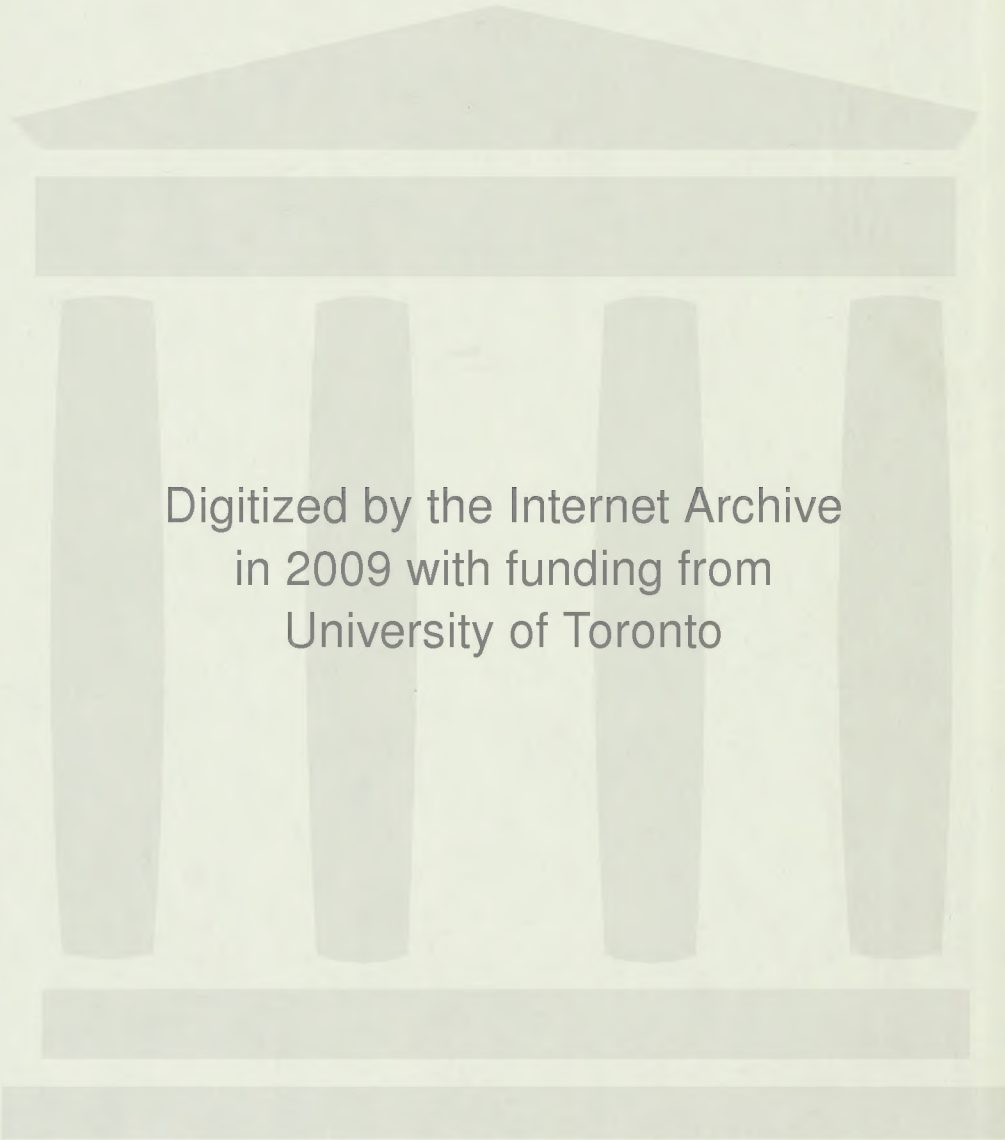

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THE BOWMAN LECTURE
ON
THE ETIOLOGY AND EDUCATIVE TREATMENT OF CONVERGENT STRABISMUS.

Delivered before the Ophthalmological Society of the United Kingdom on June 10th, 1898.

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[Abstract.]

For the cure of strabismus measures of three kinds are employed at the present day—optical, operative, and what may be called educative, the aim of the latter being to lead the patient not merely to direct his eyes, but to use them in the normal way. Concerning the value of glasses and operation we are all practically agreed. The educative treatment, that is the systematic use of the monocular shade, the reading bar, the stereoscope, and so forth, stands on a different footing. Javal,[1] who has been its chief exponent for many years, and has elaborated it with infinite ingenuity, declares that it is not only an important auxiliary before and after operation, but is capable by itself of curing certain cases. Many others have used it to a certain extent, but there is no general agreement as to its value; indeed, one well-known writer goes so far as to doubt whether the cases which have been cured by it would not have got well without it, and whether those which are incurable without it are ever curable with it. The present investigation was undertaken in order to ascertain the value of this line of treatment, and to test the principles on which it is based.

Method of Investigation.

Since January 1st, 1897, all cases of concomitant convergent strabismus coming under my care were examined on a uniform system, and noted on special printed forms. The following points were noted, so far as possible: Age; onset age; circumstances of onset; nature of squint, whether periodic or continuous, and whether alternating or monolateral; angle of squint; fixation power of squinting eye, whether true or false; refraction under atropine; acuteness of vision with corrected refraction. So far the methods of examination need not be described in detail. Beyond this there were certain tests, employed chiefly in the later stages, which require explanation.

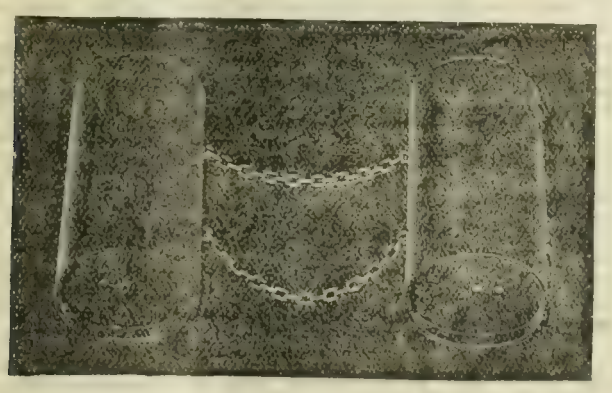


Fig. 1.—Fusion tubes.[2]

Potential Fusion.—The squinter, looking at an object such as a lighted candle, sees it single rather than double, because he has learned to take no notice of the image formed in the squinting eye. Will he be able to perceive both images simultaneously and to fuse them if we succeed in putting his eyes approximately straight? The only way in which we can test the point beforehand is by taking two similar objects, and placing them so that while the straight eye fixes the one, the squinting eye fixes the other, and so that each eye can only see its own object, as in the stereoscope. The small instrument (Fig. 1), which for convenience I will call the "fusion tubes," is essentially a miniature stereoscope, admitting of free adjustment for abnormal positions of the eyes. Looking through the tubes as through an opera glass, I see with each eye a white hole and a coloured hole, the colour being red for the one eye, green for the other. Placing the tubes in a parallel position I see the two white holes as one, for the two images are fused. Now the squinter who at first sees four holes—two white, one red, and one green—and then by converging the tubes blends the two whites while he continues to see the red and the green, has, we may assume, a potential faculty of fusion, although under ordinary circumstances he is unable to exercise it, and does not perceive the two images of one object.

Fusion Limits.—Assuming that the patient is able to fuse the two images when the tubes stand at a certain angle of convergence, can he vary that angle and still fuse them? Can he voluntarily abduct or adduct his eyes in the interest of binocular vision, and if so within what limits? For the purpose of accurate measurement I have placed the tubes in a frame (Fig. 2) which supplies fixed points of rotation, with

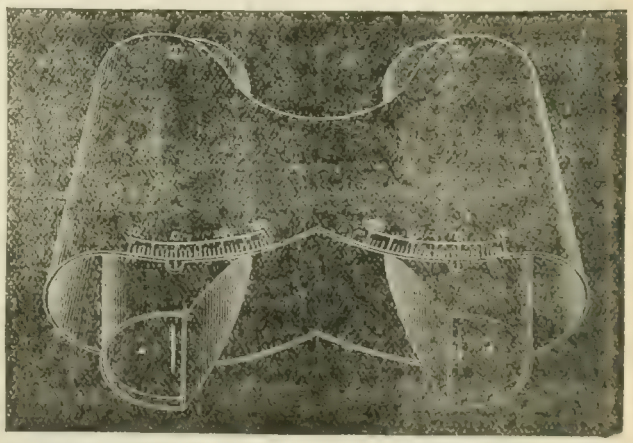


Fig. 2.—Heteroscope.[3]

scales showing their angular movement. The white holes, moreover, are replaced by vertical slits, so that fusion may still be attainable even though the deviation of the eye be vertical as well as horizontal. Fusion having been obtained, we move one or other tube slowly inwards and outwards, and note the point in each direction at which fusion ceases and the lines become double. For want of a better name I have called the instrument a "heteroscope"—an instrument with which a deviating eye sees.

Angle of Equilibrium.—In certain cases which appear to be nearly or completely cured we want to know the position which the eyes tend to assume when the stimulus of fusion is withdrawn. Turning an internal shutter in each tube of

the heteroscope, we cut off the upper part of the one slit, the lower part of the other. Fusion of the slits is now no longer possible. We tell the patient to place the tubes so that the one white line stands vertically over the other, and thus ascertain his angle of equilibrium.

Actual Fusion: Binocular Vision of a Single Object.—A completely satisfactory test of this point is difficult to find, and the more so because binocular vision is a faculty which presents various degrees of perfection. I adopted as the initial test for actual fusion the principle of Snellen's coloured glasses and coloured letters: Spectacles carrying red and blue glasses in a reversible frame are placed on the patient's face in front of his own glasses. Cards bearing red, white, and blue discs and letters on a black ground are shown to him. He must count the discs or read the letters, special precautions as to light and other matters being taken to avoid fallacy. The patient who has recovered the power of fusion will see the whole, while he who uses one eye and suppresses the vision of the other will see only those discs or letters corresponding in colour to the glass through which the good eye looks.

For the sense of perspective—the higher development of binocular vision which is learned by the continued practice of fusion—I used Hering's drop test[4] (Fig. 3).

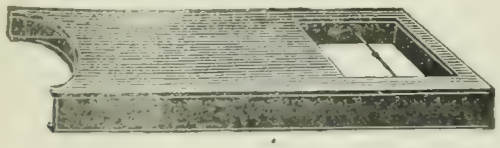


Fig. 3.—Box for Drop Test.

Etiology and Course of the Disorder.

The Early Age of Onset is the most conspicuous fact in the etiology of convergent strabismus. (Table I.) I do not

Table I.—*261 Cases of Convergent Strabismus. Onset Age in General and in relation to True and False Fixation.*

Age: years ...	≡	1	2	3	4	5	6	7	8	9	10	11	12 and over.	Totals.
All cases ...	16	31	38	63	35	36	9	11	8	6	2	1	5	261
True fixation.	13	17	26	50	27	31	8	11	8	6	2	1	5	205
False fixation	3	14	12	13	8	5	1	—	—	—	—	—	—	56

attach a precise value to the figures here given, but I lay stress on the fact that the disorder commonly begins at a time of life when the visual apparatus has not reached completion in structure or function. The development of the visual powers in infancy demands especial consideration.

The much-debated question whether the co-ordination of eye movements represents innate structure or acquired habit cannot be dogmatically answered. It is one of degree. Co-ordination is both innate and acquired, and variously so for different organs and different animals. The chick picks up grains of food within a few hours of leaving the egg, and after a few false shots strikes them with precision. Here the co-ordinating mechanism is complete, or nearly so, before it is used. The human infant is far behind the chick in this respect. His first eye movements, though already co-ordinated automatically for bilateral action, are purposeless, like the first movements of the limbs.[5] They have no relation to external objects. They represent activity in the lower levels or centres of the brain, uncontrolled by perception in the higher.[6] The higher levels are still undeveloped. His vision at birth is a mere perception of light. Soon he begins to notice conspicuous objects, then to recognise and follow them, and by the end of twelve months he watches all that goes on in his neighbourhood. We cannot test his vision at this age, but it is certainly not yet acute. He will pay no heed to minute objects. Even when he is old enough to learn his letters these must at first be large, and, unless I am mistaken, even when he is able to name them all, he will still for a time be found unable to recognise Snellen's No. 6 at 6 metres. During these early years, too, his refraction alters. Beginning with a considerable hypermetropia, like a lower animal, he gradually approaches emmetropia, but at 6 years of age has usually some hypermetropia still.[7] The visual apparatus with which the infant comes into the world is rudimentary; it is elaborated by use; the fine adjustments are made by practice and observation. The onset of strabismus in a young child involves an interruption and even a reversal of this process. What are the conditions which induce it?

Hypermetropia.—Grades of hypermetropia, which are exceptional among people in general, even in early life, are prevalent among those who squint (Table II).

Table II.—*310 cases of Convergent Strabismus Refraction under Atropine.*

—	No. of Cases.	Per Cent.
M....	3	1
E. to H. 1.5 D.	34	11
H. 2.0 to 3.5 D.	106	34
H. 4.0 to 5.5 D.	122	39 (88)
H. 6.0 and over	45	15
	310	100

They predispose to strabismus, or actually induce it in certain cases; but the influence of hypermetropia as an essential cause has been overrated. In regarding statistics, we must remember that hypermetropia (under atropine) prevails not only among squinting children, but among non-squinting children also.[8] We must remember, too, that a considerable contingent of squinters have little or no hypermetropia, and that the vast majority of hypermetropes have no squint. The doctrine of Donders, by reason of its great importance, has dominated some of us too exclusively.

The angle of the squint is not proportionate to the hypermetropia. A given effort of accommodation corresponds, in the emmetrope, with a given angle of convergence. The ordinary hypermetrope acquires the habit of converging normally, although he accommodates abnormally. The exceptional hypermetrope who fails to acquire this habit and squints instead, presents a deviation which is greatly in excess of that which his hypermetropia would seem to require. Fig. 4 (see p. 3), which is based on 239 cases, shows the degrees of deviation which the squinting eye would present were the squint proportionate to the hypermetropia (large figures), and in contrast with these the degrees of deviation which were actually present (small figures).

What is the explanation of this excessive deviation? The view that it is a voluntary and purposive act for the more complete avoidance of diplopia is not altogether satisfactory, for if the extra deviation were maintained by an effort of the will, it would surely be abandoned to some extent when the squinting eye was covered, and would hardly occur at all when the squinting eye is comparatively useless, whereas it is sometimes these useless eyes that squint the most. Is it not rather the overaction of a motor centre which has escaped from conscious control? The maintenance of fusion depends on brain action of a complex nature, on lower centres which act, when uncontrolled, without regard to purpose, and higher centres which control them. In strabismus we have probably not only exhaustion of the controlling centres, but loss of the perception which should guide the eye. The sense of fusion falls into abeyance not by the mere withdrawal of one image, as when the eye is covered by the hand, but by a purposive inhibition or suppression of it. This suppression confirms the loss of control, and degrades the act of convergence to a purely automatic level.

Failure of Control.—The onset of strabismus is often attributed to a fit, a fright, a fall, or other such occurrence, and still more often to an illness, such as whooping-cough or measles. Making allowance for the frequency of such events among children, and for a certain disregard of time and

sequence in their elders, it seems to me highly probable that these supposed causes are often real causes. Some such explanation of the onset was given, with show of reason, in more than two-fifths of my cases, and the proportion would no doubt have been higher had not many of the patients been brought by persons who knew nothing of their antecedents. In many cases the history was definite, and not to be upset by cross-examination. For example: A child who had never been seen to squint before came from school squinting badly, having that morning been put into a corner with a cloth over her head. Another did the same immediately after having his head pushed into a bucket of water by his brother; another after sitting in scalding water; another after being terrified by a monkey which jumped on to her shoulder. No less clear in many cases was the history of onset during measles, whooping-cough, or other constitutional disorder. All these are conditions which may gravely disturb the nervous system. Shock, anger, or apprehension impair the control of muscular action. Febrile disorders cause delirium, convulsions, and sometimes transient strabismus, and leave the nervous energy exhausted. Is it not highly probable that such disorders occurring in young children may interrupt the action of those higher centres which control the movements of the eyes, and this not only where control is already difficult by reason of amblyopia or error of refraction, but even in children whose visual apparatus is normal for their time of life, but not yet fully developed?

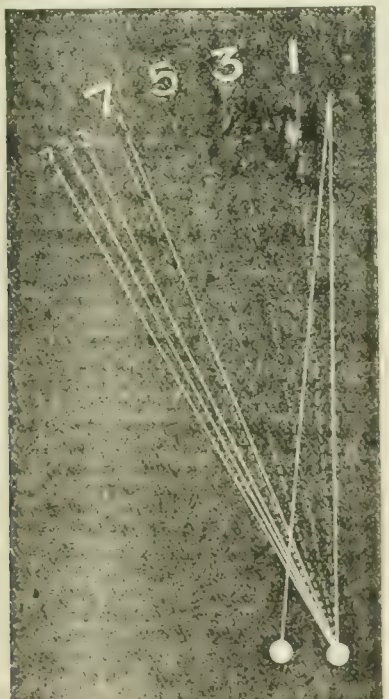


Fig. 4.—Angles proportionate to hypermetropia: 1, 3, 5, 7. Actual angles of squints: 1, 3, 5, 7.

Inequality of vision of the two eyes lessens the value of binocular vision, and increases the difficulty of maintaining it. It is present in a large majority of cases. In less than 5 per cent. of my cases there was some opacity of the media. In about 50 per cent. there was a decided inequality of refraction. But apart from these causes there was an inequality of vision not removable by correction of the refraction in 78 per cent. of all the cases in which vision could be tested; slight in some, but considerable in a large number. In 23 per cent. of all my cases the squinting eye had lost the power of true fixation.

The amblyopia of the squinting eye: is it a cause or a consequence of the squint? There is little evidence to show that an eye which has once acquired good vision can lose it through squinting, but remembering how transient are the impressions received at 1, 2, or even 3 years of age—how a familiar face not seen again is absolutely forgotten—a language partly learned but not used later entirely lost—we may suspect that an eye which begins to squint before the development of vision is completed may lose something of what it has acquired. The loss of fixation power by an eye which has once possessed it is almost a proof of loss of visual power. Some of the amblyopia, however, is certainly antecedent to the squint, for many squinting children are amblyopic in both eyes, and it is clear that the defect in the fixing eye is not dependent on the squint. Seeing, then, that both eyes often fail to reach the normal standard of vision, we may reasonably suppose that the failure is sometimes unequal in the two, or even confined to one, and therefore that the amblyopia precedes the squint, and plays a part in causing it; indeed, no other view is possible where we find great inferiority in the squinting eye shortly after the onset of the squint.

But to speak of the amblyopia of squint simply as a congenital defect is misleading. All eyes are highly amblyopic at birth. Those which later reach the standard of normal vision do so by a process which occupies several years. If strabismus be established before this process is complete the further visual progress of the squinting eye is likely to be hindered, if not arrested.[9] The cases which present the greatest amblyopia seem on the whole to be those of unusually early onset. Among cases beginning during the first three years of life a much larger proportion had false fixation than amongst those beginning later (see Table I). That some beginning even in the first year retained true fixation may have been owing to the squint being alternate or remaining periodic till a later age. Moreover, the results of disuse would vary not only with the actual age of onset, but with the state of development at that age. Many squinting and amblyopic children are distinctly backward. It may be that highly amblyopic eyes squint earlier than others because they are amblyopic, but we ought not to leave out of consideration the possibility that the early onset of squint may arrest the visual development of the eye.

Course of the Disorder.

At first the squint is usually periodic, coming and going with accommodative effort, but each lapse tends to facilitate recurrence, and in time, as the suppression of the deviating image becomes confirmed, the squint becomes continuous. It is unfortunate that so few of these children come under treatment in the periodic stage—16 per cent. in my experience—for it is then, as a rule, that the squint is cured most easily. Both in the periodic and in the continuous stage the large majority of squints are monolateral; in my cases 81 per cent. The alternating squints, constituting 19 per cent., were characterised, with few exceptions, by nearly equal refraction, and nearly equal vision in the two eyes. But the two groups are not absolutely separable. In the continuous stage, whether the squint be alternating or monolateral, the suppression of the deviating image becomes more and more complete, and the act of convergence becomes more and more dissociated from visual perception. Thus, when tested with the heteroscope, most squinters can see with the two eyes simultaneously. Some can fuse when the tubes stand in a particular position, but cannot maintain the fusion when the tubes are abducted or adducted from this position by a single degree. They have lost the notion of making a voluntary effort for the avoidance of diplopia. Some have no sense of fusion, or fuse in a spurious fashion, placing the tubes so as to blend a macular picture in the one eye with an excentric picture in the other, according to ingrained habit. This we might expect where the squinting eye has lost fixation power, but it is surprising when met with in a patient who has normal vision in both eyes, as in some cases of alternate squint. The alternate squinter is an expert in the arts of suppression and so-called false projection. He fixes his object with either eye at will. In the other eye, at the same moment, he suppresses the macular picture which he does not want, and develops to some extent the misplaced image of the object looked at, projecting it not falsely but truly, in spite of the false position of the eye.

These secondary perversions of the visual function are at once consequences of the squint and causes of its perpetuation.

Summary of Etiology and Course.

1. Convergent strabismus is a disorder of innervation in which the visual centres fail to control the act of convergence. This act is thereby degraded. It becomes purely automatic and purposeless. It is excited by the associated act of accommodation. It is excessive because it is uncontrolled.

2. The failure of control depends largely on faulty development of the visual apparatus. The fault, whether it be in the eye or in the central organs, is frequently hereditary. In many cases the power of control is lost through shock or illness during infancy.

3. Hypermetropia, when of considerable degree, predisposes to strabismus, and sometimes causes it, by demanding an abnormal effort of control, but hypermetropia of low degree does not account for strabismus in a child.

4. The disorder is confirmed and perpetuated by suppression of the function of the squinting eye. In treating it we should aim at stopping this habit of suppression, and establishing the habit of binocular control.

Educative Treatment.

In the present series of cases educative measures were employed to a considerable extent, but hardly ever alone; always, or almost always, as auxiliaries to operation and the use of glasses. Moreover, treatment was often incomplete, being abandoned or neglected by reason of time, trouble, or expense, so that the results in mass are no true measure of of the curability of the disorder. Again, I have no standard of results obtained in other ways with which to compare the present. It is clear, therefore, that the question at issue cannot be answered by a mere appeal to figures. Still some numerical statement may be useful. I take for analysis 251 cases which came under treatment during the year 1897. During the last few months I have endeavoured to examine the whole of this series, and am able to say something as to the present state of just 200.

Fifty-seven had binocular vision of a certain kind they appeared under the red, white, and blue test to fuse both in near and in distant vision.

Separating the periodic from the continuous squints, I find that 59 per cent. of the former and 18 per cent. of the latter had recovered in this way.

Eleven others fused in near vision, and were not tested for distant vision, the importance of this having for a time escaped my notice.

Nine others almost certainly had binocular vision, but were too young for the actual test.

Twenty-two more fused in near vision, but used one eye only in distant vision. In these latter cases it was most interesting to observe how the child, when standing say at 3 feet from the card, would see the three dots at once—then, on taking one step backwards, being unable to diminish the angle of convergence sufficiently for that distance, would instantly suppress the use of one eye, and see two dots only.

In the remainder—that is, in just about one-half the cases of known result—binocular vision was absent both in near and distant vision. This latter group included many patients who were cured as regarded appearance. It naturally included most of those who had false fixation at the outset, and many in which the treatment had been abandoned or interrupted.

These figures relate to fusion merely—that is, binocular vision of an elementary kind—not to the fully-developed sense of perspective or solidity. This latter was recovered in 16 cases, as proved by the drop test, and probably in others, for the test was not applied to all who had recovered fusion. The results, no doubt, are not all final. Some of these patients have the faculty of fusion on uncertain tenure, and may lose it in the future, especially if they are careless as to using their glasses. On the other hand, some who have it not will probably still acquire it, and those who retain it will certainly develop it more fully. Those especially who have it now in near but not in distant vision are likely to extend it to the latter also.

The means employed were of three kinds—occlusion of the eye by means of a shade or pad, bar-reading, and the use of the fusion tubes, these being intended as a simple substitute for the stereoscope.

The shade was employed, with more or less persistence, in 118 of the 251 cases. Its purpose is not so much to give the squinting eye a greater acuteness of vision as to compel it to use such vision as it has to promote fixation and to prevent or stop the habit of suppression. There is a period when the faculty of fixation can be saved or lost.

In January, 1897, I saw a child of 18 months with periodic squint of short duration in the left eye. The eye fixed the mirror readily as shown by the corneal reflex. Both eyes under atropine had H. 3 D. I ordered a shade to the good eye, and should probably have given glasses later, but the treatment was neglected. Fifteen months later I saw the child again, and found a continuous squint with false fixation. In contrast with this my records show 7 cases which, at first had false fixation, but recovered true fixation under treatment. In every instance the recovery was aided by the wearing of correcting glasses, but it would not have come about without occlusion of the fixing eye, for it was attained before the squint was got rid of, so that without compulsion the squinting eye would never have fixed at all.

False fixation, then, though usually incurable by any reasonable amount of effort, is not always so; and in young children especially we ought to give the eye the chance. In the more hopeful and larger class where the squinting eye has still the power of true fixation, the shade is often of distinct advantage. At first the child rebels; endeavours to remove the shade or to look sideways from behind it; failing this, it is awkward in guiding itself, is apt to fall, is unable to put its finger smartly on a given spot; in short, has false projection through using its sight in an unwonted way. Soon, however, these difficulties begin to disappear; the shade is tolerated; the mother assures us that the child can use the eye much better, or perhaps complains that we have driven the squint into the other eye. The eye has become more useful through being used. In my series I find 10 cases which, at first monolateral, showed a tendency to alternate after persistent occlusion of the fixing eye. Such advantage, no doubt, is transient if we stop the shade and proceed no further, but when we follow it up by operation it helps unquestionably in the recovery of fusion. During treatment, the vision of the squinting eye as measured by Snellen's letters rose a little in many of my cases, greatly in a few.

Some of this improvement may have been due to the continued wearing of a proper glass, for eyes which have no squint frequently show a gradual betterment of vision during the few months following the correction of refractive errors. In one case, however, vision rose from $\frac{6}{18}$ths to $\frac{6}{9}$ths, though the same glasses were worn throughout, and had been worn for some years when the case came under treatment. In this case, together with the use of the shade, a large divergence, due to operation 8 years earlier, was corrected.

For stopping the habit of suppression the shade is invaluable. When glasses, or glasses and operation, have brought the squinting eye into fairly good position, there often remains a trifling squint which the patient makes no effort to correct. He cannot, for he is not conscious of the displaced image. By covering the fixing eye for a time we may arouse the dormant vision of the other, and he may then be able to perceive the two images at once, and to unite them by adjusting the position of the eyes. To cure the habit of suppression, the shade must for a time be worn constantly on one eye or the other: on the good eye as much as possible, and at other times on the bad one, for the squinting eye had better be in darkness than continue to form images which the brain does not perceive. Occlusion of the good eye for a certain time each day may suffice to prevent a young child from losing the faculty of fixation, but it will not banish the habit of suppression. I have usually attempted to occlude the eye by means of the ordinary celluloid shade with an elastic cord, placing the shade beneath the spectacles, but this is sometimes difficult to manage. A pad of cotton wool held in position by the spectacles often answers better.

Bar-reading, the *lecture controlée* of Javal, was employed in 31 cases. A bar of some kind, such as a paper-knife, a ruler, or a strip of card, is held between the eyes and the book in such a way as to hide a part of each line from each eye respectively. The patient's own forefinger will answer the purpose if held properly, and has the advantage of being always at hand. The most convenient implement, I think, is a thin strip of metal (Fig. 5) bent in two places at a right angle so that it can be held upon the book with a thumb or finger. It is steady in relation to the book, and can be moved easily up and down the page. The patient must be taught how to use it. When his fixing eye reaches that portion of the line which is hidden from it by the bar, he must use his other eye. There must be no guessing, and no dodging movement of the head or book. At first the bar will block the line completely. To show him that the other eye can help him out if he will make it work, we cover the fixing eye for a moment with a screen. Next we teach him to occlude it for himself, at first perhaps with his hand, but as soon as possible by a momentary closure of the lids. He will learn this in a day or two if not at once. Soon he will be able to travel along the line with only a slight hitch where he closes the better eye, and at last he will read

smoothly keeping both eyes open. No one who has seen a patient work his way through these several stages can doubt that bar-reading aids in the recovery of binocular vision. It is chiefly effective when practised in conjunction with the use of the shade. Its weak side is that it is inapplicable in very early life. To older patients it affords interesting occupation.



Fig. 5.—Bar-reading.

[Cases of long-standing strabismus were cited in which treatment by glasses and operation left a slight deviation, with no diplopia and no tendency to fuse, and in which the subsequent use of the shade and reading bar restored binocular vision in the course of three to six weeks.]

The fusion tubes were used, together with other treatment, in 21 cases. The plan was to let the patient hold them in such a way as to blend the two white holes; then to separate and join these many times in succession, so as to get the idea of fusing double images. Then to overlap them partly, and try to make them go together by looking at them. Lastly, to practise this at home. Seeing that this exercise grows easier with a little practice, I presume that it serves to stimulate the sense of fusion. It is irksome if long continued, but interesting for a while, and can sometimes be managed by children who are too young for the reading bar. With the stereoscope proper I have done nearly nothing; time failed for any sufficient trial.

The old idea that the squinting child needs a little skilful cutting and nothing more is dying out. Most people know that glasses are often necessary; but that the child may require teaching, at some trouble, to use the squinting eye is a new idea to many. But it is easily grasped, and must be grasped if our efforts are to be effective. I have used the word "educative" as a help in that direction. Of course there are parents and there are children on whom all time and trouble spent in this way are entirely thrown away, but on the whole I have been surprised at the care and patience with which directions have been carried out even in homes where one might least expect it. In this lecture I have stated only my own experience; it has been impossible to compare it with that of others. I have referred but little even to Javal, but those who know his work, especially his recent *Manuel du Strabisme*, will know how much I am indebted to it. On some points of etiology his views are, I think, open to question, but as regards the education of the visual function which he has so ably advocated, I am convinced that the principle is true and the method practically useful. Used rarely by itself, usually in conjunction with other treatment, it promotes real as distinguished from apparent cures of squint, and gives the maximum security against relapse.

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THE CAVENDISH LECTURE

ON

GROWTH AS AN AGENT IN (1) PRODUCTION AND (2) THE REMOVAL OF DEFORMITY.

Delivered before the West London Medico-Chirurgical Society

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GROWTH has been defined as the increase of a part by the addition of material like that already existing in it. In its simplest form growth may be observed in the enlargement of a crystal. If a crystal of alum sulphate, for example, is placed in a saturated solution of that salt it gradually increases in size as more and more alum sulphate is incorporated in it. Another equally familiar example is the growth of a bone in a young animal. The tibia, for instance, becomes larger and larger by the addition of more and more bone to its length and thickness. When normal growth is examined it at once becomes apparent that it takes place in conformity to type. This is illustrated in a remarkable manner in the case of crystals. A crystal of alum sulphate, when it is perfect, is, whatever its size and at all stages of its progress from small to large, always octohedral. But, further, if a crystal of alum sulphate is broken, and is then placed in its mother solution, the defect is repaired, and at length it is restored to its typical shape, and becomes once more a perfect octohedron.

Here are casts of some crystals (No. 42B in the Museum, St. Bartholomew's Hospital) prepared many years ago by Sir James Paget to illustrate an experiment recorded by Jordan in *Müller's Archiv*, 1842, page 46. A broken crystal of alum was placed in a solution of this salt, and in a few days "while the whole crystal had increased in size, the increase on its broken surface was proportionately so much greater than on any other, that the perfect octohedral form was nearly regained." A few weeks ago, at my suggestion, Dr. Chattaway, in the Chemical Laboratory of St. Bartholomew's Hospital, selected two crystals of alum sulphate of the same size (Fig. 1 (A) and (B),) and then, breaking off a large piece

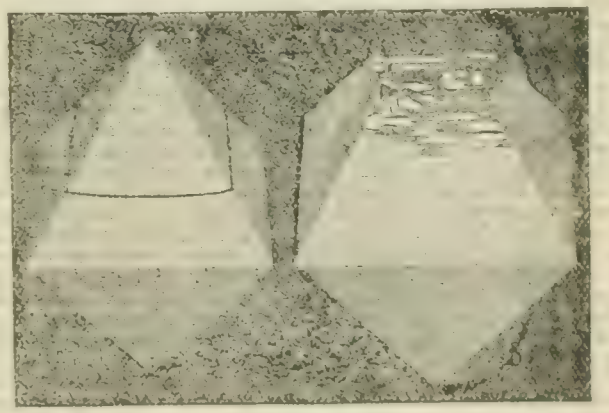


Fig. 1.—Repair of a crystal. A crystal of alum sulphate (*b*) was fractured at the level of the dark line shown on the other crystal (*a*). It was then placed in a solution of alum, and the part which had been broken off is seen to have been, in the course of a month, nearly reformed.

from one, marked the other to show the line of fracture. When placed in a solution of alum the broken crystal, growing in correspondence with its type, had within a month, to a great extent, as a glance at the two figures shows, regained its original shape.

In studying growth in the vegetable and animal kingdoms

respectively, it is found that while its ultimate object is in both the same—namely, adaptation of the individual to its environment—an important difference may be observed. In plants the influence of type is comparatively limited, for there are numerous instances in which a plant, when its environment is changed, is able, as it grows, so far to adapt itself to the new conditions under which it is placed that it becomes modified in a remarkable degree. This is well seen when the land forms are compared with the water forms of the same amphibious species,[1] or when the habitat of a plant is changed from a cold to a hot climate. The castor-oil, for instance, which is an annual in England, becomes a tall tree in Malta; while M. Freyn states that *Beta maritima* on the cliffs of Istria grows in shrub-like form, with erect stems, bearing hardly any resemblance to our cultivated beet.[2] Again this capacity for adaptation to novel circumstances was graphically demonstrated by an experiment recorded by Dr. Lindley. A young willow tree had its crown bent down to the ground; this was covered with earth, and soon emitted an abundance of roots. The true roots were then carefully removed from the soil, and the stem inverted. The roots now became branches and emitted buds, and the tree grew ever afterwards upside down.[3]

In animals, on the other hand, the law of conformity to type exercises a much stronger influence, so that, although adaptive variation takes place in a series of generations, yet it is scarcely appreciable in the life of a single individual.

When at length the individual has attained its complete form and structure, and is thus in correspondence with the type which best equips it for the functions of its life, general growth, its purpose having been fulfilled, comes to an end. In man this stage has, generally speaking, been reached by about the twenty-first year when, as the phrase is, the individual "has done growing." Variations, however, in the directions both of deficiency and of excess may occur so that the normal stature is either exceeded or not reached. Hence giants and dwarfs. Or the variation from the normal may be limited to a single part. In such cases what has been termed formative power or germinal capacity is in local excess, with the result that such specimens as these of so-called congenital hypertrophy of fingers and toes are met with. The middle finger of this hand is nearly five times its proper bulk; and this is a cast of the foot of a boy aged 13. The foot was 12 inches long, and the instep 11½ inches in circumference. The great toe was 4½ inches long, and had a circumference of 6¾ inches.

Yet on closer examination it is observed that, after general growth has ceased, the capacity for further growth in many parts still exists in a latent form or in reserve, but ready, should the interest of the individual require it, to be brought into activity. This provisional capacity for the growth of individual parts or organs after general growth has ceased is one of the most striking and valuable resources with which the individual is endowed. General growth adapts the individual to its environment under normal conditions, while latent growth serves a different purpose; it provides means by which a part is enabled to keep pace with the increased demands which are made upon it, when either its own proper work is increased or when some other part has become defective, so that, by its aid, the struggle for existence can still be maintained under circumstances which would otherwise in many cases soon lead to a fatal result. It is therefore in the highest degree protective or conservative. Thus such muscular organs as the heart, the large intestine, and the bladder grow stronger when they encounter abnormal resistance in the expulsion of their contents; and, to give minor instances, the epidermis thickens over points of increased pressure, and the cremaster grows into large fleshy bundles in cases in which heavy tumours, such as hydrocele or irreducible hernia, are present in the scrotum. And here is a photograph of one of Professor Sandow's pupils, whose muscles in the discharge of increased functions have grown to this extraordinary size (Fig. 2).

The growth of the uterus during pregnancy is yet another remarkable example. And, in the second place, organs grow when vicarious functions devolve on them. For instance, one kidney, the other being absent or useless, may acquire twice its normal bulk. When one limb is paralysed or lost in a young subject, the opposite grows to an abnormal size, and thus acquires abnormal strength. Note, again, the growth till then latent, which takes place in the arteries of a limb when, after occlusion of the main trunk, a collateral circulation is established; or in superficial veins when the deep veins have become obstructed. And it is chiefly those organs and parts which are most essential to the welfare of the individual which manifest the largest share of this reserve power of growth; for instance, in such indispensable organs as the heart or a remaining kidney the capacity for latent growth is much more considerable than it is in parts which are not essential to the maintenance of life, such as a hand or a foot; while the capacity for growth which the blood vessels hold in reserve, in order to maintain the vitality of a limb under very exceptional conditions was recently illustrated by a case* recorded by Sir Thomas Smith, in which, when the femoral artery and vein, the profunda artery and vein, and the popliteal artery and vein were all simultaneously ligatured during the removal of a tumour in which they were involved, the enlargement by growth of collateral channels, both arterial and venous, was so considerable and so rapid that no serious embarrassment of the circulation occurred. Even in bone this reserve power of growth is very remarkable. Here is a skull the holding capacity of which is at least three times the normal amount. It is from a case of chronic hydrocephalus. Growth took place in order to avert intracranial pressure, which, without it, must soon have led to a fatal issue.



Fig. 2.—The shoulder and arm muscles of one of Professor Sandow's pupils.

I have entered upon these general, and I am afraid too fragmentary, remarks in respect to growth in order to introduce the immediate subject of the present lecture. In what follows I propose to direct attention to the two forms of growth which I have mentioned—that by which the stature of the individual is originally attained, and that which, till the occasion arises, remains in reserve—in their relation to surgery, with the object of showing that they are agents of considerable potency, which, according to the conditions under which they act, may either lead to deformity or conduce in an important degree to its removal.

Growth producing deformity is met with when the influence of the law of conformity of type, which ought to regulate the process, is interrupted or inhibited by some other influence of a stronger kind. This state of things may occur under a variety of circumstances, and many examples can be easily named: I have already referred to cases of what has been termed congenital hypertrophy, in which parts grow in excess because they are endowed, not with the usual, but with an abnormal, amount of germinal power or formative capacity. Deformity from overgrowth, depending on an abnormal blood supply, is seen in those not very rare cases in which, owing to tuberculous disease of the knee, the growing ends of the femur and tibia are rendered more than normally vascular, and the limb becomes an inch, or, as I have seen

it, two inches, longer than its fellow. The same result may follow inflammation of the shaft of a long bone, for instance of the tibia. Thus in chronic tuberculous osteitis, or in acute infective inflammation followed by necrosis, and attended with abnormal vascularity, continued over a long period, the bone may become as much as an inch and a-half longer than the opposite. But the most remarkable example of deformity due to abnormal growth depending on increased blood supply is furnished by Hunter's admirably ingenious experiment, in which the spur of a cock, which he transplanted from the leg into the much more vascular comb, grew to be six inches long (Fig. 3). The



Fig. 3.—The head of a Maltese cock, into the comb of which a spur had been transplanted from the foot, and had grown into the spiral horn six inches long, shown in the drawing. Preparation in the Museum of the Royal College of Surgeons.

production of deformity when normal growth takes place under abnormal circumstances, is further illustrated in cases in which an injury of the lower end of the radius has been followed by arrested growth of the bone, and as normal growth has continued in the ulna, the hand has been pushed over to the radial side. A similar result is met with in the lower limb, and many examples have been recorded. Two years ago I saw a young married lady whose left tibia was ⅔ inch shorter than the right, and curved inwards just above the internal malleolus. The fibula was disproportionately long, so that its lower end, as the patient stood, was nearly 1 inch nearer the ground than its fellow. The external malleolus was prominent, and the foot was considerably turned in. The history of this case was that when the patient was 6 years old she injured her ankle by a fall—no doubt, as the result showed, separating the lower epiphyses of the tibia. Splints were applied, and in a few weeks she was walking naturally. Deformity, however, was slowly developed, owing to continued growth of the fibula, while growth of the lower end of the tibia had been arrested by the injury, which had involved the epiphysial line. I removed ⅔ inch of the fibula just above the malleolus and divided the tibia, and was then able to place the foot in its normal position. Some years ago I met with a case of deformity of the lower jaw in a boy aged 9. The teeth, instead of being vertical were nearly horizontal, for during growth the jaw had been constantly drawn upon by a strong scar following a burn in the neck, and in which the bone was firmly imbedded. Further examples of growth resulting in deformity with which all are familiar are met with in the spine and in the tarsal bones. In the spine in scoliosis developing in early life growth is checked by increased pressure in the concavity, and favoured by diminished pressure in the convexity of the curves, so that the bodies of the vertebræ become wedge-shaped. In this specimen the vertical measurement of the bodies is in the concavity ½ inch against 1¼ inch in the convexity of the curve. In Pott's disease, when several of the vertebral bodies have been destroyed, the thorax as growth proceeds becomes deformed, for the ribs, jammed together at their posterior ends and so becoming fixed, grow almost straight forwards, and lead to extreme protrusion of the sternum. In talipes equino-varus, when this deformity is left without treatment, the tarsal bones are altered widely from their original shape. In the knee, again, in tuberculous disease, if the joint has been long considerably flexed, or, as I have seen in a case of septic arthritis followed by fibrous ankylosis in a position of flexion, the front part of the condyles of the femur and of the head of the tibia grows in excess; and this change of shape may be so marked that it so far locks the bones as to become a considerable element of difficulty in the reduction of the deformity; while even if the deformity could be reduced, the articular surfaces would be found so changed in shape that they would no longer admit of accurate coaptation in the extended position of the limb.

Growth, although it is in itself and in its surroundings perfectly normal, may produce a gradually-increasing deformity. This is seen in the instance of scars. Thus, vaccination scars produced in infancy grow to scale with the limb on which they are placed, and become three or four times their original size. The growth of a scar I lately saw illustrated in a distressing manner in a case in which a nævus on the face had during infancy been treated by vaccinating its margin at four different points. The inoculations had all "taken," with the result that when the patient was a girl of 18 she presented a group of four scars on her cheek, each of which was nearly as large as a threepenny-piece. As a further illustration of the growth of scars I may mention a case in which, some twenty years ago, I treated a cutaneous nævus on the face of an infant 2 months old with strong nitric acid. The nævus was nearly round, and not more than a quarter of an inch in diameter. As this patient grew the scar grew also, and, a few weeks ago, I found, on examining it closely, that—though being quite flat and smooth and of the same colour as the surrounding skin, it hardly shows—it is seven-eighths of an inch in diameter, so that, growing to scale with the face, it has become nearly four times its original size.

I now pass on to consider growth as an agent not in the production, but in the removal of deformity. I have shown that in many cases when growth produces deformity, it does so under the influence of some condition which has supplanted or inhibited the action of the law of conformity to type. For instance, when growth continues in the ulna, after it has been arrested in the radius, in consequence of a fracture or other injury involving the epiphysial line at the lower end of this bone; or when the lower jaw has during growth been diverted from its typical shape by the dragging action of a scar in the neck. In such cases, however, although the law of conformity to type is prevented from asserting itself by some more powerful adverse condition, it is merely suspended, but not abrogated: and is ready to resume its influence as soon as the agency which has opposed it is removed. It thus becomes a powerful corrective agent which surgery may often turn to very useful account.

RICKETS.

The following case, which occurred in 1874, affords a good illustration. The bones of the lower extremities of a rachitic child, aged 7, had during infancy yielded under the weight of the body, and became so deformed that I determined to operate on the tibiæ, and then on the femora. To straighten the tibiæ, which were sharply curved forward in their lowermost third, I performed osteotomy, first on one side, and then, after an interval of some months, on the other, and removed a wedge-shaped piece of bone from each. In those days aseptic surgery had not been fully established. Both wounds suppurated, and from both tibiæ small scales of necrosed bone slowly separated. Under these circumstances twelve months passed, and during the greater part of this period the child was kept off his feet. Then when the femora were examined, it was found that in the course of these twelve months during which the weight of the body had been removed they had, under the undisturbed influence of the law of conformity to type, regained their normal shape, and that any resort to osteotomy was entirely unnecessary.

Again, it is frequently observed that the limbs of rickety

children which for a time are markedly deformed subsequently "grow straight." I have seen a considerable bend disappear in the course of nine months. In such instances the original deformity takes place because, when the bones are deficient in rigidity, the weight of the body is a stronger influence than the law of conformity to type. But when, a year or two later, the rickety state has become less marked or has entirely ceased, and when the bones have regained their natural strength, they gradually, without surgical interference, grow straight. But sometimes the rickety condition is present in a more aggravated degree. In such cases the bones under the weight of the body bend easily, and continue to do so for an extended period. And not only so, but growth itself is now an agent to increase their distortion; the bones, in fact, "grow bent." Thus thwarted in its normal course, the law of type is found to assert itself in another direction. Unable, under the circumstances, to restore a curved tibia to its normal shape by ordinary growth, it calls forth the other form of growth I have mentioned—that which is latent or in reserve—and by its means develops a buttress in the concavity of the curve, which effectually prevents any further bend—in other words, any further divergence from the normal type.



Fig. 4.—A rickety femur, showing a strong buttress in the concavity of the curve.

This reserve power of growth is present, it is interesting to notice, in a remarkable degree in plants." Thus Hegler found that "the hypocotyl of a seedling sunflower, which would have been ruptured by a weight of 160 g., bore a weight of 250 g. after having been subjected for two days to a strain of a weight of 150 g. The weight was subsequently increased to 400 g. without injury. Leaf stalks of helleborus niger, which broke with a weight of 400 g., were able to resist one of 3.5 kilog. after having been subjected to a strain for about five days." This increased strength was acquired by the rapid growth of the mechanical tissues of the plant in the form of supporting buttresses.

It must, however, be observed that although such a buttress (Fig. 4) prevents further deformity, it also prevents, or materially limits, the correction of the deformity by future growth, for it acts as a strong tie beam, and often renders the curvature to a great extent permanent. These considerations have an important bearing on the treatment of deformities due to rickets. In their early stage these deformities can be easily limited or removed by treatment, by which the rickety state is corrected and by keeping the patient much off his feet, so that instead of allowing the weight of the body to supersede the influence of the law of conformity to type, this latter force shall exercise its normal influence on the result of growth. In the case I have mentioned above the thigh bones under such favourable circumstances, although the deformity was very marked and tie-beam buttresses were present, grew straight within the year. A similar result was met with in the following instance. A child, aged 3, presented rickety deformity to an extreme degree, involving both the upper and lower extremities, all the bones of which were short, large at their articular ends, and so curved that a single, or perhaps a double, osteotomy of each would have failed to put them straight. The patient was placed in the country, fed on milk and fresh meat, ordered cod-liver oil, and kept entirely off his feet for eighteen months. At the end of this time his bones were practically straight, and he was allowed to be on his feet. The patient is now 21; the deformity has disappeared. He is a groom, and, I am informed, is "very well and active."

These cases will suffice to show that in the early stage before a buttress, acting as a tie-beam, has been developed, rickety deformity will be corrected by growth, if its normal course is secured by favourable circumstances. They show also that deformity is removed much more rapidly than is, I think, generally recognised. On the other hand, however, when buttresses have once been developed, though even then growth will usually tend to straighten the bones, its effect in this direction is greatly curtailed.

FRACTURES.

Fractures in the young not rarely escape detection, chiefly because many of them are of the green-stick—that is incomplete—variety. Under such circumstances union is apt to be attended with considerable deformity. This is the case especially in the clavicle, but the same result is met with in green-stick fractures in the forearm, the thigh, and other parts. Now if these cases are kept under observation for twelve or eighteen months it is found that as growth proceeds deformity, even though it was at first very considerable, gradually becomes less, and at length entirely disappears. Although fracture of the clavicle is a frequent accident in early childhood, and although union often occurs with the fragments in a bad position, it will be allowed, I think, that it would be difficult to find in children of six or eight, one in whom any evidence remained to show that the accident had ever taken place. At the Children's Hospital, where I was formerly surgeon, in dealing with green-stick fractures of the forearm united with deformity, I used at first to straighten the bones under chloroform, but afterwards I found that this method, unless the distortion was severe, was unnecessary; for the deformity became imperceptible in the course of six or nine months. But I am able to relate a case which offers conclusive evidence that after fracture in young subjects attended with deformity, as growth proceeds, under the influence of conformity to type, the bone concerned may completely regain its normal shape. Some years ago I performed Macewen's osteotomy in both femora for genu valgum in a child 7 years old. I have no record of the case at the time of the operation, but as I never resort to this proceeding in any but somewhat severe examples of knock-knee, the bones must after the operation have been put in a position of considerable deformity. The child died three years later of measles, and this is one of the thigh bones (Fig. 5). It is of normal shape, and bears no trace whatever of the deformity which was produced by the osteotomy. Its longitudinal section, however, shows at the situation indicated by a small cross, a projection of the wall of the shaft into the medullary canal, and this no doubts marks the point at which the bone is divided. This point, it is interesting to observe, is situated an inch and a half above the proper level for an osteotomy for knock-knee, a circumstance readily explained by the growth which took place in the lower end of the shaft

between the operation and the death of the patient three years afterwards.

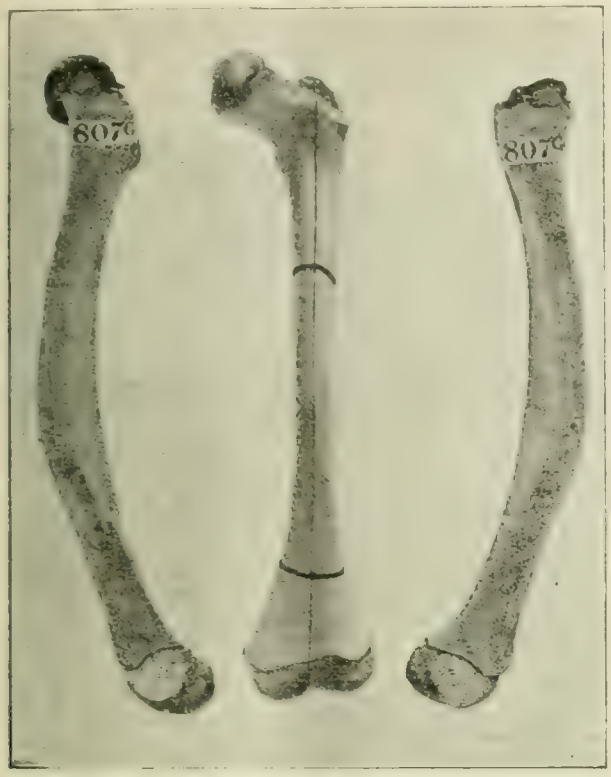


Fig. 5.—The left femur of a child aged 7, on whom double osteotomy (Macewen's) for genu valgum was performed three years previously. The bone is markedly rickety, with an antero-posterior curve in the middle of the shaft. Before a section was made the seat of the fracture could not be ascertained. Looked at in front the shaft is perfectly straight. At a spot indicated by a small cross on the longitudinal sections, a faint trace of the fracture is still visible, namely, slight thickening of the cancellous tissue, especially towards the posterior aspect of the bone (Museum, St. Bartholomew's Hospital, No. 807 G).

This complete disappearance of the deformity is very remarkable, and at first sight may seem scarcely credible. Yet is it not a result that we might, on reflection, be almost led to expect when we remember what takes place in the repair of fractures in adult bones in which the plastic agency of growth is absent? Here, for example (Fig. 6), is an adult femur in which a fracture has united with the fragments considerably overlapping each other. The specimen shows how strictly the process of repair has been governed by the law of conformity to type. The ends of the fracture, which were at first open, have been closed by the formation of bone exactly similar to that which forms the external layer of the normal shaft. All the interior callus has been removed so that the medullary canal has been restored, and the exterior callus, which was at first present, has also been absorbed, and all projections and irregularities of the surface have been removed, while the callus which remains to connect the overlapping ends, and which is about 2 inches in length, has acquired compact walls and a medullary cavity, so that it precisely resembles the type on which the original shaft was modelled. The imitation of type is throughout complete. Need we wonder, when we see how closely, even in the adult, bone repair conforms to the original structure concerned, that, when the plastic element of growth is also present, conformity to type is well-nigh absolute?

THE SPINE.

The influence of growth in the removal of deformity is displayed in the spine in a degree which deserves particular notice. Scoliosis, so common in its slighter degrees in the young, usually begins between the ages of 7 or 8 and 12 or 14, but it may commence in quite early infancy as the result of rickets, and, needless to say, unless proper measures are adopted, the condition tends to increase and become permanent; for here, as in the case of the long bones, the weight of the trunk acting on parts diminished in rigidity becomes a stronger influence in controlling the results of growth than the influence of conformity to type, so that the normal shape of the column is exchanged for one of deformity. But those who have paid much attention to the subject are aware that in a large proportion of cases of scoliosis in children between 8 and 14 the curvature in the course of two or three years will completely disappear under favourable conditions when good air and diet are secured, when overwork and constrained positions at school are avoided, and when an increased period of horizontal rest is provided (11 or 12 hours at night, with an hour in the morning and an hour in the afternoon). When, with the accessories I have mentioned, the spine is relieved by posture of the weight of the trunk for about half of the 24 hours, the result of growth is soon apparent—the spine, like a rickety femur or tibia, "grows straight." The spine, however, differs from a long bone in an important respect. The shaft of a long bone being all in one piece is possessed of inherent stability, and is not, in its normal condition, dependent on external support; while the spine, formed as it is of separate elements superimposed on each other, depends for support on the muscles and ligaments by which it is surrounded. While, therefore, the spine tends under the influence of conformity to type to grow straight when it is relieved of the weight of the trunk, yet as the surrounding muscles are weak the column yields as soon as the patient assumes the upright position.



Fig. 6.—Overlapped fracture of a femur, in which the ends have become closed by compact bone, and the callus by which the fragments are united has been modelled on the type of the original shaft (Museum St. Bartholomew's Hospital, Series iii, No. 98).

Another element, therefore, in treatment must consist in the development and strengthening of the muscles. This at the present day is secured by massage and exercises judiciously employed. The idea entertained by the public and by some practitioners that scoliosis is always serious and intractable is to a great degree a misconception, which has

arisen from the traditions of former years, when the affection was either neglected or treated with heavy steel instruments in which the trunk was encased, and which were screwed up twice a week, or on ordinary commercial principles every other day. At the present day few surgeons so far ignore the rudiments of physiology as to apply steel instruments to push a scoliosis straight, as if they were pushing up the dead weight of a leaning wall, for it is clearly seen that the attempt to correct not only lateral deviation but rotation of the vertebræ by pressing in a horizontal direction upon the series of elastic arches formed by the ribs, always has been and always must remain a mechanical absurdity. Formerly the result of this treatment was to aggravate scoliosis to a very grave extent; and now that it has been discarded, the proportion of cases which become severe is greatly diminished. Indeed clinical experience shows that in a large majority of instances scoliosis is not prone to attain any serious degree; and that when the treatment I have so briefly mentioned is adopted early, and is efficiently used, a very large proportion (70 or 80 per cent.) end in complete recovery. In those cases in which infants, as the result of rickets, develop scoliosis during the first or second year, the prognosis is very unfavourable, for during the long period in which growth will continue, deformity is likely by degrees to become extreme, and there can, I think, be little doubt that the grossly distorted skeletons which are to be found in every large museum are from subjects whose curvature began during early childhood when they were suffering from rickets. No cases, I believe, more graphically illustrate the agency of growth in the production of deformity. The treatment of infantile scoliosis is attended with great difficulty. Instrumental support cannot, it must be allowed even by those who approve of it in older patients, be applied when the abdomen is protuberant, the pelvis much smaller than the thorax, and the skin unfit to bear even slight pressure; nor can exercises be employed with good effect. The case, however, is one in which growth as an agent in the removal of deformity may be turned to very good account. The spine must be placed under conditions in which it shall be able to "grow straight." The infant must, therefore, be kept very much in the horizontal position, and appropriately gentle massage must be persistently employed to develop and promote nutrition of the spinal and other muscles. A case in illustration may be briefly related.

A rickety infant, aged 13 months, a patient of Dr. McCaskie, of Brompton, had lateral curvature with very marked rotation. The child's muscles were so weak that when he was placed in a sitting position the curvature was considerably increased. The deformity, which had been noticed for three months, was rapidly getting worse. It was evident that, if matters were allowed to go on, in the course of a year or two, or even a few months, the deformity would become extremely grave, for the bodies of the vertebræ were abnormally soft, and by being compressed in the concavity of the curves would soon become wedge-shaped and otherwise distorted. The patient was therefore kept for nine months almost constantly in the horizontal position in a small wicker-work tray, in which he could be carried about, and gentle massage for the trunk and limb muscles was regularly employed. During this time the child remained in very good health and grew quickly, and at the end of the time the deformity, which had grown less and less marked, had so nearly disappeared that scarcely a trace of it remained. He was now allowed to sit up a little and be on his feet each day for a gradually extended period. He soon learned to walk, and when he was 3 years old he was running about in perfectly good health and strength, and with no return of his curvature. He is now a strong active boy of 11, and his spine is quite normal. The long period during which the horizontal posture was maintained was, of course, a troublesome ordeal for the child's parents. For himself, he always took it in very good part. But I would ask, By what other means could the development of an aggravated scoliosis have been prevented?

Joints.

In tuberculous disease of the knee the joint is often considerably flexed, the head of the tibia is displaced backwards and outwards, and the leg is rotated outwards. This threefold deformity is, as every surgeon knows, one which it is very difficult to correct. An attempt to straighten the limb by orthopædic apparatus involves, as I have pointed out elsewhere,[7] the use of leverage, and two objectionable results unless great care is taken are apt to follow. The head of the tibia may be forced still further backwards, and owing to the production of interosseous pressure the disease may be aggravated, and the joint rendered painful.

In cases of this description, provided the displacement is only moderate in degree, if the joint is enclosed in accurately-modelled leather splints, and if the patient is not allowed to walk on the limb, as time goes on the joint will "grow straight." In 1886 I saw a child, aged 14 months, a patient of Dr. Buck, of Clapton, with acute tuberculous disease of the knee, attended with considerable swelling, heat, pain, and relaxation of the ligaments. The joint was flexed at an angle of about 100 degrees, and the head of the tibia was displaced backwards and outwards to an extent that I have never seen corrected by an kind of apparatus. In so young a child it would have been a very difficult matter to use any apparatus for extension. The knee was therefore fitted with leather splints and kept at rest. These splints were uninterruptedly worn for the next four years. The joint gradually became more and more extended, the splints being remodelled about every six months to correspond with the improved position of the limb, and by the end of four years all trace of the displacement had disappeared, and the joint was in a position of complete extension, nor were its movements in the least degree impaired. At the present time the joint is still sound, quite freely movable, and of normal shape. The only remaining defects are some muscular wasting and two inches of shortening due no doubt to damage done in the course of the disease to the growing ends of the femur and tibia. In the later stages of a disease of this kind the limb may with great advantage be placed in a Thomas's knee splint. In this excellent appliance a broad webbing strap may be passed over the front of the thigh just over the knee, and another over the upper part of the tibia, and be so connected with the lateral bars of the splint that they assist in straightening the limb. By this means, without the production of any injurious interosseous pressure, the process of extension of the knee may be materially promoted, while the patient can move about on crutches and a patten on the other foot. It must be clearly understood that I do not suggest this method for the removal of deformity of the knee in the usual run of cases, when more active measures can be successfully employed. I have, however, from time to time met with cases in which it has led to results that could not, so far as I am aware, have been secured in any other way, and it is in exceptional cases that exceptional methods are often of the greatest value.

One further example may be related. A boy, aged 3, had tuberculous disease of the knee-joint, with an abscess in the tibia which reduced the outer part of the head of the bone to little more than a shell, with the result that not only was the knee flexed, but the tibia was deflected so that a severe degree of knock-knee was developed. The distortion, when I first saw the case, was such that there seemed no probability of straightening the limb except by excision—a very undesirable proceeding in so young a child. The joint was, however, with the double purpose of arresting the tuberculous process and preventing further deformity, put up in leather splints in anticipation that at some future period excision would be done. In the next year so great an improvement in the position of the limb occurred that splints of modified shape were applied on two occasions to keep pace with the altered shape of the joint, and a year later still the deformity had so far disappeared that the joint was almost fully extended and only a trifling degree of genu valgum remained. The boy, after wearing the splints for another year, had a movable joint and a limb which was practically free from deformity, except that it was three-quarters of an inch shorter than its fellow. On this limb he could walk with scarcely any appreciable defect. I feel sure that had excision been performed when the case first came under observation, or even at a later period, the result would have been very much less favourable.

I hope the observations which I have laid before you will be sufficient to show, as I proposed at the outset, that growth

is an agent, the tendencies and results of which must be fully taken into account in the clinical surgery of the young. This necessity arises from the fact that in the instances I have adduced, and in others that could be mentioned, various deformities are developed because conditions have arisen which have interfered with or superseded the law of conformity to type, under the regulating influence of which growth normally takes place. When this is recognised it at once becomes apparent that treatment, if it is to be successful, must be guided by the principle of removing as far as possible the disturbing influence, whatever it may be, that is at work, and substituting for it those conditions by which normal growth shall be promoted to the greatest available extent. Nor, I think, can any principle be named which rests on a sounder foundation, or which in the true sense of the term is more directly conservative. Many forms of treatment which are properly named conservative are conservative in only a limited or qualified degree, for, although under the circumstances they undoubtedly secure the safety or promote the advantage of the individual concerned, they do so only by the sacrifice of parts or organs, the loss of which involves more or less serious disability or inconvenience; while in the cases to which I have been alluding the surgeon, recognising in growth one of the most strongly operative of all the manifestations of life, and observing the marvellous results which are produced by its agency, makes it his endeavour to ascertain the conditions which are most favourable to it, and does his best to secure their full effect. It would not be difficult to mention plans of treatment which have done violence to Nature and her methods, and which have inevitably led to failure and disappointment, for *Naturæ non imperatur nisi parendo*. But the subject I have discussed may suffice to remind us of one of the chief rules of practice, that under which the surgeon makes it his object to act as the strict disciple of Nature, and renders himself ancillary to her work.

NOTES AND REFERENCES.

[1] *Origin of Plant Structures*, by the Rev. George Henslow. 1895. p. 136. [2] *Loc. cit.*, p. 190. [3] *Loc. cit.*, p. 189. [4] *St. Bartholomew's Hospital Reports*, vol. XXX, p. 223. [5] This subject has been fully discussed by Mr. Jonathan Hutchinson, jun., in his able and instructive lectures at the College of Surgeons on Injuries to the Epiphyses and their Results. [6] Henslow, *loc. cit.*, p. 204. [7] *Diseases of the Joints and Spine*, 1895. pp. 272 *et seq.*

THE CROONIAN LECTURES

ON THE

CHEMICAL PRODUCTS OF PATHOGENIC BACTERIA CONSIDERED WITH SPECIAL REFERENCE TO ENTERIC FEVER.

Delivered before the Royal College of Physicians of London,

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LECTURE III.

THE PRODUCTION OF THE POISONS OF THE TYPHOID BACILLUS IN ARTIFICIAL CULTURE OF THE MEDIA.

Two different kinds of media were employed in which to grow the bacillus. Ordinary peptone broth was used to determine the presence or not of secretory products of the bacillus; and broth containing no peptone but mixed with some proteid solution—either blood serum, alkali albumin made from the spleen, or an extract of lymphatic gland—in order to determine the presence of digested products of the bacillus. In some cases, liquid blood serum sterilised at 60° C. was used without the addition of broth. The virulent bacillus grows well in ordinary peptone broth, but the growth in solutions containing much proteid is very much less exuberant. This is especially the case with sterile blood serum, and most commonly the bacilli, after growing for a time, sink to the bottom in clumps and cease growing, although they are still alive and active. It grows much better in a solution containing a small proportion of alkali albumin, but still not nearly so well as it does in broth. The object of growing them in the presence of proteids was to test whether there was any digestive action of the bacillus. In one experiment two test tubes were filled about 3 inches deep with liquid blood serum, which was rendered semi-solid by heating at a temperature of 65° to 70° C. The medium was translucent, and one of the tubes was inoculated with the bacillus, the other being kept as a control. It was observed that the bacillus rapidly grew in the medium, spreading through all parts of it, but that no liquefaction indicative of digestion occurred during incubation, which lasted 102 days. When grown in a liquid medium, however, containing a small proportion of alkali albumin, and especially alkali albumin made from splenic pulp, the virulent bacillus had a slight digestive action, although a very insignificant one. Thus in one experiment, after the bacillus had grown thirty-two days in such a medium, it was found that the solution gave a distinct biuret reaction with copper sulphate and potash, and that the alkali albumin was beginning to be changed into albumoses. This digestive action, although slight, is explanatory of the albumoses found in the spleen in cases of typhoid fever.

POISON FORMED IN PROTEID SOLUTIONS.

If the non-virulent bacillus is grown in a solution containing digestible proteid instead of peptone, a poison is formed which has an action like that of the poison formed in broth. Thus, in one experiment the bacillus was grown in a 1 per cent. solution of serum alkali albumin in broth for twenty-nine days, at the end of which time it was filtered and the filtrate concentrated, and the proteid separated by alcohol. Some amount of digestion had taken place, as the solution gave a biuret reaction. The solid product obtained was injected in two doses (about 0.3 g.) on successive days into the marginal vein of the ear of a rabbit. Following each injection there was a marked lowering of the temperature and a subsequent rise, but not to the average normal temperature of the animal for some days. Some bodily depression was observed on the first two days of the experiment, and there was a loss of body weight, but there was no diarrhœa, and the animal subsequently completely recovered.

In another experiment the non-virulent bacillus was grown in a solution of alkali albumin made from the splenic pulp, but without adding broth. One flask was filtered after forty-five days, and 10 c.cm. of the filtrate were injected in two doses on successive days into the marginal vein. After the first injection there was only a very slight rise of temperature, which, however, was more marked after the second injection. The animal showed no particular symptoms except a gradual loss of weight, which amounted to 235 g. at death on the twenty-eighth day of experiment. The *post-mortem* examination revealed no naked-eye change in any of the organs or tissues of the body. No cultivations were obtained from the heart's blood; the heart muscle showed no fatty degeneration, and there was no degeneration of the peripheral nerves. Another culture was filtered after fifty-nine days' incubation, and 12 c.cm. were given in two doses on successive days, also into the marginal vein. There was a well-marked rise of temperature after each injection but no diarrhœa was produced, and there was only a slight loss of weight, which was recovered from. The animal died in twenty-four days, and no cultivations were obtained from the heart's blood, liver, spleen, or peritoneal cavity. There was subcutaneous hæmorrhage in patches in front of the thighs and the caudal region, and the peritoneum contained about 1 c.m. of clear fluid. There was no peritonitis, and the organ showed no naked-eye change.

The results of growing the non-virulent bacillus in a proteid solution show that the poisons excreted are of the same nature as that formed by the virulent bacillus in broth. The digestion which takes place in the proteid solution is extremely slight, and the toxic body is thus mainly an excretion of the micro-organism.

Although the toxic products are developed in the presence of digestible proteids, yet they are most evident when the bacillus is grown in peptone broth. In one experiment the broth was inoculated with the typhoid bacillus obtained from the spleen of a case of enteric fever, but before it had been made virulent by passage through animals. The growth was allowed to continue for eleven days, and the broth was filtered through a Chamberland filter. Two injections into the marginal vein were made on successive days.

The first injection of about 3 c.cm. resulted in the lowering of the temperature and the production of diarrhœa soon after the injection. The second injection, also of 3 c.cm., produced but little effect, and on the three subsequent days no appreciable change occurred in the animal. On the sixteenth day of the experiment the animal was found to have lost 170 g. in weight, and to have some degree of fever, which, however, did not reappear. It lived for twenty-four days, gradually losing weight until at death it had lost 235 g. At the *post-mortem* examination there was no obvious lesion found in any of the organs of the thorax or abdomen: the intestines were normal, and cultures made from the heart's blood and the peritoneal cavity were sterile, showing that there was no bacterial infection. The heart muscle, examined after staining with osmic acid, showed degeneration of most of the fibres, there being loss of striation with longitudinal fibrillation and fatty granules in the muscle cell. This experiment shows several points which will be brought out more fully later on: (1) That a poisonous substance is present in the broth apart from the bacillus itself; (2) that this body produces a lowering of temperature and diarrhœa, as well as a loss of weight; and (3) that at death there was distinct degeneration of the cardiac muscle.

The broth culture from the same stock of bacillus was more poisonous, and produced a more profound effect if the incubation lasted twenty-five days. Thus a rabbit received a single dose of 6 c.cm. of the broth filtrate after twenty-five days' growth. The initial effect of this injection into the venous system was a rise of temperature (the maximum being attained in two hours and a half) and a rapid fall, during which there was profuse diarrhœa, with collapse and laboured breathing. This period of depression lasted some hours, and on the next morning was succeeded by a febrile rise, which continued during the whole of the day. On the following day the temperature was somewhat irregular. Subsequently no great change in the temperature was noticed. The weight fell rapidly up to the fourth day of the experiment, when the animal had lost 120 g. Subsequently, however, it regained part of the weight; and at death, on the twenty-sixth day of experiment, the loss was only 35 g. from the original weight. No naked-eye changes were observed on *post-mortem* examination; no cultures were obtained from the organs of the body. The heart muscle showed slight signs of degeneration.

The more virulent the bacillus the more toxic becomes the broth. Thus, after growing for eleven days, the bacillus was killed by chloroform, and the broth mixture centrifugalised, the clear broth being used for the injection; 5 c.cm were injected in two doses on successive days (2 c.cm. and 3 c.cm.). An initial depression of temperature followed by fever was observed after both injections, and the animal died in twelve days, with no naked-eye change in the organs of the body, which gave no bacterial growth. There was a very well marked degeneration of most of the muscle fibres of the heart. These results may be taken to illustrate the action of the clear broth without the bodies of the bacillus—that is, of the chemical poison which is present in solution in the broth.

Action of Broth with the Bodies of the Bacillus.

The toxic action of the bodies of the bacillus itself was tested by killing the bacillus with chloroform. When the culture was sterile, the chloroform was removed *in vacuo*, and the liquid used for injection. In one experiment a thirteen-days-old culture was used, and 4 c.cm. injected into the marginal vein of the ear. There was a great fall of temperature in two and a half hours, and this low temperature continued the whole of the first day of experiment; also on the second day, and on the morning of the third day the mercury of the thermometer would not rise, and the animal died. Soon after the injection there was a slight diarrhœa. During the subnormal temperature the animal became increasingly weaker, the fur becoming ruffled, although there was no diarrhœa. The loss of weight in the two days of experiment was 180 g. There was no naked-eye change in any of the organs, and the blood was sterile. This experiment may be taken as showing the profound effects following the injection of the poison. The great depression of temperature, however, observed in this experiment is not the only effect to be produced. In some of the experiments with a weaker poison no depression ensued, but a well-marked rise of temperature. Thus 3 c.cm. of a broth culture (seven days' growth) killed with chloroform were injected into the marginal vein of the ear of a rabbit. There was a considerable rise of temperature to over 106° after the injection, which continued during the whole of the following day and the day after. On the fourth day the temperature partly regained the normal limit, and continued afterwards normal. There was a loss of weight up to the seventh day, after which the animal recovered. In this experiment no diarrhœa was produced, and no symptom except that of fever and loss of weight.

In two or three other experiments with the broth and the bodies of the bacillus these features were noted, but there was not infrequently an initial fall of temperature, succeeded by a prolonged rise, and diarrhœa for a longer or a shorter period, was a fairly constant symptom. There is no doubt, then, that the retention of the dead bodies of the bacillus in the broth renders it more poisonous. The effect on different animals varies somewhat. In one experiment 4 c.cm. took two days and a-half to kill; in another experiment 4 c.cm. of the same stock caused death with lowering of the temperature in three hours and a-half. There is also some individual peculiarity in the animals as regards their resistance against the poison.

The Effect of Heat.

The effect of high temperature on this poisonous liquid containing the bodies of the bacillus was tested in order to see whether the toxic substances were sensitive to heat or not. In one experiment the broth with the bodies of the bacillus was heated to 60° and 64° C. for ten minutes; 4 c.cm. were injected into the marginal vein and death occurred, with lowering of temperature and diarrhœa, in 2 hours and 20 minutes. This death was more rapid than in the control experiment with the same amount of broth unheated. As marked was the effect of exposing the broth to a higher temperature before injection. Four c.cm. of a broth mixture heated at the boiling point of water for five minutes were injected into the marginal vein, and death, with profuse mucoid diarrhœa, occurred in 2¾ hours. This experiment may be compared with a similar one in which the same amount of broth, but unheated, was injected into another animal, which lived for 2½ days with a great depression of temperature. It may be said, therefore, that this degree of heat not only does not destroy the poison which is in the bodies of the bacillus, but actually brings out its effects. It may be that the heat breaks up the bodies and liberates the poison inside, and after heating some of the bodies of the bacilli may be observed disintegrated under the microscope.

There is no evidence from the experiments that there are two kinds of poison, one extracellular or secreted by the bacillus, and one intracellular, with different actions. The toxic properties of the broth from which the bacilli are separated by means of the Chamberland filter are practically the same, although not so pronounced, as those observed when the broth contains the bodies of the bacillus as well; and this is not an unimportant point, inasmuch as some have made a distinction between the intracellular and the extracellular poisons of pathogenic micro-organisms.

No effect is more marked or more constant in the action of the poison than the production of diarrhœa, which, with the more active poison, is very profuse, lasting a varying time—sometimes hours, sometimes a day—and consists in the passage of liquid motions, with mucus occasionally, but no blood at any time. On a *post-mortem* examination of an animal dying with this diarrhœa, characteristic appearances are almost invariably found. The stomach may be full of undigested food, the cæcum and colon contain liquid faecal matter, but the greatest change is in the small intestine, which is full of a slightly turbid, sticky fluid, containing but little food and no bile. This liquid is simply a solution of mucin, which may be separated by precipitation with acetic acid. The mucous membrane is a little soft on the surface, and there is a very large increase in the number of goblet cells. The Peyer's patches were not apparently altered. The changes described by Sanarelli in the Peyer's patches of the intestines have not been observed by me. The loss of weight is also a constant symptom, and the more virulent the poison the more marked is it seen. It is also in this case progressive. With a smaller dose of the poison, however, the initial

loss of weight is regained. No naked-eye change is produced by the poison in the organs of the body.

The effect of the poison, when the death of the animal is slow, in producing degeneration of the muscle fibre of the heart, is well marked. The heart was never found in a state of advanced fatty degeneration, but rather in the earlier stage, in which there is loss of transverse striation of the fibre, with the appearance of longitudinal fibrillation and the presence of numerous granules in the fibre, staining more or less black with osmic acid.

BACILLUS ENTERITIDIS GÄRTNER.

The experiments with this micro-organism were conducted in the same manner as those with the typhoid bacillus.

A culture was kindly sent to me by Dr. Durham, which gave the reactions previously described as characteristic of the bacillus. It differs from the typhoid bacillus in the fact that it causes gas formation in glucose-agar or glucose-gelatine; but, like the typhoid bacillus, it does not coagulate milk, and it forms but little or no indol in broth. The original culture of the bacillus worked with was toxic, as 5 c.cm. of a two days' old broth culture injected into the peritoneum of a guinea-pig killed the animal in under twenty-four hours. The virulence of this bacillus was increased by passage through animals in a manner similar to that which has been described with regard to the typhoid bacillus; that is, some of the peritoneal exudation from the first animal that died being injected into the peritoneal cavity of a second guinea-pig, and from the second into a third, and so on. The death of each animal occurred, as a rule, in under twenty-four hours. The dose was gradually lessened until a small loopful of an agar culture injected into the peritoneal cavity killed the animal. In the series of experiments the intraperitoneal injections caused the exudation of a highly albuminous fluid containing numbers of bacilli. In the earlier cases there was also an exudation of leucocytes; later on, however, these disappeared. Occasionally there were a few flakes of lymph on the surface of the peritoneum, but only at the early stage of the series of inoculations. At no time was there any exudation of blood. During the series cultivations were made from the peritoneal fluid of each animal to test the purity of the growth, to see whether the bacillus kept its characteristics, and also to study the distribution of the micro-organism in the body. It was found that the growth was always typical and pure, and that when the bacillus became virulent it was found always distributed throughout the organs of the body, being obtained from the heart's blood, the spleen, the liver, and the kidneys and peritoneal cavity in pure cultivation. In this respect the presence of the bacillus of Gärtner in the various organs of the body was more constant than that of the typhoid bacillus. The peritoneal fluid was highly toxic. Thus, in one experiment in which the bacilli were killed by means of chloroform and removed by subsequent centrifugalising, 3 c.cm. of clear peritoneal fluid injected into the marginal vein of a rabbit weighing 470 g. caused death in an hour and a-half, the temperature rapidly falling in half an hour from 102° to 97.4°. The peritoneal fluid filtered through porcelain is not so toxic as the unfiltered, from which the bacilli have been removed by centrifugalising. This filtered peritoneal fluid was found to produce fever when injected into the marginal vein of the ear of the rabbit, but when given in two doses of 1.5 c.cm. and 1 c.cm. it did not cause the death of the animal nor any particular symptoms except a rise of body temperature.

GROWTH OF THE BACILLUS IN BROTH.

The experiments done in this way were precisely similar to those performed with the typhoid bacillus. The virulent Gärtner bacillus was grown in broth for twenty-two days and the culture was not filtered, but the bacillus was killed by chloroform. Experiments were performed with the clear broth after centrifugalising, and with the turbid broth, that is with the broth *plus* the bodies of the bacilli. Each animal received the same dose, namely, a single dose of 4 c.cm. into the marginal vein. The result of the injection of the clear broth was a continued and marked depression of temperature during the day of experiment, the temperature next day again rising to normal. There was diarrhœa soon after the injection of the poison, and there was a progressive loss of weight. A similar dose of the broth, *plus* the bodies of the bacilli, caused a more marked depression of temperature, which lasted till the following morning and most of the following day. Here also there was diarrhœa and a progressive loss of weight. The effect of heat on the broth *plus* the bodies is seen in the two following experiments. Thus the same dose (4 c.cm. of the mixture) heated to 60° C. for 10 minutes caused a depression of temperature which was very great and ended in death in 4½ hours. This animal also showed diarrhœa. A similar dose heated to 100° C. for ten minutes produced also a very great depression of temperature which lasted to some extent, on to the next day. There was well-marked diarrhœa and great loss of weight. It is thus seen that the characteristic action of the toxic products of the Gärtner bacillus are very like those of the typhoid. There is present in the broth from which the bacilli have been removed a poison which causes a great depression of temperature, and this poison is also present in the bodies of the bacillus, and has an action similar to that of the poison obtained from the typhoid bacillus, namely, it produces diarrhœa and loss of weight.

Like the poison of the typhoid bacillus the virulence of a broth culture containing the bodies of the bacillus is increased by heating the solution at 60° C., so that—as seen in the experiments just quoted—whereas 4 c.cm. of the unheated mixture did not cause death; when heated to 60° for ten minutes, death occurred in 3½ hours, with great lowering of the body temperature. Heating to 100° C. for the same time gives a greater effect than the non-heated mixture, but does not produce death in the same way as when the mixture is heated to only 60°. The effect of heat appears to be to break up the bodies of the bacillus, so that the poison is liberated, making the liquid more toxic.

When grown in a proteid solution containing alkali albumin or serum proteids Gärtner's bacillus causes some amount of digestion with the formation of albumoses. This is more marked than is the case with the typhoid bacillus, although the digestion is still far behind that which occurs in the case of the bacillus diphtheriæ and the anthrax bacillus. One result obtained is interesting, inasmuch as the bacillus coli also produces it, namely, that when grown in Marmorek's fluid Gärtner's bacillus produces a partial precipitation of the proteid in the form of a gelatinous clot. In strong solutions containing serum this result, however, was not observed, and it was not so constant as with the bacillus coli.

BACILLUS COLI COMMUNIS.

There is one important difference between this bacillus and the two other forms we have considered (the typhoid and Gärtner's bacillus), this is the fact that it is one of the causes of putrefaction of the proteids; it forms indol, for example, in proteid solutions; it is found in foul water, in soil, and it is a constant habitant of the intestines, being found in that region soon after birth. After death it sometimes penetrates the different abdominal organs, and is one of the causes of the putrefaction of the body. These characteristics therefore mark it sharply off from the two other micro-organisms. There are no doubt many different forms of the bacillus coli which differ in minute particulars; some, for example, forming hardly any indol, others coagulating milk slowly. Without, however, entering into the different forms which this bacillus may assume, or into a discussion as to whether they are all modifications of the same form, I may say that the bacillus I worked with was one which was obtained from the spleen in a case of typhoid fever, and which no doubt came originally from the intestinal tract. The virulence of the bacillus coli, as obtained from the intestines, varies considerably, and several observers have described an exaltation and an increase in the numbers of the bacillus in the course of cases of typhoid fever. The bacillus I obtained from the spleen was more virulent than the stock cultures of the bacillus which I had in the laboratory, and which were obtained from different sources; its virulence was readily increased, much more readily than was the case with the typhoid bacillus, and much more readily than with Gärtner's bacillus. Six c.cm. of a fourteen-days-old broth culture injected into the peritoneal cavity of a large guinea-pig, caused death in under twenty-four hours; 4 c.cm of a broth culture of the peritoneal exudation of the first guinea-pig was injected into the peritoneal cavity of a second, and killed the animal in under twenty-four hours. In the succeeding experiments 2 c.cm. of the peritoneal fluid were

found to kill, 0.5 c.cm. was fatal at the fifth inoculation, and at the sixth it was found that 0.25 c.cm. and 0.1 c.cm. killed the animals under twenty-four hours. At this stage the virulence of the bacillus was considered sufficiently exalted for experiments to be performed. Throughout, the cultures obtained from the peritoneal fluid were pure, and always gave the typical reactions of the bacillus coli. The results of the injection of the bacillus into the peritoneal cavity were markedly different from those obtained from the injection of the other two bacilli, mainly in the fact that the effusion was bloodstained, more so at first than later on, when the bacillus became more virulent. The bloodstaining was not due to the exudation of corpuscles, but to the colouring matter of the blood being dissolved in the liquid, which was highly albuminous. Numerous petechiæ were also observed, beneath both the peritoneum and the mucous membrane of the ileo-cæcal region and cæcum. No peritonitis was observed at any time. The toxic products of the bacillus were investigated by growing it in broth and in proteid solutions.

Growth of the Bacillus in Broth.

An early experiment was done with a culture which was not extremely virulent, and which was grown in broth for twenty-three days. The broth was then filtered through a Chamberland filter, and 8 c.cm. of the sterile filtrate were injected in two doses on successive days into the marginal vein of the ear of a rabbit weighing 1,090 g. The initial effect of the first injection was a fall of temperature in about two hours, which lasted over four hours, the total fall of temperature being 5.8° F. The result of the second injection on the following day was practically *nil*, but on the third day the temperature was subnormal. It then began to rise gradually, and there was some degree of fever on the fifth, sixth, and eighth days of experiment, which was markedly increased on the ninth day. On the tenth day there was a fall, and a subsequent rise on the eleventh day, after which the temperature of the animal became practically normal. The animal steadily lost weight during the first two days of experiment, 100 g. the first day, 38 g. the second day, the weight remaining stationary on the third, fourth, and fifth days of experiment, after which it slowly regained its normal. The animal exhibited no other symptom; there was no diarrhœa, and complete recovery took place. This result shows that the poisonous products which are formed in the broth by the bacillus coli have the initial effect of reducing the temperature of the body as well as weight, and that subsequently there is a reactionary rise of temperature, which remains at a febrile point for several days.

Other experiments were done with the broth cultures in the same way as those done with the typhoid bacillus and with Gärtner's bacillus—namely, after a period of eighteen days' incubation, the bacilli were killed with chloroform, and the injection of the clear broth obtained by centrifugalising, and of the broth with the bodies of the bacilli, was performed in different animals. In the first experiment, 4 c.cm. of clear broth were injected into the marginal vein of a rabbit, weighing 720 g. In two hours and a-half the temperature had fallen 2°, and there was slight diarrhœa. In four hours and a-half there was a further fall of 2.5°, and the temperature altogether remained subnormal for over five hours. On the next day it had regained its normal limit, though the animal continued to lose weight.

In the second animal a similar dose of 4 c.cm. of the broth containing the bodies of the bacillus was injected into the marginal vein. The temperature fell about 1.5° in two hours and a-half, after which it began to rise slightly, and during the whole of the next day the temperature of the animal was febrile. In an hour and a-half after the injection there was slight diarrhœa, and the animal lost 70 g. in twenty-four hours. The temperature remained at about the normal level till the fifth day. On the seventh day it had fallen, and there was slight diarrhœa. On the eighth day there was a fall to 98° F.; and on the ninth day, when death occurred, the temperature was below 95°. The total loss of weight was 210 g. These results were compared with the results of injecting a similar dose of the same stock of broth containing the bodies of the bacillus, but which had been subjected to heat. In the first of these experiments the mixture of broth and bodies was heated at 60° C. for ten minutes. The result of the injection was the cause, in a very short time, of a febrile rise of temperature, which lasted the whole of the day, and was present in the morning of the following day; the temperature then gradually fell to the normal. In an hour and a quarter after the injection there was profuse diarrhœa, and the animal lost somewhat in weight during the first two days of experiment. In another experiment a similar dose was given, after being heated to the boiling point of water for ten minutes. In less than an hour after the injection profuse diarrhœa was observed, and the temperature rapidly fell, the total fall being 7° F. The animal died in six hours.

It is seen from these experiments that the clear broth—that is, the broth not containing the bodies of the bacillus—produces a fall of temperature and loss of weight with some diarrhœa, and that a similar dose of the broth with the bodies of the bacillus causes some lowering of temperature and a reactionary febrile rise; and that the effect of heating the mixture of broth with the bodies of the bacillus is to increase the poisonous activity of the solution; so that when the mixture was heated to 100° C. it proved fatal to the animal in six hours, with great lowering of temperature. The explanation of this appears to be that the action of heat causes the discharge of the poison which is present in the bodies of the bacillus.

1. The type of action of the poison of the bacillus coli appears to be the same as that of the other two bacilli investigated, in some cases producing a great fall of temperature, and in other cases a rise of temperature.

2. Heating the dead bodies of the bacillus suspended in the broth culture fluid increases the toxicity of the solution, as in the case of the other two bacilli, but in the case of the bacillus coli it requires a temperature of the boiling point of water to effect this; whereas with the other two micro-organisms such a temperature rather diminishes than increases the toxic action. Altogether the mode of action of the poisonous products of the bacillus coli is more irregular than with the other two bacilli, not only as regards its lethal, but also as regards the irregular kind of fever and after-fever produced.

Growth of the Bacillus in Proteid Solutions.

As with the other bacilli, very different forms of proteid solution were used as culture medium, liquid serum, serum diluted with salt solution, serum diluted with broth, alkali albumin in broth and Marmorek's fluid. The general result obtained in these culture media was that the bacillus coli digested the proteids present, and produced an abundance of albumoses (a much greater quantity than the typhoid bacillus and Gärtner's bacillus), so that at the end of a month's incubation of such a culture, a brilliant biuret reaction was obtained. The digestion of proteids by the bacillus coli is not nearly so marked as it is with the anthrax bacillus or the diphtheria bacillus. A more remarkable effect was observed in the fact that after the bacillus had been growing in a proteid solution for some time, it precipitated the proteid in the form of a clot, and this occurred more particularly in the solutions of diluted serum and in Marmorek's fluid. The results were compared with a control flask which was not inoculated, and which was kept in the incubator alongside the cultures. The precipitation of the proteid in the form of a gelatinous clot was not constant, although it occurred in the majority of cases. It did not appear to be due to any increased acidity of the culture medium, produced by the growth of the bacillus in it, inasmuch as no such increase of acidity was present, the liquid remaining alkaline. The phenomenon appears to be a special action of the growth of the bacillus coli. In some solutions Gärtner's bacillus produced the same result. Thus five flasks were prepared containing about 100 c.cm. of Marmorek's fluid, which is a mixture of 1 part of ascitic fluid with 2 parts of broth. Two flasks were inoculated with the bacillus coli, two were inoculated with Gärtner's bacillus, one was kept as a control. In fourteen days a copious and soft clot had formed at the bottom of all the four flasks, the liquid in the control flask remaining limpid and unclotted. In none of the similar experiments with the typhoid bacillus was any clot or precipitation of the proteid observed, so that this serves as another distinction between the typhoid bacillus and the two other bacilli. The clotting of the proteid solution is of interest in connection

with the experiments of Stillmark, who found that the substance ricin, which is obtained from the seeds of the castor-oil plant, and which will be discussed later on, also produces a clotting in proteid solutions, especially serum. Stillmark used it as an argument in favour of the ferment nature of the toxic body, ricin.

PROFESSIONAL RECOLLECTIONS OF A VISIT TO CANADA.*

BY HAYNES S. ROBINSON, M.R.C.S.,
Surgeon, Norfolk and Norwich Hospital; President of the Branch.

THE President, after thanking the Branch for the honour which had been done him by electing him to that office, offered a hearty welcome once again to the annual gathering in the Norfolk and Norwich Hospital. He then gave some professional recollections of a visit to Canada and the United States, which he had made in the autumn of last year in company with Mr. Burton. The pleasure and profit was materially increased by the privilege of acting as one of the delegates of the East Anglian Branch. Mr. Robinson referred to the meeting of the British Association for the Advancement of Science, held at Toronto, which had afforded an opportunity of visiting that beautiful city under very auspicious circumstances. The opening address of the President, Sir John Evans, dealt with the subject of the Antiquity of the Human Family and the Scene of its Infancy, which was always of special interest to the medical profession. He also indicated the general argument of Sir William Turner's address, a full account of which was published in the BRITISH MEDICAL JOURNAL last autumn. To those, he said, who had not escaped altogether from the fetters of old traditional beliefs, these two addresses brought some help and comfort, since they showed that that which related to chronology of the earth and its inhabitants in remote ages, as recorded in sacred history, might after all not be so far from the truth, and that the adaptation of the structure of the human body to produce a being capable of taking a distinctive positive position in the universe superior to that which any other organism could assume established the conception of the dignity of man in nature and the association of the human form with the idea of a divine Creator. Mr. Robinson then referred to Professor Michael Foster's address to the Section of Physiology which was published in full in the BRITISH MEDICAL JOURNAL of August 21st, 1897. Professor Foster's remarks, Mr. Robinson observed, almost seemed to foreshadow a time when the knowledge of the nature and origin of nerve power and the means for its proper direction and control would enable us to correct many of the deviations both of structure and function from the normal and even retard decay. Passing on to the annual meeting of the British Medical Association in Montreal, Mr. Robinson said that the arrangements were all that could be desired, and that the special fitness of the McGill University with its numerous museums and lecture rooms in close proximity to the city made the working of the Sections especially easy.

Among the topics so ably handled by the President in his address which revealed a new world to European climatologists, Mr. Robinson referred especially to the Muskoka Lake regions which he had been able to visit with Mr. Burton during the few days intervening between the two meetings. This region, about 100 miles north of Toronto in the highlands of Ontario, and at an altitude of 800 ft. above sea level, abounded in fine forests, while the climate was dry and the air pure and invigorating to those accustomed to the enervating influence of southern climates.

The region possessed remarkable climatic advantages for persons with phthisical tendencies, the death-rate being less than one-tenth of that which obtained in other parts of the province. A new sanatorium on the Muskoka Lake for the cure of incipient phthisis, with accommodation for 40 patients, was opened during Mr. Robinson's visit. It would be kept open during the winter, which, owing to the still bracing atmosphere, was not only tolerable but positively pleasant. The proprietor of the hotel at the north end of Lake Joseph had come to the district forty years before from New York, where, as a young man, he had developed chest disease. He began life in a log hut, and the open-air existence suited him so well in spite of shortcomings in the way of food that he remained and prospered, and was now a hale and hearty man of 60. He was able also to mention the names of several men who had come from the States with lung disease in different stages who spent their lives, summer and winter, under canvas and prospered.

Mr. Robinson next passed in review the work of the various Sections of the annual meeting, and then referred to the hospitals in Montreal, dwelling especially on the splendid site occupied by the Victoria Hospital, the wards of which were replete with every modern improvement, while the complete arrangements for the clinical teaching of students and the excellent provision for the nursing staff left nothing to be desired. The active work carried on both in this and in the Montreal General Hospital in all departments was most apparent, and the numerous laboratory facilities for chemical and bacteriological investigation were a prominent feature. Mr. Robinson then mentioned some of the hospitals visited in the States; the St. Luke's Hospital at New York, erected under the auspices of the Vanderbilts and other prominent citizens, was quite an architectural feature with its white marble columns, its entrance hall, and its costly chapel. It was situated outside the city at the north end of Manhattan Island, it had a fine view of the Hudson, and though some years would elapse before the complete design of the building was finished, everything in connection with the building was of the best and most modern style. The Johns Hopkins Hospital at Baltimore, an older building on the pavilion plan, possessed wards so large and well ventilated that their atmosphere was preferable to the stifling heat outside. In all these hospitals the strictest antiseptic precautions were used.

In conclusion, Mr. Robinson said that all those who were present at the Montreal meeting would agree that it was quite out of the ordinary run of such gatherings. The presence of such a large number of the different races of English-speaking people, Americans, Canadians, and British, gave a novelty and charm to the proceedings to those visitors at any rate who had journeyed from this side of the water. Although no discovery of an epoch-making character was announced the work was satisfactory in quantity and quality, the addresses unusually interesting, and the lectures well attended and sometimes very lively. The organisation of the meeting was excellent, and nothing was forgotten or neglected to make things go smoothly, added to which the hospitality of the citizens in Montreal and the Dominion in general was worthy of the reputation of our Canadian fellow subjects. He would advise all those who could to go and see for themselves that Canada was alive, robust, and loyal, and wanted only plenty of English, Scottish, and Welsh immigrants to go and stop in the colony and develop the enormous natural resources of this grand unfinished portion of Her Majesty's dominions.

* Abstract of an address delivered at the annual meeting of the East Anglian Branch.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A CASE OF MALARIAL ENTERIC FEVER.

A MAN, aged 20, contracted enteric fever by drinking water at a house in a marshy district where the disease was prevalent. The incubation period lasted about nineteen days.

The case ran an irregular, but not a severe, course until the twenty-seventh day, when, after a few days' improvement, the patient was seized with a severe rigor in the afternoon. This was followed by pyrexia and sweating, and the temperature rose to 105°. The following morning it had dropped to 100.4°, but the rigor was repeated about three hours later than on the preceding day, the temperature rising to 104°. He was given quinine in 2-grain doses every four hours, and there was no recurrence until a slighter seizure occurred after an interval of four days. During these four days the temperature had been generally subnormal and the pulse slow—95° and 51 beats to the minute being on one occasion recorded. A

week then elapsed before a repetition of the attack, when it was again of a slighter character. Two days later thrombosis of the right femoral vein was found. Once more the temperature ran up to 104°, but the shivering was not repeated.

The patient's recovery was somewhat protracted. Œdema of the right leg persisted for many weeks, and a fugitive mitral regurgitant *bruit* was heard about the fiftieth day. Just when the temperature was finally becoming normal the patient passed urine under him three times involuntarily.

Broadstairs. THOS. F. RAVEN, L.R.C.P.

COMPOUND DISLOCATION OF UNGUAL PHALANX OF THUMB.

I RECENTLY saw a boy aged 15 for an injury to the left thumb incurred by trying to catch a cricket ball which was driven hard back to him while bowling. I saw him 20 minutes after the accident, and surmised that the seam of the ball had cut open the joint by its spin, while the body of the ball had driven the ungual phalanx backwards. The dislocation was complete, and the head of the proximal phalanx was protruding. After well washing the parts, I effected reduction without difficulty, and closed the wound with three sutures without drainage. The dressing was undisturbed for a week, by which time there was complete union; and by the end of another week the joint was performing its usual movements with no indication of having been injured excepting the suture marks. What happened to the flexor longus pollicis tendon I do not know.

C. W. HAIG BROWN, M.D.

Medical Officer Charterhouse School.

DISLOCATION OF TESTIS.

ON April 1st, 1898, I was called to see W. D., a farmer. I found the patient in bed complaining of much pain in his legs and the lower abdominal region. He had been engaged in training a young horse yoked in an ordinary farm cart. Whilst leading the animal by the bridle it suddenly bolted, throwing him to the ground, and the wheel of the heavy cart in rapid motion passed diagonally across his body, beginning at the left foot and ending at the anterior superior spine of the ilium on the right side. There was no fracture of any bone, and only slight bruising of the muscles of the left leg and right thigh. There was considerable bruising and tumefaction of the scrotum and right groin. The right testicle could not be felt in its place. On the following day I found the swelling of the parts much abated and was able to make a more satisfactory examination. Immediately over Poupart's ligament on the right side I found a firm resistant swelling, which on pressure elicited testicular pain. I endeavoured by gentle manipulation to return the testicle, but in vain. The patient was seen by my friend, Professor Ogston of Aberdeen, who, agreeing with me that it was a dislocation of the testis, on April 28th reduced the dislocation by the following operation:

An incision was made from the external abdominal ring to the fundus of the right scrotum, and it was afterwards prolonged up to the right internal abdominal ring. The upper part of this incision was first deepened. The testis was found lying in its tunica vaginalis underneath the deep layer of superficial fascia, partly over the external abdominal ring and partly in a rent in the external oblique tendon just above Poupart's ligament. This rent was large enough to admit the point of the thumb. The testis was drawn down, the cord being freed where adherent, till it reached the normal position. The lower half of the wound was next deepened to a nodule which had been felt in the scrotum. It was found to be the remains of a hæmatocele and a shrunken cavity whence the displacement had occurred. This was scraped and cleaned. The epididymis was sutured carefully to the lower part where the gubernaculum existed. The fasciæ and cremaster were stitched over the cord and testis. A small drainage tube was inserted at the lower angle of the wound. Finally the rent in the external oblique was sutured and the wound was closed by buried sutures.

The patient made an excellent recovery and at this date the testicle is in its normal position, not much smaller than its fellow, and apparently none the worse for its four weeks' incarceration. I have ventured to publish this case as it is unique in my experience, and in all surgical works at my immediate command I cannot find any reference to such lesion.

Craigvelgh, Aboyne, N.B. A. D. KEITH, M.B., C.M.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GUY'S HOSPITAL.

CASE OF MULTIPLE PROSTATIC STONES.

(Under the care of Mr. GOLDING-BIRD.)

G.B., aged 45, was admitted on February 8th, 1898, on account of his passing many calculi *per urethram* at frequent intervals. He dated his trouble from the time he first suffered from stricture of the urethra (twenty-five years ago), when he was treated by internal urethrotomy, and instructed to pass a catheter at regular intervals. This he has continued to do.



Fig. 1.—Skiagraph of multiple prostatic calculi, mostly in the left lobe; the patient lay on the sensitive plate, the light being over the sacrum. Taken by Messrs. Allen and Hanbury.

Five years ago he first passed stones, two in number, and they appeared at the end of the act of micturition, and on an average of three months ever since he has passed two or three stones, their appearance being generally preceded by a pain in the back, and a sharp pain at the neck of the bladder with a scalding sensation in the urethra.

Until just before his admission no stones had been passed for a year, and then about fifteen were passed, but for the last six months he had suffered from a marked frequency of micturition.

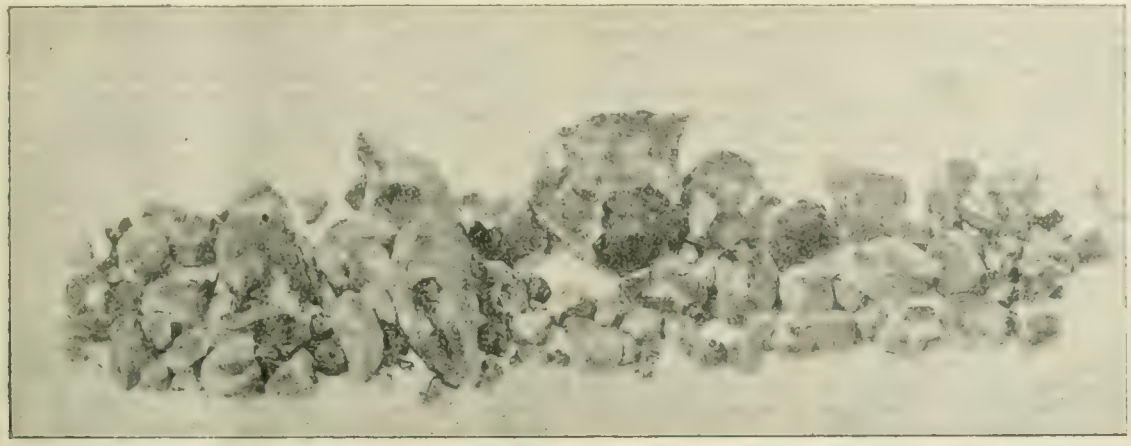


Fig. 2.—Multiple phosphatic prostatic calculi, removed by operation.

The stones exhibited by the patient were the size of small shot, facetted, and of dark colour, and when broken had an almost black centre. The passage of a sound demonstrated the presence of calculus just before the instrument entered the bladder, whilst a rectal digital examination showed the left side of the prostate to be much enlarged, and to form a mere bag containing numerous stones that grated and rattled together on manipulation.

The diagnosis of multiple prostatic stones was made, and after a fortnight's treatment of a certain degree of cystitis, the operation of lateral lithotomy was performed, the knife, however, only penetrating into the prostate, and not reaching the bladder. With the finger and a scoop 130 stones were removed, nearly all being contained in the left lobe of the prostate, but a few were in a small pouch in the right half of the organ. The finger passed through the prostatic urethra into the bladder failed to find anything abnormal there; there were no vesical calculi.

The after-treatment and convalescence were uneventful, and the patient soon made a complete recovery.

Remarks by Mr. Golding-Bird.—Whilst minute carraway-seed-like prostatic concretions are not infrequently seen *post mortem*, such a number of well-formed stones, lying probably for years in the prostate, and causing scarcely any inconvenience, is unusual. The smallest of the concretions were not larger than large pins' heads; the largest weighed 3.75 g.; and the total weight of all was 20.75 g. In composition they were purely phosphatic; no carbonate nor oxalate, nor any uric acid could be detected. A further interest attaches to this case from the fact that the *x* rays admirably demonstrated the collection of stones; and not only on the side (left) where they were felt *per rectum*, but over on the right side, where they were not found until the finger was introduced into the wound. The photograph also suggests the multiplicity of stones; the shadow is clearly not that of a homogeneous mass.

SPITTALS WORKHOUSE HOSPITAL, NEWCASTLE, STAFFS.

EXTERNAL DISLOCATION OF THE ELBOW.

(By A. E. Normington, Resident Medical Officer.)

Miss F., while out cycling, was going down a hill when she encountered a horse and cart, which she evidently thought she could not pass. In trying to dismount she fell heavily on her right side; her right elbow and arm being extended from the side struck the kerbstone heavily as she fell. Finding she could not move her arm, and being in great pain, she walked back here, a distance of about two miles. In spite of considerable swelling of soft parts the internal condyle of the humerus looked extremely prominent, and the olecranon process of the ulna could be distinctly felt in the soft parts on the outside of the elbow. Reduction by manipulation was easy and complete. That dislocation and not fracture occurred was, I think, due to the fact that the patient is a strong muscular woman, with large bones, and that the sudden blow on the inside of the olecranon caused a sudden twisting action at the joint which brought about the complete radial and ulnar dislocation.

KIMBERLEY HOSPITAL, SOUTH AFRICA.

TWO CASES OF RESECTION OF BOWEL TREATED WITH MURPHY'S BUTTON.

(By Arnold H. Watkins, M.D., M.R.C.S.)

W., a native man, aged about 30, was admitted to hospital May 18th, 1897, with strangulated right inguinal hernia. The history as to length of time strangulation had existed was indefinite, but the emphysematous condition of the sac and extensive œdema of the scrotum and penis left little doubt in one's mind that it was gangrenous, as it proved to be. The whole of the gangrenous bowel, and about 8 inches of small intestine was removed. The healthy bowel drawn down was joined with a Murphy's button, and a few stitches of Lembert suture. The mesentery was not stitched together, as I could not get at it without opening the abdomen more freely, which I was averse from doing for fear of general infection of the peritoneum. After thorough flushing the ring was enlarged sufficiently to allow the joined bowel to be replaced within the abdominal cavity, and the wound was plugged with iodoform gauze, and left to heal by granulation. He made an uneventful recovery, the button was passed on the twelfth day, and he left the hospital cured some weeks later.

The second case was a white lad, H. T., aged 19, in whom there was a dense stricture of the transverse colon due to an old standing circular ulceration of the bowel with perforation from the colon into the stomach, and occasional fæcal vomiting. On August 16th, 1897, I removed about 4 inches of colon and an oval piece of the stomach wall to which it was adherent, about 2⅝ by 1½ inches. The colon was united by a full-sized Murphy's button, and the wound in the stomach closed by a double row of such sutures. The button was passed on the thirteenth day, and the lad eventually made a good recovery, though convalescence was delayed by an attack of pleurisy with slight effusion on the left side.

BRITISH GENERAL HOSPITAL (No. 3), NOWSHERA, PUNJAB, INDIA.

REPORT ON A CASE OF GUNSHOT WOUND OF THROAT RECEIVED IN ACTION IN TIRAH: RECOVERY.

(Under the care of Surgeon-Major W. C. T. Poole, M.B., F.R.C.S.I., Army Medical Staff.)

Sergeant-drummer S. M., age 33, eighteen years' service, 1st Battalion Northampton Regiment, was wounded in the neck on December 12th, 1897, whilst marching to the relief of Saraghari. The bullet entered the right side of the neck on a level with the inner end of the right clavicle, and came out on the opposite side on a level with the inner end of the left clavicle, partially severing the trachea as it passed. The

wound on the right side of the neck was small, whereas that on the left side was large and exposed some of the large blood vessels of the neck, and from the general appearance of the wound the projectile appears to have been a Martini-Henry bullet.

He was admitted into No. 3 British General Hospital, Nowshera, on December 25th, 1897, thirteen days after the infliction of the injury. On arrival he was in a very critical state, the wounds were in a sloughing condition, septic pneumonia was threatening, his breath was fœtid, and he was unable to partake of nourishment by the mouth.

Treatment.—(*a*) Dietetic: Rectal alimentation for about one week, afterwards small quantities of milk and chicken broth by the mouth. (*b*) Surgical: Inhalations of eucalyptus oil to cleanse the inside of the throat. Local applications of tinct. benzoin co., with an outward application of boric lint and wool.

He made a perfect recovery, and was discharged from hospital invalided to Netley on February 16th, 1898, 65 days after admission, and was able to partake of solids before he left. It was highly satisfactory to note the rapidity with which the healing process responded to treatment.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, June 28th, 1898.

T. Bryant, M.Ch., F.R.C.S., President, in the chair.

The Treatment of Chronic Bright's Disease (Tubal Nephritis) Reconsidered.

Dr. W. Ewart read this paper. He said the methods of treatment, medicinal and general, hitherto adopted in tubal nephritis had not proved curative of the disease nor always of its symptoms. On the other hand, the complete and apparently spontaneous recovery of some cases after long periods of ineffectual treatment showed that the lesions were not necessarily incurable or fatally destructive of the renal structure or function. The cases under consideration were strictly those of uncomplicated tubal nephritis with dropsy, a disease which left no permanent lesion behind it, and which might be regarded as an inveterate epithelial catarrh. In other varieties of kidney disease, this epithelial catarrh was only one of the features; they presented more or less intertubal and Malpighian congestion and cellular proliferation, and varying degrees of fibroid proliferation throughout the organ. Their treatment was much less hopeful. In them, as also in the purely tubal nephritis, the albuminuria was a separate factor; and this was not necessarily amenable to treatment which might prove curative of the dropsy. The group of "acute nephritis" presented great analogy with that of chronic tubal nephritis, and the indications were largely the same; but its treatment could only be referred to incidentally. The usual well-known features of tubal nephritis were: (1) the dropsy; (2) the anæmia; (3) the oliguria; and (4) the cachexia and marasmus, disguised by the persistent œdema, and paving the way to fatal complications or exhaustion. The treatment to be described was based upon a consideration of these symptoms, and particularly of the œdema. Dropsy might be considered as Nature's protection and remedy against fatal intoxication; but also, if not dealt with therapeutically, as Nature's difficulty and danger. In itself œdema was harmful when persistent by oppressing the tissues, choking the lymphatic circulation, and impeding metabolism. So long as it persisted it hindered nutrition both locally and in general. Its usual treatment by horizontal rest in bed further depressed the vital functions. These were the systematic evils of œdema. Another set of results affected the kidney itself, the impeded nutrition of which was rendered more difficult by the absence of a free lymphatic flow. By virtue of this persistent œdema tubal nephritis became a lymphatic disease, and its treatment might properly be considered from the point of view of the lymphatic system. The indication was to relieve the lymphatic system of the œdema over as large an area as possible, and to ensure its escape by systematic drainage. This was to be effected by posture, since gravitation told upon renal dropsy, although less than upon cardiac œdema. The œdema should be allowed to collect in the lower limbs by slanting the bed; and meanwhile the trunk and the upper limbs, relieved of their puffiness, could be restored to healthier action by massage. Acupuncture, or incision and drainage afforded positive relief to the œdematous tissue of the entire body, to the serous cavities if previously occupied by fluid, and to the lymphatic circulation. They also fulfilled the first indication, that of removing from the body the accumulation of contaminated fluid. Moreover, if persevered in systematically, this treatment satisfied the primary indication of physiological rest to the kidney by opening up another channel of exit for the ingested fluids. The lymphatic system then became to a great extent the channel of emunction. A surcharge of the blood with alimentary and with effete products being largely obviated, a varied and sustaining diet could be prescribed, and on the strength of the latter a larger share of renovating exercise might be allowed than was otherwise possible. It had been shown by Hamilton[1] that the inflammatory products of nephritis were largely removed through the lymphatics of the kidney, a mode of relief analogous to that observed in pneumonia. This observation was in harmony with the *rationale* of the method now advocated, and it suggested that a free lymphatic circulation was an essential part of the treatment of the kidney in nephritis. The broad indication which had suggested itself to the writer was to place every function in the most normal condition possible in order to assist Nature in repairing the local damage. It had seemed to him that the prevailing methods had failed: (1) By not systematically relieving the œdema, but rather promoting its permanence all over the body; (2) by imperfectly carrying out the indication of physiological rest to the kidney; (3) by endeavouring to obtain diuresis by medication, and to influence the tissue changes by alteratives, at a time when the nutrition of the kidney as well as its function were in abeyance, whilst the treatment by sweating and by purging had often proved an additional trial to the strength; (4) by neglecting the measures both of hygiene and of diet which were most likely to restore normal strength and nutrition to the system constitutionally, and locally to the kidney. The special objects of the treatment proposed were: (1) To unblock the lymphatic ways choked by œdema; (2) to establish a thorough flow from the blood, and particularly from that of the renal district, into the lymphatics, whereby soluble solids and toxic products might be removed; (3) to quicken artificially the lymphatic circulation by passive movement, general massage, etc., so as to favour nutrition and metabolism of the entire body, and by that means of the kidney also. Where the œdema was general or localised elsewhere, the first indication was to bring it down to the feet by slanting the bed. Southey's tubes, or small incisions where these could be made into dilated lymphatics, preferably at the back of the ankle, were the means of draining the œdema. Every antiseptic precaution must precede the operation and must be kept up throughout the case, the part being kept covered by antiseptic dressings, and the entire foot below vaselined to prevent soakage of the skin. Large quantities of fluid might be got rid of in this way. Whilst the flow continued a liberal diet could be adopted, the chief aim of the treatment being to raise the patient's strength; but it might be necessary at times to return for a few days to a strictly milk diet. This would help to restore an abundant flow where the latter tended to dry up. A moderate allowance of tonic wine, such as Burgundy, St. Raphäel, or claret was part of the dietetic treatment. The patient in any recent case would soon be able to sit up and subsequently to walk about the room. Where prolonged illness had preceded the application of treatment, active exercise would have to be carefully adjusted to the gradual return of strength. The ordinary rules applied as regards treatment of the liver and of the alimentary canal. One great object of this treatment was to restore cardiac energy and nutrition, which ultimately tended to fail. This object being partly attained, drugs could be tried with much better results. Digitalis might then assist both the heart and the kidney. Iron, indicated by the anæmia, would be better borne, and such drugs as mercury and arsenic as well as the bitter tonics would be tried with much greater prospect of success. The treat-

[1] *Journal of Anatomy and Physiology*, vol. xxv, pp. 198-200.

ment described was specially devised for cases of dropsy. The advantages to be gained from it were not, however, necessarily restricted to such cases. Uræmia, occurring without dropsy, was treated by the removal of so much blood. Analogous relief might be secured without the sacrifice entailed by venesection if a sufficient flow of lymph could be obtained by artificially setting up dropsy of one or both lower limbs. He had succeeded in fulfilling this indication in a case where the œdema was exceedingly slight, although affecting the face as well as the lower limbs. The case, not presenting urgent symptoms, did not justify severe measures; nevertheless the artificial œdema was kept up for twelve days, and the flow obtained through a single incision continued seven days, although it was never considerable. The local œdema was obtained by the diffused pressure from a tourniquet applied over cotton wool and cardboard to Scarpa's triangle. Martin's bandage was subsequently substituted for the tourniquet. The treatment suggested addressed itself indirectly only to those conditions which kept up albuminuria independently of nephritis, and to the restoration of that part of the renal function supposed to be concerned with active internal secretion; and it claimed merely to be an endeavour to assist vicariously the excretory mechanism of the kidney. It was felt, however, that if this indication could be fulfilled, the other renal functions would benefit in a large proportion also.

Dr. W. H. Dickinson thought that in most cases of large white kidney there was a diffuse interstitial change, and not tubal change alone, so that any conclusions based on the assumption that a large white kidney was due to tubal change alone were hardly valid. The author had undervalued the share that the renal tubes took in evacuating the morbid products. That they were active was shown by the amount of casts and renal epithelium passed in such cases; the lymphatics might play some part, but it was of much less importance. He thought that by tapping the peritoneum, and perhaps the pleura, œdema of the legs was diminished, inasmuch as pressure on the inferior vena cava and great veins was thus removed. But he did not believe that tapping the legs had any effect in relieving effusions into the great cavities, for there was no communication between them. He believed in the old methods of treating renal dropsy, and thought that it was thus very successfully combated. The treatment of renal dropsy by puncture of the legs had been practised for a long time; at one time it became discredited from the danger of cellulitis, but now under antiseptic precautions this objection no longer held, and it would probably be more often employed. How far this drainage relieved uræmia he did not know, though the fluid contained urea and salts in much the same proportion as the blood. The amount of œdema produced artificially, as the author suggested, was hardly sufficient to produce much effect. Finally he laid stress on the fact that renal dropsy, though not renal disease, tended to disappear spontaneously if the patient was kept alive, and that this process was contemporaneous with the hypertrophy of the heart.

Dr. Norman Moore thought that the value of the hypotheses put forward by the author would have been enhanced by tabular statements of cases. The condition of the heart was a most important factor in renal dropsy; probably in half the cases of dropsy due to chronic renal disease, the myocardium was affected, and this he thought accounted for the extreme fatality attending pericarditis, even though not of itself very severe, in renal disease. The difference between the male and female sex as regards the prognosis in cases of tubal nephritis had been somewhat neglected; the duration of life was probably three times as long in women. The factor that seemed to account for this was probably the more restricted diet and physical activity of the female sex. He thought patients with tubal nephritis did best with little exercise.

Sir Dyce Duckworth agreed with Dr. Dickinson that large white kidneys usually showed diffuse interstitial change. In dealing with dropsy as a symptom of large white kidney the personal element must not be lost sight of; these cases varied very widely, for example strumous subjects did badly; it was necessary, therefore, to treat the patient and not the disease. Much could be done for chronic nephritis by treatment. The milk diet had been shown to be unsatisfactory, and a moderately good regimen was desirable. The author's suggestions as to posture and exercise were of value.

Dr. Ewart, in reply, quoted two cases where draining the legs removed or diminished the peritoneal and pleural effusions, in one there was diuresis at the same time, but not in the other. He admitted that the large white kidney was due to a mixed nephritis in a sense, but his object was to arrest the process before this was accomplished. He respected the older methods of treatment, but doubted whether they were carried out to their full extent. It was very important to provide the kidney with good food. In his case, on which this paper was based, the treatment was very successful. The production of artificial dropsy was intended to give rest to the kidneys by diverting the flow from them. He recommended a moderate degree of exercise so as to get the lymphatics to work. It was important to differentiate the various forms of nephritis, since the same treatment was not suitable for all alike.

Acute Dilatation of the Heart in Rheumatic Fever.

Dr. D. B. Lees read this paper, the object of which was to draw attention to the fact that an acute dilatation of the heart was a common occurrence in a rheumatic attack, even when arthritis and pyrexia were slight in amount, and apart from distinct endocarditis and from pericarditis; also that an acute dilatation might, in a more severe attack, intensify the signs and symptoms of pericarditis or endocarditis. The evidence adduced in support of these propositions consisted of tracings of the cardiac dulness at different stages of a rheumatic attack taken by the author from patients under his care at St. Mary's Hospital. The question was first discussed whether it was possible by percussion to obtain an accurate knowledge of the actual size of the heart. Reference was made to the writings of Dr. Ewart, and to the *post-mortem* investigations of Dr. Herringham in support of the contention that a tracing representing the outline obtained by careful percussion did indicate with very considerable accuracy the position of the limits of the heart, both to left and to right. The first three sets of tracings were taken from young adults suffering from subacute rheumatism, with slight arthritis and little pyrexia, with no evidence of pericarditis or distinct endocarditis. Three tracings of the cardiac dulness were shown from each of these cases, the first taken before commencing treatment, the third taken on recovery, and the second at an intermediate stage. They all showed the same phenomenon—a large extension of the dulness at first, with gradual reduction and final return to the normal. Next followed a set of tracings showing acute dilatation caused by a subacute attack in a heart already diseased by two previous attacks. The large extension of the cardiac dulness registered in the first diagram was seen to subside until it reached a permanent amount due to the previous disease. Lastly, a pair of tracings taken from a case of rheumatic pericarditis with chorea showed how acute dilatation might intensify the signs of pericarditis, and how a rapid diminution in the area of the precordial dulness might occur under treatment. It was claimed that these tracings, though doubtless open to criticism in details, were sufficient to prove that acute dilatation of the heart was a feature of rheumatism which deserved more attention than it had hitherto received. Reference was made to remarks on "swollen heart," by Dr. Sansom; also to specimens of dilated heart after rheumatism exhibited to the Pathological Society by Dr. Goodhart and Dr. West; also to Dr. Goodhart's paper on acute dilatation of the heart after scarlet fever, and to a case of the same kind reported by Dr. Barlow. It was suggested that the acute cardiac dilatation produced by rheumatism was analogous to the acute dilatation often resulting from influenza, and that in both cases it was due to the poisonous action of a microbic toxin on the cardiac muscle, similar to the effect of dilute solutions of lactic acid and of certain drugs in causing cardiac dilatation, demonstrated many years ago by Dr. Gaskell.

Rheumatic Dilatation of the Heart in the Rheumatism and Chorea of Childhood.

This paper was presented by Dr. D. B. Lees and Dr. F. J. Poynton. It recorded the results of a joint investigation of acute dilatation of the heart in the rheumatism and chorea of

childhood, carried out at the Hospital for Sick Children. It also contained the results of certain inquiries conducted by Dr. Poynton in further elucidation of the subject. These included (1) observations on the hearts of children under the care of other physicians; (2) observations on the hearts of children free from rheumatism; and (3) an analysis of the *post-mortem* records of 150 cases of fatal rheumatic heart disease in children under 12. The paper commenced with statements as to the size, strength, and sounds of the heart in children free from rheumatism, mainly deduced from Dr. Poynton's examination of the hearts of 45 patients in the surgical wards of the Hospital for Sick Children, and of 35 healthy boys of 12 and 13 at Marlborough School. The observations on the hearts of rheumatic and choreic children were arranged in four groups: (1) cases of subacute rheumatism with no pericarditis, and with no murmur, or only a systolic murmur best heard internal to the nipple; (2) first attacks of chorea without any previous history of rheumatism, and in the great majority of cases no present evidence of rheumatism except the chorea; (3) acute cases in which there were definite cardiac lesions, pericarditis, or undoubted endocarditis; (4) cases of chronic and relapsing rheumatism. Tracings were given showing the size of the heart in two or three cases from each of these groups at different stages of the disease. They all showed a considerable increase at first in the area of cardiac dulness, which tended to diminish as improvement set in, and which might again increase if a relapse of the disease occurred. During the periods of increase the cardiac impulse became diffused and displaced to the left; when the dulness diminished the impulse became stronger, more localised, and more normal in situation. The heart sounds also were altered when the area was increased, the first sound becoming weak and short, while the pulmonary second sound was accentuated. The sounds became more normal as the area diminished. From an analysis of the *post-mortem* records of 150 cases of fatal rheumatic heart disease in children under 12, it was shown that dilatation was usually found. In 92 cases out of 150 (61 per cent.) special attention was called to its existence in the records. On the other hand, marked excess of pericardial fluid was rare: in only 12 cases of the 150 was more than 2 ozs. noted. The value of acute cardiac dilatation as an aid in the diagnosis of arthritis of doubtful nature was pointed out, and the paper concluded with remarks on its importance from the points of view of prognosis and treatment.

Dr. T. S. MACLAGAN thought it difficult to exaggerate the importance of the subject. He laid stress on the greater tendency to cardiac affections in the rheumatism of early life. Myocarditis in rheumatic fever was commoner than was usually thought. Just as the voluntary muscles were affected in that disease, so might the heart suffer.

Dr. EWART had worked on the same lines as Drs. Lees and Poynton, and had obtained similar tracings; he differed from them only in their interpretation. The increased dulness in the diagrams was so extreme that if it was due to dilatation of the heart the other contents of the thorax would probably be seriously embarrassed. The apex beat was, he thought, at the outer border of the cardiac dulness, whereas in the diagrams the cardiac dulness extended beyond the impulse. He regarded the increased area of cardiac dulness as due to pericardial effusion, the fluid not collecting behind or in any one part of the pericardium, but being diffused around the heart.

Dr. NORMAN MOORE thought that such extreme dilatation as must exist in these cases, if the authors' interpretation was adopted, was seldom seen in the *post-mortem* room. He believed that endocarditis was not merely a complication of acute rheumatism, but was of opinion that endocarditis was the basis of acute rheumatism and that it was always present.

Dr. THEODORE FISHER thought that the cardiac dilatation was due to toxic agency, and quoted cases of fatty degeneration of the myocardium observed at necropsies in support of this contention. This change occurred independently of pericarditis, and might be seen in the ordinary situation for fatty degeneration—namely, under the endocardium.

Dr. LEES, in reply, did not think that the cardiac impulse necessarily occurred at the apex of the heart, but at a point internal to it. While admitting that there was some exaggeration of the cardial dulness due to the transference of the tracings from a curved to a flat surface, he did not believe that this increase was due to effusion. His two reasons were: (1) Because signs of pericarditis were usually absent; (2) since the outline of the cardiac dulness at its right lower corner did not correspond with the right angle described by Dr. Ewart. He referred to the abundant *post-mortem* evidence collected by Dr. Poynton, which showed that pericardial effusion was not present in sufficient amounts to account for the increased cardiac dulness, and that dilatation of the heart was present in 92 and marked in 58 out of 150 cases examined.

BRITISH GYNÆCOLOGICAL SOCIETY.

H. MACNAUGHTON JONES, M.D., President, in the Chair.

Thursday, June 9th, 1898.

SPECIMENS.

MR. SKENE KEITH showed Ovaries illustrating a cause of failure of Apostoli's treatment.—MR. CHARLES RYALL showed a specimen of Uterine Myoma, removed by abdominal hysterectomy.—In the discussion, the PRESIDENT, and Drs. ARTHUR GILES, ROUTH, BANTOCK, BEDFORD FENWICK, HEYWOOD SMITH, BURLEIGH ROBINSON, PURCELL, and SNOW took part.

DYSMENORRHŒA.

Dr. GRANVILLE BANTOCK read a paper on dysmenorrhœa, in continuation of the discussion of this subject that followed a paper by Mr. SKENE KEITH at a previous meeting. He recognised three forms of anteflexion: (1) That in which the flexion occurred at the junction of the body and cervix, in which the body and cervix were both directed forwards, the former lying on the bladder, the latter in the axis of the vagina; (2) that in which the body was in normal position, but the cervix was bent forwards, the bend being in the cervical portion; (3) that in which the bend was at the internal os, and the anteflexed uterus lay on its back in Douglas's pouch. He agreed with Mr. Keith that the bend was not in itself alone the cause of the pain. It was only when congestion, with its resultant thickening of the mucous membrane from simple turgescence or hyperplasia supervened, that a potential or actual organic stricture occurred, and that pain resulted. But it could not be doubted that flexion played an important part in leading to the congestion; hence antispasmodics were only palliative, and a method of treatment was required that would counteract both the bend and the congestion. Flexion of the cervix proper led to only a minor degree of dysmenorrhœa; flexion at the internal os led to the more severe forms. The symptoms reminded one strongly of the first stage of labour, which was so often accompanied by vomiting. It could be proved experimentally that the condition of the internal os was the cause of the pain and sickness; for if a tight-fitting bougie were introduced through the internal os, the patient would at once experience a feeling of nausea and perhaps vomit. He affirmed that there was no such thing as ovarian dysmenorrhœa. Careful investigation would show that even when the pain was referred to the ovarian regions, its true seat was the uterus. For treatment, he recognised only three rational methods, namely: (1) Division of the cervix; (2) the stem pessary; (3) dilatation of the cervical canal. He did not agree with the principle on which Dudley's operation was based, and personal observation and veracious report told him that it was not so successful as some would have them believe.

Dr. ARTHUR GILES said that his experience was that in many cases of anteflexion dysmenorrhœa existed from the onset of menstruation; but two forms were to be distinguished: that in which the pain had a congestive origin—here it might come on later; and that in which it was associated with neurosis—here it was generally present from the first. In the latter class of case all local treatment was likely to prove unsuccessful. He took exception to the term "obstructive dysmenorrhœa"; in these cases the flow was generally scanty, so that the blood could find its way through even a narrow channel; moreover, if "obstruction" were present, an accumulation of blood would take place behind the seat of obstruction; and this was never found. He believed the pain to be due, partly to painful contractions, and partly to compression

of the swollen and hypersensitive mucosa. Dudley's operation seemed to him to fulfil the two main indications required: first, permanent abolition of the flexion; secondly, permanent widening of the canal. But there were cases, probably the neurotic class above mentioned, in which it would not be successful. He believed there were cases of dysmenorrhœa other than those of uterine origin, notably those due to inflammatory pelvic conditions, such as salpingitis, oöphoritis, and cellulitis.

After remarks by Dr. C. H. F. ROUTH, Dr. BUTLER-HOGAN, and Dr. HEYWOOD SMITH, the discussion was again adjourned.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The Cavendish Lecture was delivered before the Society (Mr. H. P. POTTER, President, in the chair), at the Town Hall, Hammersmith, on Friday, June 24th, by Mr. HOWARD MARSH. He took as his subject Growth as an Agent in (1) the Production, (2) the Removal of Deformity (published at p. 5), illustrating his lecture by numerous specimens, diagrams, and photographs. —A vote of thanks to the lecturer was proposed by Dr. CLIPPINGDALE, and seconded by Mr. BRUCE CLARKE. Mr. MARSH replied.—After the address, the members of the Society, in larger numbers than ever before, gathered at the annual *conversazione*. Besides music, there was much to interest in the exhibits placed on the tables by many well-known firms of chemists, instrument makers and others. It is impossible to mention in detail the new and varied selection that was displayed, but mention must be made of the beautiful collection of bacteriological cultures and microscopic specimens kindly and ably shown by Mr. W. SEVERN.

REVIEWS.

BURDETT'S HOSPITALS AND CHARITIES, 1898: THE YEARBOOK OF PHILANTHROPY AND HOSPITAL ANNUAL. London: The Scientific Press. (Cr. 8vo, pp. 1070. 5s.)

WE welcome the reissue of this most valuable annual. Having so often spoken of its merits, we shall confine ourselves on the present occasion to one only of the many important subjects treated of in its pages: the most important subject, however, which can be discussed at the present time—namely, the present position of the Prince of Wales's Fund. All readers of Sir H. BURDETT's book will turn with interest to the section (pp. 63-69) which deals with this matter. Sir Henry is known to be an ardent supporter of the Fund, and an active member of its management, and he, some time ago, made himself responsible for the somewhat startling assertion that the success of the Fund was already assured. In the present work Sir H. Burdett does not go so far. He merely contends that the Fund has so far been as successful as it could have been in the time. No conclusion could be more entirely welcome to us than this is, if we could possibly think that it is established. Let us see then how our author supports it. In the first place he argues that the Prince did not expect to raise his £100,000 or £150,000 a year all at once, and that the experience of the past year, during which annual subscriptions of nearly £22,000 were secured, besides £34,776 from the sale of stamps, and a capital sum of £167,000 left for investment from donations, is quite as far as the Fund could reasonably have been expected to progress in one year towards this ultimate goal. Being friends not enemies of the Fund, we will not contest the point, and we most sincerely hope that our author's anticipation of the future increase of its resources may be more than realised.

But let us see what he has to say about the past. To most persons the discouraging feature in the record of the past year is the apparent paucity of small subscriptions. Sir H. Burdett, on the contrary, says that "at least 1,100,000 persons gave something in response to the Prince's letter." This calculation, if it can be so called, rests on the following data. First, he deals with the subscription list of about £22,000 a year, and takes this as representing "roughly some 30,000, or about one-sixth of the 200,000 households at 10s. each per annum which the Prince hoped to secure." Next, he considers "how many of the smaller subscribers of 1s. to 10s. a year were enlisted in support of the Fund," and he tells us that of the £34,776 which was produced by the sale of shilling and half-crown stamps, £8,000 came from the half-crown class, and the rest were shillings. This, if each buyer had been a separate individual, would give a total of 600,000 subscribers; but as this could not have been the case, he takes 400,000 as the number. Then, he adds, the *Daily Telegraph* fund of £36,780, of which he says £25,000 was given in shillings, and reckons this as adding another 500,000 individuals donors; and to these, again, he adds the penny subscription instituted by *Lloyd's Weekly News*, which produced £2,618, and this "at a moderate computation probably represents at least 250,000 separate contributions." Very true, indeed, is his remark: "Of course precise figures are impossible under the circumstances." We have certainly never seen figures which had less claim to precision. The three items in question, amounting to £74,174, were collected in halfcrowns, shillings, and pence, and must of course have been subscribed by a very large number of individuals; but as one person may have bought any number of stamps, subscribed any number of shillings, given any number of pence, and been a subscriber to the general list also (and many people certainly did all this), it is lost labour to try to estimate them in precise figures, and it only produces a delusive impression of statistical accuracy to set them out thus in an elaborate reckoning. Figures, in spite of the vulgar gibe, are very good things when accurate; but a loose and inaccurate calculation is the very worst basis on which an argument can be founded. The truth we believe to be that a very large number of people bought the "Jubilee stamps" because it was the Jubilee year. The present sale of the newly-issued hospital stamps is, we believe, very small. The *Daily Telegraph* and *Lloyd's Weekly News* started funds which were fairly successful, but we do not believe they could repeat the operation successfully, nor does it seem that the conductors of those journals believe so either.

And even if Sir H. Burdett had proved the real existence of his 1,100,000 small donors, and their independence of the other subscribers, how does the fact bear on the success of the Fund in attracting small subscriptions? That question must surely be solved by the result of the present and future years. The Prince's letter called for yearly subscriptions of from 1s. to 10s. from the 450,000 households which (as it was calculated) at present contribute nothing, though they could well afford to do so. To say that the present subscription list of nearly £22,000 is derived from 30,000 of these households is an assertion which is not only gratuitous but is almost certainly inaccurate. Most of these subscribers certainly came from the very class which the Prince had not in his mind; since he asked for contributions "from those who have not hitherto regularly contributed;" while the majority of those who furnished this £22,000 were certainly already contributors to hospitals, as may be seen by the most cursory perusal of the list. Sir Henry says that "on a 10s. basis only 200,000 households were invited by the Prince to support his Fund." This is not so. The invitation was to 450,000 households—not to support the Fund, but to contribute from 1s. to 10s. a year; and the difference is a vital one. The invitation was given not to all households, but to those who do not now subscribe; and it was for a trustworthy annual subscription, not for the purchase of a "Jubilee stamp," or a shilling or a penny thrown into a newspaper collection.

The above observations on Sir H. Burdett's work are made, we need hardly say, in no spirit of hostility to the Prince's Fund, which, on the contrary, has our ardent wishes for its success. But we hold that this success is as yet very doubtful; and that, if it is to be attained, this can only be by recognising what is now wanting, and how that want is to be met. The very worst way, we believe, to take with the public is to try to persuade them that the Fund has already been a great success, and that all that is now required is to rest on your oars and float down the tide. On the contrary, the fact seems to show that the main element of success, the very first thing which the Prince asked for, has not yet been even approximately reached—that is, the continued support of a large number of households which had not previously subscribed. As far as we see, this support can only be obtained by local canvassing. We repeat what we said a few weeks since,[1] that "in the essential particular of procuring subscriptions from fresh and lower social circles, the past experi-

[1] BRITISH MEDICAL JOURNAL, May 21st, p. 1341.

ence of the Fund has been a decided failure;" and that if the contemplated "sum is to be obtained, some more efficient organisation must be devised to reach the class of whom the Prince first spoke." Lord Lister gave a much more accurate view of the situation than Sir H. Burdett does, when he said that these middle and lower class subscribers "had not been sufficiently attacked,"[2] and that attack must be delivered personally.

We quite agree with Sir H. Burdett that there is no reason for pronouncing the effort a failure at present. Local organisations could, we believe, realise the end in view. But they must be formed of influential persons, who will be prepared to take a good deal of personal trouble over the matter, and, by means of subcommittees, meetings, and some would say also house-to-house canvassing, bring the needs of the Prince's Fund clearly before the eyes of the householders to whom his appeal was addressed.

Our main objection to Sir H. Burdett's essay is that its confident tone as to the prosperity of the Fund tends to endanger the success of such an appeal as this. The Prince's idea is too good to be allowed to drop out of sight; and it will be a reproach to our civilisation if it should be still possible five years hence to say that there are 450,000 households which seem to contribute nothing to the maintenance of the hospitals.

THE CENTURIES: A CHRONOLOGICAL SYNOPSIS OF HISTORY ON THE "SPACE-FOR-TIME" METHOD. Second Edition, Revised and much enlarged. London: West, Newman, and Co. 1897. (Royal 8vo., pp. 122. 5s. 6d.)

ALTHOUGH there is no author's name on the title page of this work, it is no secret that it is from the indefatigable and versatile pen of Mr. Jonathan Hutchinson. It is designed as a study table-companion for all readers in biography and history. It supplies a skeleton conspectus of general history, and by a liberal provision of blank pages it can be made to serve as a notebook for the insertion of additional names, facts, and dates. Though now published for the first time, the work is in reality a second edition. The first was printed many years ago for the author's own use and for distribution among his friends. He has been prevented by other occupations from taking much part in the preparation of the second edition, and he makes handsome acknowledgment of the assistance which he has received from Mr. Harold Scott.

The scheme of the work consists in allotting a page to each century and in dividing the century into periods of ten years in which every important event is inserted as nearly as possible in its proper position relatively to the others. In other words, each page is arranged on the "space-for-time" principle, and thus the student by glancing down the page can, as it were, localise the event in relation to others within the same period; thus he obtains in a manner less laborious and more rapid than any other a mental picture of the salient points of the history of the world at any given time. The method also strikes us as likely to be very useful in bringing visual impressions to the assistance of the memorising faculty in arranging the facts of history in their chronological relation to each other.

The author has attempted a simplification in chronology by discarding the Christian era as a starting point. For the purposes of his work he chooses as the commencement of historical time a period ten thousand years before the birth of Christ. He suggests that the remembrance of dates would be made easier by the use of a method which does not require many figures to express them. We think it best to let him explain his proposal in his own words:

He says: "We do not speak of the 'two hundred and sixty-ninth' of any year, but are content to name the day of the month, say 'the first of October.' Why, then, should it not suffice, in dealing with historic time, to specify the century, and to number the years in it? Thus the present year should be spoken of as the ninety-seventh of the nineteenth century (or of the hundred and nineteenth), instead of 'the year one thousand eight hundred and ninety-seven, Anno Domini.'" "No difficulty will be found in converting A.D. dates into the style of the new chronology, for all that is needed is to add one hundred to the number of the century. The nineteenth century becomes the hundred and nineteenth. The number of a B.C. century, according to the new plan, may be found by subtracting from one hundred the B.C. number, less one. Thus the eighth century B.C., by subtracting seven, is found to be the ninety-third, the eleventh the ninetieth, and so on."

He also proposes to give personal names to the several centuries in the same way that names are given to the months and to the days of the week. Thus the eighty-second century (19th B.C.) bears the name of Abraham, the ninety-third century (8th B.C.) that of Romulus, the one hundredth century (1st B.C.) that of Cæsar, the one hundred and seventh century (7th A.D.) that of Mahomet, the one hundred and eleventh (11th A.D.) that of Hildebrand, the one hundred and eighteenth (18th A.D.) that of Washington, and the one hundred and nineteenth (19th A.D.) that of Victoria.

Enough has been said to show the scope and plan of the work. Of the manner in which it has been executed, we can only say that it appears to us to be excellent. We have met with no book of the same size that can compare with it either for purposes of general reference or as an aid to the study of a particular period of history.

[2] See our leading article, December 25th, 1897.

PRIZE ESSAYS ON LEPROSY. By J. ASHBURTON THOMPSON, M.D., D.P.H., and JAMES CANTLIE, M.A., M.B., F.R.C.S. London: The New Sydenham Society.[1] 1897. (Demy 8vo, pp. 414.)

THE New Sydenham Society has done useful service by incorporating these essays in their list of published works.

In Dr. ASHBURTON THOMPSON'S contributions to the history of leprosy in Australia will be found much information regarding the early history of that continent, which has a value apart from the question of leprosy. His researches into the first appearances of this disease in Australia have led him to consider many questions bearing on the native races, and on the emigration of Chinese into Australia, which have an ethnological and geographical interest. The essay bears evidence of great industry in research, and the information which Dr. Thompson has acquired by extensive reading and examination of documents is given in a succinct and clear form. We venture to think that it will take a permanent place amongst the works to which future historians of the earlier days of Australian settlements will refer.

Dr. Thompson has not been able to throw much light on the history of leprosy in Australia. He believes it may be confidently asserted that no record of leprosy among the aborigines in any part of the continent, until after the known advent of immigrants from recognised leprosy areas, has ever been made. No case of leprosy among them was recorded in any part of Australia before 1892, and in his opinion nothing which could be classed as evidence warrants the tracing of leprosy among the aboriginals in the northern territories to the Malays in olden times or the Chinese in recent times. The early statistics of leprosy in Australia are, unfortunately, very incomplete. Leprosy among the Chinese remained unrecorded, with a single exception, until 1883. On the other hand, it was recorded among the whites rather frequently since the year 1868. Dr. Thompson does not consider the inoculability of leprosy proved, and believes that leprosy can be acquired by persons who have never been in "conscious contact" with any leper. He discusses at considerable length Hansen's well-known views regarding the spread of leprosy from contact with lepers, and criticises the statements of that authority and of others which support that view, and expresses the opinion that in New South Wales close contact with tubercular lepers is a matter of very little moment, and that little contact or no contact at all does not exclude danger.

After giving full weight to Dr. Thompson's dialectics, and full credit for the careful study he has given to the subject, we cannot help coming to the conclusion that his essay will not have much effect in stemming the tide of expert opinion that leprosy is an infectious disease, and that the best means of extirpating it is to isolate lepers. He does not seem to grasp the full import of the fact that the disease appears in an individual after the bacillus of leprosy has entered into his tissues, and that the progress of the disease is coincident with

[1] The annual subscription to this Society is £1 1s. Agent: Mr. H. K. Lewis, 136, Gower Street, London, W.C.

the multiplication of the bacillus, nor does he recognise the proof of contagion afforded by the celebrated case of Dr. Hawtrey Benson, with which, nevertheless, he is familiar. That case supplies the kind of evidence which would be sought by an experimenter who contrived an experiment in the best conditions. In a country free from leprosy, a leper shared his bed with a man free from leprosy, and the result was that the second man became a leper.

Dr. Cantlie's essay supplies new and interesting information regarding the prevalence of leprosy in China and the Eastern Archipelago, and here, again, we must compliment the author upon the industry which he has displayed. The information given is based upon no fewer than seventy-five reports from various parts, sent in reply to Dr. Cantlie's questions. The conclusions which Dr. Cantlie thinks should be drawn from these answers are given in sixteen paragraphs. From this it would appear that leprosy in China is centred in the south-eastern provinces—Kwantung and Fokien.

Dr. Cantlie considers that deportation and not segregation is the proper method of dealing with the Chinese leper in the (to him) "foreign countries," and that "segregation of Chinese lepers in an asylum free of leprosy will in time render that country a fresh focus of leprous infection." This last inference is, in the nature of things, only speculative, as the experiment has not been tried on a large scale, nor for a period sufficiently long. The opinion is, however, worthy of the consideration of Australian authorities who have to deal with Chinese lepers in that Continent.

Everywhere in the Eastern seas the Chinese are the principal sufferers from leprosy, and the chief importers of it into the islands. Every hospital, we are told, whether in Borneo, Sumatra, or Java, tells the same tale. The Malay patients are few; the Chinese form the bulk of the lepers. In the Pacific Ocean there are three centres of leprosy: New Caledonia, where it is rare; Fiji, where it is very rare; and Hawaii, where it attains a virulence more intense than in Kwangtung.

Mr. Skertchly, who has prepared an appendix for Dr. Cantlie's report, remarks that facts reported tell the story that leprosy is spread with the incoming of foreign races. He expresses the opinion that no unprejudiced person can weigh the evidence that is given in these islands and doubt for a moment that leprosy was brought by the Chinese. He considers that he has shown this to be the case in North Borneo, and that it is the common belief in Sumatra and Java. Both Dr. Cantlie and Mr. Skertchly believe that the coolies from Kwangtung and Fokien have spread leprosy through the greater part of these other regions.

Klinik der Krankheiten der Mundhohle, Kiefer, und Nase. Heft I. Defecte und Phosphornekrose. [The Clinical Treatment of the Disease of the Mouth, Jaw, and Nose. Part I. Defects and Phosphorus Necrosis.] Von Dr. L. Brandt. Berlin: A. Hirschwald. 1898. (Demy 8vo, pp. 54. M. 1.60.)

The principal portion of this volume of fifty-four pages is occupied with the consideration of structural defects, and the author divides this part of his subject into (1) congenital defects, (2) acquired defects, (3) acquired defects of constitutional origin.

In treating of congenital and other defects of the palate, he draws attention to the necessity for the co-operation of the surgeon and the dentist, and discusses the question of the relative values of operative and mechanical treatment of congenital defects of the soft palate. The author describes the different methods of closing the fissure by mechanical means, as by the soft rubber velum employed by Kingsley and by the hard rubber hollow Suersen obturator, which the author considers was the first obturator constructed on sound physiological principles. A device of the author's is also described in which the fissure is filled by means of a cleverly-devised pneumatic apparatus, inflated through a tube carried along the plate covering the hard palate. If the operation is undertaken, as the author advises, in earliest infancy, he considers that the attempts to improve the speech should not be undertaken before the sixth year. The combination of both methods—the plastic operation for closing the fissure and the use of a mechanical apparatus—can only, he considers, prove of full utility when the operation is carried out with due regard to the future application of that apparatus.

Considérations Sanitaires sur L'Expédition de Madagascar, et quelques autres Expéditions Coloniales Françaises et Anglaises. [Sanitary Notes on the Madagascar Expedition, and on some other Colonial Expeditions French and English.] Par le Dr. G. A. Reynaud, Médecin en chef des Colonies, avec une Préface de M. de Mahy. Paris: L. Henry May. 1898. (Crown 8vo, pp. 501. Fr. 3.50.)

This book, able and carefully compiled, is divided into two portions. The first (two-fifths) consists of short reviews of the principal tropical expeditions, both English and French, in recent times; the second (three-fifths) giving an account of the Madagascar expedition.

We often regard with wonder the phenomenal ignorance of the French press in general on English domestic matters; but in special monographs such as this we find French writers close and correct students and historians of British expeditions to distant lands, showing that, at all events, our military movements are closely watched and chronicled by foreign critics.

The British expeditions referred to are the Abyssinian (1868), Ashanti (1873-4), Afghan (1878-9), Egyptian (1884-5), Ashanti (1895-6). In all of these due credit is given for the careful sanitary precautions adopted, and the satisfactory results attained. They are often sharply contrasted with the less satisfactory French expeditions, such as that in Cochin China, which cost 4,000 men in five years; and that in Mexico, which was lamentably deficient in transport, commissariat, and hospital equipment. The French Soudan campaigns of 1886-7-8 were, however, better managed.

The disastrous nature of the Madagascar expedition from a hygienic point of view deeply stirred the heart of the French nation, and for a time even silenced the colonial party. The sufferings and loss of the troops, as we have shown in previous reviews, were appalling, yet heroically borne, for M. de Mahy is warranted in the statement in the preface that: "There is not in military history a more remarkable example of discipline and courage than that displayed by the handful of heroic soldiers in their self-abnegation and devotion overcoming such trials." The worst was that these sufferings might to a large extent have been prevented and mitigated had not the French military authorities, in their pride and self-sufficiency, refused to listen to the medical precautions recommended. Especially was there no sufficient medical base in the shape of hospital ships, anchored outside the malarial littoral, to which the fever-stricken could be sent. The men suffering from malarial diseases during the march inland were simply left behind in camps, and such as were able employed in road making, at which work they naturally died off like flies.

The Madagascar was a "doctor's" war, if ever there was one; but the generals wanted to make it a gay military promenade, and they had their way. The result was that in a few months 5,000 out of 18,000 men were dead from disease. It is unnecessary to point a moral.

Donations and Bequests.—The late Miss Day, of Oxford, has, by her will, bequeathed £1,000 each to the Oxford Medical Dispensary and Lying-in Charity, the Oxford Eye Hospital, the Royal Hospital, Portsmouth, and the British Home for Incurables; and £500 each to the Eye and Ear Hospital, Portsmouth, and the Wingfield Convalescent Home, Headington.

Plague in the East.—In every district in India where plague has prevailed we have favourable reports as to decline, more or less rapid. Telegrams dated June 28th state that the plague at Hong Kong has further declined in virulence, and it is hoped that the necessity for periodical returns to the Home Government has practically ceased. The most recent advice given to the Colonial Office is to the effect that there were 11 cases of plague and 11 deaths from the disease during the week ending June 28th.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,173 births and 3,247 deaths were registered during the week ending Saturday last, June 25th. The annual rate of mortality in these towns, which had been 16.9 and 14.7 per 1,000 in the two preceding weeks, rose again to 15.1 last week. The rates in the several towns ranged from 9.6 in West Ham, 10.3 in Norwich, 10.9 in Croydon, and 11.1 in Brighton, to 19.9 in Manchester, 20.0 in Plymouth, 21.4 in Sunderland, and 24.3 in Newcastle-upon-Tyne. In the thirty-two provincial towns the mean death-rate was 15.5 per 1,000, and exceeded by 1.0 the rate recorded in London, which was 14.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.4 per 1,000; in London the rate was equal to 1.6, while it averaged 1.3 per 1,000 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.1 in Plymouth, 2.3 in Sheffield, 2.5 in Gateshead, and 2.6 in Newcastle-upon-Tyne. Measles caused a death-rate of 1.1 in Halifax, 1.4 in Newcastle-upon-Tyne, and 1.6 in Plymouth; and whooping-cough of 1.0 in Swansea and 1.1 in Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 36 deaths from diphtheria in the thirty-three towns included 21 in London, 4 in Birmingham, 2 in West Ham, 2 in Cardiff, and 2 in Manchester. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last, June 25th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,169 and 2,194 at the end of the two preceding weeks, had further increased to 2,238 on Saturday last; 231 new cases were admitted during the week, against 220, 206, and 230 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 25th, 1,002 births and 589 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 23.0 to 20.2 per 1,000 in the three preceding weeks, further fell to 19.5 last week, but was 4.4 per 1,000 above the mean rate during the same period in the thirty-eight large English towns. Among these Scotch towns the death-rates ranged from 16.7 in Aberdeen and 17.8 in Edinburgh to 24.5 in Leith and 25.5 in Perth. The zymotic death-rate in these towns averaged 3.4 per 1,000, the highest rates being recorded in Leith and Dundee. The 513 deaths registered in Glasgow included 13 from measles, 4 from scarlet fever, 18 from whooping-cough, 3 from "fever," and 12 from diarrhœa. Seven fatal cases of measles and 2 of scarlet fever were recorded in Edinburgh, and 14 deaths from measles occurred in Dundee.

DIPHTHERIA IN LONDON.

The mortality from diphtheria in London showed a decline last week. The fatal cases of this disease, which had been 30, 23, and 26 in the three preceding weeks, fell to 21 during the week ending Saturday last, June 25th. Of these 21 deaths, 4 were of persons belonging to Chelsea, 4 to Camberwell, and 3 to Lambeth sanitary areas. The notifications of diphtheria in London, which had steadily increased from 201 to 224 in the four preceding weeks, declined to 187 during the week ending Saturday last. [illegible] ed with the preceding week there was a slight [illegible] ce of diphtheria in Central London, but in West, [illegible] London there was a decline. Among the sanitary areas of West London the decline in the prevalence of the disease was most [illegible] e the new cases, which had increased from 7 to 12 [illegible], fell to 3 last week. There was also a decline [illegible] tified in Paddington and in Fulham. In all [illegible] London, except Hampstead, there was a [illegible] of diphtheria; the 6 new cases notified [illegible] the number recorded in any week dur- [illegible] ary areas of East London there was a [illegible] of new cases, although in Shoreditch, [illegible] n the numbers of new cases exceeded [illegible] eek. Among the sanitary areas of [illegible] ne in the prevalence of diphtheria was most [illegible] Southwark, Newington, and Bermondsey; in the [illegible] the new cases, which had increased from 1 to 10 [illegible] fell to 3 last week. On the other hand, in Lambeth, the 18 new cases showed a further increase upon those recorded in recent weeks; and in Camberwell the new cases, which had been 9, 10, [illegible] ks, further rose to 16 last week. The [illegible] Asylum Hospitals [illegible] the three preceding weeks; and 623 cases remained under treatment in these hospitals on Saturday last, June 25th.

MEDICAL OFFICER'S REPORT OF ILLNESS OF PAUPER TO BOARD OF GUARDIANS.

VERAX, a district medical officer, is called to attend a widow who is in [illegible] d children. She is found [illegible]; there are signs of preg- [illegible] If this latter fact should [illegible] is her relief pay will be stopped. [illegible] nd to give this information to the [illegible] t it; and (2) if asked, is there any question of privilege involved.

"*" In strict law we believe that a full account of the case can be demanded by the guardians, but we consider that "Verax" would be justified in withholding any information professionally obtained which might seriously prejudice the interests of his patient unless he found himself hardly pressed to give it. We apprehend that in this case pneumonia was the primary affection for which medical aid was required, and if so this term might be used to describe the nature of the case in the weekly return made to the guardians; but if further information were to be applied for, we should recommend "Verax" not to attempt to withhold it.

NAVAL AND MILITARY MEDICAL SERVICES.

THE NAVY.

SURGEON WALTER K. HOPKINS has been appointed to the *Alecto*, June 22nd.

ARMY MEDICAL STAFF.

BRIGADE-SURGEON LIEUTENANT-COLONEL J. H. MOORE is promoted to be Surgeon-Colonel, *vice* W. Graves, retired, June 13th. Surgeon-Colonel Moore's previous commissions are thus dated: Assistant-Surgeon, April 1st, 1867; Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1878; Brigade-Surgeon-Lieutenant-Colonel, April 26th, 1893. He served in the Ashanti war in 1873-4, including the defence of the hospital at Foomanah (medal with clasp); and in the Afghan war in 1878-79, when he was at the occupation of Candahar and Khelat-i-Ghilzie, and in the engagements at Ahmed Kheyl and Urzoo, near Ghuznee (medal with clasp).

Surgeon-Lieutenant-Colonel James TIDBURY, M.D., retires on retired pay, June 25th. He was appointed Surgeon, February 3rd, 1878; Surgeon-Major, February 3rd, 1890; and Surgeon-Lieutenant-Colonel, February 3rd, 1898. He served throughout the Egyptian war in 1882 in medical charge of the 1st Battalion of the Gordon Highlanders, and was present at the reconnaissance in force from Alexandria on August 5th, and at the battle of Tel-el-Kebir (medal with clasp, and Khedive's star).

Surgeon-Captain F. MCDOWELL has been selected for employment as an attached Medical Officer.

Surgeon-Major ARTHUR HARDING is placed on temporary half-pay on account of ill-health, June 10th. He was appointed Surgeon, August 4th, 1878, and Surgeon-Major twelve years thereafter. His war services are thus summarised: South African War, 1879-81.—Zulu Campaign: Battle of Ginginhlovo and relief of Etshowe; medal with clasp. Transvaal Campaign: Defence of Marabastadt; mentioned in despatches. Egyptian Expedition, 1882.—Battle of Tel-el-Kebir: Medal with clasp; bronze star. Soudan Expedition, 1884-5.—Nile: With Camel Bearer Company; action of Abu Klea and engagements near Metammeh: despatches, *London Gazette*, April 10th, 1895; two clasps.

Surgeon-Captain C. J. HEALY has been appointed to the Coldstream Guards as an attached Medical Officer.

We understand that it has been decided to send a large staff of medical officers to Egypt at once for service with the expedition to Khartoum. Some thirty or forty officers will, it is believed, be required, and already the following seniors have been warned: Brigade-Surgeon-Lieutenant-Colonels J. A. CLERY at Aldershot, and Surgeon-Lieutenant-Colonel J. T. CAREY at Aldershot, W. KEYES at Limerick, and N. LEADER at Newport. It is expected that Surgeon-Major-General H. S. MUIR, M.D., Principal Medical Officer in Egypt, will proceed to the front in medical charge. The other officers selected are: Surgeon-Majors A. DODD, E. H. INGLES, C. A. WEBB, W. E. BERRYMAN, T. ARCHER, T. H. CORKERY, J. T. P. DOYLE, W. A. COWEN, A. P. HART, C. G. T. MOORE, R. J. M'CORMACK, F. T. WILKINSON, R. P. POWER, W. G. BIRRELL; Surgeon-Captains T. H. F. CLARKSON, H. S. PEEKE, R. J. COPELAND, J. THOMSON, R. E. KELLY, J. E. BROGDEN, J. GIRVIN, R. J. HALL, G. F. ALEXANDER, J. P. S. HAYES; Surgeon-Lieutenants E. BRODRIB, I. M'D. M'CARTHY, P. M'KESSACK, L. J. C. HEARNE, J. M'ARDLE, C. J. O'GORMAN, P. H. COLLINGWOOD, W. H. ROSS, M. M. LOWSLEY; and Surgeon-Major C. R. KILKELLY, with 1st Battalion Grenadier Guards at Gibraltar.

ARMY MEDICAL RESERVE.

Surgeon-Captain J. H. ANDERSON, M.D., is promoted to be Surgeon-Major, June 25th.

INDIAN MEDICAL SERVICE.

BRIGADE-SURGEON-LIEUTENANT-COLONEL D. D. CUNNINGHAM, M.B., C.I.E., Bengal Establishment, Professor of Physiology at the Calcutta Medical College, is permitted to retire from the service, from June 26th. He was appointed Assistant-Surgeon April 1st, 1868, and became Brigade-Surgeon-Lieutenant-Colonel, October 24th, 1892. He has no war record.

The military authorities in India have prepared a general report to the Government on the medical arrangements and experiences of the recent campaign on the North-West Frontier. The document is said to be the most exhaustive, and deals with all matters affecting the health of the troops in the field.

Brigade-Surgeon-Lieutenant-Colonel THOMAS H. HENDLEY, C.I.E., Bengal Establishment, is promoted to be Surgeon-Colonel, April 2nd. He entered the service as Assistant-Surgeon, October 1st, 1869, and became Brigade-Surgeon-Lieutenant-Colonel, April 2nd, 1894. He was nominated a Companion of the Order of the Indian Empire, January 1st, 1892.

The following Surgeon-Captains of the Bengal Establishment, having completed twelve years' full pay service, are promoted to be Surgeon-Majors, April 1st: WILLIAM GRANT, THOROLD PATRICK HEHIR, M.D., LIONEL JOHN PISANI, BASANTA KUMAR BASU, M.D., NARENDRA PRASANNA SINHA, WILLIAM RICE EDWARDS, M.D., CHARLES MACTAGGART, JOHN FENTON EVANS, GEORGE JAMES HAMILTON BELL, JOSEPH THOMAS DALY, HENRY FOOKS, ERNEST HUDSON, ARTHUR WILLAN DAWSON, M.D., WILLIAM HENRY BANNER ROBINSON.

ERRATUM.—In the BRITISH MEDICAL JOURNAL of June 18th, under "Changes of Station," the name "O. E. P. Lloyd" was misprinted "P. E. Polloyd," and the name "A. E. J. Croby" should have been "A. E. J. Croly."

SMALL-POX AND VACCINATION IN GERMANY.[1]

THE Imperial Health Office in Berlin has prepared a second edition of its official and well-reasoned statement of the evidence on behalf of vaccination, together with a running commentary on objections thereto, the book being issued at a low price, and evidently intended for the public at large. Its moderate tone, its avoidance of statistical tables, which are almost all relegated to the end of the work and there graphically given, and its admirable marshalling of facts, make it a kind of model. The following short analysis of this work ought to be interesting in this country at the present time.

SMALL-POX IN THE LAST CENTURY.

The work begins with a clinical description of a case of small-pox, for in central Germany the disease is only known now by tradition for the most part. It next proceeds to an account of small-pox in the last century. Juncker in 1796 wrote that about 400,000 lives were lost yearly in Europe through small-pox, and King Frederick William III of Prussia, in a regulation of 1803, states that in that country the loss from small-pox was more than 40,000 lives yearly. Small-pox was then so much a children's disease, that in three Prussian towns with a total population of 13,329 in the year 1796, when there were 1,250 cases of small-pox, it was found that of the remaining 12,079, all had already had small-pox except 524 persons. The adult population was thus permanently protected against small-pox. In 1721

THE INOCULATION OF SMALL-POX

was introduced, but was not taken up much by the public till after 1740. The deaths due to inoculation were estimated by Wernher as 1 in 300 cases. The increase of small-pox mortality towards the end of last century was only slight, and it is acknowledged that in some places, for example, Genf, the mortality was higher before the inoculation period than afterwards.

THE INTRODUCTION OF VACCINATION IN 1798.

The fact is emphasised in this work that vaccination is not a discovery of the laboratory. It is a practice taken up from a belief of the peasantry in various parts of the world—in a dozen different counties in England alone—that sores on the hands of milkers of cows affected with "cow-pox" conferred protection against small-pox. Experiments had been made by others before Jenner. In England we have Jesty's vaccinations, and in 1765 Sutton and Fewster actually made a communication to the Medical Society. But Fewster had a poor opinion of vaccination experiments, and in no way assisted Jenner, whom he often met. In 1781 Dr. Nash vaccinated his own son and other children, but died in 1786 without publishing results.

In Holstein, in 1791, the schoolmaster Plett vaccinated three children, but selected a bad site (the finger tips) in one case, and inflammation of the arm in this case deterred him from further trials. He had the satisfaction, though, of seeing that these three children escaped small-pox in a subsequent epidemic in 1794. Jenner, in 1796, not only vaccinated, but applied the severe test of subsequent inoculation with small-pox; the inoculation had no result. Jenner, we read here, fully deserves the glory which surrounds his name. His first pamphlet was published in 1798, and within a year or two vaccinations were being done all over the Continent.

VACCINATION SPREAD OVER EUROPE WITH AMAZING RAPIDITY.

In 1800 the French Government appointed a Commission and Sacco began his vaccinations in Italy with Lombardy lymph. Russia followed suit next year. In Vienna the first vaccination was done in 1799, the year after Jenner's pamphlet. Germany and Sweden took it up at once, especially Sweden. Vaccination early became compulsory in some countries: in Bavaria, 1807; in Baden, 1815; in Würtemberg, 1818; and in Sweden, 1816; and where it was not compulsory it was largely adopted at first.

In 1803, Frederick William III of Prussia, in a decree requiring the authorities to actively prosecute vaccination, stated that vaccine institutions had been established, and that the question of the protective power of vaccination had been settled by the fact that of 17,741 carefully observed vaccinations in Prussia, no fewer than 8,000 had been subsequently inoculated with small-pox without any result. These vaccinations and inoculations were not open to the reproach made against some of Woodville's cases in London, namely, that he not only vaccinated in a small-pox hospital, but may have confused small-pox lymph with his cow-pox lymph. Naturally, many of his cases showed the general eruption of small-pox.

Within a few years the mortality from small-pox diminished so rapidly that the disease as an epidemic appeared to be vanishing from Europe. As an example both of the rapid spread of vaccination and the rapid decline of small-pox we will take Sweden. Here the "rate"—by which is meant the yearly average deaths from small-pox per 100,000 of population—before vaccination, during the ten years 1792-1801, was 191. Vaccinations first began in 1801; by May, 1805, 25,000 successful vaccinations were reported, and in the seven years next 93,368 more (some estimates are higher), while during these years 1802-1811 the "rate" sank from 191 to 62, and in the five years 1812-16 it sank further to 20. In 1816 vaccination of infants became compulsory, and the rate in five more years sank to 7. It is an error to say that the "rate" had already declined before vaccination began. The above decline, it may be noticed, was not only persistent, but more marked each quinquennium. The same thing was to be observed in other countries and cities—for example, Glasgow and Copenhagen.

EARLY AMAZING DECLINE OF SMALL-POX.

Early in the century the decline in small-pox astonished the world. Such a thing had never been known before, as far back as writings went. The decline is acknowledged by opponents of vaccination; they have to acknowledge it, but they try to explain it in some other way than by vaccination. They say it was due to the discontinuance of the old inoculations of small-pox. But, in the first place, inoculation never became fashionable in Sweden; and, secondly, in any case only a slight decline of small-pox could possibly be attributed to the above discontinuance, to correspond with the alleged slight increase of small-pox said by some to be due to inoculations. The Royal Commissioners in England (1896) have stated that "there is no adequate evidence to show that inoculation did increase the mortality from small-pox." Another reason used to be alleged—namely, the decline of sheep-pox about this time. But sheep-pox, it is proved, is not communicable, and has nothing to do with human small-pox. The real explanation of the rapid decline of small-pox is, of course, that the adult population was already protected permanently, for all, or very nearly all, adults at that time had survived small-pox, while vaccination protected the young. But it took a long experience of vaccination after this, acquired not without painful undeceptions, before the degree and duration of the protection given by vaccination began to be understood.

REAPPEARANCE OF EPIDEMICS OF SMALL-POX.

About the third decade of this century small-pox increased again, serious epidemics occurring in, for example, Utrecht, Copenhagen, Marseilles, Sweden, Bavaria. But it was observed, first, that these outbreaks were never so extensive as in the prevaccination era; secondly, that the disease assumed in many cases—for instance, amongst those who had been vaccinated in childhood, an unaccountably mild form, in fact, a new disease seemed to have arisen ("varioloid"); thirdly, that small-pox was no longer a children's disease, as in old times, almost exclusively. It gradually became evident that the protection of vaccination against an attack of small-pox lapsed to a great extent in process of time, though this protection still availed to make the disease much milder, and that a repetition of vaccination was required.

THE ERA OF REVACCINATION.

The era of revaccination began at first in the armies. The Würtemberg army led the way in 1833, with the result that during the 20 years before the epidemic of 1870-5 not one

[1] *Blattern und Schutzpockenimpfung.* Denkschrift zur Begutheilung des Nutzens des Impfgesetzes vom 8 April, 1874, und zur Würdigung der dagegen gerichteten Angriffe. Bearbeitet im kaiserlichen Gesundheitsamte. Mit einer Abbildung im Texte und sieben Tafeln. Zweite Auflage. Berlin, Julius Springer, 1898. [Small-pox and Vaccination. The benefit of the Vaccination Law of 1874, with an examination of objections. Drawn up by the Imperial Health Office.] 2nd edition. Pp. 194.

small-pox death occurred. The Prussian army followed in 1834, and while during the five years previous there had been 372 deaths, an average of 74 a year in the army, during the 35 years there were only 77 deaths, an average of 2.2 yearly. The Bavarian army adopted revaccination in 1843, and from thence to 1870 had only 6 deaths from small-pox. Vaccination made only slow progress in England comparatively, and it was not till much later that the vaccination of all recruits was established. It took fifty years for England to enjoin vaccination by law upon all children, and 20 more to enforce it by the requisite machinery. But opponents say that although the "rate" in the Prussian army after 1834 was only 1.4 as compared with 23.6 in the civil population, the rates are much the same if the same age classes be taken. This is an error, for if we take as our guide the correspondence which exists for the years 1875-6 and apply this to earlier times when statistics of age classes were defective we find that the rate amongst civilians then for the age class 15-20 was 3.6, and for the age class 20-30 it was 4.0, a rate three times that of all the age classes of the army together.

So time went on, an increasing portion of the population in each country having no protection against small-pox except that conferred by vaccination in infancy, and a very large portion having no protection at all, when Europe was startled by the greatest epidemic outbreak or pandemic of this century —which, after all, was mild compared with the very frequent epidemics in every country in the last century.

The Epidemic of 1870-5.

This epidemic began with the Franco-German war. Small-pox was previously firmly rooted in France, which was very imperfectly vaccinated, for, as in Prussia at that time, there was no vaccination law enjoining vaccination on all children. The vaccinations in France during 1860-9 were only 59 per cent. of the births. Small-pox had fixed itself in 75 departments. The French army, too, was badly off as regarded vaccination. In 1868, of 82,203 recruits examined, only 47,324, and in 1869, of 115,876, only 54,720 were vaccinated. And even of the vaccinations performed only 34 per cent. were successful. The French loss from small-pox in the epidemic was enormous. Although full returns for the whole period are wanting, we know enough to prove this. In 1870 there were 13,674 deaths from small-pox in only 42 departments, to say nothing of the rest, and in 1871 there were 13,252 deaths in only 26 departments. Paris lost about 13,000 (12,952 exactly) lives from small-pox up to mid-March, 1871. The total loss of the French army is estimated by the French as 23,400; of all France 90,000. Belgium had 33,552 deaths in 3 years. In fact, every country suffered.

The German Army in the Epidemic Years.

But the German army came well out of the ordeal. Altogether there were 4,835 cases and 278 deaths; thus the deaths were only 5.75 of the cases, and only 35 per 100,000 strength, whereas in Berlin the total small-pox deaths in 1871 were 633 per 100,000 population, and in Hamburg 1,075. There were also 19 more deaths in the German army amongst officers, surgeons, and officials. Thus about 300 deaths to compare with over 23,000 (as is estimated) in the French army. But why should there have been any deaths if every recruit is vaccinated on joining? The answer is that, apart from those soldiers who had been vaccinated many years before, amongst whom a few, from individual peculiarity, early became, as an exception, susceptible again to an attack of small-pox, there were many who had been unsuccessfully vaccinated, and in the hurried levies that were made were many young soldiers whom there was no time to vaccinate. In Saxony and Hesse military vaccination was only begun in 1868 and 1869 respectively, thus only those who had just joined the army had been revaccinated. And, in fact, it was the Hessian contingent which suffered most. It constituted the fifteenth part of the army, but its loss from small-pox formed one-ninth of the total loss. The vaccinated condition in the whole German army cases could not always be known, but it is known for 1,005 cases, more than one-fifth of the total morbidity for the army. Of these, 470—that is, 46.8 per cent.—had been actually revaccinated; of these (470) revaccinated, the revaccination had been successful in 109, unsuccessful in 224, with uncertain results in 7, and with unknown results in 130. Of the 531 not revaccinated cases, 8.7 per cent were fatal, of the 224 unsuccessfully revaccinated 4.5 per cent., while of the 109 successfully revaccinated cases 1.8 per cent. were fatal. Paris alone lost 1,600 soldiers from small-pox during the siege, more than five times as many as the small-pox deaths in the whole German army. Moreover, the German army had its forced marches and wet weather and winter to undergo just like the French, but it was but slightly affected by the plague raging around it.

At the time of this epidemic, Sweden, Bavaria, Scotland, and England all had compulsory vaccination of infants; Prussia, Holland, and Austria had no general vaccination law. The deaths by small-pox per million population during the epidemic period were in the four former countries respectively 1,660, 1,660, 1,470, and 1,830, but in the three latter, 5,060, 5,490, and 6,180.

The German Vaccination Law of 1874.

After the epidemic it was decided to pass a general vaccination law not only for Prussia, but for the whole new German Empire, that is for all States belonging to the Bund, enforcing under penalties the vaccination of all children in the second year of life, and also the revaccination of all children in school-age (12 years old). This law has been steadily enforced and small-pox has been practically abolished from Germany ever since. Small localised outbreaks do occur from time to time, nearly all on the frontiers, but the death-rate per million is almost *nil*, and in the army only one death has occurred (in an unsuccessfully revaccinated case) since 1874. The average rate per million population is 4.4 during the ten years 1885-1894. In 1884 the German Vaccination Commission recommended the universal use of calf lymph to gradually replace human lymph, and since then it is used almost exclusively. There are twenty-five State institutions for obtaining and distributing calf lymph dotted over the Empire, furnishing yearly enough lymph for three and a-half million children. No one can escape the law. The requisite certificates of vaccination must be shown to the authorities, who possess complete lists of the children, or a fine of £1 is incurred; if refractory parents are met with the fine is repeated —raised to £2 10s.—or imprisonment for three days is inflicted.

Have Antivaccinists Nothing to say about Germany?

Well, not much. The custom of antivaccinists in this country is to revert to the regulations regarding infectious diseases belonging to the year 1835 and say that Prussia at least had compulsory vaccination then enjoined, if not on all children at least on all school children. The fact is that it was not till 1871 that all children attending public schools were required to be vaccinated. The 1835 law, which affected only the nine old Prussian provinces, only regulated the measures to be taken during epidemic outbreaks. If small-pox broke out in a house then everyone in that house might be compelled to be vaccinated, and if the disease spread further the inhabitants of adjoining houses. Except during epidemic outbreaks no one was obliged by the law of 1835 to have either himself or his children vaccinated. Numerous official despatches remain proving this. One of them dated 1841 uses these words, "weil kein gesetzliche Zwang zur Impfung bestehe"—because no legal obligation to be vaccinated exists. Schoolmasters were *recommended* ("werden wohl thun") to see that their pupils were vaccinated.

More adults now die of small-pox than in the last century. Then the children were unprotected, now they are protected by vaccination. Then the adults were permanently protected by small-pox, now they have exchanged this permanent protection due to survived small-pox for the less complete protection due to vaccination, a protection which lapses with time. *Revaccination is absolutely necessary* to renew this protection. In England vaccination is a thing to be disputed about by local authorities. In Germany it is a serious matter which admits of no parley. Not only are negligent parents punished, but negligent public vaccinators are heavily fined with the alternative of three months' imprisonment, and if the negligence is proved to have caused serious injury to the health of any child the punishment is much greater. Schoolmasters, too, are fined if they do not furnish proper lists.

Objections to State Vaccination.

1. *The Gain to the Medical Profession.*—It is still asserted in public meetings—for men will say what they would be ashamed to write—that the profession is prejudiced in favour of vaccination owing to the fees attached to it. History shows that medical men were slow in adopting vaccination. More than all statistics, more than all theories, it is experience which has given medical men the deep conviction which they have of the necessity of vaccination and revaccination. As to the gain, the vast majority of the profession gain nothing by vaccination. They would really gain with small-pox rampant once more.

2. *Personal Liberty.*—The answer to this objection is that the law, framed by the community through its representatives, implies—not direct physical compulsion: this is never contemplated, but—an obligation on the part of every individual to be vaccinated for the benefit of the community, and penalties are imposed if this obligation be neglected. The law offers choice of doctor, choice of place, and even free vaccination, under the strictest regulations as to care in the operation, the purity of the lymph, and the health, comfort, and propriety of all concerned. The liberty of the individual is curtailed in every community in a thousand ways. He may object conscientiously to paying taxes, but physical force would be applied if he did not. School compulsion is infinitely more severe than a solitary compulsion to vaccination and revaccination. The individual must be subordinated to the good of the whole community, and universal vaccination is absolutely necessary to ensure the advantages of vaccination to the whole community. No other effective means of combating small-pox is known, a disease as fatal now as ever it was to the unprotected. Instruction and persuasion are no good without the legal obligation, for people get careless.

3. *The Evanescent Character of the Protection.*—But there is ample proof that the vaccination in early childhood, repeated in early puberty, of the individuals of a community renders each of them practically as safe from death by small-pox, and very nearly as safe against an attack of small-pox, as survived small-pox itself. Even one vaccination in childhood affords a great protection against death by small-pox. These statements cannot be questioned; they admit of no cavilling. They are based on the experience on the part of every nation of a hundred years of small-pox. It is not just to point to mild cases of small-pox amongst individuals who have been vaccinated many years beforehand, and use them statistically to invalidate the protection given by vaccination. Besides, in earlier times vaccination implied merely the performance of the operation, without regard to its success or failure, and for a person to be vaccinated without success is the same thing as not to be vaccinated at all. All these considerations place the statistics of opponents in another light. For example, in Bavaria, where compulsory vaccination of all children in the second year of life has existed ever since 1807, where consequently nearly the whole population was vaccinated at least once, there were 28,081 "cases of small-pox" in the year 1871. This looks at first sight very bad for vaccination. But—as everywhere, so here—the figures when examined only confirm the protection of vaccination. Of the 28,081 cases, 906 belonged to the first year of life, and therefore presumably were unvaccinated; and 23,047 belonged to the ages older than 20 years, and therefore, in so far as they were not revaccinated, no longer enjoyed full protection by vaccination; only 4,128 belonged to the ages between 1 and 20 years; how many of these were under 10 is unfortunately not known. Of the whole 28,081 persons, 1,251 were proved to be unvaccinated; there died of the 26,830 vaccinated 3,619—that is, 13.5 per cent.; of the 1,251 unvaccinated 752—that is, 60 per cent. In England statistics of age classes are more complete than in Germany, and the more complete they are the more they prove the statement at the beginning of this paragraph.

4. It is said by some that vaccination is not necessary, for small-pox is gradually disappearing, as plague and cholera have disappeared. The latter diseases were never endemic in Europe in the same sense as small-pox was endemic, and in fact small-pox is as fatal as ever amongst the unprotected, and still causes a frightful mortality in countries without vaccination. In three years, 1891-3, in Russia 288,120 persons died of small-pox, thus between half a million and a million at least contracted the disease.

5. It is also said that the fall of small-pox during this century is greatly due to improved hygiene. The course of this fall does not warrant this. It is true that the general mortality from all causes is lowered, and it is true that we are under better sanitary laws. But there was no sudden alteration in sanitary laws at the beginning of the century. Again, the small-pox mortality in any country is found to be in inverse proportion to the amount of vaccination in that country. In fact, this hygienic theory has no support from facts. Are France and Holland so far behind Germany in hygiene? It is said that the poorer classes suffer most from small-pox. This is not only because these classes constitute the bulk of the community, but because the classes above them are better vaccinated. Before Jenner's time the rich suffered from small-pox as well as the poor, and the disease penetrated into royal palaces despite every care. The Chemnitz statistics showed conclusively that the "better off" classes were better vaccinated.

6. *The Alleged Danger to Health.*—The German Health Office has gone deeply into this question, and finds, on careful investigation, that the alleged cases of injury are mostly erroneous or invented, or at least exaggerated. In the rare cases in which erysipelas is due to the operation, this has been owing to accidental infection, and it is unjust to call such infection a characteristic injury of vaccination. Amongst millions of vaccinations every year such accidents will occasionally occur, but the minute regulations prescribed in all public vaccinations make them almost impossible. Before every vaccination the instrument used has to be washed and dried with disinfectant cotton wool. Landmann said that the slight inflammation round the vesicles is due to bacteria in the lymph. There are bacteria in the lymph, but they are only such as are found everywhere: no pathogenic bacteria have ever been found after repeated examinations by the highest authorities in bacteriology. Erysipelas due to subsequent infection of a vaccination sore, as of any other sore, may occur, it is true, from want of attention to cleanliness, but the law ordains that printed instructions as to the treatment of the child after vaccination must be given to the parents at the time of vaccination, cleanliness and loose sleeves being especially insisted upon. Of course, in a community where all the children are vaccinated, various ailments common to children will be ascribed to vaccination, but only two require attention—scrofula (tuberculosis) and syphilis. It is theoretically possible, though it has never been proved by experiments on animals, that vaccine lymph taken from a child affected with scrofula may contain tuberculous germs. But scrofula has not been proved to have become more frequent since the vaccination era than before—nor is it more prevalent in well-vaccinated countries than in countries with less vaccination. And lastly, the use of calf lymph excludes the possibility of thus transmitting either scrofula or syphilis.

During nine years—1885 to 1893—out of 21,920,215 children vaccinated in Germany, only 88—that is, 4 per million, died within a few weeks or months after vaccination from diseases presumed to be due to the operation. Investigations reduced the number to 57 as being possibly due to vaccination, but the evidence was insufficient to show how many of these cases were actually due to vaccination, and in what way. It comes to this—instead of tens of thousands of children dying of small-pox, about 10 a year die of unfortunate accidents attending vaccination in Germany. That man would be considered a simpleton who would advocate the abolition of gymnastic exercises or school attendance because of occasional accidents attending them.

Nine Years' Mortality in Germany—1886-94.

The "rate" for all Germany is available since 1886. It is about 2½ per million; a few other countries show as low a rate for a year or two at a time, but the peculiarity in the case of Germany is that the rate keeps low. Compare England, 13; Netherlands, 11; French cities, 147; Hungary, 175; Italy, 180; Belgium, 252; Austria, 313; Spain, 638!

The number of children in Germany each year exempted from vaccination owing to previous small-pox is known since the year 1879, and it is interesting to note that a sudden drop

in these figures occurs in the years 1884 and 1885 amongst the revaccination cases, ten years after the law of 1874. The number falls from 1024 (in 1883) to 349 (in 1885).

During these nine years 1886-94, 1,551 cases of small-pox occurred in Germany exclusive of Prussia (in Prussia the condition as to vaccination was not always verified, the cases being not all medically attended).

The age is known in 1,278 cases; 288 were under 10 years and 990 above 10. The "vaccinated condition" is known in 1,233 cases; of those under 10, 85 were successfully vaccinated; of the 990, above 10, 680 were once, and 189 twice vaccinated; 215, or more than one-sixth of the whole 1,233, had never been vaccinated, and amongst these 215, no fewer than 92 were between 2 and 20 years old, a striking fact when we consider the strictness of the German law, showing how small-pox finds out the unvaccinated, for such must be rare in this age class, and 92 is a very high proportion.

Of the 189 twice vaccinated 10 died (5.3 per cent.), but 5 were unsuccessfully revaccinated, and a sixth already had scarlet fever when attacked; thus the fatality was nearer 2 per cent.

Of 815 once successfully vaccinated, 74 died (9 per cent.); but 56 were over 40 years old, while there were only 2 under 10 years; 1 died from bronchitis, the other from cerebral meningitis.

Of the 215 unvaccinated, 68 died (31.6 per cent.).

These figures are instructive. The reproach that amongst the unvaccinated fatal cases there were many young children of weak resistance does not hold good, for the fatality in the age class 2-20 years was lower than in that beyond 20 years.

In the whole of Germany, including Prussia, there were 1,137 deaths during these nine years; no fewer than 490 occurred under the age of 2 years, and 469 above the age of 20; only 178 were between 3 and 20; of these last, the condition as to vaccination is known in 41 cases; 20 were vaccinated, 21 not. Of the former, 10 were older than 10 years, and of these 10, 6 had not been revaccinated. The unvaccinated contingent is a very large one, considering the law in Germany, for the age class 3-20 years; but after all, the "rate" for this age class is 1 per million, as against 2 per million above 20 years.

The work concludes thus: May 14th, 1896, was the centenary of Jenner's first vaccination. May the foregoing exposition aid in increasing the number of those who look back to that day with gratitude.

An appendix contains the whole vaccination law of Germany, with form of all the certificates and lists required by it; also the whole of the subsequent additions relating to calf lymph.

Another appendix relates to the numerous graphic charts inserted, and fully explains them. In 1893 the primary vaccinations were 1,326,754, with a successful percentage of 96.3; the calf lymph vaccinations were 98.5 per cent. of all the vaccinations, the whole constituting 87 per cent. of the vaccinations due according to the lists.

The revaccinations were 1,107,025, being 96.7 per cent. of those due. The successes were 91.7 per cent., a remarkably high percentage, showing thoroughness; and the revaccinations with calf lymph were 99 per cent. of the whole number.

A dreadful coloured map of Europe is given, showing the small-pox mortalities of its countries. A table of these mortalities for some or all of the 5 years 1889-93 is also given, with a summary of the law in each country. England is first discussed. The unvaccinated percentage is adverted to as rising steadily, and the free revaccinations as diminishing.

In 1896 a dreadful epidemic raged in Gloucester. "England by this epidemic received a smart warning, and, if the attempts to hinder the law which were then so marked extend further, the time may soon be at hand when England will find herself in the same condition again as in the middle of the century."

Hungary has adopted since 1887 compulsory vaccination and revaccination, though in 1892 only 78 per cent. of the primary vaccinations due were effected. But there is already a notable decrease of small-pox.

Italy adopted primary vaccination in 1888, and school vaccination in 1891, and small-pox has rapidly decreased.

Thus Germany, Hungary, and Italy have taken up the only logical position regarding vaccination.

THE MEETINGS OF THE AMERICAL MEDICAL ASSOCIATION, THE AMERICAN ACADEMY OF MEDICINE, AND OTHER MEDICAL SOCIETIES.

[From Our Special Correspondent.]

Denver, Colorado, June 10th.

The meeting of the American Medical Association at Denver this year has been in every way successful and progressive. With a single exception, to be referred to later, there has been no striking discovery made public, but work in all the sections has been more serious and solid than has before been customary. The growing popularity and power of the Association were made plain by the increased membership. The registration this year has been 1,322, this number being next to the largest in the history of the organisation. The circulation of the official organ, the *Journal* of the Association, has rapidly risen, until it is now about 10,000, and the financial condition is so excellent that $10,000 have been set aside for a permanent building fund.

Another evidence of prosperity is the crowded, and, as all admit, the overcrowded programme, the number of papers scheduled in one section (neurology) being 89, and the total for all sections amounting to about 500. It is, of course, impossible for so many papers to be read and discussed in the sessions of three days, a part of this time, moreover, being lost by that taken up by the general sessions and the addresses. Several plans are to be put in operation for limiting both the number of contributions and waste of time in section work. Under no circumstances are readers to be allowed more than the settled limit of ten or twenty minutes, discussion being restricted to five minutes for each speaker, etc. But the more effective methods of choosing well in advance subjects for investigation, and those who shall take part, together with other means of shutting out readers and speakers who have nothing of real value to give, are being considered and determined, so that waste of time may be avoided.

One of the most criticised evils of the past has been the loss of time from scientific work by reason of politics and general discussion in the general sessions, and it is gratifying to find that this has been met by the devolution of all possible business to the Executive Committee, which is composed of the Chairmen of the Sections of the past three years. This plan has this year worked splendidly, and the smaller body has acted so wisely that its decisions have been accepted almost without a question by the general body and the conduct of business has been both expedited and guided in the happiest way.

Perhaps the greatest time-saver has been found in the unrivalled efficiency of the presiding officer of the general meetings. All are agreed that Vice-President Happel has proved the best chairman that has ever been called to the conduct of these somewhat combative and often stormy meetings. If he could be secured to control them in the future it would be to the lasting benefit and honour of the Association.

The place of holding the meeting was naturally productive of papers concerning tuberculosis of the lungs and of directing the attention of all the visitors to climatology, and particularly to the Colorado climate and its influence upon the treatment of pulmonary disease. The elevation above sea level of Denver is exactly one mile, and the air is remarkably dry and pure. Dr. Fisk, for example, showed a number of visitors a railroad spike that for years had been lying on his desk, and that showed the glistening surface of polished metal, without a particle of rust. From fifty to seventy-five per cent. of the resident physicians, and of the population one would judge, have come here as "lungers," afflicted on their arrival with incipient or advanced pulmonary tuberculosis, and nothing could prevail upon these at present healthy and happy people to return to the heavy and humid atmosphere of sea-level climates. The influence of this rarer, purer, and sunnier air upon the pulmonary cells was experimentally demonstrated by Dr. Denison of Denver at the public session of the American Academy of Medicine at the Woman's Club, when, by means of a coloured rubber bladder in a large glass jar, the difference of air pressure at this elevation and at sea level showed the remarkable difference

of expansion of the pulmonary cells. The week of the meeting, fixed by rule of the Association, was a little unfortunate for the established reputation of Denver and of Colorado for sunshine, as of all weeks and months it is the worst of the whole year. Physicians, however, are accustomed to the scientific attitude of mind that knows how to merge the individual and special experience into that of the general rule and average. They, therefore, will return to their homes with a profound conviction of the truth that our great nation has in this wonderful region and climate the great health resort of the nation where consumptives may come with the almost absolute certainty that the progress of their disease will be stopped and cure effected. The demonstration is convincing in the fact of every other resident person they meet here.

In this connection must be mentioned the somewhat startling announcement of Dr. Murphy, of Chicago (of "button" fame), made yesterday in his address before the general session, and of which naturally this morning's newspapers are full, that he has discovered a new method of treating cases of pulmonary tuberculosis. The following extract from the address will give the chief idea of Dr. Murphy's plan. It is, of course, hardly necessary to observe that the suggestion cannot be pronounced upon with any scientific precision at this early date:—

Anything that will favour the deposit of connective tissue around the destroyer will cure the disease. In kindred cases, for instance, tuberculosis of the knee, we set at rest the tissues so afflicted. With rest new tissue is formed and the disease germs enclosed in a case from which they cannot possibly escape. We utilise the life of the healthy tissue to repair the destructions of the disease. While the knee is at rest, the tissue forms more rapidly, and gradually the diseased part is made by Nature to disappear. Subjects in the dead house will prove that this theory holds good in the lungs where tuberculous germs have begun an attack. Necropsies have revealed numberless persons whose lungs were once affected by the bacillus, but Nature has cured her ailments alone.

How can we put one lung at rest, to sleep as it were, put it off duty for a time, while we allow that rest to form the new tissue needed by Nature to smother the bacilli? We have the best pathological evidence that it will repair. Surgical operations prove that.

Pleurisy is a sequence of tuberculosis in 83 per cent. of the cases. Out of 164 cases of an eminent surgeon, but 4 were fatal where the operation of empyema was performed. Pleurisy is a curative and reparative to tuberculosis. Tuberculosis is repaired by pleuritic effusion. We must treat the lungs as we treat tuberculosis in other parts of the body. The lung has the greatest capacity of repairing tissue. How, therefore, with such facts known, can we aid and assist the lung in its efforts to encapsulate? We must put it in a condition to build up a cofferdam around the diseased part. That is accomplished by Nature in three ways. First, by removing the ribs and allowing a contraction of the chest over the diseased part; secondly, by opening the chest wall and rendering aid by direct injection into the pleural cavity. We inject into the pleural cavity some substance not poisonous that will remain for a long time, some substance not easily absorbed. The third method is by opening and allowing the chest wall to sink over the tuberculous cavity. I have operated by the latter method, and found that the cavity was in time obliterated. These skiagraphic views that I have were taken from a patient from November to April, at which time it will be noticed by the views the cavity has entirely disappeared. The method with the admission of air has has the same curative effect as allowing the collapse of wall. The injection of a gas or fluid into the pleural cavity, nitrogen gas preferred, is the ideal treatment for tuberculosis of the lungs. The gas being very slowly absorbed may be allowed to remain for months without injury to the patient until the disease is cured.

One of these skiagraphic views shows a patient whom I operated upon some months ago. The curative effects of the operation are most apparent. After the injection of the nitrogen gas the patient suffered a slight dyspnœa, but immediately upon leaving the table remarked that he felt better than he had for months. He refused to take to bed. On the first night after the operation he was enabled to sleep well, something he had not enjoyed for months. That irritating and annoying cough prevalent among consumptives is undoubtedly relieved by the injection of the gas into the pleural cavity. In some experiments the cough has entirely disappeared. With the operation, which is a simple one, there is no pain and no discomfort. There is no difficulty in executing the operation. There are some risks of course, but none greater than the average surgeon encounters in ordinary operations. It may be said that there are possibilities that the air will not enter the pleural cavity when there are adhesions. These adhesions can easily be removed. The pathology upon which this is based is the quiescence of rest.

With this method of treatment one may attack the earliest stages of the disease. It may be caught in its very incipiency when the patient enjoys fairly robust health and will not be endangered by any shock that may occur.

In most cases artificial pneumothorax, the operation applying to the injection of nitrogen into the pleural cavity, will be the most available operation. The arguments for it are the methods of repair. The prominence of tuberculosis of the lungs is due to the opportunities for infection and not to lowered resistance. Rest favours resistance, and by the injection of the nitrogen the diseased lung will be allowed to rest. Any functionary useless organ is the seat of connective tissue overgrowth. Thus, as the lung is a functionary organ at rest, the tissues rapidly form and enclose the destructive germs in a prison. The connective tissue overgrowth is the process by which tubercle is walled off.

The cessation of the expansion of inspiration causes the fibres to arrange themselves as is best suited for walling. The collapsed tissue shuts off blood and lymph channels, which are routes of infection. Connective tissue grows best in areas of poor blood supply. Tuberculosis long remains a local disease. The views of Strauss, Koenig, Cabot, and Runeberg substantiate this. The conclusion is irresistible that in most cases of tuberculosis as we see them this is the operation of election.

[In concluding his remarks Dr. Murphy dwelt upon the dangers arising from the operation of injecting the gas and thus suspending the work of the lung for a period. He acknowledged that there was danger of the injection of air into a vein, but offered arguments to prove that the danger was trivial. He also replied as to the alleged dangers to rupture into the pleura of tuberculous cavities, other infections of the pleura, too great displacement of the diaphragms, and collapse. As the operation is very simple, requiring little time and cost, Dr. Murphy has decided to use it largely hereafter. He now has in the Cook County Hospital over 200 patients, consumptives who are willing to undergo the operation, having heard of relief afforded patients whom he treated.]

Association of American Medical Colleges.—Of far-reaching and profound importance has been the work of the Association of American Medical Colleges, which has laboured to elevate the standards and lengthen the courses of study of American medical colleges. In conjunction with this Association and incited by it, the American Medical Association yesterday passed a resolution which crowns a long and noble endeavour with success. It was decided that after January 1st, 1899, all delegates shall be required to have received a degree from Colleges whose standards are not below that of the minimum of the Association of American Medical Colleges. By this provision four years of study are made obligatory, with certain entrance qualifications, etc. Thus the fourteen Colleges of the Southern Association, which have heretofore failed in these requirements, voluntarily enter the larger Association, with higher and more rigorous requirements; the lagging body thus lapses into a desirable non-existence by merging itself with the larger Association.

The American Academy of Medicine.—In Philadelphia in September of the centennial year, seven physicians gathered in a bedroom of one of the mushroom hotels built to accommodate the visitors to the Exposition, and organised a society of protest. The medical profession as a class had been through a number of years, because of imperfect educational methods, carelessly administered. The Society named the American Academy of Medicine emphasised its protest by making the degree in Arts (B.A.) an essential qualification for membership, and in its earlier years made the preliminary education of the intending physician its chief topic for discussion. Whether *post hoc* entirely or in any part *propter hoc* it is hard to say, but since this too often misunderstood and frequently ridiculed protest, the whole system of medical education has been changed, and now, in some of our States the educational requirements are as severe as in any country. In the meantime the fields of effort for the Academy widened. It was no longer simply the scholastic and technical education of physicians, but every problem concerning the physician in any relation he might have to society. The much discussed subject of hospital abuse, for example, received prominent attention first in the Academy amongst the American medical societies. The field of medical sociology has been found to be both extensive and fertile, and the Academy confines its attention exclusively to these topics. It still maintains its requirement for a liberal preliminary education in connection with the medical schooling, in terms somewhat altered to adjust the condition to the modern educational scheme.

This Society has just concluded the twenty-third annual meeting, probably the best of the twenty-three, as is right. The Council reported 708 members on the rolls at the beginning of the meeting, and 60 were elected to Fellowship. The attendance is never very large, since the members are scattered over thirty-nine States, but 50 were registered, which was above the average attendance. The Treasurer's report was very encouraging, showing a very substantial balance on hand, while the scientific and social sessions left little to be desired.

For several years attempts have been made to change the financial policy of the Academy. A rule was adopted early in its history making the initiation fee the only obligatory fee. This had not worked well, and the problem was to make the change and not break faith with those who had been elected under the pledge of no additional fee. Last year an amendment was proposed which exempted from any penalty all who were elected to membership prior to and including 1898. The amendment was adopted, and those who may be hereafter elected to Fellowship will be expected to pay $1 a year.

Hospitality of the Denver Profession.—The hospitality of the local profession has been truly and delightfully western. Doubtless the motive that led so many to come one or two thousand miles to this meeting was by no means purely scientific. Had it not been for the cordial promise of goodwill and the marvellous scenery, many would perhaps not have undertaken the long journey. The warm-hearted frankness and cordial generosity of our hosts, eager to please and to show their guests the scenic beauties of this wondrous State and its splendid mountains filled with mineral riches, has been a revelation of character astonishing even to impulsive Americans. The receptions of Dr. and Mrs. Hershey, Mr. and Mrs. Campion, Mr. and Mrs. Kountze, Senator and Mrs. Hill and a number of others, proved to eastern guests that "the wild West" has long lost whatever of rawness or crudity it may have illustrated a few years ago, and that there is here being developed a new example of spontaneity and cordiality united with an unexpected gentleness and courtesy altogether pleasing. The visiting members of the Association and their families are being sent through the mountains in a dozen finely planned and liberally executed excursions. The hotel accommodations and private hospitality have been perfect, and the ability to handle thousands of people without a trace of friction and with ease in dozen-train lots is a revelation of hotel and railway managerial talent that could only be found in this country.

The sincere thanks of all visitors are due to Dr. J. W. Graham, Chairman of the Committee of Arrangements, together with Drs. T. A. Fisk, W. A. Jayne, J. T. Eskridge, and C. L. Edson; to Dr. J. M. Foster of the Committee of Entertainment, with Drs. L. E. Lemen, E. P. Hershey, S. G. Bonney and Josephine Peabody. Especial gratitude also is expressed to Dr. W. P. Munn for his perfect management of the registration bureau.

AMERICAN MEDICAL ASSOCIATION: WORK OF THE SECTIONS.

Section of Medicine.

Diabetes Mellitus.—In the Section of Medicine, which was opened with a brief address by the Chairman, Dr. S. A. Fisk, of Denver, one of the most interesting communications presented bore the title "Diabetes Mellitus at the Massachusetts General Hospital from 1821 to 1897: A Study of Records," by Drs. R. H. Fitz and E. P. Joslin of Boston. They found the total number of cases treated in the medical wards of that institution to be 1/2. The percentage in the last fifteen years had increased fourfold over that of the first fifteen. Of these cases 74 per cent. were males, 26 per cent. females. The oldest was aged 73, the youngest 5 years, the average age being 33; only one of the patients was a negro. The question of hereditary tendency was considered in 42 cases, and was found present in 10 and absent in 32. It was an erroneous idea that diabetics passed more liquid than they took. One case lasted twelve years, three only twelve weeks; the average duration was one year and a half. Cases of grave diabetes ended fatally in nearly three-fourths of the cases, and a large percentage died comatose. The average mortality of saccharine diabetics had not materially changed in these seventy-four years. Dietetic restrictions had undergone no marked alterations during this time, and opium was the only drug which had been persistently used throughout the period. Dr. H. A. West said that in his Southern Hospital he had not seen a case of diabetes in a negro. Dr. James Tyson, of Philadelphia, on the other hand, said that he had had three negro cases brought to his notice within ten days.

Yellow Fever and Dengue.—Dr. H. A. West, of Galveston, Texas, read a paper on the differential diagnosis between Yellow Fever and Dengue, with some account of the Epidemic of 1897 in Texas. He stated that he had sent a circular letter to a considerable number of physicians in regard to the epidemic of 1897 in Texas, and he had received replies from 20 observers in 18 towns. The epidemic of dengue was most prevalent in the southern and central parts of the State, especially in Houston, Galveston, and San Antonio, and the incidence of the epidemic could be traced from the last-named town to the movement of troops, visitors, etc.; that it was an infectious, portable disease, increasing in prevalence in warm and ceasing in cold weather. The conclusion was reached that dengue and mild yellow fever could not be differentiated, and that the two might exist together. There was, therefore, ample time for infection of Texan towns on the direct line of travel from Ocean Springs. Dr. West knows of one case that came from Ocean Springs and suffered in Galveston from a disease much like yellow fever. The only differential point between the two that he was able to recognise is the occurrence in yellow fever only of severe nephritis, with albumen and casts in quantity. The mortality in the epidemic of 1897 was astonishingly low. In reply to Dr. F. Billings, of Chicago, Dr. West stated that in one case diagnosticated Weil's disease Sanarelli's bacillus had been found in cultures from the blood. McLaughlin's dengue bacillus was looked for with inconclusive results. Dr. Kinyoun, of the Marine Hospital Service, stated that those who were said to have had dengue in the spring of 1897 did not acquire yellow fever when that disease was undoubtedly prevalent at Ocean Springs in the Fall, even though they were exposed to the epidemic, and, in some cases, even in the disinfecting corps.

Other Communications.—Among the other communications presented in this section were the following: Dr. J. C. Wilson (Philadelphia): Perforation Peritonitis. Dr. H. Sewall (Denver): Physiological and Clinical Relations of the Papillary Muscles of the Heart. Dr. N. S. Davis (Chicago): Diabetic Gangrene. Dr. Frank Billings (Chicago): The Differentiation of Cardiac Incompetency of Intrinsic Heart Disease and Chronic Nephritis. Drs. W. C. Mitchell and H. C. Crouch (Denver): The Influence of Sunlight on Tuberculous Sputum in Denver; a Study as to the Cause of the great Degree of Immunity against Tuberculosis enjoyed by those Living at High Altitudes.

Section of Surgery.

Influence of Age, Sex, and Race in Surgical Affections.—The proceedings in this Section were opened by the reading of a paper on The Influence of Age, Sex, and Race in Surgical Affections by the Chairman, Dr. W. L. Rodman, of Louisville, Kentucky. He said that the susceptibility of the negro to disease 300 years ago still existed, especially to local tuberculosis of the glands, skin, and bones. The negro was still liable to fibroids, neoplasms, keloids, tetanus, etc., but it was believed by many that the African would at some time become as extinct in the United States as had the buffalo. Cancer was rare in this race up to 50 years ago, but malignant disease had increased among them of late much more than among the whites. Cancer of the uterus was very frequent in negroes. The most common tumours of childhood were sarcomata, although the earliest case on record was that of a cylindroma occurring in a child aged 11 weeks. Tuberculosis was fast becoming the deadliest foe to the negro race, and was twice as common as in the white. Gall stones and cholelithiasis were rare before 30, but became more common in advancing years, and were more frequent in women than in men, an explanation for which was the wearing of corsets and their sedentary habits. Several times more prominent in men than in women was aneurysm, due to the greater tendency of the former to arterial degeneration.

Removal of the Stomach.—After communications by Dr. A. D. Bevan, of Chicago, on the Surgical Anatomy of the Bile Tracts, and Dr. J. P. Lord, of Omaha, on Intestinal Obstruction, Dr. P. S. Connor, of Cincinnati, read a paper on the Removal of the Stomach. After referring to the recent announcement that this operation had been successfully performed, the author claimed to have performed it fifteen years ago, the patient dying on the table. There being no physiological, anatomical, or surgical contraindication to such an operation, he saw no reason why, in cases where the stomach was functionally extinct, as in general infiltration of the gastric walls, it should not be performed, the objection being that by the time the condition was realised the patient was ordinarily in no condition to undergo such an operation. As to removal for other conditions than carcinoma, there certainly was no reason why it should not be done if the stomach was acting as a receiving organ only, as the lower end of the œsophagus could be readily attached to the duodenum or jejunum with the least amount of tension, and with the preservation of the intestinal function. Dr. Harris, of Chicago, reported having

removed the entire stomach for carcinoma a year ago in the case of a man 72 years old, in whom the œsophagus was attached to the duodenum without difficulty, and believed this would often be possible on account of the extreme mobility of the duodenum in cases of carcinoma of the pylorus. As to the pneumogastric nerve the right one need not be interfered with in this operation, since it passes into the liver high up.

Intestinal Anastomosis.—Dr. W. F. Metcalf, of Detroit (Mich.), read a paper entitled Intestinal Anastomosis by a new Method. He said that if any device were used in intestinal anastomosis, it should be rigid, so as to hold the parts firmly in apposition, should pass away quickly, to leave the lumen of the gut free, so soon as its function was performed and the suturing was done, and it should be easy of introduction. With these objects in view he experimented upon the use of sugar in the form of cylinders of hard candy, and the results obtained were very satisfactory. After referring to the method of preparation and use of this device, he claimed that the advantages were the quick disappearance of the approximator, the accurate adjustment of the mesentery before suturing, the ease and rapidity with which union was effected, the cheapness of manufacture, the tendency to prevent accumulation of fluid, and the formation of abscess beneath the mucous coat. Dr. Ernest Laplace, of Philadelphia, presented a communication entitled a New Method of Performing Intestinal Anastomosis and Enterorrhaphy. He had devised a forceps which he said was rapid, accurate, easily adjusted, and capable of being made in various sizes. He demonstrated the method of employing it in cases of lateral and end-to-end anastomosis and invagination.

Erysipelas Toxins in the Treatment of Inoperable Sarcoma.—Dr. W. B. Coley, of New York, read a paper entitled The Use of Mixed Toxins of Erysipelas and Bacillus Prodigiosus in the Treatment of Inoperable Sarcoma, with Immediate and Final Results based upon a Personal Experience of Six Years. He said that, although the results pointed to the probable future usefulness of the toxins in the treatment also of carcinoma, favourable results had not yet been obtained in these, and the mixed toxins had been recommended only in the treatment of sarcomata. Although not recommended for operable case, the toxins might be tried before amputation. Mixed streptococcus and prodigiosus toxins grown in the same bouillon, unstrained and sterilised at a temperature of 84° were recommended. All the successes thus far had been secured from the use of mixed toxins and not from erysipelas toxins alone. It was generally believed that the cure was produced by a process of sloughing, but this was incorrect, as in a number of cases the growth disappeared by absorption. Spindle-cell sarcomata generally disappeared by absorption, whilst round-cell sarcomata sloughed. The injections should be subcutaneous, at distance from and not into the tumour, beginning with a minimum dose and gradually increasing. The dose depended on the virulence of the culture, and seldom exceeded 1 minim. A chill generally followed the injection in 15 or 20 minutes. It was unnecessary to give doses large enough to produce a chill in every case. If the treatment was successful, the growth lost its vascularity and glossy appearance, and decreased in size and painfulness. If unsuccessful after three weeks' injections, it was useless to continue treatment with the toxins. Dr. Coley had treated 134 cases by this method. Of these, 7 cases remained cured more than three years, and 3 between one and three years. Disappearance of the growth had been reported by other observers in 22 cases.

Treatment of Appendicitis.—A discussion on this subject was opened by Dr. H. A. Hare, of Philadelphia, who dealt with the medical aspects of appendicitis. He said there could be no routine treatment; opium would not cure or limit the disease, but it would take off the edge of the pain and support the patient. Dealing with the question of the Time to Operate in Appendicitis, Dr. H. D. Niles, of Salt Lake City, said experienced operators were not justified in leaving a diseased appendix in the body longer than the time necessary to prepare for an operation. The death-rate among those who waited was not known. Without operation 75 per cent. recovered; in the early operation 98 per cent. recovered. This comparative mortality left no doubt as to the course indicated. Dr. W. M. Harsha, of Chicago, said most cases aborted or subsided in twenty-four hours, and this should be the limit of time for the observation of such cases. It was the prevailing practice not to call in a surgeon soon enough. Dr. W. W. Keen, of Philadelphia, said that the first indication in the treatment was to call a surgeon. He protested against the use of opium in more than one or two moderate cases, and was unwilling to allow to pass unchallenged the statement that the appendix should be removed in all cases as soon as the diagnosis was made. Hektoen had found at necropsies evidence of appendicitis in 3 of 100 cases, after death from all causes, showing that a large proportion recovered without operation. The statement that the percentage of recoveries from early operation was 98 must be unfounded. Removal of the appendix from 100 absolutely well persons would give more than 2 per cent. mortality. In the first attack it was best to wait if possible with safety for from twelve to forty-eight hours, and, if possible, to let the patient get well and be operated upon between the attacks. Dr. J. B. Murphy, of Chicago, said that except in cases of fulminating streptococcus infection appendicitis the time to operate was when a correct diagnosis had been made. He opened directly into the peritoneal cavity, walling off with gauze to protect the peritoneum. The opening should be large enough to operate well.

Other Communications.—Among the other papers read in this Section were the following: Dr. B. Merrill Rickets, of Cincinnati, Aneurysm of the Aortic Arch, Surgical Treatment by Ligation of the Right Carotid and Subclavian Arteries, Report of a Case; Dr. W. J. Mayo, of Rochester, Maine, Surgical Treatment of Malignant Obstruction of the Pylorus; Dr. D. W. Graham, Primary Carcinoma of the Axilla; Dr. W. W. Keen, of Philadelphia, On the Advantages of a Permanent Artificial Anus and of Total Closure of the Sacral End of the Rectum in Operations for Cancer of the Rectum.

Summaries of the further work of the Sections will be given in subsequent issues in the Epitome. In the meantime we desire to acknowledge the courtesy of Dr. George M. Gould, Editor of the *Philadelphia Medical Journal*, who has favoured us with advance proofs of his report of the proceedings of the meeting of the American Medical Association at Denver.

MEETING OF AMERICAN MEDICAL EDITORS.

The Association of Medical Editors took advantage of the gathering of the American Medical Association at Denver to hold a meeting. It was remarkably well attended. The thorny subject of the ethics of advertising was seriously discussed, and the following resolution was unanimously adopted:

> That matter which, in the judgment of the editor, is clearly in the nature of an advertisement, or reading notice, shall be excluded from the regularly paged parts of the journal, and placed exclusively in the advertising pages.

Dr. G. M. Gould read a paper on Medical Journalism and Medical Libraries. He said that medical editors were the natural and official representatives of medical literature, but medical literature was comparatively useless without public medical libraries. Medical libraries were in a state of chaos, far behind that of any other equally important department of civilisation; that constituted a positive disgrace to the profession. With regard to the United States he said there were not half a dozen good medical libraries in that nation of 70,000,000 people and 100,000 physicians! The work of founding new medical libraries in every considerable centre of medical activity, filling the shelves with worthy literature both of the new and already established libraries, and so perfecting these libraries that they should become of progressively increasing value, should be taken up seriously, and carried on as persistently.

"Every medical editor," Dr. Gould went on to say, "knows from daily experience how the practitioner of the country and village is handicapped by his lack of reference books to verify, explain, systematise, and perfect his individual experience. The peculiar and anomalous cases and results he fears to report, because he cannot learn what similar cases and results have fallen to others. If he does report them, his report may be half or wholly useless, because of his inability to fit his individual work into the organic system of the world's growing science. Thus it is that we have so much utterly worthless medical literature; thus so many men of rich personal experiences and fine observational powers are made professionally dumb, and the lessons of their lives remain ungathered:

they die without handing on to the new generation the scientific products and lessons of their living. A public medical library in every community would prevent much of this loss, and would stimulate the independent and intellectual life of the profession more than any other conceivable institution."

Among the remedies proposed by Dr. Gould for the evils to which he calls attention, the chief is the establishment of an exchange among libraries with the following objects:—

A. To receive gifts of medical books and periodicals from all sources. There are (said Dr. Gould) at least 10,000 to 20,000 volumes, and probably twice that number waiting to be given such an exchange: (*a*) From physicians retiring from practice; (*b*) from the libraries of deceased physicians. (*c*) From publishers, consisting of remainders of old editions, gifts of new ones, etc. (*d*) From the lists of duplicates and triplicates of public libraries. (*e*) From the departments of exchange and review of medical journals. (*f*) From auction sales, antiquarian bookstores, by gift or purchase. (*g*) From medical societies, home and foreign, by the presentation of their transactions and publications.

B. To catalogue these accessions, and to keep classified lists of the wants of all membership libraries.

C. To ship to these libraries according to their needs and by a just system of distribution, the books and journals acquired.

As an example of how such a system could be worked, Dr. Gould stated that, by a little effort, seconded by the noble courtesy of Dr. John B. Hamilton, he succeeded in one year in getting gifts of 1,921 books and 3,934 journals, and in giving them again to libraries which needed them, without other expense than some postage, labour in letter writing, etc.

THE AMERICAN ACADEMY OF MEDICINE.

THE American Academy of Medicine held its twenty-third annual meeting at Denver, Colorado, on June 4th to 6th. The Treasurer, Dr. Charles McIntire, of Easton, Pa., stated that there was a net balance of over $250 in the treasury at the close of the fiscal year. The membership of the Academy now included men of standing from thirty-nine of the States and territories, the army and navy, as well as from England, Burmah, and other foreign countries. During the past year twenty-one of the leading collegiate institutions of the United States have extended their hearty support and co-operation to the Academy. In the list are Yale, Harvard, Pennsylvania, Williams, Columbia, Brown, Princeton, Lafayette, and Union.

Dr. Leartus Connor, of Detroit, read a paper on the Prevention of Diseases now Preying upon the Medical Profession. He remarked that all disease sprang from either misplaced matter or misdirected force, singly or confined. Force acting in the wrong direction was destructive, in the right direction constructive. Among the diseases (so-called) of the medical profession now definitely recognised and fully described were the following: Overcrowding, a vast horde of incompetents, large numbers of moral degenerates, crowds of pure tradesmen, blatant demagogues, hospitals organised and conducted to the damage of the profession, patients, and people; dispensaries and public clinics of the same character; medical colleges organised for the advantage of the few at the expense of the many, and unmindful of advantage to students; medical societies so conducted as to be a by-word among honest persons, and yet continued to advance the financial profits of their leaders; domination by commercial interests of drug manufacturers and promoters of secret and proprietary medicines, the prey of money-making corporations, as railways, accident insurance companies, and sanatoria, and the tool of lodges, secret, and other social societies. The list, Dr. Connor said, was incomplete, but sufficed to indicate the existence of morbid action in almost every portion of the profession. These diseases resulted from too many doctors and the defective quality of a large number of these. The cure consisted in an elevation of the standard of education from the public school up to the medical college, where the standard of entrance as well as of exit should be of the very highest.

In a paper entitled 'Æsthetic Relations of Medicine and Life,' Dr. G. M. Gould enlarged upon the practical importance to be derived in almost every walk of life from the correction of physical defects and deformities, such as astigmatism, defective refraction, cutaneous diseases and blemishes, nævi, and congenital or acquired nasal or facial deformities, as harelip and sunken nasal bridge.

A discussion took place on the subject of The Physiological Aspect of the Education of Youth, a public session being held in response to an invitation from the Women's Club of Denver. The various aspects of the subjects presented and considered were as follows: How Education Fails—Physiologically Considered, by Dr. J. T. Searey, of Tucaloosa, Ala.; The Child's Brain as Illustrated by Recent Neurological Studies, by Dr. Rupert Norton, of Washington; The Interdependence of Healthy Bodies and Healthy Brains, by Dr. Elmer Lee, of New York; The Advantage of Physical Education as a Prevention of Disease, by Dr. Charles Denison, of Denver; The Importance of Training the Special Senses in the Education of Youth, by Dr. G. Hudson Maknen, of Philadelphia; The Kindergarten, by Dr. Charles G. Stockton, of Buffalo; The Care of the Eyes during School Life, by Dr. Edward Jackson, of Denver; Kindergarten and Primary Grade Work in the Public Schools, and its Influence upon the Eyesight, by Dr. Casey A. Wood, of Chicago; The Amount of Work a Growing Brain ought to Undertake, by Dr. James L. Taylor, of Wheelersburg, Ohio; and The Importance of Early and Scientific Training of Children with Defective Speech, by Dr. W. Scheppegrell, of New Orleans. The annual address of the retiring President, Dr. L. Duncan Bulkley, of New York, was upon the subject of the Dangers of Specialism in Medicine.

POISONING BY CARBONIC OXIDE.

THE SNAEFELL MINING DISASTER.

IT will be remembered that about a year ago a very serious mining accident, resulting in the death by carbonic oxide poisoning of twenty miners, occurred at a lead mine on the slopes of Snaefell, Isle of Man. The official report on this accident, by Professor Le Neve Foster, F.R.S., Her Majesty's Inspector of Mines, has just been published as a Blue Book, and is accompanied by a special report by Mr. A. E. Miller, M.B., of Laxey, on the symptoms of the men affected and the appearances of the bodies. The record thus presented is exceedingly interesting, and possesses much practical and scientific value.

THE NATURE OF THE DISASTER.

The shaft of the mine is about 1,000 feet deep, and the men descend and ascend by means of ladders. "On the morning of Monday, May 10th, 1897, about 6 A.M.," to quote Mr. Miller's report, "thirty-one miners commenced their descent down the ladder way in the main shaft of the mine, in complete ignorance that anything unusual had taken place; and no one at the surface had the slightest suspicion of the tragedy which was being enacted below ground until about 7 A.M., when some of the miners returned to the top of the pit in an exhausted condition. On reaching the mine about 8.30 A.M. I found that eight of the men had managed to reach the surface by their own exertions. None of them presented any symptoms of note except that they were all more or less unduly excited. They stated that they had not noticed anything unusual in the shaft till they had descended for a considerable distance below the 60 fathoms level, when some of them thought they perceived a smell of "singeing"; but as there was no smoke, and as their candles were burning brightly, they continued to descend until they were told to go back by some of the men who were below them on the ladders. On commencing to ascend they found they had great difficulty in climbing; their legs soon gave way at the knees, and they suffered from extreme palpitation of the heart and breathlessness. The more they hurried the more pronounced were these symptoms, till they were forced to rest. While at rest they did not experience much discomfort, with the exception of a feeling of weight over the cardiac region; there was also extreme disinclination for further exertion. In their journey upwards some of them had passed several of their comrades, who were either clinging to a ladder quite unable to get any higher, or were resting on one of the landings too worn out to continue the struggle to the surface. I would here remark that the younger and more robust seemed to suffer much more than the older men. Of the eleven who either reached the surface by their own exertions or were sent up by the rescuing party alive, the large majority were men of middle age and over, while the nineteen who were quite dead when found were mostly young men well

under 30 years of age. This is to be explained by their relatively greater activity. On the alarm being given they would naturally begin climbing the ladders at a very rapid rate, passing many of those who eventually reached the surface alive, only to be repassed by those who had been obliged to take it more leisurely."

It will thus be seen that the miners, to use Dr. Le Neve Foster's words, "were like rats entering a trap." It was only when they tried to return that they realised that something had so affected them as to render them incapable of the extra exertion of climbing upwards.

On hearing of the disaster "Captain" Kewley, the manager of the mine, at once organised a rescue party, which, although he is an old man of 65, he led again and again with dauntless courage down the ladders. The party, though much exhausted by the effect of the gas, succeeded in dragging several men up by means of ropes. Mr. Williams, Assistant-Inspector of Mines, who arrived in the evening, descended at very great risk to about 600 feet, and as the last living man had been found at 350 feet, it was now clear that no further lives could be saved.

Demonstration of the Nature of the Poisonous Gas.

On examining the bodies Mr. Miller found that "the external appearances were characteristic of death by carbon monoxide poisoning. The peculiar bright red colour of the blood, as seen in the lips and skin of the face and in the palms of the hands was most striking. The expression on every face was calm and peaceful, and remarkably life-like. The characteristic colour of the blood was well seen in every one of the bodies, and recalled the appearance often observed in persons with a fair skin after rapid exertion."

It was of great importance to obtain a sample of the gas for analysis, and this Mr. Williams succeeded in doing. He descended with a rope round him to a point just below which a candle would not burn, and filled two bottles with the air by emptying water from them. He had just corked the second bottle and handed it to a miner who stood above him, when he suddenly became unconscious. He was then dragged up the ladders about 80 feet by Mr. Jones, the other assistant inspector, and several miners, who were themselves almost overcome. By this time it was found that his respirations had entirely ceased, and he appeared to be dead. Mr. Jones at once applied artificial respiration, at the same time holding his head to a hole which had been punched in a pipe conveying compressed air from the surface. After a time natural respiration returned, and he was sent up to the surface, where he soon recovered. The samples, together with the bodies of two mice which were lowered into the poisonous atmosphere by Dr. Le Neve Foster when he arrived, were forwarded from the Home Office to Dr. Haldane, who found that the hæmoglobin in the blood of both the mice was about 80 per cent. saturated with carbonic oxide, and that the gas had the following composition:

	Sample 1.	Sample 2
Oxygen	15.48	15.52
Carbonic acid	4.22	4.26
Carbonic oxide	1.07	1.10
Hydrogen	0.48	79.12
Nitrogen and argon	78.75	
	100.00	100.00

He reported that "the composition of the sample corresponds to a mixture produced by the combustion of wood or other similar material. Inhalation of air of this composition would produce helplessness (in a man) within about 7 or 8 minutes at most, and would soon cause death. A candle would not burn in such air, but would just do so on addition of a third of its volume of fresh air. The mixture would then still be intensely poisonous, and would still be so if diluted with four times its volume of fresh air. When diluted with nine times its volume of fresh air it would still be capable of rendering a man unable to walk."

The Mouse Test.

Suspecting from the first that the poisonous gas was carbonic oxide, Dr. Le Neve Foster had brought with him some mice with a view to testing the air in the manner recommended by Dr. Haldane in his report on *The Causes of Death in Colliery Explosions and Underground Fires* (1896). This test depends on the fact that although a mouse is no more sensitive to a given percentage of carbonic oxide than a man, it reacts far more rapidly, and thus quickly indicates the presence of a dangerous atmosphere. During the further exploration the mouse test was constantly employed, and seems to have been of considerable use. On one occasion, however, when a rat was being used, as a mouse could not be obtained, the exploring party evidently got into a somewhat dangerous atmosphere. A rat, on account of its much greater size, will take fully twice as long as a mouse to show the effects of carbonic oxide; and possibly this fact was not sufficiently allowed for. In any case it was evident that in using the mouse test in descending a ladder the utmost caution would be necessary, since the presence of such a small percentage of carbonic oxide as would hardly affect a mouse visibly, and would not be dangerous to a man on level ground, might be dangerous to one who had to climb a ladder in retreating. Just as the exertion of climbing elicits the symptoms produced by deficiency of oxygen in the rarefied atmosphere of a high mountain, so will it elicit the corresponding symptoms due to deficiency of oxyhæmoglobin in the blood of a man who has absorbed a good deal of carbonic oxide.

The Source of the Carbonic Oxide.

The source of the carbonic oxide in the Snaefell mine was finally found to have been a fire in the timber supports in one of the passages. The burning through of these supports had caused the roof to fall, and thus blocked the ventilation. Wood smoke—in other words, the crude gas driven off from heated wood—is intensely poisonous. The large proportion of oxygen contained in wood and similar material gives rise to the presence of a very large percentage of carbonic oxide in the smoke; and it is probable that nearly all the deaths which occur during fires, whether above or below ground, are due to carbonic oxide poisoning. The Snaefell inquiry, however, has furnished the first clear evidence that carbonic oxide is the chief source of danger in the disastrous fires which so frequently occur in mines. In the case of the still more recent fire at Whitwick Colliery in April of the present year, valuable additional evidence appears to have been obtained by Dr. Burkitt, of Whitwick, who stated at the inquest that his examination of the blood from all the bodies recovered showed that carbon monoxide poisoning was the cause of death.

Study of the Symptoms of Carbonic Oxide Poisoning.

In an appendix to the reports there is an exceedingly graphic series of accounts by Dr. Le Neve Foster and other trained observers of the symptoms which they observed in themselves while under the influence of carbonic oxide. Dr. Le Neve Foster's own account is specially interesting. Along with several companions he had descended to a level just below which a rat with which he was testing the air was rapidly affected. At this level one of the party said he was feeling unwell, and all hurried up the ladders for 80 feet to a level above. The symptoms produced by exertion while the blood is partly saturated with carbonic oxide were quickly produced.

"The poison took effect most suddenly; probably its action was accelerated by the exertion of climbing rapidly. I felt decidedly queer when I reached the 115 fathom level, and thought a drop of brandy might revive me. I took out my little brandy flask; but already my fingers seemed incapable of doing the work properly, and someone unscrewed the stopper for me. I took a small sip and sat down. Everything then seemed in a whirl, and the atmosphere seemed to be a dense white fog. This must have been, so far as I can judge, a little before 1 P.M.,.....Sitting next to me was Mr. Williams, and within a few feet were Captain Reddicliffe and Henry Clague; the men who had remained all the time at the 115 fathom level, or at all events had not descended as low as we did, had started to climb to the surface, but of their starting I have no recollection. A curious fact is that we all sat without moving or trying to escape; the foot of the ladder was close by, yet none of us made any effort to go to it and ascend even a single rung. We none of us tried to walk a dozen steps, which would have led us to the other side of the shaft partition, where we all knew that there was a current of better air. We simply sat on and on; Mr. Williams

remained motionless like a statue; Captain Reddicliffe, on the other hand, was shouting and groaning nearly all the time, while Clague was moving his arms. Of all this I was perfectly conscious, though rooted to my seat.....How soon I realised that we were in what is commonly called a 'tight place' I cannot say; but eventually, from long force of habit, I presume, I took out my notebook. At what hour I first began to write I do not know, for the few words written on the first page have no hour put to them. They were simply a few words of good-bye to my family, badly scribbled.....'I feel as if I were sleeping, no real pain, good-bye, good-bye, I feel as if I were dreaming. 2.15. We are all done. No [word illegible] or scarcely any, we are done, we are done, godo-bye my darlings.' Here it is rather interesting to note the 'godo' instead of 'good.' Before very long the fresh men who had climbed down to rescue us seem to have arrived and explained to us that the 'box' [used for raising disabled men to the surface] was caught in the shaft. Judging by my notes, I did not realise thoroughly that we should be rescued. Among them occur the words 'No pain, it is merely like a dream, no pain, no pain, for the benefit of others I say no pain at all, no pain, no pain.' I frequently wrote the same sentence over again.....Mr. Williams and Captain Reddicliffe, though not absolutely unconscious, did not recognise the lapse of time, for they thought that only about ten minutes passed between my calling out 'All up at once!' and their arrival at the surface. In reality nearly two hours had gone by. That the numbness of the fingers recorded in my notes was no fancy is proved by the fact that I burnt my wrist and hand with my candle while sitting underground, and had no notion that I had done so until a friend in the evening called my attention to a big blister."

From Mr. Williams's account of his experience on the same occasion the following description of characteristic symptoms may be quoted: "I was conscious all the way up the shaft" (he was drawn up in the "box"), "and I know I shook hands very heartily at the top with some of the men who had been repeatedly down with me during the week, but I could not bear to have anyone order or contradict me. I would have my own way. I insisted, not with very good grace, I fear, on walking by myself to the office, and Dr. Miller, who thought I ought to allow myself to be carried, at last said to me, 'Walk, then, you pugnacious little fellow.' When I sat down at the office I became unconscious again for fifteen or twenty minutes."

To judge by various facts mentioned it seems probable that the symptoms described by Dr. Le Neve Foster were due more to cardiac failure consequent on the exertion of rapidly climbing with insufficiently oxygenated blood, than to the direct action of the atmosphere at the level up to which the party had climbed. Mr. Miller, in his report, rightly lays the greatest stress on this secondary cardiac failure, of which he obtained abundant evidence, and it seems almost certain that more men might have escaped at first had they only ascended the ladders slowly. The rapid climbing seemed to bring about a complete collapse of the circulation, lasting for some time, and often ending fatally. One of the chief practical conclusions to be drawn from the report is that any great exertion is dangerous when the blood is partly saturated with carbonic oxide. As little muscular effort as possible should be made in escaping from an atmosphere containing carbonic oxide, or in rescuing another. Any gain of time by the increased effort is far more than counterbalanced by the immediate effects on the heart, and by the increased rate of absorption of the gas in consequence of the deeper and more frequent respirations.

As regards treatment, Mr. Miller lays most stress on perfect rest in the recumbent position, hypodermic injections of ether, and external application of warmth. It may be pointed out by way of supplement that in acute asphyxia by carbonic oxide the respirations stop before the heart fails, just as happens in drowning, and that in such a case the one thing that is essential is to promptly apply artificial respiration, as was done by his colleague when Mr. Williams so nearly lost his life; also, that where a supply of oxygen is available, its administration at once will often restore consciousness with marvellous rapidity.

Precautions Recommended.

We have only been able to indicate roughly the contents of the reports, and have not space to refer to the important recommendations made by Dr. Le Neve Foster at the end. These recommendations will doubtless receive the close attention which they deserve. The value of the reports from the medical side is largely due to a special request from the Home Secretary to Dr. Le Neve Foster and Mr. Miller that the symptoms observed should be fully described. The Home Office is certainly to be congratulated on the issue of a document of so much value both to miners and to medical men.

THE MEDICAL PROFESSION AND CONTRACT PRACTICE.

The Nottingham Medical Union.

The report of the council of the Nottingham Medical Union adopted at the general meeting held on June 1st, 1898, states that in December a circular to the following effect was issued to all the members of the Union.

Recent legislation with regard to friendly societies has legalised the admission of juvenile members to adult lodges, and members of the Union have been approached on the subject of admitting such juvenile members at rates of payment differing from those of adults. Under these circumstances the council of the Union think it desirable to remind members that the agreement of October 7th, 1896—"I hereby undertake after January 1st, 1897, not to enter into any new club or contract arrangement for less than 4s. per year per member" applies to juvenile as well as to adult members.

Reference is made in the report to flagrant instances in which patients of members had been canvassed by agents of one of the medical aid associations; and it was suggested that the promises made a little more than a year ago had not been kept. It is added that the council felt that active opposition could not be successfully pursued until the profession was completely unanimous and presented an unbroken front. Reference is made also to the conference in London between representatives of the British Medical Association and some of the friendly societies, at which the representatives of the friendly societies seemed anxious to look at all sides of the question, and to consider a revision of scales. By quiet work it would gradually be made plain that the club rates must be revised sooner or later.

The establishment of a nursing home where persons of the middle class who were seriously ill and might need operation might receive suitable accommodation, nursing, and medical or surgical care, had also received much attention, and had led to many investigations, but hitherto the financial difficulty had prevented progress.

The Treasurer reported that the funds of the Union were in a satisfactory state, and a memorial petitioning the General Medical Council and the colleges not to give their countenance to medical aid associations which employed "touting," or in which a portion of the medical fees went to swell the profits of the Society, was adopted.

Evesham.

We are informed that at the quarterly meeting of the Court Vale of Evesham Foresters Society on June 7th a resolution was proposed to reduce the fees paid to the surgeons from 5s. to 4s. a member per annum. Mr. Martin attended the Court meeting, and before the resolution was put to the vote made a statement distinctly declaring his position. He said that no reduction of fees would be accepted, and that if the resolution were adopted the resignation of himself and of his partner, Mr. J. S. Slater, would be immediately tendered. The resolution was, we are informed, carried by a vote of about three to one, and Mr. Martin thereupon resigned. His resignation was accepted, and a resolution passed unanimously to advertise for a successor. We learn that all the other medical men in the town have refused to have anything to do with the Society on the reduced terms. Messrs. Martin and Slater, according to the rules, "hold office under the pleasure of the Court." The Management Committee, we learn, have refused to pay the salary due for the quarter, and Messrs. Martin and Slater have therefore taken proceedings in the County Court. We are informed that the Secretary has issued an advertisement stating that a medical officer is wanted immediately, and adding that it is hoped that women and children may join also; but we trust that no medical man will be so ill-advised as to apply.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

SUBSCRIPTIONS to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY JULY 2ND, 1898.

THE BACTERIOLOGY OF WATER.

IN a report by a Committee of American Bacteriologists to the Committee on the Pollution of Water supplies, submitted at the meeting of the American Public Health Association in Philadelphia, in September, 1897, an attempt, and so far as the matter has gone, a successful attempt, has been made to draw up a scheme which may form the basis of a common method of studying, describing, and differentiating bacteria, especially those found in water.

In 1894, Dr. Wyatt Johnston suggested that "a co-operative investigation into the bacteriology of water supplies as a means of bringing order out of the chaotic state of the literature of water bacteria, and of throwing light from the bacteriological side on questions of sanitation," should be undertaken; the suggestion was approved by the Association, the members of which took steps to form a Committee for such bacteriological investigation. After much deliberation and correspondence, a small Committee was formed consisting of Drs. J. George Adami (McGill University), Chairman; A. C. Abbott, T. M. Cheeseman, George W. Fuller (Louisville Water Company), W. T. Sedgwick (State Board of Health, Mass.), Charles Smart (U. S. Army), Theobald Smith, and W. H. Welch. The Committee at once set to work and presented a report in 1896. This report was withdrawn for revision, and was again presented in its present form.

The aim of the Committee has been to draw up a practical working scheme which shall be sufficiently simple and definite to ensure its adoption by workers in this department of investigation, but shall at the same time be sufficiently complete to allow of valuable facts being collected for the purposes of collective investigation. As Professor Welch, in a short introductory note, points out: "The report is not intended to be a complete treatise on bacteriological technique. Its purpose is to make certain recommendations concerning methods to be pursued in the study of bacteria, with the view of securing greater uniformity and exactness in the determination and description of bacterial species."

The report deals with a number of points, such as the source and habitat of bacteria, the morphological and biological characters, a subject treated under three headings: (*a*) Cultural characteristics, mode of growth in and upon various nutrient media; (*b*) biochemical features; and (*c*) pathogenesis, and a certain number of secondary or optional tests. The bulk of the text, however, is devoted to the consideration of the best means of obtaining standard media of various kinds. This is certainly a most important factor in any scheme by means of which anything like uniformity of description and identification is to be secured, and it is the part which will for the present attract most attention on this side of the Atlantic. The various biochemical reactions are also well given, and the literature of this part of the subject is summarised.

As a kind of supplement, Dr. T. M. Cheeseman has contributed a series of charts—to be used by those who take part in collecting material and statistics for the use of the Committee—in which may be entered up systematically and with little trouble the morphological and biological data connected with the investigation of any micro-organisms cultivated and isolated from water. Rough sketch plans are also given which cannot fail to be of value to workers in this field.

This report, which comes to us with the authority of the Chairman of the Committee, Professor Adami, will probably be accepted as the basis on which any future work on the identification of the bacteria found in water will be carried on the American continent, and the question naturally arises whether the time has not now come for the formation of a similar Committee in this country, a Committee which—working in conjunction with, or at any rate acting as suggestors to and critics of the American Committee, might come to some understanding as to what should be done to obtain some uniformity of action and of record in regard to the bacterial flora of our water supplies.

There can be no doubt that a very strong Committee might be brought together to sift the material that has already been published, and to make such additions to the American report as experience may suggest.

HOMŒOPATHY AND THE DOCTRINE OF SIGNATURES.

OUR friends the homœopaths claim to be representatives of "advanced medicine," and speak, with the pity that is akin to contempt, of the "old school." They describe that strange creature of their own fancy, the "allopath," as following *pede claudo* in the track of their triumphant advance, gathering such intellectual spoil as he can. A particularly good opportunity of picking up unconsidered trifles of this kind was afforded the other day by the grand annual review of the homœopathic army of Great Britain, which took place in London. We have therefore looked with eager anticipation to the appearance of a full record of the proceedings on that occasion in the hope of finding some spark of new truth which, Prometheus-like, we could steal for the enlightenment of the darkness of our orthodoxy. Nor has this hope been unfulfilled. We have found what we believe to be the true light of "advanced medicine." Though this proves to be but a little candle, we nevertheless think it a duty to place it where it may throw its rays further than it is likely to do in "advanced" journals, so that it may shine like a good deed in a (scientifically) naughty world.

On the occasion to which we refer, Dr. John H. Clarke delivered himself of a discourse on the "Doctrine of Signatures and the Law of Similars," in which he made the following statement: "It would almost seem that it is

to be the lot of homœopathy to rehabilitate the ancient doctrine of signatures developed and glorified by Paracelsus, and possibly utilised by Hahnemann himself and the older homœopaths for suggestions as to the properties of drugs, the outlines of which were filled out by provings and clinical observations." That Hahnemann in his fine frenzy drew inspiration from the doctrine of signatures is probable enough, for the prophet of homœopathy was, as Voltaire said of another prophet, *capable de tout*. Neither have we any difficulty in believing that the glorious destiny of resuscitating the doctrine of signatures, which was well described by Dr. Ayrton Paris as "the most absurd and preposterous hypothesis that has disgraced the annals of medicine," is reserved for homœopathy. The doctrine of signatures has so long been buried in the limbo of dead delusions that some readers may be curious to know something about it. We may therefore recall the fact that it was a belief that every natural substance possessing medicinal virtues of any kind indicates by an obvious and well-marked character or "signature," the disease for which it is a remedy, or the purpose for which it should be employed. Thus, a flower with a bright yellow colour should be good for jaundice, bloodstone for hæmorrhage, and so on. As a typical example may be cited the "signature" of tobacco as given by an ancient writer: "In the first place, the manner in which the flowers adhere to the head of the plant indicates the *infundibulum cerebri* and *pituitary gland;* in the next place the three membranes of which its leaves are composed announce their value to the stomach, which has three membranes." Paracelsus says that those who profanely doubt the value of signatures make God a liar, for it is "He that maketh medicines out of the earth and marketh them so that we may recognise their uses." When the "signature" is not clear the scientific use of the imagination comes into play. Thus, Paracelsus assures us that the frog is a specific for the plague. If we ask what Sir Toby Belch would call his "exquisito reason" for this statement, he answers, like the typical Scotchman, with another question, Why is the frog so strangely made unless it be that he is a cure for the plague? The plague is a disgusting malady, and your frog is a disgusting beast; could "signature" be plainer? As further proof, adds the learned Bombastes, take the fact that when plague is coming frogs have black spots on their tongues. But by attentive study we can get still more information out of our batrachian indicator. Only mark how many frogs sit upon one another at an unusual time; if there be ten or twenty or more, just so many human bodies shall there be thrown upon one another in one grave. Even the modern physiologist could not get more knowledge out of a frog than can be extracted with the help of the master key of this wonderful doctrine of "signatures."

This is the "ancient doctrine of signatures, developed and glorified by Paracelsus, and possibly utilised by Hahnemann himself," which it seems to Dr. Clarke to be the lot of homœopathy to rehabilitate. To do him justice, he "glorifies" it himself as much as any mediæval mystic. He suggests that "a teacher of materia medica would find it of no little assistance to point out to his class the yellowness of hydrastis, the 'golden seal' with its 'turmeric root,' the yellow flower of calendula, the yellow juice of chelidonium, the yellow stain of nitric acid, and the yellow colour of chrome of sulphur, of picrate of iron (to mention only a few) as evident in medicines which powerfully affect the liver." Why is Thackeray's favourite "Chambertin with yellow seal" omitted? Surely that bears a distinct liver "signature." Dr. Clarke says that "we talk glibly enough about an 'universe,' but few of us really believe in it. If we did, we should recognise that everything in the universe bears relation to everything else." Believing firmly in a universe, we recognise that in it the doctrine of signatures bears the relation to truth and reason which darkness bears to light. Dr. Clarke's "advanced" views appear to have surprised even his brethren in Hahnemann, who hardly knew whether or not to take him seriously. Perhaps, like the fat boy in *Pickwick*, he only wanted to make their flesh creep.

THE POISONS BILL.

The Poisons Bill, introduced by the Lord President of Council into the House of Lords on June 24th, fulfils the promise made by the Privy Council to place restrictions upon the sale of carbolic acid and allied substances, most of which, while of a poisonous nature, are largely used for purposes of disinfection and deodorisation. The Parliamentary Bills Committee of this Association has on many occasions drawn attention to the necessity of new regulations for dealing with conditions which are practically new, since the extensive use of disinfectants is a custom of somewhat modern introduction. In December, 1896, a memorandum was drawn up by the Committee, pointing out the frequency with which cases of poisoning by carbolic acid, accidental and suicidal, occurred, and instancing the reiterated expression of opinion by juries that the unrestricted sale of carbolic acid constituted a serious source of danger.

A memorandum, drawn up by Mr. A. Braxton Hicks, and adopted by the Coroners' Society in 1896, pointed out that the cheap and crude carbolic acid, which is mostly purchased by the poorer classes, is now sold by oilmen and similar shopkeepers without any restriction or precautionary measure whatever. It is generally placed in such vessels as the purchasers may take with them, such as old beer bottles, tin cans, and other receptacles in daily use amongst them for containing harmless household liquids. Since no precautions are taken by the vendors, none are exercised by the purchasers, either to keep it in a safe place or to identify it in any way, so that many cases of poisoning occur in consequence of persons—adults and children—mistaking the poisonous liquid for beer or porter.

The Duke of Devonshire, in the speech with which he introduced the Bill, referred to the numerous representations of this nature which had been received by the Privy Council, and stated that out of 579 deaths which occurred in 1895 and 1896 owing to the use of articles enumerated in the schedule of the Bill, 468 cases were instances of suicide while in 111, including 29 children under 10 years of age, the poisoning was due to accident.

The poisonous substances scheduled in the Bill include carbolic acid and cresylic acid, and all preparations of these substances or their homologues used as disinfectants and containing more than 10 per cent. of any of them. The other substances scheduled are butter of antimony, chloride

of zinc and its solutions, sugar of lead and other salts of lead, hydrochloric, nitric, and sulphuric acids (unless diluted in the manner prescribed by the *British Pharmacopœia* for the time being in force), and substances sold for the purpose of poisoning insects or vermin. The Bill provides that none of these substances shall be sold without a distinct label with the name of the substance and with the word "poison," and with the name and address of the person selling the substance. An exception is made in favour of legally qualified medical practitioners and pharmaceutical chemists, or chemists and druggists in so far as that the words "to be used with caution" may be substituted for the word "poison" if the substance is supplied for internal use, provided that the ingredients of the substance and the name of the person by whom it is supplied are entered in a book kept by that person. Power is given to the Privy Council to make regulations as to the keeping and selling of scheduled substances and to amend the schedule. The penalty is to be a fine on summary conviction not exceeding £5, or in the case of a second or any subsequent conviction not exceeding £10. The Bill will apply to Ireland, with the substitution of the Lord-Lieutenant in Council for the Privy Council. A further provision in the Bill is to the effect that the Privy Council may exercise the power, now exercisable by the Pharmaceutical Society with the consent of the Privy Council, of prescribing regulations as to the keeping, dispensing, and selling of poisons.

The Bill contains several new departures, but the gravest is that which places the drafting of regulations for the safeguarding of the sale of poisonous substances of this class in the hands of the Privy Council. Hitherto the regulation of the sale of poisons has been in the hands of the Pharmaceutical Society subject to the approval of the Privy Council. The Lord President observed that that Act had not been altogether successful in preventing accidental deaths from the use of poisons scheduled under it, for of 786 deaths which took place in 1895 and 1896 from scheduled poisons, exactly half were the result of accident. For this chemists and druggists cannot be held altogether blameless, since deplorable laxity in complying with the regulations has been shown to have occurred in a very large number of instances, and the argument is certain to be used to reinforce the other objections which have led the Privy Council to decline to include the articles scheduled in the new Bill in the schedule of the Pharmacy Act. These arguments appear to have been in the first place the inconvenience to which the public would be exposed if any additional difficulties were put in the way of obtaining disinfectants, and in the second place that dislocation of trade would follow if the sale of the articles were placed in the hands of what the Duke of Devonshire described as virtually a great monopoly.

An objection which has been raised to placing carbolic acid and similar substances in the list of poisons has been that the labelling of medicines for internal use with the word "poison" would unnecessarily alarm the public mind. This objection appears to be adequately met by the permission granted by the Bill to employ the words "to be used with caution," in place of the ordinary poison label. In the memorandum by the Coroners' Society, to which we have already referred, it was pointed out that some special precaution ought to be insisted on in the case of sanitary authorities who gratuitously distribute carbolic acid, inasmuch as many cases of misadventure have arisen through its indiscriminate distribution without proper labelling or advice as to its poisonous nature. The Bill contains no provision on this point, which is certainly worthy of consideration.

THE MIDWIVES BILL COMMITTEE AND THE GENERAL MEDICAL COUNCIL.

IT will be remembered that at the May session of the General Medical Council a communication was received from Mr. Rowland Humphreys on behalf of the Midwives Bill Committee, asking the Council to meet a deputation representing the promoters, or to appoint a committee to confer with their delegates. A motion in the names of Dr. McVail and Mr. Horsley for the reception of a deputation by the whole Council was rejected, and it was agreed to appoint a committee consisting of Sir Richard Thorne, Dr. Glover, Dr. MacAlister, and Sir Christopher Nixon, to confer with the memorialists and report the result to the Council. The conference in question took place at the Council office on Saturday, June 25th, all the members of the Committee being present. The delegates included Dr. Cullingworth, Dr. Watt Black, Mr. Humphreys, Lady Balfour of Burleigh, Mrs. Bruce, and others. The object of the delegates was to ascertain the precise bearing of some of the clauses in the answer of the Council to the Lord President of the Privy Council as formulated in Dr. MacAlister's motions, and to elicit the opinion of the Council on some points not explicitly mentioned in that answer, with a view to making such alterations in the Bill lately before Parliament as would be approved by the Council. It was distinctly mentioned in the discussion which preceded the appointment of the Committee that the latter were not empowered to vary the resolutions of the Council, but simply to hear and to report such representations as the delegates might make. It is understood that the Committee will present to the Council at its November session a statement as to the points raised by the promoters of the Bill.

THE BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

THE annual general meeting of the British Institute of Preventive Medicine was held on June 24th. The annual report of the Council stated that the work of the Institute had progressed and expanded during the year. Some departments were already in full operation in the new building, and it was confidently anticipated that all would be completely equipped in the early autumn. The demand for diphtheria and streptococcus serum had increased, and there had also been an increased demand for mallein and tuberculin. The Institute had rented laboratory accommodation to the Local Government Board for the purpose of preparing glycerinated calf lymph. The director's report referred to the volume of *Transactions* which was noticed in the BRITISH MEDICAL JOURNAL of December 25th, 1897 (page 1872), and stated that a number of fresh investigations had been conducted and completed during the year. Some of these had already been published while others were on the eve of publication. Further investigations were in progress and the laboratories continued to attract research workers. The courses of instruction given by the staff had been well attended. The Institute endeavoured to encourage the periodical examination of water and water supplies, and several local authorities had requested the Institute to undertake systematic examinations on their behalf. Bacteriological work had also been undertaken for several other sanitary authorities. In the new building every facility was provided for the furtherance of bacteriological research. The antitoxin department at Sudbury

continued to do useful work in the field of serumtherapeutics. The members at the close of the meeting inspected the fittings of the new laboratories, which will be formally opened in the autumn. The Institute will require a considerable addition to its funds to enable it to carry out adequately the objects for which it was founded.

THE UNIVERSITY OF LONDON RECONSTRUCTION SCHEME.

What is the opinion of the majority of Convocation upon this question? and upon the Bill of the Government which has been referred to the Grand Committee on Law? Much misapprehension on the point exists; it may, therefore, be useful at the present juncture to answer these questions by a reference to the proceedings of Convocation during the last four or five years. The number of members of Convocation at the beginning of that period exceeded 3,500; it is now over 4,000. The views of Convocation can be expressed in one of two ways: (1) By ballot papers, which may be sent through the post, and are only used in elections to the Senate; or (2) by open voting at meetings of Convocation in London, when personal attendance is necessary. Many more of the extra-metropolitan members consequently are found voting in the ballot than at the meetings which are always held in London. Since 1892 there have been four elections to the Senate. The first was in January, 1893, when Dr. W. J. Collins, an opponent of reconstruction, was elected by 855 votes, against 642 recorded for Mr. H. G. Howse, who was in favour of the scheme of a teaching university. In May, 1895, Dr. T. B. Napier, who was at that time opposing the scheme, beat Mr. Cozens-Hardy, a consistent supporter of reconstruction, by 1,231 against 733 votes. In June, 1896, another opponent of the reconstruction of the University (the late Mr. Walter Rivington) defeated Sir Joseph Lister, who favoured the reconstruction scheme, by 963 against 846 votes. Finally, last month, Mr. Fletcher Moulton, an opponent of the Bill now before the House of Commons, was elected by 1,344 votes, against 1,139 recorded for Dr. Benson, who supported the Bill. Mr. Moulton thus polled 54 per cent. of the total number of votes cast, whereas at the previous large poll, when Dr. Napier was successful as an opponent of the then scheme of construction, he obtained more than 62 per cent. of the votes given. But, as regards votes in Convocation, they have always since 1894 been in favour of the party of reform and reconstruction. In January, 1895, it was resolved by 206 against 174 votes that a reconstruction of the University was desirable. At the same time a resolution was carried by 157 ayes, against 133 noes, that the necessary powers should be given to a Statutory Commission, after conference with duly accredited representatives of the Senate and of Convocation. In the following May the proposal to rescind these resolutions was lost by a majority of 240, against 119. In January, 1896, Convocation; by the votes of 466 ayes, against 240 noes, expressed its desire for the early introduction into Parliament of a Bill similar to that introduced into the House of Lords in the previous year by Lord Playfair, with inserted clauses securing to the Senate, to Convocation, and to other bodies affected, the right of appeal to the Privy Council; and a committee was nominated to prepare for the Statutory Commission, when appointed, a memorandum of points in the scheme of the Royal Commission on which modification seemed desirable. This Committee has since been continued from year to year to the present time. In 1897, no resolutions of Convocation on the Reconstruction Bill were passed, nor was there an election to the Senate. In January of the present year a resolution to accept the scheme embodied in the London University Commission Bill, 1897, was carried in a thin House by 76 against 42 votes. Thus, while the majority of the votes in meetings has been consistently in favour of reconstruction, the majority in the ballotings has uniformly been opposed to it. But, the highest number recorded in the ballot has never exceeded one third of the whole number of members of Convocation, and there has always been a large minority who desire that the present University may undertake teaching functions.

THE PRACTICE OF MEDICINE IN THE NEW ENGLAND COLONIES

In a recent number of the *Journal of the American Medical Association*, Dr. F. R. Packard gives an interesting account of medical practice in the early days of the settlement of New England. In only a few instances were the expeditions of pilgrims accompanied by a regularly-appointed physician or surgeon. In March, 1629, the Court of Assistants in London appointed John Pratt surgeon to the Salem Plantation, on condition "that £40 should be allowed him, for his chest £25, and the residue for his own salary during the first year." In April of the same year the "Governor and Company of the Massachusetts in New England," agreed with Lambert Wilson, chirurgeon, that he should minister medically to the settlers and the neighbouring Indian tribes for three years. He further engaged to give a medical training to one or more of the young men of the colony. The spiritual leaders of the early colonists, notably Cotton Mather, were regarded as authorities on medical subjects—with what result to the health of the settlers can only be conjectured. It is on record that the colonists welcomed the arrival of ships having medical men on board, and that their services were eagerly sought for. But in cases of sickness medical and surgical treatment was generally regarded as only an adjuvant to prayer. John Winthrop, Governor of the Colony of Massachusetts Bay, records that in the year 1644:

> One of the deacons of Boston Church, Jacob Eliott (a man of very sincere heart, and an humble frame of spirit), had a daughter of 8 years of age, who being playing with other children about a cart, the hinder end thereof fell upon the child's head and drove a piece of the skull before it into the brain, so as the brains came out, and seven surgeons (some of the country very experienced men, and others of the ships which rode in the harbour) being called together for advice, etc., did all conclude that it was the brains (being about half a spoonful at one time and more at other times), and that there was no hope of the child's life except the piece of skull could be drawn out. But one of the ruling elders of the Church, an experienced and very skilful surgeon, liked not to take that course, but applied only plasters to it, and withal earnest prayers were made by the Church to the Lord for it, and in six weeks it pleased God that the piece of skull consumed, and so came forth, and the child recovered perfectly, nor did it lose the senses at any time.

The same authority relates how in 1846:

> There fell out also a loathsome disease at Boston, which raised a scandal upon the town and country, though without just cause. One of the town..... having gone cooper in a ship into ——, at his return his wife was infected with Lues Venerea, which appeared thus; being delivered of a child and nothing then appearing, but the midwife, a skilful woman, finding the body sound as any other, after her delivery she had a sore breast, whereupon divers neighbours resorting to her, some of them drew her breast, and others suffered their children to draw her, and others let her child suck them (no such disease being suspected by any), by occasion whereof about sixteen persons—men, women, and children—were infected, whereby it came at length to be discovered by such in the town that had skill in physic and surgery, but there was not any in the country who had been practised in that cure. But (see the good providence of God) at the very season there came by accident a young surgeon out of the West Indies who had had experience of the right way of the cure of that disease. He took them in hand, and through the Lord's blessing recovered them all in a short time."

The magistrates held an inquiry. They "examined the husband and wife, but could find no dishonesty in either, nor any probable occasion how they should take it by any other, (and the husband was found free of it). So as it was concluded by some that the woman was infected by the mixture of so many spirits of men and women as drew her breast (for thence it began —a most convenient and comfortable conclusion. The diseases most prevalent in the Colonies are said to have been "alvine fluxes, Saint Anthony's fire, asthma, atrophy, catarrh, colic, inflammatory, slow, nervous and mixed fevers; pulmonary consumption, quinsy, and rheumatism." Many deaths seem to have occurred from galloping consumption; epidemics

of influenza swept over the Colonies at intervals, proving very fatal. Another scourge was dysentery, but the disease most dreaded of all was small-pox.

THE DANGERS OF "ICE-CREAM."

DR. DANFORD THOMAS recently held an inquest on a boy of 6, whose death was attributed by the jury to blood poisoning, the result of eating unwholesome ice-cream. It appears that the child and an elder brother had eaten some of this comestible obtained from an Italian who was selling it from a barrow, the subject of the inquest consuming a double quantity. The next day symptoms of irritant poisoning set in; one child died four days later, the other recovered. The *post-mortem* appearances were consistent with death from the effects of an irritant poison. Some very wise and justifiably strong remarks were made by the coroner as to the risks run by the consumers of these street commodities. It will be remembered that not long ago Dr. Klein made a bacteriological investigation of some ice-cream and of the water in which the glasses containing it were rinsed, with the result that both were found to be swarming with thousands of micro-organisms. Recently also some 20 cases of poisoning were reported among the customers at an ice-cream stall in Antwerp, and no doubt this delicacy is responsible for more illness than is ordinarily attributed to it. Nor is this to be wondered at when we consider the sources of contamination arising from the quality of its constituents and the habitual filthiness of its vendors. It is manufactured from the commonest and stalest materials, and stored usually under the bed of the merchant in the purlieus of Saffron Hill. The unsold residue is hashed up again, however far gone in decomposition it may happen to be. As the activity of pathogenic bacteria is only temporarily inhibited by the process of freezing, very little hindrance is opposed to their incubation under the favourable conditions afforded by their nocturnal depository. In addition to these circumstances, every provision is made for the transference of communicable diseases from the children themselves, owing to the Italian conception of cleanliness as applied to the washing of the spoons and glasses used by them. Surely it is time that the sale and manufacture of this disgusting and dangerous delicacy was controlled and regulated by law.

PUBLIC RECOGNITION OF PLAGUE WORK IN INDIA.

THE outbreak of plague in India found the Government and the medical and sanitary executive, unused to so rare a visitant, unprepared for the emergency. Moreover, it startled and alarmed the native population. Mistakes were no doubt made—many and grave—in dealing with the crisis, and signs of impatience and resentment were manifested when measures uncongenial to native sentiment and habit had to be resorted to. The rulers of India soon rose to the occasion, and made a great effort to meet the new evil, and that effort has been nobly carried into practical execution by the medical executive. The plague work done by doctors, whether official or non-official, European or native, has undoubtedly been most admirable and efficient, and quite in consonance with the traditions of the medical profession and the Indian Medical Service. Some of the more prominent workers have received public recognition in the shape of titles. Where all have done so well, the decoration of the few must be accepted as an honour to the many. What is really more valuable and significant in evidence of the good work done by the doctors on plague duty is the recognition of their services by the press and public. The distinguished services of Surgeon-Captain Lloyd Jones, Health Officer of Poona, and of Dr. Choksy, Assistant Health Officer of Bombay, have, we observe, been thus acknowledged by the communities among and for the benefit of which they so sedulously and successfully performed duties not only arduous but often distasteful to those for whose welfare they wrought. There is a feeling, and it is not an uncommon one on such occasions, that the plague work done by medical men in India has not received adequate public notice and reward. We are glad to notice that the Secretary of State for India has stated that the authorities in India are fully aware of the excellent service that has been rendered for India by civil, by medical, and by military officials, as well as by many non-officials, in the arduous campaign against the plague. We hope that Lord George Hamilton's further promise that the work so done will not be forgotten will shortly be fulfilled.

"COMPULSORY SICK CLUBS."

SO-CALLED compulsory sick clubs are sick benefit societies formed at large works for the mutual advantage of employer and employed, and are nearly always liberally subscribed to by the former. For obvious reasons, it is better that there should be a special surgeon appointed to works where large industrial enterprises are being carried on, both on account of the risk of accidents and in order that there may be a medical man cognisant of the nature of the work done there, and able to report on its general effect on the workmen. Experience has shown that the best way to support such an officer is to allow the men to elect him themselves; and for the success of such a system it is requisite that as many men as possible should join the society. It is not unnatural, then, that where there is competition for their employment, the employers should give the preference to those who are willing to support the sick club. The *Times* of June 18th reports a crowded meeting of delegates of friendly societies to protest against compulsory sick clubs. A resolution was carried by acclamation earnestly protesting against any employer of labour having the power to compel his employees to join the work's sick club as a condition of hiring, or under such compulsion to cease their membership in any friendly society to which they may belong; and expressing a desire at once to approach members of Parliament with a view of obtaining their assistance to secure such an amendment of the law as will make it illegal for employers to require as a condition of employment that their employees shall contribute to a shop club or any other benefit society in connection with their works. Colonel Hughes, M.P., is reported to have said that, in support of this principle, he would even vote, if necessary, against his own party in the House of Commons. This seems to be a new feature in the war which some agitators seek to provoke between capital and labour.

THE NEW SERVICE BULLET.

A DESCRIPTION of the new service bullet which has been invented to supersede the Dum-dum bullet was published in the *Times* of June 28th. The Dum-dum bullet was introduced in India for the purpose of stopping the rush of fanatics ("ghasi"). It is a solid bullet of hardened lead enveloped in nickel all but the point, which was left bare, so that on impact the bullet "set up," or expanded, inflicting much more severe wounds than the fully-enveloped bullet, which in most cases passed through the body unaltered, much as if it were a bolt of steel. It is stated that the new service bullet is of the same diameter (0.303), the same length (1§ inch), and the same weight (215 grains) as the Lee-Metford. "The case is of nickel, the base only being left empty" (*sic*)—it is evident here that "case" means the "envelope" of the bullet, not the cartridge case. The conical end is left empty, and when it strikes a man burrs, opens backward, and lodges in the body, penetration being lessened and shock increased. We have not seen the bullet in question, and are dependent on the *Times* report; but as we read it the new

bullet seems in some ways to resemble the later pattern Snider bullet in which there was a cavity in the conical apex, which, containing air compressed on impact, burst open violently and inflicted most severe wounds. In the bullet it would appear that the cavity will be formed by the nickel envelope being left empty in the nose or apex, and on impact the compressed air will act as an explosive, burst and burr the envelope, which, spreading open, will present a large striking surface, and cause immense injuries to trunk and limbs. It would be interesting to know if any experiments with this new bullet have been made on the bodies of animals in the presence of military surgeons, and, if so, what their report has been. Professor v. Bruns made some incisive remarks on the Dum-dum bullet, going so far as to call it an inhumane projectile; but if the new service bullet acts as it is reported to do, probably some stronger language will result.

PHOTOGRAPHERS' POISONS.

It has been suggested that, as pyrogallic acid is commonly sold to amateur photographers without question, and even without the precaution of putting a "Poison" label on the bottle, harm might result from the practice. This is true; but at the same time it must be admitted that pyrogallic acid is not a very active poison. It is largely employed in Germany, under the name of "pyrogallolium," not only in photography, but in the composition of hair dyes and marking inks. In 1878 Jarisch advocated its adoption in psoriasis, lupus, chronic eczema, and other skin diseases. Neisser reported a case of fatal intoxication following inunctions of one half the body with a 10 per cent. pyrogallic acid ointment, and Personne found that 2 grains would kill a dog in sixty hours. In spite, however, of its extensive employment, well-authenticated cases of poisoning in the human subject are rare. The symptoms produced are nausea, vomiting, diarrhœa, prostration, anæmia, and dyspnœa. The cause of death is usually hæmoglobinuria and nephritis. Though pyrogallic acid is a more dangerous remedy than chrysarobin, there is but little to fear from it when applied to limited areas. The fact that its fatal dose cannot be stated with accuracy is a pretty good proof that it is not an active poison. The best antidote is said to be turpentine, but this is mere supposition. Practically photographers run very little risk in using this substance in their manipulations.

NEWSPAPER PRESCRIPTIONS.

We are indebted to Mr. Leopold Goffe, M.B., House-Surgeon to University College Hospital, for calling attention to another serious case of reckless prescribing in a ladies' paper. A correspondent—presumably a woman—is directed to dissolve sulphate of quinine in alcohol "by gentle heat." The danger of such a procedure in unskilled hands is at once apparent. Even with elaborate precautions and the appliances of a laboratory Mr. Goffe found in one of his experiments that before he could turn round to get the quinine out of the bottle the whole of the alcohol was in flames. Had this occurred in an ordinary bedroom the luckless victim of misplaced confidence would in all probability have been burnt to death, and we should have had another instance of human cremation similar to that which not long ago followed the explosion of a paraffin hairwash. As we have pointed out before, the proprietor of a newspaper who allows such dangerous directions to appear in his columns incurs a very grave responsibility. This is a striking example either of incapacity or of gross carelessness, for no one with knowledge of the properties of alcohol could have made such a mistake. As an illustration of the value to be attached to these gratuitous prescriptions we are in a position to state that not many years ago the medical column of a ladies' paper was for a time edited and written by a musical composer who had not even an elementary knowledge of either medicine or chemistry. It was only by a fortunate combination of chances that some of the more dangerous of his prescriptions were at the last moment prevented from appearing in print.

DEPOT SORE THROAT AT PORTSMOUTH.

We believe this epidemic, to which we recently referred, is diminishing, although it is rumoured that between 200 and 300 cases have been treated in Haslar Hospital alone during the outbreak. This may possibly be an exaggeration; if so, it is the fault of the naval authorities that no trustworthy statistics are available on this important subject. It is also said that a departmental inquiry has been held, by which it was decided that as only a certain percentage (under 5 per cent.) of the sailors in harbour had been affected, there was no ground for anxiety. Granted that only a certain percentage of men have been affected out of all the men in harbour, what of the men on certain ships—the *Duke of Wellington* and the *Marlborough*, for instance? Was the percentage there no higher? The factors which the medical authorities have to consider are: The condition of the harbour into which Fareham, where an epidemic of diphtheria was present only a few months ago, drains unchecked, as well as some of the Gosport forts and barracks; the water supply of the ships; the condition of the above and other receiving ships and hulks—some of which were built long before the Crimean war—and whose wooden walls are reported to be actually rotten; and finally the bacterial nature of the tonsillar exudation in the cases affected. Until this is publicly settled no satisfaction or comfort can be felt by the public or the families of those employed in Portsmouth Harbour.

ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

This Association, which originated some seven years ago, and has since grown rapidly, held its annual dinner at the Whitehall Rooms of the Hôtel Métropole on June 23rd. Dr. H. Fitzgibbon, ex-President R.C.S.I., President of the Association, was in the chair, and was supported by a large number of the members and their friends. Mr. T. F. Chavasse, in proposing "The Army, Navy, and Reserve Forces," remarked that members of the medical profession had died at their posts in discharge of their duties in every recent campaign; and that the medical profession considered it a grievance that only one of its members—Lord Lister—had ever been elevated to the House of Lords. Sir Walter Foster, M.P., who responded for "The Houses of Parliament," also dwelt on the great claim the profession had for a larger representation in the House of Lords, and hoped future Governments would not neglect it. Sir W. H. Wills, M.P., in proposing the toast of "The Postmaster-General and other Executive Officers of the Postal Department," referred to some curious anomalies, especially in the telegraph department, amongst which was the fact that 1,800 railway stations in the United Kingdom did not even appear in the *Post Office Guide*. Mr. Victor Horsley spoke pleasant things of the College of Surgeons, and Sir W. Mac Cormac, in reply, considered that the College had admirably fulfilled the trust committed to it by the Government nearly 100 years ago. Mr. Edmund Owen sympathised much with Mr. Horsley in his public efforts for the welfare of the profession. Mr. Ebenezer Davies proposed "The General Medical Council," and would like to see its chief officers adequately recompensed. Sir Dyce Duckworth, in responding, said the Council was carrying out the provisions of the Act under which it was established to the best of its ability. That Act was passed chiefly for the protection of the public; and it would be difficult to obtain an enlargement of the Council's powers from the present House of Commons, which cavilled even at the small

power now exercised by the Council. Dr. J. G. Glover also responded, but did not take the gloomy views of the Council's future held by the previous speaker. He thought the one defect of the Council was the inadequate representation thereon of the great body of medical practitioners. In responding for "The Association of British Postal Medical Officers," the Chairman said that when he was appointed there were only five such officers in Ireland; there were now thirty-seven, of whom all but one were members of that Association. In Great Britain there were upwards of 500. He considered it a grievance that either the passing or rejection of a candidate should afterwards be reversed by the higher authorities. Sir Dyce Duckworth explained that he was one of the final referees in London and that his decision was always taken if possible in consultation with the medical attendant of the patient and the medical officer of the department who had previously examined the candidate. He thought there should be a similar arrangement in other parts of the United Kingdom. Mr. E. Bond, M.P., in proposing "The Medical Press," passed a high eulogy on the late Mr. Ernest Hart. Dr. Alfred Gubb replied. The final toast, that of "The Hon. Secretary," proposed by the President-elect, Dr. Dougan of Glasgow, was very cordially received, and was acknowledged by Dr. R. R. Giddings of Nottingham, to whose efforts much of the success of the evening was due.

THE HEALTH OF THE JEWISH POOR.

In May, 1897, the Jewish Board of Guardians appointed a Committee to inquire into the increasing prevalence of consumption among the metropolitan Jewish poor, with a particular view to the adoption, if possible, of suitable prophylactic measures. The Committee examined, among others, a large number of medical men having special knowledge of the Whitechapel and Spitalfields districts, and made a report which has just been adopted by the Board. The conclusions arrived at were not quite what had been expected, and the labours of the Committee were consequently extended considerably beyond the limits of the original reference. It was found that there had not during the past 15 years been any increase in the number of cases of phthisis among the Jewish poor, allowance being made for the increase in the Jewish population of the East-end of London, but that there had been a considerable increase in the number of persons affected with chest complaints generally. It was further concluded that the latter class of cases has increased, and has come more frequently before the Board of Guardians for relief during the past 15 years because there has been during that period a great increase in the number of Jews employed in the tailoring, boot-making, and fur trades. These occupations are usually carried on in overcrowded rooms with heated atmosphere, some of the utensils being also heated. The workers, who mostly come from Russia and Poland, as a rule object to open their windows and admit any fresh air. They come from a climate which, though cold, is dry, but after they have been here for some time the humidity of our climate, their privations, and the occupations which they follow in crowded rooms and vitiated air, tell on their constitutions, and they become affected with chest complaints of one kind or another. The Committee points out the infectious nature of tuberculosis, and emphasises the fact that it and most of the other chest affections are preventable to a large degree. Rules are given for the disinfection of tuberculous sputum, and the prevention of contagion generally, and it has been decided to circulate copies of the excellent and well known pamphlet, *Hints about the Prevention of Consumption*, by Dr. Russell, of Glasgow. In the absence of official notification it is laid down that the Board of Guardians shall be informed of any case of phthisis among its clients, whereupon an inspector will be sent down to ensure the sanitary conditions being rendered as little dangerous to the rest of the family as circumstances will allow. For prophylaxis against other pulmonary diseases more rigid inspection of workships is suggested; this applies more particularly to the domestic workships in which overcrowding and insanitary conditions generally reach their acme. The report is excellently drawn up, and its conclusions are, as will have been gathered, wise and far-seeing. It is only to be hoped that their practical outcome will be the permanent amelioration of the conditions into which the Committee was instructed to inquire.

THE TRIAL OF W. M. COLLINS.

The trial of W. Maunsell Collins, M.D., formerly a registered medical practitioner, which commenced at the Central Criminal Court, involves so many questions of medico-legal interest that it has been thought well to obtain a special report giving the evidence bearing on the medical aspects of the case more fully than it is to be found in the daily newspapers. The portion of the report which will be found at page 59 contains the proceedings of the first three days, and comprises the opening speech of the Attorney-General, the examination of the husband of the deceased lady, of the maid and nurses who waited upon her during her illness, of Mr. Troutbeck, the coroner who conducted the inquest, and of certain other less important witnesses.

THE SANITARY INSTITUTE.

The sixteenth Congress of the Sanitary Institute, which will be presided over by Sir Joseph Fayrer, Bart., K.C.S.I., M.D., will be held in Birmingham from September 27th to October 1st. The local arrangements are in the hands of a Committee of which the Lord Mayor of Birmingham is President, and Professor A. Bostock Hill, Mr. W. Bayley Marshall, and Mr. J. E. Willcox are Honorary Secretaries. Over 300 sanitary authorities, including several county councils, have already appointed delegates, and as the Institute numbers over 2,000 members and associates, a large attendance is expected. The work of the Congress will be conducted in three sections: (1) Sanitary Science and Preventive Medicine, presided over by Dr. Alfred Hill; (2) Engineering and Architecture, presided over by Mr. W. Henman, F.R.I.B.A., and (3) Physics, Chemistry and Biology, presided over by Dr. Sims Woodhead. Five special conferences will be held, including a conference of medical officers of health under the presidency of Dr. John C. McVail. There will also be conferences of municipal representatives, of municipal and county engineers, of sanitary inspectors, and a conference on domestic hygiene presided over by the Lady Mayoress of Birmingham. There will be three general addresses and lectures, and Dr. Christopher Childs will deliver the lecture to the Congress. The popular lecture will be given by the Vice-Chancellor of Cambridge University, Dr. Alex Hill. In connection with the Congress a health exhibition of apparatus and appliances will be held. These exhibitions in previous years have not only been found to be of great use to members of the Congress, but have been valuable also in diffusing sanitary knowledge among large classes who do not habitually attend congresses.

STREET NOISES.

The debate at the London County Council on the report of a committee recommending the adoption of certain by-laws as to street cries, steam organs, noisy animals, lights to vehicles, and street betting, ending, as it did, in the rejection by a large majority of a by-law providing that persons hawking, selling, or distributing any article shall not shout or make other loud noise as to cause nuisance or annoyance to residents or passengers, will appear to most

persons who have to earn their living in London to be a deplorable exhibition of incapacity. Costermongers or street hawkers were specially exempted from the operation of the by-law, and the arguments used by Mr. Stuart, M.P., and his friends who compassed the rejection of the proposed by-law, can only be described as clap-trap of the purest order. It is quite impossible that this can be regarded as a final settlement. The rich suffer, no doubt, from the outrageous licence permitted, and they are able to give more articulate utterance to their suffering, but a by-law of this kind is required far more in the interests of the poor and of those intermediate classes who live in those houses of small streets which cover the northern and eastern and southern parts of the metropolitan area. A street of this order is for many hours of the day a kind of pandemonium. The whole thing is absolutely unnecessary. The convenience to the inhabitants of having certain articles which they want brought to their door, by no means outweighs the suffering caused to the sick and weak, especially to children and women, by the howling of hawkers, who desire to sell things which can be bought of better quality and at a cheaper price in neighbouring business and market streets.

A "NON-COMBATANT" KILLED IN ACTION.

WE commend to the attention of those official persons who insist on the non-combatant character of medical officers in the army and navy the fact that one of the first of the American invading expedition in Cuba to fall in action was an assistant surgeon in the navy. Dr. John Blair Gibbs was killed during the night attack by the Spaniards on the United States Marines at Guantanamo on June 12th. He was not only the first commissioned officer of the United States to fall on Cuban soil, but he was the only one killed in the action. Dr. Gibbs took his degree in the University of Pennsylvania in 1891, and after a scientific *Wanderjahr* in Europe he became connected with the Roosevelt Hospital, New York; he was also instructor in the Post-graduate School. He gave up a substantial practice to enter the navy of the United States as soon as a call was made for men of all ranks and professions to take part in the defence of their country. He applied for a commission in the navy, and, after passing the necessary examination, was appointed to the *Panther*. Dr. Gibbs came of a military family, for his grandfather had done his part in fighting for the independence of the United States, and his father had served in the Mexican and Civil wars.

A LOCAL MEDICAL PROTECTION SOCIETY.

THE "East Suburban Medical Protection and Medico-Ethical Society, Limited," is the outcome of a movement among the medical men of the east suburban districts of London for the protection of their professional interests. The movement had its origin in a protest by more than fifty local medical men, on the initiative of Dr. Charles Allen, against the proposed establishment in East Ham of a branch of the Plaistow Maternity Charity and District Nurses Home. At a representative meeting held in January, a resolution was passed that a permanent medical society should be organised to deal with this and other matters affecting the profession. The new society was in due course placed on a legal basis. The first statutory meeting was held at the West Ham Hospital, Stratford, E., on June 23rd, and was largely attended by practitioners from Forest Gate, Upton Park, Canning Town, Barking Road, Leyton, Leytonstone, Walthamstow, Bethnal Green, Ilford, and other neighbouring districts. Over thirty new members were elected at the meeting. After the election of an executive council, the President, Dr. F. J. Smith, Senior Assistant Physician to the London Hospital, delivered an address in which he explained that the result of the action taken by the Society was that the maternity part of the proposed branch of the Plaistow Institution was abandoned. In consequence of a request from the Committee of the parent institution, a Subcommittee of six met certain members of the Committee of the Plaistow Maternity Charity. As a result of this conference, some changes in the management of the institution were made, but these were not considered satisfactory. The President further referred to a proposal which had been made to start a new hospital and dispensary in East Ham. The Society, in the face of determined lay opposition, succeeded in obtaining a representation of 25 per cent. of medical men on the Committee of the hospital scheme, thus ensuring that the views of the profession will be represented. In answer to inquiries the Secretary stated that a scheme for the formation of local branches was under consideration; that a scheme for keeping a "black list" had been drawn up for consideration of the Council; and that arrangements had been made to commence debt collecting at an early date. It was resolved that a general meeting should be held every quarter to receive a report from Council of work done in the interval. It was announced that clinical and social meetings would be held as soon as the necessary arrangements could be made, and as often as might be desired by the members. The Treasurer of the Society is Dr. Butler-Hogan, of Walthamstow; and the Secretary, Dr. Murtaugh Houghton, Ilford.

THE PRINCIPALSHIP OF GLASGOW UNIVERSITY.

THE Very Rev. Robert Herbert Story, D.D., the Professor of Ecclesiastical History in the University of Glasgow, has been appointed by the Queen to the office of Principal, vacant by the resignation of Dr. John Caird. The Very Reverend Principal Story is a son of the Rev. Robert Story, Minister of the Parish of Roseneath, Argyllshire, where he was born in 1835, and where he succeeded his father in 1860, after a probation in the Church of St. Andrew, Montreal. In 1886 he became a Professor in the University of which he is now the executive head, and in the same year was appointed a chaplain to the Queen. Dr. Story is a commanding personality in the Church of Scotland, having been Moderator of its General Assembly four years ago, and occupying at present the office of Principal Clerk. He is the author of numerous theological works. Principal Story will worthily maintain the dignity and traditions of the ancient Scottish seat of learning, while his grasp of affairs, and his fitness to lead, should do much to maintain the prosperity and progress of the University.

FORFARSHIRE MEDICAL ASSOCIATION.

THE annual meeting of the Association was held on June 9th, in the University College, Dundee, Dr. Alex. Campbell, Dundee, President, in the chair. It was resolved to hold the next annual meeting at Carnoustie. Dr. Paton, Carnoustie, was unanimously elected President for the ensuing year. Dr. Buist moved, and Dr. Templeman seconded, "That the Forfarshire Medical Association memorialise the Government to amend the Local Government (Scotland) Act, 1894, in so far that tenure of office on the part of medical officers in the service of parish councils shall henceforth be *ad vitam aut culpam*, and shall not be liable to be arbitrarily at the will and pleasure of parish councils." Dr. Byrom Bramwell, Edinburgh, gave an interesting address on Pernicious Anæmia. The annual dinner of the Association was held in the Queen's Hotel, Dundee, Dr. Alex. Campbell in the chair. After the usual loyal and other toasts, Dr. Hector Cameron proposed "The Forfarshire Medical Association," emphasising the fact that the Association kept clear of ethical and medico-political questions, and devoted its energies to the cultivation of medical science. Dr. Sinclair gave the toast of "The Scottish Universities and Medical Schools," to which Principal Mackay replied. Dr. Byrom Bramwell proposed "The Infirmaries and Asylums of Forfarshire," and in

doing so spoke of the high efficiency and excellent general equipment of these institutions. Drs. Rorie (Royal Asylum) and Fraser (Royal Infirmary) replied. Dr. MacEwan proposed "The Fifeshire and Perthshire Medical Associations," which was responded to by Dr. Constable, Leuchars.

MEDICAL REFEREES UNDER THE COMPENSATION ACT.

WE understand that the Secretary of State for Scotland has undertaken the duty of appointing medical referees in Scotland under the Workmen's Compensation Act. There seems to have been some legal objection to delegating this duty, which the Act appears to impose on the Home Secretary, to the Secretary of State for Scotland; but the practical convenience of the proposal, which is in accordance with the spirit of recent legislation, has been felt to outweigh any technical objections. The duties of medical referees under the Act and the terms of their appointment were fully stated in the BRITISH MEDICAL JOURNAL of April 23rd, page 1088, and May 14th, page 1289.

SICK PRISONERS.

IT has been decided by the Prison Commissioners that in future, in the event of any serious illness of a prisoner requiring, in the opinion of the medical officers, more efficient nursing than can be provided by the infirmary staff, governors of prisons will be authorised to obtain from any local nursing institution the assistance of skilled and trained nurses for that purpose. Medical officers will be very glad of this salutary change. Hitherto the nursing of serious cases has been carried on under special difficulty, more particularly in small prisons where, with an average of one or two patients only in hospital, the officers detailed for looking after them were of necessity lacking in experience. Under the local authority nursing was mainly carried out on the old workhouse system by means of fellow prisoners. The Commissioners have done much from time to time to improve this by placing officers who have gained hospital experience in the army, navy, and elsewhere, in charge of prison infirmaries, and also by granting special attendants from outside for infectious and serious cases, and carrying out recommendations of medical officers in regard to nursing in special cases. Owing, however, to the difficulties connected with, and the expense involved in, securing nurses for prison work, medical officers have not had hitherto at their disposal the skilled help which is so essential in many cases of illness. We congratulate the Commissioners on this much-needed reform.

THE ORIGIN OF ARTIFICIAL MINERAL WATERS.

MR. WILLIAM KIRKBY recently published[1] some particulars of Thomas Henry, the eighteenth-century apothecary of Manchester, whose name has long been associated with the invention of artificial mineral waters. Mr. Kirkby, however, proves, on evidence supplied by Henry himself that this honour does not rightly belong to him. Henry translated and annotated Lavoisier's *Physical and Chemical Essays*, in which the history of carbonic acid gas and the endeavours to make artificial mineral waters were fully set forth. His notes show that he had a thorough acquaintance with the subject, but they also conclusively prove that he had no idea of claiming the invention as his own. Rouelle and Lavoisier gave the credit to Venel, who was Professor of Chemistry in the University of Montpelier, but Henry successfully vindicates the priority of the invention for "a very worthy and learned countryman, Dr. Brownrigg (of Whitehaven)." Venel's experiments were not communicated to the Royal Academy of Sciences till 1750, and he supposed the air contained in waters which have been called "acidulous" to be common atmospheric air. But seven years before this, in 1743, Brownrigg sent a paper on the subject to the Royal Society, in which he pointed out "that a more intimate acquaintance with those nitrous airs in mines called damps might lead to the discovery of that principle of mineral waters known by the name of the spirit; that the mephitic exhalations termed the choak damp he had found to be a fluid permanently elastic, and from various experiments he had reason to conclude that it entered the composition of the waters of Pyrmont Spa and others, imparting to them that pungent taste from which they are denominated acidulæ, and likewise that volatile principle on which their virtues chiefly depend." Henry adds that "in order to ascertain a fact of so much consequence, Dr. Brownrigg took the opportunity when at Spa several years before to make some experiments for this purpose, when he had the satisfaction to find those waters pregnant with the artificial or factitious air of Mr. Boyle, the same with that of the suffocating grotto near Naples, and the same with the choak damp of our coal mines; for as much as this air instantly extinguished flame, and the life of those animals he enclosed in it." In 1767 and 1768 Priestley made some experiments upon the artificial impregnation of water with "fixed air," and in 1772 he returned to the subject in the hope of being able to devise a drink that should be a prophylactic against the scurvy in seamen. Priestley's apparatus was extremely simple, and was very soon improved upon by Nooth, Parker, and Magellan (Mag'alhaens). It was with a view to improving upon the glass machines then in use that Henry designed the apparatus described in a pamphlet the title page of which is as follows: "Account of a Method of Preserving Water at Sea from Putrefaction and of Restoring to the Water its Original Pleasantness and Purity, to which is added a Mode of Impregnating Water in Large Quantities with Fixed Air for Medicinal Uses on Board Ships and in Hospitals, and Likewise a Process for the Preparation of Artificial Yeast. By Thomas Henry, F.R.S., and Member of the Medical Society of London, Warrington. Printed by W. Eyres, for J. Johnson, No. 72, St. Paul's Churchyard, London. MDCCLXXXI." The portion of this pamphlet dealing with the impregnation of water with fixed air, which Mr. Kirkby quotes, affords indisputable proof that Henry claimed for his apparatus nothing more than that it made it possible to prepare aërated water on a larger scale than heretofore. Thomas Henry therefore was a pioneer in the manufacture of artificially aërated waters, but the credit of the invention belongs to Dr. Brownrigg of Whitehaven.

[1] The *Pharmaceutical Journal*, June 4th.

GLASGOW ROYAL INFIRMARY.

A SECOND acknowledgment of subscriptions for the much-needed new dispensary buildings for the Western Infirmary, Glasgow, has been made. Fully £17,000 has now been subscribed, but a sum of £8,000 is still required to complete and equip the building.

IT is stated that the Press Bazaar held this week at the Hotel Cecil in aid of the funds of the London Hospital has resulted in the realisation of a sum exceeding £10,000.

THE first award of the Jenner medal of the Epidemiological Society has been made to Mr. William Henry Power, F.R.S., senior assistant medical officer of the Local Government Board.

MILK AND INFANTILE MORTALITY.—Dr. Arthur R. Reynolds, Commissioner of Health for the city of Chicago, states that since the Department in 1893 undertook the systematic and rigid supervision of the milk supply, the proportion of deaths of children between 1 and 5 years of age has fallen from an average of 19 per cent. of all deaths to an average of 14.25 per per cent. in 1897. In 1893 there were 178 deaths per 1,000 infants living in that year; in 1897 this had fallen to 134 per 1,000 living.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Vaccination Bill still occupies the attention of the Grand Committee on Law, which on Tuesday had only succeeded in disposing of the first two clauses. The progress has been unusually slow, and is endangering the passage of the Bill. There was an interesting discussion on June 24th on the virtues of glycerinated calf lymph, and Dr. Clark referred to some culture experiments of Dr. Klein, which seemed at first reading to throw some doubt on the value of the new preparation as a safeguard against the infection of tubercle and erysipelas in the process of vaccination. For a time the whole Committee was engaged in a quasi-scientific discussion. The President of the Local Government Board said that he was not an expert, but relied on experts, and did his best to defend the preparation of lymph named in the Bill. Sir William Priestley spoke strongly in favour of glycerinated lymph, and Sir Walter Foster afterwards made the matter clear to the Committee by pointing out that the experiments which had been quoted did not really apply, and that the care and supervision which the Local Government Board were prepared to give to the production of the glycerinated lymph were sufficient to make it a trustworthy preparation. After this matter was satisfactorily concluded by adding the words "any other lymph that the Local Government Board may issue," Clause 1 was passed with amendments preventing the vaccination of children in unhealthy homes, and with a concession as to preliminary notice to the parents of the time of the domiciliary visit of the public vaccinator. On Tuesday Clause 2, which provides for the abolition of repeated penalties for non-compliance with the Acts, was under discussion all day. The first point raised was the advisability of limiting prosecutions by making it necessary to have them sanctioned by the local authorities. The difficulties likely to arise when a Board of Guardians were opposed to action by their vaccination officer were pointed out, and it was urged that with a hostile Board it would be almost impossible for the officer to do his duty in enforcing the law, inasmuch as the central authority could not give him any effective support. The amendment was, however, rejected by a considerable majority. Sir William Priestley then carried an amendment against the Government to introduce words with a view to a new clause later on, which provides for the postponement of the second prosecution till school age (5 years), and sanctions the admission of a declaration of conscientious objection as a bar to this second prosecution. Colonel Long next moved to omit the second prosecution altogether, and so allow only one penalty for each child; this was defeated by a majority of 3. A further amendment to allow the same parents to be fined or punished only in the case of one child was also rejected, as was another proposal to lessen the fine so that it should not exceed 5s. inclusive of costs. After this the second clause was passed, and Clause 3, which deals with the regulations to be made by the Local Government Board, was reached. Here the Committee were met with a surprise, for Mr. Chaplin introduced as an amendment what was practically a new clause limiting the regulations to the duties and remuneration of public vaccinators. This alteration was considered, after some debate, to be too serious to accept without notice and time for consideration, as it would, if carried, have swept away some fifteen amendments at a single stroke; it was therefore agreed that the proposal should be put upon the paper and considered on July 1st. It is hoped that another sitting will dispose of this and the new clauses on the paper, and that the Bill may be reported, but the controversy over the clauses already passed does not augur well for the prospect.

The Prisons Bill as amended came on for consideration by the House on Tuesday night, and a question of much medical interest arose and was settled against the decision of the Grand Committee. The Bill had been amended so as to provide that one of the Prison Commissioners should be "a medical man skilled in mental diseases." The Home Secretary moved to omit these words on the ground that they were too narrowing in their effect. He expressed full concurrence with the desire that there should be a medical element on the Commission, and undertook to make an official note to that effect. It is no doubt true, as he contended, that the words would narrow very much his area of choice of the Medical Commissioners, but that was not regarded as a sufficient reason for taking all the words out of the Bill. The presence of a medical man on the Board was considered essential by the Grand Committee, and they decided to insert the words now left out by a majority of 25 to 8. The great majority of the Government in the House enabled them to alter this decision by 178 to 81, but it is open to grave doubt whether the Bill has been improved. There was much feeling among the prison reformers at what they regarded as "a breach of faith" on the part of the Home Secretary.

The New Warrant.—A number of questions have been addressed to the War Department and the India Office in regard to army medical matters. Replying to Dr. Farquharson, Mr. Powell Williams stated that the warrant constituting the Royal Army Medical Corps had been approved by Her Majesty, and would be published in the Army Orders for July.

INDIAN MEDICAL SERVICE.—In reply to Captain Norton, Lord George Hamilton said that the medical statistical officer to the Government of India had held this appointment for nearly twelve years. There was no limit to the tenure of the appointment, and in the absence of any proposals from the Government of India he saw no reason to disturb the present arrangement. In reply to the same hon. member, Mr. Powell Williams said there was no present intention of applying to officers of the Indian Medical Service the rules under which the military officers permanently appointed to civil employment were, after ten years' absence from military duty, placed on the supernumerary list.

BARRACK SCHOOLS.—Dr. Farquharson asked the President of the Local Government Board whether his attention had been called to a report by Dr. Willcocks, of the Charing Cross Hospital, by which it appeared that out of 82 children varying in age from 3 to 16 in the Barrack Schools of Hanwell, belonging to the Central London District, it was found that 30 were suffering from adenoid growths of the throat at the back of the nose, and 23 from enlargement of the tonsils, while in 9 cases there was considerable enlargement of the tonsils, and in several cases a discharge from the ear with perforation of the drum of the ear; and whether he would direct an inquiry to be made by the Local Government Board with a view of the best being done for each individual child?—Mr. Chaplin: I have already given directions for an inquiry with regard to the cases of the children referred to. I may, however, say that Dr. Willcocks in his report distinctly states that the school life and surroundings of the children cannot be held responsible in any sense for the adenoid disease, the disease being prevalent among children in all classes of society.

CALF LYMPH.—Replying to a query by Mr. Channing, who wished to know whether the calves from which lymph would be taken for vaccination would be submitted to the tuberculin test, and those calves excluded from use which were shown by the tuberculin test to be suffering from tuberculosis, Mr. Chaplin, President of the Local Government Board, said that the proposal of the hon. member would be unnecessary because he was making arrangements by which each calf from which lymph had been taken would be slaughtered and examined by a competent expert, and no lymph would be issued from any calf until it had been ascertained and certified on *post-mortem* that the animal was not only free from all signs of tuberculosis, but that it was also healthy in other respects.

PROVISIONS OF THE WORKMEN'S COMPENSATION ACT.

There are three classes who are specially interested in the Workmen's Compensation Act which came into operation on July 1st employers, insurance agents, and medical men. The working men for whom the Act was passed are apparently taking little more than a passive interest in the measure. While among them there has been no outburst of enthusiasm, considerable anxiety has been displayed on the side of employers as to how trade will be affected by the fresh burden imposed upon it. It is difficult to say to what extent the scheduled industries will be touched by the operations of the Act. This uncertainty is exhibited in the difference in terms offered by various insurance societies in agreeing to take the financial risks off the shoulders of employers. At present insurance offices have no precedent definite enough to guide them in calculating the anticipated risks. Under the Employers' Liability Act, 1880, which was to some extent a preface of the Workmen's Compensation Act, 1897, there were tried last year in the English county courts 258 cases, and the amount of compensation awarded was £12,540 out of £36,943 claimed; in Scotland there were 310 claims for

£67,952, while the amount awarded only reached £848; and in Ireland, while there were 40 claims for £5,102, the sums awarded reached £1,009.

Under the Employers' Liability Act the basis of action is negligence on the part of the defendant or of some responsible person, but under the Workmen's Compensation Act the scope of employers' liability is much widened. In the trades specified, namely, railways, factories worked by steam, water, and electricity; docks and wharves; laundries worked by mechanical power; mines, quarries, engineering establishments; and in the construction, repairing, and demolition of buildings exceeding 30 feet in height, all accidents other than those due to the serious and wilful misconduct of a workman are provided for. The Workmen's Compensation Act still leaves untouched, however, actions for damages from persons who independently of the Act would be liable in respect of negligence; but as no employer is liable to pay twice for an accident, the injured workman must choose between bringing an action under the Employers' Liability Act, 1880, or claiming compensation under the Act, 1897.

To many it may seem hard that an employer should be liable for an accident caused by the negligence of one fellow workman to another. Thus, however, the law stands. It insists upon each industry bearing its own burdens. Any hardship there may be is apparent rather than real, for the tax ultimately will not fall upon the employer. He may have to bear the initial brunt of it until it is seen how the Act operates.

Three years' wages may seem a large sum for an employer to pay to the dependent of a working man killed by accident. The Act stipulates £150 as a minimum and £300 as a maximum. Taking the average earnings of an artisan, it has been estimated that they come to £180 in three years; £150 paid down is a big sum, doubtless, when drawn from the pocket of a small employer, and it is this class who will feel the burden the heaviest, but he will act wisely by insuring at once against risks. After all, £150 invested in a life annuity at the post office only secures for a widow aged 40 years an immediate annuity of 2s. 10d. a week, by no means a fat living, particularly if there are children. The employer, in order to meet the claims incidental through the Act, will insure, and to pay the premiums he will be obliged either to lower the wages of his workmen, or the price of the article produced will have to be raised, and thus will fall upon the consumer, or, more correctly speaking, upon society in general, the cost of the risks to health and life of those who, while following the specified avocations, are spending their lives in its service.

This is as it ought to be. Here and there throughout the country adverse opinions have been expressed by employers in regard to the Act. As to the need for such provision being made for working men there is no question. Upon individual localities has been thrown the burden of maintaining those who have been pauperised through the death of the breadwinner of the family. By the Act this is primarily imposed upon the trade itself, and ultimately it falls upon the consumer. Employers of good repute have for years had established within their works mutual benefit societies to which men and masters have in varying proportions contributed, and these have proved of considerable advantage to families when through death by accident the head of a family has been removed. Such mutual societies will now disappear, and while in many instances workmen formerly engaged in factories where these societies existed would obtain more than they can under the Workmen's Compensation Act, yet the majority of working men were not protected at all, and it is for them and all that provision is now made. Hitherto, in the ordinary trade union benefit societies men have contributed to the fund 13s. a year, and for this they secured benefits less than those conferred by the Act. When the Workmen's Compensation Bill left the House of Commons, it was estimated that the cost upon the trades included would be 25s. per cent. upon the wages. It is now computed to be 32s. per cent. of the wages, an amount which is found to be the cost of the Workmen's Compensation Act in Austria under similar conditions. So far, then, as the employer in Britain is concerned, he is to-day brought face to face with a new feature introduced into the industrial conditions of the country: he has a fresh liability to meet, and this he can accomplish either through an insurance office or by a union of the trades themselves.

So much for the employers. As for insurance offices they will wait and watch, for by many people the Workmen's Compensation Act is looked upon as a leap in the dark, and hence the impossibility of foretelling its future. Mr. Chamberlain, who is believed to be mainly responsible for the measure, claims for the Act that it removes the great inducement to litigation of Mr. Asquith's Bill, and enables the employer to calculate and make due provision in advance for the liabilities he may incur.

While it may diminish litigation it is certain that the number of claims under the Workmen's Compensation Act will be large. Injured workmen will still have the right to avail themselves of the services of their own medical attendant, who may guide them in coming to an opinion as to the money value of the injury received, and be summoned to appear at the county court when the claim is disputed. But the Home Secretary has created a new appointment, that of medical referee under the Act. Medical men are appointed in the various county court districts, whose duty it will be to advise the judge as to the nature, extent, and gravity of the injury. The terms of the appointments have appeared in the pages of the British Medical Journal, and already the filling of several medical refereeships has been announced.

THE HAMPSTEAD HOSPITAL.

We have received from Sir H. Burdett, and from one of the medical practitioners of Hampstead, the prospectus and the sixteenth annual report of the Hampstead Hospital, an institution whose method and rules are extremely worthy of careful study at the present time, when so much attention is given to the scheme of "pay" hospitals. It is a mixture of the "free" and "pay" systems; and, although in our own opinion those systems should be kept apart, at least in the centre of London, we freely allow that this is a moot point to be settled by experience, and that there are many motives for combining the institutions in the suburbs, where no hospitals already exist for the receipt of accident and urgent cases, motives which do not exist in the immediate neighbourhood of large, well-appointed general hospitals. The general scheme of the hospital is thus stated in the report:

> The hospital was established in 1882; the general wards, from May 2nd, 1894, being free to the poor of Hampstead, Highgate, Hendon, and adjoining neighbourhood, on presentation of a subscriber's letter. A limited number of patients can be received without a subscriber's letter on payment of 12s. per week, as hitherto. These patients may be attended by their own medical man if desired. Private rooms from £2 2s. to £5 5s. per week, with ordinary nursing; special nurse £1 1s. extra. All cases of accidents admitted free. The private wards are open to all qualified medical practitioners who can attend their own patients.

The experiment seems to have worked satisfactorily during the sixteen years for which it has been tried, and it comes before the public now with the great recommendation, as its promoters claim, of having, in the judgment of the medical men of the neighbourhood, supplied an admitted want, and enabled them to treat the rather numerous class who are not exactly fit subjects for charity, and who yet are not able to meet the expense incident to grave injury or disease under ordinary circumstances.

We call attention to the scheme, mainly in the hope of attracting the attention of the practitioners of Hampstead, and eliciting from them an authoritative opinion on this subject. If the Hampstead Hospital has solved the difficult problem of uniting the interests of hospitals and private practitioners, it is obvious that it deserves liberal support in its own district, and widespread imitation throughout the country.

Its present need is for £10,000 in order to build a properly-constructed hospital. At present the work is carried on in ordinary dwelling houses. We presume that there will be very little difficulty in raising such a sum in so rich a district, if only the benefits of the hospital are generally admitted by its inhabitants. But our interest is mainly in the general question, whether this hospital holds up an example worthy of general imitation; and this question, we hold, can best be settled by the verdict of the medical men who are acquainted with its working.

MEDICAL WAR NEWS.

Reported Outbreak of Yellow Fever among the American Troops in Cuba.

It is announced from Madrid, under date of June 28th, that a telegram from Santiago de Cuba states that 300 men in General Shafter's army are suffering from yellow fever. General Shafter himself, however, telegraphed to Washington on the same date that the health of the troops is remarkably good, there being fewer than 150 men on the sick list.

News has come from Monte Video that at the request of the Spanish Government a quantity of Dr. Sanarelli's serum against yellow fever has been sent to Cuba.

A Permanent Naval Hospital Corps.

Senator Hale recently reported a Bill providing for the organisation of a hospital corps for the navy, which has already passed the house. The Naval Committee recommends favourable action on the measure, but proposes to amend it by striking out the provision disbanding the corps at the expiration of the present war, thus making the corps permanent.

Records of Sick and Wounded in Time of War.

The Act of the United States Congress, approved April 22nd, 1898, authorising the organisation of the volunteer army, requires all regimental and other medical officers serving with volunteer troops in the field or elsewhere, to keep a daily record of all soldiers reported sick or wounded, as shown by the morning calls or reports, which records at the disbandment of the organisations will be filed in the record and pension division of the War Department. To permit of this ultimate disposition of the medical records of the volunteers without interfering with the medical histories of men belonging to the regular army medical officers, who may have under their care patients belonging to both organisations, will have to keep a separate set of records for each organisation. The Surgeon-General of the army has therefore called upon the surgeons in charge of general hospitals to have separate registers of patients, and monthly reports of sick and wounded made for regular and volunteer troops. Similar instructions have been issued to surgeons in charge of hospitals in the field in which regulars and volunteers are likely to be treated side by side. In time of peace monthly reports of sick and wounded are required to be forwarded in duplicate, one copy to the Chief Surgeon and the other direct to the Surgeon-General; but during the war only one copy is called for, to be forwarded from general hospitals direct to the Surgeon-General and from field hospitals to the Surgeon-General through chief surgeons.

Medical Attendance on Soldiers' Families.

According to the *Toledo Medical and Surgical Reporter* for June, at a recent meeting of the Toledo Medical Association a resolution was passed offering to the General Citizens' Relief Committee the free services of medical practitioners to such families of soldiers as they may recommend as being in need of gratuitous medical attention.

Baking of Bread in the Field.

The special correspondent of the *Medical News* (June 11th) at Tampa (Captain and Assistant-Surgeon H. T. Raymond) gives an interesting account of the baking of bread in the field with the portable ovens described in the *Manual for Army Cooks* issued by the United States War Department. Brigade-Commissary First Lieutenant Arthur Johnson, 17th Infantry, finding that his regiment was taxed 100 lbs. of bread for the baking of 196 lbs. of flour by a civilian baker, purchased two small portable ovens of a capacity of 96 loaves each, and sufficient when worked by two soldiers to supply a regiment with its bread ration. These ovens were manufactured at Tampa at 24 hours' notice, and were readily "set up" underground in the field. The following is the description of the ovens and the method of using them as given in the *Manual* referred to:

> The body of each oven is made of two pieces of $\frac{1}{16}$ inch sheet iron (sheet steel). These sheets are 5 feet long by 2 feet 6 inches wide, and so curved that, when their upper edges are connected and the lower edges fixed in the ground, they form an arch, the span of which is 3 feet 9 inches, and the rise 1 foot 4 inches. The lower edge of each sheet is bent outwards into a flange, so as to secure a firm rest on the ground. On the inside of each sheet are riveted three longitudinal bars, 1 inch wide and $\frac{3}{8}$ inch thick, and on the outside five transverse ribs, $1\frac{1}{2}$ inch wide by $\frac{3}{8}$ inch thick. The upper ends of the transverse ribs on one of the sheets are formed into hooks, and those other sheets into eyes, by means of which the sheets are securely attached to each other along the ridge of the oven when erected. (The front of the oven is closed by a sheet iron or steel door with a handle.) When the soil is of clay or of other favourable quality, the rear end of the oven may be closed by the natural earth, but if it is sandy or loose, a sheet-iron plate will be required to close it. No chimney is necessary. When set up, the whole, excepting the door, is covered with a mass of earth 8 inches in thickness.
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> The depth of the earth is named for the reason that a larger quantity would be liable, from its weight, to bend the iron when heated, and a smaller quantity would allow too much heat to escape. An excavation 3 or 4 feet in depth should be made a foot or two from the door for the convenience of the baker. Two hours are required for heating the oven at first starting, but for each heating immediately following one hour will be sufficient. A small quantity of wood is placed in the oven at the extreme rear, and ignited, the door being kept open to afford a draught and a vent for the smoke. Small quantities of wood should then be added as combustion progresses. In this way the fuel will burn more freely and the oven be heated quicker than if all the fuel necessary for the heating were put in at once. As soon as the oven is at a white heat the ashes should be raked out, the floor swept clean or the sheet-iron floor put in, and the dough in pans introduced. The time required for each baking is about forty-five minutes. The oven can be erected and prepared for use in fifteen minutes, and if kept in constant operation for twenty-four hours can bake sufficient bread for 1,000 men. By the use of two of these ovens, therefore, a regiment of 1,000 men, if it make a halt of fourteen hours hours each day, can be supplied with fresh bread daily on the line of march. Ordinary kneading troughs can be made and placed on trestles, or they may be fixed on the ground and trenches excavated near them for the kneaders to stand in.

Compressed yeast may be used under ordinary circumstances, but it should be kept on ice. The rising with this yeast will take from four to six hours. It is more practicable, however, for troops going into Cuba to make use of a dry yeast (yeast foam, yeast powder) that is guaranteed not to deteriorate for three months from time of manufacture. The rising process with the dry yeast will consume eight or ten hours. A hospital tent should be allowed for a bakery, and two men from the fighting force can well be spared as bakers.

LITERARY NOTES.

One of the first books revised in accordance with the new *Pharmacopœia* is that of Dr. Hale White, the third edition of his *Materia Medica, Pharmacy, Pharmacology, and Therapeutics* having just been published. Other works in the press based upon the *Pharmacopœia 1898* include a new book entitled *Practical Pharmacy*, by Mr. E. W. Lucas, Examiner to the Pharmaceutical Society; the twelfth edition of Beasley's *Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias*, revised by Mr. J. O. Braithwaite; the seventeenth edition of Squire's *Companion to the British Pharmacopœia*; it is not expected that this will be issued before the end of September. The publishers of these works will be Messrs. J. and A. Churchill.

Dr. Ernest Bark (Birmingham) writes with reference to the article on Sir John Floyer, which appeared in the British Medical Journal of June 18th:

> In your article on Sir John Floyer there is mentioned a receipt book—"Collections from our Country Receipt books and salmon (?)." I have a book published in 1685 by William Salmon, professor of physick at the Blue Balcony by the Ditch-side nigh Holbourne Bridge. This is a translation of the *Pharmacopœia Londinensis*, "together with some choice medicines added by the author," and is a very likely source from which Sir John Floyer might cull some of his prescriptions. It was a popular work, as the edition of 1685 was the third in nine years.

M. Laborde presented to the Académie de Médecine at its meeting on June 21st a work which will shortly be published entitled *Léon Gambetta: Biographie psychologique; Le Cerveau, La Parole, la Fonction et l'Organe; Histoire Authentique de la Maladie et de la Mort*. The work is the outcome of a minute examination of the brain of the deceased statesman, who was one of the original members of the Société d'Autopsie, a body of distinguished men who engage to leave their brains to be anatomised for the advancement of science. M. Laborde states that in the case of Gambetta the exceptional development of the faculty of speech corresponds to a proportionate development of the organ.

The *procès verbal* of the ratification of the International Sanitary Convention of Paris, 1894, and the supplementary declaration of October, 1897, was signed in Paris on June 20th by the Ambassadors of Germany, Austria-Hungary, Spain, Italy, and Russia, and the Ministers of Greece, Holland, Portugal, Persia, and the British plenipotentiaries.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on Wednesday, the 6th day of July next, at 2 o'clock in the afternoon.

The following Committees will also meet:

Tuesday, July 5th, 1898.—2.30 P.M., Vaccination Subcommittee.—3.0 P.M., Premises and Library Committee.—3.30 P.M., Parliamentary Bills Committee.—4.30 P.M., General Practitioners and Ethical Committee. *Wednesday, July 6th, 1898.*—10 A.M., Journal and Finance Committee.

July, 1898. FRANCIS FOWKE, *General Secretary.*

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1898.

MEETINGS of the Council will be held on July 6th and October 19th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before the latter meeting—namely, September 29th.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

CAMBRIDGESHIRE AND HUNTINGDONSHIRE BRANCH.—The annual meeting of this Branch will be held in Cambridge on Tuesday afternoon, July 5th, 1898. Members who desire to make any communications are requested to inform the Honorary Secretary as early as possible, in order that a full programme may be issued without delay.—JOSEPH GRIFFITHS, Honorary Secretary, 63, Trumpington Street, Cambridge.

NORTH OF ENGLAND BRANCH.—The annual meeting will be held at Sunderland on Wednesday, July 13th, at 4.30 P.M., when the President-elect, Dr. William Robinson, will deliver an address, and the officers of the Branch will be elected. The dinner after the meeting will take place at 6 P.M.—G. E. WILLIAMSON, F.R.C.S., Honorary Secretary, 8, Eldon Square, Newcastle-on-Tyne.

NORTH WALES BRANCH.—The annual meeting will be held at Llangollen on or about July 13th. Members having papers to read, cases to communicate, or specimens to show are requested to intimate the same before July 2nd.—W. JONES-MORRIS, Is-y-coed, Portmadoc, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The annual meeting will be held on Friday, July 8th, at Oxford. Dr. Brooks, the President-elect, kindly invites the members to luncheon in the Hall of Christ Church at 1.45 P.M. Full particulars will be sent to each member.—WILLIAM COLLIER, St. Mary's Entry, Oxford, Honorary Secretary.

SOUTHERN BRANCH.—The twenty-fifth annual meeting will be held at the Pier Pavilion, Sandown, Isle of Wight, on Friday, July 8th. The President-elect kindly invites the members to luncheon (from 1 o'clock) at the Pier Hotel. The general meeting will be held after luncheon. At this meeting the result of the polling for officers for the ensuing year will be declared. Mr. Bullar will move to amend By-law 9 as follows: "The Council shall in every year prepare a list of candidates willing to serve the various offices, to be proposed either by the Council or by any six members of the Branch, in writing to the Honorary Secretary before April 30th," etc. The Honorary Secretary will move to substitute the word "elected" for the word "nominated" in By-law 12. Members desirous of reading papers are requested to forward the titles to the Honorary Secretary at once. No communication must exceed seven minutes in length, and no subsequent speech must exceed five minutes. The address will be delivered by Mr. W. E. Green, President. Dr. Claremont will read notes of a case of Phthisis with Acute Endocarditis and Gangrene. Dr. Purvis will read a case of Intracranial Suppuration due to Ear Disease successfully treated by ligature of the internal jugular vein and trephining. Dr. J. Sinclair Coghill and his colleagues invite the members to tea after the meeting at the Royal Consumption Hospital, Ventnor. Members intending to avail themselves of the invitation will please communicate with Dr. Sinclair Coghill. Coaches will start for Ventnor after the business is concluded. Members intending to be present at luncheon are requested to communicate with Mr. W. E. Green, Belgrave House, Sandown, not later than July 6th.—H. J. MANNING, Laverstock, Salisbury, Honorary Secretary and Treasurer.

METROPOLITAN COUNTIES BRANCH.

THE annual meeting of this Branch was held at the Hotel Cecil on June 28th, Mr. FREDERICK WALLACE in the Chair.

Reports of Council and Treasurer.—The Report of the Council and the Treasurer's Report were read and unanimously adopted.

Election of Officers.—The following were elected to hold office during the ensuing year:—*President:* Dr. Farquharson, M.P. *President-elect:* Mr. Thomas Bryant. *Vice-Presidents:* Mr. H. T. Butlin, Dr. Crosby, Dr. Frederick Roberts, Mr. Frederick Wallace. *Treasurer:* Mr. George Eastes. *Hon. Secretaries:* Mr. H. Betham Robinson, Dr. Washbourn. *Members of Council:* Dr. Robert Argles, Mr. Bowlby, Mr. Campbell Boyd, Mr. George Brown, Dr. Dudley Buxton, Mr. Frederick Durham, Dr. Dundas Grant, Mr. George Greenwood, Dr. Major Greenwood, Mr. Brindley James, Mr. Hugh Ker, Dr. Norman Kerr, Mr. Howard Marsh, Dr. St. Clair Shadwell, Dr. Sansom, Dr. Knowsley Sibley, Mr. Tomes, F.R.S., and Dr. Dawson Williams. *Representatives of the Branch in the Council of the Association:* Mr. Andrew Clark, Dr. Cleveland, Dr. Radcliffe Crocker, Mr. George Eastes, Dr. Isambard Owen, Dr. Leonard Sedgwick, and Mr. H. Betham Robinson (Senior Hon. Secretary). *Members of the Ethical Committee of the Branch* (to serve for three years): Dr. Bridgwater, Mr. George Brown, Dr. Cleveland.

President's Address.—After votes of thanks had been proposed and carried to the retiring President and other officers, the new President, Dr. FARQUHARSON, M.P., was inducted into office, and delivered an address in which he dealt especially with medical matters that had been before Parliament, and expressed a hope that before long the number of medical representatives in that assembly might be increased. The President was cordially thanked for his interesting remarks.

The Policy of the Association.—Mr. R. B. ANDERSON then moved the following resolution:

That in the management of the affairs of this Association, the Branch commends to the Council and officers of the Association a policy of publicity and frankness in the face of adverse criticism; and of fearless admission to the JOURNAL of all exposure of the abuses of our institutions and injuries to the profession and the public, which it is one of the main objects of this Association to correct and to redress.

After fully explaining the objects of his resolution, Mr. Anderson withdrew it.

Dinner.—The meeting then adjourned to dinner, at which a large number of members were present. Dr. Farquharson was in the chair, and he was supported among others by Mrs. Garrett Anderson (Ex-President of the East Anglian Branch), Mr. Frederick Wallace, Dr. Glover, Mr. Fowke (Secretary of the British Medical Association), Dr. Dawson Williams (Editor of the BRITISH MEDICAL JOURNAL), Dr. Pavy, Dr. Isambard Owen, and Mr. Andrew Clark. After the usual loyal toasts had been honoured, "The Houses of Parliament" was proposed by Dr. GLOVER and responded to by Sir WALTER FOSTER, M.P., who vindicated his position on the vaccination question. Dr. HARE proposed "The Army, Navy, and Reserve Forces," which was replied to by Surgeon-Major LIGERTWOOD, Principal Medical Officer to Chelsea Hospital, and by Mr. ANDREW CLARK.—"The British Medical Association" was entrusted to Mr. FREDERICK WALLACE, and responded to by Mrs. GARRETT ANDERSON and Dr. DAWSON WILLIAMS.—"The Metropolitan Counties Branch" was proposed by Dr. FARQUHARSON and replied to by Dr. CLEVELAND; "The Visitors" by Dr. LEONARD SEDGWICK, and responded to by Prebendary SHELFORD and Mr. WASON; and "The President's Health" was given by Dr. PAVY, and terminated a very suc-

cessful evening. During the dinner the Cecil Viennese Orchestra gave a programme of music, and afterwards Mr. Frederick Roberts kindly sang a song.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

THE annual meeting was held at Hereford Infirmary on June 24th.

Election of Officers.—The following were elected officers for the ensuing year: *President:* Mr. Thomasson, Hereford. *President-elect:* Dr. Dixey, Malvern. *Representative on the Council and Parliamentary Bills Committee:* Dr. G. W. Crowe. *Secretaries:* Dr. Crowe, Worcester, and Mr. Du Buisson, Hereford.

Communications.—Mr. DU BUISSON read notes of the following cases and showed the patients: (1) Nævus of the Face treated by Electrolysis. (2) Subphrenic Hydatid Cyst removed from a child, aged 5. (3) Necrosis of Clavicle in a Child, aged 3.—Mr. EDGAR MORRIS read notes of a case of Tetanus successfully treated by Antitoxin; about 65 c.cm. of antitoxin altogether were injected. The injections were followed by erythematous rashes and rheumatic pains.

SOUTH-EASTERN BRANCH.

THE fifty-fourth annual meeting of this Branch was held at Tunbridge Wells on June 22nd. Forty-nine members and visitors were present.

Luncheon.—Dr. RANKING (the President-elect) kindly invited members to his house.

Address.—The PRESIDENT welcomed the members to Tunbridge Wells, and in a short address dwelt upon the improvement in science, more especially in the various departments of medical work, since the last visit of the Branch members to the town.

Votes of Thanks were accorded to the various Branch officers of the past year.

Report of Council.—After alluding to the report of the Subcommittee on the Constitution of the Association, which was to be considered by the meeting, the Council noted the changes in the Branch during the past year, the lamented death of Mr. E. H. Galton and the resignation by Dr. Ground of his post of Honorary Secretary for West Kent. Sympathy, with the hope of restoration shortly to a condition of health, was tendered to the town of Maidstone, on account of the late terrible epidemic. Gratification was expressed at the position which the General Medical Council had at length assumed towards the midwifery nurses question, and it was hoped that some legislation satisfactory to all views would be achieved, now that the governing body of the profession had formulated the principles they thought should be kept in sight in framing a Bill. The report concluded with the following paragraph: "At the general meeting in Edinburgh the result of the *plébiscite* upon medical defence will be considered. It is to be regretted that so large a proportion of members omitted to vote. Some 50 per cent. replied, 32 per cent. being in favour of taking up this work. Having regard to the significance of this result, and bearing in mind that the question of medical defence may be said to have originated from the South Eastern Branch, this meeting is of opinion that the members of the Association have not manifested such interest in the subject as would justify further action by the Executive in the matter, and that further discussion of the question is unnecessary and to be deprecated at present."

Financial Report and Votes of Money.—The TREASURER reported a balance of £175 7s., and it was decided that donations of twenty-five guineas should be forwarded to the British Medical Benevolent Fund and to the Royal Medical Benevolent College.

Annual Meeting, 1899.—The recommendation of Council in favour of Folkestone, with Dr. T. Eastes as President, was unanimously adopted.

Officers and Council.—The following were elected for 1898-99: *Representatives on the Association Council:* Dr. Galton, Dr. Tyson, Mr. Verrall. *Representatives on the Parliamentary Bills Committee:* Dr. Bowles, Mr. Verrall. *Honorary Secretary and Treasurer:* Mr. Verrall. *Branch Council* (in addition to the *ex-officio* members): Dr. Adeney, Tunbridge Wells; Dr. Allfrey, St. Leonard's; Dr. Allen, Hastings; Dr. Bagshawe, St. Leonard's; Dr. Bowles, London; Dr. Buchanan, Chatham; Mr. Chaldecott, Dorking; Mr. A. H. Dodd, Hove; Sir J. Ewart, Brighton; Dr. T. Eastes, Folkestone; Mr. Hallowes, Maidstone; Dr. Hayman, Eastbourne; Dr. Hoar, Maidstone; Dr. Holman, London; Dr. Ilott, Bromley; Surgeon-General Jeffcoat, Surbiton; Mr. Kaye-Smith, St. Leonard's; Dr. Parsons, Dover; Dr. T. W. Reid, Canterbury; Dr. Starling, Tunbridge Wells; Mr. Sturges, Beckenham; Dr. Stowers, London; Mr. Travers, St. Leonard's; Mr. Treves, Margate; Mr. J. S. Turner, Anerley; Dr. Oldman, Bletchingley; Dr. Waring, Hove.

Report of the Constitution Committee.—The recommendations of the Committee were considered, and all met with general disapproval, the votes against the paragraphs being, with hardly an exception, unanimous.

Dinner.—This took place at the Wellington Hotel, about sixty members and visitors being present.

ABERDEEN, BANFF, AND KINCARDINE BRANCH.

THE summer meeting of this Branch was held at Huntly, the President, Professor FINLAY, in the chair.

Confirmation of Minutes.—The minutes were read and approved.

New Members.—Drs. H. Adams and W. E. Henderson (Aberdeen Royal Infirmary) were balloted for and unanimously admitted members of the Branch.

Representative of Branch on Association Council.—Professor Finlay was re-elected representative of the Branch on the General Council of the Association.

Excursion.—Before the meeting the members enjoyed a drive from Gartly Station to the farm of Mytice, where some interesting curios were examined. Some of the members climbed the Tap-o'-Noth, and the vitrified fort on the top of the hill was described by Dr. Wilson, Huntly, who conducted the party.

Dinner.—After the business meeting over twenty members sat down to dinner, and a very enjoyable afternoon was spent under the presidency of Professor Finlay.

EAST ANGLIAN BRANCH.

THE annual general meeting of this Branch was held at the Norfolk and Norwich Hospital on June 16th, Mrs. GARRETT ANDERSON, M.D., in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report of Council.—The report of Council stated that the gradual increase in the number of members of the Branch which the Council had the pleasure to report from year to year was still maintained. Twenty-seven new members had joined since the annual meeting in 1897, and, after the deductions necessarily caused by deaths and resignations, the number of members belonging to the Branch now stood at 324. The annual general meeting was held at Ipswich in May under the presidency of Mrs. Garrett Anderson, M.D. The meeting was large and successful; the President gave a most able and interesting address. About 63 medical ladies and gentlemen were present at the meeting, whilst in addition 34 non-medical visitors were present at the luncheon. Dr. and Mrs. Casley deserved the hearty thanks of the Branch for hospitably entertaining a large party of members and visitors at afternoon tea at their residence in Carr Street. The East Anglian and South Midland Branches were the guests of the Cambridge and Huntingdon Branch at a large meeting held at Cambridge on July 8th and 9th under the presidency of Professor Clifford Allbutt, and the cordial thanks of the Branch were due not only to the members of the Cambridge and Huntingdon Branch, but especially to Professor and Mrs. Clifford Allbutt, for their hospitality on that occasion. The autumnal meeting was held at Aldeburgh in September, at which an important resolution relative to medical aid societies was passed which has influenced many other Branches of the Association to take similar action. The members present and visitors to the number of 97 were entertained at luncheon and afterwards at afternoon tea by the President, Mrs. Garrett Anderson. A special meeting of the Branch was held at Norwich in December, Sir Peter Eade in the chair, at which the report of the Constitution Committee of the Association was discussed and reported on, and some important resolutions relative to the election of a representa-

tive on the General Medical Council were passed. These resolutions were submitted to the Council of the Association by Dr. Beverley, and gave rise to an animated discussion there. It was believed that the result of this action, conjointly with the Lancashire and Cheshire Branch, would be to prevent similar unconstitutional action in the future. The spring meeting was held this year at Witham, at which the Branch fittingly noticed the loss sustained by the Association and by the profession by the death of Mr. Ernest Hart, and passed a vote of condolence with Mrs. Hart. Dr. Gimson very hospitably provided afternoon tea for those present.

Autumnal Meeting.—The Council recommended that an autumnal meeting be held at Mundesley, on a date to be fixed by the President and Secretaries.

New Members.—The following gentlemen were elected members of the Association and Branch: Charles Edmund Duff, M.B., St. Clement's Hill, Norwich; Karl C. Gimson, M.B., Witham, Essex; Sydney Herbert Long, M.B., 46, Prince of Wales's Road, Norwich; Stephen G. Longworth, L.R.C.S., L.R.C.P.I., County Asylum, Melton; Walter E. Manby, M.B., Cromer; H. Knights Rayson, M.R.C.S., L.R.C.P., Kessingland, Lowestoft; H. J. M. Wyllys, L.R.C.P., L.R.C.S.E., Norfolk and Norwich Hospital, Norwich. The following members of the Association were elected members of the Branch: Basil Boake, M.R.C.S., L.R.C.P., Ormesby, Great Yarmouth; A. E. Hayward, M.R.C.S., L.S.A., Kenninghall, Thetford; F. Horace Hudson, M.R.C.S., L.R.C.P., Beccles; A. McWilliam, M.B., Heigham Hall, Norwich; Cecil A. P. Osbourne, F.R.C.S.E., Old Catton, Norwich; A. Wortley Quait, M.R.C.S., L.R.C.P., Mundesley, Norfolk; J. H. Moorhead, M.B., Bury St. Edmunds; A. J. Pickworth, Lakenheath; Mildred Ransome, M.B., Marsham Hall, Norwich.

Treasurer's Report.—The Treasurer's report for the past year was read, the balance in favour of the Branch amounting to £60 2s. 6d.

Election of Officers.—The following were elected officers for the year 1898-9:—*President-elect:* E. L. Fenn, M.D., Colchester. *Honorary Secretaries:* Norfolk: M. Beverley, M.D., Norwich; Suffolk: Edgar G. Barnes, M.D., Eye; Essex: Thos. Carr, M.D., Braintree. *General Secretary and Treasurer for Branch:* Edgar G. Barnes, M.D., Eye. *Representatives on the Council of the Association:* M. Beverley, M.D., Norwich; W. A. Elliston, M.D., Ipswich. *Representatives on the Parliamentary Bills Committee:* A. R. Manby, M.D., East Rudham; J. C. Thresh, M.D., Chelmsford. *Seven Elected Members of Council:* S. J. Barton, M.D., Norwich; C. E. Addison, Colchester; T. H. Morse, F.R.C.S., Norwich; R. W. Brogden, M.B., Ipswich; H. B. Walker, Lowestoft; C. S. Kilner, M.B., Bury St. Edmunds; W. E. Wyllys, Great Yarmouth.

Vote of Condolence with Dr. Barnes.—It was proposed by Mrs. GARRETT ANDERSON, seconded by Dr. BEVERLEY, and unanimously resolved:

That the members of the East Anglian Branch, in annual meeting assembled, desire to express their sincere condolence with their much esteemed General Secretary, Dr. Barnes, in the loss he has recently sustained by the death of Mrs. Barnes.

New President.—Mrs. GARRETT ANDERSON introduced the new President, Mr. HAYNES ROBINSON, who delivered a very interesting address (see p. 15).

Votes of Thanks.—The thanks of the Branch were cordially given to the President for his excellent address, and to the retiring President, Mrs. Garrett Anderson, for the able and hospitable manner in which she had discharged the duties of her office.

British Medical Benevolent Fund.—In the absence of Dr. Barnes, Dr. BEVERLEY made a statement of the work of the British Medical Benevolent Fund.

Medical Officers of Hospitals and Fees.—Mr. H. B. WALKER called attention to the present state of the law relating to the inability of medical officers of public hospitals to claim fees for giving evidence at and making *post-mortem* examinations for coroner's inquests, and after discussion the General Secretary was requested to ask the Branch representatives to bring the matter before the Parliamentary Bills Committee with a view to making an alteration in the law.

Luncheon.—The members then adjourned for luncheon, ninety-seven members and friends being entertained by the President, Mr. Haynes Robinson.

Communications.—Miss CHARLOTTE ELLABY, M.D., read a paper on Migraine and its Relations to certain Eye Conditions. Dr. JOHNSON TAYLOR, Dr. E. L. FENN, and Mr. G. D. DEEPING took part in the discussion.—Dr. BURTON-FANNING read a paper on the Open-air Treatment of Phthisis. Mr. JEAFFRESON, Dr. COMBE, and Mr. SOFFE took part in the discussion.—Mr. R. W. BROGDEN read a paper on a Case of Perforating Gasting Ulcer: Operation; Recovery. Mr. T. H. MORSE made a few remarks.—Mr. R. H. LUCAS read a paper on a Case of Fractured Patella (with skiagraph), treated by wiring the fragments. Dr. KILNER and Dr. HOLDEN took part in the discussion.—Mr. S. H. BURTEN, read a paper on Two Cases of Suture of Musculo-spiral Nerve after Fracture of Humerus.—Mr. D. D. DAY, read a paper on a Case of Suprapubic Cystotomy for Tumour.—Mr. H. A. BALLANCE read a paper on a Case of Lateral Sinus Pyæmia, treated by operation, and showed the patient.

Norfolk and Norwich Hospital: Demonstrations and Exhibitions.—The Norfolk and Norwich Hospital and Museum were open for the inspection of members. The physicians and surgeons showed interesting clinical cases, and demonstrations took place in the theatre of the hospital. There was an exhibition of Surgical Instruments by Messrs. Down Brothers, and of Pharmaceutical Preparations by Messrs. Parke, Davis, and Co. Messrs. Boulton and Paul exhibited in the hospital garden a Shelter designed for the Open-Air Treatment of phthisis.

Dinner.—After the meeting the President and Mrs. Haynes Robinson received members and visitors at afternoon tea in the keep of Norwich Castle. A dinner was held in the evening at the Royal Hotel, fifty-five members being present.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

THE sixty-sixth annual meeting of the British Medical Association will be held at Edinburgh on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, 29th, 1898.

President: T. G. RODDICK, M.D., Professor of Surgery in McGill University, Montreal.

President-elect: Sir THOMAS GRAINGER STEWART, M.D., LL.D., F.R.S.E., Professor of Practice of Medicine and Clinical Medicine in the University of Edinburgh; Physician in Ordinary to Her Majesty the Queen for Scotland, Edinburgh.

President of the Council: ROBERT SAUNDBY, M.D., LL.D., F.R.C.P., Professor of Medicine in Mason University College, and Physician to the General Hospital, Birmingham.

Treasurer: CHARLES PARSONS, M.D., Dover.

An Address in Medicine will be delivered by THOMAS RICHARD FRASER, M.D., LL.D., F.R.S., Professor of Materia Medica and Clinical Medicine in the University of Edinburgh.

An Address in Surgery will be delivered by THOMAS ANNANDALE, F.R.C.S.Edin., F.R.C.S.Eng., F.R.S.E., Surgeon to the Edinburgh Royal Infirmary, Regius Professor of Clinical Surgery, University, Edinburgh.

An Address in Psychological Medicine will be delivered by Sir JOHN BATTY TUKE, M.D., D.Sc., Pres.R.C.P.Edin., Lecturer on Insanity, School of Medicine of the Royal Colleges, Edinburgh.

The Scientific Business of the Meeting will be conducted in Sixteen Sections.

A. MEDICINE.

Anatomy Theatre, University New Buildings.

President: GEORGE WILLIAM BALFOUR, M.D., LL.D. *Vice-Presidents:* Sir CHRISTOPHER JOHN NIXON, M.D.; JOHN MITCHELL BRUCE, M.D., ALEXANDER JAMES, M.D.; GEORGE ALEX. GIBSON, M.D. *Honorary Secretaries:* J. J. GRAHAM BROWN, M.D., 3, Chester Street, Edinburgh; SAMUEL HERBERT HABERSHON, M.D., 70, Brook Street, Grosvenor Square, W.; GEORGE LOVELL GULLAND, M.D., 6, Alva Street, Edinburgh.

The following subjects have been arranged for discussion:

1. Wednesday, July 27th.—The Clinical Varieties of Hepatic Cirrhosis. To be opened by Dr. Alexander James.

2. Thursday, July 28th.—The Significance and Consequences of different states of Vascular Tension with their General

Management. To be opened by Sir William Broadbent, Bart., M.D.

3. Friday, July 29th.—Serum Diagnosis and Therapeutics in Infective Diseases. To be opened by Professor Wright (Netley).

The following, among others, intend to take part in these discussions: Sir Christopher Nixon, Dr. G. W. Balfour, Dr. M. A. Boyd, Professor Bradbury, Dr. Graham Brown, Dr. Mitchell Bruce, Dr. Lauder Brunton, Dr. R. W. Burnet, Dr. H. Campbell, Dr. D. Drummond, Dr. Wm. Ewart, Dr. Foxwell, Dr. Gibbes, Dr. Gibson, Dr. Gulland, Dr. Handford, Dr. Habershon, Dr. Claude Ker, Dr. J. A. Lindsay, Dr. McWeeney, Dr. Muirhead, Dr. Smart, Dr. Noel Paton, and Dr. Reginald G. Alexander.

The following papers have been announced:

Anderson, Professor McCall. A Plea for the More General Use of Tuberculin by the Profession.
Bain, William, M.D. The Treatment of Congestion of the Liver not dependent upon Cardiac Disease or Toxic Conditions.
Burton-Fanning, F. W., M.D. The Open-air Treatment of Phthisis.
Campbell, H., M.D. The Treatment of Thoracic Aneurysm by Electrolysis.
Caverhill, T. F. S., M.B., C.M.Edin., The Open-air Treatment of Consumption, with exhibition of patients treated in German sanatoria.
Davidson, Thomas, M.D., Southern California as a Health Resort.
Drummond, D., M.D. On Ether Pneumonia.
Ewart, William, M.D.
Haddon, John, M.D. Diet and Exercise in the Prevention and Treatment of Disease.
Haig, A., M.D.Oxon. On the Granules Precipitated in the Blood by Chloride of Ammonia (Process of Mr. Barber Smith), and what we may learn from them.
Hillier, A. P., M.B. Chronic Dysentery.
Murray, G., M.D. On the Early Diagnosis of Thyroidal Fibrosis.
Parsons, Alfred, M.B. Some Remarkable Cases Illustrating the Results of Obstruction of the Main Systemic Veins.
Schott, Dr. Theodore. On Chronic Muscular Disease of the Heart.
Skerritt, E. Markham, M.D., and Stewart, James, L.R.C.P.E. Case of Protracted Sleep Extending over Fifty Days.
Smart, A., M.D. (1) Chemico-clinical Observations on the Elimination of Phosphoric Acid in Nervous Disorders: Preliminary Note. (2) Clinical Observations on the Relative Efficacy of Preparations of Iron commonly in Use in the Treatment of Anæmia and Chlorosis: Further Note.
Strachan, J., M.D. The Alcoholic Neurosis.
Suckling, C. W., M.D. Movable Kidney, with special Reference to its Influence on the Nervous System.
Thomson, J. Stitt, M.D. The Enlarged Thyroid of Lincolnshire.
Thorne, W. Bezly, M.D. On Cardio-vascular Repair.
Thornhill, Hayman, M.B. Observations on the Treatment of Cholera.

B. Surgery.

Surgery Theatre, University New Buildings.

President: John Duncan, F.R.C.S.Edin., LL.D. *Vice-Presidents:* Alex. Gordon Miller, F.R.C.S.Edin.; John Chiene, F.R.C.S.Edin.; James Rutherford Morison, F.R.C.S.; Joseph Montague Cotterill, F.R.C.S.Edin. *Honorary Secretaries:* Francis Mitchell Caird, F.R.C.S.Edin., 21, Rutland Street, Edinburgh; J. W. Beeman Hodsdon, F.R.C.S.Edin, 52, Melville Street, Edinburgh; Thomas Kennedy Dalziel, F.F.P.S.G., 196, Bath Street, Glasgow.

Discussion I: Injuries of the Elbow Joint. To be introduced by Professor Bennett (Dublin), followed by Messrs. Roberts (Philadelphia), Chiene, Bryant, Keetley, Jones, Macnamara, Thomas, Warden, Morgan, Poland, Murphy, Dalziel, Ward Cousins, and Parry.

Discussion II: The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract. To be introduced by Dr. David Newman, followed by Messrs. Rovsing (Copenhagen), Moullin, Macnamara, Macewen, Will, Melchior (Copenhagen), Lawson Tait, Morgan, Stanmore Bishop, and Nicoll.

The following papers have been promised:

Allingham, Herbert Wm., F.R.C.S. Cases of Intestinal Anastomosis.
Brook, W. F., F.R.C.S. Successful Removal of Calculi of Unusual Size from [illegible]
Bruce, William, M.D. On the Nature and Treatment of Sciatica.
Casper, Dr. Leopold (Berlin). On Catheterism of the Ureters in Both Sexes.
Cheatle, G. Lenthal, F.R.C.S. Operation for End-to-End Anastomosis of Bowel.
Cripps, Harrison, F.R.C.S. On Abdominal Surgery
Doyen, Dr. (Paris). (1) Surgery of the Brain. (2) Operations on the Stomach and Intestine. (3) Operations for Congenital Dislocations of the Hip-Joint.
Frazer, P. J., M.B. The Instruments Required in Litholapaxy, with an Analysis of 650 Operations for Stone by this Method.
Horn, John, F.R.C.S.Edin. An Amputation at the Ankle-Joint, with Cases.
Hutchinson, J., Jun., F.R.C.S. Removal of the Gasserian Ganglion for Trigeminal Neuralgia.
Hutton W. Menzies, F.R.C.S. On the Treatment of Empyema.
Keetley, C. B., F.R.C.S.Edin. On the Preservation of Mobility in Joints Operated On.
Little, E. Muirhead, M.R.C.S. On Coxa Vara.
Lloyd, Jordan, F.R.C.S. On Cirsoid Aneurysm.
Melchoir, Dr. Max (Copenhagen). On Septic Infection of the Urinary Tract.
Miller, A. G., F.R.C.S.Edin. On Muscle Atrophy in Connection with Joint Affections.
Morison, A. E., F.R.C.S.Edin. On Floating Kidney.
Morison, Rutherford, F.R.C.S. Wound Treatment. The Result of One Year of Antiseptic Treatment in Freshly-made Operation Wounds in Uninfected Tissues
Neve, Arthur, M.D. Clinical Paper on Chloroform.
Newman, David, M.D. (1) The Value of Catheterism of the Ureters in the Diagnosis of Diseases of the Kidney, with illustrative cases. (2) Cases Illustrating some Points of Interest in the Etiology and Treatment of Hæmaturia.
Nicoll, Jas. H., M.B., M.S. (1) The Treatment of Chronic Enlargement of the Prostate. (2) The Pathogeny and Treatment of Tuberculous Lymphatic Adenitis.
Owen, Edmund, F.R.C.S. Operative Treatment of Cleft Palate.
Parry, R. H., L.R.C.P and S.Edin. Cases of Spasmodic Torticollis treated by Neurotomy of the Cervical Plexus.
Pearson, C. Yelverton, F.R.C.S. The Treatment of Spina Bifida by "Open Operation," followed by Closure of the Spinal Canal, with photographs and notes of a successful case.
Poland, John, F.R.C.S. The Treatment of Injuries of the Elbow-joint in Children.
Rawdon, H. G., F.R.C.S.Edin. Two Cases of Successful Enterectomy following Strangulated Hernia, in which Murphy's Button was used.
Robson, Mayo, F.R.C.S. (1) The Operative Treatment of Hydatids of the Liver, illustrated by cases. (2) Two Cases of Partial Hepatectomy for Malignant Disease. (3) On a Series of Cases of Choledochotomy, including two of Duodeno-choledochotomy.
Roberts, Dr. J. (Philadelphia). The Advantage of the Extended Position in Fractures of the Condyloid Portion of the Humerus.
Rovsing, Dr. On Some Mysterious Hæmorrhages from a Single Kidney, and their Cure by Nephrotomy.
Smith, Noble, F.R.C.S.Edin. On the Treatment of Fractured Spines: (*a*) by Reduction and Fixation; (*b*) by Laminectomy: A Plea for more Active Treatment.
Stokes, Sir William, M.B., M.S. Thyroidectomy in Exophthalmic Goitre.
Tait, Lawson, F.R.C.S. On the Secondary Results of Operation on the Liver and its Ducts.
Tubby, A. H., F.R.C.S. (1) Acute Spreading Gangrene, with an Account of a Successful Case. (2) Retroperitoneal Hernia, illustrated by a case in which recovery took place after operation.
Wheeler, W. I., M.D. The Radical Cure of Hernia by Displacement Method.
Wylsson, Alex. The Treatment of Accidents under Chloroform.

Communications are also expected from Professors Mikulicz (Breslau) and Kocher (Bern).

C. Obstetrics and Diseases of Women.

Medicine Theatre, University New Buildings.

President: Alex. Russell Simpson, M.D. *Vice-Presidents:* Charles E. Underhill, M.B.; George Ernest Herman, M.B.; D. Berry Hart, M.D.; A. H. Freeland Barbour, M.D. *Honorary Secretaries:* R. Milne Murray, M.B., 11, Chester Street, Edinburgh; F. W. N. Haultain, M.D., 11, Rutland Street, Edinburgh; John Campbell, M.D., 21, Great Victoria Street, Edinburgh.

It has been arranged that the first part of the meeting of this Section on each of these days shall be devoted to a discussion on a subject of Obstetrical or Gynæcological interest. The subjects selected are as follows:

1. Wednesday, July 27th.—The Surgical Treatment of Pelvic Inflammation. To be opened by Dr. Cullingworth (London).

2. Thursday, July 28th.—The Use and Abuse of the Midwifery Forceps. To be opened by Dr. Milne Murray (Edinburgh).

3. Friday, July 29th.—The Treatment of Puerperal Eclampsia. To be opened by Dr. Halliday Croom (Edinburgh).

It has been arranged that specimens illustrative of the subjects of the special discussions shall be exhibited in the Pathological Museum.

The following among others are expected to take part in the discussions:—Dr. W. S. Playfair (London), Dr. Sänger (Leipzig), Dr. Martin (Berlin), Dr. Landau (Berlin), Dr. Gardner (Montreal), Mr. Bowreman Jessett (London), Dr. More Madden (Dublin), Dr. Stephenson (Aberdeen), Dr. Smyly (Dublin), Dr. Handfield-Jones (London), Dr. Donald (Manchester), Dr. Kynoch (Dundee), Dr. Buist (Dundee), Dr. Sloan (Glasgow), Dr. Macan (Dublin), Dr. Byers (Belfast), Dr. Yelverton Pearson (Cork), Dr. Aust Lawrence (Bristol), Dr. Giles (London), Dr. Anand Routh (London), Mr. Stanmore Bishop (Manchester), Dr. Christopher Martin (Birmingham), Dr. F. Edge (Wolverhampton), Dr. Ward Cousins (Southsea), Dr. Jardine (Glasgow), Dr. Horn (Darlington), Dr. W. J. Sinclair (Manchester).

The following papers have been promised:

Buist, R. C., M.D. Two Symphysiotomies.
Donald, A., M.D. On Vaginal Section.
Doyen Dr. (Paris). (1) Abdominal Hysterectomy and its Indication (tumours, suppuration, etc.). (2) Modification of the Technique of Vaginal Hysterectomy.
Edge, Fred., M.D. Posterior Colpotomy as a means of Primary and Secondary Drainage of the Abdominal Cavity.
Farrar, J., M.D. A New and Speedy Method of Dilating a Rigid Os in Parturition.
Fothergill, W. E., M.D. The Function of the Decidual Cell.
Handfield-Jones, M., M.D. The Value of Curette Scrapings in the Early Diagnosis of Corporeal Cancer.
Jardine, Robert, M.D. (1) Saline Injections into the Cellular Tissues in Cases of Eclampsia and Collapse from Hæmorrhage. (2) Aseptic Midwifery.
Jessett F. B., F.R.C.S. (1) A hundred cases of Vaginal Hysterectomy for Carcinoma. (2) Surgical Treatment of Fibro-myomata of Uterus by Pan-hysterectomy or the Subperitoneal Method.
Kynoch, J. A. C., M.B., M.S. A Case of Osteomalacia.
Landau, Dr. (Berlin). (1) Vaginal Cœliotomy. (2) Surgical Treatment of Uterine Cancer and its Relapse.
Macphatten, Dr. Neil (Denver, U.S.A.). The Treatment of Suppuration within the Female Pelvis.
Madden, T. More. M.D. On some Improvements in the Mechanism and Use of the Midwifery Forceps and in their Employment.
Martin, Christopher, F.R.C.S. Conservative Surgery of the Ovary.
Parsons, J. Inglis, M.B. A New Method of Treatment for Prolapse of the Uterus.
Purslow, C. E., M.D. Notes of Four Cases of Pregnancy complicated with Ovarian Tumour.
Routh, Amand, M.D. Treatment of Cystocele.
Scharlieb, Mary, M.D., London. On a case of Mixed Labour verified by Operation and also *Post Mortem*.
Smith, Dr. Lapthorn (Montreal). Treatment of Displacements of the Uterus by Operation, based on 200 Cases.
Smyly, W. J., M.D. Extirpation of Myomatous Uteri by the Vagina.
Tait, Lawson, F.R.C.S. (1) Further research into the Effects of Removal of the Uterine Appendages as the best Treatment of Uterine Myomata. (2) Case of Ruptured Tubal Pregnancy.

D. State Medicine.

Forensic Medicine Theatre, University New Buildings.

President: Sir Henry D. Littlejohn, M.D., LL.D. *Vice-Presidents:* John C. McVail, M.D.; George Reid, M.D.; Thomas Goodall Nasmyth, M.D.; James McLintock, M.D. *Honorary Secretaries:* Charles Hunter Stewart, M.B., D.Sc., 18, Moray Place, Edinburgh; William Leslie Mackenzie, M.D., Public Health Office, Leith.

It is proposed to hold discussions on the following:

1. Rivers Pollution; with Special Reference to the Present Condition of Scottish Rivers. To be opened by Dr. McLean Wilson. The following among others intend to take part: Professor Glaister, Dr. J. C. McVail, Dr. C. R. Macdonald, Dr. Matthew J. Oliver, Dr. T. G. Nasmyth.

2. Vaccination; with Special Reference to Prospective Legislation. To be opened by Dr. F. T. Bond, Gloucester. The following among others intend to take part: Dr. J. Watkin Edwards, Dr. J. C. McVail, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Mr. T. Garrett Horder, Dr. Charles R. Drysdale, Dr. J. Priestley.

3. The Hygienic Control of Milk Supplies. To be opened by Dr. T. G. Nasmyth. The following among others intend to take part: Professor Forster (University of Strassburg), Professor Saltet (University of Amsterdam), Dr. W. Brown (Carlisle), Dr. Maxwell Williamson, Dr. Spottiswoode Cameron, Dr. T. F. S. Caverhill, Dr. J. Watkin Edwards, Dr. Henry Kenwood, Dr. E. W. Hope, Dr. C. R. Macdonald, Dr. J. S. Neech, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Dr. Templeman, Dr. W. H. Symons, Dr. A. K. Chalmers, Dr. J. Maxwell Ross, Dr. Charles R. Drysdale.

4. The Plea of Insanity in Criminal Cases, conjointly with the Psychological Section.

The following intend to contribute papers:

Allan, F. J., M.D. Formaldehyde as a Disinfectant.
Cameron, Sir C. A., M.D. The Cost of Private Sanitary Improvements in Relation to Rack-rent.
Cameron, J. Spottiswoode, M.D. Remarks on Removal and Disposal of Refuse.
Cameron, Macmartin, M.D. Surface Wells as a Source of Water Supply.
Caverhill, T. F. S., M.B., C.M.Edin. Temporary Hospitals.
Chalmers, A. K., M.B., M.S. Meat Inspection.
Dixey, F. J., M.B. Diphtheria in London.
Marsden, R. Sydney, M.B., C.M. Filaria Strongylus and False Tubercle in the Pig, Sheep, and Goat.
Millard, Killick, M.D. Return Cases of Scarlet Fever
Robertson, John, M.B., M.S. Soil as a Factor in the Spread of Certain Diseases
Seaton, E., M.D. Sanitary Analysis of Water.
Van Someren, E. H., M.R.C.S. The Potability of Venice Water.

E. Psychology.

Students' Common Room, University New Buildings.

President: Thomas Smith Clouston, M.D. *Vice-Presidents:* William Wotherspoon Ireland, M.D.; H. F. Hayes Newington, M.R.C.S.; Joseph Wiglesworth, M.D. *Honorary Secretaries:* John Macpherson, M.D., Stirling District Asylum, Larbert, Stirlingshire; George M. Robertson, M.D., District Asylum, Murthly, Perth.

The following discussions have been arranged:

1. Suicide: Its Social and Psychiatrical Aspects.. This subject will be opened in three divisions: (*a*) Social Aspect, by Professor Morselli (Genoa). (*b*) Causes, by Dr. A. Haig (London). (*c*) Statistics, by Dr. Sibbald (Edinburgh).

2. The Section of State Medicine will join this Section in open discussion on: (1) Aphasia in Relation to Testamentary Capacity, to be opened by Sir William Gairdner, K.C.B. (2) The Plea of Insanity in Criminal Cases, to be opened by Dr. Shuttleworth.

3. Hypnotism: Its Phenomena and Theories. To be opened by Dr. J. Milne Bramwell (London). Mr. F. W. H. Myers (Cambridge) has kindly consented to take part in this discussion.

The following among others have intimated their intention of taking part in the discussions: Professor Benedikt (Vienna), Dr. Marie (Dun-sur-Auron), Dr. Kurella (Brieg), Dr. Pierson (Lindenhof), Dr. Lloyd Tuckey, Dr. Hayes, Sir John Batty Tuke, Dr. George Kerr, Dr. A. E. Macdonald (New York), Dr. Yellowlees, Dr. Fletcher Beach, Dr. Ernest White, Dr. Sibbald, Dr. James Shaw, Dr. Crockley Clapham, Dr. Urquhart, Dr. Outterson Wood, Dr. John Woods, Dr. Alex. Robertson, and Dr. G. Fielding Blandford.

The following papers have been intimated:

Bernard, Walter, F.R.C.P.I. On the Neglect of Early Training of the Mentally Defective.
Bruce, Lewis, M.D. (Title not yet communicated.)
Dawson, W. R., M.D., and Rambaut, D. F., M.D. The Ocular Phenomena in General Paralysis.
Easterbrook, C. C., M.B., C.M. The Action of Thyroid and Parathyroid Extracts upon Metabolism in the Insane.
Hotchkiss, R.D., M.B. A Case of Hæmatoporphyrinuria.
Jones, Robert, M.D. The Epileptic Aura.
Kerr, N. T., M.B., C.M., and Bois, C. A., L.R.C.P. and S.Edin. Clinical Studies with Spleen and Thyroid Extract.
McLean, A., L.R.C.S.Edin. The Better Inspection of Institutions for the Insane in England and Wales.
Pasmore, E. S., M.D. The Clinical Diagnosis of States of Melancholia.
Sutherland, J. F., M.D. The Insanities of Inebriety from the Legislative and Medico-Legal Standpoints.
Wilson, George, M.D. A Graphic Method of Case Records in Asylums.

F. Neurology.

Midwifery Theatre, University New Buildings.

President: Byrom Bramwell, M.D. *Vice-Presidents:* Joseph Arderne Ormerod, M.D.; William Russell, M.D.; Alexander Bruce, M.D. *Honorary Secretaries:* Robert Alexander Fleming, M.D., 10, Chester Street, Edinburgh; William Ford Robertson, M.D., 12, Bristo Place, Edinburgh.

The following discussions and demonstrations have been arranged:

1. Wednesday, July 27th, 10 A.M.—A discussion on the Treatment (Curative and Palliative) of Intracranial Tumours will be opened by Professor Ferrier, M.D., F.R.C.P., F.R.S. The following members have promised to take part: Dr. C. E. Beevor, Mr. H. F. Waterhouse, Dr. E. F. Trevelyan, Mr. C. A. Morton, Dr. John M. MacCormac, Dr. J. Michell Clarke, and Dr. T. Outterson Wood.

2. Thursday, July 28th, 10 A.M.—A discussion on the Influence of Micro-organisms and Toxins in the Production of Disease of the Central and Peripheral Nervous System will be opened by Dr. Thomas Buzzard, F.R.C.P. The following gentlemen have promised to take part: Dr. W. S. Colman, Dr. F. J. Smith, Dr. Fletcher Beach, Dr. John M. MacCormac, and Dr. T. Outterson Wood.

3. Friday, July 29th, 10 A.M.—Demonstration of (*a*) Preparations, lantern slides, and microscopic sections illustrative of the Morbid Anatomy of Diseases of the Nervous System (Brain, Spinal Cord, and Peripheral Nerves). (*b*) Patients, and Morbid Specimens from Individual Cases of Nervous Disease of special interest and importance from a clinical, pathological, and physiological point of view.

Drs. E. F. Trevelyan, Andrew Smart, and J. Michell Clarke

have, amongst others, already intimated their intention to take part in the demonstrations.

The following papers have been promised:

Beevor, Charles E., M.D. On the Bilateral Action of the Latissimus Dorsi in Hemiplegia.
McAldowie, A. M., M.D. Cases of Tumour of Crus Cerebri.
Murray, Professor George, M.D., and Richardson, George, M.B., F.R.C.S. Case illustrating the Advantages of Removal of Recurrent Cerebral Tumour.
Smart, Andrew, M.D. Some Further Notes on Undescribed Neuroses in their Physiological and Clinical Aspects.
Trevelyan, E. F., M.D. Case of Acute Meningo-myelitis, in which a Diplococcus was Cultivated from the Cord. With Microscopic Specimens.

G. Pathology.

Pathology Theatre, University New Buildings.

President: William Smith Greenfield, M.D. *Vice-Presidents:* Frederick Walker Mott, M.D., F.R.S.; John MacFadyean, M.B.; Almroth Edward Wright, M.D. *Honorary Secretaries:* Harold Jalland Stiles, M.B., 5, Castle Terrace, Edinburgh; Robert Muir, M.D., 20, Hartington Place, Edinburgh.

A discussion on the Agglutinating or Sedimenting Properties of Sera and their Relation to Immunity will be opened by Herbert E. Durham, M.B., C.B.

A discussion on the Nature and Significance of Leucocytosis will be opened by Robert Muir, M.D.

The following communications have been announced:

Auld, A. G., M.D. (1) Some Results of Extirpation of the Suprarenal Gland. (2) On the Toxins of the Pneumococcus.
Beatson, George T., M.D. A short note on the Etiology of Cancer, with some experiments.
Boyce, Professor R., M.D., and Hill, C. A., M.B. A Classification of the Micro-organisms found in Water.
Durham, H. E., M.B. (1) An Inquiry into an Epidemic caused by a Variety of the Bacillus Enteritidis of Gärtner by means of Sero-diagnosis (Gruber's Reaction) and Bacteriological Examination. (2) A Simple Method of Demonstrating the Formation of Gas by Bacteria.
Harley, Vaughan, M.D. An Experimental Inquiry into Cirrhosis of the Liver.
Hewlett, R. T., M.D. Neisser's Diagnostic Stain for the Diphtheria Bacillus.
Lazarus-Barlow, W. S., M.D. Irritation of the Pleura and Pleurisy.
Levy, Alfred G., M.D. The Blood Changes after Experimental Thyroidectomy.
McFadyean, Professor J., M.S. Generalisation of Tuberculosis in the Ox.
McWeeney, Professor E. J., M.D. On the Growth of the Typhoid Bacillus in Bouillon containing a Certain Proportion of the Homologous Serum.
Muir, R., M.D. On the Nature and Significance of Changes in the Bone Marrow during Leucocytosis.
Smith, J. Lorrain, M.D. The Pathological Effects of Breathing Oxygen at a High Tension.
Stiles, Harold J., M.B. The Nature of Parotid Tumours.
Stockman, Professor R., M.D. The Pathological Effects of Dead Tubercle Bacilli.
Thoma, Professor R. Normal Circulation and Circulatory Disturbances in the Spleen.
Woodhead, G. Sims, M.D. On Diphtheritic Paralysis.

H. Pharmacology and Therapeutics.

Materia Medica Theatre, University New Buildings.

President: James Ormiston Affleck, M.D. *Vice-Presidents:* Charles Douglas Fergusson Phillips, M.D., LL.D.; Nestor Tirard, M.D., Ralph Stockman, M.D. *Honorary Secretaries:* R. Dundas Helm, M.D., 3, Alfred Street N., Portland Square, Carlisle; A. Lockhart Gillespie, M.D., 23, Walker Street, Edinburgh.

There will be three discussions on subjects of general interest and importance related to Pharmacology and Therapeutics. These subjects are as follows:

1. Wednesday, July 27th.—The Treatment of Diseases of the Stomach. Introduced by Dr. G. Herschell and Professor C. A. Ewald, and taken part in by, among others, Drs. Lauder Brunton, Saundby, Fenton, B. Turck, Symons Eccles, and Pearson. For convenience the subject will be considered under the heads of: (*a*) General Treatment and Diet; (*b*) the Influence of Drugs upon Gastric Chemical Processes; (*c*) the Influence of the Treatment of co-existing Maladies upon Diseases of the Stomach; (*d*) the Indications for Surgical Treatment.

2. Thursday, July 28th.—The Treatment of Chronic Renal Disease, with special reference to: (*a*) Hygiene and Diet; (*b*) the Influence of Drugs and other Therapeutics Measures; (*c*) Uræmia. Opened by Dr. Nestor Tirard. Professor Ewald, and Drs. Saundby and MacAlister will take part in the discussion.

3. Friday, July 29th.—The Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Attendant Risks. Opened by Professor Ralph Stockman. Professor Cash and Dr. F. C. Phillips will take part. (The antipyretic properties possessed by members of this group will not form a part of the subject for discussion.)

It is also proposed to hold a demonstration of recently-devised intragastric instruments and other apparatus and measures for the treatment of gastric diseases; to this it is expected that Dr. Turck (Chicago), Drs. Herschell and Eccles, Drs. Einhorn (New York), and Hemmeter (Baltimore) will contribute. The Secretaries will be glad to receive notice of any member wishing to show any further novelty relating to this subject.

The following papers have been announced:

Cash, Professor J. T., M.D. The Pharmacology of the Alkaloids of Aconitum Napellus.
Ewald, Professor C. A. (1) On the Present State of the Treatment and of our Knowledge of Gastric Disorders. The Benefit of Repeated Tapping and Venesection in Chronic Kidney Disease, especially in Uræmia.
Gillespie, A. Lockhart, M.D. (1) Brief Note on the Action of the Bromide and Iodide of Strontium together upon Exophthalmic Goitre in Children. (2) Preliminary Note on the Action of Stipa Viridula. (3) The Action of Diet, Antiseptics, and of some other Drugs upon the Intestinal Processes.
Herschell, George, M.D. The Treatment of Atony of the Stomach and Intestines by Mechanical Vibration.
Hyde, S., M.D. The Pure Air Treatment of Consumption.
Kerr, Norman, M.D. Alcohol in Drugs and Drug Preparations.
McWalter, J. C. A Note on the New *Pharmacopœia*.
Phillips, C. D. F., M.D. On the Pharmacological and Therapeutical Actions of Hydrastis Canadensis.
Turck, Fenton B. (Chicago). (1) Pneumatic Gymnastics of the Stomach. (2) The Indications for Gastrostomy, with a Note on a New Method of Operation.

(Some of these papers will not be read separately, but used as a basis for the remarks made at the discussions.)

The demonstration and explanation of new gastric appliances (should it be found feasible) will take place on Thursday, July 28th, at 1 P.M. or any other hour which may be subsequently fixed upon. Details as to the appliances and measures to be illustrated will probably be specially noted later on.

I. Ophthalmology.

Chemistry Tutorial Class Room, University New Buildings.

President: D. Argyll Robertson, M.D., LL.D. *Vice-Presidents:* R. Marcus Gunn, F.R.C.S.; George A. Berry, M.B.; George Mackay, M.D. *Honorary Secretaries:* William George Sym, M.D., 50, Queen Street, Edinburgh; Angus McGillivray, M.D., 23, South Tay Street, Dundee.

The following papers have been promised:

Buchanan, Leslie, M.D. Extraocular Growths, etc.
Collins, E. Treacher, F.R.C.S. On Cases where Skiagraphs were of Service for the Detection and Removal of Intraocular Foreign Bodies.
Davidson, J. M'Kenzie, M.D. Demonstration of Employment of Roentgen Rays in Ophthalmology.
Eyre, J. W., M.D. A Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.
Fallows, J., L.R.C.S.Edin. (1) Case of Polypoid Growth from a Meibomian Cyst (illustrated). (2) The Use of Fluorescin in the form of Tabloids in the Diagnosis of Corneal Abrasions.
Griffith, A. Hill, M.D. Case of Successful Removal of Orbital Cyst.
Griffith, John, F.R.C.S. Case of Acute Exophthalmic Goitre.
Hern, John, M.D. The Operations now usually Substituted for Enucleation of the Eyeball.
Hinshelwood, James, M.D. Use of Holocaine in Ophthalmic Surgery.
Juler, Henry, F.R.C.S. (1) A Case of Gumma of the Ciliary Body with Recovery of Vision. (2) Case of Interstitial Keratitis with Acquired Syphilis.
Lawson, Arnold, F.R.C.S. Bacteriology of Normal Conjunctival Sac and its bearing on the Use of Antiseptics.
McGillivray, Angus, M.D. The Hyaloid Canal and its relation to Cyclitic Exudation.
Nuel, Professor (Liége). Absorption of Aqueous Humour of the Iris.
Reid, Thomas, M.D. (1) Reparative Processes in the Cornea. (2) Intercalary Cells in Corneal Epithelium. (3) Early Stages of Trachoma: Lantern Demonstration.
Snellen, Professor (Utrecht). (Title not announced.)
Thompson, J. Tatham, M.B., C.M. A Case of Cyst of the Hyaline Canal producing a Double Lens.
Usher, C. H., M.B. A Case of Orbital Growth.
Williams, R. Paralysis of Accommodation after Influenza.

Microscopic and naked-eye specimens, apparatus, etc., have been promised for the Museum by Drs. Reid, Usher, Buchanan, and Angus McGillivray.

J. Laryngology and Otology.

Surgery Tutorial Class Room, University New Buildings.

President: Peter MacBride, M.D. *Vice-Presidents:* J. J. Kirk Duncanson, M.D.; J. Dundas Grant, M.D.; Robert Mackenzie Johnston, M.D.; StClair Thomson, M.D. *Honorary Secretaries:* Adam Brown Kelly, M.B., 26,

Blythswood Square, Glasgow; A. LOGAN TURNER, M.D., 20, Coates Crescent, Edinburgh.

The subject selected for discussion is The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology, Rhinology, and Otology. The discussion will be introduced under these three heads by Sir Felix Semon (London), Dr. Greville MacDonald (London), and Dr. William Milligan (Manchester).

The following gentlemen have intimated their intention of taking part in the discussion or in the work of the Section: Dr. Charles Warden (Birmingham), Dr. Richard Ellis (Newcastle-on-Tyne), Dr. Farquhar Matheson (London), Professor Urban Pritchard (London), Dr. Dundas Grant (London), Dr. David Newman (Glasgow), Dr. L. H. Pegler (London), Dr. J. Kerr Love (Glasgow), J. Walker Downie, M.B. (Glasgow), John Macintyre, M.B. (Glasgow), Dr. Watson Williams (Bristol), Dr. William Hill (London), Macleod Yearsley, F.R.C.S. (London), W. Jobson Horne, M.B. (London), Dr. H. S. Birkett (Montreal), Dr. Holbrook Curtis (New York), Dr. Von Stein (Moscow), W. R. H. Stewart, F.R.C.S.Edin., Dr. Thomas Barr (Glasgow), James Erskine, M.B. (Glasgow), Dr. Robert Fullerton (Glasgow), T. Mark Hovell, F.R.C.S.E. (London).

The following papers have been announced:

BARR, Thomas, M.D. (1) Notes on Extradural Suppuration in the Sigmoid Fossa due to Ear Disease. (2) A Case of Double Acute Mastoid Empyema, with Exposure of Dura Mater and Operation in Both.
COLLIER, Mayo, F.R.C.S.Eng. Nasal Obstruction, its Relation to Throat and Ear Disease.
CURTIS, Dr. Holbrook (New York). The Treatment of Acute Laryngitis in Singers.
DOWNIE, Walker, M.B. Three Cases of Foreign Body in the Throat in which the position of the Body was determined by the Roentgen Rays. Illustrated by Skiagraphs.
HORNE, W. Jobson, M.B. The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.
HOVELL, T. Mark, F.R.C.S.E. Catheterisation of the Eustachian Tubes.
MACINTYRE, John, M.B. Demonstration on the *X* Rays, with special reference to the Diseases of the Upper Respiratory Tract.
MILLIGAN, W., M.B., M.S. Some Observations upon Antrectomy as a means of Treatment in Suppurative Middle-ear Disease.
NEWMAN, David, M.D. (1) On Laryngeal Paralysis from Pressure upon the Vagus or Recurrent Laryngeal Nerves. (2) Some Cases showing the Relationship of Nasal and Pharyngeal Disease to the General Health.
SHAW, Cecil, M.D. Notes of a case of Epithelioma of the Pharynx, with Microscopic Specimens of Tumour.
THOMSON, StClair, M.D. Nasal Hydrorrhœa.
WAGGETT, Ernest, M.B. Some new Methods and Instruments.
YEARSLEY, Macleod, F.R.C.S. The Thyroid Treatment of Middle-ear Disease.
YONGE, E. S., M.D. The Treatment of Dysphagia in Laryngeal Tuberculosis.

K. DISEASES OF CHILDREN.

Practical Materia Medica Room, University New Buildings.

President: JOSEPH BELL, F.R.C.S.Edin. *Vice-Presidents:* JAMES CARMICHAEL, M.D.; JOHN PLAYFAIR, M.D.; T. M. BURN-MURDOCH, M.B.; JOHN ARTHUR WRIGHT, F.R.C.S. *Honorary Secretaries:* GEORGE HARRY MELVILLE DUNLOP, M.D., 20, Abercromby Place, Edinburgh; JOHN THOMSON, M.D., 14, Coates Crescent, Edinburgh; WALTER STACY COLMAN, M.D., 22, Wimpole Street, W.

The following subjects have been selected for discussion:

1. Wednesday, July 27th.—The Treatment of Spinal Caries. To be opened by Mr. Victor Horsley.

The following gentlemen are expected to join in the discussion; Robt. Jones, F.R.C.S.Edin. (Liverpool), T. S. Kirk, M.B. (Belfast), R. W. Murray, F.R.C.S. (Liverpool), Noble Smith, F.R.C.S.Edin. (London), A. H. Tubby, F.R.C.S. (London), W. Thomas, F.R.C.S. (Birmingham).

2. Thursday, July 28th.—Certain Aspects of Congenital Syphilis. In opening the discussion Mr. Jonathan Hutchinson will deal with the Lesions of the Bones and of the Organs of Special Sense, and Dr. Henry Ashby will speak of those of the Brain and other Internal Organs.

The following members have intimated their intention to join in the discussion: Professor A. Baginsky (Berlin), M. Jules Comby (Paris), T. Telford Smith, M.D. (Lancaster).

3. Friday, July 29th.—Rheumatic Heart Disease in Childhood; with special reference to (*a*) Physical Signs, (*b*) Prognosis. To be opened by Dr. D. B. Lees.

The following are expected to join in the discussion: H. Ashby, M.D. (Manchester), Professor A. Baginsky (Berlin), James Finlayson, M.D. (Glasgow), W. P. Herringham, M.D. (London), H. D. Rolleston, M.D. (London), J. Lindsay Steven, M.D. (Glasgow).

The following papers have been announced:

BATTEN, F. E., M.D. On Diphtheritic Paralysis.
CARMICHAEL, James, M.D. Types of Infantile Pneumonia.
CLARKE, J. Jackson, F.R.C.S. On Congenital Dislocation of the Hip-joint.
COLLIER, H. Stansfield, F.R.C.S. On Dislocation of the Hip-joint occurring in the Course of Infectious Diseases.
COMBY, Jules, M.D. (Paris). On Movable Kidney in Children.
COUTTS, J. A., M.B. On Congenital Syphilis.
EVE, F. S., F.R.C.S. On Tendon Grafting.
JONES, Robert, F.R.C.S.Edin. On the Short Leg of Hip-joint Disease and its Treatment.
MARTIN, R., M.D.Aberd. On the Effects of Tobacco Smoking on Children.
MURRAY, R. W., F.R.C.S. (1) On Harelip and Cleft Palate. (2) On the Treatment of Club Foot.
NICOLL, James H., M.B. The Radical Cure of Spina Bifida treated by Open Operation.
STILL, G. F., M.D. On the Micro-organism of Simple Posterior Basic Meningitis in Infants.
SUTHERLAND, G. A., M.D. The Treatment of Hydrocephalus by Intracranial Drainage.

L. DERMATOLOGY.

Students' Library, University New Buildings.

President: WILLIAM ALLAN JAMIESON, M.D. *Vice-Presidents:* WALTER GEORGE SMITH, M.D.; JOHN JAMES PRINGLE, M.B., ALEXANDER MORTON, M.D. *Honorary Secretaries:* JAMES LIMONT, M.B., 3, Queen Square, Saville Place, Newcastle-on-Tyne; NORMAN WALKER, M.D., 7, Manor Place, Edinburgh.

The arrangements are as follows:

On Wednesday, July 27th, after the President has delivered his introductory remarks, the Section will adjourn to the Royal Infirmary, where a Clinical Meeting for the Exhibition of Patients will be held and the cases informally discussed.

On Thursday, July 28th, the subjects for discussion will be (1) The Nature and Treatment of Lupus Erythematosus. To be opened by Professor Boeck (Christiania), and Dr. Unna (Hamburg); and (2) What are we to understand by Eczema? To be opened by Mr. Malcolm Morris (London), and Dr. Wallace Beatty (Dublin).

Papers will be communicated on Friday.

M. MEDICINE IN RELATION TO LIFE ASSURANCE.

Music Class Room, University New Buildings.

President: CLAUD MUIRHEAD, M.D. *Vice-Presidents:* Sir R. DOUGLAS POWELL, Bart., M.D.; PETER ALEXANDER YOUNG, M.D.; JAMES RITCHIE, M.D. *Honorary Secretaries:* JAMES MURDOCH BROWN, M.D., 9, Walker Street, Edinburgh; FRANCIS DARBY BOYD, M.D., 6, Atholl Place, Edinburgh.

The subjects already arranged for discussion are:

The Prognosis of Cardiac Disease in its bearings upon Life Assurance. To be opened by Professor Sir William T. Gairdner, K.C.B.

Middle-Ear Disease in relation to Life Assurance. This will be opened by Dr. McBride, President of the Section of Laryngology and Otology. (These two Sections will probably hold a joint discussion on this subject.)

Does Evidence of Limited Family Vitality call for an advanced Rate of Premium? To be opened by Dr. James Ritchie (Edinburgh).

The subjects of papers promised are:

LOW, Mr. G. M. (Manager, Edinburgh Life Assurance Society). Extra Rating as a Statistical Problem.
MEIKLE, Mr. James (Actuary, Scottish Provident Association). Gout as a Factor in Life Assurance.
MCCANDLISH, Mr. John M. (Late Manager, Union and National Assurance Company). The Medical Advisers of Assurance Companies; Some of their Difficulties.
PLAYFAIR, John, M.B. (Edinburgh), conjointly with Mr. T. WALLACE (Actuary, North British and Mercantile Insurance Company). The Bearing of Pregnancy upon Life Assurance.

N. TROPICAL DISEASES.

Practical Pathology Room, University New Buildings.

President: PATRICK MANSON, M.D., LL.D. *Vice-Presidents:* ANDREW DAVIDSON, M.D., LL.D. ANDREW SMART, M.D., LL.D.; WILLIAM JOHN RITCHIE SIMPSON, M.D. *Honorary Secretaries:* JAMES CANTLIE, M.B., 46, Devonshire Street, Portland Place, W.; Surgeon-Captain M. LOUIS HUGHES, A.M.S., Aldershot.

The following discussions have been arranged: 1. The Unclassified Fevers of the Tropics. To be opened by Brigade-Surgeon-Lieutenant-Colonel Crombie, I.M.S.

2. Beri-Beri in Temperate Climates. To be opened by Conolly Norman, M.D. (Dublin).

3. The Epidemic of Plague in India. To be opened by W. J. R. Simpson, M.D. (late of Calcutta).

The following among others intend to take part in the dis-

cussions or to send papers: Surgeon-Major-General Hamilton, Inspector-General Turnbull, R.N.; Dr. Patrick Manson, Professor Haffkine, Mr. Hankin, Surgeon-Major Andrew Duncan, Surgeon-Major Ronald Ross, Surgeon-Captain Louis Hughes, Surgeon-Captain Buchanan, Dr. Andrew Davidson, Dr. Daniels, Dr. Sandwith, Dr. Sambon, Mr. James Cantlie, etc.

The following papers have been announced:

BLACK, Surgeon-Major, F.R.C.S.Edin. Sketch of Disease at Hong Kong in 1865 amongst the Troops, with Views, Charts, etc.
BROWN, Surgeon-Captain E. Harold, I.M.S. Abdominal Surgery in the Tropics.
CANTLIE, James, F.R.C.S. Surgical Requirements of the Tropics.
DAVIDSON, Andrew, M.D. The Malarial Problem in its Epidemiological Aspects.
HAFFKINE, Professor W. M. Plague in India.
HAMILTON, Surgeon-Major-General J. B., P.M.O. Plymouth. Enteric Fever in Armies and Tropical Climates.
HUGHES, Surgeon-Captain Louis, A.M.S. On the Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates.
MANSON, Patrick, M.D. Appearance of Pigmentation in Lymphocytes in Relation to the Diagnosis of Malaria.
SANDWITH, F. M., M.R.C.S. (Cairo). (1) Pellagra. (2) The Treatment of Acute Dysentery.
WALSH, Surgeon-Major J. H. Tull, I.M.S. Clinical Aspects and Treatment of Malarial Fever.
YARR, Surgeon-Major, A.M.S. Malarial Eye Affections.

O. ANATOMY.

Practical Physiology Room, University New Buildings.

President: Sir JOHN STRUTHERS, M.D., LL.D. *Vice-Presidents:* Sir JAMES A. RUSSELL, M.B., LL.D.; JOHNSON SYMINGTON, M.D.; ANDREW MELVILLE PATERSON, M.D. *Honorary Secretaries:* DAVID HEPBURN, M.D., University, Edinburgh. JOSEPH RYLAND WHITAKER, B.A., M.B.Lond., F.R.C.P.Edin., Surgeons' Hall, Royal College of Surgeons, Edinburgh.

There will be a discussion on The Significance of Anatomical Variations, which will be opened by Professor Cunningham of Dublin in an address illustrated by lantern and in which Professor Shepherd of Montreal and Professor Young of Manchester will take part.

Professor Symington will give a Lantern Demonstration on Cranial Topography.

The following papers have been announced:

MCCARTHY, Dr. (Montreal). A New Dissection showing the Internal Gross Anatomy of the Hippocampus Major, with Specimens.
THOMSON, Professor A., M.B. Sexual Differences of the Fœtal Pelvis.
WATERSTON, David, M.B., C.M. Observations on the Anatomical Basis of Reduction of Dislocation of the Shoulder-joint by Manipulation.

P. PHYSIOLOGY.

Physiology Theatre, University New Buildings.

President: WILLIAM RUTHERFORD, M.D., F.R.S. *Vice-Presidents:* JOHN ALEXANDER MACWILLIAM, M.D.; D. NOËL PATON, M.D.; E. WAYMOUTH REID, M.B., F.R.S. *Honorary Secretaries:* EDMOND WILLIAM WACE CARLIER, M.D., 39, Morningside Drive, Edinburgh; ROBERT ARTHUR YOUNG, M.D., 37, Trevor Square, Knightsbridge, S.W.

The following discussions have been arranged:

1. Theories regarding the Production of Different Qualities of Sensation. To be opened by Professor Rutherford, F.R.S.

2. Intestinal Absorption. To be opened by Professor Waymouth Reid, F.R.S.

The following papers are promised:

BAIN, W., M.D. An Experimental Contribution to the Study of the Mechanism of Bile Secretion.
CARLIER, E. W., M.D. Changes that Occur in Some Cells in Mucous Membrane of the Newt's Stomach during Digestion.
COPEMAN, S. Monckton, M.D. Biliary Secretion in Man.
DUNLOP, J. C., M.D. On the Distribution of Nitrogen in the Urine.
GILLESPIE, A. Lockhart, M.D. On Proteoses.
GULLAND, G. Lovell, M.D. On the Influence of Nerves on Intracranial Blood Vessels.
HARRIS, D. Fraser, M.D. The Physico-Chemical State of Caseinogen.
MACWILLIAM, Professor J. A., M.D. The Influence of the Central Nervous System on the Rate of the Heart's Beat.
MILROY, T. H., M.D. Chemical Changes in Pelagic Ova during Maturation.
MILROY, T. H., M.D., and MALCOLM, J., M.B. The Metabolism of Nuclein under Physiological and Pathological Conditions.
PATON, Noel D., M.D. (1) Protoplasm and Zymin Action. (2) Further Observations on the Metabolism of the Salmon.
PEMBREY, M. S., M.D. Observations upon the Deep and Surface Temperature of Man in Health and Disease.
RUTHERFORD, Professor, F.R.S. (1) On the Secretion of Bile in the Human Subject. (2) On the Action of the Internal Intercostal Muscle.
STURROCK, A. C., M.B. The Selective Power of Tissues, especially as Illustrated in the Mammary Gland.
THOMPSON, Professor W. H., M.D. On the Influence of Peptone and its Precursors on the Work of the Kidney.
TURNER, F. D. Dawson, M.D. (1) Experiments on the Production of Complementary Colour Sensations. (2) Stereoscopic Exhibition of Roentgen Photographs of Injected Blood Vessels.
WALLER, Augustus D., M.D., F.R.S. On the Action of Anæsthetics on Vegetable and Animal Protoplasm.
WATSON, D. C., M.B. The Place of Formation and *Rôle* of Uric Acid in the Animal Organism.

PROGRAMME OF PROCEEDINGS.

TUESDAY, JULY 26TH, 1898.

9.30 A.M.—Meeting of 1897-98 Council.
11 A.M.—Opening Service in St. Giles' Cathedral.
2.30 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business.
8.30 P.M.—Adjourned General Meeting from 2.30 P.M. President's Address.
9.30 P.M.—Reception by the Right Hon. the Lord Provost of Edinburgh, in the Museum of Science.

WEDNESDAY, JULY 27TH, 1898.

9.30 A.M.—Meeting of 1889-99 Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Second General Meeting. Address in Medicine by Professor T. R. Fraser, M.D., LL.D.
Garden Party at Craig House, Morningside Drive. Sir Alexander Christison, Bart., and Dr. Clouston will receive.
9.30 to 12 P.M.—Reception will be given by the Local Committee in honour of the Association, within the McEwan Hall and New University Quadrangle.

THURSDAY, JULY 28TH, 1898.

9.30 A.M.—Meeting of Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Third General Meeting. Address in Surgery, by Professor Annandale, F.R.C.S.
Reception and Garden Party by the Royal College of Physicians, within the College and the adjacent Queen Street Gardens.
Reception by the Royal College of Surgeons within the College.
Reception by the Royal Medical Society within the Society's Hall.
Garden Party by Professor and Mrs. Balfour, Inverleithen House.
7 P.M.—Public Dinner of the Association. Music Hall, George Street.
9 to 11 P.M.—The Ladies Committee will give a *conversazione* to ladies and invited guests within the Royal College of Physicians.

FRIDAY, JULY 29TH, 1898.

10.30 A.M. to 1.30 P.M.—Sectional Meetings.
3 P.M.—Concluding General Meeting. Address in Psychological Medicine. By Sir John Batty Tuke, President of the Royal College of Physicians, Edinburgh.
Garden Party by the Right Hon. the Earl of Hopetoun, G.C.M.G., at Hopetoun House.
Reception and Ball by the Right Hon. the Lord Provost and the Magistrates of Edinburgh, in the Music Hall, George Street.

SATURDAY, JULY 30TH, 1898.

10 A.M.—The University Graduation Ceremonial will take place in the McEwan Hall.
Excursions.

Honorary Local Secretaries.

R. W. PHILIP, M.D., F.R.C.P.Edin., 4, Melville Crescent, Edinburgh.
JOHN SHAW M'LAREN, M.B., F.R.C.S.Edin., 14, Walker Street, Edinburgh.

RECEPTION ROOMS.

The Reception Room, which is located in the Oddfellows Hall, Forrest Road, opens on Monday, July 25th, from 4 P.M. until 9 P.M., and on Tuesday, July 26th, and the following days from 9 A.M. until 6 P.M. for the issue of tickets to members, and for supplying all necessary information. It is particularly requested that all members on their arrival will at once proceed to the Reception Room, Oddfellows Hall, enter their names and addresses, and obtain their tickets and *Daily Journals* containing programme, inquire for letters, consult list of lodgings, hotels, etc. A reception room for invited foreign guests will also be provided for in an office adjoining the entrance to the Oddfellows Hall. Excursion tickets will be distributed in the smaller hall on the first floor. Suitable arrangements for post office and correspondence will be found in the main Reception Room.

THE ANNUAL MUSEUM.

The annual Exhibition in connection with the meeting will be held in the Drill Hall, Forrest Road, Edinburgh, from July 26th to July 29th inclusive. The Exhibition will comprise foods and drugs, medical and surgical instruments, appliances and dressings, medical publications, sanitary and

ambulance appliances, and other articles of interest to the medical profession.

The Drill Hall is a spacious building, well lit from the roof, and as the entrance is almost directly opposite that of the Reception Room, the situation is exceptionally advantageous. The small hall adjoining will be reserved for sanitary and ambulance appliances. For these the charge for floor space will be 1s. per square foot (all fittings to be provided by the exhibitor). For other exhibits the charge will be from 4s. per square foot, tables 3 feet and 3 feet 6 inches wide being provided.

Between two and three thousand catalogues will be printed and distributed gratis to members.

On application to the Secretary of the Exhibition Committee, Dr. Norman Walker, 7, Manor Place, Edinburgh, the regulations and any other particulars desired will be forwarded.

EXCURSIONS.

An attractive series of excursions, both for the half day and the whole of Saturday, has been arranged by the Excursions Subcommittee.

I. Short excursions, either on Saturday or on some of the week-day afternoons. These include visits to the Forth Bridge by coach or rail to Dalkeith and Roslin Chapel and Castle. Professor Cossar Ewart, F.R.S., has indicated his intention of inviting members to inspect his hybrid foals. An international match between teams representative of England and Scotland is in course of arrangement for Friday afternoon.

II. Whole day (Saturday) excursions. The series includes the following:

(*a*) *St. Andrews.*—The Marquis of Bute will entertain the members at luncheon, and allow them to inspect his recent excavations in the neighbourhood.

(*b*) *Falkland Palace and Kinross.*—Visiting the palace, where the Marquis of Bute will provide luncheon, and thence driving to Kinross for Loch Leven and Castle.

(*c*) *Dunkeld and Crieff.*—By rail to Dunkeld, and thence driving by the Small Glen and Amulree to Crieff, where the members will be entertained to dinner at the Hydropathic, by invitation of Dr. Meikle.

(*d*) *Dollar and Rumbling Bridge.*—Visit to Castle Campbell and other picturesque places in the neighbourhood. The members will be entertained to luncheon at Blair House and at Hilfoot House.

(*e*) *Perth and Dundee.*—By rail to Perth through Glen Farg. Thence by steamer down the Tay to Dundee. The members will be entertained at luncheon at Perth by Dr. Urquhart and in the afternoon by the Perth and Dundee Branches.

(*f*) *Melrose and Scott Country.*—By rail to Melrose and thence by carriage to Abbotsford, Dryburgh, etc. The members are invited to afternoon tea at Melrose Hydropathic.

(*g*) *Stirling and District.*—Visiting the famous Howietoun Fish Ponds and thence driving through Stirling, where the members will be entertained to luncheon by the Stirling, Kinross, and Clackmannan Branch, to Bridge of Allan, where a garden party will be given by the directors of the Mineral Wells Company.

(*h*) *St. Mary's Loch.*—By rail to Selkirk and thence driving by the celebrated St. Mary's Loch to Innerleithen and the Tweed.

(*i*) *The Trossachs.*—By rail to Callander and thence through the Trossachs.

LONGER TOURS IN SCOTLAND.

After the meeting tours of several days or a week or more may be conveniently undertaken. A number of suitable tours of varying length and cost will be suggested and arranged by Messrs. J. and H. Lindsay, tourist agents to the meeting, 7, Waterloo Place, Edinburgh, or at the Reception Room.

INTERNATIONAL GOLF MATCH.

It is proposed to hold a golf match on the afternoon of Friday, July 29th, over Muirfield and Archerfield Links, between resident Scottish and other members of the Association.

In order to facilitate arrangements, Secretaries have been appointed as follows: Dr. Colcott Fox, 14, Harley Street, London, W., for the South of England and Wales; Dr. Richardson, 19, Saville Row, Newcastle-on-Tyne, for the North of England and Ireland; and Dr. Blaikie, 42, Minto Street, Edinburgh, for Scotland.

Members wishing to play in the match are requested to communicate with one or other of these gentlemen not later than July 20th, naming their club and stating club handicap in strokes.

SPECIAL CORRESPONDENCE.

ROME.

The Professorial Jubilee of Professor Durante.

THE twenty-fifth anniversary of Francesco Durante's first lecture as Professor of Surgery in the University of Rome was celebrated on June 5th in the Clinica Chirurgica. The ceremony was very impressive and affecting, and those who were present are not likely soon to forget it. The great Italian surgeon's pupils were present in hundreds, and there was also a large attendance of his colleagues and friends resident in Rome and other parts of Italy. Among the latter were the entire Faculty of Medicine, the Minister of Public Instruction, many Senators, and several of the Professors of the other Italian Universities. Nearly all the British doctors practising in Rome were also present.

Professor D'Antona, of Naples, who presided, warmly congratulated Professor Durante, and presented him with the three volumes of surgical monographs referred to in the BRITISH MEDICAL JOURNAL of June 25th under the head of "Literary Notes." Professor D'Antona also presented Professor Durante with an artistic *pergamena* containing the following inscription in Italian: "To Francesco Durante, Senator of the Kingdom, Prince in Surgery; upright in his home and country. His colleagues in every nation, his friends and disciples, offer this, on the twenty-fifth anniversary of his first lecture in the University of Rome, to testify that the word of the wise man is universal, and his first revelation, like public events, fixes a date in the memory of men." The President concluded with the hope that Senator Durante's life would long be spared to science and his country.

One of Durante's students then presented him with a gold medal on behalf of the students, and said that it testified to the admiration and affection of his pupils for the restorer of surgery in the city of Celsus.

The Minister of Public Instruction next arose and said that he was present first of all as a friend and colleague of Francesco Durante in the University and the Senate; in the second place as Minister, and, finally, commissioned by the King to present to the scientist whom they were then honouring the decorations of *Grande Ufficiale della Corona d'Italia*. *Ubi major est, minor cessat*; he therefore confined himself to presenting the congratulations of the King.

Professor Cugnoni, of the Faculty of Literature, congratulated Durante on behalf of the whole academic body.

Finally, Professor Durante, visibly affected, turning to his students said: "The distinction of which His Majesty the King has been pleased to consider me worthy, the presence of the distinguished scientist who presides to-day and that of my colleagues, and the affection that you have shown me clearly prove that to make oneself admired it is not necessary to do great things. I have only done my duty, desirous of seeing our profession reach the level of other nations. This is the little stone added to the great edifice that you are constructing to-day in which the means are greatly augmented. Restore our country to the greatness of the Renaissance and give it honour and glory."

This brief speech was received with loud cheers.

As Francesco Durante is not so widely known in England as he ought to be, the following brief particulars of his life and work may be interesting. He is a Sicilian by birth, and studied medicine in Florence and Naples, where he obtained his degree. He then went to London, Paris, Vienna, and Berlin, where he devoted himself especially to embryology, histology, and pathological anatomy, studies which were to be so profitable to him and to surgical science in the future. His profound knowledge of pathology has been shown in his work on inflammation of the coats of the blood vessels, the organisation of thrombus, perforating ulcer, and tumours. He must

also be considered the author of the embryonic theory of tumours, as he clearly propounded this theory a year before Cohnheim's work on pathology appeared. Professor Durante's greatest literary work, however, is his *Treatise on Surgical Pathology and Therapeutics* in three volumes, which is now being published, and will be completed within the next few months. This book has met with unstinted praise in Italy, and even in its incomplete state has been awarded a prize by the Institute of Science and Letters of Venice. The work is being translated into English.

ABERDEEN.

The Pollution of the Water Supply: Professor Hamilton's Bacteriological Report: Suggested Remedies.—Instruction in Electro-therapeutics.

In consequence of the recent somewhat alarming discoveries of the pollution of the water supply in Aberdeen, scientific investigations as to the impurity of the water have been made at the University for the benefit of the town. Dr. Murray has carried out the chemical analyses and Professor Hamilton has drawn up a report on the bacteriological condition of the water. One of the most striking features in Dr. Murray's report is his estimate that at one point something like 700 gallons of highly deleterious liquid is daily entering the aqueduct which conveys the water to the town, and that here there is a cesspool within 10 feet of the duct, while the ground in its immediate vicinity is saturated with sewage. Professor Hamilton, in the portion of his report dealing with the quantitative examination of the bacteriological impurity of the water, states that the average number of germs per c.cm. in the water from all the points in the water conducting apparatus examined was 1,862; the lowest number being 105 on one occasion and in very dry weather, while the highest was 5,061 after heavy rain. Now since, as Dr. Hamilton points out, it was laid down by the Commission which examined into the impurities in drinking water during the recent cholera scare in Germany, that such water should contain no more than 100 germs per c.cm., and that at no part of the Aberdeen water conducting apparatus were so few as 100 germs per c.cm. ever found during the investigation, it is obvious that the condition of affairs should be made public. That 100 germs per c.cm. is by no means an unpractical limit Professor Hamilton shows by the fact that of 61 samples of filtered water from the several works of the London water companies only one sample yields more than 100 germs, whilst the average was 29 per c.cm. After summarising the results of his investigations as showing that the water contains too many bacteria, is polluted by sewage and foul water, and that each flush of rain pollutes the water beyond a reasonably safe limit, Professor Hamilton suggests the following remedies: A water-tight aqueduct, the purification of water by means of settling ponds and filter beds, and the removal of sources of contamination between the filter beds and the points of distribution of the water in the city. As the result of these investigations, a Subcommittee of the town council have visited and inspected many of the suspected points of the aqueduct, and though matters in some cases were not apparently so serious as had been feared, and though steps had been already taken in some places to remedy the obvious danger of pollution of the water, it is clear that considerable alterations will have to be made before the inhabitants of Aberdeen can drink the water as supplied by the city authorities with any confidence in its reasonable purity.

At the Aberdeen Royal Infirmary a class has recently been formed by the physician in charge of the electrical department, wherein students are now receiving practical instruction in the therapeutical uses of electricity.

MANCHESTER.

Opening of the Christie Library and Laying the Foundation Stone of Whitworth Hall by the Duke of Devonshire at Owens College.—Manchester and Salford Sanitary Association and Lamp Explosions.—Burnley Hospital Report.—A Million Doses of Medicine per Annum.—Infirmary Rebuilding Scheme.

The Duke of Devonshire, President of Owens College, paid a visit to Manchester on June 22nd to open the Christie Library and to lay the foundation stone of the Whitworth Hall. The library is the personal gift of Mr. R. C. Christie, while the hall is to be built as a memorial of the late Sir Joseph Whitworth, from moneys which came to Mr. Christie as third legatee under his will. The library is a magnificent building, and no expense has been spared to make it worthy of the great institution which it helps to complete. It cost about £20,000. The Whitworth Hall will probably cost between £50,000 and £60,000, and will be used for public ceremonials connected with Owens College and for similar functions, and on the occasion of conferring degrees in Victoria University. Up to the present time the ceremonies in connection with Victoria University have had to be conducted in public halls hired for the purpose. The Duke, in his speech, dwelt upon the Government report on the work done by Owens College, which vouched for the character of the work. The Duke remarked that increased State assistance given to universities would mean State control and State guidance, neither of which would, in his opinion, be compatible with the perfect and complete efficiency of the independent colleges. The only source upon which institutions of university rank could rely in the future was, he asserted, the generosity of private donors. The two magnificent gifts which Owens College had just received proved that in the case of Manchester and the Owens College, at least, the race of the munificent benefactor or "pious founder" had not become extinct. It was to be remembered, however, that the maintenance of these magnificent buildings would entail a very considerable increase in the sums expended by the College from the general fund.

The Manchester and Salford Sanitary Association resolved at its last meeting to publish the proceedings at the recent conference on Disposal of Towns' Sewage. A very important report on lamp explosions by Mr. Wm. Thomson, F.R.S.Ed., was read.

The findings of the joint committee, representing the Burnley Victoria Hospital and the Burnley Board of Guardians, in the inquiry into the treatment of the carter named Smith have been published. Instead of a joint report two reports of the committee were presented, one signed by the four representatives of the hospital and the other by the four guardians. The hospital section, "while greatly regretting the unfortunate misunderstandings that have arisen in connection with this case, are of opinion that the hospital authorities are not responsible for them." The report of the guardian representatives is given in eleven paragraphs, explaining the circumstances of the case from their point of view.

The City coroner, in referring to the death of an inmate of the Manchester workhouse, said that there was evidence that the inmate had poison given her by a nurse by mistake, but he doubted whether the jury would be able to form the opinion that poison had caused the death of the woman. The master of the workhouse said that medicine was given altogether between 2,000 and 3,000 times a day in the hospital, on which the coroner remarked to the jury that "You may reckon that up, gentlemen; in twelve years that means there has only been one mistake in the application of millions of doses." There are a thousand persons in hospital at present, and with three thousand doses of medicine given each day, that means more than a million a year. The jury, in returning a verdict, censured two nurses, who, they were of opinion, had been guilty of carelessness. They recommended that bottles containing poison should be kept solely in a particular cupboard, which should be in charge of one person only.

The Board of Management of the Royal Infirmary, at their meeting on June 26th, adopted a report to be submitted to the trustees in connection with the work of the Joint Committee of the Board and of the Corporation of Manchester. The report traces the history and records the failure of the negotiations. The report states that as the Infirmary Board by a majority determined not to permit their representatives to renew negotiations founded on a sale of the entire property of the Infirmary trustees, the Board "have regretfully to report that no practical result has been obtained, or seems possible of attainment within the limits and meaning of your mandate. The Board of Management therefore assume that it is your wish that the rebuilding of the infirmary upon the present site, in accordance with the plan already approved of by you, be proceeded with." In order to ascertain if this

assumption is correct, it is proposed to call a special general meeting of the trustees, of which notice will be issued at an early date. This will raise the whole question once more.

CORRESPONDENCE

THE ROYAL ARMY MEDICAL CORPS.

SIR,—The question of the competitive examinations for admission into the Army Medical Service was discussed by Lord Camperdown's Commission. Sir Thomas Crawford and Sir William Mackinnon did not think the existing system was calculated to draw high class medical men into the service. Dr. Norman Moore, in his evidence before the Commission, observed that in his opinion the examination was "foolish" because of the way it examined men, and that a system of this kind had been proved elsewhere to be a mistake. This and other evidence to the same effect led the Commissioners unanimously to adopt the following recommendation in their report forwarded to the Secretary of State for War as far back as the year 1889:

ADMISSION INTO THE SERVICE.

The medical witnesses have almost without exception stated that, in their opinion, it would be an advantage if a certain number of vacancies were offered to medical men who have filled the office of house-surgeon or physician at hospitals recognised by the General Medical Council without examination. The power to admit in this manner is already possessed by the Secretary of State for War under Art. 332 of the Royal Warrant of 1887; but up to the present it has not been exercised. We think that in this manner a certain number of desirable medical officers might be obtained. House-physicians and surgeons of large hospitals must necessarily be men who can with confidence be entrusted with responsible duties, and if candidates of this description were nominated by the medical schools, at the invitation of the Director-General of the Army Medical Department, and with the approval of the Secretary of State for War, we consider that the exercise of this alternative mode of appointment would be found beneficial.

There can, it seems to me, be but little doubt in the minds of those persons who have studied this question that the above is a recommendation in the right direction; by this means also the number of appointments into the Army Medical Service by open competition would be curtailed, and so probably the standard of the examination would be raised. These examinations might with advantage revert to the Royal Colleges of Physicians and Surgeons, who are accustomed to deal with these matters, and would probably as regards the subjects for examination and the method of applying the necessary tests, follow out the plan best calculated to test the qualification of candidates for the A.M.S.—I am, etc.,

Grosvenor Street, W., June 27th. N. C. MACNAMARA.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

SIR,—As one who took part in the formation of the above Society, allow me to say that the age at which sick pay should cease—if at all during life—was carefully considered at the time, and the age 65 was decided on after mature deliberation, and under the best actuarial advice, the chief reason for this decision being the extreme difficulty experienced by all friendly societies of dealing with old age sickness. It is found that members after a certain age tend—in spite of the greatest vigilance on the part of the management—to become permanent burdens on the funds, thus in effect receiving an annuity for which they have never paid, and it is this more than any other cause which makes many of these institutions find themselves in difficulties as soon as their members begin to grow old.

I do not understand why more of our members do not avail themselves of the annuity arrangement; the premium is trifling, provided always, of course, that the payments are commenced at a sufficiently early age; and it is surely better for them to have the sum—whatever it may be—paid subject to no conditions, and to be at liberty to do any practice they are capable of, than to receive it under the very necessary, but often harassing, rules which must always govern the receipt of sick pay, one of the chief being that all work, however little, must be given up.

It has, further, to be borne in mind that all privileges of this kind must be paid for, and if the Society were to be reorganised on the lines suggested by "A Member" in the BRITISH MEDICAL JOURNAL of June 18th—a proceeding to which I, for one, should strongly object—a considerable addition would have to be made to the sums paid to the sick fund, as much probably as would cover the cost of a moderate annuity, for it is clear that the surplus funds would under the most favourable circumstances be wholly inadequate, and it seems hardly necessary to say that the invested funds are not, and never will be, more than enough to maintain the Society on its present footing; it is also certain that any such change would greatly increase both the cost of management and the work of the Committee.—I am, etc.,

Bordesley, Birmingham, June 20th. T. H. RAVENHILL.

SIR,—The fact that all sick pay ceases at the age of 65 is indeed a weak point in the Medical Sickness and Accident Society, and one which ought, if possible, to be removed, by raising the present subscriptions somewhat, and doing away with the granting of bonuses—a very unnecessary gift, and one which is, I believe, little appreciated by the members. It is in the declining years of life, when help is most needed, that it will fail.—I am, etc.,

June 20th. M.D.

SIR,—I think the proposal made by "A Member" in the BRITISH MEDICAL JOURNAL of June 18th is very good, and ought not to be passed over unnoticed by the other members of the Society. A vote of all the members ought to be taken, and acted upon accordingly. It is a most beneficial Society, and I don't think there ought to be an age limit to the sick pay, as we all know that we shall want it more after the age 65 than before, if alive.—I am, etc.,

June 21st. ANOTHER MEMBER.

SIR,—Permit me to endorse the views of your correspondents on the hardship of the sick allowance benefit ceasing at the age of 65. I believe that I am the first of the original members to have been struck off the list for this cause. During my membership, dating from the foundation of the Society, I only drew two weeks' sick pay, and I do not know whether I shall even participate in the next bonus which my contributions have assisted to make. Like many men of my age I am in perfect health and vigour, but the prospect of being laid aside as life advances is not a happy one to contemplate. I would urge upon the members the desirability of increasing the time limit to the end of life or cessation of professional work.—I am, etc.,

June 21st. VOX.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

SIR,—In view of the approaching election of members to the Council of the Royal College of Surgeons, I have asked for an expression of opinion from the various candidates, and especially from the provincial ones, who naturally rely on the votes of the provincial Fellows. It seems certainly strange that although circulars have been sent out on behalf of the latter named gentlemen, no statement of policy or opinion on matters of interest to the Fellows has been made. Why this should be I cannot understand; every candidate who is to be elected by the votes of a constituency, such as candidates for Parliament, etc., always makes some pronouncement as to his policy. Why not candidates for the Council?

As to the question whether Members should be admitted to some share in the management of their own Council, Mr. May says:

I am opposed to any change in the present mode of election to the Council and the Presidentship.

With regard to the question of the Council taking action to check those Members and Fellows who act for medical associations which allow touting for members, he says:

While I strongly disapprove of Fellows and Members holding appointments in which touting for sick members is allowed, and would support any reasonable and legal efforts to check this evil, I cannot promise beforehand to support any particular course of action which is unknown to me.

As to the point how the College representative on the General Medical Council is to be elected, he says:

I am not in favour of election of representative on the General Medical Council by direct vote of the whole body of Fellows and Members. I should be sorry to see this mode of election introduced, and cannot promise to support in that direction.

I may say that Mr. Richardson Cross does not wish me to publish his letters to me about the matter; but generally speaking, while not promising to support any of the proposi-

tions referred to, he wishes to keep an open mind with regard to them. As it is stated on good authority that one more member on the reforming side would at any rate give a majority in favour of the last proposition, I think it is a pity some candidate holding these views has not come forward on this occasion. I have not received, up to this date, any replies from the other candidates. Trusting you will publish this for the information of the Fellows of the College.—I am, etc.,

Plymouth, June 28th. G. Jackson.

THE MEDICAL EXPERT AID COMMITTEE.

Sir,—The article contained in the British Medical Journal of June 18th, on the above, has been brought to the notice of the Subcommittee, by which I am requested to write to you as follows:

1. This Committee is quite prepared to recognise, and does recognise, the fact that one of the distinguished characteristics of the medical man (no matter whether he be a general practitioner in the suburbs of London or the senior physician or surgeon of one of the large London hospitals) is the generosity with which he treats persons requiring his assistance, but who are not in a position to pay the usual fee, no matter what that fee may be; and it is this generosity of the medical profession that has enabled, and will enable, this Committee to help the class of persons for which it has been formed.

2. It is not intended (neither has it been suggested, elsewhere than in your article) that this Committee should thrust itself between the general practitioner and the patient of limited means, for the rules of this Committee provide that after an applicant has applied for the assistance of this Committee he must go back to his general practitioner, and not until then can he go to the specialist, for the general practitioner must sign the form of certificate which is the sole passport to the specialist, so it will be seen that there is no intervention here between the patient and his ordinary medical attendant.

3. The experience of the members of this Committee and of a large number of medical men who sympathise with the objects of this Committee is that the evil to which you refer really does exist, but as this is a question of opinion, I do not think that it is necessary, at any rate at the present moment, to discuss whether the opinion expressed in your article or the opinion of this Committee is correct.

4. In your article you have written, "No consultant of any position is likely to lend himself to a scheme which makes him practically the servant of a lay committee, farming out, under the guise of a specious philanthropy, his professional skill at a price which he cannot accept with dignity, and which at the same time is too high for the class which it is desired to benefit." The first statement as to no consultant lending himself to this scheme has been shown to be quite wrong, because I have before me now a large number of letters from consultants in all branches of medicine and surgery who are well known, and who promise to see patients recommended to them by this Committee. The suggestion that this scheme makes the consultant a servant of a lay committee is likewise unfounded and somewhat ungenerous, because upon every occasion of a patient going to a consultant through this Committee the consultant is asked to see the patient, and of course the consultant has a right to refuse to do so, should he think fit, but before sending the patient to the consultant this Committee has taken the precaution to ask practically every consultant in London to see patients recommended in the prescribed manner, and the reasons why every consultant has been asked are the following: (1) That the patient may have as large a choice as possible; (2) that this Committee should not even in the slightest degree be used, or even appear to be used, for the benefit of any particular specialist, or for the benefit of one or more specialists in each of the branches of medicine and surgery.

5. The suggestion in your article that this Committee is "farming out under the guise of a specious philanthropy" the professional skill of the consultant is one that I deal with reluctantly, for I cannot conceive that the writer of the article in question would, however bitter his opposition to the scheme, adopt language that reflects, or might on account of the uncertainty of the language employed in any way reflect unfavourably upon this Committee.

I do not think it is necessary for me to make any general comment upon your article; my only object is to state facts, and in so doing to express the high appreciation of this Committee of the medical profession in general, and of the offers of assistance it has received from those consultants to whom I have already alluded.

I should like, if I might further trespass upon your space, to refer to the letter signed "Scrutator" in the British Medical Journal of June 18th, and to point out to him that the word "affiliated" incorrectly describes the relation that will exist between this Committee and the consultants to whom it may send patients, because every case will be treated separately, and no patient will ever be sent to any consultant without that consultant being asked to see that particular patient who will be named, and the consultant will, as I have above pointed out, be at liberty to refuse to see the patient. Your correspondent refers to the selection of the consultant as the most objectionable feature of the scheme, but I venture to suggest that he really has not considered the rules, because it is quite clear that the person responsible for the selection of the consultant is the patient and the patient alone, and I assume that if the patient requires any advice (and in nearly every case he will) as to which out of several consultants he should see, he will receive that advice from his medical attendant and act upon it. If this is the most objectionable feature of the whole scheme, the others (if any there are) cannot be very important, but no matter what objections there are, as the same are raised or made, it will be the endeavour of this Committee to consider those objections and adopt a course which, whilst retaining the help of the consultants in all branches of the medical profession, will bring within the reach of that large and deserving class for which the Committee exists, the assistance of the specialist which in the majority of cases is worth more to the individual sufferer than can be represented by any fee, no matter how large such fee may be.—I am, etc.,

S. Gissing Skelton, Hon. Sec.

Lincoln's Inn Fields, W.C., June 28th.

Sir,—As a general practitioner I have often felt that if we could send our patients to a consultant for a nominal fee of half a guinea, without having to ask for a special favour, that we could add considerably to the income of the consultant; also relieve the funds of our hospitals, and what I consider a very important matter, our patients would retain their own self-respect and not be pauperised. We should keep the patients under our own care, and I am sure of this that many operations which are done gratuitously in the hospitals we could easily secure for the specialists at fees from £5 5s. upwards.

I believe general practitioners are only too glad to send patients to the specialists who can pay the full fee, and may be safely trusted not to abuse the privilege. At present gross abuses exist, thousands of persons receive gratuitous advice, medicine, etc., in our hospitals who could pay a reasonable fee for consultations and operations. In Manchester, surrounded as it is by many large manufacturing towns, there is a large field for this scheme to be tried. The scheme advocated by Dr. Hugh Woods does not lower the dignity of the profession, but would tend to the mutual advantage of the medical profession and the public.—I am, etc.,

Bacup, June 27th. James Brown, M.D.

NEWSPAPER PRESCRIBING.

Sir,—I enclose a page from *The Ladies' Field* in which you will see, in answer to a correspondent, "Hygea" says: "Dissolve the quinine 'sulphate' first in the alcohol by gentle heat." This, Sir, appears to me a most dangerous proceeding to recommend the ordinary person to do. I have tried the experiment myself, and I find that with a Bunsen burner and a wire gauze to regulate the amount of heat employed, the procedure can be gone through without the alcohol taking fire; but great care is necessary to use a small flame and to keep the flame at a good distance from the beaker, otherwise the whole of the liquid takes fire and flares up. This proceeding, in the hands of a young society woman not accustomed to chemical work, and unacquainted with the inflam-

mable nature of the alcohol, might result in a serious catastrophe to herself and to others in the same house.

Sir, I have brought this case before you because I think such a reckless recommendation of an inflammable article like alcohol to be heated—a recommendation to the unwary—constitutes a grave public danger, and one that ought not to be allowed to remain unchallenged. In one of my experiments, done without due precautions, before I could turn round to get some more quinine out of a bottle, the whole of the alcohol was in flames.

The page I enclose was taken from a paper I found lying on the table of a friend.—I am, etc.,

E. G. LEOPOLD GOFFE,
M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond.,
June 27th. House-Surgeon to University College Hospital.

Obituary.

HENRY CASE, M.R.C.S., L.S.A.

WE regret to have to record the death at Folkestone on June 15th of Mr. Henry Case, who until the beginning of the present year was medical superintendent of the Metropolitan District Asylum at Leavesden. We are indebted to a former colleague for the following notice of his career:

Henry Case was born in London on June 28th, 1843, and spent his boyhood in West Herts. On leaving school he proceeded to Middlesex Hospital, and became M.R.C.S.Eng. in 1867, and L.S.A. the following year, after which he was appointed House-Surgeon to his own hospital, and performed the duties of the office with a zeal and an efficiency which won him golden opinions from all concerned.

On leaving Middlesex Hospital he was appointed House-Surgeon to the West Herts Infirmary, which position he held over three years. On resigning it in 1873 to become Assistant Medical Officer in Leavesden Asylum, the Infirmary Board formally put on record their high appreciation of his services, and expressed their regret at not having the power to mark their appreciation in such a tangible manner as they would have wished. After nearly three years' work as Assistant Medical Officer at Leavesden he was appointed Medical Superintendent of the Asylum at Hampstead under the same Board; and shortly thereafter this asylum was converted into a hospital for small-pox, which he managed with signal success.

In the autumn of 1876 he succeeded Dr. Claye Shaw, now medical superintendent of Banstead Asylum, as Medical Superintendent of Leavesden Asylum; and this office he held until ill-health compelled him to retire in January last. For some years after 1876 he was Lecturer on Psychological Medicine in his Alma Mater, but finally had to resign this appointment on account of the onerous nature of his daily work at Leavesden. He performed his duties at Leavesden with ability, tact, and rare vigilance, a vigilance so unceasing that his duty became alike his work and his hobby. He kept pace with current medical literature, and exercised a most humanising influence over his unfortunate patients, and an influence at once salutary and love-inspiring over the staff.

Modest and retiring in disposition, it was only by those who came in daily contact with him that his conscientious labours and sterling worth were fully appreciated, but within the large institution which he administered so well, and among his friends—who are all with whom he had dealings as man or physician—it will be long ere his high qualities and kindly presence are forgotten; and among his former medical colleagues his rare diagnostic ability and ripe judgment will long be remembered.

THE sudden and unexpected death of FRANZ FORESTER FOSTER-FOSTER, M.R.C.S., L.R.C.P.Lond., at Port Said on June 10th, has come as a great shock to a large circle of friends. He received his medical education at Guy's Hospital, and took the diplomas of the Royal Colleges in 1890. Two years later he was appointed Resident Medical Officer to the Lady Strangford (British) Hospital at Port Said. This appointment was originally made for three years, but his services were so highly appreciated by the committee that he was twice reappointed for periods of two years. It had been his intention to return to England nine months hence, when the second term had expired. During his residence for six and a-half years at Port Said he made many friends among all nationalities, and his decease at the age of 34 will be deplored by all. His death was due to hæmorrhage secondary to the rupture of a tuberculous abscess. He was a capable medical practitioner, and his funeral at Port Said took place amidst universal signs of mourning, for by his pleasant and sympathetic manner he had endeared himself to everyone with whom he came in contact.

MR. FREDERICK H. V. GROSHOLZ, of Towyn, whose death is announced, was born on January 14th, 1853, at Baden-Baden. His father was a native of Germany, while his mother was a native of Manchester. When Mr. Grosholz was very young the family removed to Manchester, where he was brought up. He qualified as L.S.A. and L.M. in 1874, and became M.R.C.P.I. in 1880. He was attacked by congestion of the lungs on June 18th, and died on June 21st. Some six months ago when attending some patients he met with a serious accident to his foot, from which he appears never to have fully recovered. He held many public appointments, among them being that of Medical Officer of Health for Towyn and Aberdovey. He was also a member of the Towyn and Pennal School Board, and Chairman of the Governors of the Towyn Intermediate School. The funeral, which took place at Llanegryn on June 23rd, was attended by a large concourse of people, who thus tendered a last tribute of respect to his memory.

MEDICO-LEGAL.

REGINA *v.* COLLINS.

THIS case was commenced at the Central Criminal Court on June 27th before Mr. Justice Grantham and a jury. The Attorney-General (Sir Richard Webster, Q.C., M.P.), Mr. H. T. Sutton, Mr. Charles Matthews, and Mr. Bodkin appeared for the prosecution, and for the defence there were Mr. C. F. Gill and Mr. A. E. Gill.

The ATTORNEY-GENERAL, in opening the case for the prosecution, said that the case was undoubtedly a very serious one. He had to put before the jury the facts which caused, as the prosecution suggested, the death of Mrs. Uzielli on March 25th of the present year. Dr. Collins, the prisoner, practised as a medical man at 10, Cadogan Place, and had not attended Mrs. Uzielli until Monday, March 14th, when she first saw him. Although she had had an attack of influenza some nine or ten weeks before, she was practically in good health. Dr. Collins saw Mrs. Uzielli on occasions from Monday, March 14th, till half-past seven on Thursday, March 24th. During the time he was attending her there was nothing, so far as his statement was concerned, to cause any alarm. He stated to her husband up to the very last moment of his attendance that she was absolutely all right, and that there was no single symptom to cause any anxiety. At 10 o'clock on the night of Thursday, March 24th, Dr. Stivens was called in, and he found Mrs. Uzielli suffering from acute septic peritonitis. He saw her with a livid unhealthy expression, rapid breathing, pulse 130, and temperature 102° F. She was on her back, her knees were drawn up, and the abdomen was tender and distended. There was no discharge from the womb. After a few minutes' examination Dr. Stivens saw that she was dangerously ill and suffering from peritonitis caused by blood poisoning. On Friday, March 25th, she was visited by Sir John Williams, who was called in under the advice of Dr. Stivens, and she died on the afternoon of that day. The jury had to consider whether or not her death was caused by anything done by Dr. Collins. Between Monday, March 14th, and Thursday, March 24th—a period of ten days—something happened; it might be natural causes, or it might be unnatural causes, to put Mrs. Uzielli into the terrible condition in which she was, and from which condition she died on March 25th. There was a coroner's inquest and a *post-mortem* examination, and at the examination the cause of death was plainly discovered. A wound was found about an inch and a quarter on the inner side of the anterior lip of the womb (os internum) caused by some blunt-pointed instrument. Whether or not the wound was caused by the prisoner was a very important matter, and one into which the jury would have to inquire. That it was the cause of Mrs. Uzielli's death he should have to submit upon the evidence there could be very little doubt. He should also suggest that the wound was caused on Tuesday, March 15th, and that it set up septic peritonitis—a disease which he believed, almost without exception, must be communicated by some germ or bacillus from outside. The wound having been caused on Tuesday, March 15th, septic peritonitis set in shortly afterwards, and all the symptoms which occurred were consistent, to use no stronger expression, with the wound having been caused on Tuesday, March 15th. He submitted that the condition of Mrs. Uzielli in the early days of the week must have been such as ought to have excited the prisoner's attention and made him form the conclusion that she was not only seriously but dangerously ill. During this time the prisoner was informing Mr. Uzielli and others that there was no danger, that there were no serious symptoms, and, in fact, he apparently suggested that the lady was exaggerating her sufferings—that she was hysterical and not so

ill as she imagined herself to be. From the evidence that would be called it would appear that Mr. and Mrs. Uzielli lived together on terms of great affection. At times they lived at Owsden, near Newmarket, and in January of the present year Dr. Lucas attended Mrs. Uzielli for influenza. It was not a severe attack, but it had undoubtedly weakened her. Her monthly periods had been regular and had not caused her any pain. The January period came on about the 10th or 12th, and lasted some five days, passing off in the usual way without anything being wrong. Between the January and the February period it would, he thought, be practically established that she had conceived. At the time of her first seeing the prisoner on March 14th she was, as he thought the medical evidence would establish, 7 or 8 weeks pregnant. She was treated just before or about the time of her February period coming on, for morning sickness, one of the ordinary symptoms of early pregnancy. It was right that he should state at once that she was very anxious not to have a child, and that she had unquestionably treated herself, or endeavoured to treat herself, by strong purgatives or other medicines, in order to bring on her monthly period, so that she might not ultimately bear a child. He had not been able to get any evidence as to where any medicine she had taken had been obtained; but it was fair to the prisoner to state that before she visited him, though she was a perfect stranger to him, there was very little doubt she had been dosing herself—probably strongly—in order to bring on her periods, or, in other words, to prevent herself being ultimately pregnant with a child. That that was her hope, he thought there could be no question; but it had no bearing upon the case, except so far as possibly it might affect the condition of health in which she was when she first saw Dr. Collins. She came to London early in March, and was in good health, except in so far as she might have been slightly weakened by influenza; she was going about shopping, driving, and visiting. She was a healthy woman seven or eight weeks pregnant, and there was no sign of any serious illness. She had never been attended by Dr. Collins, but in the latter part of the week, ending Saturday, March 12th, a Mrs. Adrian Hope, a friend of hers, to whom amongst others she undoubtedly made a statement that she thought she was pregnant, wrote to Dr. Collins to ask whether he could see a friend of hers, not mentioning the name. On Monday, March 14th, Mrs. Uzielli went with Mrs. Hope to Dr. Collins. Mrs. Uzielli was taken into Dr. Collins's consulting room, and he examined her; at any rate she was with him for some ten minutes. Whether or not anything was done to her on that occasion he was not able at present to suggest. The jury would hear the evidence, and would have to draw their own conclusion. He would, however, suggest that whatever was done was done upon the next day, the Tuesday, when she paid Dr. Collins a longer visit. Mrs. Uzielli made a statement to Mrs. Hope to the effect that Dr. Collins had stated she had a displacement of her womb, and that she was to go back to him the next day in order that he might examine her again, and confirm or otherwise his opinion that she had a displacement. The case, as suggested by Dr. Collins, would be that on those two days, the Monday and the Tuesday, he certainly never inserted any instrument. That he examined her with his finger in the way medical men do, and that he endeavoured to replace a retroverted womb, that was a womb which had fallen partially backwards into Douglas's pouch. The *post-mortem* examination had shown, and the medical men who would be called would prove, that it was not possible for Mrs. Uzielli to have been in that condition. It would be very important, with reference to the suggestion made by Dr. Collins that there was nothing done except an examination by the finger, and possibly an investigation on the Tuesday by the speculum, that neither of those operations could have caused the wound. It was very important for the jury to satisfy themselves from the medical evidence what the lady's condition was when she went to Dr. Collins. Counsel's suggestion was that she went to him as a healthy woman, pregnant, and that something was done upon the Tuesday which caused the wound. She went away on the Monday, and on the Tuesday she went back and saw Dr. Collins, calling upon him again, with Mrs. Hope. She was taken into the consulting room, and was there some twenty minutes. Nobody was present in the room, and therefore no evidence could be called, although there was Dr. Collins's statement before the coroner that he examined her again with his fingers, and found that the womb had partially fallen back again, and that he replaced it, but did nothing which could have caused the wound, or could have caused any injury. When she went home on the Tuesday her maid, Müller, put a bath towel and mackintosh sheet in her bed. On the Wednesday and Thursday Mrs. Uzielli went out and was apparently not suffering any serious pain. When she was at Dr. Collins's on the Monday she was not wearing any diaper. After her visit on the Tuesday for the first time the maid observed a slight discharge; there was a discoloration of her clothes, and the maid gave her a diaper. It appeared that there was a slight discharge going on on the Wednesday and the Thursday until the time of Mrs. Uzielli getting worse. On the evening of Thursday she sent Dr. Collins a cheque for 30 guineas. It would be suggested on behalf of Dr. Collins that he told her what his fees were: Two guineas at his own house for the first visit and one guinea for the following visits; two guineas if he attended at her own house. It would be suggested that the cheque for 30 guineas was on account of future attendance which Dr. Collins would have to render. When the cheque was sent there did not seem to have been any immediate expectation of Dr. Collins having to attend on Mrs. Uzielli again. Mrs. Uzielli had not mentioned the fact of her going to Dr. Collins to her husband; but he did not know that any inference need be drawn from that. On the Friday it was obvious that Mrs. Uzielli was getting worse. She had a serious fit of shivering—a rigor. The importance of that was that if the poisoning leading to peritonitis had been set up on Tuesday, March 15th, it was about the time when the rigor would in the ordinary course of the development of the disease take place. On the afternoon of the Friday, feeling feverish and cold, she sent for Dr. Collins. Dr. Collins attended and saw her for some twenty minutes, and from that Friday, March 18th until 7.30 on Thursday, March 24th, Dr. Collins was in constant attendance, three or four times a day. Mrs. Uzielli gradually became worse. After Dr. Collins's visit the maid Müller again put the bath towel and the mackintosh sheet into Mrs. Uzielli's bed. On the Friday and Saturday there was a very considerable discharge from the vagina. There was a great amount of bleeding, as appeared both in the chamber and in the staining of the bed, and he thought there was no doubt that the ovum was expelled from the womb between the Friday and the Saturday night. At the *post-mortem* examination the womb showed that it had contained an ovum. The greater part of the abdomen was constantly poulticed by the maid (Müller) under the direction of Dr. Collins. At times she had the greatest difficulty in obtaining sleep, and he treated her partly by douches and partly by sedatives in order to relieve her pain. It would be suggested on behalf of Dr. Collins that she was hysterical and exaggerated her pain. There was tenderness in the lower part of the left side, and apparent increasing tenderness in the lower part of the abdomen, indicating that there was mischief going on which did not seem to yield to the treatment. On the Saturday Mr. Uzielli, becoming very anxious about his wife, spoke to Dr. Collins, who told him that Mrs. Uzielli was all right but that she had a displacement of the womb. It was for the jury to consider whether that statement was true, and also whether or not the prisoner could have been mistaken as to what the condition was. On the Saturday Dr. Collins examined her, according to his statement, and it being evident that something had come away from the womb, he removed, or endeavoured to remove, partly with the finger, and possibly with another instrument, the remains of the membrane, which would be a perfectly proper thing to do. He did not suggest that anything Dr. Collins did upon the Sunday could have caused the wound, but he suggested that it must have been caused probably on the Tuesday. He thought it right to say that Mrs. Uzielli was herself unwilling that a nurse should be called in. He thought it was pretty evident that Dr. Collins was himself anxious that a nurse should be called in, but no nurse was called in until the Wednesday. There was evidence that Dr. Collins ordered an abdominal belt, but it was never used, as probably the poor lady's condition rendered it impossible for her to bear the pressure. Upon the Tuesday Dr. Collins communicated with a nursing institute, and on the Wednesday afternoon a nurse named Smith came, who found Mrs. Uzielli in great pain, and in a very serious condition. She was lying upon her back with her knees drawn up. He thought there was no question that at that time any experienced man would be aware of the fact that the lady was suffering from peritonitis. Dr. Collins told the nurse that Mrs. Uzielli was suffering from great nervousness, and that she had probably had an "early miscarriage." As Mrs. Uzielli's condition required that she should have constant attention, another nurse (West) was called in. On the Thursday an important conversation took place between Smith and Dr. Collins, but he (the learned counsel) would prefer that the conversation should be given by the witnesses. On Thursday, Mr. Uzielli, who had been told all the time by Dr. Collins that there was nothing wrong—that there was a displacement of the womb, and that his wife would soon be all right, became seriously alarmed, and he had a conversation with Dr. Collins as to his wife's condition. About half-past seven that evening Dr. Collins again told Mr. Uzielli that there was no single symptom to cause any anxiety, but that if he or his wife wished it they could call in another medical man. At 10.30 P.M. Dr. Stivens visited Mrs. Uzielli, and in a few minutes saw that she was suffering from acute septic peritonitis. Dr. Stivens would state that that condition of things must have been going on for more than forty-eight hours, and that it was not consistent with any prudent medical judgment to have expressed the opinion that there were no dangerous symptoms. Her temperature, her pulse, and her breathing (which was confined to the upper part of the body), the tenderness of the abdomen, and the tenderness over the womb, all pointed to a very serious condition of things, which could not have been the result of a few hours. He might mention one remarkable circumstance: after an ordinary miscarriage the discharge from the womb lasted a week, but if septic peritonitis ensued in such a condition of things the discharge ceased. When Dr. Stivens examined Mrs. Uzielli on Thursday evening there was no discharge, and the nurses would state that the discharge had slackened on the Tuesday and ceased upon the Wednesday. The symptoms he had described—the wound as he suggested being caused upon the previous Tuesday, the rigor upon the Friday (showing that septic peritonitis had set in), the disease increasing in violence, the discharge partially stopping on the Tuesday and completely stopping on the Wednesday—ought to have brought to Dr. Collins's mind the condition of the lady whom he was attending. On the Friday Sir John Williams was called in and saw Mrs. Uzielli with Dr. Stivens. A peculiar aromatic smell about the breath was noticed, due to the poisoning in the system, and he pronounced her case hopeless, and she died about 5.45. It was for the jury to consider what caused that state of things—was it something done by the prisoner or was it not? It would be suggested on behalf of Dr. Collins that he never did anything except examine with the finger and the speculum on the Tuesday, in order, if possible, to put back the retroflexed womb. The *post-mortem* examination had disclosed that the condition of the lady was such that the womb could not be either retroverted or retroflexed. When the body of Mrs. Uzielli was examined, it was found that there were old adhesions due to previous peritonitis—possibly of years before. There were thickenings between the side of the womb and the side of the bowel, so that Douglas's pouch was almost entirely filled up, the result being that owing to the thickening it was not possible for the womb to be displaced in the way suggested. The *post-mortem* examination disclosed the cause of the septic peritonitis. Whatever might have been the cause of the wound, there was no doubt it was the wound which set up the disease which caused Mrs. Uzielli's death. The *post-mortem* examination also disclosed the fact that she had been recently pregnant—probably seven or eight weeks. On Friday, at 8 o'clock, a Mr. Hull, who was staying with Mr. Uzielli wrote a letter to Dr. Collins, informing him of Mrs. Uzielli's death, and asking him to call, which he did. Dr. Collins asked Mr. Uzielli if Dr. Stivens had refused to give a certificate, and had suggested that he had done something illegal. It was for the jury to draw their own conclusions from those questions put by Dr. Collins to Mr. Uzielli practically immediately after the death of Mrs. Uzielli. He believed that Mr. Uzielli did tell Dr. Collins that Dr. Stivens had suggested that there was something wrong, and the prisoner then remarked that there was no cause to refuse the certificate, for he had done nothing wrong. On Saturday, March 26th, Dr. Collins wrote a letter to Mr. Uzielli, in which he expressed his grief and sympathy with that gentleman, and that he would

willingly have sacrificed his own life to have saved her. On the same day Dr. Collins wrote to the coroner (Mr. Troutbeck) saying that he would give all the information in reference to the matter that lay in his power. The Attorney-General briefly referred to the law upon the case. The prisoner, he said, had been found guilty of murder at the coroner's inquest. In many cases, if in the course of an attempt to commit a felony or an unlawful act death was caused, it was or might be, by the law of England, murder. But the jury would be told, no doubt, by his lordship, that if, on the evidence, they came to the conclusion that the act done, though unlawful in itself, was not such as of necessity to cause danger to life if not unskilfully performed, it was open to them to find the prisoner guilty of manslaughter, and not of murder, assuming, of course, that they considered that death was occasioned by his act. It had also been laid down by great judges in the past that as felonious intent was an implication of the law, the jury might disregard that intent if they did not think it established, and find the prisoner guilty of manslaughter. The point for the jury to consider, after hearing the evidence, was, What was the cause of the death, and was it caused by anything which the prisoner did?

Mr. DOUGLAS CLEMENT UZIELLI, examined by Mr. CHARLES MATTHEWS, said he was a member of the London Stock Exchange, and that the deceased lady, who was about 30 years of age, was his wife. There were two children of the marriage. About the middle of February his wife made a communication to him to the effect that her periods had not come on.

Mr. MATTHEWS: On Wednesday, the 16th, or Thursday, March 17th, do you remember your wife speaking to you as to her condition?

WITNESS: She said she had been to Dr. Collins' and that she was all right. That was the first time he heard of her going to Dr. Collins. On the Friday when he came home from business he found his wife had gone to bed. On the Saturday, March 19th, he went home to dress, as he was dining out. His wife was in bed and before leaving he went in to see her. Dr. Collins was in the room. Up to that time he did not know that Dr. Collins was in attendance at the house. He asked Dr. Collins how his wife was and he replied that she was "quite all right"; that she had a slight misplacement and that he would have to attend her for a few days and that she would have to remain in bed. Later he said she would have to be poulticed, and that he would come and do it himself late in the evening. Dr. Collins asked him if he would lend him his latchkey so that he could let himself in, and that the servants need not be kept up. He gave Dr. Collins the latchkey, and left him in his wife's bedroom. He saw his wife on the next day. She was in bed, and did not appear so well. On the Monday his wife made a statement to him to the effect that something had come away. She did not appear at all well, and told him that she was suffering pain in the lower part of her stomach. On the Sunday after he had had a conversation with his wife, he wrote a letter to Dr. Collins, asking him to come at once as his wife was not feeling so well. On the Monday, after his return from business, he saw his wife, who was still in bed. She complained more of the pain, and did not seem so well. Dr. Collins came in answer to his letter, but he did not remember if he saw him on that occasion. On the Tuesday he had a conversation with Dr. Collins with regard to getting a nurse, and Dr. Collins gave him to understand that he would see about getting one at once. On the same evening Dr. Collins told him that he could not get the nurse he wanted, but that he would get one the next day. Every time he saw Dr. Collins he asked him how his wife was going on, and he always replied that she was going on all right.

Mr. MATTHEWS: Up to the Wednesday had all the statements been of a reassuring character?

WITNESS: Always. Up to the Wednesday no nurse had been called in. Mrs. Uzielli being attended to by her maid. When he returned home on the Wednesday evening he found Nurse Smith in attendance. His wife was still suffering from pain in the lower part of the stomach. On the Thursday morning he saw his wife before going to business. She was lying huddled up in bed, leaning forward. She said that position "eased" her.

Mr. Justice GRANTHAM: Did you see how her knees were?—Yes, they were up.

Continuing, witness said he returned home early on Thursday, as he was feeling anxious about his wife. She seemed to be worse, and complained more. After seeing his wife he took a note to his own doctor, Dr. Lyne Stivens, at 107, Park Street. On returning to his house he met Dr. Collins coming downstairs.

Mr. MATTHEWS: What did you say to him? I asked him how my wife was, and he said she was "Quite all right." He said my wife had no more the matter with her than an ordinary woman would take as a finger ache. He said she had not any bad symptoms at all, and he asked me whether she was not prone to exaggerate. He thought she suffered from hysteria. He said I need have no cause for anxiety. He said that he had noticed that my wife's manner had changed towards him, and that if I liked I could call in another doctor. I was not to consider his feelings. I told him I should do so. He said he had given my wife every attention, and that he would not come in again. He then left the house. Witness continuing said he did not remember anything being said about congestion. The conversation being over he went upstairs, and he found his wife rather worse. She did not look so well in the face, and her eyes had a peculiar appearance. He had always asked Dr. Collins about the temperature, and he had been told that there could not be very much pain, as the temperature was not very high. On the Thursday Dr. Collins told him that the temperature was 101°. Dr. Stivens came in about half-past ten that night. By this time Nurse West had arrived. Dr. Stivens examined Mrs. Uzielli, and made a communication to him. About 4 o'clock on the following morning he found his wife suffering a great deal of pain, and he sent for Dr. Stivens. Dr. Stivens injected some morphine, and she seemed easier. In the course of the morning he received a telegram in the City from Dr. Stivens, and he hurried back at once. He was told by the nurse that his wife had taken a lot of nourishment, and that she was better, but he did not think so himself. Mrs. Uzielli was suffering from flatulence, and was very ill. Sir John Williams came that afternoon and saw Mrs. Uzielli with Dr. Stivens, and he was then told that there was no hope for his wife. Mrs. Uzielli died about a quarter to 6 that evening. A Mr. and Mrs. Percy Hall were staying in the house at the time, but he had no knowledge that Mr. Hall had written a letter to Dr. Collins on the evening of Friday, the 25th. Dr. Collins had called during the day, but he refused to see him. About 11 o'clock that night he called again, and upon that occasion he did not see him. Dr. Collins said he was terribly upset and surprised at the news. He said he had come to tell him how dreadfully sorry he was, and asked who had attended Mrs. Uzielli since he had left. Dr. Collins seemed very much upset indeed, and asked whether there was any suggestion that he had done anything illegal. He told Dr. Collins that he thought there was. Dr. Collins asked if there was going to be an inquest, and he told him that he did not know. He also asked if a certificate had been refused, and he replied that it had. Dr. Collins kept saying: "I have done nothing," and would not leave the room for a long time. (A letter from Dr. Collins to Mr. Uzielli, dated March 26th, was then put in and read.) Continuing, witness said that Mrs. Uzielli had her own banking account at Drummond's Bank. (A cheque for £31 10s., dated March 17th, 1898, drawn by Edith Uzielli in favour of Dr. Collins, was put in.)

Mr. MATTHEWS: Had your wife ever had a miscarriage in the course of her matrimonial life?—No.

Cross-examined by Mr. C. F. GILL: He had always lived on terms of close affection with his wife and was completely in her confidence. During the last eight or nine years she had never been pregnant, although they had been living in close marital relations. In appearance his wife was not an anæmic woman. Four or five years ago, when his wife was at Brighton, she had had an attack of pneumonia and was ill for about a month. He did not know that his wife had had an attack of peritonitis before her last illness. If such was the case he then learned it for the first time. He had no recollection of saying to Dr. Stivens that she was a woman who was very much given to exaggeration—who thought she was going to die if she had a finger ache. In January his wife was confined to her bed with influenza, and she complained of weakness following the attack. She went to Eastbourne to recover, but he could not state how long she stayed there. It was some time in February that he learned from his wife that she had missed her usual period. She told him that she had had very little, or practically nothing. From the statement his wife had made to him he had not formed a conclusive opinion that she was pregnant. He thought very possibly she might be mistaken, and that her condition might be one of suppressed menstruation arising from the weakness supervening on the influenza.

Mr. GILL continued his cross-examination after the luncheon interval, when witness stated that he had mentioned to Dr. Stivens his wife's attack of influenza, and Dr. Stivens gave him some pills for her. Mr. and Mrs. Hope were close friends of his, and stayed with him for two or three days while moving from one house to another. His wife informed him on the Wednesday or Thursday that her period had come on, and at the same time told him she had been to see Dr. Collins. On the Saturday (March 19th) witness saw Dr. Collins in his wife's room, when Dr. Collins told him there was some trouble in consequence of the displaced state of the womb, and that it interfered with the menstruation coming on properly. He also said there was something to come away which had not come away. He thought it would come away of itself, but, if not, he said he would remove it. Witness gave him the key of the house, because he expressed a wish to see Mrs. Uzielli again that night, and witness did not wish to keep the servants up. Dr. Collins told him the displacement would require treatment, and said he thought he had put the womb "partially right." With regard to the events of the Sunday, witness thought it was his wife who had said something had come away. She told him Dr. Collins had hurt her. He remembered her asking for chloroform. Dr. Collins complained that he had great trouble because Mrs. Uzielli would not take the medicine he gave her. He could not remember writing to Dr. Collins on Tuesday morning that his wife was better, and saying that he considered she should have a nurse. He remembered Dr. Collins telling him on the Tuesday evening that he was disappointed in getting a nurse, and he thought his wife was sorry. Witness saw his wife on several occasions on the Monday and Tuesday, and from his observations he thought she was very fractious, but not suffering so much pain. He remembered leaving a note for Dr. Collins with regard to getting a nurse. On the Wednesday his wife was surprised that she was not better, and that was the first day she complained of serious pain. He spoke to Dr. Collins about the previous attack of influenza, but not about the pneumonia. Dr. Collins suggested that his wife was prone to exaggeration, and witness agreed with him, but he did not think he himself told Dr. Collins that she was prone to exaggeration. Up to the Thursday witness had not seen anything in his wife's condition which alarmed him. It was on that day that he first became alarmed. The nurse, who came on the Wednesday, spoke favourably of his wife's illness, and appeared to think she was exaggerating. Dr. Collins spoke of inflammation and congestion, and was quite willing that a nurse should be had. He was also first to suggest that other advice should be called in. Witness himself called in Dr. Stivens. On the Friday it was obvious to him that his wife was much worse, and Dr. Stivens suggested a consultation with Sir John Williams, which was accordingly held. From his observations he considered Dr. Collins was perfectly kind in the treatment of his wife. He informed him when he called that Dr. Stivens had refused to give a certificate, and he believed he said that either Dr. Stivens or Sir John Williams thought there must have been some improper treatment.

In re-examination by the ATTORNEY-GENERAL, witness said the pills were obtained from Dr. Stivens for constipation and weakness after the influenza. Peritonitis was never mentioned by Dr. Collins, although witness was constantly asking him what was the matter. During the whole time he attended Mrs. Uzielli Dr. Collins said nothing with regard to Mrs. Uzielli's condition to cause him any alarm.

Dr. ROBERT HARRY LUCAS, of Bury St. Edmunds, in examination by Mr. SUTTON, detailed his treatment of Mrs. Uzielli for influenza from January 8th to the 15th. On January 24th she left for Eastbourne. The attack was not severe, and she was actually in bed about ten days. It left her weak, but otherwise she was tolerably well.

Replying to his Lordship, the Witness said it was pretty well known that influenza was an insidious disease which often left people weaker than they thought or looked, and there was thus a danger of their taking a liberty with themselves. On February 21st Mrs. Uzielli consulted him with regard to morning sickness and general dislike to food, and described herself as "feeling seedy."

Replying to the learned Judge, Witness said that from the symptoms described he came to the opinion Mrs. Uzielli was pregnant.

Cross-examined by Mr. C. F. GILL, Witness said that Mrs. Uzielli was not what might be called a strong woman, and the influenza pulled her down a good deal. He had no knowledge of her having had peritonitis or any trouble connected with the neck of the womb. It would not be a remarkable thing that a woman should have a stoppage of menstruation after influenza, but he did not think she would have morning sickness. Sickness, he admitted, might be a symptom of any uterine disorder, but was not invariably an accompaniment of uterine disturbance. It was a somewhat difficult matter to diagnose between a congested period and an early pregnancy.

Re-examined by Sir RICHARD WEBSTER, Witness said he had never heard Mrs. Uzielli complain about any displacement of the womb.

Mrs. ADRIAN HOPE, in examination by Mr. Charles Matthews, stated that Mrs. Uzielli was the first to mention Dr. Collins's name. Witness had been attended by him eight or nine years ago for typhoid fever, when he showed very great skill in his treatment. She communicated with Dr. Collins at Mrs. Uzielli's request, asking for an appointment on the Monday. Witness detailed the movements of Mrs. Uzielli and herself on the Monday and Tuesday, and said that on the former occasion the visit to Dr. Collins lasted some ten minutes, and on the second occasion twenty or twenty-five minutes, on both occasions Mrs. Uzielli being alone with him in the consulting room.

Mr. C. F. GILL cross-examined the Witness. From Dr. Collins's treatment of her during her illness with typhoid she had formed the opinion that he was a very skilled, very devoted, and very attentive man in the treatment of his patients. There was no mystery made with regard to visiting him, and it naturally never occurred to Mrs. Uzielli or herself to mention at the dinner table after the visits to Dr. Collins that he had stated that Mrs. Uzielli was suffering from displacement of the womb.

Re-examined by the ATTORNEY-GENERAL: Witness had no recollection of having mentioned Dr. Collins's name to Mrs. Uzielli before the latter said she was going to consult him. On the Sunday Mrs. Uzielli complained of not feeling well, and said that she had congestion of the womb.

The Court then adjourned.

On Tuesday morning the first witness called was Mrs. MABEL BUSH, sister-in-law of the late Mrs. Uzielli, who gave evidence with regard to the movements of the deceased lady during the time she was in London, between March 7th and 14th. Witness had a conversation with Mrs. Uzielli on Monday, March 14th, when she said she was feeling very seedy, and that she was afraid that she was *enceinte*.

Mr. PERCY HALL, who had just arrived in England from the Continent to fulfil an engagement to stay with the Uziellis, deposed to calling on the Friday evening, March 25th, at 10, Cadogan Place. Dr. Collins was not in, but he wrote a letter and left it for him, asking him to call and see Mr. Uzielli, as he understood there would be some difficulty about the death certificate.

Mrs. PERCY HALL spoke to seeing Mrs. Uzielli on the evening of Thursday, when she thought her extremely ill. Mrs. Uzielli, she said, spoke in a very low whisper, and told witness she was in constant pain. On the Friday Mrs. Uzielli did not appear conscious. In cross-examination witness said she saw Mrs. Uzielli at the Hans Crescent Hotel, and she seemed a little depressed, but not ill.

After evidence had been given as to the cashing of the cheque,

MISS HENRIETTE MÜLLER, Mrs. Uzielli's maid, examined by Mr. BODKIN, stated that she had been with Mrs. Uzielli for about two years prior to her death. She remembered Mrs. Uzielli having an attack of influenza at Owsden which kept her in bed for about three weeks. Dr. Lucas attended her. Mrs. Uzielli went to Eastbourne about January 21st, and remained for a week or ten days. Towards the end of her visit she felt better, and was able to walk and drive and visit friends. Witness had the duty of attending to Mrs. Uzielli's personal line and in that way became aware of the time at which her periods came on. At the beginning of the year her periods were due about January 14th. She had a January period. During the time Witness was with her, her periods usually came on regularly, and she did not complain of pain or feeling ill while they were on. There was nothing more than the usual discomfort which a woman felt at such times. In February of this year no period came on, and she spoke to witness about it. After Mrs. Uzielli had the influenza, she complained of weakness.

In reply to his LORDSHIP, Witness said Mrs. Uzielli herself told her that she had had no February period.

Mr. JUSTICE GRANTHAM: What did she say with regard to not having her period?—She said, "I think I am like that."

Witness said she understood that "Like that" meant that she thought herself to be *enceinte*.

His LORDSHIP questioned the Witness at some length with the view of eliciting why she understood the expression "like that" to mean being *enceinte*, but witness was not able to give the reason, although the words had conveyed that impression to her mind. The conversation was in reference to Mrs. Uzielli not having her periods, and Witness understood from the words that she meant she was *enceinte*. It was about the time the February period should be on that Mrs. Uzielli spoke of her being "like that." She was continually complaining about her condition.

Mr. BODKIN: Did she do anything?—She took medicine and pills. At Owsden Mrs. Uzielli used nothing but hot baths and foot baths, but at the Hans Crescent Hotel she took medicine.

What kind of medicine?—Pills and mixture.

Which came first, or were they both taken together?—Both at the same time.

For how long did she take the pills?—About four days.

How many times a day more than once?—Four times

Four [illegible]

What was the other medicine?—A dark brown mixture.

What kind of stuff was it?—A thick stuff.

There was a label on the bottle, but she did not remember what it was. There was also a label on the box of pills containing the name of Holroyd, Duke Street. Mrs. Uzielli took the pills and the mixture on the same day, and when she left the Hans Crescent Hotel some of the mixture was left behind in a bottle. She did not take all the pills. No doctor attended her at the Hans Crescent Hotel. While taking the mixture she was unable to go out, and the mixture and the pills were taken during the week before going to Buckingham Gate. Mrs. Uzielli generally employed the afternoons in driving and shopping, but did very little walking. She seemed very weak in her general health.

Mr. BODKIN: After taking these medicines, did Mrs. Uzielli say anything to you about the effect of them?—She said, "They are no use."

Mr. Justice GRANTHAM: You say she told you the medicines and pills were no use?—Yes.

Did you know what she meant by that?—Yes.

What did she say about that time when she said the medicine was no use?—We understood each other what it meant.

Continuing, Witness said that on March 12th they left the hotel and went to 7, Buckingham Gate, and on Monday, March 14th, Mr. and Mrs. Hope came to stop at that place. She was in the habit of assisting Mrs. Uzielli to dress in the morning, and remembered helping her to dress on that Monday morning. At that time she was not wearing any diaper. She put on clean linen in morning, and when witness was dressing her for dinner in the evening she noticed that the linen was a very little stained with blood. On Tuesday morning witness again assisted Mrs. Uzielli to dress, giving her fresh linen because the other was stained. Mrs. Uzielli went out, and in the evening she assisted her to dress for dinner and noticed that her linen was stained with blood more than it had been on the previous evening. The first time she wore a diaper was on the Tuesday night at Buckingham Gate. Witness received orders from Mrs. Uzielli on the Tuesday evening before dinner, and in consequence of those orders placed a mackintosh, a bath towel, and an extra sheet under the mattress, not unfolded but ready for use if required.

Mr. BODKIN: Did you make an observation to Mrs. Uzielli about the stains?—Yes.

Mr. BODKIN: What was it you said about them?—You are all right.

Witness said that Mrs. Uzielli made a reply. At the suggestion of the ATTORNEY-GENERAL it was written down, as he said that only a part was admissible as evidence, and he desired to have his lordship's opinion upon it.

Witness wrote down the exact words, and the paper was handed to the learned judge and counsel.

Mr. GILL objected, and his Lordship decided to exclude the whole of the answer, as he could not admit only a part of it.

Continuing, Witness said it was part of her duty to undress Mrs. Uzielli before she went to bed, and she assisted her that evening, and noticed that the diaper which she had given to her before dinner was very badly stained with blood. She assisted Mrs. Uzielli to dress again in the morning, and gave her clean linen and another diaper, and noticed at the time that the night dress which had been worn during the night was slightly stained. On the Wednesday Mrs. Uzielli went out in the morning, and in the evening witness again helped her to dress for dinner, and again noticed that her linen was much stained, and the diaper also. She changed her diaper before going to dinner, and after dinner, when going to bed, witness noticed that the diaper was not so much stained. That night Mrs. Uzielli wore a clean night dress, but there was very little marking upon it in the morning. On the Thursday morning Mrs. Uzielli again changed her linen, and witness noticed when assisting her to dress for dinner that both the linen and the diaper were again much stained. She gave her a clean diaper which, when removed at the time Mrs. Uzielli went to bed, was not much stained. Clean linen and a diaper were also given to her on the Friday before she went out, and when she came back about 2.30 or 3.45 she seemed to be very weak.

Mr. BODKIN: Did she make some statement to you about her feelings? She said she was feeling cold, and complained of her back.

Did she say what was the matter with her back?—She said she had pain in the back.

Did she seem in any way to show that she was cold?—Yes, she was standing by the fire in her bedroom.

Mrs. Uzielli wrote a note to Dr. Collins at 10, Cadogan Place, which witness gave to the footman, and a reply was brought back which Mrs. Uzielli burned after reading. Witness helped her to undress before going to bed, and noticed that there was no stain on her linen. At the request of Mrs. Uzielli some hot water was put near the fire, and some in the basin. Dr. Collins arrived at 4 P.M. The water was ready before Dr. Collins's answer came. When Dr. Collins came he went into the bedroom, witness remaining outside on the landing. Dr. Collins and Mrs. Uzielli were alone in the room for about twenty minutes. When he came out he gave witness a prescription, which she gave to the butler to have made up. Until Mrs. Uzielli gave her the note for Dr. Collins she had not heard his name and knew nothing about him. Witness returned to Mrs. Uzielli's room and found her still in bed.

Mr. BODKIN: Did you notice anything about the room different from what it had been before you left?—Yes, there was an enema which had been used.

Where was it when you went into the room?—Near the basin on the washstand.

Witness went on to state that Mrs. Uzielli had used the enema at the Hans Crescent Hotel about a week before she left, at the same time that she was taking the medicine. The enema was used for syringing the womb with hot water. When witness went into the room after Dr. Collins had left she noticed that the water was clear. Mrs. Uzielli remained in bed for the rest of the day. On the Friday evening, in consequence of orders given by Mrs. Uzielli, witness got ready sheets and mackintosh, and bath towel. They were still under the mattress, where she had put them on the previous Tuesday.

What did you do with them?—I unfolded them and put them in her bed.

Where did you put them?—Under her, the mackintosh under the sheet, and the bath towel over the sheet. Dr. Collins came about seven o'clock and saw Mrs. Uzielli alone in the room; he was there for about twenty-five minutes.

After he had gone on that occasion did you notice anything different about the room?—No, except that there was water in the basin.

Did you see the enema again when you went into the room?—Yes.

Had it apparently been used or not?—Yes.

For the second time?—Yes.

And was the water clear again?—Yes.

In reply to the learned JUDGE, Witness stated that she carried out the instructions of Mrs. Uzielli with regard to the mackintosh and things after the second visit of Dr. Collins. She was in and out of the room during the night and found Mrs. Uzielli awake every time she went in. She gave her diapers twice during the night and found them stained. On Saturday morning the patient seemed to be in the same condition as on the previous day. Witness saw Dr. Collins on the Saturday about 11 A.M. when he called. He stayed about half an hour, and after he left she noticed that water had been used, and saw the enema again, which had apparently been used also. The water was clear as before. The mackintosh and bath towel had been left in bed throughout the night and all day. On Saturday Dr. Collins called again about 7 P.M. and stayed another half an hour, and on going into the room after he had gone she noticed that the bath towel in the bed was stained with blood.

Mr. BODKIN: Did you go and look at it on your own initiative?—No. Mrs. Uzielli told me to.

What did she say about herself or about her condition?—She was pleased, and she said "It is all over, and there is not much pain; it was not much to be in anxiety about: it has come." Witness assisted her to put on a diaper and then noticed the condition of the bedclothes. There was a great quantity of blood.

Mr. Justice GRANTHAM: Was it merely blood or did it look as if there was something else there?—It was pale and watery, not very red.

Witness left the bath towel and the mackintosh until the next day. Mrs. Uzielli wore the diaper for half an hour and then it was thrown into the fire. Frequent changes of diaper went on throughout the night. Witness remained up during the night to apply poultices, the first poultice being put on on the Saturday about 9 P.M. The poultices were made of hot linseed meal and applied low down on the abdomen. So far as witness could tell the bleeding was still going on during the night. Mrs. Uzielli seemed better, but did not sleep. On the Sunday morning she visited Mrs. Uzielli, but did not change anything in the bed. The poulticing was continued throughout the Sunday, as was also the change of diapers. Dr. Collins called between 10 and 11 and was alone with Mrs. Uzielli for about half an hour. After he had left, witness noticed that the basin and enema had been used and the water in the basin was quite clear. During the Sunday Mrs. Uzielli seemed to be better. Dr. Collins came again in the evening, and after his departure witness noticed the same state of things, the water and the enema as before. Witness took the bath towel and the mackintosh from the bed on Sunday night. She found the clothes under the mackintosh were stained very much, and the stain had gone right through to the mattress. With the exception of the commencement, the staining on the other days up to the Friday was greater than would be the case with the ordinary period. There was very little, however, on the Friday, but it came on much more on Saturday. On that night Mrs. Uzielli said she thought she would be able to get up on the next Thursday. On the Monday morning witness noticed in the chamber some thick blood—very thick, like a lump. Dr. Collins called on the Monday three times, but Mrs. Uzielli did not seem to be so well, and complained that she could not rest, as she had so much pain; she was very restless. Witness asked Dr. Collins how long Mrs. Uzielli would be ill, and he replied, "Only a few days." He said, "She is all right; give her nourishment and keep on poulticing." Mrs. Uzielli was taking medicine at the time. Witness was too tired to continue the nursing, and spoke to Dr. Collins on the Tuesday about a nurse, which he said he would obtain. Mrs. Uzielli, however, asked her to wait another day.

In reply to the learned JUDGE, Witness said Dr. Collins was always saying the same thing, "She is all right."

Witness continued the poulticing and diapers on the Monday and Tuesday, but on the Wednesday morning Mrs. Uzielli seemed worse, and complained of much pain. She lay forward on her knees, with two pillows to support the front of her body. About 8 P.M. on Wednesday, Nurse Smith came, and the actual nursing was left to her. Mrs. Uzielli was an affectionate mother to her two children, and they came to see her in her room every day up to the Monday or Tuesday.

Cross-examined by Mr. C. F. GILL, the Witness admitted that she had described in her previous evidence that Mrs. Uzielli was not strong, and had expressed the opinion that the influenza had pulled her down a great deal. For some days, at the Hans Crescent Hotel, she was very ill and unable to go out. The medicine she took at the hotel was taken with the object of bringing on her periods, but witness could not say who advised her, and did not know where the mixture came from. It was a large square bottle of a thick dark brown mixture, of which Mrs. Uzielli took a small medicine glass full twice a day. She saw Mrs. Uzielli use the vaginal syringe for the first time at the Hans Crescent Hotel. The syringe used was a new one, which witness purchased at Harrod's Stores, as the old one had been left behind. Witness was always present with Mrs. Uzielli when she used the syringe, which she began to use after she began to know she was "like that." She tried everything to bring her periods on, and amongst other things used the syringe.

Pressed by Mr. GILL, Witness admitted seeing Mrs. Uzielli using the old enema twice at Owsden. The old enema was kept in a case sometimes in the bedroom and sometimes in the night nursery, so that anybody who wanted it could find it.

Mr. GILL: From first to last did you ever see anything except blood—some of the blood no doubt thick?—I did not notice anything except blood.

In answer to further questions the witness admitted stating before the magistrate "I noticed thick blood in the night chamber. I say 'miscarriage' because I saw a lot of blood on the Saturday night. It was nothing else but blood." The mackintosh used was used once or twice at Newmarket. Mrs. Uzielli had some trouble with her menstruation at times, but very seldom. She knew that Mrs. Uzielli had douches administered to her by Dr. Collins, but she was not in the room when it was done. The second visit of Dr. Collins on Friday was made at about half-past seven, before dinner, and he was announced to witness by one of the men-servants. On the Saturday the patient appeared to be going on well, and on Tuesday witness spoke to Dr. Collins about a nurse, and he said he would see about one, but Mrs. Uzielli said she did not want a nurse that day. The nurse came on the Wednesday afternoon, and witness noticed that Mrs. Uzielli got very rapidly worse on the Thursday, and was very much worse on Friday. Dr. Collins was constantly in attendance, coming three or four times a day, and witness had many opportunities of seeing him with her. He was very anxious that she should take nourishment and food. She was a little fractious occasionally about trivial things, and wanted very much to have her own way. At one time Dr. Collins had to give her an enema because she was suffering badly from constipation. He said that the trouble would have been saved if she would only take the medicine. From the first to the last Dr. Collins seemed very kind and attentive to Mrs. Uzielli in every way, and the only thing witness ever saw after he had gone was the enema and the water.

Re-examined by the ATTORNEY-GENERAL: Up to the time of Dr. Collins coming on Friday, except Dr. Lucas, witness knew of no other doctor attending her mistress at the Hans Crescent Hotel or Buckingham Gate.

In reply to the learned JUDGE, Witness described the lump she saw in the chamber as being about as big as the top of the standard of the witness box, which was about the size of a small cricket ball.

GEORGE ELLIS, the proprietor of the Albion Hotel, Eastbourne, gave evidence as to the dates when Mr. and Mrs. Uzielli visited that place.

GEORGE CRIPPS, footman to Mr. Uzielli, spoke of sending a letter by a cabman to Dr. Collins and receiving an answer, which he handed to Mrs. Uzielli's maid.

SUSAN ALFORD, housemaid in Mrs. Uzielli's service, deposed to lighting a fire in Mrs. Uzielli's bedroom on the Friday afternoon at 3 o'clock. The fires were generally lit in the morning, but on that particular day it was not set going till later in the afternoon. Witness also spoke of changing the sheets on the Monday and finding them very much soiled with blood, as were also the blankets and the mattress. She corroborated the evidence of Miss Müller as to the mackintosh and bath towel being very much stained. She changed the sheets also on the Tuesday, but they were not so much stained as on the previous day.

Miss WALKER, the lady superintendent of the South Kensington Lady Nurses' Corporation, gave evidence with regard to Dr. Collins calling to inquire about a nurse for a patient who, he said, was suffering from great nervousness, and for whom it was very important he should have someone very kind and accustomed to wait on ladies. He mentioned that the lady did not want to have a nurse, and therefore it was very important he should have a suitable person, and he wanted to see her. Witness received a message from Dr. Collins on the Wednesday about 5 o'clock, asking her to send Nurse Isabel to 7, Buckingham Gate immediately, and witness at once sent off Miss Smith. In consequence of a telegram received from Nurse Isabel on the following day Nurse West was also sent to Buckingham Gate.

In cross-examination Witness said the names of the nurses which she gave Dr. Collins were those of thoroughly qualified ladies.

In re-examination she said that none of the nurses were midwifery nurses.

HENRY CHARLES BAKER, assistant to Mr. Holroyd, the chemist, identified prescriptions for a sedative mixture and opium pills, and also a prescription by Dr. Stivens of pills containing aloes and iron, which witness described as a tonic purgative pill.

In cross-examination he said he had frequently made up prescriptions for Mrs. Uzielli, and therefore knew the name perfectly well.

Mr. CHARLES WHITE, chemist, also gave evidence with regard to a bundle of prescriptions which he had made up; one a preparation of carbolic acid and glycerine, and another of mercury chloride; 20 grains of sulphonal and half a grain of calomel; another preparation of sulphonal in larger quantities; a mixture of potassium bicarbonate, potassium bromide, and tincture of aconite; 2 ozs. of chloroform, and quinine in the form of cachets. Two other prescriptions which he identified were in a different handwriting—suppositories of morphine, and a preparation of nepenthe.

In cross-examination Witness said the seven prescriptions bore the initials "W.M.C.," some of them written on paper bearing the address of 7, Buckingham Gate, and some on paper of Owsden Hall, Newmarket. The first was an ordinary mild antiseptic douche: the next was a proprietary article by Burroughs and Wellcome; then two prescriptions were moderate doses of sulphonal, the commonest thing used for the purpose of sleeping draughts, and one of the others was simply a small bottle of chloroform.

In reply to the ATTORNEY-GENERAL, Witness said it was a common thing to have prescriptions with initials.

EMILY LOUISA SMITH, the nurse who was first called in to attend Mrs. Uzielli, was the next witness called. She stated that she had had no midwifery experience. She had a case of peritonitis under her charge in hospital five years ago, but not since. Dr. Collins called on her on March 21st at the Nurses' Club, but he did not give his name. He said he wanted a nurse for a lady who was very nervous, and thought, perhaps, she was suffering from a little pelvic trouble, a little inflammation on the left side. He agreed to let witness know if he wanted her, and later in the day she received a communication from Miss Walker, and in consequence of that went to Buckingham Gate. Dr. Collins saw her in Mrs. Uzielli's room a few minutes after she got there, and told her exactly the same as before, and added that perhaps the patient had had an early miscarriage. She found Mrs. Uzielli lying on her back with both knees drawn up and a pillow to support them. Dr. Collins told her to poultice the abdomen every four hours, the mixture and powders also to be given every four hours. She was also to have plenty of nourishment. Mrs. Uzielli appeared to be suffering pain, and Dr. Collins told witness there was some pain, and that was why he wanted her poulticed. He said she was very nervous, and he thought there was not so much pain as she herself believed. Mrs. Uzielli was inclined to be drowsy, and there was rather a difficulty in getting her to take medicine, and she also seemed unwilling to take her food. Dr. Collins came again between 10 and 11 on the Wednesday, and witness remained in the room while he was with the patient. He gave her a vaginal douche, with something in it, but witness could not say what. When he asked Mrs. Uzielli how she was, she said she was no better, and that she had a great deal of pain in the abdomen, chiefly on the left side. Before Dr. Collins gave her the douche on the second occasion chloroform was administered. He told witness each time he came that he thought Mrs. Uzielli was very nervous and hysterical. On that occasion

he altered the cachets from every three to every four hours, and left a sleeping draught, giving a morphine suppository himself. During the night she slept fairly well for the first part, but was very wakeful towards morning, and was always complaining of pain when awake.

Mr. Justice GRANTHAM: When he told you he did not think she was suffering as much as she said she was, what was your view?—She certainly appeared to be suffering great pain. On one occasion when witness saw him take the temperature he told her that it was a little over 101. No temperature chart was kept, and she was told not to take the patient's temperature, because it bothered her, and he preferred to do it himself. On more than one occasion, in the presence of Dr. Collins, Mrs. Uzielli had said that she was not getting better, and she knew she was going to die. Dr. Collins tried to reassure her, and told her to take plenty of food, and sleep well, and she would be all right. On March 24th Dr. Collins gave the patient an enema to relieve the bowels, and when it was being administered she screamed out once or twice. He told her not to scream or the servants would hear. She said, "I do not mind if they do. I have a French *chef* and also a French maid. Do you think they do not know what is going on?"

Dr. COLLINS, rising in the dock, said: I never heard her use such words as these.

THE ATTORNEY-GENERAL: Did Dr. Collins make any reply?—He said, "Do you mean they know I am giving you an enema?" Mrs. Uzielli made no answer. With Dr. Collins's and Mrs. Uzielli's permission, witness wired for Nurse West at the end of his visit on the Thursday morning. He came again between 2 and 3 that afternoon, and the patient told him that the pain since Sunday had been no better. He came again about 7 P.M. On the Friday Mrs. Uzielli appeared to be much worse, and her pulse was much quicker. Witness remained with her until she died in the evening.

In cross-examination Witness said she had made several statements with regard to the matter, and at the time she made her second statement the whole of the inquiry had taken place before the coroner. After she had been examined and cross-examined, she was asked to write out her recollections, which she did. She believed herself quite competent to take charge of an early miscarriage case, although she had had no training in midwifery. She had seen Dr. Collins in attendance on Mrs. Uzielli about five times.

Mr. GILL: I want your own personal judgment on the matter. Apply your years of experience as a nurse, and form your own personal judgment—did you believe this lady to be nervous and hysterical from what you saw?—I should have said so, yes.

It was difficult to get her to take medicine or nourishment. Dr. Collins thought Mrs. Uzielli was exaggerating her pain. When she asked for chloroform a few drops were sprinkled on a handkerchief, and she sniffed it. After having the enema Mrs. Uzielli appeared to be considerably relieved.

At the time she spoke of people knowing what was going on, was anything going on except the fact that she was having an enema administered to her?—No.

WITNESS had expressed the opinion to Dr. Collins that she complained more when anyone came into the room, and that was witness's opinion. The pain complained of was chiefly on the left side. Dr. Collins appeared most attentive and anxious and kind to the patient. From what witness saw of the case she did not think Mrs. Uzielli was going to die although she was very ill. Witness was not told what was the matter, except that Dr. Collins mentioned pelvic trouble and inflammation, and from what she learned from Mrs. Uzielli herself.

In re-examination, WITNESS said that the statement she wrote out she wrote without any assistance, and put into it nothing that did not occur. She was asked by Mrs. Uzielli if she was a monthly nurse, and she said "No." Mrs. Uzielli answered: "Then you do not understand my case, because I have had a miscarriage." Mrs. Uzielli always expressed the belief that she was going to die, except on one occasion, when she said she was going to get better.

At the conclusion of the witness's examination the Court adjourned.

The evidence on behalf of the prosecution was continued on Wednesday morning, when Mr. T. G. HAINTON, of Harrod's Stores, proved the purchase of the enema by Miss Muller.

Mr. GILL raised a question as to the absence of the vagina piece, and Miss MÜLLER was recalled to say where it was. She stated that it had been left at home, and undertook to produce it in court later in the day.

Mr. J. H. MONTAGUE, a surgical instrument maker of Bond Street, spoke to Dr. Collins selecting an abdominal belt on Monday, March 21st, which was sent at his request to 7, Buckingham Gate.

The next witness was Miss ELIZABETH WEST, the second nurse who attended Mrs. Uzielli. In the course of her evidence she stated that she had had no midwifery practice, but had attended cases of peritonitis. Witness went to 7, Buckingham Gate on March 21st, where she saw Dr. Collins. On inquiring from him what the patient was suffering from, he said a little inflammation of the left side was all he could find. He said the patient was to have sleep and plenty of nourishment. Witness went on night duty and kept notes. Dr. Stivens called at 10.30. Mrs. Uzielli, at 9, when witness took charge, was a little drowsy, and lying on her back with her knees drawn up. She roused herself just before Dr. Stivens came, and said she was in constant pain. Dr. Stivens remained about twenty minutes, but witness was not in the room. Every time Mrs. Uzielli spoke during the night she said she was in intense pain, and that she knew that she was going to die. In the morning she said she must have the doctor, as she could bear the pain no longer. She was very restless; her temperature at midnight was between 101° and 102°—101° she thought. She always complained of the pain being low down in the abdomen. Dr. Stivens was sent for in the morning, and came about half-past four, when the patient was on her knees bending forward to bed, a position which she said was the most comfortable. Mr. Uzielli said: "I shall soon be dead; why don't you give me something to finish me?" and witness thought this was said in Dr. Stivens's presence. She poulticed the lower part of the abdomen several times during the night, and gave her champagne, and water, and milk.

In cross-examination, Witness said she noticed no sign of hiccough and vomiting in the early part of the night, but in the morning Mrs. Uzielli complained of being sick. Witness did not consider Mrs. Uzielli's condition in the morning to be serious enough to send for the doctor until the patient requested her to do so.

Chief-Inspector Moore, of the Criminal Investigation Department, was about to give evidence with regard to the arrest, when Dr. Collins was seized with a sudden attack of illness, falling backwards in his chair. Sir John Williams, Dr. Bond, and Dr. Stivens, who were present in court waiting to be called, at once went to his assistance, but the seizure was thought to be sufficiently serious to adjourn the case.

In the afternoon, on the Court resuming, Dr. Collins, accompanied by Scott, of Holloway, entered the dock. He looked exceedingly haggard and ill.

Chief-Inspector MOORE, of the Criminal Investigation Department, proved arresting the prisoner on Monday, March 28th, under a warrant for causing the death of Mrs. Uzielli by unlawfully using an instrument for the purpose of procuring a miscarriage. Dr. Collins replied, "There is no truth whatever in the accusation; I never did anything to this lady except what was proper and legitimate." In the consulting room witness found a number of instruments, which he produced, one being a long black whalebone instrument, and another a long yellow catheter. He also found a bundle of letters, of which he took possession as well as a large number of bottles. On being charged at Rochester Row Police-court, Dr. Collins said, "There is no foundation whatever for such an accusation." Witness also visited Mrs. Uzielli's room, and took possession of the medicines, pills, prescriptions, and enema which he found there. Witness produced the *Medical Register* for 1892, containing Dr. Collins's name, and the *Register* for 1893, in which he failed to find any entry of Dr. Collins's name. The *Register* of the present year also did not contain the name of Dr. Collins.

In cross-examination by Mr. C. F. GILL, WITNESS said that Dr. Collins was born in Cork in 1844, and entered the army in 1866 as Assistant-Surgeon on the staff passing first of all the candidates of that year, and also passing first at Netley. In 1870 he was appointed Assistant-Surgeon to the Scots Guards, and Surgeon in the Army Medical Department in 1873. In 1880 he was appointed Surgeon to the Royal Horse Guards, and retired with a gratuity in 1885. Amongst the bottles found were some containing strong antiseptics. Witness found a large number of instruments, uterine syringes, speculums, dilators, curettes, catheters, instruments for the examination of the throat and ear, and a variety of instruments one would expect to find at the house of a medical man.

The next witness was Mr. JOHN TROUTBECK, the Coroner for Westminster, who proved holding an inquest into the death of Mrs. Uzielli. Witness received a letter from Dr. Collins on Saturday, March 26th, in which he asked to be informed of the time and place of the inquest, in order that he might be present, and stated that he was quite ready to give all information in his power with reference to the matter. On Dr. Collins being called to give evidence at the inquest, the witness warned him that anything he said would be taken down in writing, and might be used against him, and he expressed his willingness to give evidence, and did so, and witness recorded in writing what was said. After the verdict had been given, the whole of his evidence was read over to him, and he objected to the statement, "My curetting would not be sufficient to produce an abrasion," as being something which he had not said. That was the only substantial objection made, and the objection having been noted, Dr. Collins signed the statement. The depositions were read in court.

Mr. GILL objected in one case to a difference between the coroner's note and a shorthand note, but the witness was firm in his belief that his note was correct, and pointed out that it had been read to the prisoner and signed by him. "Yes," said Mr. GILL, "at 8 o'clock at night, after the verdict, when he was in a state of collapse, and after he had been cross-examined for seven hours."

Mr. Justice GRANTHAM expressed the belief that witness had taken an accurate note and ruled that the depositions must be taken as correct.

The reading of the coroner's notes occupied the greater part of the afternoon, and their accuracy was occasionally questioned by Mr. Gill, the witness asserting in most cases, however, that Dr. Collins had not objected to the statement when it was read over to him, and therefore it could not be said to be wrong. He admitted that mistakes might be made occasionally in putting evidence obtained by the means of questions and answers into the form of a narrative statement; and once or twice accepted the suggestions put forward by Mr. Gill as to what Dr. Collins had stated, where the shorthand notes and the depositions varied.

On the objection of Mr. GILL, one or two parts of the statement were not read.

On the conclusion of the reading of the depositions, Mr. C. MATTHEWS questioned the witness as to the procedure with regard to death certificates. Witness explained that the certificates would be only given to medical men who were on the *Register*. A death occurring without the attendance of a registered medical man would necessitate an inquest being held.

In cross-examination by Mr. C. F. GILL, WITNESS said he understood Dr. Collins wished to be called as a witness and that he attended at his own request. He was always present in the custody of two warders. Witness decided the time when Dr. Collins should be called, and was aware that he wished to be called at an earlier stage of the proceedings. He was the last witness but one examined. Sir John Williams was not present at the inquest, and witness had nothing to do with submitting the uterus to Sir John. Dr. Collins's examination occupied about six hours on one day, and witness thought he looked rather bothered.

Miss MÜLLER was recalled for the purpose of producing the missing part of the enema, which she handed to the learned judge. The part was in the case when she purchased the enema, but was accidentally omitted when the case was brought into court.

In reply to Mr. C. F. GILL, WITNESS said that the enema used at Newmarket was substantially the same as that produced.

Mr. UZIELLI was also recalled with regard to certain conversations which were alleged by Dr. Collins in the coroner's depositions to have occurred between himself and the witness. In the majority of cases witness denied that such conversations had taken place.

Witness was then cross-examined as to the trustworthiness of his

memory, and admitted that in certain instances he had not been able to recollect before the coroner things that had not occurred. He admitted asking Dr. Collins whether his wife had peritonitis, and Dr. Collins replied that he did not think she had.

Dr. THOMAS STEVENSON, Official Analyst to the Home Office, gave evidence of the result of his analysis of the bottles of medicine found in Dr. Collins's room. The majority of them he found to contain antiseptics; even in cross-examination by Mr. Gill he stated that the antiseptics were of the most modern kind. With regard to the prescriptions, which had been shown to him, they were mostly sedatives and opiates.

Mr. GILL: Dr. Stivens has accepted them as perfectly proper treatment. The Court then adjourned.

THE PECULIAR PEOPLE.

At the Central Criminal Court on June 22nd Henry J. A. Marsh, a member of the sect called "The Peculiar People," was found guilty of the manslaughter of his daughter, aged 13 months. The child was taken ill with pneumonia. No medical man was called in to attend her, but an elder prayed over her and anointed her chest with olive oil in the name of the Lord. Mr. Justice Darling in passing sentence said, according to the report in the *Times*, that the defendant now knew that it was the opinion of his countrymen that but for his neglect to call in medical aid his little child would now be alive, and that opinion might, he hoped, lead the defendant to consider whether he had not in vanity, ignorance, or want of skill in argument come to an altogether false conclusion in determining to follow the practices of those who arrogated to themselves the name of the Peculiar People. He was not going to make a martyr of the defendant, but he was going to leave him to the reflection that it was the opinion of the jury and his opinion that the defendant was responsible for the child's death. He bound the defendant over in his own recognisances in £10 to come up for judgment if called upon.

FEES TO MEDICAL WITNESSES.

VEXED.—The fee of one guinea for giving evidence in the county court is the usual allowance to professional witnesses in England, with perhaps something additional in respect of mileage, and probably some similar rule prevails in Ireland. A reference to the rules under the County Courts (Ireland) Act would perhaps settle the question. In cases of civil proceedings we cannot too strongly urge upon members of the medical profession to obtain some undertaking as to their fees from the solicitor to the plaintiff or defendant serving the subpœna, or from the plaintiff or defendant personally before the trial. In the present case, after the expression of opinion by the judge, we do not think that our correspondent can usefully take any further step in the matter.

EXCISE DUTIES.

A CORRESPONDENT inquires if any medical practitioners are in the habit of painting their names on their traps, and if by so doing they can avoid the tax of 15s. or 21s. which they have to pay. "Many of us," our correspondent adds, "keep our carriages entirely for our work, not for pleasure."

*** The prescribed statutory exemptions from the duty on carriages are a waggon, cart, or such other vehicle which is constructed or adapted for use, and is used solely for the conveyance of any goods or burden in the course of trade or husbandry, and whereon the Christian name and surname, and place of abode or business, etc., shall be legibly painted. We are not aware of any medical practitioners adopting the custom of painting their names on their carriages or traps, nor do we think that so doing would be sufficient to exempt them from liability to duty.

MEDICAL RESPONSIBILITIES IN CASES OF TEMPORARY ABERRATION.

MEMBER asks: (1) A man suffering from delirium tremens chases the inmates of the house (all women) with a loaded revolver. The police refuse to interfere, stating that it is not within their province. Who is responsible for the safety of the members of the household?

(2) If a medical attendant procures the services of male nurses, can the patient, on recovery, legally refuse to pay them?

(1) If the individual concerned was alleged to be a lunatic at the time of the dangerous acts mentioned, he might have been removed temporarily to the workhouse (if there was proper accommodation there for him) by a constable, relieving officer, or overseer, who was satisfied that it was necessary for the public safety or the welfare of the alleged lunatic. This would secure detention for a space of time not exceeding three days, during which further steps (if necessary) could have been taken. If not alleged to be a lunatic at the time, the person dangerous in the way described would seem to fall within the direct province of the police. The police take differing views of their own powers and functions.

(2) We are advised that the patient could not legally refuse to pay them.

GERMAN OTOLOGICAL CONGRESS.—The German Otological Society held its annual meeting in Whitsun week at Würzburg, under the presidency of Professor Bezold, of Munich. The meeting was attended by 85 otologists, of whom 6 were Japanese. It was decided that a memorial should be erected to Professor von Tröltsch, who taught in the University of Würzburg from 1864 till his death in 1890. It was further decided that the next annual meeting should be held at Hamburg.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.—The following candidates have satisfied the Examiners in the subjects undernoted:

Organic Chemistry.—C. H. Barber, non-coll.; G. E. Batty, Trinity; C. L. Coode, Hertford; A. G. Gibson, Ch. Ch.; A. H. Hogarth, Ch. Ch.; P. A. Mansfield, Keble; J. E. Rutherford, Corpus; R. H. Sankey, Ch. Ch.

Materia Medica.—G. B. D. Adams, Ch. Ch.; G. D. Allen, non-coll.; C. H. Barber, non-coll.; A. W. Brodribb, Univ.; J. Freeman, Univ.; A. G. Gibson, Ch. Ch.; F. L. Golla, Magd.; A. C. Goodwin, Keble; T. Harris, non-coll.; A. H. Hogarth, Ch. Ch.; C. M. H. Howell, Trinity; F. Howson, non-coll.; H. L. Laws, Wadh.; H. C. Lecky, Ch. Ch.; T. G. Longstaff, Ch. Ch.; P. A. Mansfield, Keble; L. D. Neave, Merton; L. J. J. Orpen, Keble; D. R. Pike, Jesus; C. Rolleston, New; P. F. Tinne, Magd.; E. H. White, Univ.; A. R. Wilson, Wadh.; H. M. M. Woodward, Keble.

Anatomy and Physiology.—L. H. Badcock, Trinity; E. C. Bevers, St. John's; G. G. Davidson, New; O. Hildesheim, Magd.; E. H. Hunt, Balliol; A. J. Jex-Blake, Magd.; L. J. Picton, Mert.; W. B. Prowse, Pembroke; O. W. Richards, New; W. V. Shaw, Ch. Ch.; G. F. D. Smith, New; M. F. Tylor, Trinity; C. E. A. Wilson, Ch. Ch.

FINAL EXAMINATION FOR THE DEGREE OF M.B., B.Ch., etc.—The following candidates have satisfied the Examiners:

E. F. Buzzard, Magd.; J. Fortescue-Brickdale, Ch. Ch.; E. R. Frazer, Ball.; M. H. Gordon, Keble; C. N. Grover, Keble; L. H. Lindley, Magd.; A. W. Oxford, Ch. Ch.; R. C. B. Wall, Queen's; W. A. P. Waters, B. N. C.; R. Whittington, Merton.

UNIVERSITY OF CAMBRIDGE.

MEDICAL DEGREES.—The Order of Seniority for the academical year just closed shows that 30 candidates were admitted to the degree of Doctor of Medicine, 59 to the degree of Bachelor of Medicine, and 60 to the degree of Bachelor of Surgery. The number of Doctors is considerably in excess of the average of previous years.

THIRD EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have satisfied the examiners:

Part I.—Barnes, B.A., Christ's; Boulton, B.A., Cla.; Byles, King's; W. D. Chapman, B.A., Corp. Chr.; H. N. Clarke, B.A., Trin.; Denyer, M.A., Queen's; Dore, B.A., Joh.; W. Eardley, M.A., Joh.; Fryer, B.A., Christ's; Garrood, B.A., Joh.; Glasier, B.A., Emm.; Glynn, B.A., Cla.; W. D. Harmer, B.A., King's; Hart-Smith, B.A., Gonv. and Cai.; Hay, B.A., Gonv. and Cai.; Jordon, B.A., Sid. Suss.; Kemp, B.A., Cla.; Litchworth, B.A., Emm.; A. F. MacCallan, B.A., Christ's; H. F. Parker, B.A., Emm.; Pettinger, B.A., H. Selw.; S. P. Pollard, B.A., Gonv. and Cai.; Powell, B.A., Emm.; S. B. Reid, M.A., Joh.; R. E. Sedgwick, B.A., Gonv. and Cai.; Sewell, B.A., Pemb.; C. C. Simson, M.A., Trin.; G. R. Slade, B.A., Trin.; Stacey, B.A., Joh.; F. W. Sumner, B.A., Joh.; Sutcliffe, B.A., Emm.; Talbot, B.A., King's; Tallent, B.A., Joh.; E. C. Taylor, B.A., Joh.; Thorp, B.A., Emm.; I. Ll. Tuckett, M.A., Trin.; Ware, B.A., Pemb.; W. K. Wills, B.A., Joh.; R. J. Willson, B.A., Emm.; A. G. Wilson, B.A., Gonv. and Cai.

Part II.—Betteridge, B.A., Gonv. and Cai.; T. H. Brown, B.A., Pemb.; Byles, King's; Carter, B.A., Jes.; Corner, B.A., Sid. Suss.; H. G. Deller, B.A., Trin.; A. B. Green, M.A., Down; Gregory, B.A., Joh.; Harrisson, B.A., Magd.; Heilborn, B.A., Gonv. and Cai.; Levick, B.A., Jes.; E. A. C. Matthews, B.A., Trin.; H. E. May, M.A., Cla.; F. A. Mills, B.A., Cla.; Naish, B.A., Trin.; Prest, B.A., Joh.; Ransome, B.A., Gonv. and Cai.; Roderick, B.A., Emm.; J. E. Sandilands, B.A., Trin.; Sargent, B.A., Joh.; Hon. G. H. Scott, B.A., Trin.; C. White, B.A., Christ's.

UNIVERSITY OF GLASGOW.

FOURTH (FINAL) PROFESSIONAL EXAMINATION.—The following candidates have satisfied the Examiners:

Degrees of M.B., C.M.—J. Donald, W. K. Hutton, M.A.; J. Millar, J. W. O. van Millingen, W. F. M'Ewen, S. M'Lean, C. D. Picken, T. B. Riddall, C. E. C. Stanford, B.Sc.

Degrees of M.B., Ch.B.—J. Aitken, G. Alexander, A. J. Ballantyne, R. F. Ballantyne, A. A. Barclay, J. Barrowman, W. Bennett, J. G. W. Boleyn, T. B. Broadway, J. Brunton, J. J. Buchan, R. D. Campbell, J. Carruthers, M.A.; R. Carswell, M.A.; J. Crow, J. R. Currie, B.A. Oxon.; R. Douglas, M.A.; K. M'K. Duncan, R. Fullarton, M.A.; A. Garrow, D. S. Harvey, E. W. R. Jones, J. W. Leitch, M.A.; A. M. Lindsay, A. Matheson, J. B. Miller, J. A. Mitchell, P. A. Mitchell, M. Macdonald, A. T. Macewan, L. A. Mackenzie, D. M'Kinlay, A. D. Macnair, R. R. Macnicol, M.A.; W. G. Neill, R. Niven, P. L. Pearce, J. W. Scott, J. M. Sloan, W. H. Steel, B.A.; F. Stevenson, F. E. Stokes, P. D. Strachan, M.A.; T. M. Strang, A. Taylor, R. A. H. Watson, W. Webster, J. P. Wilson. Women: D. A. Bennett, A. F. Blackadder, M. Gardner, J. Grant, M. Longmire, E. M'Call, M. C. Poulter, J. E. Prowse, M. J. Ross.

A MEDICAL FACULTY is about to be constituted in the University of Odessa, and will be formally opened next autumn. Dr. W. Podwyssozki, of the University of Kiew, has been called to the chair of pathology in the new faculty, of which he has also been appointed Dean.

DR. GÉZA V. MIHÁLKOVICS, Professor of Anatomy and Embryology at Buda-Pesth, has been elected Rector of that University for the academic year 1898-99.

THE Government of the Netherlands has appointed a special Committee to study the means of preventing tuberculosis in cattle.

MEDICAL NEWS.

The Queen, who is a patron of University College Hospital, has sent a donation of £100 in aid of its fund.

The total sum received by the Hospital Sunday Fund for the present year now amounts to £30,700.

The will of the late Sir James Mackie, K.C.M.G., M.D., of Alexandria, has been proved of the value of £62,133 12s. 1d.

At a general court held at Guy's Hospital on June 22nd, Mr. Balfour, M.P., Mr. Charles Gassiot, and Sir Samuel Wilks, F.R.S., were elected to the corporation.

Presentation.—Mr. A. T. Wooldridge, Lecturer to the York Town and Camberley Branch of the St. John Ambulance Association, has been presented by the ladies' class with an oak inkstand mounted in silver and suitably inscribed, and a blotting case with monogram.

A Munificent Offer.—Mr. M. Garton, brewer, of Southampton, has offered to complete the new wing of the Royal South Hants Infirmary at a cost considerably over £5,000. He had previously contributed £2,000 towards the same object.

The East London Hospital for Children, Shadwell, has received from Mrs. Douglas Harvey a special donation of £1,000 for the endowment in perpetuity of a cot in the hospital, and Lord Iveagh has sent a contribution of £50 towards the building fund of the convalescent home recently erected at Bognor.

Jews in the University of Moscow.—Further restrictions as to the admission of Jewish students to the University of Moscow have recently been promulgated by the Russian Government. It is now ordered that the proportion of Jews in any faculty must not exceed 3 per cent. It is estimated that in consequence of this edict there will only be 30 Jewish students in the University of Moscow in the ensuing semester. Of these only 7 will belong to the Medical Faculty.

United Hospitals Athletic Sports.—These sports will be held at the grounds of the London Athletic Club, Stamford Bridge, on July 9th. On the following Wednesday, July 13th, there will be a competition between the teams of the United Hospitals (London) and a strong team which is coming over from Dublin. The President of the United Hospitals Committee is Mr. Edmund Owen, and the Secretary is Mr. C. I. Graham, St. Mary's Hospital, who is ready to supply further information. It is hoped that on both the days mentioned the friends of hospital athletics will show their practical interest by attending the meetings.

An American National Society for the Study of Epilepsy.—At a meeting held at the Academy of Medicine in New York on May 24th, representatives from eight States were present to organise a "National Society for the Study of Epilepsy and the Care and Treatment of Epileptics." The following officers were elected:—*President:* Hon. William Pryor Letchworth, LL.D., New York; *First Vice-President:* Dr. Frederick Peterson, New York; *Second Vice-President:* Professor William Osler, M.D., Maryland; *Secretary:* Dr. William P. Spratling, New York; *Treasurer:* Dr. H. C. Rutter, Ohio. The Society organised with 44 members.

The Repression of Tuberculosis in Roumania.—The Council of Hygiene of Bucharest recently appointed a Committee to prepare a handbook of advice as to the means of preventing phthisis. The Committee has recommended, among other things, that persons suffering from the disease be excluded from workshops and placed in sanatoria, where they should be treated and maintained at the cost of the municipality. With the object of giving effect to this recommendation steps have already been taken to obtain buildings to be transformed into a sanatorium. A special medical inspector is also to be appointed whose duty it shall be to discover cases of tuberculosis in workshops and factories.

The St. John Ambulance Association.—The report of the St. John Ambulance Association for the session 1896-7 shows that the brigade now comprises 350 surgeons and about 9,000 officers and men. In all parts of the country the police and railwaymen are receiving systematic instruction, and efforts are being made to extend the work amongst colliers and seamen of the mercantile marine. The services of the Invalid Transport Corps have been utilised on 710 occasions, and the permanent ambulance station at St. Paul's and the temporary stations erected at the time of the Jubilee celebrations, the opening of the Blackwall Tunnel, etc., have all proved of great public benefit. The issue of certificates for the past session has been: First aid, male 20,559, female 7,798; nursing, male 252, female 3,527; making a grand total to date of 102,124 certificates and 49,380 medallions. No mention is made of certificates granted for "hygiene" or for "cottage nursing." These new courses, which were instituted last year and which were not very cordially received by medical men, do not appear indeed to have met with any great measure of success. The Committee most fittingly express their sense of gratitude to the members of the medical profession for their valuable services, and glancing through the report, a bulky volume of 400 pages, one cannot fail to be struck by the very large amount of voluntary work done by the members of the profession. It is to be hoped that the public will fully appreciate the value of these services often given at much personal sacrifice, and that the Association will more and more give to their medical staff a generous share in the management and administration.

Appointments under the Workmen's Compensation Act.—The following gentlemen have been appointed by the Home Secretary to act as Medical Referees under the Workmen's Compensation Act: Mr. H. A. Ballance and Dr. Michael Beverley (Norwich), for the Norwich County Court District; Mr. C. Clark Burman (Alnwick) for the County Court Districts of Alnwick and Rothbury; Dr. W. K. Clayton (Wakefield) for County Court Circuit No. 14; Dr. W. Burrough Cosens (Dorchester) for the Dorset County Court Circuit No. 53; Mr. Joseph Wm. Gill (Liskeard) for Liskeard and St. Austell County Court Circuit No. 59; Mr. Nelson Hardy (Dulwich), Dr. W. G. Vawdrey Lush (Weymouth) for the County Court Circuit No. 55; Dr. James Murphy (Sunderland) for Durham Court, No. 2 Circuit; Dr. H. Campbell Thomson (London); for County Court Circuit No. 43; Dr. Arthur Tuxford (Boston) for County Court Circuit No. 17; Mr. C. Hamilton Whiteford (Plymouth) for County Court Circuit No. 58; Professor C. J. Wright (Leeds) for Leeds District of County Court Circuit No. 14.

MEDICAL VACANCIES.

The following vacancies are announced:

ABERDEEN UNIVERSITY.—One additional Examiner in (1) Botany, (2) Chemistry, (3) Medical Jurisprudence and Public Health. Grant, £30 per annum. Applications to the Secretary by July 5th.

BIRKENHEAD AND WIRRALL CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £50, with board, apartments, and laundry. Applications to the Secretary, 5, Rumford Place, Liverpool, by July 4th.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by July 9th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £130 per annum, with apartments. Applications to the Honorary Secretary, G. A. Lightfoot, Rivershill, Stanwix, Carlisle, by July 14th.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester Square.—Demonstrator. Honorarium £50 per annum. Applications to the Dean by July 18th.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Resident Dispenser and Assistant. Honorarium, 20 guineas per annum, with board, lodging, and washing. Applications to the Honorary Secretary by July 5th.

DUMFRIES; PARISH OF NEWABBEY.—Medical Practitioner and Public Vaccinator. Salary, £50 per annum. Applications to the Chairman by July 14th.

EDINBURGH ROYAL HOSPITAL FOR SICK CHILDREN.—Two Resident Medical Officers. Applications to Messrs. Henry and Scott, 20, St. Andrew's Square, Edinburgh, by July 9th.

GLASGOW UNIVERSITY.—Lecturer on Materia Medica and Therapeutics. Salary, £150 per annum. Applications to the Secretary of the Court by July 20th.

LANARK: MIDDLE WARD ISOLATION HOSPITAL.—Resident Physician. Salary, £140 per annum, with board, etc. Applications to J. B. Ferguson, District Clerk, County Buildings, Hamilton, by July 7th.

LAGOS GOVERNMENT RAILWAY.—Assistant Medical Officer. Between 25 and 30 years of age. Salary, £30 per month, and first-class passage out and home. Applications to the Crown Agents for the Colonies, Downing Street, S.W., by July 11th.

LIVERPOOL, STANLEY HOSPITAL.—Honorary Assistant Surgeon. Applications to the Honorary Secretary by July 8th.

MANCHESTER: ANCOAT'S HOSPITAL.—Resident Senior House-Surgeon, Salary, £80, with board and washing. Applications to the Secretary.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship. Appointment for six months. Applications to the Secretary by July 11th.

MANCHESTER: OWENS COLLEGE.—Senior and Junior Demonstrator in Physiology. Stipends, £150, rising to £200, and £100, rising to £150 respectively. Applications to the Registrar by July 18th.

RIPON DISPENSARY AND COTTAGE HOSPITAL.—Resident House-Surgeon and Dispenser, unmarried. Salary, £70 first year, with board and lodging. Applications to the Honorary Secretary.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners; and an Examiner in Dental Surgery. Applications to the Secretary by July 6th.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—House-Physician. Appointment for six months. Board, etc., provided. No salary. Applications to the Secretary by July 23rd.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C.—Junior House-Surgeon. Salary, £50, with board and residence. Applications to the Secretary by July 4th.

SUNDERLAND INFIRMARY.—House-Surgeon. Salary, £80 per annum, rising to £100, with board and residence. Applications to the Chairman of the Medical Board by July 7th.

VICTORIA HOSPITAL FOR SICK CHILDREN, Park Street, Hull.—Lady House-Surgeon. Salary, £50 per annum, with board and laundry. Applications to the Honorary Secretaries by July 18th.

MEDICAL APPOINTMENTS.

ADAM, Dr. James, appointed Medical Officer for the Killarmarsh District of the Chesterfield Union.

ALCOCK Reginald, M.B., Ch.B.Vict., appointed Honorary Assistant Surgeon to the North Staffordshire Infirmary, Hartshill, *vice* G. S. Hatton, M.D.Durh.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 5s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

MARRIAGES.

LINDESAY—FOWLER.—On Monday, June 6th, 1898, at Holy Trinity Church, Karachi, by the Rev. A. Howard, M.A., Chaplain, Victor Edward Hugh Lindesay, M.B., Ch.B., Surgeon-Lieutenant I.M.S. 1st Battalion IV Goorkhas, third surviving son of the late Fredrick Lindesay, M.A., J.P., D.L., Barrister-at-Law, of Loughry, co. Tyrone, to Helen Frances Levine, eldest daughter of Major W. Merrick Fowler, late 61st Regt., of Strode Manor, Dorset.

MACLEOD—DAVIES.—At St. Nicholas Church, Leicester, on June 22nd, by the Rev. Edward Atkins, B.Sc., and the Rev. A. P. Dawson, M.A., Alexander Lewis Macleod, M.A., M.B., C.M., to Fanny Elizabeth, daughter of Edward Davies, Esq., R.I., of Leicester. At Home, 58, Hinckley Road, Leicester, August 10th and 11th.

DEATHS.

DORAN.—On Sunday, June 26th, at 9, Granville Place, W., Emma Mary Harrington, widow of Dr. John Doran, F.S.A., in her 83th year.

LE MOTTÉE.—On June 5th, at Quetta, Baluchistan, Herbert De Lisle, beloved son of Surgeon-Lieutenant-Colonel G. H. Le Mottée, A.M.S., aged 15 months.

NICOL.—At 12A, Clarendon Road, Leeds, on June 22nd, James Main Nicol, M.R.C.S., L.R.C.P., L.D.S., aged 27.

DIARY FOR NEXT WEEK.

MONDAY.

Central London Throat, Nose, and Ear Hospital, Gray's Inn Road. W.C., 5 P.M.—Mr. Wyatt Wingrave: Morbid Growths of the Nasal Septum.

TUESDAY.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, 4.30 P.M.—Dr. T. Dixon Savill: On Methods of Electrical Diagnosis and Treatment in Diseases of the Nervous System.

National Hospital for the Paralysed and Epileptic, 3.30 P.M.—Lecture by Mr. Ballance.

WEDNESDAY.

Obstetrical Society of London, 8 P.M.—Specimens will be shown by Drs. Blacker, Pembrey (introduced by Dr. Amand Routh), Spencer, Foulerton (introduced by Mr. Bland Sutton), Dysart McCaw, and Wise. Papers: Dr. Arnold W. W. Lea: The Sagittal Fontanelle in the Heads of Infants at Birth. Dr. George Roper: Note on Some Difficult Cases of Fronto-Anterior Positions of the Fœtal Head.

Hospital for Consumption, Brompton, 4 P.M.—Dr. S. Martin, F.R.S.: The Causes of Cardiac Hypertrophy.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. J. B. Ball: Throat Cases.

THURSDAY.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture or Demonstration of Recent Specimens.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Dr. Abercrombie: Demonstration of Medical Cases.

Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, W.C., 5 P.M.—Dr. Dundas Grant: On Mastoid Operations.

FRIDAY.

Ophthalmological Society of the United Kingdom.—Card Specimens at 8 P.M. Papers at 8.30 P.M. Mr. Richardson Cross: Subconjunctival Bloodletting for Hæmorrhagic Retinitis. Dr. Aldren Turner: Some Points Bearing on the Conjugate Movements of the Eyes. Mr Snell: (1) Large Cyst of the Conjunctiva; (2) Chancre of the Lachrymal Sac. At the close of the ordinary meeting the annual meeting for the election of officers of the Society will be held.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

H. R. would be pleased to hear of a home for an inebriate working man. Terms must be very moderate.

SEWAGE FILTERS AND STENCH TRAPS.

X. Y. Z. asks: 1. What is the best and cheapest filter for town sewage—town 1,000 population—and in what towns of the same population is it in use? 2. What is the best stench trap for town sewers which will also convey surface water? 3. What is a cheap and good disinfectant?

TREATMENT OF RELAPSING APPENDICITIS.

H. J. asks for advice in the following case: His wife suffers from relapsing appendicitis and colitis, and it is thought advisable for her to undergo a course of baths and treatment at some health resort. Plombières, Kreuznach, and Karlsbad have been suggested, but he can find no help in literature as to which would be the most suitable: in fact, the treatment of such cases as the above is hardly touched upon. If anyone has practical experience of patients suffering in the same way having been been benefited at these or other places, H. J. would be very much obliged for their information.

ANSWERS.

JUSTICE.—The question which our correspondent puts is a purely legal one on which we do not feel prepared to advise.

GREER.—We cannot recommend any individual practitioner or institution.

B. G.—The practice of advertising the names of medical officers to hydropathic establishments and lunatic asylums is one not to be commended, but appears to be sanctioned by custom.

B. B.—We have been unable to ascertain what is meant by "Basis of Indian." The powder may perhaps resemble or be identical with the "Duke of Portland's Powder for the Gout," which was of Italian origin. The composition of this was gentian, birthwort root, and the tops and leaves of germander, ground pine, and lesser centaury.

M.B., F.R.C.S.—The Marylebone Infirmary is part of the training school for the Nightingale nurses. The training given is equal to that of a provincial or London hospital without a medical school. Probationers are in training for one year, and then serve for one or more years in the wards of the infirmary.

FORENSIC.—The following are among the most recent handbooks:—*Forensic Medicine and Toxicology*, by J. D. Mann, M.D., F.R.C.P., second edition (London: Charles Griffin and Co., 1898, 21s.). *Textbook of Forensic Medicine and Toxicology*, by A. P. Luff, M.D., 2 vols. (London: Longmans, Green and Co., 1895, 24s.). *The Student's Handbook of Forensic Medicine and Public Health*, by H. A. Husband, M.B., F.R.C.S.E., sixth edition Edinburgh: E. and S. Livingstone, 1895, 10s. 6d.).

QUANTITATIVE EXAMINATION OF URINE.

MANXMAN.—There is no one book on the quantitative examination of urine which would meet our correspondent's requirements. Sutton's *Volumetric Analysis* is best for urea, total nitrogen, and most inorganic constituents. For potash and soda it is faulty, and the best process, which is not perfect, is given in the last German edition of Neubauer and Vogel's work. The best method for uric acid is that of Gowland Hopkins (*Jl. of Pathol. and Bacter.*, 1893). Halliburton gives tests for acidity, hippuric and oxalic acids, creatinin, proteids, and phenol. (*Chemical Physiol. and Pathol.*, Longmans). Ptomaines have not been tested reliably. Time spent in studying methods is time saved. It will take a few months to learn them.

NOTES, LETTERS, Etc.

AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE DR. ARTHUR BARLOW.

THE following additional subscriptions have been received on behalf of this fund:

	£	s.	d.
Per Dr. J. W. Moore—			
A Sympathiser (Putney)	2	2	0
"J. P."	1	1	0
Per Dr. J. A. Matson—			
"T. C. D."	1	1	0

ELEPHANTIASIS IN ENGLAND.

DR. RICHARD NEALE (Hampstead, N.W.) writes: At page 1517 of the BRITISH MEDICAL JOURNAL of June 18th, Dr. Macgregor reports a case of elephantiasis, occurring in a patient never away from England, and refers to a similar one reported by Dr. Purdam in the JOURNAL of 1881. A reference to the *Medical Digest* will show that the date ought to have been 1883; and also that Dr. Fox reported a very interesting case of a like nature in the *Medical Times and Gazette* for 1878.

FACTS ABOUT SMALL-POX AND VACCINATION.

IN the article in the BRITISH MEDICAL JOURNAL of June 25th, the quotation about the British Medical Association being "dissatisfied that the Bill does not provide for the heating of the furnace seven times hotter

for the persecution of anti-vaccinators" is taken from an article, entitled, The Government Vaccination Bill, published as the first article in the supplement to the *Vaccination Inquirer* of June 1st.

MOTOR CARS.

DR. WALTER LATTEY (Southam, Warwickshire) writes: Some of your readers may be interested to learn that Sir David Salomons states in the current number of *The Automotor and Horseless Vehicle Journal* that Mr. Serpollet has designed a steam carriage embodying (1) a new principle for generating steam, (2) a revolution in steam engine construction. The horse power is nominally 3, but can be doubled for short periods, and the vehicle can easily be lifted by two men. Sir David is of opinion that such carriages could be constructed for £80 or less, and that the fatigue experienced with all motors is absent.

THE DOCTOR'S HOLIDAY.

DR. G. A. HAWKINS-AMBLER (Liverpool) writes: You were good enough to publish last year a rather tedious letter from me on the above subject. I am constrained to write this brief note, since, judging from the large correspondence in which I was involved by my last communication, many doctors are looking for cheap holidays, and not at all sure where to go. It is a pity that members of the profession who reside in pretty places, and are well informed as to ways and means of getting there and living there at a reasonable rate, do not follow my example, and start a list of suitable holiday resorts where brother chips may get rest and recreation at a cheap rate. Last year I particularly urged the claims of Ireland, and after my letter, Mrs. Airey, of the Knockninney Hotel, Enniskillen, found her limited resources almost strained to entertain the doctors who tried this new field on my recommendation. The hard-worked doctor has little energy left to look out for a holiday resort and arrange for a holiday. That it is time and money well spent you, sir, have been amongst the most urgent to insist.

THE USE OF PUMICE STONE.

MR. R. BALFOUR GRAHAM (Leven, N.B.) writes: In regard to Dr. Beatson's memorandum on the use of pumice stone soap in the disinfection of the surface of the body, I may say that I am in the habit of advising in the desquamating stage of scarlatina that the soles of the feet and the palms of the hands be rubbed frequently with pumice stone in order to remove the hard, dead epidermis, the presence of which would otherwise often prevent a case being released from quarantine till long after the rest of the body had freely desquamated and the orthodox period of six weeks' isolation had expired.

A MONUMENT TO HAHNEMANN.

THE remains of Samuel Hahnemann, the prophet of homœopathy, were recently exhumed from their resting place in the cemetery of Montparnasse, in Paris, and transferred to Père-Lachaise, where a monument is to be erected to his memory. Hahnemann, who was born in 1755, spent the last years of his long life in Paris, where he died in 1843. His body was embalmed by M. Gannal, assisted by his son, Dr. Gannal, under whose supervision the recent second burial was carried out. Round the neck of the corpse was a necklace made of his wife's hair. The original embalming does not appear to have been a success.

SIR THOMAS BROWNE.

DR. CECIL SHAW (Belfast) writes: Your most interesting article on Sir Thomas Browne in the BRITISH MEDICAL JOURNAL of June 25th, will give great pleasure to many who for years have been constant readers of his works, but I venture to think that some of them, like myself, will be disappointed that among the many quotations you give you do not include one from Section XIII of *Religio Medici*—a passage which deserves to be inscribed over the door of every laboratory in the land. It runs as follows: "The wisdom of God receives small honour from those vulgar heads that unduly stare about, and with a gross rusticity admire His works. Those highly magnify Him, whose judicious inquiry into His acts, and deliberate research into His creatures, return the duty of a devout and learned admiration." May I add that your remarks suggest, no doubt unintentionally, that the works included in Dr. Lloyd Roberts's edition have till now not been easily obtainable. As a matter of fact, they are included in the "Camelot Classics" edition, with introduction by John Addington Symonds, published at 1s.

PHARMACY AS A PROFESSION FOR WOMEN.

ACCORDING to the *Daily Mail*, which has been investigating the subject, there is an institution in London where women are trained to become dispensers. The majority of the students, who now number some 50 or 60, are the [illegible] ters of medical men who are anxious to dispense for their husbands or fathers, with a sprinkling of nurses from hospitals [illegible] ers are already employed at Stoke [illegible] on in the Walworth Road, at the [illegible] and at a number of local hospitals [illegible] other countries, the pharmaceutical [illegible] igating the question whether women are fitted to become dispensers. In Hungary the Minister of Education is believed to be favourable disposed towards women entering the pharmaceutical profession.

COMPRESSED DRUGS.

MR. ARTHUR GARDINER, M.B., writes: Owing to the greater frequency with which compressed tablets of drugs are now being prescribed, I think it will be of interest to relate the particulars of a case at present under my treatment:

Mrs. H., aged 35, has suffered with nervous headaches for some years. She has been worse this last six months. I have had her under treatment for three months. She is in the habit of vomiting shortly after the commencement of an attack. I prescribed for her compressed tablets of phenacetin gr. iv, caffeine gr. j, made by one or other of our [illegible] makers. These tablets, as the tablets from "maker A." gave relief, though they were occasionally vomited unchanged three or four [illegible] These were not noticed in the stools. This [illegible] tablets from "maker B" gave no relief whatever. I increased them up to ten per dose without producing any physiological action on the patient. These tablets were sometimes vomited many hours after administration, and were passed in the stools (bowels confined) quite unchanged. I immediately prescribed antipyrin, gr. x, in water every four hours with the most happy results.

I should like to know if any of your readers have had similar experience, as the above case has recalled others, which have been unrelieved by these tablets, and which probably would have received greater benefit from the drugs given in their more natural form.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. R. B. Anderson, London; G. W. Ancrum, M.B., Gloucester; Mr. A. H. W. Ayling, Wellington, Salop; Arthritis; Alpha; Anonymous. **B** Dr. G. W. Balfour, Edinburgh; Mr. W. Berry, Wigan; Messrs. Burroughs, Wellcome, and Co., London; Mr. L. A. Bidwell, London; Dr. H. T. Bulstrode, London; Dr. J. Brown, Bacup; Dr. W. L. Blight, Cardiff; Mr. C. C. Burman, Alnwick; Mr. D. M. Beddoe, London. **C** Mr W. B. Cockill, Kendal; Dr. J. W. Carr, London; Dr. H. Campbell, London; Messrs. J. and A. Churchill, London; Lady Cook, Richmond; Mr. W. B. Cosens, Dorchester; Mr. R. H. Capper, London; Mr. T. E. Constant, Scarborough; J. G. Connal, M.B., Glasgow; Mr. T. J. Connolly, Dundalk; Constant. **D** Devon; Rev. P. Dearmer, London; Dr. N. Davis, Bracknell; Mr. F. Dugon, London; D. W.: Dentist of Thirty Years' Standing. **E** Mr. A. Emlyn, Union Mills; A. Edington, M.B., Grahamstown, S.A.; W. McA. Eccles, M.B., London. **F** D. P. Fitzgerald, M.B., Cork; Mr. G. R. Fraser, Warkon-Tyne; J. J. Foster, M.B., London. **G** Dr. H. W. Gardner, Shrewsbury; A. Gardiner, M.B., Leicester; Mr. J. Griffith, London; Mr. C. I. Graham, London; Dr. J. Galloway, London; Mr. E. G. L. Goffe, London; Mr. J. W. Gill, Liskeard; Glasgow. **H** Dr. R. Hutchinson, London; Dr. W. Habgood, Marple; Dr. L. Hamilton, Liverpool: W. J. Harris, M.B., Shaftesbury; Dr. A. P. Hillier, London; Mr. W. M. Hope, Gloucester; Mr. H. N. Hardy, London; Mr. F. R. Holmes, London; G. Halley, M.B., Dundee; H. R.; Mr. T. G. Horder, Cardiff; Mr. H. Hunter, Sandy. **I** G. S. Illingworth, M.B., Glasgow. **J** Justitia; Justice; Mr. G. Jackson, Plymouth. **K** L. B. Keng, M.B., Singapore. **L** Mr. H. Littlewood, Leeds; Mr. C. E. Liesching, Tiverton; Dr. W. G. V. Lush, Weymouth. **M** Member; Dr. C. D. Musgrove, Penarth; Dr. A. Mann, Chester; J. McFadyean, M.B., London; M.D.; Miss J. D. Macvicar, Peebles; Mr. A. H. Martin, Evesham; Mr. N. C. Macnamara, London; Mr. G. F. E. Morgan, West Hartlepool; Dr. J. A. Matson, London; Dr. J. Murphy, Sunderland; M.O.H.: Dr. H. C. Major, Bradford. **N** Dr. R. Neale, London; N. X. **O** Mr. T. P. O'Connor, M.P., London. **P** Dr. F. W. Pavy, London; A. W. C. Peskett, M.B., Nottingham; Dr. J. D. Pollock, London; P. H.; Mr. F. R. Proctor Sims, London; Public Vaccinator; Principal; Punjab. **R** Mr. F. Reynolds, Harrogate; Dr. A. Routh, London; Mr. E. M. Rodwell, Norwich; R. A. F.; Dr. A. Ransome, Bournemouth: Mr. F. C. Rogers, Stockport. **S** E. M. Skeete, M.B., Barbados; Dr. J. G. Sharp, Leeds; Dr. W. Sykes, Gosport; Mr. W. H. Spurgin, Newcastle-on-Tyne; Messrs. H. Stodart and Co., London; Mr. F. Scott, Manchester; Dr. J. A. Shaw-Mackenzie, London; Surgeon-General Retired; T. E. K. Stansfield, M.B. Woodford Bridge; Dr. T. D. Savill, London; Mr. S. G. Skelton, London; Dr. C. E. Shaw, Belfast; Dr. E. M. Smith, York. **T** Mr. E. T. Tomlinson, Bedford; Dr. F. W. Tunnicliffe, London; W. W. T. Thomas, Liverpool. **V** Mr. T. J. Verrall, Brighton; Victim; Vates. **W** Dr. F. J. Waldo, London; Dr. H. Woods, London; E. T. Whitaker, M.B., Shrewsbury; J. R. Watt, M.B., Ayr; Dr. F. Willcocks, London; Mr. C. J. Wright, Leeds; Mr. E. W. Wallis, London; Mr. C. H. Whiteford, Plymouth; Dr. R. T. Williamson, Manchester; Mr. C. Wray, London; Mr. A. Wilson, Manchester; G. J. Williams, Fishguard. **X** X. Y. Z. **Z** Messrs. A. and M. Zimmermann, London; etc.

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REMARKS
ON
SANATORIA FOR THE OPEN-AIR TREATMENT OF CONSUMPTION.

By ARTHUR RANSOME, M.D.Cantab., F.R.S.,
Consulting Physician to the Manchester Hospital for Consumption and Diseases of the Throat.

Requisites for their Installation.

More than forty years have passed since Dr. Brehmer devoted his private fortune to the establishment of an institution for the open-air treatment of phthisis. The Goerbersdorf Sanatorium was commenced in the year 1859. In 1874 a private company began the building of Falkenstein, and Dr. Dettweiler, its chief, has proved an able apostle of Brehmer's views. Since then many similar establishments have been founded, and they are to be met with in all parts of the world. But in Great Britain, the home of hygiene, until quite recently at Bournemouth (Dr. Pott's and Dr. John's Sanatoria) no such institution devoted to this purpose was to be found. Dr. Burton-Fanning has treated some patients upon this plan at the Convalescent Hospital at Cromer, and has published an excellent report upon the results, but at the present time there is not in any part of the United Kingdom any open-air sanatorium for the benefit of the poor, or for consumptives of small means.

We cannot doubt, now that attention has been called to the subject, that attempts will soon be made to supply this deficiency. It may, therefore, be useful to enumerate at least some of the conditions that such sanatoria must fulfil. In doing this I propose to make free use of recent publications on the subject, such as Dr. Léon Petit's *Le Phtisique et son Traitement Hygienique*, Dr. Duhourcau's *Conditions Générales d'un Sanatorium*, and Dr. Moeller's and Dr. Knopf's works on sanatoria.

The Rationale of the Open-Air Treatment of Phthisis.

It is not without reason that the open-air treatment has been included by Drs. Daremberg, Léon Petit, and others, within the bounds of the hygienic treatment of consumption; for, undoubtedly, an abundance of fresh air is one of the essentials of complete hygiene; but it is probable that there is something more than mere ventilation at the basis of true open-air treatment. It requires not only sufficient pure air to supply the needs of the body, but also constant currents of such air, sweeping over the patient, flushing away all impurity, and conveying abundant supplies of ozone; in other words, "hyperaëration."

It has long been known that an excess of fresh air, approaching to open-air treatment, has been beneficial in all kinds of microbic disease, not only in consumption. It is especially in military campaigns that this has been noticed. Thus, in the American war it was found that nothing was better for the sick and wounded, winter and summer, than a tent or a ridge-ventilated hut. Erysipelas and hospital gangrene were almost unknown; wounds healed more rapidly; and, even in fractures, the beneficial influence of the fresh air was to be remarked. It has been said that camp fever may be almost banished; and Stromeyer observed the remarkable effect of free ventilation in arresting military granular conjunctivitis.

The same fact comes out strongly in the records of the Austrian army. In 1854, at some of the stations of the army in Hungary, the plan was commenced of treating a portion of the patients in tents instead of in the permanent hospitals. The results were very satisfactory. "The most severe maladies ran their course much more mildly in the fresh air," and the patients recovered more quickly and more perfectly than in the confined spaces of the hospitals. Typhoid fever, small-pox, wounds, and inflammations did much better in the tents; and in no single case could it be made out that gangrene originated in a tent.

In the South Afghanistan Field Force the artillery wintered (1880-81) in tents, and remained free from pneumonia, whilst the disease was prevalent among the infantry who were overcrowded in barracks. The 63rd, which was more crowded than the other corps, suffered most, having 30 cases in hospital at one time; one company, however, quartered in large airy rooms near the residence of the general commanding, had no case. On March 25th a part of the regiment was turned out into tents; and the remainder were distributed in barracks so that each man had a minimum of 600 cubic feet of space; and, from that time, no more pnemonia occurred.[1]

One more instance may be given with regard to phthisis. It is recorded by Tholozan, who remarked during the Crimean war, that "at Sebastopol, in spite of bad nourishment and living in tents, in rain and snow, out of 1,200 sick scarcely any were phthisical." Similar testimony is forthcoming with regard to animals—horses, cows, and monkeys; and we know that men who are much in the open air are much less liable to take cold than those who have indoor employments. It is natural to inquire what there is in the air of the open that can lead to such remarkable results?

(1) In the first place exposure to the open air means far more in quantity than the freest ventilation. It has been shown by Pettenkofer that, out of doors, the average velocity of the air currents is about 10 feet per second, or about 7 miles per hour. From this and some other data he calculates that "in the course of an hour 324,000 cubic feet of air flow over one person in the open." This is at least one hundred times the amount that is afforded in ordinary ventilation, and its scavenging work must be proportionally enormous. When the air is itself pure it must sweep away every particle of organic impurity. The air of living rooms, however cleanly these may be, always contains a large proportion of micro-organisms; and the mere cleansing of a room will often, for a time, materially increase the percentage of microbes floating about. Many of these are pathogenic organisms; and we may with great probability ascribe the disappearance of fever from our tuberculous patients, after a short exposure to the open-air treatment, to the almost total absence of streptococci or staphylococci. These organisms are always very abundant in the sick chamber, and they are found almost always associated in the lungs of phthisical persons. It is probable that these microbes are at least one cause of fever in cases of phthisis.

2. Not only is the air that enters the lungs in the open purer than that of a chamber or ward, but, in association with sunshine, it acts antiseptically both upon the bodies and the clothing of the patients, destroying all organic vapours that may emanate from either, thus still further purifying the air that enters the respiratory organs.

3. The air of dwelling-rooms never contains an appreciable quantity of ozone, whereas it is usually found in the open. It may well be, therefore, that only by the open-air methods can we get the amount of active oxygen that is necessary to act medicinally upon the body, or that is sufficient to destroy ordinary bacteria.

4. Lastly, we must not forget the beneficial influence of sunlight, which is much more intense in the open than in rooms or when it has to penetrate through glass. There can be no doubt that sunshine purifies the atmosphere by its bactericidal action, and, as some experiments by Professor Delépine and myself have shown,[2] it has an exceedingly rapid action in destroying the virulence of tuberculous sputum and of tuberculous dust.

Although the direct heat of the sun has in summer to be kept from patients, it has been shown by De Renzi that sunshine materially assists guinea-pigs in combating tuberculous disease. In human beings also the warmth and light of the sun must quicken all the vital processes, and thus increase the activity of phagocytic action.

It is possible that these considerations may account to some extent for the success of the open-air treatment of consumption; but, whatever the explanation, there can be no doubt as to the amount of benefit derived from the treatment, when it is carried out in its entirety, with open air and hygienic measures, rest, and medical care all combined.

The Site for an Open-Air Sanatorium.

It seems certain that mere climate is of little importance in itself in the situation of a sanatorium. All the sanatoria at present in existence, whatever may be their geographical position and whatever their altitude above the level of the sea, show approximately the same therapeutical results.

Some of them are placed at altitudes of over 5,000 feet, others not more than 100 feet; some are to be found in the

changeable climates of Silesia and Saxony, some in the High Alps in the neighbourhood of perpetual snow. It is true that each region has its advantages and disadvantages. Thus, on the mountains the air is pure, sunshine usually abundant, the soil pure and dry, the temperature, though cold, yet more equable, and in the winter there is generally less wind. Cold often braces up the system, excites the appetite, improves assimilation; but, on the other hand, these rigorous climates bear hardly upon delicate and weakly constitutions, irritate the cough, and cause sleeplessness. A warm climate, again, is often depressing, especially when it is also moist, as at Madeira; but it often soothes an irritable cough and tempts an invalid into the open air.

On the whole, we may conclude, with Léon Petit, that climate plays only a secondary *rôle* in the treatment of consumption, and that "the best climate is that which restricts least the daily duration of the stay in the open air."

The chief authorities on this point are practically unanimous. Thus, Dr. Sabourin, the director of the Sanatorium of Canigou, in the Pyrenees, says: "Tuberculous patients are cured as easily in temperate as in cold climates. Altitude only plays a secondary part in the cure, and the best proof of this statement is the fact that perhaps the best results have been obtained at Falkenstein, a station but slightly elevated—from 450 to 500 metres above the level of the sea—and one, moreover, that is somewhat foggy. The superb results obtained in sanatoria of moderate altitudes are due simply to the fact that they fulfil the indications of the majority of the cases which present themselves. Further, their situation in intermediate climates—neither too hot in summer nor too cold in winter—permit them to remain open the whole of the year. This is the essential condition of a true sanatorium, if it coexists with a good medical directorate."

In a recent paper, Professor von Ziemssen discusses this question, and passes in review the relative merits of high and ordinary altitudes. He concludes that the only advantages of mountain climates are "the pure, dry air, the slight wind in winter." He points out also the disadvantages of treatment at high altitudes. Marked atmospheric changes occur not infrequently (wind, rain, snow), and are injurious to the patient. They make the acclimatisation of many patients difficult; and patients with high temperatures, especially those who do not reside in sanatoria, may become decidedly worse. Other objections are the wearisome journey with all its bad effects, the separation from the family, the comfortless conditions in severe illness, and in case of death; further, the financial anxiety and the economy necessitated; all these have a bad effect upon the patient. When the advantages and disadvantages are compared, the former are not so clear as to indicate the unconditional recommendation of high altitudes.

In the *Medical Courier* of St. Louis there is (December, 1885) a good article on this question. It says: "The individual peculiarities of each locality, the character and prevalence of winds, its aspect and situation under the shelter of protecting mountains, the nature of the soil, the purity of the water supply; all these must be taken into account. The site chosen may be in a climate ideally perfect for special cases; but are there also the conveniences and resources necessary to render existence there tolerable? such, for instance, as the possibility of good food, amusements, occupations, or agreeable society? In the choice of a site, these considerations have a value equal to that of mere climate; without them the climatic treatment will be a succession of disappointments. Without comfort, without an intelligent medical service, without appropriate regimen, without occupation or amusements, without friends, the unfortunate consumptive will not long stand the trial, but will hasten homewards, a prey to despair, preferring a shorter existence with comfort, to a sad life, prolonged perhaps by the bracing atmosphere of a given climate." Dr. Walshe says: "No climate will stamp out phthisis, however acquired, either in the individual or in the stock."

With regard to the locality in which a sanatorium may be placed, Dr. Léon Petit lays down the following conditions, and it will be seen that they could easily be fulfilled in many places within the British Isles:

1. It is obvious that pure air is indispensable, and therefore that we must avoid proximity to large towns, or to factories, giving forth soot, dust, or deleterious gases. Those places are best where there is an abundance of ozone in the air, and where the prevailing breezes sweep over the sea, or over moorland, or, better still, where these two conditions are associated, and fresh, pure air comes from all quarters of the compass.

2. The soil upon which the sanatorium is to be built should be sandy, without damp, and affording the smallest probability of fog or mist after sunset. Plains well exposed to the south, or broad valleys fully open to the sun, are particularly favourable, on condition that they are sheltered by hills or trees against north, or north-west or easterly gales. "The immediate neighbourhood of a forest of pines is likewise very desirable, both as a purifier of the air, and as a shelter in summer against the heat, and in winter and bad weather against the wind."

3. The phthisical patient must not feel himself in a barrack or in a prison; he should have before his eyes something better than walls. An extensive view exercises upon both mind and body a reflex action that is most beneficial. An elevated site, with a gentle slope from it, is therefore indicated. Well supplied with fresh water, if possible from a spring, it should be sufficiently extensive to afford a large garden, or, better still, a park, surrounding the building at some distance from it.

4. The access to a sanatorium for consumptives should be as easy as possible, and it should not therefore be far from a railway station, and the roads in the neighbourhood should be in good order.

THE BUILDING.

Sanatoria with an average number of from 60 to 80 patients are preferable to those that are larger or those that are too small. This number assures to the inmates sufficient society to prevent *ennui*, and at the same time a degree of medical supervision which is scarcely possible in establishments which are too vast.

It should face the south; or at least, if the contour of the site demands the variation, it may be turned slightly towards the south-west. In certain localities, however, the prevailing winds may prevent this general rule of a southern aspect from being followed.

The architectural arrangement most frequently adopted is very simple. All the buildings are placed in line, with neither recesses nor sharp angles; but it may be advantageous to deviate from this rule in order to afford shelter from the high winds. Sometimes, as at Falkenstein, two short wings are built at obtuse angles, from each end of the main central structure, thus affording screens from the wind, without cutting off either light or sunshine. At Ruppertshain, the same result is obtained by constructing the whole edifice in the form of an arc of a circle. The ground floor is reserved for the assembly rooms, dining and drawing rooms, on the south side; the administrative and the medical departments and the servants halls, etc., on the north side.

Another arrangement is to have a system of detached pavilions, each capable of accommodating from six to ten patients, and connected with its neighbours by glazed corridors. This plan has been adopted in the Adirondack Cottages, in America, and it has certain advantages. Behind the central pavilion are the buildings for the several common offices, for the dining hall, kitchen, etc., with a winter garden adjacent. The dwelling of the resident medical officer is on one side of the structures, and on the other a separate building for the friends and relatives of the patients. An isolation ward is also part of the plan, and there are various outbuildings, cow-house, stables, and mortuary disinfecting stove at a distance from the lodgings of the sick. On the south of the pavilions is a garden, with seats and adjustable kiosks. Walks are so arranged as to permit of graduated exercise being taken by the patients. Adjacent to the ground floor of each "cottage," looking due south, is a verandah, protected by a roof of glass with movable frames, and in these are the reclining chairs for the rest cure in the open air. Curtains or screens are here placed so as to protect the patients against strong winds or sunshine. On the first floor are the sleeping rooms of the patients, each having a cubic content of about 600 feet, and all opening by a large window-door on to a balcony about 7 feet wide, on which a

deck chair can be placed if the sick person cannot come downstairs. In the interior all angles are slanted so that no dust may rest, and there are no projections on walls, ceilings, or doors on which it might collect.

In every kind of sanatorium the sleeping rooms of the patients should look due south, and they had better not be of too large dimensions—though I think 1,000 cubic feet would be quite small enough—so that they may be the more easily warmed and kept at an even temperature. The windows—or, better still, the window-doors—should be high and wide, permitting the air and solar heat to enter freely during the day, when they should be always open. They should be provided at their upper portion with a sash capable of turning about a central horizontal axis—the *vasistas* of the French.

They should have outside louvre shutters, which could be closed in bad or too hot weather, and the louvres of which could be partially closed to keep out the direct rays of the sun in the early morning in summer and yet admit air freely. The best mode of securing permanent aëration of the rooms is to have the windows constantly open, night and day, to a greater or less extent, according to the weather and degree of acclimatisation of the patient. The doors should be placed directly opposite the window, so as to permit of the complete and rapid change of air of the room. This can scarcely be done if the room is partially a *cul-de-sac*.

The walls, ceilings, doors, and windows should be destitute of all ornament, except perhaps some floral paintings; they should be painted or varnished, or washed with some hydraulic distemper, so as to permit of thorough washing. The same remarks will apply to the furniture; no curtains, canopies, or fixed carpets.

The floors at most of the sanatoria are covered with linoleum or cork carpet; but Dr. Léon Petit recommends the following method, already extensively used in France: "After having carefully washed and disinfected the floor, a pinch of a preparation of paraffin, mixed when warm with benzine (density 750) in the proportion of 1 kilogramme of paraffin to 9 litres of benzine, is applied to the floor and allowed to dry during several days. The floor becomes as hard and smooth as marble, and is never sticky in the warmest weather. It suffices to renew the application once a year. The cost is about 3d. per square yard. The bedrooms should be simply furnished; an iron bedstead, with a spring mattress, and a thin hair mattress, should be placed so as to avoid the draught between the door and window; a small wardrobe, a washstand, toilet table, and a couple of chairs, are all that are needed. A strip of loose carpet or matting, and a simple screen only can be permitted. No curtain, no blind, nor canopy over the bed.

For the maintenance of cleanliness, the rooms thus treated with paraffin are well sluiced with water once a month; and every day they are cleansed with a woollen duster, lightly dipped in an antiseptic solution. The colour of the floor is rather brown and dull-looking, and the antiseptics do not contribute to the pleasantness of the apartments; but, as Dettweiler says, "so much the better, for then the patients will not be tempted to stay in them longer than is necessary. Except during the hours of sleep, their place is out of doors."

It would be well if Professor Delépine's method of brushing over all surfaces with a 1 per cent. solution of chloride of lime, were carried out occasionally, as it has been shown to destroy entirely the virulence of the bacillus of tubercle.

The Verandah.

It is in the verandahs that the greater part of the open-air treatment of the consumptive is carried on. These structures are usually placed along the whole length of the south side of the main building or of the pavilions. They should be raised two or three steps above the level of the soil, and should be from 7 to 10 feet wide, or even more, so as to permit of the needful space for the reclining chairs. They should be closed at each end, and, in windy situations, it is often desirable to have a permanent glass screen brought forward from each end in front so as to afford complete shelter when the wind is from the south.

Window blinds or venetian blinds should be arranged along the whole front, which can be lowered when required to protect the patients from the sun or the wind. At Dr. Pott's sanatorium at Bournemouth these blinds are constructed of very coarse canvas, which afford good shelter from strong winds and from great heat but do not impede the free circulation of air. Along the verandahs are arranged the reclining chairs, and, as Dr. Knopf points out, those are the best which are readily adjustable to the sitting posture when the patient takes his meals or light refreshment, or when for any reason he desires a change of position. Each couch should have its little table by its side and its electric lamp, and portable screens should be provided for those who wish for more complete repose.

The balconies for the first-floor rooms should be similarly provided, though they need not be quite so wide, but they should have a roof projecting 2 or 3 feet beyond the limits of the balcony.

Heating and Ventilation.

In most foreign countries the warming of the establishments is usually accomplished either by stoves or by hot steam or hot-water pipes, but in England there is a strong prejudice in favour of open fire grates, a prejudice that is well founded, and, in my opinion, every chamber should have its small fireplace. At the same time, it is desirable to have hot-water pipes laid on to every room and even in the verandahs. The water should not be carried to any great heat, and fresh air should be continually passing over the pipes, and allowed to enter the rooms through grids along the skirting of the walls. This warmed air is not of the same value as the fresh cold air which comes in through the open windows and doors, for it contains little or no ozone, yet it is not to be despised, for it has the great merit of preventing the sensation of draught, warming the colder air as it comes into the rooms. It thus conduces to the supreme condition of the cure, namely, the admission of perfectly fresh pure air from the open. In some cases it is considered necessary to drive forward the ventilating currents with a fan, and to withdraw foul air by similar means, or by superheated steam pipes in the roof, but if the windows and doors are left sufficiently open there will be no foul air to withdraw, and these means will become unnecessary.

In addition to these appliances a complete sanatorium should also be provided with proper bathing apparatus, with a disinfecting stove and a mortuary, and detached adjustable kiosks should be placed in various parts of the grounds.

The Medical and Nursing Staffs.

In the establishment of a sanatorium it is of the utmost importance that it should have a good medical directorate and an adequate number of day and night nurses. The importance of this condition will become apparent upon a brief consideration of certain of the measures involved in the open-air treatment of consumptive persons. These measures may be shortly summarised as follows:

1. For many patients, rest in the recumbent posture in the open air for the greater part of the day, generally in the open verandahs or shelters, sometimes in the open grounds. To this course they have to be gradually acclimatised.
2. Careful but full feeding.
3. Massage, in some cases; carefully graduated exercises in others.
4. The judicious use of baths or cold sponging.
5. The provision of suitable amusements.
6. Appropriate medicinal treatment.

On all these points the constant supervision of a medical attendant and the watchfulness of trained nurses are absolutely necessary. Upon the doctor depends the gradual education of the patient to the new *régime*, and the infusion into him of a cheerful and hopeful state of mind.

The hygienic rules for the treatment of a phthisical patient are simple enough, but their application to each case is often difficult and delicate. In the first place, the physician should himself have full faith in the efficacy of the method for the cure of a large proportion of the cases; without this he can hardly inspire the necessary confidence, not only in the patients, but also in his relatives and attendants. These persons are often the most difficult to convince.

In the next place, the physician has to discriminate between the various forms of phthisis, and has to form a prognosis from all the circumstances of the cases. This he can only obtain by very close observation during the first few days or weeks of a patient's stay in the institution.

In every suitable case the physician should know how to

inspire hopefulness. Fortunately, under the open-air and rest cure this hopefulness is often encouraged, and to some extent justified, shortly after its commencement. In most cases after the first few weeks of the treatment the fever disappears, the night sweats are arrested, the cough ameliorates, and, owing to the rest and abundant feeding, the weight increases. It is often possible also for the medical attendant to point to instances of partial cure in apparently hopeless cases, and thus he can enhearten low-spirited or despairing patients.

The supervision of the physician is really required at every part of the treatment. It is particularly necessary in the early stages of the process, when the patient has to be gradually acclimatised to the open air, and when the greatest tact has to be exercised to overcome his prejudices, and to combat his fear of "catching cold" or of "taking a chill." In the day time it must be the doctor's object to have the invalid either in the open or lying down in the verandah or kiosk for as long a time as possible. In the night time he has to be satisfied to have the windows as widely opened as the velocity of the wind will permit. With most patients these objects can only be obtained by gentle measures, and they have to be led judiciously towards their full attainment, carefully screened from all sensation of draught, and thoroughly protected by suitable wraps and clothing.

I cannot forbear quoting the excellent remarks of Dr. Moeller on this point. At page 32 of his work on *Les Sanatoria dans le Traitement de la Phtisie* he says: "It is possible to abuse the stay in the open air. To convince oneself of this it is sufficient to recall the species of drunkenness which is produced by the first occasion of going out after a more or less prolonged seclusion in the house. It often happens that a consumptive has been submitted for weeks or months to the method of protection, that he has been carefully shut up in his apartments, where he has at least avoided every possible exposure to the action of cold air. Now, when such a subject arrives at the locality to which he has been sent he is only too likely to abuse the climatic treatment in which he expects to find his cure. Instead of passing through a wise and progressive period of transition, he stays in the open air for a long time without any discretion. He omits certain precautions which are necessary everywhere—in the health resorts of the South as well as in those placed amongst the mountains, in special establishments as well as in hotels. But it is essential that the air cure should be adapted in each case to the actual state of the invaid. There may be sometimes some incident, some complication, which should necessitate a delay in the sojourn in the open air. An unfelt chill may have taken place which only the eye of a clear-seeing and conscientious doctor could detect. If the patient is left to himself, if he is not kept under constant supervision, some imprudence may be committed which may lead to disastrous consequences. In a sanatorium these consequences are not likely to take place. The effects of the air cure are watched from day to day, from hour to hour; nothing is left to chance."

When their education in these respects is completed, it is remarkable how well they bear exposure to the coldest air, and how eagerly they seek it of their own accord. Their dread of taking cold soon vanishes when they find how rarely this accident happens in the open air.

The extent to which the patient must assume the recumbent posture has also to be carefully regulated. There are some to whom it is only necessary for about an hour after each full meal. Others have to lie down most of the time they are in the open air, as it is found that they cannot be kept warm in any other position. Many of these latter persons have in addition to be submitted to massage, in order to keep up muscular tone and to assist nutrition.

Dr. Burton-Fanning has some excellent remarks on this point. He says: "After carefully watching patients under conditions of moderate exercise and of absolute rest, I have satisfied myself that the latter should be enforced for those who have any perceptible weakness of the pulse. The great cause of cardiac weakness in phthisis is the degeneration of heart muscle brought about by prolonged fever, even if this only obtains during some hours of the day. Open air lessens this fever, and thus checks further cardiac degeneration, and also by its tonic effects on the system repairs slowly the damage already done. This is, I believe, materially assisted by complete rest, and I have watched improvement of the pulse occurring steadily during many months of this treatment. Not only has the pulse strengthened on the abandonment of any exercise, but the digestion and general vigour have also improved. With this condition of weak heart these patients commonly manifest cold and blue extremities; they require careful watching and the use of additional wraps, foot warmers, or doses of brandy. Digitalis has also been used with advantage in these cases."

I may remind those interested in this question how potent the Weir-Mitchell treatment of rest and massage, etc., has been found in putting on flesh, reviving the blood, and improving digestion.

Again, whilst the fullest feeding possible has to be aimed at, the particular diet that each individual can most readily take has to be ascertained, and the cooking seduously attended to. Wonderful results have indeed been obtained by the stuffing plan of Debove, Walther, and others, but our aim should be true physiological feeding, and we should endeavour to nourish the body to the utmost without overtaxing the eliminatory organs. This object can only be obtained by watchful supervision. Baths and bathing also need great discrimination in their application, but, so applied, they are often of much service in carrying out the treatment.

The medicinal treatment also must not be overlooked, and it requires careful study to adapt it to each case.

On all these grounds, therefore, it is of great importance to have both an adequate staff of trained nurses and an efficient medical directorate. Both these services need the greatest tact and the greatest patience. Although many consumptive persons are gentle, patient, and quiet, some are extremely irritable and difficult to satisfy as to food and other things. The greatest forbearance and sympathy, and yet entire firmness, are needed in dealing with these people.

I once asked the late Dr. Burnier, of Leysin, whether he did not frequently fail in bringing English or Americans under the strict discipline of his establishment. But he replied: "Hardly ever; I leave them to their own devices for a few days, and they very soon come to me, and promise to be good, and to follow the example of the other patients." An important part of the treatment in a sanatorium is the education of the patient with regard to the means of permanent cure; and his discipline in the regular course which must be followed.

Education and Discipline of the Patient.

Most physicians who have had much to do with consumptives can recall instances of the disastrous consequences of allowing patients to follow their own inclinations in their visits to the various "health resorts" of the Continent, or of the South of England. Many of these invalids or their friends are impatient of control and, either with or against the advice of their medical attendant, they rush off to some one or another of these places of repute in the cure of the disease, without any consideration for their actual state, and without knowing the nature of the accommodation or of the medical aid they can obtain there. Some of them are perhaps in too advanced a stage of the disease for there to be any hope of cure; others, of an excitable and sanguine temperament, think themselves capable of much exertion, and rush about in the pursuit of business or pleasure, keep themselves in a constant state of agitation, commit all kinds of imprudence, and finally die of self-neglect. Dr. Moeller says:

> I have visited Nice, Cannes, Monte Carlo, etc. I have seen consumptives, in all stages of the malady, walking about everywhere, spitting on the ground, mixing with the crowds in the casinos, where the dust is incessantly being raised. Many sit down at the tables of play, and remain there until midnight or after, smoking cigarettes, and breathing the most unwholesome of atmospheres. Often they change one resort for another, as they find themselves no better, and they accuse their doctor of having sent them to a climate which does them no good. At each new place the same foolish course is pursued. . . . .

Nothing of this kind is possible in a sanatorium. Here the invalid is constantly watched, he has to rest for prescribed periods of time, his temperature is frequently taken, and he is carefully guarded against any danger of chill. His food, his toilet, his ablutions, his exercise, all these are superintended, and a watchful eye is kept against the advent of any complication, such as catarrh, hæmoptysis, pleurisies, gastric disturbance, or the least elevation of temperature. If any

thing of the kind should occur the doctor will deal with them at their onset, and will often prevent them from becoming serious. The idiosyncracies and peculiarities of each case also are noted and treated separately; there is no mere routine treatment, and it is often possible to take the patient into our confidence, and to make him work with us for his cure. All this is impossible in ordinary general practice, but it is carried out in most sanatoria. Lastly, every patient is taught how to regulate his cough, and how to prevent danger to others in the disposal of his sputum.

POSSIBLE OBJECTIONS TO SANATORIA FOR CONSUMPTIVES.

It has been made a serious reproach to all forms of hospitals or other establishments for phthisical persons that they are likely to become centres of infection, and that the disease will thus spread from the sick to the healthy. This accusation has, however, been amply disproved for most of the hospitals for consumption in this country.

It has been shown that there has been no such spreading of the disease even in the large hospitals in London and Manchester; and if this is the case in these great towns, it is still less likely to occur in the breezy open-air treatment of phthisis.

I have myself been able to prove that the most virulent tuberculous sputum entirely loses its power of conveying the disease after a comparatively short exposure to fresh air and sunlight; an exposure, in fact, too short to have permitted the formation of the fine tuberculous dust in the air which is the most potent means of contagion.

In sanatoria, where the air is freely flowing through the rooms night and day, and where there is full exposure of every dormitory to the light of the sun, we may be quite sure that the possibility of this accident is reduced to a minimum; and we may add that the care that is taken to disinfect and destroy every particle of sputum is sufficient to make infection from the patients an impossibility.

Another objection of more importance is that the patients are exposed to all the depressing influence of the presence of many invalids in all stages of the disease, and that the want of amusement and distraction is apt to cause *ennui*.

It must be admitted that to healthy people the sight of so many poor sufferers collected within the comparatively narrow limits of a sanatorium is a sad one; and it is no small tribute to the ability of most of the chief medical directors of these establishments that they have been able to triumph over the many depressing conditions that must prevail in them, and that they have succeeded in infusing a spirit of content and hope into the minds of most, if not all, of their inmates.

It must, however be remembered that these persons are all seeking a cure: that after a short stay in the place the amelioration of their condition becomes so manifest that they are ready to rejoice and to compare notes with other patients. Their life also is so taken up with the continual attention and care of the nurses and doctor that they have little time in which to nurse their sorrow, or to express their compassion for others.

I have visited several of these places on the Continent, and can testify to the general air of cheerfulness and hope which characterised the patients: moreover, the doctor in attendance was always able to assure me that the life was by no means a dull or uninteresting one, and that the tranquil amusements and little indulgences that were allowed amply sufficed to satisfy the most impatient of the invalids.

The truth is that the extraordinary success of this method of treatment, and the daily watching the progress towards cure of so many who otherwise must have been regarded as desperate—this daily spectacle, and the constant attention of the attendants, make the life of a sanatorium far from being the sad and lugubrious thing that we might imagine it to be.

Another important point is the question of cost. It may well be regarded as certain that it is impossible to bring together all the appliances of a sanatorium and to supply the inmates with the luxuries that they absolutely need without a considerable expenditure.

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THE CROONIAN LECTURES

ON THE

CHEMICAL PRODUCTS OF PATHOGENIC BACTERIA CONSIDERED WITH SPECIAL REFERENCE TO ENTERIC FEVER.

Delivered before the Royal College of Physicians of London,

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LECTURE IV.

THE ACTION OF THE POISONS OF THE TYPHOID BACILLUS, GÄRTNER'S BACILLUS, AND THE BACILLUS COLI COMPARED WITH THAT OF OTHER ALLIED POISONS.

THERE are two poisons which are not the products of bacterial action being found in the seeds of plants, and which are of great interest in connection with the toxic products of the three bacilli which have been examined. These poisons are ricin, obtained from the seeds of the castor-oil plant, and abrin, obtained from the seeds of the abrus precatorius. The latter is used in India in the poisoning of cattle, and its symptoms are those of a general toxæmia. Both these poisons produce conjunctivitis when applied to the eye, and injected under the skin they cause diarrhœa with great general prostration. In an investigation I conducted some years ago I found that the two proteids present in the seeds of the abrin—namely, a globulin and an albumose—were both poisonous, and that they both produced similar symptoms. In one experiment a pigeon, weighing 216 g., received 0.2 g. of abrus globulin, and death followed in six hours, and was preceded by an increase in the number of respirations and a great lowering of the temperature, the total fall being 23.8° F. or 12.6° C. In another experiment a pigeon weighing 355 g. received 0.02 g. of the abrus albumose. The symptoms began in four hours and a half, and the animal died in about six hours. There was a more or less continuous fall of temperature, and, unlike the first animal, the number of respirations per minute fell instead of rose. In the rabbit abrin produces, like the poison of the typhoid bacillus, a rapid fall of temperature and death. The fact that the abrus proteids produce diarrhœa, which is most commonly bloody, is remarkable. This is associated with the signs of a hæmorrhagic gastro-enteritis, there being great inflammation of the mucous membrane of the intestine, and especially of the adenoid patches. The abrus poisons are very sensitive to heat, the action of the globulin being completely destroyed by the momentary raising of temperature of its solution to 75° or 80° C., that of the albumose at a rather higher temperature, 85° C. What property it is of the proteid which has this toxic action, whether it resides in the proteid itself, or whether there is some toxic body, possibly of a ferment nature, attached to the proteids, it is impossible to say; but the similarity of their action to that of the toxic products obtained from the closely allied micro-organisms, the typhoid bacillus, the Gärtner's bacillus, and the bacillus coli is remarkable. No doubt in all these cases the effect on the intestine occurs during the excretion of the poison by the mucous membrane in whatever way it may be introduced into the body. The diphtheria poison sometimes produces diarrhœa when given in sufficiently large doses, a result which I never obtained from the injection of even large doses of the albumoses of anthrax or of ulcerative endocarditis, and this is also not an effect which is noticed as a result of the action of the tetanus poison.

With regard to the diphtheria poison, the effect on the temperature and on the body condition of different doses is seen in the following experiment. A mixture of the albumoses and toxin was used, and in the first experiment 2 c.cm. were injected into the marginal vein. This was followed by some rise of temperature on the same day, and on the next day weakness in the hind legs appeared, and a rapid fall of temperature to about 96° F. occurred, ending in the death of the the animal. In another experiment when 5 c.cm. of the same poison was given there was a great rise of tempera-

ture, and the animal died during the night. Neither animal showed any diarrhœa or intestinal symptoms, and the general effects were in marked contrast to the effects of the poisons in the three bacilli investigated.

The effect of the diphtheria poison in reducing the temperature of the body is also shown in another experiment in which a mixture of the albumoses and secretion of the bacillus, which had been dried, was given. Altogether 0.2 g. of this powder was injected into the marginal vein. After the first injection there was scarcely any rise of the body temperature, but the next morning the temperature had fallen 3°, and a second injection of a small dose still further increased the depression of temperature, the animal dying in twenty-four hours. The fact, therefore, of a bacterial poison reducing the body temperature is not limited to the three bacilli which we have investigated, although it is a prominent feature of the action of their products. The diphtheria poison is readily affected by heat; thus, in one experiment it was seen that after heating to about 60° for one hour, the injection of 5 c.cm. solution of toxin produced, not a rise, but a fall of temperature, and this was followed by a slight reactionary rise to the normal, after which the animal recovered and showed no symptoms. In another experiment, however, 5 c.cm. of diphtheria toxin, heated for ten minutes at 60° C., produced a continuous but gradual fall of temperature up to the time of death on the fifth day of the experiment.

Comparing this with a similar experiment in which the same dose (unheated) was given to another animal of the same weight, it was seen that the temperature rose somewhat after the injection, and that the animal died the following night. The heat had, therefore, weakened the action of the toxin, and this weakened toxin, instead of producing a rise of temperature, produced a continuous fall, an interesting result when compared with the effects of the products of the three bacilli. It may be concluded that a small dose of the toxin or a weakened toxin may produce a fall of temperature and no other change, and that a larger dose of the toxin may produce a rise of temperature, followed by a fall which precedes death, or it may in some cases be recovered from; and that a large dose of the poison may also produce a sudden and rapid fall of the body temperature, ending fatally in a few hours.

The effect of the diphtheria poison in producing a palsy dependent on degeneration of the peripheral nerves, and that of the tetanus poison in producing convulsions, is in marked contrast to that of the products obtained from the three bacilli, inasmuch as there was no evidence of palsy in any of the animals, even if they lived three weeks or longer, and no evidence of any convulsions. There was no nerve degeneration. The effect of the abrus poisons on the respirations is well marked, producing in some cases, as has been shown—a rise in the number of respirations, and sometimes a fall even, though in both cases the temperature persistently falls. The diphtheria toxin also has a profound effect on the respiratory system. A monkey weighing 1,575 g. received intravenously on successive days two doses of diphtheria albumoses, each of 0.3 g. After the first injection there was a depression of the rectal temperature, followed by a rise to a little above the normal, and afterwards, as well as following the secondary injection the temperature became irregular, although not very high; until the end of the ninth day of the [illegible], after which it was normal. The respiratory curve [illegible] ever, a greater irregularity. After the first injection there was a rapid rise in the number of respirations until they were nearly 80 a minute. Afterwards they fell, but following the second injection there was a gradual rise, and the respiratory curve remained irregular until about the [illegible] day, when it fell to about 40 a minute. [illegible] of the injection of this poison on [illegible] of the body was remarkable. After [illegible] are no general symptoms, but in three [illegible] the animal became progressively weaker, so that in seven hours it could not sit up or move the arms and legs. There was complete motor palsy of the limb [illegible] at no respiratory paralysis and no palsy [illegible] as the animal lying on one side, with food within reach of its mouth, ate vigorously and swallowed perfectly. No knee-jerks were obtainable, and no reflex on pinching the limbs. This condition lasted for over twenty-four hours after the second injection, and in twenty-six hours the animal could sit up, but there were still no knee-kerks. These reappeared on the second day following the injection, and recovery from the motor and sensory palsy was complete about the same day. The animal gradually and completely recovered and remained quite normal for several months, when it was killed. It may be remarked that the features of the palsy were those of a complete suspension of the functions of the spinal cord.

Like the diphtheria toxin, tetanus toxin acts on the spinal cord, but in another direction—it produces convulsions instead of paralysis, and it produces this effect not only in the higher animals, but in rodents. The diphtheria toxin does not affect the spinal cord in rodents; it produces a well-marked and universal degeneration of the peripheral nerves in the manner I have elsewhere described. The tetanus poison also, to some extent, acts on the peripheral nerves, inasmuch as I have found in animals which have received a small dose of the poison, and which have survived for some time, distinct degeneration in a few branches of the anterior crural nerve and in the phrenic. The degeneration is, however, extremely slight, and is not sufficient to cause signs of paralysis during life. A special action on the cerebral hemispheres is to be ascribed to the anthrax products, and especially the alkaloidal body, inasmuch as they produce stupor ending in coma, which may either be recovered from, or, as is more usual, end in death.

Action on the Heart Muscle.

In previous papers I have shown that it is a characteristic of the action of the albumoses of anthrax and of ulcerative endocarditis, as well as of the diphtheria poisons, to produce a well-marked fatty degeneration of the cardiac muscle, and this is as marked in the case of the anthrax albumoses as it is in the case of diphtheria poison. The poison of the typhoid bacillus produces the same result, although not to such a marked extent. In those animals which died slowly some change in the heart muscle was almost constantly observed; sometimes, however, it was absent. In none of these animals was any degeneration of the peripheral nerves discovered, though branches of the anterior crural and phrenic nerves were frequently examined after staining in osmic acid. The actions of these poisons on the heart is therefore one independent of any action on the nervous system, and is probably a direct toxic effect on the cardiac muscle. All the bacterial poisons which I have myself examined produce a profound change in the general nutrition, which is in many instances independent of any fever produced, and it may be that the degeneration of the heart muscle is only an expression of this disordered nutrition. Degeneration in the skeletal muscles, however, is not found. The structural changes which occur in the organs are the result of the action of these poisons, a subject which has been worked out very fully by Dr. Simon Flexner.[1]

Chemical Nature of Bacterial Poisons.

I have previously said that very little is known of the chemical nature of the poisons we have been discussing. There are three theories which have been discussed in regard to them: (1) as to whether the poisons are albuminous substances; (2) whether they are of a ferment nature; (3) whether they are crystalline chemical substances, or at any rate not proteid, although they may in some way be associated with the proteid.

Poisons of Proteid Nature.—Some of these poisons are so closely associated with proteids as to be inseparable. There is, for example, no question whatever that the albumoses of gastric digestion are poisonous when injected into the veins of an animal, and so also are the albumoses formed by the bacillus of anthrax, and that the poisonous nature of these substances is somewhat, although not greatly, diminished by heat. The poisons, however, which have given the greatest difficulty in the discussion as to whether they are of a proteid or of a ferment nature are those of abrus, ricin, and snake poison. The abrus seeds, for example, contain a globulin and an albumose, both of which are poisonous, and if the globulin be precipitated from its solution by heat its toxicity is lost, and if the albumose is heated to a temperature of 85° C. its toxicity is also completely lost. In this case it may with plausibility be argued that inasmuch as the toxicity of both the bodies is destroyed at nearly the same temperature, it is

not the proteid itself which is poisonous, but something associated with the proteid, that is, some body of a ferment nature. The same difficulty exists with the question of snake poison. Generally speaking, in the venom of the viperine snakes there are two proteid bodies—a globulin and an albumose—both of which are poisonous, and each of which appears to have a distinct action, the globulin acting more particularly on the blood, the albumose acting more particularly on the nervous system (C. J. Martin). If the globulin be precipitated from its solution by heating it to its temperature of coagulation its activity is destroyed, but the toxic properties of the albumose are still intact. Cobra venom does not contain so much globulin as that of the viperine snakes, so that heating its solution to the temperature at which the globulin is coagulated does not greatly diminish the toxicity of the venom, and it requires the solution to be boiled for a short time before the poisonous action is destroyed. From these facts it certainly appears that the toxic action of snake venom is so closely associated with the proteid as to be inseparable from it, and that there is something in the constitution of the proteid molecule—whatever that may be—which confers this great poisonous property on the venom.

Poisons of a Ferment Nature.—Several considerations, however, prevent the conclusion that all these poisons, including the bacterial, are of a proteid nature. Diphtheria poison, for example, is practically as toxic as cobra venom, or as the venom of the Australian black snake (hoplocephalus curtus). As previously stated, Roux and Yersin obtained the product from the broth solution in such a form that it acted in imponderable doses. Since that time Brieger and Cohn, by means of the precipitation by zinc salts, and the subsequent decomposition of the zinc salt with carbonic acid, obtained a toxic product from diphtheria, causing all the characteristic symptoms, but not giving any proteid reactions, neither the xanthoproteic nor the biuret reaction. It may be considered, therefore, that the diphtheria poison is not necessarily associated with a distinct proteid. It may be that this poison, together with the poison of tetanus and that which we have discussed as formed by the typhoid bacillus is of a ferment nature. The arguments which may be used in this respect are: (1) That they act in infinitesimal doses; (2) that they may act slowly and produce death after many days by profoundly affecting the general nutrition; (3) that they are sensitive to the action of heat in a way that no chemical poisons are known to be. If, of course, these poisons are of a ferment nature, their physiological action is unlike that of any of the other known ferments. They are not digestive ferments in the ordinary sense of the word. I have performed several experiments to test the digestive action on ordinary proteids of the diphtheria and tetanus poisons, and have never obtained the slightest indication of digestion. If they are considered as ferments they must be substances which have a peculiar affinity for certain tissues of the body on which they produce their special toxic effect. Thus, the diphtheria poison selects the peripheral nerves for one of its chief actions, and in some cases the spinal cord. The tetanus toxin produces its most marked effects on the cells of the spinal cord. Abrus, ricin, and the poisons of the three bacilli we have examined produce a pronounced effect on the body temperature, besides which they have a marked action on the small intestine. They produce no special effect on the nervous system, except perhaps in the case of abrus and ricin, which appear to affect the respiratory centre in the medulla. In each case, therefore, the ferment—if ferment it be—must be essentially different, for although they may have a similarity in action yet their differences are considerable, and especially is this so in considering the results of the toxic reaction of these poisons in the body—the most delicate test for the identity of these poisons. Thus, in the case of abrus and ricin, the actions of the poison are closely similar, ricin perhaps acting rather more vigorously than abrin, so that—so far as their physiological action goes—if that alone were investigated they might be considered as identical substances. But Ehrlich found that an animal which had been made immune to abrin was not immune to ricin, and *vice versâ*. Similarly, the diphtheria antitoxin does not counteract the effects of the tetanus poison, nor does the tetanus antitoxin protect against the diphtheria poison.

The association of digestive products with these poisons is an interesting one; in snake venom and in abrus albumoses are present, and these are also formed by the micro-organisms that we have been discussing. The amount of digestion, however, which each individual bacterium produces varies considerably, being greatest with the bacillus of anthrax, and least with the typhoid bacillus. These products of digestion are formed either by the bacillus ingesting the proteid and discharging it as albumose, or the digestion occurs by means of a proteolytic ferment secreted by the bacillus in the body of an individual or animal suffering from the disease.

It may be interesting to add the following table[2] of the comparative toxicity of these substances. The figures in the column represent the number of grammes of body weight of a rabbit which will be killed by 1 g. of dried poison:

Cobra venom	4,000,000
Hoplocephalus curtus	4,000,000
Diphtheria toxin...	4,000,000
Ricin	1,500,000
Pseudechis	800,000 to 2,000,000
Pelias berus	250,000
Anthrax albumoses	3,000
Cholera albumoses	3,000

The Relation of the Typhoid Bacillus to Enteric Fever.

The relation of the typhoid bacillus to enteric fever has been much discussed, and some confusion has been caused on the subject by work which was done some years ago with non-virulent or slightly virulent forms of the bacillus. It is constantly present in cases of typhoid fever in the intestinal lesions, in the spleen, the mesenteric glands, and sometimes in the blood. It is in not a few cases found in the urine; it is also found, though not constantly, in the fæces. The constant presence of this pathogenic organism in the lesions of the disease is one of the arguments in favour of its being the cause of the condition, and in most cases, as we have seen, it may be obtained in pure culture from the spleen after death. The second argument in favour of the bacillus being the cause of enteric fever rests on the sedimenting reaction, and Widal's reaction, which is given by the blood serum of typhoid patients in certain dilutions, causing the bacilli from a young culture to become motionless and to clump together, and sinking to the bottom of the vessel in which they are contained. This reaction is specific; it is not given by the bacillus coli, but, according to Dr. Durham, it is given to some extent by the bacillus of Gärtner.

A similar reaction was obtained from the blood serum of animals which have been rendered artificially immune to the typhoid bacillus. We must consider, therefore, that the serum reaction given by typhoid patients is due to the effects of the typhoid bacillus which is present in their bodies. It is a noteworthy fact that normal rabbit serum gives a clumping reaction with the bacillus coli, and that the serum reaction with the bacillus coli, when artificially-prepared coli serum is used, is, according to Dr. Durham, very variable. Typhoid serum never gives a reaction with the bacillus coli, nor does the coli serum give a reaction with the typhoid bacillus. This constitutes an important difference between the micro-organisms. The difficulty with regard to the question of the typhoid bacillus rests mainly (1) on the fact that this disease does not exist in the natural condition in any animal but man. In man it is a very characteristic disease, with definite intestinal lesions and a definite enlargement of the mesenteric lymphatic glands and the spleen. (2) Another statement which has been made is that the typhoid bacillus is not infective. With regard to the first point, enteric fever is in the same position as any of the other diseases which affect man alone, and the difficulty is removed if it can be shown that the typhoid bacillus reproduces the same lesions as occur in the human being. Many attempts have been made to infect animals by way of the alimentary canal with the typhoid bacillus, and most of them have been unsuccessful. The want of success does not appear to depend solely on the fact that non-virulent bacilli have been used, but also on the fact that animals are extremely insusceptible to infection through the alimentary tract by the typhoid bacillus. In my experiments I gave to two rabbits enormous and daily doses of the virulent bacillus, with the production of no result beyond fever in one animal lasting one day. Dr. Remlinger[3] appears to have been more successful, and to have produced in some rabbits a definite

infection by giving them virulent cultures with their food. Some rabbits were unaffected; others, after a period of fever, diarrhœa, and bodily depression with loss of weight, underwent complete recovery. Others, again, were affected in the same way and succumbed.

At the *post-mortem* examination there was great congestion of the small intestine, which contained liquid matter. Peyer's patches were enlarged, and there was some ulceration at the level of the cæcum. The spleen was greatly enlarged, and the bacillus was obtained in a pure culture from the organs. In one experiment the animal was fed for five days with the typhoid bacillus; on the eighth day fever was observed, and there was the train of symptoms which had been mentioned up to seventeen days when the animal was dying. In another experiment seven days after feeding the fever began, and the symptoms progressed for twenty days, when the animal died. Similar results were obtained in rats. One important point is noted by Remlinger, namely, that the blood serum of the animal infected gave an agglutinating or sedimenting reaction. There can be no question from these experiments that an infection of the animal by way of the alimentary tract was produced, and that the chief stress of the disease was on the small intestine. It may be remembered that a similar difficulty in infecting animals with the cholera vibrio by means of the alimentary tract exists, although this can be effected if the acid contents of the stomach be first neutralised with alkali, as was done by Koch. A similar method had been used with the typhoid bacillus successfully. A true infection follows the injection of the virulent bacillus into the peritoneal cavity or into the venous system, and also under the skin, although to a lesser extent; that is, there is a dissemination of the bacillus through the organs of the body and the blood. In some animals, however, it may be absent in the blood, and this was found also by Remlinger in his cases of intestinal infection.

An interesting point in the infection of the animal body by the typhoid bacillus is that, although the non-virulent forms of the bacillus are not toxic they may become so, and may infect the body when products of certain other micro-organisms are injected at the same time. I have previously mentioned these experiments, and the chief point which is noteworthy is that the injection of the products of the bacillus coli into the peritoneal cavity at the same time as the injection of the living typhoid bacillus under the skin aids the distribution of the bacillus throughout the body. At death in such cases it is found in the peritoneal cavity and in the organs of the body. This does not occur if the non-virulent typhoid bacillus is injected by itself. The products of other micro-oganisms will also do this.

In some cases enteric fever appears to be a pure infection of the typhoid bacillus; in other cases it is a mixed infection, or there may be infection after the acute disease is over, usually by pus organisms. It has been found in some cases in the course of typhoid fever that the bacillus coli, which is naturally found there, becomes more virulent than it is in life and increases greatly in number. It is possible, therefore, that these two organisms react on each other, one aiding infection by the other. It is known that the products of the bacillus coli aid infection by the typhoid bacillus, and cases in which there is infection by the bacillus coli during the course of typhoid fever have been observed—for example, in abdominal abscesses and cystitis.

It has been much discussed whether enteric fever is a primary intestinal infection, or whether it is a general infection with an intestinal lesion; that is, whether the bacillus primarily infects the Peyer's patches, and from there is distributed to the mesenteric glands and the spleen, or whether the micro-organism is introduced into the body in some other way (unknown), and infects the body, producing an enlargement of the spleen and ulceration of the Peyer's patches in the intestine as part of the general infection.

The arguments which have been used for considering enteric fever a general infection with a secondary intestinal lesion are not very satisfactory. It has been said that, inasmuch as the bacillus is not constantly found in the motions and is found in the urine, it would appear that there are not many bacilli in the intestine, such as would exist if the intestine were primarily infected. There is nothing whatever in this argument, inasmuch as even if there were a primary intestinal infection, we can readily see that the bacillus might not be discharged in the fæces in sufficient numbers to be readily found. Moreover, if there is a great increase in the number of bacillus coli in the intestinal tract, not only is there great difficulty in finding the typhoid bacillus in the presence of large numbers of this micro-organism, but the more vigorous bacillus coli might actually beat out of the field the less vigorous typhoid bacillus.

As regards the passage of the typhoid bacillus in the urine, this would as readily occur from an intestinal infection which is followed by a general infection as when there was a general infection primarily.

Another argument which has been used, and which is perhaps somewhat stronger than the first, is the result of Sanarelli's experiments. He found that, however introduced into the body—whether through the venous system or subcutaneously, or into the peritoneal cavity—the stress of the disease produced by the typhoid bacillus and its poison was on the abdominal organs and chiefly the intestines, which showed what he described as "acute mucous inflammation." The Peyer's patches were described also as swollen. From these results Sanarelli was inclined to look upon the infection as a general one with a local intestinal lesion. But the results obtained by him are not due to an infection of the body by the bacillus, but to the action of the poison of the bacillus. The effect on the intestine is due to the poison and not to the infection. It is not due to the fact that the bacilli introduced under the skin or into the vein, so to speak, get buried in the mucous membrane, where they produce a lesion, but it is due to the selective action of the poison on the small intestine, a selective action which, as we have seen, is not limited to the typhoid poison, but is also possessed by the poison of Gärtner's bacillus and of the bacillus coli, and also of the two vegetable poisons (abrus and ricin).

The result of producing an intestinal lesion by the subcutaneous or intravenous injection of a poison is not limited, therefore, to the typhoid bacillus, and the question is really one, not of the action of the bacillus itself, but of the action of the poison introduced with it. It has been a question in these intestinal lesions whether ulceration can be produced by the intravenous injection of a poison. Ehrlich stated that ulceration sometimes followed poisoning with ricin and abrus. In my own experiments such ulceration was never observed, and they were not observed by Flexner. From what we know of other intestinal affections, the view that the infection in enteric fever is primarily intestinal is the more logical. The part of the intestine affected—namely, the Peyer's patches—is the least protected part of the mucous membrane, and is a tissue of only slight metabolic activity, covered with a single layer of epithelium, with no villi; whereas the rest of the mucous membrane is covered with villi, which are more or less constantly in a state of active metabolism. Moreover, in tuberculosis produced by feeding, the Peyer's patches of the intestine are the first infected, and I cannot myself conceive of any general intestinal ulceration occurring in the absence of a local infection. In tuberculosis, ulceration of the intestine never occurs as the result of general infection, and the ulcerations of the upper part of the small intestine which sometimes occur in septicæmia and pyæmia are always few in number (one or two), and are irregularly placed.

I wish, in conclusion, to express to you, sir, and to the College my sense of the great honour you have conferred upon me by appointing me to deliver these Croonian Lectures; and I gladly acknowledge the great help I have received from my two assistants in the investigation—namely, Dr. Greig, my assistant in bacteriology at University College, and Dr. R. Row, of Bombay. Both these gentlemen, by their devotion and skill, have contributed greatly to whatever success has attended the investigation.

Note and References.

[1] Simon Flexner, The Pathology of Tox-Albumin Intoxication, *John Hopkins Hospital Reports*. Baltimore 1897. [2] See C. J. Martin, Physiological Action of Venom of the Australian Black Snake, R. S. New South Wales, 1895. Martin gives the value of the anthrax albumins as 80, quoting from my first experiments. My later experiments are as in the table, namely, 3,000. See also Calmette, *Ann. de l'Inst. Pasteur*, vol. viii, 1894. [3] *Ann. de l'Inst. Pasteur*, vol. xi, p. 829.

A LECTURE
ON
THE TREATMENT OF CONSUMPTION AND OF LUPUS BY TUBERCULIN.

Delivered as one of the Post-Graduate Course on June 9th 1898,

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GENTLEMEN,—The scope of this lecture will be limited to a statement of my own experience of the treatment of tuberculosis of the skin and of the lung by tuberculin.

In 1891[1] I published all I then had to say about the use of the tuberculin introduced into practice in 1890 by Koch. From what is there stated, I have nothing of importance to withdraw.

It is impossible to keep in sight any considerable number of patients who seven years ago passed through the wards of a London hospital. I shall deal with all the information I have concerning the 37 patients to whose cases reference was made in my paper of April 26th, 1891. I much regret the meagreness of this information, but it has not been possible to add to it materially from trustworthy sources. Of these 37 patients all the cases of lupus, 5 in number, have relapsed. Of the remaining 32 cases of tuberculosis of the lungs 8 have died, 8 are fairly well, and of the other 16 I can find no trace.

In March, 1897, I began to use the new tuberculin—T. R., as it is called—lately introduced into practice by Koch. Ten cases only—one of them was a case of lupus—were thus treated, because the hospital was in dire need of funds, and the Committee of Management were, for this reason, obliged to close the wards for some months.

Not one of the nine cases of tuberculosis of the lungs was within the limits laid down by Koch, when he defined the type of case most likely to derive the greatest benefit from the use of the new tuberculin. This typically hopeful case has rarely, or, best of all, never a temperature rising above 99.4°, and only a small portion of one lung is affected. It is rare to see in hospital practice in London a patient suffering from tuberculosis of the lung who does not, at the same time, show symptoms due to bacteria other than the bacillus of tubercle. Therefore, because of this mixed infection due to the combined actions of different bacteria, hospital cases, as a rule, have records of temperature showing frequent rises above 99.4° It is certain high temperatures caused by these mixed infections, resulting from the action of bacteria other than the tubercle bacillus, are not directly influenced for good by tuberculin. But, for lack of the typical case, I was obliged to take for this treatment persons found by examination to be least distant from very early stages of tuberculosis of the lung. According to Koch's teaching, the most reasonably to be expected from the treatment of cases of this type with the new tuberculin was material amelioration of symptoms, not cure of the disease.

One of my hospital patients was selected by me for this treatment, because, in my opinion, his case was a hopeless one. His lungs were evidently stuffed with the products of tuberculosis; and that the disease was actively progressing in various parts of the lungs was shown by the physical signs, including those of excavation of lung tissue. The glands of the neck, the submaxillary glands, and those of the axillæ, especially the right one, were markedly swollen. He had a troublesome cough, much expectoration, occasional night sweats, a pulse varying from 100 to 140. His body was emaciated to a remarkable degree. His temperature for about two months before he received the first injection of tuberculin, ran between normal or subnormal in the morning, and between 90° and 101°.6 in the evening. This case was selected for treatment because, as I stated at the time to those who saw the case in the wards, the patient was certainly slowly dying. The use of the tuberculin could not, in my opinion, do him any harm, and it was not certain it might not do him some little good. This man frequently, during the course of the treatment, expressed satisfaction with what he believed were the good results due to it. This does not, however, in my judgment, amount to much as evidence of the usefulness, even in a bad case like this one, of the new tuberculin. The man died, having received 26 injections of the remedy between April 14th and May 26th. The members of his family knew my opinion as to the hopelessness of his case before the treatment was commenced. At the *post-mortem* examination of this patient my colleague Dr. Perkins, then pathologist to the hospital, made special search for evidence in the viscera of the presence of centres of recent tuberculosis; but none was found. This fact is important, because it has been stated by Professor Virchow that the use of the old tuberculin is apt to be followed by excavation of the diseased portions of the lung, and the consequent carrying of infection by means of the morbid material taken up by the circulation at those points of excavation, and carried by it to healthy portions of the body. In this case of mine no evidence of any such spread of infection was found. I would here add, that in no case in my own practice have I seen evidence of harm having come to a case of tuberculosis in consequence of its having been treated with the new or the old tuberculin.

A second death occurred among these ten patients. It was the case of a woman who had, eighteen months before her admission to hospital, suffered from appendicitis. On admission to the wards she was found to have extensive tuberculosis of both lungs, which were largely excavated. She had also symptoms of appendicitis. Between April 26th and July 5th, 1897, she received thirty-four injections of new tuberculin. The largest dose given was 1.75 mg. During the period of treatment the patient's weight increased from 6 st. 1¾ lb. to 6 st. 12 lbs., but there was no real progress made, and the use of the remedy was therefore discontinued on July 5th. On October 20th, 1897, my colleague Mr. Macready, at my suggestion, removed the appendix, because it had, for a few weeks previous to that date, given the patient much uneasiness and some pain. She died on March 30th, 1898, five months and ten days after the operation. *Post mortem* there was found extensive excavation of both lungs, with other evidence of long-standing tuberculous disease. The pleuræ were adherent, and there was tuberculous peritonitis. At the operation on October 20th the appendix and the neighbouring peritoneum were found to be the sites of old tuberculosis.

The other eight cases were made up of seven examples of tuberculosis of the lungs and one of lupus vulgaris. These cases all did well. Without exception they left the hospital at their own request, stating that they felt well enough to return to work and wished to do so. They all improved in health to a remarkable degree. As to their present condition the case marked E. B. you have seen here, and you can judge of her state of health. I think you will agree with me in saying she is very well indeed. She is, I am sorry to say, engaged in nursing her mother, who is gravely ill, and in keeping house for her father, three brothers, and a sister. All this she does in an East London street, so that fresh air, sunlight, and rest have little to do with her present improved condition. She has no cough, and will tell you she feels in excellent health. Her illness began about Christmas, 1896, and she was admitted to hospital in April, 1897. The expansion of the left side of her chest was much impaired; percussion note was dull over left side of chest in front and behind; especially was this so over the upper half in front. Over the whole left lung in front and behind were abundant coarse mucous *râles*. Right side: Dull percussion note over upper half in front and behind. Here and there crepitation was audible over the right back, and was much coarser behind over the dull area than it was in front. Catamenia, regular until January, 1897, have ceased absolutely since then. This girl (she was 21 years of age) had, for a week after her admission to hospital and before tuberculin was used in the case, a temperature ranging between 99° and 101°, falling to 99° only on two mornings. There were numerous tubercle bacilli in her sputum.

Injection of new tuberculin was commenced on April 6th, 1897, in the usual position—that is, under the skin between the shoulder blade and the spine. The dose given was $\frac{1}{5\,5\,5}$ mg. The dose was slowly increased till, at the eighty-eighth injection, 20 mg. formed the dose. These eighty-eight injections made up a total quantity of 353 mg. of new tuberculin—that is, a little more than thirty-five of the small bottles in which the substance is sent out by

its makers. Her weight had been falling for ten days before treatment was commenced. Then it had fallen to 7 st. 1 lb. During treatment her gain in weight was gradual and practically constant, and when she left hospital her weight was 8 st. 13 lbs. At that time the physical signs were as follow: Dull percussion note, very much less marked than it had been six months previously. Where the copious, coarse crepitation had been heard on her admission to the wards, there were now audible only a few friction sounds scattered here and there in the left lung in front and behind, and the breath sounds were weaker over this lung than over the right one. When she was asked to cough, a few fine crepitations were audible in the right supraspinous fossa. She had no cough, no expectoration, no night sweats, no bad symptoms of any kind. In January, 1898, the catamenia returned, and have been regular at intervals of six weeks since that time. I show you this case, and you will notice that movement of the chest walls during respiration even on the left side, is very good, considering the history of the case. She will tell you she is quite well, and you will find the physical signs have very materially improved since she left the hospital last October. It is only now and then, and almost always only after forced inspiration, that slight friction sounds, amounting to transient crepitations, are heard in isolated parts of the left lung; and where a dull percussion note was once well marked, there is now either no dulness or it is much lessened in degree. Excepting at its apex in front and behind, there is no dulness on percussion over the right lung: and it is only on forced inspiration, and as a rule after repeated examinations, that there may be heard in that lung a few scattered friction sounds of the crepitant kind mentioned above.

Please forgive this long record of a case. But not only have you the case before you for your own examination, but this case shows very well indeed the physical signs of patients of her type, who recover from attacks of tuberculosis affecting the lungs: therefore I venture to draw your attention at such length to the case. The patient, L. B., whom I also show you, illustrates the same points as those I have detailed in the case of E. B. L. B., however, was treated with the old tuberculin in 1890-91, and therefore she has been longer free from relapse than has E. B. L. B. is now 30 years of age, has married since she was a patient of mine in hospital, and has had two children. She has had four severe attacks of influenza. In each of these her temperature ran up to 103° and more, she tells me. She says she has now and then a little cough; but it is, in her opinion, a trivial matter.[2] As to the other patients who were treated with the new tuberculin, L. W. is now in a situation as a domestic servant in the country, and is, her mistress tells me, in excellent health. This patient had no expectoration, and therefore tubercle bacilli were not found in her case. The physical signs in her lungs, and the rise of temperature following upon the injection of a small dose ($\frac{1}{10}$th part of a milligramme) of tuberculin set at rest the question of diagnosis. She had had several attacks of hæmoptysis. G. O. was quite well three weeks ago. I had hoped to have shown him to you to-day, but he is not here. G. H. was a ship's steward, and left the hospital to go, in that capacity, to Australia. For some reason, unknown to me, he remained in this country. About the end of last year he called on the patient G. O., who reports that the man had then fallen into abject poverty, and was starving. I have been unable further to trace this man. Of F. B. and W. W. I can neither find any trace nor hear any news. F. P. was very well last November.

C. S., the case of lupus, is and has been since he left the hospital, on July 2nd, 1897, quite well. There is no evidence of recurrence of the lupus, and the scars on the nostrils and lips are healthy. This case, as regards the length of time it has continued without relapse, is, I believe, unique among those treated for the cure of lupus vulgaris by the new or the old tuberculin. Therefore I ask you to listen to some of the details concerning the patient. He is a coachman, 27 years of age. On April 17th, 1897, he was admitted to hospital with lupus vulgaris affecting the whole of his left nostril, both within and without; about one-half of the anterior part of the right nostril, within and without; and the bridge of the nose between the alæ nasi, excepting the tip of the nose. The left lip close to the middle line, at junction of lip and ala nasi, was also diseased. Another infected spot of skin was noticed three-quarters of an inch in front of the lobe of the right ear. This patch was about the size of a sixpence. Treatment with the new tuberculin was commenced April 20th, 1897, and completed August 4th, 1897. Total quantity of tuberculin injected (hypodermically), 126.5 mg., given in sixty-two injections. The doses ranged from $\frac{1}{500}$ part of a mg. to 4 mg. On July 2nd scar tissue only was seen over sites of lupus patches, excepting the patch on the left lip. This had entirely healed sixteen days later. On February 25th, 1898, I showed this patient to the Clinical Society of London. He was then free from recurrence of his disease. To complete this part of the case, I may now tell you he is to-day (June 9th, 1898) still quite well.

In the discussion which followed upon the exhibition of this case at the Clinical Society, it was asserted that the diseased condition I have described to you was due to syphilis, and not to lupus. In the notes laid with the case before the Society, it was stated that the man had a history of gonorrhœa followed by sore throat. On his shins were one or two brownish stains, which, together with the history just mentioned, made it very probable he had had syphilis. He said he had never had skin disease until the appearance of the lupus patches on his nose, which, he said, began with a pimple. You will observe, in this connection, what is stated in the hospital notes of the condition of the diseased skin on July 2nd, namely, that there was then only scar tissue over the sites of the principal lupoid patches. Well, on July 5th this patient in going about the hospital hit his shin sharply upon a sharp angle of a chair. The skin was bruised and cut, and the patient suffered considerable pain in consequence. When, a day or two after the accident, I saw the shin, it was very tender, and the man complained much of pain. I ordered him to have a few doses (gr. v) of iodide of potassium, and this treatment was continued until I next saw him, a week later. He was then free from all uneasiness, and the swelling was gone. The use of iodide was discontinued at this visit, and was not again begun during his stay in hospital.

It seems to me it can hardly be fairly argued that this episode of the iodide had any effect upon the skin disease that had affected the nostrils, but practically was cured before the iodide of potassium was first given. Another point about the case is that the patient's temperature, taken for a week before the first dose of tuberculin was given, was normal. After a dose of $\frac{1}{500}$ of a mg. of tuberculin his temperature rose in twenty-four hours to 100.2°, and after a dose of $\frac{1}{167}$ of a mg. to 100°. This patient's temperature charts show that he was peculiarly susceptible to the influence of tuberculin. Doses of 1 mg. caused temperatures of over 102° on three different occasions, and $\frac{3}{4}$ of a mg. caused similar temperatures to be recorded. To my mind these facts are most important in helping us to a diagnosis of this case, and I intend to refer presently to this part of the subject.

To complete my references to cases, I will now mention those of two private patients. One of these, a well-known surgeon, requested me, in November, 1890, to treat him with the old tuberculin. Very soon he took the treatment of his case into his own hands, and continued it until February, 1891. In a letter he kindly sends me for use at this lecture he writes:

> Since then (that is, February, 1891) I have never been ill, but I am quite unable to say what part tuberculin took in my recovery. My first attack of hæmoptysis was in 1875, and I got over three bad attacks without any special treatment, except cessation from work.....Personally I have always thought that I derived real benefit from the treatment, though I do not know how this can be proved, and I regret to say that in the case of my friends who tried it their lives were not prolonged, and all have passed away.

I have no knowledge of the cases to which my friend refers in his letter, but it is a part of his testimony, and therefore I read it to you. The case of this young surgeon was a very chronic one as you have heard, and tubercle bacilli were frequently found in his expectoration many years ago.

The last case of which I ask you to-day to hear details is that of a young man who, as a schoolboy, gained a considerable reputation as an athlete, and distinguished himself three or four years ago in certain public school athletic competitions. In August, 1897, he had a hæmoptysis, which was followed by two other similar attacks, but on the last two occasions the loss of blood was indeed very slight, he tells me.

On November 25th, 1897, I gave him an injection of

$\frac{1}{500}$ mg. of the new tuberculin. His condition then was as regards physical signs: impaired movement of the upper third or more of the right side of the chest, and over this part of the lung there was marked dull percussion, the respiratory murmur was harsh both in expiration and in inspiration, and the harsh sound of the former was markedly audible from beginning to end of the act. Vocal resonance and vocal fremitus were both much exaggerated in amount over the dull patch, and for a considerable distance beyond its limits. For a month before the injection was given the temperature never rose above 99.5° F., and had on three occasions only, about midnight, passed 99°. Between 9 and 11 A.M. the temperature was always either normal or subnormal; between noon and 4 P.M. it was never higher than 99°, and only on three occasions passed 98.4°; between 6 P.M. and midnight the temperature as a rule was either upon or within a couple of points of 99°. He had hardly any cough, and only very occasional night sweats when I first saw him, though I was told he had them profusely a month or so before that time. He had lost 24 lbs. in weight in about four months. I show you this young man's temperature charts, which tell also how many doses of the remedy he has had, and how each one of them has affected him. The dose has now reached 20 mg., and when this large quantity was injected there was, as you see, a rise to 99° about twenty-four hours after it was given on the 4th inst. During the last four days the temperature has been normal. I propose, at intervals of a month, to continue the use of tuberculin in this case. Of the diagnosis of this patient's condition there can be no doubt, for I found tubercle bacilli in his sputum early in November last; and his temperature under the influence of tuberculin was, as you see, that which is, when found with the physical signs I have mentioned above, characteristic of tuberculosis of the lung.

This case was seen on January 25th of this year by Dr. Patrick Manson, who gives me permission to tell you that after having carefully examined the patient, he would unhesitatingly have passed the young man into any service where sound physical condition is essential, had he not known the history of the patient's illness.

It may be worth while to mention that the hypodermic injections were always given in my wards with the antiseptic precautions stated in detail in my paper in vol. xiv of the *Transactions of the Medical Society of London*. These injections are now close on 2,000 in number, and there has never been in any one of them evidence of abscess nor of any other septic infection.

The mode of administration of the new tuberculin is by hypodermic injection, and it may be injected where loose skin can be taken up and the needle easily introduced. For the most part I have given the injections under the skin between the shoulder blades and the spinal column.

The regulation of the dose of the new tuberculin is most important. The use of the old tuberculin was characterised by what were called "reactions." These consisted of a rise of temperature following the administration of the drug at an interval of six, twelve, twenty-four, thirty-six, or forty-eight hours, and of nervous symptoms when the reaction was severe, expressed by rigors and headache. The temperature in the severe form of reaction not infrequently reached 104°. In giving the new tuberculin no one of these severe symptoms should occur. The dose should be so regulated that the rise of temperature will be confined within the limits of 1° F., and there should be at the very most, and that only because it is perhaps unavoidable, a slight amount of occasional headache. In some cases headache does not occur; but in certain cases I believe it is unavoidable. The dose at the beginning of treatment should, in a case of tuberculosis of the lung, be not more than $\frac{1}{500}$ mg. Even so small a dose as this has, I believe, produces considerable rise of temperature with headache. This, however, has not occurred in my experience. If the temperature rises more than half a degree as a result of the administration of any dose of the remedy, then that same dose should be repeated until practically no rise of temperature follows its injection. The dose should not be repeated until the temperature has fallen either to normal, or to the temperature which was usual to the patient before treatment was commenced. The temperature usual to the patient is ascertained by keeping a careful record of it during one week before commencement of treatment. In no circumstances should tuberculin be used for the first time unless this week's record has been made for the seven days preceding the giving of the first injection. My practice has been to increase the first doses by $\frac{1}{500}$ mg. at a time, always subject to the rule above stated relating to temperature.

At first the injections are given not oftener than once in two days. It must not be forgotten that a rise of temperature of even half a degree, following upon the injection of a small dose of tuberculin, is practically diagnostic of the presence of tuberculosis in the patient. In certain cases of tuberculosis of the lung, tubercle bacilli may not be found in the expectoration, or there may be no expectoration. Should this happen in one's experience, the injection of a small dose of tuberculin which was followed by a rise of temperature would show the patient concerned had tuberculosis. The strongest possible confirmation of this important fact is given by the evidence forthcoming from many countries, and which shows that the presence of tuberculosis in cattle, which may even seem to be healthy, can be detected with practically absolute certainty by means of this tuberculin test. It seems to me that this diagnostic value of tuberculin has not been sufficiently utilised in our dealings with doubtful cases in the human subject.

To return to the regulation of the dose. When by rises of $\frac{1}{500}$ mg. the dose reaches $\frac{1}{500}$ mg., my practice has been to increase the dose by $\frac{1}{10}$ mg. until $\frac{1}{2}$ mg. is reached, and then by $\frac{1}{4}$ mg. up to 1 mg. All this, however, must be strictly subject to the law of temperature I have already mentioned. After a dose of 1 mg. the doses may be increased by $\frac{1}{2}$ mg. at a time or more, according to the temperature shown after each dose. When 5 mg. doses are reached, not more than two injections should be given in a week. With still larger doses there should be but one injection in a week. The injections should be increased up to 20 mg. of the tuberculin, that is, the contents of two bottles of the fluid as it is now sold. When this large dose has been given, and has not been followed by rise of temperature, the treatment is at an end as regards increase of dose, and this large dose need not be repeated more than once a month, for safety's sake.

This, gentlemen, is a fairly full account of almost all my experience of the use of tuberculin both old and new. I have, I repeat, never seen in my own practice harm done by the use of this remedy. I have seen it do good in the treatment of lupus, and, in my opinion, it is of value in helping consumptives on the way to recovery provided the disease is in a very early stage. In advanced stages of the disease I do not think the discomfort inseparable from the use of the hypodermic syringe, and to which many persons are exceedingly sensitive, is sufficiently outweighed by the slight chance there is of possible good that might come from the use of tuberculin. Of the cure of tuberculosis by tuberculin it is impossible for me yet to speak, because I am not sure there may not be relapse in any one of the most promising of the cases that have come under my observation. I incline to the belief that the new tuberculin is of more use than any other drug in the curative treatment of very early stages of tuberculosis affecting the lungs or the skin.

References.

1 *Trans. Med. Soc.*, vol. xiv. 2 The details of L. B.'s treatment are stated under those initials in my paper published in *Trans. Med. Soc.*, vol. xiv.

ON THE TREATMENT OF OBESITY AND MYXŒDEMA BY A NEW PREPARATION OF THYROID ("THYROGLANDIN").

By WILLIAM MacLENNAN, M.B.,

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The extensive use of thyroid gland, or its active ingredients, in the treatment of certain morbid conditions makes it very desirable that a preparation of uniform strength and quality be at all times employed. The gland is possessed of such powerful properties that the more nearly its preparations approach the "standardised" the safer and more satisfactory will their employment be.

A large variety of preparations of thyroid is employed in the treatment of obesity, myxœdema, and other ailments. Perhaps the tablets of the dried extract are the most popular. But none of the extracted preparations commonly used contain all the active ingredients in the same form or proportion as they are found to exist in the gland itself.

Last spring I obtained from Mr. E. C. C. Stanford, F.I.C., F.C.S., whose researches on iodine are so well known, a new preparation of the active ingredients—thyroglandin. I have made numerous trials of this substance in a number of cases of obesity, and in one case of myxœdema.

Case I. *Obesity.*—B. McR., aged 21, married, complained of rapidly increasing gain of flesh, with debility and great shortness of breath on exertion. She was put on 1 grain of thyroglandin thrice daily for a few days. The dose was then rapidly increased until 9 grains in the day were being taken. The decrease in weight was as follows: June 1st, 12st. 4lb.; June 12th, 11st. 10 lb.; July 10th, 11st. 2 lb.; August 10th, 10st. 8lb.; September 4th, 10st. 5 lb.; September 29th, 10st. 1lb. Since last date this patient has been taking about 1 grain daily, and her weight remains fairly stationary.

Case II. *Obesity.*—R. C., aged 46, married, multipara, consulted me on account of her obesity and dyspnœa. She was put on 1 grain of thyroglandin thrice daily, and as this dose was well tolerated it was rapidly increased to 9 grains in the day. Her weight at different dates was as follows: July 18th, 14 st. 13 lb.; July 25th, 14 st. 10¾ lb.; September 17th, 13st. 12 lb.; September 24th, 13 st. 10 lb.; October 8th, 13 st. 1 lb.; October 19th, 12st. 9 lb.; October 26th, 12 st. 5½ lb.; November 19th, 12st. 0½ lb.; November 26th, 11st. 9 lb.

Case III. *Obesity.*—Mrs. M., aged 40, under 5 feet in height; had great difficulty in moving about, and complained of excessive dyspnœa on exertion. She was put on thyroglandin in doses similar to the two former cases, and her weight fell as follows: May 16th, 13 st. 11 lb.; June 14th, 12 st. 11½ lb.; July 6th, 11st. 6 lb.

In all of these cases the rapid loss of flesh was accompanied by few of the unpleasant symptoms so commonly experienced. There was no sickness, diarrhœa, sore throat, excessive sweating, or cardiac failure, and no persistent symptoms of thyroidism.

Case IV. *Myxœdema.*—Mrs. P., aged 49. This patient first came under my observation in 1893. She was suffering from myxœdema of many months duration. In June of that year the treatment with raw thyroid gland was begun. Four glands were given in the week. In two weeks a marked improvement began. Dyspnœa became less pronounced, insomnia disappeared, œdema of legs and arms diminished, and coldness of the extremities became less. Her weight, too, was considerably reduced, and she was able to move about with some ease. At the end of two months a most obvious change in her facial expression was recognised. She continued the use of the gland for six months, with occasional intervals, which were followed by relapses if the cessation was prolonged beyond two weeks. This patient's residence being in the country, it was found to be inconvenient to procure the necessary weekly supply of fresh and [illegible]18. In 1894 treatment was continued with the tabloids of [illegible] all the preparations of thyroid, includ[illegible] makers, and thyroidin (Bayer's) have [illegible] but the results were not satisfactory, while these [illegible] nearly so therapeutically active as the raw gland. [illegible]landin was begun. The dose was 5 grains daily. [illegible] one month. Her general condition when she [illegible]nilar to when the raw gland was first com[illegible] and breathlessness were not quite so marked. [illegible] the thyroglandin, and in three weeks she [illegible]eatly improved in appearance, and swelling [illegible] from her arms and legs. From that time up [illegible] been continued, with occasional inter[illegible] The therapeutic effect of this remedy [illegible] that of the raw gland, while it produced [illegible]ptoms.

[illegible] cases in which I have employed similar preparations prescribed at different dates, but under conditions as nearly as possible identical, the results have been far from uniform. I have been led to believe that these differences depend more largely on a want of uniformity in the preparation employed than on any inherent difference in the patient.

Most of the preparations on the market have some drawback, and, as far as I am aware, none of them contain the thyroiodin and the antitoxins in the same proportion, or of the same activity, as that in which they are present in the gland.

The thyroid gland may be administered either in the raw state or dried at a gentle heat under the coagulating point of albumen. To either of these forms there are obvious objections, because animal substances foreign to the essential active principles are almost certain to be present, and bacteria of a dangerous kind may be introduced into the system of the patient.

The thyroid gland contains two important principles: one of these is an iodoglobulin, the larger constituent, and the other is thyroiodin, discovered by Baumann. Both contain iodine, and both are requisite to produce the specific effects of the gland itself. Several chemical processes[1] have been introduced with the object of separating the active principles from the animal substance—for example, boiling in dilute sulphuric acids, or in solutions of caustic soda, or digesting in closed vessels with water at a high temperature, or digesting with pepsin, or extracting with solutions of common salt and precipitating the solution with tannin.

It has been found, however, that none of these processes separate the active principles of the gland in the form or proportion in which they are contained in the gland; they all result in the destruction of the iodoglobulin entirely, or in the partial separation of the thyroiodin only, or in its association with other substances of a useless or objectionable nature. That the products of these processes have not the same medicinal effect as the gland itself is admitted by all who have employed them as substitutes on account of their greater convenience.

Thyroglandin is prepared by the following chemical process:

1. Selected and healthy glands are macerated in cold water, which extracts the soluble iodoglobulin. This solution is decanted or filtered off, and is evaporated to dryness at a temperature of 212° F. The resulting product is reduced to a fine powder.

2. The residual glands are then boiled for one hour with a weak solution of caustic soda which eliminates the thyroiodin. After filtration the solution is exactly neutralised with hydrochloric acid, evaporated to dryness, and powdered.

3. The two powders so obtained (iodoglobulin and thyroiodin) are mixed together and constitute thyroglandin.

It will thus be seen that this new preparation is made in such a way that thorough sterilisation is secured, and that it is freed from everything deleterious which might be derived from the other animal substances of the gland, while it contains the iodoglobulin and thyroiodin in the form and in the proportion in which they exist in the gland.

Thyroglandin keeps perfectly, if kept thoroughly dry, without deterioration. It may be administered in capsule or in tablets, and in doses of 3 to 5 grains, which are equal to half a gland of average size and weight.

The very active therapeutic properties which are exhibited by thyroglandin lead me to believe it is a preparation of great value. If it really represents all the active constituents present in the gland in their correct form and proportion, it may prove a very useful addition to our thyroid preparations.

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1 *Vide* articles by Robt. Hutchinson, M.D., British Medical Journal, January 23rd, 1897; March 21st, 1896; and *Journal of Physiology*, vol. xx, p. 474.

SHORT NOTES ON THE TREATMENT OF LUPUS VULGARIS WITH "T.R." TUBERCULIN.

By G. G. STOPFORD TAYLOR, M.D.Durham.
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Early in September I selected four patients; one was treated entirely as an out-patient, the others were admitted to my wards. The following are condensed notes of the cases. The minimum dose injected was $\frac{1}{200}$ mg., and the maximum 10 mg.

Case I. *Lupus of the Nose.*—J. J., a delicate girl, aged 15. The disease first made its appearance five years ago at the junction of the left nostril with the lip. When admitted on July 16th, the left cartilages, the septum, the columna, the right lower cartilage, together with the lobe, were in a state of ulceration, and numerous discrete nodules were seen at the base. The ulcerated surfaces were thoroughly scraped and cauterised and the nodules were bored with a wooden match dipped in liq. hydrarg. nit. acid. In a month the nose was soundly healed. At the beginning of September a few fresh nodules were observed beyond the area of operation, and for these the treatment with T.R. tuberculin was commenced on September 5th. September 20th. It was noticed that the nodules were disappearing, becoming depressed and scaly. September 30th. A few scales only marked the original site of the disease. October 15th. After six weeks' treatment the patient was obliged to return to her home in Wales, but with absolutely no trace of the disease. November 10th. She returned for inspection, when it was observed that a few fresh nodules had appeared. During her absence the treatment had been suspended, but it was subsequently carried out by Dr. Griffith of Castellmarch, Pwllheli, but without benefit. April 2nd. The patient returned a second time to hospital for further operative treatment, ulceration having again occurred on the right lower cartilage and base of nose; otherwise she had gained weight.

Case II. *Lupus of Nose.*—E. W. aged 32, a domestic servant, has suffer

for seven years, the left lower cartilage being destroyed. Treated by scraping and cauterisation, a recurrence of the disease having taken place, treatment with tuberculin was begun on September 2nd. September 28th. It was noticed that the nodules were becoming depressed. October 6th. Nodules less defined and scaly. December 10th. Many of the nodules have entirely disappeared, while others which were beginning to ulcerate have partially or completely healed. January 6th. The patient was shown at the Medical Institution. The injections were continued until the end of March, in spite of which fresh nodules made their appearance and healed ulcerations broke down.

CASE III. *Lupus of Face.*—E. S., married woman, aged 39, has had eleven children, three of whom died in infancy from convulsions. At the age of 14 she suffered from suppurating glands in the neck, and from which the disease originated. Her mother, a brother, and a maternal aunt died of phthisis. The disease occupies the right half of the face, the ear of the same side, the nose, the lobe of which is ulcerating. The upper margin follows a line more or less ulcerating drawn from the top of the ear across the temple and the lower eyelid to the root of the nose. The lower margin, dry and scaly, sweeps downwards and forwards from the ear, beneath the inferior maxilla to the larynx, and upwards and backwards to the angle of the left jaw, enclosing the whole of the chin and mouth. The included area consists of numerous nodules embedded in the more or less atrophic skin of the cheek, while the skin of the chin is much infiltrated and scaly. September 15th. The treatment was commenced. September 25th. The face looked red and glazed. September 27th. The nose is healing and the face is generally improving. October 5th. Redness and infiltration is less; nose is nearly well. October 15th. Face very much improved. October 18th. Face red and hot; patient complains of backache, nausea, headache, trembling, and very nervous. October 21st. Face improving. October 30th. Face flushed, hot, and burning; feels very poorly in herself. November 30th. Continued to improve until this date, when it was observed that the already healed ulceration of the nose was breaking down again. December 7th. Patient returned to her home. January 6th. Shown at the Medical Institution. January 11th. It was noticed that the nose had again healed, but that a slight recrudescence of the disease had occurred on the cheek. January 25th. A fresh eruption of nodules has appeared on the left side of the nose, and the cheeks are studded with small-sized pustules. The upper margin of the disease and the lobe of the nose are now crusted with dried exudation. March 8th. Fresh eruption of nodules; breaking down of healed ulcerations; injections discontinued.

CASE IV. *Lupus of Nose and Face.*—C. N., a girl, aged 15. This patient had been under treatment with the thyroid extract for eighteen months previously, but latterly the disease had seemed to stand still. It was one of those cases which admitted of no operative interference. The disease had begun in the nose nine years ago, and gradually involved the whole of the face and eyebrows, destroying the nose. The cheeks and chin were greatly infiltrated. The lips had been destroyed by ulceration, and in consequence the oral orifice was gradually closing; this was enlarged with scissors from time to time to enable the patient to take her food. Saliva kept continually running over her chin and interfering with repair. September 5th, first injection. October 5th, the epidermis is rapidly healing round the mouth and over the base of the nose. Large granulations on the lower lip are much diminished in size, and the mouth is rapidly closing. October 10th. Mouth completely healed. December 17th. The oral orifice was enlarged by snipping through the angles with a strong pair of scissors, and an attempt was made to bring the skin and mucous membrane together with sutures, but owing to the infiltrated condition of the tissues it was found impossible, and considerable sloughing followed. January 6th, shown at the Medical Institution, when it was noticed that considerable diminution in the width of the lower half of the face had taken place as compared with a photograph taken before the treatment was begun. January 11th. Patient became an out-patient. From this date until the end of March the girl attended weekly for injection, during which time healed surfaces again broke down, and numerous lupus nodules erupted.

REMARKS.

It will be observed that these notes refer more particularly to the local effects of T.R. tuberculin, but it must not be assumed that no constitutional symptoms were produced by the injections. All the patients suffered from *malaise*, anorexia, pains in the back, and weakness or trembling of the legs.

The local reactions differed from those produced by the old tuberculin in being milder and confined strictly within the diseased limits. No abscess formation occurred as the result of the injections.

During the earlier treatment improvement was most marked, and excited hopes that substantial benefit would follow; then came a period of no advance, and lastly a stage of breaking down of healed ulcerations and a recrudescence of the disease.

A CASE OF MALIGNANT POLYPUS OF THE NOSE, WITH REMARKS.

By G. HUNTER MACKENZIE, M.D.,

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AN important, probably the most important, point in the matter of malignant polypus of the nose is that of early diagnosis. This may be said to hold good of all organs and regions, for it may be assumed as a general rule that the success of operative treatment of malignant disease, wherever situated, is in direct ratio to the earliness of the stage at which it is applied. In the case of the nasal cavities this is particularly true; and it is chiefly with the view of assisting in the early diagnosis, and of eliminating certain fallacies which might mislead the observer, that the present communication is made.

The text of this paper is afforded by the following case:

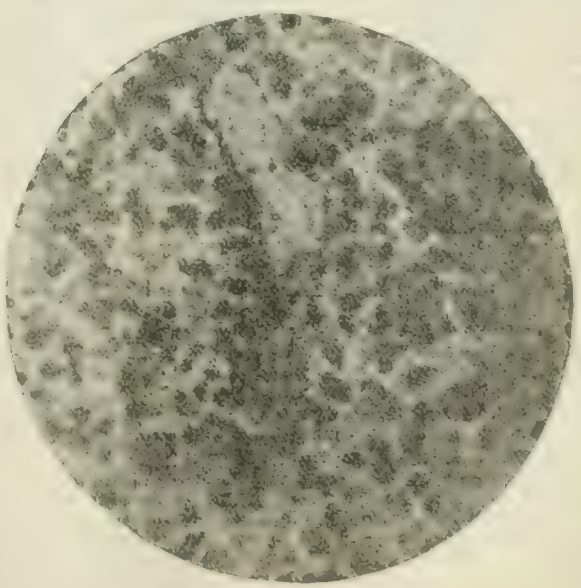
A lady, aged about 60 years, with no hereditary tendency to disease, and who had hitherto been very healthy, came under my notice on September 23rd, 1897. She was reported by her medical attendant, who was a near relative, and who accompanied her, to have polypi in both nostrils. The initial nasal symptom, and that which had ultimately led to a casual inspection of her nares, was hæmorrhage from the left nostril of a very profuse nature. The first flow of blood had occurred about three months previously, and between that date and the period of my seeing her, three or four severe recurrences had taken place. Polypi had been observed almost protruding from the left nostril about a week before coming to me. Hæmorrhage was the only thing of which she complained, and I noted that the sense of smell was good.

I found many polypi in both nostrils. In the right they presented the appearances and characters of simple growths. In the left they were numerous, and completely filled up the nasal cavity; their colour was mostly dark brown, but at places slaty grey and resembling simple polypi, and on gentle probing they bled freely. The individual polypi could be differentiated, but distinct pedicles could not be made out. No pain was present, and there was no glandular enlargement.

An attempt to operate by the cold snare in the left nostril was followed by severe hæmorrhage. On several subsequent occasions the electric snare was used, and even this induced considerable bleeding. A passage was, however, cleared into the naso-pharynx; but rapid recurrence of the growths soon led to complete reblocking, and, as further and more radical measures were declined by the patient's relatives, subsequent treatment was limited to removing so much of the disease as appeared outside the nose. The growths by this time (December, 1897) had been transformed into a dense, black, sloughy mass, which bled freely and frequently, and which gradually extended into the right nostril, into the left antrum, causing marked bulging of the cheek and closing the eye, and eventually into the mouth. There was a continuous fœtid, sanguineo-purulent discharge, and slight variable pyrexia was present during the last two months of life. Pain was absent during the whole course of the disease. Death occurred on February 12th, 1898.

The results of microscopical examination of portions of the growth removed merit a detailed notice. On the first and second occasions when examinations were made the appearances indicated simple mucous polypus of the nose. On the third occasion a different state of matters was revealed, as indicated by the following report:

The tumour consisted of a large irregular polypoid mass from 1½ to 1¾ in. long, 1 in. broad, and ¾ in. thick, from which two or three pieces had been detached. It was of comparatively soft consistence, especially in places, and distinctly brittle. On section it was of a pale to pink colour, mixed with patches of red, not unlike a mixed thrombus. The whole tumour was cut into suitable pieces fixed, and stained with hæmotoxylin, rubrin, and orange. It showed microscopically a pure sarcomatous tissue in its most typical parts. The cells were round and fairly large, about the size of medium round cells, though a



Sarcomatous Polypus of Nose. Photomicrograph × 220.

few were larger, being more than twice the size of lymphocytes. Whilst most of the cells were round, or nearly so, some, especially the larger ones, were oval, or slightly irregular in shape. In no place were they densely packed together, and in many parts of the tumour they were very scanty indeed. There was an ill-defined granular matrix, and the blood vessels were numerous, relatively large, and very rudimentary. The photomicrograph shows one of these vessels surrounded by sarcomatous tissue. In no part of the tumour were the cells more numerous than is here represented, and in most parts they were present in much smaller numbers. Tissue of this typical sarcomatous type formed a comparatively small part of the tumour as a whole. A great part was formed by a loose sarcomatous tissue infiltrated with blood and blood clot. In many places it was mainly composed of red blood corpuscles with little or no fibrin, but many young organising blood vessels shooting through it, and only a scanty sprinkling here and there of sarcomatous cells. Other parts, forming a considerable bulk of the tumour, were composed of inflammatory tissue and thrombi, the inflammatory tissue being of a comparatively recent date, and in many places, at any rate, of a septic nature. Much of the inflammatory tissue was rich in fibrin, and the disposition of many leucocytes within its meshes presented in places a superficial resemblance to a myxomatous tissue. Careful search, however, failed to find a single myxomatous cell throughout the tumour.

The growth was, therefore, a round-celled sarcoma of great vascularity and rapid growth, in which frequent and repeated hæmorrhages had occurred, and in and around which low forms of septic inflammatory changes had arisen.

In this case we have the interesting phenomenon of the occurrence of benign polypi in one nostril and malignant in the other, and not only so, but with benignity and malignancy co-mingled in one and the same nostril. The results of the microscopical examinations, which were made at intervals of about a month, afford reasons for the opinion that the polypi in the left nostril were originally benign, and that the sarcomatous invasion or degeneration was a comparatively recent occurrence, and probably commenced in the deeper part at or about the time of the first hæmorrhage. For undoubtedly polypi must have been present for many months at least before that occurrence.

Cases have already been recorded in which a sarcomatous has been preceded by a benign growth, as in that by Onodi,[1] which differed from the present one in that the transformation occurred only after ablation of the polypi. Sendziak[2] met with a case of malignant sarcoma with benign polypus of the nose, the malignant being situated low down on the septum, and the benign in the middle meatus. Haring[3] mentions the case of a woman, aged 26, in whom four months after removal of a polypus apparently of ordinarily benign character, the nasal cavity was blocked by a round-celled fibro-sarcomatous growth. Not only simple and sarcomatous growths coexist, but more than one variety of malignancy may be present. Plicque[4] quotes Ricard regarding two cases where, along with ordinary mucoid polypi, not only sarcoma but also epithelioma was present, and the same writer mentions that similar cases have been recorded by Schaeffer, Hopmann, Terrier, and Voltolini.

Apart from the etiology of malignant disease generally, the point which seems worthy of some consideration is the question of (surgical) traumatism in determining or inducing malignancy in ordinary mucous polypi. The view is held by some, and certain of the cases now quoted would appear to bear this out, that instrumental or operative interference and irritation are necessary to induce malignant transformation in an ordinary simple polypus. I do not hold that opinion, for, as already stated, in the case now submitted, no operative treatment had been practised before I saw the patient, and at the first interview I expressed my opinion to the medical attendant that malignant disease was present.

In deciding upon the precise nature of these cases, we have seen, in the earlier stages of the disease at least, that the microscope cannot be trusted to reveal the full and true nature of the lesion. There seem to be two features of value in the diagnosis of malignant polypus of the nose in its earlier stage—namely, hæmorrhage, and the locality of the growth. The former, which may be spontaneous or easily provoked, appears to be far and away the most important symptom; it is usually severe and recurrent, and, as I have seen in other cases, generally occurs for the first time at an early period, but may be somewhat postponed, as in the present instance.

In estimating the diagnostic value of this symptom, it ought not to be forgotten that women, more rarely men, sometimes suffer from a benign form of bleeding growth of the septum, usually in the left nostril, and known as "bleeding polypus of the nose." This is of the nature of a lymphangioma, is easily removed, and does not usually recur; but with this exception we may safely assume that, given an elderly individual with a nasal polypus, or a sessile polypoidal growth, which bleeds frequently and profusely, the probability is that it is malignant, more especially if the growth can be seen attached to the septum, for this appears to be the malignant area of the nose. One writer, indeed, goes so far as to affirm that "a polypus inserted on the septum must always be regarded as of a malignant character" (Plicque).[5] In the later stages of the disease it may be impossible to say whence the growths have sprung, or whether they are or are not pedicled, and hence any diagnostic value which may be attached to these features is lost. On the whole, I am inclined to think hæmorrhage the most reliable test we have, and I would say that sessile polypoidal septal growths, or blood-stained or hæmorrhagic spots or areas on the surfaces of what appear to be ordinary mucous polypi, along with frequent and profuse bleedings, are almost conclusive proof of malignancy.

Whilst sarcoma of the nose is usually met with in elderly individuals, it is not exclusively so. I have not seen it occur under 40, but Bliss[6] has recorded two cases of sarcoma of the nasal chambers in children, one aged 4 and the other 9 years. Nichols[7] mention its occurrence in a boy (age not stated), and in another patient aged 17 years. A few similar cases have been recorded by other writers.

The prognosis as regards the results of operative treatment depends upon the degree of malignancy and the stage and locality of the disease. Carcinoma and epithelioma, which are fortunately of rare occurrence in the nose, are highly unfavourable. Fibro-sarcomata are much more favourable than pure sarcomata, and several cases have been recorded in which the former have not recurred after operation. Pröbsting and Cramer[8] have even noted spontaneous shrinkage and healing of a naso-pharyngeal sarcoma, and Onodi is of opinion that the internal administration of arsenic tends to cause their disappearance. Long periods of immunity after operation have also been noticed by other observers in cases of fibro-sarcoma of the nose and naso-pharynx. Early cases of sarcoma which present as small sessile polypoidal growths on the septum are more favourable than those less frequent ones in which the ethmoid is primarily affected; and if the case be seen and the disease detected at a sufficiently early period, an intranasal operation by means of the curette and electro-cautery may suffice to permanently cure the patient. I have seen one such result in the case of a gentleman, aged 70, which I did not diagnose at the time, but which, in the light of an extended experience, I now believe to have been sarcoma of the septum.

I have to express my indebtedness to my friend, Dr. R. F. C. Leith, for his careful microscopical examinations of this and of other cases of malignant polypi of the nose which have been under my care.

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CASE OF CEPHALIC TETANUS TREATED WITH ANTITETANIC SERUM: RECOVERY.

By G. E. HALE, M.B., B.C.,
Eton.

THE following case of tetanus treated with antitoxin, and followed by recovery, seems worthy of record. It was undoubtedly subacute, as thirteen days elapsed between the date of the injury and the onset of the earliest symptoms; but the comparatively favourable prognosis suggested thereby was discounted by the fact recorded by Gowers[1] that "all the cases (of cephalic tetanus) met with over 25 have been fatal." Moreover, he adds, "In all cases that have recovered, the tetanic spasm and facial palsy have very slowly passed away, the symptoms continuing altogether several weeks." In the following case the spasms were probably mitigated in intensity and lessened in number by the chloral and bromide given simultaneously; but in view of the rapid improvement commenced after the second large injection on the fifth day of the disease, and the complete disappearance of all symptoms on the twenty-first day, it seems only right to attribute

the successful issue of the case chiefly to the antitetanic serum.

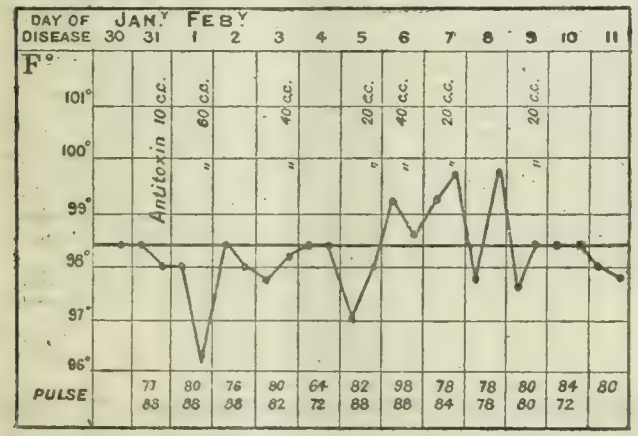
H. R. T., male, aged 30, fell on the evening of January 12th last, and struck the bridge of the nose against the kerb of the pavement, causing an abrasion, after which the face is said to have become greatly swollen. He first sought advice on January 27th, complaining of an uncontrollable impulse to laugh, and of a "drawn" sensation of the left side of the face since the 25th. He had laughed, quite against his will, on the receipt of the news of the death of a relative. No limitation of the movements of the jaw could be made out, nor any objective symptom. The abrasion had healed. When next seen on the evening of Sunday, January 30th, eighteen days after the injury, there was slight but distinct trismus, slight ptosis of the left eye, and inability to close the eyelids completely; some right facial paralysis, and a painful feeling of stiffness round the waist. No cramps nor stiffness of the neck were complained of.

January 31st. Symptoms somewhat more marked; some difficulty in swallowing; slight wrinkling of forehead; a few cramps in legs; towards evening the neck became stiff: 10 c.cm. of antitoxin injected. A full dose could not be given, as through a misunderstanding only a prophylactic dose had been sent.

February 1st. Slept well. Trismus increased, and body become stiff: towards evening back of neck became quite rigid; 60 c.cm. of antitoxin injected.

February 2nd. Slept well, except for a few spasms of a not very severe type. By night the teeth could only just be separated, the abdomen became rigid, and there was distinct opisthotonos.

February 3rd. Sleep more disturbed; spasms more frequent and severe, the tongue being frequently bitten. Opisthotonos well marked, but the legs being unaffected, the arch was between the buttocks and the occiput. Teeth firmly clenched; fed by siphoning liquids from a baby's feeding bottle, the india-rubber tube being attached to a straw which was insinuated through the gap in the teeth in which he held his pipe. Spasms frequent throughout the day: patient in a very despondent state. In the afternoon 40 c.cm. of antitoxin were injected, and a mixture of chloral hydrate gr. xv with sod. brom. 3j ordered to be given every four hours. By night there was slight relaxation of the trismus, and the spasms were noticed to be less frequent.



February 4th. Slept eight hours: abdomen and back less rigid. Patient in much better spirits; head can be moved slightly forwards; facial paralysis less marked. Fewer spasms (twenty-five in twelve hours).

February 5th. Trismus again more intense. Spasms fewer (nine in twelve hours), some severe, tongue being frequently bitten; 20 c.cm. of antitoxin injected. It was hoped to inject more, but Messrs. Burroughs and Wellcome's supply was exhausted on that day. One hour after injection the trismus relaxed sufficiently to admit the little finger as far as the middle joint.

February 6th. Slept well first part of night, but had frequent and sharp spasms from 4 A.M. till 8 A.M. Teeth could be separated ½ inch. Fifteen spasms during day; 40 c.cm. of antitoxin injected at 2 P.M. Abdomen in the evening less rigid, and opisthotonos less marked. Hypodermic injection of ½ gr. of morphine with $\frac{1}{100}$ gr. of atropine at night.

February 7th. Slept seven hours in night with only two spasms. Spasm sufficiently relaxed to allow patient to rotate his head at will. Opisthotonos quite slight, but abdomen not greatly relaxed. Teeth could be separated sufficiently to allow patient to drink from a cup. Five spasms during the day; 20 c.cm. of antitoxin injected.

February 8th. Three spasms only throughout the day; very drowsy. Chloral mixture discontinued; catarrhal conjunctivitis of both eyes.

February 9th. No spasms; opisthotonos disappeared, movements of head free; 20 c.cm. of antitoxin injected.

February 10th. No spasms; able to eat minced chicken and mashed potatoes.

February 11th. Slept well, no spasms. Neck and back quite supple. Still some rigidity of abdomen, and trismus. Ptosis of left eye persists, and a slight degree of right facial paralysis.

February 14th. Sits up in a chair and eats solid food well, though the movements of the jaw are not yet absolutely free.

February 16th. All trace of trismus and rigidity of the jaw gone; facial paralysis and ptosis disappeared: able to walk about well.

On March 5th the patient went to the seaside, and on the 21st was able to return to work.

It is interesting to note the presence of ptosis, which is said to be very rare in cephalic tetanus, and the emotional disturbance accompanying the onset. Altogether 210 c.cm. of serum were injected. The injections were made into the cellular tissue of the back by one or more punctures, 20 c.cm. being injected at each puncture. The usual antiseptic precautions were observed, no inflammation occurred, and but little pain was caused. The serum was obtained through Messrs. Burroughs and Wellcome from the Pasteur Institute at Paris.

REFERENCE.
1 *Diseases of the Nervous System*, vol. ii, p. 631.

A CASE OF TRAUMATIC TETANUS TREATED WITH ANTITOXIN.

By G. BLACKER MORGAN, Jun., M.B.,
Sunderland.

H. M., aged 20, a farmer, was kicked over the right eye by a young unshod horse. A lacerated wound below and parallel to the right eyebrow was thus produced. The wound was seen some twelve hours later and thoroughly cleansed with carbolic lotion, and two sutures of carbolised horsehair put in. By the sixth day the wound was quite healed and the œdema of the eyelid had disappeared. On the seventh day he complained of some stiffness of the jaw. There was puffiness of the right side of the face simulating facial paralysis. On the morning of the eighth day, after a very restless night, he developed the typical sardonic smile, with tonic spasm of the muscles of the face and neck. He was given chloral hydrate 20 gr. every two hours, and was kept in bed in a darkened room; he was very restless all day, and had increasing difficulty in swallowing. Injected 8 c.cm. of antitoxic serum into the abdominal wall at 6 P.M. The temperature was 97.6° F., and the pulse 56. He was also given an enema of potassium bromide ℥ss and chloral 25 gr., in milk ℥iv, and this was directed to be repeated every two hours. At 10.30 P.M. it was reported that he had been quieter. There was no reaction from the antitoxin, and the temperature was still subnormal, pulse 60. He had a restless night, but slept some three hours. On the ninth day there was very little twitching, and grinding of the teeth occurred twice. He retained all the enemata but one, and took an ounce and a half of milk by mouth. The temperature was 98.4°, and the pulse 62. Injected 8 c.cm. of antitoxin at 11 A.M., passed a catheter and emptied the bladder, drawing off a copious secretion loaded with phosphates. At 6.30 P.M. the third injection of antitoxin, 8 c.cm., was given, and the bladder emptied. He did not retain the enemas. The temperature was 99.6° F. At 11 P.M. the spasms were very frequent and opisthotonos well marked. Gave him a hypodermic injection of chloral, gr.10, and restrained the spasms with chloroform.

On the tenth day, at 6.30 A.M., after a quiet night, he was much more conscious and answered distinctly. He was given another hypodermic injection of chloral during the night (gr.10). At 1.30 P.M. found he had got steadily worse since the early morning, and was quite unconscious; the conjunctivæ were insensitive, and tetanic spasms were nearly continuous, but could be controlled by chloroform. The pulse was 100, and the temperature 99.8° F. At 3 P.M. repeated the hypodermic injection of chloral (gr.10), and at 4 P.M. he was quieter. At 11 P.M. the pulse was 120, and the temperature 102° F. Cheyne-Stokes respiration was observed. Injected 16 c.cm. of antitoxin, and emptied the bladder with a catheter. He died at 2.30 A.M. on the eleventh day.

Remarks.—The colt which caused the injury was kept in a loose box in which a horse had died from tetanus three months previously. The loose box had not been disinfected in any way. The wound healed quite normally, and on the sixth day all swelling had subsided. The eyelid became swollen again on the ninth day, but there was no fluctuation to be made out over the wound. He had three injections of antitoxin, 8 c.cm. in each, in the first twenty-four hours, but, owing to the difficulty in obtaining a further supply, there was a delay of twenty-four hours before the fourth injection of 16 c.cm. could be administered. It is possible that the general improvement in his condition in the early morning of the tenth day might have been maintained had there been a further supply of antitoxin at hand. The injections caused no local disturbance nor pain.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

HÆMORRHAGIC INFARCTION OF THE SMALL INTESTINE.

The case recorded by Mr. Gordon in the British Medical Journal of June 4th reminds me of one which came under my observation.

At 4 P.M. on July 11th, 1891, a breast-fed male infant, a month old, was brought to me in a state of collapse, and moribund, having an enteric facial expression. The abdomen was distended, and there was dulness in the depending area. There was no external hernia. The mother had contracted syphilis through her husband, and had subsequently miscarried. She stated that the infant was apparently well until 10 A.M., when he became restless, drawing up the knees and straining. Vomiting recurred occasionally, the ejecta becoming yellow (fæcal). The bowels had been twice relieved during the day, and the motions were not blood-stained. As the condition did not justify abdominal section, a stimulant was prescribed of ether, ammonia, and opium. Death occurred two hours subsequently.

Necropsy.—On opening the abdomen, about 8 ounces of dark-coloured fluid containing blood was found in the peritoneal cavity. Fully 4 inches of the small intestine was gangrenous. A small portion opposite the mesenteric attachment had sloughed; the free margin was ragged, allowing fæcal matter to freely pass into the abdominal cavity. There was no general peritonitis, and nothing was found extraneous to the intestine to account for the gangrene, though carefully looked for.

At the time I was much puzzled to account for the condition, but, in the light of subsequent knowledge, considered it arose from obstruction to the arterial supply through arteritis.

Gatcombe, Wolverhampton. John A. Lycett, M.D.

THE CAMPHOR HABIT AND ITS DANGERS.

This drug, either in the form of spirits of camphor or gum (solid) is frequently partaken of, more especially by females, for colds, later on for the exhilarating effect obtained. The undermentioned three cases may suggest the necessity for the public being cautioned.

Case I.—A young woman, in the habit of taking spirits of camphor for a cold, took an overdose, and complained of giddiness, noises in the head, passing on to delirium, became frantic and maniacal, and had to be restrained by force. Recovery ensued after plenty of potassium bromide.

Case II.—I was called upon suddenly at 1.30 A.M. to see a young girl reported to be in a fit. She appeared to be in the status epilepticus, convulsed, livid, frothing at the mouth, and presenting all the symptoms of epilepsy. Potassium bromide was administered hypodermically with very great relief. Next morning, upon investigating the case, I found that she had taken spirits of camphor. Luckily vomiting had occurred, or she would have died; rapid recovery ensued.

Case III.—The other day I was called to a young lad aged 16, and found him apparently in an epileptic fit. He had great nausea, violent delirium, livid face; the delirium and nausea, rather than the evidence of convulsions, aroused my suspicions, but the patient was incoherent, and the bystanders were not able to give any information. I gave subcutaneous injection of potassium bromide. The stomach pump was out of the question, and an enema likewise, as I might have seriously damaged the œsophagus, stomach, or rectum by such procedure. After an hour or two he lapsed into a sound sleep, and awoke pretty well in the morning, excepting a feeling of nausea owing to the gastralgia produced by the drug, which the patient admitted having nibbled at (solid form) for no reason.

In all these cases the odour of camphor in the breath and excreta was marked. In all the pulse was quick and weak. My apology for troubling you is that this pernicious and foolhardy habit should be prevented by parents pointing out to their children the dangers thereby incurred.

Newcastle-on-Tyne. W. H. Spurgin.

CHOREA COMPLICATING PREGNANCY.

Mrs. H., aged 27, married 14 months; at the eighth month of gestation; of a nervous temperament; had been treated constantly for anæmia and constipation. There was no history of previous chorea, rheumatism, nor scarlet fever. When called to see her on January 24th, 1898, she was suffering from symptoms of mild chorea, which had been going on for a fortnight. The movements were at first limited to the right side, but soon became general. She was extremely anæmic, the heart was normal, and also the urine. Arsenic and iron were given. She became very much worse fourteen days later, was unable to stand, and even when recumbent the head and limbs were in violent motion both day and night, except during sleep. Chloral and bromide of potassium were substituted, but as the intensity of the condition was increasing and there were no signs of labour coming on, the induction of premature labour was resolved upon. About 6 P.M. on February 7th a single bougie was inserted under chloroform, as it was found impossible, owing to the violent contractions, to make even a vaginal examination without it. At 8 A.M. on February 8th uterine action had not commenced, and another bougie was inserted; at 6 P.M. on February 8th uterine action had not commenced; at 8 A.M. on February 9th uterine action was slowly beginning; at 6 P.M. of the same day the membranes were ruptured; at midnight chloroform was given, and on examination there was found to be sufficient dilatation to allow of the use of forceps, and delivery was accomplished in half an hour. There was a ruptured perineum, which was sutured. Altogether the patient was not under chloroform longer than three-quarters of an hour. The child was living and a healthy male. On the recovery of the patient from the effects of chloroform it was disappointing to find that the choreic movements had returned in their old intensity. The pulse was extremely rapid, the temperature normal; the patient died four hours and a-half later from exhaustion. Throughout the attack the mind remained perfectly clear. The child has been very delicate and difficult to rear, and is affected with twitching movements.

Halstead, Essex. J. Henry Ashworth, M.D.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL FREE HOSPITAL.

PERFORATING GASTRIC ULCER: OPERATION: DEATH: NECROPSY.

(Under the care of Mr. E. W. Roughton.)

M. H., a domestic servant, aged 20, had suffered from dyspepsia for two years, but had never had hæmatemesis. She had a slight attack of pain in the abdomen on April 7th, did her work on April 8th, and went to bed at the usual hour. She awoke about 3 A.M. on April 9th with violent epigastric pain. She was seen by Mr. Walter Roughton, of New Barnet, at 10.30 A.M. He diagnosed perforation of a gastric ulcer, and sent her to the Royal Free Hospital, whither she was conveyed in the recumbent position.

Condition on Admission.—She complained of severe pain in the epigastrium. She was not collapsed, but had a good colour and pulse. There was no vomiting. The abdomen was distended and the liver dulness abolished.

Operation Thirteen Hours after Onset of Symptoms.—An incision 5 inches long was made between the ensiform cartilage and the umbilicus. Gas escaped freely on opening the peritoneum. The left lobe of the liver was found adhering to the anterior surface of stomach by recent lymph. On raising the adherent part of the liver a perforation about 1 cm. in diameter on the anterior surface of the stomach near the cardiac orifice was exposed. There was no extravasation of

stomach contents. The left rectus was then divided transversely close to the costal margin; this gave good access to the affected parts. The perforation was closed with a double row of Lembert sutures, the lymph sponged away, and the adjacent parts irrigated with biniodide solution 1 in 5,000. A gauze drain was inserted, and the abdominal wound closed in the usual manner. The operation was well borne.

After-History.—On recovering from the anæsthetic (A.C.E.) vomiting commenced, and continued at intervals of an hour or two all the following day. The vomited matter was apparently almost pure bile. On April 10th, at 8.30 P.M., the stomach was washed out. A pint and a-half of fluid was introduced into the stomach by means of a soft rubber tube, but only about a pint returned. The remainder was ejected by vomiting shortly afterwards. The sickness then ceased. On April 11th the patient complained of thirst and some abdominal pain, but in other respects her condition was very good. On April 12th the gauze drain was withdrawn a few inches. On April 13th the gauze drain was removed; the last part withdrawn had an offensive smell. A small piece of gauze was inserted through the gap in the abdominal wound. The general condition was very good. The patient made no complaint except that she was being starved. On the evening of April 14th she was not so well; she vomited some more bilious fluid. On April 15th there was pain and tenderness over the upper part of the abdomen, the sickness continued, the temperature rose to 101° F., the pulse to 128. It was obvious that she had peritonitis. Three stitches were removed from the abdominal wall, and some turbid serum mopped up with antiseptic gauze. Her condition rapidly grew worse, and she died on April 16th at noon, seven and a-half days after the occurrence of the perforation.

Necropsy Twenty-four Hours after Death.—There was an abscess containing about half a pint of pus between the cardiac end of stomach, spleen, left lobe of liver, and under surface of diaphragm. There was some recent peritonitis extending from the abdominal wound into the left hypochondriac region and as far down as the transverse colon, but not affecting the rest of the peritoneal cavity. The perforation was firmly closed, the stomach being watertight. The duodenum and a few feet of the jejunum were moderately distended; the rest of the intestines were empty and collapsed. Nothing else abnormal was noted.

Remarks.—It seems to me very desirable that we should record our failures as well as our successes. In this case death resulted because the peritoneum was not effectually cleansed. The gauze drain was quite inefficient. Although there was unmistakable evidence of peritonitis, there was no indication of any localised collection of pus. Had I reopened the abdomen freely, I do not think I should have discovered the abscess, as it was situated so far back in the hypochondriac region. Lavage of the stomach seemed to be attended with a satisfactory result. It may appear a somewhat risky proceeding to wash out a stomach which has been recently sutured, but I think that fluid can be more effectually and safely evacuated in this way than by vomiting. I should not hesitate to employ it again in a similar case.

REPORTS OF SOCIETIES.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Anatomy and Physiology.

Friday, June 3rd, 1898.

D. J. Coffey, M.B., President, in the Chair.

Exhibits.

Dr. R. J. Montgomery exhibited a child, aged about 11 years, in whom both Crystalline Lenses were Dislocated Upwards and Outwards. The displaced structures and the amount of their displacement were easily seen with the aid of a simple lens. The only noticeable effect on the vision of the patient was an inability to see small structures clearly.—Professor Fraser showed a number of interesting Embryological Specimens, exhibiting certain phases in the development of the central nervous system, the kidney, etc.—Professor Birmingham exhibited (*a*) a specimen illustrating the Course of the Left Phrenic Nerve in the upper part of the Thorax, which he thought showed the true position of the nerve at a part of its course generally neglected in descriptions; and (*b*) Dissections of the Apical Gland of Blandin.

Unusual Course of Phrenic Nerve.

Dr. J. Barton read a short note on an irregular phrenic nerve. The nerve came off from the fourth cervical, and ran for an inch and a half in the trunk formed by the fifth and sixth nerves, getting a branch from the fifth. It then passed downwards and inwards in contact with the posterior surface of the sterno-mastoid, crossed the subclavian vein opposite the insertion of the scalenus anticus, and entered the thorax in front of internal mammary artery and right innominate vein, and then passed down by the cava and pericardium as usual. He also referred to the frequency with which the phrenic nerve passed behind instead of in front of the internal mammary artery.

Professor Birmingham suggested that the phrenic had perhaps associated itself with the nerve to the subclavius for some distance in this specimen.

Professor Fraser had seen Dr. Barton's specimen when undergoing dissection, and he had thought of the explanation suggested by Professor Birmingham, which was not applicable in this case, as the abnormal phrenic lay too far in.

Dr. Barton had failed to find the nerve to the subclavius, as the dissection had gone on some way when his attention was called to it. The course did not agree at all with that of the nerve to the subclavius.

Muscular Fibres of the Œsophagus.

Professor Birmingham read a paper in which he pointed out (supporting his views by several specimens) that the usual description which made the longitudinal fibres of the œsophagus divide above into three bands, two of which were said to be attached to the inferior constrictor and a third to the ridge of the cricoid, was inaccurate. He showed that these longitudinal fibres formed two chief bands above, which were first placed laterally and then wound round to the front, where, meeting, they passed into a tendinous band ¼ inch wide, and this was attached to the top of the back of the cricoid at the upper end of its ridge. He also explained in detail the arrangement of the muscular fibres at the upper end of the tube, and showed the part played by the inferior constrictor in uniting the pharynx and œsophagus.

Muscular Fibres of the Stomach.

Professor Birmingham also read a communication on the arrangement of the muscular fibres of the stomach. He agreed with the usual description of the longitudinal fibres. With the description of the circular fibres found in all the textbooks he could not agree. These fibres were described as forming rings round the organ from the fundus to the pylorus. This was inaccurate. The fibres which formed rings round the fundus and the adjacent part of the stomach to the left of the œsophagus belonged to the deepest or oblique layer of the muscular coat. The detailed arrangement of the oblique fibres was given, and the connection of the three layers with the fibres of the œsophagus and the points brought out were illustrated by dissections of stomachs in which the muscular fibres were well developed.

Laryngological Society of London.—At a meeting of this society on June 8th, H. T. Butlin, F.R.C.S., President, in the chair, Dr. Permewan showed a Tumour removed from the œsophagus by subhyoid pharyngotomy. The tumour was benign, and was very easily shelled out and removed. The patient, however, died on the tenth day from septic pneumonia, three days after the removal of the tracheotomy tube. Dr. Permewan raised the question of the liability of a fatal issue in these cases, and suggested that they should be treated on the principles advocated by Mr. Butlin in thyrotomy—namely, that the wound should be left open. Mr. Symonds attributed the result to infection of the connective tissue planes. He advised that after suture of the mucous membrane the wound should be packed for two days with iodoform gauze, as the best means of excluding this danger.—Mr. Lake showed (1) a case of Tuberculous Ulcer of the Nasal

Septum, in a man aged 28; (2) a case of Tuberculoma on the Right Vocal Cord; (3) a Cured Case of Laryngeal Tuberculosis in a man aged 35.—Mr. SYMONDS showed a man, aged 65, with Epithelioma of the Base of the Epiglottis, also involving the tongue. The man came to the out-patient department at Guy's Hospital for the lump in his neck. The case was beyond operation on many grounds, and was exhibited to illustrate the large glandular infection in these cases; the patient had only recently complained of dysphagia, and noticed the glandular swelling two months before the dysphagia began. Dr. BOND drew attention to the comparative frequency with which patients sought relief for glands in the neck secondary to malignant disease in the larynx before complaining of inconvenience due to the primary growth. Mr. WAGGETT pointed out the value of orthoform in relieving the pain in advanced ulceration of the larynx, due to malignant disease. Dr. HERBERT TILLEY had had similar experiences in the application of this remedy to relieve the dysphagia of tuberculous ulceration of the pharynx and larynx.—Dr. DUNDAS GRANT showed a case of Removal of Small Fibroma of Vocal Cord with extremely Pendulous Epiglottis.—Dr. JOBSON HORNE showed the Right Half of a Larynx cut into a series of microscopical sections to demonstrate the topography and nature of a tongue-like growth dependent from the roof of the ventricle. Dr. Horne considered that the specimen perhaps threw light upon the histology of some of those tumours variously described as prolapsus, procidentia or hernia ventriculi, or fibroma ventriculi; and if seen during life it would probably have been described under one or other of these terms. Under the microscope the tongue-like excrescence was seen to be very similar in structure to the adjacent ventricular band. It was covered from root to tip with a columnar epithelium, which at points of pressure had been worn away, but had undergone no metaplasia. The growth, taken as a whole, suggested a duplication of the ventricular band.—Dr. WATSON WILLIAMS showed a pair of Laryngeal Forceps which had been made from his design. By means of two finger openings in the lower handle, greater steadiness in manipulation was obtainable than in many of the ordinary patterns in use.—Mr. LAWRENCE showed a case of Papilloma, springing from the juncture of the uvula and soft palate on the left side, in a boy aged 15.—Dr. PEGLER showed a case of Dislocation of the Triangular Cartilage of the Septum.—Dr. SNELL showed a case of Tuberculous Laryngitis in a married woman, aged 21.—Mr. H. BETHAM ROBINSON showed a case for diagnosis—a man, aged 38, with a tumour of the right vocal cord.—Dr. J. W. BOND showed a female infant of 10 months, who had always had a great difficulty in swallowing fluids. There was no history of diphtheria.—Dr. JOBSON HORNE showed a case of Tuberculosis, extensively involving the larynx, soft palate, and left tonsil, in a young man aged 21, who had sought relief for dysphagia and aphonia.

MANCHESTER THERAPEUTICAL SOCIETY.—At the annual general meeting on June 29th, Dr. LEECH, President, in the chair, the report of the Committee recording the work of the session, and expressing the opinion that the inaugural session gave very satisfactory promise for the future of the Society, was read and adopted. The following office-bearers were elected for the session 1898-99: *President:* Professor D. J. Leech, M.D., D.Sc., F.R.C.P. *Vice-Presidents:* Professor J. Dreschfeld, Professor J. Dixon Mann. *Honorary Treasurer:* Dr. R. T. Williamson. *Honorary Secretary:* Dr. R. B. Wild. *Committee:* Dr. A. Brown, Dr. F. J. H. Coutts, Dr. A. Hopkinson, Dr. T. N. Kelynack, Dr. J. E. Platt, Dr. A. T. Wilkinson. There was an exhibition of specimens of the new pharmacopœial drugs and those preparations which have been materially altered, and Dr LEECH read a paper dealing with the new drugs introduced, and pointing out the nature and importance of some of the changes which have been made.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND. At a meeting on June 29th, the President, Dr. RADCLIFFE CROCKER in the chair, Dr. RUFFNACHT WALTERS read a short paper descriptive of a papular and urticarial rash in a dog. It was apparently due to "red mange." The dog was exhibited. The rash had been communicated to Dr. Walters's children and to another child.—The following cases were shown by the President: (1) A case of Large-spored Ringworm in a girl aged 8. It was interesting, as it compared with alopecia areata. The large spores had been discovered microscopically. (2) Multiple Lupus Verrucosus in a girl aged 13. It had existed for twelve years, starting after an attack of varicella.—Mr. PERNET showed for Dr. SAVILL a case of (?) Angio-neurotic affection in a woman. The case had been previously brought before the Society during the past session.—Dr. A. EDDOWES showed a girl suffering from Morphœa.—Dr. WALSH showed a girl aged 18 with a Congenital Elephantiasis of the Right Eyelid combined with a lymphangiomatous condition of both the ocular and palpebral conjunctiva. The cases and paper were discussed by the PRESIDENT, by Dr. A. EDDOWES, Dr. PHILLIPS-CONN, Dr. WALSH, Mr. PERNET, and others.

REVIEWS.

NASAL OBSTRUCTION. By W. J. WALSHAM, M.B., C.M.Aberd., F.R.C.S.Eng., Senior Assistant Surgeon, Lecturer on Surgery, and Surgeon-in-Charge of the Orthopædic Department, St. Bartholomew's Hospital. London: Baillière, Tindall, and Cox. 1898. (Demy 8vo, pp. 264, 34 illustrations. 7s. 6d.)

INSTEAD of first describing a disease of the nose and then discussing how it may be differentiated from similar affections, Mr. WALSHAM has adopted the plan of working from the known to the unknown. In other words, he first describes the known conditions, such as redness, hardness, swelling, etc., which may be met with, and then works forwards to the unknown disease of which these are but signs and symptoms. As the symptom of symptoms, which forms his *point de départ*, he takes nasal obstruction, although this is not an invariable accompaniment of intranasal disease, and is sometimes the least noticeable. In the second chapter is given in tabular form an array of the conditions causing nasal obstruction, and it is seen that there are 68 affections which have to be diagnosed. This differentiation is worked out on somewhat the same lines as in a students' book on chemical analysis. Thus, if such and such a condition is found, then we are directed to "commence below at section 5; if otherwise, pass on to section 215, chapter x." Or we are told to "inquire as to its duration and rate of growth. If it is of slow growth, begin at section 44; if of rapid growth, pass on to section 46." After having our attention distracted in this way, or else being sent from post to pillar in search of the elusive morbid condition, we finally come to a paragraph with a sort of auctioneer's description of the obstruction, as that it is smooth, rounded, dull red, soft, etc., and finally the diagnosis is arrived at in a sentence printed in italics.

In the process by which, in this method, a diagnosis is reached each affection frequently turns up repeatedly in different paragraphs, and all its distinguishing features are catalogued anew.

Mr. Walsham is a lecturer of long experience, and he tells us that he has constantly employed this method in teaching general surgery, and that it seemed to him it would be especially useful if applied to the diagnosis of nasal disease. We cordially share his opinion that the method of working from the known to the unknown is admirable, and strongly to be recommended in laying the foundations of clinical observation both in general and special surgery. But it remains open to question whether the methods of oral instruction, as employed in teaching students how to use their faculties of observation, do not lose much of their value when incorporated in that form in a book of 250 pages. "College grinds" are perhaps necessary institutions; but they are surely only suitable for *viva voce* instruction. The student requires such a smattering of rhinology that he is hardly likely to avail himself of the work under consideration. The practitioner has already had his training in observation, and looks to a book for something of a different character.

But the book is not limited to the diagnosis of the various conditions causing nasal obstruction; the last 100 pages are devoted to their treatment. This is the best, as it is the most interesting, portion of the work. It shows the advantages of the author's position as a general surgeon, while at the same

time we can see the *défauts de ses qualités*. Thus, there are excellent descriptions of the various operative methods for exposing growths in the naso-pharynx. The author's opinion as to the various methods of turning in or out the superior maxilla, hinge-like, and its subsequent replacement, should be borne in mind. This is apt to be so tedious, and attended with so much hæmorrhage, that it is not recommended. As a rule the advice with regard to treatment is wise and trustworthy, and the directions are clear and simple. There appears, however, a tendency to overlook the refinements and simpler procedures introduced by specialists. It is stated that naso-pharyngeal growths can be removed only with the blunt raspatory in those cases in which preliminary exposure has been obtained. But in a recent communication to the Académie de Médecine Doyen has insisted on the fact that every operable naso-pharyngeal growth can be removed by attacking it either through the nasal fossæ or by the mouth without preliminary exposure. Again, the median vertical incision is mentioned for opening the frontal sinus, although the lateral curved incision leaves practically no disfigurement. In the description of the employment of the transillumination lamp for the detection of antral empyema there is no reference to the subjective sensation of light in the patient's eye—a sign which by many is regarded as more valuable than translucency. We are not warned that although the deafness of adenoid vegetations is as a rule insidious, yet an acute otitis may be the first warning of their presence. And although much attention has lately been given to the tuberculous nature of post-nasal adenoids, we think the statement hardly justified that "children with adenoids are often tuberculous." The difficulties which the author appears to have met with in curing traumatic adhesions between the turbinals and the septum are generally overcome by wearing a celluloid plate for a few days after dividing the adhesion. For collapse of the alæ he does not mention Moritz Schmidt's dilator, which, although hardly suitable for use during the day, is sufficient to make many patients comfortable at night.

An Atlas of Histology for the Use of Students. By Arthur Clarkson, M.B., C.M.Edin. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1898. (Demy 8vo, 88 plates, with descriptive letterpress, 9s.)

This book is a separate issue of the 174 original coloured illustrations from Dr. Clarkson's *Textbook of Histology*, and the author states in his preface that the publication has been undertaken to enable the student to use them for private study and also during the progress of a class.

We quite recognise that in the preparation of these plates the author has manifested considerable skill and undaunted patience. In the great majority of instances the illustrations themselves are well drawn, beautifully reproduced, and are faithful representations of the microscopic appearances intended to be shown. Many, however, are too diagrammatic to be described by the adjective "faithful," and we fear that the student will often be disappointed when he cannot find in his own preparations the well-marked outlines and the sharp distinctions between tissue and tissue which are here shown in such brilliant tints. In view, too, of the recent developments of the histology of nervous tissues, we regret the paucity of illustrations devoted to the nervous system; such valuable methods as those of Golgi and Marchi are not illustrated at all.

From a general standpoint we doubt the utility of the publication of such a book at all. In the early days of histology an atlas, like the map of a little-known country, had its obvious advantages, and in textbooks illustrations have still their legitimate use in brightening the pages and making clearer the author's words. But students nowadays should not employ such an atlas for private study, any more than a student of anatomy should use an atlas of anatomical plates instead of dissecting the body himself. The preparations which he has made for himself may not be so excellent as those from which these drawings were made, but a study of the actual thing will teach him much more than the most perfect of plates. Then, too, during the progress of a class we should prefer that the student should make an atlas for himself; his drawings may be entirely devoid of artistic skill and be of the roughest description, but they will be an evidence of his industry, and will lead him to a real understanding of the specimens he has made, and will, in fact, enable him to obtain that grip of the subject which drawings executed by somebody else can never do.

If the present atlas is merely used as a model of what the student should himself produce, if he refrains in his drawings from copying those of Dr. Clarkson instead of copying his own preparations, then we would welcome the appearance of this book. But knowing as we do the nature of the average medical student, we fear that if this atlas obtains a wide circulation its use will hardly be limited to this small but useful office.

Le Suc Ovarien, Effets Physiologiques et Thérapeutiques. [The Physiological and Therapeutic Effects of Ovarian Juice.] Par Dr. L. Bestion de Camboulas. Paris: J. B. Baillière et Fils. 1898. (Royal 8vo, pp. 120, 3 plates. Fr. 4.)

It has been asserted that the administration of ovary or of ovarian extract is beneficial in various abnormal conditions peculiar to the female sex: to wit, (1) troubles, nervous and other, resulting from the natural menopause, or from a menopause resulting from removal of the ovaries; (2) chlorosis and chlorotic amenorrhœa, (3) membranous dysmenorrhœa, (4) mental affections, (5) osteomalacia. The author of this treatise has collected a number of cases of these maladies, some of them observed by himself, but most previously published by others, in which more or less benefit has appeared to follow the administration of fresh or dried ovary, or of glycerine or other extract of ovary by the mouth. Of the maladies—(3) and (5)—above enumerated, the evidence of benefit from the treatment is so slender, and the cases are so few, that they may be passed over without further remark. In all the others, numerous instances are given in which distinct benefit, if not actual cure, was to all appearance the result of the treatment, although there are also a considerable number in which the effect was, to say the least, doubtful. It is, moreover, difficult to eliminate the result of "suggestion" in some of these affections; and another factor which must be taken into consideration is that other forms of medicinal treatment, as well as the regularisation of diet, may well have contributed to the beneficial results recorded. It will require a far larger series of observations, and they must be accompanied by control experiments with extracts of other glandular organs before we can admit as definitely proved a specific action of the ovarian juice in female maladies.

But the author has not contented himself with noting the results of clinical observations; he has attempted to observe the physiological effects upon animals of "ovarian juice" (*suc ovarien*). By this expression he means a glycerine extract of ovary, diluted with twice its bulk of water, and passed under pressure through a Chamberland filter.

Apparently infected with the idea that males and females ought to behave differently under the influence of "ovarian juice," he takes his animals—mostly guinea-pigs—in pairs, and injects the glycerine extract generally under the skin, more rarely into the peritoneum. The doses employed are astonishing. For guinea-pigs weighing about half a kilogramme, from 10 c.cm. to 40 c.cm.; for rabbits of 1½ to 2½ kilogrammes from 15 c.cm. to 60 c.cm.; for dogs weighing 12 or 13 kilogrammes—say about the size of a large fox terrier—from 200 c.cm. to 360 c.cm.! Small wonder that most had extensive œdema, generally resulting in abscesses, that the animals moped and refused food, that some died, and that changes were found in the liver and kidneys.

The author states that the "juice" is more poisonous to males than to females, because in the comparatively few experiments which he made more of the males injected died. But sometimes the female died as well as the male, and sometimes the female died and the male did not! In nearly every such case the necropsy showed one or more embryos in the uterus! He therefore argues that the fatal result is due to a temporary inactivity of the ovaries. But he does not take the trouble to kill and examine the females which did not die. Had he done so it may safely be affirmed that in 9 out of 10 there would also have been embryos present.

Towards the conclusion of his research it seems to have suggested itself to the author that the glycerine used might have been a factor in producing some of the results, and that there might be individual peculiarities apart from sex. As a matter of fact, many of the doses of glycerine employed were unquestionably in themselves lethal (8 grammes per kilogramme being about the lethal dose). This the author himself found to have been the case by obtaining similar fatal results with glycerine and water alone. Nevertheless he still holds that the effects obtained are due to ovary, because with aqueous extract in large doses a fatal result sometimes followed. But here, again, there were no control experiments with a similar amount of aqueous extract of other glands, nor is it clear that the septic factor was eliminated. Throughout the whole research there was no attempt made to extract the supposed active principle from the organ. No observations are recorded, either upon the blood pressure or pulse or respiration, and although the temperature is taken, no explanation is forthcoming of the fact that this sometimes rises and sometimes falls as the result of an injection, nor does the author appear to have taken any series of temperature observations upon the normal animal prior to injection. In short, the manner in which the physiological problem has been attacked furnishes an excellent object lesson of "how not to do it." Nevertheless, the author, at the end of the chapter which deals with this problem, remarks: "Connaissant l'action de l'ovaire sur les animaux, nous avons voulu, avant de l'employer en thérapeutique, l'essayer sur l'homme sain. Nous avons pris pendant huit jours du suc ovarien aux doses de 1, 2, and 3 cent. cub. sans nous en trouver mal (30 c.cm. for a guinea-pig, 3 c.cm. for a man!).....nous n'avons noté durant ces essais qu'une légère excitation génitale. L'appétit a augmenté; nous n'avons jamais eu de maux d'estomac. Rien de particulier à noter par ailleurs"!

Prostitution und Frauenkrankheiten: hygienische und volkswirthschaftliche Betrachtungen. Vortrag gehalten im Verein für öffentliche Gesundheitspflege zu Frankfurt-am-Main. [Prostitution and Diseases of Women: Hygienic and Political Economic Considerations. Reported before the Public Health Association, Frankfort-on-Main.] Von Professor Dr. Med. Max Flesch. Praktischem Arzt und Frauenarzt in Frankfurt-am-Main. Frankfort-on-Main: Johannes Alt. 1898. (Demy 8vo, pp. 60. M.1.)

Dr. Flesch holds extreme views diametrically opposite to those propounded so vehemently by British humanitarians. He maintains that venereal diseases compromise the public good, and above all prove disastrous after marriage. His main principle is that married life must be protected from disease contracted by the husband before matrimony. The police and sanitary authorities should, he thinks, take such matters in hand. He conscientiously believes that prostitution is a necessary evil, which is increased rather than abated by contemporary tendencies. Young men show more and more timidity in taking on themselves the responsibilities of married life. Political and social ideas now current admit the right of women to take a public part in efforts for the cause of morality, but people are not agreed about what a right means, and the same tolerant ideas lead many women to think they may do as they please. The abstract side of this question is seen in the two opposite doctrines now so often propounded in literature, light as well as heavy. The prostitute is not necessary; she must not be recognised, and must be abolished, say certain moralists, and those who think otherwise are *ipso facto* immoral. She is necessary; indeed she is a saviour of society; she must be recognised and protected, say another school of moralists, who also hold that the opposite faction runs a grave responsibility in turning its back on a crying evil.

Dr. Flesch declares that the prostitute must be recognised and protected against the scum of humanity, which from time immemorial has endeavoured to live upon her, plunder her, make other women like her, and encourage men in those failings which make her a necessary institution. Compulsory suspension of the exercise of her calling whenever she contracts disease, and medical treatment in the meanwhile, are duties which the law should enforce. But complete cure and treatment of chronic *lues* are impossible by a mere system of examination. As, however, the prostitute is to be recognised, she must be made responsible and liable to severe punishment if she spreads contagion. She must be forbidden to ply her vocation until she is cured. Treatment is strictly in the interest of society, and of herself recognised by society, and not in the interest of men who dread disease yet do not control their instincts. Above all, the protection of a future wife from venereal disease contracted by a future husband is one of the foremost duties of society, and the recognition of the prostitute on the above lines greatly promotes the wife's safety.

It is a remarkable fact that Dr. Flesch openly advocates what has recently been urged by a well-known authoress, an extreme opponent of the recognition and control of prostitution. In order to counteract the tendencies which increase the evil, he suggests that when girls have finished their school days they should be informed by their teachers that every woman who gives way to irregular sexual relations exposes herself to grave physical and social dangers. He further reminds religious objectors to his doctrine that the Church has had to tolerate the institution in past times, and that, if there be responsibilities in recognising prostitution, there are also responsibilities in ignoring it.

Such are Dr. Flesch's views, and they deserve consideration. Comment is quite useless, for questions of sentiment are inextricably mixed up with the subject. Sentiment cannot always be satisfied by the most clear reasoning; whilst in itself it is a thing to be taken into account and respected. It controls opinion, which rules the world, yet it is not always open to reason. Dr. Flesch does not state very clearly how Society could be reconciled to the recognition of the prostitute, nor by what steps such recognition could be gained. The idea of making her responsible for spreading disease which has become chronic, and thus defied treatment or detection by examination, seems based on faulty conceptions of human nature and of criminal law. The prostitute cannot be sure that she is free from communicable disease, and proof of her guilt in any one case where she does infect another would be impossible for justice or medicine to determine. On the other hand, she would hardly be more conscientious than members of honourable callings, who, to earn bread, often work when unfit through illness to do their duties properly, and too often join their companions before they can be certain that the malady from which they are convalescent can no longer do harm to others.

Respiratory Exercises in the Treatment of Disease. By Harry Campbell, M.D., B.S., F.R.C.P. London: Baillière, Tindall, and Cox. 1898. (Demy 8vo, pp. 208. 7s. 6d.)

In his preface to this work Dr. Campbell states that by modifying the respiratory movements in certain ways we can produce profound effects upon the organism, and that properly devised respiratory exercises, founded on physiological principles, have a great therapeutic value. More than two-thirds of the whole work are devoted to the enunciation of these physiological principles, and the author mercifully warns his readers at the outset that the practical part of the book begins at Chapter xx. The first nineteen chapters are occupied by detailed description and commentary on the various factors which are concerned in the production of the respiratory movements. To those who are dissatisfied with the accepted theories Dr. Campbell's commentaries will be interesting, but the reader must be careful to distinguish between those arguments which are founded on trustworthy evidence and those which rest on assertion only. That the author's style is original and occasionally obscure may be gathered from such sentences as the following: "The pleurae consist of two large lymphatic sacs into which the lymph is pumped from the peritoneum by the respiratory movements, and thence through the lungs and thoracic parietes. Their chief function is to enable the lungs to expand equally and in all directions." The natural respiratory movements are classified as pancostal, lower costal, and abdominal. These distinctions are useful for descriptive and argumentative purposes, but it would perhaps be a little difficult to get any but the most intelligent patients to draw fine lines of distinction between them for

therapeutic application. The question of the respiratory movements required for singers is fully discussed, and here again Dr. Campbell takes pity on the busy reader by warning him at the outset that he can offer no conclusions as to the best method of breathing for singers. The influence of the respiration, and especially of forced and abnormal respiratory movements on the circulation of the blood, is referred to at considerable length, but the author dwells almost entirely on the mechanical side of the question, and but little is said of the chemical results of accelerated or impeded respiration.

Turning to the final third of the book, which deals with treatment of morbid conditions, chiefly of the heart, lungs, and digestive organs, some very precise instructions will be found as to the way in which the respiratory movements recommended by the author are to be carried out, if only the patient can be induced to persevere with them, but it is somewhat disappointing to find that the only recorded cases of success are in highly neurotic subjects.

The book may be commended to those who have the leisure to roam in fields of scientific speculation, but as a contribution to medical knowledge it is too little supported by proof and illustration to be very convincing to the busy practitioner.

PROFESSIONS FOR BOYS, AND HOW TO ENTER THEM. By M. L. PECHELL. With a Preface by the Rev. J. E. C. WELLDON, Head Master of Harrow School. London: Breton and Co. 1898. (Cr. 8vo, pp. 149. 2s. 6d.)

MR. WELLDON remarks that hitherto "no existing book has afforded what may perhaps be called a conspectus of all such professions as are open to the young in the English-speaking world." This work may to some extent fill such a gap. It "sets forth the laws, conditions, opportunities, emoluments, and drawbacks of the professions," and the information collected by the author will be valuable to parents, guardians, and youths.

The book plunges at once into details, grouping the professions under three divisions—"Home," "Indian," "Miscellaneous." Under the first division are found the navy, army, civil service, law (bar and solicitors), medicine, church, engineering, and mercantile marine. To each of fourteen Indian professions a chapter, averaging three or four pages, is devoted. That on the medical service apparently affords all the necessary information to enable a young practitioner to estimate his fitness for such a post and the desirability of his competing for it. In the third division such diverse careers as the consular service, Cape Mounted Rifles, farming in Canada, fruit farming in the Channel Isles, and tea planting are sufficiently described. They show how wide a field is now offered for their life work to the "sons of the Empire." But, although the author describes thirty-six vocations open to young men, he is silent respecting others, such as those of schoolmaster, artist, musician, journalist, etc., upon which readers might expect to find some information.

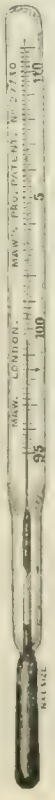
NOTES ON BOOKS.

Chavasse's Advice to a Wife on the Management of her Health. Revised by FANCOURT BARNES, M.D., F.R.S.E. Fourteenth Edition. (London: J. and A. Churchill. 1898. Fcap. 8vo, pp. 312. 2s. 6d.)—The reappearance of this classic was inevitable. Other books of the kind more up to date and more condensed, if not more to the point, continue to appear, but Chavasse we have always with us. Our fathers and grandfathers have found it good, and have handed it down to us. Yet we do not enter into our inheritance of the fourteenth edition undismayed. Only one thing could, to our mind, jar the serenity, the wisdom, the sweet humanity, and the sound sense of this old book, and that is any attempt, while preserving its general character, to bring it up to date. Antiseptics and bicycles are as much anomalies in its pages as coloured Doulton bricks would be in the restoration of Westminster Abbey. Again there is a section of modern society to whom Chavasse has already become less useful because more entertaining reading. Those belonging to it tend to be satisfied with the broad axioms of current hygiene, and are disposed, not entirely unwisely, to dispense altogether with handbooks about themselves. Also the modern woman when she wants books of the kind buys her own. She may not buy so well—but does she tend to buy Chavasse? Our respect for Chavasse is so profound that we find it painful to hear the simplicity of age derided or questioned by an upstart generation, and we suggest that honourable retirement to an honoured and special shelf detracts nothing from the good influence of either old books or old men.

La Grippe [Influenza]. Par L. GALLIARD, Médecin de l'Hôpital Saint-Antoine. (Paris. 1898. J. B. Baillière et Fils. 16mo, pp. 100, with 7 illustrations. Fr. 1.50.)—This is the first of a series of miniature monographs to be issued under the general title of *Les Actualités Médicales.* It offers a succinct but explicit account of influenza, thoroughly up to date, and at the same time notably free from prejudice. A typical epidemic is first described, and then a few pages are devoted to the account of the microbes, the pathogenic properties of which the author admits to be as yet not completely established. Next the symptoms are described in detail, and then follows a full synopsis of the clinical forms of the disease. The various forms are described, and special sections treat of influenza in the aged, its relations to various acute and chronic diseases, and to the rheumatic diathesis. The remaining chapters are concerned with complications, treatment, and prophylaxis. Dr. Galliard's style is clear, incisive, and at times witty; his facts are accurate and well-ordered, and his conclusions temperate and practical.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.



Improved Clinical Thermometers.—The difficulty experienced in shaking down the index of most clinical thermometers after use, which is usually increased where rapidly registering instruments are employed (because of their fine bores), has been overcome in the thermometers now being manufactured by Messrs. Maw, Son, and Thompson. A gentle jerk of the hand sends down the index 6° or 8° F., which quite suffices to set it for use again. The risk of breakage by the snapping off of the bulb containing the mercury is consequently reduced to a minimum; and this frequent cause of expense is saved. The instrument sent to us to be tested is not quite 4¼ inches in length, and the register from 95° to 110° occupies exactly 2 inches of its length. This principle of construction has been extended to all forms of clinical thermometers, with only slight enhancement of price, which for the "half-minute" form is 40s. per dozen, and for the "half-minute" form with magnifying index (which is the most expensive on the manufacturer's list) is 76s. per dozen. One of these instruments which has been in constant use for more than a month has given unqualified satisfaction.

An Arch Support for the Feet.—Mr. J. Pond (Norwich) has sent us a pattern of a cork sole containing a steel arch for the support of the foot. The idea is somewhat similar to that of the well-known Whitman's steel brace. Although not embracing all the mechanical features of that ingenious contrivance, we think that the arch support will be found very useful in the prevention of flat feet in those who are compelled to stand for many hours daily. It will also be of service in alleviating the pain of early flat foot, when there is relaxation of the ligaments without much displacement of the bones; but we doubt if the support will be tolerated in advanced cases on account of the pain caused by the contact of the steel with the displaced bones.

ASSOCIATION INTELLIGENCE.

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A MEETING of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.—The meeting for election of a Vice-President and officers for the ensuing year, will be held at 111, Sinclair Road, West Kensington Park, W., on Thursday, July 14th, at 5 P.M. The District Committee will meet at 4.45 P.M. to receive the report of the Honorary Secretary as sent to the Council of the Branch.—THOMAS DUTTON, M.D., 13, Holland Park Avenue, W., Honorary Secretary.

NORTH WALES BRANCH.—The forty-ninth annual meeting will be held at the Royal Hotel, Llangollen, on Wednesday, July 13th, at 1.45 P.M. Dinner at 5 P.M. prompt, tickets 5s. each. After the usual Branch business the President will deliver his address, and the following communications will be read:—H. Davies Jones (Llangollen): (1) Psoriasis, with photographs; (2) Foreign Bodies from Ear. Griffith C. Wilkin (London): Epithelioma of Ear treated by Pyoktanin. W. Permewan, M.D., F.R.C.S. (Liverpool): Tumour of Œsophagus removed by Subhyoid Pharingotomy. Charles Macalister, M.D. (Liverpool): Lantern Demonstration (1) of Deformities in Osteo-arthritis; (2) of *Post-mortem* Appearances in Complete Transposition of Viscera.—W. JONES-MORRIS, Is-y-coed, Portmadoc, Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The thirty-fourth annual meeting will be held in the Town Hall, Sunderland, on Monday, July 11th (not July 12th, as previously announced), at 4.30 P.M. Business: Minutes of the last meeting. The retiring President, Dr. McDowall, will vacate the chair in favour of Dr. Robinson, President-elect, who will deliver an address on the Repression of Consumption, and a Plea for Open-air Sanatoria in England—a New Crusade. The object of the address is to suggest the formation of a society for this purpose in the area covered by the Branch. Dr. F. Rufenacht Walters will speak on Sanatoria for Consumptives. Report of the Council of Management and Treasurer's account. Report from the Representative on the Parliamentary Bills Committee. Election of officers for 1898-99, of representatives on the Parliamentary Bills Committee. The report of the Constitution Committee of the Association. Dr. Murphy will make suggestions for using the Branch as a factor in medical politics. Members of the profession who are not members of the Branch will be welcome to attend the meeting. The dinner after the meeting will take place at the Grand Hotel, at 6.30 P.M., 6s. 6d. each, without wine.—C. [illegible], F.R.C.S., 8, Eldon Square, Newcastle-on-Tyne, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH.

THE sixty-second annual meeting of this Branch was held at Wigan on June 28th. The chair was taken by Dr. SAMUEL WOODCOCK (retiring President), and there were about 100 members present from all parts of Lancashire and Cheshire.

Confirmation of Minutes. The minutes of the last annual and the intermediate meetings were confirmed.

Report of Council and Financial Statement. The report of Council was read as follows: The Council of the Lancashire and Cheshire Branch of the British Medical Association have much pleasure in presenting their report for 1897-98 to the members assembled in annual meeting at Wigan. Your Council have held eight meetings during the year, and there were two well-attended meetings of the Branch held in Warrington and Liverpool. Your Council, and your representatives on the Central Council and on the Parliamentary Bills Committee, have been alert in all questions of medical reform, and have kept a watchful eye on the recently proposed midwifery legislation. A deputation was appointed to interview members of Parliament and otherwise oppose the last objectionable Midwives Bill, but the firm and commendable attitude assumed by the Lord President of the Privy Council rendered the work of this deputation almost superfluous. Your Council regret that the question of medical defence has not yet been taken up by the Association, and that many needful reforms in the management are still only under consideration. There has been quite an unusual number of changes in the *personnel* of the Branch during the year. There has been a large accession of 83 new members, while the number has been depleted by 20 deaths, 37 resignations, and 16 names were removed on account of non-payment of subscriptions; this leaves a net gain for the year of 10, and the total number on the books is now 1,069. The Branch has not only suffered a severe loss in the unusual number of deaths, but some of our most prominent members have been thus removed. Among those we must specially mention the names of Mr. Edward Lund, a former President; Dr. John Holden, a Vice-President; Dr. Starkey Smith, a former Vice-President; Dr. James White and Dr. G. W. Johnston, of Wigan; Dr. Rhodes, of Glossop; Dr. T. W. Rhodes, of Northenden; Dr. Moss, of Congleton; Dr. Court and Dr. Taylor, of Bolton; Dr. R. Hibbert Taylor and Dr. Turnbull, of Liverpool. The financial position of the Branch is in a sound condition, there being a balance at the end of last year of £438 19s. 10d.:

Statement of Account as at December 31st, 1897.

1897. RECEIPTS.	£	s.	d.	DISBURSEMENTS.	£	s.	d.
Balance from 1896	394	18	6	Printing and Stationery ...	28	3	8
Subscriptions	129	9	9	Postages	19	0	4
Bank Interest, less Commission	3	1	5	Travelling Expenses ...	4	6	6
				Trav. Ex. of B.P.C.	10	2	0
				,, ,, Mr. Anderson	3	3	0
				Midwives' Deputation ...	17	7	4
				Medical Directory	0	10	6
				Council Meetings	0	15	6
				Sundries	2	6	6
				Clerk's Work	2	14	6
				Cash in Bank, and in hand	438	19	10
	£527	9	8		£527	9	8

JAMES BARR, M.D., Honorary Secretary.

Examined and found correct,

D. A. O'SULLIVAN } Honorary Auditors.
JOSEPH THORNLEY }

May 15th, 1898.

—On the motion of the PRESIDENT, seconded by Dr. TAYLOR, the report of Council and financial statement were unanimously adopted.

Introduction of the New President.—The PRESIDENT said he had now to relinquish his office, though he could not do so without giving expression to his gratitude for the uniform kindness and courtesy which had been extended to him as President of the Branch during the last twelve months. He referred to the valuable assistance of Dr. Barr, and said he was happy to be able to say that he had twelve months of office which had been twelve months of enjoyment, and he hoped he had discharged his duties in such a way as to bring no discredit to the chair. He had now the most agreeable duty of introducing his successor, Dr. Berry, and of wishing him twelve as prosperous months as those they had just completed. Dr. BERRY, the new President, then took the chair amid loud applause.

Vote of Thanks to Retiring President.—On the motion of Dr. TAYLOR, seconded by Dr. MUSSON, a hearty vote of thanks was accorded to the retiring President, Dr. Woodcock, the other office bearers and members of the late Council for their past services.—Dr. WOODCOCK replied in a very facetious speech, which was much appreciated.

President's Address. Dr. BERRY delivered his inaugural address on the Advancement of Public Health during the last Quarter of a Century, which will be published.

Vote of Thanks. Dr. WOODCOCK proposed a vote of thanks to Dr. Berry for his address. They were extremely obliged

to him for it, and he was sure it had involved much time and trouble to get all these facts and figures arranged in such a striking and lucid manner. The motion was seconded by Dr. BARR, who said that he had listened with appreciative attention to the address, which was such as they might expect from their industrious and painstaking President. It was an address which would redound to the credit of the Branch, and one which he hoped to see widely diffused through the medium of the BRITISH MEDICAL JOURNAL. As seconder to the vote of thanks, he put it to the meeting, and it was carried with acclamation.—Dr. BERRY, in his reply, said he would do his best to maintain the highest traditions of the Branch.

Auditors.—On the motion of Dr. WOODCOCK, seconded by the PRESIDENT, the honorary auditors, Dr. D. A. O'Sullivan and Dr. Joseph Thornley were heartily thanked for their past services, and re-elected for the ensuing twelve months.

Election of Officers.—Dr. BARR, the Honorary Secretary, now announced the election of the officers and Council for 1898-99 as follows:—*President:* W. Berry, F.R.C.S.I., Wigan. *President-Elect:* Charles Macfie, M.D., Bolton. *Vice-Presidents:* Thomas Jones, F.R.C.S., Manchester; and B. J. Massiah, M.D., Didsbury. *Honorary Secretary:* James Barr, M.D., Liverpool. *Representatives in the Council of the Association:* J. Barr, M.D., Liverpool (General Secretary); J. Brassey Brierley, M.D., Manchester; E. H. Dickinson, M.D., Liverpool; A. Godson, M.B., Cheadle; Edwin Rayner, M.D., Stockport; Samuel Woodcock, M.D., Manchester. *Representatives in the Parliamentary Bills Committee:* T. R. Bradshaw, M.D., Liverpool; A. Godson, M.B., Cheadle; A. Brown Ritchie, M.B., Manchester; S. Woodcock, M.D., Manchester. *Members of Council:* *J. P. Aitchison, M.D., Blackburn; William Armstrong, Buxton; F. H. Barendt, M.D., Liverpool; A. Bernard, M.B., Liverpool; H. W. Boddy, M.D., Manchester; *Owen Bowen, Everton; C. G. Campbell, Uppermill; W. M. Campbell, M.D., Liverpool; William Carter, M.D., Liverpool; J. Nelson Cregeen, Liverpool; A. Davidson, M.D., Liverpool; E. T. Davies, M.D., Liverpool; *W. H. Dobie, M.B., Chester; *J. E. Dunn, Preston; T. E. Flitcroft, Bolton; *T. Fort, Oldham; E. A. Fox, M.D., Warrington; *C. E. Glascott, M.D., Manchester; J. G. Gledhill, Hollinwood; C. R. Graham, Wigan; *W. Hall, M.D., Lancaster; A. C. E. Harris, M.D., Birkenhead; R. Harris, M.B., Southport; T. E. Hayward, M.B., Haydock; *S. Heap, Rochdale; T. Arthur Helme, M.D., Manchester; J. M. Hunt, M.B., Liverpool; Horace Jefferies, Bolton; T. M. Johnson, M.D., Salford; *G. M. King, Preston; J. Lambert, M.D., Birkenhead; J. T. Neech, Tyldesley; D. A. O'Sullivan, Southport; *John Parks, Bury; H. Laird Pearson, Birkenhead; *C. J. Renshaw, M.D., Ashton-on-Mersey; *R. J. Richardson, M.B., Liverpool; D. Lloyd Roberts, M.D., Manchester; *G. Robertson, M.B., Oldham; R. Robertson, M.D., Liverpool; James Robinson, M.D., Dunscar; A. Stewart, M.D., Pendleton; C. T. Street, Haydock; *G. G. Stopford Taylor, M.D., Liverpool; J. Thornley, M.D., Bolton; *J. J. Tisdall, Liverpool; Francis Vacher, Birkenhead; J. W. Watkins, M.D., Newton-le-Willows; *Walter Whitehead, Manchester; *T. M. Wills, Bootle. (*New nominations, being gentlemen who were not ordinary members of Council within the last twelve months.)

Vote of Thanks to the Secretary.—The PRESIDENT proposed a vote of thanks to the Secretary, Dr. Barr, for his past valuable services, and referred in feeling terms to the onerous and responsible nature of the duties, and highly eulogised the very able manner in which they had been discharged. Dr. MACFIE CAMPBELL said he had much pleasure in seconding this vote of thanks, and on being put to the meeting it was carried with applause. Dr. BARR thanked them very much for this further token of their good will. He much appreciated the kindness and consideration which he had received from members of the Branch, and although he did not take too much credit to himself he had the consciousness of one who had done his duty. With all his multifarious duties he had felt for the last year or two that the work of the Branch was too onerous for him, and he had on several occasions proposed to resign, but he had again and again been persuaded to retain office. He now announced that this would positively be the last year in which he would hold the secretaryship, but while he retained office he would discharge the duties to the best of his ability, and he hoped and believed that the Branch would then be in the most flourishing condition that it had ever attained.

Communications.—Dr. E. T. DAVIES read a paper on Abdominal Hysterectomy for Fibroid Tumours, with specimens. —Dr. C. THURSTAN-HOLLAND read a paper on Foreign Bodies and the use of the *X* Rays. This was profusely illustrated by a lantern demonstration, and it will appear in the current number of the *Liverpool Medico-Chirurgical Journal.*

Luncheon.—A very sumptuous luncheon was provided by the President and the members of the Wigan Medical Society. The visitors were really the guests of the Wigan Medical Society, and under the able direction of Dr. C. R. Graham, the local Branch Secretary, the day was one of the most enjoyable which have been spent by the Branch. After luncheon the Parish Church and Free Library were visited, and a guidebook specially prepared for the occasion supplied the visitors with some interesting particulars about these institutions.

Exhibits.—There was a large exhibition of new drugs, chemicals, medical and surgical appliances, etc., which attracted much attention.

Excursions.—At 4 P.M., business in the strict sense of the term was over, and the rest of the day was devoted to pleasure. Three excursions were arranged, the most popular being that to Haigh Hall, and the members were abundantly provided with conveyances. The drive of several miles through the park to Haigh Hall was much enjoyed, and the visitors were surprised and delighted to find such a beautiful place in the neighbourhood of Wigan. The party were entertained by Mr. J. W. Fair, Lord Crawford's courteous agent, and were conducted through the library by Mr. Edmond, the Librarian. This is one of the finest, if not the finest, private libraries in the kingdom. The extensive oriental collection, the English ballads, manuscripts, proclamations, etc., were especially noted. The visitors had not much time to devote to these valuable tomes, but they saw and heard sufficient to arouse their warm admiration; and after thanking Lord Crawford for allowing them to inspect his library, and Mr. Fair and Mr. Edmond for their kind attention, they returned to Wigan after a very enjoyable day. Another party visited Longhurst, the residence of Mr. W. Simpson, and pleasantly passed the two hours at their disposal. The third party visited the infirmary, where they were received by Dr. Berry, Dr. Cowan, and Mr. W. Taberner, the Secretary.

Dinner.—Under the presidency of Dr. BERRY, about 80 members and friends sat down to an excellent dinner in the old Council Chamber. After the usual loyal toasts, the PRESIDENT gave "The Clergy and Ministers of all Denominations." The Rev. P. HAINS responded in a most humorous speech, which was much applauded. *Inter alia*, he claimed to be a minister of all denominations. He had preached in all the chapels in his own parish, and he supposed he was the only clergyman in Wigan who had ever been asked by a priest of the Roman Catholic Church to preach in his church, and he had been asked to do so once in Wigan and twice in Liverpool; consequently he was a minister of all denominations. Now he had to be very thankful to the medical profession. Thirty-five years ago he came to this town. Where were all the medical men who flourished in those days? They had all gone and the place that then knew them knew them no more. Where were Daglish, Fisher, McLoughlin? Where were old Father Lathom, Winnard, and Dr. White? All had passed to the great majority. But their sons still lived, and might they hope, as he hoped, that those who had followed would be worthy successors of those who had gone before. Where were the lawyers who existed thirty-five years ago? Well, they had gone to their own place. Where were the magistrates? They had now no opportunities of passing absurd sentences; they likewise had gone to join the lawyers. And the Town Council had passed away and not a single member of that time now existed. Every clergyman who existed in Wigan — both dissenting ministers, and priests, and clergymen of the Church of England had all passed away. He only remained, and he was indebted to the medical profession. They had never been able to give themselves long lives, but they had given him long life, for though he was 71 years of age he still existed without a single complaint of any kind, although he had broken two ribs, ruptured his lung, broken a collar bone, and

split he did not know how many bones in his body. Did they suppose that he would have been able to say that had it not been for the medical profession? No; they had always acted hand in hand together. Might they go on and prosper, and might their shadow never grow less, and then the cemetery fees would be multiplied.—Professor MITCHELL BANKS proposed "The Health of the Wigan Medical Society," and said he did not really know any provincial town where he could find a better one. Though knowing a good deal about provincial towns of Lancashire, it always struck him that he never found a set of medical men on better terms with each other than in the gentlemen who lived in the town within which they were assembled that day. He supposed that that was due to the good kindly feeling which Dr. Berry had always shown.—Dr. WHITE responded, and said Dr. Berry was the father of a big family, for the medical profession were very numerous in Wigan, and yet all desired to emulate the courtesy and urbanity which he showed on every occasion. He only hoped that the British Medical Association would come and see the ancient borough of Wigan when the small towns of Liverpool and Manchester had perhaps been overrun. Dr. MACFIE proposed the toast of "The Lancashire and Cheshire Branch and its Office-holders," and said the duty devolved upon every medical gentleman in the two counties to join it.—Dr. WOODCOCK, in responding, said that the Lancashire and Cheshire Branch was regarded as the devil of the British Medical Association, a kind of Mephistopheles, who was always spoiling the plans of the central authority. But, he went on to say, the glorious consummation of his year of office had been his visit to Wigan.—Dr. GRAHAM proposed "The Guests." He remarked that several of the guests had contributed very considerably to the success of the meeting. He coupled with the toast the names of Alderman Phillips, Mr. James Brown, ex-Chairman of the Infirmary Board of Management, and Mr. C. M. Percy.—Mr. Alderman PHILLIPS, in responding, referred to his intimate connection with the President of the Society in his capacity as Chairman of the Wigan Sanitary Committee. In all his work Dr. Berry, as medical officer, set his heart thoroughly in it. He hoped some day that Dr. Berry would be the Medical Officer for greater Wigan, devoting his whole time to the work in which he took so great an interest. —Mr. BROWN echoed the sentiments expressed by Alderman Phillips, and referred to the Wigan Infirmary, which was still doing a very valuable work.— Mr. PERCY, referring to the ancient and loyal borough, said it was not simply an ancient borough with a church whose history was longer than history itself, but he believed there was reliable evidence on the shelves of the Free Library to prove that Noah's Ark settled in the vicinity of Ashurst Beacon, and it had been stated on more eminent authority that Noah emerged from the ark and pronounced the borough of Wigan the centre of the universe and himself as chief magistrate. They had had many distinguished men since the days of Noah, and Wigan had gone on progressing from that day to this. He could, as one outside the medical profession, testify that no city or town in this country had been better represented by a class of men who had always had presented to themselves the responsibilities that rested upon them of maintaining the conduct and the purity of that profession. He did hope that as time went by the medical profession of this country would maintain its position, and that the men who represented it in Wigan would be an honour to our forefathers and an honour to the men of the present day.—Mr. W. SIMPSON proposed "The Health of the President," and said they rejoiced that he was a townsman of theirs, and that he had never failed to distinguish himself whenever he had taken a task in hand.—Dr. BERRY responded, and said he was proud to be the President of the Lancashire and Cheshire Branch of the British Medical Association, an honour through no merit of his own, but due entirely to his professional brethren. — During the evening Dr. BRADBURY gave a humorous recitation.

BATH AND BRISTOL BRANCH.

THE annual meeting of this Branch was held at the Royal Mineral Water Hospital, Bath, on June 29th. The chair was taken by Mr. F. R. CROSS, the retiring President, and there were 52 members and visitors present.

Installation of New President.—Mr. CROSS resigned the chair to Dr. LIONEL WEATHERLY, who delivered the presidential address. A vote of thanks to the President for his interesting and valuable address was moved by Dr. E. LONG FOX, seconded by Mr. R. S. FOWLER, and carried unanimously.

New Members.—Mr. W. A. Day, Dr. H. C. Shaw, Mr. W. A. Perry, and Dr. A. E. Norburn were elected members of the Branch.

Report of Council.—Mr. W. M. BEAUMONT, Honorary Secretary of the Bath District, read the report of the Council, which showed that the total number of members of the Branch was now 271; 22 new members had been elected during the year, 12 in the Bath Section and 10 in the Bristol. There had been 6 resignations in the former district and 5 in the latter, due principally to removals from the neighbourhood. By death Bath had lost Mr. T. G. Stockwell, Mr. H. W. Freeman, and Mr. F. W. Hanham; and Bristol Dr. H. Marshall, Mr. Augustin Prichard, and Surgeon-General J. Irving. Mr. Stockwell joined the Bath and Bristol Branch of the Provincial Medical and Surgical Association (as it was then called) in 1856, and in 1861 was elected on the Council, becoming President in 1872. He was always most regular in his attendance not only at the Bath meetings, but also at the Bristol even up to the last, although he seldom joined in the discussions. Mr. Stockwell was one of the oldest surgical practitioners in Bath, having been appointed surgeon to the Royal United Hospital in 1865, and was much appreciated in Bath and the country round for his sound knowledge and wide experience. He died on November 2nd, and Mr. H. W. Freeman then became senior surgeon at the hospital, a position which he held for twenty-six days only. He had been in failing health for some time, and that he should have given up earlier every one but himself recognised. But his was not the nature that readily gave up, and when most men would have considered that they were too ill for work he was actively engaged in carrying on his extensive practice. He became a member of the Branch in 1865, and in May of that year read his first paper on the Hypodermic Injection of Morphine. Mr. Freeman was best known as the leading authority on the Bath waters. In order to qualify himself for the position he took with regard to them it was his custom, on the few holidays which his energetic nature allowed him to take, to visit the various spas of Europe, and his book on *The Thermal Baths of Bath*, was the outcome of his special knowledge. The importance of obtaining a guiding, if not a controlling, position with regard to the bathing establishment, the property of the Bath Corporation, induced Mr. Freeman to become a candidate for a seat on the Town Council, and he was elected without opposition by his fellow citizens in 1887. One year later he was unanimously chosen Mayor, and his term of office was rendered brilliant by the visit of H.R.H. the Duchess of Albany to open an extension of the baths. The occasion will long be remembered by the generous hospitality which he and Mrs. Freeman extended to a large number of the medical profession from London and various parts of the country. Self-reliant and independent, with a dominant spirit that beat down all opposition, and with a force of character that did not believe in half measures, Mr. Freeman was cut out for a leader of men. He was not the one, having put his hand to the plough, to look back, but rather having decided on the course he meant to pursue, to go straight on until his object was gained. Augustin Prichard, the second son of the very eminent ethnologist, was born in Bristol in 1818. In 1849 he became Surgeon to the Bristol Royal Infirmary, and in 1862 to the Clifton College. For many years he was Surgeon to the Bristol Eye Dispensary. He was always a warm supporter of the British Medical Association, and twice at the annual meetings, at Swansea in 1853, and at Bristol in 1863 he was the Surgical Orator. In 1857 he was the President of this Branch, and at the Worcester meeting in 1882 he was President of the Section of Surgery. He was also President of the Bristol Medico-Chirurgical Society in 1877 and a frequent contributor to its *Journal*. In 1896 he published a volume of *Medical and Surgical Reminiscences*, and at the time of his death he had written a second series of reminiscences which had since been published by Dr. J. E. Prichard under the title, *Some*

Incidents in General Practice. Dr. Swayne, in the *Bristol Medico-Chirurgical Journal* for March, wrote: "After a life of eighty years he has left the world richer than he found it, and by his consistent rectitude, his honourable relation towards all those with whom he was brought in contact, and his devotion to his special work has left to younger men an example which they will do well to follow." Dr. Henry Marshall, of Clifton, one of the oldest members of the Branch, died of pneumonia on April 24th, 1898. He was the youngest son of the Rev. James Marshall, Vicar of Christ Church, Clifton. His professional education began at the Bristol Medical School, but he soon left for Edinburgh University. He became M.D. of that University, and F.R.C.S. and F.R.S.Edin.; was formerly surgeon for ten years to the Bristol General Hospital, and afterwards Consulting Surgeon to that institution; and was for a short time Lecturer on Medical Jurisprudence at the Bristol Medical School. Dr. Marshall was for some years Secretary of that Branch, and subsequently its President. He took an active part in the three general meetings of the Association held in that city; although not of late years a frequent contributor of papers at the meetings, he was at all times a reasonable and ready helper in all questions affecting the interests of the Branch and of the profession generally. Dr. Marshall for many years had one of the largest practices in Clifton, and was a prominent figure in the social life of that place. He always did his best to maintain the honour and dignity of his profession, and in all the relations of life his conduct was ever that of a high-minded and cultivated gentleman. He leaves a widow and three children. Thirty-five communications had been made at the ordinary meetings during the session, and numerous patients and pathological specimens had been exhibited. At the meeting on February 23rd, at Bath, a valuable discussion on the treatment of melancholia was ably opened by Dr. Lionel Weatherly. The following gentlemen had been elected to fill the vacancies on the Council:—Bath Section: S. Craddock, H. G. Terry, E. J. Cave, M.D., and J. Wigmore, M.D. Bristol Section: E. Long Fox, M.D., E. Markham Skerritt, M.D., and R. G. Fendick. The balance-sheet for the last year showed a surplus of £5 11s. 7d. The Council recommended that the following donations should be given: To the British Medical Benevolent Fund, £10 10s.; to Epsom College, £5 5s.; and £10 10s. towards a smoking concert to be given during the meeting of the British Association at Bristol.—It was proposed by Mr. Gaine, seconded by Mr. Goss, and carried, that the report be received and adopted.

Election of Officers.—It was proposed by Dr. E. Markham Skerritt, seconded by Mr. R. J. H. Scott, and carried by acclamation, that Dr. A. J. Harrison be appointed President-elect. On the proposition of Mr. J. Hinton, seconded by Mr. Harsant, Mr. R. S. Fowler and Dr. Markham Skerritt were reappointed representatives of the Branch on the General Council. It was proposed by Dr. Carr, seconded by Dr. E. J. Cave, and carried, that Dr. Harrison be reappointed representative on the Parliamentary Bills Committee.

Votes of Thanks.—A hearty vote of thanks to the retiring President, Mr. F. R. Cross, for his able and courteous conduct in the chair during the past year, was proposed by Mr. A. Prichard, seconded by Dr. A. Fox, and carried by acclamation.—Dr. Watson Williams proposed, and Dr. Murray Lindsay seconded, that a vote of thanks be passed to the Council and Secretaries for their services during the year, with a request to the latter to continue in office. Carried.—A vote of thanks to the Governors of the Royal Mineral Water Hospital for the use of their Board Room was proposed by the President, seconded by Dr. Symons, and carried unanimously.

Dinner.—In the evening the members and their friends dined together at the Grand Pump Room Hotel, when fifty-six sat down.

WEST SOMERSET BRANCH.

The fifty-fifth annual meeting of this Branch was held at Bridgwater on June 28th; eighteen members were present.

Installation of New President.—Mr. Hayes, the retiring President, introduced Mr. Routh, the President-elect, who took the chair and proposed a vote of thanks to his predecessor.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report of Council.—This report, showing an increase of five on last year's number, was received and adopted.

Treasurer's Accounts.—There was a balance in hand of £11 19s. 8d. It was decided to make a donation of 3 guineas to the British Medical Benevolent Fund.

Election of Officers.—Dr. Winterbotham was re-elected representative on the Association Council and Parliamentary Bills Committee. Dr. Meade-King was re-elected Honorary Secretary and Treasurer. Mr. Rigden was re-elected, and Messrs. Boake and Wilberforce Thompson were elected, members of the Branch Council.

The late Mr. Ernest Hart.—The following resolution was passed on this the first annual meeting since the death of Mr. Ernest Hart:

That the members of the West Somerset Branch desire to express their deep sense of the great service which the late Mr. Ernest Hart rendered to the British Medical Association and to the medical profession during the period in which he acted as Editor of the British Medical Journal.

Next Annual Meeting.—It was resolved that the next annual meeting be held at Taunton, and that Dr. Macdonald, of Taunton, be President-elect.

President's Address.—The President delivered an interesting address on Cycling: its Prophylactic and Curative Properties, for which he was accorded a hearty vote of thanks.

Luncheon, etc.—By the kind invitation of the President, the company were entertained at luncheon at his residence, St. Saviour's, Bridgwater. During the afternoon there was a cricket match between the members belonging to the Bridgwater district and those from the rest of the Branch, which was followed by a dinner at the Clarence Hotel, Bridgwater.

EDINBURGH (LOTHIANS AND FIFE) BRANCH.

The twenty-third annual meeting of this Branch was held in the Hall of the Royal College of Physicians, Edinburgh, on June 22nd; Dr. G. W. Balfour, President, in the chair.

Confirmation of Minutes.—The minutes of the extraordinary meeting of the Branch, held on January 14th, 1898, were read and approved.

New Members.—Intimation was made of the admission to the Association of twenty-six new members by the Branch Council. The following candidates having been proposed for admission to the Branch were after ballot admitted: W. J. Brock, D.Sc., M.B., C.M., Edinburgh; Sir A. Christison, Bart., M.D., Edinburgh; J. F. Crombie, M.B., C.M., North Berwick; G. D. Darlington, M.B., C.M., Edinburgh; W. B. Drummond, M.B., C.M., Edinburgh; H. Hay, M.B., C.M., Edinburgh; A. Kirkwood, M.B., C.M., Peebles; A. P. Low, M.B., C.M., Slateford; J. Macdonald, M.B., C.M., Cupar-Fife; G. W. M'Intosh, M.B., C.M., Kirkcaldy; W. S. Palm, M.B., M.R.C.S., Largo, Fife; J. C. Rossie, M.D., Bathgate; T. J. Thomson, M.B., C.M., Edinburgh; A. E. Watson, M.B., C.M., Fife; G. P. Yule, M.B., C.M., B.S., Leith.

Branch List.—It was reported by the Secretary that the Branch numbered 262. During the past year 41 members had been added; 2 had died, namely, Drs. A. Forbes (Liberton) and T. Lawson (Edinburgh), and 3 members had resigned.

Treasurer's Statement.—The Treasurer submitted his annual statement, which showed a balance of £66 8s. 6½d. in favour of the Branch.

Amended Branch Laws.—Intimation was made of the approval by the Council of the Association of the proposed alterations in the by-laws of the Branch, as regards the tenure of the offices of President and Vice-Presidents, the addition of the representatives of the Branch on the Council and on the Parliamentary Bills Committee to the Council of the Branch *ex officio*, and the election of an additional Secretary to the Branch.

Election of Officers.—The office bearers for the ensuing year were elected as follows:—*President:* G. W. Balfour, M.D., Edinburgh. *Vice-Presidents:* W. B. Dow, M.D., Dunfermline; Sir T. G. Stewart, M.D., Edinburgh. *Treasurer:* C. E. Underhill, M.B., Edinburgh. *Secretaries:* R. W. Philip, M.D., Edinburgh; J. W. B. Hodsdon, F.R.C.S., Edinburgh. *Council:* J. M. Cotterill, M.B., Edinburgh; James Carmichael, M.D., Edinburgh; G. A. Gibson, M.D., Edinburgh; A. Matthew, F.R.C.S., Corstorphine; George Mackay, M.D., Edinburgh; J. Sutherland Mackay, M.D., Kirkcaldy; T. G. Nasmyth, M.D., Cupar; James Ritchie, M.D., Edinburgh; D. Argyll

Robertson, M.D., Edinburgh; T. R. Scott, M.D., Musselburgh; Sir John Batty Tuke, M.D., Edinburgh; Norman Walker, M.D., Edinburgh. *Representatives on Council of Association:* R. W. Philip, M.D., Edinburgh; W. Russell, M.D., Edinburgh. *Representative on Parliamentary Bills Committee:* James Ritchie, M.D., Edinburgh.

BORDER COUNTIES BRANCH.

THE annual meeting of this Branch was held in the Whitehaven Infirmary on June 24th, Dr. MENZIES (Galashiels), President, occupied the chair, and there were twenty-one members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—Dr. H. S. Byers (Cleator) and Dr. R. S. Dickson (Whitehaven) were elected members of the Branch.

Place for Annual Meetings.—Dr. HAMILTON (Hawick) moved that in future the annual meetings of the Branch should be held in Carlisle.—Dr. MAXWELL ROSS (Dumfries) seconded.—Dr. FISHER (Whitehaven) moved the previous question. On a vote being taken, Dr. Hamilton's motion was carried by a large majority.

Cumberland Nursing Association.—Dr. OGILVY-RAMSAY (Carlisle) moved:

That in the opinion of this meeting the action of the Council at St. Boswells meeting in deputing two members to represent the Branch on the Council of the Cumberland Nursing Association was *ultra vires*.

He argued (1) that the request to nominate these gentlemen had been addressed to the Branch and not to the Council, and (2) that the Council had not taken care to inform themselves of the constitution of this Nursing Association, which was not altogether satisfactory, in that it sanctioned the employment of women with only six months' training as nurses.—Dr. FISHER (Whitehaven) seconded the motion in order to permit of discussion.—A long and animated discussion followed, and ultimately Dr. Ogilvy-Ramsay accepted a suggestion of Dr. HAMILTON that the whole question should be referred to a Committee consisting of the President-elect (Dr. Muriel), Drs. I'Anson (Whitehaven), Thomson (Penrith), Graham, and Ogilvy-Ramsay (Carlisle). This was unanimously agreed to.

Formation of Local Section of the Branch.—The PRESIDENT intimated that eleven members resident in the counties of Roxburgh, Berwick, Selkirk, and Peebles met at St. Boswells on May 27th, 1898, and constituted themselves a section of the Branch, Dr. Hall Calvert being appointed Secretary.

Report of Council.—The report of the Council was then submitted. The various paragraphs were considered *seriatim*, and the recommendations made unanimously agreed to. Regret was expressed at the retirement of Dr. Helm from the office of Secretary and Treasurer, and on the motion of the President he was accorded the hearty thanks of the Branch for his excellent services during the past three years. On the motion of Dr. BARNES, seconded by Dr. MAXWELL ROSS, the Council was instructed to issue nomination papers for annual meetings in future.

Election of Officers.—The following were elected officers for the ensuing year:—*President-Elect:* Dr. Hamilton, Hawick. *Honorary Secretary and Treasurer:* Dr. Farquharson, Garlands, Carlisle. *Council:* Dr. Barnes, Carlisle; Dr. Campbell, Carlisle; Dr. Cullen, St. Boswells; Dr. Fisher, Whitehaven; Dr. Haddon, Denholm; Dr. Helm, Carlisle; Dr. Maxwell Ross, Dumfries; Dr. Thomson, Penrith; Dr. Wade, Melrose. *Representatives on Council of the Association:* Dr. I'Anson, Whitehaven; Dr. Somerville, Galashiels. *Representative on Parliamentary Bills Committee:* Dr. Somerville, Galashiels. *Auditors:* Drs. Macdonald and Murphy, Carlisle.

Future Meetings.—It was decided to hold meetings during the ensuing year at Dumfries, Penrith, and St. Boswells. Dr. Thomson (Penrith), Dr. Fisher (Whitehaven), Dr. Ross (Dumfries), and Dr. Cullen (St. Boswells) were appointed local or district secretaries to assist the Secretary and Treasurer in making local arrangements for meetings.

Installation of New President.—Dr. Menzies vacated the chair, which was then taken by Dr. Muriel. On the motion of the PRESIDENT, Dr. Menzies was thanked for his services during the past year, and was appointed a Vice-President of the Branch for life.

President's Address.—Dr. MURIEL then delivered his presidential address, dealing in a most interesting manner with the advances made in medicine and surgery during the past 25 years. On the motion of Dr. I'ANSON, seconded by Dr. BARNES, a hearty vote of thanks was passed to the President for his address, and a request made that it should be printed and circulated amongst the members. Owing to the lateness of the hour the other items on the agenda paper were not proceeded with.

Dinner.—After the meeting the members dined together in the Grand Hotel, Whitehaven, the Mayor and others being present as guests of the President.

SHROPSHIRE AND MID-WALES BRANCH.

THE spring meeting of this Branch was held at the Salop Infirmary on May 24th, Dr. CHARNLEY, President, being in the chair. Twenty-nine members were present.

Branch Representative on Council.—Dr. CHARNLEY proposed, and Dr. BOWEN DAVIES seconded that Mr. J. D. HARRIES should be re-elected Branch representative on the Council of the Association and on the Parliamentary Bills Committee. Carried *nem. con.*

New Members.—The following new members were elected: Edward Owen Cox, Cleobury Mortimer; Frank Whincup, Salop Infirmary.

President's Address.—The PRESIDENT delivered an address on the therapeutic advantages of minced beef diet combined with the drinking of hot water. Remarks were made by Dr. BOWEN DAVIES (Llandrindod Wells), Dr. GARDNER, and Dr. CALDWELL (Wellington).

Ringworm.—Dr. CURETON read a paper on ringworm. He related his experiences in the treatment of a series of 40 cases under treatment at the same time. These comprised some recent cases, while others were of some months' or even years' duration. The age varied from 3 to 12 years. He found that most of the recent cases recovered after cutting the hair short round the patches, epilation of the diseased hairs, and application of acetic acid or Coster's paste; but for those cases of a more or less chronic nature, in which large patches were visible, associated with scaliness of the scalp, and for cases which occurred in subjects of a scrofulous or lymphatic temperament, with heavy hair growth and dense skin, Dr. Cureton found the following treatment to be the best: After shaving the head he applied linseed meal poultices, which were made with water in which had been dissolved a little washing soda (in the proportion ℥j to ℥ij to Oj). This set up an artificial dermatitis, causing inflammatory swelling and effusion into the tissues around the follicles, and thus loosened the brittle hair bulbs and facilitated their extraction. Then followed daily epilation, and the application of oleate of mercury, of a strength varying from 2 per cent. to 5 per cent. made up with lanolin. This treatment ended in the recovery of all the cases. For ringworm of the body Dr. Cureton had found the ung. sulph. iod. the most generally useful.—Mr. T. LAW WEBB spoke on the subject.

Cases.—Mr. ROPE showed an interesting case of Epithelioma involving the antrum and the skin of the face. He also showed a case of a large slow-growing Tumour of the Palate.—Dr. HART, of Wenlock, showed a remarkable case of Congenital Malformation of the Bones of the Upper Extremities, which he demonstrated with the aid of skiagraphs. An interesting point about the case was that other members of the family showed other congenital malformations, one of these being a lamellar cataract.

The Antiseptic Management of Wounds.—Mr. MACLEOD read a paper on the antiseptic management of wounds. He reviewed the methods of wound treatment that had been in vogue since antiseptics were first so applied in Glasgow, and described the various kinds of gauze which Lord Lister had from time to time introduced. Antiseptic and aseptic methods at present in use were described and demonstrated, preference being given to a combination of the two methods. Great weight was attached to the preparation of the skin of the patient and of the hands of the surgeon and his assistants. Mr. Macleod described in detail the preparation of the Berlin wool sponges and drains of Mr. Harold Stiles, of Edinburgh, to whom he wished to acknowledge his indebtedness for help in the preparation of his paper, as also to Mr. Arthur Cheadle, one of Lord Lister's last house-surgeons at King's College Hospital.

Tea.—Members were entertained at tea by the President at the close of the meeting.

SYDNEY AND NEW SOUTH WALES BRANCH.

The annual meeting of this Branch was held at Sydney on March 25th, Dr. C. B. P. Clubbe, President, in the chair. Thirty-seven members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The President announced the election of the following gentlemen as members of the Branch: Drs. Meredith, Paget, Liddell, Watson, Cruise, Cobb, W. G. Armstrong, and Higgins.

Report of Council.—The Hon. Secretary read the report of the Council, and the Hon. Treasurer read the financial statements of the Branch and *Gazette* funds.—Dr. Crago proposed and Dr. Hankins seconded the adoption of the report and statements. Carried.

President's Address.—The President (Dr. Clubbe) read his address.—Dr. Hankins proposed and Dr. Quaife seconded a vote of thanks to Dr. Clubbe for his address. Carried. Dr. Clubbe replied.

The late Mr. Ernest Hart.—Dr. Rennie proposed that a letter of condolence be forwarded to Mrs. Ernest Hart. This was seconded by Dr. Knaggs and carried.

Election of Officers.—The following gentlemen were elected the Council for the ensuing year: *President:* Dr. W. Chisholm. *Vice-President:* Dr. E. T. Thring. *Members of Council:* Drs. Crago, Clubbe, Coutie, Clark, Fiaschi, Foreman, Jenkins, Knaggs, MacCormick, Quaife, Rennie, Worrall. *Auditors:* Drs. Hankins and Todd.

A general meeting of this Branch was held on April 29th, at the Royal Society's Room; Dr. W. Chisholm, President, in the chair. There were forty members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Member.—The President announced the election of Dr. Kingsbury as a member of the Branch.

Representative on Council of Association.—Dr. Rennie proposed that Dr. Sydney Jones be appointed to represent this Branch on the Council of the Home Association during his stay in England. Carried.

Communications.—Dr. Worrall (for Dr. J. Nash) exhibited a specimen of an Anencephalous Fœtus. Drs. Thring, West, Gledden, and Arthur made some remarks upon the exhibit.—Dr. Wilkinson read a paper on the Scientific Basis of the Prevention and Treatment of Consumption, with special reference to the use of the old and the new tuberculin. Drs. Lilie and Tidswell discussed the paper, and Dr. Hankins moved the adjournment of the discussion until the following meeting.

CEYLON BRANCH.

A meeting of this Branch was held at the Colonial Medical Library, Colombo, on May 2nd. Dr. Allan Perry, Surgeon-Major, President, took the chair, and twenty-one members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following were elected members: V. Van Langenberg, M.B., C.M.Aberd.; E. P. Aserappa, L.R.C.P.Edin.; and H. G. Loos, L.C.M.C.Ceylon.

Medical Defence.—The Honorary Secretary read a letter from Mr. T. C. J. Vanderstraaten requesting postponement of the motion *re* Medical Defence.

President's Address.—Dr. Perry delivered his presidential address. He gave a short account of the progress of the Association during the past sixteen years, and referred to the recent death of Mr. E. Hart. He thanked the members for the high honour done him by electing him as President of the Branch. He felt very diffident in accepting the post, especially in view of the illustrious predecessors who were in that capacity before him. He alluded to the good and valuable work done for the Association by Sir William R. Kynsey, C.M.G., Dr. P. D. Anthonisz, C.M.G., Dr. J. Loos, and Dr. J. L. Vanderstraaten as former presidents. He urgently asked the co-operation of the members of the Branch to make the meetings successful by reading papers of medical interest, and pointed out the large field of opportunities that were in Ceylon for the study of such tropical diseases as parangi, dysentery, leprosy, malarial fever, cholera, intestinal worms, the topography of diseases in Ceylon, native materia medica, and therapeutics. He then read a paper on Serum Diagnosis, laying special attention on Widal's test for diagnosing enteric fever. The Widal's test would be very useful in its application in Ceylon, and he hoped to have the Bacteriological Laboratory, presented by Mr. J. W. Chas. de Soysa, in working order by the end of the year, where the serum diagnosis of typhoid fever, and microscopic researches could be conducted. The President then proceeded to illustrate how the test was actually performed, and a demonstration was given of the reactions of this test under the microscope.

Vote of Thanks.—At the close of the address, the Hon. Dr. W. G. Rockwood proposed a vote of thanks to the President for his interesting and instructive address.

The fifth ordinary meeting of this Branch was held at Colombo on June 4th, under the presidency of Surgeon-Major Perry, P.C.M.O.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

New Members.—The following were admitted members: R. Jayetileke, L.R.C.P. and S.Edin.; L. Prins, L.C.M.C. Ceylon; R. Pestonjee, L.R.C.P.Lond., M.R.C.S.Eng.; G. W. R. Fernando, M.B., C.M.Aberd.; K. Chittampalam, L.C.M.C. Ceylon; A. E. Spear, L.C.M.C.Ceylon; F. Oorloff, M.B., C.M.Aberd.

Representative on Parliamentary Bills Committee.—A letter from the General Secretary *re* Representative on Parliamentary Bills Committee and of Branch was read, and Dr. H. Marcus Fernando was unanimously elected to represent the Local Branch in both Committees.

Paper.—Mr. J. Attygalle read a paper on the Origin and Development of the Roentgen Ray, its Uses in Surgery and in other Sciences in General, showing how useful it would be in the future.

Cases.—Two interesting clinical cases from the General Hospital were illustrated by Mr. S. C. Paul, which elicited a long and interesting discussion.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

The sixty-sixth annual meeting of the British Medical Association will be held at Edinburgh on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, 29th, 1898.

President: T. G. Roddick, M.D., Professor of Surgery in McGill University, Montreal.

President-elect: Sir Thomas Grainger Stewart, M.D., LL.D., F.R.S.E., Professor of Practice of Medicine and Clinical Medicine in the University of Edinburgh; Physician in Ordinary to Her Majesty the Queen for Scotland.

President of the Council: Robert Saundby, M.D., LL.D., F.R.C.P., Professor of Medicine in Mason University College, and Physician to the General Hospital, Birmingham.

Treasurer: Charles Parsons, M.D., Dover.

An Address in Medicine will be delivered by Thomas Richard Fraser, M.D., LL.D., F.R.S., Professor of Materia Medica and Clinical Medicine in the University of Edinburgh.

An Address in Surgery will be delivered by Thomas Annandale, F.R.C.S.Edin., F.R.C.S.Eng., F.R.S.E., Surgeon to the Edinburgh Royal Infirmary, Regius Professor of Clinical Surgery, University, Edinburgh.

An Address in Psychological Medicine will be delivered by Sir John Batty Tuke, M.D., D.Sc., Pres.R.C.P.Edin., Lecturer on Insanity, School of Medicine of the Royal Colleges, Edinburgh.

The Scientific Business of the Meeting will be conducted in Sixteen Sections.

A. Medicine.

Anatomy Theatre, University New Buildings.

President: George William Balfour, M.D., LL.D. *Vice-Pre-*

sidents: Sir Christopher John Nixon, M.D.; John Mitchell Bruce, M.D., Alexander James, M.D.; George Alex. Gibson, M.D. *Honorary Secretaries:* J. J. Graham Brown, M.D., 3, Chester Street, Edinburgh; Samuel Herbert Habershon, M.D., 70, Brook Street, Grosvenor Square, W.: George Lovell Gulland, M.D., 6, Alva Street, Edinburgh.

The following subjects have been arranged for discussion:

1. Wednesday, July 27th.—The Clinical Varieties of Hepatic Cirrhosis. To be opened by Dr. Alexander James.

2. Thursday, July 28th.—The Significance and Consequences of different states of Vascular Tension with their General Management. To be opened by Sir William Broadbent, Bart., M.D.

3. Friday, July 29th.—Serum Diagnosis and Therapeutics in Infective Diseases. To be opened by Professor Wright (Netley).

The following, among others, intend to take part in these discussions: Sir Christopher Nixon, Dr. G. W. Balfour, Dr. M. A. Boyd, Professor Bradbury, Dr. Graham Brown, Dr. Mitchell Bruce, Dr. Lauder Brunton, Dr. R. W. Burnet, Dr. H. Campbell, Dr. D. Drummond, Dr. Wm. Ewart, Dr. Foxwell, Dr. Gibbes, Dr. Gibson, Dr. Guiland, Dr. Handford, Dr. Habershon, Dr. Claude Ker, Dr. J. A. Lindsay, Dr. McWeeney, Dr. Muirhead, Dr. Smart, Dr. Noel Paton, Dr. Reginald G. Alexander, Dr. W. J. Lyson, Dr. Robert Saundby, Dr. Theodore Fisher, and Professor Osler.

The following papers have been announced:

Anderson, Professor McCall. A Plea for the More General Use of Tuber- by the Profession.
Bain, William, M.D. The Treatment of Congestion of the Liver not dependent upon Cardiac Disease or Toxic Conditions.
Burton-Fanning, F. W., M.D. The Open-air Treatment of Phthisis.
Campbell, H., M.D. The Treatment of Thoracic Aneurysm by Electrolysis.
Caverhill, T. F. S., M.B., C.M.Edin., The Open-air Treatment of Consump- with exhibition of patients treated in German sanatoria.
Davidson, Thomas, M.D., Southern California as a Health Resort.
Drummond, D., M.D. On Ether Pneumonia.
Ewart, William, M.D.
Fraser, T. R., M.D. On the Antitoxic Action of the Bile in Relation to the Toxins of Diphtheria and Tetanus.
Haddon, John, M.D. Diet and Exercise in the Prevention and Treatment of Disease.
Haig, A., M.D.Oxon. On the Granules Precipitated in the Blood by Chloride of Ammonia (Process of Mr. Barber Smith), and what we may learn from them.
Hillier, A. P., M.B. Chronic Dysentery.
Murray, G., M.D. On the Early Diagnosis of Thyroidal Fibrosis.
Parsons, Alfred, M.B. Some Remarkable Cases Illustrating the Results of Phlebotomy in Systemic Veins.
Rouse, Chas. (1) On Twenty-five Years of Betterment in Rome; the Dis- (2) Malta and its Fevers.
Schott, Dr. Theodore. On Chronic Muscular Disease of the Heart.
[illegible] and Stewart, James, L.R.C.P.E. Case [illegible] Fifty Days.
Smart, A., M.D. (1) Chemico-clinical Observations on the Elimination of Phosphoric Acid in Nervous Disorders: Preliminary Note. (2) Clinical Observations on the Relative Efficacy of Preparations of Iron commonly [illegible] and Chlorosis: Further Note.
Somerville, W. F., M.D. The Importance of Increasing the Respiratory Capacity in the Anæmias of Young Adults.
Strachan, J., M.D. The Alcoholic Neurosis.
Suckling, C. W., M.D. Movable Kidney, with special Reference to its

Thomson, J. Stitt, M.D. The Enlarged Thyroid of Lincolnshire.
Thorne, W. Bezly, M.D. On Cardio-vascular Repair.
Thornhill, Hayman, M.B. Observations on the Treatment of Cholera.

Papers are also expected from Professors Gerhardt and Rosenbach, of Berlin.

B. Surgery.

Surgery Theatre, University New Buildings.

President: John Duncan, F.R.C.S.Edin., LL.D. *Vice-Presidents:* Alex. Gordon Miller, F.R.C.S.Edin.; John Chiene, F.R.C.S.Edin.; James Rutherford Morison, F.R.C.S.; Joseph Montague Cotterill, F.R.C.S.Edin. *Honorary Secretaries:* Francis Mitchell Caird, F.R.C.S.Edin., 21, Rutland Street, Edinburgh; J. W. Freeman Hodgson, F.R.C.S.Edin., 52, Melville Street, Edinburgh; Thomas Kennedy Dalziel, F.F.P.S.G., 196, Bath Street, Glasgow.

Discussion I: Injuries of the Elbow Joint. To be introduced by Prof[illegible] Bennett (Dublin), followed by Messrs. Roberts (Philadelphia), Chiene, Bryant, Keetley, Jones, Macnamara, Thomas, Warden, Morgan, Poland, Murphy, Dalziel, Ward Cousins, and Parry.

Discussion II: The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract. To be introduced by Dr. David Newman, followed by Messrs. Rovsing (Copenhagen), Moullin, Macnamara, Macewen, Will, Melchior (Copenhagen), Lawson Tait, Morgan, Stanmore Bishop, and Nicoll.

The following papers have been promised:

Allingham, Herbert Wm., F.R.C.S. Cases of Intestinal Anastomosis.
Brook, W. F., F.R.C.S. Successful Removal of Calculi of Unusual Size from both Kidneys.
Bruce, William, M.D. On the Nature and Treatment of Sciatica.
Casper, Dr. Leopold (Berlin). On Catheterism of the Ureters in Both Sexes.
Cheatle, G. Lenthal, F.R.C.S. Operation for End-to-End Anastomosis of Bowel.
Cripps, Harrison, F.R.C.S. On Abdominal Surgery.
Doyen, Dr. (Paris). (1) Surgery of the Brain. (2) Operations on the Stomach and Intestine, (3) Operations for Congenital Dislocations of the Hip-Joint.
Freyer, P. J., M.S. The Instruments Required in Litholapaxy, with an Analysis of 650 Operations for Stone by this Method.
Hern, John, F.R.C.S.Edin. An Amputation at the Ankle-Joint, with Case.
Hutchinson, J., jun., F.R.C.S. Removal of the Gasserian Ganglion for Trigeminal Neuralgia.
Hutton, W. Menzies, F.R.C.S. On the Treatment of Empyema.
Keetley, C. B., F.R.C.S.Edin. On the Preservation of Mobility in Joints Operated On.
Little, E. Muirhead, M.R.C.S. On Coxa Vara.
Lloyd, Jordan, F.R.C.S. On Cirsoid Aneurysm.
Melchoir, Dr. Max (Copenhagen). On Septic Infection of the Urinary Tract.
Miller, A. G., F.R.C.S.Edin. On Muscle Atrophy in Connection with Joint Affections.
Morison, A. E., F.R.C.S.Edin. On Floating Kidney.
Morison, Rutherford, F.R.C.S. Wound Treatment. The Result of One Year of Antiseptic Treatment in Freshly-made Operation Wounds in Uninfected Tissues.
Neve, Arthur, M.D. Clinical Paper on Chloroform.
Newman, David, M.D. (1) The Value of Catheterism of the Ureters in the Diagnosis of Diseases of the Kidney, with illustrative cases. (2) Cases Illustrating some Points of Interest in the Etiology and Treatment of Hæmaturia.
Nicoll, Jas. H., M.B., M.S. (1) The Treatment of Chronic Enlargement of the Prostate. (2) The Pathogeny and Treatment of Tuberculous Lymphatic Adenitis.
Owen, Edmund, F.R.C.S. Operative Treatment of Cleft Palate.
Parry, R. H., L.R.C.P and S.Edin. Cases of Spasmodic Torticollis treated by Neurotomy of the Cervical Plexus.
Pearson, C. Yelverton, F.R.C.S. The Treatment of Spina Bifida by "Open Operation," followed by Closure of the Spinal Canal, with photographs and notes of a successful case.
Poland, John, F.R.C.S. The Treatment of Injuries of the Elbow-joint in Children.
Rawdon, H. G., F.R.C.S.Edin. Two Cases of Successful Enterectomy following Strangulated Hernia, in which Murphy's Button was used.
Robson, Mayo, F.R.C.S. (1) The Operative Treatment of Hydatids of the Liver, illustrated by cases. (2) Two Cases of Partial Hepatectomy for Malignant Disease. (3) On a Series of Cases of Choledochotomy, including two of Duodeno-choledochotomy.
Roberts, Dr. J. (Philadelphia). The Advantage of the Extended Position in Fractures of the Condyloid Portion of the Humerus.
Rovsing, Dr. On Some Mysterious Hæmorrhages from a Single Kidney, and their Cure by Nephrotomy.
Smith, Noble, F.R.C.S.Edin. On the Treatment of Fractured Spines: (*a*) by Reduction and Fixation; (*b*) by Laminectomy: A Plea for more Active Treatment.
Stokes, Sir William, M.B., M.S. Thyroidectomy in Exophthalmic Goitre.
Tait, Lawson, F.R.C.S. On the Secondary Results of Operation on the Liver and its Ducts.
Tubby, A. H., F.R.C.S. (1) Acute Spreading Gangrene, with an Account of a Successful Case. (2) Retroperitoneal Hernia, illustrated by a case in which recovery took place after operation.
Wheeler, W. I., M.D. The Radical Cure of Hernia by Displacement Method.
Wylsson, Alex. The Treatment of Accidents under Chloroform.

Communications are also expected from Professors Mikulicz (Breslau) and Kocher (Bern).

C. Obstetrics and Diseases of Women.

Medicine Theatre, University New Buildings.

President: Alex. Russell Simpson, M.D. *Vice-Presidents:* Charles E. Underhill, M.B.; George Ernest Herman, M.B.; D. Berry Hart, M.D.; A. H. Freeland Barbour, M.D. *Honorary Secretaries:* R. Milne Murray, M.B., 11, Chester Street, Edinburgh; F. W. N. Haultain, M.D., 17, Rutland Street, Edinburgh; John Campbell, M.D., 21, Great Victoria Street, Edinburgh.

It has been arranged that the first part of the meeting of this Section on each of these days shall be devoted to a discussion on a subject of Obstetrical or Gynæcological interest. The subjects selected are as follows:

1. Wednesday, July 27th. The Surgical Treatment of Pelvic Inflammation. To be opened by Dr. Cullingworth (London).

2. Thursday, July 28th.—The Use and Abuse of the Midwifery Forceps. To be opened by Dr. Milne Murray (Edinburgh).

3. Friday, July 29th.—The Treatment of Puerperal Eclampsia. To be opened by Dr. Halliday Croom (Edinburgh).

It has been arranged that specimens illustrative of the subjects of the special discussions shall be exhibited in the Pathological Museum.

The following among others are expected to take part in the discussions:—Dr. W. S. Playfair (London), Dr. Sänger (Leipzig), Dr. Martin (Berlin), Dr. Landau (Berlin), Dr. Gardner (Montreal), Mr. Bowreman Jessett (London), Dr. More Madden (Dublin), Dr. Stephenson (Aberdeen), Dr. Smyly (Dublin), Dr. Handfield-Jones (London), Dr. Donald (Manchester), Dr. Kynoch (Dundee), Dr. Buist (Dundee), Dr. Sloan (Glasgow), Dr. Macan (Dublin), Dr. Byers (Belfast), Dr. Yelverton Pearson (Cork), Dr. Aust Lawrence (Bristol), Dr. Giles (London), Dr. Amand Routh (London), Mr. Stanmore Bishop (Manchester), Dr. Christopher Martin (Birmingham), Dr. F. Edge (Wolverhampton), Dr. Ward Cousins (Southsea), Dr. Jardine (Glasgow), Dr. Horn (Darlington), Dr. W. J. Sinclair (Manchester).

The following papers have been promised:

BUIST, R. C., M.D. Two Symphysiotomies.
DONALD, A., M.D. On Vaginal Section.
DOYEN Dr. (Paris). (1) Abdominal Hysterectomy and its Indication (tumours, suppuration, etc.). (2) Modification of the Technique of Vaginal Hysterectomy.
EDGE, Fred., M.D. Posterior Colpotomy as a means of Primary and Secondary Drainage of the Abdominal Cavity.
FARRAR, J., M.D. A New and Speedy Method of Dilating a Rigid Os in Parturition.
FOTHERGILL, W. E., M.D. The Function of the Decidual Cell.
HANDFIELD-JONES, M., M.D. The Value of Curette Scrapings in the Early Diagnosis of Corporeal Cancer.
JARDINE, Robert, M.D. (1) Saline Injections into the Cellular Tissues in Cases of Eclampsia and Collapse from Hæmorrhage. (2) Aseptic Midwifery.
JESSETT F. B., F.R.C.S. (1) A hundred cases of Vaginal Hysterectomy for Carcinoma. (2) Surgical Treatment of Fibro-myomata of Uterus by Pan-hysterectomy or the Subperitoneal Method.
KYNOCH, J. A. C., M.B., M.S. A Case of Osteomalacia.
LANDAU, Dr. (Berlin). (1) Vaginal Cœliotomy. (2) Surgical Treatment of Uterine Cancer and its Relapse.
MCCAW, F. J., M.D. Clamp and Ligature in Vaginal Hysterectomy for Malignant Disease of the Uterus.
MACPHATTEN, Dr. Neil (Denver, U.S.A.). The Treatment of Suppuration within the Female Pelvis.
MADDEN, T. More, M.D. On some Improvements in the Mechanism and Use of the Midwifery Forceps and in their Employment.
MARTIN, Christopher, F.R.C.S. Conservative Surgery of the Ovary.
PARSONS, J. Inglis, M.B. A New Method of Treatment for Prolapse of the Uterus.
PURSLOW, C. E., M.D. Notes of Four Cases of Pregnancy complicated with Ovarian Tumour.
ROUTH, Amand, M.D. Treatment of Cystocele.
SCHARLIEB, Mary, M.D., London. On a case of Mixed Labour verified by Operation and also *Post Mortem*.
SMITH, Dr. Lapthorn (Montreal). Treatment of Displacements of the Uterus by Operation, based on 200 Cases.
SMYLY, W. J., M.D. Extirpation of Myomatous Uteri by the Vagina.
TAIT, Lawson, F.R.C.S. (1) Further research into the Effects of Removal of the Uterine Appendages as the best Treatment of Uterine Myomata. (2) Case of Ruptured Tubal Pregnancy.

D. STATE MEDICINE.

Forensic Medicine Theatre, University New Buildings.

President: Sir HENRY D. LITTLEJOHN, M.D., LL.D. *Vice-Presidents:* JOHN C. MCVAIL, M.D.; GEORGE REID, M.D.; THOMAS GOODALL NASMYTH, M.D.; JAMES MCLINTOCK, M.D. *Honorary Secretaries:* CHARLES HUNTER STEWART, M.B., D.Sc., 18, Moray Place, Edinburgh; WILLIAM LESLIE MACKENZIE, M.D., Public Health Office, Leith.

It is proposed to hold discussions on the following:

1. Rivers Pollution; with Special Reference to the Present Condition of Scottish Rivers. To be opened by Dr. McLean Wilson. The following among others intend to take part: Professor Glaister, Dr. J. C. McVail, Dr. C. R. Macdonald, Dr. Matthew J. Oliver, Dr. T. G. Nasmyth.

2. Vaccination; with Special Reference to Prospective Legislation. To be opened by Dr. F. T. Bond, Gloucester. The following among others intend to take part: Dr. J. Watkin Edwards, Dr. J. C. McVail, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Mr. T. Garrett Horder, Dr. Charles R. Drysdale, Dr. J. Priestley.

3. The Hygienic Control of Milk Supplies. To be opened by Dr. T. G. Nasmyth. The following among others intend to take part: Professor Forster (University of Strassburg), Professor Saltet (University of Amsterdam), Dr. W. Brown (Carlisle), Dr. Maxwell Williamson, Dr. Spottiswoode Cameron, Dr. T. F. S. Caverhill, Dr. J. Watkin Edwards, Dr. Henry Kenwood, Dr. E. W. Hope, Dr. C. R. Macdonald, Dr. J. S. Neech, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Dr. Templeman, Dr. W. H. Symons, Dr. A. K. Chalmers, Dr. J. Maxwell Ross, Dr. Charles R. Drysdale.

4. The Plea of Insanity in Criminal Cases, conjointly with the Psychological Section.

The following intend to contribute papers:

ALLAN, F. J., M.D. Formaldehyde as a Disinfectant.
CAMERON, Sir C. A., M.D. The Cost of Private Sanitary Improvements in Relation to Rack-rent.
CAMERON, J. Spottiswoode, M.D. Remarks on Removal and Disposal of Refuse.
CAMERON, Macmartin, M.D. Surface Wells as a Source of Water Supply.
CAVERHILL, T. F. S., M.B., C.M.Edin. Temporary Hospitals.
CHALMERS, A K., M.B., M.S. Meat Inspection.
DIXEY, F. J., M.B. Diphtheria in London.
MCNAUGHTON, Dr. On a Typhoid Epidemic in Wimmera District, Victoria, Australia.
MARSDEN, R. Sydney, M.B., C.M. Filaria Strongylus and False Tubercle in the Pig, Sheep, and Goat.
MILLARD, Killick, M.D. Return Cases of Scarlet Fever
ROBERTSON, John, M.B., M S. Soil as a Factor in the Spread of Certain Diseases
SEATON, E., M.D. Sanitary Analysis of Water.
VAN SOMEREN, E. H., M.R.C.S The Potability of Venice Water.

E. PSYCHOLOGY.

Students' Common Room, University New Buildings.

President: THOMAS SMITH CLOUSTON, M.D. *Vice-Presidents:* WILLIAM WOTHERSPOON IRELAND, M.D.; H. F. HAYES NEWINGTON, M.R.C.S.; JOSEPH WIGLESWORTH, M.D. *Honorary Secretaries:* JOHN MACPHERSON, M.D., Stirling District Asylum, Larbert, Stirlingshire; GEORGE M. ROBERTSON, M.D., District Asylum, Murthly, Perth.

The following discussions have been arranged:

1. Suicide: Its Social and Psychiatrical Aspects.. This subject will be opened in three divisions: (*a*) Social Aspect, by Professor Morselli (Genoa). (*b*) Causes, by Dr. A. Haig (London). (*c*) Statistics, by Dr. Sibbald (Edinburgh).

2. The Section of State Medicine will join this Section in open discussion on: (1) Aphasia in Relation to Testamentary Capacity, to be opened by Sir William Gairdner, K.C.B. (2) The Plea of Insanity in Criminal Cases, to be opened by Dr. Mercier.

3. Hypnotism: Its Phenomena and Theories. To be opened by Dr. J. Milne Bramwell (London). Mr. F. W. H. Myers (Cambridge) has kindly consented to take part in this discussion.

The following among others have intimated their intention of taking part in the discussions: Professor Benedikt (Vienna), Dr. Marie (Dun-sur-Auron), Dr. Kurella (Brieg), Dr. Pierson (Lindenhof), Dr. Lloyd Tuckey, Dr. Hayes, Sir John Batty Tuke, Dr. George Kerr, Dr. A. E. Macdonald (New York), Dr. Dercum (Philadelphia), Dr. Yellowlees, Dr. Fletcher Beach, Dr. Ernest White, Dr. Sibbald, Dr. James Shaw, Dr. Crockley Clapham, Dr. Urquhart, Dr. Outterson Wood, Dr. John Woods, Dr. Alex. Robertson, Dr. John Carswell, and Dr. G. Fielding Blandford.

The following papers have been intimated:

BERNARD, Walter, F.R.C.P.I. On the Neglect of Early Training of the Mentally Defective.
BOIS, C. A., L.R.C.P.and S.Edin., and KERR, N. T., M.B., C.M. Clinical Studies with Spleen and Thyroid Extract.
BRAIDWOOD, P. Murray, M.D. The Borderland.
BRUCE, Lewis, M.D. Motor Mentalisation.
DAWSON, W. R., M.D., and RAMBAUT, D. F., M.D. The Ocular Phenomena in General Paralysis.
EASTERBROOK, C. C., M.B., C.M. The Action of Thyroid and Parathyroid Extracts upon Metabolism in the Insane.
HOTCHKISS, R.D., M.B. A Case of Hæmatoporphyrinuria.
JONES, Robert, M.D. The Epileptic Aura.
MCLEAN, A., L.R.C.S.Edin. The Better Inspection of Institutions for the Insane in England and Wales.
PASMORE, E. S., M.D. The Clinical Diagnosis of States of Melancholia.
SUTHERLAND, J. F., M.D. The Insanities of Inebriety from the Legislative and Medico-Legal Standpoints.
WILSON, George, M.D. A Graphic Method of Case Records in Asylums.

F. NEUROLOGY.

Midwifery Theatre, University New Buildings.

President: BYROM BRAMWELL, M.D. *Vice-Presidents:* JOSEPH ARDERNE ORMEROD, M.D.; WILLIAM RUSSELL, M.D.; ALEXANDER BRUCE, M.D. *Honorary Secretaries:* ROBERT ALEXANDER FLEMING, M.D., 10, Chester Street, Edinburgh; WILLIAM FORD ROBERTSON, M.D., 12, Bristo Place, Edinburgh.

The following discussions and demonstrations have been arranged:

1. Wednesday, July 27th, 10 A.M.—A discussion on the Treatment (Curative and Palliative) of Intracranial Tumours

will be opened by Professor Ferrier, M.D., F.R.C.P., F.R.S. The following members have promised to take part: Dr. C. E. Beevor, Mr. H. F. Waterhouse, Dr. E. F. Trevelyan, Mr. C. A. Morton, Dr. John M. MacCormac, Dr. J. Michell Clarke, and Dr. T. Outterson Wood.

2. Thursday, July 28th, 10 A.M.—A discussion on the Influence of Micro-organisms and Toxins in the Production of Disease of the Central and Peripheral Nervous System will be opened by Dr. Thomas Buzzard, F.R.C.P. The following gentlemen have promised to take part: Dr. W. S. Colman, Dr. F. J. Smith, Dr. Fletcher Beach, Dr. John M. MacCormac, and Dr. T. Outterson Wood.

3. Friday, July 29th, 10 A.M.—Demonstration of (*a*) Preparations, lantern slides, and microscopic sections illustrative of the Morbid Anatomy of Diseases of the Nervous System (Brain, Spinal Cord, and Peripheral Nerves). (*b*) Patients, and Morbid Specimens from Individual Cases of Nervous Disease of special interest and importance from a clinical, pathological, and physiological point of view.

Drs. E. F. Trevelyan, Andrew Smart, and J. Michell Clarke have, amongst others, already intimated their intention to take part in the demonstrations.

The following papers have been promised:

BEEVOR, Charles E., M.D. On the Bilateral Action of the Latissimus Dorsi in Hemiplegia.
MCALDOWIE, A. M., M.D. Cases of Tumour of Crus Cerebri.
MURRAY, Professor George, M.D., and RICHARDSON, George, M.B., F.R.C.S. Case illustrating the Advantages of Removal of Recurrent Cerebral Tumour.
SMART, Andrew, M.D. Some Further Notes on Undescribed Neuroses in their Physiological and Clinical Aspects.
TREVELYAN, E. F., M.D. Case of Acute Meningo-myelitis, in which a Diplococcus was Cultivated from the Cord. With Microscopic Specimens.

G. PATHOLOGY.

Pathology Theatre, University New Buildings.

President: WILLIAM SMITH GREENFIELD, M.D. *Vice-Presidents:* FREDERICK WALKER MOTT, M.D., F.R.S.; JOHN MACFADYEAN, M.B.; ALMROTH EDWARD WRIGHT, M.D. *Honorary Secretaries:* HAROLD JALLAND STILES, M.B., 5, Castle Terrace, Edinburgh; ROBERT MUIR, M.D., 20, Hartington Place, Edinburgh.

A discussion on the Agglutinating or Sedimenting Properties of Sera and their Relation to Immunity will be opened by Herbert E. Durham, M.B., C.B.

A discussion on the Nature and Significance of Leucocytosis will be opened by Robert Muir, M.D.

The following communications have been announced:

AULD, A. G., M.D. (1) Some Results of Extirpation of the Suprarenal Gland. (2) On the Toxins of the Pneumococcus.
BEATSON, George T., M.D. A short note on the Etiology of Cancer, with some experiments.
BOYCE, Professor R., M.D., and HILL, C. A., M.B. A Classification of the Micro-organisms found in Water.
DURHAM, H. E., M.B. (1) An Inquiry into an Epidemic caused by a Variety of the Bacillus Enteritidis of Gärtner by means of Sero-[illegible] Reaction) and Bacteriological Examination. (2) A Simple Method of Demonstrating the Formation of Gas by Bacteria.
HARLEY, Vaughan, M.D. An Experimental Inquiry into Cirrhosis of the Liver.
HEWLETT, R. T., M.D. Neisser's Diagnostic Stain for the Diphtheria Bacillus.
LAZARUS-BARLOW, W. S., M.D. Irritation of the Pleura and Pleurisy.
LEVY, Alfred G., M.D. The Blood Changes after Experimental Thyroidectomy.
MCFADYEAN, Professor J., M.S. Generalisation of Tuberculosis in the Ox.
MCWEENEY, Professor E. J., M.D. On the Growth of the Typhoid Bacillus in Bouillon containing a Certain Proportion of the Homologous Serum.
MUIR, R., M.D. On the Nature and Significance of Changes in the Bone Marrow during Leucocytosis.
SMITH, J. Lorrain, M.D. The Pathological Effects of Breathing Oxygen at a High Tension.
STILES, Harold J., M.B. The Nature of Parotid Tumours.
STOCKMAN, Professor R., M.D. The Pathological Effects of Dead Tubercle Bacilli.
THOMAS, [illegible] or R. Normal Circulation and Circulatory Disturbances in the Retina.
WOOD[illegible], T. Sims, M.D. On Diphtheritic Paralysis.

H. PHARMACOLOGY AND THERAPEUTICS.

Materia Medica Theatre, University New Buildings.

President: JAMES ORMISTON AFFLECK, M.D. *Vice-Presidents:* CHARLES DOUGLAS FERGUSSON PHILLIPS, M.D., LL.D.; NESTOR TIRARD, M.D., RALPH STOCKMAN, M.D. *Honorary Secretaries:* R. DUNDAS HELM, M.D., 3, Alfred Street N., Portland Square, Carlisle; A. LOCKHART GILLESPIE, M.D., 23, Walker Street, Edinburgh.

There will be three discussions on subjects of general interest and importance related to Pharmacology and Therapeutics. These subjects are as follows:

1. Wednesday, July 27th.—The Treatment of Diseases of the Stomach. Introduced by Dr. G. Herschell and Professor C. A. Ewald, and taken part in by, among others, Drs. Lauder Brunton, Saundby, Fenton B. Turck, Symons Eccles, Affleck, Crawford Renton, Calwell, Lockhart Gillespie and Pearson. For convenience the subject will be considered under the heads of: (*a*) General Treatment and Diet; (*b*) the Influence of Drugs upon Gastric Chemical Processes; (*c*) the Influence of the Treatment of co-existing Maladies upon Diseases of the Stomach; (*d*) the Indications for Surgical Treatment.

2. Thursday, July 28th.—The Treatment of Chronic Renal Disease, with special reference to: (*a*) Hygiene and Diet; (*b*) the Influence of Drugs and other Therapeutics Measures; (*c*) Uræmia. Opened by Dr. Nestor Tirard. Professor Ewald, and Drs. Saundby, MacAlister, Affleck, and Allison, will take part in the discussion.

3. Friday, July 29th.—The Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Attendant Risks. Opened by Professor Ralph Stockman. Professor Cash and Dr. F. C. Phillips will take part. (The antipyretic properties possessed by members of this group will not form a part of the subject for discussion.)

It is also proposed to hold a demonstration of recently-devised intragastric instruments and other apparatus and measures for the treatment of gastric diseases; to this it is expected that Dr. Turck (Chicago), Drs. Herschell and Eccles, Drs. Einhorn (New York), and Hemmeter (Baltimore) will contribute. The Secretaries will be glad to receive notice of any member wishing to show any further novelty relating to this subject.

The following papers have been announced:

ALLISON, T. M., M.D. Thyroid Extract in Chronic Renal Disease.
CALWELL, W., M.D. Treatment of Diseases of the Stomach.
CASH, Professor J. T., M.D. The Pharmacology of the Alkaloids of Aconitum Napellus.
EWALD, Professor C. A. (1) On the Present State of the Treatment and of our Knowledge of Gastric Disorders. The Benefit of Repeated Tapping and Venesection in Chronic Kidney Disease, especially in Uræmia.
FRASER, T. R., M.D. Further Observations on the Antitoxic Action of Bile against the Toxins of Diphtheria and Tetanus. (May be read in the Section of Medicine).
GILLESPIE, A. Lockhart, M.D. (1) Brief Note on the Action of the Bromide and Iodide of Strontium together upon Exophthalmic Goitre in Children. (2) Preliminary Note on the Action of Stipa Viridula. (3) The Action of Diet, Antiseptics, and of some other Drugs upon the Intestinal Processes.
HERSCHELL, George, M.D. The Treatment of Atony of the Stomach and Intestines by Mechanical Vibration.
HYDE, S., M.D. The Pure Air Treatment of Consumption.
KERR, Norman, M.D. Alcohol in Drugs and Drug Preparations.
MCWALTER, J. C. A Note on the New *Pharmacopœia*.
PHILLIPS, C. D. F., M.D. The Therapeutical Actions of Hydrastis Canadensis.
PHILLIPS, C. D. F., M.D., and PEMBREY, M. S., M.D. The Physiological Action of Hydrastin Hydrochloride.
TURCK, Fenton B. (Chicago). (1) Pneumatic Gymnastics of the Stomach. (2) The Indications for Gastrostomy, with a Note on a New Method of Operation.

(Some of these papers will not be read separately, but used as a basis for the remarks made at the discussions.)

The demonstration and explanation of new gastric appliances (should it be found feasible) will take place on Thursday, July 28th, at 1 P.M. or any other hour which may be subsequently fixed upon. Details as to the appliances and measures to be illustrated will probably be specially noted later on.

I. OPHTHALMOLOGY.

Chemistry Tutorial Class Room, University New Buildings.

President: D. ARGYLL ROBERTSON, M.D., LL.D. *Vice-Presidents:* R. MARCUS GUNN, F.R.C.S.; GEORGE A. BERRY, M.B.; GEORGE MACKAY, M.D. *Honorary Secretaries:* WILLIAM GEORGE SYM, M.D., 50, Queen Street, Edinburgh; ANGUS MCGILLIVRAY, M.D., 23, South Tay Street, Dundee.

The following papers have been promised:

BUCHANAN, Leslie, M.B. Leucosarcoma of the Choroid.
COLLINS, E. Treacher, F.R.C.S. On Cases where Skiagraphs were of Service for the Detection and Removal of Intraocular Foreign Bodies.
DAVIDSON, J. M'Kenzie, M.D. Demonstration of Employment of Roentgen Rays in Ophthalmology.
EYRE, J. W., M.D. A Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.
FALLOWS, J., L.R.C.S.Edin. (1) Case of Polypoid Growth from a Meibomian Cyst (Illustrated). (2) The Use of Fluorescin in the form of Tabloids in the Diagnosis of Corneal Abrasions.

GRIFFITH, A. Hill, M.D. Case of Successful Removal of Orbital Cyst.
GRIFFITH, John, F.R.C.S. Case of Acute Exophthalmic Goître.
HERN, John, M.D. The Operations now usually Substituted for Enucleation of the Eyeball.
HINSHELWOOD, James, M.D. Use of Holocaine in Ophthalmic Surgery.
JULER, Henry, F.R.C.S. (1) A Case of Gumma of the Ciliary Body with Recovery of Vision. (2) Case of Interstitial Keratitis with Acquired Syphilis.
LAWSON, Arnold, F.R.C.S. Bacteriology of Normal Conjunctival Sac and its bearing on the Use of Antiseptics.
MCGILLIVRAY, Angus, M.D. The Hyaloid Canal and its relation to Cyclitic Exudation.
NUËL, Professor (Liége). Absorption of Aqueous Humour of the Iris.
REID, Thomas, M.D. (1) Reparative Processes in the Cornea. (2) Intercalary Cells in Corneal Epithelium. (3) Early Stages of Trachoma: Lantern Demonstration.
SNELLEN, Professor (Utrecht). Historical Review of the Operative Treatment of Strabismus.
THOMPSON, J. Tatham, M.B., C.M. A Case of Cyst of the Hyaline Canal producing a Double Lens.
USHER, C. H., M.B. A Case of Orbital Growth.
WILLIAMS, R. Paralysis of Accommodation after Influenza.
WRAY, Chas., F.R.C.S. (1) Skiagraph of Penetrating Wound of Eyeball. (2) Extraction of Transparent Lens in High Myopia.

Microscopic and naked-eye specimens, apparatus, etc., have been promised for the Museum by Drs. Reid, Usher, Buchanan, and Angus McGillivray.

J. LARYNGOLOGY AND OTOLOGY.

Surgery Tutorial Class Room, University New Buildings.

President: PETER MACBRIDE, M.D. *Vice-Presidents:* J. J. KIRK DUNCANSON, M.D.; J. DUNDAS GRANT, M.D.; ROBERT MACKENZIE JOHNSTON, M.D.; STCLAIR THOMSON, M.D. *Honorary Secretaries:* ADAM BROWN KELLY, M.B., 26, Blythswood Square, Glasgow; A. LOGAN TURNER, M.D., 20, Coates Crescent, Edinburgh.

The subject selected for discussion is The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology, Rhinology, and Otology. The discussion will be introduced under these three heads by Sir Felix Semon (London), Dr. Greville MacDonald (London), and Dr. William Milligan (Manchester). The above discussion will be held on Wednesday morning.

On Thursday at 10 A.M. the Section will meet in the Music Class Room for the Purpose of joining the Life Assurance Section in the Discussion upon Middle Ear Disease in Relation to Life Assurance. Members will adjourn at noon to their own Section Room.

The following gentlemen have intimated their intention of taking part in the discussion or in the work of the Section: Dr. Charles Warden (Birmingham), Dr. Richard Ellis (Newcastle-on-Tyne), Dr. Farquhar Matheson (London), Professor Urban Pritchard (London), Dr. Dundas Grant (London), Dr. David Newman (Glasgow), Dr. L. H. Pegler (London), Dr. J. Kerr Love (Glasgow), J. Walker Downie, M.B. (Glasgow), John Macintyre, M.B. (Glasgow), Dr. Watson Williams (Bristol), Dr. William Hill (London), Macleod Yearsley, F.R.C.S. (London), W. Jobson Horne, M.B. (London), Dr. H. S. Birkett (Lontreal), Dr. Holbrook Curtis (New York), Dr. Von Stein (Moscow), W. R. H. Stewart, F.R.C.S.Edin., Dr. Thomas Barr (Glasgow), James Erskine, M.B. (Glasgow), Dr. Robert Fullerton (Glasgow), T. Mark Hovell, F.R.C.S.E. (London), Herbert Tilley, M.D., F.R.C.S. (London).

The following papers have been announced:

BALLANCE Hamilton S., M.D., Lateral Sinus Pyæmia, Operation, Recovery.
BARR, Thomas, M.D. (1) Notes on Extradural Suppuration in the Sigmoid Fossa due to Ear Disease. (2) A Case of Double Acute Mastoid Empyema, with Exposure of Dura Mater and Operation in Both.
BRONNER, Adolph, M.D. A Plea for a More Efficient Sterilisation of Nose and Throat Instruments.
COLLIER, Mayo, F.R.C.S.Eng, Nasal Obstruction, its Relation to Throat and Ear Disease.
CURTIS, Dr. Holbrook (New York). The Treatment of Acute Laryngitis in Singers.
DOWNIE, Walker, M.B. Three Cases of Foreign Body in the Throat in which the position of the Body was determined by the Roentgen Rays. Illustrated by Skiagraphs.
GRANT, Dundas, M.D. (1) A Rapid Means of Making Hartmann's Graphic Charts of the Hearing Power for a Series of Tuning Forks. (2) The Relation of Hartmann's Percentages of Hearing Power for Dying-out Tuning Forks to the Actual Degree of Hearing Power. (3) Mechanical Vibration applied to the Spine in the Treatment of Sclerosis of the Middle Ear.
HORNE, W. Jobson, M.B. The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.
HOVELL, T. Mark, F.R.C.S.E. Catheterisation of the Eustachian Tubes.
HUNT, J. Middlemass, M.B. Fibrinous Rhinitis.
JONES, Hugh E., M.R.C.S. (1) Some Unmanageable Complications of Middle Ear Disease. (2) The Early Diagnosis and Treatment of the Mastoid in Acute Suppuration of the Tympanum.
LAKE, Richard, F.R.C.S. Laryngeal Phthisis with Analysis of Cases.
MACINTYRE, John, M.B. Demonstration on the *X* Rays, with special reference to the Diseases of the Upper Respiratory Tract.
MILLIGAN, W., M.B., M.S. Some Observations upon Antrectomy as a means of Treatment in Suppurative Middle-ear Disease.
NEWMAN, David, M.D. (1) On Laryngeal Paralysis from Pressure upon the Vagus or Recurrent Laryngeal Nerves. (2) Some Cases showing the Relationship of Nasal and Pharyngeal Disease to the General Health.
PEGLER, L. H., M.D. (1) An Operation for Removal of Deformity from Fracture of the Triangular Cartilage of the Nose. (2) A Note on Bilateral Tumours of the Septum, Lymphoid and Erectile, with a Short Account of their Histology.
SHAW, Cecil, M.D. Notes of a case of Epithelioma of the Pharynx, with Microscopic Specimens of Tumour.
STEWART, W. R. H. Wounds of the Facial Nerve during Operation on the Mastoid Antrum.
THOMSON, StClair, M.D. Nasal Hydrorrhœa.
YEARSLEY, Macleod, F.R.C.S. The Thyroid Treatment of Middle-ear Disease.
YONGE, E. S., M.D. The Treatment of Dysphagia in Laryngeal Tuberculosis.

K. DISEASES OF CHILDREN.

Practical Materia Medica Room, University New Buildings.

President: JOSEPH BELL, F.R.C.S.Edin. *Vice-Presidents:* JAMES CARMICHAEL, M.D.; JOHN PLAYFAIR, M.D.; T. M. BURN-MURDOCH, M.B.; JOHN ARTHUR WRIGHT, F.R.C.S. *Honorary Secretaries:* GEORGE HARRY MELVILLE DUNLOP, M.D., 20, Abercromby Place, Edinburgh; JOHN THOMSON, M.D., 14, Coates Crescent, Edinburgh; WALTER STACY COLMAN, M.D., 22, Wimpole Street, W.

The following subjects have been selected for discussion:

1. Wednesday, July 27th.—The Treatment of Spinal Caries. To be opened by Mr. Victor Horsley.

The following gentlemen are expected to join in the discussion; F. Churchill, M.D. (London), J. Jackson Clarke, F.R.C.S. (London), Robt. Jones, F.R.C.S.Edin. (Liverpool), T. S. Kirk, M.B. (Belfast), R. W. Murray, F.R.C.S. (Liverpool), Noble Smith, F.R.C.S.Edin. (London), A. H. Tubby, F.R.C.S. (London), W. Thomas, F.R.C.S. (Birmingham).

2. Thursday, July 28th.—Certain Aspects of Congenital Syphilis. In opening the discussion Mr. Jonathan Hutchinson will deal with the Lesions of the Bones and of the Organs of Special Sense, and Dr. Henry Ashby will speak of those of the Brain and other Internal Organs.

The following members have intimated their intention to join in the discussion: Professor A. Baginsky (Berlin), M. Jules Comby (Paris), T. Telford Smith, M.D. (Lancaster).

3. Friday, July 29th.—Rheumatic Heart Disease in Childhood; with special reference to (*a*) Physical Signs, (*b*) Prognosis. To be opened by Dr. D. B. Lees.

The following are expected to join in the discussion: H. Ashby, M.D. (Manchester), Professor A. Baginsky (Berlin), James Finlayson, M.D. (Glasgow), Theodore Fisher, M.D. (Clifton), W. P. Herringham, M.D. (London), F. John Poynton, M.D. (London), J. Lindsay Steven, M.D. (Glasgow), G. A. Sutherland, M.D. (London).

The following papers have been announced:

BATTEN, F. E., M.D. On Diphtheritic Paralysis.
CARMICHAEL, James, M.D. Types of Infantile Pneumonia.
CLARKE, J. Jackson F.R.C.S. On Congenital Dislocation of the Hip-joint.
COLLIER, H. Stansfield, F.R.C.S. On Dislocation of the Hip-joint occurring in the Course of Infectious Diseases.
COMBY, Jules, M.D. (Paris). On Movable Kidney in Children.
COUTTS, J. A., M.B. On Some Exceptions to Colles's Law.
EVE, F. S., F.R.C.S. On Tendon Grafting.
JONES, Robert, F.R.C.S.Edin. On the Short Leg of Hip-joint Disease and its Treatment.
MARTIN, R., M.D.Aberd. On the Effects of Tobacco Smoking on Children.
MURRAY, R. W., F.R.C.S. (1) On Harelip and Cleft Palate. (2) On the Treatment of Club Foot.
NICOLL, James H., M.B. The Radical Cure of Spina Bifida treated by Open Operation.
STILES, H. J., F.R.C.S.Edin. Note on the Operation of Clearing Out the Mastoid Antrum in Infants and Young Children.
STILL, G. F., M.D. On the Micro-organism of Simple Posterior Basic Meningitis in Infants.
SUTHERLAND, G. A., M.D., and CHEYNE, Watson, F.R.C.S. The Treatment of Hydrocephalus by Intracranial Drainage.
TUBBY, A. H., F.R.C.S. The Occurrence of a Pad on the Dorsum of the Foot in Rickets.

L. DERMATOLOGY.

Students' Library, University New Buildings.

President: WILLIAM ALLAN JAMIESON, M.D. *Vice-Presidents:* WALTER GEORGE SMITH, M.D.; JOHN JAMES PRINGLE, M.B., ALEXANDER MORTON, M.D. *Honorary Secretaries:* JAMES LIMONT, M.B., 3, Queen Square, Saville Place, Newcastle-on-Tyne; NORMAN WALKER, M.D., 7, Manor Place, Edinburgh.

The arrangements are as follows:

On Wednesday, July 27th, after the President has delivered

his introductory remarks, the Section will adjourn to the Royal Infirmary, where a Clinical Meeting for the Exhibition of Patients will be held and the cases informally discussed.

On Thursday, July 28th, the subjects for discussion will be (1) The Nature and Treatment of Lupus Erythematosus. To be opened by Professor Boeck (Christiania), and Dr. Unna (Hamburg); and (2) What are we to understand by Eczema? To be opened by Mr. Malcolm Morris (London), and Dr. Wallace Beatty (Dublin).

In addition to those already mentioned it is expected that the following will be present and take part in the discussions: Professors McCall Anderson, Quincke, and Janowsky, and Drs. Crocker, Liddell, Leslie Roberts, Couper, Purdon, and Stopford Taylor.

The following papers have been announced:

UNNA. Dr. P. G. On Impetigo.
THOMAS, Thelwall, F.R.C.S. Notes on Three Cases of Syphilis communicated by Tattooing.
GALLOWAY, J., M.D. The Histology of Scleroderma.
FOX, T. Colcott, M.D., and BLAXALL, F. R., M.D. Demonstration of Cultures of Endothrix Ringworm, Diagnosed, Clinically and Microscopically.
EDDOWES, A., M.D. A Principle of Treatment of Infected Follicles.
WALSH, D., M.D. The Excretory Irritation of the Skin and other Organs.
DOCKRELL, M., M.D. (1) The Treatment of Lupus by Maragliano's Serum. (2) The Treatment of Skin Sarcoma by Coley's Fluid.

M. MEDICINE IN RELATION TO LIFE ASSURANCE.

Music Class Room, University New Buildings.

President: CLAUD MUIRHEAD, M.D. *Vice-Presidents:* Sir R. DOUGLAS POWELL, Bart., M.D.; PETER ALEXANDER YOUNG, M.D.; JAMES RITCHIE, M.D. *Honorary Secretaries:* JAMES MURDOCH BROWN, M.D., 9, Walker Street, Edinburgh; FRANCIS DARBY BOYD, M.D., 6, Atholl Place, Edinburgh.

The subjects already arranged for discussion are:

The Prognosis of Cardiac Disease in its bearings upon Life Assurance. To be opened by Professor Sir William T. Gairdner, K.C.B.

Middle-Ear Disease in relation to Life Assurance. This will be opened by Dr. McBride, President of the Section of Laryngology and Otology. (These two Sections will probably hold a joint discussion on this subject.)

Does Evidence of Limited Family Vitality call for an advanced Rate of Premium? To be opened by Dr. James Ritchie (Edinburgh).

The subjects of papers promised are:

LOW, Mr. G. M. (Manager, Edinburgh Life Assurance Society). Extra Rating as a Statistical Problem.
MEIKLE, Mr. James (Actuary, Scottish Provident Association). Gout as a Factor in Life Assurance.
MCCANDLISH, Mr. John M. (Late Manager, Union and National Assurance Company). The Medical Advisers of Assurance Companies; Some of their Difficulties.
PLAYFAIR, John, M.B. (Edinburgh), conjointly with Mr. T. WALLACE (Actuary, North British and Mercantile Insurance Company). The Bearing of Pregnancy upon Life Assurance.

N. TROPICAL DISEASES.

Practical Pathology Room, University New Buildings.

President: PATRICK MANSON, M.D., LL.D. *Vice-Presidents:* ANDREW DAVIDSON, M.D., LL.D. ANDREW SMART, M.D., LL.D.; WILLIAM JOHN RITCHIE SIMPSON, M.D. *Honorary Secretaries:* JAMES CANTLIE, M.B., 46, Devonshire Street, Portland Place, W.; Surgeon-Captain M. LOUIS HUGHES, A.M.S., Aldershot.

The following discussions have been arranged: 1. The Unclassified Fevers of the Tropics. To be opened by Brigade-Surgeon-Lieutenant-Colonel Crombie, I.M.S.

2. Beri-Beri in Temperate Climates. To be opened by Conolly Norman, M.D. (Dublin).

3. The Epidemic of Plague in India. To be opened by W. J. R. Simpson, M.D. (late of Calcutta).

The following among others intend to take part in the discussion or to send papers: Surgeon-Major-General Hamilton, Inspector-General Turnbull, R.N.; Dr. Patrick Manson, Professor Haffkine, Mr. Hankin, Surgeon-Major Andrew Duncan, Surgeon-Major Ronald Ross, Surgeon-Captain Louis Hughes, Surgeon-Captain Buchanan, Dr. Andrew Davidson, Dr. Daniels, Dr. Sandwith, Dr. Sambon, Mr. James Cantlie, etc.

The following papers have been announced:

BLACK, Surgeon-Major [illegible]. Notes on Sketch of Disease at Hong Kong in 1894, and of the Troops, with Views, Charts, etc.
BROWN, Surgeon-Captain E. Harold, I.M.S. Abdominal Surgery in the Tropics.
CANTLIE, James, F.R.C.S. Surgical Requirements of the Tropics.
DAVIDSON, Andrew, M.D. The Malarial Problem in its Epidemiological Aspects.
HAFFKINE, Professor W. M. Plague in India.
HAMILTON, Surgeon-Major-General J. B., P.M.O. Plymouth. Enteric Fever in Armies and Tropical Climates.
HUGHES, Surgeon-Captain Louis, A.M.S. On the Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates.
MANSON, Patrick, M.D. Appearance of Pigmentation in Lymphocytes in Relation to the Diagnosis of Malaria.
SANDWITH, F. M., M.R.C.S. (Cairo). (1) Pellagra. (2) The Treatment of Acute Dysentery.
WALSH, Surgeon-Major J. H. Tull, I.M.S. Clinical Aspects and Treatment of Malarial Fever.
YARR, Surgeon-Major, A.M.S. Malarial Eye Affections.

O. ANATOMY.

Practical Physiology Room, University New Buildings.

President: Sir JOHN STRUTHERS, M.D., LL.D. *Vice-Presidents:* Sir JAMES A. RUSSELL, M.B., LL.D.; JOHNSON SYMINGTON, M.D.; ANDREW MELVILLE PATERSON, M.D. *Honorary Secretaries:* DAVID HEPBURN, M.D., University, Edinburgh. JOSEPH RYLAND WHITAKER, B.A., M.B.Lond., F.R.C.P.Edin., Surgeons' Hall, Royal College of Surgeons, Edinburgh.

There will be a discussion on The Significance of Anatomical Variations, which will be opened by Professor Cunningham of Dublin in an address illustrated by lantern and in which Professor Shepherd of Montreal and Professor Young of Manchester will take part.

Professor Symington will give a Lantern Demonstration on Cranial Topography.

The following papers have been announced:

MCCARTHY, Dr. (Montreal). A New Dissection showing the Internal Gross Anatomy of the Hippocampus Major, with Specimens.
THOMSON, Professor A., M.B. Sexual Differences of the Fœtal Pelvis.
WATERSTON, David, M.B., C.M. Observations on the Anatomical Basis of Reduction of Dislocation of the Shoulder-joint by Manipulation.

P. PHYSIOLOGY.

Physiology Theatre, University New Buildings.

President: WILLIAM RUTHERFORD, M.D., F.R.S. *Vice-Presidents:* JOHN ALEXANDER MACWILLIAM, M.D.; D. NOËL PATON, M.D.; E. WAYMOUTH REID, M.B., F.R.S. *Honorary Secretaries:* EDMOND WILLIAM WACE CARLIER, M.D., 39, Morningside Drive, Edinburgh; ROBERT ARTHUR YOUNG, M.D., 37, Trevor Square, Knightsbridge, S.W.

The following discussions have been arranged:

1. Theories regarding the Production of Different Qualities of Sensation. To be opened by Professor Rutherford, F.R.S.

2. Intestinal Absorption. To be opened by Professor Waymouth Reid, F.R.S.

The following papers are promised:

BAIN, W., M.D. An Experimental Contribution to the Study of the Mechanism of Bile Secretion.
CARLIER, E. W., M.D. Changes that Occur in Some Cells in Mucous Membrane of the Newt's Stomach during Digestion.
COPEMAN, S. Monckton, M.D. Biliary Secretion in Man.
DUNLOP, J. C., M.D. On the Distribution of Nitrogen in the Urine.
GILLESPIE, A. Lockhart, M.D. On Proteoses.
GULLAND, G. Lovell, M.D. (1) On the Presence of Nerves on Intracranial Blood Vessels. (2) Exhibition of Specimens showing Changes in Mucous Membrane of Alimentary Canal of Salmon in Fresh Water.
HARRIS, D. Fraser, M.D. The Physico-Chemical State of Caseinogen.
MACWILLIAM, Professor J. A., M.D. The Influence of the Central Nervous System on the Rate of the Heart's Beat.
MAHALANOBIS, S. C., B.Sc. (1) An Electrical Key for Physiological Experiments. (2) Exhibition of Specimens showing Changes in Muscles of Salmon in Fresh Water.
MILROY, T. H., M.D. Chemical Changes in Pelagic Ova during Maturation.
MILROY, T. H., M.D., and MALCOLM, J., M.B. The Metabolism of Nuclein under Physiological and Pathological Conditions.
PATON, Noel D., M.D. (1) Protoplasm and Zymin Action. (2) Further Observations on the Metabolism of the Salmon.
PEMBREY, M. S., M.D. Observations upon the Deep and Surface Temperature of Man in Health and Disease.
RUTHERFORD, Professor, F.R.S. (1) On the Secretion of Bile in the Human Subject. (2) On the Action of the Internal Intercostal Muscle.
STEWART, Professor G. N., M.D. (1) The Relation between Molecular Concentration (as Determined by Lowering the Freezing Point) and the Electrical Conductivity of Certain Animal Liquids, with Special Reference to Blood. (2) The Changes which take place in the Electrical Conductivity and Molecular Concentration of Certain Animal Liquids and Artificial Nutrient Media with the Growth in Them of Putrefactive Pathogenic Micro-organisms.
STURROCK, A. C., M.B. The Selective Power of Tissues, especially as Illustrated in the Mammary Gland.

TURNER, F. D. Dawson, M.D. (1) Experiments on the Production of Complementary Colour Sensations. (2) Stereoscopic Exhibition of Roentgen Photographs of Injected Blood Vessels.
WALLER, Augustus D., M.D., F.R.S. On the Action of Anæsthetics on Vegetable and Animal Protoplasm.
WATSON, D. C., M.B. The Place of Formation and *Rôle* of Uric Acid in the Animal Organism.
THOMPSON, Professor W. H., M.D. On the Influence of Peptone and its Precursors on the Work of the Kidney.

PROGRAMME OF PROCEEDINGS.

TUESDAY, JULY 26TH, 1898.

9.30 A.M.—Meeting of 1897-98 Council.
11 A.M.—Opening Service in St. Giles' Cathedral.
2.30 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business.
8.30 P.M.—Adjourned General Meeting from 2.30 P.M. President's Address.
9.30 P.M.—Reception by the Right Hon. the Lord Provost of Edinburgh, in the Museum of Science.

WEDNESDAY, JULY 27TH, 1898.

9.30 A.M.—Meeting of 1889-99 Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Second General Meeting. Address in Medicine by Professor T. R. Fraser, M.D., LL.D.
4.30 P.M.—Garden Party at Craig House, Morningside Drive. Sir Alexander Christison, Bart., and Dr. Clouston will receive.
9.30 to 12 P.M.—Reception will be given by the Local Committee in honour of the Association, within the McEwan Hall and New University Quadrangle.

THURSDAY, JULY 28TH, 1898.

9.30 A.M.—Meeting of Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Third General Meeting. Address in Surgery, by Professor Annandale, F.R.C.S.
4.30 P.M.—Reception and Garden Party by the Royal College of Physicians, within the College and the adjacent Queen Street Gardens.
4.30 P.M.—Reception by the Royal College of Surgeons within the College.
4.30 P.M.—Reception by the Royal Medical Society within the Society's Hall
4.30 P.M.—Garden Party by Professor and Mrs. Balfour, Inverleithen House.
7 P.M.—Public Dinner of the Association. Music Hall, George Street.
9 to 11 P.M.—The Ladies Committee will give a *conversazione* to ladies and invited guests within the Royal College of Physicians.

FRIDAY, JULY 29TH, 1898.

9.30 P.M.—Concluding General Meeting. Address in Psychological Medicine. By Sir John Batty Tuke, President of the Royal College of Physicians, Edinburgh.
11 A.M. to 1.30 P.M.—Sectional Meetings.
4.30 P.M.—Garden Party by the Right Hon. the Earl of Hopetoun, G.C.M.G., at Hopetoun House.
9 P.M.—Reception and Ball by the Right Hon. the Lord Provost and the Magistrates of Edinburgh, in the Music Hall, George Street.

SATURDAY, JULY 30TH, 1898.

10 A.M.—The University Graduation Ceremonial will take place in the McEwan Hall.
Excursions.

Honorary Local Secretaries.

R. W. PHILIP, M.D., F.R.C.P.Edin., 4, Melville Crescent, Edinburgh.
JOHN SHAW M'LAREN, M.B., F.R.C.S.Edin., 14, Walker Street, Edinburgh.

RAILWAY AND EXCURSION ARRANGEMENTS.

Railway Arrangements.—The Scottish railways have promised to issue return tickets at single fare available for day of issue or the following day from Edinburgh to all places within 50 miles during the week of the meeting to members on showing their ticket of membership. They also issue periodical tickets from places in the neighbourhood at special cheap rates for the convenience of those residing a short distance out of town during the meeting. Applications for particulars may be made at any Scottish railway station.

The following are the excursions as at present arranged. All the excursions start and finish at Edinburgh, but from most it will be possible to catch evening connections to other towns.

St. Andrews.—The party will proceed by special train to St. Andrews, spend the forenoon inspecting the various buildings of interest, lunch in the Town Hall on the invitation of the Medical Faculty of St. Andrews University. After lunch there will be the choice of witnessing an exhibition golf match on the historic links of St. Andrews, visiting the Gatty Marine Laboratory, or driving to Earlshall, an old Elizabethan mansion recently restored and furnished in its original style. The party will reassemble at a reception given in the grounds of St. Leonard's School by the local practitioners, and return to Edinburgh by special train. St. Andrews is a town which will amply repay a visit. It is full of antiquarian and historical interest. It possesses the oldest of our Scottish universities; it has for long been one of the principal educational centres in Scotland; it is the home of the premier golf club; and it can fairly be described as being one of the most picturesque towns in the British islands. Special attractions to St. Andrews are offered in connection with this excursion. The Marquis of Bute has kindly consented to open for inspection the restorations which he has for some years past been carrying out in connection with the old ruined cathedral; these will doubtless be of great interest to the members present. The Medical Faculty are opening for inspection the buildings of the new medical school: these have recently been presented to the University by the Marquis of Bute, and will repay inspection. The Medical Faculty, as already stated, are entertaining this excursion to a luncheon banquet in the Town Hall, and they, along with the local practitioners, are doing all in their power to ensure a thoroughly enjoyable day. The number of tickets is limited to 170.

Falkland and Kinross.—This excursion has been arranged to enable members to inspect Falkland Palace and Castle, and Loch Leven with its Castle. Members joining this excursion will be entertained at luncheon by the Marquis of Bute at Falkland Palace. A special train will convey the party to Falkland Road Station, where carriages will be in waiting to drive the party to Falkland Palace, a distance of about three miles. The forenoon will be spent in inspecting the Castle and Palace. Lord Bute purchased the domain of Falkland about eleven years ago, and since then has been engaged in raising the ruins of the Castle and in restoring the Palace. It is with the latter especially that much has been done, and where much of interest will be seen and admired. Falkland House and grounds will also be open. After lunch the party will drive over to Loch Leven, a distance of about twelve miles, through a charming part of the "Kingdom" of Fife. On arrival at Loch Leven the party will be conveyed in boats to the island on which Loch Leven Castle stands; there full opportunity will be given of inspecting that famous old castle, and there the party will be hospitably entertained to tea by Sir Grahame Montgomerie. A special train will convey the party back to Edinburgh. The number of tickets is limited to 150.

Dunkeld and Crieff.—This excursion offers one of the most charming drives in the Highlands of Scotland, and one which is not easily accomplished at other times, there being no regular coach service passing over the route. A special train of saloon carriages will convey the party to Dunkeld, where coaches will be in waiting. From Dunkeld the route passes up to the valley of the Bran as far as Amulree, a village where the clans swore fealty to the Chevalier St. George in 1715. From there the road passes by Loch Freechie and the Sma' Glen to Crieff. The length of this drive is about twenty-two miles. The route throughout offers a succession of magnificent views: of these possibly those in the Sma' Glen are most characteristic, for the Sma' Glen has been compared to the much better known Glencoe. A picnic luncheon will be provided *en route*. Dinner will be served at the Strathearn Hydropathic, Crieff, by kind invitation of the directors. A special train will leave Crieff to convey the party back to Edinburgh. The number of tickets is limited to 100.

Dollar and Rumbling Bridge.—Members who join this excursion will spend a day in one of the most charming districts near Edinburgh. Dollar and Rumbling Bridge are situated on the southern slopes of the Ochil Hills, the country round is studded by fine country residences, and at three of these hospitality is offered. The party will proceed by special train to Rumbling Bridge. A pleasant walk from there up the Valley of the Devon will lead past Caldron Linn, a beautiful waterfall, to Blairhill House, where Mr. Hay has kindly invited members to partake of refreshment. From Blairhill the party will drive about four miles to Cowden Castle and Hillfoot House, when, after inspecting these mansions, members will be entertained at luncheon. Mr. Christie kindly

entertaining some at Cowden Castle, and Mr. McArthur Moir some at Hillfoot House. After luncheon the party will re-assemble at Hillfoot, and from there walk over the hills, about half a mile, to Castle Campbell, which, along with the beautiful scenery of "The Glen," will afford a delightful afternoon's expedition. The walk will be continued as far as Dollar, where tea will be served, and from whence a special train will convey the party back to Edinburgh. The number of tickets will be limited to 50.

Perth and Dundee.—This excursion has been arranged by the members of the local Branches of the Association in Perth and Dundee. It will give an opportunity of seeing the town of Perth with its beautiful surroundings, the River Tay, and Dundee with its new medical buildings. The party will be conveyed to Glenfarg Station by special train; from Glenfarg carriages will convey the party down Glenfarg, through Bridge of Earn, and over Moncrieffe Hill to Perth. Various buildings, including the famous St. John's Church, will be open for inspection at Perth. The party will be entertained at luncheon at James Murray's Royal Asylum by the directors of that institution. After luncheon, a steamer will take the party down the Tay to Dundee, a cruise of about two hours, passing through fine scenery, and giving views of several interesting mansions and of the old and new Tay Bridges. At Dundee the party will be conveyed to the infirmary, where they will be entertained at tea by the local members of the Association. A special train will convey the party back to Edinburgh. The number of tickets will be limited to 100.

Melrose and the Land of Scott.—This excursion has been devised to enable members to visit Abbotsford, Dryburgh, Melrose, and other places connected with Sir Walter Scott and his writings. A special train will convey the party to Abbotsford Ferry Station; from there the party will be ferried across the Tweed and driven to Abbotsford, where ample time will be allowed to inspect that interesting house. From Abbotsford the party will be driven *viâ* Bemersyde to Dryburgh, and from Dryburgh to Melrose. The route passes through lovely country, and from several points striking, and in some cases historic, views will be obtained. The charms of Dryburgh Abbey and Melrose Abbey, both of which will be inspected, are so well known that they do not require further mention. Luncheon will be served in Melrose, and afternoon tea at Melrose Hydropathic by the kind invitation of the directors. The return train, a special, will convey the party home *viâ* the Tweed Valley and Peebles. The tickets for this excursion will be limited to 150.

Stirling.—This excursion has been arranged by the members of Stirling, Kinross, and Clackmannan Branch. A special train will convey the party to Stirling; carriages will be waiting there to drive to the Howieton Fisheries. These have kindly been thrown open by the proprietors, and a most enjoyable and instructive forenoon will be spent in visiting them; a full description of the rearing of salmon and trout fry will be given and the various stages shown. The party will return to Stirling, and be there entertained at luncheon by the members of the Stirling, Kinross, and Clackmannan Branch in the Stirling Town Hall. After luncheon visits will be made to Stirling Castle, the old Parliament Hall, and other places of interest, after which the party will be driven to Bridge of Allan, where a garden party is to be given by the Directors of the Bridge of Allan Mineral Wells Company. A special train will bring the party back to Edinburgh. The tickets for this excursion are limited to 100.

St. Mary's Loch.—This excursion will take members through an exceedingly interesting and beautiful part of the south of Scotland. No part of Scotland has been so much celebrated in ballad and romance as this district, and few, if any, excursions in the south of Scotland afford the same variety of scenery of moor, loch, and stream. The party proceeds by special train to Selkirk, and from there drives up the valley of the Yarrow to St. Mary's Loch. A picnic luncheon will there be provided, probably in the neighbourhood of the celebrated cottage of Tibbie Shiels. The return drive will be by the Gordon Arms and down the Quair water to Innerleithen. The drive is long, but the interesting scenery will fully compensate it. At Innerleithen tea will be provided, and after that the party will return by special train to Edinburgh. Tickets for this excursion are limited to 50.

The Trossachs.—Thanks to special concessions of the railway companies, members will be able to visit this most beautiful neighbourhood comfortably and at comparatively small expense. A special train will convey the party to Callander, from there coaches to the Trossachs, passing on the way Loch Venacher and Lock Achray. The road affords some splendid views, notably of Ben Ledi and Ben Venue. After visiting the Pass of the Trossachs and Loch Katrine, the party will lunch at the Trossachs Hotel. The return drive will be over the hills to Aberfoyle, where tea will be provided, and from where a special train will start for Edinburgh. The country visited is so well known and so fully described in all guide books that no further description here is necessary. The tickets for this excursion will be limited to 100.

Dalkeith and Rosslyn.—This excursion has been specially arranged for the benefit of those attending the graduation ceremony of the Edinburgh University, either on duty or receiving honorary degrees, and a large proportion of the tickets will be held in reserve for such. The excursion will start later in the day than the others. A special train will convey the party to Dalkeith station; from there the party will proceed on foot to visit Newbattle Abbey, the residence of the Marquis of Lothian, and then to Dalkeith Palace, where the Duke of Buccleuch has generously invited the party to luncheon. After luncheon, a few minutes in the train brings the party to Hawthornden. The afternoon will be spent in walking through the beautiful grounds of Hawthornden, kindly thrown open to all members of the Association at the time of the meeting by Sir James Drummond, and on to Rosslyn, where the old castle and chapel will be visited. Tea will be served at Rosslyn, and the party will return by special train to Edinburgh. The tickets for this excursion, including those reserved as stated, are limited to 150.

Afternoon Excursions.—Short afternoon excursions have been arranged for the Tuesday, Wednesday, and Thursday afternoons of the meetings. These go to: (1) Craigmillar Castle, Tuesday, at 2.15, to visit that historic old castle, a former Royal residence; (2) Hawthornden and Rosslyn, any afternoon; (3) Penicuik, Wednesday, at 2.10 (train to Pomathorn Station), where Professor Cossar Ewart has kindly offered to show his interesting collection of hybrid zebras.

Conducted Town Excursions.—These will take place on the Wednesday and Thursday afternoons, and will be conducted by gentlemen well acquainted with the various buildings. They include visits to the Castle, St. Giles's Cathedral, Holyrood, the Law Courts and Parliament Hall, and the Municipal Buildings with the Town's Museum.

Tickets for the excursions can be obtained in the Excursion Department of the Reception Room on and after Tuesday, July 26th. Further information may be obtained on application to James C. Dunlop, M.D., F.R.C.P.Edin., 24, Stafford Street, Edinburgh.

NOTICES OF MOTION.

DR. LOVELL DRAGE gives notice that he will move:

That the Council be requested to take the necessary steps for bringing to the notice of the Government the necessity for an inquiry by Royal Commission into the constitution of the various medical corporations and the General Medical Council, and into the grievances of the medical profession.

DR. J. BRASSEY BRIERLEY gives notice that he will move:

1. That in By-law 8, page 15, the words from "each" on line 4 to "Association" on line 7 be deleted.
2. That in By-law 10 every word after "Council" on line 3 be deleted.
3. By-law 22, on first line, to substitute "six" for "four," and add to end, "and the travelling and hotel expenses of councillors and members of the Parliamentary Bills Committee shall be paid by the Treasurer out of the funds of the Association."

ADDITIONAL BY-LAW.

A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 400 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Council.

The Parliamentary Committee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

DR. JAMES A. MYRTLE gives notice that he will move:

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new Articles and Memorandum of Association, and, upon this being granted, to forthwith undertake the medical defence of members of the Association.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY JULY 9TH, 1898.

PRACTICE BY UNREGISTERED PERSONS.

The case of William Maunsell Collins, an M.D. of the Royal University of Ireland, who was convicted on July 2nd on a charge of manslaughter for procuring abortion with a fatal result, and sentenced to seven years' penal servitude, raises many points of interest to the medical profession, and it has therefore been thought well to publish a full report of the proceedings. We refer below to some of the aspects of the case, but there is another point which deserves the serious attention, not only of the medical profession, but also of the Legislature. Dr. Collins, to give him the title which he still possesses, was on June 27th, 1892, convicted of having forged a certain promissory note, but was liberated on his own recognisances to appear for judgment when called upon. On November 23rd, 1892, his name was directed by the General Medical Council to be erased from the *Medical Register*, and a person unacquainted with the laxity of the law might have assumed that he would be debarred from practising. As a matter of fact, however, he at once resumed his practice in Cadogan Place, and except when he had the misfortune to have a patient die under his hands under suspicious circumstances, as happened three years ago, he practically suffered little inconvenience from this formal expulsion from the medical profession. The Medical Acts exist for the benefit of the public, their enforcement is necessary to the due working of our complicated social system. Can it be said that it was advantageous, from the point of view of public policy, that fashionable ladies should be able to say to each other for the last five or six years: "There is always Dr. Collins"? If a barrister is disbarred he is forbidden to practise, and no solicitor would dream of employing him, for no judge would permit him to plead. If a solicitor is struck off the rolls he is *ipso facto* prohibited from acting as a solicitor, and severe penalties exist and are enforced against any man who ventures to evade the prohibition. If the certificate of the master of a merchant ship is withdrawn or suspended he cannot follow his calling. But if a medical man is struck off the *Register* he can and does go on practising.

It is true that he cannot recover fees by legal action, and therefore he takes care to be paid ready money. If he dispenses his own drugs he is liable to prosecution under the Apothecaries Act; but he can and does prescribe. If, as was the case with Collins, he retains his degree of M.D.—because the university which gave it possesses no statutory right to take it away from any graduate who may be convicted of felony or other infamous conduct—he may expect, if prosecuted under Section XL of the Medical Act, 1858, to find a magistrate who will take the view that he does not wilfully and falsely pretend to be a "duly-qualified practitioner"—that is, a person whose name is on the *Medical Register*, as defined in Section XXXIV of the Act of 1858.

The case will perhaps help to open the eyes of the public to the force of the contention that there is something very wrong in the state of the law which permits such a thing to happen. When the question has been raised in the past, the public has displayed a disposition to gird at the medical profession, to raise the cry of trades-unionism, and to maintain that it is the inalienable privilege of the free citizen of a free country to consult any quack or any unregistered pretender whom he chooses. The Collins case should give rise to grave searchings of heart. Either, as Mr. Horsley has contended, the Medical Acts have been wrongly interpreted, or an amendment of those Acts is urgently required.

Mr. Horsley contends that since the Medical Acts (see especially Section VI of the Act of 1886) specifically entitle registered medical practitioners to practise medicine, surgery, and midwifery, a person practising without being registered violates the Acts and comes under the penal provisions of Section XL of the Act of 1858. The point has not yet been fully argued before the High Court. It may be remembered that a summons was in fact applied for at the Westminster Police Court last March against William Maunsell Collins, but Mr. Sheil said that he did not think that there was anything in the Act which made it obligatory for a qualified man to be registered, though there ought to be such a provision. He declined to grant the summons. A rule *nisi* was obtained, and the case would have been argued before the High Court, but before this could be done the defendant was arrested on the criminal charge of which he has now been convicted.

It is impossible to feel very sanguine that the courts would put upon the Medical Acts the interpretation for which Mr. Horsley has contended with so much ability, and we are therefore the more glad that the question of the form which legislation on this point should take will come up for discussion at an early meeting of the Parliamentary Bills Committee on a draft Bill to amend the Medical Acts which has been prepared by a subcommittee of which Mr. Horsley is a member.

THE COLLINS CASE.

The recent trial of Dr. Collins will be read by the profession with interest, and with mingled feelings of satisfaction and regret—with interest, on account of the medico-legal questions involved, and the ability with which they were handled by the able counsel who defended Collins; with satisfaction, because a scoundrel has been stopped in his evil trade; with regret, that a career which began with such bright promise should end in such a ruin of disgrace.

The case was simple. Mrs. Uzielli, a fashionable lady, found herself pregnant. She did not want any more children, so she went to Collins, who induced abortion.

Fatal peritonitis followed. Collins was put upon his trial for murder, but the jury found him guilty of manslaughter, No one could suppose that he wanted to kill the poor lady; and this consideration doubtless prevented the jury from finding him guilty of wilful murder.

The first question that arises is, Why did Mrs. Uzielli die? She died from septic infection; and the infection took place because antiseptic precautions were imperfectly observed. The precautions were imperfect on account of the secrecy that from Collins's point of view was essential. The thing had to be done by him alone; the presence of a nurse might have supplied the police with evidence for a prosecution. He had to prepare the solutions, bring them and hold them where they were wanted, as well as manipulate the instruments, and it is no wonder that such inconvenience should have led to an oversight. The lesson is obvious. A patient with incomplete abortion may be bleeding so freely that the emptying of the uterus is necessary, and yet she may not wish it known that she has been pregnant. The medical man called to such a case should on no account allow himself to treat the patient with any kind of secrecy. He should insist on having proper assistance, and on his patient observing necessary precautions. He need not publish the nature of her illness, but he should give no one the chance of saying that he had been doing something that he did not wish known. The patient may be as careful of secrecy as she likes, but the doctor should act in the light of day.

A point of more especial interest is, How was Collins convicted? It is no secret that he had for years carried on a large trade as a procurer of abortion. It is reported that since he first strayed from the way of honour he has been obliged to live by crime to satisfy the demands of blackmailers. It is known that there are others who carry on the same nefarious practice. It may seem strange that it should not till now have been possible to convict Collins, and that others like him should flourish uninterfered with. But the difficulties in the way of successful prosecutions are great. If the woman survive she is an accessory to the crime, and therefore her mouth is closed. Even if the fact that a medical man has induced abortion be established, there are so many possible explanations that it is not itself evidence of criminality. He may have thought that the patient was ill, and that abortion was indicated as a therapeutic measure; or he may have been misled by statements made to him by the patient, so that he may have overlooked an early pregnancy; or he may have taken a pregnant uterus for a tumour. In the present case the task of the prosecution was made easier by Collins's inconsistent statements as to what he had done for the deceased woman.

The evidence for the prosecution consisted of the facts (1) that the patient died from septic peritonitis, and that there was a wound of the uterus adequate to account for the septic infection; (2) that the uterus showed signs of recent abortion; (3) that Collins, a stranger to her, and no one else had been attending the patient; (4) that the patient knew she was pregnant and wanted the pregnancy put an end to; and (5) that while Collins was attending her she aborted. The jury were asked to infer that Collins had procured the abortion.

Collins's statements were that the patient had consulted him at his own house twice for "weakness." After these two interviews—which, according to his account, were merely ordinary consultations—he received a cheque for thirty guineas. This, he explained, was for a course of treatment for a displacement, but he did not visit the patient till some days after the receipt of the cheque. The *post-mortem* examination showed that Douglas's pouch was obliterated by old adhesions, so that retroversion could not have been present. He admitted having used the curette to remove a membrane from the womb, but did not explain how this came into the course of treatment for the displacement. Had he been able to tell a simple consistent narrative of what he had done, it is possible the prosecution might have had great difficulty in getting a conviction.

The counsel for the prisoner most ably cross-examined the medical witnesses for the prosecution. He made them admit the tendency of pelvic peritonitis to recur, obviously in order to suggest to the jury that the fatal peritonitis was a recurrence of an old disease from which the patient had formerly suffered, and not one set up by recent infection. With regard to this we may remark that peritonitis does not itself tend to recur; it is a conservative process, and like all inflammation, when its cause has been removed, it brings the parts nearer and nearer to the state of health. Recurrence occurs because the cause of peritonitis often persists. There is no mention in the account of the *post-mortem* examination on Mrs. Uzielli of the existence of chronic disease such as could cause general peritonitis. The changes were all acute. Counsel tried to get out, but without much result, that the wound in the uterus, which was between an inch and a quarter and an inch and a half from the os externum, might have been made with the finger-nail; but his main efforts were devoted to shaking the evidence on which rested the fact of pregnancy. It was suggested that the patient was weakened by an attack of influenza, and that then a chill both stopped menstruation and set up peritonitis. These suggestions drew from Sir John Williams certain important statements of pathological opinions, namely, that he did not regard a chill as capable of causing peritonitis, and that he did not believe that sewer gas caused septic infection, or that there was any such thing as autogenetic septicæmia. A generation ago these ideas were almost articles of faith with the bulk of the profession, and doubtless many still accept them; but the younger men, trained in modern bacteriology, we think, mostly share the scepticism of Sir John Williams on these points.

There were other points on which the prisoner's counsel sought to get admissions which would enable him to justify the conduct of his client, such as the use of the sound for the reduction of retroversion, and the occasional difficulty of distinguishing between an inflammatory lump in Douglas's pouch and a retroverted uterus; but while the facts of the pregnancy, the abortion, the wound in the uterus, and the septic peritonitis remained unshaken, these minor points had little bearing on the issue.

The whole affair is a remarkable disclosure of ideas of the public on the question of foeticide. Some fashionable ladies seemed to think it quite a proper and natural thing to go to a doctor to get rid of the product of conception. It may be said that these are only types of a pleasure-

loving, vain, and frivolous set. But a glance at some religious newspapers and at many of the newspapers taken in by the poorer classes will reveal columns filled with advertisements of medicines warranted to cure "female irregularities." We imagine that the only doctors who are never asked to procure abortion are those who are known not to practise midwifery. The medical profession has in this matter a very sacred duty: to make their patients not merely recognise that maternal duties exist, but that those duties are their highest privileges. Those who regard their children as a "heritage of the Lord" will not rush to imperil their health and their lives when menstruation fails to appear.

A marriage in which pregnancy is habitually either prevented or interrupted is one from which the strongest tie that binds together husband and wife is absent; in which worldly pleasures, which soon pall, are preferred to duties which if accepted and faithfully discharged, add greater interest and delight to life than anything else: in which love often waxes cold, and old age becomes a dreary solitude. The husband very possibly sets up an establishment somewhere else, and the wife, as a great novelist puts it, "relapses upon religion and little dogs." The Hebrew Poet-king was right when he said: "Happy is the man that hath his quiver full of them; he shall not be afraid of his enemies in the gate."

THE ROYAL ARMY MEDICAL CORPS.

The uneasiness which was beginning to be felt at the delay in the appearance of the promised new warrant as to the Medical Service of the Army has been removed by its promulgation on July 1st. The text will be found at page 131. The scheme is practically identical with that foreshadowed by Lord Lansdowne at the banquet given by the Lord Mayor of London to the medical profession on May 4th. The Medical Department is transformed into the Royal Army Medical Corps, and thus becomes an integral part of the army. The officers of the corps have purely military titles, which carry with them army rank. The vital points of title and rank, for which we have so long and so strenuously contended, are thus at last conceded. The medical officer is placed in a position corresponding to the dignity of his profession and necessary for the efficient discharge of his duty. On this not only the service, but the nation, are to be warmly congratulated. Congratulations not less warm are due to the Marquis of Lansdowne, who has had the courage to do what as a statesman he felt to be best in the interests of the army in spite of determined opposition on the part of some at least of his military advisers. The medical profession will ever feel grateful to Lord Lansdowne for this great reform, and we have no doubt whatever that in time even those who cling most obstinately to the narrow traditions of a fighting caste will also come to recognise the benefits which it must produce. But what is more important, the nation will be grateful for the removal of a condition of things which was not only a scandal but a source of inefficiency and a possible cause of disaster.

At the present day an efficient medical service in the field is an essential condition of a successful campaign. In consequence of the unpopularity into which an unhappy policy had brought the medical service of the army, it had fallen into a state almost of atrophy which was in the highest degree dangerous. Spirited young men who had any prospect of success in civil practice naturally did not care to enter a service in which their profession was treated as a stamp of social inferiority, and in which they were personally exposed to intolerable slights. The warrant will inspire new confidence in the fair dealing of the Government, and will therefore, it is to be hoped, dissipate the dark cloud of unpopularity which has so long hung over the service, and once more make it what it ought to be—a career attractive to some of the best of those who enter the medical profession.

It is to be hoped that the new rank and titles will be made to apply to such retired officers as are still liable to be recalled to active service up to the age of 55, and to those who are employed at station hospitals up to the age of 65. These officers are either actually in command of men of the corps, or may at any time be placed in command of them, and it is obvious that if they retain the old compound titles and do not possess army rank, confusion will be apt to occur. This matter will doubtless be dealt with in a subsequent warrant, as will also the regulation of pay and allowances, for Lord Lansdowne has given the assurance that the emoluments of the service shall not be diminished.

The one point in the new scheme as to which any difference of opinion is likely to arise is the title of the officers at present designated surgeon-major-generals. As has before been explained in the British Medical Journal officers of corps cease to belong to the corps when promoted to a rank higher than that of colonel, and pass to the general staff of the army. According to the new warrant medical officers selected for the highest administrative ranks are to have the title of surgeon-general. It is not to be denied that this compound title is, in the new dispensation, something of an anomaly. These officers will be in command of subordinates with purely military titles. There were, however, difficulties in the way of granting purely military titles to medical officers not forming part of a corps the name of which defined their position and function, nor has any satisfactory solution of the difficulty been suggested on behalf of the medical officers. As the result of extended inquiries among officers of the Army Medical Department of various ranks, and among members of the civil branch of the profession who are in touch with the service, we have satisfied ourselves that the selection of the title of surgeon-general to designate officers of the rank in question is a solution of the difficulty which will be accepted as satisfactory by the medical officers and by the profession. It is in itself a title which has associations which may well make any man proud to bear it.

Another point in connection with the new order of surgeon-generals may be mentioned. According to the present regulations, although they rank as major-generals, they have not the privileges of that rank in regard to the age extension for retirement, the surgeon-general being compelled to retire at 60 while the major-general can serve on to 62. No doubt when the details of the scheme are being arranged this will receive attention. Surgeon-generals are as a rule more likely to be of use when over 60 than

major-generals, whose work requires more physical and less intellectual activity than that of medical officers.

By the last clause of the new warrant the regimental medical system of the Household Brigade is practically abolished. The few officers concerned are to be "seconded" officers on the establishment of the Royal Army Medical Corps, and as they die out or retire, "attached" medical officers will have charge of the Guards regiments.

Other grievances from which medical officers now suffer—such as the inequalities of home and foreign service, the want of "study leave," and the frequent moving about from station to station—will to a large extent be remedied without the need for new regulations when the service ceases to be undermanned as it is at present.

In conclusion, we venture once more to express a hope that the scheme will be loyally accepted by the medical officers as a measure devised by a large-minded statesman, evidently inspired by the wish to remedy the grievances under which they have so long laboured. We have the fullest confidence that the Minister who has carried this scheme to a successful issue will not allow it to be set at naught.

THE PROPOSED MIDLAND UNIVERSITY.

We publish in another column a brief report of the great public meeting which was held in Birmingham to promote the formation of a University of the Midlands. This project, which has been for some time in the air, has thus taken definite form, and the promoters were able to announce that they have already succeeded in obtaining a sum of over £95,000 towards the endowment fund for special professorships, the provision of fellowships and scholarships, the acquisition of buildings, and the cost of administration. The fact that Birmingham already possesses in Mason University College an institution possessing fine buildings adapted to University work will relieve the promoters from the immediate necessity of expending money in building operations, so that a sum short of the total which they eventually hope to obtain will meet their immediate aspirations. Birmingham is already well provided with educational facilities. It has, first, a great system of elementary schools widely extended and admirably organised. Above this it has King Edward VI's Grammar School and the High Schools of the same foundation. Science and art are taught in the Technical School and in the School of Art provided by the corporation of the city, and lastly, Mason University College affords to advanced students the higher training adapted to the requirements of personal culture, to those of the several professions, and to those of industrial pursuits. These institutions are so interconnected that students, without distinction of creed, sex, or class, are enabled to pass from the lowest to the highest. It is in consonance with the tendency of modern opinion that Birmingham should now ask that the crown should be placed on this great system of education, built up by the efforts of succeeding generations, by the formation of a university for the Midlands. The proposal is that the university should have professors in all the branches of arts, science (including applied sciences, such as Engineering, Metallurgy, and Electrotechnics), Law, and Medicine. It is contemplated that the university examinations should be conducted by the professors in conjunction with external examiners.

The promoters have rightly put in the forefront of their appeal for public support the opinion that the functions of a professor should be, not merely to teach, but to preside over his department, organise its work, direct and advise students in original work, and himself take part in the conduct of researches for the advancement of knowledge. A university organised on this basis would carry out the duties as defined by Professor Huxley that a university should be "a corporation which has charge of the interests of knowledge as such, and the business of which is to represent knowledge by the acquirements of its members, to increase knowledge by their investigations, to diffuse knowledge by their teaching, and last, but not least, to create a respect for knowledge among their fellow men by their personal example and influence." Accepting this definition of the duties of a university, it is—again to quote the words of Professor Huxley—desirable that such a body as this should exist in every great centre of population in England.

Birmingham is the centre of a population estimated at about two millions, and its claim as such to possess a university appears to be irresistible. From the point of view of medical education, also, strong arguments in support of the scheme may be advanced. In Birmingham, as in London, the difficulty has been felt that a student obtaining his medical education there, though the facilities for gaining a knowledge both of science and practical medicine are of the best sort, cannot obtain a degree without leaving his *alma mater*. The same arguments which have been used in support of the London University Bill, in so far as it affects medical interests, apply with equal force to Birmingham, and those who admit the justice of the claim in the one place cannot deny it for the other.

THE DIFFICULTIES OF BURGH MEDICAL OFFICERS IN SCOTLAND.

It is well known that nowadays the smaller burghs are the weak points in the sanitary armour of Scotland. In the large towns and in the counties public health administration is in the hands of men more or less accustomed to deal with large affairs and capable of taking broad views. In the small burghs things are different. The local authority is composed generally of small men in a small way of business. Their interests circle round the parish pump. They are, above all things, economists. They never cease regretting that an unthinking Legislature should have imposed upon them the duty of appointing and paying a medical officer of health, and they pay him as little as possible. The medical officer is a step above them in the social scale. He will not come in a friendly way to talk petty scandal in the back shop. He is apt to have "views," and "views" often mean expense. With the sanitary inspector it is different. He is one of themselves; he doesn't give himself airs, and he is not above taking a hint. Obviously the policy is to sit upon the doctor and magnify the office of the sanitary inspector. From press extracts we gather that the policy of sitting upon the doctor is being carried to an injudicious length, even from the petty burghal point of view, in some of the small burghs. Regulations for medical officers and sanitary inspectors under the new Public Health Act are under discussion at present, and with a noble disregard of the terms of the statute and the powers it confers upon

medical officers of health various petty burghal authorities have resolved that even in the matter of infectious diseases the sanitary inspector shall be independent of the medical officer of health. It is easy to frame unconstitutional regulations; it will be a different and more difficult matter to secure their confirmation by the Local Government Board. Under the Act no child from a house in which there has been infectious disease can be received at school without a certificate from the medical officer or a medical practitioner. In certain instances the sanitary inspector is undertaking this duty of certification. His certificates, of course, are not worth the paper they are written on, and trouble is bound to ensue. The medical officer is empowered under the Act to enter any house in which he has reason to believe that infectious disease exists, or has existed; the sanitary inspector has no such power. No person may let a house in which there has been infectious disease without a certificate that the house and its contents have been disinfected to the satisfaction of the medical officer. No person may vacate such a house without a like certificate. No articles which have been exposed to infection can be disposed of in any way without a like certificate. No infective milk supply can be stopped without a certificate from the medical officer, nor can the local authority demand a list of customers from a dairyman without such a certificate. No case of infectious disease occurring in a common lodging house can be efficiently dealt with without a certificate from the medical officer, who is to "cause the premises to be disinfected." In the matter of infectious disease, it is evident that the sanitary inspector must act under the direction of the medical officer of health, even if local authorities, such as the town councils of Ayr and Perth, should resolve a hundred times over that the sanitary inspector shall be independent of the medical officer of health. The town council of Ayr appear to have gone the length of instructing that no patient shall be removed to hospital without an order from the sanitary inspector; and in Perth the town council have resolved that no patient shall be removed by the sanitary inspector until the medical officer has handed him the notification certificate. Now, the notification certificate is a quasi-confidential document, with which the sanitary inspector has nothing to do. The law requires that it shall be deposited in the custody of the medical officer of health, and the local authority have no power whatever to remove the certificate from that custody.

PRIVATE INTERESTS AND PUBLIC DUTY.

We learn from the *Merthyr Express* that at a recent mass meeting of colliers of Dowlais, Cyfarthfa, and Plymouth, the following resolution was adopted: "That we condemn the action of the magistrates of Merthyr, including Dr. Webster, Dr. Cresswell, and Dr. Ward, in importing the military into this town as a disgrace to the law-abiding people of the principality, and that in future we will not allow any deduction from our pay sheets to be made at the Dowlais, Cyfarthfa, or Plymouth offices for the services of the doctors named, but will engage our own medical attendants." A resolution of such a nature as this will be read with regret, and we cannot believe that it reflects the deliberate opinion of the colliers of the district. Indeed, if we may judge by some of the wild remarks to which the meeting listened, it would appear that some at least of those who were present had completely lost their heads. Thus, one speaker denounced magistrates as reprobates, members of Parliament as cut-throats, and preachers as hypocrites and frauds. Though a resolution such as that which we have quoted may be passed in haste during a period of great popular excitement, we cannot believe that British working men will endeavour to injure in his professional capacity a medical man who, in the discharge of his duty in a magisterial capacity, happens to be called upon to take a step which may be for the moment unpopular.

THE BUSINESS OF THE GENERAL MEDICAL COUNCIL.

The manner in which the General Medical Council conducts its business was the subject of criticism by Mr. George Brown, one of the direct representatives for England, in the course of a recent address. He expressed the opinion that the methods involved an enormous waste of time and much useless expenditure of money. Of late years, he observed, the Executive Committee had taken upon itself to transact a great deal of business which used formerly to be considered by the Council as a whole—an arrangement which sometimes led to disastrous results. He gave it as his opinion that most of the work now done by the Executive Committee and the Penal Cases Committee should be done by the Branch Councils. He added that some years ago the Branch Councils for England, Scotland, and Ireland attended to a considerable amount of business which related exclusively to those divisions of the kingdom, and said that it was his intention to bring the question before the Council at the next session in November. With reference to the proposal for an increase in the number of direct representatives, he said that he had reason to believe that when the Council was again called upon to vote on the question it would be more favourably received, but he added that it was far from easy to answer the arguments of those who based their objection to the proposed increase on the ground that the profession generally had not shown much desire to have an increased number of representatives, and that the majority of the members of the profession had shown their indifference by failing whenever an election occurred to exercise their right of voting.

UNSATISFACTORY INQUESTS.

A correspondent writes: The Workmen's Compensation Act, 1897, will throw great responsibilities on coroners and medical witnesses, and an inquiry in a case of death alleged to be due to accident is certainly useless unless a *post-mortem* examination is made. Where compensation is to follow it is only natural that a sympathising jury should give the benefit of the doubt to the friends of the deceased. In many cases in which the cause of death has been disease some accident has happened or been alleged, and the coroner has failed, from mistaken notions of economy, or what he considers to be his duties towards his county council, to have a *post-mortem* examination made, forgetting altogether that inquiry is not only for ascertaining the cause of death and if any person be to blame, but also to find out the true or pathological cause. It has been remarked by some coroners that they were only concerned as to whether the person came to his or her death by natural, accidental, or foul means, and were well satisfied with the pathological significance implied in the terms "died from the visitation of God." Such a conclusion might be arrived at by the coroner's officer, who is usually a police officer, and accustomed to such inquiries, therefore it is waste of time to get a jury to listen to the evidence and find such a verdict; the cost of coroners' court and his fees, in such a case, is therefore unnecessary. In large mining districts, where the men have contracted out of the Employers' Liability Act, it has been common, unless positive evidence from a *post-mortem* examination was forthcoming, to return verdicts of accidental death; scrotal anasarca from heart disease has been put down to injury, and old-standing affections of the lungs, heart, and kidneys to accidental causes. A case occurred recently in the Wigan coal district, in which a dataller was said to have sprained his back in the mine. He was attended by the medical officer of the society, who gave him certificates for

his society pay, but stated that he told the deceased on his second visit that he was suffering from consumption. He did not think the injury had anything to do with his death. In his opinion death was due to exhaustion, brought on by fibroid consumption. A *post-mortem* examination would have cleared up the point. The unanimous finding of the jury, notwithstanding, was that death had been caused through the accident, and they accordingly returned a verdict of accidental death. Through this finding the widow will benefit, which no doubt is a good thing, because it carries with it a weekly allowance for herself, and if she has any children a smaller allowance for each. Under the Workmen's Compensation Act the colliery proprietors would have to pay an average of three years' wages, and a few cases like this would render it necessary to close mines which are not easily worked. This may be a desirable consummation, but it is not right that such a result should be brought about as the result of inquiries in which the true cause of death has not been ascertained.

EMPLOYMENT OF FEEBLE-MINDED GIRLS.

The annual report of the Laundry and Homes of Industry, Birmingham, shows that in the two homes at Enniskerry and Arrowfield Top there have been cared for during the last six years no fewer than 100 young women, and that no one has run away, though there is no compulsory law of detention. At Enniskerry there are 22 inmates, who for the most part have "had a first fall, though not depraved." At Arrowfield Top there are 20 mentally-feeble girls of good character. At both homes the chief occupation is laundry work, and we note that the gross total receipts on this account at the two homes amount to nearly £460. The other industry practised by the girls is hearthrug making, the net profit on which is stated to have been £74 16s. 4d. Out of 43 girls at the homes, 33 are paid for by Boards of Guardians and the other 10 by patrons or relatives, at the rate for the most part of 5s. a week. The cost seems to average about 8s. 6d. a week, and towards this each girl contributes about 2s. 6d. by her labour, so that to make both ends meet subscriptions to cover the extra cost of 1s. a week for each girl are required. Both the homes are situated in pretty rural neighbourhoods a few miles out of Birmingham, and are conducted on the family principle. The arrangements are simple and homelike, and the girls seem to form happy, contented communities. There is doubtless a great advantage in gathering such girls into such homes, not only on account of the advantages they receive from useful industrial training, but also from the protection afforded them, and the consequent saving to the next generation of the multiplication of the feeble minded. Miss Agatha Stacey, of 30, Calthorpe Road, Birmingham, is the Honorary Secretary, and it may be well to mention that inmates are received irrespective of locality.

GERMAN CONGRESS OF SCIENTISTS AND MEDICAL MEN.

In connection with the seventieth meeting of the German Congress of Scientists and Medical Men, which is to be held this year at Düsseldorf, from September 19th to 24th, there will be four exhibitions: one illustrating the history of medicine and science; another the services rendered by photography in scientific investigation; a third new instruments and apparatus of all kinds appertaining to medicine and science; and a fourth apparatus for teaching physics and chemistry. The first of these is, we believe, a new departure, and promises to be of special interest to all who take an interest in the evolution of the healing art. According to the official programme which we have received, this section of the exhibition will comprise two main divisions: (*a*) general history of medicine, (*b*) special exhibits. The former class includes: (1) Ancient Phœnician and Egyptian medicine; (2) Assyrio-Babylonian, Medo-Persian and old Indian medicine; (3) Lydio-Trojan medical antiquities: (4) Greek and "Hellenistic" medicine; (5) Ibero-Etruscan and classical Roman medicine; (6) late Roman medicine, with its Gallo-Roman offshoots in Rhineland and in Gaul; (7) Byzantine medicine; (8) Arabian medicine; (9) Chinese and Japanese medicine; (10) Frankish, Saxon, and its Gothic medical antiquities; (11) mediæval medicine of other western countries; (12) the medicine of the Renaissance and modern times up to the end of last century. The medicine of Semitic and other nations will also be represented as far as possible, and an appeal is made to antiquarians and collectors throughout the world to assist in making the exhibition as completely representative as possible. The special class of exhibits will comprise material illustrating the following subjects: (1) Popular medicine, including that of savage peoples and that of civilised peoples. (2) Instruments of all kinds. (3) Geographical exhibits. (4) History of orders and associations for the care of the sick; Knights, religious orders, associations of deacons and deaconesses and lay societies. (5) Plague medals, plague masks and amulets against sickness. (6) Illustrations of hospitals, baths, physicians in the sick chamber, operations, dressers, dissections. (7) Medals and portraits. (8) Poetical scientists and scientific poets in Germany from the oldest times to the present day, with special reference to Goethe and his relations to Düsseldorf and the Rhine country. (9) History of medicine and the Lower Rhine, in the Duchies of Jülich, Cleve, and Berg, subdivided into exhibitions relating to (*a*) Laurentius Friesius, (*b*) Paracelsus, (*c*) Weyer, (*d*) Kortum. Here, again, an appeal is made for portraits, medallions, photographs, and illustrated works. Among the latter, especially such as are of older date than 1580 (receipt books, books about animals, anatomy, distillation, alchemy, astrology, magic, etc.). The exhibitors are not put to any expense, the Exhibition Committee undertaking to pay all freights and the cost of fire assurance. The exhibition, which is to be located in the Kunstgewerbe Museum, will be open in July, and exhibits will be received up to September 15th. The Exhibition closes on September 30th. Any further information that may be desired can be obtained by application to Dr. Frauberger, President of the Exhibition Committee, Kunstgewerbe Museum, Friedrichsplatz, Düsseldorf.

GUY'S HOSPITAL BIENNIAL DINNER.

This banquet took place at the Hôtel Métropole on July 5th. Dr. J. F. Goodhart occupied the chair, and about 270 were present. Amongst those were the Treasurer, Mr. H. Cosmo Bonsor, M.P., Sir Cameron Gull, M.P., Sir S. Wilks, Bart., Sir Joseph Fayrer, Bart., and other governors, several members of the consulting staff, and nearly all the members of the acting staff of the hospital. The proceedings were of the usual enthusiastic character, and would have led a stranger to believe that there was no other hospital in the world equal to that founded by Thomas Guy. After the toasts of the Queen and the Prince of Wales (President of the hospital), both proposed in felicitously terse language by the Chairman, he gave that of "Prosperity to Guy's Hospital and its Medical School." He said they were an aged couple. The hospital started with a robust constitution, but its parent had evidently considered it might be wayward, as he had imposed upon his bantling sixty governors, a treasurer, and a treasuree. The treasurer and governors had ever exercised their faculties to the advantage of the school, whose students had obtained great successes both at examinations and in athletics. All present then sang "Auld Lang Syne." Mr. Cosmo Bonsor, the Treasurer, who responded, was received with great enthusiasm. He said that the governors were on the eve of opening some of the closed wards, also a home for nurses which would be a pattern for other hospitals.

All this was the result of the appeal started by the Prince of Wales. He (the speaker) was thankful, too, to the younger students of the hospital for the loyal way in which they always treated him. Not one of them during his two years' tenure of office had ever done anything which could bring discredit on the great institution with which they were connected. Dr. Pye-Smith proposed "The Members of the Consulting Staff—Dr. Oldham, Mr. Birkett, etc." Sir S. Wilks, F.R.S., Mr. T. Bryant, and Dr. F. W. Pavy, F.R.S., responded. Sir S. Wilks said that as governor he could now dismiss himself from the post of Consulting Physician in twenty-four hours. The recent unprecedented advance in medical science had been achieved by the aid of instruments, especially the microscope, by which micro-organisms of all kinds could now be seen and distinguished. Instead of pyæmia being one of the commonest diseases, as it had been when he had charge of the *post-mortem* room, it was now scarcely ever seen. He closed his speech with two stories. In military midwifery he had heard that the baby born in barracks was apt to come into the world "with the left foot foremost," and he had heard that "a certain farmer's wife always gave ergot to her hens when she wanted them to lay eggs." Mr. T. Bryant, in replying, alluded to the great surgeons, Sir A. Cooper, Aston Key, Bransby Cooper, and others who had passed away; and said that as long as the cordial feeling now existing between the hospital and the school lasted, the prosperity of Guy's Hospital would continue. Dr. Pavy, being called upon, also replied. Dr. Goodhart proposed "A very hearty vote of thanks to Mr. C. J. Symonds," who was the Honorary Secretary of the festival. Mr. Symonds, who was very warmly received, said that the speeches had been brought down to six in number, and that the music and songs had been contributed by Mr. Pakes, Dr. Coulson, and Dr. Briscoe, all members of the company present. Mr. Bryant, in a few brief words, proposed "The Chairman," which was feelingly acknowledged by Dr. Goodhart.

COMPLIMENTARY DINNER TO DR. WILLIAM PLAYFAIR.

The retirement of Dr. William Playfair from the active staff of King's College Hospital was made the occasion of a remarkable demonstration of regard by his friends, former colleagues, and house accoucheurs. At a complimentary dinner on Monday last, July 4th, upwards of a hundred of his well-wishers collected together, under the chairmanship of Lord Lister. His old fellow-students in Edinburgh were represented by such men as Dr. Walker, of Peterborough, and Sir Dyce Duckworth, and his former Indian *confrères* by Sir Joseph Fayrer and others. King's College was well represented by its present Principal, the Rev. Dr. Robertson, and by two former Principals, Bishop Barry and Canon Wace; and the hospital by most of the present staff and some of its consulting members, such as the noble Chairman and Sir William Priestley, M.P. Amongst others present were Sir Samuel Wilks, Sir Walter Foster, M.P., Dr. Farquharson, M.P., Dr. Buzzard, Dr. Cullingworth, Dr. Holman, etc., while other friends and former pupils came from far and near. An illuminated address was presented by Dr. Playfair's former residents. In proposing the toast of the guest of the evening, Lord Lister referred to the fact that Dr. Playfair was one of the first to apply antiseptic principles in the opening of mammary abscesses, thus avoiding the distressing and disfiguring sinuses of the breast which were formerly only too common. In the course of his remarks, the Chairman said he could not help referring to a recent *cause célèbre* in which Dr. Playfair had appeared, and the warm sympathy of the gathering was shown by the burst of applause which followed his lordship's remark that in his opinion injustice had been done in that trial to a colleague of spotless reputation. In his reply, Dr. Playfair gave an amusing description of how he became connected with King's College Hospital. When on leave from India he noticed an advertisement in the medical journals for the post of Assistant Physician-Accoucheur to that institution. He sent in his application, determined that if elected he would become a gynæcologist. He thought no more of the matter until he received an intimation that he had been appointed, when two duties were forcibly thrust upon him. One was to find out where the hospital was situated, and the other was to learn something about obstetric medicine. Touching on the trial mentioned by Lord Lister, Dr. Playfair said it had been his unvarying rule to refer to the matter as little as possible in private, and never in public. For the first time that evening he departed from the latter determination, and he assured his hosts that all the annoyance and distress of that trial had been more than counterbalanced by the warm sympathy he had received from the profession, his patients, and even from persons with whom he had no personal acquaintance. Among the manifestations from the latter was a letter he had received from the late Mr. Gladstone—with whom he was barely acquainted—commending the line of action he (Dr. Playfair) had taken. The whole proceedings of the dinner were marked by much cordiality, and must have been exceedingly gratifying to the guest, while they reflected much credit on Dr. John Phillips, who, as hon. secretary, was responsible for the excellent arrangements.

BOARD SCHOOL NURSES.

Those familiar with the deplorable and often avoidable sufferings of Board school children in poor districts from parental neglect or ignorance in such matters as the applying of dressings to sores, or the cleansing of ears or eyelids from discharges, cannot but sympathise with the good intentions of those who have formed a society to supply the services of trained nurses for such purposes. It is, however, of the utmost importance that such nurses should confine themselves to the executive functions of the nurse without trespassing upon the domain of the doctor; indeed, it is desirable that they should act under medical direction. It should be strongly impressed on them that the diagnosis and treatment of disease form no part of their duty, but that they may do good service by pointing out when medical advice is necessary. They may afterwards legitimately carry out the instructions given by the practitioner consulted, but, as is pointed out by a correspondent, it is unjustifiable for nurses, however well trained, to visit and treat patients for gain either in the Board schools or elsewhere in respect of matters requiring medical diagnosis and skill. To do so indeed, even under distinguished patronage, would not exempt them from any penalties attaching to unqualified medical practice. How far elementary schools may with propriety be regarded as fields for what we have hitherto regarded as hospital out-patient work, is a matter calling for serious consideration; but any movement in this direction requires to be carefully safeguarded against abuse, especially in view of the growing tendency of parents of the non-necessitous class to avail themselves of the excellent educational arrangements of the London School Board for the instruction of their children.

THE HAMPSTEAD HEATH EXTENSION.

The proposed addition of the Golders Hill Estate to Hampstead Heath should enlist the sympathy and good will of all who are interested in the welfare of London. The estate, formerly the residence of the late Sir Spencer Wells, consists of thirty-six acres, and has been purchased by a few residents of Hampstead for £38,500 with a view to giving the public time to subscribe for its purchase and permanent preservation for the public use and enjoyment. About £7,000 has already been subscribed, and a committee is being formed, with Sir Henry Harben as Chairman, to collect the funds required. Hampstead, however, is not alone concerned; the whole of North London should

recognise the interest which it has in this matter. Every Bank Holiday sees some 150,000 visitors from London on the Heath, and the numbers yearly increase. The open spaces required in towns, it is right to remember, must necessarily increase in direct ratio to the increase in the area covered by smoke-producing buildings, and also in relation to the distance from the centre to the rural periphery. London is spreading in all directions at so rapid a rate that its open spaces, though much has been done, are probably not increasing in an equal proportion, while opportunities of acquiring open spaces within an easily-accessible distance are becoming rare, and will soon cease to occur. An opportunity such as the present, if missed, can never be regained, and it is to be hoped that this estate, which is essential to the preservation of the beauty of the Heath, will not be allowed to pass into the builder's hands. The proposed extension would, without doubt, conduce materially to the physical and moral health of our huge metropolis, and is worthy of the support demanded.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

Last week the Select Committee of the House of Lords considered the Bill promoted by the Corporation of Newcastle for Parliamentary sanction to the handing over of ten acres of the Leazes portion of the Town Moor to the trustees of the Royal Infirmary for the purposes of a new institution. Witnesses for and against the proposal were heard, and ultimately the Bill passed the third reading in the House of Lords; a condition, however, was made that a portion of the present site is to be retained, so that if necessary an accident ward and an out-patient department can be placed upon it.

A HYGIENIC MUSEUM AND LIBRARY.

A Museum and School of Hygiene in connection with University Collegee, Liverpool, was opened by the Lord Mayor of that city on July 4th. The building, Ashton Hall, was presented by the late Mr. George Holt, and has recently been remodelled with funds provided by Mrs. and Miss Holt and the Technical Instruction Committee. The museum, which is well lighted and fitted, already contains numerous exhibits. The building also comprises laboratories and a lecture room. The Medical Officer of Health for Liverpool, Dr. E. W. Hope, said that the late Mr. Holt had desired that the building should be devoted to some branch of medicine having relation to the promotion of Public Health, and this wish had been carried out by using the building as a museum, school of instruction, and research laboratory in subjects connected with public health. The laboratory provided opportunities for the study of such problems as the purification of water and of sewage, and the action of disinfectants. The Lord Mayor, in declaring the building open, said that a course of instruction had already been given to sanitary inspectors, and that fourteen young men had already passed the examination, and would be granted certificates of their qualification to act as sanitary inspectors.

THE ARMY MEDICAL STAFF IN INDIA.

Inasmuch as persistent rumours, apparently founded on some authority, have been in circulation pointing to influences at work to bring about the withdrawal of officers of the Army Medical Staff from India, and place the medical charge of British troops in the hands of the Indian Medical Service officers, it is not surprising that Captain Cecil Norton, M.P., brought the matter to a plain issue by asking, on June 21st, the Under-Secretary of State for War "whether in connection with coming changes in the Army Medical Staff it was in contemplation to withdraw the officers of this department from the medical charge of Her Majesty's troops serving in India." Mr. Brodrick's reply in the negative is reassuring and satisfactory. It would, indeed, be ill advised, without adequate cause, to change a system that has worked so well in the past.

THE EFFECT OF MIXED DIETS ON SALIVARY DIGESTION.

The fourteenth ordinary meeting of this session of the Edinburgh Royal Society was held on Monday, July 4th, Lord McLaren, Vice-President, in the chair. Dr. W. Aitchison Robertson read a paper on the Effect of Mixed Diets on Salivary Digestion. The research was made with the object of determining whether the digestion of starch was affected favourably or unfavourably by its admixture with other articles of food. He found that porridge formed a fairly easily digested article of food, and that the greater the dilution of the porridge with water or with milk the greater was its ease of digestion. In fact, well-made water-gruel was one of the most easily digested of foods. The reason why potatoes were so often badly borne by the stomach was probably due to the manner in which they were prepared. If after being boiled they were finely powdered, so that the saliva could gain ready access to the starch granules, they were easily and rapidly digested. On the other hand, when potatoes were sent to the table whole, the probability was that they would be imperfectly masticated and swallowed in fragments of greater or less size. In such a case the saliva could only act on the outer surfaces of the fragments, and the result was a very imperfect digestion. In respect of the digestion of bread, the experiments showed that it was much less acted upon by saliva when eaten alone than when taken along with some indifferent fluid as water. Newly baked bread was not so rapidly acted upon by saliva as stale bread, but the ultimate degree of starch conversion was greater in the former than in the latter. So far as the experiments showed, stale bread was not more easily digested than newly baked bread. The addition of milk to bread caused a remarkable enfeeblement of the salivary ferment, while broth exerted a slight restraining influence upon it. Alcohol, even in solution, retarded salivary digestion of starch, but the action was much less marked than in the case of infusion of tea. Wines had a very marked inhibitory influence on the digestion of starch by saliva, and this was almost wholly due to their acidity. Even after three hours' digestion in the presence of sherry, port, or claret, the starch had undergone hardly any conversion.

At a recent meeting of the Governors of Wellington College, Sir Joseph Fayrer, Bart., K.C.S.I., was elected a Governor, and the election has been approved by Her Majesty.

The East Riding County Council have decided to appoint a medical officer of health for the East Riding. The salary will probably be £400 or £500 a year.

Sir William Tennant Gairdner, K.C.B., attended the Court at Windsor on July 4th, and was formally admitted by the Queen to the honour of Knighthood, and invested by her with the Riband and Badge of the Order of the Bath.

In view of the approaching visit of the British Medical Association to Edinburgh in the end of the month it has been decided that the usual July meetings of the Edinburgh Medico-Chirurgical Society and the Obstetrical Society shall not be held this year.

Dundee Royal Infirmary is to be congratulated, not only on the number of its friends, but on the spontaneity and continuity of their generosity. The family of the late John Sharp, of Balmuir, who already built its magnificent new operation theatre in memory of their father, have now sent a cheque for £5,000. This handsome sum they place entirely at the discretion of the directors, suggesting merely that part may be allocated to the endowment of two cots.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Vaccination Bill has at last passed through the Grand Committee, and it emerges a much longer, and in some respects a much more illogical, measure than in its original form. On Friday in last week Mr. Chaplin added a new clause to provide for increased facilities for vaccination at the time of epidemics of small-pox, and promised to consider the question of revaccination. The question of most interest in the day's proceedings was the amendment proposed by Sir Walter Foster to encourage vaccination by paying registered practitioners for all cases vaccinated, and to require a stringent form of certificate of effective vaccination. The proposal was opposed by the Government mainly on the score of expense, and the unworthy and unjustifiable suggestion was made that the medical members of the Committee supported it as a pecuniary advantage to the profession. The amendment was finally defeated by a combination of the antivaccinators and the Government by 21 to 10, and an opportunity of enlisting the whole profession in the work of effective and general vaccination lost from a want of due appreciation of the actual necessities of the case. On Tuesday the Committee continued the consideration of a proposal of Mr. Channing to compensate a parent for the death or injury of a child through vaccination. This was rejected by 16 votes to 10, but the hon. member carried a clause that offenders under the Bill should be treated as first-class misdemeanants thus committed to prison. Then a clause authorising local authorities to incur reasonable expense in diffusing information as to the reasons why vaccination is required was read a second time. After this, Sir Wm. Priestley succeeded in carrying a modified conscience clause to come into operation before a second prosecution at the age of 4 years. This amendment was carried against the Government by 20 to 11, and most materially modifies the Bill. If eventually passed, the position will be that a parent may be prosecuted once for non-vaccination of his child before the age of 6 months. No second prosecution can take place till the child is 4 years old, and then the parent will be allowed to satisfy the Court that he conscientiously believes that vaccination would be prejudicial to the health of his child. Mr. Chaplin, in opposing this new clause, pointed out the difficulty of tracing the children after the first year on account of the frequency of the removal of the parents, and also urged that the operation would be enforced by prosecutions at the early age when it undoubtedly affected the health of the infant most, and when the non-vaccinated child was practically no danger to the community, but that enforcement would be barred by a conscience clause when the operation was of the slightest consequence, and the child when unprotected had become a real danger to the community. After this Mr. Logan sought, by a new clause, to limit the powers of the Local Government Board with respect to prosecutions by vaccination officers. Mr. Chaplin, however, opposed any curtailment of existing powers, and indicated that the law would be administered as it stood, with courtesy but with firmness. He was supported by 22 to 10, and then, after adding a new clause providing that the authorities should keep a list of vaccinated persons treated in small-pox hospitals, the Bill was ordered to be reported to the House.

The Habitual Inebriates Bill stands next for consideration by the Grand Committee on Law, and will be considered this week. So far it is promised an easy Committee stage; and although the Bill is by no means perfect, yet the desire to put it on the Statute Book is so strong that its promoters hope that few, if any, amendments will be made. If this hope is realised, the Bill will pretty certainly pass this session.

The London University Bill is down for consideration by the Grand Committee immediately after the Inebriates Bill. If the latter runs through quickly, the University Bill will be greatly helped. The prolonged consideration of the Vaccination Bill has been viewed with much satisfaction by the opponents of the University scheme, because they know that every day's delay at this period of the session is serious as regards any contested measure. Since the collapse on the second reading, the opponents to the changes proposed in London University seem to have gathered fresh courage, and they are, no doubt, prepared to show fight in Committee, and if the Bill be amended, on the report stage in the House itself. In the interests of the measure it is to be hoped that the report stage will be avoided by passing the Bill through Committee without amendments.

The Poisons Bill has come down from the House of Lords after practically no discussion in the Upper Chamber. It is not likely to receive the same inadequate consideration in the Commons. Literature and correspondence are already reaching members, and the chemists and druggists are on the war-path, as they regard the Bill as an infringement of the Pharmacy Acts. Certainly any relaxation of the law with regard to the sale of poisons will be jealously watched, and the Bill, if possible, amended in the direction of greater stringency.

VACCINATION.—Sir C. Dilke proposes to move a clause to limit the duration of the Act to December, 1899. On the report stage of the Vaccination Bill, Sir W. Foster will move the following clause: "Where a child is by this Act required to be vaccinated within six months from the birth of the child, the parent or person having the custody of the child may, not less than two months before the expiration of six months from the birth of the child, make a statutory declaration of conscientious objection to the vaccination of the child, and if the statutory declaration is, within seven days after its date, delivered to the registrar of births for the district in which the child resides the registrar shall register the same, and shall, if required, deliver to the parent or other person making the declaration a certificate of such registration, and shall also send a copy of the certificate to the public vaccinator of that district, and thereupon an order shall not be made or proceedings taken with reference to the non-vaccination of the child mentioned in the certificate."

VIVISECTION.—Sir Barrington Simeon asked the Home Secretary whether his attention had been drawn to the last report of the inspector under the Act relating to experiments on living animals; whether he had observed that seven licensees confessed to having committed offences against the law, of which two consisted in two persons going on vivisecting in 1897 without the requisite licence, and that the inspector, having treated these two persons in the same way as licensed persons, condoned their offences; and would he state who these persons were, and whether any remonstrance, reprimand, or other communication had been or would be addressed to them?—The Home Secretary: Yes, certainly I am aware of the facts stated in the inspector's report to myself. The nature of the irregularities referred to is shown in the report, and it will be seen that in every case they arise from inadvertence. It is not the fact, however, that the irregularities were condoned. Letters of reproof were sent and in some cases severe measures taken. No good object would, I think, be served by publishing the names.

DEATH CERTIFICATION AT WALSALL.—Mr. Sydney Gedge: I beg to ask the Home Secretary whether he is aware that a medical practitioner at Walsall, named John Joseph Lynch, has been in the habit of certifying all deaths as from natural causes, and that in the month of December last he certified that a boy named William Charles Young died from natural causes, although he had not seen the boy for a month before his death, and another doctor had attended him on his last illness, and that on the inquest the jury found that the boy had died from swallowing a half-penny, and characterised Dr. Lynch's conduct as discreditable, and requested the coroner to call the Registrar-General's attention to it; whether he is aware that in consequence of this and a further representation made to the Registrar-General officially by the Town Clerk of Walsall, the Registrar-General directed the superintendent registrar there to treat all certificates given by Dr. Lynch of deaths from natural causes as equivalent to certificates of death for causes unknown, with a view to his holding inquests in such cases; and, could he explain on what grounds and on whose recommendation Dr. John Joseph Lynch has recently been made a magistrate of the borough of Walsall?—The Home Secretary: I have made inquiries about this matter, and understand that the facts with regard to the boy Young are as stated in the question. The conduct of the doctor in respect to the certification of death would certainly appear to have been irregular, but I have received a letter from him in which he assures me that he has reverted to the proper practice. I have no information as to his appointment to the magistracy.

BURIAL REFORM.

The twentieth annual meeting of the Church of England Burial, Funeral, and Mourning Reform Association was held on July 6th. The place of Sir Seymour Haden, President of the Association, who was unable to be present, was taken by Sir Dyce Duckworth, who, in moving the adoption of the report for the year, briefly pointed out the objects which they were working to attain. Chief among these was the universal adoption of a system of earth-to-earth burial. By the experiments of Sir Seymour Haden it had been shown that not only was the resolution of a body delayed by the use of a coffin,

but that it was very materially hastened by superficial interment. Briefly, it might be said that for every foot below the surface that a body was buried an additional year was necessary.

Canon Barker, in seconding the adoption of the report, said that although the question of the advantage of superficial interments was settled by experts, yet the question was one of great practical difficulty.

Lord Stamford in moving the resolution,

That in the opinion of this meeting, it is desirable that preachers and teachers should enforce the Christian obligation of conducting the burial of the dead promptly, innocuously, and inexpensively,

referred to the great simplicity of a recent great funeral in touchingly appreciative terms.

In connection with the subject of superficial burial, there is no doubt that resolution under such treatment is more rapid, but it must not be forgotten that such resolution is accomplished by the aid of myriads of small animal necrophagic forms, which, as has been shown, invade the body in definite sequence. In view of the fact that disease is known to be disseminated by similar small animals, the possibilities of superficial interment in keeping alive and disseminating deleterious micro-organisms should, we think, be further investigated before the practice is so boldly recommended.

THE NEW MIDLAND UNIVERSITY.

[From our Correspondent in Birmingham.]

The scheme for the foundation of a New University for Birmingham and the Midlands was most successfully launched on Friday, July 1st, at a meeting held at the City Council House, and presided over by the Lord Mayor. The meeting was one of the largest, most influential, and most enthusiastic which has ever been held in the city, and the magnificent first list of donations towards the proposed university augurs well for the success of the movement. The assembly was representative of all classes of the community, and the proceedings were throughout characterised by a unanimity and enthusiasm which must have more than satisfied the expectations of the promoters of the scheme.

The Lord Mayor was accompanied by the Right Hon. Joseph Chamberlain, M.P., the Bishop of Hereford, Dr. C. T. Williams, Professor Tilden, and Mr. G. H. Kenrick. There were also present Sir John Holder, Bart., the Aldermen and Councillors of the City Council, Principal Heath, Professor Windle (Dean of the Medical Faculty), all the professorial staff of Mason University College, and a very large number of the leading medical men of the city and district, besides numerous representatives of the various professions and the large industrial businesses of the Midlands.

Mr. Morley (the Registrar) read a number of letters from various gentlemen who were unable to attend, but who warmly supported the movement; amongst others from the Earl of Denbigh, Professor Jebb, M.P., Alderman Kenrick, M.P., Sir Alfred Hickman, M.P., the Bishop of Durham, and the Rector of Birmingham.

Mr. G. H. Kenrick then proposed, and Professor W. A. Tilden seconded:

That, in the opinion of this meeting, it is essential that in the interests of the city and the Midland district generally, a University shall forthwith be established in Birmingham.

Mr. Joseph Chamberlain, in support of the resolution, made a most eloquent speech. He considered that that day would in years to come be looked back upon by future generations as a red-letter day. During the past thirty years Birmingham had made great progress in the matter of education: first of all, in founding and completing a system of elementary education; and secondly, in making satisfactory provision for secondary education. They now sought to crown that work by establishing a university which would be a source of light and of influence, lasting and increasing, for the town of Birmingham. So long as Birmingham remained without satisfactory provision for the highest education, they would suffer not only material loss, but also, borrowing a phrase from recent diplomacy, "moral and intellectual damages." A university would create a demand for learning, as the history of Scotland had shown, and it would enable them to keep in their midst their cleverest and most able citizens, many of whom, at present being unable to complete their education there, wandered from their boundaries to seek in other cities and at other universities what they required. No country nowadays, and no city, could possibly maintain its position if its highest education was being neglected. He concluded by appealing to the local patriotism of Birmingham, feeling certain that they would not be content with any provision of education which put them in a position inferior to that of the sister cities in the United Kingdom and in the United States, and of rival and competing cities on the Continent. He felt sure they would succeed in their object, and that no greater project had ever been proposed to a city, or any which offered a larger or more beneficent prospect of future good. By their success they would set the crown upon their educational work, would do honour to Birmingham, and would realise the ambition of all those who in the past or in the present had planned or worked for its material and its intellectual advantages.

The proposal was carried unanimously amidst a scene of great enthusiasm.

The list of promised donations to the scheme was then read out. It was a lengthy one, and reached the magnificent total of over £95,500. It included £20,000 from the brewers of Birmingham, £10,000 from Mr. G. H. Kenrick, £5,000 from Messrs. Allbright, £5,000 from Mr. George Cadbury, £5,000 from the family of the late Mr. George Dixon, £5,000 from Mr. Feeney, and many other large sums from generous wealthy donors. As an earnest of the desire that exists amongst the medical men and old students of the College for the success of the scheme, it may be mentioned that no less than £3,000 was subscribed by them alone.

The Bishop of Hereford then proposed the election of some 550 ladies and gentlemen to form a Committee to further and promote the University by all the means in their power, and especially to obtain promises of financial support; and this was seconded by Professor Heath and carried.

Dr. C. T. Williams, as representative of the Royal College of Physicians on the Council of Mason University College, next proposed the election of a small Executive Committee to prepare a scheme for the University; and Professor Windle seconded the proposal, which was carried.

These Committees will at once issue a public appeal for additional donations. The sum indicated as being required to fulfil the University design completely is £250,000. It is a very large one; but judging by the enthusiasm shown at the inaugural meeting, and by the munificent first list of donations, a list obtained before any public appeal has been made, it is confidently hoped that it will be raised. The appeal will be made not to Birmingham alone, but to the Midland district generally, for it is intended that the proposed University shall be for the advantage of the Midlands generally.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The usual monthly meeting of the Medical Sickness, Annuity, and Life Assurance Society was held on June 24th at 429, Strand, London, W.C.

There were present Dr. de Havilland Hall, in the chair, Dr. J. B. Ball, Dr. J. W. Hunt, Dr. M. Greenwood, Mr. J. Brindley James, Dr. J. Pickett, Mr. F. S. Edwards, Dr. A. S. Gubb, Mr. E. Bartlett, Dr. W. Knowsley Sibley, Mr. W. J. Stephens, Dr. Walter Smith, Mr. H. H. Clutton, and Dr. F. J. Allan.

The accounts presented showed a considerable improvement in the sickness claims, which during the early months of this year had been abnormally heavy, and for a short period actually exceeded the expectation. This addition to the claim account has been almost entirely produced by influenza. As usual a large number of accident claims have been sent in. Some of these are produced by injuries sustained in strictly professional work, but most of them were in riding and driving. Accidents from cycling have so far been very few this year, but in one case a member who was thrown from a bicycle has been totally incapacitated for more than six months. The Committee devoted a considerable time to the examination of claims specially referred to them by the medical examiner. As the Society grows in size and age both the number and the complexity of the claims which have to be met by it necessarily increase, and require in con

sequence more time and attention from the executive. Of these special claims, the Committee are compelled to reject a few in consequence of breaches of the rules which cannot be condoned. But in many of them the issue is much less simple, and a considerable amount of time and attention has to be given before an equitable decision can be arrived at.

Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

MEDICAL WAR NEWS.

The severe fighting at Santiago has greatly strained the resources of the Medical Departments of the United States Army and Navy. Telegraphing to the American Secretary for War from Siboney on July 3rd, General Shafter put his losses up to date at an aggregate of 1,000. He added: "There is little sickness outside exhaustion from the intense heat and exertion of the battle of the day before yesterday and the almost constant fire which is kept up in the trenches." General Shafter had previously sent a telegram to the following effect: "A large and thoroughly equipped hospital ship should be sent here at once to care for the wounded. The chief surgeon says that he has use for forty more medical officers. The ship must bring a launch and boats for conveying the wounded."

A Reuter's telegram from Washington, dated July 2nd, states that the Surgeon-General of the Army had had a conference with the Surgeon-General of the Navy, and the preparations for sending General Shafter the medical assistance he asked for were being hurriedly pushed forward. The naval ambulance ship *Solace*, now in the vicinity of Santiago, will be utilised. Besides this, the army hospital ship *Relief*, which has been equipping at New York, sailed for Santiago this morning. She is admirably fitted for the treatment of the sick and wounded, and has accommodation for 500 men. General Alger has in the meantime ordered General Shafter to requisition as many transports as he desires for hospital ships.

Forty to fifty more surgeons and suitable appliances are to be sent to Cuba immediately.

More recent advices indicate that a much larger supply of medical officers will be required. The casualties are stated to be close on 2,000. The thermometer at Santiago stands at over 100°. The officers and men, in addition to the fatigues of actual fight, are exposed to the dangers arising from climate and want of shelter. Many of them are described as "soaking for five days in the afternoon rains." General Shafter himself is in bed with a surgeon beside him, but he still directs operations.

Professor Nicholas Senn, of Chicago, chief surgeon of the volunteer forces at Chickamauga, has been ordered to embark for Santiago. He will be chief surgeon of the reinforcements to be sent to General Shafter from Camp Alger.

Medical Officers Killed.

The United States army surgeons are warmly praised for their courage and their devotion to duty. Among the killed is Surgeon Danford. He was taking a convoy of sick men to the rear when he was shot dead. Two other doctors are reported to have been shot by guerillas.

A Red Cross Supply Boat.

The Relief Committee of the American National Red Cross has purchased the steam yacht *Admiral* for use as a medical supply boat. The vessel is 134 feet 6 inches over all, 117 feet on the waterline, and 20 feet beam. She draws 8 feet, and has a very high freeboard. The bottom is copper-sheathed, adapting the boat for cruising in Southern waters. The *Admiral* has stateroom accommodation for 25 persons, and is equipped with an electric light plant, including a very powerful searchlight. Besides the usual complement of boats, she carries a naphtha launch. As soon as the supplies are on board the boat will be sent to Jacksonville, where she will take in tow the relief launch *Moynier*. The launch will be taken to Key West, where both boats will await instructions from Miss Clara Barton, who is on the way to Cuba, having followed he transports on the relief ship *State of Texas*.

A Massachusetts State Hospital Ship.

The Massachusetts Volunteer Aid Association has obtained an appropriation of $50,000 from the State Legislature towards the equipment and maintenance of a hospital ship. A vessel has already been purchased and is now being fitted out. The name of the boat will be the *Bay State*, and she will sail under the Red Cross flag. She will be well stored with medical supplies, and will have on board surgeons and trained nurses ready for any emergency of battle or disease. She will also serve as a transport to bring back sick or wounded soldiers, either from Cuban battlefields or from Southern camps, to hospitals or places of refuge nearer their homes in the invigorating climate of Massachusetts.

The Diseases of Cuba.

The medical officers of the United States forces in camp at Tampa have been receiving instruction in tropical diseases. Among the men of special experience who have been giving the instruction is Dr. de la Torre, who was formerly Clinical Assistant in the Hospital of Havana. He said that yellow fever is only one of the scourges of Cuba. Tetanus is extremely common; indeed, it is likely to be as terrible in its ravages among troops in the field in Cuba as yellow fever, while the source of infection is far more difficult to avoid. Malignant pustule is of frequent occurrence. Dysentery is also very common and fatal in Cuba, the morbidity and mortality greatly exceeding those of yellow fever. Then there is the plague of insects. Among the most dreaded of these is the pulex penetrans or *nigua*, the sting of which often leads to tetanus. The mosquito is another fruitful source of discomfort, and is regarded by Dr. de la Torre as the chief medium of conveyance of the malaria organism to the human body.

Measles in Camp Merritt.

The medical and surgical preparations, says the *Medical News*, having been made on such a large scale for the preventive and curative treatment of yellow fever, dysentery, and similar tropical ailments, it seems like a bit of grim jesting on the part of disease that it should manifest itself in an outbreak of measles such as has occurred at Camp Merritt. The epidemic is growing at the rate of about 20 new cases daily, but no fatal cases nor complications beyond one or two instances of mumps have been reported.

The Carriage of the Wounded on Board Ship.

An ordinary stretcher for carrying wounded men to a place of safety on shipboard is almost useless, as during action hatches are battened down, water-tight compartments are closed, and passages and stairways are so narrow, that even an unburdened, sound man must move slowly and with caution. The wife of Commander Chadwick of the flagship, *New York*, has invented a carrier suited for use on board ship. Mrs. Chadwick's invention consists of an ordinary sail-cloth stretcher, at each end of which are hooks which engage in a collar with side straps, which is worn on the neck of each of the two men who are to carry the stretcher and its wounded occupant. Thus the arms of each bearer are free to assist in holding the wounded man, or to steady himself when passing through narrow passages. The carrier can be adjusted in such a way that the patient can easily be carried down a steep stairway, such as is usual on war ships, without danger or discomfort.

THE NATIONAL CONGRESS OF MEDICINE IN PORTUGAL.

If the Portuguese Government is not fully enlightened as to its duties in matters medical and sanitary, it is not the fault of the doctors. The National Congress of Medicine recently held in Lisbon brought its proceedings to a close by passing a number of resolutions on various subjects which it considered to be of pressing public importance. Perhaps the most important of these resolutions was one calling on the Government to give effect to the vote of the Chamber of Deputies that vaccination should be made compulsory in Portugal. Another series of resolutions had reference to the repression of tuberculosis. The Congress urged that permanent committees should be appointed for the purpose of diffusing a knowledge of the means of prophylaxis against that scourge.

It further recommended that all tuberculous patients admitted to general hospitals should be placed in special wards. It was also decided to appoint a committee to study the question of the establishment of sanatoria for the treatment of tuberculosis in Portugal. With regard to leprosy, the Congress called upon the Government to organise a system of careful study of the disease, and regular teaching of the means of dealing with it; to take a census of the population; to establish agricultural colonies of lepers in connection with each of which there should be places where all the means of combating the disease should be taught; to place legal hindrances in the way of marriages between lepers and the descendants of lepers; and to educate the poor to correct notions as to the heredity and contagiousness of the disease. Inebriety was not neglected, resolutions having been passed calling upon the Government to collect statistics as to the consumption of wine, brandy, etc.; to this resolution was added a further one, asking that in the certificates for the admission of lunatics to the asylums mention should be made of whatever could be discovered as to the alcoholic antecedents of the patients. Resolutions were also passed as to the need for a number of other reforms: The provision of increased hospital accommodation for the insane in Portugal; the establishment of maternity hospitals in proper sanitary conditions; the collection of statistics in regard to morbitity and mortality from puerperal infection; the regulation of midwives; the improvement of pharmaceutical teaching; and the creation of special hospitals for epileptics and idiots, with provision for the mental training of the inmates. Among the resolutions referred to committees for further consideration was one urging that it should be made compulsory on medical practitioners in all certificates of death to attribute to alcohol everything attributable thereto.

"CONSTRUCTIVE MURDER."

NOT a little comment has been excited, both in legal and general circles, by the Attorney-General's statement of the law of murder applicable to the charge against Collins. The generally accepted rule is a very simple one—that any act causing death, if done in the commission of a felony, is murder, however little death may have been intended or desired. It was known to all criminal law experts that some of the extreme illustrations of this rule, however logical they might be, would not in point of fact, ever be acted on by judges at the present day; and it was even felt that the rule as thus stated was never an absolutely correct statement of the law of England, and that some limitation of it would probably be insisted on if the necessity for accurate definition arose.

Nevertheless, Sir Richard Webster, at the Old Bailey, last week, took his audience, robed and wigged as they were, somewhat by surprise when he boldly stated the law to be that if the act by which the death was caused was "not in itself of necessity dangerous to life," then the jury might find a verdict of manslaughter, and not murder. Of course a jury may, and constantly do, bring in a verdict of manslaughter where the charge is murder. It is a well-established and very necessary rule of law that such a verdict is good, however contrary to the weight of evidence. But Sir Richard Webster meant more than this. He implied distinctly that the law itself would hold the act to be not murder but only manslaughter.

This deliberate statement of what may be considered the most recent view of the doctrine of constructive murder, made as it was by the highest law officer of the Crown, on an occasion of such importance, is significant of a growing tendency to limit the harshness of constructions placed by the law on certain offences, a tendency which is to be viewed with satisfaction so long as it is guided by sound practical lawyers like the present Attorney-General.

The truth is that the simple rule of constructive murder, as we have stated it, has been called in question previously, though apparently never authoritatively repudiated. The doctrine was very distinctly challenged by the late Mr. Justice Stephen, a great and scientific lawyer, and a great codifier of law, in his charge to the jury in the celebrated case of Regina *v.* Serné. There the prisoner was charged with murder for having caused the death of his two children by setting fire to his house for the purpose of getting the fire insurance money. It was not alleged that he intended or desired their deaths, but that having in the commission of a felony (arson) caused the deaths, he was guilty of murder—"constructive murder."

We cannot give our readers a clearer or more interesting account of the law as it was generally accepted then, than in the words of the charge itself. The limitations adopted by Sir Richard Webster on Saturday last are also clearly indicated, although Sir James Stephen refrained from actually laying them down as the law of the land:—

> It is necessary, gentlemen, that I should explain to you to a certain extent the law of England with regard to the crime of wilful murder, inasmuch as you have heard something said about constructive murder. Now that phrase, gentlemen, has no legal meaning whatever. There was wilful murder according to the plain meaning of the term, or there was no murder at all in the present case. The definition of murder is unlawful homicide with malice aforethought; and the words "malice aforethought" are technical. You must not, therefore, construe them, or suppose that they can be construed, by ordinary rules of language. The words have to be construed according to a long series of decided cases, which have given them meanings different from those which might be supposed. One of those meanings is the killing of a person by an act done with an intent to commit a felony.....I will say a word or two upon one part of this definition, because it is capable of being applied very harshly in certain cases, and also because, though I take the law as I find it, I very much doubt whether the definition which I have given, although it is the common definition, is not somewhat too wide. Now when it is said that murder means killing a man by an act done in the commission of a felony, the mere words cover a case like this: that is to say, a case where a man gives another a push with an intention of stealing his watch, and the person so pushed, having a weak heart or some other internal disorder, dies. To take another very old illustration, it was said that if a man shot at a fowl with intent to steal it, and accidentally killed a man, he was to be accounted guilty of murder, because the act was done in the commission of a felony. I very much doubt, however, whether that is really the law, or whether the Court for the Consideration of Crown Cases Reserved would hold it to be so.....In my opinion, the definition of the law which makes it murder to kill by an act done in the commission of a felony might and ought to be narrowed.....I think that instead of saying that any act done with intent to commit a felony, and which causes death, amounts to murder, it would be reasonable to say that any act known to be dangerous to life, and likely in itself to cause death, done for the purpose of committing a felony, which caused death, should be murder.[1]

Reasonable as this suggested qualification of the rule of law may be, it does not appear to have been adopted or formally recognised by any judge until its acceptance by Mr. Justice Grantham in this case. The soundness of the rule in its extreme applications had been questioned by critics and commentators long before, and something akin to Sir James Stephen's limitation had been suggested. But we are not aware of any previous authority for Sir R. Webster's categorical statement that the law is as he laid it down. In the latest edition (1896) of the standard English work on criminal law—*Russell on Crimes*—we find this summing up after discussing the rule:

> The law appears to be that anyone who deliberately attempts to commit a felony and thereby occasions death is guilty of murder. But in this respect the law seems unreasonable.

We are indebted to the courtesy of the Editor of the *Law Times* for an advanced proof of an article to appear in that journal. It opens with the following words: "It is probable that, for practical purposes, 'constructive murder' is a vanished conceit." Lord Coke's definition is quoted, but it is added that his illustration give us the *reductio ad absurdum*, "and makes it clear that in substance, apart from legal technicalities, a felonious act, happening to result in death to somebody, does not of itself constitute the guilt of murder."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

COUNCIL ELECTION.

THE ballot for the election of three members of the Council of the Royal College of Surgeons of England took place on July 7th, with the following result:

MR. F. RICHARDSON CROSS	411
MR. HENRY MORRIS	325
MR. J. LANGTON	322
Mr. Clement Lucas	274
Mr. Bennett May	248

Altogether 677 votes were recorded, 651 Fellows voting by papers whilst only 26 voted in person. No votes were received too late, and but 1 paper was found to be invalid. This is the tenth election held under the new regulations. The President declared Mr. Cross duly elected and Mr. Morris and Mr. Langton duly re-elected.

[1] R. *v.* Serné (1887), 16 Cox C. C. 311.

THE MEDICAL PROFESSION AND CONTRACT PRACTICE.

EVESHAM.

SIR,—We notice in the BRITISH MEDICAL JOURNAL of July 2nd a communication that you have received *re* Court Vale of Evesham, 4648 A.O.F., and being severally the proposer and seconder of the resolution carried on June 7th last, we wish to correct the misstatements which you have published.

1. That no proper resignation was tendered.

2. The reduction of salary could not take place until registered by the Registrar of Friendly Societies, and it was not our intention that it should take place until a quarter's notice had been duly given.

3. Mr. Martin's so-called immediate resignation was not accepted, as no resolution was put to that effect.

4. All the medical men in the town have not been approached on the subject.

5. That the Management Committee have never refused to pay the salary due, our treasurer having offered to call out a Management Committee in proper course, and before that could be done a county court summons was served on our secretary, claiming payment due for the previous quarter.

We would point out that our rules provide "that if our medical men should refuse—which they did—or neglect a sick member, so that another surgeon should be required to attend, what sum may be due to the surgeon from the court shall be applied in liquidation as far as it will go of the expenses the sick member shall incur for the services of another surgeon."

The resolution for the reduction of salary would never have been proposed had not the majority of the medical practitioners in the surrounding towns been receiving 4s. per member per annum, and had our court been in a sound financial condition.

We would ask you in common fairness to our court to give publication to these true facts contained in our letter.—We are, etc.,

C. H. JONES, P.C.R.,
DAVID HARKER, P.C.R., } Proposer and Seconder of Resolution.

Evesham, July 6th.

LITERARY NOTES.

THE Rebman Publishing Company's new books include a work on the *Ferment Treatment of Cancer and Tuberculosis*, by Mr. Horace Manders, F.R.C.S.; and *Atlases* of Internal Medicine and Clinical Diagnosis; of Legal Medicine; and of Laryngology, in the Lehmann Series of Medical "Hand Atlases" which they are publishing in conjunction with W. B. Saunders, of Philadelphia.

We have received a new edition of the *Catalogue of Lewis's Medical and Scientific Library*, which forms a substantial 8vo volume of 333 pages. A particularly valuable feature of the Catalogue is the classified index of subjects with the names of authors who have treated of them. This index has been carefully revised to the end of 1897, and cannot fail to be of use to those who wish to read up any subject.

Dr. William Findlay of Paisley ("George Umber"), author of *In My City Garden* and of *Ayrshire Idylls*, is about to publish by subscription a work entitled *Robert Burns and the Medical Profession*. Among the many intimacies and friendships formed by Burns with professional men in his own day, and among his equally numerous admirers of the same class since, none are more distinguished for the soundness of their views on his character and their generous and enthusiastic loyalty to his memory than those belonging to the medical profession. *Burns and the Medical Profession* is an attempt to gather together for the first time the story of the poet and his medical friends. Dr. Finlay has endeavoured to trace the nature, course, and extent of these medical friendships, whether of intimates and correspondents during the poet's lifetime or of biographers, critics, and panegyrists after his death, from the time he made the acquaintance at Lochlea of Mr. John Mackenzie, surgeon, Mauchline, who attended his father in his last illness, down to the present day. Extending over this period of fully a hundred years, there are laid under contribution between thirty and forty doctors, Scottish, English, Irish, American and colonial, who have all paid greater or smaller tributes to the genius and character of the bard. The volume will be illustrated with full-page portraits of the more notable among these intimates and contributors, such as Dr. John Mackenzie; Dr. James Gregory, Professor of Practice of Physic in Edinburgh University; Dr. Alexander Wood ("Long Sandy Wood"), the surgeon who attended the poet with his bruised limb during the period of the Sylvander and Clarinda correspondence; Dr. John Moore, London, formerly of Trongate, Glasgow, father of Sir John Moore, the hero of Corunna, author of *Zelucco*, etc.; Dr. William Maxwell, Dumfries, the physician who attended Burns in his last illness; Dr. James Currie, Liverpool, whom Carlyle designated Burns's "first and kindest biographer;" Dr. David Macbeth Moir (Delta), of Musselburgh, author of *Casa Wappy*, *Mansie Waugh*, and a *Commemoration Poem on Burns;* Dr. Francis Adams, Banchory, Aberdeenshire, the translator of the works of Hippocrates, etc., and author of *A Discourse on the Writings of Burns;* Dr. Oliver Wendell Holmes, the genial Autocrat of the Breakfast Table, and author of a centennial poem, etc., on Burns; Dr. John Brown (*Rab and his Friends*); and Dr. James Adams, Glasgow, vindicator of the character of Burns's "Chloris" (*Jean Lorimer*). The work will be issued to subscribers at the price of 5s. nett. The names of subscribers sent before July 15th, 1898, will be inserted at the end. The publisher is Alexander Gardner, of Paisley.

SPECIAL CORRESPONDENCE.

PARIS.

Liquefied Air on Draught.—Lunatics at Large.—Improvements at the Morgue.—General News.

AT a public dinner the other day, at which M. d'Arsonval was present, the guests were astonished by having liquefied air poured into their glasses of champagne. A year ago the Emperor of Germany was offered a glass of liquefied air. He raised the glass in honour of science, but refrained from putting it to his lips; the liquefied air in it would have burned them like hot coals. The liquefied air poured into the champagne became dispersed in white clouds, and mingled with the surrounding atmosphere. A bottle of air, if liquefied, can bear a transit of sixty hours without volatilisation taking place.

The question how to protect the public from lunatics is now as pressing as that of the prevention of hydrophobia once was. A police commissary is in a state of anxiety; he had taken measures to keep a whole family for a certain time confined to their house. Violent scenes had taken place in the house. The husband accused the wife of having lost her senses through hypnotism. The wife said her husband was mad. A few days ago a more than usually violent outbreak occurred. The husband escaped half naked, and appeared at the Commissary's office, exclaiming that his wife had tried to kill him. The Commissary went to the family dwelling; as soon as the door was half-opened, a bullet whizzed past his ear without hitting him. Discretion being the better part of valour, he left the premises, and stationed two policemen outside the door to prevent the family from leaving the house. During two days relays of policemen succeeded each other, but no one passed the door. The family preferred making their escape through the window; the mother, two young children, a girl aged 15, and a boy aged 14 are now at large. The father is also wandering about, a probable danger to the public safety. A farmer has lately been shot by a mad neighbour; the murderer has not yet been arrested.

It is feared that several years may pass before the medico-legal institute which it is proposed to establish in connection with the "Morgue" will be organised. The General Council has adjourned the discussion of the proposition. The "Morgue" is in such a dilapidated condition that it requires to be immediately put in order. The well-

known complaints of bad lighting, faulty freezing machines, etc., have at last made an impression. Part of the building is to be rebuilt, electric light will replace gas, and new freezing machines (maintaining a temperature of 15° below 0° Centigrade) will be used. These alterations will be effected before next year at a cost of £16,000.

M. Louis Salvator, an inhabitant of Marseilles, has bequeathed to the Marseilles hospitals the whole of his fortune, amounting to £280,000.

BERLIN.

Pauper Children.—Trachoma.—Congress of Prussian Medical Officers.—The Anniversary of the Emperor Frederick's Death.—A Medical Club.—The Berlin Ambulance Society.—A Hydropathic Institute in the University of Berlin.—Walking Contest: Vegetarians versus Flesh-eaters.

The Berlin magistrates have decided to organise a careful medical supervision of the pauper orphan children under 2 years of age out at nurse in private families. During the hot months each "municipal orphan baby" is to be visited by the *Armenarzt* of its district twice a week, and for the rest of the year at least twice a month—oftener when necessary. Specially appointed female inspectors are to supervise the execution of the doctors' directions, and to report to the doctors periodically. Each female inspector to have charge of ten to twelve babies. If this plan be conscientiously and sensibly carried out, it may go far to abate the present enormous mortality—especially from infantile diarrhœa—among pauper babies.

It is well known that trachoma is particularly prevalent in the eastern provinces of Prussia, where it often assumes an epidemic character, especially among children in the lower schools. The authorities are at last fully alive to the gravity of the matter, and have determined to spare neither pains nor expense in order to stamp out the disease effectually. Thus the city of Königsberg has for the last six months employed ten ophthalmic surgeons especially for the purpose, and the report of their work just published is most satisfactory and hopeful, showing as it does by figures the results already accomplished. In October, 1897, of 17,553 school children examined, 5,568 were found to be suffering from trachoma; of these, 1,763—10 per cent. of those examined—were serious cases. These latter were treated, some in the hospital, some in their own homes, and some in special trachoma classes. By the middle of February the number of cases had gone down to 1,218, of which 345 were serious in character. At the date to which the report extends—that is, the end of April—there were only 826 cases, with 223 serious ones. The number of special oculists has therefore been reduced to six.

The annual congress of Prussian medical officials will meet in Berlin on September 26th and 27th. Papers are announced to be read on: Disinfection in Midwifery; Puerperal Fever as a result of Infection brought by the Midwife; the Serum Test in Abdominal Typhus, and its Importance from the point of view of the Sanitary Police; Ankylostomiasis; Transmission of Pemphigus Neonatorum; Intoxication by Colchicine; the Field of Work for School Doctors; the Supervision of the Insane in their own Homes. Subjects enough for two days!

On June 11th the tenth anniversary of the Emperor Frederick's death Professors von Bergmann, von Leyden, Brunnam, and several other physicians of the late Emperor during his last illness, were invited to dinner by the German Emperor and [illegible].

A few months ago Professor Lassar suggested the formation of a club, of which none but doctors of medicine should be members. His idea was taken up with alacrity, and "The Medical Club of Berlin" was opened last week with a list of 330 members. As yet there is no club house proper, but a set of rooms in the Westminster Hotel, Unter den Linden, has been hired and suitably furnished.

Professor von Bergmann, the President of the new Berlin Ambulance Society (Berliner Rettungsgesellschaft) will give a gratuitous course on four afternoons during the month of July to the 800 doctors belonging to the Society. His object is to ensure uniformity of method in the dressing and first treatment of wounds, burns, fractures, etc. The co-operation of so large a number of medical men shows unmistakably that the new society is rapidly gaining ground. Unfortunately subscriptions do not flow in with the desired abundance, and for this reason an open-air *fête*, with refreshments and flower stalls, is to be held on September 2nd in furtherance of the objects of the Society. An influential committee has been formed (with a branch committee of ladies, over which Frau von Leyden presides), and great success, both pecuniarily and socially, is confidently expected.

To the medical institutes of the Berlin University will shortly be added a hydropathic institute, similar in character to those already established in the Universities of Vienna, Heidelberg, and Würzburg, where scientific hydropathy already has its place in the medical curriculum. The Berlin institute is to be erected in connection with and close to the new building of the Charité Hospital.

The Berlin vegetarians have a fine new feather in their caps. In a walking match of 15 German miles, about 70 English miles, all the 6 vegetarians who started passed the goal in perfect condition, showing no trace of excessive fatigue, whilst of 11 non-vegetarians only one was able to hold out to the end, and he arrived long after the others and very weary. The vegetarian victor did the distance—comfortably from his account—in fourteen hours and a quarter. He was sent for next day by the medical department of the Prussian War Ministry, and interrogated as to his training, diet, etc.

MANCHESTER.

Victoria University Degree Day.—Infirmary Site Question.—Sanitary Inspectors' Conference.—The Sewage Difficulty.

At the Free Trade Hall on July 2nd the candidates who had qualified for degrees in connection with Victoria University were formally "capped" by the Vice-Chancellor. In the course of an address the Vice-Chancellor referred to the refusal to admit University College, Sheffield, as a college of the University, and said that while in the event of the application being hereafter renewed, the Court must retain its absolute freedom of action, the local suitability of the College, and the efforts already made to improve its equipment were recognised, and the deficiencies on which the Council based the recommendation to refuse the application were such as sprang from immaturity of development, and not from inherent unfitness of the College.

A report of some significance in indirect relation to the Infirmary site question, has been presented to the City Council by the Chairmen of the Art Gallery Committee and the Library Committee. It states in effect that as the Infirmary site is no longer available for the purposes of the two Committees, the two Committees must look for other sites for their respective purposes.

The second Annual Conference of the North-Western and Midland Sanitary Inspectors' Association met in Manchester at the end of last week, Dr. Francis Vacher presiding. The President paid a high compliment to modern Manchester as having taken a prominent position in furthering all that pertained to public health. The report of the Sanitary Committee was a record of work prodigious in its extent, and afforded ample evidence that Manchester was abreast of the newest ideas in the region of practical sanitary work. The systematic inspection of drains—11,220 houses having been visited in two years—showed that in less than 4 per cent. of the premises examined the drains were found in a passable condition. In the city there are 2,499 registered dairies and milkshops; so great was the vigilance that during 1897 the regulations were not once infringed. Several papers bearing on the work of sanitary inspectors were read and discussed.

Continuing the narrative of the "Manchester sewage difficulty" from where he left it some weeks ago, we reach another stage of the proceedings. A deputation of the Manchester Corporation on Monday last laid a statement of their position before the "Mersey and Irwell Joint Committee." The cases against the Corporation would in the ordinary course of events come on for hearing on July 20th, and hence it was that the spokesman of the deputation, Sir Bosdin Leech, was so anxious to lay the views of the Corporation before the Committee, and to state what progress they were making. It seems that the three "experts" appointed by the Corporation have indicated to the Corporation that everything could

be satisfactorily treated on the 151 acres of land the Corporation already possessed, and that they could not possibly furnish their report before October. Sir Bosdin Leech, on behalf of the deputation, also was prepared to give a pledge to buy such land as the Local Government Board might demand after hearing all the Corporation had to say. Finally, it was agreed to grant the six months' extension asked for. This sewage business is bringing with it serious burdens, and the Rivers Committee of the Corporation has had seriously to consider its financial position. The City Treasurer states that the adverse bank balance on the sewerage and sewage disposal account has increased from £29,474 in November last to £62,597 on June 16th. The requirements of the Rivers Committee might even reach £170,000.

BRISTOL.

St. John Ambulance Association.

THE Duke of Beaufort took the chair at the annual meeting of the Bristol Branch of the St. John Ambulance Association, and distributed the certificates and medallions. The Duke was supported by the High Sheriff of Bristol (F. Richardson Cross, F.R.C.S.) and the members of the Committee of the Bristol Branch. The number of successful candidates showed a satisfactory increase during the year; 361 having passed the examination against 310 in 1896-97. During the evening reference was made to the stretcher competition, which took place on July 2nd in the Zoological Gardens, for a cup presented by Mr. Beavis, a gentleman much interested in ambulance work. The competition lay between four teams, and the umpires after consideration gave their award to a team from the Netham Chemical Works. This is the first competition of the kind held in Bristol, and it is hoped that it will stimulate interest in the work. After the competition an inspection of the Bristol Division of the St. John Ambulance Brigade was made by Drs. Milnes-Hey and Vernon.

CORRESPONDENCE.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

SIR,—Mr. T. H. Ravenhill has so ably stated the reasons against extending sick pay beyond the age of 65, that I have only to add that the small amount of bonus distributed at the last valuation, averaging about £3 to £4 per head, would be totally inadequate for the purpose of abolishing the age limit, even though a bonus of the same amount should be available every five years.

"A Member" writes about contributing "an annual premium in order to secure a few weeks' sick pay," as though this was the limit of the benefit, but he overlooks the fact that in the event of permanent incapacity the members may be on the sick list for years; one member, indeed, has drawn sick pay amounting to upwards of £1,500.

I am sorry to have to correct "A Member" in his optimistic view of the "more rapid rate" of increase of the funds of the Society in the future. On the contrary, we shall probably soon reach our maximum, and when the claims on the annuity and life assurance funds begin to come in our balance will commence to decrease.

I am afraid that we cannot reopen the question of granting annuities on more liberal terms, since on valuation it was found that owing to the fall in the rate of interest our annuity fund was hardly solvent; the Committee were therefore glad to avail themselves of the offer made by the Rock Life Assurance Company to grant annuities to members of the Medical Sickness and Accident Society on exceptionally favourable terms.

In conclusion, I can only reiterate the advice I gave at the annual meeting—that members of the Society should provide for the termination of the sickness contract by taking out deferred annuities to commence at the age of 65.—I am, etc.,

F. DE HAVILLAND HALL,
Chairman of the Medical Sickness and Accident Society.

Wimpole Street, July 4th.

SIR,—As a foundation member of the above Society, I beg to say that any attempt to alter the rules of the Association on the lines suggested—namely, keeping on sick pay after 65—will have my very strongest opposition, and I cannot but express regret that a proposal so destructive to the future of our flourishing Society should have ever been made.—I am, etc.,

Erdington, July 3rd. WILLIAM DONOVAN, M.D.

SIR,—As a member of nine years' standing of the above Society, allow me to say that I endorse every word of Mr. Ravenhill's letter of July 2nd. As he says, we know from experience that clubs are in difficulties so soon as the members are liable to what he aptly calls "old age sickness," and can only keep on so long as young members continue to join in large numbers.

"M.D." calls it in his letter "the weak point" of the Society, I call it the strong backbone; and I hope that Mr. Ravenhill's letter will show on what a firm, actuarial basis the Society is formed, and induce many members of the profession to join, and join young.

As I advise every working man to join some club, so I say every member of the medical profession should join the Society. One then feels (and I speak from experience), if an assistant, he has money coming in for expenses; if a principal, money to pay for a *locum*.—I am, etc.,

Overton, Ellesmere, July 4th. B. J. E. WRIGHT.

THE SALE OF ABORTIFACIENTS.

SIR,—The enclosed were sent to me by an inquiring husband. Without in any way commenting upon the fate of Dr. Collins and others, I believe practitioners generally would be glad to know how it is advertisements of this nature are allowed to be distributed with impunity.

I am told such advertisements appear in respectable (?) newspapers. I submit that if these medicines act as it is pretended they do, they conduce to what is as much "illegal practice" as the operations which the abortionists indulge in. If they do not, then they must be fraudulent, and one would think rendering those who advertise them liable to prosecution. Is there no authority capable of dealing with such cases?—I am, etc.,

Gloucester Gate, W., July 5th. OWEN PRITCHARD.

*** The three enclosures which our correspondent mentions are: (1) A label from a bottle containing the statement that if a stronger preparation is required it should be sent for at once, and that if one bottle is not enough another should be got; if two bottles are not sufficient the strongest should be tried. The assurance is given that a complete relief is certain if the individual perseveres. (2) A set of testimonials the correctness of which is certified by a statutory declaration made by the vendor before a Commissioner for Oaths. (3) A pamphlet containing what purport to be facsimiles of testimonials. In reply to our correspondent's question, we believe that the police or the Public Prosecutor are the only authorities which can deal with such matters. If our correspondent is in a position to afford definite information to the Public Prosecutor, we should recommend him in the first place to communicate with that official.

NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—Some of your correspondents show an experience of the scale of charges authorised—not enforced—by our Rule 48, and some do not. It does not seem to be generally understood that while the Society guarantees these charges, it does not forbid either higher or lower ones. It could not guarantee without a scale, and it is the guarantee that doctors value, for the bad debts made by the medical profession among the benefit club class of patients are notorious. While perhaps nine-tenths of the medical pay of the National Deposit Friendly Society is upon its scale, it does not profess to do what it cannot do—namely, limit the pay to the scale.

On inquiry of district secretaries I find in hundreds of cases poorer members have been charged less than the Society's scale. As part of the medical pay comes from the member's deposit, both he and the Society are helped by such leniency on the part on the doctor. On the other hand, as your correspondents have shown, those who can afford have been charged, and have willingly paid more than that scale.

Your record in the BRITISH MEDICAL JOURNAL of June 25th, p. 1661, of the abuse of medical privileges by well-to-do

members of the great orders is a shameful story. They should not expect to be doctored on the terms of a labourer any more than does the farmer in the National Deposit Friendly Society who pays your correspondent 5s. a visit, and we indeed may be rather proud of our example. In such a case as the latter the scale price can be paid by the Society on its printed monthly form, and the balance by the patient himself, or the doctor may prefer to trust the latter, and draw from him the whole charge in the usual way. In the latter case the patient would settle his own claim with the Society.

One of your correspondents has come to the amazing conclusion that because the total medical pay in this Society is small, the doctor's pay per visit is small. The best-known fact about the National Deposit Friendly Society is that its average sickness per member is about a fourth that of the great Orders.—I am, etc.,

Bedford, June 29th. EDWARD RANSOM.

THE NEW SMALL CALIBRE BULLETS.

SIR,—The articles which have from time to time appeared in the columns of the BRITISH MEDICAL JOURNAL regarding the Dum-dum bullet have been read on this side of the Atlantic with considerable interest, especially by the few of us who have had a practical experience with the new small calibre rifle; and it is certainly a surprise to us that any one who has witnessed the inefficiency of this weapon in actual battle could be found to condemn as inhumane any improvement or change which would tend to render it more effective. War is not peace. At the same time, I think that the change in armament has been a grave mistake. My own experience with the new rifle has been confined entirely to the effects of the Spanish Mauser, and I have had the opportunity of witnessing the effect of this bullet (calibre 0.295, initial velocity nearly 2,300 feet per second) side by side with those inflicted by the Remington lead and copper covered bullet (the so-called explosive), the Remington, Lee, Winchester, and others of the older style of weapon. The difference is almost incredible to one who has never seen the new arm in action. The stopping force of the new bullet is practically *nil*, and since in my experience there is a good deal of the brute in every man, especially in battle, it will no more serve to check a bayonet charge of disciplined troops than it would the mad rush of fanatical natives.

The new rifle has only theoretically two advantages over the old arm—that is, penetration and increase of range. By cutting away the point, while you render it as efficient as the old bullet (it could not be more so), you destroy one of these points which it had to recommend it—that is, penetration; and I think that among army men it has come to be pretty well understood that the great majority of wounds are received at comparatively close range, and that the seeming advantage of the new rifle in this particular is also more theoretical than real. Besides this, the Mauser, I have convinced myself, is markedly unreliable at long distances, and I have no doubt that this is true of all the other rifles of the same type. This brings us back to the point from which we started before any change was made. The expert committees who recommended this change have made a mistake. The small calibre bullet is inefficient, and the small calibre with a cut end has no advantages over the old lead bullet.

I have never seen an officer who complained of the lack of stopping force in the old Martini-Henry, or in the Springfield, which is the best weapon on this side of the Atlantic. I shall certainly expect to see before long a return to some modification of the old arm.—I am, etc.,

J. H. STEVENS, M.D.,
Boston, U.S.A., June 21st. Late Surgeon Ejército Cubano.

THE TREATMENT OF HÆMATEMESIS BY PERCHLORIDE OF IRON.

SIR, I feel sure that Mr. St. George Reid and Dr. Purkiss are right in their opinion[1] that it is good treatment to make patients with hæmatemesis swallow large quantities of perchloride of iron, and I thought it would interest them to know that this treatment has been in use at Guy's Hospital for many years. I usually order half a drachm or a drachm of the liquor ferri perchloridi, mixed with an equal quantity of glycerine, to be swallowed every one or two hours till the bleeding stops.—I am, etc.,

Harley Street, W., July 3rd. W. HALE WHITE.

[1] BRITISH MEDICAL JOURNAL, February 26th and June 25th, 1898.

MITRAL STENOSIS.

SIR,—In his valuable lecture on mitral stenosis, published in the BRITISH MEDICAL JOURNAL of June 28th, Dr. Sansom makes no reference to the part played by the "button-hole" and "funnel" mitral in facilitating the flow of blood through the constricted orifice. The shape of an orifice and of the passage leading up to and away from it influences the quantity of fluid that can pass through it in a given time. If a round hole be punctured in the side of a can full of water, the cross section of the fluid jet coming from it is much less than the area of the aperture—little more than half of it. The relation of the one to the other we term the "coefficient of discharge." If, now, the small end of a funnel be accurately fitted to the inner side of the aperture, so as to imitate the condition of things obtaining in the funnel mitral, the coefficient of discharge is almost doubled. Again, if instead of making a round aperture in our can, we make a linear one of the same dimensions, so as to imitate the button-hole mitral, we in a similar way nearly double the coefficient of discharge. This form of mitral orifice results from the flattening out of the funnel through cicatricial contraction, so as to form a more or less flat diaphragm, and it is, indeed, a remarkable fact that in this process the round aperture of the funnel is invariably converted into a slit. Sometimes it will appear to be slit-shaped before the flattening-out process begins. Hence, it is clear that in mitral obstruction the heart avails itself in a very cunning way of principles well known to the engineer, so as to secure the maximum flow through the narrowed mitral orifice—a brave attempt to make the best of a bad job.

It would be still more remarkable if it could be shown that devices similar to those employed to facilitate the forward flow are made use of to prevent regurgitation. I think it very probable that such is actually the case. A funnel-shaped passage at the mitral orifice at the time of ventricular systole would tend to facilitate regurgitation, for such a passage secures a large coefficient of discharge in both directions. Observe, however, that during ventricular systole the funnel flattens out, producing a rounded orifice, probably narrowed by the contraction of the mitral sphincter, in a more or less flat diaphragm; in other words, the coefficient of discharge is reduced to a minimum. Have we not here an agency for preventing regurgitation at least as potent as that suggested by Dr. Samways? In regard to the slit-shaped orifice this would tend to favour regurgitation. The contraction of the mitral sphincter during systole, however, would tend to convert the slit into a rounded aperture, thus reducing the coefficient of discharge.—I am, etc.,

Wimpole Street, W., June 26th. HARRY CAMPBELL.

THE INDIAN MEDICAL SERVICE AND THE PLAGUE.

SIR,—May I appeal to the powerful aid of the British Medical Association and the BRITISH MEDICAL JOURNAL on behalf of a most serious and pressing grievance of the Indian Medical Service, namely, the continuous closure of leave for nearly four years? We have passed through an unprecedented period of famine, war, and plague, during which, however inadequately recognised, it is admitted the service has unflinchingly done its duty, and it is therefore deserving of more consideration than it is receiving. Leave was closed to the Indian Medical Service in 1895 owing to the Chitral campaign. It was open for a short time in 1896, to be closed again in 1897 owing to the Afridi campaign, and during the present year not a furlough application has yet been sanctioned, owing, I believe, to the spread of plague. It is now well known that this disease is endemic at present in widely separated parts of the country, and it is certainly quite impossible to predict when the pestilence will leave India for good. If Government therefore does not relent, the officers of the Indian Medical Service need expect no more leave for years to come. As may be expected, the result of this treatment on the officers affected has already been most serious, as an extraordinary number of medical officers of the Indian Medical Service have broken down this year and have had to

be allowed to go home after being declared unfit for duty by medical Boards. If leave continues closed an increasing number of officers must break down during this year and next, and the entire object of leave—to preserve health—is being defeated. I believe it is quite unprecedented for leave to be closed—even to medical officers—for four years with practically small prospect of its being reopened in any appreciable time; and the operation of the rule is not alone a breach of faith to the service, but it is partial as well as unjust, as it affects no other officer in either civil or military employ except the medical officer. I attach a paragraph which appeared on May 5th in the *Pioneer*, which discloses the state of affairs as regards officers of the Indian Medical Service in civil employ. There is, of course, absolutely no ground for the hopeful forecast that plague will disappear from India in a year, and it was doubtless put forward to raise the shattered hopes of many officers who urgently require the leave which they were promised on entering the service.—I am, etc.,

June 3rd. INDIAN MEDICAL SERVICE.

THE DENTAL EXAMINATIONS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

SIR,—Various letters have appeared in recent issues of the BRITISH MEDICAL JOURNAL criticising adversely the curriculum and examinations of the College; in the first instance these letters hardly appeared to call for any answer, because to those well acquainted with the subject they contained their own refutation. But as other letters have followed upon the first, which have fallen into similar misconceptions, it seems desirable after all to correct them.

The criticisms fall under two heads, namely, the adequacy of the test applied to ascertain the practical fitness of the candidate as a manipulator, and the other the propriety of the curriculum and of the questions set at its final outcome, the examination.

The writer of the letter signed "G. P." complains that the examination does not afford an adequate test of practical capacity. But, if before writing he had made due inquiries, or had read the reports of their Inspector published by the General Medical Council, he would, I think, have hardly expressed himself thus, for the examination of the English College is very practical indeed, and the whole of a long day, from 9 to 7, is devoted to operations performed in the mouths of patients, and to work at the workroom bench; the practical examination being spread over two or three days if the number of candidates be such that an examiner has more than three or four candidates to superintend. He would further have found that the practical part of the examination carries higher marks than any other part, and that in the Inspector's report the recommendation was made that the examinations of certain of the other colleges should be extended in this direction, a recommendation which has already been acted upon by some of them.

In fine, it may truly be said that, if the dental examination of the College of Surgeons of England has any particularly strong point, it is its practical examination, which is the very thing of which "G. P." makes complaint.

A similar fatality seems to have pursued the other critics in their selection of instances of inappropriate questions, for they have, as a matter of fact, instanced a good many as improper which might have been equally well selected as examples of the sort of questions especially appropriate for the dental student.

Thus, "F.R.C.S." instances leucoplakia, which he holds to be one of the rarest of rare diseases. Now, no dental surgeon of large experience, whether in private or hospital practice, would be found to agree with him in so characterising the disease, for it is seen with fair frequency by the dentists, though possibly, as it often causes the patient no inconvenience, it is not so often seen by the consulting surgeon. But, if it has any significance as a possible antecedent of malignant disease, it is obviously important that the dentist who does see it should recognise it, and warn the patient against excessive smoking and the like; moreover, at least one London surgeon of eminence holds that it is often produced by dental irritation, and even by the contact of amalgam fillings, which he always requests should be replaced by some other filling. Is this, then, an inappropriate question for the dental student to be asked in surgery?

And the aid of the dentist is often sought in the treatment of fractures of the jaw. Is he, then, not to know anything about an ununited fracture, which was stigmatised as a matter outside his province by a speaker at the General Medical Council?

Again, the subject of ulcers of the tongue was cited as outside his necessary knowledge; but he is constantly concerned with ulcers produced by rough surfaces of teeth, and is it a safe thing for his patients that he should have no knowledge of the more serious conditions which may come under his eyes, often at a period before the advice of a surgeon has been or would be sought by the patient?

As a matter of fact, it very frequently happens that the dentist, by an early recognition of malignant disease, is able to secure for the patient the advantage of operative help at a date when it is most efficient, and often weeks before advice would be sought elsewhere. And how would the critics of the questions on syphilis like to succeed to a patient with mucous tubercles in his mouth, in the hands of a dentist who was incapable of recognising their nature?

Such are the sort of questions objected to by the writers of the letters. The existing dental curriculum, which practically dictates the scope of the examination, was framed originally by dentists engaged in active practice, who were, if anyone be, competent to judge of the requirements of the intelligent dental practitioner. This was done after a careful study of the dental education in vogue in this and in other countries, and it has been looked into from time to time with a view to ascertaining its appropriateness, always with the result that it has been left unchanged in its main features. Yet this is all ignored by writers who rush into print without informing themselves of the fundamental points of the issue involved.

Another thing to which exception was taken was a rudimentary question upon the structure of the skin, which might have been set in an elementary physiology paper to lay students. Now, the dentist is engaged every day in dealing with the mucous membrane of the mouth, and should obviously know its structure. Can it be seriously contended that he is to learn the structure of the mucous membrane and stop short of that of the skin?

By all means let us have legitimate criticism, for nothing is perfect, and differences of opinion must always exist; but, on the other hand, it seems not too much to ask that those who commit themselves to very positive critical views shall take the trouble to possess themselves of all the information which lies ready to their hands before so doing.—I am, etc.,

June 29th. A DENTIST OF THIRTY YEARS' STANDING.

DEATH CERTIFICATES FOR FRIENDLY SOCIETIES AND INSURANCE COMPANIES.

SIR,—I should like to be permitted, through the columns of the BRITISH MEDICAL JOURNAL, to call the attention of the profession, and especially their representatives on the General Medical Council, to what is undoubtedly a very anomalous, unjust, and undignified position in which every registered medical practitioner is placed by law as regards the granting of certificates of death, which are required in making claims for monetary benefits from friendly societies or insurance companies, with the hope and desire that they may bring the matter before the General Medical Council, with a view to legalising the validity of such certificates when given by a registered medical practitioner.

The surgeon to a friendly society gives weekly certificates to members during their period of illness which entitles them to a certain amount of money per week, and without which the member could not obtain it; but if the member dies, although he gives the certificate of the cause of death, he is not permitted by law to give a valid copy of that certificate; but the registrar, who simply makes an exact copy of that given by the surgeon, and which he gets for nothing, is allowed to do so and charge a fee of 2s. 7d. for each copy. Why the surgeon is thus prohibited I cannot possibly understand. It ought certainly to be no reason why those who are on the *Register* should be disqualified because someone, who is not so placed, may possibly give the certificate. Otherwise, what is the advantage of being on the *Register*, which exists,

at any rate primarily, in order that the public may know those who are entitled to practise?

The position is undignified because the registrar, being anxious to get as many 2s. 7d. fees as he can, takes every opportunity of telling the relatives of the deceased that "The doctor's certificate is no good," "You must get one from me," "He can't give you a certificate for that," "I'm the only one the laws allows to do so," etc.; or, if the surgeon be asked, he is obliged to confess his inability to do so, and refer them to the registrar. I understand that means are being taken with the view of getting certificates of death paid for, and it is but reasonable and just that a clause should be inserted in any new Medical Act legalising the giving of copies of certificates of death by a registered medical practitioner for use under the Friendly Societies Act, Insurance Companies Act, or any lawful purpose whatever.—I am, etc.,

Cardiff, June 28th. W. LYNE BLIGHT.

DIABETES MELLITUS AND ITS TREATMENT.

SIR,—All who are interested in the treatment of diabetes will be indebted to Dr. Pavy for expressing his valuable opinion with regard to the sudden commencement of a rigid diet. On this point, as on all others in connection with the disease, his views must command the greatest respect. Everyone will admit that it depresses and wearies the patient to have less and less carbohydrate food to eat each week. But for the gradual elimination of carbohydrates from the diet weeks are not necessary; days, six or seven, will usually be sufficient.

The point in question is simply this: When, for diagnostic purposes, it is desired to place a diabetic patient on the most rigid diet for a short time, in order to determine to which variety of the disease the case belongs, is it always advisable to prescribe this diet at once when the patient is first seen; or is it better to make the change from ordinary diet to the most rigid diet gradually, especially in the severe forms? (I use the word "gradually" with reference to days rather than weeks). Evidently different opinions are held. The gradual restriction is advocated in the article on diabetes in *Quain's Dictionary of Medicine*, last edition, p. 463, and also by Professor Ebstein and others. Writing in 1892, Professor Ebstein[1] states:

> I never introduce the diabetic diet suddenly, but gradually, and all the more slowly the more serious the case is. The sudden change of diet would not have any inconvenience for the patient suffering from a light form, but even in these cases it would not be of particular advantage. But in serious cases . . . the result might be fatal if we were to order the diabetic diet in too sudden a manner.

In his book on the dietetic treatment of diabetes, just published Professor Ebstein, expresses much the same opinions.[2] Professor Naunyn[3] also points out the danger of a sudden change of diet. Quotations of opinions of course prove nothing, but they are sufficient to show that whatever the truth may be, different views are at present held.—I am, etc.,

Manchester, June 28th. R. T. WILLIAMSON.

THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS.

SIR,—I see by the BRITISH MEDICAL JOURNAL of June 18th that the Honorary Secretary of the Leeds Practitioners' Association is rather doubtful as to my *bona fides re* unqualified assistants. I think any hospital surgeon or teacher at a medical school could easily convince him that the majority of the unqualified (I do not say all) are from the ranks of what I termed "hospital idlers," and that several others are men whose knowledge of pathology and medicine has been gained from the names on the surgery bottles. I grant that some may have attended 1,000 cases of midwifery and yet be quite ignorant of the anatomical names and relations, etc., of the pelvic organs—these are they who have never seen the inside of a dissecting-room.

Your correspondent "A. C. T." has hit the right nail on the head, for the treatment some have experienced as assistants has been something abominable. The indoor assistant is little better than a domestic servant; his principal at times uses language to him which a decent groom would resent, and, further, his position in society would be difficult to define; he has to be careful what friends he makes, and cannot spend an evening with any of them unless they are his principal's patients, or, what is of greater importance, friends of that principal's wife. I trust that for the good of those who wish to act as assistants in the future all those now in that position will stick together and so ensure better pay and more considerate treatment.

Another very awkward point in connection with the assistant is his religion. I myself am a Catholic, and in my second assistancy the principal, who was a bigoted Protestant, tried his level best to prevent me attending the only place of worship which I had always been accustomed to attend, though he did not succeed.—I am, etc.,

June 20th. CYMRO.

SIR,—The reading of your correspondence column in reference to the unqualified assistant is apt to give one the impression that the profession is really losing something of value. Such, however, I do not consider to be the case, for, as an example, in two large Lancashire towns with which I am well acquainted, each having over 100,000 inhabitants, there were nine unqualified men, four of whom had never been near a medical school in their lives. It is this last lot that most medical men want to see abolished. The man who has really tried the legitimate study of medicine we almost forgive if he does not succeed; but the man who diagnoses, prescribes, etc., without even possessing the foundations of the rudiments of anatomy and physiology ought to be swept away.

One gets wearied of reading worn-out excuses for the retention of such men as these, and the only conclusion that we can come to is that the continuance of the agitation emanates largely from the unqualified and from those who have made use of them in the past. Have they not been warned in the medical papers for years as to what was coming? My principal discarded his unqualified man four years ago because he was expecting at every meeting of the General Medical Council to be compelled by them to do so.

Amongst the younger medical men the action of the Council has given great satisfaction. It has not only improved the salary of the assistant, but has at the same time improved his status. It has also removed a number of men whose knowledge is equivalent to that of a quack, but who was palmed off on the public as a "doctor."—I am, etc.,

June 20th. AN ASSISTANT M.D.

MEDICAL SERVICE FOR THE CROWN COLONIES.

SIR,—I have read with great interest Dr. Cantlie's speech at the Imperial Institute on the organisation of the colonial medical service, and there can, I think, be no question that this important branch of the colonial civil service would be vastly more effective and more economical if the present haphazard system of admission by nomination, or local selection, of local promotion and of generally "splendid isolation" were replaced by a properly organised and graded service.

To my mind the readiest and simplest method of organisation would be to form a colonial medical staff (or corps) corresponding precisely to the Army Medical Staff and the Indian Medical Staff, with the same examinations, the same age limits, the same grades of rank and pay and the same colonial allowances. The work done at present by the colonial medical officers is precisely similar to that done by the officers of the civil side of the Indian Medical Staff, and there appears to be no reason why what has already proved effective in India should not also be a success in the Crown colonies. The details of organisation are already at hand in the sister services and have been matured by practical experience, and the present Secretary of State for the Colonies could not signalise his term of office in a better manner than by the adoption of some such scheme as this, which would confer a lasting benefit not only upon the colonial medical service, but also upon the colonies themselves, for they would then obtain better men, better trained, better disciplined, and of far wider and more varied experience than is at present the case.

It is most important that the men who are to hold the higher and more responsible positions in such a service as ours should have had a wider experience than is obtainable in one small colony, for administrative capacity depends more upon a general knowledge of the world and of men than it does upon mere seniority of age or service, and one of the greatest advantages

[2] Ueber die [illegible] Wiesbaden. 1897.

of a properly organised colonial medical staff would be that officers would be removable from one colony to another at periods of say six years, that is, at the time when at present our home leave becomes due.

The question of the status of a medical officer of health of a colony raised by Dr. Cantlie is one which does not at present appeal to many of the Crown colonies, but should a colonial medical staff be organised all its officers would, as in the A.M.S., have to be more or less trained in sanitary work, and although it might be advisable to detail one officer in each colony or in each district of a larger colony specially for these duties, yet if the senior officer was a man who had at some period of his career performed similar duties there would surely be no difficulty in making the M.O.H. subordinate to such senior officer, unless of course the former happened to be the executive officer of a municipal council or other similar body, such as obtains in the larger cities of India, in which case he would not be an officer of the colonial medical service.
—I am, etc.,

May 18th. A Colonial Medical Officer.

HOSPITAL REFORM.

Sir,—In one of the recommendations made by the Hospital Reform Association reference is made to the system adopted at two provincial infirmaries—those of Oldham and Dorchester—for the prevention of abuse; and as inquiries have been made respecting details, perhaps you will allow me to give your readers the information in your columns.

In both these institutions applicants for medical relief have to appear before the Managing Committee, and also have to be examined by the medical officers before they are admitted for treatment. In Oldham there is a wage limit; and, moreover, no person residing outside the limits of the borough is eligible for treatment. That these regulations meet with the approval of the working classes is proved by the fact that last year no less a sum than £1,720 was contributed by them through the Hospital Saturday Fund. In the report of the Bath and Bristol Branch on hospital abuse, Oldham figures well in the proportion of its out-patients to population, being only 33 per 1,000; this proportion compares very favourably with such towns as Manchester, Birmingham, and Leeds, where the proportion is 249, 291, and 222 respectively.

With respect to the infirmary at Dorchester, the Chairman (Captain J. E. Acland) writes as follows:

Our out-patient department is not abused, for, as you know, every case has to be certified as proper for treatment, both by the Committee and by one of the medical staff, before it is accepted. This system of admission has stood the test of years, and, though it makes a considerable demand on the energy and devotion of the Committee, yet it is loyally carried out, and the best result is that improper applications are rarely made.
—I am, etc.,

Cardiff, June 28th, T. Garrett Horder.

Obituary.

HENRY ALFORD, F.R.C.S.

We have to record the death of Mr. Henry Alford, of Taunton, on June 29th. Had he lived until July 17th he would have completed his 92nd year, for he was born in 1806. He was the third son of the Rev. Samuel Alford. The family had long been settled in West Somerset, where it had held landed property from the middle of the sixteenth century. Henry Alford was one of seven sons, and at the age of 16 went as house pupil to the Bristol Infirmary. Five years later he completed his medical education at St. Bartholomew's Hospital, and in 1828 obtained the diploma of L.S.A., and in the following year that of M.R.C.S. He was elected a Fellow of the Royal College of Surgeons in 1844. After a short period of private practice in Ilminster he was appointed Surgeon to the Taunton Hospital, and settled in that town.

He resigned his Surgeonship to the Taunton and Somerset Hospital in 1859, when he was appointed Consulting Surgeon, a position which he held till his death. As consulting surgeon he took great interest in the work of the hospital, being constant in his attendance on all consultations, operations, and meetings of the Medical Committee.

As a surgeon he had the advantage of being ambidextrous, preferring if anything to use the left hand. He was an expert operator, but oversensitive, often saying that he had been unable to sleep the night before an operation.

He joined the British Medical Association at its first anniversary meeting at Bristol, riding from Taunton to attend it. He was one of the original members of the West Somerset Branch, and rarely missed a meeting until the failure of his hearing prevented him taking part in them.

Though busily engaged in practice Mr. Henry Alford took his full share of public duty; he was Bailiff of the Borough, and Churchwarden of St. Mary's Church. He was also a keen politician, and was one of those Conservatives who heartily supported Sir Robert Peel in the repeal of the Corn Laws. He was twice married, and by his first wife leaves four children. He is also represented by no fewer than twenty-five grandchildren and six great-grandchildren.

We regret to announce the death of Surgeon-Captain Archibald William Forbes Russell, I.M.S., which took place recently in India. He was educated at the Loretto School, near Edinburgh, and afterwards at Cambridge, where he graduated B.A. in the Natural Science Tripos. He became a student of St. Bartholomew's Hospital, and in 1893 took the degrees of M.B. and B.C. at Cambridge. In 1894 he took the M.A. He entered the Indian Medical Service, and took part in the Chitral campaign, at the close of which he was invalided home, having suffered a severe attack of typhoid fever on the march to Chitral. After a year's leave of absence he returned to India, but was again invalided after a few months on account of dysentery. He went back to duty in March of the present year, and now he has died at Bareilly of sunstroke at the early age of 29. Surgeon-Captain Russell was noted as a football player in his school days, and at Cambridge he rowed in his college boat. He was also a hard worker. He was early a diligent student of Nature, and while a pupil at Loretto he founded the School's Natural History Museum, and was one of its first curators. He chose his profession for the mere love of it, and all he did was done thoroughly and to the best of his ability. Always a cheerful comrade, full of sympathy for those in sorrow or distress, charitable to the shortcomings of others, and grateful for the smallest service, the sterling qualities of his character and his open affectionate disposition, won him many friends. He leaves a widow and a son a year old.

Surgeon-Major-General John Charles Morice, I.M.S., who died recently in London, entered the Indian Medical Service in 1856, at the age of 21. He served in the Indian Mutiny, and was present at the relief of Lucknow, and at the siege and capture of that town, also at the engagements at Cawnpore, Seraighat, and Kalee Nadlee, and at the capture of Fategarh and Bareilly. He was also employed in the Hazara campaign of 1868, and was present at the operations on the Black Mountain, for which he received the medal and clasp. In 1885 he served in the Soudan campaign, was mentioned in despatches, and again received the war medal and clasp. The breakdown of his health, which compelled his retirement, alone prevented him from reaching the highest posts in India. He was a man of genial and happy disposition, and his loss is deeply lamented by his many friends.

Dr. Auguste Voisin, Physician to the Salpêtrière, whose death has just been announced, was born at Le Mans in 1844. He was the son of Dr. Benjamin Voisin, Chief Physician to the Hôtel Dieu of Le Mans, and he began the study of medicine under the guidance of his father. In due course he went to Paris, and after holding the much-coveted office of *interne* he graduated in 1875, the subject of his thesis being Syphilitic Arthropathies. Owing no doubt to the influence of his uncle, Dr. Félix Voisin, Member of the Academy of Medicine, and Physician to Bicêtre, he devoted himself especially to the study of mental diseases. In 1879 he won by competitive examination the appointment of Physician to Bicêtre. This post he held till 1884, when he succeeded his friend and teacher, Legrand du Saulle, as Physician to the Salpêtrière. There he was at the head of the department of backward children and of that of epileptics. His book on *Idiocy* was based on the lectures in the Salpêtrière. He contributed largely to medical literature, mainly on subjects

connected with hypnotism and mental disease. Among his writings may be mentioned monographs on *The Action of Medicines at a Distance; Melancholia with Stupor; Unconscious Fugues in Hysterial Subjects.* He was also the author of a series of *Researches on Post-Paroxystic Albuminuria in Epileptics; The Toxicity of the Urine in Epileptics; and Intoxication in Epilepsy.* Dr. Voisin attended the annual meeting of the British Medical Association held at Bournemouth in 1891, where he made something of a sensation by a paper on hypnotism and its relation to crime.

SURGEON-GENERAL FREDERICK MORRISON CLIFFORD died in London on June 16th. He entered the Indian Medical Service (Bengal) as Assistant-Surgeon on April 4th, 1843, and was placed in medical charge of the European Depôt at Chinsurah. In the following year he was attached to the 10th Bengal Cavalry, with which regiment he remained until 1854. In 1856, on return from furlough, he was appointed to the charge of the 6th Native Infantry, and on the mutiny of that regiment was successively in medical charge during 1857-58 at Allahabad of the Depôt Hospital connected with General Havelock's brigade and of the general depôt hospital. In June, 1857, he was promoted Surgeon, and in the following year was attached to the Field Hospital, Fategarh. While attached to the 10th Bengal Cavalry, then known as the Cavalry Regiment of the Bundelkhand Legion, throughout the campaign against the hill tribes in Scinde under Sir Charles Napier, he also served for a short time with the Cawnpore levy in co-operation with Lord Clyde's final campaign in Oude in 1858. He was promoted Surgeon-Major in 1863, retired in March, 1871, and was promoted Deputy-Surgeon-General in April, 1874. He was a man of amiable and upright disposition, and discharged the varied duties which fell to his lot with zeal and efficiency.

WE regret to announce the death of M. HOWARD, L.A.H., and J.P., of Lord Street, Oldham, which took place on June 26th. He had suffered from a severe attack of influenza last Easter, which left him in a very weak condition. He studied at Queen's College, Cork, and in Dublin, and took his diploma in the latter city in 1877. At his death he was only forty-five years of age. He was well known to all classes of the community in Oldham. In spite of his not over-robust physique he was a man of great energy, and besides medical practice he did much work in connection with the Commission of the Peace. He was born in Limerick in 1853. He attended medical classes in Dublin. While pursuing his medical studies there he was appointed parliamentary correspondent to the *Freeman's Journal.* He contributed also to the *Daily News.* He went to Oldham as a medical assistant in 1877, and subsequently commenced practice on his own account. For fourteen years in addition to his medical work he edited the *Oldham Standard.* He was also a certifying surgeon under the Factory Acts. He leaves a widow and young family, and by his death the journalists of the town have lost a hard working and respected colleague and the town itself a useful citizen.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Ferdinand Cohn, Professor of Botany in the University of Breslau, and author of a classic treatise on *The Development of Microscopic Algæ and Fungi*, aged 70; Dr. Karl E. Wieth, Professor of Clinical Medicine in the University of Copenhagen; Dr. Levieux, formerly Physician to the Bordeaux Hospitals, corresponding member of the Académie de Médecine, and author of publications on hospital and sanitary reform, aged 80; and Dr. Anton R. Kerner von Marilaun, Professor of Botany in the University of Vienna, aged 66.

PROFESSOR TH. PUSCHMANN, editor of works on the history of medicine, on medical education, etc., has been elected Dean of the University of Vienna for the academic year 1898-99.

ON July 6th Viscountess Portman laid the foundation stone of the new home that is to be built for the nurses engaged in the Queen Charlotte's Hospital. The building will provide accommodation for over 70 nurses and staff, and a residence for 6 students.

MEDICO-LEGAL.

REGINA *v.* COLLINS

THIS case was resumed on Thursday, June 30th,

DR. BERTRAM HERBERT LYNE STIVENS, examined by the ATTORNEY-GENERAL, said he had been in private practice for some fifteen years. Mr. Uzielli was a patient of his, and consulted him frequently. Early in March he remembered giving Mr. Uzielli a prescription for some ordinary household tonic aperient pills for his wife, as he told him she was suffering from constipation, indigestion, and general debility. On Thursday, March 24th, he was called to 7, Buckingham Gate, and arrived there about half-past seven in the evening. Mr. Uzielli told him who had been in attendance. Mrs. Uzielli was very deaf, which witness attributed to the quinine she had been taking. She said she was suffering from great pain in the abdomen pretty well all over. She had an anxious expression, and her face was cachetic—livid. Her respiration was thoracic.

In reply to the ATTORNEY-GENERAL Witness stated that thoracic breathing indicated that the muscles of the abdomen were more or less in a state of rigidity. She was lying on her back, with her legs drawn up and knees bent, a position indicating pain in the muscles of the abdomen, which was relieved by the flexion. Her pulse was 130, and her temperature 102.4°. There was the peculiar characteristic sweet odour in her breath which indicated some form of blood poisoning. He examined the abdomen and found it tender all over, especially low down in the left side. There was no discharge from the womb. There was tympanites. He formed the opinion that she was suffering from septicæmia and peritonitis. He examined the vagina digitally, and found it very tender. The womb was fixed. There was inflammation all round the neighbourhood of the womb, and the mouth of the womb was closed. He felt a little roughening round the mouth of the womb. There was swelling, particularly on the left side of the womb. The examination led him to suppose that the disease had originated there. He saw her again about half-past ten at night, when she was substantially in the same condition. He instructed the nurse to continue the poulticing, and to be very particular about the nourishment and stimulants. He gave the patient a little morphine by the rectum. He formed the opinion that she was in a very serious condition. Her condition gave him great anxiety. He did not think it possibly true to say of the patient that three hours before there was not a single symptom to cause apprehension or that she was going on perfectly right. At 3.30 on the Friday morning he was again summoned. Mrs. Uzielli was then leaning right forward with her head almost touching her knees, with her arms folded. She had been sitting up in bed with her head on her arms, resting on her legs. Her knees were semi-flexed. It was a peculiar position, and he had never seen a patient assume it before. He asked her how she came to be like that, and she said, "It eases me" or "It relieves me." She appeared to be suffering very much and was very restless. Her temperature had gone down to about 101°. Her pulse was rather more feeble. He gave her a small injection of morphine —one-eighth of a grain. There was not much change since he had seen her five hours before; she was slightly weaker, perhaps. He next saw her at 10 o'clock on the Friday morning. She was then considerably weaker, but was in less pain and easier. She said, "I am afraid I am very ill; I shall never get over this" —or words to that effect. He reassured her always. He told Mr. Uzielli after he had seen his wife for the first time that he was very anxious about her, and that he should get Sir John Williams to see her as soon as possible the next day. When he saw Mrs. Uzielli at 10 o'clock he thought she was in a more anxious condition than the night before. He knew her chances were practically *nil*. After he had arranged with Sir John Williams to come as early as he could, he telegraphed to Mr. Uzielli in the city and informed him of what he had done. He returned to Buckingham Gate at 3.30 in the afternoon, and found that Mrs. Uzielli was collapsing although still conscious. Sir John Williams arrived about 4.30, and together they examined Mrs. Uzielli. They both formed the opinion that there was no hope of recovery. Witness remained with her until her death about 5.45. He declined to give a medical certificate, and on Saturday the 26th he saw Mr. Troutbeck, the coroner, having previously written to him asking for an appointment. He received instructions on the Saturday to make a *post-mortem* in conjunction with Dr. Bond. In reply to the Judge, witness said he saw her four times, from the Thursday night at 10.30 up to the time of death on Friday at 6 o'clock. He did not see any cause to doubt that she was suffering in the way she described. A disease of that kind causing death would cause pain some days prior to death taking place. In reply to the Attorney-General, he said that at the *post-mortem* examination there was inflammation all round the womb. There was a wound situated on the front surface of the inner mouth of the womb. The distance of the wound from the outer mouth of the vagina was 5 inches, more or less; the distance from the outer mouth of the womb about 1, or 1¼ inch. The wound was ¼ inch across in diameter, ½ inch deep. It was a ragged, punctured wound, as if it had been made by a blunt, probe pointed instrument of some kind, not a sharp instrument. Asked whether the wound was about the same dimension in both directions, or a little longer than it was broad, witness said it was rather more perhaps than ¼ inch; perhaps it was a shade longer than broad. In a soft mucous membrane such as that lining the mouth of the womb, a blunt, probe-pointed instrument might have caused the wound. The wound was covered and surrounded by sloughy granulations. He formed the opinion at the time that there was the wound which was the cause of the peritonitis. The uterus, as far as he could judge, was pregnant approximately about seven or eight week. The uterus was in its normal position; it was not retroverted or displaced. There was fibrous thickening in Douglas's pouch of old standing, which he thought would prevent the womb going back. Except for the septic wound and the inflammation the womb appeared to be normal. The witness was then handed a bundle of instruments found in Dr. Collins's possession, and asked if there were any by which such a wound could have been caused? To this he replied "Yes—might have

been caused." He said metallic sounds were instruments commonly used by and in the possession of doctors in obstetric practice. They were used for estimating the size of the womb, or applying a little carbolic acid or something to the internal part of the womb, but principally for estimating the size. There was no such instrument among those produced. In reply to further questions, witness said the wound could have been inflicted with a metallic sound. In reply to the Judge, who asked if from the *post-mortem* examination there was anything to show that there had been a miscarriage, witness said there was the place in the womb where the ovum had been detached. The wound in the uterus could not have come by itself; it must have been caused by something applied mechanically. Looking at the distance from the vagina to the entrance to the womb, he did not see how it could have been caused by a finger.

Cross-examined by Mr. C. F. GILL: These matters you have been speaking of are all matters of opinion? You have been asked if the wound could have been caused by a finger nail.—I am sure in my own mind that it could not have been caused by the finger, but I do not like to make an absolutely definite assertion.

When you were called in on the Thursday you had never seen this lady before?—I knew her by sight. I had never attended her medically, and I was in no sense her doctor.

When you were called in on the Thursday night and saw her, I understand your opinion was that she was dangerously ill. Did you think she was in imminent danger?—No.

Did her husband tell you that he thought she took an exaggerated view, as she thought she was going to die if she had a finger ache?—He did.

When you saw her on the Friday morning at your 5 o'clock visit, still considering that she was dangerously ill, did you think she was in imminent danger?—No; she was weaker. At 10 o'clock I noticed no particular change for the worse, but she was gradually getting weaker. When I saw her in the afternoon I noticed a great change for the worse.

What was the immediate cause of death—thrombosis—a clot?—I should not say it was thrombosis, but it was a clot. There is a difference between thrombosis and a clot. She died of a clot in the pulmonary artery, but that need not be a thrombosis.

Continuing the Witness said that Mr. Uzielli had asked him to prescribe for his wife without seeing her; she was suffering, he had described among other symptoms, from constipation, indigestion, and general debility. He had heard that the lady had had pneumonia, which was a very weakening complaint, the effect of which might be felt in the constitution for years after. He was also aware that she had suffered in January from influenza, which under any circumstances was a serious complaint, more especially in the case of a woman who was not strong.

There were adhesions between the ovaries and the broad ligaments?—Yes.

Were the ovaries much matted down?—Yes. There was a considerable deposit in Douglas's pouch.

What is your note with regard to the old adhesions?—"In the pelvis the large bowel was adherent to the top of the uterus with recent lymph; the great omentum also adherent. The ovary is bound down by old adhesions. The left ovary was cystic, and showed signs of old inflammation with adhesions."

What is the note with regard to old adhesions?—"Right ovary comparatively healthy, but bound down by old adhesions."

Do you agree with this: "External mouth of uterus rather enlarged and hardened, as if from old inflammation. There was a scar of old inflammation of years' standing"?—To the best of my recollection that is correct.

With that material in your possession the condition of the deceased woman on March 14th could not be that of a very healthy woman, and her weakest part would probably be that surrounding the uterus?—That is so.

If she had been in the week before March 14th taking medicines such as emmenagogues or ecbolics, would that tend to further weaken her?—Not necessarily.

Ecbolics are sometimes purgative, sometimes not?—Any purgative medicine it given in a tremendous dose may become an ecbolic.

Supposing this lady was taking four pills a day and doses of a mixture of which we know nothing at all, of such a character that it involved her staying in the house three or four days, that would have a tendency to further weaken her?—I cannot say that it would, without more definite knowledge as to what she was taking and doing.

You prescribed aloes and iron pills for general debility; is that a usual prescription for general debility?—With constipation.

Taken four times a day?—I did no such thing.

The maid has told us so?—The maid has told you, but what she has told you is not correct.

The maid has told us that Mrs. Uzielli took four of these pills in the course of the day?—She could not have done.

Why do you say she could not have done it?—Because there were only five pills taken out of that box.

There was not a word at the inquest as to your having prescribed pills?—I was never asked any question. I did not prescribe four pills to be taken in the course of the day.

Aloes are sometimes taken when a woman is suffering from suppressed menstruation?—Very often. I was not consulted by Mr. Uzielli with regard to his wife more than once. There was not a consultation; there was no fee charged. It was a little friendly advice casually given while I was prescribing for him.

Prescribing for somebody you had not seen?—I had seen her.

But you had not seen her with a view to prescribing for her?—Exactly.

Did you know at that time that there was a stoppage of the period?—He said her period had not come on properly after influenza. That statement was made on March 4th.

In the case of a woman who is not robust—a delicate woman who had had a severe attack of influenza and very much pulled down by it, there was nothing very remarkable in the stoppage of the period?—No.

The stoppage of the period may be caused by influenza or by any cold or chill?—Yes.

If there were some displacement of the womb, that would have a tendency to bring about a stoppage of the period?—No; it might make it painful.

We have heard a good deal about this womb being seven or eight weeks pregnant. We have been told that this lady's period came on about January 14th or 15th. The ordinary time a woman's period lasts is four or five days; that would take it up to about January 20th. Supposing that the period stopped on January 19th or 20th, would the next period, if it came on in its regular course, be twenty-eight days from that time?—As a rule, it is a month from the commencement of one period to the commencement of the next.

Mr. Justice GRANTHAM: The month includes the period during which the periods are on?—Yes.

If the many authorities who put the time of conception as being just before or just at the time of the missed period are right, then, in this case, the woman on March 14th would have been just a month pregnant?—We always calculate the duration of pregnancy from the disappearance of the last period. That is the usual rule which is observed amongst doctors. If she was poorly on January 12th, and if she did not come on on February 12th, and did not come on on March 12th, we should calculate the period of gestation as two months.

At what date do you say anyone can certainly diagnose pregnancy in the living woman?—I could not give any date. It might to a great extent depend on the expertness of the man examining.

I do not mean a great gynæcologist, but an ordinary man like yourself; at what time do you say you could positively ascertain pregnancy in the living woman?—Not under two months.

At a month or six weeks it would be impossible for you?—Yes.

It is an extremely difficult thing under certain conditions to diagnose as between suppressed menstruation or early pregnancy?—Of course it is.

In this case there were very many reasons which would point to suppressed menstruation?—Certainly.

There is no object in procuring abortion unless you know there is pregnancy?—I should think not.

Suppressed menstruation is an affection of great frequency amongst women who lead luxurious, indolent lives?—Yes.

If there were, as the maid said, on Monday some slight sign of the period coming on, it would, of course, be an undesirable thing to explore the wound with a sound, would it not?—I should think so, decidedly.

I think some doctors are of opinion that in the case of suppressed menstruation it is desirable to assist menstruation by the passing of a sound—a distinguished man has said that?—I do not know of that as a recognised method of procedure. I have never heard of such a thing.

If you formed the opinion that she suffered from displacement of the womb, it would be desirable to delay the treatment until the period had passed away?—Certainly.

Displacement is a very common complaint, and there are a great many varieties of it?—Yes.

The most satisfactory way of getting at what the condition of the womb would be would be to pass a sound and see what the position was?—I think you could ascertain the position with the finger.

A more satisfactory examination would be an examination by a sound?—Not as to the position of the womb—as to the size.

Supposing you form the opinion that a woman had a misplaced womb, is it in your opinion imperative from a medical point of view to put it right?—No, it is decidedly not imperative, it might be advisable.

That is a matter with regard to which doctors differ widely?—Yes.

Did you not say in your depositions that from the appearance of the uterus (at the *post-mortem* examination) and its surroundings it would be very difficult for the womb to be retroflexed?—It would be very difficult.

May displacement of the womb exist temporarily from causes operating at the moment—tight-lacing may cause displacement of the womb?—It is said so.

Or from distension of the bladder?—Yes.

Or from a loaded state of the bowel?—It might.

Might not, also, a deposit in Douglas's pouch be mistaken for displacement?—Yes, by anybody not very expert.

Those conditions being removed the womb would be relieved to its proper position?—Yes.

Have you fixed the date of these deposits in the peritoneum—what are called the adhesions?—No.

If you saw some slight signs of a discharge of an offensive character, because from that granulated condition it would be of an offensive character a mild disinfectant lotion would be a desirable prescription?—Yes.

That condition of things existing on March 14th and 15th if this woman was pregnant she would be extremely likely to abort naturally, would she not?—Given a discharge, you say.

No; I have given all the conditions?—I do not say that.

In the case of this lady there were many reasons why, assuming that she was pregnant, there might be a miscarriage?—Yes.

If there was a slight discharge on the Monday and on the Tuesday, and more on the Wednesday and Thursday, and then stopped, would not that look like menstruation that was checked in consequence of a chill or something of that kind?—It might.

The fact that this lady had a fire in her bed room on the Friday would be consistent with a great many different things, with any chill?—Yes.

A woman in a weak state who had recently had influenza, coming out of a hot theatre in the afternoon, would be liable to a chill?—I should think so.

And it would be a perfectly proper and natural thing for her to go to bed if there was an appearance of the period being checked and she was not feeling well and with a pain in her back?—Yes.

You have seen the prescription which Dr. Collins gave, and it is perfectly simple and harmless?—Yes.

Is it somewhat difficult to distinguish between profuse menstruation and an early miscarriage?—Certainly.

At the end of the first month, supposing there was pregnancy, the diameter of the ovum would be about three-quarters of an inch and the embryo about one-third of an inch?—Yes.

What was it you saw on the upper surface of the uterus; was it a surface covered with purulent granulations?—There were two places in the uterus mentioned, I think. At the back of the uterus there was a patch of congestion

Was the upper surface covered with purulent granulations?—"A rough granular septic surface"—that is the exact wording.

Did you hear Mr. Bond say: "It would be impossible for me to say in this case that the womb had been pregnant, because I could not find any particle of membrane which I could swear was the product of conception"?—I do not remember hearing him say that.

Were there any marks of adhering membrane?—No.

Supposing the menstrual period to come on imperfectly for two or three days and then stop, some medical treatment would then be desirable?—Yes.

You would examine digitally, or perhaps with a speculum?—Yes.

And you would approve of prescribing a disinfectant lotion?—Certainly.

To put to you your own view with regard to distinguishing an early miscarriage, do you say this: "It is impossible to distinguish an early miscarriage unless you see the ovum at six weeks. If in a clotted condition it might be difficult to see?"—Yes.

Did you say: "There is no rule with regard to the time which will elapse before expulsion takes place after the membrane is punctured?"—Quite so.

It is of great importance to satisfy yourself that there is no retained membrane in the uterus?—If there is any stinking discharge or any other symptom to warrant you, otherwise you would leave it. If there were symptoms of peritonitis it would be your duty to explore the uterus.

Assuming an early miscarriage, and that the patient is not going on well, the proper thing would be to explore the uterus and see if there is anything to be removed?—Under the circumstances you have quoted, certainly.

It would be a reasonable thing to do with the finger?—Yes.

His medical friends asked whether the neck of the uterus could be affected by the finger nail?—I do not think it could have been. I do not think the wound could have been caused by an ordinary finger nail.

Supposing you just the place where a man with a small hand exploring the neck of the uterus would attempt to get his finger into the neck of the uterus with the object of feeling and dragging away a bit of membrane if there was any?—Yes.

Under such conditions would not the neck of the uterus be scratched?—It might be scratched, but it would not be a wound such as that was.

When you saw the deceased woman, did she tell you that the doctor had scraped her inside without giving her chloroform?—Yes, she did use [illegible] effect. I think she repeated the statement.

If you supposed that there was membrane retained, feeling with your fingers, it would be your duty to remove it, would it not?—If the woman was feverish or poorly. If her temperature was normal, I should probably leave it for a day or two.

For a competent person the way to do it would be first to endeavour to remove it by the finger?—Yes.

And if you do not succeed in getting it away by the finger you get it away by the curette?—No, I could not get it away by the curette, although I know it is one method of dealing with it.

Continuing, Witness said he would not use the curette, although many [illegible] would say that if unable to do it with the [illegible] could be used. Assuming that the membrane could [illegible] having tried to remove it by the finger, one or other [illegible] be used. The curettes found in Dr. Collins's surgery [illegible] away the membrane, and would be passed [illegible] the uterus into the uterus, and brought in contact [illegible] part of the uterus where it was thought there might be adherent [illegible]. The only part of the uterus where he found a mark in the [illegible] would be described as a wound was the mark of a quarter of an inch just inside the inner mouth of the uterus, an inch and a quarter from the external mouth.

Assuming that this was an early miscarriage, and that it took place on the Saturday afternoon or Saturday evening, on the Sunday morning one of those curettes might be introduced into the womb without a dilator?—Yes.

In your opinion is it necessary to give chloroform in using the curette?—Yes.

Supposing that a man as an error of judgment curetted a woman not [illegible] and to the act of doing so the woman moved or shrank [illegible] ght would such as that be easily [illegible] a wound could be easily caused [illegible] that wound could be caused by the curette, but I could not [illegible].

[illegible] insel, Witness said he could not see how the wound could [illegible] h as that produced; it would give [illegible] n, but nothing like a puncture; [illegible] a tear. With regard to the No. 1 [illegible] it was pliable, yet, when inserted into the neck of the [illegible] be more rigid because it would be locked up in the canal of the uterus.

If the womb was curetted on the Sunday evening in a healthy condition, might the curetting set up inflammation?—Ordinary curetting do you mean?

What is [illegible] ordinary curetting?—Ordinary curetting is when we scrape the [illegible] rly miscarriage, would [illegible] ub?—[illegible] might do.

[illegible] tion?—It might do.

[illegible] n of the womb was unhealthy?

[illegible] owing witness the sound) is the sort of instru- [illegible] wound, do you?—I suggest it might do it. I [illegible] eased a positive [illegible] had altered that [illegible] in the case w[illegible] ne of the instruments shown to him would cause it.

You have this condition of things: this lady with signs of her period on Monday and Tuesday, [illegible]re on Wednesday and Thursday, stopping on the Friday, then either the suppressed menstruation coming on on the Saturday and Sunday, or early miscarriage. With regard to her symptoms on the Monday and Tuesday, how would you differentiate these from pelvic cellulitis?—I could not differentiate them.

And would the proper term to describe her condition be pelvic inflammation?—Yes; that is a broad term and embraces both conditions.

Acute symptoms of peritonitis might develop very rapidly, and if there was an accumulation of pus in the Fallopian tubes and one of them burst that would bring on the acute symptoms of peritonitis very rapidly. Peritonitis often appeared after a perfectly natural miscarriage, and was set up by a great variety of causes. Septic matter might be introduced in a great variety of ways, but it could not be caused without a wound or without a lesion of continuity.

Supposing that there was inflammation of the neck of the womb and granulations there, and they rubbed away by something coming in contact with them, would you get the kind of surface for septic peritonitis?—Quite so.

In this case if there was septic matter in the womb and that came in contact with a healthy scratch caused by the use of a perfectly clean instrument it might probably set up peritonitis?—I do not deny it.

And the septic matter might be introduced by a dirty syringe?—Yes.

A dirty sponge?—Yes, and a dirty finger.

With regard to the use of disinfectants, every medical man used disinfectants nowadays. Witness had given many uterine douches, and had always done so with a tube about 12 inches long. If he had been curetting or removing a membrane with his finger, he should always use a uterine douche afterwards. He could not pass the pipe of the douche into the uterus unless it was already dilated. With a proper uterine douche, even with a hard vulcanite or glass pipe, witness thought it would certainly be impossible to cause any injury. With regard to the wounds in the neck of the uterus, he had come across cases in hospital practice where women had attempted to pass things themselves, but he was not aware that they had ever succeeded. He had come across cases where they had tried hairpins and knitting kneedles and all sorts of things, but they never got them into the womb at all, but pushed them into the bladder or other places.

Do you say seriously that at the present day, with the opportunity of seeing medical books, women would not have the capacity to find the neck of the uterus?—I do, unless they were taught how, most decidedly. I have heard of their being taught to do it.

Is this particular wound such a one as might be done by a thin lead pencil?—No, it could not be got up as far as that.

A knitting needle?—If they had attempted to pass a knitting needle they would have scratched the passage on the way up.

I mean a bone knitting needle?—There would have been marks on the canal before it arrived there.

Do you mean that a woman could not pass a knitting needle, or something of that kind, through the vagina without scratching herself?—Through the vagina, but not through the neck of the canal.

In abortion, properly procured, with the care shown by a man who could pass a sound, assuming that he used proper antiseptics, would the deaths from abortion be practically *nil*?—I should think so.

Do you agree that abortion is generally attempted at the third month, or later, when pregnancy is assured?—It is amongst a certain class of the population, I believe, after the third month, because they are not sure they are in the family way before that.

He would not accept the statement that the earlier abortion was attempted the more dangerous it would be, nor did he accept the suggestion that it was possible for a woman herself to pass anything through the neck of the uterus.

In re-examination by the ATTORNEY-GENERAL, Dr. STIVENS said that the old adhesions were not necessarily caused by peritonitis. There might have been an inflammatory condition not amounting to peritonitis, which was not at all uncommon, and more commonly occurred in the case of women than in the case of men. Erosion was a small patch of mucous membrane with the superficial epithelium just rubbed off. It was a very common condition, and a large percentage of women he thought had it. Roughly speaking, a woman's pregnancy was calculated from the time her last period ceased, and that was the ordinary recognised practice among medical men. The twenty-eight days were counted from the commencement of one period to the commencement of the next. The membrane containing the ovum adhered to the side of the womb, and in coming away left a mark. Witness saw the womb which he had taken from Mrs. Uzielli, and he had no doubt that it had been a pregnant womb.

Mr. GILL obtained permission of the Court to put further questions with regard to the old adhesions, and Witness admitted that before the magistrate he had described them as "signs of chronic peritonitis in the shape of old adhesions." That did not mean that Mrs. Uzielli had acute peritonitis or subacute peritonitis. Chronic peritonitis was a very different thing from what counsel had been asking about.

Mr. THOMAS BOND, examined by Sir RICHARD WEBSTER, said that in consequence of an order from the coroner on the 27th of last March he examined the body of Mrs. Uzielli; it was the body of a healthy woman of about 30 years of age. He examined it on March 29th, and except for the abdomen he found no signs of decomposition. He examined the abdominal cavity, and found it full of purulent fluid [illegible]. He also examined the pelvic cavity, which he found in the same condition. There was adherence between the larger bowel and the uterus from the exudation of lymph, which had organised within a week or so. The adhesion was between the omentum and the large bowel and the top of the uterus. The uterus was enlarged, but in its normal position; it was coated with lymph, which adhered to it in flakes. The ovaries were covered with a thick layer of recent lymph, and the Fallopian tubes were in the same condition. The left tube was very much distended with pus, but neither of the tubes were broken. There was no sign of retroversion and none of retroflexion. There were extensive old adhesions round the uterus, which arose from exudation of lymph at a former period, years before probably. It was caused by inflammation probably, and may have been of ten years' standing.

Is it necessary that the inflammation should have amounted to peritonitis?—Certainly not, not peritonitis as the word is used in the accepted form. Of course every inflammation of the peritoneum might be called peritonitis.

Speaking of it as it is understood?—As it is understood in medical parlance it need not be at all understood that she had ever had peritonitis.

Would those adhesions in any way affect the possibility of retroversion or retroflexion?—It would, in my opinion, keep the womb in a fixed position.

So that it could not retrovert you mean?—I do not think it could retrovert.

He examined and removed the uterus and the vagina, and he found the vagina quite healthy. The external mouth of the uterus was slightly thickened, and the mucous membrane around it was slightly granular, and there was a little scar of an old erosion just on the left.

Just describe, Mr. Bond, what you mean by erosion?—An erosion is just the upper layer of the mucous membrane stripped off.

What he saw was not a recent rubbing away; it had been rubbed away and healed, but the mucous membrane had not regained its normal condition. On examining the uterus he made a section in the front on the internal os, and found a wound between an inch and a quarter and an inch and a half from the outer mouth. It was a recent wound and was covered with lymph. He wiped off the lymph and found it was a ragged puncture, roundish in shape, rather longer from above downward. It was about a quarter of an inch across, and it looked about the eighth of an inch deep. It was in an absolutely septic condition. He thought the uterus had been pregnant between the second and third month. The length of the uterus from top to bottom was four and a-half inches. Looking at the wound, in his opinion it had been caused about a week before death, but he could only judge by the lymph, which had become organised to a certain extent. It was, however, a matter of opinion. He thought the wound must have been caused by a blunt-pointed, small instrument, of a shape corresponding to the whalebone sound which had been exhibited. He did not think the curettes could have caused the wound.

What had been the cause of death?—Septic peritonitis.

Have you any doubt of that?—None.

Bearing in mind what you said about the wound, do you connect the wound with peritonitis at all?—I do.

Just tell us in your own way whether you think it is the consequence or cause, or what?—Septic peritonitis is caused by the introduction of a germ into the blood through a wound. Here I found a septic wound, and my thirty years' experience would lead me to no other conclusion than that it was caused through that wound.

In reply to his Lordship, witness said he noticed the clot which he took out of the heart; the last act in peritonitis was the clot in the heart which caused death. The clot was caused by the septic peritonitis.

Continuing his examination, the Attorney General elicited from the witness that the bowels were healthy and that there was infiltration of blood into the tissues round the wound. There was a zone of inflammatory exudation. Witness had seen the instruments, the whalebone sound, the catheters, and others, and without in any way pledging himself to a particular instrument, he thought that the wound could have been caused by one or other of them. No metallic sound had been produced to him, although it was a common instrument used by medical men who practised in diseases of women. A metallic sound could have caused such a wound. Further replying to Sir Richard Webster witness explained that an ovum was enclosed in a membrane, which membrane adhered to the side of the womb. A miscarriage was brought about by separating that membrane from its attachment to the womb, or by puncturing it and letting the water out.

Assuming the object to be to effect the puncturing of the membrane, under normal conditions in what time would expulsion of the contents of the womb take place?—From three days to a week.

In cross-examination by Mr. C. F. GILL, Witness said the length of time the wound had existed on the internal os was a matter of opinion. Witness formed the best opinion that he could after careful examination of it, and gave that opinion before the coroner.

And your opinion then was that the wound might have been caused a week before, less and not more?—That is what I said before the coroner, that it was probably about a week.

I will give you the exact words: "The condition of the womb and the lymph showed it had existed a week or possibly less, but I do not think more"?—Yes.

That was your carefully-considered opinion at the time you gave it?—It was not a carefully-considered opinion; it was an opinion asked at the moment, and I had to answer it at the moment. It was not a correct opinion. I ought to have said about a week, more or less.

Considering the matter, it might have been a fortnight?—I think it is possible it might have been a fortnight.

Or longer?—No, I do not think so. I think I am going to the outside limit when I say a fortnight.

Witness admitted that he had said before the coroner "the wound might have been caused some days earlier than March 14th or 15th." He thought it was only right that he should give himself a good latitude in fixing a date in that case, because he could only judge from the organised condition of the lymph, and that could only be judged at from ordinary experience. He thought that the lymph he saw was about a week old.

You have said a wound of that kind might be caused by a hard instrument; ignoring the sound, what other kind of instrument?—A catheter, a knitting needle, the end of a quill.

Or a thin lead pencil, or something of that kind?—Yes. I should think a thin lead pencil would do it if it were not too sharp.

It was obviously done by something which was not sharp?—It was done by something which obviously had a blunt point. There was no sign of a cut or anything of that kind about it. It was a ragged puncture.

A tear?—It was not a bit like a tear.

A sort of bruise?—Yes; it was a crushing in.

He had had some experience with regard to abortion cases, and had made *post-mortem* examinations in about seven or eight cases. It was said in the books that abortion was generally procured at the third month or a little later than that, but he did not know of his own knowledge. In the cases in which he had been engaged in that court they had been usually over the three months.

The cause of death from the procuring of abortion generally arises from blood poisoning set up from the abortion procured in a clumsy manner by an ignorant man?—Usually.

And sometimes by a portion of the membrane left in the uterus setting up a septic condition?—I have not had a case in my experience of that, but they have been usually caused either by tearing the womb away or making a hole through into the abdominal cavity, or some gross carelessness.

He had never had experience of injuries done by women to themselves in attempting to procure abortion, but he had read of such cases. He had heard of an instrument made purposely for procuring abortion, with a little pointed stilette, but he had never seen one. He had known a man who told him himself that he used to procure abortion with his finger by keeping a very long nail and pointing it. That was told him by a prisoner some years ago.

The object of passing something where you intend to procure abortion is, of course, to rupture the membrane, and you would expect the something passed to be sharp?—I should expect something hard and pointed; I would not say sharp.

The pliable sound you have seen is not the sort of instrument you would expect to be used for the purpose?—It might be used for separating the membrane; it would be very good for that I should think, but not very good for puncturing.

He had been told that flexible sounds were used by accoucheurs, but he had never seen one until he saw the one produced. He had been told by an accoucheur that he was accustomed to see them in the old days.

You said, I think, in speaking of it, that the whalebone sound might have caused the wound by a wobbling process?—Yes.

Supposing a man with a small hand could get his hand a good deal up into the vagina and scrape the mouth of the uterus with his finger, would he make an abrasion?—Dilating the os with his finger you mean?

Of course he has to dilate the os before he can get it in?—I think it is quite possible he could bruise the mucous membrane with his finger.

I suggest to you it was something you would describe as torn?—No; you cannot find a better description for it than a jagged puncture.

I want to see whether I can get an answer a little better. I want you to accept that it was a torn wound, and I might assist you if I tell you that that was your own description of it?—If I described it in that way I did not describe it rightly. I make mistakes.

You said: "This was a lacerated wound, not a cut wound; it was a torn wound, not a pierced"?—I only meant it in contradistinction to the piercing of a knife or stilette. The edges were ragged and torn, and it was not a tear of the mucous membrane only. I used the word "torn."

And you have used the word "jagged"?—I have.

Would that be anything like the description of such a wound as would be caused by a finger nail?—No, because it was a punctured wound. It was in the nature of a torn punctured wound. I use the word now: a torn punctured wound. I said a ragged punctured wound, but I did not know the difference between a torn punctured wound and a ragged punctured wound.

I thought just this moment you were rather surprised you had described it so?—The tear of a mucous membrane I should say would be quite a different matter. It was not only the mucous membrane that was injured but the wound went right down to the muscular tissue. An eighth of an inch is right through the mucous membrane and right into the muscular tissue.

What is the thickness of the mucous membrane?—About the sixteenth of an inch. It is very thin there.

Where are the muscular tissues?—Just behind the mucous membrane.

What do you say as to whether that wound could be caused by a curette, assuming that the woman was being curetted and that she flinched from pain?—I should say it could not.

Why not?—Well in the first place there could be no reason in curetting. The canal would be well dilated, because you could not curette without dilating the canal. There would be no reason for hitching the curette there at all. The end of the curette would be far beyond the wound.

But you can introduce the curette without having dilated it?—I have never done it, and therefore cannot say what you would do.

Assume this condition of things; assume miscarriage on the Saturday evening, membrane not come away, the neck of the uterus explored by the finger on the Sunday morning, that not satisfactory, and then the introduction of a curette into the uterus without any dilators?—I think that in putting the finger well in the curette could be introduced after.

That being so, will you tell me it is impossible under those circumstances, with a woman flinching from the pain of it, that a wound could not be caused?—I will not say it is impossible a wound might not be caused, but I see no reason why the curette should hitch and make any wound at all because there can be no difficulty in putting it in.

Having regard to the very sensitive and very delicate character of this mucous membrane, do you think that passing the pipe of the uterine syringe might cause such an injury?—No.

Why not?—Because it certainly would not injure the mucous membrane. It might excoriate, but it would not injure the muscular tissue. It must have required hard pressure through the mucous membrane in the shape of an instrument which would puncture, in order to get the wound.

Was it such a wound as you think might have been caused by a knitting needle?—Yes, if it was not too sharp. It was the sort of wound that would be caused by a bone knitting needle, if it was not very sharp.

With regard to the setting up of peritonitis, I understood in your view peritonitis might be set up from a variety of causes, either external or internal, either autogenetic or heterogenetic: it may be the result of the condition of the lining membrane of the wound?—Yes, or a septic condition introduced through the vagina—more likely the latter, of course.

Do you think the condition that you saw of the old adhesion from inflammation and so on would make a person more susceptible to peritonitis?—I should think it would, with some reservations. I have known cases where old inflammation instead of making a part more susceptible, made it much less susceptible; but if she had a chronic irritability of the part, then it might be more susceptible.

But, broadly speaking, if you found considerable adhesions, considerable signs of deposit, the place matted with this deposit, or that condition of things in the immediate neighbourhood of the uterus, would you not say a person would be exceedingly liable to peritonitis from a very slight cause?—I think you might fairly say she would be more liable to peritonitis.

What you said about it yourself was, "I think it would be more likely to be set up if there had been previous inflammation?"—That is just about true.

There had been previous inflammation there?—Certainly.

It may have been peritonitis?—It may have been local peritonitis.

Mr. JUSTICE GRANTHAM: By local peritonitis you mean peritonitis where you saw the adhesion?—Yes, and no further.

Mr. GILL: Where did you see the adhesions?—I saw them at the back of the uterus, between the uterus and the rectum, partly filling up Douglas's pouch; then I saw the adhesions again between each ovary at the side of the uterus.

Matted adhesions?—Matted adhesions.

Are these adhesions matter which has hardened?—Lymph which has hardened. It was originally the same sort of lymph which I described as attaching the bowel to the uterus. If that had gone on for years the omentum would have been attached to the uterus.

The granulations that you saw at the mouth of the uterus—would they cause a discharge?—I do not know: I hardly think they would. There was only a granular mucous membrane.

They might cause a discharge?—I think they might, a little viscid discharge.

If there was a discharge of a septic character?—I should not think the granular condition which I saw would cause a septic discharge.

There is no mystery about the word septic—it merely means putrid?—No, it means more than that. It means there is a living germ in the thing, which, introduced into the system, reproduces itself.

Witness had said in the previous proceedings: "There was no recent injury to the external mouth. From the conditions which I found there must have been an offensive discharge for some days," but that did not refer to the mouth, it referred to the internal condition of the womb.

With regard to the question of the pregnancy of this uterus, did you say that you knew of no means by which a positive opinion could be expressed, except by the finding of the membrane?—That is not exactly what I said. I said I could not express a positive opinion, because I did not find any part of the membrane of the fœtus. As far as I was concerned I could not swear at the coroner's inquest, nor can I now.

In reply to his LORDSHIP, witness said he thought there was, because he saw the place where the fœtus was attached, but he was not able to swear that could be nothing else but a pregnancy. He would not swear it was not another morbid condition. Further replying to Mr. GILL, he said he made the *post-mortem* examination, assisted by Dr. Hebb, and dictated his notes to Dr. Stivens. The uterus was afterwards taken to the Westminster Hospital and it was now in the pathologist's private room under lock and key. At *post-mortem* examinations he would never have anybody in the room unless he knew who it was. He saw Sir John Williams on the Monday morning after the *post-mortem* examination, and Sir John inspected the uterus on the Monday afternoon. It was then in a preservative fluid. He took the whole of the uterus away with the bowel and bladder, so that the whole thing might be seen. He did not think the preservative fluid would alter the character of it much. It would harden the adhesions. He found one of the Fallopian tubes distended with pus; the other had a good deal of pus in it, but it was not distended. He opened the distended one and let the pus out. Neither had burst. The pus exuding from the Fallopian tubes was not perceptible to the naked eye when he examined it. W[illegible] could not find in his notes anything referring to the position of the uterus. It was patent that it was in the proper place and he did not know that it had any bearing on the case.

When you were asked about this in the first instance, did you express the [illegible] if the uterus had been displaced and replaced during life you could not say?—Yes, I distinctly said that.

Did you also say that you should not like to say that it was impossible for the womb to be retroflexed, but you thought it improbable?—I think that was what I said.

And if the womb had been displaced and put back into its place a week before, you could not tell if it had been out of place?—I think I said that, and I think I added a rider that I could only judge by the position of the ligaments.

Mr. GILL: Not a word of that.

The WITNESS: I do not know; I cannot recollect everything I said then.

Witness had no personal experience with regard to the displacement of the womb. The object in puncturing the membrane in procuring abortion was to let out the water, and that set up a condition of things by which the contents of the womb were expelled.

Have you ever read of or heard of a case of abortion procured by injecting water into the uterus?—Yes, I have, and read of it many times.

And it may be procured in that way?—I should think so, by separating the membrane.

And septic matter might be introduced in that way?—Certainly.

Except this wound we have been talking about, you found no other wound in any part of the uterus?—No other wound.

Re-examined by the ATTORNEY-GENERAL the Witness said that the wound he saw could not have been caused by ordinary finger-nail, and if there had been no miscarriage and no dilatation of the neck of the womb, the finger could not be got in at all. He found no marks of the curette on the womb. If the [illegible] had been retroverted in the body as he opened it, he would have noticed it at once. He saw no evidence of it having been recently retroverted or retroflected. He had said he would not swear there must be a pregnancy because he could not find any [illegible].

In reply to Mr GILL, the Witness said the enlargement of the uterus was not a reliable sign.

On Friday the first witness called was Sir JOHN WILLIAMS. In examination by the ATTORNEY-GENERAL, he said that the ordinary mode of computation of the period menstruation was twenty-eight days from the commencement of one to the commencement of the other, and the ordinary recognised mode of calculating pregnancy was forty weeks from the end of [illegible]. He was called upon him on Friday, March 25th, and in the afternoon [illegible] dying condition, suffering from [illegible] septic peritonitis. He made a slight examination, and found the mouth of the womb closed. He was not present at the *post-mortem* examination, but the uterus, the vagina, and the parts taken away were shown him by Mr. Bond. The uterus, he considered, had been pregnant about six weeks, at any rate under three months. At that stage the contents of the womb would be an ovum surrounded by a membrane which was adherent to the side of the womb. He found marks upon the womb indicating the adherence of such an ovum, and noticed that there were indications of recent peritonitis. He also found some old adhesions, which he considered would have some effect upon the possible displacement of the womb, because they would prevent the wound being retroverted or retroflexed. The adhesions were of old standing, probably several years old. They would probably be caused by inflammation.

Is it necessary that the inflammation must have amounted to peritonitis, or may it have been of a less severe character?—There are two kinds of peritonitis, one general and one local; it was a local peritonitis.

Is that a common or an uncommon condition?—Common. He found an old erosion in the mouth of the womb. About an inch and a quarter to an inch and a half from the mouth was a wound about a quarter of an inch across and a little longer than it was broad—oval. It was a recent wound and a septic one, and he formed the opinion that it had been made by some blunt-pointed instrument. The point of a whalebone sound might have caused such a wound. Metallic sounds were common instruments used by doctors who dealt with diseases of women, and such a wound could be caused by a metallic sound. In his opinion it could not have been caused by a finger nail.

Just explain to the jury with reference to the size of the pipe or the position of the wound; taking the case of a woman who has not had a miscarriage, whether it could not have been caused by a finger-nail?—The canal of the womb is not so large as the barrel of a quill, and it would be impossible to get a finger up. This wound is an inch and a half or an inch and a quarter from the mouth of the womb.

Mr. GILL objected that it had never been suggested that it was caused by a finger without a miscarriage, and the suggestion would not be made by any sane person.

WITNESS was shown the curettes, but he did not think the wound could have been caused by them; it was rather difficult to estimate the age of the wound as it had been in spirit or preservative fluid when he saw it, but he thought it was from a week to a fortnight old.

You stated that this lady was suffering from septic peritonitis when you saw her on one occasion. Did what you saw of the womb afterwards confirm you in the opinion that she had been suffering from septic peritonitis?—Yes, it did.

What, in your judgment, was the cause of the septic peritonitis?—It was the result of the miscarriage.

In your opinion, was there any connection between the wound and the septic peritonitis?—Yes.

Explain what.—The instrument that caused the wound was probably septic, or carried septic matter up into the womb.

Will you just explain how miscarriage could be brought about by the introduction of an instrument into the womb?—In two ways: one by separating the ovum, and the other by puncturing, rupturing the membrane.

Given that it was caused by puncturing the membrane, within what time, under ordinary circumstances, would you expect expulsion of the contents of the womb?—Three or four days.

Is rigor or shivering a symptom of peritonitis?—Yes.

Is it generally accompanied or followed by feverishness or a rise of temperature?—It is.

What is the shivering or rigor indicative of?—The action of the septic poison on the system.

Within what time after the communication of the poison into the body do you expect that symptom to appear?—Three or four days.

How long does the discharge continue from the uterus after miscarriage?—About a week.

Given a discharge after a miscarriage and peritonitis to ensue, has the peritonitis generally any effect on the discharge?—Yes, it generally stops it.

Within about what time after the commencement of the peritonitis?—Very soon afterwards, as a rule.

You have heard it said, rightly or wrongly, that this lady was cold, or had shivering on the Friday, with a rise of temperature, and that the discharge stopped either on the Tuesday or Wednesday: would that be indicative of septic mischief?—Yes.

What are the recognised symptoms of peritonitis?—Pain, tenderness, distension of the abdomen, fever, vomiting, restlessness, etc.

Replying to his Lordship, Witness said some of the symptoms might be present and some absent.

The ATTORNEY-GENERAL: You have heard of the constant flexing or bending up of the knees when this poor lady was lying upon her back: would that be indicative of pain anywhere?—Yes; in the abdomen.

It is the ordinary posture to assume to obtain relief?—It is.

Is there any distinction drawn by medical men between observing both legs to be flexed or only one?—Yes; when one leg is flexed the inflammation is local, generally limited to one side.

And when both?—It is general, or both sides are attacked.

Did you notice in the womb that there were any marks of curetting?—Yes.

Were there?—No.

Given curetting to have been done as recently as the Sunday or Monday, the death occurring on the Friday, do you think there would be marks of the curette visible?—There ought to be evidence of it.

The WITNESS explained the manner in which the curette was used to scrape away the decidua, and in reply to the learned Judge said it was generally used for removing a diseased condition of the membrane.

The ATTORNEY-GENERAL: What I want to ascertain is that the operation, properly carried out, whenever it has to be carried out, is one that would leave marks on the inner surface of the womb?—Yes, it would leave evidence behind that it had been used.

In cross-examination by Mr. GILL, WITNESS said he had performed no *post-mortem* examinations in the last ten years. He had seen many uteri of women who had aborted at six weeks during the last ten years; it was not an uncommon thing for a woman to abort at six weeks, sometimes

rom natural causes. He would not attend at a *post-mortem* examination unless he was obliged to do so. He had seen the uterus of Mrs. Uzielli in the laboratory of Westminster Hospital. It was taken out of a pot containing some preservative fluid. That was on Monday, March 28th. He was not instructed to examine it, and had made no notes of the examination. He had been asked to examine it by Mr. Bond. He saw it for about twenty minutes or half an hour. Besides the uterus he saw the bladder and the rectum, and, of course the peritoneum. He had seen everything the pelvis contained. He thought it had been in the preservative from the Sunday. He had not been shown the notes of the *post-mortem* examination.

Did you measure the wound?—Well, I examined it carefully. I did not measure it with a scale. I measured it with my eye—that is the way people do measure a quarter of an inch.

Witness, continuing, said he had examined Douglas's pouch especially with regard to the adhesions. Douglas's pouch was practically obliterated in consequence of the sides being stuck together. There was some thickening.

Would you describe it as a deposit in the pouch?—It is a deposit, but thickening is the proper term for it.

Were there a quantity of matted adhesions?—No, there was no matting there. There were three or four adhesions, the result of exudation of lymph.

Is that indicative of peritonitis?—What do you mean by peritonitis?

At present it is I who am cross-examining you. Were those old adhesions indicative of old peritonitis?—Yes, and no.

Did you describe it yourself in these words, "I noticed on the exterior of the womb flakes indicative of recent peritonitis and old adhesions indicative of old peritonitis?—Yes.

I am adopting your own words?—Exactly. The word "local" should have appeared.

It is not there. It is present to-day, but it was not there at that time?—I quite agree.

To-day it is described as inflammation. Is it the result of inflammation?—I have not described it.

Do you at all depart from this description that those adhesions were indicative of old peritonitis?—Not in the least; but I should like to explain that it was pelvic peritonitis, and not general peritonitis.

I suppose if it had been general peritonitis the woman would probably have died at the time?—Probably, but not necessarily.

Does that condition of things render a woman exceedingly susceptible to peritonitis?—It renders a woman liable to recurrence of similar attacks. Local peritonitis occasionally spreads and becomes general, but very rarely.

It is not a desirable condition of things in the neighbourhood of the uterus? It is not the sort of thing that "sets up a constitution," like pneumonia?—No. It was a morbid and undesirable condition of things.

Witness did not remember having found at the neck of the uterus marks of old inflammation. He had seen the uterus again one day last week.

It would be an advantage, I suppose, in expressing an opinion with regard to the uterus, to have seen it at the time of the *post-mortem* examination?—With regard to some things, yes; with regard to other things, no. He had seen it last week with Mr. Bond, and examined it for a few minutes, but he made no notes. He was not present at any of the hearings of the coroner, but he attended before the magistrate at the last hearing after Dr. Stivens and Mr. Bond had been examined. He had read their evidence.

Did you read Dr. Collins's evidence?—I have read it, but whether I had read it then I do not know. Witness was away from London during the whole of the inquest, and came back on April 21st or 23rd. He had seen Dr. Stivens almost every day.

I suggest to you there is not the smallest doubt you had read Dr. Collins's evidence at the time.—If you say so I am quite willing to admit it. The only reason that I have any doubt about it is on account of my being away. I am quite willing to admit it at once if you say so.

You may take it from me that you have sworn that before you gave your evidence you had read it all.—Very good. He had not been instructed by Mr. Uzielli to do so, but by the prosecution. Before he had given his evidence he had read the cross-examination of the other doctors. He had not furnished material for cross-examination.

Did you know before you gave your evidence, that Dr. Stivens had sworn that that whalebone sound No. 1 was no good, and could not have caused the wound, nor the catheter shown to him, and that he saw nothing in the bag of instruments which would have caused it?—If it is in his evidence of course I read it.

Can you at all fix the date of his conversion to the possibility or the likelihood of the sound having caused it?—I have no idea. He is here and will answer for himself.

You did not explain it to him?—I did not explain to him what he said here yesterday.

He swore that it could not have been caused by that, and he dropped something about the matter having been explained to him, and I want to know whether it was you who did that?—It was not I.

With regard to the date from which pregnancy is calculated, is that a matter with regard to which there are differences of opinion?—None whatever.

Is it correct, as Dr. Stivens said, that some people put the conception as just before the missed period?—The duration of pregnancy is calculated not from the time of conception, or the time of impregnation, because they are not known, but it is calculated from the last day of the last effective period. The time of conception may be immediately after the last period, and any time from the end of the last period until the first missed period.

Will you just listen to this: "With regard to the question of pregnancy, the question as to when conception takes place, is that like other questions—one as to which doctors differ?" and the answer is "Yes?"—That is what I have said.

"They differ on many subjects, as anyone can ascertain who takes the trouble to look at medical books?" That was an observation of mine, which you no doubt agree with?—I quite agree with you.

"With regard to conception, do many medical authorities put the pregnancy at just the time of the missed period, just before the missed period?" and the answer is, "It is such a disputed point, I really could not answer. Just as many do as do not." Do you agree with that?—I should not say that anybody said that conception can only take place just before the missed period.

Nor do I. Do you agree with what I have read—that many authorities put the time of conception as just before the missed period?—I have just said it may occur at any time.

Does the pregnancy date from the date of conception?—Of course it does. If the conception was just before the missed period, pregnancy a month afterwards would be the pregnancy of a month. Witness would not have given the answer which had been read.

With regard to the condition of this lady in March, from the history of the case, was it quite probable that she might have been suffering from suppressed menstruation?—I did not go into her history sufficiently fully to give an opinion upon that.

Given this condition of things, a woman who had not been pregnant for eight and a half years, who had had some serious illnesses—of course, I say that with the reservation with regard to pneumonia—and the serious attack of influenza, and who had been very much weakened and pulled down by that, would it be very probable, supposing she had got a chill of some kind, that she would suffer from suppressed menstruation?—If you leave the chill out, I do not mind admitting the rest.

Throw in the chill and perhaps peritonitis?—No.

Have you any doubt that people would differ from you upon that point?—Men who know their business would not.

Is not chill, where there is suppressed menstruation, a cause of peritonitis?—No.

I will give you an authority for it presently.—I should like to say one thing. Chill practically never stops menstruation. I do not say it never does, but practically never.

Continuing Witness said that suppressed menstruation was not an uncommon thing. It was quite possible that a woman was more likely to suffer from suppressed menstruation when in a feeble condition after an attack of influenza. Supposing Mrs. Uzielli's last period had been about January 15th, the next period would be due about February 12th.

Of course that is not a certainty?—It is more likely to be the 9th than the 14th.

Or later?—No, generally shorter. The next after February 12th would be March 12th—twenty-eight days.

Or if on February 14th then a day or two later?—Yes—twenty-eight days.

March 13th or 14th might have been the menstrual period?—I said the 12th, but I quite admit at once that the time is elastic.

This woman, having missed her period, and being in a weak condition, and on March 14th, there being some slight show of discharge, of course it would not be a proper thing to pass a sound?—No.

Supposing that a woman was suffering from displacement, what are the symptoms which she would complain of?—I should like to define the word displacement.

I mean any displacement of the womb?—Will you ask me one of them?

Would a feeling of weakness, pain in the back, and so on, be consistent with some displacement of the womb?—It would be consistent with a falling of the womb or with a perfectly healthy womb.

That is the great charm of medical science, that the symptoms are always consistent with two totally different conditions of things. Would the fact of a woman suffering from a sinking feeling—a feeling of weakness—be consistent with some displacement of the womb?—It would be consistent with any falling of the womb.

In every displacement of the womb there is some falling, is not there?—O dear no.

Do you say there is not some descent of all the parts?—No.

Supposing that there was some sign of the period coming on it would not be a very satisfactory time to make an examination with regard to the condition of the womb?—It is not the best time. An examination would be by the vagina or by the rectum. A man of ordinary intelligence might be mistaken with regard to displacement, and might suppose there was displacement when there was not. There were some conditions which simulated it, such a condition as existed in Mrs. Uzielli's case, and the obliteration of the Douglas pouch might lead to the mistake

Also a man might be misled by other conditions, by distension of the bladder. The books apparently say so, but they are by men that do not know their business?—Medical books are like law books in that respect.

Unreliable. Now, assuming that a man thought there was displacement, it would not be a desirable thing to attempt to treat the woman at once if there was any sign of the period coming on?—There is no reason why she should not be treated.

Do not you think it would be better to let it pass off?—No reason whatever.

Supposing you want to replace the womb, is it not a useful thing to use the sound?—It may be necessary to use the sound, but generally it is not. It is sometimes used.

The question of using sounds is one which doctors differ enormously about; I mean you have no doubt that I could give you an authority at the moment that some people say the sound should not be used at all?—I do not think you can give me an authority for the opinion that a sound should never be used.

But that it is an undesirable thing to use them?—Yes.

With regard to the displacement of the womb, some men would say was absolutely necessary to put it right?—Yes.

Other men would say leave it?—Yes.

Dr. Stivens would say that it was imperatively necessary to replace a displacement, and probably you would say not?—Probably I should.

I put to Dr. Stivens that question which I was putting to you, as to there being descent in a case of displacement. I put aside Hart and Barbour, and I say "I come to something nearer home—Matthews Duncan. He is accepted as an authority, except by the people who have not written books. Do you agree with this proposition, that there is always some form of descent in all displacements, but it is not only the womb alone that descends, but the whole abdominal contents as well," and Dr. Stivens says: "If it is there I accept it, but it is not within my

practical experience." It is the opinion of some there is descent?—I happen to have known Dr. Matthews Duncan well, and he did not believe in displacements any more than I do. He said that a deflection of the womb is not a displacement of any kind, and so say I. Witness agreed that to a medical man it might be a difficult thing to diagnose pregnancy in an early stage.

Unless you are satisfied that pregnancy exists there is no necessity to attempt to procure abortion?—I do not know. Witness had never procured abortion at six weeks. The earliest date at which he had done it, when it was necessary, was the seventh or eighth month—induction of premature labour.

Where, of course, there could not be any possible doubt as to pregnancy?—That is generally true.

The passing of a sound was in some cases a difficult thing to a skilled man, even in the case of a woman who had had children. To a man accustomed to it, in the majority of cases there was no difficulty, but there were a certain number of cases in which it was extremely difficult. It was a difficult thing sometimes to distinguish between a suspended period and an early miscarriage. In both cases there might be a clotted condition and shreds of membrane. If there were something retained, it would not be the proper thing to try to remove it, either by an instrument or by the finger, because it would come away of itself in almost all cases. A miscarriage took place gradually; sometimes it came away as a whole and sometimes in parts. In the latter case it would take three or four days to come away. If it did not come away then, it would be the proper thing to investigate whether there was anything left and remove it.

Just listen to this: "If I found a portion of the membrane adhering to the wall of the uterus or retained in the uterus accompanied by an offensive discharge, it would be right first to attempt to remove it with the finger, and, if unable to do it with the finger, then with a small blunt curette?"—That is practically right.

I am reading your own language. That being so, how would you try to remove it with your finger?—I should introduce the finger and try to remove it with the soft part of the finger, the pulp. There would be no question of trying to scrape it. The finger could be got right up to the top of the uterus if it was properly dilated. It could be frequently done after a miscarriage, but not always. There might be membrane in the uterus, not necessarily attached, which had not been expelled. He would not attempt to remove that with the finger, because it would come away of itself.

If you were exploring and found it, would you try to remove it?—Of course. Witness was of the opinion that such a wound as existed could not be caused by the finger nail. He was of the same opinion which he had expressed at an earlier stage, that it was hardly possible from the character of the wound, but it was possible for the finger nail to have caused it. When he had given that evidence he had read the evidence of Mr. Bond.

Is it possible to pass a blunt curette, and use it without marking the mucous membrane?—You would be obliged to mark it, but you would not make such a mark as this. If the curette were used at all, however gently, the sensation to the person operated upon would be that of scraping. There might be pain.

Except the mark which we will call the wound, do I understand that you found no mark inside the uterus at all?—There was no unnatural mark except the wound.

If the curette was being passed and this lady shrank from the feel of it, might the wound to the mucous membrane be caused?—This instrument might cause the wound; yes.

With regard to the question of rigor, would the fact that she shivered be consistent with a great many other things besides septic peritonitis, for instance, is it the first symptom of cellulitis?—Oh, yes, any acute disease.

Or even with recurrence of influenza?—Any acute disease; influenza is an acute disease. Shivering is the first symptom of many feverish diseases.

And especially of cellulitis?—Of any inflammations in the pelvis.

And cellulitis is one?—Yes; there are rare cases of old peritonitis, in which the ordinary prominent symptoms are absent, such as tenderness and pain, but they are uncommon.

Are the symptoms of pelvic cellulitis in many respects similar to the symptoms of peritonitis, only not so acute. For instance, we will take the rigor, the feverishness, pain in the abdomen—if you found it localised would they point to cellulitis?—Yes. They might point to cellulitis, or peritonitis might begin in that way too.

Mistakes are made in diagnosis?—Oh yes.

Fortunately for men in distinguished positions?—And for the patients.

And mistakes are also made in prognosis?—Fortunately, again.

If it is difficult to foresee the course which an illness will take, is it not also difficult, seeing the condition at the last moment, to go back and form an opinion as to the history? Seeing a person in an acute state of peritonitis was, what the earlier symptoms were?—When you have the *post-mortem* examination, no.

But the ordinary man who is exercising his judgment upon it has not got that?—No.

I put to Dr. Stivens some points with regard to the question of peritonitis being at times obscure and running its course without the typical prominent symptoms. Do you agree that the general abdominal pain is a thing which you would expect?—As a rule.

Tympanites, retching, and vomiting?—Yes.

And very acute pain?—Sometimes the pain is very acute and sometimes it is not; in this form of peritonitis it is not usually very acute, and in cellulitis of course the pain is not so acute.

With regard to the flexing of legs, I suppose persons may flex their legs from any abdominal pain?—Yes.

Do the acute symptoms of peritonitis sometimes develop very rapidly towards the end?—They develop at the beginning very rapidly, dependent on the cause.

In the history of the illness does the patient sometimes rapidly become very much worse?—During the last twenty-four hours or something of that sort of course they naturally get worse. I saw the lady about two hours before she died.

In the case of a supposed early miscarriage, in the examination of the uterus after death would the fact of not finding any sign of membrane throw a doubt upon whether there was a pregnancy or not?—What membrane do you mean?

I mean the membrane of conception. I will fall back upon your own language: "The absence of a membrane throws a doubt as to whether a womb has been pregnant." Is that so?—There are in pregnancy three membranes. There are the chorion and the amnion—they are the membranes which are the cases of the ovum. There is a membrane lining the uterus called the decidua. The chorion becomes adherent to the decidua and the area, the part of the decidua to which the chorion adheres, is called the decidua serotina. This decidua serotina goes partly to form the after-birth subsequently. If any part of any one of those membranes is found in the uterus pregnancy cannot be doubted.

To come back to simpler language, is it the fact that the absence of a membrane throws doubt as to whether a womb has been pregnant?—That is just the thing I have said.

Would you agree with this statement of Mr. Bond: "It would be impossible for me to say in this case that the womb had been pregnant, because I could not find any particle of membrane which I could swear was the product of conception. The finding of a membrane in a *post-mortem* examination at an early stage of pregnancy, say six weeks, would be the only proof as far as my experience goes"?—I do not agree with that.

Would the appearance that you saw on the upper part of the uterus be consistent with any kind of growth there?—No; it is one of the membranes I have spoken of.

It would not be consistent, say, with an eburnated clot?—No.

Or a false mole adhering?—No.

In your opinion this septic condition was set up by whatever caused the wound?—Yes.

An "instrument" would apply to anything—to a knitting needle or whatever it was?—Yes.

In your opinion it was unclean in the sense that it had not been disinfected?—My opinion is that the instrument carried something up there and left it there.

Would not that mean an unclean instrument?—It would be unclean when it went up there. If it had been properly rendered aseptic, it would not be unclean. If medically cleaned it would be asepticised. A septic condition may be set up in a great variety of ways, you think always from without?—I have no doubt of it.

It is said it may be set up autogenetically?—Yes, but I know of no one who says that septic occurrence take place in the body spontaneously without the introduction of something which ought not to be there.

It has got there by some means. You may have breathed the septic matter?—I quite admit with regard to specific fevers that that is the case.

Or with regard to peritonitis—No.

Could you not get it from the bad air of a watercloset on the same floo where the woman was lying in bed?—I cannot say.

A very distinguished gynæcologist has said so?—I know it is a very convenient thing to say.

Without mentioning his name, a man of high reputation—a man whose name is very familiar?—Yes, I adhere to my answer.

You stand by the proposition that it is introduced always from without?—Exactly.

Do you agree that the character and source of septic matter constitute one of the most obscure questions in connection with septicæmia, and that which is most open to discussion?—Yes, I agree with a good deal of that

That is Dr. Playfair?—Yes.

You do not agree that it may be autogenetic as well as bacteriogenetic?—I do not.

Re-examined by the Attorney-General: You use the expression that it might be carried in by the instrument; what do you mean by that?—That it was deposited there.

Mr. Justice Grantham: Assuming the wound has been made by something else, can it get in afterwards?—I think it was carried in at the time the wound was made, but I should not like to be certain about that.

It might be either one or the other?—I should not like to say. It might of course.

The Attorney-General: Were you in court when the maid, Müller, gave an account of what she saw in the chamber?—No.

Assume a miscarriage to take place and an ovum to come away after six or eight weeks of pregnancy, what sort of appearance would it ordinarily present?—If it came away entire it would be something like a hen's egg, without a shell, covered with blood. It may come away in pieces, and then it would be pieces of flesh.

Mr. Justice Grantham: Would a doctor who saw it know it?—Instantly.

The Attorney-General: You now know that the *post-mortem* examination had taken place upon the Sunday?—I think it was.

Although you have not yourself carried out *post-mortem* examinations during the last ten years, had you very considerable experience in your early days?—Abundant.

With regard to attending at the magistrate's court only at the last moment, is your time very much occupied?—Yes.

Witness, continuing, said that he met Dr. Stivens in practice, and sometimes Dr. Stivens called on him. He had known him for years. He would not describe Mrs. Uzielli's case to be one of "obscure" peritonitis. Making full allowance for mistakes, he did not think that a competent medical man ought to have had any difficulty in diagnosing it as peritonitis. A curette would not ordinarily be used for putting a womb back into position.

The Attorney-General: That is the case for the Crown.

Mr. C. F. Gill: I ask the Attorney-General to sum up this case, if he proposes to address the jury.

The Attorney General: No. I reserve my right, my lord.

Mr. C. F. Gill then addressed the jury. After commenting strongly on the initial difficulty in which he was placed through being opposed to the Attorney-General, owing to which he was obliged to sum up the evidence without knowing what the case for the Crown was, he went on to say that the prisoner was charged with constructive murder, but he was as much on his trial as though he had hated Mrs. Uzielli, and had deliberately killed her. With regard to every part of the case the onus

was upon the prosecution to prove the points they put forward. Where there was any condition of things capable of two interpretations, the right interpretation for the jury was that in favour of innocence. After a brief summary of Dr. Collins's professional career, Mr. Gill said that some fifteen years ago he had become acquainted with Mrs. Hope. That lady, knowing the weakness from which Mrs. Uzielli was suffering, suggested that she should consult Dr. Collins, which she did. At that time Mrs. Uzielli had no regular attendant. One of the first points of difference between the case for the prosecution and for the defence was the condition of the lady in March of this year. The case for the prosecution was that she was a robust woman, and the fact that she had had peritonitis previously was ignored as far as possible; only the word "inflammation" was to be used in that court. But, fortunately, what had been stated had been recorded, and they were compelled to accept the word "peritonitis," because it had been previously sworn to, although they were now careful to explain that it was "local" peritonitis and not general. That being the case, Mrs. Uzielli was in such a condition that peritonitis could be excited by trivial causes. As to the medical evidence he would remind the jury that if the present had been an action for damages against a railway company they would have had one man of distinction going into the box and saying that the shock would be disastrous to him; while the medical man representing the railway company would say that the symptoms were very trifling indeed, and would pass away as soon as the case was over. He (Mr. Gill) was not in a position to call medical evidence; Dr. Collins had not the means of placing his case before the jury in that way, but he submitted that he had sufficiently proved by cross-examination that it was in his power to call medical experts who would contest practically every proposition which had been put forward. The medical men who had been called were of such standing that it would have been expected, even if no other medical men in the kingdom agreed, that they would have done so, yet the jury had heard diametrically opposite opinions expressed by them. It had been proved conclusively that Mrs. Uzielli had previously suffered from pneumonia, which would affect a person for years, and that she had lately had influenza, a most dangerous disease. Dr. Stivens having pronounced pneumonia to be of the character he had described. Mr. Bond was called, who said that pneumonia was a useful thing in setting up the constitution. So severely had Mrs. Uzielli suffered from influenza that she had been in bed for about three weeks, attended day after day by a local doctor. When well enough she had gone to Eastbourne, and while there she was so weak that she remained in the house a great part of the time, going out in a bath chair in the afternoon. That condition of things continued during February. It was not a very remarkable thing that under those circumstances she should miss her period in February, and apparently she was anxious that her period should come on. She had said to her husband something to the effect that possibly she might be pregnant. The maid stated that Mrs. Uzielli had been endeavouring while at Newmarket to bring on her period, taking hot baths and using the vaginal syringe, which she had never known her to do before. It was in evidence that the syringe had been lying about the place for a long time, and he suggested it would probably not be so clean as would be desirable. Under those circumstances Mrs. Uzielli returned to town, and her state was apparently described by her husband to Dr. Stivens as that of general debility. It was very unfortunate that Mr. Uzielli had not at once called in a man like Sir John Williams. It was most unfortunate that she should have been treated as the result of an indirect communication to Dr. Stivens. She was supplied by him with pills composed of aloes and iron, and she took four a day, if the maid were right in supposing that they were the pills she was taking, and not others. They knew, however, that at that time medicine was being supplied to her from some unknown source at the Hans Crescent Hotel. Was it a quack doctor from whom she was getting advice? How did she obtain those medicines? Was it going very much further to suppose that she either got some ignorant person to operate upon her, or in some way injured herself? Mr. Gill next proceeded to criticise what he alleged to be inconsistencies in the evidence of Mr. Bond and Dr. Stivens. The medical evidence given in the case was built up upon theories, and he asked the jury to exercise their own judgment upon it. Mr. Gill went on to argue that the facts rather indicated suppressed menstruation than pregnancy. It was said by the medical men that the womb was not retroflexed, but there was no note taken when the *post-mortem* examination was made with regard to any question of that kind, and no note with regard to Douglas's pouch. Was Dr. Collins to be tried upon his diagnosis in respect to the question of displacement? It was inconceivable that any man would perform an operation when he did not know whether a woman was *enceinte* or not. At least he would not commit a crime without some safeguard or without some motive. What was the motive, if there had been any criminal intent? On March 11th Mrs. Uzielli had drawn a cheque to self for £300, and there would have been no means of tracing the money so obtained if it had been paid to a man who had performed an illegal act. If Dr. Collins had consented to perform an illegal act for 30 guineas, surely he would have insisted upon having the money at the time, and in such a way that it could not be traced, whereas Mrs. Uzielli had sent him a cheque, altered from being payable to "bearer" to being payable to "order," which made a complete record of the transaction. It had been suggested that Dr. Collins, from some criminal motive, had minimised Mrs. Uzielli's symptoms, but it was not a criminal offence even if he had not properly diagnosed her case. The learned counsel then proceeded to read Dr. Collins's statement before the coroner, and contended that it was a most probable and consistent one. The prescriptions which had been given were perfectly proper. Dr. Collins stated that he found what he supposed was membrane. That would be consistent with the membrane which might come away in a congested period. The lining membrane of the womb was so like the membrane of conception that even under microscopical examination it was difficult, if not impossible, to distinguish the one from the other. Defendant's opinion was that it was a miscarriage, and he expressed that, and said if would be desirable to wait to see if there was anything more to come away. What was it that Dr. Collins had done which was of a criminal character? Why was he to suppose that the wife was not telling the husband what her condition was? When he called on the Sunday morning she had had what he believed to be an early miscarriage. He made no secret of it, and told her as he told the nurse afterwards. He found that there was some membrane there, and he tried to remove it with his fingers, but without success. The evidence with regard to the length of time the wound existed was consistent with it having been caused on the Sunday morning. He submitted that there was an opportunity of causing the wound at the time with the finger-nail, and if it was caused at that time there could be abundant means by which the wound could become septic. Dr. Collins did not succeed in removing it, and he then used a fine curette. If he had been going to do anything serious he would have of course placed the lady under chloroform. But she, nervous, might have felt the curette coming in contact with the neck of the uterus and might have flinched, and a very slight movement on her part would have been sufficient to cause the wound. The learned Counsel went through the whole of Dr. Collins's statement made before the coroner, and submitted that if there had been any serious complaint on the part of Mrs. Uzielli her husband was in a position to have called in a specialist. There ought to have been an independent man to perform the *post-mortem*, and an opportunity given to Dr. Collins of being present, or being represented. What would have been the use even if he could have called evidence? In the question at issue he could get sufficient material from the men who were called, but upon the question of the appearance of the body evidence would be of no use unless he could call a man who saw the *post mortem*, and who had had an opportunity of examining and forming an opinion. What did Sir John Williams's evidence amount to? He thought that the nail was hardly possible, and, when pressed, that it was hardly likely; and he entirely threw overboard the statement made by Mr. Bond with regard to there being no means of ascertaining whether a woman has been pregnant, except by discovery of the membrane. In concluding his address, Mr. Gill said that whatever was left to the prisoner in life was more important as affecting the career of others. His own career, after such a case, must be necessarily at an end. He submitted that the only safe verdict was that the case had not been proven, and that therefore Dr. Collins was not guilty.

On Saturday morning, the sixth day of the trial, the Attorney-General replied on behalf of the prosecution. He submitted that every fact in the case showed that Mrs. Uzielli was pregnant, that she knew she was pregnant, and acted to bring about that which she wished, namely, miscarriage. He commented upon the absence from the witness box of medical men on behalf of the prisoner, and pointed out that in that great profession, which was generous and large minded, if there had been any doubt about some of the facts, there would have been no difficulty in obtaining evidence in support of the views put forward on behalf of the prisoner. With reference to the suggestion made that she was only being treated for suppressed menstruation, it was most important to observe that when she got back to the house, after her visit to Dr. Collins, she gave directions to the maid for something that was going to happen. Dealing with the *post-mortem* examination, the Attorney-General said there was evidence that there had been recently an ovum in the womb which had been expelled, and there was evidence that four or five, or six days before the death of the lady, there had been a heavy discharge from the womb. It was perfectly well known now that what Mrs. Uzielli died from was septic peritonitis. That was not disputed. It was also known that a wound in the position the wound was found would be responsible for the mischief. It was known also that the ordinary course of septic peritonitis was that it developed from two to three days after the poisoning had taken place and was followed by rise of temperature, feverishness, and restlessness supervening roughly some three or four days after the infection had taken place. It was practically established that miscarriage was brought about by something done upon the Tuesday, and that it was brought about by the puncturing of the membrane either by a metallic or other sound. The statement that the wound was caused in the process of curetting must be discredited. If the curetting ever did take place it was a remarkable thing that there should have been no mark of any sort or kind of it. He protested against the suggestion of the defence that Dr. Collins had been treated in an unfair way or that any improper attack had been made to get up evidence against him. With regard to the law of the case the Attorney-General pointed out that the prisoner was charged with constructive wilful murder, because if he was committing an unlawful act the law in one view said that death thereby occasioned was murder. But the law also said that if the act were not in itself of necessity dangerous, then the jury might find a verdict of manslaughter, and in that case it had been elicited by Mr. Gill most properly from Dr. Stivens that the risk of procuring abortion by puncturing the membrane was practically *nil*. If the jury had any doubt as to whether the prisoner had been the cause of Mrs. Uzielli's death, he invited them to give the prisoner the benefit of that doubt; but if they had no reasonable doubt that her death was caused by the act of the prisoner they were bound to do their duty and return such verdict as was in accordance with their conscience.

Mr. Justice Grantham in summing up said nothing could have been better than the defence made by Mr. Gill. With regard to the law, there was no doubt of its meaning. An person who with intent procured the miscarriage of a woman by the unlawful use of instrument or instruments was guilty of a felony, and assuming that the person did not die, was liable to penal servitude or any imprisonment that a judge might think it right to inflict. It could be well understood that there were cases where it was necessary, in order to save the life of a woman, that there should be forcible miscarriage, and a properly qualified doctor had to say when that time had arrived. That was not unlawful. If in consequence of an unlawful operation the patient died, that, by the law, was murder. But he could not ignore the fact that juries not unnaturally declined to find a verdict of murder when the person performing the operation did not do it against the will of the person operated upon, when, in fact, he was bribed to do it. The operation was an illegal one, and any woman who submitted to it was herself guilty of the same felony as the person who performed the operation, and could be placed in the dock and punished, and justly so; but unfortunately in most of the cases the woman had paid the penalty, and had gone before another Judge. It had been suggested by Mr. Gill that prisoner was unable to find witnesses owing to poverty, but there was very little foundation for the statement. A suggestion had been also made that Dr. Collins should have been represented at the *post-mortem* examination by an independent doctor, but Mr. Bond was appointed by the coroner to be just such an independent witness. It would open the door to great difficulty if a person

charged with an offence of that kind was allowed to be present while the *post-mortem* examination was going on. An accidental blow on the arm, an accidental fall of something, would obliterate the whole evidence that could be got. His Lordship then proceeded to review the evidence. There was no doubt, he said, that the case would not have been started but for the statement of Dr. Lyne Stivens, and his conduct had been commented upon; yet in all the cases that he had ever tried, he never had one in which it was so clearly the duty of the doctor in attendance to do exactly that which Dr. Stivens had done on this occasion. The real questions for the jury were: (1) Was the woman pregnant; and (2) did she have a miscarriage? Dr. Collins admitted that Mrs. Uzielli had had a miscarriage, and stated that when he first saw her she had a retroverted womb, but the evidence of Dr. Stivens, Mr. Bond, and Sir John Williams was that it was impossible she could have had it, because of the old adhesions. As regards Mrs. Uzielli's condition on the day before her death, Dr. Stivens, the moment he saw her, knew what she was suffering from. That was only an hour or two after Dr. Collins left, and it seemed incredible that he was ignorant of the true nature of the disease. It was difficult to understand why Dr. Collins should fear an inquest if he had been properly treating his patient. There was not a tittle of evidence to confirm the suggestion that the abortion was brought about by somebody else. There was no other doctor, and therefore he did not think it necessary to say anything further on the point. His Lordship then referred to the medical evidence. The uterus and parts had been preserved, and they could have been examined and other evidence could have been given to contradict what Mr. Bond and Dr. Stivens had said, and also what Sir John Williams had said. The result of Sir John Williams's evidence was that the death was due to septic peritonitis and that peritonitis was caused by the wound. How the wound was made was the question on which the whole case turned. If the evidence pointed out that it was brought about by artificial means, the question was, Who could have done it? If the jury believed that Dr. Collins had given an untrue account of his position, then they would be justified in coming to the conclusion that the other evidence pointed strongly to the fact that his must be the hand that did it.

The Jury, after deliberating for about fifty minutes, found the prisoner guilty of manslaughter, but strongly recommended him to mercy. The Foreman of the Jury handed the following rider to the Judge:

"The Jury wish to express their deep concern at and condemnation of the growing tendency on the part of certain classes of the community, as proved by the evidence in this case, to avail themselves of their marital rights, and to try to evade the responsibility of their acts."

In reply to the question as to why sentence should not be passed upon him, the prisoner asserted his innocence.

Mr. Justice GRANTHAM then passed sentence of seven years' penal servitude.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

FINAL EXAMINATION FOR THE DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.—The following candidates have satisfied the Examiners:

J. Allison, J. R. Anderson, *W. N. Barker, E. P. Baumann, H. L. S. D. Bilasco, W. Bell, F. P. Bester, Harriet A. S. Bird, J. M. Bowie, E. R. Branch, S. Branch, C. S. Brebner, R. N. Brebner, A. E. Brookes, H. H. Broome, A. C. Brown, E. H. Brunt, J. Burnet, M.A., *Isabella D. Cameron, J. Cameron, R. Cameron, *Jane Alice Craig, W. Craig, R. Crawford, Faith P. Crowther, R. Cumming, J. M. Cuthbert, E. F. Cyriax, L. J. M. Deas, *G. Dick, R. J. Dick, W. H. Dickinson, F. H. Dommipe, J. Donaldson, J. F. Falconer, D. D. Farquharson, D. Forbes, A. D. Fordyce, C. Forsyth, A. F. Fraser, A. T. Gilliton, G. Gatenby, H. E. Gibbs, R. Gibson, Janet Dorothy Gilfillan, A. Gilmour, A. Goodall, J. M. Gray, A. M. Green, G. Hamilton, T. E. Hinks, C. A. B. Horsford, W. E. Hutchinson, J. W. Ingles, A. H. Kean, *G. E. J. King, R. King, J. Leggate, P. A. Leighton, *E. W. Lewis, E. M. Lithgow, J. S. Low, B.Sc., P. L. M'All, A. J. M'Clymont, J. C. M'Conaghey, E. M'Culloch, W. C. Macdonald, W. R. Macdonald, J. M'Gibbon, *A. C. M'Gilchrist, M.A., A. M. M'Intosh, W. M'Kay, *R. W. Mackenna, J. W. Mackenzie, D. W. Maclagan, D. A. Macvean, E. C. G. Maddock, T. R. Matthews, Christina Allison Mayne, W. P. Meldrum, B.Sc., C. W. F. Melville, G. W. Miller, B.Sc., L. K. B. Mills, J. Monroe, L. D. Parsons, B.A., C. M. Pearson, G. B. Pemberton, H. R. Phillips, R. Pugh, J. A. Raeburn, W. Raine, A. C. Renwick, *J. H. Rhodes, *H. H. Roberts, G. A. Rorie, A. C. Sandelands, *R. F. M. Scott, B.A., I. Shalaby, A. Shearer, G. F. B. Simpson, J. A. C. Smith, *W. Smith, E. Somerville, W. Tarr, W. E. Teuet, A. H. Thomas, K. C. Verley, *H. Wade, W. E. J. Wallis, D. Wardrop, D. B. Waters, M.A., *J. R. Williamson, W. C. Wilson, M.A., G. G. J. Young.

FINAL EXAMINATION FOR THE DEGREES OF M.B. AND C.M. (OLD REGULATIONS).—The following candidates have satisfied the Examiners:

H. Armistead, J. H. Bain, F. J. H. Bateman, B.A.; W. Bennett, C. W. Brooks, A. J. W. Buchanan, C. Chilton, B.A., D.Sc.; A. W. G. Clark, *W. H. Dawson, M.A., B.Sc.; J. H. S. Douglas, G. Drummond, H. Duckworth, A. R. Eates, F. B. Feast, G. L. K. Finlay, B.A.; G. W. Fitzgerald, J. M. Fraser, E. Frost, J. H. Furniss, D. J. Hughes, A. H. James, F. R. Jones, F. F. Kerr, J. D. Lithgow, Beatrice Annie M'Gregor, J. Mackenzie, H. Malins, B.A.; R. F. Mudie, B. E. Myers, G. H. W. Robertson, M.A.; J. G. Ross, H. V. Sames, J. T. Scott, J. F. Stewart, W. A. C. Usher, J. F. Wilson.

* With distinction.

UNIVERSITY OF DUBLIN.

THE following degrees in Medicine, Surgery, and Midwifery were conferred on June 30th.

Bachelors in Medicine, Surgery, and Obstetrics.—W. F. Ahern, J. K. Breslaud, R. O'D. Burns, A. D. Cluch, T. D. Good, G. M. Goldsmith, G. M. Holmes, J. W. H. Houghton, W. D. A. Keys, A. C. M'Vittie, A. P. Macnamara, F. R. H. Merrick, H. H. Norman, G. J. A. Ormsby, J. R. H. Orr, H. I. Rogers, R. J. Rowlette, A. A. Seeds, J. T. Wigham.

Bachelor in Medicine.—A. G. Beaumont.

Doctors in Medicine.—J. H. L. Beaman, A. D. Clinch, J. R. Delmege, J. G. F. Hearn, P. N. Gerrard, T. B. Kerr, W. D. A. Keys, H. F. S. Langstaff, F. R. H. Merrick, G. P. Moore, B. O'Brien, G. J. A. Ormsby, J. R. H. Orr, A. A. Seeds, R. H. Shaw, W. B. A. Smith; S. B. Smith (*in absentiâ*).

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the Second Examination of the Board in the subjects indicated:—

Anatomy and Physiology.—H. N. Keeling, Yorkshire College, Leeds; C. H. Hawkins, Mason University College, Birmingham; T. S. Davies, H. James, J. C. Clayton, C. W. W. James, and H. H. Beverley, University College, Bristol; J. H. Ashton, Owens College, Manchester and Surgeons Hall, Edinburgh; C. A. G. Phipps and E. J. Jones, Owens College, Manchester; J. E. MacIlwaine, J. C. Rankin, and H. Stevenson, Queen's College, Belfast; S. U. Geraty, Royal College of Surgeons, Dublin; L. C. Driscoll, Charing Cross Hospital; L. Gollan, Melbourne University and St. Mungo's College, Glasgow; W. Pettigrew, Firth College, Sheffield; G. Gomez, Bogotà University. L. Pick, H. P. S. Devitt, and J. F. Powell, St. George's Hospital; H. M. Raven and J. W. Elliott, St. Mary's Hospital; J. S. Pascoe, Charing Cross Hospital; L. G. Hopkins, J. C. Fleming, W. R. J. Scroggie, and E. S. Littlejohn, University College, London; V. M. Wallis and G. J. Lewis, Guy's Hospital; L. Hirsch, Grant Medical College, Bombay, and Guy's Hospital; J. C. Bridge and P. G. Pavitt, Middlesex Hospital; R. Small, St. Thomas's Hospital; P. S. Hopkins, Edinburgh University, St. Thomas's Hospital, and Mr. Cooke's School of Anatomy and Physiology; C. H. Turner, R. Thompson, and H. H. Sloane, St. Bartholomew's Hospital; I. G. Pritchard, King's College, London; I. Stusser, London Hospital; P. L. Hicks, University College, Bristol and Guy's Hospital; H. D. Kempthorne, R. L. Jiménez, P. J. Nash, Guy's Hospital; R. Griffiths, Cambridge University, London Hospital, and Mr. Cooke's School of Anatomy and Physiology; E. N. Thornton, P. A. Green, and C. Parker, London Hospital; G. Dewick, St. Thomas's Hospital and Mr. Cooke's School of Anatomy and Physiology; C. W. Davies, A. E. Hill, R. H. W. Garle, St. Thomas's Hospital; F. G. Bennett, Cambridge University and University College, London; G. H. Hackney, University College, London; P. R. Fort and H. T. Doble, St. Mary's Hospital; E. L. Martin, H. E. G. Boyle, M. B. Scott, G. H. Low, St. Bartholomew's Hospital; A. Mason and F. B. Penfold, Middlesex Hospital.

Anatomy only.—W. Beck, Aberdeen and Edinburgh Universities.

Physiology only.—J. W. Bennett, Owens College, Manchester, and Mr. Cooke's School of Anatomy and Physiology; A. N. Leathem, Charing Cross Hospital; and C. C. Tandy Magee, Melbourne University and London Hospital.

Forty-two gentlemen were referred in both subjects, three in Anatomy only, and one in Physiology only.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following candidates, having passed a special examination for the Licence in Midwifery of the Royal College of Physicians of Ireland, have been admitted Licentiates: A. C. Fenn, L.S.A.; K. H. White, L.R.C.P. and S.Edin., L.F.P. and S.Glasg.

UNIVERSITY OF BRUSSELS.

AT the June Examination, 1898, of the Brussels University, the following British practitioners obtained the M.D. degree: Messrs. Bell, Cowburn, Spenser Cox, Glasson (honours), Hudson, Lamplough, McCall, Noble, Persehouse, and Reeve.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following prizes have been awarded: Barker Anatomical Prize—Miss K. F. Lynn, 1st, £26 5s.; J. S. P. Stewart, 2nd, £15 15s. Carmichael Scholarship—C. R. Boyce, £15. Mayne Scholarship—D. Hadden, £15. Gold Medal in Operative Surgery—G. W. Little. Silver Medal in Operative Surgery—T. G. N. Stokes. Certificate of Merit in Operative Surgery—S. R. Godkin. Practical Histology—J. P. Byrne, £3 and medal; R. H. Oulton, £1 and certificate. Practical Chemistry—W. Delancy and Miss M. J. Shire (equal), £2 and medals. Public Health and Forensic Medicine—D. A. Fitzgerald, £3 and medal; Mrs. H. L. Hennessy, £1 and certificate. Materia Medica—J. Levis, £3 and medal; W. R. Meredith, £1 and certificate. Practical Pharmacy—E. Evatt, £3 and medal; Miss M. J. Shire, £1 and certificate. Biology—Miss M. J. Shire, £3 and medal; R. E. Humphrey, £1 and certificate.

The preliminary examination for the commencement of medical study will be held on Tuesday and Wednesday, September 27th and 28th.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,575 births and 3,203 deaths were registered during the week ending Saturday last, July 2nd. The annual rate of mortality in these towns, which had been 14.7 and 15.1 per 1,000 in the two preceding weeks, declined to 14.9 last week. The rates in the several towns ranged from 9.0 in Preston, 10.3 in Norwich, 10.6 in Cardiff, and 10.9 in Croydon, to 18.6 in Gateshead, 19.0 in Wolverhampton, 20.8 in Newcastle-upon-Tyne, and 22.8 in Sunderland. In the thirty-two provincial towns the mean death-rate was 15.1 per 1,000, and exceeded by 0.6 the rate recorded in London, which was 14.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.6 per 1,000; in London the rate was equal to 1.9 per 1,000, while it averaged 1.4 in the thirty-two provincial towns, among which the highest zymotic

death-rates were 2.3 in Norwich, 3.0 in Newcastle-upon-Tyne, 3.1 in Salford, and 3.7 in Plymouth. Measles caused a death-rate of 3.2 in Plymouth, and whooping-cough of 1.0 in Salford and in Gateshead, 1.1 in West Ham, and 1.4 in Newcastle-upon-Tyne. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 55 deaths from diphtheria in the thirty-three towns included 28 in London, 4 in Cardiff, 4 in Leeds, and 3 in Bristol. One fatal case of small-pox was registered last week in Newcastle-upon-Tyne, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,104 and 2,238 at the end of the two preceding weeks, had declined again to 2,205 on Saturday last, July 2nd; 204 new cases were admitted during the week, against 206, 230, and 231 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 2nd, 1,054 births and 635 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 23.0 to 19.5 per 1,000 in the four preceding weeks, rose again to 21.1 last week, and was as much as 6.2 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Perth and 17.7 in Leith to 23.4 in Dundee and 25.5 in Paisley. The zymotic death-rate in these towns averaged 3.0 per 1,000, the highest rates being recorded in Dundee and Paisley. The 297 deaths registered in Glasgow included 11 from measles, 19 from whooping-cough, and 12 from diarrhœa. Thirteen fatal cases of measles and 5 of whooping-cough were recorded in Edinburgh, 11 of measles in Dundee, and 5 of measles in Paisley.

DIPHTHERIA IN LONDON.

The mortality from diphtheria in London showed a marked increase last week. The fatal cases of this disease, which had been 23, 26, and 21 in the three preceding weeks, rose again to 28 during the week ending Saturday last, July 2nd. Of these 28 deaths, 4 were of persons belonging to Poplar sanitary area. The notifications of diphtheria in London, which had been 212, 224, and 187 in the three preceding weeks, rose again to 215 during the week ending Saturday last. Compared with the preceding week there was slight further decline in the prevalence of the disease in West London, but in North, Central, East, and South London there was an increase. The decline in West London last week was due to a marked further fall in the number of notifications in Fulham, 7 new cases being notified against 19 and 15 in the two preceding weeks. Among the sanitary areas of North London there was a considerable increase in the prevalence of diphtheria in St. Pancras, where 12 new cases were reported against 5 in the preceding week. The increase in the prevalence of the disease in Central London was due to a further marked rise in the notifications in Clerkenwell, where 12 new cases occurred against 4 and 8 in the two preceding weeks. Among the sanitary areas of East London there was but little change last week in the prevalence of diphtheria, except in Poplar, where the new cases, which had been 8 and 5 in the two preceding weeks, rose again to 16 during the week ending Saturday last. The slight increase in the number of notifications in South London was mainly due to the greater prevalence of the disease in St. George Southwark, Newington, and Camberwell; in the last-mentioned sanitary area the new cases, which had steadily increased in the four preceding weeks from 0 to 16, further rose to 19 last week. On the other hand, the prevalence of diphtheria showed a decline in Lambeth, Battersea, and Wandsworth. The admissions of diphtheria patients into the Metropolitan Asylum Hospitals during last week were 119, against 149, 132, and 125 in the three preceding weeks; and 971 cases remained under treatment in these hospitals on Saturday last, July 2nd.

THE CRYPT OF ST. GEORGE, SOUTHWARK.

The vestry of St. George's, Southwark, have passed a resolution requesting the Home Secretary to receive a deputation upon the subject of the human remains in the crypt of St. George's Church. The intention of the Vestry, it is said, is to obtain leave to allow the human remains to remain in the crypt covered over by concrete, as this course, it is thought, would save expense.

LONDON WATER COMMISSION.

At the sitting of the Royal Commission on June 13th, evidence was given by Mr. Littler, Q.C., Chairman of the Middlesex County Council, who said that that body and the various local authorities of the county were strongly opposed to interference with the water supply by any outside authority. He did not want purchase by anyone, least of all by the London County Council. On June 27th Mr. James Bigwood, M.P., Chairman of the Parliamentary Committee of the Middlesex County Council, and Mr. E. J. Halsey, Chairman of the Surrey County Council, gave evidence against purchase, and urged that their respective counties should be allowed to supply themselves within their own areas. At the same time, it was suggested that some further control, preferably by a Government department, should be exercised over the action of the water companies.

NURSING IN WORKHOUSE INFIRMARIES.

Two extracts from the *Western Press* (Bristol) constrain us to repeat the old argument that a cheese-paring policy in providing nursing for the sick is false economy. The Bristol Board discussed the question at its last meeting, on the motion to rescind a resolution to increase the nursing staff and to provide a nurse for the infants. We are glad that this failed; but it seems extraordinary that men who, it may be presumed, understand the principles of business can be found to vote for the continuance of the old inadequate methods of nursing. The Rev. H. Dening, one of the guardians, writing to this same paper, argues that, "if there were an efficient staff of nurses the cures would be speedier and the economy greater, with a resulting diminution of suffering, benefits that cannot be reckoned by £ s. d." The writer also points out that to obtain and keep efficient nurses it is necessary that there should be some attention to their comfort, and a liberal salary. These counsels will in the end prevail all over the country, and when those who are in opposition accept the fact that all are working for the same end, though by different in methods, it is only a question of time.

NAVAL AND MILITARY MEDICAL SERVICES.

THE ROYAL ARMY MEDICAL CORPS.

The following is the text of the Royal Warrant forming the Royal Army Medical Corps, which the Secretary of State for War has courteously sent us for publication.

Victoria R.I.

Whereas We have deemed it expedient to alter in certain respects the conditions under which the officers employed upon the medical duties of Our Army are at present serving:

Our will and pleasure is that the officers below the rank of surgeon-major-general serving in Our Army Medical Staff shall be formed into a corps, together with the warrant officers, non-commissioned officers, and men of Our Medical Staff Corps:

It is Our further will and pleasure that the designation "Medical Staff Corps" shall be abolished, and that the corps formed as above-mentioned shall be styled "The Royal Army Medical Corps."

The following alterations will consequently be made in the ranks of the medical officers of Our Army:

Present Ranks.	New Ranks.
Surgeon-colonel.	Colonel.
Brigade-surgeon-lieutenant-colonel.	Lieutenant-colonel.
Surgeon-lieutenant-colonel.	
Surgeon-major.	Major.
Surgeon-captain.	Captain.
Surgeon-lieutenant.	Lieutenant.

The medical staff of Our Army shall in future consist of surgeon-generals (ranking as major-generals), and the title of surgeon-major-generals now serving shall be altered accordingly.

Officers of Our Royal Army Medical Corps holding appointments in Our household troops shall be borne as seconded officers on the establishment of Our Royal Army Medical Corps, and shall be dealt with as regards pay and promotion in accordance with the rules laid down in Articles 384, 385, and 387 of Our Warrant for the Pay, Appointment, Promotion, and Non-effective Pay of Our Army, dated the 26th April, 1897.

Given at Our Court at Windsor, this 23rd day of June, 1898, in the 62nd year of Our Reign.

By Her Majesty's Command,

Lansdowne.

THE NAVY.

The following appointments have been made at the Admiralty: Horatio W. A. Cowan, M.B., Surgeon, to the *Howe*, for summer cruise, July 5th; Percival M. May, Surgeon, to the *Vivid*, for the *Colossus*, July 1st; Alfred Woollcombe, Surgeon, to the *Galatea*, July 1st; Eric D. Macnamara, Surgeon, to the *Severn*, July 1st; Reginald Waterfield, Surgeon, to the *Benbow*, July 1st; Samuel H. Facey, Surgeon, to the *Collingwood*, for summer cruise, July 1st; George M'Gregor, Surgeon, to the *Mosquito*, July 4th; Robert S. Bernard, Surgeon, to the *Vernon*, July 4th.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel R. de C. Cour Corbett, M.D., D.S.O., is promoted to be Surgeon-Colonel, *vice* J. Williamson, deceased, June 22nd. His previous commissions are thus dated: Assistant-Surgeon, October 1st, 1867; Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1879; and Brigade-Surgeon-Lieutenant-Colonel, June 3rd, 1893. He was with the Burmese Expedition in 1886-7, was mentioned in dispatches, awarded the Distinguished Service Order, and received the Frontier medal with clasp.

Surgeon-Lieutenant-Colonel J. C. Dorman, M.B., is promoted to be Brigade-Surgeon-Lieutenant-Colonel, *vice* J. H. Moore, promoted, June 13th. Brigade-Surgeon-Lieutenant-Colonel Dorman was appointed Surgeon, March 31st, 1875; Surgeon-Major, March 31st, 1887; and Surgeon-Lieutenant-Colonel, March 31st, 1895. He served in the Afghan war in 1878-79, including the engagement at Ali Kheyl and the forcing of the Shutargardan (medal); and in the Egyptian war of 1882 (medal and Khedive's bronze star).

Surgeon-Lieutenant-Colonel G. H. Le Mottée, M.D., is also promoted to be Brigade-Surgeon-Lieutenant-Colonel, *vice* R. de la Cour Corbett, promoted, June 22nd. Brigade-Surgeon-Lieutenant-Colonel Le Mottée's previous commissions are contemporaneous with those of Brigade-Surgeon-Lieutenant-Colonel Dorman. He was engaged in the Boer war in 1881.

Surgeon-Colonel C. F. Churchill is appointed to officiate as Principal Medical Officer, Bengal Command, with the temporary rank of Surgeon-Major-General, dated May 29th.

The Khedive has signified his intention of conferring the 4th class of the order of the Osmanieh upon Surgeon-Captain R. H. Penton, D.S.O., and the 4th class of the order of the Medjidieh upon Surgeon-Captain P. H. Whiston.

INDIAN MEDICAL SERVICE.

The undermentioned Surgeon-Majors, having completed twenty years' full pay service, are promoted to be Surgeon-Lieutenant-Colonels, March 30th:—Bengal: Jarlath ffrench-Mullen, M.D., Eugene Cretin, Andrew Duncan, M.D., George Frederick Nicholson, M.D., Samuel Ferguson Biggar, and Sir George Scott-Robertson, K.C.S.I. Madras: Thomas Henry Pope, M.D., Robert Pemberton, Damodar Purshotam Warlicker, James Joseph Moran, M.D., William Adair Quayle, M.D., Henry Armstrong. Bombay: Charles Monks, Phirozsha Jamsetjee Damania, George Henry Bull, M.D., Frederick Fitzgerald MacCartie, C.I.E.

Brigade-Surgeon-Lieutenant-Colonel James Arnott, M.D., Bombay Establishment, has retired from the service from April 1st. His commission as Assistant Surgeon dates from April 1st, 1867; that of Brigade-Surgeon-Lieutenant-Colonel from April 30th, 1891. He served with the field hospital during the Abyssinian war in 1867-68 (medal), and in the Afghan war in 1879-80 as Principal Medical Officer of the Reserve Brigade in the Bolan Pass, and in medical charge of the headquarters staff at the defence of Candahar (mentioned in despatches), being present in the sortie of Deh Khojah (mentioned in despatches) and at the battle of Candahar (medal with clasp).

The retirement from the service of the undermentioned officers, which has been already announced in the British Medical Journal, has received the approval of the Queen: Surgeon-Colonel Samuel B. Hunt, Madras Establishment; Surgeon-Lieutenant-Colonel James Moorhead, M.D., Bengal; and Surgeon-Lieutenant-Colonel James C. H. Peacocke, Bombay.

Surgeon-Lieutenant-Colonel Joseph Backhouse, Madras Establishment, is permitted to retire from the service from July 1st. His first commission is dated April 1st, 1869; that of Surgeon-Lieutenant-Colonel April 1st, 1889.

Surgeon Alfred John Wall, M.D., late of the Bengal Establishment, died on April 29th, aged 50 years. He entered the service April 1st, 1872, and was transferred to the Half-pay List, February 26th, 1882.

Surgeon-General Frederick Morrison Clifford, late of the Indian Medical Service, died in London on June 15th.

Surgeon-General Henry Young, M.D., late of the Madras Establishment, died at 58, Wiltshire Road, Brixton, on June 18th, at the age of 81. He was appointed Assistant Surgeon, January 8th, 1842; became Deputy-Surgeon-General, October 9th, 1874; and retired from the service, December 8th, 1872. He was granted the honorary rank of Surgeon-General, June 14th, 1876.

Surgeon-General Wm. Henry Adley, late of the Bengal Establishment, died on June 18th, after a short illness, aged 70. He entered the service as Assistant Surgeon, September 2nd, 1850; became Deputy-Surgeon-General, June 22nd, 1877; and retired with the honorary rank of Surgeon-General, April 1st, 1882.

Brigade-Surgeon-Lieutenant-Colonel G. C. Hall, Bengal Establishment, is granted the rank of Surgeon-Colonel while officiating as Inspector-General of Civil Hospitals, North West Provinces.

Brigade-Surgeon-Lieutenant-Colonel D. Sinclair, M.B., Madras Establishment, is promoted to be Surgeon-Colonel, from February 12th, 1896, and to remain seconded while holding the appointment of Inspector-General of Prisons, Sanitary Commissioners, and Chief of the Civil Medical Department, Burma. His first commission dates from October 1st, 1869.

Brigade-Surgeon-Lieutenant-Colonel A. M. Branfoot, C.I.E., M.B., Madras Establishment, is also promoted to be Surgeon-Colonel, from March 1st. He entered the service as Assistant-Surgeon, March 30th, [illegible]

Surgeon-Lieutenant-Colonel H. W. B. Boyd, Bombay Establishment, is appointed to succeed Brigade-Surgeon-Lieutenant-Colonel J. Arnott, M.D., as Physician to St. George's Hospital, Bombay; Surgeon-Major J. P. Barry, M.B., Surgeon-Lieutenant-Colonel Boyd as Superintendent of Colaba Lunatic Asylum; and Surgeon-Captain B. B. Grayfoot will perform the appointment of Civil Surgeon of Kaira, *vice* Surgeon-Major [illegible]

Major-General William Roe Hooper, C.S.I., late of the Bengal Establishment, has been appointed a Knight of Grace of the Order of the the Hospital of St. John of Jerusalem.

THE VOLUNTEERS.

Surgeon-Captain R. Bevan, 1st Volunteer Battalion, the Buffs, East Kent Regiment, has resigned his commission, June 22nd.

Lieutenant A. W. W. Caudle, 2nd Volunteer Battalion the Royal Sussex Regiment, has also resigned his commission; he is per[illegible]

[illegible]n-Lieutenant in the 15th Mid[illegible] June 22nd.

[illegible]nd Middlesex Artillery, is pro[illegible]

[illegible] Volunteer Battalion the Gloucester[illegible]nant A. L. Jones, 3rd Glamorgan Rifles, are promoted to [illegible], July 2nd.

THE [illegible]EDITION.

[illegible] the Principal Medical [illegible] It is rumoured that the [illegible]n probation will go to [illegible] about July 15th, probably in the *Jelunga*, hired transport, for the same destination.

MEDICAL NEWS.

Medical Magistrate.—Dr. H. Jones Roberts, of Penygroes, has been appointed to the Commission of the Peace for Carnarvonshire.

Lord Ludlow will distribute the prizes to the successful students of the Dental Hospital for London at a *conversazione* to be held on Tuesday, July 19th, at 8 P.M., at the Royal Institute Galleries, Prince's Hall, Piccadilly.

The annual meeting of the Association for the Oral Instruction of the Deaf and Dumb will be held at the Portman Rooms on July 11th at 3.30 P.M., when the prizes will be distributed by Mrs. Arthur Lucas, and a short illustration of the system will be given.

Successful Vaccination.—Dr. Reginald Maples, public vaccinator of Kingsclere Union, has been awarded for the eighth time a grant for efficient vaccination in the Kingsclere District, and for the second time in the Highclere District. Mr. Clement Pound (Odiham, Hants) has also received the grant for efficient vaccination in his district.

A Medical Society Officered by Women.—The San Diego (California) Medical Society has made a new departure by electing as its officers women instead of men. Dr. Magee, who had been secretary for ten years, recently resigned to make room for Mrs. Nelson, M.D. During the present year the Society will have a female President, a female Vice-President, and a female Secretary.

The late Sir Robert Rawlinson, formerly chief engineering inspector of the Local Government Board has, after leaving certain bequests to Lady Rawlinson and the Institution of Civil Engineers, directed that the ultimate moiety of his personal estate valued at £82,838 should be paid to the trustees of St. Thomas's Hospital for the general purposes of the hospital, which will thus receive apparently about £35,000.

Charing Cross Hospital Musical Society.—On June 28th the Charing Cross Hospital Musical Society, with the assistance of some professional friends, gave a very successful concert at St. Martin's Town Hall. The audience was large, and included many distinguished members of the medical profession. An excellent programme was provided, among the artists being Miss Marion Blinkhorn, Miss Charlotte Hemming (the Australian reciter), Mr. Norman McLeod, and Mr. Herbert Class. Among others who appeared were Mr. Robert Manning, Mr. Percy Spark, Mr. Seguier-Brown, Messrs. Cecil and Bertie Sutton, and Mr. W. St. Aubin Hubbard, the Hon. Secretary of the Musical Society.

Presentation.—At a meeting held on June 8th, Dr. A. G. Davey of Ryde was presented by his numerous friends with a cheque for £1,000 for the purpose of endowing a cot in the children's ward of the Royal Isle of Wight Infirmary and County Hospital, to be called the "Alexander Davey" cot as a mark of their esteem and appreciation. Dr. Davey, who is Senior Medical Officer to the institution, was at the same time presented with an illuminated address which referred to Dr. Davey's labours in the interests of the Isle of Wight Infirmary and County Hospital, and more especially of the children's wing now being added to the hospital as a permanent memorial of the Queen's longest reign.

Cambridge Graduates' Medical Club.—The annual meeting and dinner of this Club was held at Limmer's Hotel, W., on Thursday, June 30th. Fifty-nine members and guests were present. The President, Dr. W. H. Dickinson, proposed the toasts of "The Queen" and "The Prince of Wales." In connection with the toast of "The Club" he reviewed the chief events of the year in connection with the Medical School of Cambridge. The death of Professor Roy, the appointment of Dr. Kanthack to the chair of Pathology, the necessity of providing new buildings for the Medical School, and the Physiological Congress to be held at Cambridge were alluded to in graceful terms. The Senior Secretary, Dr. Rolleston, who is retiring from that post after holding it for eight years, replied. Professor Kanthack proposed "The Guests," and Professor Burdon Sanderson responded to the

toast with an admirable speech. "The Health of the Chairman" was proposed by Dr. Hare in sympathetic terms, and duly acknowledged.

HOSPITAL ABUSE.—At a special meeting of the Council of the Charity Organisation Society held recently, under the chairmanship of Sir Joshua Fitch, Mr. T. Clinton Dent read a paper describing the proposed scheme for the reconstitution of the Belgrave Hospital for Children in South London. The special rules with regard to the admission and selection of patients, which were described and discussed in the BRITISH MEDICAL JOURNAL of April 23rd, 1898, p. 1104, were detailed by Mr. Dent. Mr. W. H. Kesteven, M.R.C.S., subsequently read a paper embodying various suggestions as to the reform of casualty and out-patient departments, in which he said what is known as hospital abuse had reached its climax. It was true that the managers of any particular hospital would always deny that it was not well managed, but he held that the evil existed, and was, in fact, rampant. A prolonged discussion ensued.—At a meeting in support of the Central London Ophthalmic Hospital, held at the Mansion House recently, Sir Dyce Duckworth, Consulting Physician to the hospital, moved the resolution approving the proposed scheme for rebuilding the hospital. He said that the hospital was carrying on a good work which certainly did not pauperise. Having worked for fifteen years in one of the greatest hospitals of the metropolis—St. Bartholomew's—he believed that the outcry on this head had been greatly exaggerated. He considered that in well-ordered hospitals abuses were *nil*. Colonel W. J. Tatham seconded the resolution, which was carried unanimously; and we learn from a report in the *Times* that a list of subscriptions, amounting to £642, was read by the Secretary.

APPOINTMENTS UNDER THE WORKMEN'S COMPENSATION ACT.—The following gentlemen have been appointed to act as medical referees under the Workmen's Compensation Act: Dr. Wilfred Balgarnie (Winchfield) for the County Court Circuits of Southampton, Winchester, Basingstoke, Alton, Andover, and Romsey; Mr. J. Paul Bush (Bristol) for the Bristol County Court District; Dr. W. A. Elliston (Ipswich) for the southern part of the county of Suffolk; Dr. G. Washington Isaac (London) for the County Court Circuit No. 44, Westminster; Dr. J. Holmes Joy (Tamworth) for the Warwickshire County Court District, No. 26; Dr. W. Murray Leslie for the City of London; Mr. R. Meredith Littler (Southport) for the the Southport and Ormskirk County Court District; Mr. Herbert Lund (Manchester) for division of County Court Circuit No. 7; Dr. W. B. Mackay (Berwick-upon-Tweed) for districts of Berwick, Bedford, and Wooler in County Court Circuit No. 1; Mr. J. H. S. May (Plymouth) for County Court Circuit No. 58; Dr. Charles Parsons (Dover) for County Court District comprising Dover, Folkestone, Hythe, New Romney, and Deal; Dr. Walter Petter (Darlington) for County Court Circuit No. 15; Mr. G. A. Phillips (Walsall) for County Court Circuit No. 25; Dr. Bertram M. H. Rogers for the Bristol County Court District; Dr. H. C. Sharp (Truro) for County Court Circuit No. 59; Dr. F. J. Smith (London).

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM GENERAL HOSPITAL.—House Physician. Salary, £70 per annum, with residence, board, and washing. Applications to the House Governor by July 30th.

BRENTFORD UNION.—Assistant Medical Officer for the New Infirmary, unmarried. Salary, £100 per annum, with furnished apartments, rations, washing, etc. Applications, on forms provided, to the Clerk, Union Offices, Isleworth, W., by July 20th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton.—House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coals, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to Dr. E. Markham Skerritt, Dean, by July 21st.

BUXTON: DEVONSHIRE HOSPITAL.—House-Surgeon and Assistant-House-Surgeon. Salary, £100 and £50 per annum respectively, with furnished apartments, board, and washing. Applications to the Secretary by July 20th.

CARLISLE DISPENSARY.—House-Surgeon. Salary, £130 per annum, with apartments. Applications to the Honorary Secretary, G. A. Lightfoot, Rivershill, Stanwix, Carlisle, by July 14th.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester Square.—Demonstrator. Honorarium £50 per annum. Applications to the Dean by July 18th.

DORCHESTER: COUNTY ASYLUM.—Second Assistant Medical Officer, not over 30 years of age. Salary, £130, rising to £160. Applications to the Medical Superintendent by July 20th.

DUMFRIES: PARISH OF NEWABBEY.—Medical Officer and Public Vaccinator. Salary, £50 per annum. Applications to the Chairman, by July 14th.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Surgeon to out-patients. Applications to the Committee of Management by July 22nd.

GLASGOW UNIVERSITY.—Lecturer on Materia Medica and Therapeutics. Salary, £150 per annum. Applications to the Secretary of the Court by July 20th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Junior House-Surgeon. Appointment for six months. Board, lodging, and washing provided. Applications to the Secretary by July 18th.

GUY'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Biology. Applications to the Treasurer by July 23rd.

HALIFAX: ROYAL INFIRMARY.—Assistant House-Surgeon, unmarried. Salary, £50 per annum, with an extra allowance of £9 2s. 6d., with residence, board, and washing. Applications to the Secretary by July 20th.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. No salary, but residence, board, and laundry provided. Applications to the Secretary by July 27th.

HOSPITAL FOR WOMEN, Soho Square, W.—Registrar. Honorarium, 25 guineas. Applications to the Secretary by July 18th.

LAGOS GOVERNMENT RAILWAY.—Assistant Medical Officer. Between 25 and 30 years of age. Salary, £30 per month, and first-class passage out and home. Applications to the Crown Agents for the Colonies, Downing Street, S.W., by July 11th.

MANCHESTER CORPORATION.—First Medical Assistant and Third Medical Assistant. Salary, £150 and £100 per annum respectively, with board and lodging. Applications to the Chairman of the Sanitary Committee, Public Health Office, Town Hall, Manchester, by July 15th.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship. Appointment for six months. Applications to the Secretary by July 11th.

MANCHESTER: OWENS COLLEGE.—Senior and Junior Demonstrator in Physiology. Stipends, £150, rising to £200, and £100, rising to £150 respectively. Applications to the Registrar by July 18th.

METROPOLITAN ASYLUMS BOARD.—Medical Practitioner to investigate cases of scarlet fever and diphtheria that are alleged to have resulted from the premature discharge of patients from the Board's Hospitals. Appointment for six months. Fee, 2 guineas per case, minimum remuneration 50 guineas. Applications to the Secretary by July 13th.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—House-Physician. Appointment for six months. Board, etc., provided. No salary. Applications to the Secretary by July 23rd.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, West Strand.—House-Surgeon. Applications to the Secretary by July 16th.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by July 12th.

SUFFOLK COUNTY ASYLUM, Melton.—Second Assistant Medical Officer. Salary, £100 a year, with board, lodging, washing, and attendance. Unmarried, and under 30 years of age. Applications to the Medical Superintendent by July 16th.

VICTORIA HOSPITAL FOR SICK CHILDREN, Park Street, Hull.—Lady House-Surgeon. Salary, £50 per annum, with board and laundry. Applications to the Honorary Secretaries by July 18th.

WESTERN GENERAL DISPENSARY, Stafford Street, Marylebone Road.—House-Surgeon, unmarried. Salary, £60 per annum, with board and residence. Applications to the Hon. Secretary by July 11th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon. Board, lodging, and washing. Applications to the Chairman of the Medical Committee by July 18th.

YORK COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with board, rooms, washing, etc. Applications to the Secretary by July 20th.

MEDICAL APPOINTMENTS.

ANCRUM, Wayland, M.B., appointed Honorary Assistant Surgeon to the Gloucester General Infirmary, *vice* W. Washbourn, M.R.C.S., appointed Honorary Surgeon.

ANDERSON, F., M.B., C.M.Edin., appointed to the Medical Staff of the York Dispensary, York.

BARGENT, William, M.D.Durh., B.S., appointed Medical Officer of Health to the Northallerton Urban District Council, *vice* Charles Tweedy, M.R.C.S.Eng., L.R.C.P.Edin., resigned.

BEDDOE, D. M., F.R.C.S., appointed House-Surgeon to the London Throat Hospital, Great Portland Street.

BOW, M. R., M.B.Edin., appointed Medical Officer for the Brampton District of the Scarborough Union.

BUCHANAN, Peter, M.B., C.M.Glasg., appointed Medical Officer of Health to the West Dean Rural District Council.

BURTON, C. G., M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the North-Eastern Hospital for Children, Hackney Road.

COFFEY, Mr. Patrick, appointed Medical Officer for the Emlagh Dispensary District of the Cahirciveen Union, *vice* John Healy, L.R.C.P.Edin., L.F.P.S.Glas., retired.

FOSTER, J. T., M.B., M.R.C.S., L.R.C.P., appointed House-Surgeon to the North-Eastern Hospital for Children, Hackney Road.

FOSTER, Dr. F., appointed Medical Officer for the South Arreton District of the Isle of Wight Union.

GIBB, R. Shirra, M.B., C.M.Aberd., appointed Medical Officer of Health for the County of Berwickshire.

GREEN, Mr. F. L., appointed Medical Officer for the North Curry District of the Taunton Union.

GREGORY, W. Herbert, M.D., C.M.Edin., appointed Visiting Surgeon Beverley Cottage Hospital and Dispensary, and Visiting Physician Ann Routh Hospital.

GROSVENOR, W. W., B.A., M.D., appointed Physician to the Children's Hospital, Gloucester, *vice* W. M. Hope, M.R.C.S.

HAIR, Allan, M.R.C.S., L.R.C.P., appointed House-Physician to the North-Eastern Hospital for Children, Hackney Road.

HAYNES, P. O., M.R.C.S.Eng., L.S.A., appointed Medical Officer for the Fourth District of the Devizes Union.

HOPE, W. M., M.R.C.S., appointed Surgeon to the Children's Hospital, Gloucester, *vice* W. Washbourn, M.R.C.S.Eng.

HUNT, Lewis G., M.D.McGill, L.R.C.P.Edin., L.F.P.S.Glas., appointed Medical Officer for the Headquarters Homes of the Sheffield Union.

JACKSON, W. R., M.B., appointed Medical Officer for the Second and Fifth Districts of the South Molton Union.

LAWRIE, Leo. V., M.B.Edin., appointed Medical Officer for the Moretonhampstead District of the Newton Abbot Union.

LEWARNE, Frank, M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Cricklade District of the Cricklade and Wootton Bassett Union.

LONGWORTH, Stephen G., L.R.C.P., L.R.C.S.Irel., appointed Senior Assistant Medical Officer to the Suffolk County Asylum.

MAGRATH, H. G., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Third District of the Wimborne and Cranborne Union.

MARTIN, Frederic William, M.R.C.S., L.R.C.P., appointed Medical Officer of Health to the Brighouse Town Council.

MASON, F. W., M.R.C.S., L.R.C.P., appointed a Resident Medical Officer to the York Dispensary.

MILROY, J. A., M.A., M.B., Junior Demonstrator of Physiology in Owens College, Manchester, appointed Medical Demonstrator of Physiology in Yorkshire College, Leeds.

MORGAN, G. F. V., M.R.C.S., L.R.C.P., D.P.H.Lond., appointed Honorary Physician to the Hartlepools Hospital.

MURRAY, Dr. J., appointed Medical Officer for the Ninth District of the Hexham Union.

NEWSHOLME, Arthur, M.D., F.R.C.P., appointed Examiner in Preventive Medicine to the University of Oxford.

PEARSON, Reginald S., M.R.C.S., L.R.C.P., appointed Medical Officer of Health to the Wigan Rural District Council.

ROBINSON, Dr. H., appointed Medical Officer for the Sculcoates Union Cottage Homes.

SAYERS, M. H., M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Royal Berks Hospital.

SHAW, W. H. C., M.B., B.C.Camb., appointed Medical Officer for the Fourth District of the Bedminster Union.

SMITH, Dr. Walter, appointed Assistant Medical Superintendent to the Belfast District Lunatic Asylum, *vice* S. Graham, L.R.C.P.Lond., resigned.

STALKER, Alex. Mitchell, M.A., M.D.Edin., appointed Surgeon to Her Majesty's Prison, Dundee, *vice* J. W. Miller, M.D.Edin.

STANSFIELD, T. E. Knowles, M.B., C.M.Edin., appointed Medical Superintendent of the London County Asylum, The Heath, Bexley, Kent.

SYDENHAM, G. F., M.R.C.S.Eng., L.S.A., appointed Medical Officer for the Third District of the South Molton Union.

SYRETT, E. F., M.D.Durh., M.R.C.S.Eng., appointed Medical Officer for the Seventh District of the Sudbury Union.

THOMPSON, C. J., L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer for the Calbourne District of the Isle of Wight Union.

THYNE, W., M.D., C.M., L.R.C.P., L.R.C.S., appointed as Clinical Assistant to the Chelsea Hospital for Women.

TILLEY, Herbert, M.D. and B.S.Lond., F.R.C.S.Eng., appointed to the Honorary Staff of the London Throat Hospital, Golden Square.

WALLACE, Arthur J., M.D.Edin., appointed Honorary Assistant Surgeon to the Hospital for Women, Shaw Street, Liverpool, *vice* J. E. Gemmell, M.B., C.M.Edin.

WAL[illegible] D[illegible] appointed House-Surgeon to the Northern Infirmary, Inver[illegible] [illegible] G. Stibbald, M.B., C.M.

WAL[illegible] F. M[illegible] Senior Demonstrator of Physiology at Owens College [illegible] [illegible] nted Lecturer on Physiology in University College, [illegible].

WARE, Dr. H. R. W., appointed Medical Officer for the Fifth District of the Henstead Union.

WATSON, C. Gordon, M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant House-Surgeon to the Norfolk and Norwich Hospital for six months.

WHITAKER, E. T., M.B., Ch.M., B.Sc., F.C.S., D.P.H., appointed Medical [illegible] of Health to the Oakengates Urban District Council.

WHITE, Sinclair, M.D.R.U.I., M.Ch., D.P.H.Camb., appointed Surgeon to the Sheffield Infirmary, *vice* G. H. Shaw, M.R.C.S.Eng., deceased.

WIGHAM, W. H., M.B.Durh., M.R.C.S.Eng., reappointed Medical Officer of Health to the South Molton Town Council.

WILLIS, Arthur, M.R.C.S.Eng., appointed Medical Officer for the Sixth District of the Newmarket Union.

WOODS, H. H., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer for the Fourth District of the Lymington Union.

WRAY, Charles, F.R.C.S.Eng., appointed Ophthalmic Surgeon to the Croydon School Board.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

HILL.—On June 21st, the wife of William Hill, M.D.Lond., of 28, Weymouth Street, of a son. The infant survived only one day, and was cremated at Woking on June 25th.

STALKARTT.—On June 12th, at Braemar, Barbados, W.I., the wife of Surgeon-Captain C. E. Grey Stalkartt, M.D., Army Medical Staff, of a son.

WHITE.—On July 3rd, at Chester House, Norwich, the wife of Richard Wentworth White, of a daughter.

WILLIAMSON.—At Larnaca, Cyprus, on June 24th, the wife of George A. Williamson, M.B., C.M., District Medical Officer, of a daughter.

MARRIAGES.

HUTTON—DUN.—At St. Mary's Cathedral, Edinburgh, on Tuesday, the 5th inst., by the Rev. James Dun, Vicar of Higham Ferrers and Rural Dean, assisted by the Rev. Alfred Griffiths, David Mount Hutton, F.Sc., M.B., C.M., Southport, to Isabel Stirling, third daughter of the late Finlay Dun, of Gorgie House, Edinburgh.

KENT—PARSONS.—On June 27th, at St. James's, Kidbrook, by the Reverend J. C. Leeke, Rector and Rural Dean, assisted by the Revd. F. B. Colchester, Sydney Kent, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., son of the late William Kent, of Johndaryan, Queensland, to Katharine Louisa Maud Parsons, fifth daughter of the late Perceval M. Parsons, M.I.C.E., of Melbourne House, Blackheath, Kent. Australian papers please copy.

MURRAY—WILLS.—On July 6th, at St. Mary Abbots, Kensington, by the Rev. Canon Ainger, Master of the Temple, assisted by the Rev. Canon Pennefather, John Murray, F.R.C.S., 133, Harley Street, son of the late John Murray, Esq., of Monkstown, co. Dublin, to Bertha Marion, youngest daughter of the Honble. Mr. Justice Wills, 7, Chelsea Court, S.W.

PROUDFOOT—BARINGTON.—At the Parish Church, Northam, North Devon, on June 18th, by the Rev. M. D. Dimond-Churchward, M.A., Vicar, Frank G. Proudfoot, M.A., M.B., and C.M., Oxford, to Alice Catherine, daughter of the late Lieut.-General Babington, Madras Staff Corps.

SCOTT-RIDDELL—GORDON.—In the Free Church of Tain, Ross-shire, on June 30th, by the Rev. Evan Grant, F.C., Nigg, assisted by the Rev. Thomas Grant, F.C., Tain, J. Scott-Riddell, M.A., M.B., C.M., Aberdeen, to Jane Grindley, second daughter of John Gordon, Esq., residing at Cullisse, Ross-shire. At home, 415, Union Street, Aberdeen, August 17th, 18th, and 19th.

WALKER—WILKINSON.—On July 1st, at Columbus, Pont Street, Chelsea, by the Rev. S. Macleod, George Walker, M.R.C.S., L.R.C.P., of Hill Road, Wimbledon, eldest surviving son of George Walker, Woodside, Wimbledon, to Mary Elizabeth, eldest daughter of the late Lieut.-Colonel John Wilkinson (late 80th Regiment, and for many years Commanding Officer of the London Division of the Corps of Commissionaires), 12, Penbridge Villas, Southfields, S.W. No cards. At home, July 22nd and 23rd.

DEATHS.

CASE.—At Folkestone, on June 15th, Henry Case, M.R.C.S., L.S.A., late Medical Superintendent, Metropolitan District Asylum, Leavesden, and formerly Lecturer on Psychological Medicine, Middlesex Hospital.

SMITH.—On June 26th, at Alcester, Warwickshire, Thomas Lant Smith, L.R.C.P., M.R.C.S., aged 91 years.

THOMAS.—On the 4th inst., at Alexandria, Egypt, of enteric fever, Howard Rawson, fourth son of William Thomas, F.R.C.S., of Birmingham, aged 22.

DIARY FOR NEXT WEEK.

TUESDAY.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, 4.30 P.M.—Dr. Fletcher Beach: On Mental Disorders in Children.

City Orthopædic Hospital, 5.30 P.M. Lecture by Mr. J. Jackson Clarke: Deformities caused by Badly-shaped Boots.

National Hospital for the Paralysed and Epileptic, 3.30 P.M.—Lecture by Dr. Colman.

WEDNESDAY.

West London Post-Graduate Course, West London Hospital, Hammersmith Road, W., 5 P.M.—Dr. P. S. Abraham: Dermatological Cases.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 8.15 P.M.—Clinical Meeting.

Laryngological Society of London, 20, Hanover Square, 8 P.M.—Special Meeting to discuss whether (1) it is desirable (1) to limit the membership of the Society; (2) to alter the days of meeting.

THURSDAY.

British Gynæcological Society, 8.30 P.M.—Adjourned discussion on Mr. Skene Keith and Dr. Bantock's papers on Dysmenorrhœa. Mr. Bowreman Jessett will show Specimens. The President. Two unusually interesting cases of Ovarian Cystoma, with Specimens, Mr. Christopher Martin (Birmingham): Some Moot points in the After-treatment of Cases of Abdominal Section.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M. Dr. Dickinson: Demonstration of Selected Cases.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 3.

CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Th. S., 2; Tu. F., 5. *Operations*.—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances*.—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Tu., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Tu. F.

GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.

KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 11.30. *Operations*.—W. Th. F., 2.

LONDON. *Attendances*.—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.

LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.

METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W. S., 9.30. *Operations*.—Tu. F., 9.

NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*.—Tu., 2.30.

ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.

ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances*.—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Tu. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances*.—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.

ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Tu., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.

WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429 Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

"ECZEMA" OF THE LIPS.

G. J. W. asks for advice in the treatment of a case in which there has been persistent exfoliation (eczema?) of the epidermis of the pink portion of the lips for about nine months. It has resisted resorcin, liq. picis alcoholic. and ichthyol, with iron and arsenic internally.

INSURANCE AGAINST TWINS.

A. S. has a patient who wishes to insure against the event of having a multiple birth, and desires to hear of a safe office which would undertake this risk.

*** We are informed that most offices would undertake the risk; among others the Rock, 15, New Bridge Street, will do so.

ANSWERS.

J. I.—The name of the gentleman referred to appears in the *Medical Register* for 1898.

ANONYMOUS.—We are obliged for our correspondent's expression of opinion, which has been duly noted.

O. G.—It is not illegal for a nurse to attend labour cases independently of a medical man.

R. A. F.—It is a secret process conducted as a commercial enterprise. It is alleged by the proprietary to cure nearly every case, in the usual style of such undertakings.

PRACTITIONER.—*The Theory and Practice of Hygiene*, by Notter and Firth, is published by Messrs. J. and A. Churchill, 7, Great Marlborough Street, London, W., at 24s.; and *Wounds in War*, by Surgeon-Colonel Stevenson, is published by Messrs. Longmans, Green and Co., Paternoster Row, London, E.C., at 18s.

M. A. CANT., M.B.—(1) The only means at present available in London for instruction in Chinese is by attending the classes of Professor Douglas at King's College. His *Chinese Manual* (W. H. Allen and Co.) is suitable for elementary instruction, but without teaching it would be very difficult to make any progress. (2) The following works afford practical information on the use of the Roentgen rays: *The Induction Coil in Practical Work*, by Lewis Wright. (London: Macmillan and Co. 4s. 6d.) *The Roentgen Rays in Medical Work*, by David Walsh, M.D. (London: Baillière, Tindall, and Cox. 6s.).

THE HISTORY OF ANTISEPTIC SURGERY.

E. M. S.—The literature relating simply to the history of antiseptic surgery is at the present time very scanty. The following will be found amongst the best works for reference on this subject: Cheyne's *Antiseptic Surgery*. 1882. Pp. 290 to 365. Hare's *System of Practical Therapeutics*, vol. i. p. 599. *Traité de Chirurgie*, edited by Le Dentu and Delbet, vol. i., p. 37. Lucas-Championnière, *Chirurgie Aseptique*, 1876. A brief history of antiseptic surgery in German practice will be found in the first volume of the American translation of Tillmanns's *Surgery*, published by Kimpton. A good deal of information on the subject will be found in the articles on Surgery, Obstetrics, Gynæcological Surgery, and Ophthalmology in the Queen's Commemoration Number of the BRITISH MEDICAL JOURNAL, June 19th, 1897.

LUMBAGO.

DR. J. E. POLLOCK (Upper Brook Street, W.) writes, in reply to "Alpha's" question—how to treat a patient who has had all the customary treatment for lumbago, but remains with pains on movement and motor difficulty but (presumably) without fever: Some years ago a patient in a similar state consulted an old practitioner who had spent his life in studying men as well as cases, and his advice was: "Mount a horse and ride him." "Impossible!" said the patient. "Try," said the doctor. He did so, and gradually got well. In truth there comes a period when motor inability through fear of pain must be overcome by the will. The nerves and the muscles they supply, which have been long lying idle, must be compelled to work. With resumed activity will come resumption of power; the nerve will again transmit force, and the muscles, half wasted, resume their functions. I have gone through a similar experience myself and come out whole. Many a patient requires the old doctor's prescription—"Try."

PHILA, in answer to "Alpha's" query, recommends the following prescription: Ammon. chlorid. gr.x; tr. cimicifugæ mxv; succ. conii 5j; aq. menth. pip. ad 3j; t. d. s. He would also apply an icebag to the affected part at bedtime.

NOTES, LETTERS, Etc.

WE have received a communication from "E. J. D. M." practising in the neighbourhood in which "R. T. W.," to whom a reply was published in the BRITISH MEDICAL JOURNAL of June 11th, page 1567, resides.

"E. J. D. M." states that he is the person to whom "R. T. W." referred and he repudiates the fact that any conduct on his part could have given rise to the conclusion which he alleges might be drawn from the reply in question. We willingly give publicity to this repudiation, and take the opportunity of stating that our reply was not intended to have any individual application.

CASTOR OIL.

DR. WILLIAM SYKES, M.D., F.S.A. (Gosport), writes: Henry Morley, as correctly quoted by Dr. Stewart in the BRITISH MEDICAL JOURNAL of June 18th, is incorrect, or rather may be incorrectly understood, in saying that "Machiavelli ..... increased his ailment by an overdose of castor-oil, a medicine then in particular repute, and died two days afterwards, June 22nd, 1527." Castor-oil—our oleum ricini—was not used medicin-

ally until over two centuries after the death of Machiavelli. The only oil of the name he could have taken must have been an oil of castor—from the animal product castor, a drug much in use during the seventeenth century—and also probably during the sixteenth century; in fact, Littré has a quotation from Ambroise Paré, dated about 1550, speaking of this "Huile de castor." But this product of the beaver has no connection whatever with our castor-oil, nor should it be so translated. It was probably perfectly harmless, and quite incapable of killing Machiavelli or anyone else. Castor oil in the modern and usually understood sense, was introduced into practice in 1746 by Dr. Peter Canvane, of Bath, in a treatise entitled, "Dissertation on the Oleum Palmum Christi.....commonly called Castor Oil." Whence the name castor oil, for the oleum ricini, is doubtful; but the probable explanation is to be found in the original name of its parent plant, "Palma Christi." "Christi Oil" being easily distorted into "castor oil," when the one drug became as popular as the other in everyday practice—especially in obstetric practice. We find in Giffard's *Cases of Midwifery* (London, 1734), the animal castor, in the form of a tincture frequently prescribed by that clever practitioner, while we know that in the intelligent practice of those midwives (whom an enlightened General Medical Council and Legislature are about to legalise) a precedent and following dose of castor oil is a fetish universally worshipped by exhibition in all cases of labour. It is probably to the ancestresses of these we owe the distortion of the name of the later drug. (See *New English Dictionary.* Oxford: Clarendon Press.: v.s Castor and Castor Oil.)

AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE JAMES McGREGOR LAING.

DR. J. PICKETT (Treasurer) (26, Colville Square, London, W.) and Dr. Reginald Hartley (68, Porchester Terrace, W.) (Secretary) write: We have received on behalf of the fund for the widow of the late Dr. Laing the following subscriptions, which we desire most thankfully to acknowledge:

	£	s.	d.
Sir Thomas Smith, Bart. (London)	3	3	0
Mr. Chas. A. Ballance, F.R.C.S.Eng. (London)	2	2	0
Dr. Thos. Kilner Clarke (Huddersfield)	3	3	0
Dr Frederick Needham (London)	2	0	0
K. W. M. (Taunton)	1	0	0
Mr. Victor G. L. Fielden (Belfast)	0	10	0
Dr. and Mrs. Scott (Shanklin)	0	10	6
A. G. P.	10	0	0
R. O.	1	1	0
Dr. Oscar C. D. Wolf (London)	1	1	0
Dr. W. Philip Brabazon (Lymm, Warrington)	2	2	0
Dr. H. W. Beedham (Norwich)	0	10	0
Mr. Geo. N. Dunn (Penarth)	0	7	6
Mr. Charles Terry (Bath)	2	2	0
Dr. W. G. Martin (Walkden, Bolton)	1	1	0
Anonymous (Sidcup)	0	2	0
X.	2	2	0
Mr. Geo. Everitt Norton (London)	1	1	0
Dr. C. R. Walker (Eastbourne)	1	1	0
Anonymous (H.M. ship *Vernon*)	0	10	0
Mr. S. Ryan (Sheffield)	0	10	0
Mr. Hanson Walker (London)	1	1	0
Anonymous (St. Andrews)	1	0	0
Anonymous	5	0	0
M. N. (Waterford)	1	0	0
Widow of a Poor F.R.C.S.	1	0	0
Mr. Ernest Hague, per Dr. Ryan (Castle Dyke, Sheffield)	5	0	0
Dr. Frederick Spicer (London)	0	10	6
Mr. R. W. Boodle (Sittingbourne)	0	5	0
Mr. Edgcombe Venning (London)	1	1	0
Dr. Charles Steele (Clifton)	1	1	0
Mr. D. Mackechnie (West Hartlepool)	0	10	0
A Trifle from a Medical Matron (Shrewsbury)	0	5	0
Dr. James Ritchie (Edinburgh)	5	0	0
Dr. J. Pickett (London)	2	2	0
Dr. Reginald Hartley (London)	2	2	0
Rahere Lodge, No. 2546, per Dr. C. Godson	2	2	0
Mr. Jno. F. Parr (Sheffield)	0	10	0
Mr. Samuel Evans (Dovercourt)	0	10	0
Dr. W. Collier (Oxford)	1	1	0
Esculapius Lodge, No. 2410, per Dr. Thomas	2	2	0
Miss Spooner	0	2	6
Mr. and Mrs. St. John Bullen (Clifton)	0	10	0
Mr. W. F. Brooks (Fareham)	0	10	0

ANTIVACCINATING "DOCTORS."

It is rare to find a medical opponent of vaccination, but the *Accrington Observer* recently contained a long letter against vaccination by a writer to whom the letters M.D. were appended. The letter was a copy of one which had been sent to the local M.P., Sir Joseph Leese, Bt. Vaccination, it declared, "neither prevents nor mitigates smallpox, and suppose it did, that would be a greater evil than its failure, for it would retain the disease inside and thus cause death." Further, the writer says: "But under any reasonable circumstances this much-dreaded disease need not either prove fatal or the patient be disfigured. My own mother had a very marked case has to occur yet, and when I hear of other cases I have no alternative than to attribute it to maltreatment or neglect." After explaining that "we cannot err in abrogating the vaccination laws from our statute books, and allow every parent to judge for themselves," the writer goes on to say, "This new calf lymph fad is another delusion designed to prop up a little longer the 'broken calf' which gives to the medical profession and the Local Government Board vaccination staff the nice little perquisite of a large slice of our rates and taxes. Is it likely that a lot of well-to-do men will allow such a lucrative hobby to slip through for the want of effort to retain it as long as possible?" The whole is pure stuff. The name of the writer is not to be found in the Register, and on inquiry it turns out that he was struck off the list of Apothecaries for unqualified medical practice, on appeal to the Court of Queen's Bench, on the full penalty of £20 and costs. The Anti-Vaccination League recently acknowledges a subscription from a man whom it styles "Dr." The name, however, is not now to be found on the *Register*, though it once was there. In another journal friendly to antivaccination, we find an advertisement by the same "Dr.," in which he offers advice "on family limitations, etc.," and "A Book for Ladies, post free, 1s. 2d." The League should be proud of such medical supporters.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. R. B. Anderson, London; Alpha; Dr. J. O. Affleck, Edinburgh; Professor T. Annandale, Edinburgh. **B** Messrs. Brown, Brothers, and Co., Glasgow; Dr. G. T. Beatson, Glasgow; Mr. W. M. Beaumont, Bath; Mr. L. A. Bidwell, London; Dr. F. Beach, Kingston Hill; Dr. J. Bell, Edinburgh; W. Balgarnie, M.B., Winchfield. **C** Chelsea Pensioner; Dr. G. W. Crowe, Worcester; Messrs. William Clowes and Sons, London; Mr. F. R. S. Cosens, Oakham; Messrs. A. Constable and Co., London; S. M. Cox, M.B., Dundalk; Cascara; Dr. F. M. Crandall, New York; Mr. W. B. Cockill, Kendal; F. J. H. Coutts, M.B., Manchester; C. A. A. **D** W. C. Devereux, M.B., Tewkesbury; Dr. W. Donovan, Erdington; Mr. F. E. H. Daunt, London; Dr. T. Dutton, London; Dr. J. Duncan, Edinburgh. **E** Messrs. Eyre and Spottiswoode, London. **F** W. F. Farquharson, M.B., Carlisle; E. R. Fothergill, M.B., Cullercoates; Mr F. C. FitzGerald, Hanley. **G** A. E. L. Gray, M.B., Aberdeen; Miss M. S. Greene, Winchester; Dr. J. Galloway, London; Dr. W. H. Gregory, Beverley; Mr. W. Gosse, Sittingbourne. **H** Dr. R. Hartley, London; A. C. Hovenden, M.B., Surbiton; Dr. W. Habgood, Marple; Messrs. C. J. Hewlett and Son, London; Dr. F. de H. Hall, London; Mr. R. H. Hayes, London; Mr. W. Hill, London. **I** Mr. J. Iredale, Mablethorpe. **J** Dr. J. H. Joy, Tamworth. **K** Dr. R. Kirk, Glasgow; Dr. H. A. Kelly, Baltimore. **L** H. Lund, M.B., Manchester; Mr. S. G. Longworth, Melton; Dr. T. Langston, London; Mr. R. M. Littler, Southport; Mr. R. R. Leeper, Rathdrum; Lady Dispenser; L.R.C.P.E. **M** Dr. R. L. Meade-King, Taunton; Dr. H. C. Major, Bradford; Dr. K. W. Millican, New York; Dr. R. B. McVittie, Dublin; Dr. C. Muirhead, Edinburgh; E. J. D. Mitchell, M.B., Eltham; Mr. R. Martin, Gilford; M.B.M.A.; M.A., M.D.; Mr. J. H. S. May, Plymouth; M.A Cantab., M.B.; M.D. (Glasg. Univ.); Member; Dr. J. A. Macdonald, Taunton; W. MacLennan, M.B., Glasgow; Mr. R. Maples, Newbury; G. V. Miller, M.B., Stockton-on-Tees. **N** T. Neill, M.B., Dublin. **O** O. G. **P** Practitioner of over Ten Years' Standing; Practitioner; Mr. G. A. Phillips, Walsall; J. E. Purdy, M.B., Hutt, N.Z.; Dr. G. C. S. Perkins, London; Principiis Obsta; Mr. J. Poland, London; Mr. C. Pound, Odiham; Dr. O. Pritchard, London; Mr. R. D. Pennefather, London: W. Petter, M.B., Darlington; Dr. J. Phillips, London. **R** W. Ramsden, M.B., Oxford; Mr. E. Ransom, London; Mr. W. Reeve, London; Mrs. F. Rye, London; Dr. W. Renner, Freetown, Sierra Leone. **S** Surgeon-Lieutenant; Mr. G. M. Smith, Clifton; Messrs. W. Somerville's Sons, Liverpool; Miss S. Stratford-Malone, London; Dr. W. W. Stoney, Kimberley, S.A.; Mr. H. H. Smith, Stourbridge; Dr. H. Scurfield, Sunderland; Dr. T. D. Savill, London; Dr. F. J. Smith, London; Dr. J. H. Stevens, Boston, U.S.A.; A. Sheppard, M.B., London; Dr. A. Spearing, Oldham; Mr. E. A. T. Steele, Southend-on-Sea; Mr. F. Scott, Manchester; H. O. Sharp, M.B., Truro. **T** Dr. H. C. Thomson, London; Dr. S. Tidey, Maloja; Dr. H. Tilley, London; Dr. StClair Thomson, London; Mr. W. N. Twelvetrees, London. **W** Dr. F. J. Waldo, London; Mr. A. T. Wooldridge, Camberley; Mr. C. W. Williams, Smallburgh; Dr. W. H. White, London; Mr. G. F. Wilson, London; Messrs. Wallach Brothers, London; Mr. J. C. Walker, St. Austell; Dr. A. McC. Weir, East Sheen; Dr. G. E. Williamson, Newcastle-on-Tyne; Mr. B. J. E. Wright, Overton; Mr. F. H. Westmacott, Manchester; etc.

BOOKS, ETC., RECEIVED.

Penelope's Experiences in Scotland. By Kate D. Wiggin. London: Gay and Bird. 1898. 6s.

The Development of the Child. By N. Oppenheim. New York: The Macmillan Company. 1898. 5s.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D., F.R.C.P. Third Edition. London: J. and A. Churchill. 1898. 7s. 6d.

A Report on Vaccination and its Results, based on the Evidence taken by the Royal Commission during the Years 1889-1897. Vol. I. London: The New Sydenham Society. 1898.

Die Kamerun-Küste. Von Dr. F. Plehn. Berlin: August Hirschwald. 1898. M.10.

Die Functionsstörungen des Grosshirnes. Von Dr. A. Adamkiewicz. Hanover: A. W. Kolliner. 1898.

The Doctrine of Energy. By B. L. L. London: Kegan Paul, Trench, Trübner, and Co. 1898.

The Mineral Waters and Health Resorts of Europe, being a Revised and Enlarged Edition of The Spas and Mineral Waters of Europe. By Hermann Weber, M.D., F.R.C.P., and F. Parkes Weber, M.D., F.R.C.P. London: Smith, Elder, and Co. 1898. 10s. 6d.

The Chemist's Compendium. By C. J. S. Thomson. Second Edition. London: Whittaker and Co. 1898. 8s. 6d.

Mechanical Practice in Dentistry. By William Booth Pearsall, F.R.C.S. London: Claudius Ash and Sons. 1898.

La Cura Dietetica nella Febbre Tifoide. Studio clinico e Ricerche sperimentali del Professor G. B. Queirolo. Milan: Francesco Vallardi. L.3.

Untersuchungen über den Leprabacillus und über die Histologie der Lepra. Von Dr. V. Babes. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1898. 8s.

Mittheilungen aus der gynaekologische Klinik des Professor O. Engström Band II, Heft I. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1898. 4s.

Beiträge zur Pathologie und pathologischen Anatomie des Centralnervensystems. Von Dr A. Pick. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1898. 12s.

Lehrbuch der Nervenkrankheiten. Von Dr. H. Oppenheim. Zweite Auflage. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1898. 23s.

Leitfaden zur klinischen Untersuchung des Blutes. Von Dr. C. S. Engel. Berlin: A. Hirschwald. 1898. M.3.60.

Twenty-Two Years' Experience in the Treatment of Cancerous and other Tumours. By Herbert Snow, M.D. London: Baillière, Tindall and Cox. 1898. 5s.

A Manual for Students of Massage. By M. A. Ellison, L.O.S. London: Baillière, Tindall and Cox. 1898. 3s. 6d.

Untersuchungen über den Bau der Nervenzellen. Von Dr. A. Bühler. Würzburg: Konigl. Hof. und Universitäts-Verlag. 1898.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

AN ADDRESS

ON THE

PUBLIC DUTIES OF THE DOCTOR AND HIS RELATIONS TO THE STATE.

Delivered at the Annual Meeting of the Metropolitan Counties Branch of the British Medical Association.

BY ROBERT FARQUHARSON, M.D., M.P.,

President of the Branch and Chairman of the Parliamentary Bills Committee.

SOME are born to greatness; but heredity can have nothing to do with my appearance in this chair, for I am not even a London student, and had no connection with any metropolitan hospital or school till St. Mary's folded me in her maternal embrace; and I can hardly flatter myself that I have achieved greatness, for looking along the lines of my past life, with no tendency to self-depreciation, I cannot see in anything that I have said or done a complete justification for your great kindness in placing me where I am. Well, I suppose it comes to this, that I have had greatness thrust upon me. I don't much care about the phrase in this particular connection, except as expressing the undoubted fact that this high honour has come in my way unexpectedly, almost suddenly, but with an amount of friendly cordiality that renders it all the more acceptable; and in extenuation of my claim to succeed the long procession of distinguished presidents who have marched past the chair before me, I may plead my long-standing official connection with the Branch. Little did I think when I accepted the post of Secretary at a date too remote for the operations of memory, that I had even then the baton of the field-marshal in my knapsack. What I do remember is the genial letter written by Dr. Patrick Stewart, asking me to become his successor, and the many acts of public and private kindness for which I shall hold his memory in grateful remembrance.

If I wished to improve this occasion, which is far from my intention, I suppose I ought to lament that a man of such varied gifts and accomplishments as our lamented friend did not make more of his life. But those who knew him well, as I did, will not sympathise with reflections of that narrow kind. Dr. Stewart deliberately worked out the scheme of existence which best suited a man of his placid temperament. Endowed with an easy temper, easy means, social instincts, and an unusually wide circle of friends, he let practice come to him, instead of pursuing it in feverish haste, and preferred his quiet backwater in Grosvenor Street to the hurry and bustle of a fashionable consultant's career, and now that he is no longer with us he has left behind him at least one solid bit of epoch-making work, and the still abiding charm of a singularly loveable personality which he managed to preserve to the end, fresh and unsullied by the world.

My colleague in the secretariat was another remarkable man. Quiet almost to timidity, and retiring to a fault, Dr. Henry's great learning and industry were well known to us all, and he too will not readily disappear from the field of recollection.

I am now looking forward to an easy and pleasant year of office, for I know how smoothly the wheels slip round when oiled by the experience and industry of our trusted staff. But I am bound to say that the responsibility of preparing this address—brief though it is—has weighed upon me, for it is rather difficult to know exactly what line to take. It is now nineteen years since I left medical work to feel the pulse of the nation, and attend to the integrity of the British Constitution, and I have no claim to address you on things which you know much better than I do. As a diligent student of the BRITISH MEDICAL JOURNAL, I try to keep up with modern progress, but the process is rather difficult, and I often find myself panting painfully in the rear. New diseases have appeared on the scene; new words, with deep and difficult classical roots, have been coined, and the all-prevailing bacillus has come, I fear, to stay, and to overturn all the notions of our old-fashioned pathology. So I must talk to you for a few minutes about public affairs, the relations of medicine to the State, and of us to it, of the influence we have or might have, and the value of a great Association like this in binding us together into that compact harmonious whole without which we can accomplish nothing.

I am very glad to see that our great corporations and the General Medical Council are beginning to press forward in public life, and that they are now being consulted by State departments in matters of hygiene and social legislation. To our medical parliament has been entrusted the duty of framing regulations for the construction of a Midwives Bill. The College of Physicians spoke out with good effect on the subject of the terrible ravages of syphilis in India, and I understand that the vague and mysterious body which attracts some awe-stricken attention under the name of the Privy Council is in occasional communication with our professional leaders. The Local Government Board ought to be the head centre of everything that concerns public health, but it is underpaid and undermanned, and its usefulness is seriously hindered by the comparatively subordinate position which it holds—and why the Home Office, which regulates little more than law and order and factory legislation, should have a full-blown Secretary of State at its head, whilst the bureau to which is confided all our sanitary legislation, all water questions, and the whole of local government should merely rank alongside the Board of Agriculture, and Dover House is an anomaly which fairly defeats my limited powers of comprehension. But as this very important question is to be fully dealt with by Sir T. Grainger Stewart in his Presidential Address at Edinburgh, I shall say nothing more about it at present.

Now, with all due and proper respect for the compact bodies of learned and eminent people sitting with dignity in Lincoln's Inn Fields, and Oxford Street, and Trafalgar Square, I must put in a claim for our noble selves as providing the most useful and practical machinery for organisation and educative influence and agitation when that is needed. Our constitution is broad and democratic; we appeal to a wide constituency, and we have planted in every corner of the United Kingdom centres of light and leading, which should illuminate, and instruct, and convince. Out of the 35,000 medical men in these islands nearly 18,000 belong to the Association, and our Branches spread and ramify everywhere, from Caithness to India. What an organisation this is for concentrating and co-ordinating the great body of force and influence which we might and do possess! I do not like test questions, but we can all operate on the somewhat pliable minds of public men, and persuade them that we are not working for mere power or personal self-interest, but that with self-sacrificing self-denial we are actually cutting away by our sanitary and hygienic legislation our best sources of revenue. By our organised pressure we can educate the public mind, and force the questions in which we as custodians of public health are specially interested well to the front, and give them a chance of being picked out from among their competing rivals for early consideration and treatment; and then each of us can do something in the way of missionary enterprise. For, unhappily, there is much to be done. Quackery is still rampant among us, and smart people and "society ladies" delight in irregular practices of all kinds.

From the Peculiar People to the nebulous metaphysics of the Christian Scientists and their appeals to the mesmeric hysteria of the weak and credulous is not a very long step, and cures and secret remedies still deplete the purses of those curious types of twisted intellects which our higher education seems to produce. And then we have the varied developments of what Sir Wm. Priestley has well called the "anti-mind" and that most cruel type of vivisector who operates on the sensitive centres of scientific men, and accuses them with a light heart of the most diabolical cruelties, and of a special hardening of the moral sense as a natural consequence—the class of person who will sign a petition against the Institute of Preventive Medicine to-day and to-morrow take part in that pitiful travesty of sport which mangles and maims unhappy pigeons at Hurlingham and the Gun Club. But in order that we can more effectually carry out our crusade and permeate the public mind effectually with our views, it is above all things necessary that we should take some part in public life, even at the cost of a little personal and pecuniary sacrifice. It is an excellent thing to have a crack with the farmer in the market place, and the goodwife in the kitchen, and the shopkeeper behind his

counter, and tell them that good water is worth paying for, that drainage and ventilation are wholesome things, and how epidemics may be stamped out; but we must go further, and become members of school boards and county councils, and more especially Boards of Guardians, where we can keep the antivaccinators in order; and then I should like to see more of us entering the House of Commons. Look at the bright example of Sir Walter Foster, and the good work he has done, and see how Sir William Priestley is following his footsteps, and then say whether that is not a career of which any man might well be proud.

And now that we are considering the relations of ourselves and our profession to public life, does not the name of Ernest Hart come back to us with irresistible force? No man in my time or in my recollection did more or so much to knit the ravelled threads of our scattered profession into a firm and compact web, and form the great organisation which is now ready to be set in motion at any time with its Council and its Parliamentary Bills Committee, and annual meeting, stirring up enthusiasm and quickening us all into vigorous life of thought and action. And few of us can have failed to be stimulated by his own unique personality, by his quickness and shrewdness, and sagacity and knowledge, and, above all, by the bulldog-like tenacity with which he kept his grip until he carried his point. And, speaking personally, I am grateful to him for much kindness and sympathy and loyal and true friendship, and I deeply regret that the short-sighted prejudice of our political rulers should have allowed such a man to pass away without some tangible proof of a nation's gratitude.

There has lately been, I am glad to say, much more interest taken in the House of Commons in matters medical. This is partly due, I think, to our friend Foster, who loses no opportunity of impressing his sensible and statesmanlike views on his colleagues, but also in some degree to help and encouragement given from rather an unexpected quarter. John Burns is much interested in our questions, and knows a great deal about them, and he and Davitt combined to gain a very substantial victory for the profession on the Prisons Bill before the Grand Committee by carrying triumphantly against the opposition of the Home Secretary an amendment to the effect that a doctor should be a member of the Prisons Board. My own impression is that a good deal of exaggeration and heated feeling has been imported into the debates on the treatment of our criminals; and I cannot believe that the officials of this great department entered into a conspiracy —for it would really amount to that—to starve, ill-treat, and generally depress and annoy the unhappy victims of the law. But none the less do I think that what has been said, if not always characterised by that judicial calmness which weighs facts and checks rash inferences, will clear the air and open the road to useful reforms; and the appointment endorsed in the Committee room by a large majority would undoubtedly have tended to introduce more elasticity and individuality into our prison system, and an increased infusion of the humanising element, which adds hope of reformation to the harsh and dreary punitive and deterrent aspect of prison life.

Unhappily a party vote from the green benches defeated the good intentions of the Grand Committee upstairs, and we have now to trust to the good sense and humanity of the Home Secretary, in the expectation that although not compelled to take the line of most resistance to the working of the official mind, he may devise some means of satisfying the progressive views entertained by the best authorities who have approached the subject unfettered by the suspicion and possible prejudice of his advisers.

Seven years ago, I seconded in the House of Commons Mr. Ritchie's motion for a Royal Commission to inquire into vaccination, feeling, as I then stated, that more light would only illuminate the dark places where prejudice and ignorance sit enthroned, and that Jenner's great discovery would leave the court without a stain on its character. The gestation has been prolonged, the labour of the mountain has been difficult, and the resulting mouse has crept out in the shape of a feeble little Bill. But if glycerinated lymph carries out, as I have no doubt it will, its promises, and maintains its claim to kill all other germs but the vaccine, whilst enhancing and preserving its power, then the game of the antivaccinator is up, and we can present to the public a little operation performed antiseptically, free from any possible risk.

Much interest naturally attached to Sir Walter Foster's amendment, which he would have carried in the Grand Committee if his supporters had mustered in full strength. No one has a greater objection than I have to the conscientious objector, for he is usually a feather-headed person, stuffed with vague abstract views about personal liberty and State interference, and falling an easy prey to the sophistical arguments of the paid antivaccination official. I should like in the interest of the helpless rising generation to punish the dogmatic parent severely and repeatedly, and make his life a burden till he obeys the law. But it cannot be done. Boards of Guardians refuse to act, penalties are paid by associations, and in some of the large towns there is an absolute deadlock until an epidemic appears, when the most virulent antivaccinator is the first to come creeping into the vaccination station to claim the protection which the little operation affords. Sir Walter's amendment is simply the recommendation of the Royal Commission's interim report; it is a statesmanlike proposal, and I shall support it, if the course of the statutory declarer is not made too easy, and some provision for revaccination at school age can be obtained.

Now, just one word on army medical affairs. I hope that we now see a happy ending of our troubles, and that Lord Lansdowne's warrant will rank along with Lord Herbert's as the Magna Charta of the department. The deputation which waited upon the War Minister some years ago, headed by the ever-to-be-lamented Sir A. Clark, and attended by the cream of the medical profession, impressed Mr. Stanhope so much that he calculated its money value with his secretary, Mr. Fleetwood Wilson, and the conclusion they came to was that the personal pecuniary sacrifice involved in the attendance of so many eminent men at a busy time of day was very considerable. The result of that interview was the compound titles, and cumbrous as they were, I have always held, and the result has shown I was right, that by a process of evolution they would lead on to the granting of our full claim by familiarising the military mind with the idea of purely military titles conferred on army doctors, and now Lord Lansdowne has gone one better, and has given us the full Royal Corps, with complete titles within it; and whilst congratulating him here, as I have done elsewhere, on the pluck and sagacity which have enabled him to overcome the dead weight of Horse Guards' obstruction, I cannot avoid specially referring to the valuable help we got from other quarters. Sir Evelyn Wood and the Director-General worked well for the cause. Dr. Gordon's able report was specially commended by Lord Lansdowne, and I must not overlook our noble selves, for our deputation, so ably aided as it was by our President-elect, Sir T. Grainger Stewart, undoubtedly had something to do with the happy termination of our long and laborious struggle.

Now, gentlemen, I have detained you long enough from the convivial part of the evening, when the feast of reason and other things will be animated by the flow of soul and by the "beaded bubbles winking at the brim." It is no part of my business to talk politics, but in these days, in spite of county councils and local self-government, the House of Commons remains the legitimate court of appeal. Sixteen years ago Sir Walter Foster discoursed eloquently about the political powerlessness of the medical profession, and I fear that things are not a great deal better than they were then, except that he and Sir Wm. Priestley now sit on the green benches, and for the first time in the memory of man a registered medical practitioner, in the honoured person of Lord Lister, has entered the sacred enclosure of the "other place." What we have to do is, first, to learn our power and then to use it. Next, try to agree among ourselves, study unity and concentration, and fixing our eye steadily on broad "second reading" principles, stop worrying over small details until the Committee stage is reached. We have to work in the House by means of those of us who can enter its walls, and outside it by the pressure we can bear upon individual members, and in the end the 17,000 of our rank and file, well disciplined and efficiently led, must prove an irresistible force.

Many disappointments and much discouragement will be in store for us, but if we seem to get little recognition for our labours, we can console ourselves with the noble words

spoken by Lord Lister at Edinburgh: "I regard all worldly distinctions as nothing in comparison with the hope that I may have been the means of reducing in some degree the sum of human misery."

AN ADDRESS

ON THE

ADVANCEMENT OF PUBLIC HEALTH DURING THE LAST QUARTER OF A CENTURY.

Delivered at the Annual Meeting of the Lancashire and Cheshire Branch of the British Medical Association held in Wigan on June 28th.

BY WILLIAM BERRY, F.R.C.S.I., D.P.H.,

President of the Branch, and President of the Wigan Medical Society.

GENTLEMEN,—You have honoured me with the presidency of your Branch, for which I heartily thank you, and at the same time welcome you to this "ancient and loyal borough." I do so in my own name and in that of the Wigan Medical Society. To follow such men as have occupied the presidential chair during the last few years is no easy task, and, coming immediately after one who possesses so strongly the *fortiter in re* with the *suaviter in modo*, my courage fails me; but with your assistance, gentlemen, I trust I may leave the chair as unsullied and untarnished as I have found it. It is needless for me to say how conscious I am of the undeserved honour, and, if it had not been for the good will of my professional *confrères* in this good old town, I never should have held the estimable position of being President of one of the most important Branches of the British Medical Association, not only in England but in the world.

The first duty which devolves upon me, gentlemen, is to give an introductory address, and the difficulty of saying something new and delivering something original becomes greater every year. Medicine, surgery, and midwifery have each had their turn in introductory addresses, so that I have selected the subject of the Advancement of Public Health during the Last Quarter of a Century. I have done so designedly, for I had mapped out my address, in which I proposed to give the history of sanitary science during the last sixty years, when the golden Jubilee afforded an opportunity to many to forestall what I had been preparing to deliver to you at this meeting.

It occurred to me, however, that the real awakening in sanitary matters was in 1873, when numerous combined districts for sanitary purposes were established and all authorities were compelled to appoint a medical officer of health. It is since this time that the great advances have been made, and that public health has become a speciality, just like surgery, medicine, and midwifery, not to mention the other special branches of our profession.

Although public health has become an important branch of medicine, it took a long time before statesmen and the public could see that the prevention of disease was of far more importance than its cure. It is not a little remarkable how the rank and file of the profession have always loyally supported all measures for the prevention of disease, showing plainly that the profession of medicine is anything but a selfish one. I wonder if there is another profession which would diminish its scope of work and its income for the good of the public. I trow not; but our profession, gentlemen, has always placed its services for the good of the public without consideration of self-interest. The following extract from the *Lancet* of January 8th, 1848, p. 55, shows the usefulness of medical societies even in those days, as well as proves my assertion:

The Public Health at Hull.—Dr. Owen Daly, the Honorary Secretary to the "Hull Medical Sanitary Society," has enclosed to us a copy of a report just published by the Society on the sanitary state of the town of Hull. It is entitled, "A Report of the Sanitary Committee of the Medical Society of Hull on the Sanitary State of the Town, made the 20th November, 1847." From its contents we learn that "a medical society consisting of thirty-three members having recently been established in conformity with a requisition by circular addressed to every physician and surgeon in Hull, they appointed a Sanitary Committee with a view to ascertain the true state of the town, and to suggest such sanitary measures as might be called for." In order to make the report as effective as possible "it was determined to divide the town into districts, and gentlemen were appointed to visit and report upon each. These district reports were referred to a subcommittee and incorporated by them in a general report, which having been approved by the Society is now submitted to the public." The report is an excellent specimen of the industry, talent, scientific, and business-like accomplishments of the one-and-twenty medical gentlemen headed by Dr. Sandwith who have signed it. It does them great credit that unstimulated by any reward but the future pleasure of having done some good, they should have taken upon their shoulders and thus admirably executed this onerous task. We recommend the report as a model in instances where a good plan is wanted to be copied. It may be purchased and procured for twopence through the post at Bettison's, *Advertiser* Office, Hull.

Here, then, we have fifty years ago a number of practitioners forming themselves into a society and seeking to prevent disease; surely this is a true example of the profession existing for the public. I am not even sure whether their motives would be rightly appreciated; at all events, nowadays such a proceeding would be looked upon with suspicion, and base insinuations would be made as to there being some ulterior design in such action. However, a similar state of matters existed in other towns, so far as public health work was performed without fee or reward, for I find the following announcement in the *Lancet* of November 25th, 1848, p. 594:

SANITARY APPOINTMENT.—At a meeting of the guardians of the town of Cheltenham on Thursday, November 16th, it was unanimously agreed, on the recommendation of the Sanitary Committee, to appoint Philpot Brookes, Esq., M.D., and Frederick Hyett, Esq., Medical Inspectors of Nuisances for the town and fully carry out the Removal of Nuisances Bill in the town of Cheltenham.

I may add here that the Removal of Nuisances Bill was one of the early attempts at sanitary legislation, and caused some towns to appoint medical men as sanitary inspectors, and, like many good Bills, was ineffective on account of being permissive instead of compulsory. Piecemeal legislation went on from year to year up to 1872, when the Public Health Act of 1872 was passed. This Act was a marked advance on any previous legislation in sanitary matters, as it provided for the appointment of one sanitary authority in each part of England and Wales, whether it was a rural district or an urban town, and requiring such authorities to appoint a medical officer of health. The Local Government Board issued an order dated November 11th, 1872, defining his qualification, appointment, tenure of office, and duties, and also made provision for paying a quota of the salary of such officer, provided he was appointed subject to these regulations, and with their approval. This was not the first time that such an office had been instituted, for the Towns' Improvement Clauses Act of 1847, Section XII, enabled the Commissioners to appoint a person of skill and experience, who shall be styled "the officer of health, and whose duty it shall be to ascertain the existence of diseases within the limits of the special Act, especially epidemics and contagious diseases." This section was not a compulsory one, but stated the Commissioners *may* appoint, etc. It may here be stated that many authorities, by means of local Bills, obtained powers for sanitary purposes.

To Liverpool it would appear that the honour must be given of having obtained powers to appoint and salary a medical officer of health, and Dr. William Henry Duncan was the first to hold office in this country as a medical officer of health. In 1848 London followed, and Sir John Simon, K.C.B., had the honour of being appointed. The Royal Sanitary Commission of 1869-71, whose report was laid before Parliament in 1871, gave rise to the passing of two Acts—namely, the Act in that year which changed the Poor-law Board into the Local Government Board and the Public Health Act of 1872, which amended the constitution and powers of local authorities. It is from this period that real advance has been made in public health. The state of chaos in which the sanitary laws were at this time (1869) was first publicly pointedout by members of the medical profession, the leading voice being the late Mr. Henry Wyldbore Rumsey, F.R.C.S., and living at Cheltenham. He was a gentleman who had written for years on many subjects in State medicine, such as Health and Sickness of Town Populations, 1846; Essays on State Medicine, 1856; Sanitary Legislation and Administration, 1858. Sir John Simon states[1] that he believes it to have been at his instigation that steps which led to the appointment of the Royal Sanitary Commission were taken.

A joint Committee appointed by the British Medical Association and the Social Science Association "to promote a better administration of the laws relating to registration, medico-legal inquiries, and the improvements of the public health" memorialised the Government for the appointment of a Royal

Commission in relation to these objects. Mr. Rumsey prepared a memorandum which asked for

a thorough impartial and comprehensive inquiry by a Royal Commission having power to visit, or send subcommissioners to visit, the large towns and other districts of the country, to obtain information and evidence and to report on (1) The manner in which the cases and causes of sickness and of death are, and should be, inquired into and recorded in the United Kingdom: (2) the manner in which coroners' inquests and other medico-legal inquiries are, and ought to be, conducted, particularly in regard to the methods of taking scientific evidence: (3) the operation and administration of sanitary laws, with special reference to the manner in which scientific and medical advice and aid in the prevention of diseases are, and should be, afforded; and also with special reference to the extent of the areas or districts most convenient for sanitary and medico-legal purposes: (4) the sanitary organisation existing and required, including a complete account of the several authorities and officers, the education, selection, qualification, duties, powers, tenure, and remuneration of the said officers to be specially reported on: (5) the revision and consolidation of the sanitary laws, having special reference to the increase of the efficiency of their administration, both central and local.

In April, 1869, a Commission was appointed by Royal Warrant, with the Right Hon. C. B. Adderley as its Chairman, and the following as members: the Earl of Romney, the Earl of Ducie, Lord Robert Montague, M.P.; Right Hon. Russell Gurney, M.P.; the Right Hon. Stephen Cave, M.P.; Sir Thomas Watson, Bart., M.D.; Lieutenant-Colonel Brisbane Ewart, R.E.; Mr. John Robinson McClean, C.E., M.P.; Mr. Samuel Whitbread, M.P.; Mr. John Tomlinson Hibbert, M.P.; Mr. Evan Matthew Richards, M.P.; Mr. George Clive, Mr. Francis Sharp Powell, Mr. Benjamin Shaw, Mr. James Paget, F.R.C.S.; Dr. Henry Wentworth Acland, Dr. Robert Christison, Dr. William Stokes, Mr. John Lambert, and Mr. Francis Thomas Bircham. The Commission reported in 1871, and the general purport of the report was that "the present fragmentary and confused sanitary legislation should be consolidated," "that the administration of sanitary law should be made uniform, universal, and imperative throughout the kingdom," and that "all powers requisite for the health of towns and country should in every place be possessed by one responsible local authority kept in action and assisted by a superior authority."[2]

The scheme of the Royal Commissioners, as shadowed in their report, received almost unanimous approval. The Government of the day accepted it as a basis for legislation, for in 1871 was passed the Act which constituted the Local Government Board, and in 1872 the Act which amended the constiution and powers of local authorities, or, in other words, the Public Health Act of 1872, and in 1875 was passed the Public Health Act which consolidated the previous Acts, and which it had been chief object of the Commission to secure. The passing of the Act of 1872 led to the Local Government Board communicating with the authorities and to the framing of general orders with respect to the appointments and duties of the medical officer of health and inspector of nuisances, and offering to pay half the salaries in those cases in which the Board approved of the appointment: 1,104 out of 1,468 authorities had filled the appointments in 1873. Out of the 1,104 sanitary districts there were 35 large area combinations which debarred their respective officers from private practice; these 35 areas included 142 rural and 108 urban districts, and of uncombined districts there were 23 (16 urban and 7 rural), where the one authority had similarly appointed a "whole time" officer, but in the remaining 831 districts the appointed officers of health were persons continuing in private practice.

It was originally intended that the medical officer of health should have something added to his already knowledge of medicine, that he should be in fact a specialist in respect to his knowledge and skill in reference to the prevention of disease. This idea, however, failed to a great extent owing to many circumstances and some defects in the law, as well as the low estimate put on professional services by public bodies. The idea that the Poor-law medical officer should be, and was best fitted to be, the medical officer of health held good in many districts. The estimate put on public health services, according to Sir John Simon,[3] was, "It would appear, namely, that in some instances no payment was assigned, while in others the salary ranged down to £2 or £3 per annum; that out of 273 uncombined rural districts, for which the facts had been given, 81 had among them 360 health officers, with an average salary of £21 10s. for each officer; and that out of the 453 uncombined urban districts, for which the facts had been given, there were 250, or more than half, in which no salary exceeded £25, and in which the average salary was but £14 10s." It may, however, be said that from the passing of the Public Health Act of 1872, and the creation of these offices all over the country, an impulse was at once given to the progress of public health. The officers so appointed have, under much difficulty and stress of circumstance, slowly but surely made great strides in the advancement of public health.

In 1875 the Sale of Food and Drugs Act was passed, and the Consolidating Public Health Act, and Pollution of Rivers Act in 1876.

The University of Cambridge, seeing the necessity for special knowledge in public health work, instituted an examination in sanitary science in 1875, and granted a certificate. This after some time was followed by other universities and licensing bodies. Then, in 1888, the County Government Act, which caused the formation of our county councils, by Section xviii requires that after 1891 every medical officer of health for a county, or a county borough, or a town having a population of 50,000 or more, shall have a qualification in public health in addition to the qualification obtained under Section xxi of the Medical Act of 1886, with the exception of persons who have been medical officers of health for three years previously.

In 1889 the Notification of Infectious Diseases Act was passed, although at this time there were 50 local Acts in existence compelling notification. Since 1883 our knowledge of infectious diseases has very much increased. The important work of bacteriology has done more in improving our acquaintance with the history and progress of infectious diseases than any other method of study for the last half century. The discovery of the bacillus of cholera, of tuberculosis, and of typhoid have opened up fields of study and speculation which could never have been dreamt of before; what the ultimate effect on public health will be no one can foretell.

The improvement in our water supplies, milk and food supplies during the period is enormous; the disposal of sewage and the improvement which has taken place in the drainage and sewerage of our towns are now beginning to bring forth fruit in the diminution of our death-rate and the prolonging of the duration of human life.

In the Registrar-General's report for the last ten years Dr. Tatham gives the average duration of life for the male population as 43.7, and the female population 47.2. The improvements in the death-rate consequent upon the progress made in sanitation the following table well exemplifies:

Table showing the Deaths per 1,000 in Quinquennia.

Years.	Deaths per 1,000.	Years.	Deaths per 1,000.
1871-75	22.0	1886-90	18.9
1876-80	20.8	1891-95	18.7
1881-85	19.4		

Table showing the Yearly Average Death-rate per 1,000 from 1876 to 1895.—After W. R. Smith, F.R.S.Edin.

Year.	Rate.	Year.	Rate.
1876	20.9	1886	19.5
1877	20.3	1887	19.1
1878	21.6	1888	18.1
1879	20.7	1889	18.2
1880	20.5	1890	19.5
1881	18.9	1891	20.2
1882	19.6	1892	19.0
1883	19.6	1893	19.2
1884	19.7	1894	16.6
1885	19.2	1895	18.7

The difference between the average death-rate in these twenty years 1876-1895 and the average rate in the preceding thirty-eight years represents a saving of more than a million and a half lives during the latter period. Further, the reduction in mortality has been mainly below middle age, and is now most marked between the ages 5 and 20; over middle age the death-rates have actually increased.[4] Then again, the

marked improvement in the death-rates from zymotic diseases is shown in the following table:

Average Annual Death-rates per 1,000,000 from the various Zymotic Diseases.

	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric.	Simple.	Diarrhœa and Dysentery.
1871-80 ...	245	379	719	121	513	58	326	105	916
1881-90 ...	46	441	338	163	451	15	198	25	661
1891-95 ...	20	408	182	253	398	4	417	8	630

No place gives better evidence than our own town of a diminution in the general death-rate and a marked improvement in the zymotic rate, as the following table will show:

Table showing the Death-rate, Zymotic Death-rate, and Birth-rate of Wigan from 1874 to 1897 inclusive.

Year	Death-rate.	Zymotic Death-rate.	Birth-rate.
1874	37.0	10.1	47.4
1875	32.2	6.3	47.4
1876	28 5	4.9	48.9
1877	28.8	6.9	47.3
1878	29.4	5.1	47.9
1879	26.7	3.2	44.8
1880	30.4	7.5	44.5
1881	25.1	3.7	42.7
1882	25.6	4.1	43.1
1883	27.4	5.1	41.6
1884	27.7	6.9	40.9
1885	23.7	5.8	40.1
1886	22.1	3.1	38.7
1887	25.9	5.2	39.3
1888	22.1	2.7	39.5
1889	22.7	4.1	37.0
1890	26.5	4.6	38.5
1891	24.7	3.7	39.7
1892	24.4	3.8	42.0
1893	24.2	5.1	40.6
1894	18.9	3.2	37.1
1895	22.5	3.6	38.0
1896	23.0	4.0	35.9
1897	20.9	3.11	37.1

The science of bacteriology, especially during the past fifteen years, has wonderfully increased our knowledge of infectious diseases, and from its further development we must expect further progress. Although for years cells, germs, and vibriones had been recognised as micro-organisms which produced disease, it was not till "pure cultures" of bacteria could be made that real progress was made in the application of bacteriology to the causation and prevention of disease. The first pure cultures were those obtained by Salomonsen in 1876.

In 1878 Lord Lister announced his method by which he had been enabled to obtain pure cultures of any organism, with which he was working, in sterile broth, but it was Koch who in 1881 first published his plan, which is now the well known gelatine method, and which is superior to any other for convenience and readiness of application, especially for pathogenic organisms. As Dr. Sims Woodhead has so well said in his article on the Birth and Development of Bacteriology in the Jubilee number of the *Practitioner* in June, 1897, page 683:

> This question of isolation and pure cultivation soon placed bacteriology on a footing of accuracy and security that it had not hitherto attained, and to it must be ascribed the enormous advances that have been made in our knowledge of the causes of disease and of the means of prevention and cure obtained within recent years.

The chemist and the sanitary engineer have also contributed much in improvements during the last quarter of a century, and although we have not yet attained to what is desirable in our supplies of pure water, or in the disposal of our sewage and excremental matters, or in the destruction of refuse matters, yet much has been done in reference thereto during the last twenty-five years. The work that is being done in reference to the pollution of our rivers and streams would never have been dreamt of at that time, but now we have county councils watching with jealousy what shall and what shall not be admitted into them. Much, no doubt, yet remains to done before we reach the Eldorado of sanitation. That others recognise the improvements in sanitation and the diminished sickness as a consequence is very plainly shown by a writer recently in one of our weekly magazines in a paper on Hints to Doctors, who says:

> It has been said—many times—that for a doctor, more than for any other professional man, it is necessary to have patients in order to succeed. That, as a joke, is poor; but it is rich in practical suggestion. Doctors are always searching for, and finding, fresh diseases; and when they find them they give them names. They are really starting at the wrong end. A doctor, to be successful, should devote his time to finding patients, which, in these days of sanitation and diminishing death-rates are not so easy to find; the patients will find the diseases. He may trust the ordinary unscientific public to discover diseases, and even to name them. The most obtuse of men can discover a toothache in its earliest stages, and he can call it names, too—quite as many as the President of the Royal College of Surgeons can think of.

It is quite evident that the subject of sanitation, since the well-known dictum uttered by an eminent statesman, *sanitas sanitatum, omnia sanitas*, has made much progress and must still march on in the van of knowledge, causing the medical officer of health to become more and more a "specialist" in the true sense of the term.

In conclusion, gentlemen, allow me to thank you for your kind presence and attention, and beg of you to overlook the many imperfections in my humble attempt to address you.

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[1] *English Sanitary Institutions*, Second Edition, 1897, p. 328. [2] *Op. cit.*, p. 328. [3] *Op. cit.*, p. 367. [4] *Journal of State Medicine*, vol. v, No. 7, p. 302.

THE OLD AND THE NEW IN MEDICINE.*

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[ABSTRACT.]

DR. WEATHERLY commenced by acknowledging the honour conferred upon him by the Branch in electing him President and by assuring the members that his best energy would be devoted to following in the footsteps of his distinguished predecessors. He thanked them also because they had honoured the speciality which he practised, while admitting that this added materially to the difficulty of his task in addressing them. He felt indeed that it would not be fair to bore them with any remarks on the interesting but difficult subject of insanity: he preferred to base what he had to say upon the general experience of the first fourteen years of his medical life, much of which had been spent under the immediate guidance of his father, a general practitioner of the old school.

"The old are ever learning much from the new; may not the new learn something from the old?" Those who were imbued with the pessimism of Max Nordau might shrug their shoulders at this text and scoff at the idea that the rigid joints of the men of a generation back could be trained to move along the new path and that their central nervous systems were capable of adapting themselves to recent additions to knowledge. But the seniors might equally well retort that a generation of young men was growing up which was too wholly absorbed in the scientific side of medicine, too much engrossed in its artificial aids to condescend to learn from those who had received their training in the great school of practical experience. These young men should learn to reason out the evolution of medical science and not to despise any brick which contributed to the formation of the great wall of knowledge on which they stood. At the end of a century of unparalleled progress in the healing art it were well to remember the warning given by Sir Thomas Watson against making too much of the principles of medicine to the detriment of its practice. This warning was even more needed nowadays, and it was well to bear in mind the recent weighty complaint of Mr. Christopher Heath that students were getting

* The Presidential Address delivered at the annual meeting of the Bath and Bristol Branch

too much into the hands of professors who were anatomists but not surgeons, to the lasting detriment of their practical training. The old system may have tended to make the student too much a disciple of empiricism, but the scientific book-reading medico of to-day would benefit much by a little smattering of rational empiricism, the education of common-sense reading.

Dr. Weatherly had realised in his own case the value of apprenticeship to a sound practitioner, and how it afforded the young student the means of watching the progress of his patients, the relative significance of their symptoms, and the value of treatment. The older practitioner, observing the progressively greater precision of the implements of science as applied to the diagnosis of disease, was often forced to wonder how without their aid he had managed to find out what was the matter with his patients, or to pull them successfully through many grievous ailments. And yet while envying his younger brethren their scientific attainments, while listening to their learned papers and accounts of difficult diagnoses successfully achieved, he was sometimes bound to feel that it would have been well for them to have encountered some of the difficulties which fell to his lot before science had so asserted her sway. What was particularly lacking now was the training of the eye to detect minute, yet tangible and significant, differences in form, appearance, expression, and functional activity. The love of scientific detail might tend to the greatest accuracy in the diagnosis of a patient's physical signs, while the general condition of the patient failed to receive adequate notice and attention. As Erichsen once said, the educated student of to-day was thus making himself actually less useful to the sick man than his less perfectly trained predecessor, who by reason of his more general observation was often a superior antagonist to disease.

Another recent development which Dr. Weatherly viewed with some misgiving was the enterprise of the modern druggist. This remarkably active person had now a way of making up drugs into tabloids, neatly wrapped up with the dose to be given and the diseases to be cured writ large; he was sending out pamphlets broadcast, with descriptions of complaints which could be cured by this or that new drug with some grand-sounding Latin or Greek name, and the medical practitioner was in constant receipt of useful diaries with long lists of therapeutic agents manufactured by one advertising firm or another. The consequent tendency to pocket prescribing might in some cases be useful, but surely it tended too much towards putting patients into the hands of the advertising chemist, while it was at the same time getting the doctor out of the art of prescribing, which could be learnt only by practical experience. It was to be feared also that some of the new and fashionable drugs were ousting the older and simpler remedies which in the hands of the last generation of practitioners were found so useful and effective; of these, Dr. Weatherly thought that calomel in particular had fallen into undeserved neglect.

With regard to surgery the progress made since the invention of anæsthetics and antiseptics was truly remarkable and calculated to astonish the surgeon of sixty years ago. So great had it been that anatomically there was now nothing impossible to the surgeon, and he was only stopped by physiological considerations. But it was to be feared that as a consequence he tended to be too long in the performance of operations, to give too much attention to elaboration and detail, and too little to the danger of shock; he might even learn something from the celerity and dexterity of his predecessors. Again, there was undoubtedly too great a tendency to use the knife on all occasions as a means of diagnosis. Of course, this was much easier than any other method of examination, but would it not in many cases be better that the surgeon should give his powers of observation a chance, and at the same time learn by the conservatism of his older brethren? Then, again, in gynæcological practice it was true that the use of pessaries had at one time been carried to great excess, but there was now the danger that the pendulum had swung too far in the opposite direction, and that the knife and needle were a little too much in evidence. Similarly the knowledge that injuries could be so rapidly repaired led to excessive zeal in the use of the long forceps, so that with the announcement of the safe arrival of a healthy first-born there was too often the accompaniment of rupture of the mother's perineum.

THE PHARMACOLOGICAL ACTION OF THE THYROID GLAND.

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The recent promotion of the thyroid to an official position in the *British Pharmacopœia* makes this a suitable time to state what is known as to its pharmacological action. More especially is this the case owing to the fact that the literature relating to the thyroid has recently swelled to such enormous proportions that he who runs is certainly no longer able to read it, whilst embedded in that literature there are yet a number of facts and observations which have a very direct bearing on the therapeutic use of the substance. It may, therefore, be permitted to one who, from the special nature of his own investigations, has been obliged to read all that has been written on the subject, to discuss briefly the present state of our knowledge as to the physiological effects of the administration of the thyroid, and the bearing of that knowledge upon its use as a medicinal agent.

I.—Effects upon Metabolism.

Shortly after the thyroid began to be used in the treatment of myxœdema, it was noticed that the urine of patients who were taking it contained a large excess of urea ([1] [2]). More exact investigations were soon set on foot ([3] [17]) which showed that not only was the elimination of nitrogen increased in patients who were taking thyroid, but that the amount eliminated very often exceeded considerably the amount ingested in the corresponding period of time. Obviously, therefore, a tissue rich in nitrogen, presumably muscle, had undergone an increased destruction. The loss of weight in such patients was, however, much greater than any mere destruction of proteid tissue would account for, and attention was next directed to the intake and output of respiratory gases ([18] [22]). The results showed that under thyroid administration there is a great rise in the amount of oxygen taken in, and a very considerable, but relatively not so great, increase in the amount of CO_2 given out. The obvious inference was that the thyroid leads to a greatly increased consumption of the body fat.

Briefly, then, it may be said that the effect of the administration of the thyroid is to increase oxidation in the body; it makes the tissues, as it were, more inflammable, so that they burn away more rapidly. The products of the disintegration of the nitrogenous tissues appear in the urine almost entirely in the form of urea, uric acid, ([7] [12] [13] [22]) and the xanthin bases ([7]) being neither regularly nor appreciably increased, while the products of the fat destruction are eliminated as carbonic acid by the lungs, and water by the kidneys. It is important to note the large increase in the excretion of water which occurs under thyroid administration. Diuresis is often one of the first effects of the drug, and a considerable proportion of the very sudden fall of weight which is often to be observed at the outset of a course of thyroid treatment is to be attributed simply to loss of water. Thyroid feeding seems to make the tissues drier. On cessation of the treatment this loss of water is very quickly replaced, and is accompanied by a corresponding increase in weight.

It is not sufficient merely to know that the thyroid increases tissue metabolism; we must inquire more minutely into the details of its action. Under normal conditions, as is well known, there is a constant destruction of proteids, carbohydrates, and fats going on in the body. If the amount of proteids in the food be increased, there may be a temporary storage of nitrogen in the body, but very soon equilibrium is again established, and the output becomes equal to the intake. If we increase the amount of carbohydrates and fat in the diet we may succeed in storing some of the excess as fat, but we find also that we have diminished the amount of proteid broken down in the body. In the words of the physiologists, carbohydrates and fats have a proteid-sparing action. Now it is important to inquire, What effect has the thyroid upon all this? Does it merely hurry on the whole process so that the turnover in the body is as it were increased without any disturbance in the relative destruction of proteid and fat occurring, or does it increase one of these more than the other? In other words, Does thyroid feeding lead to a

quantitative or to a qualitative alteration in metabolism or to both?

Now this is no mere academic question suitable for discussion in the physiological lecture room; it has very direct practical bearings. The use of the thyroid as a remedy in obesity has recently attained a wide prevalence. The ideal "antifat" would be something which increased the power of the tissues to consume fat without at the same time causing an increased destruction of proteid. Does the thyroid do this? Obviously not, for as we have seen its use is followed by an increased elimination of nitrogen as well as of carbonic acid. Granted then that both fats and proteid tissues tend to be broken down, on which of these does the thyroid act most powerfully? Is there any direct action on the proteid tissues or are these only attacked when there is no longer enough fat left to exercise a protective influence on the proteids? Towards the settlement of this question much research has recently been directed, but as yet the results of it are rather contradictory. Some writers ([15]) assert that the thyroid has a specific action on the proteid tissues, and a few even go so far as to maintain that under thyroid administration the proteid-sparing power of fat and carbohydrates is suspended. Others believe that the proteids are only attacked secondarily and after fat has been to a large extent got rid of, and it has certainly been shown by careful observations on cases of obesity that great loss of weight can occur while there is yet less nitrogen being eliminated than is ingested ([9] [17]). For my own part I think there is a good deal to be said for the view that the increased elimination of nitrogen which is observed at the commencement of thyroid feeding is due to destruction of circulating proteid, and that the fixed proteid tissues are only attacked when the store of fat has been considerably diminished. The practical inference is that in treating cases of obesity by thyroid feeding the diet should not be much restricted, and especially that nitrogenous matter should be abundantly represented in it. The safest method of procedure, of course, would be to estimate the amount of nitrogen in the diet, and the amount eliminated, and to stop the treatment or diminish the dose whenever the latter exceeded the former, but that method is too laborious to be practicable.

In its action on metabolism the thyroid is unique amongst medicinal agents. No other drug that we are acquainted with is capable of increasing the oxidation processes of the body in such a way. It may best be compared, perhaps, to the effect of muscular exercise. The thyroid increases metabolism without putting one to the necessity of performing muscular work. Hence its usefulness as an aid in combating an excessive accumulation of fat. It may also be compared to the effect of the toxic substances which produce fever. Fever, however, seems to have a more specific action on proteid metabolism than the thyroid has, but a fuller investigation of the chemical nature of the active constituent of the thyroid may be expected to throw some light on the toxalbumins which produce pyrexia. Indirectly, also, the effects of thyroid administration tend to confirm the view that the rise of temperature in fever is mainly due to a diminished heat loss, for by thyroid feeding one may increase tissue metabolism to an amount sufficient to produce a loss of weight of as much as 8 lbs. in a week, yet without causing the temperature to rise more than half a degree.

It is not yet determined whether the active constituent of the thyroid exerts its effects on the tissues directly or through the intervention of the nervous system. In favour of the belief that the latter method is the real *modus operandi* is the very minute quantity of the substance which is sufficient to produce powerful effects. If one regards the tissues as held in leash, as it were, by the trophic centres of the nervous system in much the same fashion as the heart is by the vagus, then it would not be difficult to understand how, if under the action of the thyroid this influence were temporarily suspended, the tissues would run off, so to speak, and a great increase in metabolism result. But this is pure speculation. I have tried to find whether the thyroid has any directly stimulating effect on the activity of cells by causing yeast to produce fermentation in a sugar solution containing some thyroid extract, but did not find that the rate of fermentation was increased thereby. Of course an experiment like that is by no means conclusive, for it might very well be that the thyroid had no stimulating influence on vegetable cells.

Whether the thyroid influence be exerted on the tissues directly or only through the medium of the nervous system, its essential nature would seem to consist in a hastening on of the life-history of the cells. Cell division occurs more rapidly, and the cell reaches maturity and passes into old age in a shorter time than normal. The reverse of this process occurs typically in myxœdema, where many of the cells never seem to reach a mature stage. Thus the subcutaneous tissue becomes filled with cells in an embryonic stage, and when the old hairs fall out the cell division which should lead to the formation of new ones ceases to occur, and the patient becomes bald. The thyroid exerts its beneficial influence by hastening on the life-history of the cells. This explains, also, its action in backwardness of growth in children and the good effect which it sometimes exerts in such skin diseases as psoriasis and ichthyosis, where the final death and casting off of the epidermic cells seems to be much delayed.

It is interesting to reflect that the secretion of the thyroid is constantly finding its way into the circulation, and must there exercise its effects on metabolism. One is tempted to speculate whether the different states of nutrition in different individuals may not be due to variations in the activity of their thyroids. In cases of simple goitre one is almost compelled to believe that there must be a great demand for the secretion, and that the hypertrophy of the thyroid is a response to the demand. This might explain the very remarkable effects of thyroid feeding in cases of simple goitre. In such cases, especially if recent and the subject young, administration of thyroid by the mouth is followed by a steady diminution in the size of the goitre, the latter tending to increase again when the treatment is stopped. The thyroid given by the mouth lessens the demand for the natural product, and the hypertrophy of the thyroid passes off. Bruns ([3]) has made observations in dogs with goitre which confirm this view. He examined a piece of the goitre microscopically, and found that it presented the characters of a gland which was over-secreting. After thyroid treatment the goitre almost disappeared, and on examining a fresh portion he found that the gland had now resumed its normal characters. The advocates of the thyroid theory of exophthalmic goitre will no doubt find confirmation of their views in the observations of Matthes ([17*]), who has found that a study of the respiratory and urinary excretions in that disease show that metabolism is increased in the same way as in thyroid feeding.

The occurrence of glycosuria as a result of thyroid administration has frequently been observed, and recent experiments tend to show that the glycosuria may be of the alimentary type. Thus Bettmann, in the *Berliner klinische Wochenschrift*, No. 24, 1897, found that if, after a week of thyroid feeding, one gives a patient 100 g. or so of glucose on an empty stomach glycosuria results. He was successful in obtaining it in about half of the cases in which the experiment was tried, although the same patient showed no glycosuria if a similar amount of glucose was given without a previous course of thyroid. Such experiments seem to indicate that the thyroid may sometimes affect carbohydrate metabolism in such a way as to diminish the power of the tissues to utilise sugar.

II.—Effects on the Circulation and Blood.

Increased rapidity of the heart's action is perhaps the most constant of the effects observed from thyroid administration. The action of the drug can hardly be said to be manifested, unless the pulse rise by 10 or more beats per minute. Along with increased rapidity one often observes other disturbances of the heart's action during thyroid administration, such, for example, as irregularity, palpitation, or even threatenings of failure. The experimental study of these effects has recently been attempted, but curiously enough, the results have been entirely negative. Vamossy and Vas ([31]) found that even strong solutions of iodothyrin had no effect at all upon the strength, rhythm, or rate of the isolated frog's heart, or on the heart of rabbits or dogs *in situ*, and I have myself obtained entirely negative results on intravenous injections of colloid matter.([32]) Nevertheless, the clinical fact of increased rapidity of pulse during thyroid feeding remains, and a conceivable explanation of the negative results of experiment is that the heart is acted on secondarily by some substance produced during the

exaggerated metabolism which follows thyroid administration.

This specific effect of the thyroid upon the heart renders caution necessary in administering the drug to patients with cardiac debility. In cases of obesity, where the fatty change may also have affected the heart, this is especially necessary. It has also been suggested that this action of the thyroid would be likely to render its administration useful in cases of functional bradycardia.

It has been found that the active part of the thyroid has no effect on the blood pressure. This has been shown by Vamossy and Vas for iodothyrin, and by myself for the colloid matter. The fall of blood pressure which occurs when decoctions of the gland are injected is mainly due to the action of organic extractives, and a similar fall follows the injection of extractives from other glands or of a weak solution of Liebig's extract of meat. It has further been shown (15) that these bodies do not affect the blood pressure at all if they are administered by the mouth instead of by intravenous injection. Notwithstanding this experimental evidence the sphygmometer shows a slight fall of blood pressure in patients who are under the influence of the thyroid. The fall seems to be due to enfeeblement of the heart rather than to any peripheral dilatation of blood vessels.

The effects of thyroid administration upon the blood have been studied both clinically and experimentally. Perry (33) found that the only change which resulted from the administration of medicinal doses in man was an increase in the relative number of the lymphocytes (that is, a physiological leucocytosis). MacPhail and Bruce (21) found in cases of insanity that a dose of twelve tabloids daily caused a fall in the red corpuscles of about $7\frac{1}{2}$ "per hæmic unit" and a diminution in the amount of hæmoglobin to the extent of 6 per cent. The administration of iron at the same time prevented the loss of hæmoglobin and brought about a slight increase in the number of the red cells. Bruns (35) has also seen chlorosis set in during the treatment of a case of acromegaly by means of thyroid.

On the other hand, Lebreton (36) has compared the blood in a case of myxœdema before and after thyroid feeding, and has found all the constituents increased and a greater relative increase also in the lymphocytes. Donath (6) has found that in rabbits small doses improved the condition of the blood, while large doses caused the destruction of the red corpuscles to the extent of from 14 to 22 per cent. Von Vamossy and Vas (31) gave to a dog varying doses of iodothyrin by the mouth, subcutaneously and by injection into a vein. They found that no effect was produced unless large doses were injected into the vein. In that case they observed a transitory fall in the specific gravity of the blood and in the red corpuscles and hæmoglobin, whilst there was a more distinct rise in the number of the leucocytes. It would seem, therefore, that small doses of thyroid produce no effect on the blood of healthy persons, while large doses cause an increased destruction of blood corpuscles just as of other cells. In myxœdema, on the other hand, the stimulus which thyroid feeding gives to all growth and division is manifested in the blood by a rise in the number of the corpuscles.

III. Excretion of the Active Constituent of the Thyroid.

The active constituent of the thyroid appears to be excreted entirely by the kidney. I have found iodine present in the urine of a dog within three hours after the administration of 1 g. of the colloid matter. On the other hand, I have never been able to detect any iodine in the bile of animals to which thyroid preparations have been given, even in large doses. Baumann has also detected iodine in the urine of dogs whose thyroids had been removed and to whom iodothyrin had been administered (11). It is difficult, however, to detect iodine in the urine of patients who are taking thyroid preparations. Thus von Jaksch (30) failed to find that element in the urine of a patient after the administration of as many as fifty thyroid tabloids. This may be due to the well-known power that the normal thyroid possesses of laying hold of iodine when given either as an inorganic salt or in the form in which it occurs in thyroid preparations, and of storing it up and thus preventing its excretion. If a healthy thyroid be present, therefore, iodine does not appear in the urine unless a large excess has been administered. This explains how Blum (12) has been able to detect iodine in the urine of normal dogs to whom 100 sheep's thyroids had been given at once.

On the other hand, the absence of the thyroid in myxœdema prevents the storage of iodine in the body, and accordingly it is more easy to detect that substance in the urine of cases of myxœdema which are under thyroid treatment. Whether the iodine is excreted in an organic or inorganic form must at present be left undecided. For my own part I have found that it can only be detected after incineration of the urine, and that it is present in a form soluble in hot or cold alcohol. Blum (12), however, states that he has found it present in an inorganic form. The question is of importance as throwing light on whether the organic iodine compound in the thyroid is entirely broken down in the body or whether some of it is excreted unchanged.

The excretion of the active constituent of the thyroid appears to be a gradual one. At all events there is no doubt that the action of the drug continues, often for several days, after the administration of it has ceased. That this is not to be attributed to the thyroid of the patient laying hold of the substance, and gradually giving it out is to be inferred from the fact that the after-action is as noticeable in cases of myxœdema, in which presumably the thyroid is totally inactive, as in normal subjects.

IV.—Dosage of Thyroid Preparations.

It must be admitted that we have as yet got no satisfactory method of standardising thyroid preparations. One cannot do so by making a given quantity of any thyroid preparation equivalent to a given weight of fresh gland because the amount of the active constituent present in any given weight of fresh gland may vary very greatly. Nor can we take the colloid matter as the standard, for, as I have shown elsewhere, there is reason to believe that it also may be of varying composition. It has been suggested that the activity of thyroid preparations should be gauged by the amount of iodine they contain, but this also may prove fallacious, for there is not yet any certain proof that the presence of iodine is essential to the activity of the thyroid at all.

Practically the difficulty is got over if the preparation be made from a sufficiently large mass of glands. The individual inequalities in these are then able to neutralise one another. Thus one finds that the composition of the colloid matter as found in the market is almost constant, and the thyroid powder of the new *Pharmacopœia* will no doubt be so too, if prepared in fairly large quantities at a time.

I have prepared some of the new liquor thyroidei according to the directions given in the *Pharmacopœia*, and find that it contains about $4\frac{1}{2}$ per cent. of colloid matter. An ordinary dose of the latter is about 0.1 g., and that would be contained in about 37 minims of the liquor. I am therefore of opinion that the dose of the latter recommended in the *Pharmacopœia* (5 to 15 minims) is too small, and would better have been given as 15 to 60 minims. Otherwise the liquor seems to be as good a fluid preparation of the thyroid as could have been devised.

Whatever the preparation employed experience seems to show that it is best to give it in small doses and frequently, rather than in large quantities at longer intervals. It is also very necessary to feel one's way in the administration of the thyroid, beginning with a small dose, and gradually increasing it. This is necessitated by the fact that idiosyncrasy plays a large part in the reaction which patients show to the drug, and the extent of the reaction in any particular case can never be foretold. The symptoms produced by over-action—headache and pains in the limbs, nausea, diarrhœa, palpitation, etc., and which are classed under the term "thyroidism"—have been partly ascribed by Lanz (13) not to any specific action of the thyroid, but to the presence in the preparation employed of toxic substances produced by putrefaction. Cunningham (14) has also recently made out a pretty strong case for this view. On the other hand, it has been denied by Zum Busch (41) as the result of his experience in about a thousand cases that this explanation of thyroidism is the correct one. For my own part I think there is some truth in both positions. There is no doubt that the thyroid is a substance very prone to undergo putrefactive change, and

some of the symptoms of thyroidism, notably the alimentary group—for example, nausea and diarrhœa—are, I think, to be explained by the presence of toxic products in the preparation employed. Since I have used preparations made by myself, of whose freshness I could be certain, I have seen nothing of this group of symptoms in the cases I have treated. On the other hand, I believe that the headache, pains in the limbs, and cardiac symptoms are due to a specific action of the thyroid, or are produced by some product of the exaggerated metabolism which it excites and that no degree of purity in the preparation employed is a guarantee that such symptoms will not arise. Seeing, moreover, that the organic iodine compound in the thyroid will stand prolonged boiling without having its activity in the least impaired, it ought to be possible to prepare a powder for administration which shall be entirely free from any products of decomposition. Whether the method of preparation of the thyroid powder of the *Pharmacopœia* eliminates the possibility of any toxic products remaining in it is, I should think, decidedly open to question.

Postscript.—Since the above article was written there has appeared in this JOURNAL (July 9th, 1898) a paper by Dr. William MacLennan describing a new thyroid preparation ("thyroglandin"). As that paper contains a number of what (in my judgment) are serious errors as to the facts of the chemistry of the thyroid and the nature of its active constituent, I feel that I ought to make a short reference to it. Dr. MacLennan asserts that the thyroid contains two important principles—an iodoglobulin and iodothyrin—and that both of these are requisite to produce the specific effects of the gland itself. This assertion is quite unfounded in fact. As I have shown elsewhere, the fresh thyroid contains only one iodine-containing compound—namely, the colloid matter. This consists of a proteid part (possibly a globulin) combined with an organic compound of iodine (crude iodothyrin), and the latter compound is split off on hydrolysis of the colloid. The specific effects of the thyroid can be produced by the administration either of the colloid matter as a whole or of the iodothyrin split off from it. The effects produced by both preparations are identical, provided an equivalent dose of each is employed. Further, the colloid matter contains all the activity of the thyroid, the extractives being incapable of producing any of the specific effects of the gland.

It is not the case that all of the processes which have been devised for separating the active constituent of the gland result either "in the destruction of the iodoglobulin entirely, or in the partial separation of the iodothyrin only." In the preparation of the colloid matter, as described by myself, the glands are extracted with dilute caustic soda without the aid of heat. The colloid matter is so soluble in alkalies that it goes entirely into the solution, and if any traces of iodothyrin happen to have been split off from it in the gland, these are also dissolved. The subsequent addition of acetic acid throws down the colloid, and it is afterwards dried without having undergone any decomposition whatever. Furthermore, this separation is accomplished without any other substance of "a useless or objectionable nature" being contained in the final product.

The process which Dr. MacLennan describes as that by which "thyroglandin" is prepared will be perceived at once by anyone conversant with the chemistry of the thyroid to result in the extraction of the colloid matter, *plus* the salts, extractives, and any other substance which happens to be present, and which is soluble either in water or in boiling caustic soda solution. As the salts and extractives have been shown to be "useless," and as the other substances (for example, products of decomposition) may very easily be objectionable, I entirely fail to see the superiority of this process over those already in existence. That the product is simply an impure form of the colloid matter I entertain no doubt at all, and by the administration of 1½ gr. of the latter thrice daily I have over and over again obtained quite as marked results as were produced by double that dose of thyroglandin. I therefore cannot regard the latter preparation as in any way superior to those with which the profession is already familiar.

BIBLIOGRAPHY.

For the convenience of other workers I append a classified list of papers bearing upon the pharmacological action of the thyroid. The numbers correspond to references in the text.

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REMARKS ON A CASE OF PENETRATING GUNSHOT WOUND OF THE ABDOMEN: IMMEDIATE LAPAROTOMY: SUTURE OF STOMACH: RECOVERY.*

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PENETRATING wounds of the abdomen must be regarded at all times as severe and dangerous injuries, but gunshot wounds, from the serious damage they inflict upon the internal structures, are always surrounded by special dangers and complications. In civil practice wounds of this class are uncommon accidents, but on the field of battle they constitute 15 per cent. of the total number of gunshot injuries, and their fatal character is shown by the fact that the majority of the men wounded in this region never reach the military hospitals, but rapidly sink from shock and hæmorrhage.[1] In these injuries the danger is in direct proportion to the damage done to the internal organs. Sometimes the projectile penetrates the peritoneal cavity and lodges within it; at other times it traverses the abdomen, and then lodges in some other part of the body or emerges at a second wound.

On October 26th, 1897, I met in consultation Drs. Sykes and Richardson of Gosport on the case of B. L., a girl, aged 16, who had received a severe wound of the abdomen by the accidental explosion of a six-chambered revolver. At the moment of discharge she was holding the weapon in both hands with the muzzle pointing to the region of the stomach. The bullet entered the abdomen 2 inches to the left of the umbilicus, at a point about midway between it and the ninth costal cartilage, and passed out on the right side of the spinal process of the twelfth dorsal vertebra. It did not penetrate the clothes behind, but dropped out of them as they were being removed. The missile was a cylindro-conoidal bullet, half an inch in length, five-eighths of an inch in thickness, and it weighed 125 gr. It was flattened on one side near the point, and the facet measured a quarter of an inch in diameter. Severe pain immediately followed the accident, the patient was cold and livid, and the pulse rapid and wiry, about 150 per minute. She was without delay very carefully removed to the Royal Portsmouth Hospital.

When seen two hours after the accident she had vomited a good deal of blood, and appeared in a state of severe collapse. After some subcutaneous injections of brandy and strychnine, she somewhat rallied. Ether was then at once administered, and abdominal section performed. The abdomen was opened by an incision through the wound of entrance, four inches in length, and two inches below and parallel with the costal margin. The black and ragged discoloration extended through the parietal track into the abdominal cavity. The omentum presented, but beyond it the track of the bullet could not be traced. After carefully raising this structure, and then rotating the stomach inwards, an irregular wound was discovered at the greater curvature, close to the reflection of the omentum. The wound was an inch and a quarter in length, its edges were dark coloured and ragged; and it was surrounded by

* Abstract of an Address delivered before the South-East Hants Medical Society, April, 1898.

coagula and thick gastric fluid. The colon and small intestines were free from injury. The region around was then very carefully cleansed, the wall of the stomach drawn into the incision, the mucous membrane tucked inwards, and the perforation closed by eight Lembert's sutures. The charred and discoloured structures in the track of the wound were cut out, and the abdominal incision closed with four layers of sutures. Two or three hours after the operation her general condition improved. Nutritive enemata were regularly administered. During the first four days she suffered from excessive thirst, but very small quantities of milk and water were given by the mouth. Her temperature never exceeded 101°. Solid food and fish were ordered on the fifteenth day. The abdominal wound healed by immediate union except in the track of the bullet, and here some suppuration occurred. The wound of exit gave very little trouble; it discharged for two weeks and then closed. The patient left the hospital in good health at the end of November with a depressed scar at the wound of entrance.

Results of Penetrating Gunshot Wounds of the Abdomen.

There is really no satisfactory record of this class of injuries prior to antiseptic times. Penetrating wounds of the abdominal cavity were then generally regarded as fatal injuries; surgical interference was very seldom attempted, and opium was freely administered as the only remedy. There are, however, many well-authenticated recoveries mentioned in surgical literature. Patients have survived after receiving dangerous wounds of the stomach, and many of them have suffered from a permanent gastric fistula. Sir W. Mac Cormac[2] mentions the case of a patient wounded in the American war who lived two years after receiving a penetrating gastric injury. After death a circular cicatrix was found in the central part of both the anterior and posterior surfaces.[3] Another unequivocal case of pistol-shot wound of the abdomen occurred during the same war. The patient recovered, but he remained permanently disabled by a persistent flexure of the body in consequence of the severe cicatricial contraction which followed in the track of the bullet as it passed through the abdomen.

Gunshot wounds of the intestines are very fatal injuries, and the recorded recoveries have been for the most part limited to wounds of the large intestine. Some of these injuries have resulted in the formation of an artificial anus, which after a time has gradually contracted into a fæcal fistula.[4] During the Crimean campaign a soldier was wounded in the loin, and many months after the missile was discharged *per anum*. Four years later the patient died of albuminuria, and at the *post-mortem* examination a part of the bullet was found fixed in the surface of the spleen.

The instances in which soldiers have been discharged from the service for the after-results of gunshot wounds of the abdomen are very rare. Some recoveries have occurred after the lodgment of a bullet in the peritoneal cavity, but the wound has usually resulted in serious disablement. Penetrating gunshot wounds are always followed by localised peritonitis in the track of the bullet, and dangerous consequences have resulted from the formation of cicatricial bands. Some years ago a case of intestinal injury of this kind came under my observation. An officer of the Royal Artillery received a severe gunshot wound of the abdomen during the Indian Mutiny in 1858. The bullet penetrated the cavity two inches above and one inch to the right of the umbilicus. The wound healed in four or five weeks, and he appeared to regain his usual health. On his return to England he consulted several surgeons, who were unanimous in the opinion that the bullet had lodged in the abdomen, and he was urged to refrain from all unnecessary exertion. He continued in fair health up to October, 1865, when he was suddenly attacked with sickness and abdominal pain. The next day I was called to see him in consultation, but he had then passed into a state of hopeless collapse. After death the small intestines were found bound together by several old and firm adhesions, and around one of these—a short and narrow band attached to two adjacent coils—another portion of the gut had become completely twisted. At the seat of the twist the intestine was stretched into the semblance of a cord and completely occluded, and about 3 inches below it the bullet was discovered lying loose in the canal. From the position of the cicatrix and the direction of the track of the bullet through the abdominal wall, together with the distinct traces of bygone inflammation, it appeared evident that the missile penetrated the body obliquely, passed into the peritoneal cavity, and there found a lodgment between the intestines in the right iliac region. It also appeared certain that the bullet must have remained encysted for a period of seven years, either in some portion of the mesentery or between the intestines, and that under the influence of muscular action and the changes produced by the absorption of the surrounding tissue, it escaped into the alimentary canal. The mesentery and intestines were carefully examined, but it was found impossible to determine the part where the ball had been so long impacted.[5]

Diagnostic Indications of Visceral Injury.

As a general rule, a wound of an internal organ is speedily followed by urgent symptoms. The patient is at once collapsed, and soon after acute abdominal pain and vomiting set in. When, however, the internal hæmorrhage is only small in quantity, or the perforation of an organ is not immediately followed by the escape of the secretions into the peritoneal cavity, the symptoms may be less distinct. It is often quite impossible to determine the direction the projectile has taken, or to diagnose the particular organ that has been injured. Gunshot wounds of the stomach are generally attended with more definite indications than wounds of any of the other organs. Wounds of the intestine are marked by sudden collapse and acute pain, and these symptoms are soon followed by tympanitic distension. Occasionally after a severe injury intestinal gas has been observed to escape through the abdominal wound.

Sometimes gunshot wounds and severe contusions of the abdominal wall produce serious internal injuries without actually penetrating the peritoneal cavity. In some cases the question of penetration can be determined at once by a careful examination of the wound; in others the question cannot be so easily settled, and under these circumstances it is prudent to wait for the development of clear indications of visceral lesion. Some months ago a young man accidentally received a pistol-shot injury at the Royal Theatre, Portsmouth, and when the explosion took place he was standing only a few feet from the weapon. He was immediately taken to the hospital in a state of severe collapse. The ball had struck him in the epigastric region, and the poor fellow and his friends believed that he had been mortally wounded. A careful examination of the seat of injury, however, yielded no evidence that the missile had penetrated the abdominal cavity. He rallied in a few hours, no urgent symptoms supervened, and he left the hospital in two weeks. The bullet was afterwards picked up in the theatre.

The diagnostic indications of wound of the stomach were well marked in my case by the position and direction of the wound, the epigastric pain and tenderness, and the persistent hæmatemesis. The pistol was discharged almost at a right angle to the surface of the body, and the bullet entered the peritoneal cavity at its highest rate of speed. The track it took was visible to the omental surface, it then lacerated the lower border of the stomach close to the origin of the great omentum, and fortunately finished its course through the abdomen without damaging any other organ. The ball penetrated an intercostal space and the muscles of the back, and then finally escaped near the body of the twelfth dorsal vertebra. After thus traversing the body it is not surprising that a well-marked facet was found upon it. This may have been caused by the first impact with the patient's clothes, and not from contact with any bone during its circuitous passage. A bullet may receive very delicate marks from soft and yielding objects with which it has been brought into collision, and one has been known to strike against unsupported canvas with such force that it has been altered in shape, and has retained markings of the cloth.[6]

Treatment by Immediate Laparotomy.

The great progress of abdominal surgery during the last few years has practically transformed the treatment of abdominal wounds and gunshot injuries, and in a large number of these cases immediate laparotomy is now regarded as yielding the only hope of saving life. In these pressing emergencies the experience and judgment of the surgeon will guide him in deciding upon the expediency of surgical interference, and, fortunately, he can now undertake the exploration of the abdominal cavity with every modern precaution, and also with the conviction that the operation is attended with far

less risk than reliance upon the administration of opium and the expectant treatment of former times.

We may now accept it as a surgical axiom that in every case of penetrating wound in which there is reason to believe that an internal injury has been inflicted, the abdomen ought to be opened with the intention of arresting hæmorrhage, securing by suture any lacerated or wounded organ, removing blood and other extravasated fluid, and cleansing the peritoneal cavity. In cases of gunshot injury, whenever a projectile has penetrated the abdomen, and urgent symptoms are present, it is surely useless to hope that the viscera have escaped damage. As soon, then, as the patient has sufficiently rallied from the shock, an exploratory operation is clearly indicated, and any delay for the development of more urgent symptoms aggravates the danger, as these can only be the outcome of pathological changes which are associated with septic poisoning and fatal peritonitis. In many cases the chance of success wholly rests on immediate action. The flickering pulse, persistent vomiting, and cold extremities are the outward expression of internal hæmorrhage and extravasation, and the hope of rescue hangs on at once exposing the wounded organs and then securing them by suture. It is of course useless to operate when the patient is rapidly sinking, for the proper treatment under these circumstances would be hypodermic and rectal stimulation and external heat; and we may rest assured that whenever the judicious application of these remedies has failed to rally the patient, abdominal section would certainly have been of no avail. Even in extreme cases we must not readily relinquish our efforts, for a patient may rally very unexpectedly from a state of profound collapse. Some time since a sailor in a state of intoxication fell 20 ft. from the side of a vessel anchored in Portsmouth Harbour into a boat, and he was not discovered for some hours after the accident had occurred. On his arrival at the hospital the poor fellow appeared to be rapidly sinking. On removing his clothes, a lacerated wound of the abdomen was discovered extending from the cartilages of the right and ninth ribs down to the umbilicus, and a large portion of the small intestine, a part of the colon, and a mass of omentum were protruding through it in a state of strangulation. After dividing the edge of the wound, excising torn pieces of omentum, securing many ruptured vessels, and clearing away blood clot and dirt, the viscera were carefully washed and returned. The patient's condition rapidly improved after the operation, and in three weeks he left the hospital.

Referring again to my own case, the patient was in a very critical position at the time of the operation. Fortunately the bullet had escaped from the body, and there was no anxiety as to the position of the projectile. If, however, this had not happened it would have been injudicious to have made a prolonged search for it, as the effort would have added to the risk of the operation. When the seat of the internal injury was discovered there appeared to be no indication of any other visceral wound, and no blood or extravasated fluid was found in any other part of the cavity.

Immediate laparotomy for penetrating wounds and severe contusions must be performed with strict attention to all the preliminary details and general principles which now regulate the practice of abdominal surgery. As soon as the diagnosis of visceral injury has been made, provided the patient has sufficiently recovered from the shock, the operation ought not to be delayed, for these serious accidents are soon followed by acute abdominal symptoms and peritonitis, and when these complications set in surgical interference can be undertaken with very little hope of success.

Acute septic peritonitis attended with diffused suppuration may follow any form of perforating lesion of the abdomen. Sometimes life has been saved by timely abdominal section; but in these fortunate cases the entire peritoneal sac is seldom involved, and there is a limitation to the inflammatory process. The signs of general peritonitis may appear to be fully developed; but, by the copious exudation of lymph, a protective barrier surrounds the purulent formation, and the result is a localised abscess, which greatly augments the chance of recovery.

In perforating laparotomy for penetrating gunshot wounds the incision ought to be long enough to admit of free exploration, and whenever possible it should be made through the wound of entrance. One or two strong silk threads introduced on both sides through the whole thickness of the abdominal wall make excellent retractors. They never slip, occupy no space, and greatly assist the inspection of the cavity. During the manipulation of the hollow organs great care is necessary to prevent the escape of their contents, and as soon as the seat of injury is discovered the wound must be temporarily secured with the fingers or forceps. The wounded organ can now be gently drawn into the incision, surrounded with sponges or moist antiseptic gauze, and sutured or excised according to the extent of the injury. When the wounds of the intestine are large or numerous, or a portion of the gut is severely contused, partial or complete resection must be practised. If the kidney or spleen is hopelessly damaged, it ought to be excised at once.[7]

In hepatic injuries hæmorrhage must be arrested by pressure, ligature, or the thermo-cautery, and the lacerated parts brought together with catgut sutures. Torn omentum or mesentery must be cut away and the edges carefully united, but these important structures must always be spared as much as possible, as upon them the vascular supply of the intestinal tube mainly depends. In closing the abdominal incision all charred and injured tissue should be excised, and the track of the projectile deodorised with the greatest care; because gunshot wounds are at all times difficult to disinfect on account of the damage done to the structures, and the forcible insertion of dirt and foreign substances which may carry pathogenic germs far beyond the limits of the actual wound and the power of sterilising agents.

In some cases of deep visceral lesion it is necessary to temporarily establish drainage from the site of the internal injury to one end of the laparotomy incision. Sometimes the wounded region may be effectively drained by a lumbar incision. When blood or extravasated fluids have penetrated to the deep recesses of the peritoneal sac, every part must be washed out with sterilised water at the temperature of 105° or 110°, and if after irrigation is finished any excess remains behind it should be removed with clean sponges, although a little residual fluid certainly does no harm. Any solid masses or pieces of food are easily removed by antiseptic gauze or clean fingers. The lumbar and pelvic hollows always require special care, and in some cases of diffused extravasation two drainage tubes are serviceable—one placed in the seat of injury and fixed to the upper end of the abdominal wound, the other inserted in Douglas's pouch, and secured through a small incision just above the pubes.

Unfortunately the death-rate after operative interference in gunshot wounds of the abdominal cavity is extremely high. Ninety-seven surgeons operated upon 167 cases, with 62 recoveries and 105 deaths—a mortality of 65.45 per cent.[8] We are greatly indebted to many eminent American surgeons for their labours in this department of abdominal surgery. We must not estimate the value of immediate surgical interference from statistical statements, however carefully prepared; for gunshot injuries are so variable both in their extent and severity. Dr. Ernest Maylard, after giving an interesting summary of ten successful cases of laparotomy, remarks: "Statistics do not afford any very safe means for determining the value of operation; for so much depends upon the size of the projectile, the range at which it is fired, and the period of time elapsing before operation. Numerous cases of recovery are recorded where it appears certain that but for the operation a fatal result must have ensued."[9]

In conclusion, very few laparotomies appear to have been performed during the recent Greco-Turkish war. Mr. J. H. Davis (late Surgeon National Fund for Greek Wounded) states that he was present at only one laparotomy. The patient was a man who had received a penetrating wound of the abdomen, and the ball had escaped through the lumbar region. When brought in urgent signs of internal hæmorrhage were present, so the peritoneal cavity was opened and many clots removed, but no visceral injury could be discovered, and the patient recovered. Mr. Davis remarks: "This was the only laparotomy on the Greek side during the war that I heard of. Some had been performed by foreign Red Crescent surgeons with the Turks, but these, I am told, mostly proved fatal."[10]

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A NEW SUTURE FOR THE INTESTINE. MESENTERY, ETC.

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In operations upon the abdomen all surgeons of experience will agree that any saving of time compatible with accuracy of manipulation is a most important factor in success. The use of small needles within the abdomen, whether straight or curved, whether held like Hagedorn's in forceps, or in the fingers as in the case of ordinary sewing needles, has always required much time, whether for threading, handing, or fixing the needle in a holder, and many surgeons have tried to avoid this by the employment of buttons and other ingenious contrivances. But, being a believer in suture *versus* other mechanical contrivances, I have been experimenting for a year or two past on various forms of needles and holders which might save time by securing greater command over so small an object as a fine needle in awkward situations, and in avoiding the threading of one of these frequently, or of many to be handed to the surgeon in the course of an operation.

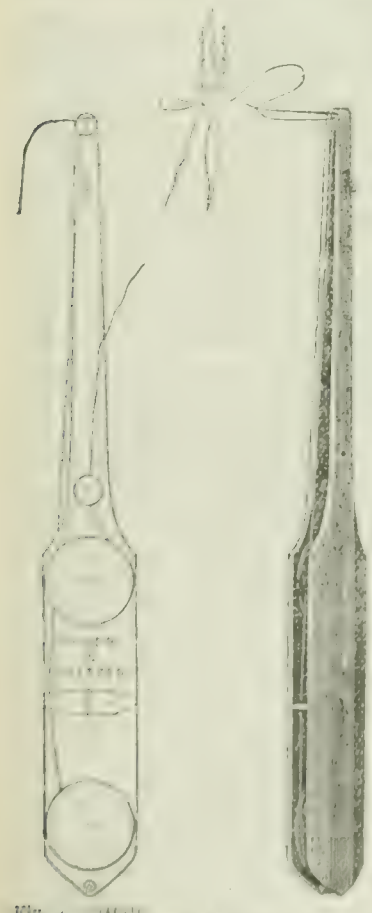


Fig. [illegible] The [illegible] instrument [illegible] with needle [illegible] for use [illegible].

In the end I have designed an instrument with which the finest needles may be held at any angle clear of the hand, and which only requires to be threaded once before the operation is begun. Moreover, the threads introduced with the needles so held can be used not only for the ordinary interrupted suture, and tied separately, but also (which in some cases is much better) for a row of suture identical with the stitching of many sewing machines, and requiring no knot until the final stitch.

I have used this little surgical "sewing machine" now for some months past, in various modifications, on several different kinds of case, including suture of the intestine and mesentery, and closing skin wounds, with much satisfaction. It has passed through various stages of evolution as its previous defects have been recognised, and is now, I venture to think, worthy of recommendation to others in its mature form.

The "sewing machine" consists of two thin steel blades, 1 inch broad at the handle end, and tapering to ¼ inch at the needle end. These blades are fitted together parallel to one another, leavings an interval of ¼ inch between them in which two, or better still, three reels, 1 inch in diameter, are held, which carry the thread. (Fig. 1.) The axles of the latter run in holes drilled in the blades, their ends being flush with the latter.

The circumference of the metal reels is almost flush with the edges of the blades, so that the pulp of the finger resting upon the latter can stop the play of the reel, or, on the other hand, roll it in either direction either to "pay out" thread or to "take in the slack," if any. The blades are held together by screws with T-shaped heads, which pass through longitudinal slits as the upper blade is laid upon the lower, and are then given one or two turns across the slits. When thus fixed the blades ought to just touch the shoulders of each reel round the axle. A turn of the T-screws one way or the other affects the adjustment either to hold the reel tightly or loosely.

The narrow ends of the blades are brought together by pressure, and when nearly touching the head of a third T-shaped screw held in the lower blade near its point, passes through a longitudinal slit in the upper blade, and when turned crosswise once or twice holds the points together. Between these points the needle is gripped firmly by an extra turn of the screw.

The "grip" for the needle is arranged thus. The end of the lower blade is drilled vertically ⅛ inch from its point. The fine hole thus made carries a screw which is the axle of a hard steel disk $\frac{5}{32}$ inch thick and ¼ inch in diameter, drilled through its centre, which lies on the upper surface of the lower blade point, and can be swivelled on the screw passing through it into the point of the lower blade. The head of this screw, which is countersunk in the disk, holds the latter down on the blade point, while a shoulder on its axle portion prevents it gripping the disk too tightly when twisted home. The upper surface of the disk has a groove running across it just clear of the axle screw. The disk is also pierced excentrically by a hole parallel to its plane surfaces, at about a right angle to the groove on its upper surface, and terminating under the left-hand end of the groove in the upper surface. The needle is laid in the latter, and the upper blade point is brought down upon it. The T-screw is then given one or two turns, and the needle is firmly fixed for use.

The thread previously wound wet on the reels, which are then boiled, is passed through guiding holes in the stops of the blade, and finally through the oblique hole in the swivelled "grip." It is then passed through the eye of the needle, which is near the point. The needle is, in fact, a sewing-machine needle, either straight or curved, either Singer's or Frister and Rossmann's pattern. It can be set at any angle to the blades by turning the swivelled disk, but the relation of the thread to the undermost groove running from the haft of the needle to its eye is not thereby changed. In this way it can be used for a right or left-handed thrust, and can be altered in a moment, without unlocking the blades, and simply with the fingers.

The needle so threaded can be used in several ways. It can be passed through the tissues to be united, and when the point emerges for about half an inch, it is slightly drawn back. This throws the loose portion of the thread on its upper surface into a loop, which can be caught by the fingers and drawn out to any desired length as it unrolls from the reel. When the needle is withdrawn this portion can be cut off, and used for one of the interrupted sutures.

But perhaps the best suture, as saving time, is the ordinary sewing-machine stitch which, I think, is new in surgery. The needle having been passed as before and the loop caught from the eye, the first loose "tail end" is drawn out without unthreading the needle. The latter is then passed for the next stitch and slightly withdrawn until the loop appears, which is caught and enlarged. Then the loose tail end of the previous stitch is passed through the loop and the latter is drawn home by withdrawing the needle, the finger meanwhile resting on the reel so as to stop it paying out thread. Then the needle is used as before, the loose end being passed through its loop, just in each case as the shuttle of the sewing machine passes through the loop of the thread as the needle in rising slacks the latter and throws it into a loop. This saves all the time and trouble of tying individual sutures until, of course, the last, which is fastened in the usual way. But care should be taken not to draw the stitches too tight, as one is decidedly inclined to do. Straight and

curved needles can be used, from the finest to the coarsest made for the sewing machine.

The two blades come asunder in a moment by turning the T-screws, and can be cleaned easily (Fig. 2). They are, I think, best sterilised for use by lying in strong spirit. The two or three reels, too, can be stored, charged with silk, in bottles of spirit. But the silk should previously be boiled in 1 in 20 absolute phenol solution before being wound wet on the reels.

The needle is designed for the smaller sizes of silk; the larger size needle will carry a fairly strong thread, quite enough so for a radical cure of hernia. But the reels will not carry much of the thicker sizes of silk; and, indeed, the latter would not run easily through the needle eye. But the smaller sizes do so easily, and as the reels can be put in position in a moment, if one is used up a fresh one from the bottle can be inserted. Each handle carries three reels, either with different sizes of silk or with a reserve quantity on one in case the first is used up. One reel will carry eight yards of stout thread, and of course very much more of the finer sorts. But it is for the use of the latter that the instrument was designed.

The principle of self-feeding needles is, of course, not new, as we have Sir Thomas Smith's for fine silver wire, and the late Mr. Greig Smith's for thread, but the present instrument is designed to meet objections which most surgeons have felt to these contrivances. I have shown my working model to Messrs. Meyer and Meltzer, who have now copied it for the benefit of any surgeons who may feel disposed to give it a trial. It has three reels instead of two as in Fig. 1. It only weighs a fraction over 3 ozs.

Like all sewing machines it requires some slight practice to render its use rapid and easy. This I have had myself in many cases, and find it very satisfactory and very simple. It saves much time, and the accuracy with which needles so held can be placed in the tissues is much greater than when the fingers alone are used. But it is well to emphasise again the fact that we are apt to draw the threads too tightly unless we are careful.

A CONTRIBUTION TO THE SURGERY OF HEPATIC ABSCESS CAUSED BY THE BACILLUS TYPHOSUS.

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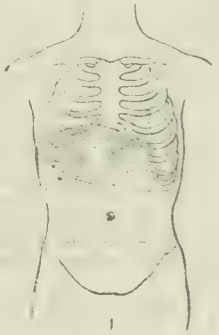
So rare is the occurrence of hepatic abscess in enteric fever that Lannois,[1] on the authority of Schultz, of Hamburg, tells us that it occurs only once in 36,080 cases.[2] Although they may arise as metastatic abscesses originating from some external focus of suppuration, or from the formation of typhoid ulcers in the biliary passages, most of the few cases on record have resulted from an infective suppurative pylephlebitis by direct extension from the intestinal ulcers. Such cases are reported by Lannois,[3] Romberg,[4] Asch,[5] Buckling,[6] Osler,[7] and others. Such, too, was the origin of the case to which I shall presently refer; and all, with the exception of this last, were fatal. That some of these abscesses may now with propriety be treated by surgical methods is apparent from the following.

C. B., a female child of 5 years, had a mild attack of enteric fever followed by symptoms of a relapse. On December 8th, in about the eighth week of the disease from its commencement, Mr. Dacre asked me to see the case in consequence of the occurrence of a rigor, but for which no cause could then be assigned. The patient was considerably emaciated, but the breathing was quiet and the pulse fairly strong. The temperature, which had been markedly fluctuating for some weeks previously, was 104.6° at the time of examination.

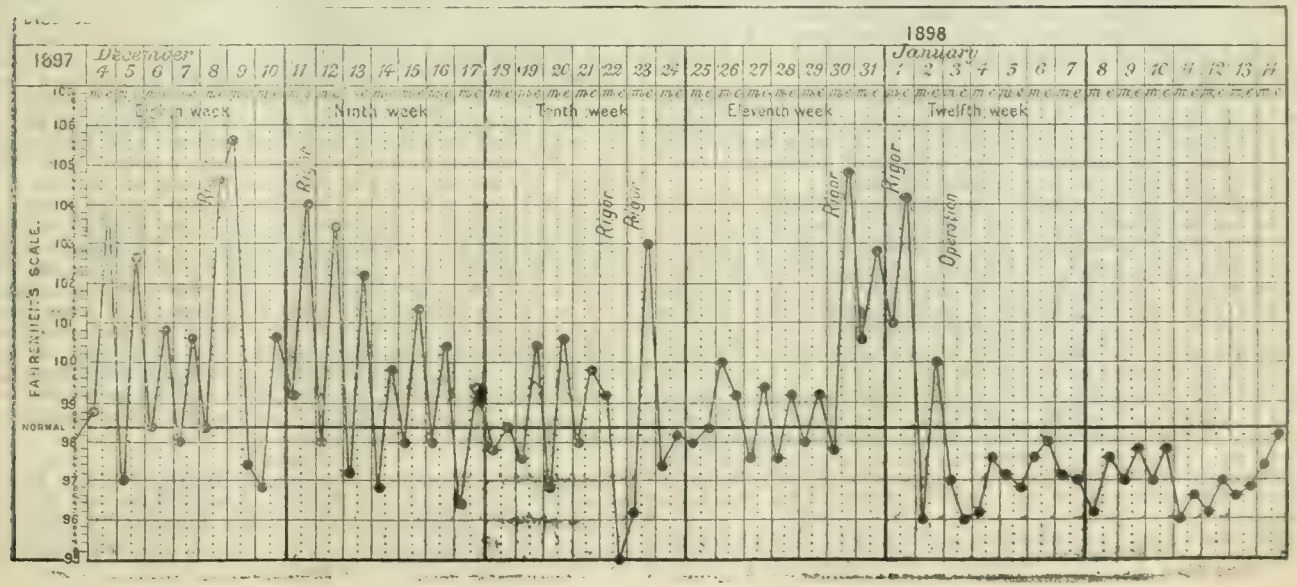
A second rigor occurred on December 11th, and about a week later the cartilages of the seventh, eighth, and ninth ribs on the left side were found slightly everted, but not thickened. This condition appeared to be due to a swelling in the left lobe of the liver, which could be felt in the epigastrium about one inch below the ensiform cartilage. The swelling, which was tender on pressure, was regarded as an incipient pyæmic abscess.

A succession of rigors occurred on December 22nd, 23rd, and 30th, and on January 1st, each rigor being followed by marked collapse, and the general condition became one of great gravity. The temperature is shown by the accompanying chart.

Towards the end of this period the swelling in the epigastrium increased very rapidly, and on January 1st the sharp edge of the enlarged liver could be felt about midway between the ensiform cartilage and the umbilicus. No pulsation was detected over the swelling, no fluctuation



could be felt, and no friction sound could be heard. There was no displacement of the heart, and the right lobe of the liver was not enlarge in the axillary line. The child complained of pain, but tenderness wa not now a marked feature. The general emaciation was extreme, but as the lungs and other organs appeared to be free from pyæmic infarction an operation was urgently advised, and in this Dr. Shingleton Smith and



Mr. Dacre concurred. Chloroform was administered on January 3rd. A vertical incision 2 inches long was made just to the left of the mid-line over the prominent part of the swelling. On opening the peritoneum it was found that the parietal and visceral layers were slightly adherent below and partly to the right of the incision. These adhesions were left undisturbed. An exploring needle was then introduced into the liver substance, and when about half an inch from the surface it entered a cavity, from which some thin brownish fluid was withdrawn. By means of a continuous stitch of fine silk the parietal peritoneum was sewn to the surface of the liver so as to surround an area of about 1 inch in diameter, the exploring needle occupying the centre. Sinus forceps were then passed in through the puncture as the exploring needle was withdrawn, and on opening the blades so as to tear through the liver substance some ounces of a thin brownish fluid escaped, followed by a thick flocculent yellowish (bile-stained) purulent fluid. Altogether about 5 or 6 ounces of fluid escaped, the cavity appearing to be about the size of a cricket ball. A rubber drainage tube $3\frac{1}{2}$ inches long and one-third of an inch in diameter, was then inserted, and the wound dressed with boric lint and Gamgee tissue. After evacuation the swelling in the epigastrium diminished to about one-half of its former size, the drainage tube emerging from the abdominal wall about 2 inches below the ensiform cartilage.

An agar culture of the fluid was taken at the time of operation, and was found to contain actively motile typhoid bacilli (*vide infra*).

At first the fluid which escaped in considerable quantity from the tube was of a brownish colour, and mixed with purulent flocculi and mucus. After about ten days it was watery, bright yellow or greenish from bile, with a slight amount of mucus and no visible pus. About three weeks after the operation, however, this was interrupted by a sudden discharge of pus, which lasted three days, but by February 3rd the wound was practically healed except for a few threads of the silk ligature, which were seen coming through the abdominal wall.

The temperature after operation was subnormal, and the child made a steady and uneventful recovery, so that in about two months from the time of operation she was fat and well.

Beyond expressing a preference for hepatotomy in one stage, I do not propose to enter upon the details of its well known methods of procedure, but it is desirable to state that the fortunate position of the adhesions, found in this case between the liver and the parietes, made me decide to operate in the manner above described, rather than to make a longer incision and break down these most useful adhesions by packing the wound with sponges in the ordinary way.

The result of the case is most encouraging in more ways than one. Here was a patient suffering from repeated rigors, with distinct manifestations of pyæmic infection. The first metastatic focus, however, was in an accessible situation, and operation prevented the spread of infection, for it cannot be doubted that, had the child escaped the danger of the bursting of the hepatic abscess into the general peritoneal cavity, death would probably have occurred from the formation of secondary infective foci.

The bacteriological examination of the fluid removed at the time of operation was kindly undertaken by Dr. Symes. Direct microscopic examination showed short bacilli with rounded ends. Agar stroke and plate cultures showed a few colonies of staphylococcus pyogenes aureus, and many colonies of short bacilli with rounded ends. The bacilli grew in broth, causing cloudiness of the medium, and were actively motile. There was no formation of indol, curdling of milk, or formation of gas in gelatine, but there was a characteristic Widal's reaction with typhoid serum, 1 in 20. There can be no doubt, therefore, that this organism was the bacillus typhosus of Eberth-Gaffky.

The only other cases which I can find of hepatic abscess in which the presence of the typhoid bacillus was demonstrated is that of Lannois,[1] to which reference has already been made, but in his case gelatine was liquefied by the organism. This, however, he attributes to an impure culture.

That the relief of tension may diminish inflammation by restoring the vitality of tissues which have been subjected to the pressure of inflammatory products is a matter of common knowledge; but, apart from this, it appears to me that the mere relief of tension has a marked influence on the destruction of some of the various organisms capable of producing suppuration. In the case narrated above the abscess was rapidly increasing before operation, and a culture of the fluid taken at the time of operation was found to be swarming with typhoid bacilli; and yet three days after operation—before any antiseptic had been applied to the abscess cavity—a second culture revealed only one colony of the typhoid bacillus. This rapid diminution in the number of the bacilli cannot be attributed to the antiseptic action of the bile itself, for the fluid removed at the time of operation was also bile-stained.

The same deterring influence on the growth of the bacillus coli communis by the relief of tension is repeatedly seen in cases of suppurative appendicitis. We may not know why these organisms multiply so rapidly when tension is great, but the indication for treatment by surgical means is obvious.

That relief of tension should prevent the absorption of the deleterious products of bacterial growth is intelligible enough, but why does that same relief of tension check the growth of the organisms themselves? Is it due to the replacement of stagnant fluid by a more or less actively-moving secretion of fresh fluid, and that this constant exudative stream prevents the development of the organisms? If this is so, the question of tension is only of secondary importance, although relief of tension is necessary before a healthy secretion of fluid can take place.

Granting, however, this explanation of the fact, it raises the question as to whether we are right in so frequently treating intraperitoneal suppuration by means of antiseptic flushing, which may do harm in other ways. Would it not be wiser to content ourselves with the relief of tension only, and thus leave the powerful phagocytic and exudative capabilities of the peritoneum to fight their own battles unimpaired by the endothelium-destroying influence of "flushing the abdomen"? Time and further experience will show.

I have been unable to find a record of any other case of hepatic abscess in enteric fever successfully treated by operation, but the above illustration is full of hope for those rare occasions on which this complication is likely to arise.

References.

[1] *Rev. de Méd.*, November, 1895; quoted in *Med. Rec.*, 1896, xlix, 924. [2] The same paper as quoted in *Gould's Yearbook*, 1897, gives a different frequency of occurrence. [3] *Loc. cit.* [4] *Berl. klin. Woch.*, 1890, No. 9; quoted in Waring's *Diseases of the Liver*, 1897, p. 81. [5] *Berl. klin. Woch.*, No. 51; quoted in *Med. Times and Gazette*, 1883, i, 16. [6] Waring's *Diseases of the Liver*, 1897, p. 81. [7] *Trans. of the Assoc. of Amer. Phys.*, 1897, xii, 382. [8] *Loc. cit.*

A CASE OF OPERATION FOR PERFORATED GASTRIC ULCER.*

By JOHN CAMPBELL, M.D., M.Ch., F.R.C.S.Eng.,

Surgeon Samaritan Hospital for Women, Belfast; and Assistant Surgeon Belfast Maternity Hospital.

History.—The patient was a widow, aged 35 years. Twenty years ago she had suffered for two years from persistent pain in the gastric region, which was aggravated by taking food. This disappeared, but for eighteen years she had been subject to attacks of pain of a neuralgic character, which occupied various situations—head, face, side, etc.—came on at irregular intervals, and were relieved by quinine. About the beginning of July, 1897, an attack of apparently the usual character came on. It was, however, noticed by Dr. O'Hara that the paroxysms had a distinct relation to the times of taking food, occurring about three hours after meals. Vomiting after food took place twice. Under dietetic treatment the symptoms were becoming less acute, when, on July 20th, 1897, she took a small quantity of porridge and milk for supper at 9 P.M., and at about 10.30 retired to bed, and fell asleep. Before 11 she was awakened by a sharp pain in the abdomen, which she recognised as more severe than any she had previously felt. It increased in intensity when she got out of bed. Dr. O'Hara saw her at 1.30 A.M. She had then great pain on the left of the epigastric region, and had vomited twice since the seizure. There was some rigidity of the abdominal muscles, and no alteration in normal liver dulness. The pulse was 80, and the temperature normal. She got one-sixth of a grain of morphine hypodermically, and ℥ iv of brandy by the rectum. At 1.30 P.M. on July 21st she was complaining of some pain in the epigastric region, and of inability to lie down, preferring a half-sitting posture in bed. Her pulse was 104, her temperature 101°, and her abdomen was considerably distended and tympanitic. As the pulse and temperature had been getting worse hour by hour, it was decided to operate at once.

Operation.

Accordingly chloroform was given by Dr. Mullan, and I proceeded to open the abdomen, Drs. O'Hara and Currie assisting. A median incision in the epigastrium allowed

* Read before the Surgical Section of the Royal Academy of Medicine in Ireland.

some gas to escape, and showed the front of the stomach to be covered by milky fluid, which welled out of the wound, and was sponged away to the amount of about 2 ounces. Many patches of lymph were seen towards the upper border of the stomach and across the front of it towards the left. The thickness of the abdominal walls rendered a longer incision necessary, and it was accordingly extended from 1½ inch below the ensiform process to 1 inch below the navel. Careful inspection then detected greenish fluid welling out of the stomach near the lesser curvature, and about 1 inch from the pylorus, the perforation being as large as a threepenny piece. Below and on the left the aperture was bounded by apparently normal stomach wall, and above and on the right by a mass of cicatricial tissue as thick as the forefinger. The opening was plugged with gauze, and the stomach area was packed round with towels which had been recently boiled. The edges of the opening were then trimmed with scissors, the cicatricial tissue being freely removed, except above, where cutting it away caused free bleeding. The raw edges were brought together by a continuous suture of fine silk, including the whole thickness of the stomach wall. Over this about a dozen interrupted Lembert sutures were placed, and over all a piece of small omentum was tacked down by a continuous suture. The abdomen was cleaned by gauze sponges. A gauze drain was inserted in the upper angle of the wound, reaching well over towards the spleen, where the gastric contents had spread most freely. The lower three-fourths of the wound was closed by interrupted silkworm-gut sutures. Owing to the distension great difficulty was experienced in getting the abdominal walls to meet over the bowels. Iodoform dressings were applied.

After-Treatment.

A copious enema given after operation proved very effective in relieving thirst. Nutrition was kept up for five days by enemata, then feeding by mouth was cautiously commenced, water being given first, then animal extracts, and then milk. The gauze drain was removed on the fifth day and the stitches on the fourteenth day. The track in which the gauze drain lay healed by granulations, the rest of the wound by immediate union. On the third day the pulse slowed down remarkably, and remained for twelve hours under sixty in the minute.

Remarks.

The abdomen was not flushed out because we thought the stomach contents had not spread far beyond the gastric region, and we feared that flushing might only disseminate them still further, therefore sponging and drainage were relied on. Previous to closing the abdomen the cavity of the small sac was inspected through an opening torn in the omentum near the lower border of the stomach. It was found to be uncontaminated, showing that the posterior wall of the stomach was intact. The progress after operation was in every way excellent. Both pulse and temperature at once fell, and remained down throughout the period of convalescence. The patient is now well, and has been free from pain since the operation. Much credit is due to Dr. O'Hara for his promptness in recognising the nature of the illness, and in at once advising operation.

KELOID (ALIBERT) AND INTRACTABLE PATCHES OF CHRONIC INFLAMMATION OF THE SKIN TREATED BY SCARIFICATION.

By HERMAN LAWRENCE, M.R.C.P.Edin., etc.,

Physician for Skin Diseases to St. Vincent's Hospital, Melbourne; Physician to Out-patients, Melbourne Hospital, Melbourne.

As cases of true keloid are so seldom cured by operation, I take the opportunity of reporting a case apparently successfully treated by myself.

M. O., aged 46, attended my skin clinic at St. Vincent's Hospital, Melbourne, two and a-half years ago. He was then suffering from a typical keloid, about 3 inches in length, with claw-like processes extending from either side of it. The growth was situated in the long axis, and on the dorsal surface of the right forearm. He complained of severe pain caused by the growth, which prevented him from carrying on his usual occupation. I twice freely excised the growth, but it returned quickly after each operation. I then exhibited the case at a meeting of the Victoria Branch of the British Medical Association, but operation was not advised. However, as the man still complained so bitterly of the constant worrying pain caused by the tumour, I decided to try some new mode of attack.

The operation performed was as follows: With a five-bladed scarifier, the blades being $\frac{1}{20}$ inch apart, I "mince-meated" the tumour and adjacent skin by making longitudinal and cross incisions into it, the network of scar tissue now presenting shows that the surface of the skin was divided into 400 sections to the square inch. After thus "mince-meating" the blood vessels in the growth and adjacent skin I encouraged bleeding by hot boracic fomentations, and then (after dusting the part with iodoform and dressing with zinc-glyco-gelatine) applied continuous pressure by a piece of solid india-rubber tubing, 4 inches in length and 3 inches in diameter, over the situation of the operation. The india-rubber pad was bound fairly tight to the arm by strips of Mead's plaster, the strips of plaster not quite meeting upon the under surface of the arm; by this means adequate pressure was obtained without interfering with even the venous circulation. After the first two dressings, at intervals of two days, the zinc-glyco-gelatine dressing was not continued. The application of pressure by this method was kept up for several months, the part beneath presenting the appearance of a thin scar tissue the whole time. It is now twelve months since the operation, and the condition of the part still remains the same, the man having been entirely free from pain or discomfort during the whole time, whereas after the two occasions upon which I removed the growth by excision, the pain was complained of, and the growth reappeared very quickly after the healing of the wound.

I have practised this operation of mince-meating the blood vessels, followed by two to three days' application of pressure, very successfully in the treatment of the following skin affections: Chronic patches of eczema; lupus erythematosus (œdematous variety), the scarifying being done very superficially; chronic patches of non-apparent catarrhal inflammation of the skin, with marked irritation as left after a general eczema; patches of chronic traumatic dermatitis, and intractable patches of chronic lichen planus.

The following case will illustrate the method of treatment and success obtained by it:

M. G., aged 36, states that 13 years ago he had an acute attack of eczema, more or less general, for which he was treated successfully, with the exception of two patches upon the inner side of the left leg. The irritation was so marked in these patches that he had frequently sought treatment for them, but without receiving any permanent relief. Internally he had been treated with arsenic, potassium iodide and other drugs; externally he had used numerous ointments, pastes, nitrate of silver applications, chrysarobin, traumaticin, picric acid, also salicylic creosote, plaster mull, zinc-glyco-gelatine, and the method of protection by Mead's plaster. There was one patch about 2 inches in diameter upon the inner side and a little below the left knee-joint, and another patch about 5 inches in length by 3 inches in breadth upon the inner side of the left thigh. The surfaces of these patches were slightly reddened with scant papery scales, the marking of the skin exaggerated, and when th skin was pinched up between the fingers a thickened leathery condition of it was very marked. Pruritus was the urgent symptom which caused him continually to seek treatment. I applied strong salicylic and creosote plaster mull under bandage for 24 hours, then removed the soddened epidermis and applied a strong solution of cocaine. I then operated with the scarifier previously described, making several longitudinal incisions parallel to one another, and then cross incisions in a like manner. I encouraged bleeding with hot boracic fomentations, rubbed in iodoform, dressed with zinc-glyco-gelatine, and applied pressure as in the case of keloid. After three days' treatment by this means the pressure and dressings were discontinued. The patient stated that he received immediate relief by this treatment, but three months afterwards I had occasion to operate again upon a part of the larger patch, which had evidently escaped the true application of pressure.

I consider the blades on the instrument used for these operations should be at least one-sixteenth of an inch apart, otherwise pieces of the skin are torn away when making the cross incisions.

The Canadian Medical Association.—The Canadian Medical Association will hold its thirty-first annual meeting in Laval University, Quebec, on August 17th, 18th, and 19th. The Association has a membership of between 600 and 700. The President is Dr. J. M. Beausoleil.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

MORPHINE IN URÆMIC ECLAMPSIA.

Two cases of uræmic eclampsia associated with labour have lately been recorded in the JOURNAL, one of which proved fatal. In the following case the morphine treatment, as recommended in recent textbooks, was apparently the cause of the patient's recovery.

Mrs. M., who had borne two children previously without mishap, was confined on May 29th at 10 P.M., the child being delivered with comparative ease. She had suffered from headache and œdema of the legs for a few weeks. Vomiting began one hour after delivery. At 7 A.M. on May 30th she had the first convulsion, and at 10 A.M. the second. Hot applications were placed on the back, and she was given a hypodermic injection of pilocarpin gr. $\frac{1}{3}$ and morphine gr. $\frac{1}{2}$. Further convulsions, however, occurred, more severe and more frequent as evening drew near, and the patient became quite insensible even between the attacks, the pupils failing to react to light. The temperature never rose above 100°, nor was the pulse increased in frequency. No nourishment had been retained when given by the mouth, so she was fed by rectal injections. At 8 P.M., after the seventh convulsion, a small quantity of urine was drawn off by catheter; it was deep orange in colour, and was rendered solid by albumen when boiled. Hot bottles were now placed round the patient in bed, and she was given a hypodermic injection of pilocarpin gr. $\frac{1}{3}$ and morphine gr. j. During the night she was comatose, with slow snoring respiration and minutely contracted pupils, but she sweated profusely, and had no more convulsions.

At 10 A.M. on May 31st she was awake and sensible, remembering nothing of what had occurred, but complaining of a sore tongue, which was found to have been bitten. She was ordered a purgative, followed by a diaphoretic mixture and milk diet. She had no vomiting, and made an uninterrupted recovery.

On June 11th there was a bare trace of albumen in the urine. No milk appeared in the breasts.

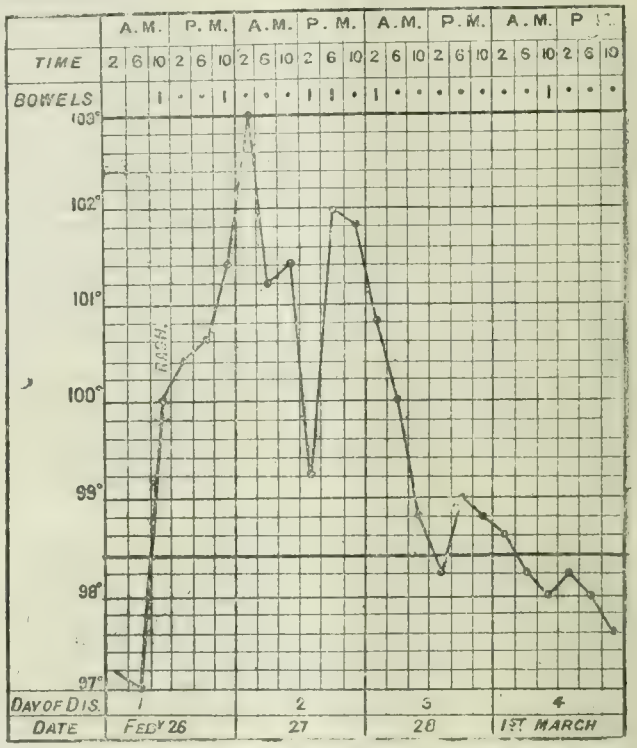
Uxbridge. LOUIS A. FRANCIS.

MEASLES: RASH ON FIRST DAY OF SYMPTOMS.

I THINK that unusual points in ordinary illnesses—especially infective—deserve record and attention, even if not of major importance, and therefore I record a case illustrating the above still more definitely than Dr. Jarratt's,[1] since his case was not seen until the day of rash, and there might have been slight unnoticed prodromata, whereas this one had been under skilled observation for three weeks before.

O. S., aged 5 years, was admitted to the Alexandra Children's Hospital on February 2nd, 1898, for simple fracture of the lower end of the femur under my surgical colleague Mr. H. H. Taylor, with whose permission I write. The patient had not had measles. On February 8th another child in the same ward admitted on the previous day developed measles and was sent home at once.

The child O. S. remained with subnormal temperature (97° F.), and absolutely no prodromal symptoms until the morning of February 26th (fourteen days counted from February 8th would end on February 22nd—that is, four days before the eruption, during which four days such symptoms might have been expected). At 6 A.M., the temperature was still 97°, but at 8 A.M. a discrete papular red rash was noticed on the back, then on the chest and face. At 9 A.M. the temperature was 100° F., and the child was isolated. There was no vomiting, rigor, or evident illness. By 1 P.M. the face looked heavy, the eyes suffused, with red patches on the lower lids, and the conjunctivæ were slightly injected. The papules, still discrete, were now scattered over the face, mostly on the forehead and chin, the latter only [illegible] measles. There were some herpetic lips, [illegible] and [illegible] more on the flexor aspects. The tongue was pale and coated. There was no sore throat, but dusky mottling over the soft palate; no cervical or occipital glands were enlarged. By night the temperature was 103°, and by afternoon next day the rash was characteristic, with catarrh, etc., and the case followed a favourable course, with normal temperature, on March 1st.



[1] BRITISH MEDICAL JOURNAL, October 16th

The difficulty of early diagnosis from rötheln is self evident, but that this really was a case of measles is the opinion of all who saw it. (I am indebted to Mr. Jones, house surgeon, for some notes.)

I should like to mention another point, though perhaps fairly well known, namely, that although the temperature may be 102° on the first prodromal day, it may be normal on the next, rising again that night or next day.

Brighton. EDWARD MACKEY.

THE DIAGNOSIS OF PYELITIS.

ALTHOUGH the Hunterian Lectures for this year are by one of the masters of our art, and are at once a veritable storehouse of sound advice and a brilliant record of their author's work, I may yet be permitted to draw attention to what has appeared to me to be a defect.

In the technique for the operation of exploring the kidney and ureter (BRITISH MEDICAL JOURNAL, April 23rd, p. 1063) the author seems to throw cold water on the examination of the bladder by electric light: "It is rarely needful or helpful, and as a rule causes an unnecessary waste of time." Later on he refers to the difficulty of deciding which kidney is affected in certain cases of calculous anuria, and states that "the cystoscope is quite unnecessary in these cases." At p. 939 (April 9th) he quotes a case in which his patient was passing muco-pus, but in which he was not certain which was the affected kidney; so he cut down on the wrong one. It appears to me the cystoscope would have prevented such a serious procedure as this. The following case from my own practice is in point:

A. B., about 50 years old, had been passing muco pus and irrigating his bladder for about five years before I saw him, his medical advisers believing he had cystitis. What struck me at once during my examination of him was his statement: "I declare I have not, nor have I ever had, pain." So it struck me that the pus was, at any rate, not cystic in origin. There was no tenderness nor enlargement of the kidneys. But I examined him with the cystoscope, and saw the pus pouring from the

left ureter like thick custard. I was then obliged to leave the station, so I sent my patient home and Mr. H. Fenwick removed the calculus from the left kidney. I may add that I tried, but failed, to make out the stone with an *x* ray apparatus, although the coil gave a 14-inch spark.

In regard to the waste of time which Mr. Morris refers to in connection with electric endoscopy, it would appear that the time required must vary greatly; but in the case I have quoted it only took about two minutes, no anæsthetic being necessary, and I do not recollect Mr. H. Fenwick ever spending more than five minutes over the actual electrical examination.

Mysore. JOHN SMYTH, M.D., Surgeon-Major I.M.S.

SCARLATINIFORM URTICARIA.

On the night of April 27th I was called to a man supposed to be suffering from scarlatina. I found him with a red rash in patches closely clustered together, but with sound skin between these patches. The temperature was normal, the pulse 78, the tongue clean, and no sign of any febrile disturbance whatever. I decided to express no opinion till next morning. I found the symptoms the same; there was no sore throat; the bowels were well relieved; and, in fact, I could find nothing the matter except an acute urticaria of the erythematous type. I elicited that this man had freely eaten of tinned salmon and cucumber some three or four days previously; and I also discovered that he had acute gonorrhœa of about ten days' standing; and, further, that he had some "stuff from a chemist's" which proved to be a copaiba mixture; so that the case proved to be one of acute erythematous urticaria caused by copaiba.

On May 9th I examined the man, and found desquamation in little patches (scurfy), on face, hands, neck, and forearms. There was no desquamation on the legs or body, and the rash had quite gone. At no time was there rise of temperature, pulse, or any "febricula."

Certainly when I first saw the man it was very difficult to say what was wrong, but the next morning by daylight it was easy to see that the exanthem was not that of scarlatina. I based my diagnosis on the following points: The tongue was clean; there was no sore throat; the pulse was normal; the temperature was 98½. The eruption came out suddenly all over the body, and was diffused in patches, more especially on the body and legs. There was the history of a hearty meal of tinned salmon and cucumber; and, finally, on close questioning, I found that I had to treat a case of gonorrhœa accompanied by copaiba rash. The rash was most irritable, and the itching intense. Slight scurfy desquamation, in patches corresponding to the patches of urticaria, occurred on the seventh day.

I remember four similar cases which I saw during my medical career. They all ran a similar course, and in all there was slight peeling of the skin on the face, neck, and forearms and hands. In one case only was there any desquamation of the trunk. I can readily understand that a person who only saw my patient on the first night might easily have ordered him to hospital, for on the face and neck the eruption was very close and diffused, but a closer inspection of the arms, legs, and body revealed the real nature of the case, as well, of course, as the subsequent progress of the case.

Banbury, Oxon. JOHN J. A. RAYE.

A CASE OF POPLITEAL ANEURYSM IN A FEMALE.

A woman, 55 years old, came to the Hull Royal Infirmary complaining of "rheumatism" of the right knee. On examination, she was found to have a popliteal aneurysm the size of a large orange, extending up to the origin of the artery at the adductor magnus. The circulation of the leg was much interfered with, neither anterior nor posterior tibial arteries were felt, and the leg was œdematous; no disease could be detected in the other arteries. There was no history of injury, and the only fact suspicious of syphilis was that she had had three miscarriages by her second husband, who she said was not a "good man." Up to the last seven months, she had been used to sedentary occupations, but since then, owing to the husband being out of work, she had had to gain a living as a hawker, which necessitated her standing or walking for sometimes as long as eight hours. It is to this that she attributed the disease, probably with some accuracy. The femoral artery was ligatured in Hunter's canal, and the patient left the hospital for a convalescent home in ten days. Now, six weeks after the operation, she remains perfectly well. The aneurysm is consolidated and circulation in the foot greatly improved, both anterior and posterior tibials being easily felt, and the œdema of the leg entirely gone.

Although we are told in the textbooks that aneurysms occur in females in the proportion of 1 to 13 exclusive of carotid and dissecting aneurysms, I can only find records of four cases of popliteal aneurysm in females, during the last thirty years, in the literature at my disposal.

E. M. HAINWORTH, M.D., B.S.Lond., F.R.C.S., Assistant Surgeon, Hull Royal Infirmary.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SHEFFIELD ROYAL HOSPITAL.

CASE OF MEMBRANOUS INFLAMMATION OF TONGUE AND MOUTH, WITH PRESENCE OF THE STAPHYLOCOCCUS PYOGENES AUREUS AND OTHER MICROCOCCI.

(Under the care of ARTHUR J. HALL, B.A., M.B.Cantab, M.R.C.P.)

[Notes by EDWARD W. ADAMS, M.B.Lond., House Physician to the Hospital.]

MRS. J. H., aged 19, was admitted on December 31st, 1897, suffering from acute nephritis, during the course of which she developed well-marked double neuro-retinitis, with the history of which, however, we are not immediately concerned.

The first intimation of the oral affection came on the night of March 6th, 1898, when the patient complained of soreness of the right side of the tongue and cheek. In the morning the tongue was found to be distinctly, though not greatly, swollen, and more so as regards the right than the left half. A patch of whitish membrane, easily detachable, and leaving no ulceration, but merely a redness on removal, was seen about midway along the right border of the tongue. About the place where this would come into contact with the right cheek, was a similar patch. There was also a small circular patch about the size of a lentil on the inner surface of the lower right lip near the angle of the mouth. The breath was offensive, and there was salivation.

During the next few days the tongue increased greatly in size, the right half, however, always maintaining the lead. The patches became more extensive and spreading by continuity along the inner side of the anterior part of the tongue, and a similar patch keeping pace with this along the inner surface of the lip near the junction with the mucous membrane of the gum, the left border of the tongue was ultimately invaded. Salivation became excessive and the fœtor of the breath very bad. No patches were seen on the fauces; there was no difficulty in breathing and no dysphagia.

About a week from the commencement the tongue had so swollen as to fill the whole cavity of the mouth, and projected between the teeth to the extent of three quarters of an inch, or thereabouts. Movement of the organ very limited, and causing much pain. The swelling was firm and non-fluctuating. The patches increased in size, and became more dirty-white than heretofore, while at the tip of the tongue a patch became converted into a gelatinous-looking mass. To open the mouth was an impossibility.

The temperature, which was at first not raised above what was usual to the patient, now became somewhat heightened (remittent), but never reached above 101° F., which was on the fourteenth day of the affection. Externally there was considerable swelling about the face, especially of the lower lip, which was much thickened, and about the angles of the jaws, cheeks, and neck.

The affection having reached its acme, became stationary for a few days, when distinct improvement set in. The tongue

diminished in size and the patches in extent. A view being again obtainable of the interior of the mouth, the hard palate was seen also to be covered with membrane, but the soft palate and fauces were clear.

On March 31st the tongue was wholly within the cavity of the mouth. Ultimately the glosso-stomatitis almost entirely cleared up, but the patient succumbed to her orginal disease.

Various remedies were tried. The measure having most influence for good was the application of sulphur freely to the patches, aided by a mouth wash of chlorinated soda solution. At its height salivation was most excessive. Dr. Alexander Anderson, to whom a portion of the membrane was sent for bacteriological examination, reports that he found no bacilli present, but two cocci in abundance—the staphylococcus pyogenes aureus and albus.

REMARKS BY DR. HALL.—The very distressing condition produced in this patient by the great swelling of the tongue, lips, and neighbouring parts, together with the perpetual flow of saliva, which poured out of the mouth in very large quantities, undoubtedly weakened her very much and accelerated her death, although not the immediate cause. The attack followed upon a series of cases of "follicular tonsillitis," which had been occurring here and there in the ward during the few weeks previous, but none of which had been at all severe; and I am inclined to think that the same causes were at work in her case as in the others. It is curious that in this patient the micro-organisms should have chosen an unusual site to commence, and further, that in spreading so extensively they should have never, so far as I know, reached the the tonsils or fauces at all, for she never complained of dysphagia during the days when the disease was at its height, and it was impossible to examine the throat. The thick membranous exudation mentioned in the notes had the consistence of incompletely coagulated white of egg, and could be removed in large masses with great ease. As the tongue increased in size and filled the oral aperture, anything like adequate local treatment became very difficult, especially as any manipulation produced greatly increased flow of saliva. The local pain and discomfort, together with the sleeplessness, were more serious than any general toxic symptoms, which were indeed markedly absent. As to the diagnosis, there is no doubt that the mouth affection was set up by the local spread of micro-organisms, and from the report, for which I am greatly indebted to Dr. Anderson, of the City Fever Hospital, it would seem that the staphylococcus pyogenes aureus played the most prominent part. Why such an unusual position should have been selected I do not attempt to say, nor why it should not have extended backwards to the fauces. The reason of its very flourishing growth may, I think, be attributed to the diminished power of resistance on the part of the patient owing to acute nephritis.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

CASES OF PHTHISIS TREATED WITH GUAIACOLATE OF PIPERIDINE.

(Under the care of Dr. ACLAND, Physician to the Hospital.)

[We are indebted for notes of these cases to Mr. A. J. MARTINEAU, late House-Physician to the Hospital.]

IN the BRITISH MEDICAL JOURNAL for January 16th, 1897, is a paper on "The Treatment of Phthisis by Guaiacolate of Piperidine," and as the drug has not been at present very extensively used, the two following cases are of interest as showing the same general conclusions as those arrived at by Dr. Arnold Chaplin and Dr. Tunnicliffe, namely, that the drug is safe, and well borne by the stomach, that it causes no unpleasant after-effects, and that the patients improved in general condition while under its influence.

CASE I.—W. M., aged 27, was admitted on December 1st, 1897, and discharged on March 19th, 1898. One sister had died of phthisis. He had cough, pain in chest, night sweats, and dyspnœa for three years. The diagnosis was disseminated pulmonary tuberculosis, infiltration of both upper lobes, no softening or excavation. No tubercle bacilli were found in the sputum. He was treated with guaiperol, at first gr. 5, later gr. 10, in cachet three times a day after meals. While taking the drug he suffered no inconvenience; in fact, pain after food, which was one of his symptoms, disappeared and appetite increased. Night sweats disappeared and temperature and cough improved. No change was detected in the physical signs. The weight increased by 9½ lbs. While in the hospital he passed through an attack of influenza, which delayed his progress somewhat.

CASE II.—J. M., aged 21, was admitted on January 5th, and discharged on March 31st, 1898. Four uncles and aunts on his mother's side had died of phthisis. For twelve months he had had cough, night sweats, sleeplessness, and loss of appetite. The diagnosis was: Chronic pulmonary tuberculosis, not very active. Infiltration and early softening of right upper lobe. Infiltration left apex. Tubercle bacilli were present in fair numbers in the sputum. Guaiperol gr. 5 in cachet three times a day after meals was given all the time he was in the hospital. The temperature was a little irregular at first, but improved later, and did not go above 99°. The night sweats disappeared, and the appetite improved. No discomfort was experienced from taking the drug. As regards physical signs, the note on January 5th says "numerous small *râles* over right upper lobe increased by cough." The note on March 30th says, "a few *râles* heard after cough over right upper lobe." Weight, at first decreasing, ultimately increased by 1½ lb.

THE INFIRMARY, PETERBOROUGH.

THE HISTORY OF A CANCEROUS FAMILY.

(Under the care of J. H. POWER, House-Surgeon.)

THE following family history of a patient in this hospital under Dr. Kirkwood is interesting. He had his right breast removed for scirrhus about two years ago, and malignant glands removed from the axilla last year. He now has malignant growth in the axilla too far gone for complete removal. He had two brothers and eight sisters.

Father died, aged 46, of cancer of left breast.
Mother died, aged 86, of old age.
First brother died, aged 65, of cancer of throat.
Second brother died, aged 24, of cancer under left arm (patient says he did not have it in breast).
First sister died, aged 63, of cancer of right breast.
Second sister died, aged 46, of cancer of both breasts.
Third sister died, aged 40, of cancer of both breasts.
Fourth sister died, aged 54, of cancer of breast.
Fifth and sixth sisters, now alive, have both of them cancer of breast.
Seventh sister died young.
Eighth sister died in childbed.

REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

Wednesday, July 6th, 1898.

C. J. CULLINGWORTH, M.D., President, in the Chair.

THE SAGITTAL FONTANELLE.

DR. ARNOLD LEA read a paper on the sagittal fontanelle in the heads of children at birth. He stated that abnormal fontanelles had been known to be present in the head of the fœtus at birth for many years; several of these membranous spaces had been described (naso-frontal, cerebellar, medio-frontal, sagittal), of which the most interesting to obstetricians was the sagittal fontanelle, first described by Gerdy in 1837. The author's observations were based upon the examination of 500 consecutive cases at birth. The sagittal fontanelle was situated 2 cm. in front of the posterior fontanelle, on a transverse line drawn between the two parietal eminences. Its average length was 1½ cm. and width 1 cm. It might form a space as large as the anterior fontanelle, or it might be developed on one side only. The edges of the membranous space were usually formed of well-developed bone, but at times there was deficient ossification of the posterior part of the parietal bone. He had found the membranous space present in 4.4 per cent. of his cases; he had not included those in which there was only a notch in the parietal bone. The fontanelle was bilateral in 17 cases and unilateral in 5 cases; in 4 instances it extended up to the parietal eminence on each side. A description was given of the development of the parietal bones and of the obstetric and medico-legal interest of the fontanelle, and of its effect in facilitating moulding of the head.

DR. HERMAN said that two practical points arose out of the laborious and careful investigation of Dr. Lea. The first was

that a sagittal fontanelle might mislead one who diagnosed the fœtal position by feeling the sutures and fontanelles. But this would not trouble anyone who was accustomed to diagnose the position by abdominal palpation. The second was that a sagittal fontanelle indicating backward ossification might invite a trial with forceps in a case which with a very hard head would call for perforation.

Dr. Herbert Spencer expressed surprise that the fontanelle had been found in 4.4 per cent. of cases. He asked Dr. Lea whether his observations were clinical or *post mortem*. He (Dr. Spencer) was well acquainted with fissures in the parietal bone, which were common, and every obstetrician knew how depressible the upper edge of the parietal bone often was; what was really only a fissure might, therefore, appear to the examining finger as a space; but having carefully examined the skulls of over 300 newborn infants *post mortem*, he had not met with one instance of a sagittal fontanelle at all comparable to the anterior fontanelle. He had, however, met with a parietal fenestra and with insular ossification and absence of ossification in the parietal bones of the mature fœtus. He had no doubt that as a considerable anatomical space the sagittal fontanelle occurred with much greater rarity than that stated by the author.

The President said it would no doubt have been quite as much a surprise to the Fellows generally as it had been to him to learn that a genuine sagittal fontanelle had been found in so large a proportion of cases. He thought the liability of this extra fontanelle to be mistaken for a fracture the result of violence had an important medico-legal bearing.

Dr. Lea, in reply, stated that the percentage of cases of parietal fontanelle observed by him was similar to that of M. Hemy. In children some months old instances in which it remained open were not uncommon. He had examined two cases in which the infants died soon after delivery.

Fronto-anterior Positions of the Fœtal Head.

Dr. George Roper read a note on this subject. He stated that, after an extensive experience in difficult labours, he never felt satisfied with the knowledge he had of the difficulties connected with the fronto-anterior positions of the fœtal head in labour. With a child beyond average size, or with a small or misshapen pelvis, considerable difficulties occurred. He referred to the description of the labour in Dr. Herman's book on *Difficult Labour*, and stated his opinion that the difficulty was due to the position of the child's trunk. He (Dr. Roper) recommended, after a moderate trial with forceps, podalic version in the treatment of these cases, and showed an instrument he had devised for facilitating traction on the leg.

Dr. Herman thought that Dr. Roper had done service in calling attention to the fact that the mechanism of delivery did not depend only upon the relation of the head to the pelvis. The position of the trunk caused extension of the spine, which led to extension of the head. Also, as Dr. Roper had pointed out, the fœtus would enter the pelvis more easily when its concave abdominal aspect was applied to the mother's lumbo-sacral convexity.

Dr. Peter Horrocks said that he agreed that the tendency in these cases was at first towards extension, but after further descent into the pelvis the head tended to be flexed by the uterine forces. The treatment depended upon the mobility of the fœtus; when there was little or no mobility the proper treatment was not rotation, nor version, but craniotomy.

Acute Bedsore after Parturition.

Dr. Blacker read a communication on a case of acute bedsore following parturition.

Specimens.

The following specimens were shown: Dr. Pembrey: Five Cake-like Bodies (containing fœtuses) which were found free in the peritoneal cavity of a large rabbit.—Dr. J. D. McCaw: A Cystic Fibro-myoma of the Uterus removed by laparotomy from the uterus in the middle of pregnancy; delivery at term.—Dr. Wise: Ovum with Hæmorrhage into the Placenta.—Dr. Tate: Uterus removed by Vaginal Hysterectomy.—Dr. Herbert Spencer: Ovarian Dermoid which, incarcerated in pelvis, was pushed up in the middle of pregnancy and removed after delivery at term.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

H. R. Swanzy, F.R.C.S.I., President, in the Chair.

Friday, July 8th, 1898.

Subconjunctival Bloodletting for Hæmorrhagic Retinitis.

Mr. Richardson Cross read this paper. Recognising the fact that a considerable amount of blood escaped from the wounded vessels in squint and other subconjunctival operations without any ill-effect, the author determined to try the effect upon intraocular hæmorrhage or congestion of a more or less free division of the blood vessels running along the muscles and in the subconjunctival tissue. For this purpose he made free incisions beneath the conjunctiva either between the inferior and internal recti, or between the superior and external recti; the incisions were followed by the use of hot fomentations. From the result of this kind of interference in several cases, the author felt justified in recommending this plan of abstracting blood from the branches of the ophthalmic artery. In one case in which there were numerous retinal hæmorrhages round the disc, with much congestion of the retinal vessels, and some optic neuritis, leeches and general medical treatment had been applied without benefit, and V was reduced to $\frac{6}{60}$. Free incisions were made into the subconjunctival tissue with strabismus scissors so as to lacerate as many vessels as possible, and warm fomentations were afterwards applied. The next day the pupil was dilated, and there was marked diminution in the swelling of the disc, with an improvement in vision. This improvement was steadily maintained, and the vision was eventually completely restored. Several other cases were quoted in which considerable improvement resulted.

The Mechanism of the Conjugate Movements of the Eyeballs.

Dr. Aldren Turner read this paper. He showed that there was accumulating evidence in favour of the sixth nerve nucleus being the lower or pontine centre for the associated action of the internal and external recti muscles; and that the fibres from the sixth nucleus of one side probably passed directly into the third nerve of the opposite side, without the intervention of cells in the third nucleus, facts which indicated that the internal recti were doubly innervated; on the one hand, from the third nucleus for convergence, and on the other from the sixth nucleus, for lateral movement. Respecting the path by which impressions were conveyed from the cerebral cortex to the sixth nucleus, he referred to an experiment in which the tegment of the pons was divided without interference with the sixth nucleus. As a result, conjugate deviation of both eyes to the opposite side, with inability to move them to the side of lesion, was observed. The conclusion drawn from this observation was that the corticipontine fibres decussated in the neighbourhood of the quadrigeminal bodies, and passed downwards in the tegment of the pons to the sixth nucleus.

The President made some observations on the position of the nuclear centre for convergence, and on the probability of there being not one but several cortical centres for conjugate movements of the eyes.

Mr. Jessop thought that absence of convergence power was a very rare condition; he knew of only one case, in a boy subject to epileptic fits. He had advanced both internal recti, with the result that the boy now had several metre angles of positive convergent power.

In reply, Dr. Turner stated that he had only seen one case of paralysis of convergence, while the conjugate movements were unaffected. He referred to the loss of pupillary contraction on attempts at convergence in that case, while the pupillary light reflex was retained. This phenomenon was the converse of the Argyll-Robertson pupil.

Large Clear Cyst of the Conjunctiva.

Mr. Simeon Snell (Sheffield) related particulars of this case. The cyst was as large as a hazel nut; it was concealed almost entirely by the lower eyelid, but when the lid was drawn down it bulged forward. The patient was aged 23; the cyst had been noticed since childhood but was then quite small. Ten months before coming under observation he was struck

over the cyst, which enlarged and became blueish in colour; before this it was transparent. Microscopical examination of the cyst made by Mr. Treacher Collins showed it to be lined throughout by a single layer of endothelial cells, outside which was some moderately dense fibrous tissue with patches of round-celled infiltration in it. The cyst was probably lymphatic in origin.

Chancre of the Lachrymal Sac.

Mr. Simeon Snell related this case. The patient sought advice for what he deemed subacute inflammation of the lachrymal sac. When seen there was no ulceration of the sac but there was a more than usual defined margin to the swelling. There was nothing to suggest a primary lesion. Later the canaliculus was slit up and the duct probed with some slight relief; afterwards a macular syphilide appeared on the chest and arms with ulceration of the tonsils. Presuming the lesion of the lachrymal sac to be a primary sore, the secondaries appeared in correct sequence as to time, the first swelling of the sac being noticed on April 3rd and the rash appeared on May 13th. The thickening of the sac and the rash quickly dispersed under mercurial treatment.

Card Specimens.

The following were the card specimens:—Mr. Richardson Cross: Plastic Operation for Contracted Socket.—Mr. Ernest Clarke: Pigmented Mole of Face and Eyelids.—Mr. Adams Frost: Case of Pseudo-glioma.—Mr. Marcus Gunn: Preparation of a Sclerosed Retinal Artery.

EDINBURGH OBSTETRICAL SOCIETY.

R. Milne Murray, M.D., F.R.C.P.E., Vice-President, in the Chair.

Wednesday, June 22nd, 1898.

Specimens.

Professor A. R. Simpson showed (1) Specimens of Ovarian Tumours: (2) Doyen's Forceps for compressing the pedicle in ovariotomy.—Dr. Brewis showed (1) a Tumour of the Left Ovary with a Twisted Pedicle, the posterior surface of which was adherent to the bowel, giving rise to symptoms of obstruction. There was a large quantity of blood in the tumour. (2) A Uterine Fibroid weighing 40 pounds, where the patient had suffered from amenorrhœa.—Dr. Foulis showed Dissections from Fœtal Deer. Last autumn he had made a collection of fœtal deer, or embryos, and for some months past he had been working at the development of the genito-urinary organs; and he now showed the Society four carefully-made dissections, in all of which, under a low magnifying power, it was possible to see the Wolffian bodies, and the Müllerian and Wolffian ducts passing downwards towards the tail end of the young animals to form that structure known as the genital cord, which became attached to the sinus urogenitalis, a part of the allantoic stalk. It was also possible to see in these preparations the urachus, the bladder, and the two large hypogastric arteries on either side of the allantoic stalk. In one preparation the genital cord was dissected out, and it could be seen that the Müllerian and Wolffian ducts made up that cord, and in the same preparation a part of the sinus urogenitalis had been cut away, just at the spot where the genital cord joins it; and on the urethral floor thus exposed could be seen an eminence which was evidently the verum montanum, said by some observers to be the analogue of the hymen in the female. In another preparation the sexual eminence was well seen, and on its under surface was a distinct fissure which might close in during the formation of the urethra or might be the vaginal orifice with the nymphæ on either side within the labia majora.

The Analogues of the Male and Female Genital Tract.

Dr. Berry Hart read a paper on this subject. He demonstrated that the sinus pocularis was the analogue of the hymen and lower third of the vagina, and therefore that all below and including the sinus pocularis was equivalent to the lower third of the vagina and vestibule. He had found traces of the uterus masculinus in the prostate of the four and a half months male fœtus. He regarded the vagina as probably derived from the pronephros, the ovary and testis as certainly developed in connection with the mesonephros. Thus the sexual glands and ducts were intimately correlated with Wolffian structure. The various analogues of the organs and the significance of the rudimentary organs in either sex were then considered, and a limelight demonstration of specimens were given.

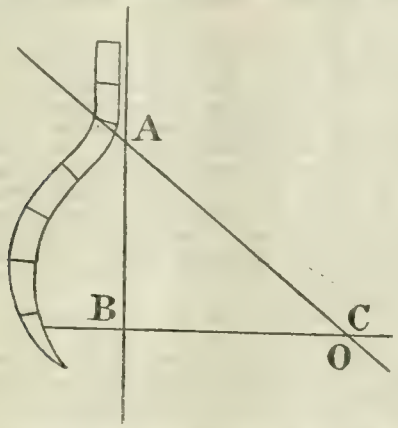
Remarks were made by the Vice-President, Dr. Foulis, and Professor Simpson; and Dr. Berry Hart replied.

The Promontory and the Build of the Pelvis.

Dr. Freeland Barbour read a paper on The Position of the Promontory as shown by Frozen Sections, and its Effect on the Build of the Pelvis. In judging of the character of a pelvis one instinctively first looked at the conjugate of the brim. Its length gave a key to the pelvis, but its significance merely expressed the relation of the promontory to the symphysis. The position of the promontory therefore determined the build of the pelvis. The relation of the promontory and symphysis was the key to pelvic deformity, and this because the weight of the body was one of many factors which determined the form of the pelvis. It thus became important to ascertain the normal relation of these two bony landmarks, any difference in the position of the promontory was usually ascribed to a difference in the length of the conjugate. The object of the paper was to show that there was another factor of equal importance in the set of the brim, by which was meant the difference in its inclination apart from posture. The results were based on a study of 18 frozen sections, too few from which to draw general conclusions, but enough to raise considerations of interest. The sections were made of the cadaver on the back. It was difficult to formulate a method of description which would express with accuracy the relation of the abdomen to the pelvis. Let a line (A B) be drawn through the promontory of the sacrum in the direction of the long axis of the body, and representing the horizonta

Section.	A.C. or Anatomical Conjugate.	Obstetrical Conjugate.	A. B. or Height of Promontory above Symphysis.	Intersection of C. B. with Back Wall of Pelvis	Angle A. C. B. or Set of Brim.	C. B. or Distance of Promontory Backwards from Symphysis.	Angle of Inclination of Axis of Abdomen to Brim.
		Inches.	Inches.		Degrees.	Inches.	Degrees.
		3·44	3·08	I. V. and V. S.	55	2·2	35
		4·28	4·00	0·4 below C.	64	2·0	26
		4·72	3·80	0·6 "	61	2·2	29
		4·40	4·00	II. C.	59	2·6	31
		5·28	5·20	IV. C.	65	2·6	25
		4·50	4·10	III. C.	58	2·8	32
		4·40	3·40	II. C.	48	3·4	42
		3·60	2·80	II. C.	50	2·5	40
	4·80	4·60	4·00		58	2·3	32
	4·70	4·40	3·80	II. and III C.	58	2·6	32
	4·80		3·80	IV. and V. S.	54	3·0	36
	4·40		1·60	II. C.	54	2·0	36
	4·60		4·00	I. and II. C.	58	2·6	32
	3·92		2·92	II. C.	50	2·2	40
	4·60				57	2·6	33
	4·42			II. C.	59	2·6	18
	4·60			IV. S.	33	4·0	57
	5·00			IV. C.	60	2·6	30

plane when the patient was recumbent. Let a second line be drawn through the upper margin of the symphysis c at right angles to the former, intersecting it at B. There was thus a



right angled triangle A B C, the base of which A C was the anatomical conjugate of the brim. The points to be determined were how high the promontory extended above the symphysis, and how much it overhung the pelvic cavity, and would tend to keep the head on the symphysis instead of allowing it to sink down into the pelvis. Dr. Barbour indicated the results of his sections in the table on page 156. The foregoing details might be expressed in the general conclusion that the position of the promontory varied greatly according to the build of the pelvis, individual pelves differing greatly not only in the length of the conjugate but in the set of the brim. The mean height was 3.8 in. above the symphysis, while the distance from the latter was 2.6 in. The height of the promontory above the symphysis was important chiefly from the point of view of topography. The length of the line C B was as important as the length of the conjugate. The shorter it was the more would the weight of the uterine contents rest directly on the pubes in pregnancy, and the more would the progress of labour be affected. Undue shortness of C B would affect not only the engagement of the head at the brim, but also the effectiveness of uterine contractions in expelling the contents.

Association of Registered Medical Women.—At a meeting on July 5th, Miss Cock, M.D., President, in the chair, the President showed a case of Erythema Marginatum in a child aged 8.—Miss Thorne, M.D., read a paper, based on 67 cases of Abdominal Section, performed in the New Hospital for Women, whose histories she had followed up with the view of determining the subsequent health of the patients, more especially with regard to the occurrence after abdominal section of (1) intestinal obstruction; and (2) ventral hernia. One case of ovariotomy operated upon in 1892 died of acute intestinal obstruction in 1897. Two patients who had returned with ventral hernia were now in excellent health. The results of the remaining 64 were very satisfactory.—Three communications were read from foreign members. Miss Farrer, M.B. (Bhiwani, Punjab), sent notes of two cases of Scarlet Fever in Europeans, probably conveyed by infected letters from England—interesting on account of the rarity of the disease in India. There was no spread of the disease to natives in close attendance on the patients throughout the illness.—Mrs. Grumpelt (Cape Colony) sent notes on the successful treatment of a case of Intractable Dysentery of nearly two years' standing, with magnesium sulphate.—Miss Greene (of Antigua, West Indies) sent an account of some cases of Eclampsia amongst native women.

The Medical Faculties of Switzerland.—The total number of students in the medical faculties of the Swiss universities during the current summer semester is 1,085, of whom 294 are women. The students are distributed among the several universities as follows: Basle 141, of whom 4 are women; Berne 189, of whom 41 are women; Geneva 271, of whom 86 are women; Lausanne 144, of whom 39 are women; Zurich 340, of whom 124 are women.

REVIEWS.

Tropical Diseases: A Manual of the Diseases of Warm Climates. By Patrick Manson, M.D., LL.D.Aberd. London: Cassell and Company. 1898. (Cr. 8vo, pp. 624. 10s. 6d.)

Dr. Manson's book contains a lucid and succinct account of the chief diseases peculiar to warm climates, and moreover possesses the uncommon quality of being full of suggestive material which will be particularly valuable to workers in this domain of medicine. The volume is divided into seven sections. Section I is devoted to fevers; it occupies one-third of the volume, and includes malaria, yellow fever, plague, dengue, Mediterranean fever, Japanese river fever, Nasha fever, kala-azar, tropical typhoid fever, heatstroke, and unclassed fevers. Section II deals with general diseases of an undetermined nature, such as beri-beri, epidemic dropsy, and negro lethargy. Section III deals with abdominal diseases, which embrace cholera, dysentery, endemic gangrenous rectitis, hill diarrhœa, sprue, tropical liver, abscess of the liver, infantile biliary cirrhosis, and ponos. Section IV treats of infective granulomatous diseases; Section V of animal parasites and associated diseases; Section VI of skin diseases; and Section VII of local diseases of uncertain nature. The enumeration shows that the term tropical disease covers a wide range of subjects.

Dr. Manson employs the term "tropical" in a meteorological rather than a geographical sense, meaning by it sustained high atmospheric temperature, and by the term "tropical diseases" he indicates diseases which occur only in warm climates, or from one circumstance or another are specially prevalent in them. Such diseases mainly have their origin not in high temperature *per se*, but in the influence which that temperature exerts on the parasitic fauna of warm regions.

It is hardly to be expected that in so condensed a volume covering so large a field, the subjects would be all treated with the same degree of excellence. The two sections which treat of malaria and of the animal parasites and associated diseases, branches of study to which Dr. Manson has given particular attention, are exceptionally full and able expositions of the subjects. The chapter on malaria gives a very clear account of the intra-corporeal or human cycle of the plasmodium, and as the description is accompanied by a number of illustrations, the life span of each variety or species of plasmodium in the blood, whether of twenty-four, of forty-eight, or of seventy-two hours, is explained in a manner that renders the subject easily understood, contrasting much in this respect with the somewhat confusing accounts usually met with. As regards the flagellated bodies it is pointed out that these forms are never seen in newly-drawn blood, and that they come into view only after the slide has been mounted. Their origin from the crescents in one type of plasmodial infection and from certain large intra-corpuscular plasmodia in other types is fully explained. Though the intra-corporeal life-history of the several parasites rests on a sound basis of observation, the same remark does not apply to the life-history of the plasmodium outside the human body, and the subject is still a matter of speculation, notwithstanding the work of Laveran, Manson, Ross, and others. From the fact that the flagellated body does not come into existence until the blood has left the vessels, or in other words until it is outside the human body, Dr. Manson holds the view that the function of the flagellum also lies outside the human body, and that the flagella are flagellated spores, the extra-corporeal homologues of the intra-corporeal spores; in fact that the flagellated body constitutes the first phase of the extra-corporeal life of the plasmodium. He holds that the plasmodium is an intra-cellular parasite both inside and outside the human body, and that in the latter situation it is parasitic in the mosquito. Doubtless Dr. Manson's previous work on the filaria has gradually influenced him in directing his attention to the mosquito as the intermediate host of the malarial parasite. Man, by this theory, becomes infected by drinking water contaminated by the mosquito, or by inhaling the dust of the mud of dried-up mosquito-haunted pools, or in some similar way. MacCallum's views, based on his observations on an endocorpuscular pigmented parasite occurring in an American crow, in which

free flagella derived from the hyaline halteridia enter the granular free halteridia, effecting certain changes and forming vermicules, are mentioned, together with Ross's experiments on malaria-infected mosquitoes, as being compatible with the mosquito hypothesis. The opposite views of Marchiafava, Bignami, Blanchard, and others are also given. These authorities consider that the crescents, spheres, and flagellated bodies are degenerated, dead, or moribund parasites. It is evident that much work has still to be accomplished before we are in possession of a sufficient number of facts either to confute or confirm the views expressed, and we entirely agree with Dr. Manson that such is the importance of the subject, both from a scientific and practical point of view, that no efforts should be spared to advance our knowledge on this subject. Dr. Manson follows Mannaberg's classification of the malaria parasites.

The chapters on animal parasites and associated diseases are particularly interesting and instructive. The subject is peculiarly important, because the conditions of life in the tropics are such that not only are natives who are careless in their habits extremely subject to verminous invasions of many descriptions, but the more careful and fastidious European is also constantly exposed to the same danger. The ability to recognise the presence of these parasites is important, for they give rise to many obscure diseases. The diagnosis, treatment, and prophylaxis of filariasis, bilharzia disease, guinea worm, ankylostomiasis, and other diseases are fully entered into, and without overburdening the work Dr. Manson gives a capital description of the life-history of the parasites. Dr. Manson's views in regard to leprosy are not the same as those propounded by the recent Indian Commission, but he gives good reasons for the views which he expounds, and they are those held generally by medical men who have had much practical experience with leprosy. The illustrations for beri-beri have been well chosen.

Apart from the theoretical considerations to which we have directed particular attention, the various subjects are dealt with in a thoroughly practical manner, and the volume is one which we can recommend to the student and the practitioner. It will be useful not only to those who intend to practise in the tropics, but to those whose lines are cast in our seaports or on our ocean steamboats. The reputation of the author is sufficient guarantee that the matter is sound, and that it is treated in a scientific spirit. The book is especially opportune at a time when so much attention is being directed to the necessity for the study of tropical diseases.

ON MATERNAL SYPHILIS: INCLUDING THE PRESENCE AND RECOGNITION OF SYPHILITIC PELVIC DISEASE IN WOMEN. By JOHN A. SHAW-MACKENZIE, M.D.Lond. London: J. and A. Churchill. 1898. (Demy 8vo, pp. 236; 5 illustrations. 10s. 6d.)

WE have long ceased to look upon gonorrhœa in the female as a relatively trifling disease. No doubt the reaction has been carried to extremes, so that the devastating effects of the gonococcus have been greatly exaggerated, but the fact remains that gonorrhœa is too often the parent of certain well-known pelvic lesions. Their treatment is also a subject of much debate. Some gynæcologists advise simple expectant treatment; some advocate early removal of the appendages; whilst several foreign authorities hold the latter step insufficient. Much of the disease, they declare, lies in the uterus. Hence, in their opinion, that organ should be extirpated as well as the tubes and ovaries.

Such radical measures hardly deserve the name of good surgery if the pelvic inflammatory changes be due to a well-known specific lesion. Better, it would seem, to rest the patient for months in bed, a method which certainly may cure if adopted in time. Yet it is not always successful, and other remedies are often needed. Dr. SHAW-MACKENZIE rightly quotes the recorded experience of Dr. Matthews Duncan, the extreme advocate of expectant treatment. Duncan traced ovaritis in young prostitutes to gonorrhœa, and everybody now admits the truth of his opinion. But he notes also that a large mass of cases occur in association with recent marriage, abortion, and delivery, and turning to treatment he insists that the best medicines are corrosive sublimate and the iodide and bromide of potassium.

These words are very suggestive. Gonorrhœa certainly causes pelvic diseases in women, but may not the same be said of syphilis? That supposition is the keynote of Dr. Shaw-Mackenzie's book. He believes that syphilis is really a cause of pelvic disease in the mother, and seems a source of infection to the child—a theory more probable, in his opinion, in many cases, than the paternal origin and "syphilis by conception" in the mother more usually accepted.

The author lays stress on the stimulating effect which gestation has upon syphilis known to exist in the mother. The menopause has a similar influence. He also dwells on pelvic disease in multiparous women subject to hereditary syphilis. In short, there is often latent syphilis in the female just as the same disease may be quiescent in the male, and though the latter may infect the child he begets, the blame in infantile pre-natal syphilis may lie with the mother, whose pelvic symptoms, attributed to other causes, may be truly syphilitic.

The book is largely made up of comments on over 200 clinical reports from the casebooks of Mr. Henry Lee, under whom the author has worked, and other authorities. The reports deserve close study, for we have yet much to learn about the effects of syphilis on the female organs and on gestation.

Dr. Shaw-Mackenzie's chapter on treatment is of great value, and it should remind the obstetrician and gynæcologist of the importance of a careful study of the management of venereal disease. He admits that benefits following the administration of mercury and iodides is not a diagnostic proof of syphilis, but it is at least significant, and the clinical cases which he publishes support such a diagnosis. He allows that pruritus vulvæ in the aged and at the menopause may be relieved by local and general mercurial treatment, though it is not a venereal disorder. But he maintains that cases in which curetting for "imperfect miscarriage" is usually recommended, cases actually sent to hospital for that purpose have done well under antisyphilitic treatment without curetting.

From the above remarks it will be seen that this work is of considerable importance, and likely to bear good fruit. Perhaps many of its readers may be induced to forswear the knife, the curette, and the douche in favour of perchlorides and iodides with a result not unsatisfactory to their patients.

THE POTTER AND LEAD POISONING. By W. DOWLING PRENDERGAST, M.D. London: Marshall, Russell, and Co. 1898. (Crown 8vo, pp. 64. 1s.)

THE publication of this small book is extremely opportune. Dr. PRENDERGAST, after spending fifteen years in Hanley, has in a few pages embodied his experience and tried to show how the disastrous effects of lead upon potters may be minimised, if not altogether prevented. Work in the potteries is even more fatal than the returns of the Registrar-General show. The population of the district is estimated at 250,000, all more or less dependent upon this particular industry. Dr. Prendergast properly condemns the use of raw lead glazes, and is of opinion that in a more extensive use of "fritted" or vitrified lead is to be found one means whereby plumbism may be largely diminished.

It is not only lead poisoning that is the scourge of the potter: the work is dusty, and hence the death-rate of potters from phthisis is twice as great as that of occupied males generally. Dr. Prendergast expresses his opinion strongly against the employment of young women in the trade; he thinks that children find employment therein at too early an age. He is in favour of the artisans being selected after medical examination. Whether it is possible to dispense with the use of lead altogether in the trade is, he holds, an open question.

THE DISEASES OF THE LUNGS. By J. K. FOWLER, M.D., and RICKMAN GODLEE, M.S. London: Longmans, Green and Co. 1898. (Demy 8vo, pp. 715, 160 illustrations. 25s.)

THIS is a practical handbook, though unusually full and perfect, rather than a complete treatise. The first chapter, which is anatomical, is illustrated by 43 plates, and is especially useful in the clear description of the pleural boundaries, and

the course and relations of the chief bronchi. The second, on physical diagnosis, is of a very practical character, and contains a section on cardio-pulmonary murmurs, which will be the more appreciated the more the reader has studied the subject.

We will not criticise every part of the book, but prefer to select the three subjects of Bronchiectasis (chapters VIII and IX), Pneumonia (chapters XV to XVIII), and Pulmonary Tuberculosis (chapters XXVII to XXXV) as examples. In Chapter VIII a section on the etiology of bronchiectasis is followed by one on the morbid anatomy of the cylindrical and saccular forms, and by others on changes in the dilated bronchi, changes in the adjacent lung tissue, and associated pathological lesions. Then comes a full discussion on the mode of production according to the various causes: intrinsic (bronchitis, bronchial stenosis, bronchial obstruction), and extrinsic (in the lung and pleura). The authors believe that the dilatation is caused by violent expiratory efforts acting on softened and inflamed bronchial walls, and deny the power of traction usually ascribed to fibrous change within the lung. Sections on the symptoms and course contain full descriptions of the sputum, and of the stages of the disease; and the diagnosis from chronic bronchitis, tuberculosis, and empyema is discussed. Lastly, the treatment by creosote vapour is fully described, two cases being quoted at length, and others cited to show the effect. Chapter IX is given up to the peculiar form "honeycomb lung," sometimes seen in children.

In the chapters on pneumonia there are good sections on bacteriology, leucocytosis, crisis and lysis, and type. It is not advised to take active steps to reduce temperature, unless this rises above 104° F. The serum treatment seems innocuous, but has not yet been sufficiently tested to be proved of value. Chapter XVIII describes subacute indurative pneumonia, which is a rare form of disease.

The authors urge that the term "pulmonary tuberculosis" should be now substituted for "phthisis," and define it as a disease produced by the bacillus tuberculosis. They divide it into miliary, caseous, fibroid, and chronic or fibro-caseous, describing each form fully with temperature charts and illustrative cases. Sir Andrew Clark described a "fibroid phthisis" which was non-tuberculous, and was dependent upon chronic disease of the pleura. This view is opposed by the authors, who divide these cases into those of fibrosis of the lung with bronchiectasis due to pneumonia, and others of fibroid tuberculosis, with thickening of the pleura secondary to retraction of the lung. In the chapter on the chronic form an interesting section is devoted to the site of the lesions, in which stress is laid upon the early involvement of the apex of the lower lobe. In the chapter on treatment, besides the section on drugs, the rules in force at Brompton to prevent the spread of infection are reproduced *verbatim*, there is a long description of the open-air treatment for which several institutions exist in Germany, and others are springing up in England, a discussion on the old tuberculin which is unreservedly condemned (the new tuberculin R has not yet been sufficiently tested), and much sound advice on climate.

The chapter on the surgical treatment of cavities of the lungs is an excellent summary of the subject, and that on the surgery of the pleura is practical and clear.

The subjects are excellently arranged in a tabular form, and the illustrations are very good.

Presentation.—Dr. T. J. Murphy, who, as already announced, recently resigned the post of Resident Medical Officer of the Cork Workhouse, has been presented by the officials of the workhouse with a gold watch bearing the following inscription: "Presented to Dr. T. J. Murphy, on his departure from the Cork Workhouse, as a token of sincere regard from the officials. July 9th, 1898."

Medical Congress at Buenos Ayres.—The Latin-American Scientific Congress held recently at Buenos Ayres attracted a large attendance. A number of interesting and valuable communications were presented on hygienic and medical subjects by delegates from the various Latin-American countries. From some of them it may be gathered that cancer is increasing in South America as rapidly as elsewhere. In Buenos Ayres it has risen from 91 per 1,000 deaths to 115 in the last twenty-six years. The next Congress will be held at Montevideo in 1901.

ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF THE COUNCIL.

At a meeting of the Council held in the Council Room of the Association, 429, Strand, London, W.C., on Wednesday, July 6th, 1898,

Present:

Dr. Robert Saundby, President of Council, in the chair.
Sir Thomas Grainger Stewart, M.D., President-elect.
Dr. Charles Parsons, Treasurer.

Dr. Henry Barnes, Carlisle.
Dr. James Barr, Liverpool.
Dr. Michael Beverley, Norwich.
Dr. Thomas Bridgwater, LL.D., Harrow-on-the-Hill.
Mr. Langley Browne, West Bromwich.
Mr. Henry T. Butlin, London.
Mr. James Cantlie, London.
Dr. Alfred H. Carter, Birmingham.
Mr. Andrew Clark, London.
Dr. W. F. Cleveland, London.
Dr. John Ward Cousins, Portsmouth.
Dr. H. Radcliffe Crocker, London.
Dr. E. H. Dickinson, Liverpool.
Dr. T. M. Dolan, Halifax.
Brig.-Surg.-Lieut.-Col. E. F. Drake-Brockman, London.
Dr. W. Dyson, Sheffield.
Mr. George Eastes, M.B., London.
Dr. W. A. Elliston, Ipswich.
Dr. David W. Finlay, Aberdeen.
Sir Walter Foster, M.D., M.P., London.
Mr. R. S. Fowler, Bath.
Dr. John H. Galton, Upper Norwood.
Dr. Bruce Goff, Bothwell.
Dr. William Gordon, Exeter.
Dr. Ogilvie Grant, Inverness.
Dr. J. Groves, Carisbrooke, Isle of Wight.
Dr. Henry Handford, Nottingham.
Mr. J. D. Harries, Shrewsbury.
Mr. J. Hughes Hemming, Kimbolton.
Dr. Holman, London.
Mr. T. Vincent Jackson, Wolverhampton.
Mr. Evan Jones, Aberdare.
Mr. Jordan Lloyd, Birmingham.
Mr. N. C. Macnamara, London.
Dr. J. C. McVail, Glasgow.
Dr. J. W. Miller, Dundee.
Dr. John William Moore, Dublin.
Mr. W. L. Morgan, Oxford.
Mr. R. H. B. Nicholson, Hull.
Dr. J. W. J. Oswald, London.
Dr. Isambard Owen, London
Mr. C. H. W. Parkinson, Wimborne Minster.
Dr. R. W. Philip, Edinburgh.
Dr. Frank M. Pope, Leicester.
Dr. John Rolston, Devonport.
Dr. William Russell, Edinburgh.
Dr. W. Sedgwick, London.
Dr. G. E. Shuttleworth, Richmond.
Dr. R. Somerville, Galashiels.
Mr. Henry Stear, Saffron Walden.
Dr. W. J. Tyson, Folkestone.
Mr. T. Jenner Verrall, Brighton.
Dr. W. L. Winterbotham, Bridgwater.
Dr. S. Woodcock, Old Trafford.

The minutes of the last meeting having been printed and circulated, were taken as read and signed as correct.

Read letters of apology for non-attendance from Dr. Batten, Mr. Manning, Mr. Jones Morris, Dr. G. Hare Philipson, Dr. Phillips-Conn, Dr. Rayner, Dr. Markham Skerritt, Dr. Urquhart, and Dr. J. Roberts Thomson.

Read letter of thanks from Dr. Roberts Thomson for the Council's resolution of sympathy on his recent severe accident.

Read letter from Dr. Bridgwater to the President of Council acknowledging receipt of Council's resolution of sympathy.

Read communication from Lord Herschell respecting index to Report of the Vaccination Commission stating that he had been again in communication on the subject, and that he had reason to hope that an index would be published.

Read invitation from Portsmouth for the Association to hold its annual meeting there in 1899.

Resolved: That the invitation for the Association to hold the annual meeting in 1899 in Portsmouth be referred to the Council of 1898-99, which meets at Edinburgh on July 27th.

Read resolution passed by the Council of the Dublin Branch respecting the date of the October Council meeting.

Resolved: That the October meeting of the Council this year be held the second week in October, namely, the 12th.

Read letter from the National Deposit Friendly Society:

Head-Office: 11, Red Lion Square, London, W.C., June 8th, 1898.

DEAR SIR,—I have seen with regret in the BRITISH MEDICAL JOURNAL expressions of dissatisfaction with the arrangements this Society makes for medical attendance upon its members.

I am quite sure this is brought about by our system not being properly understood, and, on behalf of this Society, may I ask if your Association will appoint two of its members to meet at this office two members of the General Committee of this Society, on a date to be agreed upon, to talk the matter over with a view to a settlement of the question being arrived at? An early reply will be esteemed.

Yours faithfully,
F. LITCHFIELD.

R. Saundby, Esq., M.D.,
British Medical Association,
429, Strand, W.C.

Resolved: That Dr. Oswald and Dr. Beverley be appointed a Subcommittee to interview Mr. Litchfield.

Resolved: That the sanction of the Council be given to the Psychological Section to invite Mr. Myers, of Cambridge, not being a member of the Association, to take part in one of their discussions.

Read letter from the Executive Committee of the Edinburgh meeting asking for an alteration in the time of the delivery of the address in Psychology.

Resolved: That the address in Psychological Medicine be given at 9.30 A.M. on Friday, followed by the concluding general meeting, and that the Sections meet at 11 o'clock.

Resolved: That Professor Francesco Durante be recommended for election as an honorary member of the British Medical Association at the next meeting in Edinburgh.

The President of Council reported that he had drawn up the following Memorandum on the use of the letters M.B.M.A.:

It having been been brought to the notice of the Council that the letters M.B.M.A., meaning thereby Member of the British Medical Association, are misused by being placed after the names of members upon medical certificates and other documents, and as this use of these letters is calculated to convey the impression that the person to whose name they are appended is a Bachelor of Medicine and a Master of Arts, the Council expresses its serious disapproval of this practice, and resolves that in future members desiring to signify their membership of the Association will, instead of these initial letters employ some such abbreviation as M.Brit.Med.Assoc.

Resolved: That in future members desiring to signify their membership of the Association should, instead of these initial letters, employ some such abbreviation as M.Brit.Med.Assoc.

Read resolutions from the Hospital Reform Association:

1. That the best thanks of the Council be given to the Council of the British Medical Association for their kindness in voting a donation of £50 towards the expenses of the Hospital Reform Association.

2. That an application be made to the Council of the British Medical Association for permission to hold a meeting in Edinburgh during the annual meeting of the British Medical Association.

3. That in the opinion of the Council the time has arrived when a general inquiry should be instituted by the British Medical Association into the system of administering medical relief in the hospitals and dispensaries of the United Kingdom; and the Council of the Hospital Reform Association would beg to suggest that a Special Committee should be appointed for carrying out such an inquiry.

T. GARRETT HORDER.

Resolved: That the Council sees no reason to appoint a Special Committee, as the Medical Charities Committee is already carrying on the work indicated.

Read applications for permission to hold meetings during the annual meeting from (1) Irish Schools' and Graduates' Association, (2) New Sydenham Society, (3) Scotch Poor-law Medical Officers' Association.

Resolved: That permission be given to the various Societies and Associations to meet in Edinburgh, providing they do not interfere with the meeting of the Association.

Read letter from Lord Lister, asking for renewal of the grant of £200 for the Institute of Preventive Medicine.

Resolved: That £100 be given to Lord Lister for the British Institute of Preventive Medicine, and that Lord Lister be informed that he must not look upon this as an annual subscription.

Read application for grant of £25 from the Railway Servants' and Mariners' Eyesight Committee.

Moved by Mr. Macnamara, seconded by the Treasurer, and resolved: That £25 be voted to the Railway Servants' and Mariners' Eyesight Committee on the reappointment of that Committee.

Read communication from Dr. Nestor Tirard, Honorary Secretary Therapeutic Committee, returning balance of unused grant, and asking for a further grant of £50, and for the following names to be added as members of the Committee upon its reappointment, namely, Dr. J. B. Bradbury, Dr. C. R. Marshall, Dr. A. H. Carter, Dr. Rose Bradford, Dr. Wm Osler, and Dr. Sidney Phillips.

Resolved: That the question of a grant to the Therapeutic Committee be deferred until its reappointment by the Thursday's Council at Edinburgh.

Resolved: That the attention of the First Lord of the Admiralty be drawn to the want of instruction in tropical diseases in the education of naval medical officers at Haslar, and that he be requested to receive a deputation upon the subject.

The following motion was moved: That a list be prepared for the use of the Council of the Indian and British Colonial qualifications in medicine, surgery, and midwifery which confer a licence to practise.

Resolved: That the matter be referred to the Journal and Finance Committee.

Resolved: That the 79 candidates whose names appear on the circular convening the meeting be and they are hereby elected members of the British Medical Association.

The Annual Report of Council was then considered.

Resolved: That the Report of the Council, as amended, be received and approved and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 161.

Resolved: That the Report of the Parliamentary Bills Committee be received and approved, and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 164.

Resolved: That the Report of the Scientific Grants Committee be received and approved and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 166.

Resolved: That the Report of the Inebriates Legislation Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting at Edinburgh on July 26th. See page 174.

Resolved: That the Report of the Anæsthetics Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting at Edinburgh on July 26th. See page 177.

Resolved: That the report of the Therapeutic Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 174.

Resolved: That the report of the Committee of the Railway Servants' and Mariners' Eyesight be received, approved, and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 176.

Resolved: That the report of the General Practitioners and Ethical Committee be received, approved, and published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 176.

Resolved: That the minutes of the Inebriates Legislation Committee of May 3rd last be received, approved, and the recommendations contained therein carried into effect.

The minutes of the Inebriates Legislation Committee contain resolutions suggesting various amendments to the Habitual Inebriates Bill brought in by the Home Secretary.

Resolved: That the minutes of the Scientific Grants Committee of June 30th last, with the exception of two resolutions which were referred to the Journal and Finance Committee, be received, approved, and the recommendations therein carried into effect.

The minutes of the Scientific Grants Committee contain applications for the two vacant scholarships, also applications for new and renewed grants. The Committee appointed Dr. J. L. Bunch and Dr. G. Elliot Smith to the vacant scholarships, and voted the sum of £366 in scientific grants.

Resolved: That the sum of £366 be allotted for scientific grants and £450 for scientific scholarships.

Resolved: That the minutes of the Constitution Committee of June 30th last be received, approved, and that the report of the Committee be published in the JOURNAL for presentation to the annual meeting in Edinburgh on July 26th. See page 164.

The minutes of the Constitution Committee contain the opinion of counsel as to the present mode of electing the Council, and a resolution to the effect that, in view of the small amount of interest taken by the majority of the Branches in the Committee's last report, which had been circulated to the Branches for comment, the Committee recommended the Council to take no further action in the matter.

Resolved: That the minutes of the Journal and Finance Committee of to-day's date and special meeting of May 12th, with the exception of Minute 919 (respecting the Reference Committee), be received, approved, and the recommendations contained therein carried into effect.

The minutes of the Journal and Finance Committee contain a resolution recommending the Council to establish a fourth scholarship, to be called "The Ernest Hart Memorial Scholarship in Preventive Medicine," tenable for two years, under the same conditions as the other Association scholarships, and that the sum be fixed at £200 a year. The accounts for the quarter, amounting to £9,741 15s. 2d., auditors' report, and a recommendation supporting the proposal of the Premises and Library Committee that the land tax upon the property of the Association be redeemed.

Resolved: That Minute 919 of the special meeting of the Journal and Finance Committee of May 12th be not adopted.

The motion having been put from the chair, the same was declared to be carried.

Resolved: That the minutes of the Medical Charities Committee of the 1st instant be received, approved, and the report published in the JOURNAL for presentation to the annual meeting at Edinburgh on July 26th (see page 175).

The minutes of the Medical Charities Committee contain the annual report of the Committee.

Resolved: That the minutes of the Parliamentary Bills Committee of the 5th instant be received, approved, and the recommendations contained therein carried into effect. See page 171.

Resolved: That the minutes of the General Practitioners and Ethical Committee of the 5th inst. be received, approved, and the recommendations contained therein carried into effect.

The minutes of the General Practitioners and Ethical Committee contain communications from Dr. Pickup and Dr. Richardson Rice respecting the Coventry Provident Dispensary, various cases of a medico-ethical nature, and annual report.

[*The following Reports of the Council and of the Committees will be presented at the Annual Meeting to be held in Edinburgh on July 26th, 27th, 28th, and 29th, and are published in accordance with the regulations for the conduct of Annual Meetings, which require that all Reports of the Committees of the Association shall be printed in the* JOURNAL *before the Annual Meeting.*]

REPORT OF COUNCIL, 1898.

In submitting its annual report in accordance with By-law 19, the Council desires to remind the Association that this is its third visit to Edinburgh, and to congratulate the meeting upon being assembled in this beautiful city, great as the historical capital of Scotland, great in its connection with Scott and Burns and the literary celebrities of a hundred years ago; but greater still to the medical profession as the city of Cullen and Gregory, of Alison and Christison, of Syme and Simpson.

The attractions of the city and neighbourhood, the more than usual interest of the scientific programme, the liberal list of entertainments, and the charm of meeting old friends or making new acquaintances, combine to offer the certain prospect of a conspicuously successful gathering.

It will be seen that there are one or two departures this year in the constitution of the Sections. There are sixteen Sections, of which those for Neurology, for Medicine in Relation to Life Insurance, and for Tropical Diseases, are new. These new Sections will, it is hoped, increase the scientific usefulness of the meeting.

1898.

The number of members on the books last year was 16,955; during the year 1,473 new members have been elected, 189 have died, and 493 have resigned, leaving 17,746.

Your Council has special pleasure in calling attention to the fact that the number of new members (1,473) is the largest recorded increase in any one year since the Association was founded.

Revenue and Expenditure.

The revenue of the past year amounted to £40,433, while the expenditure was £36,973, leaving a surplus of £3,460. The expenditure of £36,973 includes £1,238 written off for depreciation, the amounts paid for leases, alteration of premises, furniture, and fittings, as well as premium on redeemable stocks and £593 written off the subscription account for deaths and resignations. The surplus funds at the end of 1897 (including that year's surplus) amounted at cost price of the various investments to £53,233.

Purchase of Premises.

It will be remembered that from time to time your Council has reported that it has been on the watch for a suitable leasehold or freehold property for the offices of the Association, as in seven years the leases of the present buildings would expire, and the Association would be once more without a home. The consideration of this important point became year by year more pressing. The few sites suitable to the requirements of the Association were either snapped up before the Association could obtain any opportunity to make an offer, or the terms asked were too extravagant or were hampered by impossible conditions. Early this year the Council heard that the Sutton trustees were determined to sell the freehold of the property then held on lease by the Association, namely, the corner house of 429, Strand, and Nos. 2, 3, 4, and 5, Agar Street, covering 4,352 superficial feet. The trustees were therefore approached, and the Council learned that they were willing to sell the freehold of the whole for £81,250. A Committee was thereupon appointed to negotiate with the trustees for the purchase of the property, and this was ultimately effected for the sum of £79,000, of which £41,000 were paid in cash, and £38,000 remain on mortgage for ten years at 3 per cent. interest. Investments which cost the Association £32,981 were sold for £37,436, and a profit of £4,455 was thus realised. These sales were effected just at the right time, for had they been made a few months later when the money market had become disturbed the price would have been less by at least £800. The Association now possesses as freehold property 429, Strand, 2, 3, 4, and 5, Agar Street, and 2 and 3, Harvey's Buildings, altogether 5,887 superficial feet. The Council congratulates the Association upon having now acquired a worthy permanent home, while at the same time it has secured an investment which must increase in value from year to year.

Assistant Secretary.

The Council has found it necessary to relieve Mr. Fowke of some part of his very arduous duties by creating the appointment of Assistant Secretary. Mr. Burr, who has been nominally Assistant Secretary, is now styled Financial Secretary, and Mr. Frederic Stuart, has been appointed, on probation, as Assistant Secretary.

Branches.

Amongst the changes that have occurred, Dr. J. B. Close has retired from the Honorary Secretaryship of the East York and North Lincoln Branch; Dr. H. Swift from the Adelaide and South Australia Branch; Dr. D. Campbell Watt from the Natal Branch; Dr. C. Daniels from the British Guiana Branch; Dr. W. M. Kelly from the West Somerset Branch, after thirty-five years of office; Dr. H. Marcus Fernando from the Ceylon Branch; Dr. W. A. Carline from the Midland Branch; Mr. W. L. Morgan from the Oxford Branch; Dr. W. Roger Chew from the Grahamstown Branch; Dr. P. Fowlie from the Malaya Branch; Dr. William Gordon from the South Western Branch; and Dr. Isambard Owen from the Metropolitan Counties Branch.

Your thanks are eminently due to these gentlemen, who have for many years given their valuable time and attention to the interests of the Association in their various Branches.

The following gentlemen have been elected respectively to fill the vacancies: Mr. A. G. Francis, of Hull; Dr. W. T. Hayward, of Norwood, S. Australia; Dr. G. C. Henderson, of Durban; Dr. J. F. S. Fowler, of Georgetown; Dr. R. L. Meade-King, of Taunton; Dr. W. H. de Silva, of Ceylon; Dr. F. M. Pope, of Leicester; Dr. W. Collier, of Oxford; Dr. J. McD. Troup, of Grahamstown; Dr. Herbert Fry, of Singapore; Dr. H. M. Webber, of Plymouth; and Dr. J. W. Washbourn, of London.

THE JOURNAL.

The Association has to deplore the death of Mr. Ernest Hart on January 7th last. He was appointed Editor of the JOURNAL in 1867, and continued in that office with the exception of a short interval in the years 1869-70 until his death. He edited the JOURNAL with conspicuous success, and had the satisfaction of seeing it grow under his guidance from comparative insignificance to become one of the leading medical journals of the world. Mr. Hart's ability and energy were manifested in many other departments of Association work, and especially the Parliamentary Bills Committee, the Scientific Grants Committee, and the Library owe much to his fostering care. At the Council meeting in January the following resolution was passed:

Resolved:

"That this Council desires to convey to Mrs. Hart its expression of deep sympathy with her in the loss she has sustained, and to place on record its recognition of the valuable services rendered by Mr. Ernest Hart to this Association during his tenure of office of Editor of the BRITISH MEDICAL JOURNAL for more than thirty years."

At its last meeting your Council agreed to establish an additional Association scholarship to be called "The Ernest Hart Memorial Scholarship in Preventive Medicine" as a fitting memorial of his life and work.

Dr. Dawson Williams, who has for some years been Assistant Editor, and during Mr. Hart's frequent and prolonged absence from ill health has had sole charge of the JOURNAL, has been appointed Editor, and the Council has every confidence that the JOURNAL is safe in his hands. Mr. C. Louis Taylor, who for eleven years was Sub-Editor, has been appointed Assistant Editor. Under their direction the JOURNAL maintains its scientific and literary character, and no efforts are spared to render it still more useful and attractive.

The weekly issue now amounts to 21,100 copies, of which 5,100 are sent to members in the colonies and foreign countries.

THE LIBRARY.

The records of the Library show 4,700 attendances for the past year, and since its foundation in 1890 the attendances have been 32,066, thus affording satisfactory proof of the usefulness and popularity of this department.

The collection now consists of nearly 10,000 volumes, besides papers and periodicals.

HONORARY MEMBERS.

At the meeting of the Association at Montreal, no one contributed more to its success than His Excellency the Governor-General the Earl of Aberdeen, and the Right Hon. the High Commissioner for Canada, the Lord Strathcona and Mount Royal. At the request of that meeting, and in hearty concurrence with it, the Council desires to recommend them to you for election as honorary members in accordance with By-law 6, and considers that by so doing you will honour the Association even more than you honour them. The Council also recommends the election of Professor Francesco Durante, the eminent Italian surgeon, as an honorary member of the Association.

INVITATION TO WINNIPEG.

The first general meeting of members held out of the United Kingdom last September was conducted by the members of the Montreal Branch with such conspicuous success, that before the meeting was over a second cordial invitation to the Association to visit British North America was received through the Hon. D. O'Donnell from the Hon. Thomas Greenway, Premier of the Province of Manitoba, the invitation being to hold the next meeting of the Association in Winnipeg. This invitation was declined for the present with very great regret, and with cordial thanks for the kindly feelings which had inspired it.

THE LATE DUCHESS OF TECK.

Upon the death of the Duchess of Teck, which took place in October last, the following telegram was sent by the President of Council to Her Majesty the Queen, on behalf of the Council: "May it please your Majesty to accept on behalf of the Council of the British Medical Association this expression of our sincere grief at the death of Her Royal Highness the Duchess of Teck, who has taken so noble a part in those works of practical philanthropy with which our profession is especially concerned. It is our earnest prayer that God in His mercy will comfort and sustain your Majesty in this as at all times."

MEDICAL DEFENCE.

At the last annual meeting the Council was requested to ascertain the opinions of members respecting medical defence by sending out a reply-paid postcard, and now report to you the following results:

Particulars of medical defence postcards received up to March 16th, 1898:

Despatched	10,990	country
,, ...	2,641	town
,, ...	3,544	foreign
	17,175	

UNITED KINGDOM RETURNS:

4,955	say "yes" to both questions.
1,834	say "no" to both questions.
234	say "yes" to 1st, "no" to Number 2.
133	say "yes" to 1, and "yes" to 2, not to exceed 5s.
133	say "no" to 1, and "yes" to 2.
76	say "yes" to 1, "blank" to 2.
1	says "no" unless amalgamated with the Medical Defence Union.
1	says "no" to 1, "blank" to 2.
1	says "yes" to 1, not in favour of extra subscription whilst in the army.
1	says "yes" to 1, if Medical Defence is to apply to Colonies.
165	say they are "neutral, indifferent, or indefinite."
Total ... 7,534	

COLONIAL BRANCHES AND FOREIGN RETURNS:

709	say "yes" to both questions.
276	say "no" to both questions.
4	say "no" to 1, "blank" to 2.
13	say "yes" to 1, "blank" to 2.
44	say "yes" to 1, "no" to 2.
24	say "yes" to 1, 5s. to be subscription.
22	say "no" to 1, "yes" to 2.
38	say "yes" to 1, and "yes" to 2 if it applies to Colonies.
2	say "yes" to 1 for United Kingdom only. "no" to 2.
1	says "no" to 1, "yes" to 2 if for the Colonies.
1	says "yes" to 1, "no" to 2 unless applied to Indian and other Government services.
1	says "yes" to 1 if scheme be adopted suggested by British Guiana Branch which appeared in JOURNAL of March 20th, 1897, p. 751.
24	are indifferent; some say they subscribe to local medical defence society.
Total ... 1,159	

UNITED KINGDOM—Despatched ...	13,631	
Received ...	7,534	
Outstanding ...	6,097	
COLONIAL BRANCHES—Despatched ...	3,544	
Received	1,159	
Outstanding ...	2,385	
Total replies	7,534 + 1,159 = 8,693	
Remaining unanswered ...	8,482	
Total sent out	17,175	
Total "Yes"	5,004	
Total "No"	2,110	
Total various	919	
	8,693	

TOTAL REPLIES	50.556	per cent.
Unqualified affirmative ...	35.978	per cent.
,, negative ...	12.228	,,
Qualified affirmative ...	4.250	,,
Indifferent	1.100	,,
	50.556	

IN THE UNITED KINGDOM—		
Affirmative	36.35	per cent.
Negative	13.45	,,
Qualified or Indifferent ...	5.40	,,
	55.20	

Your Council is of opinion that the affirmative majority constitutes too small a proportion (one-third) of the whole Association to justify further steps being taken in a matter

so seriously affecting the organisation and working of the Association, and respecting which such grave differences of opinion are known to be entertained.

THE PARLIAMENTARY BILLS COMMITTEE.

Dr. Farquharson, M.P., has been elected Chairman of the Parliamentary Bills Committee in the place of the late Mr. Ernest Hart, who has held the appointment since 1873.

The Parliamentary Bills Committee has done much good work in supporting amendments to the Vaccination Bill, the Lunacy Bill, Local Government (Ireland) Bill, Poor Law (Scotland) Amendment Act, etc. It has suggested the insertion in the Lunacy Bill of a clause dealing with the treatment of incipient insanity upon the same lines as the provisions of the Scotch Act, which have been in successful working for some years.

ARMY MEDICAL DEPARTMENT.

Upon no subject which has recently engaged our attention are there better grounds for congratulation than upon the success which has followed the efforts of the Association to improve the status of the Army Medical Department. The work of the subcommittee upon Army Medical Reform, of which Dr. W. Gordon, of Exeter, was the indefatigable Secretary, culminated in the deputation to Lord Lansdowne, upon which occasion your Council was supported by the University of Edinburgh, the University of Dublin, and the Royal Colleges of Physicians and Surgeons in Ireland, the Medical School of the University of Cambridge, the Medical Faculty of the University of Aberdeen, and the London Society of Apothecaries. The gracious reply of his lordship to the deputation has since been supplemented by the issue of a warrant which it is hoped will place the department at last upon a completely satisfactory footing.

THE MIDWIVES BILL.

Vigorous opposition was made to the Bill of the Midwives' Association, and there is every reason to believe that that measure has now no chance of passing in the present Parliament unless it is so modified as to satisfy professional opinion.

SUPERANNUATION OF POOR-LAW MEDICAL OFFICERS.

A complaint having reached the President of Council of an attempt on the part of the Pershore Board of Guardians to require their medical officers to contract themselves out of the Superannuation Act, he wrote to the Under-Secretary of the Local Government Board, asking the Board not to sanction such a breach of a national engagement. The President of Council received a reply from the Local Government Board to the effect that the Pershore Guardians had been informed that no such agreement would be permitted. A resolution of thanks to the Under-Secretary was sent by the Council.

VENEREAL DISEASE IN THE ARMY: MEDICAL AID ASSOCIATIONS.

The increase of venereal disease among the troops in India, and the undesirability of members of the Association being allowed to hold office as medical officers of medical aid associations have engaged the attention of the Council.

VACCINATION LEAFLETS.

At the request of the Council, Dr. J. C. McVail, of Glasgow, has drawn up pamphlets and leaflets upon vaccination for distribution to the public by public vaccinators and others. They are supplied at cost price, and their value seems to have been recognised, as more than 4,000 have already been sold.

FEES TO MEDICAL WITNESSES.

The inadequacy of the fees to medical witnesses having been brought before the Council by the Border Counties Branch, the question was referred to the Parliamentary Bills Committee, which has the matter under consideration.

INEBRIATES LEGISLATION COMMITTEE.

During the year the Inebriates Legislation Committee, co-operating with the Society for the Study of Inebriety and the Homes for Inebriates Association, have persistently urged the Government to bring forward the promised Habitual Drunkards Bill. The Bill was brought forward in the House of Commons on April 25th, 1898, by the Home Secretary. The main feature of the Bill is the establishment and maintenance of State inebriate reformatories for criminal habitual drunkards guilty of serious crimes, and Certified Inebriate Reformatories for habitual drunkards convicted of minor offences, the latter institutions to be kept up in part at the public charge. There are also some amendments to the Act of 1879 which will improve somewhat the working of that Act. Non-criminal inebriates are not affected by the Bill, but possibly this defect may be remedied. The Committee and the medical profession generally have too high an estimate of the proposed revolution in the treatment of criminal inebriates to imperil the passage of the Government Bill through the Legislature by insisting on amendments which might wreck the Bill. The Government Bill has been read a second time and referred to the Standing Committee on Law.

THERAPEUTIC COMMITTEE.

The chief work which has been undertaken by this Committee during the past year consists in an inquiry connected with the employment of extract of conium.

The Committee has further been engaged upon an inquiry connected with the use of senecio and upon hydrastis. Interim reports on these have been received. The Chairman, Dr. D. J. Leech, after five years' service, has resigned. Dr. Donald MacAlister has been elected to succeed him.

SPECIAL COMMITTEES.

The Committee on Railway Servants' and Mariners' Eyesight has sent in a short report to the Council relative to its labours during the past year, and are collecting evidence which may ultimately be printed and laid before the Government.

The Scientific Grants Committee has allotted £400 for scientific grants and £450 for Research Scholarships, and presents a report. The total amount which has been spent on Scientific Research through this Committee since its institution is £13,182, and this is independent of £1,150 granted to Societies and Committees outside the Association. Mr. Leathes, having received another appointment, resigned his Scholarship in January last, and has presented a final report upon his work.

The Committee on Anæsthetics has now concluded its work, and will issue a report.

The Committee to Consider the Constitution of the Association was reappointed, with the addition of eight other members of the Council, and presents a report.

OBITUARY.

During the past year the following among other members of the Association have died:—

Dr. Frank Chance, Dr. Hugh Moss, Dr. Wm. H. Robertson, J.P., Mr. Watkin Wm. Roberts, Mr. C. F. Du Pasquier, Dr. John Braxton Hicks, F.R.S., President Obstetric Medicine, 1873; Dr. James C. Howden, J.P., who delivered the Presidential Address in the Psychological Section, 1888; Mr. W. J. Pilcher, President of the Midland Branch in 1890; Dr. J. Muter Turnbull, Mr. E. Stamer O'Grady, Surgeon-General William Robert Cornish, Rev. Samuel Haughton, M.D., D.C.L., F.R.S., President of Public Medicine Section in 1872, and who delivered the Address in Public Medicine, 1887; Dr. R. C. McWatt, Dr. Jas. Cagney, Dr. Cuthbert Wyman, Mr. H. W. Freeman, Dr. A. C. Brownless, C.M.G., Chancellor of University of Melbourne; Dr. Wm. Fettes Murray, Rev. T. E. Clark, Mr. Augustin Prichard, President of the Section of Surgery in 1882; Dr. Robert Hibbert Taylor, Mr. Edwd. Lund, President of the Section of Surgery, 1877; Mr. John Hodgson Wright, Dr. John Andrew Malcolmson, Sir Richard Quain, Bart, F.R.S., President of the General Medical Council, and President of the Section of Medicine, 1875; Brigade-Surgeon Joseph Johnston, M.D., Dr. Charles West, F.R.C.P., Mr. E. Hooper Galton, F.R.C.S., representative of the South-Eastern Branch on the Parliamentary Bills Committee; Dr. Henry Bingham, Mr. Edwd. Cotterell, F.R.C.S., Dr. Henry Marshall, Dr. Samuel Gordon, President of the Section of Pathology and Bacteriology in 1887; Surgeon-Captain James Walker, Deputy-Surgeon-General S. B. Partridge, Mr. John Alcock, J.P., Surgeon-General James Irving, and Mr. T. G. Stockwell Fons, President of the Bath and Bristol Branch in 1872.

ROBERT SAUNDBY, M.D., LL.D., F.R.C.P.,
President of Council.

REPORT OF THE CONSTITUTION COMMITTEE.

In accordance with the resolution passed at the Annual General Meeting held in London last year:

"That the Report of the Constitution Committee be referred back again to the Council with the request that they shall consult the Branches throughout the Association, and that they shall reappoint the Constitution Committee meanwhile," the Council reappointed the Constitution Committee, to consist of the following members:—Dr. R. Saundby (President of Council), Dr. C. Parsons (Treasurer), Dr. James Barr, Dr. T Bridgwater, Dr. J. Ward Cousins, Dr. H. R. Crocker, Dr. T. M. Dolan, Dr. Stamford Felce, Sir Walter Foster, M.D., M.P., Dr. Bruce Goff, Dr. Holman, Mr. T. Vincent Jackson, Dr. Leonard Sedgwick, Dr. E. Markham Skerritt, Mr. Lawson Tait, Dr. A. R. Urquhart, and Mr. Walter Whitehead, and a copy of the report of last year's Committee was sent to each of the Branches in accordance with the following resolution of the Council, namely:

"That copies of the report of the Constitution Committee be sent to each Branch of the Association with a request that the Branch will express an opinion upon it."

Only 18 Branches have made replies, of which the following is an analysis:

Proposals.	Approve.	Disapprove.
i.—Election of members of Council	1	17
ii.—Association to pay election expenses... ...	2	9
iii.—Members to be registered as electors in only one Branch	5	6
iv.—Council to report in first instance to the Branches	8	6
v.—Members of the Association to be elected by the Council of any Branch within the area of which they reside	7	4
vi.—Expulsion of members by Branches from the Branch	9	3
vii.—Appointment of Executive Committee by the Council	5	6
viii.—Payment to the Executive Committee of an honorarium of £3 3s. in addition to railway fare	5	5

The Committee has held two meetings at which these replies of the Branches were considered, and at the last meeting the following resolution was passed:

"That in view of the small amount of interest taken in this matter by the majority of the Branches as manifested by the paucity of returns, and the opposition shown to any change in the present constitution of the Association by those which have replied, the Committee recommends the Council to take no further action in the matter."

The question of the right of unattached members to vote for representatives on the Council having been raised, it was resolved:

"That the Council be requested to obtain counsel's opinion upon the position of unattached members in that they are precluded from voting for representatives on the General Council of the Association; whether such exclusion is ultra vires; and whether by reason of their number they are or are not entitled to such vote as are registered under the Companies Acts, being members of the Association registered in accordance with the Companies Acts, 1862-1890."

A case was drawn by the solicitor to this resolution the following case was submitted to counsel on behalf of the Association:

Case.

There is sent herewith a print of the memorandum, articles, and by-laws of the British Medical Association.

The great majority of the members of the Association belong to and are enrolled in Branches, such as the Metropolitan Counties Branch, the Lancashire and Cheshire Branch, etc., but there is a large number of members of the Association who are not members of any Branch, and are known as unattached members. (Number of members: Attached, 10,089; unattached, 6,991—total, 17,080.)

The Branches are left free to govern themselves, subject to their laws not contravening any fundamental law of the Association.

To become a member of a Branch a member of the Association (after election thereto by a Branch Council of the Association) must undergo an election by the Council or the Branch, and pay an annual subscription to the Branch in addition to the annual subscription to the Association to such Branch in addition to the annual subscription to the Association.

The Association is incorporated under the Companies Act as an Association "not for profit," and, therefore, entitled to be registered without the addition of the word limited.

The Council of the Association consists of certain *ex-officio* members, together with members who are elected thereon in the manner prescribed by the 17th By-law. The effect of such by-law is to place the election of those members of the Council who are not *ex officio* and have to be elected in the hands of the Branches alone, and to the entire exclusion of the unattached members. The majority of the Council is, therefore, not elected by the whole of the members, but by the Branches, the result of their several nominations and elections being accepted without discussion. (See Art. 5 of the Articles of Association as to membership of the Association, and By-laws 1 and 2 Art. 25, and By-law 17 and its subsections).

A question has been raised whether the Association has by any law of its own the power under the Companies Acts to exclude any duly-elected member of the Association from voting for the appointment of members of the Council, and it has been suggested that the 17th By-law of the Association may contravene and be at variance with the fundamental principles of the Companies Acts, the Council being identical with Boards of directors, and the members being regarded as members of a company.

On the other hand, in the case of joint stock companies formed for profit, their Articles of Association are often found materially to limit and restrict the powers of the shareholders in the matter of electing directors, and there does not appear to be any express section of the Companies Acts providing that directors must be elected by the members or shareholders in general meeting assembled or otherwise.

You are requested to advise whether the present mode of electing the Council of the British Medical Association as prescribed by the 17th By-law (by which certain members of the body are excluded from exercising a vote) is valid in law.

And upon this, the following opinion was given by Mr. Haldane, Q.C.:

Opinion.

I am of opinion that the present mode of electing the Council of the British Medical Association, as prescribed by the 17th By-law, is valid in law and is not in conflict with any provision of the Companies Acts under which the Association is incorporated. The Act of 1862 does not require that every shareholder should be entitled to vote for the appointment of the manager of a company constituted under its provisions.

10, Old Square, Lincoln's Inn, June 13th, 1898. R. B. Haldane.

Robert Saundby, M.D., LL.D., F.R.C.P., Chairman.

REPORT OF THE PARLIAMENTARY BILLS COMMITTEE.

During the past year the work of this Committee has been steadily pushed forward, many subjects of growing public interest having been treated with most satisfactory results. Considerable interest likewise attaches to the labours of the various Subcommittees, and of a Subcommittee acting conjointly with the Medico-Psychological Association. Full reports of most of these will be found further on. The Committee have to record a very grave loss in the decease of Mr. Ernest Hart, who besides being Editor of the British Medical Journal, was for twenty-seven years Chairman of the Parliamentary Bills Committee.

Appointment of Chairman.

In consequence of the lamented death of Mr. Hart it was found necessary to appoint a new Chairman, and on the proposal of Mr. George Eastes, seconded by Dr. Holman, Dr. Farquharson, M.P., was elected Chairman.

The Amendment of the Lunacy Acts.

The joint Committee of the British Medical and Medico-Psychological Associations have, during the past year, had a clause upon incipient insanity drawn for insertion in the Lunacy Bill, similar to that now existing in the Scotch Act. This clause, after full consideration by the Joint Committee was found to be somewhat too long and complicated, and

they therefore had it redrafted much more simply and in closer agreement with that in the Scotch Act. Your Committee sent this clause to the Lord Chancellor, requesting him to have it inserted in the Lunacy Bill, and asking him at the same time if he would receive a deputation to explain the Committee's object. To this the Lord Chancellor replied that he would give careful consideration to the suggested clause, and would let the Committee know later on if he thought it desirable to receive a deputation. As yet no further communication has been received from the Lord Chancellor.

The joint committee has also put on record its opinion that any clause introduced into the Lunacy Bill in regard to the examination of alleged lunatics by medical officers of Boards of Guardians would be unjust if it do not grant an increase of salary in proportion to the average annual number of cases during the preceding three years. A copy of this resolution was sent to the President of the Local Government Board.

ARMY MEDICAL SERVICE REFORMS.

The Report of the Subcommittee on Army Medical Service Reform was approved, and the suggestions therein adopted by the Parliamentary Bills Committee, and a vote of thanks was passed to Dr. Gordon for his able services as Chairman of the Subcommittee.

In accordance with a resolution dated March 11th, 1897, copies of the Report and Appendix were sent to all the chief medical schools, and elicited the following reply from Edinburgh University amongst others:

Extract from the Minutes of the Senatus Academicus of the University of Edinburgh of date 28th May 1897.

The following Report of the Faculty of Medicine was read and approved:

"May 28th, 1898.

"A report and other papers relating to the subject of reforms in the Army Medical Service have been communicated to the Faculty of Medicine by the Parliamentary Bills Committee of the British Medical Association. The causes of discontent which exist in the Army Medical Service are matters of much concern to the Faculty, as many of the graduates of the University are members of that service, and many students look forward to it as a desirable career. The Faculty would express their approval of the statement of reforms contained in the report, and their sympathy with the steps that are contemplated to effect them. The Faculty recommend the Senatus to communicate this approval to the Parliamentary Bills Committee of the British Medical Association, and at the same time to assure the Committee that the Senatus will be pleased to consider any suggestions for the purpose of effecting reforms that may be submitted to it."

(Signed) THOS. R. FRASER,
Dean of the Faculty of Medicine.

Extracted by L. P. GRANT, Sec. Sen. Acad.
University, 11th June, 1897.

After the Subcommittee had considered these replies, it was resolved:

"That the thanks of the Parliamentary Bills Committee of the British Medical Association be conveyed to the Senatus Academicus and to the Faculty of Medicine of the University of Edinburgh for their kind message of approval in the matter of the contemplated reforms in the Army Medical Service; and that they be informed that the approval and sympathy of the University of Edinburgh is a source of the greatest satisfaction and encouragement to the Committee; that the Committee value highly the permission of the Senatus to lay before it suggestions for the purpose of effecting reforms; and that when the result of the forthcoming examination for commissions in the service is known, the Committee hope to have some suggestions to submit to the Senatus for its favourable consideration."

The Committee have the pleasure to report to you that one of the most successful deputations in the cause of army medical reform that have yet been held waited upon the Most Hon. the Marquis of Lansdowne, Secretary of State for War, and represented to his lordship the difficulties under which the Army Medical Service suffered. In reply, his lordship said that the Government would give the greatest attention to the representations made. Later on a statement was made in the House of Commons by the Under-Secretary for War, to the effect that the concessions that were asked for by the deputation would be made with a new warrant, and this promise was confirmed and extended by the Marquis of Lansdowne, Secretary of State for War, in his speech at the dinner given by the Right Hon. the Lord Mayor of London, at the Mansion House, on May 4th. (This warrant has since been issued.)

The deputation was introduced by Dr. Farquharson, M.P., and consisted of the following gentlemen: Sir Thomas Grainger Stewart, representing the University of Edinburgh, and President-Elect of the British Medical Association; Dr. Robert Saundby, President of the Council of the British Medical Association; Surgeon-General Sir James Mouat, V.C., K.C.B. (retired); Dr. D. MacAlister, representing the Medical School of the University of Cambridge; Professor Ball, representing the University of Dublin, and Regius Professor of Surgery; Professor A. Ogston, representing the Medical School of University of Aberdeen, and Regius Professor of Surgery; Sir George Duffey, representing the Royal College of Physicians of Ireland; Sir William Thomson, representing the Royal College of Surgeons of Ireland; Mr. N. C. Macnamara, F.R.C.S., Vice-President of the British Medical Association; Dr. S. C. Griffith, Master of the Society of Apothecaries; Surgeon-Major-General G. L. Hinde, C.B. (retired); Surgeon-Major-General Campbell Fraser (retired); Dr. T. Bridgwater, LL.D., Vice-President of the British Medical Association; Dr. J. W. Moore, Professor of Practice of Medicine in the Royal College of Surgeons of Ireland; Mr. George Brown, one of the Direct Representatives for England on the General Medical Council, British Medical Association; Dr. J. W. Miller, British Medical Association; Dr. C. H. Milburn, British Medical Association; Dr. W. Gordon, British Medical Association; Mr. Francis Fowke, General Secretary of the British Medical Association. The Royal College of Physicians of London and the Royal College of Surgeons of England kindly consented to support the objects of the deputation by a joint letter to the Secretary of State for War.

MIDWIFERY NURSES BILL.

The Committee of the Parliamentary Bills Committee, to whom this question was referred, having drafted a Bill upon the various proposals of the Branches, again forwarded it to the Branches for further consideration, and the Bill was finally redrafted, sent round to members of the Council, and adopted, and sent out to every member of Parliament, to the members of the Council of the British Medical Association, and to the members of the General Medical Council. A petition was presented against the Bill brought in by Mr. Balfour and others on the ground that it would intensify the evils which it proposes to remedy. The Subcommittee had an interview with the medical members of Parliament, who agreed in the main with the views of the Subcommittee, as embodied in the Bill of the Association. Your Committee are informed that there is no chance of the matter coming before Parliament this session. The modifications suggested by the Committee have been endorsed by the General Medical Council, and it has the satisfaction of knowing that the Lord President of the Council has given an assurance that no Bill will have the support of the Government which does not receive the approval of the medical profession.

MEDICAL ACTS.

The Parliamentary Bills Committee in January last reappointed a Subcommittee for the purpose of preparing the Medical Acts Amendment Bill to be submitted to the Council.

VACCINATION.

Your Committee have had the Vaccination Bill of the Government under consideration, and have in accordance with the recommendations framed by the Subcommittee which considered the question drawn up a series of amendments. These Sir Walter Foster, M.P., put down on the notice paper in his name. It has also prepared a memorandum on the subject which has been forwarded to members of Parliament.

VENEREAL DISEASES IN THE ARMY.

The question of the great increase of venereal diseases, especially of syphilis, among the British troops in India having been brought before the Council by the East Yorkshire and North Lincoln Branch, and referred to the Parliamentary Bills Committee, the following resolution was passed: "That this Committee sympathises with the view of the Branch, but that

it is undesirable to take any further action, feeling that Government will do all that is necessary."

Regulation of the Sale of Carbolic Acid.

The Committee are glad to be able to state that the question of carbolic acid has been settled as far as possible. The reply of the Home Secretary to a question on the subject was to the effect that the Privy Council, while not thinking it expedient to include carbolic acid in the schedule of poisons, are of opinion that regulations should be made with regard to its sale and to that of other poisonous substances. In accordance with the promise given the Bill on the subject of poisons, introduced by the Duke of Devonshire in June, contains provisions dealing with the sale of this poison.

Administration of the Pharmacy Acts in Scotland.

A Subcommittee having been appointed to consider a memorial from the Scottish Midland and Western Medical Association upon the question of the manner in which certain clauses of the Pharmacy Acts are at present being administered, especially those regulating the sale of poisons, the Subcommittee recommended the Association to support a proposal to give the power of prosecution to the Public Prosecutor as well as the Pharmaceutical Society, a recommendation which has been carried out in the Bill recently introduced into the House of Lords.

Local Government (Ireland) Bill.

A Subcommittee was formed to consider the Local Government (Ireland) Bill, and certain amendments as suggested by the Parliamentary Bills Committee were sent out to the medical members of Parliament for their consideration. Certain of these amendments were accepted by Mr. Gerald Balfour on the part of the Government and embodied in the Bill.

Other matters are still under consideration, especially certain proposed sanitary clauses, in relation to which the Government have changed their attitude. The Committee are of opinion that the proposals already adopted by the Association should be enacted. They are taken from the English Local Government Act, with a few necessary alterations, and would effect a most needful and salutary reform in the sanitary organisation of Ireland.

Poor-law (Scotland) Amendment Bill.

The Council and Committee have given their earnest support to the Poor-law (Scotland) Amendment Bill, and regret that so little progress has been made with this measure.

R. Farquharson, M.D., Chairman.

REPORT OF THE SCIENTIFIC GRANTS COMMITTEE.

The Scientific Grants Committee beg to report that during the past year 1897-98 the sum of £850 allotted by the Council for the promotion of scientific investigation by means of scholarships and separate grants was distributed as follows:

Three Scholarships

(each of the value of £150 a year; tenable for two years).

No.	Scholar's Name.	Subject of Investigation.
1.	Dr. J. B. Leathes ...	"The Chemistry and Constitution of Mucin-like Proteids."
2.	Dr. Swale Vincent ...	"The Comparative Physiology and Chemistry of the Suprarenal Capsules."
3.	Mr. Sydney Rowland ...	"Influence of Physical Agents on the Life of Bacteria."

The Committee have received from Mr. Rowland an interim report of the progress of his work, which is not yet ready for preliminary publication; and from Dr. Leathes and Dr. Vincent the following statements of the work they have accomplished:

Dr. J. B. Leathes reports that he has continued his investigations upon the chemistry and constitution of mucin-like proteids, and has succeeded in splitting off from the complex mucin molecule a substance which can be obtained free from any admixture of proteid which reduces cupric oxide strongly after boiling with dilute mineral acids, and which, nevertheless, contains nitrogen. When boiled with mineral acids this substance yields, in addition to the reducing substance which gives the reactions of glyceronic acid, a base that is precipitated by phosphotungstic acid, and one or more volatile acids (formic and probably acetic). He has made elementary analyses of different preparations of this substance, which show that it is a chemical entity, and that he has obtained it in a pure state. The figures and the formula that can be deduced from them he reserves for publication with the complete work. He is now engaged in determining the form in which the nitrogen is embodied in the molecule; it appears not to be as a primary amine. But in order to isolate the basic groups the nitrogenous carbohydrate substance has to be separated, free from proteid and in a state of purity, so as to avoid contamination with basic products of the action of acids on the proteids, and the only methods available at present are laborious and involve much unavoidable loss of substance. Should, however, further investigations confirm the results hitherto obtained, it would appear that in the mucins which he has examined the carbohydrate moiety of these proteids is composed of groups similar to those in chondroitin, that is a glyceronic acid group, acetyl groups, and a glucosamin group, only in this case the nitrogen appears not in the simple form of a primary amine, but some more complicated radicle, upon the nature of which he hopes soon to have something more definite to say.

During August and September, 1897, he was working by the kind permission of Professor Foster, in the Physiological Laboratory at Cambridge. From October to Christmas, 1897, by that of Dr. Starling in the new Physiological Laboratories of Guy's Hospital. Since January 1st, 1898, he has been working in the laboratory of Professor Schmiedeberg in Strassburg.

Dr. Swale Vincent reports that during his tenure of the Research Scholarship he has devoted himself principally to the comparative physiology and chemistry of the suprarenal capsules throughout vertebrates. He has also investigated further the structure of "hæmal lymphatic glands," and their condition in animals after splenectomy. He has given more attention to certain other "ductless glands," such as the carotid and coccygeal glands, but is not yet in a position to make any report upon these. The results of his researches since his appointment are contained in the following papers:

"The Comparative Physiology of the Suprarenal Capsules."—*Proc. Roy Soc.*, vol. lxi, p. 64.

"Further Observations upon the Comparative Physiology of Suprarenal Capsules."—*Ibid.*, vol. lxii, p. 176.

"The Comparative Chemistry of the Suprarenal Capsules" (with B. Moore, M.A.).—*Ibid.*, vol. lxii, p. 280.

"Further Observations upon the Comparative Chemistry of Suprarenal Capsules" (with B. Moore, M.A.).—*Ibid.*, vol. lxii, p. 352.

"The Effects of Extirpation of the Suprarenal Bodies of the Eel (*Anguilla anguilla*)."—*Ibid.*, vol. lxii, p. 354.

"On the General Physiological Effects of Extracts of one Suprarenal Capsule."—*Journ. of Physiol.*, vol. xxii (Nos. 1 and 2, Sept.), 1897, p. 111.

"Further Observations upon the General Physiological Effects of Extracts of one Suprarenal Capsule."—*Ibid.*, vol. xxii (No. 4, Feb. 17th), 1898, p. 270; also in *Anatomischen Anzeiger*, XIV, Band Nr. 5, 1897; *Proc. Physiol. Soc.*, March 20th, 1897; *Ibid.*, June 12th, 1897; *Ibid.*, February 12th, 1898; *Ibid.*, March 12th, 1898; *Birm. Med. Rev.*, April, 1898.

Separate Grants.

The Committee have to report that during the past year 1897-98 the sum of £400 has been granted in aid of scientific research. The following are particulars of the grants made:

	£	s.	d.
Auld, A. G., M.D., 31, Manchester Street, W.—For finding out a strong toxin produced by the diplococcus pneumoniæ for purposes of vaccination	15	0	0
Ballance, C. A., M.D., and Samuel G. Shattock, F.R.C.S., for continuing an investigation into cancer	15	0	0
Barnard, Harold L., M.B., F.R.C.S., London Hospital, Whitechapel Road, E.—For an investigation upon an accurate method of obtaining blood pressure in man	10	0	0
Barratt, J. O. W., M.D., 26, Upper Wimpole Street, W.—For continuing an investigation by studying the influence of inflammation and of varnishing upon the activity of the skin ...	10	0	0
Total	£50	0	0

	£	s.	d.
Brought forward	50	0	0
BRODIE, T. G., M.D., Physiological Department, St. Thomas's Hospital, S.E.—For continuing a work upon muscle extensibility and irritability	5	0	0
BRODIE, WM. BRODIE, M.B., Physiological Department, University of Glasgow.—For an investigation into the termination of nerves and also into the existence of sensory nerves in blood vessels	6	0	0
BUCHANAN, R. J. M., M.D., 6, Rodney Street, Liverpool.—For expenses in connection with a research work of staining fluids, micro covers and slides, etc. (pamphlet submitted of work done)	10	0	0
CADELL, MARTHA GEORGINA ISABELLA, M.D., L.R.C.P., The New Victorian Club, 30A, Sackville Street, Piccadilly, W.—For carrying out a research on the influence of acids and alkalies on the gastric secretion, in order to see their real value in digestion and metabolism with the now more accurate methods of research than were formerly employed ...	10	0	0
CLARKSON, ARTHUR, M.B., Physiological Laboratory, University, Aberdeen.—For studying the effects of removal of the suprarenal bodies in animals and also the effect upon the suprarenals of the injection of certain fluids into the blood stream	3	0	0
CLINCH, T. ALDOUS, M.B., 4, Gower Street, Bedford Square, W.C. —For a research on the changes in metabolism occurring in lesions of the central nervous system, the result either of disease or experiment...	15	0	0
EDEN, THOMAS WATTS., M.D., 6, Manchester Square, W.—For a research into the question of the occurrence of fat and glycogen in the placenta of ruminant animals	5	0	0
ELDER, GEORGE, M.D., 7, Leopold Place, Edinburgh.—For an investigation chiefly to find out what difference there exists between the circulation in the closed and that in the open skull, and especially whether in the closed skull there is pulsation of the brain, and whether there is, under ordinary physiological conditions, any distinct movement of the cerebro-spinal fluid with arterial pulsation or respiratory movements	5	0	0
EVANS, H. MUIR, M.D., Kirkley Rise, S. Lowestoft.—To examine gases contained in the sounds of fish. 1. In those fish which have air bladder having no communication with the intestine. 2. In fish in which there is a communication with the stomach as in the herring, and with the pharynx as in sturgeon, etc. To investigate the methods of production of the gas in each case	5	0	0
EYRE, JOHN, M.D., 14, Trinity Square, S.E.—1. To continue investigations into the etiology and bacteriology of acute forms of conjunctivitis. 2. An investigation into the nature and causation of sympathetic ophthalmia, the possibility of an experimental production of the same	5	0	0
FINDLAY, WM., M.B., 475, Union Street, Aberdeen.—For investigating the relative physiological action of various preparations of hemlock which have been already standardised by amount of alkaloids present	5	0	0
GOADBY, KENNETH W., L.D.S.Eng., Medical School, Guy's Hospital, S.E.—For the purpose of studying the organisms of the mouth with especial relation to the diseases of that region ...	5	0	0
GOODBODY, F. WOODCOCK, M.D., 35, Bedford Court Mansions, Bloomsbury, W.C.—For continuing a research into the action of alkalies and other uric acid solvents on general metabolism with special reference to the excretion of uric acid ...	15	0	0
GRAY, ALBERT A., M.D., 16, Berkeley Terrace, Glasgow.—For an investigation upon the movements of the membrana tympani	10	0	0
GRUNBAUM, ALBERT S., M.B., University College, Liverpool.—1. For an investigation into the physiological and therapeutical properties of the aromatic double substituted amides (in conjunction with Dr. C. Kolm, F.C.S.). 2. Further investigations into the agglutinative substances in human blood, particularly with a view to the serum diagnosis of disease	7	0	0
HALLIBURTON, W. D., M.D., F.R.S., 9, Ridgmount Gardens, Gower Street, W.C.—To continue investigations (1) on the absorption of hæmoglobin, (2) on the digestion of glycogen, particularly in relation to intermediate dextrine	20	0	0
HARLEY, VAUGHAN, M.D., 25, Harley Street, W.—1. For an experimental investigation into the causation of cirrhosis of the liver and its influence on metabolism. 2. Experiments into the formation of gall stones by artificial means ...	20	0	0
HARRIS, DAVID FRASER, M.B., F.R.S.E., Physiological Department, University, Glasgow.—For a research into the condition of the blood entering, circulating in, and leaving the spleen, and to investigate the condition of its hæmoglobin and red blood corpuscles	7	0	0
HAYCRAFT, JOHN BERRY, M.D., F.R.S.E., and A. W. SHEEN, M.D., University College of South Wales and Monmouthshire, Cardiff.—For expenses in connection with a research upon the position of the centre of gravity of the human body ...	12	0	0
HUTCHISON, ROBERT, M.D., Toynbee Hall, Commercial Road, E. —For continuing researches into the chemistry of the thyroid, and an investigation of its pharmacological action, which it is hoped will lead to a better understanding of the *modus operandi* of the animal extracts generally	7	0	0
KANTHACK, A. A., M.D., Pathological Laboratory, New Museums, Cambridge.—To investigate the paths of infection and intoxication in tetanus	8	0	0
LAZARUS-BARLOW, W. S., M.D., Pathological Laboratory, Cambridge.—In aid of the continuance of work on diphtheria and on inflammatory œdema	7	0	0
LEVY, ALFRED GOODMAN, M.B., 29, Cumberland Terrace, Regent's Park, N.W.—In aid of a research into the condition of the blood of animals after thyroidectomy	15	0	0
Total	£262	0	0

	£	s.	d.
Brought forward	[illegible]	[illegible]	[illegible]
LEEDHAM-GREEN, CHARLES ALBERT, M.D., 9, Newhall Street, Birmingham.—1. For a bacteriological inquiry into the relative value of various agents used in the disinfection of the hands. 2. An inquiry into the nature and origin of the goblet cells of the conjunctiva	5	0	0
LUFF, ARTHUR P., M.D., 31, Weymouth Street, W.—1. To investigate the properties of the gelatinous modification of sodium biurate, and its bearing on the gouty process. 2. To investigate the influence of synovial fluid on the deposition of sodium biurate in cartilage. 3. To investigate the action of various drugs with reference to their influence on the rate of decomposition of sodium quadriurate, and their solvent powers on sodium biurate	5	0	0
MURRELL, WILLIAM, M.D., 17, Welbeck Street, Cavendish Square, W.—For an investigation on the action of oleum cinnamoni and other essential oils on the bacillus of tubercle ...	5	0	0
PEMBREY, M. S., M.D., Medical School, Charing Cross Hospital, Chandos Street, W.C.—For a research on the regulation of temperature in man and animals during fever, and the part played by the nervous system and the muscles in the production of heat	10	0	0
PHEAR, ARTHUR GEORGE, M.D., 13, Welbeck Street, Cavendish Square, W.—To investigate the bacteriology of simple non-purulent pleural effusions. To determine in what varieties of simple pleural effusions micro-organisms are present, and how far the clinical features of the case depend on the nature of the micro-organisms present	7	0	0
RUSSELL, J. S. RISIEN, M.D., and FREDERICK E. BATTEN, M.D., 4 Queen Anne Street, W.—For an investigation on muscle spindles	10	0	0
SMITH, HUGH R., M.D., Pathological Department, University College, W.C.—For an investigation of the streptococcus antitoxin by means of inoculation experiments on animals ...	5	0	0
SMYTH, WALTER, M.B., Physiological Laboratory, Queen's College, Belfast.—For an investigation into the emergence of fine medullated fibres from the human spinal cord ...	5	0	0
STOCKMAN, RALPH, M.D., F.R.S.E., 12, Hope Street, Edinburgh. —1. To continue a research on the action of arsenic on the blood. 2. An investigation into the action of certain antihydrotic drugs	7	0	0
STODDART, W. H. B., M.B., Bethlem Royal Hospital, London, S.E. —For an investigation on the influence of the cortex cerebri on the movements of the pupil	5	0	0
TENNANT, JOHN, M.B., 6, Cavendish Terrace, Belfast.—In aid of a microscopic examination of the structure and degenerations of myomata	5	0	0
WARRINGTON, W. B., M.D., and Professor R. BOYCE, Pathological Department, Ashton Street, University College, Liverpool.—For a research on the conduction paths in the nervous systems of the lower vertebrata	7	0	0
WASHBOURN, JOHN W., M.D., and Mr. G. BELLINGHAM SMITH, 6, Cavendish Place, W.—For an investigation upon the causation of certain infective tumours in dogs...	10	0	0
WELSH, DAVID ARTHUR, M.B., 35, Hartington Place, Edinburgh.—For a series of experiments in order to investigate the following points: 1. The effects of removing (*a*) all the parathyroids, and (*b*) some of the parathyroids in the cat and in the rabbit. 2. The effect of removing the thyroid, leaving one or more of the parathyroids in position in the same animals. 3. The effect of feeding with parathyroid gland and with pituitary gland after removal of (*a*) the thyroid alone, (*b*) the parathyroids alone, (*c*) the thyroid and parathyroid together	5	0	0
WRIGHT, Dr. H. K., Royal Victoria Hospital, Montreal.—For the purpose of prosecuting a research on neurology (to the pathological and histological side of the subject)	30	0	0
YONGE, EUGENE STEPHEN, M.B., 70, Burlington Street, Manchester.—For an investigation into the importance of the tonsils as a path of tuberculous infection, with special reference to chronic tuberculosis of the cervical glands ...	7	0	0
YOUNG, ROBERT ARTHUR, M.D., The Middlesex Hospital Medical School, W.—1. To complete the investigation of the precipitation of carbohydrates by neutral salts, of which a preliminary account has been published in the *Proceedings of the Physiological Society*. 2. To investigate the action of bile salts on the heart and circulation with a view to elucidating certain of the symptoms of jaundice	10	0	0
Total	£400	0	0

Of the foregoing grants, the following sums have been returned as unused:

	£	s.	d.
Brodie W. Brodie, M.D.	3	13	6
M. G. I. Cadell, M.D.	0	1	3
T. W. Eden, M.D.	5	0	0
G. Elder, M.D.	5	0	0
W. Finlay, M.D....	2	10	6
A. A. Gray, M.D.	3	6	3
D. F. Harris, M.D.	0	10	6
J. B. Haycraft, M.D.	9	8	9
W. S. Lazarus-Barlow, M.D.	0	6	6
A. P. Luff, M.D.	1	13	7
A. G. Phear, M.D.	4	3	7
H. R. Smith, M.D.	5	0	0
D. A. Welsh, M.D.	5	0	0
E. S. Yonge, M.D.	10	0	0
R. A. Young, M.D.	8	6	1
Total	£60	10	6

In connection with the above-mentioned unused sums the Committee have received the following statements from Dr. Eden, Dr. Eyre, Dr. Hugh Smith, and Dr. Welsh:

Dr. T. W. Eden reports that he has been unable to make any progress at all with his research, but would like his grant renewed.

Dr. John Eyre has no report to make. He returned the grant of £5 voted to him last year, as he found the research he proposed to carry out was too expensive for his small resources.

Dr. Hugh Smith has been prevented from carrying out the investigation for which he received the grant, and therefore has no report to make.

Dr. D. A. Welsh has had no occasion to use any portion of the grant, but asks for the same to be renewed.

The Committee have received the following interim reports from the investigators to whom grants were made according to the foregoing lists.

The reports are grouped together under the following arrangement:—

I. Physiological and Pathological Investigations.
- (*a*) General.
- (*b*) Circulatory System.
- (*c*) Alimentary System.
- (*d*) Nervous System.
- (*e*) Cutaneous System.
- (*f*) Internal Secretion.
- (*g*) General and Special Metabolism.

II. Bacteriological Investigations.

III. Therapeutical Investigations.

I. (*a*) General.

Dr. J. Berry Haycraft and Dr. A. W. Sheen, respecting the determination of the position of the centre of gravity in the human subject, report that they have completed an apparatus which enables them with great ease to determine the position of the centre of gravity in the human subject, and to record the position photographically. At the same time they are able to record the centres of rotation of the hip and knee-joints and their position in relation to the centre of gravity. They have investigated the relative positions of these points in various erect positions, and have only to study these positions in the case of persons suffering from malformation, for example, hip disease. This they hope to do in the course of a few months' time, when their complete paper will be ready for publication.

Dr. M. S. Pembrey has continued his research upon the temperature of man and animals after section of the spinal cord. A short account of the early results was published in the British Medical Journal, October 2nd, 1897. The present work is chiefly upon the respiratory exchange in such cases. For such experiments a large respiration apparatus has been constructed; this work and the test experiments have taken much time. With the aid of one of his pupils, Mr. Nicol, he has also made a large number of observations upon the deep and surface temperature of man under various conditions. He hopes to give a paper upon these results at the next meeting of the British Medical Association.

I. (*b*) Circulatory System.

Dr. Lazarus-Barlow: During the past year progress has been made in the research for which he received a grant from the British Medical Association in the following directions. Having determined experimentally the variations in specific gravity of (*a*) the blood, (*b*) the tissues (1, in the immediate neighbourhood of the irritant; 2, in the more distant parts). During the onset of an inflammatory œdema he investigated the histological changes in the region most affected by œdema. For that purpose he chose the pleural cavity, and induced an inflammatory condition of the pleura in guinea-pigs by intrapleural injection of diphtheria toxin. His attention has been directed to (1) the wandering cells, (2) the endothelium, (3) the substance proper of the pleura, (4) the subjacent lung. In all of these he has found important changes. He has mounted several hundred microscopical sections dealing with these points and the changes in early pleurisy in man, at the same time trying to arrive at a conclusion as to the part played by *post-mortem* changes in causing some of the appearances in human pleurisy. These sections are at the present time engaging his attention, and he hopes to give a preliminary account of his results at the forthcoming meeting of the Association. His research into the action of diphtheria toxin upon the heart has unfortunately been at a standstill for unavoidable reasons directly and indirectly connected with the illness and death of Professor Roy and Dr. Lazarus-Barlow's removal from Cambridge to London. It is, however, far advanced, and is chiefly waiting for the completion of an artificial respiration apparatus at the laboratory.

Dr. Harold L. Barnard reports that he endeavoured to make an instrument which should accurately ascertain the blood pressure of man, and in such a form that it should be adapted to clinical use. He carried out the research with Mr. Leonard Hill, and they have published in the British Medical Journal an account of the first form this instrument took. They have since continued to simplify their invention and to reduce its cost. They substituted for the tambour manometer, which was costly and complicated, a simple air manometer, which recorded pressure by the compression of air in a glass tube and bulb. A glass tap at the top enables them to set the manometer at zero before each determination, and so to avoid temperature variations. They were also able to dispense with the armlet, long rubber tube, and bicycle pump by placing a small rubber bag upon the end of their glass manometer and filling this with fluid. When this bag was sqeezed upon the radial artery by a screw arrangement the fluid rose in the manometer, and when the pressure became equal to that in the radial artery a maximal pulsation was perceived in the manometer. They are now endeavouring to adapt Dudgeon's sphygmograph so as to be able to record the maximal pulsation upon a smoked paper.

Dr. R. J. M. Buchanan reports as follows in reference to his research on the classification of leucocytes:

Classification.—Oxyphile: Finely granular; coarsely granular.

Basophile; Finely granular; coarsely granular; so-called hyaline, large, small, lymphocytes.

In lymphocythæmia he has been able to trace all gradations from the lymphocyte to the basophile cells. As regards the action of leukæmic blood on typhoid and anthrax bacilli, he reports the carrying out of experiments by means of hanging-drop preparations of the blood inoculated from a twenty-four hour culture of typhoid or anthrax bacilli. The preparations with controls were kept in an incubator, and were examined in a suitable manner on warm stages at intervals over a period of thirty-two hours. The first oxyphile cells exercised the most marked phagocytosis towards the anthrax bacilli. The large myelocytes from the bone marrow showed none. There was no phagocytosis of any kind of cell towards the non-typhoid bacilli. Contrary to the general opinion regarding the non-phagocytic action of the coarse oxyphile cells, he found in many specimens that the coarse oxyphile cells were phagocytic towards anthrax bacilli, and that bacilli taken up by them suffered marked alterations. This action was demonstrated practically, and recognised by Professors Sherrington and Boyce.

Dr. George Elder reports upon his work in connection with his investigation regarding the movements of the cerebro-spinal fluid and the intracranial circulation that the experiments were done on rabbits and dogs, and consisted chiefly in the injection of fluid containing coloured granules in suspension into the arachnoid space, disturbing as little as possible the conditions present in health. Some of the injections were made through fine holes drilled into the skull; others were made into the spinal meninges between the vertebræ. After the animal was killed by giving an overdose of chloroform, frozen sections of the parts were made and carefully examined. The results went to prove that under ordinary physiological conditions there is no to-and-fro movement of fluid from the cranial to the vertebral cavity, and *vice versâ*, either with arterial pulsation or with respiratory movements; whereas when the pressure in one cavity is suddenly raised there is a flow of fluid into the other, which gives a certain amount of respite to the circulation. A full account of his experiments appeared in the British Medical Journal for November 13th, 1897. He hopes to pursue the subject as opportunity affords.

Dr. D. Fraser Harris reports that his research into the

blood entering, circulating in, and leaving the spleen, soon resolved itself into a preliminary inquiry concerning the relative distribution or percentage of hæmoglobin in various organs and regions of the body. Rabbits were used, and Oliver's hæmoglobinometer and hæmacytometer were the instruments employed. Great difficulty was experienced in making the estimations sufficiently quickly before coagulation set in; the experiment was not begun until the cessation of respiration. Preliminary difficulties can hardly be said to have been as yet wholly overcome. The percentage of HCO_2 varies in the most surprising way, from 120 per cent. in the portal vein occasionally, to below 40 per cent. in the aorta. The concentration of pigment does not by any means vary *pari passu* with the number of red corpuscles present in any specimen of blood.

Dr. W. B. WARRINGTON, in conjunction with Professor BOYCE, reports, in reference to their progress in an investigation on the central nervous system, that he expects to have ready for publication the completed results of their observations towards the end of this session. The animals used were the hen and pigeon, the nervous systems of which have been investigated by the following methods: (1) Examination of the normal brain in serial sections stained by the Weigert-Pal method and by the methylene blue method of Nissl. (2) Course of degenerations produced by experimental lesions (*a*) in various parts of the brain, (*b*) after section of the spinal cord. These experiments show that after complete removal of one cerebral hemisphere the resulting degeneration does not extend into the spinal cord, but is limited to a large tract taking origin in the striate body and terminating partly in the thalamic region, partly in the optic lobes. The nature of certain degenerated fibres connected with the optic nerves has also been studied. After division of the spinal cord both ascending and descending degenerations have been noticed. (3) Faradic stimulation of the cortex. They have localised parts of the cortex, stimulation of which produces constant movements—namely: (*a*) A "centre" already described by Ferrier, situated near the median fissure, stimulation of which produces contraction of pupil of the opposite side, with rotation of the head and neck; (*b*) a "centre" situated posteriorly and laterally, stimulation of which is followed by a movement of pecking and swallowing.

Dr. HAMILTON WRIGHT reports that he has made a finished research of the posterior columns of the human spinal cord, which he hopes to publish; also a finished research into the effects of poisonous doses of potassium bromide on the cells of the human brain cortex, and a similar research in the brains of four rabbits, which will appear in the next number of *Brain*. Also a finished research into the changes in the spinal cord of a man who died of osteomalacia. (Dr. Bradley, of Montreal, is working out the section of this paper, and it will shortly be published in the *American Journal of Experimental Medicine*). Also a finished paper of a case of postero-lateral sclerosis to be published later; also a paper on the break of the lumbar reflex arc, the second in a series of which this paper already sent into the JOURNAL is the first; also he has been engaged in a research into the action of ether and chloroform on the nerve cells of rabbits, which will be finished at Professor Kanthack's laboratory at Cambridge.

I. (*c*) ALIMENTARY SYSTEM.

Dr. VAUGHAN HARLEY, in reference to his investigation into the causation of cirrhosis of the liver and its influence on metabolism, reports that Dr. Boix found that the administration of butyric acid caused in rabbits a form of cirrhosis of the liver, and he considered a preliminary stage to cirrhosis in man was a gastric catarrh caused by alcohol, which led to butyric acid formation and consequent intestinal hepatitis. In feeding experiments on dogs Dr. Harley has found that giving as much as even 2 c.cm. of pure butyric acid daily with meat caused not only no hepatic cirrhosis, but not even any catarrh of the stomach even after daily doses for five months. In rabbits 1 c.cm. of pure butyric acid caused acute gastritis, which was often fatal in a few days; if the dose was only occasionally given, the animal could be kept alive for months; they all lost considerable weight. In one case a rabbit of 2,700 kilos. after four months weighed only 1,760 kilos. In all the rabbits the butyric acid caused a marked gastritis, but the liver showed to the naked eye no appearance of cirrhosis. In the microscopical specimens examined by Dr. Barratt the stomach showed the appearance expected from the naked-eye examination; in no cases so far examined was there any cirrhosis except where psorospermosis was present to account for it.

Dr. Harley also reports progress made in an experimental investigation into the formation of gall stones. If gall stones were inserted into the gall bladder of dogs, it was found that in two months they had disintegrated to a certain extent, and lost from 60 to 65 per cent. of their original weight. Experiments are now in progress as to the influence of obstruction of bile ducts and different food on the composition of the bile. The investigations are not yet sufficiently advanced to report on the results obtained.

Dr. H. MUIR EVANS reports that he has made a series of experiments on the absorption of gases in the intestine of the cat, has analysed the gases in the swim bladder of the cod and gurnard, and gathered together considerable clinical material, which he has embodied in a paper shortly to be published on Flatulent Distension of the Bowel.

I. (*d*) NERVOUS SYSTEM.

Dr. W. BRODIE BRODIE reports that in his research upon the nerve endings and existence of sensory nerves in arteries the vessels employed have been for the most part the smaller mesenteric arteries, and also some of the larger arteries such as the femorals and carotids of such small animals as rabbits and guinea-pigs. The tissues were treated by the gold chloride, methylene blue, and Golgi (rapid) methods, all of which have proved more or less unsatisfactory, the last mentioned, indeed, yielding no results whatever. By means of the two former processes it has been possible to demonstrate: (1) Bundles of non-medullated nerve accompanying the vessels, either running closely alongside as in the mesenteric arteries, or embedded in the outer coat as in the case of the larger vessels. (2) Between the outer fibrous coat and the muscular coat a gangliated plexus, consisting of small, many-branched cells of fine fibres. (3) The presence within the muscular coat of fine fibrils running parallel to the direction of the muscle cells, which, however, he would hesitate to pronounce as being certainly of a nervous nature. The fibrils apparently come into close relation with elongated muscle, presumably those of the muscle cells, though they do not appear to terminate there. Nothing of the nature of a special end-organ has been observed. As regards the existence of sensory nerves in the absence of any sign of end-organs and of any method of staining which would with certainty differentiate the class of nerve fibre, the question from a purely histological point of view must be left as quite undetermined either one way or the other.

Dr. T. ALDOUS CLINCH reports in reference to his research on the changes in metabolism induced by lesions of the cerebellum that up to the present time four experiments have been performed on dogs. These experiments have involved lesions of the cerebellum, varing in degree and severity. Analyses of the food taken, the nitrogen and urea passed in the urine, the nitrogen and fat contained in the fæces, have been made both before and after the operations. The animals placed on measured and weighed quantities of fluid and solid food were kept till the maintenance of the weight at an even figure, and the steadiness of the amounts excreted announced that physiological equilibrium had been obtained; the operation was then performed and comparisons made between the results of the analyses now obtained and of those before. Control experiments were also made with the object of ascertaining how much of the results obtained were due to shock and hæmorrhage from which the animals necessarily suffered. The calculations involved by this work are not as yet completed, and in the meantime observations are being continued. His thanks are due to Professor Vaughan Harley for his invaluable assistance and encouragement in his work.

Dr. ALBERT A. GRAY, with reference to his experiments upon the human tympanum, reports that seeing the necessity for obtaining an enlarged and uninterrupted view of the tympanic membrane, and in such a way that operative procedures would not be interfered with, he designed a small speculum for that purpose, which it is needless to describe here. The first investigation was to determine the factors which cause an increase in the conduction of sound to the ear

by the bones of the head, both in normal and pathological conditions. The chief of these factors he found to be: (1) An increase in the tension of the radial fibres of the membrane. If the circular fibres alone are rendered more tense or not altered in tension, then there does not seem to be an intensity of bone-conducted sound. (2) Increased tension of the ligaments uniting the ossicles to one another and to the walls of the tympanum probably produces an increase in the intensity of sound conducted by bone. This view was suggested first by Bezold, and his experiments point to its corroboration. He has made an attempt to obtain a tracing of the movements of the handle of the malleus in response to sound conducted to the ear by the air. A filament of fine-spun glass was attached horizontally to the tip of the handle of the malleus, and brought out through the external meatus. A loud note was then sounded in close proximity to the ear, and a smoked glass plate was run along in contact with the glass filament. Tracings showing minute vibratory movements were thus obtained, but whether these really represent the movements of the membrane in response to sound, or whether they are adventitious requires further investigation. This investigation he is at present about to carry out on temporal bones obtained from the cadaver. Some experiments have been carried out to find to what extent combination tones may be produced in the ear. From these he has found that differentiated tones can be generated loudly in the ear by two primary tones which could not mix in the air and produce a differential tone there. Summational tones he has never been able, either under these or any other circumstances, to hear. Whether these differential tones are produced in the ear itself or in the nerve centres he is at present attempting to discover, but the evidence so far leads him rather to the belief that they are produced in the middle ear.

Dr. J. S. RISIEN RUSSELL and Dr. F. E. BATTEN, with regard to their experimental observations on the early degenerative changes in the sensory end-organs of muscles, report that the experiments were undertaken in order to find whether degeneration occurred in the first place in that part of the neuron most remote from the cell; and secondly, to reproduce within the muscle spindle, if possible, certain changes which had been shown by the authors to be present in the case of tabes dorsalis in man. The results of the research have been to show: (1) That within the muscle spindle a spiral form of nerve termination exists surrounding a fine muscular fibre, in the centre of which are large clear non-nucleated cells. (2) That changes take place in the spiral in twenty-four hours after section of the nerve, and that such changes become marked in forty-eight hours. (3) That degeneration of the medullated sheath of the nerve takes place in the whole course of the nerve at the same time after section of the nerve. (4) That no fatty change could be demonstrated in the intramuscular cells by the Marchi method, similar to those found in the case of tabes dorsalis in man.

Dr. WALTER SMYTH reports that his research on the visceral motor nerves has been very slow, owing to its nature and the large amount of time and work required, together with the difficulty of obtaining subjects in a fit state of preservation. He has succeeded in examining two subjects completely, and from these has been able to discover some points wherein these nerves in the human being differ from the corresponding nerves in the dog (Gaskell's description). Before, however, attempting to give a full account of these nerves, he would ask the Association for an extension of time. With this and the better supply of material now at his disposal he hopes to be able to give a detailed account of the origin and path of these nerves.

Dr. W. H. B. STODDART reports that he has been engaged in a research on the influence of the cortex cerebri on the movements of the iris. Up to the present he has confined his attention to dogs, and, further, he has limited his research to the localisation of an area on the surface of the brain, excitation of which causes dilatation of the pupil. Each experiment has been conducted as follows: The animal having been anæsthetised, the zygoma and carotid process of the jaw were removed on the left side. The skull-cap was then removed as far down as possible on the left side, close to the base of the skull, and as far down as the zygoma on the right. The dura mater was freely opened on the left side, and the hemisphere raised so as to expose the third nerve. This was divided close to the brain, and a pair of electrodes was applied to the distal segment. The dura mater of the right hemisphere was then opened. Contraction of the left pupil was effected by stimulation of the third nerve by means of the electrodes already mentioned. With another pair of electrodes the cortex of both hemispheres was systematically stimulated, and it was noted in which areas of the cortex excitation caused the pupil to dilate. The centre was then found by gradually working down to a minimal stimulus, so that the coil as a rule ultimately stood at 10 or 11. In this way the centre for dilatation of the pupil has been localised in the motor area to a spot about the middle of the opposite gyrus centralis anterior between the centre for flexion of the hip and that for flexion of the shoulder, but nearer the latter spot. No dilatation was induced by excitation of the cortex on the same side. Other details have been determined in respect of certain movements of the eye. He is now engaged in determining which parts of the cortex cerebri influence the movement of contraction of the pupil. The whole research will be published in full at a later date.

I. (*e*) CUTANEOUS SYSTEM.

Dr. J. O. W. BARRATT, in reference to his research upon the influence of inflammation and of varnishing upon the aqueous and gaseous exchange of the skin, reports that his investigation into the influence of inflammation upon the elimination of water and carbon dioxide by the skin has been completed. It was found that the elimination of water undergoes a considerable diminution, while that of carbon dioxide is but little affected. A full account of this has been published in the *Journal of Physiology* (a reprint of which is forwarded). He has also studied the process of secretion of water from the skin by comparing the amount of visible perspiration produced by the healthy and inflamed skin respectively, in this way confirming the results previously obtained. These experiments are described in greater detail in a paper sent to the BRITISH MEDICAL JOURNAL. Experiments have also been made on the influence of varnishing upon the gaseous and aqueous exchange of the skin which are rapidly approaching completion.

I. (*f*) INTERNAL SECRETION.

Dr. ARTHUR CLARKSON reports in reference to his research that he has been formulating numerous sets of serial sections of the bodies of various species (embryos) of mammals and birds, showing the position of the suprarenal bodies at various stages of their development, and their relations to the sympathetic nervous system, the latter relation being found to vary in different species, and leading to a criticism of the papers of Mitsukari and other observers. The comparative histology of the adult organ he has studied in different mammals, birds, and amphibians, more especially in relation to the granules found in the cells of the outer layers of the mammalian cortex, which granules were found to be stainable readily with osmic acid, but were undissolved by ether when treated in the fresh state.

Dr. ROBERT HUTCHISON reports that during the past year he has continued his researches into the chemistry and action of the thyroid gland. This attention has been specially directed (1) to the *rôle* of iodine in the active constituent; (2) to the experimental investigation of the relation of the thyroid gland to the reproductive organs; (3) to the pharmacological action of the gland, and especially its action upon the circulatory system. As regards the results obtained under the first of these headings, he has found that an artificially iodised nucleo-albumin possesses none of the specific action of the thyroid, and further, that an increase in the proportion of iodine in the normal colloid matter by artificial means does not raise its activity. These observations tend to confirm the view that the iodine in the thyroid gland, if it play an important part at all, must do so in virtue of the special form of combination in which it occurs. He has not yet succeeded in removing the iodine from the colloid matter. The second part of the investigation has shown that whatever clinical ground there may be for assuming some relationship of thyroid glands to the reproductive organs, experimental research does not bear it out, removal of ovaries or testes having no influence on the symptoms of thyroidectomy. The results under the third heading bear especially upon the

action of thyroid products upon the vascular system, and they are published at page 142.

Dr. A. G. Levy, with reference to his research on the changes in the blood of dogs after the operation of thyroidectomy, reports that the research is for the time being completed, and a paper on the subject will appear in the forthcoming number of the *Journal of Pathology*. Observations were made upon the corpuscular elements of the blood, and on its total solids, proteids, fibrin, total nitrogen, and ash. This was done in the cases of animals exhibiting different degrees and forms of the cachexia thyroidectomica, and at different periods after the operation. In all of these animals blood changes, usually considerable, were found. Over and above the previously known reduction in the number of red corpuscles and in hæmoglobin and increase of white corpuscles, there was discovered a loss in the amount of total solids, proteids, nitrogen, and usually of ash, but the fibrin was considerably increased in quantity. These various components of the blood were found to vary independently of one another and of the general symptoms of the cachexia. These differentiations in the abnormal blood were all made simultaneously from a single bleeding, and were controlled by estimations of the blood taken in the same manner from the animal before thyroidectomy. The details and results of eight experiments are given in the paper.

I. (*g*) General and Special Metabolism.

Dr. T. G. Brodie reports that when studying the effects of heat upon striated muscle it was shown that muscle shortened at each temperature at which one of its proteids coagulated. He has since extended the work to muscle in various stages of rigor mortis, and found that at different times after death the heat shortening differs from that obtained from fresh muscle in extent and in the temperature at which shortening occurs, thus indicating the changes in the proteids which have occurred up to those respective stages. Confirmation of this was required by a study of the proteids obtainable from muscle in various degrees of rigor mortis, as contrasted with the shortening obtainable on heating muscles taken from the same material at that time. In the case of mammalian muscle the two exactly corresponded, but in the case of frog muscle the conditions are more variable, and the experiments are as yet incomplete, owing to the difficulty of obtaining a sufficient bulk of muscles showing the same stage of rigor.

Dr. A. S. Grünbaum reports (in conjunction with Dr. C. A. Kohn) that with the object of ascertaining the conditions of decomposition of amido-compounds in the animal body, a series of condensation products of aldehydes and amides has been prepared, and their physiological action is at present under investigation. Benzylidene diacetamide has been shown to have a slight antipyretic action, without any obviously injurious secondary actions. It is proposed to extend the experiments to allied compounds, amongst others to those containing sulphur in place of oxygen, and to obtain data as to the therapeutic value of the compounds formed.

Professor W. D. Halliburton, F.R.S., reports that the work for which he received a grant from the Scientific Grants Committee had been carried out by Miss M. C. Tebb under his superintendence. The results she has obtained have been published in a paper entitled Hydrolysis of Glycogen, which appeared in the *Journal of Physiology*, March, 1898, vol. xxii, pp. 423—432.

Dr. A. P. Luff reports that he has prepared a quantity of pure uric acid, and from it has made batches of the quadriurate and biurate, which are awaiting the experiments that he proposes to carry out on the gelatinous modifications of those compounds. He has, however, been so busy with other work that he has not been able to start the experiments, and therefore requests an extension of time to next year.

Dr. John Tennant reports that the object of his research is to study the nature of local necrosis found in various tumours and well exemplified in many myomata. The greater part of the work done was embodied in a paper read before the Ulster Medical Society and epitomised in the British Medical Journal of March 12th, 1898. The local necrosis has been observed also in fibromata and fibro-adenomata, particularly in certain tumours growing in the peritoneal folds and retroperitoneal connective tissue. Microscopically it is present in a large proportion of big myomata where the necrosis areas can be recognised as ragged walled cysts, microscopically it is still more common. The necrosis is not a rapid but a very gradual change, and is characterised by progressive disappearance of the nuclei in the areas involved, the nuclear framework persists after the chromation has disappeared, but in the end an apparently structureless tissue remains. This may liquefy and form cysts. The evidence is that such cysts have no epithelial origin. The process appears to differ from the forms of tissue degeneration that are commonly recognised. It is apparently not dependent on thrombosis or thickening of the vessels. Healthy-looking vessels have been observed coursing through areas almost entirely necrosed, and the surrounding tissues show no inflammatory reaction. The necrosis has many appearances in common with that seen in tuberculous tissue, the latter is more rapid and shows more stages together. The subject requires further study before publication.

Dr. R. A. Young reports that his research on the influence of neutral salts on carbohydate solutions is completed, and a full account of the results published in the *Journal of Physiology*, vol. xxii, pp. 401-422, March, 1898. He has commenced the study of the action of bile salts on the circulatory system, and his experiments are still in progress. Up to the present he has been engaged chiefly in the preparation of material for use in the experiments. He encloses a copy of his paper on the Precipitation of Carbohydrates by Neutral Salts.

II. Bacteriological Investigations.

Dr. A. G. Auld reports that since July his research on the pathogenic properties of the pneumococcus has been conducted in the conjoint laboratories of the Royal Colleges of Physicians of London and Surgeons of England. The point which has been specially inquired into has been the production of a toxin sufficiently strong for vaccinating purposes. This is to obviate, if possible, the necessity of injecting living organisms, by which method it is impossible to achieve satisfactory or uniform results, as need not be entered into further here. It was found that the organism taken from the blood of rabbits which had been inoculated with pneumonic sputum, when grown in the ordinary broth medium, produced a weak toxin utterly insufficient, even in large quantities, for the purpose required. It was also found that the organism developed in the broth large quantities of acid, which on examination was found to be lactic acid. This acid was permanent, and seemed to inhibit the continued growth of the organism. The next step was to neutralise this acidity by adding a small quantity of precipitated chalk to the broth, when a better medium was obtained. Notwithstanding this the toxin was disappointing. The blood serum was added along with the chalk, when a more satisfactory, but still far from adequate, toxin was produced. The addition to the broth of all the constituents of horses' blood was also made. A new series of experiments was then begun. These consisted in endeavouring to raise the virulence of the organism as high as possible, which was done by transmitting it successively, first, through six, and then through twelve generations of rabbits. After this transmission a very high degree of virulence was obtained, and this organism was then grown in the broth prepared as already described (by the addition of precipitated chalk and 15 per cent. horse's serum). The broth was inoculated several times at intervals of two or three days, and after filtration the resulting toxin was found to possess markedly poisonous qualities in rabbits. Its action is now being investigated. Three different sets of experiments were conducted on these lines to insure accuracy, and he hopes to communicate the details of the work at the forthcoming meeting in Edinburgh. In this research he wishes to acknowledge much valuable assistance from Dr. Cartwright Wood.

Dr. C. A. Ballance and Mr. S. G. Shattock have continued the attempt to procure an antitoxic serum for the treatment of malignant disease, and some preliminary observations have been made on the value of the serum in the treatment of cancer.

Dr. Kenneth W. Goadby has already prepared a report on leptothrix buccalis maximus, and will shortly forward another which will cover most of the research upon which he has been engaged. He has obtained pure cultures, and discovered a method whereby those organisms occurring

in the mouth which so far have resisted cultivation may be cultivated—among them being the spirillum, at one time thought to be the same as the cholera bacillus. He has also pure cultivations of some 15 new micro-organisms, to be described, which he has found in cases of pyorrhœa alveolaris, and has also isolated a considerable number of chromogenic bacteria from the oral cavity. (Dr. Goadby also forwards a long report on the bacteriology of the mouth.)

Dr. A. A. Kanthack, Dr. W. Myers, and Dr. W. Dowson report with reference to their work on tetanus that (as regards the nature of infection and of injury) they have found, like Vaillard and Vincent, that animals which are highly susceptible to tetanus readily withstand the inoculation of large quantities of spore. In experiments on guinea-pigs—with subcutaneous inoculations, and on rabbits intravenously—they found that the addition to the spores of 0.5 c.cm. of a living or sterilised broth culture of bacillus coli, 7 days old, caused certain death in guinea-pigs in almost all cases after subcutaneous inoculation. When a twenty-four-hours'-old culture of bacillus coli was used no tetanus appeared. The addition of sterilised earth to the spores had no effect, but if a little fresh broth culture of bacillus coli was first added to the earth the spores became active. The addition of small quantities of streptococci or of staphylococcus albus and aureus had the same effect. If, however, a large-nozzled syringe be used for injection and be inserted into a muscle so as to lacerate it tetanus follows in half the cases, or if the femoral vessels be punctured or an aseptic fracture of the femur be practised previously or subsequently to the injection, or if lactic acid, croton oil, or caustic potash be simultaneously inoculated with the spores, tetanus follows. The influence of foreign bodies depends on their "septic" condition. (As regards the path of infection.) Resection of the sciatic nerves in guinea-pigs, followed by inoculation of tetanus culture or toxin into the paralysed limb, invariably delays the incubation period. With minimal lethal doses of toxin the resection may prevent death, a mild tetanus only resulting. In a case of tetanus where the site of infection was the finger, tetanus bacilli were obtained therefrom; but not from the nerves of the hand and forearm. In only two out of the six cases was it possible to demonstrate tetanus bacili in the nerves of the thigh after experimental inoculation of the ankle. (As regards the neutralising power of spinal cord and brain of susceptible animals *in vitreo*.) It was found, as Wassermann asserts, that when emulsions of cord or brain cortex are mixed with tetanus poison the mixture no longer kills from tetanus. Using guinea-pigs for inoculation it was never possible entirely to avoid tetanic symptoms, though these were less severe than in the controls and death was the exception. The white matter of a bullock's cord has very little action on the toxin, the grey matter of anterior and posterior horns respectively being much more potent, the anterior horn was found relatively the most active. (As regards the presence of toxin in tetanised animal.) In a tetanised horse: They were unable to find the toxin in any of the fluids or solid organs of the body [the latter were extracted by Blumenthal's method.] The animals (guinea-pigs) which were used for the test in no case showed signs of tetanus. The deplimated blood in doses of 4 c.cm. and 10 c.cm. caused convulsions, retching, and great weakness, lasting for about 20 minutes. The animals recovered. There was no recognisable antitoxin in 10 c.cm. serum. In the case of the rabbit showing symptoms: 10 c.cm. of serum caused mild tetanus. No organ extract (Blumenthal's method) led to tetanus, nor did the urine. In the case of the rabbit, before the appearance of symptoms 11 c.cm. of serum caused tetanus in two days in a guinea-pig, and death in seven days. No tetanus toxin was found elsewhere in the body. In the case of a boy who died from tetanus the urine, cerebro-spinal fluid, and bile produced no tetanus in guinea-pigs (doses 5 to 10 c.cm.).

Dr. Leedham-Green reports that during the past year he has continued his investigations into the relative value of various agents used in the disinfection of the skin. He has repeated at greater length and checked the experiments he made during the previous twelvemonths, and has included in the inquiry the action of formol-aldehyde. The principal difficulty with which he has had to contend has been to find out how he could best neutralise the antiseptic action of the agent experimented with; for it is necessary to be very cautious in accepting the results of experiments with antiseptics when tested by the culture tube, for although a relatively strong solution of an antiseptic is necessary to kill most micro-organisms, and especially to destroy their spore, yet an infinitesimal quantity of it when introduced into the culture medium will prevent their growth without killing them. It therefore by no means follows that the culture is sterile because no growth appears. Before we can accurately estimate the value of an antiseptic agent, we must be able either entirely to remove all trace of it from the culture tube, or absolutely to neutralise its action there. By working on the lines indicated by Geppert and Scheviakoff, the writer thinks he has overcome this difficulty. Another branch of the inquiry was the investigation of the value of gloves (silk, cotton, and rubber), pastes, and varnishes as a means of preventing infection by the surgeon's hand. The writer is in hopes of reading a paper at the annual meeting of the Association at Edinburgh, giving an account of his experiments and the conclusions arrived at.

Dr. A. G. Phear, with reference to his research into the bacteriology of simple pleural effusions, reports that fluid withdrawn from the pleural cavity in cases of simple (non-purulent) effusion was in six instances examined bacteriologically. The fluid to be examined was in each case removed by means of a sterilised syringe with asbestos plug (Koch's pattern), and every precaution was taken to guard against the accidental entrance of germs. In no instance were micro-organisms found in the fluid itself, even after centrifugalisation, nor was there in any case development of micro-organisms in the fluid on incubation at 37° C. In Case VI, in which an active growth of the diplococcus pneumoniæ was obtained on a agar, portion of the culture was introduced into the original fluid, which was again incubated, but without development of the diplococcus. The investigation was carried out in the bacteriological laboratory of University College. The writer expressed his indebtedness to Dr. Curtis for his kindness in making the necessary inoculations in Cases V and VI. The results are embodied in the following table:

Nature of Case.	Fluid.	Result of Bacteriological Examination.
1. Male, aged 26; left pleural effusion; signs of incipient phthisis at both apices	Slightly turbid clots	No growth (gelatine, glycerine-agar, blood serum, and broth).
2. Chronic Bright's disease; right pleural effusion	Clear, does not clot	No growth.
3. Same case; left pleural effusion	Clear, does not clot	Opaque greyish growth on glycerine-agar after six days' inoculation, consisting of grouped cocci. Liquefies gelatine (subculture from agar).
4. Female, aged 40; lympho-sarcoma; left pleural effusion, with fever (temperature 100°)	Clear, bulky clot forms	Greyish film on glycerine-agar and blood serum after three days' incubation; cocci in twos, fours, and groups. Gelatine subculture; very slow growth of small discrete colonies, which do not liquefy gelatine.
5. Female, aged 24; right pleural effusion, with fever (temperature 100°). No personal or family history of phthisis	Clear, centrifugalised, and sediment used for culture experiments	Broth becomes turbid, with paired cocci within twenty-four hours. Gelatine subculture; growth of minute, transparent, crowded colonies, which remain discrete and do not liquefy the gelatine.
6. Lobar pneumonia, with pleural effusion	Clear, bulky clot forms	Mouse injected with broth culture dies within twenty-four hours, but not of pneumococcal septicæmia; spleen is not enlarged; no diplococci in spleen nor in heart's blood; broth after seven days' incubation becomes turbid, with pure culture of diplococci; minute transparent colonies (diplococci) on glycerine-agar within forty-eight hours. Mouse injected with broth subculture from this dies within twenty-four hours of pneumococcal septicæmia; spleen enlarged, and contains diplococci, which are also found in heart's blood. From the heart's blood a growth of pure diplococci is obtained in broth.

Dr. Wm. Murrell, for some months past has been engaged on an investigation upon the influence of certain essential

oils on the vitality of the bacillus tuberculosis. The investigation has been partly clinical and partly bacteriological. The bacteriological work has been undertaken in conjunction with his colleague, F. R. Blaxall, M.D.Lond., D.P.H.Cantab., in the Bacteriological Laboratory of the Westminster Hospital Medical School. They have arrived at a very definite result, and as their funds are exhausted, that portion of the work on which they were engaged has been brought to a conclusion. Their experiments are finished, and they have now only to present their report, which they will have much pleasure in forwarding shortly.

Dr. J. W. Washbourn and Mr. G. Bellingham Smith report that their investigations were a continuation of a research upon infective venereal tumours in dogs, reported in the *Transactions of the Pathological Society of London*, 1897, and in the *Journal of Pathology and Bacteriology*, January, 1898. In this paper they described tumours affecting the genitals of dogs which were transmitted during coition. These tumours formed cauliflower-like growths of large size, which ultimately ulcerated and caused death from septic absorption. The microscopical structure of these growths was similar to that of a round-celled sarcoma. They succeeded in inoculating these tumours by rubbing them over the surface of the mucous membrane of the penis, and also by placing portions into the subcutaneous tissue. They have twice been engaged in attempting to raise the virulence of the tumours by serial inoculations, and to find out the cause of the infectivity. On account of the slow growth of the tumours the investigations take a long time. They have succeeded in transmitting the tumours through the subcutaneous tissue of a series of five dogs, but the virulence does not show any sign of increase. The tumours, after reaching a certain size, either ulcerate, slough, or slowly disappear without ulceration. Animals which have recovered appear to be immune to a second inoculation. They have not yet discovered the presence of a micro-organism, although a large number of cultivating media and various methods of staining have been employed. Their investigations are still in progress, and are not yet ripe for publication.

Dr. Eugene S. Yonge reports with regard to the importance of the tonsil as a path of tuberculous infection, with special reference to chronic tuberculosis of carotid glands, that twelve guinea-pigs have been inoculated with tissue from hypertrophied tonsils, two of which were excised from undoubtedly tuberculous subjects. Results entirely negative.

III. Therapeutical Investigations.

Mr. W. E. Dixon reports that he has studied the physiological properties of the various active principles of podophyllum emodi; and, secondly, the physiological properties of the active principles of cannabis indica, which experiments have now been completed, and will be shortly published.

Dr. Martha Cadell reports, in respect of her research on the influence of sodium bicarbonate on gastric digestion that in all cases two separate analyses were made, and the averages only are given in the tables. That the analyses when properly worked out yield very similar results is shown by the double analysis in Table I.

Table I.

	H Cl. per cent. Total.	Free.	Proteid.	Salt.	Volatile Acid.	Digestion 1 2 3 Minutes	Total Acidity.
	0.337	0.044	0.191	0.102	0.014	5 5 5	—
	0.325	0.049	0.176	0.100	0.016	5 5 5	—
Average...	0.331	0.047	0.184	0.101	0.015	5 5 5	65 per cent.

In Table II three normal examples are given, so that the results here obtained may be compared with those found after taking 10 gr. sodium bicarbonate immediately before the test breakfast as in Table III, and with those in Table IV, after taking 10 gr. of sodium bicarbonate half an hour before the test breakfast.

Table II.

H Cl. per cent. Total.	Free.	Proteid.	Salt.	Volatile Acid.	Digestion. 1 2 3 Minutes	Total Acidity.
0.331	0.047	0.184	0.101	0.015	5 5 5	65 per cent.
0.376	0.064	0.193	0.120	0.009	8 7 10	70 "
0.378	0.076	0.159	0.143	0.115	9 11 10	62 "

Table III.

H. Cl. per cent. Total.	Free.	Proteid.	Salt.	Volatile Acid.	Digestion. 1 2 3 Minutes	Total Acidity.
0.350	0.090	0.108	0.152	0.054	6 6 7	—
0.400	0.110	0.143	0.147	0.022	10 4 4	—
0.403	0.084	0.139	0.182	0.010	5 5 5	—

Table IV.

H Cl. per cent. Total.	Free.	Proteid.	Salt.	Volatile Acid.	Digestion. 1 2 3 Minutes	Total Acidity.
0.404	0.148	0.143	0.114	0.009	6 4 4	74 per cent.
0.492	0.108	0.179	0.116	0.110	5 5 5	73 "
0.395	0.115	0.179	0.110	0.011	4 4 5	70 "
0.408	0.075	0.223	0.110	0.028	4 4 5	70 "

Dr. W. Findlay reports that he has investigated the action of coniine, conhydrine, pseudo-conhydrine, the mixed alkaloids of conium maculatum in the proportions found in the plant, a liquid extract and a succus. He has examined the action on muscle, nerve, and heart of the frog, but the observations are yet in need of verification. He has determined the relative strength of the above preparations for guinea-pigs, using also rabbits for observation of the general effects, and also for changes in respiration and temperature. The results thus obtained point to something like the following conclusions: Coniine is the most active by far; conhydrine appears to come next; pseudo-conhydrine is weakest, but is near conhydrine. The mixed alkaloids act like coniine, but must be used in rather larger doses; in fact, the action is to be ascribed chiefly to the coniine in them. The liquid extract and the succus might be expected to act like the mixed alkaloids, but larger doses are required, and the succus for the same strength of mixed alkaloids is not so powerful as the fluid extract. This is doubtless due to these preparations not containing the alkaloids in the same relative proportions, so that coniine is really (he thinks) the proper standard of activity. He is unable yet to say what the relative amounts of the different alkaloids are in the preparations, this point and also the possibility of variation in this relative amount in the same preparation made in different years or at different times have still to be considered. Several clinical observations have also been made, chiefly with the succus in cases of whooping-cough, but a complete set of experiments is not yet to hand. He wishes in this connection to request an extension of time, as there are several points which he would like to elucidate. He would have had more of the work completed but for an attack of neuralgia which prevented him from continuing the work for three months at the end of last year and the beginning of this.

Dr. F. W. Goodbody, with regard to the action of alkalies on metabolism, with special reference to uric acid, reports that the result of the investigation on the effects of sodium salicylate on metabolism brings out the following points. The diet remaining the same throughout the experiment the average secretion of nitrogen rose rather more than 1 gramme on taking 1 gramme of the drug per diem, and on increasing the dose to 2 grammes rose a further 1.5 gramme. The average excretion of urea showed a rise of 1.6 gramme during the period of taking 1 gramme per diem, and a further rise of 1.8 gramme when the dose was increased, and the average excretion of ammonia increased 0.075 gramme during the first period, and a further 0.402 gramme in the second period. The excretion of uric acid did not take part in the general increased excretion of the other nitrogenous substances, as during the first period it fell from 0.678 gramme to 0.614 gramme, and then during the second period rose to 0.923 gramme, showing, however, a tendency to fall to the normal towards the close of the experiment. Though at the commencement of the experiment nitrogen equilibrium was established, there was a gradual increase in the quantity of nitrogen excreted in the urine while taking sodium salicylate causing a gradual loss of weight, and during the same time the absorption of fat slowly diminished.

Dr. M. S. Pembrey and Dr. C. D. F. Phillips have continued their experiments upon the physiological action of hydrastine hydrochlorate, and propose to give the final results

at the meeting in Edinburgh. The preliminary report has already been given to the Therapeutic Committee of the Association.

Professor Ralph Stockman and Dr. Greig report as to their research on the action of arsenic on bone marrow and blood formation that a long series of experiments have been made on young rabbits and dogs, and on adult rabbits, the arsenic being given in small daily doses. Systematic examination of the blood and hæmoglobin has not shown any marked change, but there was a definite and very decided stimulation of the bone marrow. This has been carefully investigated, and the research is now finally completed, and almost ready for publication. Some observations have also been made by Professor Stockman on tolerance to the action of certain alkaloids, but little progress, so far, has been made.

Robert Saundby, M.D., LL.D., F.R.C.P., Chairman.

REPORT OF INEBRIATES LEGISLATION COMMITTEE.

The work of the Inebriates Legislation Committee during the past year has been the fostering of a strong professional and public opinion as to the urgency of amended legislation for habitual drunkards.

Your Committee has also been in communication with the Premier, the Home Secretary, and other members of the Cabinet. The promises of the Marquis of Salisbury and Sir Matthew White Ridley were fulfilled by the introduction in the House of Commons on April 25th, 1898, of the Government's Inebriates Bill.

The Bill does not, as we had hoped it would, deal with non-criminal habitual drunkards, but it provides for the establishment and maintenance of State inebriate reformatories for habitual drunkards convicted of grave offences, and of certified inebriate reformatories for habitual drunkards convicted of petty offences, the latter to be aided in part by local and voluntary effort.

In view of the revolution in criminal jurisprudence foreshadowed by this new departure, your Committee regards the Bill as too valuable to be imperilled in its passage through the Legislature, and therefore strongly recommends the Bill, with or without amendments, to every member of the Association who is interested in the welfare of habitual drunkards. The Committee, while thanking Her Majesty's Government for so important and useful a Bill, has suggested that the value of the measure would be enhanced if the attestation by one justice of a voluntary request for admission were legalised, and if compulsion were enacted in well-defined cases of non-criminal habitual drunkenness.

The Committee recommends its re-election as follows: The President and President-elect, *ex officio;* the President of Council, Mr. D. B. Balding, J.P., F.R.C.S., Dr. R. Welsh Branthwaite, Dr. T. Bridgwater, J.P., Sir Charles Cameron, Bart., M.D., M.P., Dr. C. R. Drysdale, Mr. Geo. Eastes, Dr. J. W. Eastwood, J.P., Dr. R. Farquharson, M.P., Sir W. T. Gairdner, F.R.S., Dr. J. Hill Gibson, Dr. A. Grant, Mr. F. J. Gray, Dr. C. J. Hare, Dr. Arthur Jamison, Mr. H. R. Ker, Dr. Norman Kerr, Dr. Longhurst, Mr. R. H. Nicholson, Surgeon-Major G. K. Poole, M.D., Brigade-Surgeon-Lieutenant-Colonel R. Pringle, M.D., Fleet-Surgeon Geo. Robertson, M.D., Dr. Jas. Stewart, Dr. Geo. Danford Thomas (coroner), Dr. Wynn Westcott (coroner), and Dr. H. W. Williams.

Norman Kerr, M.D., Chairman.

REPORT OF THE THERAPEUTIC COMMITTEE

Upon an Inquiry connected with the Employment of Extract of Conium.

It will be remembered that when the Therapeutic Committee had under consideration the preparation of a Memorandum on the *British Pharmacopœia*, it was thought desirable to ascertain the extent to which certain drugs and preparations had fallen into disuse, and that a circular letter was addressed to the members of the Association containing a list of drugs and official preparations concerning which information was needed, and practitioners were requested to indicate whether they employed the drugs named often, rarely, or never. In this list several pharmacopœial extracts found a place for various reasons; thus it was thought that the employment of some extracts might have been discontinued on account of the introduction of more potent remedies of similar action; and, on the other hand, it was considered probable that the employment of others might perhaps be unsatisfactory owing to the method of preparation. In the list three of the green extracts were mentioned, namely, the extract of aconite, the extract of conium, and the extract of lettuce, and the answers relating to these showed that the extracts of aconite and of lettuce were comparatively infrequently employed, while the extract of conium still appeared to be either often or rarely employed by a comparatively large number of practitioners; thus, 354 stated that they employed the extract of conium often, while 1,399 stated that they used it occasionally. Since it has been frequently asserted that the preparations of conium with the exception of the succus, are almost inert, it appeared desirable to make further investigations as to the mode and the object of the use of this drug. It will be remembered that the alkaloid conine is a liquid volatile alkaloid, and it therefore appears probable that specimens of the extract, prepared in accordance with the pharmacopœial directions, might vary considerably in their strength, since some of the alkaloid might possibly be dissipated during evaporation of the extract after the coagulation and removal of albumen.

It is noteworthy that this extract has been included in the list of drugs omitted from the *British Pharmacopœia*, and it is therefore probable that some considerations similar to those above mentioned may have influenced the Pharmacopœia Committee in recommending the omission of a substance so frequently employed by members of the profession, and therefore, in all probability, needed by them. It has accordingly been deemed advisable once more to approach the members of the profession who indicated that they used this drug frequently, and to ask them specifically to state whether they used it internally, externally, or both, and further, if employed internally, to indicate the dose used, and to give indications of the conditions under which they prescribe it. Owing to the numbers who state that they use it but rarely, and owing also to the slight amount of information obtained in previous years in answer to similar inquiries relating to other drugs, it has not been deemed necessary, on this occasion, to extend the inquiry beyond the limits of those employing the drug frequently. Accordingly, letters have been addressed to 354 medical men, and from these 158 answers have been received. Of this number, 25 answers may be at once put on one side as "errors." They include 7 who suggest that some clerical error must have arisen, either on their part or on the part of the Secretary, since they never employ the extract of conium; 5 state that although they have used it occasionally it is incorrect to consider that they use it often, and would prefer to qualify their previous statement and to say that they scarcely ever use it, or seldom use it, or use it but little, or do not use it to any extent. Of the remaining 13 it is perfectly obvious from the answers that the original inquiry was erroneously filled in, inasmuch as, although the questions now addressed to them carefully and specifically relate only to the extract of conium, the answers received relate to the succus in 8 cases; in 2 to the vapour; in 2 to the ointment; and in 1 to the liquid extract of the U.S.P. Although the information that is given relating to the internal or external use of these preparations is sometimes extremely full, it must, unfortunately, for the present be put on one side, as it has no bearing on the subject of inquiry.

Turning now to the answers which apply purely to the extract of conium, it is at once obvious not only that the drug is employed comparatively frequently, but also that its use is not limited to any particular symptom, although in the majority of instances the primary idea of its employment appears to be the relief of pain or of spasmodic irritation. Some practitioners use it internally only, and some externally only; but on tabulating the answers to the questions it is found that it is employed almost three times more often internally, the exact numbers being 115 for internal use, 40 for external. The difference becomes still more striking if from these numbers we deduct those who use it both internally and externally, since we find that 28 practitioners employ it both internally and externally, 86 employ it internally only, while 12 employ it externally only.

With regard to the dose: of those who use the drug in-

ternally, very nearly one-third employ the pharmacopœial compound pill of conium, and therefore comparatively little information can be obtained of the dose used; of the remainder, the majority employ doses which vary from 1 grain up to 10 grains, the preference perhaps being for a dose of from 2 to 4 grains. Exceptionally large and exceptionally small doses are comparatively rare; only two use it in doses exceeding 10 grains; one of these employs 15 grains, the other commences with a dose of from 10 to 15 grains, and gradually increases up to 1 drachm or even more. On the other hand, only two practitioners employ very small doses; the one uses about $\frac{1}{8}$ grain every two hours, while the other states that "when in the Army Medical Staff as an executive officer he used the extract in $\frac{1}{8}$ grain doses in conditions of fever accompanied by great restlessness, and found it useful alone." The variation in dose is perhaps to be explained by variation in the strength of the preparation. Examination of seven samples of the commercial green extract has shown that the percentage of alkaloids, calculated as hydrochlorates, may vary from 0.44 to 0.09 per cent. It has also been found that conium fruits, if gathered before they begin to turn yellow and carefully dried, contain far more alkaloids than the ordinary commercial samples. Even the geographical source, the nature of the soil, or the climate may have some influence upon the strength, since Sir R. Christison has noticed that certain species of umbellifera, which are generally regarded as poisonous, are quite harmless when obtained from certain localities near Edinburgh. One observer definitely states that internally he found the extract of conium variable, producing cold sweats and paralysis, with 2 grains repeated a few times, while in other cases 10 grains had little or no effect.

It has been already stated that the employment of extract of conium appears to be dictated by the desire to relieve pain or irritation. The conditions under which it is used externally are scarcely, perhaps, to be tabulated, but they include the following: Pruritus ani, itching about the anus and vulva, fissure of the anus, piles, infantile prurigo, pruriginous affections of the skin generally, painful swellings, painful ulcerations, cancerous affections, and cancerous sores; in one case acute gout, and in two cases chronic rheumatic arthritis. When used externally it appears to be generally combined with liniments, and sometimes with belladonna or hyoscyamus. The symptoms calling for its internal administration are even more various, though they are still marked by pain or irritation. In a very large proportion conium is used to allay cough, the form of cough which is thought to be most amenable being the irritative cough of chronic bronchial affection. In a very large proportion of cases extract of conium is used in combination with other drugs of well-recognised potency; thus, when used to allay cough in about 28 cases mention is made of combination with such drugs as morphine, ipecacuanha, and squill, while in a small proportion it is employed with tartar emetic, with belladonna, with hyoscyamine, or nitrate of silver. When used with ipecacuanha the compound ipecacuanha powder appears to be mostly preferred, and it will be remembered that this contains a considerable proportion of opium. Some of the answers indicate that the conium is administered with other sedatives, such as bromide of potassium, chloral, codeine. In exceptional cases it is used to control the night sweats in phthisis, but even then it is administered together with atropine or with oxide of zinc or sulphate of zinc. One observer recommends it in cases of habitual constipation or in neurotic cases, and he combines it with aloin and with calomel. For the relief of pain arising from dysmenorrhœa it is used by some few practitioners, and in such cases it is administered together with morphine, belladonna, quinine, ipecacuanha, or extract of cannabis indica. In some spasmodic affections, such as whooping-cough, laryngismus stridulus, and asthma, and also in chorea, epilepsy, and in some forms of spasmodic pain like that of various forms of neuralgia, the extract of conium has been used; but even in such cases it does not appear to be relied upon to procure relief without the simultaneous employment of some other drugs, as, for example, creosote, bromide of potassium, "sedatives," extract of hyoscyamus, "lactucarium," and quinine. It remains to be said that nine practitioners, who admit that they formerly used it to a great extent, say that they now employ it less frequently than before; that one who has used it frequently has now entirely discontinued its employment; while one who states that he has employed this drug internally in $\frac{1}{4}$-gr. doses in whooping-cough and hepatic cancer and in nervous excitement, writes that in his thirty years' practice he has not seen any benefit derived from the use of this drug.

Reviewing the whole of the evidence disclosed in the course of this inquiry, it appears that the following conclusions may be drawn:

1. That the use of the extract of conium is fairly widespread.
2. That it is used both internally and externally.
3. That its use in each case appears to be dictated by the desire to relieve pain or to allay irritation or spasmodic affections.
4. That when employed internally it is generally used as an adjunct to other preparations of greater potency, and that there is but little evidence that it is of any value when given alone.
5. That when employed externally it has also been generally used with other sedatives, and, though there is some evidence of its power to relieve pain, the indications of its utility are only scanty.
6. That the range of dose employed appears to indicate either lack of active properties or lack of uniformity of strength; and that there are still a certain number of practitioners who would welcome a new solid preparation of conium, if by any pharmaceutical device such a preparation can be made of constant strength.

D. J. Leech, M.D., F.R.C.P. Chairman.
Nestor Tirard, M.D., F.R.C.P. Hon. Sec.

REPORT OF MEDICAL CHARITIES COMMITTEE.

Your Committee have to report that since the last annual meeting they have again communicated with the authorities of the various metropolitan hospitals and medical charities, with a view to induce them to take additional precautions to check abuse in the out-patient departments. Copies of the notices already approved by the Association for posting up in the out-patient departments of hospitals have been freely distributed. This notice, which is printed in bold type, reads as follows: "This institution being established to relieve only those persons who are too poor to pay for suitable medical and surgical aid, notice is hereby given that on and after this date patients will be required to give information as to their means and circumstances, with a view to prevent the abuse of this charity by persons who are well able to pay.—By order of the Committee."

This notice has been exhibited in conspicuous positions in the out-patient departments of several of the larger hospitals for some years past, and your Committee are pleased to report that the secretaries of several other hospitals have this year promised that the notices shall in future be posted up at the institutions with which they are connected. Among the letters received are the following:

From the Secretary of the East London Hospital for Children and Dispensary for Women:

"I beg to acknowledge the receipt of your letter of May 16th, enclosing two notices, which I shall have much pleasure in putting up in our out-patient department. I shall be extremely glad if you will let me have two or three more of the same notices."

From the Secretary of the Queen's Jubilee Hospital:

"Many thanks for the notices, which I have had put up in the out-patient department."

From the Secretary of St. Peter's Hospital:

"I have to acknowledge the receipt of your letter forwarding two posters, which I have had displayed in the out-patient department."

The following resolution, passed in the Ethical Section at the annual meeting at Carlisle, has been considered:

"That the present out-patient system as it exists in the hospitals throughout the country requires radical reformation for the following reasons: (1) It is morally debasing to the public, who are thereby frequently tempted to obtain gratuitous medical relief when they are well able to pay for the same. (2) It is not required for the needs of the necessitous poor, who are amply provided for in other ways.

(3) It is productive of great injury to the material welfare of the bulk of the medical profession through the necessary cheapening of their services that it entails. (4) That far from being necessary for medical education, the present abuses really interfere with it, and under a radically reformed system the exigencies of medical education could be better provided for."

Your Committee fully agree with these conclusions, and would recommend that they be forwarded to the leading medical charities throughout the kingdom.

Your Committee also passed the following resolution with regard to some proposals of the Honorary Secretary to the Hospital Reform Association:

"That this Committee generally approves of the proposals of the Hospital Reform Association, especially as most of them are in accordance with the recommendations of the Medical Charities Committee as expressed in their annual reports from 1892 to 1896."

Early in the year your Committee heard that it was proposed to introduce the pay system for out-patients at the London Hospital. As the tendency of this system is undoubtedly to increase the abuses connected with hospitals, your Committee communicated with the Committee of Management of the London Hospital in reference thereto. Your Committee greatly regret that the pay system in a modified form has since been adopted by this hospital.

Since last year your Committee have communicated with the Charity Organisation Society, with a view to combined action in promoting the formation of a Central Hospital Board. The overtures of the Committee have been favourably received, and it is understood that further steps in this direction will be taken by the Charity Organisation Society at an early date. It is very gratifying to find that the Charity Organisation Society continues to direct public attention to the gross evils which exist in connection with the out-patient departments of public medical charities. There can be little doubt that the efforts of that Society have had a marked effect in preventing the charitable public from subscribing to hospitals where strict precautions are not taken to exclude well-to-do persons from their benefits.

Your Committee have observed with great satisfaction that in a scheme which has been recently adopted for the reconstitution of the Belgrave Hospital for Children in South London, it is proposed to adopt the suggestions which have been approved by this Association for the administration of out-patient departments. In the scheme above referred to, it is proposed that the new patients admitted each day shall be limited to fifteen for each medical officer in attendance; that a wage limit be fixed, the limit being 25s. per week if there is only one child, 30s. per week if less than four children, and 35s. per week if more than three children under twelve years of age. In any case where the parents are receiving more than the minimum wage, treatment will be refused except for a long illness or surgical operation, and in such case treatment will only be granted on the recommendation of a medical practitioner that it is one that deserves charitable treatment. A register of out-patients will be kept on the lines recommended by this Association, and an inquiry officer will also be appointed.

It appears to your Committee that the scheme for the future management of the Belgrave Hospital for Children will give satisfaction to the profession generally, and if the new rules are strictly carried out the institution will deserve to be liberally supported by the charitable public.

The Committee are glad to report that there is much evidence that the hospital authorities, under the combined suggestions of both lay and medical opinion, are rousing themselves into a more favourable attitude for discussing and remedying these many existing evils.

T. Barlow, M.D., LL.D., Chairman.

REPORT OF THE COMMITTEE ON THE CONTROL OF RAILWAY SERVANTS' AND MARINERS' EYESIGHT.

The Committee continues its labours, and members are collecting evidence which may ultimately be printed and laid before the Government. The Committee invites communications of facts bearing on the methods of testing eyesight employed in marine and railway work illustrative of the efficiency or inefficiency of the actual tests, the examiners, and the persons examined.

In September last Mr. W. M. Beaumont attended the International Conference on Railway and Marine Hygiene, held in Brussels, as a delegate from the British Medical Association, and read a paper in which he contrasted the methods of vision testing on the Continental railways with those adopted in Great Britain.

Mr. T. H. Bickerton, who was also to have attended, was unfortunately prevented by illness in his family, and his paper was read by Mr. Beaumont.

The next Conference is to be held in Paris in connection with the International Exhibition at the close of the century.

N. C. Macnamara, F.R.C.S., Chairman.
George Mackay, M.D., Hon. Sec.

REPORT OF THE GENERAL PRACTITIONERS AND ETHICAL COMMITTEE.

The General Practitioners and Ethical Committee has met five times during the past year, and its work has involved the treatment of subjects of special and growing interest to the medical profession.

Friendly Societies.

The attention of the Committee has been directed to the rates and regulations of the National Deposit Friendly Society, to which reference had been made in the British Medical Journal from time to time, and it was resolved:

"That this Committee cannot approve or recommend any society, however satisfactory in other respects, which has no rule as to wage limits, and consequently may have its benefits extended to unsuitable persons."

Since then an offer has been made by the Society to meet representatives of the Council on the subject.

The Penal Powers of Qualifying Medical Authorities.

A memorandum, which had been adopted and circulated by the Glasgow University Court, was brought before the notice of the Committee. It stated that the University concurred with the views of the General Medical Council with regard to the question of graduates and others retaining their degrees after being adjudged guilty of serious offences and punished, but that the following reply had been received from the University Commissioners when approached on the subject:

"The Commissioners were of opinion that if the universities did not already possess the power of depriving graduates of their degrees, the Commission had no authority to confer that power. They therefore decided to take no action in the matter."

A letter from Mr. Muir Mackenzie was also appended giving an opinion on the report of the General Medical Council on the subject:

[Opinion of the Legal Adviser to the General Medical Council on this Report]:—

"4, Temple Gardens, E.C.,
May 27th, 1896.

"Dear Sir Richard Quain,—With reference to the Report of the Committee on the Disciplinary or Penal Powers of the Qualifying Medical Authorities and my letter of yesterday, the questions which it raises derive increased importance from the cases recently tried in the Courts of Justice, in which practitioners who have been struck off the *Register* have continued to practise under the titles of which the Qualifying Bodies had no power to deprive them; and the question has been raised whether such a practitioner can be successfully charged with falsely assuming a title which implies that he is registered.

"The Judges, and particularly Mr. Justice Collins, have stated from the Bench that in their opinion the question is one of great public importance, on which the law, as laid down in the decisions of the Courts, is in an uncertain and unsatisfactory state.

"It will thus be of the greatest public benefit if the charters of the Bodies which have insufficient penal powers can be amended as suggested in the Report.

"It seems to me that in each case the formal procedure would be for University or other body to petition Her Majesty in Council for amendment of its charter. Believe me, yours very truly,

"Muir Mackenzie."

The Committee after careful consideration of the memorandum unanimously resolved: That this Committee recommends the Council to forward the foregoing communication from the Glasgow University Court to the Parliamentary Bills Committee with a strong recommendation that it should receive the active support of that Committee.

This memorandum was finally referred to the Committee appointed to draw up a Medical Acts Amendment Bill, who used it in the consideration of the Bill to be proposed.

MEDICAL AID ASSOCIATIONS.

Communications from some of the Branches have been received asking that the Council should pass a resolution that in future medical men who belong to medical aid associations should not be elected members of the Association. The Committee, however, did not feel justified in recommending so sweeping a condemnation, but have promised that they would give full consideration to any case specially referred to it by any Ethical Branch Committee.

QUESTIONS OF PROFESSIONAL ETIQUETTE.

Many cases involving questions of professional etiquette have been considered by the Committee, and resolutions have been passed giving the opinions of the Committee in each case.

ETHICAL COMMITTEES OF THE BRANCHES.

Many of the Branches have formed Committees for the special consideration of ethical questions; in some Branches, however, the Council of the Branch acts as an Ethical Committee. The Worcestershire and Herefordshire Branch have formed an Ethical Committee during the past year, and it is recommended that all the Branches take the same course.

J. WARD COUSINS, M.D., F.R.C.S., Chairman.

REPORT OF THE ANÆSTHETICS COMMITTEE.

INTERIM REPORT TO COUNCIL.

WE beg to report that the work of the Analytical Subcommittee is steadily progressing. This Subcommittee have been meeting almost daily for weeks past, with the object of completing the report before the annual meeting of the Association. The work, however, is so intricate and extensive that the Subcommittee fear they may not be able to complete it by that date. Should they find that, without detriment to the ultimate value of the work, they can present their results to the general Anæsthetics Committee, this will of course be done, and in that event the general Committee may see their way to present a final report by the desired date.

JONATHAN HUTCHINSON, Chairman.
CHRISTOPHER CHILDS, Hon. Sec.
GEORGE ROWELL, Hon. Assist. Sec.

PARLIAMENTARY BILLS COMMITTEE.

A MEETING of the Parliamentary Bills Committee was held at the office of the Association, 429, Strand, W.C., on Tuesday, July 5th, 1898.

Present:

Dr. ROBERT SAUNDBY, President of Council, in the Chair.
Dr. C. PARSONS, Treasurer.

Mr. S. H. AGAR (Henley-in-Arden)
Dr. T. BRIDGWATER (Harrow-on-the-Hill)
Mr. GEORGE BROWN (London)
Mr. J. CANTLIE (London)
Dr. W. F. CLEVELAND (London)
Dr. J. WARD COUSINS (Southsea)
Dr. G. W. CROWE (Worcester)
Mr. GEORGE EASTES (London)
Dr. R. ESLER (London)
Dr. BRUCE GOFF (Bothwell)
Dr. W. GORDON (Exeter)
Dr. OGILVIE GRANT (Inverness)
Dr. HOLMAN (London)
Mr. VICTOR HORSLEY, F.R.S. (London)
Dr. W. HUGH HUGHES (Ashton-under-Lyne)
Mr. EVAN JONES (Aberdare)
Dr. J. C. McVAIL (Glasgow)
Dr. W. J. MICKLE (London)
Dr. C. H. MILBURN (Hull)
Dr. J. W. MILLER (Dundee)
Dr. J. W. MOORE (Dublin)
Dr. JAMES MURPHY (Sunderland)
Dr. J. ROLSTON (Stoke, Devonport)
Dr. R. SOMERVILLE (Galashiels)
Mr. C. R. STRATON (Wilton)
Dr. DAWSON WILLIAMS (London)
Dr. W. L. WINTERBOTHAM (Bridgwater)
Dr. S. WOODCOCK (Old Trafford).

The minutes of the last meeting having been printed and circulated, were taken as read and signed as correct.

Read letters of apology for non-attendance from Dr. Bateman, Dr. Batten, Dr. A. J. Harrison, Dr. Brown Ritchie, Dr. Carline, Mr. Jones Morris, and Mr. Spanton.

INSTRUCTION IN TROPICAL DISEASES.

Mr. CANTLIE moved the following resolution, which was seconded by Dr. WARD COUSINS, and carried:

That the Council of the British Medical Association be requested to represent to the Admiralty the need for instruction in tropical diseases at Haslar Hospital Medical School, and to ask the First Lord to receive a deputation upon the subject.

FEES FOR ATTENDANCE AT CORONERS' INQUESTS.

A letter was read from Dr. H. B. Walker, of Lowestoft, calling attention to the fact that the members of the honorary medical staff of a hospital were not paid a fee for giving evidence before a coroner. He pointed out that it was an injustice that the honorary medical officer should be compelled to give his professional services to the Crown after his duty to the hospital as regards an individual patient had ceased in consequence of death. Dr. Walker added that he understood that an alteration in the law would have the emphatic approval of the Coroners' Society of England and Wales.

The CHAIRMAN said that the Council would on the following day consider a statement with regard to the general question of the payment of medical witnesses called in the various courts. It was intended to forward a statement on the subject to the Home Secretary at an early date, asking him to revise the whole scale of payments to medical witnesses.

Dr. SOMERVILLE said that fees in coroners' courts were in a different position to those of other courts. In order that fees might be paid by coroners to hospital physicians and surgeons the law would require to be altered.

After some discussion it was proposed by Dr. MILBURN, seconded by Dr. SOMERVILLE, and resolved:

That a Subcommittee be appointed, consisting of Dr. Bateman, Mr. Hemming, and Dr. Milburn, to draft a short Bill to amend the Coroners Act in respect of the payment of medical witnesses.

REGISTRATION OF MIDWIVES.

The following resolution from the Worcestershire Medical Society was read:

That this meeting of the Worcestershire Medical Society strongly supports the memorandum formulated by the General Medical Council.

THE TREATMENT OF INCIPIENT INSANITY.

Dr. CLEVELAND reported that the Joint Subcommittee of the Parliamentary Bills Committee and the Medico-Psychological Association on this subject had asked the Lord Chancellor to receive a deputation on this matter, and that a reply had been received to the effect that the Lord Chancellor would consider the papers, and would state later whether he wished to see a deputation on the subject. The object of the Joint Subcommittee was to make a more easy way to deal with cases of incipient insanity. The object of the proposed clause was to act on the lines of the Scotch Bill, which enabled patients to be put under proper treatment for a period perhaps not exceeding six months. Dr. Farquharson had taken charge of the clause in the House of Commons. He would move:

That the minutes of the Joint Committee of the British Medical and Medico-Psychological Associations of May 10th last be received and approved, and the recommendations contained therein carried into effect.

The resolution was seconded by Dr. ESLER, and carried.

THE REFORM OF THE MEDICAL ACTS.

Dr. WOODCOCK said that the Medical Acts Subcommittee had had six meetings, five of them lasting all day. At their first meeting they determined that the matters to which their attention should be directed were the constitution of the General Medical Council, the powers of the General Medical Council, and the nature of the legislation which should be proposed to prevent and render penal the practice of unregistered persons. The Subcommittee presented as its report a draft of a Bill for the amendment of the Medical Acts. Dr. Woodcock then indicated the main provisions of this draft Bill, and said that the Subcommittee submitted it in the hope that it would have the serious criticism of the Com-

mittee. It might be objected that the Bill sought to do too much, but the Subcommittee had been anxious not to fall into the opposite, and as he thought more serious, error of asking for too little.

Mr. Victor Horsley briefly seconded the motion for the acceptance of the report of the Subcommittee.

Dr. J. W. Moore criticised some of the provisions of the Bill which he thought would require very careful consideration and considerable amendment before it could be acceptable.

After some further discussion the report of the Subcommittee was received with the understanding that the draft Bill would be fully discussed at a subsequent meeting of the Parliamentary Bills Committee.

Army Medical Reform.

Dr. Gordon said that practically the work of the Army Medical Reform Subcommittee was finished. The new warrant, which was promulgated on July 1st, gave all that Lord Lansdowne promised at the banquet at the Mansion House. The Subcommittee recommended that the thanks of the Association should be sent to various corporations and universities, and to individual gentlemen who had assisted and assisted and co-operated with the Subcommittee in the work.

After some discussion it was arranged that the resolutions of thanks should be incorporated in the report of the Subcommittee.

It was proposed by Dr. Gordon, seconded by Dr. Woodcock, and resolved:

That the report of the Army Medical Reform Subcommittee as amended be received and adopted.

It was further moved by Dr. Gordon, seconded by Mr. George Brown, and resolved:

That it be a recommendation to the Council that the proceedings of the Subcommittee be printed and attached to the Report, Appendix, and Memorandum, with a verbatim copy from the *Times* of Lord Lansdowne's speech and that a sufficient number of copies be circulated amongst the members of the Parliamentary Bills Committee, and anyone else interested in the subject.

Dr. McVail said Dr. Gordon and the Subcommittee had done a monumental work in getting the reforms in the Army Medical Service asked for granted. It was a work for which the present and future generations of medical practitioners should be thankful. They had increased the openings for younger men entering the profession, and had raised the status of all those joining the army. He had much pleasure in proposing:

That the warmest thanks of the Parliamentary Bills Committee be accorded to the Subcommittee on Army Medical Reform, and to its Secretary, Dr. Gordon, for their energetic and successful efforts to bring about important reforms in the Army Medical Service, as granted in the recent warrant for the formation of a Royal Medical Corps.

The resolution was seconded by Dr. C. R. Straton, and carried unanimously.

Dr. Gordon briefly thanked the Committee.

Vaccination.

Dr. McVail said that the Vaccination Subcommittee recommended that the Committee should take further action in order to bring pressure to bear on Parliament for the recognition and payment of private practitioners where a sufficient standard of vaccination was reached. They suggested the introduction of a clause dealing with revaccination. Some of the amendments proposed by the Committee had been accepted by the Standing Committee on Law of the House of Commons, but some had not. The Bill had still to go before the House of Lords, where they might get Lord Herschell to take charge of amendments.

It was proposed by Dr. McVail, seconded by Mr. George Brown, and resolved:

That the minutes of the Vaccination Subcommittee of to-day's date be received and approved, and the recommendations contained therein carried into effect.

Dockrell v. Dougall.

Mr. Horsley said he wished to draw attention to a case in which a medical man's name was used by a medicated water company. Dr. Dockrell, the gentleman in question, brought an action to stop the company from using his name, but was unsuccessful. It was an extremely serious matter to all members of the profession. He moved:

That the matter of the action of Dockrell *v.* Dougall be referred to a subcommittee consisting of Dr. Bateman and Mr. Horsley to report to this Committee.

The resolution was seconded by Dr. Woodcock, and carried.

The Poisons Bill.

A memorandum on this Bill, from Mr. Braxton Hicks, was read and further consideration of the matter was postponed.

The Annual Report.

The draft annual report of the Committee was considered and approved as amended for presentation to the Council.

COUNCIL.

NOTICE OF MEETINGS.

Meetings of the Council will be held in the Senate Room, M'Ewan Hall, Edinburgh, on Tuesday July 26th, Wednesday July 27th, and Thursday July 28th, at 9.30 o'clock in the forenoon of each day.

July, 1898. Francis Fowke, *General Secretary.*

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A meeting of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

OXFORD AND DISTRICT BRANCH.

The annual meeting of this Branch was held in Christ Church College on Friday, July 8th.

Luncheon.—Dr. Brooks, the President-elect, took the chair, and presided at the luncheon to which he had invited the members of the Branch, 38 of whom were present, with two visitors. After luncheon Dr. Brooks proposed "The Health of Dr. Fowler," of Cirencester; Dr. Fowler acknowledged the toast.

Installation of New President.—Dr. Pemberton, the retiring President, next introduced the President-Elect (Dr. Brooks), who took the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

President's Address.—Dr. Brooks read an interesting address on the Treatment of the Dying.—Dr. Griffin proposed a vote of thanks to Dr. Brooks for his address. Dr. Pemberton seconded the resolution, which was carried with acclamation.

Report of Council. The report of the Council, with the Treasurer's report, was next read and accepted.

Election of Officers.—Mr. Drinkwater (Bicester) was proposed, seconded, and unanimously elected President-elect. Mr. Morgan proposed that the office of Treasurer of the Branch should in future be held by the Secretary. This was seconded and carried. Mr. Morgan was re-elected as the representative

in the Council and on the Parliamentary Bills Committee. Dr. Collier was re-elected Secretary. Messrs. Dening (Stow-in-the-Wold), Yelf (Moreton-in-Marsh), and Alden (Oxford) were elected as new members of the Council. A hearty vote of thanks was given to Dr. Pemberton (Banbury), the outgoing President, who acknowledged the vote.

January Meeting.—Dr. Collier gave notice of a proposed alteration of the January meeting.

STIRLING, KINROSS, AND CLACKMANNAN BRANCH.

The annual general meeting of this Branch was held at Falkirk, on June 9th, 1898. Dr. Linton presided over a large attendance.

Confirmation of Minutes.—The minutes of last meeting were read by the Secretary and approved of.

Reports of Treasurer and Council.—The Honorary Treasurer reported that there was a balance in favour of the Branch of £11 2s. 3d. Owing to his illness a complete balance sheet could not be presented. The report of the Council was presented.

Election of Officers.—The office-bearers were elected as follows:—*President:* Dr. McPherson. *Vice-President:* Dr. Mackintosh. *Honorary Treasurer:* Dr. Ferguson. *Honorary Secretaries:* Drs. Clarkson and Griffiths. *Members of Council:* Drs. Hosack, Fraser, Highet, Ronald, and McVail. *Representative on Council of Association and on Parliamentary Bills Committee:* Dr. McVail.

Address by Professor Chiene.—Professor Chiene, of Edinburgh, delivered an address on a number of interesting points in practical surgery, and illustrated it by a large collection of specimens, apparatus and photographs. The address was listened to with great interest, and a hearty vote of thanks was accorded to the lecturer on the motion of Dr. Linton.

Dinner.—The annual dinner was held after the meeting, Dr. Linton in the chair. There were 24 members present at the dinner.

NEW ZEALAND BRANCH.

The second annual meeting of this Branch was held at Wellington on March 15th and subsequent days. Dr. Fell, of Wellington, presided, and assisted by Dr. Kington Fyffe, of Wellington, the Secretary of the Council, and Dr. Graham Campbell, of Christchurch, the General Secretary to the Branch, carried the business through in an expeditious and eminently satisfactory manner. There were present, in addition to the Wellington practitioners, representatives from the Otago, Canterbury, and Nelson Sections.

Report of Council.—The report of Council stated that the Branch had had a most successful year. There had been an increase in membership of 73 during the past twelve months, making a total of 173 members now on the roll, with a near prospect of a further increase to 200. In accordance with the wishes of the Branch expressed at the last annual meeting, the Council had modified the annual subscription. It was now £1 10s. per annum, for which the British Medical Journal was supplied. There was an additional subscription of 15s. due from those wishing to take the *Australasian Medical Gazette*. The Parliamentary Committee appointed at the last annual meeting to approach the Government on the subject of the proposed amendment to the Public Health Act reported that a satisfactory arrangement had been come to in reference to this matter. The by-laws of the Branch, as approved by the Council in London, were now in the hands of all the members. Circulars and sample copies of the Journal had been sent to those medical men on the *Register* who were not already members of the Branch. Sympathetic reference was made to the death of Mr. Ernest Hart, and the opinion was expressed that to his genius and life work they were indebted for the building up and welding of the medical profession into the united and powerful body they now were. The balance sheet showed a credit to the Branch funds of £15, against which were a few accounts since incurred. The Council submitted a suggestion that the Council should have permanent headquarters for the transaction of ordinary business in Wellington or Christchurch, and that it should meet as previously during the annual meeting. The object of such a step was that there would be better representation in either of those places on account of their central situation. Such a change would necessitate the alteration of several of the by-laws relating to the election and duties of the Secretary to the Council. So much difficulty was encountered in carrying on a Branch, the component parts of which were so widely separated, that it would be a great advantage to have this position filled by a permanent officer, not necessarily a member of the profession. The annual transference of books, papers, and business from section to section was bound to give rise to extra work and less efficient management, owing to ignorance of the necessary duties attached to the office. The Council also suggested for the consideration of members the question of appointing a permanent Parliamentary Secretary. The thanks of the Association were due to Dr. Mason, of Otaki, who had carried out the duties of this office most efficiently during the past year.

President's Address.—Dr. Fell delivered his presidential address, taking for his subject the Increasing Prevalence of Cancer. After referring to the infrequent mention of cancer in ancient literature, he said he thought cancer was a disease of modern times. Statistics for New Zealand, showing the cancer mortality for the last fifteen years arranged according to number of living people at same ages, were quoted in proof of the increasing prevalence of the disease. The number of deaths from cancer now in New Zealand was stated to be more than double what it was five years ago, although the population had increased by less than one-third. Dr. Fell believed that this increase was real and not apparent, and pointed out that the increase would be greater still if the surgeons did not cure a certain number of cases by early and radical operations. He advanced a novel theory as bearing upon the growing frequency of cancer. In the Middle Ages syphilis was rampant, and an immense number of people were tainted by this disease and passed it on to their descendants. Then cancer was rare, but now, as syphilis was dying out, cancer was becoming more common. "Could it be possible that the now greatly-attenuated syphilitic virus inherited from ancestors, while rendering us more or less immune to the attack of severe syphilis, may render us more liable to cancer?" Dr. Fell proceeded to review the various methods of research now being conducted on the pathology of cancer. Speaking of Mr. Jonathan Hutchinson's observation that pigmented patches were occasionally observed as a precancerous manifestation, he quoted a case of his own—a woman suffering from breast cancer—in whom there was very deep pigmentation of the lips.

Contagious Diseases Act.—Dr. Symes, of Christchurch, read a paper on the Contagious Diseases Act, and submitted a new Act for the consideration of the Branch.—After discussion it was decided to refer the matter to the Council for consideration.

Communications.—Dr. Collins (Wellington) described a successful case of Extraction of a Gall Stone from the Common Bile Duct.—Dr. Monckton (Fielding), in a paper on the Treatment of Diabetes Mellitus, advocated the use of sulphocarbolate of soda and of boracic acid as internal remedies, and condemned too great a restriction of diet.—Dr. Barnett (Dunedin) read a paper on Lymphangioma, and showed photographs and drawings of an illustrative case. Dr. Barnett also described a case in which he had removed a crayfish's antenna one inch long by more than a quarter of an inch in diameter from the left bronchus of a child aged 10 months. The piece of antenna possessed bristles obliquely set, so that the onward passage of the foreign body had been favoured but its expulsion hindered. The object was localised, and was successfully extracted through a tracheotomy wound.—Dr. Cahill (Wellington) opened an interesting discussion on the subject of Pelvic Abscess, and Dr. Martin (Wellington) gave details and exhibited the Fœtus from a case of Extra-uterine Fœtation at Thirteen Months.—Dr. Ewart (Wellington) read a paper on the Radical Cure of Hernia, which led to a lively discussion on the advantages and disadvantages of various of the methods of operating now commonly employed.—Dr. Mason (Otaki) gave a contribution to the Pathology of Purpura Hæmorrhagica, the subject being dealt with in its bacteriological aspect.—Drs. Sollen and Kington Fyffe (Wellington) read papers on Influenza, the former dealing with the clinical aspects, the latter with the pathology of the disease.—Mr. W. Gilruth, M.R.C.V.S., gave a

practical demonstration of some of the more modern Bacteriological Processes, including the preparation and staining of bacteria, the methods of cultivation and of inoculation into guinea-pigs and rabbits of infective micro-organisms. This demonstration was very instructive, and was highly appreciated by the members.—Dr. Martin (Wellington) described a successful case of Hydatid Cyst of the Brain, localised and removed by operation.—Dr. Collins (Wellington) read a paper advocating Reforms in the New Zealand Lunacy Act, referring especially to the lack of classification and to the overcrowding of the asylums. His paper contained many valuable suggestions, and these were laid before the Premier of the New Zealand Parliament by a deputation of the members.

Ethical and Medico-Political Matters.—In addition to these and other papers meetings of the Council were held to consider ethical and medico-political matters, and also meetings of the Defence Union and Benevolent Association, much valuable work being done.

Entertainments.—During the week a number of entertainments were given by the President and the Wellington practitioners to those attending the annual meeting, including the presidential dinner at the Wellington Club, a picnic across the harbour, a garden party at Dr. Martin's and his sister's, Mrs. O'Connor's, and an "At Home" at Dr. Grace's, all which functions proved most enjoyable.

GRIQUALAND WEST BRANCH.

A meeting of this Branch was held at Kimberley on June 6th, Dr. Mackenzie in the chair. The attendance included Drs. Booth, Fuller, Griffith, Mathias, Stansby, Watkins, Shields, Westerfield, and Stoney.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The members present then resolved themselves into a meeting of Council, when Drs. Stoney and Westerfield were elected members. The following officers for the ensuing year were elected: *President:* Dr. Griffith. *Vice-President:* Dr. Mackenzie. *Honorary Treasurer:* Dr. Fuller. *Honorary Secretary:* Dr. Stoney.

Meetings.—Dr. Fuller introduced the question of holding meetings more frequently during the winter months. It was decided to hold the next one on the first Monday in July.

Camp Fever.—Dr. Fuller read a paper on camp fever. The cases detailed were generally characterised by a prolonged fever, the duration of which varied from several weeks to many months, with occasional short intermissions; it was usually not very high, and was marked by morning remissions approaching the normal from the onset. The tongue was clean, and there was rarely any impairment of the appetite, except when the fever was high; occasionally slight diarrhœa, but no other abdominal symptoms; attacks of profuse perspiration at night and symptoms of bronchial catarrh. Rheumatic attacks in the joints constituted a frequent complication, and often delayed convalescence; orchitis was occasionally present. The cases were greatly benefited during convalescence by removal to the country, the coast, or by a sea voyage, but were apt to relapse on returning to Kimberley too soon. The mortality was very small, and most of the cases completely recovered, though sometimes after many months of illness. Some years ago, however, when the disease was more prevalent, a few deaths occurred, but *post-mortem* examination gave negative results. The small intestines were practically healthy, and the Peyer's patches normal, though there was frequently congestion of the cæcum and adjoining portion of the colon. Dr. Fuller then entered into a comparison between this and other well-known fevers —typhoid, malaria, and Malta or Mediterranean fever. All members present took part in the discussion which followed.

Specimens.—Dr. Griffith showed several interesting Pathological Specimens, and an extreme case of Elephantiasis of the Foot, with enlarged inguinal glands, and a microscopic specimen of Filaria Nocturna from the same case.

Successful Vaccination.—Mr. T. B. Ireland has been awarded for the fourth time the Government grant for efficient vaccination in the Tadcaster District of the Tadcaster Union.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

The sixty-sixth annual meeting of the British Medical Association will be held at Edinburgh on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, 29th, 1898.

President: T. G. Roddick, M.D., Professor of Surgery in McGill University, Montreal.

President-elect: Sir Thomas Grainger Stewart, M.D., LL.D., F.R.S.E., Professor of Practice of Medicine and Clinical Medicine in the University of Edinburgh; Physician in Ordinary to Her Majesty the Queen for Scotland.

President of the Council: Robert Saundby, M.D., LL.D., F.R.C.P., Professor of Medicine in Mason University College, and Physician to the General Hospital, Birmingham.

Treasurer: Charles Parsons, M.D., Dover.

An Address in Medicine will be delivered by Thomas Richard Fraser, M.D., LL.D., F.R.S., Professor of Materia Medica and Clinical Medicine in the University of Edinburgh.

An Address in Surgery will be delivered by Thomas Annandale, F.R.C.S.Edin., F.R.C.S.Eng., F.R.S.E., Surgeon to the Edinburgh Royal Infirmary, Regius Professor of Clinical Surgery, University, Edinburgh.

An Address in Psychological Medicine will be delivered by Sir John Batty Tuke, M.D., D.Sc., Pres.R.C.P.Edin., Lecturer on Insanity, School of Medicine of the Royal Colleges, Edinburgh.

The Scientific Business of the Meeting will be conducted in Sixteen Sections.

A. Medicine.

Anatomy Theatre, University New Buildings.

President: George William Balfour, M.D., LL.D. *Vice-Presidents:* Sir Christopher John Nixon, M.D.; John Mitchell Bruce, M.D., Alexander James, M.D.; George Alex. Gibson, M.D. *Honorary Secretaries:* J. J. Graham Brown, M.D., 3, Chester Street, Edinburgh; Samuel Herbert Habershon, M.D., 70, Brook Street, Grosvenor Square, W.; George Lovell Gulland, M.D., 6, Alva Street, Edinburgh.

The following subjects have been arranged for discussion:

1. Wednesday, July 27th.—The Clinical Varieties of Hepatic Cirrhosis. To be opened by Dr. Alexander James.

2. Thursday, July 28th.—The Significance and Consequences of different states of Vascular Tension with their General Management. To be opened by Sir William Broadbent, Bart., M.D.

3. Friday, July 29th.—Serum Diagnosis and Therapeutics in Infective Diseases. To be opened by Professor Wright (Netley).

The following, among others, intend to take part in these discussions: Sir Christopher Nixon, Dr. G. W. Balfour, Dr. M. A. Boyd, Professor Bradbury, Dr. Graham Brown, Dr. Mitchell Bruce, Dr. Lauder Brunton, Dr. R. W. Burnet, Dr. H. Campbell, Dr. D. Drummond, Dr. Wm. Ewart, Dr. Foxwell, Dr. Gibbes, Dr. Gibson, Dr. Gulland, Dr. Handford, Dr. Habershon, Dr. Claude Ker, Dr. J. A. Lindsay, Dr. McWeeney, Dr. Muirhead, Dr. Smart, Dr. Noel Paton, Dr. Reginald G. Alexander, Dr. W. J. Tyson, Dr. Robert Saundby, Dr. Theodore Fisher, Professor Osler, and Dr. Barr.

The following papers have been announced:

Anderson, Professor McCall. A Plea for the More General Use of Tuberculin by the Profession.
Bain, William, M.D. The Treatment of Congestion of the Liver not dependent upon Cardiac Disease or Toxic Conditions.
Campbell, H., M.D. The Treatment of Thoracic Aneurysm by Electrolysis.
Campbell, H. J., M.D. Four Obscure Cases of Intracranial Disease.
Caverhill, T. F. S., M.B., C.M.Edin., The Open-air Treatment of Consumption, with exhibition of patients treated in German sanatoria.
Davidson, Thomas, M.D., Southern California as a Health Resort.
Drummond, D., M.D. On Ether Pneumonia.
Ewart, William, M.D.
Fraser, T. R., M.D. On the Antitoxic Action of the Bile in Relation to the Toxins of Diphtheria and Tetanus.
Haddon, John, M.D. Diet and Exercise in the Prevention and Treatment of Disease.
Haig, A., M.D.Oxon. On the Granules Precipitated in the Blood by Chloride of Ammonia (Process of Mr. Barber Smith), and what we may learn from them.
Hillier, A. P., M.B. Chronic Dysentery.
Murray, G., M.D. On the Early Diagnosis of Thyroidal Fibrosis.
Parsons, Alfred, M.B. Some Remarkable Cases Illustrating the Results Obstruction of the Main Systemic Veins.

ROUSE, Chas. (1) On Twenty-five Years of Betterment in Rome; the Disappearance of Roman Fevers. (2) Malta and its Fevers.
SCHOTT, Dr. Theodore. On Chronic Muscular Disease of the Heart.
SKERRITT, E. Markham, M.D., and STEWART, James, F.R.C.P.E. Case of Protracted Sleep Extending over Fifty Days.
SMART, A., M.D. (1) Chemico-clinical Observations on the Elimination of Phosphoric Acid in Nervous Disorders: Preliminary Note. (2) Clinical Observations on the Relative Efficacy of Preparations of Iron commonly in Use in the Treatment of Anæmia and Chlorosis: Further Note.
SOMERVILLE, W. F., M.D. The Importance of Increasing the Respiratory Capacity in the Anæmias of Young Adults.
STRACHAN, J., M.D. The Alcoholic Neurosis.
SUCKLING, C. W., M.D. Movable Kidney, with special Reference to its Influence on the Nervous System.
THOMSON, J. Stitt, M.D. The Enlarged Thyroid of Lincolnshire.
THORNE, W. Bezly, M.D. On Cardio-vascular Repair.
THORNHILL, Hayman, M.B. Observations on the Treatment of Cholera.
WALKER, A. Stodart, M.D. On Alcoholic Neurasthenia.

Papers are also expected from Professors Gerhardt and Rosenbach, of Berlin.

B. SURGERY.

Surgery Theatre, University New Buildings.

President: JOHN DUNCAN, F.R.C.S.Edin., LL.D. *Vice-Presidents:* ALEX. GORDON MILLER, F.R.C.S.Edin.; JOHN CHIENE, F.R.C.S.Edin.; JAMES RUTHERFORD MORISON, F.R.C.S.; JOSEPH MONTAGUE COTTERILL, F.R.C.S.Edin. *Honorary Secretaries:* FRANCIS MITCHELL CAIRD, F.R.C.S.Edin., 21, Rutland Street, Edinburgh; J. W. BEEMAN HODSDON, F.R.C.S.Edin, 52, Melville Street, Edinburgh; THOMAS KENNEDY DALZIEL, F.F.P.S.G., 196, Bath Street, Glasgow.

Discussion I: Injuries of the Elbow Joint. To be introduced by Professor Bennett (Dublin), followed by Messrs. Roberts (Philadelphia), Chiene, Bryant, Keetley, Jones, Macnamara, Thomas, Warden, Morgan, Poland, Murphy, Dalziel, Ward Cousins, Parry, and Crawford Renton.

Discussion II: The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract. To be introduced by Dr. David Newman, followed by Messrs. Rovsing (Copenhagen), Moullin, Macnamara, Macewen, Will, Melchior (Copenhagen), Lawson Tait, Morgan, Stanmore Bishop, and Nicoll.

The following papers have been promised:

ALLINGHAM, Herbert Wm., F.R.C.S. Cases of Intestinal Anastomosis.
BALL, C. B., M.D. An Improved Method of Radical Cure of Hernia by Torsion of the Sac.
BEATSON, G. T., M.D. The Treatment of Inoperable Carcinoma.
BROOK, W. F., F.R.C.S. Successful Removal of Calculi of Unusual Size from both Kidneys.
BRUCE, William, M.D. On the Nature and Treatment of Sciatica.
BUSH, J. P., M.R.C.S. Cases of Perforative Gastric Ulcer treated by Operation.
CAIRD, F. M., M.B., C.M. On some Cases of Intestinal Resection.
CASPER, Dr. Leopold (Berlin). On Catheterism of the Ureters in Both Sexes.
CHEATLE, G. Lenthal, F.R.C.S. Operation for End-to-End Anastomosis of Bowel.
CRIPPS, Harrison, F.R.C.S. On Abdominal Surgery
DOYEN, Dr. (Paris). (1) Surgery of the Brain. (2) Operations on the Stomach and Intestine. (3) Operations for Congenital Dislocations of the Hip-Joint.
DURANTE, Professor (Rome). Tuberculosis of the Digestive Tract.
FREYER, P. J., M.S. The Instruments Required in Litholapaxy, with an Analysis of 650 Operations for Stone by this Method.
HERN, John, F.R.C.S.Edin. An Amputation at the Ankle-Joint, with Case.
HUTCHINSON, J., jun., F.R.C.S. Removal of the Gasserian Ganglion for Trigeminal Neuralgia.
HUTTON W. Menzies, F.R.C.S. On the Treatment of Empyema.
JONES, Robert, F.R.C.S.E. Castration for Enlarged Prostate, with Report of Cases.
KEETLEY, C. B., F.R.C.S.Edin. On the Preservation of Mobility in Joints Operated On.
KENNEDY, Robert. Four Cases of Traumatic Musculo-spiral Paralysis, with Restoration of Function after Secondary Operation.
LITTLE, E. Muirhead, F.R.C.S. On Coxa Vara.
LLOYD, Jordan, F.R.C.S. On Cirsoid Aneurysm.
MARTIN, Christopher, F.R.C.S. The Prevention and Treatment of Peritonitis after Abdominal Section.
MELCHIOR, Dr. Max (Copenhagen). (1) On Septic Infection of the Urinary Tract. (2) On Electrolysis of Inoperable Malignant Tumours.
MILLER, A. G., F.R.C.S.Edin. On Muscle Atrophy in Connection with Joint Affections.
MORISON, A. E., F.R.C.S.Edin. On Movable Kidney.
MORISON, Rutherford, F.R.C.S. Wound Treatment. The Result of One Year of Antiseptic Treatment in Freshly-made Operation Wounds in Uninfected Tissues.
MORTON, T. H., M.D. Notes on Dislocation of the Shoulder and an apparatus to facilitate Reduction.
NEVE, Arthur, M.D. Clinical Paper on Chloroform.
NEWMAN, David, M.D. (1) The Value of Catheterism of the Ureters in the Diagnosis of Diseases of the Kidney, with illustrative cases. (2) Cases Illustrating some Points of Interest in the Etiology and Treatment of Hæmaturia.
NICOLL, Jas. H., M.B., M.S. (1) The Treatment of Chronic Enlargement of the Prostate. (2) The Pathogeny and Treatment of Tuberculous Lymphatic Adenitis.
OWEN, Edmund, F.R.C.S. Operative Treatment of Cleft Palate.
PARRY, R. H., L.R.C.P. and S.Edin. Cases of Spasmodic Torticollis treated by Neurotomy of the Cervical Plexus.
PEARSON, C. Yelverton, F.R.C.S. The Treatment of Spina Bifida by "Open Operation," followed by Closure of the Spinal Canal, with photographs and notes of a successful case.
POLAND, John, F.R.C.S. The Treatment of Injuries of the Elbow-joint in Children.
RAWDON, H. G., F.R.C.S.Edin. Two Cases of Successful Enterectomy following Strangulated Hernia, in which Murphy's Button was used.
RENTON, J. Crawford, M.D. On the Surgical Treatment of Sciatica.
ROBSON, Mayo, F.R.C.S. (1) The Operative Treatment of Hydatids of the Liver, illustrated by cases. (2) Two Cases of Partial Hepatectomy for Malignant Disease. (3) On a Series of Cases of Choledochotomy, including two of Duodeno-choledochotomy.
ROBERTS, Dr. J. (Philadelphia). The Advantage of the Extended Position in Fractures of the Condyloid Portion of the Humerus.
ROVSING, Dr. On Some Mysterious Hæmorrhages from a Single Kidney, and their Cure by Nephrotomy.
SMITH, Noble, F.R.C.S.Edin. On the Treatment of Fractured Spines: (*a*) by Reduction and Fixation; (*b*) by Laminectomy: A Plea for more Active Treatment.
SPEIRS, W. R. Demonstrations of a Method of Treating Ulcers of the Leg.
STOKES, Sir William, M.B., M.S. Thyroidectomy in Exophthalmic Goitre.
TAIT, Lawson, F.R.C.S. On the Secondary Results of Operation on the Liver and its Ducts.
THOMAS, W. Thelwall, F.R.C.S. (1) Three Cases of Œsophagostomy for False Teeth in the Œsophagus. (2) Rupture of Gall Bladder, Laparotomy, Cure.
TUBBY, A. H., F.R.C.S. (1) Acute Spreading Gangrene, with an Account of a Successful Case. (2) Retroperitoneal Hernia, illustrated by a case in which recovery took place after operation.
WHEELER, W. I., M.D. The Radical Cure of Hernia by Displacement Method.
WILSON, Alex., F.R.C.S. The Treatment of Accidents under Chloroform.

Communications are also expected from Professors Mikulicz (Breslau) and Kocher (Bern).

C. OBSTETRICS AND DISEASES OF WOMEN.

Medicine Theatre, University New Buildings.

President: ALEX. RUSSELL SIMPSON, M.D. *Vice-Presidents:* CHARLES E. UNDERHILL, M.B.; GEORGE ERNEST HERMAN, M.B.; D. BERRY HART, M.D.; A. H. FREELAND BARBOUR, M.D. *Honorary Secretaries:* R. MILNE MURRAY, M.B., 11, Chester Street, Edinburgh; F. W. N. HAULTAIN, M.D., 17, Rutland Street, Edinburgh; JOHN CAMPBELL, M.D., 21, Great Victoria Street, Belfast.

It has been arranged that the first part of the meeting of this Section on Wednesday and Thursday shall be devoted to a discussion on a subject of Obstetrical or Gynæcological interest. The subjects selected are as follows:

1. Wednesday, July 27th.—The Surgical Treatment of Pelvic Inflammation. To be opened by Dr. Cullingworth (London).

2. Thursday, July 28th.—The Use and Abuse of the Midwifery Forceps. To be opened by Dr. Milne Murray (Edinburgh).

It has been arranged that specimens illustrative of the subjects of the special discussions shall be exhibited in the Pathological Museum.

The following among others are expected to take part in the discussions:—Dr. W. S. Playfair (London), Dr. Sänger (Leipzig), Dr. Martin (Berlin), Dr. Landau (Berlin), Dr. Gardner (Montreal), Mr. Bowreman Jessett (London), Dr. More Madden (Dublin), Dr. Stephenson (Aberdeen), Dr. Smyly (Dublin), Dr. Handfield-Jones (London), Dr. Donald (Manchester), Dr. Kynoch (Dundee), Dr. Buist (Dundee), Dr. Sloan (Glasgow), Dr. Macan (Dublin), Dr. Byers (Belfast), Dr. Yelverton Pearson (Cork), Dr. Aust Lawrence (Bristol), Dr. Giles (London), Dr. Amand Routh (London), Mr. Stanmore Bishop (Manchester), Dr. Christopher Martin (Birmingham), Dr. F. Edge (Wolverhampton), Dr. Ward Cousins (Southsea), Dr. Jardine (Glasgow), Dr. Horn (Darlington), Dr. W. J. Sinclair (Manchester), Dr. Jacobs (Brussels), Dr. Heywood Smith (London), Dr. Taylor Young (Sydney), Dr. Murphy (Sunderland).

The following papers have been promised:

BUIST, R. C., M.D. Two Symphysiotomies.
DONALD, A., M.D. On Vaginal Section.
DOYEN Dr. (Paris). (1) Abdominal Hysterectomy and its Indication (tumours, suppuration, etc.). (2) Modification of the Technique of Vaginal Hysterectomy.
EDGE, Fred., M.D. Posterior Colpotomy as a means of Primary and Secondary Drainage of the Abdominal Cavity.
FARRAR, J., M.D. A New and Speedy Method of Dilating a Rigid Os in Parturition.
FOTHERGILL, W. E., M.D. The Function of the Decidual Cell.
HANDFIELD-JONES, M., M.D. The Value of Curette Scrapings in the Early Diagnosis of Corporeal Cancer.
JACOBS, Dr. (Brussels). Vaginal and Abdominal Way.

Jardine, Robert, M.D. (1) Saline Injections into the Cellular Tissues in Cases of Eclampsia and Collapse from Hæmorrhage. (2) Aseptic Midwifery.
Jenkins, T. M., M.D. (1) Kraurosis Vulvæ. (2) Case of Lymphangioma Subaxillare causing Dystocia, with specimen.
Jessett F. B., F.R.C.S. (1) A hundred cases of Vaginal Hysterectomy for Carcinoma. (2) Surgical Treatment of Fibro-myomata of Uterus by Pan-hysterectomy or the Subperitoneal Method.
Kynoch, J. A. C., M.B., M.S. A Case of Osteomalacia.
Landau, Dr. (Berlin). (1) Vaginal Cœliotomy. (2) Surgical Treatment of Uterine Cancer and its Relapse.
McCaw, F. J., M.D. Clamp and Ligature in Vaginal Hysterectomy for Malignant Disease of the Uterus.
Macphatten, Dr. Neil (Denver, U.S.A.). The Treatment of Suppuration within the Female Pelvis.
Madden, T. More, M.D. On some Improvements in the Mechanism and Use of the Midwifery Forceps and in their Employment.
Martin, Christopher, F.R.C.S. Conservative Surgery of the Ovary.
Moir, John, M.D. Table of 168 Inductions of Premature Labour.
Murphy, James, M.D. The Technique of Vaginal Hysterectomy.
Parsons, J. Inglis, M.B. A New Method of Treatment for Prolapse of the Uterus.
Purslow, C. E., M.D. Notes of Four Cases of Pregnancy complicated with Ovarian Tumour.
Routh, Amand, M.D. Treatment of Cystocele.
Scharlieb, Mary, M.D., London. On a case of Missed Labour verified by Operation and also *Post Mortem*.
Smith, Dr. Lapthorn (Montreal). Treatment of Displacements of the Uterus by Operation, based on 200 Cases.
Smyly, W. J., M.D. Extirpation of Myomatous Uteri by the Vagina.

D. State Medicine.

Forensic Medicine Theatre, University New Buildings.

President: Sir Henry D. Littlejohn, M.D., LL.D. *Vice-Presidents:* John C. McVail, M.D.; George Reid, M.D.; Thomas Goodall Nasmyth, M.D.; James McLintock, M.D. *Honorary Secretaries:* Charles Hunter Stewart, M.B., D.Sc., 18, Moray Place, Edinburgh; William Leslie Mackenzie, M.D., Public Health Office, Leith.

It is proposed to hold discussions on the following:

1. Rivers Pollution; with Special Reference to the Present Condition of Scottish Rivers. To be opened by Dr. McLean Wilson. The following among others intend to take part: Professor Glaister, Dr. J. C. McVail, Dr. C. R. Macdonald, Dr. Matthew J. Oliver, Dr. T. G. Nasmyth.

2. Vaccination; with Special Reference to Prospective Legislation. To be opened by Dr. F. T. Bond, Gloucester. The following among others intend to take part: Dr. J. Watkin Edwards, Dr. J. C. McVail, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Mr. T. Garrett Horder, Dr. Charles R. Drysdale, Dr. J. Priestley, and Dr. H. Scurfield.

3. The Hygienic Control of Milk Supplies. To be opened by Dr. T. G. Nasmyth. The following among others intend to take part: Professor Forster (University of Strassburg), Professor Saltet (University of Amsterdam), Dr. W. Brown (Carlisle), Dr. Maxwell Williamson, Dr. Spottiswoode Cameron, Dr. T. F. S. Caverhill, Dr. J. Watkin Edwards, Dr. Henry Kenwood, Dr. E. W. Hope, Dr. C. R. Macdonald, Dr. J. S. Neech, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Dr. Templeman, Dr. W. H. Symons, Dr. A. K. Chalmers, Dr. J. Maxwell Ross, Dr. Charles R. Drysdale, and Dr. H. Scurfield.

4. The Plea of Insanity in Criminal Cases, conjointly with the Psychological Section.

The following intend to contribute papers:

Allan, F. J., M.D. Formaldehyde as a Disinfectant.
Cameron, Sir C. A., M.D. The Cost of Private Sanitary Improvements in Relation to Rack-rent.
Cameron, J. Spottiswoode, M.D. Remarks on Removal and Disposal of Refuse.
Cameron, Macmartin, M.D. Surface Wells as a Source of Water Supply.
Caverhill, T. F. S., M.B., C.M.Edin. Temporary Hospitals.
Chalmers, A. K., M.B., M.S. Meat Inspection.
Dixey, F. J., M.B. Diphtheria in London.
McNaughton, Dr. On a Typhoid Epidemic in Wimmera District, Victoria, Australia.
Marsden, R. Sydney, M.B., C.M. Filaria Strongylus and False Tubercle in the Pig, Sheep, and Goat.
Millard, Killick, M.D. Return Cases of Scarlet Fever.
Robertson, John, M.B., M.S. Boil as a Factor in the Spread of Certain Diseases.
Seaton, E., M.D. Sanitary Analysis of Water.
Van Someren, E. H., M.R.C.S. The Potability of Venice Water.

E. Psychology.

Students' Common Room, University New Buildings.

President: Thomas Smith Clouston, M.D. *Vice-Presidents:* William Wotherspoon Ireland, M.D.; H. F. Hayes Newington, M.R.C.S.; Joseph Wigglesworth, M.D. *Honorary Secretaries:* John Macpherson, M.D., Stirling District Asylum, Larbert, Stirlingshire; George M. Robertson, M.D., District Asylum, Murthly, Perth.

The following discussions have been arranged:

1. Suicide: Its Social and Psychiatrical Aspects.. This subject will be opened in three divisions: (*a*) Social Aspect, by Professor Morselli (Genoa). (*b*) Causes, by Dr. A. Haig (London). (*c*) Statistics, by Dr. Sibbald (Edinburgh).

2. The Section of State Medicine will join this Section in open discussion on: (1) Aphasia in Relation to Testamentary Capacity, to be opened by Sir William Gairdner, K.C.B. (2) The Plea of Insanity in Criminal Cases, to be opened by Dr. Mercier.

3. Hypnotism: Its Phenomena and Theories. To be opened by Dr. J. Milne Bramwell (London). Mr. F. W. H. Myers (Cambridge) has kindly consented to take part in this discussion.

The following among others have intimated their intention of taking part in the discussions: Professor Benedikt (Vienna), Dr. Marie (Dun-sur-Auron), Dr. Kurella (Brieg), Dr. Pierson (Lindenhof), Dr. Lloyd Tuckey, Dr. Hayes, Sir John Batty Tuke, Dr. George Kerr, Dr. A. E. Macdonald (New York), Dr. Dercum (Philadelphia), Dr. Yellowlees, Dr. Fletcher Beach, Dr. Ernest White, Dr. Sibbald, Dr. James Shaw, Dr. Crockley Clapham, Dr. Urquhart, Dr. Outterson Wood, Dr. John Woods, Dr. Alex. Robertson, Dr. John Carswell, Dr. G. Fielding Blandford, Dr. Seymour Tuke, and Dr. A. Stodart Walker.

The following papers have been intimated:

Beenard, Walter, F.R.C.P.I. On the Neglect of Early Training of the Mentally Defective.
Bois, C. A., L.R.C.P. and S.Edin., and Kerr, N. T., M.B., C.M. Clinical Studies with Spleen and Thyroid Extract.
Braidwood, P. Murray, M.D. The Borderland.
Bruce, Lewis, M.D. Motor Mentalisation.
Dawson, W. R., M.D., and Rambaut, D. F., M.D. The Ocular Phenomena in General Paralysis.
Easterbrook, C. C., M.B., C.M. The Action of Thyroid and Parathyroid Extracts upon Metabolism in the Insane.
Hogben, Edgar, M.D. On Pauper Lunatics in Private Dwellings (Scotland): the Point of View of a Country Practitioner.
Hotchkiss, R.D., M.B. A Case of Hæmatoporphyrinuria.
Jones, Robert, M.D. The Epileptic Aura.
McLean, A., L.R.C.S.Edin. The Better Inspection of Institutions for the Insane in England and Wales.
Pasmore, E. S., M.D. The Clinical Diagnosis of States of Melancholia.
Rorie, James, M.D. The Physico-vital Basis of Consciousness.
Sutherland, J. F., M.D. The Insanities of Inebriety from the Legislative and Medico-Legal Standpoints.
Walker, A. Stodart, F.R.C.P. Some Notes on Dipsomania.
Wilson, George, M.D. A Graphic Method of Case Records in Asylums.

F. Neurology.

Midwifery Theatre, University New Buildings.

President: Byrom Bramwell, M.D. *Vice-Presidents:* Joseph Arderne Ormerod, M.D.; William Russell, M.D.; Alexander Bruce, M.D. *Honorary Secretaries:* Robert Alexander Fleming, M.D., 10, Chester Street, Edinburgh; William Ford Robertson, M.D., 12, Bristo Place, Edinburgh.

The following discussions and demonstrations have been arranged:

1. Wednesday, July 27th, 10 A.M.—A discussion on the Treatment (Curative and Palliative) of Intracranial Tumours will be opened by Professor Ferrier, M.D., F.R.C.P., F.R.S. The following members have promised to take part: Dr. C. E. Beevor, Mr. H. F. Waterhouse, Dr. E. F. Trevelyan, Mr. C. A. Morton, Dr. John M. MacCormac, Dr. J. Michell Clarke, Dr. T. Outterson Wood, Dr. David Drummond, and Mr. J. Paul Bush.

2. Thursday, July 28th, 10 A.M.—A discussion on the Influence of Micro-organisms and Toxins in the Production of Disease of the Central and Peripheral Nervous System will be opened by Dr. Thomas Buzzard, F.R.C.P. The following gentlemen have promised to take part: Dr. W. S. Colman, Dr. F. J. Smith, Dr. Fletcher Beach, Dr. John M. MacCormac, and Dr. T. Outterson Wood.

3. Friday, July 29th, 10 A.M.—Demonstration of (*a*) Preparations, lantern slides, and microscopic sections illustrative of the Morbid Anatomy of Diseases of the Nervous System (Brain, Spinal Cord, and Peripheral Nerves). (*b*) Patients, and Morbid Specimens from Individual Cases of Nervous Disease of special interest and importance from a clinical, pathological, and physiological point of view.

Drs. E. F. Trevelyan, Andrew Smart, J. Michell Clarke, A. W. Campbell, David Drummond, George Mackay, and J. C.

Dunlop have, amongst others, already intimated their intention to take part in the demonstrations.

The following papers have been promised:

BEEVOR, Charles E., M.D. On the Bilateral Action of the Latissimus Dorsi in Hemiplegia.

BRUCE, Alexander, M.D., F.R.C.P.E. (Title not communicated.)

CAMPBELL, A. W., M.D. (1) Changes in the Vesicular Column of Clarke associated with Degeneration of the Motor Tracts. (2) On the Distribution of Certain Fibres in the Posterior Columns of the Cervical Cord, with remarks on Asystemic Posterior Column Sclerosis. (Both papers to be illustrated with lantern slides.)

CARR, J. Walter, M.D., M.R.C.P. Case of Localised Pontine Lesion.

FLEMING, Robert A., M.D., F.R.C.P.E. On Changes in the Affected Nerves in Peripheral Neuritis. (With lantern demonstration.)

MCALDOWIE, A. M., M.D. Cases of Tumour of Crus Cerebri.

MURRAY, Professor George, M.D., and RICHARDSON, George, M.B., F.R.C.S. Case illustrating the Advantages of Removal of Recurrent Cerebral Tumour.

SMART, Andrew, M.D. Some Further Notes on Undescribed Neuroses in their Physiological and Clinical Aspects.

TREVELYAN, E. F., M.D. Case of Acute Meningo-myelitis, in which a Diplococcus was Cultivated from the Cord. With Microscopic Specimens.

G. PATHOLOGY.

Pathology Theatre, University New Buildings.

President: WILLIAM SMITH GREENFIELD, M.D. *Vice-Presidents:* FREDERICK WALKER MOTT, M.D., F.R.S.; JOHN MACFADYEAN, M.B.; ALMROTH EDWARD WRIGHT, M.D. *Honorary Secretaries:* HAROLD JALLAND STILES, M.B., 5, Castle Terrace, Edinburgh; ROBERT MUIR, M.D., 20, Hartington Place, Edinburgh.

A discussion on the Agglutinating or Sedimenting Properties of Sera and their Relation to Immunity will be opened by Herbert E. Durham, M.B., C.B.

A discussion on the Nature and Significance of Leucocytosis will be opened by Robert Muir, M.D.

The following communications have been announced:

AULD, A. G., M.D. (1) Some Results of Extirpation of the Suprarenal Gland. (2) On the Toxins of the Pneumococcus.

BEATSON, George T., M.D. A short note on the Etiology of Cancer, with some experiments.

BOYCE, Professor R., M.D., and HILL, C. A., M.B. A Classification of the Micro-organisms found in Water.

DOUGLAS, J. J., M.D. On the Local Action of Crude Diphtheria Toxin.

DURHAM, H. E., M.B. (1) An Inquiry into an Epidemic caused by a Variety of the Bacillus Enteritidis of Gärtner by means of Serodiagnosis (Gruber's Reaction) and Bacteriological Examination. (2) A Simple Method of Demonstrating the Formation of Gas by Bacteria.

HARLEY, Vaughan, M.D., and BARRATT, J. W., M.D. An Experimental Inquiry into Cirrhosis of the Liver.

HEWLETT, R. T., M.D. Neisser's Diagnostic Stain for the Diphtheria Bacillus.

LAZARUS-BARLOW, W. S., M.D. Irritation of the Pleura and Pleurisy.

LEVY, Alfred G., M.D. The Blood Changes after Experimental Thyroidectomy.

MCFADYEAN, Professor J., M.S. Generalisation of Tuberculosis in the Ox.

MCWEENEY, Professor E. J., M.D. On the Growth of the Typhoid Bacillus in Bouillon containing a Certain Proportion of the Homologous Serum.

MUIR, R., M.D. On the Nature and Significance of Changes in the Bone Marrow during Leucocytosis.

NEWMAN, D., M.D. On Malformations and Displacements of the Kidneys.

SMITH, J. Lorrain, M.D. The Pathological Effects of Breathing Oxygen at a High Tension.

STILES, Harold J., M.B. The Nature of Parotid Tumours.

STOCKMAN, Professor R., M.D. The Pathological Effects of Dead Tubercle Bacilli.

THOMA, Professor R. Normal Circulation and Circulatory Disturbances in the Spleen.

WOODHEAD, G. Sims, M.D. On Diphtheritic Paralysis.

H. PHARMACOLOGY AND THERAPEUTICS.

Materia Medica Theatre, University New Buildings.

President: JAMES ORMISTON AFFLECK, M.D. *Vice-Presidents:* CHARLES DOUGLAS FERGUSSON PHILLIPS, M.D., LL.D.; NESTOR TIRARD, M.D., RALPH STOCKMAN, M.D. *Honorary Secretaries:* R. DUNDAS HELM, M.D., 3, Alfred Street N., Portland Square, Carlisle; A. LOCKHART GILLESPIE, M.D., 23, Walker Street, Edinburgh.

There will be three discussions on subjects of general interest and importance related to Pharmacology and Therapeutics. These subjects are as follows:

1. Wednesday, July 27th.—The Treatment of Diseases of the Stomach. Introduced by Dr. G. Herschell and Professor C. A. Ewald, and taken part in by, among others, Drs. Lauder Brunton, Saundby, Fenton B. Turck, Symons Eccles, Affleck, Crawford Renton, Calwell, Lockhart Gillespie and Pearson. For convenience the subject will be considered under the heads of: (*a*) General Treatment and Diet; (*b*) the Influence of Drugs upon Gastric Chemical Processes; (*c*) the Influence of the Treatment of co-existing Maladies upon Diseases of the Stomach; (*d*) the Indications for Surgical Treatment.

2. Thursday, July 28th.—The Treatment of Chronic Renal Disease, with special reference to: (*a*) Hygiene and Diet; (*b*) the Influence of Drugs and other Therapeutics Measures; (*c*) Uræmia. Opened by Dr. Nestor Tirard. Professor Ewald, and Drs. Saundby, MacAlister, Affleck, and Allison, will take part in the discussion.

3. Friday, July 29th.—The Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Attendant Risks. Opened by Professor Ralph Stockman. Professor Cash and Dr. F. C. Phillips will take part. (The antipyretic properties possessed by members of this group will not form a part of the subject for discussion.)

It is also proposed to hold a demonstration of recently-devised intragastric instruments and other apparatus and measures for the treatment of gastric diseases; to this it is expected that Dr. Turck (Chicago), Drs. Herschell and Eccles, Drs. Einhorn (New York), and Hemmeter (Baltimore) will contribute. The Secretaries will be glad to receive notice of any member wishing to show any further novelty relating to this subject.

The following papers have been announced:

ALLISON, T. M., M.D. Thyroid Extract in Chronic Renal Disease.

CALWELL, W., M.D. Treatment of Diseases of the Stomach.

CASH, Professor J. T., M.D. The Pharmacology of the Alkaloids of Aconitum Napellus.

EWALD, Professor C. A. (1) On the Present State of the Treatment and of our Knowledge of Gastric Disorders. The Benefit of Repeated Tapping and Venesection in Chronic Kidney Disease, especially in Uræmia.

FRASER, T. R., M.D. Further Observations on the Antitoxic Action of Bile against the Toxins of Diphtheria and Tetanus. (May be read in the Section of Medicine).

GILLESPIE, A. Lockhart, M.D. (1) Brief Note on the Action of the Bromide and Iodide of Strontium together upon Exophthalmic Goitre in Children. (2) Preliminary Note on the Action of Stipa Viridula. (3) The Action of Diet, Antiseptics, and of some other Drugs upon the Intestinal Processes.

HERSCHELL, George, M.D. The Treatment of Atony of the Stomach and Intestines by Mechanical Vibration.

HYDE, S., M.D. The Pure Air Treatment of Consumption.

KERR, Norman, M.D. Alcohol in Drugs and Drug Preparations.

MCWALTER, J. C. A Note on the New *Pharmacopœia*.

PHILLIPS, C. D. F., M.D. The Therapeutical Actions of Hydrastis Canadensis.

PHILLIPS, C. D. F., M.D., and PEMBREY, M. S., M.D. The Physiological Action of Hydrastin Hydrochloride.

TURCK, Fenton B. (Chicago). (1) Pneumatic Gymnastics of the Stomach. (2) The Indications for Gastrostomy, with a Note on a New Method of Operation.

(Some of these papers will not be read separately, but used as a basis for the remarks made at the discussions.)

The demonstration and explanation of new gastric appliances (should it be found feasible) will take place on Thursday, July 28th, at 1 P.M. or any other hour which may be subsequently fixed upon. Details as to the appliances and measures to be illustrated will probably be specially noted later on.

I. OPHTHALMOLOGY.

Chemistry Tutorial Class Room, University New Buildings.

President: D. ARGYLL ROBERTSON, M.D., LL.D. *Vice-Presidents:* R. MARCUS GUNN, F.R.C.S.; GEORGE A. BERRY, M.B.; GEORGE MACKAY, M.D. *Honorary Secretaries:* WILLIAM GEORGE SYM, M.D., 20, Alva Street, Edinburgh; ANGUS MCGILLIVRAY, M.D., 23, South Tay Street, Dundee.

The following papers have been promised:

BUCHANAN, Leslie, M.B. Leucosarcoma of the Choroid.

COLLINS, E. Treacher, F.R.C.S. On Cases where Skiagraphs were of Service for the Detection and Removal of Intraocular Foreign Bodies

DAVIDSON, J. M'Kenzie, M.D. Demonstration of Employment of Roentgen Rays in Ophthalmology.

EYRE, J. W., M.D. A Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.

FALLOWS, J., L.R.C.S.Edin. (1) Case of Polypoid Growth from a Meibomian Cyst (illustrated). (2) The Use of Fluorescin in the form of Tabloids in the Diagnosis of Corneal Abrasions.

GRIFFITH, A. Hill, M.D. Case of Successful Removal of Orbital Cyst.

GRIFFITH, John, F.R.C.S. Case of Acute Exophthalmic Goitre.

HERN, John, M.D. The Operations now usually Substituted for Enucleation of the Eyeball.

HINSHELWOOD, James, M.D. Use of Holocaine in Ophthalmic Surgery.

JULER, Henry, F.R.C.S. (1) A Case of Gumma of the Ciliary Body with Recovery of Vision. (2) Case of Interstitial Keratitis with Acquired Syphilis.

LAWFORD, J. B., F.R.C.S. A Brief Note on an Operative Procedure for Cases of Incarcerated Iris.

LAWSON, Arnold, F.R.C.S. Bacteriology of Normal Conjunctival Sac and its bearing on the Use of Antiseptics.

MACKAY, G., M.D., and DUNLOP, T. C., M.D. A Case of Complete Acquired Colour Blindness, with Necropsy.

McGillivray, Angus, M.D. The Hyaloid Canal and its relation to Cyclitic Exudation.
Neve, E., F.R.C.S.E. Remarks on Surgical Treatment of Cataract.
Nuël, Professor (Liége). Absorption of Aqueous Humour of the Iris.
Reid, Thomas, M.D. (1) Reparative Processes in the Cornea. (2) Intercalary Cells in Corneal Epithelium. (3) Early Stages of Trachoma: Lantern Demonstration.
Snellen, Professor (Utrecht). Historical Review of Operative Treatment of Strabismus.
Thompson, J. Tatham, M.B., C.M. A Case of Cyst of the Hyaline Canal producing a Double Lens.
Usher, C. H., M.B. A Case of Orbital Growth.
Williams, R. Paralysis of Accommodation after Influenza.
Wray, Chas., F.R.C.S. (1) Skiagraph of Penetrating Wound of Eyeball. (2) Extraction of Transparent Lens in High Myopia.

Microscopic and naked-eye specimens, apparatus, etc., have been promised for the Museum by Drs. Reid, Usher, Buchanan, and Angus McGillivray.

J. Laryngology and Otology.

Surgery Tutorial Class Room, University New Buildings.

President: Peter MacBride, M.D. *Vice-Presidents:* J. J. Kirk Duncanson, M.D.; J. Dundas Grant, M.D.; Robert Mackenzie Johnston, M.D.; StClair Thomson, M.D. *Honorary Secretaries:* Adam Brown Kelly, M.B., 26, Blythswood Square, Glasgow; A. Logan Turner, M.D., 20, Coates Crescent, Edinburgh.

The subject selected for discussion is The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology, Rhinology, and Otology. The discussion will be introduced under these three heads by Sir Felix Semon (London), Dr. Greville MacDonald (London), and Dr. William Milligan (Manchester). The above discussion will be held on Wednesday morning.

On Thursday at 10 A.M. the Section will meet in the Music Class Room for the Purpose of joining the Life Assurance Section in the Discussion upon Middle Ear Disease in Relation to Life Assurance. Members will adjourn at noon to their own Section Room.

The following gentlemen have intimated their intention of taking part in the discussion or in the work of the Section: Dr. Charles Warden (Birmingham), Dr. Richard Ellis (Newcastle-on-Tyne), Dr. Farquhar Matheson (London), Professor Urban Pritchard (London), Dr. Dundas Grant (London), Dr. David Newman (Glasgow), Dr. L. H. Pegler (London), Dr. J. Kerr Love (Glasgow), J. Walker Downie, M.B. (Glasgow), John Macintyre, M.B. (Glasgow), Dr. Watson Williams (Bristol), Dr. William Hill (London), Macleod Yearsley, F.R.C.S. (London), W. Jobson Horne, M.B. (London), Dr. H. S. Birkett (Montreal), Dr. Holbrook Curtis (New York), Dr. Von Stein (Moscow), W. R. H. Stewart, F.R.C.S.Edin., Dr. Thomas Barr (Glasgow), James Erskine, M.B. (Glasgow), Dr. Robert Fullerton (Glasgow), T. Mark Hovell, F.R.C.S.E. (London), Herbert Tilley, M.D., F.R.C.S. (London).

The following papers have been announced:

Ballance Hamilton S., M.D., Lateral Sinus Pyæmia, Operation, Recovery.
Barr, Thomas, M.D. (1) Notes on Extradural Suppuration in the Sigmoid Fossa due to Ear Disease. (2) A Case of Double Acute Mastoid Empyema with Exposure of Dura Mater and Operation in Both.
Bronsen, Adolph, M.D. A Plea for a More Efficient Sterilisation of Nose and Throat Instruments.
Cheatle, G. L., F.R.C.S. A Case of Sarcoma of the Middle Ear.
Collier, Mayo, F.R.C.S.Eng. Nasal Obstruction, its Relation to Throat and Ear Disease.
Curtis, Dr. Holbrook (New York). The Treatment of Acute Laryngitis in Singers.
Downie, Walker, M.B. Three Cases of Foreign Body in the Throat in which the position of the Body was determined by the Roentgen Rays. Illustrated by Skiagraphs.
Grant, Dundas, M.D. (1) A Rapid Means of Making Hartmann's Graphic Charts of the Hearing Power for a Series of Tuning Forks. (2) The Relation of Hartmann's Percentages of Hearing Power for Dying-out Tuning Forks to the Actual Degree of Hearing Power. (3) Mechanical Vibration applied to the Spine in the Treatment of Sclerosis of the Middle Ear.
Horne, W. [illegible], M.B. The Pathogenesis and Earlier Clinical Evidence of [illegible].
Hovell, T. Mark, F.R.C.S. Catheterisation of the Eustachian Tubes.
Hunt, J. [illegible], M.B. [illegible].
Jones, Hugh T., M.R.C.S. [illegible] Preventable Complications of Middle Ear Disease and their Early Diagnosis and Treatment of the Mastoid in Acute Suppuration of the Middle Ear.
Lake, Richard, F.R.C.S. [illegible] Phlebitis with Analysis of Cases.
Macintyre, John, M.B. [illegible] on the *X* Rays, with special reference to their Diagnostic Value in Lesions of the Respiratory Tract.
Milligan, W., M.B., M.D. [illegible] upon Antrectomy as a means of Treatment in Suppurative Middle Ear Disease.
Newman, David, M.D. [illegible] from Pressure upon the Vagus or Recurrent Laryngeal Nerves in Some Cases showing the Relationship of Nasal and Laryngeal Disease to the General Health.
Pegler, L. H., M.D. (1) An Operation for Removal of Deformity from Fracture of the Triangular Cartilage of the Nose. (2) A Note on Bilateral Tumours of the Septum, Lymphoid and Erectile, with a Short Account of their Histology.
Shaw, Cecil, M.D. Notes of a case of Epithelioma of the Pharynx, with Microscopic Specimens of Tumour.
Stewart, W. R. H. Wounds of the Facial Nerve during Operation on the Mastoid Antrum.
Thomson, StClair, M.D. Nasal Hydrorrhœa.
Yearsley, Macleod, F.R.C.S. The Thyroid Treatment of Middle-ear Disease.
Yonge, E. S., M.D. The Treatment of Dysphagia in Laryngeal Tuberculosis.

K. Diseases of Children.

Practical Materia Medica Room, University New Buildings.

President: Joseph Bell, F.R.C.S.Edin. *Vice-Presidents:* James Carmichael, M.D.; John Playfair, M.D.; T. M. Burn-Murdoch, M.B.; John Arthur Wright, F.R.C.S. *Honorary Secretaries:* George Harry Melville Dunlop, M.D., 20, Abercromby Place, Edinburgh; John Thomson, M.D., 14, Coates Crescent, Edinburgh; Walter Stacy Colman, M.D., 22, Wimpole Street, W.

The following subjects have been selected for discussion:

1. Wednesday, July 27th.—The Treatment of Spinal Caries. To be opened by Mr. Victor Horsley.

The following gentlemen are expected to join in the discussion; F. Churchill, M.D. (London), J. Jackson Clarke, F.R.C.S. (London), Robt. Jones, F.R.C.S.Edin. (Liverpool), T. S. Kirk, M.B. (Belfast), R. W. Murray, F.R.C.S. (Liverpool), Noble Smith, F.R.C.S.Edin. (London), A. H. Tubby, F.R.C.S. (London), W. Thomas, F.R.C.S. (Birmingham), Sinclair White, F.R.C.S. (Sheffield).

2. Thursday, July 28th.—Certain Aspects of Congenital Syphilis. In opening the discussion Mr. Jonathan Hutchinson will deal with the Lesions of the Bones and of the Organs of Special Sense, and Dr. Henry Ashby will speak of those of the Brain and other Internal Organs.

The following members have intimated their intention to join in the discussion: Professor A. Baginsky (Berlin), M. Jules Comby (Paris), T. Telford Smith, M.D. (Lancaster).

3. Friday, July 29th.—Rheumatic Heart Disease in Childhood; with special reference to (*a*) Physical Signs, (*b*) Prognosis. To be opened by Dr. D. B. Lees.

The following are expected to join in the discussion: H. Ashby, M.D. (Manchester), Professor A. Baginsky (Berlin), James Finlayson, M.D. (Glasgow), Theodore Fisher, M.D. (Clifton), W. P. Herringham, M.D. (London), F. John Poynton, M.D. (London), J. Lindsay Steven, M.D (Glasgow), G. A. Sutherland, M.D. (London), W. Osler, M.D. (Baltimore).

The following papers have been announced:

Batten, F. E., M.D. On Diphtheritic Paralysis.
Baginsky, Professor (Berlin). On Hospitalism and Atrophy of Children (with microscopical demonstration).
Carmichael, James, M.D. Types of Infantile Pneumonia.
Clarke, J. Jackson F.R.C.S. On Congenital Dislocation of the Hip-joint.
Collier, H. Stansfield, F.R.C.S. On Dislocation of the Hip-joint occurring in the Course of Infectious Diseases.
Comby, Jules, M.D. (Paris). On Movable Kidney in Children.
Coutts, J. A., M.B. On Some Exceptions to Colles's Law.
Eve, F. S., F.R.C.S. On Tendon Grafting.
Jones, Robert, F.R.C.S.Edin. On the Short Leg of Hip-joint Disease and its Treatment.
Martin, R., M.D.Aberd. On the Effects of Tobacco Smoking on Children.
Murray, R. W., F.R.C.S. (1) On Harelip and Cleft Palate. (2) On the Treatment of Club Foot.
Nicoll, James H., M.B. The Radical Cure of Spina Bifida treated by Open Operation.
Stiles, H. J., F.R.C.S.Edin. Note on the Operation of Clearing Out the Mastoid Antrum in Infants and Young Children.
Still, G. F., M.D. On the Micro-organism of Simple Posterior Basic Meningitis in Infants.
Sutherland, G. A., M.D., and Cheyne, Watson, F.R.C.S. The Treatment of Hydrocephalus by Intracranial Drainage.
Thomson, J., M.D., and Welsh, D. A., M.D. On a Case of General Paralysis of the Insane in a Child with Congenital Syphilis.
Tubby, A. H., F.R.C.S. The Occurrence of a Pad on the Dorsum of the Foot in Rickets.

Professor Biedert, of Hagenau, will read a paper, and Dr. Moncorvo, of Rio, will be present and take part in the work of the Section.

L. Dermatology.

Students' Library, University New Buildings.

President: William Allan Jamieson, M.D. *Vice-Presidents:* Walter George Smith, M.D.; John James Pringle, M.B., Alexander Morton, M.D. *Honorary Secretaries:* James Lamont, M.B., 3, Queen Square, Saville Place, Newcastle-on-Tyne; Norman Walker, M.D., 7, Manor Place, Edinburgh.

The arrangements are as follows:

On Wednesday, July 27th, after the President has delivered his introductory remarks, the Section will adjourn to the Royal Infirmary, where a Clinical Meeting for the Exhibition of Patients will be held and the cases informally discussed.

On Thursday, July 28th, the subjects for discussion will be (1) The Nature and Treatment of Lupus Erythematosus. To be opened by Professor Boeck (Christiania), and Dr. Unna (Hamburg); and (2) What are we to understand by Eczema? To be opened by Mr. Malcolm Morris (London), and Dr. Wallace Beatty (Dublin).

In addition to those already mentioned it is expected that the following will be present and take part in the discussions: Professors McCall Anderson, Quincke, and Janowsky, and Drs. Crocker, Liddell, Leslie Roberts, Couper, Purdon, and Stopford Taylor.

The following papers have been announced:

UNNA, Dr. P. G. On Impetigo.
THOMAS, Thelwall, F.R.C.S. Notes on Three Cases of Syphilis communicated by Tattooing.
GALLOWAY, J., M.D. The Histology of Scleroderma.
FOX, T. Colcott, M.D., and BLAXALL, F. R., M.D. Demonstration of Cultures of Endothrix Ringworm, Diagnosed, Clinically and Microscopically.
EDDOWES, A., M.D. A Principle of Treatment of Infected Follicles.
WALSH, D., M.D. The Excretory Irritation of the Skin and other Organs.
DOCKRELL, M., M.D. (1) The Treatment of Lupus by Maragliano's Serum. (2) The Treatment of Skin Sarcoma by Coley's Fluid.

M. MEDICINE IN RELATION TO LIFE ASSURANCE.

Music Class Room, University New Buildings.

President: CLAUD MUIRHEAD, M.D. *Vice-Presidents:* Sir R. DOUGLAS POWELL, Bart., M.D.; PETER ALEXANDER YOUNG, M.D.; JAMES RITCHIE, M.D. *Honorary Secretaries:* JAMES MURDOCH BROWN, M.D., 9, Walker Street, Edinburgh; FRANCIS DARBY BOYD, M.D., 6, Atholl Place, Edinburgh.

The subjects already arranged for discussion are:

The Prognosis of Cardiac Disease in its bearings upon Life Assurance. To be opened by Professor Sir William T. Gairdner, K.C.B.

Middle-Ear Disease in relation to Life Assurance. This will be opened by Dr. McBride, President of the Section of Laryngology and Otology. (These two Sections will probably hold a joint discussion on this subject.)

Does Evidence of Limited Family Vitality call for an advanced Rate of Premium? To be opened by Dr. James Ritchie (Edinburgh).

The subjects of papers promised are:

LOW, Mr. G. M. (Manager, Edinburgh Life Assurance Society). Extra Rating as a Statistical Problem.
MEIKLE, Mr. James (Actuary, Scottish Provident Association). Gout as a Factor in Life Assurance.
MCCANDLISH, Mr. John M. (Late Manager, Union and National Assurance Company). The Medical Advisers of Assurance Companies; Some of their Difficulties.
PLAYFAIR, John, M.B. (Edinburgh), conjointly with Mr. T. WALLACE (Actuary, North British and Mercantile Insurance Company). The Bearing of Pregnancy upon Life Assurance.

N. TROPICAL DISEASES.

Practical Pathology Room, University New Buildings.

President: PATRICK MANSON, M.D., LL.D. *Vice-Presidents:* ANDREW DAVIDSON, M.D., LL.D. ANDREW SMART, M.D., LL.D.; WILLIAM JOHN RITCHIE SIMPSON, M.D. *Honorary Secretaries:* JAMES CANTLIE, M.B., 46, Devonshire Street, Portland Place, W.; Surgeon-Captain M. LOUIS HUGHES, A.M.S., Aldershot.

The following discussions have been arranged: 1. The Unclassified Fevers of the Tropics. To be opened by Brigade-Surgeon-Lieutenant-Colonel Crombie, I.M.S.

2. Beri-Beri in Temperate Climates. To be opened by Conolly Norman, M.D. (Dublin).

3. The Epidemic of Plague in India. To be opened by W. J. R. Simpson, M.D. (late of Calcutta).

The following among others intend to take part in the discussions or to send papers: Surgeon-Major-General Hamilton, Inspector-General Turnbull, R.N.; Dr. Patrick Manson, Professor Haffkine, Mr. Hankin, Surgeon-Major Andrew Duncan, Surgeon-Major Ronald Ross Surgeon-Captain Louis Hughes, Surgeon-Captain Buchanan, Dr. Andrew Davidson, Dr. Daniels, Dr. Sandwith, Dr. Sambon, Mr. James Cantlie, etc.

The following papers have been announced:

BLACK, Surgeon-Major (Retired). Sketch of Disease at Hong Kong in 1865 amongst the Troops, with Views. Charts, etc.
BROWN, Surgeon-Captain E. Harold, I.M.S. Abdominal Surgery in the Tropics.
CANTLIE, James, F.R.C.S. Surgical Requirements of the Tropics.
DAVIDSON, Andrew, M.D. The Malarial Problem in its Epidemiological Aspects.
HAFFKINE, Professor W. M. Plague in India.
HAMILTON, Surgeon-Major-General J. B., P.M.O. Plymouth. Enteric Fever in Armies and Tropical Climates.
HUGHES, Surgeon-Captain Louis, A.M.S. On the Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates.
MANSON, Patrick, M.D. Appearance of Pigmentation in Lymphocytes in Relation to the Diagnosis of Malaria.
SANDWITH, F. M., M.R.C.S. (Cairo). (1) Pellagra. (2) The Treatment of Acute Dysentery.
WALSH, Surgeon-Major J. H. Tull, I.M.S. Clinical Aspects and Treatment of Malarial Fever.
YARR, Surgeon-Major, A.M.S. Malarial Eye Affections.

O. ANATOMY.

Practical Physiology Room, University New Buildings.

President: Sir JOHN STRUTHERS, M.D., LL.D. *Vice-Presidents:* Sir JAMES A. RUSSELL, M.B., LL.D.; JOHNSON SYMINGTON, M.D.; ANDREW MELVILLE PATERSON, M.D. *Honorary Secretaries:* DAVID HEPBURN, M.D., University, Edinburgh. JOSEPH RYLAND WHITAKER, B.A., M.B.Lond., F.R.C.P.Edin., Surgeons' Hall, Royal College of Surgeons, Edinburgh.

There will be a discussion on The Significance of Anatomical Variations, which will be opened by Professor Cunningham of Dublin in an address illustrated by lantern and in which Professor Shepherd of Montreal and Professor Young of Manchester will take part.

Professor Symington will give a Lantern Demonstration on Cranial Topography.

The following papers have been announced:

BERRY, R. J. A., M.D. Notes on a Specimen of Abnormally Situated and Distended Rectum.
BIRMINGHAM, Professor (Dublin). (1) On the Arrangement of the Muscle Fibres of the Stomach. (2) On the Arrangement of the Muscular Fibres at the Upper End of the Œsophagus. (3) Note on the Course of the Left Phrenic Nerve.
FITZGERALD, Dr. Some Abnormalities of the Ocular Muscles.
MCCARTHY, Dr. (Montreal). A New Dissection showing the Internal Gross Anatomy of the Hippocampus Major, with Specimens.
PATTEN, C. J., M.D. (communicated by D. J. Cunningham, F.R.S.). Case of Duodenal Diverticulum.
THOMSON, Professor A., M.B. Sexual Differences of the Fœtal Pelvis.
WATERSTON, David, M.B., C.M. Observations on the Anatomical Basis of Reduction of Dislocation of the Shoulder-joint by Manipulation.
WELSH, D. A., M.D. Exhibition of Specimens illustrating the Parathyroid Gland of Man.

P. PHYSIOLOGY.

Physiology Theatre, University New Buildings.

President: WILLIAM RUTHERFORD, M.D., F.R.S. *Vice-Presidents:* JOHN ALEXANDER MACWILLIAM, M.D.; D. NOËL PATON, M.D.; E. WAYMOUTH REID, M.B., F.R.S. *Honorary Secretaries:* EDMOND WILLIAM WACE CARLIER, M.D., 39, Morningside Drive, Edinburgh; ROBERT ARTHUR YOUNG, M.D., 37, Trevor Square, Knightsbridge, S.W.

The following discussions have been arranged:

1. Theories regarding the Production of Different Qualities of Sensation. To be opened by Professor Rutherford, F.R.S.

2. Intestinal Absorption. To be opened by Professor Waymouth Reid, F.R.S.

The following papers are promised:

BAIN, W., M.D. An Experimental Contribution to the Study of the Mechanism of Bile Secretion.
CARLIER, E. W., M.D. Changes that Occur in Some Cells in Mucous Membrane of the Newt's Stomach during Digestion.
COPEMAN, S. Monckton, M.D. Biliary Secretion in Man.
DUNLOP, J. C., M.D. On the Distribution of Nitrogen in the Urine.
GILLESPIE, A. Lockhart, M.D. On Proteoses.
GULLAND, G. Lovell, M.D. (1) On the Presence of Nerves on Intracranial Blood Vessels. (2) Exhibition of Specimens showing Changes in Mucous Membrane of Alimentary Canal of Salmon in Fresh Water.
HARRIS, D. Fraser, M.D. The Physico-Chemical State of Caseinogen.
MACWILLIAM, Professor J. A., M.D. The Influence of the Central Nervous System on the Rate of the Heart's Beat.
MAHALANOBIS, S. C., B.Sc. (1) An Electrical Key for Physiological Experiments. (2) Exhibition of Specimens showing Changes in Muscles of Salmon in Fresh Water.
MILROY, T. H., M.D. Chemical Changes in Pelagic Ova during Maturation.
MILROY, T. H., M.D., and MALCOLM, J., M.B. The Metabolism of Nuclein under Physiological and Pathological Conditions.
PATON, Noel D., M.D. (1) Protoplasm and Zymin Action. (2) Further Observations on the Metabolism of the Salmon.
PEMBREY, M. S., M.D. Observations upon the Deep and Surface Temperature of Man in Health and Disease.
RUTHERFORD, Professor, F.R.S. (1) On the Secretion of Bile in the Human Subject. (2) On the Action of the Internal Intercostal Muscle.

Stewart, Professor G. N., M.D. (1) The Relation between Molecular Concentration (as Determined by Lowering the Freezing Point) and the Electrical Conductivity of Certain Animal Liquids, with Special Reference to Blood. (2) The Changes which take place in the Electrical Conductivity and Molecular Concentration of Certain Animal Liquids and Artificial Nutrient Media with the Growth in Them of Putrefactive Pathogenic Micro-organisms.

Sturrock, A. C., M.B. The Selective Power of Tissues, especially as Illustrated in the Mammary Gland.

Turner, F. D. Dawson, M.D. (1) Experiments on the Production of Complementary Colour Sensations. (2) Stereoscopic Exhibition of Roentgen Photographs of Injected Blood Vessels.

Waller, Augustus D., M.D., F.R.S. On the Action of Anæsthetics on Vegetable and Animal Protoplasm.

Watson, D. C., M.B. The Place of Formation and *Rôle* of Uric Acid in the Animal Organism.

Thompson, Professor W. H., M.D. On the Influence of Peptone and its Precursors on the Work of the Kidney.

Programme of Proceedings.

Tuesday, July 26th, 1898.

9.30 A.M.—Meeting of 1897-98 Council.
11 A.M.—Opening Service in St. Giles' Cathedral.
2.30 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business. M'Ewan Hall.
8.30 P.M.—Adjourned General Meeting from 2.30 P.M. President's Address. M'Ewan Hall.
9.30 P.M.—Reception by the Right Hon. the Lord Provost of Edinburgh, in the Museum of Science.

Wednesday, July 27th, 1898.

9.30 A.M.—Meeting of 1889-99 Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Second General Meeting. Address in Medicine by Professor T. R. Fraser, M.D., LL.D. M'Ewan Hall.
4 to 6 P.M.—Garden Party at Craig House, Morningside Drive. Sir Alexander Christison, Bart., and Dr. Clouston will receive.
9.30 to 12 P.M.—Soirée by the Local Committee in honour of the Association, within the M'Ewan Hall and New University Quadrangle.

Thursday, July 28th, 1898.

9.30 A.M.—Meeting of Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Third General Meeting. Address in Surgery, by Professor Annandale, F.R.C.S. M'Ewan Hall.
4 to 6 P.M.—Reception and Garden Party by the Royal College of Physicians, within the College and the adjacent Queen Street Gardens.
4 to 6 P.M.—Reception by the Royal College of Surgeons within the College.
4 to 6 P.M.—Reception by the Royal Medical Society within the Society's Hall.
4 to 6 P.M.—Garden Party by Professor and Mrs. Balfour, Inverleithen House.
7 P.M.—Public Dinner of the Association. Music Hall, George Street.
9 to 11 P.M.—The Ladies Committee will give a *conversazione* to ladies and invited guests within the Royal College of Physicians.

Friday, July 29th, 1898.

9.30 P.M.—Concluding General Meeting. Address in Psychological Medicine. By Sir John Batty Tuke, President of the Royal College of Physicians, Edinburgh. M'Ewan Hall.
11 A.M. to 1.30 P.M.—Sectional Meetings.
1.15 P.M.—Golf Party leaves for Muirfield.
4.30 P.M.—Garden Party by the Right Hon. the Earl of Hopetoun, G.C.M.G., at Hopetoun House.
9 P.M.—Reception and Ball by the Right Hon. the Lord Provost and the Magistrates of Edinburgh, in the Music Hall, George Street.

Saturday, July 30th, 1898.

10 A.M.—The University Graduation Ceremonial will take place in the M'Ewan Hall.
Excursions.

Honorary Local Secretaries.

R. W. Philip, M.D., F.R.C.P.Edin., 4, Melville Crescent, Edinburgh.

John Shaw M'Laren, M.B., F.R.C.S.Edin., 14, Walker Street, Edinburgh.

Reception Rooms.

The Reception Room, which is located in the Oddfellows Hall, Forrest Road, opens on Monday, July 25th, from 4 P.M. until 9 P.M., and on Tuesday, July 26th, and the following days from 9 A.M. until 6 P.M. for the issue of tickets to members, and for supplying all necessary information. It is particularly requested that all members on their arrival will at once proceed to the Reception Room, Oddfellows Hall, enter their names and addresses, and obtain their tickets and *Daily Journals* containing programme, inquire for letters, consult list of lodgings, hotels, etc. A reception room for invited foreign guests will also be provided for in an office adjoining the entrance to the Oddfellows Hall. Excursion tickets will be distributed in the smaller hall on the first floor. Suitable arrangements for post office and correspondence will be found in the main Reception Room.

Ladies' Tickets.

Ladies accompanying Members will be received by the Ladies' Committee at the Masson Hall, 31, George Square. All information regarding special arrangements for ladies will be obtained there, and tickets admitting to the Public Addresses of the Association will be distributed.

Members or guests accompanied by ladies are invited to ask at the General Reception Room for a Lady's Ticket for entertainments, if such is desired, and *are particularly requested to note that they may take one lady only to any entertainment for which a ticket has been obtained.*

Students' Tickets.

Tickets will be issued to medical students of the fourth and fifth years. These tickets will admit to the General Addresses and to the Sectional Meetings of the Association, but will not confer privileges in respect of entertainments. The tickets will be distributed by the Students' Representative Council, University, Edinburgh, and for lady students by Miss Mackay, Medical College for Women, Chambers Street, Edinburgh.

The Annual Museum.

The annual Exhibition in connection with the meeting will be held in the Drill Hall, Forrest Road, Edinburgh, from July 26th to July 29th inclusive. The Exhibition will comprise foods and drugs, medical and surgical instruments, appliances and dressings, medical publications, sanitary and ambulance appliances, and other articles of interest to the medical profession.

The Drill Hall is a spacious building, well lit from the roof, and as the entrance is almost directly opposite that of the Reception Room, the situation is exceptionally advantageous. The small hall adjoining will be reserved for sanitary and ambulance appliances. For these the charge for floor space will be 1s. per square foot (all fittings to be provided by the exhibitor). For other exhibits the charge will be from 4s. per square foot, tables 3 feet and 3 feet 6 inches wide being provided.

Between two and three thousand catalogues will be printed and distributed gratis to members.

On application to the Secretary of the Exhibition Committee, Dr. Norman Walker, 7, Manor Place, Edinburgh, the regulations and any other particulars desired will be forwarded.

Excursions.

An attractive series of excursions, both for the half day and the whole of Saturday, has been arranged by the Excursions Subcommittee.

I. Short excursions, either on Saturday or on some of the week-day afternoons. These include visits to the Forth Bridge by coach or rail to Dalkeith and Roslin Chapel and Castle. Professor Cossar Ewart, F.R.S., has indicated his intention of inviting members to inspect his hybrid foals. An international match between teams representative of England and Scotland is in course of arrangement for Friday afternoon.

II. Whole day (Saturday) excursions. The series includes the following:

(*a*) *St. Andrews.*—The Marquis of Bute will entertain the members at luncheon, and allow them to inspect his recent excavations in the neighbourhood.

(*b*) *Falkland Palace and Kinross.*—Visiting the palace, where the Marquis of Bute will provide luncheon, and thence driving to Kinross for Loch Leven and Castle.

(*c*) *Dunkeld and Crieff.*—By rail to Dunkeld, and thence driving by the Small Glen and Amulree to Crieff, where the members will be entertained to dinner at the Hydropathic, by invitation of Dr. Meikle.

(*d*) *Dollar and Rumbling Bridge.*—Visit to Castle Campbell and other picturesque places in the neighbourhood. The members will be entertained to luncheon at Blair House and at Hilfoot House.

(*e*) *Perth and Dundee.*—By rail to Perth through Glen Farg.

Thence by steamer down the Tay to Dundee. The members will be entertained at luncheon at Perth by Dr. Urquhart and in the afternoon by the Perth and Dundee Branches.

(*f*) *Melrose and Scott Country.*—By rail to Melrose and thence by carriage to Abbotsford, Dryburgh, etc. The members are invited to afternoon tea at Melrose Hydropathic.

(*g*) *Stirling and District.*—Visiting the famous Howietoun Fish Ponds and thence driving through Stirling, where the members will be entertained to luncheon by the Stirling, Kinross, and Clackmannan Branch, to Bridge of Allan, where a garden party will be given by the directors of the Mineral Wells Company.

(*h*) *St. Mary's Loch.*—By rail to Selkirk and thence driving by the celebrated St. Mary's Loch to Innerleithen and the Tweed.

(*i*) *The Trossachs.*—By rail to Callander and thence through the Trossachs.

Longer Tours in Scotland.

After the meeting tours of several days or a week or more may be conveniently undertaken. A number of suitable tours of varying length and cost will be suggested and arranged by Messrs. J. and H. Lindsay, tourist agents to the meeting, 7, Waterloo Place, Edinburgh, or at the Reception Room.

International Golf Match.

It is proposed to hold a golf match on the afternoon of Friday, July 29th, over Muirfield and Archerfield Links, between resident Scottish and other members of the Association.

In order to facilitate arrangements, Secretaries have been appointed as follows: Dr. Colcott Fox, 14, Harley Street, London, W., for the South of England and Wales; Dr. Richardson, 19, Saville Row, Newcastle-on-Tyne, for the North of England and Ireland; and Dr. Blaikie, 42, Minto Street, Edinburgh, for Scotland.

Members wishing to play in the match are requested to communicate with one or other of these gentlemen not later than July 20th, naming their club and stating club handicap in strokes.

Notices of Motion.

Dr. Lovell Drage gives notice that he will move:

That the Council be requested to take the necessary steps for bringing to the notice of the Government the necessity for an inquiry by Royal Commission into the constitution of the various medical corporations and the General Medical Council, and into the grievances of the medical profession.

Dr. J. Brassey Brierley gives notice that he will move:

1. That in By-law 8, page 15, the words from "each" on line 4 to "Association" on line 7 be deleted.
2. That in By-law 10 every word after "Council" on line 3 be deleted.
3. By-law 22, on first line, to substitute "six" for "four," and add to end, "and the travelling and hotel expenses of councillors and members of the Parliamentary Bills Committee shall be paid by the Treasurer on of the funds of the Association."

Additional By-law.

A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 400 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Council.

The Parliamentary Committee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

Dr. James A. Myrtle gives notice that he will move:

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new Articles and Memorandum of Association, and, upon this being granted, to forthwith undertake the medical defence of members of the Association.

Dr. J. Haddon gives notice that he will move:

That the Scientific Grants Committee be discontinued.

French Association for the Advancement of Science.—The next Congress of the French Association for the Advancement of Science will be held at Nantes from August 4th to 11th. In the Section of Medical Science, of which Professor Lépine of Lyons is President, the following question is proposed for discussion: On Diabetes in general, and particularly on the progressive increase in the prevalence of that disease in the principal towns of France.

MEDICAL WAR NEWS.

Outbreak of Yellow Fever in the American Army in Cuba.

It is officially admitted by the Washington authorities that yellow fever has broken out in the American force besieging Santiago. The correspondent of the *Times* telegraphing on July 13th says that, while there are 14 admitted cases of yellow fever, the whole number open to suspicion is nearly 100. Surgeons and experts considered competent have been on the spot since the army landed, but no decisive measures were adopted till General Miles landed. Isolated hospitals have now been established, and all the prescribed steps have been taken to prevent the spread of the disease, but grave anxiety is confessed. General Shafter telegraphs that the refugees from Santiago are starving at El Caney. The number given is 18,000, who depend on such rations as can be spared from the none too ample army stores. Some are dead and others dying, and the condition of the whole is precarious in the extreme. Yet these starving wretches from a fever-stricken city were for days allowed to mingle with the American troops and wander about the camps. Yellow fever was alleged to exist in Santiago before they left. Now a cordon is drawn about El Caney after the mischief is done.

Immediately on landing in Cuba General Miles ordered Siboney to be burnt for sanitary reasons. It is stated that yellow fever stations will be established on some of the quays off Florida to which a special vessel will convey fever patients direct from Santiago.

The Sick and Wounded at Santiago.

Telegraphing to the American Secretary for War on July 8th General Shafter said: "The men are in good spirits and are making themselves more secure every hour. The wounds are much less dangerous than similar wounds with the calibre 45. Among the large number of wounded are few amputations, perhaps ten. General health of command is good. One hundred and fifty cases of fever, which runs its course in four or five days, but not serious."

An unofficial account states that the reports of the surgeons on the injuries inflicted during the recent fighting show that the small calibre bullets almost invariably proved fatal in cases of penetration of the abdomen, their action being explosive. Otherwise they were humane enough, the deaths being fewer than if the wounds had been inflicted by larger projectiles. A greater proportion of the bullets lodged in the body than could have been expected, possibly on account of the poor quality of the powder, or through the reduction of the initial velocity by the surrounding thickets.

The hospital arrangements for the American army are said to be steadily improving. Forty ambulances are now in service, and there are many empty tents. As the wounded are nearly all at Juragua, the headquarters hospital has been cleared in expectation of the next assault. The sick list is increasing rapidly, and the officers are hoping for a speedy termination of the siege before the troops begin to suffer seriously from the ravages of the climate.

The hospital ship *Relief*, with a large corps of surgeons and nurses and ample medical stores, has arrived at Playa del Este. Mrs. Porter, the wife of President McKinley's secretary, is one of the nurses.

The "Mutilation" Caused by the Mauser Rifles.

Admiral Sampson announced after the fight at Guantanamo that the bodies of the marines killed there had been "horribly mutilated by the enemy." Naturally this statement caused great indignation in the United States, but it was received with reserve by Europeans, who knew that Spaniards, whatever may be their shortcomings, are not savages. This scepticism has been fully justified by the report of Surgeon Van Reypen that "the appearance of mutilation was due to the character of the bullets in the Mauser rifles used by the Spanish," and by a subsequent report of the Admiral himself, in which he admits "that a careful investigation has been made, and it is reported to me that apparent mutilation was probably due to the effect of short ranges, and I withdraw the charge of mutilation." But in the inflammable state of the American mind, the Admiral's withdrawal will probably not avail to nullify the effect of the unfounded charge, and we heartily agree with Dr. Frank Donaldson, the special war cor-

respondent of the *Philadelphia Medical Journal*, that the "careful investigation" referred to in Admiral Sampson's later message should have been made before, and not after, the original accusation.

THE *X* RAYS IN NAVAL SURGERY.

On board the hospital ship *Relief* (a description of which was given in the BRITISH MEDICAL JOURNAL of June 18th, p. 1620), there are two *x* ray installations. There is also a dark room for photographic work. This department is under the charge of Dr. William M. Gray, the photographic expert of the Surgeon-General's Library at Washington. It is his intention to take a photograph of the entrance and exit of the bullet in all cases of bullet injuries, as well as a skiagraph, and to preserve a complete series of plates for future study. Dr. Gray has also in his laboratory an electric drill and saw, and small lamps for the illumination of cavities, etc., as well as microscopes and other necessary instruments for the study of blood, bacteria, etc.

THE DANGER OF YELLOW FEVER IN CUBA.

Surgeon-General Sternberg has written as follows to the *Army and Navy Journal* regarding the danger of yellow fever in Cuba:

In your issue of April 23rd, p. 642, the statement is made that General Sternberg "expresses confidence in the excellent sanitary provisions of the military service, and does not fear that yellow fever will prove more harmful to the troops than diseases which are common in the northern latitudes, etc." I have not expressed any such optimistic opinion, and regret to say that it is not justified either by my studies relating to yellow fever, or by my personal experience. History teaches that when a considerable number of unprotected persons are exposed in a yellow fever-infected locality during the months when the disease is most prevalent (May 1st to November 1st in the latitude of Havana) an epidemic most infallibly results. In the last week of April of last year there were 17 deaths and 70 new cases of yellow fever in the city of Havana. Now, suppose that we had a similar number of cases at the same season in New Orleans, and that 20,000 strangers from the north should go there to spend the summer, what would be the result? All past experience supports the belief that a majority of them would have yellow fever, and that from 20 to 40 per cent. of those taken sick would die. This is what I anticipate would happen if we should send an army to occupy Havana, or any other infected seaport on the coast of Cuba during the summer months. If, however, these troops could be camped upon high land in the interior, and circumstances were such as to enable them to comply with all of the extractions of modern sanitary science, I am of opinion that our loss from yellow fever would not be serious. But in time of war military commanders are expected to take their troops to the points occupied by the enemy, and a picnic in the interior with frequent changes of camp, etc., is, perhaps, not exactly what we may expect. I am not an alarmist, but I believe in looking facts clearly in the face, and cannot allow your statement of my opinion to have currency at such an important moment in our country's history without a protest.

MILITARY HOSPITALS OF CUBA.

At the meeting of the International Congress of Hygiene and Demography, held in Madrid last Easter, Dr. A. de Larra Cerezo read a paper on the Military Hospitals of the Island of Cuba, and particularly of the Hospital Alphonso XIII, in Havana during the war, which has since been republished in book form. In February, 1895, when the insurrection broke out, there were only 2,500 beds. Hospitals have since been built in every province of the island, and in January, 1898, there was accommodation for 45,655 patients. There are eleven hospitals containing more than 1,000 beds each. The larger ones are the Royal, with 5,000 beds; Alfonso XIII, with 3,000; Manzanillo, with 3,000; Beneficienza, with 2,100; Santiago, with 2,000; Sancti Spiritus, with 2,000; Ciego, with 1,700; Cienfuegos, with 1,450; Remedios, with 1,400; Holguin, with 1,300; Madera, with 1,100. All these are said to be well supplied with instruments and medical necessaries of every description, and each has also a perfectly equipped laboratory. In addition to the ordinary sanitary ambulance corps, a service of carriages is provided for the rapid conveyance of the wounded to the base hospitals in Havana, Santiago, Matanzas, Santa Clara, Manzanillo, Sagua la Grande, Trinidad and Cienfuegos.

Three of the best steamers of the Compania Transatlantica Española, the *Alicante*, the *Montserrat*, and the *San Ignacio Loyola*, were especially fitted up as hospital ships, and contain four large wards of 96 beds each, four small isolation wards, and surgical wards for operations. The ships are lighted all over with electricity. To insure a supply of fresh air the portholes are kept open when weather permits, and there are as well a number of large air pumps. Each vessel carries a large quantity of drugs; baths are also provided, while for the convalescent there is a large and comfortably furnished saloon. On the three ships accommodation is found for 1,500 patients. During the first two years after the erection of the hospital of Alfonso XIII 80,000 patients were admitted into its wards, and more than a thousand operations were performed. In 1897, the third year of its existence, fewer patients were treated, and at the same time the rate of mortality decreased. This diminished death-rate is ascribed to increased hospital space for each patient, which is secured by the early removal of convalescents to the annexe and hospital ships. The number of sick from March to December, 1895, was 49,485, with 3,200 deaths. In 1896 the number of sick was 232,714, with, 10,610 deaths; from January to June, 1897, there were 201,247, with 3,691 deaths. Yellow fever headed the list of diseases. The wounded admitted to hospitals during the period aforesaid numbered 11,912, distributed according to year as follows: 1895, 1,189; 1896, 7,270; 1897, 2,643. The number of deaths was 523. The total mortality, counting both sick and wounded, from March, 1895, to June, 1897, was 22,497.

The total number of deaths among medical officers in the hospital service of the army and navy since the beginning of the rebellion has been 50, of which number more than two-thirds have been the victims of yellow fever.

LITERARY NOTES.

WE are pleased to note that Dr. Beattie Crozier's Civil List pension of £50 has been increased to £100 in order to enable him to complete his great work, *The History of Intellectual Development on the Lines of Modern Evolution*, the first volume of which appeared in 1897.

In the July number of the *Phonographic Record* Sir Wm. Gowers has an interesting and valuable communication upon an obscure form of chorea; Dr. Fletcher Beach discourses ably upon mentally deficient children; while the troubles and trials of the assistant and the *locum tenens* have a sympathetic exponent in Dr. Lamming Burton.

Dr. G. Sims Woodhead's paper entitled Experiments on Living Animals (reprinted from the *Medical Magazine*) is written in a frank and manly spirit, and is one of the best replies to the antivivisectors that we have read. He says that in the many experiments which he has seen performed he has "met at most only two experimenters who have not taken every possible precaution to minimise not pain merely but even discomfort to the animal under experiment." He adds that "it is deemed essential that an animal should be spared all unnecessary pain, not from fear of the legal consequences but on purely moral and ethical grounds." He gives some striking proofs of the much lower degree of sensitiveness to pain possessed by animals, even so high in the scale as the horse and dog, as compared with human beings. He gives the following remarkable illustration of the inconsistencies to which the antiscientific bias may lead its victims:

One well-known lady, who is supposed to hold strong views against "vivisectors," is said to have remarked, or even written, that the sacrifice of many women for the sake of gratifying and developing the genius of one man like Byron was more than justifiable, and that women so sacrificed should feel honoured. Whatever one may think of such hysterical balderdash one is scarcely prepared to find the same lady arguing that man has no right to subject animals to pain or discomfort under any circumstances whatever.

According to a writer in a recent number of *Appleton's Popular Science Monthly*, the custom of trephining was much practised in prehistoric times, as the skulls of these remote periods show, and is still in vogue among some peoples. Among these are the people of the Berber stock in the Djebel Aurès and the Djebel Chechar of the edges of the Algerian plateau. The method of performing the operation is carefully described by Drs. H. Malbot and R. Verneau. The former was shown by a native doctor a skull with more than a dozen circular holes, two slits, and a large irregular orifice, all of which had been made when the man was alive. The skull was kept hidden, and was evidently used as an example by the local doctors. The natives have recourse to trepanning for blows or wounds on the head; and it does not matter how long before the blow may have been given if only the sick person can remember that he has had one. The operation is not severe. A woman, tired of her husband, is said to have called in the service of a trepanner in order to get a divorce from him by producing a piece of her skull and affirming that he had broken it in some of his cruel acts.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

SUBSCRIPTIONS to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY JULY 16TH, 1898.

THE VACCINATION BILL.

THE Vaccination Bill has emerged from the Grand Committee stage in a condition which can hardly be satisfactory to anyone. The age limit for primary vaccination has been lowered from 12 months to 6 months. That is the period which was originally recommended by the Royal Commission, and which was supported in the Report by the Council of the British Medical Association. With this, and a few other comparatively trifling exceptions, not much has been done in the way of improving the Bill. The most urgently required improvement would have consisted less in alteration of clauses than in the addition of new clauses. There should have been added a clause providing for revaccination, and another providing for payments to general practitioners for certificates stating not merely that vaccination had been performed, but that it had been sufficiently performed in accordance with the requirements of the Local Government Board. With systematic revaccination, and with the direct and recognised aid of the medical profession throughout the country in the carrying out of the new law, the demand for a conscience clause might well have been granted.

Amendments covering all these points were set down on the notice paper. The amendment providing for a conscience clause had precedence of the others, but by the narrow majority of 2 votes—26 to 24—it was defeated. Its defeat is no doubt largely responsible for the subsequent withdrawal of an amendment dealing with revaccination, and it is certainly a most deplorable fact that a revaccination clause has not been added. Strange to say, at a later stage of the proceedings, and notwithstanding the opposition of Mr. Chaplin, the principle of a conscience clause did find its way into the Bill, but in such a manner as to give no leverage in favour of revaccination. Under Section 29 of the Act of 1867 a single penalty may be inflicted, and under Section 31 of the same Act there may be another penalty. According to the Bill as now modified, where a penalty under Section 29 has been incurred for neglect of the vaccination of any child, proceedings under Section 31 cannot be taken with regard to the same child until it has reached the age of 4 years. If this new provision can be administered in such a way as to bring the subject of vaccination under the direct notice of every parent whose child has reached the age of 4 years without previous vaccination, then it should be very useful. Unfortunately, however, the clause does not specify any means by which lists of unvaccinated children of 4 years of age are to be prepared, or made available ot the public vaccinator. It lays no duty on School Boards in connection with children entering on school life, and in these circumstances it is not easy to see how the clause can be systematically administered, especially in large towns where changes of residence are difficult to trace.

But the curious point is that at 4 years of age "conscientious objection" is to be accepted by the Court in place of vaccination. Thus, if a parent refuses to have his baby of 6 months vaccinated, he will be liable to a penalty without any alternative in the way of conscientious objection; but when the child comes to be 4 years old, if vaccination is still objected to by the parent, all he need do is to satisfy the Court that he does object. There is here no doubt some relaxation of the law; but the relaxation is made in a most extraordinary fashion. If single penalties are to be retained, the arrangement as to the time of their infliction should surely be reversed. Would it not be better that the parent of a baby a few months old should have the right to resort to a declaration of objection, but, when his child has reached the age of 4 years, that he would then have to submit either to its vaccination or to the infliction of a single penalty? Parental dislike to the vaccination of the boy or girl of 4 years old would probably be much weaker than the feeling with regard to the infant. Yet the conscience clause is to apply not to the case of the infant but to that of the older child.

Finally, when children reach the age of 12 years, at which time revaccination ought to be performed, and at which time also there is likely to be still less parental objection, the Bill makes no provision for any action being taken as regards either vaccination or penalty or declaration of conscientious objection. The subject is not to be brought before the parent in any shape or form under the proposed Act. In the case of non-vaccination of the infant there is to be a penalty, in the case of non-vaccination of the child aged 4 years there is to be at least a declaration of conscientious objection, but in the case of the child of 12, there is to be absolutely no pressure of any kind towards vaccination. Moreover, the proposal to pay medical practitioners for certificates of sufficient vaccination was rejected by Mr. Chaplin, so that the new law is to depend for direct aid in its administration, not on the profession as a whole, but only on the public vaccinators.

The whole scheme is likely to be so hopelessly ineffectual in the promotion of vaccination that the best we can wish for the Bill is that it may fail to find a place on the Statute Book. Independently of any new Act we may assume that glycerinated calf lymph prepared by the Local Government Board will become universally available throughout the country, and that penalties will become more and more exceptional. If the Bill passes vaccination may not again be made the subject of legislation for years to come; while if it fails to pass there is every likelihood that in a short time the matter will again be dealt with by Parliament, and in that event it is hard to suppose that anything so unsatisfactory as the present scheme can be the outcome. Of course, even yet there is the report stage in the House of Commons, and there is also the House of Lords, but it is obvious that neither in the Commons nor in the

Lords will there be much chance of any serious amendment, looking to the attitude which the Government has adopted in the Committee stage.

THE CHEMISTRY OF DIABETIC FOODS.

It may be accepted as a truth, although some may dispute it and great commercial interests are opposed to it, that natural food simply cooked is the best for the sick as well as for the healthy, and that of the various artificial dietetic specialities, produced with so much ingenuity and supplied at so high a price, few are worth a tenth part of the money they cost.

In the treatment of diabetes the truth of this observation is being realised by many of those who have most experience in the matter, and attention is being directed at the present time rather to the inquiry how far natural articles of food may be permitted, than as formerly to the invention of unpalatable, indigestible, and innutritious substitutes.

The modern physician is content to confine his absolute prohibition to cane and grape sugars, and articles of food which contain these substances, but he recognises the desirability of permitting other carbohydrates, although only in quantities proportional to the assimilative powers of each patient. Chemical analysis has shown that many of the articles ordinarily excluded from a diabetic diet contain only small amounts of starch, or the less harmful forms of sugar, such as lævulose: while it has also been demonstrated that most of the so-called diabetic foods contain a considerable, and some a very high, percentage of starch or sugar-forming carbohydrates.

For example, it is very usual to meet with patients who have been ordered to eat animal food, green vegetables, and gluten bread, no limit being attached to the last, although many kinds in the market contain quantities of starch varying in amount from 30 to 40 per cent., and yet potatoes contain only 15 per cent., and Jerusalem artichokes 16 per cent. Fruit, which is so valuable an addition to a diabetic dietary, is usually totally excluded, although apples and sour oranges contain not more than about 10 per cent. of carbohydrate, while rhubarb, green gooseberries, cranberries, bilberries, and currants range under 4 per cent. In a recent paper by Dr. F. Kraus, jun.,[1] of Karlsbad, he has shown that cooking still further deprives many fruits and vegetables of their carbohydrate components. A raw apple containing 11.7 per cent. of carbohydrate after once stewing contained 7.3 per cent.; after twice, 6.1 per cent.; peaches contained 9.5 per cent. before cooking, and 1.8 per cent. after. He recommends that the water in which the fruit is stewed should be thrown away and a little flavouring added, such as cinnamon, cloves, or vanilla, as well as saccharin. In this way really palatable preserves are in Germany made for the use of diabetics, containing very little carbohydrate.

Vegetables may be made to take up a large amount of fat so as to form a very valuable addition to the diet, without becoming disagreeably greasy, as in salad (oil), or *purée* (butter), or by frying them in oil or fat. Dr. Kraus illustrates the futility of trusting to the general run of commercial articles sold as diabetic bread by a table showing the carbohydrate contents of most of those used in Germany. Of the 19 specimens enumerated only 5 contain less than 30 per cent. of carbohydrate, 4 are between 30 and 40 per cent., 4 between 40 and 50 per cent., 2 between 50 and 60 per cent., and 4 over 60 per cent., as against ordinary white wheaten bread, which contains 60 per cent. He quotes a case mentioned by Professor von Noorden, which was sent to him as a severe case of diabetes because on the strictest diet the sugar had gone up. This "strictest diet" consisted of meat soup, coffee, tea, eggs, meat, green vegetables, bacon, butter, and "conglutin bread," of which last 300 g. were taken daily. This conglutin bread contained 38 per cent. of starch, and was equal to 200 g. of white bread. On proper diet the sugar disappeared in two days, and the case proved to be really a mild one. We could produce parallel examples of English diabetic bread and flour in every respect as bad as those made in Germany. It is not uncommon in England to meet with patients who are on what they believe to be strict diet; if they are asked whether they eat bread they promptly answer, "No, only toast," of which they take as much as they please. It is extraordinary that any virtue can be supposed to exist in toast, but it is a not uncommon delusion, as all consultants must be aware. Only a few weeks ago a letter was sent to the British Medical Journal by a correspondent who wished to impart his experience of what he called "strict diabetic diet," of this kind. Toast is useful for diabetics who can assimilate bread in any form, because it can be weighed accurately, and because it is less tempting to the appetite than fresh bread, but, unless it is burnt to carbon, it must contain as much carbohydrate.

Milk contains only 4 or 5 per cent. of milk sugar, and in limited quantities of half a pint to half a litre can generally be taken with safety, but a diabetic milk may be made by previously diluting the milk and then passing it through a separator so as to get nearly all the fat, and half or less than half of the other solids in one portion. It can then be sterilised and sold in bottles. It would diminish the objection felt by many to this very valuable article of diet if such diabetic milk were prepared for sale in this country.

To sum up the lesson we desire to teach. (1) It is much better to allow a definite quantity—for example, 2 to 4 ounces of potato or toast, than to allow an unlimited amount of "diabetic bread" of unknown composition; (2) in many cases such definite quantities of natural foods are safer than even limited amounts of the less palatable and more expensive specially prepared articles; (3) when it is desired to place a patient upon strict diet care should be exercised to see that he obtains his bread substitutes from a really trustworthy maker; (4) lastly, many fruits, especially if well cooked, may be added to the diabetic dietary.

[1] *Zeitschrift für diätetische und physikalische Therapie*, 1898, Bd. I, Heft. I.

AUTO-INTOXICATION.

The difficulty and uncertainty of medicine lead to the adoption of many a theory as a makeshift or as a hope. To look upon many diseases as caused by poisons produced by the body itself is the latest refuge of pathology. The recent growth of the belief is to be traced, perhaps, to the pathology of the thyroid gland. Pathologists appear dis-

posed to regard this as a body whose function prevents a certain form of degeneration, which in its absence the body tends to take on. Certain experiments upon the pancreas followed, which elevated this gland also to a similar position. The testes were believed by Brown-Séquard to perform a like office, and a similar work has been suggested for the kidneys.

From this it was not a far step, and it was a step suggested by many clinical facts, to say that health depends upon the due performance of assimilation and excretion, and that not only a failure to cast out waste products, but also errors in the processes by which the various molecules are taken to pieces and the atoms joined into fresh combinations, will lead to disease.

Gout has long been thus explained; the nervous symptoms of constipation, and of that unknown state which laymen call "liver," point in the same direction; and of late years the theory has met with an unexpected support from bacteriology. The brilliant work of Sidney Martin leads us to believe that the poison of diphtheria is a product of our own body under the stimulus of a peculiar bacillus; and, if so, we should see in this an example of auto-intoxication produced by the action of a living organism, but otherwise analogous to that form which follows ingestion of dead matter.

Meanwhile the chemists have discovered the poisonous character of the albumoses and peptones formed during normal digestion, and the coagulating effect upon the blood of certain extracts from animal tissues, and have verified the presence in living tissues and in dead of alkaloidal bodies of a toxic nature.

Many reasons, therefore, seem to show that auto-intoxication may have a very widespread effect on disease, and entice us to offer it as an explanation of a great many states whose pathology is unknown.

But to form a hypothesis is one thing, to verify it quite another; and it is not too much to say that hardly a single step has been taken in this direction. For the last fifty years we have known the immediate cause of the local manifestations of gout; but if we do not acept defective excretion as the whole explanation, no one has yet by trustworthy chemical methods shown how the urates accumulate in the blood.

None of the poisons formed in the digestive tract have been traced in the blood, and in urine the amount of such bodies is so minute as to cause some doubt whether they exist at all, and it is quite as doubtful whether animal extracts such as Wooldridge's tissue fibrinogen play any part in morbid processes.

To turn to the other side of the case, that of defective excretion of waste products: although death by uræmia has been ascribed for many decades to this cause, no one has been able to show what is the waste product which causes the symptoms or whether there be more than one. Of late years Bouchard seemed to advance some reasonable evidence by his experiments upon the toxicity of urine. But the superstructure was too elaborate for the foundations, and his experiments, repeated by Beck, have led to quite different results.

At present therefore auto-intoxication is an almost unknown subject. It is supported by analogy, it is supported by evidence drawn from clinical pathology and from clinical therapeutics, and it is within limits a useful working hypothesis. But all this is nothing more than "predisposing" testimony; of direct evidence there is next to none.

THE PREVENTION OF TUBERCULOSIS.

WE are glad to see that the *Daily Telegraph* is lending its powerful support to the movement recently started by Sir Wm. Broadbent, Mr. Malcolm Morris, and a considerable number of leading members of the medical profession in London to take steps to check the continued prevalence of tuberculous disease in this country. The question is eminently one upon which an enlightened public opinion ought to be formed. The public mind must be aroused to the fact that consumption and other forms of tubercle are preventable diseases. "If preventable, why not prevented?" as the Prince of Wales said on a memorable occasion. We understand that His Royal Highness has already shown a warm interest in the movement, and has promised to preside over a public meeting which will be held after the autumn holidays, probably early in October. At this meeting the formation of an Association for the Prevention of Tuberculosis on lines similar to those of the Associations which are doing such good work in France and Belgium will be proposed, and other means will be concerted for placing sufferers from pulmonary consumption in its early stages under the most favourable conditions for recovery.

METROPOLITAN SCHOOLS OF MEDICINE.

IT is generally acknowledged that the London hospitals possess the largest clinical material in the world, but the wide area over which the hospitals are distributed forms an obstacle to the proper utilisation of this material. The new scheme of the Metropolitan Schools of Medicine which started on May 1st will doubtless prove to be of great value to medical men coming from abroad, and wishing to obtain a general idea of modern theory and practice. Cards of admission may be obtained from the Secretary of the Metropolitan Schools of Medicine, West Wing, Examination Hall, Victoria Embankment, between the hours of 1.30 and 3 (except on Saturdays). A general time table of the arrangement of the various hospitals and schools will be furnished with the cards. The fee for three months is 7 guineas, and for six months 10 guineas. The holders of these cards are entitled to attend the practice of nine general hospitals. A man would probably derive more benefit by attending one or two hospitals regularly, rather than spending a "butterfly existence" amongst nine. The promoters of the scheme have adopted the wise precaution of allowing the ticket holder to choose his own mode of existence; and have consequently provided ample material for the exercise of his selective capacity. Medical men wishing to be signed up for hospital attendance before presenting themselves for examination should not purchase one of these tickets; this scheme has no connection with any examining body. Up to the present time fourteen tickets have been sold; the three months series appear to be the most popular. Many inquiries are being made by medical men in the Colonies and in America, who are anxious to make the best use of their time when they visit this country, and who would prefer not to travel as far as Vienna in order to obtain the necessary medical instruction. The scheme is believed to meet a real want, and it is expected that when the winter session comes round the number of tickets will have increased.

A MEDICAL MILLIONAIRE.

THE connection of millionaires with medicine has hitherto been of what may be called a passive (we use this epithet "without prejudice," as the lawyers say) character—except when, on occasions too much resembling angel's visits,

some among them have been moved to found or rebuild hospitals, or to endow medical research. The word "millions" in any medical association suggests bacteria rather than banknotes. Millions in the financial sense are not made by the practice of medicine, though they have been made, and will doubtless continue to be made, by the sale of quack medicines. Hence, though we have princes of blood royal in our ranks, we have not hitherto, at least in modern times, had an authentic millionaire. A special interest, therefore attaches to the news which has recently come from Paris that Baron Henri de Rothschild, a cadet of the Paris branch of the famous financial family, has passed with distinction his final examination for the degree of Doctor of Medicine. We do not know whether Dr. Henri de Rothschild is himself a millionaire, but *s'il n'est pas la rose, il a vécu près d'elle*. That he has taken his medical studies seriously is shown by his academic career. While *extern* of Professor Budin, at La Charité, he was much impressed by the excellent results obtained in the treatment of infants, an impression deepened by witnessing those obtained under the same physician at La Maternité. After two years devoted thus to a practical study of the subject, M. de Rothschild established a "policlinic" in the Rue de Picpus. Here mothers are advised as to the proper frequency with which their infants ought to be suckled, and when necessary sterilised milk is distributed to the infants of poor mothers. M. de Rothschild's thesis is founded largely upon observations made in this "policlinic." It has been republished by Masson et Cie under the title of *L'Allaitement Mixte et l'Allaitement Artificiel*, to which the Academy of Medicine has awarded the silver medal. We wish Dr. H. de Rothschild all success in the career which has begun so brilliantly.

DIRECT AND INDIRECT DAMAGE TO THE GENITAL TRACT.

AT the February meeting of the St. Petersburg Obstetrical Society, Dr. Barsoukoff read notes of a case of sloughing of the vagina. The patient had been admitted for poisoning by sulphuric acid. Eight days later the first reported sign of pelvic trouble set in, the surgeon noting slight vaginal hæmorrhage, and four days afterwards he withdrew from the vaginal canal a cylindrical sloughy membrane. It included the whole mucosa and much of the submucous tissue of the entire upper third of the vagina. There was no rise of temperature through the whole course of the case. Very naturally it might be concluded that sulphuric acid had not only been taken by the mouth but likewise injected into the vagina. There was no reason, however, for such a supposition in this case. Clinical evidence was entirely against it, as there was no trouble in the pelvic region till over a week after the poisoning. On the other hand, it is quite reasonable to assume that the sloughing of the vagina was due to the sulphuric acid poisoning. One effect of the acid when taken by the mouth is acute irritation of the alimentary canal. Now, as Harley, Hutchinson, and others showed many years ago, enteritis may be followed by discharge of the vaginal mucous membrane. Dr. Rhys Griffiths, of Cardiff, contributed to our columns a valuable paper[1] on this subject. His own case deserves study, as, unlike that above related which was extremely acute, the affection lasted for years, shreds of vaginal tissue coming away from the vagina from 3 to 4 inches long and from 1 to 2 wide. The abdomen was often swollen and there was intestinal irritation. What was much more comprehensible, as the latter complication was evident, was the passages of shreds from the rectum. The primary disease was in fact mucous colitis or membranous enteritis, more frequent in women than in men. Barsoukoff related three more cases in his own experience, all in typhoid fever patients and all at the beginning of the fourth week. In all the vaginal mucous membrane came away more or less complete as a slough, just as in his first case which was clinically even more acute. At the annual meeting of the Obstetrical Society of London in February, 1896, Dr. Playfair exhibited a slough forming a complete cast of the vagina from a case of typhoid. In chronic cases like that of Dr. Rhys Griffiths the vaginal mucosa comes away in shreds. In short, for reasons on which pathologists are not agreed, enteritis may cause membranous vaginitis, whilst if the primary intestinal lesion be acute the vaginal mucosa may come away as an actual slough. This remarkable symptom, then, must not be taken as proof of local violence or of the felonious administration of local applications. On the other hand, improper local applications may cause complete mucous casts of the vagina to come away quite painlessly. Mr. Targett exhibited a very perfect cast at the July meeting of the Obstetrical Society in 1895. The patient was a very neurotic single woman, aged 35. She had been told by an eminent authority that she had nothing the matter with her. Acting afterwards on the advice of a friend she began a course of local treatment by a quack remedy. A medicament in the form of a cylinder was slipped into the vagina, and after an interval of from three to five days the cast was shed after vaginal injection. Another cylinder was then introduced and the process repeated. Within ten months no fewer than fifty casts were expelled, and the patient seemed none the worse. As in Barsoukoff's typhoid cases, stricture of the vagina does not seem to follow these exfoliations. The medical jurist may learn from these cases that the vaginal mucous membrane is very prone to come away in certain circumstances. The phenomenon is not, however, produced by ordinary local violence, but from diferent causes, one being quite the opposite to local.

[1] Membranous Vaginitis and Enteritis, BRITISH MEDICAL JOURNAL, vol. I.

THE HABITUAL INEBRIATES BILL.

MOST of the amendments made on the Government Inebriates Bill in the Standing Committee on Law have been formal, and do not call for comment. But there are a few which will greatly enhance the value of the measure if agreed to by the Houses of Parliament. In the clauses relating to State inebriate reformatories it has been added that no regulation shall authorise the infliction of corporal punishment—a judicious amendment. In regard to certified inebriate reformatories, though the Treasury has power to contribute to the expenses of the patients, the council of any county or borough, or two counties or boroughs, may combine to undertake establishment or maintenance of a reformatory, and of the whole or any part of the expenses of the detention of patients. An important amendment is the extension of the Bill to Ireland. The most valuable of all the amendments, however, has been the boon to non-criminal inebriates, in the substitution of the attestation of a voluntary request for admission into a licensed retreat by one justice instead of by two justices, as at present. The British Medical Association has therefore substantial reason for congratulation in the improvement of the Bill by the Grand Committee.

EDMUND BURKE AS AN AMATEUR MEDICAL PRACTITIONER.

ON the occasion of unveiling the memorial to Edmund Burke at Beaconsfield on Saturday last Lord Rosebery showed that many-sided man in an aspect unfamiliar to most of his admirers and especially interesting to members of the medical profession. On the authority of the diary of a Miss Shackleton, who belonged to a family with which Burke had been intimate all his life, he described the great political philosopher in his country home at the Gregories as ending his day in what would in these less tolerant times be called unqualified medical practice. "There is," said Lord Rosebery, "no light more instructive on this extraordinary man than that he ends by compounding pills

for his poorer neighbours. The man whose eloquence was the delight of his country, whose writings created an impulse such as no other political writings ever have done, sat down to waste his time, as some might have thought, compounding rhubarb with other disagreeable adjuncts into remedies for his poorer neighbours." We have the highest respect for Edmund Burke, both as a statesman and as a writer, but we confess that we cannot share the admiration which Lord Rosebery professes to feel for him as an amateur dispenser. And indeed Burke does not appear to have been particularly successful in his use of the pills which he compounded. Speaking of his medical achievements he is reported to have told the following story: "I am like an Irish peer whom I used to know who was also fond of dealing out remedies to his neighbours. One day that nobleman met a funeral, and asked a poorer neighbour whose funeral it was. 'Oh, my lord,' was the reply, 'that's Taddy So-and-So, whom your lordship cured three days ago.'" We venture to say that there is "no light more instructive" on the lightness of heart with which even enlightened statesmen regard the question of qualification in regard to the practice of the healing art than the fact that Lord Rosebery evidently believes that he does honour to the memory of Burke by telling the world that he wasted the time which he could spare from safeguarding the constitution of the nation in tampering with the constitutions of his "poorer neighbours."

EXPERIMENTS ON LIVING ANIMALS.

It was to be expected that "conscientious objectors" to vivisection would attempt to make capital out of the fact that certain persons had been reported by the inspector under the Cruelty to Animals Act, 1876, as having committed breaches of the Act by performing painful experiments on living animals without the necessary licences or certificates. The Home Secretary, when interpellated on the subject recently, stated that the irregularities referred to had in every case arisen from inadvertence, but he nevertheless marked his sense of the gravity of the offence by temporarily suspending licences and refusing to renew them. In reply to a question by Mr. John Ellis the other night, Sir Matthew White Ridley explained that the conditions and regulations attached by the Home Office to the licences and certificates granted to persons for the performance of painful experiments on living animals under the Act were not always the same, but varied according to the nature of the investigation. He stated that the most important conditions (besides the limitations as to place, time, and number of experiments), and the conditions most frequently imposed were those as to reporting and the use of antiseptics. The latter condition was that the animals were to be treated with strict antiseptic precautions, and, if these failed and pain resulted, they were to be killed immediately under anæsthetics. The reporting conditions were in brief, that a written record in a prescribed form was to be kept of every experiment, and was to be open for examination by the inspector; that a report of all experiments was to be forwarded to the inspector; and that any published account of an experiment was to be transmitted to the Secretary of State. Another condition required the immediate destruction under anæsthetics of an animal in which severe pain had been induced after the main result of the experiment had been attained. Asked by Mr. MacNeill whether it was a fact that since the Act was passed in 1876 there had been no public prosecution under the Act, the Home Secretary replied that he was not aware of that, whereupon Mr. MacNeill exclaimed: "Well, I am"—a retort courteous which was received with laughter. The House of Commons is as much to be envied as the friends of Mr. Peter Magnus in the facility with which it is amused, and the cause of the "laughter" with which the reporters considerately underline innocent-looking remarks is not always apparent. If no public prosecution has taken place under the Act since it was passed in 1876, it is to be presumed that there has been no infringement of the Act which seemed to the responsible authorities to call for such a proceeding. If Mr. MacNeill knows of any instances in which these authorities have neglected their duty he should call them to account for their remissness. But doubtless he prefers the safer course of insinuating charges which he dare not bring to the proof.

THE TRANSPORT OF SICK AND WOUNDED BY RAIL.

An important and exhaustive article on Continental regulations for the transport of sick and wounded by rail, with tables and diagrams of carriages and equipment, by Surgeon-Captain C. H. Melville, Medical Staff, appeared in the May number of the *Journal of the Royal United Service Institution*. It well deserves the attention of our War Office, although, fortunately for us, girt by the "silver streak," such warlike arrangements have less practical interest for us than for our Continental neighbours. Nevertheless, even within our shores, in the event of actual or attempted invasion, we might well need railway ambulance for our wounded defenders, while, as a Continental power in India, we ought certainly to consider whether the organisation elaborated by the great military Powers can be utilised there by us. The subject is discussed under the heads of Permanent, Improvised, and Ordinary Hospital Trains in the French, German, Italian, and Austrian Armies, but the Russian regulations are not mentioned. All such organisation on the Continent is based upon the State control of the railways, and the fact that they are placed under direct military control during war on strategical grounds. The majority of the railways have also been constructed on strategical plans, and not for purely commercial objects as with us; the foreign War Offices have therefore much freer scope than ours ever can have in dealing with private and generally rival companies. The French and German, especially the latter, have the most elaborate regulations for railway ambulances in war, and have specially constructed rolling stock always ready for the permanent hospital trains. The first essential is through communication in such trains between carriage and carriage on the corridor principle, and it is very doubtful if our railways possess sufficient rolling stock of that kind to improvise proper hospital trains. Then they should be fitted for both lying-down and sitting-up cases; this necessitates specially constructed carriages without partitions, or baggage waggons with special fittings. For lying-down cases the Germans use the ordinary field stretchers provided with mattresses and bedding, and slung in tiers with spring hooks to the walls and pillars of the carriages; the French use a special stretcher called the *lit-brancard*; the Austrian beds called *Trag-betten*; and the Italians a special stretcher called "*Barella-lettucio*;" of these probably the French are the best, while the German, if more rough and ready, are perhaps the most serviceable. In the assortment of the wounded the worst cases are placed on the top tiers, as more easily got at, while the slighter cases are disposed below. The arrangements for lighting, ventilating, and warming the carriages are all carefully detailed, while each carriage carries a commode. Special carriages are provided both for sitting and sleeping for the medical and subordinate staff, and waggons specially fitted for store and dispensary purposes. Perhaps one of the most important is the kitchen waggon, which is elaborately fitted, because upon its capacity for furnishing diets the size of the hospital train depends. The German kitchens are admirably fitted, but their service establishment is inadequate, only a cook and assistant being allowed for 300 patients, whereas the Austrians allow two cooks for 104 patients. The proportion of medical officers per cent. to patients varies from 1.3 in the German and 1.5 in the French to 2 in the Austrian and Italian services; the sick

attendants vary from 10 to 20 per 100 patients. The medical and nursing staff does not appear to be sufficient for the arduous duties required. When a permanent hospital train is mobilised it is put at the disposal of the principal medical officer of the field force, on whom devolves the responsibility of evacuating all sick and wounded from the fighting line in front. Each train has a commandant, who acts under instructions from the Sick Transport Committee, and is responsible for all locomotive details connected with moving, halting, siding of the train, and such like. From all this it appears that a permanent sick train is a very elaborate unit in Continental war, and one requiring special rolling stock and equipment which we certainly do not possess. We, indeed, can only aspire to improvised ambulance trains, and the question is, How best can we form them? Mr. John Furley has offered to demonstrate to any general railway manager how an ambulance can be formed from any ordinary luggage van, "at a cost of tens of pounds as compared with thousands required for the permanent ambulance trains." The War Office would be well advised to invite him to carry out such a demonstration.

THE CANADIAN QUARANTINE REPORT.

The report of Dr. Montizambert, General Superintendent of Quarantine in the Dominion, begins with a general statement as to the prevalence of the principal infective diseases throughout the globe, interspersing facts about the presence of cholera in the winter of 1896-7 in Hong Kong, China, and Formosa, and its conveyance by the *Nubia* to Plymouth, with extracts from Mr. Hankin's letter to the Pasteur Institute conveying his views upon the bactericidal properties of Ganges water in regard to Koch's cholera vibrio. Plague, small-pox, yellow fever, are in turn briefly touched upon, primarily from the point of view of their presence, threatening or otherwise to the Colony, and coincidently with regard to any new suggestions or discoveries bearing upon their origin, means of propagation, or any prophylactic measures likely to prove useful. The writer, coming into more immediate relationship with his own work, repeats and emphasises a suggestion which he has already made that examination and disinfection should be carried out as far as possible at the point of embarkation in the East. He would have stations under the Quarantine Board at the various ports from which emigrants embark for Canada; would disinfect suspected articles before, rather than after, the voyage; and where a proper medical officer accompanied the ship and no case occurred on board during the voyage, would grant immediate *pratique* on arrival. Another suggestion is that each vessel should have its own steam disinfecting apparatus, and that the date when proper and thorough disinfection on board had been carried out should be accepted as the date from which the days of delay should be counted. A full reprint of his own interesting address at Montreal comparing the difference between our own practice of inspection and surveillance with the similar practice in Canada *plus* occasional retention concludes this valuable report.

DEATH CERTIFICATES.

A case came into the police courts in the north last week which serves to point more than one moral for the inexperienced or too easy-going practitioner. "A young, deserving, and hardworking medical man"—so described by the prosecutor (the coroner)—was fined by the Bench £5 and costs "for having made a certain false certificate of death." It appears from the newspaper account that a child, aged 3 weeks, suffering from thrush was brought to the surgery, seen and prescribed for on that occasion only, and became "all right," but died quite suddenly six weeks later. The mother called and saw the doctor some hours after the child's death, and the doctor, having "inspected" the body, certified in the usual form that the cause of death was "Primary, acute gastritis; secondary, convulsions." A subsequent *post-mortem* examination established the fact that the child had been suffocated by water lodging on the windpipe. There was no sign of gastritis. It was stated at the inquest that the child "was sick" at 3 A.M., having been quite well up to then. The mother gave it some water to drink and went downstairs, and on returning in three quarters of an hour found the child dead. The medical man allowed himself to feel "satisfied in his own mind that the child had died from the ailment which he had attended it for" on one occasion six weeks before. He had nothing whatever to go upon except the mother's bare statement, whatever that may have been, yet he took upon himself the responsibility of certifying for registration purposes that the cause of death was gastritis. No man has a right to "certify" to any fact unless he has a reasonable certainty with regard to it, based on matters within his own knowledge and observations, not on the mere assurance of others. Fortunately, medical men are not often so easily satisfied. It is of paramount importance both to the community and to the medical profession that the statutory death certificate should scrupulously observe the conditions contemplated by the statute in pursuance of which it is given. Slackness not only vitiates highly important vital statistics, but what is of far more importance, tends to destroy public confidence in medical certificates, and may even "play into the hands of the criminal classes." The Select Committee on Death Certification (1893), from whose report we have borrowed this phrase, complained that deaths were "certified by medical practitioners who had not seen the patients for weeks or months prior to death, and who only knew by hearsay of deaths having occurred." It is true that the Committee admitted the necessity for some definition of "attendance during last illness," and the fact that every one must therefore interpret the words for himself at his own risk. But it should be generally known that this Committee recommended that the words should be formally defined as meaning "personal attendance by the person certifying upon at least two occasions, one of which should be within eight days of death."

CERTIFICATE OR INQUEST?

A medical practitioner was recently called a distance of four miles to see a patient who, he found, had been ill for two or three days. The patient was in a collapsed state and suffering from strangulated hernia, which taxis failed to reduce. An operation was imperative, but before a fellow practitioner and the necessary instruments could be procured the patient died. On inquiry it was ascertained that the local chemist had given the deceased a bottle of medicine the day before death. It would appear that the actual cause of death in this instance was quite clear, although the medical attendance was short and the death occurred rapidly. If no doubt was entertained that the death arose from natural causes, and that it was not accelerated by any medicine supplied by the chemist—then we think that the medical attendant was quite justified in giving a certificate of the cause of death to the best of his knowledge and belief. Such a certificate would not prevent the coroner holding an inquest, if, on certain representations being made to him by the relatives or anybody else, he felt it advisable to do so. In such cases, however, when doubt exists in the mind of the medical attendant as to the desirability or otherwise of giving the usual certificate, he can before doing so communicate the facts of the case to the coroner and await his reply. The coroner will make a preliminary inquiry, and will determine whether the circumstances in connection with the case are such that an inquest should be held. If so, the question of giving a certificate will not arise. If there is no inquest, then the practitioner will grant the usual certificate, the responsibility, if any, resting with the coroner. With regard to the medicine sent by the prescribing chemist, the mere fact

would not necessitate an inquest, unless it was stated that the death had been caused or accelerated by taking the said medicine. As a rule, if a practitioner is in doubt about the certificate, he should write a private note to the coroner, stating the facts, and that official will advise.

OLD MEDICAL STUDENTS.

Some authorities have suggested that a limitation should be fixed as to the latest age at which a student can be admitted into the profession. There appears to be no maximum in the British Empire. We find from our contemporary the *Chronique Médicale* that there certainly is no such limitation in France. Quite recently a student over 50 qualified in Paris. There practises in a village in the centre of France a gentleman who lived to middle life as superintendent of police. When over 40 he studied medicine and qualified. Since taking his degree he has exercised both his medical and his constabulary functions. This, says the *Chronique*, was found out at the end of a few years—an enigmatic observation. Does the combination of two callings answer, in respect to sanitation for instance, or does the medical policeman find double duties too onerous to be performed satisfactorily? All old playgoers remember the *Miller and his Men*, and all who ever saw that melodrama wondered when a body of men who were millers all day and robbers all night managed to get any sleep. The same problem meets us when we consider the late-qualified gentlemen in the French village. Still more remarkable is the case of a M. Beaudemoulin. He lived to old age as a literary man of some note; his original works are not named, but he translated Horace into modern verse and—what proved more lucrative—he prepared a new liqueur and succeeded in getting it patented. At the age of 72 he began to work for the degree of Bachelor of Science of Paris, with intent to enter the medical profession. This was in 1876, but his intent was never fulfilled. Retiring age is a much more important question; yet in France, where rules for officials are in many respects unusually strict, they do not seem more particular than they are about limitation of age for qualification. A few years ago a surgeon to the Messageries Maritimes was still on duty in one of that company's steamboats though 81 years of age!

MATCH MAKING AND PHOSPHORUS POISONING.

Canon Wilberforce presided over a meeting held in the Jerusalem Chamber, Westminster Abbey, on July 11th, to consider the question of phosphorus poisoning among girls employed in making matches. In opening the meeting, which was attended by a large number of influential persons, including many ladies, Canon Wilberforce said that it would aid in educating public opinion if people would banish from their houses every kind of match made from poisonous phosphorus. The Matchmakers' Union were of opinion that the only effectual remedy would be the prohibition by law of the use of poisonous phosphorus in the making of matches, a regulation which had been in force in Denmark for twenty years. The Baroness Burdett-Coutts moved a resolution to appoint a committee to watch over the interests of women engaged in dangerous trades, and in London, especially those engaged in the manufacture of matches with poisonous phosphorus. It had been said, apparently with truth, that the public were not satisfied to have only safety matches, and it was therefore necessary to educate public opinion as to the danger attending the manufacture of the other form. The Duchess of Sutherland, who seconded the resolution, said that working women needed the intelligent and determined help of men and women who were willing to insist that those who toiled to make England rich should by England be kept healthy in body and contented in spirit. The motion was agreed to, as was also a motion moved by the Countess of Portsmouth, seconded by Lord Hugh Cecil, and supported by Mr. Augustine Birrell, M.P., appointing a deputation to wait upon the Home Secretary to seek the total prohibition by legislative enactment of the use of phosphorus in its poisonous form, and of the importation of matches made from such phosphorus. Dr. Oliver, of Newcastle-on-Tyne, and Professor Thorpe, of London, who were recently appointed by the Home Secretary to inquire into the causes and prevention of lead poisoning in the Potteries, have been appointed by Sir Matthew White Ridley to undertake a similar inquiry into the dangers incidental to lucifer match making, and have been commissioned to visit some of the factories on the Continent. Dr. Oliver and Professor Thorpe last week visited the Potteries district, and began their inspection at Messrs. Doulton's works at Burslem.

VACCINATION: MR. CHAPLIN AND THE "STAR."

On June 17th Mr. Chaplin said, in Committee on the Vaccination Bill: "The number of children born annually in this country was about 922,000. The vaccination returns for 1893 showed no less than 150,000 of these remained unvaccinated, while in 1897 that number had been increased to 250,000, and at the present time the number was scarcely less than 300,000, or a third of the whole." Regarding this the *Star* says (June 29th): "Mr. Chaplin has admitted that a third (that is to say 300,000) of the children born every year are not vaccinated." The *Star* is not a *laudator temporis acti*, nor, on the other hand, does it take any thought for the morrow. In its estimation the present year is "every year." Being on one side of politics it naturally wants to help the other side. "There are therefore 300,000 fathers who object to vaccination, and who will be disposed to vote for the party which abolishes it. Which party then means to secure these 300,000 votes? We commend this question to the attention of the present Government." Leaving out the trifling considerations as to how many of the 300,000 parents had no votes, how many of the children were dead before the vaccination age, how many were medically postponed, how many were lost sight of through change of residence, and so forth, how does the *Star* know that the great majority of the parents were not merely indifferent, and resident in places where the vaccination law is in abeyance, and where no one had approached them on the subject, or had offered to perform the operation? And what of the other side of the question? How many votes might be lost by a political party which would "abolish vaccination"? Advice which costs nothing is often worthless, and the *Star's* counsel to the Government is of this nature.

THE HISTORY OF THE MASSAGE TREATMENT.

It is often impossible to determine the origin of our methods of treatment, particularly as most of them date back to the dark ages, when accuracy in detail was not a characteristic feature in medical records. Sweden is usually credited with being the place of origin of the scientific system of massage and physical exercises. This is no doubt correct as far as modern Europe is concerned, but the real originators of massage and physical exercises appear to have been the Chinese. An interesting article appeared recently in the *Deutsche medicinische Wochenschrift* in which reference was made to a book lately published by P'an Wei, Governor of Hupeh. The author, a great authority on massage, was consulted by the late Empress of China. The Chinese legends contain many references to various systems of physical exercises and these are associated in a curious manner with metaphysical thought. Life, according to the Chinese traditions, is entirely dependent on "air currents" which are designated as the primary *aura* of the organism. So long as the body is permeated by the "air current" it is proof against disease. The object of physical exercises is to circulate the "air current." The Chinese system is di-

vided into three periods, each period occupying 100 days. The first period should commence at the time of the new moon. The patient must rise at 4 A.M. and walk outside his house, and take seven deep inspirations; immediately after this two youths, who have been specially trained, commence a gentle friction all over the body, starting over the cardiac area. At the time of full moon a further set of inspiratory exercises must be taken. Later on in the second period the various parts of the body are rubbed with wooden planks until the muscles are hardened. It is not until the hardening of the muscles takes place that the real physical exercises commence. Between the fifth and sixth month is the period of greatest activity; the European dumb-bell is replaced by large sacks filled with stones. In the third period the back muscles are chiefly exercised. Great benefit is said to have resulted from this system.

THE HEROISM OF A MEDICAL OFFICER.

Sir Walter Foster has submitted the following interesting statement for the consideration of the Secretary of State for India, in reference to the campaign on the Indian Frontier: "Lieutenant Ford, of the Malakand Field Force, was dangerously wounded in the shoulder, and was bleeding to death from the bullet having cut the main artery, when Surgeon-Lieutenant Hugo came to his aid. The fire was too hot to permit lights to be used to examine the wound, and there was no cover; nevertheless, the surgeon struck a match, and examined the wound. The match went out amid a splutter of bullets which kicked up the dust all round, but by its uncertain light he saw the nature of the injury, and seized the bleeding artery, and as no ligature was available, he remained for three hours under fire holding the vessel between his finger and thumb. When, at length, it seemed that the enemy had broken into camp, he picked up the officer, who was unconscious from loss of blood, and bore him into a place of safety without relaxing his hold of the artery." Sir Walter Foster has pressed on the authorities the expediency of rewarding in a suitable manner this splendid act of devotion.

ASSURED PENSIONS FOR LUNATIC ASYLUMS OFFICIALS.

The Lunacy Bill (Section xx) proposes a minimum of pension for asylum officers on the Poor-law superannuation scale, with a permissive higher scale on the lines of the existing lunacy law. The opposition to assured pensions in the House of Commons is considerable, and the Parliamentary Committee of the Medico-Psychological Association has issued a memorandum drawing attention to the grounds on which it considers that assured pensions would be beneficial to all concerned. Asylum service, the memorandum states, is the only one of a public or *quasi*-public nature that has no assured pension system, whilst it is considered to be by far the most exacting, wearing, and responsible of all such services. Attention is drawn to the fact that the rate of pay is not sufficient to admit of any adequate provision for old age. The efficiency of asylums, it further points out, would most certainly be improved by such a system of pensions, since a higher class of officers would be attracted to and remain in the service; and there would be a greater inducement to obtain advancement. It is thought also that greater care in the selection of officers from the larger field of applicants would result. Pensions at the present time are given or withheld in the most capricious manner by the county councils, although many of the existing officers were attracted to the service by the pension scale permitted by the existing lunacy law and the habitual granting of superannuation allowances by the Visiting Committees. The discretion to give pensions, originally granted on the recommendation of the Select Committee of the House of Commons in 1860, has been clearly stated in Acts of Parliament, and reconfirmed in the Lunacy Act of 1890. The Court of Queen's Bench has repeatedly decided that discretion given by Act of Parliament "must not be arbitrary, but must be exercised on legal grounds and according to justice and law." The refusal of pensions, therefore, at the present time, may be contrary to the law, and it is certainly unjust that the officers of such an arduous service should not be accorded the assured pension which Parliament has granted to so many other services. The injustice is enhanced by the often illusory permissive pension scale of the existing Act. Our public asylums are at present worthy of national pride, and it is to be hoped that their high standard of efficiency may not be lowered by false economy on the score of pensions. This standard can only be maintained by making the service attractive to the high class of officers that has been hitherto drawn to it; and this most certainly can be better achieved by removing the present uncertainty by Parliament granting an assured pension system.

THE PRINCE OF WALES'S HOSPITAL FUND.

It will be remembered that the Council of the Prince of Wales's Hospital Fund recently resolved to make a special investigation into the needs, merits, and general condition of the London hospitals. For this purpose a Committee of Visitors—consisting of twenty members, including representative members of the medical profession as well as laymen experienced in the management of hospitals—has been appointed. As far as possible an effort has been made, in selecting the members of this Committee, to choose those who are not now actively engaged either in the management or in the practice of any hospital. The Committee has divided itself into four subcommittees, each of which undertakes to visit one of the four quarters into which the metropolis has been divided for the purposes of this inquiry. Matters have been so arranged that no person having any connection with any particular hospital will visit that hospital, and it is believed that the inquiry of the Committee will have the effect not only of supplying the Council of the Fund with the information necessary for the equitable distribution of the money at its disposal, but will have also an influence in encouraging the hospitals to introduce internal reforms where necessary. It is hoped that the whole of the visits will be completed and the reports rendered by the end of the present month.

WOMEN-STABBERS.

The recent outrages at Lincoln recall to us the famous case of the prototype of women-stabbers, Kenwick Williams, known in his day as "The Monster." He was a native of London, and carried on the business of an artificial flower maker. In 1789 London was thrown into a kind of panic by his strange misdeeds. Several young women were pursued and stabbed by a man whom they were able to describe, and who was at length arrested on the strength of their description. "His appearance," according to the evidence of the injured maidens, was "altogether genteel." At length he stabbed a young lady as she was coming from the Queen's palace. A relative, Mr. Coltman, tracked the criminal, but it took six months to catch him, though he tallied well with his description in the police notices, and continued his brutal practices. He was arraigned on seven indictments for cutting and maiming several females, and his trial at the Old Bailey commenced on July 8th, 1790. His behaviour in the dock was eccentric, and he begged to be allowed to read a kind of brief which he had prepared in order to "supply the deficiency of his memory." He professed himself the warm friend and admirer of that sex whose cause was now asserted; and he concluded by solemnly declaring that the whole prosecution was founded on a dreadful mistake, which he had no doubt that the evidence he was about to call would clear up to the satisfaction of the Court. An *alibi* was unsuccessfully pleaded,

and he was found guilty on three indictments; being sentenced to two years' imprisonment on each. His failing seems to have been a primary perversion, distinct from the tendencies to cruelty observed in some old voluptuaries. Wilson and Caulfield, in their well-known *Wonderful Characters*, conclude their notice of him in the flowing diction of our grandsires: "As we cannot find any further notice of this man, we suppose his sentence entirely eradicated those diabolical propensities which so degraded the name of Kenwick Williams. What time he paid the debt of nature is therefore uncertain."

AN ERNEST HART SCHOLARSHIP.

THE Council of the British Medical Association resolved at its last meeting to found as a memorial of the late Mr. Ernest Hart a scholarship to be called "The Ernest Hart Memorial Scholarship for Preventive Medicine." It was felt that no more fitting means could be found to commemorate at once Mr. Hart's great services to the British Medical Association and to the advancement of the study of preventive medicine. The scholarship, which will be of the annual value of £200, will be tenable for two years.

MEDICAL OFFICERS FOR ARMY CORPS.

CAPTAIN NORTON'S question and Mr. Brodrick's answer as to the number of medical officers required for two army corps, supposed to be ready for embarkation, touch a matter to which we have repeatedly called attention. Mr. Brodrick stated, correctly enough, that 226 medical officers would be required; but that is only for the front line with the troops, and affords no provision for hospitals on the line of communications or at the base. Ten per cent. of the total has also to be added for contingencies. We have always maintained that nothing short of 400 medical officers would be necessary for our two army corps, from front to base, and having a reasonable number in reserve. Mr. Brodrick gave no hint as to how these officers were to be found; they are certainly not available at present. We remain, as before, confident that an establishment of 1,000 medical officers is required for the Royal Army Medical Corps, and that the sooner it is brought up to that number the better.

MEXICO AS A HEALTH RESORT FOR CONSUMPTIVES.

IN the *Journal of the American Medical Association* of May 21st, Dr. W. S. Watson expresses the opinion that portions of the republic of Mexico, especially the high tablelands at an elevation of from 3,000 to 7,000 feet above the sea level, offer more and greater advantages as a health resort than any other country. High altitudes in a southern latitude offer all the climatic advantages which are of greatest importance in regard to the cure of consumption, namely, dryness of air, freedom from micro-organisms, irritants, and noxious gases, the largest possible amount of sunlight, diminished barometric pressure, ozoniferous atmosphere, and, most important of all, a climate that allows of the largest measure of outdoor life. There is, says Dr. Watson, an increase in electrical tension, a higher potential quality the higher the altitude—in other words, the dryer the air the more positive are the electric currents that surround us. In Mexico the rainy season occurs between the months of April and November, just when rain is needed to cool the air. By a convenient meteorological arrangement which it is to be wished could be imitated elsewhere, most of the showers occur during the night, thus interfering but little with outdoor life. The accommodation for invalids is at present very scanty, but the deficiency would doubtless soon be removed if the demand for it increased. The general conditions in Mexico are, Dr. Watson remarks, greatly misunderstood. The capital has many great social attractions, and intellectually it is far from destitute. Educational facilities are abundant; there are professional schools for women as well as men, an academy of fine arts, a conservatory of music, school of mines, school of jurisprudence, military institute, medical and commercial colleges, preparatory school for boys, deaf, dumb and blind institutes, a national museum, and a superb public library. Musical culture is a prominent feature in Mexico. One of the most important institutions is the school of arts for women, where poor girls have unequalled advantages for learning. The Government gives them a comfortable room and two meals a day. Many of the poor are supplied with clothing. As regards civility and politeness, Dr. Watson says the Mexicans are the most polite people he has ever seen. Hospitality is a national characteristic. Family life is delightful in its tenderness and grace, and nothing is spared to make the home beautiful; to this end every element of refined taste and culture is brought to bear.

FAMINE AND PLENTY IN THE MIDDLE AGES.

THE series of remarkable studies of the domestic and social life of the Middle Ages which M. le Vicomte G. d'Avenel has contributed to the *Revue des Deux Mondes*, has now brought him to the discussion of the cost of food in the Middle Ages. These studies, though a little repellent in form to those who are frightened by a few statistics, are full of instruction, and do more to inform us as to the true conditions under which our ancestors lived than the works of those historians who fill their pages with the obscure manœuvres of courtly politicians and the wars to which they gave rise. Taking the averages of an immense number of statistics which he has collected, M. d'Avenel finds that, during the twelfth, thirteenth, fourteenth, and fifteenth centuries, the day labourer was, so far as regards his necessary expenditure on food, better off than his representative at the present day by about 4 per cent. He is, however, careful to point out that averages convey a much less correct impression of the actual condition of the labouring classes in the Middle Ages than do the figures for the present day. Owing to the badness of the roads, owing often to the complete absence of roads, it was always very costly, and often impossible, to move grain from a district in which the crop was plentiful to one in which it had failed. He gives some extraordinary instances of the enormous differences in the price of wheat in not distant parts of France. Thus, in 1197 the price of wheat in different parts of Normandy alone varied from 1 franc to 16 francs, while in one district of eastern France it reached 43.50 francs. Variations of a similar nature were common all through the period dealt with, so that while peasantry of one district were living in plenty, those of another—which are now only a few hours distant by rail—were suffering from famine. Another effect of the difficulty or the impossibility of transport was that in districts where the crop of wheat failed bread had to be made from various substitutes—rye, barley, buckwheat, millet, and oats mingled in varying proportions. In 1421 white bread which M. d'Avenel believes must have contained a large proportion of rye, sold in Paris at 25 centimes the kilogramme, brown bread cost 17 centimes, and "workmen's bread" 13 centimes. During the same period the price of meat was almost continuously very low, and M. d'Avenel estimates that in the second half of the fifteenth century it was only about half as costly as at the present time when the price is estimated in terms of a labourer's daily wage at the two periods. The meat, however, must have been of a very inferior quality, as is shown by the relative price of the live animal and butcher's meat. Milk, butter, and cheese, on the other hand, were very dear, but eggs were cheap. It must be remembered that during the centuries mentioned the potato was not cultivated in Europe, and it would seem that peas and broad beans supplied the place of that vegetable now so universal on the table of all

classes of society. It is obvious that the knowledge of facts of this order is of the greatest interest and importance in epidemiology, and that without allowing due weight to the effects on public health of the great variations in the price and in the quality of staple articles of diet in different localities, it is impossible to form a just opinion as to the causes which contributed to the production of the great epidemics of the Middle Ages. The conditions brought about by imperfect means of communication throughout Europe before the New World was called in to adjust the balance of the markets of the Old, present the same features, but to an exaggerated extent, as those which have so severely taxed the resources of the Government of India during recent years.

THE HUXLEY LECTURE.

We understand that the winter session at the Charing Cross Hospital Medical School will be opened on Monday, October 3rd, when Professor Virchow of Berlin has undertaken to deliver the second Huxley lecture on Recent Advances in Science and their Bearing on Medicine and Surgery. The lecture will be delivered in the Town Hall of the St. Martin's Vestry at 4 P.M. It will be in the recollection of our readers that the first lecture was delivered in 1896 by Professor Michael Foster, F.R.S., and we may congratulate the authorities of the School on their success in securing two such distinguished men to do honour to the memory of the late Professor Huxley, one of the most illustrious men who ever passed through the medical school. His name is also perpetuated in the School by the annual award of an entrance scholarship of 55 guineas and a medal and prize of £10 open to students at the end of their first winter session; the examination is in anatomy and physiology.

STATE CHILDREN'S AID ASSOCIATION.

Lord Herschell, as Chairman of the State Children's Aid Association, has addressed a memorial to the President of the Local Government Board as a rejoinder to a letter addressed to five of the Boards whose children are displaced by the closing of the Sutton Schools. In this letter it is advised that the five unions concerned should build blocks not to contain more than sixty children in each, and a certain number of cottage homes for elder girls. The memorial points out that this advice is contradictory to Mr. Chaplin's action in breaking up the Sutton Schools, and urges that the President should reconsider his position in view of the facts which they lay before him as to inquiry reducing pauperism. In the light of the experience which shows how easily investigation reduces the numbers requiring the creation of special provisions, we trust that before the final step is taken, the suggestions of the State Children's Aid Association will be carefully considered.

THE EDUCATION OF DEAF-MUTES IN INDIA.

There exist in the Indian Empire, according to the most recent census, some 150,000 deaf-mutes. No provision has hitherto been made for the special education of the class with the exception of a school in Bombay, containing about thirty pupils, and some private efforts of a limited description. A petition has recently been submitted to the Secretary of State for India by some educated deaf-mutes of Bombay, pointing out the absence of organised and adequate arrangements such as exist in all civilised countries for the purpose of enabling persons afflicted with the loss of the sense of hearing and speech to overcome, in so far as that is possible, the serious disability thereby entailed, so as to fit them to participate in the enjoyment and utilisation of life. The petition has been referred for the consideration of the Government of India, and it is certain that the charitable impulses of Indian administrations which have inspired such magnificent undertakings for the relief and restoration of those disabled by sickness will result in the establishment of schools in all the principal centres of population for the special education of the deaf-mute.

MEDICAL GRADUATES' COLLEGE AND HOSPITAL.

We stated some time ago that a movement was on foot to found in London a medical graduates' college and hospital, designed to provide better facilities for post-graduate study in London. A building at 22, Chenies Street, Gower Street, W.C., has now been purchased for the purposes of a college, and on Thursday next, July 21st, a public meeting will be held at 5 P.M., when full information will be given to those medical men who may be able to attend as to the objects of the college. The chair will be taken by Sir William Broadbent, Bart. The building will be open to inspection at any time.

Mr. W. T. Holmes Spicer has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfields. The vacancy is caused by the retirement of Mr. Nettleship.

After a long and successful career of over thirty years Dr. J. A. Campbell has resigned the post of medical superintendent of the Cumberland County Asylum at Garlands. Dr. Campbell is an ex-President of the Border Counties Branch of the British Medical Association, and he presided with conspicuous ability over the Section of Psychology at the annual meeting of the Association at Carlisle, where, too, his hospitality was a conspicuous feature of that successful gathering.

The health of the troops garrisoning Lundi Kotal, in the Khyber Pass, is still fairly good as regards British corps, and excellent so far as native troops. The heat is great, but the tents are well protected with thick straw thatch, and the men are comfortable.

German Dermatological Congress.—The sixth Congress of the German Dermatological Society, which was held recently in Strassburg, attracted a large gathering, which included representatives from Austria-Hungary, Switzerland, Holland, Italy, and Russia.

Matches without Phosphorus.—Belgium, although a small country, is frequently to the fore in the matter of the application of science to industry. Its Government has offered a premium of 50,000 francs to the inventor of a paste for match heads free from yellow phosphorus and capable of igniting upon any dry surface. The conditions under which the competition will take place have been determined by the Ministry, who have agreed that it shall be international in character and remain open until January 1st, 1899. This ought to be a stimulus to manufacturing chemists, whose discovery, apart from any prize, would confer enormous benefits upon the human race and rid match making of one of its principal terrors.

Antirabic Inoculations at Oporto.—In a recent number of the *Archivos de Medicina* Dr. J. Arantes Pereira, Director of the Pasteur Institute of Oporto, gives an account of the working of that Institute since its establishment. On November 15th, 1896, he without any official assistance opened the Institute for the purpose of supplying the needs of the northern part of Portugal in which rabies is more common than in other parts of that country. From the date of opening of the Institute to December 31st, 1897, 80 persons have been treated and many more have applied in whom it has been judged unnecessary to carry out the inoculations. Of the 80 persons, 48 were male and 32 female, their ages varying from 5 to 79. In 70 cases the bite had been inflicted by a dog, in 7 by a cat; in 2 the treatment was carried out because of cuts or pricks inflicted in making *post-mortem* examinations and in 1 case by way of prophylaxis. In 40 cases the animals that inflicted the bite were proved experimentally to have been suffering from rabies; in 39 they were under suspicion. The method of inoculation was practically the same as that used in the Institut Pasteur of Paris. No death occurred.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Habitual Inebriates Bill came before the Grand Committee on Law on Friday in last week, and had a comparatively easy passage through its Committee stage. Several important questions were raised, such as the character of the sentence for the criminal offence, and the inebriety of the convicted person at the time of committing the offence, but the Home Secretary met them in a conciliatory spirit, and the amendments were withdrawn. Promise was given that the person charged with being an habitual inebriate should have full notice of this particular indictment. Mr. Pickersgill also succeeded in inserting words to forbid the infliction of corporal punishment in any State inebriate reformatory. Mr. Hazell made a gallant attempt to insert words for the recovery when possible from their friends, or out of their property, of the cost of maintenance of habitual drunkards in State institutions, but the effort was unsuccessful, for the idea of friends being liable suggested to members of the Committee such a wide and possibly personal risk of liability, that the amendment had no chance. An amendment was also lost which proposed to relieve the guardians of those paupers who habitually came into workhouses as a result of drunkenness, but this extension of the scope of the Bill was considered likely to jeopardise its chances, and was therefore withdrawn. The Bill was amended in some directions usefully by the Home Secretary, and ordered to be reported after about an hour and a half's consideration. The report stage may come on next week.

The Poisons Bill has had a short life in the House of Commons. It came down from the Lords last week, and was laid upon the table, and there it remained till Tuesday. There was none so poor as to do it the reverence of taking it up, and on Tuesday Mr. Balfour sacrificed it in the first batch of massacred innocents. It had in any case little or no chance, for the chemists all over the country had marked it down and had most industriously stirred up their representatives against it.

The Vaccination Bill is among the measures which the Government hope to pass. It is to come on early next week, probably on Tuesday, and by that time there will be some five or six pages of amendments and new clauses to be considered on the report stage. The progress of the Bill, if not its existence, depends on the attitude of the Government as regards the acceptance of a declaration of conscientious objection. If they bring the Bill into harmony in this respect with the recommendations of the Royal Commission, the opposition will practically cease; if not, a day or two is sure to be spent on the report stage.

The Lunacy Bill has come down from the Lords, and has been placed on the paper for second reading. Mr. Balfour, however, spoke of it on Tuesday so doubtfully that its chances of passing this session are by no means good. The superannuation clauses are sure to excite controversy, and this may be regarded as fatal to its prospects so late in the year.

The Irish Local Government Bill pursues its slow and somewhat stormy progress through the report stage. Many of the points connected with the organisation of counties as regards health administration have been left over till the Bill is recommitted. Some valuable changes have been made, however, in the direction of constituting district hospitals in rural areas under the control of a joint committee of guardians and nominated governors. No further provisions have been added as regards superannuation, but in a voluminous Bill like this, which will make a small volume when printed, it is impossible even in the House to grasp all its bearings till it is reprinted with the recent amendments.

The Pharmacy Acts Amendment Bill has passed the Grand Committee stage in the House of Lords. It did not, however, pass quite *sub silentio*. The Lord Chancellor drew attention to the fact that the Pharmacy Acts did not apply to corporations such as drug stores carried on by companies, and declared that common sense demanded that they should so apply. In this the noble and learned lord was supported by Lord Herschell, who stated that his attention had been drawn to a case in which a chemist and the various members of his family, by reason of having formed themselves into a company, escaped the operation of the Pharmacy Acts. The Courts had held that the word "person" in the Acts meant a natural person and not a corporation. The Earl of Hardwicke, who was in charge of the Bill, undertook at a later stage to bring up an amendment dealing with the point.

The London University Commission Bill is one of the measures which Mr. Balfour places high on the list of Bills to be passed this session. The first day's proceedings in the Grand Committee on Tuesday last do not, however, augur well for its progress. An ominous objection was raised at the beginning of the consideration, in the shape of a very difficult point of order. The Government have, so far, failed to get the necessary resolution passed in Committee of the whole House, authorising the expenses contemplated in the Bill. This absence of authority for essential expenditure was raised as an objection to progress being made, and although the Chairman ruled in favour of going on with Clause 1, several divisions were taken and much time occupied. The constitution of the Commission was criticised, and other names suggested and defeated. The addition of two members to represent external students was proposed, but the Government would not give way. Then the question of secretary came up, and in the absence of any authority for expenditure it was suggested that he should be described as "honorary." Finally, Clauses 1 and 2 were passed and Clause 3 reached before the Committee agreed to postpone the further consideration of the Bill. The *contretemps* over the question of expenses has delighted the opponents of the measure, and certainly has delayed its progress in Committee. The Committee stage will last at least one more day, and on report the opposition will be renewed. The attitude of the Government on the Vaccination Bill will materially affect the fortunes of the University Bill, for if no concession is made to those who advocate a conscience clause the time taken up in passing the former Bill may dangerously limit the time at the disposal of the Government.

VACCINATION.—Mr. Channing had a question on the paper addressed to the President of the Local Government Board with regard to the case of a child named Frederick Edwards, whose death, he said, "had been found by a coroner's inquest in Southwark to have been caused by erysipelas set up by vaccination," but when his name was called by Mr. Speaker the hon. member did not respond. It seems he proposed to ask whether "this child was vaccinated by Dr. Cory, superintendent of the National Vaccine Establishment, Lamb's Conduit Street; whether the lymph used was glycerinated calf lymph, and similar to that used in the case of the child Annie Little in Battersea, whose death was recently found by a coroner's inquest also to be due to erysipelas set up by vaccination; whether it had been brought to his notice that Dr. Cory, although requested to attend the inquest by the coroner, Mr. Langham, failed to attend; and what steps he proposed to take in reference to Dr. Cory and to prevent the use of lymph which had produced these fatal results."—Mr. Steadman had a similar question on the paper.—As Mr. Channing did not put the question, Mr. Chaplin arose and said: The hon. member is not here to put the question, but it is in the public interest, I think, that it should be answered, and I therefore desire to reply to it and also to that of the hon. member for Stepney (Mr. Steadman). The child in question was vaccinated, as stated by the Superintendent of the National Vaccine Establishment on May 24th. The lymph used was not glycerinated calf lymph, the child being vaccinated with 12 other children at the same time from the same calf, from calf to arm. The 13 children were inspected seven days afterwards on May 31st, and in all of them the vaccination had followed the normal course, and it was not until twenty days after vaccination that the child was brought again to the station and found to be suffering from erysipelas. The ordinary period of incubation of erysipelas is from one to three days, and the period which elapsed between vaccination and the appearance of erysipelas shows that the erysipelas was due not to the lymph, but to secondary infection during the third week after vaccination. Dr. Cory was not requested to attend the inquest. He was informed that an inquest would be held on June 30th, at an hour when he had to vaccinate a large number of persons, and he therefore on the 29th visited Dr. Burke, who had attended the child, and gave him all the information he possessed as to the case. As a public inquiry has been held by the coroner, who is reported to have stated to the jury that there was no evidence that the child died from erysipelas set up by vaccination, thus confirming the information which I have received, I do not see the necessity for a further inquiry.

A large and well-equipped Institute of Hygiene was recently opened in Buenos Ayres. The Director of the Institute is Dr. Ferruccio Mercanti, formerly a member of the Italian Chamber of Deputies.

THE ANNUAL MEETING IN EDINBURGH.

EXCURSION TO ST. ANDREWS.

[FROM A CORRESPONDENT.]

THE excursion to the ancient cathedral and university city of St. Andrews promises to be one of the most popular and enjoyable of the many offered by the Association on the occasion of its visit to Edinburgh.

St. Andrews University is the oldest in Scotland, and was founded by Henry Wardlaw, Bishop of St. Andrews, as far back as A.D. 1411. The Cathedral, although a ruin, is a noble pile. It is surrounded by very extensive, massive, high walls, in which are watch towers and loopholes for arrows, suggesting a curious combination of spiritual and temporal power.

The Castle, the former abode of the Primates, is a grand old keep, duly provided with moat and drawbridge on the one side, and protected by precipitous cliffs and the sea on the other. It is remarkable for its strong, thick walls, and for its deep well and bottle dungeon, the latter being excavated out of the solid rock. The bottle dungeon is a gruesome abode, where political prisoners were wont to be confined prior to execution. The belief is that a secret passage extended between the castle and the Cathedral, and traces of that passage actually exist.

The University and the Cathedral have, in some senses, been revivified and rejuvenated of late years. The ancient seat of learning is at present one of the most active of the Scottish Universities, and has taken the lead in the education of women. Famed always for Divinity and Arts it can now boast a thriving science and medical school, and a large and ever-increasing array of students.

The new Medical Buildings, in process of erection, are the gift of the Lord Rector, the Marquis of Bute, who takes a keen interest in the development of medical teaching at St. Andrews. The University has to thank the same large-minded and generous donor for very liberal contributions to the Students' Union, and also for several very fine oil paintings of distinguished personages. The munificence of the Marquis is not confined to the University. It extends also to the Cathedral, and he has been spending what many would regard as small fortunes, for several years past, in restoring architectural gems which for centuries have been buried in that part of the Cathedral grounds known as the Priory. These restorations form one of the sights of St. Andrews. The Library of the University is one of the finest and largest in Scotland, and contains many valuable and rare books and manuscripts.

The University Museum—a model one in its way—is particularly rich in zoological specimens, minerals, and fossils; the Dura Den old red sandstone fishes being unique.

The new Marine Laboratory is deserving of special attention. It is beautifully situated on the margin of the sea, where an abundance of pure salt water and all kinds of zoological specimens can be obtained. It is equipped with every modern appliance, and is the successor of a relatively very old marine laboratory, which in its day attracted, as original workers, the foremost of British and Continental savants, such as Edward Forbes, John and Harry Goodsir, John Reid, Burdon Sanderson, Ray Lankester, James Murie, Anton Dohrn (Naples), Hubrecht (Utrecht), Bourne (Madras), Prince (Canada), Gilchrist (Cape of Good Hope), and others. It is doing a great work in the identification of the ova and the hatching out of the food fishes.

The new Medical Buildings will well repay inspection. They consist of a handsome dissecting room, anatomical museum, preparation room, offices, etc.; a physiological laboratory and museum, a room for experiments, a room for keeping animals, a retiring room, etc.; a botanical laboratory and museum, a herbarium room, etc.; a materia medica laboratory and museum, a specimen room, etc. To these are added two well-lighted commodious lecture rooms.

Under existing arrangements the following science and medical subjects are taught at St. Andrews: 1, Mathematics; 2, Physics; 3, Botany; 4, Zoology; 5, Chemistry; 6, Anatomy; 7, Physiology; 8, Materia Medica and Therapeutics. The two *anni medici* or residential years required for medical graduation in the Scottish universities can now be taken at St. Andrews. Of course the glory of St. Andrews is its famous golf links and magnificent bay. These can be seen to perfection from the top of St. Regulus Tower from within the cathedral grounds. The St. Andrews Golf Links are the most celebrated in the world, and those members of the profession who are interested in golfing will have an opportunity of witnessing a masterly exposition of the game, as an exhibition match has been arranged between professionals.

The splendid bay of St. Andrews is scooped out into two smaller bays—an east and a west bay. The bay as a whole is twelve miles wide at the mouth. The climate of St. Andrews is one of the driest and most bracing in the kingdom. The summers are refreshingly cool, and the winters are crisp, bright and open, with little frost and next to no snow. Nine months of nearly perfect weather out of the twelve can always be reckoned on. The three bad months, if bad they can be called, are March, April, and May, when east winds prevail. Fogs are unknown. Occasionally, but very occasionally, a sea fret makes its appearance. The death-rate at St. Andrews is exceedingly low.

The climatic advantages referred to are now being recognised by the profession and by parents having children to educate, with the result that patients and young people keep flocking into the city, which within the last ten years has increased by nearly a third. The harbour too is being greatly enlarged, and a sea esplanade formed. These point to a yachting station in the near future.

The Madras College and Board Schools can boast something like 1,000 pupils, while St. Leonard's and St. Katherine's Schools have over 250 boarders, to say nothing of day scholars. St. Salvator, Clifton Bank, and Edgecliffe Boys' Schools may be described as being in a chronic state of congestion. All kinds of physical exercises can be had in perfection at St. Andrews—namely, golfing, lawn tennis, cricket, lacrosse, hockey, bowling, riding, cycling, swimming, boating, etc.

The medical faculty of the University are greatly interested in the proposed excursion, and are, in conjunction with the local medical men, exerting themselves to make it a success. The faculty, with their Dean, Professor Bell Pettigrew, are issuing 200 invitations to members of the Association to join them at luncheon in the Town Hall, kindly placed at their disposal by the Provost of the City, who has expressed his intention to be present on the occasion. The local members of the profession have arranged to provide afternoon tea in the beautiful grounds of St. Leonard's School, by the kind permission of Miss Grant.

A right hearty welcome awaits those who elect to spend the last day of the Association meeting in "the grey old city by the sea," as St. Andrews was finely described by the late Dean Stanley, a former Lord Rector of the University.

A SCHOOL FOR TROPICAL DISEASES.

IN a recent number of the BRITISH MEDICAL JOURNAL it was announced that steps were being taken to establish a school for the study of tropical diseases in connection with the Seamen's Hospital. It is with much pleasure that we note that Sir Henry Burdett, K.C.B., Vice-President of the Dreadnought Seamen's Hospital Society, has been able to lay before the public full details of this useful scheme.

Some time ago the attention of the Secretary of State for the Colonies was called to the great need of a better system of instruction for medical officers appointed to the Colonial Service in the diseases peculiar to the regions in which their sphere of work will lie. Mr. Chamberlain thereupon addressed a letter to the Committee of the Seamen's Hospital, in the course of which he stated that:

> He felt confident that a marked advance would be made if some scheme could be devised by which all the newly-appointed medical officers would receive a sound and systematic training in this country before taking up their duties in West Africa. He was advised that the experience and training to be obtained by the Seamen's Hospital would be the most suitable in the present instance, and he accordingly asked for the assistance of the managing committee in the matter, by considering whether it might not be possible to so enlarge the branch hospital at the Albert Docks as to provide the necessary accommodation for the establishment of a school of tropical diseases for the benefit of the medical officers in question.

He added that

> The Secretary of State for Foreign Affairs was being asked whether he wished that the Protectorates in the East and West Africa under the administration of the Foreign Office should be included in the proposed scheme.

In due course the Seamen's Hospital Committee submitted

to the Colonial Office a scheme for the establishment of a school for the study of tropical diseases. This has now been approved, and will shortly be an established fact. The total cost of the new wing, which will give the branch hospital, situated between the Royal Victoria and the Albert Docks, forty-five beds, in addition to the new school buildings, is estimated at about £13,000. Towards this sum the Colonial Office has agreed to contribute £3,550 on behalf of the colonies and protectorates more immediately concerned, leaving some £10,000 to be raised from the public. From carefully-prepared estimates it appears that the annual cost of maintenance, including 25 additional beds, the board of the resident students, salaries of the medical tutor and their necessary attendants, and interest on capital will be £3,050 per annum. At present the India Office has not intimated its intention of joining in the establishment of the school, but Sir Henry Burdett says there is reason to hope that some step may be taken in this direction in the near future. Apart from any contribution from the India Office, there is therefore required a capital sum of £10,000 and a net income of £2,000 per annum, seeing that the fees to be paid by the Colonial Office for the resident and non-resident students towards the expenses of the school are estimated to produce at least £1,000 per annum. An appeal is made to the public for the additional funds necessary to place the school on a sound financial basis. Contributions may be paid direct to the Secretary, Mr. P. J. Michelli, Dreadnought Seamen's Hospital, Greenwich, S.E., or to the hospital account at Messrs. Williams Deacon and Manchester and Salford Bank, Limited, 20, Birchin Lane, E.C.

The school will be open to other students than those members of the medical profession who may be sent by Government Departments, or who may wish to equip themselves for service abroad. It appears from the report of the special committee which investigated the question that 78 per cent. of the cases of tropical diseases treated by the Seamen's Hospital Society had been admitted to the branch hospital, which will now contain 45 beds. Provision will be made for from 20 to 25 students, with sleeping accommodation for about 10. There will be a fully-equipped laboratory, pathological room, museum, and every other necessary calculated to make the school efficient. The teaching staff will consist of the senior medical staff of the Dreadnought Hospital at Greenwich, as well as of the branch hospital, together with a number of teachers specially selected and attached to the new school. The school will be under the immediate supervision and direction of a medical tutor, who will attend for six hours daily. Instruction will be given to students on four days in the week for four hours each day by one or more members of the teaching staff.

The scheme appears to be well devised, and we wish it all success. Much, however, will depend on the way in which it is carried out, and particularly on the selection of the men most competent to teach what is known and to enlarge the boundaries of our knowledge. The matter, as we have already said, is one of national importance, and it would be a disaster and a disgrace if petty personal jealousies were allowed to wreck the scheme.

EPILEPTIC COLONIES.

National Society for Employment of Epileptics.—The annual meeting of the governors of the National Society for the Employment of Epileptics was held on July 11th, Mr. E. Montefiore Micholls being in the chair. It was satisfactory to hear from the report of the honorary medical staff that in most of the cases admitted during the past year a marked improvement had been noted. The guiding principles of the management of the inmates of the Chalfont Colonies have been regular employment in a good country air, together with abundance of simple food and avoidance of excitement and alcohol. Under such treatment the results had been up to the present all that was expected. It is less satisfactory to learn, however, that the Society which is doing such good pioneer work is in want of funds. To keep pace with the increasing demands for admission constant expansion is necessary, and the very generosity of a few large givers in providing buildings has led to the impression that existing wants are adequately supplied. Altogether about £7,000 is required for immediate needs. In a special appeal issued by the desire of H.R.H. the Duke of York, it is stated that the most pressing of the needs are a good water supply and furniture for one of the recently given homes, which is standing empty for the want of it.

The Meath Home of Comfort for Epileptic Women and Girls.—The annual report shows that this institution continues to do a useful work amongst a most unfortunate section of the community. The home admits epileptics between the ages of 2 and 35 who are likely to derive benefit from residence there. They must be able to do some kind of work, and cases complicated by mental disease or deficiency or who are violent or insubordinate are not admitted. Patients are taken for varying lengths of time. The improvement in the condition of the patients after a short stay at the home is very encouraging, and cures are not infrequent. The home is well and economically managed, and admits patients from all parts of the kingdom irrespective of creed, and, like most homes of the kind, is totally unable to cope with the demands made upon it for admission of those afflicted with this disabling disease.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

THE new laboratories in the recently-built Pfeiffer wing of the London School of Medicine for Women were formally opened by the Prince and Princess of Wales on July 11th.

Mrs. GARRETT ANDERSON, in an address to the Princess, said that the school had been opened for twenty-four years, and provided an education which met the requirements of the General Medical Council. Students from the school could obtain degrees or diplomas from nine of the medical examining bodies of the United Kingdom, six of them being universities. The students, who now numbered 170, received their practical training at the Royal Free Hospital, close to the school. Those who had passed out of the school and had obtained medical qualifications, were engaged in responsible work as practitioners, some at the New Hospital for Women, some in workhouse infirmaries, in asylums, and in provincial hospitals, while others were practising not only in England, Scotland, and Ireland, where they were able by the practice of their profession to maintain themselves in a position of honourable independence, but also in India, in China, in South Africa and Australia. The school had hitherto been carried on in several old houses, but the Council had now obtained a long lease of the site, and had begun the work of rebuilding by putting up the block of laboratories in which that meeting was held. The block had cost nearly £10,000, and had been named in memory of Mrs. Pfeiffer, who had made an important bequest.

After the BISHOP OF LONDON had offered prayer, the PRINCESS OF WALES formally declared the building open.

The PRINCE OF WALES said that the Princess desired him to express the pleasure with which she had taken part in the ceremony, and the interest which she felt in all that concerned the education of women. He had himself inspected the school with great satisfaction, and felt sure that it was doing a useful work considering the number not only of those who practised in Great Britain, but in our distant colonies and in India, where there was a great field for medical women.

THE REMOVAL OF THE BELGRAVE HOSPITAL FOR CHILDREN TO SOUTH LONDON.

A MEETING of medical men practising in the neighbourhood of the proposed new site of this hospital was held on July 12th at the Clarence Hall, Kennington Park Road, Dr. J. W. OSWALD in the chair.

Mr. DUKE, who had called the meeting, said they were there to hear two gentlemen connected with the hospital speak, and to discuss certain points connected with its coming amongst them. The first question which occurred to him was whether they needed a children's hospital in that locality at all. He certainly thought that a few beds where operations could be performed on adults in urgent cases would be more useful. As general practitioners in the neighbourhood were certain to lose by the establishment of the hospital he thought they should have certain rights guaranteed, such as opportunities of attending the practice of the hospital and

operations, and be eligible for some appointments on the staff.

Mr. SOPER (Clapham) asked if it was a fact that the hospital had overgrown its limits in its present locality, and the authorities had looked about for a cheap piece of ground and found it here. There was no doubt that the hospital would injure local practitioners, and he maintained that what was really wanted was a small cottage hospital.

Dr. CORBETT BLADES, who had had thirty years' work as one of the staff of the Royal South London Dispensary, thought a new children's hospital was not wanted. He enumerated the hospitals and dispensaries in the neighbourhood, and considered them amply sufficient for its wants.

Dr. GIBSON BOTT had been very much surprised to hear at a previous meeting from one of the speakers on behalf of the hospital that no wage limit was necessary, and no inquiry officer need be employed; he considered this the crux of the whole question.

In reply to questions from Mr. NELSON HARDY and others, Mr. CLINTON DENT said that with regard to the wage limit, though not convinced of its necessity, he thought it ought to be tried; and he would like those present to consider what the best wage limit was. He was personally in favour of giving free access to hospital practice to the neighbouring practitioners, but the question of allowing free use of laboratories provided by the hospital was a difficult one. They certainly were not going to bring down new practitioners to reside in the neighbourhood; none of their consulting staff were at all likely to reside there. The £50,000 they were asking for was largely for endowment, and was not all to be spent on the building.

Dr. CAUTLEY, another member of the hospital staff, also spoke. He thought the wage limit of 25s. not too high. He explained the proposal for consultation, and feared if no charge were made it would tend to pauperise the patients. One or two such cases came to the hospital every week at present, some very slight, but others serious cases. Personally he was strongly in favour of an inquiry officer.

On the motion of Dr. HOWARD, seconded by Mr. SWAN, it was resolved that those present should form themselves into a committee to watch the progress of the hospital in the interest of general practitioners.

A vote of thanks to the Chairman concluded the meeting.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE usual exhibition of specimens added to the Museum during the past twelve months took place on Thursday, July 7th, on the day set aside for the election of members of Council. They include, as is usual, specimens of considerable interest, amongst the pathological series of which may be noted the following:

Portion of the skull with greatly enlarged (hypertrophied) pituitary body from a case of acromegaly. [With this there has been transferred to the Pathological Series an excellent example of an acromegalic skull formerly placed amongst the Italian crania purchased from Dr. Niccolucci in 1870.]

Leprosy of the tongue and larynx.

A series of birds' heads affected with molluscum contagiosum—bunting-sparrow, fowl, turkey, pheasant.

A specimen showing the results in one of Professor Rose Bradford's experiments which demonstrate a remarkable atrophy of the kidney that follows ligature of the ureter when drainage of the dilated pelvis is subsequently established.

The entire rectum and descending colon, removed during life for a congenital stricture of the former.

A pancreatic cyst removed during life.

The series has also been enriched by the incorporation of almost the whole of the preparations sent in with Mr. Percy Furnivall's successful Jacksonian Prize Essay. These, 23 in number, furnish admirable specimens of the various morbid growths affecting the stomach and intestine.

Amongst objects of curiosity may be noticed the first ovarian cyst removed by the late Sir Spencer Wells (in 1854), and Laennec's stethoscope presented by Mr. F. W. S. Le Maistre on behalf of the widow of the late Dr. Alexander Low, a pupil of Laennec; as well as the subcutaneous osteotomy saw used by Mr. William Adams in his first operation of division of the neck of the femur (December, 1869).

One new feature has been introduced by the Pathological Curator, Mr. S. G. Shattock. It consists of a series of bacteriological cultures permanently preserved by means of formalin. These comprise most of the bacteria causing disease in the human subject, the series not as yet, however, being fully complete. The culture tubes will be displayed in cases which will stand on the museum shelves, and form a series following the last of those relating to pathology. Above the cultures is shown a set of coloured drawings carefully made from microscopic specimens especially prepared for the purpose.

The subject of bacteriology is further illustrated by a series of animals infected with pure culture in order to exhibit the chief lesions of interest that so result. It is proposed to add to these typical specimens of the infective diseases peculiar to the human subject or transmitted from the lower animals. Some such have already been obtained from the Royal Veterinary College, and include tuberculosis of the udder of a milch cow, glanders in the lung of the horse, tuberculosis from the horse. An excellent example showing the hæmorrhage occurring in the mucosa of the rabbit's stomach in the experimental diagnosis of rabies has been obtained from the Brown Institution through the kindness of the Superintendent, Professor Rose Bradford.

MR. BALFOUR AND THE ENDOWMENT OF RESEARCH.

PRIZE-DAY AT GUY'S HOSPITAL.

THE medals and prizes gained by the students of Guy's Hospital during the last academic year were distributed on July 13th by the Right Hon. Arthur J. Balfour, M.P. He was received in the Governors' Court Room by Mr. Cosmo Bonsor, M.P., and Dr. L. E. Shaw, Dean of the Medical School, by many of the Governors, the members of the medical and surgical staff, and some distinguished guests. Amongst those present were Lords Cobham, Lawrence, Aldenham, and Reay, the Bishop of Winchester, Sir Samuel Wilks, Bart., Sir Joseph Fayrer, Bart., the Archdeacon of London, Mr. McKinnon Wood, the Master of the Society of Apothecaries, Dr. F. W. Pavy, and Mr. J. F. France.

The centre point of interest was the theatre of the new school buildings, which was opened by the Prince of Wales a year ago. The auditorium of the building was quite filled, ladies forming a large proportion of those present, when the Treasurer, Mr. Balfour, the Governors, the staff, and their guests entered the building. They were received with much applause.

Mr. COSMO BONSOR presided, and said that two of their distinguished governors, Mr. Gladstone and Sir T. Acland, had recently died, but that other distinguished men were found to take their places, amongst whom was Mr. Balfour, who was there that day to perform one of the duties of a governor.

Dr. L. SHAW read out the names of the prize winners, and Mr. BALFOUR distributed the prizes.

Mr. BALFOUR, in the course of an address to the students, said that it was a great satisfaction to him that the first occasion on which he took part in the work of the great hospital, of which he had so lately had the honour of becoming a governor, should be in relation to that portion of its double labours which dealt with medical education. The work of the hospital in alleviating sickness and pain among the poor appealed directly and immediately to the sympathies of all. But that side of the work of the hospital could not flourish unless the medical schools of this country and of all countries engaged as they were in the furtherance of medical research were liberally aided in the great work they had to perform. The public, though it was ready to talk of the enormous advance made by the science and art of healing, did not thoroughly realise its responsibility in this respect. The progress might be expected to be still more rapid in the future if only the conditions of such progress were thoroughly realised, and public assistance adequately given. At one time almost the only sciences subsidiary to the art of healing were anatomy and physiology, but now medical research drew its inspiration not only from those sciences, but from chemistry and physics. But the growth of all departments of science and the mass of facts which they accumulated rendered specialisation inevitable. It followed that reliance for advance must be placed more and more upon people whose main labour was research. The cost of adequately equipping medical schools with teachers, and not only with teachers but also with persons who could devote

their lives to the work of developing knowledge, must be provided for out of funds not at present forthcoming. The man who would succeed in research had upon his shoulders not only the specialised work of his profession, but must have a sympathetic and appreciative eye to everything that was going on in other departments of science, so that, even where he could not follow those other departments minutely, he might know where to pick up those new discoveries which might help his own special branch of research. For such men further endowment was required. He was an ardent believer in the cause of the endowment of research, and there was no branch of knowledge in which it was more needed than for the advancement of medical knowledge. It was wonderful how the public were willing—rightly willing—to pay for the services of those whose clinical genius demanded, and ought to have, the fullest recognition, but apparently put aside with indifference the not less essential kinds of genius which dealt with the progress of knowledge. This failing was due not to selfishness, but to lack of imagination. The work of the medical practitioner was seen at once, but that of the man who spent his life in pursuit of the secrets of Nature, working in his laboratory, often received no public recognition except from that restricted circle of experts who were capable of forming an estimate as to its merits.

Dr. PYE-SMITH, Senior Physician to the hospital, in an eloquent speech proposed a vote of thanks to Mr. Balfour. He thought it no small sacrifice for the leader of the House of Commons to leave Westminster on a Wednesday afternoon in July to undertake such a duty as he had that day performed. On the whole, he thought all Englishmen preferred statesmen to lead them who were something more than politicians—men who, like Fox, Canning, and Gladstone, were literary celebrities, who like Salisbury were men of science, or who like the present leader of the House of Commons were skilled in divine philosophy. He thanked Mr. Balfour for his speech, not one word of which any member of the staff could not have said, if he could have said it so well. He then alluded to the untimely death of Francis Balfour, "a life too short for friendship, not for fame." He thanked Mr. Balfour for the assistance he had already given in the House of Commons to the University of London Bill, which he trusted might be passed during the present session.

Dr. T. STEVENSON, Senior Lecturer in the Medical School, seconded the vote of thanks, which was carried amid loud cheers.

Mr. BALFOUR briefly acknowledged the vote, and the proceedings in the theatre ended.

A garden party was afterwards held in the grounds, where the band of the 2nd Life Guards, by permission of the commanding officer, performed a selection of music, under the conductor, Mr. C. W. H. Hall; and the new laboratories, wards, museums, and college were open for inspection.

THE MEDICAL PROFESSION AND CONTRACT PRACTICE.

EVESHAM.

WE published last week a letter from the proposer and seconder of the resolution to reduce the salary of the medical officers of the Court Vale of Evesham, A.O.F. It will be remembered that the writers stated that the managing committee had never refused to pay the salary due to the medical officers. It would appear, however, that an action brought in the county court by the medical officers of the lodge was resisted on technical grounds. The technical objection was allowed by the judge, and the case was adjourned for a month, when it is understood that a fresh summons will be heard. We shall not attempt to forecast the decision of the Court, but so far as appears there are really no good grounds upon which the liability to pay the fees already earned can be disputed.

What the exact force of the assertion that all the medical men in the town have not been approached may be we cannot say, but the information at our disposal appears to show that it is a mere quibble. At any rate no medical man in the town has been found to accept the appointment; possibly some may not have been asked because their refusal was a foregone conclusion (see BRITISH MEDICAL JOURNAL, March 26th, p. 860).

ONTARIO MEDICAL ASSOCIATION.

THE Ontario Medical Association held its eighteenth annual meeting in Toronto on June 1st and 2nd, under the presidency of Dr. WILLIAM BRITTON, of Toronto. The meeting was a success from every point of view. The communications and discussions had reference to the questions now most debated in the various departments of medicine. A paper by Dr. Ferguson on the Injurious Effects of Our Overwrought School System on the Health of Public and High School Pupils excited particular interest. A Committee was appointed to report on the subject, and resolutions were passed declaring the opinion of the Association to be: (1) That the school children are overworked to the detriment of their mental and physical health; (2) that in many schools the ventilation and air space per pupil are not ample to fulfil the proper sanitary requirements; (3) that the lighting of the schoolroom is often so inadequate or so badly arranged as to induce various forms of visual defects; (4) that while some provision has been made for physical exercise, there is room for improvement in this respect; (5) that home studies are, as a rule, made too arduous to allow for such rest and recreation as are essential to physical growth and development.

The following recommendations were adopted: (1) That the number of subjects of study prescribed by the Education Department be lessened; (2) that home work be curtailed; (3) that less exacting examinations be imposed on the pupils; (4) that more time during school hours be devoted to physical culture; (5) that school trustees should confer with members of the medical profession as to the lighting, ventilation, and capacity of schoolrooms; (6) and that the curriculum generally be framed with full consideration of the paramount necessity for preserving the physical health of the rising generation. Dr. Ross, Minister of Education, who was present, expressed his pleasure at the recommendations, and invited the President to appoint a Committee to confer with him upon them.

A resolution was also passed condemning the abuse of medical charities, and a Committee of medical practitioners was appointed "to make full inquiry during the coming year as to the extent of the evil." A resolution was also adopted in favour of reciprocity of the right to practise between the different provinces of Canada.

Notice was given by Dr. BARRICK of a motion that the Medical Council should be called on to take a *plébiscite* on the question of prohibiting lodge and contract practice, and in the case of such prohibition being endorsed by a substantial majority, to apply to the local Legislature to have the necessary amendments made to the Medical Act.

THE PLAGUE.

THE VALUE OF EVACUATION IN THE PREVENTION OF EPIDEMIC PLAGUE.

THE Government of the North-West Provinces of India have issued a very interesting resolution reviewing the results of the operations for arresting plague in the united provinces.

In the early part of 1897 bubonic plague occurred in the Hardwar Union Municipality, and ten villages situated in its neighbourhood were also infected. Vigorous measures of cleansing and disinfection were then taken both in Hardwar itself and in the neighbouring town of Kankhal, and the epidemic was arrested. On January 9th, 1898, however, a case of true bubonic plague which ended fatally occurred at Jwalapur, and in February cases began to occur at short intervals in different parts of the town. The fact that Jwalapur is close to Hardwar where two important fairs were to take place, the one on March 20th, and the other on April 11th and 12th, caused the Government to view this outbreak in Jwalapur with great anxiety. The population of Jwalapur was about 16,000 people, but the occurrence of the disease at an earlier date in the neighbourhood had led to a good many people leaving the town, so that the population at the time the epidemic began had been reduced to about 14,000. When the epidemic had begun a further exodus took place. This was unrestricted from the uninfected parts of the town, but from the infected parts was only allowed after detention in observation camps, and after thorough disinfection of personal

property. The steps taken to deal with the epidemic were to remove the sick to hospitals which had been constructed for their reception, and near which accommodation had been provided for their attendants and friends. The people in immediate contact with the patient's family were segregated from the rest of the inhabitants in special camps, and the infected house and the houses immediately adjacent to it, which had thus been evacuated, were thoroughly cleaned out and disinfected. Fresh cases occurred in different parts of the town, and gradually, by the repetition of this process, the whole town —with the exception of one part containing about 600 of the butcher class, among whom the disease did not appear—was practically emptied by the end of March. This evacuation, which was in the main voluntary, was encouraged partly to diminish the risk of infection, but chiefly in order to render it possible to carry through the thorough cleansing and disinfection of every house—not only those in the infected blocks, but also those in blocks which had escaped infection. A remarkable diminution occurred after the evacuation. Thus, 24 cases occurred in February, 66 in March, and 19 in April. In the following six weeks only 2 cases occurred, both in the same family. On April 11th the first block in the town, its cleansing and disinfection having been completed, was opened for reoccupation, and other blocks were thrown open as they were got ready.

In March, 3 seizures followed by 2 deaths occurred in Hardwar, and 4 seizures with 3 deaths in Kankhal, the infection in each case being traced to Jwalapur. The disinfection of the houses in which the disease occurred, and the segregation of the inhabitants, sufficed to prevent the further spread of the disease—a result which experience shows would not have been attained had the towns not already undergone a thorough disinfection during the previous outbreak.

The fairs were not prohibited, but precautions were adopted to prevent any communication between pilgrims and localities or persons infected or suspected of being infected with plague. Communications between Hardwar and Jwalapur, except under a pass and after residence in an authorised camp, was forbidden; booking by railway from certain infected places in other parts of India was prohibited; persons arriving from suspected places were located in special camps; while pilgrims travelling to and from Hardwar by road were diverted from the town of Jwalapur. Both fairs happily passed off without any sickness or untoward circumstances. The number of cases which occurred during January, February, and March in villages situated within a radius of some 10 miles from Hardwar was small, and the careful watch which had been kept over these villages was effective in discovering the first appearance of illness and immediate segregation of the sick person and his friends, evacuation of his house and adjoining houses, and their thorough disinfection appear to have been quite successful inasmuch as no fresh cases occurred.

To sum up, we have a population of the infected towns and villages amounting to about 2,341,000. In this population there were 271 seizures and 217 deaths, and these figures, while they show the virulent nature of the disease, are the best evidence of the success which has hitherto rewarded the exertions of the authorities in dealing with it. The result is the more striking when it is remembered that a floating pilgrim population, probably exceeding half a million, passed in health through Hardwar during the thirteen months during which plague was prevalent either in Hardwar or its neighbourhood. The Government of the North West Provinces expresses the opinion that success in dealing with the plague depends on the discovery of the earliest cases of illness, the prompt and thorough isolation of the sufferer and his attendants, and the disinfection of the house itself and the adjacent houses. "The key to success in dealing with these difficulties," it is added, "lies in securing the true co-operation of the people. This is best secured by a procedure which, while maintaining the principles of early detection of cases of plague, prompt isolation, and thorough disinfection, permits the people to carry out the details of the arrangements in their own way."

The resolution concludes with an expression of the thanks of the Government to the officers engaged, "who, with absolute self-sacrifice and regardless of personal comfort, have carried through these operations to the successful result described above. To their forethought and energy it is due that an outbreak of virulent bubonic plague in the centre of Hindu pilgrimage has been grappled and struggled with for nearly a year; that the disease has been kept from spreading, the mortality maintained at insignificant proportions, and Hardwar kept open to pilgrims throughout that time. In view of these results the Lieutenant-Governor desires that the thanks of Government be conveyed to the officers concerned in the operations; and he wishes to specially mention Mr. Winter, Collector of Saháranpur, Surgeon-Lieutenant-Colonel Thomson, C.I.E., Sanitary Commissioner; Mr. Kendall, Joint Magistrate, and Surgeon-Captains Scotland and Elphick."

We are indebted to Surgeon-Captain H. Dempster Mason, A.M.S., special duty Kutch State, for the following interesting note upon the value of the system of evacuation in the prevention of epidemic plague:

"After thirteen months' continuous experience I have come to the conclusion that wherever practicable evacuation is the sole means which has produced a definite result in checking plague. The following table illustrates the contrast between the length of time required to exterminate the disease in the villages which have been evacuated and those which have not:—

Villages not Evacuated.

No.	Name of Village.	Population.	Total Duration.	Total Plague Deaths.
			Days.	
1	Gundiali ...	4,280	258	275
2	Godhra	1,992	195	160
3	Khakher ...	572	55	14
4	Salaya	6,446	118	539
5	Musca	2,002	155	153

Average duration, 5 months 6 days.
Average number of deaths, 228.

Villages Evacuated.

No.	Name of Village.	Population.	Total Duration.	Total Plague Deaths.
			Days.	
1	Kapaia	1,260	83	58
2	Goersama ...	477	39	10
3	Gundala	1,498	81	49
4	Khakher ...	942	57	31
5	Bhorala	613	34	13

Average duration, 1 month 28 days.
Average number of deaths, 32.

"Last year from April 1st to August 13th there were in Mandui 3,610 deaths. This year from March 9th to June 3rd there have been 247 deaths. This is a most striking fact and contrasts favourably with Bombay, Poona, and Karachi, where the recrudescence has been more virulent than the original disease.

"The advantages of evacuation are:

"1. It affects every man, woman, and child of the population, and takes them clear away from their pestiferous dens into sunlight and air.

"2. It admits of prompt measures being taken to admit sunlight and air into their old homes, to have them disinfected and generally cleansed.

"3. It admits of prompt dealing with new cases arising in the health camps, of the segregation of contacts and of the burning of the infected hut.

"4. It appeals to the people, for whereas formerly it was customary when cases occurred for the relations to conceal them in their own houses, now it is the rule that even if an attempt to conceal is made, the sick person is at once removed to the fields or gardens surrounding the town and tended by one relation or servant."

Bombay.—Although the epidemic of plague is a thing of the past sporadic cases of the disease still linger in Bombay,

an occasional case occurring with unfortunate persistency. The rapid decline of plague is best gathered from the official statement appended:

	Fatal Cases.
Week ending May 17th	109
,, May 24th	101
,, May 31st	84
,, June 7th	44
,, June 14th	26
,, June 21st	15

The mortality at the end of June was reduced to an average of 2 a day. Every effort is being made to prevent a third recurrence, and the new plague authority is being given ample powers. Plague is no doubt a question of sanitation, but it remains to be seen whether a notoriously insanitary city can in a relatively short space of time be placed in such a condition as to defy a recurrence in the near future.

The reports from the several parts of the Bombay Presidency of the deaths from plague for the week ending June 17th are worthy of note.

Cities.—Bombay, 98 cases, 26 deaths; Karachi, 89 cases, 74 deaths.

Districts.—Surat, 21 cases, 14 deaths; Thana, 88 cases, 68 deaths; Satara, 14 cases, 8 deaths; Coloba, 3 cases, 3 deaths; Belgaum, 48 cases, 40 deaths; Dharwar, 11 cases, 13 deaths; Karachi, 7 cases, 6 deaths.

Political Agencies.—Baroda, 2 cases, 2 deaths; Kathiawar, 2 cases, 1 death; Kolhapur, 42 cases, 26 deaths; Cutch, 56 cases, 36 deaths; Sachin, 6 cases, 3 deaths; Bhor, 2 cases, 1 death. Total for the week, 499 cases, and 321 deaths.

Calcutta.—The plague has been in Calcutta for well nigh three months, and it is still a matter of uncertainty whether it is likely to prevail in an epidemic form or not. The return of the cold weather is looked forward to with anxiety, as it is believed that the future of plague in Bengal will be then known. So far plague has never been known to have appeared in the valley of the Ganges. It is satisfactory to know that antiplague inoculation is being practised, and that both Mohammedans and Hindus are submitting to the treatment. Plague hospitals have now been provided for patients of all sections of the community. The city has recovered somewhat from the initial scare, and except that the supply of domestic servants are insufficient, has resumed its normal appearance. The deaths from plague in Calcutta up to date are 128.

Hong Kong.—During the week ending July 5th, 10 cases of plague occurred in the colony, and an equal number of deaths. Last week the numbers were 11, so that but a slight improvement is apparent.

Canton.—Reports from Chinese sources state that thousands of people have died of the pneumonic variety of plague during this year. In this city alone popular belief amongst the Chinese estimate the deaths at several thousands a week. We have no means of verifying this statement, but before the Chinese even speak of such a state of matters there must be a high mortality. No official records are kept by the Chinese authorities of either the number or the causes of death, but by a simple method the numbers are approximately ascertained. The Manderin in charge sends round to inquire the number of coffins made by the undertakers, and according as they exceed or fall short of the average is the presence or absence of a widespread epidemic known.

THE LATE MR. ERNEST HART.

AT the last meeting of the Jamaica Branch, the following resolution was passed:

That the members of the Jamaica Branch of the British Medical Association learnt with deep regret of the death of Mr. Ernest Hart, who for so many years so ably edited the BRITISH MEDICAL JOURNAL, and who made so many valuable contributions to preventive medicine. The members of the Branch beg to offer their deep condolence with Mrs. Hart in this her irreparable loss.

THE annual report of the Statistical Committee presented to the Metropolitan Asylums Board at its last meeting showed that the total number of patients treated during the past year was greater than in any previous year, and that the death-rate, 8.19, was the lowest on record. There had been a noticeable decline in the percentage mortality amongst diphtheria patients from 40.74 in 1889 to 29.29 in 1894. In 1895, when the antitoxic treatment was first adopted, the mortality was 22.85, in 1896 it was 21.2, and in 1897 17.69. The Chairman stated that the Board began to receive all cases about 1888, and that the mortality was now about half what it was in 1889 in the same class of cases.

SPECIAL CORRESPONDENCE.

PARIS.

The Bordeaux Bureaux de Bienfaisance.—Medical Preparations for a Cycle Race.—The French Society of Hygiene.

THE Bordeaux Bureaux de Bienfaisance provide gratuitous medical assistance for the sick poor according to a system peculiar to that city. The total population is 296,986; the indigent section of it amounts to 19,864. The law of July 15th, 1893, which is not compulsory, has not been adopted by the Bordeaux Bureaux. There are twelve auxiliary bureaux established in houses where the poor can obtain relief. Ten of these are in different parts of Bordeaux for the relief of Catholics; there is one for Protestants, the twelfth being for Jews. The two last distribute help and provide gratuitous medical advice for all the inhabitants of Bordeaux belonging to these two forms of faith respectively. There are sixteen medical men termed "médecins des sections," and twenty-four specialists, of whom six are oculists. There are, in addition, eighteen supplementary and twenty-six honorary medical men. Five dispensing chemists are in the pharmaceutical department. The auxiliary bureaux are entirely under the control of the administration; in addition to these, and in connection with them, there are charitable institutions which are supported by private philanthropy. During these latter years the outlay has been greater than the revenue. The indigent poor increase, and the yearly receipts decrease. It is intended to exercise greater strictness in future in respect of the admission of foreign poor. In order to relieve the acting medical officers whose duties have become more and more arduous, while their salaries have remaind stationary, the supplementary doctors were asked to undertake part of the duties without remuneration, but only two came forward. The obstetrical service is in the hands of thirty-two midwives and thirty-nine probationers. In 1896 582 women were delivered at a fee of 10 francs each; £221 12s. were distributed among them besides medicine. There are 15,227 Bureaux de Bienfaisance in France. It is proposed to collect statistics; these, supplemented by a description of the working of these bureaux, will form a useful work of reference on the subject, which, it is hoped, will be ready for the Exhibition of 1900.

A cycle race would seem to be regarded by French journalists as almost as dangerous as a campaign. At a forthcoming race among journalists no fewer than five medical men will be in attendance at different parts of the route. There will also be eighteen nurses, male and female, prepared to cycle to the spot where any accident may occur. A motor car for the benefit of the wounded will be run by the Secretary of the Société des Secouristes Français.

The French Society of Hygiene will award next year fifteen prizes for the best essays on the means of improving the condition of crews of fishing boats. The essays are to be sent in before January 1st to M. M. E. Cacheux, 25, Quai Saint Michel.

BERLIN.

Professor Koch on Bubonic Plague.—The Vaccination Law.—A Female Club Doctor.—A Proposed Sanatorium for Consumption in the Silesian Mountains.

IN honour of Professor Robert Koch, the German Society for Public Hygiene held a special meeting on July 7th, in the hall of the Zoological Gardens, on which occasion Koch delivered an interesting address on bubonic plague and its dissemination. Koch calls the plague primarily and essentially a rat's disease; from rats the infection is carried to man. As the chief foci of the disease—places where it never entirely dies out, and whence it spreads at intervals—he named Mesopotamia, to which country all the epidemics that in olden times were the scourge of Europe can be traced: Thibet, whence the infection is carried to China and India; Western Arabia, south of Mecca, where a residuum has been left; and British Uganda in Central Africa, a hitherto unknown focus, from which, however, epidemics have sprung, and can be traced as far as the North Coast of Africa and the Nile Lowlands. At Kisiba, a German settlement on the West

Coast of the Victoria Nyanza, Professor Koch and Dr. Zupitza had occasion to observe cases of a disease with exactly the same symptoms as Chinese and Indian plague. This disease the natives call "luwunga;" it has an enormous mortality (about 90 per cent.), and is extremely infectious. Clinical observations were, of course, registered, the blood and the glands bacteriologically examined, and five necropsies made. Spontaneous cases of rat disease were likewise observed, and experiments on animals by feeding and inoculation carried out successfully. Koch found that here, too, the human epidemic is preceded by a rat epidemic. Natives, as soon as they see rats lying dead, fly from their huts. The Kisiba banana plantations abound in rats, thus forming a most favourable locality for the development of plague. Still, the Kisiba plague is only an offshoot from Uganda, brought there eight years ago by a single case. In Uganda itself—so the missionaries declare—plague has been endemic from time immemorial. Koch thinks it very possible that the projected railway from Uganda to Mombassa may bring the plague to the coast, and cause an epidemic there, but he hopes that modern science—in conjunction with the cleanliness of advancing civilisation—will before long be successful in stamping out the disease.

In the building of the Imperial Board of Health a Committee of experts has assembled to debate the question whether and in what particulars the directions for the execution of the German vaccination laws may need revision or greater amplification.

A curious anomaly of the law has just found expression in Barmen (Rhineland). A sick club there appointed a lady doctor, who on the strength of her Zurich diploma is allowed to practise in Germany as physician to the female members of the club. Thereupon the Committee received a rescript from the Provincial Government at Düsseldorf, threatening each member of the club with a fine of 10 marks (10s.) a day if the lady doctor continued to practise.

Prince Hatzfeldt, a provincial Governor in Silesia, took the chair at a public meeting in Breslau for the erection of a sanatorium for consumption in the Silesian Mountains. After an able speech by Professor Kast, in which he explained the objects and scope of the work to be undertaken, the meeting unanimously resolved to found a Society for the Erection of Provincial "Lung Sanatoria," and elected the Committee. Prince Hatzfeldt was chosen chairman, and amongst the members were the head mayor of Breslau, Professor Kast, Professor Flügge, the Silesian Government medical officers, and several prominent citizens.

CORRESPONDENCE.

THE ROYAL ARMY MEDICAL CORPS.

Sir,—Undoubtedly too short a time has elapsed since the appearance of the Warrant to influence very materially the number of candidates at the examination which is to commence on August 5th, but it is earnestly hoped that all teachers will do their best to induce good men to join the Royal Army Medical Corps. Probably few who have not been specially preparing will care to compete next month, but at the examination in February it is hoped that a large accession will be made to the ranks of the Corps.—I am, etc.,

Robert Saundby, M.D., LL.D.,
President of Council.

Birmingham, July 12th.

SANATORIA FOR THE OPEN-AIR TREATMENT OF CONSUMPTION.

Sir,—My attention has been called to a statement in the introductory paragraph of Dr. Ransome's paper on the "Open-air Treatment of Consumption" in the British Medical Journal of July 9th. He says: "At the present time there is not in any part of the United Kingdom any open-air sanatorium for the benefit of the poor."

Dr. Ransome does not appear to be acquainted with the situation and structural arrangements of the Royal National Hospital for Consumption at Ventnor, and the treatment carried out in that institution, of which free exposure to open air and sunshine has always been, and has become more and more recognised as, a leading feature.

Dr. Hassall and those associated with him in founding the hospital in 1871 kept this principle in view from the very beginning, both in selection of site and in the structural arrangements of the several blocks or pavilions of which it consists. The site of the hospital is an elevated terrace facing due south to the channel, exposed freely to the prevailing ozone-laden summer winds blowing directly from the sea from south-east to south-west-by-west, while it is sheltered on north, east, and west by the lofty Down-capped cliffs.

All rooms occupied by patients face the south. Each bedroom has a door with ventilating arrangement, and a large French window from floor to ceiling, with venetian shutters, facing each other north and south, the patient's bed occupying the intervening space. There are no curtains or valances to beds, which have woven wire matresses. The floor has movable slips of carpet. Each window opens on a covered verandah sufficiently wide (in the last block now under construction it is 11 feet), and permits of the pyrexial patients lying there all day on chair or couch. The convalescent patients spend their time either in the spacious grounds when the weather is suitable, or in the sheltered verandahs on which the French windows of the sitting rooms open, or in covered shelters in blocks. At night and when the weather is unsuitable for outdoor exposure currents of air are drawn directly from the open into each room at a minimum rate of 5,000 feet a patient an hour, while extraction of the used air goes on in correspondence by the same steam-driven mechanism.

I am familiar with the situation, structural arrangements, and system pursued at most of the open-air sanatoria on the Continent, of which that at Falkenstein under its distinguished and courteous chief, Dr. Dettweiler, may be taken as the type, and I am certain that the patients of the Royal National Hospital at Ventnor enjoy the benefits of exposure to open air and sunshine to at least as great an extent as at Continental establishments.

To make individual comparisons would be invidious, but in none of the sanatoria referred to are the conditions of site, exposure, of duration of sunshine, of subsoil dryness, rainfall, and equabiiity of annual, diurnal temperature, so markedly favourable to carrying out this treatment, as at the Royal National Hospital. As Dr. Léon Petit, aptly quoted by Dr. Ransome, says, "The best climate is that which restricts least the daily duration in the open air."

I am very far from agreeing with Dr. Ransome in his appreciation of exposing the invalid to continuous powerful currents of even the freshest air—indeed Ziemssen refers the beneficial effect of high altitudes in tuberculosis to "the slight air in winter." Even the robust experience a feeling of fatigue when long exposed to a strong current of air, which indeed has, as is well known, the effect of lowering the electric tension of the body. The so-called "scavenging work" of any current to which a patient is exposed, must necessarily be conditioned by the amount of cleansing required, and by the extent of body surface exposed, beyond this the effect must be exhausting in proportion to its force and velocity.

Dr. Ransome says that "perhaps the best results have been obtained at Falkenstein." Now such a statement, unsupported by proper data as a basis on which to recommend any system of treatment, is quite worthless, if not indeed misleading.

A wide distinction prevails between a sanatorium run on commercial principles, and a purely charitable public hospital. To the former a large number of cases of tuberculosis in the first stage of the disease resort, and indeed a considerable proportion are only cases of premonitory or suspicious character. The same necessity for careful elimination of unsuitable cases does not exist, and the appreciation of the results of treatment must be conditioned by the commercial element in the character of the institution. In the Royal National Hospital the cases in the first stage do not amount to 1 per cent., while those in the third stage exceed 75 per cent. The nature and extent of the disease is determined by three independent medical examiners before the case is accepted. The progress of treatment is in each case carefully recorded from time to time, and the results annually pub-

lished. No comparison of any clinical value can therefore be instituted between the statistics of treatment at sanatoria like Falkenstein and those at public hospitals like the Royal National, where the main object is to economise the resources of the charity, so that the greatest benefit of the greatest number may be accomplished. There are several other points in Dr. Ransome's paper which invite criticism, but I shall confine myself to points which more immediately called for this communication.—I am, etc.,

J. G. SINCLAIR COGHILL, M.D., F.R.C.P.Edin.

Ventnor, July 11th.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

SIR,—It seems to me obvious, from the crop of correspondence my letter of June 18th has produced, that there is a feeling of dissatisfaction amongst the members in regard to the age limit of 65, at which age benefits now cease. Mr. T. H. Ravenhill "does not understand why more of our members do not avail themselves of the annuity arrangement" with another Society, to wit, the Rock Assurance Company, and that the "premium is trifling if commenced at a sufficiently early age."

I think I express the views of the rank and file of members when I repeat what I said in my former letter, namely, that a large proportion of members cannot afford a second policy and another annual premium with another society, and I would say further that the earlier the age the less can they afford it, just at a time when the youths of the profession can scarcely eke out a bare existence from medical practice.

The Chairman in his letter takes exception to my remarks anent the "few weeks' sick pay," and implies that sick pay goes on indefinitely. On referring to Rule 12 I find it stated that "when any member has been on the Society's fund twenty-six successive weeks, and his affliction continues, he shall be reduced to half pay," so that my "few weeks" embraces a period of exactly six months, at the expiration of which time the sick pay drops one half, a most serious business for the poor member. The bonus which it is proposed to distribute, averaging £3 to £4 per member, is too trifling to be appreciable; whereas if it were allowed to accumulate it would add considerably to the funds of the Society, and increase them in the future "at a more rapid rate." I venture to think that most of the members would gladly forego the dole which it is now intended to give to them, so as to enable the directorate to extend the age limit according to the amount of funds at their disposal—say from 65 to 70 years. There is no such thing as an age limit in other ordinary benefit societies, such as Oddfellows, Rechabites, Foresters, etc.; on the contrary, they are specially intended to give help in old age and infirmity.—I am, etc.,

July 12th. A MEMBER.

THE SALE OF ABORTIFACIENTS.

SIR,—May I ask you to publish the following letter which I have sent to the principal daily papers, who all decline to insert it.—I am, etc.,

Southborne, July 6th. W. K. RIX.

CRIMINAL ABORTION.

[To the Editor, etc.]

SIR,—I beg you will give me space to point to the class of advertisements which flood the columns of many weekly and some daily papers addressed to "ladies requiring assistance." No doubt the greater number of these are fraudulent and do not fulfil their promise, but they work untold mischief by offering inducements to young and thoughtless women to yield to temptation under the strongest assurance that whatever may happen all will be "put right." So audacious are these announcements, and so long have they gone on with impunity in otherwise respectable papers, that it is no wonder a certain class of persons have been educated to look upon abortion as hardly constituting an offence. Fashionable women whose maternal instincts have been blunted or lost amidst the whirl and excitement of social engagements, fly to purveyors of these nostrums to rid themselves of the irksome encumbrance of children, and, getting no relief, sometimes tempt their medical attendants to risk their reputations in acceding to their wishes, happily with very rare success. Nevertheless, it must be confessed that there are men in my profession whose morality in these matters allows them, while ostensibly employing means for the treatment of other conditions, to endeavour to bring about the results indicated. I make this grave statement with the utmost deliberation. It is a state of things which a medical journal has described as "an abominable traffic, in the suppression of which all decent citizens are interested."—Yours, etc.,

Southbourne. W. K. RIX.

THE CERTIFICATION OF LUNATICS IN IRELAND.

SIR,—In the Medico-Legal column of the BRITISH MEDICAL JOURNAL of June 25th, I see a dispensary medical officer has been unjustly treated as regards the certification of a pauper lunatic.

For years I have both written and spoken and in every way which I could endeavoured to have this absurd clause of 30 and 31 Vic., Cap. 118, altered and rendered workable. When a case of dangerous lunacy occurs in rural Ireland, the patient is most frequently at once conveyed to the nearest union by the police. Yet the medical officer of such workhouse is prevented by this absurd clause from certifying for such patient's removal to the asylum. Be it remembered that no trustworthy insane attendants are provided in many of the Irish workhouses, and the medical officer has no one to aid him in the care of such cases but the other patients in the workhouse and the infirmary nurse, who might reasonably object to attend on a case of acute delirious mania as part of her duties. Yet such case must await the arrival of a dispensary doctor, who has to be brought often from a distance, and when at the union must depend on the officer of the workhouse for all information concerning the case he is to certify for, and the arrival of two magistrates, who have often to be procured by a species of kidnapping in sending police to waylay a justice at some known place of resort, in order to comply with the requirements of this most ridiculous Cap. 118.

The workhouse medical officer is responsible for the care and treatment of a large number of the insane people of this country, and this Act is a great hindrance to him in the speedy removal of such acute and dangerous cases of mental disease to those institutions especially provided for their reception by the Government, and I hope that if lunacy legislation ever receives the attention which it demands from the Government that this Act and clause will be the first to be altered and amended.—I am, etc.,

Rathdrum, co. Wicklow, July 5th. R. R. LEEPER, F.R.C.S.I.

SYMPATHETIC OPHTHALMIA.

SIR,—Many ophthalmic surgeons will read Dr. Cecil Shaw's communication in the BRITISH MEDICAL JOURNAL of June 18th with interest, and, I think, with surprise. He arrives at a conclusion that the old theory of reflex irritation through the ciliary nerves is the one deserving of the chief support, and places aside as untenable the theory of Deutschmann.

There are, as Dr. Shaw emphasises, difficulties in harmonising the migratory theory with the clinical facts of the disease. There is every reason for excluding the group of pyococci as a causative factor.

The main point on which Dr. Shaw has based his conclusions is the inability to discover the organism, but because they cannot be demonstrated by staining or by inoculation it is scarcely just to discard a theory which certainly has many points to recommend it.

The infective theory has my support; partly based on the fact that in eyes which have been excised for sympathetic ophthalmia I have found myriads of fine granules in the retina, and sometimes in the vitreous, visible to the naked eye in a concentrated illumination, a condition I have never seen except in eyes excised for this complaint. It is my belief that these granules are foci of organisms, but so far I have failed to prove it.

The way in which the poison is transmitted to the second eye appears to me to be due, not to the transmission of any living contagion, but to a toxin as is suggested by Panas, and, moreover, it seems probable that this ferment is generated through the action of an unknown fungus upon the pigment of the eye. Such a poison is formed, in my opinion, which only affects pigmented tissues, and though it circulates freely throughout the system, it only exerts its baneful influences upon the fellow eye, and especially on the ciliary zone, which, as I have formerly contended, has some power upon the growth and generation of pigment. In other words, a poison produced by an undiscovered organism which, entering into a chemical union with melanin, forms a complex compound highly irritating to pigmented tissues sufficient to create a severe plastic inflammation.—I am, etc.,

Cavendish Square, W., June 24th. JOHN GRIFFITH.

CEPHALIC TETANUS.

SIR,—In Dr. Hale's remarks on an interesting case of cephalic tetanus in the BRITISH MEDICAL JOURNAL of July 9th, the question of the possibility of recovery after the age of 25 is referred to. In commenting on a severe and fatal case of the same disease (JOURNAL, February 8th, 1896) I came to the conclusion, as a result of an extensive search into the literature of the subject, that recovery had hardly been seen after the age of 25. Dr. J. R. Hamilton wrote a few weeks later (JOURNAL, February 28th, 1896) that he had seen a case in a man aged 45 which was followed by recovery. Within the last two years I have seen two further cases of this form of tetanus, both of which recovered. One of these cases occurred in a man aged 35. This patient was also treated with antitoxin, but it was not at all clear that this treatment was responsible for the recovery; moreover, the case was only a moderately severe one. In Dr. Hale's case the incubation period was prolonged, and the development of symptoms gradual, thus indicating also a case of moderate severity. It is therefore obvious, as might indeed be expected, that cephalic tetanus of varying severity may occur after the age of 25, and that for this reason an age limit cannot be relied upon in the question of prognosis.—I am, etc.,

Leeds, July 11th. E. F. TREVELYAN.

HOSPITAL REFORM.

SIR,—Will you allow me to inform the members of the Association that we have received permission from the Council to hold a meeting in Edinburgh on Tuesday morning, July 26th, at 12.30?

The subjects we propose to discuss are:

1. The mode of administering medical relief in the hospitals and dispensaries of Scotland.
2. Provident dispensaries: their use and abuse.

From an examination of the reports of the hospitals and dispensaries, it is, I venture to say, quite manifest that there is quite as much need for reform in Scotland as there is in England. In the report of the Bath and Bristol Branch on hospital abuse, I find it stated that the proportion of out-patients to the population is in Edinburgh no fewer than 371 per 1,000, in Glasgow 139 per 1,000, and in Aberdeen 115 per 1,000. Even allowing a fair percentage for the non-residents, it must be allowed that too many people receive free medical relief in these three towns.

I have only to add, Sir, that I shall be glad to receive the names of gentlemen who would like to take part in the discussion. I am etc.,

T. GARRETT HORDER,
Honorary Secretary, Hospital Reform Association.

Cardiff, July 12th.

NAVAL AND MILITARY MEDICAL SERVICES.

THE NAVY.

THE following appointments have been made at the Admiralty:—WILLIAM H. TRYTHALL, Surgeon, to the *Daphne*, July 7th; WILLIAM H. POPE, Surgeon to the *Amazon*, for summer cruise, July 9th; HENRY W. FINLAYSON, M.B., Surgeon, to the *Victory*, additional, July 11th.

ROYAL ARMY MEDICAL CORPS.

SURGEON-MAJOR-GENERAL W. TAYLOR, M.D., has been selected for the appointment of Principal Medical Officer on the staff of Major-General W. [illegible] C.B., in the forthcoming expedition to Khartoum. At the conclusion of the operations it is expected that Surgeon-Major-General Taylor will proceed to Egypt to assume the duties of Principal Medical Officer in Egypt, vice Surgeon-General A. A. Gore, who will be placed on the retired list in December next.

Surgeon-Major-General [illegible] WILLIAMSON, M.B., Principal Medical Officer in the Orange River Colony District, Central Command, died at Lucknow on [illegible] were thus dated: Assistant Surgeon, October 2nd, [illegible] Major, October 2nd, [illegible] Lieutenant-Colonel, September [illegible]. He was in the Ashanti war of 1873-74, and had the medal for that expedition.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT-COLONEL A. T. NORTON, C.B., having resigned his appointment in the Volunteer Medical Staff Corps, and Surgeon-Captain R. BEVAN, having resigned his Volunteer appointment, cease to belong to the Army Medical Reserve, July 13th.

INDIAN MEDICAL SERVICE.

BRIGADE-SURGEON-LIEUTENANT-COLONEL G. C. HALL, Bengal Establishment, is granted the temporary rank of Surgeon-Colonel from June 1st, while officiating as Inspector-General of Civil Hospitals, North-West Provinces and Oude.

Surgeon-Captain S. H. BURNETT, M.B., Bombay Establishment, is appointed Secretary to the Surgeon-General with the Government of Bombay.

MEDICAL STAFF CORPS.

MR. ERNEST B. WAGGETT, M.B., is appointed Surgeon-Lieutenant in the London Companies, July 13th.

THE VOLUNTEERS.

SURGEON-LIEUTENANT W. MONCKTON, 1st Gloucestershire Artillery, has resigned his commission, July 13th.

MR. ARTHUR L. WHITEHEAD, M.B., is appointed Surgeon-Lieutenant in the 1st West Riding of Yorkshire Artillery (Western Division Royal Artillery), July 13th.

Surgeon-Major C. S. SMITH, 1st Surrey (South London) Rifles, has resigned his commission, July 13th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Staff have been officially reported to have taken place during the last month:

		From	To
Surgeon-Colonel	J. H. Moore	Portsmouth	Belfast.
Brig.-Surg.-Lt.-Col.	J. A. Clery, M.B.	Aldershot	Egypt.
Surg.-Lieut.-Col.	J. T. Carey, M.B.	,,	,,
,,	J. L. Peyton, M.B.	Belfast	Holywood.
Surgeon-Major	C. A. Webb	Exeter	Egypt.
,,	P. M. Carleton, M.D.	Cork	Glenbeigh.
,,	T. Archer, M.D.	Chester	Egypt.
,,	C. J. Addison	Bombay	Woolwich.
,,	J. Battersby, M.B.	Mullingar	Egypt.
,,	W. G. Birrell, M.B.	Shorncliffe	,,
,,	W. Kelly, M.D.	Punjab	Leeds.
,,	A. Dodd	Aldershot	Egypt.
,,	G. D. Hunter, D.S.O.	Cork	,,
,,	F. D. Elderton	Jamaica	Aldershot.
,,	J. H. Branningan	Dublin	Curragh.
,,	J. FitzG. Burke	W. Africa	Maryhill.
,,	J. B.W. Buchanan, M.B.	Dover	Shorncliffe.
Surgeon-Captain	T. H. F. Clarkson	Aldershot	Egypt.
,,	H. A. Cummins, M.D.	Bermuda	London.
,,	G. F. Alexander, M.B.	Spike Island	Egypt.
,,	J. Thomson, M.B.	Hounslow	,,
,,	J. Girvin	Cahir	,,
,,	F. W. Hardy	Devonport	Bermuda.
,,	C.W. H.Whitestone, M.B.	Holywood	Belfast.
,,	J. E. Brogden	Devonport	Egypt.
,,	F. McDowell	Punjab	Scots Guards.
Surg.-Lieutenant	J. McArdle, M.B.	Athlone	Egypt.
,,	L. J. C. Hearn, M.B.	Belfast	,,
,,	E. Brodribb	Dover	,,
,,	S. de C. O'Grady, M.B.	Cork	Kilworth.
,,	M. M. Lowsley	Aldershot	Egypt.
,,	C. J. O'Gorman	,,	,,
Quartermaster	F. Kyle	Edinburgh	Aldershot.
,,	H. Lockhart	Chester	Egypt.
,,	J. B. Short	Netley	,,

Surgeon-Captain H. J. PARRY, M.B., has been appointed to command the B Company and to be Assistant Instructor at the Depôt and Training School at Aldershot, *vice* Surgeon-Major A. Dodd, who has proceeded to Egypt.

Surgeon-Lieutenant-Colonel and Honorary Brigade-Surgeon J. TIDBURY, M.D., retired pay, has been appointed to the charge of troops at Winchester.

ALLOWANCES FOR MEDICAL SERVICES IN INDIA.

IT has been decided that Indian Medical Service officers shall in future receive Rs. 100 a month for the medical charge of each section of a field hospital in lieu of consolidated salaries for medical charge of such hospital as a whole; but the allowances to army medical officers for the charge of field hospitals and to officers of both services for charge of general hospitals shall remain unchanged.

ASEPTIC SURGERY IN THE FIELD.

THE following extract from the *Manual for the Medical Staff Corps*, issued by the War Office (1894) will show the nature of the dressings which are intended to be used in the field:

FIRST FIELD DRESSING.

A field dressing forms a component part of every British soldier's kit on active service, so as to be available at all times and in all places, as a first dressing for wounds.

When a soldier goes on active service the first field dressing is sewn into a pocket on the the inside of the skirt of his jacket, and thus the quantity of material required to be carried as medical stores is greatly reduced.

The field dressing now in use is an adaptation of that used in the French service, and consists of: Outer cover (sewn cloth); two safety pins; inside cover (thin waterproof, cemented, airtight); thin waterproof (mackintosh) folded over dressings (size 12 inches by 6 inches, to be torn in half if required); gauze bandage 4½ yards long, folded flat into 2½ inches by 4 inches; piece of gauze, 17 inches by 13 inches, weight not less than 3 pennyweights, folded to suit the size of the package; compress of compressed charpie to be of flax between layers of gauze (like Gamgee's dressing), capable of being teased out into a thick pad (minimum weight

of charpie, 155 gr.: maximum weight, 165 gr. The antiseptic agent used is corrosive sublimate, 1 in 1,000). Directions for use are printed upon both the outside and inside cover.

THE HEALTH OF THE ARMY AND THE FRONTIER OPERATIONS.

THE inquiry into the causes which led to the invaliding of British soldiers during the late campaign and the consequent diminution of the strength of battalions on service has, says the *Pioneer*, proved to be most difficult. There is, however, only too good reason to suppose that venereal disease was at the bottom of the breakdown of many men who ought really never to have been sent into the field. The report will in due course be submitted to the Secretary of State for India.

THE NORTH WEST FRONTIER RISING IN INDIA.

THE Governor-General of India in Council publishes for general information a despatch from the Secretary of State, dated May 26th. The despatch speaks in the highest terms of the services rendered by all ranks during the campaign, the arduous nature of which is recognised. The Secretary of State has also sanctioned the issue of a gratuity to all officers and men engaged in the operations. A share of this gratuity is 24 rupees for British and 12 rupees for native soldiers, and is admissible to the heirs of those killed in action or who died of disease during the operations. Medical officers with the force participate as follows: Surgeon-Colonel, 40 shares; Brigade-Surgeon-Lieutenant-Colonel and Surgeon-Lieutenant-Colonel, 32 shares; Surgeon-Major, 16 shares; Surgeon-Captain 12 shares.

HONOURS FOR THE TIRAH EXPEDITION.

OUR attention has been called to an error in the short statement of services of medical officers who obtained D.S.O.'s in the honours for the Tirah expedition, which appeared in the BRITISH MEDICAL JOURNAL of May 28th. We there noted that Surgeon-Lieutenant James H. Hugo was mentioned in Sir Bindon Blood's despatches as having "served with distinction throughout the defence of Chukdara." We are now informed that this service refers to Surgeon-Captain E. V. Hugo, a brother of Surgeon-Lieutenant J. H. Hugo; the latter officer was awarded a D.S.O. for services at Malakand, and not at the defence of Chakdara. It is noteworthy that Surgeon-Captain E. V. Hugo, I.M.S., although highly mentioned by Sir Bindon Blood in an after-despatch, is the only European officer who was in the Chakdara Fort during its defence who received no decoration. All the other officers obtained D.S.O.'s or a brevet, and the Junior Political Officer who was there a C.I.E. The omission to recognise Surgeon-Captain E. V. Hugo's services is strongly commented on by those who served on that part of the frontier.

THE VOLUNTEER MEDICAL SERVICE.

THE recent army warrant dealing with the reconstruction of the Army Medical Service has given rise to the hope in some quarters that a corresponding alteration will ere long be made in the Volunteer Medical Service. With the view of discussing the position it is hoped that a meeting of volunteer medical officers may be held in Edinburgh during the meeting of the British Medical Association in that city. Further information will be obtained in the reception room.

HONOURS FOR THE FRONTIER WAR.

PUNJAB writes: Your correspondent, "Inquirer," asks why the Victoria Cross has not been granted to medical officers who were currently reported to have well earned it during the Frontier War. The following remarks may enlighten him: At the time the Chakdara Fort was relieved there were in the garrison four British officers—namely, two lieutenants in command of troops, a lieutenant acting as Political Officer, and a Surgeon-Captain. Major-General Blood recommended all of those officers for "favourable consideration," and mentioned that the Surgeon-Captain "served with distinction throughout the defence of Chakdara Fort." The result was the two Lieutenants were given the D.S.O., the Political C.I.E., and the Surgeon-Captain—nothing! All the officers who were concerned in the defence of that fort, except the Surgeon-Captain, have been either promoted or decorated.

*** Our correspondent, "Inquirer" may well ask "Why?" We do not know why the Surgeon-Captain of Chakdara was invidiously treated, as stated; but if the facts are correctly given, there seems no doubt that he was so, and we should like to know whether the heads of his own department, backed up the recommendation of Sir Bindon Blood.

SURGEON-GENERAL (RETIRED) writes on the same subject: The non-recognition of acts of bravery by medical officers in the Frontier War is exciting bitter comment. Take the case of Surgeon-Captain Beyt, who saved the life of a wounded officer by carrying him and controlling hæmorrhage from an artery under a heavy fire. If such acts are to have no recognition young surgeons may well hesitate to share in the dangers of combatants.

AMONG those who received from the Queen at Windsor, on July 13th, the insignia of the division of the Third Class of the Order of the Bath (C.B.) was Surgeon-Lieutenant-Colonel and Commandant ARTHUR TREHERN NORTON, Volunteer Medical Staff Corps, the London Companies (Civil).

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. R. C. M. Page, Professor of General Medicine in the New York Policlinic Medical School and Hospital, sometime First Vice-president of the New York Academy of Medicine, and author of a work on *Practice of Medicine and Physical Diagnosis*; and Dr. Hugo Gerold, formerly Professor in the Medical Faculty of the University of Halle.

MEDICO-LEGAL.

THE RISKS OF MEDICAL PRACTICE.

DR. SHERIDAN of Stradone, co. Cavan, was recently placed in a most unpleasant position. He was called to see a young woman, and proceeded to make a vaginal examination. While so engaged, the mother of the girl shut and locked the door of the room, so that Dr. Sheridan could not get out, and he had to call to his servant out of the window to go for the police. On their arrival Dr. Sheridan was given into custody on the charge of rape.

He was brought before the Bailieboro Court of Petty Sessions upon the above charge on June 21st, when the magistrates present, having fully investigated the case, unanimously refused informations, the Chairman stating that all the magistrates agreed with him in saying Dr. Sheridan left the court without a stain upon his character. That their decision met with public approval is evidenced by the Nationalist and Unionist fife and drum bands of Stradone both turning out to welcome him on his return, a very remarkable incident in Ireland, where party feeling runs high. We also congratulate Dr. Sheridan on his acquittal from such a terrible charge.

DEATH FROM ACUTE PLUMBISM.

AN inquest was held at King's Norton, near Birmingham, on July 9th, on the body of a young married woman, the wife of a telegraph linesman. She had recently been temporarily insane, but recovered, and a few days afterwards died suddenly. Before death she informed her neighbours that she had, unknown to her husband, been taking diachylon made into pills to procure miscarriage. Dr. Crooke said the woman died from acute lead poisoning. Diachylon contained a large proportion of white lead. The poison at first accumulated in the system, and then exploded, as it were, with these fatal symptoms. A verdict in accordance with this evidence was returned.

CHARGE OF PROCURING ABORTION.

JOHN LLOYD WHITMARSH, registered as L.S.A.Lond., 1871, L.R.C.P.Edin., 1872, was arrested on June 9th on a charge of performing an operation upon a young woman named Alice Bailey, of Plumstead, with intent to procure a miscarriage. The woman was admitted into Charing Cross Hospital about a fortnight before her death, which took place on July 10th. The prisoner was formally charged at the Westminster Police-court on July 11th, and after formal evidence had been given the magistrate remanded the prisoner for eight days, refusing bail, and certifying for legal aid.

Mr. Troutbeck, coroner, opened an inquest into the case on July 12th. After the mother of the deceased had given evidence, the inquiry was adjourned until July 18th.

The entry in the *Medical Directory*, which has been copied into several newspapers, states that the accused is a member of the British Medical Association. This is incorrect, as he has not been a member of the Association since 1889, when his name was removed from the list of members for arrears.

POSITION OF COMMITTEE OF PERSON AND ESTATE OF LUNATIC.

CONSTANT desires to know the position of a committee (of person and property) in relation to the Lord Chancellor's Visitors in Lunacy, and whether the committee is entirely under their orders, or has by law independent powers.

*** The duties of the Chancery Visitors are principally directed to inquiries and investigations as to the care and treatment and mental and bodily health, and the arrangements for the maintenance and comfort and otherwise, of the lunatic; and whether the lunatic is maintained in a suitable and proper manner, having regard to the existing amount of the allowance ordered to be paid, and the existing scheme approved for his maintenance. The Visitors make reports on these subjects to the Board of Visitors, which the Board consider, and if they think fit refer to the Masters to take such steps thereon as may appear to them expedient. The Masters thereupon investigate the matters reported upon, and have power, if they deem it expedient, to summon the Committee of the person or estate before them to give explanations thereon. The Committee of the estate has certain powers which he can exercise at his discretion, and others which have to be exercised under the direction of the Masters. The Committee of the person and estate should look carefully at the bond which he has been called upon to execute. Space will not allow of our going into detail on the questions raised, but it will appear from the foregoing that the Committee is not under the orders of the Visitors in the sense to which we think the question has reference, although it would be desirable to bear in mind any suggestions the Visitors may make.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

THE CALENDAR.—The University *Calendar* for 1898-99 has just been issued. The first thing that strikes one is its increase in bulk—870 pages against 816 in the previous issue. Examination papers are mainly responsible for the increase. Curiously enough, "The Bruce and John Usher Chair of Public Health" is not alluded to among the new foundations, though there are side references to it in various other parts of the *Calendar*. The available funds appear now to be some £25,000. It is believed that the University Court will on Monday next, July 18th, proceed to the appointment of the first professor to the new chair. Most of the changes

intimated have already been reported in the columns of the BRITISH MEDICAL JOURNAL.

THE McCOSH BURSARIES.—The regulations for the McCosh Graduates' Bursary and the McCosh Medical Bursary now first appear. Each Bursary is to be tenable for one year, during which the holder must prosecute study or research in a medical school or medical schools of Europe. The Faculty of Medicine may award both bursaries to the same person. The applicants are to indicate the school or schools, the time proposed to be spent, and the nature of the study or special work to be engaged in. Bachelors of Medicine and Bachelors of Surgery shall be eligible for appointment during one year after receiving these degrees. The holders must send a three-monthly report to the Dean. The sum of £5,115 is available for endowment of the "McCosh Graduates' Bursary" in Medicine: and the sum of (?) £375 for the "McCosh Medical Bursary."

THE MOUAT SCHOLARSHIP.—By a bequest of the late Dr. John Frederick M. Mouat of £1,831, the already existing endowment of the "Mouat Scholarship" in Practice of Physic benefits to the extent of that sum.

GRADUATION CEREMONIAL.—The present summer session ends on Friday, July 15th. The graduation ceremonial, instead of taking place as usual on the first available or lawful day in August, has, in connection with the Edinburgh meeting of the British Medical Association, been fixed for Saturday, July 30th, when honorary degrees will be conferred on several of the notable visitors then in Edinburgh. The names have not yet been made public.

UNIVERSITY OF ABERDEEN.

THE University Court of the University of Aberdeen has appointed the following to be additional examiners for degrees, each for a period of four years, from February 1st ensuing, namely:—*Botany*: J. Reynolds Green, D.Sc., F.R.S., Cambridge. *Chemistry*: John Shields, D.Sc.Edin., London. *Medical Jurisprudence and Public Health*: William Leslie Mackenzie, M.A., M.D., Medical Officer of Health, Leith.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a stated meeting of the College, held on July 8th, R. Travers Smith, M.D., was admitted as Member, and A. Cooper Fenn, L.S.A., as Licentiate.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the Second Examination of the Board in the subjects indicated:

Anatomy and Physiology.—A. S. Grimwade, Melbourne University and St. Thomas's Hospital; T. W. H. Downes and J. Walker, St. Thomas's Hospital; W. M. Robson, S. S. H. Shannon, R. P. Marshall, G. B. Churchill, F. M. M. Ommanney, Guy's Hospital; A. J. Courzens, C. L. Traylen, and F. J. Trimmer, London Hospital; W. G. Paget, G. M. Sedgrove, C. E. Hogan, L. E. Hughues, and V. G. Hesseltine, St. Bartholomew's Hospital; G. W. Curtis, G. F. Rugg, and F. E. Bolton, University College, London; J. McB. Ross, Melbourne University and St. Mary's Hospital; J. C. G. Kunhardt, St. Mary's Hospital; A. R. Fortescue Hubbard, Charing Cross Hospital; L. W. Shadwell, St. George's Hospital; G. P. Young, King's College, London; F. C. Jobson, Westminster Hospital; R. M. Carter, W. E. Hornbrook, K. Hart-Reeds, and J. W. S. Seccombe, St. George's Hospital; T. S. Dudding, London Hospital; J. H. Wroughton, and V. J. Duncan, St. Bartholomew's Hospital; S. H. C. Bent and F. W. Smith, Guy's Hospital; E. E. Semmence, Edinburgh University and St. Thomas's Hospital; W. F. H. Vaughan, G. R. Cox, and E. C. Lindsey, St. Mary's Hospital; E. A. Houchin, Middlesex Hospital.

Twenty-six gentlemen were referred in both subjects.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

MR. HENNESSY, L.R.C.S. and P.I., having passed the necessary examination, has been admitted a Fellow of the College.

SOCIETY OF APOTHECARIES OF LONDON.

PRIMARY EXAMINATION, PART II.—The following candidates have passed in:

Anatomy.—H. H. Beale, St. Mary's Hospital; A. E. Brown, Royal Free Hospital; P. J. R. Bucknill, Manchester; P. C. Burgess, Middlesex Hospital; T. M. Burton, Royal Free Hospital; E. N. de V. Dawson, St. Thomas's Hospital; S. de Carteret, St. Bartholomew's Hospital; C. D. A. Dowman, St. Bartholomew's Hospital; E. A. Dunn, Royal Free Hospital; J. C. Furness, Charing Cross Hospital; A. E. Gilford, Royal Free Hospital; R. Gillett, Royal Free Hospital; H. M. O. Jones, Royal Free Hospital; D. E. Lockwood, Royal Free Hospital; C. L. Mandl, Edinburgh; L. S. Molony, Royal Free Hospital; F. M. Payne, Royal Free Hospital; W. Roper, Edinburgh; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree, Royal Free Hospital; P. S. Stokes, Sheffield; M. E. Unwin, Royal Free Hospital; G. H. Watson, St. Bartholomew's Hospital.

Physiology.—I. M. Anderson, Aberdeen; A. E. Brown, Royal Free Hospital; P. J. R. Bucknill, Manchester; T. M. Burton, Royal Free Hospital; E. Courtauld, Royal Free Hospital; E. N. de V. Dawson, St. Thomas's Hospital; S. de Carteret, St. Bartholomew's Hospital; C. D. A. Dowman, St. Bartholomew's Hospital; E. A. Dunn, Royal Free Hospital; B. M. Dunstan, St. Thomas's Hospital; A. B. Edwards, St. Bartholomew's Hospital; J. C. Furness, Charing Cross Hospital; A. E. Gilford, Royal Free Hospital; R. Gillett, Royal Free Hospital; H. M. O. Jones, Royal Free Hospital; D. E. Lockwood, Royal Free Hospital; C. L. Mandl, Edinburgh; L. S. Molony, Royal Free Hospital; A. F. Reardon, St. Thomas's Hospital; W. Roper, Edinburgh; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree, Royal Free Hospital; P. S. Stokes, Sheffield; E. K. Tickner, Durham; M. E. Unwin, Royal Free Hospital; G. H. Watson, St. Bartholomew's Hospital; A. Whitby, Dublin; F. E. D. Woomb[illegible]

PRIMARY EXAMINATION, PART I.—The following candidates have passed in:

Biology.—A. B. Gosse; E. M. Handley, Royal Free Hospital; M. S. Jevons.

Chemistry.—G. M. Crockett, Royal Free Hospital; K. A. Dawson, Royal Free Hospital; A. B. Gosse, M. E. Martin, Royal Free Hospital; F. Murray, Royal Free Hospital; W. A. C. Niven; A. U. Parkhurst, Cardiff; T. G. Prosser, Royal Free Hospital; L. G. Simpson, Royal Free Hospital; A. Whitby, Dublin.

Materia Medica and Pharmacy.—K. A. Dawson, Royal Free Hospital; L. Demergue, Paris; L. Denny, Royal Free Hospital; P. T. Goodman, St. Thomas's Hospital; R. A. Lyster, Birmingham; F. H. Maberley, Birmingham; C. J. Marsh, University College Hospital; C. G. Meade, St. Bartholomew's Hospital; H. R. Miller, Guy's Hospital; F. Murray, Royal Free Hospital; A. U. P. Parkhurst, Cardiff; L. K. Tickner, Durham; A. Whitby, Dublin.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1898.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE vital statistics of the thirty-three large English towns dealt with by the Registrar-General in his weekly returns are summarised in the accompanying table. During the three months ending June last 83,933 births were registered in these thirty-three towns, equal to an annual rate of 30.0 per 1,000 of their aggregate population, estimated at 11,218,378 persons in the middle of this year. In the corresponding periods of the three preceding years the birth-rates in these towns were 31.5, 31.1, and 30.0 per 1,000 respectively. In London the birth-rate last quarter was 28.8 per 1,000, while it averaged 30.7 in the thirty-two provincial towns, among which it ranged from 21.3 in Halifax, 22.1 in Huddersfield, 24.0 in Bradford, and 24.8 in Croydon to 35.0 in Wolverhampton, 35.3 in Salford, 35.6 in Gateshead, and 37.4 in Sunderland.

During the quarter under notice 47,714 deaths were registered in the thirty-three towns, corresponding to an annual rate of 17.1 per 1,000, against 17.8, 18.2, and 16.9 in the second quarters of the three preceding years. In London the rate of mortality was 16.4 per 1,000, while it averaged 17.5 in the thirty-two large provincial towns, among which it ranged from 11.7 in Croydon, 12.1 in West Ham, 12.6 in Cardiff, 12.7 in Brighton, and 14.7 in Burnley, to 20.0 in Manchester, 20.1 in Gateshead, 22.2 in Sunderland, 22.6 in Newcastle-upon-Tyne, and 23.0 in Liverpool. The 47,714 deaths registered in the thirty-three towns last quarter included 5,275 which were referred to the principal zymotic diseases, equal to an annual rate of 1.88 per 1,000, against 1.71, 2.91, and 1.70 in the corresponding periods of the three preceding years. In London the zymotic death-rate last quarter was equal to 2.26 per 1,000, while it averaged 1.64 in the thirty-two provincial towns, among which it ranged from 0.48 in Huddersfield, 0.75 in Blackburn, 0.82 in Brighton, in Nottingham, and in Preston, and 0.90 in Portsmouth, to 2.16 in Liverpool, 2.21 in Sheffield, 2.24 in Salford, 2.28 in Halifax, and 2.87 in Newcastle-upon-Tyne. The 5,275 deaths referred to the principal zymotic diseases in the thirty-three towns during the quarter under notice included 1,929 which resulted from measles, 1,454 from whooping-cough, 680 from diphtheria, 526 from diarrhœa, 374 from scarlet fever, 305 from "fever" (principally enteric), and 7 from small-pox. The fatal cases of measles, which had been 1,452, 2,196, and 2,749 in the three preceding quarters, declined to 1,929 during the three months ending June last, and were equal to an annual rate of 0.69 per 1,000; in London the measles death-rate was 0.96 per 1,000, while it averaged 0.51 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in Bristol, Leicester, Derby, Halifax, Bradford, Leeds, and Newcastle-upon-Tyne. The deaths referred to whooping-cough, which had risen from 646 to 1,596 in the four preceding quarters, declined again to 1,454 during the three months under notice, and were equal to an annual rate of 0.52 per 1,000; in London the death-rate from this disease was equal to 0.60 per 1,000, while it averaged 0.47 in the thirty-two provincial towns, among which whooping-cough was proportionally most fatal in Birmingham, Liverpool, Salford, Sheffield, Sunderland, Gateshead, and Newcastle-upon-Tyne. The fatal cases of diphtheria, which had been 720, 1,097, and 919 in the three preceding quarters, further declined to 680 during the quarter under notice, and were equal to an annual rate of 0.24 per 1,000; in London the diphtheria death-rate was equal to 0.33 per 1,000, while it averaged 0.10 in the thirty-two provincial towns, among which this disease caused the highest proportional fatality in West Ham, Cardiff, Birmingham, Leicester, Birkenhead, Burnley, and Leeds. The 526 deaths from diarrhœa were below the average number in the corresponding quarters of recent years, and were equal to an annual rate of 0.19 per 1,000; in London the death-rate from this disease was 0.16 per 1,000, while it averaged 0.20 in the thirty-two provincial towns, and was highest in Plymouth, Wolverhampton, Birmingham, Manchester, Salford, and Preston. The fatal cases of scarlet fever, which had been 490, 599, and 469 in the three preceding quarters, further declined to 374 during the three months ending June last, and were equal to an annual rate of 0.13 per 1,000; in London the scarlet fever death-rate was 0.14 per 1,000, and almost corresponded with the mean rate in the thirty-two provincial towns, among which this disease was proportionally most fatal in Wolverhampton, Liverpool Halifax, Leeds, and Gateshead. The deaths referred to different forms of "fever" (including typhus, enteric, and simple and ill-defined forms of fever), which had been 499, 732, and 438 in the three preceding quarters, further declined to 305 during the quarter ending June last, and were equal to an annual rate of 0.11 per 1,000; in London the "fever" death-rate did not exceed 0.07 per 1,000, while it averaged 0.14 in the thirty two large provincial towns, among which the highest rates were recorded in Wolverhampton, Norwich, Liverpool, Manchester, Burnley, Blackburn, and Sunderland. Of the 7 fatal cases of small pox registered last quarter in the thirty-three towns, 3 occurred in Newcastle-upon-Tyne, 2 in Gateshead, 1 in Sunderland, and 1 in Leeds.

Infant mortality in the thirty-three towns, measured by the proportion

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Second Quarter of 1898.

Towns.	Estimated Population middle of 1898.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhœa.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
33 Towns	11,218,378	83,933	47,714	30.0	17.1	1.88	5,275	7	1,929	374	680	1,454	305	526	133	1.3
32 Provincial Towns	6,713,612	51,439	29,270	30.7	17.5	1.64	2,747	7	852	220	313	781	232	342	137	1.6
London	4,504,766	32,294	18,444	28.8	16.4	2.26	2,528	—	1,077	154	367	673	73	184	127	0.8
West Ham	286,654	2,070	863	29.0	12.1	1.40	100	—	9	6	32	40	8	5	118	2.1
Croydon	124,421	769	363	24.8	11.7	1.02	32	—	8	2	5	10	1	6	91	—
Brighton	122,310	767	388	25.2	12.7	0.82	25	—	13	—	2	5	—	5	117	0.5
Portsmouth	186,618	1,227	615	26.4	13.2	0.90	42	—	1	7	8	12	7	7	97	0.3
Plymouth	99,136	756	445	30.6	18.0	1.42	35	—	14	—	2	11	—	8	132	0.7
Bristol	316,900	2,226	1,191	28.2	15.1	1.73	136	—	82	2	13	22	2	15	124	1.3
Cardiff	177,770	1,390	537	31.4	12.6	1.61	71	—	15	5	37	6	2	6	88	0.2
Swansea	102,001	760	388	29.9	15.3	1.26	32	—	12	1	6	10	2	1	143	1.0
Wolverhampton	88,051	769	376	35.0	17.1	1.60	35	—	10	5	5	1	6	8	124	0.8
Birmingham	510,343	4,307	2,247	33.9	17.7	1.79	227	—	35	15	33	76	27	41	143	2.7
Norwich	111,699	833	438	29.9	15.7	1.38	38	—	7	5	6	8	6	6	114	1.1
Leicester	208,662	1,612	829	31.0	15.9	2.11	110	—	72	10	13	5	2	8	144	3.6
Nottingham	236,137	1,669	900	28.3	15.3	0.82	48	—	6	5	8	13	8	8	125	1.0
Derby	104,834	693	431	26.5	16.5	1.49	39	—	18	5	3	7	4	2	139	—
Birkenhead	113,189	798	428	28.3	15.2	1.14	32	—	7	5	10	1	3	6	129	0.5
Liverpool	633,645	5,479	3,637	34.7	23.0	2.16	339	—	80	31	28	122	42	36	142	3.4
Bolton	122,495	913	503	29.9	16.5	1.22	37	—	4	3	2	17	3	8	114	0.6
Manchester	539,079	4,542	2,682	33.8	20.0	1.52	206	—	57	11	11	53	29	45	146	0.3
Salford	215,702	1,898	1,054	35.3	19.6	2.24	120	—	28	9	6	52	8	17	144	1.3
Oldham	148,288	936	649	25.3	17.6	1.41	52	—	20	4	1	12	4	11	138	0.2
Burnley	109,546	748	401	27.4	14.7	0.95	26	—	2	—	13	3	5	3	154	2.0
Blackburn	133,228	954	542	28.7	16.3	0.75	25	—	4	1	4	—	6	10	124	2.8
Preston	116,356	808	465	27.9	16.0	0.82	24	—		—	1	9	2	12	142	2.8
Huddersfield	102,454	564	402	22.1	15.7	0.48	12	—	5	2	2	1	1	1	94	3.0
Halifax	96,729	514	454	21.3	18.8	2.28	55	—	38	6	—	2	3	6	158	3.7
Bradford	233,737	1,400	994	24.0	17.1	1.51	88	—	57	3	2	19	4	3	158	1.8
Leeds	416,618	3,299	1,964	31.8	18.9	1.98	205	1	78	33	26	51	9	7	140	0.2
Sheffield	356,478	2,922	1,599	32.9	18.0	2.21	196	—	55	15	11	80	15	20	146	2.3
Hull	229,887	1,959	894	34.2	15.6	1.52	87	—	32	11	8	24	3	9	115	1.7
Sunderland	143,849	1,342	796	37.4	22.2	1.68	60	1	18	5	1	21	9	5	169	0.6
Gateshead	103,775	920	520	35.6	20.1	2.04	53	2	7	6	6	24	4	4	163	0.4
Newcastle-on-Tyne	223,021	1,795	1,255	32.3	22.6	2.87	160	3	58	7	8	64	7	13	174	0.8

of deaths under one year of age to registered births, was equal to 133 per 1000 during the quarter ending June last, against 139, 141, and 128 in the corresponding quarters of the three preceding years. In London the rate of infant mortality was equal to 127 per 1000, while it averaged 137 in the thirty-two provincial towns, among which it ranged from 88 in Cardiff, 91 in Croydon, 94 in Huddersfield, 97 in Portsmouth, and 114 in Norwich and in Bolton, to 154 in Burnley, 158 in Halifax and in Bradford, 163 in Gateshead, and 174 in Newcastle-upon-Tyne.

The causes of 603, or 1.3 per cent., of the deaths in the thirty-three towns during the three months ending June last were not certified, either by a registered medical practitioner or by a coroner. The proportion of uncertified deaths in London did not exceed 0.8 per cent., while it averaged 1.6 in the thirty-two provincial towns. The causes of all the deaths during the quarter were duly certified in Croydon and in Derby, and only one death was uncertified in Cardiff and in Oldham; while the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Blackburn, Preston, Huddersfield, and Halifax.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,509 births and 3,154 deaths were registered during the week ending Saturday last, July 9th. The annual rate of mortality in these towns, which had been 15.1 and 14.9 per 1,000 in the two preceding weeks, further declined to 14.7 last week. The rates in the several towns ranged from 9.4 in Cardiff, 9.7 in Huddersfield, 10.3 in Brighton, and 10.9 in Burnley, to 17.9 in Plymouth, 18.1 in Gateshead, 20.3 in Newcastle-upon-Tyne, and 21.4 in Sunderland. In the thirty-two provincial towns the mean death-rate was 14.9 per 1,000, and exceeded by 0.6 the rate recorded in London, which was 14.3 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.5 per 1,000; in London the rate was equal to 1.6 per 1,000, while it averaged 1.5 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.5 in Gateshead, 3.3 in Sunderland, 3.5 in Newcastle-upon-Tyne, and 3.7 in Plymouth. Measles caused a death-rate of 1.3 in Croydon, 1.5 in Gateshead, and 2.1 in Plymouth; scarlet fever of 1.0 in Gateshead; whooping-cough of 1.1 in Oldham and in Sunderland, 1.2 in Salford, 1.7 in Bolton, and 2.1 in Newcastle-upon-Tyne; and "fever" of 1.0 in Swansea. The 48 deaths from diphtheria in the thirty-three towns included 27 in London, 6 in Leeds, and 3 in West Ham. One fatal case of small-pox was registered last week in Liverpool, but not one in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,238 and 2,205 at the end of the two preceding weeks, had risen again to 2,250 on Saturday last, July 9th; 237 new cases were admitted during the week, against 230, 231, and 204 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 9th, 1,009 births and 603 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.5 and 21.1 per 1,000 in the two preceding weeks, declined again to 20.0 last week, but was 5.3 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.3 in Leith and 14.5 in Paisley to 23.5 in Dundee and 27.2 in Perth. The zymotic death-rate in these towns averaged 3.2 per 1,000, the highest rates being recorded in Glasgow and Dundee. The 289 deaths registered in Glasgow included 14 from measles, 2 from scarlet fever, 18 from whooping-cough, and 14 from diarrhœa. Two fatal cases of scarlet fever were recorded in Edinburgh, and 16 of measles in Dundee.

DIPHTHERIA IN LONDON.

The prevalence of diphtheria in London, judged by the notification returns, showed a further increase last week, although the mortality from this disease showed a slight decline from that recorded in the preceding week. The fatal cases of diphtheria in the metropolis, which had been 26, 21, and 29 in the three preceding weeks, were 27 during the week ending Saturday last, July 9th. Of these 27 deaths, 5 were of persons belonging to St. Pancras, 3 to Shoreditch, and 2 each to Paddington, Hackney, Clerkenwell, St. Luke, and Lambeth sanitary areas. The notifications of diphtheria in London, which had been 187 and 215 in the two preceding weeks, further rose to 218 during the week ending Saturday last. Compared with the preceding week there was a considerable increase in the prevalence of diphtheria in West London, while in North, Central, East, and South London there was a decline. The marked increase in West London was mainly due to an outbreak in Chelsea, where 13 new cases were notified, against 3 and 2 in the two preceding weeks; and in Fulham, the 14 new cases were double the number notified in the preceding week. There was a decline last week in the prevalence of the disease in each of the sanitary areas of North London, except Islington, where 10 new cases were notified, against 7 and 6 in the two preceding weeks. Among the sanitary areas of East London there was an increase in the prevalence of the disease in Bethnal Green and in Whitechapel: in the latter sanitary area the new cases, which had been 2, 4, and 5 in the three preceding weeks, further rose to 9 last week. On the other hand, there was a marked decline in the prevalence of diphtheria in Poplar, 8 new cases being notified, against 16 in the preceding week. The slight decrease in the prevalence of the disease in South London last week was mainly due to the decline in the number of new cases in Bermondsey, Greenwich, and Camberwell: in the last-named sanitary area the new cases, which had steadily increased from 0 to 10 in the five preceding weeks, declined to 6 last week. On the other hand, there was a marked increase in the prevalence of diphtheria in Lambeth, Battersea, and Lewisham. The admissions of diphtheria patients into

the Metropolitan Asylum Hospitals during last week were 152, against 132, 125, and 119 in the three preceding weeks; and 1,006 cases remained under treatment in these hospitals on Saturday last, July 9th.

NURSING IN WORKHOUSES.

At the Northern Poor Law Conference held at Gilsland on July 13th, Dr. Rhodes read a paper on this subject. Dr. Rhodes's views on this question are so well known that we need not repeat them. Summed up they emphasise the necessity for good nursing for the sick poor, and at the same time he warns the guardians that good nursing costs money, and more than that, thought, time, and trouble, must be expended in this cause. But—and this should be laid to heart, not only by officials, but by every ratepayer who grudges the necessary outlay—Dr. Rhodes says, "In fact, unless you have satisfactory nursing you are wasting the ratepayers' money to no purpose." Medical skill, drugs, treatment, all are ineffective without the skilled nurse to apply them. Happily the skilled nurse in the workhouse infirmary is more or less the rule by day, but the night nursing is lamentably deficient, and here Dr. Rhodes quotes from Mr. Baldwin Fleming, Poor-law Inspector, who says "nothing can be more inconsistent than to make full arrangements for good day nursing and to hesitate to do the same for night work .....as a matter of fact the good work of the day is often spoilt by the bad work of the night."

METROPOLITAN ASYLUMS BOARD.

SIR EDWIN GALSWORTHY presented his annual report as Chairman of the Metropolitan Asylums Board at an ordinary meeting of the managers held on June 19th. The chief work of the past year has been the opening of the Park Hospital and the building of the Grove Hospital, and of the diphtheria pavilions at the Western Hospital. When the latter work is completed the Board will have increased its available beds by 1,172, thus raising the accommodation at their disposal to 5,177. Eventually this number will be raised to over 6,000 by supplementary beds for 720 patients at the proposed Southern Convalescent Hospital, and by 128 additional beds at the North-Eastern Hospital, which will be available when the reconstruction scheme is carried out.

For the past year London has enjoyed its previous immunity from small-pox, while the number of cases of infectious disease notified under the Public Health Act during 1897 was 45,417, as against 49,708 in 1896. The long-delayed scheme for the infirmary for 750 imbeciles at Tooting has received the approval of the Local Government Board. Not the least interesting phase of the Board's work during the past twelve months has been the providing for the relief of certain classes of afflicted children, whose relief had previously fallen upon the several metropolitan Boards of Guardians. The results of their work in this direction has been a determination to provide isolation accommodation for about 800 children suffering from ophthalmia and other contagious diseases of the eye, and for 400 children suffering from ringworm.

POTABLE WATER AT POCKLINGTON.

WHAT we are told was a much-appreciated lecture was given to the Pocklington and Derwent District Agricultural Societies recently by Mr. Leadman, of Pocklington, on "Water Fit to Drink." As was perhaps to be expected from an antiquarian, reference to the ways in regard to these matters of the ancient Egyptians, of the Greeks, of the Romans, was not omitted. An important part of the paper, however, consisted in pointing out the dangers of contaminated waters. The lecture, to judge from the report which has reached us, was of a somewhat familiar and conversational character, and therefore more likely to be followed by the audience to whom it was addressed than a more formal and systematic treatise upon the subject. The general character of the waters from the several geological strata of the East Riding was indicated. The practice of getting medical men to lecture to the lay public on health subjects is every way to be commended. Unfortunately, in many places, the public prefer ignorance and bliss.

TRAMP-SPREAD SMALL-POX.

DR. WYNDHAM RANDALL, the health officer of Bridgend, records the instance of a man having been admitted from the tramp ward to the workhouse, and there found to be suffering from small-pox. Despite the fact that he was next day admitted to the small-pox hospital, after an interval of eleven days an inmate of the "house" was found to be ill of small-pox, and two days later another inmate developed the disease. Neither of these latter had been revaccinated prior to infection by small-pox, and only one of them after wards. The case is also mentioned of a "district surveyor" contracting small-pox in the act of disinfecting a house; and the question arises why the official was not revaccinated in view of his occupation.

WATER ANALYSES BY HEALTH OFFICERS.

D.P.H. AND M.O.H.—It will be found that the task of making an ordinary qualitative examination of water on the part of a medical officer of health is not one imposed upon him "outside his official duties" as prescribed, but rather that the matter is one which falls within his province, and has to do with the discharge of his duties under the requirements of the regulations which govern his office. That the salary doled out to the officer is frequently only a paltry pretence at payment is too true; but it does not take the scope of the multifarious demands which a local authority may legally make upon an ofttimes underpaid officer.

ST. PATRICK'S (SWIFT'S) HOSPITAL, DUBLIN.—The governors of St. Patrick's Hospital have recently acquired a valuable addition to their resources. By the purchase of a large house and grounds at Lucan they have the means of establishing a country convalescent home, which ought to prove of great value to the parent institution. It will be remembered that there are in Scotland several institutions where the great value of Nature is recognised, notably the Royal Crichton Asylum, Dumfries.

MEDICAL NEWS.

AN Association of Medical Practitioners has recently been established in Portugal. The new association already has a membership of more than 200.

THE UNITED STATES PHARMACOPŒIA.—In May, 1900, the eighth decennial Convention for the revision of the *United States Pharmacopœia* will be held in Washington. All medical colleges and State medical societies will be invited to send delegates.

DENTISTS FOR THE AMERICAN NAVY.—Mr. Otey, the representative of Virginia, has introduced a Bill into the United States Congress providing for the appointment of a brigade dentist for each brigade, with the rank of major, and one for each regiment, with the title of captain.

AT the general meeting of the British Balneological and Climatological Society, Dr. Fortescue Fox (Strathpeffer Spa) was elected President, Dr. Samuel Hyde (Buxton) Chairman of Council, and Mr. H. Shirley-Jones (Droitwich) and Dr. Septimus Sunderland (London) Honorary Secretaries.

A BOY who had fallen into the Thames at a point opposite the Tate Gallery was gallantly rescued from drowning on July 12th by Dr. Nitch-Smith. There were no steps down the Embankment at the point, and Dr. Nitch-Smith had to climb the wall and drop a distance of 20 feet into the shingle. The boy, who was almost dead, was resuscitated by Dr. Nitch-Smith, with the assistance of some workmen, and was removed to the Westminster Hospital.

THE NIGHTINGALE FUND.—The report of the past year's work of the Nightingale Fund shows that the excellent work which the association has accomplished in previous years is being continued. Since the opening of the school at St. Thomas's Hospital in 1860, no fewer than 1,452 candidates have been admitted, of which number 864 have, after completing a year's training, received appointments either in St. Thomas's or some other hospital. The long list of appointments received by former probationer-nurses during the year —including several matronships in provincial hospitals and other posts of equal responsibility—is the best testimony that could be paid to the character of the training given and the esteem in which it is held.

THE PURIFICATION OF THE THAMES.—Mr. Gough, Secretary of the Thames Conservancy Board, stated in the course of a speech at the annual dinner of the Epidemiological Society of London, held on June 24th, that the increased jurisdiction which the Conservancy Board now possessed had enabled them to bring about a very marked reduction in the pollution of the river. It had been shown that immediately above the intakes of the water companies the amount of organic impurity dissolved in the water was only two-thirds of that which obtained prior to 1894. Mr. Gough added that the Conservators were now bringing strong pressure to bear upon such authorities as are still in default.

THE annual report of the Council of Epsom College shows that the school has continued to make most satisfactory progress, and that the number of university distinctions gained was in excess of the record of any previous year. As an evidence of the affection which Epsom is capable of arousing, it may be mentioned that Mr. P. H. Maddock, an assistant master who died recently, bequeathed a sum of £500 to the College to be used for its benefit in such a manner as the Governors might think fit. Mr. Maddock also left his pictures and books to the school and his valuable entomological collection has been presented to the College museum by his executor.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.—This Society has decided to hold a special meeting on the occasion of the visit of the British Medical Association to Edinburgh. The gathering will take the form of a luncheon, to which members may invite their friends, to be held at the Balmoral Hotel on Wednesday, July 27th, at 1.15 P.M. The annual meeting of the Society will, as usual, be held in Paris in the autumn, and the meeting in Edinburgh will not concern itself with business, but will be entirely of a social character. Members who intend being present at the luncheon

would greatly facilitate arrangements if they would kindly intimate their intention to the honorary secretaries, at the same time mentioning how many places they wish reserved for guests. The secretaries for the luncheon are Drs. Geo. Bull and StClair Thomson, 28, Queen Anne Street, London, W.

International Congress of Applied Chemistry.—The third International Congress of Applied Chemistry will be held in Vienna from July 28th to August 2nd. In the Section of Pharmaceutical Chemistry the following questions among others will be discussed: A proposal to introduce into all *Pharmacopœias* and supplements to *Pharmacopœias* statements of the physical and chemical properties, and of the qualities requisite to establish the purity, of substances; a proposal to introduce for all countries not only uniform methods for the preparation of heroic remedies, but the employment of uniform standards to determine the potency of medicaments; a proposal to introduce uniform methods of determining the amount of active substances contained in surgical dressings; the nature of the analytical researches to be employed for estimating the value of new serumtherapeutic preparations, and the precautions to be taken before such preparations are recognised as suitable for use in medical practice; and the general qualities requisite in medicinal wines.

Presentation.—Recently, upon the occasion of his leaving Bromley, Kent, where he has practised for the past thirty years, Dr. W. T. Beeby was the recipient of a handsome chronograph gold watch and chain, and to Mrs. Beeby was presented a gold bracelet with a centre of pearls. Mr. Tindal Atkinson made the presentation in the name of a large body of subscribers, and at the same time handed to Dr. Beeby a cheque for ten guineas and a handsome album containing an address inscribed on vellum and the names of the subscribers. Mr. Atkinson, Mr. Mullen, Dr. Chatterton, the Rev. J. White, and Major C. Satterthwaite all made most kindly remarks respecting Dr. and Mrs. Beeby, Dr. Chatterton especially dwelling on the excellent feeling of comradeship and respect entertained for Dr. Beeby by all the medical men of Bromley and the neighbourhood. Dr. Beeby, in reply, thanked his many friends for their handsome gifts.

Reading Dispensary.—The annual report of this dispensary for the year 1897, presented to the annual general meeting of 1898, shows that the dispensary is conducted mainly on provident lines, but that a respectable income from funded property permits the association of a certain amount of charity. To the provident branch there are more than 18,000 subscribers, or about one-fourth the population of the town; of these, about 2,500 joined during the year under consideration. Two points in the management of the dispensary which appear to call for special attention are the arrangements made by it for the performance of vaccination and for attendance upon midwifery. The former is paid for out of the funds of the dispensary, so that the children of subscribers obtain the benefit of free vaccination by their regular medical attendants. As a result the percentage of vaccinations to births is far higher among such children than in the rest of the population. With regard to confinements, midwives are engaged by the Committee, who are bound in cases of difficulty to call in one of the medical officers to the dispensary, who receives a moderate fee from the institution. This arrangement appears to have worked fairly well. The governors hope that with increased support district nurses may be provided, and that eventually the benefits of the provident system may be extended by the establishment of a convalescent home.

Brussels Medical Graduates' Association.—The annual meeting of this Association was held at the Café Royal, Regent Street, on July 12th. Dr. A. W. Thomas was elected President for the year in succession to Dr. C. T. Brookhouse, and Drs. Younger and Major Greenwood were re-elected to their respective posts of Treasurer and Honorary Secretary. The following gentlemen were elected Members of Council: Drs. Gabe, Achard, Snape, Naumann, Wunderlich, Haydon, Eady, Walter Smith, Edwards, and Vicars. Dr. Charles Burland was elected Vice-President, and the Honorary Secretary, in presenting the balance sheet, pointed out the satisfactory financial condition of the Association and its general progress. After the meeting the members and their friends, to the number of 60, dined together and spent a very pleasant evening. Among the guests were Dr. F. Roberts, Dr. Heron, Mr. Joseph Smith, Mr. George Brown, Dr. Clement Godson, Mr. Howard Marsh, and Dr. Morgan Dockrell.

Appointments under the Workmen's Compensation Act.—The following gentlemen have been appointed to act as medical referees under the Workmen's Compensation Act: Dr. R. J. Banning (Shoeburyness) for County Court Circuit No. 38, Districts of Hertford, Edmonton, Grays, Thurrocks, Romford, Southend, and Waltham Abbey; Dr. G. Stokes Hatton (Newcastle, Staffs) for the districts of Longton, Stoke-on-Trent, Hanley, Burslem, Tunstall, and Newcastle-under-Lyne; Dr. J. Munro Moir (Inverness) for the district of the county of Inverness (mainland); Dr. E. S. Watling (Mansfield) for County Court Circuit. No. 18, comprising Nottingham, Newark, Mansfield, and Bingham; Mr. F. Faulder White (Coventry) for County Court Circuit No. 22; Dr. R. Wilson (Alloa) for the district of the county of Clackmannan, and to act when required in the Sheriffdom of Stirling, Dumbarton, and Clackmannan; Dr. J. Woodman and Dr. Raglan Thomas (Exeter) for the Exeter district.

Ophthalmological Society of the United Kingdom.—At the meeting of this Society, held on July 8th, the following gentlemen were elected officers and members of the Council for the session 1898-99:—*President:* H. R. Swanzy. *Vice-Presidents:* Sir W. R. Gowers, M.D., F.R.S.; D. Argyll Robertson, M.D. (Edinburgh); R. Marcus Gunn; R. Williams (Liverpool); E. Nettleship; Henry Eales (Birmingham); *W. A. Brailey, M.D.; *Priestley Smith (Birmingham); *F. R. Cross (Clifton); *George Cowell. *Treasurer:* *John Abercrombie, M.D. *Secretaries:* James Taylor, M.D.; *E. Treacher Collins. *Librarian:* W. Adams Frost. *Other Members of Council:* Arthur P. L. Wells; L. H. Tosswill (Exeter); C. E. Glascott, M.D. (Manchester); Arthur W. Sandford, M.D. (Cork); Charles J. Oldham (Brighton); Howard H. Tooth, M.D.; W. A. Turner, M.D.; G. E. Wherry, M.B. (Cambridge); S. H. Habershon, M.D.; *J. B. Lawford; *W. J. Cant (Lincoln); *Sydney Stephenson. The gentlemen whose names are marked with an asterisk (*) were not in the Council, or did not hold the same office, during the preceding year.

United Hospitals Athletic Sports.—The thirty-second annual athletic meeting in connection with the United Hospitals Athletic Club was held at the L.A.C. Grounds at Stamford Bridge on Saturday afternoon, July 9th. There was a good attendance. Of the twelve events which constituted the programme, eleven were in competition for the Challenge Shield, which went to St. Mary's with five events to their credit, Guy's and St. Bartholomew's scoring two firsts and St. George's and Middlesex one each. More than one existing record was broken, H. B. Butler improving on the half-mile time, while C. E. H. Leggatt, the ex-champion jumper, beat his previous best, 5 ft. 7 in. by a quarter of an inch. The hurdles were easily won by W. M. Fletcher, the old Cambridge blue, who also brought off the hammer, only failing to beat the existing record of 102 ft. 6 in. by half a foot. This is the third year that St. Mary's has won the shield. The 100 Yards Challenge Cup was won in 10⅗ sec. by a yard by F. W. Sime, Guy's, while the half mile remained with A. G. Butler, the present holder of the record (2 min. ⅗ sec. in 1895). Butler had the race in hand from the start and won in 1 min. 9⅘ sec. by half a dozen yards, thus creating a fresh record. G. E. Orme, St. George's, put the weight 34 ft.—4 ft. 3 ins. short of the record. F. Sime, Guy's, won the 220 yards by a good yard, which he had maintained all the way; and A. C. Oakley, Middlesex, getting the lead 200 yards from home, won the mile by a dozen yards in 4 min. 48⅗ sec. In the 1½ mile invitation handicap, Munn started very lame, and retired after going a mile. Bennett took the lead early in the fifth lap, and won easily by fully 100 yards. Had Bennett anyone to take him along in the last quarter, he would undoubtedly have beaten the record; as it was, he was ⅘ sec. outside, his time being 6 min. 54⅘ sec. The ¼ mile A. G. Butler, St. Mary's, won by a good yard in 52⅗ sec., which victory won the shield for St. Mary's. In a slow-run race, R. C. Leaming, St. Mary's, won the 3 miles in 16 min. 7⅗ sec.

SCIENTIFIC PRIZES.—The Istituto Veneto di Lettere, Scienze ed Arti has awarded the three Balbi-Valier prizes, which are of the value of £120 each, respectively to Senator Durante, Professor of Surgery in the University of Rome, for his treatise on General Special Surgical Pathology and Treatment; to Professor Boschetti for his work on "Tremulotherapy"; and Professor Emilio Cavazzani, Lecturer on Physiology and Pharmacology in the University of Ferrara, for his researches on the Thermogenesis, Glycogenesis, and Circulation of the Fœtus.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM GENERAL HOSPITAL.—House-Physician. Salary, £70 per annum, with residence, board, and washing. Applications to the House Governor by July 30th.

BISHOP'S STORTFORD UNION.—Medical Officer and Public Vaccinator for the Pelhams District. Salary, £35 per annum. Applications to the Clerk by July 25th.

BOURNEMOUTH: BOSCOMBE HOSPITAL.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Secretary by July 23rd.

BRENTFORD UNION.—Assistant Medical Officer for the New Infirmary, unmarried. Salary, £100 per annum, with furnished apartments, rations, washing, etc. Applications, on forms provided, to the Clerk, Union Offices, Isleworth, W., by July 20th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton.—House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to Dr. E. Markham Skerritt, Dean, by July 21st.

BUXTON: DEVONSHIRE HOSPITAL.—House-Surgeon and Assistant House-Surgeon. Salary, £100 and £50 per annum respectively, with furnished apartments, board, and washing. Applications to the Secretary by July 20th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Anatomy. Stipend, £120 per annum. Temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary, £120. Applications to the Registrar by July 30th.

DENTAL HOSPITAL FOR LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester Square. Demonstrator. Honorarium, £50 per annum. Applications to the Dean by July 18th.

DORCHESTER: COUNTY ASYLUM.—Second Assistant Medical Officer, not over 30 years of age. Salary, £130, rising to £160. Applications to the Medical Superintendent by July 20th.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Surgeon to out-patients. Applications to the Committee of Management by July 22nd.

GLASGOW UNIVERSITY.—Lecturer on Materia Medica and Therapeutics. Salary, £150 per annum. Applications to the Secretary of the Court by July 20th.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Junior House-Surgeon. Appointment for six months. Board, lodging, and washing provided. Applications to the Secretary by July 18th.

GUY'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Biology. Applications to the Treasurer by July 23rd.

HALIFAX: ROYAL INFIRMARY.—Assistant House-Surgeon, unmarried. Salary, £50 per annum with an extra allowance of £9 2s. 6d., with residence, board, and washing. Applications to the Secretary by July 20th.

HASTINGS, ST LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. No salary, but residence, board, and laundry provided. Applications to the Secretary by July 27th.

HOSPITAL FOR WOMEN, Soho Square, W.—Registrar. Honorarium, 25 guineas. Applications to the Secretary by July 18th.

HUDDERSFIELD INFIRMARY.—Assistant House-Surgeon. Also Second Assistant House-Surgeon. Salary, £50 and £40 respectively per annum, with board, residence, and washing. Applications to the Secretary by July 22nd.

HULL: VICTORIA HOSPITAL FOR SICK CHILDREN, Park Street.—Lady House-Surgeon. Salary £40 per annum, with board and laundry. Applications to the Honorary Secretaries by July 19th.

LONDON HOSPITAL MEDICAL COLLEGE.—Lectureship on Public Health. Applications to the Warden.

MANCHESTER: OWENS COLLEGE.—Senior and Junior Demonstrator in Physiology. Salaries commencing at £300; and £100, rising to £150 respectively. Applications to the Registrar by July 30th.

MANCHESTER COLLEGE.—Demonstrator of Anatomy. Applications to the Secretary by July 30th.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £70 per annum, with board, lodging, and washing. Applications, endorsed "House-Surgeon," to the Secretary to the Board of Management by July 25th.

MARGATE ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary at the offices, 30, Cornhill, E.C., by July 25th.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary, £170, with furnished apartments, coals, gas, and attendance. Assistant for six months. Salary, £60, with furnished apartments, etc. Applications to the Secretary.

QUEEN'S HOSPITAL, Hackney Road, Bethnal Green, N.E.—Assistant Resident Medical Officer. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by July 18th.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—House-Physician. Appointment for six months. Board, etc., provided. No salary. Applications to the Secretary by July 20th.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by July 30th.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Honorarium of £10 at end of six months, with board, lodging, and washing. Unmarried. Applications to the Secretary.

WAKEFIELD: WEST RIDING ASYLUM.—Pathologist. Salary, £150, increasing to £200. Applications to the Medical Superintendent.

WEMYSS AND DISTRICT JOINT BOARD.—Medical Officer of Health. Salary, £50 per annum. Applications to the Clerk.

WESTMINSTER HOSPITAL, Broad Sanctuary and Marsham Street.—House Surgeon, unmarried. Salary, £100 per annum, with board and residence. Applications to the Hon. Secretary.

WEST HAM: Resident Medical Officer for the Workhouse and School. Salary, £100, with board, lodging, and washing, in addition to usual residential allowances. Applications, on forms to be obtained from the Clerk, by July 27th.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Chairman of the Medical Committee.

WORCESTER: Assistant County Analyst. Salary, £40 per annum. Applications, endorsed "County Analyst," to the Clerk of the Peace by July 20th.

YORK: CITY HOSPITAL. Assistant House-Surgeon. Salary, £60 per annum, with board, lodging, and washing.

YORK: Resident Medical Officer for the Workhouse and Fever Hospital. Salary, £150 a year, with furnished apartments, coals and gas. Applications to Mr. W. Draper, De Grey House, York, by July 19th.

MEDICAL APPOINTMENTS.

COOKE, J. Benson, L.R.C.P., L.R.C.S.Edin., appointed Medical Officer to H. M. Convict Prison, Borstal, Kent.

CORY, Dr. G. C., appointed Government Medical Officer at Bingara, New South Wales.

CORRY, William, M.D., appointed Health Officer for the Shire of Phillip Island and Woolamai, Victoria.

COWEN, H. O., M.B., appointed Health Officer for the Borough of Reywood, Victoria.

COX, E. O., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Medical Officer for the Second District of the Cleobury Mortimer Union.

DYER, C. Harold, M.D.Aberd., reappointed Medical Officer of Health to the Cleckheaton Urban District Council.

FROST, A. E., M.B., B.S., appointed Clinical Assistant to the Chelsea Hospital for Women.

GOODMAN, Henry Cyril, M.B., B.C.Camb., M.R.C.S.Eng., L.R.C.P.Lond., appointed Resident Medical Officer to the Kasr-el-Aini Hospital.

HAMILTON, Dr. Partrick J., appointed Medical Officer to the Ardara Dispensary District, co Donegal, *vice* T. D. Sullivan, L.R.C.P., L.R.C.S.Edin.

HARSTON, L. de Courcy, L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer for the Workhouse and No. 8 and 9 Districts of the Kingsbridge Union.

HATTON, G. Stokes, M.D., M.S.Durh., F.R.C.S.E., appointed an Honorary Surgeon to the North Staffordshire Infirmary, Hartshill, Stoke-on-Trent.

HAYWARD, John W., M.R.C.S.Eng., L.S.A., reappointed Medical Officer of Health to the Whitstable Urban District Council.

HILL, Charles A., M.B., B.C., B.A.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., appointed Stipendiary Medical Officer to the Liverpool Hospital for Consumption and Diseases of the Chest.

HUTCHINSON, Frederick Arundel Stuart, M.B., B.C.Camb., M.R.C.S.Eng., L.R.C.P.Lond., appointed Resident Surgical Officer to the Kasr-el-Aini Hospital.

JEFFERY, E., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Second District of the St. Austell Union.

LAWRENCE, H. Cripps, L.R.C.P.Lond., etc., appointed Honorary Physician to the Home for Sick Children, Cheltenham.

LAWSON, T. C., M.R.C.S., appointed Medical Officer for the Stogumber District of the Williton Union.

MADDEN, Frank Cole, M.B., B.S.Melb., F.R.C.S.Eng., Medical Superintendent of the Hospital for Sick Children, Great Ormond Street, appointed Professor of Surgery at the Egyptian Government School of Medicine, and Senior Surgeon to the Kasr-el-Aini Hospital, Cairo.

MASSIE, Thomas, M.B., appointed by the School Board for London Lecturer on Ambulance at the Evening Continuation Schools in Southwark, Walworth, Newington, and Bermondsey.

MAY, Francis Hollingsworth, L.R.C.P.Lond., D.P.H.(Fac.P.&S.Glasg.), appointed Medical Officer of Health to the Aston Manor Urban District Council, *vice* Henry May, L.R.C.P. Lond., retired.

MILTON, Francis Ralph Septimus, M.R.C.S.Eng., L.R.C.P.Lond., appointed Professor of Clinical Surgery at the School, and Surgeon to the Kasr-el-Aini Hospital.

NOBLE, H. P., M.B., B.S.Lond., M.R.C.S., L.R.C.P., appointed Honorary Anæsthetist to Children's Hospital, Paddington Green.

PALMER, G., M.B., appointed Health Officer for the Shire of Ararat, Victoria.

POTTER, J. C., M.B., C.M.Edin., appointed Medical Officer for the Tudhoe District of the Durham Union.

RUSSELL, R. Ussher, L.R.C.P.Edin., appointed Medical Superintendent for Insane, Newcastle, and Health Officer for the Port of Newcastle, New South Wales.

RISELEY, Stanley, M.D., C.M.Edin., appointed Honorary Ophthalmic Surgeon to the Sheffield Royal Hospital.

SANDELL, H. W. A., L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer of Health to the Linslade Urban District Council.

SHACKEL, George A., L.R.C.P.Lond., M.R.C.S.Eng., reappointed Medical Officer of Health to the Ludlow Rural District Council.

SPICER, W. T. Holmes, M.A., M.B.Cantab., F.R.C.S.Eng., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children, appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfields, E.C.

STAIN, Corbet, M.B., C.M.Edin., appointed Medical Officer for the Audlem District of the Nantwich Union, *vice* Walter Twyford, M.R.C.S., L.R.C.P.Lond., resigned.

STEWART, F. G., M.R.C.S.Eng., L.S.A., appointed Medical Officer of Health to the Wadebridge Urban District Council.

STRETT, E. F., M.D.Durh., M.R.C.S.Eng., appointed Medical Officer and Public Vaccinator for the Eighth District of the Lexden and Winstree Guardians, *vice* James Crooks, M.D.Toronto, L.R.C.S.Edin., resigned.

TOLLER, Seymour Graves, M.D., M.R.C.P.Lond., M.R.C.S.Eng., appointed Professor of Clinical Medicine at the School, and Physician to the Kasr-el-Aini Hospital.

TRUMPER, O. B., M.B., Ch.B., appointed Medical Officer for the Market Rasen First District and the Tealby District of the Caistor Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 5s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

CROSS.—July 7th, at Worcester House, Clifton, the wife of F. R. Cross, M.B., F.R.C.S., High Sheriff of Bristol, of a daughter.

FULLER.—On July 3rd, at Fairhaven, Queen's Road, Richmond, Surrey, the wife of John Reginald Fuller, M.B., B.S., M.R.C.S., L.R.C.P., etc., of a daughter.

MARRIAGE.

ST. JOHNSTON—SANDERSON.—On July 6th, at Edgbaston Parish Church, by the Rev. Canon Strange, M.A., George St. Johnston, M.D., son of the late James Johnston, M.R., to Caroline Lily, daughter of the late William Sanderson and Mrs. Sanderson, of Yew Tree Road, Edgbaston.

DEATHS.

BOSWORTH.—On July 12th, 1898, at Grove End, Sutton, Surrey, Emily Sophia, wife of John R. Bosworth, M.R.C.S., etc.

RAVERTY.—On July 11th, at 8, Chadmore Road, Upper Clapton, Dr. George A. Raverty, formerly of Evering Road, Stoke Newington, aged 55. *R.I.P.*

DIARY FOR NEXT WEEK.

TUESDAY.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, 4.30 P.M.—Dr. Harry Campbell: On Apoplexy and other Disorders attended by Loss of Consciousness.

WEDNESDAY.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Percy Dunn: Ophthalmic Cases.

FRIDAY.

British Laryngological, Rhinological, and Otological Association, 11, Chandos Street, 8 P.M.—Clinical Meeting. Cases will be shown by Drs. Dundas Grant, Middlemas Hunt, George Stoker, Furnias Potter, and others.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 2.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Tu., 2.30, Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 2.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F. 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 2.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 8; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0. Eye, Tu. F., 9; Ear, M. Th., 9; Throat Tu. F., 3; Skin, M. Th., 8; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429 Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

DR. T. ANDERSON GLOVER (Askern) desires to hear of a suitable home for a young woman who is much "run down" and hysterical. Seaside preferred. He asks also for information as to the probable cost.

IGNORAMUS will be grateful to any reader who will inform him whether there is any sign, *post mortem*, characteristic of death caused by an overdose of chloroform vapour. References to literature bearing on the point would be most welcome.

CHELSEA PENSIONER would be obliged for suggestions as to treatment of syphilitic primary teeth. The notches in the upper incisors are not yet apparent, but discoloration has appeared, and he wishes if possible to prevent the pathognomonic signs of the disease being developed. The subject is a healthy child aged 18 months, and has been treated to salivation with mercury. Perhaps some reader could suggest a preservative enamel or paint or could offer some other suggestion short of extraction, for what will otherwise prove an eyesore.

M. Y. asks for information of a good monthly German journal dealing with hygiene and bacteriology; also for the name, price, and publisher of a good German dictionary which would give scientific and medical terms.

*** Our correspondent would probably find that the following would meet his wants: *Zeitschrift für Hygiene und Infectionskrankheiten* (Leipzig: Veit and Co.); or, dealing more exclusively with bacteriology, *Centralblatt für Bakteriologie, Parasitenkunde, und Infectionskrankheiten* (Jena: Gustav Fischer). *A German-English Dictionary of Medical Terms*, by Frederick Treves, F.R.C.S., and Hugo Lang, B.A. (London: J. and A. Churchill, 1890). A good German dictionary, such as Hilpert's (Routledge and Co.), gives most of the medical and scientific terms.

PHOSPHORUS NECROSIS OF JAW.

H. S. P. writes: I remember reading an extract from a French medical journal, published fifteen or twenty years ago, in one of our medical papers, that the fumes of turpeutine prevented necrosis of jaw from phosphorus. Can any of your readers give further information or date of publication?

THE TREATMENT OF BROMIDROSIS.

PUZZLED asks: Can any suggestions be given as to best remedies for this unpleasant affection in a young gentleman? Absolute cleanliness, morning bath, and sponging the feet at night, with frequent change of stockings, are scrupulously habitual; but, after the least walking, the feet become heated, perspire, and emit a most pungent odour, which is socially very disagreeable and overpowering. The sufferer is in perfect health. Any advice will be gratefully received. It is not a question of cleanliness.

*** It would appear that the affection is due to an alkaline fermentation, and that, among the many cures that have been advocated, the most successful have been those which are of an acid and antiseptic nature. Cleanliness is, of course, a *sine quâ non*, coupled with which the following have been used with varying success: As constitutional remedies, the affection being regarded as a vasomotor effect, atropine, strychnine, calomel, and compound scammony powder have been given. As local remedies, the following have been advocated: The German army surgeons, in their reports, have spoken highly of salicylic acid used as an ointment with lard in the proportion of 1 to 50. The same substance has been prescribed as a dusting powder. A curious remedy, but one that is reported to have been successful, is a piece of lead plaster cut to the shape of the sole and worn inside the sock. Diachylon ointment has also been used with satisfactory results, as has a lotion compounded of red oxide of lead and a solution of the subacetate of the same metal. Red oxide of zinc has also been used as a dusting powder, and the ointment of zinc is spoken of still more favourably. In more recent years an antiseptic treatment has been largely used. Such is the prescription to wring out the socks in, a 1 in 40 carbolic acid solution before wearing them, and the use of a 5 per cent. chromic acid solution as a lotion. Other reagents of a similar nature that have been used are bromo-iodine, iodol, aristol, boracic acid, etc. A lead spirit solution as follows: R plumbi subacet. 5j; Sp. vini rect. 3ij; acet. destil. 5j; aq. ad 3xvj, is also given. Another dusting powder that is spoken of as efficacious is powdered alum. All authors insist on loose boots, woollen socks, discarding old and saturated foot gear, and of course absolute cleanliness.

ANSWERS.

VICTIM.—We have been unable to obtain any information about the society.

R. D. P.—Mr. E. B. Turner, F.R.C.S., in his article on Cycling for Women in the BRITISH MEDICAL JOURNAL of June 6th, 1896, p. 1309, stated as to the result of his experience that a woman should not ride during the menstrual period, during the time of pregnancy, nor for three months at least after her confinement.

VARIOLOID OR VARICELLA.

M.D.GLASG.—Our correspondent's diagnosis, confirmed as it was in consultation with a resident physician, appears to be in consonance with

the facts of the case as related by him. Even had there been an element of doubt, which does not appear to have existed, measures of isolation would have been indicated.

MERCANTILE MARINE.

J. A. M.—Application for the post of ship surgeon should be made direct to the owners or general managers of the various steamship lines, the names of which may be found in the advertising columns of the daily press, and should be supported by whatever commercial or personal influence can be obtained. The cost of instruments, if they are not found by the firm, is from £20 to £25; uniform about £10. The remuneration is usually about £7 to £8 per month.

"F. H. M.," writing in the BRITISH MEDICAL JOURNAL of January 22nd, 1898, page 200, as an ex-ship surgeon, suggested that information as to the duties of the office might be found in that portion of Notter and Firth's *Hygiene* which deals with the navy and mercantile marine.

NOTES, LETTERS, Etc.

PUERPERIUM COMPLICATED BY CEREBRAL HÆMORRHAGE.

MR. F. CHARLES FITZGERALD, L.R.C.S.I., etc. (Hanley, Staffs) writes: On March 22nd, 1898, I attended N. A., aged 37, 6-para, who was delivered of twin daughters (vertex presentation), one of which was stillborn. Labour was precipitated, both children being born within twenty minutes from the first symptoms. While sitting up on the morning of April 2nd, the twelfth day after her confinement, and apparently in her usual health, the patient was seized with an apoplectic fit, coma following rapidly. I saw her an hour afterwards, when she was cold, collapsed, and pulseless, and had a death-like pallor. She seemed as though life were ebbing away. She was then found to be suffering from right hemiplegia with slight aphasia. Under treatment she soon recovered consciousness, and the following day her leg had almost recovered. She remained in a more or less conscious condition, taking nourishment freely, until April 16th, when she developed pneumonia, from which she died on the evening of April 18th, almost four weeks after delivery. During my attendance before her paralysis I noticed that her pulse was of high tension, arteries rigid, heart hypertrophied, and her pulse 96. There was no œdema, but on repeated examination of her urine it was found highly albuminous. The inference of chronic nephritis seems to me pretty clear, and accounted for all her symptoms.

AN APPEAL ON BEHALF OF THE FAMILY OF THE LATE DR. ARTHUR BARLOW.

WE may recall attention to the appeal which was made in the BRITISH MEDICAL JOURNAL of May 14th on behalf of the widow of Dr. Arthur Barlow, who died on March 10th at the early age of 37. Owing to ill-health he was prevented from making provision for his widow, who is without any means whatever, and is in exceedingly delicate health by the long strain of nursing her husband and the shock of his sudden death. Subscriptions will be received by Dr. J. W. Moore, 40, Fitzwilliam Square West, Dublin; Dr. John Barton, 26, Upper Merrion Street, Dublin; Dr. G. J. Clibborn, 80, Ovoca Terrace, University Street, Belfast; Dr. L. H. Ormsby, 92, Merrion Square West, Dublin; Dr. Henry, 2, Lewisham Park, Lewisham, London; and Dr. A. Matson, 619, Holloway Road, London.

THE COLLINS CASE.

A CONTEMPORARY publishes a letter on the Collins case, in which the following question appears: "Why is the West-end full of private hospitals and nursing homes established mainly for these practices?" We have never heard of such a hospital or home, nor do we believe that one exists. We may point out that did such a place exist, nothing would be easier than the detection and conviction of the persons conducting it, for the first discontented nurse or servant could supply to the police evidence sufficient for the purpose. A place used "mainly" for the reception of abortion cases could readily be distinguished from the reputable home hospitals which have occasionally to admit cases of abortion from natural causes or its sequelæ.

MORTALITY STATISTICS OF INSURANCE COMPANIES.

WE learn from *Nature* that the inquiry which is being carried out jointly by the Institute of Actuaries and the Faculty of Actuaries in relation to the mortality statistics of insurance companies is now in an advanced state. The whole of the data relating to the experience in respect of annuities have been dealt with in tables now in the press. They have been prepared under the superintendence of Mr. T. G. Ackland, who has a staff of thirty clerks constantly at work upon the large body of cards containing statistics supplied by the assurance companies. In response to applications made by the president of the Institute and the Faculty, life assurance offices have undertaken to contribute liberally towards the cost of the investigation, which will necessarily be very heavy. The contributions of the companies at present promised or received amount to £10,952, which sum, it is hoped, will cover the larger portion of the expense, and thus relieve the Institute and the Faculty from any anxiety as to their ability to carry this valuable investigation to a satisfactory conclusion.

RAPID DIGITAL DILATATION OF THE OS UTERI DURING LABOUR.

DR. J. R. PURDY (Hawera, New Zealand) writes: I was glad to see in a report on a case of placenta prævia published by Dr. Westwood Fyfe in the BRITISH MEDICAL JOURNAL of April 9th that he had digitally dilated, and after a long experience I can fully endorse all he claims for the method. I am at present busy on a lengthy paper on the subject embracing a large series of cases which I hope to publish shortly. You may, however, as they are on all-fours with Dr. Fyfe's case, deem the following copied from my rough notebook worthy of publication: July 14th, 1894. Mrs. M., aged 21, 2-para. Placenta prævia centralis. Labour commenced at seventh month. When seen os barely admitted one finger; she had lost a good deal of blood; placenta could be felt; diagnosis was clear, seeing there had been two attacks of hæmorrhage previously; rapid dilatation first with fingers, then with forceps blade and blades, and as soon as possible head was delivered by forceps, owing to hæmorrhage gave no chloroform; very little blood was lost after commencing to dilate; mother and child did well. In this case I finished dilatation with forceps blade, because patient not being under chloroform I did not want to pain her unnecessarily by passing hand into vagina. October 8th, 1895. Mrs. S., aged 34, 6-para. Labour commenced at seventh month with profuse hæmorrhage. On examination found placenta presenting centrally. Patient had lost a great deal of blood, and was blanched and almost pulseless; os barely admitted forefinger; digitally dilated; turned; child had been dead some days; gave no chloroform. Whole proceeding lasted inside 30 minutes. Mother did well.

PTOSIS AND FACIAL PALSY.

DR. WILFRED HARRIS (Oxford Terrace, W.) writes: In an interesting account of a case of recovery from *Kopfstetanus* under antitoxin in the BRITISH MEDICAL JOURNAL of July 9th Mr. G. E. Hale mentions the occurrence of slight ptosis of the left eyelid as being present in addition to facial palsy on the right side, and he lays stress on the rare occurrence of the former in such cases. As it is a common mistake to diagnose ptosis of the sound eye when there is inability to close the opposite eye owing to facial palsy, it would be interesting to know whether Mr. Hale examined the movements of the left upper lid without reference to the other eye, or whether the ptosis was merely comparative, seeing that it was slight only and disappeared with the right facial palsy. In all cases of recent facial palsy the palpebral aperture on the affected side is wider than on the sound side, owing to the unopposed action of the levator palpebræ, the orbicularis being paralysed. Moreover, in cases of *Kopfstetanus*, while there is facial palsy on the injured side, there is sometimes spasm of the facial muscles on the other, and apparent ptosis might be due to spasm of the orbicularis on that side.

LETTERS, COMMUNICATIONS, ETC., have been received from:
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BOOKS, Etc., RECEIVED.

Essays on Museums and Other Subjects connected with Natural History. By Sir W. H. Flower, K.C.B., etc. London: Macmillan and Co. 1898. 12s.

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REMARKS
ON THE
UNIVERSAL APPLICABILITY OF THE OPEN-AIR TREATMENT OF PULMONARY TUBERCULOSIS.

BY R. W. PHILIP, M.A., M.D., F.R.C.P.E., F.R.S.E.,
Physician to the Victoria Hospital for Consumption, and Assistant Physician to the Royal Infirmary, Edinburgh.

IN view of awakening interest in relation to tuberculosis, it seems opportune to record the conclusions I have been led to form as the result of ten years' observation with regard to the prevention and treatment of pulmonary consumption in connection with the Victoria Hospital for Consumption, Edinburgh, which was established especially for the treatment of poor patients on the open-air principle. A description of the origin and scope of the hospital has already been published in the *Edinburgh Hospital Reports*, vol. iii., and more briefly in the well-known works on *Sanatoria for Consumption* of Drs. Knopf, Léon-Petit, and Kuthy.

At the Tenth International Congress at Berlin (1890) I ventured to maintain the view that hospitals for the open-air treatment of pulmonary tuberculosis should be founded in relation to all large centres, and might, in my judgment, be as effectively arranged in Scotland as in any part of the world. This view was based on observation of the extremely varying characters of recognised resorts for consumptive patients, and the highly satisfactory results which had been obtained by the adoption of the fresh-air treatment in the practice of an extensive outdoor department for consumption at Edinburgh. Continued observations during the eight years which have elapsed since that date have confirmed and intensified that belief. These include observations made at a large number of the leading sanatoria and health resorts for tuberculous disease at home, on the Continent, and in North Africa, and results obtained at the Victoria Hospital for Consumption at Edinburgh, which was formally opened for the residence of patients four years ago, and where the *cure à l'air libre* has been the basis of treatment throughout.

REPUTED CLIMATIC FACTORS.

In the earlier discussions on the climatic treatment of pulmonary tuberculosis many factors were admitted and rightly emphasised, which cannot, however, be regarded as essential. The recognised fact that tuberculous disease is combated effectively at the sea level and at all elevations to over 6,000 feet, goes far to show that elevation, as such, has little to do with determining the successful result. Similarly the varying mean of temperature recorded at various stations makes us discard temperature as a factor of direct importance. For like reasons we may exclude mere dryness or moisture of the atmosphere, both of which are of significance in particular cases. Comparative stillness of the atmosphere, or, at least, some provision for protection against boisterous or piercing winds, is certainly a powerful adjuvant, usually eminently grateful to the patient, but cannot be regarded as essential in view of the fact that excellent results are attainable on shipboard, and at many sea coast and island resorts with full measure of wind. The nature of the soil is a factor worthy of much consideration in selecting the residence of tuberculous patients, but in the light of the geographical distribution of phthisis cannot be regarded in the category of essentials. Phthisis occurs in all countries where the disease has obtained a footing, and can, I believe, be treated with approximately equal success, or want of success, in all climates, according as the larger indications for treatment are fulfilled or overlooked. It is a comforting doctrine, and economically reassuring, that the tuberculous patient, of whatever country or race, can be suitably treated not far from his own home.

THE ESSENTIAL FACTOR IN TREATMENT.

The one essential is the free exposure of the patient to open air. He must be bathed in fresh air day and night, and this irrespective of whether the weather be good or bad, as popularly understood. The more sunshine, or at least bright sunlight, he can have, the better for the patient. It is remarkable at what different rates in a climate such as this, two patients, starting apparently with the same degree of disease, proceed towards cure according as their dwelling rooms face southward or northward. Every aspect of climate having been considered, I have been led to the conclusion which I have now for long taught to the members of my chest clinic, that the best climate for the treatment of pulmonary tuberculosis is that which wooes the patient most into the open air. The one misfortune of our climate is the tendency which its comparative rigour during a large part of the year induces in patients to stay indoors, frequently in over-heated rooms, when they ought to be outside. This protective policy wants to be reversed. I believe, on the other hand, that one of the chief benefits conferred by an ocean voyage is the impossibility of obtaining a screen from through currents, unless the patient is content to remain cooped in his berth. (To this, of course, has to be added the presence of the greater amount of ozone which in every atmosphere is of first curative moment). The experience of the past dozen years has convinced me that if the patient can only be persuaded to be out of doors, lying, sitting, or walking, as the case may be, a large part of each day, and, when indoors, to allow the freest access of fresh air day and night, results may be obtained in almost any district which will compare satisfactorily with those obtainable at most favoured resorts. In order to do this much depends on the confidence in the method inspired in the patient, and this, in turn, on the physician's complete belief in the method proposed. It has frequently been my experience to meet patients, and sometimes colleagues, who unhesitatingly profess a belief in the value of fresh air in the treatment of the disease, but whose practice is hopelessly at variance with what should be implied in such belief.

ADDITIONAL EVIDENCE IN FAVOUR OF THE VIEW.

It seems needless at this date to dwell on the support which the open-air practice receives from other sides. The question of occupation in relation to tuberculosis is, of course, pregnant with suggestion. It is not the outdoor worker who applies chiefly for help at a consumptive hospital. Such are conspicuous by their absence. Thus, out of a record of 6,996 individual cases from all parts in connection with the Victoria Hospital, there occur 32 farm and garden workers, 21 railway men, 15 policemen and watchmen, 13 postmen, lamplighters, etc.; while there occur of indoor workers, on the other hand, 107 bookbinders, 209 clerks, 243 domestic servants, 1,256 housewives, 320 masons (mostly hewers), 117 millworkers, 196 printers, 107 rubber workers, 227 salesmen and saleswomen, 172 dressmakers, and 172 tailors. In keeping with this, the history of the army affords important evidence. Ill-ventilated though seemingly comfortable barracks have wrought intense havoc, while prolonged exposure has been unaccompanied by such results. Similarly, it is not the animal exposed to all weathers and breeding in the open which falls victim to tuberculous disease, but comfortably housed milch cows – "cabined, cribb'd, confined"—whose ranks are decimated. It seems to me probable that the comparative immunity of the goat and certain other animals is in large part to be explained on those lines.

THE VICTORIA HOSPITAL FOR CONSUMPTION, CRAIGLEITH, EDINBURGH.

The Victoria Hospital was the first, and is apparently still the only, hospital in the United Kingdom for the gratuitous treatment of consumptives strictly on the open-air principle. The outdoor department, which is situated in the heart of Edinburgh, affords a central office where patients are received and treated from day to day, and where suitable patients are selected for hospital residence. The educative value of the outdoor department has been immense. There has been recorded a relative increase in the number of early cases which present themselves, and a corresponding diminution in the frequency of hopeless ones. By daily or frequent visits to the institution patients are induced to lay aside their fear of going about, and are taught by constant reiteration the principles of the open-air system. Although the *clientèle* of this department is both very numerous and poor, it used to seem marvel-

lous in the earlier days that untoward incidents were so infrequent of occurrence in relation to these visits to the institution in all weathers. The experience of the outdoor department has throughout afforded corroborative evidence as to the value of open-air treatment. At the same time, the patients are instructed in respect of preventive measures. For many years the following rules have been distributed at the out-patient department:

RULES FOR CONSUMPTIVE PATIENTS AND THOSE LOOKING AFTER THEM.

Consumption is a communicable disease. It may pass from person to person. It may pass from one lung to the other, or from one organ to another.

The chief source of infection is the expectoration of the consumptive. The great danger lies in the drying of the expectoration, and the blowing about of the dried infectious material.

The spread of consumption can be largely prevented. *If the succeeding directions be obeyed, there need be no serious danger in ordinary intercourse with patients. The breath of the consumptive is not directly infectious.*

The patient should expectorate into a jar or cup containing a tablespoonful of carbolic acid (1 to 20) or other disinfectant.

The vessel should be changed once in twelve hours, or oftener. It should be cleansed by being filled up with *boiling* water. The combined contents should be poured down the w.c. The vessel should then be washed with *boiling* water.

When the patient is out of doors, he should carry a pocket spitting flask (such as Dettweiler's, or the Victoria Hospital simpler model). The flask should be used and cleansed like the jar. The patient should never spit on the streets.

The patient should not use handkerchiefs for expectoration. If this ever has to be done, the handkerchief should be of an inexpensive material, that it may be burned after use. Squares of rag or paper, which may be used for convenience, should be similarly treated.

The expectoration should on no account be swallowed, for thereby the disease may pass to other organs.

Consumptive patients should avoid kissing.

Consumptive mothers should not suckle.

If expectoration has been accidentally deposited on the floor or other object, it should be wiped up and burned, and the surface of the object cleansed with strong antiseptic.

Rooms which have been long occupied by a consumptive patient should, before occupation by someone else, be carefully disinfected, as after other infectious disease.

FRESH AIR is the food of the lungs. Therefore, see that the lungs be not starved.

A.—By Day.—The patient should occupy as airy a room as possible. It must be scrupulously dry, and preferably removed from the ground. The window should be freely open. When able, the patient should be out of doors once or several times during the day. He must avoid over effort, and damp, or chill, which would counteract the benefit.

B.—By Night.—He should sleep alone. The bedroom should be large and airy. The window should be kept open, less or more according to the season.

THE HOSPITAL PROPER.

The hospital proper is situated about a mile to the north-west of Edinburgh. It is placed advantageously on a gentle slope facing due south, and basks in sunshine to a remarkable extent. The present hospital was not built originally for the purpose, but is an old mansion house which has been adapted sufficiently well. The ground, which extends to 7½ acres, includes a beautiful park and gently inclined lawns and winding paths. The grounds are sheltered, without being overshadowed, on various sides by a splendid belt of trees. The position of the grounds and trees render it possible to gain protection somewhere from every possible wind, while a couple of lawns at different levels catch all available sunshine. The present accommodation of the hospital is limited to 15 patients, 7 male and 8 female, but a considerable extension is shortly expected. The climate is the climate of Edinburgh, temperate, but changeable, with a fair amount of mist and wind. There is, however, at all reasons a sufficient proportion of sunshine. The rooms of the patients are bright, with cubic capacity of approximately 1,000 cubic feet per patient (some have almost twice this amount). Heating is arranged for by open fireplaces, which serve also to assist much in the ventilation. Some of the rooms contain three patients, others two, and others, again, only one. Each room has at least one large window, which is constantly open, day and night, and the larger rooms have three windows, which afford free ventilation by a constant current of fresh air. The temperature is regulated according to thermometric reading. A thermometer is placed in each room and every passage. It is the duty of the nurse or someone deputed by her to watch the thermometers from hour to hour throughout the house. A uniform temperature of 60° F. is demanded. This has been found practically easy of attainment by increasing or diminishing the size of the fires. The windows have never been shut, day or night, since the hospital was opened. The air of the rooms is thus remarkably fresh, so that visitors constantly remark on the absence of stuffiness and used-upness such as even well-regulated dwelling-houses exhibit in some degree. The furniture of the room is of the simplest. The floors are plain and polished, and the walls are coloured with distemper, which is renewed from time to time. The bedsteads have an open spring mattress, covered by a very light hair mattress, and the bed clothing is made as little as it can be, compatibly with comfort. There is a simple bedside table, made of glass and metal, which comes readily to pieces for cleansing purposes, an adaptation of the small recently introduced instrument tables. The lower shelf of this is screened by means of a thin cotton strip, which is frequently renewed. The expectoration is carefully treated along the lines which have just been indicated. No patient is allowed to expectorate within doors or outdoors save into the receptacle provided for the purpose.

THE METHODS OF TREATMENT IN PRACTICE.

1. *Free Access of Fresh Air and Sunlight into the Rooms.*—As already indicated, the rooms are bright, with one to three large windows, facing especially south. One or two of these windows in each room have never been closed since the hospital was opened. Most of the windows are provided with a closely fitting board, 8 inches deep, which is placed within the lower part of the framework, and on which the lower edge of the lower sash rests. This allows, even in the stormiest weather, a free but gentle current of air to pass upwards between the sashes into the room. Under ordinary conditions of weather, however, the windows and doors are freely opened in addition. The windows are not allowed to be closed merely to raise the temperature within the room. This must be effected by an increase of fuel throughout the house. In practice it has been found easy in this way to obtain a uniform temperature of 60° F. The patients are thus taught, and very soon learn, to fear a draught less than a stuffy atmosphere.

2. *Out-of-door Life.*—Under ordinary conditions every patient is out of doors for a considerable portion of the day, the length of time being prescribed in individual cases just as are the diet and medicines. The more delicate patients, especially those with marked pyrexic and circulatory disturbance, are conveyed outside to reclining chairs, or the bed is carried out without disturbing the patient. Care is taken that such patients are kept sufficiently warm by suitable clothing. I have treated thus patients with considerable pleural effusion with much advantage. For other cases, walking exercise on the gently sloping paths is enjoined, with rest from time to time. During the finer weather meals are commonly taken outside.

3. *Graduated Exercise.*—Some of the patients rest entirely at first. The great determinant under this head is the state of the circulation. For others quiet walking exercise during regulated intervals is sufficient. This is often combined with the use of a simple retaining apparatus, whereby the shoulders are thrown backward, the elbows approximated behind, and the play of the chest, especially in its upper portion, rendered free. Other patients are allowed light dumb-bell or Indian club exercises, with the same object in view. To still stronger patients mild golfing or quoit-throwing is permitted, and to those further on, gentle cycling exercise. In addition, simple garden games of various kinds are permitted in sheltered corners, according to the direction of the wind. In the regulation of these measures, the pulse is regarded as a better indicator than the stethoscope.

4. *Clothing.*—Sufficiently warm but light clothing is prescribed. To meet this indication there is nothing better than the well-known Shetland materials. The patients are taught that, as cold has not produced their disease, so the piling on of clothes will not cure them, and is, contrariwise, distinctly harmful in most cases. Thus chest-protectors, which simply harbour dirt and foul odours, are forbidden, and the extraordinary and varied wardrobe in which the patient generally arrives is speedily simplified. The patient is taught that, just as the fresh air must be freely admitted to his lungs, so the surface of his body may be exposed to its benign influence without harm.

5. *Bathing.* Even the most delicate patient is sponged gently but widely, once or preferably twice, daily. In all cases, where there is not a distinct contraindication, the patient after some ten days' observation is prescribed a regular bath. This is simply a momentary dip, the temperature of the

water being regulated according to the season, but always to the cool side. This has proved in my experience a great advantage, and has never been followed by the slightest accident. The bath is succeeded by rapid dry-rubbing—in more delicate cases by a nurse or attendant, and in stronger cases by the patient himself. In some instances more formal massage is practised with advantage by the nurse, and frequently oily applications—chiefly stimulating, with perhaps cod-liver oil as the basis—are applied. It is marvellous how soon unhealthily acting skins come to function properly.

6. *Dietary.*—In most cases five meals are allowed daily. Of these, three are the more formal breakfast, dinner and tea, while, between breakfast and dinner, a cup of soup or warm milk or the like, and towards bed-time something similar is given. Milk is allowed freely throughout, and forms a large proportion of the dietary in pyrexic cases. In many of these, raw meat juice in various forms is regularly supplied. Stimulants are not exhibited universally, but in pyrexic conditions, and in cases where there is much prejudice of the circulation are usually prescribed. Before and after the larger meals, the patients are enjoined to rest for a little, and the more delicate recline on a couch or in bed.

7. *Medicinal Treatment.*—It is unnecessary to discuss this at present. It is sufficient to say that fattening agents are freely used. Cod-liver oil, which somehow or other seems to have fallen more into the background than it deserves, in recent times, is freely used. It has been found that, if the larger hygienic measures which have just been detailed are pursued, the inconveniences frequently reported by patients do not appear. In addition to this the prolonged use of arsenic has often proved most helpful. Such measures, combined with one or other of the more specific lines of treatment, are usually important adjuvants, but I am satisfied that in the absence of the other methods they are of comparatively little use in most cases. In some instances throughout, and in many for a period at least, they may be advantageously dropped.

Results of the Open-Air Treatment.

(*a*) In the first place, it is right to emphasise that during prolonged experience of this treatment I have not witnessed one untoward incident resulting therefrom. During the years which have elapsed since the hospital was opened there has not been a single day on which some of the patients have not been outside, and on most days almost all have been able to be out for a time. Rain and snow have not been allowed to form a contraindication. In such weather the patients are suitably shod and mantled, the shoes and mackintoshes being put on and thrown off in an outer hall.

(*b*) A remarkable change of type of disease occurs speedily. Within three or four days, the patient's colour begins to manifest a healthier aspect. His appetite rapidly picks up, so that patients whose chief complaint was anorexia may within ten days or so eat voraciously. Night sweats disappear almost at once. Again and again I have admitted patients either from their own homes or from other hospitals who required to have their clothing changed several times throughout the night, and within a week's time those patients have ceased to manifest this distressing symptom, their night rest being simultaneously benefited. So uncommon is this symptom that, while I was anxious to accede to the request of one of my colleagues that he might have an opportunity of conducting some observations thereon, he had to go elsewhere in order to obtain sufficient material. Similarly, the temperature in most cases, which may have been both irregular and high previous to admission, tends gradually to assume the normal, or rather the slightly subnormal, which is the rule in many cases of latent tuberculosis. In like manner, the cough quickly lessens, and finally disappears. It has been frequently remarked to me by visitors going round the wards how seldom the patients coughed. The body weight, too, and general condition show corresponding improvement. An increase of 14 to 16 pounds has not been an uncommon incident during the comparatively short stay which a hospital with limited accommodation for poor patients permits.

(*c*) The educative value of such residence cannot be overestimated. The patients learn unconsciously how to treat themselves. They realise how practically true it is that open air, day and night, and sunlight are their best friends, and that attention to hygienic measures can be their salvation. They thus become on their discharge from the hospital apostles of the new faith, and one frequently hears of the results of their teaching in their own homes.

(*d*) In so chronic and treacherous a disease it is not wise to speak confidently of cures effected. The proportion of patients, however, who have left the hospital and maintained for years continuously good health and been able to resume regular work, perhaps with a change of employment, is a large one. The list includes cases where both lungs and larynx were involved on admission. On the other hand, disappointments are frequent. Some of the most promising cases have returned on our hands or have gradually fallen back elsewhere. The proportion of these cases is larger than it should be from causes over which we have meantime no control. In the first place, our patients are chiefly in poor circumstances, and are compelled too rapidly to resume the conditions of life which induced the disease. And secondly, the resources of the institution are so limited and the demands so enormous that the patient's stay in hospital has often to be curtailed when it ought to be prolonged.

(*e*) The course of treatment is a pleasant one. There are none of the drawbacks which have sometimes been portrayed in relation to hospitals for consumptive patients. Far from being a gloomy place our hospital is one of the brightest of households. The only dull day in most cases is the day when the patient's discharge is signed.

Length of Residence.

Under present regulations, the patient's stay is practically limited to some two months. This in some cases is sufficient, either to start the cure or effect such amelioration that, if the patient can continue generally the same line of treatment, he does well. But in the larger group of patients it is not sufficient. The results of my experience suggest that a residence of from four to six months is desirable. Because this is meantime impossible, however, we have framed a regulation which permits likely patients to avail themselves of the benefits of the hospital *régime* by spending the day in the hospital grounds and dining with those in residence.

Anti-Tuberculosis Organisation.

During the past eleven years it has been my endeavour to create an interest in an organised effort against tuberculosis within this district, and through the co-operation of a number of citizens, both medical and lay, much has been effected. I venture to suggest that the successive steps which have been followed in our experience will prove factors of value in all wisely-directed organisations against a disease which is at once the bane of humanity and the opprobrium of medicine. These include (1) the selection of a suitable committee of citizens, both medical and lay, who are sufficiently alive to the necessity to take determined and concerted action; (2) the institution of a central outdoor department in the heart of our larger towns with the double object both of treatment and education; and (3) the erection of a hospital whose basis of treatment shall be the hygienic measures we have discussed. This hospital, while sufficiently removed from the smoke and other impurities of town life, should not be too far removed. There are many practical difficulties when the hospital is out of the way. Further, the patient must not be led to suppose that cure can only be effected and health maintained under conditions totally divorced from those which are obtainable near his own door. The experience at the Victoria Hospital goes clearly to prove that most satisfactory results can be obtained in this way. Beyond this, however, I would fain (4) see established what, for want of a better name, we may term a tuberculous colony where poor patients might be enabled, for long periods and under hygienic conditions, to maintain themselves honourably by contributing to the common good of the residents. This is not a Utopian idea, but has been already tested in my experience in the case of several of our patients with excellent results. Thus we have had, for a couple of years, as auxiliary gardener to the hospital, a man who was admitted first as a patient with grave pulmonary and laryngeal disease, and who now lives in the vicinity of the hospital, spends his days with us, working in the way referred to, and is doing well. Such tuberculous colony will be wisely placed in some situation where the climatic and other conditions are especially favourable.

Lastly, it will be the function of such an organisation to insist that special asylums for admittedly dying cases of tuberculosis among the poorer classes should be erected by the local authorities, in the interests both of the dying and the living, and that wisely-conceived preventive measures be adopted by every community.

PERFORATION OF A TYPHOID ULCER: OPERATION: RECOVERY.

BY

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Perforation of the intestine in typhoid fever is unfortunately not uncommon, and although there is little doubt that recovery does occasionally, though very rarely, follow, the result in the vast majority of cases is fatal unless surgical aid be sought. No very great measure of success can be expected from operation undertaken under such desperate circumstances. Nevertheless Finney,[1] of Baltimore, has collected 47 undoubted cases of operation with 13 recoveries, a percentage of 27.65.

The diagnosis of perforation in the earliest stage is by no means always easy. This is shown by several published cases which have been operated upon and no perforation found, and by the fact that out of the 47 cases collected by Finney, in 8 a wrong diagnosis had been made. Typhoid perforation was found, but appendicitis or some form of intestinal obstruction had been diagnosed.

By far the most important difficulty in recommending operation is the fact that usually when perforation occurs the patient is prostrated by an acute and exhausting disease, the course of which is not yet terminated. The present case was an unusually favourable one, because the attack had never been very severe, and the patient was not exhausted. The perforation occurred during convalescence after nearly a week's normal temperature. My absence in the country caused an unfortunate delay, but the case shows that even after twenty-two hours or more operation may be undertaken with success. The severe nephritis during convalescence from the operation was very unfortunate, and has much delayed complete recovery. It was probably due to a septic infarction of the kidney, which suppurated and discharged into the pelvis of that organ.

History.

G. S., aged 27, was admitted on February 15th, 1898. He had not been well for three weeks, and had been in bed six days complaining of pain in the head and limbs, diarrhœa, sickness, sore throat, cough, deafness, and nocturnal delirium. On admission the temperature was 102° F.; there were numerous spots, and the spleen could be felt. There was no albumen in the urine, and his case ran a moderate and uneventful course. There was slight diarrhœa for three days; the highest temperature was 103° F., and the temperature reached normal on March 2nd, being the sixteenth after admission, the twenty-first in bed, and probably the twenty-fifth of the disease. He was kept exclusively upon milk and beef tea until March 2nd, when a beaten-up egg was allowed. On March 4th the temperature rose to 101° F., and was thirty-six hours in subsiding. The pulse had fallen to between 80 and 88 per minute, and he appeared quite convalescent, but no solid food was given for fear of a relapse. On the evening of March 10th, the twenty-ninth day in bed, and probably the thirty-third of the disease, he complained of a sudden pain in the abdomen, but the pulse did not rise above 90, and the temperature remained subnormal. The bowels were moved, and a trace of blood appeared in the motion. There was no sign of collapse. Opium was given by the mouth, and next morning, as the pain continued, a hypodermic injection of morphine. I was out of town, and was unable to see him until twenty-one hours after the sudden onset of the abdominal pain. By that time his pulse had risen to 120, his temperature to 102° F., and it was evident that he had perforation and commencing peritonitis. My surgical colleague, Mr. Anderson, was fortunately within reach, and gives the following account of the operation, which was commenced 22½ hours after the occurrence of the perforation.

Operation.

An incision 4 inches long was made in the mid-line below the umbilicus. On opening the peritoneum some gas and fæculent matter escaped. The whole of the small intestine was deeply congested and covered with patches of lymph. Examination of the coils within view did not reveal the leakage, so the cæcum was found, the ileum traced from its termination, and the perforation found within 3 feet of it, the opening being about the size of a bean. Its edges were thinned, but not excessively. The loop of bowel was pulled out of the abdomen, and the hole closed by Lembert's sutures of fine silk. The edges of the opening were not pared, and the intestinal walls on either side of it, although thinned by ulceration, were in sufficiently good condition to hold the sutures well. The small intestine was then pulled out loop by loop, wiped with sponges wet with 1 in 2,000 biniodide solution, and replaced, until the whole had in this way been cleansed. The pelvis and loins were treated in the same way. Douching was not employed. The presence of septic peritonitis was well marked over the whole area occupied by the small intestine, and also in the pelvis. The abdominal wound was closed completely; no drain was used.

After-History.

The urine had been tested twice a week up to the date of the perforation, and always found quite free from albumen. Two days after the operation there was a cloud of albumen, which soon disappeared. Again, on March 27th and April 3rd the urine is recorded as quite free from albumen. On April 4th the temperature, which had been normal for a fortnight, began to rise to 100° and 101°; and on April 6th the urine was smoky and contained a large amount of blood and albumen. The albumen rapidly diminished, though a few blood and epithelial casts were found. The temperature returned to normal, and he appeared to be going on well until April 23rd, when the temperature rapidly rose to 105.2° and the quantity of blood and albumen again increased. By May 3rd the temperature was again normal, casts were very rarely found, but about one ounce of pus was discharged in the urine daily. At this date (June 8th) the albumen is very slight in amount, and is fully accounted for by about 1 drachm of pus which is still passed. The quantity of urine is 60 to 80 ounces daily, and the specific gravity 1015. The patient is on meat diet, sitting up, and gaining flesh. Had it not been for the unfortunate renal complication he would have been out long ago. The wound has been soundly healed for several weeks.

Reference.

[1] *Annals of Surgery*, 1897, p. 239.

ON FURTHER EXPERIENCES OF DANGERS CONNECTED WITH RESPIRATION AND THEIR AVOIDANCE;

WITH SPECIAL REFERENCE TO ANÆSTHESIA, HÆMOPTYSIS, DROWNING, APOPLEXY, AND ALL PARALYSED AND UNCONSCIOUS CONDITIONS.

By R. L. BOWLES, M.D., F.R.C.P.

The unconscious state which most commonly presents itself to us as coma implies loss of feeling as well as of consciousness, and a general paresis or loss of muscular sense and power. All mental and bodily powers are more or less in abeyance, and only those final organic forces, circulation and respiration, remain in action, whilst even they are then depending upon but a central spark of life to sustain their functions.

In the treatment of it, when life is threatened, it matters little which gives way first, respiration or circulation; our duty is, clearly, to keep them both in action and to prevent anything coming in the way of their easy, regular, and orderly function. It is to this department of the subject that I now propose to address myself.

For clearness I will remind you of some experimental observations on the dead body, undertaken by the late Dr. Marshall Hall in the years 1855 and 1856 by the now distinguished physician, Dr. Edward Long Fox, of Clifton, the late Mr. Charles Hunter, and myself, with the object of settling some important questions in the management of the appar-

ently drowned. Dr. Marshall Hall conceived the idea that sufficient use was not made, at that time, of the natural elasticity of the chest walls in inducing artificial respiration, and he requested us to find out how much air could be moved out of, and into, the chest, by alternate pressure and relaxation of the ribs and sternum. In the course of these experiments we found that something frequently obstructed the passage of air into the trachea when the patient lay in the supine position, and at the same time we demonstrated the nature of the obstructions we encountered. We also discovered that pronolateral movements were sufficient for effecting artificial respiration, and that the advantages of those movements (afterwards called the Marshall Hall method) over the older methods were very great, for they were considerably more ready than running for a pair of bellows and its appurtenances, better than blowing in air from our own lungs, already charged with more than 4 per cent. of the very poison we seek to get rid of, and better too than any method, such as the Sylvester, which, as advised, implies the adoption of the supine position of a helpless body.

In all unconscious, comatose, or syncopal conditions, however subtle or obscure the cause may be, whether from accident or from disease, whether from concussion or compression, whether from alcohol poisoning or from drugs, whether from suffocation or from drowning, or from any other cause, we have a condition of (in a physical sense) practical death of the body; a condition in which the patient cannot lift a finger to avert impending death, so that, if he is to be saved, it must be done by the help of those around him; he is now as much subject to the force of gravity as the dead bodies upon which we experimented in the *post-mortem* room, and if there are physical difficulties in the way interfering with respiration or circulation they must at once be removed. Anæsthesia is a condition essentially belonging to this category, but it is clinically often complicated by a mixed condition of syncope and apnœa, and it is by no means easy to separate the one from the other.

It is clear that in the syncope of anæsthesia the smallest interference with respiration is an instant danger, for to relieve lungs already surcharged with chloroform vapour we desire in the first place the expulsion of the noxious contents and to replace them with pure air. One's natural instinct is to fly to artificial respiration at once; but let us beware at such a moment of what a friend of mine calls "the vigour of fright."

In syncope the greatest care must be taken to avoid disturbance or pulling about of the body; if the ghost of a breath is being taken, wait and watch; a person nigh unto death wants very little air, metabolism is almost at a standstill, and as much air as the patient wants at that moment Nature will supply. If we wish to prevent the extinction of dying embers we do not violently disturb them by "poking the fire," or we dissipate heat, and so extinguish the spark that kept them alive. I have seen cases of illness in which it was certain that physical disturbance during syncope put the patient in imminent peril by calling on the heart for extra effort at a moment when that effort was impossible.

In 1862 the Committee of the Royal Medical and Chirurgical Society repeated our experiments of 1856, but in repeating them the Committee, in the desire to arrive at greater precision as to the amount of air respired in the two rival methods of Marshall Hall and Sylvester, introduced the tube of the pneometer into the trachea, thus avoiding interference from the regurgitated contents of the stomach or other fluids in the pharynx, or from the gravitation of the base of the tongue or other possible physical obstructions.

This change, in the detail of the experiments of placing the tube below all possible nasal, buccal, pharyngeal, and laryngeal obstructions is a vital point for us and the public to remember, who have to trust to the natural air passages for the maintenance of respiration in any sudden difficulty; it was a change of principle, and although it effected one purpose of the Committee, namely, gauging the amount of air introduced, it led astray the unthinking, who, to spare themselves responsibility, always prefer to wait for and act upon authority.

We have seen how, from gravitation, the tongue, foreign bodies, and liquids, may entirely block the pharynx, and, indeed the trachea and bronchial tubes also; there are, however, impediments which only partially block the way, but which by their continued presence, produce the most disastrous consequences, frequently ending even in death.

In 1857, whilst watching an old lady lying on her back in deep apoplectic stertor, with a widely-opened mouth, I observed that the sound arose from a partial obstruction of the airway, and that by hooking up the base of the tongue with my finger the sound immediately ceased, and free-and-easy breathing ensued. Realising that the obstruction arose from the gravitation of the heavy and paralysed tongue, I placed the patient on her side and propped her in that position with pillows, when at once easy respiration ensued. As I have said elsewhere, "noise in any part of the airway is a danger signal. Its importance the physician must determine. The stertor of the apoplectic state may indicate a condition equal in danger to the crowing of the croupy child or the stridor arising from the pressure of a thoracic tumour. Stertor is, therefore, a symptom with two meanings: the noise expresses mechanical interference, and mechanical interference is an accidental concomitant of the unconsciousness. The accident which determines whether the stroke be or be not accompanied by stertor is in most cases due to the accident of the patient's happening, or not happening, to be on his back; or should he exhibit stertor while upon his side, there must be some derangement of the ordinary relations of the pharynx, such as the chin being too near the sternum, the existence of a local œdema, long uvula, large tonsils, mucus in the air tubes, pressure from without, or something which narrows the respiratory channels or vibrates in their course. Stertor, then, that discordant music of the aërian ways, must be so attuned that it no longer grates on the physician's ear, the respiration must again be brought back to the silent harmony of Nature."

I could relate to you many striking cases of successful treatment from carrying out these principles, but I will take one or two only of my own and one or two published cases of others that have been before the profession of late to illustrate some interesting relations with the principles I have just had the pleasure of bringing before you.

The Prevention of Suffocation in Hæmoptysis.

On March 22nd, 1894, I was hastily summoned to an apparently dying man. I found him lying on his back on the floor, motionless, with the exception of occasional ineffectual gaspings; he was of a livid colour, and his pupils were widely dilated. The feeble pulse could occasionally be felt, but not counted. Three policemen and several coachmen were standing helplessly by. Observing blood on his clothes and about his mouth, I opened the man's shirt and rapidly surveyed, percussed, and auscultated the front of his chest; finding more percussion dulness on the right side than on the left, and that no air was entering that lung, I gently turned him on to his worst side (the right), so as to leave the better lung free, and propped him up with pillows. Each gasp now became a short gurgling inspiration, and signs of returning life began to show themselves by clutchings of the hands and spasmodic actions of the legs and an occasional moan. Some air entered the upper lung, the *râles* diminished, and the pulse became fuller and countable at 130 in the minute. I then left him in charge of Dr. Waggett, who administered a hypodermic injection of caffeine in sodium salicylate and an enema of 2 ounces of brandy. In half an hour Dr. Waggett reported that the man had quite recovered from present danger, and was talking naturally to his friends.

On the following morning I saw the man in consultation with Mr. Wise, his own medical attendant, and found him still lying on his right side, looking wonderfully better and quite himself; temperature normal, pulse 120. He was expectorating freely blood clots and bloodstained muco-pus. There were very few *râles* to be heard in the upper (left) lung, and the air entered quite freely, so that as far as the danger from suffocation was concerned, the man was safe.

This case recalled another, similar in its onset, different in its result, but useful as a contrast and as a demonstration of the importance of the mechanical management of such cases in practice. When going round the wards as a student, the physician, Dr. Bence Jones, commented on the salient points of a case of phthisis in a young girl who was sitting dressed on the side of her bed. Ten minutes afterwards the physician was hastily summoned from the other end of the ward to see her again, and she was dead; at least she had entirely ceased to breathe. She had been seized with hæmoptysis, the nurse had laid her on her back on the bed, and she had so become choked. At the necropsy large coagula were found in the trachea and bronchial tubes.

Lately I was taken by surprise in a case of hæmoptysis by a patient suddenly developing dyspnœa and cyanosis with starting eyeballs and dilated pupils whilst in the sitting posture. With sudden and violent effort he coughed up three or four large pinkish-grey masses [illegible] appearance to portions of emphysematous lung; on examination, they proved to be coagula infiltrated with numberless fine air vesicles. It appears that in his terror of increasing his blood flow, he had maintained the sitting position for some hours and had studiously avoided coughing when he felt the *râles* in his chest, so that the small oozing from the affected (right) lung had gradually found its way into the sound lung, and had become inflated into large masses by the air vesicles which had slowly formed in the coagulating blood.

Gradual Suffocation in Apoplexy.

In March, 1894, I saw on the *post-mortem* table the body of a man. His face was terrible in the extreme—distorted, swollen, and purple; the eyes were open, and blood was oozing from the mouth and nose. Venesection had been performed in the left arm. I diagnosed "death from suffocation," but was told that the man had died of apoplexy, but, with profound stertor which the venesection had in no way relieved.

Death from Tea in the Lungs.

On February 23rd, 1894, Dr. Hale White reported to the Clinical Society a case of a patient suffering from diphtherial paralysis who had died suddenly whilst drinking tea; after death an ounce and a half of tea was found in the bronchial tubes. Dr. Hale White stated that after coughing for some seconds "the patient became very distressed in his breathing, exactly as if he had been suffering from asthma, there was at no time any evidence that the larynx was obstructed." The patient was dead in less than ten minutes from his taking the tea. The pulse was good to the end. It was assumed that the patient had died of spasm of the bronchial tubes from the specific action of tea on the nerve centres, but may it not be assumed, with even more confidence, that the patient was practically drowned with tea? An ounce and a half was found after death. This is a large amount, and probably during life it was larger; quite enough, when mingled with mucus and churned into foam, to obstruct several of the main bronchi, and thus to cause fatal suffocation. At the same meeting Mr. Gould related a case of suffocation in a child with diphtherial paralysis. Tracheotomy was instantly performed and the child turned over, whereupon the bread and butter which the child had been eating ran out of the wound in a liquid form, and the child recovered.

Dr. Frederick Weber told me of a case of death from suffocation in consequence of milk having been inspired in a case of diphtherial paralysis; so that bland fluids such as water and milk will cause death when introduced into the windpipe; we need not therefore assume that the specific influence of tea had anything to do with the cause of death in the case above referred to. We know what horrible distress supervenes on even one of the large bronchi becoming suddenly plugged by a cherry stone or by a pea. In cases of drowning the amount of fluid usually found after death might not amount to more than was found in the foregoing case. It must always be remembered that the introduction of any fluid excites mucous secretion which inspissates the fluid and gives rise to foam bubbles, more or less large, and these add greatly to the difficulties of inspiration.

From these points of view it is possible that the case might have been successfully treated, either by turning the patient on one side as in the case of hæmoptysis just related, thus freeing one lung, and so giving time for the obstructed lung to relieve itself by expelling the intruded fluid; or in this case perhaps relief might even have been more immediately effected by placing the patient on his face, and pressing or striking on the back to assist the expulsion of the tea.

AN ADDRESS
ON THE
SINS OF THE TEETOTALLERS.

Delivered at the Annual Meeting of the Midland Branch of the British Medical Association.

By W. A. CARLINE, M.D.,
President of the Branch.

Ladies and Gentlemen,—My first duty is to thank you for the great honour you have done me in electing me your president. No honours can carry so much prestige as those conferred by members of one's own profession, and of these president of a Branch of our Association is one of the highest.

The subject of my short address is an unusual one at these meetings, but it is one to which I have given some thought, and one which I venture to believe has been left too much in abeyance by the profession. I wish to draw your attention to some of the sins of the teetotallers, and at the outset I must put myself right with you by a little personal explanation.

I have nothing to say against abstinence from alcohol. Professionally I rarely order it for patients, and then only for a specified period. At the same time I can see no objection to persons taking alcohol, provided they do so in moderation, and because they like it, but not for the purpose of doing them good; that is, always providing they are not people devoid of that self-restraint found in a well-balanced mind. What I have to speak against, however, is the omission of the teetotallers to guide aright, and do their duty to those whom they have won to their cause. Having made a man or woman forswear alcohol, they seem to think there is nothing further to do except to provide them with literature which consists chiefly of abuse of the liquor traffic, or with meetings, whereat the same abuse is dealt out with the addition of music and song. The first thing a teetotaller requires and the last thing he thinks of is pure water.

I have had 22 consecutive numbers of one of the leading temperance papers, the *Alliance News*, carefully examined. In the 22 numbers the word "water" was found 60 times; of these 38 are used in the sense of drinking water, of which all but 10 occur in quotations. The sole encouragement for the water drinker is contained in the following quotations. December 31st, p. 859, Mr. A. J. H. Crespi, in a letter on substitutes for alcoholic beverages, says:

"Many people clamour for substitutes. Well, I find water very palatable, and coffee and tea I don't like, but cocoa and chocolate are very good. Lemonade I rarely touch, and syrups I don't buy, while soda water I dislike. Some of my friends and guests will take lemonade, others soda water, by the quart."

And again, April 22nd, p. 253, referring to the Atbara war, the following quotation is given of a conversation between Lady Elizabeth Biddulph and Lord Cromer:

"But what about the Nile water?" asked Lady Elizabeth.

"We have Pasteur filters in the camp," was the reply, "and plenty of good tea and coffee, which you will find our troops will be able to fight on."

And on the same page a quotation from the *Daily News* says:

"If there had been any whisky at hand it might have been impossible to move the whole army without the aid of the London police. The battle was fought on Nile water purified by the Pasteur filter, and then converted into the cup that cheers."

Perhaps the *Alliance News* would consider the following more encouraging to the drinking of water. It is a quotation on p. 207, and appropriately dated April 1st:

"The *Christian Leader* says we have all heard of the captain who with a portion of his crew was cast into a shark-infested sea by the capsizing of a boat, and who, counselling the sailors to keep their legs moving to keep the sharks off, forgot meanwhile to move his own, and was snapped up while warning his men. Something of the same kind has happened to the late Father Kneipp, famous for his water cures. That his treatment did immense good to many is unquestionable; but while commending water to others, it seems that he did not provide enough for himself. He died of cancer in the stomach, and the medical verdict is that he neglected to apply water in sufficient quantities internally to keep his blood in good order."

This is all the encouragement a water drinker obtains in nearly half a year from the *Alliance News*.

Our experience in Lincoln is that in any attempt to improve the water supply the teetotallers are either not in evidence or they are in opposition, and I do not think that our experience is at all unique.

Recently a local society was in communication with the Waterworks Committee about the pollution of our drinking water by the effluent of a sewage farm. The teetotal members of this society were not in evidence, and the teetotal members of the Waterworks Committee were in opposition. This pollution has been going on for years, and was long since condemned by the medical officer of health, but the local temperance societies have never taken any action.

In this connection and bearing on the attitude of the temperance party to a pure water supply, I will quote the following from the *Medical Press*, under date November 24th, 1897:

"One of the results of the recent waterborne epidemics of typhoid fever will be a serious backhanded blow at the advocates of water drinking. The new Mayor of King's Lynn is a total abstainer, and at the feast which celebrated his election to the civic headship he found himself unable for conscience sake to offer them any beverage stronger than water. As some sort of compensation for his restricted hospitality he fined himself 10 guineas in favour of the typhoid relief fund of his native town. There is a grim, satirical irony about his worship's action in this matter that invites a passing reflection. The typhoid fever at Lynn is due to polluted drinking water; at the Mayor's feast the guests must drink nothing but Lynn water; the Mayor gives 10 guineas to help the victims of that contaminated supply. It remains to be seen whether any part of this donation will be required on behalf of those who have partaken of his banquet. The answer to that interesting query may be expected in about a fortnight, more or less. Clearly it is in some cases safer to turn to the brewery than to the water monopolist when one wishes to slake one's thirst."

One almost doubts if the teetotallers are really anxious to put down the use of alcoholic drinks; surely if they were

more sincere they would not rest until it was everywhere as safe to drink water as to drink beer.

That you may not be anxious as to the results of the Mayor of Lynn's feast, I may inform you that it was reported in the local press that the guests restrained their thirst until the Mayor left the table; they then ordered champagne at their own expense. And who can blame them, when the alternative was to drink water that had already caused some 380 cases of typhoid fever? Not to be allowed to touch alcohol, to know that most temperance drinks are harmful to digestion, and to be doubtful of the purity of the water supply puts one indeed in a hard case.

Luckily our Association has come to the rescue, and by a special report on the efficiency of water filters has enabled us to ensure the safety of our own drinking water. But why the British Medical Association? Why did not the temperance societies take the question up years ago? Or why was it not the British Medical Temperance Association that took the initiative? Such action would, I am sure have had much more weight with the profession than the heavy breakfast they give at our annual meetings.

Not only do the teetotallers neglect their obligations with regard to the provision of an absolutely safe drinking water, but they actually foster and encourage the use of drinks that are positively harmful.

You as medical practitioners know that your out-patient departments are crowded with chronic dyspeptics, a large proportion of whom are bad-tempered, ill-conditioned teetotallers, who have damaged their stomachs by the constant swilling of cold tea and other tannin-laden compounds—people who, with their eructations and grumblings, are almost as great a curse in a household as the chronic drunkard, for the latter is at all events speechless occasionally.

And where is the warning raised at teetotal meetings or in their press against this very prevalent habit amongst their working-class members. Of course it is chiefly the working-class teetotallers who substitute these tannin compounds for pure water, but not always. An eminent divine, who conducted a Church House party on a short holiday, provided for their chief meal hot meat and tea! And when the Lincoln coffee palace was opened the guests at lunch were offered all sorts of drinks, from teetotal champagne downwards, but water was absolutely tabooed.

Another point in which teetotallers seem to show great weakness is in the naming of their non-intoxicant drinks; for, although we are frequently told that alcohol is the Devil, the majority of their drinks are named after him. We have beers, ales, and stouts innumerable, a drink called "Burton"—evidently in honour of a noble lord—orange, ginger, and other wines, lager and shandygaff, madeira, marsala, champagne, muscat, red alicante, etc.; but, most curious of all, a drink that not only recalls an intoxicant but also the word-clipping of the drunkard—"isky toddy."

It may be said that the manufacturer is responsible for this; but one may be quite sure that the manufacturers would not use such names if not acceptable to their customers. It looks as if they delighted in playing at drinking, as one did in childhood's days—acting farmers, and pretending the water one drank was gin and the pipes one smoked were real.

I trust my few remarks will be taken in the spirit in which they are made, and not as opposed to the cause of true temperance. I should be glad, and I am sure the profession would be glad, to work with the teetotallers in the cause of humanity, and to receive the assistance of their powerful organisation in our attempts to render our water supplies free from contamination, and in our endeavours to get the Legislature to pass enactments for the purpose of protecting the habitual drunkard from himself. But I am afraid, before such co-operation is possible, that it will be necessary for the teetotallers to learn to emulate the Good Samaritan a little more and the Pharisee a little less.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.—At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the Secretary (Mr. R. N. Ramsay) reported that the number of students so far as ascertained attending the School during the summer session recently closed was 1,239.

AN ADDRESS
ON THE
REPRESSION OF CONSUMPTION.

Delivered at the Annual Meeting of the North of England Branch of the British Medical Association.

By WILLIAM ROBINSON, M.D., F.R.C.S.,
Physician, Sunderland Infirmary; President of the Branch.

[ABSTRACT.]

AFTER referring to the widespread prevalence of tuberculosis among man and animals, and briefly describing the modes of its dissemination, Dr. Robinson went on to say: Preventive measures fall under two heads: first, those belonging to the realm of general sanitation which improve the dwelling, the workshop, and the bodily conditions of the people generally. It is only during the last sixty years that beneficent measures for this purpose have been put in force, and they have reduced the mortality from consumption in England and Wales from 38 per 10,000 living in 1838 to 14 in 1895. The second means of prevention must be the destruction of the sputum, and the removal of those affected in the later stages if they cannot be sufficiently isolated at home, that is, if they are dangerous to others owing to overcrowding, etc., to a home for consumptives, free from the taint of pauperism, and provided by the sanitary authority. Notification should be in force, though the sanitary officer must never come between the physician and the patient. There is no need to treat the sufferer as a leper. In the open air he is practically harmless, as the bacilli in the sputa are soon destroyed by sunlight and fresh air. After a room has been vacated by a consumptive it should be thoroughly cleansed, disinfected, and papered by the authority. Leaflets stating plainly the nature of the disease, its mode of spreading, and simple directions to prevent its spread, should be distributed freely. Spittoons should be placed in all public places. To stop the spread by meat and milk we must urge the provision of abattoirs; the systematic inspection of meat, and the destruction of tuberculous meat; the careful regulation of cubic space, light, and ventilation in all cow byres; the testing of milch cows by tuberculin by an appointed veterinary surgeon, and the killing of tuberculous cows. The sources of all milk brought into a town should also come under the supervision of the authority in whose district it is for sale, and all dairies and milkshops should be stringently looked after. By means such as these the death-rate has been brought down in New York from 4.42 in 1886 to 2.85 in 1897, and similar good results have followed in Brussels and Berlin.

Passing to the treatment of consumption, Dr. Robinson insisted on the curability of the disease. He said: We can all look back on many cases in which the disease has become quiescent. The records of the *post-mortem* room also teach us how large a proportion of those dying of other diseases or of injuries show evidence of healed tuberculous lesions in the lungs. Fresh air and sunlight alone mean death to the bacilli and life to the patient. It is now nearly 40 years since Brehmer established at Görbersdorf, in Silesia, the first sanatorium for the open-air method of treatment of consumptives, and the results obtained there have been excellent. Brehmer's statistics of over 5,000 cases show that 27.8 per cent. of those in the first stage were cured, and 6.83 per cent. of those in the second stage; whilst other 31 per cent. in the first stage were nearly cured, and 14.6 per cent. in the second. Climate only exerts a secondary influence on the results of treatment. The four main conditions invariably present in the sanatoria are: A warm, dry soil; pure fresh air, free from dust and organic impurities; sufficient fine weather, or sufficient shelter from bad weather to allow of an outdoor life; and adequate protection from wind and rain. All these conditions may be had in our own country. The experiment has been tried with gratifying results, at Cromer. For some time past I have been treating phthisical patients on this plan as far as the limited means at my disposal would allow, and the results have been most encouraging. I know that neither heat, nor cold, nor rain, nor wind, nor mist need deter a patient from being out of doors all day long provided he be sufficiently protected by shelters and wraps, and, if need be, given a hot water bottle to his feet. The patients are carried out on stretchers if feeble or feverish, and kept lying down and well

wrapped up. After a few weeks' treatment the temperature subsides, the cough lessens, the expectoration diminishes, and the physical signs improve. This treatment, however, can only be properly carried out in an institution specially built for the purpose, and under immediate daily supervision by a medical man, aided by well-trained nurses. The open-air method cures (1) by the tonic influence of fresh air; (2) by preventing the patient from reinhaling his own tuberculous dust; and (3) by the bactericidal action of sunlight and of the ozone in fresh air. The influence of good and abundant food, hygienic conditions, and careful nursing in sanatoria tend greatly to cure. Phthisis in the well-to-do lasts four times as long as in the poor in fatal cases. In sanatoria also the patient learns the best way of taking care of his health, and how to prevent his sputum from becoming a danger to himself and to others.

Dr. Robinson concluded by pointing out that sanatoria for the reception of consumptive patients belonging to the poorer classes were springing up all over the Continent and in the United States, and urged that England, which was the first to build special hospitals for consumption, should not lag behind in this matter.

AN ADDRESS

ON THE

SERUM TREATMENT AND ITS RESULTS.

Delivered at the Annual Meeting of the Southern Branch of the British Medical Association.

BY W. E. GREEN, M.R.C.S.,
President of the Branch.

[ABSTRACT.]

MR. GREEN, after thanking the members for his election, referred briefly to the prosperous career of the Branch since its foundation by Dr. Ward Cousins in 1874, and in particular to the support it received from members of the Army Medical Service.

He then proceeded to offer some remarks on Sandown as a health resort, based upon twenty-one years of personal observation. Sandown lies in the southern zone of the Isle of Wight in the middle of a wide valley, facing mainly south, and protected by hills east and west. The soil is sandy, the water supply and drainage are excellent, severe zymotic diseases are almost unknown, and the death-rate is particularly low. The place is especially adapted for phthisical patients, for whom in addition to the climatic advantages there is the attraction of being able to take ample exercise without the fatigue of climbing. The climate is remarkably equable, the range of temperature between day and night often not exceeding 3° to 6°; the day temperature averages 1° less the night 3° more than that of Greenwich. The amount of sunshine is large, the mean number of sunny days per annum for nine years being 261, while the foggy days in the same period averaged only 3.

The principal subject of Mr. Green's address was serum treatment, which he described as the newest branch of therapeutics, and one of particular importance to the general practitioner, who had frequent opportunities of employing it in causing disease to abort. The method was first applied to diphtheria, the bacillus of which was discovered by Klebs in 1875, and established as the cause of the disease by Loeffler a little later.

The nature of the action of the toxin produced by this bacillus on the tissues has been most clearly laid down by Sidney Martin, who found that the irritant poison brewed by it in the throat undergoes chemical change in the spleen and that a somewhat less poisonous but more stable substance is there produced which exerts a special action on the nerves and muscles. Patients would invariably succumb to the disease were it not that the toxins appear to have the power of stimulating the cells and tissues of the body to manufacture a neutralising body known as antitoxin, which is consequently found in the blood serum.

Ferran, and subsequently Fraenkel, succeeded in producing immunity in animals, but it was Behring who first conceived the idea of using the serum of an immunised animal to help a patient in coping with the toxin of diphtheria. He found that animals could be immunised in two ways—by the injection of weakened bacilli, or of filtered toxin from cultivations. He further found it advisable to work with large animals which were both more resistant and able to provide larger quantities of the serum. The antitoxic serum is now usually prepared from the horse by the method of Roux, which occupies about three months. The serum is standardised according to the rules laid down by Behring and Ehrlich, whose normal antitoxic serum is of such a strength that $\frac{1}{10}$ c.cm. added to 10 c.cm. of diphtheria toxin is enough to render it harmless. In fully immunised horses the serum may be from 50 to 100 times this strength, and the dose varies accordingly, as well as with the day and severity of the disease. All agree that a large dose should invariably be given to commence with, followed by a small one later on if required. Behring insists that the initial dose should be at least 600 to 1,000 units and others give even larger quantities. The necessity for this can be demonstrated by observing the greatly increased amount of antitoxin required to save an animal if the toxin is injected beforehand and not simultaneously.

Antitoxic serum has also been used as a prophylactic measure in the case of members of an infected household; a dose of 200 to 300 units appears to afford protection for about a month. The drawbacks described are so slight as to be negligible. Ehrlich has recently introduced a new standard of strength, the test dose of the diphtheria culture being that which just suffices to kill the animal within four days when mixed with one unit of the serum.

Mr. Green next adduced statistics showing the value of the treatment, particularly when adopted early. He quoted the figures published by the Metropolitan Asylums Board, by Dr. Sidney Martin, Dr. Clubbe of Sydney, Dr. Whitworth of St. Agnes, and Dr. Koht of Strassburg. The last-named, giving a dose of 3,000 Behring units, managed to save two-thirds of his tracheotomy cases; Dr. Martin recommends doses of 8,000 or even 16,000 units.

With regard to other antitoxic serums, Mr. Green has collected 36 cases of tetanus thus treated, with 25 recoveries; 40 of puerperal fever and allied conditions, with 33 recoveries; and 11 of pneumonia, with 9 recoveries. As regards prophylaxis, Surgeon-Major Semple relates that out of 84 persons vaccinated against typhoid during an epidemic not one contracted the disease; while of 120 unvaccinated under the same conditions 16 were attacked by it. Dr. Haffkine's plague serum has also been most valuable; inoculation was practised in 5,251 cases with a mortality of 1.75 per cent., while of 14,830 treated in other ways 20.6 per cent. died. The use of antivenomous serum promises equally good results, but those in tuberculosis are so far unsatisfactory. The last successes are those obtained by Dr. Sanarelli in the serum treatment of yellow fever.

The prospects with regard to the treatment of diphtheria, at any rate, are so good that Mr. Green considers that the State should assist by providing central antitoxin depôts, by supplying the remedy free to hospitals and the poor, and by appointing inspectors to act with medical men in facilitating its distribution and administration. In these respects valuable lessons might be learnt from the address given by Dr. Hermann Biggs of New York at the Montreal meeting of the Association.

ON THE DIFFERENT FORMS OF ALBUMINURIA IN DIABETES MELLITUS.

Read before the Sixteenth Congress of Internal Medicine at Wiesbaden.

BY KARL GRUBE, M.D.,
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THERE is a widespread belief that the appearance of albumen in the urine of diabetic patients is a comparatively harmless symptom which in most cases has no special significance, being seldom a sign of organic disease of the kidneys. Although I admit that there are many cases of diabetes in which the appearance of albumen in the urine need not give rise to any fear, yet, on the other hand, there is also a considerable number of cases—greater, I believe, than is generally assumed—in which the appearance of albumen is a symptom of grave significance, and demands special care on the part of the patient as well as of the physician. I am glad to find that quite recently Senator has expressed the same opinion in his excellent book on diseases of the kidney.[1]

To study this question more closely I have carefully analysed and tabulated the 473 cases of diabetes mellitus which I have treated during the last four years.

Age.	Total Cases of Diabetes.				Cases of Diabetes with Albuminuria.							
	Men.	Women.	Severe Form.	Light Form.	Men.	Women.	Severe Diabetes.	Light Diabetes.	Arterio-sclerosis.	Gout.	Alcoholism	Chronic Nephritis.	Failure. Heart.
1—10	—	—	—	—	—	—	—	—	—	—	—	—	—
11—20	2	2	4	—	—	1	1	—	—	—	—	—	—
21—30	16	4	10	10	7	1	8	—	—	2	—	—	—
31—40	26	5	5	26	8	—	2	6	—	—	2	—	—
41—50	90	27	11	106	33	10	6	37	4	1	6	11	—
51—60	132	49	6	175	55	20	4	71	15	6	11	23	1
61—70	65	39	—	104	30	19	—	49	18	1	2	10	2
71—80	16	—	—	16	7	—	—	7	2	—	—	—	—
	347	126	36	437	140	51	21	170	39	10	21	44	3
	473		473		191		191						

Of former writers on the same subject Schmitz[2] found albuminuria in 67 per cent., Lecorché[3] in 50 per cent., Bouchardat[3] in 45 per cent., v. Noorden[4] in 23.5 per cent. I have found it in 191 cases out of 473—that is, in 40.4 per cent. Of my 191 cases 140 were males and 51 were females; 21 were suffering from the severe form and 170 from the light form of diabetes. This division into severe and light form of diabetes is of course somewhat arbitrary, and some of those cases which I have included in the latter class may, after they had passed from under my observation, have become worse, and merged into the former.

As regards the age of the diabetic patients with albuminuria:

1st decade: No diabetic seen.
2nd " 1 case; a female with severe diabetes.
3rd " 8 cases; 7 males, 1 female; all severe diabetes.
4th " 8 " ; all males; 2 severe, 6 light diabetes.
5th " 43 " ; 33 males, 10 females; 6 severe, 37 light diabetes.
6th " 75 " ; 55 " 20 " 4 " 71 " "
7th " 47 " ; 30 " 19 " 0 " 49 " "
8th " 7 " ; 7 " 0 " 0 " 7 " "

Albuminuria in diabetes, therefore, seems to be most frequent between the ages of 50 and 60. In the fifth and sixth decades it is about equally frequent. It is also frequent in the eighth decade, as appears from the table, 7 out of 16 cases of diabetes had albuminuria—that is, 43 per cent.

Three pathological conditions are of special influence in causing albuminuria in diabetes—namely, (1) arteriosclerosis, (2) gout, (3) alcoholism. In the cases under my notice arteriosclerosis was most frequent between the ages of 60 and 70 (18 times), then between 50 and 60 (15 times). Altogether I found it in 37 cases out of the 191 cases of albuminuria—that is, in 20.4 per cent. of the cases. Of course, only those cases are noted down here in which the signs of arteriosclerosis were pronounced. There were a great many more in which the arteriosclerosis was beginning.

Gout I noted in 10 cases—that is, 5.2 per cent., while alcoholism was a feature in 21 cases or 11 per cent., all being males with one exception, a lady, aged 61, a *potatrix strenua*. In my opinion, the excessive drinking of alcoholic beverages is one of the chief causes of albuminuria in diabetes, and this explains also its greater frequency in male diabetics.

With regard to the different forms of albuminuria observed in conjunction with diabetes most authors distinguish only between simple albuminuria and that caused by organic disease of the kidneys. Bussière,[6] in his paper on the subject, makes a distinction between "malign" and "benign" albuminuria, Maguire[6] between "chronic" and "acute" albuminuria.

Varieties of Albuminuria in Diabetes.

For clinical as well as therapeutic reasons I think it preferable to draw a sharper distinction between the different forms of albuminuria; and, according to my experience, five distinct forms exist: (1) Albuminuria, with the severe form of diabetes; (2) albuminuria produced by failure or weakness of the heart (*Stauungsalbuminurie*); (3) senile albuminuria; (4) functional albuminuria; (5) albuminuria caused by chronic inflammation of the kidneys. There may be albumen in the urine of diabetics from other causes—for instance, in cystitis or there may be chronic or acute nephritis from causes quite independent of the diabetes, but these cases do not concern us here.

1. *In the last stage of severe diabetes and in diabetic coma albumen is nearly always present in the urine.* I may say I have never found it absent. Out of 36 cases of severe diabetes which were under my care, 21—that is, 58.3 per cent.—had albuminuria. This albuminuria is never very considerable, but it often increases considerably immediately before death. Changes in the kidneys have been found in such cases by various observers. According to Frerichs and Ehrlich, the principle change is a glycogenic degeneration of Henle's loops, but according to other observers a hyaline degeneration of Henle's loops and the straight tubes. These changes appear to be very frequent, and may be the cause of the albuminuria found at this stage of the disease. Besides this degeneration Ebstein[7] has described necrosis of the epithelium of the kidney, which, according to him, is produced by toxic substances, such as acetone, diacetic acid, etc., contained in the blood and urine of severe cases of diabetes. As I have not found it in two cases which died in diabetic coma, it cannot be said to be a constant condition. The same holds good of the fatty degeneration described by Fichtner.[7] There is no therapeutic treatment of this form of albuminuria, neither need any be sought, as the patients from their diabetes have already passed the stage in which they can be treated with any success.

2. *Albuminuria produced by failure or weakness of the heart* (*Stauungsalbuminurie*) is sometimes to be met with in diabetics. I have seen it in a pronounced for in 3 cases, of which the following is a characteristic example:

A gentleman, aged 56, diabetes discovered about 10 years ago. Although he is not a drunkard he has for a long time past regularly taken more wine than is good for him, being under the erroneous impression that this helps to keep up his nutrition. It may be mentioned *en passant* that this belief is not infrequently met with in diabetics. In spite of his diabetes the patient had enjoyed good health for a long time, but was suddenly seized with a general feeling of tiredness and shortness of breath when walking fast or on going upstairs. Slight œdema of both feet appeared. The urine contained traces of albumen and of sugar. The heart beat was very weak. The dyspnœa increased during the next fortnight, as did also the œdema, although digitalis was given. In a short time considerable hydrothorax, œdema of the scrotum and penis, and dropsy of both legs up to the knee appeared. The urine now contained, besides traces of sugar, a considerable amount of albumen, but no casts. Rest in bed, with the administration of diuretin and digitalis caused the dropsy to disappear entirely. After some time the albumen also entirely disappeared when the heart had regained its strength.

The two other cases which I have seen followed a similar course. I consider that many of the cases of slight albuminuria in diabetics, especially if there is slight œdema, are instances of heart failure, which is by no means a rare symptom in connection with diabetes of long duration, and which, as Frerichs first pointed out, may sometimes lead to sudden death. It may be that sometimes the albuminuria in severe cases of diabetes is due to the same cause, which itself is part of the general debility of the system. The only mention which I have found of this form of albuminuria in diabetes is by Maguire,[6] who says that albuminuria can be produced by failure of the heart in the later stages of diabetes, and that it is an early sign of this failure. This form is of importance with regard to treatment, as its occurrence indicates that the patient should be kept in bed till the heart has regained power. As is shown by the case given above, it is quite possible to get good results; the patient is still alive and in comparatively good health a year after the attack detailed above.

3. *Senile albuminuria* is the slight albuminuria met with in old people—generally over 70 years of age—which probably arises from a slight arteriosclerotic degeneration of the small vessels of the kidney. In diabetics this change seems to occur earlier in life; at least I am of opinion that certain cases of albuminuria in diabetics over 50 years of age, in which no other cause for the albumen is to be found, may be looked upon as instances of an affection analogous to senile albuminuria, This form of albuminuria is always slight; there are no casts or morphotic elements in the urine. Sometimes the albumen is only present at intervals. For instance, the urine may be free from albumen in the morning, but

may contain some later in the day. This form of albuminuria has no tendency to develop into chronic inflammation of the kidneys, and may last for years without getting worse. Such patients should avoid everything that could irritate the kidneys.

4. *Functional Albuminuria.*—This name I should like to apply to that form which appears in diabetes without any other symptom of chronic disease of the kidney, and where the only cause discoverable is the increased flow of sugar from the kidney. This albuminuria is always slight, very rarely are there more than traces of albumen present. There are no casts or other morphotic elements. This form of albuminuria is chiefly to be found in diabetics who have been passing a large quantity of sugar for a considerable time. If the amount of sugar excreted is reduced, the albumen very often in a little time disappears entirely. The explanation of the albuminuria in these cases may be found in the irritation of the kidneys by the excessive flow of urine loaded with sugar. It is not certain, though it is probable, that at the time of the albuminuria there are real pathological changes in the kidney, as, for instance, slight inflammation and hyperæmia. After death, the kidneys of diabetics are often found enlarged, hard, and hyperæmic. Maguire found that the kidneys of persons who had had diabetes of long duration were often hard with much interstitial connective tissue round the vessels and glomeruli, and between the tubuli. He thinks that this increased growth of connective tissue is a result of the continuous overwork, and a preliminary stage of chronic granular kidney.

5. *Albuminuria produced by Chronic Disease of the Kidney.*—Although Frerichs has denied that chronic inflammation of the kidneys could be caused by diabetes, I agree with Senator[9] who mentions diabetes mellitus as one of the causes of chronic nephritis. Which form of chronic inflammation is chiefly produced is a question not yet settled, for while some authors, for instance Inglessis[10] and Seegen,[11] say that parenchymatous nephritis is the form of chronic kidney disease chiefly to be observed, others, for example v. Noorden,[4] declare it to be almost always granular kidney. My own observation agrees with that of the former writers, for I have often seen the symptoms of parenchymatous nephritis, and but rarely those of granular atrophy. In one case I had the opportunity of making a *post-mortem* examination, and there I found pathological changes of the parenchyma as well as an increase of the interstitial tissue. Of my 191 cases of diabetic albuminurics, 44 suffered from chronic Bright's disease. Of these 5 had gouty kidney, while in 17 cases chronic alcoholism, and not the diabetes, was the probable cause of the affection of the kidneys. There remain 22 cases for which no other cause than the diabetes could be detected. I cannot here give an analysis of those 22 cases, but I may quote one instance to show how the nephritis develops in these cases.

A lady, aged 56. I first saw her in 1893, and each year since then she has been under my observation for six weeks or two months in the summer. Her diabetes dates from 1889, when much sugar and a trace of albumen were passed. Under treatment there was great improvement, and in 1893 sugar only appeared in the urine when the diet was not properly attended to. There was no albuminuria. This condition lasted till 1895, when the diabetes became more obstinate, and albumen reappeared for the first time, but again disappeared when the glycosuria was reduced by a strict diet. In 1896 the albumen had returned, and could not be got rid of; there were no casts, and the quantity of albumen was small. In the spring of 1897 there were the symptoms of chronic kidney disease—much albumen, casts, blood corpuscles, etc., in the urine, slight œdema, and spots of gangrene of the skin on both feet. Now (April, 1898) the condition is again worse. There are attacks of nausea and vomiting, probably of a uræmic nature, general debility, and œdema of both legs. The urine contains 0.6 per cent. of albumen, traces of peptone, casts, etc. Only a very little sugar is excreted on a diet rich in carbohydrates, while with a fair amount the urine remains sugar free.

The development of chronic nephritis in diabetic patients is generally to be explained as follows: The constant and excessive flow of sugar-containing urine through the kidneys leads first to irritation of the epithelium of the tubuli uriniferi, to hyperæmia of the kidneys, and functional albuminuria. If the irritation continues it leads to inflammation of the parenchyma, and increased growth of the interstitial connective tissue. Diabetic nephritis is much more common in men than in women, the proportion in my cases being 16 to 6. Pathologically and clinically very different from the diabetic nephritis is gouty nephritis with glycosuria. It is not always easy to distinguish at once between the two, but it can be done with some degree of certainty when the whole history of the case is known. The chief difference between the two affections is afforded by the glycosuria; in gouty nephritis with glycosuria the latter is and has been almost always slight, while persons with diabetic nephritis almost invariably have had for some time a considerable glycosuria. Pathologically, gouty nephritis means almost always chronic granular degeneration of the kidneys.

TREATMENT.

As regards the treatment of the functional albuminuria the chief object we have to attain is the reduction of the irritation of the kidneys. This we accomplish by diminishing the glycosuria, which, as everyone who has had any experience of the disease knows, can only be done satisfactorily by dieting. In cases of real chronic nephritis it is often difficult to treat both affections satisfactorily, and one has to try not to do harm in one way by doing good in the other. If, as sometimes occurs, the glycosuria ceases altogether, or at least becomes quite inconsiderable, as the nephritis develops, the treatment is somewhat easier, as the dieting gives less trouble. On the whole, the prognosis in these cases is very grave. The cessation of the glycosuria seems to show that the tissue of the kidneys is more changed than in those cases in which there is still some excretion of sugar.

If milk is well tolerated I prescribe it freely. Mineral waters can be beneficial, especially those of Neuenahr, after the use of which I have sometimes seen decided improvement. If the patient has sufficient strength warm baths may be made use of with advantage. They relieve the kidneys by increasing the action of the skin. That it is essential to keep these patients quiet, or even in bed for some time, and to avoid everything that could increase the irritation of the kidneys need scarcely be pointed out.

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NOTE ON A CASE OF RECURRENT SARCOMA OF THE FASCIA OF THE BACK, TREATED BY COLEY'S FLUID.

BY A. MARMADUKE SHEILD, M.B., F.R.C.S.,
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IN the BRITISH MEDICAL JOURNAL for January 23rd, 1897, I published a case of recurrent sarcoma of the mammary gland treated by Coley's fluid (the mixed toxins of streptococcus and micrococcus prodigiosus), where the patient died of pyæmia, apparently excited by the necrosis of the growth. I have now to report a case which shows many features of interest, since rapid improvement ensued after injection; but after a time the growths again increased, the remedy seeming to have little influence over them. The injection method in this instance was thus carried out. On each occasion the surface of the skin was carefully purified, the needle was sterilised, and the puncture made by it at once covered with iodoform and collodion. Pure carbolic acid was kept in the barrel of the syringe between the intervals of use. The fluid was tested and found sterile, and the syringe was filled by plunging the needle through a septum of fine gutta-percha tissue stretched over the bottle which contained it. The puncture thus made was at once closed with wax. The fluid was kindly provided by Professor MacFadyen. During the intervals between use it was kept in a cool chamber. The following is a very abbreviated account of the case. The leading features and circumstances are alone reported. I am indebted to Mr. Roland Whipham, the Assistant Surgical Registrar, for careful notes of the case.

The patient was a well-nourished, healthy-looking woman of about 60 years of age. She first came under Mr. Warrington Haward's care in October, 1895. There was then a livid-coloured hard tumour in the posterior lumbar region on the right side, which was covered by arborescent vessels, presenting the usual appearance of sarcoma. There was a history of eight years, with rapid growth of late. The tumour was freely re-

moved and the wound soon healed. The microscope showed a fibroma; the deeper parts were undergoing change into spindle-celled sarcoma.

On April 21st, 1896, the woman was admitted for several recurrent nodules in the scars, which were again removed.

In November, 1896, another removal. The tumour was large and formidable this time, very soft and gelatinous, and full of blood. The operation was very extensive. The mass was freely cut away until the lumbar fasciæ were exposed. On each of these occasions spindle-celled sarcoma was declared by the microscope, the cells being large and plump, and the growth of a very malignant aspect.

She was again admitted into St. George's under my own care on September 15th, 1897, with extensive recurrence, the tumours extending from the tenth rib to the iliac crest. Another free removal was done right down to the subperitoneal tissue. Dr. Rolleston reported that the microscopical sections were becoming more and more malignant in appearance.

In February, 1898, she was again admitted under my care. A tumour the size and shape of a very large potato reached from the right lower ribs to the crest of the ileum. The skin was stretched and thin at one spot superiorly, as though the growth would soon fungate. The colour was a livid blue, with arborescent vessels. The growth was so soft as to fluctuate like a hæmatoma or abscess, for which, apart from the history, it might readily have been taken. Below the crest of the ileum was another soft elastic tumour the size of an orange. This, the patient said, had rapidly formed. The accompanying photograph by Mr. Drake-



Brockman well shows the extent of the larger tumours. The general health and condition of the patient were good. Seeing the hopeless nature of this case for operation, I suggested treatment by Coley's fluid, and an account of the injections is now given. The larger tumour was alone injected, and a part was selected where the skin was thick, so as to obviate any tendency to sloughing near the punctures. The fluid was thrown into the centre of the tumour by a long needle.

On February 11th, at 4 P.M., the first injection of miij was given. The effects were very alarming. Within an hour a severe rigor occurred, the temperature rising to 102°. She was faint and felt very ill, and the bowels acted involuntarily. Under warmth and stimulants she improved, and the next day the temperature fell, and the patient seemed better.

The tumours became intensely painful, and it was singular to observe that the lower tumour, which was not injected, seemed the more affected of the two. The skin over the tumours was of that roseate hue so often described. For some days the temperature remained above the normal, and the tumours were inflamed and exquisitely tender. There was some slight broncho-pneumonia, which cleared up, and herpes formed on the lips and face.

On February 21st it was noted that the larger tumour, at the site where the skin was so thinned and prominent, threatened to slough. An area the size of a florin was blackened and obviously dead. The lower tumour was distinctly smaller.

On March 4th the black slough separated from the upper tumour, and some necrotic tissue could be seen beneath. The cavity was painted daily with liquefied carbolic acid, and dusted with iodoform gauze.

By March 9th it was noticed that the lower tumour was very decidedly smaller. Slough was discharged daily from the upper tumour, which was somewhat flattened and reduced in size. The latter was again injected in its lower part, mj of the fluid being employed. There were no constitutional symptoms after this, but the tumour became more red and painful.

By March 15th the smaller tumour had shrunk to the size of a walnut. The larger tumour was also smaller, and strikingly soft and diffluent.

On March 17th miij of the fluid was injected. There was slight constitutional disturbance, and trivial local reaction.

On March 19th mij again injected. There was practically no reaction.

On March 30th a large dose (miv was injected. There was no reaction.

On April 1st it was noted that the lower tumour remained as before; it had shrunk very materially. The upper tumour was also much flatter.

On April 6th the large dose of mvj of the fluid was injected. There was no reaction.

At the end of April it was obvious that the growth was again extending. The lower tumour began to progressively increase, and the upper tumour to rapidly extend both laterally and below. The patient became dissatisfied with the treatment, and went out. I have since heard that symptoms are developing indicative of implication of the spinal cord. The lower tumour in ten days increased to quite its former size, and the upper one also extended with rapidity.

In any novel method of treatment it is most important that the true results should be noted. The injection of sarcomatous tumours by Coley's fluid has now been carried out in a considerable number of cases, yet comparatively few really successful instances of disappearance of indubitable sarcoma have been recorded, leading to the inevitable conclusion that the remedy has given disappointing results. It may be remarked that it is not enough that tumours should wither away and disappear under its influence. Some sort of hope of permanency of cure must also be promised, or the remedy affords little advantage over the ordinary methods of operation. Many of the reputed successful cases have not been watched afterwards for long enough periods to note the length of time that freedom from recurrence may last. It may also be pointed out that cases have recently been reported that are calculated to somewhat shake our faith in our clinical knowledge of sarcomatous growths. The diagnosis, especially the microscopical diagnosis, of sarcoma from inflammatory formations is distinctly dubious, and growths which present all the microscopical features of sarcoma, have undergone spontaneous resolution from sloughing or atrophy. This has been from time to time noted about the jaws or naso-pharynx. All this is mentioned to show the various sources of error which may occur. Perhaps the close simulation of sarcoma by inflammatory formations is hardly enough guarded against by those who employ the injection method extensively, and report disappearance under its use. We are all apt to fall into the too common error of attributing ill-understood pathological changes to whatever remedy, the patient happens to be employing at the time.

The case here shortly reported was, however, certainly sarcomatous. The clinical history, and the repeated microscopical examinations, left no room for doubt. It was of the spindle-celled variety, situated on the fascia, and seemed a peculiarly suitable case for the method. There could be no doubt that the fluid powerfully influenced the tumours, yet I cannot but think that the phenomena were largely inflammatory, and the actual increase of the growths which later occurred, while the patient was receiving large injections of the fluid, showed the futility of proceeding further. Had the growths in this case been small, say of the size of a pigeon's egg, one can easily understand they may have disappeared altogether. How far the disappearance would have been more permanent than that affected by operation it is difficult to define. It would be of great importance if a collective investigation could be made of the results of injecting these tumours, say two years after the treatment. The reports of cases are most contradictory, and the unfavourable results in my own two reported cases of undoubted sarcoma, have not impressed me with the value of the method. Nevertheless, in the face of the experience of others, I would not reject the

remedy on such small evidence, but when occasion offers I would give it a further trial, selecting only cases of undoubted sarcoma for its employment.

EXCISION OF THE UPPER END OF THE TIBIA FOR MYELOID SARCOMA AS A SUBSTITUTE FOR AMPUTATION:

WITH A RECORD OF TWO CASES.

By CHARLES A. MORTON, F.R.C.S.,

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IT has been a well-recognised fact that myeloid sarcoma is the least malignant form of sarcoma of bone. Several years ago Gross estimated that it recurred after resection of the affected bone, or amputation through or above it, in 1 in 12½ cases, and that it gave rise to metastatic deposit in 23 per cent. of cases.[1] Quite lately Mr. Bland Sutton has stated[2] that if these tumours have not perforated their capsule they may be safely removed without fear of recurrence, and that they do not disseminate, and he suggests that they should no longer be called myeloid sarcoma, but myeloma. Mr. Clutton also considers that they so seldom return after removal that they may almost be looked upon as benign growths.[3] In several cases, instead of amputating the limb, the portion of bone in which the myeloid growth occurred has been excised, and there has been no recurrence. Mr. Morris has recorded a case of resection of the lower end of the radius for myeloid sarcoma, and the patient was perfectly well thirteen years later,[4] and Mr. Lucas one of resection of the lower end of the ulna for the same form of growth, and the patient was also well ten years after operation. A patient of Mr. Sutton's, from whom a myeloid sarcoma of the sternal end of the clavicle had been excised, was shown at the Clinical Society free from recurrence nearly four years later.[5] Mr. Clutton has recorded[6] one case of excision of the lower end of the radius for myeloid sarcoma, with no recurrence at the time of the patient's death from Bright's disease eighteen months later, and another of the same kind with freedom from recurrence nearly two years after operation.

Excision of the affected portion of bone has now been accepted by most surgeons as the recognised method of treating such cases if the removal of bone can be carried out so as to leave a useful limb. I can find no record of a case in which this has been successfully done in the femur or tibia, though it has in the upper end of the humerus.[7] I can only find the records of two cases in which it has been attempted. Billroth[8] excised the lower end of the femur in one case of central sarcoma, but the patient died of pyæmia. The excision was performed because the patient refused amputation. In another case he excised the lower 3 inches of the tibia for "pulsating central osteosarcoma," but in this case gangrene occurred, and this patient also died of pyæmia.[9]

I have now excised the upper end of the tibia for myeloid sarcoma in two cases. In the case first operated on the patient has a most useful limb, and in the other is beginning to walk without support. In the first case I determined to try to save the limb, but the patient consented to amputation if I thought during the operation that it would be the best method of dealing with the disease. In the second the patient absolutely refused amputation under any circumstances. It seemed to me that the shortening could easily be made up for by a high-soled boot, but what I feared was that after removal of so large an area of bone, when I approximated the tibia to the femur, the tissues in the popliteal space, instead of retracting to a sufficient extent, might kink, and thus, by obstruction of the popliteal vessels, cause gangrene in the leg. That the operation can be performed without danger of kinking of the vessels is now evident, and that we may get perfect osseous union and a very useful limb is shown by my first case. That even in cases in which the union permits a little movement the limb may be fairly useful is also evident, and I am inclined to think that in the course of a few months the limb will have become much more useful; if not a second operation for refreshing and screwing the ends of the bones could be undertaken.

But all endosteal sarcomas are not myeloid, and the question will arise as to the possibility of the diagnosis of myeloid growth before operation. Fortunately, most central sarcomas are myeloid. Gross estimated their frequency at nearly 70 per cent. of all endosteal sarcomas of the long bones. Out of 8 cases of central sarcoma of the upper end of the tibia in St. Bartholomew's Hospital referred to by Mr. Butlin and Mr. Colby,[10] only 1 was not myeloid. Slow growth and pulsation would be conditions in favour of myeloid tumour, and so would evidence of cyst formation if we could get it. I do not think we should do wrong in making resection the rule in endosteal sarcoma at the articular ends; and if on examination of the growth after removal it was found not to be myeloid, the patient should be very carefully watched, and amputation performed at the earliest sign of local recurrence.

We must recognise the fact that some cases of myeloid sarcoma have been successfully treated by scraping out the growth from the interior of the bone, but this method does not seem to me a satisfactory way of removing a tumour. The results in several cases after this method of treatment have, however, been satisfactory. Of the 8 cases already referred to of myeloid sarcoma in the head of the tibia at St. Bartholomew's Hospital, 4 were treated by scraping, and it is stated[11] that "two of the patients were well two years later, but one had a tiny sinus leading into the cavity from which the tumour had been removed; the third was well at the end of eight years, and the fourth patient suffered from recurrence at the end of two years." Dr. Hinds[12] has recorded a case of myeloid sarcoma of the lower end of the femur treated by scraping, with no recurrence two and a half years later; a small sinus persisted.

CASE I.—G. T., aged 40, came under my care at the Bristol General Hospital, January 10th, 1897. Six months before, he had suffered from a little pain just below the left knee, and then a swelling appeared there. He had no pain at the time I saw him, but only a feeling of weakness in the limb, and was able to continue his employment, which necessitated a good deal of work for the lower limbs. There was a smooth, round, tense, fluctuating swelling, the size of a walnut, projecting from the head of the tibia, just on the inner side of the ligamentum patellæ, and slightly pushing the latter outwards. There was distinct "eggshell crackling" over the lower part of the swelling. The needle of the exploring syringe entered for two inches, and then struck bone, and straw-coloured fluid was withdrawn. The whole of the head of the tibia was not expanded. As the fluid was not like that of hydatid cyst it seemed more likely that the cyst was only part of a sarcomatous growth, and on January 21st, when an exploratory incision was made, this suspicion was confirmed. A portion of tumour tissue removed and examined microscopically showed the structure of myeloid sarcoma. This exploratory incision healed by primary union.

On February 1st I operated by the method which I will now describe, and which I planned so as to save the popliteal vessels and external popliteal nerve from damage. I did not expect to be able to preserve the anterior tibial vessels from injury, but was successful in doing so, so that no important vessel or nerve was divided. After applying Esmarch's bandage and tourniquet I first made an incision across the front of the knee, just below the patella, from a point midway between the front and back of the limb on one side, to a similar point on the other side. This was an incision equal in length to half the circumference of the limb. The skin and subcutaneous tissues were then separated from the patella, and retracted upwards, and the joint opened by an incision around the upper border of that bone. It is most important that the patella shall be left, as this forms a useful handle for levering the head of the tibia forwards when clearing its posterior surface. The lateral ligaments and the crucial ligaments were then divided, and the knee-joint strongly flexed, with the sole of the foot resting on the table to steady the limb. By drawing forcibly forwards the head of the tibia by means of the patella and ligamentum patellæ, I was now able to clear the upper end of the tibia and fibula from the tissues lying behind them for the extent of three inches. In this mass of tissue lay the popliteal vessels, but they were not seen. The popliteus, the biceps tendon, and the tendons of the inner hamstrings were separated from the bones. This separation was carried out mainly with the scalpel, but in parts by a blunt instrument.

I now carried two incisions vertically down the leg, one from each end of the previous transverse incision, and joined the lower ends of these by another transverse cut extending across the leg 3 inches below the first. These four incisions enclosed a quadrilateral area of skin, which included the portion over the tumour, and corresponded in its vertical extent to the amount of bone to be removed. The limb was then turned on its side, and the upper ends of the tibia and fibula (now detached from the soft tissues on their posterior aspect) made to project from the lower end of the femur by manipulation of the leg. I then sawed through the tibia at what I thought was a safe level below the growth, and then easily dissected the upper 3 inches of the bone off the muscles in the interosseous space, and, after division of the ligaments of the superior tibio-fibular joint, removed it. I then cleared a corresponding length of fibula, taking great care not to cut the anterior tibial nerve which was not seen, and the bone was divided with the saw at the same level as the tibia. The anterior tibial artery was then seen passing between the bones uninjured, and the external popliteal nerve was also seen to be uninjured. A slice of bone, one-third of an inch thick, was then sawn off the lower end of the femur. As many small cut vessels as could be recognised were then secured in forceps, and the tourniquet removed. No large vessels bled, but numerous small points of oozing had to be dealt with. The cut sur-

faces of the tibia and fibula were then placed against the cut surface of the femur, and the tibia and femur screwed together with a long screw passed obliquely through the tibia upwards into the femur, and the end of the screw was left projecting. There was a strong tendency for the femur to rotate outwards or to assume the ordinary position of rest, and of anæsthesia, and the screw did not hold the bones together in such a way that fixation of the foot in the vertical position prevented this rotation of the femur outwards. The edges of the two transverse incisions came together (with the end of the screw projecting between them), and the edges of the two vertical ones were doubled on themselves so that they came together transversely. The wound was freely drained.

At the end of the operation both anterior and posterior tibial arteries were felt pulsating, and the foot was of good colour. The soft tissues at the back of the joint did not contract very much, but did not kink. The limb was put up on a long back splint with footpiece. A longitudinal section of the portion of tibia removed showed a typical myeloid sarcoma with several cysts. Above the growth the bone had been completely absorbed, and it was only separated from the interior of the joint by the articular cartilage. On the posterior aspect of the growth there was only one-sixth of an inch of bone left. In front the growth was protruding from the exterior of the bone, and was infiltrating the scar of the exploratory incision, which had been included in the area of skin removed. Below the growth, was nearly an inch of healthy bone. Fig. 1



Fig. 1.

represents the portion of tibia removed, laid open and viewed from its posterior aspect. The interior is seen to be occupied by the cystic myeloid sarcoma.

As the rotation outwards of the femur was found to be very marked the day after the operation, and this bone could not be kept in a position of greater rotation inwards, the leg and foot were rotated out to a corresponding degree and the foot fixed to a new foot-piece on the splint, which was inclined outwards at an oblique angle. The drainage tubes were removed on the third day, and the wound healed by primary union. On March 18th the limb was removed from the splint and put up in plaster. There was then very slight movement between the bones. On April 27th the plaster case was left off and a poroplastic knee-case, such as patients wear after fracture of the patella, applied. The patient was shown at a meeting of the Bristol Medico-Chirurgical Society on May 10th, 1897.[13] By the middle of July no movement could be detected between the bones, and he could walk with only a slight limp, with a high-heeled boot and a stick. There was four inches of shortening. He returned to work in August, but continued to wear the poroplastic case to prevent flexion until the beginning of this year. He was again shown at the same Society in April of this year, free from recurrence, and Figs. 2 and 3



Fig. 2.

represent the condition of the limb at that time and the depth of sole required to overcome the shortening.

CASE II.—R. G., aged 39, came under my care in September, 1897, with a pulsating swelling in connection with the head of the right tibia. She had suffered from pain in the leg for six months, and had first noticed the swelling in May, and the pulsation later. She continued to walk about until a week before I saw her, and then the pain compelled her to rest. On the anterior and outer aspect of the head of the tibia was a pulsating elastic swelling, rather larger than a hen's egg, with plates of bone on the surface, giving rise to "egg-shell" crackling. It did not reach quite to the articular border. Pressure on the femoral artery not only stopped the pulsation, but greatly reduced the tension of the swelling, so that the plates of bone on the surface could be more easily felt.

On September 17th I performed exactly the same operation as in the last case. Esmarch's bandage was used, and very little blood was lost. The anterior tibial vessels were exposed, but not injured. In making traction forwards with the patella the bone broke through the growth, and had to be drawn forwards by grasping the head of the fibula with lion forceps. I first divided the bone just below the projecting growth, and found I had not cleared it. I then removed another inch, and found my section was half an inch below it. The popliteal artery was seen beating at the end of the operation. After removal of half an inch of the lower end of the femur

the bones were fastened together in exactly the same way as in the last case. I found I had removed 3½ inches of the tibia. The growth was a typical myeloid sarcoma, but there were no hæmorrhages or cysts.



FIG. 3.

Microscopically it showed the usual structure of such a tumour. The [illegible] covered by a thin shell of bone on its posterior aspect [illegible] and outer surface there was only a capsule with [illegible] it. Above it had not reached the articular cartilage. [illegible] put up in the same way as in the last case, on a long back [illegible] piece. I have no note of any trouble from rotation of [illegible] think probably the screw held the bones so well [illegible] prevented by fixation of the foot against the [illegible] union was obtained, except where the sarcoma [illegible] The screw was removed on November 1st, and on the [illegible] put up in plaster. She continued the plaster case until [illegible] some movements remained between the bones, [illegible] On March 17th a light poroplastic case, [illegible] after fracture of the patella, was substituted for [illegible] boot made for her. When seen on May 15th [illegible] ement between the bones, but with the [illegible] led boot she could walk a little in the [illegible]

NOTE AND REFERENCES.

[illegible] *System of Surgery*, [illegible], vol. i, p. 881. [illegible] *Edinburgh Medical Journal*, 1897, N. S., vol. i, p. [illegible] *...ery*, vol. i, p. 916. [illegible] *Clin. Soc. Trans.*, vol. x. [illegible] , vol. xxvii, p. 86. [illegible] *Medical ... Surgery*, 1881, p. 451. [illegible] The ... not suggest such an ... on in the bones of the ... *Reports*, vol. xxxi, p. 35. [illegible] *Ibid.*, p. 36. [illegible] BRITISH MEDICAL JOURNAL, 1898, i, p. 555. [illegible] *Bristol Medico-Surgical Journal*, June, 1897, p. 119.

COXA VARA OR DEFLECTION OF THE NECK OF THE FEMUR.*

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THERE can be little doubt that the condition of the bones—that is their tone, so to speak—varies from time to time quite as much as that of the muscles and ligaments. In infantile rickets this is so, and one is accustomed to form some of the elements of prognosis on the elasticity or otherwise of the bones. During adolescence and adult life from time to time there occur various changes in the resistance of the bones to strains, changes which are not associated with gross lesions, such as osteomalacia or osteitis deformans, but conditions which are thoroughly dependent on the varying states of health at different times. What may be called the true tone of bone is its power of resistance to continued pressure. Loss of power of resistance will necessarily be shown in those parts which are subject to the greatest pressure at a mechanical disadvantage. Such a part is the neck and head of the thigh bone, and the effect of pressure *plus* softening of the bone is to push the head of the thigh bone downwards, to cause the neck to become more horizontal, and so to give rise to the deformity under notice.

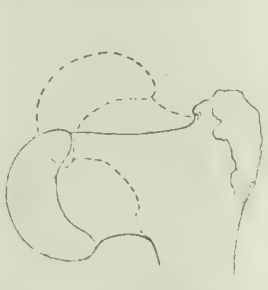


Fig. 1.—Outline of the depressed head and neck of the femur in coxa vara in Müller's specimen. The unusual position is shown by the dotted line (after Royal Whitman).

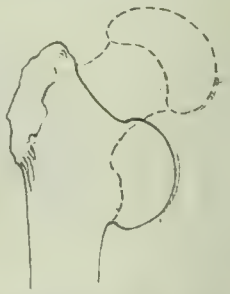


Fig. 2.—Outline of the depressed head and neck of the femur in coxa vara in Hoffa's specimen, contrasted with the normal position shown by the dotted line (after Royal Whitman).

The existence of downward deflection of the neck of the femur in rickets has not often hitherto been noticed, but if one takes the trouble to examine a considerable number of cases of rickets, it is met with very frequently. So long ago as 1843 Roser observed bending of the neck of the femur in the otherwise healthy bone of adolescence. And in 1857 Richardson described in the *Transactions of the Philadelphia Pathological Society* a case of deformity of the neck of the thigh bone simulating fracture; and Keetley, in the *Illustrated Medical News*, September, 1888, and *Annals of Surgery*, vol. ii, p. 308, has put on record a curious case which gave rise to a good deal of difficulty in diagnosis, but which, in the light of subsequent researches, appears to have been a probable case of coxa vara. At any rate, Mr. Keetley successfully employed treatment which we now know to be necessary for the restoration of the deformity arising from the affection under notice.

The essential nature of the deformity being a downward bending of the neck and head of the femur in such a way that the latter comes to lie below the level of the great trochanter and to form an acute angle with the shaft of the femur, it is necessary to note the varieties of the affection and the time of their occurrence. In the most recent article on the subject by De Quervain in *La Semaine Médicale*, January 29th, 1898, the following varieties are described. First of all, congenital, which is admitted to be rare; then the most common form, the rickety form of coxa vara, in which bending of the neck of the femur may take place either directly downwards, or downwards and backwards. Lamenstein[1] had in his possession specimens taken from a child, aged 6 years, who died after osteotomy for other rachitic deformity in the lower limbs. Both femoral necks were in this case much bent.

* A paper read before the Hunterian Society.

Nélaton had previously noticed elevation of the trochanters in rachitic children. Two cases have recently come under my own observation at the National Orthopædic Hospital, one in a child aged 4, and the other in a child aged 7. In the first-mentioned case the affection was bilateral, and the trochanters were half an inch above Nélaton's line. In the second case the left hip only was affected, and the trochanter was three-quarters of an inch above Nélaton's line. In neither was there any of that downward movement of the trochanter on traction of the leg so characteristic of congenital hip displacement, a condition with which coxa vara has been often mistaken.

The next variety is coxa vara of adolescence. Three forms of this have been described. Coxa vara adducta, or direct downward displacement of the head and the neck of the femur; then downward and backward displacement of the neck, with rotation of the head on its long axis as a modification of the last-named; and a class of case which is characterised by elevation of the trochanter and anteversion of the head of the femur. Another variety is coxa vara of adults which is generally due to osteomalacia. With reference to the etiology, the majority of cases of coxa vara is due to rickets, either infantile or adolescent (late rickets). In the latter case the disease is said to be local in its manifestation. It seems that there are some conditions which are predisposing. These are inflammatory processes in the neck of the femur, generally osteomyelitic or arising from the epiphyses, and employments which necessitate much standing or lifting of weights. Occasionally there is a distinct history of injury preceding it. The affection may be unilateral or bilateral. It is, perhaps, more often bilateral, and is seen more frequently in males.

The symptoms in the adolescent form are as follows: Often without apparent cause or following a slight injury, the patient begins to limp and to complain of fatigue and pain about the affected joint on exertion. Shortening of the limb is soon apparent, and is accompanied by elevation of the trochanter above Nélaton's line. The limb is usually extended or flexed to a few degrees and somewhat rotated outwards. The motion of the joint is diminished particularly in adduction, as a rule there is no local tenderness on pressure. The most striking signs are the adduction of the thighs, the shortening of the limb, and the elevation of the trochanter. Royal Whitman, [2] to whom we owe a very graphic description of the affection, details several cases. I may, however, briefly sum the symptoms as follows:

1. Age: Either in infancy or adolescence, less often in childhood.
2. Class of patients: Rickety and those who carry weights or do much walking and are subject to prolonged fatigue.
3. Onset: Peculiar stiffness of hip, spoken of as "growing" pains, the stiffness is worse on rising after sitting for a time, but is relieved by complete rest.
4. Limping, if one side is affected; waddling, if both sides.
5. Shortening, amounting to as much as 1½ inch.
6. Prominence of the trochanter, especially on flexing the thighs.
7. Displacement of the trochanter above Nélaton's line, and sometimes backwards.
8. Rotation outwards of the limb and eversion of the foot.
9. Limitation of inversion and final loss of abduction, with, in extreme cases, scissor-leg progression and inability to walk without crutches.
10. Tilting of the pelvis and consecutive scoliosis.
11. Signs either of infantile rickets or of late rickets, the so-called rickets of adolescence.

Negatively, the absence of the following symptoms may be observed:

1. No local swelling except that presented by the displaced trochanter, and no tenderness on pressure.
2. Absence of the up-and-down movement or telescopic movement on traction of the limb so characteristic of congenital hip displacement.
3. Suppuration never occurs, nor is the thickening of the trochanter found.

I here append notes of two cases of my own and two of Royal Whitman.

CASE I.—A. H., aged 9 years, came under my care at the Evelina Hospital on July 21st, 1897. The mother had observed that the left leg seemed longer than the right when the patient was a baby about 18 months or 2 years old, and she had since noticed that the left leg got longer gradually, and the right did not seem to grow as quickly as the left. There was no history of tubercle except in the case of the grandfather, who had died of phthisis. The child complained of some pain in the right hip, and was limping considerably in walking. On examination, the right leg was found to be three-quarters of an inch shorter than the left; the trochanter was three-quarters of an inch above Nélaton's line, whereas



Fig. 3.—Coxa vara on the right side: the crests of the pelvis, the prominent great trochanter, and the shortened limb are well seen.



Fig. 4.—Back view of the case of coxa vara in Fig. 3.

the left trochanter was just on the line. There was smooth free movement in every direction except abduction, which was limited by the adductor longus tendon, which became readily tense on attempting abduction. On walking the patient's gait was peculiar; she waddled, and the body was tilted towards the right side. The pelvis was also tilted, and the spine was curved to the right so as to bring the short leg down to the ground (Figs. 3 and 4). There was no difficulty in flexion of the thigh, but the muscles were somewhat wasted, and the thigh was somewhat everted. It was not possible to move the head of the femur up and downwards as in the case of congenital displacement of the hip, but the points which struck me so much were as follows:—The smoothness of movement of the joint, the shortness of the limb, the prominence of the trochanter on that side, the increased hollow between the trochanter and the tuber ischii, and the absence of any definite swelling. It was decided to watch the child, and so a cork sole of three-quarters of an inch was given to her. She was subsequently seen on September 23rd. She had not been taken off her feet nor allowed to rest as much as necessary; shortening was then one inch and a quarter. On February 21st, 1898, the shortening process had stopped, the loss of adduction was less, and it seemed as if the softening had ceased.

CASE II.—N. J., aged 7, was admitted to Westminster Hospital on November 14th, 1897. The mother stated that the child's knees had both turned in slightly from birth, but the deformity became more noticeable when she began to walk. The mother sought advice for the child, and splints were ordered, and when I saw her she had marked genu varum of the right leg and genu valgum of the left leg. These were subsequently rectified by operation, but the child still retained an inclination on the pelvis towards the right side, and the right trochanter was found to be half an inch above Nélaton's line. The trochanters seemed also to be placed too far backward, indicating an anterior curve (convexity forwards) in the femoral necks. The left limb measured 20½ inches in length and the right 20⅜ inches. The length of the left thigh was 11¼ inches and that of the right 10⅝ inches. The length of the left leg was 9 inches and of the right 9⅜ inches, a considerable compensation having been made for the deficiency in the length of the right thigh by an overgrowth of the right tibia. The child still presented symptoms of rickets, and a skiagraph showed well the anterior curves in the necks of the femora and the downward deflection of the right caput femoris.

CASE III. given by Dr. Royal Whitman in his pamphlet on the subject.—A boy, aged 15, was seen with 1⅜ inch actual shortening. This amount of shortening had all come on within one year, as at the age of 14 he was in perfect condition. After that age he noticed a gradual increasing limp, and the application of a cork sole became necessary. Flexion, extension, and rotation remained free, but abduction became entirely restricted. In the figure presented by Whitman, adduction of the right leg, tilting of the pelvis, and scoliosis are seen. It should be added that there was no up-and-down movement of the head of the femur in the acetabulum. All treatment was refused.

CASE IV (Royal Whitman).—The boy was aged 16 when he came under Dr. Whitman's observation. In infancy he was said to have had weak ankles and flat feet. For two years he had been working as a grocer's boy, standing, and carrying heavy weights. Lately there had been soreness and stiffness about the right hip, which were attributed to "growing" pain. On resting, these symptoms disappeared. When he resumed work they reappeared in an aggravated form, and were increased by extra work, but diminished on rest. On examination the trochanters were found to be slightly elevated above Nélaton's line, the gait was rolling in character, and abduction at the hip was limited to a third of its extent, and more marked on the right side than the left. The treatment, consisting of rest and gymnastic exercises, was neglected, and three months later he came again to the hospital, walking with much effort, the rolling gait being most marked, and abduction of the legs limited at the line of the body. Crutches were now ordered. Four months later the patient was seen. The adduction as the patient moved on crutches was so great that the legs were crossed, "scissor-legged deformity." On flexing the right thigh the limb crosses that of the opposite side, and with the thigh at a right angle with the trunk, outward rotation is such that the heel is in a line with the opposite anterior superior spine. With the limbs parallel and extended separation of the knees to 3½ inches only is possible. Flexion at once crosses them. The trochanters are now an inch and a half above Nélaton's line. Dr. Whitman, in the belief that the bending of the necks of the femora had nearly reached its limit, proposed to divide those bones below the trochanters so as to obtain sufficient abduction.

PATHOLOGY.

Hoffa's case showed that the neck of the femur had bent in such a way downwards and backwards that the head of the bone rested on the trochanter minor at an angle of 60 degrees with the shaft as contrasted with the normal of 28 degrees. On section, there was no evidence of previous disease, but the structural arrangement of the cancellous tissue differed from that which is usual. The femur was also rotated outwards. The trochanter was raised and pushed nearer to the middle line of the body. The difficulty in flexing the limb arose from the trochanter major coming into contact with the prominent upper and anterior margin of the acetabulum.

Local rachitis is frequently a cause, but the incidence of the disease in patients liable to much standing and prolonged fatigue, together with the absence of deformities in other of the long bones, points to the chief factor in the production of coxa vara in adolescence being overweight acting upon a slender and softened neck of the femur. The diagnosis of cases is by no means always easy, and the following conditions are liable to be mistaken for it: Congenital displacement of the femur, coxitis, fracture of the neck of the femur, and separation of the epiphyses. Congenital displacement of the femur and coxa vara present certain symptoms much alike—namely, prominence of the trochanters with the upward and backward displacement, the waddling gait, and the shortened limb; but in congenital displacement the limb can always be lengthened somewhat by traction, and the gain thus obtained is at once lost on ceasing traction, while the head of the bone is felt not to be in the acetabulum. Then, again, in congenital dislocation there is little or no difficulty in flexion, and in certain early cases abduction is well marked, whereas in coxa vara there is no telescopic movement of the head of the femur, which is felt to be in its normal position, and there is frequently difficulty in flexing the limb, and the loss of abduction is well marked.

The early stages of coxitis present some similitude to that of coxa vara. In both we have pain present, in both limping gait, and in both there is some external rotation of the limb; but in coxitis, abduction and flexion are present; in coxa vara abduction is lessened and there is no flexion. These should suffice to distinguish them. From fracture of the neck of the femur, the upper part of the shaft, or separation of the epiphyses, the diagnosis is more difficult, but there can be no doubt that in obscure cases the use of the Roentgen rays will afford a guide.

The prognosis depends considerably upon the age. If we are dealing with a case in infancy, the affection as a rule spontaneously disappears as the rachitic attack subsides. But after this age, unless the patient seeks relief by rest, the depression of the head and neck of the femur continues, and the case, if left to itself, results in very considerable disability, as detailed in Case II.

The treatment is simple. In the first place, in infants, rickets should be treated, and, if the disease is at all marked, it would be well to place the infant in a Hamilton's or in a Bryant's splint, with the legs abducted as much as possible. If there is softening of bone still present, this position will serve to lever back the head into its original position, and, if the time of softening has passed, recumbency will prevent further development of the deformity. In the case of adolescents, the first thing to insist upon is cessation of habits of long standing or the necessity of weight-bearing. Rest will then quickly relieve the pain, and the deflection of the head and neck cease. But, if left to itself, a miserable result will follow, limping, shortening, persistent and chronic adduction of the limb, and in bilateral cases even scissor-leg deformity. If, however, the case comes to one when it is well pronounced and disability is great, I should not hesitate to recommend an osteotomy on the femur, done in one of two places, either obliquely through the great trochanter or below the trochanters. I think the best results would be obtained by the former procedure. If the patient should refuse operation, a cork sole is the only remedy.

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AN OPERATION FOR ELEVATION OF THE FEMALE BLADDER IN PROLAPSE OR CYSTOCELE.

By D. LOWSON, M.D.,

Surgeon, Hull Royal Infirmary and Hull Orthopædic Hospital.

HERNIA, or breach of the musculo-aponeurotic layers of the abdominal wall, is difficult of cure and prone to relapse, and numerous mechanisms and operations have been devised for its remedy or relief. Similarly for hernia or prolapse through the pelvic floor pessaries innumerable have been invented and operations associated with great and well-known names have been proposed, approved, and ultimately abandoned. Kolporrhaphy and allied methods for narrowing the vaginal canal or ostium have been found wanting and have been discarded by many for the more satisfactory plan of elevation and fixation from above; and certainly in cases where there is descent of the uterus alone, hysteropexy or Alexander's operation when skilfully performed approaches in success the more recent operations for the cure of inguinal hernia. Many cases occur, however, where even these fail to relieve the

symptoms; and after the operation, though the uterus is found to be placed high up, almost beyond reach of the examining finger, the patient still complains of a sensation of downbearing and discomfort similar to her previous experience. In many of these cases it will be found on examination that the bladder is still prolapsed, and that this is the cause of the persistence of the symptoms, that in fact there is still left a cystocele which the elevation of the uterus has failed to cure. This unrelieved remainder after the operation of hysteropexy led me to examine carefully all cases of procidentia coming under observation, and I found that for purposes of practical surgery cystoceles may be divided into three classes, the classification being based on the anatomical relations between the uterus and bladder.

I. *Prolapse of the Bladder without Descent of the Uterus.*—Here the connective tissue attachment of bladder to the anterior aspect of the cervix uteri is loosened and extended, so that the bladder can come down without bringing the uterus with it. Nor is it difficult to see how this takes place. The physical connection between the two viscera is never very strong, and in the course of a married woman's life is subjected to many a strain; for example, in labour, especially when an impatient accoucheur prematurely applies the forceps before complete expansion of the os has taken place.

II. *The Uterus and Bladder both Prolapsed, the Utero-vesical Connection remaining Normal.*—Here the two organs descend together and contemporaneously.

III. *Both Viscera are Prolapsed, but the Utero-vesical Connection is Loosened and Elongated as in* I.—Clearly this is due to the fact that one organ has fallen before the other, and in such cases when the uterus is pushed up the bladder still remains down.

Symptoms.

The symptoms complained of are chiefly these:

1. *Downbearing.*—This is often accompanied with backache, and a feeling as if "the inside were coming out."

2. *Vaginal Obstruction.*—A soft mass occupies the vagina, or even projects through the vulva, filling in severe cases the whole canal. This proves also an impediment to sexual intercourse.

3. *Cystitis* is often present; frequency of micturition, urine turbid, and sometimes offensive. The turbidity is due to mucus or pus or micro-organisms, in addition to lithates or phosphates.

4. The bladder is imperfectly evacuated, and the residual urine may decompose and produce the symptoms of vesical inflammation.

Preliminary Necropsies.

To remedy prolapse of the bladder when the uterovesical-connection is elongated (as in I and III) it is plain that elevation of the uterus alone would not be enough, but that elevation and fixation of the bladder is also requisite.

1. *The Urachus.*—One examination of the cadaver was enough to prove that the urachus could not be trusted either to raise the bladder or to retain it in position. It was indeed tough and fibrous in its upper reaches, but at its vesical end it spread out on the bladder wall in a cone of involuntary muscular fibre continuous with the vesical muscle, and little force was needed to uproot it.

2. *The Hypogastric Cords.*—With the object of gauging the strength of these I made ten separate dissections, and I was pleased to find that all ten subjects had cords of considerable strength, that they were firmly attached to the bladder, and even when not very thick they bore a considerable strain before giving way; and in no case were they uprooted at the vesical end, but broke at some point higher up. At subsequent investigations, however, on the dead subject, and in operations on the living, I discovered many more varieties in these structures. Some were surprisingly thick and tough, and others extremely fine. They varied also in symmetry and anatomical disposition.

1. The most frequent arrangement was this: The two cords ascended upward from the sides of the bladder, inclining to each other and to the urachus, but all three remaining separate and distinct cords as far as the umbilicus. (Fig. 1.)

2. In some cases the left cord crosses the urachus and joins the cord on the right side. (Fig. 2.)

3. The cord that crosses is sometimes a fine thread-like fibre. (Fig. 3.)

4. One cord may be wanting, and it appears to be the left that is most frequently absent. (Fig. 4.)

5. A common occurrence is a coalescence of all three structures at a point about 2 inches above the pubes in the middle line, all joining to form an alar expansion at the point of fusion. (Fig. 5.)



Fig. 1. Fig. 4.



Fig. 2. Fig. 5.



Fig. 3. Fig. 6.

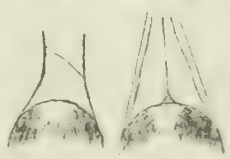


Fig. 7. Fig. 8.

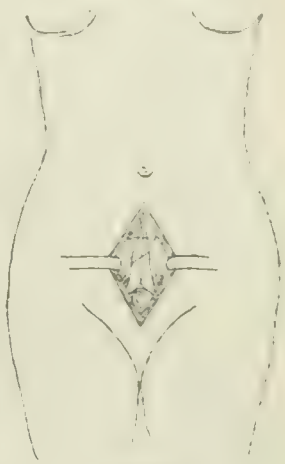


Fig. 9.

6. Not infrequently a branch arises from one cord, and crossing inwards obliquely over the middle line, joins the opposite cord at a higher level, thus forming an anastomosis. (Fig. 6.)

7. Sometimes there are two cross branches, or a branch when crossing may divide into two, and join the opposite cord at different levels.

8. The transverse anastomosing branch is in some cases reduced to the size of a mere thread. (Fig. 7.)

As the hypogastric cords are really obliterated fœtal vessels, it is not surprising that they should exhibit so many departures from the normal. It is well known that fœtal vessels are most unstable structures, and that changes occur in their course with great readiness. Anastomoses are quickly formed, and a new branch will enlarge with such facility that the current is quickly diverted, the main channel shrivelling up and being superseded by the branch.

Soon after the completion of these investigations, a patient presented herself at the Hull Infirmary, with a long history of urinary trouble, and of some obstacle to married life in the shape of a large soft swelling entirely blocking the vaginal ostium. The cystitis from which she suffered was soon relieved by medicine, but she continued to have a considerable amount of residual urine after micturition, and she dwelt much on the symptom of dyspareunia. This gave rise to much mental worry, and encouraged a tendency to melancholia, which was aggravated by some remarks made by her husband. The patient was admitted on October 15th, and was operated on on October 18th, 1895.

Operation.

A little above the pubes a vertical incision, 3 inches long, was made through the skin fascia and rectus muscle, exposing the subperitoneal fascia. The sides of the wound were drawn widely aside by means of strong retractors, and the hypogastric cords looked for in the fat overlying the peritoneum. (They are found best about 2 inches above the pubic symphysis, where they are separated by an interval of about an inch.) Having found them, they were separated from the subjacent serous membrane well down to the sides of the

bladder. Next they were dragged well up into the wound, the bladder following, a stitch was passed through the sheath of the rectus and the muscle itself, then transfixing both cords, the needle was brought out through opposite rectus and the fascia covering it. The suture was tied firmly, and several others passed through the same structures above and below, so that the two cords were embedded for a considerable distance in the substance of the approximated recti. Skin sutures were then inserted, and the wound closed and dressed. At the time of the operation I was somewhat disappointed that the bladder did not seem to yield sufficiently to traction, and consequently, not expecting a favourable result, I made no vaginal examination for a week; when I did, I was agreeably surprised to find that the soft mass which had previously filled the vagina had now entirely disappeared. This case I examined quite recently, and it is still in as good position as immediately after operation.

The next case was not quite so successful: when recently examined there was a distinct though moderate recurrence of the cystocele. Five others were operated on with results equal to the first case, and then came a check. In searching for the cords in rather a stout woman but one could be found sufficiently strong for use—the right—the left being a mere thread. Still worse was the ninth case, in whom neither cord could be discovered, although the patient was a spare woman. The urachus was conspicuously present, but broke off on my attempting to utilise it. Clearly I could not wisely persevere with an operation that was based upon structures liable to so much anatomical uncertainty.

3. *By Peritoneal Flap* (see Fig. 8).—This improvement on the above method is performed thus. After the usual incision through skin, fascia, and rectus, the sides of the wound are well separated, and the hypogastrics looked for and defined. Midway between the pubes and umbilicus the peritoneum is divided transversely for about 1½ inch, the midpoint of the incision corresponding with the middle line (1 ... 2, Fig. 9). From each end of this incision the peritoneum is divided with a pair of scissors downward and outward toward the sides of the bladder (1.....3 and 2.....4, Fig. 9), just outside the cords. (The flap thus formed is attached to the back of the bladder, and includes the hypogastrics and the urachus.) By dragging on this flap the bladder is drawn upwards, and is retained in position by sutures passing through the flap, recti muscles, and fascia. In this way one is independent of the hypogastric cords, though, if present, they help to strengthen the flap.

4. *Flap Operation with Separation of the Bladder in Front.* The flap operation proved, on the whole, successful, but in 3 cases out of 14 the cystocele was not completely reduced. It was evident that more elevation was required. With this object in view I have in subsequent cases passed my hand behind the pubes, and completely separated the bladder in front and laterally. After this the bladder can be well drawn into the wound, and fixed at whatever level is considered advisable.

Up to December 31st I had operated on 25 cases by No. 4 method. Of these, 19 have given me absolutely favourable reports, expressing themselves variously—as "never better," etc. Many of them I have examined digitally, raised on the elbow and when coughing. Three I have lost sight of, and one was, I believe, a failure, and was operated on by another surgeon. Three still complain, two of a persistence of the feeling of down-bearing, though on examination I find no sign of prolapse, and they are not free from symptoms of hysteria. The other complains of pain and frequency of micturition, and she has several times had a recrudescence of the cystitis from which she had long suffered. There have been no deaths.

THE INFLUENCE OF LOCALITY ON THE PREVALENCE OF MALIGNANT DISEASE.

By T. W. BLAKE, M.D.St.And., M.R.C.S.Eng.
Bournemouth.

THE following extracts from my paper read at the annual meeting of the British Medical Association in London, 1895, gave very much the same evidence (facts) of the extra prevalence of malignant disease in river-watered valleys, as described in Dr. E. N. Nason's paper in the BRITISH MEDICAL JOURNAL of March 5th. Moreover, the village in the Hampshire chalk valley I have described has alongside the main street a tributary to the river Test. This rivulet, when the local springs are low, disappears annually, and probably carries into the wells by "soakage" deleterious deposits to the drinking water.

In a paper read at the annual meeting of the Association in Bournemouth, 1891, I gave the history of a farmer's family living in a good substantial house at the terminal end of a long straggling village, containing about 800 inhabitants, situated in a chalk valley. The main road only divided the farmhouse from the village schoolhouse, a narrow strip of garden divided it from the churchyard, close to this on the other side was the vicarage, and near and below that was a labourer's cottage. Each of these dwellings had its separate well for drinking water sunk into the subsoil of chalk. There is also a rivulet running close to these dwellings part of the year. In all those dwellings I have seen and attended cases of cancer more than twenty years ago, and the successor to my practice there has attended and known of other cases of cancer since then at the same farmhouse in members of different families from those who previously occupied the same.

In the surrounding villages on the hills, where rain water from ponds is used much more than well water, the cases were not so prevalent. These ponds are kept clean when required for domestic purposes, fenced in to keep out cattle, and are kept free from vegetation. They supply all drinking water when the springs in wells are low. In the valley well water is almost entirely used for drinking purposes, and these wells are made in solid chalk.

The glandular system is more fully developed in women than men, and this may be one of the causes of the greater frequency of cancer in women. Women are habitual water drinkers; they suffer from habitual constipation, perhaps partly from their sedentary lives, and drinking hard water increases this trouble. Would not this suggest another cause for the greater frequency of cancer in women?

The cases among the men in the chalk valley, to which I have referred, and frequently following that common trouble there—constipation of the bowels—chiefly involved the intestinal tract, and were mostly cases of cancer of the rectum.

As Vice-President of the Dorset and West Hants Branch of the British Medical Association, I was called upon to open a discussion at their summer meeting held at Bridport in the year 1895, and I chose for discussion the question, Is Cancer a Waterborne Disease? with special reference to its frequent occurrence in chalk valleys and districts, containing periodical springs and rivulets. I then referred to the reported rapid increase of cancer in America, and suggested that it would be well if we could ascertain if it was of greater frequency there in chalk and limestone districts.

I also referred to this disease in grazing animals, and to the fact that horses in Australia suffer from swamp cancer in the axilla from grazing on stagnant marsh grass, the tumours growing to an enormous size. I also mentioned the fact of cattle and pigs wallowing in the shallows of sinking rivulets, and their excretions polluting the same. I spoke of a common practice in the bacon-producing counties of Hampshire and Wiltshire, of labourers eating their bacon uncooked, and of frugal farmers having been known to do the same to avoid waste of the fat in boiling. Is it possible, then, that cancer germs can find temporary lodgment and be reconveyed from animals to man? The question whether the hardness of water from lime deposits may have anything to do with forming a cancer matrix in them, and disorganising the absorbent and excretory glands, seems to be nearer the mark, and worth our consideration.

At our discussion at Bridport, Dr. McLean, of Portland, said that in making reports for the County Hospital, he noticed larger numbers of cases from the same places, and he thought it would be well for medical officers of health to make a note of this in their returns, and investigate those localities where the cases predominate. Mr. Parkinson, of Wimborne Minster, thought that the Government return should have a special column for cancer cases.

If Mr. Parkinson's suggestion can be adopted, and in the future Government returns be made to notify the nature of the subsoil, with special reference to the hardness or softness

of the water in localities where cancer cases are mostly met with, it would guide us in investigating the cause of this increasing and terrible malady. It is the fashion to drink table and aërated waters of all descriptions now, both in this country and America; it is possible that much of it is procured from limestone and chalk districts. Boiling the water in tea and beer making throws down much of the lime with deleterious deposits, and I think preference should be given to drinking water so treated, especially in chalk districts where clean pond and rain water is not always at hand, in fact this should be boiled also; and for all bottled waters it should be taken from springs not so impregnated with an excess of lime.

I have raised these questions arising out of my observations extending over many years, and out of records supplied to me by Mr. Gilmour, who is now practising there, of the extraordinary occurrence of cancer in that Hampshire chalk valley, hoping that other observers may trace the sources and aggravating causes of this fearful disease, and so endeavour to check its rapid increase.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

THE TREATMENT OF LEUCOCYTHÆMIA.

IN a boy with exceedingly large spleen and with marked, though not quite so extreme, an excess of white cells, who had been under treatment for eighteen months at other hospitals and at St. George's Hospital without relief, the inhalation of carbonic acid has been rapidly followed by a considerable reduction in the size of the spleen, and with a remarkable improvement in the general condition. The method is simple. Pure gas is easily obtained with the help of a Kipp's apparatus (supplied by Messrs. Baird and Tatlock, of 14, Cross Street, Hatton Garden, E.C.) and of a wash-bottle, in which it is made to bubble through a 20 per cent. solution of potassium carbonate to free it from all traces of hydrochloric acid, and from which it may be inhaled by means of a long india-rubber tube. The rate of delivery can be easily gauged by watching the bubbling of the gas in the wash-bottle, and easily regulated down to a moderate strength by adjusting the tap of the gasogene. The latter is charged with chipped marble in the middle bulb, and with a 1 in 4 solution of strong hydrochloric acid to fill the lower bulb and to rise into the middle bulb sufficiently high to submerge the marble.

In order to obviate any respiratory complication, I have administered oxygen simultaneously, likewise in a very slight stream through another tube connected with the oxygen supply. The duration of the inhalations did not at first exceed three minutes, but I now give seven and ten minutes' sittings several times a day, and I combine with the inhalation a preliminary application of galvanism to the spleen for five minutes before, and during the whole sitting. There has never been any cyanosis or feeling of discomfort at the time or afterwards.

A second case, that of a young man with less extreme splenic enlargement but with very great increase of white cells, also showed general improvement, but the diminution in the size of the spleen has hitherto been only slight.

The object of the early publication of the encouraging results obtained so far is to secure for those whose life may be at present in the balance the possible benefits of a method which is harmless and which might perhaps in some of them prove successful, even at the last stage. Its trial is also invited in the other varieties of leucocythæmia and in Hodgkin's disease, as well as tentatively in splenic, in simple, and in pernicious anæmia, and in malarial splenic enlargement, although in the latter affections the same rational indication does not obtain.

It is hoped that the subject may be brought up and the method demonstrated at the coming meeting in Edinburgh.

Curzon Street. WM. EWART.

8

ON THE USE OF CARBO-SAPOL IN THE DISINFECTION OF THE SURFACE OF THE BODY.

WHILE mechanical disinfection by scrubbing (preferably, as I pointed out recently in the BRITISH MEDICAL JOURNAL with pumice-stone soap) is of the first importance in the sterilisation of the surface of the body, we cannot altogether do without the subsequent use of some chemical antiseptic. Different surgeons use different substances, many preferring, especially in the operating theatre, Kelly's rather complicated plan of a solution of permangate of potash, followed by a saturated solution of oxalic acid. For some time I have been using a combination of 50 per cent. carbolic acid (Calvert's No. 5) with 25 per cent. yellow soap (Tennant's), and 25 per cent. soft black soap. These ingredients (the yellow soap being in thin shavings), when put into a wide-mouthed bottle, heated gently in a water bath until a clear solution is obtained, and then strained through lint, give a clear brown fluid, which Mr. Macmillan, chemist, who first made it up for me, has not inappropriately termed "carbo-sapol," the name indicating exactly its composition.

Carbo-sapol mixes well with water, forming an oleaginous solution which yields an abundant lather when the hands are washed in it, and leaves them when dried soft and glossy. In fact, I find it very much less irritating than the ordinary carbolic lotions, which have a tendency to crack the skin. I employ a 1 per cent. solution of it for disinfecting the hands and the skin of the patient after they have been cleansed with the pumice-stone soap, and then finally a 1 to 2,000 corrosive solution is used. This procedure, I consider, renders the skin quite surgically clean.

During operations I find carbo-sapol of great service in connection with the cleansing of one's hands and the sponges. As is well known if one washes one's hands in corrosive solutions, the presence of any blood forms a compound which stains the skin and nails in a very unpleasant way. Sponges, natural or artificial, with blood in them are also discoloured. I find that a preliminary washing in carbo-sapol lotion (1 per cent.) gets rid most satisfactorily of the blood, after which the 1 to 2,000 corrosive lotion should be used, as the carbo-sapol leaves the hands too slippery for handling instruments; in fact, it behaves very much as lysol does, and I have quite given up the latter since I commenced the use of the carbo-sapol, the composition of which I know exactly, and of whose cleansing powers I have formed a high opinion.

Glasgow. GEORGE T. BEATSON.

THE TREATMENT OF PNEUMONIA BY DIGITALIS.

DR. EUSTACE'S notes in the BRITISH MEDICAL JOURNAL, June 25th, 1898, p. 1656, on the above and the successful results therefrom are corroborated by my own experience. I have on several occasions adopted that course and have been invariably satisfied. As a rule, I add tr. ferri perchlor. to the digitalis, usually ℥xv of the former to ℥xxx of the latter every three hours. One case especially recurs to my mind. A lady of robust, not to say florid, type was attacked by pneumonia. On the third day her temperature was over 105°, and delirium was setting in. I at once placed her on the combined iron and digitalis, and the temperature gradually fell; arterial tension subsided, and the patient made an excellent recovery. I should hesitate to give digitalis to patients of somewhat anæmic type, and rely on iron alone. In the robust class I consider that I should fail in my duty not to prescribe digitalis. ARTHUR H. W. AYLING, M. and L.S.A. Lond.

Wellington, Shropshire

EPILEPTIFORM CONVULSIONS DURING ANÆSTHESIA.

IN connection with your article on the above, in the BRITISH MEDICAL JOURNAL of June 25th, 1898, p. 1671, I may mention that I had, six years ago, a death under chloroform, apparently due to a fit. A woman, aged 29, was having a suppurating kidney, with perinephritic abscess, removed. The operation was finished and the anæsthetic stopped, the pulse and respiration being good; while the dressings were being applied the patient became absolutely rigid, the pulse and respiration both stopping suddenly. In this case the rigidity exactly resembled the tonic stage of an epileptic seizure: there was no struggling. There was no history of epilepsy or uræmia.

I have also been present at a death under chloroform, where a middle-aged fat woman, after inhaling the anæsthetic for a minute from a Skinner's mask, began to struggle; the mask was removed; she went on struggling, and died. *Post mortem* her heart was found to be fatty.

C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

Plymouth.

IN reply to your question concerning the death under an anæsthetic at the Ross Cottage Hospital[1] tracheotomy was discussed at the time, but was not carried out, as, owing to the intense rigidity of the whole respiratory muscles, opening of the trachea was considered to be a futile proceeding. The entire muscular system was in a state of continuous spasm, rendering efficient artificial respiration impossible, and the man died from asphyxia, caused, not by any obstruction at the glottis, but from the violent and prolonged spasm of the respiratory muscles, the chest wall being fixed and immobile to the end.

J. ASHFORD POTTS.

Ross.

STRUGGLING occurring in the early stages of anæsthesia is of course not uncommon, but epileptiform seizures under an anæsthetic are rare, and are nearly always, not the cause of death, but symptoms of a fatal failure of the circulation. These convulsions are not due to the direct effect of the chloroform on the nerve centres, but are really anæmic convulsions consequent upon sudden paralysis of the circulation by the anæsthetic. This is evidently the mode in which the convulsions were produced in the case mentioned, and in others reported by Snow.[2]

The reasons for this view are briefly as follows: Depletion of the nerve centres of blood by sudden hæmorrhage or ligature of vessels causes certain definite spasmodic affections of the muscles.[3] Any sudden destruction of the circulation by injury, disease, or poisons, such as hydrocyanic acid, occasions an equivalent and similar train of symptoms. This disturbance of the muscular system, which originates from anæmia of the motor centres behind the optic thalamus, is exhibited by acceleration of the respiration, and extremely violent convulsions, etc. The severity of the convulsions vary according to the condition of the subject and the suddenness and completeness of the anæmia. Now, chloroform when inhaled has a marked depressing influence on the vasomotor centre; in fatal cases there is a sudden and extreme fall in blood pressure, due to paralysis of the centre. The effect of this paralysis is to cause the blood to flow into the veins and large vascular areas, and so deplete the nerve centres of blood. In the words of Professor Wood, "the patient is bled into his own veins as effectually as into a bowl." Under certain conditions the anæmia so induced by the inhalation of chloroform may give rise to convulsions. Thus, if the paralysis of the circulation occurs suddenly at an early stage of the administration, before the muscular system is narcotised, the induced cerebral anæmia will occasion exaggerated respiration and general convulsions. Failure of the circulation at a more advanced stage of narcosis will produce merely exaggerated respiratory movements. The cases described, in which the patient becomes rigid and there is a tonic spasm of the muscles and fixation of the chest, belong really to this class. In considering these cases it must be remembered that death under chloroform does not usually happen from a gradual progressive deepening of the narcosis, as in opium poisoning. It generally arises from the sudden excessive action of the drug on some vital centre, by which death may be caused at almost any stage of the administration.

ALEXANDER WILSON,
Senior Administrator of Anæsthetics, Royal Infirmary, Manchester.

STRANGULATED HERNIA IN OLD AGE.

I WAS called late one evening to Mrs. T., an old lady in her 91st year. She had suffered from a femoral hernia for many years. It had come down about twelve months earlier, and with much difficulty I reduced it under chloroform; since then she had worn a truss.

[1] BRITISH MEDICAL JOURNAL, 1898, ii, p. 1671.
[2] [illegible]
[3] Kussmaul and Jolmer, *On Convulsions*, in Sydenham Society.

I found a hernia the size of a walnut, which she said had slipped down under the truss two hours previously, and that she had been unable to reduce it. On attempting taxis I found it so tender that I persuaded her to be put under an anæsthetic, explaining that if I failed to reduce it she would have to undergo an operation; to this last she would not give her consent. With the help of my partner, Dr. Welsford, she was placed under chloroform, which she took very well, but we failed to make an impression on the hernia. The next morning I placed matters before her, and it was not until 17 hours after it first came down that she gave her consent on the condition that it was done in her room which was her dwelling and sleeping apartment, she being the occupant of a room in an old almshouse.

With the assistance of Dr. Welsford she was again placed under chloroform. On opening the sac I found it blood-stained, and the knuckle of gut, which was tightly constricted at the neck, somewhat dark. After relieving the constriction at the neck I reduced the bowel, dissecting up the old sac, which I removed after transfixion. As I was not satisfied with our surroundings I thought it better to wash out the wound with a 1 to 20 carbolic lotion, and to this I attribute a small slough at the margin of the incision, which delayed the healing of the skin.

I may add that she had no nursing, and owing to old-standing ankylosis of the hip in a slightly flexed position, it was most difficult to keep her dressings in apposition with the wound.

I publish this case on account of the extreme age of the patient (I once had to operate on a child of 16 months for a congenital inguinal hernia, which became strangulated), and the fact that that was in no way a bar to a successful termination.

C. E. LIESCHING, M.R.C.S., L.R.C.P.,
Surgeon to the Tiverton Infirmary.

INJECTION OF ALCOHOL IN THE TREATMENT OF GUINEA WORM.

I HAVE recently had a number of cases of guinea worm under my care. Although these cases seem but trivial, the patients are usually detained by them in our military hospitals for a considerable time. The idea occurred to me that the time under treatment might be shortened if some hardening agent were applied to the worm in order to lessen the chance of breaking it and also to allow of more force being used in drawing it out. It seemed probable that if alcohol were injected into the worm with a sufficient amount of force the alcohol would permeate it and harden its substance wherever it came into contact with it, and that a certain amount of shrinkage would take place which would loosen the worm from the surrounding tissues.

The first case on which trial of this process was made had been under treatment for about a fortnight, the usual course being pursued of rolling up an inch or two of worm daily round a piece of paper. I then injected alcohol into it, and allowed about half an hour for it to take effect. The remainder of the worm (about 2 feet) was then easily drawn out in a few minutes. Several other cases were equally successful, both in my own hands and in those of some of my colleagues.

I subsequently found that the alcohol did not always reach the farther end of the worm, and the same amount of withdrawing force being kept up, the part of the worm which was not pickled was liable to snap off. To remedy this a little fuchsin was added to the alcohol. This dyed the worm a fine red colour, and showed how far the alcohol had penetrated; further injections could then be made into the uncoloured part of the worm.

An additional advantage of this method of treatment is that if the worm by any mischance breaks and retracts, no suppuration occurs, the wound heals up, and the remainder of the alcoholised worm is absorbed like an aseptic ligature. I observed this in several cases.

Unfortunately my supply of guinea worm cases came to an end before I was able to test the treatment as fully as I could wish, so I write this as a suggestion for those who may be more favoured with cases than I have been and may like to try this process.

T. H. FOULKES,
Surgeon-Captain, I.M.S.

Salem, Madras.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. MARY'S HOSPITAL FOR CHILDREN, PLAISTOW, E.

CREOSOTE IN TUBERCULOUS DISEASES.

(By W. W. FARNFIELD, M.R.C.S., L.R.C.P.Lond., Resident Medical Officer.)

AT the end of last year I learnt from Mr. Charles Lamplough his method of administering large doses of beechwood creosote; since then I have, through the kindness of the visiting staff, been enabled to test the treatment on children at this hospital. In 14 cases which I have tabulated, large doses—3j *per diem* or more—have been administered for an average period of six weeks. In addition, many children, both in-patients and out-patients, have taken smaller doses for varying periods. In every case the appetite and general condition improved, in addition to the gain in weight noticed in 9 of the 14 cases.[1]

Although out-patients have occasionally complained of inability, no in-patient has been unable to take the drug. The difficulties met with have been very slight, occasionally vomiting has taken place, but has usually been attributable to other causes. The urine has in the majority been dark, even to porter colour, but this has disappeared in a few days without discontinuing the creosote.

Although the number of cases at my disposal is yet too limited for any dogmatic statement, I am of opinion that in creosote we have a valuable and inexpensive adjunct to cod-liver oil in the treatment of tuberculous disease in children.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

CASE OF SIMPLE STRICTURE OF THE PYLORUS IN WHICH A STRONG BAND WAS FOUND EXTENDING BETWEEN THE LIVER AND THE PYLORUS: PYLOROPLASTY: CURE.

(Under the care of Mr. FREDERICK PAGE from Notes by J. D. WARDALE, M.B., Surgical Registrar.)

A MAN, aged 27, was admitted with a dilated stomach, having had symptoms of gastric ulceration for the last five years. Upon opening the abdomen on March 3rd by an incision in the middle line, extending from the ensiform cartilage to the umbilicus, the stomach, much hypertrophied and dilated, at once presented. A band nearly as thick as the little finger reached from the under surface of the liver to the near neighbourhood of the pylorus, drawing the pyloric end of the stomach upward towards the liver. This band was divided. On examining the pylorus no abnormal thickening could be felt. An incision was made in the stomach and a tight stenosis of the pyloric orifice, due to cicatrisation after ulceration, found. On trying to pass the finger through the stricture the walls gave way, and the tip of the finger appeared externally. The usual operation of pyloroplasty was performed: a recent ulcer was found close to the stricture and was sutured. The patient suffered very little from the operation. He was fed by the rectum for the first few days, but was allowed teaspoonfuls of fluid by the mouth, gradually increased in quantity every quarter of an hour, from the first.

Previous to the operation he was a thin, miserable-looking man, weighing only 7st. 4lbs. When he left the hospital, four weeks later, he had gained 2st. 4lbs. On his revisit, a month later, he weighed 11st., having gained 3st. 10lbs. in the two months.

REMARKS BY MR. PAGE.—An interesting feature in this case is the circumstance that the stenosis might have been easily overlooked in consequence of no thickening of the pylorus being felt. The stricture was not discovered till an opening had been made in the stomach and an attempt made to pass the finger through the pylorus. Having divided the band passing between the liver and the pylorus, I was at first tempted to think that sufficient had been done, and that it would not be necessary to spit the pylorus. The stenosis was evidently due to superficial ulceration, and this ulceration may, I think, have had some connection with the band which certainly tended to kink the canal.

LADY AITCHISON HOSPITAL FOR WOMEN, LAHORE.

ABDOMINAL PREGNANCY: LAPAROTOMY: RECOVERY.

(Under the care of ELIZABETH BIELBY, M.D., Senior Physician to the Hospital.)

THE following case seems worthy to be recorded. D., Hindu, was admitted at 11 P.M. on February 24th, 1898, pregnant for the third time. She stated that she had been in labour twenty-four hours. She was much deformed, could not stand erect, and when lying down could not extend her legs.

On internal examination the pelvis was found extensively deformed, both at the inlet and outlet. The true conjugate measured less than two inches. The vaginal roof was torn to the extent of two inches, and from this laceration the edge of the placenta was protruding. The limbs of the fœtus could be easily felt through the abdominal walls. The patient was very weak and exhausted, she having lost much blood.

The walls of the abdomen were cleansed with hot water and soap, and turpentine: the woman was put under chloroform, which she took well. An incision was made three inches from the symphysis pubis to two inches below the ensiform cartilage. On opening the abdomen a large quantity of blood-stained fluid escaped. The fœtus, which had been dead some time, was easily extracted with the placenta. The abdomen was washed out with 1 in 10,000 perchloride lotion: the abdominal wound closed in the usual

[1] *Table of Cases.*

No.	Age.	Disease.	Duration of Treatment.	Method of Administration.	Quantity of Creosote per 24 hours.	Weight.
1	1	Broncho-pneumonia	Nov. 21st, 1897—Jan. 1st, 1898	Creosoti mxx c. ol. morrh. ad 5j t.d.s. p.c.	5j	Gained 1 lb.
2	4	Tuberculous knee-joint	Dec. 2nd, 1897—Feb. 12th, 1898	Creosoti mxx c. ol. morrh. ad 5j t.d.s. p.c.	5j	Gained ½ lb.
3	1½	Broncho-pneumonia	Nov. 28th, 1897—Jan. 3rd, 1898	Creosoti mxx c. ol. morrh. ad 5j t.d.s. p.c.	5j	Gained 5 lbs.
4	11	Hip disease	Dec. 4th, 1897—Jan. 1st, 1898	Creosoti mxx c. ol. morrh. ad 5j t.d.s. p.c.	5j	Not recorded.
5	1	,,	Nov. 21st, 1897—Jan. 13th, 1898	Creosoti mxxv c. ol. morrh. ad 5j t.d.s. p.c.	5j mxv	,,
6	5	,,	Jan. 1st, 1898—May 3rd, 1898	Creosoti mxx c. ol. morrh. ad 5j quater d.s. p.c.	5j mxx	Gained 3 lbs.
7	6	,,	April 26th, 1898—May 13th, 1898	Creosoti mxx c. ol. morrh. ad 5j quater d.s. p.c.	5j mxx	*In statu quo.*
8	1½	Tuberculous peritonitis	Nov. 23rd, 1897—Jan. 4th, 1898	Creosoti mxxx c. ol. morrh. ad 5ij t.d.s. p.c.	5iss	Gained 2½ lbs.
9	12	Caries of rib	April 23rd, 1898—May 5th, 1898	Creosoti mxxx c. ol. morrh. 5ij t.d.s. p.c.	5iss	Gained ½ lb.
10	2	Phthisis	April 25th, 1898—May 5th, 1898	Creosoti mxxv c. ol. morrh. ad 5j quater d.s. p.c.	5j mxl	*In statu quo.*
11	6	,,	Nov. 23rd, 1897—Jan. 2, 1898	Creosoti mxl c. ol. morrh. ad 5ij t.d.s. p.c.	5ij	,,
12	4	Hip disease	April 25th, 1898—May 27th, 1898	Creosoti mxx c. ol. morrh. ad 5j quartis horis p.c.	5ij	Gained 2 lbs
13	11	,,	March 25th, 1898—May 27th, 1898	Creosoti mxxx c. ol. morrh. ad 5ij quater d.s. p.c.	5ij	,,
14	12	Phthisis	Jan. 1st, 1898—Feb. 25th, 1898	Creosoti ml c. ol. morrh. ad 5ij quartis horis p.c.	5v	Gained 5 lbs.

Nos. 10, 11, and 14. Diagnosis was confirmed by discovery of the tubercle bacillus in the sputa.
No. 14 was a case of phthisis of three months' history and advanced physical signs. Cough completely disappeared, night sweats ceased, and weight gained as shown.
Nos. 1 and 3 were cases of broncho-pneumonia of some duration in which tuberculosis was suspected; in both the physical signs cleared up.
Nos. 2, 5, 8, 9, 12, and 13 underwent operation before treatment with creosote.

way; a glass drainage tube left in the lower angle of the wound, and a second drainage tube left in the laceration in the vaginal roof, the vagina packed with iodoform gauze. She was very weak, and the extremities cold. She was given a hypodermic injection of ether.

For the first few days she remained weak and exhausted, her temperature remaining slightly below normal. On the fourth day the drainage tube was removed from the abdominal wound, and from that date she made a good recovery. She was discharged cured on April 2nd, being kept in hospital for the last ten days owing to an attack of bronchitis.

The question that seems difficult to answer is, How was the laceration caused in the vaginal roof? The patient informed us that she had had no treatment before she came into this hospital.

I was very ably assisted in the operation and after-treatment by my assistant, Miss Jardine, L.M. and S.Madras. The chloroform was given by Mrs. Paul, the house-surgeon to this hospital.

REPORTS OF SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual general meeting of this Society was held on July 15th; Mr. T. G. ALDERTON, Treasurer, in the chair, in the unavoidable absence of the President, Mr. E. P. Potter. The annual report and balance-sheet were presented and adopted. The Society has now a membership of 498, and is about to enter much larger and more commodious quarters necessitated by its continued growth. The President's retiring address was read by the SENIOR SECRETARY (Dr. F. J. MCCANN), and was entitled Some Observations on Old Age. Votes of thanks to the retiring officers of the Society were duly passed, and the following were elected to fill the offices for the ensuing year 1898-99:—*President:* *Dr. S. D. Clippingdale. *Vice-Presidents:* Dr. Lamb, Mr. A. G. Wells, Mr. C. M. Tuke, *Mr. L. A. Bidwell. *Council:* Mr. F. Lawrance, Mr. Herbert Menzies, Dr. Seymour Taylor, Dr. Elliot, Dr. F. H. Low, Dr. J. Harper, Mr. C. Andrews, Mr. Neville Wood, *Dr. F. J. McCann, *Mr. F. R. Mallard, *Dr. G. P. Shuter, *Mr. F. Savery. *Treasurer:* Mr. T. Gunton Alderton. *Secretaries:* Mr. McAdam Eccles, *Dr. G. D. Robinson. *Librarian:* Mr. C. B. Keetley. *Editor of Journal:* Mr. H. Percy Dunn. *Editorial Secretary of Journal:* Mr. McAdam Eccles. Those marked with an asterisk did not hold similar office last year.

REVIEWS.

A SYSTEM OF PRACTICAL MEDICINE BY AMERICAN AUTHORS. Edited by the late A. L. LOOMIS, M.D., and W. GILMAN THOMPSON, M.D. Vol. iii. London: Henry Kempton. 1898. (Roy. 8vo, pp. 926. 25s.)

THE third instalment of this well got up *System* contains the diseases of the alimentary canal and its appendages, the liver, spleen, and pancreas. This section occupies more than two-thirds of the volume and is followed by articles on diseases of the thyroid gland, metallic, alcoholic and morphine poisoning, infectious diseases common to man and to animals, while under the heading of miscellaneous subjects purpura, beri-beri, hæmophilia, diabetes, and insolation are described.

In the first section Dr. R. C. Cabot gives a systematic account of the affections of the mouth, pharynx, and adjacent parts. Here, as elsewhere in the volume, there are occasional mistakes as to names, making one doubtful whether the original authorities have always been scrupulously verified, for example, "Hague-Brown's" analysis of 345 cases of rheumatic tonsillitis is referred to. The diseases of the stomach are reviewed by Drs. Stockton and A. A. Jones in a complete and up-to-date manner. Drs. W. W. Johnston and H. M. Lyman between them deal with the intestines, the former goes with very considerable detail into duodenal ulcer and carcinoma, but by a slip refers to Collins for Colin and Pick for Pic. In the article on appendicitis Dr. McNutt gives a temperate and well considered opinion on the burning question of operative measures in that disease. Intestinal parasites, except the amœba coli, which has already been dealt with in a previous volume, are described, together with trichinosis, by Dr. Dock.

Dr. V. Vaughan has brought his extensive experience to bear on his article on food poisoning, and has provided a valuable contribution. The diseases of the liver and gall bladder have entrusted to Dr. J. E. Graham. Functional disease of the organ is recognised and explained as due to the liver being unable to stop poisons carried to it, this inadequacy may be either primary as in neurasthenia, or secondary, for example, from indiscretions in food and drink. The descriptions of the other hepatic diseases show an intimate acquaintance with the literature and the recent advances of our knowledge, and are illustrated here and there by suitable cases.

The spleen receives full justice at the hands of Dr. Lockwood, and Dr. Stockton gives a systematic description of the affections of the pancreas. There is a full and up-to-date article on exophthalmic goître, with a goodly number of references supplied by Dr. Kinnicutt, who may be congratulated on his successful contribution, also supplies the account of ordinary goître. Dr. Allen Starr gives a well illustrated account of cretinism and myxœdema.

After articles on metallic and other forms of chronic intoxication there is a section on infectious diseases common to man and animals. This includes glanders, anthrax, rabies, and actinomycosis, and is from the pen of Mr. J. Law, F.R.C.V.S. The volume closes with a number of diseases grouped under the heading of miscellaneous subjects, and here purpura, beri-beri, hæmophilia, diabetes, and insolation are described. Dr. Warren Coleman gives useful tables of diet in his valuable account of diabetes, and has produced a useful and practical article, while doing full justice to the scientific problems connected with its etiology. In conclusion, this volume fully maintains the standard of the two previous instalments and will be found a useful source of reference.

GARDNER'S HOUSEHOLD MEDICINE AND SICK-ROOM GUIDE. Revised by W. H. C. STAVELEY, F.R.C.S.Eng. Thirteenth edition. London: Smith, Elder and Co. 1898. (Demy 8vo, pp. 524. 8s. 6d.)

THE task of writing a book for lay readers on a professional subject is very difficult, and one in which many who have essayed it have failed. The author of this book, however, by dint of strictly limiting his subject, and by not attempting to teach what it is obviously impossible for amateurs to practise, has come well out of the ordeal, and has produced a work full of information useful to those for whom it is written. It is free from all quackery, and nowhere pretends to teach all that is to be known on the subject, or to make its readers independent of professional help when such is to be had. The honesty and the practical nature of the book may be judged from the following paragraph in the preface: "It must be clearly understood that the treatment described is, in many cases, not the best form of treatment known, but is the one which can be safely used with good prospect of success."

A fair elementary account is given of the structure and functions of the body. Then comes a section on hygiene, dealing with the body, the surroundings, with infancy and childhood, and with health in the tropics.

After treating of the conditions produced by disease and the modes of observing and investigating them, we come to sections on treatment, on accidents and emergencies, on general and local diseases, and finally on pregnancy and labour.

From the professional side we can speak very highly of this book. Whether the public will be satisfied is another question. People like to have their diseases ticketed, to get a prescription for a malady and have done with it, and we do not know whether they will altogether appreciate the descriptions of the various diseases or the common-sense directions for what one may call the "nursing treatment."

As an instance of the practical nature of some of the directions given we would note that, in the list of "requisites" given for disinfecting a room by "fumigation," he begins with: "1. Soft soap and water; scrubbing brushes." Many a much more important manual begins with the sulphur! The book is addressed to families, missionaries and colonists, and

those engaged in expeditions in search of game, when far from skilled help, and it seems likely to be of great service to them.

Clinical Manual for India. By Surgeon-Major-General C. Sibthorpe, C.B., F.K.Q.C.P.I., M.R.I.A. Fourth Edition. Madras: Government Press. (Demy 8vo, pp. 415, 25 illustrations.)

The first edition of this work was compiled in 1878 by Surgeon A. M. Branfoot, M.B., for use in the Madras General Hospital. A revised and enlarged edition was prepared in 1880 by Surgeon-Major Sibthorpe, assisted by Surgeon MacNally. At the suggestion of the Madras Government this work was distributed among civil dispensaries in the Madras Presidency. A third edition was issued some years ago, and has become exhausted. The present edition has been prepared under the orders of Government by a committee of medical officers mostly connected with the Madras Medical College, Surgeon-Major-General Sibthorpe having offered his interest in the work to Government for that purpose, on condition that the profit, if any, should be devoted to a prize for the students of the Madras Medical College.

The utility and popularity of the *Manual* have been amply attested by the call for four successive editions, and it only remains to state that the present edition has been revised with great judgment and care, and is admirably adapted to fulfil the purpose of its publication—as an aid and guide to students and practitioners in the observation, study, and treatment of disease. Clinical methods are systematically and tersely described, as applied to the investigation and diagnosis of different classes of disease, and in addition much useful information is given regarding the treatment of emergencies, the use of antiseptics, the performance of *post-mortem* examinations, the management of cases of poisoning, and the dieting of the sick.

A short list of the more common and useful indigenous drugs is given, and a hospital formulary containing a classified collection of prescriptions for internal and external use likely to be frequently employed in hospital practice; each is designated by a definite name, which is preferable, on the score of safety, to a number. The volume is, in short, a practical, ably-compiled, and excellent work, and ought to be supplied to every hospital in India.

Onze Années de Pratique Chirurgicale du Docteur Andres F. Llobet, Professeur libre de la Faculté de Médecine de Buenos Aires, avec Préface du Professeur Ollier, Professor de Clinique Chirurgicale à la Faculté de Médecine de Lyon [Eleven Years of Surgical Practice by Dr. Llobet]. Paris: J. B. Baillière et Fils. 1898. (Roy. 8vo, pp. 1518, 73 illustrations, 2 vols, 527 cases recorded in full. Fr. 24.)

Dr. Llobet is a young and distinguished surgeon, who submits, in this work, his record of surgery done in the Argentine Republic to the judgment of his colleagues in other lands. Professor Ollier stands sponsor for the work, and in an eloquent preface justifies its production. There is, expressly, no pretence made of academic completeness. Judging by the frequency of the repetition of the phrase, "I was the first to perform this operation in the Argentine," the author would appear to believe that surgery could hardly be said to have had any existence, worthy of the name, before his advent. It is interesting, therefore, to inquire how the methods now in use there will compare with our own, and to determine whether there are any essential differences, so far as regards racial or climatic influences, in diseases as they present themselves in the two countries.

All branches of surgery are touched upon, and the following may be quoted as characteristic illustrations of the author's surgical practice. In acute appendicitis, Dr. Llobet, in common with the generality of surgeons, is tending towards early operative intervention, if possible within the first 24 or 48 hours. An interesting case is mentioned at length, where an appendix was passed entire, in a motion on the eighth day of an attack. In the treatment of inguinal hernia preference is given to the methods of Aguilar (a local procedure born of a knowledge of Bassini's method) and of Lucas-Championnière. In umbilical hernia Dauriac's procedure, the intercrossing of portions of the recti muscles, is condemned. Inguinal colotomy is preferred to lumbar, a choice in which the author believes he has the support of a majority of modern surgeons. In referring to double castration the opinion of his colleague, Dr. Ayerza, is quoted approvingly, to the effect that "all patients upon whom double castration has been performed have committed suicide or become insane."

In dealing with the treatment of malignant disease of the various abdominal organs, Dr. Llobet gives expression to the gloomiest of views. Although "many" cases of cancer of the stomach, especially of the pylorus, have been seen early, it is avowed that "patients are hardly ever subjected to operation, for the results do not correspond to the importance of the intervention." Similarly, Kraske's operation is accredited with an immediate mortality of 50 per cent. and an appalling list of possible accidents is given. Pyloroplasty is considered "ingenious but difficult." All the latest European work in these regions seems unknown to the author. Priority is claimed for the immediate suture of the liver parenchyma after the removal of hydatid cysts. In two cases out of four primary union was obtained. In describing Pott's disease, mention is made of good recoveries after Treves's operation, the indications for which, it is held, should be more widely extended. Lund's operation is resorted to frequently in the treatment of club-foot. No mention is made of Thomas's wrench. An excellent case of recovery after craniectomy for premature ossification of the cranial sutures is detailed. The grafting of the bones of a dog's skull into gaps left after trephining has been adopted with some success.

The illustrations throughout are poor; the records of the cases are well given and are the feature of the work.

The record of surgical progress is, on the whole, a satisfactory and a creditable one. The author has not yet reached the standard of modern European and North American surgeons. But he is not far behind.

A Century of Vaccination and What it Teaches. By W. Scott Tebb, M.A., M.D.Cantab., D.P.H., Surgeon to the Boscombe Hospital. London: Swan Sonnenschein and Co. 1898. (8vo, pp. 448. 6s.)

This attack on vaccination is addressed principally to the author's "medical brethren," and to members of Parliament. To the latter he expresses himself thus regarding the former, in so far as they are officially related to vaccination: "It is strange that members of Parliament do not perceive that the strength of the provaccinist party lies in the public endowment of the practice. Right through the century there has existed a body of officials, ostensibly paid to promote the practice of vaccination, but also partly at least, paid to vindicate it theoretically, and to explain away its failures and accompanying disasters." This accusation that medical men have officially, right through the century, explained away failures and disasters, partly or wholly in return for payment, and that mercenary motives are the mainspring of the practice of vaccination, comes with singular infelicity from Dr. Tebb. Insinuations of this sort are weapons which should be avoided by all self-respecting men. While Dr. Tebb writes thus to legislators, he has advice to give also to his own "medical brethren." It would be advisable for them "to accept as authenticated only published and tested cases, or such as have come under their own personal observation." But even here there is a difficulty. Such cases may tell in favour of vaccination, and it must not be overlooked, says Dr. Tebb, that, as to medical men, "their errors will probably accord with their cherished beliefs," and that, "the evidence of detailed cases—which is really the only evidence on which the credit of vaccination depends—cannot be accepted wholesale as if it were not open to question." Thus it seems that nothing but detailed cases are of any use as evidence, and if the details make for vaccination then at once we must recollect that the medical men who furnish the details may not be trusted because they "are still liable as men to err." Some readers do not like to be troubled with large tables of statistics, and any such readers proceeding so far through Dr. Tebb's book, would at least feel this satisfaction, that the question was not about to be discussed statistically, but only by means of "cases." But that belief would soon receive its deathblow. For Dr. Tebb has no hesitation in giving column

after column of statistics wherever he supposes they suit his own argument. If they fail to convince, it is not because of their paucity, but of their pointlessness. They are marshalled not singly but in battalions.

True, indeed, many tables of statistics bearing most closely and pertinently on the subject of vaccination are conspicuous by their absence. The hospitals of the Metropolitan Asylums Board have furnished some of the most complete statistical material ever produced on the subject of mitigation of small-pox by vaccination. But while Dr. Gayton is quoted where a phrase happens to suit Dr. Tebb's purpose his tabulated experience is excluded, and while Dr. Russell is referred to the reader is not favoured with his statistical records or his diagrams. Neither do we find here the figures for small-pox in infected houses in Gloucester and Dewsbury, and the statistical evidence of its differentiation between the vaccinated and unvaccinated. As to all such data, we must no doubt recollect Dr. Tebb's dictum that detailed cases "constitute really the only evidence on which the credit of vaccination depends." This being so we might perhaps have hoped for some explanation of the cases of the Leicester Hospital small-pox staff, of whom thirty-four had been revaccinated or had small-pox and only one had even a slight attack during the epidemic, while of six who refused revaccination five were attacked and one died. As to these, however, perhaps they are omitted because medical men may err, and their "errors will probably accord with their cherished beliefs."

TUBERCULOSIS OF THE GENITO-URINARY ORGANS, MALE AND FEMALE. By NICHOLAS SENN, M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, etc. London: The Rebman Publishing Company, Limited. 1898. (Demy 8vo, pp. 318. 17s.)

ANY work which bears upon its title page the name of Professor SENN is sure to receive a cordial reception from surgeons the wide world over. By a series of volumes, each one a masterpiece of accurate and trustworthy work either clinical or theoretical, the author has established for himself a reputation as a scientific surgeon of the foremost rank.

The present volume deals with the tuberculous diseases of the genito-urinary organs in the male and female. A full and complete description is given of the various forms of disease arising in each organ as the result of the primary or secondary infection with the bacillus of tubercle, and to the more important organs a separate chapter is allotted. The majority of the statements made and opinions given are in accord with those of the greater number of surgical authorities; but the author has freely incorporated in the volume the fruits of his own thought and work, and thereby has added greatly to the value of the book. A few of his beliefs, however, are at variance with those usually accepted, but where a novel view is expressed weighty reasons are given by the author for the faith that is in him.

Though by no means the greatest work which Professor Senn has given us, this is, perhaps, on the whole the most typical, the most characteristic of the author at his best and at his worst. As illustrating the author at his best, we may refer to the wonderfully accurate and vivid descriptions he gives of the clinical manifestation of each disease; to the minuteness and completeness of the pathological descriptions, both naked-eye and microscopic; and finally to the wide survey of, and aptness of selection from, the vast literature in all languages, and of all countries, which has any bearing upon any branch of his subject. These are all qualities of the highest worth in a surgical author, but we recognise and accept them as natural and inevitable in any work of Professor Senn's. But, on the other hand, there is no lack of the faults to which we are equally accustomed. The same harshness and inelegance of style persists; there is an almost wanton clumsiness of expression, and an awkwardness of phrase that is very suggestive of slovenliness. But, worse than all, there is an excessive wordiness which is tedious beyond measure. The volume contains 311 pages. In 100 less Professor Senn could have told us all his message, and told it equally well, without inducing in us a not infrequent lapse of interest from sheer weariness.

The illustrations are satisfactory, and in spite of the faults we have mentioned, the book will well repay perusal. It is the final word, as our knowledge stands, upon the diseases of which it treats, and will add to the reputation of its distinguished author.

LES TROUPES COLONIALES: III. HYGIÈNE DU SOLDAT SOUS LES TROPIQUES. [Colonial Troops: Health of the Soldier in the Tropics]. Par F. BUROT et M. A. LEGRAND. Paris: J. B. Baillière et Fils. 1898. (Demy 8vo, pp. 218. Fr. 2.50.)

THE former portions of this book were reviewed in the BRITISH MEDICAL JOURNAL of October 9th and April 16th last. This portion is the outcome of sanitary experiences gathered in the various French colonial enterprises in recent years, a subject which cannot but be of deep interest to this country. It is divided into eight chapters, of which the following is a sketch. Under the head of Housing is discussed the value of upland sanitaria, with special reference to our Indian hill stations. It will hardly be credited that the French have as yet no sanitarium in Tonkin. The authors state that the walls of houses in the tropics should be thick; painted in clear but not white colours; double-roofed; the ground floor out of reach of the sun, and in malarial countries raised above the level; a verandah is indispensable. They apparently are not familiar with our wooden military huts in Bermuda and elsewhere, raised about 2 feet above the ground on iron or stone supports, and admitting free and perfect ventilation beneath, which have been found both healthy and comfortable.

As to rations, it is stated that the English, Dutch, and Italian are of better nutritive value than the French. An allowance of wine is considered essential for a colonial soldier. A pure water supply is insisted on, and it is urged that a filter should not only filter but sterilise.

The necessity for a change of clothing for day and night is shown; especially is a flannel belt for night wear needful. The head-dress should not only protect the head but shade the eyes. Almost of equal importance is good foot gear, which has recently been brought home to us in the campaign on the Athara.

Under the head of Military Life, rest, work, duty, and play of soldiers are discussed, and under that of Medical Service it is urged that the number of medical officers should be ample so as to provide for detachments of all sorts over at least 60 white troops, the number for natives being less. The proportion of medical officers will, of course, vary according to the climatic and physical conditions of the country occupied.

In a chapter on Sanitary Policy, conservancy, vaccination, isolation of infectious cases, quarantine, and disinfection are discussed; and in that on Special Measures for Expeditions, various important points relating to *personnel* and equipment are brought out. Choice of troops, convoys, commisariat, and transport are reviewed. Human transport is preferable to animal carriage for sick and wounded in the tropics. Hospital ships should be used wherever practicable.

In a final chapter the hygienic principles to be observed in a colonial (tropical) army are stated. No white soldier should be sent to the tropics under 22 years of age, and all should be specially selected; those presenting dyspeptic and rheumatic diatheses being especially unsuited. The leading principle for the formation of a good colonial soldier should be "a European head on a native body," a hybrid, we fear, difficult to attain. White men should not be employed in manual labour in the tropics, where natives can be used. The period of service in the tropics is discussed, and it is asserted that, from a maximum of five years in the Antilles, three years in Indo-China and Madagascar, to a minimum of eighteen months in the African Soudan, is the most that should be exacted.

The authors, in conclusion, state that a knowledge of colonial hygiene is as indispensable to a commander as military strategy in a tropical campaign. This latter criticism was probably suggested by the ignorance and indifference shown by the military commanders in Madagascar, which led to such lamentable results. It will be observed that the French use the term "colonial" in a different sense from that in which it is employed by us; they apply it to all their foreign possessions, whether settled by white men or not.

THE SOUTH AFRICAN CLIMATE, including Climatology and Balneology, and Discussing the Advantages, Peculiarities, and Capabilities of the Country as a Health Resort, more particularly with reference to Affections of the Chest. By W. C. SCHOLTZ, M.D.Edin. London: Cassell and Co. 1897. (Demy 8vo, pp. 200; 10 illustrations. 5s.)

THE book does not fulfil the expectations raised by a perusal of its comprehensive title. Only 77 pages are by Dr. SCHOLTZ, and of these about 25 are within inverted commas. The remaining 123 pages form an appendix reproducing papers by past and present South African practitioners, which have mostly appeared in the *South African Medical Journal*. The authors of these are practically unanimous in their opinion of the climate, but the country has been a health resort for so many years, that we are disappointed to find no statistics of results in the treatment of chest disease. Dr. Scholtz does not refer to such statistics as have been published, nor does he produce statistics of his own results. The book emphasises the fact that only hardy invalids should be sent to the country, and that it is not a poor man's country. It is stated that there has been recent improvement in the accommodation provided for invalids and in the sanitation of the health resorts, but we fear the improvement has not been such as those desire who are experienced in the climatic treatment of phthisis. For cases of very early phthisis, however, life on a veld farm appears to offer many advantages.

The many valuable mineral springs in South Africa are briefly referred to, but those of Caledon are fully described by Dr. Daniel. The climates of the charming Cape Peninsula, Natal, Bechuanaland, Rhodesia, and even the Transvaal receive no attention in this book, and Dr. Scholtz attempts no scientific discussion of the climatology, meteorology, and balneology of the country. The pages for which he is responsible require revision. Statements, such as that on p. 34, "known hereditary predisposition" has "markedly improved in South Africa," are frequent.

The value of the book lies in the appendix, but the papers thus brought together for the first time are somewhat out of place when attached to pages obviously written for the laity. The illustrations are (to quote the "author") typical bits of South African scenery: but the intending invalid emigrant is not given a view of the Karroo—perhaps judiciously. We are unwillingly driven to the conclusion that Dr. Scholtz's pages are of no higher rank than those already written with the unveiled intention of attracting both healthy and delicate emigrants.

THE BOTANIST'S VADE MECUM; being a Synopsis of the Divisions and Subdivisions of the Vegetable Kingdom. Compiled by JOHN WISHART. Edinburgh: E. and S. Livingstone. 1898. (Fcap. 8vo, pp. 143. 2s.)

THE plan of this little book, which will almost go into a waistcoat pocket, is not a bad one; but the details need considerable revision before it can make good its claims to recognition. According to the title page the author lectures on zoology, general biology, botany, physiology, and chemistry, so that we are almost prepared for an unusual number of deficiencies and inaccuracies. "It is intended chiefly as a guide to students during botanical excursions," but the student is expected to "make careful and methodical examination of actual representative specimens before committing the characteristics of any division to memory." We do not quite follow the writer here. The first part, consisting of brief definitions of the groups of microscopic organisms, might have been left out for all the use it could be on an excursion.

Coming to the flowering plants we find that Bentham and Hooker's *Genera Plantarum* has been freely drawn upon, though that work is not included in the "list of books consulted and recommended." Thus the estimated number of species of each natural order is taken from the *Genera Plantarum*, and usually given as exactly the same, though the first volume appeared thirty-five years ago, and some of the orders have been nearly doubled during that period. Sometimes the figures are not correctly reproduced. It looks odd to see the number of species of Ranunculaceæ given as exactly 503; Bentham and Hooker say scarcely 540, and the number now known is not much short of 1,000. There are many other discrepancies of this kind. But, after all, mere numbers are of comparatively little importance. Definitions of orders and genera, however, should be clear. Taking a somewhat difficult example, the Betulaceæ, they are characterised as follows:—Male flowers: sepals 4 or fewer, stamens 2—4; female flowers: 2—3 under each side of catkin-like spike, perianth none, etc. And the British genera: 1. Alnus—stamens 4; scale of female spike woody. 2. Betula—stamens 2: scale of female spike thin and trifid. This is insufficient, inaccurate, and hardly intelligible.

SURGICAL TECHNICS IN HOSPITAL PRACTICE. A Handbook for House Surgeons, Students, Dressers, and Others engaged in Hospital Work. By K. W. MONSARRAT, M.B., F.R.C.S.E., Assistant Surgeon, Liverpool Cancer Hospital. Bristol: John Wright and Co.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited; and Hirschfeld Brothers. 1898. (Cr. 8vo, pp. 138. 3s.)

THE author of this work has supplied a decided want in a very satisfactory manner. Clearly and concisely, and without any attempt to dogmatise, he has endeavoured to define the routine duties of surgical work in hospitals, and to reduce to a practical system the latest applications to surgical work of antiseptic and aseptic principles. The general plan of the book has been to discuss in order the proper management of the surgical patient and his surroundings, from the beginning to the end of the course of treatment. An instructive chapter on the aseptic precautions to be taken by the surgeon in his own person is followed by other chapters on his professional duties to his patients, relating not so much to direct surgical treatment as to the essential conditions of success in such treatment, which consist in the proper care of the operating room, the order to be observed whilst performing an operation, and the best means of distributing and dressing surgical cases in the wards of a hospital.

It would have been well, we think, if Mr. MONSARRAT had prefaced his description of the details of antiseptic and aseptic practice by a chapter explaining the scientific principles on which such practice is based. It is only by a full knowledge and a strict observance of the doctrine of microbic infection that modern surgical technics can be prevented from degenerating into the performance of a mere mechanical ritual.

Among the many indications afforded by this little book of the revolution that has within a brief period been effected in the practice of surgery, one cannot fail to note that success in treatment depends not only, as in former times, on the skill and experience of one man, but also on the intelligent co-operation of his assistants, both male and female. Certainly Mr. Monsarrat's work, though intended for junior men only, would not have been complete without the addition of a very useful appendix containing surgical rules for nurses.

LEHRBUCH DER ENTWICKELUNGSGESCHICHTE DES MENSCHEN. [Textbook of Human Embryology]. Von Dr. J. KOLLMANN, Professor of Anatomy in Basel. Jena: G. Fischer. 1898. (Roy. 8vo, pp. 670. 386 figures. M. 15.)

ALTHOUGH there is no lack of books on embryology at the present day—we have only to mention the works of Kölliker, Hertwig, Duval, Milnes Marshall, Minot, and the first part of *Quain's Anatomy*—this one by Professor KOLLMAN will command attention, for it furnishes a well-written and well-planned account of the development of the human embryo such as until recently it has not been possible to produce, from sheer lack of material. The study of vertebral embryology was originally founded on that of the chick, and this, from its accessibility, must for the student always form the basis of his study; but it was greatly extended by the researches of Balfour in elasmobranchs and subsequently by those of various workers in mammals. Finally the importance of verifying in man results which have been already arrived at from the study of the development of the lower mammals has been rendered very apparent by the work of His and others. The present book is an attempt—and by no means an unsuccessful one—to found the study of human

embryology upon the actual history of the human embryo. Nevertheless, it is not for a moment pretended that all the problems of development can as yet be studied in the human subject, nor is it advisable to avoid reference to the differences which are met with in vertebrates. There is therefore a good deal of what we may call "general" development, in contradistinction to the "special" part which is the main object of the book; but this is necessary to render the account complete, and of course quite essential in dealing with general problems, as fertilisation, segmentation, the formation of a blastoderm, heredity, and the like.

Not the least important feature is the number and excellence of the illustrations. This is, if anything, more necessary in works on embryology than in any other department of morphology. The figures are mostly copied from original memoirs; those of His, as must necessarily be the case in dealing with human embryos, having been especially laid under tribute (the author has omitted, doubtless by an oversight, to state in every case the source); but there are, in addition, a fair number of cuts which have been prepared for the book. The bibliography which is given at the end of each section is meagre, but this is explained by the fact that full bibliographies are to be found in Minot and in other works, and there is therefore no need to multiply them further. It is interesting to observe, in looking through this most recent addition to embryological textbooks, how much our knowledge is becoming advanced by the introduction of the "modelling" method in the study of the form of internal parts, a method the inception of which is due to the eminent Swiss anatomist who has for so long rendered Leipzig the centre of embryological research.

It is to be hoped that this work will find a translator, for its value is not confined to the advanced student of morphology, but on account of the precise details which it contains regarding the human embryo at all stages, it cannot fail to be of interest to all medical men, and especially to those who are engaged in obstetric practice.

LEHRBUCH DER VERGLEICHENDEN MIKROSKOPISCHEN ANATOMIE DER WIRBELTHIERE. Zweiter Theil. Schlund und Darm. [Textbook of Comparative Histology of Vertebrates. Second Part. Gullet and Intestine.] Von Dr. ALBERT OPPEL, Professor in the University of Freiburg-i-Br. Jena: G. Fischer. 1897. (Roy. 8vo, pp. 682; 343 illustrations and 4 lithographic plates. M. 20.)

THE second part of the colossal work upon which Professor OPPEL is engaged is in no way inferior to the first part, which dealt with the comparative histology of the stomach.

The amount of literary research necessary for the compilation of this part is stupendous. Every page abounds with references; for every statement of importance the authority is given; theories as well as facts are fully discussed, and the several views held, such as for example, those upon absorption of fat, are all given with marked impartiality. Each part must prove essential as a work of reference for all future investigators, whose labours will be greatly lightened by the possession of such a book.

The mass of details with which it is filled renders it impossible to do any justice to a work of this kind in a review without far exceeding the limits ordinarily assigned to book notices. On looking through the pages we have failed to notice the omission of any important fact, and even the most recent researches are given with minute accuracy and an unusual wealth of illustration. Professor Oppel is to be congratulated upon the progress which he is making in the fulfilment of his design to furnish a complete account of vertebrate comparative histology, of which, since the work of Leydig, now nearly fifty years old, there has been no attempt to provide a concatenated description.

When it is added that there are 35 pages at the end of the book devoted to a bibliography, containing several thousand references, to each of which the full title of the paper referred to, as well as the source and date is appended, and that a double index, one of authors' names and one of subjects, is supplied—a circumstance which used to be of the rarest occurrence in German scientific books, but which is now fortunately almost the rule—the reader may be able to form some idea of the assistance which the book is likely to afford to the histological investigator.

NOTES ON BOOKS.

TRANSACTIONS AND REPORTS.

The Transactions of the American Pediatric Society, vol. ix, contains the text of the papers read at the ninth session held in Washington in May, 1897, together with the reports of the discussions upon the papers. The volume, which is well illustrated, is edited by Dr. Floyd M. Crandall. The value of these annual volumes is well known to all who take an interest in diseases of children, and we need not do more than announce the appearance of the present issue.

The Transactions of the Nineteenth Annual Meeting of the American Laryngological Association is concerned with the proceedings of the session held in Washington in May, 1897. It contains a long series of papers of interest to specialists, together with the discussions which took place upon them at the meeting.

A volume of *Studies from the Department of Pathology of the College of Physicians and Surgeons*, Columbia University, New York (vol. v, Part I) is edited by the Director, Dr. T. Mitchell Prudden. It consists of reprints of the more important studies published by workers in the department during the years 1896 and 1897. Among the subjects dealt with are the Pasteurisation of Milk, by Dr. R. G. Freeman; a Contribution to the Study of Acute Ascending Paralysis, by Drs. Pearce Bailey and James Ewing; and a report by Dr. J. S. Ely on Bacterial and Allied Tests as applied to the Clinical Diagnosis of Typhoid Fever.

The second volume of the *Transactions of the Reading Pathological Society* contains the proceeding of the fifty-sixth session, 1896-7. Among the papers reported we notice one by Dr. A. Gordon Paterson on Sporadic Cretinism, which is illustrated by a series of striking photographs of cretins. We notice also an excellent practical paper by Mr. H. G. Armstrong on the Period of Incubation and Duration of Infectiveness of the Common Infectious Diseases, another on Small-pox and Vaccination, by Mr. Alfred Ashby; and a paper by Mr. Hastings Gilford on General Purulent Peritonitis due to Ulceration of the Vermiform Appendix.

The second volume of the *Reports of the Medical, Surgical, and Pathological Registrars of the Liverpool Royal Infirmary* has been issued. The volume consists of statistical tables dealing with cases admitted to the wards. These tables are compiled by Mr. E. A. Smith, M.B., Medical Tutor, and Mr. H. T. Nixon, Surgical Tutor. The pathological report by Professor Boyce contains brief particulars of each necropsy.

The fifteenth annual issue of the *Year Book of the Scientific and Learned Societies of Great Britain and Ireland* (London: Charles Griffin and Company, Limited, 1898) contains particulars with regard to a large number of societies, their officers, and places of meeting, together with lists of papers read during 1897. The volume deserves to be well known. The various societies are classified under fourteen heads, and the information given, so far as we have been able to check it, is accurate. The work, however, is too well established to need detailed commendation. Under the head of "Law," it might be well to insert brief particulars with regard to the two Coroners' Societies of England and Wales and of Ireland.

The *Transactions of the Society of Alumni of Bellevue Hospital, for 1896-7* (New York: D. Appleton and Co., Cr. 8vo., pp. 232) contains the address of the President, Dr. Hotchkiss, and a large number of papers, clinical reports, and descriptions of specimens. Among the papers we notice an elaborate essay by Dr. Hermann M. Biggs, of New York, on The Use of Diphtheria Antitoxic Serum under the supervision of the New York City Health Department; a paper on The Sero-Diagnosis of Typhoid Fever, containing a discussion of its practical clinical value, by Dr. J. W. Branman, and an article on Pasteurised Milk, by Dr. Getty, showing evidence from the experience of Yonkers that pasteurised milk, if used intelligently as directed among a large number of healthy children, will reduce the mortality of a community to a marked extent, regardless of all adverse hygienic and climatic conditions.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF LONDON SANITARY DISTRICTS DURING THE SECOND QUARTER OF 1898.

[SPECIALLY REPORTED TO THE BRITISH MEDICAL JOURNAL.]

IN the accompanying table will be found summarised the vital statistics of the forty-three sanitary areas of the metropolis, based upon the Registrar-General's returns for the second or spring quarter of this year. The mortality figures in the table relate to the deaths of persons actually belonging to the various sanitary areas, and are the result of a complete system of distribution of deaths occurring in the institutions of London among the various sanitary areas in which the patients had previously resided.

The 32,294 births registered in London during the three months ending June last were equal to an annual rate of 28.8 per 1,000 of the population, estimated at 4,504,766 persons in the middle of this year; this rate was lower than in the corresponding quarter of any year on record, and was 2.0 per 1,000 below the mean rate in the second quarter of the ten preceding years, 1888-97. The birth-rate during the period under notice in the various sanitary areas showed, as usual, wide variations, owing principally to the differences in the sex and age distribution of the population. In St. George Hanover Square, Westminster, St. James Westminster, Hampstead, St. Martin-in-the-Fields, and London City the birth-rates were considerably below the average; while they showed the largest excess in St. Luke, Bethnal Green, Whitechapel, St. George-in-the-East, Mile End Old Town, and Newington.

The 17,984 deaths of persons belonging to London registered during the three months ending June last were equal to an annual rate of 16.0 per 1,000, against 16.3, 17.4, and 15.1 in the corresponding periods of the three preceding years; in the second quarters of the ten years 1888-97 the death-rate in the metropolis averaged 17.9 per 1,000. The death-rate in London last quarter was, with one exception, lower than in the corresponding period of any year on record. The lowest death-rates in the various sanitary areas were 10.6 in Hampstead, 12.9 in St. Martin's-in-the-Fields, 13.4 in St. George Hanover Square and Stoke Newington, 13.5 in Lee, 13.6 in Wandsworth, and 13.8 in Hackney, Camberwell, and Battersea; the highest rates were 20.6 in Limehouse and in St. Olave Southwark, 20.7 in St. Saviour's Southwark, 22.9 in St. George-in-the-East, 23.3 in Strand, 23.4 in Holborn, and 24.1 in St. Luke. During the quarter under notice 2,512 deaths resulted from the principal zymotic diseases in London; of these, 1,073 were referred to measles, 671 to whooping-cough, 363 to diphtheria, 181 to diarrhœa, 154 to scarlet fever, 69 to enteric fever, and 1 to an ill-defined form of continued fever. These 2,512 deaths were equal to an annual rate of 2.24 per 1,000, against an average rate of 2.45 in the corresponding periods of the ten preceding years, 1888-97. In the second quarter of the three preceding years the zymotic death-rate was 1.84, 3.55, and 1.45 per 1,000 respectively. No death from any of the principal zymotic diseases was registered last quarter in St. Martin-in-the-Fields; in the other sanitary areas the lowest zymotic death-rates were 0.82 in Stoke Newington, 0.83 in London City, 1.01 in Hampstead, 1.15 in St. George Hanover Square, and 1.27 in Newington; and the highest rates were 3.34 in Limehouse, 3.36 in Westminster, 3.60 in Marylebone and in St. Luke, 3.72 in Plumstead, and 3.73 in Holborn.

No fatal case of small-pox was registered in London during the three months ending June last. Measles showed the highest proportional fatality in Paddington, Chelsea, Marylebone, Holborn, St. Luke, Bethnal Green, Rotherhithe, and Plumstead; scarlet fever in Fulham, Clerkenwell, St. Luke, Shoreditch, St. George Southwark, St. Olave Southwark, and Lewisham; diphtheria in Chelsea, Hackney, Clerkenwell, St. Luke, Bethnal Green, Poplar, and Battersea; whooping-cough in Westminster, Bethnal Green, Limehouse, St. George Southwark, St. Olave Southwark, Greenwich, and Woolwich; and diarrhœa in St. Luke, St. George-in-the-

Analysis of the Vital and Mortal Statistics of the Sanitary Districts of the Metropolis, after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1898.

SANITARY AREAS	Estimated Population middle of 1898.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Undefined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
LONDON	4,504,766	32,294	17,984	28.8	16.0	2.24	2,512	—	1,073	154	363	671	—	69	1	181	1,858	126
West Districts.																		
Paddington	127,480	699	467	22.0	14.7	2.35	75	—	54	—	9	9	—	—	—	1	50	127
Kensington	172,174	903	675	21.0	15.7	2.18	93	—	55	8	8	17	—	2	—	3	55	150
Hammersmith	107,370	734	415	27.4	15.5	2.20	59	—	35	4	2	16	—	—	—	2	50	129
Fulham	125,275	1,060	443	33.9	14.2	1.86	58	—	9	9	13	18	—	2	—	7	42	110
Chelsea	96,713	581	412	24.1	17.1	2.91	70	—	38	4	18	7	—	2	—	1	37	114
St. George Hanover Sq.	80,608	351	269	17.5	13.4	1.15	23	—	10	—	2	6	—	2	—	3	22	142
Westminster	52,574	260	243	19.8	18.5	3.36	44	—	17	—	6	19	—	—	—	2	32	138
St. James Westminster	22,200	103	84	18.6	15.2	1.44	8	—	0	—	1	—	—	1	—	—	10	146
North Districts.																		
Marylebone	140,483	977	665	27.9	19.0	3.60	126	—	89	2	11	15	—	2	—	7	56	129
Hampstead	78,755	365	209	18.6	10.6	1.01	20	—	2	2	5	6	—	2	—	3	20	110
St. Pancras	243,416	1,692	974	27.9	16.0	1.44	88	—	31	10	13	29	—	2	—	3	103	119
Islington	344,616	2,313	1,249	26.9	14.5	2.53	218	—	111	6	26	63	—	4	—	8	119	121
Stoke Newington ...	34,660	218	116	25.2	13.4	0.82	7	—	—	1	1	4	—	—	—	1	7	96
Hackney	219,630	1,542	755	28.2	13.8	1.93	106	—	32	12	31	24	—	4	—	3	79	100
Central Districts.																		
St. Giles	37,519	263	179	28.1	19.1	2.03	19	—	12	—	—	4	—	2	—	1	27	114
St. Martin-in-the-Fields	12,424	40	40	12.9	12.9	—	—	—	—	—	—	—	—	—	—	—	3	125
Strand	23,284	110	135	19.0	23.3	1.89	11	—	4	1	2	3	—	—	—	1	21	136
Holborn	30,056	227	175	30.3	23.4	3.73	28	—	20	1	2	4	—	—	—	1	22	167
Clerkenwell	66,120	524	318	31.8	19.3	3.03	50	—	22	5	9	11	—	—	—	3	31	147
St. Luke	41,076	440	247	43.0	24.1	3.60	37	—	15	3	7	8	—	—	—	4	25	136
London City	29,088	120	134	16.6	18.5	0.83	6	—	3	1	1	—	—	1	—	—	15	168
East Districts.																		
Shoreditch	121,485	994	515	32.8	17.0	2.24	68	—	15	10	8	24	—	1	—	10	55	124
Bethnal Green	129,027	1,126	618	35.0	19.2	3.27	105	—	46	1	17	29	—	5	—	7	69	154
Whitechapel	80,559	833	331	41.5	16.5	1.50	30	—	8	2	4	10	—	2	—	4	51	90
St. George-in-the-East	48,241	531	275	44.1	22.9	3.25	39	—	13	2	5	9	—	1	—	9	35	162
Limehouse	58,661	437	301	29.9	20.6	3.34	49	—	16	—	6	16	—	1	—	10	31	165
Mile End Old Town ...	112,528	1,039	457	37.0	16.3	1.97	55	—	21	1	7	23	—	—	—	3	36	115
Poplar	170,220	1,429	774	30.1	18.2	2.57	109	—	29	8	22	33	—	5	—	12	68	154
South Districts.																		
St. Saviour Southwark	24,562	183	127	29.9	20.7	1.48	9	—	2	—	2	5	—	—	—	—	19	175
St. George Southwark	60,461	513	302	34.0	20.0	2.45	37	—	5	9	7	13	—	—	—	3	45	140
Newington	123,183	1,055	488	34.4	15.9	1.27	39	—	10	5	9	1	—	3	—	11	72	118
St. Olave Southwark ...	11,288	62	58	22.0	20.6	2.85	8	—	2	1	—	5	—	—	—	—	5	194
Bermondsey	85,738	732	358	34.2	16.7	1.83	39	—	17	4	3	10	—	—	—	5	47	137
Rotherhithe	40,849	333	190	32.7	19.5	3.05	31	—	23	3	2	1	—	—	—	2	21	156
Lambeth	304,073	2,289	1,185	30.2	15.6	1.74	132	—	35	10	16	52	—	7	—	12	127	121
Battersea	171,921	1,266	593	29.5	13.8	1.94	83	—	33	6	21	17	—	—	1	5	55	122
Wandsworth	202,526	1,294	687	25.6	13.6	2.34	118	—	55	1	22	28	—	2	—	10	53	112
Camberwell	261,189	1,763	897	27.1	13.8	2.05	133	—	43	4	26	46	—	7	—	7	90	109
Greenwich	180,441	1,384	727	30.8	16.2	2.85	129	—	59	6	2	51	—	6	—	5	68	126
Lee	39,717	213	134	21.5	13.5	1.51	15	—	3	2	3	6	—	—	—	1	14	117
Lewisham	88,562	537	307	24.3	13.9	2.18	48	—	22	7	8	6	—	—	—	5	16	123
Woolwich	41,478	284	200	27.5	19.3	3.10	32	—	11	—	3	13	—	1	—	4	21	104
Plumstead	62,531	475	247	30.5	15.8	3.72	58	—	40	3	3	10	—	—	—	2	34	109

East, Newington, and Woolwich sanitary areas. The mortality from "fever" showed no marked excess last quarter in any of the sanitary areas.

During the three months ending June last 1,858 deaths from phthisis were registered in London, equal to an annual rate of 1.65 per 1,000, against 1.61 in the corresponding period of the preceding year. Among the various sanitary areas the lowest phthisis death-rates were recorded in St. George Hanover Square, Hampstead, Stoke Newington, St. Martin-in-the-Fields, Wandsworth, and Lewisham; and the highest rates in St. Giles, Strand, Holborn, St. George-in-the-East, St. Saviour Southwark, and St. George Southwark.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 126 per 1,000 last quarter, and was slightly below the mean rate in the corresponding periods of the ten preceding years, 1888-97, which was 130 per 1,000. Among the various sanitary areas the rates of infant mortality were lowest in Stoke Newington, Hackney, London City, Whitechapel, Camberwell, and Plumstead; while they caused the largest excess in Holborn, St. George-in-the-East, Limehouse, St. Saviour Southwark, St. Olave Southwark, and Woolwich.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,411 births and 3,159 deaths were registered during the week ending Saturday, last, July 16th. The annual rate of mortality in these towns, which had declined from 15.1 to 14.7 per 1,000 in the three preceding weeks, was again 14.7 last week. The rates in the several towns ranged from 8.7 in Portsmouth, 9.0 in Blackburn, 9.2 in Croydon, and 9.9 in Derby, to 19.0 in Manchester, 19.3 in Salford, 22.6 in Bolton, and 22.9 in Newcastle-upon-Tyne. In the thirty-two provincial towns the mean death-rate was 15.1 per 1,000, and was 1.0 above the rate recorded in London, which was only 14.1 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.8 per 1,000; in London the rate was equal to 1.9 per 1,000, while it averaged 1.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2.8 in Birkenhead, 3.0 in Gateshead and in Newcastle-upon-Tyne, 3.1 in Salford, and 4.7 in Plymouth. Measles caused a death-rate of 1.4 in Norwich, 1.5 in Gateshead, 1.6 in Newcastle-upon-Tyne, and 1.2 in Plymouth; and whooping-cough of 1.1 in West Ham, 1.2 in Salford, and 1.5 in Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 52 deaths from diphtheria in the thirty-three towns included 39 in London, 4 in Cardiff, and 3 in Leeds. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,238, 2,205, and 2,250 at the end of the three preceding weeks, had further risen to 2,314 on Saturday last, July 16th; 265 new cases were admitted during the week, against 231, 204, and 237 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 16th, 977 births and 550 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 21.1 and 20.0 per 1,000 in the two preceding weeks, further fell to 18.5 last week, but was 3.8 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 17.0 in Aberdeen and 17.7 in Dundee to 23.7 in Greenock and 23.8 in Perth. The zymotic death-rate in these towns averaged 3.1 per 1,000, the highest rates being recorded in Greenock and Paisley. The 250 deaths registered in Glasgow included 10 from measles, 2 from scarlet fever, 18 from whooping-cough, 4 from "fever," and 16 from diarrhœa. Four fatal cases of measles and 4 of scarlet fever were recorded in Edinburgh.

DIPHTHERIA IN LONDON

The mortality from diphtheria in London showed a marked increase last week. The fatal cases of this disease, which had been 21, 29, and 27 in the three preceding weeks, rose again to 39 during the week ending Saturday last, July 16th, and exceeded the number recorded in any week since the end of April. Of these 39 deaths, 7 were of persons belonging to Lambeth, 3 to Paddington, 3 to Hammersmith, and 3 to Poplar sanitary areas. The notifications of diphtheria in London, which had increased from 187 to 218 in the three preceding weeks, further rose to 244 during the week ending Saturday last, a higher number than in any week since February last. Compared with the preceding week there was a decline in West and North London, but a marked increase in East and South London. The decline in the prevalence of the disease in West London was mainly due to the fall in the number of new cases in Chelsea, only 4 cases being notified, against 21 in the preceding week; in Fulham, however, the 17 new cases showed a further increase upon recent weekly numbers. In most of the sanitary areas of North London there was a decline in the prevalence of diphtheria, in both Marylebone and Hackney the number of new cases showed a further decline from those recorded in recent weeks. The increase in the prevalence of the disease in East London was mainly due to a serious outbreak in Poplar, where no fewer than 28 new cases were notified, against 8 in the previous week. In Mile End Old Town the 8 new cases showed a further increase upon recent weekly numbers, but in Whitechapel there was a considerable decline. The marked increase in the prevalence of diphtheria in South London was principally due to the increase of new cases in St. Saviour Southwark, Lambeth, Wandsworth, Camberwell, and Greenwich; in Lambeth 25 new cases were notified, against 8 and 16 in the two preceding weeks; and in Camberwell the new cases numbered 18, against 6 in the preceding week. The admissions of diphtheria patients into the Metropolitan Asylums Hospitals during last week were 125, against 110, and 152 in the three preceding weeks, and 1,[illegible] remained under treatment in these hospitals on Saturday last, July 16th.

LONDON WATER COMMISSION.

The Royal Commission continues to hear the evidence of local authorities or their deputies. The prevailing feeling seems to be strongly against purchase by the London County Council. A few of the witnesses wish for local control apart from the company monopoly. Sir John Evans, Vice-Chairman of the Hertfordshire County Council, gave it as his opinion that existing local authorities were the proper persons in whom the control of the water companies should be vested, and that the creation of any new board controlling the whole metropolitan water area would be a far less satisfactory solution of the question than the strengthening of the control which the local authorities of the districts supplied by the companies and the consumers of water already possess.

THE CRYPT OF ST. GEORGE-THE-MARTYR, SOUTHWARK.

The order of the Home Office to remove from the crypt of St. George the human remains about which there has been so much trouble has not yet been obeyed by the churchwardens. A deputation has been arranged to wait upon the Home Secretary to obtain permission to cover in the remains with concrete, a far less expensive plan than removal. To cover with concrete means to seal hermetically any organic products that may still remain in the crypt, from the natural agents which should reduce them to an elementary and harmless condition. Supposing that any deleterious matter still remains, covering with concrete is just the way to preserve it for a further period.

INSTRUCTION IN TROPICAL DISEASES.

The President of the Council of the British Medical Association, in accordance with the resolution adopted at the last meeting of the Council, has addressed the following letter to the First Lord of the Admiralty respecting the desirability of making provision for instruction in tropical diseases for the officers of the Medical Service of the Royal Navy.

British Medical Association,
429, Strand, W.C.,
July 11th, 1898.

To the Right Honourable
G. J. Goschen, M.P.,
First Lord of the Admiralty.

Sir,—It has been a surprise to the medical profession to learn, as it has done recently, that there is no provision in the course of medical instruction at Haslar given to medical officers on joining the navy for teaching tropical diseases. On behalf of the Council of this Association, which numbers over 17,000 medical practitioners, I desire to call your attention to this defect, and to ask you if you desire further information on the subject, to be so good as to receive a deputation which shall be as representative as possible of those interested in and acquainted with the medical practice in the navy and the tropics.

I am, Sir, your most obedient servant,
Robert Saundby, M.D., LL.D., F.R.C.P.,
President of the Council.

The following reply has been received:

Admiralty,
16th July, 1898.

Sir,—Mr. Goschen desires me to acknowledge the receipt of your letter of the 11th instant with regard to the question of providing special instruction in the treatment of tropical diseases to medical officers on joining the Royal Navy. In reply, I have to inform you that this subject is receiving the very careful consideration of the Board of Admiralty, who are quite alive to the importance of giving surgeons of the navy every facility for acquiring, as far as possible, the latest knowledge obtainable on the nature of the diseases in question, and the progress of scientific inquiry into the methods of treatment.

As the Board are in agreement with the views of the Council of the British Medical Association in the matter, it appears to Mr. Goschen to be unnecessary to put the Council to the trouble of sending a deputation to represent the importance of the case to the Admiralty.

The difficulties which may have to be dealt with are mainly of an administrative character, such as to what extent, and at what periods, officers can be spared from their duties afloat for the purpose of going through special courses of instruction on shore, and in order to examine in what way the object desired can best be obtained it is the intention of the Admiralty to appoint a small departmental committee of inquiry.

I remain, yours faithfully,
W. Graham Greene.

Robert Saundby, Esq., M.D.

LEAD POISONING IN THE POTTERIES.

The increased information which has recently become available with regard to the prevalence of lead poisoning, especially in the pottery trade, renders it desirable to give somewhat more fully than has hitherto been done an account of the measures that are being adopted to combat the evil, and of the terms of the new regulations and instructions that the members of the medical profession will be required to assist in carrying into effect.

The Extent of the Evil.

From a report by Dr. Arthur Whitelegge, the Chief Inspector of Factories and Workshops, it appears that, in pursuance of the system which came into operation on January 1st, 1896, requiring the notification of all cases of poisoning by lead, phosphorus, and arsenic, together with all cases of anthrax, 1,050 cases were reported in the year ending December 31st, 1896. Of these, 1,030, or over 98 per cent., were ascribed to lead. Of the 1,030 cases of plumbism, 432, or nearly 42 per cent., occurred from the use of lead for glazes in the china and earthenware works, 239, or over 23 per cent., in the white lead manufactories, and the remaining 35 per cent. were distributed among workers in glass, smelters of metals, tin workers, enamellers, file makers, workers in paints and colours, coach makers, and other operatives. But these figures do no more than gauge approximately the gravity of the mischief, because the persons attacked—and the women more than the men—habitually endeavour to hide their illness lest they should be discharged from remunerative employment. No fewer than 631 of the 1,030 cases, or 61 per cent., were from factories in the Midlands, and 432 of these were from the North Staffordshire Earthenware and China Works. Of these 432 cases, 200 were males and 232 females, 397 were adults and 35 were "young persons" between the ages of 14 and 18. The comparative danger of the different processes may be estimated from the following facts: 24 per cent. of a series of 326 cases occurred among the dippers of the ware; 24 per cent. among the cleaners after its dipping and the dippers' assistants; 21 per cent. among the glost placers; 14 per cent. among the ground layers; 13 per cent. among the majolica paintresses; and 4 per cent. among the printer's transferrers.

The Results of Lead Poisoning.

As it occurs among workers in lead (apart from acute accidental poisoning) the symptoms of plumbism may be acute or chronic, and in the chronic cases there occur from time to time acute exacerbations.

The acute poisoning is seen at its worst in young persons, and especially in girls, who have recently commenced to work in the factories. Sometimes they suffer from severe colic, with constipation, lasting a few days; or they may have violent diarrhœa, and other gastro-intestinal symptoms of severe irritant poisoning, often leading to a fatal termination in a week or two. Or they may suffer from acute anæmia followed by fits and delirium, and often a rapidly fatal issue. In one fatal case a girl had worked with lead only 40 days in all, and these were spread over 9 weeks. Among the symptoms of chronic poisoning are the well-known anæmia, blue line on the gums, colic, paralysis and cramps of muscles, the so-called "encephalopathia saturnina," gout, cirrhosis of the kidneys, and affections of the organs of reproduction. In a series of 1,390 cases colic occurred in 88 per cent., paralysis in 7 per cent., and encephalopathy in 5 per cent. The paralysis is usually of the forearm type, giving the characteristic double wrist drop, sometimes however it is of the upper arm type, affecting the deltoid, biceps, and supinator longus, sometimes of the ordinary (Aran-Duchenne) type of progressive muscular atrophy, attacking first the intrinsic muscles of the hands, sometimes of the peroneal type (the legs being involved in about 13 per cent. of the cases). It affects comparatively rarely the muscles of the larynx.

The most terrible cases are those with severe nervous manifestations—the encephalopathic or fulminant cases resulting, as they do not infrequently, in death after a few hours' illness. The patient, if a girl, is at first probably considered to be hysterical, and shortly develops convulsions, blindness, delirium, and coma. Even if the patient escape with her life the result may be persistent blindness, epilepsy, or insanity. Ophthalmoscopic examination often shows double optic neuritis or neuro-retinitis, although there is often amblyopia without fundus changes. Vision may be partially recovered, or absolute blindness may be caused by the atrophy secondary to the papillitis. Permanent blindness more often results, however, from a primary chronic atrophy of the optic nerves. The fits are toxæmic in origin, like those of uræmia and alcoholism, and can only be differentiated from idiopathic epilepsy by a recognition of their exciting cause. Quite lately a patient died, after twenty-four hours' illness, in what was virtually status epilepticus due to lead. In men gout is frequently developed from interference with the excretion of uric acid, and sooner or later cirrhosis of the kidney is set up, to which, in a large proportion of cases, death is directly due. Nearly all female workers in lead are either menorrhagic or amenorrhœic, and abortion is so common as to materially lower the birth-rate in some of the affected districts; it is common, moreover, even if the father alone is a worker in lead. In 123 pregnancies 73 children were born dead, and of the 50 born alive only 15 lived beyond the third year. The children usually die in convulsions, and if they live they are generally ill-developed and badly nourished.

Idiosyncrasy.

Not only are women, and particularly girls, more susceptible to the toxic influence of lead than men, but there are also marked differences in the susceptibility of individuals, which can only be ascertained by actual experience. The girls who are the most susceptible are the ill fed, badly clothed, and badly housed, who have in fact taken to the work on account of unfavourable surroundings. One attack of plumbism apparently predisposes to another; thus a man who had colic while working as a house painter became a gamekeeper, and a long time afterwards had another attack after stirring leaden shot in water with his hands. Another house painter, because of wrist drop, changed his occupation to that of a college porter, and long after complete recovery had a relapse through sitting, as it is believed, for several hours in a newly painted "porter's box."

How the Evil may be Met.

It was a great step in advance when, at the beginning of January, 1896, the notification of cases of lead poisoning became compulsory; but it is not easy for the employers to decide when a worker is beginning to suffer from lead poisoning so that they may notify the case, and the difficulty is rendered all the greater through the efforts frequently made by the employed to conceal the nature of their illness, although they may be obliged to give up work for a time, fearing lest they should be discharged on account of special susceptibility.

No children are allowed to work in the factories, and by special rule no woman is allowed to do the more dangerous work in the manufacture of white lead, and in one factory women are absolutely excluded by the employers. It is required that overalls and head coverings shall be provided by the employer for all women employed in the dangerous processes of the trade, and that the garments shall be washed once a week. But these are not used as they should be, because, as it is said, they are not considered becoming. Meals are not to be prepared, or eaten, in any of the more dangerous rooms. Exhaust fans are to be used in the rooms where much lead dust is produced, and good ventilation is enforced, while respirators are supposed to be worn over the mouth and nose. They are, however, often worn round the neck until just before the visit of the inspector. Suitable washing accommodation is to be provided, but the irreducible minimum was not stated in the 1896 regulations; whilst strict rules for bathing and the washing of hands are laid down and but too often evaded. On the one hand, in a certain factory a tub with a water tap was provided in a yard; a brush and soap were said to be in use, but at the time of the inspection could not be found; and on the other, in a factory with 300 workers, where a good lavatory and mess room were provided, no one would use the lavatory and only 20 the mess room.

New Special Rules for the Manufacture of Earthenware and China.

The Chief Inspector of Factories recently has, under the authority of the Home Secretary, made some further advances. The minimum age has been raised for the more dangerous parts of the industry to 14 years after August 1st, 1898, and 15 years after August 1st, 1899. All women and young persons employed in these processes are to be inspected once a month by the certifying surgeon; this, although new in the lead trade, has been for some time in force in the carbon-bisulphide works. Overalls and head-coverings are to be provided in future for all young persons, as well as for women. The minimum washing conveniences are explicitly stated—a basin, and conveniences, with water laid on by tap and a waste-pipe for each five persons, while the employer is to be obliged to make suitable provision for the accommodation during meal-times of workers in the more dangerous processes.

It may be considered that the regulations do not go far enough, and especially that the minimum age is too low; but substantial advantages have already been gained by their enforcement and their terms are open to revision. The workpeople are held responsible for the cleaning of the workplaces. It is considered by some that the employers should do this, but the arrangement, we understand, has for long been customary and has worked well; an alteration in this direction, however, might be desirable.

That certifying surgeons are appointed by the Home Office and are not removable by the employers while they are paid by them is thought by some to be a distinct grievance, but this is in accordance with the Act. No attempt has been made as yet to prevent the employers from using "raw" lead, the alternatives are either to abolish the use of lead which, it is said, would paralyse the manufacturer or to use only "fritted lead," that is lead made into a glass. Even with the use of this silicated lead cases of poisoning have occurred, possibly from incomplete transformation into silicates or from their partial solubility, and the matter is therefore one which appears to call for inquiry and experiment.

Suggestions for the Future.

The recent appointment of a Commission, consisting of Dr. Thomas Oliver and Professor Thorpe, which is to experiment and make inquiries both at home and abroad, more particularly with the view of finding whether any substitute can be devised for glazes and pigments containing lead, is a most promising omen. In one industry indeed, that of enamelling iron plates, much less lead is even now in use, and as purchasers learn that certain colours indicate the employment of lead the demand will it is anticipated diminish. As a preliminary it is to be hoped that the chemists employed by the manufacturers may find a way of using lead for glazes in a less injurious way than that now in vogue. Efforts should be made to educate the workers in more scrupulous habits of personal cleanliness. All persons especially susceptible, whether from sex or age, or individual idiosyncrasy, should be excluded from work that involves the use of lead, while women (and particularly girls once poisoned) should not be re-employed.

THE ANTIVACCINATION PROPAGANDA.

The antivaccination letter writers have been pretty busy over Mr. Chaplin's Bill, and the statements made by them have that relation to truth which long experience of their compositions has led us to expect. Mr. ex-President Tebb is to the front as usual. He recently told the readers of the *Daily Chronicle* that "one of the most conspicuous features of the Bill introduced by Mr. Chaplin is that arm-to-arm vaccination is to be abandoned by reason of its attendant risks." It is hardly necessary to say that the Bill has not one word about the abandonment of arm-to-arm vaccination. What it says is that, if a child is not vaccinated by the time it has reached the age of nine months, the public vaccinator shall call at the home and offer to vaccinate with glycerinated calf lymph. The Government believe that this lymph makes even a nearer approach to absolute safety than does the very safe humanised lymph, and on that account its use is to be encouraged. It is not easy to suppose that Mr. Tebb is really ignorant of the contents of the Bill, and the question as to why he misstates them is curious though hardly important. Regarding what he alleges to be the claims made for glycerinated calf lymph, he wrote: "Allow me to say that the official promoters of each of the various vaccines introduced from time to time and enforced upon the people by means of judicial penalties have said as much for their respective merits." What were the various vaccines officially advocated and promoted and introduced from time to time and enforced? Dr. Bond straightway called attention, in a letter to the *Chronicle*, to this effort of the imagination of Mr. Tebb. At the same time he pointed out how ridiculously the ex-President had travestied some of Dr. Cory's evidence before the Royal Commission.

Mr. Tebb's method is well illustrated in his attack on glycerinated calf lymph in the same letter, which appears to have had a wide circulation, for we find it not only in the *Daily Chronicle*, but also in the *Aberdeen Journal*, the *Christian World*, and the *Methodist Times*. He says:

> The late Sir George Buchanan, chief medical officer to the Local Government Board, who had inquired into its merits, stated that the people who used it were always complaining of it, and observed, "It will, I trust, be long before such preposterous adulterations of vaccine give the opportunity of investigating their results in English practice." In my own evidence before the Royal Commission I produced a copy of the official report of a Government inquiry into the results of a disgusting and contagious outbreak of skin disease due to vaccination in the Isle of Rügen in June, 1885, with lymph diluted with glycerinum purissimum obtained from a Government establishment at Stettin, which infected no fewer than 342 persons, as will be seen by the third volume of evidence, p. 135.

The unwary reader would hardly suppose that the "disgusting and contagious outbreak" whose report he says he produced "in my own evidence" does double duty here, it being the very same occurrence. And as to the statement which was referred to in Sir George Buchanan's criticism, about "lymph diluted with glycerinum purissimum obtained from a Government establishment at Stettin," the official report, as quoted by Mr. Tebb himself to the Royal Commission, says, regarding the glycerine, "This may have been extracted from the waste products of soap manufactories, where the refuse of animals found sick or dead may be employed. If prepared according to the prescription of the *Pharmacopœia* 'Glycerinum purissimum' glycerine is perfectly inodorous, and could certainly contain no germ of disease....." But Mr. Tebb, in the face of this, and after cross-examination on the very point, so that his attention was definitely called to it, now tells the newspapers that the material used was "lymph diluted with glycerinum purissimum obtained from a Government establishment at Stettin." In his new book, *A Century of Vaccination*, Dr. Scott Tebb repeats (p. 380) the statement about glycerinum purissimum having been used. As to the skin disease, Mr. Tebb did not consider it necessary to explain that one of the Royal Commissioners—no less an authority than Mr. Jonathan Hutchinson, who has done so much to prove that conveyance of syphilis by humanised lymph is not an impossibility, and who is so often quoted by antivaccinationists informed him that contagious impetigo "is a very common malady of no importance." Mr. Tebb's assumption, carefully maintained, that this mixing of glycerine with lymph at Rügen in 1885 is comparable with the practice begun in this country by Dr. Monckton Copeman six years later, is a remarkable example of controversial ingenuity. He has seized on the fact that glycerine is used by Dr. Copeman in his process of destroying extraneous organisms, and, having noted that lymph and glycerine had often been mixed previous to the discovery of this process, he and his followers are now adducing as evidence against the new procedure an occurrence which was denounced by Sir George Buchanan several years before Dr. Copeman had even commenced his investigations. In the same way it is assumed in other effusions of the antivaccination letter writers—as in the *Leicester Post* of June 16th—that because the late Dr. Warlomont mixed glycerine with calf lymph Dr. Copeman's process must be identical.

In another letter, this time to the *Birmingham Daily Post*, the ex-President wrote on May 11th:

> It is safe to say that from the day when the speech in praise of glycerinated lymph was delivered by Lord Lister there have been continuous protests from members of the profession, public health authorities in the medical journals, and others in the press against this innovation.....

No one, we presume, proposes to take Mr. Tebb into a law court, and in that sense it "is *safe* to say" what he does say.

But it is not "*true* to say" these things. They are gross misstatements, and they appear in a lay newspaper whose readers are not likely to be at the trouble to check them by turning to the medical journals in search of the alleged "continuous protests."

In addition to what we have given above from Mr. William Tebb, perhaps our readers may be interested to have one or two samples, taken almost at random, of the kind of stuff with which newspapers have lately been deluged by the more active opponents of vaccination:

The Ramsgate doctors.....stated vaccination was a protection from small-pox..... But the Council of the British Medical Association says you get it milder and the attacks are fewer, therefore you are not protected from small-pox. The British Medical Association therefore contradict the Ramsgate doctors..... (Geo. Rapkin, Minister of the Disciples of Christ, Margate, in the *East Kent Times*, of April 13th).

But take, for instance, Kirkcaldy and the adjoining towns of Kinghorn and Burntisland, and I have for these three towns alone a list of 43 cases of death following on vaccination.....I cannot here go into the details of each, but will touch on one or two. In Case XXV, for instance, the child laughed in the doctor's face when he vaccinated it, but was a corpse within four days; while in Cases V and XXI the child in both instances screamed under the operation, and thereafter dwined and died (John C. Robertson, Kirkcaldy, in the *Aberdeen Journal* of April 16th).

So chagrined was Dr. Barry at the exposure of his Sheffield statistics that he asked permission to withdraw them for "correction" ("A. S. I." in *Southport Visitor* of April 30th).

The real facts are that, as vaccination is no protection whatever, the medical profession not only obtain large emoluments for treating vaccinated small-pox patients, but in addition profit by both vaccination and revaccination, and especially in attempting to cure the injurious effects of divers invaccinated diseases ("B.A." in the *Echo* of May 3rd).

Whole columns of the *Courier* might be filled with the names of most eminent medical men, both past and present, who have strongly condemned the whole practice as unscientific and useless, and whose arguments never have been, and never can be, fairly met and refuted (W. Fraser, in *Dundee Courier*, May 12th).

As to the protective power of vaccination, that had long been given up by the medical profession.....The basis of the whole thing was founded upon falsehood. The reason why it was still in favour must be asked of the medical men at the back of the Local Government Board, the public vaccinators, and of others whose positions depended on its continuance (Dr. Walter R. Hadwen in a speech as reported in the *Middlesbrough Gazette* of May 12th).

Middlesbrough is the best vaccinated town in England (*Harrow Indicator*, March 16th).

No proof exists that microbes in vaccination lymph cease to be baleful because, as Mr. Chaplin—good, easy man—said, they "disappear" under the action of glycerine. If they are poisons, as is admitted, they do not cease to be such simply because their form is changed ("J. H." in the *Leicester Daily Post* of June 16th.

We hardly think these quotations need any comment. The results of similar propagandism are written partly in the small-pox death records of Gloucester, partly in the registers of every small-pox hospital, and partly on the faces of the children who have had to pay the penalty of parental credulity and folly.

NOTES ON HEALTH RESORTS.

The Climate of Southport.[1]—The custom of making yearly meteorological reports at health resorts is certainly a good one, and that Southport should take particular trouble in this direction is not surprising, for the local authorities have long held a good reputation for their intelligent interest in sanitary arrangements. According to Mr. Baxendell, the mean temperature for the year was 48.7° (1° above the previous twenty-five years' average), and that from June to September was 58.1°. The mean daily range of temperature was 11.5°, the greatest range of temperature (July 11th) being 30.2°, and the least (February 3rd) 1.5°. The mean relative humidity at 9 A.M. was 82 per cent. of saturation. The total rainfall was 31.88, being about the same as that of Ryde in the Isle of Wight. The total duration of bright sunshine in the year was 1,622 hours, a good amount for this part of England. It is mentioned that grapes ripened fully in the open air on a wall having a southern aspect.

Llangammarch.[2]—There have recently been several pamphlets written on the spas of Mid-Wales, including Llandrindod Wells, Llanwrtyd Wells, Llangammarch Wells, and Builth, and this group of health resorts has become decidedly better known in England. Llangammarch has been talked of in connection with its so-called barium spring, which was discovered nearly half a century ago by a shepherd. Dr. Jones remarks that "barium chloride, as a constitutent of a mineral water, is quite rare, but it occurs in certain waters in association with such large quantities of sodium chloride as to prevent their use for drinking purposes." The therapeutic effect of the barium chloride (a little over 6 gr. in the gallon) in the Llangammarch waters may be somewhat questionable, but there can be no doubt that Llangammarch affords a pleasant and healthful resort, in a fairly bracing position, to many persons for whom a change of air is advisable, but who at the same time ought to remain under medical supervision.

Buxton.[3]—This little book supplies the kind of information required in a popular guide to one of the most visited of English health resorts. The views of Buxton and its neighbourhood are excellent and the type is clear. We are informed that the work is to be sent free of charge on application (with stamp for postage) to the Council Office, Town Hall, Buxton, Derbyshire.

Alveneu.[4]—Though Tiefenkasten is familiar to most travellers in Switzerland owing to its position on the diligence roads from Thusis and Coire to the Engadine, the neighbouring mineral waters are still perhaps hardly sufficiently known in England. Alveneu lies in the Albula valley, at an elevation of about 3,150 feet above sea level. Its mountain position and its weak sulphur waters may be of use in some chronic catarrhal conditions of the respiratory organs, and in some chronic rheumatic and gouty affections. The sulphated alkaline chalybeate springs of Tiefenkasten and Solis can likewise be employed at Alveneu in suitable cases. Dr. V. Weber's little book should be consulted in regard to the medical indications.

Driburg.[5]—Driburg is a pleasantly situated spa in the Teutoburg Forest, well known for its gaseous compound chalybeate waters. Dr. Foss also draws special attention to its sulphur waters and to its mudbaths. Like most authorities of the present time, he attributes the therapeutic value of its effervescent baths not to the iron contained in the water (the old idea), but to the action of the large quantity of free carbonic acid gas which the Driburg waters possess in common with other sparkling iron waters and the now famous Thermalsoolbäder of Nauheim. The medical indications for the use of this health resort are carefully detailed by the author.

Valencia as a Winter Resort.[6]—Valencia, in Spain, quite close to the east coast, has much to recommend it as a winter station. Dr. V. Guillen enters fully on its geographical, geological, and meteorological claims, and compares it with Nice, Cannes, Ajaccio, and other winter stations of the Mediterranean coast. It possesses a fairly equable marine climate of moderate humidity (relative humidity = 66), and boasts of a very clear sky and comparatively few rainy days during the winter months. Dr. Guillen concludes that residence at Valencia may be very useful in scrofula and rickets, and in some chronic pulmonary and bronchitic affections, as well as in cases of gout, chlorosis, and neurasthenia. Information is likewise given on the flora and fauna of the neighbourhood, which will be interesting to visitors who occupy themselves with such matters. The views of the town are excellent, and the type is large and clear.

[1] *The Fernley Observatory, Southport: Report and Results of Observations for the Year, 1897*. By J. Baxendell, F.R.M.S., Meteorologist to the Southport Corporation. Southport: W. Milne. 1898.

[2] *Llangammarch Wells as a Health Resort*, by W. Black Jones, M.D., B.S., D.P.H. London: J. M. Kronheim and Co. 1898. Demy 8vo, pp. 26. 6d.

[3] *Buxton: Its History, Waters, Climate, Scenery, etc.* Manchester: Henry Blacklock and Co. Pp. 36, with many illustrations.

[4] *The Sulphur Baths of Alveneu, with the neighbouring Mineral Springs of Tiefenkasten and Solis*. By Dr. Victor Weber. Second Edition. Zürich: Orell Füssli and Co. 1883. Crown 8vo, pp. 71.

Das Freiherrlich von Sierstorpff-Cramm'sche Bad Driburg. Beschrieben von Dr. Foss. [The von Sierstorpff-Cramm Baronial Bath of Driburg.] Braunschweig: F. Vieweg und Sohn. Demy 8vo, pp. 33.

[5] *Valencia como Estación Invernal*. Por Dr. V. Guillen. Valencia: Manuel Alufre. 1898. Demy 4to, pp. 214, with maps, views, and meteorological charts and diagrams.

PRESENTATION.—Dr. G. B. Morgan, Senior Surgeon to the Sunderland Infirmary has been presented by the President, Vice-presidents, members of the General Committee, and the Medical Board of that institution with a brass tablet to be placed in the Morgan Ward of the infirmary, a silver bowl, a silver candelabrum, silver candlesticks, and a silver tray as a token of their regard and appreciation of his services to the institution. Both the tablet and the silver tray bore suitable inscriptions.

LITERARY NOTES.

WE understand that a new edition of Dr. William Osler's well-known textbook, *The Practice of Medicine*, is now in the press.

Reference was made recently in this column to the curious example of pluralism which formerly existed in Denmark, where the public hangman was allowed—apparently in virtue of his office—to practise the art of healing. Such cumulation of contradictory functions was not, it seems, confined to Scandinavia. In Alexandre Dumas's *La Reine Margot*, Caboche, the Paris headsman, is represented as curing with herbs and potions the Chevalier Coconnas of a terrible wound which had been treated according to the rules of surgical art by Ambroise Paré without success.

In connection with the subject of the embalming of the dead, it may be interesting to quote a description of the method employed by John Hunter, who was on one occasion called upon to embalm the body of a nobleman. The following are the details of the procedure as dictated by the great anatomist and surgeon to the late Sir John Doratt, who presented the manuscript to the late Mr. T. M. Stone. The document was published in the *Medical Times and Gazette* of December 9th, 1871:

The whole of the viscera, thoracic and abdominal, having been removed, the entire inside of the trunk was well well washed with cold lime water, and afterwards well dried with cloths; when dry the cavities were actually soaked in rectified spirit of wine. On the removal of the contents of the abdominal cavity incisions were made into the intestinal canal to give vent to the fæcal contents, as also to the gas that might have been contained within them; they were immediately immersed in cold lime water, well washed, and the blood then appeared well squeezed out. This effected, the whole was again immersed into lime water, and allowed to remain for a time; this last being finished, the whole was thrown into rectified spirit of wine, and suffered to remain for some time. The abdominal cavity having been prepared as directed, and a bed of spices being laid to receive the viscera, the latter was then returned or replaced. The whole cavity, with its contents, was entirely filled with the spices and alum, so as not to leave a vacant space. The abdominal integuments were then closely drawn together, and strongly sewn with twine well waxed.

The thoracic viscera were in part treated in the same manner as the abdominal viscera, as also was the cavity of the chest, the lungs having been replaced, and the cavity completely filled with spices, etc., the integument closely drawn together, and sewn with twine well waxed (the blood well squeezed from the lungs before immersion, and incisions having been made, friar's balsam was poured into them).

The heart, after having had several incisions made into its substance, was immersed as before described in lime water and spirit of wine; a considerable quantity of friar's balsam was poured into all the openings, and the arteries and veins plugged with spices, etc., well wetted or soaked in the balsam; the heart was then placed in the urn and filled with spices, and again soaked with the balsam. The urn was then hermetically sealed. The scalp being most carefully removed, the cranium was sawn through, so as to remove the upper and larger portion, the brain being carefully removed; the bony cavities were treated in the same manner as the other cavities. The brain was divided into many parts by small incisions or deep punctures, and a considerable quantity of friar's balsam poured into them; it was carefully replaced within the cranial cavity, well covered with the balsam, so as to envelop the whole mass, the scalp well drawn over the whole cranium, and closed by being closely sewn [illegible] well waxed. The mouth and throat were crammed with the [illegible] tted with the balsam, as also the nostrils. Nothing was done to the lower parts of the body that I remember, neither have I any note of such. The body was well washed with lime water, and when perfectly dry, every member was separately rolled with waxed cloth, and afterwards the whole body closely enveloped in the same.

I forgot to mention the bladder was treated in the same manner by the different immersions, and crammed with the spices. Performed by Mr. Home, myself acting as assistant. The body was an Earl of Moira, all under the immediate direction of Mr. John Hunter.

The apothecary who supplied all the materials that were necessary by tenure of office was Mr. Wainwright, who resided in Pall Mall, opposite to Carlton House, within a door or two of St. Albans Street as it was at that period.

The [illegible] were composed of the more aromatic and pungent order, as cloves, nutmeg, cinnamon, pepper, frankincense, etc., added to which was a large portion of alum in powder; all were reduced to a coarse [illegible].

The Scientific Press is about to issue a new volume to "The Burdett Series of Popular Nursing Textbooks," entitled *The Care of Consumptives*, by W. H. Daw, M.R.C.S. This little work should prove of exceptional interest to nurses, especially at a time like the present, when so much attention is being directed toward the treatment of consumption.

The following extract from a letter written more than twenty-five years ago by Robert Louis Stevenson to a friend has recently been published:

You will probably know how nicely woman's rights were received by some of my fellow students the other day. The female medicals were hooted, mewed, and jostled till the police interfered. My views are very neutral. I quite believe that Miss [illegible] and the rest of our fellow-studentesses are the first of a noble army, pioneers, and Columbuses, and all that sort of thing. But at the same time Miss —— is playing for the esteem of posterity. But I won't marry either her or her fellows; let posterity marry them. If posterity gets hold of this letter I shall probably get burnt in effigy by some Royal Female College of Surgeons of the future.

It would be interesting to know whether Stevenson's views on the subject of medical women underwent modification in later life.

Mr. T. H. Plowman, of Bath, has sent us the following interesting birth entry copied from the *Annual Register* of 1806 (p. 465).

Mrs. Elizabeth Cook, aged 64, wife of Mr. Thomas C., of Weobly, Herts, aged upwards of 70, a daughter, being the only child they have had after a marriage of more than 20 years.

We are always glad to welcome medical poets, and we have much pleasure in introducing to our readers Dr. Edward Willard Watson, of whose Muse the following verses, taken from *Songs of Flying Hours* (Philadelphia: Coates) may serve as a specimen. The subject is "Bacilli:"

For you no kindly power, with loving art,
Adorns and shapes, with beauty rare, each form.
Beneath the eye of man, in unseen part,
Ye, in the darkness of the infinite, swarm
Everywhere, alway, in the calm or storm,
Within the living, waiting there the hour
When ye shall rise triumphant and o'erpower;
Within the dead, where carnival ye keep,
Ever invading as ye steal and cower,
Till, on some sultry wind, ye to your carnage leap.
Are ye, then, life? Like flowers and painted things,
That poise in sunshine on their gilded wings,
That hum the note that louder still doth float,
Leaping heavenward, from the palpitating throat
Of every bird that skyward soars and sings?
Or are ye death, the desolate and drear,
Ever surrounding us with legions vast;
Evading sight, lurking in guilty fear
Where never can unaided glance be cast?
Are ye the silent foe of that blest power
Who, for us, works unceasing, day and night,
That hides from us its majesty and might
Within the blushing petals of the flower?
And, in the future, will the untiring hand
That builds again each shattered house of clay,
Conqueror, before death's flying legions stand,
And claim for all that lives a deathless day?

AN ANTHROPOLOGICAL INSTITUTE AT LEGHORN.—The Istituto Antropologico Italiano, which has recently been opened at Leghorn, has for its aim the popularisation of anthropological work and the collection of material for scientific purposes. The Director of the Institute is Dr. Giuseppe Marina. Its scope comprises psychological work, anthropometrical, pathological and ethnographic investigations. Persons can for a moderate fee have themselves examined by the most approved modern methods in all these directions. A careful record is kept, and the same individual may return from time to time to have the examination repeated—a procedure in which he has a personal interest, while the comparative results thus obtained will prove of value to science. In addition to this, lectures are to be given, pamphlets published, and public discussions on anthropological and other methods of making the science attractive to the public will be employed. Particular prominence will be given to the history of civilisation, demography, sociology, and hygiene.

MOUNTAIN SICKNESS.—A short paper by Douglass on the Effects of High Mountain Climbing (*Appalachia*, vol. viii, No. 4, 1898) summarises the most important symptoms of mountain sickness as noted by previous climbers, and adds a few notes from the author's own experiences. He is of opinion that in trips which require two days to reach the summit of the mountain, as, for example, the ascent of Popocatepetl and Orizaba, the night should be passed at an altitude where mountain sickness is not likely to prevent sleep, that is, at about 13,000 feet. The increased discomfort from mountain sickness during the night, and the fact that all the symptoms become exaggerated with increasing elevation above sea level, make it advisable to sleep at as low an altitude as possible.

THE report for 1897-98 of the Association for the Oral Instruction of the Deaf and Dumb, London, shows continued activity in the institution in Fitzroy Square in its double capacity of a training college for teachers for the deaf and of a school for deaf children. Of students there appear to have been six during the year, and it is stated that the demand for trained teachers is considerably in excess of the supply. The school has been attended by forty-eight pupils, and its work is reported as admirable by Her Majesty's inspector.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

SUBSCRIPTIONS to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

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SATURDAY, JULY 23RD, 1898.

COMPANIES AS PRACTITIONERS.

THE various enactments which govern the incorporation of limited liability companies appear to have been framed with the object of rendering the process quick, easy, and inexpensive; and as it may not be known to all of our readers how simple the process is, it may save repetition to say at the outset that any seven persons, male or female, can at the cost of £7 or £8 obtain incorporation.

Certain formalities have to be complied with, such as a statement in the memorandum of the purposes of the company, but as this is often worded in very general terms, and very elastic powers taken, even in the case of perfectly *bonâ fide* companies, this does not constitute any real protection nor in practice limit the operations of the company. The capital has to be mentioned, but this may be a mere paper sum, and need not be issued; all that really is necessarily subscribed being the holdings of the seven persons who signed the memorandum. These persons need not, and often do not, hold more than one share each; and these shares may be of very small amount—£1, 10s., or even in one case a farthing each. This constitutes the entire real capital and pecuniary responsibility of a great many bogus companies, but it has been distinctly laid down that it is no part of the duties of the Registrar of Public Companies to go behind the mere formal compliance with the requirements, and indeed there is not any certainty, so far as is indicated in the application for registration, whether the company is of the bogus class or is going to have a real, and even very large, capital, companies of real importance being sometimes registered in the first instance with seven shareholders only holding one or a few shares each.

Moreover, there are a certain number of perfectly legitimate companies, more or less family concerns, or concerns in which a retiring partner wishes to leave his capital, but desires to limit his liability to that amount, which are registered in this way, and appear *primâ facie* to be of the one man type—a type which finds its most typical development where for improper purposes a man, his wife, two or three daughters, a son-in-law or two, and a clerk to the solicitor who transacts the business, form the necessary seven. This difficulty of discrimination has so impressed the several committees who have undertaken the revision of the Companies Acts, that they advise that no attempt shall be made to investigate, and if need be refuse, the applications in the first instance, so that there seems to be no hope of preventing at the outset the incorporation of companies which infringe the Medical or allied Acts, but a remedy must be sought at a later stage.

The object of the class of company with which we are concerned may be expressed in a few words: the restrictions and penalties enforceable against individuals under the Medical Acts are absolutely inoperative against a company, and hence those who propose to infringe the provisions of such Acts often take the preliminary precaution of enrolling themselves into a company.

Several things concur in bringing this state of things about, one of the most important being embodied in a decision of the House of Lords (Pharmaceutical Society *v.* London and Provincial Supply Association, 1880). This is too lengthy to quote, but its general lines may be thus expressed. Those Acts which lay down that a personal qualification shall be necessary for the pursuit of certain callings prescribe that persons shall, prior to following them, go through a given course of education, shall submit themselves to examination, and, having satisfied the examiners, shall receive some sort of licence to practise. Now, in this decision it was pointed out that it was impossible for a company to comply with these conditions, and it was argued from this that the word "person," where employed in such Acts, could not be applicable to a company; and, as the Act says that "persons" shall not do this or that under penalties, no penalty could be exacted from a company for similar infringements.

The decisions are curious reading, and to the non-legal mind amount to saying that, inasmuch as it is manifestly impossible for a company to put itself in the right, therefore it is not in the wrong. To the unqualified chemist belongs the credit of first discovering and largely availing himself of this loophole; but the same means are also in full operation as a safe way of evading the Medical and the closely similar Dental Acts.

Thus, towards the end of last year a company was incorporated in Ireland, which consists of six persons of the same name—three of them being women—and a solicitor, each of whom holds one share. Their objects are, amongst others, to carry on the business of pharmaceutical chemists, etc., and to carry on the business of physicians and surgeons; it need hardly be said that there is no qualified medical man amongst those who sign the memorandum, nor is there a pharmaceutical chemist.

In another instance a *soi-disant* medical student (not registered as such) associates himself with five persons of various occupations, and with one who styles himself "physician"; this last was a registered practitioner, but has been now dead for some years, though the company goes on. The so-called medical student is stated to have carried on a medical practice of a low type for some time prior to his incorporation. The place still exists and is placarded as "Medical Hall" and sundry legends "medical advice gratis," "to the surgery," and the like appear on the premises, while the window (a chemist's shop) is full of venereal specifics, appliances for avoiding pregnancy, etc. Were the registered practitioner still alive it is possible that the offence of covering might be brought home to him, though it might have been both a difficult and uncertain task to do so. But, as it is, nothing can be done, though the intention of leading the public to suppose that they

will receive qualified medical advice is sufficiently apparent.

Many other examples might be cited, some of which have already been before our readers, such as the World's Dispensary Medical Association, which holds itself out to supply medical and surgical advice and assistance of all kinds; here, of the seven, five put M.D. after their names in the memorandum, though they are careful not to do so elsewhere, and of course none of them are registered; the General Council of Safe Medicine, Warner's Safe Cure, and Ware's Eczema and Anæmia Cure are other instances of the same character, some of them going so far as to send a paper to be filled up by the patient describing his symptoms, with which he is requested to send a sample of his water. In some instances coroners have complained and suggested prosecution, and in a few counsel's opinion has been taken on the subject, but always with the same result, that proceedings against a company cannot be advised in the present state of the law.

Enough has been said to show that the present state of things is eminently unsatisfactory, and it might have been thought that it would be merely necessary to call attention to it in order to secure a remedy. But unfortunately, such is the apathy of the British public in matters pertaining to medicine, and such is the spirit of non-interference with anybody or anything which characterises the spirit of our Legislature in recent years that the task of getting any effectual enactment is very difficult.

About three years ago a very strong Departmental Committee was appointed by the Board of Trade to inquire into company law and to draft a Bill with a view to its amendment. It was thought that a somewhat general revision of company law would afford a better opportunity than was otherwise likely to occur for obviating the miscarriage of the intentions of these Acts which now prevails, an attempt was therefore made on behalf of the British Medical Association, the Medical Defence Union, the British Dental Association, the Pharmaceutical Society, and the College of Veterinary Surgeons (all of them interested in the maintenance of personal qualification conferred after examination) to obtain a hearing before that Committee. This, however, was refused upon the ground that whilst it was not denied that a grievance existed, the duties of the Committee were defined by the Board of Trade, and that this lay outside the matters referred to them.

A deputation was, however, received by the President of the Board of Trade, at which the case was laid before him, and although in the draft Bill which subsequently appeared that for which the deputation asked was not conceded, nevertheless the Committee made use of some of the cases submitted by the Pharmaceutical Society as striking examples of the improper sort of "one man" company, and printed them in their report, in which they also so far endorsed the views urged upon them as to say that one of their draft clauses might perhaps be of use against such companies as those of which complaint had been made. It may here be mentioned that the Pharmaceutical Society presented a fine collection of cases, in which persons prosecuted for infringements of their Act (by the non-possession of personal qualification) had been successfully prosecuted as individuals, in some instances several times, and had then incorporated themselves, with the result that nothing more could be done against them. The British Dental Association also presented similar cases, which are quite on all fours with medical cases, inasmuch as the offenders were prosecuted and fined for the assumption of professional title, and then subsequently exempted themselves from further interference by the aid of company registration.

The deputation not being satisfied with the small measure of help afforded them, next proceeded to get an amendment set down in the House of Lords, and were fortunate in obtaining the powerful help of Lord Herschell, who drafted and set down a much more efficacious clause.

At that time there seemed to be good reason to hope that this amendment might have been accepted, but unfortunately, when some progress really appeared to have been made, the Bill went no further, but was relegated to a Select Committee of the House of Lords, which has not even yet issued its report, so that there is practically no chance of the Bill coming on this session.

Nothing more has been done by the original deputation, but the matter having been brought before the notice of the General Medical Council at its last session, a small deputation, consisting of the President, Mr. Victor Horsley, and Mr. Tomes, was appointed with a view of urging the matter upon the proper authorities, and we understand that these gentlemen have been received by the President of the Board of Trade, and are still engaged in the endeavour to get some clause introduced into the new draft of the Bill.

Since this interview the position of the question has been materially modified by a short conversation which took place in the Standing Committee of the House of Lords while the Pharmacy Acts Amendment Bill was under consideration last week. The Lord Chancellor suggested that the measure should be amended so that companies as well as individuals might be liable to punishment for infringement of the Pharmacy Acts. Lord Herschell endorsed the suggestion, and the Earl of Hardwicke promised to embody the suggestion in a new clause. As the Bill has already passed the House of Commons the new clause, if adopted by the House of Lords, would have to be considered in the lower House, and in the present state of public business this would seriously endanger the prospects of the Bill. For this reason it is very probable that the suggestion will not be persevered with this session. This we should be inclined to consider the best thing which could happen, as we might then hope that in the next session of Parliament a Bill commanding the influential support of the Lord Chancellor and Lord Herschell might be introduced dealing with the matter not only as it affects pharmacy, but also as it affects medicine, dentistry, and veterinary practice. What is needed is some provision by which incorporation into a company shall be rendered of no avail in protecting offenders, but shall leave them as liable as though no company existed.

Although it would be a step in the right direction, the mere making of the company liable in its corporate capacity would not be so efficient as it might at first sight appear, for it has often no assets wherewith to pay fines, and the intriguers are quite sufficiently awake to the

nature of the position to secure its full advantages. At present all that they have to do is to take care that the company and not the individual commits the technical offence, makes use of the titles, etc., and then the individual or individuals who really are the company are, in a legal sense, quite safe.

THE VACCINATION BILL.

AFTER a long discussion on Tuesday night the Government agreed to modify its position with regard to the question of penalties. In effect the relief to conscientious objectors which on the motion of Sir Wm. Priestley was adopted by the Committee as regards children of 4 years old, is to be given also in the case of babies 4 months old. But it is not to consist merely in appending the parental signature to a printed form and sending or handing the form to the registrar. The parent is to satisfy a court of law that he has conscientious objection to vaccination. This ought to involve so much time and trouble on the part of the objector as to form a rough-and-ready test of the strength of the objection, and to separate, in a fashion, the merely negligent parent from the "honest" antivaccinationist. At any rate, the proposal is less likely to be merely farcical in its operation than anything else that has yet been suggested with the same object in view. It is to have effect for five years only, when the question, it is intended, will again come before Parliament, and the intervening experience of the working of the system should by that time be sufficient to afford useful guidance towards a more permanent method.

The concession embodied in Mr. Balfour's proposal makes it possible to hope that revaccination may after all find a place in the new list, the same proviso being introduced for the relief of the objector. Once more we have to insist on the essential importance of revaccination by law in any satisfactory national scheme of small-pox prevention. Of course, if the Government is determined to pass only an incomplete and lopsided measure, it must take its own course, but in the best interests of the health of the people of this country it ought to take the opportunity of adding a clause which would in all probability far more than make up for any diminution of vaccination which can possibly result from the allowance now to be made for the relief of antivaccinationists as regards the infantile community.

Also, we would again urge that it is in the best interests of vaccination that Parliament should now call in the general practitioner to help in carrying out the new law. His persuasion of doubting parents might do much to protect the helpless offspring against small-pox; but, in addition to all the gratuitous work which he already performs, he can hardly be expected to spend his time in advocating the claims of vaccination if his own certificate of its due performance is not to be looked on by the State as equally worthy of a fee with any similar certificate signed by a public vaccinator. With these additions to the Bill there might be no need of further legislation for many a year: without them, and especially without a revaccination clause, the new Act will be no more than a stopgap, and will leave the adult population everywhere open to the ravages of small-pox, in the same way as in Middlesborough, where infantile vaccination was well attended to, and where the children therefore in great measure escaped attack and death in the recent epidemic, but where at the same time the adult population had neglected revaccination and in consequence were seized on and slain by the disease to an extent altogether out of proportion to their numbers. Until the Bill is through Parliament we shall refuse to believe that it will not be rendered a complete measure as regards both primary vaccination and revaccination.

THE LEGAL AND MEDICAL PROFESSIONS AND THE CHANCELLOR OF THE EXCHEQUER.

ON Tuesday Dr. Farquharson asked the Chancellor of the Exchequer "whether having regard to the fact that the sum of £5,000 a year of public money was paid to the Council of the Incorporated Law Society to assist them in purifying the legal profession, he could see his way to make a similar grant to the General Medical Council to enable them to undertake the prosecution of irregular medical practitioners."

The answer of the Chancellor of the Exchequer to the question was that there was in effect no analogy between the two cases, since the sum voted to the Incorporated Law Society was but a small fraction of the yield of the duty on solicitors' certificates which went to the Exchequer. As no such tax was imposed on medical practitioners no question of a similar grant could in his opinion arise. A medical man pays nothing to the Government either as a student or on being registered, or after he is registered, for the privilege of practising his profession. On the other hand, a person becoming a solicitor has to pay the Government stamp of £80 on his articles of clerkship, £25 on being admitted as a solicitor, and annually £9 if within ten miles of the General Post Office, and £6 if beyond that radius, for the privilege of practising his profession. The official report of the Council of the Incorporated Law Society for July, 1897, states that the number of solicitors who took out certificates for the year 1896 was upwards of 15,300. The aggregate annual sum paid for certificate duty to the Government by these persons is not stated, but it must be enormous, and is, as will be observed, exclusive of what was received by the Government that year in respect of articles of clerkship and admission of solicitors.

It is probably for this reason that the legal profession is fortunate enough to find itself in an extremely strong position for dealing with cases of misconduct within its ranks. The Incorporated Law Society has been able to provide for an investigation, the results of which are subsequently brought before the Court and if found guilty the accused person is either suspended from practice or struck off the rolls by order of Her Majesty's judges. Previous to an Act passed in 1888, the process of ascertaining whether a case had been made out for striking a solicitor off the rolls was conducted by certain paid officials of the courts, but since that Act the investigation of the charges brought against solicitors has been conducted by a Committee of the Incorporated Law Society appointed by the Master of the Rolls. Such Committee discharge their duties gratuitously, but serious costs are necessarily incurred in the matter of evidence and instructing counsel; for the Committee, when their

report on a case comes before the judges, have to instruct counsel to appear and support it.

Such are briefly the circumstances under which the Incorporated Law Society considered that it had an undeniable claim on the Government out of the annual certificate duties paid by solicitors themselves to have refunded some portion of the expenses so incurred by the Society, and which claim the Chancellor of the Exchequer admitted after a resolution supported from all sides of the House had been passed in favour of it. The Chancellor of the Exchequer stated that the amount allowed by the Government is £2,500, a very small proportion of the annual sum contributed by solicitors to the national exchequer. Dr. Farquharson has rendered great service by being the means of clearing up this matter, as no doubt many medical men have shared his opinion that our profession was being discriminated against.

THE PRINCE OF WALES.

The members of the medical profession will desire in a special manner to share in the universal expression of sympathy with the Prince of Wales on the distressing accident which befell him on Monday, for none are better able to appreciate the disabling consequences which are but too apt to follow fracture of the patella. The Prince on his arrival at Marlborough House was at once seen by Sir Francis Laking, who summoned Sir William Mac Cormac, and subsequently consultations have been held with Sir Thomas Smith and Lord Lister. In consequence of the widespread interest taken and the sympathy shown for His Royal Highness in his unfortunate mishap, the Prince of Wales with characteristic consideration for the wishes of those who desire authentic information as to the nature of the injury, has sanctioned the following statement, which was placed in our hands on July 21st:

> On Monday morning, July 18th, while coming down the spiral staircase at Waddesdon Manor, he missed his footing, and in the sudden severe effort made to save himself from falling, sustained a fracture of the left patella.
>
> On examination it was found that the line of fracture was nearly transverse and close to the upper margin of the patella. About one-fifth of the bone, somewhat crescentic in shape, was torn away, along with the tendinous insertion of the quadriceps extensor, and the gap between the fragments amounted to a little more than 2 inches. The joint was distended with blood. Means were adopted to immobilise the limb, bring down the upper fragment, and to prevent tilting. This has proved so far successful, that upon examination today it was found that the interval between the fragments was greatly diminished, not being now more than a quarter of an inch, and the effusion in the joint is lessened considerably. The condition of the illustrious patient is in other respects most satisfactory, and he is bearing the enforced restraint with exemplary patience and good temper.

The question of operation has had the fullest and most anxious consideration by the medical attendants, who after carefully weighing all the circumstances of the case, decided against it. Lord Lister, who saw the Prince and examined the injured part on Thursday morning, fully endorsed this view of the matter. Lord Lister, whose opinion upon any matter involving the question of operation will be received in every quarter as authoritative, expressed himself as perfectly satisfied that the right course of treatment is being adopted. The favourable position of the fracture ends of the bone as disclosed this morning goes far to justify the decision. We would express the fervent hope that this satisfactory progress may be maintained, and that the Prince may eventually regain the power of walking without assistance, though it is impossible to put aside the fear that some lameness or weakness of the limb may remain as a permanent reminder of this unfortunate accident.

PLAGUE AND BANANAS.

In his address to the German Society for Public Hygiene on July 7th, Professor Koch drew attention to a centre of plague in Africa. Students of the history of plague have heard for some time past of this focus of infection, but no definite statement of any real scientific value has hitherto been forthcoming. It however seems certain that in the Hinterland of German East Africa people have been found suffering from plague. Dr. Zulitza made a special expedition to Kissiba, a district adjacent to the Victoria Nyanza Lake, and there found clinical and bacteriological evidence of the presence of plague. In the case of five persons who had died from a devastating disease in this region, the blood and lymphatic systems proved that the cause of death was true bubonic plague. In addition, all the ordinary signs and symptoms of plague were present; 9 out of 10 of the cases died; the disease was communicated to rats and monkeys, and all the usual methods of scientific investigation go to prove that genuine plague prevailed. Hitherto plague was considered never to have reached the equatorial belt; in fact, it was limited to 14 or 16 degrees north of the equator. Uganda is believed to be the region whence the infection spread to Kissiba, and Uganda is situated on the equator itself. Plague is, moreover, held to be endemic in Uganda; the missionaries there having been acquainted with the disease for a long time. This statement is calculated to remove several fallacies into which we had fallen, and the belief that plague could only find a home in the parts of India to the north of 12 degrees of the equator (in other words, the equatorial belt) is shown to be no longer tenable. A further observation made by Professor Koch, namely, that the banana and the banana plantations are the breeding grounds and the means by which plague is spread, will be received with hesitation. Plague exists in countries where banana growing is unknown, and to stamp as pernicious a fruit which is the daily bread of a large section of the human race is a serious matter. Professor Koch holds that plague will not survive the advance of "civilisation." We are not aware what is here meant by civilisation. If it means that plague will not survive good drainage, sanitary surroundings of high perfection, wholesome food, and all the hygienic perfections appertaining to an ideal sanitation, it will be many a year yet before the natives of Uganda or the pigmies in the primæval forest will be able to defy infection. If on the other hand civilisation and the introduction of railways are used as synonymous terms, it must be remembered that frequent and rapid communication seems rather to favour rather than prevent the spread of plague.

BRITISH MEDICAL BENEVOLENT FUND.

The report of this invaluable Society once more shows how large an amount of relief can be afforded to necessitous cases with miserably insufficient funds to meet most urgent need. The amount received from subscriptions in 1897 was £962 6s. 6d., from donations £405 4s. 10d., and with this the Committee have given small sums, either at once or in weekly or monthly doles, to really necessitous cases, where they would willingly have given more. It is not sufficiently recognised that this Society ministers to the

immediate and pressing necessities of applicants, saving them indeed not infrequently from pauperdom or from absolute ruin. The Committee, we know, are most painstaking and thorough in their investigation into the cases brought to their notice, and have too often the distressing experience of having to leave deserving cases unrelieved. It has lately been attempted to rouse up greater interest in the Society by appointing a number of medical men of high standing as vice-presidents. It is hoped by this to make the work of the Society more widely known and secure more generous support. By subscribing 10s. 6d. the privilege of recommending a candidate is secured. The Branches of the British Medical Association are staunch supporters of this charity, and, as will be seen from an announcement elsewhere, the Executive Committee of the Annual Meeting of the Association this year has decided to give a practical proof of their appreciation of its work. Annual subscriptions are the backbone of the "Grants" portion of the work, and more subscribers are urgently needed. The annuity side of the charity is in better case; 107 aged persons, whose ages varied between 80 and 63, received annuities, a few of these reaching £20 per annum. We earnestly commend this Society to the support of all medical men; it wisely and carefully distributes relief at a minimum of expense.

AN UNDERMANNED SERVICE.

WE learn that the various regimental districts at home, which have for some years been constantly suffering from a dearth of medical officers and trained men of the corps, have recently been still further denuded in consequence of the approaching campaign in the Soudan. Some forty medical officers and six hundred men of the corps have recently proceeded to Egypt, and the numbers now in that country is quite unprecedented. This is no doubt in large measure due to the great length of the line of communications, which necessitates the establishment of a series of stations and hospitals, while at the same time medical officers must be provided for each convoy of sick and wounded. The denudation of districts at home has, of course, thrown a great strain upon those left. The rejoining of men from the medical reserves, which has just been sanctioned, will no doubt tend to relieve matters, but it is high time the Royal Army Medical Corps was brought up to a strength, both officers and men, sufficient to cope at least with ordinary duties. Were a big war to break out, its condition would indeed be serious.

KINGSBURY *v.* HOWARD.

THE case of Kingsbury *v.* Howard, which occupied the attention of the Probate Court for five days, and came to an end by a verdict in favour of the plaintiff on July 19th, has attracted a great deal of public attention, and has been watched with special interest by the medical profession. Shortly stated, the case for the defence was that a provision in the will of Mrs. Harriet Howard making Dr. Kingsbury, of Blackpool, residuary legatee had been obtained by the exercise of undue influence. The amount involved was stated to be about £30,000. The fiduciary relation which exists between a medical man and his patient is fully recognised by the medical profession, and it is satisfactory to find that the jury has exonerated Dr. Kingsbury from the charge of using undue influence, and has found in favour of the will. The case of the defendant, who was the son of the testator, rested largely upon the assumption that Dr. Kingsbury had obtained a peculiar influence over the patient by reason that he had hypnotised her. Dr. Kingsbury, while he admitted that he had on a number of occasions attempted to hypnotise the testator, said he had not succeeded in doing so, and in any case it appeared that the last attempt to hypnotise was in September, 1894, whereas the will was dated more than three years later. Even assuming that the lady had been hypnotised, this long interval would make a considerable call upon the credulity of the most convinced believer in the effectiveness of suggestion made in the hypnotic state. The contention might, perhaps, be admitted by some students of hypnotism in France, but it would be altogether rejected by the great bulk of the medical profession who had any experience in these matters. That this line of defence should have been taken, however, illustrates one of the dangers attending the practice of hypnotism. Reference was made during the proceedings in the Probate Court to the report of the Committee on Hypnotism appointed by the British Medical Association. The facts as to the proceedings of this Committee were briefly recapitulated in the BRITISH MEDICAL JOURNAL of February 19th, 1898, p. 513, and in the following issue of the JOURNAL Dr. Kingsbury added some explanation as to his own position. We will merely recall that the report when first presented was referred back to the Committee, and that when again presented with an appendix of some documentary evidence to the next following annual meeting the report was received and the Committee thanked for their services, but the report was not adopted and has not since been adopted by the Association.

MEDICAL HEROISM AND ITS REWARD.

WE mentioned last week that Sir Walter Foster had brought the act of gallantry performed by Surgeon-Lieutenant Hugo in the campaign on the Indian frontier under the notice of the Secretary of State for India. Lord George Hamilton in reply stated that Surgeon-Lieutenant Hugo, "for his services in the late campaign, has received the decoration of the Distinguished Service Order." This is an excellent illustration of what Carlyle would have called the "thin official manner." Let us recall the act which is considered by the Secretary of State for India to be sufficiently recognised by a decoration which in these days is showered about after a campaign almost as liberally as a mention in despatches. Lieutenant Ford was dangerously wounded in the shoulder and was bleeding to death from the bullet having cut the main artery, when Surgeon-Lieutenant Hugo came to his aid. The fire was too hot to permit lights to be used to examine the wound, and there was no cover; nevertheless, the surgeon struck a match and examined the wound. The match went out amid a splutter of bullets, which kicked up the dust all round, but by its uncertain light he saw the nature of the injury, and seized the bleeding artery, and, as no ligature was available, he remained for three hours under fire holding the vessel between his finger and thumb. When at length it seemed that the enemy had broken into camp he picked up the officer, who was unconscious from loss of blood, and bore him into a place of safety without relaxing his hold of the artery. Now, we say it with all deliberation, none of the many deeds of valour done by our soldiers in the Indian campaign equals that of this young medical officer, either in courage or in devotion to duty. Fighting men have the fierce joy of combat, and the excitement engendered by "the pride, pomp, and circumstance of glorious war," to stimulate and support them. Non-combatants have none of these adventitious aids to heroism. They must be obscurely brave without the cheers of comrades, and they must be content to fall without glory. Theirs is the very highest and truest courage, and it is deplorable that military etiquette, or official pedantry should be allowed to stand in the way of its being properly rewarded. If ever anyone deserved the Victoria Cross it is the man who did the splendid deed above recorded.

ANTISEPTIC SURGERY IN THE FIELD.

The field medical equipment for the British Army has recently been revised, and explanations and instructions on this head were promulgated in Army Orders issued this month. Many of the alterations are in the direction of increasing the facilities for carrying out antiseptic and aseptic surgery in the field. An antiseptic case has been added, and will replace one of the field fracture boxes hitherto allotted to bearer companies and field hospitals. A considerably larger supply of antiseptic dressings of the most modern kind has been added. All the surgical instruments are constructed with metal handles, and are capable of being rendered aseptic, while field sterilisers have been added to both field medical and field surgical panniers. The old-fashioned splints have been entirely abolished and replaced by perforated zinc, which, with the aid of an anvil, a hammer, copper rivets, and shears, can at once be made and adapted to each individual case. All field medical units are now supplied with operating tables, and the amount of anæsthetics carried has been largely increased. A further modification is the extensive adoption of compressed drugs in the form of tablets or tabloids. A sufficient quantity of the new equipment has been procured to meet the requirements of one army corps and one cavalry brigade; the whole field army will be provided with the new equipment at a later date.

THE INVESTIGATION OF MALARIAL DISEASES.

We learn that the Royal Society, recognising the importance of the scientific study of the causes of malaria and its mode of distribution, and having regard especially to the researches of Surgeon-Major Ross, of the Indian Medical Sevice, into the relation of the mosquito to the malarial parasite, have appointed a small Committee to consider the subject, and to confer with a Committee appointed by the Colonial Office. The Royal Society, we understand, contemplate voting a sum of money for the prosecution of researches in India and Africa, and it is anticipated that the Colonial Office will make a similar contribution. It is proposed that a small Commission, consisting of two medical men and one entomologist, should be nominated to proceed at first to India and afterwards to West Africa to make the necessary researches on the spot.

CYRANO DE BERGERAC AND THE DOCTORS.

The hero of M. Rostand's interesting play now being performed at the Lyceum was in real life a man of versatile talents, and in the intervals of love-making, fighting, and miscellaneous scribbling he found time to bestow some attention on scientific subjects. As is well known, Molière, who acted on the principle of "taking his property wherever he found it," not only borrowed ideas from Cyrano de Bergerac, but conveyed whole scenes from his plays. Whether it was from the same source that the great comic dramatist of France took his dislike of doctors we are not prepared to say, but it is clear that on this subject also Cyrano de Bergerac might have given him hints. Among Cyrano's writings there is a curious letter in which he criticises the faculty as bitterly as the author of *Le Médecin malgrè lui* himself. Writing in the character of a patient who has been condemned by the doctors, he says that, like a malefactor in the hands of the executioner, he felt inclined to make a last dying speech. Fever and the "drugger" hold the knife to his throat, the latter telling him meanwhile it is nothing, while informing everybody else that he cannot get well unless by a miracle. He professes, however, not to be disturbed by the gloomy predictions of the doctors, for it is one of their tricks to condemn all their patients to death, in order that if anyone chance to escape, they may attribute the cure to their skill, while, on the other hand, if they die, they can point to this as a proof of their insight. When he tells the leech that he has had a "lethargic syncope" which lasted nearly an hour, the doctor sagely replies that it is a good sign; a flux of blood is declared to be the best thing that could happen; when cold, as in the case of Falstaff, creeps from the feet to the knees, "and so upward and upward, and all as cold as any stone," this is triumphantly pronounced to be the effect of the medicines which have been given to reduce the fever. So, cries the unfortunate patient, *A force de me bien porter, je me meurs!* He recommends patients whose health has been undermined by medicine to turn doctors themselves, so that they may have a chance of revenge if a sick physician falls into their hands. Such a horror of the faculty has Cyrano that he says that even to dream of having seen a doctor is enough to give a man fever. In this, however, he is not original. Fifteen centuries before, Martial, in announcing the fact that Andragoras was found dead in bed after a joyous supper on the previous night, says:

> Tam subitæ mortis caussam, Faustine, requiris?
> In somnis medicum viderat Hermocratem.

Doctors in Paris used to make their rounds on mules, clothed in long gowns with white bands. Cyrano says that when he sees one on his bony beast, clad as it were in a winding sheet, it gives him the idea of a coffin with Death astride it. The jests about bleeding, purging, physicking and dieting anticipate everything that has been said on the subject since, the enema syringe, as was inevitable, supplying matter for much play of the *esprit Gaulois*, the characteristic of which is nastiness unredeemed by wit. Apart from this, it must be admitted that Cyrano's wit is not of first-rate quality, and it is not known that he had personal reason, as Molière had, to hate the medical profession. In spite of his disorderly life, he made a good end. Let us hope that, among his other faults, he repented his evil speaking against the doctors.

MATCHES WITHOUT YELLOW PHOSPHORUS.

In a letter recently published in one of the daily papers attention is drawn to the possibility of making a "strike anywhere" match without the use of yellow phosphorus. If the head of an ordinary "safety" be dipped in the paste which is put upon the sides of the match box, and which contains red phosphorus and sulphide of antimony, the match will be found capable of igniting upon any surface. Since the question of match poisoning is so much before the public at present, any suggestion that will contribute to a satisfactory solution of the problem of the prevention of phosphorism is welcome. It is said that even a Bryant and May's safety match can be made to ignite apart from rubbing it against the paper on the box. If the match is dry and it is quickly and deftly made to strike upon a dry and perfectly even surface it will catch fire. The match suggested by Mr. Cunynghame, the writer of the letter to which we have referred, is made from red phosphorus, which is generally admitted to be harmless. Since the publication of his letter it is more than probable that several experiments have been made on the lines stated therein. We mentioned recently that the Belgian Government had offered a prize of £2,000 to the inventor of a "strike anywhere" match containing no yellow phosphorus. The conditions under which the offer is made have been published in the *Labour Gazette* for this month. It is required that the match shall be a "safety" at every point, both to the worker and to the user; it must not ignite in the pocket, must be capable of transport, and of being warehoused. It must also be shown that the matches can be made upon a practical manufacturing scale, and as a test of this the inventor binds himself to produce one million matches under the inspection of the Commission of Industry on Belgian territory. The offer remains open until January 1st, 1899. Meanwhile, the Belgian Government insists that the maximum amount of yellow phos-

phorus allowed in match paste must not exceed 8 per cent. In Holland and Switzerland dangerous trades are receiving similar attention to what is being given to them in England, and in the report of the Factory Department of Germany, just published, several trades which have been receiving the consideration of the Departmental Committee of the Home Office have been scheduled by Germany as dangerous.

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

THE Royal Commission on Sewage Disposal held three meetings last week. The Committee, it will be remembered, was appointed to inquire into the conditions which should govern the selection of a method of dealing with sewage in relation to its nature and volume, and to the population to be served. The Commission was also instructed to make recommendations with reference to the treatment and disposal of sewage. The members of the Commission who attended the meetings last week were Lord Iddesleigh (Chairman), Sir Richard Thorne, F.R.S., Professor Foster, F.R.S., Professor Ramsay, F.R.S., General Carey, Dr. Russell, Colonel Harding, Mr. Killick, Mr. Cotton, and Mr. F. J. Willis (Secretary). The witnesses examined were Mr. Deane of the Local Government Board for Ireland, and Mr. Murray of the Local Government Board for Scotland; Mr. Tatton, Mr. Scudder, and Mr. Wilson, on behalf of the Mersey and Irwell Rivers Board; Mr. Naylor, on behalf of the Ribble Rivers Board; and Mr. Trevor Edwards and Dr. Wilson on behalf of the West Riding Rivers Board. It is stated that the Commission will not hear further evidence for the present, but that a series of bacteriological and chemical investigations will be carried out for it during the recess.

THE CHAIR OF PUBLIC HEALTH AT EDINBURGH.

AT a meeting of the University Court held on Monday, July 18th, Charles Hunter Stewart, M.B., D.Sc., F.R.S.E., was elected to the Bruce and John Usher Chair of Public Health in the University of Edinburgh. The new professor is 43 years of age. After being trained in the house of Messrs. Duncan Flockhart and Co., he in 1876 entered the University of Edinburgh, bent on the study of physical and experimental science. In 1880 he was awarded the Hope Prize Scholarship in Chemistry; in 1882 he took the degree of B.Sc. in the Physical Experimental Sciences; in 1884 he took the degree of M.B. and C.M., and in the same year was awarded the Mackay Smith Scholarship in Chemistry. In 1885 he was appointed University Assistant to Sir Douglas Maclagan, and aided him in organising the new Public Health Laboratory. In 1894 he received the degree of D.Sc. in Chemistry. At various times and in various ways he has given valuable help to his chief, Sir Douglas Maclagan, and since his appointment in 1885 he has been Assistant in the Department of Medical Jurisprudence and in the Public Health Laboratory. For some years he has been an Examiner in Public Health to the Royal College of Physicians of Edinburgh. He has studied at the Hygienic Laboratories of Munich and Amsterdam, and in the Pasteur Institute. He has devoted much of his time to research in subjects connected with the scientific and practical aspects of public health. His work has been mainly in the laboratory.

CONSTRUCTIVE MURDER.

THE answer which the Attorney-General gave to a question by Mr. Pickersgill in the House of Commons last week will be generally welcomed as a definite and authoritative expression of opinion upon the question of constructive murder. Mr. Pickersgill asked the Attorney-General whether he would introduce an amending Bill to provide that a person who, without an intention to injure, killed another by a felonious act not likely in itself to cause death or grievous bodily harm, might be regularly convicted of manslaughter, and not of murder. Sir Richard Webster expressed the opinion that there was no need for any such amending Bill, since the law, as he had expressed it in the Collins case, had been laid down more than once by distinguished judges charging the jury. This deliberate and public statement, made in his official capacity in Parliament by the Attorney-General, though not binding on judges, coroners, or magistrates, must yet influence them directly as well as indirectly through public opinion. It will also directly influence Crown prosecutors whose official head is, in fact, the Attorney-General for the time being. Sir Richard Webster stated that the law had been laid down more than once by distinguished judges, and in an article published in the BRITISH MEDICAL JOURNAL of July 9th the view of one of the most distinguished of these judges was quoted. Still, the fact remains that the view has not been adopted by writers and commentators of the highest authority. There is no doubt, however, that the milder, and let us say juster, view now laid down by the Attorney-General is in consonance with the present attitude of public opinion. Juries, in fact, would decline to see "malice aforethought" in such offences, and if the question for them were guilty or not guilty of murder they would be strongly disposed to find a verdict of not guilty, which would let the prisoner free.

RECEIVING HOUSES FOR MENTAL DISORDERS.

A "SCHEME for providing receiving houses," etc., now under the consideration of the London County Council, offers the prospect of a most important advance in the treatment of mental diseases. The scheme recommends that receiving houses should be established in convenient districts of the metropolis, for the temporary observation and treatment (1) of alleged lunatics; (2) of certified lunatics detained by suspension of reception order pending removal to an asylum; (3) of certified lunatics whose removal is suspended by medical certificate as to unfitness; and (4) of cases detained by medical certificate or order of justice (under section 24 (1) of the Lunacy Act). The reception house, it is suggested, might be deemed an asylum for the purposes of administration, but lunatics should not be received in it on a reception order. The designation of the receiving house, it is proposed, should be unconnected with either the county asylum or workhouse, so that the stigma either of lunacy or pauperism would be avoided. The receiving houses, it is proposed, should entirely supersede present workhouse lunatic wards. The continuance of the existing twenty-nine lunatic wards would obviously be no longer necessary or desirable. The advantages of these reception houses are many and striking. The concentration, for example, of the twenty-nine lunacy workhouse wards into a much smaller number will give opportunities for great improvement in organisation. The medical staff of these receiving houses should consist of men specially qualified by experience in lunacy to hold such appointments, and they should have the assistance of, or the power to obtain the aid of, other specialists. In this way the effective treatment of the early stages of mental disorder would be greatly facilitated, and there can be little doubt that many cases of incipient mental disorder which now run a protracted course, requiring asylum treatment, would be arrested. The reception houses, established in Australia by Dr. Norton Manning many years since have worked most successfully. There are many other advantages in the administration of assistance to lunatics. In the first place it would admit of an adequate system of inquiry in the initial stages of mental disorder in regard to social position, and would thus avoid the injustice now frequently occurring of classing and treating individuals as paupers who are not so. The *primâ facie* settlement of actual paupers would also be obtained at the outset, and errors of classification avoided, both saving costly removals from one institution to another

which now occur with great frequency. The clashing of applications for admission to the asylums, and many other smaller difficulties of procedure, would be also obviated. The police cell also, which is now a frequent channel for admission to asylums, would, it is to be hoped, be rarely used, and the friends of patients who now delay in seeking early aid, owing to repugnance to the pauper lunatic ward, would be much less reluctant to seek the help of a *quasi*-public hospital with a name not necessarily indicating lunacy in its patients. The liberal and advanced views of the London County Council in lunacy matters makes it very probable that this most important element in the success of the reception houses will not be wanting, and we hope, therefore, at no distant date to see this important development carried out by the legislative power which the Council purposes to obtain from Parliament.

UNLABELLED TINNED FOODS.

The Coroner of Leicester, at a recent inquest on a child whose death was attributed to eating tinned salmon stated to be in a state of decomposition, is reported to have expressed the opinion that all tinned meat, fish, or fruit should be properly stamped. The absence of a proper label from a tin is certainly a circumstance which should raise suspicion, and we are inclined to agree with the coroner that such absence should be made illegal. Meantime the public can, if they will, largely protect themselves by declining to purchase canned foods not guaranteed by a legible label. We lately drew attention to the care of the Canadian Government for the tinned salmon industry. Would it not be well if they went a step further, and enjoined a special label upon those exporters who conform to the conditions of pasteurisation, etc., prescribed in their valuable report?

MEDICAL CHARITIES.

The Executive Committee of the Annual Meeting of the British Medical Association to be held next week in Edinburgh has, we understand, decided that the proceeds of the collection at the opening service in St. Giles' Cathedral on Tuesday are to be divided between the Royal Medical Benevolent College, Epsom, and the British Medical Benevolent Fund. These two great charities are peculiarly deserving of the support of the medical profession, and the public and official recognition thus made of the value of their work encourages the expression of a hope that members will attend the service in large numbers and contribute liberally.

STREET NOISES.

We are glad to see that at the discussion by the London County Council on July 19th of the further by-laws for regulating street noises a more reasonable spirit prevailed than on the previous occasion, when the first of the new by-laws which would have checked the present habit of unlicensed hawkers of howling in the streets was under discussion. A by-law forbidding the working of steam organs, or other musical instruments by mechanical means, to the annoyance or disturbance of residents or passengers was adopted without discussion. A third by-law, prohibiting the keeping of any noisy animal so as to cause a serious nuisance to residents in the neighbourhood if three householders residing within hearing of the animal make a written objection, led to some discussion. One member of the Council made the supremely ridiculous suggestion that the restriction would endanger the supply of new laid eggs! It is a pity that Carlyle is not alive to express his opinion upon this gentleman's political economy. Another member thought that the Council should guard against handing over the welfare of London to "a lot of cranks" and the Council coinciding with this principle, but differing from its peculiar application by the gentleman in question, adopted the by-law by a large majority. We must be thankful that the majority of "cranks" who were found to believe that the convenience and will of most people did not object to the yelling of unlicensed hawkers disappeared when it became a question of the steam hurdy-gurdy, and we may live in hopes that eventually the noise-loving "crank" will disappear from the London County Council.

DUNDEE UNIVERSITY COLLEGE.

At the meeting of the University Court of St. Andrews on July 15th Dr. Alexander Mitchell Stalker, Physician to the Dundee Royal Infirmary, was appointed Professor of Medicine, and Dr. David MacEwan, Surgeon to the same infirmary, was appointed Professor of Surgery in Dundee University College. The Court resolved to advertise for applications for the Chair of Midwifery. At the same meeting Dr. Charles Templeman was appointed to the Lectureship in Forensic Medicine and Public Health at Dundee University College. Dr. David Fraser Harris was appointed Lecturer in Physiology and Assistant to Professor Pettigrew.

We have reason to believe that the new military titles will shortly be made applicable to officers of the Indian Medical Service.

It has been decided that the monument to Professor Charcot will be formally unveiled at the Salpêtrière in Paris on October 23rd.

Dr. Watt Black, after a service of nearly thirty years, has resigned the appointment of Obstetric Physician to Charing Cross Hospital, and has been succeeded by Dr. Amand Routh.

The last issue of the *London Gazette* contains the announcement of the appointment of Sir William Henry Broadbent, Bart., M.D., F.R.C.P., to be one of Her Majesty's Physicians Extraordinary, in the room of the late Sir Richard Quain.

It will interest readers of Dr. R. W. Philip's paper on the Open-air Treatment of Pulmonary Tuberculosis, which is to be found at page 217 of this issue, to know that the Victoria Hospital for Consumption, Edinburgh, will be open to the inspection of members attending the annual meeting of the British Medical Association next week.

At a recent meeting of the School Board for London, Mr. Costelloe moved that the General Purposes Committee should consider the subject of underfed school children and the efficacy of the voluntary provision of school meals. We have already expressed our conviction of the futility, not to say danger, of stimulating by educational processes a brain the reaction of which is habitually feeble owing to impoverishment of blood, and we could be glad if the Board, which adopted Mr. Costelloe's proposal, would do all in its power to further the work of the voluntary agencies which endeavour to improve the physical nutrition of the poor children in their schools.

Dr. Ribemont-Dessaignes, who has just been elected a member of the Académie de Médecine in succession to the late Professor Tarnier, is Physician to the Maternity Department of the Beaujon Hospital and the author of numerous contributions to medical literature, chiefly on obstetrical subjects. He was born at Vendôme in 1847, and took his doctor's degree in Paris in 1878 after an academic career of remarkable distinction. His thesis on the Anatomy of the Fœtus was illustrated by 30 folio plates, containing 78 drawings of frozen sections drawn by his own hand. Dr. Ribemont-Dessaignes is, like his fellow academician, Dr. Paul Richer, almost as distinguished in the art of sculpture as in medicine. Many productions of his chisel have been exhibited in the Salon.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENTS.]

The Habitual Inebriates Bill came before the House late on Monday night, and was amended in some particulars. The most important was a clause to enable authorities to recover the expenditure on well-to-do persons committed to reformatories. There was really no discussion or opposition to the Bill, and by the consent of the House the third reading was taken. The Bill may now be regarded as safe to find its way on to the Statute Book.

The Vaccination Bill was made the first order for Tuesday, and gave rise to one of the most interesting and exciting debates of the session. A motion was first made by Mr. Pickersgill to postpone the consideration of the Bill for six months. On this Sir Henry Fowler, as former President of the Local Government Board, made a very strong speech, in which he reviewed the history of vaccination legislation, and showed how the compulsory powers had always vested some discretion in the magistrates. He argued that the time had come when a statutory declaration of conscientious objection should be accepted as a bar to proceedings. The motion for postponement was afterwards withdrawn, and Sir Walter Foster moved his new clause, which embodied the amendment which he moved in the Grand Committee, providing for the acceptance of a statutory declaration of conscientious objection as an excuse for non-vaccination of a child. The debate went on till nearly midnight, and of twenty-three speeches delivered only two were made against the proposal. The remarkable feature of the position was the support given to Sir W. Foster's clause from the Government side. The result was considerable perturbation on the Government front bench, and after much consultation an attempt was made at a compromise. As soon as this became known, the stir in the House and lobbies became most characteristic, and although the speeches went on, the centre of interest was directed to the consultations going on between the Whips and the Leader of the House. At last Mr. Balfour rose, and in a remarkable exhibition of dialectical discourse led up to the offer to put a clause on the paper embodying the principle of Sir W. Foster's amendment. On this the debate was adjourned to Wednesday, when the new clause was accepted as the basis of discussion. Sir Walter Foster was unable to accept the exact form of words proposed by the First Lord, as he regarded the requirement that the conscientious objector should "satisfy the magistrates" as likely to lead to great diversity of practice in different places. In one the magistrates might examine the parent as to his grounds of objection, and in another place the proceedings might be purely formal. The Government clause was finally adopted on a division by a comparatively small majority for the Government, and compulsory vaccination as regards persons who hold *bonâ fide* objections was practically abolished. The main basis for the change is the desire on the part of members on all sides of the House to discontinue as far as possible the prosecutions which have done so much to keep alive the agitation against vaccination. The widespread hope is that the new glycerinated calf lymph will now have a fair chance, and that the many baseless objections to the great prophylactic against small-pox will steadily disappear.

The following is the text of the clause :—

No parent or other person shall be liable to any penalty under section twenty-nine or section thirty-one of the Vaccination Act, 1867, if within four months from the birth of the child he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices of such conscientious objection.

The Bill completed the report stage about half-past five, and Mr. Balfour asked for the third reading, but after some discussion this was postponed till Thursday.

The London University Commission Bill has had two more contentious days in the Grand Committee and was finally reported to the House on Tuesday last. No very serious amendments have been made in the Bill, but on the report stage the fight will be renewed. The opponents of the measure are exhibiting great energy and are in evidence in many ways. It is quite possible that the interest taken in the progress of other Bills is to some extent accounted for by the desire of those who are opposed to the Criminal Law Amendment Bill and the University Bill to occupy a good share of the time at the disposal of the Government. These tactics are always resorted to in some instances towards the close of the session.

REPORT OF THE ARMY MEDICAL DEPARTMENT.—The report for the year 1897 concerning the Army Medical Department, vol. xxxix, has been laid upon the table in both Houses.

LEAD POISONING.—Mr. Drage asked the Home Secretary whether he could give any statistics showing the effect of employment in the dangerous processes in potteries on the health of women and their children as well as on the health of young persons.—Sir M. W. Ridley : I am not sure that I understand what kind of statistics the hon. member has in his mind. There are many recorded instances which amply prove that in the pottery trade, as elsewhere, the occurrence of lead poisoning in the mother is capable of producing grave effects upon the child. The total number of reported cases of lead poisoning among women and girls engaged in the manufacture of earthenware and china during the two and a-half years since the Act of 1895 came into force is, women, 528 ; girls, 63 —a yearly average of about 230—the number of females employed in Staffordshire being 20,705.—Mr. Woodall : May I ask the right hon. gentleman whether he will consider the practicability of informing the House as to the proportion of cases in which lead poisoning has been certified by a medical practitioner whose report has afterwards been found to be unfounded ? Sir M. W. Ridley : Every information of that kind I am now endeavouring to obtain. It is a very difficult question, but I will bear it in mind.

RETIRING AGE OF ARMY MEDICAL OFFICERS.—Captain Norton asked the Under Secretary whether he could state if officers of the Army Medical Staff were obliged to retire at an earlier age than combatant officers, although they entered the Army several years older on an average. Whether the rule regarding promotion to the rank of Major-General had been applied to medical officers to the extent that they were ineligible for promotion after attaining the age of 57. And why the rule permitting all Major-Generals to serve on to 62 was not also made applicable to all Surgeon-Generals, seeing that such an extension of service would be economical to the State. Mr. Powell Williams in reply said : In the combatant ranks Colonels retire at 57 years of age and Major-Generals at 62. In the Army Medical Staff the age of 60 holds for both ranks. The medical officers have, therefore, the advantage of three years in one rank, while they lose two years in the other. Medical officers are not ineligible for promotion to the rank of Surgeon-General after the age of 57 if recommended by the Promotion Board as possessing exceptional abilities. As a general rule, however, promotion to the rank of Surgeon-General is only given to officers who have at least three years to serve. The Secretary of State is advised that, having regard to all the conditions involved, it would not be desirable to extend the rule under which Major-Generals are allowed to serve on to 62 to all Surgeon-Generals.

PRIVATE PATIENTS IN PUBLIC LUNATIC ASYLUMS.—Mr. Power asked the Irish Secretary whether, since provision was made in Great Britain for the admission and care of private patients in public lunatic asylums, he would extend in the Local Government Bill or by other legislation this useful provision to Ireland.—Mr. Gerald Balfour, in response, pointed out that by an amendment to Section IX, Subsection 6, of the Local Government Bill, introduced in Committee, power was given to county councils through the Asylum Committee to make regulations respecting the conditions as to payment and accommodation under which private patients might be admitted and detained in the asylum.

REPORTS OF LUNACY COMMISSIONERS.—Mr. Patrick O'Brien asked the Home Secretary if he could state when the Lunacy Commissioners would issue their reports for 1897 for England, Scotland, and Ireland respectively.—The Home Secretary, in reply, said that he had made inquiry of the different departments concerned, and was informed that all the reports were in the printers' hands, and would be ready for issue within the next two or three weeks.

TREATMENT OF INEBRIETY IN AMERICA.—In his report of the Walnut Lodge Hospital for Inebriates at Hartford, Connecticut, U.S.A., for last year, the experienced Superintendent, Dr. T. D. Crothers, calls attention to the difficulties in the way of permanently successful sound treatment. The chief of these is the mistake of supposing that inebriety can be cured in a few weeks. The subsidence of the drink craze is not a cure or return to health, but is usually chemical restraint or a pathological halt in the progress of the case. Of the 80 cases under treatment, 38 were periodical and 23 continuous inebriates, 5 opium, and 3 cocaine drunkards. Heredity was traced in 38 cases; 10 of the patients were doctors, contributing the largest numbers; 47 had been in gold cure places; 13 in hospitals and sanatoriums; and 20 had never been treated before. The duration of the addiction had been considerable: 8 from five to ten years, 36 from ten to fifteen years, 24 from fifteen to twenty years, and 12 over twenty years. As a result of treatment 35 recovered and were restored and 43 improved.

THE LOCAL GOVERNMENT (IRELAND) BILL.

WE regret that we cannot, without serious qualification, join in the chorus of congratulation which greeted the Chief Secretary for Ireland at five o'clock on the morning of July 15th, when the Local Government (Ireland) Bill, as amended, was reported by the Chairman of Committees to the House of Commons.

It will be in the recollection of our readers that the Council of the British Medical Association approved four leading amendments to the Bill as originally submitted to Parliament, and that these amendments were recommended and justified in the series of articles on the Bill which appeared in the BRITISH MEDICAL JOURNAL during the spring of the present year.

Briefly stated, these amendments dealt with:

1. The position of county infirmaries in Ireland under the Bill.
2. The qualifications of medical officers of lunatic asylums.
3. The burning question of superannuation of Poor-law medical officers; and, above all,
4. The relation of the county councils to the sanitary organisation of the country.

The position of the county infirmaries under the Bill is assured. Provision has been made for a continuance of the grants of public money to these useful institutions, without which their beneficent work must have come to a standstill; and, as is proper under the circumstances, full representation on the governing body of each infirmary has been secured for the county council which finds the money for the upkeep of the establishment. Further, the rights and privileges of existing officers of the infirmaries have been safeguarded, with perhaps the single exception of the Meath Hospital, the physicians and surgeons of which many years ago surrendered their salary on the understanding that they were to have the right of co-opting to vacancies on their staff. That understanding was ratified by Act of Parliament, but is not specifically provided for in the Bill as it stands. However, this is more a personal matter than one of prime public importance.

As to the qualifications of medical officers of lunatic asylums, Clause 64, Subclause (2) now reads thus:

> Every resident medical superintendent shall be a registered medical practitioner of not less than seven years' standing, and shall have served for not less than five years as a medical officer or assistant medical officer in an asylum for the treatment of the insane, and every assistant medical officer shall be a registered medical practitioner.

As regards the subject of compulsory superannuation of dispensary and workhouse medical officers, the Bill leaves the matter practically where it was, and so perpetuates a grave injustice.

But it is in reference to sanitation that we feel constrained to arraign the Government. In the Bill introduced into Parliament there was nothing to connect the proposed county councils in any way with the sanitary organisation of the country. Independent public opinion in and out of Ireland agreed that the county councils should have the power, either singly or in conjunction with other county councils, of appointing a medical superintendent officer of health, specially trained, the possessor of a recognised and registrable diploma in Public Health, who should receive a salary which would render him independent of private practice.

The provisions for such an appointment had already been enacted in the English Local Government Act, and needed only trivial alterations to render them applicable to Ireland. The Royal College of Physicians of Ireland, the Royal College of Surgeons in Ireland, the Dublin Sanitary Association, the Dublin Branch of the British Medical Association, and the Council of this body, acting on the initiative of the Parliamentary Bills Committee, one and all urged upon the Government the necessity of adopting such a clause.

This the Government actually did, but in an evil hour the backers of the Bill handicapped the amendment by proposing the following subclause, to apply where a county council appointed a medical superintendent officer of health:—

> So long as [illegible] is in force in any district, there need be no other medical officer of health in that district, and in that district the officer of the dispensary district shall, if the district council so direct, cease to be medical officer of health, and the office of any such person holding office as a medical officer at the time of the direction shall be deemed to be abolished within the meaning of the Union Officers (Ireland) Act, [illegible], and such person may obtain compensation accordingly.

The object of the original amendment was to improve and develop sanitary organisation by providing independent expert opinion and supervision. All who proposed it fully recognised the useful part which is played by the dispensary medical officers throughout Ireland acting as medical officers of health for their respective dispensary districts under Section XI of the Public Health (Ireland) Act of 1878. There are many important duties which they can discharge, such as the detection in their daily rounds of sanitary defects, outbreaks of disease, and such like. By the appointment of county medical officers of health, the hands of the dispensary medical officers would be strengthened in the performance of the duties imposed upon them by the Public Health Acts. The county medical officers of health would possess full executive powers, and by their administrative and professional standing would be in a position to save the dispensary medical officers from any odium which might attach to them as the result of a conscientious discharge of their duties. The object of the Government in suppressing the local medical officers of health would appear to have been to divert the wretched salaries paid to them as such to make up the sum required for paying the county health officer an adequate salary. Suppose four counties joined in the appointment of the medical superintendent health officer, surely £200 a year could easily be raised by each county so as to pay him £800 per annum without meddling with the £5, £10, or £15 a year which represents the salary paid to the dispensary medical officers in respect of their health duties.

Convinced apparently by such considerations as the foregoing, the Government changed their position, and proposed the following alternative clause:

> Clause K (after Clause 56 insert the following clause):
> (1) A county council may, if they think fit, submit to the Local Government Board a scheme providing for the appointment of a county medical officer of health, and determining the qualifications, tenure, and conditions affecting his office, and the powers and duties of such county medical officer, and of the district medical officer of health, and of all other sanitary officers in the county; and such scheme, when approved by the Local Government Board, shall have full effect, subject to amendment or revocation of any other scheme made by the county council with the approval of the Local Government Board.
> (2) The Local Government Board, before giving their approval, shall hear in opposition any district council concerned who desire so to be heard, and may modify the scheme by excluding the district of any such council either wholly or in part.
> (3) While any such scheme is in force in any county district, there shall be no medical superintendent officer of health or consulting medical officer in that district, and any person holding either of these offices in the district at the time of the scheme coming into force, shall, if not employed under the scheme, be entitled to compensation as if his office had been abolished under the Union Officers (Ireland) Act, 1885, and the amount of such compensation shall be paid by the council of the district.
> (4) If it appears to the county council from any report of the county medical officer, or otherwise, that any provisions of the Public Health Acts have not been properly put in force within any district in the county, or that any other matter affecting the public health of any district requires to be remedied, the council may complain to the Local Government Board, and such complaint, if referring to any matter mentioned in Section XV of the Public Health (Ireland) Act, 1896, shall be deemed to be a complaint within the meaning of the section.

Sanitary reformers in Ireland could not accept subclauses (1) and (2) of this new clause as likely to provide that personal independence and that supervision over subordinate officers which, in the opinion of sanitary experts, are essential for the efficient carrying out of sanitation.

In the first place, the proposed subclauses would, if enacted, lead to endless variety in the mode of appointment, specification of duties, and terms of office of the county medical officers, with the inevitable result that all would be thrown into confusion. No one should be appointed county medical officer of health who has not been specially trained, or educated and examined in State Medicine or Public Health. Except in the case of an already experienced medical officer of health, the knowledge of a candidate for the high post proposed to be created should be testified to by the possession of a registrable qualification in these subjects within the meaning of Section XXI of the Medical Act of 1886.

Further, such an officer should devote his whole time to his sanitary duties, and for them he should be recompensed on a sufficiently liberal scale to enable him to forego private practice, or any other means of livelihood outside his special duties. It is also to be remembered that, so long as a medical superintendent officer of health is in any way dependent upon an income derived from private practice or other appointments, he cannot possess that executive power which is

absolutely necessary to give effect to his advice and recommendations in the interest of the public health.

It may be hoped, although we dare hardly expect it, that the House of Lords will have an opportunity of amending the measure with the object of bringing the county councils into definite and close relations with the sanitary organisation of the country on the lines so often indicated in our comments upon the Local Government Bill. This measure is destined soon to be the law of the land, and it is all the more necessary that so golden an opportunity of completing the sanitary organisation of Ireland should not be wantonly or lightly thrown away.

THE WORKMEN'S COMPENSATION ACT.

THE following is a list of Medical Referees under the Workmen's Compensation Act, 1897, who have been appointed by the Secretary of State for England and Wales for certain County Court Circuits, in respect of which the arrangements are for the present complete:

CIRCUIT No. 1.

George Hare Philipson, F.R.C.P., M.D., Newcastle-on-Tyne.
Frederick Page, M.D., Newcastle-on-Tyne.
George Halliburton Hume, M.D., F.R.C.S.Edin., Newcastle-on-Tyne.
Charles Clarke Burman, L.R.C.P., L.R.C.S.Edin., Alnwick.
William Bertie Mackay, M.D., Berwick-upon-Tweed.

CIRCUIT No. 2.

Selby Wetherell Plummer, M.D., Durham.
Thomas Alexander McCullagh, M.R.C.S., Bishop Auckland.
James Murphy, M.D., Sunderland.
Robert Anderson, M.D., Seaton Delaval.
William Mearns, M.D., Gateshead.
Frederick Hughes Morison, M.B., West Hartlepool.

CIRCUIT No. 4.

James Arthur Rigby, M.D., Preston.
Arthur Stanley Barling, M.R.C.S., L.R.C.P., Lancaster.
Leonard Greenham Star Molloy, Blackpool.
John Michael Harding Martin, M.D., F.R.C.S., Blackburn.
Oswald Samuel Wraith, L.R.C.S. Edin., Darwen.
Edwin Moore, M.D., Preston.

CIRCUIT No. 5.

Frederick Blakesley Mallett, M.D., Bolton.
James Corns, M.D., Oldham.
James Holmes, M.D., Manchester.
Joseph Henry, M.D., Rochdale.

CIRCUIT No. 6.

George Gibson Hamilton, F.R.C.S., Liverpool.
Joseph D. Crawford, F.R.C.S.Edin., Liverpool.
Robert Meredith Littler, F.R.C.S., Southport.
Charles Stuart Pethick, M.R.C.S., L.R.C.P., Woolton, Liverpool.

CIRCUIT No. 7.

George Harry Cooke, M.D., St. Helens.
Damer Harrisson, M.R.C.S., Liverpool.
Joseph Collier, F.R.C.S., Manchester.
Herbert Lund, F.R.C.S., Manchester

CIRCUIT No. 8.

William Thorburn, M.D., F.R.C.S., Manchester.
Samuel Buckley, M.D., M.R.C.P., F.R.C.S., Manchester.
Abraham Emrys Jones, M.D., Manchester.
Judson Sykes Bury, F.R.C.P., Manchester.
George Arthur Wright, F.R.C.S., Manchester.
Simeon Holgate Owen, M.D. M.R.C.P., Manchester.

CIRCUIT No. 11.

William Henry Horrocks, Jun., M.R.C.S., Bradford, Yorks.
Henry Johnstone Campbell, M.D., M.R.C.P., Bradford, Yorks.
James Mackenzie, M.D., Burnley.
William Henry Ellis, M.R.C.S., J.P., Shipley.

CIRCUIT No. 12.

Thomas Michael Dolan, M.D., F.R.C.S.Edin., Halifax.
John Crossley Wright, M.B., Halifax.
Alfred Mantle, M.D., Halifax.
Thomas Kilner Clarke, F.R.C.S., M.D., Huddersfield.
Peter MacGregor, L.R.C.P., L.R.C.S. Edin., Huddersfield.

CIRCUIT No. 13.

Rutherfoord John Pye-Smith, F.R.C.S., Sheffield.
Archibald William Cuff, F.R.C.S., Sheffield.
Henry Waytes Pomfret, M.D., F.R.C.S., Manchester.

CIRCUIT No. 14.

William Kitson Clayton, L.R.C.P., L.R.C.S.Edin., Wakefield.
Walter Henry Brown M.R.C.S., Leeds.
Charles James Wright, M.R.C.S., Leeds.
Walter Thompson, F.R.C.S. Leeds.

CIRCUIT No. 16.

John Dickinson Leigh, L.R.C.P., L.R.C.S.Edin., Scarborough.
John Fletcher Horne, M.D., F.R.C.S. Edin., Barnsley.
Charles H. Milburn, M.B., Hull.
Thomas Melancthon Evans, M.R.C.S., Hull.

CIRCUIT No. 17.

William Arthur Carline, M.D., Lincoln.
William John Cant, M.R.C.S., L.R.C.P., Lincoln.
George Skelton Stephenson, M.D., Grimsby.
Arthur Tuxford, M.D., Boston.

CIRCUIT No. 20.

Claude Douglas, F.R.C.S., Leicester.
Frank Montague Pope, M.R.C.P., Leicester.
Thomas William Gordon Kelly, M.D., Leicester.
Joseph Balm Pike, M.R.C.S., Loughborough.
William Newman, M.D., M.R.C.P. F.R.C.S., Stamford.

CIRCUIT No. 21.

Harry Gilbert Barling, F.R.C.S., Birmingham.
William Tuberville Farncombe, M.D., Birmingham.

CIRCUIT No. 23.

Henry Hammond Smith, L.R.C.P., M.R.C.S., Stourbridge.
John Lionel Stretton, L.R.C.P., M.R.C.S., Kidderminster.

CIRCUIT No. 24.

Charles Tanfield Vachell, M.D., Cardiff.
Octavius Edward Bulwer Marsh, M.R.C.S., Newport, Mon.
Samuel Hamilton, M.B., Newport, Mon.
William Taylor, M.D., Cardiff.
W. Edwin Williams, F.R.C.S.Edin., Abertillery, Mon.
William Dyne Steel, M.D., Abergavenny.

CIRCUIT No. 25.

Matthew Arden Messiter, M.R.C.S., Dudley.
Thomas Vincent Jackson, F.R.C.S. Edin., Wolverhampton.
Christopher Atkinson Newham, M.R.C.S., Wolverhampton.
Henry William Langley Browne, M.R.C.S., L.R.C.P.Edin., West Bromwich.
George Arthur Phillips, M.R.C.S., Walsall.

CIRCUIT No. 31.

James Fenton Stamper, M.D., Pembroke Dock.
Evan Evans, Llanelly.
David James Williams, F.R.C.S., Llanelly.

CIRCUIT No. 32.

Hamilton Ashley Ballance, M.D., Norwich.
Michael Beverley, M.D., Norwich.

CIRCUIT No. 33.

Charles Hunter Graham, F.R.C.S. Edin., Lowestoft.
William Alfred Elliston, M.D., Ipswich.

CIRCUIT No. 35.

Walter Gifford Nash, F.R.C.S., Bedford.
Edward Colby Sharpin, L.R.C.P. Edin., M.R.C.S., Bedford.
George Borthwick Mead, Ph.D., L.R.C.P., M.R.C.S., Cambridge.

CIRCUIT No. 40.

Frederick John Smith, F.R.C.P., F.R.C.S., 4, Christopher Street, Finsbury Square.
George Paddock Bate, F.R.C.S., 412, Bethnal Green Road.
Bertram Goddard, M.R.C.S., L.R.C.P., 27, Pentonville Road.

CIRCUIT No. 41.

Alfred Herbert Tubby, F.R.C.S., 25, Weymouth Street, Portland Place.
H. Martin Jordan, F.R.C.S., 9, John Street, Adelphi, W.C.

CIRCUIT No. 42.

James Berry, F.R.C.S., 60, Welbeck Street, Cavendish Square.
William Bruce Clarke, F.R.C.S., 51, Harley Street.

CIRCUIT No. 43.

Christopher Heath, F.R.C.S., 36, Cavendish Square, W.
Herbert Campbell Thomson, M.D., 34, Queen Anne Street, W.

CIRCUIT No. 45 (Further appointment).

Felix Charles Kempster, M.R.C.S., 59, Bridge Road, Battersea.

CIRCUIT No. 49.

Thomas Whitehead Reid, M.D., F.R.C.P.Edin., Canterbury.
Charles Parsons, M.D., Dover.
Thomas George Styan, M.D., Ramsgate.
James Vincent Bell, F.R.C.S., Rochester.

CIRCUIT No. 50.

Ebenezer Snell, M.R.C.S., Brighton.

CIRCUIT No. 54.

Bertram Mitford Heron Rogers, M.D., Clifton.
James Paul Bush, M.R.C.S., Clifton.

CIRCUIT No. 58.

J. Raglan Thomas, M.D., Exeter.
John Woodman, M.D., F.R.C.S., Exeter.
John Henry Square May, M.R.C.S., Plymouth.
Charles Hamilton Whiteford, M.R.C.S., Plymouth.
J. Snowden Smith, M.R.C.S., Tavistock.

CITY OF LONDON.

William Murray Leslie, M.D., 23, Fenchurch Street.

ERRATUM.—It should have been stated that the name of the gentleman appointed Medical Referee to County Court Circuit No. 18 was Dr. E. S. Nutting. The name was spelt erroneously in the list published on July 16th.

SIR WILLIAM TURNER, the President of the General Medical Council, has consented to take the chair at the luncheon of the Continental Anglo-American Medical Society, which will be held in Edinburgh at the Balmoral Hotel on Wednesday, July 27th, at 1.15 P.M. Members who intend being present are requested to at once communicate with the Honorary Secretaries for the Luncheon, Drs. George Bull and StClair Thomson, 20, Coates Crescent, Edinburgh.

MEDICAL WAR NEWS.

Yellow Fever at Santiago.

According to the most recent intelligence the total number of cases of yellow fever in the American force at Santiago now exceeds 300. Among the sufferers is General Duffield. The type of the disease is mild, and few new cases occur. There are very few cases in Santiago itself. The total number of deaths up to July 18th is given as 12.

According to information from Spanish sources the total Spanish force in Guantanamo and Caimanera numbers 5,000 men. Only about 3,000, however, are fit for service, yellow fever being rife among them.

Alleged Violation of the Red Cross.

The New York *Medical Record*, referring to reports which have been current in the "yellow" papers as to Spanish troops attacking Cuban hospitals and butchering doctors, nurses, and patients, says that for a long time these reports were thought to be inventions devised in order to arouse sympathy for the Cubans. Now, however, our contemporary adds, any lingering doubts as to the truth of these stories and of the Spanish nation's responsibility have been dispelled by the action of the Spaniards in shooting deliberately upon the American wounded and their bearers at the battle of Santiago de Cuba. All accounts of the battle, it says, agree in stating that the Spaniards paid no respect whatever to the Red Cross flag when flying on the American side. On the other hand, they made no scruple of flying the flag over some of their own most exposed blockhouses in order to protect them from attack. One of their batteries, it is said, was masked by a blockhouse over which the Red Cross flag was flying, and the road leading from General Shafter's quarters on the Rio Sevilla to the front had for two days been infested at various points by sharpshooters who fired deliberately upon the American wounded. A correspondent of the *Sun* states that while he was crossing a stream leading a mule bearing a wounded rough rider five shots were fired at them. The mule was killed, and Dr. Danford, a surgeon in the cavalry and at one time a surgeon under the Cuban Government, was mortally wounded by a bullet passing through his head. A few moments later two other wounded men were shot at the same crossing. According to another correspondent "one of the most horrible features of the war is the dozens of men who have been killed as they lay in litters, and the surgeons, although wearing the emblem of the Red Cross Society on their arms, have been the special object of attack."

Seven Spanish soldiers, who are believed to have been in the band of sharpshooters who fired upon the American ambulances at Santiago and killed Drs. Danford and Troval, have been taken, and it is probable that they will be hanged.

In regard to these charges of deliberate firing on surgeons and bearer parties, it would be well not to accept them unreservedly without conclusive evidence. Such charges were made by both sides in the Franco-German War, and, indeed, in every war since the Geneva Convention was made. War, as a great American general is reported to have told the cadets at West Point, is not "all glory," but "all hell," and individual acts of savagery are sure to be committed, even when it is conducted on the most humane principles.

Reported Yellow Fever in Key West.

According to the *Medical Record* there have been two cases of illness recently at Key West, which it is suspected may have been of yellow fever. One of the patients was a sailor on the *Yankee*, who was removed to the hospital for treatment of appendicitis. While recovering from the ordinary troubles he was taken seriously ill, and died in two days. The other case was in the person of one of the attendants at the Marine Hospital, and the question concerning the nature of his illness was still undecided when he recovered.

Temporary Hospitals.

It is reported that the American Government will establish at Old Point a general hospital, where the sick and wounded soldiers will be brought from Cuba for treatment. Tents will be pitched at Fort Monroe, and every provision will be made for the comfort of the sufferers. Twenty surgeons have been secured for service in the hospital.

Mr. James Armstrong, of New York, has offered the Red Cross Society the use of his country house at Centre Hill, Florida, as a hospital. The house has twenty large rooms, and is built on the highest point of land in the State, about seventy miles from Tampa. It is surrounded by 300 acres of land, and there is an ice-making plant near by.

Mr. Henry M. Flagler has presented to the Red Cross a site for a hospital at Miami, Florida, and has promised to have the first pavilion ready for occupancy within a week, and to construct a second as soon as possible. The use of the hospital, with a full staff of physicians and nurses, will be offered to the Secretary of War by the Red Cross Society.

A Hospital Train.

The Southern hospital train, to be run when necessity arises from Tampa to northern points, consists of two dining cars, ten sleepers, and a baggage car. The sleepers will accommodate 500 men if necessary. One car is arranged as an operating room. The train will be kept at Tampa for the present as a stationary hospital for the sick and wounded, but will be ready at an hour's notice to start north whenever it is thought best to remove the patients to a cooler climate. The Daughters of the American Revolution will keep the hospital train supplied with delicacies for the sick.

Hospital Ships.

Bids are now being received by the purchasing agents of the Charleston navy yard for the furnishings of new hospital ships which are to be fitted out there.

Red Cross Nurses to the Front.

The Red Cross Auxiliary Committee has suggested the sending of 100 nurses and assistants as near to the scene of hostilities as may be practicable, to the end that they may be accessible for service with the least possible delay, and the Relief Committee announces that it is prepared to undertake the entire expense of transportation from New York to Tampa and to such other places as it may be deemed necessary to send these nurses, and their maintenance while in the field and until their return to New York. Fifteen nurses left New York on July 2nd for Cuba, and 11 nurses, 2 physicians, and 2 students on July 4th. Preparations are also being completed to send a ship to the Philippines with relief stores for the suffering which reports recently received declare to exist there.

Regimental Bands as an Ambulance Corps.

The Assistant-Adjutant-General of the United States forces has issued orders to the following effect: that all members of regimental bands will be instructed in hospital drill, and as much of first aid to the injured as is practicable under existing circumstances. To this end all musicians will hereafter report to a medical officer attached to the regiment to which the band belongs for one hour each day for instructions until they are pronounced qualified by the medical officer who instructs them. This arrangement will add largely to the numerical force and efficiency of first-aid bearers upon the battlefield. Practically, the instruction that band members are receiving consists of exercises in the manual of the litter, namely, marchings with the litter, as litter squads, composing a detachment so as to mobilise at a given point; searching for the wounded by scattering the several squads under charge of their respective squad leaders; the proper loading of the litters with the wounded, and their easy convoy to some designated spot, and the placing of the loaded litters in ambulances.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly Council was held on July 14th, 1898, Sir William MacCormac, Bart., in the chair. The minutes of the preceding meeting were read and confirmed.

Death of Mr. Henry Lee.—The Council recorded their deep regret at the death of Mr. Henry Lee, and expressed their sympathy with his widow and family.

Professors and Lecturers.—The following were elected Hunterian Professors: Dr. Leonard Erskine Hill, Mr. Frederick Gymer Parsons, and Mr. Charles Stewart. The subject proposed by Dr. Hill is the Influence of Gravity on the Circulation; that by Mr. Parsons, Joints of Mammals Contrasted with those of Man. Mr. Berkeley George Andrew Moynihan,

who has been appointed Arris and Gale Lecturer, will take for his subject the Anatomy and Surgery of the Peritoneal Fossæ. Dr. Thomas Grigor Brodie the Erasmus Wilson Lecturer, has chosen the Chemical Pathology of some Infective Diseases.

Court of Examiners.—Mr. R. J. Godlee was re-elected a member of the Court. Mr. Howard Mummery was elected a member of the Board of Examiners in Dental Surgery.

Jubilee Institute for Nurses.—Mr. Thomas Bryant was nominated as a representative to serve on the Council of the Institute.

Election of President and Vice-Presidents.—Sir William MacCormac, Bart., was re-elected President; and Mr. T. Pickering Pick and Mr. Howard Marsh Vice-Presidents.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETINGS.

MEETINGS of the Council will be held in the Senate Room, M'Ewan Hall, Edinburgh, on Tuesday July 26th, Wednesday July 27th, and Thursday July 28th, at 9.30 o'clock in the forenoon of each day.

July, 1898. FRANCIS FOWKE, *General Secretary.*

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A MEETING of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

DORSET AND WEST HANTS BRANCH.

THE summer meeting of this Branch was held at Wimborne on July 13th under the presidency of Dr. ALLAN MCLEAN. Twenty-four other members were present.

New Members.—Dr. Arthur Meyrick Meyrick-Jones of Crewkerne and Dr. Tom Pelley of Bournemouth were elected members of the Branch.

Autumn Meeting.—It was arranged to hold the autumn meeting at Yeovil on October 19th.

Discussion.—Mr. CRESPI, Vice-President, advocated that "in view of the exacting nature of medical work, greater importance should be given to the early preliminary general education of medical men."—Dr. BATTERBURY, Dr. MACDONALD, Mr. WYKE-SMITH, Dr. BACOT, and Mr. PARKINSON took part in the discussion.

Communication.—Dr. RAMSAY, Short Notes on Four Cases of Tubal Pregnancy.

Excursion.—An excursion was made to Badbury Ring, a British encampment commanding an extensive view of the country.

Dinner.—The members, who had been hospitably entertained to luncheon by those residing at Wimborne, dined together at the King's Head Hotel.

CAMBRIDGESHIRE AND HUNTINGDONSHIRE BRANCH.

THE annual meeting of this Branch was held at Cambridge on July 5th.

Election of Officers.—The following officers were elected:—*President:* D. B. Balding, F.R.C.S., J.P. *Secretary:* Dr. Lloyd Jones. *Representative of the Branch on the Parliamentary Bills Committee:* Dr. Balding. *Representatives on the Council:* Professor Bradbury, J. Hough, F.R.C.S.; and Mr. Gray (Newmarket).

By-laws.—At the suggestion of Mr. GILES (Caxton), it was agreed that the by-laws be referred to the Council of the Branch for reconsideration, and that a report be presented to the members at the next annual meeting.

The Administration of Gas.—Mr. H. J. PATERSON gave a demonstration at the hospital on a method of administering gas so as to produce prolonged anæsthesia for dental operations, etc. For this purpose two patients were kept under nitrous oxide for about eight minutes while Mr. Rhodes operated. The first case was that of a robust man, aged about 30. The operation consisted in the excision of the remains of three maxillary incisors, the pulps, which were alive in each case, being removed, the nerve canals enlarged, and the roots otherwise prepared for crowning; several diseased roots were also removed. The second case was that of a delicate girl, aged 22 years, two maxillary incisors being prepared for crowning as in the first case, and in addition twenty diseased roots were removed in 8 minutes 10 seconds.

Distribution of Cancer in Cambridge.—Dr. LLOYD JONES read a paper on this subject. He exhibited a map which showed the situations of all the cases of cancer in the borough during the years 1879-1897 inclusive. Out of upwards of 5,000 houses continuously inhabited during this period, upwards of 400 had been invaded by cancer. These were unequally distributed; in some districts the houses attacked were so small a number as 1 in 62, in others so large as 1 in 2. He referred to the geological substrata in the different parts of the town, the height above the sea level, the character of the vegetation, etc., and concluded that cancer was in Cambridge most abundant in the near vicinity of trees. There was more cancer in low-lying parts of the town, though this was not invariably the case. Clean, and in some cases blind, streets seemed to have been immune. It was rare to find two or more cases in one house. He thought that accumulation of filth of all kinds—animal and vegetable—was present in the cancer districts.

Paper.—Dr. REGINALD GROVE (St. Ives) read a paper on a case of Gastrostomy for Malignant Disease of Œsophagus.

NORTH OF ENGLAND BRANCH.

THE annual meeting of this Branch was held at Sunderland on July 11th, thirty-eight members being present.

Installation of New President.—The retiring President, Dr. MCDOWALL, vacated the chair in favour of Dr. ROBINSON, of Sunderland, who delivered an address on The Repression of Consumption, and a plea for Open-air Sanatoria in England—a New Crusade, an abstract of which is published at p. 223.

Sanatoria for Consumptives.—Dr. RUFENACHT WALTERS, Physician to the North London Consumption Hospital, then spoke on Sanatoria for Consumptives.

Election of Officers.—The officers of the Branch for 1898-1899 were elected, and are as follows:—*President:* Dr. W. Robinson. *Vice-President:* Dr. S. Walker. *Honorary Secretary and Treasurer:* Dr. Beattie. *Council of Management:* (Northumberland), Dr. Drummond, Dr. Philipson, Mr. Williamson. (North Durham), Dr. Gowans, Dr. Mearns, Dr. Murphy. (South Durham), Dr. Blandford, Dr. Middlemiss, Dr. Wardle. *Representatives on the Council of the Association:* Dr. Drummond, Mr. Williamson. *Representative on the Parliamentary Bills Committee:* Dr. Murphy.

Votes of Thanks.—A vote of thanks to the retiring President was unanimously carried. A vote of thanks to the retiring Secretary, Mr. Williamson, for his twelve years' service as Hon. Secretary and Treasurer of the Branch was unanimously carried. A vote of thanks to the President for his able address was unanimously carried, as also was a vote of thanks to Dr. Rufenacht Walters.

Report of Constitution Committee.—The report of the Con-

stitution Committee of the Association was discussed, and the first three recommendations were approved, namely, election of members of Council, Association to pay election expenses, and members to be registered in only one Branch. The recommendation that the Council should report in the first instance to the Branches was not approved. Members of the Association to be elected by Branch Council, approved. Expulsion of members: Recommendation that two meetings should be held, and that 10 per cent. of the members of the Branch must be present at each appointment of Executive Committee, not approved. Payment of Executive Committee, not approved.

The late Mr. Ernest Hart.—It was unanimously resolved:

That the members of the North of England Branch of the British Medical Association desire to express their deep sense of the great service which the late Mr. Ernest Hart rendered to the Association and to the medical profession during the period for which he held office as Editor of the BRITISH MEDICAL JOURNAL.

The Prevention of Tuberculosis.—Proposed by the PRESIDENT, and unanimously carried:

That this meeting approves of the suggestions contained in the President's address, and is of opinion that societies, consisting of medical and lay members, should be formed for carrying them out.

Annual Dinner.—The annual dinner took place at the Grand Hotel. Twenty-four were present, including several guests.

SOUTH-WESTERN BRANCH.

THE annual meeting of the Branch was held at Penzance on June 17th, under the presidency of Dr. HUGH MONTGOMERIE. About 55 members were present.

Installation of New President.—The minutes of the last meeting having been taken as read, the retiring PRESIDENT, Dr. DAVY of Exeter resigned the chair to Dr. MONTGOMERIE, who delivered his inaugural address. At its close a hearty vote of thanks to Dr. Montgomerie was accorded by acclamation. A hearty vote of thanks to Dr. Davy at the close of his year of office was also carried by acclamation.

New Members.—The following gentlemen were elected members of the Branch: Dr. Carlyon, Exeter; Dr. Arthur Rendle, Devonport; Dr. Daniel Brough, Devonport; Dr. Blagden of Horsebridge, Dr. Webb of Dawlish.

Report of Council.—The Honorary Secretary read the following report: "The Council report the continued prosperity of the Branch, which now numbers 334, this being an increase of 20 during the past year. The annual meeting at Exeter was very successful, and a very successful intermediate meeting was held at Torquay besides a special meeting at Exeter. The subjects which have engaged the attention of the Branch during the year have been:

1. *The Organisation of the Branch.*—The Subcommittee appointed by the Branch Council to draw up the new rules having presented their report, these rules were submitted to the Branch at a special meeting, and having been approved were sent on to the Central Council for confirmation. The Central Council has signified its approval and the new rules (which have been circulated with the notice of this meeting) are now in force. The Branch is therefore organised in divisions corresponding to the parliamentary divisions of the two counties and is the first Branch in the Association to make this very important constitutional advance.

2. *The Midwives Registration Bill.*—A resolution against the the Bill before the House of Commons was moved by Dr. Jackson at the Torquay meeting, and copies of this resolution have been sent to every M.P. for Devon and Cornwall. The answers which have been received state that the Bill has no chance of coming on during the present session.

3. *Report of the Constitution Committee.*—The Branch has protested against unattached members being permitted to vote for the election of Branch representatives on the Council. Also against the proposal to hand over the complete control of the Association to an executive committee of the Council, and has urged the payment of the representatives for each attendance.

The following results of important measures are reported:

Medical Defence. It will be remembered that this Branch has taken a very active part in urging the desirability of altering the Memorandum of the Association so as to permit of the expenditure of money for objects which concern the honour and interests of the profession. A poll of the whole Association has lately been taken on this subject, and the result is a large majority of votes in favour of this step.

Army Medical Reform.—The recent revival of the movement in favour of army medical reform originated in this Branch two years ago. It is gratifying to know that it has been entirely successful. There is a credit balance of £88 6s. 1d. The Branch income has been £34 10s. 5d., and its expenditure £21 15s. 9d., a reduction of expense of £12 1s. 10d. on that of last year. The Council suggests Barnstaple as the next place of annual meeting, and desires to nominate Dr. Marsh Jackson as the President-elect. Elections of members of the Branch Council from the various Divisions have been already reported. Barnstaple, Dr. Harper; Southmolton, Dr. Powne; Exeter, Dr. Gordon; Torquay, Dr. Eales; Totnes, Dr. Gibson; Plymouth, Dr. Fox; Devonport, Dr. Leah; Falmouth, Dr. Knuthsen; St. Ives, Dr. Bennett. It is hoped that the remaining vacancies will be filled up within the next few weeks." It was resolved that the report be adopted.

Election of Officers.—The Honorary Secretary, Dr. GORDON, having intimated that he did not again offer himself for election, Dr. H. W. Webber, of Plymouth, was elected Honorary Secretary. A vote of thanks to Dr. Gordon, the retiring Secretary, for his services was carried with acclamation. Dr. Deas, of Exeter, and Dr. Rolston, of Devonport, were elected representatives of the Branch on the Parliamentary Bills Committee. The meeting then adjourned.

Excursion and Annual Dinner.—By the kindness of Dr. Hugh Montgomerie a most enjoyable excursion round the bay had been arranged, of which all who could do so availed themselves. The annual dinner took place at the Queen's Hotel at 7 P.M. The following day the West Penrith members most kindly provided a delightful excursion to Land's End, where luncheon was provided.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

THE sixty-sixth annual meeting of the British Medical Association will be held at Edinburgh on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, 29th, 1898.

President: T. G. RODDICK, M.D., Professor of Surgery in McGill University, Montreal.

President-elect: Sir THOMAS GRAINGER STEWART, M.D., LL.D., F.R.S.E., Professor of Practice of Medicine and Clinical Medicine in the University of Edinburgh; Physician in Ordinary to Her Majesty the Queen for Scotland.

President of the Council: ROBERT SAUNDBY, M.D., LL.D., F.R.C.P., Professor of Medicine in Mason University College, and Physician to the General Hospital, Birmingham.

Treasurer: CHARLES PARSONS, M.D., Dover.

An Address in Medicine will be delivered by THOMAS RICHARD FRASER, M.D., LL.D., F.R.S., Professor of Materia Medica and Clinical Medicine in the University of Edinburgh.

An Address in Surgery will be delivered by THOMAS ANNANDALE, F.R.C.S.Edin., F.R.C.S.Eng., F.R.S.E., Surgeon to the Edinburgh Royal Infirmary, Regius Professor of Clinical Surgery, University, Edinburgh.

An Address in Psychological Medicine will be delivered by Sir JOHN BATTY TUKE, M.D., D.Sc., Pres.R.C.P.Edin., Lecturer on Insanity, School of Medicine of the Royal Colleges, Edinburgh.

The Scientific Business of the Meeting will be conducted in Sixteen Sections.

A. MEDICINE.

Anatomy Theatre, University New Buildings.

President: GEORGE WILLIAM BALFOUR, M.D., LL.D. *Vice-Presidents:* Sir CHRISTOPHER JOHN NIXON, M.D.; JOHN MITCHELL BRUCE, M.D., ALEXANDER JAMES, M.D.; GEORGE ALEX. GIBSON, M.D. *Honorary Secretaries:* J. J. GRAHAM BROWN, M.D., 3, Chester Street, Edinburgh; SAMUEL HERBERT HABERSHON, M.D., 70, Brook Street, Grosvenor Square, W.; GEORGE LOVELL GULLAND, M.D., 6, Alva Street, Edinburgh.

The following subjects have been arranged for discussion:

1. Wednesday, July 27th.—The Clinical Varieties of Hepatic Cirrhosis. To be opened by Dr. Alexander James.

2. Thursday, July 28th.—The Significance and Consequences

of different states of Vascular Tension with their General Management. To be opened by Sir William Broadbent, Bart., M.D.

3. Friday, July 29th.—Serum Diagnosis and Therapeutics in Infective Diseases. To be opened by Professor Wright (Netley).

The following, among others, intend to take part in these discussions: Sir Christopher Nixon, Dr. G. W. Balfour, Dr. M. A. Boyd, Professor Bradbury, Dr. Graham Brown, Dr. Mitchell Bruce, Dr. Lauder Brunton, Dr. R. W. Burnet, Dr. H. Campbell, Dr. D. Drummond, Dr. Wm. Ewart, Dr. Foxwell, Dr. Gibbes, Dr. Gibson, Dr. Gulland, Dr. Handford, Dr. Habershon, Dr. Claude Ker, Dr. J. A. Lindsay, Dr. McWeeney, Dr. Muirhead, Dr. Smart, Dr. Noel Paton, Dr. Reginald G. Alexander, Dr. W. J. Tyson, Dr. Robert Saundby, Dr. Theodore Fisher, Professor Osler, Dr. Barr, and Dr. Wm. Calwell.

The following papers have been announced:

ADAMI, Professor J. G. (to be read by Dr. W. Osler). On the Bacteriology of Progressive Portal Cirrhosis.
ANDERSON, Professor McCall. A Plea for the More General Use of Tuberculin by the Profession.
BAIN, William, M.D. The Treatment of Congestion of the Liver not dependent upon Organic Disease or associated with Febrile Disofders.
BALFOUR, G. W., M.D. The Pathology of a Fit of Gout.
CALWELL, W., M.D. On the Hygienic or Open-air Treatment of Consumption.
CAMPBELL, H., M.D. The Treatment of Thoracic Aneurysm by Electrolysis.
CAMPBELL, H. J., M.D. Four Obscure Cases of Intracranial Disease.
CAVERHILL, T. F. S., M.B., C.M.Edin. The Open-air Treatment of Consumption, with exhibition of patients treated in German sanatoria.
CHARLES, Dr. E. (Rome). (1) On Twenty-five Years of Betterment in Rome; the Disappearance of Roman Fevers. (2) Malta and its Fevers.
DAVIDSON, Thomas, M.D., Southern California as a Health Resort.
DRUMMOND, D., M.D. On Ether Pneumonia.
EWART, William, M.D.
FRASER, T. R., M.D. On the Antitoxic Action of the Bile in Relation to the Toxins of Diphtheria and Tetanus.
HADDON, John, M.D. Diet and Exercise in the Prevention and Treatment of Disease.
HAIG, A., M.D.Oxon. On the Granules Precipitated in the Blood by Chloride of Ammonia (Process of Mr. Barber Smith), and what we may learn from them.
HILLIER, A. P., M.B. Chronic Dysentery.
MURRAY, G., M.D. On the Early Diagnosis of Thyroidal Fibrosis.
PARSONS, Alfred, M.B. Some Remarkable Cases Illustrating the Results; Obstruction of the Main Systemic Veins.
SCHOTT, Dr. Theodore. On Chronic Muscular Disease of the Heart.
SKERRITT, E. Markham, M.D., and STEWART, James, F.R.C.P.E. Case of Protracted Sleep Extending over Fifty Days.
SMART, A., M.D. (1) Chemico-clinical Observations on the Elimination of Phosphoric Acid in Nervous Disorders: Preliminary Note. (2) Clinical Observations on the Relative Efficacy of Preparations of Iron commonly in Use in the Treatment of Anæmia and Chlorosis: Further Note.
SOMERVILLE, W. F., M.D. The Importance of Increasing the Respiratory Capacity in the Anæmias of Young Adults.
STRACHAN, J., M.D. The Alcoholic Neurosis.
SUCKLING, C. W., M.D. Movable Kidney, with special Reference to its Influence on the Nervous System.
THOMSON, J. Stitt, M.D. The Enlarged Thyroid of Lincolnshire.
THORNE, W. Bezly, M.D. On Cardio-vascular Repair.
THORNHILL, Hayman, M.B. Observations on the Treatment of Cholera.
WALKER, A. Stodart, M.D. On Alcoholic Neurasthenia.

Papers are also expected from Professors Gerhardt and Rosenbach, of Berlin.

B. SURGERY.

Surgery Theatre, University New Buildings.

President: JOHN DUNCAN, F.R.C.S.Edin., LL.D. *Vice-Presidents:* ALEX. GORDON MILLER, F.R.C.S.Edin.; JOHN CHIENE, F.R.C.S.Edin.; JAMES RUTHERFORD MORISON, F.R.C.S.; JOSEPH MONTAGUE COTTERILL, F.R.C.S.Edin. *Honorary Secretaries:* FRANCIS MITCHELL CAIRD, F.R.C.S.Edin., 21, Rutland Street, Edinburgh; J. W. BEEMAN HODSDON, F.R.C.S.Edin, 52, Melville Street, Edinburgh; THOMAS KENNEDY DALZIEL, F.F.P.S.G., 196, Bath Street, Glasgow.

Discussion I: Injuries of the Elbow Joint. To be introduced by Professor Bennett (Dublin), followed by Messrs. Roberts (Philadelphia), Chiene, Bryant, Keetley, Jones, Macnamara, Thomas, Warden, Morgan, Poland, Murphy, Dalziel, Ward Cousins, Parry, and Crawford Renton.

Discussion II: The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract. To be introduced by Dr. David Newman, followed by Messrs. Roysing (Copenhagen), Moullin, Macnamara, Macewen, Will, Melchior (Copenhagen), Lawson Tait, Morgan, Stanmore Bishop, and Nicoll.

The following papers have been promised:

ALLINGHAM, Herbert Wm., F.R.C.S. Cases of Intestinal Anastomosis.
BALL, C. B., M.D. An Improved Method of Radical Cure of Hernia by Torsion of the Sac.
BATTLE, W. H., F.R.C.S. Notes of a Case of Traumatic Aneurysm of the Gluteal Artery: Recovery.
BEATSON, G. T., M.D. The Treatment of Inoperable Carcinoma.
BISHOP, Stanmore, F.R.C.S. On the Immediate Sealing of Abdominal Wounds *versus* the Use of Drainage.
BROOK, W. F., F.R.C.S. Successful Removal of Calculi of Unusual Size from both Kidneys.
BRUCE, William, M.D. On the Nature and Treatment of Sciatica.
BUSH, J. P., M.R.C.S. Cases of Perforative Gastric Ulcer treated by Operation.
CAIRD, F. M., F.R.C.S.Edin. On some Cases of Intestinal Resection.
CASPER, Dr. Leopold (Berlin). On Catheterism of the Ureters in Both Sexes.
CHEATLE, G. Lenthal, F.R.C.S. Operation for End-to-End Anastomosis of Bowel.
CRIPPS, Harrison, F.R.C.S. On Abdominal Surgery
DOYEN, Dr. (Paris). (1) Surgery of the Brain. (2) Operations on the Stomach and Intestine, (3) Operations for Congenital Dislocations of the Hip-Joint.
DURANTE, Professor (Rome). Tuberculosis of the Digestive Tract.
FREYER, P. J., M.S. The Instruments Required in Litholapaxy, with an Analysis of 650 Operations for Stone by this Method.
HERN, John, F.R.C.S.Edin. An Amputation at the Ankle-Joint, with Case.
HUTCHINSON, J., jun., F.R.C.S. Removal of the Gasserian Ganglion for Trigeminal Neuralgia
HUTTON W. Menzies, F.R.C.S. On the Treatment of Empyema.
JONES, Robert, F.R.C.S.E. Castration for Enlarged Prostate, with Report of Cases.
KEETLEY, C. B., F.R.C.S.Edin. On the Preservation of Mobility in Joints Operated On.
KENNEDY, Robert. Four Cases of Traumatic Musculo-spiral Paralysis, with Restoration of Function after Secondary Operation.
KOCHER, Professor (Bern). On Ileus.
LITTLE, E. Muirhead, F.R.C.S. On Coxa Vara.
LLOYD, Jordan, F.R.C.S. On Cirsoid Aneurysm.
MARTIN, Christopher, F.R.C.S. The Prevention and Treatment of Peritonitis after Abdominal Section.
MELCHIOR, Dr. Max (Copenhagen). (1) On Septic Infection of the Urinary Tract. (2) On Electrolysis of Inoperable Malignant Tumours.
MILLER, A. G., F.R.C.S.Edin. On Muscle Atrophy in Connection with Joint Affections.
MORISON, A. E., F.R.C.S.Edin. On Movable Kidney.
MORISON, Rutherford, F.R.C.S. Wound Treatment. The Result of One Year of Antiseptic Treatment in Freshly-made Operation Wounds in Uninfected Tissues.
MORTON, C. A., F.R.C.S. Lantern Demonstration of Skiagraphs illustrating the Pathology of the Ordinary Form of Genu Valgum.
MORTON, T. H., M.D. Notes on Dislocation of the Shoulder and an apparatus to facilitate Reduction.
MOULLIN, C. Mansell, F.R.C.S. A Case of Removal of the Vesiculæ Seminales.
MURPHY, James, M.D. The Surgical Treatment of Tuberculous Peritonitis.
NEVE, Arthur, M.D. Clinical Paper on Chloroform.
NEWMAN, David, M.D. (1) The Value of Catheterism of the Ureters in the Diagnosis of Diseases of the Kidney, with illustrative cases. (2) Cases Illustrating some Points of Interest in the Etiology and Treatment of Hæmaturia.
NICOLL, Jas. H., M.B., M.S. (1) The Treatment of Chronic Enlargement of the Prostate. (2) The Pathogeny and Treatment of Tuberculous Lymphatic Adenitis.
OWEN, Edmund, F.R.C.S. Operative Treatment of Cleft Palate.
PARRY, R. H., L.R.C.P. and S.Edin. Cases of Spasmodic Torticollis treated by Neurotomy of the Cervical Plexus.
PEARSON, C. Yelverton, F.R.C.S. The Treatment of Spina Bifida by "Open Operation," followed by Closure of the Spinal Canal, with photographs and notes of a successful case.
POLAND, John, F.R.C.S. The Treatment of Injuries of the Elbow-joint in Children.
RAWDON, H. G., F.R.C.S.Edin. Two Cases of Successful Enterectomy following Strangulated Hernia, in which Murphy's Button was used.
RENTON, J. Crawford, M.D. On the Surgical Treatment of Sciatica.
ROBSON, Mayo, F.R.C.S. (1) The Operative Treatment of Hydatids of the Liver, illustrated by cases. (2) Two Cases of Partial Hepatectomy for Malignant Disease. (3) On a Series of Cases of Choledochotomy, including two of Duodeno-choledochotomy.
ROBERTS, Dr. J. (Philadelphia). The Advantage of the Extended Position in Fractures of the Condyloid Portion of the Humerus.
ROYSING, Dr. On Some Mysterious Hæmorrhages from a Single Kidney, and their Cure by Nephrotomy.
SMITH, Noble, F.R.C.S.Edin. On the Treatment of Fractured Spines: (*a*) by Reduction and Fixation; (*b*) by Laminectomy: A Plea for more Active Treatment.
SPENS, W. R. Demonstrations of a Method of Treating Ulcers of the Leg.
STOKES, Sir William, M.B., M.S. Thyroidectomy in Exophthalmic Goitre.
TAIT, Lawson, F.R.C.S. On the Secondary Results of Operation on the Liver and its Ducts.
THOMAS, W. Thelwall, F.R.C.S. (1) Three Cases of Œsophagostomy for False Teeth in the Œsophagus. (2) Rupture of Gall Bladder, Laparotomy, Cure.
TUBBY, A. H., F.R.C.S. (1) Acute Spreading Gangrene, with an Account of a Successful Case. (2) Retroperitoneal Hernia, illustrated by a case in which recovery took place after operation.
WHEELER, W. I., M.D. The Radical Cure of Hernia by Displacement Method.
WILSON, Alex., F.R.C.S. The Treatment of Accidents under Chloroform.

Communications are also expected from Professors Mikuliez (Breslau) and Kocher (Bern).

C. OBSTETRICS AND DISEASES OF WOMEN.

Medicine Theatre, University New Buildings.

President: ALEX. RUSSELL SIMPSON, M.D. *Vice-Presidents:* CHARLES E. UNDERHILL, M.B.; GEORGE ERNEST HERMAN, M.B.; D. BERRY HART, M.D.; A. H. FREELAND BARBOUR, M.D. *Honorary Secretaries:* R. MILNE MURRAY, M.B., 11, Chester Street, Edinburgh; F. W. N. HAULTAIN, M.D., 17, Rutland Street, Edinburgh; JOHN CAMPBELL, M.D., 21, Great Victoria Street, Belfast.

It has been arranged that the first part of the meeting of this Section on Wednesday and Thursday shall be devoted to a discussion on a subject of Obstetrical or Gynæcological interest. The subjects selected are as follows:

1. Wednesday, July 27th.—The Surgical Treatment of Pelvic Inflammation. To be opened by Dr. Cullingworth (London).

2. Thursday, July 28th.—The Use and Abuse of the Midwifery Forceps. To be opened by Dr. Milne Murray (Edinburgh).

It has been arranged that specimens illustrative of the subjects of the special discussions shall be exhibited in the Pathological Museum.

The following among others are expected to take part in the discussions:—Dr. W. S. Playfair (London), Dr. Sänger (Leipzig), Dr. Martin (Berlin), Dr. Landau (Berlin), Dr. Gardner (Montreal), Mr. Bowreman Jessett (London), Dr. More Madden (Dublin), Dr. Stephenson (Aberdeen), Dr. Smyly (Dublin), Dr. Handfield-Jones (London), Dr. Donald (Manchester), Dr. Kynoch (Dundee), Dr. Buist (Dundee), Dr. Sloan (Glasgow), Dr. Macan (Dublin), Dr. Byers (Belfast), Dr. Yelverton Pearson (Cork), Dr. Aust Lawrence (Bristol), Dr. Giles (London), Dr. Amand Routh (London), Mr. Stanmore Bishop (Manchester), Dr. Christopher Martin (Birmingham), Dr. F. Edge (Wolverhampton), Dr. Ward Cousins (Southsea), Dr. Jardine (Glasgow), Dr. Horn (Darlington), Dr. W. J. Sinclair (Manchester), Dr. Jacobs (Brussels), Dr. Heywood Smith (London), Dr. Taylor Young (Sydney), Dr. Murphy (Sunderland).

The following papers have been promised:

BUIST, R. C., M.D. Two Symphysiotomies.
DONALD, A., M.D. On Vaginal Section.
DOYEN Dr. (Paris). (1) Abdominal Hysterectomy and its Indication (tumours, suppuration, etc.). (2) Modification of the Technique of Vaginal Hysterectomy.
EDGE, Fred., M.D. Posterior Colpotomy as a means of Primary and Secondary Drainage of the Abdominal Cavity.
FARRAR, J., M.D. A New and Speedy Method of Dilating a Rigid Os in Parturition.
FOTHERGILL, W. E., M.D. The Function of the Decidual Cell.
HANDFIELD-JONES, M., M.D. The Value of Curette Scrapings in the Early Diagnosis of Corporeal Cancer.
JACOBS, Dr. (Brussels). Vaginal and Abdominal Way.
JARDINE, Robert, M.D. (1) Saline Injections into the Cellular Tissues in Cases of Eclampsia and Collapse from Hæmorrhage. (2) Aseptic Midwifery.
JENKINS, T. M., M.D. (1) Kraurosis Vulvæ. (2) Case of Lymphangioma Subaxillare causing Dystocia, with specimen.
JESSETT F. B., F.R.C.S. (1) A hundred cases of Vaginal Hysterectomy for Carcinoma. (2) Surgical Treatment of Fibro-myomata of Uterus by Pan-hysterectomy or the Subperitoneal Method.
KYNOCH, J. A. C., M.B., M.S. A Case of Osteomalacia.
LANDAU, Dr. (Berlin). (1) Vaginal Cœliotomy. (2) Surgical Treatment of Uterine Cancer and its Relapse.
MCCANN, F. J., M.D. Clamp *versus* Ligature in Vaginal Hysterectomy for Malignant Disease of the Uterus.
MACPHATTEN, Dr. Neil (Denver, U.S.A.). The Treatment of Suppuration within the Female Pelvis.
MADDEN, T. More, M.D. On some Improvements in the Mechanism and Use of the Midwifery Forceps and in their Employment.
MARTIN, Christopher, F.R.C.S. Conservative Surgery of the Ovary.
MOIR, John, M.D. Table of 168 Inductions of Premature Labour.
MURPHY, James, M.D. The Technique of Vaginal Hysterectomy
PARSONS, J. Inglis, M.B. A New Method of Treatment for Prolapse of the Uterus.
PURSLOW, C. E., M.D. Notes of Four Cases of Pregnancy complicated with Ovarian Tumour.
ROUTH, Amand, M.D. Treatment of Cystocele.
SCHARLIEB, Mary, M.D., London. On a case of Missed Labour verified by Operation and also *Post Mortem*.
SMITH, Dr. Lapthorn (Montreal). Treatment of Displacements of the Uterus by Operation, based on 200 Cases.
SMYLY, W. J., M.D. Extirpation of Myomatous Uteri by the Vagina.

D. STATE MEDICINE.

Forensic Medicine Theatre, University New Buildings.

President: Sir HENRY D. LITTLEJOHN, M.D., LL.D. *Vice-Presidents:* JOHN C. MCVAIL, M.D.; GEORGE REID, M.D.; THOMAS GOODALL NASMYTH, M.D.; JAMES MCLINTOCK, M.D. *Honorary Secretaries:* CHARLES HUNTER STEWART, M.B., D.Sc., 18, Moray Place, Edinburgh; WILLIAM LESLIE MACKENZIE, M.D., Public Health Office, Leith.

It is proposed to hold discussions on the following:

1. Rivers Pollution; with Special Reference to the Present Condition of Scottish Rivers. To be opened by Dr. McLean Wilson. The following among others intend to take part: Professor Glaister, Dr. J. C. McVail, Dr. C. R. Macdonald, Dr. Matthew J. Oliver, Dr. T. G. Nasmyth.

2. Vaccination; with Special Reference to Prospective Legislation. To be opened by Dr. F. T. Bond, Gloucester. The following among others intend to take part: Dr. J. Watkin Edwards, Dr. J. C. McVail, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Mr. T. Garrett Horder, Dr. Charles R. Drysdale, Dr. J. Priestley, Dr. H. Scurfield, and Dr. G. C. H. Fulton.

3. The Hygienic Control of Milk Supplies. To be opened by Dr. T. G. Nasmyth. The following among others intend to take part: Professor Forster (University of Strassburg), Professor Saltet (University of Amsterdam), Dr. W. Brown (Carlisle), Dr. Maxwell Williamson, Dr. Spottiswoode Cameron, Dr. T. F. S. Caverhill, Dr. J. Watkin Edwards, Dr. Henry Kenwood, Dr. E. W. Hope, Dr. C. R. Macdonald, Dr. J. S. Neech, Dr. Arthur Newsholme, Dr. Matthew J. Oliver, Dr. Templeman, Dr. W. H. Symons, Dr. A. K. Chalmers, Dr. J. Maxwell Ross, Dr. Charles R. Drysdale, and Dr. H. Scurfield.

4. The Plea of Insanity in Criminal Cases, conjointly with the Psychological Section.

The following intend to contribute papers:

ALLAN, F. J., M.D. Formaldehyde as a Disinfectant.
CAMERON, Sir C. A., M.D. The Cost of Private Sanitary Improvements in Relation to Rack-rent.
CAMERON, J. Spottiswoode, M.D. Remarks on Removal and Disposal of Refuse.
CAMERON, Macmartin, M.D. Surface Wells as a Source of Water Supply.
CAVERHILL, T. F. S., M.B., C.M.Edin. Temporary Hospitals.
CHALMERS, A. K., M.B., M.S. Meat Inspection.
DIXEY, F. J., M.B. Diphtheria in London.
HOPE, W., M.D. The Value of the Present Method of Estimating the Populations of the Great Towns in England.
MACKENZIE, W. Leslie, M.D. (1) The Question of Outdoor Sanitary Instruction for Health Degrees. (2) Disinfection by Spray.
MCNAUGHTON, Dr. On a Typhoid Epidemic in Wimmera District, Victoria, Australia.
MARSDEN, R. Sydney, M.B., C.M. Filaria Strongylus and False Tubercle in the Pig, Sheep, and Goat.
MILLARD, Killick, M.D. Return Cases of Scarlet Fever
ROBERTSON, John, M.B., M.S. Soil as a Factor in the Spread of Certain Diseases
SCURFIELD, H., M.D. A Necessary Amendment of the Housing of the Working Classes Act, Part I.
SEATON, E., M.D. Sanitary Analysis of Water.
VAN SOMEREN, E. H., M.R.C.S The Potability of Venice Water.

E. PSYCHOLOGY.

Students' Common Room, University New Buildings.

President: THOMAS SMITH CLOUSTON, M.D. *Vice-Presidents:* WILLIAM WOTHERSPOON IRELAND, M.D.; H. F. HAYES NEWINGTON, M.R.C.S.; JOSEPH WIGLESWORTH, M.D. *Honorary Secretaries:* JOHN MACPHERSON, M.D., Stirling District Asylum, Larbert, Stirlingshire; GEORGE M. ROBERTSON, M.D., District Asylum, Murthly, Perth.

The following discussions have been arranged:

1. Suicide: Its Social and Psychiatrical Aspects.. This subject will be opened in three divisions: (*a*) Social Aspect, by Professor Morselli (Genoa). (*b*) Causes, by Dr. A. Haig (London). (*c*) Statistics, by Dr. Sibbald (Edinburgh).

2. The Section of State Medicine will join this Section in open discussion on: (1) Aphasia in Relation to Testamentary Capacity, to be opened by Sir William Gairdner, K.C.B. (2) The Plea of Insanity in Criminal Cases, to be opened by Dr. Mercier.

3. Hypnotism: Its Phenomena and Theories. To be opened by Dr. J. Milne Bramwell (London). Mr. F. W. H. Myers (Cambridge) has kindly consented to take part in this discussion.

The following among others have intimated their intention of taking part in the discussions: Professor Benedikt (Vienna), Dr. Marie (Dun-sur-Auron), Dr. Kurella (Brieg), Dr. Pierson (Lindenhof), Dr. Lloyd Tuckey, Dr. Hayes, Sir John Batty Tuke, Dr. George Kerr, Dr. A. E. Macdonald (New York), Dr. Dercum (Philadelphia), Dr. Yellowlees, Dr. Fletcher Beach, Dr. Ernest White, Dr. Sibbald, Dr. James Shaw, Dr. Crockley Clapham, Dr. Urquhart, Dr. Outterson Wood, Dr. John Woods, Dr. Alex. Robertson, Dr. John Carswell, Dr. G. Fielding Blandford,

Dr. Seymour Tuke, Dr. A. Stodart Walker, Dr. Shuttleworth, Dr. James Hyslop (Pietermaritzburg), Dr. David Nicolson, C.B., Dr. Bond, Dr. Kingsbury, Dr. J. F. Sutherland, and Dr. R. H. Nootт.

The following papers have been intimated:

BERNARD, Walter, F.R.C.P.I. On the Neglect of Early Training of the Mentally Defective.
BOIS, C. A., L.R.C.P.and S.Edin., and KERR, N. T., M.B., C.M. Clinical Studies with Spleen and Thyroid Extract.
BRAIDWOOD, P. Murray, M.D. The Borderland.
BRUCE, Lewis, M.D. Motor Mentalisation.
DAWSON, W. R., M.D., and RAMBAUT, D. F., M.D. The Ocular Phenomena in General Paralysis.
EASTERBROOK, C. C., M.B., C.M. The Action of Thyroid and Parathyroid Extracts upon Metabolism in the Insane.
HOGBEN, Edgar, M.D. On Pauper Lunatics in Private Dwellings (Scotland): the Point of View of a Country Practitioner.
HOTCHKISS, R.D., M.B. A Case of Hæmatoporphyrinuria.
JONES, Robert, M.D. The Epileptic Aura.
MCLEAN, A., L.R.C.S.Edin. The Better Inspection of Institutions for the Insane in England and Wales.
PASMORE, E. S., M.D. The Clinical Diagnosis of States of Melancholia.
RORIE, James, M.D. The Physico-vital Basis of Consciousness.
SUTHERLAND, J. F., M.D. The Insanities of Inebriety from the Legislative and Medico-Legal Standpoints.
WALKER, A. Stodart, F.R.C.P. Some Notes on Dipsomania.
WILSON, George, M.D. A Graphic Method of Case Records in Asylums.

F. NEUROLOGY.

Midwifery Theatre, University New Buildings.

President: BYROM BRAMWELL, M.D. *Vice-Presidents:* JOSEPH ARDERNE ORMEROD, M.D.; WILLIAM RUSSELL, M.D.; ALEXANDER BRUCE, M.D. *Honorary Secretaries:* ROBERT ALEXANDER FLEMING, M.D., 10, Chester Street, Edinburgh; WILLIAM FORD ROBERTSON, M.D., 12, Bristo Place, Edinburgh.

The following discussions and demonstrations have been arranged:

1. Wednesday, July 27th, 10 A.M.—A discussion on the Treatment (Curative and Palliative) of Intracranial Tumours will be opened by Professor Ferrier, M.D., F.R.C.P., F.R.S. The following members have promised to take part: Dr. C. E. Beevor, Mr. H. F. Waterhouse, Dr. E. F. Trevelyan, Mr. C. A. Morton, Dr. John M. MacCormac, Dr. J. Michell Clarke, Dr. T. Outterson Wood, Dr. David Drummond, Mr. J. Paul Bush, and Mr. J. M. Cotterill.

2. Thursday, July 28th, 10 A.M.—A discussion on the Influence of Micro-organisms and Toxins in the Production of Disease of the Central and Peripheral Nervous System will be opened by Dr. Thomas Buzzard, F.R.C.P. The following gentlemen have promised to take part: Dr. W. S. Colman, Dr. F. J. Smith, Dr. Fletcher Beach, Dr. John M. MacCormac, and Dr. T. Outterson Wood.

3. Friday, July 29th, 10 A.M.—Demonstration of (*a*) Preparations, lantern slides, and microscopic sections illustrative of the Morbid Anatomy of Diseases of the Nervous System (Brain, Spinal Cord, and Peripheral Nerves). (*b*) Patients, and Morbid Specimens from Individual Cases of Nervous Disease of special interest and importance from a clinical, pathological, and physiological point of view.

Drs. E. F. Trevelyan, Andrew Smart, J. Michell Clarke, A. W. Campbell, David Drummond, George Mackay, and J. C. Dunlop have, amongst others, already intimated their intention to take part in the demonstrations.

The following papers have been promised:

BEEVOR, Charles E., M.D. On the Bilateral Action of the Latissimus Dorsi in Hemiplegia.
BRUCE, Alexander, M.D., F.R.C.P.E. (1) On the Central Terminations of the Trigeminal and Glosso-pharyngeal Nerves, with demonstration. (2) On some of the Ascending and Descending Tracts in the Spinal Cord, and their relations.
CAMPBELL, A. W., M.D. (1) Changes in the Vesicular Column of Clarke associated with Degeneration of the Motor Tracts. (2) On the Distribution of Certain Fibres in the Posterior Columns of the Cervical Cord, with remarks on Asystemic Posterior Column Sclerosis. (Both papers to be illustrated with lantern slides.)
CARR, J. Walter, M.D., M.R.C.P. Case of Localised Pontine Lesion.
FLEMING, Robert A., M.D., F.R.C.P.E. On Changes in the Affected Nerves in Peripheral Neuritis. (With lantern demonstration.)
MCALDOWIE, A. M., M.D. Cases of Tumour of Crus Cerebri.
MURRAY, Professor George, M.D., and RICHARDSON, George, M.B., F.R.C.S. Case illustrating the Advantages of Removal of Recurrent Cerebral Tumour.
SMART, Andrew, M.D. Some Further Notes on Undescribed Neuroses in their Physiological and Clinical Aspects.
TREVELYAN, E. F., M.D. Case of Acute Meningo-myelitis, in which a Diplococcus was Cultivated from the Cord. With Microscopic Specimens.

G. PATHOLOGY.

Pathology Theatre, University New Buildings.

President: WILLIAM SMITH GREENFIELD, M.D. *Vice-Presidents:* FREDERICK WALKER MOTT, M.D., F.R.S.; JOHN MACFADYEAN, M.B.; ALMROTH EDWARD WRIGHT, M.D. *Honorary Secretaries:* HAROLD JALLAND STILES, M.B., 5, Castle Terrace, Edinburgh; ROBERT MUIR, M.D., 20, Hartington Place, Edinburgh.

Wednesday, July 27th: A discussion on the Nature and Significance of Leucocytosis will be opened by Robert Muir, M.D.

Thursday, July 28th: A discussion on the Agglutinating or Sedimenting Properties of Sera and their Relation to Immunity will be opened by Herbert E. Durham, M.B., B.C.

The following communications have been announced:

ADAMI, Professor J. G. (Communicated). Demonstration of a Microbe in Portal Cirrhosis.
AULD, A. G., M.D. (1) Some Results of Extirpation of the Suprarenal Gland. (2) On the Toxins of the Pneumococcus.
BEATSON, George T., M.D. A short note on the Etiology of Cancer, with some experiments.
BOYCE, Professor R., M.D., and HILL, C. A., M.B. A Classification of the Micro-organisms found in Water.
CHRISTOPHERS, S. R., M.B. The Action of Normal Serum in Relation to the Diagnosis of the Typhoid Bacillus.
DOUGLAS, J. J., M.D. On the Local Action of Crude Diphtheria Toxin.
DURHAM, H. E., M.B. (1) An Inquiry into an Epidemic caused by a Variety of the Bacillus Enteritidis of Gärtner by means of Serodiagnosis (Gruber's Reaction) and Bacteriological Examination. (2) A Simple Method of Demonstrating the Formation of Gas by Bacteria.
HAIG, A., M.D. Demonstration of Granules Precipitated in the Blood by Chloride of Ammonium (Process of Mr. Barber Smith).
HARLEY, Vaughan, M.D., and BARRATT, J. W., M.D. An Experimental Inquiry into Cirrhosis of the Liver.
HEWLETT, R. T., M.D. Neisser's Diagnostic Stain for the Diphtheria Bacillus.
LAZARUS-BARLOW, W. S., M.D. Irritation of the Pleura and Pleurisy.
LEVY, Alfred G., M.D. The Blood Changes after Experimental Thyroidectomy.
MCFADYEAN, Professor J., M.S. Generalisation of Tuberculosis in the Ox.
MCWEENEY, Professor E. J., M.D. On the Growth of the Typhoid Bacillus in Bouillon containing a Certain Proportion of the Homologous Serum.
MUIR, R., M.D. On the Nature and Significance of Changes in the Bone Marrow during Leucocytosis.
NEWMAN, D., M.D. On Malformations and Displacements of the Kidneys.
SMITH, J. Lorrain, M.D. The Pathological Effects of Breathing Oxygen at a High Tension.
STILES, Harold J., M.B. On the Morbid Anatomy of Hydrocephalus.
STOCKMAN, Professor R., M.D. The Pathological Effects of Dead Tubercle Bacilli.
THOMA, Professor R. Normal Circulation and Circulatory Disturbances in the Spleen.
WOODHEAD, G. Sims, M.D. On Diphtheritic Paralysis.

H. PHARMACOLOGY AND THERAPEUTICS.

Materia Medica Theatre, University New Buildings.

President: JAMES ORMISTON AFFLECK, M.D. *Vice-Presidents:* CHARLES DOUGLAS FERGUSSON PHILLIPS, M.D., LL.D.; NESTOR TIRARD, M.D., RALPH STOCKMAN, M.D. *Honorary Secretaries:* R. DUNDAS HELM, M.D., 3, Alfred Street N., Portland Square, Carlisle; A. LOCKHART GILLESPIE, M.D., 23, Walker Street, Edinburgh.

There will be three discussions on subjects of general interest and importance related to Pharmacology and Therapeutics. These subjects are as follows:

1. Wednesday, July 27th.—The Treatment of Diseases of the Stomach. Introduced by Dr. G. Herschell and Professor C. A. Ewald, and taken part in by, among others, Drs. Lauder Brunton, Saundby, Fenton B. Turck, Symons Eccles, Affleck, Crawford Renton, Calwell, Lockhart Gillespie and Pearson. For convenience the subject will be considered under the heads of: (*a*) General Treatment and Diet; (*b*) the Influence of Drugs upon Gastric Chemical Processes; (*c*) the Influence of the Treatment of co-existing Maladies upon Diseases of the Stomach; (*d*) the Indications for Surgical Treatment.

2. Thursday, July 28th.—The Treatment of Chronic Renal Disease, with special reference to: (*a*) Hygiene and Diet; (*b*) the Influence of Drugs and other Therapeutics Measures; (*c*) Uræmia. Opened by Dr. Nestor Tirard. Professor Ewald, and Drs. Saundby, MacAlister, Affleck, Jas. Barr, and Allison will take part in the discussion.

3. Friday, July 29th.—The Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Attendant Risks. Opened by Professor Ralph Stockman. Professor Cash and Dr. F. C. Phillips will take part. (The antipyretic properties

possessed by members of this group will not form a part of the subject for discussion.)

It is also proposed to hold a demonstration of recently-devised intragastric instruments and other apparatus and measures for the treatment of gastric diseases; to this it is expected that Dr. Turck (Chicago), Drs. Herschell and Eccles, Drs. Einhorn (New York), and Hemmeter (Baltimore) will contribute. The Secretaries will be glad to receive notice of any member wishing to show any further novelty relating to this subject.

The following papers have been announced:

Allison, T. M., M.D. Thyroid Extract in Chronic Renal Disease.
Cash, Professor J. T., M.D. The Pharmacology of the Alkaloids of Aconitum Napellus.
Dixon, Walter E., M.B., M.S. Pharmacology of the Alkaloids derived from the Mescal Plant.
Ewald, Professor C. A. (1) On the Present State of the Treatment and of our Knowledge of Gastric Disorders. The Benefit of Repeated Tapping and Venesection in Chronic Kidney Disease, especially in Uræmia.
Fraser, T. R., M.D. Further Observations on the Antitoxic Action of Bile against the Toxins of Diphtheria and Tetanus. (May be read in the Section of Medicine).
Gillespie, A. Lockhart, M.D. (1) Brief Note on the Action of the Bromide and Iodide of Strontium together upon Exophthalmic Goitre in Children. (2) Preliminary Note on the Action of Stipa Viridula. (3) The Action of Diet, Antiseptics, and of some other Drugs upon the Intestinal Processes.
Herschell, George, M.D. The Treatment of Atony of the Stomach and Intestines by Mechanical Vibration.
Hyde, S., M.D. The Pure Air Treatment of Consumption.
Kerr, Norman, M.D. Alcohol in Drugs and Drug Preparations.
McWalter, J. C. A Note on the New *Pharmacopœia*.
Phillips, C. D. F., M.D. The Therapeutical Actions of Hydrastis Canadensis.
Phillips, C. D. F., M.D., and Pembrey, M. S., M.D. The Physiological Action of Hydrastin Hydrochloride.
Turck, Fenton B. (Chicago). (1) Pneumatic Gymnastics of the Stomach. (2) The Indications for Gastrostomy, with a Note on a New Method of Operation.

(Some of these papers will not be read separately, but used as a basis for the remarks made at the discussions.)

The demonstration and explanation of new gastric appliances (should it be found feasible) will take place on Thursday, July 28th, at 1 P.M. or any other hour which may be subsequently fixed upon. Details as to the appliances and measures to be illustrated will probably be specially noted later on.

I. Ophthalmology.

Chemistry Tutorial Class Room, University New Buildings.

President: D. Argyll Robertson, M.D., LL.D. *Vice-Presidents:* R. Marcus Gunn, F.R.C.S.; George A. Berry, M.B.; George Mackay, M.D. *Honorary Secretaries:* William George Sym, M.D., 20, Alva Street, Edinburgh; Angus McGillivray, M.D., 23, South Tay Street, Dundee.

The following papers have been promised:

Buchanan, Leslie, M.B. Leucosarcoma of the Choroid.
Collins, E. Treacher, F.R.C.S. On Cases where Skiagraphs were of Service for the Detection and Removal of Intraocular Foreign Bodies
Davidson, J. M'Kenzie, M.D. Demonstration of Employment of Roentgen Rays in Ophthalmology.
Eyre, J. W., M.D. A Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.
Fallows, J., L.R.C.S.Edin. (1) Case of Polypoid Growth from a Meibomian Cyst (Illustrated). (2) The Use of Fluorescin in the form of Tabloids in the Diagnosis of Corneal Abrasions.
Griffith, A. Hill, M.D. Case of Successful Removal of Orbital Cyst.
Griffith, John, F.R.C.S. Case of Acute Exophthalmic Goitre.
Hern, John, M.D. The Operations now usually Substituted for Enucleation of the Eyeball.
Hinshelwood, James, M.D. Use of Holocaine in Ophthalmic Surgery.
JulER, Henry, F.R.C.S. (1) A Case of Gumma of the Ciliary Body with Recovery of Vision. (2) Case of Interstitial Keratitis with Acquired Syphilis.
Lawford, J. B., F.R.C.S. A Brief Note on an Operative Procedure for Cases of Incarcerated Iris.
Lawson, Arnold, F.R.C.S. Bacteriology of Normal Conjunctival Sac and its bearing on the Use of Antiseptics.
Mackay, G., M.D., and Dunlop, T. C., M.D. A Case of Complete Acquired Colour Blindness, with Necropsy
McGillivray, Angus, M.D. The Hyaloid Canal and its relation to Cyclitic Exudation.
Neve, E., F.R.C.S.E. Remarks on Surgical Treatment of Cataract.
Nuël, Professor (Liége). Absorption of Aqueous Humour of the Iris.
Reid, Thomas, M.D. (1) Reparative Processes in the Cornea. (2) Intercalary Cells in Corneal Epithelium. (3) Early Stages of Trachoma: Lantern Demonstration.
Snellen, Professor (Utrecht). Historical Review of Operative Treatment of Strabismus.
Thompson, J. Tatham, M.B., C.M. A Case of Cyst of the Hyaline Canal producing a Double Lens.
Usher, C. H., M.B. A Case of Orbital Growth
Williams, R. Paralysis of Accommodation after Influenza.
Wray, Chas., F.R.C.S. (1) Skiagraph of Penetrating Wound of Eyeball. (2) Extraction of Transparent Lens in High Myopia.

Microscopic and naked-eye specimens, apparatus, etc., have been promised for the Museum by Drs. Reid, Usher, Buchanan, and Angus McGillivray.

J. Laryngology and Otology.

Surgery Tutorial Class Room, University New Buildings.

President: Peter MacBride, M.D. *Vice-Presidents:* J. J. Kirk Duncanson, M.D.; J. Dundas Grant, M.D.; Robert Mackenzie Johnston, M.D.; StClair Thomson, M.D. *Honorary Secretaries:* Adam Brown Kelly, M.B., 26, Blythswood Square, Glasgow; A. Logan Turner, M.D., 20, Coates Crescent, Edinburgh.

The subject selected for discussion is The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology, Rhinology, and Otology. The discussion will be introduced under these three heads by Sir Felix Semon (London), Dr. Greville MacDonald (London), and Dr. William Milligan (Manchester). The above discussion will be held on Wednesday morning.

On Thursday at 10 A.M. the Section will meet in the Music Class Room for the Purpose of joining the Life Assurance Section in the Discussion upon Middle Ear Disease in Relation to Life Assurance. Members will adjourn at noon to their own Section Room.

The following gentlemen have intimated their intention of taking part in the discussion or in the work of the Section: Dr. Charles Warden (Birmingham), Dr. Richard Ellis (Newcastle-on-Tyne), Dr. Farquhar Matheson (London), Professor Urban Pritchard (London), Dr. Dundas Grant (London), Dr. David Newman (Glasgow), Dr. L. H. Pegler (London), Dr. J. Kerr Love (Glasgow), J. Walker Downie, M.B. (Glasgow), John Macintyre, M.B. (Glasgow), Dr. Watson Williams (Bristol), Dr. William Hill (London), Macleod Yearsley, F.R.C.S. (London), W. Jobson Horne, M.B. (London), Dr. H. S. Birkett (Montreal), Dr. Holbrook Curtis (New York), Dr. Von Stein (Moscow), W. R. H. Stewart, F.R.C.S.Edin., Dr. Thomas Barr (Glasgow), James Erskine, M.B. (Glasgow), Dr. Robert Fullerton (Glasgow), T. Mark Hovell, F.R.C.S.E. (London), Herbert Tilley, M.D., F.R.C.S. (London), Mr. Cresswell Baber (Brighton).

The following papers have been announced:

Ballance Hamilton S., M.D., Lateral Sinus Pyæmia, Operation, Recovery.
Barr, Thomas, M.D. (1) Notes on Extradural Suppuration in the Sigmoid Fossa due to Ear Disease. (2) A Case of Double Acute Mastoid Empyema, with Exposure of Dura Mater and Operation in Both.
Bronner, Adolph, M.D. A Plea for a More Efficient Sterilisation of Nose and Throat Instruments.
Cheatle, G. L., F.R.C.S. A Case of Sarcoma of the Middle Ear.
Collier, Mayo, F.R.C.S.Eng, Nasal Obstruction, its Relation to Throat and Ear Disease.
Curtis, Dr. Holbrook (New York). The Treatment of Acute Laryngitis in Singers.
Downie, Walker, M.B. Three Cases of Foreign Body in the Throat in which the position of the Body was determined by the Roentgen Rays. Illustrated by Skiagraphs.
Grant, Dundas, M.D. (1) A Rapid Means of Making Hartmann's Graphic Charts of the Hearing Power for a Series of Tuning Forks. (2) The Relation of Hartmann's Percentages of Hearing Power for Dying-out Tuning Forks to the Actual Degree of Hearing Power. (3) Mechanical Vibration applied to the Spine in the Treatment of Sclerosis of the Middle Ear.
Horne, W. Jobson, M.B. The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.
Hovell, T. Mark, F.R.C.S.E. Catheterisation of the Eustachian Tubes.
Hunt, J. Middlemass, M.B. Fibrinous Rhinitis.
Jackson, G. (Plymouth). Curetting in Middle-Ear Suppuration.
Jones, Hugh E., M.R.C.S. (1) Some Unmanageable Complications of Middle Ear Disease. (2) The Early Diagnosis and Treatment of the Mastoid in Acute Suppuration of the Tympanum.
Lake, Richard, F.R.C.S. Laryngeal Phthisis with Analysis of Cases.
Macintyre, John, M.B. Demonstration on the *X* Rays, with special reference to the Diseases of the Upper Respiratory Tract.
Milligan, W., M.B., M.S. Some Observations upon Antrectomy as a means of Treatment in Suppurative Middle-ear Disease.
Newman, David, M.D. (1) On Laryngeal Paralysis from Pressure upon the Vagus or Recurrent Laryngeal Nerves. (2) Some Cases showing the Relationship of Nasal and Pharyngeal Disease to the General Health.
Pegler, L. H., M.D. (1) An Operation for Removal of Deformity from Fracture of the Triangular Cartilage of the Nose. (2) A Note on Bilateral Tumours of the Septum, Lymphoid and Erectile, with a Short Account of their Histology.
Shaw, Cecil, M.D. Notes of a case of Epithelioma of the Pharynx, with Microscopic Specimens of Tumour.
Stewart, W. R. H. Wounds of the Facial Nerve during Operation on the Mastoid Antrum.
Thomson, StClair, M.D. Nasal Hydrorrhœa.
Yearsley, Macleod, F.R.C.S. The Thyroid Treatment of Middle-ear Disease.
Yonge, E. S., M.D. The Treatment of Dysphagia in Laryngeal Tuberculosis.

K. DISEASES OF CHILDREN.

Practical Materia Medica Room, University New Buildings.

President: JOSEPH BELL, F.R.C.S.Edin. *Vice-Presidents:* JAMES CARMICHAEL, M.D.; JOHN PLAYFAIR, M.D.; T. M. BURN-MURDOCH, M.B.; GEORGE ARTHUR WRIGHT, F.R.C.S. *Honorary Secretaries:* GEORGE HARRY MELVILLE DUNLOP, M.D., 20, Abercromby Place, Edinburgh; JOHN THOMSON, M.D., 14, Coates Crescent, Edinburgh; WALTER STACY COLMAN, M.D., 22, Wimpole Street, W.

The following subjects have been selected for discussion:

1. Wednesday, July 27th.—The Treatment of Spinal Caries. To be opened by Mr. Victor Horsley.

The following gentlemen are expected to join in the discussion; F. Churchill, M.D. (London), J. Jackson Clarke, F.R.C.S. (London), Robt. Jones, F.R.C.S.Edin. (Liverpool), T. S. Kirk, M.B. (Belfast), R. W. Murray, F.R.C.S. (Liverpool), Noble Smith, F.R.C.S.Edin. (London), A. H. Tubby, F.R.C.S. (London), W. Thomas, F.R.C.S. (Birmingham), Sinclair White, F.R.C.S. (Sheffield).

2. Thursday, July 28th.—Certain Aspects of Congenital Syphilis. In opening the discussion Mr. Jonathan Hutchinson will deal with the Lesions of the Bones and of the Organs of Special Sense, and Dr. Henry Ashby will speak of those of the Brain and other Internal Organs.

The following members have intimated their intention to join in the discussion: Professor A. Baginsky (Berlin), M. Jules Comby (Paris), T. Telford Smith, M.D. (Lancaster).

3. Friday, July 29th.—Rheumatic Heart Disease in Childhood; with special reference to (*a*) Physical Signs, (*b*) Prognosis. To be opened by Dr. D. B. Lees.

The following are expected to join in the discussion: H. Ashby, M.D. (Manchester), Professor A. Baginsky (Berlin), James Finlayson, M.D. (Glasgow), Theodore Fisher, M.D. (Clifton), W. P. Herringham, M.D. (London), F. John Poynton, M.D. (London), J. Lindsay Steven, M.D. (Glasgow), G. A. Sutherland, M.D. (London), W. Osler, M.D. (Baltimore).

The following papers have been announced:

BATTEN, F. E., M.D. On Diphtheritic Paralysis.
BAGINSKY, Professor (Berlin). On Hospitalism and Atrophy of Children (with microscopical demonstration).
CARMICHAEL, James, M.D. Types of Infantile Pneumonia.
CLARKE, J. Jackson F.R.C.S. On Congenital Dislocation of the Hip-joint.
COLLIER, H. Stansfield, F.R.C.S. On Dislocation of the Hip-joint occurring in the Course of Infectious Diseases.
COMBY, Jules, M.D. (Paris). On Movable Kidney in Children.
COUTTS, J. A., M.B. On Some Exceptions to Colles's Law.
EVE, F. S., F.R.C.S. On Tendon Grafting.
JONES, Robert, F.R.C.S.Edin. On the Short Leg of Hip-joint Disease and its Treatment.
MARTIN, R., M.D.Aberd. On the Effects of Tobacco Smoking on Children.
MURRAY, R. W., F.R.C.S. (1) On Harelip and Cleft Palate. (2) On the Treatment of Club Foot.
NICOLL, James H., M.B. The Radical Cure of Spina Bifida treated by Open Operation.
STILES, H. J., F.R.C.S.Edin. Note on the Operation of Clearing Out the Mastoid Antrum in Infants and Young Children.
STILL, G. F., M.D. On the Micro-organism of Simple Posterior Basic Meningitis in Infants.
SUTHERLAND, G. A., M.D., and CHEYNE, Watson, F.R.C.S. The Treatment of Hydrocephalus by Intracranial Drainage.
THOMSON, J., M.D., and WELSH, D. A., M.D. On a Case of General Paralysis of the Insane in a Child with Congenital Syphilis.
TOMORY, J. Kay, M.D. Note on a Case of Supernumerary Testicle.
TUBBY, A. H., F.R.C.S. The Occurrence of a Pad on the Dorsum of the Foot in Rickets.

Professor Biedert, of Hagenau, will read a paper, and Dr. Moncorvo, of Rio, will be present and take part in the work of the Section.

L. DERMATOLOGY.

Students' Library, University New Buildings.

President: WILLIAM ALLAN JAMIESON, M.D. *Vice-Presidents:* WALTER GEORGE SMITH, M.D.; JOHN JAMES PRINGLE, M.B., ALEXANDER MORTON, M.D. *Honorary Secretaries:* JAMES LIMONT, M.B., 3, Queen Square, Saville Place, Newcastle-on-Tyne; NORMAN WALKER, M.D., 7, Manor Place, Edinburgh.

The arrangements are as follows:

On Wednesday, July 27th, after the President has delivered his introductory remarks, the Section will adjourn to the Royal Infirmary, where a Clinical Meeting for the Exhibition of Patients will be held and the cases informally discussed.

On Thursday, July 28th, the subjects for discussion will be (1) The Nature and Treatment of Lupus Erythematosus. To be opened by Professor Boeck (Christiania), and Dr. Unna (Hamburg); and (2) What are we to understand by Eczema? To be opened by Mr. Malcolm Morris (London), and Dr. Wallace Beatty (Dublin).

In addition to those already mentioned it is expected that the following will be present and take part in the discussions: Professors McCall Anderson, Quincke, and Janowsky, and Drs. Crocker, Liddell, Leslie Roberts, Couper, Purdon, and Stopford Taylor.

The following papers have been announced:

UNNA, Dr. P. G. On Impetigo.
THOMAS, Thelwall, F.R.C.S. Notes on Three Cases of Syphilis communicated by Tattooing.
GALLOWAY, J., M.D. The Histology of Scleroderma.
FOX, T. Colcott, M.D., and BLAXALL, F. R., M.D. Demonstration of Cultures of Endothrix Ringworm, Diagnosed, Clinically and Microscopically.
EDDOWES, A., M.D. A Principle of Treatment of Infected Follicles.
WALSH, D., M.D. The Excretory Irritation of the Skin and other Organs.
DOCKRELL, M., M.D. (1) The Treatment of Lupus by Maragliano's Serum. (2) The Treatment of Skin Sarcoma by Coley's Fluid.

M. MEDICINE IN RELATION TO LIFE ASSURANCE.

Music Class Room, University New Buildings.

President: CLAUD MUIRHEAD, M.D. *Vice-Presidents:* Sir R. DOUGLAS POWELL, Bart., M.D.; PETER ALEXANDER YOUNG, M.D.; JAMES RITCHIE, M.D. *Honorary Secretaries:* JAMES MURDOCH BROWN, M.D., 9, Walker Street, Edinburgh; FRANCIS DARBY BOYD, M.D., 6, Atholl Place, Edinburgh.

The subjects already arranged for discussion are:

The Prognosis of Cardiac Disease in its bearings upon Life Assurance. To be opened by Professor Sir William T. Gairdner, K.C.B.

Middle-Ear Disease in relation to Life Assurance. This will be opened by Dr. McBride, President of the Section of Laryngology and Otology. (These two Sections will probably hold a joint discussion on this subject.)

Does Evidence of Limited Family Vitality call for an advanced Rate of Premium? To be opened by Dr. James Ritchie (Edinburgh).

The subjects of papers promised are:

LOW, Mr. G. M. (Manager, Edinburgh Life Assurance Society). Extra Rating as a Statistical Problem.
MEIKLE, Mr. James (Actuary, Scottish Provident Association). Gout as a Factor in Life Assurance.
MCCANDLISH, Mr. John M. (Late Manager, Union and National Assurance Company). The Medical Advisers of Assurance Companies; Some of their Difficulties
PLAYFAIR, John, M.B. (Edinburgh), conjointly with Mr. T. WALLACE (Actuary, North British and Mercantile Insurance Company). The Bearing of Pregnancy upon Life Assurance.

N. TROPICAL DISEASES.

Practical Pathology Room, University New Buildings.

President: PATRICK MANSON, M.D., LL.D. *Vice-Presidents:* ANDREW DAVIDSON, M.D., LL.D. ANDREW SMART, M.D., LL.D.; WILLIAM JOHN RITCHIE SIMPSON, M.D. *Honorary Secretaries:* JAMES CANTLIE, M.B., 46, Devonshire Street, Portland Place, W.; Surgeon-Captain M. LOUIS HUGHES, A.M.S., Aldershot.

The following discussions have been arranged: 1. The Unclassified Fevers of the Tropics. To be opened by Brigade-Surgeon-Lieutenant-Colonel Crombie, I.M.S.

2. Beri-Beri in Temperate Climates. To be opened by Conolly Norman, M.D. (Dublin).

3. The Epidemic of Plague in India. To be opened by W. J. R. Simpson, M.D. (late of Calcutta).

4. Insanitary Environment the cause of the Spread of Yellow Fever and Bubonic Plague. To be opened by Inspector-General Turnbull, R.N.

5. A Leaf from the Early History of Bacteriological Discovery. To be opened by Andrew Smart, M.D., LL.D.

The following among others intend to take part in the discussions or to send papers: Surgeon-Major-General Hamilton, Inspector-General Turnbull, R.N.; Dr. Patrick Manson, Professor Haffkine, Mr. Hankin, Surgeon-Major Andrew Duncan, Surgeon-Major Ronald Ross Surgeon-Captain Louis Hughes, Surgeon-Captain Buchanan, Dr. Andrew Davidson, Dr. Daniels, Dr. Sandwith, Dr. Sambon, Mr. James Cantlie, Dr. E. Charles, etc.

The following papers have been announced:

BROWN, Surgeon-Captain E. Harold, I.M.S. Abdominal Surgery in the Tropics.
CANTLIE, James, F.R.C.S. Surgical Requirements of the Tropics.
DAVIDSON, Andrew, M.D. The Malarial Problem in its Epidemiological Aspects.

HAFFKINE, Professor W. M. Plague in India.
HAMILTON, Surgeon-Major-General J. B., P.M.O. Plymouth. Enteric Fever in Armies and Tropical Climates.
HUGHES, Surgeon-Captain Louis, A.M.S. On the Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates.
MANSON, Patrick, M.D. Appearance of Pigmentation in Lymphocytes in Relation to the Diagnosis of Malaria.
SANDWITH, F. M., M.R.C.S. (Cairo). (1) Pellagra. (2) The Treatment of Acute Dysentery.
WALSH, Surgeon-Major J. H. Tull, I.M.S. Clinical Aspects and Treatment of Malarial Fever.
YARR, Surgeon-Major A.M.S. Malarial Eye Affections.

O. ANATOMY.

Practical Physiology Room, University New Buildings.

President: Sir JOHN STRUTHERS, M.D., LL.D. *Vice-Presidents:* Sir JAMES A. RUSSELL, M.B., LL.D.; JOHNSON SYMINGTON, M.D.; ANDREW MELVILLE PATERSON, M.D. *Honorary Secretaries:* DAVID HEPBURN, M.D., University, Edinburgh. JOSEPH RYLAND WHITAKER, B.A., M.B.Lond., F.R.C.P.Edin., Surgeons' Hall, Royal College of Surgeons, Edinburgh.

There will be a discussion on The Significance of Anatomical Variations, which will be opened by Professor Cunningham of Dublin in an address illustrated by lantern and in which Professor Shepherd of Montreal and Professor Young of Manchester will take part.

Professor Symington will give a Lantern Demonstration on Cranial Topography.

The following papers have been announced:

BERRY, R. J. A., M.D. Notes on a Specimen of Abnormally Situated and Distended Rectum.
BIRMINGHAM, Professor (Dublin). (1) On the Arrangement of the Muscle Fibres of the Stomach. (2) On the Arrangement of the Muscular Fibres at the Upper End of the Œsophagus. (3) Note on the Course of the Left Phrenic Nerve.
FITZGERALD, Dr. Some Abnormalities of the Ocular Muscles.
MCCARTHY, Dr. (Montreal). A New Dissection showing the Internal Gross Anatomy of the Hippocampus Major, with Specimens.
PATTEN, C. J., M.D. (communicated by D. J. Cunningham, F.R.S.). Case of Duodenal Diverticulum.
THOMSON, Professor A., M.B. Sexual Differences of the Fœtal Pelvis.
WATERSTON, David, M.B., C.M. Observations on the Anatomical Basis of Reduction of Dislocation of the Shoulder-joint by Manipulation.
WELSH, D. A., M.D. Exhibition of Specimens illustrating the Parathyroid Gland of Man.

P. PHYSIOLOGY.

Physiology Theatre, University New Buildings.

President: WILLIAM RUTHERFORD, M.D., F.R.S. *Vice-Presidents:* JOHN ALEXANDER MACWILLIAM, M.D.; D. NOËL PATON, M.D.; E. WAYMOUTH REID, M.B., F.R.S. *Honorary Secretaries:* EDMOND WILLIAM WACE CARLIER, M.D., 39, Morningside Drive, Edinburgh; ROBERT ARTHUR YOUNG, M.D., 37, Trevor Square, Knightsbridge, S.W.

Address on Tone Sensation, with reference to the Functions of the Cochlea. To be opened by Professor Rutherford, and followed by discussion.

Discussion on Intestinal Absorption. To be opened by Professor Waymouth Reid, F.R.S.

The following papers are promised:

BAIN, W., M.D. An Experimental Contribution to the Study of the Mechanism of Bile Secretion.
CARLIER, E. W., M.D. Changes that Occur in Some Cells in Mucous Membrane of the Newt's Stomach during Digestion.
COPEMAN, S. Monckton, M.D. Biliary Secretion in Man.
DUNLOP, J. C., M.D. On the Distribution of Nitrogen in the Urine.
GILLESPIE, A. Lockhart, M.D. On Proteoses.
GULLAND, G. Lovell, M.D. (1) On the Presence of Nerves on Intracranial Blood Vessels. (2) Exhibition of Specimens showing Changes in Mucous Membrane of Alimentary Canal of Salmon in Fresh Water.
HARRIS, D. Fraser, M.D. The Physico-Chemical State of Caseinogen.
MACWILLIAM, Professor J. A., M.D. The Influence of the Central Nervous System on the Rate of the Heart's Beat.
MAHALANOBIS, S. C., B.Sc. (1) An Electrical Key for Physiological Experiments. (2) Exhibition of Specimens showing Changes in Muscles of Salmon in Fresh Water.
MILROY, T. H., M.D. Chemical Changes in Pelagic Ova during Maturation.
MILROY, T. H., M.D., and MALCOLM, J., M.B. The Metabolism of Nuclein under Physiological and Pathological Conditions.
PATON, Noel D., M.D. (1) Protoplasm and Zymin Action. (2) Further Observations on the Metabolism of the Salmon.
PEMBREY, M. S., M.D. Observations upon the Deep and Surface Temperature of Man in Health and Disease.
RUTHERFORD, Professor, F.R.S. On the Secretion of Bile in the Human Subject.
STEWART, Professor G. N., M.D. (1) The Relation between Molecular Concentration (as Determined by Lowering the Freezing Point) and the Electrical Conductivity of Certain Animal Liquids, with Special Reference to Blood. (2) The Changes which take place in the Electrical Conductivity and Molecular Concentration of Certain Animal Liquids and Artificial Nutrient Media with the Growth in Them of Putrefactive Pathogenic Micro-organisms.
STURROCK, A. C., M.B. The Selective Power of Tissues, especially as Illustrated in the Mammary Gland.
TURNER, F. D. Dawson, M.D. (1) Experiments on the Production of Complementary Colour Sensations. (2) Stereoscopic Exhibition of Roentgen Photographs of Injected Blood Vessels.
WALLER, Augustus D., M.D., F.R.S. On the Action of Anæsthetics on Vegetable and Animal Protoplasm.
WATSON, D. C., M.B. The Place of Formation and *Rôle* of Uric Acid in the Animal Organism.
THOMPSON, Professor W. H., M.D. On the Influence of Peptone and its Precursors on the Work of the Kidney.

PROGRAMME OF PROCEEDINGS.

TUESDAY, JULY 26TH, 1898.

9.30 A.M.—Meeting of 1897-98 Council.
11 A.M.—Opening Service in St. Giles' Cathedral.
2.30 P.M.—First General Meeting. Report of Council. Reports of Committees; and other business. M'Ewan Hall.
8.30 P.M.—Adjourned General Meeting from 2.30 P.M. President's Address. M'Ewan Hall.
9.30 P.M.—Reception by the Right Hon. the Lord Provost of Edinburgh, in the Museum of Science.

WEDNESDAY, JULY 27TH, 1898.

9.30 A.M.—Meeting of 1898-99 Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Second General Meeting. Address in Medicine by Professor T. R. Fraser, M.D., LL.D. M'Ewan Hall.
4 to 6 P.M.—Garden Party at Craig House, Morningside Drive. Sir Alexander Christison, Bart., and Dr. Clouston will receive.
9.30 to 12 P.M.—Soirée by the Local Committee in honour of the Association, within the M'Ewan Hall and New University Quadrangle.

THURSDAY, JULY 28TH, 1898.

9.30 A.M.—Meeting of Council.
10 A.M. to 2 P.M.—Sectional Meetings.
3 P.M.—Third General Meeting. Address in Surgery, by Professor Annandale, F.R.C.S. M'Ewan Hall.
4 to 6 P.M.—Reception and Garden Party by the Royal College of Physicians, within the College and the adjacent Queen Street Gardens.
4 to 6 P.M.—Reception by the Royal College of Surgeons within the College.
4 to 6 P.M.—Reception by the Royal Medical Society within the Society's Hall.
4 to 6 P.M.—Garden Party by Professor and Mrs. Balfour, Inverleithen House.
7 P.M.—Public Dinner of the Association. Music Hall, George Street.
9 to 11 P.M.—The Ladies Committee will give a *conversazione* to ladies and invited guests within the Royal College of Physicians.

FRIDAY, JULY 29TH, 1898.

9.30 A.M.—Concluding General Meeting. Address in Psychological Medicine. By Sir John Batty Tuke, President of the Royal College of Physicians, Edinburgh. M'Ewan Hall.
11 A.M. to 1.30 P.M.—Sectional Meetings.
1.15 P.M.—Golf Party leaves for Muirfield.
4.30 P.M.—Garden Party by the Right Hon. the Earl of Hopetoun, G.C.M.G., at Hopetoun House.
9 P.M.—Reception and Ball by the Right Hon. the Lord Provost and the Magistrates of Edinburgh, in the Music Hall, George Street.

SATURDAY, JULY 30TH, 1898.

10 A.M.—The University Graduation Ceremonial will take place in the M'Ewan Hall.
Excursions.

Honorary Local Secretaries.

R. W. PHILIP, M.D., F.R.C.P.Edin., 4, Melville Crescent, Edinburgh.
JOHN SHAW M'LAREN, M.B., F.R.C.S.Edin., 14, Walker Street, Edinburgh.

RECEPTION ROOMS.

The Reception Room, which is located in the Oddfellows Hall, Forrest Road, opens on Monday, July 25th, from 4 P.M. until 9 P.M., and on Tuesday, July 26th, and the following days from 9 A.M. until 6 P.M. for the issue of tickets to members, and for supplying all necessary information. It is particularly requested that all members on their arrival will at once proceed to the Reception Room, Oddfellows Hall, enter their names and addresses, and obtain their tickets and *Daily Journals* containing programme, inquire for letters, consult list of lodgings, hotels, etc. A reception room for invited foreign guests will also be provided for in an office adjoining the entrance to the Oddfellows Hall. Excursion tickets will be distributed in the smaller hall on the first floor. Suitable arrangements for post office and correspondence will be found in the main Reception Room.

Ladies' Tickets.

Ladies accompanying Members will be received by the Ladies' Committee at the Masson Hall, 31, George Square. All information regarding special arrangements for ladies will be obtained there, and tickets admitting to the Public Addresses of the Association will be distributed.

Members or guests accompanied by ladies are invited to ask at the General Reception Room for a Lady's Ticket for entertainments, if such is desired, and *are particularly requested to note that they may take one lady only to any entertainment for which a ticket has been obtained.*

Students' Tickets.

Tickets will be issued to medical students of the fourth and fifth years. These tickets will admit to the General Addresses and to the Sectional Meetings of the Association, but will not confer privileges in respect of entertainments. The tickets will be distributed by the Students' Representative Council, University, Edinburgh, and for lady students by Miss Mackay, Medical College for Women, Chambers Street, Edinburgh.

Annual Dinner.

The annual dinner will be held in the Music Hall, George Street, on Thursday, July 28th, at 7 P.M. The total accommodation for members and guests is 445. More than half of the seats have been already applied for. No applications will be received after 12 noon on Wednesday, July 27th. Those who have already paid their dinner subscription are requested to call at the Reception Room and exchange their vouchers for dinner tickets. Those who have intimated their intention of being present at the dinner are requested to pay their subscription at the Reception Room. Any further information required may be obtained at the Reception Room, or from Mr. Alexis Thomson, 32, Rutland Square, Edinburgh, Secretary Dinner Committee.

Daily Luncheons.

These will be provided for members and their guests (including ladies) at the University Union (adjoining the M'Ewan Hall) from 12.30 P.M. onwards. The service will be a first-class *table d'hôte* one only, at 2s. 6d. per head. Wines, etc., will be supplied at club prices. All members of the Association are privileged to regard themselves as honorary members of the Union during the meeting.

Foreign Reception Room.

The reception room for invited and foreign guests is at 12, Forrest Road, next door to the General Reception Room, and will be open on Monday, July 25th, from 4 P.M. to 9 P.M., and every day throughout the meeting from 9 A.M. to 6 P.M. Guests are requested to call at the Reception Room as soon as possible after their arrival in Edinburgh, in order to enrol their names, to receive a visitor's ticket which admits them to all the privileges of the Association, and to obtain tickets for the various entertainments at which they wish to be present. All inquiries should be made at the Reception Room.

Railway Arrangements.

The Caledonian and North British Railway Companies will issue to members of the Association, on production of membership card, at Edinburgh (Waverley, Haymarket, and Princes Street) Stations, return tickets at single fares (minimum, 6d.), available for day of issue and the following day, to all places within fifty miles of Edinburgh. They will also issue periodical tickets, at a cheap rate, between Edinburgh and places near, covering the time of the meeting. No special facilities, apart from the ordinary tourist arrangements, are offered by the through railways from England or Ireland to Scotland.

Edinburgh Medical Missionary Society.

A Missionary Loan Exhibition, under the presidency of Prof. Sir T. Grainger Stewart, M.D., LL.D., President-Elect British Medical Association, will be held in Heriot School, Lauriston, Edinburgh (immediately opposite Royal Infirmary), July 25th to 30th. Amongst the exhibits will be models and photographs of medical mission hospitals, leper wards, native surgical instruments and drugs from China, etc., and numerous other objects of great interest. A large collection of medical antiquities will also be shown. Mrs. Bishop, F.R.G.S., Miss C. F. Gordon Cumming, Dr. A. Neve of Kashmir, Dr. F. I. Mackinnon of Damascus, Dr. J. A. Greig of Manchuria, and others are expected to take part. Tickets, 1s., 12 noon to 6 P.M.; 6d. 6 P.M. to 10 P.M. Admission free to members of the British Medical Association on showing their membership tickets.

The Annual Museum.

The annual Exhibition in connection with the meeting will be held in the Drill Hall, Forrest Road, Edinburgh, from July 26th to July 29th inclusive. The Exhibition will comprise foods and drugs, medical and surgical instruments, appliances and dressings, medical publications, sanitary and ambulance appliances, and other articles of interest to the medical profession.

The Drill Hall is a spacious building, well lit from the roof, and as the entrance is almost directly opposite that of the Reception Room, the situation is exceptionally advantageous. The small hall adjoining will be reserved for sanitary and ambulance appliances. For these the charge for floor space will be 1s. per square foot (all fittings to be provided by the exhibitor). For other exhibits the charge will be from 4s. per square foot, tables 3 feet and 3 feet 6 inches wide being provided.

Between two and three thousand catalogues will be printed and distributed gratis to members.

On application to the Secretary of the Exhibition Committee, Dr. Norman Walker, 7, Manor Place, Edinburgh, the regulations and any other particulars desired will be forwarded.

The Pathological Museum.

The annual Pathological Museum is arranged in the Practical Anatomy Room of the University. The exhibits, which number nearly 2,000, have been arranged in the following groups:

1. An Educational Series of Preparations, Models, etc., found useful for purposes of teaching.
2. Series illustrative of subjects to be discussed in the Sections.
3. A Bacteriological Series.
4. Specimens, Drawings, Photographs, etc., illustrative of modern Medical and Surgical Pathology.
5. Microscopic Specimens.

The museum will be open daily from 9 till 4. Catalogues may be had at the door.

N.B.—Members desirous of showing their specimens from the Pathological Museum at any of the Sections are requested to apply to the Secretaries of the Museum, who will arrange for their removal. Members requiring the use of microscopes for demonstrations in Sectional meetings will please give notice to the Secretaries of the Museum the day before, stating number of microscopes and powers required.

Secretaries: C. W. Cathcart, M.B., F.R.C.S.; Alex. Miles, M.D., F.R.C.S.E.

Excursions.

An attractive series of excursions, both for the half day and the whole of Saturday, has been arranged by the Excursions Subcommittee.

I. Short excursions, either on Saturday or on some of the week-day afternoons. These include visits to the Forth Bridge by coach or rail to Dalkeith and Roslin Chapel and Castle. Professor Cossar Ewart, F.R.S., has indicated his intention of inviting members to inspect his hybrid foals. An international golf match between teams representative of England and Scotland is in course of arrangement for Friday afternoon.

II. Whole day (Saturday) excursions. The series includes the following:

(*a*) *St. Andrews.*—The Marquis of Bute will entertain the members at luncheon, and allow them to inspect his recent excavations in the neighbourhood.

(*b*) *Falkland Palace and Kinross.*—Visiting the palace, where the Marquis of Bute will provide luncheon, and thence driving to Kinross for Loch Leven and Castle.

(*c*) *Dunkeld and Crieff.*—By rail to Dunkeld, and thence driving by the Small Glen and Amulree to Crieff, where the members will be entertained to dinner at the Hydropathic, by invitation of Dr. Meikle.

(*d*) *Dollar and Rumbling Bridge.*—Visit to Castle Campbell and other picturesque places in the neighbourhood. The members will be entertained to luncheon at Blair House and at Hilfoot House.

(*e*) *Perth and Dundee.*—By rail to Perth through Glen Farg. Thence by steamer down the Tay to Dundee. The members will be entertained at luncheon at Perth by Dr. Urquhart and in the afternoon by the Perth and Dundee Branches.

(*f*) *Melrose and Scott Country.*—By rail to Melrose and thence by carriage to Abbotsford, Dryburgh, etc. The members are invited to afternoon tea at Melrose Hydropathic.

(*g*) *Stirling and District.*—Visiting the famous Howietoun Fish Ponds and thence driving through Stirling, where the members will be entertained to luncheon by the Stirling, Kinross, and Clackmannan Branch, to Bridge of Allan, where a garden party will be given by the directors of the Mineral Wells Company.

(*h*) *St. Mary's Loch.*—By rail to Selkirk and thence driving to the celebrated St. Mary's Loch to Innerleithen and the Tweed.

(*i*) *The Trossachs.*—By rail to Callander and thence through the Trossachs.

LONGER TOURS IN SCOTLAND.

After the meeting tours of several days or a week or more may be conveniently undertaken. A number of suitable tours of varying length and cost will be suggested and arranged by Messrs. J. and H. Lindsay, tourist agents to the meeting, 7, Waterloo Place, Edinburgh, or at the Reception Room.

INTERNATIONAL GOLF MATCH.

It is proposed to hold a golf match on the afternoon of Friday, July 29th, over Muirfield and Archerfield Links, between resident Scottish and other members of the Association.

In order to facilitate arrangements, Secretaries have been appointed as follows: Dr. Colcott Fox, 14, Harley Street, London, W., for the South of England and Wales; Dr. Richardson, 19, Saville Row, Newcastle-on-Tyne, for the North of England and Ireland; and Dr. Blaikie, 42, Minto Street, Edinburgh, for Scotland.

NOTICES OF MOTION.

Dr. LOVELL DRAGE gives notice that he will move:

That the Council be requested to take the necessary steps for bringing to the notice of the Government the necessity for an inquiry by Royal Commission into the constitution of the various medical corporations and the General Medical Council, and into the grievances of the medical profession.

Dr. J. BRASSEY BRIERLEY gives notice that he will move:

1. That in By-law 8, page 15, the words from "each" on line 4 to "Association" on line 7 be deleted.
2. That in By-law 10 every word after "Council" on line 3 be deleted.
3. By-law 22, on first line, to substitute "six" for "four," and add to end, "and the travelling and hotel expenses of councillors and members of the Parliamentary Bills Committee shall be paid by the Treasurer out of the funds of the Association."

ADDITIONAL BY-LAW.

A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 400 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Committee.

The Parliamentary Committee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

Dr. JAMES A. MYRTLE gives notice that he will move:

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new Articles and Memorandum of Association, and, upon this being granted, to forthwith undertake the medical defence of members of the Association.

Dr. J. HADDON gives notice that he will move:

That the Scientific Grants be discontinued.

SPECIAL CORRESPONDENCE.

BERLIN.

Incomes and Salaries of Medical Professors.—A Pasteur Institute for Berlin.—Honour for Professor von Leyden.—The Emperor and the German Red Cross Society.—The Proposed Polish Congress.—Meat Poisoning at Hamburg.

To the Prussian Minister of Finance the large incomes which some of the famous medical professors in German Universities make by private practice have long been a thorn in the flesh, and there has been much talk of a proposed scheme by which these favoured mortals should be asked to consent to a reduction of their State salaries. The first step has now been taken in the shape of a confidential circular asking for co-operation in a sliding-scale scheme of self-taxation, a scheme which would reduce the State salary in proportion to the annual income (above a certain sum) accruing from private practice. This extraordinary proposal reduced to plain terms means that a professor earning from £1,000 a year in private practice would enjoy the enviable distinction of serving the State gratis. Herr von Miquel is a shrewd man, and probably himself hardly expects compliance with such a plan. Should he count on the proverbial, though somewhat out-of-date, unworldliness of the German professor, he may find that he has forgotten to reckon with the learned man's wife and daughters—an important factor in questions of income.

A department for the treatment of hydrophobia by Pasteur's method and for scientific research on the subject of hydrophobia has just been opened in the Berlin Institute for Infectious Diseases (Koch Institute). This establishment is the first of its kind in Germany. Apparently rabies is becoming more frequent in Germany. In spite of the stringent legislation on muzzling, five persons died of hydrophobia in Prussia during the year 1897.

Professor von Leyden has been elected a Corresponding Member of the Paris Académie des Sciences, thereby taking the place hitherto held by Professor Rudolf Virchow, who has been promoted to the higher grade of Associate.

The German Emperor has subscribed a donation of 10,000 marks (£500) to the collection made by the German Red Cross Society for the aid of the sick and wounded in the Spanish-American war.

Polish medical men had sent out invitations for a Polish medical congress in Posen (the capital of Prussian Poland) this summer, but the Prussian Government, seeing more of political demonstration than of scientific ardour in the plan, have forbidden the congress to be held there.

In the infantry battalion stationed at Altona, near Hamburg, no fewer than 165 men were attacked by severe illness of toxic origin. Thanks to energetic treatment they are now all on the road to recovery, although some of the cases were very serious. The cause has not yet been elucidated; at first it was thought that the cook had used hemlock instead of parsley, but later accounts give bad sausage-meat as the origin of the outbreak. Surgeon-General von Coler has proceeded to Altona to superintend the further investigations.

PARIS.

The Protection of Infant Life.—Poisonous Perfumes.—Refuges for Indigent Old People.—Match-making without Phosphorus.

DR. FERNAND LEDÉ, member of the Superior Committee for the Protection of Infants, calls upon the administration to adopt such measures that the medical inspectors on service shall be immediately informed of the arrival of children at the dwellings of their foster mothers; and that all nurslings boarded out be registered gratuitously at the Assistance Médicale, in accordance with the law of July 15th, 1893. Dr. Ledé declares that the administration could suppress a great many of the formalities now insisted on, and thus hasten the first medical inspection. These steps would lessen the rate of infant mortality. The certificate should be given by the medical inspector of the locality, who should be obliged to investigate the sanitary condition of the dwelling and the neighbouring dwellings; to ascertain that there is freedom from infectious disease, and that no injurious trade

or occupation is carried on there; also that the child of the foster mother is free from any contagious illness. The mortality of bottle-fed children is 9.27 per cent.: that of breast-fed children 5.92 per cent. The bottles with a long india-rubber tube are to be replaced by bottles easily cleansed. Sterilised milk is to be used.

Quite recently a member of the Paris Academy of Medicine informed that body that a number of scents and toilette luxuries contained bacilli, and accidents had resulted from the use of certain perfumes. In France alone the trade in perfumes amounts to £4,000,000. The craving for luxury at a small cost has led many perfumery distillers to use chemical products. Many soaps and scents are sold under false pretences notwithstanding the labels they bear attesting their harmlessness. Instead of reckoning among their constituent parts inoffensive vegetable products they contain dangerous salts and other chemical substances.

At a recent meeting of the Municipal Council the new Director of the Assistance Publique, Dr. Napias, was invited to state his views as to the provision of refuges for the aged and infirm, for unmarried mothers, and for tuberculous patients. M. Napias declared that he could not answer those questions satisfactorily and at the same time frankly. It was useless to make promises he was not sure he could fulfil. With regard to the aged and infirm, providing them with hospitals and pensions, M. Napias declares that it is difficult with the means at the disposal of the Public Assistance to improve their condition. There are 10,000 aged and infirm waiting to be placed in hospitals, and they will have to wait a long time, In 1817 the number of beds at their disposal was 6,650, in 1898 it was 8,832; the population of Paris has increased twofold. At the present moment 13,000 aged are helped; 8,932 are in hospitals and 4,088 receive help as an equivalent to hospital relief. M. Napias declared that boarding out in families is the most economical plan, but it has disadvantages. In the case of unmarried mothers he thinks means must be taken to prevail on the families to adopt these illegitimate children born among them.

The State engineers have succeeded in giving a formula for making lucifer matches which does not include either white phosphorus or any substance injurious to the health of the hands or that of the public. Machinery has also been invented which will contribute to the health and safety of the hands. The machinery has been tested; after a few improvements have been made in it, it will be generally adopted in the Government lucifer match factories.

MELBOURNE.

The New South Wales Branch of the British Medical Association.—The Treatment of Appendicitis.—The Destitute Poor.—Licensing Fees and the Hospitals.—The Infant Life Protection Act.—The Health of Melbourne.

Dr. Clubbe, in his retiring address as President of the New South Wales Branch of the British Medical Association, alluded with pride to the fact that the Branch now numbers 371 members, and is, with one exception, the largest colonial Branch. He spoke feelingly of the great services rendered to New South Wales by Dr. Norton Manning, who recently resigned the position of Inspector-General of the Insane, which he had honourably filled for thirty years. The effort to raise a subscription towards the erection of a hospital for consumptives had so far been but partially successful, as but £10,000 had been collected. Quite five or six times that amount was necessary to establish a fund before any steps could be taken towards the erection of a hospital. He hoped to see a new Medical Bill become law, which would effectually deal with quacks and abortionists who unfortunately abound in New South Wales. The working of the Public Health Act, as far as it applied to the prevention of infectious diseases, might be improved on, as it did not provide for the compulsory removal and isolation of persons suffering from infectious diseases where such isolation cannot be effectually carried out at home. Hospital abuse was as glaring in Sydney as in any other part of the globe, and he felt quite unable to offer any suggestions towards grappling with so difficult a problem. He thought medical fees were too high, and that the working classes and small tradesmen could not well afford to pay the present fees. The Government Statist of the colony estimates the number of employers at 56,000, and that of the wage earners at 300,000. The total income of the wage earners is £23,636,000, which gives the average of £76 per male and £34 per female wage earner for one year. For a man earning £70 a year, and with a family to keep, a fee of half a guinea is, in addition to the expense of medicines, about half his weekly earnings. The consequence is that they and others patronise the hospitals and do not pay their medical attendant. Dr. Clubbe considers that a lowering of the fee to suit these cases would be beneficial all round.

At a recent meeting of the Victorian Branch a discussion on the suitability of medical or surgical treatment in appendicitis was introduced by Dr. Henry and Mr. G. A. Syme. The debate was an unusually interesting one. The speakers were Mr. C. Ryan, Mr. F. Bird, Mr. M. O'Hara, and Dr. Springthorpe. The opinions expressed seemed to be pretty unanimous that when possible and where the symptoms were marked an operation should be attempted before the third day, and that a period existed during which it might be wiser to temporise.

The Government has for a long time been wrestling with the problem of what to do with our destitute poor. Under a charge of vagrancy the police could run the unfortunates into gaol, although their only crime consisted in being houseless, and being without means of support. Arrangements have now been made with the Committee of the Immigrants' Home to provide extra accommodation for 50 men and 30 women. We hope in this way to modify somewhat the reproach of heartlessness and inhumanity with which we have so long been charged.

The licensing fees for the colony of Victoria, which have been accumulating for some time, have now reached the sum of £90,000. Originally this fund was intended to provide for the compensation of those hotels which it was decided by public option to close. The Treasurer, in his proposed Charities Bill, has notified his intention to utilise £40,000 of this fund for paying off the debts of the various hospitals and charities and further to utilise the annual income from the licensing fees, which amount to about £9,000 a year, as a yearly Government grant to the charities. The Melbourne Hospital is in debt to the amount of £10,000, and is anxiously looking forward to Government assistance. From want of funds it has allowed its out-patient department to get into an insanitary and discreditable state. The Committee is, however, bestirring itself to introduce the required improvements.

Our Infant Life Protection Act is not all that it should be, and a subcommittee of the Society for the Prevention of Cruelty to and Neglect of Children has drawn up a report on the provision and practical working of the Act and presented it to the Chief Secretary. The committee took an immense amount of evidence, which it deliberated upon, and finally embodied its views in the report. As the result of its work the Society's report states that an amendment to the Bill is necessary, as within recent years fresh experience and knowledge have been obtained. It further states that no person should receive a child under the statutory age for the purpose of nursing or adopting unless such person and the residence are duly registered. The inspection of such children should be carried on until the children have reached the age of 5 years. Instead of the police making the inspection, it is suggested that female inspectors should be substituted. Instead of inquests being compulsory in each case of death, it is proposed that this should be done only by special advice of the coroner, and that this official should have the power to be satisfied with a certificate from a registered medical practitioner, who would have to certify that he had personally attended the child, and also specify the cause of death.

The report of the City Health Officer (Dr. Jamieson) for the year 1897 shows that in some respects the general health of Melbourne has improved, and it also shows that the death-rate is remarkably lower. The general mortality in London for the same year was 18.2 per 1,000, and for thirty-two English towns it was 19.7, while for eight Scotch towns it was 21.2. For Melbourne city it was only 13.6, and including the suburbs it was 15. The typhoid mortality has been increasing, Melbourne being above the cities quoted. The typhoid mortality per 10,000 in London was 1.27; in thirty-two English

towns it was 2 per 10,000, and for eight Scotch towns it was 1.78; while for Melbourne city it was 2.85, and for Melbourne and suburbs 2.60. The difference, it is believed, is largely due to patients coming from all parts of the country to receive attention in the hospitals. We still have surface drainage and a pan system of night soil disposal. We are now introducing an extensive system of deep drainage with water closet connections, so that there is good reason for believing that the clearing of the soil and the improved sanitary conditions will lead to a general improvement of the public health.

HONG KONG.

Report of Medical Officer of Health of the Colony for the year 1897.

THE annual report of Dr. Clark, Medical Officer of Health, has been published in the Government *Gazette*, and contains many points of interest regarding the work done by the Sanitary Board. Referring to the general sanitary condition of Hong Kong, an appeal is made for more thorough legislation, so that many defects in the construction of Chinese houses may be dealt with, especially the unhealthy custom of erecting back-to-back houses. In explanation Dr. Clark says:

It must be borne in mind that such back-to-back houses as erected in this colony cannot be in any way compared with back-to-back houses as erected in England, for in these latter the depth of the building rarely much exceeds the frontage, while in Hong Kong almost all dwellings are about 13 feet wide (exclusive of thickness of party walls), while they may extend in depth for some 30 to 50 feet, and consist of one long narrow room on each storey, lit only by one or two small windows, except upon the ground floor, where the whole front is more or less open during the daytime. At the back of this room is a cookhouse, with smoke hole in the ceiling, while the room itself is subdivided by partitions of match-boarding 8 feet high into a number of cubicles, varying in size from 6 feet by 7 feet by 10 feet, each of which constitutes the home of two, three, four, or more persons. It can readily be imagined that the amount of light which penetrates the interior of these cubicles is infinitesimal, and it is almost impossible for anyone who has not ventured into these dwellings to realise the amount of filth and rubbish that will accumulate in them even in a few weeks. The partition wall should not be allowed to be more than 6 feet in height.

The insanitary condition of many of the opium divans has been dealt with by the Legislative Council, and a new law came into force in March, whereby the right of granting licences is transferred from the opium farmer to the Colonial Secretary. The population of the colony in 1891 was 221,441, but on January 20th, 1897, the census was again taken, showing a total of 246,880; of these the Chinese numbered 233,280, non-Chinese 8,482, while the military population made up the remaining 5,118. The census shows that the population is essentially an adult one: Among non-Chinese 52.6 per cent. are between the ages of 20 and 45, while among the Chinese 55.9 per cent. are between the same ages. Further, there is a preponderance of the male sex among the Chinese, the proportion being 70.9 per cent. males. The death-rate is 18.85 per 1,000. Dr. Clark expresses it strongly:

No less than 1,800 Chinese die annually in Hong Kong as the result of gross insanitary conditions, many of which are at present permitted by the laws of the colony.

The report shows that nothing has yet been done to enforce the registration of Chinese doctors, a matter of first importance for the health of the colony. The infant death-rate among the Chinese, though less than in former years, is still very high—593 per 1,000, while among non-Chinese it is 120 per 1,000. The deaths among the former are largely due to diseases of a convulsive type, induced by the foul atmosphere of dwellings. The death-rate from respiratory diseases (among Chinese) is 4.7 per 1,000. The mortality among boat population is 6.5 per 1,000; among shore population, 4.4 per 1,000; more than 50 per cent. of the total deaths from chest diseases are due to phthisis. Malaria seems to be more fatal among the boating than the shore population—4.3 per 1,000 for former, and 2.8 per 1,000 for latter. Beri-beri is reported as being the cause of death in 173 cases, but 52 of these occurred on board vessels in harbour, and in persons recently arrived in the colony. From an analysis of these cases Dr. Clark shows that the disease appears to have a partiality for certain ships, and even berths, while repeat cases occur very rarely in domestic dwellings, and incline to the theory of "food infection."

The colony has been practically free from bubonic fever in 1897, only 21 cases occurring. Regarding the disinfection of houses, Dr. Clark says:

The marked recurrence of cases in houses previously infected, even after an interval of twelve months, has convinced me that only the most thorough disinfection, and even in some cases the removal of all existing unsound woodwork, will eradicate the disease from an infected dwelling, and I have decided to abolish the process of disinfection by burning sulphur and by washing the floors with some coal tar preparation, which have hitherto been in vogue in this colony, and to adopt the system of disinfection which has proved so successful in Paris, of spraying floors, walls, etc., with a 1 in 1000 solution of perchloride of mercury: the rooms will subsequently be exposed, as far as it is practicable in the ill-ventilated and mostly back to back dwellings in which these cases occur, to a free current of air by opening all doors, windows, and ventilators as fully as possible, and keeping the premises unoccupied for a few days.

There is a difficulty about enforcing vaccination in the colony—though vaccination of infants is compulsory—for only 7 per 1,000 of Chinese population are born in the colony. Sixty-five cases of enteric fever were reported, but only a small proportion were among Chinese—the apparent immunity being ascribed to the fact that children are so fully exposed to infection that they almost always contract disease in infancy; and if they should survive and have a second attack in adult life, it will be so modified as to be scarcely recognisable as such.

BELFAST.

The New Royal Victoria Hospital.—The Ulster Medical Society.

THE various steps preparatory to the erection of the new Royal Victoria Hospital, Belfast, are being taken as quickly as circumstances permit. The Bill giving the Corporation power to assign a free site to the new hospital on a portion of the ground belonging to the Borough Asylum has passed both Houses of Parliament, and received the royal assent. The modifications of the charter of the present Royal Hospital to suit the circumstances of the new hospital have been made after negotiations between the Board of Management of that hospital and the Relations Committee of the Royal Victoria Hospital. These modifications received the assent of the Corporation of the Royal Hospital at a special meeting upon July 11th: The hospital to be called the "Royal Victoria Hospital" instead of the "Royal Hospital." Medical, surgical, and other official appointments to the hospital are to be made by the Board of Management instead of as hitherto by the General Committee. The representation of the medical and surgical staff on the Board of Management to be five instead of two members, and one-fifth of the sixty persons elected to the General Committee in addition to the life governors and honorary officers are to be ladies. The Board of Management is to consist of the honorary officers, five annually-elected members of the medical and surgical staff, the present life governors with fifteen life governors and fifteen annual subscribers elected by the General Committee—one-fifth of elected life governors and annual subscribers, if possible, to be ladies, and one-third of each class elected to retire annually.

The annual business meeting of the Ulster Medical Society was held in the Museum, Belfast, upon July 7th; the President, Dr. J. A. Lindsay, was in the chair. The report of the Council showed that the meetings of the past year had been interesting and well attended, and that the Society was in a very prosperous state. The membership was now 151. The Treasurer's report showed a considerable balance to the credit of the Society. The reports of the Librarian and the Pathological Secretaries were presented and approved. Dr. Darling (Lurgan) introduced the subject of the Irish Local Government Bill, and its effect upon the status of Poor-law officers in Ireland. He pointed out that according to the amendment tabled by the Chief Secretary for Ireland, only those officers who at the time of the passing of the Bill had attained the age of 60 years, and had served twenty years, would be entitled to a retiring allowance, and that these officers constituted only a very small fraction of the Poor-law officers in Ireland. He moved a resolution to the effect that the Ulster Medical Society approves of the amendment proposed by Mr. J. H. Campbell, Q.C., which seeks to provide that Poor-law medical officers in Ireland, after completing the appointed period of service, and conforming to the usual conditions, should be entitled to a retiring allowance on the scale of Her Majesty's Civil Service. After some discussion this motion was carried unanimously, and the Secretary was directed to

communicate it to the members of Parliament for Belfast and certain of the Ulster boroughs and counties. The annual election of office-bearers for the session 1898-99 took place, with the following result:—*President:* Dr. Joseph Nelson. *Ex-President:* Dr. J. A. Lindsay. *Vice-Presidents:* Dr. John Campbell and Dr. Gaussen. *Members of Council:* Professor Byers, Dr. McKisack, Dr. Calwell, Dr. Walton Browne, Dr. Bigger, Dr. Mackenzie. *Hon. Treasurer:* Dr. McCaw. *Pathological Secretaries:* Dr. Lorrain Smith and Dr. Lynass. *Hon. Librarian:* Dr. Cecil Shaw. *Hon. Secretary:* Dr. James Colville, 40, University Road, Belfast.

CORRESPONDENCE.

THE ANAËROBIC BACTERIAL TREATMENT OF SEWAGE.

SIR,—The most recent advance in the treatment of sewage was subjecting it to aërobic fermentation. This now seems likely to be reinforced by an anaërobic method, and one which may play a most important part in the solution of a very difficult and costly problem. I should like therefore to direct attention to some early work upon the subject which, as far as I am aware, appears to have been overlooked. In January, 1893, my father received a very interesting letter from the British Consul at Barcelona, bringing to his notice a new method for the treatment of sewage, a method which the writer stated had been published in France about the year 1883 by the Abbé Moigno. The Consul stated that the system had been tried by a well-known merchant of Barcelona, at first at his factory and then at his private residence, and that at the time of writing the method had been in operation for five years with perfect success. The Consul had himself inspected the tank and had seen the almost colourless and odourless fluid which came away, and which was removed in casks and employed for manure purposes without causing the slightest repugnance. With the letter the Consul enclosed a very remarkable pamphlet upon this automatically discharging cesspool, entitled, A New, Hermetically-closed, completely Inodorous, Incessantly Self-emptying Cesspool, invented by M. Louis Mouras, propriétaire, Vesoul (Haute Saône). The pamphlet was written by the Abbé Moigno, and the substance is briefly as follows: In the year 1881 Monsieur Mouras asked the Abbé to publish his observations upon a cesspool system which he had in use for twenty years. According to the Abbé the system was hermetically closed, absolutely inodorous, and rendering infection impossible. "By a mysterious action which reveals an entirely new principle it transforms all that it receives, both solid and liquid evacuations, in a tolerably short time, and without any addition of chemical ingredients into a homogeneous and scarcely turbid liquid, which holds everything in suspension in a state of filaments almost invisible, without leaving any deposit against the sides of the soil pipe or at the bottom of the drain pipe." The apparatus is constantly discharging, and the fluid is admirable for domestic irrigation. The septic tank is then accurately described and figured and the capacity calculated for the amount of work it has to do. It is in effect the perfect septic tank as now understood. The Abbé discusses the theory of action of the complete decomposition of the fæcal and refuse material in the airless tank, and hints that it may be due to the action of a hydrosulphate of ammonia, but he adds that this is a conjecture, and proceeds, "May it not be discovered that the mysterious agents of the fermentation, cause of the decomposition and liquefaction of the fæces, are the vibrios, or rather the anaërobes, of M. Pasteur which the oxygen kills, and which only employ their devouring activity when excluded from the air?" A laboratory septic tank was constructed with glass sides, so that the whole process of fermentation and liquefaction could be observed; the layer of about 5 c.cm. which forms upon the surface is described and the manner in which it undergoes disintegration. A tap was placed on the top of the tank and over this a bladder was securely fastened, and it was found that little, if any, distension of the bladder occurred. If, however, air was admitted to the tank there was a rapid development of gas bubbles, and soon the bladder was distended, and therefore for the effective working of the bacterial destructor it was essential to exclude the air. He points out that a certain proportion of water is requisite to prevent saturation of the fluid with the product of decomposition, and in consequence arrest of the process. Chemical analysis of the fluid showed that it possessed strong fertilising properties. The Abbé conjectures that during the putrid anaërobic fermentation any pathogenic germs which might be present are destroyed, and that therefore the fluid can be turned with impunity into the sewers or used for irrigation. Practical details are added, in conclusion of this very remarkable document, showing how ordinary cesspools may be converted into the new form. The process was patented in 1881. I may add that we are erecting in the Hygienic Laboratory in Liverpool experimental tanks for further testing the process.—I am, etc.,

R. BOYCE,

July 18th. Professor of Pathology, University College, Liverpool.

THE ROYAL ARMY MEDICAL CORPS.

SIR,—I read with pleasure Mr. Edmund Owen's letter in the BRITISH MEDICAL JOURNAL of June 4th on the subject of the entrance examination for the Royal Medical Corps, and am glad he has drawn attention to this matter. I quite concur in all his remarks, and consider he has not put it at all too strong when he states that the examination as at present conducted is as wrong as it can be. The army requires men who are thoroughly good professionally, and are at the same time gentlemen, and I agree with Mr. Owen that such men are generally to be found among the athletes, and that every encouragement should be given to them to enter the service.

During my career of over twenty years in the army I have met a large number of young men entering the service, and have been surprised to see how deficient many of them were in practical work, notwithstanding that they took high places in the competitive examination; indeed, it has not infrequently been the case that the men at the bottom of the list were better practical surgeons than those higher up, and for this the method by which the examination is carried out must be held responsible. Owing to the fact that the work of the army surgeon is confined to one class only of the population, and that the most healthy, his opportunities for gaining practical experience are in ordinary peace times much less than in civil practice. It becomes all the more necessary, then, that we should get as many men as possible who have had practical experience as house-surgeons in large hospitals, and the more practical the examination is made the more of these men we are likely to obtain. The new Warrant as promised by the Secretary of State for War should render the Army Medical Service an exceedingly popular one, which should attract some of the best men who enter the profession. When this occurs we will be able to compel the respect of our brother officers in the other branches of the service, and there will then be no longer friction or unpleasantness between us.

To intending candidates I would give this advice—that if they wish to enter the army, they should do so as young as possible, as it is very unpleasant to find men younger and at the same time senior to yourself serving at the same station; moreover, your chance of reaching the higher ranks is, of course, proportionately reduced. In my opinion, the limit of age for entering the army might with advantage be reduced to 26 instead of 28 years of age, as at present.—I am, etc.,

June 28th. ROYAL MEDICAL CORPS.

THE DOSAGE OF LIQUOR THYROIDEI, *B.P.*, *1898*.

SIR,—Dr. Robert Hutchison's excellent paper in the BRITISH MEDICAL JOURNAL of July 16th on "The Pharmacological Action of the Thyroid Gland" will I am sure be read with interest by many. There is, however, one statement with regard to the dosage of liquor thyroidei with which I am unable to agree. Liquor thyroidei is simply the original liquid thyroid extract devised and described by me in 1891, which the new Pharmacopœia Committee has paid me the compliment of adopting, unaltered in strength or composition as an official preparation. The dose recommended in the *Pharmacopœia* is 5 to 15 minims, which are the proper limits of an ordinary dose for an average adult. Dr. Hutchison thinks this dose is too small, and that it would be better to give the dose as 15 to 60 minims. These doses are certainly too

large, as doses ranging from 30 to 60 minims are likely to produce unpleasant effects, even if given only once daily. I have constantly used this preparation for more than seven years, and have found that 10 minims of it given once daily is quite sufficient to maintain an adult who has suffered from myxœdema in good health. Thus, for example, my first case of myxœdema, who has now been treated with liquor thyroidei for more than seven years, is maintained in continual good health by this amount,

It seems, therefore, that this amount (10 mimims) contains as much thyroid secretion as is daily formed and poured into the blood by the healthy gland. In some cases it appears to be even less than this, for in another case 5 to 7 minims was found to be the suitable daily dose, larger doses producing increased frequency of the pulse, etc. When this patient ultimately died from cardiac disease, microscopical examination showed that the whole of the thyroid gland was converted into fat and fibrous tissue, not a trace of glandular structure being left. In this case no secretion at all can have been formed by the diseased gland, so that the 7 minims were equivalent to the maximum amount of normal thyroid secretion. It is thus evident that the dose given by the *Pharmacopœia* is the right one. Of course this dose may be increased or repeated more frequently if it is desired, and produce a condition of thyroidism, but such doses are really toxic and beyond the ordinary range.

In conclusion, I may mention that in my opinion liquor thyroidei gives better results in treatment than the dried preparations of the gland, so many of which are now used in the form of powders and tablets.—I am, etc.,

GEORGE MURRAY, M.A., M.D., F.R.C.P.

Newcastle-on-Tyne, July 18th.

THE BRITISH MEDICAL ASSOCIATION AND THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—I have read with considerable alarm the resolution passed by the Council of the Association, that a subcommittee of two be appointed to confer with the above Society, the Secretary of which was instructed last April to write that its Committee "cannot see that it is either possible or even necessary to insert a clause in the rules imposing a wage limit for membership."

This Society is of less importance to the medical profession than is generally recognised, and it would be absolute folly for the profession to encourage its pretensions.

Take the following illustrations from the annual report for the year 1896:

LONDON DIVISION.

Total number of members	859
Number of weeks of sickness	312
Cash received by the profession	£56 11s. 6d.

An average of 1s. 3¾d. per member per annum, or an average fee of 3s. 7¾d. for the professional services and medicines which a week's sickness represent.

Corresponding figures are even more striking:

LEEDS DIVISION.

Total number of members	457
Number of weeks of sickness	156
Cash received by the profession	£16 9s. 6d.

An average of 8¾d. per member per annum, or an average fee of 2s. 1¾d. for each week's sickness.

—I am, etc.,

Salford, July 16th. R. HANSON WOLSTENHOLME.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

SIR,—I think the letter from "A Member," in the BRITISH MEDICAL JOURNAL of July 16th, about the Medical Sickness and Accident Society is an extremely good one, and every word he says is perfectly true. No doubt the age limit of 65, at which all sick pay ceases, is a very great disadvantage. I myself have got several members to join the Society, but could certainly have got many more if it had not been for this clause; but why not take a vote on the matter, and abide by the decision of the members? I am only 35, and consequently a long way off 65, though I would far rather now, if necessary, pay a little more annually, and have the age limit extended. I may say I cannot speak too highly of the Society. I have on many occasions drawn upon its funds, and the prompt and businesslike way, and the courtesy one always receives at the hands of its genial secretary is to be much admired, and I feel sure it only wants to be more known to be more appreciated. The very economical way in which it is carried on with regard to working expenses might be well copied by other societies, and I have no doubt, if the Committee could see its way to alter this rule, our list of members would greatly increase.—I am, etc.,

LOUIS DEMETRIADI, F.R.C.S.Edin., D.P.H.

Huddersfield, July 17th.

SIR,—It is not at all surprising that "A Member's" letter in the BRITISH MEDICAL JOURNAL of June 18th should have elicited sympathetic notes from others, but, nevertheless, if the Society is to flourish and maintain its present satisfactory position his suggestions cannot be entertained.

Many were inclined to hold the views expressed by "A Member" at the time the Society was established, and only the logical arguments of the very excellent actuary then employed convinced them that any such extension of the age limit would infallibly wreck the scheme after a few years working. Mr. Ravenhill explains the reason in his able letter, and it is satisfactory to find the Chairman of our Society and others supporting him.

Recognising, as we all should, the necessity of an age limit for sick pay, and being desirous of handing our useful Society on to posterity, it would be suicidal to alter our present rule. Again, sick pay is not the remedy for old age difficulties; its place being more satisfactorily filled at that time by annuity. Some of us, from the foundation of the Society, have had the good fortune to pay our contributions regularly without experiencing the solace of its support in periods of sickness; let us be doubly thankful, and realise that beneficent as its sick pay is in trouble, it falls far short of the blessings of good health.

Trusting "A Member" will understand that whilst numbers sympathise with his suggestions, the facts are too strong, and therefore it behoves the executive to be on its guard against risky changes in the rules of the Society.—I am, etc.,

No. 419.

July 16th.

THE CHARGE AGAINST DR. REICHARDT, OF EWELL.

SIR,—It appears to me justifiable to ask for the support of the members of the medical profession when one of their fellows is attacked by a powerful body in regard to what he believes to be the proper conduct of his profession.

I therefore write under the following circumstances: Dr. Reichardt, of Ewell, who has had considerable experience in the treatment of nervous and insane patients received into his house, at the suggestion of a leading consulting general physician, a young lady who was suffering from temporary mental depression, he having no other certifiable patient in his house at the time. After the lady had been with him for a short time he called in a mental specialist to advise him as to whether the patient, who was still somewhat depressed, was in such a state as to require certification. The consultant decided that in his opinion she was not certifiable, and the patient began to improve in all ways till the reception of bad news seemed to upset her again, when she escaped from the house and drowned herself. Dr. Reichardt is now called upon to defend himself at the Old Bailey for alleged offences against the Lunacy Act; and it seems to me to be of the utmost importance to the profession generally that he should be placed in a position to defend himself and justify the treatment in private of patients who are suffering from temporary mental disorder. I therefore beg to appeal to my medical brethren for pecuniary support. I am, etc.,

3, Henrietta Street, W., July 15th. G. H. SAVAGE.

CONSTITUTION AND CONDUCT OF THE ASSOCIATION.

SIR,—I shall be glad if you will allow me to intimate to those of your readers who are interested in the proposed alteration in the By-laws that an informal meeting will be held on Monday evening, July 25th in the Chief Class Room of the new School of Medicine of the Royal Colleges, Bristo Street. The chair will be taken at 9.30 o'clock precisely, and the proposals bearing upon this and other questions will be considered with a view to facilitating discussion thereon when brought before the general meeting.

I trust that as many of those members who have reached Edinburgh, and are able to, will make it convenient to attend.

The best train from Manchester will leave Victoria on Monday at 12.50, reaching Princes Street at 6.5, and I shall be glad if anyone wishing to go by that train will let me know by Saturday night's post, so that the carriages may be reserved.—I am, etc.,

Old Trafford, July 18th. James Brassey Brierley.

RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.

Sir,—In the notice of my work, *Respiratory Exercises in the Treatment of Disease*, which appeared in the British Medical Journal of July 9th, a doubt is expressed as the practicability of getting any but the most intelligent patients to discriminate between the three primitive types of breathing I describe. Will you allow me to say that I have never yet found any difficulty in this respect?

Some of the statements contained in the notice in question are misleading. I let them pass; but I must protest against the implication that my book is mainly speculative; it is from start to finish essentially practical, and deals with methods of treatment which any practitioner may carry out for himself. Being convinced of the utility of these methods, I am anxious that they should have a fair trial. This is my excuse for writing to you.—I am, etc.,

Wimpole Street, W., July 11th. Harry Campbell.

*** The statement that the book is "from start to finish essentially practical" is hardly consistent with the author's kindly warning in his preface that the practical part of the book begins at the twentieth chapter. The cases put forward as convincing of the utility of his methods are for the most part admitted by the author to be of the markedly neurotic type. A reviewer would, indeed, be "misleading" if he failed to call attention to these facts.

MITRAL STENOSIS.

Sir,—Dr. Harry Campbell, commenting in the British Medical Journal of July 9th on Dr. Sansom's lecture reported on June 25th, asserts that the slit-shaped "button-hole" orifice is better than the round orifice of equal area, and favours the forward flow of blood. This seems likely, but on trying the experiment of making a round hole about the size of a sixpenny piece in the bottom of a tin box, and a long oval hole of equal area in a similar box, I get no appreciable difference in the rates of flow, and rather suspect that Dr. Campbell made holes too small for useful comparison, or is speaking carelessly, when he says the coefficient of discharge is "nearly doubled," "with a linear one of the same dimensions" as the round hole.

I admit that the coefficient of discharge is greater with a funnel-shaped orifice than with one in a flat diaphragm, the proportion being experimentally about 3 to 2.

"Observe, however," says Dr. Campbell, "that during ventricular systole the funnel flattens out, producing the rounded orifice, probably narrowed by the contraction of the mitral sphincter." Is there any evidence of either of these? Is not the funnel still held towards the ventricle by the chordæ tendineæ, often themselves shortened, and does anyone know whether the mitral sphincter contracts, dilates, or remains unaffected, divided as expert opinion appears on the subject?

To answer the question, "Have we not here an agency for preventing regurgitation at least as potent as that suggested by Dr. Samways?" I would reply, What agency? May we speak of the deformity which causes regurgitation as the agency which prevents it, because we can conceive of a worse? A small leak similarly prevents a ship sinking.

Potain and others have maintained for years that the funnel-shaped stenosed mitral may sometimes prevent regurgitation by the approximation of the funnel walls through lateral pressure. Such an explanation is plausible, but Dr. Campbell tells us that "during ventricular systole the funnel flattens out producing the rounded orifice," thus sacrificing substance for shadow.

The fact is that when there is most stenosis—that is, towards the latter part, the breakdown part, of a patient's life—there is commonly most regurgitation, though probably least valvular incompetence. The auricle can defend no longer the diminishing valvular orifice, because it cannot empty its contents through in time to become itself small before the ventricle contracts, and the auricle cannot resist the ventricle except when small. The orifice will now continue to leak, and the auricle will become mechanically dilated, unless by rest and treatment it may regain its tone.—I am, etc.,

Crouch End, N., July 13th. D. W. Samways.

DEATH CERTIFICATES FOR FRIENDLY SOCIETIES.

Sir,—With reference to Dr. Blight's letter of July 28th, in the British Medical Journal of June 9th hereon, permit me to point out, for his information, that Section lxi of the Friendly Societies Act (1896) (59 and 60 Vict.), reads as follows:

> A registered society or branch shall not pay any sum of money upon the death of a member or other person whose death is, or ought to be, entered in any register of deaths, except upon the production of a certificate of that death under the hand of the registrar of deaths or other person having care of the register of deaths in which that death is, or ought to be, entered,

and that the registrar of deaths only charges 1s. for the first certificate and 6d. for the second if applied for at the same time, instead of 2s. 7d. as stated by him.—I am, etc.,

F. Litchfield,
General Secretary of the National Deposit Friendly Society.
Red Lion Square, W.C., July 13th.

Obituary.

We regret to announce the death of Dr. David Johnston, of Belfast, which took place upon July 6th. The deceased gentleman had been in failing health for some time, and had gradually retired from active practice. He received his medical education at the Queen's College, Belfast, and graduated as M.D. of the late Queen's University in Ireland in the year 1866. In the same year he obtained the Membership of the Royal College of Surgeons of England. Dr. Johnston occupied for many years a useful and honoured place in the medical profession in Belfast. He was a careful and kindly physician, much trusted by his patients, and respected by his professional brethren. He was very retiring in his habits, and never sought office or public honours of any kind.

We regret to record the death of Dr. Duncan James Caddy, which occurred at his residence, 4, Earl's Court Gardens, S.W. Dr. Caddy was educated at Merchant Taylors' School, and in 1889 became a medical student at King's College, London, graduating M.B. at the University of Durham in 1892. In 1894 he proceeded to the degree of M.D., and in the same year was elected a Fellow of the Royal Geographical Society. He entered the Colonial Medical Service, and while in the West Indies, where he held several appointments, he earned the bronze medal of the Royal Humane Society by saving a life from drowning at great risk to himself. He earned the respect of all with whom he came in contact, and was greatly esteemed by patients and friends, who will alike regret that his promising career should have been cut short at so early an age.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Carlo Giacomini, Professor of Anatomy in the University of Turin, aged 57; Dr. Victor Michaux, Surgeon to the Civil Hospitals of Metz, aged 70; Dr. C. Dufay, formerly Senator for the Loir et Cher, President of the Medical Association of that Department, and father-in-law of the Minister of War, General Billot; and Dr. Ernest Cadèze, Medical Superintendent of the Lunatic Asylum of Liége and a very distinguished entomologist, aged 71.

The prizes gained in the London School of Dental Surgery were distributed by Lord Ludlow at the conversazione held at the Royal Institute Galleries, Piccadilly, on July 19th. After the presentation the numerous guests listened to a selection of music and to humorous sketches by Mr. Walter Churcher.

NAVAL AND MILITARY MEDICAL SERVICES.

THE NAVY.

THE following appointments have been made at the Admiralty: ARCHIBALD W. CAMPBELL, Surgeon, to the *Alarm*, July 12th; GEORGE E. MACLEOD, Surgeon, to the *Gossamer*, July 12th; GODFREY TAYLOR, B.A., M.B., Surgeon, to the *Leda*, for summer cruise, July 12th.

INDIAN MEDICAL SERVICE.

SURGEON-CAPTAIN JOHN P. MORTON, M.B., Madras Establishment, is transferred to the half-pay list, June 21st.

The retirement from the service of the undermentioned officers has received the approval of the Queen: Brigade-Surgeon-Lieutenant-Colonel DAVID D. CUNNINGHAM, C.I.E., Bengal Establishment, June 20th; Surgeon-Lieutenant-Colonel OSWALD BAKER, Bengal Establishment, July 6th; Surgeon-Lieutenant-Colonel JOHN F. FITZPATRICK, M.D., Madras Establishment, July 8th; and Surgeon-Lieutenant-Colonel JOSEPH BACKHOUSE, Madras Establishment, July 1st.

The names of the undermentioned officers, whose promotion to the rank of Surgeon-Lieutenant-Colonel was notified in the *London Gazette* of June 17th, are as follows, and not as given in that *Gazette*: Sir GEORGE SCOTT ROBERTSON, K.C.S.I., DAMODAR PURSHOTAM WARLIKER.

Surgeon-Colonel ROBERT BOWMAN, late of the Bombay Establishment, died at 1, Charlmont Place, Armagh.

THE VOLUNTEERS.

THE undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps specified, dated July 2nd: GEORGE R. C. RUSSELL, M.B., 1st Orkney Artillery; HERBERT S. OLIVER, 1st Volunteer Battalion the Buffs (East Kent Regiment); HERBERT J. HARGRAVE, 2nd Volunteer Battalion the Suffolk Regiment; LAWRENCE BOWMAN, M.B., 2nd Volunteer Battalion the Royal Scots Fusiliers; WILLIAM G. HEASMAN, 1st Volunteer Battalion Princess Charlotte of Wales's Royal Berkshire Regiment.

The undermentioned are also appointed Surgeon-Lieutenants, July 6th: EDWARD A. C. BAYLOR, M.D., 1st Volunteer Battalion the Buffs (East Kent Regiment); SAMUEL MACLEAN, M.B., 1st (Cumberland) Volunteer Battalion the Border Regiment; WILLIAM F MACDONALD, M.B., 2nd Volunteer Battalion the Highland Light Infantry.

Captain JAMES S. WILSON, M.D., 2nd Volunteer Battalion the South Staffordshire Regiment, formerly Surgeon, resigns his commission, and is appointed Surgeon-Captain, July 2nd.

Surgeon-Lieutenant-Colonel W. R. SMITH, M.D., 1st London Rifles, is promoted to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the East London Volunteer Infantry Brigade, July 2nd.

Surgeon-Majors G. G. SPARROW, 2nd Hampshire Artillery Company (Southern Division Royal Artillery), and C. W. THORP, 2nd Volunteer Battalion the Lancashire Fusiliers, are promoted to be Surgeon-Lieutenant-Colonels, July 6th.

THE MEKRAN OPERATIONS.

A DESPATCH from Lieutenant-Colonel R. C. G. Mayne, commanding the troops in Mekran, describing the operations there in January and February last, is published in the *London Gazette* of July 15th. In the course of his report Colonel Mayne says: "Surgeon-Captain E. G. R. Whitcombe, with his hospital assistants, was up in the firing line from the commencement of the action tending the wounded."

LIABLE TO RECALL.

A CORRESPONDENT wants to know whether an officer liable to recall can resign in Canada?

*** We know of nothing against it. Our correspondent also asks whether officers and men of the Reserves can, but we are unable to answer this question.

SERVICE IN WEST AFRICA.

A CORRESPONDENT writes: There are at present no fewer than six medical officers [illegible] on the West Coast of Africa who were simply ordered out, and did not volunteer. He writes: It has been understood, hitherto, that such service was voluntary, and the removal, as you have pointed out, of [illegible] medical list from the revised Army List lends colour to the [illegible] such service is now and in future compulsory. [illegible] will undoubtedly lead to trouble.

*** The [illegible] of the service at present carried out [illegible] well shown by the large number of casualties among the white men.

HONOURS FOR THE INDIAN FRONTIER WAR.

SURGEON-GENERAL [illegible] I read with great indignation the answer of Lord George Hamilton to Sir W. Foster, that Surgeon-Lieutenant Hugo, whose splendid act of bravery and devotion, under fire on three [illegible] in securing a bleeding artery, and carrying the wounded officer, Lieutenant Ford, to a place of safety, "has received for his services the decoration of the Distinguished Service Order." As is well known, this D.S.O. is [illegible] reserved for acts of conspicuous bravery in the field, but the V.C. [illegible] in the field.

PAY IN INDIA.

A CORRESPONDENT, writing from India, says: In your able article on the "Active List" of the Medical Service you did not mention that, although each of the [illegible] Surgeon-Lieutenant-Colonel in India draws [illegible] Lieutenant-Colonel.

UNIVERSITIES AND COLLEGES.

ROYAL UNIVERSITY OF IRELAND.

FIRST EXAMINATION IN MEDICINE.—The following candidates have passed the Examination:

J. V. Bateman, Queen's College, Cork; R. Best, Queen's College, Galway; R. J. Bethune, Queen's College, Belfast; S. H. G. Blakely, Queen's College, Belfast; J. D. Buchanan, Queen's College, Belfast; J. H. Campbell, Queen's College, Belfast; T. Carnwath, Queen's College, Belfast; Florence M. M. Condon, Royal College of Science; R. Cox, Queen's College, Cork; W. Cummings, Queen's College, Belfast; J. W. Dale, Queen's College, Belfast; J. Dawson, Queen's College, Cork; R. J. Dwane, University College, Dublin; A. J. Foote, Queen's College, Cork; R. W. Harper, Queen's College, Belfast; J. P. I. Harty, Queen's College, Cork; N. d'E. Harvey, Queen's College, Cork; W. R. Hayden, Queen's College, Belfast; J. H. Hegarty, University College, Dublin; S. T. Irwin, Queen's College, Belfast; Mary E. Jeremy, B.A., University College, London; H. M. Johnston, Queen's College, Belfast; G. Kelly, University College, Dublin; J. W. Killen, Queen's College, Belfast; T. Killen, Queen's College, Belfast; J. McClatchey, Queen's College, Belfast; T. McFetridge, Queen's College, Cork; F. A. McOstrich, Queen's College, Cork; S. B. W. Moore, Queen's College, Belfast; P. M. O'Dwyer, Queen's College, Cork; C. R. Peters, Queen's College, Cork; W. J. Sheehan, University College, Dublin; J. Shipsey, Queen's College, Cork; J. K. Small, Queen's College, Belfast; F. C. Smyth, Queen's College, Belfast; S. Stockman, Queen's College, Belfast; J. H. Thompson, Queen's College, Belfast; W. Warnock, Queen's College, Galway; J. E. Wilson, Queen's College, Belfast.

The *Calendar* for 1898, which has recently been issued, consists of two volumes. The first contains particulars as to the conditions upon which degrees are granted in the various faculties, together with a list of graduates. The second contains the examination papers for 1897.

CONJOINT BOARD IN IRELAND.

FIRST PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:—

Completed the Examination.—Honours in order of merit: G. C. Robinson, A. Charles, and C. W. Ewing, equal; Miss M. J. Shire, W. J. O'Doherty, L. C. E. Murphy, W. B. A. Moore. Pass Division, alphabetically: Miss L. H. Alexander, C. N. Bryan, W. Delany, J. A. Dillon, C. H. Downing, J. P. Falls, T. G. Galligan, B. D. Gibson, J. Harvey, D. F. Hegarty, T. E. Johnston, J. Murray, T. A. M'Dougall, M. A. A. O'Brien, J. O'Doherty, E. O'Grady, C. E. O'Keeffe, M. J. O'Meara, P. W. Power, S. H. Raverty, C. Robinson, C. Waters, J. P. White, G. B. Wilkinson.

Anatomy.—T. M. Allen, R. M. Atkin, J. E. Brereton, G. F. H. Davison, Miss S. F. Dickson, T. C. Fitzgerald, R. E. Humfrey, L. F. Kelly, J. J. Moore, J. Murphy, M. O'Keeffe, D. M. O'Sullivan, P. M. Sheridan, A. E. E. B. Williams.

Chemistry and Physics.—A. H. R. Duncan, R. E. Humfrey, J. Murphy.

Biology.—R. M. Askin, G. F. H. Davison, T. C. Fitz erald, R. E. Humfrey, J. J. Moore, M. O'Keeffe, J. Onreat, D. M. O'Sullivan.

Pharmacy.—T. M. Allen, J. Archdeacon, R. M. Atkin, Miss S. F. Dickson, T. C. Fitzgerald, J. Gatavan, L. F. Kelly, J. J. Moore, J. Murphy, F. G. M'Caughey, D. M. O'Sullivan, E. A. Reilly, A. M. Sayers, T. P. Seymour, P. M. Sheridan.

SECOND PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

Completed the Examination.—Honours: J. P. Byrne. Pass: W. E. Adrian, R. Allison, J. F. Brogan, P. N. Creagh, S. W. Cumming, A. D. C. Cummins, G. Downing, J. Dundas, G. H. Enright, S. G. Gordon, M. Graham, R. A. Johnston, J. F. L. Keegan, J. M. S. Levis, G. L. N. Miles, L. R. More-O'Ferrall, O. F. M. Ormsby, J. F. Peart, E. M. Pennefather, S. Potter, J. M. Reynolds, L. G. de Rosario, R. A. Ross, T. D. Sullivan, T. J. Tallon, E. R. Towsend, R. C. Venn.

Anatomy.—H. L. A. Barry, F. W. Brunker, J. J. S. Carbury, H. A. Cecil, C. W. Conry, W. N. Eustace, J. F. Fitzmaurice, E. Glenny, G. Goldfoot, P. J. Hanafin, J. J. Harty, M. J. Johnston, G. W. Knight, F. J. Lennon, J. R. Magee, W. R. Meredith, A. A. W. Merrick, R. F. MacMahon, P. J. Nicoll, J. C. O'Donnell, A. E. O'Reilly, D. J. O'Reilly, W. H. M. Phelan, F. G. Sharp, J. White, T. J. Wright.

Histology.—H. L. A. Barry, C. W. Conry, A. S. Cosgrave, P. L. Crosbie, W. Davis, E. Glenny, G. Goldfoot, P. J. Hanafin, M. J. Johnston, G. W. Knight, F. J. Lennan, J. R. Magee, J. P. O'Donnell, S. A. Tucker, J. White, T. J. Wright.

Physiology.—J. F. Fitzmaurice, E. Glenny, P. J. Hanafin, J. R. Magee, R. F. MacMahon, D. J. O'Reilly, W. H. M. Phelan, J. White, R. O. White.

Materia Medica.—P. L. Crosbie, D. Gilles, M. J. Johnston, W. R. Meredith, W. H. M. Phelan, S. A. Tucker.

THIRD PROFESSIONAL EXAMINATION. — Candidates have passed this examination as undernoted:

Completed the Examination.—Honours: D. A. Fitzgerald. Pass: E. Bennett, J. Conway, M. M. Crawford, R. B. Daly, T. J. O'Connor Donlan, R. M. Fisher, R. J. Franklin, M. F. Hession, C. G. Jones, R. H. Moffit, J. Neilan, J. McDonald, E. E. Roberts, R. J. White.

Anatomy (4 years). J. F. Allan, G. W. R. Clarke, T. N. Smith.

Pharmacology (4 years). T. N. Smith.

Medicine.—R. M. M. Colley, T. P. Cormack, N. P. Kirby, J. A. Martin.

Surgery.—J. W. Clarke Bayliss, W. A. Cooke, S. R. Godkin, J. L. Jones, J. A. Martin, C. B. Pasley, W. Patterson.

Pathology.—R. J. Cane, B. McM. Colley, D. J. Farrell, S. R. Godkin, A. H. Jacob, J. L. Jones, C. B. Pasley, W. Patterson, D. Power.

Therapeutics.—W. S. D. Bird, B. McM. Colley, W. A. Cooke, W. C. Croly, S. R. Godkin, J. L. Jones, G. L. N. Miles, P. J. McGinn, C. B. Pasley.

Forensic Medicine, etc.—W. S. D. Bird, R. J. Cane, W. A. Cooke, W. C. Croly, S. R. Godkin, A. H. Jacob, J. D. Jones, T. E. Loughrey, J. A. Martin, P. J. McGinn, C. B. Pasley, W. Patterson.

QUEEN'S COLLEGE, GALWAY.

THE *Calendar* of the College for 1897-8 contains full particulars as to the constitution of the College, and of the courses of lectures and demonstrations given in it. It also contains specimens of examination papers. A photograph of the College is reproduced as a frontispiece.

MEDICO-LEGAL.

CONVICTION OF AN UNREGISTERED PRACTITIONER.

IN the Glasgow Sheriff Summary Court on July 8th Sheriff Boyd commenced the hearing of a case in which, according to the report in the *Glasgow Herald*, Abraham S. Eastburn, 13, Cambridge Street, who was alleged to call himself physician and surgeon, professor, American eclectic medical specialist, and using the letters A.M.S., was charged, at the instance of the Scottish Branch Council of the General Council of Medical Education and Registration of the United Kingdom, with having been guilty of an offence within the meaning of the Medical Act, 1858, in so far as, during the month of June, 1898, in Glasgow, he falsely pretended to be and took or used the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, or surgery, or other names, titles, additions, or descriptions, implying that he was registered under the Medical Act, 1858, or that he was recognised by law as a physician or surgeon, or a licentiate in medicine or surgery, or a practitioner in medicine, whereby he had incurred a penalty not exceeding £20. Mr. P. Lamond, Writer, appeared for the prosecutor, and Mr. A. S. D. Thomson, Advocate, Edinburgh, instructed by Mr. Daniel Mackenzie, Writer, Glasgow, appeared for the respondent.

A printer stated that he had printed 20,000 of the large bills for Mr. Eastburn in the course of a year, and that 1,000,000 of the small handbills were ordered at a time, though the delivery was spread over a long period.

Mr. James Robertson, Registrar of the Scottish Branch Council, said that Eastburn's name was not on the official list of registered persons. The title A.M.S. was not registrable.

The case was adjourned until July 13th, when evidence was given as to the posting and distribution of bills.

The Sheriff stated that the Medical Act was passed to protect the public by enabling them to distinguish between qualified practitioners and people who practised without a qualification. Parliament could not by a mere Act put down fools, and as long as there are fools there will be quack-salvers; but the target at which the Act aimed was the quack-salver who falsely pretended to be a registered person. Had the title A.M.S. stood alone the case might have been somewhat narrower, but by a very ingenious qualification the respondent supplied what was the meaning and interpretation thereof, because immediately under his name, "Professor Eastburn, A.M.S.", came the words "the Celebrated American Eclectic Medical Specialist," and it did not take any very astute person to see in A.M.S. "American Medical Specialist." It was part of the common stock of knowledge that legal medical qualifications were represented by initials, and the use of these letters, especially in this qualification which he (the Sheriff) had pointed to, led naturally to the impression that the respondent was recognised by law as a practitioner of medicine. The Sheriff thought that this was done falsely, and the respondent had laid claim to a qualification which had been proved was not his to claim. The Sheriff thought that if he were anxious to keep exactly to the terms of the section he should find that the respondent had "wilfully and falsely taken and used the title or addition of A.M.S., implying that he was recognised by law as a practitioner in medicine." He saw no reason for limiting the penalty which was the logical result of his conclusion, and accordingly he fined the respondent £20, with £3 3s. expenses.

RIGHTS OF PURCHASER ON SALE OF GOODS.

A CORRESPONDENT asks whether a wholesale chemist is obliged to replace a defective article or not. It is a point, he adds, of importance to medical men, though the amount involved is usually so small that it is not worth while to seek any legal remedy.

*** We fear this question raises too many difficulties to enable us to give any useful general reply in the columns of the BRITISH MEDICAL JOURNAL. We may say, however, that if in the case quoted by our correspondent, the contract for sale were complete, the seller could not probably be required to replace the article. The remedy (if any) would be in damages for breach of an implied warranty.

MEDICAL PRACTITIONER AND PATIENT.

PERPLEXED asks the following question: When a patient sends for a doctor and offers him his fee, can the doctor legally refuse to attend such patient?

*** There is no legal obligation on the part of a medical practitioner to attend a patient, and the tender of a fee does not affect the matter, assuming, of course, that the fee is refused.

PROPOSED ARBITRATION FOR SETTLING DISPUTE.

A CORRESPONDENT refers to a question at issue between an employer and assistant, and inquires if we should be willing to arbitrate between the parties.

*** We fear we could not undertake the duties of an arbitrator in the ordinary sense of the term, but if both parties would sign an agreed statement of facts, we should on such statement being submitted to us be willing to express an unbiassed opinion.

MEDICAL NEWS.

PROFESSOR W. H. CORFIELD, M.D., has, at the request of the Committee, accepted the post of Honorary Sanitary Adviser to University College and Hospital.

THE sum of £12,000, the proceeds of the Press Bazaar held recently at the Hotel Cecil, has been handed over to the London Hospital.

PERCY THEODORE HERRING, M.B., C.M., and George Freeland Barbour Simpson, M.B., C.M., have been appointed House-Surgeons to the Edinburgh Royal Maternity and Simpson Memorial Hospital, and enter on duty on August 1st next.

THE ORAL INSTRUCTION OF DEAF MUTES.—At the annual meeting of the Fitzroy Square Institution, which consists of a college for training teachers, and a school for deaf mutes, Mr. R. Brudenell Carter presided over a large attendance. Speech through the eye, and by lip imitation was (in the opinion of the Chairman) of great advantage mentally over the old system of signing, and nothing was to be compared with it in breaking down the barrier and bridging over the gulf which separated the deaf from the hearing. Mr. Van Praagh, the Director, having described and demonstrated the educational methods adopted, the prizes were distributed by Mrs. Arthur Lucas.

FRENCH SURGICAL CONGRESS.—The twelfth Congress of the French Surgical Association will be held in Paris, from October 17th to 22nd, under the presidency of Professor Le Dentu, Surgeon to the Necker Hospital. The opening meeting will take place in the Great Amphitheatre of the Faculty of Medicine, on Monday, October 17th, at 2 P.M. The questions proposed for discussion are: (1) Nephrotomy, to be introduced by MM. Guyon and Albarran; (2) the Treatment of Goître, excluding cancer of the thyroid and exophthalmic goître, to be introduced by M. J. Reverdin, of Geneva. Full information as to the Congress may be obtained from the General Secretary, Dr. Lucien Picqué, 8, Rue d'Isly, Paris.

THE SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—Mr. Christopher Heath, Vice-President, took the chair at the quarterly court of the directors of this Society on July 13th. Two members were elected, and the death of Mr. Henry Lee, a Vice-President, announced. The death of a widow was reported who had been in receipt of grants since January, 1868, and had received in all £893. It was resolved to distribute £1,203 10s. among the 49 widows, and 12 orphans on the books of the Society, and the 6 recipients from the Copeland Fund. The expenses of the quarter were £44 13s. 6d. The funded property had been increased by the purchase of £500 Birmingham Corporation stock.

THE medals and prizes were presented at the Charing Cross Hospital Medical School on July 20th by Mr. McKinnon Wood, Chairman of the London County Council. Mr. McKinnon Wood in his speech said he assumed he had been asked to preside because an important function of the County Council was the same as that of medical men generally—namely, to reduce the death-rate. He referred to the increasing influence of the medical profession as shown in the literature of the country compared with that of two centuries ago, and argued that the change was mainly due to the decline of empiricism and the proportionate progress of accurate scientific knowledge upon which more valuable opinions could be based. The vote of thanks was moved by Sir Joseph Fayrer, Bart., seconded by Mr. J. H. Morgan, and carried by acclamation.

HAMPSTEAD HEATH EXTENSION SCHEME.—The proposal to add the Golders Hill Estate to Hampstead Heath as a public gift is, we are glad to see, being received with favour by the public. As factors in the healthiness of London the value of open spaces cannot be overestimated; but the claims of Hampstead are, as Canon Ainger remarked at the Mansion House meeting in aid of the scheme on Tuesday, July 19th, unique, inasmuch as it is the only one of London's lungs that retains the "sentiment of country." At the same meeting Sir Samuel Wilks made an eloquent appeal for help

for the scheme on the grounds of the value of fresh air to the health of Londoners; and Lady Jeune asked for similar support by reason of the joy that the country gave to London children. The scheme, which was the last public work promoted by Mr. Ernest Hart, has thus fallen into good hands, and we sincerely hope it will be brought to a successful issue.

CREMATION IN NORWAY.—The Norwegian Legislature recently passed a law permitting cremation in the case of persons over 15 years of age who make a declaration in the presence of two witnesses that they wish their bodies to be disposed of in that manner. In the case of children under 15, a declaration must be made by the parents. The medical registrar, the medical attendants, and the police must also make statements in writing as to the cause of death before a body can be cremated. The measure was opposed by the ecclesiastical authorities on religious grounds, and by the judicial authorities on the ground that cremation would make medical investigation in cases of suspected crime impossible. The weight of medical opinion was in favour of the proposal.

MEDICAL VACANCIES.

The following vacancies are announced:

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—Second Assistant Medical Officer. Unmarried, and not exceeding 35 years of age. Salary, £130 per annum, apartments, board, and washing. Applications to the Clerk by August 23rd.

BIRMINGHAM GENERAL HOSPITAL.—House-Physician. Salary, £70 per annum, with residence, board, and washing. Applications to the House Governor by July 30th.

BISHOP'S STORTFORD UNION.—Medical Officer and Public Vaccinator for the Pelhams District. Salary, £85 per annum. Applications to the Clerk by July 25th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton.—House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician; unmarried, and under 30 years of age. Salary, commencing at £50 per annum, with board and residence. Applications to the Secretary by August 24th.

CANCER HOSPITAL (FREE), Fulham Road, S.W.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by August 2nd.

CARDIFF INFIRMARY.—Assistant House-Physician and an Assistant House-Surgeon. Salary at the rate of £50 per annum, with board, washing, and apartments. Applications to the Secretary by July 26th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Anatomy. Stipend, £120 per annum. Temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary, £120. Applications to the Registrar by July 30th.

CHARING CROSS HOSPITAL.—Assistant Anæsthetist. Applications to the Secretary by July 30th.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Registrar. Honorarium, 20 guineas a year. Applications to the Secretary by August 8th.

DERBY COUNTY ASYLUM.—Second Assistant Medical Officer; unmarried. Salary, £100 per annum, rising to £120, with board, lodging, and washing. Applications to B. Scott Currey, St. Michael's Churchyard, Derby, by July 28th.

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £40 per annum, with board, residence, and washing. Applications to the Secretary by August 12th.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer; not exceeding 30 years of age. Salary, £120, rising to £160. Applications to the Medical Superintendent by July 30th.

DUNDEE ROYAL INFIRMARY.—Two Resident Medical Assistants. Appointments for six months. Salary at the rate of £40 per annum, with board and washing. Applications to the Medical superintendent by August 10th.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. No salary, but residence, board, and laundry provided. Applications to the [illegible] by [illegible].

HOLBORN UNION.—Resident Medical Officer for the Workhouse, Shepherdess Walk, City Road, N. Salary £[illegible] per annum, with furnished apartments, fees for vaccination, and [illegible] pregnancy certificate; between 25 and 40 years of age. Applications [illegible] July 25th.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 145, New Kent Road.—Orthopædic Surgeon and Ophthalmic [illegible] Applications to the Honorary Secretary by August 20th.

LAMBETH INFIRMARY.—Resident Clinical Assistant, and Second Assistant to the [illegible] Appointments for six months. Salary at the rate of £50 per annum. Applications to the Medical Superintendent, Brook Street, Kennington [illegible], S.E.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee [illegible].

MANCHESTER [illegible] HOSPITAL.—Resident Junior House-Surgeon. Salary, £50, [illegible]. Applications to the Secretary by August 8th.

MANCHESTER [illegible] COLLEGE.—Demonstrator of Anatomy. Applications to the [illegible] by August 1st.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £70 per annum, with [illegible] and washing. Applications, endorsed "House-Surgeon," to [illegible] by July 25th.

MARGATE ROYAL PAVILION HOSPITAL.—Resident Surgeon. Salary, £100 per annum, with board and residence. Applications to the Secretary at the offices, 30, Cannon Street, W.C., by [illegible].

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham. Salary £80, rising to £200, with board, lodging, [illegible]; must not be under 21 nor exceed 35 years. Applications to [illegible] August.

NEW HOSPITAL FOR WOMEN, 144, Euston Road.—House-Physician and House-Surgeon. Applications to the Secretary by July 23rd.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary, £180 a year, with coal, gas, furnished apartments, etc. Also Clinical Assistant. Salary £[illegible] for six months, with coal, gas, furnished apartments, etc. Applications [illegible].

ST. ANDREWS UNIVERSITY.—Professorship of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 1st.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Honorarium of £10 at end of six months, with board, lodging, and washing. Unmarried. Applications to the Secretary by July 27th.

STAFFORDSHIRE COUNTY ASYLUM.—Medical Officer to act as "Locum Tenens" for two or three months. Salary, 2 guineas per week, with board, etc. Applications to the Medical Superintendent.

VICTORIA UNIVERSITY, The Yorkshire College, Leeds.—Demonstrator of Pathology. Salary, £150. Applications to the Registrar by July 23rd.

WAKEFIELD: WEST RIDING ASYLUM.—Pathologist. Salary, £150 per annum, increasing to £200, with board and furnished apartments. Applications to the Medical Director.

WEST HAM UNION.—Assistant (Resident) Medical Officer for the Workhouse and School. Salary combined, £125 per annum, with usual residental allowances. Applications, on forms provided, to the Secretary by July 27th.

WORCESTERSHIRE COUNTY COUNCIL.—Additional County Analyst. Salary, £400 per annum. Appointment for six months. Applications, endorsed "County Analyst," to the Clerk, Shirehall, Worcester, by August 19th.

MEDICAL APPOINTMENTS.

BAILEY, Francis William, M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Anæsthetist to the Royal Infirmary, Liverpool.

CHRISTOPHERSON, J. B., M.A., M.D., B.C.Cantab, F.R.C.S.Eng., elected Assistant Demonstrator of Anatomy at St. Bartholomew's Hospital, London.

COLLEN, George Denbigh, M.A., M.D., B.Ch., B.A.O., Dublin University, appointed Medical Officer for All Saints District of Northampton Union.

DOBBIN, Francis W., B.A.Dub., M.D., appointed Medical Officer of Health to the St. Albans Rural District Council.

DUNWOODY, W. G., M.D.Dub., appointed Medical Officer for the Downham District of the Ely Union.

ELKINS, F. A., M.D.Edin., appointed Medical Superintendent to the Leavesden Asylum.

ELVINS, Dr. F. H. H., appointed Resident Surgeon at the Ararat Hospital, Victoria.

HEATH, Charles J., F.R.C.S.Eng., appointed Surgeon to the Throat Hospital, Golden Square, W.

HERRING, Percy Theodore, M.B., C.M., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

HICKEY, E. L., M.D.Dub., M.R.C.S.Eng., appointed Government Medical Officer and Vaccinator at Nyngau, New South Wales, *vice* Dr. W. H. Jermyn, resigned.

HICKS, E. B., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Easingwold District and the Workhouse of the Easingwold Union.

HOLLINGS, C. E., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Kilham District of the Driffield Union.

HOW, A. B., B.A.Oxon., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Claygate District of the Kingston Union.

HUNTON, Frederick, M.D.Durh., M.B., B.S., appointed Medical Officer of Health to the Sedgefield Rural District Council.

MCARTHUR, A. N., M.R.C.S.Eng., appointed House-Surgeon to the General Hospital, Launceston, Tasmania.

MILES, G. Edward, L.R.C.P.Lond., appointed Medical Superintendent at the Hospital for Insane, Rydalmere, New South Wales.

NICHOLSON, C. R., L.R.C.P., M.R.C.S., appointed Senior House-Surgeon to the Hastings, St. Leonard's, and East Sussex Hospital, *vice* H. C. T. Langdon, M.B., resigned.

RICHARDS, S. J., M.B., appointed Medical Officer at Mount Morgan, Queensland, *vice* H. C. Brannigan, M.D., M.Ch. Irel., resigned.

ROSS, J. A., M.B., C.M.Aberd., appointed Medical Officer to the Penistone Union Workhouse.

ROUTH, Amand, M.D.Lond., appointed Obstetric Physician to Charing Cross Hospital, *vice* Watt Black, M.D.Edin., resigned.

SIBLEY, J. C., M.D.New York, appointed Medical Officer of the Goodooga Hospital, New South Wales.

SIMPSON, G. F. B., M.B., C.M., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

STEWART, C. Hunter, M.B., D.Sc., F.R.S.E., appointed Professor of Public Health and Sanitary Science at Edinburgh University.

SMITH, W. E., M.B., C.M.Edin., appointed Junior House-Surgeon to the Royal London Ophthalmic Hospital, Moorfields, E.C.

STUART, J. A. Erskine, L.R.C.P.Edin., L.R.C.S.Edin., reappointed Medical Officer of Health and Superintendent of the Infectious Hospital for the Borough of Batley.

SYMES, J. Odery, M.D.Lond., appointed Registrar to the Royal Hospital for Sick Children and Women, Bristol.

THOMSON, StClair, M.D., M.R.C.P.Lond., F.R.C.S.Eng., appointed Physician to the Throat Hospital, Golden Square.

THORNE, May, L.S.A.Lond., M.D.Brux., appointed Clinical Assistant to the Royal Free Hospital.

VERNON, Claude Martin, appointed Medical Officer of Health for Ashford Urban District, *vice* R. Bevan, resigned.

VINCENT, Dr. William James, appointed Second Assistant Medical Officer to the Wadsley Asylum.

WHITFIELD, Arthur, M.D.Lond., M.R.C.P., appointed Physician to the Skin Department, Great Northern Central Hospital.

WILLIAMS, Lewis A., M.B., M.S., appointed Visiting Surgeon to the Chester General Infirmary.

WILLIAMSON, W. Cotter, M.D., appointed Medical Superintendent to the Hospital for Insane, Gladesville, New South Wales.

WILSON, Dr. Thomas, appointed Medical Officer to the Parish of Birmingham Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

DAVIS.—On July 13th, at 13, Church Street North, West Ham, E., the wife of Frederick Herbert Davis, M.R.C.S.Eng., L.R.C.P.Lond., of a daughter.

FORSYTH.—At Tansfield House, Castletown, Thurso, on July 5th, the wife of William Forsyth, M.B., C.M.Edin., of a daughter.

KNIGHT.—On July 10th, at Brentwood, St. Annes-on-the-Sea, the wife of Ernest Knight, M.B.Lond., M.R.C.S., of a daughter.

MILL.—On July 15th, at Dunkeld, Ossett, Yorkshire, the wife of G. Symers Mill, M.D., of a daughter.

MARRIAGES.

APPLEYARD—HARRIES.—On June 13th, at the Court House, Umtali, Rhodesia, Francis Edward Appleyard, B.A., M.B., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., elder son of George Appleyard, Halifax, to Beatrice Louise, youngest daughter of Barret Harries, Esq., of Byfleet, Surrey.

BROCK—LUPTON.—On July 16th, at St. Mary Abbots, Kensington, by the Rev. J. M. Lupton, M.A., Assistant Master in Marlborough College, brother of the bride, assisted by the Rev. Canon Pennefather, Vicar of Kensington; and the Rev. Aiken Sneath, M.A., Curate of St. Mary Abbots, James Harry Ernest Brock, M.D., B.S., D.P.H.Lond., F.R.C.S.Eng., eldest son of S. Brock, Esq., late Controller of Public Works Accounts, Madras, to Margaret, elder daughter of the Rev. J. H. Lupton, D.D., sub-Master of St. Paul's School, and Preacher to the Honorary Society of Gray's Inn.

DRAKE-BROCKMAN—HODGE.—On July 16th, at St. Bartholomew's Church, Bristol, by the Rev. Canon Allen, D.D., assisted by the Vicar, the Rev. Francis Hudson, M.A., Edward Forster Drake-Brockman, F.R.C.S., Brigade-Surgeon-Lieutenant-Colonel I.M.S. (retired), to Ellen Florence, eldest daughter of Edward Hodge, Esq., Montpellier, Bristol. No cards. Indian papers please copy.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30. Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 11.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 3; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; e.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 3; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429 Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

SUPPLE asks for advice as to the best method of treating flat foot in a boy aged 12 years.

G. A. asks to be referred to publications giving full and official particulars of the hospitals, medical schools, etc., in (1) India, (2) the British colonies generally, (3) Japan.

*** Our correspondent will probably find some of the information he requires as to Australasia in the *Australasian Medical Directory and Handbook*, edited and compiled by Ludwig Bruck. Sydney: L. Bruck. London: Baillière, Tindall, and Cox. Some particulars as to the medical schools and colleges in the Dominion of Canada were published in the BRITISH MEDICAL JOURNAL during the course of last year.

ASTIGMATISM.

Dr. J. TREGELLIS FOX (Strathpeffer) writes: Can anyone refer to statistics or authoritative account of the most usual position of the bulging meridian in astigmatism, and its probable cause?

TREATMENT OF INGUINAL HERNIA IN INFANCY.

J. D. asks for suggestions in treating an obstinate case of inguinal hernia in an infant 11 months old. Worsted will not prevent the bowel descending, while the ordinary circular truss causes chafing. The pad on the ordinary spring truss could not retain the rupture, and an indiarubber-covered truss without a spring proved equally ineffectual.

TREATMENT OF PAROXYSMAL HÆMOGLOBINURIA.

Z. Y. asks for advice in the treatment of the following case: A girl, aged 7, born in the Fens, has during the last two years suffered from frequently recurring attacks of erythema, with arthritic pains and swelling, but no redness of joints. There is great irritability of stomach and a constant brown fur on the tongue, moderate degree of fever with attacks, and the two last have been attended with hæmoglobinuria, but with this the joint trouble has been less. There is no enlargement of the spleen. There is a history of gout and eczema in the family, and the father is of a nervous and excitable temperament. The grandparents on the father's side were cousins. One child suffers from an impediment of speech. Quinine, iron, arsenic, mercury, saline aperients, salicylates and other remedies have been used without permanent benefit.

LECTURES ON NURSING INFECTIOUS DISEASE.

M.O.H. asks to be referred to a book that would help the medical superintendent of a hospital for infectious diseases in preparing a course of lectures for his nurses.

*** Their name is legion. We cannot attempt to enumerate them all. Professor Billroth's excellent little book on *The Care of the Sick*, translated by J. B. Endean, and published by Sampson Low, Marston, and Co. (6s.), contains two valuable chapters specially dealing with fever patients. Billroth's name is a sufficient guarantee of excellence. The work is popular. Dr. Cullingworth's *Manual of Nursing, Medical and Surgical* (Churchill, 2s. 6d.) is well known, and devotes a chapter to infectious disease. Dr. P. G. Lewis's *Nursing: its Theory and Practice* (Scientific Press, 3s. 6d.), E. J. Domville's *Manual for Hospital Nurses* (Churchill, 2s. 6d.), H. C. Burdett's *Helps in Sickness and Health* (Scientific Press. 6s.) deals with nursing in most of its phases, and refer to infectious diseases. "M.O.H." might also find useful matter in Dr. Louis Parkes's *Infectious Diseases* (H. K. Lewis, 2s. 6d.). The art of popularising what the Scotch Universities still call the "institutes of medicine" may be studied in such manuals as Michael Foster's *Primer on Physiology* (Macmillan, 1s.). Our contemporary the *Hospital* had recently a useful series of nursing lectures. We are not aware whether Dr. Allan's little work, *Notes on Fever Nursing* (1879) is still in print.

THE AFTER-HISTORY OF PATIENTS SUBMITTED TO LAPAROTOMY.

MISS MAY THORNE, M.D. (10, Nottingham Place, W.) (late House-Surgeon, New Hospital for Women), writes: I was much interested in reading an editorial in the BRITISH MEDICAL JOURNAL of March 26th, 1898, entitled Abdominal Section and—After? part of which ran as follows: "At the October meeting of the Obstetrical Society, Dr. Herbert Spencer pointed out that intestinal obstruction from the adhesion of the intestine to the stump after ovariotomy was by no means rare, as his experience of general hospitals amply proved. A month later, at the Harveian Society, Mr. Doran showed how frequently hernia of the abdominal cicatrix followed laparotomies."

I was influenced by this article to make inquiries on the after-history of the various cases of laparotomy that have been performed in the New Hospital for Women, and thanks to the courtesy of Mrs. Scharlieb, M.S., and Mrs. Stanley Boyd, M.D., I have been enabled to look up the old casebooks. The inquiries I have made extend over nine years 1888-1896, inclusive. I have not taken note of the laparotomies performed in 1897, as time must, as a rule, be allowed for the formation of dense adhesions or the giving way of scar tissue.

I have received news of or have interviewed 75 patients, with the following results: One operated on in 1892 for ovarian abscess returned with acute intestinal obstruction in 1897, being brought to the hospital in a moribund condition. One operated on for ovariotomy (double) in 1888 returned with a ventral hernia in 1895. Since leaving the hospital in 1888 she had worked hard as a laundress, and done a great deal of mangling. One, a dwarf, operated on at full term by Cæsarean section in 1895, returned with severe metrorrhagia in 1896; owing to the

extreme deformity of the pelvis abdominal hysterectomy was necessary. In 1897 the patient returned with a ventral hernia, which was successfully operated upon. She is now in excellent health, earning her living.

I should be extremely obliged if any members of the medical profession who have had a patient operated upon at the New Hospital for Women under their care would be good enough to let me know the subsequent history of the case, as there are over 100 patients whose after-histories I have not been able to trace. It is possible that amongst this number other cases of intestinal obstruction or ventral hernia have occurred, but so far as we know patients who have had subsequent trouble have returned to the hospital for further treatment.

ANSWERS.

PERPLEXED.—There is no rule about the matter, which must be decided by every man for himself.

I. M. S.—Dr. Reid's portable ophthalmometer can be procured from the maker, Mr. James White, optician, 18, Cambridge Street, Glasgow. The price is £8 10s.

R. AND W.—Misunderstandings between neighbouring practitioners of the kind revealed by the correspondence submitted to us are deeply to be regretted. We think that R. will be well advised to pay the fee of one guinea to W., but we cannot say that W. has been well advised in the attitude which he has adopted towards his brother practitioner.

SEWER GAS AND SEPTICÆMIA.

J. G.—The subject is too large a one for discussion in our correspondence columns. We may refer "J. G." to some correspondence that was published in the *Lancet* and the BRITISH MEDICAL JOURNAL in December, 1893; and to an article by Dr. Herman on the Etiology of Puerperal Fever, with discussion thereon, in *Public Health*, June, 1894.

THE TREATMENT OF BROMIDROSIS.

DR. WALDO, Physician to the Bristol Royal Infirmary and in charge of the department for skin diseases, suggests that "Puzzled" should give ichthyol internally. This sets free sulphur, which is eliminated by the skin, and so sterilises the sweat by preventing the growth of the bacterium fœtidum.

COUNTRY PRACTITIONER writes to strongly advise formalin; the feet to be sponged night and morning with 1 in 100 solution.

DR. WILLIAM MITCHELL (Bradford) speaks in equally high terms of the same reagent, and advises the use of Schering's 40 per cent. solution.

DR. SLADE BAKER (Abingdon) recommends the remedy suggested by Dr. George Thin, BRITISH MEDICAL JOURNAL, September 18th, 1880. The stockings are changed twice daily, and the feet of the stockings are placed for some hours in a jar containing a saturated solution of boracic acid. They are then dried and are fit to wear again. The boracic acid effectually destroys the smell. But to kill the bacteria in the stockings is not enough. The leather in the bottom of the boot is wet and soddens, and smells as vilely as the stocking. This difficulty is got over by the use of cork soles. The patient is directed to get half a dozen. A pair must only be worn one day unchanged; at night they are placed in the boracic jar, and put aside the next day to dry. If these directions be accurately carried out, the evil smell is perfectly destroyed. The soles of the feet may be washed in a boracic acid solution. Dr. Baker states that he has adopted the treatment in a series of cases without failure.

NURSING ASSOCIATIONS.

W. R. D.—The combination of the duties of general nurse with that of midwifery nurse is most undesirable and fraught with dangers which appear to be insufficiently guarded against in the rules submitted to us. The rule as to the duties of the nurse in midwifery cases appears to be liable to bring the nurse into conflict with the opinion of the medical profession which has found recently general expression; but it is difficult to advise without a full knowledge of local conditions. Under all the circumstances, which are rather complicated, we would be disposed to advise that the best course would be for the medical men practising in the district to meet and consider what arrangements are safest and best.

TREATMENT OF CHRONIC GONORRHŒA.

DR F. R. PROCTOR-TIMS (Warwick Square, S.W.) writes: In reply to "Rusticus" (BRITISH MEDICAL JOURNAL, of June 25th, p. 1692) I would suggest the following treatment of chronic gonorrhœa. Having ascertained that no stricture is present by passing a gum-elastic bougie, I wash out the urethra once a day with some antiseptic lotion such as potassium permanganate, boracic acid, or mercury perchloride. This I do through a straight vulcanite tube of about the calibre of a No. 7 catheter attached to an ordinary Higginson's syringe. The extremity of the tube introduced into the urethra is bulbous and closed, but there are four or five small openings at the sides allowing a backward flow of the fluid injected. I pass the tube in as far as possible, and inject about a pint of fluid at each sitting. Internally I give the following mixture: ℞ Ol. santal flav., ol. cubebæ āā 3iss, tr. hyosc. 3ij (*B.P.* 1885), liq. potass. 3j, spt. cinnam. 3j, aq. ad 3vj. S. 3j ter die.

NOTES, LETTERS, Etc.

ERRATUM.—In the Reports of the Scientific Grants Committee, in the table published (BRITISH MEDICAL JOURNAL of July 16th, page 172) relating to the experiments of Dr. A. G. Phear, the sentence opposite number 6, beginning "Mouse injected" and ending "heart's blood," should have been shown as referring to number 5. The description of the result of the experiment number 6 should have begun with the sentence, "Broth after seven days' incubation."

A DOCTOR'S HOLIDAY.

A MEMBER writes: In reference to Dr. G. A. Hawkins-Ambler's letter touching a doctor's holiday, I beg to name Toomebridge, co. Antrim, Ireland, as a most suitable place for a quiet holiday for any medical man who enjoys good fishing. He will receive every comfort at very moderate charges in the fine hotel (the O'Neill Arms) situated in the village. The River Bann, with Loughs Neagh and Beg, are close at hand. Three other fishing rivers are within an hour's drive. Most beautiful scenery is within easy reach by rail or car. The place is exceedingly easy of access, about one hour's rail from Belfast. Trustworthy information as to the fishing can be got from the hotel proprietor, Mr. J. Grant, Toomebridge.

A CASE OF TRIPLETS.

DR. E. M. RODWELL (Norwich) writes: I was called by the midwife on May 24th to see a Mrs. B., who, she told me, had twins, but she could not get the "afterbirth" away. I found one cord gone (I presume in endeavouring to extract after the birth of the first child). On examining I could plainly find another head. This child was born at 8 P.M., the first at 5 A.M., the other one at 2.30 P.M. I had some little difficulty in extracting the placentæ, one of which was a very large one with two cords, and the other without the cord. The mother and children (two girls and one boy) are quite well, and Her Majesty has been pleased to send her the grant. It would be difficult to say when I shall again go to a case of triplets on the Queen's birthday.

AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE DR. ARTHUR BARLOW.

The following additional subscription has been received on behalf of the fund:—

	£	s.	d.
Per Dr. Matson—			
Sir Edwin Saunders	2	2	0

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Dr. J. O. Affleck, Edinburgh; Mrs. E. Garrett Anderson, M.D., London; Anti-Hydro. **B** Mr. W. M. Beaumont, Bath; Mr. S. I. Baker, Abingdon; Mr. A. Barker, Eye; Mr. J. B. Blackett, London; Dr. J. Barry, London; Be-bundobust; Dr. J. B. Brierley, Manchester; Mr. F. W. Bailey, Liverpool; Dr. A. H. Boyle, Brighton; Dr. J. Beddoe, Bradford-on-Avon. **C** Mr. F. Churchill, London; Dr. G. F. Crooke, Birmingham; Dr. Chalmers, Glasgow; Dr. W. A. Carline, Lincoln; Mr. A. L. D. Carbery, Maidstone; Dr. G. D. Collen, Dublin; County Practitioner; Certifying Factory Surgeon; Mr. E. J. Cross, St. Neots; Mr. T. Carter, Richmond, Yorks.; Mr. G. Cuscaden, Melbourne. **D** "Daily Mail," Editor of the, London; Mr. J. Davies, Manafon; Mr. L. Demetriadi, Huddersfield; Dr. P. Doyle, Calcutta. **E** W. McA. Eccles, M.B., London; Mr. W. J. Engeldene, Brentwood; A. C. Elsmore, M.B., Woodstock. **F** Dr. T. R. Fraser, Edinburgh; Mr. J. T. Fox, Strathpeffer Spa; G. C. H. Fulton, M.B., Middlesbrough. **G** Mr. C. Gane, London; Dr. F. W. Grant, Elgin; G. P. **H** Mr. M. J. Houghton, Ilford; Mr. R. Hilgers, London; Mr. C. J. Heath, London; Dr. J. Hinshelwood, Glasgow; Mr. T. G. Horder, Cardiff. **I** I.M.S. **J** Dr. E. L. Jones, Cambridge; J. G. **K** Mr. J. Kirk, London; Miss A. Kencaly, Watford; Mr. T. Kirby, Winchester. **L** Mr. F. Litchfield, London; Mr. P. G. Lee, Cork; Dr. W. G. V. Lush, Weymouth; Dr. R. C. Lofthouse, Harrogate; Lancs. **M** M.D., M.R.C.S.; Dr. M. Murray, London; Dr. A. Mann, Chester; Dr. P. McBride, Edinburgh; Dr. J. D. McCaw, London; M.D.; W. Mitchell, M.B., Bradford; Dr. S. Moore, Holbeck; Dr. C. G. May, London; Dr. G. Murray, Newcastle-on-Tyne; Messrs. Major and Co., Hull. **N** Mr. R. Nitch-Smith, London; Dr. D. Newman, Glasgow; No. 419; Dr. E. R. Nicholson, Hastings; E. S. Nutting, M.B., Mansfield. **O** Mr. G. Okell, Middlewich; Mr. M. J. O'Connell, Cork. **P** Mr. T. H. Plowman, Bath; Perplexed; Mr. H. C. Parkes, Weston-super-Mare; Dr. R. W. Philip, Edinburgh; Mr. C. Pound, Odiham; Dr. W. Price, Coonoor; Dr. A. G. Phear, London; Pro Bono Publico. **R** Messrs. Reynolds and Branson, Leeds; Royal Medical Corps; Professor W. Rutherford, Edinburgh; Dr. J. J. Ridge, Enfield; R. X.; R.A.M.C. (Retd.); Dr. L. Roberts, Liverpool; Redress. **S** Mr. D. Stead, Alderney; Dr. D. W. Samways, London; W. R. Speirs, M.B., Haltwhistle; Mr. J. Stewart, Clifton; Dr. A. R. Simpson, Edinburgh; "Scientific Press," Editor of, London; Dr. H. Snow, London; Mr. G. Stoker, London; Dr. J. O. Symes, Bristol; Surgeon-General Retired; Mr. J. A. E. Stuart, Batley; Mr. C. S. Smith, London; Supple; J. B. Shaw, M.B., Selkirk; Subscriber; Messrs. Street Brothers, London; Sir J. Struthers, Edinburgh; Dr. H. T. Sells, Greenhithe; W. E. Smith, M.B., Manchester. **T** Dr. StC. Thomson, London; Sir J. B. Tuke, Edinburgh; Miss M. Thorne, London; Mr. L. Tait, Birmingham; Dr. J. A. Thompson, Sydney; Mr. A. Teevan, Ballarat. **V** Mr. C. M. Vernon, Ashford; Mr. H. Vevers, Hereford; Mr. T. J. Verrall, Brighton. **W** Mr. A. Wilson, Manchester; Dr. A. Whitfield, London; Mr. J. H. F. Way, Southsea; Mr. W. R. Williams, Clifton; Mr. R. H. Wolstenholme, Salford; Mr. W. B. Wallis, Colchester. Mr. B. Wiggins, Barnsley; Dr. H. Waldo, Clifton; Dr. G. E. Williamson, Newcastle-on-Tyne; etc.

BOOKS, ETC., RECEIVED.

The Cerebellum. By H. Davies, M.D. London: Nichols and Co. 1898. 2s.

The Retrospect of Medicine. Edited by J. Braithwaite, M.D., assisted by E. F. Trevelyan, M.D., B.Sc., M.R.C.P., Vol. CXVII. London: Simpkin, Marshall, Hamilton, Kent and Co. 1898. 6s. 6d.

Physiology: Experimental and Descriptive. By B. P. Colton. London: Scientific Press. 1898. 6s.

Buxton: its Baths and Climate. By S. Hyde, M.D. Fourth edition. Manchester: John Heywood. 1898.

St. Bartholomew's Hospital Reports. Edited by N. Moore, M.D., and W. J. Walsham, F.R.C.S. Vol. XXXIII. London: Smith, Elder and Co. 1898.

Telegraphy: its Effects upon the Operator. By J. T. Hull. Leeds: Jowett and Sowry. 1898. 3d.

The Removal and Disposal of Town Refuse. By W. H. Maxwell. London: Sanitary Publishing Co. 1898. 15s.

Operative Gynecology. By H. A. Kelly, A. B., M.D. Vol. II. London: Henry Kimpton. 1898.

, In forwarding books the publishers are requested to state the selling price.

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PRESIDENT'S ADDRESS

DELIVERED AT THE

SIXTY-SIXTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION

BY

SIR T. GRAINGER STEWART,
M.D., LL.D., F.R.S.E.,
Professor of the Practice of Physic and of Clinical Medicine in the University of Edinburgh; Physician-in-Ordinary to Her Majesty for Scotland.

THE RECIPROCAL DUTIES OF OUR PROFESSION TO THE COMMUNITY, AND OF THE COMMUNITY TO THE PROFESSION.

WELCOME.

I BID you welcome to this ancient and famous seat of medical learning; welcome in the name of the city whose Lord Provost has already so eloquently addressed you to-day; welcome in the name of the University to which we are indebted for the use of this stately hall, and for so much besides; welcome in the name of the Royal Colleges and of the whole of the profession in Edinburgh and in Scotland, and in particular of the Edinburgh Branch of this great Association.

My first duty is to thank the Association for having called me to this Chair. It is, indeed, a great honour to occupy a position which has been filled by Alison, by Christison, by Stokes, by Acland, and by many other illustrious men. I can assure you that I am deeply sensible of the distinction that you have conferred, and that no effort will be wanting on my part to serve the Association to the best of my ability.

My second duty is to advert to the losses which we have sustained in the death of many distinguished members, and especially of Mr. Ernest Hart, who during many years edited the BRITISH MEDICAL JOURNAL, and took a leading part in the conduct of the Association. His services have been and will be further suitably acknowledged, and he must always be remembered with grateful appreciation.

It will not be easy for us in Edinburgh to equal the interest and the charm of last year's gathering in Montreal. If there lurked in some minds a doubt whether it might prove possible to make a meeting so far from home a success, such doubts were soon dispelled. Those whose good fortune enabled them to cross the ocean found in Montreal a cordiality of welcome, a skill of arrangement, and a wealth of instruction which led them to form a very high estimate of the qualities of the President, Professor Roddick, of the profession in Canada, and its medical institutions.

Our science and our art recognise no national limitation. The members of our profession are our brethren to whatever people or race they may belong, but there is a just and patriotic pride in the greatness of our empire, and in the vigour of the schools and universities which have sprung up in so many distant parts of the Queen's dominions. The young country with its freshness, its vast extent, its illimitable resources, showed us an inspiring example last year, and we must do our best to make it clear that the centuries have not diminished the vigour of this ancient home of medicine.

You have been drawn to Edinburgh on this occasion by a great variety of considerations. No doubt the chief of these is the desire for the increase of knowledge and improvement of practical skill, the hope of meeting old friends, and becoming personally acquainted with those whose work has made their names familiar. We hope that in none of these respects will you be disappointed.

But while these are doubtless the main attractions of our gathering, there must be many minor considerations which have helped to draw you hither. Many have come to revisit the home of their student days and the haunts of happy youth. The old city is to them redolent of pleasant associations. I can fancy groups of fellow students or brother Residents gathering to explore the wards or the class-rooms with which they were familiar, seeking out the site of the old Infirmary, or the halls in which they had listened to Goodsir, Bennett, Simpson, or Syme. There are some, I can imagine, who will wish to see the house in which chloroform was first administered, or the wards in which the principles of antiseptic surgery were developed during most important years. But many come also attracted by the picturesque and the historical. They wish to see the beautiful scenes which surround us; to explore the Castle; to trace the remaining fragments of the old city wall which was built as a defence against our ancient enemies of England; to visit Holyrood; to see the little back room in which the author of *Waverley* achieved much of his finest work; or to make out the site of the Heart of Midlothian, the home of Jeanie Deans, or of her faithful admirer, the Laird of Dumbiedykes.

STATEMENT OF SUBJECT.

No subject could in my judgment more worthily form the topic of an address on an occasion like this than a consideration of the reciprocal duties of our profession to the community and of the community to our profession. It is true that the time at our disposal can at the best permit of a very inadequate discussion of so wide a subject, still it may be possible to indicate in bold outline the general lie of the questions involved, and to illustrate one or two of their more important aspects.

The respective duties may be described in a single sentence. That of our profession is to do its best to prevent disease, to cure disease, and to alleviate suffering in individual patients; to protect the community against preventable maladies; to advance our knowledge; to train our successors, and to guard the portals of admission to our ranks. The duty of the community is to afford us every facility for so doing.

I purpose to speak briefly of each of these, and then refer to the various organisations instituted by the profession and the community with a view to the fulfilment of their respective duties.

PRELIMINARY: A COMMON UNDERSTANDING.

It is, to begin with, most desirable that a common understanding should exist as to the present position of the science and art of medicine. The days are passed in which medical men were accustomed to make great claims as to their powers, arrogantly pretending to control processes of Nature which we are really unable materially to influence. Our profession recognises its limitations; none know so well as we how imperfect our art still is, and how little it can achieve as compared with what we would desire. Still we know that medicine has advanced amazingly during the present century, and is advancing every day in all directions at an accelerated and ever accelerating speed.

Goethe puts into the mouth of a well-known personage a humorous description of the powers of our art—a description which has met with wide acceptance.

> The spirit of Medicine is easy to be grasped.
> One studies through the great and little world
> To let things go in the end as pleases God.

Were Goethe living now, he would be the first to recognise that our studying through the great and little world is, thank God, proving by no means fruitless. The annual death-rate in England and Scotland has since 1855 fallen by more than one-fifth. The proportion of deaths from zymotic diseases as compared with other causes has diminished by more than one-third. In the treatment of the maladies of every important organ—the heart, the lungs, the stomach, the kidney, the liver, the brain—we can accomplish far more by our modern methods than was possible a few years ago. Even the great scourge of humanity, tuberculous disease, has been robbed of some of its terrors. The mortality due to it has fallen by one-third during the past thirty years. The experience of Glasgow has afforded a striking example of more recent improvement, for comparing the past seven years with the seven immediately preceding, the deaths from pulmonary consumption have diminished nearly one-fifth. And everywhere the life of those stricken by the malady has been remarkably prolonged as compared with former experience; the chances of recovery have greatly increased. All this has been accomplished in regard to tuberculous diseases, while as yet but little has been done in the way of prevention of their spread by infection. Our rapidly-advancing knowledge is supplying us day by day with new precautionary measures which

are certain further to diminish the frequency of the disease and its rate of mortality. All these results are mainly due to the labours of members of our profession. The public takes cognisance of facts like these, and is therefore according year by year a higher measure of respect to our art, imperfect though we must acknowledge it still to be.

INDIVIDUAL DOCTORS AND INDIVIDUAL PATIENTS.

There is little need to enlarge upon the personal relationships of doctors and patients. The duties which the practitioner owes are universally recognised. He has to master the art of medicine to the best of his ability and then to apply his knowledge for the benefit of each individual who may come under his care. Four hundred years before the birth of Christ we find in the oath of Hippocrates the great principles which guide us still. The young physician of that school vowed to do his best for every patient: "I will follow that system of regimen which according to my ability and judgment seems best, and abstain from whatever is deleterious and mischievous." He vowed also that he would never use his art for evil purposes: "I will give no deadly medicine if asked, nor suggest any such counsel." He vowed moreover to lead a high and noble life: "With purity and holiness I will pass my life and practise my art." And he vowed most solemnly to observe the strictest secrecy with regard to all private matters of which his profession might make him cognisant: "Whatever I see and hear in the life of man which ought not to be spoken abroad, I will not divulge, as reckoning that all should be kept sacred." No nobler summary of professional morals could be found than this, and I venture to say that in our time and in our nation these duties are well observed.

If we can claim that our part of this duty is fairly performed in our country at the present day it is equally true that the public shows a generous appreciation of the services of their individual doctors. They fully recognise our honest good intent, and if they sometimes evince less gratitude than we know or think we deserve, on the other hand they often accord us more; and if we treat our patients from the humblest to the highest with care, courtesy, and discretion it will be found that generally speaking we have not to complain of any want of appreciation and gratitude.

THE PROFESSION AND THE LEGISLATURE IN THE PREVENTION OF DISEASE.

The prevention of disease is in its practical results perhaps the most important of all our duties. It is our chief glory that we have been able to accomplish so much. It is our highest hope that we shall accomplish more.

The several members of the great group of diseases which owe their origin to invasion by pathogenic micro-organisms are in course of being rationally explained, and so it is becoming possible for us to take measures for their prevention. In some of them we can prevent the development of the organisms. In some we may hinder their multiplication and spread. In some we can block the channels by which they have been accustomed to find entrance into the body. In some we are able to modify the germ so that it produces when inoculated a milder disease, and yet a disease capable of conferring immunity against the malady in its ordinary form. In some we can interfere with the action of the germ even after it has been introduced, or counteract the poisonous substances which the germs generate.

With regard to the important group of diseases due to faulty chemical processes we have learned much that is of service for prevention. We have traced the origin of some diseases to the subtle action of chemical substances introduced with the food, or in the exercise of various trades and crafts. We have learned not a little regarding toxic substances which are developed within the body from faulty chemical processes, or which accumulate as a result of deficient elimination. And most recently of all we have traced important diseases to deficient or excessive supply of what we have come to know as internal secretions. And each discovery which renders the causation of a disease more clear contributes something towards its prevention.

Every member of the profession ought to be keeping his eyes open to the advances of science, for in that he may find explanations of morbid action as Lord Lister did in regard to wounds, and ought to be always seeking for an explanation of the occurrence of disease, and especially of epidemic outbreaks, for by watchfulness in such matters mighty results may be achieved, as the work of such men as Snow and Budd and Koch have shown. The public may in many ways benefit from such discoveries and the precautions they suggest. Individual health, family health, social health, and national health, may all be improved if the individual, the head of the family, the employer of labour, and the legislator, duly study and act upon these lessons. It is their duty to do so. But an intelligent appreciation of these subjects is not easily attained. Perhaps we are ourselves in some measure to blame for this, because our professional customs do not readily lend themselves to the issuing of clear and popular statements by leaders of medical opinion in such forms as would enable the public to share our knowledge. We ought to take more pains to instruct the public in such questions. Individual members of the community should seek to understand how their own personal health and that of their families may be protected when they act according to the light of modern science. Employers of labour should modify the conditions of their work, as, indeed, so many of them do, with the view of warding off the special dangers proper to each occupation. Teachers and governors of schools should study zealously all that we are learning with regard to the evils of deficient ventilation, of cramped attitudes, and of excessive or too prolonged mental effort. In unnumbered ways may intelligent and well-instructed men ward off dangers by attending to the hygienic rules of modern science.

But apart from all the private applications of hygienic laws rises the question of the duty which the Legislature owes to the facts of medicine. It is an interesting question whether under our democratic Constitution we are in a better or worse situation in this matter than we might have been under an absolute monarchy or an oligarchy. It was perhaps easier in the old days when a monarch was absolute to get him to understand medical questions; a Linacre enjoying the confidence of a Henry VIII, or a Harvey that of a Charles could command a sympathetic appreciation of facts which might readily result in valuable royal edicts. One can conceive that had supreme power vested in the hands of such a man as the late Prince Consort, his fine perception of scientific facts would have led to his being the friend of such men as Chadwick, Farr, Parkes, and Richardson, and that at their suggestion effect would have been given to every legislative advance that medicine justified. And even in oligarchic days one can understand how a group of men wielding the whole power of the State might similarly be convinced, and might promptly bring into action legislative machinery for the prevention of disease. But now when every man is a king, when the whole people rules, it is perhaps not so easy to attain the results that we desire. The whole community requires to be instructed before the lessons can be used to good purpose. It is our task to give that instruction; it is theirs to give effect to what we have taught. The country has since the Queen's reign began awakened to the benefits which legislation in medical matters may afford, and history will recognise the fact as one of the chief glories of the Victorian era.

But I wish that our progress were more satisfactory. Take, for example, the great subject of the prevention of small-pox. With scarcely a dissentient voice the medical profession recognises the transcendent value of vaccination. A Commission laboured for many years, and at last reported unequivocally in favour of that treatment. But with a determination which would be admirable if it were not so disastrous, a comparatively small group of men set themselves to opposing and maligning the process, belittling its advantantages and magnifying and multiplying the slight risks that attend it. To these a considerable section of the English public have given heed rather than to the medical profession—I speak advisedly of English public for as Mr. Balfour has pointed out, the public of Scotland remains loyal to medical opinion. But from the attitude of certain districts in England it comes about that the greatest discovery in practical medicine, although it had its native home in Britain, is less efficiently carried out here than it is in many parts of the Continent. In Germany small-pox has practically disappeared; there has been no

death from it in the whole of the vast German army since revaccination was made compulsory. In 1853 and 1867 Acts were passed for compulsory vaccination in England. These Acts have been the constant object of attack by the antivaccination propaganda. The Vaccination Commission was a result of these attacks. It included active opponents and active supporters of the process, with some members who were understood to take up the inquiry without any definite preformed opinion. After seven years' labour they gave in their report. By a majority of 11 to 2 they found that vaccination was a valuable preventive of small-pox; that the process could not be safely abandoned and replaced by other precautions; and that while some alleged dangers are real they are in truth unimportant in relation to the extent of vaccination work done and are diminishing under the better precautions of the present day. More than a year elapsed before legislation was attempted and the Bill was introduced of which the third reading has recently occupied the House of Commons. That Bill contained good provisions in the way of postponing the date of compulsory vaccination of infants, providing for the treatment being carried out at home, the supplying of calf lymph and the taking advantage of Dr. Copeman's valuable discoveries regarding the special security afforded by glycerinated lymph. But the Bill made one disastrous omission. It proposed nothing in the way of revaccination. Now, experience has proved that the protection afforded by the process requires to be renewed from time to time, and has amply shown that here, where it has been tried in many ways, as well as in Germany, where it has been since 1874 compulsory, repetition of the process secures an almost absolute immunity. It is in my opinion, and I am sure in that of almost the whole profession, profoundly to be regretted that the Bill contained no proposal in regard to revaccination. It is grievous to think that we lag behind, and are deprived of securities which would be of such value, and might so readily be obtained.

But if this was a disastrous omission the Bill as it leaves the House of Commons shows another defect, for in the course of the debate it was decided that "no parent or other person shall be liable to any penalty under the Vaccination Act, 1867, if he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child."

The first remark that I would make is that this clause admits the status of the "conscientious objector," and gives him rights and privileges. An analysis of conscience is always attractive to a Scotsman, but I refrain from attempting to forecast how the process would work out either in regard to that of the "conscientious objector" or those of the justices of the petty sessions. But the right of a person to act according to his conscience is one which a democracy is bound to protect. Only whenever it is distinctly proved that the result of conscientious objections is really dangerous to the well-being both of the individual concerned and of the community, the community is, in my judgment, entitled to set aside the "conscientious objector" and to insist upon obedience. The Commissioners, who acted as a jury for the nation in this matter, are satisfied that the abandonment of vaccination would inevitably lead to formidable evils. It seems, therefore, to me that the plea of conscientious objection affords no logical ground for resistance to the law.

The second remark which I would make is to inquire what the term "conscientious objector" might be made to cover. This is no easy task, but it is safe to say that it would include a great deal more than the strict use of the words would warrant. And besides, if this plea be once admitted, we may find conscientious objectors springing up in many other quarters. In questions of education they might make themselves heard. In regard to the payment of taxes, conscientious objections, if once admitted, would no doubt spread with great rapidity; and in regard to the sanitary laws, the liquor laws, and many other subjects, conscientious scruples might soon assert themselves in somewhat startling ways.

But, apart from speculative opinions, let us see what different parties are saying about the practical result of the clause. Mr. Chaplin, who did his best to stand to his ground, says that the administration of compulsory vaccination in the future will be absolutely impracticable, and no Ministry will be able to enforce it. Many share his opinion and regard the outlook as gloomy in the extreme.

The antivaccinationists are jubilant. One of their representatives on the Commission says that the practical conclusion of the whole matter and the results of the Royal Commission's labours amount to the abolition of compulsory vaccination for a generation.

There is another class that, while believing in vaccination and desiring to see it established, yet may be ranked as advocates of "freedom before security." Some of them would not accept that motto, but I think it is just. I sympathise with the love of freedom but would not have it override the well-being of the community. I cannot advocate freedom to do mischief, and to that result this kind of freedom inevitably tends.

In this matter is it not to be feared that the House of Commons has decided contrary to its own belief? There must be but few members who do not believe in vaccination, and would not desire to see it insisted upon. Why have they voted as they did? Was it not on the part of some a weak yielding to the bigoted prejudices of their constituencies? And may it not be said that in the case of others the "conscientious objector" has made cowards of them all? I should besorry to suggest that anyone sought to make party capital out of such material.

May we look to the House of Lords for reconsideration of this subject? That House has one member who belongs to our profession, and who understands the subject. They have a right to express an opinion. What is their opinion on this matter?

We here at all events are, I suppose, practically unanimous in our regret that the exigencies of Parliamentary government has led us into such a retrograde position.

I wish that the Legislature would boldly accept the principle that as it is mainly guided by the opinion of lawyers as to legal questions, by those of soldiers in matters military, by practical seamen and engineers in matters concerning their department, so in medical questions they would look for guidance to the medical profession, and give effect to its matured opinion. Then we should have less difficulty about the question of vaccination, or that of the treatment of inebriates, or the prevention of the risks attending certain callings, such as those that expose the workers to lead poisoning or to poisoning by phosphorus; and we should soon find the Statute Book enriched by further beneficent enactments which would save multitudes of lives and immensely diminish sickness and suffering.

The Advancement of Knowledge.

Another duty recognised from earliest days is that of extending, increasing, and deepening our knowledge. The *mens medica* is an inquiring mind, and the nature of our training and of the problems which daily confront us stimulate inquiry. Original observation and research are being carried out in unnumbered centres throughout the world. The mediæval method of building systems or theories upon slight or fanciful foundations has been replaced by the methods of sound philosophy. To these the world is indebted for boundless benefits. Every great hospital has been for long used as a field of accurate and painstaking clinical observation, and in many of them, and in every university and school, laboratories of research have been established, and original work has been incessant. Here in Edinburgh, in addition to the various laboratories in different departments of the University, the Royal College of Physicians established some years ago its Laboratory of Research, and thereby the profession organised more perfectly than ever before the means for advancing our knowledge. Similar laboratories have since been founded by the London colleges and by other bodies. We may therefore claim that the profession is fully alive to its duty in this respect, and is exerting itself to the utmost for its fulfilment. It is much to be desired that the community were more appreciative of the value and importance of such work, that there were less of ignorance regarding the results, and less prejudiced opposition to the methods employed; but in this respect also, as the fruits become apparent, the value of the work is being admitted, and confidence and respect are deepening. It is pleasant to observe how nobly individual men of wealth and position are seeking to foster work of this kind. In this University a generous and liberal-

minded citizen has, within the past few weeks, provided the whole sum necessary for building and equipping the much-needed new Public Health Laboratory, and especially, considering the recent dicta of the Leader of the House of Commons, one may venture to hope that the hour may not be far distant when the State will realise that the money of the nation can scarcely be better spent than in making ample provision for the endowment of research.

The Training of our Successors.

I cannot speak as fully as I should like upon our duty of training our successors. From the earliest days this has been recognised as one of our most important functions. At first it seems to have been accomplished by transmission from father to son or from master to disciple. Just as one sees in the present day among the Savoyards at Aix-les-Bains the fathers training their sons and the mothers training their daughters in their traditional methods of treatment, so the old-world physician handed on his knowledge. By degrees the training came to be entrusted to individuals specially set aside for the work, and teaching was gradually organised. I shall not trace this development, but it may be well to get a glimpse of it at two or three different stages.

Somewhat more than three hundred years ago a wealthy Scottish prelate summoned in consultation the famous Girolamo Cardano, of Milan, to his seat at Monimail in the kingdom of Fife. Cardano then enjoyed a world-wide fame. How was this great physician educated? Having decided to study physic rather than law—because he considered that it afforded both a nobler and a safer ground on which to build a lasting fame—he entered the University of Padua in 1524. In two years he laureated Doctor of Medicine. He heard the lectures of Curtius on the theory of physic, and Curtius became his friend. But it is difficult to guess what practical training he enjoyed. The account of his graduation is, however vivid enough, for he received with due solemnity the open and the shut book, the biretta, the ring, and the kiss. The open book signified things now known to him, which he was authorised as a doctor to teach, the closed book signified the knowledge that yet remained to be won and which it was his business to acquire; the biretta was of an ecclesiastical form, and indicated that he was consecrated as a priest to science; by the ring he was espoused to his profession; and the kiss was the symbol of the brotherhood to which he was admitted, and of the peace and harmony that should prevail among all fellow-labourers in art and science. He was also led from a humble seat in the cathedral to a seat beside the prior, symbolising that as a man of learning he was qualified to sit among the princes of the earth. Such an installation shows that in the Italy of 1526 a high ideal of the physician's position had been attained.

Two hundred years ago Sir Robert Sibbald, the first Professor of Medicine in this University, was one of the foremost Scotsmen. Choosing medicine as his profession, he found no means of obtaining proper education at home, and so in 1660 he sailed for Holland. For eighteen months he worked in Leyden under Van Horne and Sylvius, visited Utrecht and Amsterdam, then took nine months in Paris attending the Hôtel Dieu and the Charité, took his degree at Angiers, and returned home a fully equipped practitioner after an absence of thirty months.

A little more than a hundred years ago this University was still adorned by one of the most famous of its professors—William Cullen. His education was very different from that of the present day. About two years' apprenticeship to a Glasgow practitioner; some voyaging to the West Indies and elsewhere; some attendance in the shop of Mr. Murray, an apothecary in Henrietta Street, Covent Garden; then a period of practice in the moorland parish of Shotts; a time of study in Rothbury; and then two happy years in this University, just entering upon its medical fame, made up his time of education and gave him his degree.

In this we find the transition stage of our own country between the old and the modern method of education.

To-day the profession has organised throughout the country many great and famous medical schools, and all the universities devote themselves more or less to medical education. That work, of course, can never be successfully accomplished except where great hospitals exist. The fame of the schools of Guy's, of St. Bartholomew's, of St. Thomas, has sprung from the splendid hospitals in connection with which they were formed, and the greatness of the Edinburgh school could never have been but for the Royal Infirmary, which among all hospitals stands out so eminently as a training ground of the profession.

There is no need for me to speak to this audience of what medical education has now become, but I wish that all teachers could manage to make their instruction a training of the powers and mastering of the methods, rather than a loading of the memory with unnecessary facts and transient theories. I wish, also, that it were possible for the universities and schools to make more complete and satisfactory arrangements for post-graduate instruction, so that old students might return to the *alma mater*, and pick up in the course of a few weeks instruction as to new methods and new facts whereby they might keep themselves more abreast of modern progress.

Guarding the Portals.

Another necessary duty is the testing of candidates for admission to our ranks. None but experts can perform such a duty. This was recognised in the days of Henry VIII, when the authorities began to organise the process of admission to the profession. It was enacted that no one should practise medicine in the City of London or within seven miles of it unless he had been examined, approved, and admitted by the Bishop of London or the Dean of St. Paul's and a board of advisers or assessors consisting of four doctors of physic in regard to medicine, or for surgery other persons expert in that faculty. And when once the College had taken this preliminary step it was ordained that the Churchmen should call in as their advisers four of those that had been already approved. In Henry's enactment, however, the rights of the Universities of Oxford and Cambridge were expressly reserved. So it came about that Colleges of Physicians and Surgeons and the great universities had to undertake a definite share in the duty of admitting members to the profession.

The Medical Act of 1858, which introduced so many improvements working in the lines common to British legislation, did not attempt to start a brand-new mode of admission to the profession, but rather, recognising that many portals already existed, kept these portals open and regulated and modified them as seemed best. Some have advocated the establishment of a single portal, conceiving that thereby a more perfectly equal system might be attained; but I think that the country was wisely guided when it adopted the plan it did, and that for many reasons, of which I shall mention one or two. It was better not to change, because the portals were doing, or were capable of being made to do, good and efficient work; because, while it is essential that every portal must attain a certain minimum standard, it is most desirable that there should be portals of various degrees, some conferring a qualification humbler and more easily attained, others a higher one and more difficult to win; and because I believe that it surpasses the wit of man to devise a method whereby, for the whole United Kingdom or each of its divisions, a just, equitable, and trustworthy single portal could be organised and worked.

It is our duty to see that examinations are thorough, practical, and proportionate. Thorough, in respect that they cover the whole wide field of our science and art and demand a due knowledge of it. Practical, in that so far as possible the candidates shall be made to show not mere book knowledge, but a practical acquaintance with our art and with the sciences on which it is founded. Proportionate, in respect that no single department shall be allowed undue predominance. It is so natural for an examiner, who in order to be efficient ought also to be a teacher of his subject, to overestimate the importance of his own department and to insist upon a standard which would be unattainable if demanded all round. Such a tendency should be well held in check, each subject being allowed its due place and no more.

The care of the regulation of examinations is entrusted by the country to the General Medical Council, and it has endeavoured, by inspection of examinations and otherwise, to secure that a certain standard is insisted on at all the portals.

An Illustration of Mutual Duties well Fulfilled.

Before I leave this part of my address, I should like to offer an illustration of what I conceive to be the ideal working out of the mutual duties of a medical officer and of the department to which he stands related.

One of our younger practitioners in Edinburgh had, in the discharge of his duties at St. Cuthbert's Poor House, observed that the inmates were throwing out nitrogenous matter from the system in a proportion far beyond that which they were taking in by way of food. The nitrogenous waste was so great that the paupers might have been described as being in a state of "physiological bankruptcy." In well-fed healthy individuals the store of glycogen within the organism is kept at a level which amply suffices to meet the requirements of the system, and even if on any occasion the daily supply falls short, there is the fat stored within the body which can easily be drawn upon as occasion requires. But beyond these are the nitrogenous tissues which are only brought into use when the other two sources of supply are exhausted, and are so used at great expense to the organism. It was ascertained that our paupers were not fed in such a way as to meet the daily expenditure; that whatever stores of fat they might at one time have had were completely exhausted before they had long been living upon the poorhouse fare, and that consequently they were obliged to fall back upon their nitrogenous tissues to the great diminution of their energy and strength. Their output of nitrogen, instead of being a normal of, say, 15 to 20 grammes, was from 30 to 40 grammes *per diem*. He soon ascertained that this nitrogenous waste went on all the same, whether the food supply of nitrogenous material was given in proper quantity or deficiently or in excess. And by degrees he satisfied himself that the fault lay in the deficient supply of the fatty materials. He therefore provided for certain paupers an additional allowance of fatty materials in an inexpensive form, and found that the nitrogenous waste speedily diminished. He then was able to determine the amount of fat required, by noticing when in each case he got the nitrogen equilibrium established.

These results were presented to the University in the form of a graduation thesis for the doctor's degree, and the author received the degree with the highest honours. He then placed the work in the hands of the Local Government Board. The Board, after consideration and conference, sent the diets which he suggested to every poorhouse in Scotland. If the authority of the Board over the parish councils be supreme, as it ought to be, this improved diet will be everywhere adopted, and this whole matter will illustrate in an admirable way the efficient discharge of duty on the part of the medical officer and of the authorities under whom he acts, and at the same time the conferring of most important benefits upon the inmates of our poorhouses.

Medical and State Medical Organisations within the Profession.

I wish we had time to consider together the various organisations which have sprung up in the profession and have been recognised by the State, or which the State has instituted for dealing with matters medical. Time would fail me to speak of the origin and the services of the ancients guilds of surgeons and the Royal Colleges, profoundly interesting as that subject would be; nor can I speak of the growth of the medical faculties of the universities, or the medical schools which are now scattered so numerously throughout the kingdom, nor of the societies which do so much not only in the great centres of medical education, but in every considerable city and in almost every district of country throughout the Empire. But I must allow myself time to refer to that Association in connection with which we are assembled here this evening.

Little more than 50 years ago it took origin as the Provincial Medical Association, and only after a time did it spread to London. It is 40 years this week since it first ventured to cross the border and hold a meeting in Scotland. It now consists of upwards of 17,000 members, all legally qualified practitioners, admitted after careful consideration, and resident in all parts of the Empire. In every district the Association is represented by Branches, each of which serves important local purposes, and takes its share in determining the policy of the whole Association through its representations to and representatives on the Council. I think that the Association will do well to foster the vigour of life in the Branches.

Its Journal has a circulation of more than 20,000 weekly, and is recognised as one of the leading medical periodicals of the world.

The objects of the Association are the promotion of medical and allied sciences and the maintenance of the honour and the interests of the medical profession. This is effected by the holding of meetings, the publication of a journal, the granting of money for promotion of science, and for defence and promotion or maintenance of the honour or interests of the medical profession by such means and such manner as the Council may think fit, including, in particular, taking or defending legal proceedings and promoting or opposing Bills in Parliament. These objects seem to me worthy of the high and noble traditions of our profession. It is for the discovery and dissemination of truth, and for the maintenance of the rights and influence of the profession as a whole, not for merely private ends, that the Association exists.

It is our duty to inquire how far these purposes are being fulfilled. The mere numerical growth to which I have referred seems to be of itself a proof that a useful end is being served. The value of the Journal to the profession cannot be overstated, especially now that such excellent epitomes of recent observation are sent out with each number. I am sure that no member can attend an annual meeting without being enriched in knowledge and inspired with new ideas. The mere contact with other minds is of inestimable value, and every man who is thinking for himself or doing original work finds fresh light thrown upon his results by the results of the efforts of kindred intellects.

The Association has for many years devoted considerable sums of money to the endowment of research, and much has been accomplished by its research scholars and others whom it has helped. It exerts a considerable influence in regard to public affairs connected with medicine; our Council laboriously considers all questions of medical interest which concern the profession, and I can assure you that I had no idea until I came to serve on that body that its work made such demands upon the time, energy, and ability of its members, nor did I realise the far-reaching influence which it exerts. The Parliamentary Bills Committee is now presided over by a distinguished graduate of this University, who is at the same time one of the most popular members of the House of Commons. The influence of that Committee in helping to form opinion among our legislators is very considerable, and I have no doubt it will increase as time advances. Apart from that Committee the Association is able to intervene with good effect in other ways. No better illustration could be offered than our recent experiences in relation to the Medical Department of the Army, for the Association had its share in making the representations to the Minister of War which have resulted in so hopeful a reorganisation of the whole Army Medical Service. I can speak personally of the courtesy and encouragement with which our deputation was received, and I am sure that no one who heard the statement by the Marquis of Lansdowne at the great banquet given by the Lord Mayor of London could fail to see that the intervention of the Association had been attended by the happiest result. Not that we are to claim all the credit, for the hard facts of the state of the Service had been pressing themselves upon the attention of the authorities, and many influential representations had been made regarding the questions involved. As time goes on and our influence increases, the Association may often be able to perform like services for the profession and for the country.

The General Medical Council.

Among the institutions which, although suggested by medical men, were instituted by the Legislature, I should mention first the General Medical Council. We have now had forty years' experience of that body, and I for one think that it has done good service to the profession and the State. It has raised the standard of preliminary examinations; it has extended the period of medical study; it has set its face against the custom of legally qualified practitioners

evading the law by what is known as covering others who are not qualified; and it has recently passed a strong resolution against the employment of unqualified assistants, which, however hardly it may press upon individuals who are worthy of all sympathy, is undoubtedly sound in principle. Its powers have been more limited than might have been desired, and perhaps they might be extended and increased with advantage. To take a single instance, I would suggest that just as a diploma of a university or a college entitles the holder, whoever he may be, to be placed upon the *Medical Register*, and gives him all the privileges attached to such registration, so the decision of the General Medical Council that any person on the *Register* is no longer worthy to have his name retained upon it should, *ipso facto*, deprive him of the diploma or the degree upon which he had been registered. It seems absurd that there should be a necessity for renewing and repeating the trial in such a case. The decision of the supreme court of the profession should, I think, be held to cover and to include that of the licensing bodies, and even of the universities. The Legislature is already acquiring the habit of now and then referring a question or an opinion to the General Medical Council, and it seems to me that much would be gained if this expedient were more frequently adopted in regard not to that Council alone, but to the Association which we here represent.

The Public Health Executive.

This brings me to speak of the Public Health Executive, the officials who are entrusted with carrying out the laws relating to disease and its prevention. The formation of the department was—like most British institutions—an evolution rather than a creation. For when the Government felt the need of establishing such a branch of the Executive, it did not construct a new Board or appoint new officers beyond what was absolutely necessary, but rather laid additional duties upon Boards and officials already existing. There is no need for me to explain the precise arrangements adopted either in England or in Scotland, but in a general way I may say that in the former the new duties were entrusted to what had previously been the Medical Department of the Privy Council, the Engineers of the Local Government Office, and the members of the Poor Law Board; while in the latter the Board originally established for carrying out the Poor Law of 1845 was turned to account for the new purpose. They were named in each division of the country "The Local Government Board." But these Boards were not entrusted with the carrying out of the whole work relating to public health. Sir Benjamin Ward Richardson pointed out nearly twenty years ago that that work is too widely distributed. He said that so much had to be done by the President of the Local Government Board, so much by the Secretary of State for the Home Department, so much by the Registrar-General, so much by the Chief Commissioner of Works, so much by the Lord President of the Privy Council, and so much by the President of the Board of Trade, and all that without reckoning the heads of the Army and Navy Departments, the Postmaster-General and even some other important officials.

On the other hand, the duties of the Local Government Board naturally included, considering its mode of construction, much that might well have been relegated to other departments, as, for example, many matters relating to Poor-law administration.

All this might surely be simplified with much advantage. The department has grown so great and so complicated, and the importance of the work of some of its parts has become so much more appreciated, that it demands reconstruction. I should like to see the Local Government Board entrusted with every question that bears upon the prevention of disease. It should have two divisions, one dealing with the questions of local administration, and the other with the public health. These two subdivisions would cover the whole work at present undertaken, and which properly belongs to this great department.

The President of the Board thus reconstructed should be recognised as an official of the higher rank, and should indeed be not only a Minister, but a Secretary of State for the department. It would be a great benefit that he should be an officer of such dignity and influence as that he would be able to secure in the Cabinet and in Parliament due attention to the subjects with which he has to deal. He might be a member of either House, but considering the frequency with which financial questions must emerge, it would probably be better that he should sit in the House of Commons. He would, of course, have a Parliamentary and a permanent Under-Secretary, the former of whom should also, as at present, be a member of the House, who should take his share in the administration of the department, and, in the absence of his chief, answer questions and be available for reference and inquiry in the House on any subject connected with the department. A subdepartment should also be maintained, at which information, advice, and direction upon all sanitary questions may be obtained, while at the same time it continued to organise and carry out scientific investigations somewhat on the lines that are at present followed. There should also be other subdepartments dealing with various branches of the subject, as, for example, with the registration of births, deaths, and marriages; with the incidence of notifiable diseases, epizoötics, and diseases of plants (unless this is sufficiently provided for by the Board of Agriculture), with meteorological and other reports; with the working out of the various Public Health Acts; with the Vaccination Acts, the medical questions arising under the Factory Acts; with the care of the insane; with all questions as to the disposal of the dead, and such like. There are already officials entrusted with nearly all these duties, and in many respects the department is admirably equipped. All that would be required in many instances would be the grouping of them afresh and the clearing up of the precise details as to their work.

I am well aware that it is a serious thing to suggest the addition of even one Minister to the Cabinet (but this would scarcely be an addition) it is more to suggest that he should take so high a place as that of Secretary of State; but even with the difficulties which I admit, it seems to me obvious that the great importance of the public health, equalling, indeed, that of almost any other department in the State, warrants such a step. And as I believe that history will regard it as one of the chief glories of the reign of Her Majesty that the nation thus awoke to the importance of the question of public health, so I should desire that the Executive which subserves it should in that reign also be put upon a footing worthy of the greatness of its work. In respect of administration as well as of legislation, such changes as I advocate would give a great increase of efficiency.

Conclusion.

But I have reached the utmost limit of my time and must hasten to conclude. I have briefly reviewed what I consider the chief relative duties incumbent upon us and the community. I have shown that in our personal relationships things stand fairly well, but that in regard to preventive medicine the attitude of the community and the State leaves much to be desired. I have shown also reason to think that there is room for more generous dealing in respect of the endowment of research and of universities and schools. But I should sum up by saying that our part is to perform our duty conscientiously and to the best of our ability. It is not by banding ourselves like a trades union and crying aloud about our wrongs, real or imaginary, but by the efficient discharge of our own duty, that we shall best aid the community to perform theirs. When each of us does his best for every patient and for the State, not with eye service as men pleasers, but with a profound appreciation of our grave and sometimes awful responsibilities, shall we win the place in public esteem which will bring to our beloved science and art and to us the recognition to which they and we are entitled.

The Movement for the Repression of Tuberculosis in Germany. At the meeting of the Association of German Scientists and Medical Men, held in Brunswick last year, a Committee was appointed by the combined sections of medicine and hygiene to study the question of the organisation of a movement for the repression of tuberculosis in Germany and to report to the forthcoming meeting of the Association in Düsseldorf. The Committee, which consists of Professor Finkler, Professor Blasius of Brunswick, Dr. Meissen of Hohenhoumef, Staff-Surgeon Pannwitz, Dr. Liebe of Loslau, Dr. Blumenfeld of Wiesbaden, Director Gebhard of Lübeck, and Councillor Engelmann of the Imperial Health Office, held a final meeting in Berlin not long ago under the presidency of Professor Hueppe.

ADDRESS IN MEDICINE

BY

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THE TOXIC ORIGIN OF DISEASE.

WHEN this Association last met in Edinburgh the Address in Medicine was delivered by the accomplished and universally beloved physician, Dr. Warburton Begbie, and notwithstanding the lapse of time, I can still recall—and there are others here also able to recall—the thesis which formed the subject of the address, expressed in the inquiry, Has the practice of medicine made a single step since the time of Hippocrates?

In dealing with this thesis, Dr. Begbie described the history of medicine from its beginnings, as only could be done by one who had not only carefully studied the writings of the Fathers of medicine, but had also made himself familar with the work of their successors. The doctrines regarding the nature of disease, which successively replaced each other during the twenty-three centuries dealt with, were clearly described, and, as was to be expected from the practical physician, he fully discussed the bearings of these doctrines upon treatment, and pointed to the more conspicuous acquisitions in the healing art which had enriched practical medicine.

He had the opportunity of showing how greatly medical doctrine had been transformed by Harvey's discovery of the circulation of the blood; how the diagnosis of pulmonary and cardiac disease had received an extension and previously unknown definition from Laennec's discovery of auscultation; how the memorable discoveries and courageous applications of nitrous oxide, ether, and chloroform, by Horace Wells, Morton, and Simpson, had deprived the knife of the surgeon and the reproduction of animal life of much of their former terrors and anxieties; and how by that vaccination, which will ever be associated with the name of Jenner—the first and still unsurpassed means of restricting the ravages of a fatal infectious disease—an almost incalculable benefit had been conferred upon the human race.

From his elaborate survey of the history of medicine, he concluded that no general doctrine—chemical, physical, humoral or physiological—had been propounded which satisfactorily explained the nature and production of disease; that therapeutic advancement had been obtained, chiefly by the observation of patients, by adhesion to the classic method of rational empiricism; and that by this method such valuable accessions to the means of treating disease had been gained as the administration of turpentine in pulmonary gangrene and bronchitic affections; of quinine in intermittent fever; of iodide of potassium in syphilitic periostitis and thoracic aneurysm; of bromide of potassium in epilepsy; and of cod-liver oil in pulmonary tubercle.

It may not be without interest to consider to-day how far, and in what directions, this great and wide subject of medicine has chiefly advanced since Dr. Begbie delivered his address. The intervening period is the relatively brief one of scarcely a quarter of a century. It has, however, been signalised by a great increase of knowledge regarding the fundamental sciences of chemistry, physiology, and morbid anatomy; by the creation of pharmacology as a science of the action of remedies; by steady advance in symptomatology and diagnosis, and above all by so remarkable a development in our conceptions of the nature and production of many diseases, that we appear almost to have attained a position, vainly sought for during centuries by our predecessors, of being able to formulate a doctrine of disease, founded upon the satisfactory basis of experimental demonstration, and sufficient to explain many of its forms and to already provide us with assured means and principles for its prevention and treatment.

While fully acknowledging the merits of the workers in medical science and practice by whom this gratifying progress has been made, it cannot be forgotten that the necessary pioneer work was undertaken amid difficulties of exploration in dark and unknown regions; and that but for this pioneer work the present generation would not have been able to reap so prolific a harvest of medical discovery.

This indebtedness to our predecessors is nowhere more conspicuously shown than in the advancements that have been made in the diagnosis of disease. Observation, careful and intelligent, practised by the Fathers of medicine, had already constructed a nosology sufficient to distinguish the great majority of diseases, and so complete that it is doubtful if much advance could have been made had the methods in use at the commencement of this quarter of a century alone been trusted to. The introduction, however, of physical aids to our senses, and of chemical applications and methods—each rendered possible by the growth of collateral science—has placed us in a position from which we have been able to advance in accuracy of diagnosis, and even in the discovery of new diseases.

By the apparatus now in use for blood determinations the condition of this fluid in regard to many of its most important constituents can be exactly determined, and information can be obtained valuable for treatment, and previously unattainable by any perfection of intelligent observation by means of the unaided senses. The sphygmograph depicts with precision of detail changes in the pulse which are difficult to apprehend by the unaided finger, even after a long apprenticeship, and above all increases the usefulness of the physician by indicating the characters which, without its use, he should be trained to detect. He is thus enabled to appreciate changes, which are not only of the highest value in prognosis, but are also frequently sufficient, either in themselves or aided by the most superficial of further observation, to justify without auscultation the diagnosis of the cardiac lesion which is present. The ophthalmoscope has increased the certainty of diagnosis of many nervous affections and toxic processes, and some of the difficulties of clinical observation have been overcome by radiography, whose capabilities, however, are as yet undeveloped.

By the introduction of chemical processes applied especially to the examination of the stomach contents, and of the urinary and other secretions, diagnosis has also been advanced, and previously unknown precision has been obtained. The agglutinating effects of the blood serum in certain infective diseases, as typhoid, Malta, and relapsing feyers, and in cholera and anthrax, upon their respective pathogenic organisms; and the application of chemical pigments to reveal the existence of the microscopically minute organisms of such diseases as pulmonary tubercle, pneumonia, and diphtheria has removed many of the perplexities of diagnosis and rendered identification almost a mechanical art.

While by these and other means the diagnosis of diseases—a fundamental work in the art of medicine—has conspicuously advanced during the last quarter of a century, this advancement, however great, does not in itself justify any claim to a nearer approach to the realisation of the highest aims and objects of medicine. Diagnosis, for the most part, deals only with symptoms, it has no immediate concern with the true nature of the malady, and until this has been determined progress in treatment can only be tardy and unsatisfactory. The history of medicine has shown that the advance in these two departments has rarely, if ever, been parallel or equal. The one may reach a position of almost ideal perfection, while the other still remains in the initial stage of vague speculation. This is exemplified by the present state of knowledge of nervous diseases. Minute symptoms have been identified, and have been so arranged in groups as to constitute special diseases, and thus numerous forms of disease associated with morbid lesions of parts of the spinal cord or brain have been created. The elaboration is a remarkable triumph of painstaking and skilful observation in symptomatology and in morbid anatomy. It presents a field for the training of the powers of observation and reason, probably unsurpassed by any other problems in practical medicine, and the solution of these problems is undoubtedly a cause of satisfaction to the physician, as it frequently also is to the patient. To what extent, however, is the patient a gainer? To what extent is the object of diagnosis and of all medical knowledge fulfilled? It must be admitted that the gain in most cases

is disappointing. The natural course of the disease is no doubt often beneficially modified, but usually to only a slight extent, unless surgical treatment be successfully applied, which even the scientific discoveries of Ferrier and Horsley and the surgical skill of Durante, Kocher, Macewen, and others have rendered possible in relatively few cases. Whether the investigation of the condition of the patient leads to the diagnosis of acute ascending paralysis or anterior cornual degeneration, of spastic paraplegia or locomotor ataxia, of syringomyelia or bulbar paralysis, the methods of treatment are much the same; and while we may have some satisfaction in adopting measures to relieve symptoms or to protect the patient against conditions favourable to the progress of the disease, or to increase the general powers of resistance, we most frequently find ourselves in the mortifying position of being unable to cure the disease. In those cases, on the other hand, where it is possible to advance from diagnosis to the determination of the actual cause of the disease, when remedies are employed which have been proved to be curative as regards that cause, the disease, whatever be its position in the artificial nosology of nerve affections, may in many instances be arrested in its progress, and may even be cured, provided the affected tissues have not already undergone incurable destruction.

At the present epoch in medicine it is especially interesting to recognise that the latter gratifying results are to be obtained when there is reason to believe that the disease has been caused by a toxic substance present in the body, and that according as this substance is the poison of syphilis, or of rheumatism, or of malaria, is the cure effected by remedies which have been proved capable of annulling the toxic effects of these poisons. It is thereby shown that the disease is not truly a product of the structural alterations which are present, but of a hurtful substance or poison capable among other effects of producing these structural alterations. Similar facts are observed with many ordinary poisons, and an association, highly significant in regard to the production of disease, is thus indicated. Many of the more common poisons also produce changes in structure closely simulating the changes of disease, as the peripheral neuritis, anterior cornual degeneration, granulo-fatty degenerations, and arterial sclerosis of lead; the liver steatosis and yellow atrophy of phosphorus; and the fatty degenerations and diffuse sclerotic hyperplasia of the liver, the peripheral neuritis and the atheromatous changes in blood vessels produced by alcohol.

By such facts, acquisitions of modern pathology, it is strongly suggested that the structural changes found in many diseases may, after all, be mere manifestations, associated with other effects, of a cause which would thus assume the importance of being the essence, the *vera causa*, of the disease, and that this essence is a toxic substance. This idea is rapidly becoming the predominant doctrine of the present-day conception of disease, and as investigation proceeds it is almost daily receiving support from new facts. It has been demonstrated that the body is constantly subjected to the risks of poisons produced within itself, as well as of poisons introduced into it from without. Many of the poisons produced in the body, such as the ptomaines and leucomaines, are of the chemical nature of the previously known alkaloids, and not a few of them rival the vegetable alkaloids in toxic power and reproduce their leading effects. Nervine, for instance, is lethal in minute doses, and acts in many respects like pilocarpin; while muscarin finds its analogue in the active principle elaborated by poisonous fungi.

The organism, even in a state of health, is a veritable storehouse of these toxic substances. Many of its normal constituents, such as potash salts and carbonic acid, are well-recognised poisons; many of the products of its glands, such as saliva and bile, contain toxic ingredients; many of the substances formed in the processes of disassimilation, and which enter such secretions as the urine and the intestinal canal, are capable of disordering health and even of endangering life; and in disorders of function, even if they amount to little more than mere disturbance of nutrition, poisons not found in the healthy body are generated and produce the symptoms of disease. By such toxic influences the symptoms of cholæmia, gout, rheumatism, uræmia, diabetic coma, stercoræmia, and probably also of chorea, sunstroke, neurasthenia, asthma and the idiopathic anæmias receive a sufficient explanation, even although the toxic substances have not in all cases been identified.

The doctrine of the toxic origin of disease has also been applied to mental affections. Auto-intoxication from poisons produced in the intestinal canal is believed to be an important factor in the causation of insanity, and already neurologists, such as Nissl and Van Giesen, have expressed the opinion that the toxæmic theory is destined to clear away much of the present vagueness regarding the pathogenesis of mental disease. Further, it is not improbable that in cancer, auto-intoxication by a poison generated in the cancer cells, equally with, and in some instances to a greater extent than, structural degenerations of invaded tissues, accounts for the symptoms and for the fatal termination—a probability which has been strengthened by the separation from cancer of a substance possessing a hyperthermic and powerfully lethal action.

The widely acting pathogenic influence of poisonous substances has, however, received its most definite and convincing support from the remarkable discoveries in bacteriology which have signalised this period. The gravity and wide prevalence of infective diseases had rendered them a subject of special study from the earliest period. Rhazes in the seventeenth century propounded the view that small-pox was essentially a fermentative disease, and thus originated the doctrine of the fermentative nature of all infectious disease. Previously to this time a theory of the parasitic origin of these diseases had been propounded, and its more enthusiastic supporters gave a reality to their views by such statements as that syphilis was caused by a minute worm, and measles, small-pox, and plague by infusorial animals or invisibly minute insects. With the introduction of the compound microscope the parasitic theory disappeared in this gross form of it, and the fermentative theory was again adopted. It was not, however, until 1861, when Pasteur's great discovery of the nature of butyric fermentation was made public, that the sufficiency of the theory became revealed. His demonstration of the essential part played by minute living structures in the transformations which constitute the process of fermentation at length removed the process from the mysteries which had previously surrounded it, and opened up applications to the pathogenesis of infective diseases which have revolutionised medicine. He pointed out that the organisms of fermentation are similar to those which had already been discovered by Rayer and Davaine in anthrax. He subsequently demonstrated the virulent nature of the microbes of pyæmia and infected gangrene, and, following Koch's work on the cultivation outside of the body of the bacillus of anthrax, he proved also that this bacillus, as well as that of fowl cholera, is able, when grown in suitable media, to reproduce itself almost indefinitely, and to retain for many generations its power to cause the symptoms of the original disease when inoculated into animals.

The way was thus opened up for important additions to the knowledge of the etiology of infective diseases, and, in rapid succession, the pathogenic micro-organisms of swine fever, glanders, tubercle, Asiatic cholera, septicæmia, erysipelas, pneumonia, and numerous other infective diseases were discovered.

The pathogenic action of the microbes was at first attributed either to mechanical obstruction of the blood vessels, caused by their accumulation in them, which resulted in asphyxia of organs essential to life; or to a biological action which enabled them to appropriate nutritive materials destined for the tissues of the body, and thus to deprive these tissues of life. While, in the case of a few of them, both of these actions may to a slight extent explain their effects, it was subsequently proved that these effects are mainly caused by the poisons which they produce. The poisons are of complex composition; some are alkaloids, and others modified proteids, and others, again, have altogether unknown chemical composition. Many of them are of extreme and almost indefinitely great activity: one milligramme, for instance, of the dry poisonous constituents of tetanus toxin is sufficient to kill a horse, or 600 million times its weight of living tissue; while the hyperthermal effects of tubercle toxin are appreciable when the dry toxin in doses of from one to two-tenths

of a milligramme, is injected, representing a strong reaction on 60 trillions of its weight of living human substance. Like other poisons, further, they are capable of producing structural changes, exemplified in the skin eruptions produced by many infectious diseases; the focal necrosis of peripheral nerves produced by the diphtheria poison; the fatty changes and longitudinal fibrillation of the heart muscle produced by this poison, and also by that of anthrax; the cerebro-spinal meningitis produced by the poison of influenza; the anterior cornual and muscle degenerations and the neuritis produced by the poisons of tetanus and diphtheria; the acute parenchymatous and hæmorrhagic nephritis produced by serpents' venom; and in the production of nodules in the lungs, reproducing the characteristics of pulmonary tuberculosis, by dead tubercle bacilli.

The demonstration of the toxic origin of infectious diseases has thus added greatly to the number of diseases which are caused by poisons, and has thereby been largely instrumental in establishing the doctrine of the toxic origin of disease. Unlike the older doctrines of the iatro-chemists, humoralists, and physiologists, this doctrine is supported by an abundance of convincing facts; and it may confidently be anticipated that it will have an endurance which former systems of medicine have not possessed.

Large numbers of disease-producing poisons are thus ever present in the body, created by the normal processes of life, and abundantly produced by departures, even in themselves unimportant, from these processes. Many substances well known to have poisonous properties are intentionally introduced into the body, such as alcohol, tobacco, tea, and opium, while others, such as lead, accidentally find their way into it. The respiratory passages and intestinal canal are crowded with micro-organisms, and they teem in the soil, air, and articles of food. Many of them are producers of virulent poisons, and when they effect a lodgment in the body and find conditions congenial to development, they proliferate with so great rapidity that a single bacterium may in twenty-four hours have multiplied itself into many millions of separate toxin-creating organisms.

In these circumstances, it is of interest to inquire what defence man and other animals can oppose to the disease and death-producing poisons by which they are so constantly endangered? Instances have long been known of the possession of defensive powers against the ordinary poisons, organic and inorganic. Certain animals are by hereditary endowment able to receive with impunity large quantities of poisons, which in minute quantities are hurtful to other animals, well exemplified in the enormous quantities of belladonna and opium which may be administered without injury to herbivora. It is also notorious that man and other animals may become so habituated to the action of several toxic substances that, in the course of time, doses greatly in excess of the minimum lethal are no longer able to cause death or even much inconvenience. Such acquired powers of defence are produced against arsenic, opium, alcohol, and tobacco, and they are also illustrated in the effects of nitrile ethers.

Explanations for these exceptional powers of defence have been found in the special activity of the processes of elimination, and particularly of elimination by the kidneys, whereby the quantity of poison requisite to cause injury is prevented from being present in the blood; in an unusual power of producing decomposition, probably dependent on special chemical conditions of the blood, by which, for example, herbivorous animals are enabled to convert very large quantities of atropine into relatively inert tropine substances; and on the property which certain organs, and especially the liver, possess of absorbing and retaining toxic substances and of thus preventing their access to the structures on which they act in quantity sufficient to be hurtful. In the case, further, of many organic poisons, absorption and diffusion are impeded by the walls of cells, as in the instance of the slow absorption of strychnine through the stomach walls and of many albuminoid poisons through the intestinal epidermis.

These explanations, however, do not account for all the observed phenomena, and it must in the meantime be assumed that tissues may gradually become accustomed, possibly by exhaustion, to the perturbations produced by substances which modify their normal condition, so that by-and-by a tolerance is induced.

Anticipating some statements which will afterwards be made, a fundamental difference exists between both congenital and acquired defence against ordinary poisons and that resulting from the action of disease toxins, venoms, and such-like poisons, in so far that in the former there is not produced in the blood any substance which plays the part of an efficient counter-poison or antitoxin.

The subject has, however, gained a new importance from the remarkable facts discovered in connection with the poisons generated by pathogenic micro-organisms, and in connection also with other poisons of very similar chemical composition, represented especially by the venom of serpents and by the vegetable products abrin and ricin.

It had long been known that many infectious diseases conferred upon those who had suffered from them a power of resistance against subsequent attacks of the same disease. After the discovery had been made—and to this I have already alluded—of the microbian origin of infective diseases, it was experimentally shown that if the microbes constituting the cause of any infective disease were inoculated into animals, not only were symptoms of the disease produced, but also that the animal, if it survived, reproduced still further the events of an infectious illness, by acquiring a power of successfully resisting the morbific influence of the same microbes subsequently inoculated. It has likewise been found that each of these events could be reproduced by the filtered, and therefore microbe-free, solution, in which the pathogenic microbes had been cultivated, and thus it was demonstrated that neither the original disease nor the subsequently acquired production was actually due to the microbe, but to toxic substances produced by it.

From this position the further great advance was made that the blood serum of protected animals, itself destitute of poisonous properties, when introduced into non-protected animals conferred upon them a resisting power which might be so great that even large lethal doses of the virulent micro-organism and of its toxin no longer produced death or even symptoms of poisoning.

These remarkable results of experiment deservedly claim much attention. They irrefutably demonstrate that infectious diseases are in their essence poisonings; they throw much light on the mystery, previously shrouded in metaphysical phrases, of the nature of the protection acquired by attacks of infectious disease or conferred by vaccination; and they have not only at once led to valuable therapeutic results, but they indicate further applications, both in the prevention and treatment of disease, exceeding in their possibilities any expectations that had previously been originated by discovery in medical science.

Inquiry into the nature and cause of this protection has thereby been removed from the position of speculation long occupied by it to one in which experimental methods could be pursued with some hope of solving the problems. Many of the results, however, are yet difficult to explain, and considering that new facts bearing upon them are almost daily being obtained, it is not to be expected that altogether satisfactory solutions had been found or unanimity of opinion obtained. More especially does this apply to the nature of the process whereby protection or immunisation is obtained, to the origin of the protection-producing substances or antitoxins, and to the manner in which they act as curative or therapeutic agents.

As in the case of some of the ordinary poisons, mineral and vegetable, it may be admitted that a portion of the acquired protection is due to the tolerance brought about by the accustoming of the structures of the body to the action of the poison, but this tolerance could not continue for the long periods during which acquired immunity sometimes persists after the infected disease has been recovered from. It may also be admitted that pathogenic micro-organisms absorb and thus remove from the body certain constituents necessary for their growth and vitality, whose removal may, to some slight extent, render the body unsuited for the further growth of these organisms; but, apart from other objections that might be advanced, it is inconceivable that this cause could operate in the bodies of animals which so rapidly change the composition of all their constituent parts, and that therefore the substances which have been removed would not very soon be again restored to the body, and thus render it vulnerable to

fresh infections. The doctrine of phagocytosis, enunciated and ably and strenuously supported by Metchnikoff, in which protection is attributed to the power possessed by leucocytes of absorbing and destroying microbes, may to a limited extent account for the destruction of living microbes, but it probably accounts to a greater extent for their disappearance after life is extinct; while it can have but little influence upon the soluble toxins which, since the introduction of the theory of phagocytosis, have been proved to be in most cases the true cause of the disease symptoms.

The frequent persistency of immunity, not only exemplified in the after-history of patients who have recovered from certain of the infectious diseases, but also in vaccination against small-pox, as it alone serves to disprove each explanation yet advanced of the essential nature of acquired protection, must be taken into account in formulating explanations. The micro-organism of an infected disease introduced into the body produces the characteristic symptoms of the disease, and, if the animal recover, subsequent inoculations of this micro-organism no longer produce any injury. The animal has become protected against the disease, and there is abundant clinical evidence to show that in the case of the majority of infectious diseases the immunity lasts for many years. The pathogenic organism of the same disease cultivated outside the body produces a toxin which when administered to an animal likewise reproduces the symptoms of the disease, and if the animal recover, and further quantities of the toxin are successively administered, an immunity may be acquired so great that the animal suffers but little inconvenience when 50 times the minimum-lethal dose, or even a larger quantity, of this toxin is now administered to it. The immunity acquired in the latter case is, however, only of short duration. I do not know if the duration of it has been defined with any of the toxins of disease, except with the toxin of diphtheria, and Roux and Klein have shown that with this toxin it lasts only from five to seven days. Enough, at least, has been done to show that it is brief when compared with the immunity produced by the microbes from which the toxins had originated, and Klein remarks that a serum which may be relied on to afford any durable protection is still a desideratum. It is also interesting to note that Monckton Copeman has found that lymph filtered so as to remove from it all solid particles, and therefore presumably all micro-organisms, can produce only a briefly lasting protection against unfiltered vaccine lymph of normal potency. In the case of the venoms of serpents pents—which in composition, and in other important respects, are analogous to the toxins of disease—the duration of immunity has, however, been defined; and experiments have shown that if an animal be protected so as to survive the minimum-lethal dose of the cobra venom, the protection produced against the same dose of venom does not last longer than a few hours; and even when the process of the immunisation has been carried so far that the animal can survive four times the minimum lethal, the protection against this dose of venom exists for only thirty days.

The protecting substance, antitoxin or antivenin, which appears in the blood after inoculation with pathogenic microbes, or after the injection of toxins or venoms, is chemically unstable, and is subject also to the general processes of elimination. Its presence in the body, even when the quantity of toxic substance to which it owes its origin is greatly above the quantity of toxin which has been elaborated in a case of infectious disease by the pathogenic organisms of that disease, is to be measured by days only; and, nevertheless, the protection produced in a patient by an infectious disease may apparently endure for a lifetime, and the immunity from small-pox gained by vaccination for at least seven years. It appears to me impossible to explain these contrasting facts on any other supposition than that, in the instances of prolonged immunity, successive supplies of the antitoxin of the disease, or of small-pox, must be furnished to the body during the time that protection continues. It is not possible, however, that these supplies could emanate from the pathogenic organism itself, for the life of the host would not endure were it retained in the body in its condition of original virulence. Jenner himself believed that vaccinia is a modified small-pox. The microbe of small-pox, like all other microbes, is greatly influenced by its surroundings. When transferred from man to the calf, it is now known that it may gradually acquire the characteristics of vaccinia, and elaborate substances which reproduce in man the protective effects of inoculation with human vaccine. The microbe of small-pox, therefore, has obviously become so modified that, while it can no longer produce a virulent toxin, it still retains the power of elaborating a protective antitoxin, and also retains sufficient vitality to reproduce its like through many generations in the human body.

Evidence pointing in the same direction has been obtained with other pathogenic microbes. Pasteur found that the microbe of fowl cholera, when treated in a certain manner, can have its virulence greatly lessened, and if it be then injected into the tissues of fowls, only slight poisoning is produced. From fowls thus treated, microbes are obtained also capable of producing only slight poisoning, and inoculations can be carried through a successive series of fowls with a like result. Each of these fowls had by this inoculation with a weakened or attenuated microbe become protected against the original and virulent microbe.

In the case of the pathogenic micro-organism of anthrax, this great pioneer in the field of the microbian etiology of disease discovered similar facts. If grown outside of the body at a temperature of 42.5° C. for eight days, this microbe could no longer produce the disease in susceptible animals, but, notwithstanding, it endowed them with a certain degree of protection against the original virulent microbe. Similar results were obtained with the microbe of hog fever, and it is important to note that a duration of immunity exceeding that known to be produced by any toxin was obtained, for the protection following inoculation of the attenuated microbe lasted for at least one year.

These instances are sufficient to show that immunity equally with poisoning is dependent upon a soluble substance produced by the micro-organisms: that the duration of even a high degree of immunity resulting from the introduction into the body of the immunising substance as distinguished from the microbe is only of brief duration; and, accordingly, with the existing evidence, it is impossible to account for the prolonged immunity following upon the recovery from many infective diseases, or from inoculation with vaccine lymph, otherwise than by assuming that so long as immunity continues the microbian sources of infective disease continue to exist in an attenuated and otherwise modified form in the protected body.

Attenuation for the purposes of protection would therefore appear to be essentially a process in which the condition of life of the microbe is so altered that its capacity for manufacturing poisons is weakened or destroyed, while its disease-preventing properties are retained. Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition, while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised.

The theory which I have suggested implies that long-enduring protection from infective disease cannot be obtained by the introduction into the body of either the poisonous or the immunising products of microbes—the toxins or antitoxins—but only by inoculation of such microbes as are capable in the body of assuming a non-virulent form, or of microbes already converted into this form.

I would here point out that, however highly we may value the objects and success in some important directions of the experiments of Dr. Monckton Copeman and others on the effects of glycerine upon vaccine lymph, it must not be overlooked that the powerful microbicidal action of glycerine upon the contaminating organisms of this lymph may, in the course of time, weaken or even destroy the activity of the specific organism by which the long-lasting protection against small-pox is produced.

In the case of some diseases it is possible that the modification of the pathogenic power of the micro-organism necessary to convert it from a poison-producing to an antidote-producing agent cannot be accomplished in the body. Thus may be explained the failure of certain diseases to protect the body from subsequent attacks of the same disease, well recognised in the instances of pneu-

monia, influenza, diphtheria, rheumatic fever, erysipelas, and tubercle. On the other hand the microbes of other diseases may, in small numbers, and attenuated both in virulence and in power of conferring protection, persist in the body after convalescence has been established and actually rendered it not only more susceptible to fresh infection but also to a recurrence of the disease by auto-infection. Results obtained by experiments with toxin and venom support the former possibility, for owing to some as yet unexplained individual peculiarity, an animal which had received a number of successive doses of toxin or venom, each considerably below the minimum lethal, instead of having thereby acquired protection, may unexpectedly exhibit serious symptoms of poisoning, and may even die when it receives a dose considerably below that required to produce death in an animal which had not previously received any toxin or venom. The probability of the second event is supported by the well-known effects upon the life and pathogenic power of microbes of changes, even although slight, in the conditions to which they are subjected. A change in temperature, the addition to, or removal from the fluid in which they are grown of a minute quantity of a chemical substance, may convert a non-virulent form of a pathogenic organism into a virulent form. Similar causes may, outside the body, also render moderately or intensely virulent a previously non-virulent microbe, and thus may be explained variations in the severity of epidemics, as well as the occurrence of outbreaks of infectious disease not originated by infection from any previously existing case.

The dependence of microbial existence upon the composition of nutrient media may also partly account for the age liability which forms so conspicuous a feature in the history of such infectious diseases as scarlet fever, measles, and whooping-cough. Further, pathogenic microbes, attenuated as to their virulence but not as to their protective power, may enter the body and render it immune by a process of accidental vaccination; and thus may be explained, without recourse to such unsatisfactory phrases as individual or racial peculiarities, well-authenticated examples known to all of us, of repeated exposure to infection without the production of disease, and of the immunity enjoyed by the inhabitants of towns and districts daily subjected to the virus of typhoid fever, malaria, or yellow fever.

These are not mere hypotheses unsupported by experimental data. Describing the results of his experiments on anthrax, Pasteur states that when fowls are inoculated with the virulent microbes of this disease, they remain well until they have been cooled down to a subnormal temperature; and, in the earlier stages of the poisoning thus induced, if the temperature be again raised, the symptoms of anthrax disappear and the fowls recover. Anthrax microbes, as well as those of fowl cholera, if cultivated at a temperature between 42° and 43° C., acquire varied degrees of lethality according to the age of the culture, and the microbes of each variety of lethality can be almost indefinitely reproduced by maintaining certain conditions of cultivation. If microbes so grown as to be no longer able to produce anthrax in rabbits are first inoculated in a successive series of experiments in young, and, for that reason, extremely susceptible rabbits, and if the microbes obtained from the last of the series are then inoculated into somewhat older and finally into adult rabbits, the original virulence of the microbe is found to have been regained. "The work in my laboratories," he states, "has established that pathogenic microbes are not morbid entities. They can assume various forms of physiological activity, depending on the media in which they live and multiply. As a consequence, one can modify their virulence. It can be exalted or enfeebled, and each state can be fixed." Impressed by the far-reaching possibilities suggested by these and other fruits of his fertile imagination, it is not astonishing that the great discoverer, whose divining rod of science had thus thrown a clear light on the mysteries of centuries, should exclaim, "The hour has now arrived when we may enter the enchanted grotto full of priceless treasures."

Passing now to consider the origin of the protection-producing substances—antitoxins or antivenins—it is important to bear in mind that the symptoms of a pathogenic disease, the toxic phenomena by which it is characterised, are, with a few doubtful exceptions, directly caused by the poisons generated by micro-organisms, and not by the micro-organisms themselves. The production of microbicidal agents does not, therefore, in connection with this question, require consideration, but it may be pointed out that there is evidence of the production, both by toxins and by micro-organisms, of substances specially unfavourable to the vitality of the micro-organisms themselves.

The production of antitoxin in the body, whether following the introduction of virulent microbes or of toxins entirely free from microbes, has generally been explained by a reaction occurring in the tissues of the body, whereby either a proliferation of leucocytes and the production by them of the protecting substances is excited, or the normal cells of the body are stimulated in such a way that they secrete the protective substance.

I have, to some extent, already discussed the question of phagocytosis, which is involved in the first explanation. To the objections that have been stated there are others which can be derived from the results of observation and experiment. In many instances, when immunity to a high degree has been produced by venom, no increase can be found in the number of leucocytes immediately, or at varying periods, after the subcutaneous injection of large, though, in the circumstances, easily tolerated doses of venom. Further, when one half more than the minimum-lethal dose of venom is mixed ontside of the body with antivenin, and the mixture injected into an animal, the quantity of antivenin required to prevent this lethal dose from producing death is only the quarter of a cubic centimetre; whereas if the antivenin be administered half an hour before the same dose of venom, as much as 3 cubic centimetres are required. That is to say, in conditions which are the more favourable for the proliferation of leucocytes, or for the production by them of protecting substances, the antivenin is less efficient as a protecting agent than when the conditions are much less favourable.

As to the second theory, often termed the reaction theory, it is also opposed by the experiments I have last mentioned, but equally so by the fact that a high degree of immunity can be produced by an appropriate adjustment of doses without any observable reaction occurring. Even when a distinct reaction, such as an elevation of temperature, is produced during the process of immunisation, the production of the reaction is in itself of no other significance than that a dose of an active substance, sufficiently large to cause an observable effect, had been administered.

The subject, however, is surrounded by difficulties, not a few of which have arisen from the attempt to obtain an explanation without separating the influence of the microbe from that of the toxin, with the result that biological conceptions have perhaps been introduced unnecessarily into the consideration and discussion of the subject. As a contribution to the solution of the problem I would advance the following facts: Although searched for, no proteolytic or fermentative action has been discovered in the case of any toxin or venom; by subjection to certain external influences, such as elevation of temperature, and the influence of electric currents and of certain chemical reagents, toxins and venoms may have their poisonous action destroyed, while the immunising or protective action is retained; and toxins have been found actually to contain protective or remedial substances along with their toxic ingredients, as shown, for instance, by Hunter in the case of the toxin of tubercle.

These considerations suggest that the protecting substance originates directly from the toxin, or is indeed an ingredient in its complex composition. The suggestion is supported by experiments which show that the degree of protection artificially produced in an animal—for it is, perhaps, not unnecessary to state that protection and immunisation are only relative and not absolute—is proportional to the total quantity of toxin or venom introduced, rather than to the amount of reaction produced in the animal by any of the several administrations. The remarkable facts which have been described in connection with the stomach administration of venom, obtained also by Ehrlich and Kobert with the somewhat similar bodies abrin and ricin, and by Valli with the virus of hydrophobia, seem likewise to receive their most satisfactory solution on this supposition. A dose of venom, several hundred times greater than is requisite to produce death by subcutaneous injection, fails when introduced into the stomach to produce any poisonous symptom whatever, but

still so protects the animal that considerably more than the minimum-lethal dose may now be subcutaneously administered without producing death.

It is difficult to account for these facts otherwise than by assuming that the venom while in the alimentary canal had been subjected to a process of analysis, as the result of which its toxic constituents had been separated from those that are antitoxic or protective; and while the former had either been destroyed or had failed to be absorbed, the latter had passed into the blood in sufficient quantity to protect the animal against otherwise lethal administration of venom.

There are, undoubtedly, many facts still required before a convincing explanation can be formulated of the origin of the antitoxic substances that appear in the body after the reception of pathogenic or other similar toxins; but the facts already ascertained appear to indicate that the antitoxic or immunising substances originate not from vital reactions upon constituents of the body but from the toxins themselves, being produced by chemical changes in them, or being actually among their normal ingredients.

The question is not only of scientific interest but it has also a practical bearing. The manufacture of the immunising substance is attended with much difficulty. A satisfactory antitoxin can rarely be obtained until a tedious process, extending over several months, has been followed. Antipneumococcus serum requires as long a time as six months, the immunising serum of yellow fever from twelve to eighteen months, and the nearest approximation yet obtained to a satisfactory protecting serum for tubercle the almost impractical period of several years. Were it recognised that the antitoxin originates directly from the toxin, the preparation of it would be freed from existing difficulties and mysteries, and, after some necessary chemical research, it could be produced in the laboratory and thus brought into closer relationship with ordinary medicinal substances.

Any generalisation in medicine, while it may serve the useful purpose of emphasising advancement in knowledge, must remain barren of practical result unless it also supplies general principles as well as specific indications for treatment. It may with some confidence be stated that the doctrine of the toxic origin of disease does not fail in these respects.

In the case of ordinary poisons it has been well established that recovery is largely promoted by hastening the removal of the poison from the body, especially by means which it is the province of pharmacology to indicate; and the eliminative treatment which has long been followed in many diseases thus finds in their now definitely established toxic origin a sufficient explanation and justification. Clinical and experimental evidence, not restricted to ordinary poisons, but gained also from the study of the effects of toxins and venoms, has taught us that treatment should also include the adoption of measures for increasing the resistance afforded by the body to toxic and morbific processes. If a dose of venom below the minimum lethal be administered to an animal, and, after all obvious symptoms of poisoning have disappeared, this dose be followed by a second, also considerably below the minimum lethal, the animal may die, although each dose was in itself insufficiently large to cause death. If an animal has been inoculated by a non-lethal quantity of the virus of a recognised disease such as anthrax, and, after recovery has apparently been established, if a non-lethal dose of the virus of another disease be inoculated, death will follow the inoculation of the second dose, although that dose is quite insufficient of itself to produce death in an animal which has not previously been thus treated. In both cases the power of resistance has been so weakened by the first and apparently recovered-from administration that a quantity of virus in itself insufficient to cause death now succeeds in doing so. From such examples the explanation is found of the widely prevalent employment of means to increase the strength or resistance of a patient, of the value of tonics and foods and of fresh air and light, not only in promoting recovery from illness, but also in actually preventing a fatal termination. Expressed in another form, they constitute means for slightly increasing for any given degree of disease the minimum quantity of the disease-producing influence or substance required to produce that degree of disease.

These as well as other methods of treatment that might be referred to do not, however, directly affect the true cause of the malady. Hitherto this cause could be counteracted or opposed only in the instances of the well-known poisons which are dealt with by toxicology, and of a very few diseases such as ague and syphilis, in which the cause was surmised, without being proved, to be a poisonous substance; and in substances fitted to antagonise these poisons by chemical combination, or, though only to a limited extent, to counteract their effects by physiological processes, therapeutics has possessed satisfactory resources. By the demonstration of the production of many diseases by toxins generated by micro-organisms, the opportunities for the application of these principles has been greatly extended. Diseases whose treatment had previously rested on an uncertain basis have now been brought into the range of rational therapeutics; and it has been shown that morbific processes which had already become so definitely established as to display serious symptoms can be entirely arrested, and, above all, that illnesses which would otherwise inevitably terminate in death may be so perfectly controlled that the fatal termination can be prevented and recovery ensured.

A dose considerably above the minimum lethal of the toxin of tetanus is administered to an animal. Several hours after the administration, when symptoms of tetanus had manifested themselves, the antitoxin of tetanus, derived from an animal which had been immunised against the virus, is injected under the skin, and in a short time afterwards the symptoms of the disease disappear and the animal recovers.

A dose of cobra venom sufficient to cause death in two or three hours is administered to an animal; the venom illness is developed, and while it is quickly advancing to apparently an early death, a dose of antivenin—the blood serum of an animal highly immunised against this venom—is administered, and by-and-by the symptoms become mitigated, and in a few hours the animal, which otherwise would certainly have died, is restored to a perfectly normal condition.

By this antidotal treatment, further, not only is disease arrested and even death conquered, but the structural alterations in the muscle fibre and elsewhere that the tetanus toxin produces, and also the acute and rapid changes in the parenchyma of the kidney, characterising the poisonous action of serpent's venom, are altogether prevented from occurring.

How are these marvellous therapeutic or curative effects to be explained? The explanations that have been advanced are essentially the same as those applied to the production of immunity, and they have already been disposed of in the discussion of that subject. Specially bearing on the therapeutic aspect of the question are the further considerations that antitoxins are destitute of any distinct physiological action, and, founding on Declory's recent work on antivenin, antitetanin, and the antitoxin of diphtheria, they have even no influence on the processes of ultimate nutrition. Their curative action cannot therefore depend on physiological antagonism, and it is highly improbable that it has any biological basis whatever.

Referring again to experiments made with serpent's venom, when this venom in lethal quantity is mixed in a test tube with a small quantity of antivenin, the venom almost instantly loses its toxic power. Further, if the smallest quantity of antivenin required to produce this change after contact for a definite time with a lethal quantity of venom be determined, it will be found that if the time of contact is lessened this quantity of antivenin is no longer able to remove the toxicity of so large a quantity of venom. When, again, venom is injected under the skin of an animal at the same time as, but in a different position from, the antivenin, the quantity of the latter required to prevent death is for the same dose of venom about twelve times larger than when the two substances had been mixed together before they were injected. Such distinctions are difficult of explanation otherwise than by supposing that a combination, chemical or mechanical, is effected between the antivenin and the venom, for they indicate that when the conditions are the more favourable for ensuring contact between the antitoxin and the toxin, the antidotal action is more powerful than when the conditions are less favourable for this contact.

This view is also supported by the fact that if the antivenin be administered after the venom, the dose of the former required to prevent death is enormously larger than when the

two substances are simultaneously administered after they have been mixed together outside of the body. In the case of antivenin and venom the difference is as great as 1 to 1,200.

This experimental result, harmonising altogether with a physical as distinguished from a biological explanation of the antidotal action of antitoxins, emphasises the lesson, gradually receiving acceptance in practice, that for the effective treatment of an infectious disease the quantity of antitoxin must be a very large one, and at least 1,000 times greater than is indicated by the *in vitro* experiments by which their antidotal power has usually been determined and standardised.

For this reason the antitoxic serums frequently in use at the present time must be regarded as too dilute solutions. It is indeed probable that the process of immunisation, even when carried to its utmost limits, is incapable of producing antitoxic serums sufficiently powerful, in doses which can be administered, to cure a patient suffering from the effects of a large lethal quantity of toxin. Chemistry, however, has as yet left almost untouched the investigation of antitoxic serums, and it may confidently be expected that, when more knowledge has been obtained of their chemical composition, this difficulty will be overcome by the separation of the curative from the worthless ingredients.

By such results as are exemplified in the experiments that I have described a new era has been originated in practical medicine. Considering how limited were the means—if, indeed, they previously had existed—of actually preventing death when the fatal disease conditions were already present, a special fascination attaches itself to the subject of the antidotal treatment of disease, the newly created serumtherapeutics. It has merely entered the first stages of its development, and has had to contend in its applications to human beings with the difficulties presented by the presence of undiscoverable amounts of disease toxins, diffused by living generators, which are present in the body in unknown quantities and in varying toxic potentialities. The results already obtained are, however, of much value. Diphtheria has had its case mortality reduced from 70 per cent. to 26 per cent., or, according to another estimation, from 40 per cent. to 8 per cent.; hydrophobia has been so far brought under therapeutic control, by means which have not as yet been developed to their full efficiency, that its mortality has shrunk at least from 16 to 1 per cent.; the prognosis of tetanus has been deprived of much of its gloomy forebodings; the cure of pneumonia, of tubercle, of erysipelas, and of septicæmia is on the eve of being realised; a complete demonstration has been obtained of the power of antivenins to prevent the toxic and lethal effects of venoms; and the experimental data are being surely accumulated for completing the greatest triumph of preventive medicine by the discovery of an antitoxic serum for the cure of small-pox.

These, however, are to be regarded as merely the first fruits—in some cases requiring further maturing by the light of science—of the ample harvest which is ripening. Their acquisition, at the same time, has been sufficient to supply materials for constructing, in imperfect outline, the doctrine of the toxic origin of disease to which I have ventured to ask your attention. This doctrine has at least the merit of being able to bind together in one harmonious unity the conception of the actual nature or essence of a large number of diseases, including those which most urgently demand consideration. It supplies a simple and intelligible basis for treatment. Under its directing influence it may confidently be anticipated that Medicine will reach a position of definiteness previously unattainable; and, above all, that the healers of disease will have their resources in this beneficent function rendered more effective and valuable for mankind.

MEDICAL PRACTITIONERS IN GERMANY.—According to Eulenburg-Schwalbe's *Reichsmedicinal Kalender*, recently issued, the total number of medical practitioners in the German Empire in 1897 was 24,873, being an increase of 873 as compared with the previous year. They were distributed in the several kingdoms and States of the Empire as follows: Prussia, 14,957; Bavaria, 2,699; Saxony, 1,832; Würtemberg, 835; Baden, 949; Alsace-Lorraine, 731; Hesse, 655; and Hamburg, 519.

ADDRESS IN SURGERY.

BY

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At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

THE PRESENT POSITION OF SURGERY.

MR. PRESIDENT AND GENTLEMEN,—I desire to join my colleagues in offering you a most sincere welcome to Edinburgh, and I desire also to express the hope that you will all be able to look back upon your visit here as pleasant, interesting, healthy, and profitable both to mind and body.

When asked by a deputation of my colleagues in Edinburgh to give the Address in Surgery I felt that an honour had been very kindly and courteously shown me, but in accepting this offer I also felt that I had undertaken a responsibility—a responsibility which called upon me to speak to this distinguished audience as a representative of Scottish surgery. This responsibility was all the more serious to me, for my friends know well that I am more ready with the knife than with pen or speech, and as my daily life for many years has been to lecture and demonstrate to students as babes entering the profession, I had some fear that I might be offering to you as men and kings in the profession baby's food. My first difficulty was to select a text on which to address you. I might have offered you some of the results of nearly forty years of active hospital and private surgical practice, but I felt that an account of any such results was more fitted for the Departmental Sections. I also at one time thought I might have endeavoured to prove to you, and I think could have proved to you with success, how much Scottish surgeons and Scottish work have assisted in the development and improvement of surgical practice, but with this thought there suddenly came to my mind the old Scotch saying, "Ye'll hae a guid conceit o' yersel," and accordingly I at once dropped the idea of Scottish self-glorification.

After consideration it seemed best to me to take some more general text, and accordingly I decided to offer you a few remarks upon the present position of surgery. It must, I think, be universally acknowledged that the present position of surgery is of the highest. There are now few diseased conditions in which surgery does not play a very essential part in connection with treatment, and there is scarcely a single organ of the body, internal or external, which is not the subject of successful surgical procedure. The brain, the organs of the chest, abdomen, pelvis—many of which were so long looked upon as belonging solely to the province of the physician—are now shared, if not principally absorbed, by the surgeon as regards the relief or cure of their diseases.

It has sometimes occurred to me that on not a few occasions my esteemed colleagues, the physicians, have a strong longing to be surgeons for the time being, in order that they might be able to carry out some surgical procedure which their experience has taught them to be more efficacious than medicine.

For the sake of convenience, and partly also as is known to some here, that a discourse in this country is not considered complete unless delivered under from three to twelve heads, I propose to treat my subject under certain heads. In consideration for your feelings and time I propose to confine these heads to three, the minimum number allowed, and to speak of present surgery in:

I.—Its Scientific Aspect.
II.—Its Practical Aspect.
III.—Its Moral Aspect.

I.—ITS SCIENTIFIC ASPECT.

It must at the outset be acknowledged—and acknowledged with gratitude—that the marvellous advances in connection with present surgical practice are largely indebted to those who have diligently, honestly, and successfully carried on experimental and other research in connection with the sciences of chemistry, physiology, bacteriology, anatomy, and pathology. We, as surgeons, look forward hopefully to receive

the continued aid of these gentlemen in still further promoting our art, and it should be our duty to encourage and assist in every possible way all such scientific work, work which in connection with surgery can only be considered to be in its early infancy, and will require much care, accuracy, and close industry to establish its steady and sure growth.

I would now refer to some of this scientific work which has so benefited surgical practice. To speak of the antiseptic system at the present time is to speak almost of ancient history, but two reasons prompt me to refer to it. First, because it was in this school that its distinguished author carried on those carefully conducted and original researches and experiments which led him to suggest this great principle; secondly, because I have lived long enough to have had experience of three epochs in connection with surgical wounds. As a young apprentice more than 40 years ago I witnessed the dressing of wounds by the application of layers of ointment, the edges being brought together by sutures of thick silk and the arteries secured by ligatures of the same material, the ends of the ligatures being left hanging out of the wound and acting much like setons. As a dresser under the great Syme I learnt the simpler methods of water dressings and of dry dressings, and lastly as a pupil and colleague of Lister I had the good fortune to follow the various stages of the developments of the antiseptic treatment. In the first of these epochs I gained a large experience in connection with septic suppuration, hospital gangrene, pyæmia and septicæmia, all of which conditions were common and frequently led to fatal results. In the second epoch my experience of septic suppuration, pyæmia, and septicæmia was small in comparison, but still too common. In my third and present epoch such experience has been reduced to a minimum.

In the early stages of the antiseptic suggestions failures undoubtedly occurred, but such failures when honestly investigated were important as lessons, and the consideration of their causes did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required and when such treatment was unsuccessful condemned the whole system.

Let me quote a sentence from an address which I gave when appointed Professor of Clinical Surgery in this University, now twenty-one years ago: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful, and scientific research; of vast, laborious, and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister."

I confess that I was one of those who, while carefully watching the progress of Lister's work, and thoroughly believing and greatly admiring his great scientific abilities, were at first cautious in accepting all the details of its practical application, because I felt that these were somewhat complicated; and it was certainly a great relief to my mind and to the minds of many others I am sure, when it was found that in actual practice many of these details could with safety to the principle be much modified and simplified; and further, I had learnt from experience that even with the use of antiseptic treatment the ordinary principles of rest, avoiding causes of irritation, and attention to the general health must not be ignored. I know that no one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified, and so used under circumstances which formerly made it difficult or impossible to carry out.

But while the external application of antiseptic means and precautions is now thoroughly established upon a simple, and at the same time efficient, basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important a study in connection with disease, and with the results of injuries and surgical procedures. It is to a further study and knowledge of this science which must be considered as still in its infancy that surgery as well as medicine looks for more light in connection with the causation and treatment of diseased conditions.

Although experimental and pathological research and clinical observation have already done something to explain and determine the action of certain organisms, the particular manner in which these organisms cause in one case no result, and in others injurious results, cannot be considered as proved.

We certainly have learnt certain facts: first, that organisms of various kinds gain entrance into the tissues or organs of the body; secondly, that some special condition of these tissues and organs favours their development and multiplication.

Such organisms vary much in form, source of origin, situation where chiefly met with, conditions under which they develop or are destroyed, and the special effects which they produce. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behaviour in connection with the tissues. Further, it would appear that the resulting toxin may not itself produce the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results.

The conditions of the tissues or soil in which the organisms settle has much to do with the results caused. Individualism, age, constitution, general condition of patient, and any local condition, more particularly any condition which interferes with the vitality of the tissues, influence much the action of organisms.

The resistance of the tissues to the injurious effects of organisms depends upon the condition of these tissues, upon the activity of the organisms, and upon the amount and virulence of the toxins develop. It appears that it is the spores of organisms which most resist destruction, and as these spores may germinate not only in the tissues, but outside the body, they act as a serious source of infection.

From the facts I have just stated it will be judged what difficulties arise in connection with the study of bacteriology, and consequently with the treatment of the injurious results produced by the numerous organisms which invade and affect the human body. Bacteriological experiments upon the lower animals may in some instances aid us, but the conditions of the lower animals are not always the same as those of human beings, and therefore results obtained in the former are not always safe guides as regards results in the latter.

Continued careful study of anatomy and pathology and accurate clinical observation should do something to increase our knowledge, but I venture to think that much of our future trust for light must be in connection with physiological chemistry, which we hope may be able to teach us more of the origin, causation, and behaviour of the various toxins, and of the action of the tissues in connection with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavour to treat the general effect of these toxins, either by the administration of remedies supposed to produce a general antiseptic effect but it cannot be said that such treatment has proved satisfactory except in a limited number of cases or by the introduction into the tissues by subcutaneous injection of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connection with surgical conditions must have encountered this uncertainty as to their action. My own experience is that, though some severe cases of septicæmia have recovered after the injection of an antitoxin, other cases very similar have recovered without any antitoxin being used.

I would suggest that another important subject for further study is the physiological action or connection between one tissue or one organ and another. May not further experience of this connection help us in carrying out treatment based upon this connection? Take, for instance, the suggestion of Beatson for removing the ovaries in cancer of the female breast, incurable by other means. Having thought it my duty to test this suggestion, I carried it out in three typical cases, and my experience and the experience of others who have

tried this procedure has been that, though the disease was not cured, the removal of the ovaries had certainly some influence upon the diseased local condition.

I venture also to suggest that as a possible and further addition to treatment some more careful work should be devoted to the action of drugs upon the toxin poisons, such drugs being introduced either by the mouth, by subcutaneous or intravenous injection, or by inhalation. We know that large quantities of saline fluid may be injected into the veins with safety, and it is therefore not unreasonable to suppose that other solutions of a non-irritating and antiseptic nature may be similarly employed.

The remarkable results obtained by thyroid extract should be an encouragement to us in this respect, and it has already been proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins it will much simplify our treatment, for such remedies would be more easily and more certainly handled than the antitoxins now in use.

The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Colley and others by the mixed toxins of streptococcus and prodigiosus do show some hopes, for under the use of these toxins growths have undoubtedly disappeared, but I think that all who practise surgery will agree with me when I say that sarcomas and other growths do occasionally undergo a check in their development, and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

Reference to the scientific aspect of surgery would not be complete without some notice of the "new photography." Ordinary photography has always been of great assistance to surgeons, and will continue to be so for the illustration, progress, and record of many of their cases, but its new and latest development has already proved to be of the greatest service in diagnosis, and consequently in connection with successful treatment, and an improved development of it will no doubt add still more to the success of surgical practice. The scope of this department of science is a very wide one, and by its means we may add much to our knowledge of osseous development and growth, of the relation and position of internal organs, and of the actual condition of diseased parts. In connection with many surgical conditions, and especially in connection with injuries of various kinds, this photography is invaluable.

In leaving this, the scientific, portion of my address, I desire again to express the indebtedness of practical surgeons to those discoverers and workers in science who have by their honest and accurate observation obtained results which have done so much to improve our practice and so render our treatment more successful.

II.—Its Practical Aspect.

To one like myself who, as apprentice, student, and surgeon, has for more than forty years followed the practice of surgery, its steady and remarkable progress is a most interesting study. In watching this progress it not infrequently appeared as if perfection in some particular procedure had been reached, but a little more experience or a little more observation gave rise to a suggestion which entirely drove the so-thought perfection from the field and opened up a new and important practice with resulting benefit to suffering humanity. There are few surgical procedures which have not undergone some change and marked improvement since I first commenced the study of surgery, and the number of new procedures suggested would require many pages even to enumerate them. While not a few of these suggestions have become established in practice, many others, being founded on incorrect or ignorant principles, have perished, and deservedly so. To myself and to others it has often been interesting to observe the gradual development of some procedure or treatment; a suggestion made by one surgeon would lead to an improved suggestion by another, and this process of improvement might again be taken up by a third or fourth, until at length its thorough success was established. My Scottish modesty prevents me referring to work of my own, but it will always be to me a feeling of satisfaction that in connection with my very special opportunities for experience in surgical practice I may, in some small way, have been able to assist in adding to or originating such suggestions and improvements. I know I shall be excused if I here refer to the fact that to the great Syme I owe my opportunities for the study and practice of surgery, and it was in connection with my intimate association as his assistant for more than ten years that I learnt how to attain and how to exercise the qualities which are the essence of good and honest practice. Another personal incident I may be allowed to mention is, that as a baby I once rested in the arms of the great surgeon Liston, who was the favourite chief of my father, and although at that time I received no bodily nourishment from him, in after-life I obtained much surgical nourishment from the study of his writings and work.

The advances in our scientific knowledge, combined with extended and more accurate clinical observation, have, as has already been stated, assisted much in the improvement of practical surgery, and the development of what I would designate honest specialism must also be looked upon as adding to our practical resources and treatment.

If asked to define any special characteristic which will apply to the practice of surgery at the present day, I would be inclined to say simplicity—antisepticity of course being granted—a simplicity in which is included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency.

In a general address such as this a reference to all the improvements which have taken place, and are taking place, is quite unnecessary, as such improvements must be well known, or should be known, to all who desire to carry on with success the active practice of surgery.

For such knowledge we have not only our own experience to aid us, but we have to thank the medical press and the many distinguished authors who by their books and papers bring the results of their own experience and observations and researches under the notice of the profession.

Although so many and so great changes have taken place as a result of the advances in the departments of science already referred to, it would be very wrong to ignore the work of those surgeons who are no longer with us. Many of these surgeons showed a knowledge and wisdom and forethought of conditions and procedures which have stood the test of time, and still remain sound and correct as monuments of their genius. This knowledge was principally the result of shrewd and careful clinical observation and reasoning, for they had little or no scientific aids to help them, and their success under such circumstances should be an example to all of us to make every use of our clinical opportunities, and to observe closely, carefully, and honestly.

But the practice of surgery has not only reached a high standard of improvement, but it has much widened its area both as regards the number of its procedures and the number of those who practise them. This is scarcely the time or place to discuss the exact relationship between surgery proper and what is called gynæcology. Of late years these departments have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both are really surgical procedures, and both require for their proper and successful performance that training and those qualities which make the good surgeon. That physicians under the designation of gynæcologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and as time goes on some balance may perhaps be arrived at which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In this greatly-improved era of practical surgery it is well perhaps to suggest a caution, for there is undoubtedly a tendency—and more especially in the case of some of our younger colleagues—to be too ready to resort to surgical procedures. When greater risk was attached to operative procedures, surgeons young and old had for the sake of their patients and their own reputations to take into account these

risks even in comparatively slight operations; but now that so little risk attends operations, they may be undertaken without due consideration of all the circumstances or necessities of the case. I would as a senior colleague venture to remind my younger friends that Nature, with perhaps some little non-operative treatment, will do much, and that no operative procedure should be suggested or practised until the case has been thoroughly studied and found to be unrelievable by other means.

As a practical surgeon in this, the Edinburgh, School of Medicine, it may be expected that I should refer to my experience of anæsthetics, and I accordingly express the opinion that chloroform holds the field as the best general anæsthetic in connection with surgical procedures; and although I have met with a few fatal results from its administration, I have most thorough confidence in its safety if carefully used and its effects diligently watched. Perhaps the best test of my confidence is the fact that having a few years ago suffered from a poisoned finger received when operating, I required to take an anæsthetic on several occasions in order to have deep incisions made for the relief of extensive suppuration. The anæsthetic I took was chloroform, and it was administered according to the "open" method by one of my assistants and not by any special anæsthetist.

It is my opinion that fatal results will occasionally take place in connection with all anæsthetics, and that these fatal cases may be divided into (1) avoidable, (2) unavoidable. The avoidable ones are those which are due to careless administration, or to neglect of means to prevent blood or other matters entering the air passages, and should not occur if proper care is exercised. To avoid these risks it is essential that one person should give sole attention to the anæsthetic and watch both respiration and pulse, more especially the respiration and its nature, during the whole period of its administration. I need scarcely say that the preparation of the patient before the anæsthetic is employed is, when possible, important. I prefer to give a small basin of plain soup about two hours before the chloroform is administered, and if the patient is feeble, or the operation likely to be attended with much shock, a tablespoonful or more of brandy or whisky a quarter of an hour before the anæsthetic. In cases in which there is a risk of matters, and especially of blood passing into the air passages, the dependent position of the patient's head, as advocated by me in 1879, will often prevent this accident, and, should it take place, immediate tracheotomy must be resorted to if the symptoms are serious.

The unavoidable cases are, in my opinion, the result of heart failure from fatty or other conditions, and occasionally I believe they may be caused by cerebral conditions, as I have seen a fatal case in which the symptoms resembled most an epileptic seizure. Further, I believe that in the majority of these unavoidable cases it is impossible by any external examination prior to giving the anæsthetic to discover the condition which has led to the fatal result. I am inclined to think that the avoidable accidents are more frequent than the unavoidable, and if so it teaches us how important it is to avoid, by careful preparation and administration, anything likely to bring about an unfavourable result.

I would like here to give a word of warning as to the use of cocaine in local anæsthesia, and more particularly when it is used by subcutaneous injection. My experience is that some individuals are specially susceptible to its action, and therefore, if too strong a solution or too large an amount of a weaker one is injected, the result may be faintness and serious interference with [illegible] action. It should therefore be used cautiously, and a stimulant be given, or be at hand in case of such symptoms occurring.

Not wishing to weary you, I close my remarks under this head by referring to the importance of taking carefully into consideration everything likely to influence the performance or result of any surgical procedure, and when possible to first remove by proper treatment conditions likely to interfere with or to retard the recovery of the patient. It is not age or apparent feebleness which is likely to cause anxiety, but it is the condition of the organs and the tissues which should guide the surgeon, for if these be in a weak or in a diseased state they are more likely to become the soil for injurious bacteriological development and action.

III.—The Moral Aspect.

I make no apology for offering a few remarks under this head, with the explanation that I employ the term "moral" in its highest and widest sense, for I am decidedly of opinion that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart, and who desires to maintain the honour and reputation of his profession, to speak out with no uncertain meaning in regard to every action which is dishonest or dishonourable or tends to be so. The actions and practices of so-called quacks or unqualified individuals are much to be deplored, and it is in every way desirable that legalised checks should be established so as to prevent or limit them, and more particularly in the case of the ignorant and uneducated public. If the educated public consult such practitioners—and it is not very uncommon for them to do so—they can only blame themselves should unfortunate results take place.

It is, however, of practices inside the profession of which I wish to speak. It is sincerely to be regretted that in some quarters the true, honest, and high feeling which should be the standard principle of the members of our profession is in the present day partially or wholly ignored, and in consequence our profession is not always respected as it should be and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patients' cure or relief.

Three causes seem to me to influence this much-to-be-lamented evil which has insiduously invaded our profession —1, Active competition; 2, untrained specialism; 3, society demands.

There can be no doubt that the number of medical practitioners has increased, but in connection with the increase of the population this increase in numbers is not so great as is generally supposed. A few years ago I selected statistics in connection with this question, and taking some of the largest provincial towns in England and Scotland, I found that the number of medical men as compared with the population was very little changed from what it had been twenty years before. The active competition, therefore, is in my opinion not so much due to the increase of medical men as to the fact that in many instances most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession. My suggestions for the cure of this are that those who constitute the few should be specially careful to guard and encourage the interests of the many; should not seek to secure every remunerative appointment within their reach, but should at least leave some crumbs for their less fortunate brethren.

The second cause is untrained specialism. I have already stated that honest specialism has aided much the practice of surgery, and by honest I mean such practice as is founded upon a thorough knowledge of all the different departments of the profession, and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialised.

Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession. There are few who endeavour to practise their profession with integrity who have not met with cases in which mere symptoms have been treated by operation or otherwise, the real source of the diseased condition having been entirely ignored, either through ignorance or for reasons which can only be classed as contemptible and degrading to the profession. The cure for such practices is not easy, and it can only be hoped that the honest members of the profession will note such practices, and endeavour to check them by exposing their real nature, and by endeavouring with tact to educate the public mind to avoid those who practise them as unsafe and possibly dangerous advisers.

The third cause is society demands. A section of the public, or I should rather say a section of what is termed "society," has done much to interfere with the proper feeling which should exist in our profession.

Men, women, and even young people read and discuss professional matters and diseases; books are published and advertised which are written more to catch the eye of the public

than to advance the knowledge or reputation of the profession; a certain class of newspapers and periodicals devote one or more columns to professional subjects, and even give gratuitous advice in the form of "Questions and Answers." The manners, qualifications, and doings of members of the profession are freely criticised at afternoon teas and other entertainments. One man is condemned, and some supposed failures in treatment are magnified or invented, while another receives extravagant praise, and many of his wonderful surgical or other procedures are lauded, and not infrequently described with marvellous details added. One is glad to think that in the majority of instances the surgeon or specialist has no art or part in such proceedings; and having, with justice, confidence in his abilities and upright conduct, much regrets that they should exist, and does all he can to prevent their occurrence. But there are some, I fear, who take advantage of such extravagant popularity, and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. It is fortunate that there still exists among the public in all classes of society many who are endowed with Nature's nobility and good feelings and who are not influenced by the extravagant or false opinions of fashion, but who have both respect and esteem for those members of the medical profession who conscientiously devote themselves to the relief of suffering.

We can all hope, but I fear hope in vain, that those members of society who lead a frivolous, useless, and sometimes unholy life may some day realise that they are not acting as true citizens of their country or taking any proper interest in the welfare of their countrymen and countrywomen.

If some of their energies, some of their time, some of their sympathy, and some of their money were employed to assist their fellow-creatures, they would themselves reap reward by feeling that their lives were not altogether a selfish existence.

If any member of our profession encourages or takes part in society's ignoble life or actions, he is not worthy to belong to the profession, and he certainly does not add to its reputation.

In conclusion, Mr. President and Gentlemen, I wish to thank you all for the patient and kind manner in which you have received my address, and more particularly because I feel that I have not been able to offer you anything that is new or original.

I would also wish to express how great a pleasure it has been to me to meet so many of my distinguished and representative colleagues. We are all labouring in the cause of our noble profession, and it becomes all of us to join hands and to assist and sympathise with one another so as to advance our science and art, and in this way increase our power for the cure and relief of humanity.

Italian Medical Congress.—The Italian Society of Internal Medicine will hold its ninth annual meeting in Turin at the end of September. Professor Guido Baccelli will preside. The subjects proposed for discussion are Blood-Letting; Organotherapy; Advances in Diagnosis and in General Therapeutics. A large number of communications on subjects of present interest have been promised. Owing to the fact that general exhibitions in which medicine in its present and also in its historical aspects is largely represented—will be open, and that surgical, ophthalmological, hygienic, and other special Congresses will be held at the same time, the forthcoming meeting promises to be of exceptional interest. Further information can be obtained from the General Secretary, Dr. E. Mangianti, Via S. Francesco da Paola 4, Turin.

Medical Ministers. The new French Cabinet includes a member of the medical profession in the person of Dr. Viger, the Minister of Agriculture. Dr. Viger held the same portfolio in four previous Governments: Dupuy (1893), Casimir Périer (1893), Dupuy (1894), and Bourgeois (1895). It is interesting to note that M. Peytral, the Minister of Finance in the present Cabinet, is a pharmacist. In Italy Professor Guido Baccelli is now again Minister of Public Instruction, a post which he held in the Cairoli and Depretis Governments (1880-1884), and afterwards in that of Crispi (1893-1896).

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF MEDICINE

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

By GEORGE W. BALFOUR, M.D., F.R.C.P.Edin., LL.D.Edin. & St. And.,

Consulting Physician to the Royal Infirmary, Edinburgh; President of the Section.

PERSONAL EXPERIENCE OF AN ALMOST FORGOTTEN EPISODE IN MEDICAL HISTORY.

In saying a few words of introduction from the Chair of this Section, over which I have the honour to preside, it has struck me that a few words from personal experience in regard to a now almost forgotten episode of medical history might prove both interesting and instructive. There are not many now alive who remember the time when bloodletting was the panacea for almost every ailment, and when patients could be no longer safely bled they were certainly leeched or cupped. There must be few survivors of the time when one of the earliest lessons in surgery was to distinguish between an ordinary blood clot and one which was buffed and cupped, or who were taught that in uncomplicated pneumonia such confidence was to be placed in bloodletting that "the only essential action of the prognosis was the day of the disease on which the treatment was commenced," as it sometimes failed when delayed more than two or three days from the commencement of the disease.[1] Yet such were the earliest lessons in medicine which I received, lessons which were daily exemplified in the wards of the old Royal Infirmary.

When within a year of my graduation I made my way to Vienna with the view of studying homœopathy, which had just made a convert of one of our ablest professors (Henderson), I occupied my time at first in improving my knowledge of percussion and auscultation under the world-renowned Dr. Joseph Skoda, and you may imagine my astonishment when I found that in his wards the severest cases of pneumonia were treated with poultices and regulated doses of extractum graminis (hay tea), and with nothing else unless much pain was complained of, when a few grains of Dover's powder were superadded.

It was truly astonishing to behold in bewildered amazement a pneumonia melting away under the magic influence of the decillionth of a grain of phosphorus, but it was indeed a *reductio ad absurdum* to find this magic influence emulated by the virtues of hay tea, and to be told by Skoda that pneumonia was a disease which tended not to dissolution but to resolution.

The ὅμοιον πάθος, known to Hippocrates as one of many theories available to guide and to explain the treatment of disease under certain circumstances, was raised to a paramount position by Hahnemann, who enunciated the doctrine that by it alone could disease be not only cured *tuto, cito, et jucunde*, but silently and at once extinguished. In this respect homœopathy was the eighteenth century analogue of our modern antitoxin treatment. Remedies were selected not for any healing virtues they were supposed to possess, but because of the power they were believed to have of exciting a disease similar to that they were supposed to cure. A crude dose of such a remedy could not, as you may well suppose, benefit a patient, but by superadding a medicinal disease to that he already suffered from was bound to make him worse. This was called medicinal aggravation or exacerbation, and, to prevent any risk of this, Hahnemann invented a most elaborate system of preparation by which all the noxious qualities of the drug were gradually removed and nothing but its healing virtues left. The first step in this preparation was necessarily dilution, by which the active and noxious properties of the drug were gradually eliminated; at the same time by a series of rubbings and handshakings the already spiritualised remedy had its dynamic power so developed, that, when administered in a fitting dose, the disease for which it was appropriate melted quietly away without any previous exacerbation. In spite of all this elaborate care, and in spite of the terrors of medicinal aggravation for

ever before their eyes, there was still the widest discrepancy in regard to the doses employed by even professed homœopathists, for while some employed drop doses of the mother tincture at reasonable intervals (Schmid), others used nothing lower than the 800th or 900th dilutions (Grosse), and sometimes only permitted the patient to smell one globule damped with this dilution once during an illness of four or five weeks' duration, so powerful were these high dilutions supposed to be, so mild and certain in their remedial action.[2]

The enormous discrepancy between these doses may be faintly imagined when you reflect that the 30th dilution contains in each drop 1 decillionth of a grain of the original drug, and that to bring about this attenuation each grain of the drug has to be dissolved in an ocean of 14 septillion cubic miles of diluted alcohol, a quantity equal to many hundred spheres, each with a semidiameter extending from the earth to the nearest fixed star.[3]

Fleischmann of the Vienna (Gumpendorf) Hospital was not an extremist, and the dilutions he employed were seldom higher than the third or fourth, yet for one fresh from a school where it was taught that "in the case of inflammation no one would think of trusting the safety of the patient to any other remedy than bloodletting,"[4] it was a sufficiently startling experience to observe cases of true sthenic pneumonia not only entrusted to these infinitesimals, but making excellent recoveries under their use. Naturally the first and most obvious idea was that there really must be some occult virtue developed by the various triturations and succussions, and some truth in the homœopathic aphorism *similia similibus curantur*. Fortunately the excellent results obtained by Skoda with his hay tea sufficed to dispel these clouds of mysticism, while the success of Dietl in the same class of cases in another hospital with simple aqua colorata showed that there was nothing specific even in hay tea, and but confirmed the unmistakable conclusion that, as Skoda put it, pneumonia tended not to dissolution but to resolution, and that the large bloodlettings thought necessary for its treatment were, to say the least, uncalled for.

Among some even in Vienna the idea prevailed that this singular result was due to the presence of a less sthenic type of pneumonia. I need not say that this idea was not shared by Skoda, nor by his colleague Dr. Bittner, a benevolent-looking old gentleman of by no means a truculent aspect, but a great stickler for the old faith, who had no difficulty in bleeding his pneumonic patients freely with very considerable success, and when he could no longer bleed them he always cupped them; he applied to them those now forgotten instruments of torture, the cucurbitula cruenta, so that when his patients did arrive at the *post-mortem* theatre they were always readily recognised.

Though so much stress continued to be laid upon the necessity for blood letting in the Edinburgh school, it had ceased to be carried to such an extreme as in the immediately preceding generation. I have been told by an old gentleman that he heard Professor Gregory in a clinical lecture boast that he had bled a man into convulsions,[5] adding that the students had rushed terror-stricken from the ward, and that he himself had been disconcerted for a moment. Fortunately the patient recovered, and Gregory's boldness and success were so rapidly blazoned abroad that, though long before the days of railways and telegraphs, within a week it was heard of at Geneva. In a series of MS. clinical lectures still extant, Gregory narrates the still more remarkable case of Betsy Moffat, who during an attack of pneumonia had suffered much from bloodletting, tartar emetic, and other perturbative treatment; at last she was found at visit insensible, her pulse 104 and feeble, and a rattle in her throat like one dying. Even Gregory admitted she could not be further bled, but by dint of stimulating her with hartshorn and sack whey he was able to apply a few leeches to her head, and before he left the ward he was able to take 4 more ounces of blood from her arm, [illegible] tells us, was still buffed and cupped. It must be a relief to you, I think, as well as an astonishment, to learn that this patient did not die, but on the contrary was able to be discharged exactly one week after her last bloodletting.

Gregory was a very able man and no fool; he quite recognised the danger of large bloodlettings, especially in weakly patients; he considered the remedy unsafe, but he thought it less dangerous than the disease, and in this opinion he was supported by the pathology of his day.

Towards the end of the seventeenth century the researches of Bonetus into human morbid anatomy confirmed the statement first made by Laelius a Fonte in regard to the presence of hepatisation in the lungs of those dying from pneumonia. By and by the further experience of Valsalva, Morgagni, and Lieutaud showed that the lungs of all who died with symptoms of pneumonia were always either in a state of red or grey hepatisation, were either, as was supposed, filled with coagulated blood or were in a state of suppuration the result of effusion of blood into their tissue. Cullen, impressed with the idea, based upon the presence of red or grey hepatisation in all fatal cases, that pneumonia was always fatal by the rupture of a vessel within the lung, connecting this with Hoffmann's[7] theory that all inflammatory action was due to spasm of the small arteries, and regarding bloodletting as the only certain resolvent of spasm, was led to advocate free bloodletting—*usque ad deliquium*—as the only cure for pneumonia. For the first time in the history of medicine phlebotomy as a treatment for pneumonia was removed from the domain of empiricism and placed upon the thoroughly scientific basis of an apparently indisputable pathology. When we recall the remarkable relief that followed venesection, the quiet restful repose of a patient who but a few moments previously had been sitting up gasping for breath and complaining of intense pain, we cannot wonder at the reluctance displayed by the profession when asked to cast aside a remedy so powerful to relieve and believed to be so certain to cure. And if we put ourselves in the position of the men of that generation, we almost cease to wonder that wise and able men yielded themselves to the fascination of infinitesimals which seemed capable of replacing so pleasantly and efficiently a remedy so powerful, but attended by so many serious drawbacks.

On my return from Vienna I read to the Medico-Chirurgical Society of this city a report of what I had observed in the wards of Skoda with an account of 392 cases of pneumonia, treated on what might be termed the expectant principle, and showing a mortality of only 54, or 1 in 7¼, equal to 13.7 per cent. I pointed out that the Vienna cases were certainly not less sthenic than those in Edinburgh, that they had the disadvantage of being daily unceremoniously auscultated, percussed, and lectured over, which was not the custom in our infirmary in those days, and that they had not the advantage of having been freely bled, yet their mortality was only 13.7 per cent.[8] In the reports of our own infirmary during the five years and three months from July 1st, 1839, to September 30th, 1844, there are recorded 253 cases of pneumonia who escaped the lecturing, and had the advantage of having been freely bled, and of these 91 died, a mortality of 1 in 2.78, or 35.9 per cent, showing a proportion of recoveries of nearly 3 to 1, or over 20 per cent. in favour of those who were not bled, to say nothing of the time gained by their more rapid recovery,[9] or of the less exhausted condition in which the patients were left, whereby they were sooner fit to return to the duties of active life. I urged upon the Society the importance of giving the eclectic system of treating pneumonia a fair trial, throwing out the suggestion—made to me by a distinguished Austrian physician—that possibly some change in the type of the disease might underly the apparent change in its relation to perturbative treatment. My words fell on deaf ears, and the conclusion arrived at may very well be summed up in the words of one of the ablest physicians of the day—Dr. John Gairdner: "Nothing was better established than the good effect of bloodletting in Edinburgh, whatever might be the case in Vienna .... Of the benefits of early bloodletting he entertained no doubt whatever; they were positive, immediate, unequivocal, and admitted by almost every physician whose experience and judgment entitle him to consideration; and if Dr. Balfour, or anyone else, could shake his conviction in the truth of this opinion, he would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description, since in no case whatever can we have evidence which is stronger or more satisfactory."[10]

I need not pursue the subject further. The eclectic treatment passed gradually into the hands of the general practitioner, and within less than ten years the late Professor Bennett wrote: "It is admitted that the practice of bleed-

ing in acute inflamations has, within a recent period, undergone a great change; that whereas it was formerly the rule to bleed early, largely, and often repeatedly, now such bleeding is rarely practised, and is not necessary."[11]

After this we had the war of opinions in regard to whether this change was due to a better knowledge of the natural history of the disease and of its pathology, or to an actual change in the type of disease, which had become less sthenic in character, and no longer required the same heroic remedies. But into this I need not enter; it forms part of the history of medicine, and the object of this short sketch is to point out the importance of a knowledge of this subject.

If at the end of last century the profession generally had been fully alive to the fact that since the days of Pythagoras, a contemporary of Hippocrates, there has never been wanting a body of eclectic physicians, many of them the most renowned physicians of their day, who shunned perturbative medicine, and guided their patients safely through the most acute diseases without having recourse to any so-called heroic practices,[12] it seems unlikely that even the skilful special pleading of Cullen would have sufficed to establish bloodletting as a treatment upon a foundation apparently so stable. And in the absence of the factitious contrast between the supposititious curative action of heroic medicine and that of infinitesimals, it seems equally unlikely that Hahnemann's wildly improbable ideas as to the preparation and powers of infinitesimals would have taken any hold on the profession at all.

We are now on the threshold of new discoveries, and of quite a new pathology, which is indeed but a higher development of ideas that have long been slumbering in the professional mind—the connecting links being Dwight, Raspail, Hallier, and Pasteur—but which seem likely now to attain a development of the highest importance for the well-being of mankind. It is well, however, in the light of the past to remember that disease may be recovered from under many different forms of treatment.

The practical certainties of our art in all ages have been sufficient for the welfare of mankind,[13] and we must be careful never to subordinate to any vague ideas of what may possibly be curative of disease that which is, after all, the paramount object of our art—the relief of suffering.

REFERENCES.

[1] Alison's *Pathology and Practice of Medicine*, 1844, p. 280. [2] *British and Foreign Medical Review*, October, 1846, pp. 568 and 569. [3] Simpson, *Homœopathy, its Tenets and its Tendencies*, p. 285. [4] Marshall Hall, *Researches on Loss of Blood*, p. 272. [5] See *Additional Memorial to the Managers of the Royal Infirmary, Edinburgh*, 1803, pp. 457, 458. [6] *Edinburgh Medical Journal*, September, 1865, p. 213. [7] The influence of Hoffmann's views upon Cullen's practice is well seen in the preface to his *First Lines*. [8] *Edinburgh Medical and Surgical Journal*, vol. lxviii, p. 397. [9] "The part of the statements of those witnessing such practice which I was most inclined to distrust was the assertion that the convalescence of the patients thus treated was usually more rapid than that of patients with inflammatory complaints treated by fuller evacuations. But on watching the progress of cases of the kind I have been satisfied that the observation is correct." (Alison, *Edinburgh Medical Journal*, Nov., 1852, p. 507). [10] *Edinburgh Medical Journal*, August, 1847, p. 141. [11] *Edinburgh Medical Journal*, March, 1857, p. 770. [12] See Hæmatophobia, *Edinburgh Medical Journal*, September, 1858, p. 214; and An Episode Medical History, *Edinburgh Medical Journal*, December, 1894, p. 577. [13] Cabanis, *Du Degré de Certitude de la Médecine*, Paris, 1803, p. 65.

THE UNIVERSITIES OF FRANCE.—From official statistics published by the Minister of Public Instruction it appears that on January 15th, 1898, the total number of students in the faculties and schools of superior instruction in France was 28,782. Of this number 27,911 were men, 26,419 being French, and 1,492 foreigners; and 871 were women, of whom 579 were French and 292 foreign. The total number of students in the several faculties and schools of medicine was 8,064, of whom 399 were women; of the whole number 734 male and 168 female students were foreigners. The "extra-legal" schools of medicine outside the universities had 949 students, of whom 70 were women; while the medical schools of Algiers had 763, of whom 24 were women. There are in Paris 11,647 students of whom 3,971 are students of medicine. Next to Paris in respect of student population comes Lyons, with 2,335, of whom 1,106, including 33 women, belong to the medical faculty. Bordeaux occupies the third place, with 2,144, of whom 737 are students of medicine. Toulouse, Montpellier, Lille, Rennes, and Nancy have each over 1,000 students.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF SURGERY,

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY JOHN DUNCAN, M.D., F.R.C.S.EDIN., LL.D., F.R.S.E.,
Consulting Surgeon to the Edinburgh Royal Infirmary; President of the Section.

MODERN OPERATING THEATRES.

WILL you allow me to express first our pleasure in welcoming you here, and secondly the hope that you may find your visit socially pleasant and surgically profitable?

We in Edinburgh have been engaged of late years in putting our medical house in order, and possibly some of the recent changes may be worthy of your attention.

As you know, the staple commodity of Edinburgh is education. Of this staple, medical education forms an important part, and you can therefore readily understand that these changes have been made largely for the purpose of improving our facilities for medical and surgical teaching.

To one who can look back over thirty or forty years, no fact in medical education bulks more largely than the increasing importance of our examination system. Formerly examinations were meant to eliminate the useless; now they dominate the teaching. In some respects this is matter for regret, but there is hope that, if a little breathing space be accorded, we shall gradually educate the examiners to recognise that the candidate is not a finished practitioner familiar with every meaningless detail, but that the chief business of the teacher is to make men think, and of the examiner to find out how far that has been successful.

Meantime, however, this educational movement has done much good, and one of the most distinct benefits has been increased attention to the practical and clinical. You will find evidence of this in the laboratories and museums which are now attached to every department in our new university buildings and in the associated schools, and which culminate in the admirable laboratory of the College of Physicians and in the important museum of the College of Surgeons.

The managers of our infirmary have not been slow in responding to this movement. Extensive additions have been made to the pathological and other departments, but I may specially direct your attention to two points which are surgically interesting.

The first is that we have now all but completed the arrangements whereby a surgical theatre shall be placed at the disposal of each set of wards. When not many years ago we moved into the present buildings we found that one spacious theatre had been provided in which it was intended that all operations should be performed. But the antiseptic system has thrown open to surgery so wide a field, and the population of our towns has so greatly increased, that our youngest surgeon now performs almost as many operations as were performed in the whole infirmary in the days of Syme.

Moreover, students do not flock nowadays to the surgical theatre as the populace used to flock to an execution, or at least not to the same extent as formerly. The glorification of mere manual dexterity has also greatly diminished. It is seen that if you know what to do there is little difficulty in doing it. And so a surgical operation has come to be regarded as an incident in a case, and the theatre has become an appanage to the ward, in which whatever manipulation is necessary may be carried out in the way most advantageous to the patient and most beneficial to the student as a sequel to the diagnosis and a preliminary to the after-treatment.

You will see, also, that not only have the new theatres been constructed according to modern ideas, but that the older have also been remodelled on the same lines. Our managers deserve all credit for this endeavour to meet modern requirements, but I am not of those who have great faith in surgical upholstery. I cannot believe that the expense which has been incurred here and elsewhere in transforming cleanly and well-ventilated theatres into structures of tiles and glass was a necessary expenditure. It may be said that it is all in the right direction, but there are considerations worth bearing in

mind before the money of a charity is expended in costly reconstruction.

In the first place smooth and impermeable materials are not necessarily those which are most easily rendered aseptic. It is a fallacy to suppose that you render a theatre aseptic by douching its floor with antiseptic solutions. I am not sure but that the cleansing of a good old wooden floor is antiseptically as satisfactory as the treatment applied to its modern substitute.

In the second place, if the principle be sound on which this change has been made, much more is necessary to carry it to a logical conclusion.

The emanations from spectators are more dangerous than those from walls and floor. Must we not, therefore, follow those who have cut the spectators off more or less by an impermeable but transparent screen?

The emanations from the operator and his assistants are far more likely to reach the wound than those from spectators. So I picture to myself a time when everyone concerned in an operation—patient, surgeons, and assistants — having been rendered from top to toe cutaneously aseptic, shall cover each natural orifice of the body with an antiseptic mask, and clothing themselves in raiment scientifically pure, shall pass into an atmosphere freed from germs by the air pump and by heat.

Many years ago we had here a little controversy as to the value of the spray which was then in vogue. Incidentally I convinced myself by experiment and clinical observation that in surgical operations the air was a negligible quantity. If that be so—and if not absolutely true it is very near it—it would be unfortunate that in cases of antiseptic failure the surgeon should be led to seek in unfavourable surroundings for a loophole of escape from self-blame, or to believe that he cannot operate with perfect success save in a glass case or a crystal palace. Our ingenuity need not be directed to the air, which may be trusted to efficient ventilation and the germicide action of the tissues. The skin, the instruments, the apparatus, are the true objects of our care.

The other improvement to which I venture to direct your attention is the introduction of electricity into the infirmary. We have taken the opportunity afforded by the substitution of electric for gas light to rearrange our means of applying electricity medically and surgically. The use of electricity in surgery is doubtless extending, but has been hitherto restricted by the troublesomeness and costliness of the apparatus.

In the matter of lighting there are surgical operations and investigations which cannot be satisfactorily accomplished without it. The surgical value of rendering the body diaphanous by means of the Roentgen rays is now amply proved. The electric cautery has this advantage over others —that it can be placed in position before being heated.

For 30 years I have preached in and out of season the surgical uses of electrolysis, but I feel assured that even now it has not met with the appreciation it deserves. Yet in cirsoid aneurysm no other treatment can be compared with it for a moment. In nævus of the usual mixed variety if you desire to avoid a scar there is nothing so sure and so safe. It does excellently in some other forms of angioma. It gives good results in goitre. It is useful in uterine fibroma. It is an efficient depilatory.

Many of these are common diseases which ought to be treated by the ordinary surgeon, and I have hope, now that electricity is being introduced into our infirmaries, that electrolysis will come into greater favour, and that the surgeon will have no more hesitation in employing it in suitable cases than in performing lithotomy or amputating a finger. In some applications of electricity it will probably always be necessary to ask the aid of an expert, but this is not usually the case, and assuredly not with electrolysis.

I am sure that it will interest many of you to see the methods which have been adopted in our infirmary for utilising the current supplied by the town. They have been introduced under the direct advice and supervision of Dr. Milne Murray. His large knowledge of electricity, his ingenuity, and the great amount of time he has devoted to this matter have enabled us to make an installation which I believe is second to none.

I have ventured to direct your attention to one or two recent improvements of interest to myself, but I doubt not that my colleagues will be able to show you others of equal importance, and I trust that thus, as well as by our papers and discussions, you will find your visit to Edinburgh not altogether unprofitable.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY A. R. SIMPSON, M.D., F.R.C.P.EDIN.,

Professor of Midwifery and Diseases of Women and Children, University, Edinburgh; President of the Section.

THE TEACHING OF OBSTETRICS.

THE authorities of the Association do not wish Presidents of Sections to take up much time with formal addresses. Yet I cannot deny myself the privilege of offering some words of welcome to the members who interest themselves in obstetrics and gynæcology, especially to the foreigners who have come to honour us with their presence; and before a company so capable of appreciating the importance of the subject, I am anxious to put in a plea for the more thorough training of students in midwifery and the diseases of women and infants.

THE OLDEST MIDWIFERY CHAIR.

First, let me say that it may interest strangers to Edinburgh to learn what the alumni of this University already know, that the greeting I offer you comes from the occupant of the oldest Chair of Midwifery in the world. When we were entering on possession of these buildings in 1882 our Principal, Sir Alexander Grant, writing the Story of the University, stimulated the professors to study the history of their individual chairs. The investigations into the history of my chair went to show that when the town council of Edinburgh wisely instituted in 1726 a Professorship of Midwifery in its University, they unwittingly established a precedent. They resolved that their new professor should be "vested with the same privileges and immunities that are known to appertain to a Professor of Midwifery in any other well-regulated city or place"; but when one came to search for the privileged professor he was nowhere to be found. This seemed to me so astonishing that I sent a copy of an address on the subject to the incumbents of all the Chairs of Midwifery in Europe, and along with it this note: "My dear Sir, Will you kindly let me know what was the date of the foundation of your Chair of Midwifery? Any information you can give me as to the foundation of the earlier Obstetric Chairs will be gratefully welcomed by yours very faithfully, A.R.S." I got kind replies from many of my obstetrical colleagues—French, German, Dutch, and Italian. They gave sometimes interesting accounts of the origin of their respective chairs and clinics, but no one could date back so far as our own, the next in seniority being that of Strassburg, instituted two years later, in 1728. In that same year, Victor Amadeus II of Piedmont started the first school for teaching midwifery in Turin by setting apart a ward in the San Giovanni Hospital for Lying-in Women, where midwives should have practical instruction.

WHY MIDWIFERY LATER IN DEVELOPMENT.

This circumstance, that the first Italian obstetric clinic was provided for the teaching not of men but of women, suggests the reason why medicine and surgery had precedence of midwifery in the development of facilities for study in the respective departments. Through long ages the care of the lying-in woman had been consigned to members of her own sex, and the question of the propriety of allowing men to attend women in labour only emerged in the seventeenth century to give rise to bitter controversies, lasting until far on into the eighteenth. Up till then the approach of a physician or surgeon to a parturient patient was like an intimation to her of doom for her infant or herself, or for both. But the introduction of the forceps, that enabled the practitioner to effect

delivery with safety both to mother and child, came gradually to calm her fears and to win her confidence for the aid of the accoucheur; whilst his greater erudition enabled him to avail himself to such an extent of the growing power of the printing press that all the tuition and the greater part of the practice of midwifery gradually passed from the untrained hands of women to the more capable hands of men. That the pendulum swung too far I am not concerned to deny; and now that some women have engaged in the studies and attained the status of fully qualified practitioners, and so have earned a place in the membership of this Association, we welcome them as comrades in the Section where above all others we may look to see them render useful service to their kind.

Now Ranks with Medicine and Surgery.

But what I am concerned about is to seize this opportunity of calling attention to the inadequate provision that is made in our medical curricula for the disciplining of students in our section of the healing art. From the point of view of the legislator it takes equal rank in importance with the other two great departments, for according to statute no man or woman can become a registrable practitioner who has not passed a satisfactory examination in midwifery as well as in medicine and surgery. No one doubts the justice of that law, which constitutes of medicine, surgery, and midwifery what the President of the General Medical Council calls the Tripos of our profession.

If it was only late in human history that midwifery became the subject of serious scientific research, it has, since obstetric chairs were instituted, advanced with rapid strides; its votaries have taken an honourable place among the masters of medicine, and its achievements have helped to win for our common profession the confidence and admiration of mankind.

Importance of Obstetric Literature.

If we have regard to the activities of the obstetrician as manifested in various relations we see that in none of them does he come behind the physician or the surgeon. We have to be sure in our city, for example, two colleges that take their titles respectively from the physicians and surgeons, in one or other of which the obstetrician finds a modest place. But when it comes to be a question of forming a society for the purpose of discussing matters of scientific interest and practical importance, of relating cases and comparing notes and gathering experience, the physicians and the surgeons combine with all the specialists to do their work in one Medico-Chirurgical Society, whilst the obstetricians fill a yearly volume with the transactions of their own society, and sometimes make contributions to the Medico-Chirurgical as well. Again, if we look to the journals that are open to the discussion of subjects in all branches of the profession, we cannot fail to be impressed with the large space that is occupied by the papers on obstetrics and gynæcology. I had occasion some years ago to look through a chance volume of our *Edinburgh Medical Journal*, and to note that the obstetric material amounted to more than a third of the whole—of the 630 pages occupied with original articles, 233 being devoted to articles in this department. If we take the great *Sammlung klinischer Vorträge*, founded by Volckmann, we find that important serial setting gynæcology on an equal plane with medicine and surgery. It purposes to issue, as far as possible, the same number of lectures in the three departments, and yet the 150 which constitute Series I—V of the new issue divide themselves into 50 for medicine, 44 for surgery, and 56 for midwifery. Perhaps this tendency to predominance of the gynæcological series may be due as much to the interest of the readers as to the productivity of the writers of the gynæcological literature: for the agent here of Williams and Norgate informs me that apart from the numbers supplied to the libraries of the universities and the colleges, they sell only the gynæcological lectures, and when giving me this information he added, "It is precisely the gynæcological works of which we sell the largest number. We have to provide six gynæcological books for three of every other kind of medical books."

Importance of Midwifery in Early Practice.

Now I do not imagine that this tendency to large development and diffusion of obstetric essays is due to any special peculiarity in obstetric problems. These do not lend themselves to academic discussions any more freely than the many problems that arise in medicine and surgery and their subsidiary branches. That will not explain the striking fact that of the theses sent in this summer by men who have been a few years in practice and are now candidates for the M.D. degree, 13 were sent to me for examination, while only 11 fell to be divided between my two surgical colleagues. The secret of the interest is, I believe, to be found in the circumstance that a preponderating share of the best time and most anxious thought of the general practitioner is taken up with his obstetric cases. How largely and how constantly names of lying-in women occur in your visiting lists is well known to my present audience; but I find it difficult to impress it on the imagination of those who have yet to face the realities of a doctor's life. When I was considering some years ago how to present it to my class, my friend, Dr. James Sidey, called to ask me to see a patient with him. Dr. Sidey, I may say, was prison surgeon, and I have helped him with a face case in a female cell; but he had a large general practice, and when he had his visiting list in his hand, I said: "Do you mind telling me how many patients you are seeing to-day?" And when I had explained the reason of the question he counted the names and found 25. When I asked him further to analyse them for me, we found that there were only 4 men, 16 women (4 of them puerperæ), and 5 children; and then he added: "By-the-bye, there are the 4 infants, and they belong to your department."

About the same time, when I was seeing a case with a country practitioner, he was good enough to look up the number of individual cases he had visited in the preceding month. These were 60 in number, and divided themselves into 11 men, 34 women (of whom 13 were general cases, 6 gynæcological, and 15 obstetric), and 15 children, besides again the 15 infants. Thus in this gentleman's practice fully a third were obstetric and gynæcological cases; and if we add the 15 infants which he learnt in his midwifery course how to deal with, we find nearly one-half of the individuals under his care that month were dependent for their successful treatment on what he had been set in that class to learn. I try to get students to believe that the successful conduct of confinements is the surest guarantee for speedy success on their entrance on the career of an ordinary practitioner. Coming into a locality, a young doctor may get a reputation in the community for managing well an outbreak, say, of typhoid fever, or operating well in some case of injury. But his very triumph over the typhoid has only been complete when he has succeeded in preventing the possibility of its recurrence; and people will not be less careful to protect themselves from injuries though they know they have a skilful surgeon near at hand. But each time it is whispered among the ladies that he is specially skilful in the handling of his confinement cases, the rumour of his skill and kindness must fall on the ear of someone who will say to herself: "My time is coming; I must have him to attend on me." It is the only gate into general practice that is always open everywhere.

Constancy of Midwifery in General Practice.

Men who have gone through a medical curriculum with the bare modicum of midwifery that may carry them past a final examination have afterwards found themselves in a situation where they might have rendered good service to a suffering fellow creature if they had not been in a hurry to forget what little they had learned. I have heard a gentleman who had attained to eminence tell how during his student course he had imagined that all he needed earnestly to study was surgery, as he was destined for the Army Medical Service; but, to his horror, he found the first professional service he was called to render on board a troopship was to deliver a soldier's wife, a service in which he was glad to avail himself of the efficient help of a skilful matron who was on board. Not only at the entrance on his profession, but all through his life, the practitioner must be prepared to deal with cases of labour. The grand operations that evoked his student enthusiasm, the technique of which he so laboriously learnt, do not fall to to his lot. In the midst of the busy routine of practice he is glad to send away his aneurysms and calculi and neoplasms, his diseased joints and damaged limbs, to the care of some

friendly surgeon, or to consign them to some favourite hospital. So, also, in the sphere of internal medicine, much of the information he laboriously ground up through wakeful nights and weary days is of comparatively rare application in his daily round. I remember one of the ablest of my fellow students in his last year being nearly distracted and half maddening some of his companions with all the theories he was learning in regard to diabetes. But a practitioner may see a case of diabetes once in two or three years; or he may have a run of cases for a time, and then for years fall out of acquaintance with it. So with many other forms of disease; they may come and they may go from the visiting list, but the midwifery cases go on for ever. So long as the practitioner has his place by the side of the river of life, watching its menstrual ebb and flow, and prepared to render efficient aid, he will find it float confinements to his charge with the steadiness of the tides.

NEED OF SELF-RELIANCE IN MIDWIFERY CASES.

Moreover, there is this to be said in regard to deliveries, that whilst the ordinary run of them are cases of natural labour that may not call for active intervention, at any moment emergencies may arise that will tax to the uttermost the practitioner's resourcefulness and self-reliance. If he has a case of heart or lung or brain disease that leaves him undecided when he sees it first as to what should be the best line of treatment, he can probably prescribe something that will be useful, or at least not hurtful, until on a second visit the course becomes more clear, or until he has had time to read up the subject in a system of medicine. If he cannot at once classify a skin disease, the case will not go wrong whilst he compares it with the plates of some work on dermatology. If he does not feel quite sure what kind of truss to order for a hernia, he can politely propose to give the instrument-maker instructions about it, and in the interval refresh his memory at some surgical source. In most of the difficulties in ordinary practice, the family attendant may even, if he see fit, call in the aid of a consultant. Their combined wisdom may make for the recovery of the patient, or, at the worst, give the patient and the friends the comfort of thinking that everything had been done that could be done. But if a man comes to a midwifery case, and finds an arm protruding, it is too late to think of reading up his Playfair; if at the end of a labour that has gone on smoothly he finds his patient become pale and pulseless, he has no time to get assistance. Before help can come the flooding may be fatal. If he is not to see the patient die before his eyes, he must recall the measures he has been taught to adopt in this contingency, and he must apply them with his own hands immediately. A former pupil wrote me of the fright he got when he met his first case of placenta praevia. "The woman had lost a great deal of blood, and was still bleeding," he said. "I wished that I could have had the help of one of the house-surgeons of the Maternity; but the cervix was already partly dilated, and I remembered that you had recommended turning in such a case. I went over in my mind the rules for the operation, and carried it out step by step, till I got out a living child and saved the mother."

INADEQUATE SPACE FOR MIDWIFERY IN CURRICULUM.

I am persuaded that every member of the Association present will bear me out when I thus intone the prime importance of this department in a doctor's daily round. You are all familiar with the frequency and constancy of the call to attend women in labour, and you know only too well the exacting nature of the service implied in such attendance. But as you cast your minds back to your student days, how does this predominance of midwifery in your practice look in comparison with the little time devoted to it in your classes? There may be some of you who were set adrift on the sea of obstetrics after being enjoined to listen to a three months' course of lectures and present a certificate of attendance on a certain number of cases of labour. Yet the likelihood is that you were compelled to receive far more complete instruction in medicine, and as for surgery, who that gets a diploma has not first had to attend two courses of systematic and nine months of clinical surgery, whilst he did besides the work of a dresser in a hospital? Even where the provision seems the fullest for the study of midwifery and gynæcology there is a tendency in Faculties and Councils and Governing Boards to treat this great department of practice in a severely stepmotherly fashion.

The obstetric teacher, among a company of physicians and surgeons, is apt to find his subject regarded as a kind of subordinate speciality, which may be lectured on at any odd time to senior students, whose best hours are all laid out for them in the interests of systematic and clinical medicine and surgery and their subsidiary branches. It has always seemed to me that this is to do an injustice to men whom we profess to send out fully qualified to undertake all the duties of a medical practitioner. It is altogether out of proportion to have them, as they commonly are with us, under the necessity of attending two six-months courses of systematic surgery and three three-months courses of clinical surgery, whilst, apart from the gynæcology they learn in connection with clinical medicine, all the midwifery that is enjoined on them is the six months systematic course, three months of clinical teaching in the maternity, and attendance on six cases of labour. This gives them a false impression of the work that lies before them, and implies superfluous attention to surgery or inadequate instruction in midwifery. I would not have the surgical discipline diminished, but surely men should not be sent out to practise their midwifery with only half the training they have enjoyed for their surgery.

THE FIFTH YEAR LOST TO MIDWIFERY.

A fifth year was added just a lustrum ago to the medical curriculum. It was understood to have been added in the interest of the practical subjects of study; but I protest that, in Edinburgh at least, the student has lost rather than gained in his opportunities of qualifying as an accoucheur in consequence of the changes that have been made for the more prolonged curriculum. Examinations in some of the scientific subjects are such that many men find themselves compelled to take two systematic courses as well as the compulsory practical course to enable them to pass; so that not only the first three years are swallowed up, but generally the fourth as well, before they can at all face the subjects of their final examination, and then the time that remains is so largely claimed for medicine and surgery that midwifery runs the risk of being driven to the wall.

It has sometimes been suggested that a greater security for proficiency in midwifery would be given by making it compulsory on candidates for diplomas to have attended a larger number of cases during their curriculum than has hitherto been required of them. This, I am convinced, is a mistake. The attendance on a case of labour is not like a visit to a dispensary patient. It cannot be done in the course of an afternoon walk. It means the occupation of hours—it may be of a whole day or a whole night. And the young fellow, already overburdened with work, is to spend these hours or days or nights twenty times over in the slums! No; it is not fair. And it is futile. What guarantee does a man's attendance on a score of confinements give of his knowledge of practical midwifery, or of his fitness to deal with difficult cases? There may have been some tedious labours among those he witnessed. He may even have had the exceptional luck to see forceps applied. He counted himself most fortunate when he arrived just in time to see the baby washed; or he became a hero because he lighted on a crossbirth where he sent for the house-surgeon to turn, and the house-surgeon had to send for the physician to decapitate. But all that does not make him fit to cope with the first complication that may meet him in his own practice afterwards.

WHAT SHOULD BE DONE.

What is needed is that arrangements should be made for the student to have a full winter course of systematic study of midwifery, after his intellect has undergone the discipline of the earlier scientific subjects and his mind is free from the incubus of the examinations that followed. His teacher should have the opportunity of fully expounding to him the many dangers and difficulties that he must be prepared to encounter, and of explaining to him the methods by which these may be most successfully combatted. In connection with this course he will be drilled in the use of the various obstetric and gynæcological instruments and appliances; and especially he will be practised in the application of forceps and in the

operation of version on the phantom. Phantom courses should be regarded as an essential part of the student's training. Practical gynæcology ought to constitute a part of his clinical medical discipline and an element in his clinical examination.

As for the practical midwifery, in addition to the attendance under superintendence of a qualified practitioner on a limited series of cases—of which he should present a detailed record—he ought to attend the clinics in a maternity hospital. Into such an institution there come every quarter not only normal cases, but a certain proportion of women who are sent because they are the subjects of some difficulty or complication which gives the teacher the opportunity of enforcing on the student the lessons of the systematic class, and showing him how abstract teaching is adapted to concrete cases. It is by enforcing such requirements as these that the teaching bodies will do justice to their students and the licensing bodies to their diplomates, who will then be prepared to enter on practice with an adequate impression of the importance of this department of medicine, and with some consciousness of due equipment for its manifold emergencies.

Unfailing Supply of Teachers.

I have indicated how the constant interest in our subject tends to the free production of obstetric literature. I add, in closing, that it tends to produce an unfailing supply of obstetric lecturers. We can easily understand, apart from the interest of the subject, how in this city surgery should have nine representatives among the teachers in the School of Medicine of the Royal Colleges. For, first, students begin the study of surgery already in the second year of their curriculum; secondly, repeated courses of surgery are required for the diplomas; and, thirdly, there are two chairs of surgery, a systematic and a clinical, within the University, one of which any of these teachers may justly aspire to fill—chairs which have been filled up five and four times respectively within this century, and almost invariably by men who had been extramural lecturers on surgery. The subject which engages us here is represented within the walls of the University by a single chair, which has only twice been vacant since the century began. The largest demand of any qualifying board is an attendance on a winter course of midwifery, and that attendance is commonly given in the final year when the ranks of the students have been thinned by the falling out of the feeble, the indifferent, the incapable. Nevertheless there are no fewer than nine teachers of midwifery in the Colleges' School giving courses that qualify, six of them for the University degrees and all of them for the Corporation diplomas. Whensoever, therefore, the General Medical Council and the various medical authorities see fit to provide adequate space for the teaching of midwifery and gynæcology there will not be wanting a race of teachers well prepared to occupy it to the profit of the student, to the honour of the profession, and to the advantage of the whole community.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF PSYCHOLOGY

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

By T. S. CLOUSTON, F.R.C.S.E.,

Physician-Superintendent, Royal Edinburgh Asylum; Lecturer on Mental Diseases, University of Edinburgh; President of the Section.

THE NEUROSES AND PSYCHOSES OF DECADENCE.

Development and Decadence: a Contrast.

In 1890 I directed attention to that series of nerve disturbances and diseases occurring early in life which might properly be grouped together under the heading of, "The Neuroses of Development."[1] To-day I desire to make a few suggestions that will point to another series in which would be included a considerable number of the nervous and mental diseases and disturbances that occur in the later periods of life, and which might, I think, be properly grouped as "The Neuroses and Psychoses of Decadence." The one series all have as their chief and often their only cause, faulty development of nerve centres: the other series have as their predisposing cause unphysiological decadence of brain and nerve. In the former series a neurotic heredity is always present; in the latter it is not necessarily present. In the former series there need not necessarily exist any exciting or proximate cause; in the latter such exciting causes as toxic agencies in the form of syphilis or alcohol, the effects of hard work or unphysiological conditions on the brain extending over many years, worry or strain, the access of the climacteric or senility are commonly present. In the former class, the strain of taking up new functions, especially the all-dominating one of sex and of the reproduction of the species, has upset or arrested nervous development from an inherent weakness of power to produce a sound, strong fabric of nerve centres; in the latter, the breakdown is not due only to the cessation of reproductive energy, but commonly to want of staying power of the centres to do the work imposed on them, or the want of resistive power against undue strains or poisons. The most of developmental neuroses may in one way be looked on as Nature's effort to stop a bad stock before it reaches the time to reproduce itself. A large number of the neuroses of decadence may be looked on as premature senility and nervous death before its allotted time. In the one case we are face to face with imperfect, delayed, or irregular maturation of tissues, organs, or organism: in the other with premature, irregular, or abnormal nerve retrogression. Man's normal, average life may be divided into three periods of twenty-five years each. During the first quarter of a century his body is growing and his functions are maturing, the last organ to attain physiological perfection being the brain cortex. During the next period the fullest muscular action, the highest resistive power against disease, and the most reliable and intense mentalisation are found. During the last period a slow process of retrogression and decay sets in, and goes on till the physiological ending of death is reached.

Unrelational Decadence.

As during development one organ or function may lag behind its normal maturation time in reaching perfection, thus constituting a neurosis from unrelational development, so during decadence every physician and every alienist has had experience of a premature decay in individual organs and functions, constituting a neurosis through unrelational decadence. One man's trophic energy fails at 55, and he then loses 3 stone of flesh, and falls a victim to the first severe bronchial catarrh that attacks him. The cardiac innervation of another fails at 60 and influenza cuts him off. The memory of another quite gives way at 65, while another loses originating volitional power at 70, so that he cannot then manage the simplest business.

Cessation of Reproduction.

Then the cessation or slackening down of the great reproductive energy at the climacteric period in both sexes, is attended by such frequent nervous and mental disturbances that in their lesser degrees they are commonly regarded as rather normal than abnormal in their character. There are low forms of animal life which terminate their existence with reproduction. Continuation of the species with them is death to the individual. There is no intermediate sexless barren zone between fecundity and death, as in man and most of the higher animals. A period of slower ebbing of life—of decadence, in fact—in the latter takes the place of the absolute termination of existence of the former, but the whole barren period becomes subject to many diseases and defects that are incidental to this period.

Neuro-Vascular Decay.

The last epoch of all, that of vascular disease and imperfect blood supply and demonstrable nerve cell and fibre degeneration, is one necessarily attended by many neuroses and psychoses. Then it is that senile endarteritis, fatty vessels, atrophies, apoplexies, softenings, senile dementia, with irritative maniacal states superadded, come on. It is the time, too, for the more partial breakdown of muscular weakness and inco-ordination, senile amnesia, senile irritability, senile paralysis of family and natural affections, and senile immoralities.

Life-History of the Neuron.

The life-history of the neuron and the sheathed nerve fibre in their stages of growth, development, and decadence, histologically and functionally, has yet to be written. A very important part of such a life-history would be the account of the degrees of their reactiveness to different stimuli, and susceptibility and resistiveness to the causes of different kinds of diseases at different ages and under different conditions. The effects of stimuli and of poisons on the nutrition as well as on the kinesia of nerve cells are certainly different at different ages of life. Sudden loud noises or the excess of oxygen carried by blood at temperatures over 100°, send many young children into convulsions, but will have no such effect on boys of 10. The psychoses we slump together under the name of delirium are easily producible in childhood by high temperature or by nerve toxins circulating in the blood, but they are not so readily produced in the later periods of life by the same causes. But, on the other hand, the nerve degenerations and more severe disturbances of function are far more apt to be set up in the senile periods of life by alcohol and the other nerve toxins than in early life. Such changes of structure or of function as occur in the natural growth development or decadence of a neuron or sheathed nerve fibre cannot properly be counted as disease. The imperfect observation, attention, and reasoning of the child of 3 is no psychosis any more than its difficult equilibration at 18 months is a motor neurosis. So the weakened memory and the lessened force of origination and volition of the man of 80 is no psychosis, nor do his less firm grip of the ground and his uncrisp articulation constitute motor nervous diseases. Yet the imperfect development of cortical cells and the only partial existence of fibre connections in the one and the fewer dendrites, the chromatolysis, as well as the diminished blood supply of the other, may be both conditions predisposing to diseases special to each through non-resistiveness. The wondrous and as yet mysterious process of innate progression of structure and function whereby the neuron gradually acquires the capacity of exhibiting the energies we call co-ordinated motion, sensation, and mentalisation certainly depends on a hereditary potentiality within it, together with favourable conditions of environment. If this potentiality is in any way faulty, we know that the organism is apt to suffer from the developmental neuroses in various forms. The process of decadence also implies a potentiality to be carried out in natural and physiological fashion. There are risks of the nerve cell and fibres falling into many diseases from weakened powers of resistance, from non-competency to undergo strains that earlier in life would have been easily borne, from the effects of previous unfavourable conditions of life.

Heredity.

Though bad heredity does not come in so powerfully in decadence as during development, it does operate in some cases, and thereby brings on decadence or disease before their time. Operate it must, for all the recent investigations into the conditions that conduce towards centenarianism and prolonged life point to heredity as being by far the most powerful cause. The answer to the question, How to live long? seems to be, Have an ancestry that did so. But I think heredity operates in a different way in decadence from what it does during development. In the one case it is the sword that smites the potentially unfit, and so stops the reproduction of a bad stock; it is Nature's chief means of weeding out the organisms that do not make for the physiological ideal she sets up in all species; it is then an actively destructive force. But in the period of the decadence of the organism bad heredity is more like the weakening of the supports and roots that keep a full-grown tree from being blown over by the storms to which it is exposed from without. A tree in a sheltered spot, though spindly and not well-rooted, may live long. So a man with a nervous heredity, if he has got safely through childhood and adolescence, may with care and obedience to Nature's laws live to a good old age; but if he drinks too much, or carries within him an old syphilitic gland, or has to work too hard, or has occasion of much worry, or lives in an influenza cycle, he has not the staying power to resist these things. With a good heredity he might have withstood them; with a bad heredity in his nerve centres he falls a victim to general paralysis, locomotor ataxy, brain softening, climacteric melancholia, or senile dementia during decadence.

General Statistics.

A glance at the general statistics of the neuroses and the ages at which they prove fatal conveys some idea of how they are related to the periods of development and decadence. Taking the Report of the Registrar-General for Scotland for 1895, we find that there are 55 per cent. of the population living between 1 year and 25, both inclusive—that is, during brain growth and development. The number of deaths from diseases of the nervous system during this period amounted to 3,262 out of the total of 9,307, or 35 per cent. At the next period, that of full strength, from 26 to 50, the proportion of the population alive was 30 per cent., while the proportion of deaths from the neuroses sank to 12.2 per cent. In the next period, when decadence has begun, from 51 to 75, the proportion alive was only 12 per cent., while the proportion of the fatal neuroses rose to 33.2 per cent.; and the last period, from 76 to 100, that of marked senility, showed only 3 per cent. of the population alive, while 14.8 per cent. of the deaths from neuroses occurred then.

The general conclusions from this comparison of figures are that the neuroses prevail largely in the period of brain growth and development of function (the detailed statistics for each year show that the first two years are very deadly neurotic years), that the very best years of life are very free from them, and that decadence brings them on with a rush to a far more deadly degree than even during development, senility being the most deadly neurotic period of all. The functional nervous explosions of convulsions are the most deadly of the developmental neuroses; the organic vascular-neurotic destructive lesions of apoplexies and brain softenings kill most frequently after 50.

Looking to the prevalence of the insanities of development and those of decadence, I find that about 12 per cent. of the whole number of new cases occurring each year may be put down to development, not including idiocy and congenital imbecility. If these are included, bad brain growth and development account for about 40 per cent. of the whole existing insanity and weak-mindedness in the country. On the other hand decadence (climacteric, senile, and paralytic insanities) accounts for about 20 per cent. of the insanity and 5 per cent. of the combined insanity and idiocy of the country. At least our statistics at the Royal Edinburgh Asylum over 20 years give these results.

Signs of Nerve Decadence.

We shall not be able to put on a really scientific basis the diseases of decadence until we know the exact steps in the normal processes of decay of structure and function in every tissue and organ. As regards the neuron of the brain cortex and its higher functions, we know only a few of the steps in its downward course, especially towards the end. No histologist could undertake to describe the exact differences between a group of neurons at 20, 30, 50, and 60. Yet differences there must be of a marked enough kind could we but see and estimate them. We know that in the very senile period of life, say at 75 and 80, the cell body appears granular, and has fewer processes as prepared by the Bevan Lewis method; that as prepared by the Nissl method, its chromatic granules are disposed differently; and as prepared by the Golgi method, its dentrites and their gemmules are changed, and many of them have undergone atrophy or bulbous swellings. The actual number of neurons in any given field of the microscope is fewer than in youth, just as is seen in brain sections from dements. We know also that mentally their functions have lost much in quality and intensity. The process of mental decadence we can perhaps trace more definitely, if we cannot measure it more exactly than the motor, the sensory, and the trophic lessening of intensity. Different men decay mentally in different ways, but taking the majority, the process begins at the memory of names and things that have no associated ideas, the mere labels and tickets that convey no descriptive meaning. Place names and personal names are examples. Then there comes a diminution of the affective faculties, with a lowered intensity of poetic and idealised images of things and of feelings. This no doubt accompanies a lessened sexual and reproductive

energy. Few of the great poets have written glowing verse after 50. What is the latest age at which a man or woman can really "fall in love?" would be a proper and a very interesting psychological inquiry. Like the other faculties of the associated neurons of the cortex, this no doubt fails gradually, not suddenly. Then comes a time when mental energising generally gets slacker, when originality and spontaneity cease to be all-powerful. The reasoning faculty weakens at a later period still. The highest of all departments of mind, the self-control, the volition, the mental inhibition generally, with the moral faculties, suffer as real senility advances. Emotionalism, irritability, lack of perseverance in action, and even immorality in speech and action, are then met with. Every one of these steps in mental decadence must be correlated to physical alterations in the neuron.

Advancing age brings with it not only these mental failures but also diminished motor energy in various ways. The skilled workman is found to do less skilled work and less of it after 35. The finer co-ordinations especially suffer. Where a combination of specially fine motor co-ordination with the exercise of an acute sensibility is needed, as in the wool-sorters' trade, the effects of advancing age are very disastrous to the worker. The old man's gait and speech both show lack of output in the motor cortical areas, and lack of fine co-ordination of muscles.

Diminished Resistance to Toxic Agents.

The great regulative action of the higher cortex on the nutrition of all tissues and on the function of all organs undergoes a steady deterioration as age advances. The whole body shrinks in volume, except the less organised fat cells in some cases. No doubt it is owing to this fact that there is a less general resistive power in the organism to certain diseases from within and from without. Rheumatism and gout become chronic, bronchitis kills off its victims after 60 by the 100,000, and neoplasms then become more numerous. The enemies of the tissues and of the organism get too strong for them.

During all this process of decadence of the higher nerve centres it is not surprising that diseases and disorders special to the period should appear, namely, the true psychoses and neuroses of decadence. The different ways in which a decadence affects the resistive quality of the brain and spinal cord against nerve toxins is, I think, best illustrated by studying a number of alcoholic cases past the prime of life, and correlating their symptoms—mental and bodily—with their ages, their heredity, their occupations, and their habits in youth. We have all had experience of the immense variety in the alcoholic neuroses and psychoses in different cases according to whether the patient was in mid-life or beyond 50. The most common case is that in which a man has taken alcoholic stimulants freely, but not to manifest excess, from his youth, and they have had no appreciable mental or bodily effects till he reaches the age of 45 or 50, when all at once, within two or three years his eye and face get bleary, his hair gets grey, his hand gets shaky, his memory and acuteness of mind fail, his force of character lessens, his morals deteriorate, his weight either goes up by the deposition of useless fat or drops a stone or two through lack of trophic energy, his walk changes so that he no longer has a firm "grip of the ground," and he looks twenty years older in these two years. What has happened? The chief thing, I think, has been that his nerve centres—mental, motor, and trophic—have suddenly lost their resistive power against the alcohol, and its full toxic effects on their functions have thus become apparent, and this because commencing decadence has begun, and altered the quality, structure, and energising of his neurons.

I have known other cases with a bad neurotic heredity where men had drunk hard in youth, but with apparent impunity, and stopped drinking about 40, yet after 50 they passed into an alcoholic dementia. No doubt the cortical tissues resisted the toxic effects till decadence set in, and then a something destructive from the old alcoholic poisoning killed off their higher energising.

A parallel series of clinical facts can be observed in regard to syphilis and lead poisoning. I have known many cases where men have acquired syphilis in youth or mid-life, and its germs have lain apparently harmless in their brain cortices till they began to turn the corner of life, when, the resistiveness of the tissues becoming weakened, they become insane or paralysed, or developed various forms of ataxia or aneurysms. It is well known that plumbism is more common in men of 50 or 60 than between 25 and 40.

The Psychoses of Decadence.

The varieties of technical insanity directly connected with decadence are the climacteric and the senile forms, while indirectly we have most cases of paralytic insanity or organic dementia. Climacteric insanity is typically a timorous melancholia, while senile insanity is typically an irritable dementia. But the insanities are largely the mental and bodily exaggerations and morbid representations of the normal psychology of the climacteric and senile periods of life. The one cannot be properly understood without a study of the other. At the climacteric the sexual desire weakens or ceases, the affectiveness in the female tends to change from the male to the progeny; the imaginative and poetic force is lessened; the fire, the impulsiveness of life are slackened; poetry and love tales then cease to set the brain on fire; action ceases to be so pleasurable for its own sake; the all-pervadingness of sex in the emotional life ceases; life becomes slower mentally and in movement; a gentle sadness is often present. In the male sex the state of Antonio, the hitherto active, pushing merchant, was typically climacteric when he said:

> In sooth I know not why I am so sad;
> It wearies me. You say it wearies you;
> But how I caught it, found it, or came by it,
> What stuff 'tis made of, whereof it is born,
> I am to learn;
> And such a want-wit sadness makes of me
> That I have much ado to know myself.

No doubt the course of human history has often been changed and battles lost and great projects left unfinished because the grand climacteric came on the makers of history.

He would be a bold man who would attempt to compete with the picture Shakespeare has given us of the senile psychology verging into the senile insanity of King Lear. Forgetfulness, fickleness, childishness, bursts of passion, actual delirium, all mixed up with shrewdness, sense, and natural affection, translated into physiological language meant that the neuron was degenerating, shrinking, and ceasing to receive new impressions or to hold old ones firmly, and was getting irritable and explosive in action. Whether from the feeling that after Shakespeare no one need attempt anything in that line or not, it always strikes me that our general and medical literature is very deficient in studies of old age, its memory and affectiveness, its reasoning and conduct, its speech and walk, its nervous inco-ordination and its facial expression and attitudes.

Three Types of Neuroses of Decadence.

It seems to me that we have three chief types of nervous and mental lesion connected with decadence. The first consists chiefly and primarily of a vaso-trophic degeneration, through which the cerebral vessels first lose their elasticity, and then gradually their walls take on various trophic changes and degenerations generally or in patches, when in the course of their constant expansions and contractions, as more or less blood is called for by the neuron, they can no longer sustain the blood pressure and they burst. This is the cause of the vast mass of the destructive brain lesions, the softenings, the apoplexies, which bulk largest as the causes of death in the registrar's returns.

No doubt the chief degenerations of the vascular coats are the atheromatous, the inflammatory (senile endarteritis), and the hyaline. It cannot be doubted that the brain tissues regulate by innumerable vasomotor centres their own blood supply, and there can be as little doubt that the nutrition of their walls is also regulated from centres in the brain. No doubt in most cases of apoplexies from vascular disease we have also some amount of surrounding nerve degeneration. There is a solidarity throughout the whole brain, through which a tissue change seldom occurs in one organ, or system, or centre, or envelope without some amount of pathological change in some or most of the others. The second typical lesion of decadence seems to me to be best represented by

those degenerations of the motor and sometimes sensory systems which constitute the ataxies, the scleroses, and the other progressive degenerations. The third typical series is constituted by the mental disturbances and diseases grouped under the climacteric and senile insanities. In them undoubtedly the primary lesions begin in the mental tissues and mental areas.

A Hypothesis.

It seems as if the mental faculties do not undergo decadence in the order of their development. Probably, therefore, the cortical neuron does not undergo decadence in the order of the development of its parts. Undoubtedly the nucleus is the first to appear, then the protoplasm, the "perikaryon" of Foster, then the dendrites, and finally the gemmules. Now as the memory—that is, the permanent recording of impressions—is the first to disappear, it is probable that the molecular structure of the protoplasm of the neuron is the first to suffer in decadence. The frequency of advanced chromatolysis in the senile and the infrequency of nuclear lesions seem to confirm this. As in brain and mental development, nerve paths of fibre communications are, according to Flechsig, the accompaniment and cause of the advance in the reasoning power and the association of ideas in the child; so probably the gradual destruction of the dendrites and their gemmules and the neuraxons next takes place and is the cause of decadent reasoning in senility. But we are yet far from being able accurately to correlate the decadence of cortical function with the demonstrable changes that we are gradually discovering in the neurons of the brain cortex as age advances. No doubt this will be one of the most difficult but most urgent problems of psychiatry and neurology during the next ten years.

Reference.

1 *The Neuroses of Development.* By the Author.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF PHARMACOLOGY AND THERAPEUTICS,

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

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THE PROGRESS OF THERAPEUTICS.

Gentlemen,—The subjects included in this Section can never cease to be of interest to those engaged in the practice of medicine nor fail to occupy a prominent position in the business of a congress like this. However widely diverse the topics dealt with in our proceedings here, there may be traced through them all a certain unity of purpose, and a common object towards which they converge—the treatment of the sick and suffering.

Doubtless, many points relating to treatment in individual diseases are fully discussed in other Sections, but it seems nevertheless an advantage that there should be a department in which therapeutics and our therapeutic resources are specially considered, and towards which some will naturally turn in the hope of gaining or of imparting information.

The conjunction of the two subjects of Pharmacology and Therapeutics necessarily makes the field in this Section a wide one. But it has the obvious advantage of bringing into contact for discussion those specially skilled in the knowledge of the composition, properties, and actions of medicinal agents and those whose main duty lies in practically applying these in the daily work of their profession.

Having myself more in common with the latter category, I do not purpose in this brief address to dwell upon any subject in the domain of pharmacology, even had time or ability admitted of my doing so. But it would be impossible to avoid a passing allusion to the recent issue of the fourth *British Pharmacopœia*. Since the publication of the previous edition in 1885 a large number of new remedies of great importance and utility had been introduced, and were widely employed in medical practice. Some of these were embodied in the *Addendum* issued in 1890, but as they were constantly being added to, and as many of them had come to replace older remedies, a new *Pharmacopœia* became a desideratum. To the preparation of this work the General Medical Council addressed itself with great earnestness, and a mere reference to the names of experts whom they selected for carrying it out furnishes sufficient evidence that the latest and best results of science in the fields of pharmacy, chemistry, and medicine have been combined to make this authoritative publication as complete and reliable as possible. A work of this kind is of course open to criticism as to what it introduces, modifies, or omits, and such criticism has not been wanting; but it will probably be generally felt by those who have given their careful attention to the matter that the practitioner has been put in possession of a guide in which he may confidently trust in his important duty of prescribing.

Turning now to the subject of general therapeutics, it might perhaps be permitted in one occupying the position I have now the honour to hold in this Section, who has at the same time been closely associated with the Edinburgh Medical School and with medical teaching and practice during a whole generation, to take a brief survey of the progress of therapeutics as witnessed by himself during this period.

At the commencement of that time, namely, in the middle Sixties, medical practice was in a transition epoch, and was only emerging from the influences of the humoralistic doctrines of disease which found active expression in depletory measures of treatment. The clinical student of those days, as I can well remember, was not a little perplexed by hearing from some of his teachers views calculated to engender scepticism in the potency or utility of most medicinal agents, especially in the acute and self-limited diseases; and from others, statements strong and dogmatic as to the virtues of one or other member of the *Pharmacopœia* in the treatment of almost every malady that formed a subject for investigation in the wards of our hospital. The net result to the young practitioner was undoubtedly salutary, since it led to questionings about the action of remedies, to experimental inquiries into some of the more important medicinal agents, and probably also to more intelligent and less lavish prescribing.

Passing over a few years, let me refer to the last meeting of this Association in Edinburgh in 1875, and recall the Address in Medicine delivered by the lamented Warburton Begbie—a memorable address which acquired a pathetic interest to all who listened to it from the fact that in the space of half a year from that time death had removed this cultured physician and estimable man. Dr. Begbie set himself to answer a question once put by the great Scottish philosopher, Sir William Hamilton, Has the practice of medicine made a single step since Hippocrates? and in a masterly sketch of the progress of medicine and therapeutics from ancient to modern times he had no difficulty in furnishing a conclusive reply. While appreciating to the full the wonderful sagacity and efficacy exhibited in some of the ancient methods of treatment which hold good to the present day, he showed how advancing knowledge and the development of the scientific as distinguished from the mere empirical side of medicine led by sure steps in the direction of a rational system of therapeutics. "It might," he said, "be a sufficient answer to the query of Sir William Hamilton, to signalise the discovery in modern days of vaccination, and the introduction of sulphuric ether and chloroform as anæsthetics," but he proceeded to enumerate many of the well-recognised remedial agents which have proved such potent instruments in the physician's hands for the relief of human suffering.

During the twenty-three years which have elapsed since the delivery of Dr. Begbie's address, the number of new remedies has been multiplied enormously, chiefly by the adoption as therapeutic agents of substances which organic chemistry has so richly provided, the virtues of many of which are beyond all doubt. An illustrative instance might be cited in the power of salicin and salicylic acid and its compounds to lessen the pain and in many cases to shorten the attacks of acute

rheumatism. The groups, too, of synthetic analgesics, antipyretics, and antiseptics have furnished us with substances which (while requiring at all times care and judgment in their selection and administration) are among the most widely employed and efficacious of the resources for treatment placed in the physician's power.

Conspicuous among the therapeutic advances during the period now referred to has been the large number of remedial measures which lie outside of the materia medica, and which, many of them at least, are eminently rational in their conception and application. The developments of pathology and more accurate clinical methods have contributed in no small degree to bring about this result.

A therapeutic measure of immense value is the method of treating stomach disorders by lavage, a plan which owes its origin to Professor Kussmaul, who originally designed it for use in dilatation of the stomach, but which has since been extended to the treatment of many other painful conditions of digestion to which it can oftentimes bring marked relief. A better acquaintance with the processes of the gastric chemistry, too, has been turned to useful account in the various methods of peptonising foods in cases of dyspepsia.

An entirely new field of therapeutics has been opened up by antiseptic surgery, and some of the most formidable and fatal of all maladies which were at one time regarded as outside the reach of remedies have been made possible of cure. This has been especially the case as regards the abdominal cavity, where the wall of partition which divided medicine and surgery has been broken down and conditions of disease formerly believed to be hopeless are now successfully dealt with by surgical operation. The gynæcologists led the way in this direction. Many cases of acute peritonitis which thirty years ago were treated only by opium are now explored surgically, and whether due to the perforation of a viscus, disease of the appendix vermiformis, or acute intestinal obstruction are cured by the timely intervention of the surgeon. Excision of the kidney and operations upon the liver, the stomach, and the intestines are now common occurrences and many a life is preserved and much suffering spared by these modern methods of treatment. Indeed, it sometimes happens that cases which on exploration were found to be beyond the reach of radical treatment may yet by this very operation be materially benefited as regards some of their distressing symptoms. The surgery of the brain, at one time deemed a practical impossibility, has yielded, especially in the hands of Professor Macewen, results which have arrested the attention of the whole world of medicine.

In my work as a hospital physician, extending back over a long period of years, I have been much beholden to my surgical colleagues, and I take this opportunity of bearing my humble and grateful testimony to the enormous debt which, particularly in recent times, medicine owes to surgery. The results so fruitful of good to suffering must ever remain associated with the name of Lister, whose work has rendered them possible of attainment.

The employment of massage as a therapeutic agent has been found to be a valuable adjuvant in the treatment of various forms of paralysis, particularly those of peripheral origin; in many functional disorders of the nervous system; in the disabling sequelæ of rheumatism; in certain varieties of dyspepsia; in insomnia, and in the debility of convalescence.

The amount of aid to be obtained from electricity as a therapeutic measure is not to be gauged by the comparatively limited extent of the results hitherto obtained by its use. Its more recent developments seem to promise for it a wider sphere of useful action as a means of treatment.

The employment of various forms of baths in the treatment of disease has until recent times held a much less prominent position in this country than on the Continent. But their value is now gaining much wider and more practical recognition, and some of our large hospitals are providing the means for establishing a separate department for the systematic application of this important therapeutic agency. In this connection it is satisfactory to be able to point to the large addition to the Edinburgh Royal Infirmary now in course of erection, in which the managers of the institution have made provision for the accommodation and full equipment of a balneological department.

The application of regulated exercises in the treatment of heart disease by the Oertel system or by the more recent Nauheim method has been found to yield excellent results in many conditions of cardiac enfeeblement with or without valvular disease. Nevertheless the range of applicability of this form of treatment is probably less extensive than some of its more strenuous advocates contend, and at all events much care and discrimination are called for in the selection of presumably suitable cases and vigilance in observing the effects lest harm result.

The open-air treatment of phthisis in specially constructed sanatoria has recently awakened widespread interest. This method, which seems to rest upon a scientific and rational basis, is still only on its trial, yet results of an encouraging kind have already been obtained.

Time will not permit of any detailed reference to the steps by which it became evident that to the atrophy or abolition of function of the thyroid gland was due that remarkable disease, myxœdema, characterised by such strange physical and mental transformations. But the discovery, depending upon the observations of Kocher, Horsley, Murray, and others that the introduction of fresh thyroid into the system of a myxœdematous patient was followed by the rapid disappearance of all the symptoms may justly be regarded as one of the greatest therapeutic triumphs of modern times, while it has opened up a field for further effort in similar directions which is being assiduously cultivated.

Of no less importance, and with a still wider range of beneficent result, are the means which bacteriological investigation has placed within our power of identifying specific organisms in infectious diseases and observing their life-history and toxic properties. The way has thus been opened for the scientific study of immunity, and this again has resulted in the discovery of protective and curative antitoxins, of which that of diphtheria is the most outstanding example. The testimony which has been borne to the value of this treatment in that dreaded malady has been universal. Others of the deadly scourges of humanity are now also being effectively combated by serumtherapeutics. For this work we are indebted to the Pasteur Institute, where also the antirabic treatment of hydrophobia was discovered by its famous founder.

It would be impossible in any sketch of therapeutic advance to omit a reference to the growth and development of the modern system of nursing the sick. It is difficult for those who have grown up in this system and have never had experience of any other to realise the full extent of the benefit to practical therapeutics which has resulted from the employment of refined, educated, and properly trained women in this work. Prior to the period to which I am referring the nursing of the sick and hurt in hospitals was done by women who had had no special training for this work, and while many of them did their duty admirably up to the extent of their light, and were worthy of all praise, it cannot be denied that a large proportion of them were utterly unfit to engage in it. If such was the nursing service available for hospitals, it was still worse as regards the community at large, and especially as regards the poor, who in this matter were for the most part absolutely neglected.

The work of setting apart properly equipped women as nurses, with which the name of Miss Nightingale will ever remain associated, came in time to change the old order, and during the past 30 years the growth and development of what may be called skilled or scientific nursing has been phenomenal. It has had the effect of revolutionising to a large extent hospital treatment, has incalculably contributed to the relief and comfort of sufferers, and has lightened the labours and anxieties of medical men.

Outside of hospitals, throughout all classes of the community, the benefit has been no less conspicuous. The beneficent work of nurses is universally recognised and appreciated by the public, and is happily now made available for the poorest of the poor.

In summing up this hurried retrospect, which is largely a personal one, seeing that of most of the illustrations now cited I have had ample opportunity of proving the efficacy, it is not too much to assert that the generation which ends with the century now closing marks an era in therapeutic progress not witnessed in any corresponding period during its course, if indeed ever before. From the resources thus placed in the

power of medicine for dealing with bodily ills the gain to humanity is undeniable. It can scarcely be doubted that thereby the average of life has been lengthened, and it is certain that the pains and miseries of disease and death have been wonderfully lightened.

The survey now made has obviously been a very incomplete one, and there are numerous topics which might have been dealt with, any one of which could have formed the text for an address. Some of these relate to subjects that are so to speak intangible, but are not on that account any the less real.

The power of suggestion as a factor in therapeutics has gained wide recognition in recent times. The numerous directions in which it may be exercised are necessarily better realised by some practitioners than by others. But there is one manifestation of it which applies to the case of all—that is, the personality and moral influence of the physician in his relations to his patient. It may, indeed, be difficult or impossible to appraise the absolute therapeutic value of the output of his sympathy and the tone which may be imparted to his ministrations. But when these are dictated by the highest motives which can inspire a life, they are laden with true healing virtue to the sufferer, they tend to exalt the physician's office in the estimation of mankind, and they cannot fail of their reward.

The three subjects chosen for special discussion in this Section possess for the practitioner much interest both clinically and therapeutically.

1. As regards the first, there are no disorders more frequently brought under his notice and calling for his interference than those of the digestive organs. Until quite recently the treatment of this large and varied class of maladies was far from satisfactory, owing chiefly to the difficulty of associating the symptoms present with any definite morbid process. The more accurate knowledge of the chemistry of digestion in all its stages and the means of diagnosing its faults by the methods for collecting and testing the gastric contents have done much to rescue the treatment of the stomach disorders from the sphere of empiricism, and to place it upon a rational foundation. We are fortunate in having present with us to take part in the discussion some of those whose work and writings have been largely instrumental in achieving this result, and we especially extend a cordial welcome to those foreign representatives whose names are familiar to us as leaders in this matter.

2. The treatment of chronic kidney disease is a subject of scarcely less importance than the last from the frequency with which it is encountered in practice and its liability to be overlooked. The comparative powerlessness of remedial measures to influence serious structural changes existing in the kidney, or to stay the progress of the resulting nutritional disturbances affecting a wide range of tissue throughout the body, and full of disastrous possibilities, combine to render the therapeutics of chronic renal disease a somewhat disheartening topic. Nevertheless it is certain that many of the symptoms attendant upon this morbid state may be ameliorated, and that dangers may be averted and comparative health and comfort often secured by a well directed line of treatment. With this object the discussion proposed cannot but be of use as affording an opportunity for suggestions and for a comparison of experiences.

3. The importance of the synthetic analgesics cannot be questioned. There are few medicinal substances in more common use at the present time. And it is to be observed that besides their administration under medical advice they have come to be extensively, and it is to be feared often recklessly, employed without it. They possess undoubted value, but they have their dangers; and it will serve a useful purpose if a discussion embracing both pharmacological and therapeutic considerations can bring out more clearly their true and safe position as medicinal agents.

It is quite obvious from the amount of time available that the discussions upon the topics now named can be of but limited extent and mostly upon only general lines. But notwithstanding such inevitable restrictions the hope may be indulged that from these discussions as well as from the important communications which are to be submitted the work of the Section may be not unfruitful in useful results.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF OPHTHALMOLOGY

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

By D. ARGYLL ROBERTSON, M.D.,LL.D., F.R.S.Edin.,
Surgeon-Oculist in Ordinary to H.M. the Queen in Scotland; Consulting Ophthalmic Surgeon, Edinburgh Royal Infirmary; President of the Section.

ON THE PROGRESS OF OPHTHALMOLOGY.

Gentlemen,—My first and most pleasing duty on taking the chair is to express my sincere appreciation of the very high honour that has been conferred upon me in asking me to preside over the Ophthalmological Section of this meeting of the British Medical Association, and to assure you that no effort will be wanting on my part to discharge the duties of the chair in a thoroughly impartial manner, and, with the assistance of the other office-bearers, to render your visit here at once pleasant and profitable.

It is not my intention to inflict upon you a formal introductory address, and, in accordance with a pointed recommendation from the headquarters of the Association addressed to all Sections of the meeting, will endeavour to make my observations very concise.

During the twelve months that have elapsed since the last annual meeting of the Association no startling novelty or important advance in our department of medical science has, as far as I am aware, been communicated to the profession on which I might have dilated at the present time. Ophthalmology indeed seems to have attained such a development that a short time may probably elapse ere any further important advance is made. In fact, it is advisable occasionally to rest in that constant strain after novelties, and to consolidate, strengthen, and perfect the advances that have already been made.

Even the most optimistic of oculists will readily admit that there are many directions in which improvements may by well-directed experiments and investigations be effected in our science. Thus we may hope that septic inflammations, which still frequently follow penetrating wounds of the eye, may be found capable of being averted or arrested by the employment of intraocular medication. The experience of Mr. Berry of the value of such treatment encourages this hope. We may also, I think, entertain well-grounded expectations that ere long some prophylactic measures may be devised which, applied to an eye so injured as to render the occurrence of sympathetic ophthalmia probable, shall effectually remove all danger of that serious affection. Might not a more intimate knowledge of the circumstances that induce conicity of the cornea enable us to arrest the development of that condition? May we not also hope that in suitable cases, which however we must admit are rare, a perfecting of procedure in the operation of transplantation of the cornea may be attended with better results than we can claim as yet? We must all admit our helplessness to arrest the slow steady onset of blindness in many cases of glaucoma simplex. Is it not possible by a thorough investigation into the cause of this intractable affection to devise some method of cure? The diversity of opinion, too, as to the most efficacious method of treating detachment of the retina calls loudly for further research.

At the same time, when we compare the existing state of ophthalmology as a special department of medical science with its state forty years ago (a period well within the limits of my personal experience), we have every reason to be gratified with the progress that has been attained. In those days the ophthalmoscope was a novelty, and was only gradually making its way into use among ophthalmic surgeons, and many of the wonderful revelations we owe to its employment were still in the womb of futurity; the nature of glaucoma and its treatment were only being evolved by the investigations and genius of Von Graefe; while the connection between optic neuritis and intracranial lesions, between albuminuric retinitis and Bright's disease, and between hemianopsia and localised cerebral lesions, and many other interesting and valuable discoveries have since been reaped in ophthalmology.

The increased acknowledgment, too, of the importance of

our speciality by the profession and the public is exemplified by the very greatly increased numbers of the profession who devote their whole time and energies to the practice of ophthalmic surgery. Thus, forty years ago, in the whole of Scotland there were only two pure ophthalmic surgeons, one residing in Edinburgh and one in Glasgow, whereas now they abound in Edinburgh and Glasgow, while Aberdeen and Dundee also supply representatives. We cannot overlook one cause of this increase, which is the recognition of the prevalence of refractive errors and the necessity of consulting an oculist with regard to them. Thus forty years ago the set of test lenses employed by the ophthalmic surgeon was of the most imperfect and primitive character, and it was not at all unusual even for the oculist to recommend the patient to go to the optician to be fitted with glasses, while the profession in general did not consider it necessary to send such cases to an oculist for advice. Cylindrical lenses were then practically unknown, only being constructed at great cost and with great difficulty to meet some very exceptional case of marked astigmatism, in which the nature of the error and its degree had been worked out by a long and patient investigation on the part of the surgeon. The difference in these respects at the present time is patent to you all. With the advent of Donders (whose colleague and successor, Professor Snellen, we welcome among us to-day) a new era dawned, and refractive errors and their consequences rest on a satisfactory scientific basis, and constitute a very large proportion of the cases applying to the oculist for relief.

But I dare not touch, however briefly, on the very numerous important advances that have served to place ophthalmology in the front rank of recognised special departments of our profession, or I should run the risk of violating my promise and wearying you with an address. Let me rather press the necessity that exists for its further recognition by the universities and medical licensing corporations in this country. It is only seventeen years since a lectureship on diseases of the eye was founded in the university here, and it is only within the last two or three years that attendance on a course of instruction in that branch of medicine has been made compulsory on candidates for a medical degree or for the diploma of the licensing corporations. What is still needed is that all candidates shall be subjected to a special examination in ophthalmology. In this respect we in the United Kingdom are far behind the universities of the Continent and the University of Dublin, which, to its credit be it said, has for more than thirty years demanded from candidates for its degree the passing of a testing examination in ophthalmic surgery. I gladly admit that much has already been done, but more remains to do, to gain for our specialty that status which its importance demands.

Let me now say a few words with regard to the business of the Section. On referring to our programme you may observe that it differs from those of all the other Sections in not indicating any subject set apart for special discussion. This is a matter that was fully considered by the office-bearers of the Section, who decided that on this occasion it was desirable to depart from the ordinary custom. All the important topics that lend themselves readily or advantageously to such discussions have already been fully debated at recent meetings of the Association or kindred societies; and as the International Ophthalmological Congress is to meet next year at Utrecht, we deemed it judicious to leave such discussions for the consideration of that wider assembly of oculists drawn from all parts of the world. The time thus saved may enable us to overtake most, if not all, of the communications that have been promised, and allow of a fair debate on the matters brought forward, and we may thus avoid that accumulation of unread and unconsidered papers which too often marks the close of our meetings.

Our Section this year is favoured by the presence of several visitors eminent for their labours in our department of medicine, to whom we tender a most hearty welcome. It is extremely kind of them to come from a distance, some from a great distance, to show their interest in our meeting and take part in our proceedings, and I think I may, on the part of all who attend this Section, express our high appreciation of the honour that is thus paid us.

Lastly, gentlemen, it is barely necessary to remind you that such meetings as this have a double purpose to serve. They are not merely intended to widen and deepen our professional knowledge, but they have also the important function to perform of cultivating and stimulating friendly social intercourse among members of our profession. Keeping this in mind, I think it would be well, with your concurrence, to close our deliberations here each day not later than half-past one (instead of two o'clock as mentioned in the official programme), so as to enable all attending this Section to partake of their mid-day meal without hurry and consequent fear of indigestion, and to betake themselves in a comfortable mood, and with uplifted spirits, to the various excursions or entertainments that have been provided for their afternoon's enjoyment.

THE VACCINATION BILL.

The Conscience Clause.

Looking to the changes which have taken place in the Vaccination Bill since it was first presented to Parliament, and to the confusion which appears to exist in some quarters regarding the attitude of the British Medical Association on the question of conscientious objection, it may be well to restate exactly the position of the Council and the Parliamentary Bills Committee.

The following are the first three of a series of resolutions arrived at by the Parliamentary Bills Committee, and adopted by the Council:

(*a*) Revaccination should be provided for at the age of 12 years, subject to whatever relief as regards limitation or abolition of penalties, and allowance for conscientious objection may be granted with regard to primary vaccination.

(*b*) Children entering on school life, who have not previously been vaccinated, should then be brought under the operation of the law, subject to relief as above.

(*c*) If (*a*) and (*b*) are granted, even single penalties might be done away with, excepting in the case of neglect by a parent to register conscientious objection in such elaborate fashion as might be prescribed by an order of the Local Government Board.

The memorandum preceding and explaining these resolutions laid very special stress on the question of revaccination. It was held that a revaccination clause was the main point to which the Association should direct its energies. As regards the conscience clause, it was felt that if revaccination were granted, and if all children entering on school life, who had not previously been primarily vaccinated, were again brought under the operation of the law, the objections to a conscience clause would to a great extent be removed. Not only so, but it was obvious that in the case of members of Parliament who approve of vaccination, but who at the same time have strong views as to the liberty of the subject, their way towards support of revaccination would be cleared by the acceptance of a conscience clause. It should be understood, therefore, that the approval of such a clause by the Council was distinctly subject to the granting of a revaccination clause applying to children at the age of 12 years, and of a primary vaccination clause for children entering on school life whose vaccination had not been secured in infancy.

In speaking of the attitude of the Association, therefore, towards the conscience clause it is necessary to note that resolution (*c*) is conditional on resolutions (*a*) and (*b*). Sir William Priestley, in the Grand Committee, secured the acceptance of resolution (*b*), but though amendments giving effect to resolution (*a*) were placed on the paper they were not moved. The Government must take its own course in the matter, and must take the responsibility of the results of its own action in accepting a conscience clause without at the same time providing for revaccination. In refraining from proposing a revaccination

clause along with the new conscience clause it has done an utterly foolish thing. It is universally recognised that revaccination occupies with regard to adolescents and adults the same place as a protection against small-pox which primary vaccination occupies with regard to infants.

We can only repeat what we said in a recent article—namely, that the Bill in the form into which it has now been brought is so very unsatisfactory that the Government would do well to let it drop for this session, and introduce next session a new Bill embodying a statesmanlike view not merely of the opposition to vaccination, and the weight to be given to that opposition, but also of the need which there is to incorporate in any new vaccination law a provision requiring revaccination.

MEDICAL MISSIONARY LOAN EXHIBITION IN EDINBURGH.

THE Edinburgh Medical Missionary Society are to be congratulated upon the valuable and interesting collection of objects of medical interest which they are exhibiting in Herriot Hospital during the annual meeting of the Association. Medical missionaries have many opportunities of acquiring instruments, charms, and drugs in use by the tribes amongst whom they live, and now that the Society has shown that they value such collections, it is to be hoped that before long a more or less complete museum of such medical appliances may be established.

Amongst the exhibits from Nazareth there are a number of charms which show that the Arabs living in that region are believers in the doctrine of "signatures." Thus a yellow stone is considered to be beneficial in jaundice, a spherical one in diseases of the eye, and a blue one pierced by six pupil-like apertures has a great reputation in fending off the effects of the evil eye. With regard to this last, the greater the number of apertures the more likely is it that the charm will not only be successful in preventing harm coming to the wearer, but will also enable him to injure the possessor of the evil eye.

The collection of instruments from China is exceedingly interesting, the ingenuity exercised in the shaping of certain probes, pus searchers, and foreign body extractors being especially noteworthy. Whether intentionally or not, too, most of the instruments are so made as to be easily kept clean. In some there are notches and irregularities, but in many the surface is smooth and even, and the whole instrument is made in one piece.

Amongst the Chinese medicines the usual superstitions of the ignorant are to the fore. Thus, the scaly skin of the snake is a remedy for scaly skin diseases, and a decoction of centipede is a specific for asthma and other lung affections, which cause a feeling of creeping in the throat and chest. In addition, one finds drugs allocated by guesswork: thus, powdered bird's-nest is used as a tonic, and certain stony-looking tablets are to be prescribed, when the doctor is in doubt, as being good for anything.

The collection of fetishes from the Lower Congo is fairly complete. There are examples of the carved images, the fetish bags, etc., such as are met with so constantly in this region. The natives of Bamu are evidently of a higher order of intelligence, for they have discovered the value of certain drugs; for instance, they use aconite root in fevers.

In the collection from Persia two hernia trusses are shown which are made upon exactly the same principle as our own. From the same country comes a cupping glass in which the glass is drawn out to a tube, which the surgeon sucks so as to reduce the internal pressure.

A couple of emergency splints from Natal and Mombassa consist of thin canes or flat pieces of wood united by grass cords, which are meant to encircle the limb, and to be kept in place with bandages.

Of course from all parts come charms of all kinds, which are supposed to ward off diseases: silver rings for hæmorrhoids, birds' claws to prevent harm arising from the attacks of birds, and so on, but these are no worse than the rings to prevent rheumatism and similar nostrums of which half-educated people in our country make use.

Only a few of the many rare and curious things to be seen in this exhibition have been mentioned, and space does not allow to tell of the jia pota which will cause a sterile woman to conceive, or a pregnant one to abort; of the devil-stick from Smyrna; of the African witch-doctor's accoutrements; or of the models, drawings, and photographs of mission hospitals. But enough has been said to show that the Society has gathered together a collection of great interest, not only to the medical profession, but also to the public generally.

In an adjoining room Messrs. Oppenheimer are showing the medical antiquities collected by Dr. Luigi Sambon, of Rome, which they exhibited in London in 1895. As these have been previously dealt with it is unnecessary to do more than mention them now. The collection is one of very great interest, and well repays a careful and thorough inspection.

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

THE Congress of the Royal Institute of Public Health, under the presidency of Sir Charles Cameron, M.D., will be held in Dublin from August 18th to 23rd next. The local preparations are on an extensive scale, and everything points to a very successful meeting. The Local Committee is large and representative, and the subscriptions so far received are generous enough to make it certain that the entertainments will be exceptionally good. The meetings of the various sections will take place in Trinity College; the Health Exhibition will be held in the buildings of the Royal University, and a banquet in the Royal College of Surgeons.

There will be four sections—Preventive Medicine and Vital Statistics, Chemistry and Meteorology, Engineering and Building Construction, and Municipal and Parliamentary. In addition, there will be a conference of army medical officers on Enteric Fever in the Army, and by medical officers of health on the Housing of the Poor and the Prevention of Tuberculosis. Among the general subjects to be discussed in the various sections are: The Treatment of Infectious Diseases in General Hospitals, the Increase of Lunacy in Ireland, the Management of the Sick in Workhouse Hospitals, Pollution of Rivers and Treatment of Sewage, and Designing and Construction of Hospitals.

The proceedings will begin on Thursday, August 18th, when Sir Charles Cameron will give an address. There will be a luncheon at the Royal University, given by Alderman Pile, the High Sheriff, and afterwards the exhibition will be opened. In the afternoon Surgeon-General and Mrs. Preston will give a garden party. On Tuesday, there will be Presidential addresses in the Sections, a promenade concert, a garden party given by Sir Christopher and Lady Nixon, and a ball given by the Right Hon. the Lord Mayor; on Saturday, further addresses, concert, garden party by Right Hon. Alderman Meade and Mrs. Meade, banquet at the Royal College of Surgeons at which His Excellency the Lord Lieutenant will be present, and a promenade concert at the Royal University. On Sunday special sermons will be delivered in the Cathedrals. On Monday there will be an excursion to Belfast and a luncheon given by the Lord Mayor of that city; excursions to Wicklow; a garden party by Sir Henry and Lady Cochrane; and a concert. On Tuesday there will be further sectional meetings, and in the evening the Right Rev. Monsignor Molloy will give a popular lecture on Wireless Telegraphy.

This by no means exhausts the programme, which provides for much additional scientific and social hard work.

DR. D. M. FORBES was on July 19th entertained at luncheon at the Holborn Restaurant and presented with an illuminated address and a purse containing over 600 guineas on the occasion of his retirement from the post of Medical Superintendent of the Infirmary of St. Leonard's, Shoreditch, after a service of thirty years. Mr. R. G. Alabaster, J.P., Chairman of the Board of Guardians, who occupied the chair, said that Dr. Forbes was one of the first to introduce a better system of housing and nursing the sick poor in Poor-law establishments. He had been the means also of ameliorating the condition of workers in white lead by drawing public attention to that subject, and had taken a principal part in obtaining the White Lead Factories Act of 1891.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, JULY 30TH, 1898.

THE EDINBURGH MEETING.

The sixty-sixth meeting of the British Medical Association was opened with every augury of success on Tuesday, July 26th, when, in the beautiful M'Ewan Hall of the University of Edinburgh, Sir Grainger Stewart was conducted to the Presidential chair by Professor Roddick of Montreal, who brought his successful year of office to an end in a short speech which breathed the same spirit of friendship and geniality that has animated him throughout the whole of his tenure.

It was no easy task to follow a meeting which so appealed to the imagination of those citizens of our great Empire who believe in its imperial obligations, as did the great meeting in Montreal last year. But Sir Grainger Stewart and his colleagues in Edinburgh have proved themselves fully equal to the task, and have so managed matters that this annual meeting of 1898 will long be remembered as being from every point of view a brilliant success. The invitation so cordially extended to the Association by the Edinburgh (Lothians and Fife) Branch has been not less cordially accepted, and it has thus fallen to the lot of Sir Grainger Stewart to preside over one of the largest meetings which the Association has ever held.

To this great meeting Sir Grainger Stewart on Tuesday evening delivered an address full of wise counsel and sound suggestion. The reciprocal duties of our profession to the community and of the community to the profession formed a subject of living interest to the great audience that acclaimed his spoken words, and to the still greater body that will study them with advantage in the printed form. After a graceful and thoroughly well merited reference to the loss which the Association has suffered in the loss of Mr. Ernest Hart, the President in his opening sentences alluded to the circumstances which must always make a visit to Edinburgh evoke memories of great medical triumphs and personal struggles. There medical visitors must always feel that they stand on classic ground, hallowed by the achievements and teaching of some of the greatest professors of the medical art whom the world has seen. We can imagine that some of those past worthies would have hardly relished, could they have heard them, the President's references to the imperfections of our art; but they would immediately have been reassured as to the progress of medicine by the striking figures which he adduced of lessened death-rates, and in particular by the evidence which he brought forward of our increasing control over that great scourge of humanity, tuberculous disease.

On such subjects, however, the address could not extend without trespassing on the domains of the orators of medicine and surgery. We have no doubt that Sir Grainger Stewart, if custom had allowed, would have loved to dwell on the victories of medicine, and to have delighted his auditors with illustrations, which he could so easily have given, from the stores of his well-garnered experience. But limited by unwritten law in those directions, he wisely turned to the great questions of national health and medical organisation in relation to the profession and the community.

One of the great duties of the medical profession, as the President pointed out, is the training of its successors and the extension of the field of knowledge by fostering research and encouraging well-directed efforts to wrest fresh secrets from Nature, which could be turned to the advantage of practical medicine. In this work, as he did not fail to point out, the British Medical Association is taking a distinguished part through the scholarships which it has founded and the grants which it has made for the encouragement of research, and through the publication of its Journal, which carries to every member the latest results of scientific research and clinical observation.

Sir Grainger Stewart struck the keynote of wise counsels when he said that "we ought to take more pains to instruct the public on such questions." The profession has indeed been somewhat backward in the duty. To-day the greatest difficulties in health administration arise from the comparative ignorance of the people on sanitary matters. In a country with a democratic constitution like ours public health work can never move faster than the education of the community on such questions.

We may agree with the President that it is a most interesting speculation whether we are in a better or a worse condition than we might have been under an absolute ruler. The body of the profession is disposed to ask for strong central control as regards public health, because it is often reduced to despair by the slowness of the advance. While this feeling may readily be understood, it must yet be recognised that it is impossible to put back the clock. For good or for evil, the Legislature has created a system of popular local government from the unit of the parish up to the area of the county, and decided that these elected bodies are to control local administration. In the aggregate these councils are irresistible, and in groups they are often too strong for any Government to resist, and so we must perforce use them as best we can, and above all we must, as the President said, instruct them in all problems connected with public health. Knowledge in such bodies grows slowly, and wise administration is apt to linger, but it rests with the medical profession to develop knowledge and assist in stimulating wise administration.

Though it may not be possible for all to agree with every detail of the views on the present position of vaccination

legislation expressed with so much candour and ability by Sir Grainger Stewart, yet it will be universally admitted that his deliverance on the subject is likely to be most valuable at the present time. The House of Lords can hardly fail to attach great weight to an utterance made under such circumstances and so heartily received by so large and important a meeting of medical men gathered from all parts of the country. If what he said has the effect of causing the whole subject to be delayed for another session and of preventing the passing of so incomplete a measure as that which is now before Parliament, he will have done most valuable service. The attitude which the Association has felt bound to take towards the question of the insertion of a conscience clause is fully explained at page 309.

Sir Grainger Stewart also made some wise and weighty suggestions on guarding the portals of the profession and on the reconstruction and reorganisation of the Local Government Board in connection with public health work and the protection of the workers in dangerous trades. As opportunity offers we hope to return to the consideration of the points so well raised, and in the meantime we ask our readers to study the suggestive address which has given special distinction to the Edinburgh meeting of 1898.

THE ADDRESS IN MEDICINE.

"Has the practice of medicine made a single step since the time of Hippocrates?" This, Professor Fraser says in his Address in Medicine, was the question which Dr. Warburton Begbie attempted to answer when the Association, scarcely a quarter of a century ago, last met at Edinburgh. Then Dr. Begbie concluded that no general doctrine—chemical, physical, humoral, or physiological—had been propounded which satisfactorily explained the nature and production of disease. Such an answer we cannot now accept. It was, for instance, completely refuted by the greatest living master of medicine, Virchow, in his brilliant oration on the progress of pathology during the last one hundred years, and in his address before the International Congress at Moscow. Indeed, medicine has made one great step since the days of Hippocrates: medicine has become a biological science. Two thousand years ago medicine lost a golden opportunity of being established upon a firm, scientific basis, when she rejected the early and pregnant promises of the Alexandrian school of anatomy. In Egypt, through a series of happy circumstances by such men as Herophilus and Erasistratus, there arose the possibility of reforming medicine upon a natural foundation. But this unexpected chance was rejected, and thus the progress of medicine was delayed for 1,500 years, when anatomy had to be reconquered under great difficulties, and by means of keen struggles against obstructive prejudice. This century has given the deathblow to "systems," and has taught us to observe what can be observed, and to retain it faithfully. That, as Virchow says, is the "method" which during the second half of this century has become common property. Medicine has become a biological science, and conscious of this she will progress. Practical medicine, therefore, can never be divorced from science; practical medicine must ever be a science working with technical appliances, and medical art is no longer independent, but can only follow out the indications derived from the science upon which it is based. *Nam et ipsa scientia potentia est:* that is the maxim of the dying century.

In estimating the advances made by medicine during the last quarter of a century, Professor Fraser naturally gives the first place to the extraordinary progress achieved by what he calls the fundamental sciences of chemistry, physiology, and morbid anatomy. This progress has entailed a corresponding improvement in the science of diagnosis, an improvement so great that the work of the pioneers in the field with their limited opportunities and imperfect instruments is apt to be almost, if not entirely, forgotten. Professor Fraser raises the serious question whether increased facility in diagnosis has really brought us nearer to the realisation of the highest aims and objects of medicine. He instances the perfection to which the diagnosis of nervous diseases has been brought as compared with the general unsatisfactoriness of their treatment. Professor Fraser takes a rather pessimistic view of this subject, for accurate diagnosis forms the only true basis of appropriate treatment. Still it is well that a word of warning should be uttered in these days of unscientific over-confidence, and no one is better qualified to deliver it than an investigator of such undoubted authority as Professor Fraser.

The main theme of the address, however, is constructive rather than critical, and has to do with a subject of great interest to all, and one with which the author has specially occupied himself—that of immunity. Few questions have lately occupied more investigators, particularly in Continental schools, and nothing can be more remarkable than the way in which the mystery surrounding it deepens with the progress of research. That certain diseases once survived may protect against their own recurrence for the remainder of life is a matter of common knowledge; how this happens is still a subject of scientific ignorance. It is true that in many cases the actual germ causing the disease has been found, though it is a remarkable fact, and one not generally insisted on, that it is in just those affections which are most perfectly protective that the *vera causa* is still to seek. It may be that this cause is of a nature as yet not revealed to biological inquiry, and that with its discovery the mystery of immunity will be definitively cleared up.

With the advancement of knowledge we may learn why it is that small-pox, scarlet fever, and to a less extent measles protect their victims if they spare their lives, while diphtheria and pneumonia only render them more liable to future suffering. Taking the facts as they are at present known, Professor Fraser puts forward a theory of immunity which if not absolutely convincing can at least claim to afford a good working hypothesis. He starts from the fact that acquired immunity to a disease is of two kinds: that produced by an actual attack and that following the introduction of increasing doses of the disease toxins. The former may, as has already been said, be lifelong, the latter, although it may protect against enormous quantities of the toxins, is only temporary. The rapid passing away of this protection is presumably associated with the elimination of the antitoxic bodies produced by the action of the toxins upon the bodily constituents;

as long as these antitoxins are present protection is assured. Hence it is that Professor Fraser puts forward the suggestion that in the immunity following infectious disease small quantities of antitoxin are contantly being supplied to the organism. To explain this he postulates the existence within the body of a residuum of the specific micro-organisms attenuated as regards their virulence, but not in respect of their protective powers. This would fall into line with the protective inoculation against fowl cholera and anthrax by means of attenuated cultures, and probably also with the means of protection adopted in small-pox and hydrophobia. The last named disease, however, may perhaps be better classified as regards prophylaxis with Professor Fraser's own experiments on the establishment of protection against serpent venom. His theory is decidedly ingenious, and seems to be susceptible of comparatively easy proof. If these attenuated organisms are stored in the hidden recesses of the body they must be detectable and will be detected; with their discovery and successful cultivation the theory will become a fact.

Professor Fraser did well to emphasise the importance of the products secreted by bacteria in the causation of disease and to point out how these toxins were responsible for most of the effects formerly attributed to the growth of the organisms themselves. We note, too, that while giving due weight to the active properties of ptomaines and leucomaines he refrained from allotting that prominence to autointoxication which is just now fashionable. Autointoxication is indeed held to account for everything, from the determination of sex to senile decay; the grounds for these sweeping views being usually wholly inadequate. We would suggest that some hesitation is advisable before the acceptance of autointoxication as a cause of disease. When the "toxin" has not been isolated or its physiological action tested, it is hardly creditable to scientific men to fly to so poor a refuge for the destitute in place of giving more careful attention to the study of obscure factors in the causation of disease. The brilliant work of Bouchard has had one unfortunate issue in leading to this short way with etiology. Hence it is that Professor Fraser's address is particularly welcome, turning as it does the attention of the members of the Association to the scientific side of their profession, and in particular to the great and increasing science of chemical pathology.

The work that Pasteur commenced in this direction is being admirably carried on by his successors, notably Ehrlich and Wassermann in Germany, Duclaux in France, and Sidney Martin in England. His demonstration that ferments only acted on bodies having certain definite groupings of their chemical molecules has been followed by the discovery of Emil Fischer that bacterial toxins are subject to the same law. The ferment action of these bodies has now been as a rule established, and upon it has been based Ehrlich's "lock and key" theory of the neutralisation of toxins by antitoxins, followed by Wassermann's demonstration that the cells of the central nervous system may themselves possess the power of neutralising the toxin of tetanus. From this a practical outcome has already followed, for Babes claims to have treated tetanus successfully by injections of normal spinal cord emulsion. Thus chemical bacteriology and pathology may well in the future prove to be the foundation of not only diagnosis but treatment, and of this Professor Fraser shows in his address an admirable appreciation.

THE ADDRESS IN SURGERY.

Few can have listened to Professor Annandale's address without profit and enjoyment, none the less keen that here and there it was enlivened by that dry humour characteristic of the North. Its tone suggests once again that it is possible to unite in one person the power of scientific observation and generalisation and those practical qualities which go to make the sound teacher of clinical surgery. The address leads us to speculate whether there is not, perhaps, in these days too great a tendency unduly to neglect purely clinical observation in surgery in favour of the more abstract studies of the sciences upon which modern surgery is based. There is, to be sure, in our present system a great temptation in this direction. The physiological, biological, chemical, and bacteriological laboratories are doubtless becoming very important to students who have inevitable examinations before them, while bedside studies appear to have less immediate material value. But, apart from this, there seems to be an inclination on the part of many engaged in teaching the matters that can be dealt with in laboratories to regard the application of a knowledge of these things to the needs of the sick at the bedside as something of lower dignity, and as requiring less intellectual power than the study of the subjects themselves in the abstract. We often nowadays hear the term "pure science" used in a tone which implies that there is no science outside the laboratory, and as if the physician and surgeon at the bedside were merely ordinary observers of the pains and aches of sick folk.

It does not appear to occur to many otherwise thoughtful people that sound clinical teaching involves on the part of the teacher a very wide acquaintance with most of the "'ologies," and indeed, that his knowledge and power of generalisation should be so great that he ought to be able to pick out the very kernel of an idea or observation in any of these subjects, and use it for the benefit of his sick charge and for the instruction of those he has about him. It does not appear to strike them, for instance, that the clinical teacher, even of surgery, must be a psychologist, without spending the major part of his time exclusively in investigating the operations of the higher centres of the nervous system, as he watches and gives their full value to the changing moods of his injured or diseased patients; or that he must be able to generalise from the facts of biology before he can apply the teachings of bacteriology to the treatment of disease.

Professor Annandale's address reminds us that such a tendency is unsound and unscientific; that it is only of the legitimate union of pure science and practical study of the complex machinery of the human organism in its physical, intellectual, and moral qualities that true clinical surgery is born. And without giving undue weight to the practical study of surgery at the bedside and in the operating theatre, he emphasises its dignity and its immense achievements.

On the moral questions, too, involved in surgical practice, he has wise words to say; and, coming from one who has for forty years watched the ebb and flow of surgical thought and the fluctuations of surgical usage, his utterances have special weight. Indeed, the time appears to have come when all prominent members of our profession whose experience is long and large should express themselves fully and freely as to the general ethics of medicine and the rules which should guide medical men in their relations to each other and the public. It has been asserted that we are getting much new blood socially into our profession, owing to the spread of education; and that since we are tapping new strata in the social crust for the supply of our ranks, it behoves us to see to it that the influx of those bred under the influence of trade and commerce does not sweep away those traditions which belong to our profession—traditions which have grown up in the course of ages, and have had an incalculable influence for good upon society at large. No country has had more just cause to be proud of the ethical traditions of the medical profession than ours. But it is a duty laid upon us all at the present day to be very watchful that in the great struggle for existence our standard of moral conduct does not deteriorate.

It is often said that the sun of chivalry in our dealings one with another is on the wane if it has not entirely set. We hear of the efforts at over-reaching made by professional rivals—efforts of the most unworthy kind, of underbidding and under-selling, of consultant pitted against the general practitioner, and *vice versâ*. What wonder, then, if a commercially minded public is coming to regard our profession as a mere trade guild to be chaffered with and overreached if possible, according to the rules which unfortunately regulate too many trade proceedings at the present time?

The leaders of medicine and surgery who will take the line of Professor Annandale's address can do much by their public utterances to remind us all of the dangers to the moral standard of our profession which beset us. But it is only when each member for himself takes the matter to heart and places a high standard before himself rather than before his neighbour that any large effect will be produced.

It cannot be too often repeated that medicine is a glorious profession, but a vile trade. It is the one in which chivalry ought to survive longest, for its function is to be sleeplessly in arms in the cause of the weak and less fortunate. "Pure science" may teach that it is for the benefit of the race that the weak and sick should be left to perish. This is only another way of uttering the old heathen cry "*Væ victis!*" For us this theory ought to have no meaning when dealing with the sick or with one another. If it had, all our work would be a terrible mockery or a sordid trade. There is most assuredly something higher and grander than the brute forces of Nature, falsely so-called. And we are all the better for being reminded of this from time to time, not only by the professional teachers of morals, but also by those who, having peered deeply into the mysteries of human suffering as well as into science, and who having watched noble and ignoble careers through a long life, can speak with knowledge and with experience.

ANNUAL MEETING.

THE success of an annual meeting of the British Medical Association may be judged by several standards: by the character of the addresses delivered to the general meetings, by the spirit with which the discussions are maintained in the Sections, and by the number of members registered as in attendance on the meeting. In no one of these respects need the Edinburgh meeting fear comparison with its predecessors. The address of Sir Grainger Stewart, to which we refer elsewhere, and which is published in full at page 281, was a masterly exposition from one of the leaders of medicine in this country, characterised by broad views, keen insight, and a just appreciation of the place which medicine ought to take in our complicated social system. The Address in Medicine by Professor Fraser was appropriately directed to the discussion of one of the most pressing questions which are occupying the minds alike of the pathologist and the clinical physician. Professor Annandale in his Address in Surgery showed that he knew well how to commingle a serious view of the obligations of the profession to the public with that appeal to the sentiment of *esprit de corps* and the affection for an *alma mater* which is so tenderly regarded by all her children. The discussions in the Sections, so far as they have gone at the time of writing, have been remarkable in many respects, not least, perhaps, for the distinction of those who have introduced the main subjects of debate. We give elsewhere a short sketch of the more important of these, and it will be seen that they cover a large proportion of the more important questions which are at present forcing themselves upon the attention of the profession. Lastly, in the matter of numbers, which in itself has an important bearing upon the success of the discussions in the Sections, the meeting in Edinburgh may almost be said to mark an epoch. So soon as it was announced that the British Medical Association was to hold its annual meeting in Edinburgh it was anticipated that the members attending would be large, but the number of members who have actually availed themselves of the invitation is in excess of the most sanguine anticipations. On the first day, on which the Reception Room was open, it was crowded, and the total number registered is very large. At the time of writing the returns are not complete, but already the total exceeds 1,834. This large influx of members, in many cases accompanied by members of their families, has put a severe strain upon the organisation, but it has well responded to the call, and the work of registration has proceeded without a hitch. The hospitality which has been shown to the Association, not only by the medical profession in Edinburgh and by the Edinburgh Branch, but also by the Lord Provost and the corporation, has been most generous. On Tuesday evening the Lord Provost and Mrs. Mitchell Thomson received a very large number of guests, who crowded the beautiful gallery of the Museum of Science; and on Wednesday evening the President and Local Committee gave a brilliant *conversazione* in the M'Ewan Hall; while on Thursday evening the Association dinner in the Music Room, George Street, was very largely attended, and the members had the pleasure of returning in some small degree the hospitality which they had received from the corporation and the citizens of Edinburgh.

LORD STRATHCONA AND MOUNT ROYAL was most warmly received when he came forward to receive the diploma of honorary membership at the hands of the President, who had just been introduced to the chair by the retiring President, Dr. Roddick of Montreal. Lord Strathcona, in a short speech of much natural eloquence, expressed the gratification with which he had received the honour, and his remarks as to the bond which knit the mother country to her colonies were loudly acclaimed by all present.

ON July 27th the members of the Anglo-American Continental Medical Society lunched together at the Balmoral Hotel in Edinburgh. The opportunity was taken to entertain a number of guests, including Dr. Lauder Brunton, Mr. Thomas Bryant, Dr. Little (Dublin), and Professor Baginsky (Berlin). The chair was taken by Sir William Turner, the President of the General Medical Council.

THE invitation of the Royal Scottish Society of Painters in Water Colours to a private view at the Galleries of the Royal Academy gave the members of the Association a welcome opportunity of appreciating the high atandard of this branch of Scottish art. The works seen at the exhibition comprise examples of various styles, some being bold pictures of the impressionist school, whilst others show care of detail and a comparatively high finish. The subjects have many of them an especial local interest, as they are views of different parts of Scotland, whilst others are scenes from various Continental towns. The number of members and guests present in the galleries was a proof, if such were needed, of the way in which the kindness of the Society was appreciated.

THAT the Edinburgh meeting would be a success needed no great powers of prophecy to predict, but few thought that on the first day there would be so large a number of members present as seemed to pervade the ancient city from an early hour in the morning. When it was realised how large the attendance promised to be, it was found that the careful arrangements made by the local committees for the comfort and entertainment of the members and guests would be tested to the full. In making these arrangements, great help has been given by the Lord Provost, and his most successful reception was in itself an evidence of the warm interest he has taken in the meeting. The guests commenced to arrive even before the hour at which they were invited, and from a little before 9 until nearly half-past 10 a continuous stream paid their respects to the Lord Provost and Mrs. Mitchell Thomson. In all, more than 4,000 guests accepted the Lord Provost and Mrs. Mitchell Thomson's invitation, filling the large and handsome building in which the reception was held. Though but few of the guests had donned the national dress, yet the whole effect as viewed from one of the galleries was bright and charming. On all sides one heard hearty greetings as old students met once again their old teachers, or man hailed man by some friendly name which had probably not been used or heard for years, and which in itself served to bring back associations and to awaken many memories of Auld Lang Syne. Sir Grainger Stewart, Professors Chiene and Argyll Robertson, Sir Henry Littlejohn, and many others must have been almost exhausted before the evening was finished with the amount of hand shaking that they had to go through. As soon as the Lord Provost had welcomed his guests the band of the Royal Scots commenced to play, and during the rest of the evening a selection of modern music was performed, varied from time to time with performances by the nine pipers of the regiment. This, the first social function of the Edinburgh Congress, inaugurated the lighter side of the meeting with right Scottish hospitality, and must have left a most happy impression upon all those who were fortunate enough to take part in it.

THE Directors of the Town and Gown Association gave afternoon tea to the members at their picturesque home in Ramsay Garden, where Professor and Mrs. Patrick Geddes received their guests. The Association was started by Professor Geddes twelve years ago, and he is still the life and soul of the undertaking. Professor Geddes's scheme is an ambitious one, as he hopes on the gown side to establish a number of houses representing the various "nations" of which the Empire is composed, in which there should be a collegiate mode of life; and on the town side, he wishes to do no less than convert the poor and squalid High Street, from Holyrood to the College, into a street of colleges. So far he has succeeded in getting five houses, each having its own government, each living on such scale and at such expense as the community may determine, and each consisting of a certain number of past students who give the stable or Fellow's element to the hall, and for the rest of students who are still attending the University classes. The residents are chiefly drawn from the medical side of the University, as is only natural considering that the medical faculty forms the backbone of the University itself. Close by Ramsay Lodge, which is the longest of the halls, there is another in Riddel's Close, which forms a charming piece of old Edinburgh. A small passage leads past an old doorway bearing the date 1626 into the Close, which is surrounded by an old building with quaint chimneys and picturesque gables, one of the special features being the irregularity in both size and position of the windows. Those members who were able to avail themselves of Professor and Mrs. Geddes's kind hospitality spent a most enjoyable time, and some at least before they left had become almost as enthusiastic as the Professor himself in their admiration for his bold scheme.

THE Council of the British Medical Association at its meeting on July 27th had the pleasure of receiving a deputation which presented a cordial invitation to hold the next annual meeting in Portsmouth. The deputation was introduced by Dr. Ward Cousins, and Dr. James Watson, Physician to the Royal Portsmouth Hospital, in the name of the profession in Portsmouth, said that it was prepared to promise a very warm welcome to the Association. Inspector-General Turnbull, R.N., supported the invitation in the name of the officers of the medical department of the Royal Navy, and Surgeon-General Cuffe, C.B., in that of the officers of the Royal Army Medical Corps; and Dr. C. P. Ruel and Dr. Carling, of Southsea, spoke in the name of the general practitioners of Portsmouth. Dr. Groves, of Carisbrooke, I.W., and Mr. Manning, of Salisbury, said that the Southern Branch of the Association endorsed and supported the invitation of the profession in Portsmouth, and would be glad to see Dr. Ward Cousins chosen to the office of President-elect. The invitation was cordially accepted by the Council, and its decision was confirmed at the general meeting on the same afternoon. Dr. Ward Cousins, who has long been an active member of the Association, and who discharged the duties of the office of President of the Council with so much ability and geniality, is well known to the Association. He will bring the same qualities to the new office for which he has now been chosen, and there can be no doubt that under his direction, and with the cordial co-operation of the profession in Portsmouth and of the members of the Southern Branch, that the success of the annual meeting of 1899 is assured.

THE opening service was held within St. Giles Cathedral on Tuesday, at 11 A.M. There was a large congregation crowding every part of the Cathedral. Mr. Hartley played selections on the organ whilst the congregation was assembling. The service commenced with the singing of the Hundreth Psalm, after which the Rev. W. Landale, in the absence of Dr. Cameron Lees, read prayers, and asked for a blessing on the deliberations of the Congress. Then followed the Hymn "Thou to Whom the sick and dying," after which the Scripture Lesson (1 Corinthians, chap. xiii) in praise of "charity" was read by the Rev. Dr. Blair of Dunblane, Moderator of the United Presbyterian Synod. The chanting of the Lord's Prayer came next, followed by a collection in aid of the Royal Medical Benevolent College and the British Medical Benevolent Fund. The choir sang the anthem "All ye who

weep." The inaugural discourse was given by the Right Rev. Alexander Whyte, D.D., Moderator of the Free Church of Scotland. The text was from the Lesson "The greatest of these is charity," and the subject of the discourse was an appreciation of Sir Thomas Browne, the author of the *Religio Medici*. This was his masterpiece, and upon it, although he wrote other pieces of affinity thereto, his sure fame as a writer of noble truth and stately English most securely rests. He was a physician of high standing and large practice all his days, and was in other ways greatly renowned. His father was wont to creep up to the little boy's cradle, kiss the child's breast, and pray that the Holy Spirit might take possession there. The boy went to Winchester; then to Pembroke College, Oxford. He graduated, and studied medicine in France, Italy, and Holland; and eventually settled at Norwich, where he passed the remainder of his long, busy, prosperous, and honourable life. Dr. Whyte detailed a large number of the exalted ideas of life with which Sir T. Browne was actuated, and quoted from the Rev. J. Whitefoot the following passages, amongst several: "Parsimonious in nothing but his time, whereof he made as much improvement with as little loss as any man in it, when he had any to spare from his drudging practice he was scarce patient of any diversion from his study; so impatient of sloth and idleness, that he would say, he could not do nothing. . . . Never missed the sacrament if he were in town. . . . . He had often triumphed over the King of Terrors in others, and given him many repulses in the defence of patients; but when his own time came he submitted with a meek, rational, religious courage." The *Religio Medici* was his best book. He is at his best when most alone with himself. Nothing interests him so much as Sir Thomas Browne. He is one of the greatest egotists of literature, and on a par with the three egotists singled out by Hazlitt—namely, Cellini, Montaigne, and Wordsworth. Sir Thomas Browne lived so much within himself that he was both secret writer, and sole reader to himself. In short, the properly prepared and absolutely ingenuous reader of the *Religio Medici* must be a second Thomas Browne himself. If ever any man was a truly catholic Christian, it was surely Sir Thomas Browne. He does not unchurch or ostracise any other man. He has never been angry with any man because his judgment in matters of religion did not agree with his. He is the very prose-laureate of death. He writes as no other man has ever written about death. Death is everywhere in all Sir T. Browne's books. But death is swallowed up in his defiant faith that cannot, even in death, get difficulties and impossibilities enough to exercise itself upon. Spinosa has it, "a free man thinks of nothing less than of death." Browne was a free man, but he thought of nothing more than of death. The preacher next sketched the characteristics of Browne's other books, *Christian Morals*, the *Letter to a Friend* ("which should be a classic to every well-read doctor in the language"—an "unique marvel of literature," as Walter Pater calls it)—the vulgar errors, "in every page of which we see the labour," as Dr. Johnson so truly says, "that its author was always willing to pay for the truth." And, as Sir Thomas says himself, a work of this nature is not to be performed upon one leg, or without the smell of oil, if it is to be duly and deservedly handled." "Shall this Association," said the preacher, "raise up from among its members a worthy successor and enlarger of Sir T. Browne?" *Urn Burial*, *The Garden of Cyrus*, were his other books. He was one of our most classical writers on natural and revealed religion. To him atheism or anything like atheism was always absolutely impossible. He never wrote a single line, even in his greenest studies, that on his death bed he desired to blot out. He prayed in all places and at all times: "But the greatest of these is charity." For charity is nothing less than the Divine Nature itself in the heart of man. In all English literature two books stand out beside one another and are alone in this supreme respect of charity—William Law's *Spirit of Love*, and Sir Thomas Browne's *Religio Medici*. With the singing of the hymn, "The city shall be flourishing," and the benediction this impressive service came to an end. The visitors were particularly delighted with the beauty of the music. The organ is one of the finest in Great Britain, and the choir is in every way excellent.

The Local Committee has presented the members of the Association attending the annual meeting in Edinburgh with a *Pocket Guide to Edinburgh and Neighbourhood* (John Bartholomew and Co., The Edinburgh Topographical Institute). The volume, which is of a convenient size, is well illustrated by maps of the city, showing the position of the University, the M'Ewan Hall, Students' Union, the Royal Infirmary, and other buildings lent for the purposes of the meeting, and also by maps of the surrounding country. In addition to information as to the topography and history and literary associations of Edinburgh, there is an appendix written by Mr. George P. Boddie, M.B., giving some account of the medical institutions of Edinburgh. These comprise the University, the Royal Colleges of Physicians and Surgeons, the Extramural School, the Medical Colleges for Women, the Royal Infirmary and its convalescent house, the Edinburgh City Hospital, the Royal Hospital for Sick Children, the Royal Maternity and Simpson Memorial Hospital, the Victoria Hospital for Consumption, and other medical charities in Edinburgh, as well as brief notes of the medical societies.

On Monday evening the President-elect, Sir Grainger Stewart, entertained at dinner a large party of guests, including Professor Roddick, the retiring President, the Lord Provost of Edinburgh, the President of Council, and many members of that body, as well as numerous officers of the Sections and of the Local Executive. The proceedings were of a semi-private character, and it will be sufficient to say that they were most cordial throughout. The toast of "The Association" was given by Sir Grainger Stewart, and acknowledged by Dr. Roddick, who referred to the pleasure with which the Montreal Branch had received the Association last year. Dr. Saundby, President of Council, also replied, as did Lord Strathcona and Mount Royal, who was asked to associate himself with the toast in anticipation of his election as an honorary member of the Association on the following day. During the evening several songs were sung, Professor Crum-Brown told a Scotch story, and Dr. John Smith sang in his inimitable manner a song of his own composition entitled "The Clinical Examination." We are indebted to Dr. Smith for the following text of this amusing skit:

Air: "The Queen o' the Loudons" or "Last May a braw Wooer."

I was just aboot smoored wi' a kittlin cough,
Whilk at times was just fair suffocation,
An' the soonds o' my voice were sae wheezin'an' rough,
I was thocht for till be in an ill situation,
Till be in an ill situation.

I spiered at my doctor gif ever I'd mend,
When he said twas his recommendation
At the Royal Infirmary I suld attend,
There tae mak o' my state a strong representation,
Tae mak a strong representation.

They tell't me the place was brau buskit an' new
That for comfort it just was perfection,
An' that I'd be attended by some bonny doo,
Wha'd be there tae dae everything at my direction,
Dae everything at my direction.

Sae I cam to the yett in a cairt amang straw,
An' was gaun tae commence my narration;
But afore I could speak I was whuskit awa,
As ye'll see for the purposes of illustration,
The purposes of illustration.

The professor neist day cam an' gied me a look,
Whan at ance wi' profund admiration;
He clerkit me doon in a lang narrow book
As deservin' a clinical examination,
A clinical examination.

I was prood at what seemed sic attention an' care,
Till I fand tae my great consternation
That it meant I was fixed in a week less or mair,
For experiments on as a mode of probation,
Tae serve as a kind o' probation.

A curram o' callants wi' paper an' pens
Cam' in for their edification;
An' the doctor he speirs if ilk ane o' them kens
Whilken pairt o' my system's in maist perturbation,
Whilken pairt was in maist perturbation.

They surroonded my bed an' they pood doon the claes,
An' glowered at my haile conformation;
An' examined me a' frae the head till the taes,
In the first place tae see I had nae malformation.
To see I had nae malformation.

They measured my stammack an' knappit my skin,
An' spiered gin I'd ony purgation.
Was I nervish, or deaf, or rheumatic or blind,
An' whether my habits required reformation.
My habits required reformation.

Ane said I was puzhout wi' owrecome o' bile,
Some blethered o' degeneration;
Says a glib gabbit loon when I happened to smile.
"He's deleerit, it's plain, an' needs incarceration,
It's plain he needs incarceration."

My liver, my kidneys, my lungs an' my heart,
They disparaged without reservation;
'Deed they spak wi contempt aboot every pairt
That exists in my bodily organization.
My bodily organization.

Not bein' a female, it puzzled them sair
To divine the correct explanation;
O' some o' my symptoms they 'greed to be rare,
When they we're'na conneckit wi' utero-gestation.
Conneckit wi utero-gestation.

They houpit ma freens wad alloo gin I de'ed
A bit *post-mortem* examination.
For ma' thrapple in speerits, they were agreed,
Micht be useful to show as a class preparation;
Tae shew as a class preparation.

Ilk threipit my case tae his mind was quite clear,
Whilk to me was but sma consolation;
For they differed sae muckle it made it appear
I was ailin' o' everything in combination;
O' everything in combination.

Then I rose frae my bed, an' I said I was cured,
For I felt that a continuation
O' the scandulous treatment that I had endured
Wad hae brocht a man's days till a swift termination.
My days till a swift termination.

The doctors, the medicine, the nurses, the meat,
I maun aye haud in high commendation;
But I'd rather forgae them an' dee on my feet
Than submit till a clinical examination;
A clinical examination.

J. SMITH, M.D., LL.D.

THE liberality with which the University of Edinburgh placed at the disposal of the annual meeting of the Association its magnificent buildings has been highly appreciated by all who have taken part in the proceedings. Owing to the ample accommodation in the numerous lecture theatres and class rooms, it was found possible to assign to each one of the sixteen Sections a commodious meeting room within the University buildings. This has contributed very much to the convenience of members, and facilitated the work of the Sections. The M'Ewan Hall, a magnificent building erected by the generosity of Mr. M'Ewan for university ceremonials, has afforded an admirable place of assembly for the general meetings. Here Sir Grainger Stewart delivered his presidential address in the presence of the Lord Provost and many members of the Corporation of Edinburgh, as well as numerous distinguished citizens. The floor of the hall afforded ample sitting accommodation for the large number of persons present. The Edinburgh University Union most courteously placed at the disposal of the members of the Association during the annual meeting their handsome buildings which possess all the conveniences of a club. This graceful act was highly appreciated, and proved a great convenience to the many members who availed themselves of the facilities afforded.

THE exhibition in connection with the annual meeting is arranged in the Drill Hall, a spacious building opposite the Reception Room. The exhibition is large and representative, and contains a great number of stands displaying medical preparations or surgical instruments and appliances of interest to medical practitioners, as well as various forms of foods and beverages recommended for invalids and others. The exhibits of several firms of surgical instrument makers illustrate the high importance now attached to appliances for operating theatres, which are easily capable of being rendered aseptic. A very interesting exhibit is a model of the installation of the septic tank system of sewage treatment with automatic aërated filters, which is one of the chief novelties in the exhibition. We hope to publish in a future number a fuller account of the collection.

THE reception and *conversazione* given by the President and Local Committee in the M'Ewan Hall on the evening of Wednesday, July 27th, was very largely attended. If any fault was to be found with it, it was that it was rather too crowded. The fineness of the weather and the warmth of the night, together with the fact that the function did not commence until 9.30, tempted many to go who might otherwise have stayed at home. The sight presented in the magnificent hall at 10 o'clock, when the *conversazione* was at its height, was at once gay and impressive. The floor and the side seats were almost inconveniently crowded with guests, and even the galleries were occupied. During the evening a bright and varied programme of music was gone through, the string band and the splendid organ being heard to great advantage. It is hardly necessary to say that during the evening the Pipers of the Royal Scots discoursed at intervals. The quadrangle was tastefully lighted up and decorated, and as the very numerous company slowly distributed themselves into the galleries and the quadrangle, more space was left to move about in the centre of the hall.

SIR GRAINGER STEWART presided on Thursday at the breakfast given at Edinburgh University Union by the Edinburgh Medical Missionary Society, of which he is President. In his opening remarks he referred to the work which the Society is doing. Dr. F. Mackinnon of Damascus gave an account of his work carried out at the Royal Victoria Hospital, Damascus, founded by the Edinburgh Medical Mission. Mrs. Bishop, F.R.G.S., and Mr. A. Neve, F.R.C.S.E., of Kashmir, also addressed the meeting. A vote of thanks to the President, proposed by Dr. Heywood Smith, concluded the proceedings.

THE PRINCE OF WALES.

WE are glad to be in a position to state authoritatively that any fears which may have been felt as to the safe removal of his Royal Highness after his unfortunate accident are entirely groundless. The most complete and careful provisions have been made for safe and easy transport; every detail has been precisely arranged and practically tested on several occasions by a body of drilled men. It must be remembered that the Prince of Wales is no longer a young man, and in his present condition the dangers to health from the irksomeness of long confinement far outweigh the very remote danger of a possible mishap during his journey. During the past week the progress made by his Royal Highness has been most satisfactory. There have been no local complications, and the general health is well maintained. The extravasation into the joint has been completely absorbed, and the small detached portion of patella and the ruptured tendon are effectively controlled by apparatus. In addition to Sir Francis Laking, both Sir William Mac Cormac and Mr. Fripp will accompany the Prince. Mr. Fripp will continue in attendance at Cowes, while Sir William Mac Cormac will go down from town to see His Royal Highness as often as may seem desirable.

PLAGUE ON BOARD A P. & O. STEAMER.

WE are glad to be able to allay any fears that may have been aroused by the circulation of exaggerated reports as to the cases of plague that occurred on board the s.s. *Carthage* on her homeward voyage from Bombay. From inquiries made in the proper quarters, we are able to give the following authentic account of what actually took place. The P. and O. Company's steamer *Carthage* arrived in London on Monday, July 25th, and reported two cases of bubonic plague having occurred during the voyage home from Bombay. The *Carthage* left Bombay on July 2nd, taking on board a native crew. As is the practice, this crew was inspected by the port sanitary authority at the time of signing on, and no trace of illness was found. On July 6th a Lascar fireman complained of pain and swelling in the right groin, and stated that his indisposition dated from the second of the month, the day of sailing. On examination the right femoral glands were found swollen, and on the following day the glands in the left femoral region and in both axillæ became enlarged. This case was at once diagnosed by the ship's surgeon and isolated. The patient was placed in one of the ship's boats furnished with an awning and swung out over the lee quarter. Two natives were set apart as attendants. On arrival at Aden a steam disinfector was obtained, and the whole of the native crew removed from the forecastle to another part of the ship. All the crew's effects were disinfected, and the patient landed on an island reserved for infectious cases. The boat was cleaned out, disinfected with 1 in 20 carbolic acid, and repainted. All went well on board until July 14th, when another fireman was taken ill with exactly similar symptoms. He was isolated in the same manner, and the crew's effects again treated in the disinfector. On arrival at Gravesend the ship was boarded by the assistant port medical officer, Dr. Herbert Williams, who ordered the removal of the patient and his attendants to the port hospital at Denton. It will be seen from the above brief account that the most energetic measures were at once taken, and we congratulate Dr. Henry, the surgeon of the *Carthage*, on the able way in which he succeeded in arresting the progress of the disease amongst what must have been a very susceptible body of men. During the stay of the *Carthage* in dock the Asiatic crew will be kept on board, and will not be allowed to touch the cargo. As showing how completely the disease has failed to gain any foothold, it may be noted that although the ship harbours many rats, none have been found dead. The company's rat-catcher has, however, been ordered to cremate in the ship's furnaces the bodies of all the vermin he may catch on board at the time of his visit. The question of employing native crews in times of native epidemics has recently been warmly discussed in some circles, and the company has had considerable difficulties in connection with the matter. If anything is to be learned from a single case, we would suggest that the medical inspection of the crew on signing on at an infected port be made if possible more stringent than at present, and that in all cases a steam disinfector should be carried on board.

MEDICAL WAR NEWS.

GENERAL SHAFTER telegraphed to Washington last week that the sanitary condition of the invading army in Cuba is not alarming, although about 1,500 men are down with fever. Only 10 per cent. of these were cases of yellow fever, and these were of only slight severity. Telegraphing again on July 26th, General Shafter says: "The number of new fever cases on the 24th inst. was about 500. At least 450 men have returned to duty. The actual figures will be given hereafter." Notwithstanding the figures the situation seems somewhat improved. There has been one death. Medical officers say that the fever is of a mild type. The patients are ill from three days to a week, and then return to duty. The troops have, however, suffered greatly from the heat and from malaria. Owing to the large number of men on the sick list the members of the garrison at Santiago are doing guard duty day and night, and they are said to be breaking down under the excessive work. The Surgeon-General of the American Army has announced that there is not now a case of yellow fever in the United States. It is believed the danger is past, as the form of fever prevailing among the troops at Santiago is very mild, and is apparently under complete control. With regard to the wounded, the special correspondent of the *Daily Chronicle* says: "The observations of the surgeons thus far have shown that practically no fever follows a wound from the Mauser bullet. They attribute this absence of fever to the fact that every soldier was supplied with a 'first-aid' package, consisting of antiseptic dressings and simple instructions how to use them. Many of the men naturally threw their packages away, but more retained them, and as soon as a man was wounded the bandages were applied, and undoubtedly in many cases prevented blood poisoning. The brass-encased bullet used by the Spaniards makes a larger and more jagged wound, and is followed by more serious consequences. Practically there has been no gangrene. Abdominal wounds have proved far less fatal than was anticipated. The absence of shock has been a surprise to the surgeons. After a man has been hit with a Mauser bullet he rapidly recovers or as rapidly dies. The modern bullet and the more scientific treatment of gunshot wounds make war less horrible than it used to be."

THE PREVENTION OF TUBERCULOSIS.

THE following letter, calling the attention of the public to the formation of an Association for the Prevention of Consumption and other forms of Tuberculosis, appears in all the leading newspapers:

We desire to call attention to this Association, which has been formed with the object of preventing the spread of the most fatal disease to which mankind is subject. It has gradually become definitely known that tuberculous disease, of which pulmonary consumption or phthisis is an example, is not inherent in the constitution, but is communicated indirectly from pre-existing cases, and the principal methods by which it is spread have been identified. Tuberculous disease, which in one or other of its forms is responsible for at least 1 in 10 of the deaths from all causes, and, according to some calculations, for 1 in 6 of the deaths among adults, is therefore preventable.

For this the education of the public is needed in the methods of prevention and eradication, and the stimulation of individual effort in carrying them out. The objects of the Association are the dissemination of information, the arousing of public feeling as to the necessity for defensive measures, and the provision of sanatoria, which will be both preventive and curative, for the open-air treatment of consumption. In order to enlist the co-operation of large numbers the annual subscription for membership has been fixed at 5s., and the donation for life membership at £5 5s. All members will receive a full description of the measures which are proposed, and information as to the organisation of the Association. The office of the Association is at 20, Hanover Square, W., where members can now be at once enrolled.

We are permitted to state that the Prince of Wales takes a deep interest in the movement.

(Signed) SAMUEL WILKS, President of the Royal College of Physicians, London.
WILLIAM MAC CORMAC, President of the Royal College of Surgeons.
W. H. BROADBENT, M.D., F.R.S., Chairman of the Provisional Committee.
MALCOLM MORRIS, Hon. Treasurer.

All communications respecting the association should be addressed to StClair Thomson, M.D., Hon. Secretary.

THE LOCAL GOVERNMENT (IRELAND) BILL.

WE understand that Lord Ashbourne, the Lord Chancellor of Ireland, has declined on the part of the Government to accept the proposals of the Royal College of Physicians of Ireland, and of other public bodies, relative to the conferring on county councils in Ireland the power of appointing medical superintendent officers of health, and so the suggested amendment to the Bill was not moved in the House of Lords. The ground on which the Lord Chancellor based his refusal to accept the proposition was that the House of Lords had no power to create new officers or appointments under the Bill. It may be pointed out, however, that the proposal of the Royal College of Physicians of Ireland did not contemplate the creation of a new

officer. What the College desired was simply to give to the county councils the power, "if they think fit," of appointing a medical superintendent officer of health as provided in, and within the meaning of the eleventh section of the Public Health (Ireland) Act, 1878. The section runs thus:

> And every sanitary authority, whether urban or rural, shall appoint such other sanitary officers, including a medical superintendent officer of health, when deemed necessary, as the Local Government Board shall in each case direct, etc.

As the Local Government Bill now stands, the county councils have practically nothing whatever to do with sanitation, which is left as heretofore in the hands of the district councils and local bodies. This is not the law in England and Wales, as a reference to Sections XVII, XVIII, and XIX of the Local Government Act of 1888 will show. For twenty years medical public opinion in Ireland has been asking for medical superintendent officers of health. It is hard that so reasonable and necessary a request should be denied in this way when the occasion was so appropriate. Now all we can look forward to is the passing at an early date of an amending and completing Act, which will bestow upon the Irish county councils the powers of a sanitary authority, including the right to appoint county medical officers of health, "if they think fit." We use the permissive phrase almost against our better judgment.

POISONOUS MATCHES: DEPUTATION TO THE HOME SECRETARY.

It has seldom fallen to the lot of a Home Secretary to have so many important industrial and hygienic questions addressed to him as have come before Sir Matthew White Ridley. There is no doubt that several of the questions that have been asked of him in the House of Commons have been unnecessary, and there is just the danger during public agitation that they may be carried to the point of vexatiousness. The practice has, however, some redeeming points. In order to supply the information asked for by legislators, Sir Matthew White Ridley has been obliged to make himself conversant with some of our dangerous trades, and with the need of improving the conditions under which certain industries are conducted. It is not long since the Home Secretary received a deputation regarding plumbism in the Potteries. Last week he received another whose concern was lucifer match making and its dangers. Reform is in the air, sentiment rules, and so it happens that in this, as in all agitations, it is extremes that prevail. Mr. Burdett-Coutts, in introducing the deputation, stated that the object of its visit was to come to some understanding whereby the manufacture of matches might be so regulated that it would be impossible for phosphorus poisoning to occur; and while he had been requested to ask for a total abolition of yellow phosphorus, he quite recognised the industrial and social difficulty which such a step, if taken, would create. The Baroness Burdett-Coutts pleaded for female factory inspectors for the industry. To the deputation Sir Matthew White Ridley returned answers which showed that he was in sympathy with the main object sought to be attained, namely, the prevention of phosphorus poisoning, for the accomplishment of which a full inspection of the match factories of England had been made. He had secured the assistance of two experts—Dr. Thomas Oliver and Professor Thorpe — who were at the present time busily engaged following out their inquiry. Quoting from Dr. Oliver's report upon the match factories of of France, Sir Matthew White Ridley rightly stated that phosphorus necrosis was not a necessary consequence of match making; that in the largest State factories of France where necrosis used to be rife no case had occurred during the last two years, owing to improved methods of manufacture and ventilation, special medical selection of the workpeople, and repeated dental examinations. Within the last two weeks Messrs. Bryant and May have instituted a dental department in their works, which will certainly be useful. Of 1,701 persons engaged in the dangerous processes connected with match making, the cases of necrosis have been 1.07 per cent. The Home Secretary, believing that necrosis can be prevented, did not feel it his duty to recommend the abolition of yellow phosphorus, particularly, too, as there was some prospect of "strike anywhere" matches being made without it. The Paris Correspondent of the British Medical Journal of July 23rd confirms this statement, and alludes to the introduction of machinery to replace hand labour. In order to assist the Factory Department the Home Secretary stated that it was his intention to increase the staff of female inspectors and to add a medical inspector.

UNIVERSITY OF EDINBURGH: HONORARY DEGREES.

At the graduation ceremonial on Saturday, July 30th, the Senatus Academicus of the University of Edinburgh has indicated its intention of conferring the honorary degree of LL.D. on the following distinguished gentlemen, most of whom are to be in Edinburgh in connection with the meeting of the British Medical Association: Dr. Henry Bowditch, Professor of Physiology, Harvard University, U.S.A.; Sir William Broadbent, Bart., F.R.S.; Dr. Lauder Brunton, F.R.S.; Dr. E. Doyen, Paris; Dr. David Ferrier, F.R.S., Professor of Neurology, King's College, London; Dr. Joseph Forster, Professor of Hygiene, University of Strassburg, Germany; M. le Comte de Franqueville, Member of the Institute of France; Dr. Karl Gerhardt, Professor of Clinical Medicine, University of Berlin, Germany; Mr. Richard B. Haldane, Q.C., M.P.; Mr. Jonathan Hutchinson, F.R.S.; Dr. Theodor Kocher, Professor of Surgery, University of Berne, Switzerland; Dr. August Martin, Professor of Gynæcology, University of Berlin, Germany; Dr. Johann Mikulicz, Professor of Surgery, University of Breslau, Germany; Dr. Ottavio Morisani, Professor of Midwifery, University of Naples, Italy; Dr. William Osler, Professor of Medicine, University of Baltimore, U.S.A.; Dr. William Playfair, Professor of Obstetric Medicine, King's College, London; Dr. Roddick, Professor of Surgery, University of Montreal, Canada, President of British Medical Association, 1897; Dr. Siegmund Rosentein, Professor of Clinical Medicine, University of Leyden, Holland; Dr. Hermann Snellen, Professor of Ophthalmology, University of Utrecht, Holland; and Sir Richard Thorne, K.C.B., F.R.S., Chief Medical Officer, Local Government Board, London.

HOSPITAL REFORM ASSOCIATION.

A meeting of the Hospital Reform Association was held on Tuesday at 12.30 in the Music Room, University Buildings, Edinburgh. The chair was taken by Dr. Ward Cousins, who in a short speech explained the objects of the Hospital Reform Association. Dr. Garrett Horder read a paper on the Mode of Administration of Medical Relief in the Scottish Hospitals. He pointed out that the out-patient system was in most respects identical with that followed in England, but that in certain hospitals, as, for instance, the Edinburgh Royal Infirmary, the Chalmers Hospital, Edinburgh, and the Ayr County Hospital, advice and prescriptions were given and the patient left to obtain his drugs by purchase from any chemist. He observed that so far as he was aware there was only one provident dispensary in the whole of Scotland—the Edinburgh Provident Dispensary. A special and interesting feature of this dispensary was that the medical staff included specialists who treated patients in special departments for ophthalmology, gynæcology, etc. Dr. David Walsh (London) read a paper advocating representation of general practitioners on the managing committees of hospitals, so that they might bring influence to bear to prevent the continuance or the establishment of abuses

in the administration of medical relief. Dr. Campbell Black and Dr. Muir (Glasgow) spoke of the large amount of hospital abuse which existed in Glasgow, and gave details of instances which had come under their personal observations. Dr. Richardson Rice (Coventry) gave an account of the features of the system followed by the Coventry Provident Dispensary to which the medical profession in the locality took exception, and gave an interesting description of the Public Medical Service which had been established there. Dr. Cousins said that the object of the Hospital Reform Association was not to injure the hospitals, but rather to assist them in their work by correcting abuses in the management, and limiting the number of out-patients. Dr. Garrett Horder, in closing the discussion, pointed out what had been already done in London through the Metropolitan Hospital Sunday Fund Committee and the Prince of Wales's Hospital Fund, and expressed the view that the profession in Scotland might look with confidence to reform on similar lines if they would combine to bring their views before the public and others interested in the management of hospitals.

THE LATE FRONTIER CAMPAIGN.

WE have taken some pains to ascertain from a trustworthy source whether there were any solid foundations for the alleged breakdown in the medical arrangements in certain parts of the force on the frontier, and we are glad to be able to state that if such rumours had any basis in fact at all, they were mostly gross exaggerations. Our information is that there were no doubt at times friction and jealousy between sections of the regimental and staff officers, the former believing the latter to have secured through "Simla influence" more than their share of the honour and credit going. Not a few of the rumours originated from this rivalry. There was also the usual set of chronic "detractors," who growl and grumble at everything, with or without reason. That some allegations were true, and that mistakes did occur, it is impossible to deny; but the majority, including those relating to the medical arrangements, had little or no foundation in fact. Many of the stories which appeared in newspapers when brought back to camp were received with utter amazement. On what any statement to the effect that there was any general breakdown in the medical arrangements during the frontier campaign, if such were seriously made, could have been founded it is difficult to conjecture. There was no ground whatever for such a statement. It is quite true that the medical service was often overworked, and at Dargai it was heavily beset and its resources severely taxed by an unexpected number of casualties, but no one on the spot even ventured to hint that it failed. The country was most unsuitable for all the ordinary ambulance arrangements, and a considerable number of the dhoolie bearers were not "Kahars" at all, but half-starved coolies quite unfit for the work. No doubt some of the rumours of breakdown originated in the inefficient services of these dhoolie wallahs.

PROPOSED MEDICAL GRADUATES' COLLEGE AND HOSPITAL.

AT a meeting of medical men interested in the subject held at 22, Chenies Street on July 21st, Sir William Broadbent in the chair, a scheme for providing London with a central institution for post-graduate study was discussed. It is proposed to furnish and equip as laboratories and lecture rooms, certain premises in Chenies Street, which have been acquired for the existing Committee by Mr. Jonathan Hutchinson. These classes will be held, lectures and demonstrations given, and clinical work carried on with the aid of cases brought for the occasion. The latter branch of the proposed work would form, in fact, a consultation hospital. From letters read at the meeting it would appear that the general feeling of the profession is in favour of the scheme, but further opinions are asked for and suggestions invited. Emphasis was laid by some of the speakers on the danger of competing with the existing hospitals, but it was emphatically stated by many present that no such competition should be allowed; it was further decided to invite the metropolitan hospitals to send representatives to assist in carrying out the scheme. A provisional committee consisting of the following, with power to add to their number, has been appointed: Dr. Bowles, Sir William Broadbent, Mr. Thomas Bryant, Dr. Radcliffe Crocker, Sir Joseph Fayrer, Mr. Jonathan Hutchinson, Dr. Stephen Mackenzie, Mr. Malcolm Morris, Dr. C. Theodore Williams, with Mr. James Cantlie and Dr. Fletcher Little as Honorary Secretaries *pro tem.* At Thursday's meeting the names of Dr. StClair Thomson, Dr. Ord, and Professor Cruikshank were added to those given above.

THE CHELSEA PHYSIC GARDEN.

LAST week Mr. Grant Lawson, one of the Charity Commissioners, stated in reply to Mr. Whitmore, who represents Chelsea in the House of Commons, that the Society of Apothecaries as trustees of the Physic Garden at Chelsea have applied to the Charity Commissioners for the establishment of a scheme for the future administration of the trusts regulating the garden, which is now maintained at the charge of their corporate funds, and they desire to be relieved from the trusteeship. The Commissioners have received from the trustees of the London parochial charities an offer to undertake the trusteeship of the garden and to make a provision for its maintenance for the purposes of botanical study, which appears to be sufficient for that purpose. The Commissioners accordingly propose to publish a scheme giving general effect to these proposals.

THE ILL-TREATMENT OF CHILDREN.

THE *Report of the National Society for the Prevention of Cruelty to Children, 1897*, which is issued from the Central Office, 7, Harpur Street, W.C., sets forth that during the past year no fewer than 25,170 complaints have been received by the Society, leading to action in 18,779 cases, to prosecutions in 2,519, and that 96.55 per cent. of such prosecutions were successful. The number of children whose interests were involved in all these cases was 68,008. It seems a terrible indictment of our boasted modern civilisation that a society such as this should, at the end of the nineteenth century, be required to protect defenceless offspring from their parents. A tabular statement of the operations of the Society during the last nine years shows that there has been an aggregate of 89,805 authenticated cases of neglect and starvation, 25,435 of ill-treatment and assault, and 4,318 of immorality. The subject of infant insurance comes into prominence in the report, which shows that amongst children dealt with by the Society no fewer than 75,018 are known to have been insured for an aggregate sum of £386,467. In a picturesque sketch of an imaginary city focussing the Society's work it is pointed out that a large proportion of parents are what is called "thrifty" in the way of provision for funerals, though utterly improvident as regards the assistance of the doctor.

UNIVERSITY COLLEGE, DUNDEE.

WITH reference to a paragraph under this heading, which appeared in the BRITISH MEDICAL JOURNAL of July 23rd, Dr. D. Fraser Harris asks us to state that he has been appointed Lecturer on Physiology in the University of St. Andrews, not in University College, Dundee.

WE are asked to state that the Huxley Lecture, which is to be delivered at the Charing Cross Hospital Medical School on Monday, October 3rd, by Professor Virchow, will be given in English.

SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at Edinburgh, July 26th, 27th, 28th, and 29th.

FIRST GENERAL MEETING OF MEMBERS—TUESDAY, JULY 26TH.

THE first general meeting of the Association was held in the M'Ewan Hall, on Tuesday afternoon, July 26th, Dr. RODDICK, and afterwards Sir THOMAS GRAINGER STEWART, President of the Association, in the Chair.

The minutes of the last annual meeting were taken as read and confirmed.

The PRESIDENT said it now became his pleasing duty to resign the chair in favour of their distinguished fellow citizen, Sir Thomas Grainger Stewart. [Cheers.] Sir Thomas needed no introduction to the citizens of Edinburgh, or to the medical profession in this or any other country. His reputation was world-wide, both as a skilful physician and as an able and attractive teacher. In Canada his name was a household word, he having had to do, more or less directly, with the training of many eminent physicians and teachers in the Dominion to-day. Hence it was a source of great regret that Sir Grainger Stewart had been prevented from attending the meeting in Montreal last year. He begged to render his heartfelt thanks to the officials of the British Medical Association; he would mention especially Dr. Robert Saundby, the able President of the Council, and Mr. Francis Fowke, the indefatigable General Secretary—[cheers]—for their uniform kindness and for the able assistance they had rendered him from time to time during his term of office. To Mr. Fowke's accurate methods in carrying on the business of the Association the local committee in the city of Montreal owed very much of the success of the meeting. On Mr. Fowke's estimate of the number of members on this side of the Atlantic who were likely to attend all their estimates were based, and they turned out to be almost absolutely correct. In conclusion, he congratulated the Association on meeting in the beautiful city of Edinburgh, the modern Athens, and congratulated himself upon the opportunity afforded him of handing over his office to so distinguished a successor. [Cheers.]

Sir THOMAS GRAINGER STEWART then took the Presidential Chair.

Welcome to Edinburgh.—The PRESIDENT said his first duty was to call upon the Right Hon. the Lord Provost to welcome the Association to Edinburgh.

The LORD PROVOST: On behalf of the Municipality and inhabitants of Edinburgh I have great pleasure in offering a most cordial welcome to the British Medical Association, embracing as it does, representatives of the medical profession from different parts of the United Kingdom and the Colonies to the capital of Scotland. [Cheers.] I am sure that no one will for a moment think that I speak in a boasting spirit when I say that your Association could not have chosen for its deliberations a more suitable place than this ancient city, for apart from its beauty and its historical associations, we have here one of the most important medical schools in the world. It may interest you to know that the Town Council have a large share in the patronage of the University chairs, and when I tell you that at one time when it was the sole patron it elected such men as Christison, Alison, Playfair, Simpson, Bennett, and Laycock, I am sure you will admit that it has exercised its privilege with wisdom and discretion. [Cheers.] Our medical school still holds a prominent position, and that to a large extent is due to the men in whose hands is the teaching of the students at the present time. It is always invidious to single out names, but I am sure that his fellow labourers in the profession will understand me—nay, will join with me in saying that the inhabitants of Scotland received with the liveliest satisfaction the news that the General Medical Council had conferred the Blue Riband of the profession upon our townsman Sir William Turner. [Cheers.] I had recently the honour, on behalf of the corporation of Edinburgh, from this chair, of conferring the freedom of the city upon Lord Lister. [Cheers.] Although he is no longer a resident amongst us, he spent twenty-five of the best years of his life here. His antiseptic treatment of wounds and surgical operations forms a counterpart to Simpson's great discovery of chloroform as an anæsthetic. In selecting a President for your present meeting it is gratifying to know that you have fixed upon one who is so well known and so much respected as our friend Sir Thomas Grainger Stewart. [Cheers.] I trust that under his presidency your meetings will tend to the advancement of medical science, and that the interchange of thoughts and opinions amongst you will tend to the relief of suffering mankind. Yours, gentlemen, is a noble profession. I am afraid that in the latter part of the nineteenth century we are too apt to measure success from a monetary standpoint. To measure success by mere money is a wrong way in any profession. Your reward must be in the satisfaction that your lives are spent in the alleviation of human suffering. I again offer you a cordial welcome to our city, and let me also say that I do so especially to those visitors from other countries who are in Edinburgh at the present time. [Cheers.] I am sure that it is not only the desire of the municipality, but of every citizen in Edinburgh, to render your stay here as pleasant as we can make it. It is not for me to give advice to medical men, but let me say that I hope you will not devote so much of your time to your work that you will have to neglect the many social functions which have been prepared for you.

The PRESIDENT, in thanking his lordship for his words of welcome, congratulated him upon being the Lord Provost at the time that the M'Ewan Hall began its work, and said that it was pleasant to know that his lordship could make himself so well heard, and that every speech he had made in that hall had been as good and as successful as that to which they had just listened.

The PRESIDENT then moved:

That the warm thanks of the meeting be given to Dr. Roddick—the first Colonial President—for the able way in which he had performed the duties, and for the great interest he had taken in the affairs of the Association, both scientific and social, and that he be, and he is hereby elected a Vice-President for life.

[Cheers.] He considered that the resolution required no recommendation. It was interesting to think that last year was the first time that the Association met in the Colonies, and that the great Dominion of Canada was the first place of meeting. It was just forty years that week since first the Association ventured across the border into Scotland. They had now managed Canada, and might before long be seen going to Australia, to New Zealand, and to other distant parts of the British Empire. But meanwhile there was the solid fact that a very eminent Colonial surgeon had been elected a President of the first meeting in one of the distant Colonies. [Cheers.]

Mr. WHEELHOUSE seconded the motion. It had been, he said, his good fortune to go to Canada, and notwithstanding the receptions the members had met with all over the United Kingdom, they were never received with greater hospitality, and never shown greater entertainment, than they met with in the Dominion of Canada. [Cheers.] For that they owed a vote of thanks to Dr. Roddick, who worked day and night on behalf of the Association. There was no matter of any kind that he did not look after, and it was in great measure in consequence of his great personal hospitality and his keen interest in everything concerning the Association that all went so well, and that members came back feeling that never had the Association had a grander meeting than they had in Canada. [Cheers.] It was the first time they had ventured out of the boundaries of the United Kingdom, and he hoped it would not be the last. Speaking for himself, and he believed also for a great many others, he might say that the members of the Association in going to Canada enjoyed a treat which they could never have had unless they had gone far afield to seek it. If it should be his good fortune to live long enough to go to Australia, to New Zealand, or to Zululand—[laughter]—with the Association, he hoped he might be permitted to do so. [Laughter and cheers.]

The resolution was carried with acclamation.

Dr. RODDICK, in replying, assured the meeting that the tribute of the President and Mr. Wheelhouse was a slight exaggeration, but he thought those who were present would

bear him out when he said that the profession in Canada had tried at any rate to do their best to entertain the members of the British Medical Association when they did dare to leave the British islands for the first time. [Cheers.] Certainly they felt in Canada very proud indeed that Canada was selected for the place of meeting, and that a Canadian should have been selected for the President on that occasion. He did not speak personally, because he felt that his election as President was not intended so much as a personal honour, but more as a tribute to the entire profession in the Dominion of Canada. The President and Mr. Wheelhouse had jokingly referred to Canada, and he mentioned that there were two or three invitations open for other visits. There was the capital itself, Ottawa, Winnipeg, and Victoria in British Columbia, each ready to receive the Association with open arms. It was a matter of only a few miles further to get to those places. [Laughter.] He hoped it would not be long before the Association would repeat their visit. In conclusion, he said he felt very deeply the very kind way in which the resolution had been proposed, seconded, and carried, and he should return to Canada and make known how kindly Englishmen had spoken of their brethren in the Dominion.

The PRESIDENT OF COUNCIL (Dr. Robert Saundby) suggested that before the report was taken as a whole, the paragraph relating to the honorary members should be dealt with, because that was a matter upon which there could be no possible difference of opinion. He therefore moved the election of the Right Hon. the Earl of Aberdeen, K.T. (the Governor-General of Canada), Lord Strathcona and Mount Royal (the High Commissioner for Canada), and Professor Francesco Durante (Professor of Surgery in the University of Naples) as honorary members of the Association. He said that when the Association met in Canada no one could have shown himself more interested in the work of the meeting than Lord Aberdeen. He left his country house to go to Montreal, and stayed there during the whole of the meeting. He attended at every general meeting, and was most genial and kind, and threw over all the proceedings the ægis of his dignity as Governor-General. Lord Strathcona was good enough to undertake a journey from England to Canada in order to be present in Montreal to receive the Association. He extended splendid hospitality to the Association, and did all in his power to promote the success of the meeting. With regard to Professor Durante, he was a prominent Italian surgeon, and during the meeting of the International Medical Congress in Rome took the most prominent part not only in showing all that was best in Italian surgery, but also in welcoming English and Scottish surgeons to Rome, and doing his utmost for them.

Mr. MACNAMARA seconded the resolution. The list of honorary members, he said, was very limited, because it was meant to be a distinguished honour. It was as high a honour as the Association could bestow on those gentlemen who from time to time came forward and added to the success of the annual meetings.

Each proposal was put separately, and the resolutions were carried with acclamation.

In presenting the diploma of honorary membership to Lord Strathcona and Mount Royal, who was present at the meeting, the PRESIDENT welcomed his lordship very cordially into the ranks of the Association. The representation of the Dominion of Canada in London had been curiously linked to the profession, for Sir Charles Tupper was a graduate in medicine of the University of Edinburgh, and had practised when young, though he had given up medicine to become a politician. The members now had the honour of seeing one who had been a politician, but was now going to become a doctor—[laughter]—of seeing the man who was now the master of one of the most historic places in Scotland, the man who ruled over the dominion in which the Macdonalds suffered so very hardly in old times. They knew that he would be able to defend himself most effectually against any Campbell or anybody else—[laughter]—and they knew that he would be a splendid ruler of the district, pouring out the wealth of kind helpfulness which he possessed in the district which was now to be his summer home.

Lord STRATHCONA AND MOUNT ROYAL, who was very warmly received, said that, in accepting the scroll of membership, he did so in a spirit of great humility, being only too conscious how little he merited the honour conferred upon him by a great profession. But, at the same time, it was a very great gratification to him, and it was with gratitude that he accepted the distinguished honour. He knew full well that it was not, and could not be, intended for the individual alone, but for the whole of that great country, Canada; he would not speak of it or of the other outlying parts of the Empire as Colonies any longer, but would call them constituent parts of the Empire. [Cheers.] Without them to-day we could not have that Empire in which they all rejoiced, and which he was sure they would all stand shoulder to shoulder in maintaining as one. [Cheers.] It was an additional honour to be associated as an honorary member with the Governor-General of Canada, one who had well acquitted himself in that high position, and one who had never forgotten the dignity that was owing to his Sovereign. He trusted that now he had been admitted as a member he should do nothing that would reflect upon the honour of the medical profession, which he had never hesitated to proclaim as one of the noblest of all the professions. He thanked the members most cordially for the honour conferred upon him, and declared that the distinction was one which he appreciated as much as anything that he had received during his life. [Cheers.]

REPORT OF COUNCIL.

Dr. SAUNDBY (the President of Council) then moved:

That the report of the Council for the past twelve months, together with the financial statement for the year ending December 31st, 1897, be received and adopted.

The report had been published in the BRITISH MEDICAL JOURNAL, and was in the hands of the members, and they would see that the last year had been a prosperous one for the Association. He was glad to say that the years had now for some time past been prosperous. It was somewhat interesting to recall that the last meeting of the Association in Edinburgh seemed to be the end of the lean years, and that for the last twenty-three years the Association had been always able to put by some money, after a considerable expenditure with no grudging hand upon all sorts of objects for the benefit of the medical profession. It would be seen that the income last year was larger than ever, that the total number of members was larger than ever, and that the total accession of members during the last twelve months had exceeded anything which had ever been known before in the history of the Association. Furthermore, when the Association met in Edinburgh in 1875 it had only just got out of debt. The Council was this year able to announce the purchase of the freehold of the large premises in the Strand and the adjoining houses, so that the Association now possessed in the heart of London, in the very best part for its purpose, an admirable freehold site and large buildings, which could be adapted, as time went on, to every purpose that the Association might look forward to need. That had been done by means of the savings of the last twenty-three years. It was true that the whole sum was not paid, but four-sevenths of it was paid, and the Council had no doubt at all that in the course of the next few years they would be able to pay off by easy instalments the remainder of the purchase money. The Association had thus been given a permanent home. The Association had only possessed a short lease, and the Council had for years been compelled to look to the fact that when that lease came to an end it would have been necessary to make other arrangements. Only recently it had been distinctly ascertained that a new lease could not be obtained, and that unless the property was purchased it would be sold to somebody else. It was that which compelled the Council to face the question whether they should purchase the present property or look elsewhere, and on the whole they were satisfied that they could not do better than purchase the property which the Association had occupied for some eleven years. The Council was practically unanimous as to the advisability of purchasing, and it seemed to him that there was practical unanimity in the Association. The Council was of course open to criticism, and most rightly and properly open to criticism, but they had only received one letter which had expressed any dissatisfaction at the step taken in purchasing that property. When it was remembered that there were 17,000 members of the Association, it

was a somewhat marvellous thing that only one person objected to such a step. [Cheers]. Dr. Saundby then referred to the death of Mr. Ernest Hart. Mr. Hart had been for so many years the Editor of the British Medical Journal that his dissociation from the head of the Journal could be nothing else but a severe blow to all those who had to do with the management of the Association. It was somewhat difficult to realise how the Journal would go on without Mr. Ernest Hart, had it not been that during the last few years Mr. Ernest Hart's health had been so indifferent that he had been compelled on many occasions to take prolonged holidays, and so they had been as it were weaned, and had learnt to get along, at any rate for some months, without him. Therefore it seemed they might perhaps get along when he was removed altogether. Mr. Hart's death had occurred only in January last, only seven months ago, but he hoped the members would agree that the Journal had not shown any falling-off during those seven months—[cheers]—and that in Dr. Dawson Williams—[cheers]—they had an Editor upon whose wisdom and prudence and ability they could rely, and in whose hands they might feel sure the Journal would remain an efficient organ of the Association, a powerful organ of public opinion, able to be what it had been for so many years, the leading medical journal in these islands. [Cheers.] Votes of condolence, Dr. Saundby continued, had been passed with the family of Mr. Ernest Hart, and in addition the Council had decided to institute an additional annual scholarship to his memory. [Cheers.] The Council had gradually increased the number of its research scholarships. A few years ago there were only two; then three, the reason of the addition being that the Council were so satisfied that the scholarships did good. The Council had always had very much at heart the endowment of research. It had been felt that any surplus income could not be better applied than to the endowment of research, to helping those who were working at subjects which did not bring in any money, to help them to work for the common good of the profession. It had been felt distinctly that money devoted to research scholarship was money well spent. There had been some difference of opinion as to the grants, but there had been complete unanimity, even on the part of strong opponents of grants, in favour of scholarships. Therefore, he thought the proposal to institute a fourth scholarship was one which should have the warm support and approval of the members. The fact that it was given the name of the Ernest Hart Memorial Scholarship in Preventive Medicine enabled the Association to perpetuate the memory of Mr. Ernest Hart in connection with work in which he was particularly interested, while at the same time something more was done for the encouragement of research to help young men who were beginning life, and who were able to do such work, by guaranteeing them a sufficient subsistence during those early years of research. Passing on to the question of medical defence, Dr. Saundby said that the subject had been before the Association a good many years, and a good deal of discussion had taken place on the matter. He thought there was a very general agreement up to a certain point. Speaking for himself, and for many who did not go the length of the more ardent supporters of the proposals, they were all willing to go to the length of saying that if the Association could undertake the work of medical defence it would be a very convenient thing. That had been the feeling of a great number of men. There were few, he thought, who would say that it was a bad thing for the Association to take up medical defence. Everybody was willing to go so far, that if the practical difficulties in the way of it were not too great, it would be a good thing for the Association to take it up. The practical difficulties were very great. The Council was willing to go to a certain length, but those in favour of the proposal thought it was not going far enough, and rejected the proposals put forward by the Council. In order to test the feeling of the whole Association, the Council were asked last year to circulate a postcard, and the result had been exceedingly disappointing to everybody concerned. It was very disappointing to the Council, and he should think it was very disappointing to those who pressed for the method of testing the opinion of the members. The total number of persons who took the trouble to reply only amounted to about a third of the whole Association, and out of that number no doubt a majority was in favour of medical defence. But as medical defence would involve very considerable changes in the organisation of the Association, the Council felt that they could not embark upon such a scheme with such a small amount of support, and therefore recommended the Association to allow the question to be put on one side, at any rate until something like a better or stronger feeling in favour of it was shown by a larger proportion of members. [Cheers.] In the matter of the Army Medical Department, the members of the Association had to congratulate themselves on a very great success. [Cheers.] It was a matter which had interested the Association for many years past, and latterly, under the management of a very active Committee, which had a very able and energetic Secretary (Dr. Gordon, of Exeter), to whom the best thanks of the members were due—[cheers]—a memorial was prepared and laid before the Secretary of State for War, which resulted in a deputation being received by Lord Lansdowne, who promised to do all that was possible to meet their wishes. The warrant since published had given practically what was asked for by the deputation. With reference to some other matters referred to in the report, Dr. Saundby asked the patience of the members. When it was a question of influencing public opinion, progress was necessarily slow, and it took much time to bring such matters to a successful issue. In conclusion, he said that he regretted to see such a long list of members who had passed away, but pointed out that in so large an Association the obituary list must each year of necessity be long. Yet none the less did they deplore the loss of those who had passed away.

The Treasurer (Dr. Parsons), in seconding the motion, said that the question of the purchase of the premises in London had been referred in the first instance to the Premises Committee, then to the Journal and Finance Committee, and afterwards to the Council. All these bodies were unanimously of opinion that it would be the best possible investment. The price asked by the trustees of the estate was £81,000, and the thanks of the members were due to the President of the Council for having induced the trustees to accept £79,000. The Association now paid a rental of £2,200 and the premises were their own, instead of—if a short lease had been granted—paying £2,400 for rent alone. If the Association maintained its present rate of financial progress and prosperity, he thought that in ten years' time, with economy, the whole of the mortgage would be paid off and the premises would be free.

Dr. Brown (Bacup) protested against the Council determining to establish an Ernest Hart Memorial Scholarship without consulting the members of the Association. He did not oppose the proposal, having known Mr. Hart for over twenty years and highly esteeming him, but thought the Association ought to be consulted.

The President of Council said that the Council had no idea of doing anything without the sanction of the annual meeting. The amount of the proposed scholarship would be £200 a year.

Dr. James Myrtle complained of the way in which the reply postcard with reference to medical defence had been dealt with by the Council. At the meeting in London it had been carried unanimously that a postcard should be sent to ascertain the wishes of the members. Not one single word was said in London concerning a low 5s. limit or a high 10s. limit for medical defence. He thought the Council had done their best to spoil the result. In all probability the 50 per cent. of non-replies was due not to the members taking no account of the question, but rather to the extraordinary action of the Council in sending out the postcard with that question on it, when by four previous meetings—in London in 1895, at the special meeting in Birmingham in 1896, confirmed at Carlisle, and reconfirmed again last year—it had been decided that the defence of members of the Association was a necessary thing for the Association to undertake. It was said that 11 Branches were in favour of medical defence, and 13 against; the total number of voters in the 11 Branches was 456, as against 447 in the 13 Branches. The President of Council grumbled because there was not a full total vote. Was there ever an election fought in this country of any kind whatever where cent. per cent. voted? In Parliamentary elections 70 per cent. was a huge percentage

at the poll. He also complained that the Council had included all the "doubtfuls" in the number of those opposed to medical defence. He contended that he would be equally justified in including them in the number of those who were in favour of it. He moved the deletion of the paragraph dealing with medical defence and the substitution of the following:

That the question of undertaking medical defence by the British Medical Association having been decided by a majority in favour at the annual general meeting held in London (1895), Carlisle (1896), and London (1897), the Council undertakes to reconsider this report with a view of bringing this great question to a satisfactory issue.

Mr. JACKSON (Plymouth) in seconding the amendment, said that a great point was made at the beginning of the agitation of the fact that a great number of the Branches were indifferent, and that a great number was decidedly against it. He believed that arose from the fact that the Branches were not properly asked by the secretaries to decide. When a Branch meeting was called only a few members attended, and it often happened that they were those who were against medical defence, so that a fair opinion of the Branch was not elicited. Dr. Gordon had taken a great deal of trouble and had sent out cards, with the result that 75 per cent. of the members of the South-Western Branch were found to be in favour of medical defence. He believed that would have been the case in the other Branches if the members had been approached in the same way. What was the need, with the enormous sum of money the Association had at its disposal, of making the members pay an additional subscription? He did not consider it was at all necessary. If the Association was to do any good, it was certain they must bind themselves together in order not to be squashed by various other Associations. With regard to the Coventry Dispensary system, the men who took those appointments were entirely under the control of the lay Committee. He was glad to hear that the Council had decided that that was wrong, and he hoped some steps would be taken. He would go so far as to say that the men who carried on the work of that dispensary should at any rate not be allowed to remain members of the Association. If they could establish the principle that they should take up medical defence, that would be a great point. No doubt medical men in some places were not interested in the subject, because they were not personally affected. Those who were interested in the subject would be found to be in favour of medical defence. As to the numbers of those voting, the General Medical Council were not elected by more than 50 per cent. of the profession—at any rate, a great number did not vote, but they were elected all the same.

Mr. VICTOR HORSLEY said he had understood the President of the Council to say that one-third of the Association only had recorded their opinion on the postcards, but that was not correct, because the matter was one which concerned the United Kingdom alone; it was agreed that it should not concern the colonies.

The PRESIDENT OF COUNCIL pointed out that a resolution had been passed at the last annual meeting that postcards should also be sent to the colonies.

Mr. VICTOR HORSLEY said that that had been done upon his motion, but it was only in order to keep themselves within the constitution of the Association. It had been decided at all the meetings mentioned that when the scheme should be carried out it should be only for the United Kingdom. What were the returns from the United Kingdom? Seven thousand men voted, out of which number 4,955 were in favour of medical defence, something like 60 per cent. of those whom the matter intimately concerned. That was a sufficiently strong argument for the Association to take it up. [Hear, hear.] It was true that those 7,000 men only represented something more than half the members in the United Kingdom, but surely sufficient had been said to show that that was quite as many as they could expect to vote. To his mind that result was not in the least degree disappointing. The profession had yet to be thoroughly aroused on that and other great matters. If the Council had come to the decision that it was unwise for the Association to take up medical defence, they ought to have proposed an alternative. He would suggest that they ought to have proposed subsidising those bodies which had experience in the work—such as the Medical Defence Union with which he had recently been associated. If that had been done he should have said, "Well, perhaps that is a more or less wise proposal at the present time." But for the Council to come forward at this meeting and say, "We are not going to do anything at all," was not quite worthy of them, especially after the numerous meetings and discussions which had taken place. He strongly supported Dr. Myrtle's amendment.

Dr. JOHN HADDON said he was not in favour of medical defence being taken up by the Association. It seemed to him that the intention of the founders was very different; the Association was founded for the advancement of medical science, and all the money was to be spent with that object. Dr. Saundby had said that he had only received one letter in opposition to the "speculation" which they had gone into. Perhaps that letter was from him (Dr. Haddon). He was accustomed to be in a minority, even in a minority of one. [Laughter.] He wrote the letter because he believed the object of the Association was the advancement of medical science. The Association should live from hand to mouth and spend its money for the object he had mentioned, and let their successors attend to themselves. Just as money should not be spent in buying premises, so it should not be spent in medical defence.

Dr. WARD COUSINS said there were great legal difficulties in the way of subsidising. He would recommend every member interested in the subject to join the most excellent Medical Defence Union to which Mr. Horsley had alluded. It was perfectly clear from the investigation which had been carried on year after year that the Association was not agreed. There was a large number of men in favour of it, but a still larger number who were opposed to it. ["Question."] He was not speaking of the present meeting, but of the Association generally. The introduction of medical defence would require very great changes and very great additional expenditure, and he recommended that the matter should be dropped entirely for the present.

Dr. WOODCOCK said he was one of the first of those in the Lancashire and Cheshire Branch who was engaged in developing the scheme of medical defence. But from his experience since he had been a member of Council, he was assured that it could not be done with any amount of safety at the present time. He had come to the conclusion that there was a very great deal of indifference with regard to the question, and so many men who were strongly opposed to it that an attempt to introduce the scheme now would be a very serious matter indeed, and might possibly be disastrous in its results. To undertake it in the present aspect of affairs would be simply to invite failure, and the Association could not afford to fail. There were many members of the Council who were as strongly convinced as he was that it would be a desirable thing if it could be done with safety. But there was strong opposition. The Dublin Branch was almost unanimous in opposing it. Even an able man like Dr. Moore had said: "If you adopt medical defence at this time, you may depend upon it the whole of the Dublin Branch will separate itself from the Association." Mr. Horsley said the Association wanted rousing on the question.

Mr. GARRETT HORDER thought Dr. Woodcock had made a great mistake—great men did make mistakes—in the opinion he had expressed. He was strongly of opinion that the majority of the members in general meeting assembled had given such an expression of opinion in favour of medical defence that the Council should be encouraged and not discouraged.

Dr. BRASSEY BRIERLEY considered the action of the Council was very weak. When in the Lancashire and Cheshire Branch they attempted some kind of reform, they were told they would blast the reputation of the Branch, but since that time it had increased by magnificent strides.

Dr. MUIR (Glasgow) said that at the West of Scotland Branch, out of a membership of 390, as well as 250 unattached members, only 30 persons attended a special meeting called for the purpose of considering the question of medical defence. That Branch was reported to be against any scheme, but the majority was only two or three.

The PRESIDENT OF COUNCIL said that the Council's decision had been come to, not because they did not agree generally with the principle of medical defence, but because of the practical difficulties of doing it. Dr. Myrtle seemed to assume that they could hand over £2,000 or £3,000 out of their present income for medical defence. ["No."] That was his view.

As Dr. Myrtle objected to any additional subscription, he supposed he thought the present subscription was sufficient. It was not sufficient. The present income of the Association would not allow them to take up the question, and therefore they were at once confronted with the difficulty that they would have to put on an additional subscription. Before he had allowed the paragraph to appear in the report he had asked every member of the Council to vote, and every member held up his hand in favour of the paragraph. It was a large Council meeting, composed of men sent up from the principal Branches of the Association—men who were responsible to their constituents, who could turn them out if they wished.

The amendment was then put and negatived, 89 voting in its favour and 101 against.

Dr. Muir (Glasgow) said that at a meeting of the Scottish Poor-Law Medical Officers' Association he was deputed to convey their thanks to the Council of the British Medical Association for the endeavour they had made to carry through the Bill which was introduced into Parliament to remedy the grievance from which medical officers in Scotland suffered. He wished further to say that in Scotland they felt that they had not the same weight as bodies in London in influencing Parliament, and he was asked to say that if the Council of the Association would take the initiative in London, where they could push Parliamentary matters much more effectively than could be done in Scotland, the members in Scotland would do everything in their power to carry the matter to a successful issue.

Dr. Brassey Brierley criticised the balance sheet, and asked for a more detailed account of the expenditure.

The report of the Council was then put and unanimously adopted.

Constitution Committee.

The President of Council moved that the report of the Constitution Committee be received and adopted. The result of the Committee's two years' labours had been that on the whole they could not come to any such agreement as would justify them in bringing forward at the present time any scheme. Therefore they had withdrawn their proposals, and the matter stood over.

Dr. Phelps seconded the motion, which was agreed to.

Parliamentary Bills Committee.

The President of Council moved the adoption of the report.

Mr. Macnamara seconded the motion.

Dr. Brassey Brierley said that considerable work had been done by different members of the Parliamentary Bills Committee with reference to the amendment of the Medical Acts. A Subcommittee had been working very hard for some time, and had drafted a Bill which had not been placed before the annual meeting, and now they might wait for another year before anything was done with regard to amending the Medical Acts, without which the medical profession could never be put on a sound basis.

The President of Council said that the draft Bill had only come before the Parliamentary Bills Committee for the first time on July 5th. The Committee felt it was quite unable to go through and discuss such a complicated series of questions as those raised by such a Bill at once and submit it to the Council, and consequently it did not come before the Council at all.

Dr. Brassey Brierley said he accepted the explanation.

The resolution was carried unanimously.

Reports of Various Committees.

The reports of the Scientific Grants Committee, the Inebriates Legislation Committee, the Therapeutic Committee, the Medical Charities Committee, the Railway Servants' and Mariners' Eyesight Committee, and the Anæsthetics Committee were adopted.

General Practitioners and Ethical Committee.

Dr. Ward Cousins moved the adoption of the report, with the following addition:

Resolved: That after a prolonged and careful inquiry the Council of the British Medical Association is of opinion that the members of the Coventry Provident Dispensary are continuing a system of medical relief which is incompatible with the best interests of the profession and hurtful to their professional brethren practising in the neighbourhood.

The questions raised in this matter were not confined to Coventry, but unfortunately extended over a very wide area. The Association could do nothing but express its moral disapprobation. The wage limit and the appropriation of the moneys of these associations for the benefit of the medical staff were the two great crying questions. Also, the medical men should have a voice in the management. If the Royal College of Surgeons of England, the Royal College of Physicians, and the General Medical Council were unable to deal with the question except by expressing moral disapprobation, it was clear that the British Medical Association could do no more.

Dr. Brown (Bacup) seconded the motion, which was agreed to.

The meeting then adjourned.

Adjourned General Meeting.

President's Address.

The adjourned general meeting was held in the M'Ewan Hall in the evening, the magnificent building being crowded from the floor to the topmost gallery. The President, on taking his seat, met with an enthusiastic reception, which was renewed on his rising to deliver his Presidential Address, which is published at page 281.

Dr. Roddick (Montreal), in moving a cordial vote of thanks to the President for his very interesting and able address, said that it was just the sort of address which they had expected Sir Thomas Grainger Stewart to deliver on such an occasion. It was able, comprehensive, thoroughly and readily understood, and intended to be understood, not only by the profession, but by the lay members of the community who might have had an opportunity of listening to him. There were one or two points he (Dr. Roddick) would like to deal with did time permit, and he certainly felt, when the President touched on the subject of legislation, that he was touching on a tender point to a Canadian. In Canada in past years, especially in Montreal, there had been more trouble with small-pox and vaccination than with any other preventable disease. A remedy was found, and he recommended it as one which might be tried in this country, namely, inoculating the opponents of vaccination with small-pox. [Laughter.] That occurred in Montreal. For many years two or three French Canadians insisted on constantly carrying on a crusade throughout the city and preventing their fellow-countrymen from becoming vaccinated. A case of small-pox occurred in 1885 which got into the French quarters, and made such havoc that in a population of about 180,000, between 3,000 and 4,000 French Canadians became victims, and only some 50 or 60 of the English people who had been vaccinated. No legislation had been required ever since. [Laughter.] They learnt a lesson then which they had never forgotten, and now there was no further trouble in vaccinating or revaccinating their French Canadian fellow-citizens. With regard to the part of the President's address dealing with public health, Dr. Roddick thought it was time this country had a Minister of Public Health, because it was the only way to regulate the question of preventable disease. If England did not hurry he believed Canada would have a Minister of Health first. Now it was entirely under the control of the Minister of Agriculture, a great personal friend of his own. He was an admirable farmer, and there was no better authority on questions of agriculture; but when it came to a question of public health, a question of quarantine, or a question of bacteriology, he knew as much about it as a donkey knew about his grandfather [laughter]—and if his friend the honorable member were present, he should make the same remark.

Dr. Pavy seconded the motion. He said that those who knew Sir Thomas Grainger Stewart must have come that evening prepared to go away gratified with what he would say to them, and they had not been disappointed. With regard to the vaccination question, he (Dr. Pavy) thought that it was a great pity there was not greater firmness of mind amongst English politicians not to yield to the unbalanced minds of faddists upon the point. [Hear, hear.] There would be great difficulties if the freedom of the individual was to outweigh the benefit of the community.

The resolution was carried with acclamation.

ARMY MEDICAL REFORM.

Mr. MACNAMARA moved the following resolution:—

That the thanks of the General Meeting of the British Medical Association be given to Dr. W. Gordon, the Chairman of the Subcommittee on Army Medical Reform, for the assiduous attention he has given to the work of the Committee, and especially for drafting the comprehensive and convincing report embodying the history of the whole question and the reforms necessary, which had a great influence in securing the concessions which have been granted to the Army Medical Service, contained in Her Majesty's Warrant of the 23rd of June, 1898.

He said that some fifteen years ago some of them, impelled by a desire to do what they could to promote the best interests of the British soldier, determined if possible to relieve the Army Medical Service from the incubus under which it laboured at that time. They were informed by those who well understood the service that a considerable number of the best men declined to enter it under existing conditions. Year after year they fought the War Office from one point to another, gaining little by little, but the War Office seemed determined not to recognise that army medical officers were *bonâ-fide* officers of the army. The late Mr. Ernest Hart, who did yeoman service for the army and navy, hoped when Sir H. Campbell-Bannerman came into office that he would try to alter the condition of things. At last the Government could not get men to come into the service at all, and at that particular juncture Dr. Gordon—a name associated with one of the finest characters in the British army, the hero of Khartoum—came to the work with unselfish motives, and with a desire to do the best for the army. He drew up a report, which stated that the medical officers of the army were not only entitled to receive all the ranks which the other officers of the army received, but were entitled to more by reason of the work they did. [Cheers.] That was followed by a warrant, which gave all that the British Medical Association had so long fought for. [Cheers.] He believed now that the Army Medical Service offered as fine a career to young medical men as any scientific corps in the Empire. [Cheers.] He hoped that the younger members educated at the Universities would take advantage of a most honourable career, and one in which if they would only work success was certain.

Dr. FARQUHARSON said he had worked a good deal at the army medical question and knew perfectly well what good work Dr. Gordon had done in forming public opinion, in informing Lord Lansdowne, and in enabling him to overcome the stolid obstruction of the War Office which had prevented them so long from coming to the full fruition of their hopes. Dr. Gordon's work was recognised by Lord Lansdowne, and he was quite sure that he had a great influence upon his mind, and instructed him in those matters of detail which enabled him eventually to come to the conclusion which had placed the question on a thoroughly sound and satisfactory basis. He hoped with Mr. Macnamara that the medical schools would now take advantage of the improved conditions of the Army Medical Service and would bring about once more a full, complete, and successful flow of candidates to occupy positions which could be described as honourable and of the highest importance to the public service. [Cheers.]

The resolution was carried unanimously.

The PRESIDENT, addressing Dr. Gordon, said that in the name of the British Medical Association he had the honour to congratulate him on the good work he had done, and to convey to him the expression of thanks which he had just listened to from the mover and seconder of the resolution.

Dr. GORDON thanked the members for the vote of thanks and the meeting adjourned.

SECOND GENERAL MEETING.

THE second general meeting of members was held in the M'Ewan Hall on Wednesday last, Sir THOMAS GRAINGER STEWART, President of the Association, in the chair.

ELECTION OF COUNCIL.

The PRESIDENT OF COUNCIL reported the election of the representatives of the Branches for 1898-1899, and called attention to the following changes which had taken place: Dr. I'Anson succeeded Dr. John Campbell as representative of the Border Counties Branch; Professor Henry Corby succeeded Dr. Sandford as representative of the Cork and South of Ireland Branch; Dr. James Craig was an additional representative of the Dublin Branch; Dr. Brassey Brierley succeeded Dr. Glascott as representative of the Lancashire and Cheshire Branch; and Dr. P. Maury Deas succeeded Dr. Gordon as representative of the South-Western Branch.

ANNUAL MEETING, 1899.

The PRESIDENT OF COUNCIL announced that at a meeting of the Council held that morning it had been agreed:

That the invitation to hold the annual meeting of the Association at Portsmouth in the year 1899 be accepted with thanks, and that Dr. Ward Cousins be appointed President-elect.

The Council recommended the members to accept that invitation, and he therefore moved the resolution. There was something appropriate in going from one end of the kingdom to the other—from Edinburgh down to the extreme south—and it was a fact that some years had elapsed since the Association had met in the South. They also knew that Dr. Ward Cousins had been a very active member of the Association. They could not have a President who had done more to earn his position than Dr. Ward Cousins.

Dr. DRUMMOND seconded the motion, which was carried unanimously.

The PRESIDENT, addressing Dr. Cousins, said he had great pleasure in informing him that Portsmouth was the place selected for next year's meeting, and congratulated him upon his appointment as President-elect.

Dr. WARD COUSINS thanked the meeting most heartily in the name of his colleagues at Portsmouth for the honour they had done them in accepting their invitation to hold the next annual meeting in their town. During all the past sixty-six years for which the British Medical Association had existed, Portsmouth had never had the honour of entertaining it, and he thought they would agree with him that it was time they had that honour. Portsmouth was a great naval centre, and a great army centre, and he need scarcely remind them that the medical officers of the army and the medical officers of the navy were warm friends of the British Medical Association, and that the British Medical Association was equally a warm friend, and had done its utmost for the medical officers of both services. Of course at Portsmouth they would not be able to entertain the members of the Association in the way they were being entertained in the splendid and ancient city of Edinburgh—the city of learning, literature, and art; but they would show them something of the iron walls of old England which helped to sustain the honour and glory of this country throughout the world. He thought they could do something more in addition to the scientific work; they could help them to listen to the strains of some of the most brilliant music from the bands of the army and navy in Portmouth. When they were tired of music, they could offer them a dip in the warm sea off Spithead. Portsmouth itself had something of commercial enterprise in it, but still after all their manufactures were very limited indeed. Portsmouth would most cordially welcome the Association, and would do its utmost according to the limits of its space and abilities to send the members away with the most happy recollections. [Cheers.]

The Address in Medicine was then given by Professor T. R. FRASER, M.D., LL.D., F.R.S. It will be found at p. 287.

Sir WILLIAM BROADBENT moved "That the thanks of the Association be given to Professor Fraser for his able Address in Medicine." He said that the address had been characterised by the highest ability and by remarkable lucidity. They had had the most complete and lucid history of the toxic doctrine of disease that had ever yet been written, and that meeting and address would always be looked upon as a statement of microbic pathology, microbic biology, and microbic therapeutics so far as it had at present advanced. They had seen how immensely knowledge had advanced since Warburton Begbie's address 23 years ago, and also the methods of treatment. Although Professor Fraser did not allude to it specifically it was interesting to find how the latest developments of antitoxic therapeutics had come round to some of Professor Fraser's earlier work. [Cheers.] Thirty years ago that work had claimed the attention of all those who were interested in the scientific aspect of therapeutics. Professor Fraser's work on the antagonism between atropine and muscadine was illustrative of the antagonism which he had justly placed before them be-

tween toxins and antitoxins. It was extremely interesting to find that all the antagonism between toxins and antitoxins was chemical and not biological. That led back to Professor Fraser's old work on chemical constitution and therapeutic action, and he had no doubt that they were only at the starting point of investigations which would extend the valuable knowledge he had given them of venoms and antivenoms. Professor Fraser was a great illustration of the Edinburgh system of medicine and teaching. The University existed for the purpose of teaching, and they had illustrated in Professor Fraser the type of teacher, a man who not only assimilated all the existing knowledge, but who was prepared to push on that knowledge by researches of his own. The thanks not only of the Association but of medicine throughout the world were due to Professor Fraser for his address. [Cheers.]

Professor Osler, in seconding the motion, said that in his masterly description of the character of the greatest Scotchman in their profession, John Hunter, Buckle had drawn a very close antithesis between the English and the Scotch mind, and in the days of John Hunter, not in Mr. Buckle's opinion to the credit of the latter; for he said in those days they were too much immersed altogether in pathological speculations in medicine, and he asked the question whether, had Mr. John Hunter remained in Scotland, they would have known him at all, much less as not only the greatest practical surgeon, but one of the greatest theoretical investigators in disease. Professor Osler claimed that such men as Professor Fraser showed that Scotland to-day had that combination of theory and practice which was needed in the medical profession. He felt that in some countries a dissociation was gradually arising between science and practice. The physiology and the pharmacology taught in many schools were often not taught with a direct and specific object of teaching the young men how ultimately to cure disease. In Edinburgh the school had a great advantage in having a man who not only was a laboratory worker but a hospital physician. [Cheers.] Professor Fraser had expressed the opinion that possibly the gain in medical observation and diagnosis had been relatively slight as to the cure of disease. The public and too many medical men were too optimistic with regard to disease. There were plenty of diseases which could not be cured and which never could be cured, and that was lucky for the race. [Laughter and cheers.] Sir Thomas Browne, to whom one might go for occasional crumbs in medicine as well as in morals, pointed that out years ago when he said that there were vices incorrigible in divinity, cases indissoluble in law, and diseases incurable in physic.

The resolution was carried by acclamation, and Professor Fraser briefly returned thanks.

Proposed Alteration of By-laws.

Dr. Brassey Brierley obtained permission to withdraw his proposed alteration of By-laws 8, 10, and 22. He said that the advantages to be derived from the change were of such an infinitesimal character that it was hardly worth while wasting time in discussing them. He, however, moved his additional by-law as follows:

> A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 150 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Council.
>
> The Parliamentary Committtee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

At the present time, he said, they had a Parliamentary Committee, so that they were perfectly in order in creating the new by-law. There was no definite provision for the constitution of the Parliamentary Bills Committee in the Articles. He proposed that instead of the Branches having one representative for 200 members, each Branch being over 150 members should elect one representative. The Parliamentary Bills Committee, according to his scheme, would have 21 members instead of 74. He contended that the work would be far more efficiently done by 21 men than it was at present by the 74. At present there were 370 possible attendances during the last year, but there were actually only 133. If those attendances had been paid for at 5 guineas each—if they were not paid for they ought to have been—665 guineas would have been expended. Under his system there would have been 6 attendances instead of 4 during the year, and it would only cost the Association 630 guineas.

Dr. Bousfield, in seconding the motion, said that the Parliamentary Bills Committee was dealing, and in future would deal still more, with matters closely affecting the welfare of general practitioners. It was the tendency of all associations of that kind to fall more or less into the hands of consultants. While they had the highest esteem for their professional and social position, it could only be said that the majority of them had no experience of the difficulties, and in some cases the privations, which fell to the lot of the general practitioner. The resolution of Dr. Brierley introduced the principle that it was the duty of the Association to spend a portion of the money which it received from its members, the majority of whom were general practitioners, in directly advancing their interests.

Mr. Jackson (Plymouth), in supporting the motion, asked if any sum was allocated to those Committees, or whether it was done in a haphazard way.

The President of Council (who now occupied the chair in the absence of the President of the Association) said that small Committees had grants given to them, but large Committees like the Parliamentary Bills Committee had practically the whole of the resources of the Association at their back. He did not know of any instance where the Parliamentary Bills Committee had applied for assistance involving the expenditure of money where it was not granted.

Mr. Garrett Horder asked how many Branches there were at present existing with fewer than 150 members.

Dr. Brierley: Seventeen.

Dr. Barr thought that Dr. Brierley's scheme was very badly thought out. The men on the present Parliamentary Bills Committee did not attend unless there was something coming up which especially interested them, and that very fact tended to make the Committee work more satisfactorily. He hoped that the members would not support Dr. Brierley until he brought forward some practicable scheme which would be an improvement upon the present one.

The President of Council asked if the effect of Dr. Brierley's proposed by-law would not be to disfranchise a number of Branches. ["Yes."] Under the present constitution of the Parliamentary Bills Committee it was not intended that each Branch should send a representative to attend each meeting of the Committee, but that they should have an opportunity of sending a representative when there was any business to come up in which their Branch or district was interested. The second part of the resolution made it obligatory that the Committee should meet at least six times a year. At the present time it met usually five times. Mr. Fowke told him that it very often met six times. It was not at all a lazy Committee. As to the question of money, he could not say how much it spent, but there was practically no limit to what it could spend. He might say that the Committee was the spoilt child of the Association.

Mr. Anderson said that at the January meeting Mr. Horsley had moved a resolution asking for a grant of £50 to pay the expenses of the members of a Subcommittee to draft a Bill to amend the Medical Acts. There had been no reference to such a request in the report from the Council which they had adopted, and he wished to be informed whether that £50 had been duly paid and why it was necessary to ask for it.

Dr. Woodcock said that as he happened to receive the £50 he could state that it had been paid. [Laughter.] He hoped the resolution would not be passed. In the first place it proposed to disfranchise a number of Branches, and then it imposed upon the Committee the duty of meeting six times a year. The Committee did its most important work by a process of devolution, and it was in that way that the splendid work was done by Dr. Gordon and his Subcommittee. It would be a very dangerous thing to pass the resolution. Practically it proposed to add nearly £3,000 a year to the expenses of the Association. He had never known the Council to decline any grant which the Parliamentary Bills Committee said was required.

After some further discussion Dr. Brassey Brierley withdrew his motion.

The Articles and Memorandum of Association.

The next item on the agenda was the following notice of motion in Dr. Myrtle's name :

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new articles and memorandum of association, and upon this being granted to forthwith undertake the medical defence of members of the Association.

Upon Dr. Myrtle rising,

The President of Council said that the matter of medical defence had been disposed of, and Dr. Myrtle's motion was out of order.

Dr. Myrtle said he would leave out that part referring to medical defence.

The President of Council said he should rule that the first part of the motion undoubtedly referred to medical defence. Everybody knew that the alteration of the Memorandum of Association was proposed to facilitate the Association taking up the question of medical defence, and with no other object. They had then no intention to help Mr. Anderson or anyone else. Dr. Myrtle had no right to strike out a paragraph in his motion.

Dr. Myrtle said it was an arbitrary ruling.

Mr. Anderson rose to a point of order. He thought the matter should be referred to the meeting to determine, as had been done in that room before.

The President of Council said that the matter referred to was merely the substitution of "150" members for "400" members in Dr. Myrtle's resolution, and the permission of the meeting had been obtained for that, but this was an entirely different case. Any attempt to suggest that the alteration of the Memorandum of Association had anything to do with Mr. Anderson and his affairs was from an historical point of view absolutely incorrect.

Dr. Myrtle did not wish to suggest it had anything to do with Mr. Anderson.

The President of Council said it had been proposed to go to the judge to see if the Memorandum of Association could be altered, but until the judge gave his sanction no alteration could be made.

Dr. Myrtle said he did not challenge the ruling, but he gave notice that at the next annual general meeting he should move the resolution down to the word "association."

Scientific Grants.

Dr. J. Haddon moved :

That the Scientific Grants be discontinued.

In doing so he said it was with some sadness that he had listened to the Treasurer congratulating the members upon the immense property which the Association now owned in the Strand. When he had been present at past meetings he had generally wished to spend money, but now the Association was running into debt it should get out of debt before any more money was spent. In looking about to see where economy could be practised, it seemed to him that the scientific grants might very well be done away with. They had been going on since 1873. In 1874 they amounted to £25, and the largest sum granted in any one year was £463; but altogether £8,585 had been spent. Had the Association obtained £8,585 worth of good? ["Yes."] He was glad to hear it, because they touched upon subjects which he thought were foreign to the work of general practitioners as a rule, some of them rather enigmatical. He did not wish to speak against scholarships there, except to point out that they had already absorbed over £4,000. He also suggested that the Parliamentary Bills Committee might reduce its expenditure until the Association was fairly out of debt.

The President of Council said the Council had limited the grants a good deal of late years, and was considering the making of even further limitations of small grants.

The motion, not finding a seconder, was dropped.

The meeting then adjourned.

According to the *Lyon Médical*, the number of theses presented for the degree of Doctor of Medicine of the University of Paris in the week ending July 23rd was 150.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Wednesday, July 27th.

The following notes upon the proceedings in the various Sections will afford some indication of the discussions which have taken place. We propose to publish during the next few months complete reports of the papers and discussions in the various Sections.

Section of Medicine.

In the Section of Medicine the proceedings commenced with a few cordial words of welcome from the President, with special mention of the distinguished foreign guests, amongst whom Professor Gerhardt (Berlin), Professor Rosenstein (Leyden), and Professor Rosenbach (Berlin), were present. The President then read the address which is printed at page 297. Sir James Grant, in a short but happy speech, thanked Dr. Balfour for his paper, and remarked that in Canada venesection was now very rarely practised, but that it had not been entirely discontinued. Dr. Alexander James then opened the discussion upon the Clinical Varieties of Hepatic Cirrhosis, in which he gave a general review of the clinical and pathological aspects of the subject, laying special stress upon the latter. Dr. Osler, who followed, made special reference to the form described by Hanot, and pointed out the importance of not neglecting the possible bacterial nature of at least some forms of cirrhosis. Professor Rosenstein then alluded to the different varieties, and gave it as his opinion that in Holland at least it was impossible to attach as much weight to alcohol as a causal factor as had been the custom in the past. Dr. Wm. Ewart spoke of the dietetic causation of cirrhosis. Professor Bradbury referred to the occasional association of cirrhosis with the consumption of highly-spiced foods. Dr. Boyd objected to the present classification, and suggested what he considered to be a more rational one. Dr. Handford regretted that there was so little co-ordination between our clinical and pathological knowledge of the subject. Professor Gerhardt referred to the occasional occurrence of cirrhosis as the result of poisoning with phosphorus, and alluded to the essential differences in the kinds of jaundice met with. Dr. Drummond considered that a variety of cirrhosis occurred with a large spleen and a condition of pseudo-leukæmia. Professor Rosenbach spoke of the association of heart disease with cirrhosis. Dr. Allison thought that whilst alcohol predisposed, yet another factor must be sought for. Dr. Fisher briefly discussed cases in which there is great enlargement of the spleen with atrophy of the liver. Dr. James then briefly replied. Dr. Osler read a most interesting paper by Professor Adami on the Bacteriology of Progressive Portal Cirrhosis, and Dr. Bain, Professor M'Call Anderson, and Dr. Caverhill also read the papers announced by them, after which the proceedings of the Section closed. After the work of the Section had terminated for the day, Dr. Osler showed a series of slides illustrating Professor Adami's paper. The Anatomy Theatre, in which the Section met, though at no time crowded, was well filled during the whole morning. The President had some difficulty in keeping the discussions within reasonable limits, many speakers evidently being so interested in the subjects that they found it difficult to condense their remarks sufficiently to bring them within the necessarily short time allowed.

Section of Surgery.

The work of this Section was opened by the short address by the President, Mr. John Duncan, which is printed at page 299. The Section throughout the early part of the morning, when the subject of injuries of the elbow-joint was under discussion, was very well attended, and even during the last two hours the number present was unusually large for the reading of papers. The discussion on injuries of the elbow-joint was introduced by a very able and interesting paper by Professor

Bennett of Dublin, who exhibited a large number of dissections, dry specimens of injured bones, and models showing the deformities produced by injury. Professor Bennett referred to the confusion of terms applied to the various portions of the lower end of the humerus, and called attention to the ease with which an incomplete dislocation of the ulna and radius backwards might escape detection, and to the fact that in compound separation of the lower epiphysis of the humerus the elbow-joint is not opened, because the lower end of the diaphysis is torn out of its periosteum, and thus the ligaments attached to the other end of the humerus are not ruptured. Dr. Roberts of Philadelphia next read an interesting paper, in which he advocated nailing the fragments together in cases in which there was any difficulty in keeping them in good position, in fractures of the lower end of the humerus, and the adoption of the extended position in putting up the limb on a splint after any injury about the elbow-joint. He exhibited several photographs of the "gun-stock" arm, produced, he thought, by treatment in the flexed position. Professor Chiene made some brief but important remarks on the best position for the arm to be placed in after these injuries. He advocated the flexed position, except in cases of separation of the olecranon, or when the patient was kept in the recumbent position. Mr. Bryant also said a few words on this subject, and advocated the semi-extended position; and Mr. Dalziel of Glasgow spoke in favour of nailing the fragments, as Dr. Roberts had suggested, and described a special form of fracture he had met with at the lower end of the humerus. An opinion differing from Professor Bennett's was expressed by Mr. Keetley as to the reason why the elbow-joint was not attacked by septic arthritis in cases of compound separation of the epiphysis at the lower end of the humerus, as he could not accept Professor Bennett's statement that the elbow-joint was not opened. Mr. Jordan Lloyd (Birmingham) stated that in his experience dislocation of the elbow was distinctly a rare injury, and that separation of the lower end of the humerus was much more common. He drew attention to the need of an anæsthetic in order to make a satisfactory diagnosis in many cases, and described how force applied to the olecranon caused fracture of the lower end of the humerus. It was evident that there was much difference of opinion as to the best position in which to put up the arm after an injury to the elbow-joint, and that many surgeons were opposed to nailing of the fragments except under very special circumstances. Professor Kocher (Berne) read a most interesting paper on the Surgical Treatment of Intestinal Obstruction, and gave some very encouraging statistics of resection of the bowel. He strongly advocated the treatment of cases of obstruction by the surgeon from the first, but advised that the physician should be called in to assist in making an accurate diagnosis. Mr. Mayo Robson's account of his three cases of excision of malignant growths of the liver was listened to with great interest, but the question which he raised as to whether we should operate on such cases was not discussed, probably because Mr. Robson was best able to answer it himself from his own experience, and the study he has made of cases operated on on the Continent. A discussion followed the reading of an account of two cases of perforated gastric ulcer by sponging out the peritoneal cavity and suturing the ulcer by Mr. Bush (Bristol). Mr. Bush advocated sponging out the peritoneum rather than flushing; but the other surgeons who took part in the discussion expressed the opinion that thorough irrigation was the best method of cleansing the peritoneal cavity. Other papers of interest were also read in the course of the morning.

Section of Obstetrics and Gynæcology.

The President opened the work of this Section with the address on the Teaching of Obstetrics, which is printed at page 300. Dr. W. S. Playfair (London), in moving a vote of thanks to the President, remarked on the pleasure it was to him to see his old fellow student occupying this honoured position as the tenant of a University Chair made illustrious for ever by his namesake and predecessor. He agreed with his remarks on the importance of the teaching of midwifery. Dr. A. Martin (Berlin) seconded the vote of thanks, and commented on the tendency to neglect the teaching and practice of midwifery in favour of gynæcology. For anyone going into practice, it was most important that he should be well equipped in this department. A discussion on the surgery of pelvic inflammation was opened by Dr. C. J. Cullingworth (London). Referring to his address at the Newcastle meeting in 1893, he observed that he considered on that occasion first, the comparative frequency of inflammation of the Fallopian tubes; secondly, the pathological importance of the condition as being by far the most frequent cause of pelvic peritonitis in women; and thirdly, the not infrequent necessity for surgical intervention. On this occasion he dwelt on two points that had not frequently been made the subject of such discussions—(1) The indications for operative interference in pelvic inflammation; (2) the choice of time for operation. He considered that in pelvic cellulitis operation was not indicated in cases in which no suppuration occurred; in suppurative cases it was necessary to operate as soon as possible. In pelvic peritonitis he laid down the broad lines that operation was not called for in simple catarrhal salpingitis, and that it was called for in all cases attended with the formation of pus in appreciable quantity. As to time, he thought it was well to defer operation if possible till acute symptoms of localised peritonitis had subsided. Dr. Doyen (Paris) advocated the treatment of diseased appendages *per vaginam*, in all cases where this was possible; the method of colpotomy which he practised did not necessitate the sacrifice of the uterus until after the appendages had been carefully examined. He thought the uterus should not be removed in any case, either by the vagina or abdomen, unless it was unhealthy. Vaginal and abdominal methods were not in conflict; each should be used in the special cases in which it was indicated. Dr. Jacobs (Brussels) thought the vaginal route should be chosen in cases of old-standing pelvic suppuration, with fistula, adhesions, etc.; whilst the abdominal route was better in relatively recent cases in which there was no evident injury to surrounding organs. Dr. Theodore Landau (Berlin) contributed to the discussion a paper on Vaginal Cœliotomy, giving his experience of 58 cases. After some remarks by Dr. Sänger (Leipzig) and Dr. Fehling (Halle), Dr. A. Martin (Berlin) observed that exact diagnosis was important, because whereas cases due to gonorrhœal infection often recovered spontaneously, those due to septic infection seldom did so and almost always needed operation, which might have to be performed during an acute febrile attack. The bacillus coli played a part in these conditions which was not generally sufficiently recognised. An added element of difficulty arose in the differentiation of inflammatory conditions from extrauterine gestation. He thought it was by no means necessary to remove the uterus in every case. Dr. Macan (Dublin) dwelt on the importance of exact diagnosis. This would be much easier if the dorsal position were more generally employed. He advised postponing operation as long as possible. Professor Byers (Belfast) thought that the vaginal route was too much neglected in England; but there was still much doubt as to the cases demanding this rather than the abdominal method. Dr. Taylor Young (Sydney) while advocating the removal of the uterus, when diseased, along with the adnexa, remarked that the tendency in some parts of Germany was often to interfere needlessly, making the patient actually worse than before operation. The discussion was continued in an animated fashion by Drs. Lapthorn Smith (Montreal), Amand Routh (London), Handfield-Jones (London), Aust Lawrence (Clifton), and E. T. Davies (Liverpool), and after a few remarks by the President, Dr. Cullingworth replied to the main points raised.

Section of State Medicine.

The Section was opened by the President, Professor Sir Henry Littlejohn, who, in welcoming the members, made some interesting remarks on the advances which the sanitation of Edinburgh had made since the Association last met there in 1875. He referred particularly to the improvement in the housing of the poor, the drainage system, the water supply, and the incidence of infectious diseases. After a vote of thanks to the President had been proposed by Sir C. Cameron, Sir Henry introduced Dr. M'Lean Wilson, who opened the discussion on Rivers Pollution by reading a paper on that subject. He brought before the meeting the following five questions: 1. Who should administer the laws for the prevention of pollution of rivers? 2. Are the present laws sufficient? 3. Is treatment of sewage on land to be required in all cases?

4. Should manufacturers' refuse be purified by the manufacturers themselves or by the sanitary authorities? 5. Should any standard of purity be adopted for effluents from sewage works or purified trade refuse? He referred to the fact that those who had to administer the Rivers Pollution Act were often the defaulters, and advocated joint committees for the control of rivers. The present law was insufficient, and the Bill before Parliament also. In connection with the third question he referred to the difficulty of obtaining land, and pointed out that artificial methods had been shown to be quite sufficient in many cases. He advocated the removal by the manufacturers themselves of such substances as would add to the cost of the after-treatment of the sewage, and in connection with the last point considered that it would be impossible to fix a standard of purification applicable to all cases. Professor Glaister (Glasgow) referred to the failure of the Rivers Pollution Act, and after reverting to the difficulty of obtaining a standard of purity, advocated the centralisation of the control of rivers. Dr. Reid (Stafford) considered that local conditions should largely determine the formation of joint committees. Dr. Bruce Low (of the Local Government Board) pointed out that the need for joint committees was evident, and thought that some assistance in the formation should be afforded by Parliament. Dr. J. C. McVail and Dr. Hill (Birmingham) having made some remarks, Dr. Bond (Gloucester) advocated procedure at the common law by the local authorities on behalf of the riparian owners. He proposed a resolution to this effect; and Sir H. Littlejohn proposed a Subcommittee to draw up resolutions on the subject. An interesting paper was read by Dr. Hope on the Methods of Estimating the Population of Towns, and he advocated the adoption of a quinquennial census. Dr. Spottiswoode Cameron (Leeds) and Professor Saltet (Amsterdam) took part in the discussion. The former suggested that a partial census would be sufficient at the quinquennial period. After some remarks by the President of the Section and by Dr. Symons (Bath), a resolution to the effect that a quinquennial census is desirable was carried unanimously.

SECTION OF PSYCHOLOGY.

THIS Section was opened by the President, Dr. Clouston, who delivered the address on "The Neuroses and Psychoses of Decadence," which will be found at page 303. A discussion on Suicide in its Psychiatrical and Social Aspects was opened by Dr. Sibbald, Commissioner in Lunacy, Edinburgh, who dealt with the subject from the statistical point of view. Dr. Sibbald's paper was graphically illustrated by a very interesting set of tables hung on the wall. Dr. A. Haig (London) read a paper on the Causation of Suicide. Dr. Macpherson (Larbert Asylum), Honorary Secretary of the Section, gave the gist of a paper by Professor Morselli, of Genoa, dealing with the social aspects of the question. The papers were discussed by Dr. Blandford, of London; Professor Benedikt, of Vienna; Dr. Yellowlees, of Gartnavel, Glasgow; Dr. A. E. Macdonald, of New York; Dr. Urquhart, of James Murray's Royal Asylum, Perth; Dr. Macpherson of Tarbert Asylum, Dr. Mercier of London, Dr. D. Nicolson, Lord Chancellor's Visitor in Lunacy; Dr. Hayes Newington and Dr. Sutherland, Commission in Lunacy, Edinburgh. Dr. J. F. Sutherland (Commissioner in Lunacy, Edinburgh) read a paper on the Insanities of Inebriety from the Legislative and Medico-legal Standpoint. The paper was illustrated by a map or diagram showing the regions more or less affected by inebriety. The paper was afterwards discussed by Dr. Geo. Wilson, Mavisbank, Polton; Dr. Ireland, Dr. Templeman of Dundee, and Dr. Yellowlees of Gartnavel, Glasgow. After some further discussion Dr. Sutherland moved that a recommendation should be made by the members of the Section with regard to a movement for better legislation in the case of inebriates. Dr. N. T. Kerr then read a paper, the joint work of himself and Dr. C. Bois (both of Hartwood, Glasgow) on Clinical Studies on Spleen and Thyroid Extract, and Dr. Easterbrook, Morningside Asylum, Edinburgh, a paper on The Action of Thyroid and Parathyroid.

SECTION OF NEUROLOGY.

DR. BYROM BRAMWELL, in opening this Section, introduced Professor Ferrier, and referred shortly to his work on cerebral localisation, experimental as well as clinical. Professor Ferrier, in opening the discussion on the Treatment—Palliative and Curative—of Cerebral Tumours, dwelt at some length upon the dangers of cerebral tumours, and referred to a class of tumour upon which operation was not permissible, namely, those at the base of the brain. He next gave a brief sketch of the progress of cerebral localisation within the last fifteen years, and touched upon the labours of Lord Lister, which had so greatly reduced the dangers of death from septic infection, and had enabled the surgeon to operate where operation was hardly permissible in former times. He then gave various statistics showing the percentage of cures, and discussed the various reasons that determined the surgeon's course of action, concluding his paper with a brief account of the medicinal remedies which might be tried before operative interference. Dr. Byrom Bramwell having conveyed the thanks of the Section to Professor Ferrier for his excellent address, Dr. Dercum of Philadelphia called attention to the special value of potassium iodide in inoperable cases as a palliative measure, especially in gliomata. He then gave an account of some cases which had been under his care, and in which he had pushed the treatment with oxytuberculin and had failed. Dr. Joseph Collins pointed out that Professor Ferrier's statistics showed twice the percentage of cures shown in some others, and discussed the efficacy of potassium iodide as a palliative measure. Sir William Broadbent also took part in the discussion. Dr. John MacCormac (Belfast) said that he took rather an optimistic view of the subject, and referred at some length to the headache and vomiting which usually accompanied cerebral tumours, and entered into the treatment of those symptoms. Dr. Beevor (London) detailed a few cases which had come under his care, and the results of treatment, palliative and operative. Dr. Trevelyan referred to two cases of intracranial tumour treated by operation. He discussed the question of operation in tuberculous growths. Drs. Michell Clarke, Paul Bush, and Cotterill also spoke of the value of operative interference in cerebral growths, not only as a curative measure, but to relieve the urgent and distressing symptoms. Dr. Byrom Bramwell added a few words to the discussion, and Professor Ferrier replied.

SECTION OF PATHOLOGY.

PROFESSOR GREENFIELD, President of the Section, having opened the proceedings with a few introductory remarks, Dr. G. Sims Woodhead read a paper on Diphtherial Paralysis. He quoted a large number of cases of diphtheria to illustrate the great frequency with which paralytic symptoms of various kinds occurred, more especially paralysis of the finer muscles of the fauces or eyeball, and of the heart itself. He pointed out that the primary lesion was probably in the motor cells of the anterior horn of the spinal cord, but that these lesions were transient (except in cells which underwent complete degeneration), and, therefore, readily overlooked. The changes found in the peripheral nerves were probably of the nature of a secondary degeneration. In experimental work post-diphtherial paralyses occurred more frequently than was formerly the case, because of the larger doses of toxin and antitoxin employed. The diphtheritic poison was a complex body producing a lethal action, a local irritation, and an effect on the body temperature, in addition to its action on nerve cells. When large doses of the toxin and corresponding doses of antitoxin were injected, a number of animals suffered from paralyses, though the other toxic effects were neutralised; and the larger the doses of toxin and antitoxin employed, the greater was the number of animals affected by paralytic symptoms. The discussion was continued by Dr. Mott, Professor Baginsky (Berlin), and Dr. E. W. Goodall. Dr. J. Lorrain Smith read a paper on the Pathological Effects of Breathing Oxygen at High Tension, and described some interesting experiments. Dr. Robert Muir then opened a discussion on the Nature and Significance of Leucocytosis. After referring to the importance and wide range of the subject, he stated that he would limit his remarks to the nature of leucocytosis as a process in general pathology. In many acute inflammatory conditions, more particularly if suppuration occurred, a general leucocytosis occurred, and a similar condition might be produced by the injection of various chemical substances, especially bacterial products. The increase

of leucocytes was not merely in the peripheral vessels, but was an actual increase in numbers due to an increased production. Dr. Muir next referred to the various kinds of leucocytes, and to their origin (1) from adenoid tissues, (2) from the bone marrow. He said that in his opinion the polymorphous leucocytes, which were especially increased in general leucocytosis, were formed in the marrow, and entered the blood stream in their fully formed condition. His own experiments on the marrow fully bore out this contention. In experimental leucocytosis, the marrow showed absorption of the fat cells, and a corresponding increase chiefly of the large, finely granular "leucoblasts" which were the source of the finely granular polymorphonuclear leucocytes. These appearances were demonstrated by a series of lantern slides from photomicrographs. Professor Greenfield complimented Dr. Muir on his important contribution to pathology. Professor Hamilton, Dr. Woodhead, Dr. Edmonston Charles, Dr. Lazarus-Barlow, Dr. Durham, Dr. Milroy, Dr. Copeman, and Dr. Grünbaum took part in the subsequent discussion.

Section of Pharmacology and Therapeutics.

The President (Dr. Affleck) opened the business of the Section with the address which is published at page 306. Dr. G. Herschell commenced the discussion upon the Treatment of Diseases of the Stomach, directing attention especially to the different unsolved problems in connection with the various headings under which the subject had been arranged and upon which discussion was desirable. Professor C. A. Ewald (Berlin) detailed the various forms of treatment of gastric disorders which he had used or continued to use, and deprecated the over-use of mechanical instruments. Dr. R. Saundby insisted on the advantage of absolute rest in bed in dyspeptic cases. He said that the only sign of ulcer of the stomach which could be relied upon was hæmatemesis, and that when this was absent one was not justified in diagnosing ulcer. He did not believe in prolonged feeding by the rectum. He also considered that the treatment by sulphate of iron and sulphate of magnesia was practically the same as that by Carlsbad salts. Dr. Lauder Brunton said that he had learnt from Dr. Herschell's remarks why gentian was superior to calumba in cases of hyperchlorhydria, because it contained tannin. Professor Fenton B. Turck (Chicago) described the methods found by him to be of benefit in gastric myasthenia, calling special attention to the pneumatic gymnastics of the stomach, giving details of cases illustrative of its beneficial action, and summarising its effects. Dr. Calwell (Belfast) alluded to several clinical points in the treatment of gastric disorders; and Dr. Crawford Renton (Glasgow) discussed the subject from a surgical standpoint. Dr. Lockhart Gillespie made some remarks upon the effects of intestinal fermentation upon gastric processes and the benefit of interesting the patient in his course of treatment. Professor Ewald, in reply, said that if a case which was undergoing rectal feeding lost his pain it pointed to ulcer; if it continued the case was probably a neurosis. Professor J. Theodore Cash (Aberdeen) read a paper on the Pharmacology of the Alkaloids of Aconite, pointing out the difference between the actions of the various bodies identified. Dr. Lockhart Gillespie read a short note upon the Action of the Iodide and Bromide of Strontium given together in Exophthalmic Goître in Children. All the cases were deaf and dumb, rapidly recovered under these salts, and experienced no discomfort from large doses of them. Dr. Nestor Tirard remarked on the frequent tolerance children showed for iodides. Dr. Symons Eccles's paper upon the Treatment of Gastroptosis, and Dr. Norman Kerr's paper on Alcohol in Drugs and Drug Preparations were read by the Secretary.

Section of Ophthalmology.

After the President (Dr. Argyll Robertson) had opened the Section of Ophthalmology with the address printed at page 308, Professor Nuel (Liége) read a paper on the Absorption of Aqueous Humour by the Iris. He pointed out by the aid of diagrams the presence of lymphatic channels in the iris of the dog and cat. Indian ink was injected into the vitreous of the eyes of these animals and the passage of the ink traced into canals in the iris. By staining with silver nitrate he had found canals and stomata, the canals increasing in size towards the ligamentum pectinatum. He applied the results of these experiments to the causation of glaucoma, and pointed out that iridectomy opened up the canals. Mydriatics also had the same effect, thus increasing the flow from the eye. Professor Nuel then showed lantern slides illustrative of his paper. Dr. Berry (Edinburgh) made some remarks on the result of the injection of chlorine water into the vitreous in septic cases. Professor Nuel, in reply, stated that absorption took place from the anterior surface of the iris, and this was the principal area of absorption in the eye. Dr. Reid (Glasgow) next showed some lantern specimens illustrative of reparative processes following wounds of the cornea, and specimens of the intercalary cells met with in the cornea. Dr. George Mackay and Dr. J. C. Dunlop (Edinburgh) then read a paper on a Case of Acquired Colour Blindness which came on suddenly in a patient suffering from cancer of the stomach. The patient's vision was good, media clear, refraction emmetropic, fields of vision good to hand movements, but restricted to more accurate measurement. Five months after the colour blindness came on the patient died. The *post-mortem* examination revealed cancer of the pylorus and atrophy of the posterior end of the occipito-temporal convolution of the right occipital lobe, with general shrinkage of the right occipital lobe. On section the left occipital lobe was found slightly affected and the arteries and capillaries extremely thickened. Lantern specimens of the brain and arteries were then shown. Dr. Berry (Edinburgh) spoke on the difficulty of proving the existence of a colour centre apart from a centre of form, the form sense and colour sense being closely associated. Dr. M'Kenzie Davidson (London) gave a demonstration on the employment of Roentgen rays in ophthalmology. He had used them in 41 cases of foreign body in the orbit with satisfactory results. He showed the apparatus he used, and gave a demonstration of his methods on a patient. His principle was based on getting three co-ordinates of a point; the three planes were formed by two knitting needles fixed on the apparatus, one vertical, the other horizontal crossing one another, and by the photographic plate. The patient's head was fixed, the axis of his eye being parallel to the horizontal needle. A fine Crookes's tube was used in two positions, 6 cm. apart, the two plates thus obtained being afterwards placed in stereoscopic relief. A piece of lead wire was previously placed on the patient's lower lid to form a known point from which the position of the foreign body could be calculated. This was worked out by means of a separate apparatus. A number of lantern slides illustrative of the apparatus and of skiagraphs were then shown. Mr. Treacher Collins (London) showed a number of lantern slides illustrative of foreign bodies in the eye, which had been localised by Dr. M'Kenzie Davidson by skiagraphy, and afterwards successfully removed. He advocated the early use of the rays in all cases of suspected foreign bodies in the eye. Mr. Cargill (London) mentioned 5 cases in which Dr. M'Kenzie Davidson's method had proved of great value in deciding the presence, situation, or absence of foreign bodies. Dr. Reeve (Toronto) showed an apparatus made by Dr. Sweets (Philadelphia), and Professor M'Hardy (London) spoke of two cases in which skiagraphy had proved most important. Dr. Hinshelwood (Glasgow) read a paper on Holocaine, and advocated its use as an anæsthetic in eye work; it acted more rapidly than cocaine. Mr. Edgar Browne (Liverpool) said that he used it in all superficial operations, as it had no harmful action on the cornea. Dr. Argyll Robertson said his experience led him to consider that holocaine was much inferior to cocaine, but Dr. Hinshelwood said that he believed that most cases of failure were due to imperfectly prepared solutions. Dr. Leslie Buchanan (Glasgow) then showed some specimens of leucosarcoma of the choroid.

Section of Diseases of Children.

The first meeting of this Section was attended by a large number of members and by several foreign guests. After Dr. Joseph Bell had opened the proceedings with some preliminary remarks (which will be published later), a discussion on the Treatment of Spinal Caries was opened by a paper by Mr. Victor Horsley. The chief points in the paper were how to deal with caries as a result of tuberculous

osteitis, and as a cause of deformity. Mr. Horsley advocated very early operation, free removal of diseased bone, free drainage aided by laminectomy, and, if necessary, removal of the pedicles, and thorough disinfection. He also advocated temporary fixation by elastic extension to prevent deformity. Mr. Robert Jones (Liverpool) deprecated too early operation. He maintained that elastic tension, when strong enough to extend the spine, was intolerable to children. His method was to treat all early cases by placing them in the recumbent position with the back in lordosis, the spine being supported in this position and the hips resting comfortably. The lordosis should in some degree be maintained by apparatus when the patient got about again. He had performed immediate reduction ninety-four times, Mr. Murray (Liverpool) did not favour the immediate reduction of deformity. He had tried it fourteen times, and deformity had recurred in all. Mr. Noble Smith (London) thought it advisable to remove diseased bone when it could quite easily be done, but disapproved of taking away the pedicles and laminæ, which were the only sound parts of the vertebræ. Where fixation was employed there must be a long leverage or exaggerated lordosis below the carious portion might result. Mr. Tubby thought the immediate reduction of deformity worthy of a conscientious trial. Out of thirty such operations he had straightened four spines, and the majority were much improved. Mr. Thomas (Birmingham) alluded to the superficial sores which often resulted from the operation. Dr. Churchill (London) and Mr. Luckham (Salisbury) advocated expectant treatment and good hygiene. Mr. Murray (Liverpool) then read two papers on the treatment of Club Foot and Harelip and Cleft Palate, illustrating each by a series of excellent lantern photographs. Mr. Tubby (London) read a highly interesting and original paper on the Occurrence of a Pad on the Dorsum of the Foot in Rickets. Mr. Stansfield Collier reported several cases of Dislocation of the Hip-joint Occurring in the Course of Infectious Diseases, and Mr. H. J. Stiles contributed a note on the Clearing Out of the Mastoid Antrum in Infants and Young Children.

SECTION OF DERMATOLOGY.

THE President (Dr. W. Allan Jamieson) delivered his presidential address, which will be published subsequently. On the motion of Professor Shepherd, of Montreal, seconded by Mr Malcolm Morris, the thanks of the Section were conveyed to Dr. Jamieson for his address. The Section then adjourned to the West Medical Theatre of the Royal Infirmary, where the following cases were shown: (1) Xeroderma pigmentosum; (2) four cases of Scleroderma, treated with improvement by perchloride of mercury ointment; (3) Lupus Lymphaticus or Infective Angioma of fourteen years' duration; (4) Ulerythema Sycosiforme of seven months' duration; (5) Adenoma Sebaceum, treated by thermo-cautery with considerable improvement; (6) two cases of Dermatitis Herpetiformis; (7) Lichen Planus Ruber; (8) a milder case of the same; (9) Lichen Planus of thirty years' duration; (10) case showing great Overgrowth of the Mucous Layer of the Skin; (11) Symmetrical Paronychia (Dr. McLeod's case); (12) Mycosis Fungoides (Dr. Macdonald, of Cupar, sent case); (13) Xanthoma; (14) group of cases of Lupus Erythematosus; (15) Lupus Erythematosus associated with Superficial Epithelial Growth on Lip; (16) Vitiligo; (17) Lupus Erythematosus confined to the Scalp; (18) Folliculitis Decalvans closely resembling Acne Keloid; (19) Seborrhœic Eczema resembling Lupus Erythematosus; (20) case of Lupus Vulgaris with Elephantiasis due to lymphatic obstruction in a girl aged 15 years; (21) Ichthyosis treated with great improvement by resorcin soap and resorcin and starch dressing (2 cases); (22) Monilithrix; (23) Alopecia Areata associated with Favus; (24) case of Tuberculosis of the Cheek treated by salicylic creosote plaster; (25) a series of cases of Favus; (26) case of Total Alopecia occurring in one week; (27) a case of Lepra Anæsthetica (shown by Dr. Wm. Elder). The majority of the cases were shown by Drs. Allan Jamieson and Norman Walker, and an informal discussion took place in which the following took part: Drs. Cuma, Radcliffe Crocker, Morris, Boeck (Christiania), Eddowes, Payn, M'Call Anderson, Abraham, Walter Smith, Pringle, etc.

SECTION OF MEDICINE IN RELATION TO LIFE ASSURANCE.

THE proceedings of this section were opened by the President, Dr. C. Muirhead, who gave his address (which will be published later). Professor Sir W. T. Gairdner opened a discussion on the Prognosis of Cardiac Disease in its Bearings upon Life Assurance. He spoke of the alternatives of rejection, and thus making the candidate miserable, and of being a little blind to facts, and thus not doing one's duty to the office, and eulogised a middle course—namely, "loading." He divided the subject into eight—namely, abnormalities, lesions involving organic lesions without serious importance, those belonging to the order of senile degenerations, organic lesions debarring altogether from life insurance, lesions which were probably functional, including tachycardia and brachycardia, the choreic heart, the heart abnormally large or small, and angina and pseudo-angina, which latter divisions he declared himself unable to separate absolutely from one another. Dr. Symes Thompson (London) thought it difficult in many doubtful cases to form a judgment of the amount of defect. He attached less importance to slow pulse than Sir W. Gairdner had done. Tachycardia was often associated with the insurance heart, the candidate often regarding the doctor with a feeling of hostility. Dr. W. J. Tyson (Folkestone) said that as a result of the annual meeting at Brighton, where the subject of Prognosis in Heart Disease was introduced by Sir A. Clark, a paper of questions was drawn up and circulated amongst practitioners, to which he had received several answers. In private practice patients with murmurs did not die. A slow pulse of 40 to 60 was a good working pulse. In doubtful cases he would pass the candidate, with the proviso that if he lived only a short time a small sum would be handed to his representatives, whilst if he lived the full time they would have the full benefit. Mr. Horace Jefferies (Bolton) thought there could not be an abnormal heart with a normal apex beat. Mr. G. M. Low (General Manager of the Edinburgh Life Insurance Company) said that many of the medical reports on candidates came from young practitioners, and in them he rarely heard the remark, "I don't know," which Professor Gairdner and others had uttered that day in respect of much of their work. If the information at their disposal were more definite they could deal more definitely with patients with heart disease in a more satisfactory way than by rejecting them. Cases of slow pulse were very rarely found in life insurance papers. With doubtful lives it was better to increase the premium than to lessen the amount insured. Dr. Poynton (London) described the results of his examinations of hearts dilated by rheumatic fever, and gave statistics of 150 cases of that kind. Dr. Macfie (Bolton) thought that cases with slight mitral disease should be deferred for a few weeks. Two such he had seen recover. Dr. Glover Lyon (London) thought that doubtful cases were far too frequently rejected by the offices. He would "load" cases of heart disease, and examine them afterwards every five years, and possibly admit them at last as first class lives. Dr. J. Ritchie looked with suspicion on a patient past middle life with irregular heart beat. The condition of the valves must not be considered alone, but that of the heart wall as well. Possibly the man with slow pulse had it set up by his interview with the doctor. Mr. G. Eastes (London) gave his experience of the tea heart, and advised that candidates suffering therefrom should be advised to relinquish the habit, and be referred for examination in a few weeks' time. Sir W. Gairdner, in reply, was pleased at the discussion which his paper had elicited. He thought all would regard a man with a pulse persistently below 30 as not being in good health. He thought the working man with accentuated second aortic sound was working himself beyond his capacity. Doctors must deal truthfully with their patients, but there were gentle ways of doing this. Blurting out a word such as angina was not telling the truth to the individual under examination. Dr. Ritchie read a paper entitled Does Evidence of Limited Family Vitality call for an Advanced Rate of Premium? He pointed out that while very stringent customs obtain as to dealing with members of families tainted with consumption, an indefinite want of vitality indicated by repeated early deaths was disregarded. He showed that the early claims at his office were largely amongst applicants whose

fathers and mothers had died early. Sir W. Gairdner said that the facts of heredity in regard to long life were most important. Physicians were going too far in the direction of disregarding heredity in the present day.

SECTION OF TROPICAL DISEASES.

THIS Section was attended by some eighty to a hundred medical men. The interest taken in the Section was proved by the number and diversity of countries and colonies represented. France, Italy, America, British Guiana, Central Africa, the West Coast of Africa, India, China, Malay Peninsula, Sumatra, Hong Kong, and the Treaty Ports of China and Japan were represented by men who listened earnestly and entered vigorously into the discussion on the subject of Tropical Fevers. After the President, Dr. Patrick Manson, had delivered his address, which will be published, Brigade-Surgeon-Lieutenant-Colonel Crombie gave an exhaustive classification of Tropical Fevers, and spoke at length on the more indefinite form. The subject was further discussed by Major Baker, R.A.M.C.; Dr. Sambon, Captain Hughes, R.A.M.C.: Captain Davidson, R.A.M.C.; Dr. Charles, Brigade-Surgeon-Lieutenant-Colonel Arnott, I.M.S.; Dr. Thornkill, Dr. Cousland, and Mr. Cantlie. The tendency of the discussion was to separate malaria from climatic fevers, and to differentiate a class apart from either. The subject of ardent fever was keenly taken up, and many expressed the belief that the recent theory which would attribute it to infection was not confirmed by experience in India. An erudite and deeply interesting paper on the Malarial Problem in its Epidemiological Aspects was read by Dr. Andrew Davidson. One of the most interesting points in it was his reference to malaria in Sweden on the shores of the Gulf of Bothnia. Even in the latitude 66° N. attacks of malaria were not unknown. Dr. Manson drew attention to the fact that pigment was found normally in a large percentage of lymphocytes. He further specified the form that it took, and warned observers to beware of confusing the anatomical and the pathological appearances. The subject of Black Water Fever was introduced by Dr. Sambon, who drew attention to the terrible death-rate in tropical Africa from this cause. Dr. Sambon expressed the opinion that the fever was not an aggravated form of malaria nor due to the influence of quinine. It was most probably a specific disease allied to the hæmoglobinuria of cattle caused by a parasite which has been classed between protozoa and bacteria. The Section adopted a resolution for submission to the Council of the Association, to the effect that the fever ought to be specially studied on the spot, and that a commission composed of experts should be sent thither. A specimen of the parasite from a case of pernicious fever in British Guiana was sent by Dr. Daniels and exhibited by Dr. Thin. Captain Yarr, R.A.M.C., read a most interesting and instructive paper on Malarial Eye Affections. We are almost without literature upon this subject, and Captain Yarr's contribution will be eagerly read and appreciated by tropical practitioners. An able paper by Surgeon-Major J. H. Tull Walsh, I.M.S., on the Clinical Aspects and Treatment of Malarial Fever, and another by Surgeon-Captain Buchanan, I.M.S., on the Cerebro-spinal Fever in India, brought the first day's work of this Section to a highly satisfactory conclusion.

THE SECTIONS OF ANATOMY AND PHYSIOLOGY

ON Wednesday morning Professor Rutherford, F.R.S., the President of the Section of Physiology, gave an address on Tone Sensation, which will be published shortly. Dr. A. D. Waller followed with an account of the Action of Anæsthetics on Vegetable and Animal Protoplasm. He recapitulated some of the chief points brought out in his former experiments, and gave a description of some recent experiments on the spinal cord of the frog, showing the complete abolition of reflexes after direct application of vapour of chloroform to the cord. He also showed that in vegetable cells there was the same paralysing influence—for example, in the cells of elodea canadensis the chlorophyll granules ceased to move under the influence of CO_2—ether and chloroform. He pointed out that the action of anæsthetics was the same on all animal and vegetable protoplasm. The paper was illustrated by lantern slides and diagrams. Dr. Waymouth Reid criticised the method of conducting the experiment on the frog, inasmuch as the chloroform vapour would first affect the sensory nerves of the skin, and so lead to an abolition of the reflexes. Dr. A. C. Sturrock read a paper on the Selective Affinity of the Tissues, especially as regards the Mammary Gland. He pointed out how the mammary gland selected the material needful for the life of another and separate organism—the child; and he pointed out how animals of different climates produced milk suitable for each case, and referred to the elephant, which, though now a tropical habitant, still retains the milk characteristic of an animal from a cold climate, corresponding to that which its ancestors had inhabited. He showed the great importance of the phosphorus-holding part of the milk. Dr. Waymouth Reid spoke on the milk of pigeons, and pointed out that the rate of growth of pigeons is much greater in the early days of its life, when fed by this milk, than later when fed on the ordinary diet. He believes the milk of pigeons to be of the same nature as that of mammals. Sir John Struthers, the President of the Section of Anatomy, then took the chair, and Professor Cunningham (Dublin) opened a discussion on Anatomical Variations. He divided all anatomical variations into two great classes—prospective and retrospective. The former were indicative of changes that might yet become normal in the history of the species, while the latter was of two kinds: first, simple arrest; and, secondly, development along lines which had once been normal for the species. The address was illustrated by lantern slides of the brains of apes and microcephalic idiots. Professor Shepherd (Montreal) divided variations into those which had significance and those which had not, referring extra digits, abnormal lingual arteries, etc., to the latter, and quoting the occasional occipito-scapular muscle and others as pointing to a former type, and hence belonging to the former. Some other variations were due to persistent fœtal conditions and injuries during fœtal life. Professor Paterson referred to variations in the hair and teeth of man. Dr. MacKay, Professor Symington, and others also spoke. The President closed the meeting with some remarks on the teaching of anatomy.

THE PATHOLOGICAL MUSEUM.

CLASSIFICATION.

AN extremely interesting collection of pathological specimens and drawings has been brought together by the Pathological Museum Committee, of which Sir John Struthers has acted as Chairman, and Mr. Charles W. Cathcart, F.R.C.S.Edin., and Mr. Alexander Miles, F.R.C.S.Edin., as Honorary Secretaries. The objects are exhibited in the University Dissecting Room, which is well lighted, and they are thus seen to the best advantage. The specimens have been arranged in the following series:

1. Educational Series.
2. Section of Surgery and Allied Sections.
3. Section of Medicine and Allied Sections.
4. Section of Obstetrics and Diseases of Women and Allied Sections.
5. Section of Pathology, including Bacteriology.
6. Drawings, Photographs, etc.

As far as possible the specimens and drawings have been grouped so as to illustrate subjects which are at present exciting particular interest, and in many instances have been so arranged as to illustrate or form the basis for discussions or papers in the various sections.

EDUCATIONAL SERIES.

A collection which is at once intrinsically instructive and also valuable as an example and incentive has been formed to illustrate methods for preparing and mounting specimens, casts, and models to be used for teaching in the various departments of the medical curriculum.

To this series Mr. Harold J. Stiles has contributed several sets of valuable specimens and casts, in particular a series illustrating Professor Chiene's method of cerebral localisation for surgical purposes. The same surgeon exhibits some abdominal organs hardened by formalin, and, in conjunction with Mr. Harry Rainy, skiagraphs of blood vessels injected with mercury. Mr. Caird exhibits a series of cast in papier maché material illustrating strangulated inguinal hernia. Dr. Harvey Littlejohn shows a large series of preparations pre-

served by means of formalin, and special mention should be made of a series of preparations illustrative of suicidal cut-throat. Some of the specimens exhibited the lesions usually produced, while others were rare examples of unusual forms of injury, including one in which the suicide made two huge wounds in the throat, one penetrating into the trachea without wounding the blood vessels. Mr. Alexander Miles shows a set of gelatine and papier maché casts found useful in teaching to illustrate various surgical conditions, such as hare-lip and cleft palate. The same gentleman, in conjunction with Mr. Stewart, exhibits gelatine casts of two cases of dislocation of the surgical end of the clavicle.

Mr. Theodore Shannon has prepared an extremely beautiful set of specimens illustrating Joré's formalin method. Some of the most successful of these are those showing tuberculosis of the lung: the particular beauty of the method resides in the fact that the natural colours are retained. Professor Chiene shows a series of lantern slides for use in teaching surgical pathology; and Mr. David Wallace and Mr. H. J. Stiles a series of gelatine casts illustrating surgical anatomy. Dr. Foulis exhibits several extremely beautiful dissections of the embryo to show the Wolffian body and the development of the genito-urinary system.

Finally, Mr. James Simpson, the assistant curator of the University Anatomical Museum, has brought together a set of specimens to illustrate methods of mounting and preserving museum specimens so as to show them to the best advantage. One of the points to which he gives attention is the choosing of the tint which should be given to the glass supporting a small specimen so as to throw it up. He has also devised a method of writing labels so that they can be mounted inside the specimen bottle without deteriorating. Those curators of museums who have had the mortification of finding a specimen rendered practically useless by the label having been rubbed off or the number obliterated will know how to appreciate this improvement.

Dr. Berry Hart has chosen from his extensive collection a series of casts illustrating various gynæcological operations, including in particular the various steps of the operation for the removal of hypertrophied cervix. Dr. Berry Hart has also a series of preparations illustrating abortion, while Dr. Freeland Barbour shows preparations used in teaching, including a section of the uterus with placenta after expulsion of the child, and the cast of the genital tract from a frozen section in the second stage of labour. This cast is extremely interesting and instructive, since it shows, as no amount of description and no drawing, however good, could do, the exact condition of the parts and the moulding of the fœtus.

Medicine and Allied Sciences: Neurology.

Cerebral Tumours.—A very extensive series of specimens and photographs of intracranial tumours, a subject discussed in the Section of Neurology, are brought together in the Museum. Among those who contribute specimens are Dr. George Gibson, Mr. J. M. Cotterill, Professor Hamilton, Professor George Murray, Mr. George Richardson, and Dr. Alexander Bruce (Edinburgh), who show a series of specimens of cerebral tumours in various situations. Dr. Byrom Bramwell also has brought together a large series illustrating various forms of tumours, including an extraordinary case of melanotic sarcoma of the brain and other organs in which there are innumerable deposits of new growth in the brain and various organs of the body, but not in the cerebellum. Professor Coats and Dr. L. R. Sutherland exhibit a specimen of spindle-cell sarcoma of the cerebrum, and a specimen showing multiple cyst of the brain of cancerous nature secondary to cancer of the lung.

Diseases of Children.

Dr. John Thomson shows a number of specimens of syphilitic conditions in children, one of the subjects set down for discussion in the Section of Diseases of Children. He shows also a series of specimens of cases of congenital heart disease, three examples of congenital hypertrophy of the pylorus and stomach wall, and a water-colour drawing for a frozen section of spinal caries, another subject discussed in the Section.

Dr. T. Burn Murdoch, curator, and Dr. D. A. Welsh, pathologist, show a series of specimens of various morbid conditions from the museum of the Royal Hospital for Sick Children, and Dr. Burn Murdoch has lent a number of photographs and paintings.

Dr. Alexander Bruce shows a series of examples of acquired and congenital hydrocephalus, and Dr. Thomson exhibits specimens, photographs, drawings, and cast of chronic hydrocephalus.

Mr. Alexander Miles has a collection of congenital deformities, and Mr. A. A. Scot-Skirving a cast of a case of ectopic perineal testicle. Mr. Harold J. Stiles shows two examples of spina bifida myelo-meningoceles. Professor Chiene exhibits a very characteristic cast of a child suffering from congenital syphilis and emaciation.

Teratology.

Dr. J. W. Ballantyne shows a collection of 150 photographs of teratological specimens illustrating most of the principal variations of abnormality, and has also arranged to permit the inspection of his library of over 2,000 books, pamphlets, and dissertations bearing upon antenatal pathology and teratology.

Among the other specimens in this division are two examples of fœtal inclusion containing intestines in the dorsal region, shown by Mr. G. A. Peters, F.R.C.S., of Toronto.

Neurology.

In addition to specimens belonging to this department to which reference has already been made, there are several series illustrating various other points, in particular, a set of fifty coloured drawings of microscopic sections of acute myelitis and of various other nervous lesions in man, and of acute myelitis with chorea in dogs sent by Professor E. F. Trevelyan, of Leeds, a number of drawings lent by Dr. David Drummond, of Newcastle-on-Tyne, a portfolio of drawings by Dr. Byrom Bramwell; specimens of changes in the cord in pernicious anæmia by Dr. James Taylor, of London, a series of sketches of various lesions of the cord and brain by Dr. R. A. Fleming, and a specimen from a case of syringomyelia in an adult male, showing an advanced stage of neuropathic arthritis of the right shoulder girdle and humerus by Mr. Alexis Thomson. Examples of Charcot's joint disease are also exhibited by Dr. Alexander Bruce.

General Medicine.

Professor Greenfield exhibits a number of large thin sections of organs, as well as many other pathological specimens. Dr. Alexander Bruce has lent a full-sized cast of an adult patient suffering from achondroplasia, and showing the condition in a very marked form. The condition of this patient is further illustrated by photographs and a skiagram, and by photographs of four other cases, three shown by Dr. John Thomson and one by Mr. Harry Rainy. Dr. Hastings Gilford exhibits a number of photographs illustrating dwarfism.

Dr. George Gibson contributes a series of specimens of aneurysm of the aorta and of disease of the aortic, pulmonary, and tricuspid valves. Dr. Alexander Bruce shows a series of water-coloured drawings of malignant disease of the lung; Dr. Lindsay Steven, of Glasgow, drawings of various forms of disease of the lung and other organs; Dr. Paterson, of Glasgow, ninety-eight photographs illustrative of clinical medicine and surgery; Dr. Fleming a series of specimens of interesting cases. Professor Coats and Dr. L. R. Sutherland exhibit a large number of specimens illustrating diseases and injuries of the heart and their consequences. Dr. Byrom Bramwell shows a very fine series of drawings from his unrivalled collection, mostly water-colour sketches, illustrative of a large number of medical diseases. Dr. H. G. Durham shows photographs of the parasite of the tsetze disease. Dr. Radcliffe Crocker, Mr. Malcolm Morris, Dr. J. J. Pringle, Dr. James Galloway, Professor McCall Anderson, Dr. Norman Walker, and Dr. W. Allan Jamieson, President of the Dermatological Section, have also sent striking drawings of various forms of skin disease.

Surgery and Allied Sciences.

The museum is particularly rich in specimens illustrating various surgical injuries and diseases, and contains many series which are extremely instructive. The first place among these should, perhaps, be given to Professor Annandale's

fine collection of 40 specimens, illustrating injuries in the region of the elbow-joint, which is expanded by a series of 8 specimens sent by Mr. J. M. Cotterill, and specimens lent by Mr. Alex. Miles, Professor Chiene, Dr. W. G. Richardson, and Mr. Alexis Thomson.

Professor Chiene shows a series of specimens illustrating the pathology of the bladder and urethra. Dr. Heron Watson and Mr. J. Shaw Maclaren also show a number of specimens illustrating diseases of the urinary passages, among the most interesting of which are some showing various forms of enlargement of the prostate; while Surgeon-Major Richard Baker, of Hyderabad, has sent for exhibition a collection of 418 calculi removed from the bladder (404 by litholapaxy; 14 by lithotomy) during eleven months in Hyderabad.

There are also a large number of specimens illustrating the pathology of the vermiform appendix, twenty-four being lent by Mr. Annandale and thirteen by Mr. Alex. Miles. Under the head of diseases of the stomach and intestines amenable to surgical treatment, mention must be made of a remarkable series of specimens from cases submitted to operation lent by Mr. F. M. Caird and Mr. Alexander Miles. Professor Annandale shows a set of thirty specimens from operations performed for displaced semilunar cartilages, as well as a number of other specimens in general surgery, and Mr. Theodore Shennan exhibits injected specimens from a case of gangrene of the leg after frostbite, in which the line of demarcation was very beautifully shown. Mr. Alex. Miles exhibits an extremely striking specimen of middle meningeal hæmorrhage secondary to fracture of the vault and base, and the base of a skull showing an enormous piece of a revolving knife which had broken off and had been driven into the brain, lacerating the cerebral tissue. In this case both common carotids were ligatured for hæmorrhage, and the patient survived for some hours. Mr. Alexis Thomson shows the calvaria of a boy aged 16, who had been operated upon three years before for infantile hemiplegia and fits by the flap method; the specimen shows how well the completely isolated flap of bone had preserved its vitality, and had become reunited to the surrounding bone without any irregularity or projections from the dural aspect. Dr. A. M'Gillivray shows a large series of specimens of diseases of the eye mounted in glycerine, and Dr. Geo. Mackay, Mr. Herring, Mr. Paterson, and Mr. Jas. M. Buchanan (Glasgow) also shows specimens. Among the objects belonging to the department of Laryngology and Otology probably the most interesting are a series of thirty-six sketches showing variations in the anatomy of the frontal air sinuses prepared by Dr. Logan Turner. Specimens are also exhibited by Drs. McBride, Robert Fullerton, A. Brown-Kelly, and Messrs. Alexander Miles and Harold J. Stiles.

Obstetrics and Gynæcology.

In addition to the specimens used for teaching, to which reference has already been made, Dr. N. T. Brewis shows a series of specimens of salpingitis and also a number of examples of diseases of the ovaries and uterus. Specimens of three cases of deciduoma malignum already reported are exhibited by Dr. Herbert Spence, Dr. Lewers, and Miss Cock respectively; while of a fourth case, exhibited by Dr. J. H. Kelly and Mr. John H. Teacher, of Glasgow, a full history is given, and the condition is further illustrated by microscopical slides. Dr. Freeland Barbour, Professor Annandale, Dr. Harvey Littlejohn, Mr. C. W. Catheart, Dr. W. G. Richardson, Dr. Haig Ferguson, and Mr. Rutherford Morison shows specimens of extrauterine gestation.

Bacteriology.

Dr. Sims Woodhead and Mr. S. G. Shattock shows a number of specimens illustrating the effect of experimental inoculation, with special reference to the distribution of tuberculosis. Dr. Sims Woodhead also shows casts of tuberculosis of the udder, of the uterus, and of the intestine of the cow. Dr. Robert Muir, in addition to a series of cultures of pathogenic and other bacteria and photomicrographs, shows some specimens illustrating the effects of inoculation with pathogenic organisms. Both he and Dr. G. H. Durham (Cambridge) shows a set of apparatus used in serum diagnosis. Mr. Theodore Shennan and Mr. J. W. Tullo exhibits a series of cultures of nonpathogenic bacteria, including yeasts and moulds.

Stereoscopic Photographs.

Mr. Harold J. Stiles shows two sets of stereoscopic photographs of very great interest: the one illustrating the anatomy of congenital hydrocephalus, and the other reproducing dissections of parts from an adult male hardened in formalin, and employed for teaching topographical anatomy. The latter were prepared in association with Mr. W. E. Carnegie Dickson. Both sets show in a striking manner the advantages of the stereoscopic method of studying such objects.

Historical Objects.

A small collection of objects of historical interest is contained in the Museum. Among others there are John Hunter's writing desk, a bureau with a glass bookcase above, of the kind commonly called Chippendale. This interesting memorial of the great surgeon was presented to the Surgical Department of the University of Edinburgh by Dr. Robert Anstruther Goodsir, brother of Professor Goodsir. There are also one of Mrs. John Hunter's drawing-room chairs made from wood brought by Sir John Banks from Australia, and the boiler in which John Hunter boiled the body of O'Brien, the Irish giant. Professor Chiene also lends the dissecting table from the Old Minto House, believed to have belonged to Robert Knox, the anatomist. There is also to be seen the *post-mortem* table from the old Edinburgh Royal Infirmary. Among the surgical instruments shown are John Goodsir's dissecting case, bone forceps, and other instruments which belonged to Robert Liston, and instruments which had belonged to Professor Miller and Professor Spence; these are lent by Mr. A. G. Miller. There are also a cast of Syme's hand holding a knife, and Professor Annandale lends the knife which produced the gluteal aneurysm in the historical case upon which Mr. Syme operated.

It will be seen that the Museum, which contains nearly 1,000 specimens, is one of unusual interest and magnitude, and that careful classification of the objects exhibited added much to its value and instructiveness.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE fifty-seventh annual meeting of the Medico-Psychological Association of Great Britain and Ireland met in Edinburgh on July 21st, under the presidency of Dr. Macdowall of the Morpeth Asylum. After several honorary members had been elected, reports were presented by the various committees.

President's Address.

After luncheon, Dr. Macdowall introduced his successor, Dr. Urquhart of Murray's Royal Asylum, Perth, who then gave his presidential address. He gave a sketch of the men who had filled the chair in Edinburgh since 1858, including the great Conolly, the veteran Dr. W. A. F. Browne, Sir James Coxe, and, ten years ago, Dr. Clouston. When they last met in Edinburgh the membership was 450; now it was 574. Proceeding to analyse the cases admitted into Murray's Asylum, between 1827 and 1864 when the State-supported patients left, he stated that the cases received in that period were more actively insane, younger, more hopeful in prognosis, than those which had been admitted since. Taking the middle years of 1827 to 1864 and comparing with the period since 1879, the acute cases numbered 65 per cent. of the admissions of the former, as contrasted with 46 per cent. of the latter. Those over the age of 60 were 4 per cent, as contrasted with 14 per cent. The greater majority in the earlier period suffered from mania; few were melancholic: very few suffered from dementia. Now the curve for melancholia was rising, with trivial remissions, year by year. During the first period of 36½ years, it was found that 41.1 per cent. had been discharged recovered, as against 35.1 per cent. during the last period of 33 years. On reducing these figures to the net recovered persons, in so far as the asylum statistics could show, there was a difference of 2.4 per cent. instead of 6 per cent. The difference was apparently due to the large number of alcoholic cases formerly received as insane. The death-rate for the earlier and later periods referred to was 5.05 and 5.65 per cent. respectively. When the constituent elements of this death-rate were scrutinised, one was appalled at the number of deaths due to causes now considered preventable. The average age and physical strength

of the patients under care was more favourable in the earlier period. As to the inquiry, Does insanity increase? it ought to be answered with an indication of how the evil might be mitigated. Next Dr. Urquhart referred to the three Parliamentary Bills likely to pass into law this session—the English Lunacy Bill, the Habitual Drunkards Bill, and the Irish Local Government Bill, and felt disappointed that there was no proposal to increase the number of the Commissioners in Lunacy in the first-named Bill, and he demurred to the policy of legal restraints which seemed to threaten the asylums of England. He spoke on the whole favourably of the Habitual Drunkards Bill, but thought it not quite adequate. In concluding, Dr. Urquhart referred to a visit he had paid lately to the Elmira Reformatory, New York, which he commended as a model for the treatment of young criminals; to the improvements in methods of research now in progress, mentioning in this connection the Laboratory of the Scottish Asylums, and its first superintendent, Dr. Ford Robertson; to the danger of specialising in medicine at too early a period in life; and to the advantages of those engaged in asylum work living in terms of closest intimacy with the neurologists; and he looked with great hopefulness to the results of that closer contact with general hospitals which they should endeavour to bring about. It was a very real reproach to them that no psychiatrist had yet been appointed to the staff of the Edinburgh Royal Infirmary. They had learnt from Dr. Rayner and Dr. Crochley Clapham that their work was no longer in the experimental stage, and surely what had been approved by results at St. Thomas's and Sheffield should be adopted there. So long ago as 1871 Dr. Sibbald showed that the exclusion of insane patients from ordinary hospitals was an idea of recent date, and that the administration and legal difficulties were not insurmountable. They still awaited the realisation of his ideas, and it seemed to him (Dr. Urquhart) that it was high time to take action.

Votes of Thanks.

Dr. Rayner moved, and Dr. Conolly Norman seconded, a vote of thanks to Dr. Urquhart for his address, and this was supported by Dr. A. E. M'Donald, New York, and agreed to.

On the motion of Dr. Yellowlees, a vote of thanks was carried *nem. con.* to Dr. Macdowall for the manner in which he had discharged the duties of the chair during the past year.

Annual Dinner.

The annual dinner was held in the evening. The company included Sir William Turner, Sir Alexander Christison, Professor Chiene, Dr. Sibbald, Dr. Macdonald, New York; Drs. Stocker, Fletcher Beach, Chambers, Rayner, and Mercier, London; Drs. Clouston, Yellowlees, Ford Robertson, etc.

Papers and Discussions.

On the first day Dr. Ford Robertson read a paper on the Normal Histology and Pathology of the Nerve Cells in Relation to Mental Health. On the second day the nursing certificate question was referred to a Committee for consideration and report; various reports were made; a small Committee was formed to consider the prevention of insanity; the Sutton system of sewage disposal was considered; and the Habitual Drunkard was the subject of a paper by Dr. S. R. Wilson, of Mavisbank Private Asylum, in which he dissented from the too kindly theory of heredity, ridiculed "craves," and generally urged a more "Calvinistic" treatment of the habitual drunkard. This paper gave rise to much and varied discussion. Sundry technical papers were also read, and demonstrations given. The Association's bronze medal was awarded to Dr. George R. Lord, Hanwell Asylum, for the best communication sent in during the session, and finally the appropriate votes of thanks were passed.

Presentation. Mr. S. Macaulay, who has been on the surgical staff of the Newcastle Throat and Ear Hospital for 17 years, has, on the eve of his departure to settle at Perth, Western Australia, been presented by his colleagues and officials connected with the institution with an illuminated address expressive of their esteem and regret at losing his services. Mrs. Macaulay was at the same time presented with a diamond and ruby ring.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The summer general meeting of the above Association was held on Wednesday, July 27th, in the Students' Reading Room, Edinburgh. In the absence of the President (Dr. Mapother) the chair was occupied by Dr. Richard Heath (St. Leonard's). Among those present were Dr. P. S. Abraham (Chairman of Council), Dr. Jocelyn Swan (Honorary Treasurer), Brigade-Surgeon William Alexander (Portobello), Dr. F. H. Daly; Dr. Frederic W. Kidd (Dublin), Surgeon-Major Harman (Winchester), Dr. J. Colley Burkitt (Whitwick), Dr. J. Chestnutt (Howden), and the Provincial Honorary Secretary, Dr. J. Stewart (Clifton).

Dr. Stewart, in an address, said that since their last provincial meeting another English hospital, and he was glad to say it was a metropolitan one, had rescinded the rule which had previously prevented anyone but a Fellow of the English College of Surgeons from holding a position on the honorary surgical staff. He alluded to St. Peter's Hospital for Stone, Covent Garden. These strongholds of monopoly were gradually being reduced in number, and he (Dr. Stewart) felt sure that the innate sense of justice, which was so marked an element in the English character, would ere long lead the governors of the remaining hospitals, where the exclusive rule prevailed, to open their doors to fully qualified candidates holding the higher diplomas obtained by examination, no matter in which division of the kingdom such diplomas had been obtained. The victories the Association had already gained at Bristol, St. Leonard's, Brighton, and other places were an earnest of what was before them if all those holding Irish diplomas would give a helping hand by joining the Association, the membership of which now numbered nearly 750, but which ought to be over 1,000.

The Chairman announced his intention of giving a donation of £10 to the Hospital Disabilities Fund on the understanding that one of the monopoly strongholds (such as Liverpool) should be attacked by the Council as soon as possible, and he concluded by moving:

That this meeting hereby records its regret that so many English public hospitals have still among their regulations a rule the effect of which is practically to exclude from candidature for honorary appointments on the staff who do not hold the diplomas of two specially favoured London Colleges.

Dr. Abraham proposed a vote of thanks to Dr. Stewart for his address, and for the untiring efforts he had made for years to bring the monopoly question before the profession and public. This was seconded by Dr. Swan, and carried with acclamation.

A vote of thanks to the Chairman concluded the proceedings.

THE SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

A meeting of the Scottish Poor-Law Medical Officers' Association was held in Edinburgh on July 27th, under the presidency of Dr. W. L. Muir, of Glasgow. A discussion took place as to grievances under which Poor-law medical officers suffered in Scotland. The following resolution was passed:

That the Scottish Poor-Law Medical Officers' Association be instructed to send a communication to the Local Government Board for Scotland, asking them to again take into their favourable consideration the grievances complained of, and take steps, by legislative or other methods, to have them removed.

A resolution was also unanimously passed, thanking the Council of the British Medical Association for the kind assistance they had given the Scottish Poor-Law Medical Officers' Association in the struggle, and trusting that they would continue to give that assistance in any future agitation which might take place.

Dr. J. Magee Finny, Professor of Practice of Medicine in the School of Physic of the University of Dublin, has been appointed to the seat on the Board of Superintendence of the Dublin Hospitals rendered vacant by the death of Dr. Samuel Gordon.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Vaccination Bill has not yet been read a third time in the Commons, and the delay is, as usual, giving rise to many rumours. Some hope that the Bill will be dropped; others that it will be reconstructed in the Lords. These last remember that in 1871 a Select Committee of the House recommended that no more than two penalties, or one full penalty, should be imposed for the same child. Mr. Forster, who was chairman of the Committee, adopted the recommendation in the Bill which he passed through the House in that year, but was nevertheless unable to carry in the Lords. In the Upper House, by a majority of 8 to 7, the clause was struck out, and as the session was nearly at an end there was no time to fight it out again in the Commons. The system of repeated penalties, which has been going on since 1871, with a steady decline in the number vaccinated year by year, was thus the work of 15 peers, 7 of whom voted one way and 8 the other. History may repeat itself, some think, as regards vaccination this session, but, if so, it will hardly be by a majority of one. The Government really mean to carry the Bill, and will in all probability take the third reading at a special sitting on Saturday or on Monday next. As some few members are annoyed at what they call the surrender of the Government, there will be a warm but short debate.

The London University Commission Bill proved to be a very contentious measure, for the House was engaged on it from about 5 o'clock on Monday afternoon till the early hours of the next morning. Some ten amendments were divided upon, but no material alteration was made in the Bill. The fight raged most fiercely round the number of the Commissioners, the extension of the 30-mile radius, and the question of making the examinations the same for both internal and external students. There was a very strong feeling in the House in favour of including in the University colleges like those at Brighton and Southampton. Many members think the opportunity should have been taken when Wye College was included to make the Bill elastic enough to include all the southern counties, so as to avoid the creation of another university south of London at some future date. The Government was, however, supported by large majorities, and no objection was raised at the end of the report stage to the third reading, which was taken early on Tuesday morning.

Unqualified Assistants have at last appeared with their grievances in the House of Commons. On Tuesday Mr. Logan called Mr. Balfour's attention to the effect of the action of the General Medical Council in depriving a large number of persons of their means of obtaining a livelihood. The First Lord, in reply, said that the Privy Council had no official knowledge of the matter and could not interfere, but he indicated that the General Medical Council would deal with every case brought before it on its merits. There is a good deal of sympathy in the House with these assistants, but the matter is not one on which any Parliamentary action can be taken, short of a Bill to reverse the policy of the Council, a most improbable, if not impossible, contingency.

The Habitual Inebriates Bill is making its way rapidly on to the Statute Book. The second reading was passed without debate in the Lords last week, and all promises well for an early passage into law.

The Pharmacy Acts Amendment Act and the **Poor-Law Union Association Act** were reported by the Speaker on Monday last as having received the Royal assent.

ADVERTISEMENTS AND ILLEGAL PRACTICES.—Mr. Channing asked the Secretary of State for the Home Department whether he had considered the facts disclosed at the recent trial of Dr. Collins, and in many previous trials of similar character, and the use made in the St. Neots case of a notorious advertisement; whether he was aware that an enormous number of advertisements inciting to criminal offences of this nature are regularly being inserted in the metropolitan and provincial press, and that a vast amount of social mischief and crime was alleged to arise from these advertisements; and, whether he would introduce or support effective legislation to prevent the insertion in the press or other distribution of advertisements of this class, and strengthen the law in dealing with incitements to these offences.—The Home Secretary, in reply, said: I am fully aware of the character of these advertisements, but legislation on the subject would be a matter of great difficulty; and I am not prepared at present to give any undertaking to introduce it. I will, however, bear the matter in mind.—Mr. Channing: In consequence of this answer I beg to give notice that I will take the earliest opportunity next session to introduce a Bill on the subject myself.

TUBERCULOSIS.—Mr. Broadhurst asked the President of the Board of Agriculture whether he had reason to believe that tuberculosis was prevalent in the dairy herds of the country, and if so, whether any steps were being taken to warn the consumers of milk of danger to young children drinking milk from cows so affected.—Mr. Chaplin, in reply, said he must refer the hon. member to the report of the Royal Commission as to the prevalence of tuberculosis amongst dairy stock. He did not himself think that the issue of any warning on the subject was necessary, but the matter was one for the consideration of the Local Government Board rather than himself.

VENEREAL DISEASE IN INDIA.—Mr. James Stuart asked the Secretary for India whether in the draft cantonment rules sanctioned by him in his despatch of July 8th, 1897, it was provided that any medical practitioner who in the course of his practice became cognisant of the existence in any person of any infectious or contagious disorder should be bound under penalty to give information to the cantonment authority; and whether the Indian Government had given any reason for omitting this provision in the cantonment regulations issued by them under date October 15th, 1897, and now in operation.—Lord G. Hamilton, in reply, said the Government of India were of opinion that the rule referred to was, as originally drafted, too wide, and that it required modification. As, however, it was desirable to issue the rules without delay, they decided to publish them without this particular one, which they reserved for further consideration, but it was their intention to restore it in a modified form. This would shortly be done, and he would then lay it on the table of the House.—Lord George Hamilton, in reply to Mr. James Stuart, said that steps had been taken to lay upon the table of the House the letter issued by the Government of India, Military Department, dated November 20th, 1897, which purported to state explicitly and in practical detail the policy of the Government of India with respect to the future treatment of venereal disease in cantonments.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

First Professional Examination for the Degrees of M.B. and Ch.B.—The following candidates have passed in Botany:

R. G. Aichin, L. Anderson, W. W. Anderson, R. G. Archibald, C. A. Bennett, W. Bennett, G. Bennett, G. B. Brand, M. Holmes, S. W. Hudson, R. H. S. Langveld, C. E. Marshall, T. Mill, R. Bladworth, A. Brownlee, W. T. M. Goldie, D. Golding, A. O. Hooper, F. P. Lauder, R. J. Mayberry, A. F. H. Rabaghiati, W. J. D. Robertson, W. M. Selby, H. M. Stumbles, J. F. van de S. de Villiers, E. F. Wood, R. H. Bullmore, R. H. Carlisle, A. M. Caverhill, M. Davies, T. S. Dick Cleland, Ian Domisse, Percy E. C. Karez, L. Fourie, R. P. Ghose, E. G. Girdwood, T. B. Hamilton, D. J. Hanmon, C. R. F. Hartley, T. J. H. Hoffmeyr, J. M. Johnstone, R. W. Johnstone, J. P. Kennedy, R. D. Kidd, S. Burns, C. M. Campbell, J. Dalzell, J. S. Elliot, J. Girdwood, G. Henderson, R. B. Hole, G. I. Leceuse, H. Kramer, J. C. London, H. MacCormack, G. M'Farland, A. H. M'Shine, A. M. Moll, J. H. Montgomery, E. Muir, C. H. Muller, T. Nichol, C. O. Flaherty, T. H. Osler, J. A. Raubenheimer, J. J. Redhead, H. H. Robarts, D. W. Standley, P. Cickers, W. Blackwood, H. T. Cumming, C. E. F. Fartshell, A. M. Gloag, H. A. Knight, V. Langmore, A. E. Nalbrough, M. J. Neylon, A. M. Pryce, J. J. Shannon, G. S. Sharpe, M. Sinclair, G. D. Sloan, J. A. Small, E. J. Taylor, G. A. J. Tait, G. J. Wentzell, F. A. Wille, S. A. K. Wilson, G. H. Winch, C. H. Wright, N. D. Wright, E. A. Braine, W. B. Brayne, Edith C. Brown, W. A. Brown, J. W. Cathless, Kate S. Clark, Elizabeth L. Colby, J. H. Connolly, G. M. Coughtrey, C. H. Craig, Scunliffe, A. Dangerfield, H. S. Davidson, D. E. Derry, A. C. Deureaux, J. Dunlop, S. C. Ellison, C. L. Eyles, J. Fairbairn, A. N. Fell, J. Scobie, D. J. Scott, E. W. Smyth, H. S. Gashnell, A. C. Geddes, A. Gillespie, R. G. Gordon, Annie M. Gurney, H. Harding, A. W. M. Harvey, H. Herd, H. Kerr, S. Khan, J. M. Kirkness, Norah Lenwood, W. Lilico, R. C. Low, F. W. Lundie, W. F. Macdonald, Isabel M. M'Keand, J. M. Macrae, W. E. Marshall, E. L. Meynell, A. B. Morgan, E. J. Morton, C. Nelson, G. P. B. Phillips, W. S. Pillans, J. H. H. Pirie, Julia L. Pringle, C. Reece, W. R. Reid, A. B. dos Remedios, Mabel Ross, R. E. Russell, James S. Sewell, F. W. S. Shepherd, W. F. Smeall, A. B. Spence, A. Thomson, Effie F. M. Stuart, and Robert Veitch.

UNIVERSITY OF GLASGOW.

Graduation in Medicine.—The graduation ceremony which marks the close of the summer session in Glasgow University, took place on July 21st, in the Bute Hall of the College. There was a large attendance of friends of the graduates and others interested. Sir William T. Gairdner, K.C.B., who performed the "capping" ceremony, at the outset paid a high tribute to the retired Principal Caird. He said that it was the last public meeting connected with the University at which it was competent to give expression to their feelings at the retirement of their venerated and much beloved principal. He could not let the occasion pass without at least giving expression to the extreme regret which they all felt at losing one whose large-mindedness, whose sympathies, and whose love of peace had been throughout a strong tower to the University, and whose great fame as an orator and as a divine had lent a lustre to it that they could never forget.

Professor Young presented the graduates, of whom 13 received the degree of M.D., and 63 the degrees of M.B., C.M., or M.B., Ch.B. Professor Stockman afterwards addressed the graduates, congratulating them on their success, and giving them a few words of advice. He referred especially to some of the difficulties of the profession, referring, among other things, to the abuse of medical charity, which had at the present time reached such proportions as to be a serious burden on the profession.

The following is a list of the degrees conferred:

M.D.—*J. W. Findlay, M.B., C.M., †R. G. Bell, M.B., C.M., †J. D. O. Wilson, M.B., C.M., W. Allan, M.B., C.M., E. A. Gibson, M.B., C.M., R. Jamieson, M.B., C.M., J. H. Martin, M.A., M.B., C.M., G. G. Macdonald, M.B., C.M., A. L. McMillan, M.B., C.M., C. E. Robertson, M.B., C.M., R. McC. Service, M.B., C.M., H. W. Williams, M.B., C.M., J. Wylie, M.B., C.M.

M.B., C.M.—*W. K. Hutton, M.A., *R. Fullarton, M.A., *W. Webster, †J. J. Buchan, †J. A. Mitchell, †A. J. Ballantyne, †J. R. Currie, B.A., †J. Crow, †J. Aitken, †R. Niven, †J. B. Miller.

Mr. Hutton also gains the Brunton Memorial Prize of £10, awarded to the most distinguished graduate in medicine of the year.

* With honours. † With commendation.

UNIVERSITY OF ABERDEEN.

The following degrees were conferred at the Graduation Ceremony on July 21st:

Doctor of Medicine (M.D.).—G. Allan, M.B., C.M. Thesis—"On the Diseases Prevalent in the Western Pacific Islands." H. Angus, M.B., C.M. Thesis—"Purpura, its Forms and Relationships." W. H. Hewlett, M.B., C.M. Thesis—"Psoriasis or Lepra." F. Kelly, M.B., C.M. Thesis—"On Nigrities Linguæ." F. M. Robertson, M.B., C.M. (Old Regulations). D. Ross, M.B., C.M. Thesis—"On the Uric Acid Diathesis, and on some Newer Uric Acid Solvents." A. T. Smith, M.B., C.M. Thesis—"Tubal Pregnancy." D. M. Smith, M.B., C.M. Thesis—"Analysis of over 300 Midwifery Cases." R. Turner, M.A., M.B., C.M. Thesis—"A Critical Notice of Dr. George S. Keith's Book, *A Plea for a Simpler Life*." J. S. Walker, M.B., C.M. Thesis—"Remarks on Diphtheria."

The thesis of Mr. D. Ross was considered worthy of "Highest Honours."

Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—R. J. Brown, J. G. Chalmers, A. J. Hind, J. G. S. Macpherson, I. Macquarrie, H. Munro, H. M. Nicholls, C. G. Peries.

Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—D. H. Ainslie, R. J. Cheves, R. H. Clarke, F. W. Ellis, A. G. G. M. Fraser, D. A. Hutcheson, R. F. Hutchison, F. Kinnear, H. J. McGrigor, D. M. Maciver, F. McLennan, J. J. R. Macleod (with honourable distinction), A. D. McQueen, G. J. Piric; C. E. Preston, B.A.; W. Tuach, A. B. Walker.

The John Murray Medal and Scholarship was awarded to Mr. J. A. Thomson, M.B., Ch.B. B.Sc., and the Alexander Anderson Scholarship to Mr. J. J. R. MacLeod; *Proxime accessit*, Mr. G. F. Petrie.

The Diploma in Public Health was granted to M. Connon, M.B.Aberd.; T. W. Parkinson, M.B.Edin.; and G. A. Turner, M.B.Aberd.

SOCIETY OF APOTHECARIES OF LONDON.

Pass List, July, 1898.—The following candidates passed in:

Surgery.—F. Adams, St. Thomas's Hospital; L. D. B. Cogan, Guy's Hospital; A. W. H. Edgelow, Charing Cross Hospital; J. L. Elliott, Leeds; T. A. E. Fawcett (Section I), Leeds; F. Hasler (Section II), London Hospital; G. C. Hobbs (Section II), St. Bartholomew's Hospital; A. J. Kennedy, Edinburgh; R. A. Lewty, Leeds and St. Mary's Hospital; E. P. Marett, St. Thomas's Hospital; L. R. Marshall, St. Mary's Hospital; M. Pantin (Section II), Royal Free Hospital; E. J. Parry, St. George's Hospital; W. J. Schuller (Section I), London Hospital; D. C. M. Shaw, Manchester; A. P. Square, Middlesex Hospital.

Medicine.—F. Atthill (Section I), Charing Cross Hospital; E. U. Bartholo- [illegible] Hospital; M. E. Bennett (Section II), Royal [illegible]; G. F. M. Clarke, Charing Cross Hospital; H. E. Dalby, [illegible]; A. G. C. Davies (Section I), Guy's Hospital; S. E. Dunkin, Charing Cross Hospital; J. M. Edwards (Section II), Charing Cross Hospital; P. T. Goodman, St. Thomas's Hospital; E. J. Gruby, London Hospital; F. Hasler (Section II), London Hospital; E. S. Johnson, St. Mary's Hospital; A. J. Kennedy, Edin- [illegible]; W. R. Wilson, Dublin and Belfast; C. C. Worts, Guy's Hospital.

Forensic Medicine.—F. Atthill, Charing Cross Hospital; E. U. Bartholo- [illegible] Cross Hospital; H. E. Dalby, Charing Cross Hos- [illegible]ics, Guy's Hospital; S. E. Dunkin, Charing Cross [illegible]; London Hospital; J. W. Haigh, Leeds; A. [illegible]; J. M. Saunderson, Cambridge and London [illegible] Manchester; C. C. Worts, Guy's Hospital.

Midwifery.—W. F. E. Ashton, Birmingham; E. U. Bartholomew, [illegible]; M. E. Bennett, Royal Free Hospital; T. [illegible] P. T. Goodman, St. Thomas's Hospital; J. [illegible] H. L. Hands, Charing Cross Hospital; F. Hasler, London Hospital; D. F. Kennard, St. Mary's Hospital; A. J. [illegible]rgh; E. P. Marett, St. Thomas's Hospital; W. [illegible] Hospital; S. Sugden, Manchester; J. [illegible] Thorpe, University College Hospital; [illegible]

Messrs. F. Adams, J. L. Elliott, A. W. H. Edgelow, F. Hasler, A. J. [illegible]on, A. P. Square, and [illegible]ety entitling them to [illegible]

The Prevention of [illegible] in Italy.—It is announced that the Italian Ministry of the Interior, giving effect to the desire expressed by the Superior Sanitary Council, will begin the construction of sanatoria for tuberculous patients.

MEDICAL NEWS.

We are asked to state that the Library of the Royal Medical and Chirurgical Society, 20, Hanover Square, W., will be closed from August 1st to 31st, both days inclusive.

The University of Aberdeen conferred the honorary degree of LL.D. on Dr. William Osler, Professor of Medicine at the Johns Hopkins University, Baltimore, U.S.A., at the graduation ceremony on July 21st.

Dr. Leslie Thorne Thorne has been appointed Medical Examiner to the Technical Education Board of the London County Council.

A new hospital for soldiers' wives and children was opened at Aldershot by the Duchess of Connaught on July 26th.

Dr. Cheadle, Chief Physician at St. Mary's Hospital, has presented the Medical School with the sum of £500 to found a gold medal in clinical medicine.

Mr. H. Bellamy Gardner has been appointed anæsthetist to Charing Cross Hospital in the room of Dr. F. W. Hewitt, who has resigned that post.

A Mineral Water Congress.—Among the numerous congresses which are to be held in the autumn is an International Congress on Drinking Water and Mineral Waters. This gathering is to be held for the fifth time at Liége, from September 25th to October 3rd. The Secretary is Dr. Jorissene, 130, Boulevard de la Sauvenière, Liége, Belgium.

A Chinese Regiment for the Philippines.—According to the *N. Y. Medical Record* for July 2nd, a Chinese medical man—Dr. Joseph F. Chan—has asked permission to enlist about 200 Chinamen in San Francisco, to form a Chinese regiment as a nucleus for recruiting from among the 2 million Chinese in the Philippines for service there under the American flag.

University Education in the United States.—According to the report of the American Commissioner of Education, Dr. W. T. Harris, just issued, the number of students pursuing liberal studies in the colleges and Universities of the United States in the year 1896-97 was 97,122, a decrease of 255 from the number reported in the preceding year. The number of graduate students is, however, constantly increasing, being in 1896-97 4,919, of whom 1,413 were women. There were 8,173 students of theology, 10,449 students of law, and 24,377 students of medicine.

MEDICAL VACANCIES.

The following vacancies are announced:

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—Second Assistant Medical Officer (unmarried, and not exceeding 35 years of age). Salary, £130 per annum, apartments board, and washing. Applications to the Clerk by August 23rd.

BOROUGH OF DERBY. Medical Officer of Health. Salary, £500 per annum, increasing by £50 per annum to £600 at intervals of two years. Applications, endorsed "Medical Officer of Health," to H. F. Gadsby, Town Hall, Derby, by August 22nd.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton. House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician; unmarried, and under 30 years of age. Salary, commencing at £50 per annum, with board and residence. Applications to the Secretary by August 24th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to E. Markham Skerritt, M.D., Dean, by August 20th.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE, Chelsea, S.W.—Teacher of Hygiene. Applications to the Honorary Secretary.

CANCER HOSPITAL (FREE), Fulham Road, S.W. House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by August 2nd.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W. Registrar. Honorarium, 20 guineas a year. Applications to the Secretary by August 8th.

CUMBERLAND AND WESTMORELAND ASYLUM, Carlisle. Senior Assistant Medical Officer. Salary, £120 a year, with board. Application to Dr. Farquharson, Garlands, Carlisle.

DERBY: DERBYSHIRE ROYAL INFIRMARY. Assistant House-Surgeon. Salary, £40 per annum, with board, residence, and washing. Applications to the Secretary by August 12th.

DUNDEE ROYAL INFIRMARY.—Two Resident Medical Assistants. Appointments for six months. Salary at the rate of £40 per annum, with board and washing. Applications to the Medical Superintendent by August 10th.

HOSPITAL OF ST. FRANCIS, 145, New Kent Road.—Orthopædic Surgeon and Ophthalmic Surgeon. Applications to the Honorary Secretary by August 20th.

LAMBETH INFIRMARY. Resident Clinical Assistant, and Second Assistant to the Medical Superintendent. Appointment for six months. Salary at the rate of £50 per annum. Applications to the Medical Superintendent, Brook Street, Kennington Road, S.E.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon; doubly qualified. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by August 3rd.

MANCHESTER: ANCOATS HOSPITAL.—Resident Junior House-Surgeon. Salary, £50, with board and washing. Applications to the Secretary by August 8th.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham. Salary, £100, rising to £200, with board, lodging, attendance, and washing; unmarried, and age not to exceed 35 years. Applications to the Clerk by August 22nd.

MILLER HOSPITAL AND ROYAL DISPENSARY, Greenwich Road, S.E.—Resident Medical Officer. Appointment tenable for six months, with prospect of re-election as Senior. Salary, £30 per annum, with board, attendance, and washing. Applications to the Secretary by August 15th.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House-Surgeon; doubly qualified. Appointment for six months. No salary, but an honorarium of £10 will be given at the end of term if found satisfactory. Board, lodging, and washing provided. Applications to the House-Surgeon by August 6th.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary, £180 a year, increasing to £200, with coal, gas, furnished apartments, etc. Also Clinical Assistant. Salary, £60 for six months, with coal, gas, furnished apartments, etc. Applications to the Secretary.

OWENS COLLEGE, Manchester.—Demonstrator of Anatomy. Applications to the Registrar by August 1st. Also Senior and Junior Demonstrator in Physiology. The stipends will be £150, rising to £200, and £100, rising to £150, respectively. Applications to the Registrar by September 1st.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

SALFORD SCHOOL BOARD.—Medical Officer. Salary, £150 per annum. Applications to the Board by August 17th.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Doubly qualified. Salary, £50 per annum, with board, lodging, and washing. Applications, addressed to the "Medical Staff of the Royal Infirmary, Sheffield," by August 18th.

SOMERSET AND BATH ASYLUM, Wells, Somerset.—Junior Assistant Medical Officer; unmarried, and under 30 years of age. Salary, £110, rising to £130, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by August 13th.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon; doubly qualified. Appointment tenable for six months (renewable). Honorarium at the rate of £30 per annum, with residence, board, and washing. Applications to Joseph Worall, Infirmary Office, Cambridge Arcade, Southport, by August 6th.

STAFFORDSHIRE COUNTY ASYLUM.—Medical Officer to act as "Locum Tenens" for two or three months. Salary, 2 guineas per week, with board, etc. Applications to the Medical Superintendent.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. No salary; board, lodging, and washing provided. Applications, endorsed "Assistant House-Surgeon," to J. E. W. Wakefield, Bank Buildings, Taunton, by August 15th.

THREE COUNTIES ASYLUM, Arlesley, Hitchin.—Second Assistant Medical Officer; unmarried, and under 30 years of age; doubly qualified. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to F. G. Butler, Clerk to the Committee of Visitors, St. Neots, Hunts, by August 15th.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice Lane, Walton-on-the-Hill, Liverpool; doubly qualified. Salary, £80 per annum, with board and residence. Applications to Harris P. Cleaver, Brougham Terrace, West Derby Road, Liverpool, by August 9th.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary; doubly qualified. Salary, £80 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by August 10th.

WAKEFIELD: WEST RIDING ASYLUM.—Pathologist. Salary, £150 per annum, increasing to £200, with board and furnished apartments. Applications to the Medical Director.

WORCESTERSHIRE COUNTY COUNCIL.—Additional County Analyst. Salary, £400 per annum. Appointment for six months. Applications, endorsed "County Analyst," to the Clerk, Shirehall, Worcester, by August 19th.

MEDICAL APPOINTMENTS.

DENBY, W., M.B., C.M.Edin., appointed Medical Officer for the Fourth District of the Bradford Union.

GARDNER, H. Bellamy, M.R.C.S.Eng., L.R.C.P.Lond., appointed Anæsthetist to Charing Cross Hospital, *vice* Dr. F. W. Hewitt, resigned.

GOODING, C. Gerald, B.A., M.B., B.C.Cantab., appointed Honorary Surgeon to the Royal Kent Dispensary.

HUNT, J. W., M.D., appointed Medical Officer for the Seventh District of the Hackney Union.

LLOYD, J. W., M.R.C.S., L.R.C.P.Lond., L.D.S.Edin., appointed Honorary Surgeon to the Liverpool Dental Hospital.

O'MEARA, T. J., B.A., M.B., appointed Medical Officer for the Dispensary District of Tullagh in the Skibbereen Union.

THORNE, Leslie Thorne, M.D., appointed Medical Examiner to the Technical Education Board of the London County Council.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

BOOBBYER.—On July 20th, at 56, Burns Street, Nottingham, the wife of Philip Boobbyer, M.B., of a daughter.

COSENS.—On July 17th, at San Clare, Paignton, the wife of C. Hyde Cosens, of a daughter.

MARRIAGES.

BATTERSBY—AYRE.—July 20th, at St. Nicholas Church, Withernsea, by the Rev. J. G. Patrick, Vicar of Owthorne, assisted by the Rev. C. Day, Vicar of Withernsea, and the Rev. F. Weston, Vicar of Roos, John Hargreaves Battersby, M.D., of Ripon, Dogcastor, second son of the late Richard Battersby, of Heywood, Lancashire, to Lily Rachel, elder daughter of H. H. Ayre, of Withernsea, East Yorkshire.

GROSVENOR—PEARSON.—On July 27th, at the Parish Church, Knutsford, by the Rev. Jas. Bourchier Sayer, M.A., cousin of the bride, assisted by the Rev. G. Louis Higson, M.A., William Clayton Grosvenor, M.A., M.D., eldest son of Frederic Grosvenor, of Dennistoun, Glasgow, to Mary Mowbray, elder daughter of James Fildes Pearson, of Beechwood, Knutsford.

JOHNS—BARNES.—On July 25th, at St. John's, Moordown, by the Rev. Theodore Marsh, Vicar, Walter Denton Johns, B.A., M.B., of Sunny Mount, Bournemouth, son of the late Captain Johns, R.N., of Benington Hall, Boston, to Ellen, daughter of the late W. Barnes, Esq., of Durham.

RICHARDSON—TONKING.—At Camborne Parish Church, on the 19th instant, Adam Richardson, M.B., M.S.Edin., L.S.A.Lond., etc., to Rhoda Maud, youngest daughter of C. H. Tonking, Esq., Roskear Villas, Camborne.

DEATH.

KINGSLEY-HUNTER.—On July 19th, at Montague House, Gamlingay, Cambs, Herbert Kingsley-Hunter, M.D.Paris., L.S.A.Lond., of heart failure, accelerated by mental strain, aged 29.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—i.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 3; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Tu. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 3; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429 Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

FIJI asks for information as to the class of Europeans found in Fiji. He asks from the point of view of one thinking of a medical appointment there. He is satisfied as to the climate.

M.B. would be glad to be informed if there is a home for inebriates where a young man can be received under the Act if necessary for about £1 1s. a week.

H. W. would like the experience of those who have used the carbonate of cresotol in phthisis, especially as to its influence (favourable or otherwise) in hæmorrhage.

P. L. G. S. would be glad to be informed where a home can be found for an elderly woman with heart disease whose friends are willing to pay £1 a week.

ENQUIRER asks if any reader can inform him whether a special examination or Canadian diploma is required of an Englishman setting up in practice in British Columbia. He would also be glad of any information as to scale of fees, opportunities for practice, cost of living, and climate in the large towns, for example, Victoria or Vancouver in the same dependency.

MR. L. A. WINTER (Chartham, near Canterbury) will be much obliged if any member can tell him of a suitable home where the following patient could stay for a time: Village tradesman of limited means has been in an asylum six years ago with melancholia; now has symptoms of recurrence, but is by no means insane, and recurrence may be averted by judicious treatment and appropriate surroundings. During the last five years has been quite well mentally.

M.R.C.S. writes: Suppose a metallic catheter passed through the male urethra into the bladder and a finger placed in the rectum. What is the distance separating the catheter in the membranous part of the urethra from the examining finger? Judging from Fig. 569 in Gray's *Anatomy* (11th edition), it would be about one inch and a-half. But this must surely be too much, or the catheter would hardly be perceptible. What is the degree of distinctness with which the catheter should normally be felt? No doubt it is difficult to define; but I should be glad of some guidance.

ANSWERS.

E. J. C.—The preparation is a secret remedy, and we have no information with regard to its composition.

G. O.—The question appears to be a legal one, and its answer to turn upon the legal interpretation of the policy.

D. W.—The practice mentioned by our correspondent is quite irregular, and would get him into trouble if it came to the knowledge of the authorities.

F. J. A. B.—As a rule, we believe that a medical officer on a passenger steamboat is not entitled to claim fees from passengers, but this would depend upon the terms of his engagement.

DR. J. CUTHBERTSON WALKER.—Ordinary drinking water containing alkaline carbonates, chlorides, etc., cannot be used for the preparation of solutions of metallic salts, such as silver nitrate and lead acetate, without decomposition ensuing. It is better to use distilled water in dispensing medicines, although it is not absolutely necessary in all cases. We are informed that the auto still made by Bennett and Shears, 167, Kingsland Road, London, is a very suitable one for the production of small quantities of distilled water. It produces about half a gallon of distilled water per hour.

J. McC. will find information with regard to the relative advantages and disadvantages of the Indian Medical Service, and as to the life of members of the service in the *Indian Medical Service Guide for Candidates and Officers*, by W. W. Webb, M.D., Surgeon-Captain, B.M.S. (London, Thacker, and Co., 1890, price 5s. 6d.). Surgeon-General Charles R. Francis published in the *Middlesex Hospital Gazette* for February, 1898, an article on the Indian Medical Service, which was reprinted for private circulation, but we understand that he intends to issue a revised separate edition shortly.

R. N.—We are not aware that Fellows of the Royal College of Surgeons of England "arrogate the right to sign F.R.C.S. without the addition of Eng.," nor do we know of any rule on the subject. It is obvious, however, that the mere title without indication of its source may convey a different meaning according to the country in which it is used. Thus in Scotland, for instance, the letters "F.R.C.S.," without addition, *primâ facie* imply that the practitioner is a Fellow of the Edinburgh College, while in Ireland they would suggest that he is a Fellow of the Irish College. In England they are naturally taken to denote the Fellowship of the English College.

THE D.P.H. CAMBRIDGE.

CAMBRIDGE.—If our correspondent will refer to the BRITISH MEDICAL JOURNAL of February 5th, 1898, p. 415, he will find in a reply to "Psycho" the information which he requires.

TREATMENT OF FLAT FOOT.

MR. T. S. ELLIS (Gloucester) writes: If "Supple" (first of the "Queries" on p. 279 of the BRITISH MEDICAL JOURNAL, July 23rd) cares to apply to me direct, I will gladly give him the plan of treatment for flat foot which I have for many years adopted and always find satisfactory. I am unwilling to trespass on your space to the necessary extent.

MATCHES WITHOUT YELLOW PHOSPHORUS.

G.T.M.—The Belgian Government has voted a sum of £2,000 (open to competitors of all nations) to anyone who can compound a marketable match paste without the aid of yellow phosphorus. The paste must not be liable to explosion in manufacture, and must not contain any substance dangerous to the health of the workpeople. Application for conditions should be made to M. Woeste, President de la Commission au Ministère de l'Industrie et du Travail, Rue Latérale 2, Bruxelles, to whom also the results of experiments are to be sent.

NOTES, LETTERS, Etc.

MEMBRANOUS INFLAMMATION OF TONGUE AND MOUTH.

W. G. writes: In the BRITISH MEDICAL JOURNAL of July 16th there is a very interesting account of a case of membranous inflammation of tongue and mouth reported by Drs. Hall and Adams, of the Sheffield Royal Hospital. I have met with two similar cases as far as symptoms were concerned, both occurring during the course of chronic nephritis (presumably the large white kidney). The symptoms in my cases were by me directly attributed to the incautious use of mercury. In one of the cases I myself prescribed one pill containing 3 grs. of pil. hydrarg. with squills and digitalis, to relieve the cardiac dilatation. The patient was not seen by me for three days after I prescribed the pill, as she lived some considerable distance from my residence, and her husband called on me to say it would not be necessary for me to visit her for that period, as she was so much better after taking the pill and the other remedies I ordered. When I did see her, I found that she had been taking a pill each night to make her sleep, "as she derived so much benefit from the first." She died from exhaustion before the mouth recovered. The other case was one I saw with a neighbouring practitioner, and inquiry elicited that he had prescribed a calomel purge some few days before. Could mercury in any way have entered the system of the patient in the case reported from the Sheffield Royal Hospital?

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Dr. B. Anningson, Cambridge; Professor T. Annandale, Edinburgh; Messrs. Attwood and Co., London. **B** Mr. A. Buchan, London; Mr. G. J. Barlow, London; Dr. G. P. Bate, London; Dr. W. G. Bacot, Bournemouth; Dr. J. J. Bingham, Alfreton; Mr. L. Buss, London; Mr. E. J. Brady, Bath. **C** Dr. T. Churton, Leeds; Dr. E. McD. Cosgrave, Dublin; Cambridge; Civis; Dr. H. Campbell, London; Mr. A. Clarke, London; W. Cruickshank, M.B., Droitwich; Mr. H. H. Coates, Southsea; F. M. Caird, M.B., Edinburgh. **D** D. F.; D. O.; H. E. Dixey, M.B., Great Malvern. **E** Experientia Docet; Enquirer; E. D. S.; Mr. T. S. Ellis, Gloucester; F. H. Edgeworth, M.B., Clifton. **F** F. J. A. B.; G. C. H. Fulton, M.B., Middlesbrough; Dr. C. R. Francis, London; Dr. T. R. Fraser, Edinburgh; Dr. J. L. Firth, Clifton; Mr. G. R. J. Fletcher, London; Dr. W. H. S. Fosbery, Reading. **G** Dr. H. W. Gardner, Shrewsbury; C. G. Gooding, M.B., London; Mr. W. E. Green, Sandown, I.W.; G. F. Grant, M.B., Champaran; Mr. R. Gray, Armagh; Mr. H. B. Gardner, London; Dr. W. H. Gregory, Beverley; Guy's Man. **H** D. F. Harris, M.B., Edinburgh; Mr. R. H. A. Hunter, Lowestoft; Mr. H. Hind, Harrogate; H. W. **I** G. W. Isaac, M.B., London; Inquirer. **L** G. V. Lockett, M.B., Kingston, W.I.; Lex. **M** Medicus; Mr. G. T. Mockett, Longton; Dr. H. M. Murray, London; M.B.; Dr. H. V. McKenzie, Torquay; F. McKenna, M.B., Girvan; M.D.; Middle Temple; J. G. Marshall, M.B., Hull; Member; Dr. C. W. M. Moullin, London; C. J. Martin, M.B., Melbourne; Medical Adviser; "Medical Press and Circular," Editor of, London; Mr. W. May, Kilmoganny; Mr. Y. H. Mills, Haverfordwest; D. M. Mackay, M.B., Holbeach. **N** Dr. D. Newman, Glasgow. **O** Professor A. Ogston, Aberdeen; O. W. E. **P** Mr. J. C. Prince, London; R. S. Penman, M.B., Paisley; Mr. R. B. Pilcher, London; Dr. H. H. Phillips-Conn, Reading; Dr. F. Pott, Bournemouth. **R** Rural; Dr. L. Roberts, Liverpool; Dr. W. Rutherford, Edinburgh; Mr. W. K. Rix, Southbourne; R. N. **S** Messrs. Street Brothers, London; Mr. J. Stretton, Wokingham; Mr. R. R. Sieman, London; Mr. P. M. Staunton, Howth; Dr. A. Sheen, Cardiff; Mr. P. L. G. Skipworth, Gravesend; Mr. J. W. Sidebotham, M.P., London; Dr. M. J. Sturges, Broadstairs; Dr. E. M. Shirtliff, Ryde, I.W. **T** Mr. M. Turner, St. Petersburg; Mr. A. S. Turner, London. **U** Urgent. **W** Dr. F. R. Walters, London; Mr. L. A. Winter, Chartham. **Y** Mr. J. Young, London.

BOOKS, ETC., RECEIVED.

Fonctionnement de la Maison d'Accouchements Baudeloeque, Clinique de la Faculté. Dirigée par Professor A. Pinard. Année 1897. Paris: G. Steinheil. 1898.

Elements of Histology. By E. Klein, M.D., F.R.S., and J. S. Edkins, M.A., M.B. Revised edition. London: Cassell and Co. 1898. 7s. 6d.

Natural Hygiene. By H. Lahmann, M.D. London: Swan, Sonnenschein and Co. 1898. 4s. 6d.

Medical Missions in their Relations to Oxford. By Sir H. W. Acland, Bart., K.C.B., F.R.S. London: Henry Frowde. 1898. 1s.

The Care of Consumptives. By W. H. Daw, M.R.C.S., L.R.C.P. London: The Scientific Press. 1898. 1s.

Conservative Gynecology and Electro-therapeutics. By G. B. Massey, M.D. Third edition. Philadelphia: F. A. Davis Co. 1898. 3.50 dols.

. In forwarding books the publishers are requested to state the selling price.

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ADDRESS IN PSYCHOLOGY.

BY

SIR JOHN BATTY TUKE, M.D., D.Sc., F.R.C.P.E., F.R.S.E.,

President of the Royal College of Physicians, Edinburgh; Lecturer on Insanity, School of Medicine of the Royal Colleges, Edinburgh.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

MODERN CONCEPTIONS OF THE ETIOLOGY OF THE INSANITIES.

TWICE during the current decade the British Medical Asso-tion has demanded an address in psychological medicine. For the first time in its history, in 1890, Sir James Crichton Browne was requested to perform this duty, and now, after a short lapse of years, a similar duty has devolved on me. This mere fact must be gratifying to the speciality we had and have the honour to represent, as indicative of a growing consideration accorded to a department of medicine which, till lately, has, in the opinion of many, held a somewhat doubtful position in the realm of the medical sciences.

It may be suggested that there is "a sweet reasonableness" in the demand for addresses on this subject in the current decade, for during the corresponding period of last century vast changes were brought about in the principles governing the management of the insane in France and Great Britain, and that, therefore, it has been deemed desirable to commemorate the centenary of a beneficent revolution. But I doubt much whether this epochal consideration has had much to do with the matter; nor do I think that the requests of your Council for addresses on the subject have been prompted by social considerations affecting the general public directly. Doubtless the rapidly-increasing incubus of lunacy is seriously complicating Poor-law administration; but the question of relief from its pressure is not one that can be referred to the opinion of a single individual. It is a big question, with many ramifications, social, medical, and legal; and I take this opportunity of suggesting that its consideration might be referred to a mixed commission appointed by this great Association consisting of authorities in lunacy, representatives from the general profession, lawyers, and Poor-law administrators. It is possible that such a commission might arrive at valuable general conclusions which might influence future policy and arrest the haphazard drifting one which at present obtains.

I believe the actual reason for the requests for these addresses to be that the profession at large is alive to the fact that so-called psychological medicine is becoming day by day more and more incorporated in general medicine, and less and less a peculiar and isolated department. That with the advance of knowledge of the nervous system the glamour which hung over the general conception of insanity is becoming dissipated, and that the various phases of mental alienation are coming to be recognised as symptoms of numerous and very various morbid physical conditions. In point of fact we are drifting away from the psychological conception of insanity, from the contents of the term "mental disease," even as our ancestors drifted away from the idea of demoniacal possession. *Nulla mens insana nisi in corpore insano* expresses the principle which is regulating our conception and our practice in respect of all the conditions comprised under the generic term insanity. It may be freely admitted that the proposition was enunciated centuries ago, but the theories of the connection between diseases of the general system and mental symptoms were so loose as to exercise little or no influence on principles or practice. The popular conception of insanity a hundred years ago was to all intents and purposes psychological; at the best it was a rude mixture of a pseudo-psychology and a pseudo-pathology identical with what we find in the pages of Burton, and the views of the medical profession, with a few isolated exceptions, were not much further extended.

I hold it to be my duty to-day, so far as time admits, to review the course of events which have served to divert the current of opinion, to indicate the palpable indications of change, and the bearings such change has had, is now having, and may in the future have, on the treatment of the insanities. In so doing I can only hope to sketch the subject in the broadest manner, marking merely the main historical points, and reviewing it from the standpoint of one who for forty years has studied the progress of events.

It was inevitable that from the earliest down to quite recent times the study of the insanities should be carried out on psychological lines. The prominence of the mental symptoms asserted itself, and cases of insanity were classified under the terms mania, melancholia, and dementia. Notwithstanding that these so-called forms were based on mere external appearances, that their common characters were so loose, that to say a case belonged to any one of them gave no further indication than could be derived from superficial observation of the case itself, these terms assumed the proportion of diseases. The symptom was the essence of the case, and the underlying causating condition was ignored. Undoubtedly to the public and the lawyer, the mental symptoms must always be the essence of the case; but to the physician they are not. He has to go further back and seek for the *fons et origo mali*. To him the underlying morbid condition is the essence of the case. Still in the hands of Pinel and his school the clinical method of study subserved important purposes; the most important of which was the expiscation of general paralysis of the insane out of the general mass, accomplished by the keen clinical observations of Bayle and Calmeil. But the evils of concentration on psychology are well illustrated by the instance of Pinel himself. He, a man of high scientific attainments, a mathematician, an ardent student, and the translator of the works of Cullen, extended to the insanities the analytic method, which he held should govern the study of all diseases, and accordingly he not only set aside as useless the observations of Haller and Portal, but reconstituted the Hippocratic classes of insanity as concrete pathological entities. From the acknowledged position attained by Pinel in scientific medicine, by the force of character which showed itself in the bold steps he took to improve the management and treatment of the insane, and from the reputation he most justly gained from that beneficent movement, his influence has been and is even now great on the study of insanity. Most of his pupils followed his line of observation, and down to the present day mania, melancholia, and dementia hold practically the position of pathological entities in the mind of the public, of the lawyer, and of no small part of the medical profession.

This undivided adherence to the psychological principle of study led to "an undue love of minute detail," and consequently to undue extension. Instances in which intellectual deficiencies were not so apparent as changes in feeling and conduct were designated cases of "moral insanity," with such subclasses as pyromania, erotomania, kleptomania, homicidal and suicidal mania, and so on, irrespective of the clinical observation that no case of insanity exists without moral aberration, and that in those cases in which moral obliquity is most prominent the intellectual faculty is also weakened, inasmuch as the patient is not able to recognise the nature of his immoral acts, nor weigh their consequences. Thus confusion became worse confounded, and fallacies arose within the psychological conception itself. It had, moreover, a further result in the production of a conflict between law and medicine, the consideration of which, interesting as it is, the limits of this address do not permit of. All that need now be said is that the assumption of a clinico-psychological position on the part of the physician in medico-legal cases served to intensify in his mind the importance of the psychological nosology of insanity. This becomes all the more evident when we turn to the work of such authorities as Stahl, Jacobi, Sauvages, and Cullen, who brought to bear on the subject various principles of study of disease at large, yet when they proceeded to classification of so-called mental diseases, reverted to metaphysical or psychological considerations. Accordingly so-called psychiatric medicine held a peculiar and isolated position, and, as Griesinger said, "its study was supposed to be distinguished by some difficulty *sui generis*."

It is only during the last thirty-five years that the study of the insanities has ceased to be so distinguished, or at least that scientific data have been afforded which should prevent

it being so distinguished, data which, although still far from perfect, have afforded starting points to the psychiatric physician for the scientific study of his subject. In passing let me say that I deprecate the use of the word "psychiatry," but it has become so commonly employed as indicative of the study of morbid mental phenomena as to render its provisional use convenient.

It is of interest and importance to contrast the state of knowledge of the anatomy and physiology of the cerebral hemispheres in 1864 with that of 1898. Up to the former year even the rough naked-eye anatomy of the convolutions was chaotic, only some two or three gyri being recognised as distinct anatomical landmarks; and it was only then that Gratiolet reduced them to system, demonstrated their orderly arrangement, and propounded a nomenclature, which, with certain modifications, is in use to-day. The position at the same time as regards minute anatomy, and therefore as regards physiology, is best illustrated by a quotation from the sixth edition of Carpenter's *Principles of Human Physiology*. He therein states: "It is a point specially worthy of note that no sensory nerves terminate directly in the cerebrum, nor do any motor nerves issue from it; and that there seems a strong probability that there is not a direct continuity between all or any of the nerve fibres distributed to the body and the medullary substance of the cerebrum. For whilst the nerves of 'special' sense have their own ganglionic centres, it cannot be shown that the nervous fibres of 'general' sense, which either enter the cranium as part of the cephalic nerves, or which pass up from the spinal cord, have any higher destination than the thalami optici. So the motor fibres which pass forth from the cranium, either into the cephalic nerve trunks, or into the motor columns of the spinal cord, though commonly designated as cerebral, cannot be certainly said to have a higher origin than the corpora striata. And we shall find strong physiological as well as anatomical ground for the belief that the cerebrum has no communication with the external world, otherwise than by its connection with sensori-motor apparatus; and that even the movements which are usually designated as 'voluntary' are only so as regards their original source, the stimulus which calls the muscles into contraction being even then immediately issued from the cranio-spinal axis, as it is in the movements prompted by the reflex stimulation of an external impression." This was the opinion of the recognised physiological authority of the day, who, in the absence of anatomical data, set aside the results of ablation of the hemispheres as demonstrated by Flourens, and disregarded the inductions of Laycock bearing on what he termed the reflex function of the hemispherical ganglia. The gap was bridged by the ingenious methods of cutting and staining devised by Gerlach and Lockhart Clarke, who were the pioneers of a system of research, which, developed in the hands of Meynert, Max Schultze, Rudolph Wagner, Kölliker, Gowers, Weigert, Bevan Lewis, Golgi, Ramon y Cajal, Nissl, Flechsig, and others, revealed paths of conduction between the outer world and the regions of highest cerebral function, between hemisphere and hemisphere, between convolution and convolution, and between the tracts of the special organs of sense. Let me advise those amongst you who desire to fully recognise the altered state of things to keep in mind the statement of Carpenter just quoted, and then to study Déjerine's *Centres Nerveux*, the last edition of Kölliker's *Handbuch der Gewebelehre des Menschen*, or the more readily accessible *Textbook of Physiology* by Michael Foster. In the last edition of this most charming work, the part written in conjunction with Sherrington sets before the student a wonderful panorama of brain connections, paths of conduction between organs without and within the skull, and between the various organs of the brain itself. Although the authors never overstep the physiological limit, it is difficult for the reader to avoid, whilst studying the relations of the mechanism by which impulses are distributed, the construction of schemes which for the moment seem to make it remotely feasible to conceive how it might be possible to account for the transmutation of external impulses into states of consciousness. Need it be said that his dreams are short and that he wakes to the fact that he is vainly seeking to think of the unthinkable and that his sphere is limited to the study of structures, the destruction or implication of which renders mental activities impossible or imperfect. The very brilliance of the anatomical demonstrations and of the physiological deductions emphasises the wide gaps in our knowledge. Large areas of the cortex exist to which no system of experimentation has been able to assign or even to suggest special functions. But Flechsig has of late asserted that certain of these unnamed regions in the brain map may be filled in; for he has arrived at the conclusion, founded on a series of anatomical, physiological, pathological, and clinical observations, that certain of the cortical areas on the superior and frontal aspects constitute the material "antecedents" of mental activities, in that they are the areas in which the stimuli of the various sense spheres are associated.

Great as has been the work of the anatomist, that of the physiological pathologist has been equally important. Hughlings Jackson's name must ever hold the foremost place in this department of science, and I am sure Fritsch, Hitzig, Ferrier, and Gowers, would be the first to acknowledge that his induction opened up that field of inquiry which has been of such importance to the study of nervous physiology and pathology. It is not necessary for the present purpose to do more than allude to the observations of these authors, as they are matters of common knowledge; and it is impossible to-day to do more than allude to the contributions of the experimental pathologist, the embryologist, the physicist, the chemist, and the comparative anatomist, all of which converging expand our views on the general question.

The physiologists of the psycho-physical school which arose as a result of scientific developments advanced the study of psychology so far as they ranged scientific data so as to add to the "provisional body of propositions" about states of mind necessary for their philosophy. Whether our knowledge of states of mind has been materially increased by the lucubrations of this school is open to question, but there can be no doubt that the views not only of the physiologist, but of all thinking men, have been enlarged by the application of the philosophic mind to the scientific position. Were it only that the world has had placed before it the proposition that the essence of mental life and the essence of bodily life are the same—namely, the adjustment of inner to outer relations, great gain has accrued to science and philosophy. But I verily believe that the change of conception of the nature of the insanities is much more due to the establishment of scientific data bearing on the antecedents of mental action than to the generalisations of the philosopher as to mental activities. Remember, we are dealing with the mental attitude of a profession which deals with material, and which, till lately, so far as the cerebral material is concerned, had slight scientific knowledge. Gradually—no, I should say rapidly—perhaps too rapidly for complete assimilation—there has been presented to the psychiatric physician knowledge of a cerebral apparatus, on which he is warranted in basing working hypotheses and practice. Until that apparatus was demonstrated, he could not assert, except as an assumption, the fundamental physiological principle that mental action is a function of connection, or, the pathological corollary, that interruption of connection is the cause of impaired mental action. Given those starting points he can work on the same principles as influence the non-psychiatric physician in regard to ordinary disease. The atmosphere in which he works may not be—nay, is not—so clear as that of his colleague; he may still see as in a glass darkly; but what he does see is a revelation to him which could not have been afforded by the study of a philosophy which, except in certain of its provisional propositions, is not cognate to medicine.

Time to-day will only serve to allude to the observation around which all others centre. That, to my mind, is the demonstration of the mechanism by which impulses are carried from the periphery to the cortex and from the cortex to the periphery. We know that series of fibres exist which, starting from the entire surface of the body, the muscles, and from the mucous membranes, are collected in the spinal cord, and pass upwards to the optic thalami, whence—as demonstrated by Flechsig, whose observations have been confirmed experimentally by Ferrier and Aldren Turner—they are distributed in three systems to the cortex. We will deal with only one of these "sensory" systems—that which passes directly to the Rolandic cortex without forming connections in its upward course with any other system of fibres. In the ex-

ternal layers of the grey matter these fibres come into relation with the dendrons of the pyramidal cells; but there is no anatomical continuity between the sensory fibres and the dendrons; they transfer impulses by contact. It is contended by certain observers that the liberation of energy takes place in the dendrons, which, by their gemmulæ, are in close contact with the dendrons of other cells, forming what Foster terms "synapses." Be this as it may, impulses descend to the cell bodies, through which certain of the fibrils of the dendron pass to the descending axon—till lately spoken of as the axis cylinder—the fibrils of which are distributed to the periphery, throwing off collaterals to remote areas of the cortex. In order to obtain and maintain the conception of the mechanism of a circuit, and to relate the afferent with the efferent systems, it might be well not to restrict the term "neuron" to the cell body and its dendritic processes, but to include in the term the ascending conducting apparatus, the cell body, and the spinal, cerebellar, and cerebral distributing arcs, and to regard the whole mechanism as a physiological if not an anatomical unit.

It is not necessary for our present purpose to consider where and how the transmutation of peripheral impulses takes place, but it is of importance to emphasise the statement that impulses are not generated in the cell body. As Gowers says, the old battery idea must be thrown aside. It may be regarded as the "vital centre" of the neuron, and, making allowances for the possible action of the dendrons, it may be held to be a receiver, conservator, and transmutator of energy, and a liberator and distributor of energy by means of its synapses with other pyramidal cells, and with what is of supreme importance, with association cells. But all impulses come from without, a fact which must have important bearings on the question of the adjustment of outer to inner relations.

Although the neuron has been spoken of as an organ, it may be as well to state, for the benefit of any layman who may be present, that the neurons can be counted by millions; but anyone can realise that an almost inappreciable number of organs must exist for the reception and distribution of the constant and continuous flood of impulses which streams from without inwards to the brain.

It is as difficult to estimate the influence of the developments of knowledge of the nervous system on the individual psychiatric physician as it is to gauge the influence of bacteriology on the individual general physician. Our acquaintance with both these subjects is a recent acquisition. The latter is a new science, and I believe I am right in saying that in the case of many of us only its outlines are present. But its principles pervade the method of thought of the whole profession. So with the study of the minute anatomy of the brain; none but experts can be expected to be acquainted with the full details, but the great leading facts as to structure, and the facts, theories, and warrantable assumptions as to its actions, have operated, and continue to operate, on the views of the speciality at large. Its members, knowing that they have a mechanism to deal with, solution of the continuity of which in any part of its course may affect its function, have a scientific foundation for the study of the morbific influences productive of interruption of connection.

A strong indication of the awakening of the scientific spirit is afforded by the earnestness with which the study of the morbid anatomy of the brain is being prosecuted by the psychiatrist all the world over. Shortly after methods of cutting and staining microscopic sections of nervous structure was promulgated, the rough turning over of the soil was begun. Naturally in dealing with what was then an occult subject, certain errors of observation and deduction were made; still, the fact was elucidated that marked departures from health were to be found by microscopic examination of the brains of persons dying insane. Steady labour, however, soon had its effects, and the results were embodied in the work of Bevan Lewis, in which not only were lesions described in the mass, but differentiation of special lesions in connection with certain classes of insanity were demonstrated. Since the publication of that book our knowledge of the minute anatomy of the brain has been considerably increased, and with it our knowledge of its lesions and our appreciation of their significance. Let me allude to two instances of this: First, the demonstration of the loss of gemmulæ of dendrons under the action of disease, the organs which we have a right to believe have important conducting functions; and secondly, to changes in the cell bodies, the significance of which was misinterpreted so long as it was regarded as an originator of impulse. Now that we understand that one at least of its functions is control over the nourishment of the great neuron, the pathological value of its lesions assumes different, but still very important, proportions, inasmuch that as the consequence of impaired trophesis, interruption of continuity must be sought for in the synapses or in other parts of the paths of conduction.

The value of research into morbid cerebral anatomy made itself so strongly felt that laboratories were established in many asylums, and eventually the County Council of London were so deeply impressed by the importance of the subject that they instituted a thoroughly equipped laboratory for the systematic study of the pathology of insanity, placing it in charge of that able and experienced physiologist and pathologist Dr. Mott. The work he has already accomplished is of great interest and value, and we may confidently anticipate rapid progress in this department of science as the result of his labours. Scotland has followed suit. An association of asylums has been formed for the same purpose. Assisted by the Royal College of Physicians of Edinburgh suitable premises have been provided, and systematic work is being prosecuted under Dr. Ford Robertson, one of whose most important duties is the instruction of assistant medical officers of asylums in methods of research. Similar institutions have been erected in the United States, and if I merely refer to the observations of Van Giessen of New York, of Berkeley of Johns Hopkins University, and of Hodge of the Clark University, evidence is afforded that important scientific results have been already obtained, bearing, not only on morbid anatomy, but on physiology and normal anatomy. Contributions flow in from Germany, Italy, France, and Russia, and it may be truly said that the psychiatrist all the scientific world over is alive to the necessity of tracing the lesions productive of solutions of continuity as an essential part of the pathology of the insanities. In this connection I may allude to the importance attached to science by the Medico-Psychological Association of Great Britain and Ireland. This Association holds examinations for the certification of practitioners already conversant with insanity. Whilst demanding evidence of knowledge of the normal and morbid anatomy of the nervous centres, it excludes psychology in any form as a subject of examination. I do not say this exclusion is to be commended, more especially as it relates to physiological psychology; it is only adduced as an example of the prominence given to pathology.

As a consequence of this system of study a vast change has come over the aspect of psychiatric literature. The journals of the day, instead of dealing largely with analyses of the mental condition of real or imaginary persons, with abstract considerations, and mere clinical details, are now mainly occupied by papers of a strictly scientific character bearing on the production of neuroses, and the reports of cases are rarely confined to a mere description of symptoms; and in one particular instance, the monumental work of Bevan Lewis, we have the study of the insanities preluded by a systematic account of the cerebral apparatus, instead of by an attempt to analyse mind, which was the time-honoured introduction to works on mental aberration.

But the all-important question remains to be answered: What effect has the change in the principles of study had on general pathology, practice, and treatment? As regards general pathology the evidence is manifold, but I must confine myself to two illustrations. In former times the theory of the effect of the mind on the body held a foremost place, and gave rise to many misconceptions. For instance, the general degradation of the system, the complications in the intestinal and reproductive systems, which are such marked and important symptoms in many of the insanities, were regarded either as the results of abnormal mental action or as its cause. Now that we recognise that the brain exercises trophesic functions over all the organs of the body, we are alive to the fact that such degradations are referable to imperfect brain action, that they are secondary to the reduction of its nourishing action, and are to be treated accordingly. We connote the well-known results of experimental ablation

of the cerebral hemispheres with the evidence of diseased action observable in those regions amongst the insane. Another evidence of change is afforded by the acceptance and extension by the psychiatrist of the principle that all mental symptoms are produced by the action of the same causes of disease which act on other systems than the nervous. In the absence, which I believe will be but temporary, of a nosology of the insanities founded on morbid anatomy, we find him tracing the history of each etiological class, studying each and all on the same lines as the hospital physician follows in the case of ordinary disease. He is no longer content with the rudimentary classification of the insanities; he disregards the six "Disorders of the Intellect" set forth in the *Official Nomenclature of Diseases* published in 1871, and associates with and qualifies each symptom by an etiological term indicative of the morbific agency which has been potential in its production. Thus he is brought into close contact with general medicine, and is asserting, in the words of the far-seeing Griesinger, that "diseases of the nervous system form one inseparable whole, of which the so-called mental diseases form only a certain moderate proportion."

The psychiatrist has influenced public opinion in this respect very markedly. In most of the recently-erected institutions for the insane, at home and abroad, we find separate hospitals provided for the treatment of recent and acute cases. This surely marks the reduction of theory to practice. Instead of the subject of a recent attack of insanity being mixed up with the residuum of chronic cases, he is placed in a separate institution, where he is submitted to systematic treatment on thoroughly hospital principles. The extreme delicacy of the brain structures demands early and assiduous medical treatment in order to prevent disintegration and destruction of tissue; and the psychiatrist has so forced this on the mind of lay asylum authorities as to have induced them to place at his disposal hospitals suitable for the purpose of systematic treatment. This to my mind illustrates how widely diffused the change of feeling in regard to the insanities has become extended.

But even with such appliances many of those working amongst the insane are heavily handicapped, as no provision is made by the public for the treatment of cases in the initial stages. Statistics show that the increase of chronic lunatics occurs amongst the poorer classes of society, and not amongst the rich. I believe this to be due to the latter being able to place members of their class showing indications of incipient insanity under systematic treatment at home during the prodromal stage; whilst the former are compelled to allow matters to drift till cases become more or less confirmed. We know that if we exclude general paralysis, epileptic insanity, and certain congenital classes of insanity from consideration, at least 80 per cent. of recent cases are amenable to treatment. But such treatment is necessarily costly, as it involves nursing, possible change of residence, and continuous medical attendance. This is out of the power of the poor to obtain. All general hospitals shut their doors against persons suspected of insanity, on the ground that the asylum is the proper place for their treatment. The asylums, however, cannot receive cases until the symptoms are so far advanced as to warrant certification; and, in England especially, the procedure for the transmission of insane persons to asylums is so absurdly cumbrous as to prevent many persons being placed under treatment until such time as the probabilities of recovery are seriously lessened or the case is hopeless. How this state of matters can be improved is one of the questions to be taken up by the commission I have suggested. Some relief may be obtained by the inclusion of the study of the insanities in the five years' curriculum demanded of the rising generations by the General Medical Council. If teachers conduct their courses of instruction on the general principles which govern the teaching of medicine, the general practitioner will soon be found treating the insanities as he does every-day disease, and we may fairly anticipate a reduction of the number of cases relegated to asylums as the result of early and rational treatment.

I have merely touched the fringe of the subject. I may plead *inopem me copia fecit*; but if I have been able to indicate, however feebly, that the members of the psychiatric speciality are with you in all things, scientific and practical, the object of this address has been attained.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF LARYNGOLOGY AND OTOLOGY.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY PETER MACBRIDE, M.D., F.R.C.P.E., F.R.S.E.,

Lecturer on Diseases of the Ear, Nose, and Throat, University of Edinburgh; Aural Surgeon and Laryngologist to the Royal Infirmary, Edinburgh; President of the Section.

THE EXPANSION OF LARYNGOLOGY AND OTOLOGY.

THE time is long past when there was a necessity for defending the existence of laryngology and otology as special branches of study. It used to be said by the opponents of specialism that it tended to a narrowing of the mental horizon on the part of its votaries. The inclination now is rather to complain that the surgical limits of our specialities are being unduly extended. Indeed I have been told that a well-known teacher of surgery in this school is in the habit of demonstrating a very small area in the neighbourhood of the umbilicus, which in the near future will represent the region upon which the general surgeon will still continue to exercise his skill.

Experience has shown that no charge of mental narrowness can be brought against the best workers in our specialties, but the danger of excessive extension is, perhaps, more real. Let us consider first how easy it is for the laryngologist gradually to extend his field, both on the medical and surgical side. You are all familiar with the indications of general disease which are often first detected by the laryngoscope. We discover, it may be, some lesion of the chest, nervous system, or even kidneys, which we feel ourselves perfectly able to treat, and so, unless the laryngologist be careful, he may be led to encroach seriously upon the domain of the general physician. Turning now to the surgical aspect of the same speciality, the old rule used to be to call in a surgeon when external incisions were required. Of course to carry out this absolutely would be impossible, for tracheotomy is an operation we must all be prepared to perform when the indication is urgent. The laryngologist of to-day, however, does not confine himself to this. He performs thyrotomy and excisions, removes goitres and sometimes cervical glands, so that he thus annexes, as it were, a considerable portion of the general surgeon's territory. If these operations are to come within our sphere of work, then it almost logically follows that we shall in the near future undertake external operations on the œsophagus and stomach, as well as extensive dissections involving the removal of tumours from the neighbourhood of the large vessels of the neck.

In otology there is the same tendency towards extension on the surgical side. Thus the aurist no longer fears to open the cranial cavity, nor does he hesitate to perform such operations as ligature of the internal jugular; he has not, however, the same direct temptation as the laryngologist to enlarge his field at the expense of the physician. The same expanding tendency may be observed, too, in connection with the nose, although here there is not quite the same scope.

I am content, Gentlemen, to place these facts before you. There is a good deal to be said for and against this growing desire of the younger specialities to annex fresh territory. It is a question for each one of us to decide for himself how far he shall take part in this policy of expansion. Only if it creates against us a certain feeling of antagonism on the part of physicians and surgeons we must not be surprised, and I think much could be done towards mitigating such antagonism by taking care that our position—be it in the van or rear of this movement—is logically unassailable.

Another direction in which our expanding tendencies have manifested themselves is in our immense literary activity. I suppose I shall not be considered far wrong in saying that most of the best that is written sooner or later finds its way into English, French, and German, as being the most widely known languages, although we are well aware that much excellent matter makes its first appearance in Russia, including

Poland, Scandinavia, Denmark, Holland, Spain, and Italy. To most of us, however, only those works which appear in the three languages first referred to are accessible.

It may not be uninteresting to glance for a moment at the most striking national peculiarities of our literature. The Anglo-Saxon writer (whether European, American, or Colonial) usually aims at brevity, and on the whole I am inclined to think that there is a slight tendency to put points of purely scientific and theoretical interest on one side in favour of the more directly practical, and in some cases to dispense with all literary references to the subject treated of. In striking contrast to the Anglo-Saxon is the German author. In his work we find the most elaborate attention to detail and a very strong tendency to discuss the subject from every possible point of view, and even then not always in the fewest possible words. His literary references to the works of his compatriots are generally full and accurate, but this cannot always be said of those to foreign literature, and withal he is not over tolerant to the foreigner who overlooks a Teutonic authority. Moreover, there is among Germans a great tendency to polemic writing, and sometimes even to personality. With all these drawbacks, however, we must admit that the best literature in our specialities at the present time is produced from Germany. It may be because of the large number of workers, or due to greater facilities afforded by the Government and circumstances of the country, but the fact remains. As we all know, many excellent works emanate from French pens, and in the absence of polemical writing we have reflected the racial courtesy. It has sometimes appeared to me as if the amount of material did not quite justify the existence of all the journals which are devoted to our subjects in that language, but the frequent appearance of excellent, interesting, and original articles in all of them must be fully admitted. In speaking of French journals, however, I cannot refrain from noticing the odious custom of interleaving advertisements with the text—a practice which certainly cannot conduce to the dignity of medical journalism.

Let us now turn from national to individual characteristics, for in the study of the individual we come nearer the forces which make for and against expansion.

The first and best type of author is undoubtedly represented by the man who has really something new and valuable to communicate. It may be the result of scientific research or of clinical observation, while sometimes it takes the form of valuable generalisations, deduced from facts either original or quoted from literature.

There are, however, numerous other and less praiseworthy types. We all know that in most instances diseases which are least amenable to treatment are those for which innumerable curative agents have been recommended, and further, how each new remedy is said to be followed by numerous successes, often occurring only in the hands of its inventor. When the method employed is harmless little mischief results, but when operative measures are advocated in this way a grave evil arises.

A danger of specialism has always been the tendency of some specialists to magnify the importance of the part of the body with which they are familiar, and I do not think that otology, laryngology, and rhinology can plead that their votaries have been altogether guiltless in this respect. Specialism is only good so long as it rests upon a broad basis of anatomical, physiological, and pathological facts, and so long as no attempt is made by writers to juggle with these facts in order to elevate the part at the expense of the whole. It would be ill-judged to give any examples, but no doubt works will occur to some here in which this mistake has been made.

Far be it from me to suggest that there are many writers who indulge in misrepresentation. Absence of the highest critical faculties, and a limited knowledge of general medical and surgical science, sometimes associated with an almost morbid desire to magnify the importance of a special organ, account for much writing which is ill calculated to bear the clear light of criticism.

Again, what I may call undue therapeutic credulity is responsible for much that is scientifically worthless. It is but rarely, I trust, that lower motives, such as a desire to establish a temporary notoriety, and to benefit directly therefrom, actuate authors in our specialities. Still, it must be remembered that we are but human, and that there is no more certain way of establishing a reputation of a sort than by originating some new and startling theory, remedy, or operative procedure. Under these circumstances, would it be surprising if some, driven by vanity, and others spurred on by hopes of aggrandisement, were to fall before the temptation?

Let us finally turn to another great difficulty which has arisen of late years, and which confronts the serious student not only of laryngology and otology, but of almost every branch in medicine and surgery. It is of course necessary for every specialist to follow the literature of his subject, but perhaps the burden falls most heavily upon those who are engaged in lecturing and upon writers of textbooks. All of you know how voluminous are the works devoted to our specialities; you are aware of the numerous journals which appear in French, German, and English; there is further a considerable array of monographs, and finally we have an ever-increasing number of textbooks. All this bears very heavily upon the conscientious reader, for it must be remembered that until a work has been read it cannot be classified or criticised. No separation of "wheat from chaff" is therefore possible without an immense amount of wasted time and energy. Among our large current literature there is much that is good, but more that is valueless. This may seem a rather sweeping statement, but if you will throw your mental glance back over recent years and compare the actually valuable additions to our knowledge with the amount written in the same period I am sure that you will agree with me that they are not proportional; indeed, we might be not far wide of the truth in calling them inversely proportional. It may be urged that the system of abstracting papers, now so largely in vogue, is of value in saving time and labour to the over-burdened student. No doubt this is to some extent true, and certain journals are, by employing a carefully selected staff of workers, enabled to present an epitome of all that is being done in various parts of the world. It is, however, necessary to warn readers that such abstracts are by no means always correct representations of authors' views, and it is perfectly certain that some periodicals which profess to give abstracts of current literature are lamentably defective, in so far that they confine their attention to reviewing only articles which appear in a few of the better known journals of each country. I have thus merely outlined some of the difficulties which every experienced reader can fill in and amplify for himself. The important question I wish to bring forward is, Can this be remedied? It appears to me that it might be by adopting some such method as this:

1. The establishment of a body composed of men of ripe experience and wide reading in each country equivalent in position to the *collaborateurs* of the *Centralblätter* and journals of to-day.

2. The selection of two or three of those *collaborateurs* to form a small central committee in each metropolis.

3. The employment of a staff of abstractors composed of young workers.

The advantages of such a scheme would be obvious. The *collaborateurs* would each have assigned to them certain journals, and it would be their duty to send in a return to the central committee, indicating the names of the papers which were considered worthy of a place. The list so accumulated would be again checked by the central committee, and in this form handed over to the abstractors.

It will be seen that the adoption of some such method as this would produce a periodical of reasonable dimensions, because many published works would probably be rejected by those responsible for selection. Of course, we have something similar in the various year books, but it must be remembered that the reading specialist can hardly accept any single author as his guide; while, on the other hand, he might be quite satisfied to have the important works chosen for him by a strong, responsible committee of each country.

In conclusion, I beg to say that I desire in no sense to reflect upon the excellence of works which endeavour to give, and in some cases actually do give, abstracts of nearly all papers which are written on our subjects. In doing so, however, they must give the bad with the good, for although every now and then we find an abstractor bolder than the rest who describes a paper as containing nothing new, yet a desire to

avoid discourtesy prevents this being frequently done. If it were once understood that only papers of importance were to be abstracted an immense amount of space would be saved, and a most valuable publication would result, which, if it were published in English, French, and German ought to be commercially as well as scientifically successful.

INTRODUCTORY REMARKS

DELIVERED AT THE OPENING OF

THE SECTION OF DISEASES OF CHILDREN.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

By JOSEPH BELL, M.D., F.R.C.S., F.R.S.Edin.,
Consulting Surgeon to the Royal Infirmary and to the Royal Hospital for Sick Children, Edinburgh; President of the Section.

Gentlemen,—When this Association last honoured Edinburgh by its presence in 1875—now twenty-three years ago—its work was divided into six Sections, and among these our special subject Diseases of Children had no place. We now have sixteen Sections, and among these Diseases of Children occupies an important position. By the kindness of my friends in the Edinburgh Branch I have received the very high honour of being asked to preside over your deliberations, and by a wise rule the Presidents of Sections have been relieved of the duty or pleasure of making any introductory oration.

It is my pleasing duty, then, gentlemen, to welcome you to Edinburgh and to express on behalf of my colleagues in this Section the great pleasure it gives us to see such distinguished men coming, some of you from a great distance, to give us the benefit of your instruction and the pleasure of your society. The subjects chosen for discussion at the commencement of each day's work are interesting and practical, and may I congratulate you on the special eminence of those gentlemen who have kindly consented to open the discussions? To have obtained Mr. Horsley, whose special work on brain and spinal cord has a world-wide reputation, to open for us the discussion on spinal caries should ensure its being most ably started.

"Certain aspects of congenital syphilis" at once calls to our memories the name of Jonathan Hutchinson, who is known to the world of surgery for many boons; but for none more valuable than for his researches in this subject. He and Dr. Ashby will tell us all that is both true and new, while Dr. D. B. Lees has already made himself a reputation by his studies in the difficult subject of rheumatic heart disease in children.

Besides having a special Section of its own, the subject of diseases of children has been advanced in Edinburgh by an increase of hospital accommodation, and our new Royal Hospital for Sick Children has been opened within the last two years, and is well worthy of a visit by the members of the Section.

While on this subject may I be pardoned if I express to the Section an opinion, purely an *obiter dictum*, that there is a risk of overdoing what may be called the driving of sick and hurt children into hospital to the exclusion of home treatment.

This may be considered a foolish idea, but the general practitioner all over the country is gradually beginning to see that hospitals are being used by patients who have no right whatever to public charity, to the grave detriment of the independence of the middle class, who are already too well disposed to get all they can for nothing, and also impoverishing the practitioner. The very poor, who have dirty homes, and who starve their children, may have a sort of reason when they bring their children to light, air, and food; but the great middle class should be reminded of their responsibilities.

There is no reason whatever why a large number of operations which crowd the wards should not be done at home. Mastoid antrum cases, tuberculous glands and joints; radical cures of hernia, phimosis and the like, why should hospital surgeons slave at doing those for nothing for patients whose relations are often much richer than the surgeon? Oh, the answer is, you cannot keep the wound aseptic. Well, if you cannot keep a child aseptic in a decent home you are not much worth, and till the State pays the doctor, or public charity supports him as well as the palatial hospital, some patients should still be left in their homes.

Besides, for a small child, can any nursing in a hospital, however good—and we know how good it generally is—make up to the child for removal from its mother; or in dying cases, comfort the mother who has no longer the child to nurse, but only is allowed an hour by its bedside in a long ward?

Gentlemen, pardon me, think of these things, for hospital surgeons are apt to forget the family tie as well as the family practitioner. I will now call upon you to commence the discussion.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF DERMATOLOGY,

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

By W. ALLAN JAMIESON, M.D., F.R.C.P.Edin.,
Physician for Diseases of the Skin, Royal Infirmary, Edinburgh: President of the Section.

THE APPLICATION OF REST IN THE TREATMENT OF DISEASES OF THE SKIN.

Before taking up the subject proper of my address, a few words on the history of dermatology in Edinburgh may not be inappropriate. This is but a brief record, for it dates back only to the time when John Hughes Bennett was Professor of Clinical Medicine, from thirty to forty years ago. So long as he taught in the old Royal Infirmary he had wards for cutaneous diseases. The instruction was simple, the varieties few, and the remedies fewer still, but his prelections had the inestimable advantage of being dogmatic. Eczema, scabies, and psoriasis made up the bulk of the cases, though he was fond of demonstrating examples of favus, then as now not a rare disease here. Eczema he treated, if acute or moist, with alkaline water dressings, if chronic, infiltrated, or dry, with citrine or zinc ointment. Psoriasis was cured for the time by free inunctions with unguentum picis, and scabies with sulphur ointment, though curiously enough he maintained that the sulphur was unnecessary, and only acted by thickening the salve. The conjunction of the two last named ingredients rendered the atmosphere of the wards suggestively malodorous. When Bennett relinquished the teaching of clinical medicine, the skin wards were abolished, and for many years Sir Douglas Maclagan almost alone gave an occasional lecture on integumentary disorders and admitted a few cases to his wards.

In 1877 by the kindness of the Directors of the Royal Public Dispensary I was granted a special out-patient hour for skin cases, twice a week. In 1884, mainly through the intervention of the late Dr. Daniel Haldane, then one of the most influential of the managers of the Royal Infirmary, as he had been for long the very best Lecturer on Practice of Medicine in the Edinburgh School, an out-patient department was established. This proved so successful that in 1891 six beds were assigned to cases of skin disease in wards which were not constructed for the purpose, and in 1892 the department was still further strengthened by the appointment, as Assistant Physician, of our excellent Secretary, Dr. Norman Walker.

The subject on which I propose to offer some remarks in opening this Section, is The Application of Rest in the Treatment of Diseases of the Skin. Rest in its wider sense has been made the theme of a medical classic by Hilton, but in it he has alluded but little to its place in dermatology, indeed the branch had hardly been recognised as a division in his day. Mr. Morris has published some excellent and well-timed observations on Over-Treatment in Eczema, but there appears to me to be room for a more extensive survey. In the space of time at my disposal many details must be omitted or but lightly touched on, but these can perhaps be better filled in by each member present at

his leisure. And first it is necessary to inquire, What is meant by rest? Certainly not absolute inactivity. This the surgeon may aim at, at all events for a brief preliminary period, in the coaptation of fractured bones, but even he has very early to think of the tendons, muscles, vessels, and nerves in the neighbourhood, to say nothing of the related joints, which would all suffer were complete quiescence insisted on for too long a time. Absolute rest is impossible in the case of the skin. To see this we have but to remove a bandage which has been for a week or so coiled round a limb. On passing one's hand over the surface a cloud of dry loose epidermic particles arises, showing that though occluded from the air, and immovable, yet the process of cornification has been continuously going on, the thin protective layer of keratine which forms the outer boundary has been constantly renewed from beneath, but has not been shed imperceptibly, as in healthy normal conditions of freedom. And if the desquamation from the surface thus becomes visible to the eye, in quite similar fashion does the insensible perspiration, or the secretion of the oil glands, if allowed to accumulate through defect of ablution, assert its presence by impinging on the olfactory nerves. The renewal of the integument and the secretion of its glands are therefore uninterrupted throughout life.

But, while it may be out of our power to procure, by the means at our disposal, absolute and entire quiescence, comparative repose is attainable, and this in the great majority of cases is sufficient for our purpose. Rest, then, consists in the removal of irritants, whether these be such as worry and distress the mind or tease and vex the body. The prescription given by Horace would not, we fear, be quite an acceptable one at the present day, however closely life in Imperial Rome resembled in some respects that of the final years of the nineteenth century:

> Si te grata quies et primam somnus in horam
> Delectat: si te pulvis, strepitusque rotarum,
> Si lædit caupona: Ferentinum ire jubebo.
> *Epist.*, I, xvii, lines 6-8.

The contrast between life in a busy city and that in a torpid small country town, with no golf links near, is too strong to prove agreeable. Yet one can thoroughly understand how the genial country gentleman we know Horace to have been preferred the stillness of the little town to the noise of Rome, with the rumble of wheels and the carousals at the tavern next door. We at the present day seek rest more in alternation of employment than by taking refuge in Sleepy Hollow. Sophocles, indeed, emphasises the value of and the intense longing for rest when he makes his beautiful heroine, Deianeira, say of Heracles:

> ὡς ἢ τελευτὴν τοῦ βίου μέλλει τελεῖν
> ἢ τοῦτον αρας ἆθλον εἰς τό γ' ὕστερον
> τὸν λοιπὸν ἤδη βίοτον εὐαίων' ἔχειν.
> *Trachiniæ*, lines 79-81.

The whole of this tragedy possesses exceptional interest for us as dermatologists, for the motive turns on the fatal though unwitting gift of Deianeira to Heracles, which caused the hero unendurable torture through inflaming his skin. One would like to linger over the origin of the idea in the mind of Sophocles—how the blood of Nessus acquired its toxicity solely by exposure to the warmth of sun or fire, kindling into activity the long latent germs. But this fascinating excursus would lead me too far.

Before proceeding further, there is a question which demands reply—namely, Why is rest necessary? Now, there are many circumstances under which rest is required, but for our present purpose only one will be commented on. We need rest as a consequence of fatigue or exhaustion. After the expenditure of energy, a time arrives when indications are afforded that its further continuance must cease. The wise man assents, yields to Nature's law, and desists from further effort. He takes rest. But there are many who will not heed the dictates of reason, and decline to rest. In place of rest these substitute what may be called a "pick me up." This is by no means merely alcohol in some form, or coca, or such drugs as antipyrin, phenacetin, caffeine, and the like, though such are largely indulged in. The most frequent mode in which a so-called restorative is ingested is as tea. Tea is made to take the place of rest, so that the jaded brain and wearied muscles may lose consciousness of fatigue, and may be driven on regardless of the thus oft postponed yet inevitable final breakdown. I leave to physiologists and biological chemists to explain the action of tea and its congeners, but the undoubted fact remains that the employment of nerve stimulants is at the present day, in an increasing proportion of cases, made to supplant natural needful rest.

Turning now to the skin, the very name applied to the cutaneous manifestations of disorders of the integument, suggests the idea of rest. We speak of an "eruption" as the visible feature from which most of our conceptions of the nature of the ailment are drawn. Now, the term eruption is associated in our mind with some disturbance from within, something which having interfered with the normal balance of economy, has come in this way to the surface. To the popular understanding, which has not even yet been able to free itself from the influence of the old humoral pathology, this indicates a diseased state of the blood, and from this view even educated members of the profession have not entirely dissented. Yet, so far, there are few demonstrable alterations in the blood which we can fix on as causative of a skin disease. Anæmia poses as a predisposing and maintaining factor, scorbutus as a determining one, but of all the conditions which the microscope or bio-chemical investigation have so far revealed, there is hardly any one we can positively assert is solely blameworthy. At the same time it is undoubtedly our duty to rest the skin from the deeper side by what therapeutic means are at our command. Thus all internal causes which may be suspicious are to be eliminated, by correction of dietary, by cutaneous sedatives, of which antimony may be taken as a type, by hæmatinics, and by agents which influence metabolism, such as arsenic, or flush the sudoriferous canals as pilocarpin.

More closely considered rest is procured for the skin by freeing it from the effects of the over-activity of its own constituents or appendages. Of this an example is provided by ichthyosis. The most prominent feature here is the continual accumulation of the horny layer on the surface, in place of its regular and imperceptible desquamation. The researches of Ohmann-Dumesnil, and Bowen point to the cause of this anomaly being due to a failure of the normal separation of the epitrichium, owing to an arrest of development of the hairs and sebaceous glands, the epitrichium thus becoming fused with the outer layers of the epidermis. In this way perversions of nutrition arise, and should the adhesion take place on the palms or soles, the masses of keratin may acquire great thickness. The same result may occur elsewhere, as proved by the examples of ichthyosis hystrix which are occasionally met with. This theory supports the efficacy of external therapeutic measures in this disease as opposed to mere internal remedies. The ingenious reasoning of Byrom Bramwell, that as the hard, dry, scaly integument of confirmed myxœdema becomes again soft, pliant, and natural if thyroid extract be administered, similar consequences might be expected to follow were it given in ichthyosis, has hardly been borne out by experience, any results of its exhibition being but temporary. But there are keratolytic applications which, used early enough, can restore the normal polish to the skin. Of these resorcin is the chief, and used as soap, supplemented by its employment as an ointment or in combination with glycerine of starch, we can in many cases perfectly remove the abnormality. We can compel the over-active epidermis to rest by these means.

We find evidence of increase of the secretive energy of both the sebaceous and sweat glands, and in this way also is the quietude of the skin disturbed. Round the question of the nature and significance of seborrhœa war still wages, though more languidly than was the case a year or two since. This it may be said, however, that the *rôle* of the oil glands as being something more than mere appanages of the hair system, and their function merely to grease the capillary growth, has again come with greater prominence to the front, while that of the sweat glands has rather retired from the position of cutaneous lubricants to that of being more purely the irrigating and refrigerating element. Under many and various circumstances we find that sebum or an oily coating concretes on the surface. Whether this is directly due to the stimulus imparted by micro-organisms, whether it is to be viewed as an expression of chemotaxis, how far the altered condition of the soil, commonly an anæmia, is to blame, or whether organisms

and their toxins are merely secondarily present, can hardly be yet said to be positively settled. That seborrhœa either of the concrete or the oily form does prove an irritant is certain, though possibly all the deleterious results ascribed to it may not be thoroughly well grounded. Our efforts to obtain rest in this instance must go further than merely removing the accumulation of oil and degenerated epidermic scales. The anæmia must be corrected by toning up the soil, not merely by iron to enrich the blood, by mercury to neutralise the syphilitic virus, should that be present, but by ergot or ichthyol to constrict the vessels of the peri-glandular plexuses. Locally sulphur, which has a peculiar and specific desiccating effect, quite apart from any presumed anti-parasitic one, and the astringent action of cold water are our most reliable remedies. Hyperhydrosis weakens the tissues by converting the integument into a swamp. And just as in marshy ground in warm climates the air becomes pestilential, so the soddened skin is prone to give off offensive odours, and from the rancidity of the secretion to occasion irritation, which may go on to inflammation. Here we employ the keratoplastic properties of small quantities of salicylic acid, 3 per cent. in a bland pulverulent medium as powdered talc, or orthoform may prove valuable in the same way. In this manner we can give rest to the weary sole of the afflicted general servant.

Another state in which our efforts must be directed to procure rest for the skin is that in which it is necessary to modify abnormal perversions of functional activity. This is usually manifested by some form of hyperæsthesia, of which pruritus is the commonest expression. Pruritus, or the sensation of itching, is such a frequent accompaniment of cutaneous disorders of all kinds, and is often the chief, if not the sole, subject of complaint, that its relief is continually being demanded. As examples, we may select those forms which are especially aggressive at the two extremes of life, and in both cases it constitutes the most prominent, if not the only, symptom visible to the eye, or merely cognisant to the sufferer. The age of the patient has a special bearing on the methods which must be adopted for its repression; the locality has in general a minor claim. In infants and young children one must bear in mind the tenderness of the skin, its yet imperfect development, particularly as regards the as yet incomplete evolution of the hair and oil-glandular systems, since children may and do perspire readily enough. One of the most troublesome of the neuroses which affect them is lichen urticatus or urticaria papulosa, a complaint which, while found occasionally in the better ranks of life, has its most perfect manifestation in the poorer classes. The skin in those afflicted by it almost always exhibits evidence of malnutrition, partly the result of bad hygiene quite as much, perhaps, as that ascribable to improper dietary. Thus it is usually dry, thin, and anæmic, so that those remedies, both external and internal, calculated to correct this are indicated; hence our duty in endeavouring to give rest to the integument is to discover and amend all faults of feeding or attention discoverable, and these, even among the poor, are in most cases attainable, since they mean no more than a simplification in the matter of food, and in more judicious modes of cleansing. In place of the strong carbolic soap often employed, we prescribe either merely ablutions with gruel or with a superfatted naphthol soap; cotton, or flannelette to be worn next the skin; accompanied by the inunction of glycerine of starch made with double the quantity of glycerine of that in the *Pharmacopœia*, medicated by the addition of naphthol, camphor, chloral, tumenol, or resorcin. Sometimes an oil containing menthol and a little lanolin or adeps lanæ proves more grateful. Internally antipyrin, in small doses at night, is valuable in promoting sleep.

At the other extreme of life we encounter pruritus again, that termed senilis, though it may cause annoyance at an age not old if counted by the years since birth. Here, too, the skin is apt to be thin and anæmic, but the cause is less remediable, since it is the result of atrophy; the peripheral circulation has shrunk, and as a consequence the glandular structures diminish or wholly cease their activity, and the integument becomes dry, hairless, and devoid of oil. With this wasting perversions of sensation arise, and the old man or woman has his or her rest disturbed by night and by day by tormenting itching. Now, while it may be impossible to create new capillaries, yet those which still exist can be made to do more duty, and the sweat and possibly the sebaceous glands are not so completely damaged that their functions cannot be in a measure resuscitated. The sudorific action of pilocarpin can be brought into play to calm the pruritus. We thus flush once more the peri-glandular plexuses, and if this be repeated night after night for a couple of weeks a great amelioration will certainly, sometimes a permanent cure, be obtained. As in the young glycerine of starch is likewise a valuable adjuvant, and temporary relief at least can often be procured by gentle ablutions with a well-made superfatted menthol soap. Warmth too is essential in the old, but the underclothing selected must be of the softest and smoothest wool, that derived from the Australian breed of sheep being particularly serviceable.

But in the large group of the inflammatory affections of the skin we find many examples in which we must have recourse to measures for procuring rest. We naturally turn to eczema in the first place, as being the commonest to invoke our aid. Whatever view of the nature of eczema may be determined on in the discussion which is to follow, its relations to catarrhal processes cannot be overlooked, and our most successful efforts to cope with it are those which follow the lead given by this theory. It does not matter whether we regard it as a parasitic catarrh or not, provided we bear in mind that it is a catarrh. We treat it on the same principles as we do an internal catarrh, though we can apply remedies which are impracticable in the case of internal catarrh. Just as in bronchitis we endeavour to soothe the inflamed and irritated mucous membrane by keeping the air of the apartment continuously moist and warm, so in eczema we envelop the raw, denuded leeting surface with a soft, bland, aseptic medium, a starch jelly with which is combined a proportion of boric acid, the least irritating if perhaps the weakest of our available correctors of putrefaction. That it has this property was proved by an experiment which one of my clerks thought fit on his own responsibility to try. A patient with very extensive and profusely secreting eczema was being poulticed with boric starch jelly. One day on making my visit to the ward I was struck by the offensive odour arising from one side of the body, when the poultices were removed in my presence. On remarking on this my nurse said that this clerk had doubts of the necessity of incorporating the boric acid with the jelly in preparing the poultices, and had asked her to have some made without it and applied to one side. The test was conclusive. While that side to which the boric starch had been applied was sweet and odourless, that to which the plain starch had been used was offensive in the extreme. The micro-organisms which set up putrefaction in eczema seem easily neutralised, but at times they resist boric acid. In general dusting with a weak salicylic acid powder or painting with nitrate of silver dissolved in sweet spirits of nitre before renewing the poultice is sufficient in such cases to get over the difficulty. One of the most obstinate of the characteristics of eczema is the infiltration or induration which accompanies it, and which persists as a leathery condition after the surface has healed. This often melts down marvellously under the continued employment of the boric starch jelly. But in certain cases of long-standing disease we cannot wholly get rid of it by their agency even if we could prolong their use. Until this has disappeared the eczema is not cured, and will certainly recur on very slight provocation, if not spontaneously, so soon as the patient attempts to return to his usual habits of life. Where a limb is the part affected one of the most efficient methods of causing the absorption of the infiltration is by closely enveloping it in strips of the salicylic soap plaster which Pick of Prague has introduced. The strength used may be the 2½ per cent. or the 5 per cent., according to the degree of infiltration, the age of the patient, and the sensitiveness of the skin. The plaster is worn for several days up to a week, and on its removal a distinct, sometimes a remarkable, restoration of pliancy will be found. It is important that the plaster should contain no resin, as this gives rise to redness and irritation, and largely neutralises the absorptive action.

But there are some cases of eczema in which neither the boric starch poultices nor the salicylic vaseline subsequently applied prove curative. Such may present the seborrhœic type, and implicating the cheeks, seem to have had their origin in seborrhœa of the scalp or eczema of the margins of

the eyelids. In a case of this kind, the treatment referred to above served merely to aggravate the disease, and to occasion its further extension. Hebra recognised the advantage of smearing an ointment such as his diachylon salve on cotton or linen pretty thickly, and then placing the strips so prepared in close approximation to the skin, over the plan hitherto adopted of simply rubbing it on, and emphasised this in his prelections. But Unna greatly improved on this in his salve muslins, a porous cloth carrying on and in its substance a thick stratum of an ointment of such hardness and consistence that it just melts slightly at the heat of the body, but does not become fluid or run. It also does not become rancid by keeping, if reasonable precautions are taken. When pieces of, say, his zinc ichthyol salve muslin, that of which my experience has been the largest and the longest, are applied to the skin of the face, we obtain an amount of rest attainable by no other means with which I am acquainted. The case alluded to immediately improved, and was in the course of a very short time brought to the dry and scaly condition which precedes complete cure. It cannot be from the action of the muslin as a parasiticide; it does not seem to me to go very far in proof of the microbic origin of eczema, be that true or not, but it most efficiently gives rest to the skin, and cure results. My friend Professor Chiene explains its action as not tending to disturb the young layer of epithelial cells; these are thus permitted to pass through the stages of normal cornification without interruption, and compares it to his plan of healing an ulcer by placing over it a piece of tinfoil, which, equally unirritating, does not on its removal tear away the pellicle of epidermis, which, starting from the margin, spreads as a film over the denuded surface. Where, then, expense is not a serious objection, this treatment with zinc ichthyol salve muslin is one of our best methods, in many cases curing our patient by giving as entire rest as is perhaps possible to his skin.

So far reference has been made to examples where it is not necessary to do any more than rest the part, but there are instances where such partial measures are not sufficient. Where eczema is already extensive, where large areas of the trunk or the lower limbs are involved, or threaten to become so in no long time, then confinement to bed is imperative. By placing our patient in the horizontal position, the blood stream pursues a placid course, the strain on the heart and vessels is at once taken off, while at the same time the temperature of the external surface is maintained at or about that of the internal organs, and friction and compression or irregular pressure are all done away with. The act of undressing is often cited as the period of commencement of itching. This is no doubt due in part to exposure to a cooler atmosphere, but partly also to setting free certain parts from constriction. This may be merely linear, as by garters or strings, or more general by waistcoats or corsets; but in either case the part so circumscribed is forthwith flushed, seen as a reddening on inspection, and with the returning blood the sensation of itching is excited. Dressings too which were inapplicable with the day clothes on can now be easily coaptated, and if the facility for scratching is greater, the demand is lessened. In all cases of widespread eczema therefore, either actual or threatening, confinement to bed is almost essential.

Before leaving the subject of eczema one other point may be alluded to. We have seen that rest in general is obtained by alternation of occupation. It sometimes happens that a case of eczema confined to bed and carefully treated ceases to improve further after a considerable degree of progress has been attained. When this is the case it is not infrequent that cure rapidly follows an entire change. The patient is sent home, the ordinary pursuits are again engaged in, and recovery is uninterrupted. The rest has done its work, and the time for activity has come.

In acne again, the question of how we can best procure repose for the skin comes prominently forwards, but is a much more complex one than is offered for our solution in most cases of eczema. As to the primary difficulty in acne, the researches of Unna have pretty well placed us on sure ground. We have to deal with "a superficial hyperkeratosis of the epidermis, which, extending to the follicle mouths, leads to the formation of comedones." We all recognise that the worst examples of acne are to be encountered in those subjects whose skins are coarse, thick, muddy, and pale, yet in them the acne is a transitory matter, it will in time cease its troubling, no doubt at the expense of indelible scars, and much disfigurement. Yet the thick skin remains for life, the superficial hyperkeratosis of the epidermis is permanent. It is the epoch of developmental activity, that between puberty and manhood or womanhood, which is the period *par excellence* of acne. To my mind the micro-organisms which have been invoked as the essential causes of acne are mere contributory factors, they determine the access of suppuration, but they are not the source of the comedo, though no doubt a component part of it. Hence treatment in acne has several sides. On one hand we must endeavour to thin down the abnormally thick epidermis. This is effected by various methods in accordance with the degree and the resistancy of the integument. Sometimes ointments which contain salicylic acid, soap, and sulphur, as in the admirable one of Boeck, suit our purpose, or it may be necessary to have recourse to the resorcin desquamating paste suggested by Unna, or to the application of his resorcin or salicylic plaster muslins. At the same time the sulphur nullifies the pus-determining properties of the micro-organisms. But all this time it is necessary to watch over the evolutionary movements which are going on, and to direct these as far as we can in their proper channel, repressing any excess, and correcting any derangements which may exert a reflex influence.

Certain skins exhibit an exaggerated sensitiveness to light, but to only one of the methods in which such react will reference be made at present. Some individuals, particularly those with reddish hair, freckle readily during the brighter part of the year. This impressibility may be congenital, the result of changes due to age, or acquired as the consequence of excessive exposure to intense radiation. There can be little doubt that these freckles are an effort on the part of Nature to protect areas which are from some cause more than usually delicate, to impart rapidly to limited spots the same safeguard which the progress of the ages has given to the darker races of humanity. The researches of Bowles have proved that it is the chemical rays which are thus active, and, though their effects are most pronounced on uncovered parts, they are not restricted to these. They in this respect correspond to the *x* rays, since freckles are met with on portions of the body on which the sunlight never impinges directly for any length of time, if at all. The most remarkable example of this susceptibility occurs in xeroderma pigmentosum. Not only have we intense freckling, but dryness and hyperkeratosis, at first diffuse, after a time taking on a warty and then a carcinomatous degeneration. Unna has thrown out the suggestion that by due protection from the chemical rays the freckling might be modified in this melancholy if rare disease, the further malignant changes postponed or arrested, and amelioration if not cure obtained. A case of this kind has been under my care for two years and a half, which I hope to show you shortly, and in it we have been able to check the advance almost perfectly. An ointment stained brown by the addition of raw umber has been pretty constantly applied to the face, a dark brown veil worn whenever the child—now 6—has gone out, and the warts on their earliest appearance treated with salicylic collodion. In this way fairly perfect rest has been obtained for the abnormally tender skin.

The inquiry as to how to secure rest when parasitic agencies are to blame has been left to the last. At the present moment the trend of investigation is to try to find an organism which can be credited with the causation of every cutaneous disease. The effort is a laudable one, for in due time it will demonstrate which ailments are and which are not parasitic in origin. Hence in this tentative stage too much stress is very probably laid on the accidental presence of micro-organisms which are not pathogenic. Take the case of seborrhœa. Is that to be ascribed to micro-organismal action, either direct by toxins or by chemotaxis? Is the organism which sets up the seborrhœal flux the same as that which occasions the dermatitis, or the alopecia? The following instance, viewed from the purely clinical side, exemplifies the intricacy of the problem:

A man of 31 consulted me for a too copious fall of hair, which he feared would occasion baldness, of which there

was so far no appearance. His hair was dark and plentiful, but there was a considerable amount of seborrhœa in the form of branny, greasy scales, distributed pretty uniformly over the scalp. There was no loss of mobility on pinching or moving it, nor did the hair come out readily on pulling. By the employment of a salicylic and sulphur pomade the seborrhœa had entirely disappeared in the course of a month, but the hair still fell out too abundantly. Nine months afterwards there had been no return of the seborrhœa. The scalp on examination did not exhibit the faintest trace of scale; it was smooth and uniform and the horny surface in the most perfect condition. The hairs, too, were well-nourished, yet the fall continued, and there was certainly a degree of thinning, though not yet to a marked degree. If Saboraud is correct that the bacillus he has discovered is the cause of seborrhœa and seborrhœic alopecia, how can we explain the complete cure of the seborrhœa in this case, the healthy state of the scalp, and yet the persistence of the loss?

There is an entire consensus of opinion that erysipelas regarded as a medical disease is caused by the streptococcus of Fehleisen, giving rise to spreading inflammation of the skin, or mucous membrane, having contagious characters. The micrococci grow in chains in the lymphatic vessels and spaces of the corium, and are most numerous at and just beyond the extending margin of the disease, while in the earlier affected parts no living cocci are to be found, but in these leucocytes invade the lymphatic channels, and the organisms die. Unna, however, maintains that while this may to some extent be true of the cutis, the process extends to the hypoderm, which swarms with cocci, both in the marginal and central zones. He believes that from its more constant and higher temperature, the subcutaneous tissue provides better conditions of nutrition for the coccus of erysipelas than the parts nearer the surface, as it is notoriously sensitive in this respect. While the streptococci, having gained entrance through some breach of continuity of the skin, grow in the lymph vessels of the cutis, the veins and capillaries are dilated and distended with red blood corpuscles, and in the arteries there is a large amount of coagulated fibrin. It is believed that the contagion may proceed from the desquamated flakes of epidermis, or may linger in the crusts, or attach itself to the dressings or bedding. The point is that it is from the superficies that the danger of the spread arises. Now, since in the high temperature of the affected part we find the favouring element for the growth of the organism, and in the separation of the dead epidermis and *débris*, the element of communication, we have a clear indication for treatment. Though constitutional symptoms manifest themselves almost consecutively with the onset of the disease, it is for a time a surface ailment. And there is one remedy at least which can, in the large majority of cases strangle it, so to speak, at its birth, if used promptly and efficiently. This is ichthyol. Yet it is singular that in the most recent article on erysipelas which has appeared, the in all other respects admirable one by Mr. Watson Cheyne in *Allbutt's System of Medicine*, no allusion whatever is made to it. I had ample opportunities of thoroughly testing it in the erysipelas ward of the City Hospital, and never once did it fail to afford immediate relief, and if applied early enough to check the further spread. As Leistikow observes, "If we cannot maintain that this remedy agent directly kills the streptococci, yet it is manifest that by it a process of contraction is initiated, so that the cocci no longer thrive on the altered soil." If thickly smeared over the inflamed area as a 25 per cent. ointment made up with prepared chalk and vaseline, a base much like that suggested by Sir Dyce Duckworth, and covered with a layer of cotton wool, which has the double advantage of excluding the air and acting as a cushion to shield the very sensitive surface, an agreeable feeling of coolness is at once experienced, the further progress is arrested, and simultaneously the fever and other disturbances abate. The treatment of erysipelas by strong ichthyol ointments affords one of the best examples of medicinal rest to an inflamed skin that can be cited.

Only two more illustrations, drawn from the more frankly parasitic affections, and I have done. The treatment of pityriasis versicolor is well enough established, but the prevention of recurrences is scarcely such a simple matter. These very probably originate from small points having escaped treatment, and so acting as foci, from which the disease once more spreads. Now it occurred to me that if the entire surface of the body so far as covered by the clothes—that on which the disease flourishes—were thoroughly washed with a soap capable of thinning down the epidermis, the last traces might be got rid. I therefore have been in the habit of directing my patients affected with pityriasis versicolor, after the course of treatment calculated to rid them of all evident traces had been carried out, to continue to wash for a week or two with a resorcin and salicylic acid soap, and in this way, so far as my experience enables me to state, a permanent cure has been effected. We have thus procured rest by eliminating the cause.

We sometimes meet with instances of pediculosis vestimentorum in elderly people, who are seriously anxious to be rid of the infliction. But there are some skins which seem to afford a specially favourable feeding and rearing ground for these obnoxious parasites. The patients may change their linen with exemplary frequency, may wash with carbolic or other soaps more or less distasteful to the insects, yet they reappear. It struck me that possibly by utilising the property of sulphur to undergo slow oxidation at the temperature of the body, one might eradicate these pests. I therefore tried the plan of making such persons wear in a bag made of some porous material a number of fragments of sulphur next the skin night and day, after the manner of a reliquary. The method proved eminently successful, and I have been able thus to preserve the skin from the ravages of these insects, and arrest the annoying itching.

There are numerous other illustrations of the value of rest in cutaneous diseases which may occur to you, and to which reference might have been made. Thus, in the large range of syphilitic affections of the integument, rest is an important factor in cure. But my object has been more suggestive than didactic, and will have been fulfilled if I have been successful in enlisting your interest in what is by no means a minor point of detail.

AN ADDRESS

DELIVERED AT THE OPENING OF THE

SECTION OF MEDICINE IN RELATION TO LIFE ASSURANCE.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

By CLAUD MUIRHEAD, M.D., F.R.C.P.Edin.,

Consulting Physician to the Edinburgh Royal Infirmary; President of the Section.

MEDICINE AND LIFE ASSURANCE.

Gentlemen,—For the first time in the history of this Association a Section has been instituted for the consideration of Medicine in Relation to Life Assurance. And I think our President deserves the congratulations of the members of the Association for the happy inspiration which prompted the formation of it. For to him, I believe, the idea is entirely due. And indeed when one considers the matter, it is rather a surprise that the formation of this Section has been delayed so long, and that only now it is taking its position in the Association to which it is fairly entitled.

Before proceeding further, permit me to interpolate a word of thanks to those gentlemen, who have the arrangement of these matters in their hands, for the honour which they have conferred upon me in inviting me to assume the position of first President of this new Section. I am quite aware that I owe this distinction to my official connection with one of the largest and most influential insurance companies in the kingdom, namely, the Scottish Widows' Fund Assurance Society. And I am also aware that many other more distinguished men might have been offered this honourable post. But of this I am equally certain, that not another man could have more highly appreciated the honour conferred on him, and therefore

I tender to those who have conferred it my sincere and hearty thanks.

We have also to congratulate ourselves on the good fortune of having many of the leading men in this city and elsewhere who are connected with insurance offices of the first rank, conjoined with us in our deliberations and discussions on the subjects which are to be brought before us. The Faculty of Actuaries have also kindly responded to our invitation to give us the benefit of their rich experience, an experience which, as it is commonly built up on a statistical basis, is at once final and irrefutable. I think that from such a combination of persons, whose minds are daily engaged in weighing evidence, in close reasoning, and in deducing practical results from the premisses submitted to them, in conjunction with the more practical experience of our own profession, there cannot fail to arise most valuable conclusions as the outcome of our conference, which will prove of much service in guiding us—more equitably, perhaps, and certainly more satisfactorily—to adjudicate upon the merits of cases which in future may come before us as proposals for life assurance. And, if this turn out to be a correct surmise, it will prove the most ample justification for the formation of this new Section, and lay the foundation for its acceptance as a permanent branch of our Association.

As you are all probably well aware, the business of life assurance has of late years made enormous advances, and huge sums of money are now and again set aside in this way, not merely for the original humane and beneficent purpose of securing to the widow and her children on the death of the head of the house some means by which they may be saved from the terror of actual poverty, but it is also largely used for commercial purposes, and more lately as a method by which to meet the demands of the Chancellor of the Exchequer when he claims the estate duties. It may astonish some of you—as it certainly amazed me—to learn that in the United Kingdom the liabilities of life assurance companies amount to no less than £263,829,625. The sum is so huge that one has difficulty in appreciating it. But it serves to give one some small idea of the vastness of this enterprise, and of the enormous responsibility imposed upon those who have to administer and find safe and profitable investments for these ever-growing funds.

Perhaps it may help to give you a better conception of its magnitude were I to quote the statistics given in the last Insurance Companies' Blue Book, which is annually furnished to the Board of Trade, and by it presented to Parliament, in which I find the following figures:

	Ordinary Companies.	Industrial Companies.	Total.
Premium Income ...	£19,604,748	£7,151,109	£26,755,857
Number of Policies	1,543,026	15,860,654	17,403,680
Sum Assured ...	£562,344,968	£152,073,819	£714,418,787

That is to say, that nearly one-half of the population of the United Kingdom (exactly 43.7 per cent.)—men, women, and children of all ages—is insured in some form. The value of the average policy taken out in the ordinary companies amounts to £364, while that of the industrial companies amounts to about £9 5s.

Now, what relation to this vast enterprise does the medical profession hold? What is our position in regard to life assurance? In the first place, let me say in answer to this question that I trust everyone now in this room has already, in some form, accepted the invitation of one or other of the numerous companies, and has become a member of one of them. And if any one of my younger friends still hesitates about the propriety or necessity of such a step, let me advise him, without another year's delay, to join one of the companies; and if he will suffer me to still further advise him, I should most strongly urge him to select the endowment form of assurance. To no class of assurers does this method appeal more urgently than to the professional man. For as years wear on he of necessity loses some of the spring and energy of his younger years; the pursuit of his profession, though always a charm to rouse him to enthusiasm, still finds him more readily fatigued by it; a fact which his friends and patients are perhaps more quick to perceive than he himself to acknowledge; and so, as age advances, patients cease to fill the ranks of those who inevitably drop off, and practice gradually dwindles. Now is the time when, if he be wise, the professional man will retire, with his laurels still green upon him. And to enable him to accomplish this otherwise not always easy though most commendable act, the falling in of this endowment seems to have been specially devised. It is easy, when one is in the full swing of professional life, to spare the necessary sum to secure so great a boon in after-life. By this means the professional man puts himself in the same position as some of his more fortunate friends who have the prospect of a pension to retire upon when they attain the specified age at which retirement is enforced.

But apart from this purely personal relation to life assurance, the medical profession is, and has for long been, associated with the companies in enabling them to make judicious selection of lives proposed for assurance. Not much before the commencement of this century were the services of a medical man asked for. On reference to the first proposals of the Scottish Widows Fund Society in 1814, I find that the applicant had to appear before a medical man, and produce a certificate to this effect. I quote the words:

I ..... do hereby certify that ..... mentioned in the written declaration (application form) did appear before me this day, and that I have known ..... for ..... years, and that to the best of my knowledge he hath never been afflicted with gout, asthma, or any disease which tends to the shortening of life, and that I do believe ..... present state of health to be good, and his habits of living not such as to endanger ..... life. Given at ..... this ..... of .....18.... Signature. [Note appended. This, or any other form adapted to the case, to be used.]

This not very elaborate report continued in use up to the year 1830, and it will be observed that most attention was paid to the general appearance of good health, without apparently any examination of the applicant whatever. It is curious to note how concerned the directors were, at that early date, to ascertain if the applicant had suffered from gout. It does not appear how they dealt with a case where the man confessed to having been afflicted with it, but evidently they were impressed with the fact that gout tended to the shortening of life, a fact which was later lost sight of, and has only recently been recognised as a condition calling for a surcharge on the premium, and for which our friend, Mr. Meikle, will, at a later stage, bring forward ample justification. In the year 1830 these perfunctory reports were no longer considered satisfactory, and a certificate was required from the private medical attendant, to whom a series of specific questions were addressed with regard to the general state of health of the applicant, the nature of any serious illness, suspicion of any organic affection, any injury, his habits and constitution. This report was returned to the manager or medical officer of the Society. About this time vouchers as to character and health were required from friends. This is apparently the first time the Society deemed it prudent to retain the services of a physician to aid them in the sifting of cases; and in 1835 they went a stage further, and required applicants to appear before their own medical adviser, as well as to produce answers to a more elaborate set of questions, as to health and family history, addressed to the private medical attendant. A report from the agent and two private friends was also called for.

It would thus appear that, coincident with the advance in medical science and the spreading of the knowledge of more precise means of physical diagnosis, the companies sought for and obtained more exact information as to the actual condition of proposers before admitting them to the benefits of their societies. And so the process of selection of the most healthy lives has gone on to this day, each company trying, from time to time, to improve upon the medical forms which are placed before their examiners, in order to obtain as complete and faithful an account of the proposer as possible, as to his family and personal history as well as to his physical condition, at the moment of application.

There exists a popular belief that all this care is of little use, and that the benefits of selection are entirely lost after the first five or six years. Acting on this assumption, companies have been started to accept lives without any medical examination. But, so far as I am aware, they have not proved a success, as one would naturally predicate. For to them all the rejected of other offices would as a matter of course repair, and the healthy would, equally as a matter of course, carefully shun such offices. But the fallacy of this has been repeatedly exposed, and by none more effectively than by our two friends Dr. Sprague and Mr. Meikle of this city, who have shown that, after elimination of the voluntary withdrawals, the advantages of selection diminish at all ages with

duration of the policies, rapidly at young ages, slowly at middle life, while in the older it probably never entirely disappears.

Mr. Edgar Holden thus defines selection: "Of any number of persons we know how many will attain a given age, how many will die each year, and the mathematical value of the chance of any to attain his expectancy; but to know which ones will do so is impossible; *to decide which are most likely to do so is selection.*" And it is to the credit of the medical profession that they, by their careful examination of candidates for assurance, largely contributed the data which enabled the actuaries to formulate their tables of Expectation of Life for Healthy Males—and thus to estimate the mathematical value of the chance of a man attaining his expectancy.

But infinitely more difficult is the problem which is constantly submitted to us, namely, how equitably to assess the value of under-average lives; how sufficiently to protect the societies against loss, and how, at the same time, not to overcharge such candidates for assurance. Here we have no fixed and mathematically correct data by which to guide our decisions. We have no aggregated groups of persons suffering from the same disorder, though perhaps differing greatly in form, which might supply a basis by which to adjudicate upon the special case before us. And if the extra rates recommended by medical officers have in the past saved the offices from loss, I am bound to admit that this happy result has been arrived at without the aid of any scientific formula, and by merely empirical methods.

Now, gentlemen, it appears to me that one of the most important functions of this Section is—by our discussions, our interchange of views, the communications brought before us, and by stimulating medical officers to investigate the records of their various companies—to endeavour to devise some more scientific, I shall not say more equitable, principles to guide us in our estimate of extra risks. Our good friends the actuaries have already calculated for us the after-life of groups of healthy males; and if we can only supply them with sufficient data from which to calculate by how much the expectation of life of unhealthy men is diminished in special groups of disease, they would quickly provide us with a table of the expectations of unhealthy males, and thus our task would be immensely simplified.

I do not doubt that the discussions and papers already announced to be held in this Section will do much to advance and stimulate this much-to-be-desired end, and in this way, perhaps, extend the boon of life assurance to those who may, for the present, be reckoned to be outside its pale.

Gentlemen, I shall not longer trespass on your patience by detaining you from the business proper of the Section, but content myself with thanking you for your kindly reception of my remarks.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF TROPICAL DISEASES.

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898.

By PATRICK MANSON, M.D., F.R.C.P.Lond., LL.D.,

Physician to the Seamen's Hospital, Albert Dock Branch; Lecturer on Tropical Diseases, St. George's Hospital and Charing Cross Hospital Medical Schools; President of the Section.

It has been the policy of the British Medical Association—a policy especially apparent in recent years—to include in its operations the Colonies and dependencies of the Empire, as well as the three kingdoms themselves. As many of these Colonies and dependencies are situated in or near the tropics, as in the aggregate they carry an enormous population, and as many of the diseases of these countries are more or less peculiar to the tropics, the institution at the annual meetings of this Association of a Section devoted to tropical medicine was the inevitable outcome of the catholic policy I refer to. Furthermore, the expansion and progress of this branch of medicine during the last twenty years, more especially since Laveran's discovery of the malaria parasite in 1880, have been so great that the study of tropical medicine has become a life's work in itself, and consequently, like so many departments of our science, is perforce day by day becoming more specialised. Every year the volume of discovery increases; new fields of inquiry are constantly being opened up, and pathologists are beginning to realise the important fact that just as the fauna and flora of the tropics are infinitely richer in species than are those of the temperate zones, so the pathological fauna and flora of the tropics, and the diseases to which they give rise, are also infinitely more numerous than their congeners of cooler climates. It must be so. High temperature and plentiful moisture, in the aggregate, everywhere make for abundant life, whether it be a question of ordinary beasts and plants or whether it be a question of pathogenic organisms.

From a pathological point of view, therefore, there is abundant justification for the initiation of this Section. There are other grounds, however. The profession is becoming alive to the fact that a large proportion of its numbers—a fifth or sixth—have a direct personal interest in tropical medicine. Moreover, public interest in this matter is manifestly growing, and even the rulers of the empire are at last waking up to a sense of a neglected responsibility.

It seems to me therefore that the Association has done well to institute this Section, and I think it has been especially happy in its selection of this particular time and place for so doing. It seems to me that it has hit on the psychological moment, and considering the leading position which Edinburgh has always held in the field of medicine, I think it has hit upon, if I may be allowed the expression, the psychological place.

I have no intention of inflicting on you a long address, but I consider it incumbent on me briefly to indicate that, as the special Tropical Section, we have three distinct functions to fulfil.

In the first place we must work for the affiliation and organisation of the five or six thousand British practitioners who, more or less directly, are interested in tropical practice. Five or six thousand is an enormous body; such is its magnitude, however. Hitherto it has been without head or organisation; it has been conscious of its duties only, unconscious of its size and power, and absolutely oblivious of its rights.

Secondly, we have to see that those who propose to join our ranks in the future are properly educated in our special branch. Speaking to an audience most of whom, I presume, have had personal experience of tropical practice, it is hardly necessary for me to enlarge on this point. We all of us feel acutely the backward state of our educational system in its bearing on tropical medicine. There is not one of us that does not bewail the crass ignorance in which at the outset of his career he lightly undertook the care of men's lives in dangerous climates. There is not one of us that does not mourn over innumerable lost opportunities of adding to the common stock of knowledge; opportunities lost, not even recognised, because of the inadequacy and unsuitableness of our initial medical education. There is not one of us who cannot pillory himself with the recollection of lives that perished entirely owing to the lack on our part of an elementary knowledge of tropical medicine. This is a theme very susceptible of illustration; I forbear. But we must have, we must insist upon, improved education in tropical medicine.

Lastly, we have to discuss the problems of tropical disease. Though much has been done in recent years, that which has been accomplished has but served once more to show that there is no finality in research. The higher we rise the wider becomes the horizon. Laveran's discovery has illuminated many things that were dark before, but it has also opened out new problems and shown dark spots of ignorance hitherto unsuspected. It has left untouched the practical aspect of that important subject the etiology of malaria. Beyond that which Ross has just told us, we still know absolutely nothing of the malaria parasite as it exists outside the human body. Similarly we are still in absolute ignorance of the location and of the physical features of the malaria parasite while latent in the human body, or of the exact physical conditions that cause it, after months or even years, to spring once more into active pathogenic life.

Again, that other great tropical disease, or rather group of diseases, which we call dysentery, is still, as regards many of its forms, their causes, and their treatment, a sealed book. The pathology of liver abscess is still, as it has ever been, a *quæstio vexata*. We just begin to know a little about the symptoms, epidemiology, and pathology of beri-beri; we do not know its cause. Filariasis, ankylostomiasis, distomiasis, are all new subjects, bristling with obscurities, as well as with practical points in prevention and treatment. There is plenty of work for us to do. These are not a tithe of the problems in tropical pathology calling for our consideration. Everyone who has tried to work in this field must have felt dimly that the recognised and named diseases of the tropics are far outnumbered by the unnamed and undifferentiated diseases. In all pathology there is no such field for fruitful original research and discovery as tropical medicine.

I conclude these few remarks with the hope that the creation of this Section will receive its justification in the amount and quality of the work we propose to get through on this occasion; and that the Tropical Section may become a permanent feature in the annual meetings of the Association.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF PHYSIOLOGY

At the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

By WILLIAM RUTHERFORD, M.D., F.R.S.,
Professor of Physiology, University of Edinburgh; President of the Section.

ON TONE SENSATION WITH REFERENCE TO THE FUNCTION OF THE COCHLEA.

There are few chapters in physiology so interesting as that in which Johannes Müller in his *Elements of Physiology* discusses certain preliminary considerations relating to the general physiology of the senses, and expounds his classical theory of the specific energies—or, as we should now rather say, specific activities—of the sense organs. No doubt we are all agreed that the immediate cause of the specific sensations of the different sense organs must be referred to the different modes of activity developed in the several sensory centres, but how it comes about that the activity of cells in the auditory centre impresses our consciousness with a sense of sound, while that of cells in the vision centre impresses us with a sense of light is, as Müller stated, a "problem incapable of solution."

I am not going to discuss the production of specifically different qualities of sensation, but the production of different qualities of the same kind of sensation. This aspect of the question presented itself to Müller in the early years of this century (1826), as it had done to Newton a century earlier (1704). Although Newton was an opponent of the undulatory theory of light, strange to say, he suggested an undulatory theory of nerve action in attempting to explain the production of different colour sensations. He supposed that light induces vibrations in the retina that are transmitted to the brain, and there give rise to colour sensations that differ according to the length of the incoming vibrations. In referring to Newton's idea Müller observed that "such a hypothesis if at all tenable would find its first application in accounting for the different sensations of which a single sense is susceptible: for example, in explaining how the sensorium receives the different impressions of red, yellow, and blue, and of acute and grave tones," but "that it is only with this application that the hypothesis is worthy of regard."[1]

These thoughtful words of Müller were set aside, and his theory of specific activities extended to the hypothetical explanation of different qualities of the same kind of sensation, first by Natanson in 1844, then by Helmholtz[2] in 1862, and afterwards by Hermann. The extended theory was so well stated by Hermann[3] in the edition of his *Physiology* published in 1878 that I cannot do better than quote his words: "It is necessary to ascribe to the stimulation of different nerve fibres the different qualities of any given sensation; for example, the sensations of red and blue; of high and low tones and hence to suppose that the specific energy of certain fibres aids in the perception of red, while that of others aids the perception of blue. For if it were not so we would be compelled to assume that one and the same nerve fibre is capable of states of excitement that differ in quality; an assumption hitherto unsupported by facts. There must therefore be at least as many sensory fibres as there are simple qualities of sensation." Although this extension of Müller's theory originated with Natanson, its general acceptance and persistent vitality is mainly due to the great influence of Helmholtz.

I had thought that we might perhaps on this occasion discuss the production of different qualities of the same kind of sensation as regards the senses generally, but I became convinced that the subject is too extensive to be taken up at one meeting, I therefore propose to confine myself to the sensations of tone. At the meeting of the British Association held in Birmingham in 1886 I gave a popular evening lecture on the Sense of Hearing, in which I proposed a new theory of tone sensation in opposition to the well-known theory of Helmholtz. A short abstract of my lecture appeared in the *Journal of Anatomy and Physiology*[4] at that time, but although my theory has been accepted by a few physiologists, the majority, if I may judge from all the German textbooks and some of those by British and American authors, still adhere to the Helmholtz theory, although there are evident signs that the implicit faith so long prevailing is gradually growing weaker.

I deem this a suitable opportunity for submitting my views on this subject to those who have specially studied anatomy and physiology, and are able to criticise the opinions I may express. In so doing I must bear in mind that I may be addressing some who are engaged in the practical departments of medicine, and who are on that account scarcely so familiar with anatomical and physiological details as some of us are. I shall therefore endeavour to be as explanatory as may be compatible with brevity in discussing a complicated subject.

Although our auditory sensations are highly complex, we know that the physical agent by which they are induced is simply the increase and diminution of pressure characteristic of the waves of sound; and happily we now know that in all animals the peripheral mechanism adapted for the reception of sound essentially consists of modified epidermic cells with hair-like processes, by which the sound vibrations are transmitted to the cells, and the auditory nerve impressed.

Structure of the Cochlea.

We are all deeply indebted to Gustav Retzius[5] for the splendid illustrations and elaborate descriptions he has given of the structure of the ear. I have found his work of the greatest value in the study of this subject.

All are agreed that the cochlear canal, or scala media of the cochlea is the terminal organ that enables us to appreciate musical sounds. In transverse section the canal is somewhat triangular, and is bounded on one side by bone, and on two sides by thin membranes—the membrane of Reissner, through which the sound waves enter the canal, and the basilar membrane, through which they leave it. The sound therefore crosses the canal.

The basilar membrane supports the organ of Corti; I believe the membrane is nothing but a mere supporting structure, but another function so very different has been ascribed to it, that I had better describe its structure minutely. Its main body consists of connective tissue fibres extending from the periosteum covering the osseous spiral lamina to that lining the outer wall of the cochlea. In all cases the chief fibres of the membrane are tense, closely adjacent, and directed across the cochlea. In man and some animals they form a single layer. In the reptile and bird there are two layers of fibres, with a narrow interval between them through which some fibres pass obliquely from the one layer to the other. In the rabbit there are two layers of fibres, with connective tissue cells between them. We shall presently see how this complicated arrangement of fibres affects Hensen's theory of the peculiar function he has assigned to them. The fibres are completely covered on both surfaces of the membrane by epithelial cells. Those on the lower or tympanic surface are undifferentiated squamous cells, while those above it are in part differentiated into the organ of Corti.

We can best understand the organ of Corti by comparing

its simpler structure in reptiles and birds with its more complex structure in mammals. In the crocodile, as described by Retzius, it consists of hair cells at its free surface, supported by a large number of ordinary columnar epithelial cells planted on the basilar membrane. The fibres of the auditory nerve are distributed to the hair cells. Corti's membrane (membrana tectoria) covers the whole organ, and the endolymph fills the remainder of the canal.

In birds the structure of the Corti's organ is essentially similar to that of reptiles. That fact is of special interest, because the power of appreciating musical sounds is so conspicuous in some birds.

In mammals the much greater length of the cochlear canal permits of a far larger number of hair cells. Most of the supporting cells are specially modified into the pillar cells of Corti and cells of Deiters, each of them containing a stiff elastic fibre that gives a comparatively firm support to the lamina reticularis, through which the hairs of Corti's cells project. The hair cells do not reach down to the basilar membrane, but rest on the shoulders of Deiters's cells and inner pillar cells of Corti, by which they are individually supported.

Since Corti's hair cells are the true auditory terminals through which the nerve fibres are impressed, their structure is of special importance. Each cell has a thin envelope enclosing a nearly fluid protoplasm, with a large nucleus deeply placed near the inner end of the cell, and a clear looking body termed Hensen's corpuscle near its free end. About twenty short, stiff, rod-like hairs project from the free extremity of each cell, their inner ends passing a very short way into the cytoplasm.

Nerve fibrils terminate around the inner ends of the hair cells. Retzius was unable to trace them into the cells, but there must at all events be physiological continuity between the cell substance and the nerve.

Since the sound waves reach the hair cells through Corti's membrane, the nature of that membrane and its relation to the hairs are therefore important. At the apex of the bird's cochlea, Corti's membrane has been shown by Retzius to be simply an otolith consisting of a soft organic matrix laden with calcareous particles. But throughout the completely developed portion of the cochlear canal, the membrane contains no calcareous matter, and is therefore better adapted for the transmission of vibrations. Retzius describes it as "homogeneous and semigelatinous," and states that the auditory hairs either project into it or are in contact with it. If that be their anatomical relation, the membrane and hairs must vibrate as one mass, like the membrane and ossicles of the tympanum.

In the mammalian ear Corti's membrane consists of laminæ of homogeneous fibrils. In the cat, a hem runs along the lower surface of the membrane next the hair cells. The inner margin of the membrane is firmly attached to the epithelium covering the spiral lamina, while its outer margin is loosely attached to Corti's organ external to the hair cells. The outer attachment is so slender and easily ruptured that the membrane is most commonly detached from Corti's organ in making sections. It is therefore difficult to be certain of the anatomical relation between the membrane and the hairs in the mammal, but probably they are in close relation, so that membrane and hairs may vibrate as one.

Stimulation of the Auditory Nerve.

When the sound wave in its phase of condensation arrives in the scala vestibuli it is transmitted through Reissner's membrane to the fluid in the cochlear canal, thence through Corti's membrane, Corti's organ, the basilar membrane to the fluid in the scala tympani and membrane of the fenestra rotunda. All these parts oscillate back again in the rarefaction phase of the wave. It is admitted that the wave arrives at Corti's organ throughout the whole length of the cochlear canal at practically the same moment. The short, stiff, auditory hairs probably transmit the vibrations of Corti's membrane to Corti's cells in the same manner that they are transmitted by the columella of the bird's tympanum from the membrana tympani to the membrane of the oval fenestra.

What is the precise function of Corti's cells? Do the sound vibrations induce chemical discharges within them that stimulate the nerve ends? If such were their mode of action we may reasonably suppose that they would have required a liberal blood supply to maintain active chemical change, like the visual terminals in the retina. But, as a matter of fact, there is not a blood capillary in Corti's organ. Its lymph supply is obtained from capillaries at some distance, and its renewal probably takes place slowly. It therefore seems reasonable to dismiss the idea of any special chemical action in Corti's cells, and to assume that their action is probably mechanical. Since the terminals of tactile nerves in the cutaneous touch corpuscles are stimulated by pressure without the aid of any intervening cells, it is reasonable to suppose that in the ear the sensory apparatus is stimulated mechanically by the alternations of pressure in the sound waves. This view is supported by the observations of Ewald[6] that after complete destruction of the labyrinth and tympanic apparatus on both sides of the head in the pigeon, the animal still gives signs of hearing sounds made at a distance, although care is taken to obviate any effect on the nerves of touch. But all signs of hearing disappear if the auditory nerve is destroyed on both sides by the local application of arsenical paste or croton oil. The inference, therefore, is that the fibres of the auditory nerve can be stimulated directly by sound conducted by the bones of the head. But although the auditory nerve detached from its terminals can be stimulated by sound, are we to conclude that Corti's cells are superfluous, and that the sound may stimulate the nerve fibres in the organ of Corti directly? We might as well say that touch bodies in the fingers are superfluous because the ulnar nerve can be stimulated by pressure at the elbow. Hair cells appeared as the auditory terminals at so early a stage in the evolution of the animal kingdom that their intervention between the sound vibrations and the nerves must be essential for their proper stimulation. But one cannot tell whether they are simply transmitters of sound vibrations to the nerves or whether the sound vibration, as we know it, is within the protoplasm of Corti's cells translated into that unknown form of molecular vibration termed a nerve impulse.

Tone Sensations.

Our auditory sense excels all others in the power of distinguishing different qualities of sensation. It can distinguish tones varying in pitch from 16 or 20 vibrations to 40,000, or even 60,000, vibrations per second. A good violinist can detect about 50 differences of pitch within the range of a semitone, implying that he can feel a difference due to half a vibration. But in some highly trained ears the sensitiveness is even greater, so that differences of pitch due to one-quarter, or even one-sixth, of a vibration can be felt throughout the ordinary scale (Luft.)[7]

How are we enabled to appreciate differences of pitch? As we all know, Helmholtz supposed that the same nerve cell cannot give us two different sensations even of the pitch of tone, and therefore a separate nerve fibre and cell must be impressed to enable us to hear tones differing by, it may be, only the fraction of a vibration. This was his extension of doctrine of specified activities to explain the different qualities of tone sensation. To render his theory feasible, he supposed that the cochlea must contain an immense number of minute resonators capable of severally responding by sympathetic vibration to all the tones we can hear. Each cochlear resonator was supposed to stimulate its own special nerve fibre, and this in turn its own cell in the brain. When he advanced that theory in 1862 the structure of Corti's organ was so imperfectly understood that Corti's pillars were supposed to be the nerve terminals. They increase very slightly in length from base to apex of cochlea (from 0.06 mm. at the base to 0.1 mm. at the apex) yet Helmholtz deemed that small difference sufficient for his theory. But when it was ascertained that no pillars of Corti occur in the bird's cochlea, and that in the mammal they are mere supporting structures apparently unconnected with nerves, the theory of their function as resonators had to be abandoned.

But the resonance theory was not allowed to drop. Hensen came to its support with a new suggestion. He showed that the fibres of the basilar membrane increase slightly in length from base to apex of cochlea, and that they may play the part of resonators for tones of widely different pitch, although the shortest fibres are only about $\frac{1}{4}$ mm. and the longest about $\frac{1}{2}$ mm. in length. But the fibres are so heavily damped by

layers of cells cemented to them on both surfaces of the membrane and along their whole length, that they are ill adapted for resonance. Hensen thought that the basilar fibres run parallel with each other, and that they lie in a single layer like piano strings; but in the bird's cochlea there are two layers of fibres and irregular fibres running between them. It is impossible that systems of fibres so arranged can severally act as resonators. A nightingale would scarcely be able to learn its songs if it had to rely on the individual vibration of basilar fibres to enable it to appreciate tones of different pitch.

But another argument strikes me as cogent against Hensen's theory. If Corti's membrane had consisted of a single layer of tense parallel fibres, each cemented to the hairs of a series of Corti's cells, and varying much in length throughout the cochlea, Helmholtz and Hensen would not have been so unreasonable in ascribing stimulation of Corti's cells to a segmented vibration of the superjacent fibres. But the sound waves first encounter the comparatively lax membrane of Corti, and after affecting the hair cells reach the heavily-damped subjacent basilar membrane, which is surely in a most unfavourable position for sound analysis.

I have observed in Ziehen's *Physiological Psychology*,[8] that Corti's membrane is substituted for the basilar membrane in alluding to Hensen's theory. No one, so far as I know, has ever ascribed a power of sympathetic response to the fibrils of Corti's membrane. It is not a tense membrane; its fibrils are in laminæ, and in the bird it is semigelatinous. Nor has anyone ascribed to the short rod-like hairs of Corti's cells the power of selective and sympathetic vibration. I believe they are the mere transmitters of all vibrations, whether simple or complex, to Corti's cells. I submit, therefore, that the minute structure of the cochlea places insuperable difficulties in the way of Helmholtz and Hensen's theory, and I cannot but think that if Helmholtz had known the structure of the cochlea in mammals, but more especially in birds as described by Retzius, the resonance theory would never have been proposed.

But there is a physical defect in the theory of Helmholtz which he entirely overlooked; for example, if we sound three tuning forks, giving the notes of a common chord—say *c*, *e*, *g*, each fork produces a simple tone due to a series of simple vibrations. The three sets of vibrations are compounded, and enter the cochlea as a compound vibration. But although we have the compound sensation of a harmony, we can discriminate its three constituent tones. Helmholtz inferred that the cochlea must analyse the compound vibration, and that three sets of terminals and at least three different sensory cells in the brain must be affected.

Harmony, however, depends on the relative frequencies of vibrations. It is strictly determined by the mathematical ratios of numbers. In the common chord of *c*, *e*, *g*, the numbers are 264, 330, 396 vibrations per second. Helmholtz never supposed it possible for the cochlear resonators to send these or any such numbers of impulses along their respective nerve fibres. He abandoned the mathematical cause of harmony at the cochlea, and imagined that it could be accounted for by the specific activities of cells in the auditory centre. When he published his book on *Tone Sensations* in 1862 he cannot have been impressed by a passage in Fechner's *Psychophysics*[9] published two years previously (1860), containing these significant words: "The first, the fundamental, hypothesis is that the activities in our nervous system on which the sensations of light and sound functionally depend are—no less than the light and sound themselves—to be regarded as dependent on vibratory movements."

Helmholtz, in his book on the *Sensations of Tone*, gives no evidence that he ever sought to determine how many impulses per second can be transmitted along a nerve; on the contrary, he shows quite clearly that he dismissed the subject without experiment. You can readily verify my statement by examining page 253 of the third edition of his work translated by Ellis, and published in 1875.[10] Yet eight years before that edition appeared, his own assistant, Bernstein,[11] had made his researches on the nerve impulse by means of his differential rheotome, and had ascertained that the electrical change which accompanies the transmission of a nerve impulse lasts only $\frac{1}{75}$ of a second (0.0007 second), even when the nerve is powerfully stimulated. Therefore, even when tested in that manner, 1,400 perfectly discrete impulses can be transmitted per second in a frog's sciatic nerve. But Bernstein's method of experiment, though highly ingenious, is far too crude to inform us of the limit to the frequency of the impulses that a nerve is capable of transmitting. The question is, if a nerve can transmit, say, 1,400 perfectly discrete impulses per second, is there any reason why it should be supposed incapable of transmitting 14,000 or even 40,000 per second to produce the highest audible tones? I imagine that if Bernstein had made his experiments before Helmholtz published the first edition of his book, he could not have abandoned the mathematical cause of harmony at the cochlea, but must have believed that the vibrations produced by the several tones of a chord are continued into the brain. I believe he would have adopted this view of the matter even though he adhered to his theory of cochlear analysis.

Theory of Hearing suggested by the Telephone.

Eighteen years ago (1880), while thinking over the great difficulties that beset the resonance theory it occurred to me that the telephone might by analogy help us to better understand the action of the cochlea. The telephone transforms sound vibrations, however complex, into electrical currents of corresponding frequency, amplitude, and wave form, and these in turn are retransformed into sound vibrations similar to those received.

The theory of hearing that I was led to propose is that there may be no analysis of sound in the cochlea; that all the hair cells may be affected by every sound, simple or complex, and through them the sound waves translated into nerve vibrations of corresponding frequency, amplitude, and wave form; that in the sensorium the nerve vibrations give rise to sensations varying in quality with that of the incoming impulses. My theory has been termed the telephone theory of hearing, and no doubt it is a convenient term to distinguish it from the resonance theory, but I wish it to be understood that I never regarded the hair cells as transforming the mechanical vibrations of sound into an entirely different mode of motion analogous to electricity. The essential point in my theory is simply this, that there is no analysis of sound waves in the cochlea. Theoretically a single hair cell, nerve fibre, and sensory cell should suffice to give us all the different sound sensations; but probably the great number of auditory terminals and sensory cells renders us far better able to feel slight differences in the quality of sounds.

My theory of tone sensation has the advantage of carrying the physical cause of harmony into the auditory centre, and the validity of the argument I advanced in 1886 was afterwards proved by Hermann by experiments on the production of differential tones.[12] When two discordant tones are simultaneously produced, a beat is heard, and if the vibrational difference between the two primary tones be sufficiently great, the successive beats give rise to the sensation of a third tone whose pitch is the vibrational difference between the two primary tones; for example, if the primary tones have respectively 880 and 1,056 simple vibrations—namely, notes a^1 and c^2—the pitch of the beat tone is 176 simple vibrations—namely, the note *F*.

Hermann produced the two primary tones from two tuning forks, with a third fork at rest, but capable of consonating to the beat note if it had been produced objectively. But the third fork remained unaffected, although the observer heard the beat tone loudly. He therefore concluded that if the beat tone failed to excite a resonator outside the ear, it could not affect any supposed resonator in the cochlea; consequently it must be a purely subjective phenomenon arising from the conflict of vibrations in the auditory centre. That experiment, which has been fully confirmed, proves that the auditory nerve transmits to the sensorium vibrations of the same frequency as the sound waves, and that they produce in the auditory centre harmony or discord, according to their relative numbers. Hermann's conclusion from these experiments is, "that there is no alternative but to drop the Helmholtz hypothesis of resonators in the ear, although so elegant."

Although the telephone theory of the action of the cochlea enables us to understand the production of sensations of harmony and discord, it still leaves much that is in the highest degree obscure. The discrimination of pitch is a

great difficulty. We all know that it varies greatly in different persons. Those who have little or no ear for music have been found unable to observe any difference of pitch between *c* and *e* of the scale, although there is an interval of 66 vibrations between them. On the other hand, a musician with an extremely good ear may by practice become so sensitive to pitch that he can detect a difference due to one-fifth of a vibration even when the vibrational frequency is 1,000 per second. That fact is all the more remarkable, because when the vibrational frequency rises above 500 per second we cannot detect the individual vibrations, although we can readily feel a change in the sensation. The accurate and refined appreciation of pitch seems therefore to imply an exceptionally perfect molecular state in the cells of the auditory centre; but how it is that the consciousness is so sensitive to changes in vibrational frequency when the individual vibrations are no longer perceptible must remain a mystery.

Galton's whistle is now frequently used by aurists for testing the upper limit of tone sensation. The pitch of its note can be readily varied by a screw that alters the length of the tube of the instrument by very fine degrees within a range of 13 mm., by which a series of high tones can be obtained with vibrational numbers from nearly 6,500 to 84,000, making a range of three and a half octaves above G^1, its lowest note. In using the whistle I find it best to hold it about 2 feet away, and somewhat in front of the meatus, for if held too near the puffs of the air produced by squeezing the elastic bag distract the listener during the production of very high tones. In an experiment on three persons with very acute hearing I found that A. heard the pitch of the note rise until the tube was shortened to 1.5 mm., but heard no higher tone. B. could detect changes of pitch until it was shortened to 1.45 mm., but when shortened below 1.4 mm. he heard no tone. C. could detect changes of pitch until the tube was shortened to 1.4 mm., but heard no note when shortened below 1.3 mm. According to the scale accompanying the instrument made by Spiller, London, 56,000 vibrations are produced when the tube is 1.5 mm. in length, and at least 60,000 when it is shortened to 1.4 mm. I was surprised at the accuracy with which the listeners detected changes of pitch produced by turning the screw only 0.01 or 0.02 mm. when tones so excessively high were produced. The highest appreciable tone has been stated by Luft to be 41,000 vibrations, but Galton's whistle shows that far higher tones can be accurately distinguished.

Another difficulty is the discrimination of the constituents of complex auditory sensations. How are we enabled to distinguish the several tones of a harmony, since their vibrations are compounded and so arrive at the auditory terminals? Helmholtz believed it impossible to explain our discrimination of the three tones of a chord unless the cochlea analyses the compound vibration into its three component sets of simple vibrations, and transmits their effect to at least three different nerve fibres. But I have argued that the theory of cochlear analysis is attended by insuperable difficulty. It seems to me that we are compelled to entertain the theory that there can be no cochlear analysis, and that sound waves, however complex, are translated into nerve vibrations of like complexity that produce in all the cells of the auditory centre a sensory impression that is, so to speak, the representation of the complex vibration. By education and experience we have acquired the power of recognising complex tone impressions such as the vowel sounds without being able to discriminate their components. We all know how laborious it has been for the mathematician to analyse the phonographic curves of the vowel sounds, and show what their constituents really are. And we know also that, although our auditory sense has been supposed to have the help of a marvellously perfect instrument of sound analysis in the cochlea, it has not enabled us to discriminate the constituents of the vowel tones, which I think it ought to have done if each constituent tone were, so to speak, ringing up its own nerve cell.

The power of discriminating the components of complex tone sensations such as we receive from an orchestra is, I believe, acquired by practice; and the very fact that it is so difficult to acquire, and so rarely acquired to any remarkable degree, appears to me opposed to the theory of cochlear analysis and favourable to the theory of tone sensation that I have proposed.

Pressure Pattern Theory of the Action of the Cochlea.

A somewhat different theory of the action of the cochlea was proposed by Dr. Waller[13] in 1891. He is disposed "to regard the basilar membrane as a long narrow drumhead repeating the complex vibrations of the membrana tympani, and vibrating in its entire area to all sounds—although more or less in some parts than in others—giving what we may designate as acoustic pressure patterns between the membrana tectoria (Corti's membrane) and the subjacent field of hair cells. In place of an analysis by consonation of particular radial fibres (of the basilar membrane), it may be imagined that varying combinations of sound give varying pressure patterns, comparable to the varying retinal images of external objects."

I own that I have had great difficulty in seeing how the action of the cochlea is to be explained in Dr. Waller's theory. If the hairs of Corti's cells are to be subjected to different pressures in different parts of the cochlea dependent on the unequal vibration of a tense membrane, it seems to me that such a membrane ought to be undamped and placed in contact with the hairs of Corti's cells on the side of the entering sound. But the basilar membrane is heavily damped and is reached by the sound wave only after having traversed Corti's cells. I have already used this argument against Hensen's theory, and it seems to me no less applicable to that under consideration.

But all our theories are open to criticism on a subject so obscure; none of us can say that we have a theory capable of explaining all the facts that have been ascertained regarding the cochlea, and this will become very evident when I have alluded to the results of experiments on animals and pathological observations on man.

Experiments on Animals.

An elaborate series of experiments was performed on dogs by Baginsky[14] of Berlin. His method was to render the animals completely deaf in one ear by destroying the cochlea on that side. He then in one series of experiments destroyed the apical portion of the remaining cochlea, and in a second series he broke away part of the promontory and destroyed the adjacent portion of the spiral lamina. The inflammatory processes that followed the operation caused many experiments to fail, but in some cases he succeeded in obtaining results that seemed to him reliable. The sensitiveness of the animals to tones of different pitch was tested by air conduction of the tones of pipes. They were completely deaf for some days after the operation, but most of them recovered their hearing to some extent. Their audition was minutely studied for several weeks, after which they were killed, and microscopic sections made of the cochlea to determine the extent of the lesion and the condition of the uninjured portion.

When he destroyed the apical turn and the greater part of the middle turn of the remaining cochlea, the animals after being totally deaf for five or six days gave signs of hearing the very high tones c^5 and c^4. In the course of the second week they were affected by somewhat lower tones, such as c^3, but seldom by c^2; so that they were deaf to all the tones of a bass voice and all the chest notes of an ordinary tenor voice. The necropsy showed that in these animals the basal portion of the cochlea was apparently uninjured, and Baginsky's conclusion is that the basal turn of the cochlea is devoted to the audition of the very high tones that lie quite above the ordinary scale; while the apical and middle turns enable the dog to hear all the ordinary and the deeper tones of the voice; thus supporting the theory of Helmholtz.

The cochlea can be reached far more easily in the guinea-pig than in the dog, and experiments on that animal have been made by Corradi,[15] and also by Stepanow.[16] Both observers took the reflex movement of the outer ear as an index of hearing. According to Corradi destruction of the apical portion of both cochleæ abolishes all response to deep tones, but the animal is still affected by high tones. His results, therefore, agree with Baginsky's; Stepanow, however, obtained entirely different results.

In a large number of guinea-pigs he destroyed the apical portion of both cochleæ. Although many experiments failed owing to permanent deafness or other cause, he had seven successful cases in which low as well as high tones caused the

animal to move its ears. He found no evidence that the animals failed to hear tones of low pitch. Stepanow's results are therefore a complete contradiction of those obtained by Corradi on the guinea-pig and by Baginsky on the dog, and we shall see that Stepanow's conclusions are borne out by his observations on man.

Baginsky[14] also made experiments on the basal portion of the dog's cochlea, but with results so uncertain that he would have done well to have deduced no conclusions from them. The anatomical conditions are such as might well render any such experiments futile. He desired to open the scala tympani in the basal turn of the cochlea and destroy the membranous spiral lamina there without permanently interfering with transmission of sound to the apical portion. After completely destroying the cochlea of one ear and injuring the basal portion of spiral lamina of the other, many of the animals remained permanently deaf. Of those that recovered hearing, some appeared to be as much affected by high as by low tones; others seemed less affected by high tones, while in a small number of cases they seemed at first to hear only low tones, but after two or three weeks they were also affected by high tones. In some of these cases he found the membranous spiral lamina completely disorganised at the seat of injury, yet from results so variable and unsatisfactory he concluded that the special function of the basal turn of the cochlea in the dog is to enable it to hear high tones, which is of course in accordance with the Helmholtz theory.

Pathological Observations on Man.

Observations on tone sensation in speechless animals must always be unsatisfactory; one therefore turns to pathological observations on man in the hope of finding data of greater value, but here also the evidence is contradictory. Stepanow[17] has recorded the case of a young man who had received a severe blow on his left ear that eventually led to exfoliation of the apical portion of the cochlea to the extent of one and a-half turns of the tube. When Stepanow became aware of the nature and extent of the exfoliation he perceived that if the Helmholtz theory of tone sensation be true, his patient ought to have become deaf in his left ear to tones of low pitch. He had the man's hearing tested in the presence of several colleagues, among whom were a physicist and a physiologist, and all were satisfied that the man could hear tones as low with his left as with his right ear. Indeed, the appreciation of pitch by his left ear seemed unimpaired. The observers agreed that the case gave no support to the Helmholtz theory as regards the apical portion of the cochlea.

Gruber[18] has reported the case of a boy, aged 14, from whose left meatus he removed a sequestrum consisting of the two upper turns of the cochlea. Notwithstanding the loss of so much of the cochlea, the tones of tuning forks, if sounded loudly, were still distinctly heard by air conduction when held near the left meatus. Gruber states that the pitch of the notes made no difference, and that the boy could correctly imitate the note. Unfortunately the range of pitch of the tuning forks used is not stated, so that we have no means of knowing the depth of pitch of the tones heard by the left as compared with the right ear, in which the hearing was normal.

There are, however, other cases by no less eminent observers who regard them as favourable to the Helmholtz theory. A case reported by Moos and Steinbrügge[19] is referred to in the books as showing that extensive nerve atrophy limited to the basal turn of the cochlea is associated with loss of the audition of high tones. I shall not trouble you with the complicated details of that case, because the examination of the precise limits of tone sensation in the two ears appears to have been incomplete, and although the deafness to high tones was nearly as great on the one side as on the other, the observers examined the cochlea on one side only instead of on both sides, for comparison. The books, in referring to this case, assume that the nerve atrophy in the basal turn was the cause of the deafness to high tones; but, singularly enough, the two eminent aurists whom I have quoted regarded the nerve atrophy as possibly the result of inactivity owing to non-transmission of the vibrations of high tones through the labyrinth, because of the high pressure of the lymph which they were satisfied had been of long standing. In support of this hypothesis they refer to experiments made by Bernett under the direction of Helmholtz, who found that high artificial pressure of fluid in the labyrinth diminishes the transmission of the vibrations of low, but more especially of high, tones to the membrane of the round fenestra, and that when the pressure is greatly increased the vibrations of high tones are abolished. The possible lowering of the upper limit of tone sensation by increase of intralabyrinthine pressure must therefore be kept in mind in the study of this subject.

Two important cases have been recently reported by Bezold[20] that appear to have been very carefully observed. One of the cases was that of a woman, aged 65, whose hearing was defective on both sides. The scale of audible tones was shortened at both ends; the lower tone limit for air conduction was raised to *B* in each ear, but there was apparently no shortening of the lower end of the scale when the tones were conducted to either ear through the bones of the head. Her upper tone limit was lowered on both sides about two octaves below the highest audible tone of Galton's whistle. The highest note heard by the right ear was given by the whistle at 6.4 mm., by the left ear at 6.3 mm., implying that with both ears she could still hear very high notes of 13,000 to 14,000 vibrations. Three weeks after the aural examination the patient died of pneumonia, and the necropsy revealed complete immobility of the foot of the stapes from ossification of the orbicular ligament, which may have accounted for the deafness to low tones by air conduction. He examined the cochlea, and found "no nerve fibres in the spiral lamina near the fenestra rotunda; and in the further course of the first turn there was a moderate increasing atrophy of the nerve fibres. There was a trace of atrophy even in the second turn. The remaining nerve fibres stained well with Weigert's method, and Corti's organ was well preserved except in the first turn." He concluded that the atrophy of the nerve in the basal turn explained the deafness to the high tones.

Bezold's second case was that of a woman 30 years of age, whose hearing had long been defective, especially in the left ear, through which she was unable to hear conversation. The sound of a tuning fork (a^1) placed on the vertex of the head and on either mastoid process was not heard, showing that bone conduction of sound had no apparent effect on the labyrinth and auditory nerve of either side. The range of tone sensation in the left ear was shortened at the lower, but especially at the upper, end of the scale. She could only hear tones in the middle register extending from *D* to b^1, a range of nearly two octaves. The sound vibrations that affected her left ear therefore extended from 148 to 990 vibrations, and there were no gaps in the scale within that range. On the right side the lower tone limit was *C*, almost the same as on the left side, but the upper limit reached to 2.2 mm. of Galton's whistle. Her right ear was therefore affected by vibrations varying from 132 to about 38,000. In both right and left ears the scale was shortened at its lower end by about two octaves, and the diagnosis was "nerve deafness." The patient was seized with severe illness, and died shortly after these observations were made. The left temporal bone was removed and prepared for microscopic examination, but the organ of Corti was not well preserved. The foot of the stapes moved normally. "There was extensive and well-marked nerve atrophy in the basal turn, less marked in the second turn, and scarcely noticeable at the apex." Bezold regards the nerve atrophy in the basal turn as the cause of the deafness to high tones, which of course is in accord with the Helmholtz theory. He makes no allusion to the fact that there were no breaks in the scale of audible tones, although there was evident nerve atrophy in the middle turn. He expected to find nerve atrophy in the apical turn to account for deafness to tones at the lower end of the scale, because in this case their defect could not be due to ankylosis of the stapes. Failing to find any definite lesion there, he surmised that "possibly there were changes in Corti's organ in the apical turn, which owing to its poor state of preservation escaped notice," or that "there might have been a central lesion to account for the defect in the lower register." He therefore assigned what he regarded as a definite cause for deafness to high tones, no apparent cause for the deafness to low tones, and no defect of tone sensation resulting from the atrophy of fibres in the middle turn. I think it unfortunate that in this case the right cochlea was not examined, since there was deafness to low but not to high tones in the right ear, and of

examination of its nerve fibres would obviously have been important.

The cases to which I have referred are sufficient to illustrate the great difficulty attending the problem of tone sensation, the mobility of the stapes, the pressure of lymph in the labyrinth, and the state of the sensory nerve apparatus are all capable of affecting our tonal sense. In the first case quoted from Bezold deafness to low tones conducted through the meatus was apparently due to ankylosis of the stapes. I have referred to the effect of high lymph pressure on the transmission of low, but more especially of high, tones through the labyrinth, and the possible production of deafness to these tones from that cause. I have now, in the last place, to ask you to consider the conclusions that appear to be indicated regarding the function of the cochlea in aiding our perception of pitch.

I believe I was justified in arguing twelve years ago that our sensations of harmony and discord cannot be reasonably explained unless we believe that the auditory nerve transmits to the brain impulses of the same frequency as the sound vibrations. The proof of that has since been furnished by the experiments of Hermann on differential tones already referred to. But it by no means follows that the theory of cochlear analysis is thereby disproved; on the contrary, it merely compels the upholders of the Helmholtz theory to admit, that if certain cochlear terminals are affected by vibrations of a certain frequency, they must transmit to the brain impulses of the same frequency as the sound vibrations. Although the validity of my argument on this point be granted, it still remains an open question whether certain auditory terminals are impressed by tones of a certain pitch, or whether they are all impressed by audible tones of every pitch. If the observations made by Gruber, but especially those by Stepanow, are reliable and free from fallacy, we should be obliged to conclude that the loss of the apical half or so of the cochlea does not involve deafness to tones of low pitch. The results of their observations are, therefore, hostile to the resonance theory, and favourable to the telephone theory.

On the other hand, the two cases observed by Bezold, and that by Moos and Steinbrügge show that deafness to tones of high pitch may be associated with nerve atrophy in the basal turn of the cochlea. It is very difficult to look upon that association as a mere coincidence, and apparently more reasonable to regard the basal portion of the cochlea as necessary for the appreciation of tones of high pitch. But if a corresponding relation cannot be shown between the apical portion of the cochlea and tones of low pitch, the upholders of the resonance theory must feel that they are supported by only one of the two legs that are necessary in this case.

But if it appear impossible to harmonise the resonance theory of the cochlea with anatomical structure and with certain pathological observations, how does it stand with the telephone theory? If it be true, as Gruber and Stepanow would have us believe, that the basal turn of the cochlea can enable us to hear all tones, notwithstanding destruction of the apical half, it seems reasonable to expect that the apical portion should still enable us to hear all tones, [illegible] atrophy in the basal portion. Bezold's cases, however, appear to show that the basal portion is necessary for the appreciation of high tones. We are therefore landed in the dilemma that pathological observations on the apical portion of the human cochlea are opposed to the resonance theory, and favourable to the telephone theory, while those of the basal portion favour the resonance and oppose the telephone theory. In Bezold's second case only about two octaves of audible tones remained in the middle register; the loss of high tones was ascribed to nerve atrophy, but no cause could be assigned for the loss of low tones. On the telephone theory, one is compelled to ask why there should have been deafness to many low and so many high tones, although nerve fibres enough remained to enable the patient to hear two octaves of the middle tones. If evidence of high tension in the labyrinth had been recorded in that case, an explanation could have been found on the lines of Bernett's experiments; but in absence of that evidence I am bound to say that I do not at present see how that case is to be explained on the telephone theory.

Whatever be the true theory it is important to note that tone defects are far less common at the lower than at the upper end of the scale, and that in the middle of it they are exceedingly rare. Politzer states that in cases of apparent tone defects in the middle register the use of resonators generally shows that there is only diminished sensitiveness instead of total deafness to the particular notes. At first thought one might be inclined to regard gaps in the scale as evidence in favour of the theory that each auditory fibre is concerned in the sensation of a particular tone, but in the well-known case reported by Magnus, where the tones *F*, *F* sharp, *G*, *G* sharp, *A* sharp and *B* were inaudible, ankylosis of the stapes and calcification of the orbicular ligament were found after death and assigned as the cause.

I think I have said enough to show the difficulty of arriving at a definite conclusion regarding the extension of Müller's doctrine of specific activities to the several fibres of the cochlear nerve. The writing of this address has been to me a grateful task, for it has compelled me to see the strength and the weakness of the theories hitherto advanced in explanation of the function of the cochlea. The study of theories stimulates thought, and I trust that my necessarily rapid and imperfect sketch of a complicated subject may serve to induce discussion of the difficult problem of the qualities of tone sensation.

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REPORTS OF SOCIETIES.

BRITISH GYNÆCOLOGICAL SOCIETY.

H. Macnaughton-Jones, M.D., President, in the Chair.

Thursday, July 14th, 1898.

Specimens.

Mr. F. Bowreman Jessett showed a Double Pyosalpinx with broad Ligament Cyst. The specimen was from a case in which the bladder was injured during the removal of the mass. It was repaired, and the patient made a good recovery. —Remarks in discussion were made by Drs. Purcell, C. H. F. Routh, Heywood Smith, Mr. Mayo Robson, and the President.

Dysmenorrhœa.

The adjourned discussion on this subject was resumed by Dr. Hodgson, who said that they seemed to be agreed that there was such a thing as mechanical dysmenorrhœa, and that it could be cured by mechanical means. He was glad to find that Dr. Bantock advocated the stem pessary; he had found it useful in many cases. When there was a tendency for the stem to be shot out by spasm at the internal os, he sometimes sewed the pessary in, fixing it to the cervix and leaving it for six weeks.

Dr. Snow could not see any advantage in gradual dilatation over rapid dilatation under an anæsthetic; the latter method, however, had several advantages. He believed the ring pessary often did good in these cases by putting the vaginal walls on the stretch, and so relieving congestion by equalising the pelvic circulation.

Dr. Burleigh Robinson agreed with the objection raised by Dr. Giles at the last meeting to the term "obstructive" in relation to mechanical dysmenorrhœa. The pain was due to

congestion, which was aggravated by the tension of the broad ligament in cases of displacement; the veins were principally affected, and tended to assume a varicose condition. To relieve this he had adopted the plan, described in a paper published in 1892, of placing the patient on an inclined plane with the feet raised for several days before the period. In some cases he had obtained good results by advising that the patient should always sleep with the foot of the bed raised by means of blocks; this might be continued for several months.

Dr. Travers had paid attention for many years to the question of dysmenorrhœa, and had seen cases yield to Hewitt's treatment, to the Hodge and to various other kinds of vaginal pessary. He thought it would be a mistake if the impression went forth that the Society condemned all vaginal pessaries in the treatment of dysmenorrhœa. He had also found the stem pessary useful in certain cases.

Dr. Purcell remarked that there were some cases in which no local treatment or even examination was possible, especially in the case of some unmarried women; and then they must rely on medicinal means and measures for depletion. When local treatment was possible he thought gradual dilatation answered best.

The President urged that in every case a clear gynæcological and scientific differentiation of the cause of dysmenorrhœa should be aimed at, and whether the patient were young or old an examination should be made, under an anæsthetic if necessary. He did not think "mechanical" was a scientific term, and "spasmodic" was open to objection, for in all such cases some interstitial change was found in the uterus, or, secondarily, in the ovaries and tubes; and he believed there was no true analogy between these cases and organic or spasmodic stricture of the male urethra. Elevation by the inclined plane had been recommended by Heywood Smith many years ago; whilst Goodell, of Philadelphia, had suggested raising the foot of the bed with blocks, which he called "putting the ovaries to sleep."

Dr. Bantock and Mr. Skene Keith replied.

Unusual Cases of Ovariotomy.

The President read a paper, illustrated by specimens, on two unusual cases of ovariotomy. Case I. Patient, aged 42, mother of five children, thought she was pregnant. On examination the abdomen presented the shape and character associated with ovarian cystoma, and on palpation a hard tumour could be felt, movable, and evidently separate from the uterus. A long incision was necessary, and a large solid mass was removed from the right side. On the left side was a smaller tumour which was removed without difficulty. The recovery from operation was complicated by diarrhœa, from which the patient had suffered beforehand; this made the administration of food difficult. She left the home one month after operation. The pathologist's report showed that the large tumour was a scirrhous carcinoma, whilst the smaller one presented the characters of an adeno-fibroma. Case II. This patient was aged 46, and had four children. Like the other, she thought she was pregnant. While under observation, she had an attack of acute peritonitis; and her condition, which urgently demanded operation, was so critical that her removal to the home was a very anxious matter. On opening the abdomen, the parietal peritoneum was found completely adherent to the cyst wall; while on the posterior aspect of the latter numerous coils of intestine were adherent. The adhesions would probably have become so dense had operation been delayed that their separation would have been a matter of great difficulty and danger. The recovery from operation was satisfactory. Mr. Targett, who examined this as well as the preceding specimen, reported it to be a multilocular cyst of the ovary, the solid portions presenting the characters of adenoma. The smaller spaces were lined with columnar epithelium, and the larger ones contained colloid matter. There was no evidence of malignancy.

After a few remarks by Mr. Jessett and Dr. Purcell, Dr. Macnaughton-Jones replied.

Saturday, July 23rd, 1898.

H. Macnaughton-Jones, M.D., President, in the Chair.

A very large and special meeting was held at the Society's Room, 20, Hanover Square, to hear Professor A. Martin's address on

The Development of Ovariotomy.

Professor A. Martin, of Berlin, having been introduced by the President, delivered an address on the development of ovariotomy.

The President referred to the various important pronouncements made by the author, and the principles which he advocated, and on some of which wide differences of opinion still existed, only to be settled by such great practical experience as Professor Martin enjoyed. The history of ovariotomy was a subject in which, as had been pointed out in the address, British gynæcologists could take a just pride. They were chiefly indebted to Professor Martin for his courteous acquiescence with the request of the Council of the Society to deliver as an honorary Fellow an address on some gynæcological subject. He had placed the Society under an obligation, and he, the President, had great pleasure in proposing that the hearty thanks of the meeting be accorded to Professor Martin for his able and instructive address.

Dr. C. H. Routh, in seconding the vote of thanks, congratulated Professor Martin on the splendid results of his operations, and on the fearless line of an address which was the outcome of a huge experience and comprehensive personal knowledge of the different issues on which he gave his opinion. The Society was honoured by the appearance before it of such an orator, and he heartily seconded the vote of thanks.

Dr. Bantock supported the vote; and Professor Martin briefly replied.

REVIEWS.

The Diseases of Infancy and Childhood, for the Use of Students and Practitioners of Medicine. By L. Emmett Holt, A.M., M.D. London: H. Kimpton, and Hirschfeld Bros.; Bristol: J. Wright and Co. 1898. (Cr. 8vo, pp. 1136, 240 illustrations.)

The great advance which has been made during the last decade in our knowledge of the diseases of infancy and childhood and in their pathology is reflected in the large size of this work. The bigness of a book can be forgiven only if its pages contain a well-ordered account of the work of others informed by personal experience. On the whole, it may be said without hesitation that Dr. Emmett Holt has justified the publication of his book by the manner in which he has performed his task. He apologises in his preface for giving much space to pathology and the description of lesions, but unnecessarily; for it may, we hope, be assumed that medical education has now reached such a stage of development that even the person who boasts himself to be a "practical man" no longer desires to be fed with "tips," nor to depend for his treatment of disease on rule of thumb.

The arrangement of the volume is a little unusual. For instance, the specific diseases are placed last. If Dr. Holt's volume were a book to be read through, this would be a distinct defect, for the whole field of pædiatrics is dominated by the infectious disorders, acute and chronic. The book, however, is rather one which will be consulted on some particular point, or on some phase of disease which has arisen in practice. For this purpose it is admirably well fitted, as the chapters are full and well arranged, and the discussion of each subject is as a rule very complete. The chapters on diet are particularly well worthy of perusal, and Dr. Holt makes a gallant attempt to introduce some order into the classification of the diseases of the gastro-intestinal system in infancy. He errs, perhaps, on the side of over-elaboration, but avoids the old fault of slumping every form of disorder of this system together under the head of "diarrhœa and vomiting," as used to be the custom not so long ago.

The volume is well illustrated, some of the photographs in the text being specially good, and we can recommend it as a whole as a work of reference, or to those who have leisure to give real study to a large work on a subject the true importance of which would fully warrant the expenditure of time necessary for mastering the contents even of a large volume.

TEXTBOOK OF NERVOUS DISEASES. By CHARLES L. DANA, A.M., M.D. Fourth Edition, revised and enlarged. London: J. and A. Churchill. 1898. (Demy 8vo, pp. 636, 246 Illustrations. 20s.)

THE developments in neurology that have taken place since the first edition of this book was published six years ago have necessitated much revision and rewriting in order to bring the work into accord with prevailing views. The description of the anatomy and histology of the nervous system is practically new, as also are the articles on acute encephalitis, multiple sclerosis, combined sclerosis, and neurasthenia. A chapter on alcoholic meningitis or "wet brain" is added. From the account given of the pathological anatomy of the last-mentioned affection it appears that the synonym is the more correct designation; for in uncomplicated cases there is no true inflammatory process, the most common condition being œdema of the brain with dilatation of the perivascular spaces. In the comatose stage of this malady lumbar puncture is indicated, but the author has not seen any permanent good result from the operation.

As pointed out on a former occasion, special features of this textbook are the great amount of information it contains in concise form, and its practical nature. It gives very numerous therapeutic details which are not to be found even in larger works.

By the improvements introduced into the present edition the work fully maintains its position amongst the best of the smaller treatises on nervous diseases.

A STUDENT'S TEXTBOOK OF ZOOLOGY. By ADAM SEDGWICK, M.A., F.R.S. Vol. I. London: Swan Sonnenschein and Co. 1898. (Demy 8vo, pp. 620, 472 illustrations. 18s.)

OF the making of textbooks of zoology there seems, at all events at present, to be no end, and as each new-comer appears we turn eagerly to the preface to ascertain the author's special reason why an additional one is required, to see, in fact, his *apologia pro libro suo*. Each of the new claimants to attention has some strong points, and to those of the present work we shall at the outset direct attention. In the first place, we note with satisfaction that the arrangement is thoroughly systematic. To the mature zoologist who has spent years, many years it may be, in contemplating the animal kingdom, and who has thus a panoramic view of it ever present to his mind's eye, the details of classification are apt to seem of small moment; but it is otherwise with the beginner, whose difficulties in acquiring such a view are much increased by vague discursive writing, and to whom anything like uncertainty is absolutely intolerable. Mr. SEDGWICK is too broad-minded to ignore diversities of opinion, but he has wisely relegated his discussions of them to the small print, and has set down what seems to him the best classification in black and white in full detail. Every family is defined, and a considerable number of genera are enumerated, usually with an indication of their geographical distribution, so that by the aid of the index the student may run down animals which he finds casually mentioned in books of travel, in medical treatises, and elsewhere. The index contains upwards of 4,000 generic names, a number greatly in excess of that contained in any English textbook with which we are acquainted, and only surpassed by the most useful though now somewhat antiquated *Handbuch der Zoologie* of Carus and Gerstaecker (1863-75) which contains about 20,000 names.

The author has been well advised in not "adding to each chapter a detailed account of some easily accessible species belonging to the group with which it dealt," and thus converting his book into a textbook on the type system. He has, we are glad to observe, a high appreciation of the method of study by types, but is sufficiently judicious to see that it is a system for the laboratory and not for the study. There are plenty of instructions of this kind for the elementary student in "Marshall and Hurst" and elsewhere, and the advanced student should attack less common forms by the aid of original memoirs, and under the guidance of his teacher.

As regards the body of the work we have found the descriptions clear and concise, and we have not found the "note book" style, for which apology is made in the preface, at all detrimental. The illustrations are numerous and well selected.

It is a proper course to separate the sponges definitely as a distinct phylum from the cœlenterata, and to break up the old group of vermes into independent phyla, though perhaps the number of these is a little excessive. A mistake has been made in the disuse of hydrozoa as opposed to anthozoa, and we are astonished to see the graptolites utterly ignored, especially in view of the recent important researches into their structure by Wiman. We must demur to the adoption of the termination "inæ" for divisions of superior value to families, this being by common consent the orthodox ending for subfamilies; to the spellings "cordilophora" and "mesoglæa;" to "rhizostomæ" for the plural of "rhizostoma;" and to the haphazard way in which the Greek κ is sometimes transformed into "c," sometimes into "k." Furthermore, the idea of using "a network or, better still, a sponge work," to express classificatory relationships, will cause some amazement. How is it to be reconciled with the theory of descent?

These, however, are small matters, and we shall look forward with great interest to the appearance of the second volume, treating (*inter alia*) of the echinoderms and vertebrates, and especially to the section "dealing generally with the facts and principles of zoology," promised in connection with it.

THE DEFORMITIES OF THE FINGERS AND TOES. By WILLIAM ANDERSON, F.R.C.S.Eng., Surgeon to St. Thomas's Hospital, etc. London: J. and A. Churchill. 1897. (Demy 8vo, pp. 150, 18 illustrations. 6s.)

THE work before us has been developed from a course of Hunterian Lectures delivered by Mr. ANDERSON some years ago. We are grateful to him for embodying them in book form, since they treat of a group of ailments which, though not serious in themselves, involve considerable disability and often pain, and interfere with a patient's work. Fortunately we find that most of these slight affections are readily amenable to treatment. Another reason for extending a welcome to this book is to be found in the fact that these affections receive very scanty notice in the textbooks.

There are three sections, the first dealing with contractions of the fingers, the second with contractions of the toes, and the third treats of congenital deformities of the hands and feet. In the first section forty pages are devoted to the consideration of Dupuytren's contraction of the hand; and we notice that the writer distinguishes two kinds—(1) true Dupuytren's contraction, which is independent of traumatism and tends to multiplicity of lesion, and (2) traumatic contraction, the result of an ordinary wound, and confined to the parts in direct relation to the injury. After giving a clinical picture of true Dupuytren's contraction, the varieties, six in all, according to the author, are sketched, and the following pregnant observation is made: "If we examine a case of Dupuytren's contraction in the light of our anatomical knowledge, we shall be struck by the circumstance that the morbid structure which causes the permanent flexion of the fingers bears no resemblance in position or character to the normal fibrous tissues of the part, although it is apparently continuous in the proximal direction with the digital bands of the radiating fascia." This is an important observation as showing that the fibrous bands are really new in their nature and formation. Mr. Anderson adduces cogent reasons for the belief that the affection is a chronic inflammation, probably set up by micro-organisms, which gain access to the subcutaneous tissue through accidental lesions of the epidermis, overlying the bony prominences formed by the heads of the metacarpal bones. The author believes that the best plan of treatment is subcutaneous section.

The pages on hammer-toe, hallux flexus, hallux valgus and varus are well worth careful reading, and the best accounts in our literature of macrodactyly, cetrodactyly, and brachydactyly are found in the last section of the book.

Altogether the volume is a valuable and trustworthy addition to surgical literature, and as such we welcome it.

ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN. Andrew H. Watt, M.B., C.M., and Edwin Matthew, M.B., C.M., have been appointed resident medical officers in this hospital for a period of six months from 15th October next.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Section of Medicine.

As some disappointment had been expressed at the close of Wednesday's proceedings at the inadequacy of the discussion on the hygienic treatment of phthisis, it was decided to devote the first part of Thursday morning to the further discussion of this important subject. Dr. Davidson contributed a paper upon Southern California as a health resort, and this was followed by a communication by Dr. Caldwell upon the open-air treatment of phthisis. Referring to this matter, Dr. Guillemard narrated his experience of the veldt of South Africa as a resort for consumptives. Dr. Graham Brown then read a communication from Dr. Bourcart (Cannes) and Dr. Vivant (Monte Carlo) upon the South of France in relation to consumption. The President spoke briefly upon the subject, and pointed out that success attended the treatment of phthisis in many climes. Dr. Sidney Jones (New South Wales) referred to the unsuitability of the seaboard, and to the great value of the high internal plains and mountains slopes of New South Wales in the climatic treatment of the disease. He further discussed the question of how best to deal with poor consumptives, and stated that he was endeavouring to start farm colonies in Australia to which poor consumptives could be sent. Dr. Jane Walker described the results which she had obtained in a farm in Norfolk, and Dr. Johns (Bournemouth) referred to the value of the open-air treatment as carried out in that health resort. Dr. Campbell spoke of the importance of selecting a health resort with due regard to the resisting power of the individual, and the stage and character of the disease; and Dr. Churchill showed plans of an ideal seacoast sanatorium. The discussion closed with a few remarks by Dr. Bezly Thorne upon Falkenstein. The President then called upon Sir William Broadbent to open the discussion upon the Significance and Consequences of Different States of Vascular Tension, with their General Management. On rising, Sir William Broadbent was greeted with warm applause, and his paper was listened to with marked attention by the large audience present. After discussing the causes of low and high vascular tension, he proceeded to deal with the significance of these conditions respectively, laying special stress upon the nutritional effects produced by changes in the resistance to the blood flow afforded by the contracted arterioles in cases of increased vascular tension. He then proceeded to consider the relationship of various nervous conditions to blood pressure, pointing out the frequent association of low vascular tension with the graver forms of epilepsy, and stated that in his opinion the main factor in the production of uræmic convulsions is the high tension and consequent diminished blood supply of the cerebral cortex in these cases. He also pointed out the causal significance of high vascular tension in the occurrence of Cheyne-Stokes respiration, and finally concluded his paper with a few valuable remarks upon treatment. Dr. Balfour warmly thanked Sir William Broadbent, on behalf of the Section for his most valuable and interesting paper, and then called upon Professor Bradbury (Cambridge) to read his communication upon erythrol tetranitrate. Professor Bradbury briefly described the composition of the drug, and then discussed somewhat fully the effects of its administration, concluding his paper with the histories of some cases which had derived marked good from the exhibition of the drug. The discussion was then continued by Dr. Savill, who alluded to the importance of arterial hypermyotrophy; by Dr. Handford, who alluded to the causation of the condition; and by Dr. Samways, who also discussed the subject from the side of its origin. Dr. Watson Williams then dealt with the defensive effect of increased tension. Dr. Haddon claimed to be able to diagnose pregnancy with the sphygmograph: Dr. Haig considered that uric acid and not high tension was the cause of the headaches complained of by people who have high vascular tension: and Dr. Drummond referred to the peculiar character of the pulse in diabetes. Sir William Broadbent then briefly replied to the various points that had been raised. Dr. Drummond read a paper upon Ether Pneumonia; and then Dr. Parsons gave his communication upon some cases of Obstruction of the Large Systemic Veins. This paper was illustrated by an excellent series of photographs. Dr. William Ewart then read a paper upon the Treatment of Chronic Nephritis by Drainage, Massage, and Feeding; and Dr. Strachan read a paper upon Alcoholic Neurosis. This last was followed by some brief remarks upon the subject from Dr. Stewart, and the proceedings then terminated. The subject for discussion in this Section on the last day of the meeting was the Serum Diagnosis and Therapeutics in Infective Diseases. This was opened by Professor Wright (Netley) who handled a difficult subject in a clear and interesting address. Professor Wright first briefly dealt with the historical aspect of the subject, and then passed on to a discussion of Ehrlich's theory of the mode of action of antitoxic and antibacterial substances. This theory for the first time explained in a manner which no other view had so far succeeded in doing the way in which these substances act. Metchnikoff's theory was purely morphological, and only suggested a picture of what took place, without in any way explaining it. Professor Wright proceeded to explain some of the terms that had been used, and to describe the theory itself. He next referred to the importance of considering both the toxotropic and the bacteriotropic substances, and pointed out that whilst cholera was almost certainly best treated by the bacteriotropic substances in many diseases, it was not yet decided as to whether bacteriotropic or toxotropic bodies were the most active curative agents. The speaker criticised Roux's conclusions, which were adverse to Ehrlich's theory, and finally stated that in treatment three things were necessary to produce immunity: (1) The bacteriotropic or toxotropic substances must be weakened or destroyed, so that on stimulation overproduction might occur; when they had been over-restored the subject would be immune. The President proposed a vote of thanks to Professor Wright, which was most warmly passed by the large number of members present. The discussion was continued by Dr. Grünbaum, who referred to the amount of agglutinin formed in the serum, and the practical aspects of the question. Dr. Mitchell Bruce then read notes of two successful instances of the use of antistreptococcus serum. Dr. Ker described his experience of the value of Widal's typhoid reaction, and stated that out of 264 examinations only 8 were dubious. Sir James Grant spoke of his having used serum in the treatment of skin diseases as far back as 1863. Mr. H. E. Durham considered that Ehrlich's theory was almost too complete and definite, and ought at present only to be accepted as a working hypothesis. Dr. Allison referred to the use of antitoxic serum by the mouth, and Professor Wright briefly replied. At this stage of the proceedings a resolution was adopted on the proposition of Dr. Bezly Thorne, inviting the Council of the British Medical Association to take steps to press upon the Legislature the urgent necessity of providing each sanitary district with a bacteriological laboratory available for gratuitous examination of expectoration and other products for the purpose of early diagnosis of disease, and which would also supply gratuitously materials for the treatment of infectious disease. The reading of papers was then proceeded with, Drs. Faure Miller, Somerville, H. J. Campbell, and Suckling making communications. The proceedings terminated with a cordial vote of thanks to Dr. Balfour for presiding, moved by Dr. Stewart and carried unanimously.

Section of Surgery.

The work of the Section of Surgery on Thursday morning began with a paper by Dr. Newman, of Glasgow, which was an introduction to a discussion on the Origin, Effects, and Treatment of Septic Infection of the Urinary Tract. Dr. Newman chiefly dealt with the various forms of septic infection of the kidney and the methods of infection. The bacteriology of the urinary organs was very fully considered by Professor Rovsing, of Copenhagen, who based his observations on the examination of 200 cases. Mr. Mansell Moullin, Dr. Nicholl, and Dr. Melchior also spoke on the same aspect of the sub-

ject; and Mr. Bruce Clarke and Mr. W. H. Battle made some remarks on the clinical features of urinary infection. Considerable difference of opinion was expressed as to the injurious effects of the bacillus coli communis when present in the urine. Several speakers expressed the view that urethral rigors were due to the absorption of a toxin produced by septic organisms in all cases. Sir William Stokes recorded a very successful case of Partial Excision of the Thyroid for Exophthalmic Goître, and discussed at considerable length the various theories as to the causation of the disease. The members present had also the opportunity of hearing some very valuable remarks by Professor Kocher, of Berne, on operations for goître. Professor Kocher, who has probably had a larger experience of such operations than any other surgeon, stated that he had entirely given up general anæsthetics in such cases, on account of the grave danger attending their use. He performed all these operations under cocaine. The subject of Catheterism of the Male Ureters was introduced by Dr. Leopold Casper, of Berlin, the inventor of one form of cystoscope, and further remarks on the same subject were made by Dr. Newman, of Glasgow. The value of this method of examination for purposes of diagnosis was pointed out, and some striking cases in which it had given great assistance in the determination of the kidney condition were referred to. Dr. Melchior, of Copenhagen, drew attention to the disappearance of malignant tumours in a few cases after the application of powerful electric currents to the interior of the growth. Extensive sloughing resulted, and after the sloughs had separated and the wounds healed, there had been an absence of recurrence for a considerable period. Many of the papers read in this Section on Friday morning had reference to the surgery of the peripheral nervous system. A very instructive and interesting communication on the removal of the Gasserian ganglion for trigeminal neuralgia was made by Mr. J. Hutchinson, jun., who recorded a successful case of excision by the Hartley-Krause method. Mr. Parry showed a patient who had been the subject of very severe spasmodic torticollis, but had been cured by division of the posterior branches of the cervical plexus after division of the spinal accessory nerve had failed; and Mr. Noble Smith gave his experience of operation on the posterior branches of the cervical nerves in these cases. The subject of operation for restoration of function after division of nerves was brought forward by Dr. Kennedy in a paper, and Mr. Mayo Robson spoke in a most encouraging way on the success which might attend operation after a long period had elapsed between the injury and the operative treatment. The members present in this section were greatly interested by the exhibition by Dr. Doyen of Paris of his instrument for excavating an acetabular cavity in cases of congenital dislocation of the hip-joint, and of his apparatus for reduction of the head of the bone into this newly-formed cavity. Professor Rovsing of Copenhagen advocated exploratory operation in certain cases of mysterious hæmorrhage from a single kidney, and related details of three such cases; and the work of the Section was brought to an end by a communication by Mr. Muirhead Little on coxa vara, in which stress was laid on the great difficulty in the certain diagnosis of this condition without the aid of a skiagram.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

THE second day's session of the Section of Obstetrics and Gynæcology was opened by a discussion on the Use and Abuse of the Midwifery Forceps, introduced by Dr. Milne Murray (Edinburgh). After considering the general indications for and against their use, he summed up their misuse as follows: (1) The forceps are often used at the wrong times; (2) they are sometimes not used at the right times; (3) they are often badly used at both times. Their dangers were: (1) The mother's parts may be bruised, lacerated, or otherwise injured by mechanical violence; (2) the too sudden emptying of the uterus may be followed by imperfect retraction and dangerous hæmorrhage; (3) the fœtal head may be unduly compressed, lacerated, or otherwise damaged. He took up the position that the forceps lessened pain and minimised injury, and said that he would have no scruple, could he do so with safety, in abolishing every pain after the first, and reducing the duration of labour to a minimum. Dr. W. S. Playfair (London) took exception to the main thesis laid down by Professor Sinclair at the Montreal meeting, that gynæcology had become so largely developed as the direct result of surgical intervention in midwifery. Much of the development of gynæcology was due to abdominal surgery, which had nothing at all to do with midwifery. The introduction of the forceps had had two markedly beneficent results—first, the practical disappearance of vesico-vaginal fistula; secondly, the enormous diminution of the number of cases requiring craniotomy. Dr. Smyly (Dublin) discussed the practice at the Rotunda Hospital while he was Master there. He observed that in many cases when delivery with the forceps seemed impossible, waiting for a short time for moulding of the head would allow delivery to be effected with ease. Professor Fehling (Halle) confessed to a preference for the use of the old forceps. He thought the tendency among students was to a far too frequent use of the forceps. He agreed with Dr. Murray's dictum that the forceps should be used when there was less danger from their use than from waiting. Sir William Priestley contended for a moderate and reasonable use of the forceps. Professor Stephenson (Aberdeen) and Dr. Macan (Dublin) having spoken, Dr. Monro Kerr put in a protest against the teaching generally found in text-books, to the effect that as long as the forceps were applied in the transverse pelvic diameter, it did not matter how the head was grasped. He contended that to avoid injury to the child it was most important that the head should be deliberately and properly grasped. Professor Byers (Belfast) agreed with the rule "Wait until you see what Nature can effect; do not interfere until she fails." He was entirely in favour of the use of axis-traction forceps; he preferred to use them at the brim rather than turn in many cases of flat pelvis. Professor Sinclair (Manchester) expressed modified approval of the axis-traction forceps, but could not imagine a time when the ordinary long forceps would be discarded. His address in Montreal had been misunderstood to some extent, and he proceeded to deal with some criticisms in detail. Dr. Jardine (Glasgow) agreed with Professor Byers in preferring the use of forceps to turning in many cases of contracted pelvis, and had delivered children weighing 8½ lbs. alive through a true conjugate of 3 inches. Dr. Handfield-Jones (London) thought it would be unwise to teach students that the forceps were to be put on simply with reference to the position of the fœtal head rather than in relation to the lateral pelvic wall. In attempting such an application it was often very difficult to lock the blades, and much harm might be done by rough efforts in this direction. Dr. Sloan (Glasgow) said that the old Sir James Simpson forceps were axis-traction forceps: the tractors were the man. In the so-called axis-traction forceps of modern days the tractors were there, but the man might not be. He could not see what use the axis traction could be at the outlet. Drs. Lapthorn Smith (Montreal), Brassey Brierley (Manchester), and John Moir (Edinburgh) also joined in the discussion, to which Dr. More Madden (Dublin) contributed a paper on the Use of the Midwifery Forceps, and some Modifications in its Mechanism, after which Dr. Milne Murray briefly replied. Mrs. Scharlieb, M.D. (London) read a paper on a Case of Missed Labour verified by Operation and also *post mortem*. Dr. Jardine (Glasgow) read a paper on Aseptic Midwifery. In this Section on Friday Dr. R. C. Buist (Dundee) read a paper on Two Cases of Symphysiotomy in Domestic Practice. The paper was discussed by Professor Morisani (Naples) and Dr. John Moir (Edinburgh). A paper by Dr. Amand Routh (London) on the Treatment of Cystocele was discussed by Professors Sänger (Leipzig), Fehling (Halle), Martin (Berlin), and Drs. Arthur Giles (London), Lapthorn Smith (Montreal), and Smyly (Dublin). Dr. W. J. Smyly then read a paper on Extirpation of Myomatous Uteri by the Vagina, on which observations were made by Dr. Theodor Landau (Berlin) and Mrs. Scharlieb, M.D. (London). Dr. J. P. Farrar (Gainborough) followed with a paper on a New and Speedy Method of Dilating a Rigid Os in Parturition. Dr. Jardine (Glasgow) and Dr. Alice Ker (Birkenhead) joined in the discussion. Dr. A. Donald (Manchester) read a paper on Vaginal Section, and Mr. Christopher Martin (Birmingham) followed with a contribution on Conservative Surgery of the Ovary, and Dr. Lapthorn Smith (Montreal) with one on Treatment of Displacements of the Uterus by Operation, Based on 200 Cases. This brought the proceedings of the Section to a close.

Section of State Medicine.

In the Section of State Medicine, after the conclusion of the joint discussion with the Section of Psychology, Dr. Nasymth (M.O.H. Fife, Clackmannan, and Kinross) read a paper on the Hygienic Control of Milk Supplies. Dr. Nasmyth first dealt with the legal aspect of the subject, and suggested in connection with the Sale of Foods and Drugs Act that samples of milk should be taken more often, and that the percentage of extraneous matter found in the sample should be stated. After referring to the regulations which obtain in Great Britain, he went on to speak of the systems of control in various Continental countries. He referred to the excellence of the Copenhagen Milk Supply Company, but thought that the conditions in the rural districts were not as good as those in this country. He also referred to the tuberculin test as applied in Philadelphia. After treating of the cubic space allotted to cows, he went on to advocate stringent regulations for the exclusion of tuberculosis. He also advocated strict supervision of the milkers and the more frequent use of sterilised milk for infants. He concluded by pointing out the disadvantage under which dairymen in this country laboured in competing with Danish dairymen who were not bound by such stringent regulations. The discussion was continued by Dr. Spottiswoode Cameron (M.O.H. Leeds), who pointed out that many cases of milk infection were due to contamination beyond the sphere of the town authorities. He advocated that the right of search in neighbouring boroughs should be given to the sanitary authorities of large cities. Professor Förster (Strassburg) spoke upon the various methods of sterilising milk. Sir C. Cameron (Dublin) insisted on the need for strict control of milkers, their persons and houses, and also of the supervision of all places in which milk was exposed for sale. Principal Dewar (Veterinary College) advocated the more extensive application of the tuberculin test, backed up by powers from Parliament. Professor Saltet, of Amsterdam, described the excellent arrangements for the control of milk which prevailed in that city. Samples of milk as delivered were analysed and compared with samples from the same farms, milked under the eyes of the hygienic inspectors. Lists were also kept of all those who sold sterilised milk. The discussion was continued by Dr. Chalmers (Glasgow), who dealt with the difficulty of detecting the place of infection in mixed supplies of milk, and also with the question of compensation of dairymen for interruption of their business. He was followed by Dr. Maxwell Ross (M.O.H. Dumfries) and Professor A. P. Aitken (Dick Veterinary College). The latter spoke in favour of milking machines, and pressed upon the meeting the importance of fixing a standard for the percentage of fat. The discussion was closed by a few remarks, in reply, by Dr. Nasmyth. The next paper was on Soil as a Factor in the Spread of Certain Diseases, by Dr. J. Robertson (M.O.H. Sheffield). He dwelt more particularly with the soil in relation to typhoid and the growth of the bacillus typhosus in the soil. He briefly described the relation of season, ground water, and other factors to the growth of the bacillus. The discussion of this valuable paper was held over till the next day. The first discussion in this Section on Friday was opened by Dr. Bond of Gloucester with a paper on Vaccination with special reference to prospective legislation. Dr. Bond referred to the increase of agitation against vaccination which he attributed in part to the natural intolerance of the ordinary Briton of compulsion in any form. In putting the question as to how far the present Bill met the existing state of matters, he dwelt on the power of glycerinated calf lymph to overcome the scruples of anti-vaccinators, and advocated the abolition of the term "glycerinated calf lymph" altogether. He insisted upon the need for diffusion of knowledge as to the dangers of small-pox, and supported the recommendation of the Royal Commissioners as to domiciliary visits. He regretted that private vaccinators were not remunerated, and thought that private vaccination should be encouraged. He concluded by urging as objections to the present Bill that: (1) It ignores revaccination; (2) it ignores private vaccination. Dr. J. C. McVail considered that there would be no harm in waiting another year in order to secure a more satisfactory Bill. He held that a satisfactory Bill should contain a conscience clause and a revaccination clause, and thought that with these two clauses and with compulsory registration in court of conscientious objection both to primary vaccination and revaccination, the number of anti-vaccinators would be greatly diminished. He upheld domiciliary visits and private vaccination, and thought that the sanitary authorities should have charge of vaccination. Dr. Monckton Copeman dwelt on the preparation of glycerinated calf lymph, and pointed out that all vaccine issued by the Local Government Board would be examined for sterility by means of plate cultivation. Dr. Newsholme proposed the following resolution, which was seconded by Dr. Drysdale:

That in the opinion of this Section the Vaccination Bill at present before Parliament should be withdrawn in order that the Government may have the opportunity of fully considering the views and facts which have emerged in the discussion of the Bill on the part of the profession and the public, and that a new Bill should be introduced next session.

After some remarks from Dr. Fulton (Middlesbrough) and Dr. Caldwell Smith, Dr. Bond said a few words in reply. Sir William Priestley, M.P., who had joined the meeting shortly before, said a few words as to forwarding this resolution to the House of Commons. The resolution was then put to the meeting and carried. Papers were also read by Dr. F. J. Allan, Dr. Killick Millard (Birmingham), and Dr. Dixey. The meeting concluded with the following resolutions, which were carried: (1) *Re Rivers Pollution.*—Proposed by Dr. M'Lean Wilson, seconded by Dr. Hill:

That in the opinion of this meeting:

(1) Further legislation for prevention of rivers pollution is urgently required, lengthened experience having shown that the Act of 1876 is in many respects deficient.

(2) That the Bill at present before Parliament is insufficient and unsatisfactory.

(3) That the Parliamentary Bills Committee of the British Medical Association should take action in the matter.

(2) *Re Fat in Milk.*—Moved by Sir C. Cameron, seconded by Dr. Hill:

That, in the opinion of this meeting, there should be a legal standard of fat required in milk sold to the public.

(3) *Re Separation of Sections of Public Health and Medical Jurisprudence.*—Moved by Dr. Scurfield, seconded by Dr. H. Kenwood:

That it be recommended to the Council of the British Medical Association that in future annual meetings of the Association there be a separate Section for Public Health.

Section of Psychology.

On Thursday the Section of Psychology held a discussion conjointly with the Section of State Medicine on the subject of Aphasia in Relation to Testamentary Capacity. The chair was taken by Sir Henry Littlejohn, who called upon Sir William Gairdner, K.C.B., to open the discussion. Sir William Gairdner delivered an eloquent and interesting address, in which he expressed the opinion that aphasia did not preclude the possibility of clear, reasoning, and technically sound testamentary capacity. Dr. Elder, Physician to the Leith Hospital, continued the discussion; and Dr. Clouston made a few remarks on the two addresses, but as there was still much business to be done the President promptly closed the discussion, and called upon Dr. Mercier (London) to open the second discussion, The Plea of Insanity in Criminal Cases. The discussion was taken part in by Dr. J. F. Sutherland, Commissioner in Lunacy (Edinburgh), Dr. Blandford (London), Professor Glaister (Glasgow), Sir William Gairdner, and Dr. Clouston. Dr. Mercier then replied to the various speakers, after which the President closed the meeting, and the Section of Psychology returned to the Sectional Room to hear the papers read. Dr. Walter Bernard (Londonderry) read a paper on the Neglect of Early Training of the Mentally Defective. The paper was discussed by Dr. Shuttleworth (London) and Dr. Fletcher Beach (London). Dr. R. Dawson (Finglas, co. Dublin) then read a paper, the joint work of himself and of Dr. Rambaut (Richmond Asylum, Dublin), on the Ocular Phenomena in General Paralysis. The paper was discussed by Drs. Connolly Norman, Joseph Wiglesworth, and John Macpherson. Dr. Geo. Wilson (Mavisbank, Polton, Midlothian) read a paper on a Graphic Method of Case Records in Asylums. The paper was illustrated by a clear and well-drawn chart, which should be of great value. Remarks were made on the paper by Dr. Urquhart and Dr. Connolly

Norman. Dr. Lewis Bruce (Morningside, Edinburgh) then read a paper on Motor Mentalisation. Dr. Hogben (Strathmiglo, Fifeshire) read a paper on Pauper Lunatics in Private Dwellings in Scotland. A large gathering of this Section assembled on Friday to take part in the discussion on Hypnotism: its Phenomena and Theories. After a few general remarks on the subject, the President of the Section, Dr. Clouston, introduced Dr. J. Milne Bramwell (London), who spoke on the phenomena of hypnotism, setting before his audience a great number of varied and deeply-interesting facts from his own personal experience. Mr. F. W. H. Myers (Cambridge)—who had, by the special permission of the Council, been invited to take part in this discussion—gave a very striking address on the theories of hypnotism. The discussion was continued by Dr. Yellowlees (Gartnavel, Glasgow), Dr. George Robertson (Murthly), Dr. Dercum (Philadelphia), Dr. John Woods, Dr. Alexander Robertson (Glasgow), Dr. Mercier (London), Dr. George Kerr (Edinburgh), and Dr. Haddon. Dr. Bramwell then replied to the various speakers, and, after a few questions and remarks, the discussion was closed. The recommendation to the Council of the Association with regard to the better legislation in the case of inebriates, which had been previously intimated by Dr. Sutherland (Commissioner in Lunacy, Edinburgh), was then read to the meeting, seconded by Dr. Yellowlees (Gartnavel Asylum, Glasgow), and unanimously carried. A paper by Dr. Robert Jones (Liverpool) on the Relation of Epilepsy to Insanity was presented but not read.

SECTION OF NEUROLOGY.

IN this Section, on Thursday, Dr. Buzzard opened the discussion on the Influence of Micro-organisms and Toxins in the Production of Disease of the Central and Peripheral Nervous System. In his paper Dr. Buzzard entered fully into the question of toxins—micro-organismal in origin and otherwise—which might play a part in the causation of nervous diseases. Dr. Dercum (Philadelphia) thought that the theory of the action of toxins on the nervous system was one of the most important now engaging the attention of neurologists. Dr. Joseph Collins expressed the conviction that poliomyelitis anterior acuta was both toxic and infectious frequently, but not always. Dr. Fred. J. Smith related two cases of peripheral neuritis arising from septic wounds in which the neuritis seemed to transmit itself in a peculiar manner to the opposite side of the body. Dr. R. A. Fleming showed sketches of hæmorrhages and thromboses taken from the spinal cords of patients who had died from alcoholic neuritis. Dr. Mott referred to the changes which he and Dr. Barrett had found in the nerves and muscles of two cases of beri-beri. No definite organism had been found, but marked fatty changes were demonstrated in the muscles, and Wallerian degeneration in the nerves. Professor Ferrier expressed his obligation to Dr. Buzzard for his most suggestive communication, and went fully into the question as to whether certain nervous affections could be regarded as due to the toxins of specific micro-organisms. Dr. Bruce, speaking of multiple sclerosis, said that he had examined several cases. In one he found a number of foci of the disease in every stage, and in every focus he had found a small blood vessel, from which he believed a substance flowed out which had a solvent action on the myeline. Dr. Trevelyan referred to cerebro-spinal meningitis, infantile paralysis, and acute myelitis as diseases due to infection. He thought that the perivascular lesions found in these cases favoured that view. Dr. Byrom Bramwell advanced the theory that the cause might be an autointoxication, and was of the opinion that the toxin was of importance, not the micro-organism. He agreed with Drs. Buzzard and Collins that infantile paralysis was probably micro-organismal. In this Section demonstrations were given by Drs. Mackay and Dunlop, Dr. James Taylor, Dr. A. W. Campbell, Dr. Trevelyan, Professor Cunningham, Dr. Clinch, Dr. Michell Clarke, Dr. A. Bruce, Dr. Fleming. The President, Dr. Byrom Bramwell, read a paper on Aphasia, which was illustrated by means of photographs. The paper was discussed by Sir W. Broadbent, Dr. Ormerod, Dr. Buzzard, and Dr. Ealer.

SECTION OF PATHOLOGY.

ON Thursday Dr. Lazarus-Barlow read a paper on Irritation of the Pleura and Pleurisy, and showed a number of lantern slides in illustration of his work. By making a series of horizontal sections he was able to demonstrate a number of interesting changes both in experimentally-produced pleurisies and in those occurring in men. Professor Greenfield, Dr. Woodhead, Professor McFadyean, Dr. Muir, and Dr. Welsh criticised his interpretation of the results then obtained, and Dr. Barlow replied. Dr. Herbert E. Durham opened a discussion on the Agglutinating and Sedimenting Properties of Serums and their Relation to Immunity. He said that the importance of the agglutinating principle had been raised to a high position by the observation, first made by Dr. Grünbaum at Vienna, that the blood serum of typhoid patients may acquire the property of clumping cultures of the typhoid bacillus. He divided the various ways of applying the principle of specific immunity into three headings: (1) Protective, (2) lysogenic, (3) agglutinative; and discussed very fully the proportional relationships between these powers, as illustrated by the serums from different organisimal conditions. The differential destruction of agglutinins *in vitro* and *in vivo* was next considered, and also the fatal issue during the presence of high agglutinative power of the blood. Professor McFadyean said that the subject had a wide clinical as well as a laboratory interest. Dr. Grünbaum suggested that a fourth specific action might be added, namely, the paralysing action of serums especially on motile organisms. Professor McWeeney suggested a possible fifth action of serums—namely, concatenation of bacilli, which did not normally form chains. Dr. Woodhead pointed out that in these serums there were a number of actions which ran parallel to a certain extent, but ultimately diverged. In this Section on Friday Dr. Alfred G. Levy read a paper on the Blood Changes after Experimental Thyroidectomy. He found that the anæmia was not very intense and not very constant. The red corpuscles were diminished together in the proportion of about 25 per cent. Leucocytosis also occurred to a varying degree. The increase of fibrin was very constant and very considerable. The diminution of solids and proteids was very variable. Professor Stockman read a paper on the Pathological Effects of Dead Tubercle Bacilli. After a short historical review, the author described his own experiments: (1) Intravenous injection of dead tubercle bacilli in a dog produced a marked temperature reaction, and, after several months, *post-mortem* examination showed a large number of small fibrous nodules in the lung and pleura. (2) Similar injection in a pony also gave a marked rise of temperature, and again the lungs were studded with small fibroid nodules. (3) Dead tubercle bacilli injected into the lung of a cat produced a large non-caseous nodule with imperfect giant cell formation. (4) Feeding experiments in cats produced no reaction and no lesion on *post-mortem* examination. The nature and origin of giant cells were discussed. Professor McFadyean said that he had never employed such colossal doses of dead bacilli, but small doses of living bacilli were found to produce tuberculous disease of the bronchial and mediastinal glands, and also tuberculous nodules in the lung crammed with living bacilli. He did not agree with the statement that giant cell formation in experiments with dead bacilli was the result of caseation. Dr. Woodhead described a large number of experiments which he had made by injecting dead tubercle bacilli in guinea-pigs. He had found that fibroid changes were very common when devitalised bacilli were used, whereas these were rare after injection of living organisms. Professor Greenfield said that all the speakers had acknowledged a possible flaw in the experiments. Undoubtedly dead bacilli could produce elementary tubercle follicles with giant cells. He thought that dead bacilli might pass through the pulmonary capillaries and lodge in the liver. Dr. J. J. Douglas read a paper on the Local Action of Crude Diphtheria Toxin. Dr. S. R. Christophers read a paper on the Action of Normal Serum in Relation to the Diagnosis of the Typhoid Bacillus. Dr. Alexander Haig gave a demonstration of the granules precipitated in the blood by chloride of ammonium, and said that the number of these granules varied with the uric acid passing in the urine.

Section of Pharmacology and Therapeutics.

On Thursday Dr. Nestor Tirard opened the discussion on the Treatment of Chronic Kidney Diseases. He considered the subject under the heads of chronic nephritis, renal cirrhosis, lardaceous disease. He pointed out that subacute attacks were the chief danger in chronic nephritis, and could be prevented by hygienic means. He alluded to the influence of climate and occupation. He did not think that there was any advantage in non-albuminous diet in the absence of subacute attacks. A marked feature in these cases was a tendency to dyspepsia. It was better not to interfere with the habits of patients as regards alcohol unless it was taken to excess. In his opinion water was one of the best diuretics. Treatment of cirrhosis had to be almost entirely symptomatic, the chief symptoms requiring attention being headache. Nitroglycerine and nitrate of sodium and other agents for reducing arterial tension were often valuable. Professor Ewald pointed out that diuresis varied inversely with the amount of fluid in the subcutaneous tissues. He considered that tapping for ascites was not done early or often enough, and, therefore, alteration of epithelium, and consequently of function occurred. Often punctures every three or four days produced excellent results. In œdema he used long needles, introduced parallel to the skin. As it was possible that the symptoms of uræmia depended on auto-intoxication, nothing was more rational than the removal of some of the blood, especially if it was replaced by saline solution. Dr. Barr said that the amount of albuminuria was of little moment, but that the retention of the effete products in the blood was the important point. Dr. McVail attached great importance to the estimation of urea. If it were in excess the case would do well. The best remedy was aërated water. Dr. Saundby agreed with Dr. Ewald in advocating early tapping. He had found much benefit from elevating the limb and massage as practised by Sir Thomas Grainger Stewart. He very rarely used venesection because he had had no difficulty in treating the early cases by simple means, and in the other class of cases it was of no use. He had not found any drug of use to relieve dyspnœa except erythrol tetranitrate. Dr. MacAlister commended oxygen, milk diet, and opium. Dr. Stockman asked for information as to the oxygen administration. Dr. Ewart described a special method of his own for treating chronic kidney disease. Dr. Allison praised thyroid extract. Dr. Sillar suggested the use of distilled water aërated with oxygen gas. Dr. Tirard replied. Professors Ewald and Turck, and Dr. Heschell exhibited numerous intragastric instruments; others being shown by Dr. Lockhart Gillespie for Drs. Einhorn (New York) and Eccles.

On Friday, July 29th, a discussion upon the Recent Synthetic Analgesics: their Benefits and Disadvantages, was opened in this Section by Professor Ralph Stockman, who considered the relative merits and actions of the classes of synthetic analgesic remedies derived from phenol, anilin, phenyl-hydrazin, and salicylic acid. Two analgesics were required, one exerting its effects upon the nerve paths sensitive to pain but inert with regard to the rest of the nervous apparatus, another acting similarly but also with a gentle hypnotic or narcotic action on the cerebrum. He had given up the use of acetanilidine almost entirely, of phenazonum almost as much, using especially phenacitinine and lactophenin most commonly. Dr. C. D. F. Phillips divided the synthetic analgesics into those derived from chinolin, anilin, and salicylic acid, and the anilin derivatives further into four classes—primary, secondary, or derived from phenyl-hydrazin and from para-amido-phenyl, tertiary or containing antipyrin. Salophen, he thought, was the most useful and beneficial. Dr. Lockhart Gillespie referred to the dangers of the use of these drugs by patients themselves, noting his experience with exalgine poisoning in one case, which necessitated large doses of morphine. He mentioned the advantages of adding to many of these analgesics some cardiac stimulant like caffeine. Dr. Leech reviewed the subject, as did Dr. Liddell, who expressed a wish for a local analgesic which could allow small operations to be performed painlessly. Dr. Hamilton had discarded all the recent sympathetic drugs for citrate of caffeine, and deplored the slight acquaintance newly-graduated men had with dosage. Dr. Gordon thought that in time some ideal body would be found which would act as a perfect analgesic. After remarks from Dr. Frew, the President (Dr. Affleck) gave some of his experiences with regard to these bodies, and Professor Stockman replied, pointing out especially that a drug capable of abolishing subjective pain ideally could hardly be free from narcotic properties as well. The discovery or formation of new bodies was of great importance, and, though many might be found to be useless, others might prove to be of great service. Dr. J. C. McWalter read a note on the new *Pharmacopœia*, in which he deplored the capricious manner in which the editions of this official publication appeared and the secrecy maintained about it. The deletion of many of the old preparations was a source of regret to him. Drs. Leech and Nestor Tirard replied to the criticisms, which they thought were based on an inadequate knowledge of the laws under which the *Pharmacopœia* had to be issued.

Section of Ophthalmology.

In this Section on Thursday Professor Snellen (Utrecht) gave a Historical Review of Operative Treatment of Strabismus from the first operation by Professor Dieffenbach in 1839 onwards. He compared the operations of von Graefe and of Priestley Smith, and described the operation he himself had adopted. He emphasised the importance of producing as little injury to surrounding tissues as possible, thus preventing subsequent cicatrisation and shortening of the muscle. He advocated removal of a portion of the tendon in many cases. Chloroform should not be used, but a local anæsthetic, as cocaine. A discussion ensued, in the course of which Dr. Little said that he did not fully correct the squint at the time of operation. At the same time, he laid stress on the importance of the use of glasses, especially in young children. Dr. Berry said he believed that cases of insufficiency after tenotomy were due to too free division, to a less extent the following cicatricial contraction might be a cause. Dr. Argyll Robertson drew attention to Mr. Critchett's operation in cases where divergence had resulted from previous operation. Professor Snellen replied, advocating the use of glasses, and the undesirability of any operation in very young children. Mr. Lawford read a paper on an operative procedure for cases of incarcerated iris. This consisted in passing a Graefe's knife through the margin of the cornea into the anterior chamber and out at the opposite side. He then divided the iris on each side of the adhesion. Dr. Argyll Robertson preferred operating twice. Professor Snellen said he considered the principal object of operating was to reduce tension. He performed sphincterotomy instead of iridectomy. Dr. Berry thought that in the majority the tension was not increased. He did an iridectomy opposite the scar, or a double iridectomy one each side of the adhesion. Dr. Little performed iridectomy as for glaucoma in all bad cases. Mr. Lawford, in reply, expressed the opinion that the reduction of intraocular tension was the most important point. Mr. R. Williams then read a paper on a case of Paralysis of Accommodation after Influenza. Each eye was affected, the left first. Dr. Argyll Robertson said he had seen two similar cases which followed influenza, but he could not say that influenza had been the cause. Mr. Juler mentioned cases of paralysis of the third nerve after influenza with complete recovery, and Dr. George Mackay several cases of unilateral paralysis of accommodation after influenza. One case was very persistent, but was temporarily relieved by eserine. Mr. Edgar Browne said that paralysis of the third nerve after influenza was less rare than paralysis of the sixth and the optic nerve. Mr. Granger spoke of a patient who had not recovered from the paralysis. Dr. Tatham Thompson read a paper on a case of Cyst of the Hyaline Canal producing a Double Lens; and Dr. Angus M'Gillivray read a paper on the Hyaloid Canal and its Relation to Cyclitic Exudation. A paper on the Diplo-bacillus and the Conjunctivitis it caused was read by Dr. J. W. Eyre, and one on the Bacteriology of the Normal Conjunctival Sac and its Bearing on the Use of Antiseptics by Mr. Arnold Lawson. He found many sacs free from organisms; out of 159 cases, 118 contained the bacillus xerosis. The pyogenic cocci were few, and when injected into the conjunctival sacs of guinea-pigs produced no reaction. He advocated asepsis. Dr. Eyre considered that the upper portion of the congenital sac was sterile, the lower not so. On Friday Mr. Juler, (London) read a paper on a Case of Symmetrical Gumma of the Ciliary Body with Recovery of Vision, and reviewed the literature, pointing out the rarity

of intraocular syphiloma. Dr. Argyll Robertson said he had seen a number of cases in which the astigmatism produced had subsequently almost entirely disappeared, and Mr. Hill Griffith said that he had seen vision entirely destroyed in several cases. Mr. Juler replied. Mr. Juler then read the second part of his paper on a Case of Interstitial Keratitis with Acquired Syphilis. Dr. Hinshelwood and Mr. Lawson mentioned similar cases, and Dr. Argyll Robertson said he thought a distinction should be drawn between the characteristic cases of interstitial keratitis and cases of keratitis punctata. He considered that Mr. Juler's case belonged to the latter category. Papers were also read by Mr. J. Fallows, Mr. H. E. Jones, Mr. Chas. Wray, Mr. John Griffith (London), and Dr. Adolph Bronner (Bradford). Dr. M'Gillivray said that in America a solution of extract of suprarenal capsule had been used with cocaine to prolong the anæsthesia. He had tried it in one case with good results. Dr. Reeve (Toronto) said suprarenal extract acted as a styptic as well, and rendered the operation a bloodless one.

SECTIONS OF LARYNGOLOGY AND OF MEDICINE IN RELATION TO LIFE ASSURANCE.

AT a joint meeting of these Sections on Thursday, a discussion on Middle-ear Disease in Relation to Life Assurance was opened by Dr. P. MacBride, President of the Section of Laryngology and Otology. He limited his remarks to cases of suppuration of the middle ear, especially in its chronic form, and pointed out the various data that must be considered in the history of the case—the condition of the ear itself when examined, the presence or absence of diseased bone, the character of any perforation of the drum, amount and character of the discharge, the social position and habits of the patient, presence or absence of pain. Dr. T. Barr (Glasgow) thought the statistics must be wrong which gave the deaths from ear disease in Scotland in one year as 50 only. Nor was information as to mortality in patients with otorrhœa forthcoming. With purulent discharge the life should usually be declined altogether, postponed, or heavily rated. Dr. Urban Pritchard (London) mentioned the classes of ear disease which should lead to rejection, those for which "loading" was necessary, also the third division, which might be taken without extra premium. Mr. Mark Hovell (London) thought many diseases of the ear very serious from the actuarial point of view. Dr. R. Mackenzie Johnston said that in Scotland about 1 in 1,000 of all deaths was due to ear disease; it was, therefore, not an important item. Dr. H. Tilley (London) thought that each case should be taken or rejected by insurance offices on its own merits. Mr. G. M. Low (Actuary to the Edinburgh Life Insurance Company) thought that the actuary in all these questions had some useful information to give. The proportion of deaths from ear disease —1 in 1,000—was so small that if other points were quite favourable the question of slight ear disease might almost be disregarded by the offices. Doctors should classify the cases of ear disease more fully than had been already done. The offices could not take each case on its merits; they must have broad principles on which to act. Dr. W. Hill (London) divided the cases roughly into those with and those without pain. Candidates with ear disease applying for life insurance should be examined and reported upon by experts. A discussion on the bearings of Pregnancy on Life Assurance was then introduced by Dr. John Playfair (Edinburgh), and Mr. T. Wallace (Actuary, North British and Mercantile Insurance Company) who made the following suggestions, that: (1) For the uniform extra premium at present charged, an extra, varying in amount according to age should be substituted. (2) The extra premium for a first pregnancy should be about three times as great as that for a subsequent pregnancy. (3) A proposal for insurance from a woman, aged 30 and upwards, pregnant for the first time, should be delayed. (4) A proposal for insurance from a pregnant woman, aged 40 or upwards, whatever the number of the pregnancy, should be delayed. Mr. G. M. Low (Actuary, Edinburgh) asked if there was any difference between the mortality in pregnant women of the upper and middle classes and those of the patients enumerated in the tables from the hospitals. If not, the insurance companies did not charge enough extra premium when they put on 5s. in the case of every woman within the child-bearing period, and 10s. for every woman actually pregnant when the policy was effected. Mr. McCandlish thought the companies should see that although there was some risk in pregnancy, yet after the time of child-bearing the chance of life of females was so much better than that of males that the risk in the female lives from pregnancy was quite counterbalanced by the later advantage. Mr. George Eastes (London) remarked that the antiseptic treatment had diminished the mortality of child-bearing during the last fifteen or twenty years, and that, therefore, statistics of former years could not well be applied to the present time. Further, that the mortality amongst the upper classes of society, who had good sanitary surroundings, was lower than that in the lower classes where insanitary surroundings usually prevailed. Dr. Glover Lyon thought that actuaries should give their figures on this as on kindred questions, for information on the subject only existed in the records of the offices. Mr. T. Wallace, in reply, thought it right that an extra premium should be charged in pregnancy, the present increased charge being quite inadequate. Under 20 years of age the death-rate in parturition amongst married women was very low—0.472 per cent., but amongst the unmarried it was very high—2.264. Dr. J. Playfair, in reply, said that the antiseptic treatment in hospitals had undoubtedly greatly lessened the mortality in recent years; but he doubted if it had done the same in general practice. In hospitals the deaths were now chiefly due to eclampsia. There had been only one death from septicæmia in the Edinburgh Maternity Hospital during the last five years.

SECTION OF DISEASES OF CHILDREN.

THE second meeting of this Section took place on Thursday. There was an exceptionally large attendance of members. Mr. Jonathan Hutchinson opened the discussion on Certain Aspects of Congenital Syphilis, limiting his remarks to the question of lesions of the bones and organs of special sense. He discussed certain late manifestations of congenital syphilis, and emphasised his belief that these were very rare after the age of 20. He gave an account of certain rare cases, and remarked on the questions of the time when marriage should be permitted and the question of transmission of disease to the third generation. He alluded to certain difficulties in diagnosis, and gave his views with regard to the general uselessness of routine drug treatment of the disease in infants. Dr. H. Ashby (Manchester) discussed certain cases of doubtful character which might occur in connection with the brain and other internal organs. Such cases were those of certain forms of anæmia, large spleen, hydrocephalus, and other conditions affecting the nervous system. Professor Baginsky (Berlin) spoke of certain cases of Melæna and Ulceration of the Intestines in the same connection. M. Jules Comby (Paris) spoke of the importance of early diagnosis and of the necessity of drug treatment. Mr. J. Hutchinson described a rare case of Gumma of the Occipital Lobe. Dr. Telford Smith contributed a paper on the Infrequency of Syphilitic Idiocy. Dr. John Thomson gave facts pointing to a family tendency to special lesions. Dr. Hudson, Dr. Finlayson, Dr. Still, and Dr. Symes took part in the discussion, and Dr. Ashby replied. Papers were read by Mr. Robert Jones on the Treatment of Short Leg in Hip-joint Disease; by M. Jules Comby on Movable Kidney in Children; by Professor Baginsky on Atrophy in Children; by Mr. G. F. Still on the Micro-organism of Simple Posterior Basic Meningitis in Infants, and by Drs. G. A. Sutherland and Watson Cheyne on the Treatment of Hydrocephalus. Excellent lantern demonstrations were given, and the proceedings were throughout of unusual interest. The third meeting of this Section was very largely attended. Dr. D. B. Lees (London) opened the discussion by a paper on Rheumatic Heart Disease in Childhood. He referred to the great mortality among children as compared with adults from this disease. He dealt especially with the question of dilatation, which he maintained was usually present in subacute first attacks, even when pyrexia was slight and arthritis not present. Fatal results were not due to effusion into the pericardium nor to endocarditis. These conditions seemed to affect the mortality very little, but plastic pericarditis and dilatation played a very important part in the fatal result. Professor Osler

(Baltimore) thought it was important to guard against repeated attacks of rheumatism. Sir W. Broadbent (London) agreed with Dr. Lees's conclusions. He thought he had perhaps neglected to attach due importance to this condition. Considerable dulness to the right could exist independently of the presence of fluid. Dr. Ewart (London) showed diagrams illustrating his point that in dilatation fluid was always present, and laid stress on the diagnostic value of spinal dulness. Professor Baginsky drew attention to the immense size of the heart in some of these cases of dilatation. Dr. Finlayson remarked on the uncertainty of individual methods of percussion and the relative truth of all diagrams. Dr. Fisher discussed the microscopic and macroscopic appearances of heart muscle in these cases, and Dr. Poynton spoke on the pathology of the disease. Dr. Samways and Dr. Still joined in the discussion. Mr. J. H. Nicholl contributed a paper on the Radical Cure of Spina Bifida by Operation, Dr. R. Martin a paper on the Effects of Tobacco-smoking in Children, Dr. J. Kay Tomory a note on a case of Supernumerary Testicle, and Dr. J. Carmichael one on Types of Infantile Pneumonia. Dr. Finlayson (Glasgow) proposed a vote of thanks to the President, Dr. Joseph Bell, and to the Secretaries of the Section, and the proceedings then terminated.

Section of Dermatology.

In this Section on Thursday a discussion on the nature and treatment of Lupus Erythematosus was opened by Professor Boeck (Christiania) and Dr. Unna (Hamburg). The following took part in the discussion: Drs. Allan Jamieson, Morgan Dockrell, Eddowes, Radcliffe Crocker, and Johnston (New York). Professor Boeck and Dr. Unna replied. Subsequently a discussion took place on the question, What is to be understood by Eczema? The discussion was opened by Mr. Malcolm Morris and Dr. Wallace Beatty. Drs. Unna, Colcott Fox, Parratt and Allan Jamieson also spoke. The Section then adjourned to the pathological museum. In this Section on Friday Dr. Unna read a paper on Impetigo regarded from the clinical and histological aspects. The paper was illustrated by drawings, tube cultures, and microscopic specimens, and was discussed by Dr. Colcott Fox. He gave a demonstration of cultures of endothrix ringworm; the experiments had been conducted in conjunction with Dr. Blaxall. The paper was discussed by Drs. Leslie Roberts (Liverpool), Norman Walker (Edinburgh), and by Mr. Malcolm Morris. Dr. Dockrell read a paper on the Treatment of Skin Sarcoma by Coley's Fluid.

Section of Medicine in Relation to Life Assurance.

In this Section on Friday Dr. C. Muirhead, President, in the chair, Mr. J. M. McCandlish (late manager of the Scottish Union and National Assurance Company) read a paper entitled "Medical Advisers of Life Assurance Offices: Some of their Duties and Difficulties," in which he pointed out that rates of mortality and longevity, however uncertain in the case of individuals, could be reckoned on in the mass if some necessary conditions were attended to. The duty of the medical examiner was to detect disease (often in the face of indisposition to give full information), to discover the proclivities to diseases, or any reasons there might be for apprehending premature death, and to make a selection of lives. All insurance offices, therefore, looked for assistance from their medical examiners. Life insurance should be conducted as a sound and scientific business rather than a species of gambling, which could only be done by the careful measurement, as far as possible, of each individual risk. The President alluded to the difficulty of eliciting truth from many candidates. No medical examiner should put his questions in any other than a sympathetic and kind way; an abrupt method would often draw answers which were not quite truthful. The selection of lives was difficult, and facility therein only came with years of experience. As to problems connected with over rating, figures were required to show how under-average and overrated policies had come out. The local medical officer should in all cases send off his report to the central office, and not let it go through the local insurance agent. Dr. W. L. Muir (Glasgow) related instances of untruthful answers given to him by candidates with respect to their family connections. He never now examined the urine of a candidate unless it had been actually passed in his own presence. Dr. W. F. Somerville (Glasgow) considered it far better to examine patients in his own consulting room than in the agent's noisy office. If the head examiner rejected, or put on an extra premium to, a candidate examined by the local medical man, he should communicate to the latter the cause of his rejection or "loading." Dr. P. Watson Williams (Clifton) said that candidates were often busy men, and it was advisable to examine them in the agent's office, so as to avoid loss of time. A "poor life" should be advised to go in for endowment rather than whole life insurance. The medical officer should pay as much attention to lives insured for small sums as to those insured for large amounts. Mr. D. Deuchar (President of the Faculty of Actuaries) thanked the British Medical Association for instituting that Section, and for sending to the Faculty tickets of admission. Dr. T. F. Caverhill (Edinburgh) would have the medical examiner be something of a man of the world; like whist life insurance had an element of exact science, blended with an element of chance. Mr. McCandlish, in reply, urged inquiry into the right methods of conducting the selection of lives. Mr. G. M. Low (Manager of the Edinburgh Life Assurance Society) read a paper on Extra Rating as a Statistical Problem. The problem was how best to measure the extra risk necessitated by flaws in the family history or personal condition of candidates for assurance. This was essentially a statistical problem. He illustrated this by reference to the family taint of consumption. An extended inquiry would solve many questions upon this and other doubtful points. In assurance no risk could be estimated *per se*; under-average cases must all be put into their appropriate groups. He illustrated his remarks by reference to the mortality of stout persons, also to that of liquor sellers; and appealed to the medical profession to assist the insurance offices in the above inquiry. Dr. Muirhead said that in selecting lives more attention must be paid to the law of averages, but medical men were prone to make much of individualities. Dr. Glover Lyon (London) thought actuaries were too apt to divide candidates into classes, as of heart disease or phthisis, but the chance of life in different individuals of any class varied greatly. In America the material for such an investigation as Mr. Low had suggested already existed; in England offices had only begun lately to keep their statistics with sufficient accuracy for the purpose. The expense of such an inquiry in England would be serious: in America it would be laughed at. Dr. Sprague, manager of the Scottish Equitable Life Assurance Society, said that a recent inquiry into the mortality of persons charged extra because of a family taint of consumption, had shown that the extra rating of such persons had been about double what it should have been. Dr. J. Ritchie (Edinburgh) said that medical men must deal largely with individualities in trying to classify the candidates; for example, in the discussions on heart disease the large classes were subdivided into groups by the various speakers. In phthisis the fact that a brother or sister had died was not of such importance as the death of either parent therefrom. Laborious investigations were now being conducted in America, and he doubted if such could be done here with profit on similar lines until the result of those inquiries was known. Mr. Low briefly replied. Mr. James Meikle, Actuary to the Scottish Provident Institution, contributed a paper on Gout as a Factor in Life Assurance, and showed that gout was a very important factor, and caused a mortality far above the average of mortality of healthy lives. Dr. Muirhead said that the offices should agree among themselves what addition should be made to the annual premium, and that no office should thereafter undersell other offices. Dr. Sprague said that a charge of 12s. or 15s. should be added to the rate of sufferers from gout. Dr. Balfour Graham (Leven) pointed out that formerly the term "gout" was employed in a much looser way than at the present day. Gouty dyspepsia, for example, was not so serious as the contracted kidney and enlarged heart due to gout. The treatment of gout, too, had greatly improved in recent years. Dr. Glover Lyon, Mr. Chatham (actuary), Mr. Hewat, and Mr. Stenhouse, continued the discussion; and Mr. Meikle replied. Mr. Garrett Horder's paper on Life Assurance and Medical Examiners, was, in the absence of the author, taken as read. The President thought the result of that meeting had been very successful as a first experiment. Dr. Murdoch Brown (Edinburgh) proposed a vote of thanks to Dr. Muirhead for his conduct of the business of the Section. The vote was seconded by Mr. G. Eastes

(London), supported by Mr. Panton, and carried unanimously, with applause. The President briefly replied, and the business of the Section ended.

Section of Tropical Diseases.

In this Section on Thursday Dr. Conolly Norman (Superintendent, Richmond County Asylum, Dublin) read a paper on Beri-beri, in the course of which he pointed out that, contrary to popular belief, beri-beri was by no means confined to the tropics. In Saghalien, with a climate which resembled that of Finland, beri-beri was met with. In North Germany, in Suffolk in England, in Dublin, and in two of the North American States beri-beri had occurred during the last few years. It was remarkable that it had been observed in lunatic asylums; only no satisfactory explanation of this circumstance was forthcoming. In Dublin the disease appeared in 1894, and recurred in 1895-96. In all, 534 cases had occurred in Dublin, with 44 deaths. He discussed in detail the various signs, symptoms, and phenomena of the Dublin outbreak of the disease, and showed that the symptoms of the disease tallied in every particular with the beri-beri reported from the Indies. The pretibial œdema, tenderness on deep pressure, cramps, cardiac disturbance, and anæsthesia were in the Dublin epidemic all pronounced. Dr. Norman further drew attention to a few symptoms. Pain in the back over the region of the sixth dorsal vertebra was a fairly constant factor, and the columns of Goll and pyramidal tract showed *post-mortem* changes. The question of diet came up and both rice and smoked fish had been accused. The fish was dry ling from Newfoundland mostly, where beri-beri was prevalent, and it was peculiar moreover that this diet of ling was introduced in 1894, the year beri-beri broke out. Rice had also been held in suspicion, and some writers had argued that as rice was brought from tropical countries where beri-beri prevailed it was possible the rice acted as a medicine. But the food of the paupers in the lunatic asylum in Dublin did not differ essentially from that of the people around them, and on close investigation neither fish nor rice could be held guilty. The course of the disease was a question of some moment. Grimm stated that all beri-beri patients had an initial fever and an exaggerative knee jerk. These phenomena Dr. Conolly Norman had been aware of for some time, so that it was no new discovery of Grimm. Dr. Manson (the President), Dr. Osler of Baltimore, and Mr. Cantlie joined in the discussion. Dr. Manson held that the disease in the Richmond County Asylum, Dublin, was undoubtedly beri-beri. Dr. Osler said that beri-beri still occurred amongst the fishermen on the Newfoundland Bank, and that cases of beri-beri reached the United States from the West Indies. Dr. Sandwith (Cairo) gave a concise and instructive paper on Pellagra. He showed various photographs which illustrated the character of pellagra as met with in Egypt. It was only of late years, and chiefly by Dr. Sandwith's instrumentality, that this disease, which has been long known in Italy, had been shown to prevail in Egypt. Dr. Sandwith drew attention to the disease as one of general infection and not a mere skin affection. The word "pellagra" was a compound word, derived from the Italian, signifying rough skin; but serious mental and physical depression accompanied the condition, and patients frequently found their way in the end to a lunatic asylum. Dr. Sandwith also spoke on acute dysentery, and advocated washing out the lower bowel with a mixture consisting of sulphate of copper, laudanum, starch, and water. Dr. Osler (Baltimore), Dr. Bentley (Straits Settlements), Dr. Ozanne (British Guiana), Dr. Prentice (Central Africa), Major Davidson, R.A.M.C., Brigade-Surgeon-Lieutenant-Colonel Crombie, and Sir Joseph Ewart also took part in the discussion. Sir Joseph Ewart warned those who decried ipecacuanha against neglecting this drug. He remembered the death-rate from dysentery in India before ipecacuanha was known, and the immense fall in the mortality since this drug was used. Inspector-General Turnbull, R.N., read a paper full of historical and epidemiological interest on the Cause of Yellow Fever. He showed by full and elaborate tables and reports that yellow fever and bubonic plague were severally associated with environments. Contagion played but a minimum part in the spread of yellow fever. Dr. Thornkill of Ceylon brought up the subject of the treatment of cholera. Dr. Manson subsequently gave an address, illustrated by diagrams and microscopical specimens on the Malarial Parasite. On Friday, Professor W. J. Simpson, late medical officer of health, Calcutta, opened the discussion on plague by a paper entitled Plague in India. Dr. Simpson reviewed the history of plague in India from remote times, and showed that plague was a well known and well understood disease in India 800 years ago. The disease seems to have shown a preference for the Bombay or western side of India at all times. Dr. Simpson, however, wished to annul the belief that it had never been known in Calcutta; he found from native annals that plague was in Calcutta 200 years ago. Plague was not endemic in India, and was as much an exotic to India as to Western Europe, and the intervals of freedom even for upwards of 100 years furnished no *a priori* reason that it would not recur wherever and whenever sanitation was neglected. In the Levant plague had been known for 3,000 years, and biblical history afforded frequent evidence not only of its existence but of its means of spread. The Levantine disease, however, was not of the same nature as that met with in China and India to-day. The former was a far less active disease, and it was unlikely that the Indian plague was its offspring. Dr. Simpson advocated in emphatic language the necessity for the formation of a "trained sanitary service" for India. He divided the medical part of a sanitary service into three branches: (1) The administrative; (2) the investigative; and (3) the scientific. The first of these was in Britain represented by the local health officers and their subordinates; the second by the medical inspectors of the Local Government Board, and the third by the scientific workers in the Government laboratories. Surgeon-Major Richard Baker, I.M.S., stated that he had experience of plague in many centres in India, and also in Asia Minor. He had a firm belief in Haffkine's method, and in the absolute necessity for isolation and segregation. Surgeon-Major Baker also referred to the danger of demolishing infected houses previous to disinfection, and held that those engaged in the work were thereby exposed to grave danger. Brigade-Surgeon-Lieutenant-Colonel Arnott, I.M.S., stated that the medical profession, when plague declared itself, immediately pointed out to the Government the serious nature of the malady, and advised stringent steps to be taken. He believed the chief danger to Europe was overland by way of the North-West Frontier, and not by sea. A paper by Professor W. M. Haffkine and Surgeon-Major Bannerman, I.M.S., on the Testing of the Plague Prophylactic in Plague-stricken Communities in India was read. By numerous experiments and carefully compiled statistics it was claimed for Haffkine's treatment that the power of protection was most marked, and the death-rate enormously reduced. The system of inoculation was first practised on rats, and its power shown thus: 20 rats were taken from a ship newly arrived from Europe; of these, 10 were inoculated by the protective serum. The rats were then placed together, and a rat suffering from plague introduced amongst them. Numerous experiments of the kind were practised. In course of time 8 or 9, or all the unprotected rats, died; while none, or possibly only one, of the protected died. At Mora, in the Kolaba District, out of a population of 1,000 souls, 429 were protected by inoculation, of whom 7 were attacked and none died; whilst of the unprotected 26 were attacked and 24 died. In the Portuguese colony of Lower Damaon 2,197 were inoculated out of a population of 6,033. Of the unprotected 1,482 died, whereas of those protected by inoculation 36 died, showing a reduction of 89.2 per cent. in favour of preventive inoculation. Numerous similar instances were cited in the paper, and in every case benefit by the treatment was apparent, so much so that it was held that by Haffkine's prophylactic method of treatment the reduction of mortality in those attacked amounted to no less than 86 per cent. Brigade-Surgeon-Lieutenant-Colonel Dimmock, I.M.S., gave an account of the Measures adopted for Dispelling Plague in Bombay. The address was illustrated by excellent maps, and a full account of the organisations in force proved interesting and instructive. Brigade-Surgeon-Lieutenant-Colonel Arnott, I.M.S., read an abstract from the Report of the Plague Research Committee in Bombay supplied by Surgeon-Captain L. F. Childe, I.M.S., on the Pathology of Plague. Surgeon-Captain Childe classifies the varities of plague as: (1) The bubonic, (2) the septicæmic, (3) the pneumonic. Mr. Cantlie

stated that judging by the frequent recurrences in Hong Kong it seemed as though plague in India was but commencing, and that for several years it would be a scourge. The appearance of plague in Calcutta had not the same interest for Europe as the Bombay epidemic; the communication with Bombay was many times more frequent and direct, and the longer voyage from Calcutta by sea allowed plague to declare itself before other ports were reached. Mr. Cantlie believed that the chief danger to Europe was by land, not by sea; but as the disease had taken an easterly instead of a westerly direction, it was possible Europe might escape infection. Before the meeting terminated, the following resolution, proposed by Dr. Andrew Davidson, the Chairman, was passed:

That the Tropical Disease Section send a message of congratulation to Surgeon-Major Ronald Ross in Calcutta for the excellent work he has done, and is doing, in connection with the extracorporeal life of the malarial parasite, and thank Dr. Patrick Manson for his careful exposition of Ross's work, and for the part he played in conjunction with Ross in bringing about the important results stated in Dr. Manson's lecture.

Section of Anatomy.

On Thursday, July 28th, Sir John Struthers presided during part of the proceedings. Lantern demonstrations were given by Professor Symington on Cranial Topography, and Mr. Stiles on the Topography of Thorax and Abdomen. Both described their methods of preparation and showed numerous well-made slides. Professor Thompson and others criticised. Dr. McCarthy gave a paper (communicated) by Professor Shepherd on a New Dissection Showing the Internal Gross Anatomy of the Hippocampus Major, with specimens and diagrams. Professor Birmingham gave a series of papers on the Arrangement of Muscle Fibres in Stomach and Œsophagus, and on the Course of the Left Phrenic. Dr. Hepburn followed with an account of the Shape of the Abdominal Organs, followed by a discussion in which Professors Thompson, Cunningham, Hughes, Symington, and Birmingham took part. Dr. Berry gave Notes on a Specimen of Abnormally Situated and Distended Rectum. Professor Thompson then gave a paper on the Sexual Differences of the Fœtal Pelvis, illustrated by diagrams and lantern slides. Communications were read on Friday by Professor Paterson, Dr. Waterston, Dr. Patten, and others. A paper on Some Abnormalities of the Ocular Muscles by Dr. Fitzgerald (Cork) was read in his absence by Dr. Hepburn. Small slips connecting the external and internal recti were described, the microscope having been used to demonstrate the tissue as muscle. Professor Paterson's paper dealt with the Development of the Sympathetic System in Elasmobranchs, describing it as a derivative of the dorsal ganglion elements by a process of cellular growth; the union of adjacent ganglia to form a commissural cord, and the junction of a visceral branch of the ventral root which alternates with the dorsal root, with the cellular ganglionic mass at an early stage in its development. Dr. Waterston spoke on the Anatomical Basis of Reduction by Manipulation of Dislocation at the Shoulder-joint, and considered in detail the various factors which influence the reduction in Kocher's method. Dr. Patten's communication was read by Professor Cunningham and illustrated by the lantern. It was on a case of Duodenal Diverticulum Occurring on the Antero-External Surface of the Inner Part of the Duodenum. It contained all the coats of the duodenum and was about the size of a small orange. A short discussion followed in which Mr. Stanley Boyd, Professor Cunningham, and Dr. Hepburn took part. The thanks of the meeting were cordially awarded to Sir John Struthers for his attendance and acting as president in his present delicate state of health. Dr. Hepburn, as Secretary, was also accorded a vote of thanks.

Section of Physiology.

On Thursday, July 28th, Professor Waymouth Reid opened a discussion on Intestinal Absorption. He considered the physico-chemical factors which would influence the absorption, and detailed some experiments on dogs with which he had been occupied for a considerable time. In his opinion, the vital activity of the intestinal epithelium played a great part, as shown by experiments in which the animal's own serum was obtained and placed in the gut. Here the conditions on both sides of the gut wall were equal so far as composition was concerned, and yet absorption took place to a marked extent in spite of the lower hydrostatic pressure in the gut compared to the intestinal capillaries. Other experiments, involving the destruction of the intestinal epithelium by temporary anæmia, the application of distilled water, osmic acid, etc., showed that in such cases the absorption of the serum was very slow and imperfect. The speaker thought that absorption should be considered as an inversion of secretion, but in that case Heidenhain's law of the correspondence between concentration of secretion and the rate of its production was not applicable to absorption. In reply to a question by Dr. Noel Paton, Professor Reid stated that he had been unable as yet to observe any stimulant action on absorption by bile salts. Dr. Dawson Turner then gave a lantern demonstration on the Production of Complementary Colour Sensation. Professor Neill Stewart read two papers dealing with Molecular Concentration and Electrical Conductivity of Blood treated in Various Ways, and of Culture Media in which various organisms had been allowed to live for some time. Professor Macallum gave the results of the work of some of his pupils and himself on the Genesis of Nissl's Spindles. He showed that they were not artificial, and traced their first appearance in the embryo as a cap of peculiarly-staining substance lying close to the nucleus. He had also examined them microchemically, and he described a new process for the detection of phosphorus-holding granules in tissues, which enabled him to state that Nissl's spindles were phosphorus-holding. After Drs. Paton and Milroy had spoken, the next paper by Professor Thompson was given on the Influence of Peptone, etc., on the Work of the Kidney. He showed the marked rise in excretion of watery urine which followed injection of peptone into a vein, this increase reaching a maximum in two to three hours. He found a similar but less marked effect from injection of normal saline solution in which the peptone had been administered. Dr. Fraser Harris followed with a paper on the Physico-chemical State of Caseinogen, in which he criticised the former opinions on that subject, and gave some interesting ideas on the solubility of proteids. On Friday Dr. Noel Paton discussed the Nature of the Amylolytic Action of the Liver, and described the changes of the glycogen in alcohol-hardened organs and after the action of chloroform. A great part of the work of the Section was a discussion on the Secretion of Bile. Dr. Bain read a paper on the Mechanism of Bile Secretion as affected by section of the vagus, etc. He believed that some drugs acted on the muscle in the walls of the bile ducts. He found that Plattner's crystals and the Harrogate sulphur waters increased bile secretion. Professor Rutherford gave some of his later work on bile secretion, which was in the main confirmatory of his now classical experiments on dogs. Dr. Paton, Professor Waymouth Reid, Dr. Mayo Robson, and Professor Neill Stewart took part in the discussion which followed. Dr. Carlier read a paper on Changes in the Cells of the Newt's Stomach after Ingestion of Food. The paper was well illustrated by lantern slides, photographs, and microscopical specimens. Professor Macallum said he had found similar changes. Drs. Milroy and Malcolm communicated a paper on Nuclein Metabolism, showing that the excretion of phosphorus was a more important gauge of leucolysis than the nuclein bases. A paper by Dr. Gulland on Nerve Cells in Blood Vessels of the Brain was read by Dr. Carlier.

AN INTERNATIONAL CONGRESS OF HYPNOTISM.

The Second International Congress of Experimental and Therapeutic Hypnotism will be held in Paris in August, 1900, immediately after the closure of the International Congress of Medicine. The Executive Committee consists of Dr. Dumontpallier (President); Drs. Boirac of Dijon, Grasset of Montpellier, and Liégeois of Nancy (Vice-Presidents); Drs. Bérillon (General Secretary), Paul Farez (Assistant General Secretary); and Henri Lemesle, Félix Regnault, Julliot and Lépinay (Secretaries). The Honorary Presidents are Professors Azam, Raymond, Richet, and Drs. Durand, de Gros, Liébeault, and Jules Soury. General reports will be presented on the following subjects:

1. The formation of a vocabulary of hypnotism and the phenomena relating thereto.
2. Hypnotism in relation to the law of November 30th, 1892, on the practice of medicine; interference of public authorities in the regulation of hypnotism.

3. Relations of hypnotism to hysteria.
4. Applications of hypnotism to general therapeutics.
5. Indications of hypnotism and suggestion in the treatment of mental diseases and alcoholism.
6. The applications of hypnotism to general pædagogy and mental orthopædics.
7. Value of hypnotism as a means of psychological investigation.
8. Special responsibilities arising from the practice of experimental and therapeutic hypnotism.

Communications will be received on subjects referring to the (1) clinical and therapeutic applications; (2) medico-legal applications; (3) psycho-physiological applications; and (4) pædagogic and sociological applications of hypnotism and suggestion.

Further information may be obtained from Dr. Bérillon, 14, Rue Taitbout, Paris.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.

A breakfast was given by the Scottish Branch of this Association, in the Edinburgh Café, on Wednesday, July 27th. There were over 100, including ladies, present. Professor Simpson, Edinburgh (one of the Vice-Presidents), presided. There were also present to Rev. Dr. Whyte, Moderator of the Free Church Assembly, Professor Chiene, Mr. Lockhart, Mr. A. G. Millar, Dr. P. A. Young, Edinburgh, and other well-known physicians and surgeons.

The Chairman said there was no doubt room for temperance organisation among medical men. He believed that most of those present were teetotallers on the Pauline principle—for the sake of their medical brethren.

Dr. Sims Woodhead said that the addresses given before the Edinburgh Medical Temperance Association connected with their University by such men as the President of the College of Surgeons (Professor Chiene), by Professor Fraser, by Dr. Clouston, Mr. Millar, and others, had in his time set men thinking on this matter in such a way that even those who originally had no leanings towards total abstinence had come to the conclusion that from all points of view, under present conditions, total abstinence from alcoholic beverages was the best line to take. Only a few days previously he had been accused, might he say? by a very great personal friend of saying that alcohol was never of any use as a medicine. He could not remember ever having made such an unscientific because unproved statement. What he had often said was that doctors did not use alcohol as they used other drugs. It was against such use that they protested. If alcohol was a drug it should be treated as such and prescribed under ordinary pharmacopœial rules and not loosely and indiscriminately. Let this be done and they would soon see how the use of alcohol in the treatment of disease would be reduced. They as total abstainers were not there to dictate to their medical brethren, each of whom was responsible for the treatment of his own cases, but they were there to ask them to use alcohol only in such cases where they deemed its use absolutely necessary, and in view of the terrible dangers associated with its use in certain cases, only when no other drug in the *Pharmacopœia* would serve the same end. This was the principle on which they as medical men and personal abstainers wished to carry out their work.

Dr. Clouston said he thought those of them who were not teetotallers, like the President of the College of Surgeons and himself, might really and truly help the temperance cause. No one could possibly see sadder or more terrible instances of the effects of alcohol on the individual and the race than he saw in his practice. Therefore he felt that any possible help he or anyone who had his experience could give, would be willingly and heartily given to educate the public as to the actual effects of alcohol on the brain and mind. From the medical and scientific point of view they had this great absolute physiological fact before them, that the first thing alcohol did in 99 cases out of 100 was to affect the mental working of the brain of the man who imbibed. The effect of a small quantity of alcohol might be to produce a certain happiness and cheerfulness in the man who took it; but as scientific men they had to ask what was the ultimate or the great general effect not the immediate effect and every physiologist knew that the first mental effect of alcohol was to diminish the power of the brain, which they called inhibition or control. That being so, surely their duty as scientific men was to say to those persons who were especially weak in the power of self-control that they should be most careful in regard to alcohol. They all knew that the power of self-control or inhibition was the last to be developed, and, in fact, the doctor should preach in season and out of season that no man should take alcohol until his beard had grown. They should also remember that at the very end of life there was a period when the self-control was very easily affected. He next mentioned that there were many people handicapped in the race of life by a neurotic and insane heredity. Those people were especially liable to be taken hold of by alcohol, to have their control diminished, and to fall into that terrible category of something like 20 per cent. of their insane people.

Dr. Ridge (London), speaking of the Association, said that it had been growing from its commencement. They had now some 460 or 470 members, and over 400 students.

Dr. Connel (Peebles) agreed with Dr. Wilson that flogging was the thing for the early drunkards. He also agreed with the proposition of the President of the British Medical Association (Sir Thomas Grainger Stewart) that he laid down when speaking on another subject, that when the conscientious scruple was without doubt proved to injure society, then society had a right to set aside that scruple and enforce obedience. He said the same with regard to the habitual drunkard.

On the motion of Dr. P. A. Young, the speakers were thanked, and the proceedings closed with the Benediction.

ANNUAL PATHOLOGICAL MUSEUM.

An exhibit which attracted a considerable amount of attention was added to the Annual Pathological Museum after the notice which appeared in the British Medical Journal of July 30th was written. It consisted of a series of casts made by a new method devised by Mr. E. A. Peters, F.R.C.S., of Toronto, a complete description of which we hope to publish soon.

Through the courtesy of the Royal College of Physicians, Mr. Peters was enabled to demonstrate his method in their laboratory during the meeting. The object to be cast is sprayed over with a layer of melted paraffin with the aid of an electro-motor engine, and is caused to solidify rapidly by means of a jet of ice-cold water. In this way very fine impressions are obtained, and the mould is readily separated from the object, the plasticity of the paraffin obviating any difficulty in this direction due to "undercutting." To give the paraffin mould rigidity and to facilitate handling it is backed up with plaster-of-paris. From the mould thus obtained a cast is taken by pouring in plaster-of-paris in the usual way, and after this has set the cast is removed by placing the whole in hot water till the paraffin becomes plastic, when the outer layers of plaster are chipped away without risk to the cast.

In addition to various clinical and pathological objects cast by this method Mr. Peters took casts of the heads of several of his friends in Edinburgh.

THE MEDICAL PROFESSION AND CONTRACT PRACTICE.

Cork Medical Benefit Association.

It is satisfactory to find that the firm attitude taken by the profession at Cork has borne good fruit.

The *Cork Examiner* reports the first general meeting of the Cork Medical Benefit Association, which is organised entirely by the local profession. According to the Chairman's address the Association is in a very flourishing condition, and has every prospect of future success. We understand that of the four practitioners introduced into Cork in opposition to the local medical men only two remain, and that the rival societies are not exactly flourishing.

The foundation stone of the "Lung Sanatorium" which is to be built at Belzil, near Berlin, was laid on August 2nd in presence of the chief members of the Committee and many influential patrons. In support of the funds a public open-air *fête* is to held on the 31st of August in one of the Berlin suburban parks.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 6th, 1898.

THE ANNUAL MEETING OF 1898.

Writing last week, while the annual meeting in Edinburgh was still in progress, we were able to say that it would be a memorable occasion to all who were so fortunate as to take part in it, and the concluding hours of the meeting only confirmed and strengthened this conviction.

Many circumstances combined to render the Edinburgh meeting from every point of view one of the most successful which the Association has ever held. Edinburgh is a great medical centre, and is always regarded with loyal affection by those who have been introduced to the study of medicine within its walls. The great traditions of the Edinburgh Medical School are so well known to the whole medical profession that all were certain that the scientific work of the meeting would be of more than ordinary distinction; while the beauty of the city itself, and of the surrounding country, not less than the many historical and literary associations of the Northern Athens appeal to the love of Nature and of literature for which our profession is still distinguished.

The meeting, as was expected, was attended by a very large number of members, who found that the arrangements made by the local Committee had been thoroughly well thought out. The welcome extended by the profession in Edinburgh was indeed remarkable for its warm-hearted unanimity. The Professors of the University, the teachers of the Extramural school, the Royal Colleges of Physicians and Surgeons, the general body of the profession in and around Edinburgh, and the students of the Medical Faculty all showed in various ways their interest in the work of the Association, and all contributed their part to the success of the meeting.

It is too soon as yet to estimate fully the value of the work done at the general and Sectional meetings. The address of Sir Grainger Stewart, to which we have already referred, was generally felt to be one of the most important ever delivered from the Presidential chair. In a manner appropriate to the occasion he passed in rapid review some of the public matters which at the present time are most urgently demanding the attention of the profession, and the opinions he expressed will long afford matter for reflection. To the admirable addresses of Professor Fraser and Professor Annandale we have already ventured to call the special attention of our readers, and in another part of the British Medical Journal will be found Sir John Batty Tuke's valuable address on Psychological Medicine.

The general meetings were on the whole remarkably free from those regrettable ebullitions of feeling on the part of a few members which have on some previous occasions tended to make these assemblies somewhat ridiculous in the eyes not only of the more temperate members of the profession itself, but also of that section of the public which takes a malicious pleasure in belittling the profession by finding in these disputes another evidence of how "doctors differ." The report of the Council and of the Committees gave rise to comparatively little debate, and the question of medical defence, which has excited so much strong feeling, was discussed if with some vehemence yet with good humour, and the decision of the Council to take no further action in the present state of opinion was accepted.

In spite of the fact that there was the large number of sixteen Sections, they were well attended, and, as will be gathered from the summary account published in this and the preceding number of the Journal, and as will be more fully perceived when the full reports, which will appear during the next few months, are published, many valuable discussions took place.

Ars est celare artem; but the completeness of the arrangements, which provided for every hour of the Edinburgh week something of interest, must not render us unmindful of the thought and care with which for months past every detail had been prepared, and every difficulty foreseen. Sir Thomas Grainger Stewart not only used his great influence to ensure to the Association a brilliant reception, but himself took an active and leading part in the elaboration of the arrangement. He had an able lieutenant in Dr. R. W. Philip, with whom was associated as co-Secretary of the Executive Committee Mr. Shaw M'Laren. To these gentlemen the Association is much indebted, especially perhaps to Dr. R. W. Philip, upon whom, as Secretary of the Edinburgh Branch, much of the preliminary work fell, and who showed throughout organising ability of a high order, and a tact and discretion beyond praise. The large number of members who attended the meeting, some nineteen hundred in all, put a severe strain, not only upon the general arrangements under the immediate control of the Executive Committee, but also upon those for which were responsible the Reception Committee of which Dr. Gibson was Chairman, and Mr. George Mackay and Dr. Logan Turner Secretaries; the Local Entertainments Committee, of which Sir Henry Littlejohn was Chairman and Dr. Stodart Walker Secretary; and the Soirée Committee, of which Dr. Argyll Robertson was Chairman and Dr. James Ritchie Secretary. The organisation thus ably directed was fully equal to the calls upon it, and the reception given by the Local Committee in the M'Ewan Hall was not the least successful of the many successful social functions of the week. The large number of foreign guests who were present in Edinburgh found that excellent arrangements had been made by the special Committee over which Professor Simpson presided, and of which Dr. Lovell Gulland was the energetic Secretary, to facilitate their taking part in the scientific work and social relaxations of the meeting.

Again, even the most scientific and enthusiastic of us require to be fed, and the arrangements made by the Com-

mittee, of which Sir John Batty Tuke was Chairman, and Mr. Alexis Thomson Secretary, deserve a special word of praise. By the courtesy of the Students' University Union, their fine building close by the University was placed at the disposal of members, and was largely used. The annual dinner, also arranged by this Committee, not only brought together a large assembly, but did justice to the culinary reputation of Scotland. Under the skilful and genial presidency of Sir Grainger Stewart the proceedings passed off with much distinction, and the members present were gratified that the local Executive had given them the opportunity to meet, and in some cases to hear many distinguished foreign guests. The applause which greeted the Lord Provost of Edinburgh showed how highly the hospitable reception extended by him and by the Corporation, in the name of the citizens of Edinburgh, was appreciated, and members were equally ready to show to the President himself that they were not unmindful of his efforts on their behalf.

THE ADDRESS IN PSYCHOLOGY.

Nulla mens insana nisi in corpore insano is the pithy paraphrase in which the President of the Psychological Section epitomises the conception "of all the conditions comprised at the present day under the generic term 'insanity.'" The marvellous revelations of the microscope, on which Sir John Batty Tuke discoursed so eloquently, have elucidated much of the structure of the nervous system, and even promise some understanding of its pathological changes at no very remote period. Clinical research also, for which, as he pointed out, our asylums are now distinguished, has established the principle that "all mental symptoms are produced by the action of the same causes of disease which act on other systems than the nervous; so that the clinician now adds to the old symptomatic nosology, etiologic terms indicative of the special causation."

The pathological and clinical advances already made have, indeed, brought the treatment of mental diseases within the fold of general medicine, from which it has been, until quite recently, practically excluded. That this will be of great mutual benefit there can be little doubt, for while the specialist of insanity has still much to learn as to the action of general causes of disease in producing cerebral disorder, he has still more to teach the general physician as to the influence of the nervous system in affecting other bodily systems. The conditions of asylum treatment give opportunities for the observation of disease and of the results of treatment which private practice, and even hospitals, do not furnish.

The thoroughly equipped pathological laboratories of the London County Council and of the Scottish conjoint asylums, as well as many asylum laboratories, such as that at Wakefield, promise valuable aid in pathological research. The number of beds in the asylums in this country is largely in excess of that in the general hospitals, and putting all these facts together, it must be conceded that psychiatric medicine, if for brevity we may use a term objected to by the orator, promises to take a very prominent part in the fabric of general medicine.

Sir John Batty Tuke sketched briefly the vast progress that has been made since Gerlach and Lockhart Clarke gave such an impetus to the section cutting and staining from which so much has resulted. He selects, as the most interesting problem of the moment, that of the "demonstration of the mechanism by which impulses are carried from the periphery to the cortex and from cortex to the periphery." It is well to remember that the nerve cell was until recently regarded as the centre of function, and credited with powers little short of omnipotence and omniscience; to-day, as Sir John Batty Tuke remarks, it is only regarded as the "vital centre" of the neuron. This should give us pause, lest in the admiration of the newly recognised "neurons" and "synapses" the physiological conditions under which alone function is possible should be ignored, and lest these, too, should have ascribed to them powers and potentialities which they may not independently possess.

A nosology of mental diseases founded on morbid anatomy is perhaps more distant than Sir John Batty Tuke hopes. The changes hitherto recorded in the nerve cells have yet to be very carefully investigated before they can be accepted as verities. Many of these changes may very probably be found to result from the chemical processes used; others even in the freshest methods may be due to mere mechanical injuries in preparation. The identification of the changes that are pathological from those that are accidental or artificial will still leave open for solution the problems of the order of their development—whether primarily from the results of functional changes in the structures themselves, or secondarily as a consequence of insufficient nutrition or of defective depuration, or various possible combinations of these disorders of the physiological nutritional processes.

The changes already noted as being produced in the nervous structures by artificial toxic conditions and by the influence of fatigue give ground for hope that much may be done by them and similar experimental methods in elucidating these most complex problems; but so intricate are the possible variations in the disorder of the physiological nutritive processes which culminate in definite pathological change that a patho-nosology from histological methods alone must long remain incomplete.

Turning from his brilliant review of the progress in the pathology of insanity, Sir John Batty Tuke dwelt on the great advances that have been made in treatment. This he illustrated by the very general adoption in asylums of the plan of placing the acute, recent, and presumably most curable cases under the most favourable conditions. This has long been carried out in all asylums by the setting apart of special wards for recent cases, but of late special hospitals detached from the body of the asylum in which the acute can be treated apart from the chronic form of insanity have been established with great advantage.

In dwelling on the importance of the early treatment of insanity Sir John Batty Tuke reiterated the oft-repeated opinion of all competent observers. Statistics, it is pointed out, show that the increase of chronic insanity occurs among the poorer classes and not amongst the rich. This is rightly ascribed to the advantages which the well-to-do possess in being able to obtain ample treatment in the early stages. Many forms of insanity, indeed, should rank

largely as preventable diseases; and the prevention, it is now fairly obvious, can only come from treatment in the incipient pre-asylum stage of the disorder.

There can be little doubt that the legal hindrances to treatment in England to which Sir John Batty Tuke alluded constitute one of the gravest causes of the increase of insanity. Nearly every practitioner can quote cases in which, owing to this cause, he has had to wait until the patient was sufficiently insane to be certified, until in fact the patient had reached a stage of his disorder in which the hope of cure was considerably reduced.

"Red-tape restraint" is without doubt the greatest hindrance to the preventive and even curative treatment of the insane both before and after admission to asylums. The time has arrived when the right of the insane to proper care and treatment should be asserted in opposition to the "liberty of the subject" theory, by which so much harm has been inflicted on the lunatic with such terrible results.

The increase or accumulation of the insane in our asylums is becoming so grievous a burden on the community at large that the popular mind is ripe to consider seriously and practically whether there must not be something wrong in a system which results in producing such appalling results, in spite of an expenditure that is prodigious and institutions that are colossal.

The rate of increase of the insane, of asylums for their care, and of expenditure on this account, is indeed giving every ratepayer of intelligence grave reason for thought. The most striking anomaly in the whole thing is that the Lord Chancellor is the head of this vast machinery for the treatment of the insane. Hence it is that the perennial farce of the inspection of lunatics and of asylums by barristers is kept up. These gentlemen are of undoubted capacity in their own profession, but this affords no kind of guarantee that they are fitted to supervise and direct the treatment of the insane.

The legal hindrances to treatment, and the red-tape restraint of both patient and physician, of which so much complaint is being made, are the necessary result of so grotesque an anomaly as that of lawyers directing medical matters, and the first and most important reform necessary is the constitution of a medical authority to preside over asylums and all matters connected with the treatment of the insane, the property of lunatics very rightly remaining under the supervision of the Lord Chancellor.

The appointment of a Commission, composed of alienist and other physicians, with lawyers and Poor-law administrators, as suggested by Sir John Batty Tuke, is therefore greatly to be desired. Lunatics are accumulating at a rate that alarms and astonishes all connected with them, and it is quite time that the most exhaustive investigation should be made of the causes of the accumulation and a conclusion arrived at as to the best system that can be devised for the treatment and prevention of insanity.

Fraulein Dr. Katharina van Tusshenbroek has been appointed Professor of Gynæcology in the University of Utrecht.

Medical Magistrate.—Dr. Thomas Fisher, of Garstang, has been appointed a magistrate for the county of Lancaster.

ANNUAL MEETING.

A highly successful smoking concert was given by the members of the Royal Edinburgh Infirmary Residents' Club in the Hall of the Students' Union on Monday, July 25th. The popular president of the Club, Professor Chiene, took the chair (which had been at first temporarily filled by the able Secretary, Dr. Claude Ker). An excellent programme was thoroughly appreciated by a large and enthusiastic audience. Many of the performers were old favourites who had sung in former years at the Kitchen Concerts of the Royal Infirmary. Among the more popular items were the songs of Professor Rutherford, Dr. Hepburn, Dr. Kennedy, Dr. Peart Thomas, Dr. Porter, and Dr. Bunday. The recitations of Dr. Wilson Shiels were also highly appreciated. Professor Chiene introduced as the guest of the evening Professor Osler of Baltimore, whose health was drunk enthusiastically by all present. Dr. Osler returned thanks in an amusing and complimentary speech. The proceedings fittingly terminated by all present joining in singing "Auld Lang Syne." It was felt by all that Dr. Claude B. Ker's was a happy idea for the eve of the meeting of the Association. A very considerable number of members had arrived on Monday afternoon, and a more delightful way of spending their first evening could not have been devised. The decorative design on the programme was executed by Mr. F. M. Caird.

We are informed that on Thursday, July 28th, a special dinner was held by the medical women attending the British Medical Association meeting in Edinburgh, and 42 practitioners were present on the occasion. The only non-medical person invited was Miss Louisa Stevenson, whose many services to the cause of medical education for women were thus acknowledged. Dr. Sophia Jex-Blake was requested to take the chair. After an enjoyable dinner the waiters were requested to withdraw, and Dr. Jex-Blake remarked that as no programme had been handed to her she would take the responsibility of proposing three toasts, all of which were received with acclamation: (1) "The Secretaries," who had proposed and carried out the arrangements for the dinner so successfully at 24 hours' notice. To this Dr. Jane Walker (London) responded. (2) "The Guest of the Evening," to which Miss Stevenson responded by expressing her very great pleasure in being present on the occasion, and her conviction that it was in the struggle in Edinburgh nearly 30 years ago that the battle of medical education for women was really fought and won, and that but for that struggle no such assemblage as the present would have been possible. Next came "The Health of Dr. Garrett Anderson," the first woman who had obtained a British diploma, to whom all present owed a debt of gratitude. Dr. Garrett Anderson responded cordially, but remarked that all was not yet won, and that she hoped to see medical women on a more absolute equality with medical men than was yet the case. Dr. Florence Boyd (London) then proposed "The Health of Dr. Jex-Blake," and a vote of thanks for her acceptance of the chair. Dr. Alice Ker (Liverpool) supported the motion, as did also Dr. Scharlieb (London) and Dr. Mary Marshall (Cannes). Dr. Jex-Blake expressed her very great pleasure in being present on the occasion, and begged the younger women to remember that, if the elder women had laid the foundation stones, the succeeding generation must build the walls and complete the edifice. She congratulated those present on their noble profession, and expressed a conviction of the great value of such meetings which brought together medical women from all quarters, doing very various and most successful work, and enabled them to strengthen each other's hands in all high endeavours on behalf of humanity, for the advancement of science, and for mutual help and encouragement. On rising from table, most of the company went on to the reception at the College of Physicians. The following is a list of those present: Elizabeth Garrett Anderson, M.D.;

Louisa Garrett Anderson, M.B.; Rosa Ball, L.R.C.P.andS.; Elizabeth Baker, L.R.C.P.andS.; Florence Boyd, M.D.; Grace Cadell, L.R.C.P.andS.; Evelina Cargill, L.R.C.P.andS.; Ursula Chaplin, M.B.; Anne Church, M.B.; Edith Collett, L.R.C.P.andS.; Rosina Despard, M.D.; Mary Douie, M.B.; Ella Flint, M.B.; Alexandra Geddes, M.D.; Sarah Gray, L.R.C.P.and.S.; Elizabeth Gilchrist, L.R.C.P.andS.; Lilias Hamilton, M.D.; Elizabeth Henderson, M.D.; Jane Henderson, M.D.; Mary Handson, L.R.C.P.andS.; Elsie Inglis, L.R.C.P.andS.; Sophia Jex-Blake, M.D.; Alice Ker, M.D.; Mary MacDougall, M.B.; Grace Mackinnon, L.R.C.P.andS.; Agnes McLaren, M.D.; Alice McLaren, M.D.; Mary Marshall, M.D.; Alice Moorhead, L.R.C.P.andS.; Isabella Mears, L.K.Q.C.P.I.; Mary Nannetti, L.R.C.P.andS.; Elizabeth Pace, M.D.; Beatrice Russell, M.D.; Mary Scharlieb, M.D.; Emily Thomson, L.R.C.P.andS.; Margarett Todd, M.D.; Alice Umpherston, L.R.C.P.andS.; Isabel Venters, M.B.; Jane Walker, M.D.; Amy Weir, M.D.; Beatrice Harrison, M.D.; and E. L. Ewan, L.R.C.P.andS. All but three of these ladies are members of the British Medical Association.

Among the numerous functions of Thursday afternoon was a reception by the President and Fellows of the Royal College of Physicians in their Hall, 9, Queen Street. In connection with this reception there was to have been a garden party in the adjoining Queen Street and Abercromby Place Gardens. Unhappily Thursday was the one wet day of the week, and the garden party portion of the entertainment with the band and pipers had unwillingly to be cut out; in consequence the attendance was much smaller than it would otherwise have been. Over a thousand invitations had been issued. The guests were received by the President, Sir John Batty Tuke, by the Vice-President, Professor A. R. Simpson, and by the Treasurer, Dr. P. A. Young, in the smaller library hall. Refreshments were served in some of the rooms of the library. Amongst the guests were Professor Ottavio Morisani (Naples); Dr Farquharson, M.P.; Sir William T. Gairdner, K.C.B., Glasgow; the Lord Provost of Edinburgh, and Sir James Russell.

On Thursday night, the night of the annual dinner, the Local Ladies' Committee gave one of the most delightful entertainments of the week in the Royal College of Physicians. The form was that of a reception and *conversazione*. The guests were received by Lady Grainger Stewart, Mrs. Underhill, Mrs. Byrom Bramwell, and Mrs. Argyll Robertson, and a large and brilliant company was present. The various rooms were charmingly decorated, a string band played in the great hall, and there was a continued concert in an adjoining hall; a large number of ladies and gentlemen gave themselves up entirely to assist in promoting the enjoyment of the visitors. In this they were most successful. None of the entertainments was better organised than this, both as to the mode of invitation and the manner of the entertainment.

On Thursday afternoon the Senatus Academicus of the University of Edinburgh held a largely attended reception in the beautiful library hall of the old University buildings. The commencement of the proceedings was announced by two buglers who stood at the top of the grand staircase, and the guests were then ushered into the hall and received by some of the members of the Senate clad in their robes of office. The recent redecoration of the magnificent old hall has been most effectively carried out, the lighting being especially successful, for whilst there is no glare the light is sufficient to illuminate every part of the hall. Some of the old manuscripts and painted missals, displayed in cases in the recesses, are of the greatest interest, a case of Hebrew scrolls on goat skin being especially noteworthy. By half-past 4 the hall presented a very animated appearance, and the guests evidently thoroughly enjoyed the music discoursed by the band. Refreshments were provided in one of the lower library rooms, and the unfortunate occurrence of a heavy downpour of rain made the warmth and comfort of the interior all the more appreciated.

At Surgeons' Hall in Nicolson Street the Royal College of Surgeons received a large company of guests on Thursday afternoon. Professor Chiene and Sir John Struthers, looking rather pale from his recent illness, warmly greeted the guests on their arrival, and the rooms quickly filled. After partaking of tea many of the company made their way to the Museum to examine the fine anatomical and surgical collection of the College. Mr. Cathcart did the honours of the Museum, and amongst the guests there were many who showed the keenest interest in the specimens.

The hall of the Royal Medical Society of Edinburgh presented quite a lively scene between five and six on Thursday, when a reception was held in honour of the visit of the Association. The guests were received by the President, and they then passed into the hall, where refreshments were provided, and where, in a small room opening out of the large hall, a string band played selections of music. The reception by the Medical Society was by no means one of the least successful of the many successful functions that have marked the Edinburgh meeting.

On Thursday, July 28th, the Committee of the Medical, Surgical and Hygienic Exhibitors' Association gave a smoking concert at the West-End Café, Princes Street, under the chairmanship of Dr. Norman Walker, Hon. Secretary of the Exhibition Committee. There was a large company present, including many members of the medical profession. A varied and interesting programme was successfully got through.

In connection with the visit of the British Medical Association to Edinburgh the Executive Committee of the Victoria Hospital for Consumption, Craigleith, Edinburgh, held a garden party in the hospital grounds on Saturday afternoon. The Chairman, Sir Alexander Christison, received the guests, who spent a very pleasant afternoon, the weather being delightfully fine. Light refreshments were provided in the grounds. The arrangements of the hospital were studied with much interest, as all the patients are systematically subjected to the open-air treatment. The arrangements were fully described by Dr. R. W. Philip in the Journal of July 23rd, page 218, but it was extremely interesting to observe by what simple means the desired ends were obtained, and how completely the patients themselves appreciated the value of the method and acted up to its spirit. Some of the old cases which visitors to the hospital were able to see were really remarkable; in particular we may mention two men admitted into the hospital with tuberculous ulceration of the epiglottis. In one of these cases tracheotomy had to be performed; in the other this was avoided, but the patient was voiceless and suffered from severe dysphagia. Not only are both men still alive between two and three years after the date of their admission, but the ulceration has healed, swallowing is no longer painful, and the men are both in fairly good health, and are able to do odd jobs in the garden. The hospital is a small one, but it demonstrates the ease with which the method may be applied even in a climate such as that of Edinburgh, which is not particularly genial. The greatest credit is due to Dr. R. W. Philip and his colleagues for the way in which they have worked out a practical system, and have set an example which will doubtless be followed

before long in many parts of the country, and which, as we pointed out some months ago, has in fact already been applied at several places in England.

The amount collected in St. Giles Cathedral, Edinburgh, at the opening service of the recent annual meeting of the British Medical Association was £51 8s. This will be equally divided between the British Medical Benevolent Fund and Epsom College.

The garden party given by the Earl and Countess of Hopetoun on Friday afternoon was one of the most enjoyable functions of the week, and those members who had not previously seen the beautiful grounds of Hopetoun House will always look back with pleasure upon having been enabled by the kindness of Lord and Lady Hopetoun to see them under almost perfect conditions. The day was one of those rare ones when the alternation of light and shade give beauty to the near landscape, whilst the light north wind rendered the distant hills clear and distinct, the faint mist rising from the water at the same time giving to them the colours of a glowing sunset. The views from the terrace walk overlooking the Forth were seen to perfection; out to sea the Bass rock was plainly visible, whilst the picture seen in the opposite direction of Ben Lomond, Ben Ledi, and peak after peak of the Highland Hills, was one that will long linger in the memories of those who saw it. Most of the guests drove back to Edinburgh along the picturesque Queensferry Road, past the Forth Bridge, Dalmeny, and the Dean Bridge, and so had an opportunity of seeing some of the prettiest country in the immediate vicinity of the city.

The festivities of the meeting ended on Friday evening, when a reception and ball were given by the Lord Provost, the Magistrates, and Council of the City of Edinburgh, in the Music Hall and Assembly Rooms, George Street. About 800 tickets had been issued to the members of the Association at noon on Wednesday, July 27th, and those who were in the throng competing for the invitation will not deny that the anxiety to be present at the ball was very keen. Unfortunately the space at the disposal of the Corporation was not equal to entertaining all who desired to attend. Some 400 citizens, chiefly those who had been the hosts of the visitors, were also invited. The hall had been artistically draped, and the comfort of the guests had in other ways been most amply provided for. The reception by Lord Provost Mitchell Thomson and Mrs. Mitchell Thomson began at 8.30, and Sir James Russell, Bailies Mackenzie, Hay, Steel, and Gulland, and ex-Bailies Dunlop, Grieve, and Gray, assisted in the reception. Dancing soon afterwards commenced, and was carried on simultaneously with great spirit in the Music Hall and Assembly Rooms, to music by Mr. Dambmann's band. The rooms were pleasantly full, but never overcrowded. Ex-Bailie Dunlop took charge of the arrangements. The chief officers of the Association and their ladies were present, and the Comte de Franqueville and M. Léon Geoffray (of the French Embassy to the Court of St. James), happening to be in Edinburgh, were cordially welcomed by the Lord Provost. One feature of the evening was the dancing of two Scotch reels, which was witnessed with much interest, especially by the visitors from all parts outside Scotland. Carriages were ordered at 1.30, to suit the convenience of those starting early on Saturday upon various excursions.

KITCHEN BACTERIOLOGY.

A Königsberg doctor, *Privat-docent* Dr. Jäger, recently gave a course of hygiene and bacteriology for ladies, which included practical exercises in applied bacteriology, for instance, in the preparation and preservation of food by methods used in bacteriological work. At the close of the lectures the hearers were allowed to invite their friends to an exhibition of kitchen products—some raw and some cooked—that had remained in a warm room for periods varying from five to sixteen days, and which were all found perfectly fresh and quite unchanged in appearance and taste. Nor had any complicated procedure been required to attain this result. The method simply consists in: (1) The use of vessels with well-fitting, overlapping lids, instead of the inside lids used in kitchens all the world over, which allow stray bits of matter that may adhere to their rim to fall into the food; (2) avoidance of opening the vessels in which the food was kept, or, where this was indispensable, careful manipulation as in bacteriological work; and (3) the use of cotton-wool as a covering. Cotton-wool lids had been specially prepared to fit the wide tops of the food vessels; they consisted of a circular disc of cotton-wool, tightly held between two metal rings, the outer of which formed the overlapping rim of the lid. It is to be hoped that Dr. Jäger will find imitators, and that "kitchen bacteriology" may become a study with ladies. Certainly there is much room for improvement in the old-fashioned kitchen methods to which our "family plain cooks" cling with such desperate energy, and which they seem to regard with an almost superstitious reverence.

THE PRINCE OF WALES.

We are pleased to be able to state, on authority, that the removal of the Prince of Wales to Cowes has been followed by the most satisfactory results. His Royal Highness is not only better in general health in consequence of the change, but the local condition has also continued to make steady progress. The actual removal took place without a hitch, and the whole of the elaborate arrangements that had been made were carried through as anticipated. The royal patient experienced, we are informed, no more discomfort than would attend his being carried from one side of his bedroom to the other.

AN INSTITUTE OF PUBLIC HEALTH FOR EDINBURGH UNIVERSITY.

Professor Sir William Turner has made the following communication to the press:

University of Edinburgh, July 27th, 1898.

Sir,—At this time, when matters affecting the profession of medicine in its relations to the health of the community are filling so large a place in the public eye in this city, I wish to be allowed to state in your columns that, through the munificence of Mr. John Usher, of Norton, an Institute of Public Health is to be built and equipped for the teaching of the subject, and for the prosecution of research, worthy of the University and of the Medical School of this city.

Mr. Usher has already shown his practical interest in sanitary science by completing the endowment of the Chair of Public Health, which was initiated by the late Mr. A. L. Bruce, and added to by members of his family and firm, and to which an appointment was made by the University Court a few days ago.

Mr. Usher is now about to provide the Professor with a building and equipment to enable him efficiently to carry on his work, so as to meet the requirements of this rapid developing and fundamentally important branch of medical science.—I am, etc.,

Wm. Turner.

We understand that the new Institute of Public Health is to be erected on the site of the synagogue recently purchased by the Town Council of Edinburgh, quite close to the Medical University and the Students' Union.

DISEASES OF THE PHILIPPINE ISLANDS.

According to the special correspondent of the *Medical News*, Manila is not a place that would be chosen as a place of residence by anyone seeking a pleasant climate and a comfortable life. The climate is very trying, and the town is filthy beyond description. The population is about 250,000, consisting of 67 per cent. pure natives, 30 per cent. Chinese and Chinese half breeds, and 3 per cent. Spanish,

with a few other Europeans. The diseases most common in the Philippine Islands are dysentery, malaria, tuberculosis, and syphilis. Dysentery is, however, less frequent and less virulent in Manila and other parts of the Island of Luzon than in some of the islands of the group. Malarial and other fevers are prevalent during the rainy season, which begins about July 1st, and lasts until the end of October. Epidemics of small-pox and measles are of almost yearly occurrence. Among the native and Spanish troops syphilis is shockingly prevalent; in the military hospitals about 20 per cent. of the inmates are generally found to be suffering from that disease. Tuberculosis and bronchitis are very common among the natives, and many such cases are always to be found in the military hospital of Manila. It has been estimated that 75 per cent. of the native troops in the hospital have one or other of these diseases. Beri-beri also claims many victims. The European residents complain of a tendency to "scruff" which develops after a short stay in the climate. The natives believe that the eating of the flesh of monkeys is a preventive. In the forests of Luzon there are a great many monkeys, and the native believes that stewed monkey is an infallible cure for skin diseases of all kinds. The writer says there are few dishes more delicate than young monkey stuffed and baked, though it looks very much like a small brown baby. The cities as well as well as the jungles swarm with snakes, frogs, lizards, landcrabs, centipedes, tarantulas, large poisonous spiders, locusts, beetles, and ants. The most dreaded of the snakes are those called by the natives *alupong* and *daghong-paly*; the bite of either of these reptiles is said to be fatal if not immediately cauterised. Every pool of stagnant water is alive with leeches, and in the forests there is a tiny leech which has a disagreeable way of unexpectedly jumping into one's eyes. Mosquitos are very troublesome, but there are few crawling insects about because they are destroyed by the newt and by a species of lizard called *chacon*.

UNREGISTERED DENTISTS AND THE ADMINISTRATION OF ANÆSTHETICS.

Dr. R. C. Buist, Honorary Secretary of the Dundee and District Branch of the British Medical Association, has forwarded us the following copy of a resolution received from the Registrar of the General Medical Council relative to the administration of anæsthetics by registered medical practitioners for dental operations performed by persons not registered under the Dental Acts, to which the Council of the Branch asked him to draw attention:

That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible, and recommend that if a charge of "covering" in connection with such administration of anæsthetics were brought before the General Medical Council it should be entertained and investigated.

THE CARMICHAEL PRIZE ESSAYS.

In the Irish Courts the Master of the Rolls recently delivered judgment on a question brought before him in reference to the Carmichael Trusts and 52 George III, c. 101. Application was made on behalf of the College of Surgeons that the existing scheme for the management and administration of the Carmichael Prize Fund, created by the will of the late Dr. Carmichael, might be altered, and a new scheme for the management of the fund should be settled by the Court. The late Dr. Carmichael, by his will of 1849, bequeathed to the College of Surgeons a sum of £3,000, and directed that the interest arising from this sum should be applied in giving every fourth year a premium of £200 for the best essay, and £100 for the second best essay on medical education; and he directed that the authors of such essays should make suggestions as to the improvement of the profession with a view to rendering it "more useful to the public and a more respectable body than it is at present." From time to time the College of Surgeons advertised in the public press for essays, but generally the essays submitted were deemed to be of insufficient merit, and no prizes were awarded. In 1866 the first prize was awarded to Dr. Mapother, and the second to Dr. Ashe. In 1879 the prizes were awarded to Mr. Rivington and Dr. Laffan, and in 1887 they were again awarded to the same two gentlemen. Since then no advertisements have been inserted for further prizes, the income of the fund being insufficient to pay for the printing of the 700 copies of each which were directed by the testator to be printed, and copies sent to Cabinet Ministers, heads of colleges, etc. The cost of printing each essay was on an average £100. One of the essays exhibited in court ran to 1,200 pages. The Council of the College of Surgeons were, it was stated, of opinion that the essays were doing no good, and they proposed that the income of the fund should be apportioned between the College of Surgeons and the Royal Medical Benevolent Fund Society of Ireland, the College of Surgeons to get three-fourths of the income, and the other body one-fourth, the Royal Medical Benevolent Society having been mentioned by the testator as the body to get the £3,000 in the event of the College of Surgeons not carrying out the trusts named in the "sequel." The College of Surgeons proposed that their three-fourths of the income should be used in awarding every second year to a licentiate of the College a travelling prize of £100, in order to enable the successful candidate to visit hospitals in Vienna and other capitals on the Continent. Affidavits in support of the application were made by Sir Charles Cameron, Sir William Thomson, Sir William Stokes, Sir George Duffey, Sir William Thornley Stoker, Dr. Heuston, Dr. Jacob, Dr. Story, and other leading members of the Colleges of Surgeons and Physicians. The Master of the Rolls said the original gift in this will had not in any legal sense at all failed, and except as regarded the amount of money now available for the trust, it appeared to him quite possible to carry out the instructions of the testator, and he was of opinion that he had no power to devote the testator's money to a purpose which he did not contemplate or sanction. However, as the income of the fund was now insufficient to pay prizes of £200 and £100 every fourth year, including the large expenses of printing prize essays, and owing to the fact that the College has no fund to pay examiners of those essays, he thought some modification of the existing scheme was necessary. He would, therefore, refer the matter to chambers for an inquiry as to what alterations in the scheme were necessary to make it practicable and workable.

THE PREVENTION OF WOOLSORTERS' DISEASE.

The recent death and inquest at Bradford from this too frequently recurring but entirely preventable disease have caused some discussion in the Bradford and Leeds papers. The practical difficulties in dealing with the alpaca wools, in which the anthrax bacillus is chiefly found, are considerable. Naturally expensive fans and washings, steam sterilisation of dust, and other suggested means of preventing infection, are resorted to with an unwillingness directly proportional to their costliness, and to the smallness of the risks attendant on their neglect. It has been stated that the incidence of woolsorters' disease being as much an accident of employment as say a fall down a lift, the Compensation Act will apply; and that the dread of having to pay some hundreds of pounds to the family of a victim will deter employers from neglecting the preventive measures which science has prescribed. Indeed, the Bradford Trades Council suggests that if the disease does not at present come under the Act, as Mr. Chamberlain, we believe, contends, it should be made to do so by the Legislature. It must, however, be remembered that a merely pecuniary penalty can be insured

against. If the means to be adopted are expensive, and have to be applied to every factory, while the risk is only occasional, the premium necessary to cover the latter may be so small that it might be preferred to the erection of the necessary apparatus. Were the penalty for neglect, however, a fortnight in gaol without the option of a fine, the moral sense of some manufacturers might receive a wholesome stimulation.

THE ROYAL COLLEGES ON VACCINATION.

At the last meeting of the Fellows of the Royal College of Physicians, the following resolution was passed unanimously:

The Royal College of Physicians having learnt that certain changes are likely to be made in the laws relating to vaccination, think it their duty to reiterate their conviction that vaccination properly performed and duly repeated is the only known preventive of small-pox, and this opinion they consider to be fully confirmed by the report of the recent Commission.

At a meeting of the Royal College of Surgeons of England on August 2nd, Sir William Mac Cormac, Bart., President, in the chair, the following resolution, adopted by them on May 11th, 1893, and presented to the Royal Commission on Vaccination as expressive of their opinion on the value of vaccination was reaffirmed—namely:

We, the Council of the Royal College of Surgeons of England, desire to put on record at the present time our opinion of the value of vaccination as a protection against small-pox. We consider the evidence in favour of its life-saving power to be overwhelming, and we believe, from evidence equally strong, that the dangers incidental to the operation, when properly performed, are infinitesimal. Experience has satisfied us that, even when vaccination fails to afford complete exemption from small-pox, it so modifies the severity of the disease as not only to greatly reduce its mortality, but to lessen the frequency of blindness, disfigurement, and other grave injuries. We should therefore regard as a national calamity any alteration in the law which now makes vaccination compulsory. We are moreover firmly convinced that revaccination is an additional safeguard, and should be universally practised. We would add that we believe that the instructions of the Local Government Board for public vaccinators are well designed to secure the greatest efficiency in vaccination and to avoid the liability to risks from operation.

These are weighty declarations, which should have all the more force in that they emanate from bodies better entitled to speak with authority on the subject than any other. It is perhaps the only question in the whole domain of medicine in regard to which the profession are practically unanimous.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

We have received from Sir Henry Burdett a letter in the course of which he writes, in reference to our review of his book on *Hospitals and Charities*, as follows: "The reviewer evidently had not the Prince's letter before him, or he would have realised that the Prince of Wales mentioned 450,000 householders who did not contribute anything, and proceeded to reduce the number to about one-half by assuming that one-half were unwilling or unable to acknowledge either privilege or duty in the matter. You will see, therefore, that my statement that on a ten-shilling basis only 200,000 householders were invited by the Prince to support his Fund is in effect correct." We should be very sorry to do Sir Henry Burdett an injustice; we therefore quote the words of the Prince's original appeal of February 5th, 1897: "If we divide the population of the metropolitan district into two portions, and agree that one moiety is unable to contribute anything, there will still remain 3,000,000 of persons, representing, say, 500,000 households. Of these, 450,000 households at least, so far as can be ascertained, do not contribute anything towards the support of hospitals. If we again assume that one-half are unwilling or unable to acknowledge either privilege or duty in this matter, an average annual subscription of no more than 10s. each from the remainder will suffice. . . I propose . . . to invite subscriptions of 1s. per annum and upwards from all classes . . . . Our attention will be concentrated upon an endeavour to secure from £100,000 to £150,000 in annual subscriptions from those who have not hitherto regularly contributed." It appears to us that the passages above quoted justify the opinion that the Prince's appeal was not to 200,000 households to subscribe 10s. apiece, but to the whole 450,000 households to subscribe what they could. The assumption that one half of those addressed would turn a deaf ear would seem to have been made only in order to avoid an overestimate. It seems to us to be quite clear that the appeal was made to 450,000 households, who it was estimated did not subscribe to the hospitals, to contribute to this special Fund. Instead of saying that the Prince invited them to contribute from 1s. to 10s. a year it would have been more correct to have quoted the exact words of the Prince's appeal, "from 1s. a year upwards." But this only makes the contention stronger, namely, that the appeal was addressed to the whole number of the households who do not now contribute, and that it was for "trustworthy annual subscriptions"; and we contend that the Fund has hitherto failed in this respect, although we agree with Sir Henry in not regarding this failure as final. As for the figures on which Sir Henry bases his calculation of 1,100,000 small donors, and about which he also writes, we hardly think the point worth arguing. The number of these donors must have been very large to bring the collection up to £74,174; but the calculation seems to us to rest on no arithmetical basis and therefore to be worthless. The point, however, is not how many gave small sums in the Jubilee year for stamps, etc., but how many will so contribute in this and future years. The object of the fund is to raise a large sum as annual subscriptions from the households which have not previously subscribed. This has not been done hitherto. If it is to be done at all it can only be by other measures adapted, as Lord Lister said, to attract "middle and lower class" subscribers.

NELSON'S WOUND AT THE BATTLE OF THE NILE.

In view of the interest excited during the past week by the occurrence of the centenary of the battle of the Nile, which was fought on August 1st, 1798, it is desirable to recall the nature of the wound received by Nelson on board the *Vanguard* on that day. According to Captain A. T. Mahan, the precise moment at which Nelson was wounded has not been recorded. It was apparently just before the second act of the drama opened. "He was struck upon the upper part of the forehead by a flying piece of iron, the skin, which was cut at right angles, hanging down over his face, covering his good eye, and, with the profuse flow of blood, blinding him completely. He exclaimed, 'I am killed! Remember me to my wife!' and was falling, but Captain Berry, who stood near, caught him in his arms. When carried below to the cockpit, the surgeon went immediately to him, but he refused to be attended before his turn arrived in due succession to the injured lying around him. The pain was intense, and Nelson felt convinced that his hurt was mortal, nor could he for some time accept the surgeon's assurances to the contrary. Thus looking for his end, he renewed his farewell messages to Lady Nelson, and directed also that Captain Louis of the *Minotaur* . . . . . should be hailed to come on board, that before dying he might express to him his sense of the admirable support given by her to the flagship." "After his wound was bound up Nelson was requested by the surgeon to lie quiet, but his preoccupation with the events of the evening was too great and his responsibility too immediate to find relief in inactivity—the physician's panacea. He remained below for a while, probably too much jarred for physical exertion; but his restlessness sought vent by beginning a despatch to the Admiralty. The secretary being too agitated to write, Nelson tried to do so himself,

and it was characteristic that the few lines he was then able to trace—blinded, suffering, and confused—expressed that dependence upon the Almighty habitual with him. . . . After the blowing up of the *Orient*, at a quarter before ten, Nelson was persuaded to go to bed, but he neither got nor sought repose of mind. During the days that succeeded the battle, with his full native energy he struggled on, amid mental confusion and bodily suffering, and in the heat of an Egyptian August, to secure all the fruits of success—with splitting head and constantly sick, a significant indication of the rattling shock his brain had received. On August 9th he wrote to the Governor of Bombay, concluding with these words, 'If my letter is not so correct as might be expected, I trust for your excuse when I tell you that my brain is so shook with the wounds in my head, that I am sensible I am not always so clear as could be wished, but whilst a ray of reason remains my heart and my head shall ever be exerted for the benefit of our King and country." "The scar left by this wound seems to have been the cause of Nelson's hair being trained down upon his forehead during the later years of his life. Prior to that it was brushed well off and up." On August 19th he sailed with three ships for Naples, the voyage occupying between four and five weeks. This "procured for Nelson a period of salutary, though enforced, repose, which the nature of his injuries made especially desirable." The distress from his head continued for some time with little abatement, and naturally much affected his tone of mind. "My head is ready to split," he had written before starting, "and I am always so sick; in short, if there be no fracture, my head is severely shaken." At the end of August he wrote again, "I know I ought to give up for a little while; my head is splitting at this moment." Soon afterwards, happily, the pain had become at least intermittent, and on September 7th Nelson wrote that he felt so much recovered that it was probable he would not go home for the present. Shortly afterwards he landed at Naples amidst signs of universal rejoicings at the greatness of his victory.

METROPOLITAN HOSPITAL SUNDAY FUND.

At a meeting of the Council of this Fund on August 3rd, Sir Sidney Waterlow, who presided, said that the amount received was £38,741. In view of the fact that many of their largest contributors had diverted the whole or a portion of their gift to the Prince of Wales's Hospital Fund for London, he thought that this total, though less than in previous years, was satisfactory. In the discussion of a motion made by Dr. Glover requesting the Distribution Committee to inquire into the cause of the falling off, Sir Henry Burdett expressed the opinion, founded on an examination of the accounts of every hospital in London with four exceptions, that the falling off was not due to the Prince of Wales's Hospital Fund. He thought that the fact that so many private firms had been converted into companies had something to do with the diminution. Dr. Glover's resolution was lost; and the report of the Committee of Distribution, which stated that the amount available was £35,000 and recommended payments amounting to £34,304, was approved.

GERMAN PATHOLOGICAL SOCIETY.

The first meeting of the German Pathological Society, the President of which is Professor Rudolf Virchow, will take place in connection with the forthcoming Congress of German Naturalists and Medical men. Professor Virchow has already sent out the invitations for September 18th to 25th at Düsseldorf on the Rhine.

A MONUMENT TO WILHELM MEYER.

We understand that the monument to Professor Wilhelm Meyer the discoverer of post-nasal vegetations, is now completed. The monument, which is a beautiful piece of sculpture, consists of a bust of more than life size on a Hermes pedestal; from below the Goddess of Medicine holds up a palm to the Danish physician. The monument will be unveiled in Copenhagen in the later part of October. Sir Felix Semon will deliver an address on the occasion, and will formally hand over the monument to the municipality of the city.

THE PREVENTION OF ANTHRAX IN ITALY.

During the first few years after the foundation of the Anticharbon Institute at Turin the number of tubes of anticharbon vaccine sent out was only 4,000 to 5,000 a year. Professor Pagliani, then Director of the Public Health, decided that the Laboratory, which had been founded at Turin by Perroncito, should be removed to Rome. Immediately after this the production of vaccine greatly increased, as it was found possible to reduce its price. In the disorganisation which overtook the department of Public Health two years ago this laboratory came to grief; fortunately, however, its work was taken up by the Sero-therapeutic Institute of Milan, from which the vaccine continues to be sent out under the supervision of Professor Airoldi, a former assistant of Perroncito. Now the yearly output of anticharbon vaccine amounts to 165,000 tubes. From May 1st, 1897, to April 30th, 1898, sufficient vaccine was sent out to inoculate 33,734 bovine and 98,792 ovine animals. Anthrax has greatly diminished in Italy in recent years; but, in spite of the large amount of anticharbon serum supplied, a good many cases still occur, both among animals and among men, in different parts of the country.

We are sure that we give utterance to the general feeling of the profession in expressing the deepest sympathy with Mr. Henry Power in the terrible bereavement which he has suffered by the loss, all the more shocking from its suddenness, of his daughter and granddaughter, Miss Lucy Power and Miss Isabel Cooper. The ladies were walking on the East Pier at Whitby on Saturday last, when a huge wave broke over them and washed them into the sea, where they were drowned in the presence of Mr. Power. He made a courageous attempt to save them, but was himself knocked down by another wave, and would have been carried out to sea but for the assistance of a bystander. Miss Power was an artist of great promise, and a portrait of her father painted by her attracted much attention in last year's Academy.

In reply to numerous inquiries addressed to us on the subject, we think it well to state that no further warrant applicable to retired medical officers has yet been published.

Professor E. Ray Lankester, F.R.S., Linacre Professor of Human and Comparative Anatomy of the University of Oxford, has been appointed by the principal trustees of the British Museum Director of the Natural History Department, in the room of Sir William Flower, who retires at the end of September.

Dr. John C. Thresh, M.D., D.Sc., D.P.H., Medical Officer of Health to the Essex County Council, has been appointed Lecturer on Public Health at the London Hospital Medical College. The new laboratories and public health museum now being provided at this College will be ready by the commencement of the winter session.

Both the German Empress and the Empress Frederick have sent handsome contributions to the collection which is being raised by the German Red Cross Society for aid to the sick and wounded in the Spanish-American War.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Vaccination Bill came on for third reading on Saturday last, and produced a lively and interesting debate. Mr. James Lowther anticipated the fighting young Tories below the gangway, who were for rejecting the Bill, by moving that it be recommitted for the reconsideration of the clauses dealing with reduced penalties and the conscience clause. On this motion the discussion was taken on the suggestion of the Speaker. A stranger entering the House during many of the speeches would have been forced to conclude that the merits of vaccination as a preventive of small-pox were in question. Whole speeches were devoted to proving that vaccination was valuable, a point that had never been questioned. Mr. Balfour very wisely pressed the House not to enter on this subject, which really tended to confuse the issue, which in fact was the expediency of trying whether vaccination could be rendered more general by the adoption of limited penalties and the conscience clause as framed by the Government. Many of the speakers forgot that the Bill still retained penalties for the careless and indifferent parents, and that the point to be decided was the wisdom of continuing to penalise persons whom so far neither penalties nor imprisonment had compelled to vaccinate their children. Towards the close of the debate, Mr. Chaplin made a remarkable speech, and the House roared with laughter over his description of the dilemma in which he found himself when Sir William Priestley carried his modified conscience clause. He was, however, scarcely just to the hon. member for Edinburgh University, who had given full notice of his views, and had even carried an amendment connected with and leading up to his conscience clause at a sitting of the Grand Committee prior to that at which he carried the amendment to allow a declaration of conscientious objection after one fine had been inflicted. Sir W. Priestley was unfortunately absent, and there was no one able to speak who knew fully the merits of the case. Mr. Chaplin's speech thoroughly and generously accepted the changes in the Bill which had been forced upon the Government in the report stage. The joke in the House was that he lost a vote or two by it. The Government, however, could afford that, for the motion for recommittal was rejected by more than 4 to 1, only 29 voting for Mr. Lowther's motion. The minority consisted of 23 Conservatives and 6 Liberals; of the latter, 3 were Scottish, 2 Irish, and 1 was a Welsh member. The third reading was then carried without a division. On Monday the Bill was read a first time in the House of Lords, and on Tuesday Lord Harris, in a very businesslike speech, moved the second reading. He admitted that he had been converted by his study of the report of the Royal Commission to regard the Bill in its present form as the best that could be passed. There was no further speaking, and the second reading was carried, and the Committee stage fixed for Thursday. A feeling is growing up that the Bill ought to be passed with the conscience clause as it stands, as there would be then a good chance of securing next year a compulsory revaccination clause, which could not be carried except in connection with relief for the honest objector.

The London University Commission Bill, as amended by the House of Commons, was considered in the Lords on Tuesday, and after a very few remarks the amendments were accepted. The Bill now only awaits royal assent, and London will soon have its teaching university.

Lead and Phosphorus Poisoning was discussed at length on Friday last in the Commons on a motion moved by Mr. Tennant to reduce the Home Secretary's salary. The House dearly loves a semi-scientific discussion like this, and member after member spoke well and forcibly on the horrors connected with work in the Potteries and in match factories. There is an earnest desire that these trades should be more strictly regulated and more efficiently inspected. The present powers of the Home Secretary will have to be increased, for Parliament evidently means that life and health shall not continue to be sacrificed from conditions which are really preventable. The Home Secretary has appointed a medical inspector, and spoke sympathetically of more female inspectors, and possible modifications of the law. The House emphasised its earnestness by a division, and the Home Secretary only saved his salary in a small division by a majority of 38.

MEDICAL WAR NEWS.

General Shafter, in a report on the sanitary condition of his force dated July 29th, states that on July 28th the number of sick had increased to 4,279, including 3,406 cases of fever. The new fever cases numbered 696, and the fever patients who had been returned to duty on the 28th, 590. There had only been one more death. Brigadier-General Sternberg, Chief of the Medical Department, fully appreciates the seriousness of the situation, and is forwarding doctors and nurses to Santiago faster than ever. There are also many cases of typhoid among the troops stationed at different points in Florida, especially at Miami, where there are now 7,500 volunteers under canvas, among whom malarial fever is very prevalent.

The Washington correspondent of the *Daily Chronicle* states that he has received from a correspondent at Newport News a telegram to the following effect: "I arrived here on Wednesday from Santiago. The city is short of food. There is no doctor, and there are no medical supplies there. A man died on Wednesday, and since then he has lain a putrefying corpse on ship board. The authorities will not bury him. Complete paralysis seems to possess the quartermaster's department. After waiting two days ice and fresh provisions were put abroad at the ship's expense. There is no trace of yellow fever or any suspicious case on board."

All the southern ports have been thrown into a panic about yellow fever, and threaten to refuse to permit the landing of any person coming from Cuba.

The New York correspondent of the *Daily Mail* says that great indignation has been aroused by the manner in which sick and wounded soldiers are being sent back to the United States from Cuba. The transports employed are unfit for the service, and the steamer *Concho*, which arrived at New York yesterday, is a specimen case. This vessel left Santiago on July 23rd with 175 officers and men suffering from fever and wounds, as well as a large number of other passengers. The voyage was one of inconceivable horror. There were only 58 bunks in the foul hold, and into these were packed 150 sufferers without mattresses or blankets. The drainage from the decks filtered through, there was no ice aboard, and the supply of water, received on June 1st, had become putrid. No food was to be had except the coarsest, no clothing, no drugs or disinfectants, and no medical attendance except one doctor and a few Red Cross nurses, who lacked the requisite stores. The sick aboard became worse, the healthy became ill, and the conditions were revolting. Five men died during the voyage, and many more are not expected to live, as the result of the hardships they underwent. The Government has ordered a strict inquiry to be made into this scandalous mismanagement.

ROYAL COLLEGE OF PHYSICIANS.

The ordinary quarterly comitia of the College Fellows was held on Thursday, July 28th, Sir Samuel Wilks, Bart., F.R.S., President, in the chair.

The President announced that Dr. Ord would deliver the Bradshaw lecture on November 10th on Myxœdema and Allied Conditions. It was also announced that Dr. G. R. Murray had been appointed Goulstonian lecturer, his subject being the Pathology of the Thyroid Gland; that Dr. Gee would be the next Lumleian lecturer, and Dr. Mott, F.R.S., the next Croonian lecturer.

The membership of the College was granted to E. Hanly, M.D., Q.U.I., W. Darley Hartley, M.D.Durh., and E. A. Saunders, M.B.Oxon.

The licence of the College was granted to 136 gentlemen, 64 of whom came under the five years' curriculum, and only 2 under the old regulations, that is, did not present themselves under the Conjoint Board.

Diplomas in Public Health were granted conjointly with the College of Surgeons to E. H. Cartwright, M.D., B.Ch. Oxon., L.R.C.P., and M.R.C.S.; H. W. Jackson, M.B.Lond.,

L.R.C.P., and M.R.C.S.; R. G. Kirton, M.B.Lond., L.R.C.P., and M.R.C.S.; H. A. Kinsey, L.R.C.P. and M.R.C.S.; S. G. Moores, L.R.C.P. and M.R.C.S.; W. Mussellwhite, L.R.C.P. and M.R.C.S.; J. G. V. Sapp, M.B., M.S.Edin., L.R.C.P., and M.R.C.S.; D. L. Smith, L.R.C.P., and M.R.C.S.; H. W. Stephens, L.R.C.P. and M.R.C.S.; A. N. Weir, M.B.Lond., F.R.C.S.Eng., and L.R.C.P.; F. J. Woollacott, M.B., B.S.Oxon.

Dr. Norman Moore, on behalf of the subscribers, asked the College to accept a portrait of Dr. Munk, the Harveian Librarian, which had been painted by the Hon. John Collier. He said that Dr. Munk had been elected a Fellow in 1854, and three years later had been made Harveian Librarian, which post he had ever since held. On entering upon his office he had at once set to work to prepare a list and record of the past Fellows, which virtually was a history of the College. This he had completed in 1860, and the College had then undertaken the publication, with the result that in the following year there was given to the world the well-known Roll of the Royal College of Physicians, and a second edition had been brought out some twelve years since. The publication of this work had given the College a permanent place in all treatises on English history. Dr. Munk had done a great and permanent service to the College, and it was right that the portrait of the historian of the College should find a permanent place within the walls; the portrait was, moreover, on artistic grounds worthy of a place in their collection.

The President, in accepting the portrait on behalf of the College, expressed the hope that it might long grace their walls and be handed down as representing the great historian of the College. He considered that Dr. Munk had done more for the College than many who had sat in the presidential chair.

A communication was received from the Charity Commissioners respecting a new scheme for the maintenance of the Physic Garden at Chelsea. The Registrar having explained the circumstances of the trust formed for the management of the Garden under the will of the late Sir Hans Sloane, a former President of the College, on the motion of Dr. Allchin it was resolved to ask that the College might have a representative on the new Committee of Management.

Communications were received from the Royal College of Surgeons and from the President of the Queen Victoria's Jubilee Institute for Nurses, in response to which latter Sir Dyce Duckworth was appointed to represent the College on the Council of that body.

Permission was granted to Sir F. Burrows to remove the bust of Sir G. Burrows, a former President of the College, for the purpose of having a copy made for the General Medical Council.

On the motion of Dr. Dickinson, seconded by Dr. Church, a resolution, which is printed elsewhere, on the subject of vaccination was unanimously adopted.

The following were, on the nomination of the Council, elected office-bearers, namely:—*Censors:* Walter Butler Cheadle, M.D., William Miller Ord, M.D., Philip John Hensley, M.D., Sir R. Douglas Powell, Bart., M.D. *Treasurer:* Sir Dyce Duckworth, M.D. *Emeritus Registrar:* Sir Henry Pitman, M.D. *Registrar:* Edward Liveing, M.D. *Harveian Librarian:* William Munk, M.D. *Elected Members of the Library Committee:* Samuel Jones Gee, M.D., Philip Henry Pye-Smith, M.D., John Cavafy, M.D., George Vivian Poore, M.D. *Curators of the Museum:* William Howship Dickinson, M.D., Henry Charlton Bastian, M.D., William Cayley, M.D., Norman Moore, M.D. *Finance Committee:* Alfred Baynard Duffin, M.D., George Vivian Poore, M.D., John Mitchell Bruce, M.D. *Examiners—Chemistry and Chemical Physics:* William Ramsay, F.R.S., Percy Faraday Frankland, Ph.D., F.R.S., John Millar Thomson, F.C.S., Frederick Daniel Chattaway, Ph.D., D.Sc., Henry Wilson Hake, Ph.D. *Materia Medica and Pharmacy:* Francis Warner, M.D., William Carter, M.D., Nestor Isidore Charles Tirard, M.D., Hector William Gavin Mackenzie, M.D., James Calvert, M.D. *Physiology:* William Dobinson Halliburton, M.D., John Wychenford Washbourn, M.D., Marcus Seymour Pembrey, M.D. *Anatomy:* George Robertson Turner, F.R.C.S., L.R.C.P., George Dancer Thane, M.R.C.S. *Medical Anatomy and Principles and Practice of Medicine:* William Cayley, M.D., Joseph Frank Payne, M.D., Thomas Henry Green, M.D., Thomas Lauder Brunton, M.D., Arthur Ernest Sansom, M.D., Horatio Bryan Donkin, M.D., Thomas Barlow, M.D., David Bridge Lees, M.D., Julius Dreschfeld, M.D., William Hale White, M.D. *Midwifery and Diseases Peculiar to Women:* John Baptiste Potter, M.D., Charles James Cullingworth, M.D., John Phillips, M.D., C. Montagu Handfield-Jones, M.D., Robert Boxall, M.D. *Surgical Anatomy and Principles and Practice of Surgery:* John Langton, F.R.C.S., John Neville Colley Davies-Colley, F.R.C.S. *Public Health—Part I:* James Lane Notter, M.D. *Part II:* William Henry Corfield, M.D.

Reports were received from the Representative of the College on the General Medical Council, and on the Governing Body of Mason College, Birmingham.

A report was also received from Dr. Woodhead respecting the nature of the poisons used in some poisoned arrows sent from Uganda. The report was sent to the Secretary of State for Foreign Affairs, and the best thanks of the College voted to Dr. Woodhead for his exceedingly valuable work.

The quarterly reports of the Finance Committee, the Laboratories Committee, and the Examiners for the Licence were received and adopted, as also were the annual reports of the Library Committee and the Curators of the Museum.

A report from the Committee of Management was received and adopted, and the thanks of the College were returned to the donors of books during the past quarter.

SIXTY-SIXTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Held at Edinburgh, July 26th, 27th, 28th, and 29th.

Third General Meeting of Members—Thursday, July 28th.

The Investigation of Blackwater Fever.

The third general meeting, held in the M'Ewan Hall on Thursday, July 28th, was again presided over by the President of the Association, who opened the meeting by calling on the President of Council to make a communication in regard to an important matter.

The President of Council said the Section of Tropical Diseases had asked the Council to bring before the general meeting the desirability of asking the Government to send out an expert pathologist to South Africa to investigate the subject of Blackwater Fever, a disease which was causing a very large mortality in the district, and the pathology of which was at present not fully understood. He therefore asked the meeting to authorise the Council to send a letter to Lord Salisbury making the request on behalf of the British Medical Association, and moved a resolution to that effect.

Professor Chiene seconded the motion, which was unanimously carried.

The Address in Surgery.

The President, in calling upon Professor Annandale for his Address in Surgery,[1] said that all the world recognised his honoured friend Professor Annandale as worthily occupying the position that had been held by Lord Lister and by Syme.

Mr. Thomas Bryant said he felt perfectly sure that every member of the Association and every visitor who had had the pleasure of listening to the address that had just been delivered would support the resolution that he was about to propose with the greatest cordiality, for it was:

That the thanks of the Association be given to Professor Annandale for his able Address in Surgery.

[Cheers.] As they had been reminded, the address was the third that had been given in Edinburgh under the ægis of the Association—the first by Professor Syme, the second by Professor Lister—and he thought it would be fairly admitted that Professor Annandale had certainly equalled the occasion. [Cheers.] He thought that both the orators who had preceded Professor Annandale would have been surprised, and Lord Lister even would have been startled at the improvements that had taken place in their noble profession. Professor Syme, a surgeon

[1] British Medical Journal, July 30th, p. 293.

unequalled by anyone before or since, never could have dreamt of the lines of improvement which surgery had followed, and Professor Lister could have little foreseen, when he delivered his address in that city, the enormous developments that his own system, adopting that of Pasteur's, had brought to that great profession. [Cheers.] It was a pleasant thing to feel that they were progressing in the way that Professor Annandale had mentioned, and to the older members it was somewhat startling to see how that progress went on by leaps and bounds. They must be careful, as Professor Annandale had pointed out, whilst they did everything to encourage the scientific advance of their profession, to be thoughtful and careful how they applied the conclusions of science to the practical side of their work. Not that they were to depreciate science; on the contrary they were to encourage it; but they were not to be too hasty in applying its teachings at once to the practice of their art, more particularly when it at first seemed to go contrary to the principles they had hitherto adopted. He agreed with all Professor Annandale's words in that department most cordially, as most of the members did. He would not attempt to follow Professor Annandale by speaking of the enormous improvement in practice and so much of it being due to the scientific work to which he had just alluded; but he was sure they were all in accord with most of his observations. He was not there to criticise what Professor Annandale had said, although he should like to have had a little discussion on some few of the interesting points brought before them. He appreciated, as he was sure they all did, the observations of Professor Annandale upon the moral side of the profession. It was a side that was certainly worthy of being brought before the Association, because in a mixed assembly of people representing every branch of medical science and every class, the fortunate and the reverse, it was well to look to themselves and look at home, and ask why it was that divisions and difficulties existed, and whether some of them were not due to their own faults. He was sure they were, and he was perfectly confident that the observations Professor Annandale had made would be read and studied by every member of the profession, and with enormous advantage, and the address would not only be a great benefit and pleasure to those who had listened to it, but would be of incalculable value to those who thought over it and acted upon it in the future.

Professor Bennett (Dublin), who seconded the motion, said he did not at all propose to follow in any form of criticism the address which had been delivered by Professor Annandale. Perhaps it was an Irish way of returning thanks to return thanks for something else; but that something else was the proof that Professor Annandale had given of his practical work in surgery and pathology in the particular branch of injuries which had been discussed in the Surgical Section—the exquisite series, almost unrivalled, of examples of injuries or effects of injuries to the elbow-joint which Professor Annandale had presented to the meeting in the museum. In the collection there was food for work for many a long day before one acquired all the details. Many new injuries and many new phases of injury were presented there, and he asked those who had not seen it to take the trouble of doing so, for it was a proof of the great and sterling work which Professor Annandale had done as a surgeon and pathologist. In the scientific portion of his address he had alluded to the enormous advantage that was conferred upon surgeons by the Roentgen rays; and no doubt it was enormous—enormous in assisting the surgeon to read the endless details of fractures and dislocations. But there was another way in which he (Professor Bennett) thought the rays would be of importance in improving surgery: they would teach surgeons, however skilled, to be very cautious in their diagnosis. The Roentgen rays would expose any inexact diagnosis and destroy the reputation of any surgeon whose diagnosis was not accurate. Perhaps that was a new view to take of the advantages of the rays to the surgeon; but he thought Professor Annandale would agree with him that there was some practical gain to be got by that supervision of surgical diagnosis.

The resolution was carried with acclamation.

Professor Annandale, in returning thanks, assured the meeting that he felt sincerely and highly gratified at having a distinguished Scotchman in the chair, a distinguished Englishman proposing the motion, and a distinguished Irishman seconding it. [Laughter.] What more could he wish? [Cheers.]

Fourth General Meeting.

The Address in Psychological Medicine.

The concluding general meeting was held on Friday morning, when the address in Psychological Medicine, published at p. 341, was delivered by Sir John Batty Tuke.

Dr. Blandford, in proposing that a vote of thanks be given to Sir John Batty Tuke for his most able, instructive, and interesting address, said it was a great many years since he first read the writings of Sir John Batty Tuke on the subject, and he had known him to be a constant worker in his speciality for a considerable number of years, and he remembered the time when there was no such thing as a Psychological Section at the meetings of the Association; still less was there anything like an address in Psychological Medicine; but the study of it had advanced, and had now assumed, he thought, a position about which there could be no sort of doubt. The progress of psychological medicine had been commensurate with that of the Association, and he hoped that the two would advance together. [Cheers.]

Professor Macdonald (New York) said he esteemed it a high honour to second the resolution. To the good feeling towards the mother country which had been shown in America so unmistakably and so happily of late—so happily especially in view of the reciprocation of the mother country—there was added the esteem and the good feeling towards individuals. As an asylum physician and as a teacher of medicine in the Medical College, he was glad to take the opportunity of acknowledging the large debt the American profession owed to the teachers and writers on this side of the Atlantic. The roll would be a long one, and he should not attempt to mention other names than those of Sir John Batty Tuke, the mover of the resolution, and the secretaries of the Psychological Section.

The resolution was heartily and unanimously carried.

The President, in tendering the vote to Sir John Batty Tuke, said it had been very delightful to hear the words of wisdom with regard to his (Sir John's) department of work. Sir John and he had got to be pretty old friends now, and he (Sir John) had never failed in any instance, all through the years, to be interested in a scientific matter of any kind. [Cheers.]

Votes of Thanks.

The President of Council then asked the attention of members to some formal, very necessary, and important business with which the work of the general meetings would be wound up. He moved that the thanks of the Association be given

To the Right Honourable the Lord Provost and the magistrates and Council of the City of Edinburgh for the hearty welcome accorded to the Association at the opening meeting in the M'Ewan Hall, for the reception on the site of the New City Hospital, and for the brilliant reception and ball given at the close of the meeting.

To the Right Honourable the Lord Provost of Edinburgh and Mrs. Mitchell Thomson for their splendid reception in the Museum of Science and Art.

To the Very Rev. the Dean of the Order of the Thistle and the Chapel Royal and the Kirk Session of St. Giles Cathedral for permission to hold divine service in St. Giles Cathedral; to the Right Rev. Dr. Alexander Whyte, Moderator of the Free Church of Scotland, for giving an inaugural discourse, and the Right Rev. Dr. Blair, Moderator of the United Presbyterian Church of Scotland, for his assistance at the service.

To the University Court of the University of Edinburgh for granting the use of the splendid buildings of the University New Buildings and the M'Ewan Hall, and to the University Union for admission to the members as honorary members of the Union.

To the Senatus Academicus of the University of Edinburgh and the Royal College of Physicians and the Royal College of Surgeons of Edinburgh and the Royal Medical Society for their hospitality.

To His Grace the Duke of Buccleuch, the Most Honourable the Marquis of Bute, the Right Honourable the Earl and Countess of Hopetoun, and the numerous ladies and gentlemen and others who have so handsomely entertained the members of the Association.

To Lady Grainger Stewart and the Ladies' Committee for the kind interest they have taken in providing for the comfort and entertainment of the ladies, and for the delightful *conversazione* given by them on Thursday evening.

To the Managers of the Royal Infirmary and the Directors of the various Hospitals for their kindness in opening their institutions to the members of the Association, and to the Committee of the Mason Hall for their courtesy in granting the use of their Hall as a ladies' reception room.

To the various firms who have thrown open their establishmentments for inspection by the members.

To the Committees of the Caledonian United Service Club, University Club, Scottish Conservative Club, Scottish Liberal Club, Union Club, Northern Club, Scottish Arts Club, Queen's Club, Edinburgh Victorian Club, and the Directors of the Edinburgh Philosophical Institute and the Edinburgh Literary Institute, and the various Golf Clubs for extending the privileges of membership to members of the Association during their visit to Edinburgh.

To the members of the Edinburgh (Lothians and Fife) Branch of the Association for their invitation and the organisation of the meeting.

To the Dundee and District Branch, the Perth Branch, and the Stirling, Kinross, and Clackmannan Branch and others for the hospitality extended to the members of the Association joining in the excursions in their districts.

To the Medical Faculty of the University of St. Andrews for their hospitality.

To the Chairman and Honorary Secretaries of the various Committees for their successful labours in connection with the meeting.

To Dr. R. W. Philip and Mr. J. Shaw Maclaren, Honorary Local Secretaries, Dr. Underhill, and Dr. P. A. Young, Treasurers, for their highly successful labours in connection with the organisation of this most successful meeting.

To the distinguished foreign visitors for their presence, and the additional interest created by their various communications made to the Sections during their visit.

The resolution, continued Dr. Saundby, was an attempt to put very briefly the thanks of the Association to the large number of ladies and gentlemen who had contributed to make the meeting the splendid success it had been. [Cheers.]

Dr. Deas seconded the motion. As an old student of the University, and as representing the many old students present, he much appreciated the holding of the meeting in Edinburgh. It was not very often that the annual meeting of the Association was held in the seat of a great medical school, and that fact of itself added an interest, and he might say a pathos, to the meeting which all old students would feel. They had been revisiting the shades of the past, and the feelings that had been aroused by the visit would never pass away. The kindness shown to them and the meeting of old friends and teachers showed that in spite of long separation there were still delicate tendrils of association between themselves and their old *alma mater* which they trusted would never decay.

The motion was carried with acclamation.

The President of Council said they had dissociated from the large group of votes of thanks one of the most important, which was deserving a special notice, and that was the vote of thanks to the President—[cheers]—to Sir Thomas Grainger Stewart, who had presided so admirably over that meeting—[Hear, hear]—and he had the advantage, when he was a student, of listening to Sir Thomas Grainger Stewart's instruction, and diligently attended his classes for at least one winter session, and he had always had the greatest admiration and respect for him as a teacher, as a professor, and as a physician, and it was a great satisfaction to him that Sir Thomas should be occupying the chair of the President of the British Medical Association at that meeting—[cheers]—and he moved:

That the cordial thanks of the Association be given to Sir Thomas Grainger Stewart for his able and courteous conduct in the chair on this the sixty-sixth annual meeting of the Association.

[Cheers.]

Dr. Henry Barnes (ex-President) seconded the resolution. Sir Thomas Grainger Stewart, he said, was one of his oldest friends. Like Dr. Saundby, he was a student of the University, and he had the best recollections of his life there, and of the work he did at that time. The work of Sir Thomas, who was then pathologist to the infirmary, was one of the greatest incentives to progress in medical study anyone could have; and the example of his life, the splendid work he had done in various departments of medicine, had stimulated all those who were associated with him in the earlier period of their career. With regard to his presidency of the meeting, nothing could have been better. The brilliant address on Tuesday night was one of the most memorable he remembered in the history of the Association. [Cheers.] The manner in which that address was delivered added very much to the intellectual pleasure which the members received on that occasion. He trusted Sir Thomas would have a happy year of office. He associated with the motion a rider that the thanks of the meeting should be also given to Lady Grainger Stewart. [Cheers.]

The President of Council pointed out that the meeting had already passed a vote of thanks to Lady Grainger Stewart, but said they should be delighted to do it again.

The resolution and rider were carried with great acclamation.

The President thanked the members most cordially for their kindness in proposing, seconding, and accepting the resolution. It was, he said, very pleasant to him to notice that his friends had thought of the efforts of those at home. A good wife was certainly a most important necessity for a doctor—[laughter and cheers]—and he should like to see his friends recognising that fact. It had been one of the special delights of the meeting and in preparing for it, to see what an amount of organising talent of the most extraordinary kind existed amongst the doctors of Edinburgh. He had just simply admired the skill of his friends—the Secretaries, Dr. Philip and Mr. Maclaren, who had done so much, the Treasurers, and the heads of the various Sections. Some people had gifts of one kind, and some of another. Those men were great in organisation, a power to which he could not pretend. It was very good of the members to think that he had managed to sit properly in the chair—that was a thing he could really manage to do—[laughter]—but as to the organisation he could not express the sense of admiration that he felt for the splendid fellows who had put their shoulders to the wheel and done the work, and brought about the success on which he thought they were all entitled to congratulate themselves.

The meeting then closed.

Annual Dinner.

The Annual Dinner was held in the Music Hall, George Street, Edinburgh, on Thursday evening, the President of the Association, Sir Thomas Grainger Stewart, occupying the chair.

Some 450 members and guests were present, amongst them being the Right Hon. Lord Provost of Edinburgh, the President of Council, Sir William Broadbent, the President of the Royal College of Physicians of Edinburgh (Sir J. Batty Tuke), the President of the Royal College of Surgeons of Edinburgh (Professor Chiene), Dr. Roddick of Montreal (ex-President of the Association), Dr. Ward Cousins (President-elect), Professor Bowditch, Professor Osler, Fleet-Surgeon Corrie, Colonel Rooney (Principal Medical Officer of the Scottish Military Headquarters Staff), Dr. Barnes, Professor Simpson, Professor Kocher, Sir William Stokes, Mr. Bryant, Sir William Priestley, M.P., Professor T. R. Fraser (the Dean of the Medical Faculty), Professor Gerhardt, Dr. F. T. Roberts, Dr. Howard Kelly, Professor Blanchard, Dr. Farquharson, M.P., Mr. Macnamara, Mr. Wheelhouse, Professor Rosenstein, Sir Charles A. Cameron, Professor Sir Henry Littlejohn, Professor Boeck, and General Chapman, C.B., General Commanding the Forces in Scotland.

The toast of "The Queen" having been duly honoured,

The President, in proposing "The Prince and Princess of Wales and the Royal Family," referred to the accident which His Royal Highness had met with, and expressed the sympathy of the members therewith. He said he had a great respect for all the Fellows of the Royal College of Physicians of London, and it was interesting to recall that the Prince of Wales was one of them.

"The Navy and Army."

The President, in proposing "The Health and wellbeing of the Navy and the Army," said that the Navy had done so much for us, kept us so safe, grew so wonderfully, and had such a power of work in it, that we felt as secure as any nation could do that had to depend upon defences of that sort against possible enemies. But we had not any enemies that were active. Our enemies might say a word or two

against us now and then, but it was a long time since anyone had made an attack upon our shores. We were not a very military nation, but our business was to have such an Army and Navy as would be able to defend our shores if any difficulties should arise. As doctors, they loved the whole human race, and as Englishmen, Scotchmen and Irishmen, desired to live in good-fellowship and on good terms with all mankind. The Navy was a necessity, and the British Navy was one to be proud of. He coupled with the toast of the Navy the name of Fleet-Surgeon Corrie, who had sailed under the Queen's flag in every clime, and served in every possible way, except that we had not had enough of wars at sea to give him a very large experience in the cockpit. Referring to the Army, the President said that he had seen the troops march off from Edinburgh Castle for the Crimean War in his student days, and he remembered when they started there was not a class taught in the university, for everyone had gone to see them march away. He also remembered at the time of the Indian Mutiny when the regiment in the Castle was suddenly ordered to India. They had the honour of the presence that night not only of distinguished medical officers, but of the officer commanding the army in Scotland. It was very pleasant to have as their guest General Chapman—one who had seen not a little of service. A man who had been Chief of the Staff in the march from Kandahar to Kabul, and a few months later the Chief of the Staff from Kabul to Kandahar with Lord Roberts, had got to know something about battles, and his powers of organisation had been tested, and he had not been found wanting. General Chapman had done splendid work in many ways, especially as an explorer in Central Asia.

The toast having been duly honoured,

Fleet-Surgeon Corrie replied for the Navy. He said that, holding a public appointment, his tongue was more or less tied: but there was one thing he might say without offence to his seniors at Whitehall, and that was, he firmly believed the Navy of England was never in a more efficient state than it was at the present moment. He spoke highly of the Royal Naval Reserve, for which force Lord Charles Beresford had done an enormous amount of work. Although the Navy was in a very efficient condition, he thought we must not stop there, but make it more efficient and more formidable than it was at present.

General Chapman, in replying for the Army, said he only wished the members to believe that the Army in Scotland was as good as the Pipers of the Royal Scots. He believed it was as efficient as it could possibly be made in the present day. The President had said that we were not a very military nation, but he (General Chapman) thought the British nation was the most military nation in the world. It was the only nation that could give a voluntary army—an army raised by voluntary enlistment, and give that army continuously. He hoped the President would agree that he had a right to take exception to what he said on that score.

"The Lord Provost, Magistrates, and Town Council of Edinburgh."

Dr. Roddick, who was received with cheers, assured the members that it was a very serious experiment on the part of any committee to place such a toast in the hands of a medical man, especially of a surgeon. Surgeons were rather in the habit of taking down corporations, and he expected it was required of him to say something which would rather elevate them. He was delighted at the opportunity to propose the toast, although he was entirely ignorant of the history and the present status and the future of the Corporation of Edinburgh. He understood that the City of Edinburgh, and Scotland, and the world, all owed a great deal to the Corporation of Edinburgh, for the reason that they established the University of Edinburgh about four hundred years ago. Whether the Corporation at that time were the Professors of the University or not, he did not recollect, but he could quite understand why the Corporation of the City should always have a certain number of chairs in the City. He understood that the Corporation of Edinburgh was the first Corporation that insisted upon the compulsory notification of disease, and he was led to believe that their friend Sir Henry Littlejohn was responsible for that. So far as the medical profession was concerned, they owed a great deal to the Lord Provost and the Corporation. Municipalities were always delighted to come forward and welcome the medical profession—he could speak personally for the City of Montreal, at any rate. He thought those who were present in the City of Montreal last year would bear him out when he said that the Mayor of Montreal did very much indeed towards adding to the comfort and pleasure of that occasion. He understood that the Lord Provost of Edinburgh was also Admiral of the Frith of Forth. Whether his responsibilities were great or not he did not know, but he understood they were about as great as those of Admiral Cervera at the present moment—they were not very likely to weigh very heavily upon him. He thought if ever the Spanish Navy appeared round the corner, opposite the town of Leith, the Admiral of the Frith of Forth would be there to give the foe a warm reception.

The toast was drunk with acclamation.

The Right Hon. the Lord Provost, in reply, said it had been a great pleasure to his colleagues in the Municipality, as well as to himself, to do any little thing they could to make the stay of the Congress in Edinburgh as enjoyable as possible. There were two things with which he was sure the members would agree, and the first was that they ought to be proud of the history of Edinburgh. If the history of Edinburgh was blotted out, the history of Scotland would be blotted out to a great extent. That could not be destroyed. Then there was the beauty of the city. He trusted that neither those who had the charge of the city's interest just now, nor any who would come after them, would ever do anything to the place to injure the beautiful and ancient city. They had at the present moment a large expenditure in the shape of public works, spending at the present time somewhere between two and three millions sterling. To a great extent that would be remunerative from a monetary point of view. Some of their English friends might say that that was not in accordance with Scottish character, to look to a monetary point of view; but what they were doing would contribute to a very great extent to the material comfort of the people. They were also spending a considerable sum of money in the building of a new city hospital. Dr. Roddick had referred to its having taken the lead, if he might put it so, with regard to the care of public life. There were two gentlemen they were greatly indebted to for that. The first was his friend Sir Henry Littlejohn, who had been for many years their Medical Officer of Health. He did not think that the services of Sir Henry Littlejohn to the City of Edinburgh were fully appreciated at the present time, but he was certain that they would be some day. When Sir Henry Littlejohn was first appointed to the position the death-rate in Edinburgh was 28: to-day it was 17. Then they were also indebted to Mr. David Pollard, the convener of the Public Health Committee. He was, as Sir William Turner had said, an expert with regard to the care of health, and he (the Lord Provost) had no doubt that when the Association did Edinburgh the honour of coming back again they would be able to acknowledge that they had in full operation a hospital for the treatment of infectious diseases second to none in the kingdom. He referred also to the appointment of Dr. Hunter Stewart to the Chair of Public Health, and trusted that when that gentleman's department got into working order, and when the new hospital was got into working order, a good deal of work might be done not only for the city, but for the country at large. He was very pleased to reply to a toast proposed by a Canadian, not only because he knew Canada fairly well, but because the man who had written the best book on Edinburgh was a Canadian—Sir Daniel Wilson. At the first general meeting of the Association he had been rather alarmed to hear the President suggest the possibility of the Association holding one of its annual meetings in Australia. The thought went through his mind, What was to become of the patients? and it struck him that the duties of the Lord Provost might have to be enlarged to an enormous extent. He could fancy Charlotte Square depopulated of doctors—there were plenty of them there at the present time—and the Lord Provost having the care of the health of the city, and having to review the patients every morning. One thing he should like to ask the President before he went on that long journey was to leave him a prescription of an innocent character in Latin, because people appreciated Latin prescriptions more than English ones; and he dared say that, armed with that and with the clinical thermometer, he might be able to preserve

the health of the city during the time the Association were away. He thanked Dr. Roddick for the kind way in which he had spoken of his services, and the members for the enthusiastic way in which they had received the toast. He wished that circumstances had permitted him to render greater service to the Association than he had been able to do.

"THE HOUSES OF PARLIAMENT."

Professor FREDERICK T. ROBERTS, in proposing "The Houses of Parliament," said that he had never entered upon the troubled waters of medical politics; he was not an ardent reformer, and he was not a disturber of the harmony of the general meetings of the Association. In fact, he had been so neglectful of his duties as a citizen on more than one occasion that he had been actually called to his face a "mugwump," whatever that might be. He recognised that the toast was an important one, and it would not be out of place if he alluded to some of the names which had cast lustre upon the House of Lords and the House of Commons. He referred first to Lord Playfair, who was, for so long a time, the member for the University of Edinburgh, and who afterwards was such an ornament to the House of Lords. They owed to him a great deal of the advancement of science in relation to medicine. Then there was the name of Mr. Gladstone. In spite of difference of politics they must all recognise that he was a great man in every sense of the word, and the tribute of affection and respect that was paid to Mr. Gladstone quite recently could not be overlooked or ignored on such an occasion. The President, in his most splendid presidential address—an address which had seldom been equalled and never surpassed—had suggested that the best way of dealing with the toast would be to drink to the abolition of both Houses. He was not one of those who wished to abolish the House of Lords. They very often did useful work, initiated useful things, and they were a check upon the other House. The President had made allusion to that point when he spoke of looking to the House of Lords for the reconsideration of the vaccination question. The House of Lords on the whole were very favourable to the profession, and amenable to common sense. But the House of Lords, as they acknowledged themselves, needed reforming. They were progressing, and within a comparatively recent period they were introducing into that House new elements that would be to them and to the country of the greatest possible service in the future. They had recognised literature, and law, and art, and science, and at last they had recognised medicine in the person of one who was not only recognised by the profession at large as one of its most prominent members, but whose relation to Edinburgh must afford the greatest satisfaction—he alluded to Lord Lister. There was another member of the profession in the House of Lords in the person of the Prince of Wales, who was now a Fellow of the Royal College of Physicians of London. But they had not enough in the House of Lords. There were plenty more who were fit to sit in the House and to add dignity to that great body; their friend the President would make a good peer, Sir William Broadbent would make another. The House of Commons was a very difficult subject to treat. There was not now the simple division that there used to be between the two great parties. There were a great number of different parties in the House of Commons at the present time, but when necessary they all seemed to combine for particular purposes against the medical profession. The House of Commons at present contained a large number of faddists and fanatics, many of them self-assertive and perfectly ignorant, and they were yielding to the views of their constituencies on grave matters. There was a sort of weakness and want of tone in the House of Commons at the present time. The Association had an important Parliamentary Bills Committee that looked after the affairs of the medical profession. It had done good work, and he was sure it would do good work in the future. There were a few medical members in the House, but not nearly so many as they ought to have. Amongst the most prominent of them was Sir William Priestley, with whom he had the pleasure of associating the toast. There was also their friend Dr. Farquharson, and Sir Walter Foster, who was a most useful member whether they all agreed with his views or not was another matter. What was wanted in the House of Commons was not a soporific, but stimulants and tonics. The term "anti" was very much in favour just now: there were antivaccinationists and antivivisectionists; and he suggested that members of the medical profession should go into the House as antipyretics, as antineurotics, as antiseptics, and as antitoxins. The Legislature should recognise its duties to the profession as the profession recognised its duties to the Legislature. The profession was willing and eager to help in every good work that was initiated—temperance, the care of old people, attention to the young, or the good of those who were engaged in dangerous occupations; but on the other hand, they expected the Houses of Parliament to help them redress their grievances—of which there were many—and to do what they could to help them in their duties towards humanity at large.

The toast was enthusiastically drunk.

Sir WILLIAM PRIESTLEY, M.P., responded. He said he remembered once asking his lamented friend, Mr. Russell Lowell, the prince of after-dinner speakers, what was the great secret of making a successful after-dinner speech. Mr. Russell Lowell gave various axioms, but he ended by saying, "Above all do not be too serious." He (Sir William Priestley) gathered from some remarks made that night that those speeches which were not too serious told most with that audience. But it was not easy to divest his mind of a grave and serious feeling when he had to respond to so important a toast as that, responding indeed, for the two great Houses of Parliament that ruled over the nation to so important a degree. They ruled, by the laws they made, over one of the greatest realms, so far as the civilised world was concerned, or any part of the habitable globe. In truth, he had a good deal of difficulty in responding, because he found himself very much as a tiro, almost a child, with reference to his knowledge both of Parliamentary usage and Parliamentary procedure. He recollected that before he was nominated to the important position of member of Parliament for the Universities of Edinburgh and St. Andrews he had a very great reluctance to accept such a position, a great doubt as to his fitness for accepting any such position. He had been told that there was a great deal to learn in the House of Commons. Although he found himself at first very much like a fish out of water, yet as the result of discipline he had come to find the work of the House of Commons not only extremely interesting, but also found that the House of Commons gave one aspirations. As might be well understood, it brought its grievous disappointments—because he could not disguise from that assembly that he felt grievously disappointed at the course the Vaccination Bill had taken in the House of Commons during its later stages. He very much feared that if the Bill passed into law it would lead to very serious default in reference to vaccination in this country. There was no difficulty in Scotland, and the Welsh also were well affected, and he only wished the English people could be brought to the same point of diligence and reason they found among the poorer classes in Scotland. The House of Commons was not a place where a professional man who had led a busy life could live a life of *otium cum dignitate*. He might have expected, after more than forty years of practice, to have retired quietly into private life, but he felt, on being selected to fill the important position, that it was necessary he should accept the post. There was a great deal of work to be done in the House of Commons if a man did his duty, and there was an intense concentration of mind required in watching every phase of the Bills in which one was interested. There were also the late sittings, which were trying to everyone, old and young, especially those who were older in life. He remembered when he first entered the House of Commons the Speaker, who had previously been an old friend of his, said, "I suppose we shall have your first speech on the Midwives Bill?" He (Sir William Priestley) said, "I think, Mr. Speaker, that if the Bill is a Bill to shorten the hours of labour, then we shall get the thanks not only of expectant mothers, but also members of the House of Commons." "Every subject in the House of Commons, whatever it might be, good or bad, must necessarily endure a great deal of discussion. There were always members of the House of Commons, however good a measure might be, who were ready to carp at it, dissect it, sift it through and through, and it was therefore most difficult to get even the most beneficent of measures through the House of Commons without some considerable

discussion. He trusted he should not offend any Liberal present that evening, but he was obliged to say that on the Liberal side of the House—and he believed his friend Dr. Farquharson was responsible for first starting the idea—there were a certain number of members who were irreconcilable to almost everything that seemed to limit the liberty of the subject. There was a certain small set of determined men who were antivaccinators, anti-Contagious Diseases Acts men, antimuzzling men, and he did not know what "anti" else, but they were nearly always the same men and seemed to be filled with the desire to keep personal liberty at whatever cost it might be. It seemed to him the only explanation of it was that they must be regarded as the tares and weeds growing up among Liberal ideas, and as adjuncts which they must try to check and weed out. He was particularly struck when he first entered the House with the general excellence of the speeches on all sides, notwithstanding that there was a great number of men who were not so well educated as others. It had always been a marvel to him that they should speak so well. In the House of Commons a man who knew his subject, and who was an expert on the subject, was always listened to with the greatest possible attention, while the man who spoke on every possible subject, and often repeated himself, sometimes met with murmurs, then with deeper growls, and then with sounds that made it impossible for him to go on. With regard to the position of the profession in the House of Commons itself, he was sorry to say there was a sort of feeling among a great number of members of the House of Commons that the medical profession was but a refined form of trades unionism. He did not know whether that might have sprung out of the attitude the profession might have taken in reference to the Midwives Bill, or medical defence, or what else, but unfortunately the feeling remained that the medical profession more or less sought rather its own good than that of the public at large. That, he believed, was absolutely a mistake. He was quite sure that the medical profession sought first the public good, and secondly its own interest, and he was sure that that would always be best for the profession.

"The British Medical Association."

Professor Bowditch (Harvard College, Boston), in proposing the toast of the evening, "The British Medical Association," said that among the many pleasant things which had happened to him since he landed on these shores he numbered the opportunity given to him that evening of taking part in the festivities of that old Association as one of the most agreeable. That an American should be selected to propose so important a toast he regarded with peculiar satisfaction, because it suggested the theme which had been in all their hearts and on all their lips so much during the last few months—the essential unity of the Anglo-Saxon nations. It was, of course, no new proposition to say that in all essential matters the interests of the English-speaking race were identical all over the world. The matter had been emphasised in a peculiar way during the last few months, owing to the events connected with the unfortunate Spanish war, which was now, apparently, rapidly approaching a termination. Nothing, perhaps, had given him greater satisfaction than to see, since he had been in England and Scotland, the thorough, genuine appreciation of the gallant deeds of the American navy, which was expressed by everybody whom he had met. It was, in fact, impossible for an American to feel prouder of the gallant deeds which had been done at Manila and Santiago than Englishmen had felt, judging by the way they had expressed their sentiments. It had been a source of very great gratification, and he could assure them that the feeling of intense appreciation and sympathy which had been shown by English people to America in her struggles was universally felt in America. He had an interesting illustration of it just before he left the country. His youngest son, a boy aged 7 years, desired particularly that the British flag should be brought home to him to be put up in the house. Nothing had been said to that boy particularly about England, but he seemed to have inspired the sentiment with the air he breathed. He assured them it was a universal feeling. It was no new thing to say that the interests of all English-speaking people were identical; in fact, illustrations of it had been afforded to anyone who would look into the subject for a very long time past. He need scarcely remind any who had lived for any length of time—in Dresden, for instance—what an important part was played by the Anglo-American Club in that city. He had also recently learned that there was a Continental Anglo-American Association, composed apparently of medical practitioners of America and of England practising in the cities on the Continent of Europe and in Northern Africa. That was another illustration of the way the nations might combine for any purpose. He thought the Anglo-American idea was capable of being infinitely expanded. It was a bond that was worth cultivating, and he had no doubt it would bear admirable fruit in various directions. Without alluding to the various possibilities which might be readily suggested, he would speak of only one, which would appeal to all, as members of the great medical profession. He saw no reason why they should not have an Anglo-American standard of medical education. They were not so very far from it now. The standard of the best schools of America was not very different from that which prevailed in this country. In England as a rule five years of medical education was required; in America, four. But it must be remembered that the first year of the medical education in this country was employed very largely in those branches of study which, in America, were covered by the admission examination. He did not mean to say that the men who entered the medical schools in America were as well qualified to go on with medicine as those who had studied one year in the English medical schools, but it would not require very much stiffening to make the education identical. He commended the thought to the British Medical Association, which had done so much and played such an important part as guardians of medical education. If an allusion to the history of the Association and the important work it had done had been expected on that occasion, he thought somebody else would have been appointed to propose the toast, and he should not attempt to tell them anything which they all knew very much better than he did. He might, perhaps, talk about the work of medical education, of which he had had some experience, but he felt that were he to do so his remarks might be open to the objection which his countryman, Mr. James Russell Lowell, mentioned, as quoted by Sir William Priestley. He thought, therefore, considering the advanced hour of the evening, he might be excused if he brought his remarks to a close, and simply asked them to drink to the health and prosperity of the British Medical Association.

The toast was drunk with enthusiasm.

Dr. Robert Saundby (President of Council) responded. He said it was the third occasion on which he had had the honour of returning the thanks of the British Medical Association at its annual dinner. With reference to what Professor Bowditch had said about Anglo-American relations, he was sure they all reciprocated it most heartily, but they felt, as their statesmen felt, that while they should like to have the closest possible relationship and sympathy, anything of the nature of a formal alliance might be fraught with difficulties to both sides. Therefore he was not at all sure that anything like a formal acknowledgment of American education and medical degrees was, at any rate at the present time, within the range of practical politics. It was his business on that occasion chiefly to be the mouthpiece of the thanks of the Association to their hosts. They had to thank on that occasion the Lord Provost of Edinburgh for his kindness in welcoming them to the city of Edinburgh, and in gracing by his presence the various meetings, and in showing them such splendid hospitality. They had to thank the University of Edinburgh for having placed its buildings at their disposal; the Royal Colleges of Physicians and Surgeons for the hospitality they had shown them; and the local profession, and especially those gentlemen who had held offices on the Executive Committees and as Secretaries, for the work they had done in organising such a splendid meeting. It certainly was one of the very best meetings it had been his privilege to attend, and, he should say, in the history of the Association. If he might be pardoned a personal reference, he should like to say that he first joined the British Medical Association in the year 1875, at the last meeting held in the city of Edinburgh. He was then a young

graduate, and had the honour to serve as Secretary to the Psychological Section. It was impossible not to notice the great advance which had been made in the organisation of the meeting since the last occasion the Association met in Edinburgh, and not least in the matter of the annual dinner, which he recollected on the former occasion was a sad scramble for most of those who did not hold important positions. He might say that in all respects the present had been a most splendid gathering, and they had to thank the profession and the City of Edinburgh for having given them so magnificent a reception. With regard to the enormous progress the Association had made in the interval, he mentioned that twenty-three years ago when the Association met in Edinburgh, it had positively no surplus funds whatever. It had just managed to get out of debt. It had at that time 6,112 members: now it had 17,746. It had then an annual income of £9,539; now it had an annual income of £40,433. The JOURNAL then had a circulation of 7,505; it now had a circulation of 21,400. The invested funds were at that time nothing; at the present time they had £52,233 accumulated simply by the savings of those twenty-three years. The Association, which commenced by being a British Association, had become Imperial, and embraced the whole Empire. Last year they had the satisfaction of meeting in Canada, and they looked forward to the possibility of meeting at any rate in South Africa, if not in Australia. They had Branches in every British Colony throughout the world. It was a democratic organisation, and one in which the humblest member had an opportunity of making himself heard through its Branch organisation; and although a democratic organisation had its disadvantages, as all democratic organisations must have, still he thought the common sense of mankind throughout the world had become convinced that democratic organisations with all their disadvantages were best. They might be attended by a great deal of awkwardness, and what seemed to people very tiresome circumlocution; but their work was solid and lasting. A man could not say "After me the deluge," about work which was democratic in its basis; therefore he thought that the work of the British Medical Association, although open to criticism, as it must be, was work which would last much beyond their time, and go on from age to age, extending in usefulness, in importance, and in dignity.

"THE PRESIDENT."

Professor OSLER (Baltimore), in an amusing speech, proposed the health of Sir Thomas Grainger Stewart, President of the British Medical Association, whom he described as a man worthy of Edinburgh, worthy of the profession, of that great empire, and worthy to control the destinies of that great Association.

The toast was drunk with musical honours.

The PRESIDENT OF THE ASSOCIATION, who was received with great cheering, said it was rather an embarrassing sort of thing to reply to a speech such as that to which they had just listened. Dr. Osler was a man whose work one had known for many years, and the Professor had established a home amongst them. His books were full of good and solid matter. He (the President) knew something about what it was to work, and he had always wondered how Professor Osler managed to do it; how he got such a quantity of good solid facts together. The wonderful book which he had written on the *Practice of Medicine* was one which every student rejoiced in, and no professor in this island would ever dream of going into his lecture without knowing what Osler had said about the subject. It really was startling to find Professor Osler announcing in such a brief form that the Association possessed the three British medical graces, the three graces which evidently, on the authority of Professor Osler and the President of the Council, constituted excellence; it really was too much for one to think of. He had hitherto believed Professor Osler implicitly, but he must be excused if he took that announcement just with a little grain of the glorious salt that filled the ocean over which he came. He thanked the members for all their kindness. It had been a happy meeting to him, and had done him a world of good to meet with so many dear old friends. It was a great pleasure to him to meet with men who were old fellow-students and some who were old teachers. Mr. Priestley was not Sir William then. He had got a ribbon to his breast and a "Sir" to his name nowadays; but there he was, as kindly as he was when he was Sir James Simpson's assistant, and used to run about and make himself useful. Then there was Dr. Playfair. He recollected the admiration they all had in the Royal Medical and elsewhere, when they heard that Playfair, who had just passed, had come in at the very top of the candidates for the Indian Medical Service, just when people had found out that it was not a very bad way of getting people into services to have them submitted to a good stringent examination. He saw many others around him, men who were doing good work, and he thought he could look at every table and name men whom he had remembered as those who had been his own students, and in whose careers and noble advance in the profession he had had such pleasure throughout many years.

"THE GUESTS."

Professor CHIENE (President of the Royal College of Surgeons) proposed the last toast of the evening, "The Guests." He said that in the name of his fellow President, Sir John Batty Tuke, in the name of the Royal College over which they had the honour to preside, in the name of their ancient University, of the profession and the city of Edinburgh, they heartily bade the Association welcome. Man healthy was necessarily man social. Robinson Crusoe was much strengthened when his guest "Friday" arrived on the island. Their guests strengthened them. The congress would not finish its comet-like career until Saturday, that day dear to every old Edinburgh student, graduation day, when in the M'Ewan Hall their University, of which they were all so proud, would laureate some of their guests, and he asked them to think, when they were laureated, of the last public occasion on which that hall was used, when Edinburgh honoured itself by making Lister her burgess. It was a remarkable fact that in Edinburgh the cap used was made of a pair of old trousers of George Buchanan, while in St. Andrews they used a pair of trousers of John Knox for the same purpose. It was remarkable in that "kiltie" country that trousers were used to make caps. Amongst the many factors in the success of the meeting he enumerated a genial President, ably supported by Lady Stewart, a Lord Provost who had nobly done his duty to the metropolis over which he ruled, the loyal townsmen, a loyal profession, and above all a band of old Edinburgh students. He thought he was speaking for the Dean when he said that he joined with him in thanking all the old Edinburgh men for coming there to help on that important occasion. Among the other factors he mentioned a certain modicum of scientific work as an aid to digestion, and plenty of good fellowship. But there was something else. They had amongst them representative men from the great countries of the neighbouring Continent and from the sister Continent of America. Their presence strengthened them. There were, as Carlyle pithily put it, heroes in medicine, and those heroes they welcomed that night. In thinking of some of the guests who might have been present, but who were prevented from attending, he mentioned the names of Leyden, Durante, Lucas-Championnière, and Billings. When he thought of Billings he necessarily thought of a story. There was a Christmas treat at a sick children's hospital, and there were three items in that treat—a tea, a speech, and a band. The tea passed off without a hitch. A well-intentioned individual like the gentleman who was now addressing them stood up; but he had not proceeded very far when a little child stood up in its nightshirt in its bed, and grasping the sides of its crib said, "Put oot that mon and gie's the band." He (Professor Chiene) was in the position of that well-intentioned individual and would now introduce them to the band, coupling with the toast the names of three men, Professors, and therefore, necessarily great men. He was not going to say a word about those men: he did not need to say anything about Gerhardt or Blanchard, and they could see for themselves Professor Howard Kelly, between Gerhardt and Blanchard, the Anglo-Saxon holding out his hands to the German and to the Frenchman. He also coupled with the toast the name of Professor Kocher. He thought he was the mouthpiece of every man present when he said that they expressed the hope that their guests would reach their homes in safety with a happy memory of the short few days they had spent in Edinburgh.

happy to meet, happy to part, and happy to meet again; and when they met they would sing in the words of one of the greatest of Scotland's sons:

And here's a hand, my trusty friend,
And gie's a hand o' thine;
And we'll tak' a right guid willie-waught,
For auld lang syne.

He did not think that Professor Gerhardt knew what a "right guid willie-waught" was, so he would give him two more lines:

And we'll tak' a cup o' kindness yet
For the days of auld lang syne.

The toast was drunk with enthusiasm.

Professor Gerhardt, in reply, expressed his sincere thanks for the kind and flattering invitation the foreign guests had received to attend that great and learned assembly, which was sanctified by the memory of so great a number of physicians. He also thanked them for the great hospitality extended to them. The distinction conferred upon him in allowing him to address the meeting was, he felt, intended to extend to all the medical profession in Germany. If he might make himself the interpreter of their thoughts on that occasion he would say that they were deeply sensible of all that they owed to British medical science. To think of only a few things, he would mention the theory of the circulation of the blood by Harvey, the system of vaccination, the application of the antiseptic method, the introduction of chloroform, beginning in that town of Edinburgh. Apart from the scientific matters and achievements which claimed their admiration, they could not but look with an eye of appreciation upon all that British medicine had accomplished in another sphere—he meant the high position which the profession had attained and won for itself by good works and self-education.

Dr. Howard Kelly said the burden resting upon him was a heavy one; he had to voice the sentiments and emotions of 60 millions of people, the whole American people, crying out at a time when their emotions were stirred up as they had never been before, and holding out the beckoning hand for sympathy and aid in sustaining the great principles for which Anglo-Saxon civilisation stood—true honour, righteousness, defence of the weak, true manhood. The true American often deprecated the self-appointed representatives who came over here and noisily represented them either in the press—*parvenus* or *nouveaux riches*. The true American realised that blood was thicker than water, and insisted that Englishmen were their real kinsmen. They were peculiarly indebted to the medical profession of this country. While that profession had within the past hundreds of years been quietly making history they had been forging chains which bound them to all parts of the world—chains whose strength they probably did not recognise. The very foundation stones of medical history were laid on British lines. The evolution of American medicine had undergone three important phases of growth, in each of which the medical profession in this country had played the determining influence. In precolonial days America drew her medicine from this side of the water. About the middle of the last century Dr. Morgan, of Philadelphia, wrote a now rare and precious little pamphlet on medical education, and started the University of Pennsylvania, the first medical institution on that side of the water. That University had grown to be a great institution, and had always stood for the highest and best in the medical world. Both Morgan and Shippen, who was associated with him, were graduates of the University of Edinburgh. When America broke away from the mother country, the break was a political one, and not an intellectual one. He took great pride in declaring that American doctors were among the first to come over here and sit at the feet of that greatest master who put the capstone on the pyramid of surgery, Joseph Lister. Speaking on behalf of his friends and of himself, he said that never had they had more delightful, charming, whole-souled courtesy extended to them one and all than they had had at that meeting. He asked the Association to go over to America, and allow them to return in some slight degree the many courtesies with which they had been so overwhelmed.

Professor Blanchard also responded. He said in France they had learned to appreciate the good work done on behalf of suffering humanity and scientific progress by the Association. It was especially a pleasure to him to reply for his country to the toast because of the intimate and cordial relations of France and Scotland in bygone times, when their countries were one in sentiment, one in action, and bound by the closest ties of friendship and esteem. They were also striving towards the same end—how to alleviate the miseries of suffering humanity, and leave the world by their work if possible better than they found it.

Professor Kocher also responded. Speaking, he said, for Switzerland, where the Association would always be very welcome, he expressed his cordial thanks for all the pleasure he had had in so charming a town as Edinburgh. Long ago it was his conviction that everything which made England strong was a guarantee for the whole world, a guarantee of progress in every direction—religious, legal, medical, or social—progress towards everything good and true. Therefore he wished with all his heart health, wealth, and prosperity to this country, and added to the few words on the list of toasts, *Floreat res medica*.

During the evening an excellent programme of music was rendered by the orchestra, and the pipers of the Royal Scots played several marches, reels, and strathspeys.

BRITISH MEDICAL ASSOCIATION GOLF MATCH.

During the week of the meeting members who were devotees of golf had opportunities of enjoying their favourite pastime over several of the courses near Edinburgh. On Friday they went further afield and visited Muirfield and Archerfield by the kind permission, as to the first-named place, of the Honourable Company of Edinburgh Golfers, and, as to the latter green, by the kind invitation of Mr. and Mrs. Hamilton Ogilvy of Bill, Archerfield, etc. A special train left the Waverley Station for Gullane at 1.35 with a company of about 150 ladies and gentlemen, and on the arrival of the party there conveyances were in waiting to convey them to Muirfield and Archerfield. For the benefit of the ladies and others who were not taking part in the match, a visit to the fine old ruins of Dirleton Castle and to the beautiful gardens surrounding the Castle had been arranged. The Rev. John Kerr, the minister of the parish, met this detachment of the party on their arrival at Dirleton, and explained to the visitors the historical and other aspects of the Castle, after which they proceeded to Archerfield, where they were shown the gardens and the grounds in the vicinity of the house. Dr. R. H. Blaikie, Edinburgh, was in charge of the arrangements for the golf match, which took the form of a game between members of the Association resident in Scotland on the one hand, and members resident elsewhere on the other. A considerable proportion of the latter team were Scotsmen who have crossed the Border, but the players on this side also included two members of the profession from the United States and two from Ireland. Twenty-eight couples played over Muirfield and twenty couples contested their matches over Archerfield; one round in each case deciding matters. While there was a number of close matches, the result was of a very one-sided character, the team made up of members resident in Scotland winning by a majority of 64 holes. At the close of the play at Archerfield the visitors were entertained at tea by Mr. James Law. The details of the match are as follows:

RESIDENT SCOTTISH.		OTHER MEMBERS.	
(Played at Muirfield).			
P. J. Henderson, Edinburgh	0	W. B. Gow, Manchester	1
T. H. Bryce, Glasgow	5	F. L. Mackenzie, Huddersfield	0
A. E. Watson, East Wemyss	4	Nathan Raw, Liverpool	0
F. W. N. Haultain, Edinburgh	0	G. W. Ridley, Newcastle	3
J. Simla Paterson, Edinburgh	9	E. S. Robson, Alnwick	0
D. Argyll Robertson, Edinburgh	5	T. B. Grimsdale, Liverpool	0
G. M. Robertson, Murthly	1	P. Davidson, Liverpool	0
A. R. D. Thomson, Musselburgh	0	John D. Cruickshank, London	2
W. A. Finlay, Trinity	7	J. Limont, Newcastle	0
D. Wallace, Edinburgh	3	R. Howden, Newcastle	0
J. M. Cotterill, Edinburgh	3	B. Honeyburne, Bradford	0
T. R. Ronaldson, Edinburgh	3	T. E. Hill, Newcastle	0
S. C. Fowler, Juniper Green	0	A. E. Morrison, Hartlepool	4
H. J. Simson, Edinburgh	5	F. Penny, Barnstaple	0
T. Rutherford, Kelso	0	T. Jenner Verrall, Brighton	1

Colin Mackenzie, Edinburgh ...	0	J. T. Creery, Coleraine ...	5
R. Muir, Edinburgh	0	W. S. Campbell, Whitley ...	1
J. A. H. Duncan, Edinburgh ...	4	W. P. Simpson, Lincoln ...	0
John Duncan, Edinburgh... ...	0	H. H. Curtis, New York ...	3
C. W. Donald, Edinburgh	2	F. M. Pope, Leicester ...	0
C. H. Thatcher, Edinburgh ...	2	A. M. Routh, London ...	0
G. R. Wilson, Mavisbank	2	Rutherford Macphail, Derby ...	0
W. A. Calvert, Melrose	6	J. V. Rutherford, Newcastle ...	0
C. J. Lewis, Stirling	0	G. A. Sutherland, London... ...	13
W. N. Elder, Edinburgh	0	A. M. Paterson, Liverpool... ...	3
George Hunter, Glasgow	3	George Reid, Stafford	0
R. Kirk, Bathgate	0	D. Burgess, Sheffield...	8
Jas. Dunsmure, Edinburgh ...	0	Thos. Eastes, Folkestone	0

(Played at Archerfield.)

N. Walker, Edinburgh	0	T. C. Fox, London	5
F. D. Boyd, Edinburgh	0	G. S. Woodhead, London	0
G. Chiene, Edinburgh	0	Dr. Trimble	4
John Chiene, Edinburgh	3	J. S. Thomson, Lincoln	0
H. M. Dunlop, Edinburgh... ...	6	D. D. Davis, Newcastle	0
P. A. Young, Edinburgh	4	Sinclair White, Sheffield	0
H. H. Littlejohn, Edinburgh ...	8	John Oakley, Halifax	0
W. A. Macintosh, Stirling	1	A. Cameron, London	0
G. Lovell Gulland, Edinburgh ...	0	T. Stainthorpe, Hexham	5
H. A. Thomson, Edinburgh ...	5	W. Livesay, Derby	0
J. W. B. Hodsdon, Edinburgh ...	2	J. H. M'Auley, Dublin	0
R. Lucas, Dalkeith	0	Tatham Thomson Cardiff... ...	0
A. Ballantyne, Eskbank	3	H. Jefferies, Bolton	0
Watson Wemyss, Broughton Ferry	10	C. Kemp, South Shields	0
Jas. Gowans, Glasgow	1	W. Page May, London	4
D. N. Paton, Edinburgh	3	R. W. Burnett, London	0
P. S. Turnbull, Edinburgh ...	9	H. Brimdell Crouch	0
M. Dewar, Edinburgh	3	L. Roberts, Liverpool	0
M. Burnet, Crieff	5	John Rand, Wimbledon	0
J. Maxtone Thom, Glasgow ...	0	Geo. Peters, Toronto	0
Total 126		Total 62	

Majority for Scottish Resident Members ... 64 holes.

MADAME PÉAN, in fulfilment of the wishes of her distinguished husband, has presented to the Hôpital Saint-Louis his collection of 614 anatomical and pathological casts. The moulds of each cast were destroyed after the cast had been exhibited and reported; hence the collection is of high value.

THE foundation stone of an asylum for the county borough of West Ham was laid by the Mayor at Chadwell Heath, Essex, on August 3rd. The buildings will provide accommodation for 800 patients and staff. The total cost when furnished will be about £300,000.

EMSWORTH VICTORIA COTTAGE HOSPITAL.—On July 23rd the Emsworth Victoria Cottage Hospital, which is intended to be a memorial of the Queen's Diamond Jubilee, was opened by Sir Samuel Wilks, Bart., President of the Royal College of Physicians. Since 1887 the work has been carried on in a cottage rented at £16 a year, over 300 in-patients have been treated, 46 operations performed, and without incurring any debt. For the last three years the average cost per head per day has been 2s. The present hospital for 7 beds, designed by Mr. John Birch, of 8, John Street, Adelphi, has been erected at a cost of £1,500, and is very convenient in its arrangements. It consists of a first floor, on which are the two wards of 3 beds each and the matron's bedroom; and a second floor, with small special ward of 1 bed, bath room, operating room admirably lighted and equipped, and servant's room. The honorary consulting staff are Dr. Goodhart and Mr. W. H. A. Jacobson; the honorary medical officer is Mr. Lockhart Stephens. After a careful inspection Sir Samuel Wilks expressed his entire approval of the design and arrangements.

LEPROSY IN RUSSIA.—Kirchner and Kübler (*Klinisch. Jahrbuch*, Bd. vi. Heft 3), who were recently sent by the Prussian Government to report on leprosy in the eastern provinces of Russia, including the neighbourhood of St. Petersburg, state that the disease has been prevalent in this district for some hundreds of years; this fact makes it impossible to say whether any fresh cases have been imported from other districts. During the last two years they have been engaged in collecting statistics with regard to the number of cases of leprosy in Russia at the present time; they found that these amounted to about 5,000. The increase of leprosy seems to be confined to the southern and eastern portions of Russia. The system of isolation started in Norway has been followed by the Russians with marked success. Many private individuals have built hospitals for the treatment of this affection; the Czar himself has been a most munificent donor.

ASSOCIATION INTELLIGENCE.

SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.

THE sixty-eighth quarterly meeting of this District took place on July 15th, 1898, at Sandown, I.W., Dr. GROVES, President, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Notices of Meeting.—It was moved by Dr. GREEN, seconded by Dr. WILLIAMSON, and carried unanimously:

That in future Rule 14 should be printed in all notices of meetings.

The Treatment of Pulmonary Tuberculosis.—In the absence of the members who had promised papers, and at the invitation of the President, Dr. WILLIAMSON introduced a discussion upon the systematic treatment of pulmonary tuberculosis, and more especially the open-air treatment. He first indicated the lines upon which treatment should be framed, laying stress upon the guidance derived from grouping cases into certain types. Having briefly alluded to medicinal, germicidal, and other methods, he pointed out that the successful treatment of phthisis was now more than ever recognised to depend upon the improvement of vitality obtained by attention to the broad principles of liberal feeding, suitable clothing, and personal hygiene, regulated exercise, and an abundance of fresh air. The last of these items had rather suddenly achieved popularity under the name of the open-air treatment. Its principles and practice were by no means new. Although never organised or carried out to the extent now recommended, Dr. Williamson found them enforced at the Royal National Hospital for Consumption at Ventnor when he took charge there twenty-five years ago, and the same ideas had influenced medical practice for many years past at Ventnor, where the verandahs of the houses had proved most useful for the purpose. To overcome their fear of taking cold, patients needed much encouragement before they would leave the warm, rebreathed atmosphere of their rooms and sufficiently expose themselves to fresh air. Medical advice on this point would now be reinforced by the convictions of the laity, who, having emancipated themselves from the close rooms and curtained beds of former generations, had minds ripe for receiving a faith in fresh air as a curative agent. Dr. Williamson explained the manner in which the open-air treatment was conducted and its application in different types of phthisis. He spoke of the importance of combining it with recumbent rest in acute or highly febrile cases, and with carefully regulated exercise in the moderately febrile and stationary cases.

Uræmia with Few Symptoms.—Dr. PRESTON reported a case of uræmia with few symptoms, followed by death, in a man aged 84 years, who had always enjoyed good health until a few weeks before March 16th, 1898, when he complained of diarrhœa, nausea, pain in the rectum, and loss of appetite. The tongue was very thickly coated, breath offensive, pulse weak and inclined to be intermittent, urine normal, natural quantity passed, no difficulty. On March 18th the patient was examined in bed, and it was then found that there was a hard swelling in the abdomen in the region of the bladder, extending up to within 3 inches of the umbilicus. The swelling was inelastic and dull on percussion, and no fluctuation could be obtained. *Per rectum* the prostate was found considerably enlarged, and above the prostate a hard swelling was found projecting into the rectum. The rectum was itself distended by masses of very hard fæces. These were immediately removed by the finger, and the large bowel thoroughly washed out by means of a hydrostatic douche. The diarrhœa then ceased, and the bowels were kept gently moved by mild aperients for a few days, during which time the patient rapidly improved. On March 22nd an attempt was made to pass a catheter in order to diagnose if possible the nature of the abdominal swelling, but after the catheter had only been passed about 4 inches into the urethra, the patient experienced such pain that it was necessary to desist. A second attempt a few days later met with the same result, but was followed by slight hæmorrhage, and slight frequency of micturition. This, however, only lasted for about 36 hours, and the urine passed became normal. On March 31st the patient began to complain of slight frequency of micturition, accompanied by slight pain at the end of the penis. The

urine remained normal, and the swelling in the abdomen neither increased nor diminished in size. From this date the patient became weaker and very morose, the appetite completely failed, and finally on April 6th he became partially unconscious. On April 10th he became completely unconscious, and he died on April 13th. At the necropsy the abdominal swelling proved (as was expected) to be the bladder, but, unexpectedly, distended with urine. The walls were in some parts hypertrophied, and in others thinned as though preparatory to becoming sacculated. The urine was collected and tested, and found to be normal. Lying in the bladder were found eighteen small stones, the total weight being 1 drachm. The kidneys were found to be in a state of advanced cystic degeneration. No calculus was found in either kidney. The points of interest in this case were: First, the absence of any urinary trouble up to within three weeks of the patient's death, despite the presence of a distended bladder, which had undoubtedly existed for a considerable time before the patient was first seen, and despite the presence of eighteen sharp-pointed calculi in the bladder. Secondly, the normal condition of the urine up to the day of death, despite the condition of the bladder and the kidneys. Thirdly, the diarrhœa caused by the masses of hard fæces in the rectum, and which ceased upon their removal.

Next Meeting.—The next meeting of the District was fixed for the third Friday in October, at 4 P.M., at Sandown.

Annual Dinner.—After the meeting the President, visitors, and members dined together.

NORTH WALES BRANCH.

The forty-ninth annual meeting of this Branch was held at Llangollen on July 13th, 1898, Mr. H. J. Lloyd, J.P., President, in the Chair. Over thirty members were present.

New Members.—Messrs. Edwards (Port Dinorwic), and Roger Parker, F.R.C.S. (Liverpool), were admitted members of the Branch, and Messrs. R. J. Evans (Pwllheli), Edwards (Nantlle), Glynn Morris (Nantlle), Llewelyn Parry (Springs, Johannesburg), and G. P. Searle (Wrexham Infirmary), were admitted members of the Association and Branch.

Report of Council.—The District Council in their annual report congratulated the Branch on the success of the year's work, the meetings having been well attended (one by a third of the members of the Branch), the papers and discussions being encouraging and the finances in a satisfactory state. Reference was made to the interesting fact that next year the Branch would celebrate its jubilee, having been established in 1849, and the incoming Council were authorised to celebrate the event as it deemed fit.

Election of Officers.—President-Elect: It was unanimously resolved, on the motion of Dr. Palin, seconded by Dr. Lloyd:

That the Honorary Secretary (Mr. Jones Morris) be the President-Elect for the year 1899-1900.

Honorary Secretaries: It was unanimously resolved that Dr. H. Jones Roberts, Penygroes, be appointed joint Hon. Secretary with the President-Elect. *Honorary Treasurer:* Dr. Samuel Griffith, Portmadoc, was unanimously re-elected.

Branch Council.—Messrs. J. Craig, M.B. (Llandudno), Price Morris (Colwyn Bay), Grey-Edwards, Langford Jones, Emyr O. Price (Bangor), Rob Parry (Mayor of Carnarvon), Lloyd Williams, M.D. (Llanberis), Rich. Jones, M.D. (Blaenau Festiniog), and R. P. Roberts (Bethesda), were elected.

Places of Meeting.—It was decided that the autumn intermediate meeting should be held at Chester in conjunction with the Lancashire and Cheshire Branch; the spring intermediate in 1899 at Colwyn Bay, and the annual in 1899 at Bangor, that being the place where the first meeting of the Branch was held.

President's Address.—The President of the year, Dr. H. O. Palin, of Wrexham, delivered the annual address, taking for his subject "Antiseptic Surgery," for which he was accorded a hearty vote of thanks on the proposition of Dr. W. Thelwall Thomas (Liverpool), seconded by Dr. Lloyd Roberts (Denbigh).

Papers, etc.—Dr. Davies-Jones (Llangollen) read notes of a case of Psoriasis, and also showed some Foreign Bodies from the Ear.—Dr. W. Permewan (Liverpool) read the notes of a case of Tumour of the Larynx removed by Subhyoid Laryngotomy.—Dr. C. Macalister (Liverpool) gave a lantern demonstration of the Deformities in Rheumatic Osteitis, and also photographs of a case of Complete Transposition of the Viscera.

Annual Dinner.—The annual dinner was subsequently held, the members having as their guests the Chairman of the District Council and the Headmaster of the Intermediate School.

NORTH OF IRELAND BRANCH.

The twentieth annual meeting of this Branch was held in the Museum, College Square North, Belfast, on Thursday, July 21st, 1898, at 4 P.M. The President, Dr. Robert Gray, F.R.C.P. (Armagh), occupied the chair, and thirty-five members were present.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Annual Report.—The Secretary's report and Treasurer's statement having been already printed and circulated among the members, were, on the motion of Dr. John Campbell, seconded by Dr. Lindsay, taken as read and adopted by the meeting.

Election of Office-Bearers.—The following were elected for the year 1898-99: *President:* Henry O'Neill, M.D. (Belfast). *Vice-Presidents:* W. Calwell, M.A., M.D. (Belfast), and J. Singleton Darling, M.B. (Lurgan). *Council:* For Belfast: J. A. Lindsay, M.A., M.D., M.R.C.P.Lond.; Professor Sinclair, M.D., F.R.C.S.Eng.; H. L. M'Kisack, M.D.; John M'Caw, M.D.; Professor Whitla, M.A., M.D.; Professor Byers, M.A., M.D.; J. Lorrain Smith, M.A., M.D.; J. Symington, M.D., F.R.C.S.; For the Country: J. Campbell Hall, M.B., Monaghan); G. St. George, M.R.C.P. (Lisburn), James Stuart, M.D. (Ballymena), J. M. Palmer, F.R.C.S. (Armagh), D. P. Gaussen, M.D., (Dunmurry), R. Gray, F.R.C.P. (Armagh), P. J. O'Hara, M.D. (Ballymena), and J. C. Martin, M.B. (Portrush). *Honorary Treasurer:* George Gray, M.D., Adelaide Place, Newcastle, co. Down. *Honorary Secretary:* John Campbell, M.A., M.D., F.R.C.S.Eng., 21, Great Victoria Street, Belfast. *Representatives of the Branch on the Council of the British Medical Association:* J. A. Lindsay, M.D., and John Campbell, M.D. *Representative of the Branch on the Parliamentary Bills Committee:* Alexander Dempsey, M.D.

Death of Dr. David Johnston.—The Secretary was instructed to send a letter of condolence to the relatives of the late Dr. David Johnston.

New Members.—The following new members were elected: H. R. Irvine, L.R.C.S. and P.Edin. (1, Connsbrook Terrace, Strandtown, Belfast), Charles Hugh Murray, L.R.C.S. and P. Edin. (33, Kerr Street, Portrush), G. W. O'Flaherty Clark, L.R.C.S. and P.Edin. (Downpatrick), William Henry, M.B., T.C.D. (Clones, co. Monaghan).

Communications.—The following communications were then brought before the meeting:—Professor Byers showed (1) a rare Abdominal Tumour (a Multilocular Cyst of the Omentum) removed by Cœliotomy; (2) gave details of a case of Primary Cancer of the Peritoneum; (3) and gave an account of a combined Ovariotomy and Hysterectomy.—Dr. J. Lorrain Smith showed Sections of the Tumours from Dr. Byers's cases (1) and (2), and described their microscopic characters.—Dr. Henry O'Neill showed a patient from whom he had excised the right half of the lower jaw for the removal of a large Fibro-sarcomatous Tumour of the Jaw, and read notes of the case.—Dr. Calwell read a paper entitled Some Observations on the Open-air Treatment of Consumption. He described some of the German sanatoria which he had recently visited, and gave details as to the treatment carried out in several of them. Remarks were made by Dr. Frier (Waringstown), Dr. Henry O'Neill, who alluded to the fact that many years ago the late Dr. Mac Cormac, of Belfast, held views as to the treatment of consumption similar to those now in vogue, and advocated them in his book on *Air Rebreathed*; and Dr. Simpson, who called attention to the fact that at the Foster-Green Memorial Hospital there were the means of carrying out the most recent methods of treatment in consumptive cases.—Mr. T. Sinclair Kirk showed a patient upon whom he performed the operation of Nephrectomy for injury, and exhibited the Kidney removed.—Mr. Robert Campbell showed (1) a case of Spina Bifida cured by injection of Morton's fluid; (2) a case of Spina Bifida cured by operation; and (3) read notes of a case of Suppurative Arthritis treated by incision and drainage, and resulting in a movable joint.—Dr. John Campbell showed (1) a large Fibrocystic Tumour, weighing over 20 lbs., removed by abdominal section; (2) the Fœtus and Fluid

removed by operation from a case of extrauterine fœtation; (3) a Dermoid Tumour of the Ovary: (4) two Ovarian Cysts; (5) a Uterus containing several Fibroids, removed by vaginal hysterectomy: (6) a complete Cast of the Uterus, from a case in the practice of Dr. J. R. Davison.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

THE twenty-eighth annual meeting of this Branch was held at Cardiff on June 30th, Mr. J. L. W. WARD, President, and subsequently Dr. T. WALLACE, President-elect, in the chair. About 35 members were present.

Vote of Thanks to Retiring President.—A hearty vote of thanks was passed to the retiring President.

Election of Officers.—The following were elected officers for the ensuing year:—*President-elect:* Mr. W. W. Leigh (Treharris). *Members of Council:* Messrs. Webster, P. R. Griffiths, Lynn Thomas, Redwood, and Rawlings. Drs. A. Sheen and Evan Jones were elected representatives on the Council of the Association, and Mr. Evan Jones on the Parliamentary Bills Committee.

Report of Council.—The Council presented their twenty-eighth annual report, which stated that the year 1897-98 had been an uneventful one, work having been done much as in previous years. The membership of the Branch had increased from 233 to 243, in spite of losses incurred by several members leaving the district, and by a few resignations. There were a large number of unattached members, that is, members of the Association who did not belong to the Branch. This was a pity, because the members had no voice in the election of representatives on the General Council. They ought to have a voice, but this could only be by their joining the Branch. There had been no losses by death. The Branch was to be congratulated on the fact that by a voluntary subscription of 5s. from each member willing to give it, a sum of £38 had been sent to the British Medical Benevolent Fund. If each Branch in the kingdom would follow this example, the good work of this most useful and economically worked fund might be much more extended, and the pitiful cries for help which they read in the JOURNAL from time to time would not be so frequent. This plan had been in operation now for seventeen years. Since the last annual meeting at Swansea, four meetings had been held: at Llanelly and Merthyr, Swansea, and Cardiff, the two latter being clinical. The meetings had been unusually well attended, and many interesting cases and papers had been presented. At the Merthyr meeting the members present were most sumptuously entertained by the President, Mr. Ward. The fixtures for the coming year were: clinical, at Cardiff, in September; autumn, at Newport, in November; clinical, at Swansea, in February; spring, at Aberdare, in April; annual, at Swansea. The Council again recommended that a donation of £5 should be given towards the education of the daughter of the late Mr. Dixon, of Pontypridd.

Statement of Accounts. The statement of accounts showed a balance in hand of £69 12s. 5d.

Proposed Publication of a Volume of Transactions.—The question of publishing an annual volume of *Transactions* was discussed, and the opinion of the meeting being against, the PRESIDENT gave notice of motion that at the next meeting he would move to rescind a resolution passed at a previous meeting that such a volume should be published.

Branch Organisation.—Surgeon-Colonel Evatt's proposals *re* branch organisation were read and discussed, and it was resolved that his suggestions would be impracticable in the Branch.

President's Address. The PRESIDENT delivered his address on The Cardiff Medical School. A hearty vote of thanks was accorded to him for the address.

SOUTHERN BRANCH.

THE twenty-fifth annual meeting of this Branch was held at Sandown, I.W., on July 8th, Brigade-Surgeon W. HARMAN, M.D., presiding. Between forty and fifty members were present.

Election of Officers.—The result of the voting for office bearers in 1898-99 was announced as follows:—*President:* Mr. W. E. Green, Sandown. *President-elect:* Mr. A. B. Wade, Southampton. *Vice-Presidents:* Mr. F. R. P. Darke, Surgeon-General Davis. *Members of Council:* Drs. Blackman, Bullar, Lee, Robertson, J. Green, G. F. England. *Representative on Parliamentary Bills Committee:* Mr. C. R. Straton. *Representatives on General Council of Association:* Mr. H. J. Manning, Mr. J. Groves.

Donation to Royal Medical Benevolent College.—A donation of 5 guineas was voted to the Royal Medical College, Epsom.

Communications.—Dr. PURVIS read notes of a case of Intracranial Suppuration due to Ear Disease successfully treated by ligature of the internal jugular vein and trephining.

President's Address.—Dr. Harman resigned the chair to Mr. GREEN, who delivered the Presidential address, an abstract of which was published in the BRITISH MEDICAL JOURNAL of July 23rd (p. 224).

Visit to the Ventnor Consumption Hospital.—During the afternoon the members drove to Ventnor, and were received and entertained at the Royal Consumption Hospital by Dr. Sinclair Coghill and his medical colleagues.

Luncheon.—Before the business commenced the members were hospitably entertained at luncheon by Dr. Green at the Pier Hotel, Sandown.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT.

A MEETING of the East Surrey District of the South-Eastern Branch was held at Croydon on May 12th, 1898, H. G. THOMPSON, M.D., of Croydon, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Next Meeting.—On the proposition of Dr. J. H. GALTON, seconded by Dr. F. NICHOLLS, it was resolved that the next meeting should be held at Reigate on Thursday, October 13th, and that Mr. W. A. Berridge be invited to take the chair.

The Administration of Anæsthetics for Advertising and Unregistered Dentists.—Dr. P. I. DUNCAN proposed and Dr. F. NICHOLLS seconded the following resolution:

That the members of this Branch agree that they will not assist professionally, meet in consultation, or administer anæsthetics for members of the dental profession who advertise.

This was carried unanimously. Dr. P. I. DUNCAN then proposed and Dr. F. NICHOLLS seconded the following resolution:

That this meeting considers it unprofessional for registered medical practitioners to administer anæsthetics for unregistered dentists.

To this resolution the following amendment was proposed by Dr. J. H. GALTON and seconded by Dr. J. R. ADAMS:

That the time is not yet opportune to pass the resolution before the meeting.

After some remarks by Mr. MORGAN HUGHES, Dr. PARSONS SMITH, and Mr. J. SIDNEY TURNER, the amendment was put to the meeting, and declared lost, 4 members voting for it and 23 against, whilst the original resolution, on being put, was declared carried by 23 to 4.

The late Mr. E. H. Galton.—A vote of condolence with the friends of the late Mr. E. H. Galton was moved by Mr. J. SIDNEY TURNER, and seconded by Mr. PRANGLEY; and after being spoken to by Dr. POOLE, was unanimously carried.

Communications.—Mr. WRAY showed a case of Gunshot Injury to Eye.—Dr. FRED. J. SMITH read a paper On Some Points in the Clinical Nature of Pleurisy and Pleuritic Effusion. Dr. PETER HORROCKS read a paper on Hysterectomy *versus* Oöphorectomy.—Mr. A. H. TUBBY read a paper on The Diagnosis and Treatment of Infantile Hernia.—The CHAIRMAN, and Drs. J. H. GALTON, TUBBY, SIDNEY TURNER, OLDMAN, HOVENDEN, and PARSONS SMITH joined in the discussion which followed these papers.

Dinner. After the meeting seventeen members and visitors dined together.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE usual monthly meeting of this Branch was held at the Royal Society's Room on May 27th, 1898; Dr. W. CHISHOLM, President, in the chair. Thirty-six members and one visitor were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members. The PRESIDENT announced the election of Drs. F. Magnus and Wm. Cumming, and the nomination of Dr. Robertson of Coolamon.

Discussion.—The discussion on Dr. Wilkinson's paper was

continued by Drs. Lilie and Eichler. Dr. Wilkinson replied.

Communications.—Dr. Clubbe read some notes on five cases of Laparotomy for Perforation of Hollow Viscera. Drs. Hinder, Foreman, Fiaschi, Worrall, and Chisholm discussed the paper, and Dr. Clubbe replied.—Dr. Hinder read some notes on four cases of Prostatectomy. Dr. Gordon Craig read some notes on a case of Prostatectomy. These papers were discussed by Drs. Lilie, Fiaschi, and W. Chisholm. Drs. Hinder and Gordon Craig replied.

CORRESPONDENCE.

THE WIDOWS AND ORPHANS OF MEDICAL MEN.

Sir,—Attention has been drawn to the will of the late Dr. George Vernon Blunt, which has lately been proved in the district registry at Birmingham at the sum of £43,000, and it has been pointed out that the selection of the charities to which he bequeaths legacies is very catholic, and one with which no one will quarrel, for there is hardly any form of infirmity or distress which does not benefit by the bequests.

I cannot, of course, quarrel with the intentions of a testator who leaves his wealth to relieve distress, but I cannot help thinking it deplorable that medical men who have earned their incomes by the practice of their profession, hardly ever remember that, in spite of abilities, in spite of hard work, many widows and orphans of medical practitioners are left in terrible need through no fault of their own; in the case of these, through the British Medical Benevolent Fund and through the Royal Medical Benevolent College, legacies bequeathed by those practitioners who have prospered would relieve untold distress, and would save even from the workhouse. I speak of that which has fallen within my own experience in efforts to reach those helpless, hopeless ones.—I am, etc.,

Gloucester Place, W., Aug. 3rd. C. Holman.

PLAGUE ON A P. AND O. STEAMER.

Sir,—Will you kindly allow me to correct a slight error in your account of the cases of plague occuring in this ship? The first patient stated that his indisposition dated from July 3rd, and not from the date of sailing, which was July 2nd. All the native crew are most carefully examined by the port medical officer and his staff immediately before the ship's departure from Bombay, and any case of incipient plague would most certainly have been detected by them.—I am, etc.,

Robert Henry,
Royal Albert Docks, Aug. 2nd. Surgeon ss. *Carthage.*

THE CHEMISTRY OF THE THYROID GLAND.

Sir,—The British Medical Journal of July 9th contained a paper of mine on a new preparation of thyroid (thyroglandin), and in the issue of the following week there is a postscript in Dr. Robert Hutchison's paper on the Pharmacological Action of the Thyroid Gland, calling certain statements in my paper in question.

The views I have expressed with reference to the chemistry of this new preparation (thyroglandin) are those of its inventor, E. C. C. Stanford, F.C.S., F.I.C. I shall therefore leave him to confute in detail Dr. Hutchison's contentions.

Dr. Hutchison does not deny that thyroglandin contains all the constituents that the raw gland contains in the form and proportion in which these are found in the gland itself. So far as my experience goes, I am convinced that none of the extracted preparations at present on the market give such satisfactory results as the raw gland. They are used instead of the gland because of the obvious disadvantages connected with the latter. I am well aware that the specific symptoms of thyroid action (thyroidism) can be produced by the "colloid" material of Dr. Hutchison and other preparations, but have these preparations exactly the same therapeutic effect as the gland itself? I pointed out that there are two principles in the thyroid gland because cold water separates them. Both of these contain iodine. Dr. Hutchison denies this, and maintains that there is "only one iodine-containing compound, namely, the colloid matter." When a constituent can be separated from an animal substance by means of cold water alone, no chemist would think of using caustic soda to effect this purpose. The caustic soda would dissolve everything, and there is not the least probability that any iodoglobulin thus dissolved could be precipitated by an acid unchanged. I believe Stanford's preparation avoids these objections, and represents really all the active ingredients present in the raw gland.—I am, etc.,

William MacLennan, M.B.,
Late University Assistant to the Chair of Materia Medica and Therapeutics, Glasgow University; Dispensary Physician,
July 26th. Western Infirmary, Glasgow.

HOSPITAL REFORM.

Sir,—Having been requested to read a paper on Hospital Reform at the forthcoming meeting of the Institute of Public Health at Dublin, I shall feel grateful if some of your Irish correspondents will communicate with me on the subject. At first sight there does not appear to be a very close connection between hospital reform and sanitation, but on reflection it will be found that there are several points in connection with hospitals which may fairly be dealt with by sanitarians. For instance I may mention two: first, the reception of infectious diseases in a general hospital; and secondly, the massing together of patients in the limited space generally allowed for the out-patients.—I am, etc.,

T. Garrett Horder,
Cardiff, Aug. 2nd. Honorary Secretary Hospital Reform Association.

MEDICALLY DOUBTFUL LIVES IN LIFE INSURANCE.

Sir,—In your issue of July 30th I am reported to have said, "that doubtful cases were far too often rejected by the offices. I would load cases of heart disease, and examine them afterwards every five years, and possibly admit them at last as first-class lives." I would not trouble you in the matter except I am convinced that points of great importance to the offices and the profession are involved. The cases which I proposed to treat as described were "medically doubtful cases," namely, cases where there was a slight aberration from the normal whose significance was not gaugeable at the time of application, but which might be expected to clear up one way or another in course of time. I proposed to form special classes of these cases, and it will be seen that by so doing disappointment would be saved to proposers of insurance, and additional work of a purely professional nature afforded to medical officers of the offices.—I am, etc.,

London, Aug. 2nd. Thos. Glover Lyon.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH: GRADUATION CEREMONY.

The Medical Graduation Ceremonial in the M'Ewan Hall of the University of Edinburgh on Saturday, July 30th, may be regarded as the closing scene of the great Edinburgh meeting of the British Medical Association, and it was enacted with due pomp and circumstance. Everything contributed to make the scene impressive—the great hall, the nineteen notable medical men on whom honorary degrees were conferred, the ten lady graduates of medicine, the audience of 3,000, and the general enthusiasm. The proceedings were made more interesting by the fact that it is the first medical graduation which has taken place in the new hall. The demand for tickets of admission was, we believe, without parallel in the history of the University. The Vice-Chancellor (Sir William Muir), who presided, had on his right Lord Provost Mitchell Thomson, and on his left Sir William Priestley, M.P. Besides the members of the Senatus Academicus there were on the platform Dr. Farquharson, M.P., Dr. John Smith, Dr. Argyll Robertson, the architect of the Hall (Dr. Rowand Anderson), and others. The first part of the function was the conferring of honorary degrees.

The Honorary Degree of LL.D.

The Dean of the Faculty of Law (Professor Sir Ludovic Grant) introduced those upon whom it had been resolved to confer the honorary degree of Doctor of Laws. Before doing so he remarked that it was matter for congratulation that the first medical graduation ceremonial held in the M'Ewan Hall

should have coincided with the visit to the city of the British Medical Association. This meeting, so far as honorary graduates were concerned, would establish a record. If they put aside the great tercentenary festival of 1884—the circumstances of which were unique—on no previous occasion in their academic annals had a lengthier list of honorary graduates been prepared, or one of a more cosmopolitan character. He then, with the following remarks, introduced the gentlemen to be laureated:

HENRY PICKERING BOWDITCH, M.D., Member of the National Academy of Sciences, U.S.A., Professor of Physiology in Harvard University.—The metropolitan University of Scotland rejoices to offer her degree to one who is justly regarded as a pioneer and leader of scientific enterprise in the United States of America. The researches which the distinguished tenant of the Chair of Physiology in Harvard University has himself prosecuted have added not a little to the advancement of that science, notably those into the laws regulating the growth of children, the force of ciliary motion, and the innervation of the vascular system. But, more than this, he has stimulated others to carry on research, and has so efficiently trained his countrymen in the most approved methods, that we are justified in largely attributing to his influence the present position of the American School of Physiologists. I now beg you to confer upon the distinguished American the Honorary Degree of Doctor of Laws.

Sir WILLIAM HENRY BROADBENT, Bart., M.D., F.R.S., London.—We are proud to recognise in Sir William Broadbent one of the foremost representatives of British Medicine, and a physician whose name has passed into a household word. He has taken as his peculiar province the pathology of the heart, and his treatise on the structural diseases of that organ has given him a position as a scientific writer not less exalted than that to which his skill in diagnosis and treatment entitle him as a practitioner. His eminence has been recognised by his election to the Presidency of all the chief medical societies in London, and by the award of a baronetcy. To these distinctions the University of Edinburgh now gladly adds her Honorary Doctorate of Laws.

THOMAS LAUDER BRUNTON, M.D., D.Sc., F.R.S., Lecturer on Materia Medica, St. Bartholomew's Hospital School, London.—Formerly an *alumnus* of the University of Edinburgh, where he graduated as Doctor of Medicine with a gold medal in 1868, and as Doctor of Science in 1870, Dr. Lauder Brunton has since achieved successes which reflect no little lustre on the institution where he received his earliest training in medical science. The reputation which he has made for himself alike as a lecturer and writer on pharmacology is of the highest; indeed, his great work on *Pharmacology, Therapeutics, and Materia Medica* has been described as marking an epoch in the history of medicine, and as a veritable mine of wealth for students and practitioners. His *alma mater* cordially welcomes her distinguished son into the ranks of her Honorary Graduates in Law.

EUGÈNE LOUIS DOYEN, M.D., Paris.—At one time Professor of Surgery in Rheims, Dr. Doyen has now established a clinic in Paris, to which surgeons from all parts of the world resort. For he is renowned for the brilliance of his technique and for the ingenuity of his inventions, notably those which minimise the risks attending operations upon the abdominal, thoracic, and cranial cavities. He is also known as the author of many important contributions to the literature of pathological anatomy and of microbiology, and the diagrams with which his volumes are illustrated show that he is as dexterous a draughtsman as he is a skilful surgeon. We are proud to offer so distinguished a representative of surgical science in France the highest honour in our gift.

DAVID FERRIER, M.D., F.R.S., Professor of Neuro-Pathology, King's College, London.—In welcoming Professor Ferrier here to-day the University recalls with gratification that he equipped himself for the profession of which he is now so conspicuous an ornament in our own Faculty of Medicine, graduating as Doctor of Medicine with Gold Medal in 1870. He is now regarded as one of the greatest authorities on the pathology of the brain, and his treatises on the functions of that organ and on the localisation of cerebral disease are of the highest value. The University has already recognised his learned researches by conferring upon him the Cameron Prize in Therapeutics, and to-day she rejoices to add a more significant mark of her appreciation—the Honorary Degree of Doctor of Laws.

M. LE COMTE DE FRANQUEVILLE, Officer of the Legion of Honour, Member of the Institute of France.—The learned researches which M. le Comte de Franqueville has conducted have been directed, unlike those of most of his co-graduates to-day, not towards the human body, but towards the body politic. Amongst writers on political science he holds an exalted place, and most fitting is it that this country should do him honour, for his greatest and best work has reference to the political and social life of Great Britain. He has made a lifelong study of our constitution and our institutions—legal, educational, economical—and from his many erudite volumes British publicists may learn much about their own country. Already the Universities of St. Andrews and Dublin have conferred their highest dignities upon M. le Comte de Franqueville, and the University of Edinburgh now rejoices to bind him with a fresh fetter to the kingdom of whose organisation he has made so masterly a study.

JOSEPH FÖRSTER, M.D., Professor of Hygiene and Bacteriology in the University of Strassburg.—Amongst those by whom scientific hygiene has been most materially advanced is to be placed the Professor of Hygiene in the University of Strassburg. Under his guidance as director of the Hygienic Institute many invaluable investigations have been prosecuted into micro-organic life, and his own researches in connection, for example, with nutrition, with the milk supply, and with methods of bacteriological cultivation, have yielded most important results. No more signal proof of his eminence can be adduced than the long roll of honours that have been conferred upon him at home and abroad. The University rejoices to inscribe the name of the illustrious bacteriologist on the roll of its Honorary Graduates in Law.

CARL GERHARDT, M.D., Professor of Medicine and Director of Clinical Medicine in the University of Berlin.—Occupant of the Chair of Medicine in the Universities successively of Jena, Würzburg, and Berlin, Professor Gerhardt, while gaining a great name as a teacher, has found time to enrich therapeutical literature with several valuable contributions. He is known for his researches in connection with affections of the larynx and chest, but, above all, he is known as the author of an encyclopædic work on the diseases of children, which is everywhere regarded as a standard text-book. In recognition of his signal services as teacher and writer, the University delights to confer upon him the Honorary Degree of Doctor of Laws.

RICHARD BURDON HALDANE, Q.C., M.P.—Twenty-two years ago Mr. Haldane graduated as Master of Arts in this University with first class honours in Philosophy, and he returns to us to-day because the promise of his early years has already been so amply fulfilled. The philosophical writings which he has published mark him out as gifted with a rare capacity for speculative thought. But his achievements in this field are the more remarkable that they have been combined with a forensic career of such rapid and such marked success as alone would entitle him to be ranked as a Doctor of Laws. He took silk at the unprecedentedly early age of 34, three years later he became a Bencher, and he now is recognised as one of the leaders of the English Bar. His *alma mater* willingly testifies to the pride with which she regards so distinguished an *alumnus* by conferring upon him her highest honour.

JONATHAN HUTCHINSON, M.D., LL.D., F.R.S., Emeritus Professor of Surgery, London Hospital College.—On the roll of British surgeons the name of Dr. Jonathan Hutchinson occupies a pre-eminent place, and the estimation in which he is held may be inferred from the lengthy list of high offices which he has occupied at different times. The special branch in which he is recognised as an authority of the greatest weight is the diseases of the skin, in regard to which he has written several important treatises. And he has also rendered services of the highest order in connection with the Commissions on small-pox, vaccination, and leprosy. These meritorious labours fully entitle him to the distinction which I now ask you to confer.

THEODOR KOCHER, M.D., Professor of Surgery in the University of Berne.—The fame of this great representative of surgical science in Switzerland extends far beyond the precincts of the University of Berne, in which he holds office. His skill of hand and fertility of resource, more especially in

operations for goitre, hernia, and internal cancer, are known all the world over, and the tale of those whom he has relieved would take long to tell. In one direction, moreover, he is to be hailed as a pioneer, for his researches were largely instrumental in establishing the connection of myxœdema with the removal of the thyroid gland. His written works form a massive and important contribution to surgical literature. The University is sensible that she is honouring herself in receiving the world-renowned surgeon into the ranks of her Honorary Graduates in Law.

August Martin, M.D., Professor of Gynæcology, University of Berlin.—Amongst gynæcologists, Professor Martin, who holds the Chair of that department of medical science in the University of Berlin, has won for himself a place in the very foremost rank. His numerous published writings, of which many deal with the operative treatment of morbid conditions, are charged with much original observation, and have greatly contributed to the diffusion and development of gynæcological knowledge. He has, besides, founded and continues to edit a very important magazine. As a teacher, too, his success has been marked, and he has sent from his class-room many workers of the highest promise. On these grounds Professor Martin is pre-eminently worthy of our highest academic distinction.

Johann Mikulicz, M.D., Professor of Surgery in the University of Breslau.—For many years Professor of Surgery in the University of Cracow, and now Professor of that subject in the University of Breslau, Dr. Mikulicz may be justly regarded as one of the leaders both of Polish and of German surgical science. His published papers and books form a voluminous and most valuable contribution to the literature of his department. Of special importance are those writings which deal with the antiseptic treatment in surgical operations, which he has done much to develop. He is also known as the author of the operation of osteoplastic resection of the foot. The University with which the name of Lister is inseparably linked delights to honour one by whom the antiseptic system has been so materially advanced.

Ottavio Morisani, M.D., Professor of Midwifery and Gynæcology, University of Naples.—Much of the advancement which recent years have witnessed in the science and art of obstetrics must be laid to the credit of the illustrious Professor of Midwifery in the University of Naples. His achievments in that department of medicine are truly remarkable, and to him belongs the honour of having perfected the operation of symphysiotomy, by which so great a saving of life is secured. He has further contributed to the diffusion of the most advanced obstetrical knowledge as a teacher in one of the largest schools in Italy, and as editor of an important gynæcological magazine. The University extends a cordial welcome to the illustrious Italian while adding his name to her honorary roll.

William Osler, M.D., LL.D., F.R.S., Professor of Medicine, University of Baltimore.—The science of medicine in the New World reckons as one of its most illustrious ornaments the distinguished Professor of Medicine in Johns Hopkins University. He has prosecuted research in many directions with conspicuous success, and his published writings cover a varied field. In particular may be mentioned those relating to chorea, to the cerebral palsies of children, and to morbid conditions of the heart. The lengthy list of offices which he has filled are a certain index to the reputation which he enjoys in the profession. But a few days ago the University of Aberdeen conferred upon him its highest degree, and to-day the University of Edinburgh rejoices to follow the example of her northern sister.

William Smoult Playfair, M.D., LL.D., Professor of Obstetric Medicine, King's College.—A pupil of the late Sir James Simpson, Dr. Playfair has added lustre to this University as a school of obstetric medicine. He has not only raised himself to the very front rank of practitioners in that department of medical science, but is also known as the author of many valuable obstetrical treatises. In particular, it should be mentioned that his work on the *Science and Practice of Midwifery* has held the field for more than twenty-five years as the most authoritative English textbook on the subject. He has been elected to all those offices which are the prerogative of our most eminent obstetricians. And now his *alma mater* desires to signify her appreciation of his work by creating him an Honorary Doctor of Laws.

Thomas George Roddick, M.D., Professor of Surgery in M'Gill University, Montreal.—It is a source of gratification to this University to know that to Professor Roddick belongs the merit of having been the first to introduce the Listerian antiseptic treatment from Scotland into Canada. Of the many papers of which he is the author, the most notable are those relating to antiseptic and aseptic surgery, and his medical report on the Riel Rebellion, in which he acted as Deputy-Surgeon-General to the West Field Force. He has held many dignified offices, and last year he was elevated to the commanding position of President of the British Medical Association. In asking, then, Professor Roddick's acceptance of our highest degree, we are honouring also the great Association which has been lately meeting within our precincts in the person of its late titular head.

Siegmund Rosenstein, M.D., Professor of Clinical Medicine in the University of Leyden.—A native of Germany, Dr. Rosenstein first made his mark as a teacher of medicine in the German Universities of Berlin and Göttingen; but he is now claimed by Holland, for he has held since 1873 the Chair of Clinical Medicine in the University of Leyden. Prior to his election to this office he had been recognised as a writer of conspicuous merit, by virtue of his great work on the *Pathology and Therapeutics of Diseases of the Kidneys*, a book which has passed through several editions. He has since written widely on medical subjects—for example, on aneurysm, on cirrhosis of the liver, and on endocardiac affections. The University of Edinburgh cordially inscribes on the roll of her honorary graduates the name of so illustrious a representative of the German and Dutch Schools of medicine.

Herman Snellen, M.D., Professor of Ophthalmology in the University of Utrecht.—Devoting himself from an early age to researches in the physiology of vision, in particular the retinal perception of form and colour, Professor Snellen now enjoys a unique reputation as an ophthalmologist. From the lengthy list of his scientific publications I would select for mention his system of test-types, by which the acuteness of the visual sense can be accurately gauged, and which has been adopted by our Government in the examination of candidates for the army and civil service. As an operator Professor Snellen is famed for his dexterity of execution, and for having introduced into practice several original methods of treatment. He is, too, greatly esteemed as a teacher of ophthalmology, and students resort to his class-room from all parts of the world. So great a benefactor is well worthy of the honour which we now bestow upon him.

Sir Richard Thorne Thorne, K.C.B., Chief Medical Officer, Local Government Board, London.—Placed in the exalted position of official head of sanitary science in England, Sir Richard Thorne has given evidence of administrative abilities and scientific attainments of the highest order, and by his energy and address has rendered inestimable services in the cause of the public health. It would be impossible to speak too highly of the diplomatic skill with which, acting as our plenipotentiary, he has conducted several important international negotiations having reference to sanitary arrangements. We take it as an auspicious omen that within the self-same month in which the University has gained through private liberality a Professor of Public Health and an Institute of Public Health, an opportunity should be afforded us of conferring honour upon one whose example as an officer of the public health is so conspicuous.

Degree of Doctor of Medicine.—Professor Bayley Balfour next presented the following 71 candidates for the degree of M.D.:—

H. de M. Alexander, M.B., C.M.; A. Balfour, M.B., C.M.; H. Bateson, M.B., C.M.; R. S. Bennie, M.A., M.B., C.M.; A. Birt, M.B., C.M.; H. Blundell, M.B., C.M.; A. J. Campbell, M.A., M.B., C.M.; A. K. Campbell, M.B., C.M.; S. H. Carr, M.B., C.M.; H. O. Corfield, M.B., C.M.; E. N. Darwent, M.B., C.M.; W. Denby, M.B., C.M.; M. L. Dhingra, M.B., C.M.; E. R. Dodds, M.B., C.M.; H. A. Dumat, M.B., C.M.; G. H. Dupont, M.B., C.M.; W. F. Farquharson, M.B., C.M.; F. W. Foxcroft, M.B., C.M.; Alexandra Mary Campbell Geddes, M.B., C.M.; C. J. Gibson, M.B., C.M.; W. Glegg, M.B., C.M.; C. J. Gomes, M.B., C.M.; A. C. E. Gray, M.B., C.M.; T. P. Gray, M.B., C.M.; H. M. Green, M.B., C.M.; F. H. Hardman, M.B., C.M.; J. W. Hart, M.B., C.M.; J. F. Haswell, M.B., C.M.; C. M. Hector, M.B., C.M.; D. H. Hutchinson, M.B., C.M.; D. S. Johnston, M.B., C.M.; H. B. Knox, M.B., C.M.; H. G. Langwill, M.B., C.M.; D. Lawson, M.A., M.B., C.M.; I. Macdonald, M.B., C.M.; C. J. R. Macfadden, M.B., C.M.; H. M. MacGill, M.B., C.M.; W. MacGill, M.B., C.M.; A. G. M'Intyre, M.B., C.M.; G. M'Kellar, M.B., C.M.; F. L. Mackenzie, M.B., C.M.; W. H. Mackenzie, M.B., C.M.;

D. Melville, M.B., C.M.; J. Middlemass, M.A., B.Sc., M.B., C.M., F. H. Morison, M.B., C.M.; R. O. Morris, M.A., M.B., C.M.; C. F. A. Moss, M.B., C.M.; P. W. Nicol, M.B., C.M.; P. A. Nightingale, M.B., C.M.; G. Ozanne, M.B., C.M.; W. Peart-Thomas, M.B., C.M.; J. A. Perez, M.B., C.M.; G. Phillips, M.B., C.M.; W. A. Potts, B.A., M.B., C.M.; L. N. Robinson, M.B., C.M.; W. Sanson, M.B., C.M.; J. Scott, M.B., C.M.; W. Somerville, M.B., C.M.; F. N. Stewart, M.B., C.M.; A. C. Sturrock, M.A., M.B., C.M.; W. S. Syme, M.B., C.M.; D. Thomas, M.A., M.B., C.M.; H. T. Thomson, M.B., C.M.; H. S. Walker, M.B., C.M.; J. R. Watson, M.A., B.Sc., M.B., C.M.; R. H. Watson, M.A., M.B., C.M.; J. Watt, B.A., M.B., C.M.; G. A. Welsh, M.B., C.M.; J. Wilkinson, M.B., C.M.; J. W. Williams, M.B., C.M.; J. B. Yeoman, M.B., C.M.

DEGREES OF M.B. AND C.M.—The following candidates were next presented for these degrees:—

H. Armistead, J. H. Bam, F. J. H. Bateman, B.A., W. Bennett, C. A. Bentley, C. W. Breeks, A. J. W. Buchanan, C. Chilton, M.A., D.Sc., A. W. G. Clark, W. H. Dawson, M.A., B.Sc., J. H. S. Douglas, G. Drummond, H. Duckworth, A. R. Eates, F. B. Feast, G. L. K. Finlay, B.A., G. W. FitzGerald, J. M. Fraser, E. Frost, J. H. Furniss, D. J. Hughes, A. H. James, F. R. Jones, F. F. Kerr, J. Davis, Beatrice Anne M'Gregor, J. Mackenzie, H. Mallins, B.A., R. F. Mudie, B. E. Myers, G. H. W. Robertson, M.A., J. G. Ross, H. V. Sames, J. T. Scott, J. F. Stewart, W. A. C. Ussher, J. F. Wilson.

DEGREES OF M.B. AND CH.B.—The following 114 candidates were then presented for these degrees:—

J. Allison, J. R. Anderson, W. N. Barker, E. P. Baumann, H. L. S. D. Belasco, W. Bell, F. P. Bester, Harriett Amelia Scott Bird, J. M. Bowie, E. T. R. Branch, S. Branch, C. S. Brebner, R. N. Brebner, A. E. Brookes, H. H. Broome, A. C. Brown, E. H. Brunt, J. Burnet, M.A., Isabella Douglas Cameron, J. Cameron, B.Sc., R. Cameron, Jane Alice Craig, W. Craig, R. Crawford, Faith Philpot Crowther, R. Cumming, J. M. Cuthbert, E. F. Cyriax, L. J. M. Deas, G. Dick, R. J. Dick, W. H. Dickinson, F. H. Dommisse, J. Donaldson, J. F. Falconer, D. D. Farquharson, D. Forbes, A. D. Fordyce, C. Forsyth, A. F. Fraser, A. T. Gailleton, G. Gatenby, H. E. Gibbs, R. Gibson, Janet Dorothy Gilfillan, A. Gilmour, A. Goodall, J. M. Gray, A. M'W. Green, G. Hamilton, T. E. Hincks, C. A. B. Horsford, W. E. Hutchinson, M.A., J. W. Ingles, A. H. Keun, G. E. J. King, R. King, J. Leggate, P. A. Leighton, E. W. Lewis, E. M. Lithgow, J. S. Low, B.Sc., P. L. M'All, B.A., A. J. M'Clymont, J. C. M'Conaghey, E. M'Culloch, W. C. Macdonald, W. R. Macdonald, J. M'Gibbon, A. C. M'Gilchrist, M.A., A. M. M'Intosh, W. M'Kay, R. W. MacKenna, M.A., J. W. MacKenzie, D. W. Maclagan, D. A. Macvean, E. C. G. Maddock, T. R. Matthews, Christina Allison Mayne, W. P. Meldrum, B.Sc., C. W. F. Melville, G. W. Miller, B.Sc., L. H. B. Mills, J. Monroe, L. D. Parsons, B.A., C. M. Pearson, G. B. Pemberton, H. R. Phillips, R. Pugh, J. A. Raeburn, W. Raine, A. C. Renwick, J. H. Rhodes, H. H. Roberts, G. A. Rorie, A. C. Sandstein, R. F. M'N. Scott, B.A., I. Shalaby, A. Shearer, G. F. B. Simpson, J. A. C. Smith, W. Smith, E. Somerville, W. Tarr, W. E. Tellet, A. H. Thomas, R. C. Verley, H. Wade, W. E. J. Wallis, D. Wardrop, D. B. Waters, M.A., J. R. Williamson, W. C. Wilson, M.A., G. G. J. Young.

MEDALS, SCHOLARSHIPS AND PRIZES.

The DEAN then presented the following gentlemen to the Vice-Chancellor, and asked him to present to them the gold medals, scholarships, and prizes, which they had been awarded:

Thesis Gold Medallists: A. Balfour, M.D., A. C. Sturrock, M.D. Ettles Scholarship: R. F. M'N. Scott, B.A., M.B., Ch.B. Beaney Prize in Anatomy and Surgery: J. H. Rhodes, M.B., Ch.B. Mouat Scholarship in Practice of Physic: A. D. Fordyce, M.B., Ch.B. Stark Scholarship in Clinical Medicine: G. E. J. King, M.B., Ch.B. Wightman Prize in Clinical Medicine: R. W. Mackenna, M.A., M.B., Ch.B. Pattison Prize in Clinical Surgery: L. C. P. Ritchie. Buchanan Scholarship in Gynæcology: J. H. Rhodes, M.B., Ch.B. James Scott Scholarship in Midwifery: A. C. Sandstein, M.B., Ch.B. Freeland Barbour Fellowship in Anatomy, Physiology, and Pathology: A. C. Sandstein, M.B., Ch.B. Ellis Prize in Physiology: A. C. Sturrock, M.A., M.D., C.M.

DEGREES IN SCIENCE.

The Degree of Doctor of Science in the Department of Public Health was conferred on Charles Hubert Bond, M.D., B.Sc., and Charles Killick Millard, M.D., B.Sc.

The Degree of B.Sc. in Public Health was conferred on Edward Daniel Wilson Greig, M.B., C.M.

The capping ceremony having been concluded,

The VICE-CHANCELLOR said it was unusual for the Vice-Chancellor to intervene with any remarks, but that occasion was such a special one that he felt impelled to depart from the usual custom. On behalf of the University Court and the Senatus, he desired to express their gratification at that marvellous assembly. There were several circumstances that marked that out as a very special occasion. In the first place, although the degrees of Arts and Science were conferred in April last in that hall, which had been given to them by that noble gentleman whose name it bore, that was the first time the degrees in Medicine had been conferred there. They congratulated the graduates upon that fact, and felt assured that in their after-careers they would look back upon it with pleasure and satisfaction. In the next place, that occasion was signalised by its concurrence with the visit of the British Medical Association to Edinburgh. The meetings of that Association during the week had been of great interest and importance, and it was their hope and belief that the labours of the various Sections would result in benefit to humanity.

The Promoter's address was then given by Professor BAYLEY BALFOUR. He congratulated the graduates on their honours, and said the times seemed "to have conspired to make the day of their laureation memorable beyond that of their predecessors." He referred to the M'Ewan Hall, to this the first medical graduation in it, to the generosity of Sir William Priestley in decorating the Library Hall, and to the generosity of Mr. John Usher in endowing the Institute of Public Health for the University and city. He proceeded: "The other circumstance to which I refer is the concurrence with your graduation of the meeting in Edinburgh of the Association, which links in membership your profession in Britain, and at the same time holds out the hand of fellowship to your brethren all over the world. The brilliant assemblage which the reputation of the Edinburgh school has brought together here at this time cannot fail to impress you. Many of you will, I doubt not, have come in contact with men whose names have become familiar to you during your curriculum, and may thus have added the magnetic influence of their personality to that of their work; and the honour which your *alma mater* has today conferred upon leaders in your profession, some of them men who in the recent past have occupied the position you do today, will encourage you to emulation of their life-work, so that perchance in years to come you may merit similar honour." He counselled the graduates to cultivate their sense of responsibility if they would become great men, to avoid the two pitfalls of diffidence begotten of timidity, and on the other hand that of cocksuredness which is bred of the temerity of youth and inexperience. He concluded by congratulating the new graduates upon the beginning of their life-work and wishing them all success, prosperity, and happiness.

Professor TAYLOR then pronounced the Benediction, and as the graduates left the hall they were cordially shaken by the hand by the Vice-Chancellor.

PRESENTATION TO MR. JOHN CHAPMAN.

This being the last official appearance of Mr. John Chapman, whose stately presence as mace-bearer has been so conspicuous a feature of all academic ceremonies in connection with the University of Edinburgh during the last thirty-three years, the Senatus have presented him with a purse of sovereigns and a silver salver bearing the following inscription:

Presented with a purse of sovereigns to John Chapman, janitor and mace-bearer in the University of Edinburgh, 1865-1898, by past and present members of the Senatus Academicus, in grateful recognition of his long and faithful services.

Mr. Chapman was also presented with a gold locket and chain for Mrs. Chapman.

UNIVERSITY OF LONDON.

INTERMEDIATE EXAMINATION IN MEDICINE FOR HONOURS.—The following candidates have passed this examination in the subjects noted:

Anatomy.—First Class: *T. C. Savage, University College. Second Class: S. H. Bown, University College. Third Class: W. F. Fedden, St. George's Hospital; A. L. Matthews, London Hospital; A. B. Soltau, London Hospital.

Physiology and Histology.—First Class: *A. Edmunds, B.Sc., King's College; †W. H. Wynn, B.Sc., Mason University College. Second Class: J. M. Bernstein, Owens College; A. Eastwood, Cambridge University and Owens College; A. B. Soltau, London Hospital. Third Class: W. O. Greenwood, Yorkshire College; S. Hodgson, Guy's Hospital.

Organic Chemistry.—Second Class: H. W. Reynolds, University College.

Materia Medica and Pharmaceutical Chemistry.—First Class: *A. Eastwood, Cambridge University and Owens College; A. Edmunds, King's College; O. C. Gruner, Owens College. Second Class: J. F. E. Bridger, St. Mary's Hospital; A. F. Hayden, St. Mary's Hospital; W. Payne, Westminster Hospital; A. B. Soltau, London Hospital. Third Class: T. H. B. Dobson, Owens College; F. Gröne, St. Bartholomew's Hospital.

* Exhibition and Gold Medal.
† Gold Medal.

INTERMEDIATE EXAMINATION IN MEDICINE.—Pass List: The following candidates have satisfied the examiners:

Entire Examination. First Division: H. Balcam, London Hospital; F. C. Carlé, King's College; Florence Elizabeth Willey, B.Sc., London School of Medicine for Women. Second Division: S. H. L. Abbott, Oxford University; E. G. Bark, Mason University College; F. A. Boissière, King's College; S. Bree, University College; C. H. Brodribb, St. Mary's Hospital; Amy Jane Burgess, London School of Medicine for Women; W. J. Butcher, Owens College; F. Challans, London Hospital; Katherine Chamberlain, London School of Medicine and Royal Free Hospital; G. Clarke, Owens College; E. L. Clay, Mason University College; A. Coleridge, University College,

Bristol; H. A. Colwell, St. Bartholomew's Hospital; W. R. Dunstan, London Hospital; B. G. Fiddian, University College, Cardiff; F. G. Gibson, Guy's Hospital; J. S. Goodall, Middlesex Hospital; H. Halliday, Westminster Hospital; J. A. B. Hammond, Guy's Hospital; C. D. Hatrick, University College; L. G. Hopkins, University College; J. F. Jennings, University College, Cardiff; A. E. Jones, University College, Cardiff; Helena Gertrude Jones, London School of Medicine and Royal Free Hospital; E. W. J. Ladell, St. Bartholomew's Hospital; E. V. Lindsey, St. Bartholomew's Hospital; J. W. Little, St. Thomas's Hospital; J. A. Lloyd, St. Bartholomew's Hospital; C. A. Marsh, London Hospital; Z. Mennell, St. Thomas's Hospital; R. E. Roberts, B.Sc., St. Thomas's Hospital; Ellen Mary Sharp, London School of Medicine and Royal Free Hospital; C. C. C. Shaw, St. Mary's Hospital; H. W. Sinclair, St. Thomas's Hospital; H. S. Stannus, St. Thomas's Hospital; C. Tessier, Guy's Hospital; A. H. Thomas, University College, Cardiff; K. V. Trubshaw, Guy's Hospital; H. S. Ward, University College, Cardiff; F. N. White, St. Bartholomew's Hospital; A. C. Williams, King's College; A. G. Wilson, Owens College and Manchester Royal Infirmary; Edith Louisa Young, London School of Medicine and Royal Free Hospital.

Excluding Physiology.—Second Division: E. W. Bain, London Hospital; R. M. Barron, Guy's Hospital; F. A. Beattie, Guy's Hospital; F. J. Birks, University College, Sheffield; J. D. Bridger, Guy's Hospital; A. Caddy, St. George's Hospital; N. Carpmael, St. Thomas's Hospital; D. Ellis, London Hospital; D. Forsyth, Guy's Hospital; S. B. Green, St. Bartholomew's Hospital; A. C. Haslam, St. Thomas's Hospital; R. A. Lloyd, St. Bartholomew's Hospital; E. C. Mackay, St. Bartholomew's Hospital; T. A. Matthews, Guy's Hospital; S. J. Ormond, Guy's Hospital; A. C. Ransford, Guy's Hospital; M. J. Rees, Guy's Hospital; C. H. D. Robbs, St. Bartholomew's Hospital; J. J. S. Scrase, St. Bartholomew's Hospital; D. W. Smith, Edinburgh University and School of Medicine; J. H. Stormont, Mason College; A. S. Woodwark, St. Bartholomew's Hospital.

Physiology only.—Second Division: N. C. Beaumont, St. Bartholomew's Hospital; A. Birch, St. Mary's Hospital; R. H. Birtwell, B.A., London Hospital; A. B. Brown, St. Bartholomew's Hospital; W. C. Dawson, Mason University College; Alice Debenham, London School of Medicine for Women; E. P. H. Dudley, St. Bartholomew's Hospital; A. Fraser, Guy's Hospital; D. T. C. Jones, University College; E. W. Jones, Mason University College; Elizabeth Knight, London School of Medicine for Women; J. T. M. McDougall, Guy's Hospital; A. Moon, Guy's Hospital; D. L. Morgan, Guy's Hospital; E. M. Niall, St. Bartholomew's Hospital; T. M. Pearce, St. Bartholomew's Hospital; Mary Elizabeth Phillips, University College, Cardiff, and Royal Free Hospital; Mary Ariel Stewart, London School of Medicine for Women; E. Wethered, St. Bartholomew's Hospital; P. W. White, Bristol Medical School; Gisela Wilmersdoerffer, London School of Medicine for Women.

NAVAL AND MILITARY MEDICAL SERVICES.

ARMY MEDICAL SCHOOL, NETLEY.

Distribution of Prizes.

In the lecture room of the Royal Victoria Hospital, Netley, on Friday, July 29th, the result of the examinations lately held at the Army Medical School was promulgated, and the prizes distributed by Lord Lister, F.R.S. Among those present were Surgeon-General J. Jameson, C.B., Professor J. Lane Notter, Colonel W. F. Stevenson, Lieutenant-Colonels Webb and Blennerhassett, C.M.G., Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S., Surgeon-Major-General W. M. Webb, Deputy Surgeon-General H. Cayley, Surgeon-Colonel K. McLeod, Surgeon-Captain W. W. Webb, Secretary, Army Medical School, etc.,

Professor J. Lane Notter read the report, which showed that the work of the Session had been most satisfactory, and the whole of the surgeons on probation, who had undergone examination had proved themselves fit to receive Her Majesty's commission.

The lists were as follows:

Royal Army Medical Corps.

Surgeons on probation of the Medical Staff of the British army who were successful at both the London and Netley examinations. The final positions were determined by the marks gained in London, added to those gained at Netley, and the combined numbers are shown in the list which follows: W. H. S. Nickerson, 5,048 marks; G. S. Nickerson, 4,988; G. B. Crisp, 4,519; R. S. H. Fuhr, 4,503; W. Jagger, 4,488; A. B. MacCarthy, 4,407; G. J. S. Archer, 4,429; R. Selby, 4,413; S. O. Hall, 4,405; A. E. Weld, 4,292; J. S. Gallie, 4,254; F. J. C. Hefferman, 4,251; A. E. Thorp, 4,060; C. W. Mainprise, 4,043; H. Herrick, 3,947; E. J. Dobbin, 3,894; J. Cowan, 3,889; A. R. O'Flahertie, 3,833; H. B. G. Walton, 3,676; and E. P. Hewitt, 3,174.

Indian Medical Service.

Surgeons on probation of the Indian Medical Service, who were successful at both the London and Netley examinations, the prizes being awarded for marks gained in the special subjects taught at the Army Medical School. The final positions were determined by the marks gained in London, added to those gained at Netley, and the combined numbers are shown in the list which follows: T. Hunter, 6,322 marks, gained the Herbert prize of £20, the Montefiore second prize in surgery, the Martin Memorial Medal, and the de Chaumont prize in hygiene; W. R. Battye, 6,103, gained the Parkes Memorial Medal; H. B. Meakin, 5,948, gained the Montefiore Medal and prize of 20 guineas; G. Hutchinson, 5,603, gained the Maclean prize for clinical and ward work; W. G. Liston, 5,585, gained the Pathology prize, presented by Sir Joseph Fayrer, Bart., K.C.S.I.; H. Boulton, 5,505; R. W. Anthony, 5,471; E. F. G. Tucker, 5,208; G. E. Stewart, 5,184; F. S. C. Thompson, 5,175; T. S. Novis, 5,140; J. W. Watson, 5,096; H. J. R. Twigg, 4,827; C. W. McG. Orpen, 4,752.

Lord Lister afterwards distributed the prizes, offering a word of congratulation to those who had been successful in obtaining them. A remark had often been made on occasions like the present and it was not stale; that was that those who had failed were to be also congratulated, not because of their failure, because in many cases that had probably been an accident; some persons had obtained a few more marks, and had gained the actual nominal prize, but the real prize had been gained by all of them who had striven to attain success. They had gained knowledge, which would be a life-long possession to them, and he doubted not would prove of the greatest value to them in their after-career. He might also congratulate them on the fact that they were about to enter on the active duties of Her Majesty's medical service under more favourable auspices than was the case with some of their predecessors, thanks to the liberality and wisdom of the present Secretary of State for War. The slur which had for a long time past attached to the medical service of Her Majesty's Army had been, he thought he might say, completely removed, and he could not doubt that this change would conduce to greater amenities in their after-life, and to greater self-respect. Whatever others might think, they were well aware that their profession was a nobler profession than that of arms; it was more exalted in its objects, and gave greater scope for the exercise of the highest intellectual powers, and the greatest virtues. Even in the matter of personal bravery, to his notion that man showed the greater heroism who rescued and attended a wounded comrade under a hot fire than the man who displayed the most conspicuous gallantry under the intoxicating stimulus of a charge or an assault; but in the far higher virtue which induced a man, with self-devotion, lovingly to attend from day to day his fellow man in the earnest endeavour to diminish the miseries that accident or disease occasioned, this far higher virtue was one in which their noble profession was expecially conspicuous. The conduct of Sir Joseph Fayrer at the siege of Lucknow no doubt seemed to him a matter of course; it seemed to him that he was only doing that which he would naturally do as a medical man, but that daily and hourly exposure of his life in the quiet service of others that, he would say, had proved nobility of conduct and of action, which the functions of the combatant service afforded too little scope. Then in times of peace, while the combatant officers were largely engaged in the somewhat tedious duties of drill the medical staff would be always occupied in the interesting employment of observing the variations of disease, of doing their utmost in accordance with these variations to adopt suitable treatment. They would be also engaged in their own injuries, and they would often have opportunities of advancing the science of medicine. They had a noble calling before them, and they would be ever engaged in that which would be full of special interest—interest scientifically, and interest their hearts in the loving care of their fellow soldiers. He felt that these were exceedingly trite and common-place remarks, and he did not think it necessary that he should detain them with more of them, and he would simple conclude with congratulating them all on the knowledge they had acquired in that great school, upon the bright prospects before them through the liberality and the wisdom of Lord Lansdowne, and above all, on being about to enter into the active practice of that profession the due service of which brought its own never-failing great reward.

Director-General Jameson, C.B., said that Lord Lister's visit to Netley was naturally a cause of great pleasure to the Army Service, for military surgery had shared equally with general surgery the advantage of Lord Lister's investigations. As an example of this, he could mention some of the results of the Frontier War in India, in which they had to bewail the loss of many killed and wounded; but they had also succeeded in establishing a record, for not a single death had occurred from septic disease from the beginning to the end of the war. Moreover, of nine compound fractured thighs all did well. These were facts which would naturally create a very profound impression, and these results were due to the fact that they had followed the principles Lord Lister was the first to teach. Having given advice as to the value of the septic dressing, the speaker went on to say that Lord Lister's

presence there that day would, he hoped, do something to remove the prejudice against the treatment which the whole medical profession recognised as scientific and meritorious before all others, and he invited them to extend to him a very hearty welcome on his visit to Netley.

Lord Lister having bowed his acknowledgments,

Sir Joseph Fayrer, said it had long been a source of great pleasure to him to watch the progress of that school, and to see its development, and to watch what its results had been here and in India. He thought the country more indebted to that institution than to many others. Their predecessors had been the pioneers and directors of the sanitary administration of India, and it was due to them that human life was so much more valued. They who would leave the school would have to fill the places of their predecessors. There was a great deal to be done in the way of further investigation, and an infinite amount of ground still to be explored. If they followed the example of those who had gone before in the paths of research their names would be honoured the same as those connected with the prizes awarded that day. He hoped the prizes won would be regarded as an incentive to further study, and congratulated them on the new position they had assumed. With regard to the acquisition of new titles and distinctions, he said they did not want to command regiments, as they had other duties to perform, but it was necessary that they should have military authority and control. Though he had severed his connection with the school, there was no severance in regard to his affection for all concerned with it.

The Principal Medical Officer said this closed the session of the Army Medical School, and he wished them success in the service to which they belonged, and in which they had that day become officers.

A Memorial in the Hospital Chapel.

Before the company left Netley Hospital they proceeded to inspect a handsome marble tablet in the chapel, supplied by Messrs. Garrett and Haysom, of Southampton, as a memorial to the late Director-General of the Army Medical Department. The inscription was: "Sacred to the memory of Surgeon-Major Sir Wm. Alexander Mackinnon, K.C.B., Q.H.S., Army Medical Staff, born at Strath, Isle of Skye, 27th June, 1830, died in London, 28th October, 1897. He served in the Crimea with the 42nd Royal Highlanders, and through the Indian mutiny on the personal staff of Lord Clyde. He also took part in the New Zealand and Ashanti 1873 and 1874 campaigns, and closed, as Director-General of the Army Medical Department, an honourable and active career, which extended over forty-three years."

At the bottom of this tablet is the following: "Erected by his brother officers and several old comrades and friends."

THE NAVY.

Fleet-Surgeon George R. D. Charlton has been placed on the retired list of his rank at his own request, July 20th. Fleet-Surgeon Charlton entered the service as Assistant-Surgeon, September 29th, 1877.

The following appointments have been made at the Admiralty: Ernest E. Bray, Staff-Surgeon, to the *President*, for Royal Victoria Yard, Deptford, July 25th; George Welch, Staff Surgeon, to the *Boscawen*, for Portland [illegible] July 25th; Bernard B. Gilpin, Surgeon, to the *Pembroke*, [illegible] posal, July 25th; James W. W. Stanton, Surgeon, to the *Vivid*, additional, July 25th; Edward H. M'Sherry, Surgeon, to the *Victory*, for the *Duke of Wellington*, July 21st; James W. Craig, M.B., Surgeon, to the *Heron*, August 1st; Edward S. Meagher, Surgeon, to the *Caledonia*, August 1st: Arthur B. Vise, to be Surgeon and Agent at Fosdyke Station and Fleethaven, July 26th; Henry J. Hadden, B.A., [illegible] to the *Rainbow*, August 3rd; Alexander Andrews, [illegible] August 3rd; John C. Durston, Surgeon, to be lent to Walmer Depôt temporarily, July 26th; Edward C. Ward, [illegible] July 29th; Hamilton Meikle, Staff Surgeon, to the [illegible]; James O'B. Williams, Staff Surgeon, to the *Vivid*, for Keyham Barracks, July 21st.

ROYAL ARMY MEDICAL CORPS.

Major James E. Nicholson retires from the service, receiving a gratuity, July 20th. He was appointed Surgeon, March 6th, 1880; and Surgeon-[illegible] after.

[illegible] W. B. Slaughter is appointed to officiate on the [illegible] Staff of the Bengal Army, with the temporary [illegible] from June 21st.

[illegible] W. M. Price, who is serving in the Bengal Command, and Lieutenant-Colonel G. D. Bourke, serving in the Punjab, have been appointed Honorary Surgeons on the Staff of the Governor-General of India.

ARMY MEDICAL RESERVE.

Surgeon-Major Charles S. Smith, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve, July 27th.

INDIAN MEDICAL SERVICE.

Surgeon-Lieutenant [illegible] M.D., Bombay Establishment, is promoted to be [illegible] Lieutenant-Colonel, April 1st. He joined the department [illegible] and served in the Afghan War in [illegible], being present in the engagement at Girishk, at the defence of Candahar, including the sortie of Deh Khojah, and the Battle of Candahar. He was mentioned in despatches and received the Afghan medal with clasp.

The Khyber Force has been reorganised as the Khyber Brigade Command, and the Principal Medical Officer will be Brigade-Surgeon-Lieutenant-Colonel R. Blood, Royal Army Medical Corps.

Surgeon-Colonel W. P. Warburton, M.D., Bengal Establishment, has been appointed Honorary Surgeon to the Governor-General.

Brigade-Surgeon-Lieutenant-Colonel W. E. Johnson, M.D., Madras Establishment, is appointed Principal Medical Officer of the Madras Distribt.

Surgeon-Captain B. B. Grayfoot, Bombay Establishment, on attaining the rank of Surgeon-Major on September 30th, will vacate his position as Secretary to the Surgeon-General with the Government of Bombay, and take up the appointment of Civil Surgeon of Kaira, *vice* Surgeon-Major J. P. Barry, M.B.

Surgeon-Captain S. H. Burnett, M.B., Bombay Establishment, is appointed to act as Secretary to the Surgeon-General with the Government of Bombay.

Surgeon-General William Johnston, M.D., late of the Madras Establishment, died at Cheltenham on July 24th, in his 81st year.

Surgeon-General John Fullarton Beatson, M.D., C.I.E., late Bengal Establishment, died at 205, Cromwell Road, Earl's Court, London, on July 29th, aged 80. He was nominated a Companion of the Order of the Indian Empire in 1878, and retired on full pay in 1880.

THE VOLUNTEERS.

Surgeon-Lieutenant W. B. Fergusson, M.D., 1st Gloucestershire Engineers, is promoted to be Surgeon-Captain, July 27th.

Mr. Josiah Field Hall, M.B., is appointed Surgeon-Lieutenant in the 3rd Volunteer Battalion the Queen's Royal West Surrey Regiment, July 27th.

The retirement of Surgeon-Major Evan Jones, 3rd Volunteer Battalion the Welsh Regiment, which appeared in the *London Gazette* of September 28th, 1897, is cancelled.

VOLUNTEER MEDICAL STAFF CORPS.

Mr. Henry E. L. Purcell is appointed Quartermaster to the London Companies, July 20th.

THE YEOMANRY CAVALRY AND VOLUNTEER RIFLES.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps specified, dated July 20th: James Wilson, M.D., Pembroke Yeomanry; John H. P. Graham, 4th Volunteer Battalion the King's Liverpool Regiment; James P. Brown, M.B., 5th Volunteer Battalion Princess Louise's Argyll and Sutherland Highlanders.

Surgeon-Captain A. Drysdale, M.B., 1st Fifeshire Light Horse, has resigned his commission, July 20th; he is permitted to retain his rank and uniform.

Surgeon W. H. Webb, 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment, is promoted to be Surgeon-Major, and Surgeon-Lieutenant J. S. F. Clark, of the same regiment, has resigned his commission, both dated July 20th.

We have been asked to say that in the announcement made in the British Medical Journal of July 16th of the resignation of his commission by Surgeon-Major C. J. Smith, of the 1st Surrey Rifles, it should have been added that he is permitted to retain his rank and uniform.

VOLUNTEER MEDICAL ASSOCIATION: AMBULANCE CHALLENGE SHIELD COMPETITION.

The competition for this year took place at Wellington Barracks on Saturday, July 23rd, in the presence of a large number of volunteer medical officers and other spectators. Fourteen teams, representing most parts of the United Kingdom had entered, but the 1st Volunteer Battalion Leicester Regiment was obliged to withdraw a few days before the competition in consequence of a difficulty experienced in obtaining a medical officer of the regular forces to examine the men for their S. B. certificate, which all competitors for the Volunteer Medical Association shield must possess.

The result of the competition was as follows:

2nd Volunteer Battalion Royal Fusiliers ...	312	out of possible	348
24th Middlesex...	310	,,	,,
1st Bucks	307	,,	,,
12th Middlesex...	296	,,	,,
2nd Volunteer Battalion Hampshire Regimt. 1st Volunteer Battalion Light Infantry ...			
22nd Middlesex (1st Squad)...	295	,,	,,
London Rifle Brigade	292	,,	,,
Westmoreland and Cumberland Yeomanry ...	283	,,	,,
3rd Volunteer Battalion R. West Surrey Rgt.	276	,,	,,
22nd Middlesex (2nd Squad)	273	,,	,,
2nd Volunteer Battn. King's Liverpool Regt.	269	,,	,,
3rd Volunteer Battalion Hampshire Regimnt.	255	,,	,,

The 2nd Volunteer Battalion Royal Fusiliers, who won in 1897, therefore retain the shield for another year. Both the first and the second squads had, we are informed, previously been through a course at the Volunteer Ambulance School of Instruction. Colonel T. O'Farrell, P.M.O. Home District, presented the shield and badges to the winning squad, and badges to the second, and remarked how pleased he was to see such a high state of efficiency in the regimental bearers. Brigade-Surgeon-Lieutenant-Colonel Andrew Clark, V.D., Chairman of Council, thanked Colonel O'Farrell for his kindness in presenting the prizes. The arrangements were in the hands of Surgeons-Captain Rory Fletcher and J. Harper, the Honorary Secretaries of the Volunteer Medical Association.

HEAT APOPLEXY AND ENTERIC AT PINDI.

There have been several deaths from heat apoplexy among European troops in Rawal Pindi during the abnormal heat of the early part of July and end of June.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

ZYMOTIC MORTALITY IN LONDON.

THE accompanying diagram shows the prevalence of the principal zymotic diseases in London during the second or spring quarter of the current year. The fluctuations of each disease, and its fatal prevalence as compared with that recorded in the corresponding weeks of recent years, can thus be readily seen.

Small-pox.—Not one fatal case of small-pox was registered in London last quarter, the corrected average number in the corresponding periods of the ten preceding years being 18; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals during the quarter.

Measles.—The deaths referred to measles, which had increased from 162 to 1,494 in the five preceding quarters, declined to 1,077 during the three months ending June last, but exceeded by 165 the corrected average number. Among the various sanitary areas of the metropolis, measles showed the highest proportional fatality in Paddington, Hammersmith, Chelsea, Marylebone, Holborn, Clerkenwell, St. Luke, Bethnal Green, Rotherhithe, Greenwich, and Plumstead.

Scarlet Fever.—The fatal cases of this disease, which had been 216, 247, and 182 in the three preceding quarters, further declined to 154 during the three months under notice, and were 64 below the corrected average number in the corresponding periods of the ten preceding years. Among the various sanitary areas, this disease was proportionately most fatal in Fulham, Clerkenwell, St. Luke, Shoreditch, St. George Southwark, St. Olave Southwark, Rotherhithe, and Lewisham. The number of scarlet fever patients in the Metropolitan Asylum Hospitals, which had been 3,585, 3,507, and 2,377 at the end of the three preceding quarters, had further declined to 2,146 at the end of June last. The number of cases admitted into these hospitals, which had been 4,592, 4,441, and 2,823 in the three preceding quarters, further fell to 2,802 during the three months ending June last.

Diphtheria.—The deaths referred to diphtheria in London, which had been 488, 704, and 534 in the three preceding quarters, further declined to 367 during the three months under notice, and were 92 below the corrected average number. Among the various sanitary areas this disease showed the highest proportional fatality in Chelsea, Westminster, Hackney, Clerkenwell, St. Luke, Bethnal Green, Poplar, St. George Southwark, Battersea, and Wandsworth. The number of diphtheria patients in the Metropolitan Asylums Hospitals at the end of June last was 971, against 1,033, 1,066, and 1,009 at the end of the three preceding quarters; 1,648 new cases were admitted during last quarter, against 1,832, 1,995, and 1,733 in the three preceding quarters.

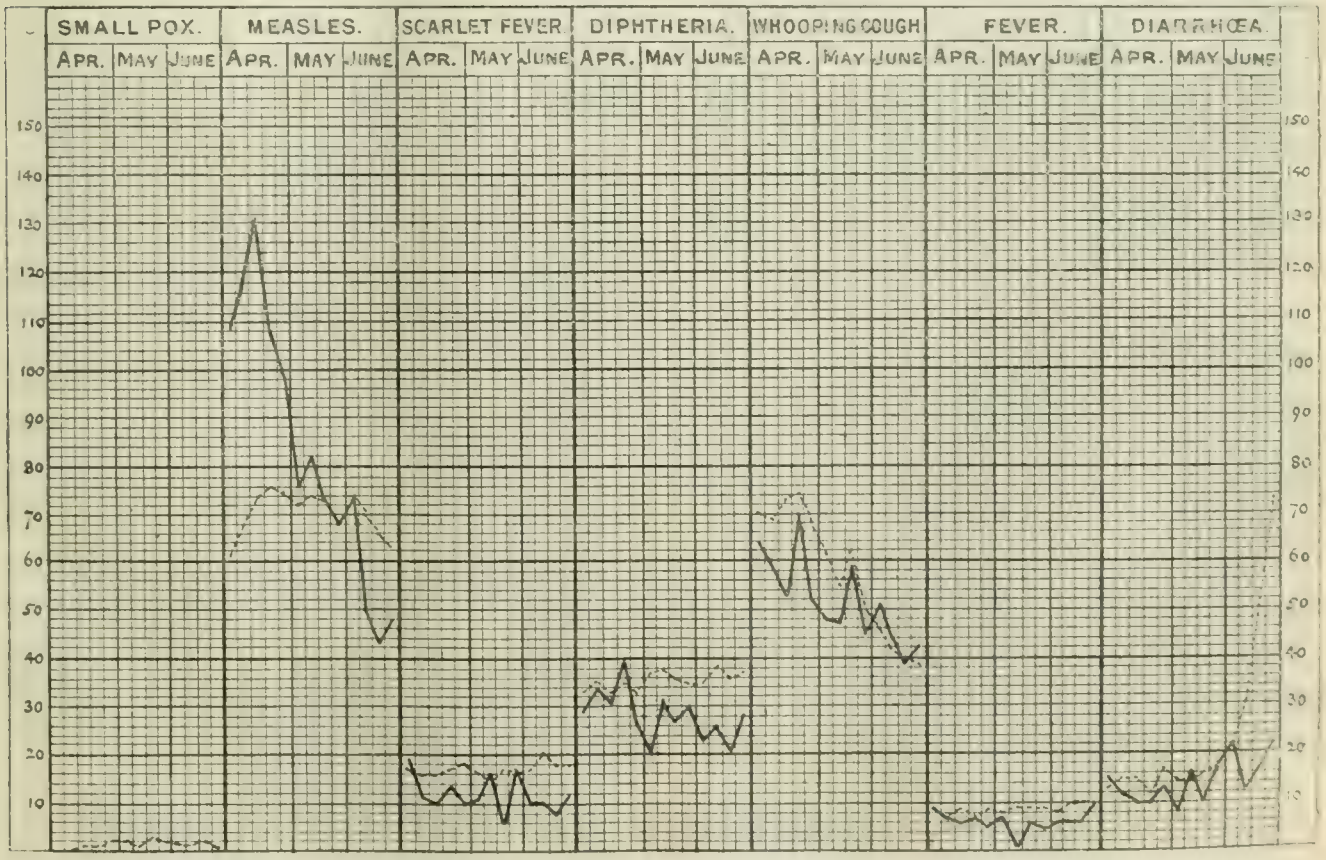
Whooping-cough.—The fatal cases of this disease, which had been 373, 455, and 816 in the three preceding quarters, declined to 673 during the three months ending June last, and were 73 below the corrected average number; among the various sanitary areas whooping-cough was proportionally most fatal in Westminster, Bethnal Green, Limehouse, Mile End Old Town, St. Saviour Southwark, St. George Southwark, St. Olave Southwark, Greenwich, and Woolwich.

Fever.—Under this heading are included deaths from typhus, enteric, and simple and ill-defined forms of continued fever. The deaths referred to these different forms of "fever," which had been 144, 237, and 107 in the three preceding quarters, further declined to 73 during the three months ending June last, and were 40 below the corrected average number. Of these 73 deaths, 72 were certified as enteric fever, and 1 as simple continued fever. The mortality from "fever" in London last quarter showed no marked excess in any of the sanitary areas. The Metropolitan Asylums Hospitals contained 53 enteric fever patients at the end of June, against 173, 116, and 64 at the end of the three preceding quarters; 133 new cases were admitted during last quarter, against 322, 281, and 171 in the three preceding quarters.

Diarrhœa.—The 184 fatal cases of diarrhœa registered in London during the three months ending June last were 126 below the corrected average number; this disease was proportionally most fatal in St. Luke, St. George-in-the-East, Limehouse, Newington, and Woolwich sanitary areas.

In conclusion, it may be stated that the 2,528 deaths referred to the principal zymotic diseases in London during the second or spring quarter of this year were 248, or nearly 9 per cent., below the average number in the corresponding periods of the ten preceding years, 1888-97. The mortality from each of the diseases except measles was below the average. No death from any of the principal zymotic diseases was recorded last quarter in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover Square, St. James Westminster, Hampstead, St. Pancras, Stoke Newington, City of London, and Newington.

DEATHS FROM ZYMOTIC DISEASES IN LONDON DURING THE SECOND QUARTER OF 1898.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding week of the ten preceding years, 1888-97.

ton; and the highest rates in Westminster, Marylebone, Holborn, St. Luke, Bethnal Green, Limehouse, and Plumstead.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,423 births and 3,356 deaths were registered during the week ending Saturday, July 23rd. The annual rate of mortality in these towns, which had been 14.7 per 1,000 in each of the two preceding weeks, rose again to 15.6. The rates in the several towns ranged from 4.6 in Croydon, 10.7 in Huddersfield, 10.9 in Hull, and 11.3 in Nottingham and in Halifax, to 18.9 in Birkenhead, 19.6 in Gateshead, 21.1 in Liverpool, and 23.9 in Salford. In the thirty-two provincial towns the mean death-rate was 15.7 per 1,000, and was slightly above the rate recorded in London, which was 15.4 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.3 per 1,000; in London the rate was equal to 2.0 per 1,000, while it averaged 2.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.7 in Norwich, 4.1 in Salford, 4.2 in West Ham, and 6.9 in Birkenhead. Measles caused a death-rate of 2.1 in Plymouth and 2.8 in Norwich; whooping-cough of 1.2 in Newcastle-upon-Tyne, 1.3 in Preston, and 1.4 in Oldham; "fever" of 1.0 in Burnley; and diarrhœa of 2.2 in Birmingham, 2.5 in Portsmouth, 2.9 in Salford, and 5.5 in Birkenhead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 53 deaths from diphtheria in the thirty-three towns included 29 in London, 6 in Leeds, 3 in West Ham, and 3 in Liverpool. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,205, 2,250, and 2,314 at the end of the three preceding weeks, had further risen to 2,355 on Saturday, July 23rd; 276 new cases were admitted during the week, against 204, 237, and 265 in the three preceding weeks.

In thirty-three of the largest English towns, including London, 6,910 births and 3,709 deaths were registered during the week ending Saturday last, July 30th. The annual rate of mortality in these towns, which had been 14.7 and 15.6 per 1,000 in the two preceding weeks, further rose to 17.2 last week. The rates in the several towns ranged from 9.4 in Cardiff, 11.8 in Blackburn, 11.2 in Preston, and 11.9 in Brighton and in Burnley, to 23.0 in Liverpool, 23.7 in Halifax, 25.3 in Birkenhead, and 27.3 in Salford. In the thirty-two provincial towns the mean death-rate was 17.5 per 1,000, and exceeded by 0.7 the rate recorded in London, which was 16.8 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.7 per 1,000; in London the death-rate was equal to 2.6 per 1,000, while it averaged 2.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 5.0 in Portsmouth, 5.1 in Sheffield, 6.5 in Wolverhampton, and 7.4 in Birkenhead. Measles caused a death-rate of 1.1 in Portsmouth, in Plymouth, and in Sunderland; scarlet fever of 1.2 in Wolverhampton; whooping-cough of 1.2 in Wolverhampton; "fever" of 1.0 in Huddersfield; and diarrhœa of 3.4 in Portsmouth, 3.5 in Leicester, 3.9 in Sheffield, and 6.4 in Birkenhead. The 47 deaths from diphtheria in the thirty-three towns included 21 in London, 5 in Liverpool, 4 in Leeds, and 3 in West Ham. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,205 to 2,355 at the end of the four preceding weeks, had declined again to 2,321 on Saturday last, July 30th; 232 new cases were admitted during the week, against 237, 265, and 276 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday, July 23rd, 974 births and 605 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 21.1 to 18.5 per 1,000 in the three preceding weeks, rose again to 20.1, and was 4.5 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 15.[illegible] in Greenock and 10.4 in Leith to 22.7 in Paisley and 23.8 in Perth. The zymotic death-rate in these towns averaged 3.9 per 1,000, the highest rates being recorded in Greenock and Perth. The 303 deaths registered in Glasgow included 9 from measles, 5 from scarlet fever, 10 from whooping-cough, and [illegible] from diarrhœa. Three fatal cases of scarlet fever and 9 of whooping-cough were recorded in Edinburgh, and 6 of measles in Dundee.

During the week ending Saturday last, July 30th, 930 births and 560 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.5 and 20.1 per 1,000 in the two preceding weeks, declined to 18.6 last week, but exceeded by 1.4 per 1,000 the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 8.5 in Perth and 13.6 in Leith to 19.7 in Edinburgh and 24.0 in Dundee. The zymotic death-rate in these towns averaged 3.7 per 1,000, the highest rates being recorded in Glasgow and Dundee. The 269 deaths in Glasgow included [illegible] 1 from scarlet fever, 2 from diphtheria, 14 from whooping-cough, 1 from "fever," and 40 from diarrhœa. Thirteen fatal cases of measles were recorded in Dundee, 3 in Edinburgh, and 3 in Leith.

SUPERANNUATION UNDER THE ACT 1896.

F. H. T. who has been a district medical officer for fourteen years, and has just resigned, writes to ask whether, in the event of obtaining another Poor-law appointment, his past services would be allowed to reckon towards superannuation.

*** Under Clause 4 of the above Act this past period of service may be aggregated and reckoned for the purpose of fixing the amount of superannuation allowance

MEDICAL NEWS.

Professor von Bruns, of Tübingen, has been elected a Corresponding Member of the Paris Surgical Society.

Grant for Successful Vaccination.—Dr. George Stevens, of Norton, Bury St. Edmunds, Public Vaccinator of the Stow Union, has been awarded for the tenth time in succession the Government award for successful vaccination.

The Treasurer of Guy's Hospital has received an anonymous donation of $6,000 from one who listened to Mr. Balfour's speech on the occasion of the distribution of prizes in the Medical School, with a request that the governors would use the sum for the purpose of endowment of medical research.

German Association of Scientists and Medical Men.—Among the addresses to be delivered in the general sessions of the German Association of Scientists and Medical Men, which meets at Düsseldorf from September 19th to 24th, are the following: A Century of Surgery, by Professor Tillmann, of Leipzig; Causes and Beginnings of Disease, by Professor Martin, of Rostock; the Importance of Nursing for Scientific Treatment, by Dr. Martin Mendelsohn, of Berlin. Professor Virchow will probably deliver an address, but the subject is not stated. In addition to the general addresses, over 400 communications have been promised in the various sections.

Metropolitan Asylums Board.—At a meeting of the Metropolitan Asylums Board held on July 30th, a letter was read from the Local Government Board forwarding a copy of a notice which Dr. Farquharson, M.P., had placed on the order book of the House of Commons, asking for a return showing the actual cost of each of the hospitals, in comparison with the original estimate, and asking for the managers' observations. The fever returns showed a slight increase, but the total was lower by 600 than at the same period last year. A tender for £47,532 for the erection of the new head office buildings was accepted; and the Works Committee were instructed to procure plans for the erection of a school at Swanley for about 360 children suffering from ringworm or ophthalmia.

MEDICAL VACANCIES.

The following vacancies are announced:

BANGOR: CARNARVON AND ANGLESEY INFIRMARY AND DISPENSARY.—House-Surgeon. Knowledge of Welsh desirable. Salary, £70 per annum, with board, and lodging in the house. Applications to the Secretary by August 17th.

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—Second Assistant Medical Officer. Unmarried, and not exceeding 35 years of age. Salary, £130 per annum, apartments, board, and washing. Applications to the Clerk by August 23rd.

BOROUGH OF DERBY.—Medical Officer of Health. Salary, £500 per annum, increasing by £50 per annum to £600 at intervals of two years. Applications, endorsed "Medical Officer of Health," to H. F. Gadsby, Town Hall, Derby, by August 22nd.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £70, with board, residence, and washing. Applications to the Secretary by August 20th

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton.—House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician; unmarried, and under 30 years of age. Salary, commencing at £50 per annum, with board and residence. Applications to the Secretary by August 24th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to E. Markham Skerritt, M.D., Dean, by August 20th.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Registrar. Honorarium, 20 guineas a year. Applications to the Secretary by August 8th.

CHESTERFIELD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary, £500 per annum. Applications to the Clerk of the Council, Union Offices, Chesterfield, by August 12th.

DERBY COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary, £100 per annum, rising to £120, with board, lodging, and washing. Applications to B. Scott Currey, St. Michael's Churchyard, Derby, by August 18th.

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £40 per annum, with board, residence, and washing. Applications to the Secretary by August 12th.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Board, lodging, and washing. No salary. Applications to the Chairman of the Medical Committee by August 17th.

DUNDEE ROYAL INFIRMARY.—Two Resident Medical Assistants. Appointments for six months. Salary at the rate of £40 per annum, with board and washing. Applications to the Medical Superintendent by August 10th.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge, S.E. Clinical Clerkships. Applications to the Registrar.

FULHAM PARISH.—Public Analyst. Salary, £200 per annum. Applications to the Clerk to the Vestry, Town Hall, Waltham Green, S.W., by August 27th.

HOSPITAL OF ST. FRANCIS, 145, New Kent Road. Orthopædic Surgeon and Ophthalmic Surgeon. Applications to the Honorary Secretary by August 20th.

HUDDERSFIELD INFIRMARY. Senior Assistant House-Surgeon. Salary, £50 per annum; also Junior Assistant House-Surgeon. Salary, £40 per annum. Board and lodging provided in each case. Application to Mr. Knaggs, 2, Bradley Lane, Huddersfield.

MANCHESTER: ANCOATS HOSPITAL. Resident Junior House-Surgeon. Salary, £50, with board and washing. Applications to the Secretary by August 8th.

METROPOLITAN ASYLUMS BOARD. Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham. Salary, £160, rising to £200, with board, lodging, attendance, and washing; unmarried, and age not to exceed 35 years. Applications to the Clerk by August 22nd.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Resident Medical Officer. Appointment tenable for six months, with prospect of re-election as Senior. Salary, £50 per annum, with board, attendance, and washing. Applications to the Secretary by August 15th.

OWENS COLLEGE, Manchester.—Demonstrator of Anatomy. Applications to the Registrar by August 1st. Also Senior and Junior Demonstrator in Physiology. The stipends will be £150, rising to £200, and £100, rising to £150, respectively. Applications to the Registrar by September 1st.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Salary, £50 per annum, with board and residence. Applications by August 13th.

SALFORD SCHOOL BOARD.—Medical Officer. Salary, £150 per annum. Applications to the Board by August 17th.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Doubly qualified. Salary, £50 per annum, with board, lodging, and washing. Applications, addressed to the "Medical Staff of the Royal Infirmary, Sheffield," by August 18th.

SOMERSET AND BATH ASYLUM, Wells, Somerset.—Junior Assistant Medical Officer; unmarried, and under 30 years of age. Salary, £110, rising to £130, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by August 13th.

STOCKTON-ON-TEES: STOCKTON AND THORNABY HOSPITAL.—Non-resident House-Surgeon. Not exceeding 30 years of age. Salary, £200 per annum. Applications to the Secretary by August 23rd.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. No salary; board, lodging, and washing provided. Applications, endorsed "Assistant House-Surgeon," to J. E. W. Wakefield, Bank Buildings, Taunton, by August 15th.

THREE COUNTIES ASYLUM, Ariesley, Hitchin.—Second Assistant Medical Officer; unmarried, and under 30 years of age; doubly qualified. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to F. G. Butler, Clerk to the Committee of Visitors, St. Neots, Hunts, by August 15th.

TOWYN URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £20 per annum. Applications to the Clerk, Town Offices, Towyn, by August 9th.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice Lane, Walton-on-the-Hill, Liverpool; doubly qualified. Salary, £80 per annum, with board and residence. Applications to Harris P. Cleaver, Brougham Terrace, West Derby Road, Liverpool, by August 9th.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary; doubly qualified. Salary, £80 per annum, with board, lodging, and washing. Applications to the Honorary Secretary by August 10th.

WORCESTERSHIRE COUNTY COUNCIL.—Additional County Analyst. Salary, £400 per annum. Appointment for six months. Applications, endorsed "County Analyst," to the Clerk, Shirehall, Worcester, by August 19th.

MEDICAL APPOINTMENTS.

BARTLETT, R. C., M.R.C.S.Eng., L.R.C.P.Lond., reappointed Medical Officer of Health for the Borough of Romsey.

BEATTIE, G. W., M.D.Aberd., M.B., C.M., reappointed Medical Officer of Health to the Failsworth Urban District Council.

BELL, Dr. James B., appointed Medical Officer of Health to the Cults Parish Council.

BENSON, Dr. J. A., appointed Medical Officer for the Ashover District of the Chesterfield Union.

BROWNING, B., L.R.C.P.Lond., M.R.C.S.Eng., D.P.H.R.C.P., reappointed Medical Officer of Health to the Weymouth Urban District Council.

CAMPBELL, J. A., M.D., F.R.S.Edin., appointed Honorary Consulting Physician to the Cumberland and Westmoreland Asylum, Garlands.

CAMPBELL, James D., M.B., C.M.Edin., appointed Medical Officer for the Fourth District of the Lincoln Union.

CHADWICK, C.M., M.A.Oxon., M.D., appointed Professor of Materia Medica and Therapeutics to the Yorkshire College, Leeds, *vice* A. G. Barrs, M.D.Edin.

DUN, Robert Craig, M.B., C.M., B.Sc.Edin., M.R.C.S., L.R.C.P., appointed Honorary Assistant Surgeon to the Stanley Hospital, Liverpool.

FARQUHARSON, W. F., M.D., C.M.Edin., appointed Medical Superintendent to the Cumberland and Westmoreland Asylum, Garlands, vice J. A. Campbell, M.D., F.R.S.Edin.

GEOGHEGAN, A. V., M.D.Dub., appointed Medical Officer for the Mickleton District of the Shipston-on-Stour Union.

HEDGES, C. E., M.A.Camb., M.B., B.C., M.R.C.S., appointed Medical Officer for the Workhouse and for the First District of the Newport (Salop) Union.

KENNEDY, A. E., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Plaistow District of the West Ham Union.

MACKAY, Alexander, M.D.Glasg., M.B., C.M., appointed Medical Officer of Health to the Crook Urban District Council.

M'NAMARA, P. J., M.D.R.U.I., F.R.C.S.I., appointed Medical Officer for the Workhouse of the Kilmallock Union.

MARTIN, P. W., M.R.C.S.Eng., L.R.C.P.Edin., reappointed Medical Officer of Health for Brighouse.

MILROY, A. J., M.A., M.B., B.C.Edin., appointed Demonstrator of Physiology in the Medical School of Yorkshire College.

PHILLIPS, Hugh R., M.B., Ch.B.Edin., appointed Assistant House-Surgeon to the County Hospital, York, *vice* R. H. Ashwin, M.B.Lond.

PITT-TAYLOR, F. S., M.B., B.Ch.Vict., appointed House-Surgeon to the Birkenhead and Wirrall Children's Hospital.

RUSSELL, John, M.B., C.M.Glasg., reappointed Medical Officer of Health to the Brigg Urban District Council.

STURDY, J. C., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Fifth District of the Bradford Union.

WHITE, C. P., M.A., M.B., B.C.Cantab., F.R.C.S.Eng., appointed Demonstrator in Pathology in the Medical School of Yorkshire College.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

HEWLETT.—July 18th, at 6, Rosebery Villas, Southfields, S.W., the wife of Richard T. Hewlett, M.D., M.R.C.P., Bacteriologist to the British Institute of Preventive Medicine, of a son.

PISANI.—On July 19th, 1898, at Aligarh, North-West Provinces, India, the wife of Surgeon-Major L. J. Pisani, F.R.C.S., Indian Medical Service, of a son.

RENTZSCH.—On July 29th, at The Firs, Waltham Cross, Herts, the wife of Sigismund H. Rentzsch, of a daughter.

TINLEY.—At Thorsgrif, Whitby, on July 28th, the wife of W. E. F. Tinley, M.D., M.R.C.S., of a son.

MARRIAGES.

COCK—EVANS.—July 27th, 1898, at St. Stephen's, Westbourne Park, W., Frederick William Cock, M.D., son of the late Frederick Cock, M.D., to Frances Louisa Evans, of 83, Inverness Terrace, Hyde Park.

KELLY—JOHNSTON.—On July 28th, at Greyfriars Parish Church, Aberdeen, by the Rev. Gordon J. Murray, B.D., Francis Kelly, M.D., Aberdeen, to Annie, youngest daughter of John Johnston, member of the Pharmaceutical Council. No cards.

WOODHAMS—SHARLAND.—On July 27th, at Holy Trinity Church, Gravesend, by the Rev. F.C. Naish, Vicar, assisted by the Rev. J. H. Haslam, Rector of Gravesend, Sidney Woodhams, M.R.C.S., L.R.C.P.Lond., of Park Place, Gravesend, to Julia, youngest daughter of George Edward Sharland, of the Laurels, Gravesend.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Tu., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Opthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Tu., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Tu., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

CIVIS asks where he is likely to obtain authentic information for estimating the relative monetary compensation for the loss of an eye, limb, or finger, computing total permanent disablement or death at £300.

J. H. would be glad to know of a suitable institution for a boy aged 8½ years, who has been having epileptic attacks regularly for the last four years, and whose mental condition is becoming impaired.

J. J. M. asks where he can obtain information dealing with the proper proportions of the human body, for example, relative circumference of chest at nipples and abdomen at the level of the navel.

SENILITY will be glad to be informed whether there is any home or hospital, in Sussex if possible, to which an aged gentlemen over 80, who is suffering from senile dementia, could be sent. His family are in straitened circumstances, and at present have to employ a day and night nurse to look after him. They are prepared to pay the sum of 2 guineas per week to have him taken care of.

G. G. writes: Is there any home or other institution in which we could place a woman, aged 40, epileptic, and partly imbecile, but otherwise strong and healthy? Her friends could contribute 4s. or 5s. a week, but it must be mainly a work of charity. When not suffering from fits she can do a little work. Cumberland or its neighbourhood preferred, so that her friends can visit occasionally.

A MEMBER writes: I should like if possible to have definite information on the following points: What is the largest dose of iodide of potassium —if any—which can be given for an indefinite time—say years—to a rheumatic patient? My patient, a married woman, aged 30, improves under its use, but gets worse immediately on stopping it. The rheumatism is articular. Can anyone speak well of the hydro-electric treatment of rheumatism? Could it be carried out successfully without complete immersion, and would an ordinary Spamer's battery be of any use?

G. W. ISAAC, M.B. (Gower Street, W.C.) writes: Will somebody kindly tell me whether there is any better treatment for the removal of hair from the upper lip of a young lady than electrolysis? Is the removal of hair by means of *x* rays practicable? If so from whom can I obtain information?

*** The *Wiener medizinische Wochenschrift* (Nos. 22-24, 1898) contains a paper on the *x* rays in hypertrichosis by Drs. E. Schiff and L. Freund.

RUSTICUS writes: I have a patient, a primipara, six months pregnant after having married five years. Although I have examined at intervals since ... commenced, I am entirely unable to feel any os, and indeed expressed a decided opinion at first that she was not pregnant. I examined her some few years ago for amenorrhœa, which was set right by a course of iron; my recollection is that she then had a long conical cervix with a small os. I should like to know if the present condition is a common one, if it is likely to cause trouble at parturition, and if so, where I can get the best information as to treatment.

*** The condition is not common. It may cause delay in the first stage of labour. "Rusticus" will find some information about it in Dr. Herman's work on *Difficult Labour*, p. 248.

ANSWERS.

C. M. C. writes to say that perhaps the Victoria Home for Invalid Ladies, Headingley, Leeds, would suit the case referred to by "P.L.G.S."

DR. J. G. MARSHALL.—We see no objection to the advertisement for rooms for consulting purposes as submitted.

INQUIRER. ... to the requirements and course of study for the M.D. London, will be given in the Educational Number of the BRITISH MEDICAL JOURNAL, which will be published on August 27th.

MEMBER, B.M.A. (Montreal).—Full information as to the conditions under ... diplomas of the Royal Colleges of Physicians of London and ... can be obtained will be found in the Educational Number of the BRITISH MEDICAL JOURNAL, which will be published on August 27th.

W. G. B.—1. We are not aware that any such rule or custom prevails, nor do we believe that such a rule could be established or enforced. 2. The plan referred to is the sanction of the writer of one of the best-known textbooks, and we believe there is some evidence that it is efficacious. 3. *Ex* ...

"CURE FOR ASTHMA"

LANCS.—We are unable to give any information respecting the asthma medicines as to which our correspondent inquires.

NOTES, LETTERS, Etc.

ERRATUM.—The ... of the Bronze Medal and Prize of the Medico Psychological ... was John Robert Lord, not George Robert Lord ... in the report which appeared in the BRITISH MEDICAL JOURNAL of July 30th.

AN APPEAL ON BEHALF OF THE WIDOW OF THE LATE ... ARTHUR BARLOW.

The following additional subscription has been received on behalf of this fund:—

	£	s.	d.
Per Dr. J. A. Matson—			
W. Alex. Hearnden, M.D.	1	1	0

THE ACTION OF GLYCERINE UPON PERCHLORIDE OF IRON.

DR. THOMAS CARTER (Richmond, Yorks) writes: Dr. Hale White in the BRITISH MEDICAL JOURNAL of July 9th states that he usually gives liq. ferri perchlor. mixed with same quantity of glycerine in cases of hæmatemesis, but I have always been taught that these are incompatibles. It is so stated in *Squire's Companion*.

*** The addition of glycerine to the liquor or tincture of the perchloride of iron modifies the styptic properties of the ferric chloride and covers the metallic taste. The modification produced by glycerine on the astringent taste of the perchloride is mainly due to its viscosity. Very large doses of liquor ferri perchloridi can be given with an equal bulk of glycerine without producing irritation and with good results in hæmatemesis (Dr. Hale White, BRITISH MEDICAL JOURNAL, July 9th, 1898, p. 118). Perchloride of iron mixed with glycerine forms an efficient and not unpleasant astringent paint for the throat. In this application the liquor ferri perchloridi on account of its acidity is better replaced by the solid perchloride of iron. This salt is prepared by careful evaporation of the liquor ferri perchloridi fortis. It is in pale orange-yellow opaque crystalline masses, very deliquescent and entirely soluble in water. A paint much used at Guy's Hospital is composed of perchloride of iron 1 and glycerine 4. Under certain conditions glycerine acts as a reducing agent upon perchloride of iron, converting it into a ferrous salt. This fact was first brought to notice by Mr. G. F. Schacht in a note upon the action of glycerine on some salts of iron read at a meeting of the British Pharmaceutical Conference at Southampton, 1882 (*Year Book of Pharmacy*, 1882, p. 496). Mr. Schacht's experiments showed that glycerine reduces persalts of iron and tends to prevent the oxidation of protosalts, and that this influence appears to be stronger when the mixture is exposed to sunlight than when it is left in the shade.

LETTERS, COMMUNICATIONS, ETC., have been received from:
B Mr. A. K. Bulley, Liverpool; Mr. H. H. Beale, Reading; Dr. G. W. Balfour, Edinburgh; Dr. T. W. Blake, Bournemouth; J. M. Bramwell, M.B., London; Dr. J. J. G. Brown, Edinburgh; Mr. B. Browning, Weymouth; Mr. T. D. Bell, Carlisle; Dr. D. C. Black, Glasgow. **C** C. P. Crouch, M.B., Weston-super-Mare; Mr. J. Carmichael, Cork; Mr. J. Carter, London; Mr. W. H. Coupland, Lancaster; Mr. C. Campbell, Saddleworth; Mr. C. Carrington, Paris; C. M. C.; Mr. W. F. Clay, Edinburgh; F. M. Caird, M.B., Edinburgh; Mr. H. N. Custance, London; Dr. H. J. Campbell, Leeds. **D** W. B. Drummond, M.B., Edinburgh. **E** E. H. B.; Enquirer; Mr. R. A. Easton, Edinburgh; E. M.; Mr. H. Elliot-Blake, London. **F** Messrs. Fletcher, Fletcher, and Co., London. **G** General Practitioner; Geneva Cross; Mr. A. E. Greville, London; G. Govan, M.B., Cockermouth; Messrs. E. Goddard and Alldridge, London; Mr. L. W. Gans, Frankfort-on-Main. **H** Dr. J. Highet, Workington; Mr. F. Howell, York; C. M. Hector, M.B., Edinburgh; Mr. T. G. Horder, Cardiff. **I** Dr. H. H. Irvine, Boirstown. **K** Mr. H. Kynsey, Whitstable; Mr. B. Kuhn, London. **L** J. R. Lord, M.B., Southport; Dr. E. J. Lloyd, Bangor; Dr. T. G. Lyon, London. **M** W. MacLennan, M.B., Glasgow; Mr. T. I. Mills, Easingwold; Dr. T. S. Maguire, Stony Stratford; Dr. A. J. Mackintosh, Esh; Mr. J. A. Magee, Clown; Dr. J. A. Menzies, Rochdale; Mr. A. H. Martin, Evesham; Dr. P. McBride, Edinburgh; Dr. J. A. Matson, London; Member Brit. Med. Assoc.; J. Malcolm, M.B., Edinburgh; Member. **N** Mr. F. A. Nyulasy, Melbourne; Neuron. **P** Dr. J. Pickett, London; Dr. C. B. Plowright, King's Lynn; H. V. Palin, M.B., Wrexham; Mr. C. Pound, Odiham; Practitioner; F. S. Pitt-Taylor, M.B., Birkenhead; Mr. H. J. Prangley, London; Dr. A. G. Phear, London. **R** Dr. J. M. Rhodes, Didsbury; Rusticus; Mr. F. A. Rogers, London. **S** Mr. W. D. Scott-Monerieff, London; Mr. J. Smithson, Epsom; Mr. L. Stephens, Emsworth; Mr. M. Scott, London; Mr. E. Shackleton, Whitworth; Mr. G. Stevens, Norton; W. Snodgrass, M.B., Glasgow; Soldier Surgeon; Mr. J. Snowman, London; W. H. Stephen, M.B., Smethwick; Senility. **T** Mr. T. H. Tetley, Bungay; Dr. J. C. Thresh, Chelmsford. **U** Ubique; Dr. A. R. Urquhart, Perth. **W** Mr. A. Walker, Rochdale; Dr. A. O. Ward, London; Dr. W. J. Wheeler, Dublin; Mr. M. A. Wardle, Bishop Auckland; Mr. J. H. Walker, West Calder; Messrs. Widenmann, Broicher, and Co., London, etc.

BOOKS, Etc., RECEIVED.

Ueber Malaria und andere Blutparasiten. Von Dr. H. Ziemann. Jena: Gustav Fischer. 1898. M.8.50.

Diseases of the Stomach. By M. Einhorn, M.D. Second Edition. London: Baillière, Tindall, and Cox. 1898. 12s. 6d.

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger. Vols. I and II. London: Baillière, Tindall, and Cox. 1898. 25s.

The Effects of the Diamond Jubilee on the Resources of Voluntary Charities. By Sir Henry Burdett, K.C.B. London: The Scientific Press. 1898. 1s.

La Diphtérie. Par H. Barbier et A. G. Uiman. Paris: J. B. Baillière et Fils. 1898. Fr.1.50.

A Manual of Chemical Analysis, Qualitative and Quantitative. London: Longmans, Green, and Co. 1898. 6s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

Sir Henry D. Littlejohn, M.D., President.

ADDRESS ON THE SANITATION OF EDINBURGH.

By Professor Sir H. D. Littlejohn, M.D., President.

The President, in welcoming the visitors, said that he was old enough to remember the last meeting of the British Medical Association in Edinburgh in 1875, and went on to speak of the great changes which the sanitation of Edinburgh had undergone since that time. One of the outstanding improvements was that of the housing of the poor. By a Bill introduced by Lord Provost Chambers £560,000 had been devoted to this improvement, with the result that the death-rate had been lowered from 28 to 17 per 1,000. This reduction did not take place all at once, but was only fully appreciable after the lapse of three or four years. There were still, however, plague spots in the city in which the death-rate rose to 33 per 1,000.

He then referred to the improvement in the drainage of the city, and more especially to the purification of the Water of Leith. By means of a map he illustrated the great extension of the city boundaries which had taken place in recent years, and also pointed out the drainage arrangements for the various districts of the town. He then went on to speak of the water supply, showing that Edinburgh derived its supply, not only from the Pentland and Moorfoot Hills, but also from the Talla Burn in the watershed of the Tweed.

A peculiarity of Edinburgh to which he called attention was the fact that no accumulation of rubbish in the city was allowed. For 200 years the people of Edinburgh had been educated to bring their rubbish down to the streets, whence it was carried away by the town authorities. At first the rubbish was disposed of to farmers, but in the end the sanitary authorities had been compelled to build destructors, and now the rubbish was mainly got rid of in that way.

The President also referred to the Craigentinny sewage farm. The sanitary authorities had, he said, on more than one occasion tried to have the sewage farm done away with, but had failed through being unable to prove that any ill-effects were produced by it. The cause of their failure was that the population in the neighbourhood of the farm was very sparse, and that the water supply of the district was not derived from local sources, but from the Edinburgh main supply.

He next referred to the association of Edinburgh with the Infectious Diseases Notification Act, and remarked on the opposition to the Act exhibited by the Royal Colleges. The effect of the Notification Act was, he said, remarkably shown in the decrease of typhus fever. Edinburgh, instead of being "a fever-stricken city," was now almost free from that disease. But in this connection the President made the interesting observation that sporadic cases, when they did occur, were just as severe as they used to be when the disease was rampant.

He concluded his address by referring to the Hospital for Infectious Diseases, and pointed out that there was no direct infection from the fever hospital of the district in its immediate neighbourhood.

On the motion of Sir C. Cameron (Dublin) a cordial vote of thanks was accorded to the President for his address.

A DISCUSSION ON RIVERS POLLUTION: WITH SPECIAL REFERENCE TO THE PRESENT CONDITION OF SCOTTISH RIVERS.

I.—H. M'Lean Wilson, M.D.,

Chief Inspector, West Riding Rivers Board.

It might have been more appropriate had the opening of a discussion upon the pollution of rivers and its prevention, which is to have special reference to the present condition of Scottish rivers, fallen to someone with more local knowledge than I can pretend to have.

I may claim, however, some right to speak upon the subject as being probably the only member of the Association wholly employed in the prevention of rivers pollution, and as having to deal with what are the most polluted rivers in the country.

As the time allowed for each speaker is so limited, I shall, with your permission, plunge at once into my subject, and put before you the five questions I have for your consideration:

I. Who should administer the laws for the prevention of pollution of rivers?

II. Are the present laws sufficient?

III. Is treatment of sewage on land to be required in all cases?

IV. Should manufacturers' refuse be purified by the manufacturers themselves or by the sanitary authorities?

V. Should any standard of purity be adopted for effluents from sewage works or purified trade refuse?

I.—Administration.

Probably all of us are agreed that the chief reason why the Rivers Pollution Prevention Act of 1876 remained so long nearly a dead letter was that no proper provision was made for its administration. The sanitary authorities, to whom the enforcement of the Act naturally belonged, were nearly all themselves offenders. It was wiser of them, from their point of view, to allow the Act to remain on the shelf than, by taking proceedings against offenders, to stir others to take proceedings against themselves.

By the Acts of 1888 in England, and 1889 in Scotland, county councils were formed, and to them was committed the power of enforcing the Rivers Pollution Prevention Act. This was a great step gained, for the administration of the law was thus given to a body with clean hands.

The county councils are naturally somewhat chary of dealing with cases of pollution of streams within the limits of county boroughs and in Scotland other burghs, within which the greater number of polluting manufacturing processes are usually carried on, and the boroughs themselves have been chary of exercising their powers against individuals in their districts. The same Acts gave power, therefore, to the Local Government Board of England and to the Secretary for Scotland to constitute a joint committee, representing all the administrative authorities concerned in any river, for the purpose of enforcing the Act of 1876.

Such joint committees have been formed in three cases only: that of the Ribble in Lancashire, where, in 1891, a committee was formed representing the county council of Lancaster and the four county boroughs of Blackburn, Burnley, Preston, and Wigan; that of the Mersey and Irwell, also in 1891, where the committee consists of members elected by the county councils of Lancaster and Chester and the seven county boroughs of Manchester, Bolton, Bury, Oldham, Rochdale, Salford, and Stockport; and that of the West Riding in 1893, upon which are represented the county council of the West Riding and the five county boroughs of Bradford, Halifax, Huddersfield, Leeds, and Sheffield.

The formation of the Water of Leith Commission by special Act of Parliament in 1889 was on somewhat similar lines, but that body, as I shall afterwards have to point out, was armed with powers far in advance of those given to the joint committees by the Act of 1876.

By a Bill now before Parliament it is proposed to give powers to the Local Government Board of England and the Secretary for Scotland to constitute another similar body,

with representatives from county councils on the English side of the Border and from county councils and burghs on the Scotch side. for the purpose of dealing with the rivers on the Border. The formation of these joint committees was another step in advance. They have no other duties than those relating to the prevention of pollution of rivers, and they are free to a much greater extent than any single county authority can be from local influences and prejudices.

It has been advocated with some reason that the enforcement of the laws for the prevention of river pollution should be entrusted entirely to a central authority; but this in my opinion is going a step too far. The best arrangement I believe to be that for every large river or group of rivers a joint committee should be formed, to whom the administration of the law should be relegated.

II.—THE INSUFFICIENCY OF THE ACT OF 1876.

In the general Public Health Acts various sections deal with pollution of streams, but even at the time the Public Health Act of 1875 was passed it was recognised that special legislation on the matter was required, and in the following year the Act of 1876 was passed. Under this Act much good work has been accomplished by county councils and by the Ribble Joint Committee.

The special rivers authorities which have been created have, however, found that the Act of 1876 is faulty in many respects, and in 1892 the Mersey and Irwell Joint Committee, and in 1894 the West Riding Rivers Board, found it necessary to go to Parliament for special powers.

There are two very ancient bodies in England with special powers for dealing with rivers pollution—the Thames Conservancy and the Lee Conservancy—and these bodies have special Acts of Parliament arming them with powers very similar to those of the Lancashire and Yorkshire authorities, but in addition with powers of carrying out actual works of conservancy and purification.

The Water of Leith Purification and Sewerage Act of 1889 gave also to the Commission it constituted very different powers to those given to the other authorities by the Act of 1876, for the Commission was entrusted with the duty of carrying out the works necessary for the purification of the Water of Leith.

By a Bill now before Parliament, called the Middlesex County Council Bill, it is proposed that the Middlesex County Council shall be given many powers in dealing with the streams in the county in addition to those of the Act of 1876—power to improve the bed of a stream, to remove obstruction, to straighten the channel, to construct weirs, to regulate discharge of compensation water, and to prevent the occurrence of any new pollution.

A general Bill for the Prevention of River Pollution is also now before Parliament. Of this it may briefly be said that it aims at making general the special Acts of the Mersey and Irwell Joint Committee and the West Riding Rivers Board.

All these Acts and Bills make it very clear that it is generally recognised that the Act of 1876 is far from sufficient. Will the Rivers Prevention Bill now before Parliament satisfy the requirements of the case? The Bill as it at present stands is weaker in several respects than either of the two special Acts upon which it is based, and it is certainly the opinion of the West Riding Rivers Board that their special Act requires amendment in many important particulars. The same, I believe, is true of the Mersey and Irwell Joint Committee.

The following are some of the points left undecided by the present Bill: The settlement of the question of the right of a manufacturer to discharge his trade refuse into a public sewer or of the right of the sanitary authority to refuse to allow him so to discharge it; the prohibition of the sludging of mill dams; the power to cause obstructions to the flow of streams to be removed; the absolute prohibition of any new pollutions; the proper supervision of the discharge of compensation water. It will be a great misfortune if the Bill in its present state passes into law, as it will postpone indefinitely the proper solution of the difficulties that have arisen in dealing with rivers pollution.

I am not clear in my own mind that it is a good thing to call upon the rivers authorities to construct the actual works required, as is done in the Water of Leith Act and as is proposed in the Middlesex County Council Bill, and this is one of the points upon which I should like to hear the views of the members present.

III.—IS SEWAGE ALWAYS TO BE TREATED ON LAND?

This is one of the questions which the present Royal Commission is expected to answer.

The cases where sewage is discharged into the sea or into tidal waters may be set aside, for few will claim that in such cases any land treatment of the sewage is necessary. Even in these cases, however, some method for the purification of the sewage should be enforced. The solids at least should be removed so as to prevent the gross pollution of many of the shores and estuaries at present too prevalent. Where sewage is to be discharged after purification into a stream there can be no doubt but that land treatment is much the most effective and satisfactory where the land available is sufficient in area and of a suitable nature. But there are very many places where no land for sewage disposal can be obtained except at a prohibitive cost, or in some position hemmed in by dwellings, or of such an impervious nature that to expect it to absorb and purify sewage is to look for the impossible. No doubt land even of the worst description can by proper measures be rendered suitable for sewage disposal, but to do this is very much like preparing an artificial filter.

Owing to the reports of the Rivers Pollution Commission of 1865 and 1868, sewage farms have in the past been frequently laid out upon land wholly unsuitable for the purpose; and it is to such farms as these—hopelessly impracticable from the beginning—that the discredit attaching to sewage treatment is chiefly due.

Of chemical precipitation of sewage, whether or not followed by filtration on the old plan, in which a filter was constantly used until no sewage could pass through it, it cannot be said that the results are satisfactory. Nor have any of the patent methods from time to time put forward solved the difficulty.

But the experiments of the Massachusetts Board of Health, and of Dibdin, Scott Moncrieff, Cameron, and others, in this country have fairly conclusively shown that sewage can be efficiently purified by artificial methods without passing it through the soil, and there are already in existence in various parts of the country sewage works where these methods have been adopted with satisfactory results.

It has not yet been proved that sewage mixed with different kinds of trade refuse can be purified in this way, but experiments at present being carried on at Leeds, Sheffield, Bradford, and many other places, will go far towards the settlement of the question.

It can, however, be already admitted that by biological methods alone domestic sewage can be sufficiently purified, and that any kind of sewage, even when mixed with a very large amount of trade refuse, can also be similarly purified, at any rate after preliminary chemical treatment.

While, therefore, the provision of land for the treatment of sewage should generally be insisted upon, it must come to be recognised that in special cases far better results are likely to be obtained by artificial filtration by biological methods.

IV. REFUSE OF MANUFACTORY.

In England the legal question whether or not a manufacturer has a right to discharge his trade refuse into a public sewer has not been definitely decided. Section XXI of the Public Health Act of 1875 is modified by Section VII of the Act of 1876, and this, again, is so modified by the included proviso that it is difficult to say what is its exact significance.

In Scotland, however, the matter seems definitely settled by Section CX of the Public Health Act of last year. The proviso does not affect many manufacturers, and need not affect any who carry out the requirements of Section CXVI. It is worthy of notice that the provisions of CXVI do not include the preliminary treatment of trade refuse for the purpose of removing from it anything which would interfere with the treatment of the combined sewage. Sections framed for this purpose have been inserted in a Wolverhampton Act of 1869, in a Bilston Act of 1896, and in a Bradford Act of 1897. It is not quite clear, and the fact that there are these private Acts of 1896 and 1897 renders it more doubtful whether the proviso

in Section VII of the Rivers Pollution Prevention Act enables an authority to compel a manufacturer to remove from his trade refuse any such injurious matters, at any rate where the liquids only prejudicially affect the disposal of the sewage by enhancing the cost and difficulty of treatment.

While the unsettled state of the English law is greatly to be deplored and is a great hindrance in dealing with trade pollutions, the solution arrived at in the Scotch law must often lead to great injustice. There are not a few sanitary districts where the amount of trade refuse is largely in excess of the domestic sewage, and where the refuse is of such a character that it renders the treatment of the combined sewage vastly more difficult and costly. It cannot be just that the whole extra cost in such cases, often far in excess of any rates paid by the manufacturers, should fall upon the shoulders of the community.

A solution of the difficulty which seems a just one has been proposed by many of the manufacturers in the West Riding—that the manufacturer should have the right to call upon the sanitary authority to purify his trade refuse, and that the sanitary authority should have the right to ask the manufacturer to remove from his refuse anything which would interfere in any way with the treatment of the combined sewage, and to impose on him a special rate to meet the extra cost of treatment.

In many localities, however, where the manufacturers draw from small streams large quantities of water for trade purposes, it will always be impossible to allow the discharge of trade refuse into the sewers. This course would sometimes wholly deplete the streams, and such an interference with the rights of riparian owners on the parts of the stream so depleted could never be permitted. In such cases it will always be necessary for the manufacturer to deal with his own trade refuse, so that he may be able to return the purified effluent to the stream for the use of his neighbour lower down.

V.—A Standard of Purity.

If it were possible to have a fixed standard such as that recommended by the Royal Commission on Rivers Pollution, the labours of all who have to do with prevention of pollution would be much easier. Sanitary authorities, too, and manufacturers would have removed from their minds an element of uncertainty which undoubtedly now exists. But is it possible or reasonable?

Compare two authorities on the same stream, the one discharging its sewage effluent into the stream where the water is pure and perhaps afterwards used for drinking, the other into the stream lower down, where the water is used only for manufacturing purposes or for navigation. Or take the case of two authorities on different streams, the one draining its district into a small tributary, where the volume of sewage effluent may be as large as that of the natural flow of water, the other into a large river where the effluent is at once diluted some hundreds of times. Or take another comparison between an authority which has purely domestic sewage to deal with and an unlimited quantity of suitable land available for its treatment, and, on the other hand, an authority into whose sewers vast quantities of complex trade refuse are discharged, and which has not within available reach any land suitable for sewage treatment. Or, to take the manufacturers, one may have a trade refuse of which the only impurity is some suspended solids, such as coal dust from coal washing and sand from stone sawing; another may have to deal with refuse quite as obnoxious and as difficult to treat as sewage, as, for instance, tanyard or brewery refuse. Or, again, one manufacturer may have works in the country where there is every facility for the construction of purification works, while another engaged in the same trade may have his premises in the heart of a town with scarcely an inch of spare ground within a mile.

Instead of a single standard applicable to all cases, the adoption of several standards is sometimes advocated—a special standard for each river or part of a river, or for a certain trade. But these attempts seem only to emphasise the fact that the establishment of a standard is impracticable.

If a standard of purity for sewage effluents could be fixed, it should not be taken on chemical analysis only. The effluent from a sewage farm where the sewage has been passed through suitable soil, or from a biological filter on Dibdin's method, may contain as much organic matter as the effluent from sewage works where chemical precipitation and ordinary filtration are the means of purification adopted. But in the former case much of the organic matter may be in the form of living and active organisms, still carrying on the work of purification, while in the latter the organic matter is likely to be inert and dead, and ready to undergo putrefaction when diluted with the water of the stream into which it is discharged.

In the discussion of questions relating to rivers pollution it must be remembered that the subject may be looked at from different points of view. Sometimes the river to be purified has been so abused, and is so offensive, that the first aim of the reformer is to put a stop to the nuisance. Some rivers form sources of water supply, and require to have their purity very jealously guarded; and in regard to some the question of fish is the important one.

Our object in all cases must, however, be to put a stop to the gross abuse of the rivers now so common, and to bring them back as nearly as possible to their natural condition.

II.—John Glaister, M.D.,

Professor of Forensic Medicine and Public Health, University of Glasgow.

Professor Glaister said that he desired to confine his attention to the subject of river pollution, with special reference to Scottish rivers, since the previous speaker had dealt with the general question. In 1896, having collated statements from the reports of the medical officers of health, and from personal inquiries made on the spot, regarding the present condition of the rivers in the various counties of Scotland, he wrote exhaustively upon the subject, in an address before the Philosophical Society of Glasgow. In that address (copies of which he had pleasure in handing to the members of the Section) he was able to show that the result of twenty years' experience of the Rivers Pollution Act was absolutely negative, and that the condition of rivers was as bad to-day, if, indeed, not worse than when the Commissioners examined the subject in 1868. It could be said, without any fear of contradiction, that pollution existed practically in every river in Scotland, varying from small additions of sewage to all kinds of trade discharges, organic and inorganic. The present machinery for the remedy of this condition consisted in the Rivers Pollution Prevention Act (1876), certain sections of the Public Health (Scotland) Act of last year, certain clauses of the Gasworks Act, and of the Salmon Fisheries (Scotland) Act, 1862, and at common law. Probably the least effective part of this machinery is the Act which was intended directly to deal with the pollution, because of the various restrictions found in the Act, which make its action so cumbrous, so costly, and so inefficient, in the case of recalcitrant polluters. This has been recognised by Parliament in the preamble of the West Riding of Yorkshire Rivers Act, 1894, where it is said, "Whereas the restrictions contained in the Rivers Pollution (Prevention) Act of 1876 are such as to preclude effective action by the joint committee for the improvement of the conditions of the said rivers or parts thereof, and the tributaries, it is desirable and expedient to confer the powers asked." Difference of opinion exists as to the value of legislative enactment in respect of impurity standard. The Commissioners, it is true, laid down standards of impurity by which effluents could be judged, but these did not find their way into the Act which followed their reports. Undoubtedly much difficulty surrounds the applicability of one set of standards for all rivers, but he (the speaker) would be glad to revert to the standard laid down by Dumas when he was consulted by the Commissioners—namely, "Whenever water was so affected by a town or manufacture as to become unfit for supporting the life of fish or of green plants, the pollution, from whatever cause derived, should be considered as an insupportable nuisance to the riparian population," and that this standard should only be applicable to those rivers which in no way enter into the water supply of a populous place. If, in conclusion, any improvement in our Scottish rivers is to be effected, it can only be done by amended legislation, and in that direction he would suggest that from that Section a resolution should pass, calling upon the Legislature for amendment of the Rivers Pollution Act of 1876, in the direction of

the Lancashire and Yorkshire Amended Acts of 1892 and 1894, which centralise and focus the authority by which action shall be taken, define the various pollutants, classify them, and catalogue their sources, and which relieve the Rivers Boards of the consent of the Local Government Board before they can take action against a recalcitrant polluter.

III.—GEORGE REID, M.D.,
Medical Officer of Health for the County of Stafford.

DR. REID said, with regard to joint Boards, he thought that local conditions should largely determine their formation. There were numerous overlapping local authorities with differing interests; the county boroughs, for instance, who as a rule were the great sinners, might be able to defeat the efforts of other bodies, such as the county councils, by combination. He suggested the county councils as the more suitable central authorities, except possibly in special cases. As to constructing works for sewage disposal, he thought it would not be wise to entrust anything but supervisory powers to the county councils. In the case of populations on large streams it might be perfectly reasonable to admit a less highly purified effluent than in the case of smaller streams.

IV.—R. BRUCE LOW, M.D.,
Medical Inspector of the English Local Government Board.

DR. BRUCE LOW considered that the need for the formation of joint Committees to protect rivers from pollution was evident. He upheld the contention of Dr. Reid that the jealousy of various authorities often wrecked schemes that otherwise promised success. He remarked that when rivers flowed through more than one county opposition often arose between the counties concerned, and he considered that some assistance by Parliament appeared to be needed to aid in the formation of joint committees, and to exert pressure on offending county councils to compel them to unite in the protection of the entire watershed of a river.

V.—JOHN C. MCVAIL, M.D.,
Medical Officer for the Counties of Stirling and Dumbarton.

DR. MCVAIL said that Dr. Wilson's paper was both lucid and suggestive. That Dr. Wilson, a medical man, had been appointed inspector of rivers was a suggestive fact, indicating that the fitness of medical men for work having no more than a kinship to medical science was coming to be more and more acknowledged. In local sanitary administration it was now universally recognised that large areas were desirable. Size, however, was a relative term. An area sufficiently large to make it likely that the authority in charge of it would act impartially as regards an ordinary nuisance or an insanitary house might not be large enough to be entrusted with the control of the purification of a large river, affecting not merely a single proprietor, but many proprietors, many large manufactories or mills, and many sanitary Boards. For purposes of rivers purification the administrative area should be very large, and it was doubtful whether the authority in charge of it should not be appointed by special election rather than by small local authorities, themselves probably responsible for many of the causes of complaint. In any case a central authority should have ample power to compel sanitary authorities to do their duty in carrying out the provisions of a Rivers Act entrusted to their charge. The Rivers Board in charge of any area should have power to form special districts for general schemes applying to the combined effluents of mills, manufactories, towns, and villages on any river, and this power should be exercised where a better result would be obtained than by the separate action of individual towns and mills. In such combinations the incidence of assessments, say as between villages and manufactories, should be subject to variation according to circumstances. If fixed merely by valuation then a small mill might pay much less than a village, though in the treatment of its effluents the mill might give far more trouble and cause far more outlay than the village. The existing Act was a very weak one, but within the last few years in Scotland it had by no means been a useless one. By regular inspection, and by constantly bringing pressure to bear on polluters, very much had been done, at least in some localities, to diminish pollution. At the same time a new and stronger Act was urgently required.

VI.—ALFRED HILL, M.D.,
Medical Officer of Health, Birmingham.

DR. HILL remarked on the vast extent of the subject, and the difference of conditions existing in different localities as to the size of the rivers, the number of the population polluting them, and the presence or absence of manufactures of a special kind, such as dyeing works, metal works, acid refuse, etc. In large manufacturing towns situated on very small rivers it was impossible to keep such streams pure, whatever might be done. They might be kept or made pure enough not to become public nuisances as sources of impure emanations, but he believed they could never be made potable. He considered that no single method of purification could cope with the difficulty, but that some were suitable and others unsuitable taken singly, while in many cases a combination of systems would be necessary. In large rivers the state of things was different, as with a large volume of running water in rivers of considerable length, combined with the subsidence of suspended matter, aëration, and storage, an extraordinary degree of purification was attained. Thus, in London—one of the healthiest of the great cities—the water was drunk with apparently complete impunity. Where towns were situated on small streams their only hope was to go further afield and derive their water supplies from a distant pure source.

VII.—FRANCIS T. BOND, M.D.,
Medical Officer of Health, Gloucester.

DR. BOND referred to the success of the recent installation of the combined septic tank and aërating filters at Exeter, and asked Dr. Wilson whether the regulations for the control of manufacturing refuse which he had stated were being generally adopted in his district could be legally enforced, or whether they were being promoted only with the benevolent co-operation of the manufacturers themselves? Dr. Bond said that he thought that what was wanted was to facilitate the employment of procedure at common law by aggrieved riparian occupiers. This might be done by empowering county councils or other river pollution authorities to proceed at common law against river polluters on the complaint of a riparian occupier in any case in which it could be shown that the interests of the complainant were common to other persons. Such a method would be analogous in some respects to the method of procedure in England by which the Attorney-General could be moved by any aggrieved person to take action. In such cases the Attorney-General acted in theory as a public prosecutor, but at the expense of the plaintiff. In the course which he (Dr. Bond) suggested, the cost should be borne by the public. The advantage of such a course would be that the case would be brought under the operation of equitable considerations, and would not be restricted to the strict letter of statutes which were generally admitted to be defective and confused. Dr. Bond concluded by moving a resolution, which, on the suggestion of the President, was referred for consideration to a Subcommittee, which reported at the concluding session of the Section.

THE VALUE OF THE PRESENT METHOD OF ESTIMATING THE POPULATIONS OF THE GREAT TOWNS IN ENGLAND.

BY E. W. HOPE, M.D.,
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MEANS OF CHECKING THE ESTIMATE.

FOR the past few years reasons have been growing stronger for calling into question the accuracy of the results of the method adopted by the Registrar-General for estimating the population of the City of Liverpool. The method, I need hardly say, is based upon the assumption that the rate of change in the various districts of the city which had taken place during the last intercensal period has obtained since. The Registrar-General's estimate is that the popula-

tion has increased from 629,443 in 1891 to 633,645 in 1898, that is, a total increase during the seven years of 4,202.

The reasons for believing that the present estimate of the population of the city is very much below what it actually is may be summarised in the following manner :—

(*a*) The natural increase of the population—namely, the increase in the number of births over deaths since the last census—exceeds 40,000.

(*b*) The increase in the number of registered voters since the last census exceeds 26,000 (Table VII).

(*c*) Since the last census the number of inhabited houses in the city has been ascertained by special investigation to have increased by 14,448, and the number of houses which have been built, in excess of those which have been demolished, since the last census, is close upon 2,500.

Each one of these considerations add to the belief that the actual increase has been greater than the estimated increase. (*a*) sufficiently explains itself. With regard to (*b*) the number of inhabitants to a voter, taking the census average, is 6.9, but if only 6.5 be taken, and the increase in the number of voters be multiplied by this figure, it gives an addition to the population of 171,346, including the incorporated areas, which, added to the census population of the old city, makes a total of 689,326.

With regard to (*c*), the number of inhabitants to a house, taking the census estimate, is 5.6, and, taking the occupied houses of the present extended city as a basis of estimate of the population, it makes an addition of 80,908 since the last census, and raises the total to 710,351.

The mere addition of the births over deaths would raise the population to upwards of 670,000.

These figures have reference to Liverpool as it now is, the estimate of the city being made as for one whole, but it will be remembered that an incorporation of Liverpool with its suburbs took place in 1895. If this incorporation had not taken place, and the city and suburbs had been dealt with by the Registral-General separately, as would have been the case except for incorporation, the totals so obtained would have been greater by 23,000 than they are now. (See Table V.) This shows one obvious fallacy of the method of estimation adopted.

Effects of Under-Estimation.

Assuming the under-estimation of the population of the city to be about 50,000, the consequences, taken as a whole, are trifling. It merely causes relatively unimportant errors in the birth-rate and in the death-rate, making both of them too high ; but the consequences in certain districts of the city of obvious errors in the estimate of the population are very grave. Two districts have been selected for illustration. In one of them, Scotland District (Table I), the phenomenal increase in the birth-rate, from 37 per 1,000 ten years ago, up to close upon 50 per 1,000 at the present time, can only be explained by the obviously-increasing error in the estimate of population. The death-rate is, of course, correspondingly exaggerated (Table II). Exchange District (Table III) further illustrates the same anomaly in precisely the same way. In the subdistricts affected the consequences are still more pronounced. To take one of them, namely, Vauxhall Ward, the error in the Registrar-General's estimate cannot be less than 40 per cent., the consequences being that all statistical returns must be vitiated to an extent which renders them worthless. Fortunately, these returns are not now published separately, but in this district, perhaps more than in any other, the error results in delaying and discrediting sanitary operations.

Vauxhall Ward formerly was a notoriously unwholesome district. Pent-up alleys and courts, dwellings of the most grossly insanitary construction and condition, were the rule, but for some years past great efforts have been made to ameliorate the conditions of the district, large numbers of insanitary houses have been demolished, streets have been opened up, cottages and artisans' dwellings of the most approved style have been erected, and yet, year by year, thanks to the gross errors in the population, as estimated by the Registrar-General's method, the rate of mortality appears to be steadily going up.

Those who believe, or affect to believe, that the Registrar-General's method is a carefully-considered estimate, corrected year by year upon available evidence, are able, if they choose, to point to this rise in the death-rate as evidence, from a Government Department, that what is being done has resulted in no amelioration, that the money has been expended in vain, and the work has resulted in increasing disease and mortality.

But erroneous estimates are no new thing; at the close of the last intercensal period the Registrar-General's estimate of the population of the city of Liverpool showed an error of 100,000.

Need for a Quinquennial Census.

In Table IV a few towns are selected to show that Liverpool was not singular in regard to these errors, either in 1891 or in 1881. What error may exist in the estimate as applied to-day to other towns we do not know, but I have addressed letters on the subject to the medical officers of the great towns of England, and no fewer than twenty-one of them are of opinion that the estimate is wholly incorrect and unreliable as applied to their own towns, whilst three others are very doubtful as to its accuracy. With regard to London, a quinquennial census exists, and that it is necessary is abundantly proved by the errors of estimate which arise even in five years, amounting in 1891 to no fewer than 241,000.

Clearly, what is wanted is a more frequent census for the whole country, certainly not less frequently than every five years. It is singular that the Registrar-General is satisfied, week after week, and year after year, to publish, under the imprimatur of his office, figures which everyone conversant with the subject must hesitate to accept as correct. No word of explanation, no word of warning or comment, is issued with these returns, cities are strung together for comparison, with egregiously misleading results, and with consequences which tend to cripple and retard sanitation. No doubt a quinquennial census would go far to correct these mistakes, and tend not only to prevent the waste of time involved by the compilation and issue of fictitious returns, but also to put an end to the mischief which such returns give rise to. But, pending such a census, it is eminently unsatisfactory to find that the Registrar-General regards the subject of so little importance as to decline to discuss it.

Concrete Instances.

The following table shows that the increase in the birth-rate of Scotland District during the last ten years has been phenomenal if the Registrar-General's estimate of the progressive decline of the population is correct.

Table I.—*Scotland District.*

Year.	Population.*	No. of Births.	Birth-rate.	
1888	57,908	2,177	37.6	Corrected.
1889	56,346	2,174	38.5	
1890	54,826	2,088	38.0	
1891	53,347	1,984	37.2	
1892	51,908	2,057	39.7	
1893	50,508	2,027	40.1	
1894	49,145	2,041	41.5	
1895	47,820	2,144	44.8	
1896	46,530	2,053	44.1	
1897	45,275	2,122	46.9	

The assumed increase in birth-rate in ten years is upwards of 24 per cent., and the assumed decline in the total population during the same period is about 21 per cent.

* Calculated by the Registrar-General's method.

Table II.—*Scotland District.—Deaths and Death-Date, 1888-1897.*

Year.	Number of Deaths.	Death-Rate.	
1888	1,746	30.1	Corrected.
1889	1,914	33.9	
1890	2,003	36.5	
1891	1,993	37.0	
1892	1,838	35.5	
1893	1,834	36.3	
1894	1,628	33.1	
1895	1,836	38.4	
1896	1,609	34.5	
1897	1,711	37.7	

In Table VI the births and birth-rates of the various districts of the city of Liverpool are shown, and Table V the alternative estimates of the population of the city are given.

The Exchange District further illustrates the anomalies alluded to as existing in Scotland District.

TABLE III.—*Exchange District.*

Year.	Population.	Number of Births.	Birth-Rate.	
1888	53,272	1,521	28.5	Corrected.
1889	51,153	1,455	28.4	Corrected.
1890	49,175	1,416	28.8	Corrected.
1891	47,268	1,385	29.3	
1892	45,449	1,303	28.8	
1893	43,715	1,387	21.7	
1894	42,054	1,302	30.9	
1895	40,476	1,325	32.7	
1896	38,964	1,433	36.8	
1897	37,518	1,381	36.8	

Vauxhall Ward.

The locality which until recently was known as Vauxhall Ward forms part of Exchange District. The evidence of underestimate of the population in this locality is also very strong.

The population of Vauxhall Ward at the census of 1891 was found to be 7,166, the number of houses occupied was 1,316, and the number empty was 381 (many of these being insanitary and incapable of further tenancy), the total being 1,697. The proportion of inhabitants per occupied house at the census was 5.4.

Since 1891 565 houses have been demolished, a very large proportion being insanitary and unoccupied; 274 houses have been built, almost every one of which is tenanted. Assuming, however, that the same proportion which was untenanted in 1891 is untenanted now, it leaves 1,091 occupied at the present time.

Taking 1,091 houses with 5.4 occupants per house, as was the case at the census, gives a population of 5,891, but the estimated population of the ward upon the Registrar-General's method is 4,118, the error in this case amounting in all probability to not less than 40 per cent., which must completely vitiate statistical returns relating to the locality.

The following towns (Table IV) are selected to illustrate errors of similar kind in previous intercensal periods.

TABLE IV.—1881.

Town.	Estimated Population	Census Population	Amount of Error.	Percentage of Error.
Nottingham	176,800	186,575	9,775	5 below census.
Manchester	364,037	393,585	29,548	7.5 ,, ,,
Salford	191,739	176,235	15,504	8.8 above ,,
Sheffield	310,788	284,508	26,280	9 ,, ,,
Bradford ...	202,809	183,032	19,777	10.8 ,, ,,

TABLE IV *(continued).*—1891.

Town.	Estimated Population	Census Population	Amount of Error.	Percentage of Error.
Portsmouth	144,226	159,251	15,025	9.4 below census.
Newcastle	164,490	186,300	21,810	11.7 ,, ,,
Salford...	248,679	198,139	50,540	25.5 above ,,
Liverpool	618,639	517,980	100,659	19.4 ,, ,,

TABLE V.

District.	Population at Census 1881.	Population at Census 1891.	The Registrar-General's estimate after incorporation, the combined districts being dealt with as one whole.	What the Registrar-General's estimate would be if his method were applied to the former City Districts combined together, and each of the Incorporated districts by itself, as would have been done if incorporation had not taken place.	What the Registrar-General's estimate would be if City Districts and Outtownships had not been incorporated but had each been calculated separately.
			1898.	1898.	1898.
Scotland	70,606	53,713	44,053	44,053[1]	44,053
Exchange	72,007	47,738	36,137	36,137[1]	36,137
Abercromby	67,551	55,530	48,642	48,642[1]	48,642
Everton	109,812	110,556	110,677	110,715[1]	111,106
Kirkdale	58,145	66,131	67,993	68,404[1]	72,598
West Derby	67,727	76,971	79,122	79,597[1]	84,452
Toxteth	106,660	107,341	106,644	106,757[1]	107,916
Walton	18,536	40,304	58,228	70,780[2]	70,780
West Derby (Rural) ..	31,673	36,349	38,564	40,141[3]	40,141
Wavertree	11,097	13,764	14,579	16,117[4]	16,117
Toxteth (Rural) ...	10,368	21,046	29,006	35,163[5]	35,163
Total	624,182	629,443	633,645	656,506	667,105

Table VII requires a word of explanation. The citizens' roll up to the year 1894 was limited to the inhabitants of the then city. In 1895 the boundaries of the city were extended, consequently all inhabitants of the extended area became citizens, and the number of them indicated in the table became voters. Since 1895 the total numbers of these voters,

TABLE VI.—*Births and Birth-rates.*

District.	*1888.		*1889.		*1890.		Census Year, 1891.		1892.		1893.		1894.		1895.		1896.		1897.	
Scotland	2,177	37.6	2,174	38.5	2,088	38.0	1,984	37.2	2,057	39.7	2,027	40.1	2,041	41.5	2,144	44.8	2,053	44.1	2,122	46.9
Exchange	[illegible]	[illegible]	[illegible]	[illegible]	1,416	28.8	1,385	29.3	1,303	28.8	1,387	31.7	1,302	30.9	1,325	32.7	1,433	36.8	1,381	36.8
Abercromby	[illegible]	[illegible]	[illegible]	[illegible]	1,603	28.4	1,627	29.4	1,596	29.4	1,691	31.8	1,671	32.0	1,676	32.8	1,740	34.7	1,711	34.6
Everton	[illegible]	[illegible]	[illegible]	[illegible]	3,844	34.7	4,006	36.2	4,074	36.8	4,105	37.1	4,233	38.3	4,287	38.7	4,335	39.2	4,441	40.1
Kirkdale	[illegible]	[illegible]	[illegible]	[illegible]	2,351	35.9	2,446	36.8	2,340	35.0	2,479	36.9	2,308	34.2	2,411	35.6	2,359	34.6	2,423	35.5
West Derby	[illegible]	[illegible]	[illegible]	[illegible]	2,673	35.0	2,689	34.8	2,829	36.3	2,852	36.5	2,894	36.8	2,858	36.2	2,950	37.2	3,040	38.3
Toxteth	[illegible]	[illegible]	[illegible]	[illegible]	3,017	33.7	3,695	34.4	3,559	33.1	3,787	35.3	3,444	32.1	3,746	35.0	3,522	32.9	3,527	33.0
Walton	[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	—	—	—	—	—	—	1,439	27.8	1,542	27.9	1,552	26.5
West Derby (Rural)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,099	28.5	951	24.3	991	25.0
Wavertree	—	—	—	—	—	—	—	—	—	—	—	—	—	—	405	26.8	400	20.8	451	28.6
Toxteth (Rural)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	616	21.7	598	19.6	641	19.6

* The rates for these years are corrected.

NOTE.—For Scotland, Exchange, Abercromby, and Everton Districts see also Table V.

both in the old city and in the incorporated district, have increased.

TABLE VII.—*Citizens' Roll.*

Year.	No. of Voters on Citizen's Roll.	Increase.	No. of Inhabitants to a Voter.	—
1891	75,283	—	6.9	Calculated on census population.
1894-5 (Before extension)	76,303	1,020	—	—
1895-6 (After extension)	97,893	21,590	—	—
1896-7	99,953	2,060	—	—
1897-8	*101,644	1,691	*6.2	Calculated on Registrar-General's estimate of population.
Increase since 1891	—	*26,361	—	—

* This does not include 2,105 service voters, the great majority of whom are heads of families.

DISCUSSION.

Dr. SPOTTISWOODE CAMERON (M.O.H. Leeds) remarked upon the continuance of the 1871-81 rate of increase of population during the decade 1881-91. From this he considered it probable that the Registrar-General's return would not be found to differ very greatly from a census taken to-morrow. But this he considered would not be true of the several divisions or wards of a city; in the 1891 census some districts of Leeds had a population largely different from that estimated. Dr. Cameron thought that a quinquennial census was absolutely needed in Leeds if the statistics as to the health of districts were to have any value. He hoped that a strong presentation on this subject would go from the British Medical Association to the Government. No Government was, he said, anxious to propose a new census, but the profession ought, in season and out of season, to press the importance of it on the powers that be.

Professor SALTET (Amsterdam) said that in the Netherlands a biennial census was taken. In this census not only were births, deaths, and marriages recorded, but a separate register was kept also of change of residence. Fines were imposed where due notice of change of residence was not given. In the last census (1889) there was, with a population of 9,000,000, an error of only 3,700 in the population as estimated by the register. Thus, the second register might be considered a good method for the evaluation of the population.

SURFACE WELLS AS A SOURCE OF WATER SUPPLY.

By R. W. D. MACMARTIN CAMERON, M.D., D.Sc.Edin.,
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THE CLASSIFICATION OF WATERS.

In the sixth report of the Rivers Pollution Commissioners the following observations in regard to surface wells occur: In respect of wholesomeness, palatability, and general fitness for drinking and cooking, our researches lead us to the following classification of waters in the order of their excellence, and founded upon their respective sources.

Wholesome	1. Spring water 2. Deep well water	Very palatable
	3. Upland surface water	Moderately palatable
Suspicious	4. Stored rain water 5. Surface water from cultivated land	Palatable
Dangerous	6. River water to which sewage gains access 7. Shallow well water	

Shallow or surface wells are here condemned, and this order of merit is reproduced in every textbook in the kingdom dealing with the subject of water supplies. Shallow well water is dangerous; it is worse even than river water to which sewage gains access; it is the very worst water we drink. The only redeeming feature is its palatability.

VARIETIES OF SHALLOW WELLS.

But there are shallow wells and shallow wells; good, bad, and indifferent. It is far from my intention to defend cesspools such as the Rivers Commissioners had in view, whose best title to the name of well would consist merely in the fact of their being furnished with a pump and drinking vessel. Fortunately, and to the great improvement of the health of towns, these wells are much less in evidence to-day than formerly. Even in country districts from the gradual substitution of gravitation for well water in our larger villages the dangerously polluted well is becoming more and more of a rarity. Subsoil water, laboriously pumped or lifted in buckets out of wells, is being fast elbowed out by upland surface water distributed by gravitation. The main purpose of my paper is to ask whether this drastic, and in most cases very costly, change is altogether reasonable, more particularly where, as in many instances, gravitation schemes are forced on unwilling and impoverished communities. My observations, such as they are, have led me to certain definite conclusions which I hope to make intelligible as I proceed.

To revert for a moment to the classification of the Rivers Commissioners. Few will cavil at the high position given to spring and deep well water. I hold, however, that surface well water when, that is, it is reasonably safeguarded, ought to be placed third, or at least immediately after upland surface water, and that its proper position is in the "wholesome," not in the "suspicious," much less the "dangerous" group. It all depends on where the wells are situated, and how their surroundings are protected. It will be observed that the fourth place is assigned to "stored rain water," but the Commissioners would surely never have honoured this particular form of water so highly had they founded their conclusions solely on inspection of back-yard water butts, once (not so often now) a common and popular source of domestic supply. The abominations of the water butt, with its compost of rotten leaves, bird manure, drowned kittens, rags, dirt, and "creeping things innumerable," are known to all who have inspected "stored rain water," thus taken at a disadvantage. The most execrable surface well could scarcely be worse. I hold also that it is a libel on surface wells to mark them down as inferior to and more dangerous than surface water from cultivated land.

The essential difference between surface well water and rain water as it runs off the surface of the ground is that the former, percolating slowly through the soil, has undergone filtration more or less prolonged, the latter none at all; and there can be no question as to the immense value of this natural filtration in purifying even the filthiest surface waters. This is strongly insisted upon by Dr. Vivian Poore—that intrepid champion of surface wells. How have these been contaminated? he asks. And his answer is in complete accord with my experiences so far as these have gone. They have, he says, always been contaminated by direct inflow of filth from the surface of the ground in which they are dug, or by the leakage of cesspols or sewers direct into the well, through fissures in the soil and defects in construction.

WATER SUPPLY OF FARMS.

It frequently happens that farms—(I have several in my eye at this moment)—are supplied from wells or springs situated in one of the fields. If levels permit, the usual channel for conveying the water to the farmhouse is made up of common unjointed drain tiles less than a couple of feet—perhaps not more than one foot—below the surface. So long as the field is retained in permanent pasture the water supply continues good. But some day the field is ploughed, and a crop of oats or wheat sown. Next year the ground is manured for what is known as a "green crop," generally turnips or potatoes. After heavy downpours of rain the surface water, filthy with mud and manure, gets washed directly into the pipes, and not infrequently into the water at the fountain head, which is rarely protected in any effective way. The result is an outbreak of typhoid fever. So long as no surface water gets into the supply pipe without percolating through

the foot or two of turf and soil above it the water may be used, or at least it has been used, with perfect impunity for years, perhaps for generations. It is often remarkably pure, with chlorine and organic matter well within permissible limits, the droppings of cattle on the surface appearing not to affect its quality to any appreciable extent.[2] This statement presupposes, of course, that the fountain head is adequately guarded, and that the cattle have no access to the water. The danger comes when the turf is destroyed and an easy way made by the plough for the direct influx of polluting matter into the pipes, and, as usually happens, into the well itself. When natural filtration on so very limited a scale can make all the difference between a safe and a dangerous water, what may we not hope to effect by pushing the principle to its utmost practicable limit?

I have traced two outbreaks of typhoid fever at separate farms unmistakably to the ploughing and manuring of old grass fields which furnished the water or through which the water was led in ordinary drain pipes. In both instances the disease broke out, not in the first year of ploughing when no manure had been applied and oats soon sprang up to take the place of grass, but in the second, when the land was under a green, that is a root, crop, and the surface therefore liable to constant digging and disturbance. In both places there was evidence of the occasional direct washing of surface filth into the water after heavy rain, a thing that never occurs so long as the surface soil remains unbroken and covered with grass. At one of the farms a typhoid case was said to have occurred some few years previously, when the same field was last under a green crop; and I found a tradition associating an old-time typhoid case at the other farm with the breaking up of the field there thirty years before. All farms, therefore, similarly circumstanced as to their water supplies had better beware of the green crop year and spare their water-bearing fields from the aggressions of the plough. It is no uncommon thing to see farmers spread manure and dig potatoes on the very tops of their wells.

Typhoid Fever and Surface Wells.

The only other outbreaks of typhoid fever I have been able to trace to surface wells occurred in the case of one or two, and these were so situated in relation to dwellings and drains, so defectively constructed, and so absolutely unprotected from slop water and filth thrown over them, that crude sewage could not help gaining a direct entrance. One of these wells was found on analysis to be highly polluted, the other gave no indication of pollution. In no single instance have I been able to trace typhoid fever to any surface well situated in a decently clean locality. I should state, however, that my experience of epidemics, or even sporadic cases of typhoid fever, is not extensive, the disease being fortunately comparatively rare in the counties of Kirkcudbright and Wigtown, notwithstanding the fact that they contain, outside the towns, a population of between 40,000 and 50,000 dependent entirely on surface wells.

The Protection of Shallow Wells.

My experience of surface wells during the last four or five years has led me to think that a most important source of water supply, that, namely, of the subsoil, has been unduly depreciated, is not utilised to the full, nor regarded with the unqualified confidence albeit rudely shaken now and again—unhesitatingly extended to water supplied under the ægis of that blessed word gravitation. Whence this unreasoning distrust of surface wells, this somewhat blind confidence in gravitation water? These feelings originate mainly from the fact that while waters supplied by gravitation have almost invariably a good deal of attention bestowed on the sources from which they are derived, surface wells, besides being neglected, are for the most part placed in unclean localities, in soil saturated with filth, rendering structural precautions in the few instances where anything of the kind is attempted absolutely futile. It is just as if we were to set about a gravitation scheme by selecting a gathering ground mainly fed by drainage from dunghills, cemeteries, and street gutters, and turn on the water unfiltered. Yet, strange to say, it is not at all an uncommon thing to find surface wells yielding pure water though uncased and surrounded with every abomination. These are such as by some lucky accident do not afford direct ingress to polluting mixtures, and are surrounded with ground which, in spite of appearances, still retains its filtering and purifying properties in efficient working order. Herein I think we have the key to the solution of the surface well problem. I have no great faith in casing surface wells. They should never be placed in situations so doubtful as to require it. This desperate expedient, so often resorted to in the vain hope of curing polluted wells, appears to me to be effective only as a means of retarding pollution which, if the soil about the well is corrupted, will sooner or later become inevitable. If a sufficiency of clean ground is reserved around the well inviolate and inviolable, a watertight casing will usually be superfluous. Of course it can do no harm, and may be of service as a second line of defence. But the first line of defence is the circumjacent ring of ground, which must be kept scrupulously clean, and be of a size adequate to the purification of any reasonable amount of polluted water percolating through it. No sewers, cesspools, or collections of filth should be permitted within 100 yards or more of a well.

Although it cannot be gainsaid that water of splendid quality is not infrequently obtained out of wells the surroundings and construction of which might lead one to suppose that contamination could not by possibility be escaped, yet he would be a bold man who would stand up and say that such wells are safe and reliable sources of drinking water. The usual fate of a well so situated is to become polluted in the long run, and pollution is the rule, not the exception, in the case of all surface wells placed in filth-sodden localities such as farmyards and back courts. But that exceptions do undoubtedly exist shows what a powerful effect filtration through the soil has in removing impurities of the vilest kind, including, we must suppose, disease germs.

Village Wells.

It is an indisputable fact that many villages have from time immemorial used nothing but ground water pumped or scooped out of the simple wells in the street or garden, and have nevertheless gained no notoriety for unhealthiness, but the reverse. The inhabitants live long and rear lusty families. They venerate the wells their fathers and grandfathers used before them, and this could hardly be had the water ever been suspected of causing illness or disease. Hence the embittered opposition often called forth by the proposal to close a public well condemned on analysis, the users of the water not unnaturally setting against the somewhat arbitrary and admittedly unsatisfactory criteria of analysts the fact that the water in their judgment is good, being clear and palatable, and has never been known to cause death or sickness. But, much more convincing than considerations of a general nature, we have the direct evidence of experiment to show what a powerful and perfect filter the soil is, or ought to be were justice done to it. "Numerous filtration experiments," says a high authority, "on a large and small scale have shown most distinctly that a layer of earth half to one metre in thickness is an excellent filter for bacteria, and hence the purification of fluids from bacteria must be still more complete in cultivated and especially in clay soil, and where the fluid moves with extreme slowness. Further, it has been repeatedly shown that wells which were protected against contamination with bacteria from the surface and from the sides of the well furnish a water almost entirely free from bacteria; that, further, wells of water containing bacteria become the purer the more water is pumped out and the more ground water comes in from the deeper layers of the soil."[3]

I am not, of course, losing sight of the fact that villages have oftentimes been decimated by diseases directly traceable to their wells, that town wells are an utter abomination, and that typhoid outbreaks in isolated houses in the country, sore throats of sorts perhaps, and other obscure forms of illness have over and over again been laid at the door of the well. But there is nothing surprising or specially terrifying in this. The same thing will happen with all water supplies that have similar treatment meted out to them. If water companies take sewage-contaminated water, and pass it through an imperfect or dirty filter, we may lay our account with a grand outbreak of typhoid fever or worse. But water companies do not so conduct their business. As a rule they are very careful, and there are legislative proposals

in the air to enable and at the same time compel them to be more careful still. But what care do the owners of surface wells bestow upon them? Practically none. Slops are thrown over them; they have to run the gauntlet of sewage from byres, pigstyes, and stables; the ground about them and over them is delved or ploughed and manured, or, as a drain terminus, it may be found useful for "intermittent downward filtration." If the place is handy it becomes an *al fresco* public privy for the village youth, and the dumping ground for every kind of filth and rubbish. Finally, if waterclosets coexist with the well (a most incongruous combination) the drain is led close by its side and the cesspool is but a few yards off. Hence surface wells are denounced as dangerous. The well is not to blame for its corrupted water if it does not get reasonable treatment.

The Palatability of Well Water.

Percolation through the soil is the great advantage well waters have over upland surface waters. The soil not only purifies the water, but imparts to it certain minerals, as lime, common salt, and carbonic acid, which make the water more pleasing to the eye, more palatable, and more eagerly sought for by the consumer, than the best of surface waters artificially filtered through sand and gravel. It is this same percolation, but carried out on a more extended scale among the deeper strata, that rids the waters of deep wells and springs of every atom of impurity. Subsoil water cannot of course have the advantage of such prolonged and perfect filtration, but the moderate amount which can easily be secured to it before it collects in the well is quite sufficient to render the water pure, safe, and wholesome. The great desideratum, the one thing needful, is that the precincts of the well, the well-filter I shall call it for convenience, be jealously guarded from defilement. The surrounding ground (half an acre or less might suffice) should be withdrawn from all base uses, laid down in grass, and dedicated to the well. In towns this is impossible and surface wells are there entirely out of place. In villages the well-filters will usually be found in every stage of impurity, many of them unequal to their functions, and all progressing with greater or less rapidity towards incompetence.

The only real cure for this is in most cases to abandon the well and go outside the village to a spot where a clean filtering ground can be procured. I have year after year, in my annual reports, advocated the necessity for the special reservation of ground about surface wells, but the bare idea of a common well monopolising a piece of ground, however small, seems to be regarded as monstrous. I proposed a quarter of an acre as a minimum, to be laid down in grass and surrounded with an unclimbable fence—the outlying ground if possible to be utilised only for hay-growing or left in permanent pasture. Out of something like 200 analyses made by me of samples from surface wells I have scarcely found one bad where anything approaching to these conditions obtained. It must be remembered, however, that even in the most unimpeachable localities newly dug wells will often show temporary impurity from adventitious causes unconnected with the real character of the water, which subjects them to the risk of precipitate and unnecessary condemnation. Almost invariably when a patch of old grassland intervened between the well and outlying polluting influences, even when not far removed, no trace of contamination was visible. In two places in the county of Kirkcudbright, where new water supplies were being introduced, one a tiny hamlet, I have succeeded in getting the proprietor to fence off and preserve intact a small piece of ground adjoining the well, the pump being placed as it should be outside the reservation. I have little hope, however, that this good example will be extensively followed by others in the absence of legal compulsion.

The Construction of New Village Wells.

When the wells of a village are shown to be contaminated, and a new water supply becomes imperative, it is not, as a rule, necessary—not at least in the province of Galloway, for which I have the honour to be medical officer of health—to press on a gravitation scheme as the only way of meeting the difficulty. A simple and inexpensive well scheme will often suffice. All that is requisite is to sink new wells outside the precincts of the village on higher ground if practicable. Commonly enough the self-same water that feeds the old wells may be tapped at a point before it has entered the polluted ground of the village. All that is then required to secure perpetual immunity from pollution is to obtain possession of a sufficiency of ground around each well to be devoted for all time to purposes of filtration. With a sufficient reserve (anything say from half to one acre, according to circumstances) little or no danger will accrue from ordinary agricultural operations beyond; but it would be better that as much as possible of the outlying ground should be left under grass. There is no safer or better water than what a surface well in an old grass park can be got to yield. This is an ideal site. I should have no fear even of a top dressing of manure, provided the ground in the immediate vicinity of the well were not profaned.

By my advice, and with the approval of the Local Government Board, a village in the county of Wigtown, containing a population of just under 1,000 inhabitants, will shortly be supplied with water on the principle of substituting new surface wells in clean ground outside the village for the present polluted ones within. The introduction of gravitation water from a hill burn $3\frac{1}{2}$ miles distant was mooted as an alternative to the well scheme, but its cost would be five or six times as much. It has to be borne in mind that gravitation schemes have the great disadvantage of carrying in their train endless drainage difficulties which give little trouble in villages devoid of waterclosets, and supplied with water from pumps in the street. The question of convenience to the inhabitants need not bulk largely as an argument in favour of a "laid on" supply, for usually, with the exception of a few specially interested individuals, they prefer the sweet simplicity of their pumps to the delicate attentions of the rate collector.

In another village in Galloway about half the size of the above the wells have been found to be polluted, and a gravitation scheme has been on the *tapis* for years. The great bulk of the villagers are dead against it as likely to cost more money than they can afford, and they loudly bewail the threatened closure of their favourite wells. The village was long ago formed into a special water supply district, and spasmodic efforts have been made at intervals during the last six years to bring water in from a distance. One scheme after another has had to be abandoned either on account of the refusal of proprietors to give the water or of the prohibitive cost of the undertaking. In whatever way it is set about, a gravitation scheme will entail enormous expense. I am of opinion that a simple solution of the difficulty would be to go up the incline behind, sink wells there, and catch the water before it enters the village. The cost would be small, and the inhabitants would continue to enjoy the same water as they so highly appreciate at present. True, it would be deprived of a certain bouquet imparted by garden and street washings, but the villagers would soon get reconciled to the loss. On the other hand, there are many cogent reasons why it would be better in this particular village to face the cost of a gravitation scheme at once. It is the centre of a favourite locality among the hills, and is rapidly rising into favour as a health and holiday resort. With a little encouragement building might go on apace and the village rise considerably in population and importance. Nothing stimulates enterprise of this kind so much as an abundant supply of gravitation water with its necessary adjunct of first-class drainage; and there is no blinking the fact that some holiday makers and health seekers, superior persons from the big towns, would about as soon think of plunging into darkest Africa as of risking life and limb in any place where they cannot count on finding the true insignia of civilisation—drains, waterclosets, and German waiters.

Proposed Legislation.

Before concluding I should like to advert for one moment to the recent discussion in the House of Commons on the need of further legislation to prevent the pollution of water supplies. Nature, in her capacity of sanitary reformer, has no compunction in acting on the principle of doing evil that good may come of it, and one excellent result of the deplorable epidemic at Maidstone is the certainty that public water

supplies will be much better looked after in future. It seems probable that a Bill having this end in view will be introduced into Parliament next session. Apparently, however, its scope is to be rather limited and perhaps confined to the operations of water companies. I venture to express the opinion that the time has come for Parliament to take up the cause of surface wells. With new legislation in sight it would be a pity if sanitary authorities were to lose a good opportunity of obtaining powers for the compulsory acquisition of suitable sites for wells and for making by-laws for their adequate protection. Let us have no more sinking of wells in improper and unauthorised places, and no poisoning of their surroundings. Let them only have fair play for once, and we shall cease to hear of their misdeeds. Give them that, and surface wells will step at once into their proper place in the first rank of potable waters.

REFERENCES, ETC.

[1] *Rural Hygiene*, p. 300. [2] Recent analyses by Professor Sheridan Delépine (see current number *Journal of State Medicine*) appear to corroborate this from the bacteriological standpoint. [3] Quoted in Murphy and Stevenson's *Hygiene*, vol. i, p. 314.

A DISCUSSION ON THE HYGIENIC CONTROL OF MILK SUPPLY.

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THE EXISTING LAW.

AT such a meeting as this we do not require to advance proof as to the connection between diseases and milk, unless that proof is in the direction of adding to the already formidable list of diseases well known to be causally associated with milk.

The first question we may consider is the existing law regarding milk supply which regulates all our actions.

In Scotland we have the most recent Public Health Act, and those sections which deal with milk mark a most distinct advance on anything that has preceded them. Unfortunately they are marred by another section which appears to have crept in accidentally.

The sections dealing specially with milk are LVIII, LX, LXI, and Section XV, Subsection 4 may also be included, although it has only an indirect bearing. Section XV, Subsection 4, deals with byres, in which any animal or animals are kept so as to be a nuisance or injurious to health. This section should never be needed, it is hoped, in legal proceedings regarding cow byres, or something must have been far wrong with their inspection.

Section LVIII is a most valuable one, and provides, *inter alia*, that any person suffering from infectious disease, or living in an infected house, shall not milk any animal or engage in any occupation connected with food. There is no penalty referred to in this section, save when the person himself suffering from an infectious disease contravenes its provisions, but in Section CLXIII penalties for violating or obstructing the Act are provided for. For reasons that will afterwards appear Section LVIII will most generally be acted upon in dealing with infectious disease cases in their relation to the milk supplies.

Section LX of the Act is similar to Section LXXI of the London Act of 1891, and to a similar section of the Diseases Prevention Act. It should be noted, however, that Section LX provides, "If the milk supply from any such dairy is likely to cause any such disease to any person in the district, the local authority may stop the sale of the milk." The question arises whether this section applies to tuberculosis. This clause will certainly enable a local authority to act in cases where they know infectious disease exists in connection with dairies. In Scotland, the notification of infectious diseases is universally applicable to every district, so that it is only in the cases of delayed or concealed notifications that outbreaks should be allowed to attain wide prevalence.

The notification of infectious diseases all over Scotland will, without doubt, prove to be the most stringent regulation for protecting the public against milk infection, and all the more so as by Section CLXIV full compensation are to be paid to all persons sustaining any damage by reason of the exercise of any of the powers of this Act. This section appears to have slipped in by accident, and its full significance was not observed when the Bill was being discussed. It appears to me, however, that it will compel local authorities, in defence of the pockets of the ratepayers, to endeavour to prevent outbreaks at dairies by applying more stringently the powers they have under the Dairies Orders. When local authorities fully realise the risks they run by having to pay full compensation for the stoppage of a milk supply from a large dairy, they will insist on vigilant supervision of all dairies under their jurisdiction. On the other hand, dairymen will see it to be to their advantage to take every precaution to prevent infectious disease occurring on their dairy premises, and co-operate with the sanitary authorities in carrying out dairy regulations. As compensation will certainly be paid at a certain rate, probably £1 per cow per week being the full amount payable, this will not compensate the dairyman for loss of trade consequent on the stoppage of the business. Upon the whole, although I certainly think compensation was not intended to be paid for stoppage of milk supplies, it appears to me that the fear of having to pay compensation will have a beneficial effect on local authorities.

The general authority to regulate dairies, milkshops, and cowsheds is provided under the Contagious Diseases Animals Act, 1878 and 1886, and the Dairies and Cowsheds and Milkshops Orders of 1885 and 1887, and the Local Government (Scotland) Act, 1889. As you are aware of the provisions of these, it is not further necessary to refer to them; but I intend to deal somewhat fully with some of the regulations local authorities are enabled to make under these.

In burghs in Scotland Clause CXXI deals with the sanitary condition of byres and stables. Under the Public Health (London) Act, I observe that cowhouses have to be licensed annually. The Diseases Prevention Act of 1890 deals with the stoppage of milk supplies similarly to the Scotch Act of 1887.

There is still another Imperial Act which I shall only mention, but which has a direct bearing on milk supplies, and that is the Sale of Food and Drugs Act. Under this, incidentally, I would observe that more ought to be done in the way of sampling milk in order to keep up its quality. Analysts would do much good if, in addition to giving the percentage of fat and solids, they gave the proportion of foreign material found in some samples, such as straw, cowdung, and other extraneous matters.

In Edinburgh, Glasgow, and other large cities, there are private Acts, and in burghs the Cattlesheds in Burghs Acts, which enable the local authorities to make stringent regulations for dairies.

REGULATIONS IN CONTINENTAL COUNTRIES.

In *Paris*, cowhouses are classified establishments, for which authorisation is required, and are placed under the control of inspectors. Large dairies are included in the second class of offensive and dangerous trades. The dairies are subject to regulations very similar to those in Britain. Walls must be faced with marble or tiles or cement. The examination of milk is entrusted to inspectors who select samples in the manner provided, and send them to the municipal laboratory. Nocard, in his work on *Animal Tuberculosis*, states that the disease is now rare in Paris dairies, as milch cows are kept for not longer than a year before fattening and slaughtering.

In *Stockholm*, since 1886, the trade has been organised as follows: The sale of milk can only take place in (1) dairies where one room is specially set apart for the purpose; (2) shops and private stores exclusively devoted to the trade; (3) places in public markets and streets on the prescribed conditions. In order to obtain permission to open a milk shop a written statement must be addressed to the Bureau of Hygiene. All places used for the sale or preservation of milk must be in a sanitary condition, well lighted, well ventilated, conveniently arranged, and kept very clean; they must not be used until approved by the Health Commission; they must on no account be used as sleeping rooms or kitchens, nor must anything be put in them which would infect the milk, or give it a bad taste. In the case of diseases, whether happening in a house near to a dairy, or in a room connected with the sale of milk, the Bureau of Hygiene must be informed at once. (This is distinctly in advance of anything in

our regulations). If the disease is infectious, the Bureau will take the necessary precautions for preventing the spread of the disease by milk. Until these arrangements are made the sale of milk is stopped. Any infraction of the regulations is punishable by a fine.

In *Germany*, it is forbidden to sell the milk of diseased animals. Milk stores must not be used as bedrooms or sick rooms, nor be in direct communication with them. Cowkeepers must permit the examination of their cows by veterinary surgeons. Milk is tested from samples taken by inspectors attached to the police force.

The sanitary by-laws of all *Danish* towns contain regulations providing that all articles of food, milk included, are under the supervision of the Local Board of Health. In the rural districts there is a want of all regulations beyond a few dispersed and rather insignificant ones contained in the sanitary by-laws of some few parishes. While the milk inspection in Danish provincial towns is as good as worthless, that of the metropolis has improved somewhat.

We are all aware of the enormous quantities of butter that come to this country from Denmark, and of the generally held belief that dairy sanitation in Denmark is of a very high order.

These remarks, taken from a volume on *Denmark and its Sanitary Organisation* circulated at the London International Congress of Hygiene in 1891, corroborate what I recently read in articles regarding Danish dairies in the *North British Agriculturist*. The writer of these articles narrated his personal experience of visits to dairies in Denmark, and he insisted that the average dairy farm in Denmark was worse than in this country. He went so far as to state that they certainly would not conform with the dairy regulations we have. A lengthy correspondence between writers, representing the Danish and British dairy industries followed, and it was suggested that Commisioners should be sent over from this country to investigate the question.

Whatever may be the condition of the dairy farm generally in Denmark, there can be little doubt that the Copenhagen Milk Supply Company conducts its business in the most advanced manner, which might with very great advantage be imitated in this country.

The *Philadelphia* Board of Health has adopted the tuberculin test for dairy cows, and after sixty days notice any milk producer who supplies the city failing to furnish a clean bill of health for his dairy—based on the results of the test—will be liable to have his milk supply rejected and its sale prohibited.

In *New South Wales* the Board of Health are taking steps to impress upon local authorities the urgent need for the immediate destruction of any cows or bulls that may be affected with tuberculosis, and for the cancellation of the registration of dairymen who object to carry out the directions in this matter.

The *New York* Board of Health has established a vigorous system of inspection of dairies and cows. Cows that do not stand the tuberculin test are to be killed. If the dairyman refuses he will not be allowed to sell milk. No compensation is to be paid.

In *Berlin* two large milk businesses conducted on similar lines to that of the Copenhagen Milk Supply Company, one of Herr Grub, is designed to supply milk for children and invalids. Stalls for 250 cows are provided; they are lofty and well ventilated, the floor is of cement, and the walls to a height of 8 feet are covered with white glazed tiles, and red peat is used for litter. No animal save of the healthiest breeds is accepted, and it must have a veterinary surgeon's certificate. All the cows are regularly examined by a veterinary surgeon. Feeding is carefully regulated. The udders are washed before milking, and the milk is at once removed from the byre and cooled down. It is sent into the city. Herr Bolle's business is conducted on similar lines to the Copenhagen Milk Supply Company's. The cows are regularly inspected by a veterinary surgeon.

The Dairies and Cowsheds Order of 1885.

The briefest reference only can be made to the various articles and regulations made under the Order. Registration should follow inspection and report that the premises, the water supply, the lighting and ventilation of the byre are satisfactory. The premises should then be licensed for a year, to be renewed from year to year or refused as the case might be.

A great deal of attention has been paid to the air space for cows, but a cubic space of 800 feet may be as unsatisfactory as one of 400 if the air inlets and outlets are not sufficient. The air space varies exceedingly in the different counties and towns of Scotland. The highest cubic space is found in Roxburgh and Selkirkshire, and the lowest in Ayrshire. In cities, Aberdeen, Dundee, Edinburgh, and Glasgow demand 800 cubic feet per cow for new byres. A large cubic space for cows is considered by dairymen to be a most oppressive demand, as it leads to a lower production of milk, and if outlets and inlets are provided to provide for the free ingress of pure air and the removal of foul, too often these are purposely blocked up, as cold byres are inimical to the full milk-yielding capacity of cows. To overcome this, byres may be artificially warmed. It is of very great importance to have impervious surfaces both to floors and walls. This is as important for a byre as for the ward of an isolation hospital. The systematic and frequent limewashing of the walls and roofs or ceiling would well repay the dairyman in the better health of his cows and the better keeping of the milk.

In the arrangement of the block plan of the dairy premises complete isolation of domestic life from the various component parts of the dairy should be aimed at, so that if infectious disease breaks out in the dairyman's house it should be difficult, if at all possible, for the contagion to reach the milk.

It should be inculcated that pure water in abundance is necessary for dairy work and for the cows; and it should be pointed out that cows grazing on lands manured with police manure may have their udders specifically contaminated, and that a similar danger arises from cows wading in ditches polluted by sewage.

No dairy regulations can be considered sufficient which do not provide for the exclusion of tuberculous cows from dairies. This is a question of Imperial interest. Persons suffering from tuberculosis should find no place in dairy work. To protect the public and the milk vendors it should be penal for anyone to take a milk can or vessel from an infected room to a dairy or to a milk cart.

Outbreaks of scarlet fever, impossible to trace as to their origin, are doubtless caused by infected vessels being handled by the unconscious milk vendor. To further guard against infection dairymen and cowkeepers should have all their servants, milkers especially, directly under their control, otherwise infected cases may be concealed until outbreaks of epidemic diseases arise. That dairymen and cowkeepers should have control over their milkers cannot be too strongly insisted upon. In large towns this is very difficult to obtain. Washing of their hands preliminary to milking is eminently desirable. Washing of the teats and udders is very seldom done, but it is an eminently desirable precaution. The reduction of micro-organisms in milk, the result of this process, is very great.

The danger of creameries is one that ought to be considered, as the milk sent from an infected farm may be the means of spreading a widely scattered epidemic from the infected milk being mixed with other milk. The separated milk returned back to all the farms sending milk to the creamery sets up so many centres of infection. This danger has been well shown in a pamphlet by Dr. Welply.

The manufacture of sterilised milk under existing conditions of milk production ought to be encouraged by medical men. If sterilised milk were used for the rearing of infants, there would be less trouble with the frequent gastro-intestinal troubles which cause such high death-rates, and fewer tuberculosed children, and fewer scarlatinal, typhoid, and diphtheritic outbreaks. Specimens of sterilised milk, from a factory in Fifeshire, were shown. Dairymen should be instructed that milk is much more easily sterilised and that there is less necessity for sterilisation if it is quickly removed from the byre. The larger the air space for cows, the more light and sunshine, the cleaner the byre and cows are kept, the fewer micro-organisms gain access to milk, and consequently there is less need for sterilisation and refrigeration of milk.

The cleansing and sterilisation of milk vessels employed are of the utmost importance. To begin with, all the milk ves-

sels, as far as possible, should be of block tin. Milk coolers are often made of enamelled fireclay, and nothing could be better.

The employment of wooden vessels for conveying and distributing milk is not to be recommended, as they are too absorptive and consequently difficult to sterilise. Milk vessels to be cleansed, should first be washed out with cold water, and then scrubbed with a brush and boiling water. The application of steam to the interior of milk vessels offers the best guarantee of thorough sterilisation.

Filtration and Refrigeration.

Milk, when it is drawn from healthy cows contains no bacteria and no foreign materials. After it has been drawn, however, it quickly becomes polluted with manure particles, fodder particles, mould fungi, hairs, threads, wools, etc. The fouler the byre is, the worse lighted and ventilated, the more rapidly do these foreign bodies gain entrance.

It is necessary that they should be removed by filtration, and this should take place, not in the byre, but in a fresh and pure atmosphere. Different kinds of filters or strainers are used. In the Copenhagen Milk Supply Dairy sand and gravel are used. Usually flannel or linen cloth is a kind of strainer, put over a wire gauze sieve. In most of the well-managed dairies, some form of refrigerator is used. In countries where ice is easily got refrigeration should be effected by ice.

Finally, with reference to legislation, it is to be hoped that the Legislature will carry out the recommendations of the Tuberculosis Commission, and further take into consideration how seriously dairymen in this country are handicapped by the free importation of dairy products from dairy farms on the Continent. On the Continent they are not subject to the same supervision, or to such stringent dairy laws and regulations as are imposed in this country. I think both the public and the dairy producer in this country require protection. The public requires education on the whole subject, and county councils are doing good work by establishing technical lectures on dairy management.

II.—A. K. Chalmers, M.D.,

Joint Medical Officer of Health, Glasgow.

It had been assigned to me to introduce to the notice of the meeting two aspects of the hygienic control of milk supplies, namely:

1. The office machinery necessary for discovering when milk supplies become infected, and for the prevention of its further sale, and

2. The question of compensating the owner of the dairy or dairy farm whose business has been summarily suspended owing to the presence of disease associated with his milk distribution.

The Discovery of Infection and its Prevention.

In considering the former question I shall draw my illustrations chiefly from the practice in a large city population, because that is the phase of the question with which I am most familiar. Moreover, the question is there most often present in complex form from the custom which obtains among milk purveyors of mixing the product of several farmers before delivering to their customers. That is, in a city population the milk purchased by an individual customer is rarely that derived from a particular farm, but most commonly the mixed product of several farms from which the city purveyor obtains his supplies. In pursuing the question two conditions must here be distinguished: (*a*) Disease affecting the dairy animals; and (*b*) disease affecting the workers employed on the dairy farm, either as byre tenders or milkers, or affecting those solely engaged in the delivery and distribution of the milk.

We must further distinguish between (*a*) the conditions created by infectious disease as recognisably affecting the workers before milk has become infected, and (*b*) infection which is only recognised when the consumers of the milk are attacked. In past years this latter was by far the most common experience. In prenotification days a local authority or its medical officer only became aware of the presence of an actively infecting milk supply through the friendly co-operation of the medical attendants of the consumers, or when a public hue and cry directed attention to the increasing prevalence of some specified form of disease among the consumers of a certain milk supply, and valuable days were frequently lost in gathering together the information necessary to trace the infection to its source. A striking illustration of the change introduced by the Notification Act was afforded in Glasgow a few years ago by the Jaapston outbreak, in which all the cases occurring came under notice within a comparatively few days.

It is obvious, however, that the mere introduction of the Infectious Diseases (Notification) Act, which is now by the new Public Health Act made universally applicable in Scotland, will not of itself place authorities in a better position for effectively controlling the spread of disease through milk if no effort is made to utilise the channels of information which it places at their disposal. In other words, the simple notification of disease will avail nothing toward preventing disease if action is not immediately taken by the local authority to whom the notification is made, and which in this instance means in the first place, visitation of the domicile and routine inquiry into certain probable sources of infection. Of these the one presently under discussion is the source of the milk supply, and, in a town population at least, it should always be possible to ascertain that within a few hours of the notification being received. This implies that the medical officer should have at his disposal a sufficient number of inspectors for the work to be undertaken, and this is by no means limited to obtaining simply the name of the milk purveyor. It may be, and frequently is, necessary to ascertain also the names of persons—usually children—who are employed in the work of milk distribution, and they, as well as those otherwise concerned with the distribution of the milk from the dairy, must be excluded (by examination) as possible sources of infection before the medical officer is in a position to affirm that infection is being distributed by a given milk supply, and that the source of infection is not contained within the area of distribution. Beyond this, when the source of supply is a dairy farm in the country, the persons engaged in the transport of milk from the farm to the purveyor's premises in town, and those immediately concerned with its production in the country must be examined, for, as all of you are aware, when a milk supply is under investigation, it is necessary to investigate every manipulative proceeding from the time the milk is obtained from the udder until its distribution at the house of the consumer, and this, as you know, implies an organisation which cannot be put into shape when the occasion arises, but must, like a fire brigade, be already formed and ready for any emergency. I am purposely refraining, as you will see, from considering what is legally possible in suspending milk supplies that I may the more clearly outline what is hygienically necessary to be done in investigating outbreaks of disease, presumably associated with them, because oft-repeated and often costly experience has taught the dairy farmer that to comply with the suggestion of the local authority is not only his best policy, but that the public apprehension of impugned milk supplies being what it is—it is always less disastrous to his trade to act with the local authority than against them, and only to yield each point when the publicity of an action at law has well nigh ruined his trade.

But it may be said, and with truth, that thus far we have indicated nothing whatever of the hygienic control of milk supplies. Such control presupposes circumstances surrounding the production and distribution of milk which would render its contamination impossible. These circumstances fall naturally into two categories:

(1) The physical conditions under which the cattle are housed—the cubic space, ventilation, lighting, water supply, etc.

(2) The healthiness or otherwise of the cattle themselves, and of all those in attendance on them or engaged in the distribution of the milk.

Regarding the first of these, much has been done by regulation and otherwise to ensure for the cattle a healthy existence, but in my opinion it has still to be seriously considered whether compliance with any regulation as to cubic space, lighting, and ventilation is possible in many town byres, or whether, as a general question, byres in towns can as a rule be adapted for sustaining healthy animal life, and indeed whether the artificial feeding of stalled cattle in

towns for the production of milk is under any circumstances to be regarded as satisfactory.

It is in regard to the second class of circumstances, however, above noted that most remains to be done—namely, the question of illness as affecting the cattle and those persons engaged in the milk traffic.

With regard to the cattle, the recent Royal Commission on Tuberculosis have made a definite suggestion that udder affections should be notified, and the milk of the animals suspended from sale until the nature of the disease has been ascertained. Apart from the presence of tuberculosis in the udder, as to the effect of which there is now common agreement, there remains the question of the unwholesomeness of the milk obtained from an inflamed udder or from an animal affected with teat eruptions, so that the milk is liable to be at any rate mechanically contaminated with septic or more specific discharge. In one of the illustrations already given the animals were affected with a specific teat eruption, and ever since the experience of that epidemic I have had the conviction that all affections of the udder and teats of milk animals should be reported, and the milk suspended from sale until the character of the eruption is set definitely at rest. Now that the Tuberculosis Commission have laid down the principle of notifying udder affections, it would seem advisable to include therewith every affection of the teats.

Coming to the question of the health of the dairy workers, we have already in the Dairies Order provision for the exclusion of anyone suffering from infectious disease; but it is here precisely that difficulty begins. When the nature of the illness is fully declared there is no difficulty, but how often in milk epidemics is the nature of the diarrhœa or sore throat only recognised after the event? A striking illustration was afforded by one of the outbreaks already referred to, when the true character of certain sore throats was only recognised when scarlet fever attacked the customers, and the conclusion was that notification of all illnesses among dairy workers was required.

Compensation for Interruption of Dairyman's Business.

It can only be because of the magnitude of the interests involved that the question of compensation for slaughter or interference with business should be so uniformly raised in connection with meat and milk supplies. In a minor way as affecting individuals only, how frequently do we find infectious disease invading a household and interfering with the work or residence of the unaffected members, dislocating entirely for the time being the family life, yet questions of compensation never arise. Section lviii of the Public Health Act provides that no person suffering from an infectious disease, or who is living in an infected house, shall engage in any occupation connected with food, or carry on any trade or business in such a manner as is likely to spread such disease, and no provision is made for compensating him for the interruption to his employment. I am far from believing, however, that any local authority is justified in endeavouring to escape from its own responsibilities under the shelter of any clause such as this. Should infectious disease invade a household as is here contemplated, the local authority should be in a position to say, "Let the sick inmate of your household accept the hospital accommodation which we have provided, and the difficulty is removed." If the householder does not choose to accept the alternative, he has no cause of complaint if the clause becomes operative. Whenever, therefore, infectious disease exists in connection with milk production or distribution, and the local authority undertakes their responsibilities as to hospital provision, I can see little need for interrupting the dairyman's business. But there are other conditions; when, for example, as in the first, every regulation is complied with, the existence of specific disease was only recognised by its effect on the consumers. These are admittedly the most difficult.

III.—J. Spottiswoode Cameron, M.D.,

M.O.H., Leeds.

Dr. Spottiswoode Cameron considered that the control of milk supplied to large towns was very unsatisfactory. Some of it came from well watched farms within the city boundaries, over which the city authorities had efficient control. Much of it came from outside the boundaries, where control was bad. One partial remedy was to enlarge the city area so as to include the milk-supplying farms. Every large town should have a large area of farm land within its boundary, where cowsheds would be under the control of city authorities. Even this, however, would not cover the large quantities of milk coming 50 or 100 miles by train to our large towns. What medical officers of large towns needed was a sort of right of search outside their own boroughs. The method of the Public Health Amendment Act was altogether too slow and cumbersome.

IV.—Professor Forster,

Strassburg.

Professor Forster remarked that milk might be contaminated in one of two ways: (*a*) by the animal, for example by tuberculosis; (*b*) by contact, for example, diphtheria, scarlet fever, and typhoid. He went on to speak of the different methods of counteracting this contamination. The boiling of milk produced in it a peculiar flavour and a yellow colour, and to some extent destroyed its richness. On this account it was disliked by many and its consumption thereby diminished. The question therefore arose, Is it necessary to boil milk to destroy the germs of disease? He referred to the process of pasteurisation in which the milk was raised to a temperature of 150° to 160° F. for one minute. This he found by experiment to be insufficient to kill all the pathogenic organisms. Experiments which he had conducted had shown that different bacteria were killed by different temperatures and by different periods of heating, but that all could be killed by temperatures below the boiling point provided that the temperature was maintained for a sufficient length of time. This process did not destroy the flavour of the milk and had been largely adopted in Amsterdam.

V.—Sir Charles A. Cameron, M.D.,

Dublin.

Sir C. A. Cameron said that there could be no doubt as to milk being by no means infrequently the vehicle by which enteric fever (especially) as well as other diseases was diffused. Several years ago he traced a very extensive outbreak of enteric fever in Dublin to a dairy in which there were cases of this disease. From this dairy 14 houses in a square of 120 houses were supplied with milk, and 24 dairies supplied the remaining 106 houses. In all the 14 houses enteric fever appeared. Since then he had traced several minor epidemics to the use of infected milk. In Dublin the by-laws in relation to dairies and cowyards had been rendered more stringent. The personal hygiene of those engaged in the milking of the cows and the distribution of the milk was looked after. He had no doubt that the persons who generally lived in poor tenement houses paid but little attention to personal cleanliness, and it was therefore necessary to oblige them to wear, when at work, linen or canvas overalls.

VI.—Principal Dewar,

Dick Veterinary College, Edinburgh.

Principal Dewar took exception to the distinction referred to by Dr. Nasmyth, of unhealthy breeds of cattle. He considered that all breeds were equally healthy, and that the difference lay in the surroundings and hygienic conditions in which the animals were kept. He referred to tuberculosis in cattle, and expressed regret at the apathy shown in this matter by the agricultural public. He advocated an appeal to Parliament for power to apply the tuberculin test to cows in town dairies, and considered that this would react on the country districts and lead to the elimination of tuberculous animals from the dairy farms. He agreed with Sir C. Cameron as to the personal hygiene of the workers, and dwelt upon the importance of frequent inspection of dairy cows by veterinary experts for the purpose of recognising tubercle of the udders in its earliest stages.

VII.—Professor Saltet,

Amsterdam.

Professor Saltet made some remarks on the control of milk in Amsterdam. He spoke of the efforts of the authorities to

prevent the spread of disease by the milk supply and to make the milk supply as good as possible. The milk came from different parts of the country, and it was difficult to prevent contamination. Large milk companies were gradually replacing small dealers. There was no Act of Parliament to assist in the work, and dependence had to be placed on the assistance of the daily press. The analyses of the sanitary authorities were reported in the press, and this stimulated the producers to keep to a high standard.

VIII.—J. MAXWELL ROSS, M.B.,
Medical Officer of Health, Dumfries.

DR. ROSS said he was much interested in Dr. Cameron's milk outbreak of scarlet fever from cases in which the disease appeared to be confined to the throat. He had had experience of such cases, and held that no person suffering from a sore throat, if scarlet fever happened at the same time to be in a district, should be allowed to engage in dairy work. He had tried to bring such cases within the definition of the "dangerous infectious disorders" of the Dairies and Cowsheds Order; and would, he believed, have succeeded, because he was well supported by the profession in the district, had it not been for the action of a fellow medical officer. The case had, however, resulted in good. He did not quite agree that the city medical officer should have power to enter rural districts in Scotland at least. These were now very well looked after by the medical officers of health and dairy inspectors, and it was better that any investigation should be made by the local officers, who would be glad to give every assistance to their city brethren.

IX.—Professor A. P. AITKEN,
Dick Veterinary College, Edinburgh.

PROFESSOR AITKEN granted that milk contamination was derived chiefly from the hands of milkers and dirt of the air of the byres where milking was carried on. It seemed to him that some of the large cubic space demanded for cows might be utilised in providing milking stalls attached to byres, where in full light and under perfectly clean conditions the cows might be milked in circumstances suggesting nothing but cleanliness. Even better than all such methods would be the general adoption of the milking machine, by means of which the milk could be got from the cow without any contact with the hands or anything else. Experience had shown that such machines could be kept perfectly clean, and used without any injury or inconvenience to the cows. When milk was got under the best conditions, it was important that it should reach the consumer in the condition it came from the cow, but it was notorious that a very large proportion of the milk supplied to the public was tampered with by abstraction of cream and addition of water. Experiments had shown that in a properly conducted dairy the fat in milk should not fall below 3·5 per cent., and it would aid the public in getting good milk if a statutory standard of milk were adopted, and in his opinion it should not be lower as regards fat than 3 per cent.

A DISCUSSION ON VACCINATION: WITH SPECIAL REFERENCE TO PROSPECTIVE LEGISLATION.

I.—FRANCIS T. BOND, M.D., B.A.Lond., F.R.S.Edin.,
Medical Officer of Health, Gloucestershire Combined District.

As the precise title of this paper has not been selected by myself, but is one on which I have been asked to open this discussion, I feel it necessary to give it a certain latitude of interpretation. By the term "prospective" I propose to understand not simply the legislation which is now imminent as the result of the consideration of the Vaccination Bill by Parliament, but such provisions as it has been found impossible to get incorporated into the Bill, and as it is to be hoped may be placed on the statute book at no very distant period, unless this country is to lag behind most others in the march of sanitary progress.

THE VACCINIST POSITION.

It is superfluous in such an assembly as this to assume that we are all convinced that vaccination is in some degree a protection against small-pox. I have no doubt also that the great majority of us are thoroughly convinced that, when properly performed, it is free from serious risk, and that it is nearly if not quite as effective a protection against small-pox as an attack of that disease itself is. I may probably go still further, and may assume that there are few if any now present who would undertake to maintain that, apart from the absolute separation of the infected person from all who are likely to take the disease—an almost impracticable condition—there are any other means of protection against small-pox which are approximately comparable with vaccination. It goes without saying that we all know very well what is so generally ignored on one side of the controversy on this subject, that the term "vaccinated," unlike that of "unvaccinated," has no meaning that can, for purposes of comparison, be definitely estimated, and that in using it for controversial purposes we labour under the disadvantages which inevitably attach to the employment of ambiguous terms.

THE MEDICAL VACCINIST AS A CRITIC.

It may be well also to refer at the outset to an objection which may be taken to the discussion by a purely professional meeting, such as this of a question in the decision of which many of those present may be said to be personally interested. There are two answers to this objection, either of which is of itself sufficient. The first is, that however much those who are engaged in the practice of vaccination may be assumed to be interested in the maintenance of it—and for my own part I do not admit that the pecuniary interests of the medical profession as a body lie in this direction—this does not exclude them from the right, nay, does not absolve them from the duty, of discussing a matter which affects them in their individual capacity of citizens as much as it does other people. It may give a bias to their opinions, but that must be estimated by those who care to consider them. The second answer is that, assuming, as is so often done, that medical men are prejudiced in favour of vaccination, and therefore are not impartial judges of what is right and expedient in this matter, their opinions are entitled to the more respect if it should turn out that they are less enthusiastic in favour of the coercive promotion of vaccination than they are often assumed to be, less so, in fact, than many non-medical enthusiasts have shown themselves to be. In illustration of this view of the matter, it may be pointed out that an unsuccessful proposal to absolve determined objectors to the compulsory vaccination of their children in infancy was made by a leading member of the medical profession on one side of the House of Commons in Grand Committee on the Vaccination Bill, whilst a more successful effort in the same direction, at a later stage of childhood, was made by an equally distinguished member of the profession on the Ministerial side of the House: This is a fair answer to the charge so often made by anti-vaccination controversialists, that, in maintaining compulsion, Parliament is led through through the nose by the doctors.

LEGISLATION AS IT AFFECTS THE INDIVIDUAL AND THE COMMUNITY.

The legislative aspect of the vaccination question is of two kinds: as it affects the individual, and as regards the community of which he is a unit. So far as the ethical basis of legislation is concerned it must be assumed that whatever may be our views of individual rights in matters of opinion, there is only one principle upon which the maintenance of society can be based, and that is that the right of the individual in regard to action must be subordinate to the opinion of the majority. But, whilst strictly insisting on the imperative character of this principle as a general safeguard of society, we must fully recognise the right of protest on the part of the individual to any legislation of which he does not approve, and also that in all cases in which the volume of such protest becomes considerable, the correlative question of the expediency of modifying the law against which it may be directed must engage the attention of prudent legislators. So far as the individual is concerned, it must be frankly admitted that the aphorism, *de minimis non curat lex*, however unwise it may appear in conception, and however harshly it may often operate in practice, is as unavoidable in vaccination as in all other matters of opinion

which have to be embodied in a legal form. It is only when individuals can, from the force of their convictions or from the acuteness of their sufferings, succeed in associating their efforts so as to disturb the peace of the community, or to impede the operation of the law, that they can expect to obtain a hearing for their grievances, whether real or only sentimental. This may be considered as a somewhat cynical view of the matter, but it can hardly be disputed that it represents the real state of public opinion. It is obvious that this consideration applies in a still higher degree to the case of recalcitrant communities than it does to that of objecting individuals, since the difficulty of enforcing the law becomes proportionately greater as the number and solidarity of the protestants increases. Nor must we forget that in matters of opinion, as in pathology, infection often plays a very important part, and if not judiciously treated is apt to spread with unexpected rapidity and to become unmanageable. That we have approached within appreciable distance of this state of things in regard to vaccination in this country can hardly be denied by anyone who has an adequate knowledge of the real state of affairs. The unfortunate interregnum in vaccination administration necessitated by the prolonged inquiry of the Vaccination Commission has led to a crisis which can only be described as a state of administrative chaos.

How does the Vaccination Bill meet the Crisis?

Looked at from this point of view there are two questions which, both as citizens and as medical men, we are called on to discuss. The first is, How far does the Vaccination Bill meet the agitation against the Vaccination Acts which has been steadily increasing in volume since those Acts, and especially that of 1867, were passed? The second is, assuming, as the Royal Commissioners unanimously recommended, that vaccination is to be promoted by the State, so far at any rate as the maintenance of the existing machinery is concerned, What provisions are necessary in order to carry out that object effectively?

The Agitation against Vaccination.

That the agitation against vaccination, which commenced about thirty years ago, has been since then steadily growing, is a fact much less generally appreciated than it should be. The refusal by Boards of Guardians to enforce the compulsory sections of the Act of 1867, which was for some years unheard of, has during the last decade become a familiar occurrence. This may, no doubt, in some degree be attributed to the excuse which the protracted inquiry by the Royal Commission has offered to many Boards who, though perhaps prepared to carry out the law, as it may be modified by Parliament as the result of this inquiry, have been glad to avail themselves of this pretext for at least suspending action. Indeed, had it not been for the experience of Gloucester, followed so soon after by that of Middlesbrough, it is probable that the general dereliction of prosecutions would have been much more extensive than it has been.

What has been the cause of this apparent unwillingness of vaccination authorities to carry out the law? It certainly is not attributable to any decline of confidence on the part of the medical profession in the efficacy of vaccination as a protection against small-pox, when rightly and duly employed. If there were any question on this point it would be settled by the recent declaration of over 1,100 medical officers of health, that in their opinion vaccination is the only trustworthy protection against small-pox, both for the individual and the community. Every epidemic, nay, every isolated outbreak, of small-pox only adds fresh evidence to the huge mass which the experience of a century has accumulated. So huge, indeed, is it that only those who, like the Royal Commissioners, have had to wade through it, even with the assistance which their report affords, can form any idea of the weariness of the effort required. There is, of course, as we all know, a sufficient explanation of the enfeeblement of the law which has been thus steadily taking place.

Its Causes.

It is to be found in three causes. The first of these is the natural intolerance of the ordinary Briton for compulsion in any shape, and especially for compulsion in matters which intrude within the domain of private opinion, of the relations of the family, or of the sacredness of the person. It is needless to discuss the reasonableness or the reverse of this feeling: we must accept it as a fact. The second cause is the unquestionable occurrence of mischief which, whether rightly or wrongly attributable to vaccination, has certainly followed it. The third is the recognition of results connected with the spread of small-pox which appear at first sight, and when incorrectly represented, to be incompatible with the claims made for the protective value of vaccination. It is quite unnecessary to assume that the efforts which have been persistently made to appeal to the intolerance of control, which we all feel, and to parental sentiments, which are worthy of the highest respect, by an exaggeration or misrepresentation of the seriousness of this mischief, have been actuated or even materially maintained by disingenuous motives. Bare justice demands the recognition of the fact that the great majority of those who have taken an active part in the agitation against vaccination have had more to lose than to gain in so doing, so far as their pecuniary interests are concerned. That paid advocacy has played a part in this as it does in all prolonged agitations for the spread of new opinions, may be admitted without thereby reflecting on the good faith of those who have availed themselves of it. Paid advocacy may suggest caution in receiving the statements of the advocate, but it is in no way incompatible with their being true. We must look in a different direction for an explanation of the enthusiasm by which what we cannot but regard as the wrongheadedness of the antivaccination movement has been so persistently maintained. It is to be found in the tendency, largely unconscious, which we all have in matters of opinion to exaggerate everything which appears to support what we ourselves believe; to give undue weight to sentiment as opposed to reason, and to view in a false perspective the relative features of our mental landscape. It is only necessary to suggest the names of some of the men who have identified themselves with the antivaccination movement to appreciate the fact that this tendency is not confined to the illiterate, or even to those who are destitute of scientific culture. The name of at least one of the protagonists of the antivaccination cause might be quoted to prove that it is consistent with the highest degree of mental training and originality.

The Crude Bill.

How does the Vaccination Bill propose to meet this state of things? As is well known, the Bill first laid before the House of Commons contained only three provisions which are material to this question. It proposed to limit prosecutions to two, or perhaps three, at the most; to compel the use of glycerinated calf lymph by public vaccinators, unless the parent or other person with whom the discretion lies prefers some other form of lymph; and to offer, and in many cases personally present, this lymph at the home of the defaulter. It must be evident to anyone who has any acquaintance with the conditions which led to, and have so long maintained the antivaccination agitation, that those who are responsible for the Bill must either be singularly unacquainted with the history of this agitation, or excessively sanguine as to the power of glycerinated calf lymph in dissolving it, if they thought that the Bill in this form would put an end to it.

"Glymph" as a Solvent of Doubts.

One would almost fancy, from some statements which have been made on the subject, that we had never heard of glycerinated calf lymph, or "glymph," as it has been proposed for brevity to call it until it was revealed to us by the Bill.; whereas, as we all know, it has been in use by private vaccinators for years past. The best indication of its value as a solvent of antivaccinist doubts is that in Germany, where the combination of glycerine with human lymph was introduced more than twenty years ago, there is an increasingly active agitation against vaccination. And it is somewhat singular, as an illustration of the different points of view from which what may be called the controversial value of glycerinated calf lymph is regarded, that whilst in this country it has been thought sufficient to make it practically the *pièce de résistance* of our new vaccination law, the official German handbook on the subject of vaccination, which deals

mainly with its controversial aspects, makes absolutely no reference to it at all. The Germans have adopted this agent as a valuable laboratory device, which enables calf lymph to be employed under the most favourable conditions at present practicable, but they do not seem to think it necessary, or perhaps even expedient, to depend on this provision alone as a means of relieving vaccination from all ground of reproach, nor to pin themselves by an Act of Parliament to the compulsory use of any single preparation, as the Bill in its original form would have tied down the Local Government Board. The German Government place their reliance in minimising the opposition to vaccination not on glycerinated calf lymph alone, but upon a carefully-devised administration by which the process of vaccination in all its stages is hedged round by precautions which we entirely ignore. As a sample of this it may be mentioned that any medical man who can be shown to have performed vaccination in such a way as to expose the subject of it to needless risk is liable to a very severe penalty.

The real value of glycerinated calf lymph, of course, is—and I have no desire in any degree to minimise it—that it reduces to an incalculable zero the previously "insignificant"[1] pretext which there was for magnifying the dangers of vaccination. But reasonable people, who are satisfied with the opinion of the Royal Commissioners on this point, will hardly need the further assurance which the purveyor of official calf lymph will now be authorised to give, whilst it is to be feared that the unreasonable people, by whom the anti-vaccination agitation is entirely carried on, will be in no degree conciliated by it. Upon the great majority of defaulters, the indifferent and the indolent, it will have no appreciable effect; they will not be induced to have their children vaccinated because they believe that calf lymph is any better with glycerine than it is without it, but because they know that behind the public vaccinator, with his lancet and his glycerinated calf lymph, stands the vaccination officer with a summons. The whole influence of the first of these two officials in diminishing the number of defaulters will depend on whether the sequence of the second of them can be certainly reckoned on or not. On this point still hangs, as it has hung for many years past, the vaccination problem.

The mistake of specifying "glycerinated calf lymph" in the Bill has been corrected in Committee by the addition of the words "or such other lymph as may be issued by the Local Government Board." But it may well be asked why, with this alteration, the words "glycerinated calf lymph" should be retained in the Bill at all? The public must trust the Local Government Board in this matter, and the simpler provisions of this kind are made the better in view of the handle which a superfluous word often affords to an astute lawyer for verbal strife. Surely the words "lymph as issued by the Local Government Board" would be sufficient for the purpose.

Need for the Diffusion of Knowledge.

But outside the bigoted antivaccinist on one side, whom nothing will convince, and the indolent and indifferent parent on the other, who can only be compelled to face his responsibility by the strong arm of the law, lie the great body of the British nation, who know but little about vaccination, and for the most part, also, have at the outset no prejudices either for or against it, except so far as it may be likely to entail inconvenience or discomfort upon them. They are the ready prey of the casuistry and misrepresentation which the organised machinery of the Antivaccination League brings to bear upon them. And they will continue to be so in default of a corresponding effort to counteract this mischief. It is a striking paradox that, whilst we have for thirty years been compelling parents to have their children vaccinated, we have never thought it expedient to make any official or organised effort to explain to them the grounds on which this requirement is founded. And it is a fact which is scarcely credible that if a local vaccination or sanitary authority were to incur any expenditure in diffusing literature on this subject or in any other way promoting the spread of knowledge in regard to it—except, possibly, when small-pox might be actually prevalent in the neighbourhood—those members of it who might happen to sign the cheque for so doing would render themselves liable to be surcharged by the auditor, and could only obtain relief by memorialising the Local Government Board.

[1] See opinion of the Royal Commissioners in final Report.

The Amended Bill.

The Bill, when it emerged from the ordeal of consideration by Grand Committee, was distinctly improved by the process.

The provision which extended the age limit within which vaccination is required from three to twelve months was altered to six months. This alteration was made chiefly on the strength of recommendations to that effect by the Council of the British Medical Association, the Society of Medical Officers of Health, and other representative bodies, and, though open to some discussion, is probably, on the whole, a judicious alteration.

The clause providing that the public vaccinator shall visit the home of the child for the purpose of vaccinating it, if requested to do so by the parent, was the most valuable one in the original Bill, as it will remove a fertile source of discontent on the part of mothers who dislike, and with some reason, taking their children to public stations. The objection to this proposal, on the ground that the home of the child may, for sanitary reasons, be an unfit place for performing the operation, was met in Committee by an amendment giving the vaccinator a discretion to withhold vaccination for this reason, if he saw good to do so. As a parent is under no compulsion to invite the public vaccinator to vaccinate his child, no reasonable opposition could be offered to this clause. Others which are in the same category, and which were mostly added as amendments in Committee, were Clause 2, which prohibits the repeated prosecutions that have been so largely responsible for the agitation against vaccination; Clause 4, which provides that persons committed to prison for vaccination offences shall be treated as first-class misdemeanants; Clause 6, enabling the Local Government Board to make special provision for opening public vaccination stations in case of any local outbreak of small-pox; Clause 7, authorising local authorities to incur reasonable expense in distributing literature explanatory of the advantages of vaccination; and Clause 8, requiring records of cases admitted into small-pox hospitals to be kept, and making them accessible to those who may wish to consult them.

Domiciliary Visitation.

The Vaccination Bill in its original form contained three other provisions besides the prescription of the use of glycerinated calf lymph. One of these, to which reference has already been made, requires the public vaccinator to vaccinate children at the homes of their parents, if called on to do so. This course, which was recommended by the Royal Commissioners, is an eminently reasonable one, and simply involves the consideration of the cost of paying for such visits. Sir Walter Foster attempted to get a schedule of vaccination fees incorporated with the Bill, but for some not very evident reason it was not accepted. A more questionable provision is that which requires the public vaccinator to offer vaccination at the home of the parent in the case of every defaulter. This arrangement, which seems very simple in theory, and which was justified by a somewhat misleading analogy drawn from Scotch experience, will probably prove to involve considerable difficulties in practice. It is certainly open to two grave objections. The first is that in urban localities, where the feeling against vaccination is strong, it will expose the public vaccinator to treatment which is likely to make the office a very thankless one. There can be no expectation that he will convert the objecting parent, and as these visits will have to be paid for, it is only imposing useless expense on the community to require them. If it be urged that they will help to make the case stronger against the recalcitrant when he may have to be summoned before the justices, the obvious answer is that it can be made quite strong enough by giving him the offer of vaccination in another way. This may be done by requiring the vaccination officer to serve the parent with notice at the appointed time that the public vaccinator will attend at the home of the child to vaccinate it, unless he shall have received before a specified date a notice, signed by the parent, that he does not wish him to come. This would give the parent the opportunity of having his child vaccinated by his own medical attendant if he preferred doing so; if he did not take this course, but sent a note deprecating further attention, it

would save a useless visit by the public vaccinator, and would serve as *primâ facie* evidence of his irreconcilable objection. If the public vaccinator received no such notice he would be justified in going to the home of the child, and if vaccination were then refused, the refusal, under such circumstances, would be a fact which the justices would probably take into consideration when inflicting a penalty.

The Private Vaccinator Ignored.

The second objection is that it may very easily create friction between the public vaccinator and his professional brethren, into the houses of whose patients he will thus be licensed to intrude. This consideration naturally leads to another, and that is that the Bill entirely ignores the fact that so large a portion of the vaccination of the country is performed by private vaccinators. The public vaccinators have complained, and with reason, that they are heavily handicapped in being required to make four insertions as a condition of being paid for their work as efficient, whilst private vaccinators are allowed to underbid them by giving certificates of what is assumed to be satisfactory vaccination on the strength of a single insertion. On the other hand, the private vaccinators have a right to complain that the Bill handicaps them by containing no provision for their being supplied with lymph bearing the Government guarantee, as the public vaccinators will be. Hence, instead of a healthy rivalry between these two sections of the profession, by which both should be encouraged to do their work with the highest degree of efficiency, an antagonism is created between them which can hardly fail to be detrimental to vaccination, and consequently to the public interest.

The expediency of recognising the work of private vaccinators, and of putting them on the same footing with public vaccinators, which was recommended by the Royal Commission, and was pressed on the Government from a variety of representative bodies, was embodied in an amendment proposed by Sir Walter Foster and supported by Sir William Priestley and Sir Charles Cameron, but was defeated. It was opposed by Mr. Chaplin, who admitted that it would promote vaccination, for two reasons: because it would entail a heavy burden on the rates, and because there was no assurance that satisfactory results could be obtained without the appointment of a "whole army of inspectors." These objections seem capable of easy answer. The children who would be thus vaccinated would be mainly of the class who now are vaccinated at the charge of the ratepayers. All that would be done, therefore, would be to transfer to private vaccinators a portion of the fees now paid to the public officials. The burden on the rates would not be appreciably increased by so doing, except upon the assumption that those who are now competent to pay for vaccination would, under the new regulations, claim to have it done free. But this might be safely left then, as it is now, to the doctors themselves, who were prohibited by Sir Walter Foster's proposal from making any private charge if they took the administrative fee, and who would scarcely accept 1s. 6d. from the rates if they could obtaid more from the parent direct.

As to the need for "an army of inspectors," this objection is equally susceptible of answer. The inspection of public vaccinators as now carried on by the Local Government Board can hardly be claimed to be a very effective one. A hasty inspection, made once in two years, which is the amount of supervision bestowed on the bulk of public vaccinators, scarcely represents an adequate control; and it may be freely admitted that if arm-to-arm vaccination were to be maintained, any extension of this system of control to private vaccinators would be quite impracticable, except at the cost which Mr. Chaplin suggested. But he appears to have overlooked the fact that the change to glycerinated calf lymph will entirely alter the aspect of this question, and that with a properly-devised form of certificate, and a stiff penalty for mis-statements, as proposed by Sir Walter Foster, those vaccinations by private vaccinators for which the public would be called to pay would be mainly a matter of inspection of registers, which might be well delegated to local officials.

Local Option.

There is one aspect of the vaccination problem which the Bill will leave unchanged. It is this: there are unquestionably a large number of Boards of Guardians who, at the present time, are not enforcing the vaccination law. Admitting that a certain proportion of these authorities who have suspended action, on the plea that they were waiting to see first what the report of the Royal Commission would be, and then what Parliament would do, will, when the Vaccination Bill has become law, resume the prosecution of defaulters, there will be a considerable number who are not likely to do so. In some cases these Boards have ceased to take any action at all, and the subject of vaccination is practically ignored by them. Others profess to consider the objections of defaulters, and to deal with them on their merits. The result in this case also is much the same as in the other, for, in one way or another, everyone who chooses to express an objection to vaccination is allowed to escape scot free. The position taken by these Boards really amounts to a claim to exercise local option in a matter in regard to which Parliament has conferred no such right. The claim is founded on the assumption that Boards of Guardians possess a discretionary power in this matter which the law has certainly not given them. That this is the strictly legal view of the question is beyond doubt. And it is important to recognise also that this claim is only a phase of a much larger one, by which some of these Boards seek to emancipate themselves in all matters from any form of central control. Local option, therefore, in vaccination is the first serious manifestation of a revolt by local authorities, at first as Boards of Guardians, against the general opinion of the country as formally expressed by Parliament. As such it must be dealt with firmly, unless we wish to drift into general anarchy. Even if it cannot be prevented, it can be at least controlled. How is this to be done?

How to Control Local Option.

The President of the Local Government Board has drawn attention to a fact which has escaped general observation, that Parliament has already provided in the Vaccination Act of 1874 a remedy for this state of things, by investing the Board with powers, in virtue of which they can directly instruct vaccination officers to carry out their duties in regard to the prosecution of defaulters, where the Boards of Guardians, whose officers they are, refuse or neglect to take action of this kind. It is probable that many Boards who have suspended prosecutions would be glad to be relieved of the disagreeable position in which they find themselves in this matter by having the responsibility of action thus taken off their shoulders by the central authority. But it is difficult to see how this can be done without a transference at the same time of all other duties in regard to vaccination from the defaulting Board to some other body. The local administration of vaccination, if it is to be carried on with any energy or efficiency, must be vested in some body which is interested in so doing. Even where Boards of Guardians do not expressly refuse or neglect to carry out the law, they generally show little enthusiasm in regard to vaccination. And the reason is not far to seek. Vaccination is distinctly a branch of preventive sanitary action with which guardians, as such, have nothing to do. Their work is the administration of the Poor Law, and in looking after this they have quite enough to find occupation for all their energies. If, therefore, they are to be relieved of the duty of prosecuting vaccination defaulters, they will not unreasonably expect to be relieved also of all other duties connected with vaccination. And it is very much in the interest of vaccination itself that they should be.

The Divorce of Vaccination from other Sanitary Work.

The fact is, and it is necessary distinctly to recognise it, that the whole of the difficulty connected with the vaccination question has largely grown out of the maintenance of Boards of Guardians as the vaccination authority after the creation by the Public Health Act of 1872 of sanitary authorities. Had vaccination then been placed, along with other sanitary work, in the hands of these latter bodies, not only would there have been a better guarantee of its being carried out more efficiently than it has been, but there would have been much less opportunity for friction in so doing. And the reason for this is very obvious; it would in that case have become part of the work of the medical officer of health to look after it. He is officially

interested in the promotion of vaccination, because he is interested in the control of small-pox. It is a curious instance of the utterly illogical and fragmentary character of so much of our legislation that this divorce of vaccination from other branches of sanitary administration, by which the medical officer of health is excluded from any connection with one of the most important branches of preventive work, should ever have been perpetrated. It is still more strange that, although the blunder should have become increasingly evident during the quarter of a century which has elapsed since it was first made, there should have been no effort to remedy it. But what is most singular of all is that, at the present time, when the need for fresh legislation has been recognised by the Government to meet the critical position in which vaccination has got, and notwithstanding the strong representations which have been made to them of the desirability of transferring vaccination from Boards of Guardians to sanitary authorities, they have not adopted this course. This would at first sight appear to be more extraordinary because the proposal can scarcely be considered one of a contentious character, though it is only fair to admit that it would involve a good deal of legislative detail in the shape of amendment of existing Acts which, with the facilities at present available for obstructive tactics, might have been made an excuse for even greater delay than the Vaccination Bill has already experienced. It must also be admitted that so far as the majority of rural sanitary districts are concerned, the variation of personality between the Boards of Guardians and the sanitary authority is so trifling as to be unimportant. Still, with full allowance for these considerations, it may be safely maintained that the Government would have been well advised to make the venture, if only in the form of a provision giving the Local Government Board power to make such a transference in any case in which a Board of Guardians neglected or refused to carry out its duties under the Vaccination Acts. There are probably not many rural districts in which such a contingency would arise. It is in Poor-law districts which include urban populations that the transfer is most likely to be needed, and in many of these it would be as much welcomed as a relief by the Board of Guardians as it would be accepted with difficulty by the sanitary authority.

How to Treat Recalcitrant Authorities.

There are no doubt towns where this would not be the case, in which the reluctance to enfore vaccination, so far as such enforcement will in future be possible, would be as great on the part of the sanitary authority as it has been on that of the Board of Guardians. How are such cases to be dealt with? Take Leicester, for example. The sanitary authority of Leicester professes, apparently, to believe that it can deal with epidemics of small-pox by means of isolation, without having recourse to vaccination. Those who are familiar with the facts of the outbreaks of small-pox which have taken place at Leicester of late years know very well that whatever may be the theory of Leicester on this point it does not represent the practice in that town. For in Leicester, as elsewhere, when small-pox is prevalent there is always a run upon vaccination, and the medical officer of health, who has never had any delusions of this kind, has always had a free hand to vaccinate all whom he could induce to undergo the operation, including those who were most exposed to infection, such as hospital nurses and attendants.

But if the sanitary authority of Leicester or any other place were to refuse to promote vaccination, with the very moderate amount of coercion which will in future be associated with it, why should they not, at least, be required to show that they have provided, in an adequate degree, the resources which they claim to be an effective substitute for vaccination? They, in common with other opponents of vaccination, allege that isolation and disinfection are sufficient weapons with which to meet an outbreak of small-pox. Well, we have had some experience, both at Gloucester and at Middlesbrough, of what is needed to meet possible contingencies of this kind; why should not the Local Government Board lay down a general proposition as to the minimum amount of resources for hospital accommodation and disinfection which such a town as Leicester should provide, and then hold an inquiry as to how far it had met these requirements? If the Leicester sanitary authority could show that they had efficiently armed themselves in this way they would have some claim to be entitled to disregard vaccination. But if Leicester, or any other place where vaccination is formally discountenanced, were to refuse or to neglect to comply with reasonable requirements in regard to providing the alternative for vaccination which the antivaccinists themselves affect to consider a sufficient protection, the force of public opinion would be so strong against them that the Local Government Board would be well justified in bringing all the powers of the law, whether by mandamus or otherwise, to bear upon them to compel them at least to make such provision. It is only by compelling defaulting sanitary authorities to spend money in doing their duty that they can be brought to book. Such procedure is on all fours with that by which individuals who refuse to do their duty are punished. They are fined, but with this difference, that in their case the penalty is applied for the benefit of the community at large instead of being primarily devoted to meeting their own needs, as it would be where a sanitary authority was compelled to spend money in providing for its special requirements. Hedged round with these conditions, there would be something to be said for allowing the principle of local option in vaccination to have some scope for experimental application. At any rate, it would be placed under some control, which would be better than the present state of anarchy.

The Vexed Question of Compulsion.

The Bill as it entered Committee was so drafted, as has been already seen, as to remove a good deal of the grievance by which the agitation against vaccination has been largely maintained. Prosecutions, which have been hitherto unlimited, and in some cases scandalously multiplied, would be in future limited to two or possibly three. This of itself was a great gain. But the framers of the Bill failed to avail themselves of the opportunity which presented itself to them to use the power of prosecuting defaulters in a much more effective way than has been hitherto done. Section xxxi of the Act of 1867 gives power to prosecute the parent or custodian of any unvaccinated child until it is 14 years of age. The Jenner Society have urged, in various documents which they have issued on the subject, that if the power of prosecuting defaulters thus conferred by the Act of 1867 is to be retained, as a test of the solidity of objection on the part of a defaulting parent, it is not expedient to use it more than once in infancy, and that a second or third application of it, if employed at all, should be applied at later periods of the child's life, when it first enters school and when it is about to leave it. The object of so doing is, in the first place, to formally revive at these periods the requirement by the State of the vaccination of the child, and, in the second, to put the same pressure upon the parent at these two stages of the child's life as was applied in infancy. Such a procedure is thoroughly logical and defensible. For, if the penalty test is defensible in infancy it is equally so at these two later periods, when the danger against which vaccination is a safeguard is greater both to the child and to the community than it is in infancy.

Sir Walter Foster took the sense of the Committee on the penalty question generally by proposing what is commonly called a conscience clause, which, after all, when enforced in the way he proposes, is only a penalty in modified form; for it cannot be denied that anything short of the power of escaping vaccination by signing a simple form of declaration, which can be made without any trouble or expense, is a penalty, especially to a poor man. On the other hand, any form of exemption which does not go beyond such a declaration is so feeble a test of the solidity of a man's objection that it is practically no test at all. The Committee decided, though by a small majority, that it was not expedient to abandon the test which the law at present imposes, limited in the way proposed in the Bill.

Sir William Priestley then proposed and carried an amendment which adopts the course suggested by the Jenner Society, of limiting the prosecutions in infancy to one, under Section xxix of the Act of 1867, and reserving the use of Section xxxi until the child arrives at the age of 4. To this Sir William Priestley himself added the provision that if a parent "satisfies the Court that he conscientiously believes

vaccination would be prejudicial to the health of the said child," he should not be liable to any further penalty or molestation. Nothing is said in this provision about costs, and as prosecutions cannot be initiated without incurring costs of some kind, it is doubtful who is to be left to pay them in case of successful evasion of the requirements of the law.

Now, it cannot be denied that this clause is open to all the objections on the score of logic and consistency which have been urged against the adoption of exemption by declaration in infancy. It is true that it revives the obligation of the law once, but it does so in a very attenuated form. It prescribes a penalty as the price of exemption, but what that penalty is precisely to be is left somewhat obscure. It is, in fact, one of those compromises which are so often the price which has to be paid to buy off opposition.

Further Amendments: Rejection of Clause 7.

The foregoing notes on the Vaccination Bill were written before the recent debate on the report stage of the Bill. Only two material amendments have been made in it at that stage, but they are of some importance. The first was to strike out Clause 7, which was done by a majority of 270 to 49. The history of this clause is so curious, and throws such an interesting light on what may be called the internal economy of the Bill, as to justify a little explanation of it. It was originally suggested by the Committee of the Jenner Society, with other amendments, in a memorandum on the Bill which they issued. Sir William Priestley proposed it on behalf of Sir Walter Foster, by whom it was originally placed on the Orders of the Grand Committee. Mr. Chaplin accepted it without any demur, and the Committee adopted it without any opposition. Its object was to enable local authorities to incur reasonable expenditure in diffusing information on the subject of small-pox, and on the advantages of vaccination in preventing it. At the present time it is open to some doubt whether Boards of Guardians can incur such expenditure. By a liberal interpretation of a clause in the principal Vaccination Act it might be assumed that they could do so, but the point is not so clear as it might be, and it is quite certain that sanitary authorities, who are much more interested in preventing small-pox than Boards of Guardians are, have no such power. It appeared desirable that the doubts affecting the powers of Boards of Guardians should be cleared up, and that sanitary authorities should be distinctly empowered to diffuse information on a matter in which they are so greatly interested.

On report of the clause Sir Charles Dilke moved its rejection on the plea that it might lead to friction between county councils and Boards of Guardians. How it could possibly do so he did not explain, and as there are numerous chairmen and other members of county councils in the House, none of whom supported this view of the matter, the fear may be dismissed as groundless. Sir Walter Foster, who had originally fathered the clause, strangely enough had nothing to say on its behalf, and consented to its withdrawal. Mr. Gibson Bowles ingenuously objected to it because it would favour a "one-sided propaganda," and appeared to be ignorant of the fact that the agitation against vaccination is maintained by a propaganda of a decidedly one-sided character. Mr. Chaplin repudiated responsibility for the clause but recognised its utility, and several members, chiefly on the Government side, protested against its rejection. Under these circumstances it might have been expected that it would easily pass; but, to the general surprise, Mr. Balfour pronounced against it and it was lost. Mr. Balfour's explanation of his objection to the clause was even more remarkable than that of Sir Charles Dilke. He said that for a consideration he would undertake to produce a defence of vaccination which would inspire doubts in anyone who read it, and that it was not desirable to give Boards of Guardians a chance of making vaccination ridiculous. That Mr. Balfour, who is an admitted master of the art of clothing philosophic doubt in the garb of conscientious conviction, could travesty a defence of vaccination which would breed doubts in the mind of an unprejudiced reader is quite possible. But whether he would equally bamboozle the auditor of the Local Government Board, who would ultimately have to decide as to whether his defence was a travesty or not, is a different matter. Moreover, if so little confidence can be placed in Boards of Guardians that they cannot be trusted even to circulate literature in support of vaccination, how can Mr. Balfour justify their retention as vaccination authorities? A lamer excuse for a foregone conclusion was never offered. The real explanation of the sudden change of front in regard to this clause is very simple. The antivaccinators outside the House had discovered, under the inspiration of the *Vaccination Inquirer*, the organ of the Antivaccination League, that a mistake had been made in not opposing the clause in Committee. Pressure was at once brought to bear on such members as could be influenced to reject the clause. All the non-official members who opposed it represent constituencies in which the antivaccinators are strong. It was a small sacrifice for them to burke the clause, but they could not have rejected it without the connivance of the Government. This was not likely to have been afforded had it not been for the fear of a reduction of the Government majority. Jonah was therefore flung to the waves, and sanitary authorities will be still left helpless in meeting the agitation against vaccination by the only means by which it can be withstood. The matter is not one of vital importance, but it points a moral which is still further illustrated by the course which the debate took on the more crucial question of the enforcement of the law.

On this subject it is only necessary to point out that if the Government had properly appreciated the difficulties of their position at the outset, they might have made a concession to the opponents of vaccination which, though it would not have satisfied the Anti-vaccination League, would have effectually cut the ground from under the feet of the organised propaganda against vaccination, and they might at the same time have secured solid compensations for this concession in the direction of revaccination and of the general improvements of vaccination administration. They have now capitulated in a panic, and are no longer masters of the situation. It will not be long before they find out their mistake, but it will, in all probability, be a long time before they will find such an opportunity for statesmanlike legislation as they have thus lost. A few more experiences like those of Gloucester and Middlesbrough will hurry it on, but meanwhile the administration of vaccination will be demoralised, and, like the Sibylline books, the price that will have to be paid eventually for the neglected opportunities will be proportionately heavy.

Provisions not in the Bill.

Having thus dealt at some length with what the Bill as amended contains, it is only necessary to refer briefly to some provisions which it does not contain. First of all, it is entirely silent on the subject of revaccination, notwithstanding the strong representations made to the Government on the subject, and the statement by Mr. Chaplin in debate on the second reading of the Bill, that he would favourably consider any proposal made by Sir Walter Foster, who thereupon proposed an amendment in favour of it. The Bill also, as has been before indicated, altogether ignores vaccination by private practitioners, who are to be as uncontrolled in deciding what is "sufficient" vaccination as they have hitherto been. Moreover, the sanitary authority will have as little power as it has at present to promote vaccination even in times of epidemic small-pox, and the medical officer of health will continue to have neither responsibility for nor official connection with one of the most important branches of sanitary work. With these important matters, which lie at the bottom of the efficient promotion of vaccination, altogether ignored, it is unnecessary to specify other points which are scarcely less essential in building up a system of effective administration. Some of these, to which it is unnecessary to allude here, were indicated in the memorandum on the Bill issued by the Jenner Society. It is, of course, not to be assumed for a moment that the Government are insensible to the desirability of incorporating all these provisions if they could have seen their way to do so. But with the facilities for factious obstruction which the forms of the House of Commons offer, it is practically impossible to deal with a subject of such a contentious character in a Bill which has any chance of getting through Parliament, unless by a vigorous exercise of the closure or by buying off opposition with large concessions. The Vaccination Bill is only one of many illustrations of the increasing unfitness of Parliament, with its present antiquated regulations, for dealing with the legislative requirements

which the ever-augmenting complexity of our social organisation demands.

In conclusion, as this meeting is held in a part of the United Kingdom by the experience of which the provision in the Vaccination Bill on the subject of enforced domiciliary visitation has been justified, it would be interesting to learn what that experience is at the present day, compared with what it was when the Royal Commission took evidence on it seven years ago. It was then reported that vaccination prosecutions were almost unknown in Scotland; that there was practically no agitation against vaccination; and that no difficulty was experienced by those medical men who officially correspond with the public vaccinators of England in obtaining the vaccination at their own homes of the comparatively small percentage of Scotch children who were not vaccinated by private practitioners. In these matters one is inclined to ask, "Stands Scotland where it did?"

II.—JOHN C. MCVAIL, M.D.,

Medical Officer of Health, Stirling and Dumbarton.

THE AIM OF LEGISLATION.

DR. MCVAIL said that the purpose of a new Vaccination Act should be twofold—first, to promote vaccination; and, secondly, to remove as far as possible, the opposition to vaccination. The Government Bill, as originally introduced, was in both of these respects a most incomplete measure. It did a little for each of the two purposes, but not enough for either. In the course of its progress it had been altered so as to do a good deal more with the purpose of conciliating anticompulsionists, but nothing had been added for the first purpose—namely, the promotion of vaccination. With regard to antivaccination, the medical profession, especially in Scotland, where fortunately the movement had made very little progress, were too apt to hold that no recognition whatever should be given to existing opposition. The Royal Commission unanimously approved of some relief being given to strenuous antivaccinationists. Assuming that the new Bill would contain a conscience clause, the question was how that conscience clause might be utilised for the promotion of vaccination. In the first place it opened the way to revaccination, and the speaker believed that in this country legislation for revaccination could not be expected unless qualified by a conscience clause. With such a clause no one, however strong might be his views as to the liberty of the subject, could object to revaccination, unless he at the same time objected to primary vaccination. In the second place domiciliary vaccination of infants as a public service should not be confined to public vaccinators. The private practitioners in the course of their daily work should be enlisted by the Government for the promotion of infantile vaccination. If parents objected and took the steps which might be laid down by the law for having their objection given effect to, then when the unvaccinated child was about to go to school the law should again intervene, and the parent should be called on either to submit the child to vaccination or again to take the proper steps for recording his continued objection. At 4 years of age, however, many children as to whom there had been parental objection in infancy would now in all probability be vaccinated. Once more at 11 or 12 years of age the whole population belonging to that period of life should be brought under the law—for primary vaccination if the operation had not already been performed and otherwise for revaccination. At 12 years of age there would very likely be much less objection than even at 4 years, and many children might be transferred from the unvaccinated to the vaccinated class. The new law should be administered by sanitary authorities. Assuming the conscience clause prosecutions would not be entirely abolished. Take the case of a parent who did not take advantage before his child had reached the age of 4 months of the opportunity to satisfy the Bench that he did object to vaccination, and who, during the subsequent two months did not procure the vaccination of his child, then he would be subject to a penalty. For such prosecutions as would be required in this connection there ought to be a public prosecutor, and neither the Board of Guardians nor the local sanitary authority should require to take proceedings. But for the general administration of vaccination, the sanitary authority was the proper body, it having charge of the administration of other laws for protection against infectious disease. These were some of the main features which ought to characterise a Vaccination Act intended not only to make reasonable allowance for existing opposition to vaccination, but intended also for the promotion of vaccination.

III.—S. MONCKTON COPEMAN, M.A., M.D.,

Medical Inspector, Local Government Board.

GLYCERINATED CALF LYMPH.

DR. MONCKTON COPEMAN referred to certain points in connection with the purification and preservation of vaccine lymph by the employment of glycerine under certain definite conditions. He pointed out that much of the so-called glycerinated calf lymph at present in use by no means conformed to these conditions. The vaccine lymph to be used by the Local Government Board would be examined by the method of plate cultivation, and none would be sent out which had not been found to be not only clinically active but also bacteriologicaliy pure.

IV.—ARTHUR NEWSHOLME, M.D.,

Medical Officer of Health, Brighton.

RESOLUTION RECOMMENDING WITHDRAWAL OF BILL.

DR. NEWSHOLME remarked that the discussion was somewhat belated, unless the Government could be induced to withdraw the Bill, with a view to their becoming more perfectly acquainted with the predominant feeling of the country before legislating. There could be little doubt that "conscientious scruples" would spring up on every side in connection with the Bill as now finally shaped in the House of Commons. The medical profession had themselves largely to thank for the present state of things. With a few notable exceptions, like Drs. Bond and McVail, they had indifferently or idly allowed the misrepresentations of antivaccinators to pass muster, and consequently in nearly every constituency an active minority were in a position to make it difficult for members of Parliament to act in accordance with their own conscientious views. If the present Bill was to become law, it was most important that the gigantic experiment about to be made on the *corpus vile* of the public should be made under scientific conditions; and for this it was essential to have a record on every vaccination certificate of the quality and quantity of vaccination that had been effected. By this means it would be possible in the future to ascertain exactly the relative incidence and severity of small-pox in different classes of the community. But it was much preferable that the present Bill should be withdrawn, to be replaced next year by a Bill having closer conformity to the real state of public opinion, and with that object he begged to propose the following resolution:

> That in the opinion of this Section the Vaccination Bill at present before Parliament should be withdrawn in order that the Government may have an opportunity of fully considering the views and facts which have emerged in the discussion of the Bill on the part of the profession and the public, and that a new Bill should be introduced next session.

V.—C. R. DRYSDALE, M.D.,

Consulting Physician to the Metropolitan Hospital.

DR. DRYSDALE seconded the resolution. He held that, as a result of the evidence before them, not only vaccination but also revaccination, before a certain age—say 10 to 12 years—was urgently needed. Also he held that in future all vaccination should be carried out by means of animal lymph alone. Jenner believed that vaccination once performed secured the patient for life against small-pox; but as early as the third decade after his discovery it was seen that there were a good number of deaths among adults who had been vaccinated in childhood but not revaccinated. It was most unwillingly that this truth was admitted by the medical profession, but now it was hardly possible for anyone to allege that one vaccination would protect for life. The curious fact was now evident that whilst during last century small-pox was a children's disease, and rarely proved fatal to adults, it now killed mostly persons over 20 years of age. It was impossible for anyone to lay down theoretically the number of times which it was necessary that a person should be vaccinated to protect him from small-pox epidemics, but the German experiments had

shown the world that vaccination in infancy, followed by revaccination at the age of 12 years, using only animal vaccine, was capable, if rigorously carried out, of putting an end to the most terrible of European plagues. Dr. Drysdale referred to statements by Professor Gerhardt, who said "that in our time the disease had almost died out of Prussia." Dr. Drysdale considered that sooner or later the public would be compelled to adopt the German plan, and he expressed the hope that the present Bill would be thrown out.

VI.—Campbell Munro, M.B., D.Sc.,

County Medical Officer of Health for Renfrewshire.

Dr. Campbell Munro agreed that the true policy was entire rejection of the present Bill. He suggested that the resolution should be transmitted to the Council with a request that it be referred to the Parliamentary Bills Committee for immediate action. Dr. Newsholme accepted the amendment. Dr. Campbell Munro supported the resolution, especially in respect that it would afford an opportunity of transferring the administration of the vaccination laws from the Boards of Guardians to the local sanitary authorities.

VII.—G. C. H. Fulton, M.B., C.M.,

Medical Officer of Health and Public Vaccinator, Fourth District, Middlesbrough Union.

Revaccination.

Dr. Fulton insisted on the essential importance of revaccination by law in any satisfactory national scheme of small-pox prevention. In Middlesbrough, where infantile vaccination had been fairly well carried out, probably not more than 5 per cent. of children under 10 years suffered from small-pox during the recent epidemic; in this it contrasted strongly with Gloucester, where the children were unprotected. In the districts of North Ormesby and Eston, representing a population of 21,000, there were 60 cases, and not a single person revaccinated contracted the disease. At Eston (population 11,000) he advised the council to issue an order that every person employed or having anything to do at the sanatorium be revaccinated, with the result that not one person inside or outside the sanatorium who had work to do for the patients or council contracted the disease. That was the more remarkable, as at a neighbouring hospital under his care the only persons (three in number) that were not revaccinated contracted the disease, and the revaccinated servants, etc., were free from attack. After facts like these, when penalties were to be abolished, he thought they were entitled to have revaccination included in the Bill before Parliament at the present time. Children entering on school life who had not been previously vaccinated should then be brought under the influence of the law, subject to relief by the order of two magistrates on conscientious objection. Single penalties should be done away with, excepting cases of neglect by a parent to register conscientious objections. The administration of the Vaccination Acts should be in the hands of the sanitary authorities, they having everything to do with the disease when it occurred. The question of compensation for quarantine and for articles destroyed was a serious one, and should be considered. Inspection of the arm by the vaccination medical officer should be made on the eighth day, and reinspection should be provided at a later date. Private practitioners should be paid for vaccination performed on poor people if done according to the requirements of the Local Government Board—that is, in four places, four perfect vesicles, with characteristic cicatrices, covering half a square inch. The number and area of the vesicles should be recorded in every certificate of successful vaccination. The age limit should be six months. Stations should be retained because of cleanliness, handiness, and better results. Domiciliary vaccination he considered unsatisfactory; it should only be made in those cases where the child had not been vaccinated at the age of nine months.

Dr. Bond's Reply.

After a few remarks from Dr. Caldwell Smith (M.O.H., Wandsworth), Dr. Bond replied. He said that, whatever was the fate of the Bill, the future of vaccination largely depended on the efforts made to neutralise the very active propaganda which had been carried on against vaccination. He thought it was the duty of the medical officers of health to enlighten the people on the subject. Dr. Bond, in his reply, desired, in order to avoid any possible misconception as to what he had said, to express his high appreciation of the valuable work which had been done by Dr. Monckton Copeman in connection with his researches on glycerinated calf lymph, and also of the admirable report on the subject recently issued by Sir Richard Thorne. He also strongly pressed on medical officers of health the importance of mastering the subject of vaccination in its controversial aspect, for it must be on them that the organisation of an effective antidote to the antivaccination propaganda which had been so long carried on must rest.

The Resolution.

Sir William Priestley pointed out that the Bill was to come on for its third reading in the House on July 30th, so that the resolution, if sent to the Council, would reach the House too late to serve the purpose for which it was intended. He understood that Lord Lister was to speak on the Bill in the House of Lords, and that he would urge that something should be done to prevent the great harm that might result to the community if the present Bill became law.

The resolution printed on p. 420 was then adopted and remitted to the President of Council, to be transmitted immediately to Mr. Balfour, Lord Salisbury, and Lord Lister (see p. 448).

SOIL AS A FACTOR IN THE SPREAD OF CERTAIN DISEASES.

By John Robertson, M.D., B.Sc.,
Medical Officer of Health, Sheffield.

The Bacteriology of Surface Soils.

During the past few years renewed interest has been taken by sanitarians in the subject of soils as a factor in the production and spread of certain diseases. Much importance was attached to this subject by our great sanitary reformers, Budd, Simon, Buchanan, and others, although at that time there was neither statistical nor experimental evidence of much value obtainable. The subject did not receive the attention it deserved until within the past ten or fifteen years. Numerous investigators are now giving much time to it, and with our improved physical chemical, and bacteriological methods it is much to be desired that the subject will be put on a more scientific basis than it is even at present. I believe there are few, if any, to whom more credit is due than our Honorary Secretary, Professor Hunter Stewart, for his prolonged and laborious researches into this very difficult subject.

It is, perhaps, necessary to state at the outset, that the term soil is used in the sense of a medium for the growth of organisms. It therefore includes the surface of a paved court or street, equally with the soil of a grass field, and a privy midden equally with the filth in and around a sewer or drain.

It has of course long been well known that surface soils contain a very large number of micro-organisms of different species. It has been found, too, that the number varies very much under different conditions, as also do the varieties of micro-organisms found. What the exact conditions are which favour the growth of different organisms in soils is a subject which requires further investigation. It may be roughly stated that there are a larger number in made soils than in virgin soils. The number varies, too, with the amount of certain organic matters in the soil.

The largest number is found not at the surface, but at a distance of 12 to 24 inches below the surface. An interesting point, too, is that the number of organisms in undisturbed soils rapidly diminishes at a depth of 3 to 4 feet from the surface. While this is generally true, it must be borne in mind that "faults," and specially porous strata, allow organisms to be carried down to great depths, for example, at the White Cross Colliery, St. Helens, I have noticed surface filth to be carried to a depth of over 800 yards below the surface, so that even the deepest wells may under such conditions become contaminated with surface organisms.

In some experiments which Dr. Maitland Gibson and I carried out, we found that in the case of the typhoid organism planted at a depth there was an undoubted tendency to grow

upwards to the surface rather than downwards. This appears to be quite distinct from the upward diffusion which has been frequently noted in the case of B. anthrax by means of earth worms. I believe that this tendency to upward growth has a most important bearing on the spread of disease by soils. In my own experiments I found that during the winter months organisms disappeared from the surface soil long before they had disappeared from the subjacent strata, and from these experiments I was led to believe that the deeper layers acted as a sort of shelter during the winter months from which the organism sallied forth to the surface during the warmer months.

Among the organisms which are found in the soil some are pathogenic. For instance, it has long been recognised that the subcutaneous injection of a quantity of surface soil into a guinea-pig was liable to be followed by tetanus or malignant œdema. Again, surgeons have noted the difference of the healing qualities of wounds contaminated with surface soil as compared with those containing the practically sterile coal dust of a deep mine.

CLASSIFICATION OF SOIL INFECTIONS.

Diseases which may be due to specifically contaminated soils in temperate climates may be, roughly, divided into two groups: (*a*) Those in which the specific organisms have a general or wide distribution; (*b*) Those in which the organisms have a local distribution.

It would appear that tetanus, malignant œdema, and the group of pyogenic diseases are examples of diseases due to group (*a*). Typhoid fever, epidemic diarrhœa, cholera, swine fever, and anthrax are diseases belonging to group (*b*). Such diseases as tuberculosis, leprosy, epidemic pneumonia, glanders, rabies, scarlet fever, etc., appear not to be propagated to any extent by growth in soil, whilst dust plays a most important part in their diffusion.

I desire particularly to draw attention to certain features of group (*b*), that is, those in which the organism appears to have a local distribution, and I will take typhoid fever as a type of this group.

THE DISTRIBUTION OF TYPHOID FEVER.

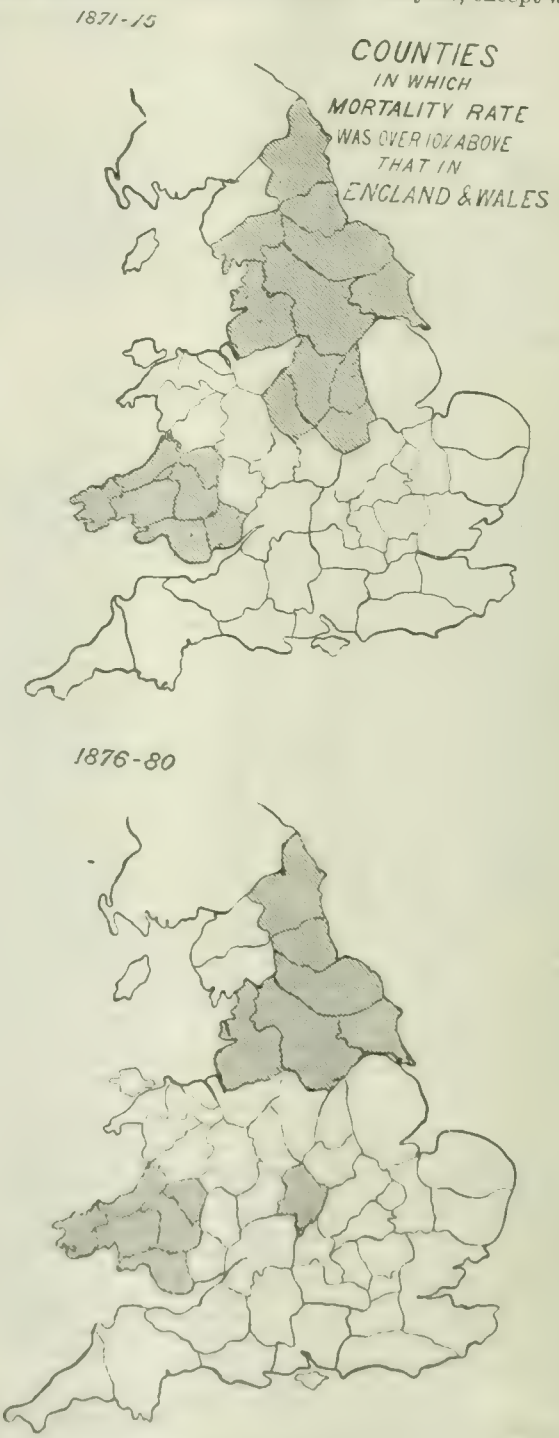
Several years ago I prepared a series of maps showing accurately the distribution of typhoid fever mortality in England and Wales for each year during a period of 25 years. The examination of such a series shows that typhoid fever mortality is high in certain districts with the utmost regularity, while with an equal regularity it is low in other districts. I have from these "yearly" maps prepared the accompanying series, showing for each quinquennial period during 25 years the counties in which the mortality from typhoid fever was over 10 per cent. above that for the whole of England, and it will be noted how markedly the areas of high mortality correspond in each. If a similar series were prepared showing the counties in which the mortality-rate was below that for the whole country by 10 per cent., an equally striking series would be obtained.

There are a few very interesting exceptions in the distribution due to severe local epidemics which will be noted in these maps, occurring in areas where typhoid fever mortality is usually low. In examining the yearly maps it is noted that when such an outburst of typhoid fever occurs in a district which had hitherto had a low rate of mortality the district does not return to its normal rate during the following year, but appears to clear itself slowly. This is a point of great importance, I think, as it indicates that with certain soil conditions the organism of typhoid fever slowly dies out, and the question naturally arises What are the conditions which favour the growth of the organism?

If we look at [illegible] we find much the same conditions [illegible] for example, if the mortality rate for two towns of nearly equal size [illegible] Salford and Bristol, are compared, we find that with the utmost regularity the rate in Salford is high, while that in Bristol is low. Again, in the smallest [illegible] we find [illegible] to exist. In every district [illegible] to be found [illegible] cases of typhoid fever occur with the utmost regularity at intervals of one or more years.

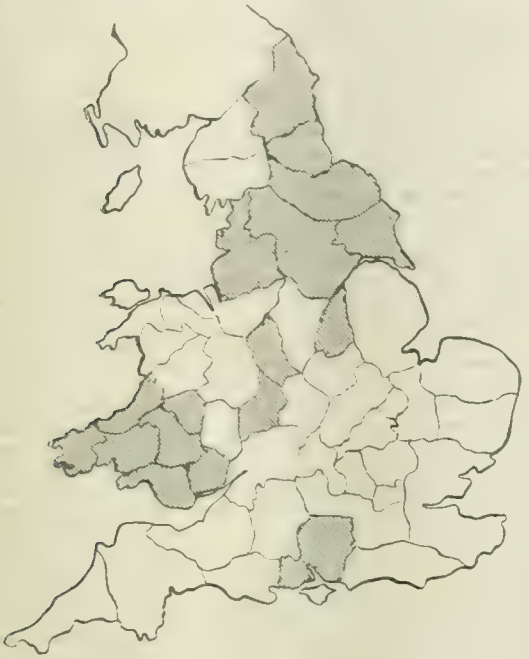
THE TYPHOID BACILLUS IN SOIL.

In a series of experiments which I have recorded in the BRITISH MEDICAL JOURNAL of January 8th, 1898, I was able to show that the bacillus of typhoid fever was capable of living and multiplying in the ordinary surface soil of the district. In these experiments it was demonstrated that the organism died out during the cold months of the year, except when it was artificially fed with organic matters. I believe that the observation is one which explains to a considerable extent the prevalence of the disease in certain small inhabited areas and its absence in others. If it is correct to apply it generally,

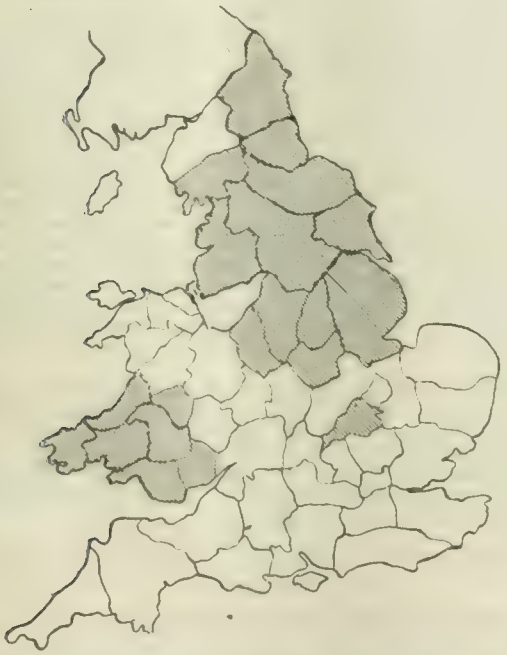


then an unpaved or badly paved road or courtyard which is constantly receiving small amounts of organic matter in the shape of slop waters or fæcal matter would be a good "soil" for the growth of the typhoid organism should it by chance

1881-85



1886-90



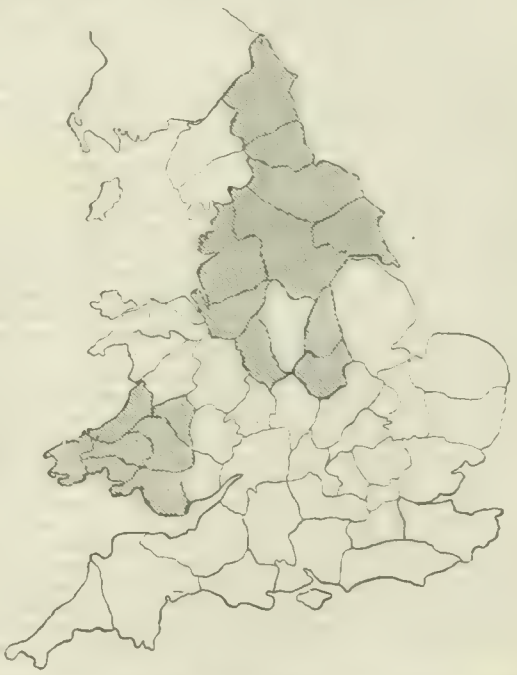
become planted there. The filth in and around privies and drains also become fertile breeding places having the requisite fresh organic matter supplied for the growth of the organism.

Typhoid Fever and Polluted Soil.

My own experience in the investigation of the cause of nearly 2,000 cases of sickness from typhoid fever goes to show that, roughly, about 10 per cent. of all the cases were probably due to direct infection, such as occurs when a nurse becomes infected from her patient. This, I believe, is a larger percentage than is usually attributed to this cause. Then water or milkborne disease accounts for the incidence of typhoid fever in a certain relatively small proportion of cases. I believe that the water carriage of typhoid fever is a very important subject, but at the same time I think that the amount of attention it has received has to a large extent put out of account the relatively much more important subject of dust and filthborne typhoid. In my experience certainly over 80 per cent. of cases of typhoid fever in town districts cannot be accounted for by direct infection or by water or milk carriage of the infection.

Before dealing with the subject of how specific infection is caused by soils, I should like to point out that the condition I have mentioned applies equally to the whole of England, and does not in itself explain the very irregular distribution of the disease. There would appear to be splendid scope for inquiry in this direction. Doubtless local customs in the arrangement and structure of dwellings, together with local differ-

1891-95



ences in the habits of the people, do operate to some extent, and this is a factor always difficult to estimate. Another factor which in my small experience appears to operate is that of ground water level. I have not noticed any relationship between the rise and fall of the ground water and the prevalence of typhoid fever similar to that which has been so ably described by Von Petenkoffer; but all my observations show that areas where the ground water level is near the surface are more liable to endemic typhoid fever than are areas where the ground water level is a low one during the summer months. This was the case at St. Helens in the areas affected. It is said to be so also in Dublin and many other towns where typhoid fever is specially prevalent, and it brings us back to one of the remedies suggested many years ago of "deep draining areas where typhoid fever is specially prevalent." It by no means follows that areas at a high level have a low ground water level, and it is questionable in areas of stiff clay whether deep draining would have the desired result. The effect of different geological formations on the propagation of the typhoid organism is a subject regarding which our knowledge at present appears to be very deficient.

A point on which I made several series of experiments, and which I think is of some practical importance, is that bacillus

typhosus quickly dies out in grass-covered areas. In all of our large towns we have areas of dirty soil on which no grass will grow. If grass were made to grow in such places, I believe that they might not act as distributors of typhoid infection as they may do at present. The breeding ground of each disease-producing organism which is found in the soil requires to be dealt with separately, as the differences in the habits and requirements of each, so far as we can at present judge, appear to be wide. I have dealt only with that of typhoid fever because in it we have a well-marked organism on the one hand and a valuable series of statistics of the disease on the other. Much investigation is specially needed into the condition of soils more favourable to the organisms of diarrhœa and other diseases.

DUST AND DISEASE.

The next important question which arises in connection with diseases propagated from soil is as to how the organism is transferred from the soil to man. I feel certain that dust, under certain conditions, is the chief agency in the transference of the poison from the soil to the subject; and this, of course, may be direct or indirect. A good deal of attention has been directed to this subject by Continental observers within recent years, and I think from the experiments which have been made by others, together with my own observations, I am now entitled to say that dust is a very frequent means of spreading soil diseases.

Those of us who did bacteriological work ten to fifteen years ago will remember how seldom our plate cultivations became contaminated with air organisms in our moist chambers. A moist chamber was ready for use in less than an hour's time, that is to say, the organisms present in the air had subsided in this time so as to leave the air sterile. It was usually found that if any contamination did occur it was due to moulds, the spores of which are known to be very small and light. Quite recently I have had an opportunity of making extended observations in a large lead-lined chamber, 6 feet high, the walls of which were wetted, and it was found that plates of gelatine exposed for 15 minutes at the bottom of this chamber became contaminated first with micrococci, bacilli, and moulds; afterwards with moulds; and at the end of two hours and a-quarter (as a mean of five observations) they ceased to become contaminated. Observations were made as to the number of particles in this air at the beginning and at various intervals during these observations by means of one of Aitkens's dust counters and also by means of passing a beam of light through the air, and it was found that at a time when the air became sterile as far as the gelatine plates were concerned it yet remained crowded with particles of dust to such an extent as to exceed the capabilities of the small dust counter I had at my disposal. It was also seen that the particles were being carried about actively by convection currents. The practical conclusion to be drawn from these experiments is that the infectious particles in the air are heavy and quickly subside if the air is allowed to remain still.

I am inclined to believe that the "raft" theory is the correct one (with a few exceptions, as in the case of the spores of certain moulds). If this is the case, it goes far to explain the reason why persons living in or entering an infected area only become infected, for it presupposes that such heavy particles will not travel great distances, but will rather tend to contaminate food and water in the area. For instance, during a long warm summer, one area may infect numerous other areas, and so extensive and widespread outbreaks occur in contrast to the much more localised outbreaks which occur during a short summer. While this is the case, there appears to be abundant evidence that there are certain limitations to the spread of typhoid infection by dust. It is not possible for me here to review the recent work of Flügge, Germano, Neisser, and others as to the conditions under which dust may carry the typhoid infection, but it seems to me that their work fits in well with the dust theory founded on practical experience of the methods of spread of typhoid fever.

DISCUSSION.

Sir C. CAMERON (Dublin) said that the facts recorded in Dr. Robertson's paper confirmed the opinion that in Dublin at least enteric fever was a semi-miasmatic disease. Dublin was built partly on boulder clay, partly on the limestone gravel; in the former, the cases of enteric fever were 50 per cent. greater than in the latter. This he attributed to the greater facilities for the storage of filth and the aëration of the soil in the former, conditions favourable to the development of the bacilli of the disease. His observations extended to several thousand cases during the last dozen years. There was no possible way of accounting for the greater prevalence of enteric fever in the gravel as against the clay, except that the bacilli flourished better in the former than in the latter, and became disengaged from it.

Sir RICHARD THORNE, K.C.B., recalled the work done by Dr. Sidney Martin for the Local Government Board, showing that in certain soils polluted with organic matter, the typhoid bacillus was maintained and spread for some 500 days and still retained its vitality. Since it had been found that this vitality was retained at temperatures of 9° to 24° C., but that the power for spread was diminished. Recently Dr. Houston had reported that the bacillus enteritidis sporagenes was an extremely sensitive indication of a recent excremental contamination of soil, much more so indeed than the presence of the bacillus coli; and in this way they were coming to possess a much clearer indication as to the safety of water from a given soil than chemistry could afford. Under his guidance work was now proceeding to determine what was the result to the typhoid bacillus of having to face in soil the ordinary and at times exceptional organisms with which soil abounded; and similar work was in progress as to the relation of the diphtheria bacillus to soil. He hoped the same would soon be done to determine whether the known influence of wetness of soil on tuberculous consumption was due to soil action on the tubercle bacillus. But he could not refrain from urging that, after all, it was in the practical application of bacteriology to public health purposes that the health officer must rely. They had enormously diminished typhoid fever; they had reduced the death-rate from phthisis to one-half what it was before they had heard of the typhoid bacillus and the tubercle bacillus. In bacteriology they had succeeded in getting precise scientific data, the practical application of which was likely to be of immense service in the promotion of public health and in the diminution of preventable disease.

Dr. SCURFIELD (Sunderland) said that as the medical officer of health of one of the most typhoid-stricken towns in the United Kingdom, he had been especially interested in Dr. Robertson's experiments. For the last two years he had been strongly of opinion, from observation of the distribution of typhoid fever in Sunderland, that the infection of typhoid fever had the power of living in the soil for prolonged periods. He had been particularly struck with the way in which year after year typhoid fever had clung to individual houses or groups of houses. The greater part of the county of Durham, in which typhoid fever had been prevalent during the last few years, was covered with stiff boulder clay, and in the urban district of Sunderland typhoid fever had been just as prevalent in houses built directly on the boulder clay as in houses built on sand or gravel lying on the boulder clay, so that in this particular his observations made in Sunderland did not agree with Sir Charles Cameron's observations made in Dublin.

Dr. A. K. CHALMERS (Joint M.O.H. Glasgow) cited a case of enteric fever epidemic which had continued throughout the autumn, winter, and spring through infection of the soil. The drains were overhauled after the appearance of the second case, and were found to be perforated in several places. Though the defects were remedied cases kept on cropping up as mentioned above.

TYPHOID FEVER IN AN AUSTRALIAN RURAL DISTRICT.

By JOHN MCNAUGHTON, M.B., C.M.Edin.,
Late M.O.H. Dunmunkle and Borung, Victoria.

THE paper referred to the occurrence of typhoid fever in various parts of the Wimmera District, Victoria, in 1888-94. Dr. McNaughton gave some particulars as to the district which lies between the Grampian Mountains and the River Murray. It is 240 miles from north to south, 200 from east and west, and falls from 800 feet at the mountains to 100 feet at the river. The rainfall is small and uncertain, ranging

from 36 to 26 inches at the mountains to 5 inches at Mildura. The summer months are almost absolutely rainless. The water supply is in part from stored rain water, in part from storage reservoirs in the mountains. Dr. McNaughton saw his first case at Horsham in September, 1888, and the cases increased in number down to June, 1889. In 1890, when he became medical officer of health for a district in Eastern Wimmera, cases were occurring there; they reached a maximum in April, and ceased in May. In all, 38 cases occurred that year in a population of 2,000. In 1891 1 case occurred, and in 1892 none. In 1893 4 cases occurred in one family, which had been camping out at a distance with others. In 1894 a mild epidemic occurred. Dr. McNaughton had found that the best plan of disposing of urine and fæces was by fire whenever possible. If not he had the excreta buried. He commented on the apparently mysterious appearance of the disease in a rural district, and confessed that he was unable to account for it.

NOTE ON FILARIA STRONGYLUS OR FALSE TUBERCLE IN THE PIG, SHEEP, AND GOAT.

By R. Sydney Marsden, M.B., D.Sc., F.R.S.Edin., etc.
Medical Officer of Health, Birkenhead.

Filaria strongylus or false tubercle is a zoöparasitical disease of frequent occurrence in the lungs of the pig, sheep, and goat, especially in the sheep, more rarely in the pig; yet so far as I am aware no book on meat inspection contains a description of the disease, and I believe that lungs so affected are constantly seized and recorded as cases of tuberculosis which at first sight they very much resemble. Lungs affected with strongylus may be found somewhat congested, but sometimes they present a normal appearance. The surface will be found more or less covered with small light brown or grey patches, varying in size from that of a pin's head to that of a pea, with little patches of congestion surrounding them. These patches form little raised tumours or granulomata on the surface very much resembling those of tuberculosis, but not quite so hard and more hyaline in appearance. They are also disseminated all through the lungs and gather together into clusters or lumps varying much in size, sometimes as large as a farthing or a halfpenny. On nipping them between the finger and thumb these little lumps feel somewhat softer and less firm and resistent than the corresponding ones of tubercle, this being due to their cluster form as against the continuous substance of tubercle, and they do not as a rule form such large masses.

On section the tumours look very similar to tubercle, having a hyaline grey appearance, and some of the older nodules may have an opaque yellow centre and consist of an amorphous cheesy substance, the product of retrogressive changes.

If the finger is passed over them they give the same characteristic hard gritty feeling as tubercle, but the hardness is not quite so great and is mixed with a slight velvety feeling.

Professor Boyce in his *Textbook of Morbid Histology* says: "The filaria are a remarkable group of parasites, but much information is still needed concerning the exact nature of the tissue changes which they excite." The commonest seats of infection are the lungs, kidneys, and liver. Professor Boyce, describing strongylus vasorum—after Laulanié, its discoverer—says:—

> The adult strongylus lives amongst the trabeculæ of the right side of the heart and in the pulmonary artery, and produces its eggs there. These are washed away, just as minute fragments might be from the diseased valves in ulcerative endocarditis of the right side of the heart, and lodge, as might be expected of emboli, in the periphery and base of each lung. Wherever an egg is arrested it excites at that spot an inflammatory reaction, and becomes the centre of a typical granuloma, which, to the naked eye, has a hyaline grey appearance, and is somewhat smaller than a pin's head. On microscopic section the granuloma presents the following appearances, namely:—
>
> 1. In the centre one or more giant cells are seen, each containing or surrounding an ovum or embryo.
> 2. A zone of epithelioid cells.
> 3. An outer ring of small round cells.
>
> After a short time the granuloma undergoes retrogressive metamorphosis, and becomes converted into an opaque yellow nodule. The transformation commences in the epithelioid zone, the cells and ground substance of which pass into an amorphous cheese-like mass, in which the remains of one or more ova may be discovered.

This, as far as I can find, appears to be the only description given of the disease. It is, however, excellent, and does not require amending. Of course the organs affected with strongylus should be seized and destroyed, but apparently the flesh of the animals is not affected. There is no emaciation, and the brightness and setting qualities of the meat are not altered.

EXPERIMENTS WITH GASEOUS DISINFECTANTS

(Sulphur Dioxide and Formic Aldehyde).

BY

Francis J. Allan, M.D.Edin., D.P.H.Camb., F.R.S.E., Medical Officer of Health for the Strand District.

and

Cecil H. Cribb, B.Sc.Lond., F.I.C., Public Analyst and Bacteriologist for the Strand District.

During the last two years we have been engaged upon experiments on different methods of disinfection. The results now submitted relate to the action of sulphur dioxide and formic aldehyde. During part of these experiments we had the co-operation of Dr. George Newman, Demonstrator of Bacteriology in King's College, London.

The experiments were carried out for the most part in two ordinary dwelling rooms measuring 1,290 cubic feet and 750 cubic feet respectively; and for certain purposes the chamber of a Fraser's dry air apparatus (with a capacity of 250 cubic feet) was employed. To the wall of this chamber a small tight-fitting glazed door was fitted, by means of which access could be obtained to the interior during the progress of the experiments. All textile articles were removed from the rooms, as we presumed would be done had a case of infectious disease occurred in the room, for disinfection in a steam apparatus before any process was applied to the walls, floor, etc. The rooms were carefully sealed up in the usual manner.

Sulphur Dioxide.

Experiments were first made with sulphur dioxide produced by burning sulphur "candles." The amount of sulphur used per 1,000 cubic feet was 1 lb., 1½ lb., 2 lbs., and 2½ lbs. The organisms employed were good cultures of diphtheria, typhoid, cholera, and anthrax with spores. They were exposed in one or more of the following ways: Strips of linen dipped in broth cultures, plate cultures, and sterilised filter paper smeared with active growths and gently dried. These were exposed in the rooms at various heights in each experiment; the positions were the floor, 1½ feet above it, 4 feet above it, and within 2 inches of the ceiling. In Series A the length of time of exposure varied from 20 hours to 8 hours. In series B typhoid organisms were exposed to the sulphur in the small chamber, and a piece of the infected linen was removed at the end of each hour up to 8 hours. In Series C organisms were inserted at varying periods after the sulphur had been burning. A note was kept of the meteorological conditions existing at the time as the presence of moisture, and temperature has some influence upon the method of action of both the gases experimented with. In some of the experiments water was evaporated in the room. In each series the experiments were repeated a second time, and in every case the results were checked by controls.

The results of the experiments with sulphur dioxide may be shortly stated:

1. Diphtheria.—In none of the experiments in which this bacillus was employed did it grow, the shortest exposure being for 4½ hours in an atmosphere in which sulphur equal to 1 lb. per 1,000 cubic feet had been burning. The same result was obtained with this organism, whether wet or dry.
2. Anthrax was retarded in its growth for several days when exposed in a moist state for 20 hours in an atmosphere produced by burning 1½ lb. of sulphur, but in a dried condition was unaffected.
3. Cholera smeared on filter paper and dried, no growth after 8 hours exposure in room in which 2½ lbs. of sulphur per 1,000 cubic feet were burned.
4. Typhoid.—(a) On medium in Petri dish, 20 hours exposure, 1 lb. sulphur per 1,000 cubic feet. *Result:* growth unaffected. (b) Smeared on filter paper and dried, 8 hours' exposure, 2½ lbs. sulphur per 1,000 cubic feet. *Result:* growth unaffected. (c) Strips of linen soaked in typhoid broth exposed in moist condition for periods extending from 1 hour to 20 hours, in the various strengths of the gas used. *Results:* These varied in such a manner as to show that the gas was unreliable in its action.

The experiments led to the conclusion that while sulphur dioxide was of service in disinfection after cases of diphtheria it was not to be depended upon for typhoid fever.

Formic Aldehyde.

One experiment only was made with Trillat's autoclave, but the results proved unsatisfactory; and, moreover, the cost

and weight of the apparatus and other considerations render it in our opinion unsuitable for general work. The Alformant lamp (both A and B forms) was used for the rest of the experiments. The principle of this lamp is that the hot moist products from the combustion of methylated spirit act upon the paraform tablets, converting them into the gas. Each tablet weighs 1 g., and experiments have led the vendors to recommend that 10 be used for each 1,000 cubic feet of space. This standard was therefore adopted throughout these experiments, which were carried out in the two rooms already mentioned, the larger one being designated hereafter as No. 1, the smaller as No. 2. The experiments began in October, 1897, and extended to July, 1898. The organisms used were chiefly typhoid, diphtheria, and the staphylococcus pyogenes aureus; organisms of plague and anthrax (none-spore bearing) were also tried. As with the previous experiments, the linen strips were placed in different parts of the rooms. In each case the exposure of the infected strips began at the same moment as the lighting of the lamps. Controls were made at the same time, and they were placed in the culture medium on the return of the exposed strips to the laboratory.

These experiments were in two groups, D and E. In the D series the organisms were in a more or less moist condition. In series E one set was carefully dried by passing over them a current of air filtered through cotton wool for twenty-four hours; another set had similar treatment, but from the nature of the material used was not dry throughout:

SERIES D.

1. October 19th, 1897. Temperature at noon, 66° F. Humidity 93. Dull, foggy, moist. Linen strips dipped in broth cultures of typhoid and plague. Room 1. Exposure, twenty hours. *Results:* No growth in either case (Newman).

2. February 8th, 1898. Temperature at noon, 48° F. Humidity, 80. Cloudy. Linen strips dipped in cultures of anthrax and typhoid. Room 1. Exposure, ten hours. *Results:* No growth in either case (Newman).

3. February 8th. Same organisms exposed in same way in Room 2 for five hours. *Results:* No growth in either case (Newman).

4. February 15th. Temperature, 54° F. Humidity, 82. Dull, blowy, S.W. wind. Typhoid and staphylococcus pyogenes aureus smeared on sterilised strips of linen. Room 1. Exposure, ten hours. *Results:* No growth (Cribb).

5. Same date, same organisms. Room 2. Exposure, five hours. *Results:* No growth (Cribb).

6 and 7. February 22nd. Temperature, 43° F. Humidity, 80. N.E. wind cloudy. Experiments 4 and 5 repeated. *Results:* No growth (Cribb).

8. March 21st. Temperature, 52.5° F. Humidity, 73. Fine, sunshine. Linen strips sprinkled with typhoid broth. Room 1. Exposure, four hours. *Results:* No growth (Cribb).

9. Same date. Same organism. Room 2. Exposure, 2 hours. *Result:* No growth.

10 and 11. April 28th. Temperature, 56.5° F. Humidity, 97. Dull and wet. Organisms: Typhoid and staphylococcus pyogenes aureus on linen strips. Room 1: Exposure, 4 hours. Room 2: Exposure 2 hours. *Results:* No growth in either case (Cribb).

SERIES E.

1. July 5th. Temperature, 69° F. Humidity, 69. Cloudy and dull. Organisms: Diphtheria and typhoid. Cotton wool soaked in broth, and afterwards partially dried, but at time of experiment still damp in centre and matted together. Exposed in Room 1 for 12 hours to formaldehyde.

2. The same in Room 2, exposed to sulphur dioxide evolved by burning a pound of sulphur.

Results: In each case the organisms were not destroyed. The sodden condition of the wool had prevented the action of the gases on the organisms in the centre of the mass. The growth was less in the case of those exposed to the formaldehyde than of those exposed to the sulphur dioxide.

(These two experiments appear to indicate the undesirability of spraying thick materials with water in order to give a gaseous agent better access to organisms. We are of opinion that spraying with formalin itself is more effective than spraying with water followed by use of the lamp.)

3. July 14th. Temperature during experiment 50° to 75° F., humidity 60. Very fine, 12 hours sunshine recorded. Linen strips dipped in typhoid and diphtheria broth, and dried under a bell jar in a current of filtered air for 24 hours. Exposed for 24 hours to formic aldehyde: 2 diphtheria on [illegible], cold near ceiling, 1 on mantelpiece; 1 on [illegible]. *Results:* The cultures made after exposure showed, on examination and culture on agar proved that no typ[illegible] organisms were present, the growth on the surface of the [illegible] due to the presence of proteus vulgaris in the case of the diphtheria tube, and of the bacillus subtilis in the typhoid tube.

4. July 15th. Temperature during experiment 60° to 77° F., humidity 60. Very fine, 12 hours recorded sunshine. Same organisms. Room 2: Exposure 6 hours. Organisms arranged as in last experiment. *Results:* Both typhoid and diphtheria were killed, but in some of the tubes the same organisms were found afterwards as in Experiment 3.

Experiments with the organisms in a moist state are of course not comparable with disinfection, as it would be carried out in the ordinary way with a gas in rooms after infectious illness, but they nevertheless supply a certain amount of information.

In the first place it is important to see that the lamp is so set that it burns properly, for if the wick be too low it is possible that the tablets may not be supplied with a sufficiency of moisture and carbon dioxide to produce formic aldehyde. Thus in a recently-published experiment it is stated that, although the room had been carefully sealed up, there was but a faint odour of the gas (formic aldehyde) at the end of twenty hours, and that the lamp was still burning.

Under such conditions it is not surprising that there was failure to kill the diphtheria organisms exposed. In all our experiments the rooms, even at the end of twenty-four hours, were still strongly charged with the gas, and the doors had to be left open for a few minutes before one could comfortably enter.

Dr. Kenwood has suggested that it is not so much a question of the period of treatment (exposure) as of the initial dose. This seems to be borne out by the experiments in Series D. We think it desirable to evolve the gas rapidly, and as the tablets are soon diffused there should be a good flame in the lamp. We are also of opinion that when the room to be treated is a large one it is better to use two or more lamps than to put a large number of tablets into one lamp.

Formic aldehyde is much more diffusible than sulphur dioxide, so that even greater care must be taken to seal up a room. It was noticed on entering a room that the gas appeared to be less strong nearer the floor than higher up. This may explain why Trillat and Roux[1] found that while organisms on the walls were killed, dust scraped from the floor developed a certain number of organisms. It may, of course, have been due to the dust not having been penetrated by the gas, but it suggests the need of keeping the generating apparatus as near the floor as possible. In the form of a gas neither of the agents experimented with appears to have very great power of penetration.

In regard to the action of formic aldehyde on organisms in a dry condition, the two experiments (Series E, Nos. 3 and 4) go to show that it is efficacious not only with diphtheria but also with typhoid. The presence of proteus vulgaris and bacillus subtilis may be explained in two ways: either they were in the rooms where the experiments took place and were not killed or they obtained admission when the linen strips were being placed in the culture medium in the laboratory. This can be determined in subsequent experiments. So far as these go it appears that (1) sulphur dioxide will kill the diphtheria either in a moist or dry state, but that it is not to be relied upon for more resisting organisms; (2) formic aldehyde will kill diphtheria and typhoid organisms in either a moist or dry condition, and several other organisms—including staphylococcus pyogenes aureus—in a moist state. It has also the advantage over sulphur dioxide that it diffuses better and that it does not affect colours and metallic substances.

DISCUSSION.

Dr. KENWOOD (Medical Officer of Health, Stoke Newington and Finchley) was glad to see that Dr. Allan's experiments were in agreement with his own. He had only one important fact which he wished to communicate, and that was that if the Alformant lamp was to become the accepted means of employing formic aldehyde in practice, it would be necessary to use a larger number of the paraform tablets than was recommended by the manufacturers. He had performed many experiments with the lamp, which he was now using in both of his districts, and he had found that 10 paraform tablets to each 1,000 cubic feet of space rarely killed even organisms of little resistance, although they might exert an inhibitory effect lasting several days, even when steps were taken to neutralise the formic aldehyde retained by the culture subsequent to exposure. His experiments pointed to the fact that 25 tablets should be used to every 1,000 cubic feet if disinfection was to be ensured in every case.

Dr. W. LESLIE MACKENZIE (Medical Officer of Health, Leith) stated that for over two and a-half years he had used the spray for disinfection, and that for over eighteen months he had used it in place of all other forms of disinfection of

rooms except washing. He had ceased to use gaseous disinfection, not because he considered it a thoroughly bad method, or because he questioned the positive results of such disinfection, but because he had found the spray more simple and more rapid. He had, by this method, disinfected about 750 houses, ranging from slums to detached villas. He had disinfected hospital wards—some after scarlet fever, then occupied by measles; others after measles, after small-pox, diphtheria, erysipelas, chicken-pox, typhoid, etc. He had applied the spray after all the ordinary infections, from confluent small-pox to mild chicken-pox. Never in a single instance had he found any case traceable to the disinfected room. He used the spray also to disinfect the fever ambulance and the infected clothing wagon, and, as the spray was easily applied in a few minutes, the vans could be disinfected after every time of use. The chief practical objection that at first caused him to delay the adoption of the spray for general disinfection was its possible effect on walls and wall papers. But, in all the 750 instances, although all sorts of walls and furniture—gilded, veneered, polished, etc.—had been saturated, he had never received a single complaint. He exhibited specimens of cheap and highly-coloured papers that had been pasted on boards and sprayed to saturation. None showed the slightest damage. The solution hitherto used was a solution of formalin, a little over 2 per cent., that is, 4 oz. of formalin (40 per cent. strength) to the gallon of water. He also showed goggles specially adapted to protect the eyes from the irritating effects of the formalin vapour. He invited the members present to examine both spray apparatus and papers.

REFERENCE.
[1] *Ann. de l'Inst. Pasteur*, vol. x, Nos. 5 and 9.

THE WATER SUPPLY OF VENICE.

By E. H. Van Someren, M.R.C.S., L.R.C.P.,
Venice.

"Venetian Cisterns."

There are in Venice three sources of water—a few springs, some private wells, and the aqueduct from the mainland. The springs and private wells are very few in number, but they have an historical interest which it is worth while to notice. The refugees from the mainland in the fifth and sixth centuries who first settled on this little group of islands, found here springs of water sufficient for their use. Some few of these were sweet, but the greater number were chalybeate, though quite palatable. As these settlers were joined by others, and increased in numbers, wealth, and importance, they spread their habitations over the adjacent lagoons by building dwellings on long piles driven into the mud. These new houses and palaces soon became inconveniently distant from the springs, and the inhabitants were forced to conserve the rain water.

One of Venice's many ingenious sons invented at this time cisterns for this purpose. They were called *Cisterne Veneziane*, and exist to this day, forming the private wells already mentioned (Figs. 1 and 2). They are also used by the water company.

A "Venetian cistern" consisted of a square pit, with sides gently sloping to the bottom, some 15 to 20 feet deep, sunk into the lagoon mud. This was first lined with tiles, which were imbricated upwards, then puddled with clay a metre in thickness, and finally bricked all round. The pit was filled up with sand, of exceedingly fine quality, procured from Malamocco, a few miles down the coast. The central well was sunk, and consisted of brick, the whole pit being then paved over with stone. At the four corners of the pit were placed marble gratings, which led the rain water into a little tunnel running round the four sides of the pit just below the paving, whence it filtered through the sand into the well. These cisterns were placed in all the public squares and places, and private individuals built them in the courtyards of their palaces. Some used marble throughout instead of bricks, and the well heads—or *pozzi*, as they were called—were richly sculptured.

This supply sufficed for some time, but in the sixteenth century another had to be found. The Government sought on the mainland, and of the several rivers flowing into the lagoons chose the Brenta. It was the nearest, but it received the drains of Padua and of many villages between Padua and the lagoon. The stream was partially diverted at its mouth, and was led off to small wharf, where, by pipes, it poured into barges and tank boats moored under them. These were then rowed over to Venice, five miles away, and the water pumped into the cisterns or dealt out to the people. This extraordinary state of affairs continued until the year 1879, when it was determined to divert the stream above Padua and bring it down by a canal to the mouth of the river at Moranzano. Here filter beds were constructed, and the water was forced by a turbine under the lagoon in a tube to reservoirs in Venice. The cisterns were cleaned, and many rebuilt.

This supply did not satisfy the municipality, and the Department of Hygiene investigated some springs at St.

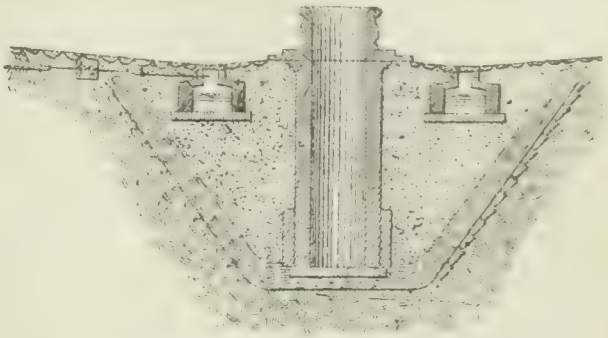


Fig. 1.—Sectional drawing of Venetian cistern, 1-300.

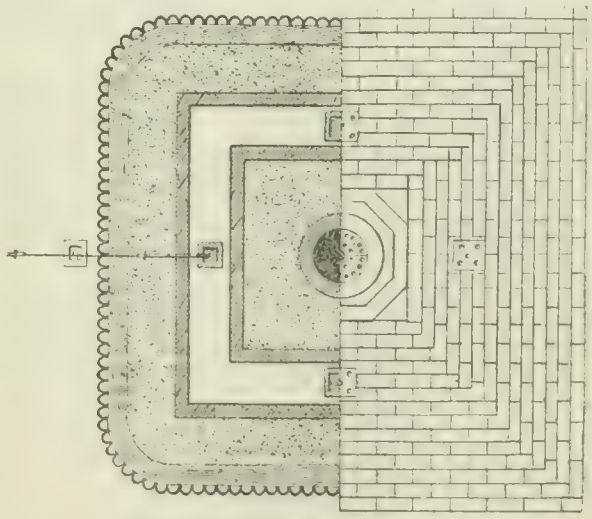


Fig. 2.—Plan of Venetian cistern, 1-300.

Ambrogio. Experiments were made which resulted in their adoption as the chief water supply of the town. This has been enjoyed since 1891.

The Modern Water Supply.

The springs of St. Ambrogio are 26 kilometres from Venice, about one-third of the distance along a line drawn to the north-west point of the Carnic Alps. Situated in the eastern portion of the northern Italian plain, at a height of 15 metres above the sea level, they seem to form the head waters of a small river called the Sile. All the springs lie conveniently massed together within the compass of a six-acre field. A country road runs diagonally through half the field. The road on each side has a deep wide ditch, and this ditch runs round the whole field, taking off the surface drainage.

The only dwelling actually on the field is the cottage of the engineer in charge, who keeps a few fowls, but no large stock. Three peasants' cottages are placed at varying distances round

the field, but it appeared to me a difficult matter that any pollution from these should reach the springs—first, on account of the geological position of the springs and the method of their conservation; and, secondly, for the reason that drainage was carefully led away from the field.

The terebration of the field from which the water springs is as follows: The layer of arable land—a soil of clay, sand, and vegetable matter—is 1.80 metre in thickness. This is followed by 4 metres of greyish yellow sand, and this by 3 metres of micaceous sand. Next there lies a layer of clay 2 metres in thickness, and under this the water-bearing stratum of sand and gravel, which is 9 metres in depth. Thus the water rises at least 11 metres through strata the nature of which tends almost entirely to exclude the passage of organic matter, and the depth of which entirely excludes the passage of micro-organisms.

The water-bearing stratum is tapped in the following manner: 300 cast-iron pipes, ranging from 3 to 10 centimetres in diameter, are sunk from 12 to 20 metres. The lower these pipes are sunk the greater is the pressure of water obtained. Each pipe empties superiorly into a rectangular receptacle made of impermeable cement, the dimensions of which are 0.75 × 0.35 × 0.60 metres. Each has two covers, one a tightly-fitting frame of wood and fine meshed wire; the external of zinc overlaps the edge of the receptacle, and admits air below the eaves thus formed. From these receptacles the water is lead by connecting tubes to a main which empties into what might be fitly called a "view chamber." This is a small brick building, the well of which is lined with cement. The well is some 10 × 3 × 1 metres. The water passes directly through it and out by the tube, which conveys it to Moranzano on the lagoon shore. The view chamber is built double to allow of cleansing when necessary. Each half is provided with two sluices, controlling the tubes of ingress and egress. Should it be necessary to close these the water would escape from the above-mentioned receptacles, and after flooding the field, would be carried away by the deep ditches surrounding it to the river Sile.

The tube from Sant' Ambrogio to Moranzano runs under ground except at three points, where it is siphoned over two canals and a river. It is 22 kilometres long, and is made in cement in lengths of 1 metre moulded round an iron wire frame; each piece is 0.80 metre in diameter. The frame projects at each end and receives the cement jointing. Every few kilometres a brick well, having a sluice and an overflow pipe, is sunk down to the tube. This arrangement allows of the tube being cleaned in sections, and of repairs being made when required.

At Moranzano the tube meets the tube under the lagoon. This is made of cast iron in pieces 4 metres long and 18 millimetres thick, the diameter being the same as that of the previous tube. Each piece has been subjected to a pressure of ten atmospheres. They are made so that each piece overlaps the following by 10 centimetres. The joint is bound round with stout cording, and melted lead poured over and beaten down flat all over it. The whole tube is covered with a layer of vegetable bitumen to prevent any action on the iron of the salt saturated lagoon mud in which it lies. Along the course of this tube 23 wells are sunk down to it; they are 1.50 metre in diameter, built well above high water mark, and kept hermetically sealed. The tube is 6,400 metres in length, and is supported on wooden trestles placed 12 metres apart, which are driven into the bed of the lagoon.

In Venice the tube ends in a T opening into the three divisions of the reservoir, each opening being provided with a sluice. The depth of the reservoir throughout is 5 metres, and the cubic capacity 10,000 metres. There is no intercommunication between the divisions.

This reservoir is built of brick on a base of concrete 3 metres in thickness, laid on piles of wood forced into the bed of the lagoon. The enormous pressure of water, the shifty elastic nature of the lagoon bed, and the fact that earthquake shocks are of frequent occurrence here, rendered it necessary to make the sides and groundwork of the building exceedingly strong, the former being strongly buttressed. Each division is lined with fine cement, and from each an aspiration tube takes the water to the pumping station, whence it is conveyed all over the city in cast-iron pipes.

As by far the major portion of the population are too poor to have the water laid on in their houses, the water company took over one hundred and twenty of the Venetian cisterns, had them cleaned, and some slightly modified, and supplied water to them. They are provided with chain pumps and kept closed. Lately they have been building continuously-running fountains, which are much simpler and safer, and do away with the filtering of the water through the sand, which occurs in the cisterns, and the mixing of the aqueduct supply with the rain water off the not too clean squares in which the cisterns are placed.

To all hotels and pensions, and to almost all the large private houses and palaces, there is a direct and constant supply of water. Cisterns such as we have in England do not exist.

Venice is a city which does not require nearly so much water as others of the same size and population—159,000. There are neither horses nor cattle, neither are there gardens of any importance, nor streets to be watered, washed, and kept clean. The drains are flushed out twice daily by the tide, which is higher here than in the rest of the Mediterranean, and in the neighbourhood of the reservoir they are flushed out with the overflow of the water from it.

The company guarantees to supply 36,000 cubic metres, 900,000 gallons, every twenty-four hours. This is practically more than enough to meet the needs of the city. There is no doubt that should necessity arise more could be easily supplied, as there are still springs at Sant' Ambrogio allowed to run waste, showing that the water bearing stratum has not been tapped to the full.

The physical properties of the water are those of spring water generally that comes from such a depth; clear and limpid, colourless, without odour, and very palatable. It is also delightfully cool, the temperature ranging with the season from 13.4° C. in summer to 12.8° C. in winter, (56.2° to 54.8° F.); the maximum and minimum are quoted.

A weekly analysis of the water at the reservoir is made, and the following figures are taken from the annual report on the water supply made by the Department of Hygiene to the Municipality. The first is a series of bacteriological experiments, and the second is the chemical analysis:

BACTERIOLOGICAL EXAMINATIONS.

(1) 1 c.cm. of the company's water was taken and diluted first with 15 c.cm. slightly alkaline nutritive gelatine, to which was added 200 c.cm. of the same. It was then placed into 25 glass culture plates and put under glass bell jars.

(2) 1 c.cm. of water mixed, at necessary temperature, with agar-agar, and also divided among 25 culture plates.

(3) 1 c.cm. of water with nutritive gelatine, as in (1), but placed in 50 test tubes closed with sterilised cotton plugs.

(4) 1 c.cm. of water with agar-agar in test tubes closed as in (3).

(5) 1 c.cm. of water in beef tea, divided into 50 parts in test tubes closed with sterilised cotton plugs.

(6) 1 c.cm. of water with 100 g. of nutritive gelatine placed in 10 test tubes.

(7) 1 c.cm. of water with 200 g. of beef tea placed in 10 "Pasteur retorts."

At the end of eight days the gelatine, and of eleven days the agar-agar culture plates showed a few superficial colonies with all the characteristics of the common micro-organisms present in the air. At the end of thirty days all the experiments with gelatine, agar-agar, beef-tea in the test tubes closed with sterilised cotton plugs, showed no signs of culture of any kind.

CHEMICAL ANALYSIS.

In 100,000 parts of water:—

	Grammes
Sodium chloride	0.272
Sodium carbonate	0.103
Calcium sulphate	1.996
Calcium nitrate	0.295
Calcium carbonate	11.989
Magnesium carbonate	6.730
Silica	0.760
	22.145

Carbonic acid (free) and partly combined ... g. 10.485

Amount of air dissolved in one litre of water at 0 and 760 mm. { Oxygen, c.c. 8.20 ; Nitrogen, ,, 15.89

Organic material nitrous acid, ammonia, iodine, hydrogen disulphide—absent.

	French degrees
Total hardness	12.18
Temporary hardness	11.27
Permanent hardness	0.91

In conclusion, I should like to express my thanks to Commendatore Memmo, Secretary General of the Municipality, and to Dr. Fano, Director of the Department of Hygiene of Venice, for their courtesy and kindness in helping me with data, all of which, however, were confirmed by personal observation.

MEDICAL NOTES IN PARLIAMENT.

[From Our Lobby Correspondents.]

The Habitual Inebriates Bill had rather a stormy greeting in the House of Lords last week, when on Thursday the Earl of Wemyss wanted to have it recommitted for the purpose of limiting its operation to persons convicted of crime. Lord Wemyss speaks for the Liberty and Property Defence League, and is a vigorous hater of paternal legislation. The Bill was just the sort of thing which, in his opinion, marks the degeneracy of the age, and so he lifted up his voice against it and its authors. The Lord Chancellor treated the matter gently, talked of Jane Cakebread, and so effectually soothed the threatened opposition that the Bill went prosperously through its stages on its way to receive the Royal assent.

The Vaccination Bill has, after all, proved the most contentious and exciting measure of the session. The wonderfully quiet second reading which we recorded last week was only the calm before the storm in the House of Lords. To those present on the occasion there was an ominous quiet in the manner in which the Bill was received, and at Thursday's sitting the storm burst. Lord Ailesbury first proposed to postpone the Bill, and on that line opened the attack. This gave Lord Lister an opportunity of making a valuable contribution to the subject. He did not, as many expected, show himself simply a partisan of the law as it stands, but admitted that the "conscience clause" might possibly really lead to more, instead of less, vaccination being performed. But he also expressed the hope that the passage of the Bill with this clause in it opened the door to compulsory revaccination. He was able to tell the House that he had good grounds for believing that the Government would introduce a Bill for this purpose next session. That reconciled him to the measure which he characterised as a "tremendous experiment." After this the motion for postponement was withdrawn, and the Bill went into Committee, when the storm of opposition was redoubled. As the son (Mr. Duncombe) had led the fight against the Bill in the Commons, so the father (Lord Feversham) led it in the Lords. He moved to strike out the objectionable Clause 2, and attacked "the conscientious objector." To his aid came other noble lords, and among others a new peer, Lord Aldenham, whose son Mr. Vicary Gibbs had also taken the same line in the Commons. Other peers followed, whose experience in the Colonies and India led them to regard the British citizen as a more "drillable" being than Mr. Balfour had declared him to be in the other House. Finally, Lord Salisbury defended the Bill, and in a very forcible speech put the case for the Bill and the conscience clause in a piece of closely reasoned and tersely expressed argument which has seldom been equalled. It was of no avail, however, for on a division the Government were beaten by 40 to 38. History was repeating itself, and the majority of one which rejected the Commons recommendation in 1871 to abolish repeated penalties became two in 1898 to reject the conscience clause. So the Bill, with the clause struck out, was bundled back to the Commons, and after midnight on Friday was there considered. The scene in the House of Commons was one of the most remarkable which has been witnessed for many years. Mr. Chaplin, as the Minister in charge of the Bill, moved to disagree with the action of the Lords as regards the conscience clause. Then the rebels on the Government side delivered their assault. It was strong and vigorous, and soon brought Mr. Chaplin to his legs. He stood at the table with his back to the box, fighting, like a stag at bay, the attack of his own party. It was a scene of great excitement, and the House enjoyed it mightily. Finally, Sir William Harcourt referred to the myth of Actæon, and said he had always sympathised with that sportsman as he did now with the President of the Local Government Board. Soon after the division was taken, and the Commons refused to allow the Lords to strike out the clause by 129 to 34. So the Bill was sent back to the Upper House, and remained suspended like Mahomet's coffin till the Lords met on Monday afternoon. In the meantime all sorts of rumours were afloat, but the Government never wavered in their intention to pass the Bill. Its rejection or withdrawal would, in their opinion, have done infinite mischief to vaccination, and so they were bound to insist on passing the measure. The scene of the previous Thursday was repeated in the Lords on Monday. Peer after peer on the Government side attacked the Government and urged the withdrawal of the Bill. Lord Salisbury again defended it in a most trenchant and earnest speech, and on a division the Lords agreed to accept the Bill, conscience clause and all, by 55 to 45. So ends the most remarkable struggle of this session, and one of the most memorable incidents in the history of vaccination legislation. We print below the authentic text of Lord Lister's speech, together with a brief chronological summary of the other proceedings:—

On Thursday, August 4th, on the order for going into Committee, the Marquis of Ailesbury moved that the House do resolve itself into the said Committee this day three months. He objected to abrogating the work of Jenner at the bidding of a few faddists when all the nations of the world were following his teaching. He further objected to the Bill that it contained no allusion to revaccination.

Lord Lister said: Happily it is not necessary to advocate the cause of vaccination. The great majority of the members of the House of Commons—and, I trust, every member of your lordships' House—are aware of the enormous benefits which vaccination confers. The only question is, What are the best means of promoting vaccination in the country? It is to be observed that if the amendment to omit the clause is passed, the result will not be the passing of the Bill without the clause objected to. The Bill will inevitably be sent back to us from the Commons with that clause reintroduced, and the consequence will be that the Bill will be thrown out for the session. Not only so, but I am given to understand that if this Bill, which is framed very much on the lines of the report of the Royal Commission, is thrown out this year, it is not likely that the Government will introduce another Bill next session dealing with the subject, and very probably not in the year after, nor perhaps for many years to come. Therefore, what we have to consider is whether it is better for us to pass this Bill in the form in which it is sent to us from the Commons, or be content to let the subject of the administration of the vaccination laws remain in the position in which it is. After giving the subject the best consideration in my power, my impression is that it would be better to pass the Bill as it is sent to us than to have no Bill at all. If, after the long labours of the Commission, and the endeavours of the Government, nothing whatever were done by Parliament in regard to vaccination, I think the result would be to cast discredit upon the whole subject. It is not as if the present compulsory system were working well. The appalling fact is that at the present time about one-third of all the infants born in England and Wales are at present not vaccinated. It is also true that nearly one-quarter of all the guardians throughout the country fail to put the vaccination laws into operation. This is a highly unsatisfactory state of things, and it is undoubtedly the result of the antivaccination crusade. The antivaccinator has two weapons. One of these is the supposed possible dangers of vaccination, and the other is the martyrdom which it is thought is endured by persons who are subjected to fines and imprisonment for disobeying a law which, rightly or wrongly, they believe subjects their children to danger. Now, as regards the former of these weapons—the supposed dangers of vaccination—the glycerinated calf lymph will remove it. With arm-to-arm vaccination the danger does exist—though a very, very remote one—of introducing into a child the terrible contamination of syphilis. Now this danger is absolutely done away with by the use of calf lymph, since syphilis cannot occur in the calf. Then the introduction of tubercle by vaccination is equally prevented by the use of the new lymph. Tubercle can, indeed, affect the cow, and, though very rarely, the calf; but it has been found that if tubercle bacilli are actually mingled with the glycerinated lymph, in the course of a time far short of that at which the lymph would be issued for use the bacilli have lost their vitality. There remains the possible danger of communicating erysipelas. This cannot be done by the lymph as such, for the microbes which are the essence of erysipelas are as effectually disposed of by the glycerine as are the microbes of tubercle. But there is the possibility of the communication of erysipelas to the incisions made in vaccinating, just as there is the possibility of communicating it to any scratch or sore in a human being. That is a possibility, and it would undoubtedly be diminished by having the children vaccinated at home, as is proposed in this Bill, instead of having them crowded together at the vaccination stations. But I trust that before very long any possibility of the communication of erysipelas by subsequent contamination will be done away with. The medical officers of the Local Government Board have now under consideration what would be the best, simplest, and most effectual means of using antiseptic measures for the treatment of the scratches—measures which will be simple and efficacious from the antiseptic point of view, and

on the other hand, not interfering with the efficacy of the lymph. I feel certain that the thing can be done. In the medical journals papers have been published by gentlemen who show that they have used antiseptic measures with perfect success in regard to vaccination. When this is accomplished there will be absolutely no objection to the vaccination of children on the ground of possible danger. But the conviction of the absolute safety of the process will take a long time to establish itself in the country. At the present time there is a deep-rooted idea, derived from the propaganda of the antivaccinationists, that serious danger exists; and it will take a long time before that idea is dissipated. The second weapon of the antivaccinationist — namely the martyrdom of the honest objector — would, of course, be struck out of his hand at one stroke by the present Bill. It has been said that this conscience clause introduces a new and dangerous principle into our legislation. It may be so; but when I see that such a conscience clause was unanimously recommended by the eminent men who constituted the Royal Commission, including so distinguished a lawyer as Lord Herschell, I feel that I am free to consider this proposal on its merits otherwise. What is likely to be the effect of the Bill if passed into law? On this point we find the utmost discordance of opinion among medical men themselves. Some feel sure that the result will be an enormous diminution of vaccination throughout the country, and a consequent increase of small-pox. Other men of high position and large experience in sanitary matters are equally confident that the Bill would greatly increase the amount of vaccination. As to which of these opinions is really correct, I confess that I am hardly prepared to give an opinion. Those who hope good from the passing of the Bill think that when the conscientious objector has been so amply provided for, the guardians who now object to enforce the vaccination law will not hesitate to prosecute persons who, from mere idleness, and without any real objections, neglect to have their children vaccinated. That this hope is not altogether without foundation we have a good illustration in a letter which appeared in the *Times* the day before yesterday from Sir Walter Foster. I will read to the House an extract from this letter—

"In 1897 the Barton Regis Board of Guardians, in face of difficulties in enforcing the vaccination laws, adopted (of course, without legal sanction) the recommendation of the Royal Commission. They informed the parents who had not submitted their children for vaccination that they (the guardians) would not proceed against them for default if a declaration of conscientious objection was made before a magistrate. In the Barton Regis Union in the last half of 1897 there was a population of over 200,000, and the number of births was 2,944. The defaulting parents were 350, and and the actual number of declarations 130. Major Rumsey, the ex-chairman of the Board, writes me—

'The number of declarations, 130, bore about the same proportion to the defaulters as the prosecutions under the Vaccination Acts did prior to the form of statutory declaration being adopted. The Barton Regis guardians (44) were nearly equally divided in opinion upon the vaccination question, but from the time of the adoption of the declaration the antivaccinationists offered no objection to the prosecution of those who did not furnish a declaration, and a most disturbing element to the harmonious working of the Board was removed. I may add that, had not the statutory declaration been adopted, a resolution would have been passed refusing to order prosecutions, and so the whole 350 would have escaped vaccination in place of the 130 referred to, the remaining 220 having no objection to vaccination, but being simply negligent or careless, and requiring pressure.'

In other words, the announcement of the remission of penalties for those who made a declaration of conscientious objection, together with the threat of their enforcement for others, induced nearly two-thirds of the whole number of defaulting parents to submit their children to vaccination. So far as one case can go, this seems to me most encouraging. It is to be observed that this Bill by no means entirely does away with compulsion, though it is commonly spoken of as if it did so. Those parents who refuse to make a declaration of conscientious objection before the magistrate may be fined or imprisoned as under the existing law for not having their children vaccinated; but beyond that the fact that the parent is obliged to appear before the justices is a mild form of compulsion. It gives the parent trouble, and it will be a question with him whether it is more trouble to go before the magistrates or to have his child vaccinated under the very much less troublesome form provided under this Bill—namely, having it done by the vaccinator at the man's own house. If it turns out that the [illegible] are not so satisfactory, as regards the behaviour of the guardians, as may be hoped, it would be very easy by a simple Bill to arrange that the administration of the vaccination laws should be transferred from the guardians to the sanitary authorities, or, at any rate, to arrange that the vaccination officers should have the expenses of prosecution, which are now refused by the guardians, paid to them either through compulsion of the guardians or by the State. Therefore I must confess that I am disposed to be hopeful as regards the effect the Bill in its present form is likely to have. But there is one serious omission from the Bill, and that is that it neglects to deal with revaccination. It is a matter of bitter disappointment to the medical profession of this country that revaccination is not dealt with by the Bill. The immense value of revaccination has been shown by the splendid results obtained from it in Germany, in the army, and more recently throughout the population. The value of revaccination is also indicated by the figures quoted by the Commission as to its effects in diminishing death from small-pox in our army and navy and postal service. The immunity of nurses in our small-pox hospitals, who are always revaccinated before admission as nurses, is another most striking proof of the efficacy of revaccination. The Royal College of Physicians have lately made the following declaration:

"The Royal College of Physicians, having learnt that certain changes are likely to be made in the laws relating to vaccination, think it their duty to reiterate their conviction that vaccination, properly performed and duly repeated, is the only known preventive of small-pox."

In the *Times* this morning there is published a declaration of the Royal College of Surgeons, in which the following passage occurs:

"We are, moreover, firmly convinced that revaccination is an additional safeguard, and should be univerally practised."

It is true that several members of the Commission considered that compulsory revaccination was so surrounded with difficulties that they were not able to recommend it. But two of the most influential members of the Commission, Sir William Guyer Hunter and Mr. Jonathan Hutchinson, thought that in spite of those difficulties revaccination ought to be made compulsory. And those Commissioners who were of the opposite opinion made this significant declaration:

"Again, it is impossible to leave out of sight the effect that such an extension of the present compulsory law might have in intensifying hostility where it at present exists, and even in extending its area, though, if our recommendations, especially that which exempts from penalty those who honestly object to the practice, were adopted, this objection would be much diminished."

In the present temper of the House of Commons and of the country, it would indeed be hopeless to attempt to introduce compulsory revaccination on the lines on which infant vaccination is now compulsory. But the conscience clause of the present Bill opens the door for very valuable legislation on this subject. It could be arranged, with a little assistance from the Education Department, that every master or mistress of a school where children of the age of 10 attend, should keep a list of the names and addresses of those who had reached that age. Then the vaccinator could look in from time to time, at whatever periods it might be thought desirable, to see from the mere inspection of the arms of the children which of them had not been recently vaccinated, and the parents of these would be dealt with as this Bill proposes to deal with parents who have neglected to have their infants vaccinated, including the offer of doing the operation at home. This would ensure the revaccination of the vast bulk of the population, except the children of the so-called conscientious objectors who, under the new system, would, I believe, be a rapidly diminishing quantity. Another effect of this arrangement would be that many children who had not been vaccinated in infancy would be dealt with at the age of 10. Personally, I should like if the Bill could be withdrawn this year and brought in again next year with this question of revaccination attended to, and also some other matters which the Commission recommended, but which are not dealt with in this Bill. But I fear that is a hopeless suggestion. However as regards revaccination, the members of the Government who have been approached on the subject have given us good reason to hope that a Bill dealing with revaccination may be brought in next session. Such a Bill would, I think, be sure to pass the House of Commons, the great majority of which, however they may differ on other questions, are at one as regards the importance of revaccination. The medical members of Parliament are certainly at one on this point. The Bill would therefore readily pass, and by introducing it the Government would do untold benefit to the community. The confident hope that the Government will see their way to take this course next session makes me the more readily acquiesce in what I confess is a tremendous experiment.

After Lord Harris had stated that the Government were prepared to consider during the recess whether it would not be possible to bring in a Bill next session with the object of encouraging revaccination, Lord Ailesbury's amendment was negatived.

The House then went into Committee on the Bill. The Earl of Feversham on Clause 2 (exemption from penalties) said that the Bill was a leap in the dark, and maintained that under this clause there was no security that any child in the country would be vaccinated. He moved the omission of the clause. This was supported by Lord Aldenham, Lord Stanmore, and Lord Loch. The Marquis of Salisbury said there was no difference of opinion in the House upon the extreme value of vaccination. The difference was as to the best way of procuring vaccination. He feared that if the clause was struck out the result would be that the exasperation against compulsory vaccination would go on increasing. The amendment was, however, carried, the clause being struck out of the Bill by 40 votes to 38. Other clauses were agreed to, and on Friday, August 5th, the Bill was read a third time and passed.

When the Bill went down to the House of Commons, Mr. Chaplin moved to disagree with the Lords' amendment striking Clause 2 (exemption from penalties) out of the Bill, and the motion was agreed to on a division by 190 to 74.

On Monday, August 8th, a further debate took place in the House of Lords, and finally it was agreed by a majority of 10 in a House of 100 not to insist on the amendment striking out Clause 2. The clause thus remains part of the Bill.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 13TH, 1898.

THE VACCINATION ACT, 1898.

We print in this number of the Journal a full report of the interesting discussion which took place in the Section of State Medicine during the Edinburgh meeting, and we would commend its perusal to all who believe that the matter cannot be allowed to rest in the unsatisfactory position into which it has been brought by the Bill which has just completed its stormy passage through Parliament.

The official announcement by Lord Harris that the new Vaccination Act will in all likelihood be followed next year by a Revaccination Bill is the only thing which can reconcile the medical profession to the measure. If the decision on which this announcement is based had been arrived at sooner, and if the promise contained in the announcement itself had been more definite and binding, the indignation which has been felt and expressed by medical men with regard to the Bill of this session might have been less. No doubt, however, the unanimity of the profession, and even the threatening attitude of the Lords, may have had a causal relationship to the practical promise of a Revaccination Bill, but that such a Bill is promised at all is so far satisfactory as to make it unnecessary and ungracious to inquire too closely into the reasons which have led the Government to contemplate a step so important in the interests of the public health. When the measure does come before Parliament it will be the duty of the medical profession to give careful consideration to its provisions, and to help to make it a really useful and effective piece of legislation.

The resolution adopted by the Section of State Medicine and transmitted by the President of Council to Mr. Chaplin recommended the Government to drop the Bill, and there can be no doubt that this reflects the opinion of a large proportion of the medical profession. The question in its practical bearings was ably discussed by Lord Lister in his speech in the House of Lords. We print in another column (page 429) the authentic text of this valuable contribution to the controversy, and all will agree with the concluding words of the speech that the country is about to undertake "a tremendous experiment."

The experiment can only be justified by success, for it amounts to the establishment for five years of optional infantile vaccination without, at present at least, the safeguard of State-provided revaccination, which would have rendered such an experiment much less risky.

Starting with the fact that at present nearly one-third of all children born in England and Wales escape vaccination in infancy, it would be perhaps too sanguine to hope that any great diminution will occur in this large percentage of default. What the exact result will be must however depend to a large extent on the action of the Boards of Guardians throughout the country. Many of them have been calling for a conscience clause, and their manifest duty now is to resume heartily and in good faith that administration of the Vaccination Acts which has been so entirely in abeyance in many districts.

It is only to be expected that the Antivaccination League will do its utmost to induce Boards of Guardians not to carry out the new Act, but it is to be hoped that the great majority of Boards will pay little heed to its appeals. In places like Leicester and Keighley, however, which pride themselves on their antivaccination, there may still be an effort to make it unnecessary for parents either to get their children vaccinated or to appear in court to assert their objections to the operation. In such places we presume Mr. Chaplin will meet with his greatest difficulties, and with regard to them he may have to bring into judicious exercise those powers of direct action which it seems have long been at the disposal of the Local Government Board. Had he been in a position to operate through some other person than the vaccination officer, appointed and paid locally, the duty which he proposes to himself would have been easier of performance, but as he has not chosen to make in the new Act any provision for a public prosecutor, it is to be feared that the setting in motion of the local vaccination officer as a servant of the central authority will raise new difficulties and fresh opposition.

While working for a Revaccination Act, it will be the duty of the medical profession to do its best for infantile vaccination under the new law. Under the old Act medical men were frequently appealed to by timid parents, ignorant of the dangers of smallpox, to make only one or two insertions of lymph instead of three or four. Whatever salve a practitioner may have been able to apply to his conscience in the past for occasionally yielding to such solicitations, he can have no excuse in the future. In the past, where the Vaccination Acts were enforced, the choice was between some sort of vaccination with its accompanying certificate on the one hand, and a penalty on the other hand. Now, however, a hesitating parent may go to a law court and get relief. In all cases, therefore, the profession must now maintain a firm attitude, and parents must be told that if they do not choose to let their children be thoroughly well vaccinated they cannot have them vaccinated at all, but must accept the other alternative, of a visit to the petty sessions, for the purpose of declaring their objections. It is one of the many defects in the new Act that no new form of certificate is prescribed, stating the exact number and area of vaccination marks, and it is another and a worse defect that only public vaccinators are to be paid for filling up certificates. Notwithstanding these serious flaws, the choice offered to parents by the private practitioner as well as by the public vaccinator should in the future be —thorough vaccination or no vaccination. That is one direction in which a distinct benefit may result from this defective piece of legislation. But the greatest benefit will be the promised Revaccination Act.

DIET IN HYPERACIDITY.

MANY efforts have been made recently to throw light upon various stomach diseases by an investigation into gastric chemistry. The main object of these researches has been to evolve through a better understanding of the diseases themselves a more satisfactory and rational treatment, both dietetic and other. It is only too patent that the labelling of a case as dyspepsia only brings one to the threshold of the inquiry, as this term should signify nothing more than a symptom complex caused by gastric disease. It is equally clear that the treatment, dietetic or other, must be haphazard if the efficiency with which the stomach discharges its functions in the case in question is unknown. Notwithstanding this, the methods of investigating gastric chemistry have found little favour in this country, and therefore it is more than probable that cases of hyperacidity are passed by unnoticed. Almost *pari passu* with the above-named researches, and in some sense dependent upon them, much investigation has been made into the general metabolism of the body. By ascertaining the input, and carefully comparing it with the output, it becomes possible to find out to what extent the various constituents of the food are utilised by the body. To such an extent has this subject been advanced, that in not a few clinics abroad the investigation of metabolism is looked upon as almost a routine necessity in certain cases.

At any rate it is obvious that if the functions of the stomach both secretory and motor be known, and the methods of treatment dietetic and other be carefully controlled by an investigation into the metabolism of the body, some valuable information should be forthcoming. H. Strauss and L. Aldor[1] have made such a research in regard to diet in hyperacidity due to the excess of free hydrochloric acid. There has been a difference of opinion among authorities upon the question of diet in hyperchlorhydria. Some have thought that a diet chiefly nitrogenous was indicated, but on the other hand this diet irritates the stomach and should thus aggravate the disease. Other well-known physicians have even advocated the presence of a considerable amount of carbohydrates in the dietary. Against this view must be placed the fact that a relatively rich deposit of starchy material is found in the contents of the stomach obtained after the test meal given to those suffering from hyperacidity. Strauss and Aldor believe that the problem is to be solved by reducing the carbohydrates, while at the same time providing a sufficiency of substances free from nitrogen. The replacement of ordinary starchy food stuffs by those in solution will not satisfy the requirements. The damage done to the total metabolism in hyperacidity is well recognised and is evidenced by the deficient nutrition of such patients.

The authors maintain that the desired end may be attained by introducing an abundant amount of fat into the diet. Dr. Strauss undertook a series of investigations upon patients suffering from various stomach affections, by which he was able to show that in the majority of cases the addition of a certain amount of oil to the dietary was followed by a diminution both in the total acidity as well as in the acidity due to free hydrochloric acid. It has been stated that fat impairs the motor functions and absorptive powers of the stomach, but even if this were to some extent correct, the patient is nevertheless thus provided with a quantity of combustible material which is only otherwise supplied with much difficulty. Having thus satisfied themselves on these points, the authors proceeded to test how far it would be possible to substitute fat for carbohydrates, and at the same time to maintain a rational mixture of nitrogenous and non-nitrogenous food stuffs. They made five investigation into 4 cases of hyperchlorhydria. The observations extended over five to eight days, during which period abundant fatty matters (125.5 g. in two and nearly 160 g. in three investigations) were added to the dietary, and the metabolism was most minutely investigated.

The subjective condition of the patients, as well as the functions of the stomach, were also carefully noted. The tables appended in Strauss and Aldor's article show that the utilisation of both fatty and nitrogenous matters was extremely good. The patient's weight remained constant, or increased. The use of abundant fatty matters produced no unpleasant effects, for only in one case were there any dyspeptic symptoms, and these were very fleeting. The authors claim to have established the fact that in gastric hyperacidity there is a considerable toleration of fatty matters, and that if it is desired to improve the patient's nutrition fats must occupy a considerable place in the diet sheet. The fat used was obtained from milk, butter, cream, and oil; cream is especially to be recommended. A portion of the carbohydrates required should be supplied in a state of solution, but on the other hand attention is drawn to the fact proved by Strauss himself that oatmeal soup very quickly leaves the stomach of those suffering from considerable motor insufficiency both when the secretion of hydrochloric acid is normal and when it is increased.

The subject is obviously one which deserves considerable attention, and if the investigations of Drs. Strauss and Aldor, most carefully devised and carried out, are confirmed by more extended clinical trials, these authors will have advanced our knowledge of the dietetic treatment of disease, and will further have shown the value of scientific research applied to the treatment of disease.

[1] *Zeitschrift für diätetische und physikalische Therapie*, Bd. 1, Hf. 2, S. 117.

MEDICAL STUDENTS AND MIDWIFERY.

IT is not very surprising that Mr. Arthur O'Connor should have sought by a question in the House of Commons to get a definite statement as to the attitude of the General Medical Council with regard to the attendance of medical students on midwifery cases, for there is no doubt that many practitioners have felt that there was a certain conflict between the notice issued in consequence of the Council's resolution of November 24th, 1897, and the practice at medical schools of requiring medical students to attend women in labour in their own homes. Mr. O'Connor asked the Home Secretary whether, when a woman who applied to "one or other of the general hospitals in London for a doctor to attend her in her confinement," a student was frequently sent who had little or no experience, or might even never have been to a case before, no intimation being "given to the patient that the person sent is not a fully qualified medical practitioner." Mr. Jesse Collings, who evidently knew nothing about the matter, promised to obtain the desired information from the General Medical Council. Mr. O'Connor further asked that the Home Sec-

retary should at the same time inquire whether there were not members of the Council who were themselves medical officers attached to some of the hospitals from which "these unqualified persons" were sometimes sent out, and whether the General Medical Council was in a position to enforce the same rules for all parties, since it had "prohibited the employment by private practitioners of assistants who, although they had taken out a full course of midwifery training, had not taken out a degree in medicine, surgery, and midwifery." We shall not anticipate the answer of the General Medical Council, but we may observe that the poor women who go to the outdoor maternity departments of general hospitals to secure attendance in their confinements are probably all perfectly well aware that they will be attended by students, although they anticipate, rightly, that should anything go wrong they will have the advantage of more skilled attendance. If it be true, as Mr. O'Connor suggested, that students are sometimes sent alone to attend a case of midwifery without ever having seen one before, the practice ought not to continue, but we were under the impression that this was never done, and that the student, at his first case at least, was always accompanied by an obstetric officer.

THE ROYAL ARMY MEDICAL CORPS.

We understand that at the recent examination for commissions in the Royal Army Medical Corps there were 37 candidates for the 39 places. Though some disappointment may be felt that the competition was not better, the numerical result is, on the whole, not unsatisfactory, looking to the short interval between the publication of the warrant constituting the corps and the date of the examination, and having regard also to the unusually large number of commissions offered. From the official announcement in another column it will be seen that the substantive ranks of the officers on the retired list liable to be recalled to service, and of those retired officers who have been or shall be in military employment on or after June 23rd, 1898, have now been defined in accordance with corps titles.

THE FRENCH TUBERCULOSIS CONGRESS.

The fourth meeting of this Congress opened on July 7th in the great amphitheatre of the École de Médecine of Paris, under the presidency of Professor Nocard, of Alfort. Among those present were Professor Brouardel, Dean of the Medical Faculty; Professors Bouchard, Potain, Grancher, Arloing, Landouzy, Chauveau, Metchnikoff, and Cornil, together with many distinguished delegates of foreign countries, including Professors Schrötter, Weichselbaum, Perroncito, Maragliano, Denys (Louvain), Bang (Copenhagen), and others. A summary of the scientific proceedings will be found in this week's Epitome. Before the formal opening meeting the members of the Congress paid a visit to the Boucicaut Hospital to hear an address by Dr. Ribard on Crymotherapy or treatment by the application of intense cold (*κρυμός*, cold). This method, which is intended to be a stimulant to the appetite, is carried out as follows: A packet of cotton wool containing 2 kilogrammes of "carbonic snow" is applied to the epigastrium and over the hepatic region, where it is kept for about half an hour before the two principal meals. The temperature of the snow is − 83°, but on the skin it should not be lower than + 5°; this is obtained by adding cotton wool in greater or less quantity. Ribard explains the action of cold upon the appetite provisionally as follows: As the Roentgen rays pass with greater difficulty through the heart, the liver, and the bones, so it may be assumed that heat rays pass through certain organs—for example, the liver—with difficulty. Hence intense refrigeration causes a reaction of the organism, and excites the sense of appetite as the expression of a demand for the food necessary to supply the heat which has been abstracted. Cold also further acts as a tonic. From the clinical point of view, the method is stated to be successful, and is believed to have been the means of increasing the weight in a number of cases. In particular it has been used by M. Letulle in a number of cases of tuberculosis, with results better than have been obtained by any other treatment. In a period varying from two to five days appetite was restored, so that "forced feeding" became possible. The arrangements of the Boucicaut Hospital itself were inspected with great interest by the visitors; it is intended to be a realisation as far as possible of the idea of medical antisepsis, and it is excellently adapted for the purposes of a sanatorium. Speaking of the hospital provision for tuberculous patients in Paris, M. Letulle said that at present only two hospitals—Boucicaut and Lariboisière—had isolated wards for cases of consumption. His service in the Boucicaut Hospital has accommodation for 35 patients; as he has been in charge for only eight months, his statistics are as yet somewhat scanty, but, as far as they go, they showed good results. Of 125 cases treated during that time 38 have died, in 60 the condition has remained stationary, and there has been decided improvement in 27; in this last category were included only cases in which an increase of weight of 2 to 10 kilogrammes has been obtained. It was stated that, deducting patients admitted in a dying state, one-third of the cases improved. In these wards the open-air treatment in all its details, as far as can be done in a hospital situated in Paris, is carried out. M. A. J. Martin gave an encouraging account of the disinfection of dwellings tenanted by tuberculous patients in Paris; the number of cases in which this had been accomplished, which in 1892 was only 4,000, rose to 7,000 in the first six months of 1898, and there was every prospect that this figure would be largely exceeded in the second half of the year, as public authorities were beginning to be awakened to the necessity of prophylaxis, and the municipal council had decided to carry out strict preventive measures in one *arrondissement* by way of experiment.

"HOW TO TREAT AN INJURED KNEE."

The statements and opinions of newspaper scribes on medical matters are generally more amusing than edifying. Among them, however, *il y a des degrés*, as the French judge unkindly hinted to the elder Dumas in regard to dramatic authors. Among all the writers in the lay press who profess to throw light on the mysteries of medicine there is none whose utterances more tend to laughter than those of the Paris correspondent of *Truth*. They are made all the more comic by the air of condescending omniscience with which they are delivered; "Sir Oracle" himself would have seemed diffident beside this clever lady. The recent accident of the Prince of Wales gave her an opportunity of which she did not fail to avail herself. She informs the world that last winter and spring she herself suffered severely from a knee accident. *Haud inexperta malorum*, therefore, she feels as if she could, from what she experienced, almost set up as a knee-doctor. In default of this she kindly places her own gained knowledge at the service of fellow sufferers. "Have the doctors in attendance on the Prince," she asks, "examined the extensor muscle? If so, have they found it degenerate?" It is conceivable that they might have a delicacy about giving a public answer to this question. But the Paris correspondent of *Truth* has no such scruples. The occasion calls for plain language, and accordingly she goes on to say: "The Prince is stout. This is a source of muscular weakness and likely to affect the extensor. When this muscle is weak we are very liable to fall and to hurt the knee." The more flesh the more frailty, as Falstaff says; and if even the just man falls seven times a day, it must be difficult indeed for the fat man to keep from falling. But let him not fancy that he can secure himself by reducing his bulk. Let us hear the words of

Truth, if not wisdom: "To try to reduce the Prince's flesh would be very bad. Veins and arteries have adapted themselves to the adipose tissue, which presses round them like sawdust round wine bottles. It keeps the veins from swelling and the arteries well in their place. A fat person growing suddenly thin and at all subject to rheumatism or gout suffers fearfully from the blood vessels in the legs. The synovial membrane is irritated and becomes too active, swelling the knees and thickening their tissues. The circulation is impeded. One feels as if one's limbs were a ton weight." There we have the whole pathology of "injury to the knee-joint" in a nutshell. But even with all these formidable complications one need not despair. There is balm in Gilead and there is counsel in *Truth*. "There should be no massage of the knee itself when the time for massage comes, but of the muscles above and round it. In becoming braced and fuller, they will absorb the extragavased (*sic*) blood, and all that abnormally thickens membranes. One of the most soothing applications is St. Amand mud, as hot as it can be borne." Light is also vouchsafed us on the question of diet: "The best thing for the circulation is coffee. The Prince has been troubled with varicose veins. He ought to take, fasting, a cup of black coffee when he wakes in the morning, and half an hour after a bowl of boiled milk as hot as he can drink it. Hot milk is not stodgy, like cold, and leaves an appetite. The meat luncheon should be greatly reduced. If he could do with more hot milk and eggs only, it would be better. The best drink ——" but here we seem to come on the trail of the advertiser, and we leave the reader to fill up the blank with his favourite beverage. Moral treatment is not neglected. Our monitor sometimes fancies "they are too anxious to provide the Prince with *distractions*." This, we gather, is all wrong. "Quiet, restful cheerfulness is good; but a course of amusements very bad. The effort of following a play by telephone must use up nervous force. Recollect that moral force gives vital force. How can one have it unless one falls back completely on oneself?" How indeed? Certainly not by reading the medical lucubrations of *Truth*, an amusement which must use up an amount of nervous force that few of us could spare.

FLEAS.

It is a rather curious circumstance that the flea indigenous in most civilised countries, and so ready to invade any house in Europe which is not kept scrupulously clean, does not seem to flourish in Central Africa. The larva of the flea must have for its development a dry place, and can then support life on any casual animal or vegetable refuse. It is now said, however, that the flea is becoming established in Central Africa, and Dr. Baumann is given as authority for the statement that several villages on the shores of Lake Victoria had been deserted in 1892 owing to a plague of fleas. Dr. R. A. Freeman, in his *Travels and Life in Ashanti and Jaman*, recently published, relates a curious example of the way in which the flea can multiply in Africa and the relative ease with which it may be exterminated. During a visit to Bontuku in 1888, the flea was apparently introduced into the mess-hut by the party from the coast. The fleas rapidly increased in numbers, until, he writes, "as I sat in the hut a dense cloud of black specks appeared on my white clothes, and steadily advanced upwards, so that I was compelled to brush them off every minute to prevent them from swarming on to my neck and face." Remembering the flea's need of a dry place for its larval stage, Dr. Freeman got rid of his enemies by keeping the floor of the mess hut and of his tent constantly flooded with water for a time. In a few days hardly a flea was to be seen—a very satisfactory but rather surprising result. In this case, probably, the flea was not P. irritans, the flea of man, but P. serraticeps, the flea of the dog and cat. Dr. Freeman, however, remarks that the common flea (P. irritans) is very rare in West Africa. There must be many tourists in the mountains of Switzerland and along the fjords of Norway, who are now wishing that the same were true of those more civilised countries.

THE ANNUAL MEETING AT EDINBURGH.

We state last week that the number of members who attended the annual meeting at Edinburgh was about nineteen hundred. From the returns supplied to us it appears that the actual number of members and foreign guests of the Association who registered their names was 1,914. It has been universally recognised by all who attended the meeting that the arrangements made by the local Committees, upon whom fell the duty of providing for the wants of this large gathering, were most excellent. We have already ventured to express the gratitude of those who benefited by their exertions to some of the Committees who took so much pains to make matters go smoothly, but thanks ought also to be given to the Committee over which Dr. Clouston presided, and of which Dr. Harvey Littlejohn and Dr. David Wallace were Secretaries. This Committee had the duty of making arrangements as to hotels and lodgings, and their labours contributed much to the comfort of members at a season of the year when the hotels of Edinburgh are very apt to be crowded. In expressing acknowledgments to the Reception Committee it should have been said that a large part of the work of that Committee, which was so admirably discharged, fell upon Dr. Francis D. Boyd, who was associated with Mr. George Mackay and Dr. Logan Turner in the office of Secretary. Thanks are due also to the Ladies' Committee, who took infinite pains to make the visit to Edinburgh of ladies accompanying members agreeable; of this Committee Lady Grainger Stewart and Mrs. Argyll Robertson were conveners, and Mrs. Underhill the Secretary. Finally, not the least debt of gratitude from all who took part in organising, or who shared in the advantages of the annual meeting, is owing to Dr. C. E. Underhill and Dr. P. A. Young, who undertook the onerous duties of Treasurers to the local executive. Thanks are due to all these active workers, and to many others who freely lent their aid, but their best reward will be to know that their labours in various departments worked together to produce a harmonious whole, and that all who attended the Edinburgh meeting will look back upon it as one of the most interesting, most enjoyable, and in every way the most successful which the Association has ever held.

"HEADACHE POWDERS."

In his quarterly report on the health of the Borough of Chorley, Lancashire, Dr. J. A. Harris, the Medical Officer for the district, calls attention to the indiscriminate sale and purchase of the various so-called headache powders. He states that under his direction the county police obtained six or seven samples from different shops in the town, and had them submitted to analysis. In every case the quantity of the active ingredient was found to be in excess of the maximum dose of the drug allowed in the *British Pharmacopœia*. These remedies belong to the class of the analgesics, the members of the group in common use for this purpose being acetanalide or phenyl-acetamide, phenazone, and phenacetin or para-acet-phenetidin. Their properties were fully considered in the Section of Pharmacology and Therapeutics at the meeting at Edinburgh, where Professor Stockman (Glasgow) opened a discussion on The Therapeutic Value of Recent Synthetic Analgesics: their Benefits and Attendant Risks. There was a general expression of opinion that these drugs required to be handled with the greatest possible care, and that a slight error of judgment with regard to dosage might be followed by disastrous results. All these substances depress the heart's action, and in toxic doses diminish the force of

the respiratory act. We are given to understand that a common formula for headache powders is acetanalide (70 to 75 per cent.), caffeine (10 per cent.), the rest being bicarbonate of sodium. The danger is not obviated by selling a poisonous drug under a fanciful name. We concur with Dr. Harris that it is impossible to say how much harm may follow the constantly-growing practice of taking these remedies. At present they are not included in the scheduled list of poisons, so that an obstacle is placed in the way of taking legal steps against the vendor.

THE MEDICAL INSPECTOR OF FACTORIES.

Dr. Thomas Morison Legge, who was Secretary of the second Royal Commission on Tuberculosis, has been appointed to the post of Medical Inspector of Factories and Workshops. The duties of this new office are varied, the Medical Inspector will reside in London, but he will conduct special and general inquiries into the question of health and safety as the Chief Inspector may direct; he will exercise general supervision over the work of certifying surgeons, especially where they have duties with regard to dangerous industries; he will deal with the notices of lead and other poisoning received under the Act of 1895; he will advise the staff generally on all medical questions connected with their work, and will give evidence in proceedings when so directed by the Chief Inspector, though he will not himself institute prosecutions unless specially directed. In visiting factories, workshops, and other places, he will give special attention to all matters affecting the health and safety of the persons employed; he will supply to the district inspectors particulars of any irregularities, defects, or infringements of the Acts which he may observe, and also particulars of any recommendations he may make to occupiers, and he will call the special attention of the district inspectors to cases where he considers any structural alteration necessary or a prosecution desirable. He will also visit hospitals in places where industrial diseases prevail, and, generally, he will act in co-operation with the other members of the staff, the certifying surgeons, and the local authorities.

VENEREAL DISEASE IN INDIA.

The General Order as to means for checking venereal disease among British troops in India issued by the Commander-in-Chief in India was laid on the table of the House of Commons on August 9th. It was founded upon Lord George Hamilton's well-known despatch, and according to the summary of its contents which has been published in the *Times* it does not appear to contain any novel points. Officers are advised to exercise their influence in the cause of morality, and it is justly added that soldiers listen with attention to those, and it might have been added only to those, whom they respect and who can speak to them from the standpoint of higher education, of blameless life, or of technical knowledge. The famous idea of giving didactic instruction takes form in the suggestion that "selected combatant and medical officers" should be invited to deliver lectures to the men on the moral and physical degradation which is almost certain to result from misconduct. It is impossible to feel very sanguine about the success which is likely to attend this propaganda. But it may do some good, and it certainly ought to be honestly tried. The medical profession undoubtedly has a duty in this matter, and probably there is no officer to whom the men would more readily listen on such a subject, without false shame and bravado, than to the soldier-doctor, when once they have got to know him. The present rate of invaliding is a scandal to the army, rank and file, and the recommendation that men who are again and again admitted for fresh attacks of local venereal disease should be subjected to all the restrictions of discipline will be approved by everybody; only there must be no confusion on this head. A man who is admitted for fresh manifestations of the constitutional disease acquired perhaps long before, should not be penalised, otherwise there will be a temptation to conceal the facts. This would be a misfortune, and would have the inevitable result of increasing permanent invaliding, for thorough and long-continued treatment is above all things necessary in syphilis. It is to be hoped that this aspect of the question will be kept well in view.

DRAGOONING A MEDICAL CONGRESS.

We have received a document to which are appended the names of a large number of professors in the universities of Cracow and Lemberg calling attention to the prohibition which has been issued against the meeting of the Polish Association of Physicians and Naturalists which was to have met in the town of Posen, Prussia, early this month. In July the President of the Posen police informed the organising committee that strangers, by which was understood persons of Polish nationality not being Prussian subjects, would not be allowed to participate in the proceedings, and moreover that any such persons going to Posen during the meeting would be forcibly expelled from the country. We are informed that for the past thirty years meetings of this Association have been held at various places without the occurrence of any difficulty or conflict, and that in the year 1884 a very successful meeting took place in Posen itself. The prohibition has excited much indignation, and the document before us is stated to be an abstract of a memorial presented to the Polish members of the Austrian Parliament. The story certainly makes one rub one's eyes, for a police edict of this nature directed against a peaceful gathering of scientific men to discuss scientific subjects carries us back several generations. The members of the Polish Association of Physicians and Naturalists will have the sympathy of their medical brethren throughout the world.

TYPHOID AND PUBLIC WATER SUPPLIES.

Some useful figures illustrating the fall in typhoid mortality following the introduction of a purer water supply will be found in a lecture delivered by Mr. J. W. Hill, C.E., before the Faculty of Students of Ohio University last March. After glancing at the bacteriological question, without overlooking the difficulty of detecting Eberth's bacillus even in notoriously polluted waters, Mr. Hill points out how strong the evidence is that typhoid diminishes as the water supplied is purer. Referring to the steadily decreasing mortality from this cause in London, he remarks that though the pollutions of the Thames may not have decreased, the filtration of the water has been enormously improved. The filtering of the water supplied from the Merrimac to the City of Lawrence, Mass., he shows has been attended with an enormous reduction in the typhoid death-rate. So also in Newark, N.J. This town and Jersey City both obtained their water supply from the Passaic river at Belleville. In April, 1892, Newark began to draw its water from impounding reservoirs in the valley of the Pequannock. In 1890 and 1891 its typhoid mortality was 60 and 81 per 100,000 respectively. In 1892 it fell to 45, and in the four subsequent years to 28, 15, 17, and 21; Jersey City meanwhile, with the old source of supply, reaching 91 and 95, but never falling below 53 per 100,000. In November, 1896, Pequannock water began to be supplied. In 1897 the typhoid mortality had fallen 78 per cent. as compared either with 1895 and 1896. A considerable part of the lecture is devoted to the description of filter beds, Mager sand scrapers, Schroeder sand washers, etc. These were explained at the time by diagrams thrown upon the screen. Unfortunately Mr. Hill has not reproduced these in his pamphlet. There is, perhaps, a little tendency to overstate the value of filters. In comparing the typhoid mortality of Manchester during the three years for which

unfiltered Thirlmere water has been in use, with that of London using filtered Thames water, to the disadvantage of the former, no mention is made of other circumstances, such as the very different modes of night-soil removal in the two English towns. An appendix gives the various sources and treatment of water supply in the chief "German cities." An Englishman is, however, somewhat puzzled to find Zurich, Copenhagen, Stockholm, Riga, and Amsterdam in this list.

CHEAP ICE CREAMS.

Under the constantly changing circumstances of life in our great towns new dangers to public health periodically arise, but public opinion is somewhat slow in recognising the need for taking special means to confront them. The facts come under the notice of medical men, and attention is called to them in the medical press, with the result, as a rule, that the public and the evening newspapers ridicule the "new medical fad." After an uncertain time there usually comes a moment when public indignation is aroused either by accumulated evidence of the mischief which is being done or by some one particularly glaring instance. Then there is the demand for stringent measures, and the supineness of public health authorities is severely condemned. We seem now to have reached the physiological moment when the matter of ice creams vended to children in the street by itinerant Italian confectioners is to be seriously taken in hand. More than one inquest has been held upon the victims of the craving for this cheap rubbish, often poisonous owing to decomposition, and always swarming with microbes. In one case lately a verdict of "death from irritant poisoning" was rendered. The Paddington Vestry have now instructed their medical officer of health to cause samples of ice cream and other similar insidious mixtures to be taken from itinerant vendors in the parish in order that they may be subjected to a chemical analysis, and have voted a sum of 25 guineas to procure a bacteriological examination also. Similar instructions have been given in Clerkenwell and Holborn, and the chemical and bacteriological examinations are now in progress. It is to hoped that should the results of these examinations be of such a nature as to give grounds for prosecution, the authorities will be able to proceed against the real offenders, for in many cases the persons who actually sell the ice creams from the barrows are only the agents of persons in a larger way of business.

A DENTAL OPERATION UNDER DIFFICULTIES.

At the recent Dental Congress in Bath, Sir Edwin Saunders gave some interesting reminiscences of his professional career, which are published in the current number of the *Dentist*. Among other illustrious patients who came under his hands was the last Pasha of Egypt, before that country passed under British protection. The Pasha came over on a week's visit to this country, and when he arrived he was suffering from a painful tooth, a novel experience for him. Sir Edwin, who was called in by Sir Moses Montefiore, found a large, well-formed set of teeth, the most magnificent he had ever seen, but there was caries on the distal surface of the second upper molar. There was no time to treat it, however, and the Pasha, who was very impatient, preferred to have it out. On the morning of the day appointed for the operation, Sir Edwin happened to mention the fact to another patient who was acquainted with the Pasha. "Take care what you are about," said the patient, "for the Pasha is a very impatient man, and has already killed two men with his own hands." This was rather alarming, but as the appointment had been made, it had to be kept. So Sir Edwin drove to the place, and having a quarter of an hour to spare he got hold of Sir Moses's butler. His experience was that when he went to a big house nothing could be found that was wanted. He managed, however, to get tumblers of hot and cold water, and fixed on the room which gave the best light. When at last everything was arranged he was ushered into the presence of the Pasha, and found that the dining-room had been altered into a Turkish divan. The Pasha was seated, and around him in a semi-circle were his Prime Minister, his Turkish physician, his Secretary, his French physician, and about twenty men in various uniforms. Sir Edwin took a chair opposite to His Highness, and a gaudily caparisoned slave brought him a cigarettee and coffee, which against his will he had to take, for the French Physician intimated that if he did not the Pasha would take it as a personal slight. The situation was decidedly curious. The Turkish physician knew no English, and Sir Edwin knew no Turkish, so he asked the French physician to help him, because from the great bulk of the patient he saw it would be impossible to hold the patient's head with one hand and operate with the other. But on his telling the French physician to hold the patient's head, that functionary became alarmed and went to the Turkish physician, who in turn went to the Prime Minister. After a consultation the Turkish physician returned and said the thing could not be done. There was no one present of sufficient rank to come in contact with His Highness. The Turkish physician, however, promised to stand near enough to lend a hand if necessary. As a matter of fact the Pasha behaved exceedingly well during the operation, but he would not touch the tumblers of water which had been provided because "some dog of a Christian might have touched them." The servant clapped his hands, the curtain was pulled aside, and two magnificent negroes, gorgeously dressed in gold embroidery, scarlet and blue, came forward, dropped in a graceful manner on their knees, and inserted a long tube in the patient's mouth through which water flowed in from a gold vase in the corner of the room. One is not surprised to learn that Sir Edwin was relieved when this remarkable experience was over.

THE PREVENTION OF MALARIA IN ITALY.

According to the Rome correspondent of the *Morning Post*, two members of the Italian Chamber of Deputies, Signor Leopoldo Franchetti and Signor Fortunato, have issued a circular proposing the foundation of a society for studying the phenomena of malaria. "The malaria," they state, "keeps 2,000,000 hectares (nearly 5,000,000 acres) of ground in Italy from cultivation; it affects, more or less, 63 provinces and 2,823 communes; and every year it poisons about 2,000,000 inhabitants, killing 15,000 of them. It is impossible to estimate the economic damage done to our country by the scourge, and no sanitary problem is more intimately bound up with the question of our prosperity." The authors of the circular therefore propose that a society be formed for studying malaria and for discovering the best means of combating it. Those who contribute 500 lire will have the title of founders, and ordinary members will pay 36 lire a year. Signor Franchetti and Signor Fortunato have subscribed 1,000 lire each.

Copies of the declaration as to vaccination adopted by the Council of the Royal College of Surgeons of England at its last meeting, and published in the British Medical Journal on August 6th, page 377, were by direction of the Council transmitted to the Marquis of Salisbury, Lord Harris, and Lord Lister.

At a private Investiture of Orders, held by the Queen at Osborne on August 6th, Dr. Andrew Milroy Fleming, Medical Director of the British South Africa Company, and Principal Medical Officer of the British South Africa Police, received the Companionship of the Order of St. Michael and St. George, in recognition of services rendered by him in connection with operations in Mashonaland last year; and Surgeon-Lieutenant-Colonel Frederick Fitzgerald MacCartie, M.B., of the Indian Medical Service, received the Companionship of the Order of the Indian Empire.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

EXCURSIONS.

Saturday, July 30th, the last day of the annual meeting, was devoted to a series of most interesting excursions which had been arranged by the Excursion Committee of which Professor Chiene was the Chairman and of which Dr. James C. Dunlop was the energetic Secretary. Edinburgh is the railway centre for many districts of unsurpassed natural beauty, enriched by historical association, and the Committee received the assistance and co-operation of members of the Association resident in various parts of Eastern Scotland.

The arrangements made by the Committee and carried out with great enthusiasm and organising ability by Dr. James C. Dunlop were very complete. Owing however to the fact that the day was the Saturday of the Edinburgh Trades Holiday, and was the last day of the last week of July when so many Edinburgh households move to the country, a very great strain was put upon the resources of the railway companies, a strain which was not met with success in all directions. The Caledonian Railway Company carried out the plans to the complete satisfaction of everyone, but the North British Railway, by which most of the excursionists were conveyed, was not so satisfactory, and inconvenience was caused by the unpunctuality of the special trains and the condition of some of the carriages. The Dunkeld and Crieff excursion suffered most by the lateness of the train service. It was late in arriving at Dunkeld, very late at luncheon, late for dinner, and very late in arriving back in Edinburgh. The Secretary of the Committee desires us to give expression to his regret, but he was of course powerless to secure that the excellent arrangements which he made should be punctually carried out by the North British Railway Company, upon whom the blame for the inconvenience caused must rest.

The total number of members who took part in the various excursions on Saturday was very large: St. Andrews, 170; Falkland and Kinross, 155; Dunkeld and Crieff, 69; Dollar and Rumbling Bridge, 36; Perth and Dundee, 64; Melrose and Land of Scott, 56; Stirling, 40; the Trossachs, 104; Dalkeith and Roslin, 150; making a total of 844.

The afternoon excursions on other days during the meeting were thoroughly successful, and those who joined the conducted party to Edinburgh Castle, which was under the direction of Mr. Hippolyte Blanc, R.S.A.; to Holyrood Palace and Abbey, under the direction of Mr. W. W. Robertson, H.M. Office of Works; to St. Giles' Cathedral, under the guidance of Mr. George Henderson; to the Municipal Buildings, under the guidance of Judge Dunlop; and to the Parliament House and Courts of Law under the guidance of Mr. J. Balfour Paul, Lyon-King-of-Arms, all expressed themselves much interested, and much indebted to those who had taken so much pains to render the visits to these places interesting. The visit to Gullane and Dirleton to witness the golf match between Scottish and other golfing members of the Association, a competition which, as we announced last week, ended in a very decisive victory for Scotland, was combined with a garden party at Archerfield House, where hospitality was shown to a very large number of visitors by Mr. James Law.[1]

St. Andrews.

The visit to St. Andrews was one of the most interesting of the excursions arranged. Like many others, it suffered somewhat from the unpunctuality of the special train, as this curtailed the time, which was already barely sufficient to permit a visit being made to the many interesting buildings in the city, which has been called, not without justice, the ecclesiastical capital of Scotland. The recent development of the University, however, bids fair to render it remarkable rather for the advantages which it is able to offer to medical students during the early part of their career.

The visitors on arrival were conducted through some of the older buildings of the colleges and of the University, and then had the opportunity of inspecting the medical buildings now in course of erection through the munificence of the Marquis of Bute, the Lord Rector of the University. The new medical buildings will, when complete, form a spacious institute containing a fine dissecting room, anatomical museum, and preparation room; a physiological laboratory and museum; a botanical laboratory and museum; a materia medica laboratory and museum; and well-lighted lecture rooms.

After an inspection, somewhat more hasty than might have been desired, the visitors were entertained at luncheon in the Town Hall by the Medical Faculty. The chair was taken by Professor Bell Pettigrew, Dean of the Medical Faculty, who was supported by the Provost of the city, Dr. G. W. Balfour (Edinburgh), a member of the Senate of the University, and Dr. Saundby, President of the Council of the British Medical Association. Professor Pettigrew after luncheon made a short speech welcoming the visitors to St. Andrews. He referred to the extensions which were taking place in the Medical Faculty and said that under the arrangements now in force two of the residential years required for medical graduation in the Scottish Universities can now be taken at St. Andrews. He spoke of the great liberality which the Marquis of Bute had shown to the University, and proposed a special vote of thanks to the Marquis who had defrayed the cost of the luncheon. This was carried by acclamation, and Professor Pettigrew then briefly indicated some of the objects of interest which still remained to be visited. Speaking of the ruins of the cathedral, he said that the Marquis of Bute had for several years past been engaged in bringing to light architectural structures of great beauty which for centuries had been buried. In conclusion, he indicated that those who desired to inspect the marine laboratory would be able to do so under the guidance of Professor McIntosh, while those who at such a moment and on so fine a day set golf above science would have an opportunity of watching an exhibition golf match.

Those who were of the latter opinion had the pleasure of witnessing a very interesting and closely contested foursome between two gentlemen and two professionals, Andrew Kilcaldy and Tom Morris, the veteran green keeper of the St. Andrews Links. The match was won, 2 up, by the professionals, who came home in 38.

The larger party, who visited the Gatty Marine Laboratory, which is situated on the margin of the sea, and is equipped with every modern appliance, were able to see something of the important work which is there being done in the identification of the ova and the hatching out of the food fishes. Other visitors drove to Earlshall, an Elizabeth mansion, recently restored and furnished in its original style by the owner, Mr. McKenzie. The various parties met again in the grounds of St. Leonard's school for girls, where, by kind permission of Miss Grant, they were entertained at tea on the invitation of the local medical practitioners, to whom, and to Miss Grant, before leaving for the return journey those present passed a hearty vote of thanks.

Falkland and Kinross.

The excursion party, numbering 155, left Waverley Station about 10.30 A.M. At Falkland Road Station carriages were waiting, and Falkland Palace was reached about noon. Major Wood, the Marquis of Bute's factor, there received the party, and very kindly pointed out all that was of interest in Falkland Palace, Falkland Castle, and the grounds near. The members were greatly impressed by the extent and good taste of the restorations which Lord Bute is having carried out. Want of time prevented a visit of inspection to Falkland House, the residence of the Marquis of Bute. At 1.15 a sumptuous luncheon was served in Falkland Palace, and before leaving the table Dr. P. A. Young proposed the health of the host, the Marquis of Bute, and a very hearty vote of thanks to him. These were heartily responded to by all present.

At 2.30 the party re-entered the carriages, and were driven to Loch Leven, a distance of about sixteen miles. On the shore of Loch Leven Mr. Burns Begg, representing Sir Grahame Montgomerie, received the party, and conducted them to boats which were in readiness to convey them to the island on which Loch Leven Castle stands. On returning from the island the party proceeded to Kinross House, where all were interested in inspecting that old Scottish mansion, and enjoyed tea and other refreshments. Hearty thanks having been voted to Sir Grahame Montgomerie and

[1] We are asked to state that successful photographs of those who attended some of the excursions were taken by Maclure MacDonald and Co., 2, Bothwell Circus, Glasgow, from whom copies can be purchased.

Mr. Burns Begg, the party drove to Kinross Station, where the special train was waiting to bring them back to Edinburgh.

DUNKELD AND CRIEFF.

Of all the excursions, this one suffered most from the irregularity of the train service; the time table was completely upset, and the intervals for food and rest had to be uncomfortably shortened. The party left the Waverley Station at 9.40 A.M., fully half an hour late, and arrived at Dunkeld only a little before 1, nearly two hours behind time. A little time was occupied in the start from Dunkeld in wagonettes, and this along with the slowness of the driving made it very late before the Sma' Glen, where the picnic lunch was prepared, was reached. Here the members of the party were refreshed, and they immediately re-entered the carriages to continue their drive to Crieff, which was reached about 6 P.M., instead of 4 P.M. as expected. Arrangements had hurriedly to be made to keep the special train waiting, and give the party some time for dinner. Crieff was left at 6.45 P.M., and Perth reached a little before 8. The special train left there soon afterwards, but instead of taking seventy minutes for the run to Edinburgh, as arranged, took three hours, and brought back to Edinburgh the excursionists tired and weary. These annoying detentions on the railway, amounting as they did to about five hours, seriously detracted from the pleasure of the day. The forenoon detention alone was sufficient to upset the Excursion Committee's carefully considered plans, and the evening detention was sufficient to exhaust what patience the excursionists had left. But for these unfortunate circumstances this would have been one of the best of the excursions. The beauties of the drive were enjoyed by all, the grand scenery of the Sma' Glen especially being seen to perfection. The hospitality and arrangements made by Dr. Meikle at the Crieff Hydropathic were perfect, and all regretted that they were unable on account of time to do them justice.

RUMBLING BRIDGE, CASTLE CAMPBELL, AND DOLLAR.

Owing to the heavy traffic and confusion at the Waverley Station, the special train timed to arrive at 10.10 did not reach Rumbling Bridge till 11 A.M., and several who held tickets for the excursion were even then left behind. The party were met at the station by Dr. Strachan, who thereafter acted as guide. A visit was first made to the fine scenery at Rumbling Bridge, including the remarkable waterfall, "The Devil's Mill," so called from the peculiar clacking sound, resembling that of an old-fashioned mill, produced by the impact of the water upon the curved surface of the rock. From here a pleasant walk by the "Banks of the Clear Winding Leven" brought the party to the Cauldron Linn, where the stream by a couple of leaps suddenly descends a distance of more than 100 ft., the space between the two falls being wonderfully hollowed out by the action of the water into a series of cauldrons, whence the name. The way then led through the finely laid out gardens to Blairhill House, where the company were most cordially and hospitably received by the Misses Haig, by whom the members were entertained on behalf of Mr. and Mrs. Haig.

The visit to Blairhill was somewhat curtailed through the delay in the train, and after a hearty expression of thanks to Mr. and Mrs. and the Misses Haig the party took their places in the conveyances which were in waiting, and proceeded by road to Cowden Castle and Hillfoot House, where, by the kind invitation of Mr. and Miss Christie and Mr. and Miss McArthur Moir respectively, an excellent and substantial lunch was partaken of, the party being about equally divided between the two houses. After luncheon a cordial vote of thanks to the host and hostess having been proposed and heartily responded to, the Cowden contingent, after a pleasant ramble through the beautiful gardens and greenhouses, drove to Hillfoot, where, according to arrangements, all were to assemble for the walk across the hill to Castle Campbell. On arrival, however, they found that their companions, having become impatient, had gone on without them, so that the reunion actually took place on the summit of the castle, where the Rev. Paul F. C. Dollars, who very kindly attended for the purpose, was found discoursing upon the history and antiquity of the ancient pile where the Campbells held sway, and had entertained at different times the beautiful and unfortunate Mary Queen of Scots, and the stern reformer, John Knox. Dr. Spence, of Dollar, here also joined the party. From here a beautiful view was obtained of the Devon Valley, with the picturesque town of Dollar nestling at the foot of the hills, and the fine expanse of country stretching away to the river Forth and the Pentland Hills in the distance. The walk through the fine scenery of "The Glen" was thoroughly enjoyed.

Dollar was reached about 4.30, and the company assembled in the library hall of the Institution, where afternoon tea was provided by Mrs. Strachan and Mrs. Spence, and handed round by a small party of young ladies. Thereafter a tour of inspection was made through the class rooms, gymnasium, etc., kindly thrown open for the purpose by the Governors. All expressed themselves as much impressed by the clean, bright, and airy appearance, and thorough equipment of the school. Punctually at 5.50 the special train of saloon carriages drew up at Dollar Station, and the party, with many expressions of gratitude for the kindness shown to them and of their thorough enjoyment of the day's excursion, commenced their return journey to Edinburgh. The weather throughout was all that could be desired.

PERTH AND DUNDEE.

The excursion organised by the Perth and Dundee Branches passed off very successfully. The party were received at Glen Farg Station by Dr. Fergusson and Dr. Urquhart. Unfortunately, owing to the late arrival of the train there was no time to inspect the interesting buildings in Perth. A short stop at St. John's Church was made to explain this to the Rev. W. E. H. Carmichael, who, with the Rev. J. Ferguson, was kindly in attendance to describe the building. The party was received at Murray's Asylum by Sir Robert Pullar, and luncheon was immediately served. Short speeches of welcome and acknowledgments followed. The day was bright and clear, and the noble prospect was much admired. As the tide began to ebb at 1 P.M., and very little water was in the river it was necessary to hasten on board the steamer kindly provided by the Dundee Harbour Trust. A few of the trustees and some of the leading medical men of Dundee, including Dr. Duncan, Dr. Sinclair, and Dr. Buist, received the party at Perth. The sail down the Tay was greatly enjoyed, and a hearty vote of thanks was passed to the Harbour Trustees and acknowledged by Bailie Taylor. In the afternoon, before leaving on the return journey, those who took part in this excursion were entertained to tea by the Directors of the Infirmary, and had an opportunity of seeing the new operating theatre and the nurses' home.

MELROSE AND THE LAND OF SCOTT.

It was a beautiful morning when the party, numbering 52, arrived at Abbotsford Ferry, after an hour and a half's run from Edinburgh. Two rowing boats soon conveyed the excursionists across the Tweed, where they found a number of breaks awaiting them. The drive, about a mile, occupied only a few minutes.

Abbotsford, the abode of the great Wizard of the North, was seen. The collection of curiosities, pictures, books, and armoury made by Sir Walter Scott proved such an irresistible attraction to many members that it was some time before they were *en route* for Melrose, where lunch was provided. After lunch, Melrose Abbey was visited, and here again some delay occurred in getting the enthusiastic sightseers to start for Dryburgh. The drive from Melrose down Tweedside was much enjoyed, but owing to the lateness of the hour there was not time to return from Dryburgh Abbey by way of Bemersgate Hill, from the top of which Sir Walter Scott's favourite view of the Tweed Valley proves itself to be one of the loveliest views in the south of Scotland.

On returning to Melrose the Waverley Hydropathic was visited, and by the kind hospitality of the directors tea was provided. Unfortunately this most acceptable refreshment had to be taken hurriedly, as, owing to time having been lost at the various places of interest, the hour of departure arrived all too soon. A quick run in to Edinburgh completed a pleasant day.

STIRLING.

After some confusion, due to large holiday traffic, this excursion of fifty members left the Caledonian Station well up to time. They arrived a little late at Stirling. They there found the view hidden to a great extent by a thick mist, but, with

a glorious sun overhead, Stirling itself was looking its best. The drive to Howietoun was over part of the celebrated field of Bannockburn, and the distribution of the Scotch and English forces, as well as the Gillie's Hill, from behind which the Scotch camp followers appeared at the critical time to be mistaken for reinforcements, were pointed out by members of the Stirling, Kinross, and Clackmannan Branch. At Howietoun the fish hatcheries and fish ponds were shown, and much interest was taken in the numerous varieties of trout that are kept there. The various varieties of hybrids between salmon and trout, and between trout and char, attracted special attention, as did also the lively leaping after food of the older Loch Leven trout.

The return drive to Stirling led by another route past the Borestone, where Bruce's standard was raised at Bannockburn. This route offered at several points lovely views of the surrounding country. Lunch was served at the Golden Lion Hotel. After it, Dr. Macpherson (Larbert), President of the Stirling, Kinross, and Clackmannan Branch, welcomed the guests in a few well-chosen words. Dr. Beverley (Norwich) proposed a vote of thanks to the members of that Branch. This proposal was most cordially received, and Dr. Mackintosh (Stirling), the Vice-President of the Branch, replied. After luncheon the party inspected Stirling Castle, and as by this time the mist had gone from the hills the magnificent panorama was seen and much enjoyed. By the courtesy of the officers of the garrison visits took place to the officers' mess, where trophies of ancient warfare and modern sport were seen, and to the barrack room No. 7, where remains of the old Parliament Hall can be studied. Other places of interest in the Castle were visited, and after that the party started to drive to the Bridge of Allan, going there through the beautiful grounds of Airthrey Castle, kindly opened by Mr. D. Graham, the proprietor. On reaching the grounds of the Mineral Wells Company the party were received by Mr. D. Graham, and joined a most enjoyable garden party. Those members who wished to combine professional pursuits with pleasure had their attention drawn to the composition of the water and to its effects. After a thoroughly enjoyable day the party returned to Edinburgh, arriving a little after 7 P.M.

The Trossachs.

The party were conveyed by special train to Callander, where coaches were waiting to drive to the Trossachs. The drive proved most enjoyable, the day was fine, and the views of mountain and loch were seen to perfection. On arrival at the Trossachs Hotel about 1 o'clock, luncheon was served. After lunch the party drove over to the head of Loch Katrine, and had an opportunity of seeing that place, so justly celebrated as one of the most beautiful spots in Scotland and as one so intimately connected with some of Sir Walter Scott's writings. At Loch Katrine the carriages turned and conveyed the party over the well-known hill road to Aberfoyle; from this road also the views were seen to advantage. Aberfoyle was reached a little before 5, and after service of tea the party left by special train for Edinburgh, which was reached shortly after 7 o'clock.

Dalkeith and Roslin.

This excursion, specially arranged for the convenience of the honorary graduates and others attending the graduation ceremony, was very popular. Coaches started from the M'Ewan Hall after the graduation ceremonial, and some visitors found their way by private conveyance or by rail. The first stage was to Dalkeith Palace, where luncheon was served in a marquee on the lawn on the kind invitation of the Duke of Buccleuch. On arrival the guests were received by the Duchess of Buccleuch and Lord Henry Scott. The company included Sir Thomas and Lady Grainger Stewart, Sir William and Lady Broadbent, Sir Henry Littlejohn, Sir Richard Thorne, K.C.B., Professor R. H. Saltet, Amsterdam; Professor Theodor Kocher, Berne; Professor Ewald, Berlin; and Professor Turck, New York.

In the absence of the Duke of Buccleuch, who was at Homburg, Lord Henry Scott presided, and gave the toast of "The Queen." The President of the Association gave "The Duke and Duchess of Buccleuch," and Lord Henry Scott replied. After luncheon the company in two sections was conducted over Dalkeith Palace, and saw the famous collection of paintings. The party then drove to Newbattle Abbey, which the Marquis of Lothian had kindly thrown open. They were received by the Chamberlain (Mr. Caverhill) and the Clerk of Works (Mr. J. Ramsay). The paintings, the excavations in the old Monastery or Priory of Newbattle under the present Abbey, the flower gardens, and the famous beech tree, said to be the largest in Great Britain, were examined with much interest.

Thereafter the drive was continued to Hawthornden, thence to the Castle and Chapel of Roslin, after which tea was served in the Royal Hotel at Roslin, and the party drove back to Edinburgh by Hillend, Fairmilehead and Morningside, reaching the end of their journey shortly after eight. The weather was perfect.

Penicuik.

From the scientific point of view, one of the most interesting expeditions was that on Friday afternoon to the Bungalow, Penicuik, to view Professor Cossar Ewart's hybrid zebras. The company was a small and limited one, and left the Waverley Station by special train at 2 P.M. They were met at Penicuik Station by Dr. Badger, medical officer of the burgh, and by him conducted to the Bungalow.

Professor Ewart's experiments at Penicuik deal with a number of problems. Although hybrids have been frequently obtained between a horse and zebra mares, it has not been found by previous experimenters possible to obtain a cross between ordinary mares and a stallion belonging to the great Burchell group of zebras.

In 1895, Professor Ewart succeeded in mating a male Burchell zebra of the Chapman variety with a black Island of Rum pony, lent by Lord Arthur Cecil. On August 12th, 1896, a hybrid was born. This hybrid "Romulus," the first of its kind, is now nearly 2 years old. Since then seven other hybrids have been bred, all by the same sire, but by different dams. They vary from 11 to 15 hands in height. The hybrids, though varying greatly, are all marked on the same plan—a plan, as it happens, quite unlike that of their common sire the zebra stallion "Matopo." Some of the mares, after having hybrids, have produced foals to Arab and other sires. Though some of the second foals are faintly striped, their stripes are not the stripes of a zebra. If the mares had been "infected," the infection appears to have led to reversion to markings which characterise the ancestors of the horse, rather than the ancestors of the zebra.

In addition to "Matopo's" offspring, there are three other zebra hybrids at Penicuik, two bred by "Lady Meux" from the same zebra mare, and one, bred in France, between a zebra mare and a donkey. Three of the hybrids have recently been inoculated with the organism which causes the dreaded tsetse disease in various parts of Africa.

Professor Ewart has also collected a series of embryos for a study of the development of the horse. This series includes embryos for each of the weeks, from the third to the ninth, the smallest being only a quarter of an inch in length. Experiments have also been made, bearing on reversion or atavism, and on prepotency, with rabbits, fowls, pigeons, etc. The stud at the Bungalow at present includes a zebra stallion, eleven hybrids, an Arab horse, and about thirty mares and foals.

Before leaving, the company were entertained to tea in a marquee in the High Park, and they expressed their appreciation of Professor Cossar Ewart's kindness in affording them such an instructive and delightful afternoon's excursion.

Presentation.—Dr. F. W. Lewis, Medical Officer for the No. 1 District of the Llandovery Union, has been presented by his friends and patients with two pairs of Corinthian candlesticks, four chased and pierced fruit dishes, a silver Georgian tea kettle and stand, and a silver fluted Georgian hot-water jug, together with a grand piano and a dark oak secretaire, as a mark of respect and esteem. The kettle bears the following inscription: "Presented, with four silver fruit dishes, two pairs of candlesticks, hot-water jug, piano, and desk, to Dr. F. Lewis, Llandovery, by the inhabitants of town and neighbourhood, as well as by the employees of L. and N.W.R. and G.W.R. Companies, as a mark of their appreciation of his long service amongst the poor and needy of the district, and his unfailing courtesy to those amongst whom he lives. 30th July, 1898."

MEMBERS PRESENT AT THE ANNUAL MEETING.

The following names of members and visitors attending the Annual Meeting were entered in the books provided for the purpose:

Abernethy, R., M.D., Edinburgh
Abraham, P. S., M.D., London
Adam, James, M.B., Hamilton
Adam, John, M.D., Dingwall
Adams, F. V., L.R.C.P.Edin., Glasgow
Adams, John, M.B., Glasgow
Adamson, R. O., M.B., Glasgow
Adkins, P. Rutherford, M.D., Brighton
Affleck, J. O., M.D., Edinburgh
Ainslie, Alexander C., M.B., Edinburgh
Aitchison, Robert Swan, M.D., Edinburgh
Aitken, John, M.D., Buckhaven
Alexander, Chas. A., M.B., Denny
Alexander, G. P., F.R.C.S.Edin., Forfar
Alexander, James, L.R.C.S.E., Leslie, Fife
Alexander, John, M.D., Wick
Alexander, Lewis, D., M.D., Kilcreggan
Alexander, Samuel, M.D., Belfast
Alexander, William, M.D., Portobello
Allan, Francis John, M.D., London
Allardice, Wm. C., M.D., Stoke-on-Trent
Allfrey, C. H., M.D., St. Leonard's-on-Sea
Allison, John, M.D., Kettering
Allison, T. Moffat, M.D., Newcastle-on-Tyne
Allwood, J. Aldred, M.D., Jamaica
Amner, F. H., L.R.C.P.S.Edin., Tongkan, Siam
Amsden, George, M.B., Brentwood
Anderson, Mrs. E. Garrett, M.D., London
Anderson, F. T., F.R.C.S.Edin., Barnstaple
Anderson, G. E. C., M.D., Cape Town
Anderson, James, M.B., Cramlington
Anderson, James, M.B., Lancaster
Anderson, J. B. M., M.B., Glasgow
Anderson, John, M.B., Pitlochry
Anderson, Louisa G. M.B., London
Anderson, R. B., F.R.C.S., London
Anderson, Professor R. J., M.D., Newry
Anderson, Professor T. McCall, M.D., Glasgow
Andrew, Grant, M.B., Glasgow
Andrew, Jas. M.D., Edinburgh
Annandale, Professor Thomas, F.R.C.S., Edinburgh
Arbuckle, Hugh W., M.D., Thorne
Archibald, John, M.D., Paramé, France
Armour, E. F., M.B., Edinburgh
Armour, T. W., M.B., Edinburgh
Arnold, Ernest C., M.B., London
Arnott, Brig.-Surg.-Lt.-Col. James, M.D., I.M.S., Edinburgh
Arthur, David, M.D., London
Arthur, H., M.D., Airdrie, N.B.
Ashby, Henry, M.D., Manchester
Ashford, C., M.R.C.P.Edin., Bath
Atkins, T. G., M.D., Cork
Atkinson, George Armstrong, M.D., Newcastle-on-Tyne
Atkinson, J., M.R.C.S., Crewe
Auld, A. G., M.D., London
Aymer, Chas., M.B., Leslie
Aymer, James, M.B., Bervie

Baber, E. Cresswell, M.B., Brighton
Badger, William, M.B., Penicuik
Bailey, Frances H. A., M.D., Edinburgh
Bailey, T. R., M.D., Bilston
Bain, William, M.D., Harrogate
Baird, John, M.B., Glasgow
Baker, Richard, M.D., Dublin
Baldwin, Aquilla, L.S.A., Birmingham
Bale, Rosa Elizabeth, L.R.C.P., Plymouth
Balfour, Andrew, M.B., Edinburgh
Balfour, Andrew, M.D., Portobello
Balfour, G. W., M.D., Edinburgh
Balfour, T. Stevenson, M.D., Chard
Ball, Charles B., M.D., Dublin
Ballance, Hamilton A., M.D., Norwich
Ballantyne, Alex., M.D., Eskbank
Ballantyne, H. S., M.B., Eskbank
Ballantyne, J. W., M.D., Edinburgh
Bamford, C. S., M.R.C.S., Uttoxeter
Banks, Robert M'Lachlan, M.B., West Port, Lanark
Banks, T. W., M.D., Lanark
Banks, W. Mitchell, M.D., Liverpool
Banks-Price, H., M.B., Coventry
Bannatyne, Gilbert A., M.D., Bath
Bannerman, William, M.D., Edinburgh
Barbour, A. H. F., M.D., Edinburgh
Barclay, William B., L.R.C.P. and S. Edin., Bacup
Barendt, Frank H., M.D., Liverpool
Barnes, Henry, M.D., LL.D., Carlisle
Baron, Barclay J., M.B., Bristol
Barr, James, M.D., Liverpool
Barr, Thomas, M.D., Glasgow
Barron, Archibald C., M.B., Dailly, Ayrshire
Bateman, A. G., M.B., London
Battle, Wm. H., F.R.C.S., London
Baumann, E. P., M.R.C.S., Edinburgh
Baylis, H. M., L.R.C.P.Edin., Edinburgh
Beach, Fletcher, M.D., London
Beatson, G. T., M.D., Glasgow
Beattie, J. M., M.B., Liverpool
Beatty, Samuel, M.B., Pitlochry
Beatty, Wallace, M.D., Dublin
Beaumont, W. M., M.R.C.S., Bath
Becker, H. A., M.D., Wepener, Orange Free State
Beevor, Chas. E., M.D., London
Bell, John Henry, M.D., Bradford
Bell, John S., M.B., Lockerbie
Bell, Joseph, M.D., Edinburgh
Benham, H. A., M.D., Bristol
Bennett, Professor E. H., M.D., Dublin
Bennett, Hugh Percy, M.B., Newcastle
Benson, John, M.R.C.S., Sheffield
Bentley, Arthur J. M., Cairo
Bernard, Waller, F.R.C.P.I., Londonderry
Berry, G. A., M.D., Edinburgh
Berry, R. J. A., M.D., Edinburgh
Bevan, John J., M.B., Mumbles
Bevan, W. L. P., M.D., Alton
Beveridge John, M.B., Hurlford
Beveridge, R. E., M.B., Sunderland
Beverley, M., M.D., Norwich
Bickerton, Thos. H., M.R.C.S., Liverpool
Biden, Wm. Price, L.R.C.P.Edin., Hyères
Bigham, John, M.D., Dudley
Bird, Harriet A. S., M.B., Edinburgh
Bird, J. B., M.D., Carlisle
Birkett, H. S., M.D., Montreal
Birmingham, A. E. T., M.D., Dublin
Bishop, E. Stanmore, F.R.C.S., Manchester
Black, A. Campbell, M.R.C.S., Hereford
Black, D. Campbell, M.D., Glasgow
Black, John Greer, R.A.M.C., M.D., Gibraltar
Black, Malcolm, M.D., Glasgow
Black, Surgeon-Major William G., F.R.C.S., Edinburgh
Blackburn, T. L., M.B., Port Elizabeth, South Africa
Blaikie, J. Brunton, M.B., St. Boswell's
Blaikie, R. H., M.D., Edinburgh
Blair, David, M.B., Lancaster
Blair, M. C., M.D., King's Langley, R.S.O.
Blair, William, M.D., Jedburgh
Blandford, G. F., M.D., London
Blandford, J. W., M.R.C.S., Norton, Stockton-on-Tees
Bluck, W. C., M.B., Derby
Blumer, F. Milnes, M.B., Stafford
Blumer, W. Percy, F.R.C.S.Edin., Sunderland
Blundell, Hight, M.B., Crouch, Kent
Boddie, G. P., M.B., Edinburgh
Boland, J. H., L.R.C.P.Edin., Dundee
Bond, F. T., M.D., Gloucester
Booth, O. M., M.R.C.S., New Cleethorpe
Booth, W. G., L.R.C.P.I., Manchester
Borrowman, P. G., M.B., Elie
Bousfield, Edward C., L.R.C.P.Lond., London
Bower, David, M.D., Bedford
Bower, J. A., M.B., Cheltenham
Bowker, George E., M.B., Bath
Bowser, Joseph E., M.B., Penrith
Boyd, Francis D., M.D., Edinburgh
Boyd, Jas. Paton, M.B., Glasgow
Boyd, M.A., M.D., Dublin
Boyd, Mrs. Florence, M.D., London
Boyd, Stanley, M.B., London
Bradbury, Professor J. B., Cambridge
Bradley, W., L.R.C.P.&S.Edin., Drogheda
Bramwell, Byrom, M.D., Edinburgh
Bramwell, Edwin, M.D., Edinburgh
Bramwell, J. M., M.B., London
Brander, T. L., M.B., Chinchow, China
Bremner, D. C., M.B., Bishop's Castle
Brewis, N. T., M.B., Edinburgh
Brierley, J. Brassey, M.D., Old Trafford
Bright, John M., M.R.C.S., Forest Hill
Broadbent, Reginald, M.D., Leicester
Broadbent, Sir William, M.D., London
Brock, G. Sandison, M.D., Rome
Brock, W. John, M.B., Edinburgh
Brodie, David, M.D., Canterbury
Bronner, A., M.D., Bradford
Brook, W. F., M.R.C.S.E., Farcham
Brook, W. F., F.R.C.S., Swansea
Brookhouse, Joseph O., M.D., Nottingham
Brown, Andrew, M.D., London
Brown, Francis Leonard, M.D., Pau, France
Brown, J. F. C., M.B., Alexandria, N.B.
Brown, J. J. Graham, M.D., Edinburgh
Brown, J. Murdoch M.D., Edinburgh
Brown, John, M.D., Bacup
Brown, John H., M.D., Sheffield
Brown, Walter F., M.B., Baillieston, N.B.
Brown, William, F.R.C.S.E., Carlisle
Brown, Wm., M.D., Bristol
Browne, Edgar A., F.R.C.S., Liverpool
Browne, Henry W. Langley, F.R.C.S.E., West Bromwich
Bruce, Alexander, M.D., Edinburgh
Bruce, J. Mitchell, M.D., London
Bruce, W., M.D., LL.D., Dingwall
Brunton, T. Lauder, M.D., London
Bryant, Thomas, F.R.C.S., London
Bryce, Thomas H., M.B., Glasgow
Bubb, Ben., M.R.C.S., Boston, Lincs
Buchan, A. H., M.B., Edinburgh
Buchanan, G. Burnside, M.B., Glasgow
Buchanan, J., M.B., Catheart
Buchanan, Leslie, M.B., Glasgow
Buchanan, R. M., M.B., Edinburgh
Buck, C. W., M.R.C.S., Settle
Buist, A. C., M.B., Dunblane
Buist, R. C., M.D., Dundee
Buller, Frank, M.D., Montreal
Bunting, W. H., M.D., Accrington
Burgess, Duncan, M.B., Sheffield
Burkitt, J. Colley S., M.D., Leicester
Burnet, Morton, M.B., Crieff
Burnet, R. W., M.D., London
Burn-Murdoch T., M.B., Edinburgh
Bush, J. Paul, M.R.C.S., Bristol
Butchart, C. A., M.B., Leith.
Buxton, Edward, M.D., Liverpool
Buzzard, Thos., M.D., London
Byers, Professor J. W., M.D., Belfast

Caddick, Chas. John, M.B., Sutton Coldfield
Cadell, Francis, F.R.C.S., Edinburgh
Cadell, Grace R., L.R.C.S.Edin., Edinburgh
Cadell, J., M.D., London
Caird, Francis Mitchell, M.B., Edinburgh
Cairns, R. Murray, M.B., Liverpool
Calder, Hugh L., M.D., Edinburgh
Calderwood, John, M.B., Stanburn
Caldwell, John, L.R.C.P.Edin., Shotts, N.B.
Callender, Thomas Marshall, M.B., Sidcup, Kent
Calvert, W. H., M.D., Melrose
Calwell, William, M.D., Belfast
Cameron, Albert, M.B., London
Cameron, Sir Chas. A., M.D., Dublin
Cameron, Prof. Irving H., M.B., Toronto
Cameron, James, M.D., Edinburgh
Cameron, John M., M.D., Dalmuir
Cameron, John, M.D., Innerleithen
Cameron, J. Spottiswoode, M.D., Leeds
Cameron, J. Wilson, M.B., Glasgow
Cameron, Professor Murdoch, M.D., Glasgow
Cameron, R. W. D. McM., M.D. Newton Stewart
Campbell, A. J., M.B., Duns
Campbell, A. T., M.B., Glasgow
Campbell, Alfred W., M.D., Liverpool
Campbell, Colin Geo., M.R.C.S., Saddleworth
Campbell, D. G., M.B., Elgin
Campbell, Donald, M.D., Ballachulish
Campbell, H., M.D., London
Campbell, H. J., M.D., Bradford
Campbell, J. A., M.D., Carlisle
Campbell, John, M.D., Belfast
Campbell, M., M.B., Glasgow
Campbell, Matthew, M.B., New Zealand
Campbell, Peter, M.B., Birmingham
Campbell, R. A., M.B., Newcastle-on-Tyne
Campbell, R. B., M.B., Montrose
Campbell, W. S., M.B., Whitley
Cant, William J., L.R.C.S.Edin., Lincoln
Cantlie, James, M.B., London
Cappie, James, M.D., Edinburgh
Cargill, Evelin A., L.R.C.P.Edin., London
Cargill, L. V., F.R.C.S., London
Carlier, E. W. Wace, M.D., Edinburgh
Carline, W. A., M.D., Lincoln
Carling, W., M.B., Southsea
Carmichael, A. N. S., M.B., Edinburgh
Carmichael, David, M.B., Tarbert
Carmichael, Edward, M.D., Edinburgh
Carmichael, E. Scott, M.B., Edinburgh
Carmichael, James, M.B., Edinburgh
Carmichael, William, M.B., Edinburgh
Carr, William, M.B., Cambuslang
Carslaw, James, M.B., Glasgow
Carstairs, J. L., M.B., Glasgow
Carswell, John, L.R.C.P.Edin., Glasgow
Cash, J. T., M.D., Aberdeen
Cassidi, Francis, M.D., Derby
Caskie, James, M.B., Methil
Catheart, C. W., L.R.C.S., Edinburgh
Catheart, George Clark, M.B., London
Catheart, S., M.R.C.P.Edin., London
Cattanach, James G., M.B., Edinburgh
Cattle, C. H., M.D., Nottingham
Caton, Richard, M.D., Liverpool
Caudwell, H., L.R.C.P.Edin., Woodstock
Caverhill, Thomas Francis S., M.B., Edinburgh
Challinor, C., M.R.C.S., Leigh
Chambers, Annie, M.D., Ontario
Chambers, James, M.D., London
Chaplin, Ursula, M.B., Chelmsford
Charles, T. Edmonstone, M.D., Rome
Cheatle, G. L., F.R.C.S., London
Chestnutt, J., L.R.C.P. and S., Howden

Chiene, George L., M.B., Edinburgh
Chiene, Professor John, M.D., Edinburgh
Chill, Edwin, M.D., London
Chipman, W. W., M.B., Edinburgh
Christison, Surgeon-General Sir Alexander, Bart., M.D., Edinburgh
Christophers, S. R., M.B. Edin., Liverpool
Church, Anna L., M.B., Glasgow
Church, Clarence C. R., M.D., Ottawa
Church, H. M., M.D., Edinburgh
Churchill, Frederick, M.B., London
Clapham, W. Crochley Sampson, M.D., Rotherham
Clark, A. Campbell, M.D., Shotts
Clark, Andrew, F.R.C.S., London
Clark, Henry E., M.R.C.S., Glasgow
Clark, James, M.D., Lichfield
Clark, W. F., L.R.C.P., Cheshunt, Herts
Clarke, J. F., F.R.C.S., Edinburgh
Clarke, J. Michell, M.D., Bristol
Clarke, W. Bruce, F.R.C.S., London
Clarkson, R. D., M.B., Falkirk
Clay, John, M.B., Newcastle-on-Tyne
Clayton, J. S., M.D., Accrington
Cleveland, W. F., M.D., London
Clinch, T. Aldous, M.D., Durham
Clouston, T. S., M.D., Edinburgh
Clow, David, M.B., Kirkcaldy
Cluckie, Andrew, M.D., Stranraer
Coates, C. M., L.R.C.P., Taunton
Coghill, J. G. S., M.D., Ventnor
Coldstream, G. Probyn, M.D., Bedford
Collett, Edith G., L.R.C.P.Edin., Edinburgh
Collie, Robert John, M.D., London
Collier, H. S., F.R.C.S., London
Collins, E. T. F.R.C.S., London
Collinson, F. W., M.B., Preston
Colman, W. S., M.D., London
Connal, J. G., M.B., Glasgow
Connel, John, F.R.C.P.E., Peebles
Connor, G. W., M.R.C.S., Newry
Constable, John, M.D., Leuchars, Fife
Conyers, D. H., M.B., Georgetown
Cook, W. Stewart, M.B., Greenock
Cooper, Alfred, F.R.C.S., London
Cooper, Austin E. M.D., London
Cooper, C. M., M.B., Edinburgh
Copeman, S. M., M.D., London
Corby, Henry, M.D., Cork
Corfield, H. Oakley, M.B., Bristol
Corrie, Fleet-Surgeon Alfred, M.R.C.S., R.N., Edinburgh
Cosh, John J. C., M.B., London
Cotterill, J. M., F.R.C.S.E., Edinburgh
Cotton, William, M.D., Bristol
Couper, David, M.D., Glasgow
Cousins, J. Ward, M.D., Portsmouth
Cousland, P. B., M.B., Edinburgh
Cowan, J. M., M.B., Glasgow
Cowan, Insp.-Gen. M. W., M.D., Leigh, Worcester
Cowburn, A. D., M.D., London
Cownie, J. F., M.B., Cardiff
Cowley, J. Selwyn, M.R.C.S., Upton-on-Severn
Cowper, John, M.B., Shanklin
Cox, F. W. J., M.D., Bowden
Cox, J. J., M.D., Eccles
Cox, J. N., L.R.C.S.Edin., Gatehouse-of-Fleet
Cox, Llewellyn F., M.R.C.S., Denbigh
Crabb, James, M.D., London
Craig, Archibald, M.D., Pathhead, Ford
Craig, J., L.R.C.P.Edin., Glasgow
Craig, James, M.D., Dublin
Craig, Surgeon-Lieutenant-Colonel R.M., London
Craig, William, R.A.M.S., F.R.C.S. Edin., Edinburgh
Crawford, Douglas, M.B., Liverpool
Crawford, W. T., M.D., Worksop
Crease, J. Robertson, F.R.C.S.Edin., South Shields
Creasy, L. E., M.R.C.S., Ealing
Creery, J. T., M.B., Coleraine
Crerar, John Wm., M.D., Maryport
Crerar, Peter, M.B., Tutbury
Cressey, G. H., M.R.C.S., Torquay
Cresswell, P. R., F.R.C.S.Edin., Dowlais
Crocker, H. Radcliffe, M.D., London
Crombie, J. Frank, M.B., North Berwick
Crombie, J. L., M.D., North Berwick
Crookes, L. A., M.D., Edinburgh
Cropley, Henry, F.R.C.S., Northampton
Crowley, R. H., M.D., Croydon
Cuffe, Surg.-General C. MacDonagh, C.B., F.R.C.S.Edin., Portsmouth
Cullen, G. Mathieson, M.B., Edinburgh
Cullingworth, C. J., M.D., London
Cumming, John, F.R.C.S.Edin., Edinburgh
Cunningham, Professor, D. J., M.D., F.R.S., Dublin
Cunningham, John, M.B., Campbeltown
Curme, Decimus, M.R.C.S., Blandford
Currie, Oswald James, M.B., Maritzburg, Natal

Dacre, John, M.R.C.S., Clifton, Bristol
Daly, Frederick H., M.D.Edin., London.
Dalziel, Thomas K., M.B., Glasgow
Danvers, H., L.R.C.P.Edin., Bordighera, Italy
Darling, Thos. Brown, M.D., Edinburgh
Darlington, George Denholm, M.B., Edinburgh
Davidson, Andrew, M.D., Edinburgh
Davidson, David George, M.B., Edinburgh
Davidson, J. M., M.B., London
Davidson, John Stewart, M.B., Colchester
Davidson, Peter, M.B., Liverpool
Davidson, Robertson, M.B., Shettleston
Davidson, Thomas, M.B., Los Angelos, California
Davies, David Llewelyn, M.B., Neath
Davies, Ebenezer, M.R.C.S., Fochriw
Davies, Ellis. T., M.D., Liverpool
Davies, S. H., L.R.C.P. and S.Edin., London
Davis, A. N., L.R.C.P.and S.Edin., Plymouth
Davis, D. D. L.R.C.P. and S., Newcastle
Davis, E. H., M.R.C.S., West Hartlepool
Dawson, William R., M.D., Dublin
Deas, Peter M., M.B., Exeter
D'Evelyn, Alexander McN., M.D., Ballymena
Dempsey, Alex., M.D., Belfast
Dempsey, M. P. J., M.D., Dublin
Dendle, Frank, M.B., Lochgelly
De Souza, E. M., M.B., London
Despard, Rosina C., M.D., Virginia Water
Deverill, H. G., M.D., Edinburgh
Dewar, Hugh, M.B., Portobello
Dewar, James, M.D., Arbroath
Dewar, Michael, M.D., Edinburgh
Dewar, Thos. W., M.D., Dunblane
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Dickie, John T., L.R.C.P.Edin., Loanhead
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Dickson, George, M.D., Edinburgh
Dickson, George, M.D., Edinburgh
Dickson, George A., M.B., Edinburgh
Dickson, G. C., M.D., Carnoustie
Dickson, Walter, M.B., Hungerford
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Dixson, Douglas Scott, M.B., Edinburgh
Dockrell, Morgan, M.D., London
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Donald, George, M.D., Leith
Dougan, William, M.D., Glasgow
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Douglas, A. H., M.B., Nice, France
Douglas, C. Ed., M.D., Cupar, Fife
Douglas, Carstairs Cumming, M.D., Glasgow
Douglas, Kenneth M., M.D., Edinburgh
Douglas, Thomas, M.D., Cape Town
Douie, Mary B., M.B., London
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Dow, David R., M.B., Crail, Fife
Dow, W. Barrie, F.R.C.S.Edin., Dumfermline
Dowling, Jeremiah, F.R.C.S.I., Tipperary
Downie, J. Walker, M.B., Glasgow
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Draper, Jas. Wm., M.R.C.S., Huddersfield
Drennan, R. H., M.B., Gravesend
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Duguid, W. R., M.D., Buckie
Duke, Alex., F.R.C.P.Edin., Cheltenham
Dumat, H. A., M.B., Durban, Natal
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Duncan, Ebenezer, M.D., Glasgow
Duncan, James, M.D., Paisley
Duncan, John, M.D., Edinburgh
Duncan, John A. H., M.B., Edinburgh
Duncan, Thomas, M.B., Exeter
Duncan, William, M.D., Aberdeen
Duncanson, J. J. K., M.D., Edinburgh
Dunlop, G. H. M., M.D., Edinburgh
Dunlop, James C., M.D., Edinburgh
Dunn, W. J. R., Liverpool
Dunning, M., M.B., Glasgow
Dunsmure, J., M.D., Edinburgh
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Egdinton, Geo. Henry, M.D., Glasgow
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Edwards, David, M.R.C.S., Mold
Edwards, H. J., L.R.C.P.Edin., Oxford
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Elder, William, M.D., Leith
Elder, William Noel, M.D., Edinburgh
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Erkine, James, M.B., Glasgow
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Ewart, Wm., M.D., London
Eyre, John W. H., M.D., London

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Ferguson, J. Haig, M.D., Edinburgh
Ferguson, Robert Thomas, M.D., Anstruther
Ferguson, Samuel, M.B., Alloa
Fernando, H. M., M.D., Colombo
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Fowler, O. H., Cirencester
Fowler, S. C., M.B., Midlothian
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Fraser, Hugh Ernest, M.D., Dundee
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Fraser, John James, L.R.C.P.Edin., Clitheroe
Fraser, J. S., M.B., Edinburgh
Fraser, P., M.D., Leyland
Fraser, P., M.D., Carnarvon
Fraser, R. Moore, M.B., Belfast
Fraser, Thomas, M.B., Berwick-on-Tweed
Fraser, Professor Thomas R., M.D., F.R.S., Edinburgh
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Gairdner, J. Francis, M.B., Leeds
Gairdner, Professor Sir Wm. Tennant, M.D., Glasgow
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Goff, Bruce, M.D., Bothwell
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Goldie, William, M.D., Toronto
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Graham, D. J., M.D., Edinburgh
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Graham, R. B., F.R.C.S., Leven
Graham, Thos., M.D., Paisley
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Gray, James, M.B., Edinburgh
Gray, John A., M.B., Glasgow
Gray, Sarah, L.R.C.P.Edin., Nottingham
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Greenwood, J. W., M.R.C.S., Scarborough
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Greves, E. Hyla, M.D., Bournemouth
Greville, Ernest, M.B., Edinburgh
Grey, Harry, M.B., San Remo, Italy
Grieve, [illegible]
Griffin, [illegible]
Griffith, [illegible]
Griffith, Samuel, M.D., Port Madoc
Griffith, Surgeon Lieut.-Col., G. S., [illegible]
Grimmer, G. K., M.B., South Queensferry
Grimsdale, T. B., M.B., Liverpool
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Groves, Joseph, M.D., Carisbrooke
Grünbaum, Albert S., M.D., Liverpool
Gubb, Alfred S., M.P., London
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Gulland, G. Lovell, M.D., Edinburgh
Gunn, C. B., M.D., Peebles
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Habershon, S. H., M.D., London
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Haddon, John, M.D., Denholm
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Haig, William, M.B., Guardbridge
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Hamilton, John R., M.D., Hawick
Hamilton, Lilias, M.D., Ayr
Handfield-Jones, M., M.D., London
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Harbinson, John Wesley, M.B., Melbourne, Victoria
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Hardyman, G., F.R.C.S.Edin., Bath
Harley, Vaughan, M.D., London
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Harper, Joseph, M.R.C.S., Barnstable
Harris, D. Fraser, M.D., Edinburgh
Harris, S. C., M.B., Glasgow
Harrison, Beatrice M., L.R.C.P. and S., London
Harrison, Charles, M.D., Lincoln
Harrison, John, M.B., Lesmahagow
Harrison, Thomas, M.D., Selkirk, Ontario
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Hartley, Surgeon-Lieutenant-Colonel E. B., V.C., Umlala, South Africa
Harvey, Henry, M.B., Liverpool
Harvey, James, M.B., Edinburgh
Haultain, F. W. N., M.D., Edinburgh
Havard, David, M.D., Newport, Pembroke
Havelock, John G., M.D., Montrose
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Hay, Henry, M.B., Edinburgh
Hay, Matthew, M.D., Aberdeen
Hay, Walter, M.B., Plymouth
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Henderson, Elizabeth, L.R.C.P. and S.Edin., London
Henderson, George M.D., Coldstream
Henderson, Jane B., L.R.C.P. and S. Edin., Glasgow
Henderson, P. J., M.B., Edinburgh
Henderson, T. Brown, M.D., Glasgow
Henderson, Thomas, M.B., Florence, Italy
Henderson, W. E., M.B., Aberdeen
Hepburn, David, M.D., Edinburgh
Hern, John, M.D., Darlington
Herring, P. T., M.D., Edinburgh
Herschell, Geo. M.D., London
Hewetson, H. B., F.R.C.S., Leeds
Hewison, J. James, M.B., Edinburgh
Hewland, G. V., M.D., St. Leonard's-on-Sea
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Hill, Charles A., M.B., Liverpool
Hill, William, M.D., London
Hills, F., L.R.C.P., Croydon
Hinshelwood, James, M.D., Glasgow
Hobson, J. M., M.D., Croydon
Hodsdon, J. W. B., M.D., Edinburgh
Hogben, Edgar, M.D., Strathmiglo
Hogg, James B., L.R.C.P. and S., Toowomba, Queensland
Hoggan, Robert, M.B., Liberton
Hoile, Edmund, M.D., Edinburgh
Holden, C., M.D. St. John's, N. B. Canada
Hollis, Alfred, M.D., Freshwater, Isle of Wight
Hollis, Elphinstone, M.D., Woodbridge
Holmes, James, M.D., Manchester
Holmes, J. G., L.R.C.P., Leeds
Holt, Richard C., F.R.C.S.Edin., Burnley
Homer, Thomas, L.R.C.S.Edin., Elgg
Honeyburne, Richard, M.D., Bradford
Hood, Thomas A. F., M.B., Blairgowrie
Hope, E. W., M.D., Liverpool
Horder, T. Garrett, M.R.C.S., Cardiff
Horne, W. J., M.B., London
Horsburgh, J. H., M.B., Musselburgh
Horsley, Victor, F.R.S., London
Horsman, G. C., L.S.A., London
Hossack, J. F., F.R.C.S., Ipswich
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Hovell, Mark, F.R.C.S.Edin., London
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Howell, R. E., M.B., Middlesbrough
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Howie, John C., M.B., Glasgow
Hubbard, Daniel Lovett, M.B., Bordighera, Italy
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Hudson, James, M.B., New Zealand
Hughes, A. W., F.R.C.S., London
Hughes, J. Medwyn, M.B., C.M., Ruthin
Hughes, M. Louis, R.A.M.C., Aldershot
Hughes, Roger, M.R.C.S., Bala
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Hunter, George, L.F.P.S.G., Glasgow
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Hunter, Walter K., M.D., Glasgow
Hunter, W. Brown, M.D., Londonderry
Hunter, Wm. Lovell, M.D.Edin., Pudsey
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Hutchinson, Jonathan, jun., F.R.C.S., London
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Jackson, Thomas William, M.D. Chorley
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Jameson, James, M.D., Edinburgh
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Jamieson, W. Allan, M.D., Edinburgh
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Jardine, Robert, M.D., Glasgow
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Johnston, George Minto, M.D., Leith
Johnston, H. H., M.D., Edinburgh
Johnston, J. H., M.B., Nottingham
Johnston, J. McC., M.D., Glasgow
Johnston, John, M.D., Bolton
Johnston R. John, M.B., Edinburgh
Johnston, R. McKenzie, M.D., Edinburgh
Johnston, T. N., M.B., Corstorphine
Johnston, Lieutenant-Colonel W. T., R.A.M.C., Birr
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Jones, P. S., M.D., Sydney, New South Wales
Jones, Robert, F.R.C.S.E., Liverpool
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Kennedy, Duncan S., M.B., Perth
Kennedy, Rob., M.D., Glasgow
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Kerr, George, M.B., Edinburgh
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Kerr, J. M. M., M.B., Glasgow
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Kirk, T. S. M.B., Belfast
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Leith, R. F. C., F.R.C.P., Edinburgh
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Liddell, John, M.B., Errol
Liddell, John, M.D., Harrogate
Limont, James, M.B., Newcastle
Lindsay, James, M.D., Belfast
Linton, Gavin, M.B., Grangemouth
Linton, John, M.D., Edinburgh
Lithgow, Surgeon-Major-General S. E., C.B., M.D., Edinburgh
Little, Alex. M., M.B., Edinburgh
Little, David, M.D., Manchester
Little, E. Muirhead, F.R.C.S., London
Little, Jas., M.D., Dublin
Littlejohn, Sir Henry, M.D., Edinburgh
Littlejohn, H. Harvey, M.D., Edinburgh
Livesay, William, M.D., Derby
Livingston, George R., M.B., Crieff
Livy, John, M.D., Bolton
Lloyd, Jordan, F.R.C.S., Birmingham
Lockie, Stewart, M.D., Carlisle
Logan, George Duncan, M.B., Ecclefechan
Logan, Thomas, M.D., Bradford
London, John E., L.R.C.P., Georgetown, Demerara
Longbottom, William, L.R.C.P. and S.Edin., Sheffield
Loudon, James, M.D., Hamilton
Love, James Kerr, M.D., Glasgow
Low, Alexander, M.B., Aberdeen
Low, A. Bruce, M.D., Lunderland
Low, Alexander Petrie, M.B., Slateford
Low, George C., M.B., Monifieth
Low, R. Bruce, M.D., London
Lucas, R. Clement, F.R.C.S., London
Lucas, Robert, M.D., Dalkeith
Luckham, L. S., M.R.C.S., Salisbury
Lundie, Robert Alexander, M.B., Edinburgh
Lundie, William Tasker, M.D., Edinburgh
Lyon, T. M. Murray, M.D., Midcalder
Lys, Henry Graham, M.D., Bournemouth

McAldowie, A. M., M.D., Stoke-on-Trent
Macalister, C. J., M.D., Liverpool
Macallum, A. B., M.D., Toronto
McAllum, D. C. A., M.B., Ardrossan
McAllum, S. G., M.D., Wooler
Macan, Arthur V., M.B., Dublin
McArthur, Duncan R., M.D., Luton
Macarthur, Peter, M.B., Grey Abbey
Macaulay, D. J., M.D., Halifax
McAuley, J. H., L.R.C.P. and S., Dublin
McBride, Peter, M.D., Edinburgh
McCann, F. J., M.D., London
McClure, J. C., M.B., Glasgow
MacCormac, John M., M.D., Belfast
Macdiarmid, D., M.B., Stirling
Macdonald, Alex., M.B., Edinburgh
McDonald, Alexander Minto, M.B., Edinburgh
MacDonald, Angus, M.B., Edinburgh
Macdonald, C. R., M.D., Ayr
Macdonald, G., L.R.C.P.Edin., Markinch
MacDonald, Greville, M.D., London
Macdonald, J., M.B., Cupar
Macdonald, James, M.D., Carlisle
Macdonald, Keith N., M.D., Edinburgh
MacDonald, P. W., M.D., Dorchester
Macdonald, W. B., M.B., Dunbar
McDonnell, M. S., M.D., Luton
McDougall, J. N., M.D., Coldingham
McDougall, Mary, M.B., Wallington, Surrey
McDowall, J. G., M.D., Menston
McDowall, Thomas William, M.D., Morpeth
MacEwan, D., M.D., Dundee
McEwan, W. C., M.D., Prestonpans
Macewen, William, M.D., Glasgow
Macfadyen, Allen, M.D., London
McFadyen, Donald, M.D., Stirling
McFadyean, J., M.B., London
McFarland, Beattie, M.D., Lincoln
McFarlane T. F., M.B., Dundee
Macfarlane, William, M.D., Maybole
McFarlane, William, M.D., Glasgow
Macfie, Charles, M.D., Bolton
Macfie, Johnstone, M.D., Glasgow
MacGill, H. Moncrieff, M.D., Hartlepool
MacGill, Wakefield, M.B., Denton
McGillivray, Angus, M.D., Dundee
MacGillivray, C. W., M.D., Edinburgh
McGown, J., M.D., Millport
MacGregor, Jessie M., L.R.C.P. and S.Edin., Edinburgh
McGuire, James, L.R.C.P.S.I., Belfast
McHardy, Malcolm M., F.R.C.S., London
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McIntosh, J. Wilson, M.B., Edinburgh
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McIntyre, John Peter, M.D., Doune
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Mackay, F. Reid, M.D., Edinburgh
Mackay, George, M.B., Edinburgh
Mackay, George, M.D., Edinburgh
Mackay, Deputy-Surgeon-General George, M.D., Edinburgh
Mackay, James, L.R.C.P., Falkland
Mackay, John, M.D., Aberfeldy
Mackay, J. Sutherland, M.D., Kirkcaldy
Mackay, John Yule, M.D., Dundee
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McKelvie, Robert B., M.D., Oban
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Mackenzie, Colin, M.B., Edinburgh
Mackenzie, F. L., M.B., Huddersfield
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Mackenzie, James, M.D., Burnley
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Mackenzie, Robert, M.D., Edinburgh
Mackenzie, Ronald P., M.B., Edinburgh
Mackenzie, W. G., F.R.C.S.Edin., Belfast
Mackenzie, William Leslie, M.D., Leith
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Mackinnon, W. J., M.B., Biggar, N.B
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Mackintosh, A. W., M.D., Aberdeen
Mackintosh, D. J., M.B., C.M., Glasgow
Mackintosh, H. J., M.B., Bishopriggs, Glasgow
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McLaren, J. Shaw, M.B., Edinburgh
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McLean, Wm., M.B., Fortrose
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McLennan, Q., M.B., Glasgow
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McNeil, Roy, M.D., Oban
McNicol, Daniel, M.B., Glasgow
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Macpherson, Richard B., M.D., Cambuslang
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Macrae, John, M.D., Murrayfield
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Masson, G. H., M.D., Trinidad
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Matthew, Edwin, M.B., Edinburgh
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Mears, Wm., M.D., Edinburgh
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Menzies, J., M.D., Galashiels
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Messer, Andrew, M.B., Lemington-on-Tyne
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Middlemiss, G., M.D., Darlington
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Middleton, J. M.D., Caledonian United Service Club
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Miller, Alex. Gordon, M.D., Edinburgh
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Morison, Rutherford, L.R.C.S.Edin., Newcastle-on-Tyne
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Morris, Malcolm, F.R.C.S.Edin., London
Morris, S. G., M.D., Nantgaredig R.S.O.
Morris, Thos. H., M.B., Tylorstown
Morris, W. Jones, M.R.C.S., Portmadoc
Morrison, A. A., M.D., Alexandria, Egypt
Morrison, John O., M.B., C.M., Kirkcaldy
Morrison, J. Holmes, M.D., Perth
Morrison, Robert M.D., Methil
Morrison, W., M.D., Leith
Morse, T. H., F.R.C.S., Norwich
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Morton, James, M.B., London
Morton, John Leyden, M.D., London
Morton, Thomas H., M.D., Sheffield
Mosley, R. L., M.B., Long Eaton
Moss, C. F. Arrowsmith, M.B., Madagascar
Mossop, Isaac, F.R.C.S.Edin., Bradford
Mott, F. W., M.D., London
Mouillot, Albert, M.D., Harrogate
Moullin, C. M., M.D., London
Mowat, James, M.R., Edinburgh
Mowat, J., M.D., Edinburgh
Mowat, R. S., M.B., Dundee
Moxon, A. H., M.R.C.S., Great Yarmouth
Muir, Robert, M.D., Edinburgh
Muir, W. L., L.R.C.P.Edin., Glasgow
Muir, William, M.B., Davidson's Mains, Midlothian

Muirhead, Claud, M.D., Edinburgh
Mulqueen, John, M.D., London
Munro, Alexander, M.B., Glasgow
Munro, A. Campbell, M.B., Greenock
Munro, R. H., M.B., Friockheim
Murchison, Alexander, M.B., Cowdenbeath
Murdoch, Robert, L.R.C.P.Edin., Glasgow
Muriel, Cecil, M.R.C.S., Norwich
Murison, Patrick, M.B., Dundee
Murphy, George, M.R.C.S., Carlisle
Murphy, Jas., M.D., Sunderland
Murray, Donald, M.B., Stornoway
Murray, G. R., M.D., Newcastle-on-Tyne
Murray, Hugh, F.F.P.S.G., Glasgow
Murray, James, M.D., Inverness
Murray, John K., M.B., Whittlesea, Cape Colony
Murray, R. Milne, F.R.C.P.Edin., Edinburgh
Murray, R. W., F.R.C.S., Liverpool
Murrell, William, M.D., London
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Myrtle, J. A., M.D., Harrogate

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Nannetti, Mary F., L.R.C.S.Edin., Kirkmichael, N.B.
Nash, James F. C., M.B., Beckingham
Nasmyth, Thomas G., M.D., Cupar
Naylor, J. Nolliday, M.R.C.S., Low Moor
Neech, James F., D.Sc., Tyldesley
Neil, James, M.D., Oxford
Neilson, A., L.R.C.P.Edin., Glasgow
Nesfield, Stephen, M.D., Manchester
Ness, R. Barclay, M.B., Glasgow
Nettleship, Edward, F.R.C.S., London
Neu, C. F., M.D., London, Canada
Neve, Arthur, L.R.C.P.Edin., Brighton
Newington, H. H., F.R.C.P.Edin., Ticehurst
Newman, David, M.D., Glasgow
Newsholme, Arthur, M.D., Brighton
Nicholson, H. O., M.B., Kirkcaldy, N.B.
Nicholson, Staff-Surgeon R. H. M.R.C.S., South Queensferry
Nicholson, R. H. B., Hull
Nicoll, James H., M.B., Glasgow
Nicolson, David, M.D., Guildford
Nightingale, P. A., M.B., Bangkok, Siam
Niven, Thomas, M.B., Newburgh
Nix Edward James, M.D., London
Noble, James D., M.B., Dalkeith
Noott, Reginald H., M.B., Wokingham
Norman, Conolly, F.R.C.P., Dublin
Nott, Surgeon-Captain A. H., Bengal

Oakley, John, M.R.C.S., Halifax
O'Connor, B., M.D., London
O'Connor, Browne, L.S.A., London
O'Connor, J., L.R.C.P.I., Dublin
O'Gorman, Surgeon-Captain P. W., L.R.C.P.&S.E., I.M.S., India
Ogston, Professor Alexander, M.D., Aberdeen
Oldmeadow, L. H., M.B., Tasmania
Oliver, M. J., M.B., St. Boswell's
Oliver, Thomas, M.D., Newcastle-on-Tyne
O'Neill, Henry, M.D., Belfast
Orr, John Fraser, M.D., Glasgow
O'Ryan, J. F., L.R.C.P.Edin., Tipperary
O'Sullivan, A. C., M.B., Dublin
Ormerod, J. A., M.D., London
Ormerod, T. T., M.B., Brighouse
Orr, David, M.B., Edinburgh
Orr, James, M.B., Taypor
Orr, John, M.D., Edinburgh
Orr, W. Basil, M.B., Edinburgh
Orton, Charles, M.D., Orr, near Hastings
Osler, Prof. William, M.D., Baltimore
Oswald, James W. J., M.D., London
Oswald, L. R., M.B., Gallcosh
Owen, Edmund, F.R.C.S., London
Ozanne, Gleanmore, M.D., British Guiana

Pace, Elizabeth Margaret, M.D., Glasgow
Page, Frederick, M.D., Newcastle-on-Tyne
Palin, H. V., M.B., Wrexham
Palmer, W. Pitt, M.B., Torquay
Pardington, George L., M.D., Tunbridge Wells
Parker, William A., M.B., Glasgow
Parkinson, C. H. W., M.R.C.S., Wimborne
Parry, R. H., F.F.P.S.G., Glasgow
Parry, T. W., M.B., Youlgreave
Parsons, Alfred R., M.D., Dublin
Parsons, Charles, M.D., Dover
Parsons, Francis, M.D., West Worthing
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Paterson, David William Horn, M.B., Leith
Paterson, G. Keppie, M.B., Edinburgh
Paterson, G. W. Simla, M.B., Edinburgh
Paterson, James V., M.B., Edinburgh
Paterson, William, M.B., Leith
Paton, Diarmid Noël, M.D., Edinburgh
Patrick, William, M.D., Glasgow
Pavy, F. W., M.D., London
Payne, J. Frank, M.D., London
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Peddie, H. Anderson, M.B., Edinburgh
Pegler, H., M.D., London
Penman, R. S., M.B., Paisley
Penny, F., M.R.C.S., Barnstaple
Penny, Deputy-Surgeon-General J. C., M.D., London
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Perez, J. A., M.D., Trinidad
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Peters, George A., M.B., Toronto
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Philip, R. W., F.R.C.P., Edinburgh
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Phillips, Edward, M.B., Coventry
Phillips, George, M.B., Ealing
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Porter, George, M.B., Toronto, Canada
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Preston, J. M. S., M.B., Manchester
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Pringle, John James, M.B., London
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Pryce, T. Davies, M.R.C.S., Nottingham
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Purslow, C. Edwin, M.D., Birmingham
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Pye-Smith, R., F.R.C.S., Sheffield

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Ramsay, James, M.D., York
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Reid, John Charles, L.R.C.P., Fenwick
Reid, Thomas, L.S.A., Edinburgh
Reid, W., M.B., Kirkcudbright
Reid, William, M.D., Lochhead
Renshaw, C. J., M.D., Ashton-on-Mersey
Renshaw, W. A., M.R.C.S., Altrincham
Renton, Brigade-Surgeon-Lieutenant-Colonel D., M.D., Eyemouth, N.B.
Renton, J. C., M.D., Glasgow
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Richard, W. J., M.B., Glasgow
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Richards, J. P., M.R.C.S., Ealing
Richardson, W. G., F.R.C.S., Newcastle-on-Tyne
Richardson, W., M.D., Isle of Man
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Ridley, G. Walter, M.B., Newcastle
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Ritchie, Duncan, L.R.C.P.Edin., South Shields
Ritchie, James, M.D., Edinburgh
Ritchie, John, M.B., Glasgow
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Robertson, Alexander, M.D., Glasgow
Robertson, D. A., M.D., Edinburgh
Robertson, Duncan, M.B., Callander
Robertson, George M., M.B., Murthly
Robertson, James, M.B., Patna
Robertson, J. B., M.B., Stirling
Robertson, J. F., M.D., Lerwick
Robertson, John, M.D., B.Sc., Sheffield
Robertson, John Alex., M.D., Peterborough
Robertson, R. Macdonald, M.B., Edinburgh
Robertson, W. F., M.D., Edinburgh
Robertson - Fullarton, Archibald Louis F., M.B., Glasgow
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Robinson, Leonard N., M.B., Paris
Robinson, William, M.D., Sunderland
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Ronaldson, Rob. M., M.D., Edinburgh
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Ross, James Maxwell, M.B., Dumfries
Ross, T. A., M.B., Edinburgh
Rossie, J. C., M.D., Bathgate
Rouse, R. E., M.D., Monte Carlo
Routh, A., M.D., London
Rowlands, H. P., M.D., Towyn
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Roxburgh, William, M.B., Troon, Ayrshire
Rull, C. Percival, L.R.C.P., Southsea
Rusk, John, M.B., Belfast
Russell, Major A. F., R.A.M.C. Edinburgh
Russell, A. W., M.B., Glasgow
Russell, Sir James A., LL.D., Edinburgh
Russell, Mrs. Beatrice, M.D., Edinburgh
Russell, William, M.D., Edinburgh
Rutherford, Henry, M.B., Glasgow
Rutherford, James, M.D., Dumfries
Rutherford, James M., M.B., Edinburgh
Rutherford, John V. W., M.B., Newcastle-on-Tyne
Rutherford, Prof. W., M.D., F.R.S., Edinburgh
Ruxton, John, M.D., Blackpool
Rygate, D. J., M.R.C.S., Hove
Rygate, John James, M.B., Edinburgh
Rygate, J. R., L.R.C.S.Edin., Bridgwater

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Sinclair, R., M.D., Dundee
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Sinclair, Wm. Japp, M.D., Manchester
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Sloan, Samuel, M.D., Glasgow
Smailes, Rob., L.R.C.P.Edin, Leeds
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Smith, A. Muir, M.D., Glasgow
Smith, Andrew, M.D., Newcastle-on-Tyne
Smith, D. K., M.B., Toronto
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Smith, G. D., M.D., Leith
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Smith, J. Lorrain, M.D., Belfast
Smith, John, M.D., Edinburgh
Smith, J. W., L.R.C.P., Doncaster
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Smith, Walter, M.D., London
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Somerville, W. F., M.D., Glasgow
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Spence, Robert, M.B., Burntisland
Spence, William, M.B., Dollar
Spence, W. J., L.R.C.P.Edin., Leicester
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Stainthorpe, Wm. W., M.B., Saltburn-on-Sea
Stalkartt, Captain H. A., M.B., Southsea
Stalker, Prof. A. M., M.D., Dundee
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Steven, P., F.R.C.S.Edin., Dundee
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Stevens, John, M.D., Edinburgh
Stevens, J. W., M.B., Edinburgh
Stevens, W. Goldie, L.R.C.P. and S. Renfrew
Stevenson, John, M.B., Edinburgh
Stevenson, Louis E., M.B., Penrith
Stevenson, William, M.R.C.P., Crieff
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Stewart, Prof. James, M.D., Montreal
Stewart, James, F.R.C.P.Edin., Clifton, Glos.
Stewart, Jas., M.B., Maryhill
Stewart, Peter, M.B., C.M., Langley Moor
Stewart, Robert, M.B., Edinburgh
Stewart, Sir T. Grainger, M.D., LL.D., Edinburgh, *President*
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Stewart, Wm., M.D., Bacup
Stewart, William, M.D., Leith
Stiles, Harold J., M.B., Edinburgh
Still, George F., M.D., London
Stirling, David H., M.D., Perth
Stirling, J. W., M.B., Montreal
Stirling, Robert, M.D., Perth
Stirling, Stewart, M.D., Edinburgh
Stirling, Professor William, M.D., Manchester
Stocker, J. R., M.B., Glasgow
Stockman, Professor Ralph, M.D., Glasgow
Stoddart, John, M.B., Edinburgh
Stokes, Sir William, M.D., Dublin
Stone, George, L.R.C.P. and S.Edin., Newton-le-Willows
Storrs, Arthur, M.D., Southport
Strachan, J., M.D., Dollar
Strahan, M., L.R.C.P.Edin., Dublin
Strain, W. L., M.B., Brazil
Struthers, Sir John, M.B., Edinburgh
Struthers, John W., M.B., Edinburgh
Stuart-Low, William, L.R.C.P.Edin., London
Sturrock, A. Corsar, M.B., Edinburgh
Sturrock, C. A., M.B., Dunfermline
Sturrock, W. M., M.B., London
Suckling, Cornelius W., M.D., Birmingham
Summerskill, William, M.R.C.S., London
Sutcliffe, Alfred, F.R.C.S.Edin., Lytham
Sutherland, G. A., M.D., London
Sutherland, J. F., M.D., Edinburgh
Sutherland, L. R., M.B., Glasgow
Swallow, Allan, J., M.B., London
Swan, R. J., M.R.C.S., London
Swanson, George I., M.D., York
Sworder, Horace, L.R.C.P., Luton
Sykes, John C., M.B., Cleckheaton
Sym, Allan Cuthbertson, M.D., Edinburgh
Sym, W. G., M.D., Edinburgh
Syme, William Smith, M.B., Sanday
Symes, Langford, F.R.C.P., Dublin
Symington, Johnson, M.D., Belfast
Symonds, Henry, M.D., Kimberley, South Africa
Symons, W. H. M.D., Bath
Taylor, G. G. Stopford, M.D., Liverpool
Taylor, James, M.D., London
Taylor, James, M.R.C.S., Clifton, Bristol
Taylor, J. C., M.D., Las Palmas
Taylor, Sidney Johnson, M.B., Norwich
Taylor, Surgeon-Colonel W., M.D., Cardiff
Taylor, W. C., M.B., London
Taylor, W. Macrae, M.B., Edinburgh
Taylor, William, M.D., Edinburgh
Teacher, J. H., M.B., Glasgow
Templeman, Charles, M.D., Dundee
Templeton, George, F.R.C.S., London
Thatcher, Charles Henry, F.R.C.S.E., Edinburgh
Thin, Robert, M.B., Edinburgh
Thom, Alex., M.D., Crieff
Thom, J. Maxtone, M.B., Glasgow
Thomas, George Crewdson, M.B., Bath
Thomas, Surgeon-Major G. Harley R.A.M.C., Gibraltar
Thomas, J. Lynn, F.R.C.S., Cardiff
Thomas, John Jebb, L.R.C.S., Leicester
Thomas, Staff-Surgeon Lloyd, M.R.C.S., H.M.S. *Victory*
Thomas, H., M.D., Glasgow
Thomas, T. M., M.D., Newport
Thomas, W. Evans, M.D., Ystrad, Rhondda
Thomas, William, F.R.C.S., Birmingham
Thomas, W. T., F.R.C.S., Liverpool
Thompson, Edmund Symes, M.D., London
Thompson, Edward, M.D., Omagh
Thompson, George M., M.D., Bellaghy
Thompson, Henry E., M.B., Birmingham
Thompson, J. T., M.B., Cardiff
Thompson, Professor W. H., M.D., Belfast
Thomson, A. D. R., F.R.C.P.Edin., Musselburgh
Thomson, Alexis, M.D., Edinburgh
Thomson, Arthur, M.B., Oxford
Thomson, D. G., M.D., Norwich
Thomson D. G. Pearce, M.D., Penrith
Thomson, Emily C., L.R.C.P.Edin., Dundee
Thomson, James, M.D., Cowdenbeath
Thomson, J. M., M.B., Airdrie
Thomson, J. Still, M.D., Lincoln
Thomson, John F., L.R.C.P., Gateshead-on-Tyne
Thomson, John, M.D., Edinburgh
Thomson, StClair, M.D., London
Thomson, T. J., M.B., C.M., Edinburgh
Thomson, W. E., M.D., Glasgow
Thorne, Sir Richard, K.C.B., M.B., London
Thorne, W. B., M.D., London
Thornhill, Hayman, M.D., Bedford
Thornhill, Surgeon-Lieutenant-Colonel W., M.D., Cork
Thornley, Jos., M.D., Bolton
Thyne, G., M.B., Edinburgh
Thyne, Thomas Jackson, M.B., Edinburgh
Tilley, Herbert, M.D., London
Tindal, A. S., M.D., Glasgow
Tirard, Nestor, M.D., London
Titterton, W. S. S., M.B., Portobello
Tod, Hunter F., F.R.C.S., Eastwood Park, Giffnock
Tod, John, M.B., Leith
Todd, James, M.D., Glasgow
Todd, Margaret G., M.D., Edinburgh
Tomory, John Kay, M.D., Halkirk
Totherick, J. Y., M.D., Wolverhampton
Travers, William, M.D., London
Trench, F. Ponsonby, M.B., Edinburgh
Trevelyan, E. F., M.D., Leeds
Trout, J. Ensor, L.R.C.P., Birmingham
Tubby, A. H., F.R.C.S., London
Turnbull, Insp.-Gen. A., M.D., Emsworth
Turnbull, A. R., M.B., Cupar
Turnbull, Surg.-Maj.-Gen. P. S., MD., Edinburgh
Turner, A. Logan, M.D., Edinburgh
Turner, Dawson, M.D., Edinburgh
Turner, E. A., M.D., Glasgow
Turner, William, M.D., Gibraltar
Tuke, Sir John Batty, M.D., Edinburgh
Tuke, T. Seymour, M.B., London
Tyrrell, E. M., M.B., Galashiels
Tyson, W. J., M.D., Folkestone
Tytler, Peter, M.D., Manchester

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Underhill, Francis William, F.R.C.S.Ed., Moseley
Underhill, T. Edgar, M.D., Barnt Green
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Urquhart, Catherine J., L.K.Q.C.P.I., Edinburgh

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Van Someren, E. H., M.R.C.S., Venice
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Veitch, J. Ogilvie, M.B., Edinburgh
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Vinrace, John, M.D., Birmingham

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Wakefield, Robert, C., M.D., London
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Walker, A. H., M.R.C.S., Cranleigh
Walker, A. Stodart, M.D., Edinburgh
Walker, Jane H., L.K.Q.C.P.I., London
Walker, J. R. H., M.B., Edinburgh
Walker, Norman, M.D., Edinburgh
Walker, Walter Oliphant, M.B., Edinburgh
Walker, William, M.D., Glasgow
Wall, R. Bligh, M.R.C.S., London
Wallace, Andrew, M.D., Turriff
Wallace, David, F.R.C.S.E., Edinburgh
Wallace, James, M.D., Greenock
Wallace, J. W., M.D., Glasgow
Wallace, William, M.B., Glasgow
Waller, Augustus, M.D., London
Walsh, David, M.D., London
Walsh, Leslie H., M.R.C.S., Newcastle-on-Tyne
Walsh, William B., M.D., Melbourne
Walshe, Denis, L.R.C.P.&S.Edin., Graigue
Warburton, Joseph Wilkinson, M.D., Liverpool
Ward, J. L. W., M.R.C.S., Merthyr Tydfil
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Warden, Charles, M.B., Birmingham
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Waterston, David, M.B., Edinburgh
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Watson, A. E., M.R.C.S., Torquay
Watson, D. C., M.B., Edinburgh
Watson, H. A., M.B., Glasgow
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Watson, James, M.D., Southsea
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Watson, W. M. D., M.D., Slateford, Midlothian
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Watt, J. Leslie, M.B., Plymouth
Watt, N.P., M.D., Edinburgh
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Weir, A. Mary, M.D., London
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Westland, A. W., M.D., London
Westwood, David, M.B., Partick
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Williams, Patrick Watson, M.D., Clifton
Williams, Richard, M.R.C.S., Liverpool
Williams, W. Lloyd, M.B., Llanberis
Williamson, A. M., M.B., Edinburgh
Williamson, G. E., F.R.C.S., Newcastle-on-Tyne
Williamson, J. R., M.B., Guildford
Williamson, Richard Ernest, M.B., Otley, Yorks
Willson, A. R., L.S.A., Oxford
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Wilson, Andrew, M.B., Glasgow
Wilson, Frederick, L.R.C.P., Hull
Wilson, G. H., L.R.C.P.Edin., Edinburgh
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Wilson, Hector M., M.D., Wakefield
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Wilson, James, M.B., Glasgow

Wilson, James, M.B., C.M., Edinburgh
Wilson, James, L.R.C.P.Edin., Dumbarton
Wilson, J. J., M.D., Anstruther
Wilson, J. Lyon, L.R.C.P.Edin., Edinburgh
Wilson, J. Mitchell, M.D., Doncaster
Wilson, J. Osbert, M.D., Huntly
Wilson, J. P., F.R.C.S.Edin., Hawick
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Wilson, Samuel, M.R.C.S., London
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Wilson, T. Miller, M.D., Penrith
Wilson, William A., M.D., Greenock
Winterbotham, W. L., M.B., Bridgwater
Wolston, W. T. P., M.D., Edinburgh
Wood, R. E., M.B., Edinburgh
Wood, T. Outterson, M.D., London
Wood, W. W., M.B., Leith
Woodcock, S., M.D., Manchester
Woodhead, G. Sims, M.D., London
Woods, J. F., M.D., London
Wortabet, Surgeon-Major H. G. L., M.D., London
Wright, R. J. T., M.B., Edinburgh
Wright, W. M., Fraser, M.B., Edinburgh
Wylie, John, M.B., Kilmarnock
Wyness, J. D., M.D., Aberdeen

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Young, David Pryde, M.B., Musselburgh
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Young, J. Buchanan, M.B., Edinburgh
Young, Jas. Y. S., M.B., Edinburgh
Young, John, M.B., Earlston
Young, Joseph, L.R.C.P. and S., Limerigg
Young, Peter Alexander, M.D., Edinburgh
Young, R. A., M.D., London
Young, R. J. Erskine, M.D., Edinburgh
Yule, A. D., M.B., East Pilton
Yule, G. Pratt, M.B., Edinburgh

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Baginsky, Professor Adolf, M.D., Berlin
Benedikt, Professor Maurice, LL.D., Vienna
Blanchard, Dr. R., Paris
Boeck, Professor C., Christiania
Bourcart, A., M.D., Cannes
Bowditch, Professor, Boston, U.S.A.

Casper, Leopold, M.D., Berlin
Chalmers, Professor James, LL.D., U.S.A.
Cholmeley, Dr. Henry Patrick, the *Lancet*
Collins, J., M.D., New York
Comby, Dr., Paris

Dana, Professor C. L., New York
Dembo, T., M.D., St. Petersburg
Dercum, Professor Francis X., M.D., Philadelphia
Doyen, Dr. E., Paris

Ewald, Professor, M.D., Berlin

Fehling, Professor H., M.D., Halle
Fenton, Professor B. Turck, M.D., Chicago
Forster, Professor J., M.D., Strassburg

Gerhardt, Professor Carl, M.D., Berlin
Guiart, Dr. Jules, Paris

Heine, Dr. Axel, Copenhagen
Helm, Dr. O. von der, Bonn
Holbrook, Curtis C., M.D., New York

Jacobs, Professor C., Brussels
Johnston, Dr. James C., New York

Kelly, Professor Howard A., Baltimore
Kocher, Albert, M.D., Berne
Kocher, Theodor, M.D., Berne
Kyritzis, Nicolas, M.D., Naples

Landau, Theodor, M.D., Berlin
Laquer, Benno, M.D., Wiesbaden
Macdonald, Dr. A. E., New York City
McElwee, L. C., M.D., U.S.A.
Mangiagalli, Professor L., Milan
Marie, Dr. A., Paris
Martin, Professor A., Berlin
Martin, J. M., Montagne, P.E.I., Canada
Meighan, Jacob M., M.D., Twin Valley, Minnesota
Melchoir, Max, M.D., Copenhagen
Mikulicz, Professor Johann, Breslau
Miller, Dr. John Faure, Paris
Morisani, Dr. Teodoro, Rome
Morisani, Professor O., Rome

Naureddin, Dr. A., Constantinople
Nuel, Professor, Liège

Pierson, R. H., M.D., Lindenhof, near Dresden
Pijnappel, Dr. M. W., Zwelle

Roberts, Professor John B., Philadelphia
Rosenbach, Professor, M.D., Berlin
Rosenstein, Professor S. Siegm., Leyden
Rovsing, Thorkild, M.D., Copenhagen

Saenger, Professor Max, M.D., Leipzig
Saltet, Professor R. H., Amsterdam
Sambon, Dr. L. W., Rome
Schickert, Surgeon-Major Otto, Berlin
Smith, Oliver C., M.D., Hartford, Conn.
Snellen, Professor H., Utrecht
Streckor, Dr. Hugo, Wiesbaden

Taranto, Dr. F. de, Constantinople
Unna, Professor, M.D., Hamburg

Verry, Dr. L., Lausanne
Vivant, Dr. Y. E., Monte Carlo

Zehender, Professor W. v., Munich

THE MEDICAL PROFESSION AND CONTRACT PRACTICE.

Evesham.

Medical union does not seem perfect at Evesham. A Foresters' Court recently decided to reduce the slender fees paid to their medical officer, who resigned in consequence. The cause of the resignation was well known to the local profession, but it is to be regretted that one of them was found willing to accept the lower terms. It is satisfactory, however, to learn that he was the only applicant, and that all the others declined to have anything to do with this Court when they heard of the treatment of the former surgeon.

THE ASSOCIATION AND THE VACCINATION BILL.

The following is a copy of a letter addressed by the President of Council, during the annual meeting in Edinburgh, to the President of the Local Government Board, respecting the Vaccination Bill, together with Mr. Chaplin's reply:

British Medical Association,
Council Room,
Edinburgh,
July 29th, 1898.

Sir,—I beg to enclose a copy of a resolution passed in the Section of State Medicine of the General Meeting of this Association, now being held in this city, and which I have been requested to convey to you by Sir Henry Littlejohn, the President of the Section.

I am, yours faithfully,
Robert Saundby, M.D., LL.D.,
President of the Council.

To the Right Hon. Henry Chaplin, M.P.,
President of the Local Government Board
Whitehall, S.W.

Resolved: That in the opinion of this Section the Vaccination Bill at present before Parliament should be withdrawn in order that the Government may have an opportunity of fully considering the views and facts which have emerged in the discussion of the Bill on the part of the profession and the public, and that a new Bill should be introduced next session.

Reply of the Local Government Board:

Local Government Board,
Whitehall, S.W.,
July 30th, 1898.

Dear Sir,—I am desired by Mr. Chaplin to acknowledge the receipt of your letter of the 29th inst., enclosing a copy of a resolution passed by the Section of State Medicine of the General Meeting of the British Medical Association.

Yours faithfully,
Noel T. Kershaw.

The President of the Council, British Medical Association.

THE WORKMEN'S COMPENSATION ACT.

The following is an additional list of Medical Referees under the Workmen's Compensation Act, 1897, who have been appointed by the Secretary of State for England and Wales for certain County Court Circuits, in respect of which the arrangements are for the present complete:

Circuit No. 3.

Henry Ambrose Lediard, M.D., F.R.C.S., Carlisle.
Roderick Maclaren, M.D., Carlisle
Archibald Carmichael, M.D., Barrow-in-Furness.
George Bertram Muriel, M.B., M.R.C.S., L.R.C.P., Whitehaven.

Circuit No. 9.

William Hugh Hughes, M.R.C.S., Ashton-under-Lyne.
Thomas Castley Bailey, M.R.C.S., L.R.C.P.Edin., Crewe.
James Thomson Wilson Baird, M.B., Congleton.

Circuit No. 15.

Samuel Walker, M.R.C.S., Middlesbrough.
Henry Hind, F.R.C.S.Edin., Harrogate.
Charles Dennis Hill Drury, M.D., Darlington.
William John Beatty, L.R.C.P.Edin., Stockton-on-Tees.
Walter Petter, M.B., Darlington.

Circuit No. 18.

Ernest Stanley Nutting, M.B., Warsop.
Alexander Richard Anderson, F.R.C.S., Nottingham.
Henry Handford, M.D., Nottingham.
Simeon Snell, F.R.C.S.Edin., Sheffield.

Circuit No. 19.

Edmund Vaudrey, M.D., Derby.
William Legge, M.R.C.S., Derby.

Circuit No. 22.

Frederic Thorne, M.D., Leamington Spa.
Frank Faulder White, F.R.C.S., Coventry.
Clement Dukes, M.D., Rugby.
George Heaton, M.A., F.R.C.S., Birmingham.
Alfred Russell Darley, M.D., Rugby.

Circuit No. 24.—Further appointment.
Edward Treharne, L.R.C.P., L.R.C.S., Barry.

Circuit No. 26.

William Dunnett Spanton, F.R.C.S. Edin., Hanley.
George Stokes Hatton, M.D., F.R.C.S.Edin., Newcastle-under-Lyme.
John Holmes Joy, M.D., Tamworth.

Circuit No. 27.
Paul Morgan Chapman, M.D., F.R.C.P., Hereford. William Alma Aylmer Lewis, F.R.C.S., Oswestry.

Circuit No. 29.
Farington Marsden Granger, L.R.C.P., M.R.C.S., Chester. John Lloyd-Roberts, M.B., Denbigh.
Joseph Llewelyn Williams, M.B., M.R.C.S., Wrexham. John Williams, M.R.C.S., Carnarvon.
Edward James Lloyd, M.D., Bangor.

Circuit No. 31.—Additional appointment.
Frederick Robson, M.D., Port Talbot.

Circuit No. 36.
Frank Buszard, M.D., F.R.C.P., F.R.C.S., Northampton. Horatio Symonds, F.R.C.S.Edin., Oxford.
Robert Arthur Milligan, M.R.C.S., L.R.C.P., Northampton. William Collier, M.A.,M.D., Oxford.

Circuit No. 38.
Robert James Banning, M.D., Shoeburyness. Murtaugh James Houghton, M.R.C.S., L.R.C.P., York Road, Ilford.
Edward Liveing Fenn, M.D., M.R.C.P., Colchester.

Circuit No. 44.
John George Garson, M.D., 64 Harley Street, W. George Washington Isaac, M.B., 75, Gower Street, W.C.
Fletcher Beach, M.B., F.R.C.P., 64, Welbeck Street, W.

Circuit No. 47.
Francis James Steward, M.B., F.R.C.S., 24, St. Thomas Street, London Bridge, S.E.

Circuit No. 51.
John Ward Cousins, M.D., F.R.C.S., Southsea. Ernest Frederick Eliot, F.F.P.S. Glasg., L.R.C.P., L.R.C.S., Southampton.
Wilfred Balgarnie, F.R.C.S., Winchfield. William Sykes, M.D., Gosport.

Circuit No. 52.
Frederick King Green, F.R.C.S., Bath.

Circuit No. 57.
Joseph Harper, L.R.C.P., M.R.C.S., Barnstaple. George Loraine Kerr Pringle, M.D., Bridgwater.

Circuit No. 59.
Peter Gardiner, M.D., Camborne. Hugh Culliford Sharp, M.B., Truro.
Arthur Edward Permewan, M.D., Redruth. Joseph William Gill, M.R.C.S., L.R.C.P., Liskeard.

Circuit No. 6.—Revised List.
George Gibson Hamilton, F.R.C.S. Edin., Liverpool. Robert Meredith Littler, F.R.C.S., Southport.
Charles Stuart Pethick, M.R.C.S., L.R.C.P., Liverpool. Thomas Clarke, M.D., Liverpool.

In Scotland Francis William Grant, M.D. (Elgin) has been appointed for the Sheriffdom of Inverness, Elgin, and Nairn, to act in the district of the county of Nairn, and when required generally throughout the Sheriffdom; William M'Alister, M.B., for the Kilmarnock District of the county; and also for the Sheriffdom of Ayr; James Ross Watt, M.B. (Ayr) for the Sheriffdom of Ayr, and generally throughout the Sheriffdom.

EPSOM COLLEGE.

Founder's Day was celebrated at Epsom College by the distribution of prizes and the customary ceremonies and festivities. The head master, the Rev. J. N. Hart-Smith presided, and was supported by Dr. Shore, warden of St. Bartholomew's Hospital, and the following members of the Council: Sir Joseph Fayrer, Bart., Dr. Holman (Treasurer), Mr. J. Lumsden Propert, Dr. Baines, Mr. Kiallmark, Colonel Gordon Watson, Mr. H. E. Vardon, Mr. Clement Smiles, Dr. F. Taylor, and Mr. A. Oldaker.

The Head Master, in his report, stated that one of the greatest advantages the school possessed was the large number of scholarships for boys leaving to go to the London hospitals. For many years past there had been as many as nine scholarships. Three of them went to those who had obtained first class in the Preliminary Scientific Examination, four to those who passed that examination, and the remaining two to those who matriculated either in honours or the first division. For many years past, for various reasons upon which he need not dilate, those scholarships had not been filled up. Last there there was one boy in the first division, and that was something they need not be ashamed of, as the difficulty attending that achievement had increased of late years. It was thought that it would be right to approach the authorities of the different hospitals, and ask them whether they would reconsider the conditions under which the scholarships were given. He went to every hospital, and on all sides the justice of the request was acknowledged. He was very glad to announce that the hospitals, without exception, had acceded to the request made to them, so that in future the scholarships would be open to boys who succeeded in passing a portion of the examinations. The school possessed a really remarkable number of scholarships and exhibitions for the benefit of the boys who studied there, and he thought on Founder's Day, when they were all thinking of John Propert and the many others who had benefited them, it was right he should remind them of what had been done. There were no fewer than eight scholarships in addition to those he had been speaking of, in connection with one or another of the universities. Only last year a fresh one was established for the benefit of those going to the universities, and of the eight he had mentioned, three were available each year, and the others as they became vacant. In looking back over the events of the past year, he thought the most important thing was the progress of the Lower School, which was founded in order to enable them to receive small boys and give them different conditions from those in the college. The working in the past year under Mr. Newsom, the senior master, had given great encouragement. It was generally felt to be possible to combine with a school of that character the advantages of a preparatory school with the advantages of a public school. One of the greatest difficulties he had to contend with was the bad preparation of boys who came there. The new school was built for nearly one hundred boys, and there was still a large number of vacancies there. A good deal of discussion, in view of coming legislation, had taken place as to what the object of education should be. He was convinced that education of a general character was the only one from which to expect good results.

After the distribution of prizes, Dr. Shore addressed the boys, and said that Epsom boys compared favourably with those educated at any other school, and they did exceedingly well in the medical profession. At St. Bartholomew's they had had many excellent boys from Epsom.

Sir Joseph Fayrer, Mr. Lumsden Propert, and Dr. Holman each said a few words, mainly in advocacy of the system of general education in preference to specialism, and the proceedings terminated with the customary cheers.

THE METROPOLITAN ASYLUMS BOARD.

Report of the Statistical Committee for 1897.

There is not much of novelty to record in regard to this report; so far as the records of the Statistical Committee itself is concerned it follows much the same lines as in previous years. The chief interest naturally centres in the medical supplement, edited by Dr. Foord Caiger and Dr. Goodall, which is issued as an appendix. The first subject dealt with here is that of the complications and the coincident infectious diseases which occurred along with each malady under treatment.

Otitis still maintains its pre-eminence as a complication of scarlet fever, occurring in 14.39 per cent. of the cases. Its distribution among the several hospitals is worthy of note, especially the small number of cases that were noted at the two convalescent hospitals, the Northern and the Gore Farm. There is nothing, however, to show whether this is due to a considerable proportion of the cases of otitis which occurred during the acute stage having been cured before they went to the convalescent institutions or merely to such cases not having been sent there. It would be interesting to know the duration of the disease and in what proportion of the cases recovery has taken place before the patient is discharged.

Mastoid abscess, again, was markedly less common at the North-Western than at many other hospitals. It is satisfactory to find that, taking all the hospitals together, not more than 118 cases of mastoid abscess occurred, or only 0.77 per cent. of the cases of scarlet fever treated.

Of the diphtheritic cases, 42.16 per cent. suffered from albuminuria, and 20.55 per cent. had paralysis.

Scarlet fever occurred in 6.99 of the diphtheritic cases, and diphtheria in 5.22 of the scarlet fever cases.

Chicken-pox occurred with considerable frequency among the scarlet fever cases at some of the hospitals. That it was spread from case to case seems clear from the fact that one of the hospitals (the Fountain Hospital) was entirely free from this complication.

A very full report is given of the cases of post-scarlatinal

diphtheria which occurred at the different hospitals. There were 15,241 completed cases of scarlet fever during the year, and among these were 796 cases of post-scarlatinal diphtheria, which gives an incidence of 5.22 per cent., 0.58 more than last year. The high reported percentage of these cases during the last couple of years has doubtless been due to the fact that since 1895 bacteriological methods of diagnosis have been freely employed, cases being thus brought to light which would otherwise have been overlooked. This also no doubt has something to do with their extraordinary low case-mortality compared with what it was a few years ago.

The still further fall in the case mortality of this complication in 1897 is due, however, to another cause, and is most gratifying as showing the lessened fatality of the laryngeal cases.

The case mortality in 1897 was but 3.7 per cent., that of the laryngeal cases being 8.4, and of the remainder 2.9. In the preceding years they were 5.1, 22.7, and 2.8 respectively; so that the lessening in the total case mortality between 1896 and 1897 "appears to be entirely due to the lessening in the mortality of the laryngeal cases, and not to the inclusion of a larger number of mild ('bacteriological') faucial and nasal cases."

There is not very much that is fresh to note in regard to the use of antitoxin. It seems fully to maintain its position as a curative agent. One point, however, is certainly worthy of attention, namely, the statement that "the vast majority of the tracheotomy cases are in need of the operation when they are admitted to hospital, and that it is quite the exception for a patient who, on admission, has little or no laryngeal symptoms, and who is treated with antitoxin to develop urgent laryngeal obstruction afterwards, though this was by no means an uncommon event in the days before the serum treatment was introduced." Clearly one of the best things that the sanitary authorities can do in view of the widespread prevalence of diphtheria would be to make full provision for enabling practitioners to obtain reliable antitoxin at the earliest possible moment, even in the middle of the night; and to remove all the formalities which restrict its use. We should have been glad to see some explanation of the very high (comparative) mortality of the laryngeal cases, and the tracheotomy cases at one of the hospitals at which the general fatality of the diphtheria cases was by no means excessive. The fact that the death-rate in such cases at one hospital is more than twice what it is at others we think deserves some sort of notice.

The medical supplement contains some interesting articles which will well repay perusal. Diphtheria and the Heart is treated by Dr. Arthur Stanley, the Date of Onset of the various forms of Diphtheritic Paralysis by Dr. Miller, a case of Laparotomy for Perforation in Enteric Fever by Dr. Richards and Dr. Goodall, the Etiology of Necrosis of the Jaw in Scarlatina by Dr. Mantell, Acute Suppurative Peritonitis associated with Scarlatinal Nephritis by Dr. Thornton, Septic Osteitis by Dr. Mary Sinclair, Glanders by Dr. Hodges, and the Serum Diagnosis of Enteric Fever by Dr. R. G. Kirton. These essays are not only of importance from a professional point of view; they also serve to reassure the public that the hospitals of the Board are not merely houses of recovery, but are hospitals in the true sense of the word.

Turning back again to the main body of the report, we see how vast is the material for scientific observation and investigation, the cases admitted during the year having been 22,964 in number. These cases are fully tabulated, and the various interesting results are set forth as usual.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE British Pharmaceutical Conference held its annual meeting on August 9th, 10th, and 11th at Queen's College, Belfast, under the presidency of CHARLES SYMES, Ph.D. This is the second time that the Pharmaceutical Conference has visited Ireland. The first meeting was at Dublin twenty years ago.

The proceedings were opened by addresses of welcome from the Right Hon. the Lord Mayor of Belfast and the President of Queen's College.

Dr. SYMES, in his address, pointed to the necessity of education as the chief measure for bringing about a general advancement in pharmacy, and the value of a body like the British Pharmaceutical Conference, which offered to the newly-qualified man encouragement to devote himself to the higher branches of his calling, and to keep himself posted in the advances which were made, and thus to prevent drifting behind the times and lose the position he held in public opinion. It was evident from the ever-growing list of physiologically active synthetic compounds that there was a necessity for the pharmacist to keep up his knowledge of modern chemistry. Of the ordinary chemicals he knew the nature, qualities, and process of production, and it was that knowledge, together with care and experience in handling them, which in the eye of the law constituted qualification for the practice of pharmacy. The President gave a list of fifty substances which had recently been used, and showed that it was the duty of the pharmacist to familiarise himself as far as possible with these new compounds. Another chemical industry which had considerable interest for the pharmacist was the production of synthetic esters and odorous substances closely related to the odour of flowers, plants, and animal substances. Fruit flavours had been known for some time, but now it was possible to obtain the artificial odours of heliotrope, new-mown hay, jasmine, caraway oil, and others. These artificial odours were more persistent than the natural ones, and in some cases, as perfumes, were preferred by the public. The so-termed oxidised paraffin oils medicated in various ways, and known as valsols, and which in consequence of that oxidation were stated to be brought into a condition in which they were readily absorbed by the skin required investigation. The statement as to oxidation was so contrary to previous notions concerning the paraffins, that Dr. Symes was of opinion that it was not the pure paraffin which became oxidised, but rather the various substances usually found accompanying it in the commercial article. The new *British Pharmacopœia* had received adverse criticism from several well-known pharmaceutical authorities, but on the whole there was reason to believe that the work largely represented the advances which had been made in pharmacy since 1885. The absence of pharmacists from the Pharmacopœia Committee was to be regretted for several reasons, and the method of procedure with reference to the publication of the work might have been so arranged as to have saved much inconvenience and uncertainty, and for its more complete observance than now existed. Other topics which the President touched upon were the Poisonous Substances Bill, the amended Food and Drugs Act, and the legalisation of the metric system for commercial purposes.

The consideration of various reports and statements then began, and was followed by the reading of papers and their discussion.

On Tuesday the papers comprised notes upon kieselguhr, the oils of eucalyptus, lemon, and dill, and a quick polarimetric method for the estimation of strophanthin in the *B.P.* tincture and extract. A paper upon gluten flour and its analysis showed that gluten flour of commerce contains a notable quantity of starch; another upon the alkaloidal value of the green extracts of the *Pharmacopœia* pointed to the necessity for their standardisation.

Wednesday was almost entirely devoted to the reading and discussion of papers upon the new *Pharmacopœia*. The titles of these were the Galenicals of the 1898 *Pharmacopœia*, the Galenicals of the *Pharmacopœia* from a Wholesaler's Point of View, the Chemistry of the *Pharmacopœia*, the *Pharmacopœia* Chemically Considered, the Nomenclature of Certain Drugs of the *Pharmacopœia*, and Pharmacists and the *Pharmacopœia*. The general opinion appeared to be that as a whole the new *Pharmacopœia* was a distinct advance in pharmacy and a great improvement upon its predecessors.

DONATIONS AND BEQUESTS.—The late Mrs. Harriette Howard, of Blackpool, has by her will bequeathed £2,000, together with her invalid carriages, to the Blackpool Hospital, and £1,000 to the Staffordshire Infirmary.

CHOLERA IN MADRAS.—Dalziel's representative at Bombay, telegraphing on August 9th, states that owing to the outbreak of cholera in Madras having been declared epidemic, the port authorities of Colombo have imposed a five days' quarantine upon all vessels arriving there from Madras. The total number of cholera cases reported up to August 9th was 278, of which 63 had recovered.

SPECIAL CORRESPONDENCE.

PARIS.

The Paris Milk Supply.—A New Biological Institute.—Sick Leave in the Army.—The Spitting Nuisance.

A Milk Committee has sat for some time in order to draw up such regulations as may ensure a pure milk supply to the population of the French capital. Professor Budin, who drew up the general report of the Committee's proceedings, indicated the objects to be aimed at. M. Breuillé, a municipal councillor, has submitted the following proposals to the Municipal Council: To lower the price of sending milk by rail; to ensure strict superintendence over the sanitation of cows; the conveyance and sterilisation of milk; to forbid the sale in Paris of milk containing less than 30 grammes of butter or preserved milk prepared with chemical substances; to consider the means of establishing a sterilising milk factory and an *école de laiterie* at Paris. M. Breuillé further proposes that sterilised milk should be distributed gratis to mothers unable to buy milk for their children.

M. Brébant, architect of the Pasteur Institute, has been commissioned to build a Biological Institute. The site, which is opposite the existing Institute, was bequeathed by an anonymous benefactress two years ago to the administration of the Pasteur Institute, on the condition that a hospital should be built on part of the site. Baroness Hirsch's gift of £80,000 will defray the building expenses of the Biological Institute annexed to the hospital, and the remainder will be devoted to defray the yearly expenses of the laboratories. The hospital and laboratories will be ready for 1900. Professor Duclaux, the director of the Pasteur Institute, will fill the same post in the new institute. The biological laboratories of the Sorbonne will be at the new institute.

The Minister of War directs that three categories of "sick leave" are to be instituted in the army—temporary, long, and definitive. Temporary and long sick leave will, if it is judged to be necessary on re-examining the men, be changed into definitive exemption from military service.

The Police Prefect has evidently perceived that the admonitions posted up on the Seine boats and on the Paris omnibuses are treated as a dead letter. In order to induce the public to desist from the "detestable habit of spitting," the Conseil d'Hygiene considers that they should be instructed concerning the danger of this habit. The Police Prefect has therefore desired that the boat and omnibus companies shall add to the prohibition hitherto disregarded the reasons why it should be observed.

ROME.

The Health of the Pope.—Public Baths for Rome.—The Health of the Italian Army in 1896.—General News.

Somewhat alarming reports have lately appeared in a section of the Italian press as to the health of the Pope. I am able, however, to state on the authority of Professor Lapponi, the Holy Father's physician, that there is not the slightest foundation for these rumours. Leo XIII enjoys excellent health for a man of his great age—he is now in his 89th year—and he takes daily walks in the Vatican Gardens from 7 to 9 A.M.

The municipal authorities have at last decided to erect two public baths in Rome, where, strange to say, there is not at the present time a single public bath. This is all the more surprising when one thinks that Rome possesses the largest supply of water in proportion to its population of any city in the world, and that ancient Rome, in the times of the Cæsars, possessed 11 great baths and 926 smaller ones, in which 62,800 persons could bathe at the same time.

The Report of the Health of the Italian Army for the year 1896 has recently been published. It appears from this report that, out of a total of 204,382 men under arms in the above year, 151,438 were treated in the hospitals and infirmaries, that is 741.05 men in every 1,000. Of this number, 90,777 were treated in the hospitals and the remaining 60,681 in the military infirmaries. The total number of deaths was 1,184. Infective diseases furnished the greatest contingent with 536 deaths, of which 225 were due to typhoid fever. Next come those of the respiratory apparatus, 265, of which 134 were due to acute pneumonia. Constitutional diseases also furnished a large contingent of the death statistics, 204, of which 186 were due to general and local tuberculosis. There were 72 deaths from suicide. According to period of service and age the mortality is classified as follows: 556 died during the first year of service, 326 in the second year, 125 in the third, and barely 177 from the fourth to the twentieth year of service. The highest mortality was observed in those between 21 and 23 years of age (893); of those under 21, 107 died. The remaining 182 were from 24 to 40 years or more. The largest number of deaths happened among the soldiers born in Alpine Italy, 447; next those of Central Italy, 335; Southern Italy, 250; and finally Insular Italy with 150. When these figures are contrasted with the population it is found that Central Italy comes first with the proportion of 0.57 per mille, then Insular Italy and Alpine Italy with 0.37, and, last, Southern Italy with 0.32 per mille.

The first Congress of Legal Medicine will be held at Turin in October, under the presidency of the celebrated Professor Lombroso.

Dr. Luciani, Professor in Human Physiology in the University of Rome, whose work on the functions of the cerebellum is so well known throughout the scientific world, has been elected Rector of the Rome University for the academic year 1898-99. Professor Luciani has recently written a work on Human Physiology, which is to be published in three volumes. If one may judge from the portion already published, it promises to be one of the most important works on the subject written in these later years.

Dr. Corona, Professor of Experimental Physiology and President of the Faculty of Medicine of the Parma University, has also been elected its Rector.

CORRESPONDENCE.

THE VACCINATION BILL.

Sir,—The probable abolition of compulsory vaccination after long and increasing agitation throughout the country must cause the medical profession to seriously consider the real reason which has given rise to the strong feeling against vaccination, and to find a remedy for it.

There is only one great reason, namely, that many diseases —"bad arms," inflammation of the arm, abscesses, eczema, impetigo—and most diseases and most deaths that occur soon after vaccination, are put down by many people with great conviction to be the direct or indirect result of vaccination. This is the fount and origin of the whole agitation, the reason why a great number of people fear vaccination, and a small number agitate to abolish it altogether. The other reasons put forward by antivaccinators, namely, that vaccinia does not protect from small-pox, which has greatly lessened because of better sanitary conditions and better mode of living, and that epidemics of small-pox will not recur with any greater frequency when vaccination has ceased to be practised, are all reasons depending solely for their force on the fear of the results of vaccination.

First, as to "bad arms," local inflammation, erysipelas, and abscess at site of vaccination and in the auxiliary lymphatic glands, these can all be prevented with certainty. There is no doubt that vaccination is not done with the care necessary to prevent with certainty streptococcus infection of the wounds of the skin. The present usual "open" method is certainly bad, and is a fruitful cause of local inflammation and suppuration. Any dirt can get into the wounds, the edge of the sleeve is constantly rubbing against it, it is exposed to the septic dust in the air, it is rubbed against by the septic dress of the mother or older child, and is open to contamination in a hundred different ways. It ought to be made an absolute rule never to be departed from that vaccination should be performed with the strictest antiseptic precautions and the arm kept aseptic throughout.

1. The arm should be thoroughly washed before the doctor with soap and water, and dried with a sterile towel; the skin of the upper arm should be made as nearly sterile as possible with 1 in 1,000 biniodide of mercury.

2. Vaccination should be performed in the middle of the arm, nearer the elbow than the shoulder, with glycerinated

calf lymph only, with a sterile new needle which is thrown away after the vaccination: the arm then to be covered with strongly antiseptic absorbent lint and a layer of antiseptic absorbent wool and bandaged, a long strip of sticking plaster to be wound round the upper part of the bandage and arm so as to prevent air entry and slipping of bandage. These dressings ought to be reapplied every three days till the arm has entirely healed up: no lymph ought to be taken from the arm, so as to allow as much of it as possible to be absorbed, thus giving a more thorough attack of vaccinia, which means a more thorough protection against small-pox.

Thus all the great trouble of local septic inflammation could be surely avoided if rigid antiseptic precautions against every possible contamination were always employed, and one great cause of antagonism to vaccination would thus be removed.

Secondly, an impossible thing is asked of the profession, that is, that an infant under one year of age must not die from almost any cause, any time within two or three months of vaccination, or even get ill from any skin disease such as scabies, eczema, "pedicular" impetigo, or fall into marasmus, otherwise a sufficient number of people will put the disease down to vaccination, and keep up the agitation and antagonism to it. There is one important fact never to be forgotten in connection with vaccination, that is, the death-rate of infants under one year of age is enormous in great towns. Every age of life has a lower death-rate than that of infants under one year of age till the "85 and over" age period. For instance in 1897 the thirty-three great towns of England had an infant mortality of 176 per 1,000 births. In Preston the infant mortality in 1897 was 263 per 1,000 births. In the summer quarter Preston had an infant mortality of 449 per 1,000 births (see Quarterly Return of Registrar-General for 1897).

In 1896 (see 59th last issued Annual Report of Registrar General, pages LII and LIII) the death-rate of infants under one year to 1,000 births was 148, whereas the death-rate to 1,000 persons living at all the other age periods was

5–9,	10—,	15—,	20—,	25—,	35—,	45—,	55—,	65—,	75—,	85 and over.
4.3	2.3	3.4	4.6	6.2	10.1	15.7	29.2	59.9	122.6	239.5

Total deaths in England, 1896	...	526,727
" " " under 1 year	...	135,013
Total deaths in England, 1895	...	568,997
" " " under 1 year	...	148,093

About ¼ of total deaths are infants under 1 year of age.

So that just in the year when illnesses and the number of deaths are at the maximum, vaccination compulsorily takes place; can it be wondered that people who have not a scientific education, hearing of illness after illness, death after death, pretty soon after vaccination ascribe to it half the diseases that occur?

For all this an endeavour must be made, in the interest of the health of the nation, to avoid as far as possible even the appearance of illness following closely after vaccination. Now that vaccination is voluntary two courses seem necessary: (1) education of the public by an authoritative pamphlet on vaccination, given to the parent at the time of registration of birth, giving as clearly as possible full knowledge of vaccination and its effects, and pointing out the above error that is so easy for some people to fall into. (2) Extreme care on the part of the medical profession only to vaccinate strong and perfectly healthy infants, and to avoid vaccinating those in whom or in whose condition of life there is the slightest suspicion that any illness, slight or severe, is likely to arise shortly.

This extreme care in avoiding vaccination of all weak or ailing infants would go far to lessen the number of illnesses and deaths following close after vaccination, and this would greatly lessen the feeling against it. Some different and new practice is certainly necessary, the past practice having brought things to the present pass. Perhaps in the long run it may be better for the nation to have epidemics of small-pox from time to time, and learn wisdom and freely choose the right, rather than be for ever under the policeman's baton, ruled despotically, and compelled to do every right thing. Indeed, perhaps voluntary vaccination may indirectly lead to a great progress in the general sanitary condition of the whole country.

I am, etc.,

Southsea, July 26th. HONITON COATES.

THE VACCINATION SURRENDER.

SIR,—It seems time that our Association should declare its opinion on this important matter. The Council of the College of Surgeons has very properly reaffirmed the judgment pronounced by it in 1893, that "we should regard as a national calamity any alteration in the law which now makes vaccination compulsory." The College of Physicians has published a similar opinion, and if the authorities of our Association had followed these excellent examples, it might be said with truth that the whole medical profession was united on what ought to be a purely medical question in condemning the so-called conscientious objectors' clause against which the House of Lords protested.

If I am rightly informed, however, members of our profession in the House of Commons have been stating that they represented so many thousands of their fellow members of our Association in desiring the passage of the conscience clause, and in this respect they are, I believe, deceiving themselves.

To say, as one of the antivaccination papers has it, that Sir Walter Foster was speaking on behalf of the medical profession (or even of that portion of it connected with our Association) when, after quoting certain facts from Sir Thomas Watson, he held that they constituted a rational excuse for objecting to compulsory vaccination, is, as all your readers must be aware, to state what is as far as possible from the truth. Nor do party attacks on the Government help in my opinion to cover the fact that we have been placed in a false position by one of our own members, on whom the Association has conferred many honours, and in whom in time past many of us have shown considerable trust. I hold it to be iniquitous, as was well said by one of the speakers in the House of Commons, that a question concerning the health of the community should be made the battle-ground of political parties; and I hope that every Branch in our Association will take the earliest opportunity of expressing its dissent from Sir Walter Foster's views.—I am, etc.,

Dulwich, Aug. 1st. H. NELSON HARDY.

THE WIDOWS AND ORPHANS OF POOR MEDICAL MEN.

SIR,—The best thanks of the profession are due to Dr. Holman for his letter in the BRITISH MEDICAL JOURNAL of August 6th, calling attention to the claims of the above.

For over twenty years I have noted the wills, published by the press, of eminent and rich medical men, and have found therein provision made for free libraries, public parks, museums, beds in hospitals (to be named after the founder), etc., but very rarely indeed any mention in such wills of institutions for the relief of distress in the ranks of the profession, or of the widows and orphans of poor members.

I am sorry to say that this apathy, neglect, or indifference is not confined to England, for I understand that the Royal Medical Benevolent Society of Ireland suffers from the same cause.—I am, etc.,

August 8th. MEMBER OF SOUTH MIDLAND BRANCH.

RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.

SIR,—I regret that the reviewer of my book *Respiratory Exercises in the Treatment of Disease* should persist in saying I warn the reader in my preface that "the practical part of the book begins at the twentieth chapter." This is not so; I say the more practical part, which, you will observe, is a very different thing. At the beginning of Chapter XX, while stating that former chapters are largely occupied with theoretical considerations, I actually refer the reader, for his convenience, to no fewer than five previous chapters (and I might have added others) "treating of important practical points." In the face of this your annotation declares that "a reviewer would, indeed, be 'misleading'" if he failed to call attention to the fact "that the practical part of the book begins at the twentieth chapter."

It is true that I enter into a detailed account of certain physiological questions, but solely with a view to their practical application. Wherefore I repeat that my work is from start to finish essentially practical. Too often has the physician to rely upon empirical treatment, and I contend that

an attempt to devise a rational treatment—one founded on physiology—should be encouraged, and that a reviewer is ill-advised in warning off your readers from a work because the author enunciates in detail the principles upon which his treatment is founded.

Pray do not think, Sir, that I resent trenchant criticism. I ardently welcome it when it is to the point. Had my censor, for example, when he insinuates that many of my arguments are founded upon assertion rather than upon trustworthy evidence, given a case in point, it would have been most helpful, for I have taken great pains to be accurate as to my facts. Happily when he charges me with obscurity of diction, he does give what he regards as an instance, thus allowing your readers to judge how far the alleged obscurity attaches to my words, and how far to his understanding.—I am, etc.,

Wimpole Street, W., July 25th. HARRY CAMPBELL.

*** With regard to this letter, we have only to say that in the review to which Dr. Harry Campbell takes objection, an honest opinion was expressed after a careful study of the book. It cannot, we think, be contended that a reviewer ought to accept an author's statement that his book is "practical" if on perusal it appears to him to be the reverse.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

SIR,—A. is honorary surgeon to a hospital in a town of 60,000 people. He is appointed referee under the Workmen's Compensation Act. In order to secure the appointment he is compelled to give up his clubs; he, however, gets over this difficulty by securing the reversion to his partner. This gentleman, by the senior partner's influence with the manager of a works employing 5,000 or 6,000 men, is now appointed to act on their behalf in seeing and reporting on all cases of accident in the works (in reference to the Workmen's Compensation Act). This arrangement appears likely to make A.'s public duty clash with his private arrangements.—I am, etc.,

August 5th. FAIR PLAY.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—The following is a copy of a letter addressed to the General Secretary of the National Deposit Friendly Society in answer to an application for observations on the medical tariff of the Society.—I am, etc.,

Cardiff, Aug. 6th. T. GARRETT HORDER.

To F. Litchfield, Esq., General Secretary, National Deposit Friendly Society.

DEAR SIR,—In accordance with your wish, I have examined the pamphlets, etc., you were good enough to send me some little time since. I may remark before I enter into details that I have had considerable experience with friendly societies, and that long since I came to the conclusion that it would be a good plan to pay the medical officers of such societies for actual work done in attendance on the sick members. Of course, in arranging the fees to be paid, two things had to be taken into consideration, namely, the proper and sufficient remuneration of the medical officers and the position in life of the members of the Society. I freely admit that it is not an easy matter to settle the amount of the fees to the entire satisfaction of both these parties.

According to your rules, the following are the fees paid for medical cases in your society:—

	s.	d.
One visit with medicine for two days...	2	6
Ditto beyond three miles, extra per mile	0	6
Members enlitled to over 5s. daily sick pay, extra for every 1s. above 5s. per visit	0	6
Intermediate visits in dangerous cases, extra per visit	1	0
Attendance at surgery and medicines for two days ...	1	6
Fresh supply of medicine for two days	1	0

I notice that some alterations have been made in the above, and that now an extra fee of 6d. is allowed for cases outside the two miles radius, that 1s. extra is allowed for visits paid between the hours of 9 P.M. and 8 A.M., and that 6d. extra is allowed for attendance at the surgery between these hours.

I candidly confess that I do not think the terms offered are sufficiently liberal. To ask a medical man to travel four miles, and supply medicines in addition for a fee of 2s. 6d., is hardly reasonable or fair. Neither is the allowance of 6d. per mile for visits paid outside the two miles radius nearly sufficient. Again, the extra allowance for night visits and night attendances is far too small. Supposing a member sent for the medical officer in the middle of the night, and the member lives nearly two miles from the doctor's house, do you think the fee of 3s. 6d. would be a fair and reasonable one for such a journey? With respect to "intermediate visits in dangerous cases," it is not quite clear to me whether the medical officer would receive 3s. 6d. or 1s. for such visits. If it is the latter sum, then I must say it is altogether inadequate.

As it is of the highest importance that candidates should be properly examined by the doctors before being admitted, I would suggest that the fee for such an examination should be raised from 1s. to 2s. 6d. That a stricter examination is more necessary in your society than in the ordinary friendly societies is evident from the fact that you admit members up to 55 years of age.—I am, dear Sir, faithfully yours,

Cardiff, Aug. 5th. T. GARRETT HORDER.

THE TREATMENT OF SARCOMATA BY THE INJECTION OF MIXED TOXINS (COLEY'S FLUID).

SIR,—I read with great interest in the BRITISH MEDICAL JOURNAL of July 23rd the account that Mr. Marmaduke Sheild gave of the treatment of a case of recurrent spindle-celled sarcoma of the back by means of injections of Coley's fluid. Unfortunately it was not successful. The tumour, which was proved microscopically to be a sarcoma, did not disappear. It merely diminished in size. After a time the injections had no further effect, and the growth began to increase again. The same thing has been noted not only in other cases in which the toxins have been injected, but in some of those in which attacks of erysipelas have occurred; the growth in some instances appears to develop very rapidly, a power of resistance it did not possess at first. But though the case was not successful, it is distinctly most encouraging. It proves, if proof were needed, that in Coley's fluid we possess a substance which has the power of profoundly modifying the growth of certain forms of sarcomata. That alone is an immense step. Where it will lead it is impossible to say. It may lead no further. But it is at least admissible to hope that either by some modification of the substance itself, or of the conditions under which it is employed, it will be possible to produce so rapid and energetic an effect upon the growths that they will disappear entirely before immunity is established, instead of merely diminishing in size.

That the conditions under which the injections are made are not without an important bearing upon the result is shown by the following extract from a letter (dated February 18th, 1898) written to me by Dr. Coley: "I have a new successful case that I shall show before the Surgical Society of New York the last of the month. Inoperable sarcoma, spindle-celled, of parotid. Entire disappearance in three months' treatment. Three operations had been performed, and the glands in the neck were involved. The toxins had been tried at another hospital without success when I saw him (due to the small doses and irregular treatment)."

I agree with Mr. Sheild that "comparatively few really successful instances of disappearance of indubitable sarcoma have been recorded" as a result of the injection of Coley's fluid. For one reason, that it has been employed in many unsuitable cases. But there are a few, definitely proved, and some of them are of some years' duration. Whether recurrence will take place or not is another question. It must be remembered that even the most complete removal by operation does not confer immunity from this. In both the cases recorded by Mr. Sheild the tumours had been removed as freely as possible, yet they returned; and in one returned the more quickly after each successive operation. Too little is known with regard to the cause of these recurrences. But if they are due to outlying portions of the growth, or of the embryonic structure that precedes the growth, suddenly springing up into activity, there is at least as much hope from an internal remedy that causes disappearance by atrophy or fatty degeneration as from the most extensive removal by operation. On *a priori* grounds there may be even more.—I am, etc.,

Wimpole Street, July 24th. C. MANSELL MOULLIN.

VENESECTION IN CHRONIC BRIGHT'S DISEASE.

[DR. SAUNDBY requests us to publish the following letter which he has addressed to Professor Ewald.]

DEAR PROFESSOR EWALD,—In the Section of Pharmacology and Therapeutics at Edinburgh, during your speech on the treatment of chronic Bright's disease you expressed surprise that in the last edition of my lectures on Renal and Urinary Diseases I had omitted all reference to the value of bleeding in uræmia. I could only reply that if that were the case it was an undoubted omission, although it was rare for me now to have recourse to bleeding in these cases. On returning home, however, I have turned to the place in my book, and find you were mistaken, as on page 177, under the heading Treatment of Uræmia, are these words: "In obstinate con-

vulsions 12 to 16 ounces of blood may be taken from the arm. Hemiplegia and coma call for bleeding to the like amount, but the hot-air bath recovered one patient from coma after the attempt to bleed had failed."

I am sending this correction to the press.—Yours faithfully,

ROBERT SAUNDBY.

83A, Edmund Street, Birmingham, Aug. 6th.
Professor C. A. Ewald, M.D.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

PRELIMINARY SCIENTIFIC EXAMINATION.—The following candidates have satisfied the Examiners:

Entire Examination.—First Division: G. C. Adeney, St. Thomas's Hospital and private study; W. F. Box, Guy's Hospital; D. Brodie, King's College; M. Culpin, London Hospital; H. B. Day, King's College; E. H. Drinkwater, University College, Liverpool and University Tutorial College; A. F. Forster, St. Bartholomew's Hospital; A. Hamilton, St. Bartholomew's Hospital; T. H. Harker, St. Bartholomew's Hospital; private study: W. S. Hughes, University College, Cardiff; E. F. Iredell, B.A., University Tutorial College and Birkbeck Institute; J. H. Jagger, Kingswood School; F. W. Jones, London Hospital; J. E. Middlemiss, Yorkshire College; C. A. Moore, Merchant Venturers Technical College, Bristol; J. C. Mottram, University College; A. A. Myers, King's College; F. Rogerson, Guy's Hospital; J. N. Sergeant, St. Thomas's Hospital; Ida Russell Shields, Exeter Technical College and University College, Aberystwith; H. D. Smart, Guy's Hospital; M. W. Stewart-Smith, Birkbeck Institute, University Tutorial College and private study; N. I. Spriggs, private study. Second Division: E. L. Ash, Alwyne Institute; G. E. Aubrey, St. Bartholomew's Hospital; T. Bates, St. Bartholomew's Hospital; L. Bathurst, Dulwich College; W. Briggs, Owens College; J. Cook, University College, Cardiff, and private study; G. de la Cour, University Tutorial College; S. C. Dunn, Birkbeck Institution; D. Elder, University College, Liverpool; F. W. Fawssett, Guy's Hospital and University Tutorial College; Jessie Josephine Francis, University College; J. J. Gardiner, Guy's Hospital; Ruby Ellen Glanville, Tunbridge Wells High School; A. M. H. Gray, University College; H. B. Hill, Epsom College; C. E. Iredell, Guy's Hospital; H. B. Jones, Mason University College; I. D. Jones, University College; J. D. Kennedy, St. Mungo's and Technical Colleges, Glasgow, and private study; Jessie Lamb, Westfield College; J. A. Milne, London Hospital; E. G. D. Milsom, St. Bartholomew's Hospital; B. Moiser, Yorkshire College; A. H. Pinder, University Tutorial College; E. S. Prior, University College, Bristol; C. D. Pye-Smith, Guy's Hospital; J. J. Rainforth, London Hospital; A. D. Rees, University College, Cardiff; R. L. Ridge, London Hospital; M. de L. Robinson, Nottingham High School; F. W. Schofield, Owens College; Isabel Gertrude Sexton, Bedford and University College, London; G. H. Shepley, St. John's College, Cambridge; G. H. Shortridge, University College, Cardiff; Constance Brodribb Slater, King Edward's High School, Birmingham; A. H. Snell, Birkbeck Institute and Guy's Hospital; Alice Maude Sorabji, Bedford and University College, London; I. D. Stubbs, University College; J. D. Thomas, Birkbeck Institution; Mary Townsend, Westfield College; Margaret Cordelia Vivian, Royal Holloway College; A. M. Webber, Guy's Hospital; B. H. Weld, Guy's Hospital and University Tutorial College; R. S. Woods, Queen's College, Belfast.

Chemistry and Experimental Physics.—†C. S. Archer, Yorkshire College and University College, Nottingham; †E. C. P. Barnes, London Hospital; H. H. Bashford, London Hospital and University Tutorial College; Alice Marian Benham, University Tutorial College and private study; †Ruth Levy Benjamin, University Tutorial College and Birkbeck Institution; †G. H. Brown, Owens College; H. D. Chernside-Smith, St. Paul's School and private tuition; Helen Mary Collins, private study; C. Colmer, Epsom College; A. W. D. Cornelius, Trinity College, Cambridge; E. P. Cumberbatch, St. Paul's School; D. M. Davies, University College, Aberystwith; E. W. Dewes, St. George's Hospital; P. A. S. Dyson, Guy's Hospital; P. G. Fowler, Birkbeck Institution; †Mabel Emily Gates, University Tutorial College; †K. M. Gibbins, St. Mary's Hospital; E. G. Gimbert Lamel, Cooper's Hill, University College, and private study; M. Greenwood, Birkbeck Institution and private study; A. H. Gregson, Owens College; †Ida Margaret Guillaume, University Tutorial College; †W. C. F. Harland, St. Bartholomew's Hospital and University Tutorial College; †G. S. Hett, private study; †Elizabeth Hill, University College; L. Hinder, Merchant Venturers Technical College, Bristol; A. B. Howitt, Epsom College; Catherine Mary Ironside, University Tutorial College; J. Jones, Owens College; A. E. F. Kynaston, Oundle School; C. H. Latham, St. Thomas's Hospital; O. E. Lord, St. Bartholomew's Hospital; L. P. Maitland, the Polytechnic, Regent Street, and private study; †R. V. G. Mouckton, private study; †A. C. Motta, St. Mary's Hospital; P. A. Peall, Guy's Hospital; S. H. Pitcairn, St. Thomas's Hospital; G. Price, St. Thomas's Hospital; G. H. Rees, Camberwell Grammar School; H. T. Samuel, Kingsholme School, Weston-super-Mare; †P. H. Seal, University Tutorial College; F. W. W. Smith, University Tutorial College and Birkbeck Institute; †Mary Margarete Louise Birkbeck Institute; †Annie Broomhall Thin, Ladies' College, Cheltenham; S. B. Turner, University and Wesley Colleges, Sheffield; G. O'N. Waddington, London Hospital; H. W. Ward, King Edward's High School, Birmingham; F. R. Wheeler, Monkton Combe School, Bath; †W. A. L. Whitehouse, Carlyon College and Westminster Hospital; †Ada Miles Whitlock, University Tutorial College; †E. Wilkinson, Mason College; G. E. O. Williams, Bedford Grammar School; H. W. Wilson, King Edward's School, Chelmsford; L. A. Wilson, Owens College; †Frederick Robert Elliston Wright, St. Thomas's Hospital; †Lilian May Barker Wright, University College, Nottingham.

Biology.—†O. F. H. Atkey, King's College; W. Bain, City of London College; †C. H. Berry, University and University Tutorial Colleges; †E. W. C. Bradfield, King Edward's School, Birmingham, and Mason University College; Mabel Sophia Gabrielle Breeze, Bedford College, London; †P. C. Brown, St. Bartholomew's Hospital; †H. S. Brown, University College and Guy's Hospital; †G. L. Bunting, Westminster Hospital; †H. Catling, St. Thomas's Hospital; Caroline Agnes Crompton, University Tutorial College; †T. B. Davies, University College, Aberystwith, and St. Bartholomew's Hospital; R. Deane, University and University Tutorial Colleges; †P. G. Easton, St. Mary's Hospital; A. J. Edmonds, Owens College; Olive Muriel Edgood, Ladies' College, Cheltenham; †E. S. Ellis, St. Bartholomew's Hospital and private tuition; †H. Falk, St. Bartholomew's Hospital and King's College, Cambridge; †J. Ferguson, St. Bartholomew's Hospital; †W. Garton, Alwyne Institute and St. George's Hospital; †L. S. H. Glanville, University College, Bristol; Florence Erin Gubb, University College; †P. W. Hamond, Guy's Hospital; R. O. Handcock, Yorkshire College; †V. Hetherington, St. George's Hospital; †R. Holtby, St. Bartholomew's Hospital; E. C. Hood, Yorkshire College; E. Hulme, Owens College; H. Irving, Owens College; †A. G. Jackson, University College, Liverpool; †E. J. C. Jermain, Epsom College and Charing Cross Hospital; Mary Sophia Jevons, private study, Bedford and University Tutorial Colleges, and Polytechnic; †C. R. Keed, Carlyon College and St. Bartholomew's Hospital; Eleanor Gladys Kensington, Bedford and University Colleges, London; W. N. Kingsbury, City of London School and Birkbeck Institute; Kate Knowles, University College, Nottingham, and private study; C. L. Lakin, Charing Cross Hospital and private study; †R. Larkin, St. Olave's Grammar School; †H. D. Ledward, Trinity College, Cambridge; †F. Macfadyen, St. Bartholomew's Hospital; †A. Manuel, St. George's Hospital; B. S. Matthews, Owens College; A. R. Neligan, St. Bartholomew's Hospital; †F. Paine, Middlesex Hospital and University Tutorial College; †G. G. Parkin, Owens College; †Kate Anne Platt, University Tutorial and Carlyon Colleges; †J. M. Plews, St. Bartholomew's Hospital; T. P. Puddicombe, University Tutorial College and private tuition; †G. H. Rodolph, London Hospital; A. Rollason, Mason University College; W. L. Scott, University College and Birkbeck Institute; †D. L. Sewell, Owens College; †J. B. Stephens, St. Mary's Hospital; J. Stewart, London Hospital; D. J. Thomas, University College, Cardiff; W. P. Walker, University Tutorial College; †H. Watts, St. George's Hospital and University Tutorial College; †J. B. V. Watts, University College, Bristol; F. Weber, St. Bartholomew's Hospital; Elizabeth Rose Wells, Owens College; A. D. White, St. Bartholomew's Hospital; †H. T. Wilson, Bedford Grammar School; Lilian Ethel Wilson, Bedford College, London; †L. L. Winterbotham, St. Bartholomew's Hospital; G. E. Wood, St. Mary's Hospital.

INTERMEDIATE EXAMINATIONS IN SCIENCE AND PRELIMINARY SCIENTIFIC EXAMINATION. — The following candidates have satisfied the examiners:

Inorganic Chemistry (Honours).—First Class: P. R. Bolus, Guy's Hospital; T. A. Henry, private study and Pharmaceutical Society's School; W. Makower, University College: H. Newbould, Nottingham High School; W. G. Orme, Mason College; J. I. Scott, Royal College of Science and Birkbeck Institution; E. H. Todd, University College (Exhibition). Second Class: J. Bearcroft, Royal College of Science and Chelsea Polytechnic; Sibyl Frood, University and Royal Holloway Colleges; E. H. B. Milsom, Guy's Hospital; W. L. Odell, Birkbeck Institution and Royal College of Science; Agnes Robertson, University College; H. S. Shelton, private study; R. E. B. Smith, University College; C. J. R. Tipper, private study and University Tutorial College. Third Class: F. C. Clarke, Plymouth Science, Art, and Technical Schools and private tuition; C. S. van R. Harwood, private study; B. Higham, Camberwell Grammar School; F. C. V. Rickards, Royal College of Science, Victoria Institution Walsall, South-West London Polytechnic, and Birmingham Technical School; C. C. Robinson, St. Bartholomew's Hospital; F. Southerden, Birkbeck Institution.

Experimental Physics (Honours).—First Class: *J. W. Barker (Neil Arnott Medal), Royal College of Science and South-west London Polytechnic; *R. J. Sowter, Royal College of Science; W. H. White (Neil Arnott Exhibition and Medal), Royal College of Science. Second Class: E. Hinks, King's College; R. Y. L. Lee, City of London School and King's College; J. A. McBride, Queen's College, Belfast; W. G. Orme, Mason College; J. I. Scott, Royal College of Science and Birkbeck Institution. Third Class: F. B. Carter, University Tutorial College; W. S. Charlton, University College, Nottingham, and private study; G. D. Frater, St. John's College, Cambridge, and University Tutorial College; E. P. Harrison, University and University Tutorial College; W. L. Odell, Birkbeck Institution and Royal College of Science.

Botany (Honours). First Class: *A. K. Coomára-Swámy, University College; Agnes Robertson (Exhibition), University College. Second Class: H. M. Woodcock, University Tutorial College and private study. Third Class: W. E. Harding, Merchant Venturers Technical College, Bristol.

Zoology (Honours).—First Class: E. S. Montagu (Exhibition), University College. Second Class: L. G. Parsons, Mason University College and private study; H. M. Woodcock, University Tutorial College and private study. Third Class: G. H. Leader, Merchant Venturers Technical College, Bristol; C. C. Robinson, St. Bartholomew's Hospital.

Pass List. First Division: S. A. Boyd, Charing Cross Hospital; W. Gillitt, Middlesex Hospital and University College; A. J. R. Jacoby, University Tutorial College; F. R. Parkes, University College,

Aberystwith; I. E. Woodward, Bedford and University Colleges, London. Second Division: C. A. Ablett, Oundle School; Elizabeth Bolton, Bedford College, London; J. H. Legge, Yorkshire College; Louisa Florence Mellows, Bedford College, London; S. H. Nixon, University College, Aberystwith; Helen Marion Louise Pearce, Ladies' College, Cheltenham; J. W. Tomlinson, University College, Nottingham, and private study; C. M. Wenyon, Yorkshire College.

* Obtained the number of marks qualifying for the exhibition.
† These candidates have now completed the examination.

UNIVERSITY OF EDINBURGH.

The following is the official list of passes at the recent First, Second, and Third Professional Examinations for Degrees in Medicine and Surgery:

First Professional Examination.—R. G. W. Adams, L. Anderson, M. F. Anderson, R. G. Archibald, N. H. Beath, E. Bennett, W. Bennett, W. Blackwood, F. A. Braine, M.A., G. B. Brand, J. G. Briggs, J. E. M. Brown, H. H. Bullmore, C. M. Campbell, M.A., K. A. Cappie, A. Carruthers, M.A., J. W. Cathles, A. M. Caverhill, P. D. Cremona, C. W. C. Crooke, H. L. Cumming, S. Cunliffe, J. Dommisse, J. Dunlop (with distinction), P. El-Karey, J. S. Elliott, S. C. Ellison, J. Fairbairn, A. N. Fell, B. P. Ghose, C. M. Gillespie, E. C. Gimeson, A. M. Gloag, R. G. Gordon, A. Grant, J. A. Gray, M.A., T. B. Hamilton (with distinction), D. J. Hamman, H. Harding, A. W. M. Harvey, A. W. Hauman, G. Henderson, M.A., H. Herd, J. T. Hill, T. J. Hofmeyr, R. B. Hole, M. Holmes, J. M. Johnstone, J. N. Karma, J. P. Kennedy, H. Kerr, R. D. Kidd, E. A. King, H. A. Knight, H. Kramer, G. I. Leeesne, Norah Lenwood (with distinction), W. Lilico, J. C. London, R. C. Low, T. S. M. Lumsden, W. F. MacDonald, G. M'Farland (with distinction), I. N. M'Keand, G. M'Neill, C. E. Marshall, J. M. Marshall, R. J. Mayberry, E. L. Meynell, T. Mill, W. S. Milne, A. M. Moll, G. I. Moriarty, A. E. Morton, R. S. Munro, A. E. Nalborough, C. Nelson, A. L. Nestor, C. O'Flaherty, T. H. Osler, T. C. E. Parry, E. P. B. Phillips, J. H. H. Pirie, A. M. Pringle, J. A. Raubenheimer, J. J. Redhead, C. Reece, A. B. dos Remedios, R. A. C. Rigby, H. H. Robarts, A. Rose, F. E. Ross, R. E. Russell, J. S. Sewell, J. J. Shannon, E. S. Sharpe, M. Sinclair, W. F. Smeall, J. M. Smith, E. W. Smyth, D. W. Standley, J. P. Steven, H. M. Stumbles, G. A. J. Tait, A. B. M. Thomson, P. Vickers, J. F. van de S. de Villiers, E. Wells, W. C. P. White, H. Whittaker, G. Wight, S. A. K. Wilson, M.A., W. Y. Woodburn.

Second Professional Examination.—V. G. S. Adams, R. Affleck, H. Alexander, C. H. Allen, E. M. Anderson, M. S. Anderson, W. L. G. Anderson, B. H. S. Aylward, A. J. Baird, F. A. F. Barnardo, M.A., J. H. Bell, L. N. Biggs, L. Bruce, G. B. Butt, E. Cameron, J. P. Campbell, G. S. Carey, H. L. Clift, W. J. Collinson, A. D. S. Cooke, L. Crossley, G. A. Davidson, A. Dods, J. P. Douglas, E. Ewart, C. Fraser, Y. Fukuda, A. W. Fuller, O. A. Gee, J. C. Gilchrist, N. Glegg, J. L. Green, R. Hamilton, F. Hardie, Eleanor Hodson, L. G. Hood, A. J. Hughes, D. B. B. Hughes, F. F. C. Jagger, J. G. S. Jamieson, M.A., J. Jamieson, J. M. Jeffrey, J. C. Kennedy, F. K. Kerr, H. C. Keun, S. M. de Kock, A. C. Lennie, G. H. Lewis, G. A. Lowther, D. J. M'Adam, R. J. M'Clelland, J. G. M'Dougall (with distinction), W. J. M. M'Farlane, W. E. M'Farlane, J. H. M'Kee, J. G. Mackenna, D. M. Macleod, Elizabeth Macrory, K. D. Melville, H. C. Miller, J. B. Milne, M. C. Morgan, Florizel Myers, J. C. Parker, P. Pattison, C. B. Paul, M. C. Pepper, D. E. Pratt, J. B. Primmer, J. R. Prytherch, S. Rattray, J. L. Rentoul, O. L. Rhys, C. M. Richardson, C. H. G. Ritter, D. J. Roberts, A. Robertson, J. Ross, M.A., R. Rutherford, L. S. Sandemar, J. B. Scott, B.A., S. R. Sibbald, W. Sloss, J. A. Smaill, H. O. Smith, H. M. Speirs, A. D. Spence, B. Stracey, C. P. Strong, K. H. H. Uffman, N. N. Wade, W. Wallace, P. D. Whiriskey, G. Wright (with distinction), J. H. Wrightson.

Third Professional Examination.—F. A. F. Barnardo, M.A., L. D. H. Bough, J. A. Black, H. W. Boreham, J. M. Buist, E. A. Burroughs, G. J. R. Carruthers, M. Carthew, C. S. Clark, H. E. Coghlan, W. J. Collinson, J. D. Comrie, M.A., B.Sc., S. L. Dawkins, Y. A. Djedjizian, D. R. Evans, D. J. Fergusson, B. K. Goldsmith, C. H. G. Gostwyck, A. N. de Gruchy, G. Haddow, W. D. S. Harrison, P. H. Henderson, W. E. Herbert, J. Jeffrey (with distinction), H. C. Keun, C. King, C. G. S. Reeds, G. Lyon (with distinction), W. J. M. M'Farlan, E. W. Martin, E. G. D. Menzies, M. J. Menzies, J. Miller, H. A. D. Moore, S. H. Morris, A. Mouat, A. C. Neethling, T. E. Richards, D. Robertson, A. A. Robinson, W. Rogers, J. M. Ross, A. B. Slater, W. C. Spooner, H. B. Sproat, B. Stracey, K. L. Teng, G. Thomson, W. G. Thompson, J. B. Thorburn, A. Tweedie, W. G. Williams.

VICTORIA UNIVERSITY.

First Examination, Faculty of Medicine. Part II.—The following candidates have satisfied the Examiners in the subject noted:

Biology.—J. W. Anderton, Owens; J. H. Bateson, Owens; J. P. Bligh, Univ.; L. R. Braithwaite, Yorks.; W. Briggs, Owens; C. H. Bromhall, Owens; G. H. Brown, Owens; S. Brown, Univ.; T. Brown, Yorks.; J. Brunskill, Owens; A. Burkhard, Yorks.; L. T. Chadwick, Yorks.; A. G. Christian, Univ.; W. E. Cooke, Univ.; E. H. Cox, Owens; E. H. Crawley, Yorks.; J. A. Davenport, Owens; A. J. Edmonds, Owens; D. Elder, Univ.; A. H. Gregson, Owens; H. E. Heapy, Univ.; E. W. Henstock, Owens; B. Herald, Owens; G. R. Hitchin, Owens; C. H. Hopwood, Owens; A. Howard, Owens; E. Hulme, Owens; J. R. Hutchinson, Owens; H. Irving, Owens; A. E. Johnson, Owens; J. A. Johnson, Univ.; J. A. Jones, Owens; G. W. N. Joseph, Univ.; R. E. Knowles, Univ.; F. H. Lacey, Owens; R. G. M. Ladell, Yorks.; A. W. Latham, Owens; G. Laurence, Univ.; G. H. Leigh, Owens; J. T. Lloyd, Univ.; J. A. Longley, Yorks.; J. Longworth, Owens; T. H. Lund, Owens; J. F. McCann, Univ.; H. Maffin, Yorks.; H. E. Moore, Owens; J. H. Nichol, Owens; A. H. Radcliffe, Yorks.; W. E. Rothwell, Owens; J. A. C. Roy, Owens; S. H. Ryan, Owens; F. W. Schofield, Owens; J. O. Sergeant, Yorks.; J. M. Skinner, Owens; P. K. Steele, Yorks.; F. Sugden, Yorks.; B. Suggit, Yorks.; A. F. Thompson, Owens; L. Thorp, Owens; A. B. S. Todd, Yorks.; A. E. Townley, Owens; F. E. Tylecote, Owens; D. Walker, Owens; G. F. C. Walker, Univ.; S. A. Winstanley, Owens; T. B. Wolstenholme, Owens; H. F. Woolfenden, Univ.; W. S. Wrigley, Owens.

Second Examination, Faculty of Medicine.—The following candidates have satisfied the Examiners in the subjects noted:

Anatomy and Physiology.—M. B. Arnold, Owens; J. H. Billing, Univ.; C. W. Budden, Univ.; R. Burnet, Univ.; D. Cowin, Owens; C. W. Crawshaw, Owens; R. F. Ferris, Owens; F. H. Flack, Owens; A. H. B. Fletcher, Yorks.; R. T. Forster, Yorks.; W. Garstang, Owens; W. D. Hamar, Owens; E. C. Hulme, Owens; W. C. Johnson, Owens; R. J. Jones, Univ.; H. S. Lister, Owens; W. Parker, Owens; P. Pollard, Yorks.; A. Ramsbottom, Owens; E. C. Roberts, Univ.; E. E. Roberts, Univ.; C. W. S. Saberton, Owens; W. R. N. Smithard, Owens; J. H. Stevens, Owens; G. Taylor, Owens; E. Tinker, Yorks.; G. Unsworth, Owens; J. W. Watson, Owens; H. W. Whitely, Owens; S. C. Wilkinson, Yorks.; H. M. Williamson, Owens.

Materia Medica and Pharmacy.—J. Acomb, Yorks.; D. M. Alexander, Univ.; F. H. S. Ashworth, Owens; H. M. Berry, Univ.; J. H. Billing, Univ.; G. G. Buckley, Owens; R. N. Butterworth, Yorks.; W. H Canter, Yorks.; J. B. Cook, Owens; J. F. Corson, Owens; W. J. Cox, Owens; E. N. Cunliffe, Owens; S. W. Davies, Univ.; T. Eastham, Owens; D. J. Ferris, Owens; R. B. Fletcher, Owens; J. E. Floyd, Owens; F. W. Gatenby, Owens; G. W. Geldard, Univ.; V. J. Glover, Univ.; P. H. Green, Owens; G. Heathcote, Owens; R. Heathcote, Owens; J. Hindshaw, Owens; W. S. Holmes, Owens; A. R. Jackson, Univ.; S. J. C. Johnson, Owens; C. O. Jones, Univ.; W. G. Lloyd, Univ.; W. L. Maccormac, Yorks.; C. Mackey, Owens; A. F. Martin, Yorks.; C. T. Matthews, Yorks.; R. V. A. Mosley, Yorks.; J. S. W. Nuttall, Univ.; T. F. Okell, Owens; W. V. Pegler, Yorks.; S. Platts, Yorks.; H. H. Rayner, Owens; A. Richmond, Owens; E. Saville, Yorks.; F. R. Sawdon, Owens; G. H. Shaw, Owens; W. R. N. Smithard, Owens; H. G. Tansley, Owens; J. C. Teasdale, Yorks; E. Tinker, Yorks.; H. C. Waterhouse, Owens; A. Wharton, Owens; B. M. Wilson, Owens; J. G. Woolham, Owens.

Final Examination, Faculty of Medicine.—The following candidates have satisfied the examiners:

Part I.—G. P. Alderson, Univ.; T. P. Allen, Owens; W. J. W. Anderson; Yorks.; J. D. Andrews, Yorks.; H. N. Bridge, Owens; J. P. Brown, Owens; P. A. Browne, Univ.; J. S. Byrne, Univ.; H. H. Bywater, Owens; A. H. Capamagian, Owens; W. Crabtree, Owens; C. H. Dawson, Owens; R. J. Ewart, University; E. W. Falconer, Owens; C. H. Ferguson, Univ.; H. M. Fletcher, Univ.; C. Garner, Owens; A. Greenwood, Owens; C. H. Greenwood, Yorks.; H. C. R. Hime, Yorks.; J. C. Hindley, Owens; J. A. Howard, Univ.; W. A. Illingworth, Yorks; H. Lett, Yorks.; E. O. Libbey, Yorks.; C. J. N. Longridge, Owens; J. W. Miller, Univ.; J. Moreton, Owens; F. A. Morrison, Owens; A. Morton, Yorks.; A. H. Priestley, Owens; A. E. Rayner, Owens; T. E. Regan, Owens; J. E. H. Scott, Yorks.; H. Scholefield, Owens; C. E. Silvester, Owens; H. Snape, Owens; T. J. Thomas, Univ.; H. West, Univ.; A. G. Wilkins, Owens; J. D. Windle, Owens.

Part II.—D. A. Alexander, Univ.; J. W. Anderson, Univ.; G. Carter, Yorks.; H. Dunk, Yorks.; A. Firth, Yorks.; †E. W. Floyd, Owens; J. P. H. Greenhalgh, Owens; H. F. Hart, Univ.; E. M. Hime, Yorks.; F. Hoyle, Owens; F. W. Inman, Univ.; A. Lomas, Owens; H. H. McNabb, Owens; W. F. Oyston, Yorks.; S. Pickering, Owens; W. Sankey, Owens; A. T. Sissons, Owens; †A. Spong, Yorks.; H. Stansfield, Yorks.; *E. Trotter, Yorks.; †E Turton, Yorks.; G. C. Walker, Univ.; T. H. Wignall, Owens; J. Williamson, Yorks.; J. D. Windle, Owens.

* First Class Honours.
† Second Class Honours.

The Diploma in Public Health was awarded to A. E. Brindley, D. Ligat, R. W. Marsden, G. E. Scholefield, and H. A. Scott.

ROYAL UNIVERSITY OF IRELAND.

First Examination in Medicine.—The following candidates have satisfied the Examiners:

J. V. Bateman, Queen's College, Cork; R. Best, Queen's College, Galway; R. J. Bethune, Queen's College, Belfast; S. H. G. Blakely, Queen's College, Belfast; J. D. Buchanan, Queen's College, Belfast; J. H. Campbell, Queen's College, Belfast; T. Carnwath, Queen's College, Belfast; Florence M. M. Condon, Royal College of Science; R. Cox, Queen's College, Cork; W. Cummings, Queen's College, Belfast; J. W. Dale, Queen's College, Belfast; J. Dawson, Queen's College, Cork; P. F. Dolan, M.A., University College, Dublin; R. J. Dwane, University College, Dublin; A. J. Foote, Queen's College, Cork; R. W. Harper, Queen's College, Belfast; J. P. I. Harty, Queen's College, Cork; N. d'E. Harvey, Queen's College, Cork; W. R. Hayden, Queen's College, Belfast; J. H. Hegarty, University College, Dublin; S. T. Irwin, Queen's College, Belfast; Mary E. Jeremy, B.A., University College, London; H. M. Johnston, Queen's College, Belfast; G. Kelly, University College, Dublin; J. W. Killen, Queen's College, Belfast; T. Killen, Queen's College, Belfast; J. M'Clatchey, Queen's College, Belfast; T. M'Fetridge, Queen's College, Cork; F. A. M'Ostrich, Queen's College, Cork; S. B. W. Moore, Queen's College, Belfast; P. M. O'Dwyer, Queen's College, Cork; C. R. Peters, Queen's College, Cork; W. J. Sheehan, University College, Dublin; J. Shipsey, Queen's College, Cork; J. K. Small, Queen's College, Belfast; F. C. Smyth, Queen's College, Belfast; S. Stockman, Queen's College, Belfast; J. H. Thompson, Queen's College, Belfast; W. Warnock, Queen's College, Galway; J. E. Wilson, Queen's College, Belfast.

Messrs. H. M. Johnston and W. Warnock obtained honours in Botany; P. F. Dolan honours in Zoology; J. M'Clatchey and W. Warnock honours in Chemistry; and W. Warnock, J. M'Clatchey, and S. T. Irwin honours in Experimental Physics.

Mr. W. Warnock was awarded an Exhibition of £20, and Messrs. J. M'Clatchey and H. M. Johnston each one of £10.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following have been elected Honorary Fellows of the College in connection with the forthcoming Congress of the Royal Institute of Public Health, which is to take place in Dublin from August 18th to 23rd: Sir Richard Thorne, K.C.B., M.B.Lond., 1866; F.R.C.P.Lond., 1875; Medical Officer to the Local Government Board of England. Alexander Crum Brown, M.D.Edin., 1861; LL.D.Aberd., 1893; F.R.C.P.Edin., 1865; D.Sc.Lond., 1869; F.R.S.Edin., 1863; F.R.S.Lond., 1879; Professor of Chemistry, University of Edinburgh. Matthew Hay, M.B., M.Surg., 1878; M.D., 1881, University of Edinburgh; Professor of Forensic Medicine, University of Aberdeen. Sir Charles Alexander Cameron, M.D.R.U.I., 1856; M.R.C.P.I., 1859; F.R.C.S.I., 1874.

The following Licentiate in Medicine of the College has passed the examination for the Membership: Richard Travers Smith, M.B., B.A.O., B.Ch., University of Dublin, 1894; M.D., 1896; L.R.C.P.I., 1897.

The License in Medicine has, after examination, been conferred on Arthur Cooper Fenn, L.S.A., 1895.

The License in Midwifery has, after examination, been conferred on Arthur Cooper Fenn, L.S.A., 1895; Kyran Hutchinson White, L.R.C.S.&P. Edin.; L.F.P.&S.Glasg., 1897.

CONJOINT BOARD IN SCOTLAND.

THE following candidates passed the respective examinations:

First Examination (Four Years' Course).—A. Macleod, T. T. Smith, E. J. Nichols, J. Lindsay.

First Examination (Five Years' Course).—D. G. Dingwall (with distinction), J. O'Regan, W. Bates, H. A. Lunn (with distinction), W. P. Scott, J. H. Milne, A. Young (with distinction), G. L. Clark (with distinction), R. J. Roberts, R. A. Hegarty, T. Foley, S. L. G. D. Maclaine, D. R. Williams, T. E. Harty.

Second Examination (Four Years' Course).—J. F. Dwyer, C. S. Buck, J. Wiglesworth, J. H. Spray, N. Johnstone, J. V. U. Somers, T. A. Chalmers.

Second Examination (Five Years' Course).—A. E. Ward, G. Kee, G. J. Campbell, F. Hannah, G. R. Jarvie (with distinction), R. Wardlaw, J. Allan, H. A. Chaplin, D. Duff (with distinction), A. Macqueen, W. H. Ferguson, E. W. Powell, J. T. Malloch, Charlotte M'Crea, E. G. D. Benson, H. R. Parkinson, Jane Mary Louisa Foley, D. M. Donovan.

Third Examination.—R. E. Moorhead, T. B. Adam, R. E. Naish, G. B. M'Kendrick, E. J. Evatt, J. T. Bradley, T. S. Logan, F. W. Newcombe, W. Fatullo, T. J. O'Donovan, J. G. Grant, R. N. Woodley.

Final Examination (and admitted Licentiates).—D. Campbell, A. Bulleid, J. G. Parker, T. B. Whitelaw, S. V. Robinson, R. Storrs, R. M. Powell, J. Dick, J. J. A. Sherry, H. Chaffer, D. R. Edwards, H. A. Marquis, W. A. Clayton, H. S. Anderson, C. H. L. Bellot, D. G. Rai, B. S. Reyhardt, P. Aitken.

CONJOINT BOARD IN IRELAND.

FINAL EXAMINATION.—Candidates have passed this Examination in the subjects undernoted:

Completed the Examination.—Honours: W. H. May, M. W. Falkner. Pass: J. A. Browne, P. H. Falkner, J. J. Foley, D. Haddon, D. Jackson, R. Hassard, W. O'Connor, F. J. W. T. O'Rorke, J. P. O'Donnell Quinn, F. S. Walker, M. S. Walsh.

Medicine.—W. J. P. Adye-Curran, W. R. Blackwell, H. H. A. Carter, T. J. O'C. Donelan, A. W. A. Irwin, J. W. Langstaff.

Surgery.—W. R. Blackwell, J. A. Byrne, E. P. Connolly, J. Gordon, C. A. A. Lever, R. W. Ospen, W. C. Ross, G. F. Sheehan, V. P. Tighe, A. A. Woods.

Midwifery.—W. J. P. Adye-Curran, J. M. Ahern, W. S. Brooks, J. A. Kennedy, J. W. Langstaff, C. A. A. Lever, A. M'Munn, R. W. Orpen, E. E. Roberts, W. C. Ross, G. F. Sheehan, J. W. Shortt, J. Sinclair, V. P. Tighe, A. A. Woods.

Ophthalmology.—W. J. P. Adye-Curran, J. M. Ahern, W. R. Blackwell, J. A. Byrne, E. S. Connolly, A. A. Cooper, T. J. O'C. Donelan, G. Kennedy, J. W. Langstaff, C. A. A. Lever, M. M. Maughan, W. Meagher, R. W. Orpen, W. C. Ross, G. F. Sheehan, V. P. Tighe, A. A. Woods.

Forensic Medicine, etc. (four years).—H. H. A. Carter, M. M. Maughan, A. F. Studdert, A. A. Woods, F. W. Woods.

Medical Diseases (five years).—W. J. P. Adye-Curran, J. M. Ahern, W. R. Blackwell, J. A. Byrne, E. P. Connolly, T. J. O'C. Donelan, R. M. Fisher, J. Gordon, A. W. A. Irwin, J. W. Langstaff, W. C. Ross.

APOTHECARIES' HALL, IRELAND.

At the late Examinations Messrs. W. Long and E. A. Reilly passed in Chemistry, L. A. Reilly in Physics, L. J. Farell and E. A. Reilly in First Anatomy; W. P. Harding and L. J. Farell in Final Anatomy; E. [illegible] in Physiology and Histology; F. A. Bass in Forensic [illegible] in Physiology and W. P. Harding in Hygiene.

Messrs. [illegible] and F. A. Bass and W. P. Harding have completed the Second Professional Examination.

E. P. Eustace and P. J. Murphy have passed the Final Conjoint Examination.

[illegible] of the Royal College of Surgeons in Ireland.

MEDICO-LEGAL.

THE CORONER'S COURT.

A. E.—The coroner has a right to call such medical or other witnesses as he may deem [illegible] if the jury are not satisfied that the cause of death has been sufficiently explained as arising from natural causes, they can adjourn and request the coroner to call further medical evidence, and they can name the medical man they wish called. In the present case it is to be presumed that they were satisfied, as they returned a verdict at the first sitting. Our correspondent has no redress in the matter, but in future cases we would advise him to write direct to the coroner telling him of the circumstances and of his connection with the case, otherwise the coroner may very likely summon the police surgeon or parochial officer, not knowing of any previous attendance by any other practitioner.

CONTRACTS IN RESTRAINT OF PRACTICE.

PRO BONO PUBLICO.—No definite opinion can be expressed on the various questions raised without a consideration of the precise terms of the bond given by the assistant B. to A. It may be that the attendance in an urgent case or cases such as are referred to would not be a breach of the bond, but the question can only be dealt with on a careful perusal of the documents, and with a knowledge of all the facts, and we think it is essentially a case in which B. should consult his solicitor.

DISSOLUTION OF PARTNERSHIP.

SUBSCRIBER asks the following questions:

1. The usual course to pursue upon determination of a partnership with regard to the debts owing to the firm?
2. If the remaining partner wishes to take over the book debts, about what proportion should he pay?

*** 1. When a partnership is dissolved it is usual to appoint one of the partners or some third person to collect and get in the debts of the firm.

2. We are not aware that there is any settled rule with regard to the amount of discount which the partner taking over the book debts should be allowed; each case we think would necessarily have to be considered on its merits, for example, the period over which the accounts extend, and the question whether the recovery of any of them may be considered doubtful.

There should be no difficulty in coming to a mutual agreement on such a point.

THE WORKMEN'S COMPENSATION ACT.

CERTIFYING FACTORY SURGEON writes: A manufacturer in my district has a very competent workman who is subject to epileptic fits. He asks me if under these circumstances he can make any special arrangement with him with regard to compensation for any accident that may occur to him as the result of one of those fits.

*** If a manufacturer decides upon retaining in his service a workman whom he knows to be the subject of epileptic fits, he should enter into an agreement with the workman whereby, should an injury be received, say by falling upon machinery in motion during one of the fits and death follow such an accident, the extent of his liability would be known beforehand. Where no such arrangement is made and a fatal accident has occurred, the employer is liable to the extent of full compensation under the Act, since, while epilepsy was the cause of the workman falling upon the machinery, it is the machinery which has caused the injury or the death.

CHARGE OF PROCURING ABORTION.

JOHN LLOYD WHITMARSH, registered as L.S.A.Lond., 1871, and L.R.C.P. Edin., 1872, who was arrested on July 6th on the charge of performing an operation upon a young woman with intent to procure a miscarriage, and whose case has already been referred to in the BRITISH MEDICAL JOURNAL, was on August 5th committed for trial, by the magistrate at the Westminster Police court, at the next Old Bailey Sessions. In this case the coroner's jury also found a verdict that the young woman in question died from the effects of an illegal operation. The coroner pointed out that this was in effect a charge of murder.

Obituary.

SURGEON-GENERAL JOHN FULLARTON BEATSON, M.D., C.I.E.,

Indian Medical Service (Retired).

THIS distinguished officer died at the age of 81 on July 29th. He entered the service of the Honourable East India Company in the year 1843, and was posted to the Bengal Presidency. He served with the army of the Sutlej in 1845, taking part in the defence of Ferozepore and the battle of Ferozeshah, for which he obtained a medal and clasp. He also served in the Punjab campaign, being present at various actions, and was decorated with a second medal at its close. During the Mutiny he held the responsible appointment of Chief Surgeon of the Allahabad Field Hospital, in which he rendered most efficient service. He subsequently filled the office of Garrison Surgeon at Allahabad, and was appointed Medical Storekeeper at Umballa. On his promotion to the rank of Deputy-Surgeon-General he was posted to the Meerut Circle, in which he completed the usual tour of service in that capacity. In 1875 he was selected to succeed Surgeon-General Sir John Campbell Brown, K.C.B., as head of the Bengal Medical Service, and, after five years' tenure of that post, he retired in 1880, having completed a service of thirty

seven years. Dr. Beatson was a man of strong physique, distinguished appearance, and great ability. He possessed a high sense of honour and duty, and was endowed with great energy, strong, clear, rapid judgment, much force of character, and firm, accurate grasp of detail. He was a sound physician and surgeon, and a most competent administrator. He was gifted with a keen perception and very retentive memory. His rule of men was strict, but just and generous, and his influence throughout the service was salutary and stimulating.

During his term of office he rendered valuable aid to the Government of India in arranging for medical relief measures in connection with the Madras Famine of 1877-78. Although he did not devote himself to research or contribute to medical literature, he kept himself fully *au courant* with medical science, and was always ready to encourage and commend good work and promote medical and sanitary progress.

His death, which was somewhat sudden and unexpected, has been the occasion of deep regret to a large circle of friends and acquaintances, to whom he endeared himself by the genuineness and warmth of his friendship and the kindliness of his disposition.

WILLIAM SAVAGE SPEER, M.D., M.Ch.R.U.I.

Much regret is felt in Belfast at the untimely death of Dr. W. S. Speer, who passed away on August 3rd after a brief illness. Dr. Speer, who was 50 years of age, was a graduate of the late Queen's University in Ireland, and received his medical education at the Queen's College, Belfast. He had been in practice in Belfast for twenty-five years, and had acquired a large practice and a high position in the medical world. He was a man of intelligence and great energy, painstaking and conscientious in a high degree, and very kind-hearted. He earned and fully merited the confidence of the general public, and the regard and esteem of his medical brethren. He was active in religious and philanthropic work, and will be much missed both by his patients and fellow practitioners and by the general public. He leaves a widow, but no family.

NAVAL AND MILITARY MEDICAL SERVICES.

ARMY MEDICAL OFFICERS ON THE RETIRED LIST.

It is announced that the designation of the substantive ranks of the officers on the Retired List liable to be recalled to service are to be as follows: Brigade-Surgeon-Lieutenant-Colonels to be Lieutenant-Colonels, Surgeon-Lieutenant-Colonels to be Lieutenant-Colonels, Surgeon-Majors to be Majors, Surgeon-Captains to be Captains, Surgeon-Lieutenants to be Lieutenants. The designation of those retired officers who, though not liable on account of age to be recalled under the provisions of Article 486c, Royal Warrant, April 26th, 1897, have been, or shall be, in military employment on or after June 23rd, 1898, are to be as follows: Brigade-Surgeons to be Lieutenant-Colonels, Brigade-Surgeon-Lieutenant-Colonels to be Lieutenant-Colonels, Surgeon-Lieutenant-Colonels to be Lieutenant-Colonels, Surgeon-Majors (ranking as Lieutenant-Colonels) to be Lieutenant-Colonels, Surgeon-Majors (ranking as Majors) to be Majors, Surgeon-Majors to be Majors, Surgeons (ranking as Captains) to be Captains, Surgeon-Captains to be Captains.

THE NAVY.

The following appointments have been made at the Admiralty: Edward W. Luther, Fleet Surgeon, to the *Thunderer*, additional, for Pembroke Dockyard, August 5th; William M. Lory, Staff Surgeon, to the *Repulse*, August 5th.

Surgeon William Godfrey Peck, H.M.S. *Anson*, died at Malta on July 28th. He was a son of Mr. Kenrick Peck, Barrister-at-Law, and entered the Royal Navy as Surgeon, November 14th, 1894.

ARMY MEDICAL STAFF.

Surgeon-General John W. Maxham, M.D., retires on retired pay, August 3rd. His commissions are thus dated: Assistant Surgeon, March 31st, 1864; Surgeon, March 1st, 1873; Surgeon Major, April 28th, 1876; Brigade-Surgeon, December 19th, 1888; Surgeon-Colonel, January 11th, 1894; and Surgeon-Major-General, May 29th, 1898. He has no war record in the *Army Lists*.

Colonel W. A. Catherwood, M.D., Royal Army Medical Corps, is promoted to be Surgeon-General, *vice* J. W. Maxham, retired, August 3rd. Surgeon-General Catherwood entered the service as Assistant-Surgeon, October 2nd, 1865; became Surgeon, March 1st, 1873; Surgeon-Major, October 2nd, 1877; Brigade-Surgeon, April 7th, 1889; and Surgeon-Colonel, April 21st, 1894. He served in the Ashanti war of 1873-74 (medal with clasp). Served in the Egyptian war in 1882, and was present at the battle of Tel-el-Kebir (medal with clasp, and Khedive's Star). Served in the Soudan Expedition under Sir Gerald Graham in 1884 as Principal Medical Officer at the base (mentioned in despatches, promoted Surgeon-Major with relative rank of Lieutenant-Colonel, clasp).

THE ROYAL ARMY MEDICAL CORPS.

Captain Phillip J. R. Nunnerley is placed on temporary half-pay on account of ill health, July 26th. His commission dates from Aug. 1st, 1885. He was with the Burmese Expedition in 1886-87, and has the Indian Frontier medal with clasp.

Lieutenant-Colonel W. B. Slaughter, who is serving in the Bengal Command, is appointed to officiate as Principal Medical Officer, Oude and Rohilkund Districts.

The under-mentioned Captains, who have completed twelve years' full pay service, are promoted to be Majors, from July 28th: John S. Davidson, M.B., James Will, M.B., James Moir, M.B., James Fallon, John V. Salvage, M.D., Arthur R. Aldridge, M.B., Joseph Fayrer, M.D., F.R.C.S.Edin., Charles P. Walker, M.B., Charles J. MacDonald, M.B., Charles J. W. Tatham, Thomas H. F. Clarkson, Herbert W. Austin, Cathcart Garner, M.B., Robert W. Wright, Edwin Eckersley, M.B., Reginald J. C. Cottell, James R. Burrows, M.D., John Keatley, F.R.C.S.I., Daniel Hennessy, M.D., David M. Saunders, M.D., Walter Kiddle, M.D., Denis M. O'Callaghan, Michael J. Whitty, M.D., Henry A. Cummins, M.D., James F. Donegan, John Donaldson, Hugh B. Mathias, George Bent, George H. Barefoot, Foster R. Newland, M.B., Reginald J. Windle, M.B., Robert J. D. Hall, Edward S. Marder, Charles W. Allport, M.D., John J. Russell, M.B., John S. Edye, George Scott, M.B., Thomas Browning, Andrew Hosie, M.D., George F. H. Marks, M.D., Ralph Holyoake, Robert M. Buist, M.B., John J. C. Watson, M.D., Thomas du B. Whaite, M.B., Henry T. Knaggs, Ferdinand S. Le Quesne, V.C. Their war services are as follow:—Captain Eckersley, Ashanti expedition, 1895-6 (star); Captain Hennessy, operations in Zululand, 1888; Captain O'Callaghan, Ashanti expedition, 1895-6 (star): Captain Cummins, Sikkim expedition, 1888 (medal with clasp): Ashanti expedition 1895-6 (star); Captain Donegan, Poukhan expedition, Burmah, 1889 (medal with clasp); Captain Donaldson, Burmese expedition, 1888-9 (medal with clasp); Captain Mathias, Nile expedition, 1898 (mentioned in despatches); Captain Barefoot, Hazara expedition, 1888 (mentioned in despatches, medal with clasp); Captain Marder, Burmese expedition, 1888-90 (medal with two clasps); Captain Scott, Burmese expedition, 1887-9 (medal with clasp); Captain Trotter, Isazai expedition, 1892; Captain Holyoake, operations of the Zaila field force, 1890; Captain Le Quesne, Burmese expedition, 1889, severely wounded during the operations against the Chins (medal with clasp and Victoria cross); Chin-Lushai expedition, 1890 (clasp); Wuntho field force and Kaukwee expedition, Burmah, 1891 (clasp).

The undermentioned Lieutenants, who have completed three years' full pay service, are promoted to be Captains, July 29th:—Lionel F. Smith, M.B., Robert J. Blackham, Septimus H. Fairrie, M.B., George T. K. Maurice, Rupert Fawssett, John V. Forrest, M.B., Henry W. Grattan, Francis E. Gunter, M.B., John H. Campbell, John Grech.

The undermentioned Surgeons on probation are appointed Lieutenants July 27th: William H. S. Nickerson, M.B.; George S. Nickerson, M.B.; George B. Crisp, Robert S. H. Fuhr, Walter Jagger, M.B.; Alexander B. MacCarthy, M.B.; George J. S. Archer, M.B.; Robert Selby, M.B.; Sydney O. Hall, Alfred E. Weld, James S. Gallie, Francis J. C. Heffernan, Arthur E. Thorp, Cecil W. Mainprize, Henry Herrick, Edwin J. Dobbin, James Cowan, M.B.; Austin R. O'Flaherty, Henry B. G. Walton, Edmund P. Hewitt.

ARMY MEDICAL RESERVE.

Surgeon-Captain James Turton is promoted to be Surgeon-Major August 3rd.

INDIAN MEDICAL SERVICE.

Brigade-Surgeon-Lieutenant-Colonel A. M. Branfoot, C.I.E., M.B., Madras Establishment, is promoted to be Surgeon-Colonel March 1st. He was appointed Assistant Surgeon March 30th, 1872, and nominated a Companion of the Order of the Indian Empire on May 21st last.

The promotion of Surgeon-Lieutenant-Colonel A. H. C. Dane, M.D., Bombay Establishment, which has been already announced in the British Medical Journal, has received the approval of the Queen.

Brigade-Surgeon-Lieutenant-Colonel W. McConaghy, M.D., Bombay Establishment, is granted the temporary rank of Surgeon-Colonel from June 9th, while officiating as District Principal Medical Officer in the Bombay Command.

Brigade-Surgeon-Lieutenant-Colonel W. E. Johnson, M.D., Madras Establishment, is promoted to be Surgeon-Colonel, and the tenure of his appointment in the administrative grade of the Indian Medical Service will reckon from June 30th. His first commission is dated March 30th, 1872.

Surgeon-Captain Archibald W. F. Russell, M.B., Bengal Establishment, died at Bareilly on June 22nd, in the 30th year of his age. He was appointed Surgeon-Lieutenant, July 28th, 1894, and Surgeon-Captain three years after.

THE VOLUNTEERS.

Mr. Patrick B. G. Considine, M.B., is appointed Surgeon-Lieutenant in the 1st North Riding of Yorkshire Artillery (Western Division Royal Artillery), August 3rd.

Surgeon-Lieutenant J. B. Milne, M.B., 4th West Riding of Yorkshire Artillery (Western Division Royal Artillery), has resigned his commission, August 3rd.

Surgeon-Lieutenant T. Brushfield, M.B., 2nd Volunteer Battalion the East Surrey Regiment, is promoted to be Surgeon-Captain, August 3rd.

Surgeon-Major G. Griffith, 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment, is promoted to be Surgeon-Lieutenant-Colonel, August 3rd.

Surgeon-Lieutenant H. M. Evans, M.D., 1st Norfolk Artillery (Eastern Division Royal Artillery), is promoted to be Surgeon-Captain, August 10th.

Surgeon-Major H. F. Hurst, 2nd Volunteer Battalion the Northumber-

land Fusiliers, is promoted to be Surgeon-Lieutenant-Colonel, August 10th.

Surgeon-Captain A. R. WADDELL, M.D., 1st Volunteer Battalion the Worcestershire Regiment, has resigned his commission, August 10th.

Surgeon-Lieutenant S. A. MUGFORD, 2nd Volunteer Battalion the Essex Regiment, is promoted to be Surgeon-Captain, August 10th.

Brigade-Surgeon-Lieutenant-Colonel F. F. LEE, M.B., 1st Wiltshire Rifles, has resigned his commission, August 10th; he is permitted to retain his rank and uniform, vacating at the same time the appointment of Senior Medical Officer to the Western Counties Volunteer Infantry Brigade.

Surgeon-Lieutenant-Colonel J. LINDSAY, 9th Lanarkshire Rifles, has resigned his commission, retaining his rank and uniform, August 10th.

The Volunteer Officers' Decoration has been conferred upon the following officers: Surgeon-Lieutenant-Colonel THOMAS A. MCCULLAGH, 2nd Volunteer Battalion the Durham Light Infantry; Surgeon-Lieutenant-Colonel CHARLES W. THORP, 2nd Volunteer Battalion the Lancashire Fusiliers; Surgeon-Lieutenant-Colonel ALEXANDER HAMILTON, 2nd (Earl of Chester's) Volunteer Battalion the Cheshire Regiment; Surgeon-Lieutenant-Colonel Thomas Fort, 6th Volunteer Battalion the Manchester Regiment; Surgeon-Lieutenant-Colonel JAMES CHARLESWORTH, M.D., 1st Volunteer Battalion the Prince of Wales's North Staffordshire Regiment; Surgeon-Major ROBERT J. GARDEN, 1st Aberdeenshire Volunteer Artillery; Surgeon-Lieutenant-Colonel ALEXANDER NAPIER, M.D., 3rd Lanarkshire Volunteer Rifle Corps; Surgeon-Major Sir JAMES REID, Bart., K.C.B., M.D., 2nd Volunteer Battalion the Gordon Highlanders; Surgeon-Lieutenant-Colonels WILLIAM G. STEVENS and MATTHEW H. TAYLOR, 2nd (Renfrewshire) Volunteer Battalion Princess Louise's, Argyll and Sutherland Highlanders; Surgeon-Lieutenant-Colonel GEORGE G. SPARROW, 2nd Hampshire Volunteer Artillery (Southern Division Royal Artillery); Surgeon-Lieutenant ADOLPHUS W. W. CAUDLE, retired, 2nd Volunteer Battalion the Royal Sussex Regiment.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Staff have been officially reported to have taken place during the last month:

		From	To
Surgeon-General	W. Taylor, M.D.	Headquarters	Egypt.
Colonel	W. D. Wilson, M.B.	York	Headquarters.
Lieut.-Colonel	J. Armstrong	Kilworth	Fermoy.
"	N. Leader	Newport	Egypt.
Major	E. H. Myles, M.B.	Portsmouth	"
"	W. D. A. Cowen	Gosport	"
"	T. F. MacNeece	"	"
"	D. Wardrop, M.B.	Preston	"
"	P. M. Carleton, M.D.	Glenbeigh	Cork.
"	F. P. Nichols, M.B.	Manchester	Chester.
"	S. H. Creagh	Plymouth	Devonport.
"	F. T. Wilkinson	Aldershot	Egypt.
"	F. H. Treherne	Dover	Brighton.
"	J. M. Irwin, M.B.	Brighton	Egypt.
"	H. N. Thompson, M.B.	Aldershot	"
"	A. de C. Scanlan	Woking	Malta.
"	R. I. Power	Waterford	Egypt.
"	J. H. Curtis	Bermuda	Cork.
"	S. G. Allen	Woolwich	Egypt.
"	J. FitzG. Burke	Maryhill	West Africa.
"	T. H. Corkery	Spike Island	Kilworth.
"	J. P. S. Hayes	Malta	Egypt.
Captain	R. J. D. Hall	Chatham	"
"	R. J. Copeland, M.B.	Portsmouth	"
"	H. S. Peeke	"	"
"	W. E. Hardy	Bengal	Aldershot.
"	T. J. Lenehan, M.B.	"	Ireland.
"	I. A. O. MacCarthy	Woolwich	Egypt.
"	P. McKessack, M.B.	Netley	"
Lieutenant	J. McD. M'Carthy	"	"
"	N. H. Ross, M.B.	Portsmouth	"
"	P. H. Collingwood	Aldershot	"
Quartermaster	B. Goater	"	"
"	A. Finley	Natal	Aldershot.

Lieutenant-Colonel A. TURNER, retired pay, has been appointed to the medical charge of the troops at Plymouth, and Lieutenant-Colonel C. M. DOUGLAS, M.D., V.C., retired pay, to Perth.

THE UNIFORM OF THE R.A.M.C.

GENEVA CROSS.—We understand that the article in a daily journal to which our correspondent calls attention was a practical joke. It was not a very good joke and is better forgotten.

THE STANDARD OF VISION FOR THE INDIAN MEDICAL SERVICE.

R. X. points out that the standard of vision for the Indian Medical Service has recently been altered by assimilation to that of the army generally. This, he fears, will bear hardly on candidates who, having already passed the physical examination and failed in the professional, may reappear for a second or third trial. We have ascertained that the fact of a candidate having previously been passed or rejected at a former examination is always noted and considered when candidates appear before the Medical Board.

LIABLE TO RECALL.

A CORRESPONDENT gives the following account of the rules which govern liability of recall to service, but we are unable to say whether his statement is altogether accurate. Medical officers retired, whether on pension or gratuity, are liable to recall up to 55 years of age, and may be permitted to reside out of the United Kingdom for a longer period than six months, although that is seldom granted. Combatant officers retiring on a pension are under the same regulation; but those who retire on gratuity are free men not liable to recall, and can reside where they please, unless, indeed, they apply to join the Reserve.

PUBLIC HEALTH IN INDIA.

IT has been decided that one of the special officers recently appointed with a view to investigating the cause of sickness in cantonments, is to be deputed, as soon as he can be spared, to inquire into the cause of the prevalence of fever at Bannu and Dera Ismail Khan in the Punjab.

THE NEW TITLES.

OUR correspondent appears to have overlooked the fact that the announcement in the BRITISH MEDICAL JOURNAL of July 16th referred to events which took effect before the new Warrant came into operation, and that therefore the officers were correctly designated by their old titles.

STATISTICS OF THE FRONTIER OPERATIONS.

OF some 61,000 odd troops and followers which accompanied the main and subsidiary columns into Afridi land and gave admissions to the hospitals of the army less than 3½ per cent. died from disease and 1½ per cent. from gunshot wounds. The statistics of few campaigns can give better results, and the medical service is to be congratulated. Such figures are undoubtedly the result of the excellent arrangements for the equipment, to meet all kinds of emergencies, of the hospitals. Apart from the bestowal of honors the medical officers' services have been ungrudgingly acknowledged.

VOLUNTEER MEDICAL ASSOCIATION AMBULANCE CHALLENGE SHIELD COMPETITION.

IN the paragraph describing the results of this competition published in BRITISH MEDICAL JOURNAL of August 6th, p. 396, there is an error in the list of competing teams. The first three entries in the list should be as follows:

2nd Volunteer Battalion Royal Fusiliers	312
1st Bucks	307
24th Middlesex	300

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths registered in England and Wales during the second or spring quarter of this year, and to the marriages during the three months ending March last. The marriage-rate was equal to 11.6 per 1,000, and was slightly below the mean rate in the corresponding periods of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 232,343, and were equal to an annual rate of 29.7 per 1,000 of the population, estimated by the Registrar-General to be nearly thirty-one and a-half millions in the middle of this year. This rate was 1.4 per 1,000 below the mean rate in the corresponding periods of the ten preceding years. The birth-rates in the several counties ranged from 22.6 in Westmorland, 23.2 in Surrey, 23.6 in Rutlandshire, and 23.2 in Sussex to 33.5 in Northumberland, 31.9 in South Wales, 35.9 in Staffordshire, and 36.4 in Durham. In thirty-three of the largest English towns, including London, the birth-rate last quarter averaged 30.0 per 1,000, and slightly exceeded the general English rate. In London the birth-rate was equal to 28.8 per 1,000, while it averaged 30.9 in the thirty-two provincial towns, among which it ranged from 21.3 in Halifax, 22.1 in Huddersfield, 24.0 in Bradford, and 24.8 in Croydon to 35.0 in Wolverhampton, 35.3 in Salford, 35.6 in Gateshead, and 37.4 in Sunderland.

The births registered in England and Wales during the three months ending June last exceeded the deaths by 105,310; this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 55,217 emigrants embarked during last quarter, for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 55,217 emigrants, 21,489 were English, 3,536 Scotch, and 13,875 Irish, while 13,875 others were of foreign origin. Compared with the averages in the corresponding quarters of recent years, the proportion of emigrants from each division of the United Kingdom showed a marked decline.

During the second quarter of this year the deaths of 127,033 persons were registered in England and Wales, equal to an annual rate of 16.2 per 1,000 of the estimated population, which was 1.7 per 1,000 below the mean rate in the corresponding periods of the ten preceding years, and with one exception was lower than in the second quarter of any year on record. The lowest county death-rates last quarter were 11.4 in Middlesex, 12.1 in Surrey, 12.5 in Sussex, and 12.9 in Huntingdonshire; while the highest rates were 18.5 in Durham, 18.8 in Staffordshire, 18.9 in Rutlandshire, 20.1 in Northumberland, and 20.8 in North Wales. In the urban population of England and Wales, estimated at nearly twenty-one and a-half millions, the rate of mortality during the quarter under notice was 16.6 per 1,000; while in the remaining and chiefly rural population of nearly ten millions the rate was 15.4 per 1,000. These urban and rural rates were 1.9 and 1.3 per 1,000 below their respective averages in the corresponding quarters of the ten preceding years. Among thirty-three of the largest English towns the mean death-rate was 17.1 per 1,000, or 0.9 in excess of the general death-rate in England and Wales during the same period. In London the rate was 16.4 per 1,000, while it averaged 17.5 in the thirty-two large provincial towns, among which the rates ranged from 11.7 in Croydon, 12.1 in West Ham, 12.6 in Cardiff, and 12.7 in Brighton to 20.0 in Manchester, 20.1 in Gateshead, 22.2 in Sunderland, 22.6 in Newcastle-upon-Tyne, and 24.6 in Liverpool. In sixty-seven other large

towns, with an estimated aggregate population of nearly four millions, the mean death-rate was 15.5 per 1,000, or 1.6 per 1,000 below the rate in the thirty-three great towns.

The 127,033 deaths registered in England and Wales during the three months ending June last included 4,381 which were referred to measles, 2,801 to whooping-cough, 1,505 to diphtheria, 1,277 to diarrhœa, 816 to "fever" (including typhus, enteric, and ill-defined forms of continued fever), 788 to scarlet fever, and 66 to small-pox; in all, 11,534 resulted from these principal zymotic diseases, equal to an annual rate of 1.47 per 1,000, which was 0.20 below the average rate in the corresponding quarters of the ten preceding years. The mortality from measles showed an excess, and that from diphtheria was equal to the average, while that from each of the other principal zymotic diseases was below the average. Of the 66 deaths from small-pox registered in England and Wales during the quarter under notice, 45 occurred in Middlesbrough, 4 in Gateshead, and 3 in Newcastle-upon-Tyne registration districts; and 4 were of persons removed from a steamship to the Floating Hospital at Southampton.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths under 1 year of age to registered births, was equal to 123 per 1,000, and was slightly below the average proportion in the corresponding periods of the ten preceding years. In London the rate of infant mortality was 127 per 1,000, while it averaged 136 in the thirty-two provincial towns, among which it ranged from 88 in Cardiff, 91 in Croydon, 94 in Huddersfield, and 97 in Portsmouth, to 158 in Halifax and in Bradford, 163 in Gateshead, 169 in Sunderland, and 174 in Newcastle-upon-Tyne. The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to an annual rate of 8.6 per 1,000 of the estimated population at this group of ages, and was 1.2 below the average rate in the ten preceding second quarters. In the thirty-three great towns the mortality at this age group averaged 9.8 per 1,000, and ranged from 5.7 in Croydon, 6.4 in Brighton, and 6.9 in West Ham and in Portsmouth, to 11.9 in Salford, 12.8 in Sunderland and in Newcastle-upon-Tyne, and 14.2 in Liverpool. Among persons aged 60 years of age and upwards the death-rate in England and Wales last quarter was equal to 65 7 per 1,000 of the estimated population at this age-group, against an average rate of 69.3 in the corresponding quarters of the ten preceding years. In the thirty-three great towns the rate was 68.0 per 1,000, ranging from 47.4 in Brighton, 50.3 in West Ham, and 54.8 in Portsmouth, to 95.6 in Oldham, 95.7 in Liverpool, and 101.3 in Newcastle-upon-Tyne.

The mean temperature of the air at the Royal Observatory, Greenwich, was 52.4°, and corresponded with the average in the second quarters of 127 years; it showed an excess of 1.8° in April, but was 0.9° below the average in May, and 0.8° below in June. The rainfall during the quarter amounted to 5.3 inches, and was 0.3 of an inch below the average.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 5,742 births and 3,932 deaths were registered during the week ending Saturday last, August 6th. The annual rate of mortality in these towns, which had increased from 14.7 to 17.2 in the three preceding weeks, further rose to 18.3 last week. The rates in the several towns ranged from 10.2 in Brighton and in Huddersfield, 10.9 in Oldham, 11.9 in Burnley, and 12.0 in Hull to 23.9 in Sunderland, 24.2 in Plymouth, 24.4 in Liverpool, and 25.6 in Salford. In the thirty-two provincial towns the mean death-rate was 18.2 per 1,000, and was slightly below the rate recorded in London, which was 18.4 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.7 per 1.000; in London the death-rate was equal to 3.7 per 1,000, and corresponded with the rate in the thirty-two provincial towns, among which the highest zymotic death-rates were 5.6 in Portsmouth 5.8 in Liverpool, 7.2 in Sheffield, and 7.4 in Plymouth. Measles caused a death-rate of 3.2 in Plymouth; scarlet fever of 1.6 in Plymouth; whooping-cough of 1.1 in Sunderland, and 1.3 in Preston; and diarrhœa of 4.5 in Birmingham and in Leicester, 4.7 in Portsmouth and in Liverpool, 4.8 in Salford, and 5.6 in Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The 52 deaths from diphtheria in the thirty-three towns included 30 in London, 6 in Leeds, 5 in Birmingham, and 4 in West Ham. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and only one small-pox patient was under treatment in the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,355 and 2,321 at the end of the two preceding weeks, had risen again to 2,326 on Saturday last, August 6th: 224 new cases were admitted during the week, against 265, 276, and 232 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, August 6th, 962 births and 604 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 20.1 and 18.6 per 1,000 in the two preceding weeks, rose again to 20.0 last week, and was 1.7 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 16.4 in Leith and 16.7 in Dundee to 30.3 in Paisley and 34.0 in Grennock. The zymotic death-rate in these towns averaged 4.4 per 1,000, the highest rates being recorded in Paisley and Grennock. The 278 deaths registered in Glasgow included 5 from measles, 2 from diphtheria, 16 from whooping cough, and 45 from diarrhœa. Five fatal cases of measles and 5 of whooping-cough were recorded in Edinburgh; and 7 deaths from measles occurred in Dundee.

STOCKPORT WORKHOUSE INFIRMARY: OFFICIAL INACTIVITY.

In 1894 our Commissioner visited the above workhouse, and the report was published on October 4th, 1894. The constant comment made by our Commissioner is that it is overcrowded, "dangerously overcrowded," "the inmates packed like herrings in a barrel"; and there is also criticism on the insanitary condition of the wards, the impossibility of doing anything like justice to the sick or the helpless classes, with a final recommendation to adopt the only possible course, and build a new workhouse and infirmary. We see from a report in the *Stockport Echo* of July 28th, that so far from this having been done, the Board are still wrangling over the site, though the master is reported to say, that though one of the rooms is so rotten as to be dangerous, there is no place available for the forty women inmates during the necessary repairs. The half-yearly report of the medical officer emphasises the unsatisfactory condition of the workhouse, the overcrowding of certain wards, and the bad ventilation. As an instance of overcrowding it is mentioned that six imbeciles had to sleep in the body of the house.

The existence of such a state of things in a town like Stockport is a disgrace, reflecting severely not only on the elected guardians, but on the ratepayers who show such indifference to the welfare of their own poor. The Local Government Board has powers to compel a recalcitrant Board to undertake necessary works; we trust that an inspector will be ordered to the spot and that the department will at once take action. Indeed, we believe that all information is in the hands of the central authority, so that why four years have been allowed to elapse requires some explanation. A delicacy for the feelings of the guardians should not be allowed to weigh against considerations for the sufferings of the paupers.

FREEBRIDGE LYNN RURAL DISTRICT.

On the reappointment of Dr. C. B. Plowright as Medical Officer of Health, the Freebridge Lynn Rural District Council raised his salary from £82 10s. to £100 per annum. The District Council also resolved that steps should be taken to add, if possible, phthisis to the list of notifiable infectious diseases.

SUPERANNUATION FOR PUBLIC VACCINATORS.

J. L. J. writes to ask whether there has been any decision in reference to the claims of public vaccinators of Union districts who hold permanent appointments for superannuation under the Act of 1896.

*** We are not aware that there are any public vaccinators of Union districts who do hold permanent appointments, but if there are any such, and our correspondent is one, we must ask to be informed of the exact terms on which his appointment is held.

SUPERANNUATION IN THE IRISH POOR-LAW MEDICAL SERVICE.

Member.—Under the Local Government (Ireland) Act, 1898, a Poor-law medical officer, who is over 60 years of age and who has served for more than thirty years, will be entitled to superannuation, as a matter of right, upon his retirement from the Poor-law Medical Service.

LUNACY CERTIFICATES IN SCOTLAND.

Inkpot writes that it is necessary to remove a private patient to the asylum. She is taken as a pauper, and "Inkpot" signs a certificate, an urgency one, and gives it to the inspector of poor of the parish. On another occasion another private patient of "Inkpot's" is taken as a pauper lunatic, this time two doctors certifying in the usual way. In the first instance the certificate is refused by the superintendent of the asylum, in the second case it is accepted. "Inkpot" has asked the parish council to pay him two guineas for all the work, and the council demur to doing so.

1. Can "Inkpot," no previous arrangement existing, fix the amount of his fee?
2. Can the council refuse to pay for either certificate after their inspector of poor has accepted them?
3. In case of their refusing, is there any appeal to the Lunacy Commissioners or Local Government Board?
4. Can "Inkpot" insist on being one of the certifying doctors when a private patient of his is removed as a pauper lunatic?

*** The queries relate to Scotch practice. The following is a categorical answer:

1. Yes; the customary fee is a guinea for a certificate, but we are informed that it is usual to give the emergency certificate and the ordinary certificate, one or two, for a single fee.
2. No.
3. The only appeal is to a court of law.
4. No.

SPACE IN REAR OF NEW HOUSES.

M.B. writes: The by-laws of a rural district council, framed on the model issued by the Local Government Board, prescribe to the effect that "in the rear of every new domestic building there must be an open space of an aggregate extent of not less than 150 square feet." He asks if he is right in contending that such space must be within the back-yard of such building. The rural district council contend that they are entitled to include half the back road opposite the building in the required space.

*** If the by-law contains no word on the matter beyond those quoted from our correspondent's letter, the authority are probably right. In many by-laws, however, there are words specifying that the 150 square feet must be exclusively for the use of the dwelling, or even specifying a minimum width of back-yard. We believe the architectural department of the Local Government Board are inclined to construe the model clause as requiring the open area exclusive of any street. A back street is, however, from a sanitary point of view, of great value, and if the acceptance of our correspondent's position would curtail the building of houses so that refuse had to be removed through the dwelling, the result would be unsatisfactory. With semi-detached houses this would not necessarily follow, but the building of cottages in a row without the provision of any means of access to the curtilage in the rear is greatly to be deprecated.

MEDICAL NEWS.

IT is stated that at the beginning of the next term Dr. Osler will succeed Dr. Welch as Dean of the Johns Hopkins Medical College.

A TELEGRAM to the Colonial Office from the Government of Hong Kong states that no fresh cases of plague had occurred in the colony last week.

SUCCESSFUL VACCINATION.—Mr. John H. Gornall, Public Vaccinator for the Borough of Warrington, has been awarded for the thirteenth time in succession the Government award for successful vaccination.

SIR J. DICKSON POYNDER, Bart., M.P., has been elected Chairman of the Committee of Management of the Great Northern Central Hospital, in the room of the late Mr. C. T. Murdoch, M.P.

AT the recent meeting of the Section of Diseases of Children of the American Medical Association it was resolved to take steps to found a suitable memorial to the late Dr. Joseph O'Dwyer, who had so large a part in introducing the operation of intubation of the larynx.

SOUTHBOURNE-ON-SEA.—Dr. W. K. Rix writes that the descriptions of this seaside place given in some guide books is misleading. The pier is not used as such, the esplanade is not finished, and winter gardens are not yet erected. Nevertheless, he adds, it has attractions of its own. The soil is dry and the air bracing, with much sunshine. Its stands 100 feet above the shore, commanding fine views of the bay, the Isle of Wight, Christchurch, and the surrounding country. The estuaries of the Stour and Avon are near for boating and fishing, it is close to magnificent pine woods, and there is capital bathing.

MEDICAL VACANCIES.

The following vacancies are announced:

BANGOR: CARNARVON AND ANGLESEY INFIRMARY AND DISPENSARY.—House-Surgeon. Knowledge of Welsh desirable. Salary, £70 per annum, with board, and lodging in the house. Applications to the Secretary by August 17th.

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—Second Assistant Medical Officer. Unmarried, and not exceeding 35 years of age. Salary, £130 per annum, apartments, board, and washing. Applications to the Clerk by August 23rd.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the House Governor by August 27th.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried. Salary, £100 per annum, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by August 24th.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £70, with board, residence, and washing. Applications to the Secretary by August 20th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's Road, Brighton.—House-Surgeon for the northern branch, unmarried. Salary, £140 per annum, with furnished apartments, coal, gas, and attendance. Applications to the Honorary Secretary before August 17th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician; unmarried, and under 30 years of age. Salary, commencing at £50 per annum, with board and residence. Applications to the Secretary by August 24th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to E. Markham Skerritt, M.D., Dean, by August 29th.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with furnished apartments, board, and washing. Applications to the Secretary.

CARLISLE: CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £70 per annum. Also Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum, with board, lodging, and washing provided in each case. Applications to the Secretary by August 31st.

DERBY: BOROUGH OF.—Medical Officer of Health. Salary, £500 per annum, increasing to £600. Must give whole time. Applications, endorsed "Medical Officer of Health," to the Town Clerk, by August 22nd.

DERBY COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary, £100 per annum, [illegible] with board, lodging, and washing. Applications to B. Scott Currey, at Midland Railway Yard, Derby, by August 18th.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary to commence, £800 per annum, with furnished residence, etc. Applications to Arthur E. Ward, Solicitor, 9, Bedford Circus, Exeter, by September 9th.

DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Board, lodging, and washing. No salary. Applications to the Chairman of the Medical Committee by August [illegible].

DUDLEY [illegible] HOSPITAL.—Resident Medical Officer. Salary commencing at £120 per annum, [illegible] to £120, with residence, board, attendance, and washing. Applications to [illegible].

FULHAM PARISH [illegible]. Salary, £200 per annum. Applications to the Clerk to the [illegible] Walham Green, S.W., by August 27th.

GLASGOW DISTRICT [illegible] HOSPITAL FOR MENTAL DISORDERS.—Junior Assistant Medical [illegible] salary, £100 per annum, with board, lodging, and washing. Applications to the Medical Superintendent, Garloch, Gartcosh, N.B.

HOSPITAL OF ST. [illegible], Great Ormond Street.—Orthopædic Surgeon and Ophthalmic Surgeon. Applications to the Honorary Secretary by August 20th.

KING'S COLLEGE.—Assistant [illegible] to the Hospital. Applications to the Secretary.

LANCASTER: ROYAL [illegible] INFIRMARY.—House-Surgeon; unmarried. Salary, £50 per annum, with board, residence, board, attendance, and washing. Applications to the Secretary, by August [illegible].

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by August 24th.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer. Appointment for one year. Salary, £80 per annum, with board and lodging. Applications to the Chairman of the Medical Board by August 31st.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham. Salary, £160, rising to £200, with board, lodging, attendance, and washing; unmarried, and age not to exceed 35 years. Applications to the Clerk by August 22nd.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Resident Medical Officer. Appointment tenable for six months, with prospect of re-election as Senior. Salary, £30 per annum, with board, attendance, and washing. Applications to the Secretary by August 15th.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

OWENS COLLEGE, Manchester.—Demonstrator of Anatomy. Applications to the Registrar by August 1st. Also Senior and Junior Demonstrator in Physiology. The stipends will be £150, rising to £200, and £100, rising to £150, respectively. Applications to the Registrar by September 1st.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Secretary by August 24th.

SALFORD SCHOOL BOARD.—Medical Officer. Salary, £150 per annum. Applications to the Board by August 17th.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Doubly qualified. Salary, £50 per annum, with board, lodging, and washing. Applications, addressed to the "Medical Staff of the Royal Infirmary, Sheffield," by August 18th.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Honorarium at the rate of £30 per annum, with residence, board, and washing. Applications to Joseph Worall, Infirmary Office, Cambridge Arcade, Southport, by August 20th.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Third Assistant Medical Officer; unmarried and under 30 years of age. Salary, £100 per annum, rising to £150, with furnished apartments, board, etc. Applications to the Medical Superintendent.

STOCKTON-ON-TEES: STOCKTON AND THORNABY HOSPITAL.—Non-resident House-Surgeon. Not exceeding 30 years of age. Salary, £200 per annum. Applications to the Secretary by August 23rd.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. No salary; board, lodging, and washing provided. Applications, endorsed "Assistant House-Surgeon," to J. E. W. Wakefield, Bank Buildings, Taunton, by August 15th.

THREE COUNTIES ASYLUM, Arlesley, Hitchin.—Second Assistant Medical Officer; unmarried, and under 30 years of age; doubly qualified. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to F. G. Butler, Clerk to the Committee of Visitors, St. Neots, Hunts, by August 15th.

WESTERN GENERAL DISPENSARY, Marylebone Road.—House-Surgeon; unmarried. Salary, £60 per annum, with board and residence. Applications to the Honorary Secretary by August 23rd.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, and an honorarium at the rate of £50. Board, lodging, and washing provided. Applications to the Chairman of the Medical Committee by August 23rd.

WORCESTERSHIRE COUNTY COUNCIL.—Additional County Analyst. Salary, £400 per annum. Appointment for six months. Applications, endorsed "County Analyst," to the Clerk, Shirehall, Worcester, by August 19th.

MEDICAL APPOINTMENTS.

BENSON, J. R., F.R.C.S.Eng., appointed Sambrooke Surgical Registrar and Tutor in Surgery at King's College Hospital.

CUFFE, Dr., appointed Medical Officer for the Kilsallaghan Dispensary District.

DUNCAN, William, M.B., C.M.Glasg., appointed Medical Officer of Health for Clay Cross Urban District, *vice* Angus Mackintosh, M.D., deceased.

HARRIS, F. Drew, M.B.Lond., D.P.H., reappointed Medical Officer of Health to the St. Helens Town Council.

HAYDON, H. W., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer for the Wade District of the Bodmin Union.

JONES, T., M.R.C.S., L.S.A., appointed Medical Officer for the Middle District of the Whitechapel Union.

LEWIN, O. M. S., M.B.Lond., appointed Assistant Medical Officer to the Charlton Union Workhouse.

MASTER, George, M.B., B.C.Cantab., appointed Assistant Medical Officer to the Suffolk General Hospital.

NORTON, E. E., M.R.C.S., L.R.C.P.Lond., D.P.H., appointed Medical Officer of the Workhouse and Infirmary of the Parish of St. Leonard, Shoreditch.

OULTON, H. W., M.D., appointed Surgeon to the Dublin Metropolitan Police Force, *vice* Thomas Medley, M.D.

PLUMMER, Henry B. W., M.R.C.S., M.D., appointed Honorary Surgeon to the West Bromwich District Hospital.

ST. JOHN, A. S., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Eltham District of the Lewisham Union.

TRIBE, P. C. E., M.B.Lond., L.R.C.P., appointed Sambrooke Medical Registrar and Tutor in Medicine at King's College Hospital.

WHITE, H. E., M.R.C.S., L.R.C.P., appointed Assistant Medical Officer to the Parish of Birmingham Infirmary.

WILKINSON, George, B.A., M.B.Cantab., F.R.C.S.Eng., appointed Honorary Surgeon to the Royal Hospital, Sheffield.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

COUTTS.—On August 5th, at Farnborough, the wife of Major G. Coutts, Royal Army Medical Corps, of a daughter.

CURRIE.—On August 5th, at Edinburgh, the wife of O. J. Currie, M.B., M.R.C.S., Maritzburg, Natal, of a son.

FRASER.—On August 9th, at Bellfield, Bridge of Allan, N.B., the wife of John Hosack Fraser, M.B., F.R.C.P.E., of a daughter.

MARRIAGES.

BRUCE HENDERSON.—On August 9th, at St. John's, Perlethorpe, Thoresley Park, by the Rev. H. T. Hayman, Vicar of Edwinstowe, assisted by the Rev. W. B. Carden, of St. John's, George Bruce, M.A., M.B., C.M.Aberd., Edwinstowe, to Annie Agnes, only daughter of Archibald Henderson, of Thoresley Gardens.

PENTREATH—MAKGILL.—On June 8th, at Brackmont, Waiuku, New Zealand, by the Rev. E. Chaute Budd, Charles Henry Reginald Pentreath, M.B., B.C., B.A.Cantab., son of E. Pentreath, Parkstone, Dorset, to Ruth Makgill, third daughter of Captain John Makgill, R.E., of Brackmont, Waiuku, N.Z.

WARD—JEFFERIES.—On August 4th, at St. Helen's, Ipswich, by the Rev. Canon Footman, M.A., Vicar of Nocton, uncle of the bride, assisted by the Rev. Edwin Oakley, M.A., Rector of the Parish, Francis Ward, M.D., eldest son of Colonel A. E. Ward, late Bengal Staff Corps, to Elizabeth Lillian, second daughter of John Robert Jefferies, J.P., of St. Helen's Lodge, Ipswich.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

Cancer, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

Central London Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily.

Central London Throat, Nose, and Ear.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

Charing Cross. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

Chelsea Hospital for Women. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

City Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

East London Hospital for Children. *Operations.*—M. W. Th. F., 2.

Great Northern Central. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

Guy's. *Attendances.*—Medical, daily, 2. Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

Hospital for Women, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

King's College. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

London. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

London Temperance. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

London Throat, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

Metropolitan. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

Middlesex. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

National Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

New Hospital for Women. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

North-West London. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

Royal Eye, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

Royal Free. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

Royal London Ophthalmic. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

Royal Orthopædic. *Attendances.*—Daily, 2. *Operations.*—M., 2.

Royal Westminster Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

St. Bartholomew's. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

St. George's. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

St. Mark's. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

St. Mary's. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

St. Peter's. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

St. Thomas's. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 8.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

Samaritan Free for Women and Children. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

Throat, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

University College. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

West London. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

Westminster. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

X.Y.Z. would be glad to know if there are any evening classes in London which would be accepted for the D.P.H.Camb.

T.E.S. asks for advice as to the treatment of lepidoderma, which is of four years' standing and gradually increasing in area.

M.H. wishes to know of a convalescent home for gentlewomen in the country or near the sea.

H.H.P.C. would be glad to be informed where a home can be found for an epileptic boy. The parents are in poor circumstances, but would be willing to pay a few shillings weekly.

BARTS will be grateful for particulars of any sanatorium or private home where a lady can undergo the open-air treatment for phthisis. She is in a position to pay any reasonable fee.

J.C. Thinks of sending his two young children, aged 12 and 10 respectively, to Lausanne, Switzerland, and would be glad to be put in communication with any gentleman who knows that place, and would give him some reliable information with regard to sanitary arrangements, etc.

COUNTRY PRACTITIONER asks to be referred to the best and latest literature on puerperal eclampsia.

*** Our correspondent might consult:—In English: Clifford Allbutt, *Lancet*, February 27th, 1897. In other languages: Various writers in *Comptes Rendus* du Congrès Internationale de Gynécologie et d'Obstétrique, Geneva, 1896. In German: Ludwig and Savor, *Monatsschrift für Geb. und Gyn.*, Band I, 1895; and Wendt. *Archiv für Gyn.*, Band LVI.

THE ELECTION OF CORONERS.

MIDDLE TEMPLE wishes to be informed where he can see a list of the coroners, town and country, and their salaries. Also, he desires information as to the present methods of appointment.

*** Until recently there was a list of the coroners of England and Wales, with their districts at the end of Churchill's *Medical Directory*, but for the last few years it has been omitted; but our correspondent may find the names of the coroners in the *Law List*. As regards the amount of the salaries, these are not published, except in the Home Office Returns. They vary very considerably, and are usually estimated upon a quinquennial average of the number of inquests held at the rate of £1 6s. 8d. per inquest, with travelling expenses extra.

Since the last Local Government Act the election for all county coroners has been transferred from the freeholders to the County Councils, the election of borough coroners remaining as before in the hands of the Corporation. There are still remaining a few franchise and verge coroners appointed by the Crown, and this applies also to the Duchy of Lancaster.

When a vacancy occurs the appointment is usually advertised, and candidates making application are requested to forward their testimonials by a certain date to the Clerk of the Council or Corporation as the case may be, and it is not unusual now to see at the end of the advertisement the words "all canvassing is prohibited." Medical men possessing also a legal qualification have of late years been selected in the metropolis in preference to others, but like every other appointment in the hands of corporate bodies other considerations may influence the electors in their choice.

ANSWERS.

A. McC.—Our correspondent should apply to the Secretary, Anglo-American Medical Association, 12, Landesgerichtstrasse, Vienna.

"ALETHOLIS" mentioned in the Epitome of the BRITISH MEDICAL JOURNAL of June 18th, par. 499, was a misprint for "alcoholis."

P.—It would be unwise and lacking in ethical dignity to take any opportunity of writing in a public paper to correct such rumours. They should be contradicted verbally whenever opportunity offers.

MEMBER BRIT. MED. ASSOC.—It would be the wiser plan for our correspondent to allow his name to remain still on the old premises, and to make his intentions known through the intermediary of friends.

M. J. O'C.—We are informed that a good arch instep sock can be obtained from Mr. J. H. Montague, 101, New Bond Street, London, W. He also makes a sock with a post between the first and second toes.

G. C. P.—We do not think that our correspondent would be well advised to trust altogether to the indulgence of "local official magnates" in regard to medical practice in France.

NITRAM.—Information as to the conditions under which the M.D. Paris can be obtained will be given in the Educational Number of the BRITISH MEDICAL JOURNAL, which will be issued on August 27th.

Dr. E. J. C.—Either the *Deutsche medicinische Wochenschrift* or the *Berliner klinische Wochenschrift* would, we think, meet our correspondent's requirements. The *Centralblatt für Bakteriologie* concerns itself specially with bacteriology.

E. M.—The following works would probably meet our correspondent's requirements: *Hypnotism.* By Dr. Albert S. Moll. Walter Scott, Limited. 1897. *Hypnotism and its Application to Practical Medicine.* By Otto G. Wetter-

strand. M.D. Translated by H. G. Petersen. G. P. Putnams Sons. 1897.
Suggestive Therapeutics. By H. Bernheim, M.D. Translated by C. A. Herter. Young J. Pentland. 1890.

NEURON.—We do not know that the waters of Plombières are imported. The chief part of the treatment at Plombières consists in baths and other external application of the water. It is therefore unlikely that drinking the Plombières water in England can have the same effect as a course of treatment at the spa itself.

J.P.—The young woman should either decline the patient altogether, giving no reasons, or accept unconditionally, but intimating that she will not be a party to any concealment of what may take place in her house. In the event of abortion taking place the doctor should treat the case just as he would any other case of abortion; but take care to do nothing that he would object to see published in the next issue of the local paper.

J. M.—We know of no analysis of the medicine in question, but the drugs mentioned are of little importance. Rumex crispus is the "yellow dock," a common roadside plant. It contains tannin, chrysophanic acid, and mucilage. It is said to be antiscorbutic. Geoffrya mermis is the "cabbage bark tree." It was many years ago official in the *Dublin Pharmacopœia*, and was given in large doses as a cathartic and anthelmintic. Malva sylvestris is the common mallow. It contains mucilage, and is a simple demulcent without any active properties.

DOSES OF IODIDE OF POTASSIUM.

DR. RICHARD NEALE writes: "Member" can, by reference to Sections 2953 : 5 and 1128 : 5 of the *Medical Digest*, obtain the information he seeks. In the BRITISH MEDICAL JOURNAL, vol. ii, 1897, p. 906, a case is reported where 8 lbs. of the drug were taken in eight years.

ACUTE LEUKÆMIA.

S. A. B.—Our correspondent will find valuable papers on acute leukæmia in *Virchow's Archiv*, by Eichhorst (1892, vol. cxxx) and Askanazy (1894, vol. cxxxiv.). Further details will be found in Von Limbeck, *Klin. Path. des Blutes*, 2nd Edition, 1896.

METALLIC IODINE IN SYPHILIS.

L.R.C.P.—The following is a version of M. Bouveyron's prescription (Epitome, April 30th, No. 368) which could be compounded by a British chemist: Iodine 15 gr., dissolved in iodide of potassium solution *q.s.* (30 gr.); glycerine 75-150 gr.; citric acid, 225 gr.; syrup and distilled water to 35 ozs. A British chemist ought, however, to be able to compound a prescription in which the quantities are given on the metric system.

NOTES, LETTERS, Etc.

A WARNING.

MR. F. NORIE MILLER (The General Accident Assurance Corporation, Limited, Perth) writes: As a protection to the members of the medical profession, I beg to inform your readers that this company has no agent or person of any kind authorised to appoint medical referees, all such appointments being made by my Board, and from this office direct. The necessity for this letter has arisen through doctors in Gateshead, Hull, and other towns, having written us that a man, or men, giving various names, have called upon them offering the appointment of medical referee for our company, and taking the doctors' proposals for accidents, and with it a deposit, usually £1, and they, the doctors, have heard nothing further of the matter.

It seems to me that it is one man who is travelling from town to town under various names, or a gang of men who are thus victimising the doctors in various towns, and as it appears they have the prospectuses of this company, I presume they have called on our agents or at our head offices asking for copies of our prospectuses for the purposes of insurance.

ERRATA.

IN the brief report of proceedings of the Section of Tropical Diseases at the annual meeting of the British Medical Association, published in the BRITISH MEDICAL JOURNAL of August 6th, p. 368, it should have been stated that Dr. Beatty practises at Cairo, and not as there stated.

THE name of Mr. J. D. Litlygow was accidentally omitted from the list of those who received the degrees of M.B. and C.M. of the University of Edinburgh on page 394 of the JOURNAL of August 6th.

THE FLOORS OF SANATORIA FOR CONSUMPTION.

DR. W. CALWELL (Belfast) writes to point out an apparent error in the comments he [illegible] Leon-Petit's method of dealing with floors as given in [illegible] paper on Sanatoria for the Open-air Treatment of Consumption published in the BRITISH MEDICAL JOURNAL of July 9th, 1898. It will appear that Dr. Leon-Petit's method is to apply *with a brush* a preparation of paraffin mixed warm with benzine.

AN APPEAL ON BEHALF OF THE FAMILY OF THE LATE DR. ARTHUR BARLOW.

WE [illegible] attention to the appeal which was made in the BRITISH MEDICAL JOURNAL of May 14th on behalf of the widow of Dr. Arthur Barlow, who died on March 10th at the early age of 37. Owing to ill-health he was prevented from making provision for his widow, who is in [illegible] means whatever, and is in exceedingly delicate health by the [illegible] of nursing her husband and the shock of his sudden death. [illegible] subscriptions will be received by Dr. J. W. Moore, 40, Fitzwilliam Square West, Dublin; Dr. John Barton, 26, Upper Merrion Street, Dublin; Dr. [illegible], Grove Terrace, University Street, Belfast; Dr. G. [illegible], 20, Merrion Square West, Dublin; Dr. Henry, 2, Dr. L. H. [illegible], Leeson Park, Leeds; [illegible], London; and Dr. A. Matson, 619, Holloway Road, London.

HOLIDAYS FOR DOCTORS.

DR. F. HAIG MARTIN writes: I have just seen the letters of Dr. Howard Ambler and "A Member," and would recommend any medical man visiting the south of Ireland to try the Esplanade Hotel, Courtmacsherry, about two hours by rail from Cork. In my own case a fortnight last year has lengthened into a month this year. Originally a private house, it was started as a hotel last year, and the hotel element is conspicuous by its absence. The house stands in beautifully wooded grounds, and is embedded in a mass of rhododendrons and covered on one side by myrtles; in front it commands a charming view up the estuary of the Argadeen. There is good sea fishing, and boating and bathing *ad lib.*, while the antiquarian will find in the remains of Timohague Abbey, some three miles away, one of the most beautiful ruins in the country. Some four miles away is Dunworley Bay. The terms are moderate, and I cannot speak too highly of the courtesy and attention of the manager.

DR. REICHARDT'S DEFENCE FUND.

WE are asked to state that the subscriptions already received in response to the appeal published by Dr. Savage in the BRITISH MEDICAL JOURNAL of July 23rd are as follows:

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BOOKS, ETC., RECEIVED.

The Ferment Treatment of Cancer and Tuberculosis. By H. Manders, F.R.C.S., M.D. London: Rebman Publishing Company. 1898. 10s. 6d.

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SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

Professor A. R. Simpson, President.

A DISCUSSION ON THE SURGERY OF PELVIC INFLAMMATION.

I.—Charles J. Cullingworth, M.D.,

Obstetric Physician to St. Thomas's Hospital and Lecturer on Obstetrics and Gynæcology in St. Thomas's Medical School.

Retrospective.

On the last occasion upon which I addressed the Association on this subject (at the meeting held in Newcastle in 1893), my chief endeavour was to convince my hearers, first, of the comparative frequency of inflammation of the Fallopian tubes; secondly, of the pathological importance of that affection as being by far the most frequent cause of pelvic peritonitis in women; and, thirdly, of the not infrequent necessity for surgical intervention in the treatment of both the disease itself and its sequelæ. To some of our American and foreign visitors it seemed even at that time rather late in the day to be taking up the position of apologist for a mode of treatment that had already for some time been generally adopted in one form or another—both in America and in every country in Europe, except that in which it had its birth.

Just, however, because the necessity for surgical interference was not recognised in Great Britain as it was elsewhere, I deemed it opportune on that occasion to reconsider the grounds upon which a more energetic treatment had come to be advocated, and was being more and more widely adopted. With this object in view I found it necessary briefly to enumerate the advances recently made in our knowledge of the causes, nature, and usual course of pelvic inflammation in the female, and then to inquire how far this new knowledge justified the increasing frequency with which some of its more formidable and dangerous manifestations were treated surgically. But I shall surely not be far wrong if I say that we have now passed the stage when such a method of dealing with the subject is required. What was then being contended for has now been generally accepted, and the questions that now chiefly interest us, and that still await a final settlement, are quite different from those which were agitating us even five years ago.

Proposed Scope of Discussion.

I do not purpose making such ill use of the opportunity that the organisers of the work of this Section have so generously placed at my disposal as to expand these opening remarks into an elaborate address. It would indeed, in the face of the printed regulations, be disloyal to attempt it. Those regulations most wisely lay down a definite time limit, within which those who open and take part in these sectional discussions are requested to compress their remarks. It seems to me, therefore, that I shall be acting most in accordance with the spirit of these rules, and the convenience of the Section, if I content myself with (1) an enumeration of the subjects to which I think it will be wise to adhere in the course of this discussion, and (2) to lay down certain propositions that may be accepted as a condensed expression of my own personal opinions on the questions at issue, and that may at the same time be useful to subsequent speakers as a basis for argument and for illustration from their own experience.

I purposed, had time allowed, to take up the following topics as being those most likely to yield material for useful discussion:

1. The indications for operative interference in pelvic inflammation.
2. The choice of time for operation.
3. The methods to be preferred.
4. The extent to which the principles of conservatism may find legitimate application in the surgery of pelvic inflammation.

This proved to be too ambitious a programme for the time at my disposal. I must therefore be content to deal with the first two of these topics. They are perhaps less attractive than the others, but I am not sure that they are less important.

The Indications for Operative Interference in Pelvic Inflammation.

I adopt the usual classification of pelvic inflammation into two main divisions, one, in which the primary and predominant lesion is in the connective tissue area of the pelvis, the other in which the primary lesion is intraperitoneal and the resulting inflammation is mainly pelvic peritonitis.

Pelvic Cellulitis.

There is so close an agreement amongst gynæcologists as to the surgical treatment of pelvic cellulitis that the question may be dismissed in a few sentences. Some cases of pelvic cellulitis suppurate, and some do not. The latter end in resolution and need no surgical treatment of an operative kind. The cases that are attended with suppuration are amenable to the ordinary surgical rule, that as soon as pus is discovered and within reach it should be let out.

In suppurative pelvic cellulitis the operation should always be performed without opening the peritoneal cavity. Fortunately the abscess in the majority of cases points externally, above Poupart's ligament, indicating the proper site for the incision. In cases, however, in which the suppuration occurs in the neighbourhood of the pelvic glands, that is, behind the posterior parietal layer of the pelvic peritoneum, the abscess is too deeply seated to point, and its very existence is often a mere matter of inference. The desirability of operation is here not so universally acknowledged, and the operation itself is much more complicated, requiring a similar incision to that required in the operation for tying the external iliac artery, followed by careful dissection beneath the uplifted peritoneum. More rare situations for the pus to collect are between the bladder and cervix uteri (of which I have only seen one instance, and that after death), and behind the posterior wall of the vagina generally on one side. In either of these cases the abscess must be opened from the vagina. Still more exceptional cases are now and then met with where the pus makes its way out of the pelvis through the sciatic notch or beneath Poupart's ligament along with the blood vessels, or upwards into the loin along with the ureter. In each of these cases the abscess sooner or later would make itself apparent on the external surface.

Of cellulitic abscess circumscribed between the layers of the broad ligament at its upper part I have no personal experience, and can only surmise what the course of events would be likely to be. Such abscesses, I imagine, would, under ordinary circumstances, tend to spread in the direction of least resistance, namely, into the base of the ligament, whence they would normally extend forwards and point in the anterior abdominal wall above Poupart's ligament. Failing this they would probably cause adhesion of the distended broad ligament to the abdominal wall or to a coil of intestine, with ultimate pointing, in the former case, on the external surface, and in the latter case with eventual perforation of the intestinal wall and escape of the contents of the abscess into the bowel. It is probable that most of the cases recorded as examples of suppurative cellulitis in this situation have been, as I have elsewhere pointed out, cases of pyosalpinx or suppurating ovary, in which the broad ligament has been drawn over the inflamed organs in the form of a hood, completely concealing them from view when the abdomen is opened.

Pelvic Peritonitis.

The indications for surgical interference in the other main division of pelvic inflammation cannot be stated quite so categorically. It would of course be easy to enumerate the conditions necessitating operative interference,

if one could deal with them from the point of view of the pathologist. But the exact knowledge of the pathologist is acquired after the parts have been exposed or removed in the operating theatre or the *post-mortem* room. Diagnosis at the bedside is at best a matter of inference. In much of the criticism that has been expended on the operative treatment of pelvic inflammation this fact has been lost sight of. It is so easy to be wise after the event, so easy to say, with the parts lying before us, this patient ought to have been operated upon or that patient ought not to have been operated upon, as the case may be. If those who are so ready with their cheap and easy criticisms had been brought face to face with the clinical problems presented by the cases during life or before operation, they would often have had to acknowledge in the words of our great Master, that "judgment is difficult" and "opportunity fleeting." The indications that I am about to formulate may possibly be found to have a disappointing vagueness, a lack of pathological precision. Vague as they are, however, I trust they will prove not altogether useless.

Speaking broadly, it may be laid down, in the first instance, that operative interference is not called for in cases of pelvic peritonitis due to simple catarrhal salpingitis; and, secondly, that it is called for in all cases attended with the formation of pus in appreciable quantity, whether in the Fallopian tube, in the ovary, or amongst peritoneal adhesions. This sounds simple enough. But it is not always possible to say whether suppuration exists or not. The temperature is not a trustworthy guide, for there may be a considerable rise of temperature in cases of simple or catarrhal salpingitis during the acute stage, and, on the other hand, there may be considerable collections of pus in the pelvis without elevation of temperature. No absolute rules of diagnosis can be laid down, but there are certain signs and symptoms that, if present, will greatly assist us in coming to a conclusion in any given case. Let me enumerate some of these.

After the subsidence of the acute symptoms in a case of pelvic peritonitis due to tubal inflammation, a bimanual examination reveals the presence of a swelling in the posterior fossa of the pelvis on the side affected, extending not infrequently into the pouch of Douglas. In an uncomplicated case of non-suppurative or catarrhal salpingitis this swelling is formed by a thickened and enlarged Fallopian tube fixed by its adhesions to one or more of the surrounding parts—namely, ovary, broad ligament, posterior aspect of the supravaginal portion of the cervix uteri and the peritoneum covering the floor and walls of the pelvis. It is often possible to trace the tube as a thick cord from its commencement near the cornu of the uterus, and to follow it as it turns backwards and downwards, winding round and embracing the normal or perhaps œdematous ovary. The outer extremity of the tube can seldom or never be defined, but it may be presumed to lie where the hardness is most marked, and where it is evident the inflammation has been most intense. This condition is one in which, under favourable circumstances, gradual recovery may be expected to take place without operation.

If, however, such a swelling is larger than would be accounted for by the pathological conditions just described, and is found to be increasing in size in spite of rest in bed and the local application of warmth, it is almost certain that pus is present, and the indications for surgical intervention are clear.

Again, if during an attack of acute inflammation of the uterine appendages a tense, globular, cystic swelling be formed in the pouch of Douglas, bulging downwards into the vagina and backwards into the rectum, the probabilities are strong that the swelling is an intraperitoneal abscess. Even if the contents of the distended pouch prove to be serous and not purulent, the relief of tension is necessary, so that here again the need for surgical interference is imperative.

Another occurrence, the importance of which from a diagnostic point of view can scarcely be overestimated, is the outbreak of recurrent attacks of pelvic peritonitis in a patient who has had an acute salpingitis and in whom there has remained a quiescent but obvious swelling in the posterior part of the pelvis. Such attacks, whether they occur without apparent exciting cause, or as the result of exposure to cold and damp, and whether they occur at shorter or longer intervals, are very suggestive of a collection of pus and the need for operation. The pus in such cases is generally shut up either in the tube (pyo-salpinx) or in the ovary (ovarian abscess).

There is another class of cases in which there is practically no difficulty in deciding what should be done. I refer to those cases in which with a more or less definite history of pelvic inflammation and the presence of a localised swelling above the vaginal roof, there are symptoms of general septic infection. The indications for immediate operative intervention are here unmistakable. The presence of pus is certain, and that of a virulently infective kind. In my own experience such cases have most frequently proved to be instances of what is termed tubo-ovarian abscess, that is to say, cases in which a communication has been opened by a gradual process of ulceration between a suppurating Fallopian tube and a cyst in the adjacent and adherent ovary, with sudden infection of the contents of the cyst and putrid changes as a consequence.

Are there any cases of pelvic inflammation in which operative treatment is indicated, although there is no special reason to suspect suppuration? As a rule, cases of salpingitis, unattended with an appreciable amount of suppuration, tend, under the influence of time and rest, to spontaneous recovery, and, as I have already said, do not need operation. But there are exceptions to this general statement. For example, the swelling, instead of subsiding, may slowly enlarge, and may without any return of the pyrexia of the acute stage, acquire in parts a softer consistence or present signs suggestive of the presence of fluid. The first indication in such a case is to empty the bowels thoroughly, so as to exclude adherent coils of distended intestine. If after this has been done the swelling remains, the probability is either that the ovary is in an early stage of cystic disease, or that there is a hydrosalpinx or an encysted collection of serum. An encysted collection of serum will usually subside in a few days under the influence of rest. Should the size of the swelling remain unaltered, it may be assumed that either a hydrosalpinx or a diseased ovary is present. In either case operation is indicated. Hydrosalpinx is a cause of much suffering, and should either be removed or incised. A diseased ovary obviously requires removal. Incipient cystic disease of the ovary is met with so frequently as a complication of chronic salpingitis that it seems not unreasonable to suppose that the disturbance of the functions of the ovary consequent upon its involvement in the adherent mass is in some way responsible for the starting of this morbid process within it. Certain it is, that when once cystic degeneration has commenced the ovary is rendered more prone to become secondarily infected and to suppurate, and by far the majority of cases of secondary ovarian abscess occur in ovaries which have first become cystic. This constitutes an additional reason for their early removal.

There are, in my opinion, still other circumstances which may justify operation, even when there is no marked indication that pus is present. I refer to such cases as that of a woman belonging to the labouring class, to whom it is of the utmost importance that she should be restored to health quickly. Such women cannot afford the time that women in better circumstances can, and for my own part I consider it perfectly legitimate to operate upon them when disabled by chronic non-suppurative salpingitis, if, the alternatives having been frankly explained to them, they decide in favour of operation.

I cannot pretend to have done more than offer a few suggestions. The subject is a large one, and cannot be treated exhaustively in the limited time at my disposal.

THE CHOICE OF TIME FOR OPERATION.

There appears to be a general consensus of opinion, founded partly on clinical experience and partly on inferences drawn from pathological facts, in favour of deferring operation where it is possible until acute symptoms of localised peritonitis have subsided. In the first place, it is often impossible during the acute stage to say whether the tubal inflammation on which the localised peritonitis depends is catarrhal or suppurative; whether, in other words, the case is one in which spontaneous recovery may or may not be reasonably expected to take place under the influence of time and rest.

And, secondly, the mortality of operations performed during an acute peritonitis is found greatly to exceed that of operations performed where the acute symptoms have been allowed to subside. One of my surgical colleagues at St. Thomas's Hospital, Mr. Clutton, is at the present moment preparing for publication an account of his results in the analogous operation for diseased appendix. He has very kindly given me permission to quote some of his statistics, which in reference to the question I am just now considering, seem to me very striking and highly instructive. Out of 21 patients upon whom he found himself compelled to operate without waiting for the symptoms of acute peritonitis to subside, 6 died; whereas of 47 cases in which he operated for the removal of a diseased appendix after the subsidence of acute symptoms he only lost 1. It will be readily understood that this experience has made Mr. Clutton a strong advocate for deferring operative measures, wherever it can be safely done, until the acute stage is over.

It must have struck those of my hearers who have had frequent occasion to operate for the removal of diseased uterine appendages how marvellously tolerant the peritoneum is after an attack of acute pelvic peritonitis. It will bear with impunity the most prolonged and severe manipulations, and will often take no notice of even extensive contamination with pus and other morbid material. This increase in the resisting power of the peritoneum after exposure to a sudden infection suggests that a certain degree of temporary immunity has been brought about by the acute infective process that has just subsided, and this inference from purely clinical experience has been greatly strengthened by the results of some recent experiments on animals. "In 1894 Dr. Issaeff, a bacteriologist, published in Germany a remarkable series of experiments upon peritoneal infections which arose in connection with investigations upon the cholera vibrios.....He showed that several different substances, when injected into the peritoneal cavity of guinea-pigs, were capable of affording protection to the animals which were inoculated with cholera vibrios on the following day. By means of the preliminary injections an increase of the 'power of resistance of the part' is established, so that an otherwise fatal dose of microbes can be tolerated; this condition is attained in about twenty-four hours and lasts about four days." The condition is one of exalted general resistance, and has nothing to do with specific or special immunity. The animal is protected for a limited time not only against the cholera vibrios but against other pathogenic organisations. Specific immunity, on the other hand, furnishes a protection against the specific microbe, and the protection is not only special but is more intense and more lasting. If, instead of injecting urine, or bouillon, or tuberculin, as in some of his experiments, he injected the specific serum from an animal immunised against the cholera vibrio, he obtained a much more considerable effect, for, in addition to the increased general resistance, he secured the specific action of the cholera serum. The increased general resistance is due to two factors—namely, an increase in the bactericidal power of the peritoneal fluid and an increase in the number of active phagocytes. When a specific serum is employed, there is obtained, in addition to the temporarily increased general resistance, the special and more lasting protection afforded against the specific microbe.

It occurred to Mr. Herbert Durham, Gull Research Student in Pathology at Guy's Hospital, that "in view of these facts, it ought to be earnestly considered whether some similar preliminary treatment should be undertaken before operating through the peritoneal cavity upon abscesses." In a paper read in March, 1897, before the Royal Medical and Chirurgical Society of London, and entitled The Clinical Bearing of some Experiments on Peritoneal Infection, he discusses this question at some length, giving an account of a series of experiments carried out by himself, and offering some suggestions that are well worth the attention of all who are engaged in abdominal and pelvic surgery. It would be out of place to pursue the subject, but I may conclude my reference to Mr. Durham's paper (to which I am indebted for the above synopsis of Issaeff's observations) by quoting a practical recommendation offered as the result of his (Mr. Durham's) investigations. The suggestion is that, inasmuch as streptococci have been shown to be an important factor in peritonitis occurring in the human subject, it would be well to administer an intraperitoneal injection of antistreptococcic serum the day before undertaking an intraperitoneal operation upon a case in which abscess is suspected. By this means specific "immunity will be afforded against streptococcal invasion as well as increased general resistance against other microbes." There are other suggestions in the paper of an equally practical nature, but for further details I must refer to the paper itself, which will be found in the 80th volume of the Society's *Transactions* (pp. 191-204).

The bearing of all this upon the point under discussion is (1) that an explanation is here obtained of the remarkable tolerance of the peritoneum after sudden invasion by pathogenic micro-organisms; and (2) that, inasmuch as the protection afforded is limited in its duration, operative measures, which it may have been safer to defer until acute symptoms have subsided, should not be indefinitely postponed, lest the immunising effects of the invasion should have passed off.

Although it is, generally speaking, good practice, on account of the unfavourable condition of the patient, and for other reasons that I have mentioned, to avoid operating during an acute attack of localised peritonitis, there are of course many exceptions to the rule, as for example, where the symptoms indicate a seriously septic condition; where, as I have already said, a tense fluid swelling is formed in Douglas's pouch; or where a rapidly increasing fluctuating swelling in the lower part of the abdomen indicates acute suppuration elsewhere.

I am not aware that the particular points to which I have called your attention—namely, the indications for operative interference and the choice of time for operation, have hitherto been selected as special subjects for debate, and I trust they will commend themselves to you as offering a useful basis for to-day's discussion. I regret that time does not permit me to speak also of the choice of methods, or of the extent to which the principles of conservatism find legitimate application in this branch of surgery, but the omission is less to be deplored, as not only have these subjects been discussed on many recent occasions, but ample opportunities for discussing them are to be afforded during our present session in connection with several important papers on our programme. Meantime, it is occasionally useful to consider a subject from new points of view, and to take up little outlying corners of it, even though the discussion be thereby restricted within narrower limits than many of my hearers may have expected and hoped.

II.—Dr. E. Doyen,
Paris.

THE TREATMENT OF PELVIC SUPPURATION.

It is almost the general rule nowadays to operate in pelvic suppurations and not leave such patients exposed to the risk of the expectant method and the spontaneous evolution of the septic focus.

A few cases of purulent salpingitis have been known to terminate favourably by the spontaneous evacuation of the pus into the uterus, or the intestines and bladder. How often, on the contrary, do we see the evolution of general peritonitis or a subacute form of septicaemia, such as may declare itself in a woman in apparently good health, who has not suffered for a long time from the latent salpingitis? Early surgical interference may obviate such accidents. Periuterine collections of pus have their seat: (1) in the subperitoneal connective tissue (iliac abcess); (2) in the peritoneal cavity itself (ovaritis, salpingitis, and peritoneal suppurating cysts).

Extra-Peritoneal Suppuration.

The present discussion concerns specially intra-peritoneal suppurations, most surgeons agreeing that in cases of iliac suppuration it is well to make an immediate opening above the crural arch.

Purulent collections low down in the broad ligament may be advantageously opened by a lateral colpotomy by plunging into the inflamed ligament a long forceps, and emptying the abcesses that lie low down close to the uterine artery. I have done this operation several times with success, and it is a very simple one for a surgeon who is accustomed to do vaginal hysterectomy. The purulent focus is drained by a tampon of sterilised gauze which has been put into a solution of carbolic 2.5 per cent.

Suppuration of the Annexa or Peri-Annexa.

Suppuration of the annexa develops mostly in the tubes themselves, and the ovaries may be intact, although I have seen them enormous and purulent. Sometimes the tubes are nearly intact, and we have to deal with a purulent encysted peritonitis.

There are three methods of operation: (1) Simple incision of the purulent pouch by posterior colpotomy; (2) vaginal castration; (3) laparotomy.

Some gynaecologists are still exclusive partisans of puncture or incision by the vagina; others prefer the vaginal hysterectomy method. The larger number prefer laparotomy.

I think that any exclusive method should be rejected. Laparotomy should not be used for the simple cases where the septic focus can be emptied and cured by vaginal incision. Vaginal hysterectomy, on the other hand, is contra-indicated whenever the purulent pouch reaches above the brim of the pelvis.

On December 3rd, 1887, I performed my first deliberate operation of total vaginal castration for suppuration of the annexa. My method of hysterectomy by the vagina has satisfied all the partisans of conservative surgery. The uterus itself is not sacrificed until after the exploration of the annexa by an incision into the Douglas *cul-de-sac*, which is the first step in the operation. If the annexa are healthy on one side I can limit the operation to unilateral vaginal ablation of the diseased annexa, and leave in their places the uterus and the other tube and ovary. I had great success in my first operations of total vaginal castration, because I was satisfied only to draw out tumours of a medium size. I had always been faithful to laparotomy in cases of voluminous salpingitis with the idea of complete enucleation of the purulent pouches. A desideratum existed, however, and I have been forced to do a vaginal hysterectomy in some women who had already been operated on by laparotomy for bilateral ablation of the annexa. They still suffered from enlarged painful uterus. Such uncertain results have made me attempt the treatment of suppurating annexa by total abdominal hysterectomy.

My first operation of total abdominal castration for pelvic suppuration was made on July 27th, 1892. My method was by peeling off the serous membrane from the inferior segment of the uterus, raising it to the right and left. This operation I had invented in September, 1891, for cases of fibromata. On March 21st, 1893, I employed this operation of total abdominal castration in a case of tuberculous utero-annexial disease with a bilateral salpingitis of considerable size. This patient is now in perfect health.

Let us now establish the rules to guide us in intervention in the different varieties of pelvic suppuration.

Extraperitoneal Suppuration.

Phlegmon of the Broad Ligament.—(*a*) By iliac evolution; classical iliac incision. (*b*) Abscess of the inferior portion of the broad ligament: lateral colpotomy.

Intraperitoneal Suppuration.

(*a*) The inflammatory mass remains intrapelvic, and does not reach above the brim: vaginal operation. (*b*) The suppurating tumours pass the brim of the pelvis, and reach the level of the umbilicus: laparotomy.

By each one of the above methods, vaginal or abdominal, three distinct operations may be performed: (1) Simple incision of the purulent focus; (2) ablation of the annexa, leaving the uterus; (3) total castration.

Vaginal Method.

Simple Incision of the Focus.—If the purulent pouch is single, with thin walls, which I think will cicatrise easily, in young women, in whom castration would be an unnecessary mutilation, I content myself with a large incision and tamponing the cavity. Recovery takes from four to six weeks. Several of these women have become mothers since the operation.

Unilateral Ablation of the Annexa.—This operation is of course dependent upon the integrity of the ovary of the other side. I cannot understand the bilateral ablation of the annexa by the vagina without hysterectomy. The diagnosis cannot be made except in the course of the operation. I propose the operation to the patient or to her husband in this way. "I cannot tell if the ovary of the opposite side is healthy or not, except during the operation; and it is understood that, if it is healthy, I leave it, but if I find it is not, then I am authorised to take all away." The unilateral ablation of the annexa by the vagina has given me very good results in quite young women.

Total Vaginal Castration.—If the annexa on both sides are purulent, this operation is necessary. I will explain in a later paper my methods and improvements in this form of operation.

Laparotomy.

Simple Incision of the Focus.—I have sometimes, when making a laparotomy, found the abscess cavity as soon as the linea alba was incised. These cases of encysted purulent collections, limited by the peritoneal adhesions, are not so unusual, and they recover in a few weeks by tamponing the cavity. There is no cyst wall to remove.

Ablation of the Annexa with Preservation of the Uterus.—When the pus is contained in the tubes, they must be completely extirpated, and Trendelenburg's position will facilitate the operation in difficult cases. The mechanism of my operating table allows me to evacuate the pus by at first bending the patient a little forward. As soon as the operating field is disinfected, the position of Trendelenburg can be used. The table may be raised or lowered, as required. The ablation of the annexa may be unilateral.

Total Abdominal Castration.—Is it rational to practise ablation of the uterus, by laparotomy, in any case of bilateral suppuration of the annexa? I have never thought that it applied to all suppurating salpingitis, but that it was an exceptional operation to be used in certain well defined cases. When the uterus is healthy and not painful, and when its ablation in women much reduced in strength may lead to an aggravation of their state, it should be left in its place. Its ablation is also useless in cases of tuberculous salpingitis, when the uterus itself is still healthy. I have already published one of these cases of laparotomy, in which the patient had tuberculous Fallopian tubes reaching above the umbilicus. The uterus had been left, as well as numerous tubercles, adherent to the parietal walls and cæcum. A year after this a purulent focus developed on the anterior face of the vertebral column. A second laparotomy proved that the uterus was still in a healthy condition, the tubes healed by cicatrisation, and the parietal tubercles were undiscoverable. In certain cases of salpingitis the uterus was found useful in closing the pelvic cavity by attaching it by a continuous suture of fine silk to the mesenteric folds adjoining. In this way one can isolate and drain Douglas's pouch deprived of its serous covering, which has been almost entirely destroyed by the removal of the adherent pouches. The uterus should only be removed with the annexa in cases in which its extirpation is evidently necessary, and becomes the complement rather than a useless complication of ablation of the annexa. The ablation of the uterus is a simple operation when done by the method I have given, that is, extraction of the cervix, from below upwards, by incision into Douglas's pouch and my subserous decortication, then turning it over, from right to left, with the patient in Trendelenburg's position. By following these rules, and properly applying them to each particular case, this operation becomes the most rational and the surest that we have, and gives us the largest number of cases of success.

The vaginal method and laparotomy are not competing methods, for each has its own indications, and it is for the surgeon to decide in the difficult cases which method shall be used according as it is the safest and the most likely to be successful.

III.—Dr. C. Jacobs,

Brussels.

Statistics.

Cases of pelvic suppuration are so complex that it is difficult to compare facts, to class observations. The uncertain value of statistics is due to this fact. I have, however, put together a considerable number of observations, so as to be able to deduce some conclusions from personal records which have been very seriously and strictly made. It is impossible to render in a concise manner the result of my practice, that is to say, all the cases in which I have been obliged to interfere surgically do not allow me to deduce a precise line of conduct.

Since the ways and means to be employed are dependent upon numerous factors, the predominance of the one or other would be sufficient to compel the surgeon to have recourse to such or such an operation.

Pelvic suppuration may be uterine, adnexial, or periuterine. In these cases of inflammations, be they acute or chronic, the object of the surgeon may be palliative or conservative, or a radical operation.

A conservative operation will take away a part of the genital organs, or will be confined to the evacuation of purulent cavities, followed by drainage, in cases in which infectious inflammation is localised in a part of the organs. If it has contaminated the whole of the organs their total ablation becomes necessary.

By palliative operations I mean vaginal elytrotomy anterior or posterior, puncture, drainage, ovaro-salpingectomy on one side (by abdomen or by vagina), marsupialisation by the abdomen of pus cavities and their drainage. By radical operations: bilateral ovaro-salpingectomy and hysterectomy or total castration by the abdomen or by the vagina.

Purulent inflammations localised to the side of the uterus are uncommon. I have only had occasion to operate during the last nine years on 2 such cases. Opening followed by drainage of the pus cavities has been followed by rapid cure.

Periuterine infectious inflammation, suppurative parametritis, more frequent. I have operated on 28 cases, almost always by puncture and drainage by the vagina—in 6 cases by abdomino-vaginal, perineo-vaginal, or sacro-vaginal drainage. Cure has sometimes only been completely obtained after several weeks of continual care.

Annexial Inflammations.

The ideas maintained during latter years by the French and Belgian schools find here their true place for discussion. If the injection be of recent date, it localises itself either in the tube or in the ovary. I have noticed the frequency of ovarian localisation in post-puerperal infection.

Abscess of the ovary, if unilateral and of recent date, may be cured by vaginal elytrotomy (anterior or posterior, according to its situation), evacuation, and drainage. But recurrence is frequent, and often requires a second operation. I have treated by this method 23 cases of abscess localised in the ovary, and have seen 7 cases of recurrence in which I have had to operate either by ablation of the organ or by a repetition of the first operation, 16 cases were cured.

If the disease is of long standing, it is better, notwithstanding the numerous peri-ovarian adhesions, to do ovariotomy; if the adhesions are too strong one may marsupialise the tumour by the abdomen, or by the vagina, or both ways: 29 cases treated in this manner have given 17 cures, 3 deaths: in 9 cases a second operation has been required.

These cases have been operated by the suprapubic route. I may add to this number 111 cases operated on by vaginal elytrotomy, ovariotomy, or by morcellation and drainage, which has given 8 cures and 1 death: 2 cases of recurrence have required radical operations.

Pyosalpinx may be evacuated by the same process of puncture followed by vaginal drainage. The results are not encouraging: out of 8 cases I have had 1 death and 6 recurrences, that is to say, 6 cases in which I have been obliged to do a second operation, almost always more radical.

The ablation of pyosalpinx either by the abdomen or by the vagina gives the best results: 53 cases operated by the abdomen yielded 39 cures, 3 deaths, and 10 cases in which reoperation was required later on; 31 cases operated by the vagina yielded 24 cures, 2 deaths, and 7 cases in which reoperation was required at a later period. In most of the cases in which a second operation was necessary secondary inflammation of the appendages of the other side, in a few cases total genital inflammation, had occurred. In these cases in which the appendages on both sides are involved an operation may be performed by the vagina, by the abdomen, or total castration may be required.

After an experience of several hundred cases, after very strict study of the results of operation, I find that the risk of operating is not greater by one way than by the other.

1. The vaginal route should be preferred in cases of old-standing pelvic suppuration, with fistula, adhesions, periuterine abscess, etc.

2. The abdominal route is the best in relatively recent cases in which there is no evidence that surrounding organs are seriously involved. By either route, the result aimed at must be total castration—that is, extirpation of the uterus and appendages, which in suitable cases will allow of free drainage of the pelvis.

Following these precepts, I have obtained the following results:

Vaginal route: 432 cases, 424 cures, 8 deaths.

Abdominal route: 98 cases, 95 cures, 3 deaths.

Among the cases treated by the vaginal route I have to record 5 cases of ureteral fistula, of which 2 healed spontaneously and 4 required nephrectomy; 9 cases of intestinal fistula, 2 following the operation, 7 anterior to the operation. 8 of these cases required secondary operations. Among 98 cases in which an abdominal operation was performed, I have seen only 2 cases of infectious parametritis.

Although all suppurative inflammations are always of infectious origin, it is seldom that the pus is very virulent at the time of operating. The older the accumulation the less is the virulence of the pus. Therefore I do not consider it necessary to attach great importance to bacteriological examination during the operation, no more than I consider it necessary to require drainage as a matter of principle. The results of these 713 operations lead me to the conclusion that pelvic purulent inflammation must be attacked by the vaginal route, puncture, drainage, evacuation, when it is periuterine. If localised in the appendages of one side only, it must be punctured and drained by the vagina or the abdomen. If taken away through the one or other of these routes, the abdominal is often preferable. If the infection of the appendages is bilateral, there will be more advantage in doing total castration by the vagina. Diseases of recent date should be attacked by the abdomen.

IV.—Dr. Theodor Landau,

Berlin.

VAGINAL CŒLIOTOMY.

Definition of Terms.

Whoever nowadays undertakes to report his experience with vaginal cœliotomy, or colpotomy, or cœlio-colpotomy, should not neglect to define exactly what he means thereby. For from a technical and pathological standpoint, there is a great difference whether by the incision in the vaginal vault the free peritoneal cavity is opened and immediately closed or whether adhesions are separated or even parts extirpated or treated otherwise—for instance, by plastic methods. Still greater is the difference if by the vaginal incision unilocular or multilocular sacs which have become completely separated from the peritoneal cavity are opened. In other words, in reporting the results of cœliotomy it is of the greatest importance to state the indication which led to the operation being performed, and especially what were the existing anatomical and pathological conditions. It is true that there are many difficulties in satisfying this last demand, certainly very many vaginal cœliotomies have been performed during which only one or two fingers were introduced into the abdominal cavity, certain resistances were felt and overcome, adhesions were severed, but their origin and connections could frequently only be imagined, not exactly determined. In other cases, the finger opened cysts from which the contents, fluid or viscid, transparent or turbid, and of all shades of colour, flowed into the vagina. Whether this fluid came from intraperitoneal or extraperitoneal sacs from old or new cavities, remains obscure. On other occasions the finger with difficulty brings out ragged pieces of membrane and thick plates of exudation, while at the same time fluid from above comes into the vagina. Torn particles of pelvic organs, which have undergone complete inflammatory fibrous change so as to be reduced to cicatricial tissue, may follow. No efforts of the pathologist, no macroscopical or microscopical observation can disclose what the original process was that led to these results.

It is not necessary to have performed this operation in order to understand the truth of these observations. Simple consideration proves that as long as the uterus, even after its displacement (luxation), obstructs the vaginal opening, not even the most simple formation can be brought out, without

the most extensive and complete morcellation, except, of course, adnexa, which are normal or nearly normal in size; smooth emptied ovarian cysts or hydrosalpinges. Therefore, frequently proof is absent, and it is not always possible to obtain an exact pathological control.

ANALYSIS OF CASES.

Now, some will say that this is of no importance, that in the kind and value of the operation, in the existing conditions before and after the operation, and also in the patient's state of health, we possess criteria much more convincing. This objection is indeed somewhat justified. Nevertheless, it is very important for the definition and estimation of colpotomies performed by the different operators, to take into consideration the pathological condition. Therefore I have taken great pains in the table of cases (p. 467), which gives my experiences with vaginal cœliotomies during the last three and a half years, to characterise as far as possible, every case according to the pathological findings.

There are altogether 58 cases, exploratory incisions are not included, nor the cases in which unilocular or multilocular cysts, intraperitoneal or extraperitoneal, of various contents were opened only and thereby cured. Nor do I include my experience with cœliotomy for the purpose of correcting malpositions of the uterus; I consider in this table only those cases in which the free peritoneal cavity was opened by a vaginal incision for the purpose of surgical interference with genuine tumours or inflammatory processes of the uterus, tubes, ovaries, or of the peritoneum.

All the patients made an uninterrupted recovery. Only in one operation a mishap occurred, a perforation of the bladder, which was at once recognised and closed, and which united by first intention. This case serves as a good lesson by showing the limitation of our sense of touch, which is our only guide in the extirpation of immovable tumours by an incision in the posterior *cul-de-sac*. With the idea of operating radically, after emptying the cyst, which lay close against the uterus, I proceeded to dissect the cyst wall, and while doing so opened the bladder. The patient, who was operated on for an intraligamentous inflammatory cyst of the ovary, has had no harm done by the total operation, but she would have been cured more easily and with much less danger by a simple incision of the cyst.

Fifty-eight cases is a small number, both absolutely and relatively, when we consider that in the last three years and a half, during which time the above tabulated cases were operated on, I have performed in my clinic 208 vaginal radical operations for the removal of bilateral inflammatory diseases of the adnexa or of complicated pelvic abscess (myomas, malignant disease, etc., excluded). Nevertheless, I believe that this number justifies certain conclusions, because it contains in a pronounced manner all possible—I might almost say impossible—indications which in any way at all demand vaginal cœliotomy.

PERMANENT RESULTS OF THE OPERATION.

The permanent results of these operations—the patients being kept under careful and continued observation—lead to the conclusion that those patients who were operated on by vaginal cœliotomy for true genuine not inflammatory tumours and for extrauterine pregnancy without severe inflammatory complications, have been permanently cured. On the other hand, of the patients in whom inflammatory conditions led to the operation, only 20 per cent. at best have been cured. From our ambulatorium (out-patients) I can mention about fifty cases, operated on by other surgeons by vaginal cœliotomy for inflammatory diseases of the adnexa, who sought out and on account of new and constantly recurring attacks. As these cases have come under my observation, I might use them in judging the permanent results of the operation of vaginal cœliotomy when performed for chronic inflammatory affections. But in order to avoid all appearance of unproper criticism I omit this group, especially as I have quite a number of my own which seem to reflect on the operation, but the truth is the fault lies in the operation being performed when the indications are against it.

Lest the objection be made that after all the surgeon must be blamed, I will mention that the worst permanent results were obtained in those cases in which the least was done, and yet they recovered almost invariably without reaction or fever. The cause of their getting worse lay in the fact that the operation did not afford the means of influencing, even remotely, the course of the disease. These are cases of diffuse inflammatory processes in the pelvis, which can be cured only by attacking them by the vaginal radical operation; this alone permits of drainage and open wound treatment, while, on the other hand, the process is not checked by vaginal or ventral laparotomy. I venture to claim that cures occurring in such cases after these operations are to be considered as spontaneous cures after cœliotomy; such cures may take place without any surgical interference after a certain lapse of time, especially with proper care and favourable social conditions. These are cured, of course, only in the clinical sense; from the anatomical and pathological standpoint they are cures only in so far as the inflammatory products are sequestred by connective tissue new formation—peritonitis fibrosa.

THE VAGINAL AND THE ABDOMINAL ROUTE COMPARED.

Those who advise this operation seems to have forgotten that vaginal cœliotomy is, after all, really a laparotomy. It is a new route, but not a new principle, and vaginal cœliotomy is—just as little as ventral cœliotomy—the object or goal; therefore we may say *a priori* that in diseases of the pelvic organs vaginal cœliotomy is only indicated when cœliotomy is necessary, and this experience thoroughly confirms.

To incise the abdominal wall of fat individuals is in itself very disagreeable. Nobody denies that the immediate dangers of vaginal cœliotomy are less than those of abdominal section. It is plain that the smaller danger comes from the fact that in the proper position of the patient during the operation physical irritation by cooling and the injury of the peritoneum from touching the intestines is much less than in abdominal section. In most cases the intestine is not seen at all. It therefore follows that the convalescence is generally more agreeable and the period of treatment shorter. Further, it is certain that the cicatrix after vaginal cœliotomy is formed very rapidly and solidly, and is preferred by the patient because it is invisible. But I cannot admit that the vaginal wound always unites by first intention, nor that herniæ are absolutely excluded. Thus I could prove in two cases, which had been operated on elsewhere, that the vaginal cicatrix (resulting from longitudinal incisions) yielded once in its whole extent; in the other case it yielded partially, and permitted a certain amount of prolapse of the intestines. The intestines were not incarcerated, but wherever herniæ are formed adhesion or incarceration of the intestines with consecutive obstruction is always possible, and when we remember how frequently nowadays the operation is performed, we shall not be surprised to hear of such unfortunate accidents.

Nevertheless, the advantages of the vaginal operation are greater, and so it follows, of course, that assuming the same good results, vaginal cœliotomy must be preferred to ventral, as soon as its technical safety is assured: in fact, we need only copy the well-known and often tried indications of abdominal section to have the indications for vaginal cœliotomy. It is necessary only to test their special technical practicability.

TECHNIQUE OF THE OPERATION.

Whoever practises total extirpation after the method which Leopold Landau developed since 1889 must admit that vaginal cœliotomy, in all its modifications described by different authors, is only one of the stages of hysterectomy. The reader of our particular description of the technique of the vaginal radical operation will find there every step of vaginal cœliotomy fully described—everything concerning the exposing and fixing of the portio, the circular incision of the portio, various incisions, freeing the uterus from the pericervical tissue, with a special description of the anatomical relations of the bladder and ureters to the genital organs, the opening of the peritoneal cavity, the luxation of the uterus and the adnexa into the vagina. This last chapter closes as follows:

"Even after the uterus and its appendages have been luxated into the vagina, the fate of the internal genitalia, so brought out of the abdomen

The Vaginal Radical Operation, by Leopold and Theodor Landau, translated by Eastman and Giles (Baillière, Tindall, and Cox, 1897).

Table of Cases of Vaginal Cœliotomy.

No.	Name.	Age	Nature of Vaginal Operation.	Date.	Pathological Conditions.
1	E. K.	34	Longitudinal incision : ovariotomy	Feb. 12, 18[illegible]	Retroflexion of uterus, tumour of left ovary of size of hen's egg.
2	N. B.	[illegible]	Transverse anterior incision : myomectomy	Aug. 30, 1[illegible]	Subserous intraperitoneal fibroid, the size of a large apple.
3	J. O.	41	Longitudinal anterior incision : colpotomy	July 23, 1[illegible]	Movable retroflexion, prolapse of anterior vaginal wall ; tuberculous pelvi-peritonitis ; tuberculous ascites.
4	N. L.	25	Anterior vaginal colpotomy : salpingo-oöphorectomy	July 23, 1[illegible]	Cystic degeneration of left ovary, size of hen's egg.
5	A. M.	37	Vaginal colpotomy by posterior incision	Sept. 8, 1[illegible]	Cystoma of left ovary the size of child's head.*
6	S. M.	29	Anterior incision : salpingo-oöphorectomy sinistra	Sept. 15, 1[illegible]	Left pachysalpingitis, pachypelvi-peritonitic adhesion[1] with formation of peritoneal cysts.
7	R. H.	29	Posterior incision : ovariotomy of right ovary	Nov. 10, 1[illegible]	Serous cystoma of right ovary, size of child's head.
8	A. L.	27	Anterior incision : salpingo-oöphorectomy dextra : resection of the left ovarian cyst	Nov. 25, 1[illegible]	Right tubal pregnancy, left-sided ovarian cyst.
9	E. P.	29	Anterior incision : anterior hysterectomy : myomectomy	Dec. 24, 18[illegible]	Submucous fibroid of uterus, larger than walnut.
10	T. V.	32	Anterior incision : myomectomy	Jan. 2, 1[illegible]	Subserous fibroid of posterior wall of uterus, size of large apple.
11	M. G.	25	Posterior incision : separation of adhesions, drainage	Jan. 29, 1[illegible]	Chronic pelvic peritonitis, left oöphritis.
12	C. W.	32	Posterior incision : right ovariotomy, separation of adhesions	Feb. 10, 1[illegible]	Chronic pelvic peritonitis ; multilocular cyst of left ovary, size of more than a man's fist.
13	A. K.	28	Posterior incision : left ovariotomy	Feb. 13, 1[illegible]	Dermoid cysts of left ovary, almost of the size of a man's fist.
14	A. L.	28	Posterior incision : left ovariotomy	Mar. 26, 1[illegible]	Dermoid cyst of left ovary, size of fist.
15	A. G.	28	Anterior incision : hysterotomy : myomectomy	Apr. 1, 1[illegible]	Submucous myoma of the size of child's head.
16	E. W.	37	Anterior and posterior incision : left salpingotomy, drainage	June 19, 1[illegible]	Ruptured left tubal pregnancy, perisalpingitis, adhesion sinistra, peri-oöphoritis, retrouterine hæmatocele.
17	A. K.	47	Anterior cœliotomy : hysterotomy : myomectomy	June 24, 1847	Apple-sized submucous fibroid of posterior wall of uterus.
18	M. R.	29	Posterior cœliotomy : left salpingo-oöphorectomy	July 1, 1897	Left pachy-pyosalpinx, unilocular cyst of left ovary, size of large apple.
19	A. B.	32	Anterior cœliotomy : left salpingo-oöphorectomy	July 17, 1897	Ruptured left tubal pregnancy.
20	Z. N.	27	Anterior cœliotomy : left salpingo-oöphorectomy	July 24, 1897	Hæmorrhagic cyst of left corpus luteum, pachy-salpingitis (left), chronic peri-salpingitis with cyst formation.
21	F. M.	34	Anterior cœliotomy : drainage	July 26, 1897	Cyst of peritoneum of left side, size of hen's egg.
22	F. W.	21	Anterior vaginal cœliotomy : left salpingo-oöphorectomy	July 28, 1897	Polycystoma of left ovary, size of apple ; adhesive peri-oöphoritis.
23	C. K.	33	Anterior vaginal cœliotomy : right ovariotomy	Sept. 2, 1897	Polycystoma of right ovary, size of hen's egg.
24	C. A.	44	Anterior vaginal cœliotomy : left ovariotomy	Sept. 17, 1897	Parovarian cyst of left ovary with papillary internal excrescences, larger than hen's egg ; adhesive peri-oöphoritis.
25	A. H.	39	Anterior vaginal cœliotomy : right salpingectomy	Sept. 28, 1897	Incomplete right abortion ; hæmato-salpinx.
26	M. R.	43	Anterior vaginal cœliotomy : right salpingo-oöphorectomy	Oct. 23, 1897	Right pachy-pyosalpinx, cirrhosis of ovary, peri-oöphoritis, adhesive peri-salpingitis, with formation of small cysts.
27	L. F.	32	Anterior vaginal cœliotomy : left salpingo-oöphorectomy	Nov. 2, 1897	Pachy-salpingitis, abscess of ovary, chronic salpingitis and oöphoritis.
28	H. L.	24	Anterior vaginal cœliotomy : left oöphorectomy	Nov. 12, 1897	Hyperplastic chronic oöphoritis.
29	L. T.	38	Anterior vaginal cœliotomy ; left ovariotomy : myomectomy	Nov. 27, 1897	Cyst of left ovary, size of child's head ; subserous myoma pachy-salpingitis and adhesive peri-oöphoritis.
30	E. B.	26	Anterior vaginal cœliotomy : salpingectomia duplex, ovariotomia sinistra	Nov. 30, 1897	Right pachysalpingitis, left hæmato-salpinx, double adhesive peri-salpingitis, peri-oöphoritis.
31	E. D.	28	Anterior vaginal cœliotomy : salpingectomia sinistra	Dec. 2, 1897	Chronic ovaritis, ovary size of goose's egg, formation of cysts.
32	E. H.	22	Anterior and posterior vaginal cœliotomy : shortening of anterior wall of uterus by excision of wedge-shaped piece	Dec. 7, 1897	Retroflexion of fixed uterus ; perimetritis.
33	O. B.	25	Anterior and posterior vaginal cœliotomy : shortening of anterior wall of uterus by excision and separation of adhesions	Jan. 8, 1898	Retroflexion of fixed uterus ; perimetritis.
34	S. H.	37	Posterior vaginal cœliotomy : separation of adhesions	Feb. 1. 1898	Perimetritis and right peri-oöphoritis.
35	N. F.	50	Anterior vaginal cœliotomy : right salpingo-oöphorectomy	Feb. 10, 1898	Fibro-sarcoma of right ovary, size of apple ; adhesive peri salpingitis.
36	G. T.	22	Anterior vaginal cœliotomy : left salpingo-oöphorectomy ; right salpingectomy	Feb. 10, 1898	Double pachy-pyosalpinx, hæmorrhagic cyst of left ovary double peri-salpingitis and adhesive peri-oöphoritis.
37	A. F.	38	Anterior and posterior colpotomy : left salpingectomy	Feb. 25, 1898	Incomplete tubal abortion.
38	M. D.	21	Anterior vaginal cœliotomy : left salpingo-oöphorectomy	Feb. 25, 1898	Left pachy-salpinx, small cyst of left ovary (corpus lut.), pachy-peri-oophoritis, salpingitis.
39	M. P.	24	Anterior cœliotomy : right salpingo-oöphorectomy	Mar. 7, 1898	Pachy-salpingitis with occlusion ; polycystic degeneration of ovary ; peri-oöphoritis and adhesive salpingitis.
40	W. F.	29	Anterior cœliotomy : left oöphorectomy	Mar. 22, 1898	Tubo-ovarian cyst, size of fist.
41	A. B.	30	Anterior and posterior cœliotomy : left salpingo-oöphorectomy ; double salpingectomy	Mar. 22, 1898	Left pachy-pyosalpinx, simple salpingitis of right side with adherent peri-salpingitis.
42	M. D.	25	Anterior and posterior cœliotomy : left salpingo-oöphorectomy	Mar. 24, 1898	Dropsy of Graafian follicle, size of fist ; adhesive oöphoritis.
43	M. M.	27	Anterior and posterior cœliotomy : left oöphorectomy	Mar. 24, 1898	Dropsy of Graafian follicle, size of apple.
44	M. L.	38	Posterior cœliotomy : left salpingo-oöphorectomy	Apr. 5. 1898	Parovarian cyst, size of child's head.
45	H. S.	35	Anterior and posterior cœliotomy : left salpingo oöphorectomy	Apr. 9. 1898	Hæmatoma of ovary, size of hen's egg (corpus luteum), occlusion of tube, adhesive peri-salpingitis.
46	P. R.	25	Anterior cœliotomy : right salpingo-oöphorectomy	Apr. 14, 1898	Chronic salpingitis and peri-salpingitis with abscess, hæmatoma of ovary, size of goose egg.
47	M. C.	28	Posterior cœliotomy : left ovariotomy	Apr. 15, 1898	Ovarian cyst, size of fist.
48	T. D.	25	Anterior cœliotomy : right salpingo-oöphorectomy	Apr. 15, 1898	Tubal abortion ; placental polypus within tube.
49	B. B.	27	Anterior cœliotomy : left oöphorectomy	Apr. 17, 1898	Chronic hyperplastic ovaritis with small cystic degeneration.
50	L. B.	35	Anterior cœliotomy : left salpingo-oöphorectomy	May 3, 1898	Salpingitis and chronic oöphoritis.
51	A. F.	40	Posterior cœliotomy : right oöphorectomy	June 8, 1898	Parovarian cyst, size of man's head.
52	M. L.	50	Anterior cœliotomy : left salpingo-oöphorectomy ; anterior colporrhaphy, shortening of anterior uterine wall	June 8, 1898	Peri-salpingitis, small ovarian abscess, peri-oöphoritis and salpingitis, perimetritis, fixed retroflexed uterus, prolapse of anterior vaginal wall.
53	T. G.	58	Anterior cœliotomy : left salpingo-oöphorectomy ; colporrhaphy, perineorrhaphy, vaginal fixation	June 14, 1898	Serous cyst of ovary, size of goose's egg ; prolapse of vagina retroflexed uterus.
54	G. F.	26	Anterior colpotomy ; right salpingo-oöphorectomy	June 16, 1898	Pachy-pyosalpinx, dropsy of Graafian follicle, larger than a goose egg.
55	A. D.	27	Posterior cœliotomy : separation of adhesions	June 18, 1898	Chronic pelvic peritonitis.
56	G. B.	15	Anterior and posterior cœliotomy : right salpingectomy	June 21, 1898	Extrauterine pregnancy.
57	H. H.	32	Anterior cœliotomy and hystero-myomotomy	June 25, 1898	Several small fibroids.
58	E. B.	27	Posterior colpectomy	July 3, 1898	Right side ovarian tumour, size of fœtal head.

* Perforation and suture of bladder.

for direct examination by sight and touch, is but little prejudiced. After possible adhesions about the tubes and ovaries have been severed, and cysts in the ovary or in the peritonitic adhesions punctured and evacuated, the operation can be suspended at this point exactly as in a vaginal cœliotomy, regardless of the more extensive denudation of the cervix just performed. The womb and appendages may be replaced, just as a dislocated limb is reduced, for up to this time none of the larger vessels have been cut off. One or both appendages may be operated upon or extirpated when inflammatory processes, tubal pregnancy, or small tumours are present. Myomata can be shelled out of the uterine parenchyma, or other plastic operations may be done on the adnexa, such as resection of the ovary, salpingectomy, etc. Finally, the whole complex of indications for the vaginal cœliotomy may be fulfilled.

Concerning the details of the technique, I may be permitted to refer to the book above mentioned, but I consider it necessary to discuss some further questions, that is:

1. When is the anterior or the posterior vaginal incision to be chosen, when the combination of both?
2. Which anterior section is better, the longitudinal or the transverse?
3. How is the uterus to be luxated?
4. Shall and must the peritoneum be specially closed?
5. Shall the uterus, after vaginal cœliotomy, be fixed to the vagina or not?

1. The incision from the posterior vaginal vault is naturally more simple; it penetrates only the tissues of the pelvic floor without coming in contact with any organ. It does not demand the dislocation of bladder and ureters as does anterior section; therefore it is easier, less dangerous, and less severe. Furthermore, it has the great advantage that the posterior *cul-de-sac* is thereby opened, and that from here the lowest point of the pelvis can be thoroughly drained if desired. If it is a question of extirpating movable retro-uterine tumours, this section is the best, because it is the most simple. If the masses which are to be attacked lie more laterally or in front of the uterus, anterior section is to be preferred. A disadvantage of posterior section is that we cannot see enough, for the uterus fills up the vaginal vault. The advantage of the anterior section consists in the possibility of temporarily removing the uterus from its place, and correspondingly increasing our power of feeling and seeing. Were a similar dislocation of the uterus to be resorted to in posterior incision (posterior luxation), we should endanger bladder and ureters. Laceration of these organs has indeed occurred as a consequence of such attempts.

Moreover, when technical difficulties are met with, it is advisable not to hesitate to combine both incisions. If at the extraction of the diseased parts or during the investigation great difficulty is found with the posterior incision, then the anterior incision may be added; if the anterior incision is found insufficient, especially when it is difficult to pull down the uterus, then the posterior may be added, which, as already mentioned, has the great advantage of rendering the most favourable drainage possible.

2. The longitudinal incision in front of the transverse incision gives more room than the simple transverse incision. The former has, however, certain objectionable features; first, the bladder is separated not only from the uterus, but also from the vagina; secondly, it must be sewed separately where, after the incision is made, bilateral disease is found to exist, and the radical operation must be done in addition, because otherwise the opening in the vaginal vault would be too large, and thus favour the occurrence of a descent of the intestines. When it becomes clear from the examination or during the course of operation, that the transverse incision is not sufficient, it is easy to add the longitudinal. When prolapse of the anterior wall of the vagina is also present, it is better to commence with the longitudinal incision, because the superfluous part of the vagina can easily be resected. Also in the cases in which vaginal fixation is indicated, the same incision is advisable. Therefore I operate in the following manner: I make either a posterior transverse incision alone, or an anterior transverse incision. If more room is required, I add a vertical incision in front or combine it with a posterior incision. The peritoneum is always opened transversely.

3. The uterus to be luxated anteriorly without wounding it. It is advisable to prise it forward with the anterior *ecarteur* or to bring it forward by a sound which has been introduced. I advise against tenaculum forceps, etc., and also against wounding it by inserting ligatures and drawing it out thereby. The uterus is torn too much by these means, and I know of a number of cases in which the means used necessitated either immediate total extirpation, or what perhaps is just as bad, fixation of the uterus.

If the luxation cannot be accomplished in the inoffensive manner just described, the methodical opening of the organ by median section is in case of need, especially in complication by myoma, much better than wounding it irregularly.

In other cases, especially when the posterior *cul-de-sac* is felt to be free, it is an excellent plan to insert the finger high up behind the uterus after posterior vaginal incision to assist the leverage in front by pressure from behind.

4. To sew the peritoneum separately is of no importance for the immediate or the permanent process of healing. On the other hand, it may be quite advantageous to unite by suture the peritoneum with the edge of the vaginal wound, because this stops the parenchymatous bleeding from the pericervical tissue which sometimes occurs. If the uterus has not been injured (by tenacula, etc.) and the peritoneum has been sewed to the edge of the vaginal wound, then a vaginal fixation is entirely unnecessary; the patient will not be liable to disturbances of labour nor be injured by producing an artificial parametritis anterior.

THE EFFECT OF THE VAGINAL INCISION.

A considerable difference as compared with abdominal section is immediately to be noted. The size of the opening is limited in the vaginal operation by the adjacent organs—bladder, ureters, and rectum. In abdominal section the incision can always be made of sufficient length; but in vaginal cœliotomy it is impossible to introduce one or both hands, as we can only introduce one or two fingers. Finally, the symphysis and the narrowness of the vagina prevent deep penetration, always assuming that one is satisfied with simple colpotomy, without adding one or even two deep incisions into the vagina and perineum.

The indications for this operation become clear when we consider that such an organ only can be reached as has a pedicle, measured by the length of the index finger introduced from the vagina, which is at once accessible or becomes so after traction and after measures taken to lessen its size, as for example evacuation of fluid contents or partial removal.

The second essential condition is that the organs to be treated must, before the abdominal cavity is opened, lie in contact with the vaginal vault, or can be easily pressed against it, so that after luxation of the uterus they can safely be reached by the finger.

We must exclude from vaginal cœliotomy all tumours, irrespective of size and position, which must under no consideration be exposed to the liability of rupture; also those in which an inspection of all the abdominal organs is necessary to determine whether they are operable at all. For instance, we will not operate for carcinoma of the internal genitals when dissemination in the peritoneal cavity is present. In a case of ovarian carcinoma, for example, we should prefer abdominal section in order to be able to remove simultaneously possibly affected parts of the intestine. Vaginal cœliotomy must furthermore not be considered when certain processes exist in the genital organs, the cause of which may be remote; therefore, never when ascites coexists, which may depend on carcinoma of the stomach, cirrhosis of the liver, tuberculous peritonitis, etc.

Vaginal cœliotomy is to be excluded *a priori* in all cases of certain malignancy of tumours of the internal genitals, also when there is a well-founded suspicion of malignancy; finally, in conditions of the internal genitals due to organs in the upper part of the abdomen (liver, etc.).

Vaginal cœliotomy is an operation for the treatment of diseases only of the genitalia and pelvic organs. If it be a question of such diseases as originate in the pelvic genital organs and then penetrate into the cavity of the abdomen, it is perfectly impossible to know without opening the abdomen how strong and firm the adhesions are, and, as we recognise that the immobility of such tumours is not caused by their size but by their adhesions, it follows that wherever the hand must be controlled by the eye in finer surgical work, the indication for vaginal cœliotomy does not rightfully exist.

INDICATIONS AND CONTRA-INDICATIONS.

A review of the indications and contra-indications for

vaginal cœliotomy leads me to formulate the following especial directions:

1. All plastic and orthopædic operation on the normally-sized or only slightly-enlarged uterus and the normally-sized or only slightly-enlarged movable adnexa can be done by the vagina; for instance, the surgical treatment of retroposition of the uterus, of descent of ovaries, plastic operations on the tube, ovarian resection, etc. Here I may mention also suture of the ruptured uterus (Dührssen).

2. In cases of genuine tumours of the internal genitals: (*a*) *Myomata* of the uterus up to the size of a child's head can be operated in this way, be they subserous, submucous or interstitial. As an aid to the operation it is necessary to have acquired the technique of median section of the uterus and of *morcellement*. It will depend on the practice and experience of the operator how great may be the size of the tumour to be removed by the vagina. (*b*) *Ovarian Tumours.*—The size of unilocular tumours is of no importance at all. But in multilocular tumours the operation may offer the greatest difficulties, and this condition can scarcely ever be diagnosed with certainty. Excluding the malignant tumours, which, as observed, must never be operated by vaginal cœliotomy, papillary tumours (fibro-epithelioma), nay, also, dermoid cysts are very little adapted for this operation, especially when complicated by adhesions. Undoubtedly benign ovarian cysts are also excluded when one is not absolutely certain that owing to their size the abdominal cavity will not be soiled by their contents when they are incised. The contents of dermoid cysts smeared over the abdominal cavity can produce local peritonitis, and the contents of benign ovarian cysts may by implantation be the origin of the development of benign growths which may later undergo malignant degeneration.

Consequently, I reserve vaginal cœliotomy for thin-walled and, if possible, movable cysts of every size; if their consistency is more dense, I employ the operation in cases in which the tumour can be pressed against the vaginal vault in such a manner that after luxation of the uterus it must descend into the true pelvis. When ascites is a complication the case is not adapted for vaginal cœliotomy.

3. In every case of malformation of the genitalia, vaginal cœliotomy is forbidden because one cannot become acquainted with the situation from the vagina.

4. On the other hand, the operation has triumphs in the various stages of extrauterine pregnancy, whether we have to deal with a living ovum or with a tubal abortion in all its various forms, with a ruptured or unruptured tube, fresh hæmorrhage, or with intraligamentous or extraligamentous peritubal hæmatoma. Exceptions to this rule are, as has been described elsewhere, cases of ruptured extrauterine pregnancy which are complicated with severe chronic diffuse inflammation of all of the internal genital organs, and finally cases in which the ovisac extends as high as the navel.

5. I cannot advocate the extirpation of inflamed adnexa, unilateral or bilateral, by means of vaginal cœliotomy. Even if the operation is successful, the majority of the cases are not benefited. Everything which I have said on various occasions against the isolated extirpation of bilaterally diseased adnexa by means of laparotomy holds good also for the vaginal operation. To this must be added, as a special objection, that vaginal cœliotomy is dangerous in the presence of any considerable changes of an inflammatory nature. Not only are bladder and ureters in danger in the presence of pericervical retraction and shrinking, but the added danger exists that in the inelastic and shortened ligamenta infundibula pelvica it may be impossible to ligature the blood vessels, and that these vessels may tear during the attempt to free the adnexa and to form a pedicle, there being no possibility of operating *in situ*.

It is no mere coincidence that almost all authors, who have reported on this operative procedure, state that when they operated for inflammatory affections of the adnexa they found it necessary to extirpate the uterus in order to be able to stop the bleeding; in other words, when they wished to be most conservative they were compelled to proceed most radically, or, at least, they had to add the ventral abdominal section to the vaginal incision. If we consider further that from the torn adhesions hæmorrhage follows, that in the attempts to separate the adnexa tears of the broad ligaments and of the veins of the pelvic cellular tissue occur and bleed freely, and moreover that the inflammatory processes in the peritoneum persist when the uterus remains, and that blood clots may become infected, then it may readily be understood why, in the presence of these indications, I am opposed to the vaginal incision.

Furthermore, I here desire to call attention to a sign, the presence of which may serve the beginner in this operation as a warning not to operate by vaginal cœliotomy. In all cases in which the uterus does not come down when pulled upon, or in which descent is simulated by an extension of the cervix, while the vagina, remaining *in situ*, is bent obtusely in its upper part, we should keep our hands off; for when such a condition exists, we shall most likely not be able to luxate the uterus without injuring or tearing it or its adjacent organs. This extensibility of the anterior vaginal wall is lost, especially in the severe inflammatory cases, and for this reason I here mention this sign.

6. For the sake of completeness, I add that many consider vaginal cœliotomy as a good means for diagnosis; after opening the cavity by the posterior vaginal incision, they introduce one or two fingers, and then practise bimanual palpation. In rare instances such a diagnostic manœuvre may be permissible; but in general it may be said that if one knows how to palpate he does not need this rather heroic means; and if he does not know, he will obtain no advantage thereby. Moreover, I consider it necessary to emphasise the fact that vaginal cœliotomy does not comprise another operation undertaken immediately. When it becomes evident that it is impossible or extremely difficult to finish in a conservative manner an operation commenced from below, it is, of course, better to open the abdominal cavity from above than to jeopardise the patient's health and life for the sake of a principle. If, on the other hand, in the course of a vaginal cœliotomy, a greater extent of the process is recognised—for instance, the presence of inflammatory troubles on both sides—then it is not difficult to complete a radical vaginal operation from this stage.

Conclusions.

In conclusion, I may say that in vaginal cœliotomy we have a good and useful operation, which under certain precise and clearly-defined indications furnishes excellent results. On the other hand, on account of its relatively small danger, there is, more than in other operations, a tendency to overdo it. The less the changes that are present, the greater the facility of its execution, and the less its danger. In the hands of an unscrupulous operator it may become a terrible scourge. Furthermore, a certain secrecy is the factor in its unexpected, almost epidemical, growth. Hidden is not only the scar—hidden and concealed is also that which has been done in the abdominal cavity. In many cases only the description of the operation can indemnify us for the fact that the pathologist, who is the conscience and the supreme judge of the surgeon, has received nothing to examine.

V.—Dr. Saenger,

Leipzig.

Conservative Operations.

At the second International Gynæcological Congress held at Geneva in 1896, I had the honour, simultaneously with Drs. Bouilly (Paris) and H. A. Kelly (Baltimore) to report on this chapter of gynæcology which is so important from a therapeutical point of view. Opinions and methods have perhaps not changed to any considerable extent since that time. Indications and treatment are inseparably connected. Every case of pelvic suppuration demands individual treatment, and the chief object generally is to bring away the suppurative focus alone or together with the suppurating parts, and not more. Hence, to remove non-suppurative parts in the course of an operation is by no means justified in principle; in a young woman when it is possible to conserve the uterus, one ovary, one tube—it must be done. It is far better than the prescription of ovarian tabloids afterwards. After extraperitoneal exudations and collections of pus, suppurative diseases of the uterine appendages are the most frequent, and, when they demand operative intervention, the abdominal route appears to be the proceeding which best fulfils the indications (conservation and individualisation). Vaginal puncture and incision are here only palliative methods, although perfectly

sufficient for a good many cases. Very regrettable is it that the removal of suppurating appendages alone by anterior or posterior colpo-cœliotomy fails so often, otherwise it would be preferable in many cases to the abdominal operation. Vaginal hysterectomy and hystero-salpingo-oöphorectomy ("total vaginal castration") had in the hands of a few very accomplished operators brilliant results, but in the most difficult cases of suppurative diseases of both tubes, ovaries, etc., the abdominal route seems preferable in many ways. Even during the last few years opinion has become increasingly favourable to the abdominal route, and, when necessary, to "abdominal total castration." At the same time, the use of clamps has diminished, the technique of abdominal hysterectomy being now much simplified by the more surgical proceeding of isolated ligatures round the ovarian and uterine vessels, and a more consecutive hæmostasis.

An important point which is now settled is that a radical operation, abdominal or vaginal, should not be undertaken except in a few rare special cases during the acute state of disease, where the microbes are fully virulent; in every case an effort should be made to ascertain the bacteriological character of the case, and the operation, when possible, should be postponed until the virulence of the microbe has been lost or diminished. Expectant treatment must precede surgical interference. A further point has been demonstrated—the frequency of appendicitis, and importance of its relations to suppurative diseases of the pelvic peritoneum, tubes, and ovaries.

In my Geneva report[2] I gave a list of 43 consecutive cases of severe suppurative disease of the appendages, peritoneum, etc., treated by the abdominal route. Since that time I can add 14 further cases, 57 together, without a death. As a proof of the value of cœliotomy, I may say that I found it possible nine times to conserve one ovary, or a part of the ovary; in 1 case (puerperal), 1 tube and ovary.

In 4 cases hysterectomy was performed at the same time, 3 times supravaginally, once totally (gangrenous myoma). Twice the suppurating appendix had been removed, with in one case the uterus and adnexa. Twice the septum romanum had been perforated before, once nearly perforated. The intestines had been lacerated 5 times, in 1 case at six different points, 2 penetrating. In 1 case a prophylactic colporrhaphy was done, as I feared intestinal obstruction from narrowing of the sigmoid flexure.

I believe that I owe my good results in large measure to Mikulicz's drainage, which was used 15 times, especially in the cases of perforation or ulceration of the intestines. This method of drainage may have some inconvenience, but in my opinion it saved life in such cases, and also in cases in which it was not possible to get the pelvic cavity dry of oozing. It is for these two indications that I drain, and not, as it has been objected, only when some pus has escaped into the peritoneal cavity. My list does not contain a very large number of cases, but it seems to me to afford a test of the advantages of the abdominal route, in favour of which I would speak here. Even in England the principle of safe surgery has been always cultivated. There is no subject which more needs the application of this principle than pelvic suppuration. In cases of this kind surgery must be safe and conservative.

VI.—PROFESSOR FEHLING,
Halle.

THE CHOICE OF OPERATION.

PROFESSOR FEHLING agreed with Dr. Cullingworth's ideas. Pelvic suppuration should be classified into cases arising in the parametrium and pelvic peritoneum and those of the adnexa. For operation that was the chief thing. In cases of suppuration of the Fallopian tube and ovary, he, like Dr. Cullingworth, not infrequently found instances in which the history of the patient and the absence of rise of temperature induced him to think there was no pus, and yet it was found in operating. Therefore he highly recommended puncture of the vagina with a thick needle of Dieulafoy's apparatus. As to the question whether the vagina or abdominal route were better, he quite agreed with Dr. Doyen that there was no general rule. When both adnexa were suppurating he removed the uterus with the adnexa by the vaginal route. If the diagnosis was uncertain, if only one side was affected, he preferred the abdominal route, to spare the uterus, and, if possible, one ovary. But to spare one ovary without the uterus did not help the patient; it was rather a source of trouble to her.

[2] *Transactions of the Second International Gynæcological Congress* and *Sammlung klin. Vortrage*, von Volkmann

VII.—A. MARTIN, M.D.,
Berlin.

THE CAUSES OF PELVIC SUPPURATION.

I HAVE been very pleased to hear Dr. Cullingworth base his remarks on the clinical aspect of the subject; his way of deciding whether an operation should be done or not is the correct one. I lay great stress on the history, for much depends on whether there is a history of gonorrhœa or not. In gonorrhœal cases an expectant treatment will often answer quite well, for these cases often get better under rest. But in septic cases expectant treatment often fails, and there are cases in which operation is generally required and may have to be performed even while there is an acute feverish condition. A difficulty sometimes arises in the differentiation of cases of pelvic inflammation from extrauterine gestation; in many cases in which the patient's illness has been thought to be due to infection by gonococci, streptococci, etc., it has turned out to be due to extrauterine gestation. When this condition exists it is not always easy to decide whether we should operate or not. Some of these patients become convalescent spontaneously; while in others symptoms of absorption appear, and it becomes necessary to operate. This applies, of course, to all cases in which there is anæmia from loss of blood. There is a cause of disease of the pelvic organs which has not obtained sufficient recognition, namely, the bacillus coli; this is responsible for many cases of illness in quite young women. The first condition may be constipation; menstruation comes on, and marks the beginning of the pelvic trouble; within a few years definite swellings are found, and then, if operation be done, it is found that there are adhesions between the tubes and the intestines. Infection may be direct through the walls of the adjacent organs, or it may take place by the route of the lymphatics.

THE EXTENT OF THE OPERATION.

Dr. Cullingworth recognises the need for operation in cases of poor patients who cannot afford the luxury of good nursing; and in this I agree with him. As regards the technique, I was interested to hear Dr. Doyen's remarks; but my own view is that it is most important to leave the uterus if possible. In many of my earlier cases, when I left the uterus after removal of the ovaries, I thought it would have been better to take away the uterus also; but these cases have got better, and I think that ultimately these patients are in a better condition than those from whom the uterus has been removed. It is always possible to remove a uterus later, if necessary; and in my opinion it is not right to remove a uterus that is not diseased, or which is amenable to medicinal treatment.

THE TECHNIQUE OF THE OPERATION.

There are many variations in technique, which all tend to show that we have not yet reached the best and final method; for my part, I do not drain at all. Some operate through the vagina, and some through the abdomen; the method adopted will probably always be a matter of personal predilection, and must be decided by the character of each individual case. Dr. Doyen has shown us some instruments which are no doubt very useful in his operations; but I cannot help thinking that we should, as far as possible reduce the number of our instruments in operating. Simplicity is the great thing to aim at.

VIII.—A. V. MACAN, M.D.,
King's Professor of Midwifery, Trinity College, Dublin.

METHODS OF DIAGNOSIS AND THE TIME FOR OPERATION.

THE indications for operation depend almost entirely on the accuracy of diagnosis, and this, again, on the knowledge of the bimanual method of examination. I fear that until the ordinary examination of the female genital organs is made while the patient is lying on the back, the right hand being used for the right side of the pelvis, and the left hand for the

left side, we can hardly expect to attain to the accuracy of diagnosis which has been attained by our Continental brethren, by whom the condition of the tubes and ovaries is made out in all ordinary cases. As to the time for operation, I would put it off as long as possible. It must, of course, be done earlier when the woman cannot afford to lie up than when her circumstances permit this for in this way we get the advantage of the efforts of Nature. As to the method of operation, I would consider that the estimation of the difficulties to be met with is much harder in the vaginal than in the abdominal operation, since in the former the condition is estimated entirely by the sense of touch.

IX.—J. W. Byers, M.D.,

Professor of Midwifery and Diseases of Women and Children, Queen's College, Belfast.

Professor Byers said that those who had listened to the discussion would feel as he had done after being present at the great debate in Geneva two years ago on the same subject, that the last word had not been said on the question of pelvic inflammation and its treatment, and that many points needed still to be cleared up: (1) As to diagnosis, he thought the greater the gynæcologist's experience, the fewer the mistakes in diagnosis, but still sometimes cases were met with in which it was impossible to define before operation the position of the pus in the pelvis; (2) as to the method to be employed, vaginal or abdominal, it was possible that British surgeons were too conservative in keeping so much to the abdominal method. There were cases better managed by a vaginal incision, as a palliative step or as a means of tiding a very exhausted patient over a time until her strength was equal to withstanding the removal of the affected part by the abdomen. Further information was wanted as to the cases which would be best treated by the vaginal and by the abdominal method respectively.

X.—Heywood Smith, M.D.,

London.

Report of a Case.

Dr. Heywood Smith said that he had had a case recently which illustrated in a remarkable manner the two points that Dr. Cullingworth had laid down for discussion. A lady was admitted into his private hospital suffering from pain in the right side of the pelvis. There was an indistinct fulness in the region of the right broad ligament. This afterwards became more defined, and the patient got more ill. He had a consultation with Mr. Bland Sutton, who, considered the case an anxious one, yet counselled some waiting to see how the case developed. There was also a history of appendicitis. A physician also subsequently saw her, as there was some question as to the state of her lungs. Mr. Sutton agreed with Dr. Smith that there was probably tuberculous inflammation of ovary or oviduct. The patient's condition became more critical; the temperature in the evening was 102° F., and in the morning about 99° F., and it was quite evident that suppuration was taking place. Dr. Heywood Smith then determined to operate on July 19th. The right ovary and oviduct were found comparatively healthy; the appendix was also healthy and abnormally small. Adherent to the pelvic floor was a body the size of a small orange. This was peeled off its adhesion, and it and part of its oviduct removed. The adhesion site was plugged for a few minutes with a sponge wrung out of tincture of matico, which effectually stopped the oozing. The ovary was at once examined, and was found to be full of pus, in which the tubercle bacillus was present. The stitches were removed on July 25th, and the patient was practically well. A very important point in this case was that the pain, which was on the right side, did not, as was usual, indicate the seat of the mischief. The explanation which he gave of this was that the ovary, disorganised as it was and filled with pus, was not sensient to pain, but that being swollen it pressed on the neighbouring and sensitive ovary, and so produced the pain on that side. In conclusion he wished once more to protest against the use of the word "laparotomy." The word λαπαρον meant "flank," and could not be used to signify a central abdominal section. Its use in that sense was philologically ncorrect and scientifically misleading, whereas cœliotomy expressed central abdominal incision without any equivocation.

XI.—H. C. Taylor Young, M.D.,

Sydney.

Conservatism and Obscurantism.

Dr. Young said: It is necessary in this discussion to separate more clearly those cases with suppuration and those without. If there be pus then operation is necessary. The condition present must decide the operation and the route. British gynæcologists handicap themselves by adhering to the lateral method of examination. The dorsal is certainly to be preferred for making a clear diagnosis. What, then, is the condition found? Is it a simple or multiple abscess? Then operate according to location. Is it unilateral or bilateral; is it multilocular or unilocular? A sharp distinction must be made in these conditions. Removal of the uterus should be practised only in cases of bilateral suppuration and destruction of the adnexa. In the others simple incision might first be tried, as even if unsuccessful it will not interfere with the performance of a future operative interference. But conservatism is not always to be carried to the extreme. What should be thought of is the future comfort of the patient. Of what use is a partially destroyed uterus when both adnexa are removed? Further, the possibility of recurrence of disease in that organ, nay even graver and malignant changes, must be thought of. In simple inflammatory cases the practice in some parts of Germany is to make a vaginal incision, insert a finger, break down the adhesions, and close the wound. The result is that the condition of the patient is frequently worse after than before operation. Treatment is not always cure, nor is operation in which the recovery is uneventful. What will the condition of the patient be two or three years after operation? That is the point, and keeping that in view I prefer the vaginal route.

XII.—A. Lapthorn Smith, M.D.,

Montreal.

The Relative Advantages of the Vaginal and the Abdominal Route.

Dr. Lapthorn Smith complimented Dr. Cullingworth on his paper, and could heartily endorse all that he had said, especially with regard to the immunity which the peritoneum acquired after one or more attacks of pelvic peritonitis. The speaker's own experience had proved that the latter cases had a much smaller death-rate than those operated on during the first attack. As to the choice of the abdominal or vaginal route, Dr. Lapthorn Smith said that he had had the advantage of visiting during the few preceding months the leading gynæcologists of Europe, and he had made this visit for the express purpose of forming an opinion on this subject. He could truly say that he had come to a definite conclusion, namely, to employ the abdominal route in all cases of large tumours of any kind; in pyosalpinx, and hydrosalpinx, and tubo-ovarian abscess, and tubal pregnancy; in fact, for anything which was large enough to be felt appreciably high up in the pelvis. He would, on the contrary, employ the vaginal route for all small growths and collections situated low down in the pelvis, such as cystic ovaries, chronic salpingitis, small pus tubes, sclerotic ovaries and retroversion with fixation; in fact, for all those small collections which could be easily removed by the abdomen. The advantages of the vaginal route were inestimable; no scar, no bugbear of hernia, no buried suture to give trouble in 5 per cent. of the cases; all was done through a little incision in the anterior vaginal wall no greater than that made in anterior colporrhaphy. From the many operations he had lately seen the mortality must be, and indeed was, almost *nil*. He had seen Dr. Martin, of Berlin, do as many as three of these operations in an hour, or less. And for his own part Dr. Lapthorn Smith felt convinced that for these cases the vaginal route had immense advantages. With regard to removal of the uterus he was strongly in favour of doing so when the tubes were full of pus, and when both ovaries had to be removed. He had had several cases of double pyosalpinx which had been a trouble to him ever since, and although he was very conservative he could see no advantage in leaving it. Certainly the removal of the uterus down to the internal os did not make the operation either more difficult or more dangerous. The operation

was greatly facilitated by the speculum of Doyen, which held the two sides of the incision open, and did away with one or two assistants. As regards drainage he had not drained for several years because he had lost several cases from drainage-tube infection. With the patient in Trendelenburg's position all bleeding could be stopped, since everything was so clearly seen. As to conserving diseased ovaries he had done it, and would still go on doing it, although his experience in this regard was very discouraging, most of the patients still reproaching him after several years because they were no better. He would, however, leave a piece of an ovary even he removed the uterus and both tubes.

XIII.—Amand Routh, M.D.,
Obstetric Physician, Charing Cross Hospital.

Parametric and Perimetric Abscesses.

Dr. Amand Routh agreed with Dr. Cullingworth's view that cases of peritonitis should not be dealt with during the acute stage. This, however, was not the case with cases of puerperal septic parametritic abscess. These should be opened and drained by the vagina as soon as pus was suspected, and should not be allowed to drift on till pus pointed above Poupart's ligament, as it only did in neglected or long-standing cases. A perimetritic collection of pus or pyosalpinx should be treated by free incision through the vagina and continued drainage. The pus should be let out and the drainage tube stitched to the vagina, and the wound kept open for some weeks, the vagina being meanwhile kept aseptic.

XIV.—M. Handfield-Jones, M.D.,
Obstetric Physician, St. Mary's Hospital, London.

The Time for Operation.

Dr. Handfield-Jones agreed with Dr. Cullingworth that (1) large size of the pelvic tumour and (2) recurrence of pelvic inflammation were the principal indications in deciding in favour of operation. In estimating the size of any pelvic mass it was most important to examine under full anæsthesia, since, in cases of pus collection lying high and situated posteriorly, it was often impossible to map out the mass with certainty until the muscular parietes were fully relaxed. There could be no doubt as regards the wisdom of waiting until acute symptoms had subsided; even if pus was discharged in the course of expectant treatment, the prognosis was not so serious as might be expected. Dr. Handfield-Jones failed to see why there should be any antagonism between the vaginal and abdominal methods of operating: both were useful and suitable in different conditions. There was, moreover, no reason why an operation commenced by one method should not be finished by the other without detriment to the patient.

XV.—A. E. Aust Lawrence, M.D.,
Professor of Midwifery and Diseases of Women, University College, Bristol.

Dr. Aust Lawrence advised that if the abdominal or vaginal swelling seen at the first operation were found to increase, or if symptoms of septicæmia set in—notably diarrhœa—then the pus should be let out if possible, either by the abdomen or vagina—the former route if there was distinct swelling in the abdomen, or the latter if the vaginal swelling only was marked. It was also wise in some of these latter cases to aspirate by the vagina, as some cases got well when the pus was removed by aspiration, and even where no pus was found. Improvement and even recovery might take place after simple aspiration.

XVI.—E. T. Davies, M.D.,
Senior Assistant Surgeon, Liverpool Hospital for Women.

Dr. Davies expressed the opinion that cellulitis or parametritis in most cases formed a part of a primary affection of the uterine appendages and peritoneum. The absolute diagnosis between these two conditions was practically impossible. The abdominal route was generally safer because hæmorrhage and adhesions were more under control. The practice of delaying operation until after the subsidence of the acute stage was no doubt useful, but there was a possibility of delaying too long, for dense fibrous adhesions to neighbouring organs formed, and rendered subsequent operation more difficult. The use of the aspirator as a means of diagnosis was a dangerous procedure, and should never be employed unless immediately followed by operation.

XVII.—J. Ward Cousins, M.D., F.R.C.S.,
Senior Surgeon to the Royal Portsmouth Hospital.

Cases Requiring Operation.

Dr. Ward Cousins observed that the various forms of pelvic inflammation ran so much one into the other that a correct diagnosis of these complex disorders could seldom be made in the early stages, though all could be traced to some kind of infective process. Many cases got well with very simple treatment. The exudation might be absorbed after high temperature even for a protracted period. In acute cases of suppuration the dangerous stage might be relieved by simple incision and careful drainage. The point at which the incision should be made must be settled by the special features of each case. Drainage must be effective, and localised cavities opened by the finger. If the collection was near the rectum the bowel could be washed out and the anus dilated. Pelvic inflammation was of course associated with many changes in the pelvic organs—cysts, tuberculous disease, and suppurating salpingitis. When the symptoms were chronic and recurrent a careful examination would yield strong indications of extensive changes in the uterine appendages. Whenever distinct swelling existed in the posterior quarters of the pelvis in association with recurrent attacks of inflammation and fever operation gave the only hope of permanent cure. In a large majority of cases the abdominal was certainly the best route for excision of the diseased structures.

Dr. Cullingworth's Reply.

Dr. Cullingworth expressed his gratitude for the appreciative manner in which the Section had received his remarks. He quite agreed with Professor Martin that a knowledge of the etiology was important in arriving at a decision for or against operation; a case having a gonorrhœal origin was much more likely to end in spontaneous recovery than a case having a septic origin. He was glad Professor Martin had emphasised the importance of the bacterium coli as a source of infection in pelvic peritonitis. In the course of a somewhat long hospital experience few things had struck him more than the habitual neglect of the condition of the bowels in patients admitted with pelvic inflammation. Almost all cases had fæcal accumulation to contend against, in addition to their other sources of discomfort and danger. He entirely corroborated Dr. Macan's observation as to the importance of accurate diagnosis, and of the great value of the dorsal position and the bimanual method in attaining this. He had himself practised and taught examination in the dorsal position exclusively for at least twelve or fourteen years, and found little or no practical difficulty in adopting it. He had not the fear of adhesions that Dr. Davies appeared to have: in fact, he considered that adhesions were rather to be hoped for than to be dreaded. Dr. Davies had quite unintentionally missed his (the speaker's) point in reference to the question of delay, the whole gist of his remarks being in the direction of recommending that the operation should not be delayed until the immunising effects of the acute attack had passed off.

A DISCUSSION ON THE USE AND ABUSE OF MIDWIFERY FORCEPS.

I.—R. Milne Murray, M.A., M.B., F.R.C.P.Edin.,
Lecturer on Midwifery and Diseases of Women, Edinburgh School of Medicine; Assistant Physician, Royal Maternity Hospital.

Surgical Midwifery.

I think I am right in stating that the selection of this subject for discussion arose out of the able and trenchant address delivered by the former President of this Section at the Montreal meeting last year. In that address Dr. Sinclair drew attention to what he considered the close relation

between many gynæcological troubles and the over-frequent and injudicious use of the forceps.

The address contained much to give the reader pause, but its general tenour may be gathered from a brief quotation from it which I venture to make: "Midwifery has during the same period," says Dr. Sinclair, "become also largely surgical—too surgical, and a thesis which I shall endeavour to maintain to-day is, that gynæcology has become so largely surgical as the direct result of surgical interference in midwifery practice; the accoucheurs are the providers of material for the gynæcologists. . . . The term surgical is employed here with almost exclusive reference to the midwifery forceps."

I am not using too strong an expression when I say that this amounts to an indictment of the present practice of midwifery all over the world; and coming as it did from the presidential chair of this Section, it must have caused much searching of heart on the part of accoucheurs on both sides of the Atlantic.

But it was not only on the general practitioner that the strictures of the address reflected. If the practice of midwifery were aberrant, no small part of the blame must lie at the door of the teachers of obstetrics. If the practice were loose, the teaching must be greatly at fault.

It could not be supposed that such a statement could be made by one in the position Dr. Sinclair occupies without due deliberation, because it directly implied that one section of those whom he was then addressing was engaged in providing employment for the others, either by reason of gross and culpable error of judgment or by direct malpractice.

If this were so, it was time to speak out. A presidential address is, like a sermon, beyond the pale of discussion, or it would have been of interest to hear what those present had to say for themselves. And so important did the question appear to those responsible for the selection of the subjects of our formal discussions, that it seemed to warrant the whole matter being opened up here. It could not be better considered than by a gathering such as this, including as it does representatives from many parts, and embracing general practitioners, specialists, and teachers.

The Value of the Forceps as a Surgical Instrument.

It is not, I take it, required of me, and it would be hopeless in the time at my disposal, if it were, to attempt an exhaustive account either of the proper use or of the abuse of the forceps in midwifery practice. I shall best fulfil my duty to-day by raising points for discussion, or suggesting the lines which the discussion should take, rather than by attempting any necessarily inadequate deliverance on the whole subject.

I begin by asking, "What is the special value of the forceps as a surgical instrument?" To Baudelocque is due the statement that the midwifery forceps is the most valuable surgical instrument that has ever been invented, and "with this statement," says Dr. Sinclair, "we are all more or less in agreement." I think there are few here who will cavil at my reply to the question I have just put, if I say that the special value of the forceps is that it enables us to shorten the suffering and diminish the risk of childbirth. If it is to justify the claim of Baudelocque it must accomplish these results in a sensible proportion of cases, because if it is only to be employed at rare intervals to diminish the suffering or even save the life of an occasional mother, while we should cherish it as a valuable component of our armamentarium, we would scarcely place it in the position claimed for it by Baudelocque. Apart, however, from the question of the frequency of its proper use, I may take it for granted that its value consists in the power it gives us on certain occasions of shortening the duration of labour, of diminishing the dangers of the mother, and greatly increasing the safety of the child.

But when we turn to the scope of the instrument and ask what are the indications for its use, we reach highly debatable ground. I daresay if the question were put to twenty individual members of this meeting there would be given twenty distinct answers, all more or less divergent, and some diametrically opposed. Perhaps the one side would best be represented by the answer Dr. Sinclair would give, while that of his anonymous friend, who startled him with the statement that his forceps cases amounted to 70 per cent. of his whole midwifery practice, would adequately represent the opposite; and these two, along with the other eighteen, would give one more instance of the many-sided character of the human mind!

When Forceps should be Used.

I shall make no attempt to analyse or classify those hypothetical answers. It will be more useful if I try to lay down a general principle which ought to guide us in seeking the indications for the use of this instrument. I think I can be sure of taking you all with me when I say that *a direct indication for the use of the forceps arises whenever—and only whenever—we are assured that the danger of interference has become less than that of leaving the patient alone.* So simple is this statement, that to some it may seem a mere truism, and to be scarcely worthy of deliberate enunciation. Nevertheless, I believe it is, in the case of some practitioners, just one of those pious opinions which are assented to the moment they are stated, and the moment after practically ignored.

I venture to think it is more than a mere truism, and that it ought to be kept more constantly before us and more strictly acted on than it sometimes is. For let me point out that it implies that the use of the forceps, in practically every case, is a matter of individual judgment. There is no accepted set of rules which can be applied to each emergency, and which will decide for us in each case whether we are to act or to hold our hand. It is for this reason that the question of the proper use of the forceps is often so difficult. Much more than in most surgical operations have we to consider in each case, not one, but many circumstances. If we discover an abscess, or a cancer, we deal with them at once by opening or excising them according to fixed principles, and by methods which have been determined by experiment and settled by experience. But the operation of the forceps comes under a different category. A fœtal head and an ovarian tumour cannot be dealt with on the same lines. It is sound practice to remove the latter as soon as it is detected, but the mere presence of a fœtal head in the pelvic cavity is not an adequate reason for its summary removal. There are many things to be considered, many things to be taken into account—the state of the passages, the efficiency of the pains, the condition of the child—ere we can justify any effort to supplement or supersede the processes of Nature. Each case must be decided on its merits, and in every case when the question of forceps arises, we must ask, "Is it safer to act or to wait?" We have no justification for interference until we have decided that the danger is in waiting, nor, let me add, in failing to act when we have decided that the danger is in delaying. It is this necessity for individual judgment in every case which renders the employment of the instrument a matter of grave responsibility.

Premature Use of Forceps.

From what I have said, it will follow that a certain number of the instances of improper use or abuse of the forceps are due to errors of judgment—the instrument is employed when it should not be used, or else it is not used in cases when it is indicated. It was to the frequency with which the first error is committed that Dr. Sinclair specially devoted his address last year, and no doubt a very substantial proportion of the instances of the abuse of the forceps comes under this category. But this does not by any means represent all the cases of misuse of the forceps; for while injury is inflicted in many cases by the premature use of the instrument, and in a smaller number by undue delay in its employment, a very large part of the injury to mother and child—and thus a large part of what may be properly termed the abuse of the forceps—is due to faulty technique.

I may perhaps best put it thus: (*a*) The forceps are often used at the wrong times. (*b*) They are sometimes not used at the right times. (*c*) They are often badly used at both times. The danger of the forceps operation, apart from the risk of septic infection (which, of course, is common to most operations), may be summarised thus:—

1. The mother's parts may be bruised, lacerated, or otherwise injured by mechanical violence.
2. The too sudden emptying of the uterus may be followed by imperfect retraction, and, consequently, dangerous hæmorrhage.

3. The fœtal head may be unduly compressed, lacerated, or otherwise damaged.

Now, in spite of all that has been done and is being done to diminish the risk and suffering of disease by anæsthesia, antiseptics, and other means, there seems a lingering doubt in the minds of some as to whether the abolition of the pain and suffering of labour would be an unmixed blessing. This seems to me to be a survival of the same barbarous instinct which prompted the so-called religious objection to the use of chloroform in labour, and is as unworthy of respect. For myself I have no such scruple, and were I able to do so with safety I should gladly abolish every pain after the first, and reduce the duration of labour to a bare minimum. But unfortunately this is not practicable. Physiological labour consists of a series of phenomena which require time for their development: and a grave abuse of the forceps consists in their employment in such a way as to interfere with the proper sequence of the normal physiological events.

Forceps in Undilated Os.

This leads me to consider a group of cases in which we have the most striking illustration of the use of the forceps at the wrong time, namely, their application through an undilated os. There is, no doubt, a small minority of cases in which such an application is, for special reasons, justified and even demanded; but these are few and far between, and the disastrous results following their use in many of these cases are only too familiar to obstetricians. The statistics of this practice, obtained from the results of the Rotunda Hospital under Dr. Johnston's Mastership, are in themselves a commentary on the dangers both to mother and child.

Spasmodic Rigidity.

I would draw particular attention to the dangers involved, because I feel sure there is a group of cases falling under the term "undilated os" which is not so generally recognised as it should be, and the non-recognition of which seems to me to account for more damage to the mother's parts than we may at first admit to be likely. Everyone is familiar with, and no one can well overlook, the ordinary form of undilated os, in which, either from early rupture of membranes, narrow pelvis, mal-presentation, or other cause, the os remains for hours in a half-dilated state. If, in spite of such a condition, the use of forceps is for some reason, good or bad, decided on, the operator recognises the condition, calculates the risk, and, it is to be hoped, does what he can to minimise or obviate that risk to the utmost of his power by careful management. But there is another form of undilated os quite as unsuitable for the forceps operation as this, and which is the more dangerous because it is not always recognised. I am convinced it accounts for the occurrence of by far the larger number of cases of lacerated cervix. For while the delivery of the head through the variety of undilated cervix referred to is always a difficult and often a dangerous operation, nevertheless it can be done, and is done in many cases, given a proper instrument, the requisite skill, and abundant patience. It is not so with the variety I now wish to consider. Here is the sort of case I refer to: A woman has been in labour for some hours; probably the membranes have ruptured early, and dilatation is slow. Opium possibly has been given, or chloroform has been used, and after a time an examination, made in the absence of a pain, shows the os soft, flabby, and apparently nearly the size of the child's head. The head is probably well down in the cavity, and lying fairly well for the application. Here, then, seems a suitable case—a long labour, a tired woman, perhaps, if I may whisper it, a wearied accoucheur, and most important of all, an os, if not dilated, at least dilatable. A little more chloroform is given, and then without any difficulty the forceps are slipped over the head and, of course, inside the os. By this time a uterine pain, excited by the manipulation, begins, and if the os is now examined it will be found spasmodically contracted round the head and forceps, and not more than half its former apparent size. Unfortunately, it sometimes happens that an examination is not made, and traction is commenced with results which do not require description here. The case is one of partially dilated, spasmodically rigid os, and may be described in physiological language as an example of uterine inco-ordination, or, popularly, as a uterine stammer. The os during an interval is soft, flabby, and easily stretched; during a pain it becomes tense, hard, and greatly narrowed.

I have several times been asked to see patients in consultation, where the attendant thinking the os was fully dilated, had ruptured the membranes, and found after uterine pains had begun again, that the os was less than two thirds dilated. The same mistake had arisen—the os was examined in the intervals, and its spasmodic rigidity overlooked. To use the forceps here and to treat the case as if the os were dilated or dilatable is one of the gravest, and, I fear, only too common examples of their abuse. On account of the tension and thinness of its edge, very slight efforts of traction will tear the cervix into the vaginal roof, inflicting frightful injury.

Secondary Inertia.

I need not detain you by dwelling on the dangers of the application of the forceps to a woman in a condition of secondary inertia, and to the almost inevitable results in the shape of deficient retraction and hæmorrhage in the third stage and *post partum*. And I do not doubt that other instances of the use of the instrument at the wrong time will be sufficiently emphasised by one or other of those who follow me in this discussion.

Failure to Use Forceps when Necessary.

Let me then say a word about the second point I raised; namely, that the forceps are sometimes not used at the right time. Whatever material damage or injury may be inflicted by the injudicious use of the forceps, there is one injury—once common enough, and now rarely to be seen—namely, vesico-vaginal fistula, whose disappearance is in great measure a result of the earlier, perhaps often premature, application of the forceps. No more striking instance of the beneficent use of the forceps can be adduced than that which we may point to in the almost total disappearance of this frightful injury. Most men nowadays take care that the long, tedious, grinding pressure of an ill-placed head, on a contracted or otherwise modified pelvis, is never allowed to occur, and the consequent necrosis and sloughing are thus largely avoided.

But I cannot help thinking that the reasonable reaction which has shown itself in many schools against the too frequent use of the forceps may in some measure diminish our vigilance in this matter, and that from an unwillingness to interfere we may unwittingly render possible an undue amount of maternal bruising and other damage. I could not find a better illustration of what I refer to than I do in the Rotunda Report for 1896-97. Here there is a record of 56 forceps cases, and in the summary of the indications of their use I find that 45 were treated by forceps on account of "delay in the second stage of over four hours." In the absence of further statistical detail I cannot express an opinion as to whether the forceps in these 45 cases were rightly or wrongly employed, whether it might not have been better to have interfered sooner than the fourth hour in some cases, or to have waited even longer still in others before artificially finishing the labour. The report simply states that "Forceps were applied in cases of delay of four hours in the second stage with material benefit to the mother and greater safety to the child, and we consider the results obtained, more particularly as regards the life of the child, amply justify us in not delaying longer" (p. 10).

The objection I would make to a statement such as this in an authoritative report is, that it gives us an impression that the element of time is the primary determining factor. I am quite at a loss to understand why, for example, we should wait in every case for four hours after the os is dilated and when the pains are not advancing the head. To my mind the latter point is the *crux*. If I could assure myself that after dilatation of the os the advance of the head was blocked—either by the size of the head, the resistance of the canal, or the feebleness of the pains—I should not wait a moment before using the forceps. I could not assure myself that this was the case without waiting a certain time, but I am perfectly certain that in many cases I should reach absolute assurance long before four hours had elapsed. If I am certain of this in one hour, why should I wait three more? What do I gain, and what does the patient gain, by my watching her enduring two or three hours of further misery and suffering?

If the head is in the brim and shows signs of descending, I shall wait till it descends, because the operation of forceps is easier in proportion to its descent. If the head is in the oblique diameter and shows signs of rotating, I shall certainly wait till the rotation is complete, because the application of forceps is simplest and the delivery safest when the head is in the antero-posterior. But if neither of these things occurs from fault or failure of any factor, I see nothing to be gained, but much to be lost in waiting after I am certain that progress is at an end. The danger of interference is then less than the danger of waiting.

There are many wise obstetric aphorisms, but none wiser than this: "Wait till you see what Nature can effect—not what she can endure." No one need imagine that this can be read as an apology of meddlesome midwifery. As long as Nature is preparing or opening the passages, and moulding or advancing the passenger, she is doing what she can do better than any of us, but she sometimes fails, and it is because she fails that Baudelocque's commendation of the forceps is "one with which we are all more or less in agreement," because by its means we have saved women hundreds and thousands of weary hours of useless suffering and preserved countless children alive. Let it not be supposed that I am traversing the practice of the Rotunda Hospital. The report at my disposal gives me no facts on which I could base my criticism: what I suggest is that the mode of stating the grounds of interference is essentially misleading, and I wish to enter my protest against the idea which it conveys that the time element alone is a proper basis for such interference.

If I am asked when, under such conditions, I should apply forceps, I should make a reply in words which I first heard from the lips of my respected teacher and your distinguished President, and which I have never forgotten:—"When the passages are in a fit state and Nature fails to advance the head, then I should apply the forceps."

Forceps in Occipito-Posterior Positions.

I must leave to others the indication of other cases in which the forceps might be used with advantage when their use is avoided or delayed. But I should like to direct attention to one group of cases in which the forceps might be employed with greater discrimination than is, I think, sometimes used. I refer to occipito-posterior positions of the vertex. We all know that in such cases, when flexion is well marked and when the pains are efficient, descent and forward rotation is the most usual ending, while in those cases in which flexion is deficient, descent is difficult and backward rotation the rule. My own view and teaching in the matter is this—that when flexion is deficient, as shown by the ease with which the bregma can be reached, the sooner forceps are applied after the os is dilated the better. In view of the practice generally recommended in regard to these cases this may seem heroic if not rash. But I confess I have little faith in the attempt at manual rotation; my experience of it in these cases is that it is futile, and on theoretical grounds I have never understood how it can be anything else. When it succeeds it seems to me almost certain that rotation would have occurred without it. For if natural rotation is the result of the action of the pelvic floor on the advancing head, I cannot understand how twisting the head in the canal can develop it when it is defective. If in rotating the head we brought it to bear more firmly on the floor, I could understand that a sound principle was involved, but we can scarcely claim that we do this. Everything however depends on the forceps employed. With the axis-traction forceps, more especially if slightly modified, we can develop flexion and secure rotation in nine out of ten cases, and in the tenth would probably have done so too had we used them soon enough.

Faulty Technique.

Finally, the forceps are abused by being badly used: not only when they should not be used, but also in cases in which their use is indicated. Now I am convinced that to these faults of technique, as I may call them, are due not only the greater number of the minor errors in the use of the forceps, but likewise some of the gravest examples of maternal and fœtal injury. I venture to refer to a few of them—some of those I regard as of most importance.

The first fault of technique to which I ask attention is one which is still too common. It consists in not employing what is indubitably the most efficient instrument. If a workman chooses for his purpose a tool which is less efficient than some other which is available, he may execute the work, but he does so either less perfectly than he might, or does so with an unnecessary expenditure of time and energy. So if the problem to be solved in the forceps operation is to extract the child with the expenditure of as little force as possible, we fail in that problem if we do not use the instrument which enables us to economise our force to the greatest extent. That this instrument is one constructed on the principles first laid down by the late Professor Tarnier has been long taught by every member of the school to which I belong. Professor Simpson has illustrated the value of the axis-traction forceps by saying that a man who has once used them would as soon think of reverting to the old forceps as a man who could keep a carriage would think of conducting his practice on foot.

When I was a boy I was more or less familiar experimentally and otherwise with a piece of mechanism, the prototype of the modern bicycle appropriately and familiarly known as a "boneshaker." It was somewhat substantially, even massively, constructed of wood and iron. It possessed wheels, a backbone, a saddle, and a steering bar, just like its descendant, and among other things it had a tyre which, if it had no other advantages, was at least durable and puncture proof. It certainly was a very different affair from the machine on which we see young and old, rich and poor, gliding along noiselessly and almost without effort at five to fifteen miles an hour. Now I should be inclined to say that a man is just as likely to revert to the old instrument after having used the axis-traction forceps as he would be to give up a good bicycle of 1898 for a boneshaker of the early Seventies. The main argument advanced in favour of the older forceps is its simplicity, and this argument is quite as much in favour of the boneshaker, for its construction was complicated neither by ball-bearings, spring saddles, nor pneumatic tyres. But I have heard a practitioner declare that he could do as much with the old forceps as another could with the axis-traction forceps. I would as soon believe that the average man on the primitive bicycle I have referred to could ride as far or as fast, and with as little fatigue, as one on a modern machine.

The Axis-Traction Forceps.

To object to the instrument that it is complicated is an argument with which, I confess, I have little patience. That a couple of rods and a handle bar should present a serious difficulty to the acceptance of an immensely more efficient instrument is an argument scarcely worthy of a grown man.

I may take it that practically it is universally admitted that axis-traction is of great advantage at the brim, and with regard to its efficiency there I need not detain you. The pleasure I have of knowing that many of those I address constantly employ and strongly advocate these instruments is saddened by the knowledge that there are some who listen to me who are not yet convinced of their efficiency, save at the brim. But I am certain of this, that those who have systematically used the instrument in all their forceps cases will bear me out that for once they have proved their efficiency at the brim, they have done so ten times in the cavity and twenty times at the outlet. They will speak of the security of the grasp, the absence of dangerous compression, the ease of extraction, the delicacy with which the proper axis can be ascertained and followed, and the safety to the soft parts which it ensures. They will perhaps, most of all, commend the instrument on account of the facility with which it produces or permits of the production of rotation.

Compare this with the deliverance on the axis-traction forceps I find in one of the recent textbooks on Midwifery. "The use of the axis-traction forceps is practically confined," says the author, "to pulling the head through a contracted brim: when the head has passed into the cavity it is no better than the ordinary kind. It is only of use, therefore, to pull the head through a somewhat smaller brim than can be passed by the latter. In cases where the difficulty is so great as this, it is in all probability better to turn." This reduces Tarnier's work to a vanishing quantity. And again, in another part of the same book, I find, "they all (that is, axis-traction forceps), however have the

same disadvantage of compressing the head during their application."

I confess it is difficult for one who has used these forceps for nearly twenty years to treat such comments seriously. As to the question of compression, I do not believe that the compression of the head by the axis-traction forceps is as much as 10 per cent. of that inflicted by the ordinary forceps. Anyone can prove to himself that after the blades are in position and in contact with the head, one half turn of the screw is all that is necessary to keep them in position. Not infrequently the screw slips out of its catch during traction, and I have delivered many cases in which the screw was off all the time the forceps were in the cavity. When the head is in the cavity, the pressure of the walls, the inward pull of the rods, and the cephalic curve of the blades keep the latter in perfect security on the head. With the ordinary forceps, it is obvious that the harder you pull the more you grip the handles—not in order to hold the head, but to prevent the handles from slipping from your grasp; nevertheless, the head bears the brunt of the pressure.

As to the efficiency of the instrument in the cavity, I have said all that I need say, and as to removing the forceps when the head has reached the perineum, for myself I should as soon think of leaving the patient in the third stage of labour as of removing the forceps before complete delivery of the head. I am prepared to maintain that in axis-traction forceps, properly constructed and properly used, we have not only a means of accomplishing delivery in cases of delay with safety and success, but by their means we are able to avoid laceration of the pelvic floor in cases in which this would unavoidably occur if left to Nature. For I have long held that deep anæsthesia, combined with the skilful use of the axis-traction forceps, is the best treatment for rigid perineum.

The Guiding Principle in Applying the Blades.

The second fault of technique to which I shall direct attention is in connection with the application of the blades. Of course when the head is at the outlet and fully rotated, the application can only be faulty from gross carelessness; but when the head is in the cavity and still in the oblique diameter, a very faulty application is often made. It is still largely the teaching and the practice of the British schools to apply the forceps as far as possible in relation to the pelvic transverse without reference to the position of the head. Now when the head is high in the cavity, or even low in the cavity and not rotated, I am convinced that this is wrong. The result of this practice is that we obtain a more or less oblique grasp of the head, and it follows that, since the blades tend to rest on somewhat sharply curved portions of the head, one or other inclines to slip off during application, and the difficulty of locking is notorious. Equally notorious is it that the vicious practice of trying to rectify this by twisting the blades into position is a source of danger to mother and child. But apart from this, after locking is effected and traction begun, one of two things follows:

1. The head as it descends rotates, and in doing so throws the forceps into the opposite oblique. This usually happens with axis-traction forceps when rotation is favoured. If delivery is effected without removing and readjusting the forceps, extensive damage to the outlet will follow.

2. The head descends without rotating, and engages the outlet in the oblique. This often happens with the older forceps, and is even more disastrous than the former.

I venture to think that the practice of the French school is much sounder. The forceps should be applied to the biparietal diameter of the child's head wherever situated, and then, as the head descends, rotation will bring the blades into the transverse diameter just as the head enters the antero-posterior, and the head, forceps, and pelvis will present proper relations at the outlet. I feel sure that extensive damage to the lower part of the vaginal canal especially internal laceration of the perineum is often caused by oblique position of the head or of the forceps at the outlet. The application of the forceps to the side of the head may require more care than the other methods, but we are there to take what care is necessary for the benefit of the patient.

I need not dwell on the objectional results of jerky irregular traction. A uterine pain begins almost imperceptibly and increases in intensity by fine gradations. So should an effort of traction. Only by this can we bring the head and canal into proper relation, and only by this can we develop rotation and minimise the danger of pressure.

The Mode of Traction.

Every year I become more and more convinced of the advantages the axis-traction forceps give us in protecting the perineum from injury caused by undue delay, or laceration caused by faulty mechanism. The procedure I adopt is as follows. As soon as the vault touches the floor the forceps are held between the finger and thumb of the right hand, while the left is placed over the fundus. I may say at once that I never in any circumstances "support the perineum." The left hand enables me to control the retraction, to detect the beginning of a pain, and often to aid the action of the forceps by efficient pressure. I press the chloroform as far as will keep the patient quite still. Extraction is effected by gentle pressure on the traction bar, the rods and shanks being kept just touching. With certain exceptions I act as far as possible only with a pain, taking care always that traction is effected in such a way as to maintain the advance of the sub-occipito-bregmatic diameter. In this lies the secret of success, for by means of these forceps we can restore or maintain the relation of this diameter to the outlet—a relation which is often disturbed by peculiarities of the pelvis, and more often by alteration in the shape of the head, caused by moulding or swelling of the scalp, associated with long and difficult labour.

There is one group of cases, however, which form a marked exception to the rule of extracting with a pain. Not infrequently we find in elderly primiparæ that every uterine pain, when the head is low, is accompanied by a spasmodic action of the muscles of the floor, which for the time narrows the vulvar orifice and throws the perineum into a state of tense rigidity. It is in cases of this type that we find instances of perineal laceration. In such a case I deepen the anæsthesia and carefully avoid traction, save in the intervals of pains. Delivery is simple and easy thus, for the orifice is often wide enough when not spasmodically contracted. This is another instance of inco-ordination, and must be treated in this special way. Without forceps such cases will continue in labour for hours, and as the spasm only passes off when the pains are checked by chloroform, this alone is not enough.

Conclusion.

In conclusion, let me say that while arranging these all-too-inadequate thoughts I was painfully conscious how much better it could have been done by many of those whom I am now addressing. But I feel sure that no one whom I address could feel a keener sense of responsibility in the task imposed on me than I have done. If I have said more or less than I should have said, that will be rectified by what will be said after me. But one thing I trust will be made plain to all that hear what is to be said to-day, or who will read it afterwards, and that is that the use of the midwifery forceps is a matter of grave responsibility. That their improper and unskilful use does grievous injury has been made plain, that in appropriate and in skilled hands they may serve a beneficent purpose of the highest order is not less certain. Whether the forceps are to be an engine of disease and death, or a means of protection alike to mother and child, will depend upon whether they are used with a seeing eye and an understanding heart—upon whether the obstetrician is prepared to put aside all adventitious considerations, "the uneasiness of the gossips"—even the demands of the patient, most of all his own convenience, and interfere when, and only when, he has deliberately assured himself that the risk of interference is less than the danger of waiting. If this principle is unswervingly followed and carried out with reasonable skill, Baudelocque's commendation will still hold good, and the forceps will maintain their high place among the products of the ingenuity of man.

H. W. S. Playfair, M.D., LL.D.,
Consulting Obstetric Physician, King's College Hospital, and Emeritus Professor of Obstetrics in King's College.

Over-action and Reaction.

Dr. Playfair said that it would be impossible for him to discuss the details of this valuable paper. He would limit himself, therefore, to one topic only, and that was the recent

as opposed to the old midwifery practice. His reason for this was that the eminent President of the Section at the last meeting at Montreal devoted his inaugural address to this subject, and laid a strong indictment against modern teachers and modern textbooks. His thesis was "that gynæcology has become so largely surgical as the direct result of surgical interference in midwifery practice, that the accoucheurs were the providers of material for the gynæcologist." Now surely this must only be taken as a hyperbole or figure of speech? He had always believed that the surgical development of gynæcology was due to such things as ovariotomy, removal of the appendages, hysterectomy, and the like, which no one could say were produced by the accoucheurs; but granting that it was only a harmless exaggeration, it was none the least necessary to reply to it. It must at once be admitted that Professor Sinclair's address would do a great deal of good. It would warn against excess, it would teach medical men to be more careful than many had been. But did that touch the principle? There was no improvement in medicine which was not open to the accusation of having been abused. Take trachelorrhaphy, which Professor Sinclair himself cited as an example of a great improvement in gynæcology. Surely the use in England of that occasionally valuable operation had been greatly hampered by the ridiculous way in which it had been overdone in a sister country? Again, with the very useful "rest cure," had not the abuse of massage made that very useful remedy stink in the nostrils of right-minded people? So with the most recent fashionable remedy—the "Schott cure"—and many others which could be named. All this should warn against abuse, but it should not be used as an argument against proper use. Most of those present were probably entirely unaware of the frightful evils which followed the old practice. His old friend and fellow-student Professor Simpson would remember how common in their student days was that awful accident "vesico-vaginal fistula," now hardly ever seen, its abolition being the direct result of modern practice. Again, Dr. Sinclair had not even alluded to one of the great glories of modern midwifery—the almost total abolition of craniotomy, formerly so common as to be an everyday procedure. Surely this was an enormous gain. Who could say how many lacerated cervices and torn perinea should be taken to be equivalent to even one human life saved from the deadly perforation? At any rate he, Dr. Playfair, must insist that his book on midwifery should not to be blamed for any such over-frequent use of the instrument, since he had most carefully safeguarded his teaching on this point.

III.—W. J. Smyly, M.D.,
Late Master of the Rotunda Hospital, Dublin.

The Time to Use Forceps.

Dr. Smyly said that safety in the use of the forceps lay in adhering as closely as possible to their employment under favourable conditions, that is, when the head presented and had passed the brim by its greatest transverse diameter, when the os was fully dilated or dilatable and the membranes ruptured. Sometimes it was necessary to employ the instrument under less favourable conditions, but then the indications must be more definite than when, as under the conditions indicated, they were employed merely to save suffering. Under unfavourable circumstances they should only be employed in case of danger to the mother or child. The high forceps was therefore an operation not to be taken lightly in hand, and the importance of time in moulding the head to the brim should not be forgotten; a head might come through with moulding which could not have been brought through with forceps at an earlier stage. Time was of no account in midwifery nor any indication for the use of forceps.

IV.—Professor Fehling,
Halle

Frequency of Forceps Operations.

Professor Fehling, speaking as a teacher, said that the chief mistake of students and practitioners was to employ forceps in the absence of strict indications, hence the bad lacerations seen were due to the increasing frequency of forceps operations; while, as Hegar and Cullingworth had shown, the mortality in childbed had not diminished. In ordinary cases three points must be insisted on: the head must be under the brim, well rotated, os dilated; if so, then the forceps might be employed when there were indications in the condition of mother or child. If there were any danger for one or another, it was justifiable to operate in the absence of these three conditions. He wished to emphasise the advice that students should be taught not only on the phantom, but in the labour ward. At Halle, during the last four years, the forceps had been used in 290 out of 3,000 cases, but only 55 of these were in the clinic (3.5 per cent.); the greatest number occurred in the policlinic. Two mothers died from eclampsia, two from rupture, which had occurred before the forceps were applied; of the children, 6.2 per cent. were stillborn. Most of the operations were done by the students, the others by the assistants. Professor Fehling felt sure that to have done one operation under the supervision of the master prevented the young physician from making mistakes later on in practice.

V.—Sir William Priestley, M.D., M.P.
Consulting Obstetric Physician, King's College Hospital.

Meddlesome Midwifery.

Sir William Priestley said he had not intended to take part in the discussion, for it was so long since he had ceased teaching midwifery that his views might be thought those of a superannuated Professor. There had been of late years such improvements in the construction of forceps and in the recognition of the suitable conditions for their use that obstetricians might well feel more confidence in their value, and there could be no doubt that a great saving of life and of injury had been effected both to mothers and children.

The danger perhaps now was lest the use of forceps should be pushed too far, and it was well that conservative influence should be exercised to restrict them within proper bounds. He was glad to recognise that the reader of the paper gave a timely warning in this respect. It was still true that "meddlesome midwifery" might be bad practice, but this did not necessarily mean that forceps must not be used more frequently than formerly, always supposing that the best forms of instruments were selected, and that the conditions at the time of their application were such that there was the smallest possible risk of injury to both mother and child.

To apply forceps before the passages were sufficiently dilated, and especially when the os uteri was imperfectly dilated or rigid, was to incur great risk of laceration, and there was then so much more force to overcome that the attempt might well fail. It was quite true, as had just been stated, that the natural forces would often mould the fœtal head to the maternal passages in such way as to facilitate delivery when forceps applied above the brim had failed to effect delivery.

VI.—Wm. Stephenson, M.D.
Professor of Midwifery in the University of Aberdeen.

Preventive Midwifery.

Dr. Stephenson considered the subject as too extensive and important to be discussed in all its details. Use and abuse must be taken together, and the second term made to limit that intended to be included in the first. Frequent use and abuse was the idea. Frequency in the use was the great advance in midwifery during the latter half of this century. It was well to remember that the movement originated in the ranks of the profession, and not from the teachers. He would prefer that the general practitioner should be heard to-day, and not the teacher. He could not accept the rule adopted by some leading teachers—that instrumental aid was to be given only when there were symptoms of danger to mother or to child, or to both. It was the old cry, Wait till Nature begins to fail. The true principle was, Aid whenever you can without deranging the mechanism, so as to avert symptoms of danger. But Dr. Murray had fully vindicated the present frequent use against the fallacies and strictures of those who would have men return to the custom of a hundred years ago. Dr. Stephenson further discussed the point that with the axis-traction forceps there was a delicacy of manipulation, which a skilled man, while retaining the use of the ordinary handles, could exercise more especially in aiding rotation in O. P. positions. He found it, however, impossible to discuss that question in full on that occasion.

VII.—ARTHUR V. MACAN, M.B., F.R.C.P.

King's Professor of Midwifery, Trinity College, Dublin.

THE PRINCIPLE OF ADMINISTRATION.

I WOULD first wish to explain Dr. Playfair's observations about Dr. Labath's statistics of his cases of craniotomy during his mastership of the Rotunda Hospital, which he said were so numerous that it was not considered worth while to keep any statistics of them. This is not so, but each Master takes the records of his mastership away with him, and unless he has published them no one else can supply them.

Next as to the dictum that Dr. Milne Murray has given us, namely, that the forceps should be applied when the danger of delay is greater than the danger of delivery by the forceps. This seems quite simple, and at once gains our assent. But when we try to translate it into practice we find that it requires great skill and experience to know when the danger of the operation is less than the danger of delay. It is, therefore, my practice to impress on my students the fact that the chief danger of delay lies in want of antiseptics, and that if they were careful of the latter the want of the former is less important.

Personally I consider that the greatest triumphs of the forceps are the cases that require the least traction. If the force of resistance is the least greater than the driving force there can be no progress. Here the slightest traction with the forceps will effect delivery, and this seems to me the greatest triumph.

Before going on to the axis-traction forceps I would like to point out that the ordinary double curved forceps can be used—indeed, ought always to be used—as an axis-traction instrument. Traction in the direction of the handles of the double-curved forceps is always wrong, and traction by both hands, one at each end of the handle, drawing the latter in a series of parallel lines towards the chest of the operator, is essential to making the instrument an axis-traction instrument. If the axis-traction use of ordinary double-curved forceps were properly taught it would be quite unnecessary for the instrument maker to stamp on one of the blades of the forceps, "Left, lower, first." This seems to me to presuppose a very low standard of intelligence and knowledge of the instrument in the man that is about to apply them.

Nor can I agree with the view that the forceps should not be applied to the head until the largest diameter of the head is past the brim. For in such cases, if the head is already fixed to the brim, and the indications for delivery are urgent, the only alternative is craniotomy. Indeed, in cases of flattened pelvis it is not infrequent to feel the head being flattened inwards and springing outwards, according as the traction is applied or relaxed, and on examining the head afterwards we find a spoon-shaped depression on the child's head, caused by the pressure of the sacro-vertebral angle against the head. The axis-traction forceps which we use in Dublin is that introduced by my friend Dr. Neville, which, as far as I can see, is quite as effective, and much more simple and easy of application, than any other axis-traction forceps with which I am acquainted.

VIII.—J. M. MUNRO KERR, M.B., F.F.P.S.G.,

Assistant Professor of Midwifery, Glasgow University; Assistant Physician, Glasgow Maternity Hospital.

MODE OF GRASPING THE HEAD.

I DESIRE, owing to the enormous number of questions involved in such a discussion as the present, to confine myself entirely to one point and it is to an abuse, or rather misuse, that I wish to refer. It is the general teaching, and it will be found in the textbooks of Galabin and Playfair, that forceps should be applied without reference to the diameter of the child's head. Now, I consider this bad teaching, because there is a lack of exactness in it. The forceps should be applied with reference to the diameter of the child's head. If the head is low down in the pelvis, it is always possible to grasp the head transversely. If the head is high up it is more difficult; with care, however, even in these cases the head can be grasped nearly transversely, and the more nearly transversely it is grasped the better. If it be admitted—and I think it will be—that the more nearly transversely the head is grasped the better, then the general teaching I have referred to is defective, because it will be a chance whether or not the head is grasped in the best manner possible. Further, if cases of flat pelvis be considered, it is of the very greatest importance to have regard to the child's head and grasp it exactly antero-posteriorly. A slight departure from such a grasp will very readily result in injury to the child and injury to the mother from the forceps slipping.

IX.—J. W. BYERS, M.D.,

Professor of Midwifery and Diseases of Women and Children, Queen's College, Belfast.

CASES REQUIRING FORCEPS.

PROFESSOR BYERS thought that all would be agreed that the indications for the use of the forceps had been well put by Dr. Milne Murray: "Wait until you can see what Nature can effect; don't interfere until she fails." When danger arose either to mother or child, it was desirable to act at once; but there were other cases in which there was no doubt that, even in the absence of distinct evidence of danger, all other conditions being favourable, the use of the forceps was justifiable. He was entirely in favour of the use of axis-traction forceps, and it was only fair to Dr. Milne Murray to say that it was to this type of instrument he alone referred in the discussion. He was with those who said that full dilatation of the os was necessary before using the forceps, but in certain exceptional cases (as in eclampsia or sometimes in aged primiparæ) they might be called for earlier. As to using forceps at the brim, he preferred to apply them rather than to turn in a flat pelvis. As to the use of the forceps where the head had come to the perineum, he preferred not to take them off, but to continue their use until the head was fully delivered, but the point was to let the head come out not, as the majority of books taught, by extension, but in a gliding manner.

X.—W. JAPP SINCLAIR, M.D., F.R.C.P.,

Professor of Obstetrics and Gynæcology, Victoria University, Manchester.

UNSKILFUL USE OF FORCEPS.

DR. SINCLAIR expressed modified approval of the axis-traction forceps, but could not imagine a time when the ordinary long forceps would be discarded in favour of the axis-traction instrument. His address in Montreal had been misunderstood to some extent, and he proceeded to speak of Dr. Playfair's criticisms. He reiterated a statement of his position in regard to the use of forceps and the teaching of midwifery. There was at least sufficient ground for reconsidering current practice, and the forceps must be used unskilfully as long as they were used by men who had not received exact teaching so as to diagnose the position of the head before the instrument was used.

XI.—ROBERT JARDINE, M.D.,

Physician, Glasgow Maternity Hospital.

THE AXIS-TRACTION FORCEPS IN CONTRACTED PELVES.

DR. JARDINE said that in Glasgow they had to deal with a very large number of contracted pelves. Last year they had 10 per cent. of these cases requiring major operations. Like Professor Byers, he believed axis-traction forceps gave a better chance to both the child and mother. He had delivered children weighing 8½ lbs. alive through a true conjugate of 3 inches, and he always used the forceps in preference to turning. There was one precept to which he attached importance—never to turn after failure with axis-traction forceps. He had never seen a child saved in this way, but he had had cases of rupture of the uterus brought into the hospital which had been caused by this. Craniotomy was not an obsolete operation as some of the former speakers had intimated. In cases of this kind it should be done. In regard to putting on the instruments before the os was fully dilated, he said there were a few cases in which it was necessary, but such cases were very few. If the patient were under chloroform, it was, as a rule, possible to dilate manually. Theoretically the transverse grasp of the child's head was the right one, but practically it was often impossible, and he had seen over and over again that when the child was delivered the grasp was oblique. With a good instrument like Dr. Milne Murray's, it mattered not what the grasp was, as there would be no damage done to the head.

XII.—M. Handfield-Jones, M.D., F.R.C.P.,
Obstetric Physician and Lecturer on Midwifery and Diseases of Women, St. Mary's Hospital, London.

Value of the Axis-traction Forceps.

Dr. Handfield-Jones did not think that it was wise to teach students that the forceps must always be put on simply with reference to the position of the fœtal head rather than in relation to the lateral pelvic wall. In attempting such an application it was often very difficult to lock the blades, and much harm might be done by rough efforts in this direction. In cases in which the cervix remained undilated it was most important to ascertain carefully the softness and degree of distensibility of the lower uterine tissues, as when this was marked forceps might be much more safely and readily applied than in cases in which the tissues were thickened and rigid. Dr. Handfield-Jones was strongly in favour of using axis traction forceps, and related cases to show their value; the less degree of force necessary in making traction was an important point in their favour.

XIII.—Samuel Sloan, M.D.,
Consulting Physician, Glasgow Maternity Hospital.

The old midwifery forceps of Sir James Simpson are axis-traction forceps. The tractors are the man. In the so-called axis-traction forceps of modern days the tractors are there, but the man may not be. I have seen them used for non-axis-traction. As to the use of these at the outlet of the pelvis it seems to me to pass the wit of man to know what service they can be there. In that position in persistent occipito-posterior cases even the pelvic curve is often mischievous in preventing rotation. It is often a case not of causing flexion nor of causing rotation, but simply giving a little help to a wearied uterus. The ordinary straight forceps gives this, whilst permitting flexion and rotation. I have often saved the lives of children by recognising this.

XIV.—A. Lapthorn Smith, B.A., M.D., M.R.C.S.,
Montreal.

Abuse of Forceps.

Dr. Lapthorn Smith said that it was perhaps ungrateful of him to say anything against the abuse of the forceps, because without this abuse his occupation would be almost gone. Nearly all day he was either repairing injuries caused by the too early use of the forceps, or he was taking down the histories of women who had been injured by the forceps; and these women, one after the other, told him that they had never been well since the birth of their first child, when the forceps were employed two or three hours after the onset of labour. The doctor had told them that labour was delayed, and that the child could not be borne without help; and these women were found to have lacerations of the cervix up to the internal os, which set up reflex nervous disturbances which had wrecked their health and happiness; and tears of the perineum through into the rectum, causing incontinence of fæces. And all this misery was caused for what? To save the doctor the time required to go home and come back again, or because he had two cases going on at once. Could he not send someone else? Or they were applied too soon because the woman could not bear the pain. Had he no opium or chloroform with which to relieve her? Or he put the forceps on and tore the child out because some old woman there threatened to get another doctor who had delivered some other woman in her first confinement after only an hour of labour. Or as in another case the forceps were put on because there were no pains—the result, inversion of the uterus and death. He said nothing against using the forceps in emergencies; anything was justifiable then—cutting up the cervix or cutting open the uterus, anything to save the woman's life. But he was speaking of perfectly normal cases, women with big pelves (they had no rickets in Canada), and absolutely no indications whatever existing for using them, and yet for the paltry reasons mentioned above a woman's life and her child's were risked, and at the least her health was ruined. He impressed upon his students, and he implored the obstetricians who heard him, never to put on the forceps in perfectly normal first confinements, unless the labour had been going on actively for twenty-four hours. If they would do this they would not have to deplore so many fearful injuries due to the early use of the forceps.

XV.—J. Brassey Brierley, M.D.,
Manchester.

Defective Teaching in Midwifery.

Dr. Brierley said: I regret Dr. Japp Sinclair has left the room, but was glad to hear him apologise for the remarkable and misleading statements he made at the Montreal meeting and which were published in the British Medical Journal last year. His excuse is that he was short of time. It is unfortunate he spent so much in making assertions wholely unsupported by statistics of the undue frequency with which instruments are used by general practitioners. He now says that he sees the evil results of the mischievous use of the forceps much more frequently than he formerly did, and that it is not the practitioner, it is not the accoucheur who is responsible for the accidents which come under his observation. Who then is it, I would ask? Dr. Sinclair is the representative of the Manchester school of midwifery, the very centre of unorthodox teaching, and he tells us students should be taught how to examine and make a correct diagnosis, and I judge that he wishes to indicate to us that they are taught these by himself and other teachers in Lancashire. But what becomes of the pupils when they have acquired the theory? They go through a full course of medical teaching extending over four or five years and are, with the exception of having to pass their final examination, fully qualified. But before presenting themselves for this final ordeal they must produce evidence of having seen a certain number of labours. Now, how really do they acquire their practical knowledge? The student is introduced to a midwife who takes him to cases; probably the pupil may reside in this lady's house until he has seen the prescribed number. How is it possible that this young man can be taught how to put on the forceps or repair a ruptured perineum? I maintain practical midwifery should be taught efficiently by qualified men or women in hospital or district practice, and that young practitioners should not be allowed to go out into the world and take up one of the most important branches of medicine with no other practical training than that which he has received at the hands of what is generally known in Scotland as "a common howdie."

XVI.—John Moir, M.D.,
Consulting Physician, Royal Maternity Hospital, Edinburgh.

Dilatation of the Os.

Dr. Moir observed in reference to the dilatability of the os and cervix so intimately connected with the necessity of using the forceps, that he did not think the practice of the present day was quite so successful as in the days when he was a student. Professor Hamilton then taught that after labour had fairly set in the practitioner should sit quietly by his patient, keep his two fingers in contact with the os, to watch whether it was being jammed between the head of the child and the brim of the pelvis, and then gently press it up above the brim, or in that direction, so as to prevent any part of the cervix being intercepted. Gentle pressure on the edge of the os assisted it in slipping over the head, and frequently so soon as this happened the head entered the pelvis, and came down naturally. If forceps were then required all danger of injury to the os and cervix had disappeared.

XVII.—J. W. Draper, M.R.C.S.,
Huddersfield.

Mr. Draper wished to emphasise the opinion expressed by Dr. Lapthorn Smith that it was wrong to use forceps for the sake of saving the doctor's time. It was very easy to apply forceps in some cases of labour which otherwise would have been normal. The delay allowable before using forceps in the second stage of labour could not be measured by hours. The condition of the patient must be considered, and the time devoted to the case must not influence the judgment in deciding what should be done. His practice was always to soak his hands in solution of perchloride of mercury 1 in 1,000 before examining patients—this was especially needful when digital or instrumental help was used—and never to apply forceps unless he was of opinion that that procedure was the best thing to be done both for the present and future interests of his patient.

XVIII.—John Connel, M.D.,

Peebles.

Dr. Connel confessed himself a convert to the axis-traction principle. As a general practitioner, trained in the school of the elder Simpson, he could say that there was no comparison between the two instruments in the matter of efficiency. An important use which they could be put to had not been touched upon—namely, the prevention of tears in the perineum by gentle backward pressure during a pain when the head was about to be born.

XIX.—Thomas More Madden, M.D., F.R.C.S.Edin., M.A.O. (*Honoris Causâ*) R.U.I.,

Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Dublin.

Delay in the Second Stage.

Dr. More Madden, after referring to the greatly-increased use of the forceps as compared with the practice of his student days, and to the vast diminution of mortality, both maternal and fœtal, which generally speaking had resulted from the more modern methods of midwifery practice in this respect, and having also at the same time, moreover, alluded to the ill-results consequent on the possible abuse of the forceps in some instances, said that no fact in midwifery seemed better established than that the dangers of childbirth bore a certain relation to the length of the second stage of labour. In some cases, however, the child's head was down in the pelvis, and the labour advanced before the os uteri was fully dilated. Under these circumstances, in cases of absolute and unavoidable necessity, the forceps might be applied as soon as the os was sufficiently dilatable. If the uterine efforts were allowed to continue too long without any assistance in a case of difficult or obstructed labour, insufficient contraction followed by *post-partum* hæmorrhage might follow; on the other hand, if the child were dragged forth before the uterus had had sufficient time to contract, the same consequences might be produced. The most common cause of delay in the second stage of labour was inertia of the uterus requiring but little tractile aid to supplement the inefficiency of the natural *vis a tergo*, and it was in such cases that the employment of the forceps after the exhibition of an effective dose of ergot to stimulate the muscular tonicity of the uterus was needed in the great majority of instances. Hard and fast rules as to the time for which a patient should be suffered to remain in labour before instrumental assistance was resorted to were of no value, for one woman might suffer more from an hour's delay in the second stage than another would from four hours. The rule should therefore be to effect delivery by art whenever any danger to either the mother or to the child was likely to result from further protraction of the labour, and when other means likely to stimulate the natural efforts to effect delivery, such as friction over the uterus, stimulating enemata, and a dose of ergot had failed. The forceps were indicated also in instances of complex labour in which imminent danger to mother or child would result from the protraction of labour, and in some cases in which parturition was arrested by some mechanical impediment or slight disproportion between the fœtal and maternal structures. The compressive power of an appropriately-constructed midwifery forceps could assist the natural moulding process by which the head was forced through the pelvis. For many years he had chiefly relied in ordinary cases of delay in the second stage on a very short straight forceps which weighed only 8 oz., and was 10 inches in length, with blades 6 inches long, the curvature of which was very gradual. They were widely fenestrated, so that when applied the child's scalp might protrude and cover the rims, thus protecting the maternal passages from contact with the instrument during extraction. Immediately above the lock was a ring for the finger of the operator. The greatest space between the blades when closed was 2½ inches, and between the points 1¼ inch. This instrument, which was made by Messrs. Fannin of Dublin, and which he now exhibited to the meeting, was extremely portable, easily applied, and he believed fitted the child's head better than other forceps. It possessed little power as a lever or compressor, but was an efficient tractor, and therefore might be used in nine-tenths of the cases in which instrumental assistance was required during labour.

Double-curved Compressing Forceps.

For delivery above the brim or where labour was impeded by some minor degree of disproportion or other mechanical resistance he had devised the double curved compressing forceps which he had exhibited when he occupied the chair of this Section at the meeting of the Association in Glasgow ten years ago. The instrument weighed about 26 ounces, its length was 18 inches, the blades were 14 inches long, the fenestrated portion being 11, and the shanks 3 inches. The widest space between the blades when fully closed was 2¾ inches, and between the points 1¼. As the handles were movable the instrument without them might be applied in the ordinary obstetric position; or when a greater degree of compressing power and leverage was required, the handles being adjusted, might be employed with the patient on her back. To these handles was affixed a screw somewhat like that of the cephalotribe, by which the amount of compression exerted on the child's head could be exactly regulated. Strong shoulders were also placed below the loops to increase the traction power of the instrument. The blades were very gradually curved, and thus when applied, the pressure being equally distributed over the child's head, the instrument was less likely to slip away than other forceps. This instrument was comparatively seldom required, as it was intended mainly for the purpose of preventing the use of embryotomic instruments, and also for certain cases of complex labour, in which version could not be readily accomplished before the natural termination of the first stage of labour, but in which immediate delivery was essential for the safety of the mother and child.

More recently, however, Messrs. Smith and Sheppard of Dublin had made, in accordance with his instructions, forceps of intermediate length (13 inches), in which the double curve was followed, the fenestra were specially wide, the edges carefully bevelled, and the greatest width between the blades when closed was 3 inches, and between the points 1 inch. The instrument was provided with his adjustable axis-tractor, and being of metal throughout might, and of course should, be thoroughly antiseptised before and after use on each occasion. He claimed that with this instrument extraction could be effected in all cases in which deliverance by forceps, whether from above the brim or from the pelvic cavity, was feasible, except only in those more exceptional instances in which delivery could be expected only with an instrument such as the more powerful compressing forceps which he had already exhibited. He believed that in these cases the safety of mother and child was better assured by the use of his recently improved and shorter double-curved compressing forceps than by any other means. From five years' practical experience of these intermediate forceps in almost every variety of difficult labour and complication in which immediate delivery was indicated, he felt justified in recommending them as an efficient and generally applicable form of midwifery forceps. The double-curved axis-traction forceps were intended to replace in many instances the more powerful compressing forceps before referred to, and should as a rule be applied with the patient in the lithotomy position, well drawn down to the end of the bed, though the ordinary left lateral position might also be used, bearing in mind that whatever the situation of the fœtal head the position of the blade of the double-curved forceps must correspond with that of the transverse diameter of the brim of the pelvis. Moreover, this being a compressing instrument, the handles must not be suddenly or forcibly closed, and, in the case of a normal fœtal head at full term, they should remain a full inch apart. When further compression was absolutely necessary to accomplish delivery, this might be cautiously and gradually applied, until the blades were sufficiently approximated to allow of their being slowly drawn through the pelvic curvatures. Any sudden, violent, or excessive compression would prove destructive to the head, which, within certain limits, might be safely assisted in the gradual moulding and elongation necessary to affect its passage through the pelvis. With one or other of the instruments described in this communication, delivery might be accomplished in every case in which extraction with the forceps

was possible, and in most instances in which the cephalotribe was still resorted to.

Dr. Milne Murray's Reply.

Dr. Milne Murray, in the course of a brief reply, maintained that true axis-traction could only be obtained by an instrument built on the Tarnier principle, and anyone who used these would admit that it was a special feature of their action that not only was the grasp safer, but flexion and rotation were greatly favoured. If this were so then the value of these forceps at all parts of the canal was established. It was impossible in the time at his disposal to discuss all the matter referred to, and this was of less consequence because the only point raised in the paper which was contested was the question of the axis-traction as against the ordinary forceps.

SECTION OF OPHTHALMOLOGY.

D. Argyll Robertson, M.D., LL.D., President.

A DISCUSSION ON THE USE OF THE ROENTGEN RAYS IN OPHTHALMOLOGY.

I.—J. Mackenzie Davidson, M.B., C.M.Lond.,

Late Lecturer on Ophthalmology, University of Aberdeen, etc.

Demonstration.

Dr. J. Mackenzie Davidson gave a demonstration of the employment of Roentgen rays in ophthalmology. His methods were illustrated by a number of lantern specimens, and he showed and explained the apparatus he used to localise the position of foreign bodies in the eye. He had used the Roentgen rays in 41 cases of foreign bodies with satisfactory results. His method was based on getting the three co-ordinates of any point: if the three co-ordinates were found the position of the point could be ascertained. In the apparatus two knitting needles—one horizontal, the other vertical—were used as two of the planes; the photographic plate made the third plane. The patient's head was fixed in the apparatus and he was directed so to look that his visual axis was parallel to the horizontal needle. A loop of lead wire was previously fixed to the patient's lower eyelid by sticking-plaster, the point of the wire projected upwards and formed the landmark from which the position of the foreign body in the eye was calculated.

The Crookes's tube was placed on a sliding scale and two plates were taken, the tube being moved forwards 6 cm. for the second exposure. The two photographs thus obtained could be placed in stereoscopic relief. The tube used must emit the light from a very fine point, and the exposure must be short: about one minute.

A second apparatus was shown by which the distances were calculated from the proofs.

Dr. Davidson said that by this method he could say that a foreign body was so far behind and so far to the right or left as the case might be of the point of lead wire fixed on the patient's lower eyelid. His measurements had proved to be correct in all cases that had been operated on, and very satisfactory results had been obtained. Some of the foreign bodies were extremely minute. He then showed a number of skiagraphs, pointing out the foreign bodies.

II.—E. Treacher Collins, F.R.C.S.,

Assistant Surgeon, Royal London Ophthalmic Hospital.

Cases in which Foreign Bodies were Localised in the Eye by Means of the X Rays, and afterwards Removed with the Electro-Magnet.

Last January, in association with Dr. Mackenzie Davidson, I brought before the Ophthalmological Society the first five cases in which he had applied his method of localisation with the *x* rays to the determination of the position of pieces of metal lodged in the eye or its surrounding tissues. I was then able to show that not only did the *x* rays enable us to determine the presence or absence of even the smallest foreign bodies in the eye, but that Dr. Davidson, by their use, was able to foretell accurately the exact position in which the foreign body lay, its shape, and its size. The cases upon which these statements were based I must not refer to further here, as they are to be published in full in the *Transactions* of the Society to which they were communicated.

Since last January I have had four other cases to deal with which so well illustrate the advantages of the knowledge gained from Dr. Mackenzie Davidson's method in the performance of magnet operations, that I thought it would be interesting to bring them before the Association. In none of the cases could the presence of a foreign body be definitely determined from the clinical appearances alone.

In the first and fourth cases the foreign body was situated in the lens, in the second case it was in the vitreous, and in the third case it was in the iris. In all four cases the chip of metal was removed with the greatest ease by one insertion of the terminal of the magnet.

Case I.—J. A. was admitted to the Moorfields Hospital on February 16th of this year, under Mr. Tay, who kindly permitted me to take charge of the case.

History.—On October 10th, 1897, four months previously, while using a chisel, he was struck on his left eye with a piece of steel. He did not see the piece that struck him fall down again, and thinks it must have remained in his eye. For about a week after the injury the eye was inflamed and painful—gradually "a film grew over the sight." At the end of a week he was only able to distinguish light from dark with it. The inflammation then subsided, and the eye remained quiet until a week before Christmas, when it again became red and painful, and has continued to be so on and off at short intervals ever since. His right eye has recently become slightly intolerant to light.

Condition on Admission.—Mr. Maclennan, the house-surgeon, noted as follows: As to the left eye, marked ciliary injection; small transverse scar in outer half of the cornea on a level with the lower margin of the pupil. Anterior chamber of good depth. Iris slightly discoloured, small reddish stained area in its outer half behind the corneal scar. Pupil contracted, reacting only sluggishly to light. Lens opaque throughout: V. = Counting fingers at 6 inches; projection of light good. T. n.

Localisation.—Dr. Mackenzie Davidson examined the patient with the *x* rays, and localised a chip of metal as situated 3 mm. external to a piece of lead wire previously fixed to the lower lid, 7 mm. upwards from it and 4 mm. backwards. On working this out it led to the conclusion that the foreign body was in the lens directly behind the discoloured spot in the iris.

Operation.—On February 21st, the patient being under ether, I performed an iridectomy upwards and outwards, inserted the terminal of an electro-magnet into the lens in the direction in which the foreign body had been ascertained to lie, and at once withdrew a chip of steel. The opaque lens matter, which was very soft, was then extracted.

Result.—The wound healed rapidly, and on March 7th, a fortnight after the operation, when the patient left the hospital, the following note was made:—Eye quiet, angles of iris in good position, very little lens matter left. V = c + 10 $\frac{5}{5}$ c + 14 J. 15 slowly.

A month later the sight had somewhat improved. There was still, however, a membrane in the pupil which if needled would probably allow of his obtaining normal vision.

Case II.—A. M., aged 23, was admitted to the Moorfields Hospital on May 9th, 1898.

History and Condition on Admission.—Five days previously, while using a hammer and a cold chisel, he received an injury to his left eye. Mr. Maclennan's note of the condition of his left eye on admission was as follows:—Much conjunctival and ciliary injection, cornea slightly steamy. Anterior chamber of good depth. Scar of recent wound in sclerotic, a short distance from the inner margin of the cornea. Iris irregularly discoloured. Pupil semi-dilated and fixed (from use of atropine). No fundus reflex can be obtained, but some blood clots can be seen in the vitreous by focal illumination. V = Hand movement. T. n. Eyeball very painful on pressure.

Localisation.—Dr. Mackenzie Davidson, after taking two skiagraphs with ninety seconds' exposure each, diagnosed the presence of a spicule of metal 5 mm. in length, and located its lower end as situated 5 mm. inwards and 4 mm. upwards from a lead wire pointer placed on the lower lid. These measurements led almost exactly to the scar in the sclerotic. He further estimated that it was lying close behind the ciliary body, so that in this case, before commencing to operate, I knew the exact spot in the sclerotic beneath which the foreign body lay, the depth in the eye at which it was situated, the direction in which it was lying, and its exact size and shape.

Operation.—I planned my incision with a Graefe's knife in such a way as best to facilitate the removal of the foreign body, and on the first introduction of the terminal of the electro-magnet at once withdrew it.

Result.—On June 6th, twenty-five days after the operation, when the patient left the hospital the following note was made:—Very little injection; cornea bright, pupil dilated regularly. No fundus reflex, only blood clot in vitreous seen; wound healed; no pain. T. n. V = Hand movement. Right eye healthy. I have seen him from time to time since then. The eye has remained quiet, and the vision has slightly improved. Streaks of blood can still be seen in the vitreous; the tension is slightly minus.

Case III.—J. K., aged 41, came to me as an out-patient in May this year.

Condition on Admission.—He complained of inflammation and pain of his right eye, which had commenced a few days previously. On examination, there was seen to be a good deal of conjunctival and ciliary injection. The iris was discoloured, and the pupil would not [illegible] with atropine. The cornea was clear. In the outer half of the iris a small brown patch was seen, with a central yellow nodule. [illegible] ing the patient as regards injury, he stated that 15 years ago he was struck in the right eye with a piece of steel, and that he thought the brown spot had been there ever since then.

Localisation.—I treated him with hot fomentations and atropine for about a fortnight, but the inflammation and pain continued unchecked.

I then sent him to Dr. Mackenzie Davidson, who took two excellent skiagraphs, and located a small foreign body in the rounded mass in the outer part of the iris.

Operation.—On June 2nd I made an incision at the outer margin of the cornea with a keratome, passed the terminal of the electro-magnet in towards the dark spot in the iris, and at once withdrew a chip of steel measuring 1 mm. by 1.5 mm.

Result.—Four days later the inflammation and pain had so far subsided that the patient was able to leave the hospital, and since then his recovery has been uninterrupted.

This case is of interest, not only because the presence of a foreign body was detected by the *x* rays, but also because an acute attack of inflammation started in the eye after a period of fifteen years of complete quiescence. That the foreign body was the cause of the attack seems to be shown by its immediate subsidence after the chip of metal was removed. In the *Ophthalmic Review* for 1892 I recorded details of nine cases collected from the *Pathological Registers* at the Moorfields Hospital, in which a foreign body had been retained in the eye for an unusually long time—in all of them for more than 14 years, and in one for as long as 28 years. In four of these cases it was the onset of pain which ultimately necessitated the removal of the eye, and in another case the onset of sympathetic ophthalmia, 15 years after the receipt of injury to the exciting eye. In all these cases the foreign body was embedded in tissue but scantily supplied with nerves and vessels, or entirely devoid of them, such as the the sclerotic, lens, and vitreous. In the case I have just related, it is remarkable that a foreign body should have been so long tolerated by a tissue so well supplied with vessels and nerves as the iris.

CASE IV.—A. K., aged 35, was admitted under my care at the Moorfields Hospital on July 18th of this year.

History.—A month previously, while hoeing in a field, he was struck on his right eye by what he thought was a piece of flint. He was treated by a doctor who told him he had removed something from the eye. Since the injury the sight has been defective.

Condition on Admission.—Mr. Maclennan, the house-surgeon, made the following note:—Right eye, much conjunctival and ciliary injection. Small nebula in lower and outer quadrant of cornea; anterior chamber shallow; iris discoloured. Pupil irregular and inactive on account of posterior synechiæ. Lens opaque. Vision = Hand movement. Tension slightly minus. Left eye healthy and vision normal.

Localisation.—The following day Dr. Mackenzie Davidson took two skiagraphs, 90 seconds' exposure each, with the Crookes's tube in two different positions. From the examination of these he was able to diagnose the presence of an exceedingly small chip of metal (less than 1 mm. in diameter) in the eye. He further located it 5 mm. above and 1 mm. to the nasal side of a pointer placed opposite a known point on the lower lid, and at a depth of 5 mm. from the surface of the cornea. These measurements, worked out on the schematic eye, showed the foreign body to be situated in the lens, opposite about the centre of the outer half of the cornea.

Operation.—On July 21st, the patient being under an anæsthetic, I made an incision with a Graefe's knife—as in cataract extraction—upwards and a little outwards. I performed an iridectomy, and then passed the terminal of an electro-magnet into the outer half of the lens in the direction in which it had been determined that the foreign body lay. I at once withdrew an exceedingly small chip of metal, the biggest diameter of which is less than a millimetre. I then expressed a quantity of soft lens matter.

Result.—A severe attack of iritis, which is now gradually subsiding, followed the operation.

In conclusion, I would summarise the advantages to be derived from the use of the *x* rays in ophthalmic surgery as follows:—

I. They enable us in doubtful cases to determine the presence or absence of a metallic foreign body in the eye. With a good apparatus properly used, my last case shows that a piece of metal less than a millimetre in diameter can be detected in a skiagraph.

II. The exact position in the eye of a foreign body can by Dr. Mackenzie Davidson's method be located, which allows of the procedure which will most easily facilitate its removal to be deliberately planned; so that a minimum amount of disturbance of the tissues of the eye is brought about.

III. The same method allows of the exact size of an invisible foreign body being ascertained, and of the size of the incision necessary for its removal being determined.

IV. Dr. Mackenzie Davidson's localisation method enables us to say whether or not a foreign body which has entered the eye has passed through it into the orbital tissues, or remained in the eye, a point sometimes left as the result of clinical examination a matter of considerable uncertainty. For example, it is by no means uncommon for a foreign body entering the front part of the eye to pass through the vitreous, strike the retina, and rebound back into the anterior and lower part of the vitreous. In such a case, if the lens is not wounded, the foreign body may be invisible ophthalmoscopically, and the mark left where it struck the retina be taken for the aperture of exit of the foreign body.

V. The presence or absence of more than one foreign body is shown by their use. In a skiagraph taken by Dr. Mackenzie Davidson, and exhibited by Mr. Wray at the Ophthalmological Society, several foreign bodies were shown scattered about in the orbital tissue, the eye having escaped injury. In a case recorded in the *Philadelphia Medical Journal* by Dr. Howard Hansell, Dr. Sweet discovered by the *x* rays the unsuspected presence of a second fragment of metal—the one causing the mischief of which the patient complained being lodged in the eyeball, and the other external to it in the soft tissues of the upper lid, just anterior to the external orbital angle.

DISCUSSION.

Mr. CARGILL (London) mentioned four cases which he had had skiagraphed by Dr. Mackenzie Davidson. He had operated, and found the foreign bodies to be in the exact situation indicated. One patient who only had one eye had three foreign bodies, two of which were in the eye and one in the orbit. The ciliary injection had passed away and the vision was $\frac{6}{9}$. In the fourth case the body was very small, but was successfully removed. A fifth case was one in which the foreign body was imbedded in the sclera behind the eye.

Professor MCHARDY (London) spoke of an old man who had been struck in the eye by some pieces of flint. He had a corneal wound and a traumatic cataract. The lens was removed but no foreign body was found. The patient was examined later by Dr. Mackenzie Davidson, and a foreign body was found behind the iris. So much time had elapsed since the injury, and the eye was so inflamed, that he had thought it advisable to remove the eye. This was done, and the foreign body was found in the place indicated. It was encysted and could not be removed by the electro-magnet, although a piece of steel. Professor McHardy thought that all cases should be examined by Roentgen rays as soon as possible after injury if any doubt existed. He mentioned a second case in which skiagraphy revealed no foreign body; there was traumatic cataract which he had removed, and he had now no further anxiety about the case.

Dr. R. A. REEVE (Toronto) thought it would interest the members to see the apparatus devised by Dr. W. M. Sweet, of Philadelphia. The speaker had tried it in three cases; in the only one in which the foreign body was patent one of the negatives had unfortunately been spoiled. There could be no doubt, however, that Dr. Sweet had accurately located the position of foreign bodies. The apparatus consisted of an aluminium frame to hold the sensitive plate which was fastened by bands to the side of the head corresponding to the injured eye. It also carried two metallic indicators—wires ending in tiny knobs—set so that one of the latter was opposite the centre of the cornea and at a short definite distance from it, the other being towards the outer canthus on the same horizontal plane. Two negatives were taken, one with the tube and the two indicators on the same level, and the second with the tube about 30° below. The tube was somewhat in front of the plane of the eyes, about thirteen inches from the plate, and on the opposite side of the head to the latter. Two diagrams (circles) were drawn on paper of the size of the globe, one a horizontal section and the other vertical, and the three necessary measurements were made out from the relative positions of the knobs and foreign body in the two skiagraphs. Dr. Reeve also mentioned that Dr. Leonard, of Philadelphia, had succeeded by a different method; namely, by utilising a fixed point on the temple, taking several skiagraphs, and then making calculations based on a series of triangles, etc.

Mr. NETTLESHIP (London) mentioned a case in which he was enabled to avoid excision of an eyeball which had been believed to contain a chip of guncap, but in which Dr. Mackenzie Davidson after a very careful examination by the *x* rays failed to find any evidence of a foreign body.

Dr. TATHAM THOMPSON (Cardiff) wished to know whether any success had been obtained in the attempt to ascertain the presence or absence of foreign bodies in the eye by means of the fluorescent screen. He himself had not succeeded in recognising such small objects by this method. As regards skiagraphy in both cases in which he had used it, the results

were of negative value, as no foreign bodies were present. But in one he had thus been enabled to save an eye which would otherwise have been enucleated, and which recovered good vision after removal of a traumatic cataract.

Dr. Mackenzie Davidson in reply stated that a fluorescent screen would not enable one to see small foreign bodies, and even if they were seen their position could not be so easily calculated. The position of the foreign body had to be calculated from some known point.

DEMONSTRATION ON THE HISTOLOGY OF THE CORNEA.

By Thomas Reid, M.D.,
Surgeon, Glasgow Eye Infirmary.

Dr. Reid showed photographs by aid of a lantern of a number of sections through the cornea, illustrating the healing of wounds. He pointed out the rapidity with which the corneal epithelium proliferated and spread over the wounds, sometimes dipping into but more often hanging free over the injured corneal substance. The stratum lucidum was responsible for the growth of the epithelium. Some of the wounds had healed by first intention, others by second intention, and in the latter there was more scarring.

He then showed a number of sections of the cornea illustrating the intercalary cells of the corneal epithelium. These were chromatin bodies or cells of a migratory nature, which were seen in various forms of transition between the epithelium and corneal substance.

THE ABSORPTION OF AQUEOUS HUMOUR BY THE IRIS.

By Professor Nüel,
Liége.

[Abstract.]

The general opinion seems to be that there is no direct absorption of the aqueous humour out of the anterior chamber through the anterior face of the iris. If authors have not succeeded hitherto in revealing this absorption, it is especially because they experimented only on the rabbit, the iris lymph apparatus of which is entirely rudimentary. In the iris of cats and of dogs, however, the absorbent lymph apparatus is greatly developed. In cats there are in the peripheral zone of the iris very numerous open orifices—as many as one hundred for instance—which lead into interstitial lymph channels. These orifices can be seen with a moderately strong magnifying glass in an iris stained after removal of the cornea by nitrate of silver, and they are much more readily seen under the microscope. Four hours after the injection of a few drops of Indian ink into the corpus vitreum the ink enters largely through these stomata and penetrates deeply: (*a*) Towards the blood vessels, about which the particles become very numerous; (*b*) towards the pupil forming a continuous trail joining trails from the pupillary margin of the iris where the particles also enter, but through smaller and less numerous orifices.

In the dog four hours after injection into the corpus vitreum the ink fills up the ligamentum pectinatum, and thence penetrates into the iris in a trail similar to that seen in the cat, but proceeding from the periphery. This trail of ink is larger than that found in the cat's iris. Similarly another trail comes from the pupillary region where the ink penetrates through numerous open orifices. After this there can be little doubt that in man also the orifices in the anterior face of the iris, and the interstial clefts into which they lead, have the function of absorbing the aqueous humour; numerous pathological facts point in this direction, and can be explained if we admit the absorbent function of the anterior surface of the iris.

Professor Nüel then showed some lantern slides illustrative of the absorption of Indian-ink by the iris.

Discussion.

Dr. Berry (Edinburgh) said that it certainly appeared from Professor Nüel's interesting demonstration that some absorption took place by the iris. He would like to ask Professor Nüel whether he considered that the amount so absorbed was or was not considerable in proportion to that absorbed from the angle of the anterior chamber. He had been specially interested too in Professor Nüel's investigations, as they seemed to him to afford an explanation of the very rapid effect produced on traumatic iritis caused by the introduction of micro-organisms by the intravitreous injections of chlorine water. Evidently a rapid absorption of the antiseptic took place in the iris. This occurred too without any production of corneal intransparency such as followed injection into the anterior chamber. Were there absorption channels on the posterior iris surface or only the anterior?

Professor Nüel replied that absorption took place through the anterior surface of the iris, not through the posterior. The iris supplied the principal drainage area of the eye.

THE DEVELOPMENT OF THE OPERATIVE TREATMENT OF STRABISMUS.

By Professor Snellen,
Utrecht.

[Abstract.]

There are two currents of opinion as to the operative treatment of strabismus. Some ophthalmologists desire to confine the treatment as much as possible to simple tenotomy, the result of which method is that while cosmetic and functional advantages are obtained, there is more or less loss of lateral mobility which may counterbalance these advantages.

Others lay down the rule that there should be no sacrifice of mobility where such can be prevented by a more radical operation. Even a simple hypermetropic strabismus requires, according to their standpoint, an advancement or shortening of both external muscles, and they are not discouraged by the greater difficulty of the operation and troublesome after-treatment, which requires bandaging of both eyes for sometimes more than a week. The operative treatment for strabismus was first performed by Dieffenbach in 1839 on December 20th at 3 P.M. I repeat here Dieffenbach's statement of date and hour because it expresses the feeling of importance Dieffenbach attached to his attempt of curing squint. Only Strohmeyer had heretofore shown its possibility, and demonstrated it on the cadaver. Dieffenbach knew that time and experience are required before new methods reach perfection. We read in the preface of his work *Ueber das Schielen und die Heilung desselben durch die Operation*, 1872: "This method of curing strabismus by operative treatment now reaches the age of three years, but after thirty years will have passed people will look with pity on these experiments of mine and my contemporaries." And indeed so it has turned out.

Dieffenbach's method consisted in simply cutting the muscle. In many cases it was followed by insufficiency, with increasing deviation in the opposite direction, "whereby the eye proved to be thoroughly delivered into the power of its opponent." And soon the operator had to endeavour to rectify "this unhappy result, most prejudicial to art and bitterly disappointing to the patients."

Dieffenbach, Jules Guerin, and finally v. Graefe ascertained the manner in which this evil could be remedied. The first method of secondary operation consisted in detaching the cut muscle and rotating the bulb inwards, maintaining it in its required position by sutures which were inserted into the tendon of the antagonistic muscle, and then fastened over the nose with strips of plaster.

Both Boyer in France and v. Graefe in Germany sought for a method to avoid these disadvantages. Both, but especially v. Graefe, pointed out that the tendon, not the muscle, should be devided. Division of the tendon near the sclerotic prevented excessive retraction because of the attachment to Tenon's capsule. All later methods of operating for squint are based on this principle—that the tendon has to remain in connection with this capsular tissue. Another cause may produce insufficiency, and that is the adhesive inflammation occurring after excessive injuring of the surrounding tissues, by which the posterior part of the tendon or muscle becomes fixed to the globe. The functional power of the muscle depends on the length of the part which has a free movement, and the smaller the length of the muscle the less its movement.

All ophthalmologists meet with these insufficiencies after

operation, and it is these which have led to the replacing of tenotomy by advancement or readjustment of the antagonistic muscle. Different methods may be recommended; these may be classified as follows: (1) Those in which the insertion of the tendon is to be attached to a more anterior part of the sclerotic "readjustment," "advancement," *Vorlagerung*. (2) Those in which the tendon is shortened by excision of a portion of it—"tenectomy."

As the prototype of the first method Critchett's operation may be cited. Critchett cut the tendon close to the sclerotic, and fastened it near the margin of the cornea to a fold of conjunctiva. There was some difficulty in removing the sutures. Lately I have overcome this difficulty by passing the needle twice through the fold of conjunctiva, tying no knots. Other operators pass the suture through the episclerotic tissue, or even through the sclera. This prevents any tearing, but is not without danger to the deeper coats of the eye. Schweigger first introduced an operative method by which the same effect is produced by shortening the tendon. He excises a portion close to the sclera, and sutures the wounded surfaces together. Priestley Smith has improved this operation, preventing as far as possible all further injury to the surrounding tissue. I have had the opportunity of repeatedly convincing myself of the value of this method. The "readjustment" of Critchett is particularly valuable in cases of secondary operations where there has been much cicatrisation. Tenectomy is preferable where muscle and tendon are intact. Both methods require skill on the part of the operator, whilst their effect cannot easily be fixed beforehand. They also require long after-treatment, and there is injection and swelling of the conjunctival tissues for a considerable time.

Much easier is the simple tenotomy; by it satisfactory results are obtained in the majority of cases, certainly in all cases of spasmodic strabismus, as it is found with hypermetropia or paresis of accommodation; but good results are also obtained often in cases of paretic strabismus, where movement has been restored with the eye in a wrong position. Bad results in tenotomy are largely due to faults of execution.

V. Graefe replaced Dieffenbach's operation by tenotomy. In 1857, at my first visit to Berlin, I saw v. Graefe operate. It then struck me that his method did not give a satisfactory guarantee that the tendon would equally remain united, upwards and downwards, with Tenon's capsule. Comparing his operation with the English subconjunctival method, I operated in a way I considered would obviate this difficulty. This operation is preferably done without chloroform in order that its effect may be modified when necessary. The only pain is caused by pressure of the speculum, and that is done away with by having the eyelids held apart by an assistant after the manner proposed by Mikulicz of Breslau.

Any insufficiency occurring later is to my experience mainly ascribable to the tendon becoming incorporated in the cicatricial tissue, thereby shortening the functionally active portion of the muscle. One form of strabismus, called by v. Graefe "strabismus fixus," cannot be rectified by any of the above-mentioned methods. This is due to the extensive adhesions which exist, and are probably congenital. In high degrees of strabismus it is therefore advisable to test the passive mobility of the eyeball by seizing with the forceps one of the tendons close to its insertion.

In order to secure binocular vision it is often necessary to combine exercise and education with operative treatment. This overcomes the want of fusion and restores the muscular tonus.

Discussion.

Mr. R. Williams (Liverpool) said that the older he grew the more convinced he was of the necessity of operating. Glasses alone took a long time, and were often unsuccessful. Some young people with low hypermetropia had no other complaint but squint. In these he considered it right to operate early. The method of advancement he had adopted left no swellings or unsightly appearances, and was a simple operation.

Dr. Little (Manchester) said that a good deal depended on the nature of the operation performed. For convergent squint he did a primary tenotomy, either by v. Graefe's or Professor Snellen's method. There was little disturbance, and excellent results followed. Occasionally he brought forward the internal rectus, divided the tendon, and drew it to the corneal margin. Healing took a longer time after this operation. He was guided by the mobility of the internal rectus; if feeble, he preferred advancement. In secondary divergence he performed Priestley Smith's or Critchett's operation. He did not perform so many tenotomies as formerly owing to the tendency to subsequent divergence. He left a little squint always rather than have the eye put quite straight at the operation. He considered suitable glasses were most important in the treatment of strabismus; he found that even young children were greatly benefited by glasses.

Dr. Berry (Edinburgh) said that the aim in the operation for correction of squint should undoubtedly be to obtain a diminution of the excessive convergence without an inconvenient degree of insufficiency. This he believed might always be got by a properly performed tenotomy of one or both internal recti. It was, of course, necessary to distinguish between an immediate operative insufficiency and a divergence occurring at some subsequent time. The latter was due to the same causes which led to the diminution and disappearance of a convergent squint in the course of time even without operation. The principal cause of the former was a too great retraction at the time of operation owing to too great interference with the indirect attachments of the muscle. He had met with 3 cases of strabismus fixus, and had been unsuccessful in obtaining any cosmetic improvement in them by operation. In one case, indeed, he was unable to distinguish the tendon from the adhesion tissue. The cases were certainly congenital, but he could offer no explanation of their origin. With regard to advancements when they were really called for, he had found that a good hold of the episcleral and even scleral tissue, by which slipping of the stitches was prevented, though it might appear risky, was perfectly safe.

Dr. Argyll Robertson referred to Mr. Critchett's operation, which was especially suited for cases in which there was secondary divergence as a result of cicatricial contraction. He had found it a very valuable operation.

Professor Snellen replied, and advocated the use of glasses, especially in young children. If a proper glass was given, a cure often resulted in young children. In treatment after operation glasses were also very valuable.

AN OPERATIVE PROCEDURE FOR CASES OF INCARCERATED IRIS.

By J. B. Lawford, F.R.C.S.,
Ophthalmic Surgeon to St. Thomas's Hospital.

[Abstract.]

In cases of incarcerated iris there was often high tension, and the object of operation was principally to arrest the secondary glaucoma. It was advisable to divide the iris on both sides of the scar. He mentioned Bowman's operation, and showed the difficulty there was in using two knives simultaneously so as to prevent loss of aqueous, and he mentioned the alternative plan of doing two iridectomies at two separate times. Mr. Lawford's plan was to pass a v. Graefe's knife through the margin of the cornea and anterior chamber so as to emerge at the opposite corneal margin, both openings were enlarged and the knife withdrawn, taking care not to cause any haemorrhage. The iris was then divided through each opening on each side of the adhesion. He had found this method give excellent results.

Discussion.

Dr. Argyll Robertson asked if there was advantage in doing one iridectomy instead of two at different times.

Mr. R. Williams had done a similar operation for some time, but had lately discarded it owing to the unsightly appearance afterwards.

Professor Snellen said the principal object was to remove the high tension, the cosmetic effect was of much less importance. In Mr. Lawford's operation the cosmetic effect was not satisfactory. A better appearance was obtained by a mere sphincterotomy at the opposite side. The incision was made in the cornea and was small, and by only excising a small part of the sphincter the result was mostly satisfactory.

Mr. Treacher Collins said that as the object was to reduce tension and prevent staphyloma, it was unnecessary to do two

iridectomies. He performed one iridectomy in the opposite direction. The result was that the scar became flattened.

Dr. Little left the eye alone if the scar was a small one. The greater the opacity and adhesion the greater was the danger of glaucoma. He performed iridectomy as in glaucoma.

Mr. Lawford replied, and urged the advantage of doing all at one operation instead of two, especially where chloroform was required, as in children. He only operated when there was increased tension or staphyloma. He had done iridectomies in the opposite direction with good results. The cosmetic effect was not so important as the reduction of tension.

Dr. Berry said that Mr. Lawford's suggestion was interesting. Personally he had found no difficulty in performing the double iridectomy by two separate incisions with a keratome. The incisions he made not simultaneously, but one after the other, choosing the more difficult situation for the first when the anterior chamber could be entered before its evacuation. He believed, however, that it was seldom necessary to operate in these cases at all. When there was evident increased tension he preferred the single iridectomy opposite the site of the prolapse. When the condition gave rise to repeated irritation without any decided glaucomatous symptoms, he considered the freeing caused by the double iridectomy the most suitable interference.

ON PARALYSIS OF ACCOMMODATION AFTER INFLUENZA.

By Richard Williams, L.R.C.P.Edin., M.R.C.S.Eng., etc.,
Senior Surgeon Liverpool Eye and Ear Infirmary.

[Abstract.]

Dr. M. S., aged 35, was attended by me about three years ago for a mild but prolonged attack of rheumatic iritis. He had fairly good health since then until the end of December, 1897, when he had an attack of influenza. A week later he noticed a difficulty in reading, and came to consult me on January 18th, 1898. The left pupil was slightly larger than the right, and micropsia on the left side was noticed by the patient. V. R. and L.=$\frac{6}{6}$, $\frac{6}{6}$. Four or five days later the pupil was still larger and sluggish. He required + 1.25 to see $\frac{6}{6}$ with L.E. The R.E. remained normal. On February 2nd there was still greater difficulty in accommodating. He required +3 to read Wecker 2. Dist. V. as before. On February 7th he required +4 to read Wecker 2. There was some ptosis, probably due to irritation caused by eserine previously ordered. On March 30th the pupil was still double the size of the other. V.=$\frac{6}{6}$, $\frac{6}{6}$, c.+·50−$\frac{6}{6}$ ptly, without a glass. He could reader Wecker 2 c.+2. On May 17th the pupil was only slightly larger than the other. V.=$\frac{6}{6}$ without a glass. Wecker 1 with +2. The patient is still under treatment, but is otherwise quite well.

Discussion.

Dr. Argyll Robertson had seen two cases of paralysis of accommodation following influenza, but he could not say that the influenza had not been a coincidence.

Mr. Juler (London) said cases of paralysis of the third nerve were not uncommon after influenza. He had had a case where severe influenza had been followed by squinting, loss of accommodation, with ultimate complete recovery.

Dr. George Mackay (Edinburgh) said that he had seen several cases of unilateral paralysis. The dilatation of the pupil had been more marked than the loss of accommodation. These cases had followed influenza. In one patient the condition was very persistent and relief could only be obtained by the use of pilocarpin or eserine. The amount of these used was very important, in this case he had found the ordinary solution too strong, but had used the lamellæ with very good results.

Mr. Edgar Browne had found the third nerve most frequently affected after influenza, then the sixth, and lastly the optic nerve.

Mr. Cargill had had a patient with loss of accommodation and complete recovery.

Dr. Williams replied that he had had the same difficulty as Dr. Mackay with eserine.

A CASE OF CYST OF THE HYALINE CANAL PRODUCING A DOUBLE LENS.

By J. Tatham Thompson, M.B., C.M.,
Ophthalmic Surgeon to the Cardiff Infirmary.

[Abstract.]

Early in February of this year I was consulted by a lady, aged 42, living in Monmouthshire, who came complaining of defective vision in the left eye, both for near and distant objects, with occasional diplopia, and latterly of headache. She stated that the defective vision had remained constant for fifteen to twenty years. V. R.E = $\frac{6}{6}$. J. 1. L.E. $\frac{6}{36}$. J. 16. The external appearances were normal, and the pupils equal and active. On examination with the ophthalmoscope a peculiar irregularity was seen to exist in the refractive condition of the central area, very similar to that met with in cases of "keratoconus." The pupil was dilated with atropine, and on further examination a small transparent cyst was found to exist lying close behind the lens. I find that in my notes I described it as being like a drop of oil suspended in water. When the pupil was fully dilated and the eye slightly rotated, a sort of tail or prolongation could be made out, projecting backwards for a short distance. The cyst was also visible by means of focal illumination, when it assumed a somewhat pearly appearance. The fundus details appeared as very highly magnified when seen through the cyst. The distinct nature of the cyst and its differentiation from posterior lenticonus was shown by its position in the parallax and by the position of the spot of light when illuminated obliquely, showing a convex surface, not a concave one. The observations were corroborated by my colleague, Dr. D. Rose Paterson.

Mr. Hill Griffith said the condition might be a cystic dilatation of the hyaline canal in its anterior part; these cysts were usually dilatations of the posterior part of the canal near the disc.

Mr. Marcus Gunn said he had seen a similar condition in a child.

THE HYALOID CANAL AND ITS RELATION TO CYCLITIC EXUDATION.

By Angus M'Gillivray, M.D.,
Ophthalmic Surgeon to the Dundee Royal Infirmary, etc.

[Abstract.]

Dr. Angus M'Gillivray traced the development of the canal and its contents. He had injected it with colouring matter from the anterior chamber. In cyclitic exudation the lymph effused into the anterior chamber passed backwards into this canal. A specimen showing the canal and cyclitic exudation was shown, also a series of sections showing development.

Mr. Marcus Gunn said that many of these cases were diagnosed as cases of persistent hyaloid artery.

A CLINICAL AND BACTERIOLOGICAL STUDY OF DIPLO-BACILLARY CONJUNCTIVITIS.

By J. W. Eyre, M.D., M.S.,
Senior Ophthalmic Assistant, Guy's Hospital.

[Abstract.]

After referring to a paper on Subacute Conjunctivitis, by Morax, in the *Annales de l'Institut Pasteur*, 1896, No. 6, Dr. Eyre detailed the clinical features of the disease gathered from observations on cases in Dr. Brailey's out-patient clinic at Guy's Hospital, where it forms about 2.5 per cent. of the new cases. Both sexes and all ages were susceptible to the disease, though it was most common in middle-aged women. It was definitely contagious, and was transmitted through the medium of the discharge. The incubation period averaged five days. The subjective symptoms were slight, and consisted of stickiness or gumming together of the lids in the morning. Slight photophobia, lachrymation, smarting of the eyes, and the presence of a small quantity of whitish discharge were also noted. The

most marked feature of the disease was its chronicity; when untreated it lasted for many months.

The Objective Signs were fairly characteristic. At first limited to one eye, the disease soon became symmetrical. Small masses of greyish, mucus-like discharge were noted adhering to the roots of the lashes and collecting in the neighbourhood of the caruncle. Slight injection of the bulbar conjunctiva and marked injection of the palpebral was present, together with an erythematous tinge along the free edge of the lower lid and some congestion of the caruncle.

Treatment was very effectual, and usually resulted in a cure in the course of a few days. The salts of zinc were especially useful.

Microscopical Examination of the discharge showed the presence of fibrinous threads, polynuclear leucocytes, and numbers of bacilli arranged in pairs or short chains.

Cultivations from the secretion upon the ordinary media of the laboratory usually failed, as the organism required the presence of serum in the media in order to enable it to grow *in vitro*. After remarking upon various points of technique in the preparation and use of serum media, Dr. Eyre described the naked-eye characters of the growth upon serum-agar, serum broth, inspissated serum, and blood-agar. The organism was a non-motile, non-sporing, aërobic bacillus, 2μ to 3μ in length by 1μ broad. It was arranged in pairs, as a diplo-bacillus: upon some media it became somewhat stunted, and so resembled a diplococcus. It possessed neither flagella nor a capsule. Involution forms appeared early in the course of its growth upon artificial media; these were of various shapes, long thick badly staining rods, gigantic club forms, large dumb-bells, spheroidal bodies, etc. The bacillus did not grow upon nutrient gelatine or potato nor in milk. It did not produce gas or indol, and induced a faintly acid reaction of the medium in the course of its growth. It liquefied inspissated blood serum. It did not grow below 30° C. nor above 40° C. It soon died if exposed to the room temperature. Its thermal death point was reached at 56° C., an exposure of 15 minutes being necessary. It stained well with all the anilin dyes, and was decolorised by Gram's method.

Pathogenesis.—No method of inoculation or treatment had enabled the writer to render the bacillus pathogenic for any of the lower animals; but when a pure culture was introduced into the conjunctival sac of man a typical attack of conjunctivitis was produced, and the ensuing discharge contained no other organisms than this diplo-bacillus.

MR. LAWFORD referred to some investigations which had been carried out for him by Dr. Jenner (the superintendent of the Clinical Laboratory at St. Thomas's Hospital) on cases of diplo-bacillary conjunctivitis. These, though confirming in general the results of Morax and Axenfeld, did not wholly agree with the statements of these observers. He had, after some experience, learned to diagnose the case with a fair degree of confidence; their clinical appearances were in many respects those long described as angular conjunctivitis.

THE BACTERIOLOGY OF THE NORMAL CONJUNCTIVAL SAC,

AND ITS PRACTICAL BEARING ON THE UTILITY OF ANTISEPTICS IN OPHTHALMIC SURGERY.

By ARNOLD LAWSON, F.R.C.S.,

Ophthalmic Surgeon, Children's Hospital, Paddington Green.

[ABSTRACT.]

THE bacterial condition of the normal conjunctival sac is of considerable importance, not only from a scientific standpoint, but from its practical bearing on the methods of ophthalmic surgery. There has been so much diversity of opinion amongst observers that a further contribution on the subject may help to a definite and satisfactory conclusion.

The work of others may be briefly summarised as follows:

1. All observers agree that the normal conjunctival sac contains bacteria in the majority of cases.

2. Opinions differ as to whether the normal conjunctival sac is ever sterile. Leber considered that it was frequently sterile; the majority of observers favour the opposite view.

3. The majority of late writers agree that the number of bacteria is usually small.

4. Opinions differ as to the pathogenic properties of the bacteria; later writers believe that pyogenic organisms are present in an attenuated form.

EXPERIMENTAL INQUIRY.

My investigations have extended over a series of 200 cases. The greatest care was taken to select cases in which the conjunctival sac was objectively and subjectively normal. Cases were selected both from people living in towns and from those living in the country. The method employed was to rub a sterilised platinum loop well over the palpebral and bulbar conjunctiva. The loop was then rubbed over a tube of Loeffler's blood serum. Blood serum was chosen to prevent any swamping of organisms by the exuberant growth of pyogenic cocci, which might have occurred if agar-agar was employed.

The following results were obtained:

159 tubes proved fertile.
41 tubes remained sterile.
16 tubes contained growths of the pyogenic cocci, including 1 case of aureus and 6 cases of albus, and 2 cases of Fraenkel's pneumococcus.
14 tubes contained growths of the S. epidermis albus, a harmless variety of the S. pyogenes albus. If this coccus is included with the pyogenic cocci there were 30 tubes containing growths of pyogenic bacteria.

Many inoculations of fresh cultures were made into the conjunctival sacs of guinea-pigs and rabbits, but in every case with completely negative results.

As a rule the number of colonies was very small, and usually limited to two or three in each case. The xerosis bacillus was found in 118 cases. In 90 cases it appeared in pure culture. Four or five other varieties of non-pathogenic bacteria were also isolated, and in 8 cases other bacilli were found, including two specimens of the mesentericus group. Sarcinæ were found in 6 cases, and two varieties of torula were also found in 1 case.

The most interesting features of the report are:

1. The frequency with which the so-called xerosis bacillus was found.

2. The comparative infrequency and attenuated form of the pyogenic cocci.

3. The considerable number of sterile tubes.

THE XEROSIS BACILLUS.

With regard to the xerosis bacillus, I believe that this is the first time the bacillus has been recognised as a common resident in the conjunctival sac. The fact has probably been overlooked on account of the difficulty of growing the bacillus on any other medium than blood serum. If this medium is employed it will be found to be by far the commonest micro-organism encountered in the normal conjunctival sac. It is not infrequently found in as large numbers in the healthy conjunctiva as in xerosis. It has therefore no connection with the disease, and its name is most inappropriate.

THE SCARCITY AND INNOCUOUSNESS OF MICROBES IN THE CONJUNCTIVAL SAC.

When the anatomical formation of the conjunctival sac and its constant exposure to infection is considered, it would be expected that the sac would teem with many varieties of virulent and non-virulent organisms. The reverse is the actual case. If the xerosis bacillus be excepted the conjunctival sac is singularly devoid of living micro-organisms. The dangers of pyogenic organisms lie not only in their presence but also in their numbers or dose, and in their virulence. In both of these respects the pyogenic cocci of the conjunctival sac seem remarkably deficient.

The sum of these facts seems to point strongly to the conclusion that the conjunctival sac, probably chiefly by its epithelium, but also possibly in part by the lachrymal secretion, possesses great powers of resistance to the growth and life of pyogenic organisms.

This conclusion is further emphasised by the great immunity of eye wounds to suppurative processes even before the days of aseptic surgery. This local vitality of the conjunctiva affords another strong reason for the abolition of strong antiseptic solutions from the practice of ophthalmic surgery. The use of antiseptic solutions has already been

discontinued by many of the most experienced ophthalmic surgeons on account of their irritating qualities. If the conjunctiva is, as I believe, a more powerful antiseptic in itself than any solution that can be safely applied to the eye, the futility of employing chemical agents whose only action on it can be to injure its vitality will be still more evident.

Discussion.

Dr. Eyre said that Mr. Lawson's observations confirmed his own, which had been recorded in his report to the Scientific Grants Committee last year. Out of 150 observations he had found 50 per cent. sterile. Of the tubes in which growth occurred, 30 contained pyogenic organisms, including streptococcus pyogenes longus 3 times, staphylococcus pyogenes aureus 13 times, etc., and these were determined by inoculation experiments to be virulent. He considered that the number of sterile tubes depended largely on the technique employed. If sterile cotton wool swabs were used, the proportion of non-sterile sacs was larger. The upper fornix was much more frequently sterile than the lower, and while the bactericidal action of the lachymal secretion was of value to the surgeon, the constant irrigation of the sac by the fluid was more efficacious. With a previous lachrymal system the constant flow of secretion through it was sufficient safeguard against the invasion of the conjunctival sac by micro-organisms from the nasal fossa.

Dr. McGillivray said he had given up the use of antiseptics in ophthalmic surgery; he only used sterile normal salt solution. This produced no reaction or irritation in the eye. He considered that more pyogenic organisms would be found in the sac if large quantities of the secretion were taken. He believed that the conjunctival sacs of all persons over the age of 60 years were septic.

Mr. Lawson replied that he had found several sterile sacs in old people, but that there was a greater proportion of non-sterile sacs in old than in young persons. This was probably due to the defective drainage so frequent in old people.

CASE OF ORBITAL CYST.

By A. Hill Griffith, M.D.,
Surgeon, Royal Eye Hospital, Manchester.

History.

Mrs. R., aged 53, was sent to me on March 11th by Dr. Rodger, of Cheetham Hill, for a swelling at the inner and upper part of the left orbit, which had been growing for about eight or ten years, and which she was anxious to have removed. The patient had rheumatic fever when 22 years of age, and had since been troubled with rheumatism. She had some cardiac affection, but her general health was good.

Condition When First Seen.

A rounded prominent swelling, the size of a cherry, was noticeable just above the innermost part of the upper lid, obliterating the oculo-palpebral fold at this situation. The upper lid drooped somewhat, and could not be everted. There was no displacement of the eye, no diplopia nor impairment of vision. The lower canaliculus had been slit up by an ophthalmic surgeon some eight years ago on what, I should imagine, must have been quite insufficient grounds.

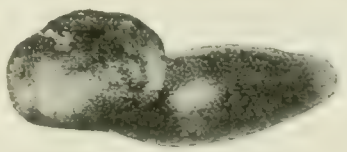
When one attempted to palpate the growth it slipped back bodily into the orbit, the eye becoming slightly protruded, and, conversely, when the globe was pushed backwards, the tumour became very prominent, and could be felt as a smooth, uniform, semispherical swelling, not adherent to the skin or other structures. Fluctuation was not made out. Several attempts were made to fix and keep forward the tumour by means of a horn spatula, pressed between the eye and the growth, but the latter always slipped back into the orbit, showing that the larger half lay far back. It was thought probable that we had to do with a dermoid.

Operation.

I operated a few days later in the presence of Dr. Rodger and his son, Dr. Stewart Rodger, assisted by Mr. W. E. Smith, our junior house-surgeon. A few drops of a 4 per cent. solution of cocaine were injected under the skin, and standing behind the patient's head, the tumour was rendered prominent by pressing the eye backwards, with the pulps of the index and middle fingers of the left hand, the nails intervening between the eye and the tumour and protecting the former. A nearly vertical skin incision was now made with a small curved Syme's bistoury, and a little dissecting and scraping exposed the front of an undoubted cyst, which was very cautiously freed, chiefly by the use of a curved, blunt-pointed, secondary cataract knife and scissors, and finally shelled out entire. The wound was completely closed by a few catgut sutures, and covered by a light dressing and bandage. The only adhesions that gave any trouble were in the form of a band around the equator, and as soon as these were divided there was very little difficulty in levering out the cyst by the use of closed blunt-pointed, curved scissors. The patient made a perfect recovery so that when I saw her a week later one could see nothing amiss with the eye.

Description of Cyst.

When removed the cyst had much the same shape of a Rugby football, with a slight circular constriction around the middle corresponding to an irregular band of connective tissue. It measured 21 by 15 mm. and lay in the orbit with its long axis pointing fore and aft. It was so tense that even when laid upon the table one could not make out any fluctuation. The sketch by Dr. Fothergill, which was taken



Natural size after spirit.

after it had lain five days in weak spirit, gives a good idea of its size and appearance: it had lost a good deal of its tenseness, but the measurements found were not appreciably lessened. It was translucent and thin walled and a few minute blood vessels were traced; it resembled a distended urinary bladder.

After lying for six days in the spirit I tapped the cyst and collected 35 minims of a light straw-coloured watery fluid; some was lost, but I should think not more than 10 minims. It was neutral in reaction, contained chlorides, and was rich in albumen. Microscopically were found a few epithelial cells and one or two leucocytes. The interior was very smooth, white, and shining like satin.

Microscopic sections across the middle part of the cyst embedded in celloidin showed that the wall was composed of closely-set parallel lumellæ of fibrous tissue, lined throughout on its inner surface by a single layer of rather small flat epithelial cells with single large nucleus. The outer layers of the cyst were composed of looser fibrous and elastic tissue, showing in places sections of blood vessels both longitudinal and transverse. Professor Delépine kindly examined the sections of the cyst wall, and confirmed my observations as to its structure. He also proved to me by the picric acid reaction that there was abundance of albumen in the fluid, whereas I had thought there was none.

Nature of the Cyst.

The presence of an epithelial lining absolutely excludes a hydatid or cysticercus, the former being, next to a dermoid, the most frequent form of orbital cyst, the latter having been met with only very rarely. The watery nature of the contents, the thinness of the wall, and the absence of hair follicles, glandular or other skin elements, shows that it is not a dermoid. It corresponds in many particulars to a "dacryops," a cystic dilatation of some part of the lachrymal gland or of one of its ducts, of which rare condition a well-recorded case is given by Arnold Lawson in vol. vii of the Ophthalmological Society's *Transactions*, but for several reasons I am not in favour of this diagnosis, as the swelling was at the *inner* and not at the outer part of the upper eyelid, and the lining epithelium was not glandular. On the whole I am inclined to regard it either as an offshoot from the capsule of Tenon, or from the bursa around the tendon of the superior oblique muscle as it lies in the pulley. Professor Delépine is in favour of the former view. The ring of fibrous tissue encircl-

ing the cyst probably corresponds to an aperture in the orbital fascia, through which the cyst had made its way, remaining suspended by this structure.

THE OPERATIONS NOW USUALLY SUBSTITUTED FOR ENUCLEATION OF THE EYEBALL.

By JOHN HERN, M.D., F.R.C.S.Edin.,
Ophthalmic Surgeon and Surgeon, Darlington Hospital.

IT should be clearly understood that in some cases, especially those in which sympathetic irritation has supervened in the uninjured eye, enucleation is the only justifiable proceeding.

1. EVISCERATION.

(*a*) The operation I prefer is to transfix the globe with a Graefe knife, entered about 2 lines external to the corneal margin, about the centre of the globe, passed through the vitreous chamber, and a counter puncture made exactly opposite to the point of entrance; the knife is now brought out by cutting through the sclera, just beyond the corneal margin; another incision is now made with the scissors on the opposite half of the globe corresponding exactly to the incision made with the Graefe knife; thus the whole cornea is removed. Whatever remains of the iris and ciliary body is now removed by the curette, being careful to retain as much of the vitreous as possible; the gaping wound in the sclera is now carefully stitched up. This leaves a good freely movable stump, on which in about six weeks an artificial eye can be fitted. The cosmetic effect is extremely good.

2. MULES'S OPERATION.

In suitable cases, if done without delay (on the day of accident if possible), if done with strict antiseptic precautions, and if a glass ball be selected which fits loosely into the emptied sclera, results are obtained from this operation which leave nothing to be desired.

3. REMOVAL OF ANTERIOR STAPHYLOMA.

This is chiefly valuable in children in whom enucleation necessitates the wearing of an artificial eye, which is always getting broken, from the fact that the orbit grows and the eye becomes too small. I always perform this operation exactly as advised by our President (Dr. Argyll Robertson) in his lectures delivered at the College of Surgeons in 1881, and have found its results most satisfactory; frequently one-half or even two-thirds of the cornea has been left, and the cut corneal margin sutured to the sclera, and has always resulted in good union.

4. Optic nerve section I have never performed.

DISCUSSION.

Dr. SPENCE MEIGHAN (Glasgow) said he had operated on a dozen cases, and found that in one there had followed sympathetic ophthalmia, although the operation had been performed in the usual careful manner, and on subsequent examination of the stump it had been found perfect. He preferred enucleation to evisceration in most cases. In exceptional cases, such as staphyloma of the cornea and recent injuries, especially in children, he performed evisceration.

Dr. BULLER (Montreal) said he had frequently performed Mules's operation ever since its first introduction. His first cases were not encouraging, but for the past six or eight years he had had no untoward results. He operated in a manner he had described at the last meeting of the Association. The cosmetic result of this operation was a great incentive to its performance. He advocated it in recent injuries of the eyeball, ordinary large staphylomata, and in all cases where there was no apparent danger of sympathetic ophthalmia.

Professor SNELLEN remarked that he had seen sympathetic ophthalmia follow.

Dr. MCGILLIVRAY drew attention to the absence after Mules's operation of the disagreeable mucous discharge so frequently seen where enucleation had been performed and an artificial eye was being worn. He considered that if the whole uveal tract were removed intact there was much less danger of sympathetic inflammation. He separated the iris at the periphery, and removed the uveal tract as a whole.

Dr. HILL GRIFFITH said he was very satisfied with Mules's operation, once there was union the glass globe never came out, the globe should be so shaped as to fit the eyeball.

Dr. LITTLE said he sometimes performed evisceration, but more often enucleation. In staphyloma and recent injuries he had done Mules's operation. He had seen a case in which Mules's operation had been done; union had taken place, and three years later the globe had ulcerated out.

Dr. ARGYLL ROBERTSON said that there was often great irritation after eviscerations. He suggested that the glass globe used should be roughened instead of being smooth outside; it would form a more solid stump, and would be less likely to ulcerate out.

TWO CASES OF TERTIARY SYPHILITIC LESIONS OF THE EYE.

By HENRY E. JULER, F.R.C.S.,
Ophthalmic Surgeon and Lecturer on Ophthalmology, St. Mary's Hospital.

[ABSTRACT.]

MR. JULER read the notes of two cases in which rare tertiary syphilitic lesions of the eye had developed.

CASE I.—GUMMA OF THE CILIARY BODY.

A young man-servant, who had acquired syphilis of a severe type, was admitted into the male Lock Hospital with rupial sores only two months after the development of the chancre. A fortnight later iritis showed itself, first in one eye, then in the other, which did not yield to treatment, but passed from the simple into the more serious form known as iritis gummosa. At this stage he was transferred to Mr. Juler's care.

Though under antisyphilitic treatment and atropine his eyes passed from bad to worse, and eventually a ciliary staphyloma developed in his left eye to the outer side of the cornea. Much lymph was present in the anterior chambers of both eyes, preventing a view of any growth behind the pupil. The anterior chamber was shallow at the site of the staphyloma, which suggested a tumour of the ciliary body. The tension was slightly subnormal (T − 1) in both eyes. The staphyloma increased in size, and the recovery of sight in the left eye seemed hopeless; at this time a staphyloma appeared immediately above the cornea of his right eye. His vision was now reduced to perception of light only. Mercury, which had been temporarily stopped, was again given internally, and also by inunctions. Effusion into his left knee-joint, double orchitis, and a gumma on his right fibula appeared while the staphyloma was at its worst; also at this time, which seemed to be the height of the disease, he had an intermittent temperature. From this period onwards, all the specific lesions began to disappear under mercury and increasing doses of potassium iodide. The staphyloma in the right eye disappeared first within three weeks of its appearance; it never reached the dimensions of that in the left. After it had gone it was noticed that the iris had been drawn up, giving the appearance of an upward coloboma. There were extensive synechiæ, and the pupillary area and the coloboma contained an organised inflammatory membrane. The vision in this eye, however, appeared to be the better.

The staphyloma in the left eye took many weeks to disappear, and even three months after the swelling had subsided there was seen a blue discoloration of the sclera. The lymph in the pupillary area became absorbed, and the iris at the outer part was drawn into the ciliary region, presenting the appearance of an outward and downward iridectomy. Ophthalmoscopic examination revealed at the extreme outer periphery a large tract of choroidal atrophy immediately behind the coloboma. In both eyes the effect of the growth was to drag by cicatricial contraction the iris into the ciliary region, and also to produce an alteration in the curvature of the cornea. The correcting lens for the right eye was + 2.5 D. cyl. axis horizontal, and that for the left eye + 5 D. cyl. axis 55° or 35° out of the vertical. There was every reason to believe that he had no astigmatism in his eyes before the attack, and this, coupled with the fact that the astigmatism was greater in the eye with the larger gumma, and that the curvature of the cornea was in each case least in the meridian of the growth, was, Mr. Juler thought, strong evidence in support of the view he had expressed. The vision in the right eye was $\frac{6}{18}$ Snellen, in the left less than $\frac{6}{60}$ Snellen. With the astigmatism corrected, R.V. = $\frac{6}{9}$. L.V. = $\frac{6}{9}$.

Mr. Juler expressed the opinion that the facts of the case justified the diagnosis of gumma of the ciliary body. He believed that one had existed in each eye, and that the restoration of such good vision was, from the literature on the subject, very exceptional.

CASE II.—INTERSTITIAL KERATITIS IN ACQUIRED SYPHILIS.

The patient was a married woman, aged 33, who had developed a sore on her genitals six weeks after marriage, and subsequently had had one miscarriage and a stillborn child at the eighth month. This was the sole evidence of syphilis. Ten years after the occurrence of the sore she suffered from a severe attack of irido-cyclitis in her left eye. This yielded to antisyphilitic remedies and atropine. A year later she attended again with peripheral choroiditis in the same eye, associated with some contraction of her visual field. This in turn subsided under similar remedies. She returned for the third time after about a year's interval with typical interstitial keratitis in her right eye. It presented the characteristic diffuse ground-glass appearance, and after a time became vascularised. It took about four months to run its course, and though not yet quite gone the vision is much better. So far the left eye has not been attacked.

Mr. Juler considered the case worthy of publication owing

to the paucity of the literature in this country on keratitis in acquired syphilis. Continental ophthalmologists had been more fortunate in meeting with these cases. One other case had come under Mr. Juler's care which had been reported in his Harveian Lectures, published in last year's *Lancet*, vol. ii.

Discussion.

Dr. Argyll Robertson had seen many cases in which the astigmatism following gummata of the ciliary body had almost disappeared after a time. The tension was an important factor.

Mr. Hill Griffith said that it was a rare condition, and he had seen it result in the complete destruction of vision.

Mr. Juler said that in his case the intraocular tension was normal, and vision had been restored in such a way as to encourage one to persevere with treatment in similar cases.

Dr. Hinshelwood said he had seen some cases similar to Mr. Juler's second case; one, a patient with interstitial keratitis, had been previously treated for syphilis; she had a nose affection thought to be lupus; on resumption of anti-syphilitic treatment, the nose condition at once improved. Another case with many syphilitic symptoms improved rapidly when given mercury.

Mr. Lawson thought it was more common to find interstitial keratitis as a result of acquired syphilis than was generally supposed. In one instance a man had chancre of the conjunctiva, which was afterwards followed by a typical interstitial keratitis. Another patient who had had syphilis twenty years before had an interstitial keratitis which cleared up.

Dr. Argyll Robertson thought a distinction should be drawn between the characteristic cases of interstitial keratitis and cases of keratitis punctata. The cases mentioned by Mr. Juler belong to a different category to those of congenital interstitial keratitis.

Mr. Juler said that the cases mentioned by Dr. Hinshelwood were apparently cases of acquired syphilis. He considered that the cases were examples of true interstitial keratitis, and that syphilis was the original cause, but that the attack might be precipitated by influenza or other debilitating causes.

CASES OF MYOPIA IN WHICH THE SUBJECTIVE TEST AND ESTIMATION BY RETINOSCOPY SHOWED CONSIDERABLE DIFFERENCE IN THE AMOUNT OF THE ERROR OF REFRACTION.

By G. Victor Miller, M.B., C.M.Edin.

I bring these cases under your notice chiefly for the purpose of gaining information; first, as to whether others have come across similar cases, and, secondly, as to what views they hold with regard to such, and how they are guided in prescribing the necessary lenses for the correction of the error.

Case I.—W. M., aged 25. He was wearing —6 D. for both eyes, and had done so for the past five years. With these glasses he reads $\frac{7}{15}$. He does not wear them constantly, but chiefly for music and going about purposes. They cause a feeling of strain and fatigue in the eyes but do not induce headaches. He has no discomfort when not wearing the glasses. Those worn at present are stronger than those he wore five years ago. Convergence is good but there is slight latent divergence. When examined by retinoscopy with the glasses on considerable hypermetropia is revealed, without the glasses a —3 D. spherical distinctly turns the shadow in the vertical meridian and a —4 D. in the horizontal meridian. In this instance the horizontal meridian was the meridian of greatest refraction. When put before the test types with these lenses in the frames he reads $\frac{7}{15}$; but the visual acuity is greatest with —6 D. spherical = —1 D. cylinder and axis vertical. Therefore, if we make the usual addition of —1 D. to the retinoscopic estimation, according to that method where a concave mirror is used, there still remain 2 dioptres to be accounted for. That is the glasses he sees best with, according to retinoscopy overcorrects his error by 2 D., in fact, makes him hypermetropic to that extent. By direct estimation the best view of the fundus was got with a —7 D. To do away with any spasm of accommodation on the patient's part and at the same time to make certain my own accommodation was fully relaxed I atropined his eye and also my own; the vessels of the fundus then appeared to be best seen with —6 D. I should mention that there was a well-marked staphyloma posticum to the outer side of the disc, and the disc itself appeared to be considerably distorted. With regard to correction, I had considerable difficulty in knowing what to prescribe, but ultimately decided to be guided by retinoscopy and prescribed the same. On next seeing the patient he informed me he had taken to his old glasses, as he could see more detail with them. I increased the strength but he still preferred his own, so finally I ordered lenses which gave the best result when he was tested subjectively. I may say that the glasses in the first instance had not been prescribed by an ophthalmic surgeon.

Case II.—T. N., a clerk, aged 24, almost exactly similar to the case of W. M. This patient objected to glasses for distant purposes, but desired them for work and reading, as his eyes got so fatigued; so I prescribed retinoscopic correction for that purpose.

Case III.—Miss N., aged 12; and with her the two eyes were different, the left being almost normal, having only — 0.5 D. of myopic astigmatism in the vertical meridian, and getting full vision. The right eye, when tested subjectively, revealed myopia to the extent of — 5 D.; but the estimation by retinoscopy showed her to be myopic only to the extent of 3 D. However, after my experience with the first case, I did not hesitate to prescribe full correction according to the subjective test.

The question which naturally crops up in connection with these cases is, Are they cases of spasm of the accommodation? Retinoscopy and direct estimation, with and without atropine, do not seem to support the view that they are cases of spasm of the ciliary muscle. I myself have not formulated any other view as to the nature of these cases, and I should be glad to have an expression of opinion from gentlemen present.

THE USE OF COMPRESSED FLUORESCIN IN THE DIAGNOSIS OF CORNEAL ABRASIONS.

By John Fallows, L.R.C.S.Edin.,
Extramural House-Surgeon, Royal Ear Hospital, Soho Square.

The use of this agent in localising corneal abrasions and diagnosing their extent is, I think, too well known to ophthalmic surgeons to require further comment. Its persistent staining properties, even when greatly diluted, at once make it useful and very difficult to transport in solution. As I required it outside the limit of the well-ordered consulting room, I was led to investigate how it might be prepared for easy and safe transport, and be equally efficacious in its use. I suggested its preparation in the form of an ophthalmic tablet, readily soluble and easy to handle. I at first suggested a tabloid, $\frac{1}{10\,0\,0}$ gr. in glucose and a tabloid $\frac{1}{10\,0\,0}$ gr. in sodium bicarbonate, which were made for me by Messrs. Burroughs, Wellcome and Co., to be equal to 1 drop of a 2 per cent. solution, which I found more than necessary. Then they made me tabloids containing $\frac{1}{10\,0\,0}$ gr. fluorescin, which I found give quite sufficient stain for diagnosing corneal abrasions produced by foreign bodies or phlyctenular ulcers. I hope this suggestion may be of use to surgeons practising in outlying and manufacturing districts, as well as those more luxuriously situated.

EXTRACTION OF TRANSPARENT LENS IN HIGH MYOPIA.

By Charles Wray, F.R.C.S.,
Ophthalmic Surgeon, Croydon General Hospital; Surgeon, Western Ophthalmic Hospital; etc.

[Abstract.]

Published cases appear to prove that the immediate results and risks are not such as warrant a repudiation of the treatment. The weak spot in the statistics is that they bear on immediate consequences, whereas the status of the operation must depend solely on those that were remote. Up to August last over 2,000 patients had been subjected to operation who had over 10 D. of myopia, but up to the present no one has attempted to demonstrate the probable ultimate consequences. Post-operative losses are from detached retina and inflammatory affections in which the ciliary region participates. My notes of 123 non-operated on myopes over 10 D. did not show one case of detachment under 45, while it occurred three times in patients above that age. After operation detachment occurred in from 5 to 10 per cent. of the cases. Both detachment and suppurative irido-cyclitis occurred as long as four years after operation, and we are impelled to the conclusion that if the risks of operation are proved to be 5 to 10 per cent. within four years of operation they will undoubtedly prove much higher later on after the cases have been watched a few years, and time and work have contributed their share to the ultimate condition of the eye.

Thus far the utility of the operation has been assumed. One distinguished operator operated on 16 cases, but saw neither detached retina nor improved visual acuity.

Another surgeon had nearly 80 per cent. of his unoperated high myopias with vision less than $\frac{1}{5}$. Otto published 85 operated cases. In 10 vision was made worse; in 7 it remained the same, and in 8 it slightly improved. In the remainder vision was improved, it is said, from two to fourfold, but the patient submits to operation not to have his vision increased from 5 per cent. of the normal to 10 per cent., but on the understanding that he will probably receive permanent benefit that will be of practical value to him. The high myopia is not in all cases the reason of the bad vision, one patient, aged 55, now under my care, with 16 D. sees $\frac{6}{5}$. Clearly, then, the amblyopia is no necessary consequence of the high refraction.

DR. ARGYLL ROBERTSON had found in cases of myopia that good results were the rule after operation. He never operated unless there were at least 14 D. of myopia.

PROFESSOR SNELLEN operated for high myopia in children, but not in adults. He found that removal of the lens in a child checked the tendency to increase of the myopia.

A MODE OF IRRIGATING THE NASAL DUCT.

By H. E. JONES, L.R.C.P.Lond., M.R.C.S.Eng.,
Honorary Assistant Surgeon, Eye and Ear Infirmary, Liverpool.

MR. JONES described and showed a method of irrigating the nasal duct. A cannula the same size as Bowman's probe (No. 6) and a head of water 8 to 10 feet were required. The stream was allowed to pass through the nasal duct several times. The cannula was of pure silver so that it could be easily bent.

MR. JULER asked Mr. Jones what solution he used and how he passed the probe without slitting the canaliculus previously.

DR. GEORGE MACKAY asked when Mr. Jones began his treatment by irrigation. Dr. Mackay found that there was considerable risk in even passing a probe immediately after slitting the canaliculus.

MR. JONES replied that he used boracic acid solution: the length of time for which he passed the solution depended largely on the patient's forbearance. He found no difficulty in passing the No. 6 probe into the duct after previously slitting the canaliculus in half its length.

A CASE OF ACUTE EXOPHTHALMIC GOITRE WITH ULCERATIVE KERATITIS.

By JOHN GRIFFITH, F.R.C.S.,
Assistant Surgeon and Curator, Royal Westminster Ophthalmic Hospital.

[ABSTRACT.]

A YOUNG servant girl, aged 21, of nervous temperament was first noticed to be suffering from Graves's disease early in April of the present year. The eyes had become painful a few days before. Up to that time she had been quite well. The three cardinal signs were present. A month later there was inability to completely close the eyes. The right cornea became ulcerated, although every endeavour was made to keep the eye protected by closure of the eyelids with plaster. Towards the end of May tarsorrhaphy was performed, median tarsorrhaphy on the left side, complete on the right. At the time of the operation the greater part of the right cornea was dry, scaly, and greyish-yellow, and the ocular conjunctiva much swollen, red, and firm. It was also dry and protruded some distance in front of the cornea. The left eye, beyond slight cloudiness in its lower half, was practically normal, though quite as prominent as the right. No union took place, and the sutures being removed on the fourth day the lids gaped as much as ever. The right cornea became completely disorganised, and as the pain was intense the eye was excised. Subsequently the left eye became from exposure in a similar condition, and eight days later was also removed. The proptosis was never great, the exposure was due to the inability, at first to keep the eyes shut, sleeping always with them open, and latterly to even shut them by voluntary effort. The corneal desiccation and suppuration was attended with agonising pain. Constitutional treatment proved valueless, and as tarsorrhaphy failed the prevention of desiccation was impossible. The removal of the eyes gave great relief, and in spite of the mental agony at this sacrifice her general health began to improve immediately, and her bodily suffering appeared to be at an end.

DR. GEORGE MACKAY said he had been called in by Dr. Gibson to see a patient who had exophthalmic goitre with extreme proptosis. He operated, and united the eyelids with horsehair sutures. Mr. Caird removed half the thyroid, with excellent results. Immense nutritional changes followed the partial thyroidectomy, the corneæ healed with extreme rapidity, and the lids, which had been united with poor success before, joined at once. The exophthalmos was slowly diminishing, and he proposed soon to separate the lids. The patient had central and lateral apertures to look through.

MR. HILL GRIFFITH related a case somewhat similar to Dr. Mackay's. He used thymus tabloids.

MR. MARCUS GUNN observed that galvanism had been found useful in some cases.

CRYSTALS OF COCAINE IN PREFERENCE TO SOLUTION.

By ADOLPH BRONNER, M.D.,
Surgeon to the Bradford Eye and Ear Hospital.

[ABSTRACT.]

COCAINE is largely used as a local anæsthetic, especially in the ophthalmic branch of surgery. In most operations on the eyeball we use a $2\frac{1}{2}$ per cent. solution applied several times. In strabismus operations a 2 to 10 per cent. solution is often injected under the conjunctiva. Toxic effects are apt to follow, and the distension alters the parts and renders operation more difficult. For most operations on the conjunctiva I use cocaine crystals in preference to the solution. For deep operations, such as iridectomy in glaucoma and extraction of cataracts, the crystals are much more efficacious than the solution. The pain is less and there is less tendency to spasm of the ocular muscles and consequent loss of vitreous and prolapse of iris. About $\frac{1}{4}$ gr. of the hydrochloride of cocaine is applied to the corneo-scleral junction where the incision is to be made. The eyelids are kept open for a few seconds, then closed four to five minutes. I also use the crystals in ulcer of the cornea and when using the galvanocautery. In tenotomies or advancements the operation is rendered painless by the use of cocaine crystals. I have also used them in several cases of enucleation. As the crystals cause a severe burning pain, it is first necessary to apply a weak solution. I have never seen any toxic effects. Some allege that a $2\frac{1}{2}$ per cent. solution induces complete anæsthesia, and that no better results can be obtained by a stronger solution or by crystals. This has not been my experience, and I have brought the subject forward in the hope of obtaining the opinion of others who have tried the different strengths of cocaine solutions and the crystals.

DISCUSSION.

MR. MARCUS GUNN pointed out that a weak solution of cocaine was necessary before using the crystals. The crystals caused pain at first, and might also produce local ulceration. For some reasons, then, a strong solution was to be preferred to the crystals.

DR. MCGILLIVRAY said that in America suprarenal capsule was given to aid the action of cocaine. He had tried it himself, first, in a case of absolute glaucoma, in which chloroform could not be given; the result had been very good. He dropped a weak solution into the conjunctival sac alternately with cocaine.

DR. REEVE (Toronto) said that suprarenal extract had the great advantage of acting as a styptic, hæmorrhage was almost entirely prevented by its use.

DR. BRONNER, in reply, said that after insertion of a crystal of cocaine the lids should be held apart for a time.

(To be continued).

PROFESSOR GEORGE EBERS, who died on August 7th, at his villa on the Starnbergersee, in Bavaria, in his 62nd year, though best known to this generation as a writer of romances, will be longest remembered as the discoverer of the famous medical papyrus which bears his name. He made the discovery in Thebes during his second visit to Egypt in 1872.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, AUGUST 20TH, 1898.

THE BACTERIOLOGY OF LONDON SEWAGE.

The London County Council in February sanctioned the appointment of Dr. A. C. Houston to co-operate with their chemist, Dr. Frank Clowes, in the experimental bacterial treatment of sewage at Crossness. A first report has just been issued[1] in which are summarised the results of Dr. Houston's study of the bacteria to be found in the crude sewage of the outfalls. The report is, of course, preliminary to the investigations of the bacteriological characters of the affluent after it passes the coke filters recently constructed at Crossness, and said now to be rapidly "maturing."

The sewage was collected in sterile bottles, and cultivations made as soon as possible after collection, invariably on the same day. It was necessary to dilute the sewage. The most convenient strengths were 1 : 10 and 1 : 10,000. Gelatine was used for plates, notwithstanding that so many sewage bacteria liquefy it. From 1.0 to 0.1 c.cm. of a 1 in 10,000 dilution of sewage in sterile water was employed. As soon as the gelatine film set the plates were inverted, and kept so till colonies were ready for counting. The temperature usually employed was 20° C. To estimate the spores, 1 c.cm. of 10 per cent. sewage was added to 10 c.cm. of gelatine in the test tube, heated to 80° C., and then run into a Petri's capsule. Special surface cultivations were made for accurate estimation of the number of liquifying bacteria. The B. coli communis was sought for as follows: 10 c.cm. of sterile gelatine was melted, 0.1 c.cm. of 5 per cent. phenol added; when solid on plate 0.1 to 0.5 c.cm. of sewage, diluted 1 to 10,000, was then spread over surface by sterile platinum spreader, and typical colonies selected and subcultured in broth for indol and cloudiness, in litmus milk for acidity and clotting, and as a gelatine "shake" for noting gas production. It was considered waste of time to search for typhoid and diphtheria bacilli. Staphylococci and streptococci were sought for in agar cultures at 37° C., and Klein's method of searching for B. enteritidis sporogenes was followed.

The crude sewage at Barking varied in the number of the bacteria it contained from just over half a million to just over 7¼ million to 1 c.cm. The average of 19 cultures of 9 samples was 3,899,259. The average of 11 cultures of 6 samples of Crossness sewage was 3,526,667—a pretty luxuriant flora in both cases. The spores varied considerably in number. At Barking they varied from 30,000 down to 80 per c.cm., the average of 15 cultures of 9 samples being 3,899. At Crossness, though the variation was less, the average was lower, 852 in 5 cultures of 5 samples. Disregarding the extreme cases, the average ratio of spores of bacteria may be said to be 1 : 11,744 at Barking, 1 : 9,662 at Crossness; relatively and absolutely fewer than in an ordinary gramme of moist soil. Liquefying were to ordinary bacteria about as 1 to 9 at both outfalls. The former probably increase in number in the sewers and are probably of service in disintegrating albuminoids in the coke filters.

In dealing with the special bacteria looked for stress is laid upon Klein's B. enteritidis sporogenes. This bacillus seems causally connected with diarrhœa. One c.cm of the whey of an anaërobic culture in milk kills the guinea-pig, into which it is injected generally within 24 hours. The spores of this bacillus were abundant. It is suggested that perhaps its presence may become one of the most delicate and valuable evidences of the sewage pollution of potable water. B. coli communis is naturally in great force. It is not present, at least in any great numbers, in pure waters. Its presence points to sewage, which may contain 100,000 (Barking) or over 200,000 (Crossness) colonies per 1 c.cm. Protean forms were abundant in all samples; fluorescent bacteria not so. The coli group were constant, as also B. mycoides, B. subtilis, and B. mesentericus, while sarcinæ, yeasts and moulds were rare. A plate with some 14 illustrations from photographs adds to the interest of a valuable preliminary report. We shall hope soon to hear what becomes of these bacteria in Mr. Dibdin's tanks.

[1] Filtration of Sewage: Report of Bacteriological Examination of London Crude Sewage. By Dr. Frank Clowes, Chemist to the Council. First Report. P. S. King and Son, 9, Bridge Street, Westminster. Pp. 11, photographs. 6d.

A DENTAL DANIEL COME TO JUDGMENT.

The vagaries of reflex action supply a principle of practice in medicine as convenient and elastic as is the Monroe doctrine in the foreign policy of our cousins across the Atlantic. When a man has firmly grasped the idea that the nose or the uterus, the liver or the rectum, by its comprehensive sympathies with the other parts of the body, is the only true begetter of all disorder in the human microcosm, he ceases to trouble himself about many things that perplex those unprovided with a similar master key to the secret chambers of pathology. Why should he vex his soul with riddles of diagnosis? He has found a general formula of treatment which, with a little ingenuity, can be applied to all cases that come before him.

We do not suggest that there is necessarily any conscious dishonesty in this. Has not Tristram Shandy taught us that the wisest men in all ages, not excepting Solomon himself, have had their "Hobby Horses"? Now your hobby horse may be a Bucephalus or it may be a Rosinante, but in either case it is likely to run away with you. Illustrations of this tendency may be found in the writings of nearly all specialists. A particularly instructive example is to be found in a recent issue of our young contemporary, the *Dentist*. In an article on Reflex Action in the Antrum, by a writer who modestly hides his identity under the pseudonym of "Dens Sapientiæ," we are presented with the following list, which we are thoughtfully

warned includes only "Some of the disorders and diseases of the system due to the reflex action of disease in the dental organs":—

"Affections of nerves and organs of sense:

1. Of the eye: Amaurosis, partial or complete; schlerotitis (*sic*), conjunctivitis, keratitis, strasbismus, dilatation or contraction of pupil, alteration of colour of iris.

2. Affections of sensory nerves: Neuralgia of face, head, and extremities; neuralgia of stomach and uterus; persistent headache, hyperæsthesia, anæsthesia, earache and deafness, and discharge of pus.

3. Cerebral affections: Delirium and mania.

4. Perverted nutrition, secretion, and assimilation: diarrhœa, dysuric urethritis, retention and incontinence of urine, lachrymation, salivation, parotitis, pharyngitis, tonsilitis (*sic*), ottorrhœa (*sic*), ozena, fibrous stricture of nasal duct, conyza (*sic*), catarrh, pleuritis, pneumonia, erysipelas, acne, eczema, prurigo, strophulus, impetigo.

5. Affections of motor nerves: Paralysis of face, trunk, and extremities; spasmodic twitchings, paralysing lingual muscles with loss of speech, spasms of glottis, trismus, infantile convulsions, chorea, eclampsia."

The pathology of our author is as original as his orthography. The latter may, of course, be due to his printer, but the classification of discharge of pus as an affection of the sensory nerves; of pneumonia and erysipelas as effects of "perverted nutrition, secretion, and assimilation," and of eclampsia as an affection of the motor nerves is all his own. This is nothing, however, to what he can do in diagnosis. After mysteriously informing us that he will cite "a few cases of total blindness connected with total blindness resulting from actual disease," he proceeds in the style of Mr. Barlow to narrate the following interesting story: "A medical man asked me to visit a patient who was suffering from toothache. I did so, and found she was confined to bed; she had lost the sight of one eye for some time. On examining the decayed root of an upper tooth, I told her that I felt certain it was the cause of her blindness, and that on its removal her sight would be restored; she, however, said she believed it was lost for ever. I was, however, correct in my diagnosis, and the sight of the eye was fully restored." But the victorious dentist is generous, and allows that triumphs of art as brilliant have been recorded by others—notably by one "Galenowski." This gentleman's name is interesting. Is it possible that he can trace his lineage to the famous physician of Pergamus? We were not aware that any of Galen's descendants had settled in Poland.

We are sure that the medical profession would be grateful if "Dens Sapientiæ" had also cited a few of the cases of "dysuric urethritis" and "fibrous stricture of nasal duct," which he may have cured by extraction of the peccant tooth. But we suppose we should be thankful for his moderation, when he had the long catalogue of bodily afflictions to choose from, that he has not extended the sphere of influence of reflex action from diseased teeth still further.

We have a more serious quarrel with "Dens Sapientiæ," however, than his hazy pathology and his eccentricities of spelling and style. The real object of his paper is to convey the impression that Mr. Gladstone's death was due to the ignorance of his medical advisers. "There can be no question," says the writer, "to anyone who has had the opportunity to study this question of reflex action, that from first to last his case has been misunderstood, and has consequently resulted in the loss of a valuable life, which under prompt and suitable treatment might have been saved." He adds that, "as the medical attendants were fully aware that the seat of the disease was evidently situated in the antrum and nerves," a particular surgeon (whose name we do not mention, because we are sure he would resent the doubtful honour thrust upon him by "Dens Sapientiæ") should have been called in. But we gather that the only effective *deus ex machinâ* would have been a dentist. "There can be no question," says this very positive person, "if the advice given by a dental surgeon while he (Mr. Gladstone) was at Cannes had been followed, that the results would in all probability have been satisfactory. . . . It was very evident from the symptoms to anyone having experience in such cases that the cause of the disease was the presence of an odontome, the root of a tooth, or other abnormal growth in the antrum." Surely the force of presumptuous ignorance could no further go.

The writer plainly knows nothing of the facts beyond what he has learnt from the newspapers, and his paper is not calculated to inspire confidence in his power of interpreting them correctly even if he knew them more fully. Yet he pronounces dogmatically on matters as to which he is quite incompetent to form a judgment, and condemns the professional conduct of men of the highest eminence on no evidence but that of his own haphazard conjectures. When John of Gaunt thrashed Shallow, Falstaff told him that he was beating his own name; we venture to express a hope that it will not be long before "Dens Sapientiæ" cuts his own pseudonym. He will then, perhaps, have wisdom enough to act on the advice of Hamlet, and "play the fool nowhere but in's own house."

Seriously, we think it a monstrous thing that a journal which in any degree represents the dental profession should have published a paper which would be malicious if it were not simply fatuous; and the offence is made worse by the solemnity with which the editor, who appears to adopt the opinions of his contributor, expresses his sorrow at the "unutterably sad revelation." Our contemporary owes an apology not only to the gentlemen so wantonly attacked, but to the dental profession whose "interests" it champions in so ill-advised a fashion.

THE JENNER MEMORIAL.

AN important step has recently been taken with regard to the proposal set on foot in 1896, the centenary of the discovery of vaccination, to found some permanent memorial in this country to Edward Jenner. It will be remembered that a public meeting was held on March 31st, 1897, under the presidency of the Duke of Westminster, when a resolution was adopted on the motion of Lord Herschell (the Chairman of the Royal Commission on Vaccination), seconded by Professor Michael Foster, to the effect that the time was appropriate to inaugurate a work of national utility in honour of Edward Jenner. A further resolution moved by Lord Lister and seconded by Lord Davey was also adopted unanimously deciding that a subscription should be set on foot with a view of

promoting, in connection with the British Institute of Preventive Medicine, but in a manner distinguished by Jenner's name, researches on the lines which he initiated. Owing to the preoccupation of the public mind with the Jubilee celebrations, it was considered desirable to postpone any public appeal; but this is now made, and the sum asked for is £100,000. It is also announced that it has been decided, by the Committee over which Lord Lister presides, that the most fitting memorial to Jenner will be to ensure the full and permanent efficiency of the institution which has been established to carry on researches in the field in which he was the pioneer. The Institute of Preventive Medicine will in future be called "The Jenner Institute of Preventive Medicine." As is well known to our readers, the Institute is already actively engaged in promoting researches in various directions tending to arrest the ravages of diphtheria, typhoid fever, and other diseases which afflict mankind, and of such scourges of the animal world as glanders and rinderpest. It will, we believe, be generally felt that no more fitting memorial to Jenner could have been devised, and the scheme will commend itself to the medical profession not only on account of the original research work carried on in the Institute, but also because it affords opportunities for obtaining instruction in public health work, water analysis, bacteriology, etc., and undertakes to facilitate the daily work of the clinical practitioner by supplying antitoxic serum, and also by making examinations of sputa and various organic fluids, the results of which frequently afford important information of the utmost value in diagnosis. The sum asked for is large, but we believe that there will be a ready response both on the part of the medical profession and of enlightened members of the general public. Among donations already received or promised are sums of £5,000 from Lord Iveagh, of £2,000 from the Earl of Derby, of £600 from the Duke of Westminster, who, it will be remembered, assisted the Institute to obtain the site which its new building now occupies on the Chelsea Embankment, of £100 from Lord Lister, and of £200 from Mr. Alfred de Rothschild. Donations and subscriptions may be sent to the Honorary Treasurer of the Jenner Memorial Fund, Sir Henry E. Roscoe, 10, Bramham Gardens, London, S.W.

THE VISIT OF PROFESSOR VIRCHOW.

It has been felt that the occasion of Professor Virchow's visit to London to deliver the second Huxley lecture of the Charing Cross Hospital Medical School on October 3rd, should be taken by the medical profession to show him some public mark of the high esteem in which he is held in this country. A private preliminary inquiry has been made, and the result has been to show that there is a widespread opinion that Professor Virchow should be invited to a dinner to be held in London. As at present arranged the dinner will take place at the Hôtel Métropole, in Northumberland Avenue, on Wednesday, October 5th. Lord Lister has promised to take the chair, and among those who have expressed their intention to be present are the President of the Royal College of Physicians of London (Sir Samuel Wilks, Bart.), the President of the Royal College of Surgeons of England (Sir William Mac Cormac, Bart.), the President-elect of the British Medical Association (Mr. Ward Cousins), and the President of Council (Dr. Saundby), the Director-General of the Royal Navy Medical Service (Sir Henry Norbury, K.C.B.), the Director-General of the Royal Army Medical Corps (Surgeon-General J. Jameson, C.B.), Sir W. H. Broadbent, Bart., Sir John Williams, Bart., Sir R. Douglas Powell, Bart., Sir Thomas Smith, Bart., Sir W. O. P. Priestley, M.P., Sir Henry Thompson, Sir William Roberts, Sir Dyce Duckworth, Sir W. T. Gairdner (Glasgow), Sir Felix Semon, Professor Bennett (Dublin), Professor Dreschfeld (Manchester), Professor Kanthack (Cambridge), Mr. Jonathan Hutchinson, Dr. Hermann Weber, Dr. Hughlings Jackson, Dr. Pavy, Dr. Lauder Brunton, and Mr. Nettleship. Mr. Andrew Clark, Dr. Rose Bradford, F.R.S., and Mr. D'Arcy Power are acting as secretaries to the dinner, and those who wish to be present should communicate with the first named of these gentlemen at 71, Harley Street, London, W. It is desirable that those willing to act as stewards should make application as early as possible, since the number of names already received is about 140, and the room will only seat about 250; the liability of stewards is limited to the cost of the dinner ticket, 25s.

DRESS IN HOT WEATHER.

The heat of the weather during the last week has, as usual, taken city dwellers in this country by surprise. One day we are donning winter garments and the next we wish, as Sydney Smith said, that we could take off our flesh and sit in our bones. The unfortunate chained to his desk in August goes to his work larding the lean earth, and cursing the unalterable decree of fashion which compels him to wear a linen shirt, and a high, heavy, ridiculous cylinder on his head. If the sufferer be a woman, her case is not much better, for, though she may cover her head with the flimsiest bunch of flowers and lace, she must encase her body in an impervious steel-ribbed corset. If over-eating and over-drinking are the two chief causes of disease in adult life, the absurd costume to which custom condemns us is certainly a good third. To the average man in good health it is a positive joy to work hard on a warm day if he may dress in flannels, and half the enjoyment of a summer holiday lies in the physical pleasure of escaping from the garments of civilisation—the boiled rag and the chimney-pot hat. Our forefathers, indeed, played cricket in this garb, and if we have so far broken with tradition why may we not go a step further? On a hot day, to a man not in perfect condition, the white cotton shirt with its linen front is a positive danger. He perspires in it all day, hurries to catch a train and sits perhaps in a draught, and his shirt, which retains the moisture of the perspiration, forms a veritable freezing machine. There are a sufficient number of men even in cities with enough strength of mind to show practically by example that a flannel or woollen shirt may look as neat and clean as a linen, and it would be a good thing for the public health if they had more imitators. Another point worthy of attention is that tailors have the absurd custom of lining waistcoats and certain parts of trousers with cotton material. One of the miseries of the stout man who goes for his holidays on the moors or the mountains is the chafing at what the tailors call "the fork" of the trousers. This is due to the insane and dirty custom of sewing a piece of cotton stuff into the inside of the trousers at this point. This soon gets moist or wet with perspiration, forms a kind of poultice to the skin, and quickly produces intertrigo. There is absolutely no excuse for this sartorial eccentricity. Fine woollen material can be obtained for the purpose, and the tailors will put it in if told to do so, though it is necessary to give strict orders that no cotton shall be used in any part of the garment, otherwise it will be introduced somewhere. In a flannel shirt and a woollen suit a man may with ordinary prudence defy any weather, hot or cold, likely to be met with in these islands, provided that in warm weather he eats in moderation of a diet mainly vegetarian, and quenches his thirst with beverages which are not alcoholic. If the attempt to reform men's dress is arduous, in the case of women it is desperate. In cold weather most of the well-to-do class now wear woollen "combinations," which make the danger of their over garments less imminent. But with the approach of hot weather they discard these safe articles of clothing, and take to a cotton shift, cotton coverings for the thighs, and

a stiff, impervious corset. Anything more atrociously unhygienic could not be imagined. Women now lead more natural lives, why should they not wear more rational clothes? Unfortunately rational dress has come to mean bloomer costume, which has gone out of fashion even with the most "advanced." As has been said, tailors can be forced into making men's clothes in a way which obviates the many risks attached to cotton garments in our variable climate, and there is no doubt that dressmakers and corset manufacturers would soon find the better way if their clients would be at the pains to insist on a rational reform.

A JUDICIAL VIEW OF COMMISSIONS.

SIR EDWARD FRY, formerly Lord Justice of Appeal, has published in the *Times* a weighty expression of opinion on the system so widely prevalent at the present time of accepting under various names gifts which are practically commissions. "The cases" he writes, "differ vastly from one another in the amounts paid and in the results likely to follow; but they have all one feature in common—that A. gives something to B. to induce B. to influence C. to do something for the good of A., and that it is not intended that C. shall know that A. has given something to B." Sir Edward Fry instances the offers of persons who wish to present a crayon portrait on condition that the recipient recommends the portrait maker to his friends. The *Times*, in commenting on the letter, gives other instances, one at least of which it is desirable to bring to the notice of our readers. "Whether," our contemporary writes, "a doctor recommend a particular brand of wine to his patients or a director asks the public to subscribe to a company, if the patient or the public know the exact extent of his personal interest all is well, if they do not, all is not well." Sir Edward Fry's dictum is expressed in general terms as follows: "Whenever a man receives anything from one in whose favour he is making a recommendation or exercising influence, then he is in common honesty bound to disclose to everyone whom his commendation or influence may reach the fact that he is receiving something —be it money, or shares, or a crayon portrait, or capitation money, or commission—in connection with the part which he is taking." We have more than once been asked questions by correspondents on this very point, and we would commend Sir Edward Fry's opinion to their consideration, as embodying a common sense view of the duties of a professional man towards the public.

WHAT IS IMPERTINENCE?

THIS question was debated somewhat warmly at a recent meeting of the Colchester Town Council. The Sanitary Committee, whose minutes came up for confirmation, had unanimously resolved:

> That the attention of the Committee having been called to a report of Dr. Thresh on the Infectious Diseases Hospital, this Committee is of opinion that Dr. Thresh's report is a piece of gross impertinence. The County Council, whose servant Dr. Thresh is, has no jurisdiction over sanitary matters in Colchester, and this Committee resents very strongly the attempts of Dr. Thresh to interfere in the borough.

Councillor Benham, however, suggested the omission from the report of the paragraph quoted. He pointed out that under the Local Government Act of 1888 the Town Council were bound to send to the Essex County Council their own medical officer's report, and that the County Council had the power of making a representation to the Local Government Board if the Town Council were neglecting duties imposed upon them by the Public Health Acts. Even if Dr. Thresh had exceeded his duty, he had only stated in somewhat milder terms what their own medical officer had said to them in his annual report only a few months earlier. The Mayor also counselled the withdrawal of the offensive paragraph. This was done. This little storm, however, in the Colchester sanitary teacup is illustrative of many similar but unreported commotions in various parts of the county; and, on the principle that anything is better than stagnation, indicates some of the indirect advantages of the County Councils Act of 1888. The recommendations of the urban officer are too often ignored unless they get into the local papers or, as in the present case, are emphasised by repetition by the county officer. Dr. Thresh's report, and still more the ridiculous manifestations of resentment it called forth from the Sanitary Committee, have certainly emphasised the deficiency of proper hospital accommodation in the ancient Royal Borough of Colchester. The burgesses were probably utterly ignorant how inadequate that accommodation was. The absurd resolution of the Committee has fixed public attention upon it, the first necessary step to having the matter remedied. The question in the heading is curiously illustrated by the action of another Committee of the Colchester Council. The Waterworks Committee added to their minutes an extract from Dr. Thresh's report in which he stated that he had found the waterworks in all respects satisfactory. They do not seem to have resented his remark as an impertinence.

THE CAMPBELL COLLEGE, BELFAST.

DR. REDFERN AND PROFESSOR BYERS, M.D., have been appointed Governors of the Campbell College, which was founded by the late Mr. Henry James Campbell, a Belfast merchant, who provided £200,000 for its erection and endowment, his object being to furnish a superior liberal education. The College, which contains every requirement needed by a great public high-class school, is situated in grounds of about 70 acres in extent in the neighbourhood of Belfast, and the buildings form one of the most magnificent college edifices in the United Kingdom. The tendency of modern education is specially shown in the very fine science section, which contains lecture theatre, two chemical laboratories, three physical and biological laboratories, instrument and balance room, detached workshops (wood and metal), and dark room for photography. Until recently the Campbell College was managed by the trustees; now, in addition to these gentlemen, in accordance with the new scheme, a governing council of twelve members has been appointed.

THE HORRORS OF WAR.

WE are all ready in times of peace to talk glibly of the "horrors of war," but when it comes to the point we are too apt to expect to have the "pride, pomp, and circumstance of glorious war" without its horrors. When the horrors come the sentiment of a civilised community is shocked, and the public asks for a scapegoat. Some of the horrors cannot be prevented by foresight, for war is irrational, but others can. When the Emperor of Russia during the Crimean war talked of General Janvier and General Février, we were very angry, but the jest would have lost its bitterness if we had looked the inevitable in the face at the beginning. The severe losses of the American army in Cuba from yellow fever and malaria, and the sufferings endured by the wounded immediately after the fighting, have led to acrimonious attacks upon the medical service of the United States army. This will not surprise anyone who is acquainted with the history of the British Army Medical Service. It was only by very bitter experience that our politicians learnt that an adequate war service cannot be improvised from a service undermanned even on a peace footing, and still more experience was needed to convince commanding officers, if indeed they have even yet learnt the lesson, that the best military dispositions may be completely compromised by a failure to understand that sanitary precautions are a necessary part of successful warfare. Napoleon is generally admitted to have been the greatest military commander of modern days, and no one who will read his letters and orders during his successful years can fail to be

struck by the immense personal interest which he took in transport and in its organisation. The memoirs, too, are full of it, Bourienne, the most intimate of all, in particular. The public is apt to assume that war means fighting, whereas the greater part is organisation and preparation for the fights which were never numerous in any campaign, and are fewer than ever nowadays. Statements made by Dr. Nicholas Senn, of Chicago, chief of the operating staff of the army at Santiago, appear to prove that the precautions against yellow fever recommended by Colonel Greenleaf, chief surgeon of the army in the field, "were entirely ignored by the commander of the invading force." "It required," he adds, "only the usual time for the disease to make its appearance, and when it did so it was not in a single place, but all along the line, from our entrenchments to Siboney." Transport was deficient, and on certain important occasions was refused. Yet in spite of the obstacles placed in the way of the medical department, Dr. Senn is able, after experience of operating in all the hospitals, to state that he "was always able to find the essential antiseptics and dressing material required in military practice," and that there was no lack at any time of stimulants and anæsthetics.

STARCH IN GLUTEN FLOUR.

THE fact that gluten flour invariably contains a notable quantity of starch has again been brought to notice by a paper read at the Belfast meeting of the British Pharmaceutical Conference by Dr. Fielden. He examined five specimens of gluten flour obtained from various sources, and found that they contained respectively 7.6, 16.7, 13.26, 68.8, and 11.63 per cent. of starch and sugar. In the discussion following the reading of the paper, it was stated that some years ago Dr. Pavy had a number of samples of dietetic bread and biscuit examined, and has expressed the opinion that gluten bread should contain 75 per cent. of gluten. That diabetic foods containing starch are not confined to this country was shown in the article published in the BRITISH MEDICAL JOURNAL of July 16th on the Chemistry of Diabetic Foods. It will be remembered that of the nineteen specimens analysed by Dr. F. Kraus, jun., of Carlsbad, only five contain less than 30 per cent. of carbohydrate, four between 30 and 40 per cent., four between 50 and 60 per cent., and four over 60 per cent., as against ordinary white wheaten bread, which contains 60 per cent. It is not impossible to obtain starch-free gluten, although it is stated that it is not possible to obtain gluten bread free from starch. What is required at the present time is that makers of diabetic foods should purify the gluten flour as obtained in commerce before making it into bread. It would be satisfactory to have upon each package a label stating the amount of gluten present.

TRANSMISSION OF MORBID PRODUCTS BY POST.

IN a Post Office circular issued recently notice is given to the effect that "deleterious liquids or substances, though otherwise prohibited from transmission by post, may be sent for medical examination or analysis by registered letter post," with the following precautions: They are to be placed in a receptacle hermetically sealed, and this, packed about with a sufficiency of an absorbent material, is to be placed in a wooden, leather, or metal case. This must be handed in at a post office, and may not be transmitted through the parcel post. In the event of any infringement of these regulations, the sender is stated to be liable to prosecution, whether he be a patient sending material to his medical man, or a practitioner sending the same to a laboratory or elsewhere. Under these circumstances, it appears that some definition of the term "deleterious liquids or substances" should have been appended, but it is evident that the Post Office authorities have purposely employed a somewhat vague expression, to allow of a wide interpretation. As hundreds of medical men throughout the country find it convenient to have morbid specimens examined for them, it behoves them to observe these regulations completely, as we understand that the Post Office authorities intend to enforce them strictly. It will add considerably to the cost of transmission, but we understand, with respect to this item, that the various railway companies undertake the transmission and delivery of packages, practically irrespective of their contents. The circular, it should be added, states that no liquid or substance of the kind may under any circumstances be sent by post to or from any place outside the United Kingdom.

THE BEAUTY OF MODERN WOMEN.

Two interesting letters have recently been published giving some reminiscenses of what smallpox was before vaccination became general or compulsory. The Duke of Argyll writes to deplore the mania which has set in against vaccination, and attributes it to "a long immunity from disease, which has led to a discreditable and stupid forgetfulness of its cause. The highlands of Scotland in the last century used to be swept by the pestilence to a fearful extent. 'Decimation' is now inadequate to convey an idea of the effect on the population. Whole parishes were depopulated. All this stopped when inoculation came, and vaccination subsequently. No fact in history is more clearly established." The other letter is from Mr. Holman Hunt, R.A., who says that about the year 1862 he asked the veteran judge, the Right Honorable Stephen Lushington, what was his view of the relative beauty of ladies "seventy years ago" and in the passing day. Mr. Hunt says that he asked the question not without some reserved recognition of the prejudice that lies ever in aged breasts for the glories of the days of youth. But the answer he got from Dr. Lushington astonished him. "Well," he exclaimed, "you can have no idea how it was that not more than one person in twenty then was undisfigured by traces of the small-pox, and this generally to such a degree that whatever beauty there had been was very seriously marred. It followed then that when a woman had escaped there was a disposition to regard her as a beauty for this cause alone, and if with this she had chiselled symmetrical features and good form of face and figure, too, the admiration of her amounted to worship. The difference I see now is that every lady we meet would have been a beauty in my early days."

DEATH OF WILLIAM PEPPER OF PHILADELPHIA.

DR. WILLIAM PEPPER of Philadelphia, who died suddenly on July 28th during a visit to California, was a very remarkable man. He was born in 1843, and was the second of his name, his father having held in the University of Pennsylvania the Chair of the Theory and Practice of Medicine, to which the son was appointed in 1881. He was a successful teacher, was the joint author with Dr. Meigs of an important work on the *Diseases of Children*, and editor of a voluminous *System of Medicine*, and he had an immense consulting practice, which made extraordinary calls on his time and energy. But the most noteworthy side of his active life was the deep and continuous interest which he took in promoting higher education. He was Provost of the University of Pennsylvania from 1881 to 1894, and under his sway the University made great progress; the number of students increased from 981 to 2,180; the area which it occupied increased from 15 to 52 acres, the Wharton School of Finance and Economy was founded, the veterinary school and hospital, the biological school and the Laboratories of Hygiene and Chemistry were established, and a graduate department, a department for women, another for physical education, and another for archæology were organised. In connection with the last-named department, he organised expeditions to Babylon, to Peru, to Florida, and the south-western States, which

resulted in important contributions to knowledge and valuable additions to the museums of the University. He had a large share in extending the medical curriculum, and when he retired from the office of Provost he facilitated its extension to four years by subscribing largely to a permanent endowment fund, and to a guarantee fund. In the following year he further testified to his enlightened views on medical education by presenting to the University a Laboratory of Clinical Medicine, which he dedicated to the memory of his father. But his eager interest in the organisation of instruction was not limited to his own University, for he was the main influence in the establishment of a Free Library and an Art Gallery in Philadelphia; nor to his own city, for he was the founder of the Commercial Museums which, originating in collections exhibited at the Centennial Exhibition, have since assumed great importance. It is sad to think that a life so full of useful work should have been ended at the comparatively early age of 55, but he deliberately chose to work hard and fast and to take the consequences. The *Philadelphia Medical Journal* states that in conversation recently with a friend who remonstrated with him on his habit of over-work, he said, "If the same work is done in ten years for which others take thirty, it is in reality doubled, and more than doubled." In many respects his character was typical of that which we attribute to the American, but he was apparently quite free from one fault which sometimes seems to mar the type—he was no worshipper of the almighty dollar. He did, indeed, make money fast, but he did not look upon it as an end, but as a means to an end; it was of value only as a necessary means to smooth the upward road of those who by educating themselves were prepared to make their contribution to the improvement of the race. He was a patriot, but a patriot with large views, and as such he deserves to be held in honour by the profession to which he belonged.

THE CONGRESS OF TUBERCULOSIS: RESOLUTIONS.

THE Congress of Tuberculosis came to an end on August 2nd, when the following resolutions were passed:—The Congress, considering that contagion constitutes by far the most important cause of human tuberculosis, and that sputa dried and reduced to dust are the most effective agents of contagion, makes the following recommendation: 1. That until the time arrives when tuberculosis will be included among the contagious diseases the notification of which is compulsory, all places open to the public should be provided with hygienic spittoons, and with a conspicuous notice forbidding expectoration anywhere else than into these receptacles. 2. That the public authorities show the example by ordering the carrying out of this measure with the least possible delay in all places under their jurisdiction, and especially in schools of every class; this is the most vital point in the reform. 3. That tuberculous patients should not be sent to convalescent homes open to persons suffering from other diseases. 4. That homes should be established and specially reserved for convalescent children. 5. That a "medical committee of initiative" for the establishment of popular and gratuitous sanatoria should be formed. 6. That the private initiative of the medical body, and the initiative of the public imitating the example already set in France and in other countries should lead to the creation of the largest possible number of sanatoria. 7. That the Minister of Public Instruction and the Department of Public Hygiene in the Ministry of the Interior encourage by an official patronage the courses of instruction in hygiene which the League against Tuberculosis is now organising in Paris in each *arrondissement*, with the idea of extending this movement to the other towns of France. 8. That the permanent Committee of the Congress make an official application to the general management of the Universal Exhibition of 1900 to bespeak its interest in the work of prevention of tuberculosis by studying, in conjunction with the Committee, the form in which instruction should be given to visitors to the exhibition as to the means whereby tuberculosis is contracted and can be avoided. 9. That periodical international meetings be held for the study of tuberculosis, especially its prophylaxis. 10. That Governments should endeavour to devise means of preventing or repressing the fraudulent use of tuberculin for the purpose of concealing the existence of tuberculosis in animals intended for sale or exportation. The Congress further considering that the constant increase of tuberculosis of bovine animals gravely threatens public health and wealth, and that contagion is the sole truly efficient cause of this increase, affirms the urgent necessity of legislative measures enjoining (*a*) the separation of diseased from healthy animals; (*b*) the prohibition of the sale of diseased animals except for butcher's meat; (*c*) the supervision of cowhouses devoted to the production of milk intended for public use as food, and the immediate slaughter of every cow affected with tuberculous mammitis; (*d*) the sterilisation or at least the pasteurisation of milk intended for the production of butter and cheese on a large scale; (*e*) the generalisation of the service of inspection of butcher meat on a plan more or less analogous to that which has been in operation in Belgium for several years.

FOOD POISONING.

A SERIOUS outbreak of food poisoning, believed to be due to ptomaines, occurred in Oldham on July 28th, 29th, and 30th. We are indebted to Dr. J. B. Wilkinson, the Medical Officer of Health, for the information that about 160 veal pies were made on July 27th by a local baker; 52 persons who purchased some of these pies have suffered from illness. Those who purchased them on July 29th suffered more than those who purchased them earlier. Four of those who bought pies on Saturday night, July 29th, have died—a middle-aged man, two young women aged 21, and a youth aged 13. An inquest, opened on August 6th, was concluded on August 13th, when the jury returned a verdict to the effect that death was due to ptomaine poisoning, but that both the veal from which the pies were made and the pigs' feet from which the jelly was obtained were in a sound and fresh condition.

PHOSPHORUS IN LUCIFER MATCHES

AT the conclusion of an interesting article on the history of the development of the lucifer match, *Nature* expresses the opinion that there is no longer any valid reason why phosphorus poisoning should be allowed to exist. "Yellow phosphorus is not essential to the manufacture of a lucifer match. If phosphorus in any form is required, it need only be in the form of the innocuous red variety—even for a 'strike anywhere' match. Red phosphorus matches are rapidly gaining ground all over the Continent, and the day will probably come when this country will range itself with Denmark and Switzerland, and prohibit the use of all matches containing ordinary phosphorus." It is a curious circumstance that, according to our contemporary, the first friction matches made in England were free from phosphorus. The lucifers, or "Congreves," first manufactured by John Walker, of Stockton-on-Tees, in 1827, consisted of strips of stout cardboard or thin wooden splints, about 2½ inches long, coated to about one-third of their length with sulphur, and tipped with a mixture of antimony sulphide, potassium chlorate, and starch and gum. With each box, which contained fifty matches and cost half a crown, was supplied a folded piece of glass paper; on drawing the match between its folds the composition inflamed and ignited the sulphur on the splint. The most deleterious part of the work of making phosphorus matches is the dipping. The dippers stand over a heated stone or plate coated with the composition from which a "fume arises. It is improbable that the

fume can contain any sensible quantity of free phosphorus and it is surmised that it consists of the lower oxides of phosphorus, and in particular of phosphorus oxide, which is more volatile than phosphorus itself. In boxing the matches it frequently happens that numbers ignite, and the air of the boxing factory is occasionally charged with a considerable amount of these oxides of phosphorus mixed with phosphoric acid. Efficient ventilation, cleanliness, and strict attention to the teeth minimise the risk of phosphorus necrosis, but it remains to be seen whether it can be entirely obviated by these means. When red phosphorus was discovered by Shrötter of Vienna in 1845 it was hoped that, as it is practically non-volatile, does not oxidise at ordinary temperatures, and therefore emits no fume, its employment might completely solve the difficulty, and igniting compositions were in fact made with it both in Germany and in England nearly fifty years ago. But it was found that the matches were difficult to strike and that the ignition was almost explosive. Hochstetter of Frankfort, it is stated, manufactures matches containing red phosphorus, and said to be cheaper than ordinary matches, which burn quietly and may be ignited even on a cloth surface. Safety matches were originally suggested by the late Professor Böttger and were first made at Jönköping in Sweden in 1855. The principle of these matches was that the match was tipped with a composition consisting of antimony sulphide, potassium chlorate, and glue, and was ignited by rubbing against a surface coated with a mixture of red phosphorus, antimony sulphide, and glue. Various modifications have been introduced by different makers, but the principle remains the same. It is added that the amount of the red phosphorus needed to ignite these matches is extremely small, less it is said than one five-thousandth of a grain; in fact it is possible to inflame many of them without any phosphorus at all by rubbing against a smooth surface such as that of glass or paper.

HIGHER EDUCATION IN IRELAND.

The annual report recently issued by the President of the Queen's College, Belfast (Rev. Thomas Hamilton, DD., shows that the number of students entering the College for the first time in the recent session was 113, being an increase of 5 upon the previous year. The number of students enrolled and in attendance in the various faculties during the session was as follows: Faculty of Arts 135, Medicine 223, Law 23, Engineering 17. These figures all show an increase upon the previous year, with the exception of the numbers in the faculty of medicine, which show a decline of 4. Fifteen female students attended the classes, ten of these being students of medicine. Since the College was opened to women, 40 women educated within its walls have taken degrees, 35 in arts, 3 in medicine, and 2 in law. Among the honours gained by the alumni of the College during the year, special mention is made of the winning of the junior Fellowship in chemistry and experimental physics in the Royal University by Mr. Frederick G. Donnan, M.A. Since these valuable prizes were instituted four years ago, four have been gained by pupils of the Belfast Queen's College. The President also notes with great satisfaction that in connection with recent events in the Far East honours have been conferred for public services upon two former students of the College—Mr. J. W. Leavy Brown, Her Majesty's Chief Commissioner of Customs in Corea, and Mr. J. Newell Jordan, Her Majesty's Chargé d'Affaires at Seoul. The number of volumes added to the library during the year was 807, other publications 146, making a total of 953. Of the gifts to the Library during the year, special mention is made of the presentation of the MS. remains of the late Dr. Charles W. Dowall, some time Professor of Greek in the College. The Museums have been well maintained throughout the year, and two anonymous donors have sent unsolicited subscriptions to aid in the foundation of a museum of sanitary science for the College. The Students' Union, opened in 1897, has proved a great success. There are 177 ordinary and 78 life members, and the proceedings of the year have left a balance to credit of £42 3s. 3d. The President concludes by pointing out how unsatisfactory is the present state of higher education in Ireland. He says that "this College and the higher education, not only of Ulster but of the whole of Ireland, have suffered sadly by the changes which have been introduced. . . . . It is admitted, even by its enemies, that this College has done a great work for the country, and such is its inherent vitality and so strong its position that, notwithstanding the grave difficulties with which it has to contend, it is still doing work of which any college in the kingdom might be proud. It only needs to be placed by the State on such a basis as in the estimation of all thinking men among us it ought to occupy, to rise in a generation or two to a most commanding position in the country. . . . . To anyone seriously anxious for the education and general prosperity of Ireland and cognisant of the evils of the present situation, as one called to deal practically with it from day to day as I am must be, the present position of affairs is wellnigh intolerable, and the statesman who will rid us of it will be entitled to the everlasting gratitude of the whole country."

THE JOURNAL OF TROPICAL MEDICINE.

We have received the first number, dated August 15th, of the *Journal of Tropical Medicine*. It is edited by Mr. James Cantlie, F.R.C.S., who was at one time engaged in practice in Hong Kong, and Dr. W. J. Simpson, formerly Medical Officer of Health for Calcutta. It is proposed at present that the journal should appear monthly on the fifteenth of each month, and it will be devoted to the exposition and discussion of medical, surgical, and gynæcological work in the tropics. The first number, which contains original articles, leading articles, reports, reviews, news, and notes, is mainly occupied by the report of the proceedings of the Section of Tropical Diseases, at the annual meeting of the British Medical Association in Edinburgh. The publication is calculated to fill an undoubted want, and we would wish it every success and a long career of prosperity. From the list of papers announced to appear in early numbers, it is evident that the editors have already in hand a considerable number of communications dealing with various subjects interesting to medical practitioners in the tropics. The journal is published by Messrs. John Bale Sons and Danielsson Limited, at 83-89, Great Titchfield Street, London, W. The subscription, which should be sent to P. Falcke, Secretary to the *Journal of Tropical Medicine*, at the above address, is for one year 17s., for six months 9s., for which the journal is sent post free. The first number contains a short commendatory article from Sir Joseph Fayrer, Bart., K.C.S.I., who hails its appearance most cordially, commends it to the consideration and support of the various Governments of our tropical dependencies, and expresses the opinion that it must be of great practical utility not only to the medical profession in the tropics, but also to administrative officers as well as to the population whose interests are so deeply concerned.

COLCHESTER NATIVES.

Eaters of oysters will be glad to learn that, in consequence of a strong representation from the Colchester Town Council to the effect that under certain conditions the effluent from the proposed new outfall for the Brightlingsea sewage would be carried directly on to the Colchester oyster layings, the Local Government Board have offered to send an inspector to superintend, along with representatives of the Town Council, the Brightlingsea District Council and the Fishery Board, a series of experiments with floats, which it is hoped may settle the question of

danger or no danger before the new sewage scheme is carried out. The temptation to seaboard towns to discharge their crude sewage on the coast is great, and it is satisfactory to find that the Colchester Council, no less than the Fishery Board, are determined to protect the interests of the oyster eater.

HEALTH OF GERMAN TROOPS IN CHINA.

There is a hospital at Kiao-Chau for the German troops brought from Germany, but, according to an interesting letter published by the *Times* from one of its correspondents, the troops are extremely healthy, sickness amounting only to about 2 per cent. in the Marines, and 1 per cent. in the navy. As usual with European troops in the East, the chief cause of sickness is venereal disease, imported, it is said, from Hong Kong: but China is likely, he says, to be as fertile a field for this form of disease as is India, and feels sure that our German cousins will deal with this terrible scourge in a more sensible spirit than the British have shown themselves capable of doing. The climate at Kiao-Chau Bay and Chingtao is excellent, and quite European. The German soldiers can work all day long with only their small hats, except during July, August, and perhaps September; December, January, and February are very cold, and part of the north side of the bay freezes over. One great difficulty at Kiao-Chau is the water supply, as the rainfall is small, confined to two months (July and August), and there are few springs and no rivers with a constant supply of water in any quantity. The water in the wells is not good, and as yet the authorities have been unable to see their way to any satisfactory water supply. No doubt, after the rainy season is over, the experience gained will enable some plan to be decided upon; but, whatever it is, it must be expensive in the first instance.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

The Home Secretary is about to issue a letter of instructions to those medical men who have accepted the office of Medical Referee under the Workmen's Compensation Act, 1897. It is pointed out in the course of this letter that the conditions on which the referees have been appointed preclude them from holding appointments which would require their attendance on injured workmen; and that in their private practice they should as far as possible avoid cases which may afterwards come before them in the capacity of medical referees. Should such a case occur (and it is not of course suggested that a medical referee should in an emergency refuse to attend an injured workman merely on the ground that it is possible that he may subsequently make a claim under the Act), some arrangement will have to be made for the particular case being taken by another referee. The intention with which the appointments have been made is sufficiently obvious, it is to afford a recognised method of obtaining an impartial and unbiassed opinion upon medical or surgical questions arising in any given case, and it will be the duty of the medical referee to keep himself free from any connections or obligations which could be interpreted as in any way likely to affect the complete independence of his judgment. It is pointed out in the Home Secretary's letter that the medical referee has two duties to perform under the Act, the first and most important is to act as adviser to arbitrators, committees, or judges on a reference being made to him. He will then send, on a prescribed form, a notice to the injured workman of the place and time where he shall attend to be examined if able to travel, or if certified as unfit to travel the time when the medical referee will visit him. The result of the examination will be consigned to a report which will be returned to the registrar of the County Court, and it is pointed out that it is of the utmost importance that the referee should give clear and definite opinions on the medical questions material to the case which are put to him in the reference. The other duty of the medical referee is that of giving a certificate to a workman as to his condition when he submits himself to examination, as he is entitled to do, when he is already in receipt of a weekly allowance under the Act, and when, having been required to submit himself to a medical practitioner appointed by his employer, he objects to do so, or is dissatisfied with that practitioner's certificate. The certificate must be directed to the condition of the workman in consequence of the accident, and a copy of the certificate must be given to him and another must be sent to his employer. It is pointed out that under no other circumstances should the referee be consulted by a workman who is receiving or who claims an allowance under the Act, and that it is undesirable that the referee should attend a workman for injuries which are likely to give rise to claims under the Act. In our opinion, a similar reservation should apply to the case of a partner in practice, and that it would be undesirable that a medical man should act as referee under the Act in the case of any workman under the medical or surgical charge of his own partner. The last clause of the letter states that the fees of the medical referee will be paid quarterly, and lays down the manner in which applications for such fees must be made to the Home Office.

The first official report on the outbreak of cholera at Madras shows that from July 9th to August 5th, 117 persons succumbed to the disease, and that 55 fatal cases occurred between August 8th and 12th.

The death is announced at Bombay on August 16th of Dr. K. N. Bahadurji, who took an active part in the agitation which was raised some years ago with regard to the position of native practitioners in India, and who more recently has won honourable distinction by his excellent services rendered during the epidemics of plague in Bombay.

At the recent meeting of the French Association for the Advancement of Science a resolution was adopted, on the motion of M. Brouardel, to the effect that vaccination ought to be rendered compulsory in France and in the French Colonies and Protectorates at as early a date as possible.

It is reported that Professor Koch has gone to Italy for several months to study malaria, and is at present working in the Milan hospitals. The results of his investigations will be awaited with much interest, for it must be confessed that some of his recent utterances on this subject have caused no little surprise, since they appear to have been founded upon a somewhat hasty inquiry.

Mr. Henry Sutcliffe, who has for twenty-seven years held the office of honorary surgeon to the West Bromwich Hospital, has resigned that post, and has been appointed consulting surgeon to the institution.

Russian Health Resorts.—The Russian Society for the Preservation of National Health has arranged a congress of climatologists, hydrologists, and balneologists for the middle of December (old style). The meeting is to take place in St. Petersburg. In a circular letter sent to the members of the medical profession, the Organising Committee state that while Western European watering places are widely known and well conducted, the same cannot be said about the watering places and climatic stations in Russia. The latter possess many natural advantages, and only require to be better organised and better known to attract the numerous searchers after health, who now leave Russia for the West European countries. It will be the object of the Congress to discuss measures for the development and encouragement of the native health resorts.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING.

THE ANNUAL EXHIBITION OF FOODS, DRUGS, INSTRUMENTS, BOOKS, ETC.

The annual exhibition of foods, drugs, instruments, books, hospital furniture, and sanitary appliances held in connection with the annual meeting of the British Medical Association in Edinburgh, took place in the Drill Hall, Forrest Road, opposite the Reception Room. There was a large and varied display of well-known articles, as well as some new inventions and preparations.

Digestive Ferments.

Messrs. Armour and Co. (Chicago, and 59, Tooley Street, London) exhibited a number of preparations of pepsin, pancreatin, etc., in various forms for use. Messrs. Fairchild Bros. and Foster (Snow Hill Buildings, E.C.) showed various digestive ferments, including pepsin in several forms, and an extract of pancreas, called "zymine," as well as specimens of trypsin. They also showed a pathogenic milk powder, designed to facilitate the domestic manufacture of "humanised milk." Messrs. Oppenheimer, Son, and Co. (Victoria House, Victoria Embankment, showed preparations of papain, pancreatin, and pepsin, the latter to be obtained in three strengths. Messrs. Parke, Davis, and Co. (21, North Audley Street, W.) showed taka-diastase, and preparations of pepsin, pancreatin, and also a milk-curdling ferment, to which they have applied the term "rennin."

Animal Organic Substances.

Messrs. Allen and Hanburys (Plough Court) showed preparations of animal extracts, including thyroiodin, of which various modes of exhibition were illustrated, and also cerebrin extract, bone marrow extract, thymus gland extract, etc. Messrs. Armour (Chicago, and 59, Tooley Street, S.E.) showed a series of preparations in the forms of desiccated powders and tablets of various animal substances, including the heart, brain, spinal cord, testicles (ram), ovaries (pig), pituitary body, bone marrow, spleen, suprarenal capsules, and thymus glands, both dried and in the form of elixir. Messrs. Hewlett and Son (40, Charlotte Street, E.C.) showed preparations of the thyroid gland, thymus gland, of the brain (calf), the pituitary body (ox), red bone marrow, and suprarenal capsules. Messrs. Oppenheimer, Son, and Co. (Victoria House, Victoria Embankment, E.C.) showed a large series of preparations of animal substances put up in special form, to which they have applied the term bipalatinoids.

Foods.

The Anglo-Swiss Condensed Milk Company exhibited the Milkmaid brand, Swiss and English, upon which we were able to publish a favourable report in our issue of July 27th, 1895, as well as specimens of unsweetened Ideal milk. The firm of Henry Nestlé (Vevey, Switzerland, and 48, Cannon Street, E.C.) showed specimens of the Swiss milk and Viking unsweetened milk, both of which were reported upon favourably in the British Medical Journal of October 12th, 1895, and Messrs. Allen and Hanburys exhibited the series of milk foods for infants manufactured by them, which were fully described in our columns of September 29th, 1894.

Messrs. Armour (Chicago, and 59, Tooley Street, London, S.E.) exhibited two forms of concentrated food: the one an extract of beef, which it is stated is employed both by the British and the United States Governments, and a preparation from lean beef to which the fanciful name of "vigoral" is applied. This last preparation can be taken in solution either hot or cold.

Bovril Company (30, Farringdon Street, E.C.) showed various examples of their well-known preparations. Vimbos Company Limited (130, Queen Victoria Street, E.C.) showed their preparation of fluid beef in various forms and also Vimbos lozenges. We propose to publish shortly the analyst's report upon Vimbos.

Messrs. Brand and Co., Limited (Little Stanhope Street, Mayfair), showed a number of preparations which are already very well known, including various forms of beef, mutton, and chicken, and convenient forms of turtle and other soups.

The exhibition of Carnrick and Co.'s products included beef peptonoids—for instance, various preparations of beef, partially of wholly digested, and other food preparations.

Cerebos Company, Limited (Newcastle-on-Tyne and London), showed cerebos table salt, which is a palatable salt with an admixture of phosphates; and also pepsalia, a table salt containing pepsin.

Messrs. Broomfield and Co. (83, Upper Thames Street, E.C.) exhibited specimens of albene, which is stated to be a pure highly refined vegetable fat. A notice of this material was published in the British Medical Journal of October 23rd, 1897, and our examination showed that it was a white, inodorous fat, having a melting point at about 80° F., neutral in reaction and corresponding respects, and a highly-purified cocoanut fat likely to be serviceable in cooking.

The Distillers' Company (Edinburgh) also exhibited the D. C. L. malt extract, on which we were able to report that it was a malt extract of high diastatic action, in the British Medical Journal of August 14th, 1897, as well as preparations of malt extract with cod-liver oil. Mr. Hoff (Hamburg, and 29, New Bridge Street, E.C.) showed a preparation of malt with manganate of iron, which tastes and looks very much like a mild stout. Messrs. Horlick exhibited a dried powdered form of their malted milk, which they state can be kept in any climate. The preparation is, it is stated, obtained by mixing the extractive products of wheat and barley with cows' milk, and drying *in vacuo* at a low temperature. The Maltine Manufacturing Company (Hart Street, Bloomsbury, W.C.) exhibited a large series of preparations manufactured by them in which maltine is the basis, and is used either to increase the efficacy or cover the taste of various drugs.

The Hovis Bread Flour Company exhibited flour and the very palatable form of brown bread and biscuits manufactured from it.

Drugs and Chemicals.

Messrs. Allen and Hanburys (Plough Court, E.C.) exhibited a number of their well-known preparations, including bynin amara, which was described in the Journal of August 14th, 1897, and byno-hypophosphites, described in the Journal of June 6th, 1898. A new form of preparation to which attention was called was a form of pellet in which the mass is enclosed in a thin jujube coating; to this mode of preparation the term "kapsol" is applied. The jujube envelope will, it is claimed, preserve the drugs in a moist, which it may be presumed is the most active, condition. This form, therefore, seems to be calculated to be of considerable use.

Messrs. Alfred Bishop and Sons (48, Spelman Street, Mile End, E.) showed a number of pharmaceutical products in effervescing form, including arsenic, strychnine, quinine, and iron. They also exhibited effervescing tablets to which they have applied the term "varalettes," which are portable and can be used to procure an effervescing beverage or draught when travelling.

Messrs. Duncan, Flockhart and Co. (Edinburgh), in addition to samples of pure chloroform and chloric-ether, exhibited a series of specimens of preparations, either new or altered, of the *British Pharmacopœia, 1898*, as well as specimens of flexible non-collapsible gelatine capsules and various other preparations useful in dispensing.

Messrs. Parke, Davis and Co. (21, North Audley Street, W.) showed a number of excellent preparations of cascara sagrada, and a large series of compressed tablets.

Messrs. H. C. Baildon and Son (73, Princes Street, Edinburgh) exhibited various pharmaceutical products and samples of Dr. Unna's preparations.

The Elberfeld Fabriken Company exhibited a number of preparations more or less new, most of which have been from time to time noticed in our columns, including europhen, aristol, salophen, trional, etc.

Messrs. C. J. Hewlett and Son (40, Charlotte Street, E.C.) had upon their stall specimens of certain drugs of recent introduction, including a preparation of monsonia ovata, recently recommended as a remedy for dysentery; and orthoform, an amido-oxybenzoic ester, introduced recently as a substitute for cocaine—the special advantage claimed for this preparation is that it can be sterilised by boiling without decomposition—protargol, a compound of silver with a proteid containing 8 per cent. of the metal, and stated to penetrate the tissues better than other silver preparations. The same firm

exhibited a number of special mixtures, a form of flexible capsule, which they state are easily soluble and inodorous, and are specially useful for the exhibition of nauseous or bitter drugs. They also showed antiseptic jellies containing perchloride of mercury combined with various antiseptic substances and antiseptic pellets for making perchloride solution. An interesting part of the collection was a series of new and altered preparations of the *British Pharmacopœia, 1898*.

Mr. B. Kuhn (St. Mary-at-Hill, E.C.) showed specimens of chinosol and various preparations, including tablets of this antiseptic. He also exhibited iodoformogen powder, a compound of iodoform and albumen, possessing little or no smell, as well as various other pharmaceutical preparations.

Messrs. Kutnow and Co. (41, Farringdon Road, E.C.) exhibited their effervescent Carlsbad powder, which is already very favourably known to the profession.

Messrs. Scott and Bowne (Great Saffron Hill, E.C.) exhibited samples of their excellent emulsion of cod-liver oil. The firm of Peter Moller (43, Snow Hill and Christiania) showed a series of preparations illustrating the manufacture of cod-liver oil, and samples of hydroxyl-free cod-liver oil manufactured from fresh livers of the cod, which it is claimed that, owing to the fact that the process of extraction is conducted in an atmosphere free from oxygen, an oil free from fat or oxidation product is obtained. Mellin's Food, Limited, exhibited among other preparations a cod-liver emulsion which is made either with or without hypophosphites.

Messrs. Oppenheimer, Son and Co. (Victoria House, Victoria Embankment, E.C.) exhibited a number of preparations which show various applications of the mode of preparations to which they have given the name palatinoids and bi-palatinoids, and it was shown that these capsules, which are made of glycerine jujube, are easily soluble. Among the demonstrations given was one of the solubility of fresh white ferrous carbonate, which was shown to be complete in 2 per cent. hydrochloric acid, whereas a green carbonate completely dissolved in 1.5 per cent. solution. Several new combinations of ferrous carbonate with quinine and arsenic were exhibited. They also exhibited moulded hypodermic tablets.

The Pharmaceutical Institute of Ludwig Gans (Frankfort-on-Maine) exhibited halogenalbacids, preparations of albumen with halogen, for which it is claimed that the halogen is not given up on treatment with dilute alkalies or acids, so that the full effect of the halogen is obtained, since it is not liberated by oxidisation.

Price's Patent Candle Company exhibited specimens of pure glycerine, and also various glycerine soaps prepared with antiseptic substances, including one neutral soap containing, it is stated, 2 per cent. of mercuric chloride.

Messrs. Robertson and Co., Operative Chemists (Edinburgh), showed a large series of pharmaceutical preparations, including acidified perchloride of mercury pellets for the immediate formation of an antiseptic solution and also flexible gelatine capsules for the dispensing of various internal remedies.

The exhibit of the Scottish Acid and Alkali Company (Kilwinning, N.B.) included various chemical preparations, among others examples of crude and resublimed iodide.

Messrs. T. H. Smith and Co. (Edinburgh) showed a series of pharmaceutical preparations, including aloin, an active body extracted from aloes, and xanthalin, a little known alkaloid of opium, and specimens of various other natural drugs.

Messrs. Raimes, Clark and Co. (Edinburgh) exhibited a series of preparations made in accordance with the directions of the *British Pharmacopœia, 1898*, and some new synthetic remedies.

Messrs. Wyleys, Limited (Coventry), exhibited a series of pharmaceutical preparations, including various forms of pills, pellets, lozenges, and capsules.

Messrs. Zimmer and Co. (33, Lime Street, E.C.) exhibited cuquinine, recently noted in our columns; cumatrol, said to be a pure oleate of sodium intended to be used as a cholagogue; validol, a preparation in which advantage is taken of the solubility of menthol and valerianic acid.

Messrs. A. and M. Zimmermann (St. Mary-at-Hill, E.C.) exhibited various preparations, among others eucaine hydrochloride, which has recently been mentioned on several occasions in these columns; and urotropine, a combination of compound formic aldehyde with ammonia, introduced as a suitable antiseptic for certain classes of cases.

Surgical Instruments and Appliances.

Messrs. Down Brothers (London) showed a complete aseptic operation theatre; it was surrounded by temporary walls made to represent opaque white glass tiles, and the floor was covered with linoleum designed to imitate mosaic. The furniture was all made of steel, enamelled a pure white. The operation table was made to raise and lower so as to suit the different heights of operators, and to facilitate operation in the Trendelenburg position. The base of the table was fixed on wheels, which could be easily put in and out of action, so that while the table was firm during operation, it could be raised on to its wheels, and the position shifted or the table moved in and out of the theatre. The upper part of the table was fitted with a jointed tubular framework, giving the Trendelenburg position, etc., and the framework so arranged as to allow hot water to circulate through the tube for heating purposes. It was provided with a convenient form of rest for use in operations on the skull, and at the other end of the table with douching tray for use in gynæcological and rectal operations. The table seemed to be in every respect complete and well designed, and to be capable of being rendered perfectly aseptic. The remaining articles of furniture in the theatre consisted of a white enamelled steel cabinet with glass shelves for the instruments, mounted on castors, the idea being that every article of furniture in the theatre should be easily moved for cleansing purposes. There were glass tables designed so as to leave no interstice or ledges on which dirt might collect, and irrigators for douching wounds, and receptacles for clean and used dressings. A small washstand to stand at the surgeon's side for cleansing the hands during operation was provided, in addition to a large washstand for the surgeons' use before and after operation, fitted with oval basins, the water supply being regulated by a pedal arrangements. Another movable table with marble top was fited with sterilisers and towel warmer. Altogether the theatre represented a good model of what a modern aseptic operation theatre should be.

Mr. George Culver (London) exhibited a number of appliances useful to ophthalmic surgeons.

Messrs. J. Gardner and Son (Forrest Road, Edinburgh, and Glasgow) showed a large collection of surgical instruments and appliances manufactured on aseptic models. Messrs. Harvey, Hilliard, and Co. (7, Nicholson Street, Edinburgh) showed a large series of surgical instruments and appliances, including many approved forms both new and old. Messrs. Hilliard and Sons (Glasgow) showed Professor Macewen's instruments for osteotomy, hernia, and spinal and cerebral surgery, and a number of other appliances of interest. Messrs. John Weiss and Son (London and Manchester) showed a large set of septic instruments, operating tables, and theatre fittings of excellent design and manufacture. A large collection of surgical instruments was shown also by Messrs. Archibald Young and Son (Forrest Road, Edinburgh).

Medical and Surgical Apparatus.

Messrs. Baird and Tatlock (Teviot Place, Edinburgh) had an exhibition of appparatus of bacteriological, chemical, and physical laboratories, including apparatus for skiagraphy. The Greville electro-thermic generator is an apparatus for applying heat to any part of the body which may be desired for the throat, ear, arms, spine, chest, stomach, and leg. The apparatus consists of an aluminium receptacle for the enclosure of the limb or member to be treated in the instance of the ear, arm, and leg, but in treating the throat, spine, chest, and stomach the generator is of curved shape, applicable to the part to be treated. The front of the generator which is nearest to the skin of the patient is made of perforated aluminium, while upon the inner sides are stretched platinoid or nickel wires suitable for electrical high resistance. In operation the electric current is introduced into these wires, and within ten minutes a high temperature (it is stated 300° F.) is obtained. We are informed that the apparatus has been practically at work in Buxton for the last three months. The special advantage claimed for the Greville system is that it is easy of application, and that the patient can be treated in his own residence, the electricity being taken

from the ordinary lighting mains or from private dynamos or accumulators; the current may be alternating or direct. The usual method would be to remove an ordinary incandescent lamp and insert an adaptor or plug in the place of the lamp.

The Liverpool Lint Company exhibited various specimens of lint, cotton wool, and bandages, and also a first field dressing. This is a small flat packet, enclosed in a cotton bag. The packet contains a pad of sublimated cotton wool, piece of cotton tissue, waterproof covering, bandage, and safety pins, enclosed in a waterproof covering, which is stated to be air-tight, and in fact appears to be so. The packet appears to be well designed, and is likely to meet the emergencies for which it is designed. Among the objects exhibited by J. F. Macfarlan and Co. was a convenient method of packing gauze, so that it could be easily cut from rolls, and also sulphur cones made according to the recommendation of Sir Henry Littlejohn. The Medical Supply Association (Edinburgh) exhibited a large series of appliances for the operating room or consulting room, together with a series of Leitz's microscopes and installation for skiagraphy. They also showed forms of apparatus employed in clinical research and a series of models. Dr. Robertson (Cincinnati) showed through Messrs. Allen and Hanburys, the Pneumachemic Company's improved vaporising and condensed air apparatus for the application of medicated fluid in the form of a fine spray to the nose and throat. This apparatus is very ingeniously constructed, and it will undoubtedly be found useful by those who employ this method of medication. Messrs. Robinson and Sons (Chesterfield, and 55, Fann Street, London, E.C.) exhibited specimens of the absorbent lint, cotton wool, and other dressings manufactured by them. The material appeared to be excellent in manufacture. The Sanitary Wood Wool Company (26, Thavies Inn, E.C,) exhibited Hartmann's wood wool, and various preparations of this material, including wood-wool vaccination pads.

Mr. Frank A. Rogers (327, Oxford Street, W.) showed a special form of spray for patients' use and a consulting room spray consisting of one spray fitting into six different bottles, which can be held in the left hand, leaving the other free for operative purposes. He also exhibited various pharmaceutical preparations.

Messrs. Ross (London) exhibited a number of microscopes and other optical apparatus. Messrs. Lizars (Edinburgh, manufacturing opticians) showed various photographic cameras, the kromoscop, and other instruments. Mr. K. Schall (55, Wigmore Street, London) showed a series of instruments to be employed in electro-therapeutics, and also apparatus for skiagraphy and motors for surgical operations and for centrifugalising.

Mr. J. H. Walker (West Calder) exhibited a moving bed upon which he has expended much ingenuity. The inventor believes that the bed will be of use in the treatment of insomnia, and we learn from the *Edinburgh Medical Journal* that one has been in use at the Royal Infirmary, Edinburgh, and has produced excellent results in cases of insomnia and restlessness.

Messrs. John Ford and Co. showed a number of glass, china, and earthenware vessels for use in museums, in hospital wards, and in dispensaries.

Messrs. Gale and Sons (Birmingham) exhibited bedsteads for hospital use. This firm claim a speciality in having the bed fitted with either wood or indiarubber feet. Messrs. Billington Brothers (Liverpool) showed various styles of beds for use in hospitals. The Longwood Wire, Iron, and Steel Company (Warrington) showed strong spring beds for use in hospital, and Wood's patent galvanised wire bicycle saddle, which, it is claimed, prevents saddle soreness and reduces vibration.

Disinfectants.

The Formalin Aldehyde Company (St. Mary-at-Hill) exhibited formalin in solid form and in solution, and various methods for degenerating formic aldehyde, and Trillat's autoclave. Jeyes's Sanitary Compounds Company, Limited, exhibited a series of fluids and other preparations for disinfecting purposes manufactured by them, including various forms of soap and various methods of dispensing their antiseptic drugs in capsules, etc. Izal disinfectants and various methods for its employment were exhibited by Messrs. Newton, Chambers, and Co., the manufacturers of izal. The Sanitas Company exhibited Sanitas disinfecting fluid and various preparations thereof and appliances for its use.

Health Resorts.

The Municipality of Harrogate exhibited a working model of the Harrogate massage douche. The model, which was of full size, enabled the visitor to obtain a good idea of the mode by which these baths are plied at Harrogate. Specimens of the natural mineral waters of Harrogate were also shown, together with pictures of the place. The Borough of Leamington Spa also showed specimens of its waters, aërated and concentrated, and views of the town and neighbourhood.

Table and Mineral Waters.

The Condal Water Company exhibited specimens of the aperient water bearing this name. It belongs to the sulphate of soda class, and is said to contain about 20 grains of sodium sulphate, and less than 2 grains of magnesium sulphate, and 1 grain of sodium chloride in the fluid ounce. The company states that this is the only water bottled at the Rubinat Springs. Hunyadi Janos, natural aperient water, was exhibited by Mr. Andreas Saxlehner; and Messrs. Alexander Riddle showed specimens of the Cusset Vichy mineral waters from the springs of St. Marie and Elizabeth. The barium waters from the Llangammarch Wells were shown by Messrs. Ingram and Royle, who also exhibited specimens of the natural mineral water of Vichy, Celestins, and Hôpital, and of Vichy salts and pastilles, and the salts obtained from the Carlsbad springs in the form of powder. Messrs. Dewsbury and Brown exhibited a series of artificial waters—soda, lithia, potash, etc.—and various medicated drinks. The Apollinaris Company exhibited Apenta, which is a natural bitter water containing magnesium sulphate and also sodium sulphate and Friedrichshall water, which contains magnesium as well of a large proportion of alkaline chlorides. They also showed the Apollinaris and Johannis table waters. The Kronthal Company were exhibiting their sparkling water.

Books.

A large and interesting collection of recent books on medicine, surgery, midwifery, and the allied sciences were exhibited by the following firms:—Messrs. Baillière, Tindall, and Cox (London), Wm. Bryce (Edinburgh), Cassell and Co. (London), W. F. Clay (Edinburgh), James Craig (Edinburgh), Young J. Pentland (London and Edinburgh), The Rebman Publishing Company (London).

THE NEW FEVER HOSPITAL FOR THE CITY OF EDINBURGH.

In connection with the meeting of the British Medical Association, the Convener and members of the Public Health Committee of the Town Council of Edinburgh held a reception in the most advanced pavilion of the new city hospital, now being built at Colinton Mains, on the afternoon of Wednesday, July 27th. The company was received by Bailie Pollard (the convener), Bailie Gulland, Mr. Morham (the city architect), and Dr. Claude B. Ker, the Medical Superintendent of the City Hospital. Each member who attended the reception was presented with a fully illustrated quarto pamphlet of 30 pages written by Bailie Pollard. The pamphlet, which bears the title, The Care of Public Health and the New Fever Hospital in Edinburgh, is dedicated to the President of the Association (Sir T. Grainger Stewart), and contains sixteen illustrations, many of them being double-page.

The farm of Colinton Mains, some three miles distant from Edinburgh, to the south-west, extending over an area of 130 acres, 350 to 400 feet above sea-level, and sloping towards the south-east, was bought by the Town Council for £20,500. Of this ground it was at once resolved to set apart 40 acres for the purposes of the new hospital, which is to have accommodation for not less than 600 patients, giving 15 patients to the acre, as against 100 per acre in the now existing hospital in Infirmary Street.

Approaches are to be provided from Comiston Road on the east and from Colinton Road on the west. A reference to Figure 1, and the use of a magnifying glass, will enable the reader to form an idea of the scheme of the hospital. The

main entrance faces the north. Immediately within it to the left is the porter's lodge, while on the right, a little further in, is the house for the medical superintendent. Directly facing the main entrance are the general offices with covered way, water tower, and courtyard behind. Still further back in the middle line are general stores, kitchen, and dining rooms, ward assistants' home, and nurses' home, all connected by covered ways. The space to the south of the nurses' home is set apart as a recreation ground for the nurses.

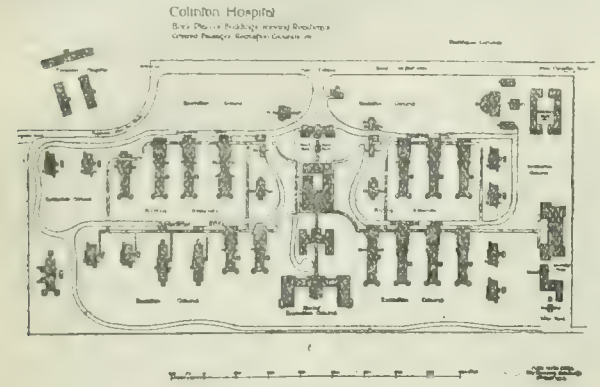


Fig. 1.

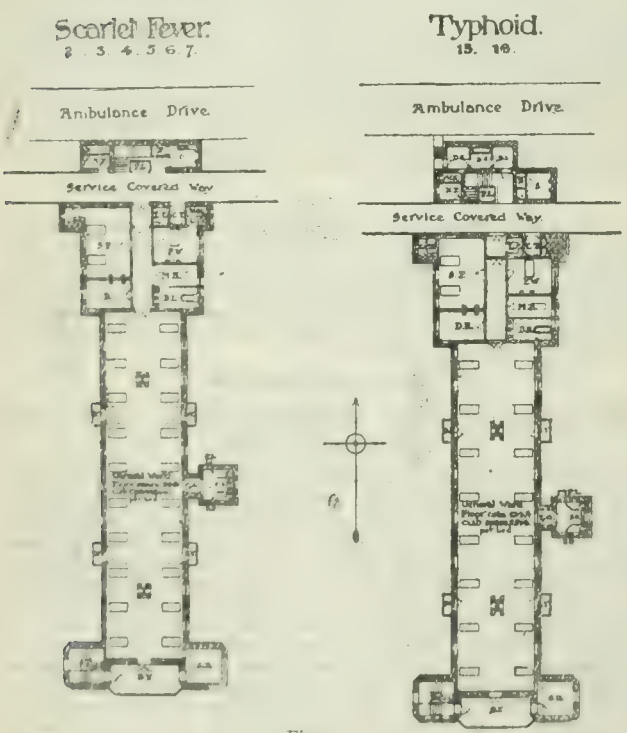


Fig. 2.

REFERENCE.—SP Separation ward; PW private ward; D duty room; BL bath and lavatory; MB movable and sink; LC linen closet; CT coal trolley; WC watercloset; LV lavatories; S scullery; P pantry; NT nurses' dressing room; BY balconies; FL foul linen closet, etc.; BP bed pan cupboard; CO cut-off lobby; SS slop sink; PS panic staircase; SR sun room; PL patients' lift; DS discharge rooms; OR operating room; SR surgeon's room; AT anæsthetic room.

Right and left, that is, east and west, of these central administrative buildings are the ward pavilions, arranged in double rows. Those on the east, twelve in number, are entirely set apart for scarlet fever, for which disease 329 beds will be available. Of these, Wards 2, 3, 4, 5, 6, 7, each containing 20 beds (as will be seen from Fig. 2) are for the treatment of ordinary cases. Ward 1 is an observation ward of 4 beds (see Fig. 3) for the same disease, while 8 is a convalescent, and 9 to 12 isolation wards (for complicated cases) of the same size as those for observation. Near the general offices is a reception and a discharge room for scarlet fever cases, with a room for the nurse in charge. To complete the description of this eastern side of the hospital, there is to the north an ambulance station (Fig. 1), and near it are lecture rooms, pathological laboratory, museum, mortuary, *post-mortem* room, and chapel, with suitable arrangements for funerals leaving as unobtrusively as possible. At the south-east corner of the ground are laundry, washhouse, disinfector, boilers, incinerator, and electrical power buildings.

On the west side of the central blocks ward pavilions are provided for diphtheria, typhoid, and erysipelas in the north-western, and measles, chicken-pox, whooping-cough, and typhus in the south-western ranges. Reception and observation wards—the latter for undecided cases—are placed near the principal entrance, as on the scarlet fever side, and isolation wards for complicated cases towards the further extremities of the respective groups. Ample open space is left for separate recreation grounds in convenient proximity to the pavilions for the several classes of disease, besides airing courts in spaces between the pavilions.

The numbers of cases of the different diseases for which provision has been made have been based upon the experience gained during the past twelve years in the old hospital.

The pavilions are placed so as to get as much sun as possible—that is, with their length north and south—the ward offices being kept, in most cases, at the north end of the ward, so that the shadow from their greater bulk may not fall on any part of the wards. The sanitary provisions for each are placed as far as may be with reference to the same consideration—that is, away from the south end of the wards, so that these may have the full benefit of the midday sun.

Besides the general ward, each pavilion has on each floor one two-bed and one single-bed ward for cases requiring separation, or in which treatment in a private ward may be desired by the patient. These, with the duty-room, bath-room, linen, coal, and brush closets, are arranged at the north end of each pavilion, and beyond the covered corridor are the ward scullery with pantry attached, nurses' dressing-room, with the stairs and lifts from the lower to the upper flat.

The spaces between the various blocks will never be less than 80 feet, so that (none of the blocks being over two floors in height) they will never overshadow each other. The stone being used is a light red, warm and pleasant-looking.

The drainage will be led from the hospital grounds by an isolated pipe to a point fully 800 yards away at the foot of Morningside, where it will join the city sewage system. Careful provision will be made for the proper flushing of all soil-pipes and the disinfection of all sewage before it leaves the hospital.

The floors are to be of fire-resisting construction, the surfaces in the wards being of solid teak plank flooring in narrow widths, closely jointed, embedded in prepared pitch, and impregnated with paraffin wax, those of the ward passages and generally of parts other than the wards and duty-rooms being finished in terrazza or polished portland cement, with large hollow at base of walls and divisions.

The walls of offices to the height of 5 feet will be formed with glazed brick, tiles, or other non-absorbent material, and those of the wards with Keene's or Parian cement, with rounded hollows at all re-entrant angles. The heating will be by means of ventilating steam coils, supplemented by central ventilating stoves in the general wards, and ventilating grates of the most improved type in the smaller wards.

While special apparatus for the ventilation of particular parts will be provided, cross ventilation by suitable arrangement of the windows on opposite sides of the wards will be largely relied on for this important function.

In the sanitary towers attached to the several wards, and in most cases placed in a nearly central position on one side of the ward, there are provided watercloset and slop sinks, ventilated bed-pan cupboards, and open-work shoots for soiled ward linen, down to carbolic tanks, and in the upper part of the tower an ample cistern chamber.

Discharging arrangements are provided, one near the principal entrance for scarlet fever patients, and one in connection with the pavilions for each of the other diseases. In and near the ambulance station and stableyard, accommodation for the men-servants and workshop premises will be provided.

It is intended that electric lighting should be adopted throughout the establishment. For certain culinary purposes it will be convenient to use gas, both in the general kitchen, etc., and in the scullerries attached to the several pavilion wards.

A coal store will be provided at the boilers near the south-eastern quarter of the premises, and another in connection with the central block, and smaller stores in each of the pavilions and other buildings where coals are required; for though it is intended that the general heating and cooking shall be largely by steam, open fires will be provided for in the wards, general offices, and in the day rooms of the homes.

Hydrants and hose for use in case of fire will be provided in convenient situations throughout the premises. For additional supply and pressure for this purpose, as well as to meet the possible contingency of the main water supply being at times turned off for repairs, it is purposed to erect on the higher ground a water tower, with tank of sufficient size to secure good supply on such occasions.

The buildings, with roadways and covered passages, are shown *en bloc* in Fig. 1. By the ambulance drives patients about whom there is no doubt as to the disease from which they are suffering are at once carried to their appropriate wards.

For convenience and protection in passing from one part of the premises to another, covered ways are provided between the general offices, central premises, pavilions, and staff quarters. These, though protected by roofs, will be to a great extent open on the sides, so that the risk of conveying infection from one part to another will be minimised.

Beneath certain of the covered ways, and in convenient lines at other parts, subways will be provided for the conveyance of water, gas, steam, and electric connections.

By the covered ways food will be transmitted from the kitchen with such promptitude that it may be expected to be served hot and fresh even in the most distant wards. With this in view the kitchen block is placed in the centre of the area.

In Fig. 2 is given the plan of a typical scarlet fever ward and of a typhoid fever ward. The amount of cubic air space for each scarlet fever patient will be 2,000, while for whooping-cough and chicken-pox—the patients being almost exclusively very little children—1,690 cubic feet may be considered ample. Attention is called to the separation of the nurses' dressing room, pantry, and scullery from the ward by the cut-off passage. The position of the ward accessories and conveniences near the centre of the block may be noted. It will also be seen that private wards and separation wards for more serious cases are provided.

The peculiarity of the typhus block merits special attention. Special provision is made for cross ventilation, and an allowance of 3,042 cubic feet is made for each patient. Edinburgh does not now produce typhus on her own soil, but cases are occasionally introduced into the city, and it is still needful to guard against this disease. The ward will be of one floor, and well apart from the other blocks.

Erysipelas (see Fig. 3B).—In many fever hospitals no cases of this disease are taken. But it would be a very serious drawback to the work of the Royal Infirmary, to say nothing of cases of erysipelas occurring outside, if patients seized with this disease could not be at once removed from the proximity of others. The cubic space allowed is 2,028 feet per patient.

Isolation and Observation Blocks.—These will be of one floor (see Fig. 3A).

Servants' Home.—Southward from the kitchen block is the servants' home, a building of two storeys and attic, and consisting of four large dormitories, two on the ground floor and two on that above, each divided into cubicles, with an intermediate building, comprising rooms for headservants—two on each storey—a day room on the lower storey and a sick room on the upper, and over these a large attic for recreation and general use. Ample bath, lavatory, and watercloset accommodation are provided on each flat.

General Offices.—These comprise central entrance hall, with telephone and post-office, with medical superintendent's offices on one side and the matron's on the other; a room for the chaplain, and a mess room for the medical staff, which will serve also for meetings of the Visiting Committee. On an upper storey are sitting room and bedrooms for the medical assistants, and two spare rooms.

Nurses' Home.—The rooms of the lady superintendent, who is of course the chief of the nursing department, are situated on the ground floor. A spacious recreation room, suitable for lectures and recitals, is also placed on this floor. One principle on which the Public Health Committee have always acted towards their nursing staff is that the nurses in a fever hospital, above all places, should receive the fullest consideration as to food, hours of relaxation, and general comfort that is consistent with the proper discipline and efficiency of the institution.

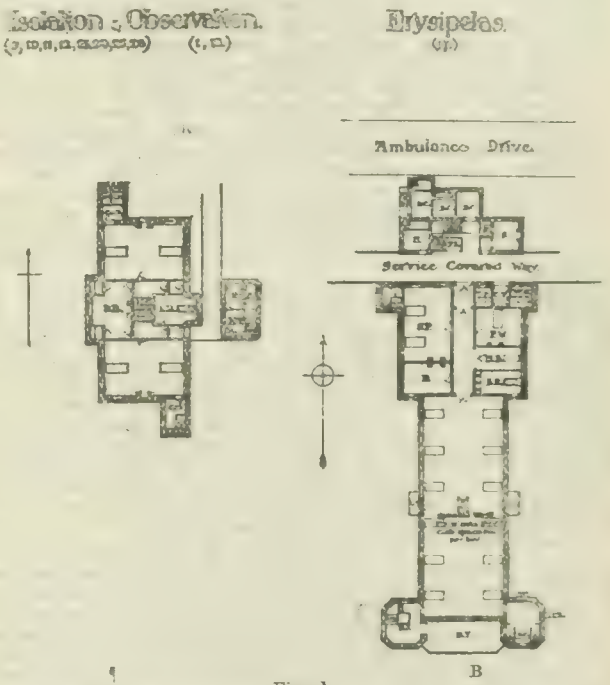


Fig. 3.

REFERENCES.—PW Private ward; SP separation ward; D duty room; BL bath and lavatory; LC linen closet; P pantry; S scullery; NT nurses' toilet; WC watercloset; CO cut-off lobby; BP bed pan cupboard; FL foul linen discharge and carbolic tank; SS slop and scalding sink; BY balcony; DC discharge rooms, etc.; MB movable bath; CT coal trolley, etc.; LV lavatory; PS panic stair; SR sun room; PL patients' lift.

The building is of four stories—in which are provided not only suitable apartments for the matron, but separate rooms for 130 nurses, with a few additional spare rooms; three day-rooms and library for the use of the nurses; two sick-rooms, with small kitchen attached; a large recreation room for the general use of the staff; bath and lavatory accommodation and linen stores on each floor; luggage lift and staircase for each wing. The arrangement of the rooms on the several floors of the nurses' home and the corridors leading to them being to a large extent identical on the several flats, the dividing walls, with the corridors and staircases, can be constructed of fireproof material, the risk of danger from fire being thereby greatly diminished, while the means of escape in the event of its occurring are largely secured. Except in the day-rooms, sick-rooms, and matron's quarters, and at convenient points in certain of the corridors, it is intended to heat with steam radiators, thereby dispensing with fireplaces both in the nurses' and ward assistants' homes, thus further reducing the risk of danger from fire.

The nurses' and ward assistants' homes have been so planned that nearly every room will, more or less, partake of the beneficial effects of sunshine, while a fair share of space

or outdoor recreation is provided distinct from that for the patients.

Stores, Kitchen Offices, Dining-rooms, etc.—The block comprising the stores, kitchen offices, and dining-rooms occupies a central position on the premises. The store building is in two storeys, immediately to the north of a courtyard and in rear of the general offices, for goods delivery. Besides a spacious apartment for receiving and distributing, there is an office, a weighing room and counter, a stair for access to the upper floor, and beyond these a mattress and bed-furnishing store and mending room, to the south of which are a dispensary, with separate entrances and counters for scarlet fever and other nurses, drug store, and shed for trolleys for the distribution of food. On the upper storey of this building ample space is provided for the various articles to be stored.

Immediately to the south of the store building and separated from it by a small courtyard are the kitchen offices and dining-room block, comprising kitchen, general scullery, vegetable scullery and store, larder, meat, poultry, fish, vegetable, and milk stores. Entering off the kitchen are two serveries, one for the distribution of food to the several pavilions, and the other for serving it to the nurses' and servants' dining rooms, in proximity to which are pantries for washing up and storing the dinner dishes, also a cook's room and stores. All the cooking will be done by steam or gas.

The nurses' dining room is provided with a glazed screen, dividing it in two, with separate entrances to permit of the separation of scarlet fever nurses from the others. That for the servants adjoins the kitchen, and has also a separate entrance.

Laundry, Wash House, and Boiler House.—Here again the utmost care has been, and will continue to be, taken by the architect, to secure the best practicable results. The wash house and laundry buildings, with arrangement for staff clothing, etc., distinct from those of the patients, and the disinfector, boilers, and incinerators, are placed towards the south-east quarter of the establishment, sufficient steam power being provided for machinery and fittings of the most approved description for wash house, laundry, disinfector, culinary purposes, electric lighting, and general heating of the entire premises, and for the sterilising of infected matters from drainage before entering the main outlet.

Probable Cost.—The estimated cost of the whole establishment, exclusive of the site, is close upon £360 per bed, but including the site, the cost may reach a total of £400 per bed, or £240,000 in all. If this sum is not exceeded, the hospital will be by no means the most expensive, while it will be considerably the largest, fever hospital in the United Kingdom. With the knowledge now possessed of what such a hospital ought to be, the Health Committee can hardly be satisfied, if at its completion it should not compare favourably with any hospital then in use.

LAY SUGGESTIONS FOR HOSPITAL REFORM.

THERE are at the present time a good many persons who are ready to pronounce off-hand opinions about hospital reform, and to suggest the most violent changes, whose writings show no personal acquaintance with the subject, far less any patient study of it. A letter, signed "Order," which appeared in the *Saturday Review* for July 30th, headed "Some Mistakes of Hospital Management," may, we think, very fairly be classed in this category. In the first place, it does not bear its author's name—a fatal defect. If the writer has any personal experience of hospital management, he should say who he is, and where and how that experience has been obtained. His letter, however, is moderate in tone and friendly in spirit, and we doubt not is meant to do good. The following are its conclusions:

1. There is an urgent necessity for organisation of all the charitable hospitals so as to cut down management expenses, arrange and define localisation, and prevent overlapping.
2. There is an urgent need for the complete separation of medical schools and hospitals. The medical schools should be under University control; the hospital staff should be independent of the medical school.
3. The hospital staff should consist of physicians and surgeons paid for their work as such, and required to do their work as such.
4. Although urgent cases should at all times be taken in, subsequent investigation should decide whether or no the patients should be charged nothing, or on what scale they should be charged for maintenance and attendance.

The letter deals with the hospitals that have schools attached to them almost exclusively; though on this point the writer is not perfectly clear, as he speaks rather vaguely of "the great general hospitals," whose expenditure he puts at £500,000 a year and their expenses of management at £30,000, or 6 per cent., and he says that if we were "to take into account the multitudes of special hospitals, the proportion of expenses would be enormously increased." This is much too vague as a foundation for a general charge of extravagance in management. Each hospital must be dealt with on its own merits and in view of its own circumstances. Those whose necessities compel expensive appeals to the public for support must spend more than others on what is classed as "administration" in the form prescribed by the Hospital Sunday Fund. If this item be excluded, we believe that the Administration expenses of our hospitals are moderate, and it must be remembered that the distribution of the Sunday Fund is regulated to some extent by the expenses of administration, and that this acts as a powerful motive to economy. At the same time, we cannot but agree with this writer in deploring the fact that only about a tenth part of the money spent by the hospitals "comes from invested endowments; the rest has to be begged, or borrowed, or prayed for by the methods which the advertising ingenuity of the managers can best devise."

This is, indeed, a lamentable state of things; but we differ from the writer as to the remedy for it. His letter points unmistakably to some "public body or State department," which is to regulate the whole as one vast institution, and distribute its revenue. If this is (as we infer) his meaning, a necessary corollary is that the public body must be charged with the duty of making good the deficiency out of rates or taxes. The result of such a scheme is to be seen in the hospitals of Paris; and we cannot say that in a medical point of view it is satisfactory, whilst it necessarily kills charity. In this country it would make the hospital system a part of the Poor Law. Our suggestion would, on the contrary, be one for the promotion of private charity. Committees should be formed in every parish of London for the purpose of collecting subscriptions for the local hospitals, and it should be urged as a duty on all persons of means, that after making necessary provision in their wills for their children and near relations, a portion of their superfluity should be devoted to the permanent endowment of their local hospital.

But if we differ seriously from our reformer's first suggestion, we dissent absolutely and entirely from his second and third. They could hardly, we think, have proceeded from anyone having any practical acquaintance with the subject. Our hospitals have attained their present high position, and have rendered the priceless services which they have to the progress of the healing art, precisely through that connection with the medical schools which he proposes to abolish. We will not insult our readers by arguing the proposition, but only ask them to consider what our hospitals would become if, instead of being officered by all the chief physicians and surgeons of the day, they were handed over to men deprived by this ingenious scheme of "reform" of all the rewards of an honourable ambition.

His fourth proposal need not long detain us. Its chief effect would be to turn the hospitals into cheap surgeries or dispensaries, and still further to increase the difficulty of getting a living by any practice except among the rich.

Yet inexperienced as our critic probably is, and crude as are undoubtedly his notions of reform, there are some truths among his objections to the present system. No one can help admitting that a system leaves much to be desired in which the great hospitals are crowded together in a comparatively small area, leaving the rest of this enormous city with hardly any. Nor can it be right that the "general" hospitals should be separated from those of the Poor Law so completely as they now are. This separation is, in fact, so absolute that the Poor-law infirmaries are quite left out in the schemes of most of amateur reformers, as they are in the letter of our present critic. He actually says that "no system exists by which an inhabitant of any district should naturally go to any particular hospital," quite oblivious of the existence of the parish infirmary, to whose services the poor have a right under certain conditions; and quite oblivious, also, of the fact

that the general hospitals were not founded and are not maintained only by the inhabitants of the districts in which they stand, that they have never professed to take charge of the public health in general, and are, in fact, quite destitute of the organisation necessary for so great a task, for which, indeed, the first requisite would be provision for epidemic diseases—a class of cases now almost utterly excluded from their wards.

The main points connected with our hospital system which seem to us to require public inquiry are: (1) alleged need for founding and maintaining general hospitals in various parts of London where none now exist; (2) the best way of connecting the in-patient and out-patient practice of the existing general hospitals with the corresponding Poor-law departments; and (3) the provision of adequate and speedy attendance on casualties (medical and surgical) in various parts of this great city. These are practical matters, in all of which the advice and co-operation of laymen would be of inestimable service. The connection between hospitals and medical schools is a question on which a layman can hardly dogmatise without great danger of making himself a laughing stock.

DANGEROUS TRADES.

The Home Office Defence as to its Action in the Potteries and Match Factories.

The debate on the efficiency of the inspection by the Home Office of the potteries and match factories which took place in the House of Commons on a motion to reduce the Home Secretary's salary did not add much to our knowledge. Mr. Tennant and the other members who followed him, in order to vindicate their position, took for their text the large amount of lead poisoning in the Potteries and necrosis among match makers, but the Home Secretary can scarcely be said to have been altogether dilatory in this matter. He may not have seen eye to eye with the Opposition, but so soon as his attention was directed to the subject, the Chief Inspector of Factories, Dr. Whitelegge, went to Staffordshire, acquainted himself with the methods or processes of working, and recognised the dangers incidental thereto. From what he saw it was only too clear that the Potteries were in anything but a satisfactory condition. Young persons were too much employed in the dangerous processes. Accordingly Dr. Whitelegge instituted a series of special rules which had as their main object the raising of the age to 18 years, provision of better washing appliances, improved ventilation, etc. These regulations apparently do not go far enough to satisfy some of the industrial reformers in the House of Commons. What they ask for among other things is the appointment of a resident lady inspector of factories.

There has been much said for and against lady factory inspectors; but, taking the verdict of the country as a whole, it has been rather in favour of than against their employment. There are undoubtedly certain industrial spheres in which they can be extremely useful.

The question of expense to some extent underlies the official objection to multiplying lady inspectorships. In industries in which a large number of women are employed it is probable that the employees would prefer to be inspected by a Home Office representative of their own sex. They would probably confide in her more than in a male inspector. Sir Matthew White Ridley's acquiescence in this was shown by the appointments he has made.

The manner in which the question of the dangerous trades of the country was discussed in the House brought out very well from those who have had official experience the difficulties with which the Home Office has to contend. It is easy to draw out special rules; the difficulty is in enforcing them. Mr. Asquith alluded to this difficulty of which he had had experience. The submission of special rules to employers with the right of the latter to carry them to arbitration if they disagree with them has done as much, if not more, to thwart factory legislation than direct Parliamentary opposition. It is an expensive procedure. The right of the employer to arbitrate must disappear, and legislation in the near future will probably deprive him of this privilege. Special rules have had too frequently to be watered down to suit his taste and satisfy his pocket, and have thus been shorn of much of their influence for good. But for the tinkering of the recommendation of the Potteries Committee of 1893 the present inquiry would not have been required. What is to take the place of arbitration it is not for us to say, but such industrial questions might perhaps be relegated to a body composed of a few permanent experts and representatives of the Labour Committee. We frequently hear it said that over-legislation is ruining British industries, but employers of labour would do well not to wait for Government to interfere with their harmful industrial methods and the structural imperfections of their factories. They should at once set about putting their house in order, and exert themselves to utilise all that human ingenuity and invention offer to make trades healthier.

There were signs of disappointment in the House of Commons that the interim report of the Potteries experts was not submitted, but the Home Secretary explained that the report was incomplete, fresh experiments were required, and Continental factory visitation necessary before proper opinions could be arrived at. Meanwhile arbitration upon the special rules for the Potteries is to be proceeded with. These may have to be strengthened. The Home Secretary is in favour rather of adopting special rules than of hasty legislation.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The monthly meeting of the Executive Committee of the Medical Sickness Annuity and Life Assurance Society was held on July 22nd, at 429, Strand, W.C.

The accounts presented showed that the favourable sickness experience noted at the last meeting still continued, and that the total amount paid in sickness claims during the six months ending June 30th last was well under the amount expected and provided for in the tables of premiums. This light sickness experience is, however, confined almost exclusively to the ordinary or short claims, as the list of those members who are permanently incapacitated continues to grow. When the Society was first started in 1884 a certain number of the original members joined the Society with the view of obtaining, in case of need, the benefits it offers in complete permanent incapacity, but few foresaw how large a portion of the funds of the Society would be required to meet such claims, and how important the list of chronic cases was destined to become.

The Committee investigated several claims referred to them by the Medical Examiner, Dr. J. B. Ball. The experience of the Society shows that no class of claims requires more careful investigation than those arising from nervous disorders, and, on the other hand, that the timely aid of the Society is never more useful than in cases of this description. The management are therefore compelled to give an ever-increasing amount of time and attention to this branch of their work.

The question of investment also requires much consideration. The funds of the Society now amount to over £120,000, and more than half of this consists of loans which are repaid by instalments. These repayments, together with the savings of the Society, compel the Committee to find fresh investments for a large amount every year, and the rate of interest obtainable on the limited number of securities which such a Society can accept is steadily declining.

Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

THE PLAGUE IN THE EAST.

India.

Although at the present moment plague is regarded as well-nigh stamped out, a perusal of the reports from several parts of India justify the belief that it is only in abeyance.

Bombay.—The actual number of deaths from plague increased in Bombay towards the end of July. The recent record of plague mortality is as follows:

Week ending July 5th	... ...	38 deaths.
,, ,, 12th	... ...	53 ,,
,, ,, 19th	... ...	63 ,,
,, ,, 26th	... ...	69 ,,
,, Aug. 2nd	... ...	— ,,
,, ,, 9th	... ...	85 ,,
,, ,, 16th	... ...	103 ,,

The record shows that in Bombay, at all events, the disease is progressing exactly as it did last year—slow progress, but with a higher weekly mortality during the "weeks of decline." Last year the mortality remained low for 22 weeks; this year the low mortality has, so far, continued for only 8 weeks. An interesting fact in the mortality returns for Bombay is that the average death-rate from malarial fevers is abnormally low. During the last week of July the "fever" mortality is reduced from 132—the average for five years—to 55. This decline of mortality from "fever" has been observed during the whole period of prevalence of plague, but this year it is even more marked than at any previous time.

The returns from the districts in the Bombay Presidency during the third week of July give the following results:

District.	Cases.	Deaths.	District.	Cases.	Deaths.
Broach ...	7	1	Karachi ...	21	18
Surat ...	98	74	Kohlapore ...	300	263
Thana ...	140	103	Sachin ...	22	9
Satara ...	54	41	Bhor ...	11	10
Sholapore ...	13	7	Cutch ...	38	26
Belgaum ...	253	185			
Dharwar ...	113	92	Total for the week ending July 21st...	1,080	840
Kathiawar ...	9	7			
Baroda ...	8	5			

Lahore.—Plague reappeared on July 26th at the village of Aur, in this district. Four cases occurred within two days, and in consequence the village area has been cordoned and a segregation camp established.

Karachi.—During the last week of July some 15 fresh cases of plague occurred, with 10 deaths.

Calcutta.—On July 22nd there had been no fresh cases of plague for seven consecutive days. Since then a few—not more than a dozen—cases in all have been reported. The plague hospitals are wellnigh empty, and only a few suspected persons are being detained.

China.—The southern ports of China—Pakhoi, Hong Kong, Canton, and Swatow—seem fairly free from plague, but in the more northerly town of Amoy and district plague is more in evidence.

Hong Kong.—The Colonial Secretary informs us that one case of plague occurred in Hong Kong during the week ending August 13th.

LITERARY NOTES.

SIR HENRY THOMPSON has just issued a ninth edition of his well-known book *Food and Feeding*. The last edition has been for some time out of print, and it is a matter for congratulation that the author has seen his way to revise and enlarge the volume and to give us his latest words on the subject, for we would prefer not to adopt his phraseology and say his "last." The book is unique of its kind, more precise and practical than Brillat-Savarin, more scientific than *Megg Dodd's*, in which, indeed, Sir Walter Scott seems always to be half in jest; it fills a place which no other book on the subject attempts to occupy. The publishers are Frederick Warne and Co.

Messrs. Macmillan and Co. will publish shortly *A Clinical Treatise on Diseases of the Breast* by Mr. A. Marmaduke Sheild. It is based mainly upon his own experience, but he has endeavoured at the same time to include as much practical information from other sources as can be given within the limits of a single volume, so that the book may be useful alike to the busy practitioner and the advanced student. The illustrations are almost entirely original, and many of them are reproduced in colour.

In the *Phonographic Record* for August, Dr. Fletcher Beach continues his admirable observations of mentally deficient children, and Dr. James Collier gives a graphic account of a noteworthy case of paraplegia under the care of Sir William Gowers, in which a vesical fistula occurred spontaneously in the groin from retention of urine. Dr. D. Haitly Burn records two cases in which lead plaster, made into pills, was "successfully" used by patients as an abortifacient—the physician's suspicions as to the drug having been aroused by the presence in each case of the blue line on the gums. In a short paper on the Humours of Patients, Dr. Sydney Whitaker tells the story of a patient upon whom a pleximeter had been used, who afterwards sent a message asking the Dr. to "come at once, and bring that thumper with him, for it had given him a lot of ease the last time; he was wonderfully better after it!"

Canada has not yet forgotten that she was apostrophised by Mr. Rudyard Kipling as Our Lady of the Snows, and in a kind of defiance of the laureate of the empire, Mr. Morang of Toronto has published a summer number under the title *Our Lady of the Sunshine*. To it Dr. William Henry Drummond, the author of the volume of poems entitled *The Habitant*, to which we referred recently, has contributed a set of verses in praise of the Canadian summer. They are put into the mouth of a French Canadian peasant, a "habitant" of the proviuce of Quebec, and like all Dr. Drummond's dialect verses, are redolent of the soil. The habitant is deeply attached to his country, and Dr. Drummond's peasant exclaims:

An' no matter w'at I'm hearin', still I never feel lak bein'
No odder stranger feller, me, but only habitant.

Dr. Drummond gives words to the love of country life which lies deep but unexpressed in the heart of the true countryman, and the following verse will strike a sympathetic chord in many breasts in this sultry weather:

See de apple blossom showin', see de clover how it's growin',
Watch de trout, an' way dey're playin' on de reever down below,
Ah! de cunning leetle feller! easy see how well dey're knowin'
We're too busy now for ketch dem, an' dat's w'y dey're jompin' so.

Canada can inspire a warm affection in her children, and there will be few Canadians who will not echo the sentiment of the concluding verse of Dr. Drummond's spirited poem:

For dere's no place lak our own place, don't care de far you're goin
Dat's w'at de whole worl's sayin,' w'enever dey come here,
'Cos' we got de fines' contree, an' de beeges' reever flowin'
And le bon Dieu sen' de sunshine nearly twelve mont' ev'ry year!

ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF THE COUNCIL.

AT a meeting of the Council held in the Senate Room, M'Ewan Hall, Edinburgh, on Tuesday, July 26th, 1898.

Present:

Dr. ROBERT SAUNDBY, President of Council, in the chair.
Sir THOMAS GRAINGER STEWART, M.D., President-elect.
Dr. CHARLES PARSONS, Treasurer.

Dr. HENRY BARNES, Carlisle.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Mr. LANGLEY BROWNE, West Bromwich.
Dr. JOHN CAMPBELL, Belfast.
Dr. JOHN A. CAMPBELL, Carlisle.
Mr. JAMES CANTLIE, London.
Mr. ANDREW CLARK, London.
Dr. W. F. CLEVELAND, London.
Dr. JOHN WARD COUSINS, Portsmouth.
Dr. H. RADCLIFFE CROCKER, London.
Dr. DAVID DRUMMOND, Newcastle-on-Tyne.
Mr. GEORGE EASTES, M.B., London.
Dr. W. A. ELLISTON, Ipswich.
Prof. DAVID W. FINLAY, Aberdeen.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. ALFRED GODSON, Cheadle.
Dr. BRUCE GOFF, Bothwell.
Dr. WILLIAM GORDON, Exeter.
Dr. OGILVIE GRANT, Inverness.
Dr. J. GROVES, Carisbrooke, Isle of Wight.
Mr. T. R. JESSOP, Leeds.
Mr. EVAN JONES, Aberdare.
Dr. J. A. LINDSAY, Belfast.
Mr. JORDAN LLOYD, Birmingham.
Mr. N. C. MACNAMARA, London.
Mr. H. J. MANNING, Salisbury.
Dr. J. C. MCVAIL, Glasgow.
Dr. J. W. MILLER, Dundee.
Mr. W. JONES MORRIS, Portmadoc.
Mr. R. H. B. NICHOLSON, Hull.
Dr. J. W. J. OSWALD, London.
Mr. C. H. W. PARKINSON, Wimborne Minster.
Dr. R. W. PHILIP, Edinburgh.
Dr. GEORGE HARE PHILIPSON, Newcastle-on-Tyne.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNOR, Stockport.
Dr. WILLIAM RUSSELL, Edinburgh.
Dr. G. E. SHUTTLEWORTH, Richmond.
Dr. R. SOMERVILLE, Galashiels.
Dr. W. J. TYSON, Folkestone.
Dr. A. R. URQUHART, Perth.
Mr. T. JENNER VERRALL, Brighton.
Mr. C. G. WHEELHOUSE, Filey.
Mr. G. E. WILLIAMSON, Newcastle-on-Tyne.
Dr. W. L. WINTERBOTHAM, Bridgwater.
Dr. S. WOODCOCK, Old Trafford.

The minutes of the last meeting having been printed and circulated were taken as read and signed as correct.

Read letters of apology for non-attendance from The President (Professor Roddick), Sir Willoughby Wade, Dr. Roberts Thomson, Brig.-Sg.-Lt.-Col. E. F. Drake-Brockman, and Mr. Vincent Jackson.

Resolved: That the following resolution of the General Practitioners and Ethical Committee be forwarded to Dr. Pickup and Dr. Richardson Rice of Coventry:

That after a prolonged and careful inquiry the Council of the British Medical Association is of opinion that the members of the Coventry provident Dispensary staff are continuing a system of medical relief which is incompatible with the best interests of the profession and hurtful to their professional brethren practising in the neighbourhood.

Read correspondence between the President of Council and the Admiralty respecting provisions being made for teaching tropical diseases at Haslar (see page 244).

Resolved: That the same be received and entered on the Minutes.

Resolved: That the 124 candidates whose names appear on the circular convening the meeting be, and they are hereby, elected members of the British Medical Association.

Read Memorial to the Home Secretary on the question of fees to medical witnesses as drawn by the Solicitor:

TO THE

RIGHT HONOURABLE SIR MATTHEW WHITE RIDLEY, Bart.,

Her Majesty's Principal Secretary of State for the Home Department.

THE MEMORIAL

OF

THE BRITISH MEDICAL ASSOCIATION.

SHEWETH—

1.—That the British Medical Association is an Association established not for profit under the provisions of the Joint Stock Companies Act, and consists of upwards of 17,000 members who are members of the medical profession.

2.—That numerous representations have been made to the Council of the British Medical Association from time to time, relative to the inadequacy of the fees allowed to medical men as witnesses in criminal cases.

3.—That such representations have shown, and a reference to the scale of fees prescribed in such cases will confirm, the fact that there is a very real and substantial grievance in medical men having to leave their practice, in some cases for a whole day, and receive at the most therefor a fee of £1 1s., or 10s. 6d., as the case may be.

4.—Notwithstanding the provisions of the statutes in force on this subject, there are cases in which medical men are required to attend to give evidence without obtaining any remuneration therefor, and remedial legislation in this respect is urgently required.

5.—By an order made by the Right Hon. Sir George Grey on February 9th, 1858, it is provided that there may be allowed to prosecutors or witnesses being members of the profession of medicine, if resident in the place where the examination is taken or within a distance not exceeding two miles from such place for attending to give professional evidence on such examination a sum in the discretion of the magistrates for each attendance not exceeding ... ... £ s. d. 0 10 6

If such prosecutor or witnesses shall reside elsewhere then a sum not to exceed 1 1 0

And for mileage a sum not to exceed 3d. per mile each way.

There may be allowed to prosecutors and witnesses, being members of the profession of medicine, attending to give evidence in a court of assize, oyer and terminer or gaol delivery or general sessions of the peace, for their trouble, expense, and loss of time for each day they shall necessarily attend the court to give professional evidence, a sum not to exceed 1 1 0

For each night the same as an ordinary witness, namely, 2s. 6d or 2s.

And for mileage a sum not to exceed 3d. each way.

It is further ordered that no prosecutor or witness be allowed under any of the regulations aforesaid for his attendance, loss of time, trouble, or expense, in more than one case on the same day.

It is further provided that as it may become necessary in certain cases that persons unacquainted with the facts to be given in evidence upon the prosecution may be required to attend as witnesses in order to state their opinion on matters as to which such opinion is admissible in evidence, and it is reasonable in such cases that the foregoing rates of allowance should be departed from, that the allowances to be made to persons in such circumstances should be subject to the decision of the court before which such person should be examined which might direct such allowances as to the court should appear reasonable.

6.—Your Memorialists submit for your consideration the real necessity which exists for the modification of the allowances to medical witnesses in the cases above referred to. Whatever might have been proper allowances to witnesses forty years ago, it must be evident that at the present time they fall far short of a fair remuneration for the trouble and loss of time involved.

7.—By Statute passed in the 14th and 15th years of Her Majesty the Queen, cap. 55, Section v, it is provided that it shall be lawful for one of Her Majesty's principal Secretaries of State from time to time to alter any regulations as to costs, expenses, and compensation, to prosecutors and witnesses, and as to certificates of examining magistrates in respect thereof, or to make new regulations in relation to any of the matters aforesaid, and that such regulations for the time being should be binding on all courts and persons whomsoever.

8.—Your Memorialists therefore submit that there exists a much-needed reform in the scale of allowances to medical witnesses, and request your careful consideration of the subject with a view of making such order as may be deemed desirable for affording to medical witnesses such remuneration as may be reasonable and proper under the circumstances.

9.—It is also submitted that remuneration in accordance with the scale of fees allowed to professional witnesses in civil cases would more nearly coincide with the remuneration to which medical witnesses should be entitled for giving evidence in criminal prosecutions, and that no distinction should be made between giving evidence in courts of assize and magisterial examinations.

10.—Your Memorialists also request that you will be pleased to receive from them a deputation on this important subject.

And your Memorialists will ever pray, etc.

Resolved: That the Memorial as drawn by the solicitor respecting the question of fees to medical witnesses be approved and forwarded to the Home Secretary.

Read list of attendances of members of Council for the past twelve months as follows:

	Total Attendances.
Roddick, Dr. T. G., Montreal, President	0
Stewart, Sir T. Grainger, M.D., F.R.S.Edin., President-Elect	4
Saundby, Dr. R., Birmingham, President of Council	6
Parsons, Dr. Charles, Dover, Treasurer	5
Acland, Sir H. W., K.C.B., M.D., F.R.S., Oxford, Vice-President	0
Banks, Sir J. T., M.D., Dublin, Vice-President ...	0
Barnes, Dr. Henry, Carlisle, Vice-President... ...	3
Barr, Dr. James, Liverpool, R.	6
Barrow, Mr. B., F.R.C.S., Ryde, Vice-President ...	0
Batten, Dr. R. W., Gloucester, R.	3
Beverley, Dr. M., Norwich, R.	5
Bridgwater, Dr. T., LL.D., Harrow-on-the-Hill, Vice-President	4
Browne, Mr. Langley, F.R.C.S., West Bromwich, R....	0
Butlin, Mr. H. T., D.C.L., F.R.C.S., London, Vice-President	4
Campbell, Dr. John, Belfast, R.	3
Campbell, Dr. John A., Carlisle, R.	4
Cantlie, Mr. James, London, R.	5
Carter, Dr. Alfred H., Birmingham, R.	5
Clark, Mr. Andrew, F.R.C.S., London, R.	5
Cleveland, Dr. W. F., London, R.	6
Cousins, Dr. J. Ward, Portsmouth, Vice-President ...	2
Crocker, Dr. H. Radcliffe, London, R.	2
Crowe, Dr. G. W., Worcester, R.	0

	Total attendances.
Cuming, Dr. J., Belfast. Vice-President	0
Dickinson, Dr. E. H., Liverpool, R.	4
Dolan, Dr. T. M., Halifax, R.	3
Donaldson, Mr. E., Londonderry, R.	0
Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel E. F., F.R.C.S., London, R.	3
Drummond, Dr. D., D.C.L., Newcastle-on-Tyne, R. ...	1
Dyson, Dr. W., Sheffield, R.	4
Eastes, Mr. George, M.B., London, R.	6
Edwards, Dr. W. T., Cardiff, Vice-President	0
Elliston, Dr. W. A., Ipswich, R.	5
Fergus, Dr. Freeland, Glasgow, R.	1
Finlay, Dr. David W., Aberdeen, R.	5
Foster, Sir B. W., M.D., D.C.L., M.P., Birmingham, Vice-President	4
Fowler, Mr. R. S., Bath, R.	3
Fox, Dr. E. Long, Clifton, Vice-President	0
Gairdner, Sir William, K.C.B., M.D., F.R.S., Glasgow, Vice-President	0
Galton, Dr. J. H., Upper Norwood, R.	6
Glascott, Dr. C. E., Manchester, R.	1
Godson, Dr. A., Cheadle, R.	4
Goff, Dr. Bruce, Bothwell, R....	5
Gordon, Dr. Wm., Exeter, R.	4
Grant, Dr. Ogilvie, Inverness, R.	5
Groves, Dr. J., Carisbrooke, R.	6
Handford, Dr. H., Nottingham, R.	4
Harries, Mr. John D., Shrewsbury, R.	4
Hemming, Mr. J. H., Kimbolton, R.	3
Holman, Dr., London, Vice-President	5
Jackson, Mr. T. Vincent, Wolverhampton, R. ...	5
Jessop, Mr. T. R., F.R.C.S., Leeds, R.	2
Jones, Mr. Evan, Aberdare, R.	6
Lindsay, Dr. J. A., Belfast, R.	1
Lloyd, Mr. Jordan, F.R.C.S., Birmingham, R. ...	4
Macnamara, Mr. N. C., F.R.C.S., London, Vice-President	4
McVail, Dr. J. C., Partick, R.	6
Manning, Mr. H. J., Salisbury, R.	5
Miller, Dr. J. W., Dundee, R.	0
Moore, Dr. John William, Dublin, R.	4
Morgan, Mr. W. Lewis, Oxford, R.	2
Morris, Mr. W. Jones, Portmadoc, R.	3
Nicholson, Mr. R. H. B., Hull, R.	5
Norton, Dr. J., Bagnalstown, R.	0
O'Dwyer, Surg.-Maj.-Gen. T. F., M.D., Aldershot, R.	2
Oswald, Dr. J. W., London, R.	6
Owen, Dr. Isambard, London, R.	3
Parkinson, Mr. C. H. W., Wimborne Minster, R. ...	6
Perks, Dr. R. H. (Adelaide), Penarth, R	0
Philip, Dr. R. W., Edinburgh, R.	0
Philipson, Dr. G. H., D.C.L., Newcastle-on-Tyne, Vice-President	1
Phillips-Conn, Dr. H. H., Reading, R.	2
Pope, Dr. F. M., Leicester, R.	6
Rayner, Dr. Edwin, Stockport, R.	4
Rolston, Dr. John, Devonport, R.	5
Russell, Dr. W., Edinburgh, R.	5
Sandford, Dr. A. W., Cork, R.	0
Sedgwick, Dr. L. W., London, R.	4
Sheen, Dr. A., Cardiff, R.	3
Shuttleworth, Dr. G. E., Richmond Hill, R.	4
Skerritt, Dr. E. Markham, Clifton, R.	3
Somerville, Dr. R., Galashiels, R.	4
Stear, Mr. Henry Saffron Walden, R.	4
Thomson, Dr. J. Roberts, Bournemouth, Vice-President...	2
Tyson, Dr. W. J., Folkestone, R.	4
Urquhart, Dr. A. R., Perth, R.	4
Verrall, Mr. T. J., Brighton, R.	5
Wade, Sir Willoughby, Birmingham, Vice-President	0
Waters, Dr. A. T. H., Liverpool, Vice-President ...	0
Wheelhouse, Mr. C. G., F.R.C.S., Filey, Vice-President...	2
White, Mr. Joseph, D.C.L., F.R.C.S., London, Vice-President	3
Williamson, Mr. G. E., F.R.C.S., Newcastle-on-Tyne, R	2
Winterbotham, Dr. W. L., Bridgwater, R.	4
Woodcock, Dr. S., Old Trafford, R.	0

R=Branch Representative.

Resolved: That the report of attendances of Council be received and entered on the Minutes, and printed in the JOURNAL in accordance with by-law 21.

At a meeting of the Council held in the Senate Room, M'Ewan Hall, Edinburgh, on Wednesday, July 27th, 1898.

Present:

Dr. ROBERT SAUNDBY, President of Council, in the Chair.

Dr. CHARLES PARSONS, Treasurer.

Dr. HENRY BARNES, Carlisle.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Mr. LANGLEY BROWNE, West Bromwich.
Dr. JOHN CAMPBELL, Belfast.
Mr. JAMES CANTLIE, London.
Mr. ANDREW CLARK, London.
Dr. W. F. CLEVELAND, London.
Dr. J. WARD COUSINS, Portsmouth.
Dr. JAS. CRAIG, Dublin.
Dr. H. RADCLIFFE CROCKER, London.
Dr. P. MAURY DEAS, Exeter.
Dr. DAVID DRUMMOND, Newcastle.
Mr. GEORGE EASTES, M.B., London.
Dr. W. A. ELLISTON, Ipswich.
Professor DAVID W. FINLAY, Aberdeen
Dr. J. H. GALTON, Upper Norwood.
Dr. ALFRED GODSON, Cheadle
Dr. BRUCE GOFF, Bothwell.
Dr. OGILVIE GRANT, Inverness.
Dr. J. GROVES, Carisbrooke, Isle of Wight.
Dr. H. HANDFORD, Nottingham.
Mr. T. R. JESSOP, Leeds.
Mr. EVAN JONES, Aberdare.
Dr. J. A. LINDSAY, Belfast.
Mr. JORDAN LLOYD, Birmingham.
Dr. John C. McVAIL, Partick.
Mr. H. J. MANNING, Salisbury.
Dr. J. W. MILLER, Dundee.
Mr. W. JONES MORRIS, Portmadoc.
Mr. R. H. B. NICHOLSON, Hull.
Mr. C. H. W. PARKINSON, Wimborne Minster.
Dr. R. W. PHILIP, Edinburgh.
Dr. G. HARE PHILIPSON, Newcastle-on-Tyne.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Mr. H. B. ROBINSON, London.
Dr. WILLIAM RUSSELL, Edinburgh.
Dr. G. E. SHUTTLEWORTH, Richmond Hill.
Dr. R. SOMERVILLE, Galashiels.
Dr. W. J. TYSON, Folkestone.
Dr. A. R. URQUHART, Perth.
Mr. T. JENNER VERRALL, Brighton.
Mr. C. G. WHEELHOUSE, Filey.
Mr. G. E. WILLIAMSON, Newcastle-on-Tyne.
Dr. W. L. WINTERBOTHAM, Bridgwater.
Dr. S. WOODCOCK, Old Trafford.

The minutes of the meeting of July 26th, 1898, were read and confirmed.

The following members were reported as having been elected representatives of the various Branches.

Aberdeen, Banff, and Kincardine Branch.—D. W. Finlay, Aberdeen. *Adelaide and South Australia Branch.*—C. G. D. Morier, Glasgow. *Barbados Branch.*—(No return.) *Bath and Bristol Branch.*—R. S. Fowler, Bath; E. Markham Skerritt, Bristol. *Bermuda Branch.*—(No return.) *Birmingham and Midland Counties Branch.*—Langley Browne, West Bromwich; Alfred Carter, Birmingham; Jordan Lloyd, Birmingham. *Bombay Branch.*—(No return.) *Border Counties Branch.*—T. F. T'Anson, Whitehaven; R. Somerville, Galashiels. *Brisbane and Queensland Branch.*—(No return.) *British Columbia Branch.*—(No return.) *British Guiana Branch.*—C. J. Gomes, Edinburgh. *Burmah Branch.*—(No return.) *Cambridge and Huntingdon Branch.*—H. Stear, Saffron Walden. *Cape of Good Hope Branch.*—(No return.) *Colombo, Ceylon Branch.*—H. M. Fernando, London. *Cork and South of Ireland Branch.*—Professor Henry Corby, Cork. *Deccan Branch.*—(No return.) *Dorset and West Hants Branch.*—C. H. W. Parkinson, Wimborne Minster. *Dublin Branch.*—James Craig, Dublin; John William Moore, Dublin. *Dundee and District Branch.*—J. W. Miller, Dundee. *East Anglian Branch.*—M. Beverley, Norwich; W. A. Elliston, Ipswich. *East York and North Lincoln Branch.*—R. H. B. Nicholson, Hull. *Edinburgh Branch.*—R. W. Philip, Edinburgh; William Russell, Edinburgh. *Gibraltar Branch.*—Surgeon-Major W. G. Macpherson, London. *Glasgow and West of Scotland Branch.*—Andrew Freeland Fergus, Glasgow; Bruce Goff, Bothwell. *Gloucestershire Branch.*—R. W. Batten, Gloucester. *Grahamstown and Eastern Province Branch.*—(No return.) *Griqualand West Branch.*—(No return.) *Halifax, Nova Scotia Branch.*—(No return.) *Hong Kong and China Branch.*—James Cantlie, London. *Jamaica Branch.*—(No return.) *Lancashire and Cheshire Branch.*—J. Barr, Liverpool; B. Brierley, Manchester; E. H. Dickinson, Liverpool; A. Godson, Cheadle; E. Rayner, Stockport; S. Woodcock, Manchester. *Leeward Islands Branch.* (No return.) *Londonderry and North-West of Ireland Branch.*—E. Donaldson, Londonderry. *Malaya Branch.*—G. D. Freer, London. *Malta and Mediterranean Branch.*—(No return.) *Manitoba and North-West of Canada Branch.*—(No return.) *Melbourne and Victoria Branch.*—C. E. Goodall, London. *Metropolitan Counties Branch.*—Andrew Clark, W. F. Cleveland, H. Radcliffe Crocker, George Eastes, Isambard Owen, H. B. Robinson, L. W. Sedgwick, London. *Midland Branch.*—H. Handford, Nottingham; F. M. Pope, Leicester. *Montreal Branch.*—F. J. Shepherd, Montreal; E. P. Lachapelle, Montreal. *Natal Branch*—(No return.) *New Zealand Branch.*—(No return.) *Northern Counties of Scotland Branch.*—Ogilvie Grant, Inverness. *North of England Branch.*—David Drummond, Newcastle-on-Tyne; G. E. Williamson, Newcastle-on-Tyne. *North of Ireland Branch.*—John Campbell, Belfast; J. A. Lindsay, Belfast. *North Wales Branch.*—W. Jones Morris, Portmadoc. *Ottawa Branch.*—(No return.) *Oxford and District Branch.*—W. L. Morgan, Oxford. *Perthshire Branch.*—A. R. Urquhart, Perth. *Punjab Branch.*—(No return.) *Quebec Branch.*—Michael Ahern, Quebec. *Reading and Upper Thames Branch.*—H. H. Phillips-Conn, Reading. *Shropshire and Mid-Wales Branch.*—John Davies Harries, Shrewsbury. *South-Eastern Branch.*—J. H. Galton, Upper Norwood, S.E.; W. J. Tyson, Folkestone; T. J. Verrall, Brighton. *South Eastern of Ireland Branch.* J. Norton, Bagnalstown. *Southern Branch*—J. Groves, Carisbrooke; H. J. Manning, Salisbury. *South Indian and Madras Branch.* Brigade Surgeon-Lieutenant Colonel E. F. Drake-Brockman, London. *South Midland Branch.* J. H. Hemming, Kimbolton. *South Wales and Monmouthshire Branch.*—Evan Jones, Aberdare; A. Sheen, Cardiff. *South Western Branch.*—P. Maury Deas, Exeter; John Rolston, Devonport. *Staffordshire Branch.*—T. Vincent Jackson, Wolverhampton. *Stirling, Kinross, and Clackmannan Branch.*—J. C. McVail, Glasgow. *Sydney and New South Wales Branch.* P. Sydney Jones, London. *Thames Valley Branch.* G. E. Shuttleworth, Richmond Hill, Surrey. *Toronto Branch.*—(No return.) *Trinidad and Tobago Branch.*—(No return). *West Somerset Branch.* W. L. Winterbotham, Bridgwater. *Worcestershire and Herefordshire Branch.* G. W. Crowe, Worcester. *Yorkshire Branch.*—T. M. Dolan, Halifax; W. Dyson, Sheffield; T. R. Jessop, Leeds.

The election of candidates was then considered.

Resolved: That the candidates whose names appear in the *Daily Journal* of to-day, together with Dr. Nathaniel Grace of Montreal, and Dr. Wm. Smith Sinclair of Wigan, be elected members of the British Medical Association subject to confirmation at the October meeting.

Dr. Ward Cousins introduced a deputation from Portsmouth, consisting of Dr. Watson (Southsea), Surgeon-Major-General Cuffe, C.B., Inspector-General Turnbull, Dr. Carling, Dr. Ruell, Mr. H. J. Manning, Dr. J. Groves, and Fleet-Surgeon Thomas.

The deputation cordially invited the Association to hold its annual meeting at Portsmouth in 1899, and recommended Dr. John Ward Cousins as President-elect.

Resolved: That it be a recommendation to the annual meeting of to-day that the invitation to hold the annual meeting of 1899 at Portsmouth be accepted, and that Dr. John Ward Cousins be appointed President-elect.

Read letter from Dr. Grimshaw, asking that the Council should take steps with regard to the resolution that had been passed in the Section of Medicine at the annnual meeting (which had been already considered by the Council and referred to the Parliamentary Bills Committee upon which no action was taken) held at Carlisle relating to the prevention of tuberculosis, namely:

That this Section is of opinion that the Council of the Association should take an early opportunity of impressing upon the Government and public authorities that, having regard to the facts now fully established and recognised by the medical profession, that tuberculosis is an infectious disease and capable of being controlled by special measures, and that in order to produce any beneficial results on an appreciable scale it is necessary: (1) That provision should be made at the public expense for bacteriological laboratories by all sanitary authorities, where the sputum of patients suspected to be suffering from tuberculous disease may be examined and reported upon; and (2) that on the discovery of pulmonary phthisis in any individual of the poorer classes, public provision should be made for the treatment of such case in a public institution provided for the purpose at the public expense and by voluntary contributions.

Resolved: That the letter be referred to the Parliamentary Bills Committee, with a request that it should take some action in the matter.

Resolved: That nominations for the following offices be made at one meeting of Council, and voted upon by printed list at the next—namely, President of Council and members of the Journal and Finance Committee.

Read letter from the Solicitor giving his opinion that the Council is not at liberty to appoint representatives upon the Committee of Management of other bodies or institutions.

Resolved: That the letter be received and entered on the minutes.

At a meeting of the Council, held in the Senate Room, M'Ewan Hall, Edinburgh, on Thursday, July 28th, 1898:

Present:

Dr. Robert Saundby, President of Council, in the chair.

Dr. C. Parsons, Treasurer.

Dr. Henry Barnes, Carlisle.
Dr. James Barr, Liverpool.
Dr. Michael Beverley, Norwich.
Dr. James Brassey Brierley, Old Trafford.
Mr. H. Langley Browne, West Bromwich.
Dr. John Campbell, Belfast.
Mr. James Cantlie, London.
Mr. Andrew Clark, London.
Dr. W. F. Cleveland, London.
Dr. Henry Corby, Cork.
Dr. J. Ward Cousins, Southsea.
Dr. James Craig, Dublin.
Dr. H. Radcliffe Crocker, London.
Dr. Maury Deas, Exeter.
Dr. David Drummond, Newcastle-on-Tyne.
Mr. George Eastes, London.
Dr. W. A. Elliston, Ipswich.
Professor David W. Finlay, Aberdeen.
Dr. John H. Galton, London.
Dr. A. Godson, Cheadle.
Dr. Bruce Goff, Inverness.
Dr. Ogilvie Grant, Inverness.
Dr. J. Groves, Carisbrooke.
Dr. Henry Handford, Nottingham.
Mr. T. R. Jessop, Leeds.
Mr. Evan Jones, Aberdare.
Dr. J. A. Lindsay, Belfast.
Mr. H. J. Manning, Salisbury.
Dr. J. C. McVail, Partick.
Dr. J. W. Miller, Dundee.
Mr. W. Jones Morris, Portmadoc.
Mr. R. H. B. Nicholson, Hull.
Dr. C. H. W. Parkinson, Wimborne Minster.
Dr. R. W. Philip, Edinburgh.
Dr. Frank M. Pope, Leicester.
Dr. Edwin Rayner, Stockport.
Dr. H. B. Robinson, London.
Dr. Wm. Russell, Edinburgh.
Dr. G. E. Shuttleworth, Richmond Hill.
Dr. R. Somerville, Galashiels.
Dr. W. J. Tyson, Folkestone.
Dr. A. R. Urquhart, Perth.
Mr. T. Jenner Verrall, Brighton.
Dr. G. E. Williamson, Newcastle.
Dr. S. Woodcock, Old Trafford.

The minutes of the last meeting were read and signed as correct.

The President of Council reported that the President of the Association had suggested the desirability of asking the Government to send a pathologist to South Africa to investigate the black-water malarial fever, and read the following resolution passed in the Section of Tropical Diseases:

The Section, recognising the wide distribution and appalling mortality from black-water fever in tropical Africa, would appeal to the Council to urge on the Government the desirability of sending properly qualified men to investigate the nature and cause of this disease with the view of devising effective measures for its prevention and treatment.

Resolved: That it be a recommendation to the general meeting to authorise the Council to petition the Government to carry into effect the subject of the foregoing resolution.

Resolved: That Sir Willoughby Wade be appointed a delegate to represent the British Medical Association at the meeting of the Italian Society of Internal Medicine at Turin.

The appointment of the Journal and Finance Committee was then considered, and, in accordance with the by-laws, the member longest on the Committee, namely, Dr. Elliston, retired, and Sir Walter Foster and Dr. Skerritt were retired by lot. There were four vacancies, for which there were nine nominations. A ballot was taken, Professor D. W. Finlay and Mr. Andrew Clark were appointed scrutineers, and the following were reported to have the greatest number of votes: namely, Dr. J. W. Moore, Dr. James Barr, Mr. T. R. Jessop, and Mr. Evan Jones.

Resolved: That the following be appointed the Journal and Finance Committee for the ensuing year:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex officio;* Dr. James Barr, Dr. T. Bridgwater, Mr. Andrew Clark, Mr. George Eastes, Dr. Handford, Dr. C. Holman, Mr. Vincent Jackson, Mr. T. R. Jessop, Mr. Evan Jones, Mr. Jordan Lloyd, Mr. Macnamara, Dr. J. W. Moore, Dr. W. Russell, Mr. T. Jenner Verrall, and Dr. S. Woodcock.

Resolved: That the following be appointed the Parliamentary Bills Committee for the ensuing twelve months:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex officio:* Mr. S. H. Agar, Mr. D. B. Balding, Mr. Gilbert Barling, Dr. A. G. Bateman, Dr. R. W. Batten, Dr. R. L. Bowles, Dr. T. R. Bradshaw, Dr. T. Bridgwater, Mr. George Brown, Dr. J. S. Cameron, Mr. J. Cantlie, Dr. W. A. Carline, Dr. W. F. Cleveland, Professor Henry Corby, Dr. G. W. Crowe, Dr. P. Maury Deas, Dr. Alex. Dempsey, Dr. T. M. Dolan, Dr. E. Donaldson, Dr. W. Douglas, Brigade-Surgeon-Lieutenant-Colonel E. F. Drake-Brockman, Mr. George Eastes, Dr. R. Esler, Dr. Robert Farquharson, M.P. (Chairman), Dr. H. M. Fernando, Sir W. Foster, M.P., Dr. G. D. Freer, Dr. A. Godson, Dr. Bruce Goff, Dr. C. G. Gooding, Dr. J. C. Gomes, Dr. Ogilvie Grant, Dr. Major Greenwood, Dr. J. Groves, Dr. J. B. Hackett, Mr. J. D. Harries, Dr. A. J. Harrison, Mr. J. H. Hemming, Dr. Holman, Mr. Victor Horsley, F.R.S., Dr. W. H. Hughes, Mr. Evan Jones, Dr. A. R. Manby, Dr. C. W. Marriott, Dr. J. C. McVail, Dr. W. J. Mickle, Dr. C. H. Milburn, Dr. J. W. Miller, Dr. J. Wm. Moore, Mr. W. Lewis Morgan, Mr. W. Jones Morris, Dr. James Murphy, Professor A. Ogston, Mr. C. H. W. Parkinson, Dr. F. M. Pope, Mr. A. B. Ritchie, Dr. James Ritchie, Dr. John Rolston, Dr. G. E. Shuttleworth, Dr. R. Somerville, Mr. W. D. Spanton, Mr. C. R. Straton, Dr. G. D. P. Thomas, Dr. J. C. Thresh, Inspector-General Alex. Turnbull, M.D., R.N., Dr. A. R. Urquhart, Mr. T. J. Verrall, Mr. F. Wallace, Dr. Martindale Ward, Dr. Dawson Williams, Dr. W. L. Winterbotham, and Dr. S. Woodcock.

Resolved: That the following be appointed the Scientific Grants Committee for the ensuing twelve months.

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio;* Professor T. Clifford Allbutt, F.R.S., Dr. T. L. Brunton, F.R.S., Mr. Andrew Clark, Dr. H. R. Crocker, Professor W. D. Halliburton, F.R.S., Dr. H. Handford, Dr. Holman, Mr. Victor Horsley, F.R.S., Professor John McFadyean, Mr. N. C. Macnamara, Dr. W. Russell, Professor B. C. A. Windle, Dr. G. Sims Woodhead.

Resolved: That the Inebriates Legislation Committee be reappointed as follows:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio;* Mr. D. B. Balding, Dr. R. W

Branthwaite, Dr. T. Bridgwater, Sir C. Cameron, M.P., Dr. G. B. Clark, M.P.; Dr. C. R. Drysdale, Mr. George Eastes, Dr. J. W. Eastwood, Dr. R. Farquharson, M.P., Sir Walter Foster, M.P., Sir W. T. Gairdner, K.C.B., Dr. W. C. Garman, Dr. J. Hill Gibson, Dr. Alexander Grant, Mr. F. J. Gray, Dr. C. J. Hare, Dr. A. A. Jamison, Mr. H. R. Ker, Dr. Norman Kerr, Dr. A. E. T. Longhurst, Surgeon-Major G. K. Poole, Brigade-Surgeon R. Pringle Fleet-Surgeon G. Robertson, Dr. James Stewart, Dr. G. D. P. Thomas, Dr. Wynn Westcott, and Dr. H. W. Williams,

Resolved: That the Premises and Library Committee be reappointed as follows:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio*; Dr. T. Bridgwater, Mr. Andrew Clark, Dr. C. Holman, Mr. N. C. Macnamara, Mr. C. H. W. Parkinson, Dr. Pope, and Dr. Rayner.

Resolved: That the Anæsthetics Committee be reappointed for the purpose of completing their report as follows:

Professor T. Annandale, Dr. Joseph Bell, Mr. F. W. Braine, Professor G. Buchanan, Mr. H. T. Butlin, Dr. Dudley W. Buxton, Professor J. W. Byers, Professor M. Cameron, Professor John Chiene, Mr. John Croft, Professor E. Duncan, Mr. George Eastes, Dr. A. L. Galabin, Dr. Frederic W. Hewitt, Mr. Jonathan Hutchinson, F.R.S., Right Hon. Lord Lister, P.R.S., Professor William Macewen, Mr. Joseph Mills, Professor A. Ogston, Mr. G. Rowell, Dr. W. V. Snow, Mr. T. Pridgin Teale, F.R.S., Dr. David Wallace, and Dr. C. Childs.

Resolved: That the Medical Charities Committee be reappointed as follows:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex officio*; Dr. F. H. Alderson; Mr. J. Wickham Barnes, Dr. T. Bridgwater, Dr. J. B. Brierley, Mr. George Brown, Dr. G. W. Crowe, Dr. Ogilvie Grant, Dr. Major Greenwood, Dr. F. de Havilland Hall, Dr. J. Brindley James, Dr. J. W. J. Oswald, Dr. Walter Smith, Dr. J. R. Thomson, Mr. F. Wallace, and Dr. Hugh Woods.

Resolved: That the Therapeutic Committee be reappointed as follows, and that a grant of £50 be made for expenses:

Dr. R. Saundby, President of Council; Dr. J. B. Bradbury, Dr. Rose Bradford, F.R.S., Sir W. H. Broadbent, Bart., F.R.S., Dr. Mitchell Bruce, Dr. T. Lauder Brunton, F.R.S., Dr. A. H. Carter, Professor T. Cash, F.R.S., Professor T. R. Fraser, F.R.S., Sir W. T. Gairdner, K.C.B., Dr. W. Hunter, Dr. D. J. Leech, Dr. James Little, Professor D. MacAlister, Dr. E. Mackey, Dr. C. R. Marshall, Dr. Sidney H. C. Martin, F.R.S., Dr. M. McHugh, Dr. W. Murrell, Professor W. Osler, F.R.S., Dr. C. Y. Pearson, Dr. C. D. F. Phillips, Dr. Sidney Phillips, Dr. Sydney Ringer, F.R.S., Sir William Roberts, F.R.S., Professor R. Stockman, Dr. W. Hale White, Dr. W. Whitla, and Dr. N. I. C. Tirard, Honorary Secretary.

Resolved: That the Railway Servants' and Mariners' Eyesight Committee be reappointed as follows, and that a grant of £25 be made for expenses:

Mr. W. M. Beaumont, Mr. T. H. Bickerton, Mr. Langley Browne, Mr. G. A. Crichett, Dr. C. E. Fitzgerald, Dr. J. B. Lawford, Dr. D. Little, Mr. N. C. Macnamara, Dr. George Mackay, and Mr. Priestley Smith.

Resolved: That the General Practitioners and Ethical Committee be reappointed as follows:

The President, President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio*; Dr. James Barr, Dr. T. Bridgwater, Dr. Brassey Brierley, Mr. Langley Browne, Dr. W. F. Cleveland, Dr. J. H. Galton, Dr. Bruce Goff, Mr. J. H. Hemming, Mr. W. Jones Morris, Mr. R. H. B. Nicholson, Mr. C. H. W. Parkinson, and Dr. F. M. Pope.

Resolved: That the Trust Funds Committee be reappointed as follows:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio*; Dr. T. Bridgwater, Mr. Andrew Clark, Dr. Bruce Goff, Mr. N. C. Macnamara, and Mr. T. J. Verrall.

Resolved: That the following be the representatives of the Council on the Arrangement Committee:

The President; the President-elect; Dr. Robert Saundby, President of Council; Dr. C. Parsons, Treasurer, *ex-officio*; Dr. W. Russell, and Dr. H. R. Crocker.

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A meeting of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

East Anglian Branch.—The autumnal meeting will be held at Mundesley-on-Sea on Thursday, September 8th. Members desirous of assisting should communicate with Michael Beverley, M.D., 54, Prince of Wales Road, Norwich, Honorary Secretary.

SPECIAL CORRESPONDENCE.

BRISTOL.

The Health of Bristol during the Past Year.

The medical officer of health's report for the past year has just been published, and contains a good deal more than the usual routine statements. In the first place, the Bristol Extension Act has considerably enlarged the area and population of the city, increasing the former to 11,417 acres and the latter to 318,042 (estimated), but as the Act only came into operation at the end of the year, the statistics are calculated on the estimated population before the extension.

In these days it is something to be able to say that no case of disease has ever been traced to the use of the company's water supply. About 22 gallons per head constant supply is allowed, and though the water from the nature of the soil in the district is hard, it is clear, bright, and pure.

Bristol is one of the few cities in the kingdom that has unventilated sewers, and though there has been some agitation recently, the medical officer of health expresses his opinion that any interference with the present system will only lead to prolonged regret.

The new fever hospitals at Ham Green (185 beds) will soon be ready for the reception of fever cases other than small-pox; while the Novers Hill Hospital (53 beds) for small-pox only is just completed. A detailed account of the cost and construction of these hospitals is given. The laboratory work in diphtheria and enteric fever has been of immense value during the past year, more particularly perhaps during the epidemic of the latter disease in the autumn of 1897, when 254 examinations of blood for Widal's reaction were made. The examinations for diphtheria were 379. The medical officer of health calls attention to the fact that this is not part of his statutory work, and that in other towns a not inconsiderable sum is paid to an "outside bacteriologist."

The tables given in the 1897 report are new, and being made to represent graphically the rate above or below the mean rate calculated for a large number of years, are very clear and readily understood. Why Bristol should fall so below the mean in birth-rate is hard to say, except that the marriage-rate is also below it. The death-rate, too, is below the mean, 386 persons being alive who should, according to the average rate, be dead. Small-pox in Bristol in 1897 was confined to 12 cases, 9 occurring in March, 1 in October, the other two being doubtful cases; but the medical officer of health points out that it is only by the city being generally well vaccinated that isolation can be used as a controlling factor, for were this not so it would be impossible to stamp out the disease when once it had gained a footing. It is satisfactory to see that diphtheria is not increasing. One hundred and eighty-six cases were notified, with 8 as membranous croup, a total of 194, as against 258 in 1896. Scarlet fever claimed 511 patients, as against 1,352 in 1896, with 18 deaths, against 59 in the previous years. In the last 10 years it has been below the mean. Of the enteric epidemic a report was given in considerable detail at the time of its occurrence, so no detailed comment need be made except to say that 343 cases were notified, with 47 deaths.

During the epidemic 192 examinations by Widal's reaction were made, of which 121 gave a complete reaction in half an hour, 17 in an hour, and 119 agreed with the clinical development of the illness. In 15 other cases in which clumping

was observed only after a long time, 6 proved to be enteric and 9 not. In 39 negative cases 4 developed clinical enteric and 2 of them gave a positive result on a second examination. Among many other interesting details in the report are the remarks on "occupation in relation to attacks," and in this epidemic, as in many others, the heavy incidence upon female servants was noticed; 65 cases (of which 14 died) among the 302 domestic servants in houses attacked. Dr. Davies is to be congratulated on his masterly account of the enteric fever epidemic.

BERLIN.

Prince Bismarck and the Medical Profession.—Sanatoria for Diseases of the Lungs.—General News.

That Prince Bismarck was a Doctor of Medicine may not be generally known. The degree was bestowed on him—*honoris causâ*—by the Jena University late in the Seventies. It cannot be doubted that Prince Bismarck took a deep interest in the aims of modern medical science and public hygiene. Witness the great medical and sanitary institutions established during the ten years following the foundation of the German Empire, such as the *Pharmacopœia Germanica* in 1872, the Imperial Board of Health in 1876, the Imperial Vaccination Law (1874), the Imperial Law on the Sale of Food (1879), the Imperial Law for the Prevention of Cattle Diseases (1880), and later in 1887 the establishment of a perpetual commission for the revision of the *Pharmacopœia*.

Professor v. Leyden, President of the Berlin-Brandenburg Society for Lung Sanatoria, laid the foundation stone of the Belzig Sanatorium on August 2nd. There was a large attendence, and suitable speeches were made. The German Empress, as patroness of the Society, telegraphed a message of sympathy. About £4,000 are still wanted to complete the estimated cost of £27,000.

The Berlin University will be in the sign of medicine this year, for Professor Waldeyer, the anatomist, has been elected Rector.

The Prussian War Ministry deputed two staff-medical officers to go to the seat of war for the prosecution of studies.

The Prussian Cultus Ministry has sanctioned the sale of diphtheria antitoxin serum manufactured by E. Merck, in Darmstadt. This brings the number of licensed antitoxin manufacturers in Prussia up to three.

HONG KONG.

The Plague.—Death of Mr. H. MacCallum

In Hong-Kong the plague has practically disappeared at the time of writing:

Returns for weeks ending:

	Cases	Deaths.
June 4th	68	63
,, 11th	22	20
,, 18th	15	12
,, 25th	11	11

The total number of cases reported up to June 30th was 1,308, the total number of deaths being 1,153. There were no new cases or deaths on June 30th. In Macao the plague has almost become extinct, and is rapidly dying out in Canton and throughout the other parts of the Kwong-Tung provinces affected.

On June 30th Mr. H. MacCallum, late Secretary of the Sanitary Board, died at the Civil Hospital at the comparative early age of 45. He acted from 1878 as apothecary and analyst at the Government Civil Hospital, and in 1883 was transferred to the new department of the Sanitary Board as sanitary inspector and secretary, and later on was appointed sanitary superintendent and secretary of the newly constituted Sanitary Board. He worked most earnestly and conscientiously in the cause of the better sanitation of the colony, and exhibited great tact in carrying out many schemes of reform.

Two female medical practitioners are at present acting as volunteer assistants in Berlin hospitals, one in the surgical department of the Jewish hospital and the other in the medical department of one of the large municipal hospitals.

CORRESPONDENCE.

NATIONAL DEPOSIT FRIENDLY SOCIETY.

Sir,—Allow me to enter a protest against the letter of my friend, Dr. Garrett Horder, with regard to this society. The dead set which is made in some quarters against this excellent institution is much to be regretted, and appears to be due to a misapprehension of the facts.

The rate of remuneration to which Dr. Horder and others take exception is, in my experience, the rate which in the suburbs of London universally obtains for private practice amongst the working classes, whilst it is above that of country districts. Now, though this rate would undoubtedly be too low where higher wages were earned than those of the average artisan, it must be remembered that there is nothing in the rules of the society to compel the attendance of medical officers on persons who are in receipt of higher incomes. It is herein that this society has set such an admirable example to all other friendly societies. In it, the great objection to club work has been removed, namely, the exclusive dealing with one or two medical men, the effect of which is to compel them to attend rich and poor alike for fear of losing their appointments. In the National Deposit Friendly Society each patient makes his own arrangements with his own medical man, and the latter can always decline to attend a patient from whom the rate of remuneration would be inadequate.

This is so important a step in advance that many minor details might be passed over. But I would go further, and say that the rate of the National Deposit Friendly Society is a liberal one. It is a very high rate when it is borne in mind at what disadvantage it places it in its competition with other friendly societies. It is advantageous as compared with private practice among the artisan classes, because with an equal rate of pay there is no risk of bad debts. There is no question as to the enormous advance upon the remuneration of the other friendly societies. My experience, carefully tabulated for some years in a large club practice, gives the average value of an attendance in friendly societies at a little over one shilling, no distinction being made between visits and consultations. The average remuneration of the National Deposit Friendly Society is therefore double that amount.

Under present conditions when reform in club work still appears to be so remote, I venture to submit that it would be as well to encourage those who are not actually working against us.—I am, etc.,

O. Wunderlich, M.D.Brux., D.P.H.

Thames Ditton, Aug. 12th.

FILARIA STRONGYLUS OR FALSE TUBERCLE IN THE PIG, SHEEP, AND GOAT.

Sir,—Referring to the note on false tubercle in sheep, etc., by Dr. Sydney Marsden, published in the British Medical Journal of August 13th, I enclose two copies of a paper published in 1893, giving a brief account of the results of a research in the above subject which I made while acting as assistant to the Professor of Medical Jurisprudence and Public Health in the University of Aberdeen.

These results, from a diagnostic point of view, may be summarised thus: False tubercle, or worm nodules, is of exceedingly common occurrence in the lungs of sheep in many parts of England and Scotland. Two-thirds of the total carcasses (sheep and lambs) inspected showed distinct evidence of the disease, which is not nearly so common in young animals as in old ones. The pathological appearances bear a strong resemblance to miliary tuberculosis, and are produced by the adult form of a small nematode worm named pseudalius ovis pulmonalis by Alois Koch, who fully described this parasite in a memoir published at Vienna in 1883, and who differentiated it from strongylus filaria and strongylus rufescens—parasites which also infect the lungs of sheep. The number of tubercles in the lungs and the appearances they present vary greatly, especially with the age of the animal, being few in number, and usually of a fleshy consistence and appearance in young animals, while in older animals the tubercles are numerous, tend to run together and assume a more solid consistence, with a greyish or yellowish colour. A ready method of demonstrating the existence of the parasite in a nodule, and of separating it from the fresh tissue is described.

In studying the microscopical appearances of the lungs—which are fully described—living embryos of the worm were sometimes found as well as ova. In examining other organs for evidence of the parasite, the prevertebral glands in the thorax were in old sheep sometimes found affected, but as the nodules were caseated the parasite was demonstrated only in two of the microscopic sections. A few copies of the paper may still be had by any of your readers interested in the subject. I may add that the research was begun in connection with the seizure and condemnation of the emaciated carcasses of some old sheep, whose lungs presented all the appearances of miliary tuberculosis.—I am, etc.,

JOHN T. WILSON,
M.O.H. for the Districts and County of Lanark.

Public Health Office, Hamilton, Aug. 13th.

*** A copy of Dr. Wilson's paper has been placed in the Library of the British Medical Association.

THE VACCINATION ACT, 1898.

SIR,—The belief of the public in vaccination is being undermined in two ways: by active prejudice and by passive indifference. In his letter last week Dr. Honiton Coates gave an able summary of the causes that have led to this active prejudice, and a glance back at the past will reveal the causes of the passive indifference.

Vaccination was made obligatory in 1853, and in the years 1867-71 measures were taken for its strict enforcement. Why is it, then, that the nation which made vaccination compulsory thirty years ago has to-day not only abolished compulsion but has so largely become apathetic and indifferent to its advantages? Because a new generation has arisen in these thirty years, which knows not small-pox. In 1867 the nation still suffered much from this dreaded scourge, had vivid recollections of its ravages in the past, and saw daily the disfigured faces and blinded eyes of its victims. The present generation knows little of these things, and the small-pox epidemics of recent years seem to have taught no lessons outside the localities affected.

Dr. Coates suggests "education of the public by an authoritative pamphlet." It is doubtful whether such a paper would do much service. Committees, like individuals, seldom pay attention to good advice. It will need the bitter experience of a widely-scattered visitation of small-pox to teach the value of vaccination to that large section of the public who either disbelieve or are indifferent.—I am, etc.,

Weybridge, Aug. 15th. HOWARD S. WILLSON.

ASSURANCE COMPANY'S FEES FOR EXAMINATIONS IN ACCIDENT CASES.

SIR,—I should be glad to hear the opinion of other members as to what is fair remuneration for examining a patient and writing a report under the Workmen's Compensation Act. I have recently been approached by the Ocean Accident and Guarantee Corporation, Limited. They wish me to undertake examinations and to make reports at a fee of 2s. per report. The blank form for these reports was sent to me. According to it what the company requires in return for the 2s. is a description of the exact nature of the injury, to be stated as fully as possible, and opinions as to whether the injuries are the result of the accident described, whether they wholly incapacitate the patient for work, whether he is suffering from any disease or is subject to rupture, deafness, etc., or whether there is any circumstance whatever, except the injury, tending to produce disability to work, how long the disability is likely to continue, and finally whether there is reason to suspect that the patient was not perfectly sober at the time of the accident. I declined to do the work on these terms, which I pointed out were inadequate. In reply I received the assurance from the local manager "that throughout the whole connection of our medical referees every man has agreed to act for us on our terms." As I still refused to accept the offer I am informed from the same official that an outside medical man will be asked to visit my district (in which I am the only practitioner) and examine the cases in it. In other words, a surgeon is to travel at least one mile and a half each way, examine the patient, and write a report as above for a total remuneration of 2s.

It is evident from the above that some medical men consider that 2s. is sufficient payment for the work; I shall be interested to know if that be the general opinion.—I am, etc.,

ugust 15th. REFEREE.

AUTOTOXÆMIA IN RELATION TO THE NEUROSES OF DECADENCE.

SIR,—The addresses of Professor T. R. Fraser and Dr. T. S. Clouston, at the Association's Edinburgh meeting, present features of the highest importance. At the present moment the doctrine of heredity claims our minute attention, and at its door it is the fashion to lay "all the ills the flesh is heir to." Yet those who have heard or read may fairly deduce that heredity is not all to blame, but only in part.

Hereditary weakness granted, is it not of first importance that we should remove the constant toxicity which exists—active or latent—in the blood of 99 out of 100 human beings; relieve our hereditarily weakened neurons from the continuous assaults of deficiently metabolised products of excessive or unsuitable food? Drs. Haig and Luff, each in their turn, strike the keynote of longevity: Perfect metabolism.

How common it is to listen to the woeful history of the dyspeptic! "Two hours or so after my meals.....mental confusion and depression.....want of power to concentrate attention; loss of memory; staggering gait and weakness at the knees; thick utterance, and palpitation of the heart." And this, too, from patients whose veracity is undoubted, and who seldom take any alcoholic stimulant. "After a variable period of this horrible state, and having taken no more food, the objectionable symptoms will pass away; the brain will become clear, imagination vivid, and mental concentration excellent, until the next meal has been taken, when perhaps the same disagreeable symptoms will arise."

What is all this? Undoubtedly toxæmia, and due to deficient metabolic power. And then consider the result of years of similar attacks, and the injurious effects upon the nerve tissues. Not only are they ill-nourished, but they are irretrievably damaged, their working powers annulled, and the whole train of evils follow—even to what is known as "insanity."

That structural changes "simulating disease" are the constant accompaniment of continued toxic influences will not be denied. Indeed, I am prepared to assert even that until these scientific truths are more widely known and acknowledged by the whole profession of medicine, and taken as a fundamental basis for treatment, we shall be groping in the dark, and in platitudes enunciating theories of hereditary influences—cursing our ancestors for the legacy bequeathed to us—as a vague but satisfactory explanation of the neuroses of decadence.—I am, etc.,

HUGHES REID DAVIES, M.R.C.S., L.R.C.P.Lond.

Bow, E., Aug. 16th.

"THE SINS OF TEETOTALLERS."

SIR,—Although not a pledged teetotaller, permit an old member to break a lance on their behalf, and say a word or two upon Dr. Carline's address in the BRITISH MEDICAL JOURNAL of July 23rd. He calls it "The Sins of Teetotallers," a grave charge based on faults of the most serious nature. He supposes, I imagine, that while excess of liquor may, and often does, lead to the most awful crimes, they are balanced by some secret vices which deeply stain the character of the apparently childlike and bland abstainer. If he had said "errors" of teetotallers he would have been more correct, for *humanum est errare*, and no class is exempt. Surely the author, while waxing wrath against the water drinkers, had not in mind the favour of those who—

> Compound for sins they are inclined to,
> By damning those they have no mind to.

The first charge is that the *Alliance News* says little about water, and does not sufficiently encourage the teetotaller. That he does not need constant exhortations to persevere is surely to his credit, and the quotation given to show that the recent Nile campaign was fought on tea made with purified water is as strong evidence of the superiority of the temperance plan in campaigning as it is possible to imagine. There is no great teetotal sin to be found there.

Dr. Carline says teetotallers are not in earnest about efficient sewerage. Well, some of them are doubtless ignorant men, and, like others, prefer their pockets to any prospective

good. Still, above all men, they most desire a glass of pure water, and, so far, should be allies of the sanitarian. But it is not only abstainers who drink water, beer and spirit drinkers take it in larger quantities, and though disguised and coloured it is equally liable to impurities.

As to the story about the Mayor of Lynn, I suppose aërated and other bottled waters were on the table; it is hardly likely he would offer his guests what he knew to be largely contaminated with sewage. That he made a mistake in not giving his guests a choice of wines was a mistake, well-intentioned, but scarcely a "sin," and of a very dilute nature when attributed to teetotallers at large.

The poor seamstress who gets no air nor exercise, and stitches her shirt from morn to night, living on tea and bread and butter; the chlorotic maidservant, the wretched working tailor, and others may be water drinkers, and victims of forms of dyspepsia, suffering from flatulence, hypochondriasis, etc.; but is not intemperance a much more frequent cause of serious gastric troubles? and does not the medical man daily see those who pay the penalty for alcoholic living in stomach, liver, kidneys, brain, and a wretched, shaking, trembling, foul-tongued anorexia, from which the non-drinker, with all his sins, is exempt?

The teetotaller is, perhaps, often bumptious and conceited; but are these defects confined to him? I had thought the harm of any quantity of liquor, not at mealtimes, was freely admitted by our profession, as well as the positive ability of man to live without it. The late Dr. Parkes says (p. 261): "There is of course no doubt that wine is unnecessary as an article of diet, and many persons are much better without it." Again (p. 262), "If alcohol were unknown half the sins, and a large part of the poverty and unhappiness of the world would disappear." And (p. 267), "Experience most decidedly shows that the highest health, the greatest vigour, and long life are quite compatible with entire abstinence from these liquids." Further, he says "experience does not sanction the use of spirits."

Dr. Parkes is an authority to whom all bow, and I would fain hope that every member of our influential profession is filled by his knowledge, and inspired by his enthusiasm. Let us at least carefully forbear doing or saying anything against the principles and practice of total abstinence. The proper use of alcohol is a different matter.—I am, etc.,

Broadstairs, July 26th. M. J. Sturges, M.D.

A DEFECT IN THE NOTIFICATION SYSTEM.

Sir,—About a year ago I tried to arouse interest in a defect in the system of notification of disease. It is this: Large numbers of men and women spend as much (if not more) of their time in London shops and offices as in their suburban houses. Enteric fever and sewer gas sore throats are common amongst these people, yet the notification provides only for the place where they sleep. In many instances which have come to my own knowledge the source of mischief has been the warehouse or office, yet I have been begged not to say a word lest the victims should lose their situations. My latest case is one of threatened enterica, and on inquiry I find there is an objectionable sewer close to the window—underground—and the clerks stuff it up with blotting paper.

The remedy is simple. Let it be a regulation that where a notifiable disease occurs in a person who spends the working hours in a building in a parish other than that in which he or she sleeps, notification shall be sent to the medical officer for each district.

I have had many years personal experience of the disgraceful state of basement offices in the City.—I am, etc.,

Cheapside, July 27th. A. Ogier Ward, M.D.

POOR-LAW MEDICAL OFFICERS, IRELAND.

Sir,—In your reference to the Local Government Bill (Ireland) in the British Medical Journal of July 23rd, 1898, you say, "As regards the subject of compulsory superannuation of dispensary and workhouse medical officers, the Bill leaves the matter practically where it was." If it did, matters would not be quite so bad, but, unfortunately, it does infinitely worse, for it practically, and in an underhand way, unfairly repeals the Medical Officers Superannuation Act of 1869, because under that Act there were a large body of *ex officio* guardians, as well as a considerable number of elected guardians, favourable to superannuating their old and infirm officers.

Now, however, by the Local Government Bill, the *ex officio* members are swept away; by its lowering of the franchise a different class of guardians is likely to be elected, and by making the occupier pay all the poor-rate, instead of as heretofore half by the landlord and half by the tenant, naturally the ratepayers will object to any superannuation being granted, as the whole of the superannuation allowance would fall upon them. The guardians elected by these men will be possessed by the same feeling, and on no account whatever will they be induced to vote for anything that would thus increase the amount of the rates they would have to pay.

Again, every Poor-law medical officer is, by the terms of Clause 113, absolutely excluded under this Act from receiving a superannuation, because Subclause 2 of Clause 113 distinctly provides that the officer to come under its provisions must "have devoted the whole of his time to the service." Everybody knows that there is not one minute in the twenty-four hours of both night and day that the unfortunate medical officer can call his own in which to do what he likes; for even if he may practise for payment, he is not at liberty to put off his attendance on receipt of a visiting ticket, nor is he at liberty to absent himself from attendance at his dispensary; so that although by a fiction he is supposed to be able to devote part of his time to paying patients, it is well known that he must at the same time attend to his public duties. It is therefore absurd to say that he does not devote his whole time to the service, but the excuse that he makes some money by private practice is made a hook on which to hang the exclusion from the benefits of this Act. Could anything be more unfair than to tell a man he must depend on the Act of 1869, although the whole conditions under which that Act was passed have been swept away by this new Act, and the new state of affairs created by it is such that the provisions of the Act of 1869 cannot by any possible chance be expected to be put into force by the totally different bodies now about to be brought into existence, whose whole surroundings will and must be bitterly hostile to the old state of affairs.—I am, etc.,

Armagh, July 24th. Robert Gray.

THE ROYAL ARMY MEDICAL CORPS.

Sir,—In the columns of the British Medical Journal there have recently appeared letters suggesting alterations in the examination for entrance into the Royal Army Medical Corps, and also that those holding appointments should be nominated direct into it. By all means let everything be done to induce good men to come into the service; but this is not enough; the aim should be to keep him contented and happy after coming in. The saying "only a doctor" is not confined to the Army, as in the recent Collins case the expression "a mere Army surgeon" was used. May I give you instances which convert the Army doctor's work into drudgery, and soon bring him into a condition of apathy? A patient suffering from "fever" is given a bottle of soda-water; this necessitates the taking of notes about the case in the casebook in order to justify the issuing of this extra. Surely the time spent in doing this would be better employed if the patient's blood were examined under the microscope for the malarial parasite. Again much time is wasted in the wards by having to write down daily on the diet sheet each patient's diet; the practice in civil hospitals could easily be followed. At Netley a very excellent course of bacteriology is gone through, but after leaving there the doctor finds that microscopic work is almost beyond his reach, as there is but one microscope in each district, and in India there are no microscopes of sufficiently high power to do work with micro-organisms. It remains with the higher authorities to restore the prestige of the service, and to make it such that the public estimation of an officer in it shall be a high one.—I am, etc.,

August 1st. A Soldier Surgeon.

Sir,—In the British Medical Journal of June 4th there is a letter from Mr. Edmund Owen, on the subject of the Examination for the Army Medical Staff, with regard

to which I should like to make a few comments. Mr. Owen's strictures on the unpractical nature of the examination would have applied fairly enough to the examination as it was a few years ago, but now there is much more opportunity given of showing acquaintance with clinical methods; more cases are shown to the candidate, his knowledge of microscopic work, urine testing, etc., is put to the proof, and mere cram is not sufficient to pass a man. The subject of chemistry is of importance, as without renewing his acquaintance with it a candidate could not properly benefit by the course on hygiene at Netley. Mr. Owen is in error in saying that it is necessary to spend six months at a crammer's before going up for the examination. The time spent with a crammer is two months, and although this is almost essential to success, in a few cases men pass straight into the service from residence in hospital.

Mr. Owen says that the stamp of man wanted for the service is the recent house-surgeon or physician, and he is certainly right in saying so; but the advice of a senior medical officer to an intending candidate would be, "Get the easiest and cheapest qualification you can: do not waste time in hospital work or post-graduate study, but go to a crammer at once after qualifying, and pass into the service as soon as you can—professional merit counts for nothing in the service." The smart house-physician or surgeon on entering the Army Medical Service full of professional zeal will find much to chill his enthusiasm; not that clinical material is wanting, but the whole tone and system of the service tends to take the edge off professional keenness. The equipment of military hospitals is far behind that of even very small civil hospitals, and, so far from having opportunities for original research, the ex-house-physician will find it difficult to carry out the most ordinary clinical tests. This, even more than the nature of the examination or the form of title, prevents men of the right stamp from entering the Army Medical Service. The examination for the Indian Medical Service is the same as that for the Army Medical Service, but that service attracts plenty of house-physicians and surgeons, and many of the very best men of the schools. But it offers a career to the ambitious, and fair remuneration for the hardships of tropical service.

In spite of some concessions recently made, the scale of pay in India contrasts most unfavourably with that of the I.M.S., while the work—I am speaking of military employ, and am not taking the civil prizes of the I.M.S. into account—is harder and more responsible. To put it shortly, junior medical officers in India are paid as regimental officers, and have all the hard work, little leave, and much worry of departmental officers, but without their pay.—I am, etc.,

EXPERIENTIA DOCET.

THE CERTIFICATION OF LUNATICS IN IRELAND.

SIR—With reference to Dr. Leeper's letter on this subject in the BRITISH MEDICAL JOURNAL of July 16th, may I be allowed to remind the readers of the JOURNAL that up to 1875 workhouse medical officers did *not* consider themselves aggrieved because 30 and 31 Victoria, Cap. 118, Sect. 10 made it compulsory on dispensary medical officers to give their services "*without fee or reward*" in the committal of dangerous lunatics. In 1875 the Lunacy (Ireland) Amendment Act (38 and 39 Vic., Cap. 67) was passed, and Section 14 of that Act allows the justices, "if they think fit to do so," to order to the dispensary medical officer who assists them a fee for his trouble and loss of time. I wonder can that have had anything to do with the change of views of workhouse medical officers on the subject? If so it may tend to lessen their grievance to learn that dispensary medical officers who examine dangerous lunatics do not always get a fee for doing so.

The statement in Dr. Leeper's letter that in rural districts the lunatic "is most frequently at once conveyed to the nearest union by the police" cannot, I think, be generally correct. It would be an illegal proceeding for policemen (as such) to adopt.

I have been medical officer of a rural dispensary district for over quarter of a century, and I cannot call to mind even one case so treated. What the police do here is to arrest the alleged lunatic on receipt of a sworn information that he or she has committed or was apparently about to commit some crime or offence, and to bring him or her before two justices. Section 10 of 30 and 31 Victoria, Cap. 118, lays down the exact procedure to be adopted from that on.—I am, etc.,

WALTER MAY, M.R.C.S.Eng.

Kilmoganny, co. Kilkenny, July 26th.

EFFECTS OF THYROID IN DIABETES.

SIR,—In the interesting paper of Dr. Hutchison on the pharmacological action of the thyroid, it is stated that the occurrence of glycosuria as a result of thyroid administration has frequently been observed, and the experiments of Bettmann are quoted, to the effect that a large quantity of glucose given to a healthy patient after a week of thyroid feeding caused glycosuria.

In connection with these observations it is perhaps worthy of remark that the administration of thyroid gland to a diabetic patient increases the excretion of sugar, for example, in one case[1] I found that 10 grains daily of thyroid doubled the amount passed.

It would seem then that the occasional occurrence of glycosuria in Graves's disease is not an altogether obscure phenomenon. These results, too, show the need of the greatest caution in giving thyroid gland as any part of the treatment of obesity in which slight glycosuria is not so rarely present.—I am, etc.,

Clifton, July 26th. F. H. EDGEWORTH.

THE ANAËROBIC BACTERIAL TREATMENT OF SEWAGE.

SIR,—In a letter to *Engineering*, written about two years ago, I referred to the work of M. Louis Mouras and the Abbé Moigno, and pointed out that the anaërobic apparatus they recommended had been adopted by Messrs. Beazley and Burrows, architects, of Victoria Street, Westminster, for dealing with the sewage disposal of several country houses in England. One of these gentlemen had heard of the apparatus while travelling in France.

An immense amount of scientific interest attaches to the bacterial process for the purification of sewage at the present moment, because we are on the eve of discovering a multitude of facts that will make the whole process intelligible. This is a consummation devoutly to be wished, because of late a great many vague statements have been made about the process, unsupported by reliable evidence, and claims of originality set up by several persons, justly celebrated in their respective occupations, who ought to have known better. My own independent discovery of a process closely analogous to that described by M. Mouras, and which in some respects is an improvement, was to some extent accidental, although it was brought about by working upon lines suggested by obvious facts. When, however, an explanation of the results obtained was looked for, the previous observations and discoveries of Pasteur upon the part played by micro-organisms in fermentation were so monumental that the subsequent claims of smaller men, even to a share in the honour which is due to them, is more creditable to their courage than to their intelligence. No one, however, would have been more pleased than Pasteur himself, had he lived, to see the developments which there is every reason to believe will soon lead to the successful solution of the problem of sewage disposal by means of putrefactive fermentation, followed by nitrification of the organic matters under highly aërobic conditions.

I have ventured to speak of the process as "biolytic," because it embraces a wider range of causes than those that are strictly bacterial, seeing that the breaking down of the complex organic substances of sewage really begins in the digestive canal, and is partly due to the action of substances that are not the products of bacteria, but of special organs of the body itself.

As matters stand at present, there is more information available from the experiments I have been making upon the aërobic changes leading to nitrification than there is upon the changes which occur during the preceding process of putrefactive anaërobic fermentation, and I am much interested to hear of the experiments which are now being carried out by Professor Boyce at Liverpool.

[1] *Bristol Medico-Chirurgical Journal*, March, 1896.

It is well, however, that he should bear in mind that the organisms ordinarily contained in sewage are both aërobic and anaërobic in character, and that wherever oxygen is available in the sewage, the first process will be one in which the oxygen is used up by the aërobic varieties, even in an anaërobic apparatus, and that active liquefaction occurs at this stage, with a conversion of some portion of the nitrogenous organic matters into nitrogen as free ammonia as well.

When he is investigating the nature of the changes due to anaërobic fermentation, it is of the greatest importance that he should discover the best point at which to stop before commencing the sudden change which must follow when the process is altered, as it ought to be, into a highly aërobic one, where free ammonia is converted into nitrogen as nitric acid.

—I am, etc.,

W. D. Scott-Moncrieff.

Victoria Street, Westminster, S.W., July 26th.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: William L. Martin, Surgeon, to the *Anson*, August 10th; Percival M. May, Surgeon, to the *Vivid*, August 12th; Alexander G. Wildey, Staff-Surgeon, to the *Hawke*, August 15th; Henry J. Haddon, B.A., M.B., to the *Cruiser*, August 15th; Henry Hunt, Surgeon, to the *Northampton*, August 15th.

THE ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Charles F. Pollock, M.B., is promoted to be Colonel, *vice* W. A. Catherwood, M.D., promoted, August 3rd. Colonel Pollock was appointed Assistant-Surgeon, October 1st, 1867; Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1879; granted the rank of Lieutenant-Colonel, October 1st, 1887; and made Brigade-Surgeon-Lieutenant-Colonel, June 6th, 1893. He was in the Egyptian war of 1882 with the 42nd Highlanders, and was present at the battle of Tel-el-Kebir (medal with clasp, and Khedive's bronze star).

The undermentioned Majors are promoted to be Lieutenant-Colonels, August 4th, their previous commissions being: Assistant-Surgeon, August 4th, 1878, Surgeon-Major, August 4th, 1890, except in the case of Lieutenant-Colonel Cross, who dates as Surgeon-Major from August 11th, 1897: John Stevenson, M.B., F.R.C.S.Ed., William L. Lane, M.B., Patrick J. Dempsey, M.D., Kenneth S. Wallis, John W. H. Flanagan, Owen E. P. Lloyd, V.C., James G. MacNeece, Morgan D. O'Connell, Alexander S. W. Young, John J. Falvey, F.R.C.S.I., Horatio R. O. Cross, 1st Life Guards, Charles Seymour, M.B. Their war services are as follow: Lieutenant-Colonel Dempsey—Afghan war of 1878-80 (medal). Lieutenant-Colonel Wallis—Zulu war of 1879, and in the subsequent operations against Sekukuni, including the storming of the stronghold; slightly wounded (medal with clasp); Boer war in 1880-81, in medical charge of the garrison at Potchefstroom during its investment (slightly wounded); with the Nile expedition in 1884-85, in charge of movable field hospital, and present in the reconnaisance to Metammeh (medal with clasp, and Khedive's star). Lieutenant-Colonel Flanagan—Afghan war in 1879-80 (medal); Zhob Valley expedition in 1884. Lieutenant-Colonel Lloyd—Zulu war in 1879 with Clarke's Column, and in the subsequent operations against Sekukuni, including the storming of the stronghold, and present at the capture of King Cetewayo (medal with clasp); Boer war in 1881, and took part in the defence of Standerton; Kachin expedition in 1892-93 with the Military Police, first as medical officer in charge of the North Eastern Column, and afterwards as Senior Medical Officer of the whole force, and present at the attack on the Sima Post; commanded the Post during the attack after Captain Morton, the officer commanding, was killed (mentioned in despatches, V.C., and medal with clasp). Lieutenant-Colonel MacNeece—Bozdar Field Force, 1881; Zhob Valley expedition, 1884; Afghan war in 1879-80, took part in the defence of Candahar, and present at the battle of Candahar (medal with clasp). Lieutenant-Colonel O'Connell—Soudan campaign, 1885 (medal with clasp, and Khedive's bronze star). Lieutenant-Colonel Falvey—Zulu war in 1879, and subsequent operations against Sekukuni in medical charge of a section of movable field hospital (medal with clasp); Boer war of 1881 in medical charge of the garrison at Lydenburg during the investment of that place (mentioned in despatches); Egyptian war of 1882 as Assistant Medical Officer Base and Lines of Communication and Medical Superintendent of the transport of the sick and wounded (medal, and Khedive's star); Nile expedition in 1884-85 as Surgeon to the Heavy Camel Regiment, and present at the action of Abu Klea; established the hospital at Abu Klea Wells, where he acted as Senior Medical Officer (two clasps). Lieutenant-Colonel Cross—Zulu war in 1879 with the Mounted Infantry of the Flying Column and with the Cavalry Patrol until the capture of King Cetewayo (medal with clasp); Boer war of 1881 with the Mounted Infantry of the Natal Field Force. Lieutenant-Colonel Seymour—Soudan campaign in 1885 (medal with clasp, and Khedive's star); Soudan Frontier Field Force in 1885-86, including the engagement at Giniss.

Deputy-Inspector-General Edward William Bawtree, M.D., died at Mistley Hall, Essex, on August 10th, aged 80 years. He was appointed Assistant-Surgeon, November 24th, 1843; Surgeon, January 19th, 1855; Surgeon-Major, July 6th, 1866; and Honorary Deputy-Inspector-General on retirement on half-pay, February 24th, 1872. From *Hart's Army List* we learn that he served in the New Zealand war, and acted as Senior Medical Officer at Taranaki from May, 1865, to April, 1866, and took part in expeditions against the rebel Maories. During the Abyssinian war in 1868 he was Principal Medical Officer to the British troops in the 2nd Division from March 9th till the conclusion of the campaign, receiving the medal.

Deputy-Surgeon-General John Riggs Miller Lewis, M.D., died at Kingston-on-Thames on August 1 that the age of 72. His commissions were thus dated: Assistant-Surgeon, February 11th, 1848; Surgeon, December 7th, 1855; Surgeon-Major, August 11th, 1866; he retired on half-pay with the honorary rank of Deputy Inspector-General June 11th, 1872. He was with the Rifle Brigade in Hockey's action against the insurgent Boers in 1848 of the Orange River, and was present at the action of Boem Plaats on August 29th, 1848.

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant John McMullen, M.B., 3rd Volunteer Battalion the King's Liverpool Regiment, to be Surgeon-Lieutenant, August 17th.

INDIAN MEDICAL SERVICE.

Surgeon-Colonel Sir G. Thomson, M.B., K.C.B., Bengal Establishment, is permitted to retire from the service, from July 6th. He was appointed Assistant Surgeon, October 2nd, 1865, and became Surgeon-Colonel, April 2nd, 1893. He served in the Afghan war in 1878-79 (mentioned in despatches, medal); with the Chitral Relief Force in 1895 as Principal Medical Officer on the line of communications (mentioned in despatches, C.B., and medal with clasp); and in the recent campaign on the North-West Frontier of India as Principal Medical Officer with the Tirah Expeditionary Force (mentioned in despatches, K.C.B., and two clasps).

Surgeon-Lieutenant-Colonel Joseph Backhouse, Madras Establishment, also retires from the service, from July 1st. His first commission bore date April 1st, 1869; that of Surgeon-Lieutenant-Colonel April 1st, 1889.

THE VOLUNTEERS.

Surgeon-Captain G. Robinson, 1st West Riding of Yorkshire (Sheffield) Engineers, is promoted to be Surgeon-Major August 17th.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps specified: Frederick Norman, 4th Volunteer Battalion the Queen's Royal West Surrey Regiment; Henry J. C. Godfrey, 2nd Volunteer Battalion the East Yorkshire Regiment; Robert T. Halliday, M.B., 5th Volunteer Battalion Princess Louise's Argyll and Sutherland Highlanders.

Surgeon-Major W. S. Limrick, 4th Volunteer Battalion the King's Liverpool Regiment, is promoted to be Surgeon-Lieutenant-Colonel, August 17th.

Surgeon-Captain H. C. C. Shaw, 5th (West) Middlesex Rifles, has resigned his commission August 17th.

Surgeon-Lieutenant A. C. Tunstall, M.D., 1st Tower Hamlets Rifles, is promoted to be Surgeon-Captain August 17th.

CADET BATTALION.

Acting-Surgeon E. Proudlove, M.B., 1st Cadet Battalion the Manchester Regiment, has resigned his appointment August 17th.

COST OF ENTRANCE INTO THE ROYAL ARMY MEDICAL CORPS.

A correspondent inquires as to the cost of entering the Royal Army Medical Corps, including "coaching" and uniform, but it is difficult to give an answer, as so much depends upon the scale of expenditure of the individual. It also depends upon whether he reckons time as money in preparation for the examination. Probably few men enter the service under an expenditure of from £80 to £100.

An account of the conditions of the service, together with some facts as to the examinations will appear in the Educational Number of the British Medical Journal which will be published next week (August 27th). Full particulars relating to the examination can be obtained on application to the Director-General Army Medical Service, 18, Victoria Street, Westminster, S.W.

EMPLOYMENT OF RETIRED OFFICERS.

An officer retired from the Indian Service writes urging that while many civilian practitioners are now in charge of military hospitals at home the authorities might well employ retired medical officers of the Indian Service on these duties.

*** Appointments of the kind in districts are made by the respective principal medical officers of the districts.

CHARGE PAY IN INDIA.

A leading article in the *Times of India* of July 19th commenting on the new Warrant for the Royal Army Medical Corps urges upon the Indian Government to grant charge allowances for European hospitals, and in advocating this concession says it was given in the days of regimental hospitals; and a few years ago Government to all intents and purposes acknowledged the inherent justice of the claim, and promised reform. It is not right that medical officers should be the only officers in India who are debarred from command or charge allowance; and it is not fair that he amongst all his *confrères* in other branches of the service should be the only man who reaps no pecuniary reward for all the discomforts and hardships of tropical service and extra responsibilities.

EXAMINATION FOR PROMOTION.

R. A. M. C. writes: Alteration and reform is needed in the examination for promotion to the rank of Major in the Royal Army Medical Corps. (1) It should be held twice a year; it is four times a year in combatant corps. (2) The officers should be allowed to present themselves, if ready, any time between seven and twelve years; at present they are ordered for examination at the very short notice of a month or less. (3) There is a half-yearly entrance examination, so that, of the men who enter the service in the same year, one "batch" will have one more try than the other under the present system. (4) An officer is sometimes ordered for examination out of a cholera camp or on active service, which is unfair to the individual.

THE NEW TITLES.

X. writes: The promulgation of the memorandum in the *Gazette* of August 8th, extending the new titles to certain officers on the retired list in employment, has caused much disappointment to a small body on that

list not employed, but bearing the abolished compound titles. They are excluded from the advantages of the new titles. The extension of the new designations to these officers would be greatly appreciated, and could be easily done; at present they are in an invidious position, and the extension of the titles would be considered a gracious concession, and would obviate the necessity of change of titles should any of them become employed hereafter.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following gentlemen having passed the necessary Examinations and conformed to the By-laws and Regulations have been admitted Members of the College:

Bailey, R. T.	Fürth, K. J.	Palmer, G. E.
Baker, C. J.	Galt, W. J.	Pares, B.
Barlow, H. W. L.	Gask, G. E.	Pearson, R. W.
Barron, H. T.	Gates, E. A.	Peatson, J. C. S.
Barrow, H. P. W.	Goddard, E. G.	Pegg, J. H.
Bates, G. L.	Graham, H. W.	Percival, B. A.
Batteson, C. L.	Groube, G. P. T.	Phillips, J.
Beddard, W. O.	Handson, L. E. C.	Plumley, A. G. G.
Belilios, D. A.	Harmer, W. D.	Pope, F.
Bensley, V. C.	Harvey, W. J. S.	Price, A. A.
Briggs, G. F.	Hay, K. R.	Pritchard, W. C.
Brincker, J. A. H.	Herbert, G. H.	Pywell, P. D.
Brown, A.	Hinde, W. C.	Rawsthorne, H.
Brown, E. K.	Hislop, W. J. H.	Reid, A. G.
Browning, P. R.	Hodgson, J. E.	Reid, S. B.
Bruzaud, A. S.	Hogan, J. J.	Reissmann, C. H.
Bullmore, E. A.	Hood, A. H. M.	Roberts, E. H.
Bunbury, E. G.	Hughes, R.	Roberts, G. A.
Burton, P.	Humphreys, L.	St. John, W. St. A.
Cammidge, P. J.	Hunt, E. R.	Saunders, L. D.
Carron, F. B.	Jamieson, R.	Sawdy, E. C.
Cazaly, W. H.	Jenkins, H. S.	Sheldon, W. S.
Charles, G. E.	Jones, G. H.	Shephard, C.
Colls, P. C.	Jones, W. E.	Singer, H. D.
Coltart, W. H.	Lambert, E. C.	Smeaton, B.
Craig, J. A.	Last, T. C.	Smith, S. M.
Cridland, A. B.	Leah, T. N.	Straton, C. H.
Crompton, S.	Leslie, L. F.	Taunton, J. G. C.
Dalebrook, J.	Lewis, F. C.	Taylor, G. P.
Dore, S. E.	Lloyd, F. S.	Thompson, F. G.
Douglas, K. H.	Lucas, S. A.	Tuckett, J. L.
Dowding, W. F. C.	Maitland, P. C.	Turner, C. E.
Dowse, T. A.	Mason, J. H.	Van Rooyen, C. E.
Dyer, H.	Mason, S. H.	Walker, W. W.
Eastman, J. D.	Mayhew, C. J.	Waller, H. E.
Ellis, R. T.	Milton, J. P.	Wedd, G.
Elwes, F. F.	Milward, W. C.	Westcott, E. W. M.
Ennion, O. R.	Myers, B. E.	White, P. S.
Fairbank, H. A. T.	Newham, H. B. G.	Will, H. C.
Fegan, J. H. C.	Newman H. R. C.	Williams, H. T. H.
Fenn, C. E.	Nicholson, G. B.	Williamson, J.
Fleming, J. K. S.	Norris, H. L.	Wills, W. K.
Frazer, E. R.	O'Dowd, J. A.	Wroughton, A. O. B.
French, G. E.	Palmer, C. J. L.	Young, B. M.

MEDICO-LEGAL.

FEES TO MEDICAL WITNESSES IN CRIMINAL CASES.

J. A. M. writes: I was asked by the police to examine a girl on whom a rape was stated to have been committed. I did so; drove fourteen miles to the Petty Sessions: went to the Assizes, and gave evidence there. For all this I was paid £3 8s. 8d., my expenses were £1 10s. Not knowing how long the assize would last, I had to engage a *locum*, to whom I paid £6 18s., leaving me out of pocket by the transaction £4 19s. 4d. I consider this state of affairs should be put an end to; it is obviously unfair that a man should be forced to lose £5 simply to help the Government in putting down crime.

*** The scale of fees payable to witnesses in criminal cases was fixed nearly fifty years ago, when Sir G. Grey was Home Secretary. It is admittedly very inadequate, but it has remained unaltered. The matter has been under the consideration of the Council of the British Medical Association, as well of its Parliamentary Bills Committee, and a memorial is about to be forwarded to the Home Secretary, asking him to revise the scale of fees payable to medical witnesses (see p. 507).

MEDICAL CERTIFICATES UNDER THE WORKMEN'S COMPENSATION ACT.

Lex.—A correspondent complains that a patient of his, who was claiming compensation under the recent Act, on taking his certificate to the employer was sent by the latter to another doctor, who till he received a certificate from him declined to pay the claim. He wishes to know whether an employer can compel his workman to go to a particular doctor?

*** An employer cannot compel his workman to go to a particular doctor, and if the workman were to bring an action and his claims were just our correspondent's certificate might be held to afford all necessary medical evidence. If however a workman can get his claim allowed without an action by going to his employer's doctor it is manifestly his best policy to do so.

EVIDENCE AT INQUESTS.

Practitioner writes as follows: I attended a patient for severe burns for seventeen days, after which she was removed to hospital and died three days later. Who is justified in giving evidence at the inquest? I did not see the patient whilst in hospital.

*** Usually the coroner summons the last medical practitioner who attended the deceased to give evidence as to the cause of death, and this the house-surgeon of the hospital would be able to do after three days' attendance. Should such evidence not be satisfactory, or insufficient, the coroner and jury can adjourn, and call such further medical evidence as they may consider necessary.

WORKMEN'S COMPENSATION ACT.

Dr. Mark Wardle (Bishop Auckland) writes: Will you kindly inform me on the following points:

1. Under the Employers' Liability Act, can an injured miner claim his surgeon's account from the employers?
2. Or is his compensation of half his wage to cover all his expenses?

*** The Employers and Workmen's Act, 1897, gives an injured workman a right to recover compensation, in the nature of insurance, in specified cases and to specified amounts only. The cost of medical attendance is not separately recoverable, but is included in the total for which the employer is made liable. A surgeon who attends an injured workman must claim payment of his fees from the patient, or in case of his death from his representatives. The fees will of course be payable out of the compensation money, and application for them should be made before it is otherwise disposed of.

Obituary.

Dr. Frank Shearar, of Paisley, who died at sea on June 29th, graduated as M.B., C.M. with high commendation in Glasgow University in 1876, and then engaged in extensive research work in the laboratories of Glasgow and Vienna, and as a House-Physician in the Western Infirmary, Glasgow. Thereafter he acted as Assistant Medical Superintendent of the Somerset County Asylum, and as House-Surgeon in the Carlisle Dispensary. Thence he went as assistant to Dr. Fraser, of Paisley, became his partner in 1883, and some years later commenced independent practice in that town. He soon became one of the most popular practitioners of Paisley. His acuteness in diagnosis, careful attention to treatment, and promptitude in action gave his patients confidence, while his buoyant manner and ready, kindly smile gave hope and help to recovery. Nor were his energies confined to the routine of practice; as a member of the Council of the Philosophical Society of Paisley he did good work, and his papers on vaccination, tuberculosis, and the like excited valuable and widespread interest and discussion among his fellow townsmen. He was also a member of the Glasgow Pathological and Clinical Society, at whose meetings his presence was always welcome, and to which he contributed papers on the treatment of scarlet fever by pilocarpin, of eczema, etc., which were afterwards published in the *Glasgow Medical Journal*. For about ten years he was associated with the Paisley Infirmary as Visiting Physician, and his practical advice in connection with the new infirmary buildings was highly valued. He was a many-sided man; science, art, literature found in him at once an enthusiastic devotee and winning exponent. Always ready to give the most generous consideration to the opinions of others, he was ready and strong in defence of his own. His social qualities made him a favourite with all. He never married, and his death coming at the comparatively early age of 44 deprives many of a wise adviser and a sympathetic friend.

Dr. Carlo Giacomini, the celebrated Professor of Anatomy of the University of Turin, whose death at the age of 58 was recently announced in the British Medical Journal, spent his life in the study of anatomy and the allied sciences of embryology and anthropology. Among his works may be mentioned his *Guide to the Study of the Cerebral Convolutions*, which, although published about twenty years ago, remains as a point of departure for many successive works on the subject. The conclusion that Giacomini arrived at in his work on *The Brains of Microcephalics* are now almost universally accepted by specialists. His *Anatomy of the Negro* treats of of some of the most vital problems of the anthropology and the comparative anatomy of the different races, and has

thrown much light on many obscure points and extended the laws which regulate the evolution of the organs from the monkey to the ape, and from the black to the white races. In the embryological field Giacomini largely occupied himself on the anomalies of development of the human embryo, in which he published a series of communications which many authorities think represent the fundamental basis on which the future study of the pathology of the ovum will be founded. He described a Human Ovum of Ten Days, the youngest probably known and studied by modern methods. He also published many papers on anatomical subjects, as for example the Venous Circulation of the Inferior Limbs, the Topography of the Heart, etc. Giacomini was an indefatigable worker, and lived for his school and for science.

Charles Albert Macaulay, M.D., R.U.I., Fleet-Surgeon, R.N., has died suddenly at Wei-Hai-Wei. Dr. Macaulay, who joined the service in 1875 and obtained the rank of Fleet-Surgeon two years ago, was surgeon of the battleship *Alexandra* at the bombardment of Alexandria, and landed there with the Naval Brigade. He was also at the seizure of Port Said, and acted as the senior medical officer of the battalion of seamen and marines landed there. He served with the Naval Brigade at Ismailia and was present at Tel-el-Kebir.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Alfred Obalinski, head of the Surgical Clinic of Cracow, author of contributions on the surgery of the kidneys and other subjects, aged 55; and Dr. De Vry, of The Hague, well known as a physiologist, and also for his researches on the pharmacology of quinine.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE VACCINATION ACT, 1898.

The following circular has been issued to guardians by the Local Government Board in England under date August 16th:—

"Sir,—I am directed by the Local Government Board to advert to the Vaccination Act, 1898, which received the Royal assent on the 12th instant.

"The Act will not come into operation in its entirety until January 1st, 1899, but the provisions of Section 11 came into force on the date of the passing of the Act, and the Board desire, therefore, at once to draw the attention of the guardians to these provisions.

"The Section is as follows:—

"'2. (1) No parent or other person shall be liable to any penalty under Section[1] XXIX or Section XXXI of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two jutices or a stipendiary or metropolitan police magistrate in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientious objection.

"'(2) This section shall come into operation on the passing of this Act, but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act.'

"As the guardians are aware, Section XXIX of the Vaccination Act of 1867 provides for a penalty not exceeding 20s. on every parent or other person having custody of a child on being convicted of neglecting to have the child vaccinated. Section XXXI provides for a similar penalty for failure, without reasonable ground for the omission, to carry into effect an order made under the section directing that a child shall be vaccinated within a certain time.

"The effect of Subsection (2) of Section 11 of the new Act is to render the provision in Subsection (1) applicable (*a*) to children born before the date of the passing of the Act, and (*b*) to those born after that date.

"In the case of children born before the date of the passing of the Act, the parent or other person having the custody of a child, if he desires to avail himself of the provisions of Subsection (1), must do so within four months from the 12th inst., and in the case of a child born after that date this must be done within four months from the date of the birth of the child. In either case the certificate referred to in Subsection (1) must be delivered to the vaccination officer within seven days, as specified in the subsection.

"As until the expiration of the period within which a certificate may be obtained and delivered to the vaccination officer in respect of a child, the parent or person having the custody of the child cannot be regarded as in default under the Vaccination Acts, no proceedings can be taken on account of the non-vaccination of the child until the expiration of that period; and, such being the case, the issue of the notice in the Form B prescribed in the schedule to the Board's order of October 31st, 1874, should be discontinued.

"With regard to the provisions of the Act generally the Board will address a further communication to the guardians at a later date in connection with the regulations which it is necessary that the Board should issue before the Act comes into operation.

"The Board request that you will be good enough to give a copy of this letter to each of the vaccination officers in the Poor-law Union. Copies are enclosed, and if further copies are required for this purpose they will be supplied on application to the Board.

"I am, Sir, your obedient servant,

"Hugh Owen, Secretary.

"The Clerk to the Guardians."

SALARY OF MEDICAL OFFICER OF HEALTH.

E. S. asks: Is £25 per annum the usual pay for the health officer of an Urban Council in a town of 6,300 inhabitants?

*** The sum named is certainly small, and, as the appointment is apt on the whole to be hurtful rather than helpful to private practice, we consider it inadequate. Unfortunately, we fear, there are many well-qualified men up and down the country who accept these ridiculously small sums for important work of this kind.

GRAVITATING TYPHOID.[1]

Dr. Reece has added nothing to the list of instances in which the situation of a village dependent on shallow wells has aided its invasion by typhoid fever from the circumstance that the initial attacks occurred on high-lying ground under conditions which led to fouling of the subsoil water by the evacuations of the patients. At Aldbrough, in the Skirlaugh rural district, some 20 odd cases in 9 houses occurred in descending order from the highest to the lower portions of the village. In the report just issued from the medical department of the Local Government Board, Dr. Reece gives details as to each house invaded, and reason for holding the well water to be the main factor in the continued manifestation of the fever in these houses, his story being illustrated by a clear map of the district.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 7,055 births and 4,410 deaths were registered during the week ending Saturday last, August 13th. The annual rate of mortality in these towns, which had increased from 14.7 to 18.3 per 1,000 in the four preceding weeks, further rose to 20.5 last week. The rates in the several towns ranged from 13.7 in Blackburn, 13.8 in Burnley, 14.0 in Halifax, and 14.3 in Swansea to 27.7 in Liverpool, 27.8 in Wolverhampton, 29.0 in Salford, and 29.1 in Preston. In the thirty-two provincial towns the mean death-rate was 20.5 per 1,000, and corresponded with the rate recorded in London. The zymotic death-rate in the thirty-three towns averaged 5.2 per 1,000; in London the rate was equal to 5.0 per 1,000, while it averaged 5.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 7.9 in Plymouth, 8.5 in Leicester, 8.6 in Liverpool and in Sheffield, and 11.2 in Preston. Measles caused a death-rate of 2.0 in Portsmouth and 3.7 in Plymouth; scarlet fever of 1.4 in Norwich; whooping-cough of 1.0 in Salford and 1.1 in Sunderland; and diarrhœa of 6.5 in Wolverhampton, 6.9 in Birkenhead, 7.3 in Liverpool, 8.0 in Leicester, 8.3 in Sheffield, and 10.8 in Preston. The mortality from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria in the thirty-three towns included 27 in London, 4 in Leeds, and 3 in West Ham. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and only one small-pox patient was under treatment in the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,321 and 2,326 at the end of the two preceding weeks, had declined again to 2,293 on Saturday last, August 13th; 201 new cases were admitted during the week, against 276, 232, and 224 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, August 13th, 910 births and 598 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.6 and 20.0 per 1,000 in the two preceding weeks, declined to 19.8 last week, and was 0.7 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 16.7 in Dundee and 17.4 in Aberdeen to 20.8 in Glasgow and 26.4 in Greenock. The zymotic death-rate in these towns averaged 4.5 per 1,000, the highest rates being recorded in Paisley and Greenock. The 290 deaths registered in Glasgow included 7 from scarlet fever, 3 from diphtheria, 7 from whooping cough, 3 from "fever," and 46 from diarrhœa. Four fatal cases of measles, 2 of scarlet fever, and 4 of diarrnœa were recorded in Edinburgh; and 2 deaths from diphtheria occurred in Dundee.

Presentation.—Dr. Bannatyne, of Southend Campbeltown, who has been for the last five years medical officer of the parish, was recently, on the occasion of his relinquishing this appointment, presented with a handsome testimonial subscribed for by the whole parish.

The medical officer reported to the Maidstone Town Council at its meeting last week that the rumours as to the reappearance of typhoid fever were unfounded. In the first six weeks of this year, during which the great epidemic came to an end, there had been 14 cases, but during the twenty-five following weeks there had been only 5 cases, and it was probable that 3 of these had been imported into the town.

[1] Dr. R. J. Reece's Report to the Local Government Board on Fever Prevalence at Aldbrough in the Skirlaugh Rural District, No. 128, 5d. Messrs. Eyre and Spottiswoode, East Harding Street, E.C.

MEDICAL NEWS.

THE Muzzling Order has been revoked in the North Riding of Yorkshire and in Durham by orders dated August 10th, 1898.

MR. FRANCIS MARPLES of Sheffield has presented £20,000 to the Sheffield Royal Hospital, which was recently enlarged. Mr. Marples, it is now stated, was the donor who in 1893 made anonymously a gift to the value of some £27,000 to the Sheffield Free Hospital for Children, to establish a branch hospital in a part of the city near the great workshops where military and marine material is manufactured.

COMPLETE REMOVAL OF THE STOMACH.—We learn from the *Philadelphia Medical Journal* that Dr. George Childs-MacDonald, of San Francisco, on June 15th removed the entire stomach for carcinoma, and united the œsophagus to the duodenum by means of a Murphy's button. The wound was dressed for the first time twelve days later, when the stitches were removed. The temperature of the patient was then normal. This is said to be the fourth case in which the formidable operation has been performed.

MODERN BULLETS.—Dr. Frank Donaldson, writing in the *Philadelphia Medical Journal*, states that the wound made by the Mauser bullet is by no means so extensive as published statements had led him to expect. The point of exit was found to be surprisingly small, the bones were not splintered, moreover the bullet was surprisingly easily deflected. On the other hand, the Lee-Metford bullet used by the marines was found to make a frightful wound at the point of exit, and, when it struck a bone, literally drove it before it, splintering it to bits.

BRITISH "PATENT MEDICINES."—The Vienna correspondent of the *Morning Post* states that the Austrian Home Office and the Ministry of Justice have recently issued a decree with reference to the introduction of proprietary medicines from Great Britain. The correspondent states that the medicines of a certain British firm were some time ago prohibited by the Government, but since then the firm has sought to evade the law by distributing their advertisements throughout Austria, offering to cure patients *ex distantiâ* and to forward medicines, the exact nature of which is kept secret. The Government naturally finds it difficult to cope with such firms owing to their offices being abroad. The only means left to them to protect the gullible public is to prohibit the sale of these medicines by chemists or other agents, and to institute legal proceedings if necessary. The political authorities have been notified of the decision of the Ministries throughout Austria, and of the name of the British firm in question.

MEDICAL VACANCIES.

The following vacancies are announced:

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—Second Assistant Medical Officer. Unmarried, and not exceeding 35 years of age. Salary, £130 per annum, apartments, board, and washing. Applications to the Clerk by August 23rd.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the House

[illegible] COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried, £[illegible] per annum, with board, lodging, washing, and attendance. [illegible] Medical Superintendent by August 24th.

[illegible] SANATORIUM.—Resident Medical Officer. Appointment for [illegible] month, with board and residence. Applications to the

[illegible] INFIRMARY.—Honorary Physician. Applications to the Secretary

[illegible] COUNTY HOSPITAL.—House-Physician; unmarried, and under 30 years of age, at £[illegible] per annum, with board and residence. Applications by [illegible]th.

[illegible] Demonstratorship of Physiology. Stipend, £125. [illegible] M.D., Dean, by August 29th.

[illegible] Surgeon. Appointment for six months, but [illegible] num, with board, washing, and apartments.

[illegible] TH WALES AND MONMOUTHSHIRE.—[illegible]ology. Appointment for one [illegible]ber 1st

[illegible] Surgeon. Salary, £70 per annum. [illegible]en months. Salary at the rate of £40 per annum, [illegible]vided in each case. Applications to the Secretary

[illegible] of Health. Salary, £500 per annum, increasing [illegible]s, endorsed "Medical Officer of Health,"

[illegible] ttendent. Salary to commence, £800 per [illegible] Applications to Arthur E. Ward, Solicitor,

[illegible] OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon; unmarried. Salary, £72 per annum, with board and washing. Applications to the Honorary Secretary, 25, Athol Street, Douglas, by October 29th.

DUDLEY: GUEST HOSPITAL.—Resident Medical Officer. Salary commencing at £120 per annum, increasing to £120, with residence, board, attendance, and washing. Applications to the Secretary by September 1st.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis Road, Shadwell, E.—House-Surgeon. Board, residence, etc., provided, and honorarium of £25. Applications to the Secretary by September 10th.

FULHAM PARISH.—Public Analyst. Salary, £200 per annum. Applications to the Clerk to the Vestry, Town Hall, Walham Green, S.W., by August 27th.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon; unmarried. Salary, £80 per annum, with residence, board, attendance, and washing. Applications to the Secretary by August 24th.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Chairman of the House Committee by August 24th.

MAIDSTONE: KENT COUNTY OPHTHALMIC HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Surgeon.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer. Appointment for one year. Salary, £80 per annum, with board and lodging. Applications to the Chairman of the Medical Board by August 31st.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park Place, Cheetham Hill Road.—House-Surgeon. Salary, £80 per annum, with apartments and board. Applications to the Secretary by August 31st.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Park Fever Hospital, Hither Green, Lewisham. Salary, £160, rising to £200, with board, lodging, attendance, and washing; unmarried, and age not to exceed 35 years. Applications to the Clerk by August 22nd.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Medical Officer. Appointment for six months, with prospect of re-election as senior. Salary, £30 per annum, with board, attendance, and washing. Applications to the Secretary by September 2nd.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

OWENS COLLEGE, Manchester.—Demonstrator of Anatomy. Applications to the Registrar by August 1st. Also Senior and Junior Demonstrator in Physiology. The stipends will be £150, rising to £200, and £100, rising to £150, respectively. Applications to the Registrar by September 1st.

PLYMOUTH, SOUTH DEVON, AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Honorarium, £10, with board and residence. Applications to the Honorary Secretary by August 31st.

POPLAR UNION.—Assistant Medical Officer at the Workhouse. Salary, £100 per annum, with furnished apartments and rations. Applications to the Clerk to the Guardians, Union Offices, 45, Upper North Street, Poplar, E., by August 23rd.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Secretary by August 24th.

STOCKTON-ON-TEES: STOCKTON AND THORNABY HOSPITAL.—Non-resident House-Surgeon. Not exceeding 30 years of age. Salary, £200 per annum. Applications to the Secretary by August 23rd.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House-Surgeon. Appointment for six months. No salary. Board, lodging, and washing provided. Applications, endorsed "Assistant House-Surgeon," to the Honorary Secretary by August 25th.

WESTERN GENERAL DISPENSARY, Marylebone Road.—House-Surgeon; unmarried. Salary, £60 per annum, with board and residence. Applications to the Honorary Secretary by August 23rd.

WEST RIDING ASYLUM, Menston, near Leeds.—Female Assistant Medical Officer. Salary to commence £100, rising to £150, with board and apartments. Also Female Clinical Clerk. Board and residence provided. Applications to the Medical Superintendent by August 31st.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, and an honorarium at the rate of £50. Board, lodging, and washing provided. Applications to the Chairman of the Medical Committee by August 23rd.

MEDICAL APPOINTMENTS.

ATHORP, Hugh L., M.B., C.M.Edin., appointed Assistant House-Surgeon to the Devonshire Hospital and Buxton Bath Charity, Buxton.

BURY, E. C., M.D.St.And., M.R.C.S., appointed Medical Officer to the Wisbech Union Workhouse.

FLETCHER, L., M.R.C.S., L.R.C.P., appointed Medical Officer for the Hoxne District of the Hoxne Union.

FRASER, Hugh, M.A., M.B., C.M.Aberd., appointed Medical Officer of Health to the Harpenden Urban District Council.

GIBBON, A. Hugh, L.R.C.P., L.R.C.S.Edin., appointed Medical Officer of Health to the Bury Town Council, *vice* J. Hodges, M.R.C.S.Eng., L.S.A., resigned.

HANLY, J. J., L.R.C.S., L.R.C.P.Edin., appointed Medical Officer for the Fifth District of Wells Union.

HARNETT, C. J., M.D., M.R.C.S., appointed Resident Surgeon to the Royal Sea-Bathing Hospital, Margate.

HARRISON, Herbert, M.R.C.S., L.R.C.P.Lond., appointed House-Surgeon to the Devonshire Hospital and Buxton Bath Charity, Buxton.

JOHNSON, Dr. Henry L., appointed Medical Officer of Health to the Ashburton Urban District Council.

KILLICK, Chas. R., M.B.Lond., L.S.A., appointed Medical Officer of Health to the Williton District Council.

RICHARDS, W. H., M.B., B.S., L.S.A., appointed Clinical Assistant to the Chelsea Hospital for Women.

SCURFIELD, Harold, M.D.Edin., D.P.H.Camb., reappointed Medical Officer of Health for the Borough and Port of Sunderland.

SPICER, Arthur H., M.B., B.S., M.R.C.S., appointed Registrar to the Chelsea Hospital for Women.

SUTCLIFFE, Henry, M.R.C.S.Eng., L.S.A., appointed Consulting Surgeon to the West Bromwich District Hospital.

TURNER, J. A., M.B., C.M.Edin., D.P.H.Camb., reappointed Medical Officer of Health to the Ware Rural District Council.

WILLIAMSON, J., M.R.C.S., L.R.C.P., appointed one of the House-Physicians at the General Infirmary, Leeds.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

ELLIS.—On August 12th, at Cedar Lodge, Lambridge, Bath, the wife of W. McDonogh Ellis, M.D., M.R.C.S., of a daughter.

MARRIAGE.

RODEN—GREENE.—On July 28th, at St. Peter's Church, Antigua, West Indies, by the Rev. Edmund Branch, assisted by the Rev. C. H. Branch, George Douglas Roden, son of the late John James Roden, to Ethelfi Lucy Greene, M.D., daughter of Henry Greene, of 73, Canfield Gardens, Hampstead.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—L.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., S; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

TREATMENT OF GASTRO-INTESTINAL ATONY.

INQUIRENS will be glad to get suggestions in the treatment of a distressing gastro-intestinal flatulence [illegible]. Many of the usual remedies have been tried, with but indifferent success.

"MR. WALKER, THE HYGIENE HUMORIST."

BOOMERANG asks for fuller particulars of the gentleman referred to in the following passage from O. W. Holmes's *The Autocrat at the Breakfast Table*, or any publication from which he can obtain further information: "Mr. Walker, the hygeian humorist, declared that he had such a healthy skin it was impossible for any impurity to stick to it, and maintained that it was an absurdity to wash a face which was of necessity always clean" (p. 166, Walter Scott's edition).

P.C. writes: A patient came to me suffering from two discharging sinuses of the nose with an interval between. On probing I found the nasal bone in part necrosed. This I removed, with complete cure as the result. The lower sinus was at the junction of the bone and cartilages. It healed up very nicely, but left a small hole which continued to discharge. I could insert a very fine probe about one-sixth of an inch, but could find nothing. I cut down on it again, and when it healed up I still found this hole remaining, but no discharge. I should be obliged for advice as to treatment.

ANSWERS.

J. J.—Our correspondent might consult *Medical Electricity* by H. Lewis Jones, M.D. (London: H. K. Lewis. 1895. 10s. 6d.)

BEGINNER.—The rate of pay for such services is so largely governed by the local conditions, which determine the rate of wages usual in the district, that it would be impossible to give any useful reply.

ENQUIRER.—Our correspondent will find material which may be useful for his purpose in the following: *Physic in Fiction*, by Dr. Judson S. Bury (Manchester, J. E. Cornish, 1896); "The Treatment of Medicine in Fiction," by Caroline W. Latimer, M.D., in the *New Science Review*, January, 1896; "The Physician in Literature," by Dr. Arthur W. Hurd in the *Medical News*, January 13th, 1894; "Disease as Described in Literature," by Dr. C. L. Bard, in the *Pacific Medical Journal* of May, 1898; and "The Doctor as Pourtrayed in Fiction," *North Carolina Medical Journal*, February, 1889. Mr. Mitchell Banks's addresses were delivered in October, 1892, and May, 1893. They have since been republished: Liverpool: Lee and Nightingale. Homœopathy is dealt with not unhappily by Lytton in *My Novel*.

TREATMENT OF HYPERTRICHOSIS.

DR. WALTER GRIPPER (Wallington, Surrey) writes: It may interest Dr. G. W. Isaac, who asks a query as to treatment of hypertrichosis by *x* rays, to know that I have now a somewhat similar case under treatment, especially for hairy moles, in which I employed needling with croton oil for epilation of stumps in ringworm, as advocated by Dr. Aldersmith.

LITERATURE OF CREMATION.

NESTOR will find the following works and references give him a good introduction to the subject: *Encyclopædia Britannica*, Article "Cremation," vol. vi; Eassie, *Cremation of Dead* (London, 1875), a valuable book in which nearly every source of information on the subject is given to date. Dr. Friedrich Goppelsroeder, *Ueber Feuerbestattung* (Mülhausen, 1890). In this work is a full bibliography from 1539-1881, together with diagrams of furnaces, etc. Among later English writers on the subject Sir Henry Thompson stands foremost. In *Modern Cremation, its History and Practice*, he describes fully the present practice of cremation. Further contributions to the subject by the same author will be found in the BRITISH MEDICAL JOURNAL of December 10th, 1892, and of August 11th, 1894, where will also be found a report of the discussion on the subject of cremation at the annual meeting of the British Medical Association at Bristol in the Section of Public Medicine.

BIER'S TREATMENT OF TUBERCULOSIS.

ARTHRITIS refers particularly to an abstract of a Paris thesis[1] in which Bier's treatment is modified to the application of an Esmarch bandage for not more than twenty minutes every day or every other day, and supplemented by active hyperæmia and other measures. A truer account of the method was given by Mr. Eve at the meeting of the British Medical Association in 1892.[2] Bier himself experimented with active hyperæmia, but without success. Of his first 20 cases, 17 were of joint disease. In his second publication[3] his cases were increased to 43, and he recommended the treatment to be out of bed and that the limb should be used as much as possible. That in children a rubber band should be substituted for the tube; no under bandage would then be necessary. The position of the band (as of the tube) should be changed twice a day; it should cause no pain, blistering, or ulceration, and with few exceptions could be borne weeks or months, day and night, continuously without real trouble, though he had not hesitated to draw it tight enough to cause marked œdema beyond the constriction. The limb is of course bandaged below the seat of disease before the constrictor is applied. In 1894, at the Twenty-third German Surgical Congress, Bier had modified his views and concluded that while very many tuberculous joints were steadily cured by congestive hyperæmia, other conditions become apparently worse (abscesses, hyperæmic ulceration, or granulation formation), and others really so (acute inflammation or

[1] EPITOME, i, 1897, No. 337.
[2] BRITISH MEDICAL JOURNAL, ii, 1894, p. 409.
[3] *Festschrift z. F. v. Esmarch*, 1893.

abscess) so that the hyperæmia must be discontinued; that the best results were obtained by the combination of iodoform injections with congestive hyperæmia, and that the limb should be immobilised. Mikulicz says that improvement (less pain, more mobility, etc.) should be manifest in four or five days, and that if the pains are increased the case is unsuitable.

At Lubeck in 1895, Bier exhibited a series of patients treated by his method, and some had had abscesses and a few still had fistulæ, but all shown had moveable joints. In America the method is favourably spoken of (Meyer and others); in this country it is not so well received.[4]

NOTES, LETTERS, Etc.

Motor Cars.

MR. EBER CAUDWELL, M.R.C.S., L.R.C.P. (Harleston, Norfolk) writes: It may interest those of your readers who are thinking of buying a motor car to know that I have recently purchased a Messrs. Hewetson and Co's. "Ideal Benz Carriage" of Mr. Valentine of Leamington; it is a compact, easily handled, fast carriage, and in every way very suitable to the requirements of a medical man. I had some difficulty at first in making it work, and more than once had a breakdown, but through no fault of the car, only my own inexperience. I should certainly recommend anyone buying a car to engage a man from the makers for two or three weeks to instruct him fully in the working of the machinery. I shall be pleased to answer any inquiries about the "Ideal," the only weak point being the tyres, which caused me no little trouble; however, I had the back wheel tyres taken off and Connolly's "Ideal" tyres fitted with the happiest results.

DR. JOHN F. SYDNEY COLOHAN (Blackrock, co. Dublin) writes; I wonder if many medical men are aware of the vast superiority of a good motor car over horse driven vehicles. Perhaps in no walk of life are they more useful, particularly to men who have long distances to cover where the practice does not pay sufficiently well to keep two or three horses, and where one would be almost useless.

For some years I was dispensary doctor to a large district in Ireland and had to adopt a system of having relief horses to meet me at different parts of the road, as one horse could not possibly cover the distances at full trot the whole time, which pace was necessary in order to get through my work. Now I am practising in a comparatively small district near a city and have indulged in a motor car, which I find both pleasant and useful. My car is a Benz "Ideal" phaeton, and seats three. It is three-horse power, light, handy, easily managed. The first outlay (£160) is practically the last, and the cost of running infinitesimal. It travels at any speed up to twenty miles an hour, is almost noiseless, particularly if a Turrill's silencer be added, and with me has never refused the stiffest hill, some of which were about one in eight.

An Appeal on Behalf of the Widow of the late Dr. Arthur Barlow.

THE following additional subscriptions have been received on behalf of this fund:

	£	s.	d.
Dr. S. P. Snook (Weymouth)	2	2	0
"Far Away" (Karachi)	5	5	0

Oxygen Treatment of Wounds.

MR. GEORGE STOKER (14, Hertford Street, W.) writes: I have read with great pleasure and interest your summary of the work of Dr. Hirschfelder[5] on the preparation of Antitoxins by Oxidation. I beg most respectfully to point out that this idea has long since been suggested and practised in reference to the investigations carried out in connection with the treatment of wounds and ulcers by oxygen gas, etc., which were begun as long ago as 1894, and are evidenced by papers, etc., published at various times in the BRITISH MEDICAL JOURNAL, *Lancet*, *Medical Press and Circular*, and *Hospital* since February 1895. These observations and conclusions were confirmed by Surgeon-Major Semple, of Netley, in the *Lancet* of May 8th, 1897. I have no possible wish to reap any man's harvest, but in justice I trust I may be allowed to garner my own.

Practice in British Columbia.

DR. CHARLES M. RICHARDS (Cookstown, co. Tyrone) writes: In reply to "Enquirer" in the BRITISH MEDICAL JOURNAL for July 30th regarding British Columbia, any Englishman setting up in practice in that Colony has not only to pass a special examination in order to obtain the Canadian diploma, but he has to act as an assistant under some local medical man for at least six months before he will be permitted to enter for said examination. I know nothing about the scale of fees or opportunities for practice, but the cost of living is small and the climate is delightful. If "Enquirer" purchases a little book entitled, as well as I recollect, *A Professional Guide to the Colonies*, or something similar, price 2d., at any stationer's, he will obtain all the information he requires.

D.P.H. R.C.S.Lond., Part II.

RURAL writes: Doubtless there are many readers of the BRITISH MEDICAL JOURNAL who contemplate presenting themselves for the above examination, and have read the standard works on the subject and done their practical work necessary as laid down by the schedule. A word of caution, however, will not be out of place. If paper No. 2 of the last examination is studied it will be found to be largely problematical, and, although fair, was more suitable for men who had been medical officers of health instead of would-be medical officers of health. The rest of the examination is fair and straightforward, and the examiners courteous to a degree, but I submit that the fact that most men presenting themselves have not had opportunities for "vast" experience should not be lost sight of by the examiners. Again, three days is too long for such an examination, as it means great inconvenience to men in practice, to say nothing of expense. I should have thought one paper would have been sufficient, then the practical and *viva voce*, and a rejected candidate allowed to present himself in three months again, not six as now, which is unnecessarily long.

[4] Sir Thornley Stoker, *Practitioner*, 1897, p. 139; *Edin. Med. Chir. Soc. Proc.*, ii, 1893, p. 637. See also EPITOME, ii, 1877, 220 and 353, and BRITISH MEDICAL JOURNAL, ii, 1866, 1058.

[5] EPITOME, August 13th 1898, p. 427.

Indecent Advertisements.

WE learn from the *Pharmaceutical Journal* that the Indecent Advertisements Act recently adopted in South Australia has been put in force against a chemist who was prosecuted in connection with a handbill advertisement of soluble pessaries and fined £1 and costs. As an outcome of this case, the Council of the Pharmaceutical Society waited upon the Chief Secretary in order to ascertain the position of chemists selling many of the ordinary patents, the handbills of which might happen to contain some word or words infringing the Act, and were promised that definite information should be supplied on the subject by the Crown Solicitor. A somewhat similar Bill was introduced into the Victorian Legislature in December last under the united auspices of the Australian Natives' Association and the Pharmaceutical Society, but had to be abandoned on account of pressure of public business. There is a growing feeling that the publication on news-sheets or otherwise of advertisements relating to sexual complaints or to drugs openly recommended for purposes of abortion is a scandal to a civilised community, and must sooner or later be rendered illegal.

LETTERS, COMMUNICATIONS, Etc., have been received from:

A Mr. R. B. Anderson, London; K. Allan, M.B., Attleborough. **B** Beginner; Mr. T. Blair, Leeds; Mr. C. E. W. Bell, Exeter; Dr. J. M. Brown, Loch Goil; Mr. J. F. Briscoe, Alton; Dr. M. Beverley, Norwich; Dr. J. W. Bull, Seaford; Boomerang; T. L. Bunting, M.B., Scotswood-on-Tyne; J. J. Bevan, M.B., Mumbles; Mr. H. B. Bates, St. Helens; Dr. J. W. Byers, Belfast. **C** Dr. J. Chambers, London; Dr. A. Carmichael, Barrow-in-Furness Dr. H. J. Campbell, Bradford; Dr. S. Colshan, Blackrock; Dr. J. S. Cameron, Leeds; Mr. R. H. Capper, Battle; Mr. E. Caudwell, Harleston; Dr. P. H. M. Cambridge, Highland, Ill. **D** Dr. G. H. M. Dunlop, Edinburgh; Mr. H. R. Davies, London; Dr. E. W. Diver, Jarrow-on-Tyne; Mr. J. Downing, Enfield Mr. F. E. Daniel, Barrow-in-Furness. **E** Enquirer; Dr. A. Eddowes, London. **F** Fighting Ram; Dr. J. Finlayson, Glasgow; Professor T. R. Fraser, Edinburgh; Mr. F. C. Fitzgerald, Hanley; V. G. L. Fielden, M.B., Belfast; Mr. F. B. Fleming, Douglas. **G** F. W. A. Godfrey, M.B., Scarborough; Dr. A. E. Giles, London; Mr. C. W. Grant-Wilson, Bromley; Mr. E. Goodby, Llandudno; Mr. E. J. Geary, Warrington; Dr. W. Gripper, Wallington; Mr. J. Grey-Faber, Brandon. **H** Mr. A. E. Hind, Jersey; A. S. Hedley, M.B., Rothbury. **I** Income Tax Repayment Agency, London. **J** Mr. H. J. Jennings, London; Mr. G. Jacob, London; Dr D. E. Jones, Cardiff; W. D. Johns, M.B., Bournemouth. **K** A. B. Kelly, M.B., Glasgow. **L** E. Lubbock, M.B., London; Dr. M. Lawrie, Greenhill; Lennox; Liverpool Lint Co., Liverpool; Dr. W. C. Lake, Teignmouth. **M** Dr. R. Muir, Edinburgh; Mr. W. M. McCandlish, Edinburgh; Dr. C. Muirhead, Edinburgh; Dr. A. Macvie, Baildon; Dr. W. L. Mackenzie, Leith; Dr. J. J. Macan, Cheam; Mr. J. G. Murray, Scarborough. Messrs. Macmillan and Co., London; Mr. G. H. Martyn, Bath; Dr. C. F. Moore, Dublin; Mr. C. A. Mercier, M.B., Catford; Dr. J. Macdonald, Carlisle. **N** Dr. R. Neale, London; Mr. E. E. Norton, London; Dr. S. Neumeier, Frankfort. **O** Old Soldier; Mr. D. Owen, Manchester; An Old Abstainer. **P** Dr. H. B. W. Plummer, West Bromwich; Mr. L. S. Partridge, Lincoln; Messrs. Phillips, Mills, and Co., London; Dr. F. Pott, Bournemouth. **R** G. A. Robinson, M.B., Holmwood; Dr. O. Rosenbach, Ostend; E. W. Reid, M.B., Dundee; Mr. J. Rein, Waddesdon; Mr. H. Rainsford, London. **S** Dr. M. Sturges, Broadstairs. Mr. C. Stiebel, Cambridge; Dr. J. V. R. Shortt, Durham; Mr. H. Sutcliffe, West Bromwich. **T** Mr. H. G. Turner, Bournemouth; Dr. F. W. Tunnicliffe, London. **W** Dr. A. A. Warden, London; Miss M. Wilson, London; Dr. J. B Wilkinson, Oldham; Dr. O. Wunderlich, Thames Ditton; Messrs. Widenmann, Brocher, and Co., London; W. Watkins-Pitchford, M.B., Church Stretton; Waverley; Mr. T. Wilkinson, Birkenhead; Mr. M. Wardle, Bishop Auckland; Dr. J. T. Wilson, Hamilton; H. S. Willson, M.B., Weybridge; J. H. Willett, M.B., Liverpool; Mr. J. D. Windle, London; Mr. C. F. Wightman, Leicester; etc.

BOOKS, Etc., RECEIVED.

Dwelling Houses; their Sanitary Construction and Arrangements. By W. H. Corfield, M.A., M.D.Oxon., F.R.C.P.Lond. Fourth edition. London: H. K. Lewis. 1898. 3s. 6d.

Die Instrumentelle Behandlung der Harnleiden. By Dr. Robert Kutner. Berlin: August Hirschwald. 1898. M. 8.

Ueber den künstlichen Hornhautersatz. By Dr. Fritz Sulzer. Wiesbaden: J. F. Bergmann. 1898. M. 1.

Gynäkologische Tagesfragen. V. By Dr. H. Lohlein. Wiesbaden: J. F. Bergmann. 1898.

Zur acuten Ueberanstrengung des Herzens und deren Behandlung. By Dr. Th. Schott. Wiesbaden: J. F. Bergmann. 1898.

Mikroskopie des Auswurfes. By Dr. Albert Dmiber. Wiesbaden: J. F. Bergmann. 1898.

Die therapeutischen Leistungen des Jahres 1897. By Dr. Arnold Pollatschek. Wiesbaden: J. B. Bergmann. 1898. M. 6.30.

Cattle Tuberculosis. By T. M. Legge, M.A., M.D., D.P.H., and Harold Sessions, F.R.C.V.S. London: Baillière, Tindall, and Cox. 1898.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

EDUCATIONAL NUMBER.

SESSIONS 1898-99.

THE MEDICAL PROFESSION AND THE MODE OF ENTERING IT.

The present number of the British Medical Journal contains particulars with regard to the mode of entering the medical profession, the degrees and diplomas granted by the various universities and corporations, and the arrangements made by the various colleges and medical schools for the education of medical students in medicine, surgery, midwifery, and public health, and for their preparation for the examinations in these subjects. The general course of the medical student's career is very precisely defined for him by the regulations of the General Medical Council, and by those of the universities and corporations. These bodies grant degrees and diplomas respectively which entitle the holder, under certain conditions, to have his name entered upon the *Medical Register*, kept by the General Medical Council, and the appearance of the name on that *Register* is the title of the holder to the privileges of a medical practitioner. The General Medical Council requires a student at the outset of his career to register his name on the *Students' Register*, and the importance of doing this is pointed out further on page 522.

The young man who contemplates entering the medical profession should consider well whether he is suited by mental and physical constitution for an arduous calling. Unless a man have a distinct leaning to scientific studies, and unless he be imbued with a belief in the sacred nature of the duties which he will have to discharge towards his patients, he would do better to choose some other walk in life. The rewards of the profession, whether measured by social distinction, or by the pecuniary standard, are not great, the relation of the medical profession to the State and to the public has improved and will go on improving, but the recognition afforded to it is still far below that to which it is entitled by the services it renders. We read sometimes in the newspapers reports of the considerable fortunes left by deceased members of the medical profession, but to gain riches in the practice of medicine is extremely uncommon, and no man, not even the most able and industrious, can promise himself that he shall attain wealth; indeed, the bare truth is that the majority of us find the struggle for a competence severe. Nor do we think that the average man should think of the medical profession as a career unless he has definite connections with the profession, or unless he has a sufficient capital to enable him after obtaining his degrees or diplomas to purchase a share in a practice, or to support life with decency in the disheartening period of waiting for practice. When means allow, this period may be utilised very much to the ultimate advantage of the individual by giving up some years to work in hospitals and laboratories at home and abroad.

As to the choice of a university or school, it is impossible to give advice of general application, since very much must depend upon the circumstances of the individual—his place of residence, family connections, pecuniary resources, and his industry and ability. It may, however, be said that it is as a rule advisable that the young student should at least be put in the way to obtain a degree in medicine; the want of such a degree is often felt in after-life by those who at the commencement of their career have set before them only the aim of obtaining the licences or diplomas of the Corporations. In Scotland and in Ireland the course which the student should follow in order to obtain such a degree is sufficiently clear, but in England and Wales the matter is more complicated. The position of London, the chief medical centre of this country, is in particular somewhat anomalous. The University of London has not hitherto filled the place which it ought to hold, but there is reason to hope that the Commission appointed by the Act which received the Royal Assent at the end of last session will introduce modifications which will materially ameliorate the position of the London medical schools. The scheme which is to be elaborated by the Commission referred to will, in fact, render the colleges and medical schools of London constituent colleges of the London University of the future but it will be essential that the student, before he enters as a medical student, should pass the matriculation examination of the University in order that he may become a member of the University and enjoy the advantages which that position would confer.

An English student should, however, carefully consider whether it may not be possible for him to proceed to one of the older Universities—Cambridge, which already has a very large and flourishing medical school, or Oxford, which is growing in importance as a medical school. In either case it would be desirable for him after passing the examinations in anatomy and physiology at the University to proceed to London or some other large town where the facilities for practical instruction in hospitals are greater, and it would be advisable in selecting the hospital to see that the university student is received upon a satisfactory footing, and in particular that the offices of house-surgeon, house-physician, and obstetric officer, which are the best prizes of a student's career, are open to him on the same terms as to other students in the school. The new arrangements made at the University of St. Andrews will place its medical faculty in a somewhat similar position in Scotland to that occupied in England by Cambridge since the first two *anni medici* may be passed there. In the Uni-

versity College of South Wales and Monmouthshire the patriotic native of the Principality will find an institution which will provide him with excellent opportunities for obtaining instruction during the first three years of his curriculum.

In the north of England the student who seeks a university degree has the choice between the Durham University and the Victoria University. Connected with the former is the College of Medicine at Newcastle-on-Tyne, and with the latter, Owens College, Manchester, University College, Liverpool, and the Yorkshire College, Leeds. At any one of these institutions will be found every facility for obtaining instruction, both practical and theoretical, in science, and in the art of medicine. Mason College, Birmingham, and University College, Bristol, are not as yet connected directly with a University, but a proposal to establish a Midland University has recently been put forward with every prospect of success, and Mason College would be the seat of the new University.

The man or woman who selects medicine as a profession, whatever may be the particular course or place of study adopted, must realise that the work required will be no child's play. Five years of study is the irreducible minimum, but the least hitch or any relaxation of industry may easily prolong the period, and throughout the whole of it the calls upon time and upon energy are such as to make it absurd for any person not of robust constitution, or who loves an easy life, to contemplate becoming a medical student.

THE MEDICAL CURRICULUM.

The course of study through which a student who aspires to enter the medical profession must pass is laid down by the General Medical Council, and the regulations do not permit any great variations in principle. The student, whether he enters at a medical school in England, Scotland, or Ireland, and whether he seeks a University degree or a College diploma, must spend, as a minimum, five years, and must pass through a course of study which is nearly the same in all cases. In the following pages particulars are given with regard to the requirements of all the universities and corporations, and a perusal of them will assist a judgment as to that one which may be best adapted to the abilities and the general circumstances of the individual. When the medical school to be attended has been selected the candidate should put himself in communication with the Dean, who will always be found ready to give advice as to the mode of entry, and as to the cost and the best way to prepare for the degree or diploma to which the candidate aspires. As soon as the student has passed one of the recognised Preliminary Examinations in Arts (see page 525), he should enter as a student at a medical school, and should register his name at the office of the General Medical Council (299, Oxford Street), or, if he has chosen a Scottish or Irish school, with the Registrar of the Branch Council (in Scotland, at 48, George Square, Edinburgh; in Ireland, at 35, Dawson Street, Dublin).

It was formerly an almost universal custom to enter a medical school in October, but, owing to changes made in recent years, if a student has passed his preliminary examination early in the year, he will do well to enter the medical school in May, at the beginning of the summer session during which he can study chemistry, physics, and pharmacy.

We shall not attempt here to compare the various ways in which the curriculum is arranged to meet the requirements of various examining bodies, but, as an example which will be found a key to the general situation, we propose to give some account of the examinations and curriculum for the diplomas of L.R.C.P. and M.R.C.S.Eng., which have now been brought more into line with the course required for university degrees in medicine than was formerly the case, and, broadly speaking, there are three examinations—the first in science, the second in anatomy and physiology, and the third and final in the purely professional subjects—medicine, surgery, and midwifery.

The subjects of the First Examination are biology, chemistry, physics, and practical pharmacy. Pharmacy, however, may be separately passed, and, in fact, taken at any stage of the curriculum. Generally the first year of the curriculum is devoted to the study of the subjects of the First Examination, and, as a rule, students pass it during their first year in two parts (1) biology, (2) chemistry and physics. This Examination may be passed before registration as a medical student, but in that case time spent in the study of biology, chemistry, and physics does not count as part of the compulsory five years of medical study required by the General Medical Council, even though the study has been done at a recognised institution. The student, therefore, under ordinary circumstances, should pass the necessary Preliminary Examination before he begins his science work, and should take care to attend the lectures and laboratory work in the science subjects at a recognised institution, such as a medical school or university college. If, when he begins his science work the student registers with the General Medical Council, a year spent in this study counts as one year of the curriculum. At the Metropolitan medical schools instruction in elementary anatomy and dissections generally accompany the science work of the first year. After passing the First Examination in biology, chemistry, and physics, the regulations require that four complete years of professional study must be attended at a recognised medical school, but those who pass the First Examination before registration must attend for five complete years at a medical school.

Students are admissible to the Second Examination in anatomy and physiology on the completion of two winter and one summer session (or fifteen months during ordinary sessions) at a recognised medical school and after a lapse of not less than twelve months from the date of passing the First Examination. Before admission to the Second Examination the student must have attended a course of lectures on anatomy, a course on physiology, and a course of practical physiology (six months each), and must have dissected for twelve months subsequently to passing the First Examination.

The Third or Final Examination is passed on the completion of five years from the date of registration, and at the expiration of four years from the date of passing the First Examination, and of two years from the date of passing the Second Examination. It is thus important that the student should pass each examination at the prescribed

time in the curriculum, otherwise he is delayed in obtaining his diplomas until the lapse of the required time from the date of passing his earlier examinations. For information regarding the details of the courses of lectures, etc., which must be attended before he can present himself for the Final Examination, we must refer the student to the official regulations published by the Conjoint Examining Board. Speaking generally, they include lectures on medicine (six months), surgery (six months), midwifery (three months), pathology, including pathological histology and bacteriology (three months), pharmacology and therapeutics (three months), forensic medicine (three months), public health, with practical instruction in medicine, midwifery, and surgery, operations on the dead subject, hospital practice (two winter and two summer sessions), *post-mortem* demonstrations (twelve months), and clinical lectures on medicine and surgery (nine months). The student must also have attended clinical instruction in ophthalmic surgery, insanity, and diseases of women, must have acted as clinical clerk and surgical dresser for not less than six months each, and have attended twenty labours. Instruction in vaccination and attendance at a fever hospital are also required. All the examinations of the Conjoint Board are held four times annually—in October, January, April, and July.

THE COST OF MEDICAL EDUCATION.

One of the questions which must be considered by any parent who proposes to let his son enter the medical profession is that of cost. The expenditure is made up from three main sources—the fees charged by the medical schools for instruction, the fees charged by universities or corporations for granting their degrees or diplomas, and the expenditure on living. Of these three sources of expenditure, the last named is of course the most considerable, and that which varies most, according to the habits of the student and the general cost of living ruling in the town in which his medical college or school is established. It may vary also a little in the schools or colleges in the same town, since the habits of life are by tradition somewhat more extravagant in some than in others.

The fee paid to medical schools for the full curriculum, the "Composition Fee," varies a good deal, and ranges from a little under £100 to a little over £150; the difference, however, when spread over five years is not very considerable, and we do not think that very much weight should be attached to this point in choosing a school. From £30 to £50 must be added for various necessary additional expenses—for extra classes, materials used in practical work, instruments, books, and subscriptions to clubs. So that it may be roughly estimated that the sum paid by the medical student for his education should not exceed about £200, and may be made perhaps about £50 less. The fees to be paid for degrees or diplomas vary very much, but they may be set down perhaps at about £50.

The main source of the increase in the cost of medical education which has undoubtedly taken place during the last few years is the prolongation of the curriculum from a nominal four to a nominal five years. It is, however, not safe to reckon that the student will finish his curriculum in five years, much less that he will at the end of that time at once become self-supporting.

As has been observed, the cost of living varies very much in different places. It is, for instance, decidedly lower in Aberdeen or Edinburgh than it is in London; but we may, perhaps, assume that a fair average will be about £100 a year, provided that the student lives free of expense during the Easter and summer vacations. To this must be added a suitable allowance for clothing and travelling expenses. If, as is usually the case during the third and fourth years of the curriculum, it becomes necessary for the student to spend a longer period than the two stated sessions in attendance on hospital practice, a corresponding increase in the annual expenditure must be reckoned upon. It is a very great mistake to attempt to cut down the expenses of living to a point below the general standard of the community of which the student for a time forms one. The life he leads, if he works properly, is exhausting, and he requires comfortable quarters, proper cooking, and reasonable funds for recreation. Where it is possible for the student to enter a residential college—as is the case, of course, at Cambridge and Oxford, and in connection with many of the schools in London, with Owens College, the Yorkshire College, Leeds, and as is the case also at Edinburgh, thanks to the exertions of Professor Patrick Geddes—the expense of living tends to be rather lower, while there are the added advantages that the student lives in association with others in the same stage of life and under a reasonable amount of supervision which may help to save him from some of the pitfalls which beset a young man in a large city.

On the whole, it should not be expected that a student should be able to pass through the prescribed curriculum, and obtain the necessary degrees or diplomas for an expenditure of less than £1,000, and it must be recognised that this amount is very likely to be exceeded. In former times it was sometimes possible for the student to earn something during the last year or two of the curriculum, but this has now become extremely difficult, and the attempt ought not to be encouraged. The five years now prescribed is all too short a period within which to crowd the immense number of subjects with which the student is expected to become familiar. The only set-off which can be allowed to be legitimate is by way of scholarships and exhibitions. Of these there are many, not only at Oxford and Cambridge and at the Scottish universities, but also at all the other medical schools, but such prizes are for the few, and what we have here said is meant to apply to the average man.

THE ROYAL MEDICAL SERVICES.

The Medical Services of the Royal Navy, of the Army, and of India afford honourable careers for medical men; but each branch has advantages and drawbacks, which will be variously estimated by different persons.

A Commission in Her Majesty's Sea or Land Forces undoubtedly confers on the recipient a social status not easily attained in civil life; but entails, at the same time, subjection to the restraints of discipline, some sacrifice of personal freedom, and the curtailment of certain home amenities enjoyed by civilians.

On the other hand, it affords an opportunity of seeing life and the world in some of their best aspects: and foreign service has many and varied attractions in our widely-extended empire.

The pay and pension, speaking generally, of the medical services are not illiberal, and sufficient for the reasonable maintenance of the individual officer; but, if he has no private means, he must bear in mind that it is generally hazardous to venture early on matrimony, perhaps to find himself in middle life in straitened circumstances, through having to maintain and educate a family. Frequent separation from wife and children, and the necessity of keeping up two establishments is a drawback which attaches more or less to each of the three branches of the service.

The prizes of the services are few, especially in the navy and army; and even in the Indian service are not what they were within comparatively recent times. The lessened value of silver, and the fall in the exchange-rate of the rupee, have disastrously affected the medical, in common with all branches of the public service in India; while, as fully a third of the army medical officers are constantly employed in that country, the depreciation in the currency presses on them as on their Indian brethren. This matter lately formed the subject of representation to the India Office, by the Parliamentary Bills Committee of the British Medical Association; with the result that a moderate increase of pay was conceded to certain of the medical ranks; and they also participated in special concessions by the Government of India, in the exchange-rates for remittances home.

If current pay in the medical services is not relatively large, but even small compared with the earnings of many civil practitioners, it is supplemented by substantial pensions, and it will not be overlooked that the State is the most stable of all paymasters.

As army pensions to widows and orphans are small and limited, medical officers must not neglect the duty of making some provision by insurance or otherwise for those they may leave behind them. The medical officer on entering the army should, with this view, satisfy himself whether it would not be to his advantage to join the Friendly Society of the Officers of the Medical Department of the Army, which affords pensions to widows; he should also support the Army Medical Officers' Benevolent Society. Particulars of these societies can be obtained at the office of the Director-General, Army Medical Service, 17, Victoria Street, S.W.

The Royal Navy affords a fine career for those who have a taste for sea life. The pay, estimated relatively to unavoidable expenditure, contrasts favourably with the necessary outgoings which fall on the army medical officer. At the present time no medical man need be deterred from entering the Royal Navy Medical Service through fear of meeting with harsh treatment at the hands of the executive authorities.

The Medical Service of the Army seems, after prolonged controversy and persistent military opposition, to have acquired a status which should satisfy its friends and at the same time disarm its opponents. It is no longer a department but a Royal Corps, and, as such, forms an integral part of the army. The Royal Warrant conferring this status is dated June 23rd, 1898, and the officers of the Medical Staff, and men of the Medical Staff Corps, are amalgamated into the Royal Army Medical Corps, with the following new ranks and titles:

Former Ranks.	New Ranks.
Surgeon-Colonel	Colonel.
Brigade-Surgeon-Lieutenant-Colonel / Surgeon-Lieutenant-Colonel ...	Lieutenant-Colonel.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant	Lieutenant.

Officers above the rank of Colonel are styled Surgeon-Generals (ranking with Major-Generals) of the Medical Staff; the Director-General is addressed as of the Army Medical Service, not Department. The former rates of pay, etc., as a consolidated total, remain unaltered; but there may, of course, be an ultimate rearrangement of items to meet the necessities of a corps organisation.

Her Majesty having thus been graciously pleased to constitute a Royal Army Medical Corps, with simple military titles, has assured to officers and men clear and indisputable army status beyond cavil. Under such circumstances we have great satisfaction in recommending the Army Medical Service as offering a promising career to young medical men. We do so the more gladly inasmuch as the recent great and far-reaching reform was mainly brought about by unwearied efforts, extending over many years, of the British Medical Association.

The Indian Medical Service has not yet a corps organisation, with simple military titles, but such an extension is in course of arrangement, and will not be long delayed. With a great and honourable past, that service still affords many important and lucrative appointments to its medical officers and opportunities to those who desire distinction, especially in the clinical work of their profession, as well as to others who may aspire to high administrative duties, both medical and political.[1]

POST-GRADUATION STUDY.

DURING the last few years there has been a remarkable increase in the number of qualified men attending hospital work in London. Even ten years ago the advent of a senior man excited quite a little stir of curiosity in a hospital ward. Now and then an old student up from the country looked in upon the scene of his earliest struggles with disease; or perhaps a foreigner making a tour was attracted by the reputation of a particular physician or surgeon, and came to see something of his clinical teaching. Nowadays, however, all is different. The numbers of those entering the profession have somewhat diminished, but the deficiency is more than supplied by the groups of attentive practitioners—some of whom are even venerable enough to suggest that they are actively qualifying for John Richard Green's epitaph, "He died learning."

The "post-graduates," to apply the current Americanism, fall into three main classes. First, there are the young men recently qualified who realise or have been told that the most important lessons of their profession are yet to learn, and who at any rate grasp the opportunity of improving their acquaintance with those subjects in which they feel themselves particularly deficient. In London they frequent particularly the out-patient department at the National Hospital for the Paralysed and Epileptic, and the dermatological clinics of three or four of the general hospitals. The second class comprises the established general practitioner often of long-standing, who in a brief interval of leisure wishes to see something of new methods, or perhaps to acquire an M.D. degree. He intends to pin his faith not to individual teachers or schools, but to post-graduate courses, which stand him in much the same stead as extension lectures to the layman.

Lastly, there are the foreign and Colonial medical men, some of whom come merely to take a look round, but others for the purpose of acquiring an English qualification in addition to their own. Among them are practitioners

[1] Further particulars as to the mode of entering these services and the rates of pay, etc., will be found at page 566.

from Canada, Australasia, the United States of America, and even—*mirabile dictu*—from Germany.

Until quite a short time ago no organised attempt had been made to cope with this demand for post-graduate instruction. The London Post-Graduate course, under the management of its Secretary, Dr. Fletcher Little, has essayed to fill the gap, and has done much good work in systematising the teaching at the various special hospitals and institutions with which it is associated, and of which details will be found on p. 557. Recently a much wider movement has been taken up in nine of our largest general London hospitals, including all those to which teaching schools are attached, with the exception of St. Bartholomew's and the London hospitals. Cards—costing 7 guineas for three months and 10 guineas for six months—are issued to qualified medical men, British, Colonial, or foreign, admitting them to the practice of all these institutions, and thus throwing open practically the pick of clinical material in London for the purposes of post-graduate study. It would be difficult to over-estimate the importance of a step which can hardly fail to set London in its proper place as a centre for this purpose.

In Edinburgh also a system of post-graduate classes has been organised, and has met with considerable success. Some particulars as to the arrangements both in London and Edinburgh will be found at pages 557, 558.

In Cambridge special arrangements have been made recently to meet the needs of advanced students who wish to prosecute some particular course of scientific study or research, while at the same time enjoying the advantages University residence, and, if desired, qualifying for a degree (see page 558).

REGULATIONS OF THE GENERAL MEDICAL COUNCIL

IN REGARD TO THE REGISTRATION AND EDUCATION OF MEDICAL STUDENTS.

THE regulations of the General Medical Council as to registration, preliminary examination, and as to professional education must be followed by all medical students seeking to obtain degrees or licences to practise from the universities or medical corporations of the United Kingdom. The separate regulations of the universities and corporations are so drawn up as to meet the requirements of the General Medical Council.

PRELIMINARY EXAMINATIONS.

Every medical student must be registered by the General Medical Council at the commencement of his studentship. To obtain registration the student must pass a preliminary examination in general education, and must produce evidence that he has commenced medical study. A degree in Arts of any British or Colonial University or of such other Universities as may be specially recognised from time to time by the General Medical Council shall be considered a sufficient testimony of proficiency. The student must make application for registration on a special form to be had on application to the several qualifying bodies and medical schools.

The *Students' Register* is kept by the Branch Registrars, namely: in England, Mr. H. E. Allen, B.A., LL.B., 299, Oxford Street, London, W.; in Scotland, Mr. James Robertson, 48, George Square, Edinburgh; in Dublin, Mr. S. Wesley Wilson, 35, Dawson Street, Dublin.

The following is a list of examining bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as medical or dental student:

I.—UNIVERSITIES IN THE UNITED KINGDOM.

University of Oxford:
(1) Junior Local Examinations; Certificate to include all the required subjects at one time.
(2) Senior Local Examinations; Certificates to include the required subjects.
(3) Responsions; Certificate to be supplemented by others showing that the required mathematical subjects have been passed.
(4) Moderations; Certificates to include the required subjects.
(5) Final Examination for a Degree in Arts.

University of Cambridge:
(6) Junior Local Examinations; Certificate to include all the required subjects at one time.
(7) Senior Local Examinations; Certificates to include the required subjects.
(8) Higher Local Examinations; Certificates to include the required subjects.
(9) Previous Examination; Certificates to include the required subjects.
(10) General Examination; Certificates to include the required subjects.
(11) Final Examination for a Degree in Arts.

University of Durham:
(12) Examination for Certificate of Proficiency; Certificate to include all the required subjects at one time.
(13) Preliminary Examination in Arts for Graduation in Medicine and Science; Certificate to include the required subjects.
(14) Final Examination for a Degree in Arts.

University of London:
(15) Matriculation Examination; Certificate to include the required subjects.
(16) Final Examination for a Degree in Arts or Science.

Victoria University:
(17) Preliminary Examination; Certificate to include all the required subjects at one time.
(18) Entrance Examination in Arts; Certificate to include all the required subjects at one time.
(19) Final Examination for a Degree in Arts or Science.

University of Wales:
(20) Matriculation Examination; Certificate to include all the required subjects at one time.
(21) Final Examination for a Degree in Arts.

University of Edinburgh:
(22) Junior Local Examination; Certificate to include all the required subjects at one time.
(23) Senior Local Examination; Certificate to include the required subjects.
(24) Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
(25) Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
(26) Final Examination for a Degree in Arts or Science.

University of Aberdeen:
(27) Junior Local Examination; Certificate to include all the required subjects at one time.
(28) Senior Local Examination; Certificate to include the required subjects.
(29) Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
(30) Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
(31) Final Examination for a Degree in Arts or Science.

University of Glasgow:
(32) Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
(33) Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
(34) Final Examination for a Degree in Arts or Science.

University of St. Andrews:
(35) Preliminary Examination for Graduation in Medicine and Surgery; Certificate to include the required subjects.
(36) Preliminary Examination for Graduation in Arts or Science; Certificate to include the required subjects.
(37) Final Examination for a Degree in Arts or Science.
(38) Final Examination for the Diploma of L.L.A.

University of Dublin:
(39) Public Entrance Examination; Certificate to include the required subjects.
(40) Examination for the First, Second, Third, or Fourth Year in Arts; Certificate to be signed in the approved form by the Medical Registrar of the University.
(41) Final Examination for a Degree in Arts.

Royal University of Ireland:
(42) Matriculation Examination; Certificate to include the required subjects.
(43) Final Examination for a Degree in Arts or Science.

Oxford and Cambridge Schools' Examination Board:
(44) Lower Certificate; to include all the required subjects at one time.
(45) Higher Certificate; to include the required subjects.

II.—MEDICAL LICENSING BODIES.

Royal College of Physicians and Surgeons in Ireland:
(46) Preliminary Examination; Certificate to include all the required subjects at one time.

III.—EDUCATIONAL BODIES OTHER THAN UNIVERSITIES

College of Preceptors:
(47) Examination for a First Class Certificate or a Second Class Certificate

cate of First or Second Division; Certificate to include all the required subjects at one time.

(48) Preliminary Examination for Medical Students; Certificate to include all the required subjects at one time.

Scotch Education Department:

(49) Examination for Lower Grade Leaving Certificate; to include all the required subjects at one time.

(50) Examination for Higher Grade or Honours Leaving Certificate; to include the required subjects.

Educational Institute of Scotland:

(51) Preliminary Medical Examination; Certificate to include all the required subjects at one time.

Intermediate Education Board of Ireland:

(52) Junior or Middle Grade Examination; Certificate to include all the required subjects at one time.

(53) Senior Grade Examination; Certificate to include the required subjects.

IV.—INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

University of Calcutta:

(54) Entrance Examination.

University of Madras:

(55) Matriculation Examination.

(56) First Examination in Arts.

University of Bombay:

(57) Matriculation Examination.

Ceylon Medical College:

(58) Preliminary Examination.

Punjab University:

(59) Entrance Examination.

University of Allahabad:

(60) Entrance Examination.

University of M'Gill College, Montreal:

(61) Matriculation Examination.

College of Physicians and Surgeons of the Province of Quebec.

(62) Matriculation Examination.

University of Bishop's College, Montreal:

(63) Matriculation Examination.

Trinity Medical College, Toronto:

(64) Departmental Arts Matriculation Examination.[1]

University of Toronto:

(65) Departmental Arts Matriculation Examination.[1]

Trinity University, Toronto:

(66) Departmental Arts Matriculation Examination.[1]

Queen's University, Kingston:

(67) Departmental Arts Matriculation Examination.[1]

Victoria University, Toronto:

(68) Departmental Arts Matriculation Examination.[1]

College of Physicians and Surgeons of Ontario:

(69) Departmental Arts Matriculation Examination.[1]

Western University of Ontario:

(70) Departmental Arts Matriculation Examination.[1]

University of Manitoba:

(71) Preliminary and Previous Examinations.

University of Fredericton, New Brunswick:

(72) Matriculation Examination.

University of Mount Allison College, New Brunswick, Canada:

(73) Matriculation Examination.

College of Physicians and Surgeons of New Brunswick:

(74) Matriculation Examination.

University of King's College, Windsor, Nova Scotia:

(75) Matriculation Examination.

Dalhousie College and University, Halifax, Nova Scotia:

(76) Matriculation Examination.

Provincial Medical Board of Nova Scotia:

(77) Preliminary Examination.

Newfoundland Medical Board:

(78) Preliminary or Matriculation Examination.

University of Melbourne:

(79) Matriculation Examination.

University of Sydney:

(80) Matriculation Examination.

(81) First Year Examination in Arts.

(82) Senior Public Examination.

(83) Entrance Examination for Medicine and Science.

University of Adelaide:

(84) Senior Public Examination.

University of Tasmania:

(85) Senior Public Examination.

University of the Cape of Good Hope:

(86) Matriculation Examination.

University of Otago:

(87) Preliminary Examination for Medical Students.

University of New Zealand:

(88) Preliminary Examination for Medical Students.

Codrington College, Barbadoes:

(89) Examinations qualifying for a Degree in Arts at the University of Durham.

Continental Bodies:

(90) The German Abiturienten-Examen of the Gymnasia and Realgymnasia; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities.

Egyptian Government:

(91) Secondary Education Certificate.

*** (a) No certificate from the bodies in the foregoing Section (IV) will be accepted unless it shows that the Examination has been conducted by or under the authority of the body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of Examination have been passed in at one time. Copies of the form of the required certificate will be supplied by the Registrar of the Council for the purpose.

(b) In the case of natives of India or other Oriental countries, whose vernacular is other than English, an examination in a classic Oriental language may be accepted instead of an examination in Latin.

[1] Conducted under the direction of the Provincial Education Department of Ontario.

The examinations in Divisions I, II, III at present entitle to registration on production of satisfactory evidence that the applicant has passed them. The examinations in IV are accepted if the certificates contain evidence that the examination passed included all the subjects required by the General Medical Council. These are:

"(*a*) English Language, including Grammar and Composition. (Marks not exceeding 5 per cent. of the total marks obtainable in this section of the examination may be assigned to candidates who show a competent knowledge of shorthand).

"(*b*) Latin, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.

"(*c*) Mathematics, comprising (*a*) Arithmetic; (*b*) Algebra, as far as Simple Equations, inclusive; (*c*) Geometry, the subject matter of Euclid, Books I, II, and III, with easy deductions.

"(*d*) One of the following optional subjects:

(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other modern Language.

The Council will not in future accept any certificate of having passed a Preliminary Examination in General Education, except in the cases indicated in the above list, unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed in at the same time.

PROFESSIONAL EDUCATION.

The period of professional study between the date of registration as a medical student and the date of the Final Examination for any diploma which entitles its holder to be registered under the Medical Acts must be a period of *bonâ fide* study during not less than five years. The course of professional study and examinations must include the following subjects:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the study of Medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene (xv) Mental Disease.

A graduate in arts or science of any university recognised by the General Medical Council, who has spent a year in the study of Physics, Chemistry, and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study provided that he has registered as a medical student with the General Medical Council. It is also to be noted that a student who has previous to registration attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any university, school of medicine, or teaching institution recognised by any of the licensing bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

THE ENGLISH UNIVERSITIES.

THE UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine (B.M. and D.M.), and two degrees in Surgery (B.Ch. and M.Ch.), which under the most favourable circumstances may be obtained in six or seven years from Matriculation.

B.A. DEGREE.

The degrees of B.M. and B.Ch. are conferred only on candidates who have taken the B.A. degree, for which residence for three years within the University is necessary; the examinations, however, for the degrees in Arts and Medicine may be passed in any order, provided the subjoined regulations are complied with.

The degree of B.A. may be obtained in either of the following ways:

(*a*) By passing Responsions (or one of the Extra-University

Examinations, which are held as equivalent to it), Moderations, a Divinity Examination, or, in the event of a candidate objecting, an examination in some specified Greek book; and the Final Pass School in three subjects, two of which may be the same as the Preliminary Examination in Natural Science.

(*b*) By passing Responsions, an additional subject in Responsions, the Divinity Examination, and the Preliminary Examinations in the Natural Science School, and by passing the Final Honour Examination in Chemistry, Physics, Animal Morphology, Botany, *or* Physiology.

Responsions and the additional subject may be passed before a candidate is a member of the University;[1] Moderations can be passed in the fourth term; the Divinity Examination at any time after Responsions; the Final Pass School may be taken any time after Moderations; a Final Honour School may be taken at the end of the third or within the fourth Academical year, that is, twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

Degrees in Medicine and Surgery.

Candidates for degrees in Medicine must take the degrees of B.M., B.Ch., to obtain which the following examinations must be passed:

Preliminary.—The preliminary examination of the Natural Science School must be passed. It is held in two parts, namely: (1) Mechanics and Physics, and (2) Chemistry in November and June, (3) Animal Morphology, and (4) Botany in December and March.

Professional.—There are two professional examinations, held twice a year at the end of Michaelmas and Trinity terms. The subjects of the first B.M. examination are Organic Chemistry, Human Anatomy and Physiology, Materia Medica, and Pharmacy: but candidates who have previously obtained a First or Second Class in the Final Examination in Physiology or Chemistry are exempt from further examination in these subjects. This examination may be passed at any time after the preliminary. The second examination, held in June, may be taken at any time after the first, but usually two or three years elapse. It comprises the remaining subjects of the medical curriculum, namely, Medicine, Surgery, Midwifery, Pathology, Forensic Medicine, and Hygiene.

D.M. Degree.—A B.M. who has entered his thirty-ninth term is admitted D.M. on presentation of a dissertation approved by the appointed professors and examiners.[2]

M.Ch. Degree.—An examination for this degree is held in June. The candidate must be in his twenty-seventh term.

Fees.—University: B.A., £16 or £17. B.M. and B.Ch., £14. D.M., £25. M.Ch., £17. Also an annual fee to the University of £2 for the first four years, reduced to £1 when the B.A. is taken.—College: Fees (varying in amount) on taking degrees and for the first four years of membership. Tuition fees, £21 to £30. The cost of living for the four University terms cannot be stated at less than £120.

Scholarships, etc.—The several Colleges grant scholarships of £80 a year tenable for four years in Natural Science, Chemistry, Physics, and Biology, and also exhibitions. Particulars can be obtained on application to the College tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually. Candidates who have been placed in the First Class in any Final Examination in the Natural Science School, whether they have taken the degree of B.M. or not, are eligible.

Teaching.

Preliminary Examination.—Courses of lectures and demonstrations on elementary Mechanics and Physics, on Inorganic Chemistry, on Animal Morphology, and on Botany, are given at convenient periods, and are open to members of the University intending to proceed to a medical degree.

Degree of B.A.—The course of instruction for the Final Honour Examination in Physiology consists of lectures and practical work, and extends over two years. It is intended for students who have passed the Preliminary Examination in other subjects.

First B.M.—The instruction in Human Anatomy is by lectures and demonstrations; the dissecting room is open daily, and dissection may be continued during the vacation. The course of instruction in Physiology consists of a course of lectures extending over three full terms, a course of practical instruction in Histology during three terms, and a course of Elementary Physiological Chemistry, with practical laboratory work during two terms. Instruction in Organic Chemistry is given in the Chemistry Department.

Second B.M.—Lectures on Materia Medica and practical instruction in Pharmacology are given during the summer term, and clinical lectures and tutorial instruction and demonstrations in Physical Diagnosis and Regional Anatomy are given in each term at the Radcliffe Infirmary. Lectures on Pathology and Practical Instruction in Bacteriology and Pathological Histology are given in Michaelmas and Hilary Terms in the Pathological Laboratory.

[1] Membership is constituted by Matriculation, and by becoming a member of a College or Hall, or a non-collegiate student.

[2] The regulations for Graduates who took the degree of B.M. previous to 1886 differ slightly.

THE UNIVERSITY OF CAMBRIDGE.

Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.C.)

A student proceding to this degree must (1) reside in the University during the required portion of each of nine terms, (2) pass (or obtain exemption from) the Previous Examination, (3) pursue medical study for five years.

There are three examinations for the degree of Bachelor of Medicine. They are partly in writing, partly oral, and partly practical. The examinations take place twice in the year, in the Michaelmas and Easter terms.

The First Examination is divided into two parts: 1. Chemistry and other branches of Physics; 2. Elementary Biology. These two parts may be taken together or separately. Before admission to this examination the candidate must have passed (or obtained exemption from) the Previous Examination. He must also produce certificates of diligent attendance on a course of lectures in Chemistry, and of practical instruction in Chemical Manipulations.

The Second Examination is divided into two parts, which may be taken together or separately: 1. Human Anatomy and Physiology: 2. Pharmaceutical Chemistry. Before admission to this examination the student must have passed both parts of the First Examination, must have attended hospital practice, and have practised dissection during six months, and must produce certificates of diligent attendance on a course of lectures on each of the following objects: 1. Human Anatomy; 2. Physiology.

The Third Examination is divided into two parts, called the First part and the Second part respectively. Before presenting himself for either part, the student must have passed both parts of the Second Examination. The First part includes Principles and Practice of Surgery and Midwifery and Diseases Peculiar to Women. The Second part includes Pathology, Principles and Practice of Physic, Elements of Hygiene, Medical Jurisprudence, and Mental Diseases. The student, before admission to the First part, must produce certificates of attendance on one course of lectures in each of the following subjects: Pathology, Physiological Actions and Therapeutic Uses of Remedies, Principles and Practice of Surgery, and Midwifery; he must have attended a course of Practical Surgery, and acted as dresser or house-surgeon at a recognised hospital for six months; must have attended twenty cases of Midwifery, and must have obtained a certificate of proficiency in vaccination from an authorised vaccinator appointed by the Local Government Board. Before admission to the Second part, he must produce evidence that he has completed the five years' course of medical study and obtained certificates of diligent attendance on one course of lectures in each of the following subjects: Principles and Practice of Physic and Medical Jurisprudence; he must also have attended the Medical and Surgical Practice of a recognised hospital (with clinical lectures), including certain special hospitals and asylums, during three years at least; must have been Clinical Clerk at a recognised hospital for six months at least, or have, subsequently to the completion of his attendance on Hospital Practice, attended to Practical Medicine or Surgery with special charge of patients in a hospital, dispen-

sary, or parochial union, under superintendance of a qualified practitioner, unless the student himself be duly qualified. All candidates must also produce certificates of attendance during three months on (1) practical instruction in Pharmacy and Dispensing, (2) clinical instruction in Fevers at a general or special hospital.

Act.—After these examinations have been passed, an Act must be kept in the schools in the following manner. The Regius Professor of Physic assigns a day and hour for keeping the Act, of which public notice has to be given eight days before. The candidate reads a thesis, composed by himself, on some subject approved by the Professor; the Professor brings forward arguments or objections for the candidate to answer, and examines him orally on questions connected with his thesis as well as on other subjects connected with medicine of a more general nature. As the Third Examination for the degree of M.B. includes operative and clinical surgery, the degree of Bachelor of Surgery is conferred upon candidates who pass the Final Examination for M.B. without further examination and without the Act. The degree of M.B., B.C. is thus a registrable qualification in Medicine, Surgery, and Midwifery.

DOCTOR OF MEDICINE (M.D.)

This degree may be taken by an M.B. of three years' standing, or by an M.A. of four years' standing, who has been engaged in medical study for five years at least. In the latter case certificates of attendance on lectures and hospital practice for the M.B. must be produced, and the examination for the M.B. must be passed. In either case the candidate keeps an Act by reading an original thesis upon which he is examined, and writes a short extempore essay upon one of four topics (at his choice) relating severally to Physiology, Pathology, Medicine, or State Medicine.

MASTER IN SURGERY (M.C.).

This degree is granted to a candidate who has completed all that is required for the degree of B.C. at least two years previously; the candidate is either (1) examined in Pathology, Surgery, Surgical Anatomy, and Surgical Operations, the examination being both written and practical; or (2) submits books or writings constituting original contributions of merit to the science or art of surgery.

DATES, FEES, ETC.

The dates of examinations are announced early in the Michaelmas and Lent terms. Each candidate pays £2 2s. to the Registrary of the University on giving notice of his intention to offer himself for either part of the First, Second, or Third Examination for M.B. He pays £3 3s. before that for M.C. Schedules defining the range of subjects in the First M.B. Examination, and of the Pharmaceutical Chemistry in the Second Examination; also schedules for the necessary certificates, and a list of the schools of medicine and hospitals recognised by the University, may be obtained on application to the Registrary of the University, the Registry, Cambridge.

THE UNIVERSITY OF LONDON.

DEGREE OF M.B.

Every candidate for the degree of M.B. is required to pass four examinations:

1. *Matriculation*, held twice a year, in January and June. This examination consists of the following subjects: (1) Latin, (*a*) translation of selected authors, (*b*) unseen translation, (*c*) translation of English into Latin, (*d*) Latin grammar; (2) one of the following languages: Greek, French, German, Sanscrit, Arabic; translation and grammar; (3) English, the general history and grammatical structure of the language; History of England to the end of the seventeenth century, with the geography relating thereto; (4) Mathematics, including Arithmetic, Algebra to Quadratic Equations inclusive, Geometry, including the subjects of the first four books of Euclid, and simple deductions; (5) Mechanics (including a general acquaintance with the apparatus by which the elementary principles of physics can be illustrated and applied); (6) one of the following branches of science: (*a*) Chemistry, (*b*) Heat and Light, (*c*) Magnetism and Electricity, (*d*) Botany. The full text of the regulations with the syllabus in each subject, can be obtained on application to the Registrar of the University of London, Burlington Gardens, London, W. The candidate must be 16 years of age.

2. *Preliminary Scientific (M.B.) Examination.*—This examination is held for Pass and Honours in July, and for Pass only in January. It consists of two sections: (*a*) Chemistry and Physics, (*b*) General Biology. The examinations are conducted by written papers, *viva voce*, and by practical tests. The two sections may be taken together or separately, and the candidate who passes in one section only, though presenting himself in both, will be credited with the one in which he is successful. Honours may be taken in (*a*) Inorganic Chemistry, (*b*) Experimental Physics, (*c*) Botany, (*d*) Zoology. Particulars as to the conditions of competition for honours and syllabuses of the subjects, both in the Pass and in the Honours examination, may be obtained on application to the Registrar, as above.

3. *Intermediate Examination in Medicine.*—This examination is held for Pass and Honours in July, and for Pass only in January. The candidate must have completed his nineteenth year, and must, subsequently to having passed the Preliminary Scientific Examination, have been a student in a recognised medical school for at least two years, have dissected for two sessions, have attended courses of Practical Chemistry and Practical Pharmacy, and have attended three courses of lectures in the medical school. The subjects of the examination are: Anatomy, Physiology and Histology, Organic Chemistry, Materia Medica and Pharmaceutical Chemistry. Physiology may be postponed by pass candidates till a later examination, but candidates will not be allowed to present themselves for the M.B. Examination till at least twelve months after they have passed in Physiology. The examination is conducted by written papers, *viva voce*, and by practical examinations. Honours may be taken in any one of the subjects of the examination under conditions stated in the *Calendar*, an extract from which containing these particulars, as well as syllabuses of the subjects, can be obtained from the Registrar.[1]

4. *M.B. Examination.*—This examination is held for Pass and Honours in October, and for Pass only in May. The candidate must have passed the Intermediate Examination at least twenty-one months earlier, must have attended lectures and hospital practice in a recognised medical school for two years, including at least two months' attendance, each on lunacy and infectious diseases, one of which must be subsequent to the Intermediate Examination, must have conducted at least twenty labours, and have acquired proficiency in vaccination. After having attended Medical and Surgical Hospital Practice for at least twelve months subsequent to passing the Intermediate Examination in Medicine, the student is required to attend to Practical Medicine, Surgery, or Obstetric Medicine with special charge of patients in a Hospital, Infirmary, Dispensary, or Parochial Union during six months, such attendance not to count as part of the Surgical or Medical Hospital Practice already referred to. The examination, which is conducted by written papers, *viva voce*, and by practical examinations, comprises the following subjects: Pathology, Therapeutics, Hygiene, Surgery, Medicine, Obstetric Medicine, and Forensic Medicine. The candidate must pass in all the subjects. Honours may be taken in Medicine, Obstetric Medicine, and Forensic Medicine.

DEGREES IN SURGERY.

Bachelor of Surgery (*B.S.*).—This degree is granted to Bachelors of Medicine after an examination held annually in December. The candidate must have attended a course of operative surgery. The examination comprises Surgical Pathology and Surgery, and the candidate is examined by written papers and clinically, and is required to operate on the dead body. Candidates who pass this examination in the first division may be examined for Honours.

Master in Surgery (*M.S.*).—This degree is granted, after examination, to Bachelors of Surgery of at least two years' standing; one year is, however, remitted in the case of candidates who passed the B.S. examination in the first division. The examination comprises Mental Physiology, Surgery, and Surgical Anatomy.

[1] In 1899 the syllabus in Organic Chemistry will be considerably altered, particularly as regards the practical work.

Degree of M.D.

Doctor of Medicine.—The degree of Doctor of Medicine is granted to Bachelors of Medicine of at least two years' standing; one year is remitted if the candidate passed the M.B. examination in the first division. The examination comprises Mental Physiology and Medicine, and is conducted by written papers, clinical examination, and *viva voce*. A candidate who presents a printed dissertation, thesis, or commentary, which shall have been approved by the examiners, will be excused the written examination.

Doctor of Medicine in State Medicine.—This degree is granted to Bachelors of Medicine after examination, on producing evidence of having been engaged in the study of State Medicine for at least two years, or one year if they passed the M.B. examination in the first division. The examination is similar to that for the ordinary M.D., State Medicine taking the place of Medicine.

Fees and Scholarships.

The fees are as follows: Matriculation, £2; for the other examinations, in each case, £5. A rejected candidate, on again presenting himself, pays half the fee.

Exhibitions or Scholarships are granted to the first six candidates in honours at the Matriculation Examination, and, if sufficient merit be evinced, to the first candidates in honours at all the other examinations.

The Sherbrooke Prize.—This prize, founded by the late Lord Sherbrooke, will in future be awarded triennially for the best essay embodying original research in some branch of natural science. It is open to all graduates of not more than five years' standing.

VICTORIA UNIVERSITY.

Colleges.—The Colleges of the Victoria University are Owens College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds.

Entrance.—The candidate for the Entrance Examination in Arts, who must present a certificate from his last instructor to the effect that he is a proper person to be admitted, is examined in: (1) Latin; (2) Elementary Mathematics; (3) Elementary Mechanics; (4) English Language, including Grammar and Composition, (5) *One* of the following: i, Greek; ii, French; iii, German; iv, Italian; v, Spanish. Candidates may, by special permission of the Board of Studies, substitute any other modern language for either of the subjects named under (5). Candidates who propose to present themselves in Italian or Spanish, or in a modern language not included in the list, must give notice to the Registrar on or before March 1st in the year in question.

Matriculation.—Before matriculating, which consists in signing the University Register, candidates must produce proof that they are registered students of a College of the University, or of a medical school recognised by it.

Degrees of Bachelor of Medicine and of Surgery (M.B., Ch.B.)

Curriculum and Residence.—Five years must be spent in study at a recognised medical school subsequent to registration as a medical student; of these five years, two must be passed in a college of the University, and one of these two years must be subsequent to passing the first M.B. Examination.

First M.B. Examination.—Candidates must have attended during at least one year courses of lectures and laboratory work in each of the subjects of the examination—namely: Part I. (*a*) Physics; (*b*) Chemistry. Part II. Biology (Animal and Vegetable Morphology, Physiology, and Laboratory work). The two parts may be taken together or separately.

Second M.B. Examination.—Candidates must have attended winter courses in Anatomy and Physiology, and a summer course in Materia Medica and Pharmacy, must have dissected for two winter sessions and one summer, and must have had practical instruction in Physiology and in Materia Medica and Pharmacy. The subjects of the examination are: (1) Anatomy; (2) Physiology; (3) Materia Medica and Pharmacy: (3) may be passed separately.

Final M.B. Examination.—Candidates must produce certificates of having attended, in a recognised medical school, courses of instruction in all the subjects of the examination, which are: Part I. (*a*) Pharmacology and Therapeutics, (*b*) General Pathology and Morbid Anatomy, (*c*) Forensic Medicine and Toxicology and Public Health. Part II. (*d*) Obstetrics and Diseases of Women, (*e*) Surgery, (*f*) Medicine (including Mental Diseases and Diseases of Children). The two parts may be taken separately, and any one of the subjects of Part I may be deferred and taken with Part II.

Degree of Doctor of Medicine (M.D.).

A candidate must have obtained the degree of M.B. at least one year previously. He must present a printed dissertation, and may be examined on any subject connected therewith.

Degree of Master of Surgery (Ch.M.).

A candidate must have obtained the degree of M.B. at least one year previously, must have been engaged in the study of Practical Surgery in the interval, and have held a surgical appointment for not less than six months in a hospital or other public institution. He must also produce certificates of having attended special courses in Operative Surgery, Bacteriology, and Ophthalmology.

Fees and Dates of Examination.

Entrance examination, £2: re-examination after failure, £1. First, Second, and Third M.B. Examinations, each £5: re-examination after rejection, £2. M.D., £10. Ch.M., £5 on examination, and £5 on the conferring of the degree.

The entrance examination in Arts is held in June and September. The First M.B. Examination is held in June (Part I) and July (Part II), and also in September. The Second and Final M.B. Examinations are held in March and July, and that for the Ch.M. in July.

THE UNIVERSITY OF DURHAM.

The University of Durham grants six degrees in the medical faculty—M.B., M.D., B.S., M.S., B.Hy., D.Hy. The degrees of M.D., B.S., and M.S. are granted only to M.B. graduates of the University. The degrees B.Hy. and D.Hy. are granted under certain conditions to registered medical practitioners (see page 561). The University also grants a Diploma in Public Health. These degrees are open both to men and women. It is hardly necessary to say that every student intending to attend the University of Durham College of Medicine (Newcastle-on-Tyne) would do well to pass the necessary examination in general knowledge, and qualify himself to obtain the degrees of the University.

Degree of Bachelor in Medicine (M.B.).

Preliminary Examination in Arts.—In addition to the Certificate of Registration a candidate must (*a*) pass the Preliminary Examination in Arts for the degrees in Medicine of the University of Durham, or hold a certificate of having passed one of the following examinations: (1) The First Public Examination for the Degree of B.Litt. of the University of Durham; (2) the First Public Examination in Arts of the University of Durham; (3) the University of Oxford Moderations; (4) the University of Cambridge Previous Examination with the extra subjects; (5) the University of Cambridge General Examination: (6) the Matriculation Examination of the University of London; or (*b*) be a graduate in Arts of the University of Durham, Oxford, Cambridge, London, Victoria (Manchester), Dublin, Queen's University (Ireland), Edinburgh, Glasgow, St. Andrews, Aberdeen, Calcutta, Madras, Bombay, McGill (Montreal) Sydney, Melbourne, Queen's College (Kingston), the Victoria or the Royal University of Ireland. Particulars as to the Preliminary Examination of the University of Durham (*a*) can be obtained from the Rev. Henry Ellershaw, M.A., Secretary of the Examinations, the University, Durham, to whom the fee (£1) is payable.[1]

[1] Candidates from Indian Universities must have passed a Matriculation Examination at one of the Indian Universities, and will have to reside for one academic year at the University of Durham College of Medicine at Newcastle-on-Tyne before presenting themselves for the M.B. Degree Examination, in accordance with the regulation on page 56 of the *Calendar*. If the matriculation Examination at the Indian University did not embrace Latin, and Persian, or Sanskrit, then it will be necessary for the candidate, in addition, to produce evidence that he has passed in Latin and one of those subjects, or in Greek, within twelve months of his presenting himself for the Examination of the Degree in Medicine.

The Preliminary Examination in Arts is held thrice yearly, in January, March, and September, at the same time as the Registration Examination. The next examination will be commenced on September 13th, 1898.

Curriculum.—The curriculum extends over five years, of which one at least must be spent in attendance at the University of Durham College of Medicine, Newcastle-on-Tyne, and in the clinical practice of the Royal Infirmary there. Students are recommended to carry out the curriculum on some such plan as the following:

First Winter: Anatomy, Dissections, Chemistry, Physics, Elementary Biology. First Summer: Practical Chemistry, Practical Physics, Elementary Biology (if not attended during the Winter).

Second Winter: Anatomy, Physiology, Practical Physiology, Dissections. Second Summer: Practical Histology, Practical Pharmacy, Materia Medica, Therapeutics, and Pharmacology.

Third Winter: Medicine, Surgery, Hospital Practice, with Clinical Lectures, Midwifery and Diseases of Women and Children, Practical Midwifery, Public Health. Third Summer: Pathology, Practical Pathology, Medical Jurisprudence, Hospital Practice, with Clinical Lectures.

Fourth Winter: Medicine, Surgery, Regional Anatomy, Hospital Practice, with Clinical Lectures. Fourth Summer: Mental Diseases, Operative Surgery, Hospital Practice, with Clinical Lectures.

Fifth Winter: Infectious Diseases and Clinical Lectures. Fifth Summer: Clinical Lectures, Mental Diseases (if not attended during the Fourth Summer).

Professional Examinations.—There are four professional examinations conducted in writing, practically, and *viva voce*, each held twice a year (April and September). *First Examination:* Elementary Anatomy and Biology, Chemistry, Physics. *Second Examination:* Anatomy, Physiology, Materia Medica, Therapeutics, and Pharmacology. *Third Examination:* Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology. *Final Examination:* Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children. The *Calendar* of the University of Durham College of Medicine, Newcastle-on-Tyne, contains synopses of the subjects of the examinations and examination papers. Applications for further information should be addressed to Professor Howden at the College. A candidate who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England will be exempt from the subject of Biology in the First Examination of the University of Durham if registered as a Medical Student before 1st October, 1896.[2] Candidates who hold a qualification from a recognised licensing Board in the United Kingdom at the date of entry for the First Examination for the Degrees of Medicine are in every case required to pass in Chemistry with Chemical Physics.[3] Candidates who have completed part of their curriculum elsewhere may pass their First, Second, and Third Examinations *previously* to entering at Newcastle-upon-Tyne.

DEGREE OF DOCTOR OF MEDICINE (M.D.).

A candidate for this degree must have been engaged in practice for at least two years subsequent to obtaining the degree of M.B. in the University of Durham. The candidate is required to write an essay based on original research or observation, and is subject to examination on the topic of his essay. For particulars as to the degree of M.D. for medical practitioners of fifteen years' standing, without curriculum, see page 559.

DEGREES IN SURGERY.

Bachelor of Surgery.—A candidate must have passed the examination for the degree of M.B.(Dunelm), and have attended courses of lectures on Operative Surgery and on Regional Anatomy. He is required to perform operations on the dead body, and to show practical acquaintance with the use of surgical instruments and appliances.

Master in Surgery.—A candidate must have obtained the degree of B.S.(Dunelm) at least two years previously, and have been engaged in practice for that period. The subjects of the examination are Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

DEGREES IN HYGIENE (B.HY., D.HY.).

For the regulations as to these degrees, see page 561.

FEES.

Preliminary Arts Examination for Degrees, £1. First, Second, and Third Professional Examinations (M.B.), each £5. Final (M.B.), £10. Examination for the degrees of M.D., B.S., and M.S., each £5, in addition to the University of Durham for each degree, £6 6s.

THE ENGLISH COLLEGES.

THE Medical Corporations in England are the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The two Royal Colleges now co-operate to hold a series of examinations, on passing which the candidate receives the diploma of Licentiate of the Royal College of Physicians (L.R.C.P.), and Member of the Royal College of Surgeons (M.R.C.S.). The Society of Apothecaries grants its diploma separately.

CONJOINT EXAMINING BOARD IN ENGLAND.

A candidate who desires to obtain the licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to pass three professional examinations, and to produce evidence of having passed through a stated course of instruction at a recognised medical school. The full period of five years must be spent in professional study, after registration as a medical student, of which six months may be spent at an Institution recognised by the Board for instruction in Chemistry, or one year may be spent at an Institution recognised by the Board for Instruction in Chemistry and Biology. The candidate must pass an examination in subjects of Preliminary Education before entering the medical school (see page 525), and must register as a medical student within fifteen days of entering such school. Except in the case of Chemistry and Physics, Practical Chemistry, Practical Pharmacy, and Elementary Biology, professional studies commenced before registration will not be recognised. For institutions from which certificates are accepted by the Conjoint Board see p. 556.

FIRST PROFESSIONAL EXAMINATION.

The examination consists of three parts: (1) Chemistry and Physics, (2) Practical Pharmacy, (3) Elementary Biology.

A candidate may take this examination in three parts at different times, or he may present himself for the whole at one time. A candidate will be admitted to examination in Chemistry and Physics and Practical Chemistry and Elementary Biology before registration as a medical student by the General Medical Council, *and he may take Practical Pharmacy at any time during the curriculum.*

A candidate is required to produce evidence of having received instruction in each of the above-mentioned subjects. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry or Biology he must produce evidence of further instruction. A candidate who produces evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination at a university in the United Kingdom, India, or a British colony will be exempt from examination on the subjects in which he has passed.

SECOND PROFESSIONAL EXAMINATION.

The subjects of this examination are Anatomy and Physiology, and both must be passed at the same time. A candidate must have passed the Parts I and III of the First Examination at least twelve months earlier, and have attended during two winter sessions and one summer session (or fifteen months during the ordinary sessions) at a recognised medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. If rejected, a candi-

[2] A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

[3] All candidates for the First Examination for the Degree in Medicine, whether exempt from a portion of it or not, are required to pay the full fee—£5.

date, before being admitted to re-examination, must continue his studies for not less than three months.

Third or Final Professional Examination.

This examination consists of three parts: Part I, Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,[1] Therapeutics, Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances; Part III, Midwifery and Gynæcology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of attendance on twenty labours. The candidate must have passed the Second Examination two years previously, and have been registered as a medical student for at least five years. A rejected candidate must produce evidence of further instruction during three months.

All applications with reference to the examinations for the Licence of the Royal College of Physicians of London and to the Diploma of Member of the Royal College of Surgeons of England should be addressed to the Secretary, Examination Hall, Victoria Embankment, London, W.C. (telegraphic address, "Conjoint," London), from which also synopses of some of the subjects can be obtained.

Regulations for Colonial, Indian, or Foreign Candidates and University Candidates.

A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained, is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scotch, or Irish University are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their University the subjects included in the First and Second Examination of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign University recognised for the purpose, who shall have passed at his university in the subjects of the First and Second Examination, will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

Fees, Dates, Etc.

First Examination, £10 10s. Re-examination, Part I, £3 3s., Parts II, III, each £2 2s. *Second Examination*, £10 10s. Re-examination, £6 6s. *Third Examination*, £15 15s. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III, £3 3s. Members of an English, Scottish, or Irish University, £5 5s.; for the diplomas, £31 10s.[3]

The examinations are held in January, April, July, and October. A book of questions set at the several examinations is published annually, and can be obtained from Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Licentiates.—Candidates are now subject to the regulations of the Conjoint Examining Board in England.

Members.—The Membership of the College is granted after examination to persons above the age of 25 years who do not engage in trade, do not dispense medicine, and do not practise in partnership. Under the provisions of the Medical Act of 1886 the Diploma of Membership is not registrable at the present time as a primary qualification, and is therefore granted only to persons already registered, or who have passed the Final Examination for the Licence.

Medical graduates of a recognised university are admitted to a pass examination, but others must have passed the examinations required for the licence of the College. The examination, which is held in January, April, July, and October, is partly written and partly oral. It is directed to Medicine, and is conducted by the President and Censors. Candidates under 40 are examined in Latin, and either Greek, French, or German. Candidates over 40 are not so examined, and the Examination in Medicine may in their case be modified under conditions to be ascertained by application to the Registrar. The fee for the Membership is £42, but if the candidate is a Licentiate the fee is the difference between what he has already paid and £42. In either case £6 6s. is paid before examination.

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

[3] On and after January 1st, 1900, this amount will be raised to £36 15s.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Membership.—Candidates who registered on or after October 1st, 1884, are now subject to the regulations of the Conjoint Board.

Fellowship.—The Fellowship of the College of Surgeons is granted after examination to persons at least 25 years of age, who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third winter session; the second, chiefly directed to Surgery, which may be passed after six years of professional study, or after five years' professional study in the case of a Bachelor or Master of Arts, or Bachelor or Doctor of Science of a university recognised by the Council for the purpose. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship.

Fees: At First Examination: Members, £5 5s.; non-Members, £10 10s.; £5 5s. returned if rejected. At Second Examination: Member, £10 10s. Further information can be obtained on application to the Secretary, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

The following are the regulations for the Five Years Curriculum.

The examinations are Primary and Final (Sections I and II). The Primary Examination is held quarterly on the first Wednesday, and on the Monday and Thursday in the same week, in the months of January, April, July, and October, Section I of the Final Examination is held monthly, and consists of: 1. The examination in Surgery, on the Second Wednesday and following days. 2. The examination in Medicine and Forensic Medicine, on the third Wednesday and on the Monday and Thursday of the same week. 3. The examination in Midwifery, on the third Wednesday and on the Monday and Thursday of the same week. Section II of the Final Examination is held monthly, and consists of: 1. The Examination in Surgery, on the second Wednesday and following days. 2. The examination in Medicine, on the third Wednesday and on the Monday and Thursday of the same week. 3. The examination in Midwifery, on the third Wednesday and on the Monday and Thursday of the same week. Candidates for the examination in Midwifery may enter for the same at Section I or Section II of the Final Examination.

Primary Examination.—This examination consists of two parts: Part I includes (*a*) Elementary Biology (oral only), (*b*) Chemistry, the Principles of the Science which bear on the Study of Medicine; Chemical Physics, including the elementary mechanics of solids and fluids, heat, light, and electricity; Practical Chemistry; (*c*) Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. This examination may be passed any time before or after registration as a medical student. No professional studies commenced before registration will be recognised as part of the medical course. Should the candidate not succeed in passing in all the subjects of the examination, he will be referred only in the subject or subjects in which he failed. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule of the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School

or other authority. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before any examining body recognised by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination (Sec. I).—This examination consists of three parts. Part I includes: The Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy. Part II includes: (*a*) The Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology, and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Candidates passing either (*a*) or (*b*) will not be re-examined therein. Part III; Midwifery, Gynæcology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. Part III may be postponed to Sec. II of the Final Examination, and candidates may enter for Parts I, II, and III together or separately. Sec. 1 of the Final Examination cannot be passed before the expiration of 45 months after registration as Medical Student, during which time not less than 3 winter sessions and 2 summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Court of Examiners.

Final Examination (Sec. II).—This examination consists of three parts. Part I includes: An examination of and written report of Surgical Cases, Operative Manipulation and Surgical Anatomy, Instruments and Appliances. Part II includes: An examination of and written report on Medical Cases, Medical Anatomy. Part III includes: Midwifery, Gynæcology, and Diseases of Newborn Children, Obstetric Instruments, and Appliances. Parts I and II of this examination cannot be passed before the end of the fifth year. Candidates may enter for Parts I, II, and III together or separately. Course of Medical Study.—The course of study is as follows: For the Primary Examination, Part I, Elementary Biology, not less than 3 months; Chemistry and Chemical Physics, not less than 6 months; Practical Chemistry, not less than 3 months; Pharmacy and Dispensing, not less than 3 months. Evidence of having received instruction in Biology and Chemistry before registration will be admitted. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary. Part II: Anatomy, not less than 6 months; Practical Anatomy with Demonstrations, not less than 12 months; Physiology, not less than 6 months; Histology with Demonstrations, not less than 3 months. Class examinations on the above subjects. The study of these subjects must be pursued at a medical school or at a place of instruction recognised by the Society.

Information as to the details of the course of study required and as to the certificates which must be produced, may be obtained on application to the Secretary to the Examiners, who attends at the Hall of the Society, Blackfriars, E.C., from 10 to 12 o'clock daily.

Fees.—Primary Examination: For the whole Examination, including Part I and Part II, £5 5s.; Re-examination after rejection in Part I, £3 3s.; Re-examination after rejection in Part II, £3 3s. Final Examination, Section 1: For the whole Examination,[1] £10 10s.; Re-examination after rejection in A, Part I, Surgery, £3 3s.; Re-examination after rejection in B, Part II, Medicine, including (*a*) and (*b*), £3 3s.; Re-examination after rejection in C, Part III, Midwifery, £3 3s. Section 2: For the whole Examination, £5 5s.; Re-examination after rejection in A, Part I, Surgery, £3 3s.; Re-examination after rejection in B, Part II, Medicine, £3 3s.

THE SCOTTISH UNIVERSITIES.

It will be convenient to give the regulations for Edinburgh more in detail, and then briefly indicate points of difference as regards the other three Universities.

[1] The fee for Section 1 of the Final Examination is £10 10s., unless £5 5s. has previously been paid for the Primary Examination, in which case the fee is £5 5s. The fee for the three Examinations is £15 15s., or £5 5s. for each Examination, except in the case of persons holding a foreign diploma recognised by the Society, who are required to pay the entire fee of £15 15s. when entering for examination.

UNIVERSITY OF EDINBURGH.

The new regulations apply to all who begin their studies after October 1st, 1892.

Four degrees in Medicine and Surgery are conferred—namely, Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. The degree of M.B. is not conferred separately from Ch.B., and *vice versâ*, but M.D. and Ch.M. are separable.

PRELIMINARY EXAMINATION.

This must be passed before beginning medical study; the subjects are: (1) English[1]; (2) Latin, Translation, and Parsing, Prose, Composition, Grammar, and Sentences; (3) Elementary Mathematics, Arithmetic,[2] Algebra, and Geometry, Euclid, Books i, ii, and iii (or their equivalents with easy deductions); (4) Greek (Translation, Sentences, and Grammar), or French, or German. [One paper will be set in French and one in German. The papers will be of a lower standard than those set in these subjects in the Arts and Science Preliminaries. The time allowed for such paper will be three hours. The papers will comprise questions in grammar, translations, a piece of English for translation, and some short sentences.]

Excellence in one or more subjects will in some measure compensate for deficiency in others. The examination is conducted by a Joint Board of the four Universities, and will be held from October 1st to 8th, 1898, and from April 1st to 8th, 1899, and these dates apply to all the Scottish Universities. The standard of examination corresponds pretty nearly to the certificate of the Scotch Education Department, or the lower certificate of the Oxford and Cambridge Schools. Candidates are required to pass in all the necessary subjects at one or at not more than two examinations. The examinations of a large number of bodies are taken as equivalents of the Preliminary; these will be found on pages 433-436 of the *University Calendar* (Regulations of the Joint Board of Examiners). The fee is 10s. 6d. each time, and is to be sent with the schedule to T. Gilbert, the University Clerk, not later that September 16th, 1898, and March 1st, 1899.[3]

REGISTRATION.

The student must register within fifteen days after the commencement of medical study. There is no fee. Forms and information may be had from Mr. James Robertson, 48, George Square, Edinburgh, or at the office of the Faculty of Medicine.

PROFESSIONAL EDUCATION.

The course extends over five years. During the first four the student must attend Elementary Botany, Elementary Zoology, Physics, Practical Chemistry, Practical Physiology, Practical Pathology, and Medical Jurisprudence and Public Health during two courses of not less than 2½ months each; Practical Anatomy during two courses of not less than 5 months each; Chemistry, Anatomy, Physiology, Pathology, Surgery, Materia Medica and Therapeutics, Medicine, and Midwifery, and the Diseases of Women and Infants, during courses of not less than 5 months each. During the fifth, or final year, he must be engaged in clinical study for at least 9 months, and must attend a 9 months' course in Clinical Medicine and in Clinical Surgery. In all, before graduation he must have attended, for at least three years, a hospital which accommodates not fewer than 80 patients, and possesses a distinct staff of physicians and surgeons, and he

[1] In English no set books are prescribed, nor is a general knowledge of the life and works of the greater authors expected of candidates, but one or two questions may be set, giving an opportunity to candidates to show a knowledge of famous literary works. The historical questions will not be confined to any one period, but will cover the whole of British History, and will be set in such a way as to give an opportunity to candidates who have confined their studies to a single period to show their knowledge. A single three hours' paper will be set, containing an Essay, a Paraphrase, two questions on History, two on Geography, four on Grammar (including correction of sentences, parsing, analysis of sentences, and derivations), two of a literary and general kind. Eight answers will be required. The Essay, the Paraphrase, one answer on History, and one on Geography will be compulsory.

[2] *Arithmetic* (including Vulgar and Decimal Fractions, Proportion, Percentage, Square Root, Simple Interest); *Algebra* (including Fractions, Factors, Square Root, Equations of the First Degree, Simultaneous Equations of the First Degree, Easy Quadratics, and problems leading to the above Equations).

[3] A student, whose native language is not English, may substitute his own language for either French or German, and may substitute any other classical language for Latin or Greek.

must have acted as clerk in the medical, and dresser in the surgical, wards of such a hospital. He must have had approved opportunities of studying at a hospital *Post-mortem* Examinations, Fevers, and Ophthalmology. He must have had a course of Operative Surgery. Every candidate must attend one of the two following courses; (1) A six weeks' course of clinical instruction in the Diseases of Children. (2) A course of instruction, of at least 18 meetings, in diseases of the Larynx, Ear, and Nose. He must have attended a course of 25 meetings on Practical Pharmacy, a course on Mental Diseases, been properly instructed in Vaccination by a certificated public vaccinator, have attended 12 cases of labour, or had 3 months' attendance at a lying-in hospital, and have personally conducted 6 cases. Certificates for these various courses must attest regular attendance and due performance of the work of the class. The fees vary from 1 to 4 guineas for each class, and the total minimum cost in class, examination, and other fees for M.B. and Ch.B. may be set down as £150. Two of the five years' course must be taken in the University of Edinburgh. For students beginning their course in winter there may be given the following minimum curriculum for the degrees of M.B. and Ch.B., with suggested order of study and examination:

First Winter Session: Chemistry, including Practical Chemistry, Physics,[4] or Elementary Zoology. Anatomy (Lectures), Examination in Chemistry, including Practical Chemistry, and either Physics or Elementary Zoology. First Summer Session: Elementary Zoology or Physics,[4] Elementary Botany. Examination in Elementary Botany and Elementary Zoology or Physics.

Second Winter Session: Practical Anatomy, Physiology, Surgery. Second Summer Session: Practical Physiology, Practical Materia Medica, Clinical Surgery (with Dressership), Hospital.

Third Winter Session: Materia Medica, Practical Anatomy, Clinical Surgery (with Dressership), Hospital, Examination in Anatomy, Physiology, and Materia Medica and Therapeutics (the last may be postponed to the end of the following summer). Third Summer Session: Practical Pathology, Medical Jurisprudence and Public Health, Clinical Medicine, Hospital, examination in Materia Medica and Therapeutics (if not previously taken).

Fourth Winter Session: Pathology, Medicine, Midwifery and Diseases of Women and Children, Clinical Medicine (with Clerkships), Hospital, Examination in Pathology, and Medical Jurisprudence and Public Health (the latter may be postponed to the end of the following summer). Fourth Summer Session: Examination in Medical Jurisprudence and Public Health (if not previously taken).

Fourth Summer and Fifth Winter Session: Clinical Medicine, Clinical Surgery, Mental Diseases, Ophthalmology, *Post-mortem* Examinations, Fevers, Diseases of Children, or Diseases of the Larynx, Ear and Nose, out-practice of a Hospital, Dispensary, etc., Midwifery Cases and Practice, Vaccination, Hospital.

Fifth Summer Session: Examination in Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery.

Professional Examinations.

These are four in number, and the first three may be taken in sections as indicated above.

First.—Botany, Zoology, Physics, Chemistry, taken any time after the full specified course in these subjects.

Second.—Anatomy, Physiology, Materia Medica, and Therapeutics, at the end of the fourth winter.

Third.—Pathology, Medical Jurisprudence, and Public Health, at the end of the third winter.

Final.—Surgery, Clinical Surgery, Medicine, Clinical Medicine, and Midwifery, at the end of the fifth year.

Failure in one subject does not involve failure in the other subjects of that division. Candidates must be 21 years of age before admission to the degress of M.B. and Ch.B.

Examination Fees for M.B. and Ch.B.

	First Time.	Re-entry.
	£ s. d.	£ s. d.
Preliminary	0 10 6	0 10 6
First Professional	1 6 0	
Any two Subjects of Ditto	3 3 0	
Second Professional	0 0 0	£1 1s. each time for each subject.
Anatomy and Physiology	4 4 0	
Materia Medica, etc.	2 2 0	
Third Professional	4 4 0	
Final	0 0 0	

Degree of M.D.

The candidate must be M.B. and Ch.B. of Edinburgh, must have been engaged for one year in the medical wards of a hospital, or at scientific work at a recognised research laboratory, or in the military or naval medical services, or for at least two years in general practice, and must be 24 years of age. He must write a thesis on a subject not exclusively surgical, and he will be examined in Medicine, and in some of its special departments. The fee is £10 10s., and the re-entry fee £5 5s.

[4] Three months' course.

Degree of Ch.M.

The candidate must be M.B. and Ch.B. of Edinburgh, have worked one year in the surgical wards of a hospital, or been engaged in scientific work, or in the military and naval medical services, or for at least two years in practice not confined to medicine. He must be 24, must submit a thesis on a subject not exclusively medical, will be examined on Surgical Anatomy, Operations on the Dead Body, Clinical Surgery, and some of its special departments. The fee is £10 10s.

For further detail the student is referred to the *University Calendar* (published by Mr. Thin, South Bridge, Edinburgh, price 3s., post free 3s. 6d.), or the medical *Programme*, price 2d., also published by Mr. Thin, or to the Dean of the Faculty of Medicine, University of Edinburgh.

Regulations for Graduation of Women.

When granting recognition to medical schools or teachers for the medical instruction of women, the University Court *requires that the classes shall not be mixed classes, except on special cause shown.*

The University Court have recognised the Edinburgh School of Medicine for Women, Surgeon Square, Edinburgh, and the Medical College for Women, 30, Chambers Street, Edinburgh, as medical schools whose courses of instruction qualify for graduation in Medicine (but see p. 576). Every candidate must produce evidence of having satisfied the conditions with respect to the preliminary examination and registration as medical students, and will be examined in all the subjects necessary for graduation by the Examiners of the University in which she takes her degree. Students attending either of these schools are free to take a class or classes separately in either the one or the other of the schools. All students not matriculated students of the University attending these schools for purposes of graduation must, at the commencement of each year of such attendance, enter their names in a book to be kept in the University for that purpose, paying a fee of the same amount as the matriculation fee paid by students of the University, and having, in respect of such payment, a right to the use of the library of the University.

THE UNIVERSITY OF GLASGOW.

The regulations are essentially the same as those given above for Edinburgh.

Preliminary Examination.

The dates of the next two Examinations are the same as those given under Edinburgh. Fee, 10s. 6d. each time. Names to be given in and fee paid by September 12th, 1898, and March 13th, 1899, to the Assistant Clerk, Matriculation Office. The extent of the examination will be found under Edinburgh.

Registration.

Printed form of application may be had from the Assistant Clerk at the Matriculation Office, and this must be transmitted to Mr. James Robertson, Scottish Branch Registrar, 48, George Square, Edinburgh.

Professional Education.

The minimum cost is about £126, and the course is the same as at Edinburgh.

Fees, etc.

The total examination fees for M.B., Ch.B., are the same as for Edinburgh, but are differently distributed. The fee for the First and Second is £6 6s., and for the Third and Fourth £5 5s. each. In the event of a candidate being rejected in any of these he may be admitted once to re-examination without payment of further fee, but for a second and for each subsequent re-examination a fee of £2 2s. is charged.

For further details the student is referred to the *Glasgow University Calendar* for 1898-99, published by James Maclehose and Sons, 61, St. Vincent Street, Glasgow, price 4s., post free 3s. 6d. (see also p. 548).

Queen Margaret College, which provides a course of instruction for women, has now been affiliated with the University. For course of study, etc., see p. 548.

THE UNIVERSITY OF ABERDEEN.

The regulations are essentially the same as for Edinburgh.

PRELIMINARY EXAMINATION.

The next Preliminary Examinations will be held on precisely the same dates as are given under Edinburgh, and the subjects are the same. Names must be intimated, and the fee paid ten days previously, to the Secretary of the Medical Faculty, Marischal College.

PROFESSIONAL EDUCATION.

The University Court has ordained that the candidate before admission to his Final Examination must produce certificates to the effect that he has acted for a period equal to a winter session both as a Clinical Clerk and Surgical Dresser, that he has attended not fewer than twenty-five necropsies, and taken part in some; that he has attended for not less than three months a fever hospital of at least forty patients, and has had a three months' course on Disease in Children, and the same in Ophthalmology. The total minimum cost for M.B. and Ch.B. is about £115.

The fees for Professional Examinations are: Preliminary, 10s. 6d.; First, Second, and Third, £5 5s. each; Final, £7 7s. The fees for second and subsequent examination have apparently not yet been adjusted.

Further information will be given by the Secretary of the Medical Faculty, or will be got in the *University Calendar* for 1898-99, published by A. King and Co., Aberdeen; price 2s. 6d., or post free 2s. 11d.

THE UNIVERSITY OF ST. ANDREWS.

PRELIMINARY EXAMINATION.

The dates of the next two examinations are the same as those given under Edinburgh. Fees 10s. 6d. each time. Examination schedules to be returned, filled up, and fees paid by September 20th, 1898, and March 21st, 1899, to the Dean of the Faculty of Arts.

REGISTRATION.

Printed forms may be obtained from the Dean, and must be sent to the Scottish Branch Registrar.

PROFESSIONAL EDUCATION.

Only two complete *anni medici* can as yet be taken at St. Andrews. Ere long provision may be made for more. Meanwhile the remaining three *anni medici* must be taken at some other medical school.

BURSARIES AND SCHOLARSHIPS.

The following Bursaries and Scholarships are open to competition during session 1898-99:

I. Bursaries for men or women. Two Berry Bursaries of the annual value of £40 each, tenable for three years, open to men who intend to study Arts, Science, or Medicine, and to women who intend to study Arts or Science.

II. Twelve Berry Bursaries, of the annual value of £20 each, open to men only who are proceeding to graduation in Medicine.

III. Bursaries for women. The Valentine Bursary of the annual value of about £25, tenable for three years. Three Taylour-Thompson Bursaries of the annual value of £20 each, tenable for two years. Four Taylour-Thompson Bursaries of the annual value of £20 each, tenable for two years. Two Taylour-Thomson Bursaries of the annual value of £20 each, tenable for two years. Four Taylour-Thomson Bursaries of the value of £25, tenable for one year. One Taylour-Thomson Bursary of the value of £20, tenable for one year.

IV. Two Berry scholarships in Science will be open to competition by students of either sex at the close of next winter session. They are of the value of £100 and are tenable for one year. See page 219 of the *University Calendar* for details.

The Bursaries are allocated in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Medical Examination, and who are prepared to take two *anni medici* at the United College, St. Andrews.

FEES, ETC.

The total fees for M.B. and Ch.B. are the same as for Edinburgh. The fee for the First Division is £6 6s., and is payable in two instalments of £3 3s. Each payment of £3 3s. admits the candidate to two periods of examination in the same subjects, but for every subsequent appearance in any subject a further payment of £1 11s. 6d. is necessary. The fee for the Second Division of the Professional Examination is also £6 6s., and is payable in instalments at the rate of £2 2s. for each of the three subjects. Each payment of £4 4s. or £6 6s. admits the candidate to two periods of examination in the same subjects, but for every subsequent appearance in any subject a further payment of £2 2s. is necessary.

DEGREES OF M.D. AND CH.M.

The regulations and fees for these will be found under Edinburgh.

Further information will be given by the Dean of the Faculty of Medicine, or will be found in the *University Calendar* for 1898-99, published by William Blackwood and Sons, 45, George Street, Edinburgh, price 2s. 6d., or post free, 2s. 11d.

THE SCOTTISH COLLEGES.

THE three medical corporate Colleges in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons in Glasgow—now co-operate to hold a series of examinations, after passing which the student is presented with the diplomas of all three Colleges. Each College grants its single qualification only to persons who already possess another and opposite qualification (see below).

CONJOINT EXAMINATION.

A candidate who passes this series of examinations is granted the diploma of each of the co-operating bodies, and is entitled to register the three diplomas under the Medical Acts, and to write after his name—L.R.C.P.Edin., L.R.C.S. Edin., and L.F.P.S.Glasg.—qualifications which are recognised by the army, navy, and other public services.

PRELIMINARY EXAMINATION.

The Educational Institute of Scotland conducts special preliminary examinations in Edinburgh and Glasgow for the Colleges. The next examination will be held on September 30th and October 1st, 1898, and names must be in and fees paid by September 24th. Full particulars may be obtained from Thomas Morrison, LL.D., Free Church Training College, Glasgow, Secretary to the Examining Board of the Institute; or to Alex. Mackay, LL.D., 40, Princes Street, Edinburgh, Treasurer of the Institute. Certain other preliminary examinations, of which a list may be obtained on application, are also accepted. The entire examination must be passed at one period.

PROFESSIONAL CURRICULUM.

The course of study after registration as a medical student must occupy not less than forty-five months, which period shall include not less than four winter sessions' attendance.[1] Professional studies commenced before registration will not be recognised, except in the case of Physics, Elementary Biology, Chemistry, Practical Chemistry, and Practical Pharmacy; but graduates in arts or science of any recognised University, who have spent a year in the study of Physics, Elementary Biology, and Chemistry, and have passed examinations in these subjects for their degrees, are held to have completed the first year of medical study. The fifth year must be devoted to practical clinical work, and six months of this year may be spent as a pupil of a registered practitioner.

The following order of study is recommended as conforming generally to the sequence of examinations, but is not imperative:

First Summer: Physics, Elementary Biology. First Winter: Chemistry, Practical Chemistry, Junior Anatomy, Dissections. Second Summer: Histology, Dissections. Second Winter: Anatomy, Dissections, Physiology. Third Summer: Pathology, Materia Medica, and Hospital Practice. Third Winter: Surgery, Hospital Practice, with Clinical Surgery. Fourth Summer: Midwifery and Gynæcology, Hospital Practice, with Clinical Surgery. Fourth Winter: Medicine, Hospital Practice, with Clinical Medicine. Fifth Summer: Clinical Medicine, Medical Jurisprudence and Hygiene, Insanity, Practical Midwifery, Eye Diseases. Fifth Winter: Hospital Practice, Dispensary, Fevers, Vaccination.

Students are also recommended to study in the fifth year the following subjects: Operative Surgery, Diseases of Children, Ear and Throat, Skin.

[1] This regulation does not apply to students who commenced medical study before January 1st, 1892.

Professional Examination.

During the five years of the professional curriculum the student has to pass four examinations. Each examination is held six times in each year, four times in Edinburgh, and twice at Glasgow, and a candidate may present himself at either place. An interval of not less than three months must elapse between the passing of any two successive examinations, and an interval of two academic years must intervene between the passing of the Second and of the Final Examination. Candidates may enter for all the subjects of an examination at one period, or may enter for any division of subjects. If the latter a higher percentage is exacted. Schedules showing the course of study followed must be submitted before the examinations to one or other of the Inspectors of Certificates: in Edinburgh, Mr. James Robertson, Solicitor, 48, George Square; in Glasgow, Mr. Alexander Duncan, B.A. Faculty Hall, 242, St. Vincent Street, to whom all inquiries as to professional examinations should be addressed.

Table showing the Fees for the Conjoint Examinations in Scotland.

The Figures signify Pounds Sterling.

	Whole Examination.	Re-entry for all Divisions.	Re-entry in one or two Divisions.	Entry for one Division.	Re-entry for one Division.
Preliminary	1	½	—	—	—
Professional First ...	5	3	2½	2½	2
,, Second ...	5	3	2	—	—
,, Third ...	5	3	2	—	—
,, Final ...	15	5	—	6	2

The total minimum cost for Lectures and Examination Fees for the Conjoint Examinations is about £102.

First Examination.—This examination may be passed at any time after registration as a medical student by any candidate who has attended the obligatory courses. The examination consists of three parts: (1) Physics, (2) Chemistry, (3) Elementary Biology, and each division may be taken separately.

Second Examination.—This examination may be passed at any time after the end of the second year by a student who has attended courses of Anatomy, Physiology, and Dissection for six months each. The subjects of the examination are: (1) Anatomy and (2) Physiology, including Histology. A candidate may pass in one subject while failing in the other.

Third Examination.—The student must have attended a course of Pathology and of Materia Medica before presenting himself for this examination, the subjects of which are: (1) Pathology, (2) Materia Medica and Pharmacy. It may be taken in three divisions, or at one time, or at any time after the end of the third year; but the subjects must be entered for together.

Final Examination.—The student must be 21, and may not pass this examination till the end of the fifth year. The subjects are: (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc. The examination may be taken in divisions at different times or all at once.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Medicine) to persons (of either sex) who already possess a recognised British, Irish, Colonial, or Indian qualification in Surgery. A candidate, who must not have been rejected within three months by any Licensing Board, is subjected to written and oral examination in Medicine, Clinical Medicine, Materia Medica, Midwifery, and Medical Jurisprudence. The fee for the examination is £15 15s.; it is held on the first Wednesday and succeeding days of each month except September and October. A special examination can be obtained on showing cause, and paying £5 5s. extra. Eight days' notice must be given by all candidates to the Secretary of the College, from whom further particulars can be obtained.

Membership.—The candidate, who must be a Licentiate of a College of Physicians, or graduate of a British or Irish University, and 24 years of age, is examined in (1) Medicine and Therapeutics, and in (2) one of the following subjects chosen by him: (*a*) One or more departments of Medicine specially professed; (*b*) Psychological Medicine; (*c*) General Pathology and Morbid Anatomy; (*d*) Medical Jurisprudence; (*e*) Public Health; (*f*) Midwifery; (*g*) Diseases of Women. Further particulars as to other formalities can be obtained from the Secretary. A candidate 40 years of age and ten years in practice *may be excused* any part of or all the examination by the Council. The fee paid by a Licentiate of the College is £21 if licensed prior to August 1st, 1876; if subsequently, £15 15s. Fee for others, £31 10s. The examination is held quarterly (October, January, April, and July), and application must be made a month previous to the date of examination.

Fellow.—A Member, aged 25, and of at least two years' standing, may be elected a Fellow; he pays £36 10s. (including stamp duty). Women are not yet admitted to the Membership or Fellowship.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Surgery) to persons (of either sex) who already possess a recognised British, Irish, Colonial, or Indian qualification in Medicine. A candidate, who must not have been rejected by any other Licensing Board in Surgery within three months, is examined on one day by written papers, and on a subsequent day orally, on specimens in the wards of a surgical hospital, and may be required to operate on the dead body. The fee is £15 15s., of which £10 10s. will be returned to unsuccessful candidates, and is payable to Mr. James Robertson, Clerk to the College, 48, George Square, Edinburgh, from whom further particulars may be obtained, and to whom eight days' notice must be given. A special examination can be obtained on showing cause. The fee is £20, of which £10 will be returned to candidates remitted on examination.

Fellowship.—A candidate must have the diploma of the Royal College of Surgeons of Edinburgh, England, or Ireland, or of the Faculty of Physicians and Surgeons in Glasgow, or the surgical degrees of the Universities of Great Britain and Ireland, must be 25 years of age, and must have been engaged in practice for two subsequent years at least. Candidates who are Licentiates of the Edinburgh Colleges are examined in Surgery, Surgical Anatomy, including Clinical and Operative Surgery, and one optional subject, and in other subjects not adequately included in the examination passed elsewhere. The optional subjects embrace: (*a*) Surgery in any of its Ophthalmic, Aural, Laryngeal, Cerebro-spinal, Dental, Abdominal, Gynæcological, Orthopædic, Venereal, or Genito-Urinary branches; (*b*) Advanced Anatomy; (*c*) Advanced Physiology; (*d*) Surgical Pathology and Morbid Anatomy; (*e*) Midwifery; (*f*) Medical Jurisprudence. The examinations are written, oral, and practical. Three weeks' notice must be given to Mr. James Robertson as above, from whom full particulars as to certificates required (among others two from Fellows of the College, of whom one must reside in Edinburgh) may be obtained. The fee is £30 to those who hold the diploma of Licentiate of the College, and £45 to others (no stamp duty is payable on the diploma). Registered practitioners, aged not less than 40, and who have been in practice for not less than twenty years, and who have distinguished themselves in their profession, may under special circumstances be elected without examination. Women are not admitted to the Fellowship.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Licence.—The Licence is only granted as a separate qualification to candidates who already possess a recognised British,

Irish, Colonial, or Indian qualification in Medicine. Candidates are examined in Surgery (including Clinical Surgery) and Surgical Anatomy. The fee is £15 15s. The examination is held quarterly. Further particulars can be obtained on application to Mr. Alexander Duncan, B.A., 242, St. Vincent Street, Glasgow.

Fellowship.—Every candidate must be qualified for two years, and aged 24. The ordinary mode of admission to the Fellowship shall be by examination and subsequent election. The subjects of examination shall be either (*a*) Medicine (including Clinical Medicine, Medical Pathology, and Therapeutics); or (*b*) Surgery (including Clinical Surgery, Operative Surgery, Surgical Anatomy, and Surgical Pathology); and one of the following at the option of the candidate: (1) Anatomy, (2) Physiology, (3) Pathology, (4) Midwifery, (5) Diseases of Women, (6) Medical Jurisprudence, Surgery, in one of its following branches, (7) Ophthalmic Surgery, (8) Aural, Laryngeal, and Nasal Surgery, (9) Dental Surgery, Medicine in one of its following branches, (10) State Medicine, (11) Psychological Medicine, (12) Dermatology. Four examinations are held annually (January, April, July, October). Fourteen days' notice must be given. The fee is £30, unless he desires to qualify to hold office, when it is £50. In the case of a Licentiate of the Faculty, £25 and £15 respectively.

Four Fellows may be elected in each year "in virtue of distinction," and without examination. They must be not less than 40 years of age, and ten years qualified.

THE IRISH UNIVERSITIES.

THE UNIVERSITY OF DUBLIN.

THE University of Dublin grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch.), and two in Midwifery (B.A.O. and M.A.O.). A candidate for any one of these degrees must be a graduate in Arts, and have passed the Previous Medical Examination.

The following schools, in addition to the School of Physic, are recognised by the Board of Trinity College—the Schools of the Royal College of Surgeons in Ireland, the Schools of the Catholic University.

PREVIOUS MEDICAL EXAMINATION.

This examination is divided into three parts: (1) Physics and Chemistry, (2) Botany and Zoology, (3) Anatomy, Practical Histology, and Physiology. The three parts may be taken together or passed at separate examinations. The examinations are held in November, January, May, and June.

DEGREES IN MEDICINE.

Regulations for Students who Matriculated since 1891.—The following conditions must be fulfilled in order to qualify for the degrees in Midwifery (B.A.O.), Surgery (B.Ch.), and Medicine (M.B.): The student must be of B.A. standing, and his name must be for at least five (academic) years on the books of the Medical School, reckoned from the date of his matriculation. He may carry on his Arts course concurrently with his medical course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical degrees conferred without the Arts degree. The following courses must be attended:—Lectures: Winter Courses: Systematic Anatomy; Practical Anatomy (with Dissections), first year; Practical Anatomy (with Dissections), second year; Applied Anatomy (with Dissections), Chemistry, Surgery, Physiology (two courses). Practice of Medicine, Midwifery, Pathology. Summer Courses: Practical Chemistry, Practical Histology, Botany, Zoology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Operative Surgery, Practical Pathology. Term Courses: Physics (Michaelmas, Hilary, and Trinity Terms). The student must attend 3 courses of nine months' attendance each on the Clinical Lectures of Sir Patrick Dun's or other metropolitan hospital recognised by the Board of Trinity College. One year at a recognised London or Edinburgh hospital or two years at a recognised county infirmary or recognised Colonial hospital previous to the commencement of their metropolitan medical studies may be allowed, on special application to the Board of Trinity College, to count as equivalent to one year spent in a recognised metropolitan hospital. The following examinations must be passed: The Previous Medical or Half M.B. Examination and the Final Examination. The Final Examination is arranged as follows:—First Part—Section A: Applied Anatomy (Medical and Surgical), paper; Applied Physiology, *viva voce*; Materia Medica and Therapeutics, paper and *viva voce*. Section B: Medical Jurisprudence and Hygiene, paper and *viva voce*; Medicine, paper and *viva voce*; Surgery, paper and *viva voce*; Pathology, paper and *viva voce*. Section A may be passed in any part of the fourth year, provided the corresponding curriculum shall have been completed, and must be passed before B can be entered for; Section B not before Trinity Term of the fourth year. Examinations for both Sections are held in November, January, or February, and May or June. Liceat fee £5 to be paid on entering for A. Second Part—Section C: Midwifery, paper and *viva voce*; Gynæcology, paper and *viva voce*; Obstetrical Anatomy, paper. Section D: Clinical Medicine; Mental Disease, paper. Section E: Clinical Surgery, Operations, Clinical Ophthalmology. Both sections of the First Part must be passed at least one term before any section of the Second Part can be entered for. One section of the Second Part must be passed in Trinity Term of the fifth year or subsequently; the other two in any part of the fifth year if the corresponding curriculum be completed. Subject to this provision the sections of the Second Part may be taken in any order. Liceat fee £5 to be paid when entering for whichever section the candidate takes first.

Degree of M.D.—The candidate must have taken, or have been qualified to take, the degree of M.B. three years previously, and must read a thesis before the Regius Professor of Physic.

Degree of M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

Degree of M.A.O.—The candidate must have passed the M.B. and B.Ch. examinations. The examination is specially directed to Obstetrics and Practical Gynæcology.

UNIVERSITY DIPLOMAS.

The University grants diplomas in Medicine, in Surgery, and in Obstetric Medicine. A candidate must have completed two years in Arts and five years in medical studies.

Diploma in Medicine.—The medical course and examination are the same as for the degree of M.B., excepting that attendance is not required on lectures on Botany and Zoology, and that the candidate is not examined in these subjects.[1]

Diplomas in Surgery and in Obstetric Science.—The examination and courses necessary for those diplomas are the same as for the degrees of B.Ch. and B.A.O. respectively.

FEES.

Matriculation, 5s.; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11.

A schedule containing recommendations respecting the five years' medical curriculum can be obtained on application to the Registrar of the School of Physic in the University of Dublin.

THE ROYAL UNIVERSITY OF IRELAND.

The University grants two Degrees in Medicine, M.B. and M.D.; two in Surgery, B.Ch. and M.Ch.; and two in Obstetrics, B.A.O. and M.A.O. The course for these degrees is five years. Graduates in Arts or Science who have spent a year in the study of Physics, Chemistry, and Biology, and passed an examination in those subjects, are held to have completed the first of the five years.

MEDICAL CURRICULUM.

The order in which the subjects of the medical curriculum are required to be studied is minutely stated in the *Calendar*; the general character of the curriculum is sufficiently indicated by the examination held at the termination of each year.

[1] A Diplomate in Medicine, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor in Medicine by attending the lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the degree fees.

Matriculation and First University Examination.

Candidates for any degree must pass the Matriculation Examination and First University Examination.

Matriculation.—This examination is held for pass and honours in June, and for pass only in September. Notice of intention to compete must be sent with the fee to the Secretaries, Royal University of Ireland, Dublin, on a printed form, not later than May 15th or August 15th respectively. The examination consists of the following parts:—I, Latin; II, any one of the following languages: Greek, French, German, Italian, Spanish, Celtic, Sanskrit, Hebrew, or Arabic; III, English Language; IV. Elementary Mathematics; V, Natural Philosophy. A schedule of the subjects is contained in the *University Calendar*.[1]

First University Examination.—A candidate who has passed the Matriculation Examination in the autumn of one year may be admitted to the First University Examination in the summer of the next year, otherwise an academical year must elapse. The subjects are: I, Latin; II, any one of the following languages: Greek, French, German, Italian, Spanish, Celtic, Sanskrit, Hebrew, or Arabic; III, English Language and Literature: IV, Mathematics; V, Natural Philosophy. Schedules are published in the *Calendar*.

Degrees in Medicine, Surgery, and Obstetrics.

A candidate must pass four examinations subsequently to the First University Examination.

First Examination in Medicine.—Candidates must have matriculated at least one year previously, and must have passed the First University Examination, and completed the first year of the medical curriculum. The subjects are Natural Philosophy, Systematic Chemistry, Botany, and Zoology. Schedules are contained in the *Calendar*. The examination is written, oral, and practical.

Second Examination in Medicine.—Candidates must have passed the First Examination one year previously, and are examined in Anatomy, Physiology, and Practical Chemistry. Schedules will be found in the *Calendar*.

Third Examination in Medicine.—Candidates must have passed the Second Examination one year previously. They are examined in Anatomy, Physiology, Materia Medica, Pharmacology, and Therapeutics.

Examination for the Degrees of M.B., B.Ch., B.A.O.—Candidates must have passed the Third Examination. The examination consists of three parts—*(a)* Medicine, theoretical and clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology. *(b)* Surgery, theoretical, clinical, and operative, including the use of instruments and appliances; Surgical Anatomy, Ophthalmology and Otology, Surgical Pathology, *(c)* Midwifery and Diseases of Women and Children. All candidates must enter for and go through the entire examination, but a candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the examiners. Successful candidates receive the triple degree.

Honours.—There are special examinations for honours held in connection with each of the last four examinations.

M.D. Degree.

A candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, and must have spent at least two of these in practice. The candidate is examined in writing and orally in Medicine and Pathology and at the bedside.

M.Ch. Degree.

The candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, two of which must have been spent in practice. The candidate is examined in Surgery, including Ophthalmology and Otology, and in Pathology at the bedside, and is required to write detailed reports on cases.

M.A.O. Degree.

The candidate must have obtained the degrees of M.B., B.Ch., B.A.O. at least three years previously, have been engaged in practice for two years, have had personal charge of at least 20 cases of labour, and have attended clinical Gynæcology for three months. The candidate is examined in writing, orally, and clinically, in Midwifery, Diseases of Women and Children, and Pathology.

Exhibitions and Scholarships.

Two first class and two second class exhibitions are given after each of the four examinations in Medicine. They are of the value at the first of £20 and £10; at the second of £25 and £15: at the third of £30 and £20: and at the degree examination of £40 and £25 respectively. A travelling medical scholarship, value £100, is awarded in October, after a special examination, to a candidate who has passed the Medical Degrees Examination in that year or the preceding one. Two Dr. Henry Hutchinson Stewart Medical Scholarships are awarded annually, the one of the value of £10, tenable for three years, in the subjects of the Second Examination in Medicine: the other of the annual value of £50, tenable for three years, for Proficiency in the Knowledge of Mental Diseases. One Medical Studentship, tenable for two consecutive years, of the annual value of £200, is offered for competition in October.

Fees.

Matriculation, £1; First University Examination, £1; First, Second, and Third Examinations in Medicine, for each £1. The Examination for Degrees, £2: for admission to the Degrees, £10; for the Degrees of M.D., M.Ch., M.A.O., each, £5.

[1] Dublin: Alex. Thom and Co.: London: Longmans, Green and Co. Price 2s. 6d.; by post, 3s. Extracts can also be obtained, price 4d.

THE IRISH COLLEGES.

CONJOINT EXAMINING BOARD OF THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

The diplomas of these two bodies are now granted upon conditions and after examinations settled between the Colleges.

Preliminary Examination.—Examinations in general education, which fulfil the requirements of the General Medical Council, are accepted by the Colleges (see pages 525-26). The Preliminary Examination of the College is held twice a year, in spring and autumn, and seven clear days' notice must be given to Mr. Greenwood Pim, Secretary of the Committee of Management, Royal College of Physicians, 6, Kildare Street, Dublin. The Preliminary Examination for the commencement of medical study of the Royal Colleges of Physicians and Surgeons for Sessions 1898-99 will be held on Tuesday and Wednesday, September 27th and 28th, 1898. Prospectus can be had on application.

Professional Examinations.

There are four Professional Examinations:

The *First Professional Examination* may be passed not earlier than the end of the first winter session. It consists of four Parts: I, Chemistry and Physics; II, Practical Pharmacy; III, Biology; IV, Anatomy (Bones and Joints). The four Parts may be taken together or separately.

The *Second Professional Examination* may be passed not sooner than the end of the second winter session. It consists of four Parts: I, Anatomy; II, Histology; III, Physiology; IV, Materia Medica; the two last named subjects may be postponed at the option of the candidate, and if he fail in either of the other two subjects, he may, at the discretion of the examiners, receive credit for the subject in which he obtains passing marks.

The *Third Professional Examination* may be passed not sooner than the end of the fourth winter session. It consists of five parts: I, Medicine; II, Surgery; III, Pathology; IV, Therapeutics; V, Public Health and Forensic Medicine. A candidate must present himself in the first instance in I, II, III, and IV at least, but if he pass any of them he may, at the discretion of the Examiners, obtain credit therefor.

The *Final Professional Examination* may be passed not sooner than the end of the fifth year of medical study. A candidate may present himself in all the subjects at one time, or in one or more in the following groups: *(a)* Medicine, including Mental Diseases, Medical Anatomy, and Clinical Medicine; *(b)* Surgery, including Ophthalmic and Aural Surgery, Clinical Surgery, Operations, and Surgical Anatomy; *(c)* Midwifery,

including Diseases of Women and Newborn Children, and the Theory and Practice of Vaccination.

CURRICULUM.

The curriculum as above stated extends over five years, and its general arrangements can be gathered from the subjects of the examination which are arranged to test the student's progress. Full details may be obtained on application to the Secretary as above.

FEES.

Preliminary Examination, £2 2s., except in the case of matriculated pupils of the Royal College of Surgeons, who pay £1 1s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; Re-examination fee, £1 1s. for each subject, with a maximum fee of £3 3s., except in Medicine and Surgery at the Final Examination, for each of which the re-examination fee is £2 2s.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

This College continues to issue its Licence in Medicine and the Licence in Midwifery to registered medical practitioners whose names appear on the *Medical Register* of the United Kingdom.

Licence in Medicine,—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

Licence in Midwifery.—The candidate must produce certificates of having attended a course of lectures on Midwifery, and of having attended Practical Midwifery and Diseases of Women, for six months, at a lying-in hospital or maternity recognised by the College; or, where such hospital attendance cannot have been obtained during any period of the candidate's course of study, of having been engaged in Practical Midwifery under the supervision of a registered practitioner holding a public medical appointment, the certificate in either case to state that no fewer than twenty labour cases have been actually attended. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15s. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month £16 16s.—to be lodged in one sum.[1] Fee for special examination for the Licence to practise medicine, £21. Fee for examination for the Licence to practise Midwifery, £3 3s. Fee for special examination for the Licence to practise Midwifery. £5 5s. The admission fee, less the sum paid to the examiners, will be returned to rejected candidates. The examination for these licences are held in the week following the first Friday in February, May, and November. Notice must be given, and the schedule transmitted at least four days before the first Friday in each of the above months to the Registrar of the Royal College of Physicians of Ireland, Kildare Street, Dublin, from whom further information can be obtained. A special examination can be obtained under certain conditions which can be ascertained on application to the Registrar.

Membership.—A candidate for the Membership of the College must be 25 years of age and a Licentiate of the College of three years' standing, or if a graduate of Arts of a university in the United Kingdom, a Licentiate of one year's standing, or if a practitioner of seven years' standing, then he is admitted to the Membership after one year. He must not be engaged in trade, dispense medicine, or practise in partnership. He must also have held during the last six months the office of resident physician or resident medical pupil, or of having acted during the same period as medical clinical clerk in a recognised hospital, or of having been in medical charge for at least twelve months of a public institution for the treatment of the sick. Every candidate must pass an examination in: 1. Principles of Medicine, including Pathology, Morbid Anatomy, and Medical Chemistry; 2. Practice of Medicine, including Principles of Public Health; 3. Clinical Medicine. The fee for the examination is £21, which must be lodged in in the Royal Bank, Dublin, before the applications and certificates are sent in. The examinations are held in January, April, July, and October.[2]

[1] Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege, and shall be required to pay the full fee of £3 3s. for the Licence in Midwifery.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

FELLOWSHIP.

A candidate for the Fellowship shall make application to the President and Council to be admitted to examination, and, if the Council decide to entertain the application, it shall lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to its being so considered, and the candidate shall then, if approved by the Council, be admitted to the next Sessional Examination or to a Special Examination if granted by Council, at such date as the President may fix. In order that these regulations may be carried out, candidates are required to enter their names with the Registrar at least one month before the date of examination.

Periods of Examination.—Sessional Fellowship Examinations commence, as far as arrangements permit, on the third Mondays in February, May, and November. Special Examinations may be granted at other times by the Council if they see fit, on sufficient cause being shown.

Grades of Examination.—Candidates for the Final Fellowship Examination are divided into two grades: (1) Licentiates or graduates in surgery of less than ten years' standing. (2) Licentiates or graduates in Surgery of more than ten years' standing. Students not either Licentiates or Graduates in Surgery, are permitted to present themselves for the Primary Examination under Grade 1 at the end of their third winter course of dissections.

Grade 1.—Candidates are required to pass two Examinations—Primary and Final. But candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary Examination are: (*a*) Anatomy, including Dissections, (*b*) Physiology and Histology; those for the Final are: (*a*) Surgery, including Clinical and Operative Surgery, (*b*) Surgical Pathology.

Grade 2.—The subjects of examination are: (*a*) Surgical Anatomy, (*b*) Surgery, including Clinical and Operative Surgery, (*c*) Surgical Pathology.

Fees—Grade 1: For Licentiates of the College—for Primary Examination, 15 guineas; for Final Examination, 10 guineas. For Licentiates in Surgery of other licensing bodies—for Primary Examination, 25 guineas; for Final Examination, 15 guineas; for Students of the College, Primary Examination, 5 guineas; Final Examination, 20 guineas; for Students of other licensing bodies, Primary Examination, 10 guineas; Final Examination, 30 guineas. *Grade 2*: Licentiates of the College, 25 guineas; Licentiates in Surgery of other licensing bodies, 40 guineas. Extra fee for Special Examination, 10 guineas. In case of rejection, £10 10s. in addition to the Special Fee, if such has been paid, is retained by the College, and is not allowed in the fees of re-examination. In the case of Fellowship candidates who fail to present themselves for the examination at the time fixed, without having previously given at least a week's notice of their withdrawal, £5 5s. of the fees is retained by the College.

Regulations and entrance forms can be obtained from the Registrar at the College.

APOTHECARIES' HALL OF IRELAND.

The Apothecaries' Hall of Ireland is now entitled to grant a full registrable diploma entitling the holder to practise Medicine, Surgery, and Midwifery. For this qualification there are four examinations, the fees for which are £5 5s. each, except for the Fourth or Final, £6 6s. Also it grants the power to practise as an Apothecary through Ireland along with above, but it is not granted separately except to persons holding other qualifications registered. The Hall grants its licence

[2] The admission fee, less the sum paid to the examiners, will be returned to the rejected candidates.

to qualified practitioners, whose names appear on the *Medical Register*, who wish to add this to other qualifications and have a certificate in Practical Pharmacy. The fee is £10 10s. on examination.

The Hall has ceased to be conjoined with the Royal College of Surgeons of Ireland, but candidates who entered their names previous to the cessation of that examination are allowed to enter for examination under that system on applying to the Secretary.

Further information can be obtained from R. Montgomery, M.R.C.S., Secretary.

NOTES ON MEDICAL SCHOOLS AND COLLEGES.

LONDON.

The special attention of all students intending to enter at a medical school in London should be directed to the fact that the degrees of Doctor and Bachelor of Medicine are conferred by Universities only. The holders of diplomas from Corporations (the Colleges of Physicians and Surgeons, or the Apothecaries' Hall) have no legal right to use the title of "Doctor." Those students who desire the degree of Doctor, and intend to obtain their medical education in London, are warned that they should matriculate at the University of London before entering a medical school. Failure to understand this point is a common source of delay, disappointment, and avoidable expense.

Particulars are given below of the twelve medical schools in London which provide for the full curriculum. The schools are connected in each case with a large general hospital, where clinical instruction is given in Medicine and Surgery, and within which students can obtain the necessary appointments as medical clinical clerks and surgical dressers. All the schools have arrangements under which the student is enabled to attend the requisite number of cases of midwifery.

The arrangements at the various schools are everywhere the same in principle, and are in conformity with the requirements of the General Medical Council and the qualifying bodies. The laboratories for chemistry, physiology, and histology, and pathology have at most of the schools been greatly improved during recent years, and the facilities for instruction at the smaller, as well as at the larger, schools are now in most respects very complete, and are yearly extended and improved.

St. Bartholomew's Hospital Medical School.

The Hospital contains 750 beds.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the most diligent students. Clerks and Dressers are also selected to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopædic, Gynæcological, Laryngological, Aural, Dermatological, and Electrical), and in the *post-mortem* room. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident Midwifery Assistant and an Ophthalmic House-Surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant Anæsthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year. Two Assistant Electricians are elected every six months.

There is a residential college within the precincts of the Hospital.

The Physiological Laboratory is being rearranged and equipped with all the most modern appliances, including electric motor for experimental work, etc.

A recreation ground has recently been purchased for the use of members of the Students' Amalgamated Clubs, which all students are expected to join.

A special class is held for students preparing for the Preliminary Scientific Examination, and special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London. Tutorial Classes in all subjects are held in preparation for all University and other examinations without further fee.

Entrance Scholarships.—Two Senior Open Scholarships in Science, value of each £75, tenable for one year, to be competed for at the end of September; candidates must be under 25 years of age. The subjects are Physics and Chemistry for one, Physiology and Biology for the other. Two Junior open Scholarships, value £150 and £50, will be competed for at the same time in the subjects of the London University Preliminary Scientific Examination. Candidates must be under 20 years of age. The successful candidates must enter at St. Bartholomew's Hospital in the October succeeding the examination. Jeaffreson Exhibition: £20; examination at the end of September; subjects: Latin, Mathematics, and any one of the following languages—Greek, French, German. Candidates for the open Scholarships and the Jeaffreson Exhibition must not have entered to the hospital practice of any metropolitan medical school. The Treasurer's Research Studentship in Pathology, of the value of £100 a year, is given by election to the most promising of the recently qualified men. The Research Student must engage in original work in the Hospital laboratories. The total value of the Scholarship and Prizes is nearly £900 per annum.

Communications regarding the Hospital and Medical College must be addressed to Dr. James Calvert, Warden of the College, St. Bartholomew's Hospital.

Charing Cross Hospital Medical School.

The Hospital contains 180 beds, and is now being enlarged. Students are also admitted to the practice of the Royal Westminster Ophthalmic Hospital, which contains 30 beds.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships, when they fall vacant, are open to students of the school, and carry honoraria. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical and Surgical Registrars to the Hospital are appointed annually, and receive £40 a year each, with luncheon in the hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstetrical Officers are appointed each year on the recommendation of the Medical Committee, after Competitive Examination. They are provided with board and residence in the hospital. An Assistant to the Röntgen and Electrical Departments is appointed every six months. He receives an honorarium of 12 guineas, with luncheon at the hospital. Clinical Clerks, Dressers, and Surgical Ward Clerks are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant and assists at the *Post-mortem* Examinations. The above appointments are open without any additional fee.

Entrance Scholarships.—Five Entrance Scholarships, of the respective value of 100 guineas (Livingstone Scholarship, founded in memory of the late Dr. Livingstone, a former student of this school), 60 guineas, 55 guineas (Huxley Scholarship, founded in memory of the late Professor Huxley, a former student of this school), 40 guineas, and 30 guineas are open to students commencing their medical curriculum. Three of these (100 guineas, 60 guineas, and 40 guineas) are open to all general students,[1] one (55 guineas) is reserved for the sons[1] of medical men, and one (30 guineas) is open to Dental students only. All these Scholarships are awarded annually at the commencement of each winter session, after a competitive examination in the following groups of subjects:

[1] Those who enter for their entire medical education

(1) English, including Language, History, and Geography; (2) Any two of the following four languages—Latin, Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry; and Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and Experimental Physics, including Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left to the candidate. Students who join in the summer session have the same privileges as regards scholarships, medals and prizes as those who join in October of the same year. The value attached to each group of subjects is 1,000 marks. No credit will be given for any paper in which the candidate obtains less than one-fifth of the total marks. Candidates must be under 25 years of age on the first day of the examination. In the first three groups the subjects, as regards extent and the authors selected, will be the same as those chosen for the Matriculation Examination of the University of London in the June immediately preceding; in the fourth and fifth, the same as those for the Preliminary Scientific Examination of the same University. Candidates must give notice to the Librarian of their intention to compete, and of the groups in which they offer themselves for examination, on or before Saturday (10 A.M.), September 24th, 1898. The examination will commence at the school on Monday, September 26th, at 9 A.M., and will continue during the two following days. The successful candidates will be required to enter forthwith for their complete medical education at the Charing Cross Hospital.

One Epsom Scholarship, giving a free education, is, at the commencement of each winter session, placed at the disposal of the Royal Medical Benevolent College at Epsom, to be competed for by their foundation scholars who have passed the Preliminary Scientific M.B. Examination of the University of London.

Two Universities Scholarships, of the value of 60 guineas each, are open to students from the University of Oxford who have passed the First M.B. Examination, to students of the University of Cambridge who have passed the Second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 27th and 28th. Candidates must give notice to the Librarian of their intention to compete on or before Monday (2 P.M.), September 26th, 1898. The successful candidates will be required to enter forthwith at the Charing Cross Hospital for the completion of their curriculum.

Further information may be had of the Dean, Dr. Montague Murray, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 351 beds, of which 205 are devoted to Surgical, and 146 to Medical cases.

The Mortuary and *Post-mortem* Room have been rebuilt during the past twelvemonth.

Appointments.—Four House-Physicians and four House-Surgeons are appointed quarterly from among the perpetual pupils; they hold office for six months in each capacity in succession, and reside and board in the hospital free of expense. An obstetric Assistant is appointed annually; he must be a legally qualified practitioner. He resides and boards in the hospital, and receives a yearly salary of £100. A Curator of the Pathological Museum, a Medical, and a Surgical Registrar are appointed annually from among the senior pupils, each with a salary of £50; another Medical Registrar with a salary of £30; and an Assistant Curator, with a salary of £30. A Senior Anæsthetist is appointed annually, with a salary of £50 a year; and two Junior Anæsthetists with salaries of £30. As the result of a competitive examination held every three months, those students who desire to proceed to the offices of House-Physician and House-Surgeon are appointed as assistants during twelve months in the special and general divisions of the out-patient department. Two Demonstrators of Anatomy are appointed annually, each with a salary of £50. Each pupil of the Hospital must act as Clinical Clerk and Dresser before a certificate of attendance on hospital practice can be signed.

Entrance Scholarships.—The following Entrance Scholarships are offered for competition: 1. A Scholarship, value £150, for the sons of medical men who have entered the schools during the current year. 2. Two Scholarships, each of £50, open to all students commencing their studies. The subjects for these three Scholarships will be Latin, Greek, French, German, Mathematics, Physics, Chemistry, and Physiography. Three of these to be taken, at option, save that at least one linguistic and one scientific subject must be taken. The examination for all these Scholarships will be held on September 27th to 30th. 3. Two Scholarships, value £85, for students who have entered during the current year, and have passed or completed the curriculum for the Oxford First M.B. or the Cambridge Second M.B. Subjects for these three Scholarships: Organic Chemistry, Anatomy, Physiology, Zoology, Botany; any two to be taken at option. 4. A Scholarship, value £85, for students of Provincial University Colleges in England and Wales who have entered the School during the current year, and have passed or completed the curriculum for the First M.B. of London or the corresponding examination of the Victoria University or of Durham. The examinations for these Scholarships will commence on October 5th.

Further information may be obtained from the Dean of the School; from any of the Lecturers; or from Mr. F. J. Marshall, the Resident Medical Officer at the Hospital.

GUY'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains more than 600 beds, of which 546 are in constant occupation. Thirty-six beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. One of the wards containing 40 beds, which has been closed for fifteen years, has been reopened for the reception of cases of diseases of women. A few beds will be reserved for cases of difficult labour.

Appointments.—All appointments are given without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight assistant house-physicians, 8 house-physicians, 24 assistant house-surgeons, and 8 house-surgeons are appointed annually. The house-physicians and house-surgeons hold office for six months each, and receive free board and lodging in the college, as also do the resident obstetric physicians, of whom 12 are appointed annually, each holding office for two months. Every student is provided with rooms and commons in the hospital during the period of his "take in" as a dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynæcology, dermatology, otology, electricity, anæsthetics, and dentistry. More than 150 additional appointments have recently been added to the list of those annually open to students of the hospital, the majority of them being in the special departments.

The College, fronting the east gate of the hospital, provides accommodation for 60 resident students. It contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs Union.

Scholarships, Prizes, etc.—Entrance Scholarships in Arts (£100 and £50). Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Entrance Scholarships in Science (£150, £60, and £50). Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 27th; names must be sent in on or before September 12th. Junior prizes for general proficiency, £20, £15, £10; Arthur Durham prizes for dissection, £15, £5; Hilton prize for dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox scholarship for physiology, £15 for three years; Wooldridge Memorial prize for physiology, £10. Senior prizes for general proficiency, £20, £15, £10; Beaney prize for pathology, £34; Bredin prize for clinical study, £25; Treasurer's gold medal in medicine, Treasurer's gold medal in surgery, and the Golding-Bird gold medal and scholarship (£20) for sanitary science are awarded annually after competitive

examination. The Gull Studentship in pathology and the Beaney Scholarship in materia medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable the holders to carry on research in these subjects.

Practical Classes.—The south wing of the new school buildings was opened by H.R.H. the Prince of Wales in May, 1897, and provides a complete series of laboratories, class rooms, lecture and demonstration theatres complete for the practical teaching of physiology.

An advanced course of Practical Physiology is held in the new laboratories during the winter session and in association with the advanced course of Practical Anatomy is designed to prepare candidates for the University and Fellowship examinations in these subjects.

Special classes are held for the Preliminary Scientific examination of the London University throughout the year. Two courses of laboratory instruction for the D.P.H. are conducted annually.

The Clubs' Union recreation ground, situated at Honor Oak Park, is reached from the Hospital in less than twenty-five minutes.

King's College Medical Faculty.

The Hospital contains 220 beds in daily use.

Appointments.—Resident Medical Officers, Clerks, and Dressers are chosen from matriculated students, and the former have rooms and commons free. Two Sambrooke Registrarships, Medicine and Surgery, of the annual value of £50 each, tenable for two years, open to matriculated students who have filled any of the higher appointments of the Hospital. Clinical assistants are appointed in the Ophthalmic, Ear, and Throat Departments.

Entrance Scholarships.—1. Two Warneford Scholarships, for the encouragement of previous education, each £75 value; subjects of examination, Mathematics, Classics, Divinity. 2. Two Sambrooke Exhibitions, one £60 and one £40, open; subjects of examination, Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training. 4. Two Scientific Exhibitions, open, given annually, in October, by the Clothworkers' Company, value £60 and £40, for proficiency in any four of the following subjects: Mathematics, Mechanics, Physics, Chemistry, Botany, Geology, Mineralogy, and Zoology will be open to all candidates who are under the age of 19. 5. Medical Entrance Scholarships.—One of 70 guineas and one of 60 guineas, instituted for Students who propose to take their degree at Oxford, Cambridge, or other British University, having already passed the examination of that University in Biology, Chemistry, and Physics.

During the curriculum Scholarships and Prizes of the value of £300 are open to matriculated students.

For conditions of Scholarships and subjects of Examinations apply to the Dean, Medical Faculty. Examinations commence September 23rd.

The Dean of the Medical Department, Sir Hugh Beevor, attends daily (Saturdays excepted), at King's College, for the purpose of seeing students and their friends. Any letter addressed to the Dean during the vacation will receive early attention.

University of London.—Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

Athletic Club.—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

Resident Chambers are available to students. The cost of the academical year varies from £50 to £60 for rent of rooms and dinner.

London Hospital Medical School.

The Hospital is the largest general hospital in the kingdom; it contains 786 beds.

Appointments.—Among the salaried appointments open to students are those of Medical Registrar, Surgical Registrar, Receiving-room Officers, and Medical, Surgical, and Ophthalmic Clinical Assistants. There are also Resident House Physicians and Resident House Surgeons and Accoucheurs. In addition there are Assistantships, and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes.—The following is a list of Scholarships and prizes. *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60; Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126; Buxton Scholarships in Arts £30 and £20. *After Entrance:* Anatomy and Biology Scholarship, £20; Anatomy and Physiology Scholarship, £25; Letheby Prize, Senior, £20; Letheby Prize, Junior, £10; Scholarships in Clinical Medicine, Surgery, and Obstetrics, £20 each; Duckworth Nelson Prize, £10; Hutchinson Prize, £35; Sutton Prize, £20; Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10.

New Buildings.—New buildings providing greater space for the Departments of Bacteriology, Public Health, and Biology are now in progress of erection, and will, it is hoped, be completed by the commencement of the winter session.

Information may be obtained from the Warden, Mr. Munro Scott, at the College.

St. Mary's Hospital Medical School.

The Hospital contains 281 beds; the number will shortly be raised to 381.

Appointments.—Three House-Physicians and three House-Surgeons are appointed for six months each, and two Obstetric Officers for six months each; all live free of expense in the Hospital. All students must act as Clinical Clerks and Dressers for eight months after passing the Primary Examination, and after having acted as Dressers for two months in the Casualty Department. Demonstrators of Anatomy are appointed annually at salaries of £70; two, or more if necessary, Assistant Demonstrators and two Prosectors with an honorarium of £5 each; a Demonstrator of Physiology at a salary of £100, and two or three Assistant Demonstrators, who receive an honorarium of £5; a Demonstrator of Chemistry and Physics at a salary of £100, and an Assistant Demonstrator, who receives an honorarium of £5; a Demonstrator of Biology at a salary of £50, and two Assistant Demonstrators who receive £5; and two Demonstrators of Pathology, to assist the lecturers, who receive an honorarium of £5 each.

Entrance Scholarships.—One Scholarship in Natural Science, value £144, two of the value of £78 15s., and one of the value of £52 10s.; subjects, Inorganic Chemistry, Experimental Physics, and Elementary Biology. There will be a practical examination in each subject. The examination takes place at the end of September. The candidates must not have completed a winter session of study at a medical school in London. The successful candidates must enter as perpetual pupils of the Hospital, and pursue the full course of study there. A scholarship of £138 for students of Epsom College, who are sons of medical men. Two scholarships, each of £57 15s., open to students from a University, who have not entered at any London medical school; subjects, Physiology and Histology, and either Anatomy or Chemistry, at the option of the competitor.

Special Classes are held for the Preliminary Scientific Intermediate M.B., and Final M.B. Examinations of the University of London, and for the Examinations for the Fellowship of the Royal College of Surgeons. All the Special Classes for the higher examinations are free to the students of the school.

Students may reside in the College, 33 and 35, Westbourne Terrace, under the supervision of the Warden, Mr. H. S. Collier. Terms can be obtained on application to the Warden.

Further information may be obtained from the School Secretary, Mr. Frederic H. Madden, or from the Dean of the School, Mr. George P. Field.

Middlesex Hospital Medical School.

The Hospital contains 320 beds.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free

of expense. There are two Casualty Medical and two Casualty Surgical officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination: and six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-Resident Physicians' Assistants are appointed in the various out-patient departments. Clinical Clerks and Dressers are appointed for six months. In the out-patient department the appointments are: Dresser to the Assistant Surgeon and to the Dental Surgeon, Clerk to the Assistant Physician, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks, and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dresserships. Each student must have held an out-patient clerkship and dresserships before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the second examination of the Examining Board in England, or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin, and Throat and Ear Departments.

Entrance Scholarships.—Two Entrance Scholarships, value £100 and £60, are open to all gentlemen commencing their medical studies in October, 1898. The successful candidates must become general pupils of the school. Examination on September 22nd and following days. Candidates must send in their names to the Dean, stating the three subjects they select, on or before September 10th.

Universities Scholarship.—An annual Entrance Scholarship, of the value of £60, is open to students of the Universities of Oxford and Cambridge who have completed their Anatomical and Physiological studies: Subjects: Anatomy and Physiology, including Histology. The examination takes place about September 22nd. Application to be made on or before September 10th. Students joining the school in the previous May are eligible to compete for the Entrance and University Scholarships in that year.

The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of the Royal Medical College, Epsom, who has passed the Preliminary Scientific M.B. Examination.

New Buildings.—The new dissecting rooms, physiological, chemical, and pathological departments will be opened next session. They will provide every facility for the practical study of Chemistry and Physics, Biology, Anatomy, and Physiology and Pathology, including Bacteriology.

Further Information may be obtained from Dr. Pasteur, the Dean.

The Residential College is situated in Cleveland Street, W., and has its frontage in the Hospital garden; it accommodates about 30 students. The Warden is the Rev. W. G. Deighton, M.A., Chaplain of the Hospital.

St. Thomas's Hospital Medical School.

The Hospital contains 572 beds, of which about 512 are in use. It is built on the system of separate pavilions, which are connected by a covered and an open-air corridor. The Hospital and School are situated along the banks of the Thames between Westminster and Lambeth Bridges, an open-air terrace running the whole length of the buildings facing the Houses of Parliament. The Operating Theatres have been lately thoroughly refitted, refloored, and provided with electric light, and are specially adapted for the carrying out of aseptic surgery. A Clinical laboratory has been recently built, in which all the more difficult methods of diagnosis, bacteriological, chemical, and microscopical, are carried on under the direction of a Superintendent. The Department for Out-patients has been rearranged, and now consists of a series of rooms, among which are two large, well-ventilated rooms which are provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the assistant staff. During the twelve months ending December 31st, 1897, the number of patients admitted into the hospital amounted to 6,035. In the same period 20,141 out-patients have been treated, and in the maternity department 2,483 women have been attended at their own homes. Casualties to the number of 97,046 attendances were treated during the same period.

The *School Buildings*, which are separated from the hospital by a quadrangle containing a lawn tennis court for the use of the residents, comprise numerous theatres, laboratories, and class rooms, and are well adapted for the modern teaching of large bodies of students in all the subjects of the medical curriculum. A large library and reading room and a very complete museum are open to all students from 9 A.M. to 5 P.M. The new club premises, opened in 1894, contain a dining room, a smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloak room with lockers, and a lavatory with bath rooms are in the old building. Students are thus able to spend the whole day at the school, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation. A ground of more than nine acres in extent is provided at Chiswick. It can be reached in forty minutes from the hospital, it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion where refreshments can be obtained.

Scholarships.—Three Entrance Scholarships will be offered for competition in September, namely: One of £150 and one of £60, in Chemistry and Physics, with either Physiology, Botany, or Zoology at the option of candidates, for first year's students. (The Medical School Committee is empowered to grant an exhibition of £20 to any unsuccessful competitor who obtains sufficient marks to qualify for a scholarship); one of £50 in Anatomy, Physiology, and Chemistry for students who have completed their examinations in Anatomy, Physiology, Materia Medica and Pharmacy for a medical degree in any of the Universities of the United Kingdom, and have not entered as students in any London medical school. Copies of the examination papers of last year may be obtained on application to the Medical Secretary. Applications must be sent in not later than September 19th, with certificate of birth and of Preliminary Examination, and in the case of candidates for the Science Scholarships with a notification of their choice of optional subject. Numerous Scholarships, prizes, and medals are open to competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology.

Appointments.—All Hospital Appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a salary of £100 with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. The tenure of these offices may be renewed for a term not exceeding three years. Four House-Physicians, four House-Surgeons, four Assistant House-Surgeons, two Obstetric House-Physicians, two Ophthalmic House-Surgeons, and eight Clinical Assistants in the special departments are appointed every three months. Clinical Clerkships and Dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Fees.—The Fees may be paid in one sum or by instalments. Entries may be made separately to lectures or to hospital practice. Special arrangements are made for students from the Universities and elsewhere entering in their second or subsequent years, also for dental students and for qualified practitioners.

University Examinations. Special Classes for the Preliminary Scientific and Intermed. M.B.Lond., for the Oxford and Cambridge Examinations, and for the Primary F.R.C.S. are held throughout the year.

Lodgings. A register of approved lodgings is kept by the Medical Secretary, who has a list of local medical practitioners, clergymen, and others who receive students into their houses.

Further information may be obtained by application to Mr. Rendle, the Medical Secretary.

University College: Medical Faculty.

The Hospital contains 210 beds, 185 of which are available for clinical instruction and study.

Appointments.—Eight House-Physicians, six House-Surgeons, twelve Obstetric Assistants, Out-Patients Physicians' and Surgeons' Assistants, Clinical Clerks, Surgeons' Dressers, and Ophthalmic Surgeons' Assistants, are selected annually from among the students without extra fee. The House-Physicians, the House-Surgeons, and four Obstetric Assistants reside in the Hospital, receiving free board and lodging.

Entrance Scholarships.—Three Entrance Exhibitions, one of the value of 131 guineas, and two of the value of 55 guineas, to gentlemen who are about to commence their first winter's attendance. Subjects: Chemistry, Physics, and Biology. The examination will take place on September 26th and 27th. Notice of intention to compete must be given on or before September 24th.

Other exhibitions and prizes of the annual value of about £500 are given in the Faculty of Medicine.

Information respecting the College may be obtained from the Dean, Professor R. J. Godlee; the Vice-Dean, Professor T. Barlow; the Sub-Dean, Professor Thane; or the Secretary, Mr. J. M. Horsburgh.

Westminster Hospital Medical School.

The Hospital contains upwards of 200 beds.

Appointments.—A Curator of the Museum and a Pathologist are appointed annually, with salaries of £40 and £50 respectively, and a Medical and Surgical Registrar, each with a salary of £40. Two House-Physicians, Two House-Surgeons, two Assistant House-Surgeons, and a Resident Obstetric Assistant are appointed for six months, after examination, and are provided with rooms and commons. An Assistant House-Surgeon, after six months' service, becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the officer of In-patient Dresser for four months, of Out-patient Clinical Clerk for four months, and of In-patient Clinical Clerk for four months. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* Room. No student is eligible as In-patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1898-9:—*In September, 1898*: Three Scholarships in Arts, £60, £40, and £30; Scholarship in Arts for Dental Students, £20; Two Colonial Scholarships in Arts, £60 and £40; Oxford and Cambridge Scholarship in Anatomy and Physiology, £40; Two Natural Science Scholarships, £60 and £40; Free Presentation, open to Pupils of Epsom Medical College. *In April, 1899*: Two Scholarships in Arts, £50 each: Two Colonial Scholarships in Arts, £60 and £40; Oxford and Cambridge Scholarship in Anatomy and Physiology, £40; Two Natural Science Scholarships, £60 and £40.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

London (Royal Free Hospital) School of Medicine for Women.

Clinical Instruction is given at the Royal Free Hospital, which contains 170 beds. There are separate departments for Diseases of Women, Diseases of the Eye, Throat, and Ear, Dentistry, and classes for instruction in Anæsthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at one of the Hospitals under the Asylums Board of the London County Council, and are also admitted to the practice of 13 special hospitals.

Scholarships.—There is an Entrance Scholarship value £30, which is offered for competition at the end of September in each year. The Stuart Mill Scholarship, value £30, the John Byron Bursary and two Mackay Prizes, value £20 each, the Helen Prideaux Prize of £50, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer valuable prizes on certain conditions, and assist ladies who wish to go to India as medical missionaries.

School Buildings.—There is an excellent library at the School, and there are two well furnished Museums, Anatomical and Pathological, at the School and Hospital. The students' rooms at the Hospital have recently been enlarged and improved, and a fine block of new laboratories, fitted with all the most modern appliances was opened at the School by H.R.H. the Princess of Wales on July 11th of the current year. A list of boarding and lodging houses can be obtained at the School.

Cooke's Medical School, London.

The School is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; that is to say that it does not receive more curriculum students than can each be supplied, in the course of his studies, with three entire "subjects." Corresponding advantages are offered in regard to Physiology. Charges but slightly in excess of current charges.

The Bland Sutton Presentation—named after Mr. Bland Sutton, F.R.C.S., Surgeon to the Middlesex Hospital (a former pupil of the School)—confers the privilege of free education during the first two years of medical studies. Particulars forwarded on application.

By decision of the various Examining Bodies, gentlemen rejected at their Anatomical and Physiological Examinations (Second Conjoint, etc.) can get "signed up" from this school for the three months' supplementary work they are required to put in before re-examination. The School is also recognised for the special dissections for the Fellowship of the Royal College of Surgeons.

The operations of Surgery are performed on the dead body.

The School possesses a good collection of physiological and chemical apparatus, and gentlemen preparing for the higher examinations receive special instruction in the more difficult subjects, and have the advantage of personal use of the physiological apparatus.

PROVINCES.

The medical schools in England, outside London, which give instruction in the full medical curriculum, are those of the Universities of Oxford, Cambridge, and Durham (University of Durham College of Medicine, Newcastle-on-Tyne); the three Colleges of the Victoria University (Owens College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds); Mason College, Birmingham (Queen's Faculty of Medicine); University College, Bristol; and University College, Sheffield (School of Medicine).

The opportunities for obtaining a good knowledge of the Preliminary Sciences, and of Anatomy and Physiology at the Universities of Cambridge and Oxford are unsurpassed; the staffs of teachers are distinguished, and the laboratories are most completely appointed. Instruction in Clinical Medicine, Surgery, and Midwifery is given by the University Lecturers, and by the visiting staffs of the Radcliffe Infirmary at Oxford and of Addenbrooke's Hospital, Cambridge; but it is the rule for Oxford and Cambridge men, after spending three years at the University and passing the necessary examinations, to proceed for the remaining two years to London or some other large towns where the opportunities for gaining clinical experience are greater. At many of the London schools special arrangements—as to which full particulars can be

obtained on application to the respective Deans—are in existence to meet the case of students from the Universities joining under these circumstance. At some of the schools they are placed on the same footing in regard to obtaining the appointments of House-Physician and House-Surgeon as students who have attended the hospital throughout. As thg circumstances of the various schools are liable to vary from time to time, special inquiries should be made on this point, which after-experience will show to be of great importance.

The arrangements and appliances for laboratory and other practical instruction at Owens College, Manchester, at University College, Liverpool, at Bristol, and at the Yorkshire College, Leeds, are most complete, having in each case been recently enlarged and improved. At Birmingham the medical school is now a Faculty of the Mason College, and is provided with all the most modern facilities for instruction in science, while the great hospitals afford equal excellent opportunities for clinical work. There is now on foot a movement for the establishment of a Midland University in Birmingham (see British Medical Journal, July 9th, 1898, page 112). Reference may also be made here to the new Medical School of the University College of South Wales and Monmouthshire at Cardiff. The school now gives instruction in all the subjects of the medical curriculum belonging to the first three years.

Mason University College, Birmingham (Queen's Faculty of Medicine).

Mason College was founded in 1875 by Sir Josiah Mason, Kt. The Medical Faculty was transferred from Queen's College, Birmingham, to Mason College in 1892, additional buildings being erected at a cost of about £20,000. There are Professorships of Medicine, Surgery, Anatomy, Physiology, Chemistry, Physics, Biology, Therapeutics, Forensic Medicine, Public Health, Midwifery, Gynæcology, Pathology, Mental Diseases, Operative Surgery, and Ophthalmology, and Lectureships in Toxicology, Osteology, Applied Anatomy, and Materia Medica, etc.

Clinical instruction is given in the General and Queen's Hospitals, which have a joint total of upwards of 400 beds; 6,000 in-patients and 80,000 out-patients are treated annually.

Appointments.—General Hospital: Two House-Physicians, salary £70 a year; a degree in Medicine is necessary. One Resident Surgical Officer, salary £130 a year. One Resident Pathologist, salary £100. Two Non-resident Casualty Officers, salary £50. Two non-Resident Anæsthetists, salary £40. Four Assistant House-Surgeons, office tenable for six months, without salary; a Surgical qualification is necessary. Two Assistant House-Physicians, tenable for six months, without salary; candidates must possess a medical qualification and be registered. One Resident Medical Officer, salary £150, at the Jaffray Hospital; and one Resident Assistant, unqualified, tenable for three months. *Queen's Hospital:* Two House-Physicians, tenable for twelve months, at a salary of £50; a Medical qualification is necessary. Three House-Surgeons, tenable for twelve months, at a salary of £50; a Surgical qualification is necessary. One Obstetric and Ophthalmic House-Surgeon, tenable for six months; candidates must have a qualification; salary £10, with board and lodging, etc. One Resident Dresser, unqualified, tenable for three months.

Entrance Scholarships.—Queen's Scholarship, 30 guineas; Sands Cox, restricted to sons of medical men, 30 guineas; Sydenham Scholarships, one or more annually, restricted to orphan sons of medical men, elected by the Council, on the recommendation of the Medical Board of Studies, 30 guineas.

Further particulars may be obtained by application to Professor Windle, Dean of the Medical Faculty, at the College.

University College, Bristol: Faculty of Medicine.

The lectures and instruction given in the Faculty of Arts and Science of University College, Bristol, are adapted to the various Preliminary Examinations, including the Preliminary Scientific Examination of the University of London; and Students can complete in Bristol the entire course of study required for the Medical and Surgical Degrees of the University of London, the Diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, and of the Apothecaries' Society of London, and for the Examinations for admission to the Royal Navy and the Indian Medical Services, and the Royal Army Medical Corps.

Clinical instruction is given at the Royal Infirmary and General Hospital. The Royal Infirmary contains 264 beds, a Library, and Museum. The General Hospital contains 200 beds, a Library, and Museum.

Appointments—Royal Infirmary.—House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon: Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks are appointed. The Dressers reside in the Infirmary in weekly rotation. *General Hospital:* House-Surgeon, Assistant House-Surgeon, Assistant House-Physician, and Casualty Medical Officer; Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. The Dressers reside in the Hospital in rotation free of expense.

Scholarships—Royal Infirmary.—Two Entrance Scholarships (in subjects of general education), value £36 15s. and £10 10s. There are also numerous class prizes and certain special prizes. *General Hospital:* Lady Haberfield Entrance Scholarship, value, the interest of £1,000, at the beginning of the winter session, after examination in subjects of general education. Second Entrance Scholarship, value £20. There are also the Clarke Scholarship in Surgery, the Sanders Scholarship, and the Martin Memorial Pathological Scholarships, and various class prizes.

Full information can be obtained on application to the Dean of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

The Yorkshire College, Leeds: Medical Department.

Clinical instruction is given at the Leeds General Infirmary, which has over 400 beds in constant use, and includes gynæcological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital attached to the Infirmary has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can in addition attend the practice of the Leeds Public Dispensary, the City Fever Hospitals (100 beds), and the Hospital for Women and Children.

Appointments.—Senior Anæsthetist, £50. Two Anæsthetists, £25 each. The Resident Medical, Surgical, and Casualty Officers, each at £100 per annum. The Resident Ophthalmic Officer at £50 per annum. A Resident Obstetric Officer is attached to the gynæcological ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Hospital (honorarium £25). Four House-Physicians, each holding office for six months, and four House-Surgeons holding office for twelve months. Physicians' Clerks, Surgeons' Dressers are appointed for six months; Ophthalmic and Aural Dressers, Gynæcological Ward Clerks, Assistant Physicians' Clerks, and Assistant Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Pathological Curator (honorarium 20 guineas) has charge of the new pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £80), at the Hospital for Women (House-Surgeon, honorarium £90, and Anæsthetist £25), and at the West Riding Asylums.

Entrance Scholarships.—The Yorkshire College awards annually a scholarship in the form of a free admission to the lectures and classes covered by the composition fee. Candidates must have passed the Preliminary Scientific (M.B.) Examination of the London University or the First (Scientific) Examination of the Victoria University. The subjects of the examination are those included in the above examinations. The Infirmary also awards a scholarship of the value of 40 guineas in the form of a free admission to the clinical teaching of the Infirmary. The subjects of the examination are (*a*) Latin, (*b*) Elementary Mathematics, (*c*) English Dictation and Composition, (*d*) English History, and (*e*) one of the following languages: French, German, or Greek.

Further information can be obtained from the Dean, the Medical School, Leeds, or from the Secretary of the Faculty, General Infirmary, Leeds.

University College, Liverpool: Medical Faculty.

New Physiological and Pathological Laboratories, which have been built and completely equipped by the generosity of the Rev. S. A. Thompson Yates, are now completed, and will be formally opened by Lord Lister on Saturday, October 8th. The building includes two theatres for physiology and pathology, spacious laboratories for microscopic, physical, and chemical Physiology, for Morbid Anatomy, Bacteriology, and Chemical Pathology, special rooms for research, gas analysis, galvanometer, centrifuge, etc., private rooms, students' common room, lavatories, etc. The Chemical Laboratories have been extended, so as to provide *inter alia* more complete accommodation for medical students and those engaged in laboratory work for diplomas in Public Health. The Anatomical Department has undergone structural alterations, and the Dissection Room and Theatre have been provided with the electric light. The chair of Hygiene has secured adequate permanent accommodation in Ashton Hall, an institute adjacent to the College, which contains ample class-room and laboratory accommodation for study and research. The museums of Anatomy, Pathology, and Materia Medica are furnished with complete provision for the needs of students, and have recently been reorganised and revised. The museum of Hygiene, accommodated in Ashton Hall, has been recently established, on the lines of the Parkes Museum. It contains meteorological instruments, and numerous models and specimens illustrating good and bad sanitary work. Under the supervision of the Professor of Hygiene a course of lectures on Sanitary Science is given during the winter, suitable for candidates for sanitary inspectors' certificates. The first instalment of new anatomical and surgical laboratories has been erected, at a cost of £2,000, in the form of permanent anatomical outbuildings and courtyard. The buildings include mortuary, store rooms, museum work rooms, and macerating room, along with lavatories, etc. The erection of new anatomical and surgical laboratories will be commenced as soon as practicable.

Royal Infirmary.—The Royal Infirmary, which adjoins the School, contains 300 beds, with 40 special beds for the treatment of Diseases of Women. The Lock, Lying-in, Eye and Ear, Children's, and Dental Hospitals are in the immediate vicinity, and their practice is open to the students of the Medical Faculty.

Fees.—The composition fee for lectures and classes is £24 15s. for Preliminary Scientific Classes; £60 for the Medical Classes required for the Victoria University Degree; £70 for all the classes required for the diplomas of the Conjoint Boards. The medical composition fees are payable in two instalments, at intervals of twelve months. The fee for hospital attendance at the Royal Infirmary is 40 guineas, also payable in two annual instalments.

Appointments.—Three House-Surgeons, three House-Physicians, and one External House-Surgeon to the Thornton Wards, are appointed for six months, after (if necessary) competitive examination. Candidates must have a legal qualification. Clinical Clerks for each physician, Dressers for each surgeon, and Clerks to the Thornton Wards for Diseases of Women, are appointed every three months. *Post-mortem* Clerks are appointed for six weeks. All students are required to perform this duty before the schedule for the Final Examination is signed.

Scholarships.—*(a)* A Holt in Pathology, of the value of £100 for one year, is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the Pathological Department. *(b)* A Holt Fellowship in Physiology awarded under similar conditions, of the value of £100 for one year. *(c)* A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. *(d)* Two Lyon Jones Scholarships, of the value of £21 each for two years, are awarded annually—a Junior Scholarship, open at the end of the first year of study to Victoria University students, in the subjects of the First M.B. Examinations; and a Senior Scholarship, open to all students in the School at the end of the third year of study, on the subjects of Anatomy, Physiology, and Materia Medica. *(e)* The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years; in 1899 the subject will be Clinical Medicine. *(f)* The Torr Gold Medal in Anatomy and the George Holt Medal in Physiology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases, and numerous Class Prizes are awarded annually.

Communications should be addressed to the Dean, Professor Paterson, M.D., University College, Liverpool.

School of Pharmacy.—A department of Pharmacy has recently been instituted, comprising the necessary courses for the minor and major examinations of the Pharmaceutical Society in Chemistry, Physics, Botany, Materia Medica, and Pharmacy. The composition fee is £17, and the classes may be attended in one or two years.

Prospectuses and further information may be had on application to the Registrar, University College, Liverpool.

Owen's College, Manchester: Medical Department.

The Royal Infirmary contains 300 beds. Associated with it are the Convalescent Hospital (136 beds), and the Royal Lunatic Asylum at Cheadle, which accommodates 260 patients.

Appointments.—The following appointments are made: A Surgical Registrar, at £80 per annum; a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum; two Assistant Medical Officers, each at £80 per annum; an Anæthetist, at £50 per annum; an Assistant Anæsthetist, at £50 per annum. Resident Medical Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum. Resident Surgical Officer, one year, £150 per annum; two House-Surgeons and three House-Physicians; and one at Cheadle, each for six months. The House-Physicians and House-Surgeons must possess a qualification which can be registered. For the Resident Assistant at Cheadle a qualification is not absolutely necessary. Four or more Clinical Clerks are attached to each Physician or Assistant-Physician, and four or more Dressers to each Surgeon and Assistant-Surgeon, and to the Ophthalmic Surgeon, Accident Room Dressers will be appointed every three months, and will hold their appointment for three months; there will be three Senior Dressers and twelve or more Junior Dressers, the former selected from students who have acted as Dressers in the wards for the full period of six months. Additional Clinical Clerks are appointed to assist in the department for the Diseases of the Ear and Throat, and to assist the Surgical Registrar.

Entrance Scholarships.—Rogers and Seaton Scholarships (in alternate years), £40 per annum, tenable for two years. Subjects: Greek and Latin. Credit given for knowledge of Geometry, Algebra, French, German, and English. Examination May 29th, 30th, 31st, and June 1st, 1899. Dalton (entrance), two of £40, one of which will be awarded annually, and tenable for two years. Examination May 29th, 30th, 31st, and June 1st, 1899. Subjects: Geometry (Euclid I—IV and VI, or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive); Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry, the Conic Sections. Credit given for knowledge of Classics and Modern Languages (including English). Cartwright Scholarship, £35 per annum, tenable for three years; subjects as in Dalton. Examination in May, 1903. Hulme, three of £35, one of which will be awarded annually, tenable for three years. Examination on May 29th, 30th, 31st, and June 1st, 1899. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an Essay on some subject of English Literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight; Grammar and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill, two of £40, one of which will be awarded annually, and tenable for two years. Examination on May 29th, 30th, and 31st, and June 1st, 2nd, and 3rd, 1899. Subjects: Mathematics—Geometry, the subjects of Euclid, I—IV and VI; Algebra, as far as the Binomial Theorem inclusive; Plane Trigonometry (to Solution of

Triangles); Elementary Mechanics, including Composition and resolution of forces in a plane, centre of gravity of simple bodies, uniform acceleration, direct impact, the elements of Hydrostatics, Boyle's Law. Chemistry: Inorganic Chemistry, Elementary Organic Chemistry; Practical work, including preparations, analysis of mixtures of inorganic salts, easy quantitative analysis. Credit given for knowledge of classics and Modern Languages (including English). Two Dauntesey Medical Scholarships, value £35, tenable for one year. Candidates must not have attended lectures in a medical school. Subjects of Examination: Zoology, Botany, and Chemistry. The successful candidates must enter for the full course of medical studies at the College. A Gilchrist Scholarship of £50 per annum, tenable for three years in the College, awarded annually upon the results of the June Preliminary Examination of the Victoria University. Grammar School Scholarship, value £18 per annum, tenable for three years, open to scholars of the Manchester Grammar School between the ages of 16 and 21. Subjects: Mathematics, with Classics and Physical Science in alternate years. A subject for an English Essay will be set each year.

Prospectuses may be obtained from the Registrar, Mr. S. Chaffers.

UNIVERSITY COLLEGE, SHEFFIELD: DEPARTMENT OF MEDICINE.

The Sheffield School of Medicine has been recently incorporated by Royal Charter with Firth College and the Sheffield Technical School under the name of University College, Sheffield. The Physiological Department, thanks to the generosity of anonymous donors, has been entirely reconstructed and equipped to fulfil the most modern requirements in memory of the late President of the School, Mr. Wm. F. Favell. The department consists of a lecture and demonstration theatre, students' laboratory, professor's room, preparing room and galvanometer room. In addition to the usual fittings the theatre is provided with a projection lantern microscope for the demonstration of microscope slides. Each student has his own laboratory bench, with gas, water, electric light, and the requisite apparatus. The department is lighted by electricity throughout.

The Arthur Jackson Chair of Anatomy has been founded by Mrs. Arthur Jackson in memory of her late husband.

Clinical instruction in Medicine and Surgery is given at Sheffield Royal Infirmary and the Royal Hospital, and in Midwifery and Gynæcology at the Jessop Hospital for Diseases of Women. Students are also admitted to the practice of the Borough Fever Hospitals and the South Yorkshire Asylum. The Royal Infirmary contains 240 beds, including Ophthalmic wards and Dermatological department. A new ophthalmic department, containing 30 beds and operating theatre, has been recently erected. The Royal Hospital contains 125 beds, and Dental and Ophthalmic departments.

Scholarships, etc.—An entrance scholarship of the value of £110 is awarded annually to the best candidate, if of sufficient merit, in Latin, Mathematics, Elementary Physics, Inorganic Chemistry, and English. Prizes in Clinical Medicine and Surgery, of £10 10s. each, awarded by the Clinical Committee. Certificates and Book Prizes are awarded annually.

Fees.—The composition fee, if paid at the commencement of medical study, is 60 guineas; or the fees may be paid 35 guineas at the commencement of the first, and 30 guineas at the commencement of the second year. These fees do not include hospital practice or instruction. The composition fee for this is £45.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

The Royal Infirmary contains 280 beds.

Appointments.—Assistant Demonstrators of Anatomy, Prosectors for the Professors of Anatomy, Assistant Physiologists, Pathological Assistants, Assistants to the Dental Surgeon, and Assistants in the Eye Department, Throat and Ear Department, and Department for Skin Diseases are elected annually. The Assistant Demonstrators of Anatomy receive £5 each; the others are unpaid. Four times in the year Clinical Clerks and Dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the winter session to intending students, and to those who have attended only one winter and one summer session. The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students who have passed the primary examination of a licensing body. The Tulloch Scholarship interest of £400 annually, for Anatomy, Physiology, and Chemistry. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at end of winter session. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of summer session. The Guyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best Essay on some subject in Comparative Pathology. The Scholarship is open to all Graduates in Medicine or Hygiene, and candidates for these degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship. The late George Y. Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4,000 to found a scholarship in surgery, the interest to be awarded every second year. First award in 1896. The Gibson Prize in Midwifery and Diseases of Women and Children, interest on £225.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE MEDICAL SCHOOL, CARDIFF.

This College has for some years prepared students for their Preliminary Scientific Examination (M.B.), and these students have continued their studies in London and elsewhere. By the foundation in 1893 of two new Chairs of Anatomy and Physiology, and also of a Lectureship in Materia Medica and Pharmacy, students are enabled to prepare for the Intermediate M.B. of London, and may spend three out of their five years of medical study in Cardiff, proceeding subsequently to a London hospital for the remaining two years. A student preparing for a Scottish University, the University of Durham, for the Conjoint College Surgical and Medical Diploma, or that of the Society of Apothecaries, may spend his first two or three years in Cardiff. Believing that many students—more especially in Wales and Monmouthshire—will avail themselves of the opportunity of study near home, the Council has sanctioned the construction, at considerable cost, of new laboratories and lecture rooms for the teaching of Anatomy, Physiology, and Materia Medica and Pharmacy, which are now complete and furnished with the newest and best appliances for teaching and research; these, together with the laboratories of Physics, Chemistry, and Biology previously founded, will enable the student to obtain the best possible training in the work of his first three years medical study.

Students preparing for the Preliminary Scientific, and Intermediate Examination in Medicine of the University of London may compound for their classes by paying a composition fee of £57 10s. Students who are preparing for the examinations of the Conjoint Board or of the Society of Apothecaries, London, may compound for their classes by paying a composition fee of £35. In both cases the composition fees may be paid in two instalments.

Scholarships and Exhibitions.—Seven College Scholarships and fifteen Exhibitions are open to students of Medicine. The examinations for these will take place in September. (See Medical Prospectus, which may be obtained on application to the College Registrar.)

The students have the privilege of attending the Cardiff Infirmary, a large and growing institution containing 200 beds, a large and well-organised out-patient department, and special departments for the eye, ear, etc. The Infirmary is within three minutes of the College, and notices of cliniques, operations, and *post-mortem* examinations are posted on the College notice boards. Further information may be obtained from Dr. John Berry Hayeraft, Dean of the Medical Faculty.

SCOTLAND.

University of Aberdeen.

Special opportunities for practical instruction are afforded in the chemical, anatomical, physiological, pathological, and hygienic laboratories; and anatomical, pathological, botanical, materia medica, forensic medicine, midwifery, natural history, and surgical museums throughout the day, under the direction of the professors. Practical instruction is given also in the toxicological, pharmaceutical, botanical, and zoological laboratories, and in the surgical museum and laboratory. Courses of practical instruction are given in summer in Medical Jurisprudence and Hygiene; in Diseases of Children, at the Sick Children's Hospital; in Fevers, at the Fever Hospital; in Insanity, at the Royal Asylum; in Diseases of the Ear and Larynx, at the Dispensary; in Diseases of the Eye, at the Infirmary and Eye Institution; in Diseases of the Skin, at the Royal Infirmary and Sick Children's Hospital. The General Dispensary and the Lying-in, Vaccine, and Eye Institutions, and the Sick Children's Hospital are open daily. Practical Pharmacy, Operative Surgery, Practical Medical Jurisprudence, and Hygiene, fee to each class, £3 3s., except Anatomical Demonstrations, Practical Natural History, Practical Midwifery, and Gynæcology, each £2 2s.; Practical Ophthalmology, Insanity, Public Health, Diseases of the Ear and Larynx, Diseases of the Skin, and Dental Surgery, each £1 1s.; Matriculation Fee, both sessions, £1; summer session alone, 10s.; Royal Infirmary, Perpetual Fee, £6; or first year, £3 10s.; second year, £3. Clinical Medicine and Clinical Surgery, each £3 3s. The winter session begins on October 13th. Bursaries, scholarships, and fellowships, to the number of forty-seven, and of the annual value of £1,028, may be held by students of medicine in this University. They range from £8 to £100 per annum, and are tenable in most cases for two years.

Edinburgh University.

Practical Instruction.—The following means are afforded for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Rooms, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence Laboratory; Materia Medica Museum and Laboratory; *Post-mortem* Department of Royal Infirmary, and University Pathological and Bacteriological Laboratory; Royal Infirmary of nearly 800 beds; Royal Hospital for Sick Children, with nearly 100 beds; Maternity Hospital; City Fever Hospital, with nearly 400 beds; Mental Diseases at Royal Morningside Asylum; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery.

Fees.—The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course, £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, Practical Chemistry, Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Insanity, Obstetric Operations, Diseases of the Eye, and Comparative Embryology are £3 3s. Practical Botany (besides charge of 10s. for Laboratory expenses), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, £2 2s. Vaccination, £1 1s. Matriculation Fee, £1 for each year, or 10s. for a Summer Session. Library open from 10 to 4; Saturdays, 10 to 1.

Fellowships, Scholarships, Bursaries, and Prizes open to Competition in Session 1898-99.

I. *Fellowships.*—(1) The Syme Surgical Fellowship of the annual value of about £100, tenable for two years, and (2) the Leckie-Mactier Fellowship of the annual value of £80, tenable for three years, are open for competition among Bachelors of Medicine of not more than three years' standing. (3) The Goodsir Memorial Fellowship in Anatomy and Physiology of the annual value of £100, tenable for two years, is open to all graduates of the University of not more than three years' standing, and to Licentiates of the Colleges of Physicians or Surgeons of Edinburgh of a like standing who have attended within the University the classes required for the degree of M.B.

II. *Scholarships.*—(1 to 7) Seven Vans Dunlop Scholarships of £100 each, tenable for three years, are awarded. Successful candidates are required to continue their medical studies in the University during the tenure of their scholarships, and to graduate as M.B. and Ch.B. One will be awarded at the Medical Preliminary Examination either in October, 1898, or March, 1899; one is awarded at the end of the first summer session of medical study to the student who has attended a systematic course of lectures in botany and zoology, and after an examination in those subjects; one is awarded under similar conditions at the end of the first winter of medical studies in the subjects of chemistry, anatomy, and physics; one is awarded under similar conditions at the end of the second winter of medical study [illegible]; one is awarded at the beginning of the winter session after an examination in anatomy and physiology; one at the beginning of the fourth winter session after an examination in materia medica [illegible] (including pharmacology); one is awarded at the beginning of the fifth winter session after an examination in pathology; medical jurisprudence and public health. (8) The Thomson Scholarship of the value of £40, tenable for four years, is open to matriculated students commencing their first Winter Session in Medicine, after an examination in Botany, Zoology, and Elementary Mechanics. The next competition will be in October, 1898, and further particulars can be obtained from Messrs. Traquair, Dickson, and Maclaren, W.S., 11, Hill Street, Edinburgh, the Agents for the Trustees, before September [illegible]. (9) The Mouat Scholarship in Practice of Physic (partly in money and partly in the form of a bronze medallion), the whole of the value of about £55), is awarded annually at the graduation ceremonial in Medicine to the candidate who takes the highest place in the class examinations in Practice of Physic, and in the oral and written examinations in that subject in the final examination. (10) The Murchison Memorial Scholarship, tenable for one year, and consisting of the annual proceeds of about £1,000, is awarded in alternate years in Edinburgh and London for proficiency in Clinical Medicine. The competition is open to candidates from London and Edinburgh, and in 1899 will take place in Edinburgh about the middle of July. (11) The Buchanan Scholarship of about £40 is awarded annually for proficiency in Midwifery and Gynæcology. (12) The James Scott Scholarship of the value of the £32 10s., is awarded for proficiency in Midwifery. (13) The Ettles Scholarship in Medicine, of the value of about £31 5s., is awarded annually to the most distinguished graduate in Medicine and surgery of the year. (14, 15) Two Hope Scholarships, each of the value of about £30 a year, tenable for one year, are awarded annually at the end of the Winter Session on the nomination of the Professor of Chemistry. (16, 17) Two Crichton Scholarships for Research, each of the value of £100, and tenable for one year, may be offered in October, one in Anatomy and one in Physiology, to candidates who have been students of the University for not less than four years. (18) The M'Cosh Graduates and Medical Bursaries, tenable for one year, during which the holder or holders will be required to prosecute research in a medical school or schools of Europe, may be open for competition in July.

III. *Bursaries.*—Certain of the bursaries in the gift of the Town Council may be held in the Faculty of Medicine, and further particulars can be obtained from the City Clerk, Council Chambers, Edinburgh. (1) One Sibbald Bursary of £30 a year, tenable for three years, and (2, 3) two Grant Bursaries of £45 a year, tenable for four years, may be held in the Faculty of Medicine by students who have passed the preliminary examination of the Faculty of Arts or an equivalent examination; particulars may be obtained by applying to Messrs. Mackenzie, Innes, and Logan, W.S., 23, Queen Street, Edinburgh, before September 15th. (4, 5) Two Thomson Bursaries of the value of £25 each, tenable for four years, are competed for each March and October at the preliminary examinations required from candidates for graduation in medicine. (6, 7) Two John Aitken Carlyle Bursaries of the value of £28, tenable for one year, are awarded at the end of each winter session, one to a first year's student for proficiency in anatomy and chemistry, and the other to a second year's student for proficiency in anatomy and physiology. (8, 9) Two Mackenzie Bursaries, each of the value of £20, are awarded to students showing industry and skill in practical anatomy. (10) The Renton Bursary of about £20, tenable for one year, is awarded after examination in English and elementary mathematics; names of candidates must be entered at the Secretary's office on or before September 16th. (11, 12) Two Crichton Bursaries, each of the annual value of £50, tenable for four years, are awarded to students entering the Faculty of Medicine after an examination in Latin, Greek, French, German, mathematics, logic and moral philosophy. The competition takes place at the preliminary examinations in autumn and in spring. (13, 14) Two Mackie Bursaries, each of the annual value of £30, tenable for two years, are awarded after the completion of the first and second medical year respectively, to students who are in such pecuniary circumstances as to require assistance. (15) The Jamieson Bursary and (16-20) five Grierson Bursaries are awarded under certain special conditions to persons residing in specified localities. Competitors for the above Fellowships, Scholarships, and Bursaries, excepting those awarded for the subjects of preliminary examination, must have studied the subjects of examination at the University of Edinburgh. No Fellowship, Scholarship, or Bursary, with the exception of the Ettles Scholarship, can be held along with any other Fellowship, Scholarship, or Bursary.

IV. *Prizes.*—In addition to Gold Medals given on the day of Graduation to Doctors of Medicine whose theses are deemed worthy of that honour, thirteen prizes, varying in value from £5 to £80, will be available for the session 1898-99.

V. *William Dickson Travelling Fund.*—This fund (the interest of which amounts to about £100 per annum) has been established for the purpose of assisting graduates of any faculty, of not more than three years' standing, to travel, for a shorter or longer period, for purposes of study or research. Grants from the fund may be made to holders of scholarships, bursaries, etc. Applications to be made to the Secretary of the Senatus on or before March 15th.

VI. *George Heriot's Bursaries for Women Students of Medicine.*—George Heriot's Trust have arranged for a certain number of bursaries for those who require aid in obtaining "higher education." Application by the appropriate form of schedule has to be made by September 15th, 1898, to the Treasurer, 20, York Place, Edinburgh. The Bursar may attend any School of Medicine for Women recognised by the Edinburgh University Court, and may hold her bursary for three years. III. The subjects of examination shall be the same as those prescribed for the Preliminary Examination in Arts or Science.

VII. *Earl of Moray's Bequest for the Promotion of Original Research.*—All graduates and other members of the University, and other persons who have given satisfactory proof of general education and fitness to engage in some special study of research," may apply [illegible]. In so far as the subject of the Research admits, the investigation shall be conducted in the buildings of the University.

EDINBURGH ROYAL INFIRMARY.

Fees.—Six months, £4 4s.; one year, £6 6s.; perpetual, £12 in one sum, or separate payments, £12 12s.

Six resident physicians and five surgeons are appointed every six months; they live in the house free of charge, save laundry. They must be registered. Many non-resident clinical clerks are also appointed for six months. The physicians and surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the pathologists. Instruction is given in all the special departments.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

The School of Medicine of Edinburgh dates from 1505. The teaching is similar to that of the Scottish Universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School.

This School of Medicine is composed of lecturers licensed by the Royal Colleges of Physicians and Surgeons, and also recognised by the University through their *licentia docendi*, who, for the sake of convenience, lecture in several buildings near at hand to the Royal Infirmary, The lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A new constitution and set of regulations have just been drawn up, in virtue of which the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the school. The different buildings at present utilised for the purpose of lecturing are the following: 1. Surgeons' Hall, Nicolson Street; 2. Minto House, Chambers Street; 3. Nicolson Square; 4. Marshall Street; 5. The New School, Bristo Street; and other places.

MEDICAL COLLEGE FOR WOMEN, EDINBURGH.

Clinical instruction in the Royal Infirmary qualifies for graduation in the Universities. Precisely the same facilities for medical study are given as to male students in the School of Medicine, Edinburgh. Arrangements, fees, and regulations are similar. All the teachers are qualified lecturers of the School, and their courses admit to the various qualifying bodies for women. The lecturers are also recognised by the University of Edinburgh as giving courses admitting to the degrees of M.B., Ch.B. In the case of those proceeding to such degrees, the same fees as those in the University must be paid. The classes, with the exception of those in the Royal Infirmary, are open to all ladies, whether taking a full medical curriculum or not. The school is a large and vigorous one. Prospectus and all information from Miss H. F. Mackay, 20, Chambers Street (Minto House).

UNIVERSITY OF GLASGOW.

The whole course of study presented by the University of Glasgow (*q. v.*) can be passed in the Medical School of the University.

For practical work there are available the Physical, Chemical (winter course, £10 10s; summer, £5 5s.), Physiological Zoological, and Botanical Laboratories; and the Botanic Gardens.

Partial Study Elsewhere.—Only two of the five years need be spent at the University; the remaining three may be spent in such universities or schools, or under such teachers, as are recognised by the University Court.

Bursaries, etc. Fifteen Bursaries and Prizes in Medicine are open to competition during Session 1898-99, the aggregate value of which is about £335, besides thirteen in the Faculty of Science.

Hospitals.—The University is in the immediate neighbourhood of the Western Infirmary, with 400 beds, and near to the Lunatic Asylum, and Special Hospitals fo Diseases of the Eye, Skin, etc.

Fees.—The class fees are, as a rule, £3 3s., excepting Practical Anatomy and anatomical Lectures (in summer), Operative Surgery, Embryology, and Diseases of Women, which are £2 2s. A Perpetual Hospital Ticket costs £21, payable £10 10s. in the first year, and the same the second, and this includes clinical instruction. The fee for the degree of M.D. is £10 10s. (exclusive of stamp duty, £10); for Ch.M., £10 10s. The total class and hospital fees for the five years' course amount to about £97 13s., to which add the annual matriculation fee (£1 1s.) and the fees for M.B., Ch.B.(£23 2s.) making a total of £126.

The Women's Department of the University (Queen Margaret College).—The course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class rooms, reading and writing rooms, drawing room, library, etc., and are taught in classes apart from male students, but have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards are reserved for their exclusive use, and in its dispensaries; also in the Royal Hospital for Sick Children; the Royal Asylum, Gartnavel; the city of Glasgow Fever Hospital, Belvidere; and the Glasgow Maternity Hospital.

Scholarships and Bursaries at Queen Margaret College.—A scholarship of £20 for three years will be open to competition by first year students at the First Professional Examination in October, 1898. The Mackintosh Mental Science Bursary of £30 is open to medical students who have attended the Insanity Lectures. The University Commissioners have issued an Ordinance to make regulations for the admission of women to certain Bursaries, Scholarships, and Fellowships. It came into force on May 11th, 1895. Miss Galloway will supply details.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £95 11s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner.

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the College. The cost for board and residence is £30 to £37 10s. for the College session of 30 weeks, according to accommodation. Students bring their own towels and dinner napkins. Full information will be obtained from the Honoray Secretary, Mrs. D. S. Riddoch, 2, Lawrence Place, Dowanhill, Glasgow; or from Miss Galloway, Queen Margaret College.

For further information male students may apply to Mr. W. Innes Addison, Matriculation Office, Glasgow University; women students to Miss Galloway, Queen Margaret College, Glasgow, W., from whom copies of the prospectus may be got.

ST. MUNGO'S COLLEGE, GLASGOW.

The College buildings are situated within the grounds of the Royal Infirmary, the wards and clinical instruction therein being available for students. The Winter Session opens on October 20th. Qualifying classes are held during the winter in Physics, Zoology, Embryology, Chemistry, Anatomy, Materia Medica, Physiology, Pathology, Medicine, Surgery, Ophthalmology, Gynæcology, Diseases of Throat and Nose, and in Public Health, Laboratory Work. Instruction is also given daily in the Dispensary by the Assistant Physicians and Surgeons of the Royal Infirmary. During the summer the classes include Botany, Medical Chemistry, Practical Pathology, Practical Physiology, Anatomy, Operative Surgery, Diseases of Children, Clinical Medicine, Clinical Surgery, Medical Jurisprudence, Dermatology, Otology, Bacteriology and Psychological Medicine. All classes in this College qualify for the diplomas of the English, Scotch, and Irish Conjoint Boards.

Sessional Fees.—First year, £15 15s.; second year, £15 15s.; third year, £10 10s.; fourth year (and perpetual), £5 5s. Total cost of qualifying course, including Corporation Licence, about £100.

Class Fees.—£2 2s. for each class, except Anatomy, £4 4s.

Pathology, £4 4s.; Zoology, £4 4s.; Botany, £3 3s.; Otology, Throat and Nose, and Dermatology, £1 1s.

Hospital Fees.—First year, £10 10s.; second year (and perpetual), £10 10s.

GLASGOW: ANDERSON'S COLLEGE MEDICAL SCHOOL.

Lectures are delivered on all the subjects of the five years' curriculum. Hospital Practice and Clinical Lectures in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. The above lectures qualify for all the Licensing Boards in the United Kingdom. They are also recognised by the Universities of London, Durham, Ireland, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the School Calendar).

The new buildings are situated in Dumbarton Road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of that institution and four minutes' walk of the University.

A *Calendar* containing full particulars of the School may be obtained from the Secretary to the Medical Faculty, Anderson's College Medical School, Dumbarton Road, Partick, Glasgow.

The session opens on Thursday, October 20th.

Class Fees.—(Anatomy, Chemistry, Practical Physiology, Practical Materia Medica and Pharmacy, Zoology, Botany, and Mental Diseases excepted), first session, £2 2s.; second session, £1 1s.; afterwards free. Anatomy Class Fees: Winter, first session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. To those who have had the necessary courses of Practical Anatomy, the fee will be £1 1s. Summer—Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 1s.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d. Chemistry Class Fees: Winter, first course, £2 2s.; second course, £2 2s. Summer (Practical), first course, £2 2s.; second course, £2 2s. Practical Physiology Class Fees: first course, £2 2s.; second course, £2 2s. Practical Materia Medica and Pharmacy Fees: first session, £2 2s.; second session, £2 2s. Zoology, £1 11s. 6d. Practical Zoology, £1 1s. Botany, £1 11s. 6d. Practical Botany, £1 1s. Mental Diseases, £1 1s. Matriculation Fee: Winter, 10s. to those taking out two or more classes, which represents a combined fee for the winter and summer sessions; 5s. to those taking only one class. Summer, 5s., except to those who have paid a fee of 10s. for the winter session. Students who have attended classes at other schools, and who desire to pursue their studies at Anderson's College Medical School, will be admitted to such classes as they may have attended elsewhere at the reduced fees.

UNIVERSITY COLLEGE, DUNDEE.

The classes qualify for the degrees of the University of St. Andrews, and students proceeding to the degrees of other Scotch Universities may take a portion of their curriculum at the College. The classes also qualify for the degrees of the University of London, the Royal University of Ireland, and the licenses of the Scotch Royal Colleges. The classes, along with the practice of the Dundee Royal Infirmary, are open to women.

Dundee Royal Infirmary.—The Infirmary contains 286 beds, with a special ward for the treatment of diseases of children. Two Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Instruction in Practical Pharmacy is given in connection with the dispensary. Out-patients are seen daily at 9 A.M. The instruction given at the infirmary is recognised for purposes of graduation by all the Scotch Universities, and by the Royal Colleges of England and Scotland. Further information may be had on application to the Medical Superintendent.

Dundee Royal Asylum.—The appointments include a qualified Resident Assistant and a Resident Clinical Clerk. Clinical instruction is given.

The session begins on Wednesday, October 12th.

Further information as to scholarships, etc., may be had from Mr. R. N. Kerr, Secretary.

IRELAND.

STUDENTS desirous of prosecuting their medical studies in Ireland may attend the School of Physic in the University of Dublin; the Schools of Surgery of the Royal College of Surgeons of Ireland, the Catholic University School of Medicine, Dublin; or the Schools of Medicine of the Queen's Colleges in Belfast, Cork, or Galway. The student will be guided in his arrangements for clinical instruction by the advice of the teachers of the School which he may select to attend.

SCHOOL OF PHYSIC IN IRELAND, DUBLIN.

This school is formed by an amalgamation of the medical school of Trinity College and of the Royal College of Physicians; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery, being appointed by the latter.

Clinical instruction is given by the staff of Sir Patrick Dun's Hospital. The following Hospitals are also recognised by the Board of Trinity College: Adelaide Hospitals, City of Dublin Hospital, Dr. Steevens's Hospital, House of Industry Hospitals, Jervis Street Infirmary, Mater Misericordiæ Hospital, Mercer's Hospital, Meath Hospital, the National Eye and Ear Infirmary, St. Mark's Ophthalmic Hospital, St. Vincent's Hospital, Richmond Hospital, St. Patrick's Hospital.

CATHOLIC UNIVERSITY MEDICAL SCHOOL.

Prospectuses and further information about this school, which provides complete courses of lectures as required by the examining bodies, may be obtained from the Registrar of the School, Cecilia Street, Dublin, who has written a very useful *Guide for Medical Schools*, which is supplied on application.

THE SCHOOLS OF SURGERY OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Schools of Surgery are attached by Charter to the Royal College of Surgeons, Dublin, and have existed as a department of the College for nearly a century. They are carried on within the College buildings, and are specially subject to the supervision and control of the Council. The buildings have been reconstructed, the capacity of the Dissecting Room nearly trebled, and special Chemical, Pathological, Bacteriological, Public Health, and Pharmaceutical Laboratories fitted with the most approved appliances, in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is now heated by hot-water pipes, and lighted throughout by the electric light. A refreshment room is also open, where students can have luncheon. The certificates of this school are accepted by all the Universities and Colleges of Physicians and Surgeons throughout the kingdom. All the lectures and courses of practical instruction may be attended by medical students who are otherwise unconnected with the College.

QUEEN'S COLLEGE, BELFAST.

The courses of study meet the requirements of the Royal University of Ireland and other examining bodies. The class fee is £2, except in a few cases. The total cost of the medical curriculum of the Royal University of Ireland, including examination fees and perpetual fee for the Royal Hospital, but not including fees for the special hospitals, is £87. It amounts to about the same for the course of the Conjoint Board in Ireland.

Clinical instruction is given at the Royal Hospital. *Fees*, six months, £7 7s.; nine months, £9 9s.; Perpetual, £21 in two instalments. The Ulster Hospital for Diseases of Women and Children, the Maternity Hospital, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Hospital for Sick Children, and the District Lunatic Asylum are open to students.

Prizes.—(1) Ten medical scholarships each year, value £20 each; (2) two Dunville studentships (one each alternate year), value £145 each; (3) one Andrews studentship each alternate year, value £145; (4) numerous sessional prizes. Clinical Prizes: two exhibitions each year, value £20 each.

Extensive additions have been recently made to the College laboratories: these comprise a new Chemical Department, opened in 1894-95, together with new Physiological and Pathological Laboratories.

A Students' Union provides dining room, reading room, library, and various recreation rooms.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

QUEEN'S COLLEGE, CORK.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but arrangements have been made for the delivery of some of the three months' courses of lectures during the months of April, May, and June. The hospitals are open to students in May, June, and July also.

CLINICAL HOSPITALS OF DUBLIN.

SIR PATRICK DUN'S HOSPITAL.

Appointments.—A House-Surgeon is appointed annually, and four Resident Pupils half-yearly.

Hospital Attendance and Clinical Lectures.—The payment of £12 12s. entitles a student to the benefits of Hospital attendance and Clinical teaching for the winter and summer sessions. *Fee* for winter session only, £8 8s. *Fee* for summer session only, £5 5s. The fees will be received by Dr. Taylor, Honorary Secretary, by any member of the staff, or by the Registrar of the School of Physic in Trinity College.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS.

These Hospitals contain 312 beds: 110 for surgical cases, 82 for medical cases, 120 for fever and other epidemic diseases.

The Richmond Lunatic Asylum, containing over 1,200 patients, adjoins these hospitals, affording facility for the study of mental disease.

Appointments.—A Resident Surgeon and a Resident Physician are appointed every year, receive a salary, and hold office for one year. Eight Residential Clinical Clerks are appointed each half year, and provided with furnished apartments, fuel, etc. These appointments are open not only to advanced students, but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils, without the payment of any additional fee.

Further information can be obtained from the Honorary Secretary, Dr. J. O'Carroll, 27, Westland Row, or the Hon. Treasurer, Sir William Thomson, 54, Stephen's Green, E.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS.

The hospitals contain 140 beds. A House-Surgeon is appointed yearly, and three resident pupils are selected half-yearly.

Further particulars may be obtained from Mr. F. T. Heuston, 15, St. Stephen's Green, Dublin, N., or any of the members of the medical staff.

CITY OF DUBLIN HOSPITAL.

This Hospital, in addition to the General, Medical, and Surgical Wards, contains special wards for Ophthalmic and Aural Cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements.

Appointments.—Clinical Assistants to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident Pupils are appointed, and Special Certificates awarded if merited. A House-Surgeon is appointed annually.

For detailed prospectus or further particulars apply to Mr. G. Jameson Johnston, F.R.C.S.I., 13, Lower Fitzwilliam Street, or at the hospital.

JERVIS STREET HOSPITAL, DUBLIN.

The hospital was founded in 1718, and was rebuilt in 1886.

Appointments.—Resident Pupils, Clinical Clerks, and Dressers are appointed every six months without additional fee, and are awarded special certificates if their duties have been satisfactorily performed. Six interns are appointed each half-year, and are provided with apartments, etc., free of expense. *Fees:* Winter Session, £8 8s.; summer, £5 5s.; winter and summer, £12 12s.

The hospital prospectus and any further information can be obtained from Dr. Thos. G. Stevens, Hon. Secretary, Medical Board.

MATER MISERICORDIÆ HOSPITAL.

This hospital, the largest in Dublin, at present contains 323 beds. Fifty beds are specially reserved for the reception of patients suffering from fever and other contagious diseases. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, Accidents, etc.

Appointments.—A House-Physician and Four House-Surgeons are appointed annually. They each hold office for one year. Sixteen Resident Pupils are elected from the most attentive of the class, each one to hold office for six months.

Entries are to be made with and fees paid to the Registrar, A. Chance, F.R.C.S., 90, Merrion Square, Dublin.

A prospectus containing in detail the arrangements for clinical instruction, prizes, etc., may be obtained from the Secretary of the Medical Board, Dr. Joseph Redmond, 8, Clare Street, Dublin.

DR. STEEVENS'S HOSPITAL.

The hospital contains 200 beds. The facilities for obtaining practical acquaintance with the treatment of injuries from accidents and other emergencies are unusually great in this institution, owing to its position, and there are always in the wards instructive cases of acute and chronic disease. The various forms of syphilis can be studied in the ward set apart for this disease, and there is also a separate Fever House.

A fee of £10 10s. is charged for each term of three months' residence. This fee includes that for Hospital Practice, and must be paid in advance. Resident pupils not requiring certificates in Hospital Practice are admitted at reduced rates.

There is accommodation for two Medical and six Surgical Resident Pupils, who are provided with separate furnished rooms, with coals and gas, also a common comfortable sitting-room for meals, which latter can be obtained at a reasonable rate.

Further particulars may be obtained from the Honorary Secretary, Dr. R. A. Hayes, 82, Merrion Square South, Dublin.

ST. VINCENT'S HOSPITAL.

This hospital contains 160 beds, and has attached to it a dispensary and three special dispensaries. The whole practice of the hospital is available for clinical instruction, which is carried on during the session in a systematic manner. Systematic courses are delivered in Medicine and Surgery. *Post-mortem* examinations are made in the pathological theatre, and frequent opportunities are given for the examination of morbid specimens. There is a museum in connection with this department. Instruction is also given daily in the dispensaries.

The hospital is in proximity to the principal colleges and medical schools. Its certificates are recognised by all the universities and licensing bodies in the United Kingdom. Two Resident Medical Officers and sixteen Resident Pupils are appointed annually from amongst the most deserving members of the class. The fees for clinical attendance are the same as at the other Dublin hospitals.

Arrangements have been made with the Fever Hospital, Cork Street, for providing senior students with clinical instruction in infective fevers, as required by the licensing bodies, without extra charge.

Further particulars can be obtained on application to the Honorary Secretary, Dr. McHugh, 25, Harcourt Street, Dublin.

Meath Hospital and Co. Dublin Infirmary.

This hospital now contains 160 beds available for clinical teaching. A new building for the isolated treatment of Fevers has recently been added. New Accident Wards and Operating Theatres have now been completed and all the modern requirements of Surgical Teaching have been provided. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom.

Twelve Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every session, and a House-Surgeon is elected annually.

A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Secretary of the Medical Board, R. Glasgow Patteson, F.R.C.S., 20, Lower Baggot Street, Dublin.

Rotunda Hospital.

Master—Dr. R. D. Purefoy.

This institution consists of two distinct hospitals—namely, the Lying-in Hospital, into which 1,700 labour cases are, on an average, admitted annually, and the Auxiliary Hospital, set apart for the reception and treatment of patients suffering from the various forms of uterine and ovarian disease; about 500 patients are received into this hospital during each year.

There is also in connection with the hospital a large extern maternity (1,838 patients were in the past year attended at their own homes), and a Dispensary for Diseases Peculiar to Women, which is open daily.

Pupils are admitted to the practice of all these departments. Clinical instruction in Midwifery and the Diseases of Women is given daily, and lectures are delivered regularly during the session on these subjects. Pupils can enter at any time.

The diploma from this hospital is granted to pupils on their passing an examination before the Master and Assistants after a period of six months' attendance on the practice of the hospital.

Accommodation is provided for a limited number of intern pupils.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.; three months, £6 6s.

CLINICAL HOSPITALS.[1]

Opportunities for clinical instruction and study are afforded by many hospitals which are not directly connected with any medical school, and the student will often find it to his advantage to resort to them, especially in the fifth year of the curriculum, as they offer great facilities for practical clinical experience. The following pages contain brief particulars as to the most important of these.[2]

A student may obtain clinical instruction at certain hospitals in London, and at some of them, both general and special, he can hold appointments.

General Hospitals: London.

Great Northern Central Hospital, Holloway Road, N.—This hospital is now recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 155 beds, of which 134 are at present occupied. The large rectangular and circular wards, each of which contains 20 beds, the operation theatre, out-patient general and special, and the pathological departments, have all been erected since 1887. They are specially designed with a view to offering the greatest facilities for clinical work, and the wards and out-patient department contain all the most recent and approved hygienic and antiseptic requirements for the proper care of the sick, and for the treatment of disease. Medical practitioners are cordially invited to see the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are four Resident Medical Officers, Senior and Junior House-Surgeons, Senior and Junior House-Physicians: also Pathologist and Registrar, Casualty Officer, and Anæsthetists. Full particulars of and rules for these appointments can be obtained from Peyton T. B. Beale, F.R.C.S., Hon. Sec. Medical Committee.

London Temperance Hospital.—The hospital contains 110 beds. The medical and surgical practice is open to students and practitioners. Appointments (vacancies for which are advertised in the medical journals): Registrar and Pathologist, Resident Medical Officer, and one Assistant Resident Medical Officer. For particulars as to hospital practice and classes apply at the hospital.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich: 225 beds. Branch Hospital, Royal Victoria and Albert Docks; 21 beds. Dispensary at 51, East India Dock Road, and at Gravesend. Opportunities are afforded to students and others who may be desirous of studying Practical Surgery and diseases incidental to Tropical Climates before entering the services or going abroad. A school for the study of the treatment of Tropical Diseases is being established in connection with the branch hospital in the Royal Victoria and Albert Docks, and students will be received on October 1st next. The hospital will contain 45 beds. Fees for Non-Resident Students, £2 12s. 6d. per week. Accommodation will shortly be provided for Resident Students. Further particulars can be obtained on application to the Secretary of the Seamen's Hospital Society, Greenwich.

West London Hospital, Hammersmith Road, W. (West London Post-graduate College).—The hospital contains 175 beds, of which 100 are now in occupation, and the remainder will be opened this summer. Some 1,700 in-patients are treated in the hospital during the year. The teaching in the hospital is especially devoted to the requirements of post-graduates. The Physicians and Surgeons attend on Mondays, Tuesdays, Thursdays, and Fridays, at 2.30 P.M., and instruction is given by the Assistant Physicians and Surgeons in the O.P. department daily, at 2.15 P.M. Operations are performed daily, except Saturdays, at 2.30 P.M. There are special departments for Diseases of the Eye, Skin, Ear, Throat and Nose, Women, and for Orthopædic Surgery. Post-Graduate lectures are delivered on Wednesday at 5 o'clock. The date of the commencement of each course is advertised in the medical journals. No Junior Students are admitted to the practice of the hospital, but since it is recognised by the Conjoint Board of the College of Physicians and Surgeons as an institution where six months of the fifth year of study may be passed, fifth year's students will be admitted as Clinical Clerks and Dressers. The course of Ophthalmology is recognised by the Army Medical Department. There is a pathological investigation laboratory attached to the hospital, at which instruction is given in practical pathology and elementary bacteriology. A large lecture room, together with reading and writing rooms, are provided for the use of post-graduates. The fee for the hospital practice, including Post-Graduate Lectures, is £3 3s. for three months, and £5 5s. for one year. For Post-Graduate Lectures alone, £1 1s. for each course. Full particulars of the next Post-Graduate Course and any other information about Post-Graduate teaching, can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

North-West London Hospital, Kentish Town Road.—The hospital, which was established in 1878, provides 53 beds. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. The special departments include: (1) Diseases of women; (2) diseases of the eye; (3) diseases of the skin; (4) dental. There are two resident officers; an honorarium at the rate of £50 per annum attaches to the senior post. Operation day Thursday, at 2.30 o'clock. Further particulars from J. Herbert Stowers, M.D., Honorary Secretary, Medical Committee, 128, Harley Street.

Children's Hospitals: London.

The Hospital for Sick Children, Great Ormond Street, W.C., contains 186 beds, divided into 88 medical, 73 surgical, and 25 for special and infectious cases, besides 52 beds at the Convalescent Branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may

[1] Additions or corrections intended for future editions should be forwarded to the Editor not later than the end of July in each year.

[2] For Clinical Hospitals in Dublin see page 550.

be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to six medical clerkships and six surgical clerkships, which are open to students at the hospital. Lectures or Demonstrations are given once or twice every week during both winter and summer sessions. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual, 3 guineas. Prospectuses and further information will be forwarded on application to the Secretary, Mr. Adrian Hope, at the hospital.

East London Hospital for Children, Shadwell.—The hospital contains 102 cots, one-third being devoted to infants. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognised by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. Gentlemen who wish to hold these appointments must have completed their fourth year of medical study. They are eligible for reappointment at the end of three months. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient department, and clerkships and dresserships can be obtained. A special course of clinical lectures is delivered by members of the staff on Friday, at 4 P.M., during the medical session, of which further particulars will be announced. Any additional information may be obtained on applying to Mr. H. Betham Robinson, M.S., F.R.C.S., 1, Upper Wimpole Street, W., or to Mr. Thomas Hayes, the Secretary at the hospital.

North-Eastern Hospital for Children, Hackney Road, Shoreditch, N.E.—The hospital contains 57 beds. Patients in 1897: In-patients, 772 (210 under 2 years of age), out-patients, 14,947 new cases, 54,352 attendances. Particulars of facilities for attending Medical and Surgical practice can be obtained on application to T. Glenton-Kerr, Secretary (City office), 27, Clement's Lane, E.C.

Lying-in Hospitals and Hospitals for Women.

Queen Charlotte's Lying-in Hospital and Midwifery Training School.—This hospital receives over 1,100 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing Obstetric complications and Operative Midwifery, on account of the very large number of primiparous cases—upwards of three-fourths of the total admissions. Clinical Instruction is given in the more important cases that present themselves. Certificates of attendance at this hospital are recognised by all Universities, Colleges, and Licensing Bodies. Pupil Midwives and Monthly Nurses are received and specially trained. *Fees.*—Medical Pupils, £8 8s. for four weeks, exclusive of board and lodging; Pupil Midwives, £26 5s. for three months; Pupil Nurses, £15 15s. for twelve weeks, inclusive of board and lodging. There is a residence for Medical Pupils quite close to, and in telephonic communication with the hospital. *Terms.* Partial board and residence, £1 1s. per week.

Hospital for Women, Soho Square.—There is an organised School for Gynæcology open to qualified medical men, and students after their fourth year. A limited number of Clinical Assistants to the Physicians and Surgeons in the Out-patient Department are appointed every two months. Clinical instruction is also given in the theatre and in the wards. *Fee* for the two months' course, £5 5s. Further information can be obtained by letter, addressed to the Dean at the hospital.

Ophthalmic Hospitals: London.

Royal London Ophthalmic Hospital, Moorfields.—The hospital, founded in 1804, and considerably enlarged in 1876, now contains 100 beds for in-patients, which were occupied during last year by 1,968 persons; in the same year the out-patients were 25,051, and the attendances 129,950. Operations are performed daily, from 10 A.M. until 1 P.M., and three surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees*, for six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given at the hospital periodically: (1) The Use of the Ophthalmoscope; (2) Errors of Refraction; (3) External Diseases of the Eye; (4) Surgical Anatomy of the Eye. Systematic instruction is also given in the Laboratory of the hospital on the Pathology of the Eye. Perpetual Students are admitted to the lectures free. Students of the hospital are eligible for the offices of House-Surgeon, or Clinical and Junior Assistants; Junior Assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital contains 30 beds, and an out-patient department. The practice is open to practitioners and students from 1 to 4 P.M. daily. Special instruction is given in the Diagnosis, Pathology, and Treatment of Eye Affections, including the Operations on the Eye, the Treatment of Errors of Refraction, and the Use of the Ophthalmoscope. *Fees:* Six months, £3 3s.; perpetual, £5 5s. For particulars apply to Mr. Adams Frost, 30, Cavendish Square, or at the hospital.

Royal Eye Hospital, Southwark.—This hospital contains 40 beds and 2 cots. The new patients in the out-patient department number over 16,000 yearly. Operations are performed and patients seen daily at 2 P.M. Qualified practitioners and students are admitted to the practice of the hospital. *Fees:* For three months, £2 2s.; for six months, £3 3s.; perpetual, £5 5s. Courses on Ophthalmoscopy, Refraction, and Diseases of the Eye, each £1 1s. (perpetual students one course free); Pathology, £1 1s., to cover cost of materials. Tutorial classes arranged to suit candidates for the various examinations. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon, and may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from Mrs. T. E. Cope, Secretary, at the hospital, Southwark, S.E.

Fever and Small-Pox Hospitals of the Metropolitan Asylums Board.

Students are admitted to study at the Fever Hospitals and the Small-Pox Hospital Ships of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and at the small-pox ships not less than two weeks, nor more than four. At the fever hospitals the student may attend three days, and must attend two days, a week; at the small-pox ships he resides, paying 12s. a week for board and lodging. He must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that he is sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made is granted to students who complete satisfactorily the courses of study. Qualified medical men are admitted under similar terms and conditions.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox ships, two weeks, £2 2s., and £1 1s. for the remaining period.

Other Special Hospitals: London.

Bethlem Royal Hospital. Two resident House Physicians are appointed twice a year for six months from recently qualified medical students. Students of certain hospitals are allowed to attend for clinical instruction. Qualified medical men are allowed to attend for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognised by the Conjoint Board for England as a place where under the present curriculum six months of the fifth year may be spent in clinical work. There are 321 beds in the two buildings constituting the hospital, and a special throat department. Pupils are admitted to the in-patient and out-patient practice of the hospital. Three courses of lectures and demonstrations will be given during the year. The next course will commence in October, 1898. Clinical assistants are appointed to the Assistant Physicians in the out-patient department, and clinical clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months. The fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £8 8s.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 164 beds. The practice of the hospital, both as regards in and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognised by the London University and London medical examining boards. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Subcommittee at the hospital.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury.—This hospital with the Finchley branch contains 200 beds and cots. The out-patient practice and lectures are free to students and practitioners. Lectures and demonstrations are given each year in three courses, a spring course, a summer course, and a winter course, and the physicians attend every Monday, Tuesday, Wednesday, and Friday. Surgical operations are performed by Mr. Horsley and Mr. Ballance on days and at hours of which notice will be posted at the Hospital. The hospital has been recognised by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. All communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary and General Director at the hospital.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for seventeen in-patients, and has an extensive out-patient department, which is open to all medical practitioners and students for the purpose of Clinical Demonstration and Instruction. Fee for three months' attendance, 3 guineas; for six months, 5 guineas. A course of lectures on the special diseases treated at this hospital is delivered during both the winter and summer months by members of the staff. The date of these lectures is announced in the medical journals prior to their commencement. They are free to qualified practitioners and advanced students of medicine. Operations on in-patients are performed on Tuesdays at 2.30 P.M., and on out-patients on Fridays at 2 P.M. Considerable attention is given to scientific work, particularly with regard to bacteriology of the diseases of the ear and respiratory passages, for which a special department has been inaugurated.

St. Peter's Hospital for Stone and Urinary Diseases (Henrietta Street, Covent Garden).—Qualified medical men and students are admitted free to the practice of this hospital, which contains 27 beds, and has a large out-patient attendance (32,717 for 1896). New cases, 4,799. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical lectures and demonstrations are given regularly by members of the staff.

Royal Ear Hospital, Frith Street, Soho Square, W.—Courses, of six weeks' duration, in Diseases of the Ear and Nose are given by the members of the staff throughout the teaching year. Students can attend one or more surgeons; the fee for each course (2 clinics a week) is one guinea. The teaching is of a practical character, and the number of students is limited. The next series of classes will commence on October 3rd. For information, address the Honorary Secretary of the Medical Board.

St. John's Hospital for Diseases of the Skin: Out-patient Department, 49, Leicester Square, W.C.: In-patient Department (with 50 Beds), 238, Uxbridge Road, W.—The Out-patient Practice is open free to the medical profession every day from 2 to 4 P.M., on presentation of their cards to the Medical Officer in attendance; also on Thursday mornings from 10.30 to noon. Chesterfield Courses and Clinical Demonstrations are given regularly. Fee for one course is a guinea. Composition fee for three courses, two guineas. Composition fee for second and third courses, a guinea and a half. Further particulars, and cards of admission, may be obtained from J. Dunlop Costine, Superintendent of the Hospital, 49, Leicester Square, W.C.

LIVERPOOL.

Royal Southern Hospital: Clinical School.—The hospital is situated within convenient distance of the School of Medicine, and contains 200 beds. There is a children's ward, and beds are appropriated to the diseases of women. Clinical teaching is given in the hospital, and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily, and clinical lectures are given each week. Tutorial classes are also held each day, at which the junior students are instructed in the methods of diagnosis, and the seniors are prepared for their final examinations. The pathological department has a good laboratory attached, in which the students receive practical instruction. *Appointments:* In addition to the usual clinical and *post-mortem* clerkships, the resident post of Ambulance Officer is awarded every three months to the student whom the Board may consider most suited to hold it. *Fees:* Perpetual, £26 5s.; one year, £10 10s.; six months, £7 7s.: three months, £4 4s. *Terms:* (Exclusive of fees for Hospital Practice), £15 15s. per quarter. The practice of the hospital is recognised by all examining bodies. Further particulars may be obtained from the Dean, Mr. Robert Jones, 11, Nelson Street, Liverpool.

Northern Hospital.—The hospital contains 155 beds. There is a special ward for the treatment of children. Clinical instruction is regularly given by the physicians and surgeons during the summer and winter sessions. Clinical clerkships and dresserships are open to all students without additional fee. The foundation stone of a new hospital of not less than 200 beds was laid during 1896, in which there will be every facility for Clinical Instruction and accommodation for Resident Pupils. *Fees:* Perpetual, £26 5s.; one year, £10 10s.; six months, £7 7s.; three months, £4 4s. Students can enter to the medical or surgical practice separately on payment of half the above fees. Practical Pharmacy, three months' fee, £2 2s. For further particulars apply to Dr. Bushby, Secretary of the Medical Board, 47, Rodney Street.

Eye and Ear Infirmary, Myrtle Street.—The infirmary contains 46 beds. Evening courses of Lectures on Refraction and Medical Ophthalmoscopy and Diseases of the Ear are delivered at this infirmary during the winter months by the honorary medical staff. Students of medicine of University College, Liverpool, have free access to the practice of the infirmary. Out-patient dresserships may be obtained on application to the Secretary of the Medical Board. The infirmary is recognised by the Conjoint Board as a teaching institution.

Liverpool Infirmary for Children.—The infirmary contains 88 beds, and has a large out-patient department. In-patients (1897), 1,196; new out-patients, 14,211; out-patient attendances, 53,603. The practice of the hospital is free to students, and clinical instruction is given by the Medical Staff. For further particulars apply to the Secretary of the Medical Board.

MANCHESTER.

The Manchester Children's Hospital, Pendlebury.—The hospital at Pendlebury contains 140 beds. The medical staff see out-patients daily at the Dispensary, Gartside Street, at 9.30 A.M., and visit the hospital at 10 A.M. and 5 P.M. The practice of the hospital and dispensary is free to students accompanying the medical staff.

Royal Eye Hospital.—The hospital contains 110 beds. The medical staff attend daily from 9.30 to 12. Clinical instruction is given to students. Further particulars can be obtained from the Secretary, Mr. W. S. Prophet.

St. Mary's Hospital for Diseases of Women and Children.—Fifty-five beds, including seven for the reception of lying-in cases, especially those attended with difficulty or danger. In the out-patient department students are taught the various

methods of examination and diagnosis, and the use of gynæcological apparatus; while, in the wards, they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynæcological operations. The large number of maternity cases attended annually (3,400) in connection with this hospital affords ample opportunity to students for receiving instruction in practical midwifery. Every student, on registering himself as a midwifery pupil, is supplied with a card, on which must be filled in the particulars of every labour at which he is present, each entry being attested by the initials of the medical officer or certified midwife in charge of the case. His first five cases must be attended under the immediate supervision of the House-Surgeon and Resident Obstetric Assistant Surgeon. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynæcology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynæcological practice of the hospital is free to third and fourth years' students. The fee for the midwifery practice, which includes attendance upon twenty cases of labour, as required by the examining bodies is £2 2s. Application must be made to the House-Surgeon at the hospital.

Manchester Clinical Hospital for Women and Children.—The hospital is situated in Cheetham Hill Road, near the centre of the town, and contains 70 beds. Out-patients are seen daily at 9.30, and the wards are visited at 9 A.M. Secretary, Mr. H. Teague, Barton Arcade, Manchester.

NEWCASTLE-ON-TYNE.

Hospital for Sick Children.—There are 60 beds in the hospital, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners.

SHEFFIELD.

Jessop Hospital for Diseases of Women.—The number of beds is 45; in the Diseases of Women Department 36, and in the Maternity Department 9. Students can attend the practice of the hospital, and be supplied with cases of midwifery. (See also p. 546).

BATH.

Royal United Hospital.—130 beds. The hospital is recognised by the Royal Colleges of Physicians, Surgeons, etc., and licensed for dissections. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month). Instruction in Practical Pharmacy for three months, £3 3s. For further particulars apply to the Secretary, Mr. J. M. Sheppard.

BIRMINGHAM.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—The practice of the hospital is open to medical students who have passed their anatomical and physiological examinations, and to registered medical practitioners. The fee for a course of three months is 5 guineas. Further particulars may be obtained from the Honorary Secretary at the hospital.

BRADFORD.

The Bradford Royal Infirmary.—The hospital contains 230 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a House-Surgeon and House-Physician. One year's attendance is recognised by the Examining Boards. *Fee*: Perpetual, £10 10s.

BRIGHTON.

Sussex County Hospital.—The hospital contains 190 beds, with separate wards for children and for cases requiring isolation; and the Out-Patient Department is attended by 700 or 800 patients weekly. It is recognised by the College of Surgeons and by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Out-pupils are admitted to the clinical teaching at the fee of £21 for two years. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 106 beds. Over 600 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time to the students of St. Augustine's Missionary College, on Practical Medicine by Dr. Gogarty, and on Surgery by Mr. T. W. Reid.

DERBY.

Derbyshire Royal Infirmary.—The infirmary has been rebuilt, and will accommodate 198 patients. Pupils are admitted to the practice of the infirmary at £10 10s. a year.

DEVONPORT.

Royal Albert Hospital.—The hospital contains 88 beds. The pupils of the medical staff are allowed to attend the hospital practice and to learn pharmacy on the payment of £2 2s. to the dispenser.

EDINBURGH.

Victoria Hospital for Consumption and Diseases of the Chest.—Excellent opportunity is afforded for the clinical study of Diseases of the Chest. Special Cliniques are arranged from time to time, both in the hospital itself, which contains 15 beds, and the extensive outdoor department, which has its headquarters in Lauriston Place, close to the University. The number in attendance at these cliniques is limited. The fee is £2 2s. for a six weeks' course. Application for places has to be made some time in advance to Dr. R. W. Philip, 4, Melville Crescent. Two medical appointments in connection with the hospital are vacant every six months: (1) Resident Physicianship; (2) Non-resident Physicianship for the outdoor department. The vacancies occur usually in April and October.

Royal Edinburgh Hospital for Sick Children.—The hospital, which has been recently built, stands in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary, contains 96 available beds, and is fitted up with modern improvements. There are some 700 in-patients, and 7,750 out-patients yearly. No cases of infectious disease are admitted. The out-patient department (medical and surgical) is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, at a fee of £2 2s., which qualify for the University and other Examinations, are given at various times throughout the year by the ordinary physicians and surgeon. These are Drs. James Carmichael, John Playfair, T. Burn Murdoch, and Mr. Harold J. Stiles. Students may enter at any time. A limited number of clinical clerkships are available, and four resident appointments are made yearly. The Registrar of the Hospital will supply particulars.

Edinburgh Eye, Ear, and Throat Infirmary.—Open daily at 6, Cambridge Street, at 1 P.M., for Eye Diseases; on Monday, Thursday, and Saturday at 12 for Ear Diseases; on Tuesday and Friday at 4 for Throat Diseases. There is a small infirmary of six beds in male and female wards. 2,000 patients are treated annually. Fee, for three months, £1 1s.

Edinburgh Royal Maternity and Simpson Memorial Hospital has 28 beds, about 310 in-patients, and 610 out-patients yearly. Cliniques are given by the physicians and their assistants. Fees for three months, £2 2s.

Edinburgh City Hospital for Infectious Diseases contains nearly 400 beds, a large number of which are available for teaching purposes. Short courses of instruction are given by the Visiting Physician during the winter and summer session at a fee of £2 2s.

Royal Asylum, Morningside, Edinburgh.—There is a clinical field of 500 beds, comprising all the wards except those for private patients. Students have the opportunity of personally

coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognise its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. The course extends through the last month of the winter session and the most of the following summer session, and the fee is £2 2s. Dr. Clouston is the Lecturer on Insanity for the University of Edinburgh.

Exeter.

Devon and Exeter Hospital.—The hospital contains 214 beds, including a special Children's Ward. There are a good Library, Museum, Dissecting, and *Post-mortem* Rooms. Attendance on the practice at this hospital qualifies for all the Examining Boards. Two Resident Pupils are received. Arrangements may be made by which students can attend Midwifery. For further particulars as to fees, etc., apply to the House-Surgeon.

West of England Eye Infirmary.—This infirmary contains 50 beds. Arrangements can be made for students of the Exeter Hospital to attend the practice of the Eye Infirmary.

Glasgow.

Royal Hospital for Sick Children.—This hospital, containing 80 beds for the non-infectious diseases of children, is open for clinical instruction, as is the dispensary, or out-patient department. Students, by paying the fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. Further particulars may be had by applying to the Resident Medical Officer, 45, Scott Street, Garnethill.

Glasgow Western Infirmary.—This hospital adjoins the University of Glasgow. Number of beds, 400. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. Specials wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-Patients' Department there are special clinics for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. All the courses of clinical instruction are recognised at the University of Glasgow and other Boards in the Kingdom. Nine resident assistants are appointed annually without fee from those who have completed their course. *Fees.*—For the hospital practice, including the various courses of clinical instruction in Medicine and Surgery, £21 in one payment, or in two equal instalments for the first and second years; for six months, £7 7s.; and for three months, £4 4s.

Glasgow Eye Infirmary.—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street. During the year 1894, 17,264 patients were treated, and 3,130 operations performed. Dispensaries open daily at 1 P.M. Operations performed on Wednesday and Saturday at 2 P.M. Fee for six months, 1 guinea.

Gloucester.

The General Infirmary and the Gloucestershire Eye Institution.—The hospital contains 156 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year, and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognised by the Royal College of Surgeons.

Lincoln.

County Hospital.—The hospital contains 125 beds, and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged by the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

Norwich.

Norfolk and Norwich Hospital.—The hospital contains 220 beds. Fees: £10 10s. for six months, £15 15s. for twelve months' Medical and Surgical Practice. Pupils (non-resident) are admitted.

Northampton.

General Infirmary.—There are 163 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given by the House-Surgeon in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually.

Nottingham.

General Hospital.—The hospital contains 193 beds. The Honorary Staff introduce pupils to witness the practice of the hospitals on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

Portsmouth.

Royal Portsmouth Hospital.—133 beds. One year's attendance recognised by the Examining Board. For particulars as to fees apply to the Secretary of the Committee of Management.

Southampton.

Royal South Hants Infirmary.—This institution was established in 1838. The out-patients' building was erected in 1887. The number of beds is 114. The in-patients number about 1,050 a year, the out-patients about 4,500. Large additions to buildings are in process of erection, including new isolation wards, new operation room, a new ward block, and a steam laundry. Internal alterations to the old building are in progress.

Staffordshire.

Staffordshire General Infirmary.—There are 75 beds. The pupils of medical practitioners resident in the county of Stafford are allowed to witness the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on the payment of £10 10s. with each pupil. The assistants of a medical practitioner, having gone through a complete curriculum, are admitted on the annual payment of £5 5s.

North Staffordshire Infirmary and Eye Hospital.—The infirmary has accommodation for 216 patients, including children's wards, eye department, and special ovarian wards. The attendance of pupils at this infirmary is recognised by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary, Mr. R. Hordley, Hartshill, Stoke-on-Trent.

Winchester.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the House-Surgeon may also receive a pupil on payment of £100 per annum. Pupils of qualified medical practitioners not belonging to the staff of the hospital may, with the consent of the Committee, become out-pupils, and see the practice of the hospital, under the direction of the House-Surgeon, on the payment of £10 10s. for one year, or £21 for unlimited attendance. Out-pupils are permitted daily (Sundays excepted) to read in the Library on payment of £1 1s.

Wolverhampton.

Wolverhampton and Staffordshire General Hospital.—The hospital contains 230 beds, and is a preparatory School of Medicine and Surgery. The pupils see the whole of the

practice of the Physicians and Surgeons, and are trained in clinical work by the medical and surgical staff. Attendance at this hospital is recognised by all the Examining Boards. *Fees:* Six months, £6 6s.; twelve months, £12 12s.; perpetual, £21.

INSTRUCTION IN PRELIMINARY SCIENCES.

The following institutions are recognised by the Conjoint Board in England for instruction in chemistry, including chemical physics, practical chemistry, and elementary biology. Certificates for biology will only be accepted from those institutions marked with an asterisk.

Aberystwyth.—*University College of Wales.
Bangor.—*University College of North Wales.
Bath.—*Kingswood School.
Bedford.—The Grammar School.
Birkenhead.—Holt Schools of Science and Art.
Bishop's Stortford.—Nonconformist Grammar School.
Bournemouth.—School of Science and Art.
Bradford.—*The Grammar School; *Bradford Technical College.
Brighton.—*Municipal School of Science and Art.
Bristol.—*University College; *Merchant Venturers' Technical College; Bristol Grammar School.
Bromyard.—The Grammar School.
Burslem.—Wedgewood Institute.
Bury.—Technical School.
Cardiff.—*University College of South Wales.
Cheltenham.—*Public School of Science and Technical School Clarence Street; Cheltenham College.
Chester.—*School of Science and Art, Grosvenor Museum.
Clifton, Bristol.—Clifton Laboratory.
Darlington.—Technical College.
Devonport.—Municipal Science, Art, and Technical Schools.
Dover.—Municipal Technical School.
Dulwich.—*Dulwich College.
Epsom.—*Epsom College.
Eton.—*Eton College.
Exeter.—*Technical and University Extension College.
Felsted.—Felsted School.
Gloucester.—Municipal Schools of Science, Art, and Technology.
Godalming.—*Charterhouse School.
Hanley.—Higher Grade Board School.
Huddersfield.—*Technical School.
Hull.—Royal Institution; Municipal Technical School.
Leicester.—*Wyggeston School.
Liverpool.—*School of Science, Technology, and Art.
London.—*The Department of Science and Art, South Kensington
" City of London School.
" *St. Paul's School, West Kensington.
" The Pharmaceutical Society.
" *Birkbeck Literary and Scientific Institute.
" *South-West Polytechnic Institute, Chelsea.
" *City of London College.
" Polytechnic Institute, Regent Street.
" *Polytechnic Institute, Battersea.
" *Northern Polytechnic Institute, Holloway.
" East London Technical College, People's Palace.
" Mercers' School, Holborn.
Maidstone.—Municipal Technical School.
Marlborough.—Marlborough College.
Middlesbrough.—Middlesbrough High School.
Newcastle-upon-Tyne.—*Durham College of Science; *Rutherford College.
Norwich.—Higher Grade Board School.
Nottingham.—*University College; The High School.
Plymouth.—*The Science, Art, and Technical School.
Portsmouth.—Higher Grade Board School; Grammar School; *Municipal Technical Institute.
Preston.—Harris Institute.
Reading.—*University Extension College.
Salford.—Royal Technical Institution.
Sheffield.—*Royal Grammar School.
Sherborne (Dorset).—Sherborne School.
Southampton.—*Hartley Institution.
Southport.—Victoria Science and Art School.
Stafford.—County Technical Schools.
Stoke-upon-Trent.—School of Science and Art.
Swansea.—Technical College.
Tonbridge.—*Tonbridge School.
Walthamstow.—Forest School.
Watford.—Watford Endowed Schools.
Wellington (Shropshire).—Wellington College.
Weston-super-Mare.—Grammar School.
Winchester.—Winchester College.
Wolverhampton.—*Science School in connection with the Free Library.
Woodford (Essex).—*Bancroft School.
Worcester.—Victoria Institute.

MEDICAL EDUCATION OF WOMEN.

QUALIFICATIONS FOR FEMALE PRACTITIONERS.

Degrees, Diplomas, and Schools.

The qualifying bodies in the United Kingdom which admit women as candidates for their degrees as diplomas are as follows: The University of London, the University of Durham, the University of Edinburgh, the University of Glasgow, the University of Aberdeen, the University of St. Andrews, and the Royal University of Ireland, the Society of Apothecaries, London, and the Conjoint Board of the Royal College of Physicians and Surgeons in Scotland and Ireland. Women candidates for qualification are subject to the regulations of the General Medical Council as to education and examinations in precisely the same manner as men.

Women medical students can obtain a complete medical education by becoming students of the London School of Medicine for Women, the Edinburgh School of Medicine for Women (but see page 576), the Medical College for Women, Edinburgh; Queen Margaret College, Glasgow, and the Schools of Surgery of the Royal College of Surgeons in Ireland. The three first-named schools receive women only. In the Schools of Surgery of the Royal College of Surgeons in Ireland special rooms are set apart for lady students. They can also enter at the Universities of Edinburgh (see page 548), Aberdeen, and St. Andrews, and at the University of Durham, the Medical and Science Faculties of which are located in Newcastle-upon-Tyne, the former in the College of Medicine, and the latter in the College of Science, where women students can receive instruction in the various subjects of these two Faculties.

For the University of Glasgow a complete medical education is given at Queen Margaret College, which has been transferred or affiliated to that University. At the University of St. Andrews women are admitted to the classes of the first two Anni Medici there held, namely, those in Botany, Zoology, Physics, Chemistry, Anatomy and Materia Medica, and Physiology. The classes available for women, University College, Dundee, are stated at page 549. The rest of the course must be taken elsewhere. It is to be added that it is expected that all the chairs necessary to complete the full medical curriculum will shortly be founded at Dundee. The College is now part of St. Andrews University. All the classes will be open to women, and will qualify for the St. Andrews degree, and, under the usual restrictions, for those of the other Scottish Universities.

Some further particulars as to the London School of Medicine for Women will be found on page 543, but intending students should write to the Secretary of the School, 30, Handel Street, Brunswick Square, London, W.C. The prospectus of this School contains an article of advice to students, which will be found very useful.

Before entering upon the career of a medical student a woman should consider well whether she is in a position to meet the serious calls which the career will make upon pocket and health. She must be prepared to spend at least five full years at a medical school (after passing a preliminary examination in Arts), and must remember that during this period she will find her time fully occupied, and should not attempt—in fact, if she does her duty, should have no time—to earn a penny. Further, the work, which is severe and prolonged, and of necessity sometimes performed under somewhat unhealthy conditions, makes a serious call upon any constitution not naturally robust.

PSYCHOLOGICAL MEDICINE.

The facilities for the study of mental diseases are now vastly increased, and in addition to the regular lectures given in the different medical schools, post-graduate lectures are also given in the Bethlem Royal Hospital. The London County Council is proposing to throw open their large asylums, and contemplate applying to the Conjoint Medical Boards for the recognition of all of them as teaching hospitals. Dr. Savage at Guy's, and Dr. Rayner at St. Thomas's, have special classes, with clinical instruction, at Bethlem Royal Hospital; Professor E. W. White lectures at King's College, and gives clinical instruction at the City of London Asylum, near Dartford; Dr. Percy Smith is the Lecturer at Charing Cross, and gives clinical instruction at Bethlem; Dr. Claye Shaw at St. Bartholomew's; Dr. Mickle at Middlesex and University College; Dr. Hyslop at St. Mary's; Dr. C. Mercier at Westminster; Dr. J. K. Will at the London Hospital.

In the provinces, also, each medical school has a Lecturer

on Psychological Medicine, who gives clinical instruction in a neighbouring asylum; and in Scotland and Ireland similar arrangements exist.

The Royal University in Ireland grants a diploma for proficiency in the treatment of mental diseases under the following conditions:

The diploma is conferred only on Graduates in Medicine of the University.

Candidates must give notice, in writing, to the Secretaries of their intention to present themselves, and must pay the prescribed fee of £2 at least one month previous to the examination.

Candidates who satisfy the examiners will be required to pay a further fee of £3 before the diploma is conferred.

The subjects for this examination are those required for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

The Medico-Psychological Association of Great Britain and Ireland also grants a Certificate in Psychological Medicine after a course of training, according to the rules of the Association, to candidates registered under the Medical Act. The examinations are held in London, Scotland, and Ireland twice a year. The fee for the examination is £3 3s. Full particulars may be obtained from the General Secretary, Dr. Rt. Jones, Claybury Asylum, Woodfordbridge, Essex. The Medico-Psychological Association further gives a Bronze Medal and £10 10s. to Asylum Assistant Medical Officers for the best dissertation on any clinical or pathological subject relating to insanity, and also the Gaskell Prize, value £30, and in 1898 it is expected the Hack Tuke Memorial Prize will be awarded for an essay on some subject connected with insanity.

POST-GRADUATION STUDY.*

London.

The Post-graduate Union of Metropolitan Hospitals.—For one who wishes to engage seriously in post-graduate medical study, it is a good plan to attach himself to one or more hospitals, and for this purpose the new scheme of the Metropolitan Hospitals will be found most satisfactory. A number of cards have already been issued, and it is anticipated that as the plan becomes more widely known much more advantage will be taken of it. It is carefully safeguarded in that no certificates will be issued under it which will secure admission to examinations. The reasonable price of the tickets, compared with the enormous facilities which they give, is bound to attract in the future large numbers of medical graduates. The cards will be issued on personal application between the hours of 1.30 and 3 (except on Saturdays) at the office of the Metropolitan Schools of Medicine, West Wing, Examination Hall, Victoria Embankment, W.C. Evidence of qualification must be furnished before a card can be issued.

London Post-graduate Course.—The arrangements of the London Post-graduate Course are, for the present, the following: Three full courses are given every year, besides short courses on public health subjects during each vacation. The courses have been found very useful, and they have been made to cover most of the specialities. They are arranged quite independently of the ordinary students, and may be recommended to those who do not care to take their chance of seeing or of not seeing during the ordinary rounds of the clinical visit. At present the lectures are delivered in connection with the following hospitals and institutions: The Hospital for Diseases of the Skin, Blackfriars; Bethlem Royal Hospital for Lunatics; the London Throat Hospital, Great Portland Street; the Bacteriological Laboratory, King's College; the Central London Sick Asylum, Cleveland Street; the Parkes Museum; and the Institute of Preventive Medicine, Grosvenor Road, S.W. The teaching is, as far as possible, of a practical character, including demonstrations of selected cases and lectures on the diagnosis and treatment of the diseases for the study of which the above-mentioned hospitals and institutions afford facilities. Instruction is given in the use of the microscope, ophthalmoscope, laryngoscope, and aural and nasal specula. The short courses which are given during the vacations are really more useful to many, as they are given daily, and fairly run through their subjects so far as can be done in the time. The subjects usually taken are bacteriology, pathology, and hygiene, and the classes are held during the fortnight preceding the commencement of the spring, summer, and winter terms. Further particulars may be obtained from Dr. Fletcher Little, 32, Harley Street, W.

Proposed Medical Graduates College.—It must, however, be noted that the directors of the London Post-graduate Course hope by the end of the year to merge it in the Medical Graduates College, which it is proposed to establish in Chenies Street. The central feature of this will be public consultations on cases of exceptional clinical interest; it is hoped that many leading London medical men will take part in these. Laboratories are also intended to be constructed, in which the newest chemical and pathological processes applicable to disease will be demonstrated. It is not yet certain whether systematic series of lectures will be given, but short courses on special subjects will be arranged. Dr. Fletcher Little is also one of the secretaries of this proposed institution.

Pathological Chemistry; University College.—At University College, London, Dr. Vaughan Harley, Professor of Pathological Chemistry, holds classes in Pathological Chemistry intended for the advantage of qualified practitioners and advanced students. Each course is practical, and includes demonstrations and lectures on the principal points brought out by analysis in the diagnosis and prognosis of disease. Each member of the class is given the actual material to analyse, and from results obtained is required to make the diagnosis, which is corrected if necessary. Thus each man not only does the ordinary class analysis, but he learns to apply his results to practice. Each course includes the analysis of the saliva, stomach contents, fæces, urine, calculi, and pathological fluids, and in the lectures the chemical changes which occur in disease are fully discussed, and as far as possible explained. The laboratory is open from 9 A.M. to 5 P.M., so that the practical work can be done at the hours most convenient to those attending the class. The next class will commence in October at a date to be fixed by mutual arrangement. The fee for the class, including apparatus and material, is five guineas. A department is also fitted up for research work, and is open to all researchers at the fee of one guinea a month. Most excellent original research work has been and is being done in the laboratory, and in many instances the workers have received grants from the Scientific Grants Committee of the British Medical Association.

Clinical Lectures and Demonstrations (Charing Cross Hospital).—At Charing Cross Hospital special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given by members of the staff throughout the year. The lectures for the year are arranged in three courses, each consisting of ten meetings, and lasting ten weeks. Two of these courses are held during the winter, and one during the summer. The class meets on each Thursday afternoon at 4 P.M. in the Board Room of the Hospital, and proceeds thence to the wards or other department in which the demonstration may be held. The fee at present charged for each course of ten lectures is £1 1s. The first of the two winter courses of the ensuing academical year will commence on October 15th next, and will be conducted by the following members of the medical and surgical staff: Drs. Green, Bruce, Willcocks, Murray, Mott, Routh, Galloway, and Messrs. Boyd, Waterhouse, and Gibbs. Practitioners wishing to attend can receive any further information as to the dates and subjects by communicating with the Honorary Secretary of the Post-Graduate Class, Dr. Willcocks, at the Hospital.

Bacteriology and Public Health.—At the Jenner Institute of Preventive Medicine courses of instruction are given and laboratory facilities are provided. In the Bacteriological department three courses are given: (1) The General Course, dealing with Bacteriology in relation to Medicine and Pathology generally; (2) in relation to Hygiene, intended for health officers and students of hygiene; and (3) Biological Chemistry for advanced students. Members of the staff afford every facility to those wishing to prosecute original researches. In the Hygiene department a practical laboratory course is given, but the laboratory is primarily intended for furthering research work in the field of Preventive Medicine. In the Clinical Investigation department medical men can obtain practical instruction in Bacteriological and Chemical methods employed in the diagnosis of disease. The Institute contains

* See also page 524.

a Water Laboratory, fully equipped for bacteriological and chemical examination of samples of water, and instruction is also given in Photomicrography by the photographer to the Bacteriological department. The Institute is now housed in a new and commodious building, and affords special opportunities for post-graduate study, all its students being qualfied men. The session begins on Tuesday, October 4th, and further particulars can be obtained from the Director at the Institute, Chelsea Bridge, S.W.

Clinical Museum.—A very interesting place for strangers to visit, and one where many post-graduate students come together, is Mr. Hutchinson's museum, close to Portland Road Station on the Metropolitan Railway. During the session, on Wednesday afternoons, Mr. Hutchinson gives clinical demonstrations, which are very interesting and well worth attending by the post-graduate students. There is no fee.

EDINBURGH.

At Edinburgh there are permanent post-graduate courses, some of them running more or less continuously throughout the year, among which may be noted: (1) Demonstrations on the Anatomy and Pathology of the Central Nervous System by Dr. Alexander Bruce; a six weeks' course (twelve meetings) at Surgeons' Hall, fee £2 2s. (2) Dermatology, by Dr. W. Allan Jamieson and Dr. Norman Walker, twelve clinical and six lantern and microscopic demonstrations, fee £3 3s. Also at the Skin Dispensary, Drummond Street, by Dr. Stewart Stirling, fee £1 1s. (3) Chest Diseases, by Dr. R. W. Philip, at the Victoria Hospital and Dispensary; short course, meeting twice weekly; fee £2 2s.; hours 4 to 5.30. (4) Ophthalmology, at the Royal Infirmary, by the ophthalmic surgeons, at 11 A.M. (5) Ophthalmoscopy, by Dr. George Mackay, at the Eye Dispensary, Chambers Street; limited class of twelve, fee £2 2s., at the Eye, Ear, and Throat Infirmary, Cambridge Street, by Dr. Sym; limited class of ten, fee £2 2s. (6) Diseases of Ear, Nose, and Throat, and Laryngology, at the Royal Infirmary, by Dr. P. McBride, assisted by Dr. R. Mackenzie Johnston and Dr. Logan Turner; at the Eye, Ear, and Throat Infirmary, Cambridge Street, by Dr. Hunter Mackenzie; limited classes of eight, meeting four afternoons a week, fee £2 2s. (7) Diseases of Children, by Dr. John Thomson, at the Out-patient Department of the Children's Hospital, and at the New Town Dispensary; the ordinary physicians and surgeon also give Clinical Courses at the Children's Hospital; a short course of Minor Surgery in Children is given at the Out-patient Department twice a week, by Mr. Stiles, fee £2 2s. (8) Pathological Bacteriology; occasional courses are given by Dr. Robert Muir, the University Lecturer, fee £3 3s., with an entrance fee of 5s.; and a three weeks' course at Surgeons' Hall by Dr. Shennan, fee £2 2s. (9) Gynæcology; three weeks' course (four days weekly) by Dr. Brewis, fee £2 2s. (10) Clinical Surgery; three weeks' course at Leith Hospital, by Mr. Miles, fee £2 2s.

In addition to these more or less permanent courses, arrangements have been made for a special series of courses in the undermentioned subjects, to commence simultaneously on or about September 27th next; Anatomy (Medical and Surgical); Bacteriology; Central Nervous System (Anatomy and Pathology of); Dermatology; Demonstrations of Modern Gastric Methods; Diseases of the Chest, Children, Ear, Throat and Nose; Electricity in Medicine; Gynæcology; Infectious Diseases; Ophthalmology; Ophthalmoscopy; Pathology; Practical Sanitation; Surgery, Clinical, Practical and Operative, and Minor Surgery in Children.

On application to the Honorary Secretary, Post-Graduate Courses, Surgeons' Hall, a full syllabus will be forwarded.

CAMBRIDGE.

Special arrangements for advanced study and research have been made recently in the University of Cambridge. Graduates of other Universities may be admitted to the University of Cambridge as advanced students. They may for one or more terms pursue courses of advanced study or research, literary or scientific, under the direction of the University teachers, and may become members of certain colleges without fulfilling the same conditions as are imposed on junior students, their collegiate status being assimilated to that of students who have taken their first degree in the University. Advanced students may, if they wish, obtain a certificate certifying to their proficiency in research, or may proceed to the degree of B.A. or LL.B. under certain conditions. In their third or some subsequent term of residence they may become candidates for certain parts of the Tripos (Honour) Examinations, among others the Natural Science Tripos, Parts I and II. Having satisfied the examiners, and after residence of six terms in all, they are admissible to the degree of B.A. or LL.B. The Certificate of Research may be obtained after residing for three terms (one academical year), and when the student has completed six terms' residence he is admissible to the degree of B.A. The facilities for advanced study and research offered by the University include the University Library and the Philosophical Library, while each of the seventeen Colleges possesses its own library, as do also the respective Natural Science departments. The department of Zoology and Comparative Anatomy includes a museum of zoology and a laboratory for animal morphology and elementary biology. The department of Botany contains a comprehensive herbarium and a museum of specimens illustrating the morphology and life-history of plants. There are also laboratories and class rooms fitted for experimental work; while the Botanic Garden contains a large and varied collection, with numerous plant houses and a botanic laboratory. The department of Human Anatomy contains a spacious dissecting room, a museum, osteological room, and a number of rooms for special study and research in anatomy, histology, and physical anthropology; upon the last-named subject a special course of lectures is given. The department of Physiology contains a number of rooms provided with electric light and motive power, and with abundant and complete appliances of all kinds for practical work. Special rooms are set apart for histology, chemical physiology, and experimental inquiries, including psycho-physical researches. The department of Pathology is well equipped for the study of the processes and results of disease and for bacteriological teaching and investigation. There is also a museum containing a fine collection of specimens illustrative of morbid anatomy. The surgical portion is of special importance, and contains a large number of interesting specimens presented by the late Sir George Humphry. The Pharmacological Museum and laboratory, at present lodged in Downing College, possesses a complete collection of the official materia medica and ample appliances for experimental and chemical research on the nature and uses of medicinal substances. Lectures on clinical medicine and surgery are given at Addenbrooke's Hospital by the staff. The department of Chemistry is very completely furnished, and several of the Colleges also possess chemical laboratories. Certain scholarships are open, including the John Lucas Walker Studentship for Pathology, the Balfour Studentship for Animal Morphology, and the Coutts Trotter Studentship (at Trinity College) for Physiology and Experimental Physics. Special arrangements for advanced students have been made already by King's College, Christ's College, St. John's College, Trinity College, and Emmanuel College. Further particulars may be obtained from the Registry of the University Registry, Cambridge.[1]

SPECIAL DEPARTMENTS.

At many of the special hospitals in London and at some of the general hospitals also, such as the West London, courses are given by the members of the staff specially arranged for post-graduate students. Some particulars as to the hospitals having such arrangements will be found under the head of Clinical Hospitals [pp. 551 *et seq.*] Details are usually published in the advertisement columns of the BRITISH MEDICAL JOURNAL from time to time. The facilities which exist for the practical study of diseases of throat and ear are considerable. Special arrangements for the study of laryngology exist in London at St. Thomas's, Guy's, St. Mary's, Charing Cross, and the West London Hospital; for otology at the London Hospital and the Royal Ear Hospital; and for both subjects at the Golden Square Hospital, the London Throat Hospital, and the Central London Throat Hospital. In connection with Owens College, Manchester, a post-graduate

[1] A *Guide for Advanced Students*, compiled by Dr. Donald MacAlister, tutor of St. John's College, and University Lecturer in Medicine, has been printed by the Cambridge University Press, and can be obtained (price 6d.) from any bookseller.

course is held at the Ear Institute in June. Anderson's College, Glasgow, has special courses for ear diseases in November and May, and at the Aberdeen General Dispensary there is a course which extends from April to June. At many other hospitals clinical practice can be attended, and full particulars will be furnished by the Secretaries.[2]

At many of these special hospitals, also, a certain number of appointments as clinical clerks or clinical assistants are available. No doubt these posts are mostly filled by senior students or newly-qualified men, but as the special hospitals are not connected with schools, there is nothing to prevent senior men taking them up. The field is very large, and the opportunity for gaining technical knowledge is great, as the work is done in connection with, and under the eye of, a member of the staff. At the children's hospitals, both at Great Ormond Street and at Shadwell, and also at the Evelina Hospital, appointments of this kind can be obtained.

DEGREES FOR PRACTITIONERS.

Since it was formerly the almost universal custom for medical students educated in London not to seek a University degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in Medicine. The want of a degree and of the title of "Doctor" is often a subject of regret in after-life, and certain universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restrictions as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

University of London.

Registered medical practitioners of not less than three years' standing, and not less than 25 years of age, who shall pass, or have already passed, the Matriculation and Preliminary Scientific Examinations, may proceed to the Intermediate and M.B. Examinations without the intervals prescribed by the Regulations, on producing certificates that they have gone through the required course of training at any time previously (see p. 528).

University of Durham.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. If he have not passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in classics and mathematics; if otherwise, he is required to translate into English passages from Cæsar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books); he is afforded an opportunity of showing proficiency in Moral Philosophy, Greek, or some modern language, but no extra marks are awarded for these subjects.

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases Peculiar to Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically, in the Royal Infirmary, Newcastle, and *viva voce*. The classical portion of the examination may be taken separately from the professional, on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India may produce evidence from an Indian university that they have passed within one year an examination in Latin and in Greek, Persian, or Sanskrit.

Fees.—The inclusive fee is fifty guineas; if a candidate fail to pass twenty guineas are retained, but if he present himself again forty guineas only are required.

Dates, etc.—The examinations are held twice a year, at the end of April and of September. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

University of Brussels.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally-qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the mannequin, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is *viva voce*, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, February, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 P.M. at latest. The whole examination (First, Second, and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

Fees.—Candidates are required to leave their diplomas with the Registrar of the University prior to the examination. The fees are: for inscription of name, £8 12s.; for examination, £13; for legalisation of diploma, 8s.; total, £22. If a candidate fail in the first part of the examination the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise matriculation fee must be renewed, that is, fee for inscription of name.

Further particulars may be obtained from Dr. Major Greenwood, Hon. Sec. Brussels Medical Graduates' Association, 243, Hackney Road, London, N.E. An article containing a full description of everything concerning the degree was published in the British Medical Journal on September 15th, 1888.

N.B.—This degree, if obtained subsequent to June, 1886, is not registrable.

PUBLIC HEALTH OR STATE MEDICINE.

A medical officer of health of any county or of any single or combined district, with a population at its last census of 50,000 or more, or of any metropolitan district, or the deputy of any such officer, must be legally qualified for the practice of Medicine, Surgery, and Midwifery, and also either be registered in the *Medical Register* as the holder of a diploma in Sanitary Science, Public Health, or State Medicine under Section xxi of the Medical Act, 1866, or have been, during three consecutive years preceding the year 1892, a medical officer of a district or combination of districts in London or

[2] *The Journal of Laryngology*, May, 1896, published a full tabular statement, giving the hours of attendance, fees, etc. The fees range from 1 to to 5 guineas.

elsewhere with a population, according to the last published census, of not less than 20,000, or have, before the passing of the Local Government Act, 1888, been for not less than three years a medical officer or inspector of the Local Government Board.

Certain regulations for candidates for diplomas in Public Health have been laid down by the General Medical Council. These regulations are designed to ensure "the possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the Public Health." The regulations have recently been revised, and the Council in forming its judgment on the conditions of Education and examination, now expects the following rules to have been observed.

Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months a course of practical instruction in a laboratory.

(1) A period of not less than twelve months shall elapse between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery, and the admission of the candidate to any examination or any part thereof for a Diploma in Sanitary Science, Public Health, or State Medicine.

(2) Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attending during six months' practical instruction in a laboratory or laboratories, British or foreign, approved of by the body granting the diploma, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught.

(3) Every candidate shall have produced evidence that, during a period of six months after obtaining a registrable qualification, he has practically studied the duties of outdoor sanitary work, (*a*) in England and Wales, either under the medical officer of health of a county or of a single sanitary district having at the date of the last census a population of not less than 50,000 or the medical officer of health of a combination of two or more sanitary districts having collectively at the date of the last census a population of not less than 35,000; or (*b*) in Scotland or Ireland under the medical officer of health of a county or of one or more sanitary districts having at the date of the last census a population of not less than 30,000; or (*c*) under a medical officer of health who is a teacher in the Department of Public Health of a recognised medical school. The certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of the county or district consents to the assistant officer giving such instruction.

*** Any candidate who shall produce evidence that he has himself held an appointment of medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation.

(4) Every candidate shall have produced evidence that he has attended the clinical practice of a hospital for infectious diseases recognised by one of the licensing bodies; provided that such a course of instruction may have been taken as part of the curriculum for his registrable qualification in Medicine, Surgery, and Midwifery.

(5) The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

*** The rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1890.

The examinations for diplomas in Public Health, granted by the various Universities and Medical Corporations, and the courses of study required are adapted to meet the regulations of the General Medical Council, and, as a rule, to fulfil the recommendations issued by that body from time to time. It would be unnecessary to recapitulate in every case details of this nature.

Books.

It is impossible to indicate all the books which are best adapted for the perusal of candidates for the various examinations, but the following list of books will be found useful:—

Whitelegge's *Hygiene and Public Health* (London: Cassell and Co., 7s. 6d.); [illegible] *Hygiene and Public Health* (London: H. K. Lewis, 10s. 6d.); W[illegible] *Handbook of Hygiene* (London: J. A. Churchill, 12s. 6d.); *The Theory and Practice of Hygiene*, by Notter and Firth (London: J. and A. Churchill, 24s.); Stevenson's and Murphy's *Treatise on Hygiene and Public Health*, 3 vols., for reference on special subjects (London: J. A. Churchill, 30s.); Wynter [illegible] *Manual of Public Health* (London: Macmillan and Co., 1890, 17s.); Smith's *Laboratory Textbook of Public Health* (London: Henry Renshaw, 1896, 21s.); Kenwood's *Public Health Laboratory Work* (London: H. K. Lewis, 10s. 6d.); Wanklyn's *Water, Air, Milk, and Bread Analysis*, four separate manuals (London: Kegan Paul, Trench, Trübner and Co., 5s. each); Fox's *Sanitary Examination of Water, Air and Food* (London: J. and A. Churchill, 1885, 12s. 6d.); Woodhead's *Bacteria and their Products* (London: [illegible] and Co., 4s. 6d.); Kanthack and Drysdale's *Practical Bacteriology* [illegible] and Co., 4s. 6d.); Muir and Ritchie's *Manual of Bacteriology* (London: Young J. Pentland, 12s. 6d.); Klein's *Micro-organisms and Disease* (London: Macmillan and Co., 1896, 10s. 6d.); Crookshank's *Manual of Bacteriology* (London: H. K. Lewis, 1896, 21s.); Deschanel's *Treatise on the Principles of Physics* (London: Macmillan and Co., 1896, 4s. 6d.); Balfour Stewart's *Elementary Physics* (Oxford: Clarendon Press, 7s. 6d.); Newsholme's *Vital Statistics* (London: Swan Sonnenschein and Co., 1889, 7s. 6d.); McVail's *Vaccination Vindicated* (London: Cassell and Co., 1887, 5s.); J. W. Moore's *Meteorology: Practical and Applied* (Rebman and Co., 8s.); Scott's *Meteorology* (London: Kegan Paul, Trench, Trübner and Co.); Statton's *Public Health Acts* (London: Knight and Co., 7s. 6d.); Knight's *Annotated Model Bylaws* (London: Knight and Co., 12s.); Corfield's *Dwelling Houses: their Sanitary Construction and Arrangements* (London: H. K. Lewis, 1894, 4s. 6d.).

It may also be desirable to consult the text of the *Canal Boats Act*, the *Factory Act*, the *Food and Drugs Acts*, etc. (London: Eyre and Spottiswoode); and some more popular books dealing with sanitation might be of service to those who have no practical experience in health matters, such as Teale's *Dangers to Health* (10s., Churchill); Cameron's *Is My House Healthy?* (1s., Simpkin and Marshall); Wilson's *Cottage Sanitation* (3d., Royal Agricultural Society), are freely illustrated, the first by excellent lithographs.

University of Cambridge.

A diploma in Public Health is granted by the University, and any person whose name is on the *Medical Register* may apply to be examined, provided that he can show that he has complied with the regulations laid down by the General Medical Council.

The examination, which is usually held twice a year, during parts of two successive weeks and beginning on the first Tuesday in April and October respectively and three or four following days, is divided into two parts, both of which are partly oral and practical, and partly in writing. One day at least will be devoted to practical laboratory work, and one day to oral and practical examination in and reporting on subjects connected with outdoor sanitary work. They may both be passed together. A fee of £6 6s. must be paid before admission to either part.

The *syllabus* will be entirely revised after the examination in October 1898, but the new requirements are not yet available.

Applications for further information should be addressed to Dr. Anningson, Walt-ham-sal, Cambridge, who will also supply particulars as to the course of instruction provided in the University.

A list of Colleges and Schools of Medicine at which the courses of laboratory instruction have, for the purpose of this examination, been already approved by the syndicate, can be obtained on application.

Application for admission to the examination must be made to J. W. Clark, M.A., Registrary, University Registry, Cambridge, not later than March 13th or September 17th, and must be accompanied by the proper fee and certificates.

University of Oxford.

A Diploma in Public Health is granted after an examination which will be held in Michaelmas Term, 1898. The examination will begin November 22nd, and will be conducted in two divisions: (1) First Division: The application of Chemistry and Physics to General Hygiene. (2) Second Division: (*a*) General Pathology, with special relation to Infectious Diseases; (*b*) Laws relating to Public Health; (*c*) Sanitary Engineering; (*d*) Vital Statistics. It will be permissible to take the two divisions at the same or at different examinations. Candidates must comply with the regulations of the General Medical Council (see p. 525). The First Division may be passed at any time after registration, provided that the candidate has spent six months studying in a public health laboratory approved by the Board of the Faculty of Medicine. The Second Division may not be taken until one year after registration, and candidates must have studied for six months under a Medical Officer of Health of a district containing at least 50,000 inhabitants. Fee for each Division, £5. Names to be sent to the Secretary to the Boards of Faculties not later than November 8th.

University of London.

The University does not grant a Diploma in Public Health, but Sanitary Science is made a branch of the M.D. Examination, which is open to persons holding the degree of M.B.Lond. Candidates must in addition have complied with the regulations laid down by the General Medical Council.

Victoria University.

A Diploma in Public Health is granted after an examination, which begins about the middle of July in each year. The candidate must fulfil the requirements laid down by the General Medical Council. The examination is divided into two parts: the subjects so nearly coincide with those of the University of Cambridge that it is unnecessary to reproduce them. Special mention is, however, made of the use of

meteorological instruments, of the diseases of animals in relation to the health of man, and of "Sanitary Reporting," every candidate being expected to visit and report upon the sanitary condition of some actual locality assigned to him by the examiners.

Each part of the examination occupies two days, and the fee for each part is £5 5s. Application for admission to the examination must be made to the Registrar of the Victoria University, Manchester, not later than July 1st, and the fee must be paid on or before July 1st.

Conjoint Board in England.

The diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England is granted to persons whose names are on the *Medical Register*. The examination is held in two parts, and Part I may be passed before fulfilling Clauses 1 and 2 under Part II. The subjects of the two parts of the examination are as follows:

Part I.—1. Physics, in their application to Health, with reference to—(*a*) Warming and Ventilation; (*b*) Water Supply, Sewerage, and Drainage; (*c*) Sanitary Construction. 2. Meteorology in relation to Health. 3. Chemistry with special reference to Food, Air, Soil, and Water. 4. Microscopical Examinations as applied to Air, Food, and Water. 5. Bacteriology, including the Cultivation and Recognition of Micro-organisms. 6. Geology and Soil in their Relation to Drainage and Water Supply.

Part II.—1. The origin, development, and prevention of Disease with reference to: (*a*) Special Pathology of Epidemic and Endemic Diseases, including the Natural History of the Specific Organisms of Diseases; (*b*) Influence of Climate, Season, and Soil; (*c*) Effects of Unwholesome Air, Water, and Diet; (*d*) Diseases of Animals in relation to the Health of Man; (*e*) Influence of Occupation and Lodgment; (*f*) Isolation, Quarantine, Disinfection, Vaccination. 2. Sanitary Work and Administration with reference to: (*a*) Health Requirements of Houses, Villages, and Towns; (*b*) the Sanitary Regulations of Households, Establishments, and Occupations, including the Construction and Arrangement of Hospitals; (*c*) the Prevention and Control of Epidemic and Endermic Diseases. 3. Statistics in Relation to Health. 4. Statutes, Orders, and By-laws relating to Public Health. 5. Duties of Sanitary Authorities and their Officers. (The candidates may be required to visit and report on some premises selected by the examiners.)

A candidate will be admissible to examination in Part I on producing evidence: (1) Of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months. (2) Of having attended, after obtaining such registrable qualification, practical instruction in a Laboratory recognised by the Examining Board in England during a period of six months.

1. Physics. Gases: examination of their physical properties; their weight and bulk under varying alterations of pressure and temperature, and the movements thereby set up; diffusion, with especial reference to warming and ventilation. Anemometers, and their use. Liquids: their physical properties, their pressure, and flow through tubes and conduits; their action on gases. Meteorological instruments, their construction and use. Barometers, thermometers, hygrometers, rain gauges. II. Chemistry. The analysis of water for drinking purposes, including the qualitative and quantitative estimation of total solids (lime, magnesia, chlorides, sulphates, nitrates and nitrites, ammonia, and lead), and loss on ignition of solids; determinations of hardness, of organic impurities, and of acidity and alkalinity. Chemical methods of treating sewage. The examination of air for the detection of polluting gases. Simple methods of eudiometry. Estimation of the quantity of carbon dioxide in air. III. Microscopy. The recognition of the constituents of food, such as starches, and muscular fibre. The recognition of the chief fibres of clothing, such as wool, cotton, and silk. The recognition of constituents of ordinary dust and deposits from water. IV. Bacteriology, including the cultivation and recognition of micro-organisms. V. Parasites and other organisms infesting foods, stuffs, or the human body.

(3) Of being at least 23 years of age. A candidate will be admitted to Part II of the examination on producing evidence: (1) Of having, during a period of six months after obtaining a registrable qualification, either practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or else held appointment as Medical Officer of Health under conditions not requiring the possession of a special Sanitary diploma. (2) Of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, either before or after obtaining his registrable qualification in Medicine, Surgery, and Midwifery[1]. (3) Of being at least 24 years of age.

The following laboratories are recognised:

London.—St. Bartholomew's, Guy's, London, University College, King's College, Charing Cross, St. George's, St. Mary's, Westminster, St. Thomas's, British Institute of Preventive Medicine.
Birmingham.—Mason College.
Brighton.—Technical School.
Bristol.—Medical School.
Leeds.—Yorkshire College.
Liverpool.—School of Science and Technology; University College.
Manchester.—Owens College.
Newcastle-on-Tyne.—University of Durham College of Medicine.

The two parts may be passed separately or at the same time. The fee for each is £5 5s., and must be paid three days before the examination commences. Fourteen days' notice must be given to the Secretary at the Examination Hall, Victoria Embankment, from whom further particulars and the dates of the examinations (which are held in the months of January and July) may be obtained.

University of Durham.

The University grants a Diploma in Public Health (D.P.H.) and the degree of Bachelor in Hygiene (B.Hy.) and Doctor in Hygiene (D.Hy.).

Degree of Bachelor in Hygiene (B.Hy.).—1. The candidate for the degree of Bachelor in Hygiene (B.Hy.) must be a registered medical practitioner and a graduate in medicine of a recognised University, not less than 22 years of age, and must have passed his first registrable qualification in Medicine, Surgery, and Midwifery at least twelve months previously. He must have spent six months of professional study subsequent to the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery, in attendance at Newcastle-upon-Tyne, in the following manner: *University of Durham College of Medicine.* (α) Course of Lectures on Public Health. (β) Three Months' Course of Lectures on Comparative Pathology with practical work in a Bacteriological Laboratory. *Outdoor Sanitary Work.*—(γ) Six Months' practical Study of outdoor Sanitary Work under the Medical Officer of Health, Newcastle-upon-Tyne. *City Hospital for Infectious Diseases, Newcastle-upon-Tyne.*—(δ) Three months' attendance on the Clinical Practice and Instruction. Regulation (α) to be omitted in the case of a candidate who has already attended the course before obtaining a registrable qualification. Regulation (γ) to be omitted in the case of a practitioner who has himself held appointment as a medical officer of health under conditions not requiring the possession of a Sanitary Diploma under the Local Government (England and Wales) Act, 1888. *Durham College of Science.*—(ε) Course of Lectures on Sanitary Chemistry and Physics. (ζ) Three months' practical instruction in a chemical laboratory. This course must not be concurrent with the three months' course of Lectures on Comparative Pathology with practical work in a bacteriological laboratory. The candidate shall be required to pass an examination in the following subjects: (*a*) Sanitary Chemistry.—The examination of Air; detection of noxious gases and atmospheric impurities. Water for sanitary purposes; detection of metals in water; the action of water on metals. Milk and Food. Detection of Poisons in Articles of Dress and Decoration. (*b*) Physics.—Hydrodynamics, Pneumatics, and Hydraulics, as applied to Hygiene. Light; Propagation of Light; Reflection and Refraction; Photometry; Heat; Thermometers; Laws of Heat in relation to Hygiene. Principles of Hygrometry and Hygrometers. (*c*) Sanitary Legislation.—Knowledge of the following Statutes and By-laws, namely: The Public Health Acts, 1875; Rivers Pollution Prevention Act, 1876; The Public Health (Water) Act, 1878; The Infectious Diseases (Notification) Act, 1889; The Local Government Act, 1888; The Infectious Diseases (Prevention) Act, 1890; The Housing of the Working Classes Act, 1890; The Public Health Acts (Amendment) Act, 1890; The Model By-laws of the Local Government Board relating to Cleansing, the Prevention of Nuisances, New Streets and Buildings, Slaughter-houses, Common Lodging Houses, Houses Let in Lodgings, Offensive Trades. Most of the above-mentioned statutes will be found in Knight and Co.'s *Public Health Acts* (latest edi-

[1] This certificate is not required in the case of a candidate who produces evidence that he has commenced special study in Sanitary Science before January 1st, 1894.

tion, and the By-laws in the work under that title, by the same publishers. (*d*) Comparative Pathology, etc.—Knowledge of the Comparative Pathology, Methods of Propagation, and Prevention of Microbic and Parasitic Diseases intertransmissible between Man and the lower Animals; Morphology of Microbes and Animal Parasites; Methods of Microscopical Examination and Artificial Cultivation of Microorganisms. The Bacteriological Examination of Water, Air, and Earth; the Special Characteristics, Life-History, Properties, and Natural and Artificial Modes of Inoculation of Pathogenic Micro-organisms and Animal Parasites. (*e*) Vital Statistics.—Rates of Birth, Death, and Marriage; Methods of Calculation, Classification, and Tabulation of Returns of Sickness and Mortality; Data required and Conclusions deducible therefrom. (*f*) Nosology.—Definition, Nomenclature, and Classification of Diseases. (*g*) Meteorology, Climatology, and Geographical Distribution of Health and Disease over the Globe, and in Different Urban and Rural Districts of the United Kingdom. (*h*) Sanitary Science in relation to the Origin, Propagation, Pathology, and Prevention of Epidemic, Endemic, Epizootic, and other Communicable Diseases; Diseases attributable to Heat, Cold, or Dampness, Insufficiency or Impurity of Air, Food, or Drink; Parasitic and other Diseases affecting the Food and Drink of Man; Diseases due to Habitation in Cities, Towns, Villages, and Separate Houses; Occupation and Trade Operations in relation to the Health of the Workers; Overwork, Intemperance, Heredity; Preventive Measures, Vaccination, Isolation, Disinfection; the Regulation of Noxious and Offensive Manufactures and Trades; the Removal of Nuisances. (*i*) Practical Hygiene in reference to Meteorological Apparatus, Sanitary Appliances, the Site, Materials, Construction, Capacity, Lighting, Ventilation, Warming, Dryness, Water Supply, Drainage, and Refuse Disposal of Houses, Schools, Hospitals, Artisans' Dwellings, Workshops and Workhouses, and other Buildings of Public or Private Resort; the Construction of Drains, Abattoirs, and Disinfecting Stations; Action with respect to Nuisances and Outbreaks of Disease; the Examination of Butcher's Meat and other Food; the Preparation of Sanitary Reports, and other Duties of a Medical Officer of Health. The examination will be conducted by written papers, and practical and *viva voce* examination, and will commence on April 17th, 1899. The candidate shall also be required; (1) To pass an examination on medical clinical cases at the City Hospital for Infectious Diseases, or elsewhere; (2) to draw up outlines for annual or other reports of a medical officer of health; (3) to report upon the condition of some actual locality; (4) to analyse liquids, gases, and specimens of food; (5) to describe the construction and use of instruments employed in Meteorological, Hygienic Apparatus, and Sanitary Appliances; (6) to examine with the Microscope submitted Specimens; (7) to describe submitted Specimens of Diseased Organs and Tissues (human and other); (8) to show a practical acquaintance with the usual methods of Bacteriological investigation; (9) to inspect and describe Carcasses. The fee for the examination for the B.Hy. is £10 10s., and for the degree £6. The fee for the examination and Diploma in Public Health is £10 10s. Holders of the licence in Sanitary Science in the University of Durham, prior to January, 1892, who are Graduates in Medicine of the University of Durham, are entitled to admission to the examination for the Degree of Bachelor in Hygiene without residence.

Degree of Doctor in Hygiene (D.Hy.).—The candidate must be a Bachelor in Hygiene, and must have been engaged for two years subsequently to the date of his acquirement of the degree of Bachelor in Hygiene, in practice, as a Medical Officer of Health. He will be required to write an essay upon some practical Hygienic subject, selected by himself and approved by the Lecturer on Public Health, and shall be examined thereon, and upon questions relative to the subject of the essay. The essay should not exceed thirty pages. The essays must be forwarded to the Lecturer on Public Health one month before the date of the examination, and will be retained by the Faculty of Medicine.

Diploma in Public Health (D.P.H.). The regulations for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor in Hygiene on pp. 561, etc., with the following exceptions, namely: (1) That the candidate is not required to be a Graduate in Medicine of a recognised university; (2) the course of study for the D.P.H. need not be spent at Newcastle-upon-Tyne.

Diploma in Public Health for Medical Practitioners.—The following are the regulations for the Diploma in Public Health, for medical practitioners, registered, or entitled to be registered, on or before January 1st, 1890: (1) The candidate shall be a medical practitioner, registered or entitled to be registered, on or before January 1st, 1890; (2) The candidate shall be required to pass the same examination as that for the ordinary Diploma in Public Health; (3) every candidate wishing to be present for the examination must give at least twenty-eight days' notice to the Secretary of the College, and must, at the same time, send the examination fee and the necessary certificates; (4) the fee for the examination and diploma is £10 10s.

UNIVERSITY OF ABERDEEN.

The University grants a diploma in Public Health. Candidates for the diploma must have graduated in Medicine in the University, or in a University in the United Kingdom, one year before they received the diploma; and they must produce evidence of (1) having complied with the regulations of the General Medical Council (see p. 525); (2) of having attended a fever hospital, containing no fewer than 50 beds, for six months; (3) if not a graduate in Medicine of Aberdeen University, of having attended a course in the University in one or more of the subjects embraced in the examination for the diploma. The examination consists of two parts; Part I (*a*) Physics, Engineering, and Meteorology; (*b*) Chemistry, Microscopy and Bacteriology; Part II (*a*) General Hygiene; (*b*) Sanitary Law and Vital Statistics. The examination (which is written and oral) is held in March and July, and notice must be given to the Secretary of the Medical Faculty two weeks before. A detailed synopsis can be obtained from the Dean of the Medical Faculty, or will be found in the University *Calendar* for 1898-99. The fee, which must be paid at the time of giving notice, is £5 5s. The fee for re-examination, £1 1s.

UNIVERSITY OF EDINBURGH.

This University confers two degrees in science in the department of Public Health—namely, Bachelor of Science (B.Sc.) and Doctor of Science (D.Sc.).

Bachelor of Science.—Two examinations must be passed, and the candidate must produce evidence of having complied with the regulations of the General Medical Council (see p. 525), and have taken a degree in Medicine in the University of Edinburgh or in a university recognised by it. The subjects of the First Examination are: (1) Laboratory work, practical, written, and oral; (2) Elements of Experimental Physics; (3) Geology, written and oral. The second examination cannot be taken sooner than six months after the first. The candidate must have attended a course of lectures (fifty at least) in the University of Edinburgh, or in a university recognised by the Court. The subjects of the Second Examination are: (1) Medicine in its application to Public Health; Sanitation; (2) Sanitary Law; (3) Vital Statistics; (4) Medicine in its bearings on Public Health; and the examinations in these subjects are taken at one time; (5) Mensuration and Drawing. (A detailed syllabus is given in the *Calendar*, pp. 244-246.) The examinations are held in March and July. The fee for each examination is £3 3s. Further particulars may be obtained on application to the Dean of the Faculty of Science at the University Matriculation Office, where the schedules for examination are issued and the certificates of candidates examined.

Doctor of Science.—Bachelors of Science in the Department of Public Health may, after the lapse of five years, proceed to the degree of Doctor in the same Department on presenting a Thesis on some subject in the Department of Public Health, or a published memoir of works, and are required to pass an examination in Public Health, and in such of its special departments as may from time to time be determined. (Candidates for D.Sc. in Public Health may appear for examination in any one of the departments of knowledge required for the degree of B.Sc. in Public Health. They are required to submit the subject in which they propose to be

examined for approval at least two months before the date of the examination.) Every such Thesis must be certified by the candidate to have been composed by himself, and must be approved by the examiners. The Thesis must be lodged with the Dean of the Faculty of Science on or before January 20th, in the year in which the candidate proposes to graduate. The fee is £10 10s.

The Conjoint Board of Scotland.

The Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow will grant a conjoint diploma in Public Health, after examination by a Board on which these bodies are represented. Candidates qualified before 1890 will be admitted without evidence of special instruction (though even in their case such instruction is strongly recommended). Registered medical practitioners who have for a period of three years held the position of medical officer of health to any county or urban district of more than 20,000 inhabitants, or any entire rural sanitary district, are also exempt from courses of special instruction. Other candidates must produce evidence of attendance (subsequent to obtaining a registrable qualification) for six months at a Public Health Laboratory, and for six months under a Medical Officer of Health of a county or large urban district. There are two examinations, and candidates may present themselves for both of them at one period, or for either examination separately. The First Examination embraces the following subjects in their relation to Public Health: Chemistry, Laboratory Work, Physics, and Meteorology. The Second Examination includes: (*a*) Report on premises visited; (*b*) examination at fever hospital; (*c*) examination at public abattoir; (*d*) epidemiology and endemiology; (*e*) vital statistics and sanitary law; (*f*) practical sanitation. The various subjects of both examinations are detached and limited by synopses given. The laboratory work embraces not only Chemical Analyses, but also Microscopical Examination, Bacteriology, Parasites, etc. At the Second Examination each candidate is required to submit a report on the sanitary condition of premises to which he may be sent for the purpose, and is examined on the Acts of Parliament included under "Sanitary Law." The fee is £10 10s., or £5 5s. in respect of each examination; and candidates referred are readmitted on the fee of £3 3s. in respect of each examination. The examination is held in Edinburgh or in Glasgow, there being two periods of examination yearly—October and May. Application for examination in Edinburgh to be sent to Mr. James Robertson, 48, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopsis of subjects will be found at page 217 of the 1897-98 edition of the *Medical School Calendar for Scotland*, published by E. and S. Livingstone, 15, Teviot Place, Edinburgh, price 2s., post free, 2s. 3d.

University of Dublin.

The diploma in State Medicine is conferred after examination upon M.D.'s or graduates in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the *Medical Register* at least twelve months before the examination, and, subsequently to registration, the candidate must have completed six months' practical instruction in a laboratory approved by the University, and have studied practical outdoor sanitary work for six months, under an approved officer of health. [This condition does not apply to candidates registered or entitled to be registered on or before January 1st, 1890.] The examination is held in December, and candidates are required to send in their names at least a week before the first day of the examination to the Registrar of the School of Physic, from whom a full syllabus of the examination can be obtained. Candidates who have registered since January 1st, 1890, are required to make application for permission to present themselves for examination to the Board of Trinity College, submitting at the same time certificates of the required courses of study. The subjects of examination are: State Medicine and Hygiene (paper); Chemistry (paper and laboratory); Physics and Meteorology (oral); Engineering (paper); Sanitary Engineering (practical); Morbid Anatomy (oral); Vital Statistics (paper); Medical Jurisprudence (oral); Law (paper); Epidemiology and the Work and Duties of a Public Officer of Health.

Further particulars can be obtained on application to the Registrar of the School of Physic, Dublin.

Royal University of Ireland.

The University grants a diploma in Sanitary Science, but only to graduates in Medicine of the University. The fee is £2. Further particulars will be found in the *Calendar*.

Conjoint Examining Board in Ireland of the Royal College of Physicians and the Royal College of Surgeons.

A diploma in State Medicine is granted by these two Colleges after an examination conducted by them jointly. Candidates are required to comply with the regulations of the General Medical Council (see page 525). The regulations as to study do not apply to practitioners registered or entitled to be registered on or before January 1st, 1890. The examination comprises the following subjects: State Medicine and Hygiene, Chemistry (including Chemical Physics), Meteorology and Climatology, Engineering, Vital Statistics, Law, and Bacteriology, in addition to written papers. The candidates will be examined orally in Hygiene, and practically in the reading of Plans, Sections, and Scales, as well as in Analytical Chemistry, with special reference to Air, Water, and Food, including the use of the Microscope, and in Bacteriology. They will also be required to read meteorological instruments, and to explain their construction; and they may be called upon to make a practical Sanitary Report.

The candidate must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, 6, Kildare Street, Dublin, three weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh.

The examination is divided into two parts, which may be passed either together or separately, but no candidate can present himself for Part II who fails to satisfy the examiners in Part I. The examination occupies four days.

The fee for examination is £10 10s., for re-examination £5 5s.; the examination begin on the first Tuesday of the months of February, May, and November.

A Special Examination for the diploma can be obtained on payment of £5 5s., in addition to the ordinary fees mentioned above, except during the months of August and September, and on giving notice at least one fortnight before the date of the proposed examination.

Schedules of the subjects can be obtained from the Secretary.

Instruction and Laboratory Classes.

Courses of lectures and laboratory instruction to suit the requirements of candidates for diplomas in Public Health have been organised at the following schools, and could probably be arranged for at any other schools and colleges (see also p. 561). The chemical and bacteriological examinations for many of the health diplomas are now so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of an M.O.H.—has a certain amount of the manipulative dexterity only to be acquired by work in a laboratory, he would probably come to grief.

London.

St. Bartholomew's Hospital.—Inclusive fee, 20 guineas.

Charing Cross Hospital.—Inclusive fee, 20 guineas.

St. George's Hospital.—Inclusive fee, 20 guineas; for candidates registered before January 1st, 1890, 12 guineas.

Guy's Hospital.—Inclusive fee for six months' course of Laboratory Instruction and Lectures, 20 guineas.

King's College.—Inclusive fee 20 guineas.

London Hospital.—Inclusive fee, 20 guineas; three months' course, 12 guineas.

St. Mary's Hospital.—Six months' course, inclusive fee, 12 guineas.

St. Thomas's Hospital.—Inclusive fee, 20 guineas; short course, 8 guineas.

University College.—Inclusive fee, 20 guineas; three months' course, 12 guineas.

PROVINCIAL.

Cambridge University.
Mason College, Birmingham.
University College, Liverpool.
Yorkshire College, Leeds.
University of Durham College of Medicine, Newcastle-on-Tyne.
University College, Bristol.

IRELAND.

School of Physic, Dublin.
The Catholic University School of Medicine.
Royal College of Surgeons, Schools of Surgery, Dublin.

SCOTLAND.

University of Edinburgh.—Fees, winter session 10 guineas, summer session 6 guineas.
University of Glasgow.—Fee for course of instruction, 10 guineas.
University of Aberdeen.
St. Mungo's College, Glasgow.—Fees: Winter session of Lectures and six months' Laboratory instruction, 12 guineas; summer session of Lectures and 3 months' Laboratory instruction, 6 guineas.
The Conjoint Board in Scotland.

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE.

The Jenner Institute of Preventive Medicine, Chelsea Gardens, Grosvenor Road, S.W., in addition to the facilities it affords for the prosecution of research work, provides classes in Bacteriology, Hygiene, Biological Chemistry, etc. The work is under the superintendence of the Director, Dr. Allan Macfadyen, assisted in the bacteriological Department by Dr. R. T. Hewlett, and Mr. Foulerton, F.R.C.S.

Courses in Bacteriology for medical men, students of hygiene, etc., are given in the Bacteriological Department throughout the year. Lectures and Practical Demonstrations are also held from time to time upon such subjects as Immunity, the Preparation of Toxins, Antitoxins, etc., and the varied material sent to the Institute for examination is utilised for classwork. The Institute is recognised by the examining bodies for the curriculum for the D.P.H., and the whole course of study can be pursued in its bacteriological or chemical laboratories.

The increasing importance of Chemistry in Biology has been recognised by the institution of a Biological Chemistry Laboratory, where general instruction in this subject is given suitable to medical men, chemists, and others. The methods for the detection and isolation of bacterial products are practically demonstrated.

The Water Laboratory, under the charge of Dr. Harden, founded by funds from the Berridge Bequest, conducts Bacteriological and Chemical Examinations, and gives instruction in all matters appertaining to Water and Sewage.

A Photographic Department, under the care of Mr. J. E. Barnard, is in working order, and instruction is given in Photomicrography.

In addition to teaching, a large number of investigations are carried out by workers in the Institute, the results of which are published in a yearly volume of *Transactions*.

In May last extensive new laboratories and lecture rooms were completed, and are now in full working order. All particulars of classes and demonstrations, and permission to carry on research in the laboratories of the Institute may be obtained from the Director.

The Institute also undertakes the preparation of tuberculin, mallein, Coley's fluid, etc., as well as of all the antitoxins at present known, and undertakes to forward any of these on the shortest notice.

Pathological material, waters, etc., may also be sent to the Institute for examination and report.

OPENING OF THE MEDICAL SCHOOLS.

THE arrangements for the opening of the Winter Session of the Medical Schools and Colleges in the United Kingdom, as far as they are at present complete, are as follows:

LONDON.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

The Winter Session will begin on Monday, October 3rd. The Old Students' Dinner will be held on Tuesday, October 4th, Sir William Turner in the chair. The systematic courses of lectures and laboratory work in the subjects of the Preliminary Scientific and Intermediate B.Sc. Examinations of the University of London will commence on October 3rd, and continue till July, 1899. There is a special class for the January examination. Four Scholarships and one exhibition, worth £150, £75, £50, and £20 respectively, each tenable for one year, will be competed for on September 27th. Further particulars can be obtained by application to the Warden of the College, St. Bartholomew's Hospital, E.C.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

The Winter Session will commence on Monday, October 3rd, when Professor Virchow will deliver the Second Huxley Lecture—"Recent Advances in Science and their Bearing on Medicine and Surgery"—at the St. Martin's Town Hall, Charing Cross. The chair will be taken by Lord Lister, P.R.S., at 4 P.M.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on Saturday, October 1st, with an Introductory Address at 4 P.M. by G. R. Turner, F.R.C.S., surgeon to the hospital. The annual dinner will take place on October 1st at the Hôtel Métropole at 6.30 P.M., when Mr. Timothy Holmes, F.R.C.S., will take the chair. Three entrance scholarships in arts will be offered for competition in September, and three entrance scholarships in science in October. Further particulars can be obtained from the Dean, St. George's Hospital, Hyde Park Corner, S.W.

GUY'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on Monday, October 3rd. The first meeting of the Physical Society will be held on this day in the new Physiological Theatre at 8 P.M., when Sir Samuel Wilks, Bart., M.D., LL.D., F.R.S., will preside, and a paper will be read by Mr. W. H. Crosse. After the meeting a *conversazione* will be held in the new laboratories and class rooms. A house dinner of the Students' Club will take place at 6.30 P.M. in the College Dining Hall. Two open scholarships in arts, two open scholarships in science, and an open scholarship for university students will be competed for in September. The next course of lectures and practical classes for the Preliminary Scientific Examination of the University of London will begin on October 3rd, and also the six months' course of laboratory instruction, including lectures on Public Health and Out-door Sanitary Work for the Diploma in Public Health. Full particulars can be obtained from the Dean, Guy's Hospital, S.E.

KING'S COLLEGE, LONDON.

The Winter Session will begin on Monday, October 3rd. The Old Students' Dinner will be held at Limmer's Hotel the same evening. The special class for the London University Matriculation will recommence on Monday, September 26th. Students entering for the Winter Session are entitled to compete in September for entrance scholarships. Further information can be obtained from Sir Hugh Beevor, Bart., M.D., Dean of the Medical Faculty, King's College, Strand, W.C.

THE LONDON HOSPITAL MEDICAL COLLEGE.

The Winter Session will commence on October 1st. The annual dinner will be held in the College Library on Monday, October 3rd, when Mr. Mansell-Moullin will take the chair. Seven entrance scholarships will be offered in October. A six months' course of laboratory instruction, including Lectures of Public Health and Out-door Sanitary Work for the diploma in Public Health will commence on October 3rd. Further information can be obtained from Mr. Munro Scott, Warden, the London Hospital Medical College, Mile End, E.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on October 3rd, when an introductory address will be given at 3 P.M. by Dr. Caley. The annual dinner will be held in the evening at the King's Hall, Holborn Restaurant, when the chair will be taken by Mr. J. N. Moore, J.P. Examinations for three entrance scholarships, and two entrance scholarships open to students from Oxford and Cambridge, will be held on September 21st and 22nd. Particulars may be had of the Secretary, Mr. F. H. Madden.

The Middlesex Hospital.

The Winter Session will commence on Monday, October 3rd, when Dr. Arthur F. Voelcker will deliver an introductory address, after which the prizes gained during the previous year will be distributed. The annual dinner of the past and present students and their friends will take place the same evening at the Café Royal, Regent Street, at 7 P.M., when the Right Hon. Sir Ralph Thompson, K.C.B., will take the chair. An examination for two entrance scholarships will be held on September 22nd and 23rd, and one entrance scholarship open to students of the University of Cambridge who have passed the Second M.B. Examination, and of Oxford who have passed the First M.B. Examination, will be competed for on September 22nd and 23rd. Full particulars can be obtained from Dr. W. Pasteur, Dean of the Medical School, the Middlesex Hospital, Berners Street, W.

St. Thomas's Hospital Medical School.

The Winter Session will open on Monday, October 3rd, when the prizes will be distributed at 3 P.M. by the Right Rev. the Lord Bishop of Rochester in the Governors' Hall. The annual dinner, in which all former and present students are invited to join, will take place the same evening at the Whitehall Rooms, Hôtel Métropole, at 6 for 6.30, when Dr. Leonard Sedgwick will take the chair. Three entrance scholarships will be offered for competition in September. For further particulars apply to Mr. Rendle, the Medical Secretary, St. Thomas's Hospital, Albert Embankment, S.E.

University College, London.

The Winter Session of the Medical Faculty will commence on Monday, October 3rd, when an introductory lecture will be given at 4 P.M. by Mr. Sidney Spokes, dental surgeon to the hospital. The annual dinner of the past and present students will take place on October 3rd at the Hotel Cecil, at 6.30 P.M., Professor F. T. Roberts, M.D., in the chair. The examinations for the entrance exhibitions will commence on September 26th. Full information can be obtained from the Dean, University College, Gower Street, W.C.

Westminster Hospital Medical School.

The Winter Session will begin on Monday, October 3rd. The annual dinner will take place on the evening of that day, at the Holborn Restaurant, with Sir George S. Robertson, K.C.S.I., in the chair. Scholarships are offered for students entering in October. For further particulars apply to the Dean, Dr. R. G. Hebb.

London School of Medicine for Women.

The Winter Session will open on Monday, October 3rd. An introductory address will be given by Dr. J. W. Carr, Senior Assistant Physician to the Royal Free Hospital, on Tuesday, October 4th, at 8 P.M., and Mrs. Charles Burt, wife of the Chairman of the Weekly Board, will present the prizes for the past year.

PROVINCES.

Mason College, Birmingham.—The Winter Session will commence on Saturday, October 1st, when Professor Michael Foster, M.D., D.C.L., LL.D., F.R.S., will deliver an address, after which there will be a *conversazione* for members of the medical profession. There are various scholarships, entrance and otherwise, to be competed for. Full particulars can be obtained from the Dean, Professor Windle, D.Sc., M.D., Mason University College, Birmingham.

University College, Bristol.—The Winter Session commences in October. There are numerous valuable scholarships and prizes offered by the Faculty of Medicine, and by the Bristol Royal Infirmary and the Bristol General Hospital. For full particulars apply to the Dean, Professor E. Markham Skerritt, M.D.

University College of South Wales and Monmouthshire, Cardiff.—The Winter Session will begin on Monday, October 3rd, and Dr. Robert Saundby will deliver the opening address to medical students on the evening of October 7th, his subject being Modern Universities. A large number of entrance scholarships and exhibitions are offered for competition in September. Full particulars may be obtained from the Dean, Mr. A. F. Dixon, M.B.

Yorkshire College, Leeds.—The Winter Session will open on October 3rd, when an introductory lecture will be delivered and prizes distributed by Dr. C. J. Cullingworth, President of the Obstetrical Society. For particulars of the entrance scholarships application should be made to the Registrar.

University College, Liverpool.—The Winter Session will begin on Saturday, October 1st, and the six months' course of laboratory instruction for the diploma in Public Health will be given in the new Public Health Laboratory, beginning on October 3rd. The opening ceremony in connection with the new Laboratories of Physiology and Pathology will take place on Saturday, October 8th, when Lord Lister will declare the Laboratories open. On the occasion of his visit to Liverpool the degree of Doctor in Science will be conferred upon Lord Lister by the Victoria University.

Owens College, Manchester.—The Winter Session begins on Monday, October 3rd.

University of Durham College of Medicine, Newcastle-on-Tyne.—The Winter Session will commence on Saturday, October 1st, when the scholarships, medals, and prizes will be presented by Sir David Dale, Bart., D.C.L., J.P. Full particulars can be obtained from the Secretary, Professor Howden.

University College, Sheffield.—The Winter Session will commence on Monday, October 3rd, when the Introductory Address will be delivered by William Dyson, M.D., B.A., Vice-President of the College. Further particulars can be obtained from the Dean, Dr. W. T. Cocking.

SCOTLAND.

University of Edinburgh.—The Winter Session will commence on Tuesday, October 18th.

University of Aberdeen.—The Winter Session will commence on Wednesday, October 19th. The Preliminary Examination will commence on October 1st.

University of St. Andrews.—The Winter Session will open on Tuesday, October 11th. The new Medical School will not be formally opened until the next Summer Session, which begins on April 25th, 1899, but teaching will be given in the new buildings next Winter Session.

University of Glasgow.—The Winter Session will be opened on Thursday, October 20th, when a public address to medical students will be delivered by some member of the Faculty of Medicine, probably Professor John Glaister, M.D., D.P.H. The Winter Session of Queen Margaret College Medical School for Women will begin on Friday, October 14th.

Anderson's College Medical School.—The Winter Session will open on Thursday, October 20th.

St. Mungo's College, Glasgow.—The Winter Session will open on Thursday, October 20th, with an address to medical students, and end on Friday, March 24th, 1899.

University College, Dundee.—The Winter Session will open on Wednesday, October 12th, with an Introductory Address by Professor Steggall. An examination for six Entrance Scholarships will commence on Thursday, September 29th. For particulars apply to the Secretary, Mr. R. N. Kerr.

IRELAND.

The University of Dublin: The School of Physic.—The Winter Session will commence on Saturday, October 1st, by the opening of the Dissecting Room.

The Royal College of Surgeons in Ireland: Schools of Surgery.—The Winter Session will commence on Saturday, October 1st.

Queen's College, Belfast.—The Winter Session will begin on Tuesday, October 18th.

Queen's College, Cork.—The examinations for the eight medical scholarships will begin on Thursday, October 20th, and the lectures on Monday, October 24th. Particulars can be obtained from the Registrar, Mr. Alexander Jack, M.A.

Queen's College, Galway.—The matriculation examination will be held on October 21st, and examinations for scholarships on October 22nd.

THE PUBLIC SERVICES.

THE ROYAL NAVY AND ARMY AND THE INDIAN MEDICAL SERVICES.

GENERAL REGULATIONS.

The following are the rules governing admission to these services:—

All candidates must submit to an examination by a medical Board into their physical fitness before being admitted to the entrance examination. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, providing it does not necessitate the use of glasses during operations, and that no organic disease of the eye exists.[1]

Candidates for the Army and Indian Services may, before examination, elect or decline their intention to compete for one or other or both of these services; and their position will be determined according to the results of the examination.

As the prospects of a medical officer of one of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55, if below a certain grade at that age, there is a distinct advantage in entering the service at as early an age as possible.

THE ROYAL NAVY MEDICAL SERVICE.

A candidate for admission to the Royal Navy Medical Service must be between 21 and 28 years of age. The entrance examination consists of two parts; in Part I, *Compulsory*, the subjects are the same as in the Army Medical Staff, but the marks are: Medicine, 1,200; Surgery, 1,200: Anatomy and Physiology, 600; Chemistry and Materia Medica, 600. Part II, *Voluntary*, consists of two divisions: (*a*) French and German (200 marks each). A knowledge of modern languages being considered of great importance, all candidates are urged to qualify in them; (*b*) Natural Sciences (Zoology, Botany, Physics, and Physical Geography) (300 marks each). Candidates will be examined in not more than two of these sciences. Candidates who qualify in the compulsory subjects will be allowed to count marks in those of the two sciences only in which they obtain one-third of the maximum marks for each.

Zoology.—The examination in Zoology will include the general principles of biology and a comparison of animals with plants; the distinctive characters of the larger groups of animals—the protozoa, coelenterata, vermes, arthropoda, mollusca, echinodermata, and vertebrata—as illustrated by common types; the elements of embryology; animal parasites.

Botany.—The examination in Botany will comprise the general principles of the morphology and physiology of low forms of life, for example, torula, bacteria, spirogyra, moss, fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants.

Physics.—The examination in physics will be limited to the general principles of mathematics, acoustics, optics, heat, magnetism, and electricity, such as: the properties of solids, liquids, and gases; conservation of [illegible] gravity, propagation and reflection of sound and light, [illegible] specific and latent heat, thermometers, properties of [illegible], chromatic dispersion of light, forms of batteries, [illegible] and frictional electricity, general properties of magnets.

Physical Geography.—The examination in physical geography will be limited to general principles, such as the relation of the earth to the rest of the solar system, nature of the earth's crust, and the chief kinds of rocks, general configuration of land and water, mountains, plains, lakes, rivers, islands, glaciers and icebergs, the ocean currents, tides, the earth's atmosphere, winds and storms, dew, rain, climate, volcanoes, earthquakes, general distribution of animal and vegetable life.

The order of merit is determined by the total number of marks obtained in the compulsory and voluntary parts. Should, however, it be considered expedient to grant additional commissions the Board of Admiralty is empowered to admit annually one candidate nominated by the examining bodies of public schools of medicine in the United Kingdom or attached to such Colonial universities as they may think proper. The candidate must be qualified according to the rules in force for entry of candidates, and must be approved by the Director-General of the Medical Department of the Navy. He will also be compelled to pass a physical and test examination. As regards seniority he will rank next below the last surgeon entered at the same time by competition.

Successful candidates, immediately after passing the examination, will receive commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, etc., at Haslar Hospital.

The rate of pay of Surgeon is on entry £209 17s. 6d. a year; after four years' full pay service, £246 7s. 6d. a year; after eight years' full pay service, £282 17s. 6d. A Surgeon at the expiration of twelve years' service may, on the recommendation of the Director-General, be promoted to the rank of Staff-Surgeon, if he has passed the required examination at any time after completion of eight years' service. The pay on promotion is £383 5s.; after four years' full pay service in the rank, £438.

Retirement.—Compulsory retirement will be as follows:

Inspector and deputy-inspector-general of hospitals and fleets.	At the age of 60, or at any age, if he has not served for five years. Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an inspector-general of hospitals and fleets on the active list, the age for the retirement of such inspector-general may be extended to 62.	To be retired irrespective of age if found physically unfit for service.
Fleet-Surgeon, staff-surgeon, and surgeon.	At the age of 55, or at any age, if he has not served for five years.	

Voluntary retirement and withdrawal will be allowed as follows:

(*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after twenty years' full pay service on the scale of retired pay, as laid down below, or with a gratuity.

(*b*) At the expiration of 8, 12, or 16 years' full pay service, every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval service, receiving a gratuity on the scale laid down below.

The name of an officer so withdrawing will be removed from the lists of the Navy, with which all connection will then be severed.

(*c*) Voluntary retirement and withdrawal will be allowed, as a rule, only when an officer is unemployed or serving at home.

(*d*) Applications from officers, not entitled to retire or withdraw, to resign their commissions will receive every consideration.

Gratuities and retired pay will be awarded on retirement, and withdrawal on the undermentioned scale:—

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon and Staff-Surgeon:			
After 8 years' full-pay service	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet-Surgeon:			
After 20 years' service (including proportion of half-pay time)	—	*1 0 0	365 0 0
After 24 years' service (including proportion of half-pay time)	—	*1 2 6	410 12 6
After 27 years' service (including proportion of half-pay time)	—	*1 5 0	456 5 0
After 30 years' service (including proportion of half-pay time)	—	*†1 10 0	547 10 0
Deputy-Inspector-General	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

*To obtain this rate an officer must hold the Commission of Fleet-Surgeon.

† Or on compulsory retirement at the age of 55.

The allowance of 5s. a day, in addition to full pay, at present granted to the fleet surgeon of a flag-ship bearing the flag of a commander-in-chief on a foreign station, will be given to the senior medical officer of such ship, being a fleet surgeon or staff-surgeon; and an allowance of 2s. 6d. a day to the senior medical officer, being a fleet surgeon or staff-surgeon, of a ship of a commodore of 1st class or senior officer commanding a foreign station.

Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances:

The senior officer employed upon this duty ... £150 a year.
The junior officer assisting ... ... 50 ,,

[1] Further particulars as to the standard of eyesight will be found in the pamphlet by Sir J. Fayrer, Bart., M.D., K.C.S.I., entitled, *Regulations as to Defects of Vision*, etc., published by Messrs. J. and A. Churchill, 11, New Burlington Street, London, W. Price 2s.

The hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and light, are as follow:

	At home.	Abroad.
Inspectors-general of hospitals	£85	£130
Deputy-inspectors-general	67	112
Fleet-surgeons and staff-surgeons ...	53	112
Surgeons	39	108

Medical officers serving afloat receive an allowance of 1s. 6d. a day in lieu of provisions, fuel, and lights, as laid down in the Queen's Regulations.

The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the Service.

THE ROYAL ARMY MEDICAL CORPS.

A candidate for a commission in the corps must be over 21 and not over 28 years of age at the date of the commencement of the competitive examination. He must be of unmixed European birth, and registered under the Medical Act.[2] He must produce a certificate of moral character, and a certificate to the effect that he is of steady habits, and likely to prove creditable to the department. Before admission to the examination his physical fitness will be determined by a Board of Medical Officers. These and some additional facts of minor importance must be embodied in a "declaration" upon a special form, which may be obtained on application to the Director-General of the Army Medical Service, War Office, London, S.W., who will also forward a memorandum on conditions of admission, pay, etc.

A competitive entrance examination is held twice a year, generally in February and August. Announcement of the date and of the number of vacancies is made in advance by advertisement in the medical and some other papers, and in the *Monthly Army List*.

Entrance Examination.

The examination consists of two parts:

I. *Compulsory*, the subjects of which are (*a*) Anatomy and Physiology, (*b*) Surgery, (*c*) Medicine, including Therapeutics and the Diseases of Women and Children, (*d*) Chemistry and Pharmacy, and the Practical Knowledge of Drugs: Medicine 1,200 marks; Surgery, 1,200 marks: Anatomy and Physiology, 600 marks; Chemistry and Pharmacy, 600 marks. The examination in medicine and surgery is in part practical, and includes operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients, at the bedside. The examination in Chemistry is limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.

II. *Voluntary.*—A candidate may be examined in the following voluntary subjects: (*a*) French, German, and Hindustani (200 marks each), (*b*) Natural Sciences, two subjects (300 marks each). Competitors are urged to qualify in French and German, as a knowledge of modern languages is considered of much importance. The Natural Sciences include Physics, Zoology, Geology and Physical Geography, and Botany. A number less than one-third of the marks obtainable will not be allowed to count. An entrance fee of £1 is payable.

The Secretary of State reserves the right to reject any candidate who shows a deficiency in general education as evidenced by bad spelling or composition.

Successful candidates are arranged in order of merit, and are required to proceed to the Army Medical School at Netley on Probation; they receive an allowance of 8s. a day.

Final Examination.

Candidates on probation at Netley attend courses in: (1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service. At the conclusion of the Netley course a further examination in the subjects there taught is held, for which marks are awarded, and the final position of the candidate is determined by the number of the marks obtained at the Entrance and Final Examinations.

Pay.—On leaving Netley the Candidate on Probation receives a commission of Lieutenant, the pay of which rank is £200 a year. The next grade is Captain, and after five years' service the pay is £250 a year. A Captain may be promoted to the rank of Major after twelve years' full pay service; to qualify himself for this promotion he must at any time after his seventh year of service pass a special examination in Surgery, Medicine, Hygiene, the Duties of Medical Officers, Hospital Organisation, Military Law, and the Administration of the Royal Army Medical Corps.

Retired Pay.—All officers under the rank of Colonel must retire at the age of 55; above this rank at the age of 60, unless specially extended. An officer of ten years' service on full pay may be permitted to retire on a gratuity of £1,250; after fifteen years' service, £1,800; after eighteen years' service, £2,500.

INDIAN MEDICAL SERVICE.

All natural-born subjects of Her Majesty between 21 and 28 years of age may be candidates; the conditions are otherwise the same as for the Army Medical Staff (see above), but there is an additional voluntary subject (Hindustani), for which 150 marks are allowed.[1] All particulars regarding condition of admission and subjects of examination are contained in the "Regulations for the Examination of Candidates for Admission to Her Majesty's Indian Medical Service," issued by the India Office, and obtainable by application to the Military Secretary. The following is the present scale of marks: Surgery and Medicine, each 1,200; Anatomy with Physiology, and Chemistry with Pharmacy, each 600; French, German, and Hindustani, each 200; Physics, Zoology, Geological and Physical Geography, and Botany, each 300. A certificate of three months' attendance at an Ophthalmic Hospital is required.

The final order of merit is determined, as in the case of the Army Medical Staff, by the combined results of the Preliminary and of the Final Examinations, and, so far as the requirements of the Service will permit, candidates will have the choice of commands in India (that is, Bengal, Punjab, Madras, or Bombay), according to their position in that list. The examinations are held, as a rule, twice a year, in February and August.

Free passage to India is provided. The rate of pay, until arrival in India, is 10s. a day. The minimum rate of pay in India is stated to be Rs.350 a month. After seventeen years' service for pension, the rate of retired pension is £292 a year; after twenty, £365; after twenty-five, £500; after thirty years, £700. Further particulars as to rates of pay, promotion, pensions, and half-pay will be found in Military Department Form 124, which can be obtained on application to the Under-Secretary of State, India Office, London, S.W.

Examination Papers.

The following are the Papers set at the Examination of Candidates for Her Majesty's Army and Indian Medical Services in August, 1898.

Anatomy and Physiology.—Mr. Cunningham.

1. Give the dissection necessary to expose the external pterygoid muscle, and describe the vessels and nerves in immediate relation to that muscle.

2. Describe the testicle and follow its duct from the commencement to its termination. Give, likewise, an account of the descent of the testicle and explain the occurrence, in connection with this, of the occasional developmental defects which create a liability to the congenital and infantile forms of inguinal hernia.

3. Explain the part which is played by the vagus nerve in the function of respiration.

4. Give the minute structure of the submaxillary gland and describe the changes which are observed to occur in the secretory cells as they pass from a quiescent or inactive condition into a state of activity. What is the active principal of saliva and how does it act in the process of digestion?

Surgery.—Sir William Mac Cormac, Bart.

(All four questions to be answered.)

1. Give the diagnosis, pathology, and treatment of new growths of the testicle.

2. What forms of congenital cyst and congenital fistula are met with in

[2] He must have a diploma in Medicine and in Surgery, but the diploma of the Society of Apothecaries in London, obtained under the conditions of the Medical Act of 1886, is accepted as a double qualification. A candidate is required to produce also the following certificates: (1) Of having discharged the duties of a medical clinical clerk during six months, and of a surgical dresser during another period of six months, of which, in each case, not less than three months must have been spent in the wards of a hospital. (2) Of having attended a course of instruction during not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

[1] Candidates presenting themselves for examination in Hindustani are recommended to study some recognised textbook, such as the annotated edition of the *Taubat-un-Nasuk*, which is the text used by candidates for the Indian Civil Service.

the regions of the head and neck? Describe their characters and mention any points of surgical importance in connection with their treatment.

3. In a case of gunshot wound traversing the middle of the thigh you apprehend, from the direction taken by the bullet, that the main artery may have been contused. Should this be so, what consequences may follow, and in what manner will you deal with them respectively?

4. Describe a case of chronic granular conjunctivitis. What are the causes, and what is the treatment, of the disease?

CHEMISTRY AND MATERIA MEDICA.—DR. NORMAN MOORE.

1. What are the principal properties of the halogens, of sulphur, and of carbon? Mention the chief compounds of these elements with hydrogen and with oxygen respectively.

2. Explain the action of the more important chemical antiseptics and disinfectants.

3. What drugs act directly upon the heart? Name their preparations, and the dose of each for an adult.

4. What are the therapeutic uses of arsenic and of antimony? Name the preparations of arsenic and of antimony, and state the proportion of the most important ingredient in each preparation.

5. Write prescriptions for the administration to adults of the following remedies in the cases mentioned with each, giving the full directions necessary: (*a*) Codeine (in diabetes); (*b*) Quinine (in malarial fever); (*c*) Ipecacuanha (in dysentery).

MEDICINE AND PATHOLOGY.—PROFESSOR MCCALL ANDERSON.

1. Describe fully the symptoms and physical signs of aortic regurgitation, complicated with dilatation of the heart and general passive congestion, and say how you would treat it.

2. Enumerate, in tabular form, the various points which enable you to distinguish granular degeneration of the kidneys from acute nephritis.

3. What are the symptoms of subacute otitis media purulenta, complicated with implication of the facial nerve in the aqueduct of Fallopius?

4. Enumerate the enlargements of the liver, dividing them into (*a*) uniform and (*b*) irregular enlargements. Underline those which are tender, and put an asterisk opposite those in which the enlargement may be very great.

NATURAL SCIENCES.—DR. NORMAN MOORE.

Candidates may answer not more than *six* questions, and they must confine themselves to *two* branches of science only.

Zoology and Comparative Anatomy.

1. What are the chief anatomical characteristics of the following orders: Carnivora, Cetacea, Insectivora, Proboscidea, Rodentia?

2. Describe the alimentary canal and digestive process in a ruminant.

3. Give a short account of the general structure of Crustacea and of Echinodermata.

Botany.

1. Give the characters of the following natural orders: Ranunculaceæ, Scrophulariaceæ, Liliaceæ, Polygonaceæ, Gramineæ.

2. Describe the structure of the whole plant, including the flower and the fruit of the common daisy (Bellis perennis), or of the wheat plant, or of the heath plant (Erica cinerea).

3. From what sources of nutrition are the tissues of an oak tree maintained and increased. In what points of structure does an oak differ from a palm tree, and from a tree fern.

Physics.

1. Describe the construction and use of voltaic cells.

Explain the following terms: Electrolysis, induction, magnet, Leyden jar.

2. Illustrate fully the conversion of mechanical energy into heat.

3. State and explain the arguments in favour of the undulatory theory of light.

What is the actual velocity of light?

Geology and Physical Geography.

1. Draw up a chronological series of the tertiary beds in the British Islands, mentioning localities where the several beds occur.

2. State the geological position and characteristic fossils of the chief beds of true coal in the British Isles.

3. Give examples of the secular elevation of land and of the encroachments of the sea.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. In the case of the smaller prisons the medical officer is usually a local practitioner but in the case of the larger prisons the medical officers are appointed by the Convict Prison Board or the Prison Commission, and form practically a special service. The Chairman of the Boards is Mr. Evelyn Ruggles Brise. Application for employment may be made to the Board on a special form which, we understand, can be obtained from the Secretary, Major E. G. Clayton, Prison Commission, Home Office, London, S.W.

The number of vacancies is not large, and the prospects of promotion are bad. This is due in part to the fact that the rate of pay of the higher appointments depends upon the number of prisoners in the particular prison, and that the total number of prisoners in the country is decreasing.[1]

The following was the staff in 1897-98:

Convict Service.—Four deputy medical officers at £250, rising to £300; four medical officers, at incomes ranging from £300 to £550.

Local Prison Service.—Ten deputy medical officers, at £250, rising to £300; seven medical officers, at £200; two medical officers, at £250; three medical officers, at £300, rising to £390; six medical officers, at £400, rising to £500.

MEDICAL APPOINTMENTS IN THE COLONIES.

1. Medical appointments are from time to time filled up by the Colonial Office in the following Colonies: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Ceylon, Straits Settlements, Hong Kong, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon and Jamaica vacancies are almost always filled locally by the appointment of qualified native candidates.

It is for the West Indies and the West African Colonies that medical officers are chiefly required.

2. The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poor-house, asylum, or other institution, and free attendance on the aged and children.

In West Africa the medical officers are also required to take charge of any hospital, public dispensary, lunatic asylum, or other Government institution at their respective stations, to supervise the sanitation of the district, to perform vaccination, and to give gratuitous attendance to all Government officials, and, in most cases, the families of such officials also.

N.B.—Passage money on first appointment, and leave of absence on half-pay (in case of sickness, or after six years' service, if the medical officer has given satisfaction in the discharge of his duties), are granted to medical officers in the cases specified in the Colonial Regulations; and those serving in West Africa are allowed six months' leave with full pay and free passages home and out again, after every twelve or fifteen months of continuous residential service. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed, the rule is that they are not entitled to pension, except in West Africa.

3. The following is a short account of the appointments in the separate Colonies:

British Guiana.—Forty-two appointments. Candidates must have held for at least six months a resident medical appointment in some public institution. Officers are appointed on two years' probation as supernumeraries, and are paid a salary at the rate of £300 per annum with quarters, without the right to private practice. Supernumerary officers, married or single, who obtain leave to reside out of the quarters provided for them, will not be entitled to lodging allowance. After serving for two years, if appointed to the permanent staff, the officer will receive £400 per annum, rising by increments of £25 annually up to £700 per annum. A Government medical officer on being appointed to a district, and a supernumerary on being appointed to act in charge of a district, will receive a salary of £500 per annum, but will not receive any increments thereto until entitled to such increments by length of actual service. Every medical officer appointed to a district or to act in charge of a district will receive a travelling allowance at a rate varying from £100 to £150 per annum as the extent of the district may require. He is allowed private practice. No more than £30 is allowed for passage money on first appointment. There is a Widows' and Orphans' Fund in the Colony to which all Government servants are compelled to subscribe at the rate of 4 per cent. on their salaries.

Jamaica.—The appointments, 54 in number, are mainly district appointments with private practice allowed; the salary paid by Government varies from £150 to £250 per annum, and

[1] Intending applicants would do well to consult a memorandum prepared for the use of the Parliamentary Bills Committee of the British Medical Association, and published in the BRITISH MEDICAL JOURNAL on April 23rd, 1892.

in most cases is £200. New comers are in some cases attached for a while to the public hospital in Kingston, and given an allowance at the rate of £200 per annum, but not permitted to undertake private practice. There is a Civil Service Widows' and Orphans' Fund established by law, to which all medical officers are obliged to subscribe at the rate of 4 per cent. on their salaries.

Trinidad and Tobago.—In Trinidad there are 32 appointments. Officers are appointed in the first instance on two years' probation as supernumeraries. They will receive a salary of £250 per annum, with furnished quarters, and are usually attached to the Government Hospital; the salary assigned to the district appointments, to which they are promoted as vacancies occur, is £300, which is increased to £400 and upwards by various allowances for horse, house, or otherwise; these posts carry the right to private practice; after every five years' service an officer is given an additional personal allowance at the rate of £50 per annum. All officers hereafter appointed are required to contribute 4 per cent. of their salaries to the Widows' and Orphans' Fund.

In the Island of Tobago there are 3 district appointments, with salary of £200 per annum attached.

Windward Islands (Grenada, St. Lucia, St. Vincent).—The 23 appointments are, with few exceptions, district appointments with the right to private practice attached; the salaries paid by Government vary from £200 to £400, with allowances in certain cases.

Leeward Islands (Antigua, St. Christopher, and Nevis, Dominica, Montserrat, Virgin Islands).—The 25 appointments are of the same nature as in the Windward Islands. An officer when first sent out is not appointed to a particular colony, but to the service of the Leeward Islands, with a salary of £200, and the Governor decides as to the district which is to be allotted to him. As a rule, £30 only is allowed for passage money. The medical officers receive fees for successful vaccinations, *post-mortem* examinations, attendance and giving evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates. They are also allowed private practice.

British Honduras.—There are 5 medical appointments, in all of which private practice is allowed, if it does not interfere with the public duties of the officer; the pay is $720 to $1,050. The Colonial Surgeon and district surgeon are public vaccinators, and as such receive a fee for every successful case. Four of the medical officers are also district magistrates, and receive an additional $720 in the latter capacity. Unless they already possess a diploma of Public Health, medical officers before they join the Colony are liable to be required to undergo a course of instruction at a laboratory of public health or analogous institution.

Fiji.—There are at present 8 medical officers, of whom the chief medical officer receives £600 per annum, the senior medical officer £450 per annum and £50 allowance for house rent, the others receiving £300 per annum with quarters, or £50 house allowance at the option of the Government. District medical officers receive in addition capitation fees upon all the indentured labourers in their respective districts. These amount usually to sums ranging between £60 and £150 per annum. Government medical officers are entitled to the private practice of their profession in all districts, on the understanding that their official duties are not made subservient to it.

Sierra Leone.—There are 8 Government medical officers. The pay of the Colonial Surgeon is £500 a year. The Assistant Colonial Surgeons receive £300, rising to £350, and the District Surgeons in the Protectorate £350, rising to £400. The Senior Assistant Colonial Surgeon is in charge of the lunatic asylum and the incurable and small-pox hospitals at Kissy, and is stationed in Freetown. Quarters are not provided.

Gambia.—There are 2 medical officers paid respectively £400 and £300 per annum, and allowed private practice. Quarters are provided, or an allowance in lieu thereof.

Gold Coast.—The pay of the Chief Medical Officer is £800, rising to £1,000 by £50 per annum, with consultation practice only. The Colonial Surgeon, the next officer, receives £600 with annual increments of £25 to £700, and there are two Assistant Colonial Surgeons receiving £500 with annual increments of £25 up to £600. The other Assistant Colonial Surgeons, 24 in number, are paid at the rate of £350 per annum for three years. After three years, if the officer has performed his duties in a satisfactory manner and is continued in his appointment, the salary will be increased to £400, rising by annual increments of £20 to £500. Private practice is allowed, but the right of withdrawing this is reserved; there is very little to be had, and it cannot be counted upon, as the medical officers are liable to frequent change of station. Free quarters are provided.

Lagos.—The pay of the Chief Medical Officer is £800 per annum, rising to £1,000 by increments of £50. The Senior Assistant Colonial Surgeon receives a salary of £400 a year, rising by annual increments of £20 to £500. Eight other Assistant Colonial Surgeons receive £350, rising by triennial increments of £25 to £400. Private practice will not be allowed in future. Free quarters, or allowances in lieu thereof, are granted to the Colonial Surgeon and to the European Assistant Colonial Surgeons. (*N.B.*—It is not considered desirable that anyone under 25 should be appointed to any medical post in West Africa. The special rules as to leave and pension in the case of Government servants on the West Coast of Africa apply also to medical officers.)

Ceylon.—The pay of the (36) Sub-Assistant Colonial Surgeons and (9) Deputy Colonial Surgeons, and (8) other subordinate medical officers is at the rate of from Rs. 900 to Rs. 1,600 per annum. The (22) Assistant Colonial Surgeons are paid at a rate of from Rs. 3,000 to Rs. 5,000 per annum, and the (4) Colonial Surgeons and (3) other superior medical officers at a rate of from Rs. 5,000 to Rs. 8,000 per annum. The Principal Civil Medical Officer receives Rs. 12,000 per annum, rising by annual increments of Rs. 1,000 to Rs. 15,000 per annum. Private practice is allowed to the subordinate officers, but the Colonial Surgeons may take only consultation practice. The Medical Service is recruited mainly from gentlemen born in the island but possessing British diplomas.

Straits Settlements.—The pay of the (11) different medical appointments is not uniform in value, but the salary of a Colonial Surgeon varies from $1,800 to $7,200 per annum, with quarters in some cases, private practice being generally not allowed.

Hong Kong.—The pay of the (7) Government medical appointments varies from $2,400 to $4,800 per annum, besides rent and carriage allowances in some cases, but private practice is in general not allowed.

Mauritius.—There are twenty-four medical appointments in all. Of these, fourteen are minor appointments with salaries varying from Rs. 500 to Rs. 1500 per annum. The other ten appointments have salaries varying from Rs. 2,000 to Rs. 9,000. Free quarters are not given in most cases; and private practice is not allowed. The service is mainly recruited from gentlemen born in the island.

N.B.—Exchange compensation is at present granted to officers appointed from this country to medical posts in Hong Kong, the Straits Settlements, and Ceylon, that is, an allowance of dollars or rupees, in respect of one-half, and one half only, of an officer's salary, sufficient to make up the difference between the market value of the dollar or rupee and a dollar equivalent to 3s. or a rupee equivalent to 1s. 6d. The sterling value of the dollar or rupee from day to day is to be found from the market quotations. There are Widows' and Orphans' Pensions Funds in Ceylon, Straits Settlements, and Hong Kong, to which all permanent Government servants are called upon to subscribe at the rate of 4 per cent. on their salaries.

Seychelles.—There are two medical appointments. The Government Medical Officer receives Rs. 4,000; the Assistant Government Medical Officer receives Rs. 3,000. The holder of the latter appointment has free quarters. Private practice is not allowed.

Gibraltar.—There is a surgeon of the Colonial Hospital receiving £250, and an assistant surgeon receiving £87 10s. The surgeon of the hospital as medical officer of the civil prison and lunatic asylum, receives £50 and house allowance of £42. The assistant surgeon is also police surgeon, port surgeon (£100), and is public vaccinator.

Cyprus.—There is a Chief Medical Officer paid at the rate of £500 per annum, and two District Medical Officers paid at the rate of £250 per annum; all enjoying private practice;

these are the only medical appointments in the island which are open to English candidates.

St. Helena.—The Colonial Surgeon receives £200 per annum, and £30 horse allowance. Private practice is allowed.

Falkland Islands.—There are two appointments, one of which is paid at the rate of £300 per annum, and the other at the rate of £200 per annum. Private practice is allowed in both cases.

4. All applicants for ordinary medical employment in these Colonies must be between the ages of 23 and 30, and must be doubly qualified; preference will be given to those who have held hospital appointments as house-physicians and house-surgeons; certificates of moral character and of sobriety will be required, and every officer before being appointed will be medically examined by one of the consulting physicians of the Colonial Office—Dr. Patrick Manson, 21, Queen Anne Street, Cavendish Square, London, W; Dr. Andrew Davidson, 30, Morningside Drive, Edinburgh; or Dr. Hawtrey Benson, 57, Fitzwilliam Square, Dublin.

5. In addition to the ordinary medical appointments in these Colonies vacancies also occasionally, though very rarely, occur for which specialists are required, as, for example, to take charge of a lunatic asylum, and the particulars of chief medical officer in some of the larger Colonies have not been given, as the headship of the medical department in such Colonies, requiring administrative as well as professional qualifications, is not reserved to the ordinary medical staff of the same Colony, but is often filled up directly by transfer, and sometimes from outside the service.

6. Applications for medical employment in these Colonies from persons in the United Kingdom must be addressed to the Assistant Private Secretary, Colonial Office, Downing Street, S.W. Out of the total number so applying, a list of candidates will be made, who will be eligible to fill any vacancies which may occur during the year, but no promise whatever can be held out that candidates will eventually receive an appointment. It is not possible to forecast either the number or the nature of the vacancies which will arise in the course of any given year and it is not expected that candidates should hold themselves in readiness by refraining from other employment, as usually, when selected for an appointment, they can be allowed sufficient time to make their preparations and to terminate their existing employment. There have been on the average 15 vacancies a year during the last ten years to which appointments have been made from this country. During the past year the vacancies have been more numerous, owing to the increases of medical staff in the West African Colonies.

In the course of the year April, 1887, to April, 1888, there were in all 15 vacancies to which appointments were made from this country. They occurred in the following colonies: British Guiana, British Honduras, Falklands, Gambia, Gold Coast, Hong Kong, Straits Settlements. In the course of the year 1888-1889, there were eight vacancies (British Guiana, Fiji, Gold Coast, Straits Settlements, Trinidad). In 1889-1890 there were twelve vacancies (British Guiana, Fiji, Gibraltar, Gold Coast, Hong Kong, Lagos, St. Helena). In the year 1890-1891 there were 17 vacancies (British Guiana, British Honduras, Gambia, Gold Coast, Leeward Islands, Straits Settlements, Windward Islands). In the year 1891-1892 there were 12 vacancies (British Guiana, British Honduras, Fiji, Gold Coast, Leeward Islands, Windward Islands). In the year 1892-1893 there were 18 vacancies (British Guiana, British Honduras, Fiji, Gold Coast, Jamaica, Leeward Islands, Trinidad). In the year 1893-1894 there were 18 vacancies (British Guiana, British Honduras, Falklands, Fiji, Gambia, Gold Coast, Jamaica, Lagos, Leeward Islands, Straits Settlements, Trinidad).

In the year 1894-1895 there were 14 vacancies (British Guiana, Cyprus, Fiji, Gold Coast, Lagos, Leeward Islands, Trinidad, Windward Islands).

In the year 1895-1896 there were 15 vacancies (Gold Coast, Lagos, Gambia, Jamaica, St. Vincent, Straits Settlements, Cyprus, and Zululand).

The list of candidates applying in April, 1897, comprised about 90 names.

In addition to the above, the Colonial Office and Foreign Office, through the Crown Agents for the Colonies, send out every year an increasing number of medical men to fill temporarily appointments in connection with railway and other large public works in the Crown Colonies and Protectorates.

Application for further information should be made at the Colonial Office, Downing Street, S.W.

BRITISH PRACTITIONERS ABROAD.

Foreign practitioners cannot practise medicine in Great Britain without the danger of infringing the Apothecaries' Act, and unless registered they cannot recover their fees by legal process nor give medical evidence in courts of law, nor hold public medical offices. Under the Medical Act of 1886 the General Medical Council may recognise equivalent qualifications granted in countries which treat this country with reciprocity; after certain formalities such qualifications would be registrable. At present, however, no foreign countries have arranged to treat this country with reciprocity, and as a rule British practitioners are required in European countries to pass an examination of greater or less severity. The following list contains particulars as to the regulations of the British Colonies as well as of foreign countries:

BRITISH COLONIES AND DEPENDENCIES.

Australasia.

New South Wales.—British qualifications, if verified, admit holders to practise as duly qualified medical practitioners here. By Order in Council the second part of the Imperial Medical Act, 1886, now applies to New South Wales.

Victoria.—Local registration compulsory. British qualifications entitle holder to registration here.

South Australia.—Registration not compulsory here, and persons can practise without it. British qualifications entitle to registration here. Part II of the Imperial Medical Act, 1886, now applies to South Australia.

Queensland.—All medical practitioners must be registered by the Queensland Medical Board. British qualifications subject to verification entitle holder to registration. Persons registered under Medical Act, 1858, can claim registration, but such registration must be legally proved.

Western Australia.—Persons registered under Medical Act, 1858, can claim to be registered by the Medical Board after legal proof of identity and registration.

Tasmania.—Registration compulsory by Local Medical Council, but any person entitled to be registered under Medical Act, 1858, can after legal proof obtained from the Court of Medical Examiners a certificate entitling him to practise in this Colony.

New Zealand.—Medical practitioners must be registered here, paying a fee of £1 1s. All persons entitled to be registered under Medical Act, 1858, can after legal proof be entitled to registration, but have to pay the fee.

South Africa.

Cape Colony.—No person can practise here without a licence signed by the Colonial Secretary on the recommendation of the Colonial Medical Council. Women are eligible for registration. The fee payable is £5. All persons entitled to be registered under the Medical Act, 1858, can, after legal proof, claim to be registered in the Colony, but the fee has to be paid. The following foreign degrees are made by Order in Council qualifications entitled to local registration—The Staats-Examens of Austria, Germany, Holland, Russia, and Switzerland. A further fee of £1 1s. is required for registration of any additional diplomas or degrees after the first registration.

Midwives are also registered by the Colonial Medical Council.

Natal.—No unlicensed person can either practise in Natal or recover fees. All persons entitled to be registered under the Medical Act, 1858, can, after legal proof, claim to be registered by the Natal Medical Board upon payment of fees from one to three guineas. An annual licence has also to be taken out, fee £5.

Dominion of Canada.

All British degrees and diplomas are registered by the Provisional Medical Board.

Prince Edward Island.—No one may practise here unless registered and licensed by the Colonial Medical Committee. All persons entitled to be registered under the Medical Act, 1858, can claim, after legal proof and the payment of fees not exceeding $20, registration.

New Brunswick.—All practitioners must be locally registered by the Colonial Medical Council under conditions which vary from time to time according to the direction of the Council. Each medical practitioner has to pay an annual fee of $1 to $2.

Nova Scotia.—Local registration compulsory by Provincial Medical Board.

Quebec.—Local registration compulsory by Provincial Board.

Ontario.—No one may practise Medicine, Surgery, or Midwifery who is not registered by the Council of the College of Physicians and Surgeons of Ontario. An examination must be passed.

Manitoba. No person may practise Medicine, Surgery, or Midwifery unless registered by the Council of the College of Physicians and Surgeons o Manitoba. Persons on *Medical Register* can claim to be registered locally upon legal proofs.

North West Territories.—No one may practice here unless registered by the Medical Council which sits at present at Regina, under a penalty of not exceeding $100. All persons entitled to be on *Medical Register* can claim registration after legal proof and payment of $50, and an annual fee of $1 or $2.

British Columbia.—Since the last issue of the Educational Number there has been passed an Act respecting the profession of medicine and surgery and by which Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows: (1) This Act may be cited as the Medical Act, 1898. (2) The members of the medical profession of British Columbia heretofore incorporated under the name of "The Medical Council of British Columbia" shall be deemed to be and to have been from its first establishment a body corporate by the name aforesaid, and the said name is hereby changed to that of "The College of Physicians and Surgeons of British Columbia." (3) Every person registered according to the provisions of the "Medical Act" and any other Act of the Legislature of British Columbia relating to the medical profession shall be a member of the said "College of Physicians and Surgeons of British Columbia." 4. Every person hereafter registered under the provisions of this Act shall also be a member of the said College. 24. The Council shall admit upon the *Register* any person who shall produce from any college or school of medicine and surgery requiring at least four years' course of study a diploma of qualification, provided also that the applicant shall furnish to the Council satisfactory evidence of identification and pass before the members thereof a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon. 63. If any person not registered pursuant to this Act, for hire, gain, or hope of reward, practise or profess to practise medicine, surgery, or midwifery, he shall, upon summary conviction thereof before any justice of the peace, for any and every such offence, pay a penalty not exceeding one hundred dollars.

West Indies.

Jamaica.—Local registration compulsory. Persons entitled to be upon *Medical Register* can claim registration here after legal proof.

British Guiana.—Registration necessary. Medical Board accepts after legal proof any person who is registered under the provisions of the Medical Act of 1858.

Fiji.

Practitioners must be registered in Fiji. The *Register* is kept by the principal medical officer, and any person entitled to be registered under the Medical Act can after legal proof claim to be registered in the Colony. The principal medial officer has power of erasing the name of any registered person for felony, misdemeanour, or unprofessional conduct.

Gold Coast Colony.

Registration before the Licensing Board compulsory here, but proof of being upon the *Register* under Medical Act, 1858, establishes right to practise.

Gibraltar.

Registration under local law necessary, but right to practise conferred after legal proof upon persons registered under Medical Act, 1858.

Leeward Islands.

Registration under local law necessary, and licence to be obtained from the Governor. Persons registered under Medical Act, 1858, can after legal proof claim registration.

Virgin Islands.

No person not entitled to practise in the United Kingdom allowed to practise medicine or surgery here.

EUROPE.

Austria.—It is necessary to pass the State examination, or to obtain a University Degree in Medicine, a necessary preliminary to which is naturalisation as an Austrian subject. Exemptions may be granted under very special circumstances.

Belgium.—Upon the advice of a jury which has a right to grant the diploma of Doctor, the Government can give permission to practise medicine to a foreign subject who possesses a diploma in Medine, Surgery, and Midwifery.

Denmark.—Foreigners are required to pass the State examination.

France.—The degree of M.D. obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse) is required. This regulation applies to Algiers. The degree, however, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject—that is to say, before registration as medical students they must produce evidence of having passed the examination for the French diploma of Bachelor in classical education (Arts and Philosophy) and the certificate in Physical, Chemical, and Natural Science, and they must go through the regular curriculum of professional study. The degree of M.D. is still obtainable by holders of British diplomas under the old conditions of exemption, at the discretion of the Minister of Public Instruction, from any preliminary examination in Arts or Sciences and from portions of the professional curriculum and examinations. The degree obtained in this way will not, however, confer the right to practise in France. The wards of hospitals and laboratories are still freely open to foreigners; and for those who may wish to obtain the purely honorary M.D. degree the facilities offered in the way of dispensation from preliminary examinations are even greater than heretofore. Application for such exemption must be addressed to the Minister of Public Instruction, to whom the documents showing the examinations passed by the candidate in his own country and the degrees or qualifications possessed by him must be submitted. Fees to the amount of £69 must be paid. The *Progrès Médical* (14, Rue des Carmes, Paris) publishes a "Students' Number" every year about November, in which full information is given as to teaching and examinations in every medical school in France.

Holland.—Foreigners are required to pass the State examination.

Germany.—Any person may practise medicine, but if he has not passed the State examination he does so at his own peril, and is liable to fine and imprisonment if convicted of a mistake. The right to practise is obtained only by passing the German *Staats Examen*. A lad who intends to enter the profession of medicine must attend a gymnasium (upper school), and pass an examination in general knowledge—Latin, Greek, German, French, divinity, mathematics, physics, history, and geography. After passing this examination he may be accepted as an ordinary full student of a university. At the end of the fourth semester (second year) he can [illegible] brace[illegible] In the [illegible] universities the degree of M.D. ca[illegible] semester (fourth year)—that is, b[illegible] The degree of M.D. does not in it[illegible] German Empire. By a recent or[illegible] not in future grant the degree of M[illegible] the State examination. The fee [illegible] the final State Examination, £10 6s. The fee to the University for the M.D. degree varies between £15 and £25.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or English.

Italy.—A foreigner must (*a*) obtain an authorisation (*abilitazione*) from one of the Royal Universities of Italy; or (*b*) if he desires to practise only among foreigners he is at liberty to do so. In Italy medical studies are conducted in Government Universities under the immediate supervision of the Ministry of Public Instruction in Rome. There are several universities, one in each of the most important centres of the kingdom, such as Rome, Turin, Naples, Genoa, Palermo, Pavia, Pisa. There is only one medical degree in Italy, and it is that of Doctor in Medicine and Surgery. The title is conferred (by the Rector of each University) in the name of the King. The examinations can be passed at any of the universities, and the students can transfer themselves from one to the other. An original thesis must be presented.

Monaco.—The following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French diploma of Doctor of Medicine; The degree of Doctor of Medicine of the universities of "the United Kingdom of Great Britain," and the diplomas of Fellow of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1804.

Portugal.—The State examination must be passed.

Roumania.—The State examination must be passed (*vivâ voce*).

Russia.—The State examination must be passed, but if the applicant possess the degree of M.D. from a university of high repute, the Minister of Education may give an authorisation after requiring the candidate to compose and defend a dissertation.

Norway.—The State examination must be passed.

Spain.—The State examination must be passed, but exemptions are sometimes granted on application through the British Ambassador. A licence costing from £1 to £24 must be taken out every year. This regulation applies to the Canary Islands and other Spanish Colonies.

Sweden.—The State Examination must be passed.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if he desire to practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zürich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers in this country an introduction to a professor at the university at which he proposes to pass the examination. His proper course would be to call upon the Rector of the University. We are informed that every information would be afforded, and that no difficulties are placed in the way of candidates. At the University of Zürich, the three examinations which it is necessary to pass are held as a rule at the following periods of the year:—*First Examination*: End of January and mid-September; *Second Examination*: end of January and mid-September; *Third Examination*: beginning of January, end of May, and beginning of October. At Basle the next examinations are in October. At Geneva the examinations are held in the third week of October, and in the second week of July, at the opening and conclusion respectively of the winter and summer session. At Lausanne the examinations take place as follows: *First and Second Examinations*: April and October; *Final Examination*: February and March, and June and July.

Turkey.—An examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, £4 10s.). Before being admitted to the examination the candidate must present a diploma from a medical school recognised by the Government of the country in which it is situated.

SOUTH AMERICA.

Argentine Republic.—The applicant's diplomas must be verified by the Argentine Consul in this country (fee £1 4s.). This should be done before leaving this country. On arriving at Buenos Ayres the endorsement of the Argentine Consul in this country must be verified by the Argentine Foreign Office. Three examinations must be passed in the University of Buenos Ayres or Cordova. First Examination: Anatomy with Dissections, Physiology, Pathology Ophthalmology, and Gynæcology. Second Examination: Clinical and Operative Surgery, Histology, Materia Medica, and Mental Diseases. Third Examination: Clinical Medicine, Pathology, Midwifery, and Toxicology. The fee for examination is $300, half of which is retained in case of rejection. The examinations can be passed consecutively at a few short intervals or separately: a rejected candidate is not readmitted to examination until after the lapse of six months. The examination is conducted *vivâ voce* in Spanish. Temporary authorisations to practise for six months may be obtained from the Governor of a province, and the applicant may utilise this time to improve his knowledge of Spanish. The regulations for graduates of Spanish Universities are less onerous.

Brazil.—A State examination must be passed which is conducted in Portuguese or French. The Faculties of Medicine are at Rio de Janeiro and Bahia.

Chili.—The regulations resemble those in the Argentine Republic; examination by the University of Santiago.

Peru.—Five examinations must be passed. Spanish is the official language. Application to be made to the Dean of the Medical Faculty, Lima.

Uruguay.—An examination, conducted in Spanish, at the University of Monte Video, must be passed.

NORTH AMERICA.

The laws regulating the practice of medicine differ in the different States and Territories. The requirements, corrected up to a comparatively recent date, are as follows:

A. In some States the possession of a diploma does not convey the right to practise, an examination being required in all cases. The following States make this demand:

Florida	Montana	North Dakota
Delaware	Washington	Oregon
Georgia	Idaho	Pennsylvania
Louisiana	Indian Territory	South Carolina
Maine	New Hampshire	Texas
Maryland	New Jersey	Utah
Minnesota	New York	Virginia
Mississippi	North Carolina	West Virginia

B. The following States require an examination by a duly qualified Board, or the approval thereby of the presented diploma:

California	Rhode Island	South Dakota
Connecticut	New Mexico Territory	Vermont
Illinois	Colorado	Indian Territory
Indiana	Iowa	Oklahoma Territory
Kentucky	Missouri	Wisconsin
Tennessee	Nebraska	

C. In a few States the presentation of diploma or other certificate of qualification is the only requirement. This is the case in:

Arkansas	Wyoming	Ohio
Michigan	Arizona Territory	Alaska Territory
Nevada	Kansas	District of Columbia

PRACTICE IN KLONDYKE.

Medical men desirous of legally practising in the Klondyke region may do so (1) if they hold a British qualification and pay a registration fee of $50.00; (2) not having such qualifications, they must pass an examination and pay the same fee. Dr. H. N. Bain, Prince Albert, N.W.T., is the Registrar of the Territories. The authorities are insisting on the strict carrying out of these regulations. The examinations are similar in character to those in British Columbia, the subjects of which and the British Columbia regulations are here appended:

Section 1.—Section 29 of the Consolidated Statutes of British Columbia provides: "The Council shall admit upon the register any person who shall produce from any college or school of medicine or surgery, requiring a three years' course of study, a diploma of qualification; provided, also, that the applicant shall furnish to the Council satisfactory evidence of identification, and pass before the members thereof, or such of them as may be appointed for the purpose, a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon." 1886, C. 13, S. 28.

Section 3.—Every person applying for registration under Section 2 of the Medical Act Amendment Act. 1893, shall, on appearing in person before the Registrar of the Council, and paying a fee to the Registrar of $100.00, be entitled to be registered, on producing to such Registrar a certificate duly authenticated under the hand and seal of the Registrar of Medical Practitioners in England, Ireland, and Scotland, as the case may be (or other legal evidence), that such applicant is a duly registered medical practitioner, and that he was duly registered under the Medical Act (Imperial) on or before the 30th day of June, 1887. Such applicant will also be required to produce a certificate of good standing in the profession of medicine from the Registrar or other officer of the medical body having jurisdiction where such applicant last practised his profession, and evidence by statutory declaration that he has not lost the benefit of [illegible] registration under the Medical Act (Imperial) by misconduct or otherwise.

Section 4.—The examination shall be orally and in writing, upon the following subjects: (1) Anatomy, (2) Chemistry, (3) Physiology, (4) Pathology, (5) Materia Medica, (6) Medical Jurisprudence, (7) Theory and Practice of Medicine, (8), Surgery, (9) Clinical Medicine, (10) Clinical Surgery, (11) Obstetrics, and Diseases of Women and Children. Marks required: 50 per cent. in first six branches, 75 per cent. in others.

Section 7.—During the year there shall be three regular meetings, and three examinations held, beginning on the first Tuesday of May and September, and the second Tuesday of January, in Victoria, B.C.

Section 8.—Permits are not granted by the Council.

DENTAL SURGERY.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

CANDIDATES for a diploma in Dental Surgery are required to produce certificates of having been engaged during four years in professional studies, and of having received three years' instruction in Mechanical Dentistry from a registered practitioner. One year's *bonâ fide* apprenticeship with a registered dental practitioner, after being registered as a dental student, may be counted one of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the dental student, either before or after his registration as a student; but no year of such mechanical instruction shall be counted as one of the four years of professional study unless taken after registration.

A Register of Dental Students is kept by the Registrar of the General Medical Council, 299, Oxford Street, London.

Preliminary Education.—Dental students are subject to the same regulations as regards preliminary examination as medical students, but professional study may commence by pupilage with a registered dental practitioner.

DIPLOMAS.

The Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, each grant a licence in Dental Surgery, and the Royal College of Surgeons in Ireland grants a licence in Dentistry, in both cases after the student has produced evidence of passing through the stated curriculum and prescribed examinations. Particulars can be obtained upon application to to the Secretary of the Conjoint Board in England, Examination Hall, Victoria Embankment, London, W.C.; to Mr. James Robertson, Clerk to the Royal College of Surgeons, Edinburgh, 48, George Square, Edinburgh; to the Secretary of the Royal College of Surgeons in Ireland, Dublin; and as to the Faculty of Physicians and Surgeons, to Mr. Alexander Duncan, B.A., 242, St. Vincent Street, Glasgow.

EDUCATION.

A candidate for the Diploma in Dentistry can obtain the necessary instruction at the Dental Hospital of London (apply to the Dean at the Hospital, Leicester Square, W.); or at the National Dental Hospital and College, London (apply to the Dean, the National Dental Hospital, Great Portland Street, London, W.); at the Dental School of Guy's Hospital (apply to the Dean at the Medical School, Guy's Hospital, S.E.); at the Birmingham Dental School in connection with Mason University College, Birmingham (apply to the Dean of the Medical Faculty, University College, Birmingham); at Owens College, Manchester (apply to the Registrar, Owens College, Manchester); at the Liverpool Dental Hospital and School of Dental Surgery (apply to the Dean of the Medical Faculty, University College, Liverpool); and at the Devon and Exeter Dental Hospital (apply to the Honorary Secretary of the Hospital). The Scottish Schools of Dentistry are the Incorporated Edinburgh Dental Hospital and School (apply to the Dean, 31, Chambers Street, Edinburgh); the Glasgow Royal Infirmary, Dental Department (apply to the Dean of the Faculty of Medicine, Mr. R. T. Kent, St. Mungo's College, Glasgow); and Anderson's College Medical School, Glasgow (apply to the Secretary, Mr. D. M. Alexander, 97, West Regent Street, Glasgow).

CHANGES AT THE MEDICAL SCHOOLS.

THE following are the principal changes in the staff and teaching arrangements that have taken place in the Medical Schools and Hospitals during the past year:

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

Sir T. Smith has retired from the office of Surgeon, and has been appointed Consulting Surgeon. Mr. W. J. Walsham has been elected Surgeon. Mr. Walsham has resigned the charge of the Orthopædic Department, and Mr. W. Bruce Clarke has been appointed in his place. Mr. D'Arcy Power has been elected Assistant Surgeon. Mr. J. Berry has resigned the Surgical Registrarship, and Mr. H. J. Waring has been elected in his place. Mr. R. C. Bailey has succeeded Mr. Waring as Senior Demonstrator of Anatomy. Dr. T. W. Shore has resigned the Wardenship of the College, but still continues to hold the Lectureship on Biology. Dr. J. Calvert has been elected Warden. Mr. P. Furnivall has been elected Demonstrator of Anatomy. Mr. Phillips and Dr. Christopherson have been elected Assistant Demonstrator of Anatomy. Dr. C. H. Roberts has retired from the post of Midwifery Tutor, and has been succeeded by Dr. J. Morrison. Mr. T. J. Horder has been elected Assistant Demonstrator of Physiology, and Dr. Morley Fletcher has been appointed Assistant Curator of the Museum.

Charing Cross Hospital.

Mr. Mackenzie Davidson has been appointed to superintend the Roentgen Ray Department. Dr. Watt Black, who had been Lecturer on Midwifery for twenty-nine years, and Treasurer of the School for eight years, has resigned. Dr. Black has been succeeded in his lectureship by Dr. Amand Routh, and in the treasurership of the School by Mr. J. H. Morgan. A new Bacteriological Laboratory has been opened. A Recreation Ground has been presented to the Students' Club by Mr. E. J. Churchill.

St. George's Hospital.

Mr. Francis Caffrey has been elected Assistant Surgeon on the appointment of Mr. T. Pickering Pick to the Consulting Staff; and Dr. A. F. Stabb was elected Assistant Obstetric Physician after the death of Dr. Leonard Remfry.

Guy's Hospital.

Dr. Stevenson has resigned his position as Senior Lecturer on Chemistry, and Mr. Groves, F.R.S., will in future deliver the whole course of lectures on Inorganic Chemistry. Mr. Wade, B.Sc., has been appointed Lecturer on Organic Chemistry, and will also take charge of the course of Practical Demonstrations. Dr. J. H. Bryant has been appointed fifth Assistant Physician, and Mr. A. D. Fripp, M.S., fifth Assistant Surgeon. Dr. Fawcett has succeeded Dr. Bryant as Medical Registrar and Tutor, and Dr. A. P. Beddard has been elected to fill Dr. Fawcett's place as Demonstrator of Physiology. Dr. J. W. Pare and Mr. K. W. Goadby have been appointed Demonstrators of Practical Dentistry.

King's College, London.

Dr. W. S. Playfair has retired from the office of Professor of Obstetric Medicine, and has been appointed Emeritus Professor. Dr. Philip has been appointed Physician Accoucheur to the Hospital. Dr. Duffin has retired from the office of Professor of Medicine, and has been appointed Emeritus Professor. Dr. W. J. Simpson has been appointed Professor of Hygiene.

The London Hospital Medical College.

A new block of buildings for the adequate teaching of Bacteriology, Public Health, and Biology, as well as for the encouragement of private research in these subjects, has been erected. On the basement is the department of Public Health, containing a large Museum, Professors' Room, Class Rooms, etc. On the ground floor is the Biological Laboratory, Class Rooms, and the Materia Medica Museum. On the first floor the Chemical Theatre and Laboratories and the Balance Room. On the second floor the Physics Laboratory, the Chemical Laboratory for the Diploma in Public Health Classes, the Operative Surgery Room, and a large Anatomy Class Room leading from the Dissecting Room. On the third floor is the Bacteriological Department with General Laboratory, Research Laboratories, Class Room for D.P.H. work, Sterilising Room, Animal Room, etc. Other portions of the buildings are thus left for additional development, and advantage has been taken of this to provide Special Class Rooms for students studying for the Preliminary Scientific, the Intermediate M.B. London, and higher Examinations. Additions have also been made to the Physiological Department, giving rooms for Original Research and for Special Class work for the higher Examinations. For all these departments special teachers have already been appointed who are devoting their entire time to the particular subjects that they have undertaken. In addition to these alterations and additions, arrangements have been made in the hospital for additional Clinical Teaching. The physicians and surgeons will make an additional visit each week. The assistant-surgeons, who formerly had no beds, now have twenty beds each, so that the clinical material of the hospital will be more fully utilised than formerly, and more opportunity will be given for the development of Operative Surgery. To meet this, another Operating Theatre will shortly be built.

The following changes have occurred in the teaching staff: Dr. Percy Kidd has been appointed Lecturer on Medicine in succession to Dr. Stephen Mackenzie, who has resigned his Lectureship after twenty years' teaching in the Medical School. Dr. Bulloch has been appointed Lecturer on General Pathology. Dr. Thresh has been appointed Lecturer on Public Health in place of Dr. Schorstein. The special course for the Diploma in Public Health will now be undertaken by Dr. Bulloch, Dr. Thresh, and Mr. Page. Mr. Mudge has been appointed Demonstrator of Biology, and Dr. L. A. Smith has been appointed Medical Tutor. Mr. Eve still retains the Lectureship on Surgical Pathology.

St. Mary's Hospital.

The new out-patients' department, which covers an area of over 20,000 superficial square feet, was opened in May. It occupies the entire ground floor of the new Clarence Wing, which when completed will also provide additional wards and a residential college for medical officers and students. The new school buildings and laboratories, begun in the Midsummer vacation of last year, were completed by the middle of the Winter Session. The Physiological Laboratories have been further increased, and form a series of rooms which occupy the whole of the first floor of both the old and new buildings. A fresh Laboratory for the study of Biology, Pathology, and Bacteriology has been added. All the buildings hitherto used for the out-patients' department of the Hospital have been apportioned to the Medical School for purposes of new laboratories, class rooms, and a new museum. A complete reorganisation of the Pathological Department has lately been made with provision of extensive new laboratories for Pathology and Bacteriology, and an improved Museum for Pathological Specimens with a Special Anatomical Department.

Middlesex Hospital.

The new school buildings, which provide new and fully-equipped Laboratories for Physiology, Pathology, and Bacteriology, as well as a new dissecting room and chemical theatre and laboratory, are approaching completion.

St. Thomas's Hospital.

Dr. W. M. Ord has become Consulting Physician, and Mr. Mackellar has resigned the post of Senior Surgeon. Dr. H. P. Hawkins has been appointed Physician, and Drs. S. G. Toller and J. J. Perkins Assistant Physicians. Mr. H. Betham Robinson has been appointed Surgeon in charge of the Special Department for Diseases of the Throat. Mr. H. C. Crouch has succeeded Mr. E. F. White, F.R.C.S., as Anæsthetist. Dr. J. J. Perkins has been appointed Demonstrator of Morbid Anatomy and of Morbid Histology, and Dr. J. S. Fairbarn Obstetric Tutor and Registrar. Mr. Battle is now Joint Lecturer on Practical Surgery; Mr. Makins, Joint Teacher of Operative Surgery; and Dr. Turney, Joint Lecturer on Pathology.

Westminster Hospital.

Mr. N. C. Macnamara has become Consulting Surgeon to the Hospital, and, in consequence of the vacancy thus produced, Mr. W. G. Spencer has been appointed Surgeon, and Mr. William Turner Assistant Surgeon. In recognition of his long service, Dr. Dupré, F.R.S., who retired from the active staff of lecturers last year, has recently received the titular distinction of Emeritus Lecturer on Chemistry. Dr. Wilson Hake has been appointed Lecturer on Toxicology. Mr. G. B. James has received the Curatorship of the Museum, and Mr. E. Canny Ryall the fourth Demonstratorship of Anatomy.

London (Royal Free Hospital) School of Medicine for Women.

A new block of buildings has recently been added to the school, comprising large and well-equipped laboratories for Anatomy, Physiology, and Chemistry. All the laboratories are lighted with electric light, and are fitted with the most modern appliances. A second block is now in course of erection, which will contain three lecture theatres and a Biology laboratory. The teaching of the school has been much extended in several departments. More attention is now given to the subject of Pathology, and extra lectures and demonstrations have been added. A course of demonstrations in Practical Toxicology is now given in October, in preparation for the M.B.Lond. examination by Mr. Bodmer. Dr. Patrick Manson has recently been elected Lecturer on Tropical Diseases, and a course of lectures is arranged for the summer session.

London School of Medicine for Women.

Miss Cock (Senior Physician New Hospital for Women) has been appointed Joint Lecturer on Medicine in place of Mrs. Garrett Anderson, M.D., resigned; Dr. E. H. Starling (Joint Lecturer on Physiology, Guy's Hospital) has succeeded Professor Halliburton as Lecturer on Physiology; Dr. F. W. Andrewes (Pathologist and Lecturer on Pathology, St. Bartholomew's Hospital) has become Lecturer on Pathology in place of Mr. Silcock; and Mr. James Berry, F.R.C.S. (Surgeon Royal Free Hospital), Joint Lecturer on Surgery in place of Mr. A. T. Norton, F.R.C.S.

University College, Bristol.

Mr. Pickering has been succeeded in the Lectureship on Operative Surgery by Mr. Paul Bush; Mr. A. W. Prichard in that of Practical Surgery by Dr. R. G. Poole Lansdown; and Dr. Edgeworth has resigned the Lectureship on Practical Physiology and Histology.

University College of South Wales and Monmouthshire, Cardiff.

During the last year Mr. S. C. Mahalanobis, B.Sc., has been appointed Assistant Lecturer and Demonstrator in Physiology, and Mr. H. Spencer Harrison, Assistant Lecturer and Demonstrator in Biology. An Assistant Lecturer and Demonstrator in Anatomy will shortly be appointed.

Yorkshire College, Leeds.

Professor A. G. Barrs has been appointed to be Professor of Medicine in succession to Professor Eddison and Dr. Churton; and Dr. C. M. Chadwick has succeeded Professor Barrs as Professor of Materia Medica and Therapeutics; Dr. H. J. Campbell has been appointed Joint Lecturer on Forensic Medicine in place of Dr. Chadwick; Dr. A. J. Milroy has been appointed Demonstrator of Physiology, and Dr. C. P. White Demonstrator of Pathology.

University College, Liverpool.

Professor R. T. Glazebrook, M.A., F.R.S. (Trinity College, Cambridge) has succeeded Dr. G. H. Bendall, now Head Master of Charterhouse, as Principal, and Dr. Richard Caton, M.D., F.R.C.P., has succeeded Professor Rushton Parker as Chairman of the Medical Faculty; Mr. A. Gordon Gullan, M.B., F.R.C.S., has been appointed Demonstrator of Physiology, and Dr. A. S. Grünbaum Assistant Lecturer on Chemical Physiology. At the Royal Infirmary, Mr. T. B. Grimsdale, M.B., has been appointed Gynæcological Surgeon in succession to Professor John Wallace.

Owens College, Manchester.

Mr. A. B. Smallman, M.B., Ch.B., has succeeded Dr. N. H. Alcock as Demonstrator of Anatomy, and Mr. O. V. Darbishire, B.A., Ph.D., takes the place of Mr. F. W. Keeble, B.A., in the Botany Department; Dr. James Niven takes the place of Mr. C. E. Paget, M.R.C.S., D.P.H., as Lecturer on Public Health.

University of Durham College of Medicine, Newcastle-on-Tyne.

The only change in the teaching staff is the appointment of Mr. William Hardcastle, M.B.Lond., M.R.C.S., L.R.C.P., to the post of Demonstrator of Comparative Pathology and Bacteriology.

University College, Sheffield.

Mr. C. F. Myers-Ward has been appointed Professor of Physiology in place of Dr. Hall; and Mr. R. Favell Professor of Midwifery and Diseases of Women in place of Dr. Keeling.

The School of Medicine of the Royal Colleges, Edinburgh.

Mr. C. W. Cathcart has rejoined the Surgical Staff; Dr. W. G. Aitchison Robertson has joined as Lecturer on Medical Jurisprudence and Public Health; and Dr. G. Lovell Gulland as Lecturer on Medical Diagnosis. Drs. Stockman, Felkin, Mr. Joseph Bell, and Sir J. Batty Tuke have resigned.

The University, Glasgow.

Professor John Glaister, M.D., D.P.H., was appointed in March last to the Chair of Forensic Medicine in succession to Dr. Pierce Adolphus Simpton, M.A., M.D., resigned.

St. Mungo's College, Glasgow.

Professor Barlow, M.D., has succeeded Professor Kent as Dean of the Faculty of Medicine, and Professor Hugh Galt has succeeded Professor Glaister in the department of Medical Jurisprudence and Public Health.

University of St. Andrews.

Several new appointments have been made to the medical staff. Professors of Medicine and Surgery were appointed in July, and in September Professors of Midwifery, Materia Medica, and Pathology will be appointed. A Lecturer on Medical Jurisprudence and Public Health has also been appointed.

Anderson's College Medical School.

The only new member of the staff is Mr. Joseph Carroll, M.B., D.P.H.Camb., who was appointed in the spring to the Lectureship in Public Health.

University College, Dundee.

Professor D. Macewan, M.D., has been appointed to the Chair of Surgery, and Professor A. M. Stalkes, M.D., to the Chair of Practice of Medicine, both chairs newly established. Appointments will be made in September to the Chairs of Materia Medica and Therapeutics, Pathology, and Midwifery.

School of Physic, Trinity College, Dublin.

Dr. C. J. Patten becomes Chief Demonstrator of Anatomy, and takes part with Professor Cunningham in giving the Lectures in Applied Anatomy. Dr. N. H. Alcock has become Assistant to the Professor of the Institute of Medicine, and Mr. E. Blake Knox Assistant to the Lecturer in Pathology.

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SATURDAY, AUGUST 27TH, 1898.

THE HEALTH OF THE PRINCE OF WALES.

It is now between five and six weeks since H.R.H. the Prince of Wales met with the unfortunate accident to his left patella which broke the bone and also caused an extensive laceration of the quadriceps insertion into the upper border of the patella. We are happy to assure our readers on the best authority that His Royal Highness has continued to make gratifying progress. The swelling in and around the joint is greatly diminished, the fragments have been kept in close apposition, and the process of repair is proceeding without interruption. The massage which has been employed every day has much improved the condition of the limb and helped to maintain the muscular tone and a good circulation. During the past fortnight passive moments in a restricted degree have been imposed upon the knee. This has caused neither pain nor any inconvenience, and the result promises well for future active movements of the joint. His Royal Highness is now on a cruise down Channel, and will visit Portland, Dartmouth, and some other places. It is proposed that he shall utilise this opportunity for having some carriage exercise, and the sailors, drilled as a carrying party on board the yacht, will be able safely and comfortably to transport him from the ship to his carriage. In a week or two it is hoped he may be able to wear a splint arranged to allow a predetermined amount of flexion at the knee, with a spring arrangement to compensate the weakened extending power of the quadriceps muscle. In this he can move about on crutches at first, till the power of maintaining his equilibrium is fully acquired, and then a stick will be used. The Prince is fully aware of the long interval which must ensue before strong union can occur, and is quite prepared to submit to any restrictions needful to secure the best possible result. For one who led such an incessantly active

life these restrictions must be especially irksome. Nevertheless the patience and good temper of the Prince seem to have no limit, and his general health has been fully maintained. We feel certain that not our readers only but the nation at large entertains the sincerest sympathy for His Royal Highness, and will admire the happy temper and courage he has exhibited throughout.

THE CAMBRIDGE PHARMACOLOGICAL LABORATORY.

We understand that it is in contemplation to increase the accommodation at Cambridge for the teaching of pharmacology, which has long been regarded by the teachers of the University Medical Faculty as an indispensable part of the medical curriculum. The Pharmacological Laboratory at Cambridge has been only a few years in existence, but it has justified its establishment by the original work done there by Professor Bradbury and by his assistant Dr. C. R. Marshall. As evidence of the value of the laboratory as an institution for teaching as well as for research, it may be pointed out that one of the two gold medals given by the University of Edinburgh for a thesis for the degree of M.D. has been awarded to Dr. Andrew Balfour for work done in this laboratory, and that the gold medal and exhibition in materia medica and pharmaceutical chemistry at the Intermediate M.B. Examination of the London University has been gained by Mr. Arthur Eastwood, a student in the department.

THE WATER SUPPLY OF EAST LONDON.

The failure of the water store of the East London Water Company, which has led the company to limit the supply of water to a few hours a day, is a serious matter, especially in view of the fact that the supply is as a general thing constant, so that domestic cisterns do not exist in a large proportion of houses. A protest has been issued by a number of medical practitioners in Ilford and East Ham, pointing out that the stoppage of the water supply is likely to be followed by a great increase in illness, especially in diarrhœa. As at present placed, however, the company appears to be helpless, as it has not got a supply of water to last more than about 100 days, even on the shortened supply, and even after cutting off, as is proposed, the supply to the public baths and washhouses, and to large factories supplied by metre from the fire mains. The exact apportionment of the blame for this state of things between the company, the London County Council, and Parliament, is a matter of dispute, but the attitude of the public is very much that of the Queen of Wonderland at the famous croquet party—that if somebody does not do something very soon, somebody will have his head cut off. In the meantime, the inhabitants of many quarters are drawing water from temporary standpipes in the streets. The only immediate hope of a better state of things is in a month's steady rain.

The inaugural address of the next session of the Abernethian Society of St. Bartholomew's Hospital will be delivered on Thursday, October 6th, at 8 P.M., by Sir Thomas Smith, Bart., F.R.C.S. Sir Thomas has chosen for his subject reminiscences of his forty-eight years' association with the hospital.

We regret to have to record the death, at the age of 73, of Dr. Thomas Francis I'Anson of Whitehaven, Vice-President of the Border Counties Branch. Dr. I'Anson, who was President of the Ethical Section at Carlisle, was recently re-elected representative of the Border Counties Branch on the Council of the British Medical Association.

Mr. William Gray Campbell, at one time brewer in Edinburgh, has by his will bequeathed £1,000 to the Edinburgh Royal Infirmary and £5,000 to the Longmore Hospital for Incurables.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

Thursday.

The Annual Congress of the Royal Institute of Public Health was opened in Dublin, August 18th, and in regard to attendance of members, work done, and the generous hospitality of the Irish metropolis may be looked upon as a most successful meeting. The Lord Mayor of Dublin and Professor W. R. Smith (President of the Institute) assisted the President of the Congress, Sir Charles Cameron, in receiving the members, and in thus formally inaugurating the proceedings. The reception was held in Trinity College, and was attended by many Irish and English mayors and Scotch provosts. Sir Charles Cameron's address dealt with the sanitary developments in Dublin, and was listened to with great interest.

The members then adjourned to the Royal University, where the exhibition had been installed. At 12.30 their Excellencies Earl Cadogan, K.G., and the Countess Cadogan arrived in State. They were attended by a distinguished party, and were received first by the Senate of the University and then by the President, the Lord Mayor of Dublin, and the members of the council. Having entered one of the large halls, an address was presented to their Excellencies, and the Lord Lieutenant made a brief reply, in which he expressed the deepest interest in the science and practice of sanitation, and offered a hearty welcome to the distinguished guests. Immediately afterwards the High Sheriff of Dublin (Alderman Pile) entertained over 600 guests to luncheon in the Great Hall of the University, and brief but suitable speeches were delivered.

In the afternoon there was a garden party at the Viceregal Lodge, for which 2,000 invitations had been issued. Their Excellencies received their guests, and subsequently walked about the grounds and engaged in conversation with very many of the visitors. In the evening there were promenade concerts at the Royal University and in the Lyric Hall; some members of the Corinthian Club gave a performance. The theatres were also crowded.

Friday.

In the Section of Preventive Medicine and Vital Statistics the Registrar-General, Dr. T. W. Grimshaw, C.B., took the chair. Dr. R. B. Mahon, F.R.C.S.Eng., Ballinrobe, read a paper on the Causes and Management of Outbreaks of Typhoid Fever occurring in Rural Sanitary Districts.

Measles.—Dr. Patrick Letters (Valencia Island) submitted a paper on the Prevention of Measles in Rural Districts. Dr. Letters having to attend another section, his paper was read by one of the Secretaries. Dr. William Berry (Wigan) read a paper on the Control of Infectious Diseases, with special reference to measles and whooping-cough; and Dr. J. Wright-Mason submitted a paper on the Modification of Measles, in the course of which he contended that compulsory notification was the only reliable means of preventing the spread of measles, but he believed that the notification should be in a modified form. A discussion followed.

Tuberculosis.—Dr. George B. White, F.R.C.S.I., read a paper on the microbial infection of milk and other food material. Dr. Joseph O'Carroll read a paper on The Duties of the Community with regard to Tuberculosis. He pointed out that the average deaths from so-called zymotic diseases in Ireland was 8,000 as compared with 12,000 from tuberculosis. An unpleasant fact was that, while in England, Wales, and Scotland the mortality from tuberculosis was decreasing, in Ireland it was increasing.

After discussion the following resolution was adopted:

That from a consideration of the serious mortality from tuberculous disease and the known connection of tuberculosis with a bacillus which can, by the adoption of proper means, be destroyed, this Section is unanimously of opinion that immediate steps should be taken to consider the question whether tuberculosis should be added to the list of notifiable diseases, and what other effective steps should be taken with a view of reducing the mortality from this disease.

At the Conference of Veterinarians, under the presidency of Mr. Hedley, the following resolutions were passed:

That this Conference is satisfied that tuberculosis cannot effectually be brought under control unless special provisions are made for periodical

inspections by qualified medical officers and by persons engaged in the general supervision and care of food-producing animals.

That this Conference, recognising the utility of tuberculin as a most valuable aid in the diagnosis of tuberculosis, and as its indiscriminate use would be fraught with danger, and would be open to abuse, considers it advisable that its distribution should be officially controlled, and its application or use should be placed in the hands of qualified veterinary surgeons only.

Climatology.—In the Section of Chemistry, the President (Dr. John William Moore, F.R.C.P.I.) gave an address on the Climatology of the City of Dublin and the scenery of the country. Dr. Byrne Power read a paper on Kingstown as a Health Resort; Mr. Cullum on Valentia Observatory on the Climatology of Valentia; Dr. Patrick Letters on Valentia as a Health Resort; Dr. B. H. Steede on Some Meteorological and other Statistics in connection with the National Hospital for Consumption for Ireland.

Housing of the Working Classes.—The Municipal and Parliamentary Section opened its deliberations at 10.30 A.M. in Room D. of the Engineering School, T.C.D., under the presidency of the Right Hon. Alderman Meade, LL.D., who delivered an address. Sir Charles Cameron said that he was altogether in sympathy with the workers in their desire to have decent, comfortable homes; but it should be borne in mind that the artisan who had from 35s. to 40s. a week was able to pay rent for a fairly decent cottage or tenement. The people to be considered were those who could not pay more than 1s. to 2s. a week, and he thought that it was the duty of Parliament to pass a law to provide decent dwellings for such people. Mr. T. W. Russell, M.P., Parliamentary Secretary to the Local Government Board in England, said that the City of Dublin differed largely from the circumstances of any other city in the three kingdoms. It was not alone that these tenement houses were of the worst and the poorest character, but that they were largely in the hands of small house jobbers, who bought at the lowest rate possible and charged naturally the highest rent they could get. They had gone into this business, they had made their investment deliberately, and he should be very much inclined to tell them when they bought this property they bought the responsibility, and he would strongly advise the Corporation to insist upon these houses, so far as it was possible to do it, being put into habitable repair. Much had been done by the Corporation in recent years, but as regards the drainage of the tenement houses, the Corporation should see that they were put into a sanitary condition.

Enteric Fever.—At a Conference of Army Medical Officers a series of papers were read on Enteric Fever, with special reference to India.

Garden Party. Sir Christopher and Lady Nixon gave a garden party at Roebuck House.

Saturday.

Vital Statistics and Preventive Medicine.—Dr. Grimshaw, C.B., Registrar-General, delivered a Presidential Address in the Section of Preventive Medicine and Vital Statistics. He dealt with the relation of vital statistics to preventive medicine and their use to the community.

The Treatment of Infectious Diseases in General Hospitals.—Sir W. Stokes read a paper on the Treatment of Infectious Diseases in General Hospitals. Professor Smith proposed the following resolution, which was seconded by Dr. Kaye, and carried, after a vigorous criticism by Sir William Thomson, who said that the patients in Dublin could not be more isolated than they were at the present day, unless they were carried six miles away:

That this Section regrets to learn that infectious diseases are in some localities treated in connection with general hospitals, and they respectfully submit that, in the interests of the public health of the community, it is urgently necessary that such treatment should take place in separate and distinct institutions under proper public control.

Urban and Rural Water Supplies.—In the Section of Chemistry and Meteorology Professor J. C. Thresh, M.D., Medical Officer of Health to the Essex County Council, read a paper on The Protection of Urban and Rural Water Supplies; Dr. Edgar Flinn, Local Government Board Inspector, on Urban and Rural Water Supplies; Mr. H. Hyndman on The Commercial Production of Cold Sterilised Water. On the motion of Professor J. C. Thresh, seconded by Professor Glaister, the following resolution was unanimously adopted:

That legislation is urgently needed for securing the supervision of all public water supplies, in order to ensure the provision of pure and wholesome water; and, further, that it is desirable that sanitary authorities should be empowered to make by-laws with reference to the construction and protection of private wells, and to enable them to close all wells yielding water liable to dangerous pollution, and also that copies of this resolution be forwarded to the Local Government Board.

Reform of the Workhouse System.—In the course of a discussion on this subject Mr. T. W. Russell, M.P., said it was a stigma upon the Poor-law system that a single child was left in an Irish workhouse. He wished that a deputation of Irish guardians would go on a short tour through England and see the working of the Poor-law system in that country.

On the motion of Dr. Moorhead it was resolved:

That this Section is of opinion that the union hospitals in Ireland should be disassociated from workhouses, and that patients admitted to these buildings for treatment should not be compelled to do anything which would class them as paupers.

Dinner.—The annual dinner took place in the Royal College of Surgeons. It was largely attended, and was honoured by the presence of His Excellency Earl Cadogan, K.G.

Monday.

Monday was devoted to excursions. A party went to Glendalough, co. Wicklow; another to Belfast, where the Lord Mayor gave a luncheon; a third to Guinness's brewery, where the directors entertained it at lunch; and in the afternoon there was a garden party at Sir Henry Cochrane's at Bray.

Tuesday.

This was the closing day, and the Sections got through the remaining business. At the general meeting of the Congress votes of thanks were passed to the various hosts who had received the members, and a vote of thanks to the President, Sir Charles Cameron, brought the proceedings to a close.

Honorary Diplomas.—In connection with the meeting of the Institute the Royal College of Physicians of Ireland conferred its Honorary Fellowship on Dr. Alexander Crum Brown, F.R.S., M.R.C.P., London; Sir Charles Cameron, M.D., F.R.C.S.I.; Dr. Mathew Hay; and Sir Richard Thorne, K.C.B., M.B., F.R.C.P., London; and its Honorary Diploma in State Medicine on Dr. T. W. Grimshaw, C.B., F.R.C.P.I.; Sir Henry Littlejohn, M.D.; Dr. John W. Moore, F.R.C.P.I.; Dr. W. R. Smith; Dr. T. J. Stafford; and Dr. J. C. Thresh. The Apothecaries' Hall of Ireland also conferred its Honorary Diplomas on Professor W. R. Smith, Dr. Mathew Hay, and Dr. Alexander Crum Brown.

SUSPENSION OF THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.

THE following correspondence with the University Court will explain the circumstances under which the separate Medical School for Women at Surgeon Square has for the present suspended its classes:

(1) *To the Secretary of the University Court, Edinburgh.*

Edinburgh School of Medicine for Women,
Surgeon Square, April 11th, 1898.

DEAR SIR,—On behalf of the Executive Committee of this School, we beg you to bring before the University Court, at their next meeting, the very anomalous position of the University regulations relating to the medical education of women in Edinburgh.

On April 16th, 1896, we received from your honourable Court the following notice:

"The University Court, having carefully considered the reports of the Committee appointed to visit the recognised medical schools for the education of women, showing that, in several cases, instruction is being given to the women students in mixed classes, such classes being conducted in the different medical schools in the city, have agreed, when considering applications by medical schools or teachers for recognition in respect to the medical education of women to require that the classes shall not be mixed classes, except on special cause shown."

On inquiry, we understood from you, Sir, that the last clause of the foregoing regulation referred only to mixed classes for which previous sanction might from time to time be given by the Court.

In compliance with this order of the Court, the committee of this school have, at great expense, organised separate classes for women in all the subjects of the curriculum, with the exception of two (Physics and Physiology) specially excepted by the Court; and such classes would have been self-supporting had they been attended by all the women medical stu-

dents matriculated in the University. This, however, has not been the case, though we have reason to know that in several subjects no other separate classes for women have been held in Edinburgh; and though the regulation above referred to has not only not been rescinded, but was quoted and reinforced in the last letter sent to this school by your honourable Court, bearing date July 20th, 1897.

On inquiry, however, we learn that this regulation has, with or without the knowledge of the Court, become practically a dead letter; that a large majority of the women now studying medicine in Edinburgh are attending mixed classes in many subjects in the various medical schools for men situated in different parts of the city; and that this disregard of the orders of the Court meets with no check or discouragement, as it appears that on presentation of certificates of attendance no inquiry is made by the University officials as to whether such attendance has been in mixed or separate classes; so that those students who have obeyed the commands of the Court have found themselves on the same footing as those who have disobeyed them.

The result of this is that it becomes impossible for the committee of this school to continue to provide expensive separate classes, involving guarantees to lecturers, and the provision of suitable premises and an adequate staff, when the ground is cut under their feet by the much cheaper expedient of mixed classes, which require no guarantee, and which are given in the schools for men.

In view of the great loss at which this school has been conducted during the last two years, and the impossibility of continuing to face ruinous competition on such a totally different basis, we most respectfully beg to obtain from the Court an authoritative decision whether the regulation forbidding mixed classes is still in force, or whether it has tacitly been withdrawn.

In the former case the Committee of this school desire to express their perfect readiness to provide a complete curriculum of separate medical classes, to the satisfaction of the Court, and they venture to believe that the results already obtained by their students are the best guarantee of the quality of instruction that will be provided. It will no doubt be in the recollection of your honourable Court that six of the seven women who have taken the degrees of M.B., C.M., at this University, have been completely educated at this school; and that during the last academical year (August, 1896, to August, 1897) its students have gone up for University examinations on sixteen occasions, and have passed successfully every time.

If, on the other hand, the Court should resolve to sanction mixed classes, to be held in the men's schools, the Committee trust that arrangements will be made as soon as possible to admit women to the ordinary classes of the medical faculty, so that no private arrangements will any longer be required; in which case the Edinburgh School of Medicine for Women will have fulfilled its temporary mission, and may be closed.

If, as a third alternative, the Court are themselves willing to make provision for the medical education of women in separate classes, the Committee of this school will gladly place at their disposal for this purpose their premises in Surgeon Square, and also (with the assent of the donors) will hand over to the Court the capital, amounting to over £2,000, already invested for the provision of medical scholarships for women.

As our Committee feel that on the decision of your honourable Court rests not only the very existence of this school, but also, in all probability, the future prosperity of the medical education of women in Edinburgh, we beg most earnestly to commend the whole subject to the consideration of your honourable Court, and to request an authoritative decision on the points at issue.

We have the honour to remain, dear Sir,
Your obedient servants,
GEORGE W. BALFOUR,
Chairman.
SOPHIA JEX-BLAKE,
Dean of the School.

(2) *From the Secretary of the University Court.*
University of Edinburgh,
June 17th, 1898.

DEAR MADAM,—Referring to your letter of April 3rd (*sic*) last on behalf of the Executive Committee of the Edinburgh School of Medicine for Women, I am directed by the University Court to state: (1) That the Court's regulation forbidding mixed classes except on special cause shown is still in force; and (2) that while thanking the Executive Committee for the offer contained in their letter, the University Court deem it impossible, in present circumstances, to depart from the system hitherto pursued of providing for the medical education of women by the recognition of an outside school or schools.

Believe me, sincerely yours,
M. C. TAYLOR, Secretary.
Dr. S. Jex-Blake, Bruntsfield Lodge.

(3) *To the Secretary of the University Court.*
Edinburgh School of Medicine for Women,
Surgeon Square, July 4th, 1898.

DEAR SIR,—For the information of the Executive Committee of this school, I beg to inquire: (1) Whether any mixed classes are now to be recognised except the two of which we have had notice—namely, physics and physiology; and, if so, what they are; (2) whether the inspectors of certificates have been instructed henceforth to ascertain whether the attendance of women students has been in mixed or separate classes.

Believe me, yours truly,
SOPHIA JEX-BLAKE.
The Secretary of the University Court.

(4) *From the Secretary of the University Court.*
University of Edinburgh,
July 23rd, 1898.

DEAR MADAM,—I regret the delay that has occurred in my reply to your letter of inquiry of 4th inst., but the University Court only met on the evening of Monday last, and the pressure of business has since then been great.

With reference to your first query, I have to state that the Court have granted permission for the holding of mixed classes in connection with the Medical College for Women, Minto House, in the subjects of Physics, Botany, Chemistry, Materia Medica (Lectures and Practical), Physiology (Lectures and Practical), and Diseases of the Eye, for next academical year. The permission in respect of Physiology has been granted only on the understanding that instruction shall continue to be given therein, during parts of the course, separately to men and women students.

The permission to hold mixed classes, it must be remembered, extends only to the particular year for which it has been asked and granted.

With regard to your second query, no fresh instructions have been prescribed by the court for the inspection of certificates. They are able otherwise to ascertain to their satisfaction whether the attendance of women students has been in mixed or separate classes.

Please say whether you desire a continuance of the recognition of your school.

I am to-day in receipt of your letter of yesterday's date.

Believe me, Dear Madam, sincerely yours,
M. C. TAYLOR, Secretary.
Miss Sophia Jex-Blake, M.D., Bruntsfield Lodge.

(5) *To the Secretary of the University Court.*
Edinburgh School of Medicine for Women,
Surgeon Square, August 15th, 1898.

DEAR SIR,—I have laid your letters of June 17th and July 23rd before our Executive Committee, and I am instructed by them to inform you that they have decided not to request further recognition of the school from the University at present, as they feel that it is impossible for separate classes, which involve financial guarantees to lecturers, to compete with the much cheaper system of mixed classes conducted in the men's schools. They therefore find themselves obliged, with great regret, to suspend the medical classes in Surgeon Square until further notice.

Believe me, yours very truly,
The Secretary of the University Court. SOPHIA JEX-BLAKE.

At a meeting of the Executive Committee of the Edinburgh School of Medicine for Women on August 13th, 1898, it was unanimously

RESOLVED, That—

(1.) In view of the fact that the University Court of Edinburgh (while adhering to their resolution of date April 16th, 1896, that in respect of the medical education of women no mixed classes shall be recognised, "except on special cause shewn,") have found so little difficulty in making these exceptions, that practically half the curriculum for the medical graduation of women may now be taken in mixed classes; and in view of the impossibility of conducting separate classes for women on a self-supporting basis while exposed to competition with the much cheaper system of mixed classes in men's schools, the Executive Committee—to their great regret—find themselves obliged to suspend for the present the separate classes hitherto conducted at the Edinburgh School of Medicine for Women, Surgeon Square.

(2.) The Executive Committee will make good to any student such fees as she may have paid to the School in excess of the classes she has taken, the fees of such classes being calculated on the University or College scale, according to the qualification for which each student is preparing.

THE ANNUAL EXHIBITION OF FOODS, DRUGS, INSTRUMENTS, BOOKS, ETC.

IN our notice of the exhibition of foods, drugs, instruments, books, etc., held in connection with the Annual Meeting of the British Medical Association in Edinburgh, it ought to have been stated that Messrs. JOHN WEISS AND SON (London and Manchester) exhibited a model of an operation table in nickelled steel fitted with screw gearing for raising the top horizontally to the extent of 11 inches, or obliquely for the Trendelenberg position for abdominal section. The head and leg pieces can be fixed in various positions. By means of a foot lever the whole table can be lifted from its legs on to wheels to be moved from place to place. The table is provided with a hot water tank, which has a concave top and is pierced in the centre by a tube for carrying away fluids during irrigation. The same firm showed cabinets and tables for instruments and improved forms of anæsthetic inhalers, cleft palate gags and needles, and other instruments, as well as Déchery's automatic cautery described in the JOURNAL of June 18th, 1898, p. 1600. By a printer's error the word "septic" was used in the place of "aseptic" in reference to the instruments of this firm last week.

In the same article last week the name of the Formalin Hygienic Company was incorrectly given; and in line 8 from the bottom of the first column on page 501 for "degenerating" read "generating."

THE Duke of Devonshire will lay the foundation stone of an extension of the Keighley Hospital on September 3rd.

THE cholera outbreak at Madras is increasing. From August 13th to the 19th 91 deaths were registered.

ASSOCIATION INTELLIGENCE.

BRANCH MEETINGS TO BE HELD.

LANCASHIRE AND CHESHIRE AND NORTH WALES BRANCHES.—A joint meeting of these two Branches will be held at Chester in the last week of September. All communications and applications for membership should be addressed to the respective Branch Secretaries, Dr. JAMES BARR, 72, Rodney Street, Liverpool, and Dr. JONES MORRIS, Portmadoc, N. Wales.

EAST ANGLIAN BRANCH.—The autumnal meeting will be held at Mundesley-on-Sea on Thursday, September 8th. Members desirous of assisting should communicate with MICHAEL BEVERLEY, M.D., 54, Prince of Wales Road, Norwich, Honorary Secretary.

OBITUARY.

JOHN MURRAY, M.D.,

Inspector-General of Hospitals, Bengal Medical Service (retired).

AT the mature age of 88, a remarkable man, who had spent forty years of active and very meritorious service in India, passed quietly away on July 27th at his summer home in Sheringham, Norfolk. Dr. John Murray was a fine specimen of the Scotchman—large-limbed and large-featured, keen and full of interest and energy in life and work, tenacious of purpose, straightforward, and kindly. He graduated in Edinburgh in the year 1826. The subject of his graduation thesis was the Formation and Solution of Urinary Calculi. It was published, and he afterwards, at Agra, became an adept in lateral lithotomy. His practice was to enter the bladder with a single plunge of the knife, and enlarge the incision in withdrawing it. He acquired great confidence, skill, and success in this operation.

He entered the Honourable East India Company's service in 1832, and was appointed to the Bengal Presidency. In 1839 he prepared a report on the Medical Topography of Meerut, which attracted attention and was printed by order of Government. He acquired the reputation of being a "particularly intelligent and competent" medical officer. He served with the Horse Artillery until 1842, when he was appointed to the medical charge of the convalescent depôt at Landour, where he remained for two years. He then rejoined the Horse Artillery, and was Field Surgeon with the army of the Sutlej in 1846. He was present at the battle of Aliwal, received a medal, and was mentioned in despatches. He obtained the medical charge of the Indore Residency in May, 1846, and was appointed Civil Surgeon of Agra in March, 1848, an office which he retained until he was promoted to the rank of Deputy-Inspector-General of Hospitals in 1858. He attained the rank of Inspector-General in 1865, and served first in the North-Western Provinces, and finally as head of the Bengal Medical Department in Calcutta, retiring in January, 1871.

During his executive and administrative service he devoted special attention to the subject of cholera. To him is due the practice, which has saved so many lives in India, of camping out troops and prisoners when attacked by epidemic cholera. He was a thorough-paced believer in the infective nature of cholera, spurned the wild theories which attributed the disease to mystical influences, and long before Koch's discovery pinned his faith to a special germ. He wrote numerous papers and reports on the subject, and finally summed up the results of his observations in a work on the *Pathology and Treatment of Cholera*, based on forty years' experience. This was published in 1874, and a second edition was issued in 1884. Though cholera was Dr. Murray's "hobby," a theme which filled his mind and sometimes bored his audience, he paid attention to many other topics, and wrote on consumption, hydrophobia, Delhi boil, plague, ventilation, disinfection, and quarantine, his bent being always towards preventable maladies and preventive medicine.

After his retirement, Dr. Murray was very regular in his attendance at the meetings of the Epidemiological Society, of which he held the offices of President and Vice-President. He took a deep interest and active share in the proceedings of the Society. He was usually to be seen of an afternoon in the smoking room of the Oriental Club, and was always ready to enter into a discussion on cholera, Indian politics, Indian art, or to recall his Indian recollections and experiences. He was a man of most amiable and upright disposition, and spent a long life and service in earnest unflagging endeavour to promote medical science and relieve suffering humanity.

We regret to announce the death of Mr. MILES ASTMAN WOOD, which took place at the advanced age of 91 at his residence in Ledbury. He was one of the oldest medical practitioners in the West of England, and had only retired from practice four years ago. He early showed a liking for medical work, and, after a course of study at Guy's Hospital, obtained the diploma of M.R.C.S.Eng. He subsequently visited Paris, and studied under Dupuytren and Laennec. He commenced practice in Ledbury in 1830, and was the first to introduce the use of the stethoscope in that neighbourhood. He had a large and extensive practice, and held several public appointments. Though of a retiring disposition, he was much esteemed and respected by all classes. He was an accomplished French and Latin scholar, and at the same time a keen sportsman, whose figure was familiar in the hunting field. Kind, generous, and cultivated, he was a bright example of the old school of English gentleman.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON ANTHONY GORHAM, M.D., has been placed on the retired list, with the rank of Deputy-Inspector-General, Aug. 20th. He was appointed Surgeon, November 12th, 1867; Staff-Surgeon, March 23rd, 1881; and Fleet-Surgeon, February 21st, 1888. He served with the Naval Brigade during the operations in the Malay Peninsula in 1875, was noted for promotion when qualified, and received the medal with clasp.

The following appointments have been made at the Admiralty: JOHN GRANT, M.B., Surgeon to Malta Hospital, August 13th; BEAUCHAMP F. PARISH, Surgeon to the *Ramillies*, August 13th; GEORGE T. BISHOP, Surgeon, to the *Raven*, August 13th; MURRAY P. JONES, Surgeon, to the *Vulcan*, August 13th; HERBERT NEWSOME, M.B., Surgeon, to the *Resolution*, August 13th; HAMILTON MEIKLE, Staff-Surgeon, to the *Pearl*, August 18th; BASSETT C. E. P. GUNN, Staff-Surgeon, to the *Severn*, temporary, August 22nd; CHARLES S. BENNETTS, B.A., M.B., to the *Halcyon*, August 23rd; ALFRED WOOLLCOMBE, Surgeon, to the *Lion*, August 23rd.

THE ROYAL ARMY MEDICAL CORPS.

THE following is a list of successful candidates for commission in the Army Medical Staff at the recent examination in London:

	Marks.		Marks.
F. Warren	2,638	G. W. G. Jones	2,183
J. E. Hodgson	2,617	J. W. H. Houghton	2,117
H. P. W. Barrow	2,602	H. S. Taylor	2,101
M. H. G. Fell	2,511	A. L. Scott	1,991
T. C. Lauder	2,415	J. W. Leake	1,969
J. G. Gill	2,292	R. H. Lloyd	1,935
W. B. Winkfield	2,266	D. E. Curine	1,892
G. H. Goddard	2,211	G. M. Goldsmith	1,848

Colonel R. DE LA COUR CORBETT, D.S.O., M.D., at present serving on the staff at Dublin, has been appointed Principal Medical Officer, Bengal, *vice* J. Williamson, deceased.

Quartermaster and Honorary Major R. T. OSBORNE is placed on retired pay, August 22nd. He was appointed Lieutenant of Orderlies, June 25th, 1873; became Quartermaster, July 1st, 1881; and granted the honorary rank of Major, May 7th, 1890. He was in the Egyptian war of 1882, including the battle of Tel-el-Kebir (honorary rank of Captain, medal with clasp, and Khedive's bronze star), and with the Nile Expedition in 1884-5 (granted the honorary rank of Major and clasp).

Sergeant-Major PHILIP MACINTOSH is appointed Quartermaster, with the honorary rank of Lieutenant, *vice* Honorary Major R. T. Osborne, August 24th.

It has been decided that the names of Colonels of the Royal Army Medical Corps are in future to be included in the seniority list of Colonels on the Active List, according to the dates of their commissions in the rank, or, in the case of those who were promoted under former warrants, as from the dates on which they became Surgeon-Colonels.

INDIAN MEDICAL SERVICE.

THE following candidates for Her Majesty's Indian Medical Service were successful at the competetive examination held in London on August 5th and following days:

	Marks.		Marks.
J. C. H. Leicester	3,179	L. E. L. Parker	2,336
H. Innes	2,888	T. S. Ross	2,316
W. S. Willmore	2,660	J. N. Walker	2,278
L. T. R. Hutchinson	2,604	D. C. Kemp	2,274
A. C. Walter	2,553	V. H. Roberts	2,259
C. Hudson	2,523	J. E. Robinson	2,215
A. M. Fleming	2,469	G. P. T. Groube	2,131
H. M. Cruddas	2,460	G. King	2,095
C. F. Weinman	2,452	P. P. Afal	2,091
E. L. Ward	2,411	W. McM. Pearson	2,027

Brigade-Surgeon-Lieutenant-Colonel A. S. REID, M.B., Bengal Establishment, 38th (Dogras) Bengal Infantry, is appointed Principal Medical Officer Kohat-Kurram Force

MEDICAL NEWS.

MEDICAL VACANCIES.

The following vacancies are announced:

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by September 5th.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum, with board and lodging. Applications to the Chairman of the Weekly Board by September 5th.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary £50 per annum, with apartments and board. Applications to the Chairman of the Medical Board by September 10th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRISTOL: UNIVERSITY COLLEGE.—Demonstratorship of Physiology. Stipend, £125. Applications to E. Markham Skerritt, M.D., Dean, by August 26th.

CAISTOR RURAL DISTRICT COUNCIL.—Medical Officer for the District. Salary, £100 per annum. Applications to the Clerk of the Council by September 2nd.

CAISTOR UNION.—Medical Officers for the Caistor No. 1 and Tealby Districts, and Medical Officer for the Caistor Workhouse. Salary, £45, £30, and £60 per annum respectively. Applications to the Clerk to the Guardians by September 2nd.

CARDIFF INFIRMARY.—Assistant House Surgeon. Appointment for six months, but renewable. Salary at the rate of £50 per annum, with board, washing, and apartments. Applications to the Secretary by August 30th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Temporary Assistant Lecturer and Demonstrator in Physiology. Appointment for one year. Salary, £120. Applications to the Secretary by October 1st.

CARLISLE: CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £70 per annum. Also Assistant House-Surgeon for seven months. Salary at the rate of £40 per annum, with board, lodging, and washing provided in each case. Applications to the Secretary by August 31st.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary to commence, £800 per annum, with furnished residence, etc. Applications to Arthur E. Ward, Solicitor, 9, Bedford Circus, Exeter, by September 9th.

DOUGLAS, ISLE OF MAN: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon; unmarried. Salary, £72 per annum, with board and washing. Applications to the Honorary Secretary, 25, Athol Street, Douglas, by September 2nd.

DUDLEY: GUEST HOSPITAL.—Resident Medical Officer. Salary commencing at £120 per annum, increasing to £120, with residence, board, attendance, and washing. Applications to the Secretary by September 1st.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis Road, Shadwell, E.—House-Surgeon. Board, residence, etc., provided, and honorarium of £25. Applications to the Secretary by September 10th.

KENT COUNTY ASYLUM, Chartham, Canterbury.—Third Assistant Medical Officer. Salary, £120 per annum, with board, etc. Applications to the Medical Superintendent by September 8th.

KING'S COLLEGE, London.—Assistant Physician at King's College Hospital. Applications to the Secretary.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer for six months. Board, residence, and washing provided, and honorarium of five guineas. Applications to the Secretary by September 15th.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer. Appointment for one year. Salary, £80 per annum, with board and lodging. Applications to the Chairman of the Medical Board by August 31st.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park Place, Cheetham Hill Road.—House-Surgeon. Salary, £80 per annum, with apartments and board. Applications to the Secretary by August 31st.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich Road, S.E.—Resident Medical Officer. Appointment for six months, with prospect of re-election as senior. Salary, £30 per annum, with board, attendance, and washing. Applications to the Secretary by September 2nd.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Assistant House-Surgeon. Appointment six months. Board, lodging, and washing provided. No salary. Applications to the Secretary by September 6th.

NOTTINGHAM GENERAL DISPENSARY.—Clinical Assistant. Salary, £60 for six months. Coals, gas, furnished apartments provided. Applications to the Secretary.

OWENS COLLEGE, Manchester.—Demonstrator of Anatomy. Applications to the Registrar by August 1st. Also Senior and Junior Demonstrator in Physiology. The stipends will be £150, rising to £200, and £100, rising to £150, respectively. Applications to the Registrar by September 1st.

PARISH OF ST. GEORGE IN THE EAST.—Infirmary and Workhouse Assistant Medical Officer. Salary, £120 per annum, with rations and apartments. Applications, on forms provided, to the Clerk, Guardians' Offices, Raine Street, Old Gravel Lane, by September 2nd.

PARISH OF ST. GILES, CAMBERWELL.—Assistant Medical Officer for the Workhouse. Salary £120 per annum, with furnished apartments, and £1 1s. weekly in lieu of board and washing. Between 24 and 35 years of age. Applications, on forms provided, to the Clerk of the Guardians, 29, Peckham Road, S.E.

PLYMOUTH, SOUTH DEVON, AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Honorarium, £10, with board and residence. Applications to the Honorary Secretary by August 31st.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House-Surgeon. Salary, £30 per annum, with board and washing. Applications to the Secretary by September 1st.

ST. ANDREWS UNIVERSITY.—Professors of Materia Medica and Pathology. Applications to the Secretary of the University Court by August 31st.

ST. ANDREWS UNIVERSITY.—Professor of Midwifery. Applications to the Secretary of the University Court by September 15th.

TEIGNMOUTH HOSPITAL, South Devon.—House-Surgeon. Salary, £60, with board and lodging. Applications to the Chairman of the Committee.

WESTERN GENERAL DISPENSARY, Marylebone Road.—House-Surgeon; unmarried. Salary, £60 per annum, with board and residence. Applications to the Secretary by August 30th.

WEST RIDING ASYLUM, Menston, near Leeds.—Female Assistant Medical Officer. Salary to commence £100, rising to £150, with board and apartments. Also Female Clinical Clerk. Board and residence provided. Applications to the Medical Superintendent by August 31st.

MEDICAL APPOINTMENTS.

ANSON, G. E., M.D., B.C.Camb., M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Surgeon to the Wellington Hospital, New Zealand.

ADAMS, H., L.R.C.P.Lond., appointed Honorary Physician to the Wellington Hospital, New Zealand.

BARNES, Dr. J. S., appointed Resident Medical Officer and Public Vaccinator for the Urban, Suburban, and Rural Districts of Kattanning, Western Australia.

BERSLEY, A. J., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Baschurch and Middle Districts of the Ellesmere Union.

CHAPPLE, W. A., M.B.Edin., appointed Honorary Physician to the Wellington Hospital, New Zealand.

CLOTHIER, Henry, M.D.Lond., reappointed Medical Officer of Health to the Hornsey Urban District Council.

CONNELLY, A. W., M.B.Melb., appointed Resident Surgeon of Bendigo Hospital Victoria.

EVANS, J. Jameson, M.B.Edin., M.R.C.S.Eng., appointed Honorary Surgeon to the Birmingham and Midland Eye Hospital, *vice* D. C. Lloyd-Owen, F.R.C.S.I., resigned.

FOX, S. C. Gundry, M.R.C.S., L.R.C.P.Lond., appointed Senior District Surgeon, Perak Federated Malay States, *vice* J. L. Welch, M.A., M.B.Edin., deceased.

FYFFE, E. H., M.B.Glasg., appointed Honorary Pathologist to the Wellington Hospital New Zealand.

GRANT, David, M.A., M.D.Edin., appointed Honorary Physician to In-patients at St. Vincent's Hospital, Melbourne.

HILLIARD, Harvey, M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Anæsthetist to Charing Cross Hospital.

KITSON, F. P., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Marshwood and Netherby Districts of the Beaminster Union.

LANSDOWN, Robert G. Poole, M.D., B.S., M.R.C.S., L.R.C.P., appointed Lecturer on Practical Surgery to the Medical School, University College, Bristol.

LEISHMAN, J. A., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Medical Officer for the Thorncombe District of the Beaminster Union.

MCGEE, J. H., M.D.R.U.I., D.P.H.Camb., appointed Honorary Physician to In-patients at St. Vincent's Hospital, Melbourne.

MCKELVEY, Alexander N., L.R.C.P., L.R.C.S.Irel., appointed Assistant Medical Officer of the Omagh Lunatic Asylum.

NEWMAN, F. A., M.B.Melb., appointed Honorary Physician to Out-patients, at St. Vincent's Hospital, Melbourne.

POLLEN, Henry, M.D.Dub., M.Ch., L.R.C.P.I., appointed Honorary Physician to the Wellington Hospital, New Zealand.

REYNOLDS, J. H., M.B., C.M.Edin., appointed Senior House-Surgeon to the Miller Hospital, Greenwich.

SCHAUB, J. M., M.R.C.S.Eng., L.R.C.P.Lond., appointed Senior Assistant Medical Officer of the Infirmary and the Workhouse of the Parish of St. Leonard, Shoreditch.

WOODSIDE, R. N., M.B.Melb., appointed Medical Superintendent of the Albury Hospital, New South Wales.

YELLAND, Dr. A., appointed Resident Surgeon to the Hospital, Creswick, Victoria, *vice* Dr T. A. Wilson, resigned.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

JOYCE.—At Glynrhondda House, Porth, on Monday, August 22nd, the wife of R. Conwy Joyce, M.B., of a son.

RAW.—On August 19th, at the Superintendent's house, Mill Road Infirmary, Liverpool, the wife of Nathan Raw, M.D., of a son.

THORPE.—On August 13th, at Addlestone, Surrey, the wife of Staff-Surgeon Vidal G. Thorpe, R.N., of H.M.S. *Northampton*, of a son.

MARRIAGES.

BAMFIELD—WITHERBY.—On August 18th, at the Parish Church of Albury, by the Rev. F. C. Hill, Rector of Shere, assisted by the Rev. A. Betton Gwynn, Surgeon-Captain Harold J. K. Bamfield, I.M.S., F.F.P., son of the late Samuel Bamfield, R.N., Deputy-Inspector-General of H.M. Hospitals and Fleets, to Katharine Basset, the younger daughter of the late Walter Witherby and Mrs. W. Witherby, of Hurst Lea, Albury.

CHESSHIRE—MASTERS.—On August 20th, at Seckington, Warwickshire, by the Rector, the Rev. A. H. Chesshire, assisted by the Rev. H. Pountney Chesshire, M.A., late Rector of Nun Monkton, father of the bridegroom, George Humphrey James Chesshire, to Lilly Stockdale, elder daughter of W. Hooper Masters, M.D., Stretton Court, Parkstone, Dorset, and granddaughter of W. Thomas and Julia Elizabeth Hammonds, of Clifton, Gloucestershire, and Borrow, Somersetshire.

EDMONDSON—ROBSON.—On August 24th, at Egremont Presbyterian Church, by the Rev James Muir, D.D., Charles Reginald Edmondson, M.B., C.M., of Wavertree, Liverpool, to Ethel, youngest daughter of Stephen Robson, Egremont, Cheshire.

GERRARD—REPTON.—On July 30th, at St. Joseph's Church, Rawul Pindi, Punjab, India, by the Very Rev. F. Reynders, Vicar-Apostolic, Major J. J. Gerrard, M.B., Royal Army Medical Corps, to Mabel Kathleen, only daughter of the late Colonel Herbert Mills Repton, Bengal Staff Corps.

HELME—CROFTS.—On August 17th, at the Wesleyan Church, Alderley Edge, by the ex-President of the Conference, Rev. W. L. Watkinson, assisted by Rev. William George and Rev. A. L. Vine, T. Arthur Helme, M.D., M.R.C.P., F.R.S.Edin., of Manchester, son of the late James Helme, of Lancaster, to Florence Jane, elder daughter of the late James Crofts, of Tipton, and Mrs. Crofts, of Alderley Edge.

JORDAN—PLAYER.—On August 18th, at the Church of the Redeemer, Edgbaston, by the Rev. J. M. Gwynne Owen, John Furneaux Jordan, M.B., F.R.C.S., of Birmingham, to Mildred, fifth daughter of John Player, Chad House, Edgbaston.

MAGUIRE—BLISSETT.—At St. Mary's, Bryanston Square, W., on August 14th, Robert Maguire, M.D., F.R.C.P., to Miss Mary Blissett, daughter of the late Thomas Blissett, Esq., of Oxton, Cheshire.

WATKINS—HARTNELL.—On August 18th, at the Parish Church, Littleton-on-Severn, by the father of the bride, Devereux John Gregory Watkins, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., eldest son of William Watkins, F.R.I.B.A., of Leyland House, Lincoln, to Florence Lucretia, youngest daughter of the Rev. Belford Hartnell, M.A., Rector of Littleton, and late Assistant-Master of Clifton College.

DEATHS.

I'ANSON.—On August 19th, at Whitehaven, Thomas Francis I'Anson, M.D., J.P., aged 73.

SMITH.—On August 10th, at Lodge Park, Freshford, Kilkenny, Ernest Frederick Smith, Major R.A.M.C. retired, of Grove House, Lavenham, Suffolk.

SUTTON.—On August 21st, at 18, Queen Anne Street, Agnes Kate, the wife of John Bland Sutton, aged 39 years.

THE MANŒUVRES MEDICAL ARRANGEMENTS.—The following arrangements for the disposal of sick are in orders:—Sick requiring hospital treatment will be transferred from corps to field hospitals, and from thence sent by train to Farnboro' under the orders of P.M.O.'s and S.M.O. of corps troops. Sick from the cavalry brigade pass to the nearest field hospital to be disposed of in the same way. The bearer companies attached to field hospitals are to be utilised for transport of sick to railway stations. Cases of infectious disease are to be isolated and reported to the medical officer of health of the district, while precautions are taken to prevent spread of the disease. Infectious sick are to be conveyed by ambulances by road to military hospitals. If infectious cases cannot be removed from the manœuvres area a tent of the field hospital must be set apart and remain fixed for their treatment.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

TREATMENT OF HYPERTROPHIC RHINITIS.

M.D.EDIN. asks how nasal massage is carried out, and whether good results have accrued from its use in hypertrophic rhinitis.

LOCUM TENENS AND PRINCIPAL.

PRACTITIONER writes that he is acting as a *locum tenens* in a certain town and has just seen a suitable opening for a medical man in a suburb about quarter of a mile from his principal's residence. He wishes to know whether there is any reason in "honour or ethics" why he should not avail himself of this opening some time this next winter.

*** It is neither honourable nor ethical for a *locum tenens* to seek for an opening to practice in the vicinity of his principal's residence. No practitioner would employ a *locum tenens* if he thought there was any danger of the latter acting in this manner so that such behaviour would be a direct infringement of the ethical rule to do unto others as you would wish others to do to you.

ANSWERS.

J. B.—The price paid for a half share in a practice would depend a good deal on its character, and is of course a matter of arrangement. In a better class practice the price would be about a year and a half, for a practice in a poor neighbourhood about one year, in each case for the half share.

X. AND G.—We can only refer our correspondents to the answer in the BRITISH MEDICAL JOURNAL of April 26th, 1898. It is the custom to address Bachelors of Medicine of the University of Cambridge, and we believe of Oxford also, as "Dr.," except within the precincts of the University.

TREATMENT OF GASTRO-INTESTINAL ATONY.

DR. GEORGE STEELE PERKINS (Wimpole Street, W.) writes, in answer to "Inquirens," to suggest treatment by massage and electricity of the part affected.

"MR. WALKER, THE HYGIENE HUMORIST."

DR. ARTHUR MAUDE (Westerham) writes: In answer to "Boomerang," the reference by O. W. Holmes is to a series of papers "On the Art of Attaining High Health" in Walker's *Original*. Walker was born in Manchester in 1784, and became a police magistrate in Lambeth in 1829. The *Original* was a weekly collection of essays, which only ran from May to November, 1835, and was entirely written by Walker. It is a very charming volume of essays on all sorts of social subjects, and used to be obtainable from second-hand dealers at about 4s. 6d. There is, I believe, a cheap modern reprint.

ALCARNOSE.

THE following passage from the paper by Brandenburg and Huppeiz (*Deut. med. Woch.*, May 19th, 1898), summarised in the EPITOME of June 11th (par. 482), contains all the information we can give about alcarnose: "In our opinion a new nutrient preparation put together by Hiller and named by him alcarnose appears to promise to be of a certain value. It contains albumin and carbohydrates in a specially suitable form for the large intestine, namely, in a digested state. It is a mixture of albumose and maltose." The authors give a reference to Hiller's original paper in the *Zeitschrift für Krankenpflege*, but without any date. Knauer (*Allgemeine Med. Central. Zeitung*, 1898, No. 28) has also investigated the nutritive properties of alcarnose.

NOTES, LETTERS, Etc.

DRESS IN HOT WEATHER.

DR. HENRY SUTHERLAND (New Cavendish Street, W.) writes: Your article on dress in hot weather is indeed most acceptable to those of our profession who are obliged to remain in town at the present season.

Tropical heat, such as we have experienced during the last fortnight, is of such short duration in this country that we are all unprepared to meet it. It comes; it strikes down its victims with sunstroke. It goes; it is replaced by cold and inclement weather before we have time to realise its dangers. The subject seems to be approached from the following standpoints: the economical, the professional, the social, and the hygienic. And these are so intertwined that it is impossible to consider them separately.

The question is, What are we medical men to wear during a hot season? The most professional "get up" for hot weather is the grey frock coat and waistcoat, and the white chimney pot hat. Both expensive; both look shabby next season, although with care they may be made to look decent for two years.

The other extreme, which delights the heart of the London "'Arry," is a light suit of dittos, with stable-jacket coat, grey or fawn-coloured pot hat to match, or a straw "yard," as he calls it. This is a little too unprofessional for London, although the luxury of such a costume cannot be denied.

The difficulty is to order a suit which may carry us through the hot day in town, serve through our vacation, and look both sporting and professional at the same time. To meet this want, I suggest a grey morning coat and waistcoat, made of not too thin cloth, and a pair of flannel trousers of exactly the same colour, with no pattern on them. With these we should wear "Monte Carlo" hat, such being in vogue just now, which should exactly match the suit in colour. The hat should be chosen first, and the suit afterwards, as it seems to get every variety of cloth or flannel, but almost impossible to get a hat the same colour as a suit which has already been prepared. A straw hat with a navy blue ribbon may be worn on other occasions, if necessary.

Of course a morning coat is hotter than a stable jacket, but it is at the same time more professional, as it can be worn with a black chimney-pot or a white chimney-pot hat, which combination would be inadmissible with the stable jacket.

Your remark in your able article that "a flannel or woollen shirt may look as neat and clean as a linen" is to me somewhat vague. A linen day shirt or night shirt can be worn with perfect safety in the hottest weather, provided there is a jersey, of flannel, or flannel and silk mixed, underneath. In my experience, it is only necessary to wear a flannel shirt, with or without a jersey underneath, when taking violent exercise, possibly followed by a railway journey.

LETTERS, COMMUNICATIONS, Etc., have been received from

A Mr. H. Ashton, Chadderton; Messrs. Armbrecht, Nelson and Co., London; W. J. Arnold, M.B., Aberdare. **B** E. C. Bridges, M.B., London; Dr. W. Bain, Harrogate; Messrs. Burgoyne, Burbridges and Co., London; Professor Bradbury, Cambridge; Dr. Boddie, Edinburgh; Dr. Bond, Gloucester; J. Bevan, M.B., Mumbles; Dr. J. B. Busdraghi, Madrid; Dr. Bridgwater, Harrow; Mr. G. E. Brooke, Turk's Island; Dr. T. R. Bradshaw, Liverpool; Dr. J. Barr, Liverpool. **C** J. Cantlie, F.R.C.S., London; K. C. Chetwood-Aiken, M.B., Truro; Dr. T. Aldous Clinch, Durham; Mrs. T. E. Cope, London; Mr. R. H. Capper, Battle; Dr. J. S. Cameron, Leeds; Mr. E. Conner, London; Mr. M. Campbell, Bearsden; Mr. G. P. Coldstream, Belford; Mr. C. Owens Cox, Cleobury-Mortimer. **D** Messrs. Down Brothers, London; Mr. W. G. Dunwoody, Ely; Mr. E. J. Domville, Exeter; Dr. H. E. Dixey, Malvern; Dr. C. R. Drysdale, Dublin. **E** E. A. Edelsten, M.B., London; Mr. C. O. Evans, Holywell; Dr. H. M. Eustace, Drumcondra; J. J. Evans, M.B., Birmingham; Mr. Chas. Eason, jun., Dublin; George Eastes, M.B., London. **F** The Formalin Hygienic Company, London; Dr. E. Fraser, London. **G** Mr. Percy Glenton, London; Miss Mary Gordon, London; Mr. T. P. Gostling, Worcester; Dr. Gould, Philadelphia; Dr. Gordon-Munn, Bushey John C. Graham, M.B., Paisley; Mr. A. R. Green, Ledbury; Dr. H. R. Greene, Belvedere; Dr. M. Greenwood, London; Dr. E. Goddard, London. **H** Dr. J. P. Henry, London; Mr. T. Garrett Horder, Cardiff; Mr. Chas. H. Hibbert, Marple Bridge; Dr. Herman, London; Mr. T. Holmes, London; R. Howie, M.B., Hayfield; H. O. D.; Mr. Hasluck, Teignmouth. **J** J. F. Jordan, M.B., Edgbaston; W. Joberns, M.B., Wolverhampton. **K** Messrs. Keith and Co., Edinburgh; Mr. C. N. King, London. **L** Mr. M. Loughnan, Rathmullan; Dr. W. C. Lake, Teigumouth; Messrs. Lafayette, Limited, Dublin; Mr. A. Ledlie, Belfast; Dr. R. G. P. Lansdown, Clifton; Mr. R. R. Leeper, Rathdrum; Dr. J. A. Lindsay, Belfast; John Lithgow, M.B., Cleland. **M** Dr. J. N. Marshall, Rothsay; Dr. J. W Moore, Dublin; C. Mercier, M.B., London; Dr. J. Morris, London; John Malcolm, M.B., Edinburgh; Mr. A. B. Macallum, London; Alex. Murchison, M.B., Cowdenbeath; Dr. E. P. Manby, Liverpool; Mr. Arthur Maude, Westerham; Dr. Robert Muir, Edinburgh; Dr. Michaelis, Berlin; Dr. G. P. Mathew, London; Dr. J. H. Musser, Philadelphia; Dr. J. Moore, Belfast; J. Macfarlane, M.B., Montgomery. **N** Professor R. Barclay Ness, Glasgow; Mr. F. Norton, London. **O** Professor A. Ogston, Dinnet; Dr. Bernard O'Connor, Ealing; Dr. T. Oliver, Newcastle. **P** Dr. Pegress, Amsterdam; Public Health; Dr. Peatling, Worcester; Dr. G. Steele Perkins, London; Mr. W. E. Pain, London; Dr. G. R. Peters, London. **R** Mr. R. Robinson, Shrewsbury; Dr. G. E. Rennie, Sydney; J. H. Reynolds, M.B., London. **S** Mr. P. R. W. de Santi, London; Dr. Henry Sutherland, London; Mrs. Sanders, Sheringham; W. R. Speirs, M.B., Haltwhistle; Mr. H. C. Stephens, London; Mr. Ralph Stoney, London; A. Tennyson Smith, M.B., Orpington; Mr. Paul Swain, Plymouth; Mr. A. M. Tully, Cheetham; Mr. J. Smith, Greenwich; Mr. J. B. Bland Sutton, London; Mr. James Smith, Bangor; Mr. Chas. S. Stevens, London; Dr. C. C. Scott, Twickenham; Mr. H. Hammond Smith, Stourbridge; Mr. A. Stewart, Birkenhead. **T** Miss Isabel Thorne, London; Mr. J. Taylor, Buxton; Mr. W. Tomlinson, Menston; Dr. George Thomson, Oldham; Mr. C. H. Tattersall, Oldham; Mr. J. F. Taylor, Leyton; Mr. C. S. Tomes, London; Dr. J. C. Taylor, Edinburgh; Mr. F. H. Tetley, Bungay; Mr. W. Thelwall Thomas, Liverpool; Dr. R. Turner, Eastwood; Hayman Thornhill, M.B., Bedford; Dr. D. Thomas, London; Dr. St.Clair Thomson, London. **V** Madame Vignal, Paris. **W** Messrs. John Weiss and Son, London; Mr. H. Whorlow, London; Messrs. Wills, Limited, London; Mr. L. Witherby, Albury; Miss Wood, London; Mr. F. C. Wood, Ripley; Mr. Miles Wood, Ledbury; Mr. H. R. Wilson, London; Dr. Parkes Weber, London; Dr. Willoughby, London; Mr. J. C. Walker, St. Austell; Mr. White Wallis, London; Mr. E. Whichello, London. **Y** Dr. J. M. Yair, Ballater; Dr. E. S. Yonge, Manchester; etc.

BOOKS, Etc., RECEIVED.

Laboratory Work in Physiological Chemistry. 2nd Edition. By Frederick G. Novy, Sc.D., M.D. Ann Arbor: George Wahn. 1898.

De L'Exploration des Organes Internes a l'Aide de la Lumière Echlarante et non Echlarante, Endoscopie par les Rayons de Rontgen. By Dr. Léon Bouchacourt. Paris: G. Steinheil. 1898.

Hernies. By Dr. Paul Berger. Paris: Masson et Cie.

Electricity in the Diagnosis and Treatment of Diseases of the Nose, Throat, and Ear. By W. Scheppegrell, A.M., M.D. London: G. P. Putnam's Sons. 1898.

Diseases and Remedies. London: The Chemist and Druggist Offices. 1898.

A System of Practical Medicine. Edited by A. L. Loomis, M.D., LL.D., and W. G. Thompson, M.D. Vol. IV. London: Henry Kimpton. 1898. 25s.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. By C. E. Simon, M.D. 2nd Edition. London: Henry Kimpton. 1898. 16s.

A Textbook of Surgery. By Dr. H. Tillmanns. Translated from the 4th German Edition by B. T. Tilton, M.D. Edited by L. A. Stimson, M.D. Vol. III. London: Henry Kimpton. 1898. 21s.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTIONS OF STATE MEDICINE AND PSYCHOLOGY.

[Joint Meeting.]

Sir Henry Littlejohn, M.D. (President of the Section of State Medicine) in the Chair.

A DISCUSSION ON APHASIA IN RELATION TO TESTAMENTARY CAPACITY.

I.—Sir William T. Gairdner, M.D., K.C.B.,
Professor of Medicine in the University of Glasgow; Physician in Ordinary to Her Majesty the Queen in Scotland.

Retrospective.

As I understand that time is of great importance in the Sections, I shall endeavour to make my remarks as brief as possible.

I do not think I can be very far wrong in saying that I was a very early contributor to the subject of aphasia. In fact, it had occupied my attention even before that famous chapter in Trousseau's *Clinical Medicine* which was to most of us the means of directing our attention to it in a practical sense. It is one of the most splendid chapters in any book of medicine that I know, and it retains a great deal of its value to the present day. I need not say that the literature of aphasia since that time has been enormous. Perhaps no subject in medicine has been so largely written about. I will mention only a very few of these contributions as being in the English language, and fairly accessible to you all, on the many aspects of this wide subject which I shall be obliged to omit.

My own earliest paper appeared in the *Philosophical Transactions of Glasgow*, 1866, not a very accessible place; and in the *Glasgow Medical Journal* for 1867 there was an account of a case, with some further general remarks. At the Liverpool Congress of 1883 I had an invitation from this Association to open a discussion upon the subject in its more general relations. A report of this appeared in the British Medical Journal for 1884; but since that time the developments of the subject have been so great that if I had been asked to speak upon it from the more general, and especially from the anatomical, point of view, I certainly should have declined the task as being beyond my powers. In the admirable book of Dr. Wyllie of this city on *Disorders of Speech* (1894), and in a smaller book, but scarcely less elaborate in the field which it covers, by Dr. Elder upon *Aphasia and Cerebral Speech* (1897); and, finally, in the most recent of all, the admirable book of Dr. Bastian on *Aphasia and other Speech Defects*, published in 1898, you will find most of what is wanting in what I say now to you.

It is, however, only the last of these, Dr. Bastian's book, so far as I remember, that makes the slightest reference to the subject that we are engaged upon just now. Aphasia, treated from the physiological, from the anatomical, from the pathological point of view, has an enormous literature, but aphasia treated from the special point of view of the testamentary capacity of aphasics has had comparatively few contributions, and these mostly abroad. I will not name them, because it would take me too far just now; but in a very interesting article by Dr. Byrom Bramwell in the British Medical Journal for May 22nd, 1897, you will find most of them fully referred to. That is all that I can afford to say in the time at my disposal about the past literature of this question.

Anatomical.

I do not wish to go into the general subject of aphasia more than is absolutely necessary, and therefore I shall use scarcely any of those extremely technical terms which have grown into use of late years. I rather prefer to take it, as it were, from the physiological side, and to leave the anatomical questions as much as possible out of consideration. Still I cannot help saying just a word or two. Twenty years ago aphasia was chiefly regarded as localised in, and associated with, what is called Broca's convolution—that is to say, the foot of the third or inferior frontal convolution, which, with a part of the foot of the parietal ascending convolution, constitutes what is called Broca's lobe considered as a speech centre. But we are now obliged, partly from the physiological and experimental evolution of the subject, and partly from the actual clinical developments of it, to recognise that there are at least four centres of localisation in the brain, lesions of which may affect the power of speech and of writing language. There is the Broca's convolution, and there is the auditory centre which lies somewhat further back, these playing upon one another, the auditory centre transmitting to Broca's convolution the impressions of spoken words through the ear, and the mechanisms of speech, again, being set in motion from Broca's speech centre in the brain; so that these two centres are concerned chiefly with the reception and the production of vocal speech. Then there are two centres which are connected with graphic language, with written or printed words—that is to say, the speech which goes by the sight. The two centres just mentioned are concerned in the communications of speech by the ear and the voice, both ingoing and outgoing, while the other two refer to the communications through the eye and the hand, both ingoing and outgoing. I think that is almost all I shall think it necessary to trouble you with on the subject of localisation. There is a fifth centre, but I think Dr. Elder and most people admit that the localisation of this is not very easy. It is supposed to be the centre of ideation of the word as apart from the mechanism for the production of the word. That centre is still not definitely localised, and therefore to a great extent we must keep it out of account. It will be sufficient for the present purpose to take account of what I am in the habit of calling the ingoing and outgoing mechanisms, and if we still further divide these into those that spring from the auditory centre (those that go by the ear to the speech centre) and those that go by the eye to the speech centre, and the corresponding outgoing mechanisms of utterance and writing, I think we have got enough of subdivision for our present purpose.

The Mental State of Aphasics.

Now when we come to consider further, we are confronted, in the first place with this ideal question, which also becomes a practical question: Is aphasia consistent at all with integrity of the mind? In other words, is a man who is an aphasic necessarily prejudiced thereby as respects his mental capacity, that is to say, does he, in respect of his infirmity, necessarily depart somewhat from the normal condition of mind, so that you must regard insanity in a theoretical sense as a part of his complaint? That is a very difficult question to begin with, and I cannot afford to deal with it at length. Most of you know the ingenious argument which Professor Max Müller has founded upon the Greek word "logos," and although I do not go to the extent of Max Müller's contention, yet I admit there is a great deal in it. "Logos," in Greek, signifies the *word*, but "logos" also means the *thought*, the *reason*. Max Müller says that one expression does for the word and for the thought which the word represents. In point of fact, he says these are two different aspects of the same thing, and they are practically inseparable. If that is the case, then you might infer that, philosophically speaking, a man who is aphasic is to that extent deprived of reason, but I do not think we can accept that as a practical conclusion. I should be willing to concede, however, that a human being who had never been otherwise than aphasic, who was congenitally deficient, let us say, in Broca's lobe, or in any of the mechanisms which go to make the speech faculty, could never grow to the "logos," and so become a reasoning animal: he could not rise much above the level of a dog, an elephant, or a horse. That I should be willing to concede. But when we come to the case of a man

who is, by a sudden accident, lamed as regards the mechanism of this particular faculty, having had all his reasoning processes well developed beforehand, I am unwilling to admit that he necessarily suffers any derogation at all of the higher faculties, although I may be pressed into the admission that theoretically he suffers, or is likely to suffer, sooner or later, in some degree. Of course, practically, he may suffer in almost any degree, because other faculties besides speech may be incidentally involved, as, for example, when an aphasic is also comatose; but that is all I can admit. The point here is how far does this either theoretical or practical laming of one faculty interfere with a man's capacity to make a will? I do not think that is a question which can be answered in any general sense, but in order to get on the lines of our subject I must direct your attention to what is the legal position in making a will, how much intellect it requires, what, even in cases that are not aphasic, are considered to be difficulties or doubts in the way of constituting a legal disposition of property, and on the other hand, the extent to which the legal instrument, commonly called a will, maintains itself against difficult positions by the force of its own character, as it were. These are all very curious questions, and I should hardly trust myself, not being a man of any legal information, to give any dicta upon them. It is, therefore, extremely lucky for me that we have had the subject presented within the last few days by the Lord President of the Court of Session, Lord Robertson, in words which can hardly be exceeded in precision as applying to this matter. The case he was dealing with had nothing to do with aphasia; but, nevertheless, it drew from his lordship a statement as to the legal position in respect to testamentary capacity; a statement which I have never seen exceeded in precision for our present subject. There are, no doubt, Englishmen here present, and perhaps it may not be quite clear to some of them how far the legal position is the same in England; but all I have to say upon that is that if the law and the state of the facts is not the same in England, you will have to show cause, as the law would say, how it is not, and why it is not. Because you may depend upon it that we Scotchmen will maintain that our way is the right way, and that the Scotch law, founded on the civil law, and coming down to us in a long procession of generations, is a much superior law to the English judge-made law, which is a thing of shreds and patches. Taking the Scotch law, I take it for granted that I am presenting the real first principles of the whole subject; and the English law, so far as it is not in accordance with those principles, has to get itself into accordance with them. Lord Robertson said this: "He must remind them (that is, the jury) that they had not got to try the question whether in the general sense the woman was sane or insane. The question was much more narrow and limited. It had reference to this particular will—had she enough mind to understand it, and did she understand it? because there were many people in this world who had got what might be called a crack in them, and were really eccentric, and yet their wills were perfectly good. They might think that it was too complicated for the woman; and if so, then they would find against the will. On the other hand, they might think, although they had heard a good deal of trash about the woman's eccentricities" [observe the contemptuous way in which his lordship brushed aside all merely theoretical inferences tending to insanity] "that still she had enough sense to make a will if it was a will that she could understand. It was to be observed in favour of the will that it was not very complicated if they thought the woman really wanted it. They then would have to consider whether there was satisfactory evidence that her mind was applied to it; but in the meantime, as regards the woman herself, no doubt she was a person of rather low intelligence. She had not been well-educated, and there was in the family a strain of eccentricity." Then his lordship went into the details of the case, with which I will not trouble you, and then comes this important statement: "They were left a good deal in the dark as to what share this woman had in the making of the will at all. His lordship's own impression was that she did not want her relations to get the money. But it was for the jury to say whether this will was her will. They must not break the will unless they really thought that either she was unfit to make it that she had not sufficiency of mind to make it, or that she was weak and was led into making it by other people."

I think that is very much in accordance with the way in which I put it in a letter to the British Medical Journal not long ago (June 12th, 1897), but in reference to an aphasic case: that a will which is a regular document, which is drawn out in reasonable language and signed before two independent witnesses, maintains itself in the eye of the law—it proves itself, as it were; in other words, it throws the *onus probandi* entirely on those who dispute its validity, and in the absence of clear proof to satisfy the jury either that the testator did not make the will or that he did not know what he was about, that he was not fully conscious of what he was doing when he made it, or, on the other hand, that he was misguided by interested parties, the will holds, and must hold. That is the position of the law at present in Scotland, and I believe also in England.

How is that position altered by the case of aphasia? To make a long story short, I would say that my view of it is briefly this. I might say a great deal more about the details, but my view of the principle is briefly this, that the fact of aphasia shifts the *onus probandi*. The fact of aphasia (unless it be very limited in extent), interferes either with the graphic and visual speech processes or with the auditory and vocal speech processes, and therefore throws the *onus probandi* upon those who consider the will genuine, or wish to prove the will genuine. It makes a difficulty in the way of a testator giving expression to his true desires and his true will, and those who support the will have to prove that the difficulty was successfully overcome. This is not saying that the will is technically bad because it was made by an aphasic person; that is not the position I am taking at all. I hold that an aphasic person—I will push it to the full length of saying a man completely aphasic, but not otherwise insane or stupid—has, as regards his inner mind, probably the full capacity of making a will of some kind. I do not say as good or as elaborate a will as you or I could make, with the assistance of a lawyer, but he has quite sufficient to meet those legal conditions required for a simple and natural disposition of this means.

I take for an illustration of this the case of M. Pasteur, who had a left-sided paralysis, a lesion therefore on the right side of the brain, when I met him in London in 1881; nevertheless, he continued to manage that admirable laboratory of his, he was the administrative head of a large scientific research department, and of his mental capacity no mortal can entertain a single doubt for a moment, even for much more complicated transactions than making a will. He was not an aphasic, of course; but he might have been so, had the lesion been on the other side of his brain. Now M. Pasteur made the shortest and the simplest will that I ever heard of. It was this: "I give all my goods to my wife." Is there the least reason to suppose that if, instead of being on the right side of his brain, that lesion had been on the left side of his brain, even if Broca's lobe, or the auditory centre, had been destroyed, that M. Pasteur would not have been able to form that will in his own mind, would not have been able to make a valid will leaving everything to his wife, provided he could have, somehow or other, by signs, or in some way, positively and clearly impressed everyone that that was his will, and had got that intention, somehow, put into a proper legal form? I have no doubt whatever that his testamentary capacity under such an aphasic attack might have been unaffected except as regards the outward mechanism of language. The difficulties, however, in a practical sense, may be serious; for a flaw in the mechanism either of reception or of production—either in the ingoing or the outgoing mechanisms of language—may prove to be something like a five-barred gate in a steeplechase: it is an additional obstacle to be got over, and the multiplication of these obstacles may incidentally preclude the possibility of giving effect to an intention which, nevertheless, may be quite clear if the testator could only get it out.

Now the question is, how far these difficulties go in a particular case. Dr. Bramwell, who I hoped would have been in this Section, has tackled this subject with his usual industry and completeness, and the only fault of it is that he has made it so excessively complicated in his way of stating it, that I am quite sure if I read the whole of it to you you would be quite overwhelmed (as, indeed, I am myself) with the ex

treme subtleties of the argument. There are, perhaps, one or two points where I should be disposed to differ from him, but I am not going to speak upon these just now, because I quite concur with him in his general statement of principle that the question whether an aphasic person can make a will and how far he can make a will, is a question of detail entirely; it is a question which must be submitted to a jury on the basis of the individual facts of the individual case, and has got to be fought out in a court of law, not upon any abstract principle at all—I have stated the principle as far as I think it will go—but upon the individual details of the individual case. In fact, I apply to aphasia just the same rule as Lord Robertson applied in the case I have quoted. It is not a general question of law, it is not a thing which can be put into legal or into physiological categories at all. The question in that individual case was, Did the woman know what she wanted? Did she form a clear conception of what she wanted, and did she succeed in giving effect to that conception in the particular document that passed for her "will"? Or was that document not really her will at all, but inspired or instigated unduly by others taking advantage of her infirmities? These are exactly the questions of detail that equally arise in dealing with the will of an aphasic.

I happen to have some very interesting documents, which I propose to hand round, only please observe that there must be no names mentioned at all. These are some attempts at utterance in writing in a case of aphasia recently under the care of Dr. Sinclair of Dundee: the case of a gentleman, well educated, and himself a very able lawyer and man of business, whom I saw in consultation, and who died aphasic. It was of great importance to get something done—it was not making a will in this instance, but it was withdrawing from a set of business transactions which he was connected with as factor or trustee, and it was of great importance to get this effectively done; but it was found to be impossible, and had he lived longer there would have been an imperative need to apply to the court about it; because even as regards the simple assent or dissent to a simple proposal it was found impossible to obtain a clear or consistent "Yea" or "Nay." Yet this gentleman seemed to be, in a general way, clear enough in his intelligence except as regards language, and there was no apparent ground for questioning his sanity.[1]

Another case which I want to refer to is the one I myself stated in a letter to the British Medical Journal of June 12th, 1897, but as it is all in print, and as it contains a great deal of the substance of what I have said, I will not detain you with it. It is the only case in which I have been personally concerned where a dispute has arisen about an aphasic will; and it would have been a very curious case indeed had it come into court.

There is just one more case to which I must briefly refer. I saw in consultation a great many years ago a gentleman who became aphasic as the result of a hemiplegic attack. A friend of mine had married his daughter, but I did not see much of this patient latterly, as he went away to reside in England, where he died. Since this discussion arose I took occasion to enquire whether he had made a will after he became aphasic. I found he had not, and furthermore, that he would have liked to have done so, but the conscientious people who were about him did not think he was competent to do it, and thus, although he was, in a sense, all right as to his mind, he was so deficient in the power of expression as to have been regarded as not competent to give effect to what he was known to have intended and desired to do. And thus (as his son-in-law wrote to me lately), though almost any change in the disposition of his property after his daughter's death, had he made it, would have been more or less in the interest of her family, and although his own wishes (in a general way) were known to them, yet the difficulties to be surmounted in the way of expression were such that (although the son-in-law was a medical man) no attempt was ever made to put anything on paper, the original disposition (made before the aphasia) remaining unaltered to the last.

I regret very much that the exigencies of time and of space preclude me from making any more detailed references to these and other cases, and also from discussing the general subject more at large with relation to the different kinds of aphasia and agraphia.

[Postscript by Sir W. T. Gairdner.]

As this case is a really curious one, and is certain not to be ever more particularly recorded, it may be as well here to insert the precise terms of the letter referred to by my friend whom I shall call Dr. X. The aphasic patient is referred to as Mr. Y.

"In reply to your letter, Mr. Y. made no will after his seizure; the estate was dealt with in terms of a will made before my marriage with his daughter, and of course before my wife's death: my wife died before her father. For convenience of all parties interested he signed a document giving power of attorney to his two sons to give receipts for dividends, etc. I do not think he knew what he was doing then, but it was a matter in which everyone was in agreement. Had he been able he would, I am sure from a conversation I had with him after his daughter's death and about a year after his seizure, have altered his will somewhat. We were very friendly and he kept saying that if he had only thought that his daughter's death would have occurred before his own he would have arranged differently. But he was never in a condition to give a clear assent to any special point. He was to the end confusing and misnaming coins, dates, and occasionally people."

II.—William Elder, M.D., F.R.C.P.E.,

Physician to Leith Hospital.

Whether a patient who suffers from aphasia is capable of making a valid will (or exercising his civil rights) is a question which it would be as absurd to answer with a "Yes" or a "No" as it would be to answer in a corresponding affirmative or negative fashion the question whether a patient suffering from cerebral tumour is capable of making a will or not. Each case must necessarily be judged on its own merits, and an answer given according to the symptoms which the patient showed at the time that the will was made. At the same time, a few general principles can be laid down to guide us in determining of the testamentary capacity of a patient suffering from aphasia.

At the outset of our inquiry we are met by the legal question: What amount of intelligence or mental capacity in a person is necessary in order that the testamentary act which has been executed by that person may legally stand as his will—or what amount of intelligence or mental capacity is it necessary for a person to show in order to give directions to someone else to draw out his will? That is a general question I must leave to others to answer, but I presume that a person, in order to make a valid will, must in the first place be sane enough, and of sufficient strength of mind, to know what he is doing, and to judge of what the effect and consequences of his intended disposition may be, and in the second place be

[1] The documents, which were placed at the disposal of the meeting in connection with the above very brief remarks, are of considerable interest as showing in detail the great amount of interference both with the ingoing processes through the auditory centre and the outgoing through the graphic centre in regard to the reception and production of words and even letters. In multiplied attempts at writing to dictation there is only in one or two instances such an amount of resemblance to the word proposed as would be legible to a third party. In one instance an Arabic numeral (67) is fairly well written, but the rest of the address (his own house) is a mere collection of scratches, with barely a trace of the letters indicating the name. His own and his sister's name are equally difficult, if not impossible, to decipher; on the other hand, he has on one occasion written "summer" and "winter," not well indeed, but quite intelligibly. He was able, apparently, to read his own name on an envelope addressed to himself, and he could usually, but not always or consistently, carry out a direction given him by spoken words, as thus: "Hold up one finger." "Put out your tongue." "Close your eyes." "Take off your eyeglasses." Dr. Sinclair writes in regard to the particular questions referred to above as follows: On March 16th, 1898, Mr. Z. had an attack of right hemiplegia with aphasia, and I send you some records of that condition. On June 5th he had an attack of cerebral hæmorrhage with convulsions and unconsciousness, and he died comatose on June 7th. There is no doubt that Mr. Z.'s whole appearance and demeanour were those of a man who was quite competent in idea to give instructions as to the direction of his affairs, and as his position of judicial factor for the trustees of an important firm of business men was one of very great consequence to his own estate as well as to the family and the creditors, his law agent and all concerned were most anxious for his fiat. But the notes I sent will show that at no time from his seizure on March 16th last was he able to give directions on which reliance could be placed, even when only a simple assent or negative was asked. In short I could never ascertain what his will in the matter actually was. Had his life been much more prolonged it would have been necessary to apply to the Court of Session for his discharge from the office. This, as you will readily understand, was a measure from which his friends rather shrank at the close of a long and honourable career such as his.

capable of carrying out in his actions what he psychologically intends; because, as is well known, to take a simple case it is quite possible that a person may mentally desire to say "No" and "Yes" by the outward expression of his mental action.

It must be laid down as a general principle that no one can make a will who does not possess the power of understanding and of producing language of some sort. I use the word language rather than speech because it is not so apt to lead to confusion, although "speech" has come to be used in almost as general a sense as "language."

In order to make a will it is necessary for an individual to be able to communicate to others by means of some form of language what he would like to be done after his death. It is necessary by law that the wishes or desires of the person be put in writing. It would not, for instance, be held to be a will if a person simply indicated by signs before he died that he wanted such and such a thing done, nor would it be held to be a will if a person gave directions by word of mouth. The simplest and most primitive form of will is a holograph will—that is, a will written and signed by the testator himself. The law, however, recognises a will that has been written by someone else, provided it is signed by the person making it. In all these cases, however, it is necessary for the signature to be attested by witnesses. The point I wish to make just now is that it is necessary for a person to be possessed of at least some language in order that he may make a will, although the amount of language may not necessarily be much.

He must be capable of understanding language, so that he knows either what he reads or what is read to him. This implies that he can hear and understand words, if he cannot read nor understand pantomimic language; but if he can read and understand what he reads, then it is not necessary for him to hear nor understand pantomimic language. If he can understand pantomimic language, the question might arise whether it is necessary for him either to be able to hear or to read. It is possible also, of course, for a person's intelligence to be reached in other ways, as, for instance, by means of the muscular sense. On the other hand, given that a person understands what is in a document by any of these methods, it is not necessary that he be able to speak in order that he may execute a testamentary deed. He may indicate what he wishes by means of writing, or by pantomime, or in other ways. How, therefore, would the symptoms of the different forms of aphasia affect the testamentary capacity of a patient suffering from each form?

From the one form of aphasia of Broca, the varieties have increased till at least one author recognises twenty-eight, but these varieties are only theoretical, and practically there are four clinical types, although I believe several varieties of more or less importance of each of these types are seen occasionally. Of these types, two are sensory, and are an interference with some part of the reception and understanding of language mechanism, and two are motor, and are an interference with some part of the mechanism which has to do with the production of language. The sensory are: (1) auditory aphasia or word-deafness; (2) visual aphasia or word-blindness. The motor are: (1) motor aphasia or aphemia; (2) graphic aphasia or motor agraphia.

There are many general symptoms affecting the mental or intellectual capacity of the patient which may be shown by the subject of any cerebral lesion, and have a very direct bearing on the question of testamentary capacity. I put aside, however, those symptoms, and limit myself to the symptoms peculiar to each variety of aphasia.

Auditory Aphasia.

A person suffering from complete auditory aphasia would be incapable of making a will. Complete auditory aphasia not only implies word-deafness but also word-blindness, because it is necessary for the auditory word centre to be capable of acting in order that a person may understand what he reads, so that the person with auditory aphasia would not be able to read intelligently, nor would he be able to understand what was spoken or read to him. The understanding of pantomimic language might also be lost, but if it were present it would certainly be very difficult to communicate to such an individual the contents of a testamentary document. It is possible, of course, that a person both word-blind and word-deaf might have acquired the power of reading by the touch and muscular sense, but such a case would be very exceptional.

Not being able to understand any form of language, he would in all probability not be able to communicate his wishes by producing any form of language. In auditory aphasia, if the motor articulatory centre acts at all, the patient is paraphasic, that is, he can speak words, but these words are not necessarily the correct ones, nor is he able to correct himself, because he cannot hear what he has said. Often such cases talk gibberish, especially if the auditory centre is not completely destroyed, or if the right auditory centre is particularly active.

His other productive language centres are even less capable of communicating with his fellow-men than his motor articulatory centres. If he can write at all, it is only some very familiar words or letters, such as his signature or even the first letter of his signature, and he may show "letter or familiar word intoxication" in writing. It is to be noted, therefore, that a signature present on a document is no evidence that the person understood a word of what was in the document, nor is it evidence that the person had command of language sufficient even to write. The signature in such a case is written automatically by the graphic centre, and is analogous to a reflex act.

As a complete auditory aphasic is therefore incapable of making a will, so probably are all cases in which there is a distinct impairment of the auditory word-centre. In cases in which the impairment is very slight, then the symptoms of paraphasia and paragraphia are often more distinct, the patient on the one hand being able to understand spoken and written and printed language better, but on the other hand producing language more freely, but often quite inaccurately.

In such cases it would often be very difficult to say whether such a patient was capable of executing a will, and the same difficulty would be met in cases of conduction aphasia, in which the auditory and visual word-centres escaped altogether, but the patient only showed the symptoms of paraphasia and paragraphia with word-intoxication. These cases understand what is said to them, and can read writing and printed matter, but, in attempting to speak or write, they use incorrect words and repeat themselves. They know, however, that they have spoken or written incorrectly, but still it might be difficult to say whether they were capable of making a valid will.

There is one very rare form of auditory aphasia that must be put on a different footing from the others, and that is the infrapictorial or subcortical variety, where the patient cannot hear words, but can understand words written and printed, and can speak and write correctly. Such a case would be capable of executing a will provided he had education sufficient to read, but he would, of course, not understand what was read to him.

Visual Aphasia or Word-Blindness.

Here we would practically have to consider whether we had to do with a case of pure word-blindness (infrapictorial or subcortical visual aphasia, or of cortical word-blindness (pictorial or cortical visual aphasia). In subcortical (or pure) word-blindness, the patient would not be able to read and understand either printed or written matter, but he would be able to hear and understand spoken language, and he would be able to speak and write correctly. Such a patient, therefore, might be quite capable of making a will, provided the contents were read to him or he wrote them himself; but the case would be different with a patient suffering from pictorial or cortical word-blindness. In that case he would not be able to read nor understand written or printed language, nor would he be able to write either voluntarily or to dictation. It is to be noted that here also, I believe, such a patient is quite capable of writing his signature, or very familiar letters, by the automatic action of the graphic centre. But the fact that he could not as a rule append his signature to any document, even although he might understand what was in the document from having it read to him, raises the very interesting question as to whether such a document would stand, provided he carried out the legal formality necessary in Scotland of getting a notary to sign for him in the presence of

witnesses. I believe that in a case of uncomplicated cortical word-blindness the patient is quite capable of making a will, provided the contents are accurately read out to him before he gives instructions to the notary to sign for him. The patient is practically in the position of a person who is blind, with, of course, the additional general symptoms due to the fact of his having a cerebral lesion.

Motor Aphasia or Aphemia.

In this condition the testamentary capacity would vary according as the lesion was in Broca's centre alone (pictorial or cortical motor aphasia), or subcortically to Broca's centre (infrapictorial or subcortical motor aphasia), what Bastian calls aphemia. If infrapictorial or subcortical motor aphasic, the patient can read and understand written and printed language, can hear and understand spoken language, and can write either voluntarily or to dictation, and therefore could write his own will; but it might be difficult for anyone to take directions from him for the making of his will, as he would not be able to speak; but if an educated person, his knowledge of language would be so perfect that he would be able to read will before he signed it. Hysterical mutism I believe to be the functional form of this variety, and hysterical mutes, therefore, are capable of making a valid will.

In cortical or pictorial motor aphasia we have a different condition, however, and I am afraid there must still be some difference of opinion as to the testamentary capacity of patients suffering from the uncomplicated form of this disease. Until within the past few years it has been believed that patients suffering from this form were almost always agraphic. Bastian has, however, produced evidence which he believes shows that patients with a lesion in Broca's centre, if limited to the third left frontal, do not suffer from agraphia. The chief part of that evidence is a case published by Guido Banti, but I cannot say that that case nor the evidence that Bastian has produced is quite convincing, and the question is therefore still in doubt. This, however, is not the place to enter into a discussion of this question. Sufficient is it to mention it, and to get over the difficulty by stating that clinically by far the majority of cases have agraphia as well as motor aphasia, and therefore these cases would not be able to write a will, and if they signed such a deed, the signature would be an automatic one, and the will, to be legally executed, would in Scotland require to be signed for him by a notary in the presence of witnesses. But there is another point about these cases still somewhat in doubt, that is, whether a patient with pictorial motor aphasia can read and understand what he is reading. I believe that some can read and understand what they reading, and some cannot—the difference depending on the peculiar psychical constitution of the individual and the method of his education. Patients with cortical motor aphasia can, however, understand what they hear, so that if a deed was read over to them they would understand its contents, and they could give instruction by pantomime to a notary to sign for them in the presence of witnesses. Here a legal question might arise as to whether the instructions given by pantomime would be considered sufficient.

Graphic Aphasia.

No true case of cortical graphic aphasia has been authenticated, but in such a case the patient would be able to hear and understand spoken speech, to read and understand written and printed language, and to speak correctly, so that his knowledge of language would be complete except that he would not be able to write. He could, however, give instruction to a notary to sign for him in the presence of witnesses.

Similarly with cases of paralysis of the right hand due to subcortical lesions or lesions of the cortical centres for the right hand, the patient could execute a testamentary deed by giving instructions as in the last case, or he might write with the left hand. In this connection a very interesting point might arise. I believe that in those cases of lesion subcortical to the centres for the right hand the patient sometimes, especially if he has been an expert writer, may, when he attempts to write with the left hand, write in the peculiar way called mirror writing. I have elsewhere given my views as to the explanation of this. I believe that the left hand in such cases is guided by the graphic or cheiro-kinæsthetic centre on the left side, the impulses passing through the callosal fibres to the centres for the left hand in the right cerebral cortex; but whatever the explanation of such cases, a case might arise where a patient paralysed on the left side from an internal capsular or subcortical lesion might write his own will in mirror writing with his left hand, or might sign his will, writing in this mirror fashion.

Such mirror writing, as I have pointed out elsewhere, is often an exact reproduction of his ordinary right-hand writing when looked at in a mirror. A person writing a will in this fashion ought, I believe, to be considered quite capable of executing a testamentary deed if his other symptoms did not point to incapacity, but it is questionable whether it would be held valid by law.

Conclusions.

The conclusions I would draw from a consideration of the whole subject are:

1. That organic diseases of the brain may render a patient incapable of making a will, and that some form of aphasia may be produced also as one of the symptoms of the organic disease.
2. That some forms of aphasia may render a patient incapable of will making.
3. That auditory aphasia, if at all well marked, incapacitates a patient from will making.
4. That some other forms of aphasia, such as pictorial word-blindness, pictorial motor aphasia, and graphic aphasia, may render a patient incapable of making a will, not necessarily from being mentally incapable, but from the difficulty of carrying out the legal formalities.
5. That these difficulties in carrying out the legal formalities necessarily vary according to the law of the particular country.
6. That simple uncomplicated cases of infrapictorial auditory, infrapictorial visual, and infrapictorial motor aphasia, are capable of valid will making.

III.—T. S. Clouston, M.D., F.R.C.P.Edin.,
Physician Superintendent, Royal Asylum, Morningside, Edinburgh.

Dr. Clouston said there were two points which he insisted every man must attend to. The first was the test question, whether it was the will of the individual, or whether it had been suggested to him. The second was that in making the will of any aphasic patient it was the duty of every medical man and lawyer to put the contrary case. A man had left, say, £100 to his wife and £100 to his daughter—to A. and B. They were bound to ask him if it was for B. and C. or for D. and E. that he intended the money. No will of an aphasic, in spite of any judge or doctor, could be a legal and proper will unless the doctor had put the contrary case, because an aphasic would assent to anything if put to him in a certain way. It was essential that the mental condition of the would-be testator should be tested by a medical man. Dr. Clouston concluded by urging that two practical points in the actual making of the will must be attended to: (1) Test whether the document is his own, and has not been suggested by others; (2) Put the contrary proposition, or a different proposition, twice at least as to sums disposed of, and as to the persons to whom the money or property is left. No will can be valid where these two points have not been most carefully gone into.

[It was found necessary owing to the pressure of business to stop the discussion at this point.]

A DISCUSSION ON
THE PLEA OF INSANITY IN CRIMINAL CASES.

I.—Chas. A. Mercier, M.B., M.R.C.P.Lond.,
Lecturer on Neurology and Insanity, Westminster Hospital Medical School, and at the Medical School for Women, London.

The controversy between the medical and legal professions that has raged for so long round this subject is now rapidly extending. Judges, while adhering, as they consider them-

selves bound to do, to the terms of a well-known formula, contrive so to interpret that formula that upon the whole substantial justice is done. Medical men, recognising that upon the whole substantial justice is done, cease to contend for an academically perfect formulation of the law, and recognise that such a formula might be found, after all, to be inapplicable to outlying and exceptional cases without that laxity of interpretation which renders the present law practically effectual. No useful object can in my opinion be served by a prolongation of this controversy, and I do not propose to have any more to say with regard to it.

What Mental Conditions should Exonerate.

The aspect of the plea of insanity which does demand discussion at the hands of medical men appears to me to be this: Are medical men agreed as to the mental conditions which ought to exonerate a criminal from punishment, and if so, what are these conditions?

The first question must, I think, be answered in the negative. I know of no statement of such conditions that has received the general assent of the profession. Several propositions purporting to formulate these conditions have from time to time been proposed, but no one of them has succeeded in obtaining universal or even general support. To every one of them the opposition from within the medical profession has been at least as strenuous as the opposition from without our ranks. While, therefore, we inhabit a dwelling so copiously provided with glazing, it would be well to refrain from the recreation of throwing stones. While no agreement upon this point has yet been reached, it does seem eminently desirable that such a general consensus of opinion should be attained, and in order to clear the way towards so desirable an end, I should ask your assent to three general propositions.

Immunity from Punishment.

First, I ask you to agree that no insane person ought for any act to be punished with the same severity as a sane person ought to be punished for the same act. Or, in other words, the punishment of an insane person ought never to be as severe as the punishment that a sane person would rightly incur for the same act. To this proposition there will, I think, be few dissentients in this room. Every institution for the insane is conducted in accordance with this principle. When the lunatic steals, or assaults, or behaves indecently, or wrongs his neighbour in any way, he is not put into a cell, nor deprived of the society of his fellows, nor is he made to lie on a plank bed, nor is he placed on starvation diet. His treatment is not assimilated to that of sane criminals, and the reason, the only reason, why it is not so assimilated, is that he is insane. Practically it is recognised every day, and all over the country—nay, all over the civilised world—that insanity carries with it, *ipso facto*, a certain immunity from punishment; that the insane offender is not to be treated with the same severity as the sane offender. It would not be difficult to show that for this practice there are good sound scientific reasons; but I do not desire to labour the point, nor do I desire to treat the subject from any but a strictly practical point of view, and that the practice is as here stated must I think be admitted.

The second proposition to which I desire your assent is this: There is for every insane person a certain sphere of conduct for which he ought to be entirely immune from punishment; or otherwise put, every insane person may commit certain misdeeds for which he ought not to be punished. We should all admit that it would be wrong to punish a sufferer from delusions of persecution for assaulting his supposed persecutor; or to punish a woman with puerperal mania for trying to kill her infant; or to punish a general paralytic for taking a watch that he thought belonged to him; or to punish a dement for upsetting the lamp and setting the house on fire. And similarly there are, for every insane person, misdeeds which, if they were done by a sane person would be rightly punishable; but which, done by the insane it would be clearly and manifestly wrong to punish at all.

The Degree of Responsibility of the Insane.

So far, I trust, that I have carried the sense of the meeting along with me, but my third proposition is one for which I do not hope to obtain your immediate assent, although I trust to secure it before I have finished. It is this: Very few indeed of the insane are wholly irresponsible—by which I mean that there are very few indeed of the insane who ought never to be punished for wrong-doing. Or, to put it with brutal plainness, it is in many cases right and just to punish an insane person for wrong-doing. I am afraid that I have made your flesh creep. There is doubtless a very prevalent floating body of sentiment, which gets expressed from time to time in expressions of horror and disgust at the notion of ever punishing a lunatic under any circumstances for any act. The English Commissioners in Lunacy some years ago wrote in their report of a certain asylum that they observed that a certain course of dealing with a patient had been adopted, and they added: "We are of opinion that this is punishment pure and simple"—or words to that effect. No further censure was uttered, evidently because it was felt that no further censure was needed, or indeed that no stronger censure was possible; the implication, the omitted premiss, being manifestly that no lunatic ought under any circumstances to be punished. With a full appreciation of the obloquy and odium that I shall incur by the statement, I affirm that for very many of their misdeeds the majority of lunatics ought to incur some punishment; and, further, I affirm that explicitly or implicitly this is the opinion of every practitioner who has had experience of the insane; and, furthermore, I affirm that punishment of the insane in some form or other is in practice in every institution for lunatics.

Punishment by Withdrawal of Privileges.

Come, gentlemen, let us clear our minds of cant in this matter. Who is there among you who, if a patient on parole comes in drunk, will not refuse him his parole next time he applies for it? Who is there among you that, when a woman has been fighting or smashing, will not forbid her to attend the weekly dance? Who is there that will not stop the tobacco of a man who is discovered pilfering or bullying? Is it denied that these are punishments? It may be said that a woman who is so violently maniacal as to be fighting and smashing is not fit to attend a dance, and is forbidden for that reason and not for punishment. And it may be said that the man who comes in drunk is refused his parole, not as punishment, but as precaution lest he should come in drunk again. But I expressly exclude the withdrawal of punishment for any such reason. I speak of "punishment pure and simple," and I say that when a patient has been smashing and tearing her clothes, not in an access of acute mania, but in an outbreak of temper, she would be excluded from the dance, not because she was unfit to be present, but as a punishment. If the man is refused the renewal of his parole as a precaution, then the refusal must be permanent. But it is not permanent. We rely upon the temporary withdrawal of the privilege to act as a check in preventing its abuse in future, that is to say, we use it as a punishment. It is sometimes denied upon another ground that these are punishments; they are, it is said, not punishments, but withdrawal of privileges. Why, yes; and so to send a man to prison is to withdraw from him the privilege of going about at large. And to treat him to bread and skilly and the plank bed is not punishment, but merely withdrawal of the privileges of sufficient food and sleep. I say that to stop a patient's tobacco or to forbid him the weekly dance is "punishment pure and simple" every bit as much as giving him a shower bath. If anyone here is in the habit of allowing pocket money to his patients, he will corroborate me when I say that this practice gives him a very powerful control over their conduct. The prospect of having his pocket money stopped will restrain a patient from practices of mischievousness, destruction, and other evil habits. *Experto crede.* I have proved it again and again. And although it may be no punishment to deprive a man of his tobacco, as to which the opinion of habitual smokers will be all one way, yet it surely cannot be denied that the infliction of a pecuniary fine is "punishment pure and simple."

Of course, it will be said that I have advocated a return to chains and manacles, to the lash and the bed of straw, and all the horrors of old Bedlam; and I shall be pointed at with the finger of scorn as the brutal castigator of the lunatic, when,

in fact, all that I have done is to refuse to call a spade an agricultural implement.

Let me point out that this proposition—that for certain offences lunatics are rightly punishable—is involved and implied in the propositions to which you have already assented. If it is asserted that no insane person ought to be punished with the same severity as a sane person, it is implied that the insane person ought to be visited with some punishment. When it is asserted that for every insane person there is a sphere of conduct within which he ought to be immune from punishment, it is implied that without that sphere he ought not to be immune from punishment.

Mitigated Punishments.

The practical importance of these propositions with regard to the plea of insanity is this—that while there are some cases in which we may rightly ask the court to refrain altogether from punishing the criminal, there are many more cases in which we cannot justly demand such complete immunity, but in which we can fairly argue that the criminal is responsible to some extent but is not wholly responsible, and that, therefore, while he ought to be punished, he ought not to be punished with the same severity as an ordinary offender. If this attitude be asumed by the medical witness, I feel sure that not only will he present his plea in a more just and equitable form, but he will stand a far better chance of having it admitted. His contention will be more in harmony not only with the justice of the case, but with the sense of the court and with the feelings of the community at large.

This, then, is the aim that, in my view, we should set ourselves to attain. The total immunity of some insane offenders for some acts, and the mitigation of punishment in more or less degree for all crimes done by insane offenders.

When should the Insane Criminal be held Immune?

The acceptance of these principles, if they be accepted, will not help us much, however, to the solution of the practical problem that confronts us in concrete cases, for in a very large number of cases in which insanity is pleaded, the prisoner has not been regarded as insane until the commission of the very crime for which he is now being tried. If our task were to establish the immunity, or partial immunity, of a person who is admittedly insane, it would be an easy one. What we are usually asked to do is to show why this offender, who up to the time of the crime has been sufficiently sane to be allowed, rightly or wrongly, to be at large should, now that he has committed a crime, receive the benefit of the plea of insanity.

Conclusion.

The speaker then briefly summarised the circumstances which, if proved, would establish the plea, namely:

1. Exonerating delusion.
2. Such confusion of thought that the accused was incapable of rightly estimating the circumstances or the consequences of his act.
3. Extreme inadequacy of motive.
4. Extreme imprudence in the act.
5. The non-concurrence in the act of the volitional self.

II.—John F. Sutherland, M.D.,

Deputy Commissioner in Lunacy for Scotland.

I have no fault to find with the criterion of responsibility laid down by the judges in 1843 in response to the request of the House of Lords for a definite ruling. The criterion—a simple one—amounted to this: Did accused at the time of committing the crime know the nature and quality of the act, and did he know the act was a wrong one? This is a good enough definition for all purposes, and I have not known any injustice to insane persons result from it in Scotland. It may not be a perfect law, but on the whole it has worked, thanks to the fairness of the Bench of this country, remarkably well. If you wish this judicial formula changed, as some seem to think, we have the right to ask—(1) What do you propose to take its place? and (2) to state wherein and to what extent it has operated unfairly to accused persons. Cases in which the plea is possible are few, because the number of crimes of violence committed by insane persons is infinitesimal when the whole is taken into account. The bulk, perhaps no less than 95 per cent., of these indictable offences, were committed by persons in a state of intoxication. In regard to such authors of crimes of violence, how does the law and how do experts stand? The "judge-made" law of 1843, as some people term it, would exculpate them from responsibility, for it exactly meets their case. A person intoxicated cannot and does not know the nature and quality of the act, or that it was a wrong act, because intoxication is insanity of the most perfect type, no matter how transient. But while "insane at the time" is a proper defence in such cases, how many specialists will enter the witness box and testify to that effect? If they did, I do not believe any jury would convict of the capital charge. No; the judicial dictum of 1843 is not, at all events in regard to them, at fault. It is not the law that is at fault, rather is it the hesitancy of medical witnesses to take a proper stand, which is blameworthy, and likewise the fact that the accused as a rule, being poor, have not the means to secure legal aid commensurate with the gravity and responsibility of the case. Consequently such cases, for the most part, fall into the hands of inexperienced lawyers, and matters are made worse by the knowledge that the aid of the specialist cannot be got. No fund for such special cases is available in Scotland. Were it in existence, several of the verdicts of recent years would have been different. In some of the worst cases there was practically not the semblance of a defence.

It is in this direction a change is needed. In regard to such cases I would venture to point out some of the judicial fallacies that have arisen. One hears the occupant of the Bench sometimes speaking of the "wilful" nature of the drunken attack, the "voluntarily" induced state of mind of accused, and not least that the death sentence is a "terror" to drunkards. In none of these views can I concur. Can a drunken man do a "wilful" act? I should be inclined to think that this is highly problematical, and that it does not even afford that presumptive evidence required in a court of law. Much might be said against the theory of "voluntary" drinking. Who can say with a degree of certainty in the advanced stage of a chronic drunkard's bout that the drinking was voluntary? for that would imply the certainty of an absence of latent or patent physical and mental degeneration induced by the vicious or the diseased habit. The former in time merges into the latter. All is uncertainty. Then there is the supposed deterrent effect which the scaffold is said to produce in the minds of drunkards. There could be no greater delusion, and drunkards were as numerous on the next "pay day" as ever they were, and deal out violence as freely and as maniacally as ever they did. The marvel is that, instead of having thirty indictments for murder every year, there are not 1,000, and as a consequence capital punishment multiplied a thousandfold. This is an aspect of the question which is overlooked. The violence of the drunkard is not measured, so great is the mental disturbance of the senses and faculties. It could not be otherwise real; consciousness either does not exist, or is of the dimmest. The intoxicated authors of crimes of violence are insane; the duration of the insanity from a medico-legal point of view is of no moment, and by the criterion of a possibility laid down in 1843, the drunkard should not be responsible, and would not if the expert looked at the matter from the point of view now submitted. But if this view be not accepted, then the crime should be reduced from murder to culpable homicide, as is the case in many countries. Some Scottish judges view it in this light. If "insane at the time" were proved, there would still be the protection for society by detention in a safe place of custody.

III.—Geo. F. Blandford, M.A.Oxon., M.D., F.R.C.P.Lond.,

Visiting Physician, Newlands and Otto House Lunatic Asylum.

Dr. Blandford remarked with regard to the vexed question of responsibility and knowledge of right and wrong, and the nature and quality of the act, that many lunatics knew right from wrong, but they knew it as lunatics. A dog knew right from wrong, a child knew right from wrong, but knew it as a child. A lunatic knew right from wrong, but the knowledge was that of an unsound not a sound mind. This was the point to be proved. It might be right that he should be held to be responsible to a certain extent—and it would be for the benefit of many lunatics that they should be held responsible to a certain extent—but instead of hanging a man who com-

mitted a murder through drink, he would send him, not to Broadmoor to smoke his pipe for the rest of his life, but to penal servitude, where he could do some useful work.

IV.—JOHN GLAISTER, M.D.,
Professor of Medical Jurisprudence and Public Health, St. Mungo's College, Glasgow.

PROFESSOR GLAISTER said that he generally accepted the propositions laid down by Dr. Mercier, but he was not quite sure that they would all be agreed as to the degree of acceptance. Any amount of general discussion on the general question might prove largely interesting and of some value, but, after all, when the responsibility of a given person for a given crime became a question of importance, perhaps of death, then only did the importance become of greatest significance. In his view there was less possibility of injustice being done to the insane than to the public. He was of opinion that the growing sentimentalism of the public regarding the responsibility of certain criminals, shown by petitions for modification of sentence and *post hoc* pleas of insanity, was a distinct danger.

V.—ALEX. ROBERTSON, M.D., F.F.P.S.Glasg.,
Professor of Medicine, St. Mungo's College, Glasgow.

DR. ALEX. ROBERTSON said that in the early part of his professional career he had published a paper entitled Modified Responsibility in Mitigation of Punishment, in which conclusions practically the same as those of Dr. Mercier in criminal cases, especially those of murder, were advocated. It appeared to him that of late years judges and juries had made very full allowance for mental defect or disorder, when these were proved to exist in criminal cases, and that justice was done. He regarded the proposition maintained by Dr. Sutherland as dangerous to society. His proposition was that if in a condition of drunkenness one should murder another, the mere fact of his mind being disordered by alcohol—in other words, that he was intoxicated—should reduce the charge against him from murder to culpable homicide. Dr. Sutherland appeared to advocate a change in the law to that effect. If such change were made, would there not be a temptation to anyone who had a feeling against another, probably known only to himself, to take two or three glasses of whisky, feign full intoxication, and kill the man against whom he had this feeling? For he would comfort himself with the thought that in any case he would at any rate not be hanged. But, even though there was no question of feigning, it was very doubtful, in the case of any drunkard who killed another when drunk, whether the charge should be modified. In all such cases the criminal had many times previously been violent under drink. It was incumbent on all who were dangerous under drink to refrain from its use; for, if they took it with that knowledge, they were clearly culpable and responsible for their acts. All such cases might safely be left to the common sense of juries.

VI.—Professor Sir WILLIAM T. GAIRDNER, K.C.B.

SIR WILLIAM GAIRDNER, speaking not as a specialist but as a teacher of the art of medicine in general, said what he had consistently taught had been in accordance with Dr. Mercier's doctrine. What he had held and taught all along was that there never could be bare justice in regard to the insane until there was a different form of verdict allowed from the present. The jury could say that a prisoner was guilty or not guilty because of insanity. He desired that there should be a third verdict allowed - guilty, but insane.

VII.—T. S. CLOUSTON, M.D., F.R.C.P.Edin.,
Physician-Superintendent of the Royal Asylum, Morningside, Edinburgh.

DR. CLOUSTON contested Dr. Mercier's position that the stoppages of indulgences constituted punishment in any sense of the term. It was certainly not punishment in a legal sense, and he considered it would be a dangerous thing to talk to the staff of the punishment of a patient. In all ages the proposal to adjust a punishment in proportion to the responsibility of a man who was admittedly defective in mind through disease of the brain had been found exceeding difficult. With regard to the great question of modified responsibility at law, they would require to go to the lawyers and convince that clear-headed set of men that the whole law of the land from the time of the Conqueror downward should be changed in principle. If punishment was regarded as a deterrent from crime he could not concur with Dr. Mercier's opinion that the partially insane would be in any way prevented from doing criminal acts by such graded punishments. He believed it would be a good thing if they could devise a verdict by which insane persons should be withdrawn from public life without being sent to Broadmoor.

DR. MERCIER'S REPLY.

DR. MERCIER held to his opinion that the withdrawal of privileges was punishment. At any rate the infliction of a pecuniary fine was punishment. When one of Dr. Sutherland's drunkards stood in the dock on Monday morning the magistrate inflicted upon him a sentence of five shillings or seven days, and the five shillings was the equivalent of the seven days and the seven days was the equivalent of the five shillings. Both were equally punishment. He was surprised after the praises of the Scotch law to which he had listened, to find that in at any rate one respect the despised English law was superior to the *jus civile*. Dr. Clouston had said that we should have to run counter to the whole course of the law as it had existed from the time of the Conqueror downwards. But in England a verdict of guilty but strongly recommended to mercy could be returned, and that recommendation was considered and effect was given to it by the judge. Having watched the course of criminal trials very closely for some years he was of opinion that judges and juries were more and more inclined to consider the mental condition of the prisoner and to admit the plea of insanity, not in total exoneration, but in mitigation of punishment.

SECTION OF PATHOLOGY.

Professor W. S. GREENFIELD, M.D., President.

A DISCUSSION ON THE AGGLUTINATING OR SEDIMENTING PROPERTIES OF SERUMS AND THEIR RELATION TO IMMUNITY.

I.—HERBERT E. DURHAM, M.B., B.C.,
Grocers' Research Scholar, Cambridge.

INTRODUCTORY.

SINCE the agglutinating property of serums was first brought forward as a means of differential diagnosis between different kinds of allied bacteria, the validity of the principle has attracted a very considerable amount of support, notwithstanding Bordet's[1] attempt to throw it into discredit as a test method. The importance of the agglutinating principle has been raised into a high position by the observation that the blood serum of typhoid-fever patients may acquire this property of clumping cultures of the typhoid bacillus. This observation was made first in the Hygienic Institute of Vienna by Dr. Grünbaum, working at the suggestion of Professor Gruber. The subject was first brought forward by Professor Gruber at the Congress für innere Medicin in April, 1896. But it would not be profitable to occupy time with questions which are mere matters of history. With increasing knowledge of the varieties and species of bacteria, we are confronted with ever-increasing difficulties in finding criteria whereby the different kinds may be distinguished. Whilst many and important differences may be demonstrated by the use of culture media of various composition, yet these not infrequently leave us in the lurch at the critical point. We still have a resource to fall back upon in the action exhibited by the serum obtained from artificially-immunised animals.

SPECIFIC IMMUNITY.

There are various ways of applying this principle of specific immunity; these may be put under the following three headings:

1. *Protective* in respect of their power of affording protec-

[1] *Ann. de l'Inst. Pasteur*, x, 1896, p. 193.

tion to normal animals which are infected with the bacterium in question.

2. *Lysogenic*, in respect of their power of determining the rapid degeneration of the bacterium in the peritoneal fluid of a normal animal (Pfeiffer's test), or in the presence of perfectly fresh blood or serum from a normal animal (Bordet's test).

[Strictly speaking, according to my own belief this property should not be included here. The lysogenic power is possessed by all normal sera in the fresh state, and is demonstrable when they are brought into contact with sufficiently weakened bacteria: the part played by the specific serum is merely that of weakening, whereby the bactericidal bodies are able to act; by means of other injurious agencies such as heat similar effects can be produced.]

3. *Agglutinative*, in respect of their power of causing clumping (agglutination) and sedimentation of the bacterium.

We have to consider how far these different modes of experimentation are equivalent to one another as well as how far the action of sera is truly specific; that is to say, have we evidence that races or kinds of bacilli which are recognisably distinct by cultural methods are uniformly and equally without reaction when exposed to one or other form of serum test? As far as present knowledge goes, this question cannot be answered with an unqualified affirmative.

The Action of Normal and Heterologous Serums.

Before entering upon the subject immediately before us, I will allude to the qualities with which certain "normal" and heterologous serums are endowed. In the days antecedent to the recognition of agglutination as one of the properties of certain specific serums, it was shown that some specimens of normal serum had distinct protective properties; the protection afforded by such serums is in contrast with that given by specific serums, in that extremely minute doses of the latter are sufficient, whilst comparatively large doses of the former are requisite. For the purpose of testing specific effects, it is necessary to use samples of serum which are efficient in quantities of 20 to 10 c.m. or less; probably doses of serum must not exceed about 50 mg. Control experiments must include those in which serum from the same kind of animal is used (this is particularly necessary in the case of serum derived from the horse, since even 50 mg. will sometimes cause very distinct retardation of death apart from any special or specific action). Some such serums will also determine a lysogenic effect in a space of an hour or so.

Turning now to agglutination, we find that many kinds of serum obtained from normal animals possess some degree of clumping power; however this, like the protective action, disappears when the proportions are sufficiently reduced. In observing the protective action, we must employ minute doses, and in using the clumping power as a test we must use sufficiently high dilutions—the higher the better.

It is far from my purpose to follow those observers who have tried to institute comparisons between the serums of normal and those of specifically immunised animals. Although the effect may be similar, it does not follow that the cause is of the same nature. These actions probably are more akin to the absorptive or combining action of brain matter upon certain toxins (tetanus, botulismus); in the case of diphtheria toxin Wassermann has shown that the serum of some persons who have never had the disease is capable of neutralising ten times the lethal dose of toxin. In the present state of our knowledge, it is a far cry still to the nature of natural insusceptibility and of specific immunity; and I have only mentioned the subject in order to avoid alluding to the possibility of fallacies being introduced from this source.

Consideration of Serums of Immunised Animals.

We may now pass to the consideration of the three methods of testing serums or bacteria by means of their actions upon one another. It is not uncommon to find that, although complete degeneration of the microbes in the free peritoneal fluid may have occurred within an hour, yet the animal eventually succumbs to the infection. In the case of kinds of bacteria which have but slight resisting power, such as vibrios, a complete protection usually results when complete degeneration has taken place; with more resistant organisms, however, although the local process may be controlled more or less completely, yet only a retardation of death, and not a permanent protection may ensue.

Many authors have attacked the view of the existence of any relationship or association between the agglutinative and the protective action. Unfortunately the number who have actually made comparative experiments seems few, whilst those who have argued from clinical ideas without the performance of experiments appear to be many. It is well known that certain forms of protective serums have absolutely no agglutinating action (for example, diphtheria antitoxic serum); agglutinating properties are, therefore, not essential in protective sera. The problem before us is rather in the opposite sense, viz., whether the agglutinating property is always associated with some degree of protecting power, in the case of such forms of serum as exhibit clumping power. Van de Velde has made some comparative observations by immunising two horses against two different races of streptococci, and a third horse against both of these races. Streptococcus "A" was clumped by serum "A." but not by serum "P;" so also streptococcus "P" was affected by serum "P." but not by serum "A" when tried in dilution of 1 to 50. Serum "A" had protective action against "A," but not against "P;" similarly, serum "P" protected against "P." but not against "A." Further, the serum "A" + "P" had both protective and agglutinative action on both of these races.

Pfeiffer, in a paper in which he endeavours to discredit any association between these two properties,[2] gives the following example, which is in the contrary sense to his desire. A person was given a "Haffkine" cholera injection:

	Protective Power of Serum.	Sedimenting Power of Serum.
Before inoculation	0.600 c.cm.	1 : 65
Nine days after inoculation...	0.010 c.cm.	1 : 10
Eighteen days after „	0.007 c.cm.	1 : 50

These observers found that in persons who had had similar injections some months previously the agglutinating power had fallen to the level which is present in many normal serums, but that the protective power was still considerably elevated. They argue that, on this account, there can be no relation between these two phenomena. A study of their tabulated experiments shows that a complete lysogenic action only occurred in those cases (within about one hour) in which a dose of serum approaching the limit of clumping effect was given. Unfortunately they give no data concerning the condition of the vibrios directly after the injection. Their other experiments, with old kept serums and alcohol precipitates, hardly show more than that low protective and lysogenic powers were associated with low clumping power. One form of experiment is designed to show that by growing cholera vibrios in cholera serum the agglutinating power is entirely destroyed, whilst the protective power is only diminished. Pfeiffer had previously described an almost identical experiment which was repeated several times by Professor Gruber and myself with serum and culture sent by Pfeiffer. Although we followed his instruction to the letter, we were never able to obtain his results. Since then the experiment has been modified, and some loss of protective power is admitted. In his last communication[2] on the place of production of protective substances, he remains significantly silent, and passes over the agglutinating power of the organ extracts with the few words that it was increased in certain cases.

Pfeiffer's Test Reaction in relation to the Clumping Test.

It has already been pointed out that Pfeiffer's test is not necessarily associated with a complete protection. In reality the destruction or degeneration of the bacteria introduced is only partial at the end of the time limit; for by killing the animal when all the bacilli in samples of the free peritoneal fluid are turned into spherular bodies, it is found that

[2] Pfeiffer and Kolle, *Cent. f. Bakt.*, xx, 1896, p. 142.

[2] (With Marx). *Deut. med. Woch.*, 1898, and *Zeit. f. Hyg.*, xxvii, 1898, p. 272.

abundant untransformed individuals are present upon the omentum, etc. I believe that the previous agglutination of the bacteria forms an important adjuvant to the production of this degenerative process in the free peritoneal fluid; for it has been a very striking fact that these two factors have always been associated in the large series of experiments with vibrios which I carried out in Professor Grüber's Institute. Some recent work of Ransom and Kitashima[3] is of interest in this connection; they obtained a race of cholera vibrios which was not affected by a certain cholera serum (this was effected by growing a number of successive generations in the diluted serum—in fact, a process of artificial selection, the more susceptible individuals being gradually weeded out). The virulence of the culture was not appreciably affected thereby. This race of vibrios yielded a negative reaction to Pfeiffer's test, although the original race was both clumped by and afforded an almost complete positive Pfeiffer reaction with the same serum.

Another observer[4] has given some experiments in which he shows that a preliminary dose of opium prevents the complete occurrence of Pfeiffer's reaction, although efficient serum is employed. This result he explains by the assertion that the leucocytes are paralysed; but if I may be allowed to put a different interpretation on this complex experiment, I am inclined to ascribe the result to the paralysis of the intestines whereby the sweeping mechanism of the peritoneal cavity is annulled, consequently all those vibrios which in a normal animal would be gathered up and disposed upon the omentum, etc., remain freely suspended in the fluid.

Comparative Agglutinating, Lysogenic, and Preventive Action of Serums Obtained from Sufferers in an Epidemic Associated with the Presence of a Variety of B. enteritidis (Gärtner).

Intraperitoneal Injection.

Limit Agglutinative Power Serum No. 19 = 0. No. 8 = 1 : 500. No. 13 > 1 : 500.

Guinea-pig.	Dose.	Examination of peritoneal fluid after 2 hours.	Result.
A, 260 g.	1 loop no serum.	Very abundant active bacilli.	Dead in less than 20 hours.
B, 275 g.	1 loop + 20 mg. serum 19.	Abundant bacilli, mostly active.	Dead in less than 20 hours.
C, 220 g.	1 loop + 20 mg. serum 8.	Many spherules, few bacilli, not many active.	Found dead and partly eaten by comrades on the 6th day.
D, 230 g.	1 loop + 20 mg. serum 13.	Very abundant spherules. A few swollen non-motile bacilli.	Found dead on 6th day.

Limit Agglutinative power Serum No. 30 = 0, No. 25 = 1 : 500, No. 23 = 1 : 1,000.

Intraperitoneal Injection.

Guinea-pig.	Dose.	Examination of peritoneal fluid after 1 hr.	Examination of peritoneal fluid after 3 hrs.	Result.
A, 390 g.	1 loop no serum.	Many active bacilli.	Very many active bacilli.	Died in 23 hrs.
B, 280 g.	1 loop + 20 mg. No. 30.	Abundant active bacilli.	Very many active bacilli.	Died in 22 hrs.
C, 230 g.	1 loop + 20 mg. No. 25.	Many spherules. A few swollen non-motile bacilli.	Isolated swollen bacilli. Many spherules.	Died in 47 hrs.
D, 260 g.	1 loop + 20 mg.	Occasional swollen bacilli. Many spherules.	Many spherules. No free bacilli. A few bacilli seen within phagocytes.	Died in 60 to 70 hrs.

According to my own observations upon sixteen kinds of vibrios (six cholera and seven not cholera, three reacting like cholera), positive Pfeiffer's reaction and complete sedimenting effect, combined with permanent protection, were invariably associated together. The concordance was too striking a fact to be overlooked.

The following observations on other bacteria are similarly in harmony with the view that protective (and lysogenic) properties are associated with agglutinins.

One more instance may be quoted in illustration of this association. It may not be generally known that it is perfectly possible to obtain a clumping serum by the administration of a non-pathogenic organism. By treating an animal with cultures of the non-pathogenic Bacillus megatherium, I succeeded in obtaining a serum which had considerable power of sedimenting this bacillus. When tested according to Pfeiffer's method this serum gave typical degeneration of the bacillus, whilst the animal to which another kind of serum was given with the bacilli afforded a typical control.

Proportional Relationship between Protective, Lysogenic, and Clumping Power.

The question as to whether there is any evidence of the existence of a proportional relationship between the protective and the clumping power of a serum entails the consideration of several matters. One fact is established without doubt, namely, that the susceptibility of a race of bacilli to a given serum is a variable quantity. Early in our researches on vibrios, it appeared that the less virulent races were more susceptible to the agglutinins produced by the use of virulent varieties than were the virulent varieties themselves; moreover, in harmony with this, the serum obtained by means of the less virulent kinds, although very efficient upon these kinds, had slight influence upon the more virulent sorts. This was subsequently confirmed by Pfeiffer and other observers. From more recent observation I fear that it is not simply a matter of virulence, for a less virulent stock of B. enteritidis was found also to be less influenced by a given serum. It is better, therefore, to speak of greater and less resistance and susceptibility to clumping serums.

Again, everyone who has watched the process of agglutination under the microscope must have been struck with the difference between individual bacilli, certain individuals being influenced long before others; indeed, some may escape altogether. Now, in measuring the agglutinating or sedimenting potency of a serum by means of determining the limit dilution at which a visibly recognisable effect is engendered in a given time, we get some idea of the action upon the susceptible individuals; but the resistant and less susceptible ones are not heeded. This method of measurement could hardly be expected to yield any proportional comparison between the protective and clumping power of the serum. The following example may be cited in illustration. A sample of typhoid serum was found to have a sedimenting value of 1:20,000 when tested for the ultimate limit of dilution at which recognisable effect was produced; when tested with the same culture upon an animal it was found that as much as 50 mg. only just protected against about twice the minimal fatal dose; in a word, it was not a powerful serum. How, then, can we reconcile so high an apparent clumping power and so low a protective capability with any association between these two properties? The answer to this is: By testing the total effect of the serum upon a given quantity of bacilli. Even in a strength of 2 per cent. this serum could not cause complete precipitation of all the bacilli; according to this test the serum could not be called a potent one. In contrasting the protective and clumping efficiency of serums we must take heed of the effect produced upon the more resistant as well as upon the more susceptible individuals. In working with vibrios it was found that serums which were capable of causing the complete sedimentation of about 2 mg. of the culture with 1 c.cm. of a 1 per cent. dilution were also capable of producing positive results in Pfeiffer's test, with permanent survival of the animals, in a dose of about 10 to 20 mg. Whilst the ultimate limit dilution at which agglutination can be discerned is totally out of proportion to the protective capacity, yet it may be in concordance with the relative protective capacities of two or more samples of serum when tested with the same culture; the experiments tabulated above may be

[3] *Deut. med. Woch.*, 1898, p. 295.
[4] Castaeuzene, *Ann. de l'Inst. Pasteur*, 1898, p. 273.

cited as instances. Some authors have argued that since a serum has high clumping power on a weak race and but insignificant protective action against a virulent stock, the existence of any link between these two phenomena cannot be entertained. It would perhaps be kindest to say nothing about such an argument.

Relationship between Clumping Power and certain Inhibitory Effects.

When bacteria are grown in the presence of even small quantities of efficient agglutinating serum, they exhibit departures from their normal habit of growth; for instance, the reducing power of a cholera vibrio may be checked, the phosphorescence of a luminous vibrio can be stopped, the production of the pigment "pyocyanin" by the B. pyocyaneus may be inhibited: morphologically also we have the tendency to grow in chains or threads by microbes, which naturally do not present this feature. No one has as yet succeeded in separating out a pure agglutinin, so that we are not able to say whether these inhibitory actions are due to the agglutinins themselves or to substances which are associated with them; we are, in fact, in the same position with regard to these inhibitory phenomena as we are in the case of the protective agents. All that we can say is that a combination of clumping, inhibitory, and protective substances is extremely suggestive of a close relationship in their nature. One author, Salimbeni[5] regards the agglutination phenomenon as a property which is only acquired by the blood, etc., after it has been shed; he states that it does not take place within the living animal. This is entirely at variance with my own experience, for numerous observations upon peritoneal injections in immunised animals have always shown that agglutination occurs within the peritoneal cavity. If the examination of the peritoneal fluid is made later than about five minutes after the time of the inoculation, all or most of the clumps have disappeared, for they have been swept away by the abdominal movements to the walls of the cavity. Salimbeni also asserts that the presence of oxygen is a necessary factor for the occurrence of clumping, inasmuch as it fails to occur *in vacuo*. Here again my observations are in disagreement, for on endeavouring to repeat his results I find that agglutination takes place in the vacuum, in the oxygen-free atmosphere produced by means of pyrogallol and caustic soda, and in an atmosphere of coal gas just as well as in the controls exposed to the air. As his observations have been frequently quoted, it would be of importance if others would give their experience in this matter.

Bactericidal Action of Serums with Clumping Properties.

Before the days of agglutination many authors examined immunised serums for bactericidal action. For instance, Sanarelli, working with cholera and other vibrios, found that considerable destruction took place. More recent observations (Bordet, Landsteiner) show that these serums are only really bactericidal when they are quite fresh; serums which have been kept or which have been heated to 55° C. lose the power of absolute destruction although they may cause profound effects upon the appearance and growth of the organisms; the bactericidal effect, however, is regained by the addition of perfectly fresh normal blood or serum, which by itself is unable to produce a like effect if the bacteria are sufficiently resistent (virulent).

Foerster[6], in his experiments on the bactericidal power of the serum of typhoid-fever patients, only made use of the limit recognisable agglutinating effect in estimating the power of the sera he tested. As, moreover, he gives no data concerning the time which elapsed between the withdrawal of the serum and the performance of the experiment, it is impossible to draw any conclusions from his results.

According to my observations upon the coccus of Malta fever a high clumping potency of the blood was associated with the absence or scantiness of the coccus in the blood; on the other hand, when animals died with low clumping power (for example, 1 in 200 or less), the cocci were very numerous in the blood. It appeared, therefore, that the presence of the agglutinins was unfavourable to the existence of the coccus in the blood and *vice versâ*.

[5] *Ann. de l'Inst. Pasteur*, 1897, p. 277.
[6] *Zeit. f. Hyg.*, xxiv, 1896, p. 523.

The Differential Destruction of Agglutinins in Vitro and in Vivo.

It has been established that by growing the special microbe in a given homologous serum the power of clumping is diminished or entirely destroyed, according to the method of experiment. On the other hand, in the growth of insusceptible heterologous bacteria, moulds, etc., practically no diminution occurs. The same observation has been made with regard to the protective power of such serums—namely, that the like sort destroys, the unlike leaves intact. Here, then, we have another instance of the parallelism between these two properties, protective and agglutinative. It must be admitted that certain authors aver that agglutinins are not destroyed by the presence of the homologous organism. This is due to the fact that undiluted serums were infected, so that the growth of the bacilli was interfered with too much. The following experiment illustrates the effect of varying dilutions:

Six portions of a sample of typhoid serum were inoculated with varying quantities of typhoid, enteritidis, and coli cultures; these were incubated for 48 hours at 37° C. and then tested for their sedimenting potency.

Portion A. infected with trace of typhoid broth culture.
" B. " 4 parts of " " "
" C. " 40 " " " "
" D. " like amount of broth culture of Gärtner's bacillus.
" E. " like amount of broth culture of bacillus coli communis.

Limit Sedimenting Values after 48 hours Incubation at 37° C. upon Typhoid Bacillus.

	A.	B.	C.	D.	E.
1 : 1,000 ...	+	Slight	■	+	+
1 : 2,000 ...	Trace	o	■	Slight	+
1 : 5,000 ...	o	o	■	■	+

With the typhoid infection the loss is greater the higher the dilution.

It will be noticed that the presence of Gärtner's bacillus also caused some loss, whilst the colon bacillus was quite indifferent at these dilutions.

Another method of testing this differential loss of clumping power is to do it within a living animal. By giving a homologous dose to an animal which already possesses some agglutinating power in its blood the agglutinating value of the blood can be made to decrease. It is somewhat inviting to suppose that as the agglutinins are used up during the struggle against the new infection they take some share in the process, and are useful and not merely ornamental substances. If the dose is recovered from they reappear in larger quantities than before, or, on the other hand, the animal may die of intoxication before they are completely destroyed.

Four guinea-pigs were prepared by giving them equal doses (1 loop = 2 mg.) of living typhoid bacilli subcutaneously; they were then kept for about a fortnight. Each one then received a large dose of bacilli in its peritoneal cavity (6 loops of young agar culture in each case). On the previous days the blood was taken in order to test its sedimenting power.

Guinea-pig A received typhoid culture.
" B " Gärtner's bacillus.
" C " variety of Gärtner's bacillus (this variety has but slight mutual reaction with typhoid).
" D " B. coli communis.

Sedimenting Values for Typhoid Bacillus (all were Tested with the same Suspension).

	A.	B.	C.	D.
Before injection	> 1 : 2,000	1 : 2,000	1 : 2,000	1 : 1,000
Four hours after injection	Trace at 1 : 500	> 1 : 500 < 1 : 1,000	1 : 1,000	1 : 1,000

It will be observed that the result is merely a repetition of the experiment *in vitro* to which I have just alluded, for the typhoid had most marked effect, the coli none whatever, the other two with B. enteritidis being intermediate. Guinea-pig B, which received Gärtner's bacillus, deserves a few more words. A control normal animal which received only 1 loop (that is, one-sixth the quantity given to B) died within 21 hours; B

survived 60 hours. A sample of its peritoneal fluid withdrawn immediately after the injection showed that most of the bacilli had already become clumped, and only a few were free and motile; after death there were very few bacilli in the peritoneal fluid; there were, however, very many spherule degeneration forms which on culture gave rise to a pure growth of Gärtner's bacillus.

When dealing with the passive protective action of typhoid serum on Gärtner's bacillus, we find that it is capable of giving distinct retardation of death with doses of bacilli which are rapidly fatal to control animals; just as the agglutinating effect is less in degree than is the case with the typhoid bacillus, so also the protective action is in lesser degree. There is much variation, however, between the interactions of different samples of typhoid serum and different varieties of B. enteritidis.

Comparison of Agglutinative, Lysogenic, and Preventive Serum Action of Typhoid Serum on B. Enteritidis (Gärtner).

	Dose.	Peritoneal Sample Taken—
Guinea-pig A: 390 grms.	1 loop Gärtner + 50 mgr. vibrio serum.* Agglutinating power = 0.	*Immediately:* Abundant active bacilli, no clumps.
		After 1 hour: Abundant active bacilli, no clumps. Also a few spherules.
		After 2½ hours: Abundant motile and non-motile bacilli.
	5 hours, T. 37.6°.	*Dead* in less than 21 hours. Peritoneal
	7½ hours, T. 35.5°.	fluid swarming with bacilli.
Guinea-pig B: 365 grms.	1 loop Gärtner + 50 mgr. Typhoid serum.* Agglutinating power: (*a*) Complete precipitation about 5 per cent.. (*b*) in ultimate dilution 1 : 200.	*Immediate:* Abundant small clumps, also many active free bacilli.
		After 1 hour: Many bacilli, none motile, many deformed bacilli, and many spherules.
		After 2½ hours: No bacilli; many swollen spherules.
	5 hours, T. 38.4°.	Survived 7 days. *Post-mortem*, only
	7½ hours, T. 37.8°.	spherules in peritoneal fluid; non-motile bacilli in pseudo-membranes on liver and spleen.

* Both these serums were taken 3½ years previously and kept sealed up in sterile condition in glass tubes. The typhoid serum has not apparently lost much of its agglutinating power since April, 1895.

Effect of Heat and Time.

So far as present knowledge goes it appears that both agglutinins and protective substances become destroyed at about the same temperature; thus both suffer but little at 60° unless the heating is prolonged. Both are fairly well preserved after long keeping, although some loss does occur. In the animal economy after active immunisation with living bacilli both substances persist for considerable periods: in some of the original experiments with Professor Gruber well-marked agglutinating power was present in animals more than a year after their infection. According to Pfeiffer the agglutinating power may be lost earlier than the protective property, judging from a very few cases.

Fatal Issue During the Presence of High Agglutinating Power of the Blood.

So far, no one, I believe, has proved the existence of agglutinins apart from any protective power of the serum. At first sight it may appear strange that an animal should die of a particular infection, although a few tiny droplets of its serum are capable of protecting numbers of other animals from a like infection. But this is an old and well-established fact, which, moreover, must have been confirmed by nearly every worker in the field of immunity. What the mechanism of the fatal issue may be (whether some toxic product or some interference with some important organ) in such cases, I must leave on one side. It is clear, however, that the fact that an animal may die with large quantities of agglutinins in its blood is no argument against the association of these substances with protective bodies, unless it is also shown that the latter are absent. And this has not yet been demonstrated. One of the best samples of serum which I obtained at the commencement of my researches was taken from a moribund animal; it possessed high agglutinating as well as high protective power.

Kraus found that floccular coagula were produced by the action of specific serum upon filtrates of cultures of the homologous bacteria. He maintains, and his observations are borne out by the confirmatory work of C. Nicolle, that the reaction is quite specific. In the low dilutions in which these experiments were made (1 in 10, to 1 in 20) it would not be likely that specific differences would be well marked when closely allied forms were put to the test, and such, indeed, I find to be the case. Thus the serum of B. enteritidis with typhoid filtrate gives as good a coagulum as with its own kind of filtrate. Whether this action is the real cause of agglutinative changes as these authors claim, is not as yet actually demonstrated, however probable it may appear. Hitherto my attempts to reduce the agglutinative power of serums by this action of filtered bacterial macerations have failed; there was no appreciable loss by the formation of the coagulum, though I found that filtrates could cause agglutination. C. Nicolle claims to have isolated the agglutinable substance from filtrates. But the field thus opened has not yet been sufficiently worked upon, and it must be left to further researches to show whether it is possible to produce a serum which possesses solely the power of clumping, and which is devoid of inhibitory and protective properties.

Conclusion.

The actions of normal and heterologous serums (clumping and protective) may be left on one side as hardly germane to our subject. We have evidence that when agglutinins are present, inhibitory and protective properties are also to be found. Hitherto an agglutinin free from these other substances has not been obtained. Agglutinins act within the living body by causing clumping as well as in the test tube. Destruction of agglutinins occurs in an actively immunised animal after infection with the homologous bacterium.

There is no definite relationship between the limit dilution at which clumping can be recognised and the limit dilution at which complete effect is produced upon a given amount of the bacteria. From the latter some clue as to the preventive efficiency of a serum may be obtained.

Lastly, although the association of agglutinins with protective substances may be shown to be fortuitous in future experience, yet it will always have attached interest from the fact that the now well-established method of serum-diagnosis in typhoid fever and other diseases owes its birth to this association. The knowledge that protective qualities are acquired by the blood of typhoid fever patients led to the probability that the clumping property would also be developed. This resulted in Gruber's world-famous suggestion that this agglutinating property should be worked out in typhoid and cholera patients.

II.—A. S. F. Grünbaum, M.D.,

Senior Demonstrator of Physiology, University College, Liverpool.

Dr. Grünbaum said that he had worked chiefly with human serums, the agglutinative action of which was often small. He thought that it was important to note that in low dilutions the agglutinative power did not go hand in hand with the protective power. He pointed out that even inanimate substances—for example, particles of French chalk—might be agglutinated by various serums, and that, therefore, the agglutination was probably a physical process which prepared the bacilli for the action of other substances later on. Even non-motile organisms might show less of Brownian movement in the presence of certain serums, probably from the swelling of a membrane round them. He suggested that a fourth property might be attributed to the specific serums in addition to those mentioned by Dr. Durham—namely, a paralysing action on motile organisms.

III.—E. J. McWeeney, M.D.,

Professor of Pathology and Bacteriology, Catholic University, Dublin.

Professor McWeeney said that in the course of his work on the growth of the typhoid bacillus in bouillon containing a certain proportion of the homologous serum, he had arrived at the following results: (1) The typhoid bacillus when caused to grow in broth containing typhoid serum displayed certain abnormalities; (2) these consisted in absence of motility and the formation of long, convoluted chains made up of short individuals; (3) this mode of growth could, under

certain circumstances, be utilised for clinical purposes; (4) the cases in which it might be advantageously used were those in which the clumping by the ordinary Gruber-Widal method was slow in coming on, or for any other reason left the observer in doubt. The method consisted in diluting the suspected serum with broth containing a small number of typhoid bacilli and preparing hanging drops, which were examined after varying periods of incubation. A moderately active serum, diluted 100 times with sterile broth, and inoculated with a few typhoid baacilli, yielded exquisitely convoluted chains after about six hours at 37° C. By the aid of this method he had been able to clear up the nature of a case of typhoid fever, the symptoms of which closely resembled those of meningitis, and which had been admitted under the care of Dr. Murphy to the Mater Misericordiæ Hospital, Dublin. The method was one that could hardly be carried out by the ordinary clinical observer on account of the absolute sterility required in all the manipulations. Professor McWeeney concluded by giving a short lantern demonstration in illustration of his results.

IV.—G. Sims Woodhead, M.D.,

Director, Research Laboratories of the Royal Colleges of Physicians and Surgeons, London.

Dr. Woodhead said that he could not help thinking that this was a subject which might with advantage be left to experts. He would, however, speak as an outsider, or rather as one who was interested in the question from a general point of view. There now appeared to be several actions in serums which undoubtedly ran parallel for long distances, but which appeared to diverge in various directions. He was very much struck by Ehrlich's experiments in which he demonstrated this in connection with ricin and antiricin. He had already said in this Section that the toxins were by no means the simple substances that were at one time suggested, and they had just heard that the serums were equally complicated. He thought it extremely unfortunate that the agglutinative serums of cholera, typhoid, etc., could not be raised to such a high degree of immunising activity as the immunising serums of diphtheria and tetanus in which, however, the agglutinative power was comparatively low. He hoped that some time they might come across some organism which would enable them to produce a serum in which both powers were highly developed. He was certainly inclined to agree with Dr. Durham as against Widal that a high agglutinating power in either cholera or typhoid could scarcely be associated with a low immunising power. The observations of Weigert and Ehrlich on the separable properties produced by the action of micro-organisms and toxins on cells would indicate that neutralisation of certain properties might be carried out in the bacteria themselves by substances separated from the tissue cells. He would like to ask Dr. Durham whether he had used higher temperatures than 55° C. or 60° C. for the purpose of determining whether there was any difference in this respect between the agglutinin and the antitoxin—the globulin precipitating temperatures, for example. He agreed with Dr. Durham as to the necessity or non-necessity for the presence of oxygen.

V.—Donald H. Hutchinson, M.D.,

Edinburgh.

Dr. Hutchinson said that he had inoculated himself with dead typhoid bacilli according to Wright's method, and had afterwards examined at short intervals of time his serum as regards its effect on living typhoid bacilli. He found in so doing that the first effect to appear was an interference with the motility of the organisms, that is, the serum appeared to develop a paralysing action before it caused distinct agglutination.

Dr. Durham's Reply.

Dr. Durham thought that too much importance should not be ascribed to the paralysing effect; absolute loss of motility did not accompany complete agglutination, for fettered individuals could be seen exhibiting whirling movements. Moreover, fresh serum and leucocytotic peritoneal fluid had much paralysing influence apart from any specific action. Since Dr. Woodhead and others had also been unable to obtain Salembeni's results they might be put aside. The antitoxic serums of diphtheria could not be compared with the class of so-called "antibacterial" serums of typhoid and cholera. Many observations showed that the serum prepared by means of filtered diphtheria toxin did not afford so efficient a protection against living bacilli as one prepared by immunising with living culture. The effect of heat depended largely upon the degree of dilution of the serum before heating; serum diluted with normal saline solution retained the clumping power against higher temperatures for a longer time than undiluted serum. By adding to the diluting fluid "nutrose" or phosphates which prevented coagulation of the albumen still greater resistance to heat was produced.

POST-DIPHTHERIAL PARALYSIS.

[Abstract.]

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Statistics.

The great attention aroused in diphtheria during recent years has caused us to study diphtherial paralysis more carefully. How important this question is may be gathered from a study of the following figures. During the year 1896 there were examined at the laboratories 7,832 cases that had been certified "diphtheria." Of these cases 5,068 had diphtheria bacilli in the throat and 1,362 suffered from paralysis of a more or less marked kind. Of these cases, 1,096 had been treated with antitoxin, and there were 273 deaths amongst them; 266 received no antitoxin (that is, they were most of them mild cases in all probability), and there were 49 deaths. In 1,764 of the cases examined in which no diphtheria bacilli were found, there were 177 cases of paralysis with 59 deaths; 89 of these cases were treated with antitoxin—31 deaths. There were, moreover, 88 not treated with antitoxin, 28 of these succumbing.

Dates of Onset of Paralysis.

Mr. A. Miller,[1] M.B., B.C., gives an account of a number of cases of paralyses observed by him at the South-Eastern Hospital during the years 1896 and 1897, in which the onset was primarily (1) in the muscles of the palate; (2) in the oculo-motor muscles; (3) in the muscles of other parts; and (4) in cases of paralytic heart failure. He collects 494 cases, of which 185 were primary paralyses of the palate, 197 strabismus, 10 paralysis of other muscles, 102 cases of cardiac paralysis, 91 of which died and 11 recovered. The bulk of the palatal paralyses occurred between the fifth and the fifteenth day, none before the fourth. Of the oculo-motor paralyses the bulk occurred between the fourth and seventeenth days, none before the fourth; of the primary paralyses of other parts, half of them occurred between the tenth and fourteenth days, and none before the earlier day. A case of primary paralysis of the palate occurred as late as the sixty-fifth day; of primary oculo-motor paralysis the ninety-first day, and primary paralysis of other parts on the fifty-first day. The bulk of the cardiac paralyses occurred between the fifth and the tenth days; a few cases occurred even as early as the second day, whilst this condition occurred in a severe form (that is, ending fatally) in 2 cases on the fifty-fourth day and in 1 case which recovered on the fifty-ninth day.

It is evident, then, that in the human subject these paralyses occur at a comparatively early date, although in numerous cases they come on at very much later stages; and one cannot help thinking that we have evidence of the primary affection of the nerve cells or of a direct action of the poison on the muscular tissue in the fact that cardiac paralyses occurred relatively at so much earlier a period than the other forms of paralyses. The affection of the cells of the vaso-motor centres and perhaps also of the ganglia of the heart being much more important in the regulation of the heart muscle, which is constantly in action, than in the case of the other muscles, which in most cases are practically at rest, and in which therefore the demands on both the motor cells and the muscular tissue itself are comparatively slight.

Morbid Histology.

Without going into the theory of the causation of paralysis, I may refer to the segmental nerve degeneration described

by Meyer,[2] Sidney Martin,[3] Dejerine,[4] and others. Comparatively recently, attention has been drawn to the fact that certain slight and perhaps temporary changes may be observed during the first twenty-four hours in which toxin may be acting on the nerve cells. It is maintained that the cells so affected either atrophy or recover at an early date, but that the nerves for which these cells act as trophic centres undergo degenerative changes, perhaps of a Wallerian type, and that only then do we meet with the characteristic diphtheritic paralysis. I have examined two cords from experimental animals treated with full doses of toxin, and in one case the chromolysis and vacuolation of the cells was fairly distinctly marked, in the other there was no perceptible deviation from the normal. It appears, as pointed out by Mouravieff,[5] that when there is no great demand on their functional activity these changes appear to produce few or no symptoms; but, owing to the trophic changes, the peripheral nerves over which they preside become markedly altered in structure, a kind of Wallerian degeneration going on, with the result that they lose their conductivity, and paralysis is the result. In this way, too, may be explained the peculiar want of co-ordination that sometimes occurs, and the patchy distribution of the nerve lesions, a few fibres of a nerve undergoing degeneration corresponding to the large or small numbers of nerve cells in the cord that are affected.

Pernice and Scagliosi,[6] in a series of *post-mortem* examinations, five in number, found that in patients that died early after infection there was marked inflammation of the meninges of the brain and cord, any other changes being the result of congestion in the first instance, although there is also marked evidence of inflammation and degeneration of the perivascular tissue and of the cells, not only of the anterior horn of the spinal cord, but also of the brain cortex. They found, however, in connection with these cells, that it was only the protoplasmic processes which were affected. These changes are observed very rapidly after the toxin gets into the circulation; and it would appear that, especially in acute cases, toxin acts directly from the blood vessels especially on the protoplasmic processes of nerve cells, and that, as a result of the changes in these trophic centres, the medullary sheath, and perhaps also the axis cylinder itself, may afterwards become degenerated, the process extending from the cell along the trunk nerve.

PARALYSIS IN ANIMALS.

Escherich[7] notes that post-diphtherial paralysis is a comparatively rare phenomenon in the guinea-pig, and he attributes this to the fact that in them in most cases the course of the disease runs only over a few days, though he points out that it has been shown that in certain animals which survive a subcutaneous injection of toxins or bacilli, where the process has been so severe that a necrotic area has been formed, and which afterwards ulcerates, there is paralysis, especially of the hinder limbs, and of the posterior portion of the body. Loeffler, in 1890, drew attention to this fact, but he also showed that this paralysis in some cases passed off, and that the animal afterwards was to a certain extent immune, and he looked upon this paralysis as one of the symptoms of a severe attack of the disease—an attack such as would confer a certain degree of immunity, and an immunity which would last for some little time.

Madsen[8] points out that paralysis, when it occurs, as a rule, follows the infiltration which results from the injection of a dose of toxin not fully neutralised. Although this swelling disappears, there very frequently occurs, some nineteen or twenty days after the injection, the first symptoms of paralysis, which manifests itself in the form of a rolling of the hinder part of the body and of the hind limbs whenever the animal attempts to make any active movements. This paralysis gradually becomes more distinct, and after a time may involve the fore limbs. The animal at rest usually lies on its side, but can raise itself when it makes a special effort. As a rule, there is not complete loss of power and motion in these muscles, but in many cases the loss is very marked. Madsen also notes that although recovery is possible, this condition usually ends in death. The animal retains muscular power longest in the head and neck, and in certain cases the only means of progression that remains to it is by pulling itself on by its front teeth.

In most of these cases the temperature falls sometimes a couple of degrees, and the respirations and even the heart beats become diminished in number. It is curious that although there should be this marked muscular weakness, the animal is still very bright, continues to feed as long as there is food within reach, is on the alert for sounds, and gives the peculiar cooing noise so characteristic of a guinea-pig when anyone sneezes or makes a sharp noise in its neighbourhood. Even in those animals which recover there is impairment of the muscular movements for a considerable period. In point of time the majority of the cases appear on the 21st to the 23rd day after injection. In connection with this point as regards time of appearance of paralysis, Ehrlich[9] has observed that in most of the cases of paralysis in the guinea-pig which have followed injection of nearly neutralised toxin the symptoms have manifested themselves at the end of the second week, instead of at the end of the third week as in Madsen's cases, and he suggests that this may be due to the fact that Madsen used the original method of testing, that is, neutralising with a 10th of an antitoxin unit, Ehrlich's observations being made on animals in which the neutralising amount of serum was one unit. The bearing of this will be presently noted. The amount of swelling is certainly no indication as to the probability of the occurrence of post-diphtherial paralysis, as we have observed some cases in which the amount of swelling is comparatively slight in which there has been paralysis, whilst in other cases where there has been a large amount of swelling there has been no paralysis at all. Examples of this are given in the specimen cases which are merely a few selected for the purpose of illustration from a considerable number. They are most of them taken from records made in the second six months of 1897 and the first six months of 1898. Madsen refers to an exceedingly interesting fact, the bearing of which will be seen immediately. When the French method of neutralising antitoxin is used, that is, where a single large lethal dose only is neutralised by the antitoxin, paralysis is of very infrequent occurrence, and when it does occur it usually disappears in the course of a few days.

13 Cases of Post-Diphtheria Paralysis (Guinea-pigs): Cases Selected from a Series of Animals used for Testing the Strength of Antitoxin.

No.	Weight of guinea-pig.	Day of onset of paralysis.	Local reaction. 2nd day.	Local reaction. 4th day.	Loss or gain of weight on 4th day.	Loss of Weight on day of onset of paralysis.
1	245	6	Slight local swelling	Distinct indurated swelling	— 45 g.	— 5 g.
2	275	14	Large firm swelling	Large deposit	— 15 ,,	— 80 ,,
3	265	15	Narrow medium hard band	Broad	— 5 ,,	— 35 ,,
4	270	18	Traces of firm swelling	Nil	Nil	Not recorded.
5	285	18	Traces of swelling	Slight strand	+ 35 g.	,, ,,
6	280	19	Small firm swelling	Swelling nearly gone	— 5 ,,	,, ,,
7	265	20	Nil	Nil	Nil	,, ,,
8	275	20	Nil?	Nil	+ 5 ,,	,, ,,
9	295	20	Narrow strand	Firm narrow strand	+ 30 ,,	,, ,,
10	270	22	Large soft swelling	Large firm swelling	— 30 ,,	— 70 g.
11	260	24	Broad band of firm swelling	Narrow firm band	— 30 ,,	Not recorded.
12	270	25	Large firm swelling	Large hard swelling	— 15 ,,	,, ,,
13	260	25	Very large firm swelling	Large hard deposit	— 40 ,,	,, ,,

It will be seen at once with reference to the table that the date of onset has little to do with the severity of the local swelling. Indeed, if we were to take the local reaction as giving any indication at all it would appear that the less the local reaction the more rapidly does the paralysis make its appearance, for in case No. 1 we find very slight local reaction on the second day, although there is a distinct indurated swelling on the fourth day; whilst in case No. 12, although there is very firm swelling on the second day and a large hard deposit remaining on the fourth day, the paralysis is not well developed until the twenty-fifth day. It should be remembered, however, that the paralysis may in several instances have occurred a little earlier than is here noted, especially where Saturday, which is always a somewhat hurried day, and Sunday, in which observations would not be made, intervene; whilst in other cases the first symptoms of

paralysis may have been overlooked. As regards weight, it will be noted that, speaking generally, the greatest loss occurs at the two extremes of the table, and it would appear that such loss of weight occurs: (*a*) When the general toxic action is very acute, as is Case 1, or where there is time for considerable nutritional disturbance to come in, as in Cases 9, 10, 11, and 12, in which the onset of paralysis was delayed the most, and in only one was there anything but a marked diminution in the weight on the fourth day. In most of the other cases the loss of weight was very marked, but in only one or two instances has this weight been recorded.

Bearing in mind the fact that in the earlier experiments very few cases of paralysis among guinea-pigs were recorded, although in later experiments such a comparatively large number are met with, some explanation becomes necessary, and this appears to be offered by the fact that paralysis amongst an equal number of guinea-pigs used for testing purposes is greater when Ehrlich's new method is used than when the older method was employed.

Local and Constitutional Action of the Toxin.

In describing toxin hitherto we have had its action divided into what may be called local and constitutional, the constitutional again being divided into those causing rapid death and those giving rise to rise of temperature and nutritional changes or reactions. So far as the cases that I have noted here are concerned, it is evident that the paralysing substances are not the same as those which produce the local tissue reactions.

Martin pointed out that the albumoses separated from the body—not highly poisonous substances—give rise to comparatively slight local reactions, but when injected in small doses into the vein they cause marked rise of temperature, some wasting, and slight paralysis.

Cartwright Wood,[10] who got rid of the enzymes from the albumoses by heating at 65° for one hour, was able to differentiate the actions of the enzmes and the "albumoses" somewhat more sharply. The rise of temperature following injection of the latter is accompanied by *comparatively* little though more prolonged local reaction; but, on the other hand, these substances give rise to slight paralytic symptoms even when injected in very large quantities. In animals in which paralysis occurs there is at first a slight rise of temperature; this is almost invariably followed during the paralytic stage by a fall, sometimes of a couple of degrees and in one or two instances the temperature was as low as 98° a couple of days after the onset of paralysis. I hope, however, to collect more accurate information on this point.

Further Enquiries Necessary.

The following statement may afford an indication as to the lines on which it would be necessary to investigate further the causes of this paralysis. This paralysis occurs more frequently in animals used for testing the strength of antitoxin serum, the greater the multiple of lethal units used in the test dose—that is, there are more cases of paralysis when a theoretically ten times lethal dose is than when one is used, and still more when the test dose is again multiplied by 10—that is, when it equals 100.

As Ehrlich has pointed out, there are certain substances formed along with all toxins and also formed as the result of a slight rearrangement of molecules of toxins, which, although they combine with antitoxins, have to a great extent lost their power of killing guinea-pigs. Some of these substances, however, only combine with the antitoxin after the true toxins have all entered into combination with the antitoxin, so that one can readily understand that these epitoxoids, as he calls them, may be present in large quantities uncombined after the actively lethal toxins have been neutralised. It is evident that the greater the multiple dose of toxin used the greater would be the amount of epitoxoid in the test solution, and, therefore, the greater will be the danger of a considerable amount of this epitoxoid being left over after the neutralisation of the actively lethal toxin. We should, therefore, expect that, if some such substance as this be the cause of the paralysis, the greater would be the proportion of paralyses as the test dose of the toxin becomes larger.

References.

[1] Medical Supplement to the Report for the Year 1897, of the Statistical Committee of the Metropolitan Asylums Board, 1898, p. 185. [2] *Arch. f. Path. Anat.*, Bd. lxxxv, 1881, p. 181. [3] British Medical Journal, 1892, vol. i, p. 641. [4] *Arch. de Physiologie*, T. v, 1878, p. 107. [5] *Arch. de Méd. Expér.*, T. ix, p. 1105. [6] *La Riforma Medica, cf. Cent. f. Bact. u. Paralaskunde*, Bd. xix, p. 887, 1896. [7] *Aetiologie, etc., Diphtherie*, I, 1894, p. 131. [8] *Experimentelle Undersogelser orrer Difterigiften*, 1896, pp. 115-121. [9] Die Werthbemeisung des Diphtherie Heilserums und deren Theoretische Grundlagen *Klinisches Jahrbuch*, Jena, 1897. [10] *Proc. Roy. Soc.*, vol. 59, 1896.

Discussion.

Dr. F. W. Mott, F.R.S., congratulated Dr. Woodhead upon his valuable paper, and the important statistics based upon a large number of observations which he had brought forward. He referred to the large proportion of cases of diphtherial paralysis, and asked whether those inimical to the antitoxin treatment had any grounds for explaining it by the increased use of antitoxins. No doubt Dr. Woodhead would satisfactorily dispose of this question, but he made the remark so that there should be no uncertainty in the minds of the public. Dr. Mott said that he had examined the nervous and muscular tissues in five cases of diphtherial paralysis. He had found generally fatty degeneration early and late of the muscles and sometimes Wallerian degeneration of the nerves. He had observed extreme early fatty degeneration of the heart, and yet no degeneration of the vagus nerve. He was of opinion that probably the poison acted on the whole neuron, especially upon the terminal arborisations of the dendron and the end plates. The early cardiac failure, he thought, could be best explained by the effect of stress. The heart muscle and respiratory muscles could not rest, but even had to work harder. They would, therefore, more readily succumb to the action of the poison.

Professor Baginsky (Berlin) said that his own observations had led him to believe that cases of post-diphtherial paralysis were now less common, though some bad cases might still occur. He had been interested to hear how early the intoxication by the diphtheria poison might begin in the body, and he thought that the observations recorded by Dr. Woodhead would throw light on the true nature and origin of the paralyses. His assistant, Dr. Katz, had examined the brain, spinal cord and peripheral nerves, and found advanced degenerative changes in all parts of the nervous system, both nerve cells and nerve fibres. Extreme degeneration of the muscle fibres of the heart and diaphragm was also found. In regard to post-diphtherial hemiplegia, he thought that cerebral embolism was the most usual cause. He had found this condition present in three such cases examined, and thought that a distinction should be made between them and cases of real diphtherial paralysis. In his opinion, early antitoxin treatment was of the greatest value in diminishing the number of cases of paralysis in diphtheria.

Dr. E. W. Goodall (London) said that since the introduction of the antitoxin treatment the incidence of paralysis following diphtheria had certainly increased. The reason of this we believed to be that patients now recovered, or at any rate lived long enough to show symptoms of paralysis, who without antitoxin would have died at an earlier period. But though the number of cases of paralysis, relatively as well as absolutely, had increased, the number of fatal cases had diminished. Moreover, if the serum treatment were commenced early enough, the number of cases of paralysis would be lower instead of higher than before. This was well shown in the post-scarlatinal diphtheria cases in the Metropolitan Asylum Board's Hospitals during 1896. These cases were all under skilled observation from the very commencement, and the serum treatment was begun early. Among them the number of paralysis cases was considerably less than among the diphtheria cases admitted from outside during the same period, and there was only one case fatal from paralysis.

Dr. Woodhead, in reply to Dr. Mott, said that he was now thoroughly satisfied that antitoxin had no power of setting up paralysis by itself. He had given it in large doses in guinea-pigs and rabbits, but had never seen a case in which by itself it had produced any paralytic symptoms. He was very glad to hear what Dr. Mott had said regarding the action of the toxin on the processes of the nerve cells; it bore out very strongly the idea that the poison acted directly and rapidly on the nerve cells. As he had indicated in his paper, he believed that the heart failed earliest and most frequently because it was the organ which really got least rest. He had contended for the same thing in his article on Tetanus in

Allbutt's *System of Medicine*. This condition of over-work and ill-nutrition was the great factor, even in those paralyses that appeared later. The poison did its work, but it was only when muscle and nerve were called into functional activity that the damage was unmasked and the tissues give way under a strain which in health they would readily stand. He quite agreed with Professor Bazinsky and Dr. Goodall that cases of paralysis were now not so frequent as formerly, and that those which did occur were less severe. He thought that the practical outcome of the whole matter was that, if possible, the antitoxin should be used before degenerative changes had been set up, and that enough antitoxin should be given to neutralise not only the lethal action of the diphtheria toxin, but also its local and paralysis-producing action.

A NOTE ON THE LOCAL ACTION OF CRUDE DIPHTHERIA TOXIN.

By J. J. Douglas, M.D., F.R.C.P.E.,
London.

Introductory.

While much work has been done on the cellular changes following the injection of diphtheria toxin, attention has been chiefly directed to changes occurring in organs more or less remote from the seat of inoculation. Thus, Baldassari[1] investigated changes in cells of liver and kidney, and Barbucci[2] in cells of liver, spleen, and lymph glands. Welch and Flexner,[3] however, while examining spleen, liver, and kidney, also investigated the histological changes at the seat of inoculation; they, however, used living cultures of the bacilli. These observers demonstrated the affinity of the toxin for the nucleus of cells, resulting in its fragmentation or in a modification of its staining reaction. They also found evidence of proliferative changes. It was to study the local changes subsequent to the injection of the filtered culture that this research was undertaken. With the object of investigating the local antidotal effect of antitoxin doses of this were injected in certain cases along with the crude toxin.

Methods, etc.

The animals used were guinea-pigs. There were three series of experiments made: (1) with toxin alone, (2) with toxin and a half-neutralising dose (as regards its lethal activity) of antitoxin, and (3) with toxin and a fully-neutralising dose (as regards its lethal activity) of antitoxin. The full test dose of toxin was given in each case. The injections were given subcutaneously in the abdominal wall. The animals were killed at varying periods after injection: 20 minutes, 1 hour, 2 hours, 3 hours, 5½ hours, 10¾ hours, 24 hours, and 30 hours. The skin of the abdomen was shaved and portions of the abdominal wall removed, hardened in 2 per cent. formalin, in Müller, embedded in paraffin, and cut in the ordinary way. Sections were stained with Ehrlich's hæmatoxylin and eosin. It will be convenient in what follows to speak of 1-hour, 2-hours, etc., sections, meaning thereby sections of specimens taken from animals killed 1 hour, 2 hours, etc., after injection. Attention was directed to the subcutaneous tissue of the area into which injection had been made, and in it to (*a*) the presence or absence of œdema, to (*b*) the condition of fixed connective tissue cells, to (*c*) the condition and relative number of wandering cells, and to (*d*) cells in the subcutaneous tissue apparently endothelial in character.

Toxin Alone.

(1) Series treated with toxin alone. It was not found possible to get a 30-hours' specimen, as the animals did not live so long.

(*a*) *Presence or Absence of Œdema.*—The earliest section to show undoubted œdema was the 5½ hours' one. It was more marked in the 10¾ hours' section, and still more in the 24 hours' one. In the earlier sections there was a condition which might possibly be œdema, but which might also depend upon unabsorbed fluid of injection.

(*b*) *Condition of Fixed Connective Tissue Cells.*—These in all periods, from 1 to 24 hours, appear swollen. This swelling seems to vary directly with the length of the period up to 24 hours. In some cases the cells show a lateral bulging. At no period are there discernible signs of fragmentation of the nucleus, nor of proliferation of the cells, unless indeed the above-mentioned lateral bulging may be taken as evidence of this. In many cases the cells seem to have taken up the stain very faintly. In 1-hour and 2-hour sections there are a few vacuolated cells.

(*c*) *Condition and Relative Number of Wandering Cells.*—The number seems to vary directly with the length of the period up to 24 hours. In 1-hour and 2-hour sections the majority show almost a uniform staining with hæmatoxylin, the nucleus not being clearly defined. In the earlier of these two sections, however, there are cells showing apparently a normal staining reaction with distinct nucleus. In both, where nucleus is definable, it appears single. Seen for the first time in 2-hour section, and being present in increasing numbers in 3-hour, 5½-hour, and 10¾-hour sections, are round cells very faintly or not at all stained, and having a granular appearance. This appearance is not a question of faulty technique. These phantom cells are present in greatest numbers in 5½-hour sections. In 24-hour sections they have altogether disappeared. Appearing for the first time in 5½-hour section are polymorpho-nuclear cells with eosinophile granules—finely granular oxyphile cells. These are also present in 10¾-hour sections and in 24-hour sections. Fragmentation of nucleus is seen most markedly in 24-hour sections, though it is also seen, but to a less degree, in 10¾-hour sections. In the former the nuclei appear shattered, recalling the appearance of pus cells.

(*d*) Cells apparently endothelial in character. These are oval cells with apparently one large nucleus and very little protoplasm. The chromatin network stains faintly with hæmatoxylin, but is distinct. They are present in all sections, perhaps in greatest numbers in the latest ones.

In most sections there are signs of cloudy swelling of the superficial muscular fibres.

Toxin Half Neutralised.

(2) Series treated with toxin and a half-neutralising dose of antitoxin. Studied in a like manner it was found impossible to be sure of the reality of œdema before 5½ hours after injection. From this period it increased up to 24 hours. Connective tissue fixed cells appeared swollen in 20 minutes' section, and this swelling was present in all sections, and was more marked in late specimens.

The changes in the wandering cells seemed to be very similar to those in Series 1. There were present uninuclear cells with distinctly staining nucleus, cells staining uniformly with hæmatoxylin, and having indistinct nucleus, gradations between these and phantom cells, phantom cells, finely granular oxyphile cells, and cells in which the nucleus was fragmented. All of these appeared at nearly identical periods to those at which they appeared when antitoxin was not used. Endothelioid cells were also present in most of the specimens.

Toxin Fully Neutralised.

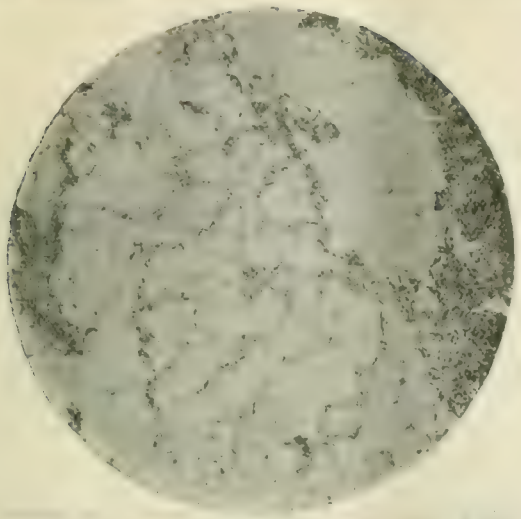
(3) Series treated with toxin and fully neutralising dose antitoxin. What has been said of Series 2 practically applies to this one. The changes appear almost identical, save for the earlier appearance of badly staining cells.

Summary.

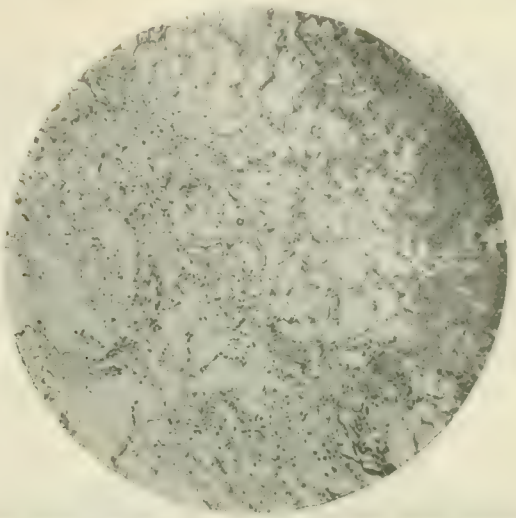
In conclusion the points elucidated by this research seem to be: (1) That the cellular changes are degenerative, and that there is no indication of proliferation of affected cells; and (2) that antitoxin, whatever may be its antagonistic effect generally, does not locally act as a chemical antidote to the toxin.

Toxin Alone.

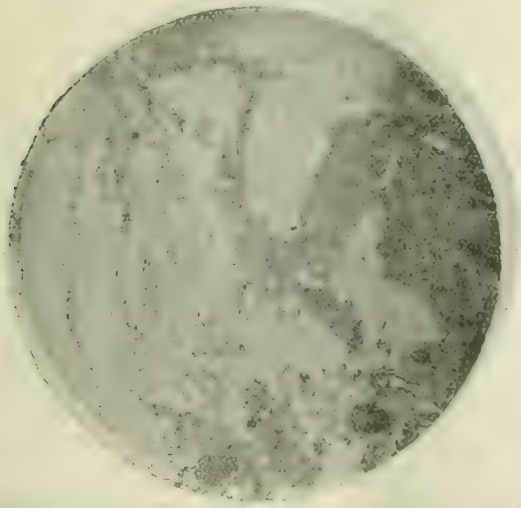
Uninuclear cells with normal staining reaction	+	+	+	+	+	+	
Cells uniformly staining			+	+	+	+	
Phantom cells				+	+	+	
Finely granular oxyphile cells						+	+
Cells with fragmented nucleus						+	+
Cells of endothelial type			+	+	+	+	+



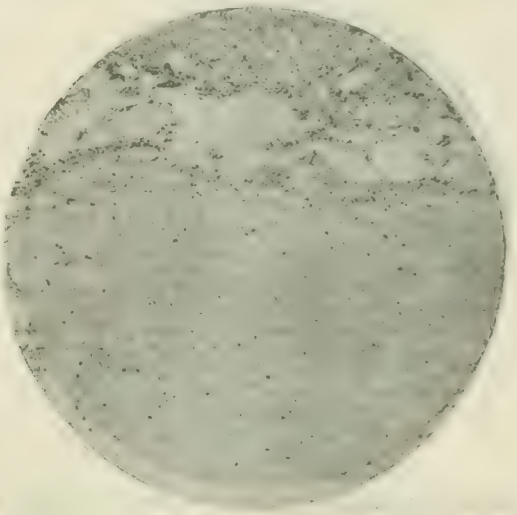
Toxin alone: 1 hour after injection showing "false œdema."



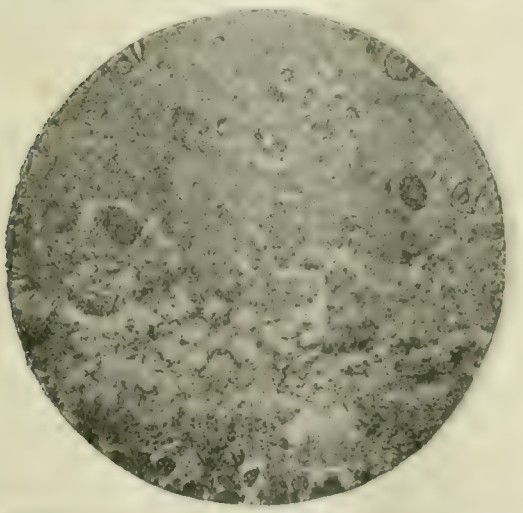
Toxin alone: 10½ hours after injection showing marked œdema.



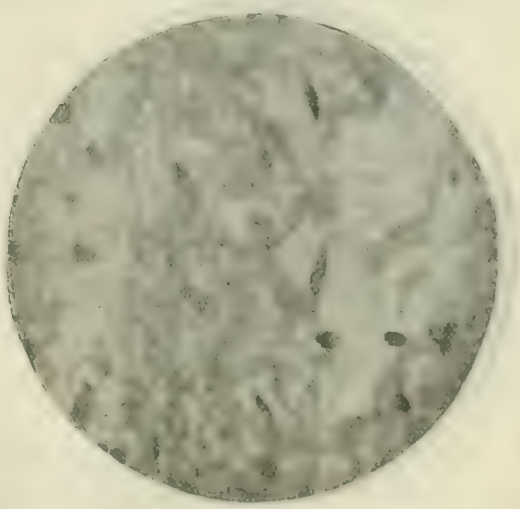
Toxin alone: 2 hours after injection showing "false œdema."



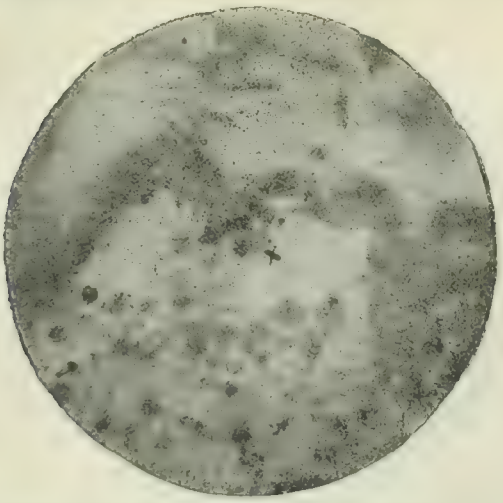
Toxin alone: 24 hours after injection showing marked œdema.



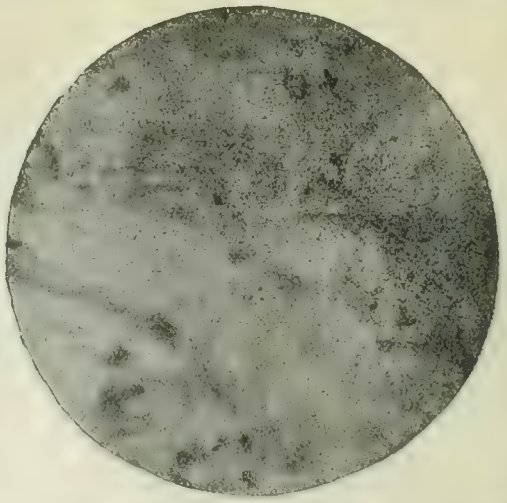
Toxin alone: 5½ hours after injection showing commencement of true œdema



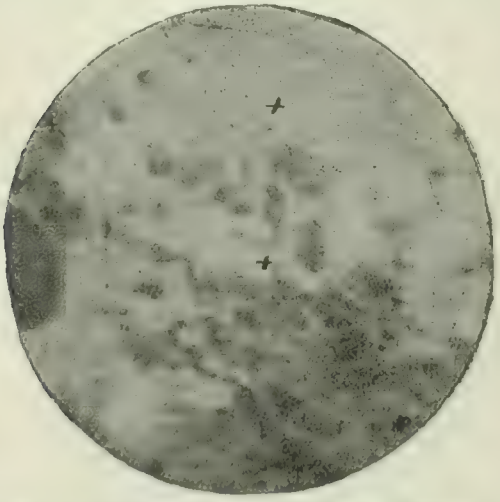
Toxin alone: 3 hours after injection showing swollen fixed connective-tissue cells.



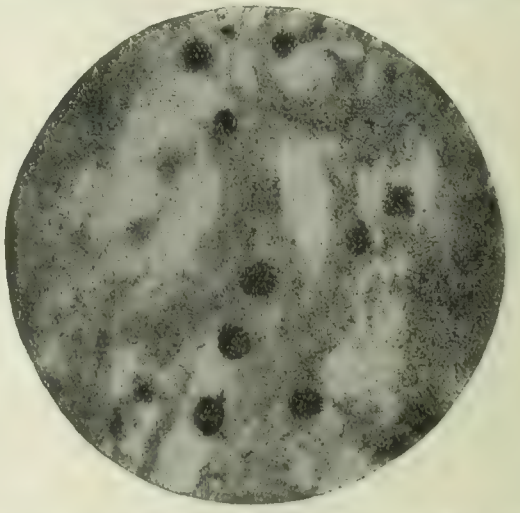
Toxin alone: 3 hours after injection showing "phantom" cells, one of which is marked ×.



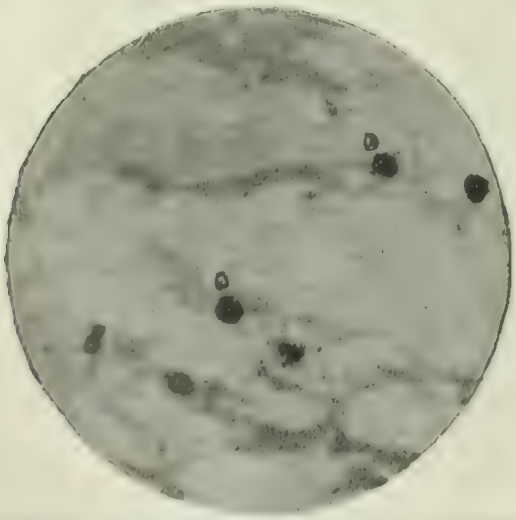
Toxin alone: 3 hours after injection. Endothelioid cell marked ×.



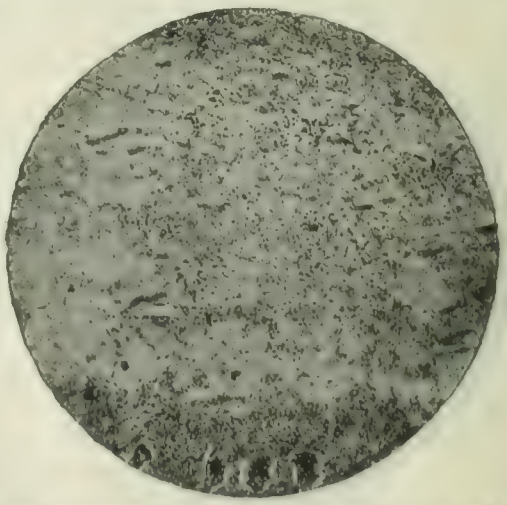
Toxin alone: 5½ hours after injection showing "phantom" cells marked ×.



Toxin half neutralised: 24 hours after injection showing marked œdema.



Toxin alone: 24 hours after injection. The cells have fragmented nuclei, though this does not appear distinctly in photograph.



Toxin half neutralised: 24 hours after injection showing cells with fragmented nucleus.

Toxin Half Neutralised.

	20 min.	2 hrs.	3 hrs.	5½ hrs.	10½ hrs.	24 hrs.
Uninuclear cells with normal staining reaction	+	+	+	+	+	
Cells uniformly staining		+	+	+	+	+
Phantom cells				+	?	?
Finely granular oxyphile cells	?	+	+	+	+	+
Cells with fragmented nucleus...					+	+
Cells of endothelial type	+	+	+	+	+	+

Toxin Wholly Neutralised.

	1 hr.	2 hrs.	3 hrs.	5½ hrs.	10½ hrs.	30 hrs.
Uninuclear cells with normal staining reaction	+	+	+	+		
Cells uniformly staining	+	+	+	+	+	
Phantom cells	?			+	+	
Finely granular oxyphile cells	+	+	+	+	+	+
Cells with fragmented nucleus...					+	+
Cells of endothelial type	+	+		+		

References.

1 *Cent. f. Alg. Path.*, ii, vol. vii, 1896. 2 *Ibid.* 3 *Johns Hopkins Hospital Bulletin*, 1891, No. 15.

Discussion.

Dr. Muir referred to the need for control experiments with antitoxin as regards the time of appearance of the finely granular oxyphil cells. The fact that they appeared at an earlier date, when the antitoxin was injected with the toxin, than when the toxin was injected alone, was suggestive in relation to the general question regarding the meaning of the local leucocytosis. It would be of value, if it could be absolutely shown that, by reducing the quantity of the toxic agent, the leucocyte emigration took place earlier, and was more marked. Such changes should also be studied in relation to the blood or general leucocytosis.

Dr. Lazarus-Barlow felt sure that if the specific gravity of the affected tissues were taken, evidence of output of fluid by the blood vessels would be found far earlier than the 5½ hours after injection at which Dr. Douglas had first recognised it. He thought that research should be further conducted on the lines indicated by the author, as in that direction might perhaps be found an answer to the question whether endothelial cells play a part in ordinary repair besides the new formation of the blood vessels.

ON NEISSER'S DIAGNOSTIC STAIN FOR THE DIPHTHERIA BACILLUS.

By Richard T. Hewlett, M.D., M.R.C.P.,
Bacteriologist to the British Institute of Preventive Medicine.

[Abstract.]

A new differential staining method for the diphtheria bacillus was recently published by Neisser.[1] The formula is as follows:

I. One gramme of methylene blue (Grubler's) is dissolved in 20 c.cm. of alcohol (96 per cent.) and mixed with 950 c.cm. of distilled water and 50 c.cm. of glacial acetic acid.

II. Two grammes of benzoin are dissolved in 1,000 c.cm. of boiling distilled water, and the solution is filtered.

Cover-glass specimens prepared from fresh serum cultures are stained in No. I for 1 to 3 seconds, rinsed in water, counter-stained in No. II for 3 to 5 seconds, washed in water, dried, and mounted in Canada balsam.

So treated, the diphtheria bacillus appears as a slender, longish rod, stained brown, and generally containing granules of a deep blue or inky tint. There are usually two granules, situated at the poles, occasionally a third at the middle of the rod. The method has been tested on about 50 cultures from diphtherial throats, and the characteristic appearances have been obtained in every case. The pseudo-diphtheria bacillus of Hoffmann does not give the granulation. A slightly longer treatment than that recommended by Neisser has seemed to yield better results—namely, five seconds in the blue and ten seconds in the brown.

An attempt has been made to extend the method to swabbings or membrane from the throat. With swabbings the results were not very successful, an error of about 14 per cent. occurring in 30 cases.

With fresh membrane, care being taken to avoid fallacy from the presence of fragments of leptothrix and diplococci, which may simulate the diphtheria bacillus, Neisser's method often affords a rapid means of positive diagnosis. If a negative result be obtained recourse must be had to culture methods.

Reference.

1 *Zeitschr. f. Hyg.*, xxiv, 1897, p. 443.

NORMAL SERUM IN RELATION TO THE DIAGNOSIS OF THE TYPHOID BACILLUS.

By S. R. Christophers, M.B.Vict.,
From the Pathological Laboratory, University College, Liverpool.

In the event of a positive reaction being given by any suspected typhoid organism with typhoid serum, there are two possibilities which should be taken into account before the diagnosis is definitely decided. The first, which has been amply demonstrated by Durham, is that of the mutual serum interaction of the typhoid bacillus with that of Gärtner's bacillus. The second, which has not received much attention, is that normal serum, apart from any specific reaction whatever, may with certain organisms give reactions equal in power and extent of dilution to so-called specific ones. The fact that normal serum has some action on quite a number of organisms has always been recognised, but that this action in some conditions is immensely increased has received but scant notice.

So long as the reaction is used as a clinical test for typhoid fever the importance of this increased normal serum action is not very great. The cultures of typhoid used are of pretty uniform virulence, and human serum does not act on such as a rule above 1 in 10 dilution. But so soon as one has to deal with organisms from various sources and of various degrees of attenuation then this normal serum action becomes of very great importance indeed.

Trying serum reactions upon numbers of typhoid-like and colon-like organisms isolated from shell fish, milk, and water, I was struck by the great dilution at which normal serum could strongly agglutinate many of the organisms. In many instances in dilution of 1 in 200 normal human serum caused extremely marked agglutination, large clumps of motionless bacilli being formed, and the preparation exactly resembling a decided typhoid reaction. At first sight this pronounced action of normal serum upon certain organisms appeared to be a specific one, for it equalled in degree and extent of dilution even strong reactions given by the serum of typhoid patients upon the typhoid bacillus. But further investigation showed that in no way could this action be called specific, and that it was in some way entirely due to a great susceptibility of certain organisms to be agglutinated by all serums. Those of the organisms most susceptible to human serums were also those most susceptible to the serums of the horse, monkey, rabbit, and even of the frog. So uniform was the action of different serums upon these organisms, that I came to the conclusion that it was not a selective action due to the serums, but depended entirely on varying susceptibilities of the organisms. In order to see how far this susceptibility was related to attenuation, a number of very susceptible organisms giving all the reactions of the colon bacillus were contrasted as regards pathogenicity with colon organisms which gave little or no reaction with normal serum. The result was most striking, in every case the non-susceptible forms in small doses proved fatal to guinea-pigs, whilst the susceptible forms in enormous doses failed to have any effect whatever.

The majority of these organisms resemble very closely the bacillus coli communis; others are extremely difficult to distinguish from the typhoid bacillus. The following table

shows the reactions of some of the more typhoid-like of these organisms and their behaviour with different sera.

	Laboratory Typhoid.	Typhoid Like.	Colon Like.	Bacillus Coli.
Gelatine	—	Non-liquefying	Non-liquefying	Non-liquefying
Gram's stain	—	Does not stain	Does not Stain	Does not stain
Glucose media at 20° ...	—	No gas formed	Gas formed	Gas formed
.. .. 7° ...	—	No gas formed	Gas formed	Gas formed
Indol formation in peptone salt solution	—	No indol	No indol	Indol
Milk in 48 hours	—	Not coagulated	Not coagulated	Coagulated
Growth on acid potato ...	—	Very thin	Thin	Thick
Growth on carbolic gelatine	—	Grows	Grows	Grows
Acid formation in neutral litmus whey 1 day	6 per cent.	2 per cent.	14 per cent.	19 per cent.
Acid formation in neutral litmus whey 5 days	8 per cent.	7 per cent.	20 per cent.	20 per cent.
Motility	—	Very active	Very active	Sluggish
Flagella	—	6 to 8 long wavy	6 long wavy	6 to 8
Serum reactions :				
Typhoid serum (*a*)	1 in 30	1 in 50	1 in 50	1 in 200
Typhoid serum (*b*) ...	1 in 200	Not 1 in 100	Not 1 in 100	1 in 100
Strongly-acting normal serum	1 in 1	1 in 60	1 in 100	1 in 200
Weak normal serum	Not 1 in 1	1 in 20	1 in 20	1 in 50
Immunised rabbit's serum .	1 in 500	Not 1 in 50	Not 1 in 50	Not 1 in 50

Professor MCWEENEY said that he had repeatedly isolated from samples of drinking water coliform bacilli, which gave a typical clumping reaction with every specimen of human serum, normal and pathological, with which he had tested them. He had carried the dilution of the serum as far as 1 per cent., but not beyond that. The bacilli that gave this reaction were short, actively motile rods, growing rapidly at the room temperature, and actively fermenting glucose and lactose. He had not tested saccharose. Crystals of triple phosphate, or a diffuse cloudiness, regularly appeared in old gelatine cultures. He regarded them as excessively attenuated micro-organisms, perhaps derived originally from a bacillus coli.

ON AN EPIDEMIC OF GASTRO-ENTERITIS ASSOCIATED WITH THE PRESENCE OF A VARIETY OF THE BACILLUS ENTERITIDIS (GAERTNER),

AND WITH POSITIVE SERO-DIAGNOSTIC EVIDENCE (IN VIVO AND IN VITRO).

[ABSTRACT.]

(From the Pathological Laboratory of the University of Cambridge.)

By HERBERT E. DURHAM, M.B.,

Grocers' Research Scholar.

THE symptoms of the cases were similar to those which have been described in outbreaks associated with the presence of the bacillus enteritidis of Gärtner and varieties thereof. About 185 persons were affected.

From a piece of the liver of a fatal case various bacilli were isolated; a large majority of those were found to agree in character with Gärtner's bacillus. The preponderance of these bacilli was suggestive of a causal connection with the epidemic. Eleven races of these bacilli from the liver were compared with the three other races of bacillus enteritidis in my possession—Gärtner, Günther, and Vienna—by means of their reactions to the serum of animals immunised against two of these varieties. It was found by this test that they resembled the races "Vienna" and "Günther" more closely than that of Gärtner.

Blood serum was obtained from 29 individuals who had suffered from the epidemic about four weeks previously. Differential diagnosis was tried against five varieties of the bacillus enteritidis and also against the typhoid bacillus. At a dilution of 1 in 100 it was found that 18 of these blood samples gave good positive reaction with one of the cultures obtained from the liver; some were potent enough to react at higher dilutions, as 1 in 1,000. A comparison of the effects of these sera upon different races gave the following results:

Culture.	Strong Reaction at 1 in 100.	Strong Reaction at 1 in 200.
Liver 1)... ...	14 times	11 times
Vienna	13 ,,	10 ,,
Günther ...	14	6 ,,
Gärtner... ...	10 ,,	1 ,,

The sera reacted more strongly oftener with a culture obtained from the fatal case (Liver I) than they did with the other races (especially Gärtner). This is in concord with the results of the comparison with the bacilli upon experimentally-produced sera. The remaining 11 samples exhibited no agglutinative effect at 1 in 100; some also failed to react at lower dilutions. Since it is hardly to be doubted that they suffered from the same disease, these cases may be compared to those cases of enteric fever in which either no reaction or but a slight and fleeting one is developed towards the typhoid bacillus.

Further, 8 serum samples were tried in doses of 20 mg. (see p. 590) for protective qualities against culture from the fatal case. Two of these had no agglutinative effect and gave no evidence of any protective action and a negative Pfeiffer reaction. The remaining 6 not only had agglutinative action, but also gave distinct evidence of protective action as well as positive results with Pfeiffer's test (lysogenic). Thus the evidence in favour of regarding the bacilli as the cause of the outbreak is made more complete.

Guinea-pigs which were fed upon living and killed cultures of the bacilli acquired agglutinating properties in their blood.

Out of the 29 cases examined 5 gave minimal traces of reaction at 1 in 100 against the typhoid bacillus. At lower dilutions (especially by bringing undiluted serum in contact with 9 and 19 drops of culture) some of these gave well-marked clumping with typhoid culture; so that in the absence of differential tests they might have been returned as having been obtained from typhoid fever patients.

The importance of making use of several different cultures for the purpose of serodiagnosis in *vitro* (Gruber's reaction) as well as the necessity for comparative dilutions is well illustrated by these sera. Only one sample reacted sufficiently strongly against the race "Gärtner" (that is, 1 in 500) for really decisive information. If this race and typhoid bacilli had alone been put to the test much of the nature of the serums and of the epidemic would have remained undiscovered.

Judging from experimental work, it is not improbable that an epidemic caused by the race "Gärtner" might be less easy to distinguish from enteric fever by the serum reactions than in the present instance, for these bacilli are rather more susceptible mutually to their respective sera than are the races with which the epidemic was associated.

For controls 28 samples of serum were tested against all the races above mentioned. None of them reacted at 1 in 100 with two of the races obtained from the liver, nor with the races Günther and Vienna. Twelve of these sera were from persons who had never had typhoid fever, the rest had either had or were suffering from that illness. One of these normal controls was from a person who was associated with those who were affected by the epidemic.

The nature of the bacilli found in the fatal case together with the serum reactions and the clinical symptoms in the majority of the sufferers affords considerable presumptive evidence that the epidemic was causally related to the bacilli.

Several of the outbreaks hitherto recorded have been associated with the meat of diseased animals (especially cows). No such origin was traceable in the present instance.

More information is required about the distribution, modes of infection, etc., of the Gärtner-like bacilli (of which Nocard's psittacosis and Thomasson's bacilli appear to be varieties), not only in this country but also elsewhere, as in India, where choleraic disease is endemic. The observation of Grünbaum that cases of febrile jaundice may give "typhoid reaction" should be kept in mind.

A series of photographic lantern slides was shown to illustrate the morphology of the bacilli found in connection with

the epidemic—namely, the tendency to form threads on agar, the characteristic unstained poles in young gelatine cultures, the abundant flagella, which are not distinguishable from those of the typhoid bacillus in successful preparations. The clumping action of the serum from one of the patients upon the typhoid bacillus when brought into contact in low dilutions, such as 1 to 10, was also demonstrated.]

THE PATHOLOGICAL EFFECTS OF DEAD TUBERCLE BACILLI.

By Stewart Stockman,
Professor of Pathology, Dick Veterinary College, Edinburgh.[1]

Experiments with Dead Tubercle Bacilli.

Such experiments have been undertaken before. Koch showed that dead tubercle bacilli produced an abscess in guinea-pigs when injected subcutaneously.

Prudden and Hodenpyl[2] experimented more fully on guinea-pigs and rabbits. In their experiments they used dead tubercle bacilli from cultures on glycerine, agar, and broth. In some of their experiments they used bacilli that had been freed from their soluble products, but they found that the results were the same whether they used bacilli from agar or broth, and whether these had been washed free from their soluble products or not. They concluded that the lesions produced were due to some substance—bacterio-protein—set free by disintegration of the microbes in the tissues, or extracted in some other way. They incline more to the former view.

By subcutaneous inoculation they produced an abscess in from two to six weeks. Tubercle bacilli stainable by the ordinary methods were found in the pus. By intraperitoneal and pleural inoculation with a milky emulsion of bacilli they produced nodules of various sizes on the serous membranes. These were made up of a central creamy-looking part surrounded by fibrous tissue. The central part consisted of epithelioid cells and giant cells. Tubercle bacilli were abundant in the central part; well-marked caseation was not found.

Intravenous inoculations were made into the auricular veins of rabbits. The animals were killed and examined at intervals of from one to sixty days. A few died after the third week. In animals killed after one day the bacilli were found in the lungs, liver, and spleen, most abundantly in the first-mentioned organ. The older the tubercle the fewer seemed to be the bacilli. After five days white nodules were found in the lung, some being microscopic, others quite visible to the eye. They were present up to the sixtieth day, the longest period of observation. Their structure consisted of epithelioid cells, giant cells, and leucocytes. Bacilli were found between the cells and inside giant cells. Later the nodule was denser and made up of epithelioid cells and loose connective tissue. After three weeks microscopic nodules, apparently having their origin inside the capillaries, were found in the liver. After five or six weeks visible nodules were found in the latter organ. Prudden and Hodenpyl conclude that the nodules originate in a proliferation of the vascular endothelium under the stimulus of dead and disintegrating tubercle bacilli. They say that "the dead bacilli seem to act as foreign bodies simply, curiously stimulating, it is true, but only foreign bodies after all." I think too much is made here of the foreign body question. Every foreign body does not produce this tissue reaction, although the power to do so may not belong exclusively to the tubercle bacillus. The action of the dead tubercle bacillus is in large part, at least, special to it, and it is the foreign body of this order that we are most likely to meet with in the tissues.

At the conclusion of their paper these authors offer some suggestions as to the influence of the products of the living germ on the degenerative changes in a true tubercle. They suggest, too, the possibility of the more fibrous tubercles being due to dead bacilli.

Curiously enough it was that last idea and a wish to further test an opinion which I had formed as to the origin of tuberculous giant cells, that led me to undertake some experiments with dead bacilli. I had conceived the idea and started experimenting with dead bacilli before I knew of their paper. I have since read it very carefully, and wish here to acknowledge my indebtedness to the authors. I have performed most of my experiments on different animals, but many of the results confirm those of Prudden and Hodenpyl.

I must also mention that Straus and Gamaleia[3] have to some extent confirmed the results of the American authors by experimenting on guinea-pigs, rabbits, and dogs. They say little about lesions in the liver. They did not find giant cells in the nodules. That may be because in their experiments too few bacilli were arrested in one part, or because the centres of the nodules were not examined. Many of their animals wasted and died. When the clumps of bacilli were broken up and well distributed in the fluid the animals wasted and died all the same, but no lesions were found. Evidently several dead bacilli are necessary in one part to produce a lesion. If the number of bacilli was very small the animals wasted, then recovered, and appeared quite healthy, but if a second small dose were administered they wasted and died. By using very small and ever-increasing doses of the dead bacillus they immunised the animal against it. With the products of the bacillus in artificial culture they could produce no lesion.

Tuberculosis of the Udder.

If one examines a number of tuberculous udders from the cow, one generally finds distinct caseous nodules, but that is not the only form that the tuberculous lesion may assume. At the Edinburgh abattoir during the last five years I have found a considerable number of very cirrhotic udders without any appearance of a caseous nodule in their substance. On examining these microscopically I have found tubercle bacilli and tuberculous giant cells, although the former were not very numerous. For that reason I think that the percentage of tuberculous udders has been slightly underestimated. These udders, however, will not very much increase the amount of tubercle-infected milk, because the affected quarters give little or no milk, and the cow is soon to be sent the abattoir. The bacilli enter the udder by way of the blood vessels, and it is highly probable that at an earlier date there were distinct caseous tubercles in these udders now cirrhotic. Two possible explanations of the difference in these two lesions suggest themselves:

1. The bacilli might have been overcome by the tissues to such an extent that they could no longer produce distinct caseation, but were still able to excite a proliferation of the tissues and cause the formation of giant cells.

2. The bacilli might have arrived in the gland in an attenuated condition, and were thus no longer able to produce the distinct caseous lesion.

There is nothing wildly imaginative in these suggestions if we think on what we know of the tubercle bacillus. It is well known that the bacillus first acts by exciting a proliferation of the tissues. The new cells, instead of completing their development, however, tend to become caseous. Still, we know that the cells do sometimes complete their development and form fibrous tissue. This is especially the case in the old tubercles found in the ox and pig. They are often surrounded by a rim of fibrous tissue, which is invading the caseous centre. Moreover, the tuberculous lesions of the muscles—muscle is considered a bad medium for the growth of the tubercle bacillus—which I have described in the pig were distinctly fibrous.[4]

I may say, too, that I have once found tubercle bacilli in fibrous nodules under the mucous membrane of the fourth stomach of the ox, and have several times found them in fibrous thickenings on the subcarpal regions of the ox. These are mainly the observations which have led me to undertake these experiments.

Experiment I.—Irish terrier bitch. I began to experiment on this animal for the purpose of trying to render her immune against tuberculosis by using the toxin and dead bacilli. I first injected her with tuberculin in doses varying from 10 c.cm. to 30 c.cm. There was no temperature reaction. I then continued with injections of the products of the tubercle bacillus in glycerine broth, from which the microbes had been separated by filtration through porcelain without previous heating. The cultures were allowed to go for from 2 to 2½ months and longer. Beginning with 6 c.cm., I went to 10, 20, 40, 50, 95 c.cm. without disturbing the animal at all. With 95 c.cm. the temperature rose 0.8° F., but was not above the physiological limits (102.6). I next gave her 100 c.cm. into the vessels and under the skin. This toxin came from a 2½ months' culture. It produced a rise in temperature of 1° F. in 6½ hours. This shows the feeble systemic effect of the tubercle toxin. Thinking that the toxin prepared in the ordinary way was too weak to produce much effect, for there followed no local lesion whatever—it thus differs from the powerful diphtheria toxin—I thought of trying the effects of dead bacilli. Under the skin of the chest region I injected a thick emulsion of tubercle bacilli

killed by three hours' steaming. The bacilli came from a glycerine broth culture that had been kept for for five months. An abscess formed and burst three days afterwards. A month later a second injection of bacilli in thick emulsion was given under the skin. The latter came from a glycerine broth culture that had been in the incubator for four months, and afterwards killed by three hours' steaming. On the third day a swelling about the size of a hen's egg formed at the seat of inoculation. The skin over this abscess was asepticised, and some pus was aspirated into a sterilised syringe by passing its needle into the cavity. Cover-glass preparations made with the pus simply swarmed with tubercle bacilli; no other microbes were present. Glycerine agar tubes sown with the pus remained sterile. The abscess then was caused by the tubercle bacilli, which were beyond doubt dead. The abscess burst on the fifth day, and the wounds took a considerable time to heal up. The temperature rose to 105° F. on the morning after the second injection. It fell to 101.5° on the sixth day. On the afternoon of the sixth day 30 c.cm. of a filtered tubercle culture were injected. The temperature next morning had risen to 104.5°, and had fallen to 102° the day after. Three weeks after the second injection of bacilli I injected subcutaneously about 4 c.cm. of the dregs left in the preparation of tuberculin. This material was very rich in bacilli, which had been killed at about 110° C. Five days afterwards there was slight swelling and tenderness, but no distinct abscess formed. The temperature rose 1° on the day after, and fell to the normal on the fourth day.

One might draw the following conclusions from this experiment: (1) That the soluble products of the tubercle bacillus produce little effect on the healthy organism, although they have a very decided action on animals whose bodies contain the tubercle bacillus, living or dead. (2) That the dead bacilli are far more active than the soluble products, although this may be on account of their retaining a strong toxin in their bodies.

This bitch ran about and enjoyed perfect health for ten months afterwards. I was anxious to see if she would still react to the dead bacilli.

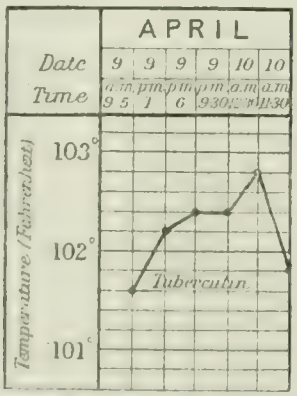
On the 22nd March of this year the daily temperature ranged between 101.8° and 102.4° F. She received into her jugular vein the greater part of the bacilli from a 2 months' culture of the tubercle bacillus in 50 c.cm. of glycerine broth, which has been sterilised at 110° C.

23rd March. Temperature 105.5°. Animal rather dull.
24th March. Temperature 104°. Animal brighter.
25th March. Temperature 103.8°. Animal brighter.
26th March. Temperature 103°. Animal apparently quite well.

Up to the 3rd April the temperature fluctuated between 103.2° and 103.4° F. From the 4th to the 8th April the daily temperature at 12 o'clock was 102.4°. On the 9th April (17 days after), at 9.15 a.m., when the temperature was 101.6° F., 20 mm. of the dilute tuberculin were injected. My reason for starting at this hour was, of course, to get the observation over in one day.

The annexed chart shows the temperature reaction.

CHART I.



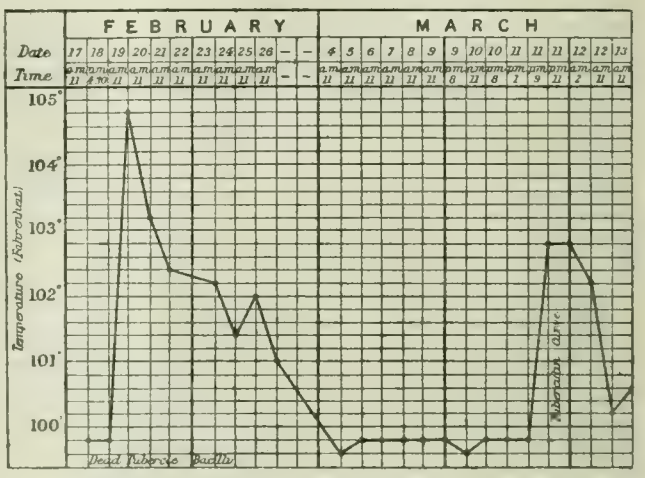
The variation was thus 1.2°, but it did not go much beyond the physiological limits. The results of tuberculin in the dog, however, have not been satisfactory, so far at least. Cadiot records the result of the test on 15 tuberculous dogs. The rise in temperature amounted to from 0.5° to 1.7° C. In 8 cases the temperature rose no more than 1°. In 3 cases there was no rise, but a diminution of temperature followed by death.

The animal was killed four months after intravenous injection of dead bacilli. The pleura showed a large number of fibrous nodules which contained no bacilli. There were no distinct nodules in the lung. The liver showed numerous tuberculous nodules.

Experiment Ia.—Spaniel bitch. With a view to raising the temperature for a certain experiment of his own, Dr. Noel Paton injected some dead tubercle bacilli into the external saphena vein of this animal's hind leg. He killed her twenty days afterwards, and was good enough to let me have the lungs and portions of the liver. The lungs contained many small, firm, greyish nodules, about the size of a pin's head. The liver showed no alteration to the naked eye, but the microscope revealed small cellular collections identical with those found at the start of an ordinary tubercle caused by the living bacillus entering by way of the blood vessels. The temperature of this animal did not rise, but I think too few bacilli were used.

Experiment II.—An aged pony was tested with tuberculin on February 17th, 1898. It did not give any reaction. The normal temperature was 99.8° F. On February 18th two cultures of the B. tuberculosis in 55 c.cm. of glycerine broth, which had been incubated for two months, were killed by submitting them to the boiling temperature for one hour. The fluid was pipetted off until the bacilli were left as a thick emulsion. As one can understand, the microbes were very numerous. At 4.30 P.M., the bacilli from the two cultures were injected into the left jugular vein of the pony with all antiseptic precautions.

CHART II.



The above chart shows the temperature reaction after the inoculation, and also the result of the tuberculin test applied three weeks afterwards.

The reaction was 3° F. It will be seen that the temperature after the injection of dead bacilli fell to the normal just about the time that it should have been rising had the animal been inoculated with living bacilli. The animal was afterwards killed for the dissecting room, twenty-five days after the bacilli had been injected.

Necropsy.—The lungs were simply studded with small white nodules, varying in size from a pin point to a pea. They to some extent resembled miliary tubercles, but they differed from them in being denser and less yellow. One or two small areas about the size of a bean were very solid and of an amber colour. The latter much resembled the larger nodules that one finds in the lungs of sheep affected with parasitic pseudo-tuberculosis. There was also slight broncho-pneumonia. The jugular vein at the seat of inoculation showed a nodule in its wall. This nodule was about the size of a pea nut. It was comparatively firm, but showed one small softened centre. Cover-glass preparations, made with the softened material and stained by carbol fuchsin, showed numerous bacilli. None of the other organs showed lesions visible to the naked eye. With several nodules from the lungs guinea-pigs were inoculated into the peritoneal cavity. They did not become tuberculous. The bacilli then were dead.

Microscopic.—The lung nodules were made up chiefly of epithelioid cells and loose connective tissue, containing a good many spindle cells. There were a few giant cells in some of the nodules. These giant cells, however, were fewer in number and not quite so distinct as those found in natural cases of tuberculosis. Numerous bacilli were present between the cells of the nodule, either as single rods or in clumps. At some places they assumed a somewhat circular arrangement, such as one often finds at the periphery of the giant cell in an ordinary tubercle. The bacilli were easily stainable by the ordinary methods used for the tubercle bacillus. There was no distinct caseation, but there were some very small homogeneous patches which stained diffusely.

The best method of showing the giant cell is to stain with picro-carmine a section cut on the freezing microtome. It is difficult to find them in thin sections cut in paraffin, although distinct giant cells are well enough seen in sections of ordinary tuberculous nodules cut in the latter way. Contrary to what one finds in the ordinary tubercle, those caused by the dead bacilli are vascular. The lumen of the small artery, however, is often narrowed by a periarteritis.

The nodule in the wall of the vein had a similar appearance to those found in the lung. The cellular centre, however, was more extensive, and there was a tendency for it to drop out of unembedded sections.

It seems to me that the giant cells are most numerous in the larger nodules, and these contain the greatest number of bacilli.

I attempted to repeat this experiment on another horse, but the animal died of embolism, in great part, I think, due to air bubbles in the fluid.

I have now another animal under experiment, I will inject

him with tuberculin at several intervals in order to see if he will cease to react.

Experiment III.—This experiment was undertaken to see whether a very large number of dead bacilli in one part would not produce distinct caseation or a more plentiful formation of giant cells. For the experiment I used tubercle bacilli that had been incubated in glycerine broth for two months and then submitted to a temperature of about 110° C. for half-an-hour. The dead culture had been kept for nine months and it was sterile. On April 20th a dense emulsion of these bacilli was injected directly into the lung through the chest wall, using a very fine needle. From April 20th to May 2nd the temperature ranged between 100.8° and 101.3° F. The animal was well and lively all the time. This cat was killed by chloroform on May 23rd, about one month from the time of inoculation. A large nodule about the size of a pea nut was found in the lung. The nodule was not caseous. The pleura was quite normal. The lung nodule was fixed in corrosive sublimate for microscopic examination.

Microscopic.—The nodule was made up of epithelioid cells and spindle cells. There were very few giant cells, not one distinct. The bacilli were very numerous. There seemed to be less fibrous formation than in the horse. The lung of the cat is, I think, not so well suited as that of the horse for the study of giant cell formation. Pulmonary tubercle of the cat is often in the form of broncho-pneumonia without distinct nodules, but of this I do not wish at present to make too much, as I have not had the opportunity of studying many cases.

Experiment IV.—The object of this experiment was to see whether the dead bacilli would act through the alimentary tract or not. So far as I know this has never yet been tried. The importance of such experiments is great, because once we have boiled suspected milk or flesh we consider that the danger is past. For the experiment I used a very young kitten, as they are considered easy to infect with tuberculosis by the ingestion method. On April 25th a kitten, six weeks old, received about 10 c.cm. of the emulsion used in Experiment III. This kitten must have swallowed millions of dead bacilli. She lived in perfect health until May 23rd, when she was killed by chloroform. All the organs appeared healthy. The mesenteric glands and portions of the ileum were fixed in corrosive sublimate for microscopic examination. They were found perfectly normal. Sections stained by carbol fuchsin showed not a single bacillus.

Experiment V.—A cat received by the mouth large doses of dead bacilli at intervals of several days. When killed two months afterwards the animal showed no signs of tuberculosis in the mesenteric glands or organs. No bacilli were found.

Significance of the Giant Cell.

It is usually accepted that the tuberculous giant cell is the result of a multiple division of the cell nucleus without a corresponding division of the cell protoplasm. By tuberculous giant cells I mean the apparently multinucleated bodies with a yellowish centre. I do not think that the multiple division theory applies to the giant cells found in animals. I cannot see how degenerating cells, for such they seem to be, could be capable of performing a function which is usually regarded as a proof of vitality, namely, reproduction.

Moreover, I have never observed mitosis in well formed tuberculous giant cells. This, however, is not an insuperable objection, as they might divide by another method.

I have seen several cells together apparently taken with degeneration in the act of nuclear division. The nuclei of these, however, were very indistinct, and their degenerate bodies had not yet completely fused. I do not think that the so-called tuberculous giant cell is really a cell, but that it is simply the commencement of caseation. I would explain its formation somewhat thus: When the tubercle bacillus arrives in an organ it begins to multiply and stimulates the cells to proliferate; a nodule is the result. The bacilli will be most numerous in the part where they are first arrested. Their products will there be more concentrated, and one may reasonably expect to get the most marked initial changes at that place. Now, the local action of the living tubercle bacilli on the tissues is to produce caseation as well as to cause proliferation, and the former will begin where the microbes are most numerous. The cells in the neighbourhood of the bacilli, then, will be the first to undergo caseation; their bodies stain yellow with picro-carmine. The nuclei resist longer, and they, along with broken up chromatin substance, can be seen for a considerable time in the degenerated patch.

It is known that the nucleins are not acted on by the gastric juice digestion, and can thus be separated from tissue cells. Possibly they are less easily acted upon by the toxins than the cell bodies, and hence their persistence. In further support of this view of the giant cell I would point out that colonies of bacilli are frequently, though not always, found around the margins of the so-called giant cells, and in the tubercles produced by dead bacilli intravenously injected in the horse the giant cells seem to be most numerous where the bacilli have been arrested in clumps. The apparent absence of bacilli from the neighbourhood of certain giant cells might be explained by supposing that the damage was due to a very small number of active ones, too few to be easily found in sections. One cannot say but what a few living bacilli may be as powerful as a large number of dead ones. Again, it might be that the tissues have overcome many of the bacilli in certain nodules, and prevented the changes from going further. The dead bacilli experimentally injected certainly do in time disappear from the nodules, and we may expect those killed *in situ* to do the same. In the centre of the so-called giant-cell one may find a single stray nucleus; usually one sees only chromatin substance, but even that may have disappeared. Many of the nuclei at the margin are breaking up. It is at the margin of the giant cell that they are mainly found, and they may be to the number of twelve or more. If these nuclei be carefully looked at, one often sees that they are in reality surrounded by the cell bodies in different stages of degeneration. This is best seen in the tubercles provoked by the dead microbes, possibly because the caseation is neither so rapid nor so marked as in the case of active living bacilli.

In some of the former one can see contiguous cells with caseous bodies not yet fused. Their nuclei are still present, but show up less distinctly. Some of the latter are in capillary vessels, and seem to arise from the endothelial cells. As caseation extends, other cells at the periphery are included. The nuclei of the cells first struck with degeneration become disintegrated, while fresh ones are taken up at the margin. By-and-by the degenerating patch may increase to such an extent that the cell-like form is lost, and it takes the appearance of a caseous area. Some of the cells included at the margin resemble certain of the white blood corpuscles. These may be phagocytes that have come out to surround the dead patch and have perished in an attempt to digest the bacilli.

These experiments seem to show so far that one may with impunity drink milk containing dead bacilli. That, of course, does not mean that cows with tuberculous udders should be tolerated in byres. They also suggest the possibility that some of the very chronic lesions in animals contain only dead bacilli. To decide this, of course, one would have to inoculate products obtained from a large number of these lesions in question. The production of a lesion in the abdominal organs of guinea-pigs would not in all cases be enough to prove the vitality of the bacillus, because one might possibly inject a sufficient number of dead ones to act. Artificial culture on glycerine agar, however, would decide the question.

References.

[1] Most of the work in this paper has been done in the Laboratory of the Royal College of Physicians of Edinburgh, and I wish here to acknowledge my indebtedness to that institution. [2] *New York Medical Journal*, June 20th, 1891. [3] *Arch. de Med. Exp. et d'Anat. Path.*, 1891. [4] *Veterinarian*, March, 1896.

Discussion.

Professor McFadyean said that Professor Stockman's experiments were of considerable interest, though he did not think that the results obtained were very closely related to anything encountered in natural cases of tuberculosis. He believed that the formation of lesions with dead tubercle bacilli followed only when colossal quantities of the bacilli were introduced. He could not agree that the formation of giant cells was similar to caseation, which was an effect produced only by living bacilli.

Dr. Woodhead said he was interested in this paper because a series of experiments which it had fallen to his lot to carry out had given a number of "bye results," if he might so say, which had a bearing on the question. He found that dead bacilli injected locally set up a local lesion in which the bacilli could be stained. From this lesion, however, no secondary infection could be obtained. Injected into the veins, these dead bacilli made their way principally to the lungs, where non-caseating, fibrous nodules were formed. These nodules contained no infective material, and secondary lesions could not be obtained. The bacilli, when not quite dead, still set up fibrous and non-caseating lesions.

Professor Greenfield said that the previous speakers had practically acknowledged the existence of a possible flaw in their experiments. He asked if it were not possible that some of the bacilli, supposed to be completely devitalised, might be still living. From his own reading, however, he had been led to the conclusion that dead bacilli undoubtedly might produce elementary tubercle follicles with giant cells.

He asked at what period of time the lesions described by Professor Stockman were found in the liver after intravenous injection. He thought it unnecessary to assume that the bacilli producing them must have been living, as it was quite possible for dead bacilli to pass through the pulmonary capillaries and lodge in the liver.

Professor McWEENEY inquired whether Professor Stockman had determined the virulence of his cultures before injecting them. The same effects could hardly be expected to result from the presence in the tissues of virulent as from that of attenuated organisms, even though they had previously been devitalised. He was of opinion that a determination of the virulence of the bacilli in the living state would be of great value in the interpretation of results obtained by the injection of devitalised cultures.

Dr. MOTT suggested that in the case of fibroid nodules produced by organisms presumably devitalised, inoculation experiments should be made from them in fresh animals.

A DISCUSSION ON THE NATURE AND SIGNIFICANCE OF LEUCOCYTOSIS.

I.—ROBERT MUIR, M.D., F.R.C.P.Edin.,
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INTRODUCTORY.

THE subject of the discussion which I have the honour of opening is at once one of the most important in modern pathology, and has also a most important bearing on clinical diagnosis and prognosis. It is, moreover, one which has very wide connections, being on the one hand closely involved with the tissue changes usually grouped together as inflammation and, on the other hand, intimately related to the defence of the organism against noxæ of various kinds, especially against microbes. The subject is, in fact, so wide, that on such an occasion as the present it can only be treated in one or two of its parts. The object or meaning of local increase, emigration of leucocytes, and their subsequent behaviour would imply in its discussion a consideration of the whole question of phagocytosis and of the bactericidal or other antagonistic properties (direct or indirect) of the substances secreted by or contained within these cells. And further, the observations on the modification in the number of leucocytes within the blood as a whole, or the modification in the number of different varieties, as observed clinically, are now so numerous that a consideration of them would occupy much longer time than I have at my disposal. Some of these observations must be incidentally referred to, whilst other speakers may refer to them in greater detail. I shall take as the main subject of my remarks the nature of leucocytosis as a process in general pathology. What is the fundamental change on which the leucocyte excess depends, and what is its standing in relation to the question of tissue reaction?

DEFINITION OF TERMS.

The term leucocytosis may be applied to any condition in which there is an excess of leucocytes over the normal, whether in the tissues or part of the vascular system, a local leucocytosis, or throughout the circulating blood, a general leucocytosis. We shall first speak of the latter. The general facts are well known—that in many acute inflammatory conditions, occurring naturally or experimentally produced, such as pneumonia, erysipelas, etc., and especially in suppurative conditions, the number of leucocytes in the circulating blood may be two- or three-fold the normal, or even more. Further, a similar condition may be produced by the introduction into the body of various chemical substances, of which the most important classes may be said to be (*a*) bacterial products, especially the so-called bacterial proteins; (*b*) extracts of various organs or tissues rich in cells, such as spleen, bone-marrow, etc.; (*c*) a great variety of definite organic compounds—for example, peptone, curare, nucleic acid, etc. Leucocytosis produced by such substances is sometimes spoken of as toxic leucocytosis, but in its essence is closely related to that occurring in inflammatory conditions. One question has been raised which must first be answered—namely, is the leucocytosis occurring in the conditions mentioned real? that is, does the total number of leucocytes in the circulating blood increase, or is there simply an accumulation in the peripheral vessels from which blood is usually drawn? Recent observations, of which those of Goldscheider and Jacob may be mentioned (with which my own, so far as they go, agree), show that the increase is a general one, and that in the peripheral vessels there is the same proportionate excess over the number in the blood of the heart as there is in the normal condition. There occurs therefore in leucocytosis an increase of the total number of leucocytes in the circulating blood, or, in other words, an addition of leucocytes to the blood. Further, in the case of suppurative and allied conditions, there occurs an enormous emigration of leucocytes from the vessels, so that we see, for example, in clinical cases, several ounces of pus discharged daily, and during this time, be it noted, the number in the blood is much above the normal. In such conditions, where there is a continuous drain, and at the same time an excess of leucocytes in the blood, the production must be much in excess of the normal. In the case of leucocytosis following injections of chemical substances there must first be an addition of cells to the blood, but after this addition has taken place it does not necessarily follow that it requires an increased multiplication to maintain it, though such may occur.

There are two points which also must be kept in view: (1) The variety of leucocyte in excess in these conditions is almost exclusively the finely granular (oxyphile or neutrophile), actively amœboid leucocyte, with polymorphous nucleus; (2) the enormous rapidity with which the leucocyte increase occurs—namely, a doubling or more of the normal number in a few hours.

VARIETIES OF LEUCOCYTES.—THE ORIGIN OF THE FINELY GRANULAR LEUCOCYTES.

[The varieties of leucocytes, as met with in the blood of man and animals, were shortly described]. The distribution of these varieties is also of importance, but I wish specially to refer to the chief sites of multiplication of leucocytes, as this seems to me a point upon which sufficient stress has not been laid. In the first place, as everyone knows, leucocytes multiply by mitotic division in lymphoid tissue, lymphatic glands, Malpighian patches of spleen, solitary glands, etc. The cells there undergoing division are small spherical cells, with relatively large nucleus and rather scanty hyaline protoplasm. These cells give rise to lymphocytes, which leave by efferent paths, and a certain proportion reach the blood by the thoracic duct. Secondly, leucocytes undergo division in the bone marrow. The great proportion of cells dividing there are of somewhat larger size than in the germ centres, and their protoplasm contains fine granules which have a definite (oxyphile, neutrophile, etc.) reaction. The coarsely granular eosinophile cells also multiply in the same position, though they are fewer in number, and their multiplication is less active, than is the case with the former variety. Now it is to be noted that division among the finely granular cells in the marrow in normal conditions is very active; in fact, so far as I have seen, as active as in the germ centres of lymphoid tissue. How do the leucocytes derived from these cells leave the marrow? One naturally concludes by the blood stream, but in the blood stream there are no cells with spherical or oval nucleus and with fine granules in the protoplasm, which have the same reaction. Examination of the marrow shows, however, that the cells there present show great variation in the configuration of the nucleus, and, in fact, one can trace all the intermediate stages from the simple rounded or oval nucleus through various degrees of lobulation to the markedly multipartite nucleus of the finely granular, actively amœboid leucocyte. And, if one examines sections, one can see that leucocytes of this character are normally found in varying number at the periphery of the blood channels, whilst the larger cells from which these cells, in my opinion, spring, are, as a rule, further removed from the blood stream. According to this view, then, the finely granular cells after division undergo this peculiar change in the nucleus which specially suits them for amœboid movements, and enter the blood in their fully formed condition. I may add that I have failed to find any amœboid movements in the larger cells in the marrow. The acquisition of this property would appear to be developed *pari passu* with the change in the configuration of the nucleus.

Another fundamental question in the inquiry is whether any formation of the finely granular leucocytes with polymorphous nucleus takes place in the blood from the larger hyaline forms with simple spherical nucleus. There is no doubt that in the latter, indentation and a certain amount of lobulation of the nucleus may be seen, but does the change go further? It will be found that authors disagree markedly on this point. At one time I considered that I could find in human blood transition forms between the "uninucleated" and "multinucleated" leucocytes, as they were formerly called, but such transition forms appeared to be exceedingly scanty and apparently quite insufficient in number in leucocytosis to account for the large number of multinucleated forms. If we investigate the question in the blood of the rabbit in which the corresponding cells have the granules much more pronounced, I think it will be impossible to observe transition forms, in fact, the whole appearance during the occurrence of a leucocytosis is as if a large number of cells of exactly the same kind were rapidly added to the blood. On carefully considering, on the one hand, the character of the cells in the blood, and, on the other hand, the cells in the marrow, there can be little doubt—in my mind there is no doubt—that the polymorphonuclear leucocytes are formed chiefly, if not entirely, from the latter, and enter the blood stream in their fully formed condition.

Leucocytosis in Inflammatory Conditions.

We must now pass on to the consideration of the evidence of increased multiplication of leucocytes in inflammatory conditions associated with leucocytosis. I may state, in a word, that neither in the tissues nor in the blood stream is there evidence of multiplication by mitosis amongst the polymorphonuclear leucocytes to account for the increase. The question regarding direct division is a difficult one, but here again facts are entirely wanting to show that such a process plays an important part in the changes which occur. If these conclusions are justified, an important question arises—namely, Are any important changes found in the bone-marrow when there is a constant drain on this variety of cell; in other words, when there is an increased production of this form of cell? To answer this question I have made a considerable number of experiments, and shall briefly detail the results. These experiments consisted in producing leucocytosis, or at least a removal of leucocytes from the blood, by subcutaneous or intraperitoneal injections of organisms, chiefly staphylococci. The experiments lasted for various periods of time up to four weeks and a half. The results are somewhat striking. I find that there occurs an important change which is readily recognisable. This change consists in a general absorption of the fat of the marrow and a corresponding hyperplasia of cells; and, further, the important point is, that the cells increased in number are the large finely granular cells which may be called finely granular leucoblasts, and which are the source of the finely granular leucocytes. The number of mitotic figures present shows that these cells are undergoing rapid multiplication. The coarsely granular eosinophile cells are relatively, and it may be absolutely, diminished. Erythroblasts or nucleated red corpuscles are also much diminished. The giant cells may undergo degenerative change and in great part disappear. (These cells do not contain granules, and are probably derived from the larger hyaline cells.) The marrow in such a condition presents a striking deviation from normal, and the change may be said to be of a corresponding nature to what occurs in the erythroblasts after hæmorrhage (great increase in their number and increase in the mitotic figures). If we call the latter the "erythroblastic" type of marrow, then we may call that which I have described the "leucoblastic" type of marrow. This fact appears to me to throw light on the whole subject. If we consider the finely granular cells as a class—say in a case of suppuration—we find (*a*) locally an enormous number of finely granular leucocytes (pus corpuscles); (*b*) in the blood a great increase in the number of the same cells; and (*c*) in the marrow a great increase in the cells from which these leucocytes are derived.

Furthermore, it is very probable that the same cause would explain all these phenomena. It must now be accepted that bacterial products act as chemotactic substances, and are the chief agents in the leucocyte emigration and accumulation. One cannot, I think, study the phenomena which follow, for example, intraperitoneal injection of various bacteria, without recognising that this process must be at work. Granted then a chemotactic substance, it may be in such quantity as only to act locally—in other words, we may have a small local inflammation or suppuration without leucocytosis, but if the local lesion be more extensive, then these substances which produce chemotaxis are absorbed by the blood stream in such quantities as to act on the leucocytes lying at the periphery of the blood-stream in the bone marrow, and the result will be a general leucocytosis. This is in all probability the first factor in the production of the leucocytosis quickly following the injection of chemical substances into the circulation. But there is also the increased multiplication of finely granular leucoblasts (marrow cells), and this is probably due to a stimulating effect which these substances exert on the cells—it certainly cannot be explained on any mechanical principle. We have therefore the local leucocytosis and the general leucocytosis induced by the same agency. This view very closely corresponds with what Ehrlich and Lazarus have adopted in their latest publication.[1] I may say, however, that I have arrived at these conclusions quite independently, and that, so far as I know, the changes referred to in the bone-marrow have not been previously described.

In interpreting the phenomena we may then say: (1) That the local leucocytosis is a most important means of defence; (2) that the proliferative changes in the bone-marrow are the means by which the leucocytes concerned may be supplied in large numbers at any given place of need; (3) that the leucocytosis in the blood is an indication at least that this supply is being maintained. We may also mention that the vascular arrangements in the marrow are such as, on the one hand, to permit a ready action upon its cells of chemotactic substances circulating in the blood, and, on the other hand, to allow a free and rapid passage of the cells into the blood.

It is to be noted that chemical substances must be the means by which a general leucocytosis is brought about, and therefore it is not surprising that it can be produced where there is no local inflammatory change. Whether in such a case the leucocytosis really acts as a means of defence by combining with toxins in the blood, for example, in the leucocytosis following injection of diphtheria toxin, must still be considered an open question. Another question worthy of study is whether, and if so to what extent, degenerating or broken down tissues act as chemotactic agents in the production of a general leucocytosis.

Relations of the Finely Granular and Hyaline Leucocytes.

I have said that in view of their chief sites of multiplication the great majority of leucocytes fall into two series, one including the lymphocytes and hyaline cells, the other including the finely granular leucocytes and the finely granular leucoblasts of the bone marrow, with possibly the eosinophile series. (The consideration of the relation of basophiles has necessarily been omitted; they certainly play a minor part in the questions under consideration.) An important question, and one exceedingly difficult to answer, is whether or not hyaline cells acquire granules as they lie in the bone marrow and become finely granular leucoblasts. This is a question which I am not prepared to answer, either in the affirmative or in the negative, but one must note, first, that during a prolonged leucocytosis mitosis in the finely granular leucoblasts is sufficient to account for the leucocyte increase; and secondly, that although hyaline cells are normally present in the bone marrow, these do not become increased during leucocytosis. Whilst, then, the transformation is quite possible, I have not found sufficient evidence from my experiments that it plays an important part in the phenomenon of leucocytosis.

Another point of importance may be referred to, namely, that if we consider the two series of leucocytes as above described, and suppose an excessive proliferation of one or other, we have an explanation of the two forms of leucocythæmia. In the one form, as is well known, there is an increase in the blood and tissues of the lymphocytes, and it may be of the larger hyaline cells. In the other form we have an increase of the finely granular leucoblasts (marrow cells)

[1] Die Anämie, in Nothnagel's *Specielle Pathologie und Therapie.*

and an appearance of them in the blood, and at the same time a great increase in the number of finely granular polymorphonuclear leucocytes.

LEUCOPENIA.

A few words must also be said with regard to diminution in the number of leucocytes—leucopenia—and we may consider, first, the fall which may occur with comparative rapidity in inflammatory or infective conditions, or on the introduction of certain chemical substances into the blood. Here, it is to be noted, the fall is chiefly, sometimes almost entirely, on the part of the finely granular polymorphonuclear leucocytes. One may summarise thus the circumstances on which this fall may depend:

First, the rapid fall after the injection of various chemical bodies is due in great part, if not entirely, to the accumulation of leucocytes in the capillaries of various organs, especially of the lungs. This has been proved by the experiments of Surgeon-Captain D. Bruce, of Goldscheider and Jacob, as well as my own. It can readily be demonstrated. Therefore one may say that the rapid destruction of leucocytes supposed by Löwit to occur in these circumstances has at least not been proved.

Secondly, after injections—for example, of organisms into the peritoneum—the fall may be due in part to accumulation of the leucocytes in the capillaries of the mesentery, peritoneum, etc., and in part to the emigration of leucocytes into the peritoneal cavity, the latter occurring very rapidly. It is, therefore, possible that a sudden extension of the inflammatory lesion may produce a fall in the number of leucocytes. (Where, however, the inflammatory change is more gradually developed, as in most clinical cases, leucocytosis may not be preceded by leucopenia.)

Thirdly, in severe septicæmic and toxic conditions an enormous leucocyte degeneration and destruction can be traced in the spleen and to a less extent in the bone marrow, and in certain circumstances there is great leucocyte accumulation associated with phagocytosis in these situations. The removal of leucocytes from the blood stream by their being entangled in coagula forming in the heart before death—for example, in pneumonia—may also be mentioned.

Fourthly, the fall may be due to interference with the proliferative changes in the bone-marrow, as a result of the action of toxic substances. On this point further observation is necessary.

Fifthly, whether substances exert a negative chemotaxis on the leucocytes in the marrow or elsewhere and interfere with their passage into the blood stream must still be left an open question.

It will be observed that in many of the circumstances mentioned the conditions determining the leucopenia are of an unfavourable kind, whether they be excess of toxic substances in the blood, excess of leucocyte emigration due to rapid inflammatory spread, rapid leucocyte destruction, etc. No doubt in most cases a combination of circumstances is at work—for example, in the fall of the leucocytes in pneumonia without a true crisis. But it is extremely important that in all conditions where there is leucopenia the circumstances which bring it about should be accurately ascertained, not simply to establish scientific facts, but also to afford the basis of possible therapeutical measures.

Another interesting fact may be noted—namely, that in various grave inflammatory or infective conditions when the leucocyte number falls, there appear in the blood stream some of the finely granular leucoblasts of the marrow—the myelocytes which are so numerous in the blood in medullary leucocythæmia. Whether this is due to organic change in the marrow interfering with the normal relation of its cells, I at present cannot say. It, however, appears to be usually a bad omen.

Lastly, we may merely mention that the leucocyte number is diminished in several chronic conditions—for example, in pernicious anæmia, in some cases of chlorosis (as I pointed out several years ago), and in some cases of anæmia with splenic enlargement. Here, again, the diminution is chiefly on the part of the polymorphonuclear leucocytes; and this association with defective blood formation or with alterations in the function of the bone-marrow is worthy of note.

EOSINOPHILE LEUCOCYTOSIS.

Though leucocyte increase is usually due to increase in the finely granular leucocytes, attention has been within late years drawn to the conditions in which eosinophile leucocytes are proportionately in excess, though the total number of leucocytes may be little increased—the condition known as "eosinophilia." Local accumulation of the eosinophile cells is common in a variety of conditions. I have observed it in various abnormal conditions of epithelium, for example, in atrophic conditions of the gastric and other mucous membranes, around cancerous growths, especially some varieties of epithelioma; in some forms of malignant glandular affection allied to the lymphadenoma; also in some subacute inflammatory conditions, for example, in organising serous inflammations, and even in the wall of abscesses. In various affections of the skin, pemphigus, psoriasis, and several others, the number of leucocytes in the tissues may be very great. And further, it has been observed that in bronchial asthma the leucocytes in the bronchial secretion are chiefly eosinophiles. The discussion of the behaviour of these cells would occupy much too long, but it is interesting to note that a close analogy can be drawn between this form of leucocytosis and the ordinary form. There may be local accumulations of the eosinophile leucocytes without increase in the blood, but on the other hand if the area affected, for example a skin lesion, be extensive, there may be an eosinophile leucocytosis in the blood. It is to be observed also that large eosinophile cells with simple nucleus are normally present in the marrow, and that mitotic figures may sometimes be observed in them. So also in the medullary form of leucocythæmia these cells, both the eosinophile marrow cells and the smaller eosinophile leucocytes, may be implicated in the leucocyte increase. Important questions in connection with this subject are: Do finely granular leucoblasts ever become eosinophile leucoblasts, and do the finely granular leucocytes in the blood or in the tissues became eosinophile leucocytes? Some facts suggest that these two varieties of granular cells are closely related to one another, whilst others show that to a certain extent they behave as if they were independent. The great diminucomplete disappearance, in the blood in acute inflammatory tion in the number of the eosinophiles, and it may be sometimes leucocytosis is also worthy of note. This subject must be investigated along the same lines as the behaviour of the finely granular cells. The occurrenee of local accumulations of lymphocytes and hyaline cells can only be mentioned as a subject also worthy of consideration.

CONCLUSION.

In conclusion, may I express the hope that this discussion may aid in determining the position which the term inflammation is to occupy in the science of pathology. It appears that much discussion might be avoided if a sharper distinction were drawn between the active and the passive phenomena concerned. By the former, I mean those which are of the nature of a defensive reaction, by the latter, those which are merely the evidence of the action of toxins or other noxæ on tissues, especially on living cells. The former ought to be regarded in the light of evolution as a provision for the protection of the organism, the latter merely as evidence that living structures are necessarily capable of damage.

II. W. S. GREENFIELD, M.D., F.R.C.P.,

Professor of Pathology in the University of Edinburgh.

THE President, Professor Greenfield, complimented Dr. Muir on the able manner in which he had opened so important a discussion. He did not wish to anticipate anything that might be said by others who wished to take part in the discussion; but he thought that the results obtained by Dr. Muir were of the highest value, and that they threw a fresh light on the whole question of leucocytosis.

III. D. J. HAMILTON, M.B., F.R.C.S.E., F.R.S.E.,

Professor of Pathological Anatomy, University of Aberdeen.

PROFESSOR HAMILTON said that the subject was one of the greatest importance. There was this to be said about it, however, that, owing to the evidence on many points being as yet scanty, and even contradictory, no one was entitled to offer an opinion on any of the so-called facts of the process, and far

less upon the numerous theories bound up with the subject, which might in the smallest degree savour of being dogmatic. Thus, in the first place, there were evidently leucocytoses and leucocytoses, probably differing widely in their causation and significance, and it would be rash and foolish to conclude because, let us say, an excess of leucocytes in the blood had occurred in one case as a protection against the effects of morbid substances introduced into the system, that therefore leucocytosis in all cases was to be looked upon in a similar light. Even after what Dr. Muir had said of investigators being almost unanimous on the subject of leucocytosis being a general affection, that is to say, affecting the whole blood equally as a mass, yet he was certainly not convinced that this was so universally concluded to be the case as Dr. Muir had made it out. Leucocytes under certain circumstances had a peculiar faculty of agglutinating within the capillaries, in some instances to such an extent as to form emboli; and it seemed very likely to the speaker that certain varieties of the phenomenon, such as that which so often precedes death, might be due to an arrestment of the leucocytes within the capillaries of the skin. The condition of leucopenia was known to be often caused by such an accumulation of leucocytes within the capillaries of the lung and other organs, and it did not seem illogical to suppose that a partial leucocytosis might occur in the vessels of the skin. Then, coming to the great question of chemotaxis being a frequent, if not the most frequent, cause of leucocytosis, he was bound to say that, so far as he had read and observed, the evidence confirmatory of this theory was of a flimsy and unstable nature; as he understood it, this chemotactic theory of the condition went on the supposition that something was introduced into the blood which had a positive attraction for the white cells contained in the bone marrow and other blood-forming organs. True as this may prove to be in the long run, it appeared to him that a much more decided basis of proof was required before it could be accepted by an unbiassed observer. What was wanted in a matter of this kind was accumulated facts, not theories, and it would be long before the experimental evidence on the matter would have grown to such an extent as to settle the question one way or the other to the satisfaction of all concerned. Was there not a possibility, the speaker asked, of those substances of a poisonous nature which called forth a leucocytosis merely stimulating the lymph-corpuscle-forming glands to excessive secretion?

IV.—G. Sims Woodhead, M.D., F.R.C.P.E.,

Director, Research Laboratories of the Royal Colleges of Physicians and Surgeons, London.

Dr. Woodhead said that he had listened with great interest to the paper, which he believed was of special value from the fact that its subject matter had a bearing on every great question in pathology. Its bearing on inflammation and immunity was of special interest to him, but all would appreciate its very great importance in connection with such a condition as leucocythemia. In regard to what Professor Hamilton had said, he thought that we should not allow a separation into two camps merely, for after all chemiotaxis was conceived in Belgium, but was hinted at by a German, and worked at by a Russian in Italy and in France. He quite agreed that chemiotaxis and phagocytosis should not be accepted as proved. Theories of this kind should not perhaps be dogmatically held, but he did believe in their use as working hypotheses. Dr. Muir's work would, he believed, clear the ground for further investigation. The locality of the small granular polynuclear cells having been fixed, and distinction being made between all those derived from the bone marrow and those from other sources, still further elimination became possible. He looked upon leucocytosis as evidence of a power of reaction in the tissues in which those cells were formed, or on the part of the cells themselves. In the local reaction of mild anthrax cases we had evidence of powers of resistance of the tissues, and capacity to react in the presence of the anthrax bacillus and its poison; so in leucocytosis we had a manifestation of a power on the part of the cells (certain of which, as Dr. Muir had demonstrated, could be traced to their source in the bone marrow) to react and multiply in the presence of proteid poisons and other irritants.

V.—T. Edmonston Charles, M.D., LL.D., F.R.C.P.,

Hon. Physician H.M. The Queen.

Dr. Charles said that in examining the blood in some acute cases of Malta fever he had been struck by the absence of the polymorphonuclear leucocytes, only lymphocytes with a single large nucleus were present. He thought at first that this appearance might be due to the particular stain employed (thionin), but he obtained the same results whatever stain he used, for example, eosine and methylene blue. In other fevers, for example, in typhoid fever, he had not found the same absence of the polymorphonuclear cells, and he thought that this was a diagnostic point of great importance. It often happened that a physician had considerable difficulty in distinguishing between typhoid and Malta fever, and he thought that a bedside examination of the blood would afford a rapid and reliable test. In further illustration of the value of a clinical examination of the leucocytes, he instanced the difficulty that was often felt in knowing when to grant a patient suffering from appendicitis permission to rise. In his experience this could be told with precision; for, if leucocytosis was present, then the patient should not rise even though all other signs and symptoms had abated, and on the other hand, if the leucocytosis had subsided, then the patient might safely rise, even though some tenderness still persisted. In conclusion, he quoted the case of a patient whom he had treated for a sore throat. The state of the throat improved, but the temperature continued to rise. Examination of the blood revealed a marked increase in the polymorphonucleur cells, and, in spite of the absence of any physical signs, he was thus enabled to predict the onset of an acute pneumonia or pleurisy, the latter hypothesis being verified on the following day.

VI.—W. S. Lazarus-Barlow, M.D.,

Curator of the Museum, St. George's Hospital.

Dr. Lazarus-Barlow congratulated Dr. Muir on the important addition to the subjects of leucocytosis and phagocytosis that he had made by his observations on the bone marrow, and said that he considered that knowledge with regard to granular-cell leucocytosis was far more advanced than with regard to non-granular cell leucocytosis. Probably the granular-cell leucocytosis should be considered as being of the same nature as the increase of the granular leucocytes that took place in the tissues in inflammation, that is, as a reaction to an irritant of a purposive kind. The non-granular cell leucocytosis, however, was a matter of the greatest difficulty, principally because of the uncertainty as to the nature of the cells concerned. In the case of lymphocytosis, there was probably only a washing out of the lymphocytes from the lymph glands during digestion; but, where the cells were of the large hyaline type, they might be connective tissue cells, endothelial cells, or even possibly in some cases sarcoma cells.

VII.—Herbert E. Durham, M.B.,

Grocers' Research Scholar, Cambridge.

Dr. Durham congratulated Dr. Muir on the success of his investigations on the bone marrow. He desired to emphasise the advisability of a routine examination of this tissue in infective diseases, since, in certain instances of bacterial infection, it was possible to demonstrate the presence of bacilli there, although examination of other organs proved negative. He also alluded to the period of resolution of a leucocytosis when many cells rather of the lymphocyte type were present; he had been unable to find transition forms between the polymorphonuclear leucocyte and these lymphocytic forms. He referred also to the rapidity of the changes and the similarity of the general type of the sequence of changes in the leucocytes in the different cavities (vascular, synovial, peritoneal, etc.) of the body after experimental injection. The enormous number of leucocytes which appeared after injections in immunised animals was compatible with the changes in "leucoblastic" bone marrow described by Dr. Muir.

VIII.—T. H. Milroy, M.D.,

Physiology Laboratory, University of Edinburgh.

Dr. Milroy said that in the experimental leucocytosis caused by the injection of nucleic acid there was an alteration in the

ratio between the amounts of nitrogen and P_2O_5 excreted compared to that in health. This difference referred both to an absolute and relative increase in the P_2O_5 compared to the nitrogen. He also stated that in medullary leucocythæmia the P_2O_5 seemed to be both absolutely and relatively decreased compared to the nitrogen, and said that this appeared to suggest a check in the breaking down of leucocytes.

DR. MUIR'S REPLY.

AFTER remarks by Dr. COPEMAN and Dr. GRÜNBAUM,

Dr. MUIR, in reply, thanked the members who had taken part in the discussion for the kind way in which they had received his remarks, and briefly referred to some of the points which had been raised. With regard to Professor Hamilton's observations, he said that he admitted at once the occurrence of merely local leucocytosis, but repeated that an increase of the total number of leucocytes had also to be dealt with. He considered that chemotaxis was the only agent which would explain many of the phenomena present, but that the stimulating effect on the cells of the marrow was of equal, if not greater, importance. If lymphoid tissue was concerned, it had still to be shown where the cells coming from it became transformed into the finely granular polymorphonuclear cells. The remarks of Dr. Edmondston Charles were of importance in showing that a fall of leucocyte number in one disease might not have the same significance as in another; in each case the circumstances determining it must be investigated. He agreed with Dr. Lazarus-Barlow as to the difficulty in many cases of distinguishing hyaline leucocytes from swollen endothelial cells and in determining the part which each played. In relation to Dr. Durham's remarks, he said that the extent to which organisms accumulated in the spleen and bone-marrow respectively varied in different diseases; so far as his observations went, they were more numerous in the former, but it was interesting to learn that the converse might be the case. He did not intend to draw too close an analogy between the marrow changes after hæmorrhage and after leucocytosis, but so far as the increase of the two classes of mother-cells was concerned the analogy held.

THE BLOOD CHANGES AFTER EXPERIMENTAL THYROIDECTOMY.*

By ALFRED G. LEVY, M.D.

[From the Department of Pathological Chemistry of University College, London.]

MODE OF EXPERIMENT.

NUMEROUS observations have now been made on the striking and diverse phenomena incident upon the removal of the thyroid bodies of animals, yet the fact remains that we are still very much in the dark regarding the physiological functions of the thyroid secretion, and of the pathological process which must occur when the secretion is absent from the body.

The study of objective symptoms can only supply us with hints as to the seat or the seats of the pathological processes which must take place when an animal is in a state of cachexia thyroidectomica. But these pathological processes have been but little directly investigated. The principal workers in this line have been Duccheschi, who has made some observations upon the urine, and infers thence a destruction of proteid matter; Vassale, histological investigations of the central nervous system; and, contemporary with myself, Postoeff has examined the blood, and last year published a short note on his work.

In experiments of this kind, it is, of course, essential that the parathyroids should be carefully removed with the thyroid gland, and this, fortunately, in the dog is easy to accomplish; but the small accessory thyroid bodies which are known sometimes to exist in the tissues around the aorta and large vessels, and which, according to Cunningham, have an active function, render it difficult to be sure that the thyroid influence is in all cases entirely withdrawn, and perhaps on this fact largely depends the somewhat variable character of the changes in the blood which I have observed.

THE CORPUSCULAR ELEMENTS.

The anæmia which supervenes upon thyroidectomy was early pointed out; however, I cannot find that it is ever very intense, and it most certainly is not constant, in its occurrence. The red corpuscles are reduced in number, the maximum reduction I have observed being 25 per cent., and the fall in the hæmoglobin is roughly proportionate to that of the corpuscles, so that the anæmia is doubtless wholly due to a destruction of the latter.

For example, a dog with marked symptoms on the third day showed red corpuscles 5,700,000 the normal being 7,600,000: hæmoglobin 70, the normal being 100. Another dog, with intense symptoms, on the third day showed red corpuscles 7,460,000, the normal being 7,130,000 (showing a slight increase): hæmoglobin remaining unchanged.

I may mention that after a pronounced anæmia of this type the liver gives an iron reaction with potassium ferrocyanide.

Another well-known phenomenon is the leucocytosis which invariably occurs. Numerous small, newly-formed leucocytes may often be found the day after the operation. The numbers fluctuate very considerably, as the following example shows: normal 8,000; first day 32,000; second day 17,000; third day 44,000.

CHEMICAL CHANGES.

The fibrin of the blood is known to fluctuate to some extent in certain pathological conditions, usually in the direction of increase, noticeably so after severe hæmorrhages, and in some infectious and inflammatory conditions. After thyroidectomy the increase, in my experience, is invariable, and often considerable; thus, for example, from a normal of 0.2 per cent. to 0.36 per cent., 0.3 per cent. to 1.14 per cent., 0.39 per cent. to 0.56 per cent., but the increase is not always quite so large.

The specific gravity, as might be expected from the diminution of the principal solid blood contents, becomes lowered. The fall of course is largely dependent upon any considerable anæmia, but it is very evident that a change in the serum solids, such as we find in the athyroidal condition, may have a marked effect upon the specific gravity, so that, to my mind, the method now in vogue of estimating hæmaglobin from the specific gravity is not always a quite reliable one.

The proteids in the blood, which were estimated in every case, underwent a varying diminution, as also did the total nitrogen.

When we come to consider the total solid contents of the blood, we find they always undergo a reduction, and in most instances their loss is more or less greater than that of the proteids, showing that one or more other substances besides proteid material are destroyed under these circumstances. To take a single example, the solids are reduced from 22.8 per cent. to 20.37 per cent, and the proteids from 20.37 per cent. to 19.2 per cent., that is, a loss of 2.43 g. solids against a loss of 1.8 g. proteids. But it occasionally happens that the proteid loss is more or less larger than that of the solids—for example, 1.2 g. loss of solids against 2.97 g. loss of proteids, indicating a considerable increase of some non-proteid material. So that these facts, taken in combination, may be held to point to a varying loss of some, and a varying gain of other, non-proteid matter. As regards these non-proteids, I have found that the blood ash does not vary to any substantial extent, so that there remains the carbohydrate and fatty substances and the extractives for further consideration, but I have not yet had an opportunity of pursuing the investigation in this direction.

Of course when there is a considerable anæmia a large part of the loss in proteids is directly due to this, but when the anæmia is absent or inconsiderable a large loss of proteids may still occur. To quote one example, in one of my dogs loss of hæmoglobin, 0; loss of corpuscles, 5.8 per cent.; loss of solids, 10 per cent.; loss of proteids, 15 per cent.; so that here it is the serum solids which principally suffer.

CONCLUSION.

Throughout the experiments I gave careful attention to the housing and feeding of the dogs after they had been thyroidectomised, for an animal in this condition is so peculiarly susceptible to external debilitating influences that otherwise it would not be fair to ascribe its blood changes entirely to the

* Towards the expenses of this research a grant was made by the Scientific Grants Committee of the British Medical Association. Full details will be published in the *Journal of Pathology and Bacteriology*.

loss of the thyroid secretion, but when bled the majority of my dogs were in very good bodily condition, and one indeed increased in weight after the operation.

I may remark the striking want of interdependence among the various blood changes, and that none of these bear any relation to the severity or rapidity of onset of the general symptoms of the cachexia. This apparently irresponsible accentuation of certain structural blood changes, as also of certain objective symptoms, may perhaps be partly referred to the "conditioning circumstances" such as temperature, hygienic surroundings, food, and, as I have already mentioned, to the existence of accessory thyroid bodies; but it is only a full knowledge of the physiology of the thyroid gland which can satisfactorily ascribe to these things definite causal relations.

To Professor Vaughan Harley my thanks are due for many helpful suggestions in working out this research.

Dr. Welsh said that he had removed the parathyroids alone in a few cases in cats, and, though he had never examined the blood during life, he had observed that the organs and tissues after death were often anæmic, and showed evidence of fatty degeneration.

Dr. Mott thought that the tendons and connective tissues should also be examined in relation to these blood changes. The theory that an excessive accumulation of mucin occurred after removal of the thyroid was probably no longer held by anyone. He suggested that the reason why the relative loss of the proteids and of the total solids varied so greatly might be found in the variations in the nutrition of the dogs observed in the course of the various experiments.

Dr. Muir said that he examined the blood in several cases of myxœdema in man, and had found a slight leucocytosis in some cases, whilst it was absent in others. The degree of anæmia also varied, but was usually slight. His general results were that the changes in the corpuscular elements were not of a marked kind.

ON PLEURAL IRRITATION AND PLEURISY.

By W. S. Lazarus-Barlow, M.D.,
Curator of the Museum, St. George's Hospital.

Dr. Lazarus-Barlow considered the formation of "false membranes" and thickenings of the pleura found when the pleura itself or the subjacent lung was the seat of inflammation. The commonly accepted view was that the false membranes, which were essentially associated with acute processes, were formed by deposition of fibrin from a liquid inflammatory effusion. Certain authors, however (Grawitz, Schleiffarth, Neumann, Borst), had dissented from this opinion, and maintained that the false membranes were chiefly formed by a modification of the subendothelial connective tissue of the serous membrane. This modification had been termed "fibrinoid degeneration" by Neumann. Neumann, in particular, maintained that in the pleural cavity the false membranes might frequently be found covered by endothelium, and not covering endothelium, as should be the case if the commonly accepted view were correct. Borst, working with the peritoneal cavity of guinea-pigs, agreed with Neumann, but in addition found that in the earliest stages of an acute peritonitis, induced by injection of a solution of iodine in potassium iodide, there was often a marked proliferation of endothelial cells.

The author had made serial sections of pleura parallel with its surface (following herein Neumann's suggestion) under the following conditions:

A. Pleura of guinea-pig:	1 normal. 2 after injection of diphtheria toxin into the pleural cavity.
B. Human Pleura.	1 normal. 2 in hypostatic congestion. 3 early pleurisy in diphtheria. 4 „ „ pyæmia. 5 „ „ lobar pneumonia. 6 later, but still early pleurisy in glanders. 7 „ „ „ „ generalised miliary tuberculosis.

[Photographs of these were thrown upon the screen.] The author found that there were, at least, three distinct forms of pleurisy: (1) A form in which "fibrinoid degeneration" occurs along with marked infiltration of the pleura by cells; (2) a form in which there is a general increase of the connective tissue of the pleura without marked infiltration by cells and without "fibrinoid degeneration" of the connective tissue fibrils; (3) a form in which the whole thickness of the inflamed pleura consists of highly vascular and very young cicatricial tissue. He agreed with Neumann that endothelium might be found covering the "false membrane," and that the connective tissue of the pleura itself might undergo the change which was well termed "fibrinoid degeneration." But he did not agree that these changes were commonly seen. In the guinea-pig, in particular, the endothelium degenerated to form a part of the false membrane, or if this did not occur it could be found lying beneath the false membrane: in no case had it been found to cover it. In the greater number of human cases all trace of the normal endothelium was lost, and reasons were given for not considering this as dependent upon *post-mortem* change. So far as the exudation was concerned in experimental cases in guinea-pigs, it might briefly be said that as early as one hour after intrapleural injection of diphtheria toxin there was an enormous output of finely granular oxyphile (polynuclear, neutrophile) cells, fully charged with granules. Later the granules disappeared and the nuclei of the cells broke up. Ultimately very few finely granular oxyphile cells, but numbers of desquamated endothelial cells and large cells unprovided with granules, were present in the exudation; the origin of the latter variety of cell is doubtful.

[The paper was illustrated by an interesting series of lantern slides and microscopic specimens.]

Discussion.

Professor Greenfield said that Dr. Barlow's paper did not readily lend itself to discussion, as it embraced too wide a range of subjects, and included practically all the fundamental processes in general pathology. He thought that these processes would be more profitably studied if they were considered separately. It was important in the study of such changes to bear in mind the different effects produced by different irritants and at different periods of time. He remarked that for the last twenty years he had been accustomed to teach some of the statements for which Dr. Barlow was now contending.

Dr. Woodhead quite agreed with Professor Greenfield that they had here to deal with a most difficult and complicated question. To begin with, it was impossible to ignore the fact that in different animals there were different types and structures of pleuræ, so that different pathological processes must manifest different appearances, especially when irritants of different kinds are used. In the specimens exhibited evidence of this was very marked. Neumann's paper had been accepted by many, especially those who had not had much experience in the examination of specimens as introducing a new light on the question of pleurisy, but many of the points raised had already been settled. It was useful to have such matters examined in fresh light. The one criticism he would make was that the pleurises differed widely in character and could not be generally grouped, and that the "young" fibrous tissue exhibited was really well-formed fibrous tissue of some standing. He recognised that fibrin could be found in the lymph spaces, and that swollen connective tissue strands could be found in the pleura, but these were not hyaline fibrinous substance.

Professor McFadyean said that he had listened with special interest to Dr. Barlow's demonstration, because he had recently examined a series of naturally occurring pleurisies in the horse. He thought that it was not reasonable to expect a common type of pleurisy which naturally varied according to the cause, just as much as dermatitis or gastritis. According to his own observations, there was a remarkable constancy between the nature of the changes and the irritant determining them. One could not expect identical changes in experimental pleurisies induced by the injection of a chemical irritant such as diphtheria toxin, and natural pleurisies which were almost all due to bacteria. These bacteria were often present most abundantly in the deeper parts of the pleura, and thus differences arose as compared with pleurisies due to surface irritation.

Dr. Muir observed that in the results brought forward the nature of the irritant should be kept in view, as the agent was

a cell poison, and many of the minor changes might thus be produced, such as necrosis of the muscle fibres in the guinea-pig's pleura. The position of the endothelium might be affected by various circumstances. So far as his observations went, the endothelium in the human subject was not found above the exudation, but its cells degenerated and disappeared in the exudation; at an early stage swollen and endothelial cells might be seen at places still attached underneath the exudation. He doubted the advisability of making distinct varieties, as so much depended upon the stage of the process and the degree which the proliferation had reached.

Dr. Welsh thought that the changes in the connective tissue of the pleura should be kept distinct from the changes in the exudation, as the two processes were essentially different. He deprecated the use of the term "fibrinoid" as applied to changes in the fibrous tissue. In some cases in which the irritant was very intense, the fibrous tissue of the pleura did undoubtedly undergo necrotic changes, and become swollen and hyaline; but the resemblance to the fibrin proper was only superficial, and could not be affirmed without confusing the true nature of the change.

THE PATHOLOGICAL EFFECTS OF BREATHING OXYGEN AT A HIGH TENSION.

By J. Lorrain Smith, M.D.,
Lecturer on Pathology, Queen's College, Belfast.

[Abstract.]

It has been noticed by Bert and other observers that, before oxygen has been raised to a tension which is fatal to animals, various symptoms develop which indicate profound disturbance in the tissues. Bert has in particular defined the effects on the nervous system, which he described as resembling those of tetanus poison.

The experiments now recorded deal with the effect of increased oxygen tension on the lungs. The results show that oxygen at a tension of about 130 per cent. of an atmosphere produces pneumonia in the lungs of mice in about 60 hours. If the tension be raised to 180 per cent. the time of survival is reduced to 24 hours. If 300 per cent. be reached the period of survival may be as short as 5 hours.

In the case of small birds similar pneumonic effects are produced; but, when a tenson of 270 per cent. is reached the tetanic symptoms described by Bert develop in about 10 minutes. This effect can be abolished at this tension by exposing the animal, as a preliminary measure, to a lower tension, sufficient to start the process of inflammation in the lung. It reappears, however, when the tension is raised to 450 per cent. of an atmosphere. Further, it is found that tetanic symptoms do not arise in mice till the atmosphere to which they are exposed contains oxygen at this tension of 450 per cent. The fact that birds with damaged lungs and normal mice have similar power of actively absorbing oxygen indicates that the onset of the tetanic symptoms at a given oxygen tension depends on the integrity of the active power of absorbing oxygen on the part of the lung.

That the effect depends on the tension, and not on the quantity, of oxygen in the blood may be further proved by exposing an animal to an atmosphere containing carbonic oxide and oxygen at a high tension. The tetanic symptoms then develop at the same tension as before, though a large percentage of the haemoglobin is saturated by carbonic oxide.

The experiments show that oxygen tension at a moderate height produces pneumonia, and at a considerably higher tension produces the tetanic effect described by Bert.

A DEMONSTRATION OF THE GRANULES PRECIPITATED IN THE BLOOD BY CHLORIDE OF AMMONIUM.

By Alexander Haig, M.A., M.D.Oxon., F.R.C.P.,
Physician to the Metropolitan Hospital, etc

The method is that proposed by Mr. Barker-Smith,[1] as modified and adapted to quantitative purposes by the author.

The granules are pale, more or less spherical bodies of one-sixth to one-third the size of a red corpuscle.

Process.—Draw a minute drop of blood, touch it with a microscope slide; mix with an equal quantity of 10 per cent. solution of sodium carbonate, and then with a similar quantity of a 20 per cent. solution of chloride of ammonium. After mixing, put on a cover glass and let it stand for 30 minutes, preventing evaporation. The granules slowly increase in number the longer the slide stands; it is therefore necessary to examine all specimens at about the same time after mixing.

To Examine.—Place under a microscope with an ⅛ inch objective glass and with a good light; choose a field about the centre of the cover glass, and count all the granules in the field; then count all the red cells, and divide the former into the latter. Counting is facilitated by somewhat diluting the blood with the solutions, so as to diminish the number of cells in a field, and by using a micrometer eye-piece.

The following are common relations of granules and red cells:

In Physiological Conditions.—1-10 in morning; 1-20 in evening; but more in children than adults.

Pathological Conditions.—1-1 to 1-5 in Bright's disease and chronic gout; 1-30 to 1-40 in fever.

Any of the above quantities can be reproduced by the action of drugs. Under all conditions the number of granules varies with the uric acid passing in the urine, and a diagram was shown to illustrate this point. A specimen of blood from Bright's disease was shown in contrast with a normal blood.

Reference.
[1] *Medical Times and Hospital Gazette*, September, 1896.

MALFORMATION OF THE KIDNEY AND DISPLACEMENTS WITHOUT MOBILITY,

WITH ILLUSTRATIVE CASES AND SPECIMENS.

By David Newman, M.D., F.F.P.S.G.,
Surgeon, Glasgow Royal Infirmary.

[Abstract.]

Anomalies of the kidney have until recently been looked upon simply as pathological or anatomical curiosities; but now that many of the diseases of the kidney come to be placed under the surgeon for treatment by operation, all departures from the normal, whether in respect of number, form, size, or situation, must be considered of moment to those who have frequently to operate upon the renal organs.

If we simply study the cases recorded it will be found that they group themselves together and may be naturally classified under the following heads:

A. Displacements without Mobility.
- I. Congenital displacement without deformity.
- II. Congenital displacement with deformity.
- III. Acquired displacements.

B. Malformations of the Kidney.
- I. Variations in number.
  - 1. Supernumerary kidney.
  - 2. Single kidney.
    - (*a*) Congenital absence of one kidney.
    - (*b*) Atrophy of one kidney.
  - 3. Absence of both kidneys.
- II. Variations in form and size.
  - 1. General variation in form, lobulation, etc.
  - 2. Hypertrophy of one kidney.
  - 3. Fusion of two kidneys.
    - (*a* Horseshoe kidney.
    - (*b*) Sigmoid kidney.
    - (*c*) Disc-shaped kidney.

C. Variations in Pelvis, Ureters, and Blood Vessels.

A.—Displacements without Mobility.

I. Congenital displacement without deformity of the organ is by no means uncommon.

Case I.—Fixed displacement of the right kidney above Poupart's ligament simulating a perityphlitic abscess; operation.[1] The patient was admitted complaining of pain in the right iliac region. There was a slight fulness of the abdomen in the right iliac and lower lumbar regions, and a rounded swelling was felt passing upwards and backwards. The swelling was cut down upon, when it was found to have a rounded outline, with a distinct hilum towards the inner and upper aspect, and being semi-elastic but firm immediately suggested a displaced kidney.

Case II. Left kidney displaced downwards and forwards in a patient upon whom lumbar colotomy was performed. On making an incision from the lower border and tip of the last rib on the left side to a point half an inch behind the centre of the crest of the ilium, the upper border of the left kidney presented itself at the lowermost limit of the incision.

Case III.—Right kidney displaced downwards and rotated on its antero-posterior axis, shortened ureter entering upper aspect of bladder. At the *post-mortem* examination the right kidney was found to be displaced and firmly fixed; the pelvis of the kidney looked upwards, inwards, and forwards, while the convex aspect of the organ rested upon the brim of the pelvis.

In the three cases above described, where the kidneys occupied abnormal positions, the fixed misplacements were not associated with any deformity of the organs.

II. Congenital Displacement with Deformity.

Case 4.—Right kidney at the brim of the pelvis, anomalous distribution of blood vessels, and deformity of the kidney.[2] The right kidney was found lying on the brim of the pelvis. At the upper limit an artery enters the kidney directly from the aorta. From the kidney, close to the uttermost limit of the pelvis, a large vein passes directly to the vena cava.

Case 5.—Malposition of both kidneys, one to the right of the promontory of the sacrum, the other in the iliac fossa; right kidney small and with no hilum.[3] In this case the kidney was found to be situated about half an inch to the right of the promontory of the sacrum, and the left kidney was discovered in the left iliac fossa 2 inches to the left of the sacro-iliac synchondrosis.

Case 6.—Right kidney flat, oval in form, supplied with two arteries; one ureter from its anterior aspect.[4] In this case the right kidney was situated at the brim of the pelvis, half in the cavity and half out.

III. Acquired Displacement of the Kidney.

Case 7.—Acquired displacement of the right kidney by a perinephric abscess. The kidney was discovered with its convexity looking upwards and lying close to the diaphragm, while the pelvis was turned downwards.

B. Malformations of the Kidney.

1. *Variations in Number.*

1. *Supernumerary Kidney.*—Supernumerary kidney is extremely rare. We have only seen one instance of this anomaly; lying close to the upper margin of the left kidney there was a small pear-shaped body, supplied by a branch of the renal artery, and having a distinct ureter which passed into the left ureter half an inch below the pelvis of the left kidney.

2. *Single Kidney.*—A careful distinction must be drawn between "single kidney" due to congenital defect of development of the opposite organ, and those instances in which a kidney has become wasted and functionally useless as a consequence of disease, while its neighbour has undergone compensatory hypertrophy.

Case 8.—Complete absence of the left kidney, ureter, and vessels, compensatory hypertrophy of right kidney. The right kidney was normal in its position, but the whole organ was greatly enlarged, weighing 12½ ounces, and measuring 5 inches in length and 4 inches in breadth. No trace was found of the left kidney or of its vessels and ureter, and no opening into the bladder could be discovered corresponding to the entrance of the ureter.

Case 9.—Congenital absence of the left kidney, vessels, and ureter. The preparation shows with the right kidney, the bladder, and the right ureter. A most careful search at the time of the *post-mortem* examination failed to find any trace in the body of the left kidney or ureter.

The following cases show how one kidney may atrophy or become functionally inactive, either as a consequence of want of growth, or from disease in early life.

Case 10.—Extreme atrophy of the left kidney, with double pelvis but single ureter.[5] I have no details of the *post-mortem* examination in this case. The kidney tissue is almost completely destroyed, and the whole organ is about the size of a walnut. The pelvis is branched, and there is no hilum; the upper limb of the pelvis springs from the inner and upper aspect of the atrophied organ, while the lower limb arises from the lower border of the kidney.

Case 11.—Atrophied kidney, the renal tissue being almost entirely replaced by fat.[6] The right kidney was 10 ounces; the left kidney weighed half an ounce; very little renal tissue could be found in the mass, and what remained was completely embedded in firm fat.

Case 12.—Atrophy of the right kidney with compensatory hypertrophy of the left kidney; disease of the suprarenal capsules. The right only weighed 1 ounce, the left 7 ounces.

II. Variations in Form and Size.

1. *General Variation in Form, Lobulation, etc.*—Slight changes in shape from the typical normal kidney are by no means uncommon, and in more marked instances the organ may be elongated so as to become sausage-shaped, or it may be increased in thickness and globular in form, resembling the shape of the kidney in the fœtus. In a few cases the kidney has been found to assume the discoid shape.

2. *Hypertrophy of one Kidney.*—Hypertrophy of one kidney is not often met with independent of some condition which has produced a functional weakness of its fellow.

Case 13.—Simple hypertrophy of the left kidney only; right kidney normal in size and appearance. The right kidney was normal in weight, 6¾ ounces, while the left weighed 10¾ ounces.

3. *Fusion of two Kidneys.*—The amount of fusion that takes place between two kidneys varies greatly.

(*a*) *Horseshoe kidney* is the most common form of fusion. The two organs are joined together at their lower ends, sometimes by a simple band of tissue.

Case 14.—Horseshoe kidney united by an isthmus of fibrous tissue at the level of the bifurcation of the aorta; renal form well retained.[7]

Case 15.—Horseshoe kidney with lobulation and complete fusion of both kidneys; malformation of pelves and anomalous distribution of blood vessels. Both kidneys retain to some extent their renal form, and are united at their lower ends by a distinct lobule, which is marked off by two deep grooves.

Case 16.—Horseshoe kidney, with complete incorporation of the two organs; lobulation of both segments, the ureters deformed, and anomalous distribution of the blood vessels.[8] The two kidneys are completely united at their lower ends, and the whole renal mass, although lobulated, is, roughly speaking, uniform in diameter, and in this respect contrasts with the previous specimens.

(*b*) *Sigmoid Kidney.*—Sigmoid kidney is an end-to-end fusion of the two organs. In this anomaly both kidneys occupy one side of the body only, but while the condition is unilateral it cannot be properly included under the term "single kidney."

(*c*) *Disc-shaped Kidney.*—Disc-shaped kidney is applied to those instances where incorporation of the two organs is very complete, as, for example, in a case published by Drs. Sutherland and Edington in the *Glasgow Medical Journal*, February, 1898.

Notes and References.

[1] This case is published in detail in the *Scottish Medical and Surgical Journal*, vol. i, No. 1, p. 53. [2] Glasgow Royal Infirmary Museum, Series 7, No. 2. [3] Newman, *Surgical Diseases of the Kidney*, p. 7. [4] Royal Infirmary Museum, Series 7, No. 1. [5] *Ibid.*, No. 9. [6] *Ibid.*, No. 13. [7] *Ibid.*, No. 3. [8] *Ibid.*, No. 4.

SECTION OF STATE MEDICINE.

Sir Henry D. Littlejohn, M.D., President.

DIPHTHERIA IN LONDON, 1896-98.

By F. A. Dixey, M.A., M.D.,
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At two previous meetings of the British Medical Association,[1] I have attempted to deal with the statistical materials furnished by the weekly returns of the Registrar-General, in so far as they are concerned with the prevalence of fatal diphtheria in the metropolis. My last communication to the Association was made two years ago; and since that time so much of interest has happened in regard to the present recrudescence of London diphtheria, that I venture to think hardly any apology to be needful for once more introducing the subject. The points to which I have given special attention are (1) the general course of fatal diphtheria in London; (2) its seasonal relations; (3) the important question of the influence of school-attendance on the spread of diphtheria; (4) the relation of diphtheria to so-called "croup:" (5) the effect of the treatment by antitoxic serum. In examining the means which recent statistics put into our hands for attacking these and similar questions, and for confirming or modifying conclusions previously reached, it may be well for me to state that I have no preconceived views to uphold, my only object being to extract from the available evidence such information as it seems fairly capable of affording. Nor do I wish, on the present occasion, to propose remedies, my only business just now being to draw attention to facts.

One word I may be allowed to add on the special usefulness of the weekly returns. This seems to me to consist largely in these two points: (1) That by their means we are enabled to study the seasonal relations of fatal diseases and the immediate as well as remote effects of varying meteorological conditions; and (2) that we are able to bring our results more exactly up-to-date than if we had to wait for the publication of annual reports, which necessarily occupy much time in their preparation.

1. The General Course of Diphtheria in London, 1896-98.

With respect to the general prevalence of the disease since the middle of 1896 there is little to record. London is still suffering from the outbreak of diphtheria which may be said to have begun early in 1892, and which reached alarming proportions in the autumn of 1893. The number of notifications and of fatal cases in 1896 both showed an increase over the corresponding figures for 1895; but in 1897 both underwent

some diminution, though the notification figures were still well above the average of the last four years, including the fatal year 1893. During the present year the tendency on the whole has been a downward one.

The following table (Table I.) gives the London mortality week by week since the beginning of 1896, according to the Registrar-General's returns. The corrected ten-yearly means for the corresponding weeks are also added for comparison. With regard to the last-named figures, it should be remembered that they are to be used with caution—not from any suspicion as to their substantial accuracy, but because the average results for a period of years in the case of a disease which varies in its incidence so much as diphtheria are somewhat artificial if considered as an index of its normal prevalence.[2] Nevertheless, if studied with due regard to the actual circumstances, these weekly ten-year averages are not without their interest and value, even in the case of a disease like diphtheria.

TABLE I.—*London, 1896-98: Weekly Deaths from Diphtheria, with Corrected Means for Ten Years of the Corresponding Weeks.*

Weeks.	1896. Deaths.	1896. Corrected Mean (10 Years).	1897. Deaths.	1897. Corrected Mean (10 Years).	1898. Deaths.	1898. Corrected Mean (10 years).	Weeks.	1896. Deaths.	1896. Corrected Mean (10 Years).	1897. Deaths.	1897. Corrected Mean (10 Years).
Jan. 1 ...	66	35.8	71	40.4	50	46.9	July 28 ...	47	33.4	36	36.7
,, 2 ...	48	32.2	52	34.8	44	38.4	,, 29 ...	55	31.2	42	35.8
,, 3 ...	59	28.6	63	32.6	33	37.9	,, 30 ...	50	36.6	41	40.2
,, 4 ...	51	31.9	53	35.8	36	39.0	Aug. 31 ...	43	38.0	42	41.5
Feb. 5 ...	61	30.1	46	40.9	42	44.1	,, 32 ...	54	36.7	38	40.7
,, 6 ...	63	33.9	37	38.5	45	40.6	,, 33 ...	59	35.2	29	39.6
,, 7 ...	45	32.6	40	35.3	33	37.9	,, 34 ...	59	32.2	28	36.0
,, 8 ...	48	31.9	62	34.7	46	39.8	Sept. 35 ...	32	31.6	35	33.7
Mar. 9 ...	48	31.2	43	34.2	38	36.7	,, 36 ...	49	30.3	25	34.4
,, 10 ...	46	29.2	53	31.5	33	35.7	,, 37 ...	48	37.3	35	40.8
,, 11 ...	45	33.1	37	36.3	36	38.8	,, 38 ...	49	40.9	45	44.4
,, 12 ...	52	29.3	43	32.8	53	36.0	,, 39 ...	61	47.5	49	51.7
,, 13 ...	51	26.2	41	30.6	45	33.5	Oct. 40 ...	69	44.8	53	49.0
Apl. 14 ...	45	29.1	23	32.2	29	—	,, 41 ...	52	42.9	45	46.3
,, 15 ...	45	31.0	30	33.8	34	—	,, 42 ...	66	48.0	55	52.1
,, 16 ...	42	27.5	40	30.2	31	—	,, 43 ...	57	44.8	65	48.2
,, 17 ...	41	30.2	40	32.3	39	—	Nov. 44 ...	64	43.6	59	48.2
May 18 ...	36	29.4	26	32.2	27	—	,, 45 ...	53	48.1	46	51.0
,, 19 ...	41	31.1	42	33.4	20	—	,, 46 ...	60	44.0	37	47.5
,, 20 ...	43	32.3	33	35.8	31	—	,, 47 ...	59	46.6	63	50.2
,, 21 ...	56	29.9	36	33.6	27	—	Dec. 48 ...	48	43.5	52	47.1
June 22 ...	40	30.3	33	33.0	—	—	,, 49 ...	60	49.6	58	54.4
,, 23 ...	52	27.4	39	31.6	—	—	,, 50 ...	52	47.3	63	50.9
,, 24 ...	49	32.9	29	36.3	—	—	,, 51 ...	58	40.1	56	44.3
,, 25 ...	40	33.0	24	35.7	—	—	,, 52 ...	38	41.6	53	44.5
,, 26 ...	37	31.8	32	34.6	—	—	,, 53 ...	49	41.6		
July 27 ...	43	33.1	43	36.1	—	—					

The same facts are shown in graphic form by the diagrams (exhibited), in one set of which is represented the actual number of deaths returned week by week, while in another the conspicuous inequalities of the curve are removed by the use of Mr. Bloxam's method.

2. SEASONAL RELATIONS OF DIPHTHERIA.

There is nothing exceptional about the seasonal prevalence of diphtheria in either of the years now chiefly in question. The usual autumnal rise was better marked in 1897 than in the preceding year, and the curve maintained its elevation for a longer period. The gradual rise that took place throughout the spring and summer of 1895 was an unusual feature that has not been repeated.

3. DIPHTHERIA AND SCHOOL ATTENDANCE.

Connected with the subject of personal prevalence comes a question of great practical importance: that of the influence on the spread of diphtheria of infection contracted at school. It is hardly necessary to point out this is a matter on which there still exists much difference of opinion. For recent discussions of the point I would refer to Dr. Newsholme's work just mentioned, and especially to Mr. Shirley Murphy's *Annual Report for 1896 of the Medical Officer of Health of the Administrative County of London*, p. 36, with Appendices I, II. and III. I have before stated my conviction that Mr. Shirley Murphy's views are fully justified by the available evidence, and I would here draw attention to the fact that in both of the years 1896-97 now under review the drop in the number of fatal cases corresponding with the period of summer holidays is again perfectly apparent even in the curve for "All Ages." As some of my readers may be aware, I am inclined to think that the Christmas holidays can also be shown to have their influence on the curve of fatal cases, though this, as might be expected, is of a less pronounced character. No doubt in any given year the operation of this school-attendance factor tends to be obscured by other circumstances; but when several years are taken together, the other influences are found to counteract each other, and the holiday fall with its succeeding rise comes more clearly into view. An examination of the successive ten-year averages will show that as the general prevalence of the disease is increased or maintained, the "holiday drop" exhibited by the ten years' mean becomes more and more distinct. The lowest point reached by these special and temporary depressions in the course of the regular curve is most often to be found (as shown by the ten years' mean) in the third and thirty-fifth weeks of the year respectively. Thus in the eight years from 1891 to 1898, the bottom of the first or January depression was reached four times in the third week, twice in the fourth; while on two more occasions it was deferred until the sixth. In the seven years from 1891 to 1897 the second or August depression reached its lowest point four times in the thirty-fifth week, twice in the thirty-sixth, and once in the thirty-fourth. Looking at the facts as a whole, I do not see any way of escaping the inference that there is a factor at work, distinct from ordinary seasonal conditions, which is sufficiently powerful to induce a fairly regular disturbance of the course of fatal diphtheria at two definite times of the year, these times corresponding with the usual holiday periods of schools. If this conclusion should appear to be well grounded, those responsible for action in the matter will doubtless not be content with a mere abstract acquiescence in its probable truth.

4. DIPHTHERIA AND "CROUP."

It is now, I think, admitted on all hands that in former years many cases of fatal diphtheria have appeared in the Registrar-General's returns under the heading of "croup."

TABLE II.—*London, 1896-98: Weekly Deaths from "Croup," with Corrected Means for Ten Years of the Corresponding Weeks.*

Weeks.	1896. Deaths.	1896. Corrected Mean (10 Years).	1897. Deaths.	1897. Corrected Mean (10 Years).	1898. Deaths.	1898. Corrected Mean (10 Years).	Weeks.	1896. Deaths.	1896. Corrected Mean (10 Years).	1897. Deaths.	1897. Corrected Mean (10 Years).
Jan. 1 ...	3	10.8	1	10.1	1	8.9	July 28 ...	6	6.0	1	5.6
,, 2 ...	6	11.7	1	10.8	3	9.8	,, 29 ...	—	5.3	—	4.0
,, 3 ...	7	10.1	1	9.7	5	9.1	,, 30 ...	1	5.6	—	4.3
,, 4 ...	5	9.5	1	9.2	1	7.6	Aug. 31 ...	—	6.0	—	5.2
Feb. 5 ...	1	8.3	1	7.1	2	6.5	,, 32 ...	—	5.1	—	4.7
,, 6 ...	5	10.1	2	8.3	2	7.7	,, 33 ...	1	4.7	—	4.2
,, 7 ...	2	11.0	3	9.9	1	8.5	,, 34 ...	1	5.5	—	4.9
,, 8 ...	1	11.9	3	10.3	1	9.0	Sept. 35 ...	6	4.2	—	4.3
Mar. 9 ...	4	10.9	7	9.9	3	9.3	,, 36 ...	4	5.1	—	4.9
,, 10 ...	1	7.6		6.0	2	5.7	,, 37 ...	3	6.2	2	5.6
,, 11 ...	3	11.0	3	8.8	—	7.6	,, 38 ...	—	5.9	1	5.2
,, 12 ...	1	8.4	2	8.1	2	7.5	,, 39 ...	4	7.6	2	6.6
,, 13 ...	2	9.3	3	8.3	—	7.5	Oct. 40 ...	—	6.5	1	5.3
April 14 ...	4	8.8		8.1			,, 41 ...	4	7.2	—	6.6
,, 15 ...	7	8.7	2	7.6	—	—	,, 42 ...	7	11.3	—	10.0
,, 16 ...	3	6.0	2	6.0	—	—	,, 43 ...	5	8.7	2	7.0
,, 17 ...	1	7.3	1	6.7	—	—	Nov. 44 ...	3	9.1	1	8.3
May 18 ...	4	6.4	3	6.0	—	—	,, 45 ...	5	9.8	1	9.2
,, 19 ...	2	4.7	2	4.2	—	—	,, 46 ...	2	8.7	1	7.9
,, 20 ...	4	7.7	3	7.2	—	—	,, 47 ...	1	8.5	3	7.4
,, 21 ...	2	5.5	1	5.4	—	—	Dec. 48 ...	—	8.1	1	7.2
June 22 ...	2	4.3	—	4.1	—	—	,, 49 ...	6	9.6	3	9.1
,, 23 ...	1	5.2	—	4.3	—	—	,, 50 ...	2	9.6	1	8.4
,, 24 ...	2	5.8	2	4.9	—	—	,, 51 ...	5	9.2	1	9.1
,, 25 ...	1	4.3	1	3.6	—	—	,, 52 ...	2	9.9	2	8.4
,, 26 ...	2	4.7	—	3.5	—	—	,, 53 ...	1	9.9		
July 27 ...	1	5.5	2	5.4	—	—					

Nor is there much doubt that, although cases of true diphtheria are tending more and more to be referred to their proper category, the register of "croup" still contains cases that have escaped transference. The preceding table (Table II) —which contains data for "croup" corresponding to those of Table I for diphtheria—demonstrates for the period since 1895 now under discussion that the gradual shrinkage of the "croup" returns which began many years ago is still continuing, while the comparison given below of the annual number of deaths recorded under the two headings since 1893 shows that even the present reduced mortality from "croup" sufficiently reflects that from diphtheria to suggest the inclusion of a common element in both.

TABLE III.—*London*, 1893-97: *Annual Total of Deaths from Diphtheria and "Croup."*

Year.	Deaths.	
	Diphtheria.	"Croup."
1893	3,264	217
1894	2,674	166
1895	2,316	144
1896	2,684	147
1897	2,261	72

In 1896 I published a table showing that the decline in the mortality from "croup" had on the whole affected the winter period rather than the spring, which is what might be expected if Dr. Whitelegge's opinion is correct that the old winter and spring maxima of "croup" were due to different causes—the former more especially owing its existence to the inclusion of cases of true diphtheria. I am now able to present the table in a more complete form by the addition of the years 1896-97, and it will, I think, be seen that the new evidence points in the same direction as the old. Putting together the seven years from 1891 to 1897, and comparing them with the ten years from 1881 to 1890, we find that the average number of March deaths from "croup" has fallen from 70 to 24, while that of December deaths has declined from 80 to 21; that is to say, the March fatality has fallen 65 per cent., but the December fatality as much as 74 per cent. This is all in favour of Dr. Whitelegge's contention.

TABLE IV.—*London: Average Number of Deaths from "Croup" in March and December for the Periods* 1881-90 *and* 1891-97, *together with the Actual Number of Deaths during the same Months in each of the latter Seven Years.*

	1881-90*	1891	1892	1893	1894	1895	1896	1897	1891-97†
March ...	70.5	57	37	17	17	16	12	15	24.4
December...	80.5	36	27	29	17	16	16	8	21.3
Excess in March ...	—	21	10	—	0	0	—	7	3.1
Excess in December	10.0	—	—	12	0	0	4	—	—

* Mean of 10 years. † Mean of 7 years.

N.B.—The months here are not calendar months, but periods of 5 weeks corresponding to March and December respectively.

5. EFFECT OF THE ANTITOXIN TREATMENT.

It is a fact admitting of no dispute, that whatever the cause, the case-mortality of diphtheria in the metropolis has undergone a steady diminution since 1894, the year of the introduction of the serum treatment. In a paper to which I have already referred, read at the Carlisle meeting of the British Medical Association in 1896, I anticipated that by the end of that year the case-mortality for the twelve months would for the first time on record have sunk below 20 per cent. This expectation, based on the course events were then taking, was quite borne out by the result, the proportion of deaths to notifications for 1896 being, as will be seen by reference to Mr. Shirley Murphy's report, lately published, only 19.3 per cent. in 1896, as against 20.4 per cent. in 1895 and 23.6 per cent. in 1894. Since the date of the materials dealt with in that report the figures for 1897 have become available, and it is satisfactory to find that the diminution in case-mortality still continues, the percentage of cases to notifications for last year having sunk to the comparatively low figure of 17.7. The following table (Table V), the data for which are derived partly from Mr. Shirley Murphy's report, partly from the Registrar-General's weekly returns, and partly from the monthly list of notifications published in the columns of the *Lancet*, shows that this diminution in case-mortality has progressed in spite of fluctuations in the number of both cases and deaths.

TABLE V.—*London*, 1893-1897: *Annual Deaths from Diphtheria, with Notifications and Percentage Case-mortality.*

Year.	Deaths.	Notifications.	Case-mortality per cent.
1893	3,264	13,694	23.
1894	2,674	11,190	23.9
1895	2,316	11,229	20.6
1896	2,684	13,668	19.7
1897	2,261	12,807	17.7

N.B.—The figures in this table, being in some instances derived from returns which have not undergone their final revision, show some slight differences from those given in the text above. There is, however, no material discrepancy.

It may be added that the experience of 1898, so far as it has gone, makes it probable that a still further reduction in relative fatality may be looked for. If anyone doubts that this improvement in the case-mortality of diphtheria is due to the introduction of the serum treatment, I think he may fairly be called upon to say what other factor can have been at work since 1894 capable of producing the present result. The fact of the diminution in case-mortality cannot be disputed, and of this the more or less general adoption of the antitoxin treatment would seem to supply the most feasible interpretation.

The conclusions arrived at in the present paper may be briefly summarised as follows:

1. The amount of diphtheria present in London is still high, but is now diminishing after a temporary exacerbation in 1896.

2. The experience of the last two years has disclosed nothing exceptional with regard to the seasonal relations of diphtheria.

3. The interruption to the usual course of diphtheria mortality coincident with the two chief school holiday periods is again apparent in both 1896 and 1897. The new evidence, like the old, tends to show that school infection is an important, though not the sole factor, in the spread of diphtheria.

4. A considerable, but yearly diminishing, number of cases of true diphtheria are still returned as "croup."

5. A marked diminution in the case-mortality of diphtheria set in at the end of 1894, and has continued up to the present time. This diminution is coincident with the employment of the treatment by antitoxin serum.

In remarking on Dr. Dixey's paper Dr. F. J. ALLAN (Strand) pointed out that he had drawn attention in his annual report for 1896 to the point that the Christmas and Easter holidays afforded better evidence of school influence than did the longer holidays in the summer, when so many children were away at the seaside or in the country. Moreover, the summer holidays in the London schools did not all begin simultaneously, whereas those at Easter and Christmas did so.

REFERENCES.

[1] See BRITISH MEDICAL JOURNAL, August 31st, 1895, and August 22nd, 1896. [2] This objection has been well stated with reference to yearly averages by Dr. Newsholme in his valuable work lately published on *Epidemic Diphtheria* (London, 1898).

THE ETIOLOGY OF "RETURN CASES" OF SCARLET FEVER.

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Of all the diseases usually treated in isolation hospitals, in none is it so difficult to pronounce with certainty as to the condition of a patient with regard to his freedom from infection, or the reverse, as in the case of scarlet fever; and it is not surprising, therefore, that with this disease the discharge of patients from hospital is less rarely associated with the conveyance of infection to others, and the resulting so-called "return case" than with any other disease.

The importance of this subject from an administrative point of view was more forcibly impressed upon me than would otherwise have been the case in consequence of an action brought against the Corporation of Birmingham some three years ago by the parents of a child who was discharged from the Birmingham City Hospital shortly before my appointment as Medical Superintendent. This case—Keegan *v.* the Corporation of Birmingham—was, I believe, unique, and attracted a good deal of attention. Certainly the verdict came as a great surprise. The jury before whom the case was tried found that the infection of scarlet fever had been carried home by a child discharged from the City Hospital, with the result that another child had contracted the disease and died, and they awarded the plaintiff damages to the extent of £50, although adding a rider to their verdict acquitting the hospital officials from any negligence. I cannot myself believe that such a verdict would have been upheld. Did it really represent the law on the subject, the position of those responsible for the management of isolation hospitals would be a most unenviable one. It is certainly, however, most desirable in their interests that the precedent created by the above case should be overruled as soon as possible.

Amongst those writers—and they are not very numerous—who have approached this subject during the past few years, few, if any, have attempted to classify or analyse systematically cases in such a way as to give statistics which would form some reliable basis for comparison and deduction. This appeared to me to be desirable, and I have therefore been endeavouring for the past two and a half years to collect the material for my present paper.

The tables are based on an analysis of 4,810 cases of scarlet fever discharged from the Birmingham City Hospital during the above period. The exact condition of these patients at the time of their discharge, and other details, were recorded in a register specially kept for that purpose.

Definition of Terms.

Before going further it will, perhaps, be advisable for me to define exactly the meaning of the special terms I propose to use in connection with my subject.

I count as a "return case" any patient coming to the hospital with scarlet fever from a house to which a patient discharged from hospital has recently returned.[1] The latter, called by some writers the "original case," I shall speak of as the "infecting case." The period elapsing between the return home of the "infecting case" and the onset of the first symptoms in the "return case" is the "interval." The time from the onset of illness in the infecting case to the time it finally leaves hospital is the "period of isolation." Where, as sometimes happens, patients are not admitted until some little time after the onset of their illness, as in the case of patients admitted desquamating, it becomes important to distinguish this from merely "time in hospital," as spoken of by some writers. The time from the onset of the illness in the infecting case to the onset of illness in the return case, deducting four days for incubation period, is the "duration of infection."

It not infrequently happens that an infecting case is followed by more than one return case. If, however, there is an interval of several days between the occurrence of the latter, it is probable that only the first one is a true return case, the later ones being infected from the first. To prevent this element of confusion it is better for purposes of comparison in giving percentages to count the number of infecting cases rather than the number of return cases.

[1] The only exception to this is where it can be conclusively shown that the patient returning home could not have been the source of infection. This occasionally happens.

Proportion of Return Cases.

Of the 4,810 patients from whom my figures were drawn, in 158 cases the return home was followed at varying intervals of from a few days up to six weeks by a fresh outbreak of scarlet fever, resulting in the admission to hospital of 171 so-called return cases. This is a percentage of 3.4 infecting cases, or 3.7 return cases.

Considering the special pains that have been taken by us to reduce the number of our infecting cases to a minimum, these figures may not look so small as might have been expected when compared with the published results of some writers. The explanation of this, however, lies very largely in the arbitrary limitation which is set by some to the length of the "interval." Some writers have actually fixed this as low as seven days, refusing to count as return cases those coming to hospital after a longer interval than this. They take seven days as being the maximum incubation period of scarlet fever, and assume that a patient returning home still infectious will at once infect other members of the family or not at all, and that, therefore, cases occurring at a later period must be accounted for as accidental coincidences. Had I adopted such a short interval as this, my percentage would have been less than 2 per cent., or little more than half what it really is. A more usual period to adopt is three weeks, but even for this there is no scientific reason. The principle I have acted upon is to count all cases, and to do this I find it is necessary to extend the duration of the interval to six weeks. I have found that practically no cases occur later than this.

Another cause which I venture to think accounts for the apparent smallness of some figures that have been published is that unless searching and systematic inquiry is made in the case of every patient admitted to hospital, it is quite certain that many return cases will escape being recorded. As an example of this I would mention a report issued some time ago by the Metropolitan Asylums Board upon this subject of return cases. The conclusion there arrived at apparently was that they almost doubted the very existence of return cases, at least in their hospitals. I understand, however, that they are making further inquiries, and in due time, I presume, will issue another report. I shall be curious to see whether this confirms their previous conclusions.

In the following table (Table I) I have classified my 158 infecting cases according to the length of the interval:

Table I.—*Showing Length of "Interval."*

Weeks...	1	2	3	4	5	6.
Cases	62	44	28	14	9	11
Percentage	39.2	27.8	17.7	8.8	5.7	—

It will be observed that the cases are most numerous, as we should expect, during the first week, and decrease uniformly during the succeeding weeks until they have practically disappeared in the 6th week. This table shows conclusively I think the necessity of taking an interval to cover all the cases. Those occurring in the 4th and 5th weeks are undoubtedly as much connected with the return home of the infecting cases as those occurring earlier.

The explanation why return cases should not always occur directly upon the discharge of the infecting case with merely an interval corresponding to the incubation period is not difficult.

1. Domestic Isolation.

In many cases the parents make an attempt, more or less conscientiously, in compliance with the instructions received from the hospital, to keep the returned child apart from any other members of the family who might be likely to take it. After a few days or a week, or perhaps after the full fortnight enjoined, this precaution is relaxed, and if inquiry is directed to this point it will often be found that this accounts for many of the longer intervals. Sometimes, indeed, the returned patient is sent away for a time after leaving hospital to be followed by a return case immediately upon his return home.

2. Recrudescence of Infectivity.

There is no doubt that many cases which appear free from infection at the time they leave hospital really are so then, as far as their power of infecting others goes, but suffer from a sort of recrudescence at varying periods after their return and thereby again become infectious. This is frequently manifested by the recurrence, or even primary development of a nasal or ear discharge.

3. Slight Degree of Infectivity.

Some cases are probably so slightly infectious that they require to be brought into the closest possible contact, and that repeatedly, before the infection "takes," so to speak.

4. Varying Susceptibility of Individuals.

It is a well-known fact that patients admitted to a scarlet fever ward on an erroneous diagnosis may develop the disease at any period during their stay in hospital. They by no means always develop it during the first week. Probably this reason is the strongest of all.

"Period of Isolation" of the Infecting Cases.

This is a very important point, because the occurrence of a return case is often, rightly or wrongly, held to be an indication of premature discharge, and undoubtedly the period of isolation must exercise an important influence on their occurrence. The exact relationship between the duration of the period of isolation and the number of return cases is not, however, so clear. The average period of isolation of "all cases" discharged during the time over which my inquiry extends was 8.5 weeks, and, curiously enough, the average period of isolation of my infecting cases was 8.3, or very nearly exactly the same. Taking the figures as they stand, it would look as if the period of isolation had very little influence. In order, however, to see if this was really so, I have prepared Table II, in which I have grouped the infecting cases according to their periods of isolation, showing the percentage of the whole in each division, and giving also for comparison—which, of course, is the important thing—the percentage of "all cases" which were discharged after the same periods.

Table II.—*Showing "Period of Isolation" of "Infecting Cases" as compared with "All Cases."*

Period of isolation in weeks	Under 6	6-7	7-8	8-9	9-10	10-11	11-12	12.13	Over 13
No. of infecting cases in each period	5	31	30	39	27	7	5	5	4
Percentage of ditto.	3.2	20.5	19.6	25.5	17.5	4.5	3.2	3.2	2.6
Percentage of all cases	5.5	16.0	21.0	16.2	11.2	8.7	5.8	4.7	10.4

Average period of isolation of infecting cases, 8.3 weeks.
" " " all cases, 8.5 weeks.

I anticipated that an unduly large proportion of the infecting cases would be found to be patients who had been discharged after the minimum period of isolation, and that the average would have been equalised by a few cases that had been detained exceptionally long. As a matter of fact, however, the table shows that no such generalisation can be accepted, for whilst the proportion of infecting cases is about the same as that of "all cases" in the first three columns, it becomes distinctly greater in the 8 and 9 weeks' columns, and then very much smaller in the remaining columns, until in the last one, namely, over 13 weeks, the percentage is only 2.6 as against 10.4 of "all cases."

The explanation I would give is this: The patients discharged after the shorter periods of isolation, that is, under 8 weeks, are principally the simple uncomplicated cases, whereas the complicated cases more especially those complicated with otorrhœa or rhinorrhea—that is, the cases most calculated to carry infection, are always detained longer. With this discrimination we see that the period of isolation becomes a very important factor, and that after 12 weeks the risk of infection becomes exceedingly small. The safety induced by such prolonged isolation is probably greater than appears merely from the table, because the cases leaving hospital after 12 weeks include those chronic and incurable ones which have to be sent out at last in desperation. At the same time, whilst taking 12 or 13 weeks as a fairly safe maximum period of isolation, I believe that infection may be carried in rare cases after as long as 14 or even 16 weeks.

In Table III I have classed the infecting cases into two groups only, those under 9 weeks' isolation and those over.

Table III.—*Showing proportion of Infecting Cases and all Cases isolated under 9 weeks and over 9 weeks respectively.*

Period of isolation	Under 9 weeks.	Over 9 weeks.
Percentage of infecting cases	60.0	31.0
Percentage of all cases	59.0	41.0

This brings out the fact that the proportion of infecting cases after less than 9 weeks is unduly large, whilst, conversely, the proportion after over 9 weeks is unduly great. Taking this fact together with Table II, I conclude that, independently of a patient's apparent fitness for discharge, the risk of his carrying infection begins to fall after 9 weeks.

Age Distribution of "Infecting Cases."

In Table IV the infecting cases are grouped into age periods, and the figures are also given as percentages, with the corresponding percentages of "all cases" for comparison.

Table IV.—*Showing Age Distribution of Infecting Cases.*

Age Period in Years ..	0–5	5–10	10–15	15–20	20 and upwards.
Infecting Cases	27	54	20	8	2
Percentage of Cases ...	24.3	48.6	18.0	7.0	1.8
Percentage of all Cases	28.7	41.4	19.6	6.9	3.2

I had thought it possible that an undue proportion of infecting cases would have occurred at some particular age-period—for example, amongst children under 5. The age distribution, however, being almost exactly proportionate to that of "all cases," we can only conclude that age has no influence on the tendency to carry infection.

Sex.

Of my infecting cases 88 were females, and only 69 were males. This excess of females may possibly be accidental, but it is quite conceivable that a difference in the domestic habits and relationships of the two sexes may account for it. Thus a girl would probably be more kissed on her return home by other members of her family.

I have also found that infection is more frequently conveyed by one sex to the same sex than to the opposite sex. Thus 87 of the infecting cases were of the same sex as the return cases they gave rise to, and only 64 of the opposite sex. This, again, is no doubt due to domestic relationships, some attempt at grouping the sexes in their sleeping arrangements being made even in the most primitive households.

Seasons.

Boobbyer, of Nottingham, in a paper on the subject which he contributed to *Public Health* in June, 1896, stated his opinion that return cases of scarlet fever were more prevalent, that is that the percentage was greater during the autumn months of the year, and he attributed this to the accommodation in fever hospitals being generally strained at that season, so that there would be a tendency to reduce the period of isolation. My experience as yet has been of too short duration to enable me to speak as to this. In November and December, 1896, we did certainly have a very marked increase of return cases, but it was not repeated the following year. Nor was it due to any reduction in the period of isolation, the mean duration of the latter being equal to the average for other months.

Type of Return Cases.

It has been found by several writers that the type of the disease in return cases is somewhat more severe on an average, and therefore they are more fatal than when contracted in an ordinary manner. My experience corroborates this, for out of the 171 return cases 13 were fatal, or a case-

mortality of 7.6 per cent. as against 4.8 per cent. for "all cases" during the same periods. As time is an important factor in reducing the vitality of infection, it might have been expected that it would reduce virulence also. It must be remembered, however, that the patients which carry infection out of hospital are, so to speak, selected cases; for it is just because the infection in the infecting case is active and resistant that the infection is carried out.

TYPE OF INFECTING CASES.

It is not possible to consider the severity of infecting cases by the simple but accurate method of comparing their case-mortality with that of "all cases," for the obvious reason that it is necessarily only those patients who recover who can become infecting cases. I do not, however, think that the cases which carry infection are much more severe than the average, and certainly some cases are of the very mildest. I do, however, think that complications, more especially certain complications, are more common.

CONDITION OF INFECTING CASES ON DISCHARGE AND SUBSEQUENT HEALTH.

I will first briefly mention the routine method adopted at the Birmingham City Hospital before patients are allowed to return home. All cases are detained for a minimum period of six weeks, counting from the onset of their illness, not from the day they come to hospital. A special register is kept in each pavilion, in which is entered the name and number of the patient, the date he was taken ill, the period of isolation, the number of children at home (if any) who have not had the disease, and any special remarks. If the case has been previously examined, the condition then noted is also included. The patient is minutely examined in the best light available, and the bed chart consulted to ascertain the type and course of the attack, complications, etc. The patient's exact condition at the time of examination is then recorded, whether it is decided to "pass" him to go home or not. In the former case a printed notice is sent to the parents or friends asking them to bring the necessary clothing two days later. At the appointed time the patients going home are taken to the "bathing-out" pavilion, which is of the approved type, and consists of a double suite of rooms for males and females, each containing waiting-room, undressing room, bath room, dressing-room, and opening into a common "finishing" room. A special staff of nurses is told off on discharging days for the duty of "bathing-out" the patients, and the following special rules have to be observed:—

BATHING-OUT RULES.

1. The bathing-out to be commenced immediately upon receipt of the patient's clothes, and to be performed as quickly as possible compatible with thoroughness and care.
2. If insufficient clothing is brought, or if the nurse considers it unfit for wear, she must at once inform the Matron.
3. The patient's own clothes to be kept carefully separated from the infected ones worn in hospital.
4. Each patient to have a clean bath sheet.
5. The bathing-out nurse to wear clean apron and sleeves.
6. "Izal" to be added to the water until it becomes distinctly milky.
7. Carbolic soap to be used and the patient washed all over with it.
8. The head of each child to be rubbed with carbolic oil after the bath.
9. The hair of each adult must, after the usual washing, be dipped in 1 in 1,000 formalin; in the case of women this should be done and the hair dried before the bath is given.
10. The nose and ears to be syringed out, if this has not already been done in the ward, with 1 in 2,000 formalin.
11. No patient to be handed over to friends until the hair is quite dry.
12. Every patient to be seen by the medical officer on duty after bathing.
13. The nurse to at once report anything about a patient which she may discover and which is not noted in the Discharge Register.
14. Every patient to have a hot drink and something to eat before being handed over to the friends.

By order of the Medical Superintendent.

The final disinfecting bath having been given, the patients are again examined before being handed over to the friends. This second examination I prefer should not be done by myself, but by one of my colleagues, the condition already noted by me being checked in the register. I strongly believe in this dual examination. In the first place, it not very infrequently happens that in the interval since the patient was first examined some fresh development occurs which may render it desirable to detain the case for a longer period. It ensures that the process of bathing, drying, and dressing have been properly performed by the nurses. It leaves a record of the patient's exact condition at the actual time of leaving the hospital, and it gives an opportunity for the medical officer to interview the friends, who are in a waiting-room in the same block, and to give them any instructions or advice. Lastly, it is a check on the primary examination, and ensures that it will be carefully and minutely made.

On examining convalescent scarlet fever patients at the end of six or seven weeks various lesions or traces of the disease may be discovered—for example, desquamation, usually on the hands or feet, inflamed throats, enlarged glands in the neck, sores, cracks, excoriations, etc., albuminuria, otorrhœa, and rhinitis. Patients manifesting any of these conditions are usually detained for a longer period of isolation, and in the majority of cases it is possible to get them perfectly clear before sending them out. This is not, however, always feasible. Sometimes the lesions referred to are exceedingly unyielding and persistent; often the parents decline, not unnaturally, to have their children indefinitely detained, occasionally it is desirable for the patient's own sake that he should be sent out. In practice, then, a certain number of cases are sent home after varying intervals with one or other of these conditions present. It has been one of my chief objects in this inquiry to endeavour to ascertain in what degree, if at all, these different lesions are likely to be associated with the carrying out of infection, and I have prepared a table (No. 5) with this in view. It would obviously have been of little use merely to have tabulated the number of the different lesions noted at the time of discharge amongst the "infecting cases" only. It was essential for such figures to be of real value that we should also know in what proportion the same lesions existed amongst "all cases" discharged. This, fortunately, I have been able to obtain from our registers.

In preparing this table it was necessary to guard against certain possible errors. In the first place it not infrequently happens that when a patient is an only child, or is returning to a house where there are no susceptible individuals, he is allowed out with lesions still present sooner than would otherwise be the case. Obviously it is highly improbable, if not impossible, that such patients will give rise to return cases, and therefore they must be excluded. Secondly, I have already shown that the risk of a patient conveying infection after thirteen weeks' isolation is very small indeed, no matter what his condition may be, and therefore all cases discharged beyond that period must, in fairness, also be excluded.

TABLE V.—*Showing Condition on Discharge of "Infecting Cases" as compared with All Cases.*

Condition on Discharge.		Desquamation.*	Fauces Abnormal.	Adenitis.	Sores and Excoriations.	Skin Eruptions.	Albuminuria.	Otorrhœa.	Rhinitis.	Quite clear in every way.
Infecting Cases.	No.	11	5	4	5	5	2	8	36	92
	Per centage.	7.0	3.1	2.1	3.1	3.1	0.6	2.2	22.9	58.2
All Cases.†	No.	205	137	59	55	26	13	39	151	1815
	Per centage.	8.2	5.4	2.3	2.2	1.0	0.5	1.5	6.0	72.6

* Applies almost exclusively to late desquamation on the feet only.
† Based on records of 2,500 cases discharged, and not on the total 4,810 cases amongst which the "infecting cases" occurred.

Some explanation is also necessary as to the meaning attached to the headings of the different columns. "Desquamation" refers almost exclusively to desquamation on the feet only. As already pointed out, desquamation on the body generally, and on the hands, is nearly always completed within the minimum period of isolation, and in any case is seldom prolonged much beyond it. "Fauces Abnormal" includes

enlarged tonsils as well as congested mucous membrane. "Sores and excoriations" includes cracks, abrasions, and all raw surfaces other than those in or about the nostrils. "Adenitis" means hypertrophied cervical glands. "Skin eruptions" includes all forms of eruption liable to occur during convalescence. "Albuminuria" includes chiefly chronic nephritis. "Otorrhœa" means purulent discharge from the middle ear. "Rhinitis" I have used to include all cases, however slight, where there was any reason to suspect the nasal cavity, whether there was actual discharge from the nostrils or not. It frequently happens that after a rhinorrhœa has ceased, or even where there has been no visible purulent discharge, an unhealthy condition may still be detected at the nostrils. There may be redness or actual excoriation, or crusts may be found just inside them. Sometimes no discharge may be seen until the nose is syringed, when thick, dried-up, purulent discharge may be found in the return lotion. Frequently there is a thin, watery mucus oozing from one nostril, scarcely distinguishable from normal nasal secretion.

Rhinitis.

I have for some time believed in the special infecting power of any discharge from the nose following scarlet fever, but I was scarcely prepared for such a very striking confirmation of this as is given in the table I am now considering. It will be seen on contrasting the percentage of lesions in infecting cases with those of "all cases" that in almost all the columns, except that for rhinitis and otorrhœa, the percentages are fairly uniform, and in the columns for "desquamation," "adenitis," and "abnormal throat," we at least have evidence that the conditions there included have played little or no part in the present series of return cases, as their percentage occurrence amongst the infecting cases is even smaller than that amongst "all cases." On the other hand the very excessive proportion in which "rhinitis" occurs—nearly 4 to 1—proves undoubtedly that this lesion far more than any other tends to carry infection. I would emphasise however the fact already mentioned, that the term as I have used it includes the very slightest cases where there may be nothing more apparent on an external observation than a slight redness or a little moist oozing.

Desquamation.

I feel satisfied that desquamation confined to the feet, and occurring long after the process of desquamation on the body generally has been completed, is no source of danger. The epidermis on the feet has very special anatomical characteristics. This probably accounts for the fact that desquamation in this region not only may not begin until the process has been entirely completed elsewhere, and the cuticle take much longer in separating, but it is more liable than elsewhere on the body to recur a second or even a third time. Whether the desquamating cuticle of a scarlet fever patient is specifically infectious—that is, more than would be accounted for by its close contiguity to an infectious body, or in other words, whether it contains the germs of the disease in itself or only carries them as any fomites might do, is a debated question. At first sight the distinction I have indicated may not appear of much practical importance, but, nevertheless, it is so, because if the shed epithelium only obtains its infection as fomites, it can no longer be regarded as a criterion of infectivity as it used to be and probably still is by a majority of the profession. We all admit, of course, that a patient desquamating about the body or hands is almost certainly infectious, because we know that the stage of infectiousness usually lasts longer than the process of general desquamation, and therefore it is a good practical rule to regard a desquamating patient as still infectious. At the same time there are certain considerations which rather point, I think, against the scientific correctness of the old and accepted view:

1. The infection certainly persists in very many cases for weeks and even months after all trace of desquamation has disappeared. There is obviously then some source of infection independent of desquamation.
2. Although there is abundant evidence to prove that desquamating patients are infectious, there is not, as far as I am aware, any positive evidence to show that the desquamation is itself the special source of infection.
3. There is evidence, gradually accumulating from fever hospitals, that late desquamation, more especially secondary desquamation, is not a source of infection. My own figures point to this.
4. From the physical character of dry epithelial scales rendering them specially liable to be disseminated by currents of air, we should have expected the "striking distance" of scarlet fever to have been a long one, and a scarlet fever hospital to be a great centre of infection to its neighbourhood. As a matter of fact, however, the reverse is the case, though scales of epithelium must float away with every breeze to be deposited in the surrounding houses.

On the other hand we can scarcely say that it has yet been proved that the old and classic view is not correct, even though Klein has failed to find his special organism in the desquamating cuticle. Moreover the process is essentially a specific one, and it may reasonably be held that its very existence is an indication that the disease is still present. For myself I consider that the question has not yet been settled, and prefer to withhold my judgment.

Otorrhœa.

This complication differs in one respect from rhinitis in that it is more definite both in its onset and termination, at least as regards its external manifestations. Consequently it is much more easy to decide whether or not it is present in any given case. This is the reason why it has played but a small part in the causation of our return cases. Being firmly convinced of its highly infectious nature, I make a routine practice of detaining all cases for at least thirteen weeks' isolation. Beyond this period I believe the risk of its carrying infection is very slight. The longest duration of infection amongst my cases, counting from the onset of the illness in the infecting case to the onset of the return case, with a deduction of four days for incubation period, was just thirteen weeks. The next two were twelve weeks, and the remainder a shorter period. As a precaution, however, I usually supply the parents of all children returning home with otorrhœa, though the proportion not cured in hospital is very small indeed, with a syringe and other materials for continuing antiseptic treatment at home.

Subsequent Health.

I have already referred to the possibility of patients undergoing a recrudescence of infectivity. I think all will agree with me that this does undoubtedly occur. The following case is a good example:

W. D. (Reg. No. 83), aged 8, was discharged from hospital early in the present year after eight weeks' isolation. He had had a simple attack without complications, and was apparently in good health. He returned home and mixed with the other members of the family without bad effects. Three weeks later, however, his nose began to discharge, and a week later his sister, aged 10, began to sicken with the disease.

This case is by no means exceptional. I have made special inquiries in my last 60 infecting cases, with the result that I find that out of 33 of them who went home apparently quite well, two subsequently developed otorrhœa, and no fewer than than 10 suffered from a discharge from the nose (sufficiently marked to attract the mother's attention), in all cases, of course, prior to the occurrence of the return case.

Conclusion.

In conclusion, I would say that I think that attempts to explain away return cases, as is often done, as being due to other causes than an infectious condition of the patient, returning home are much to be deprecated. Other causes may perhaps operate very occasionally, but there can be no doubt that in the majority of cases the infection is really carried by the patient leaving hospital. Nor do I think that the infection is carried superficially as might be done by any person coming from an infectious atmosphere. The "bathing-out" precautions sufficiently provide against this, and the infection, if carried in this way, would almost certainly be conveyed at once, that is, in the first day or two, or not at all. We have, moreover, a sort of control experiment in the case of our nurses and wardmaids who, since they live in an infective atmosphere under nearly similar conditions, might be also expected to carry out infection in the same way, which practically we know they do not do.

We have no right to assume that the virus of scarlet fever has really left the system merely because we can no longer find any visible manifestation of it. In other infectious diseases—for example, syphilis, we know that the virus may persist, and be potent to spread infection for months and even years. In a disease in many ways analogous to some cases of scarlet fever, namely, nasal diphtheria, infectivity may persisi, as was conclusively shown by Mr. J. C. Heaven, of Bristol (in a valuable paper read before the Society of Medical

Officers of Health in March 1896), for as long as six months. In this disease, however, bacteriology comes to our aid, and it is in the direction of the latter science that we must look in the future for assistance in scarlet fever also. I think it very probable we shall find that it is really in the nasal cavity that the organism of scarlet fever most readily finds a lodgment in those cases where the infection is unduly prolonged. In the meantime it is to the condition of this cavity that we must pay most attention in examining patients with a view to pronouncing them free from infection.

Certain resolutions adopted at the conclusion of the business of the Section will be found on page 363 of the British Medical Journal of August 6th.

THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

Professor A. R. Simpson, M.D., President.

CLAMP AND LIGATURE IN VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE OF THE UTERUS.

By F. J. McCann, M.D., C.M.,

Physician to Outpatients, Samaritan Hospital, London.

My purpose in this short paper is to elicit opinion as to the relative merits of the clamp and ligature, or a combination of both in vaginal hysterectomy for malignant disease of the uterus. In my first cases I used the ligature alone, following the method which I first saw adopted by Professor Leopold of Dresden.

A larger experience of malignant cases convinced me that recurrence was best prevented by a free excision of the broad ligaments, and for this purpose clamps are undoubtedly more serviceable. Ligatures cannot be applied close to the pelvic walls, as there is great difficulty in tying the knot deep in the pelvic cavity. The ligature is most suitable as a means of temporarily arresting the hæmorrhage from the growth—where the cervix is involved—by securing the uterine arteries in the bases of the broad ligaments. The objection to the use of clamps for this purpose is that they occupy more space, and thereby hinder the further steps of the operation.

In operations for malignant disease of the body of the uterus, this preliminary ligature of the uterine arteries is most important. The great desideratum is to prevent the patient losing blood; for most of the unfortunate sufferers are already affected with anæmia. Doyen and others advocate traction on the uterus as a means of arresting hæmorrhage. In many cases where the disease is well marked the uterus cannot be pulled down, and, moreover, ineffectual attempts at traction are frequently the cause of considerable hæmorrhage. When the base of the broad ligament is secured on each side it may be divided between the ligature and the uterus, thus permitting the latter to be pulled downwards. A sufficient separation of the bladder anteriorly and the vaginal wall posteriorly for that purpose can be effected without the necessity of drawing down the uterus. Much blood is frequently lost where the growth is scraped away by the fingers or curette. It is much better to secure the uterine arteries before this is done.

I am firmly convinced that the less the malignant growth is scraped or cut the better for the patient. Such a procedure may favour dissemination. For this reason I am opposed to the method of splitting the anterior wall of the uterus, and still more to *morcellement*. If the uterus be small, splitting the anterior wall is unnecessary; if large, it can be easily removed by separation of one broad ligament previously ligatured from below upwards. The uterus can then be pulled downwards and outwards, and the remaining broad ligament clamped from above. The cut end of the other broad ligament can now be pulled outwards and a clamp put on outside the ligatures, which are then cut away. Cases where the uterus is much enlarged should be treated by abdominal total extirpation.

The following method of operation is the one which I find most satisfactory. After the preliminary cleansing and disinfection of the vagina and vulva, the cervix is fixed by a suitable instrument (tenaculum, or some of its modifications). As the anterior lip of the cervix is so frequently involved in the disease, the tenaculum is best applied to the posterior lip. Where the growth resembles the so-called cauliflower excrescence, it may be absolutely necessary to remove a portion of the disease in order to obtain a hold with the tenaculum.

I always make the posterior incision first (the posterior cervical lip being previously drawn forwards), because if the anterior incision is made first the hæmorrhage tends to obscure the view. It is also a good plan to prolong the incision into the lateral fornices. After slight separation of the bladder anteriorly, and especially laterally, in order to lift the ureters forwards, the posterior vaginal wall is separated. The ligatures should then be applied to the uterine arteries, in order to arrest the hæmorrhage from the growth. Before any great traction efforts are made on the uterus, the pouch of Douglas should be opened in order to investigate the presence or absence of cysts, fibroids, or tubal swellings which may complicate the operation. I have found this precaution very advantageous when operating on complicated cases. In one where a large cervical sarcoma was complicated with fibroid outgrowths into the blood ligaments, I found on examination with the finger in Douglas's pouch that, on the left side of the uterus the fibroid outgrowth was smaller, and accordingly the left broad ligament was ligatured and completely divided, thus permitting the uterus and right broad ligament to be pulled downwards. In this case traction on the uterus did not pull that organ downwards, on account of the size of the fibroid outgrowths. If cysts are found they should be punctured.

The bladder should now be completely separated, and the utero-vesical pouch of peritoneum opened by grasping the peritoneum with forceps and snipping with scissors. The opening may then be enlarged. The body of the uterus should now be grasped by a strong tenaculum as near the fundus as possible and pulled outwards. A long clamp can then be applied from above downwards to each broad ligament, including as much of the ligament as possible. If the ovaries are to be removed, the clamp should be applied external to each ovary. The uterus is cut away, and the vagina cleansed. Gauze is packed into the vagina between and around the forceps in long strips.

The gauze should be changed when the clamps are removed at the end of forty-eight hours. There is so much oozing of blood and serum after vaginal hysterectomy that it is too great a strain on the antiseptic properties of the gauze to leave it *in situ* longer than forty-eight hours. Moreover, the patient is rendered more comfortable when the gauze is changed.

I never employ douching after vaginal hysterectomy, as it is dangerous should the peritoneum not be completely shut off. Swabbing out the vagina daily with pledgets of wool steeped in corrosive sublimate is much more efficient. It has been stated that operation by means of the clamp is more rapid than by the use of the ligature. Much, however, depends on the skill of the operator and the nature of the case. In cases of early cancer of the cervix, where the uterus is small and freely movable, the operation can be easily done by the ligature alone in half an hour. It is doubtful if there is any great difference in rapidity when the two methods are employed by a skilled operator.

The great advantage of the clamp is that a larger amount of the broad ligament on each side can be removed. This cannot be done equally well by the ligature alone, and unless the broad ligaments are freely excised in cases of cancer of the cervix, I fail to see the advantage of total extirpation over supravaginal amputation. It is further stated that convalescence is delayed after the use of the clamp, and that there is more pain. From my own experience I have not found the convalescence delayed, nor have I found the large amount of sloughing after the operation which some authors describe. Much depends on the degree of care in the use of antiseptics before, during, and after the operation. I believe that gauze plugs left too long in the vagina may account for the increased sloughing.

As to the amount of pain after the operation, this varies considerably. Where violent traction has been employed,

more pain will be experienced, and here let me add that the shock of the operation is thereby much increased. Patients who suffer from cancer of the uterus do not, as a rule, stand prolonged traction on that organ. Perhaps there may be more pain after the use of the clamp, but from my own cases I have not observed any appreciable difference.

There is no one method of operating applicable to all cases of malignant disease of the uterus treated by vaginal hysterectomy. I believe, however, that a judicious combination of clamp and ligature will ultimately become the usual method adopted. I hope, however, to have the advantage of hearing the opinion of those who have had a large experience of the operation under consideration, in order that we may be able to settle on the method most advantageous to our patients.

A TABLE OF CASES OF INDUCTION OF PREMATURE LABOUR.

By John Moir, M.D., F.R.C.P.

Dr. Moir submitted the accompanying table, showing the result of his practice in the induction of premature labour in cases of malformed pelvis. He desired to point out the advantages of the practice, initiated by Professor Hamilton, of gradual dilatation of the os and cervix over the modern practice of forcible dilatation of these parts and accomplishing the whole process of delivery in a single day or less. He believed that the latter mode of practice was attended with great risk to the mother and danger of ulterior damage—such as prolapsus and its consequent evils—and little chance of having a living child, which was the chief end and object of the operation. The table showed that 29 women who went to the full time were pregnant 49 times, and that not one of these 49 children was or could have been born alive. Premature labour was induced as above indicated in these 29 women, and the result was the birth of 66 living and healthy children; 17 only were stillborn or lived only a very short time. But for the induction of premature labour not one of these 66 children would have been born alive, whereas, to Dr. Moir's knowledge, many of them became strong and healthy and were themselves parents of families. For the details of the practice Dr. Moir referred to his paper on this subject published in the *Transactions* of the Edinburgh Obstetrical Society, 1897-98.

Table of Thirty-one Cases of Malformed Pelvis in which Premature Labour was Induced.

Table I.

Labour at Full Time, or 9 Months.

Cases.		Children. Living.	Children. Dead.
2	Very severe.	6	...
		—	—
	Remaining Twenty-nine Cases.		
	Times.		
9	One—embryotomy	0	9
1	Two ,,	0	2
2	Three ,,	0	6
1	Four ,,	0	4
3	Five ,,	0	15
11	One—forceps	0	11
2	One—version	0	2
31		0	49

Table II.

Labour Induced after 7 Months.

Cases.		Children. Living.	Children. Dead.
2	Very easy (8th month)	4	0
		—	—
	Remaining Twenty-nine Cases.		
	Times.		
7	One ...	7	0
6	Two ...	8	4
9	Three ...	24*	1
4	Four ...	13	3
3	Five ...	7	8
1	Eight ...	7	1
31		66	17

* Twins in one case.

Maternal Mortality.

Accouchements 139
Deaths 2

Both deaths were from septic poisoning, one in her fifth, the other in her third premature confinement.

An exhibition of improved clothing for women and of women's hygiene will be opened in Berlin during the next two weeks. It is organised by the Berlin branch of the Society for the Improvement of Women's Clothing. It contains a special section for sick nurses and monthly nurses, which will contain in addition to clothes specimens of various objects of use in the sick room.

SECTION OF OPHTHALMOLOGY.

D. Argyll Robertson, M.D., LL.D., President.

THE USE OF HOLOCAINE IN OPHTHALMIC PRACTICE.

By James Hinshelwood, M.A., M.D., F.F.P.S.G.,
Surgeon to the Glasgow Eye Infirmary.

[Abstract.]

Of late several new drugs have been introduced into ophthalmic practice as substitutes for cocaine. Of these the most recently discovered, holocaine, has been the subject of considerable attention since its discovery by Täuber in the beginning of 1897. The first communication regarding it will be found in the *Centralblatt für praktische Augenheilkunde*, January, 1897, where Professor Hirschberg, of Berlin, gives a short note regarding his experiences with a new drug as a substitute for cocaine. This new drug had been given to him for trial by Dr. E. Täuber, *Privat-docent* of Chemistry in the Technical High School of Berlin. Professor Hirschberg remarks in his note that a few drops of 1 per cent. solution of this drug rendered the eye insensitive in a few seconds, so that foreign bodies could be removed from the cornea without pain.

This communication was rapidly followed by others, chiefly by German and French ophthalmic surgeons, who gave their experiences of the use of the new drug. All those who have recorded their experience with holocaine, while differing in matters of detail, are agreed that the chlorohydrate of holocaine can be substituted with advantage for the chlorohydrate of cocaine as a local anæsthetic in ophthalmic practice by reason of certain decided advantages which it possesses over cocaine. I have thought it might prove interesting to the members of this Section who have not yet tried this new anæsthetic to hear the experience of one who has used it in a considerable number of cases.

Holocaine is a derivative of para-phenetidin, from which also are derived phenacetin and lactophenin. It is a strong base, insoluble in cold water but readily soluble in alcohol and ether. The chlorohydrate of holocaine, which Täuber proposed as a local anæsthetic for the eye, takes the form of white needles, slightly soluble in cold water, but more readily soluble in warm. Its aqueous solution is neutral, and undergoes no change on prolonged boiling.

Before using it for operative purposes or in the diseased eye, I made a large number of observations on the effect of the instillation of a few drops of a 1 per cent. solution of holocaine into the normal eye. The following is a brief summary of the facts observed:

1. There is complete anæsthesia of cornea and conjunctiva produced in from 15 to 30 seconds after instillation.
2. The anæsthesia produced lasts about 10 minutes.
3. There is immediately after instillation a slight feeling of burning, which rapidly passes off.
4. There is produced shortly after instillation a slight hyperæmia of the bulbar and palpebral conjunctiva, which rapidly passes away.
5. There is no alteration in the size of the pupil.
6. There is no disturbance of accommodation.
7. There is no alteration in the tension of the eye.
8. The corneal epithelium is not changed in the slightest, but retains its normal appearance.

In short, to put it concisely, holocaine seems to have no other effect upon the eye than rendering it anæsthetic. Herein lies its advantage over cocaine, which causes a conjunctival anæmia by constriction of the vessels, dilates the pupil, and often causes a desiccation of the corneal epithelium. Another great advantage of holocaine as evidenced by these observations is the great rapidity of its action, producing complete anæsthesia in from 15 to 30 seconds.

My experiences of holocaine in ophthalmic practice may be divided into two groups.

I.—In Inflamed Eyes.

It was used in conjunctivitis, phlyctenular affections, corneitis, etc., to soothe the patient, to relieve pain and blepharo-spasm, and so admit of a more exact examination of the eye.

I have found holocaine particularly useful in hospital practice, where its rapidity of action leads to a very considerable saving of time. For examining inflamed eyes with photophobia and blepharospasm, a few drops of the 1 per cent. holocaine solution will enable one within a very few seconds to get a good view of the cornea. I have used it also very frequently for little manipulations such as the application of nitrate of silver or sulphate of copper to diseased lids, when you are able to make your applications with but little discomfort to the patient within a few seconds of the instillation of the drops. It has been claimed for holocaine by some observers that where the conjunctiva is inflamed and the vessels enlarged, its anæsthetic effect is more profound than that of cocaine. My experience does not harmonise with such observations. I made a number of observations, putting 1 per cent. holocaine in one eye and a 2 per cent. solution of cocaine in the other. I found that the anæsthetic effect of the cocaine in these inflamed eyes was quite as great as that of the holocaine, but that the cocaine was much slower in its action. I tested this also in several cases of hypopyon ulcer, where the anterior chamber had to be tapped several times in succession in the same patient by using holocaine and cocaine alternately. This I considered an excellent test for seeing if holocaine in cases of inflamed eyes had a superior anæsthetic effect to the cocaine. All the patients however agreed in saying that there was no appreciable difference in the amount of pain, whether the operation was performed with holocaine or cocaine. So far as my observations have gone in such cases, holocaine does not produce a more profound anæthesia, but only acts much more rapidly.

II.—IN OPERATIONS.

I have used holocaine in 154 cases of operative interference on the uninflamed eye.

	Cases
Removal of foreign bodies	108
,, chalazion	12
,, tumour of conjunctiva	1
Tenotomies	4
Muscular advancement	1
Pterygium	2
Iridectomies	9
Extractions	8
Needling operations	9
	154

In the removal of foreign bodies from the cornea, holocaine is an excellent anæsthetic, enabling one to remove the foreign body within 15 or 20 seconds after the instillation of the drops. Only three or four drops of the solution are necessary for complete anæsthesia. In all the conjunctival operations the holocaine proved an efficient anæsthetic. The anæsthesia, sufficient after 20 or 30 seconds to begin the operation, seemed to last longer than that of cocaine, so that the instillation was repeated only at rare intervals, and very little of the solution was used. In none of these operations was any holocaine injected under the conjunctiva, but after cutting through it, a few drops were let fall directly on the conjunctival opening.

In the operations in which the globe was opened, the holocaine acted well. In the iridectomies it has the very great advantage of not altering the size of the pupil, and this will be of very special value in operating on cases of glaucoma. In the extractions and needling operations the only special advantages of the holocaine was that it enabled us to operate sooner than would have been possible with cocaine. No toxic or any disagreeable effects whatever have been observed in any of these cases. Heinz has found by experiment on animals that holocaine is a poison producing convulsions and analogous to strychnine. He found its toxic action more intense than that of cocaine or eucaine on hypodermic injection of the drug. I have, therefore, refrained from using it hypodermically until we possess more definite knowledge as to the doses which can be employed with safety. No toxic effects have been noticed by any observers from the use of the 1 per cent. solution. The reason of this is doubtless because such a very small quantity of the drug is required to produce a complete anæsthesia of cornea and conjunctiva, and herein lies one of its advantages.

Holocaine is therefore a most valuable agent for the production of anæsthesia of the eye. Its peculiar value lies in the fact that apart from the anæsthesia, it seems to have no further effect on the eye whatever. It seems to act simply by paralysis of the sensory nerve endings, and has no other action on the eye, leaving the pupil accommodation and tension quite unaffected. The rapid action of the drug is also a decided advantage, and in dispensary practice where one is dealing with a large number of patients, leads to a considerable saving of time. According to Heinz a 1 per cent. solution of holocaine is powerfully antiseptic, as proved by experiments on the growth of bacteria, and therefore boiling the solution to sterilise it is not necessary. This is a further advantage that the solution is itself a powerful antiseptic.

DISCUSSION.

Mr. EDGAR BROWNE (Liverpool) said he had used holocaine for some time, and found it very satisfactory. It must be had from a first-class chemist, as it was very difficult to make up and did not keep long. The cornea never became flaccid under its use, as it did after cocaine. He had used it in all superficial operations, less in the deeper ones. He had not noticed that it penetrated more rapidly than cocaine, into a chalazion, for instance. It was not so good for the patients' own use as cocaine in painful ulceration of the cornea. It acted in 1 per cent. solution in about 15 seconds. In reply to Mr. NETTLESHIP, Mr. Edgar Browne said that he had not not used it in the form of an ointment.

Dr. ARGYLL ROBERTSON said he had tried a 2 per cent. solution which had been made up by Messrs. Duncan and Flockhart; it was a clear solution. He had found it infinitely inferior to cocaine as a local anæsthetic.

Dr. HINSHELWOOD, in his reply, laid great stress on the difficulty in getting even a 1 per cent. clear solution. It must be made up with fresh distilled water. He believed all cases of failure to be due to badly-prepared solutions. He had a solution made up fresh every week, and found it would not keep longer than a fortnight.

CASE OF POLYPOID GROWTH FROM A MEIBOMIAN CYST.

By J. FALLOWS, L.R.C.S.Edin.,
Extramural House-Surgeon, Royal Ear Hospital, Soho Square.

THE patient, a girl aged 19, presented a swollen appearance of the upper right eyelid. When the lid was everted a flat polypoid growth possessing a very narrow base springing apparently from the site of a Meibomian cyst, which had been opened surgically, was seen. This cyst was one of a series of five from which the patient had suffered within the space of three months. The series of cysts themselves had apparently slowly developed after a general severe attack of eczema for which she was treated by Dr. Alfred Eddowes two years ago. She was cured in five weeks and had no relapse or further trouble so far as the skin was concerned. It was suggested by Dr. Eddowes that the infection of the follicles and formation of the Meibomian cysts might be due to the extension of the same infective process that had given rise to the acute attack of seborrhœic eczema. From his own recent observations Mr. Fallows was disposed to think that there was a close connection between these cysts and eczema.

ON THE SURGICAL TREATMENT OF CATARACT.

By ERNEST F. NEVE, M.D., F.R.C.S.Edin.,
Kashmir.

MR. NEVE related the results of 730 operations for cataract. Of this number 677 were successful, 39 failed, and in 14 cases the patients left the hospital before the result was known. In the last 200 cases the percentage of failure had been reduced from 6 per cent. to 3½ per cent. Success in cataract operations was to be attributed to selection of cases and to antisepsis, but it was not right by the selection of only good cases to condemn many to hopeless blindness. The success of the operation was affected by previous disease; old iritis was very prejudicial. in such cases the proportion of successes did not exceed 50 per cent. In glaucoma, also, the results were poor. With regard to the method of operating he recommended that the incision should not be too peripheral, and found that both iridectomy and capsulotomy were advantageous. With regard to inflammatory sequelæ, he had met

with panophthalmitis in 5 cases, septic infiltration of the cornea in 3 cases, irido-cyclitis in 1, and glaucoma in 5. In 60 cases iritis occurred, ending in recovery in 41 cases, in occlusion in 13 cases, and in partial occlusion in 6 cases.

A CASE OF CAVERNOUS ANGIOMA OF ORBIT.

By C. H. Usher, M.B.,
Ophthalmic Surgeon, Royal Infirmary, Aberdeen, etc.

G. C., aged 40, a farmer, came to the Aberdeen Royal Infirmary on October 12th, 1897.

History.—For about eighteen months he had noticed his left eye gradually "getting bigger" (some time later he stated that someone had noticed this for five or six years). It had never been painful, only slight irritation and watering caused by the wind. The sight of his left eye had been getting gradually worse; a year ago he could read large print with it. The eye had never been injured. For many years he had been subject to headaches, usually frontal and on the left side the pain was often very severe, keeping him awake at night.

State on Admission.—Left eye, V = p.l., very great proptosis. The eyeball projects straight forwards, its movements are fairly free, they are limited mostly in an upward direction. The proptosis is not appreciably diminished on pressing the globe backwards, there is no tenderness, no pulsation, and no *bruit*. No growth can be felt in the orbit; cornea clear; pupils equal; left pupil acts sluggishly to light. Tension normal. Fundus imperfectly seen owing to vitreous opacities; optic disc is pale. Right eye appears normal, but V is only $\frac{6}{12}$, no hypermetropia, vision not improved by lenses. Reads 1 J. at 9 ins. Field full.

Description of Growth.—The growth was situated within the muscular cone and was removed subsequent to enucleation of the globe. It had a dark blue smooth surface, studded with small nodules, and had considerable elasticity.

A DEMONSTRATION OF A NEW AND ORIGINAL METHOD OF MAKING CASTS.

Given before the Surgical Section of the British Medical Association at Edinburgh, July, 1898,

By GEO. A. PETERS, M.B., F.R.C.S.Eng.,
Associate Professor of Surgery and Clinical Surgery, University of Toronto, Toronto, Canada.

It has long been desirable to have a better method of casting living objects, anatomical subjects, and pathological specimens than that which has hitherto been in vogue. Up to quite a recent period plaster of paris has been the material almost universally employed, and certainly many useful casts have been made by its use. Recently Cathcart and others have used gelatine, papier maché, wax, etc., and for certain subjects these substances fulfil many desirable conditions.

Some six or seven years ago I began to work with paraffin wax in a molten state, and after considerable experimenting and many failures I have elaborated the apparatus which I am about to describe, and with which I gave several demonstrations at the recent meeting of the British Medical Association at Edinburgh, and subsequently in Dr. Sims Woodhead's laboratory at Examination Hall, London.

Paraffin wax possesses many qualities desirable in a material for making moulds. It is a clean, inert, homogeneous, workable substance, capable of taking a finer impression than almost any other material, and contracting but little in passing from a hot liquid state to a firm solid mass. It "works" easily, and can be used over and over again with but little deterioration in quality. Hard wax, with a melting point of about 125° F., is the quality which I have found most useful. Moreover, it possesses another quality which I find is appreciated to its full extent by those only who have had experience in the older method of casting from plaster-of-paris moulds, namely, the mould can be separated from the cast with the greatest possible facility simply by immersing the whole mass—cast and mould—in warm water until the wax becomes soft and plastic. In fact, in very delicate subjects the whole of the wax may be melted away, though this is rarely necessary. In this way the laborious process of chiselling away the waste mould, with the attendant anxiety for the safety from injury of the contained cast, is entirely got rid of, and the mould comes away with almost as much ease as one would lift a layer of gauze from the surface of the body, and with quite as little damage to the underlying surface.

One disadvantage of this process is that the apparatus is somewhat expensive and cumbersome, the principal expense being in connection with the "electric motor" and air pump. The place of this may be taken for ordinary work by a pump worked by hand or foot power, and connected to an air cylinder properly fitted with valves. It is necessary, however, to furnish oneself with a pressure of some 10 or 12 lbs. to the square inch, and this in considerable volume.

Briefly it may be stated that the process consists in spraying melted paraffin over the whole surface, cooling it by spraying ice-cold water at the same time, strengthening the mould with plaster-of-paris, and removing it in as many sections as the nature of the subject calls for.

The Apparatus.

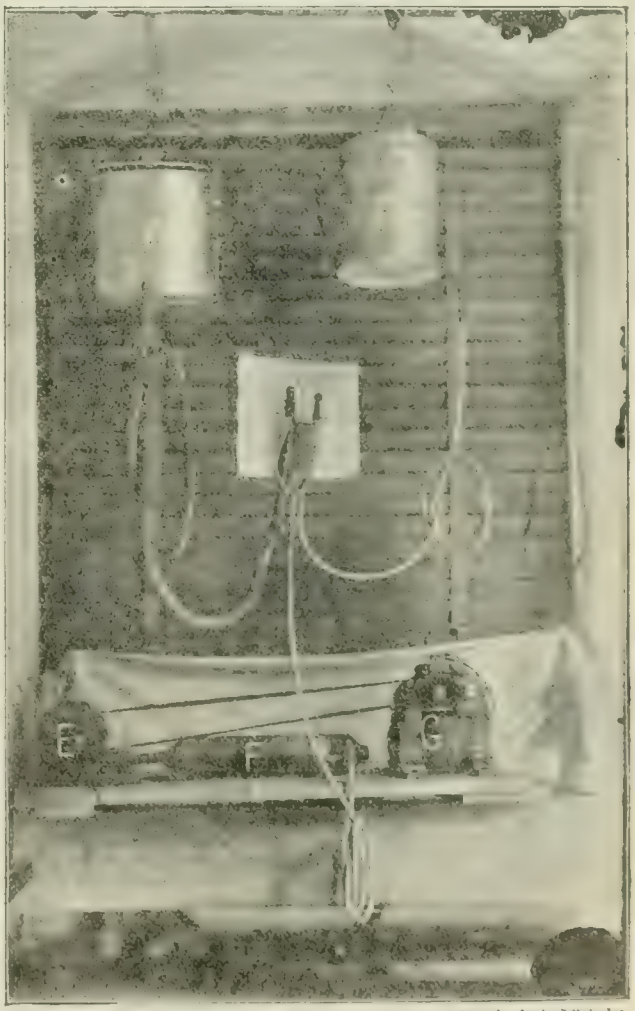


Fig. 1.—A. The "jacketed" paraffin container, with "jacketed" tube leading to C, the paraffin ejector. B. Tank containing ice-cold water, with single tube leading to D, the cold-water ejector. E. The "pressure blower," or air pump," which forces air into the air cylinder F, which is provided with four exit pipes guarded by stop-cocks. (The pressure may be regulated with great nicety by opening or closing a greater or lesser number of these). G The electric motor.

Having been melted in a water bath, the paraffin is placed in a tin tank (Fig. 1, A) capable of holding about a gallon. This tank is provided with an exit pipe a quarter of an inch in diameter, placed in the side of the tank about half an inch from the bottom, to which the rubber tube leading to the ejector (Fig. 2) is attached. The tank is then suspended within a larger tank or pail by means of three ears which arch across from the outside of the inner pail to the inside of the outer pail, where they are received into corresponding slots formed on the inner surface of the hot water tank by straps of tin soldered at each end. A metal pin or some sort of fastening then secures these ears in position, otherwise the inner pail will float up, as it is gradually emptied during the spraying process. The outer or larger pail contains the "jacket" of hot water, by which the paraffin is retained in a molten state, and the sizes of the pails should be so adjusted that the inner one is surrounded by about an inch and a half of hot water below and on all sides. The outer pail is also provided with an exit pipe about three-quarters of an inch in diameter, and placed opposite the pipe from the inner pail. To this pipe a rubber tube of corresponding size is attached, and passing over the paraffin tube furnishes a continuous "jacket" till it reaches the ejector (Fig. 2). This double pail is shown in Fig. 1 (A). The other tank (B) shown in this figure contains ice-cold water, and is not, of course, "jacketed." A single tube leads from it to the cold water ejector (D), to be described presently. The length of these tubes is purely a matter of convenience. Those I use are about $5\frac{1}{2}$ feet long. The tanks should be suspended over pulleys, at a height of about 4 feet above the object to be cast.

THE EJECTOR.

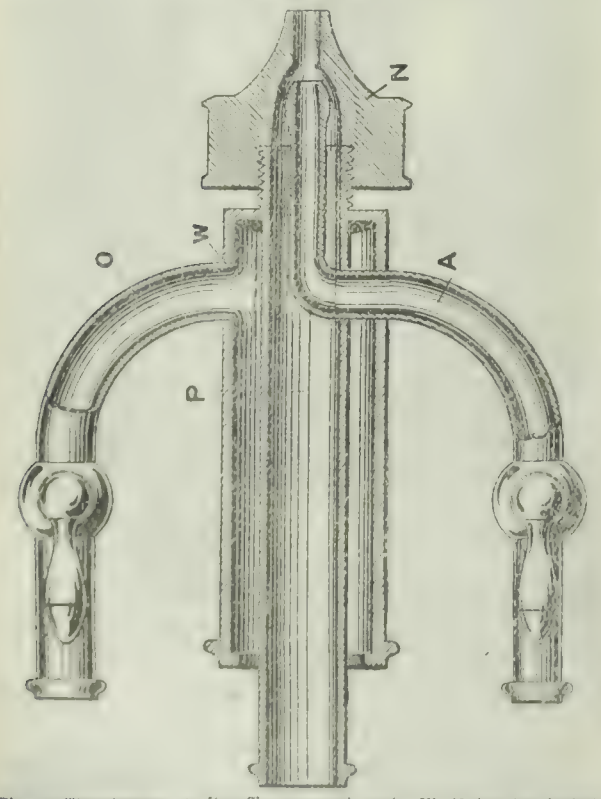


Fig. 2.—The ejector. P, Paraffin compartment. W, Hot-water jacket. A, Air channel. O, Overflow or waste tube for hot water. N, Adjustable nozzle.

The middle tube seen in Fig 1 is the conduit for air from the air cylinder (F) to the ejector. It branches by a Y-shaped tube so as to supply air for the spray both to the paraffin ejector (C) and the cold water ejector (D). Each tube is provided with a stop-cock, though in practice this is seldom used. The two tubes are represented in the figure as being attached to a piece of wood a short distance on the proximal side of the ejectors. This also is a matter of convenience merely, and the ejectors may be used separately and have separate air tubes if desired. The ejectors themselves must not be fastened to the wood, as it is requisite that they should be movable so as to able to converge towards one point as will be explained later.

The ejector is made of brass, and its construction will be readily understood from the drawing (Fig. 2). The paraffin compartment (P) projects beyond the hot-water compartment (W) in order that the tube from the paraffin tank may be readily attached. At the end of the hot-water compartment nearest the nozzle a small tube (O) is inserted in order to allow the hot water to escape as it flows down the jacket, the stop-cock in (O) being turned to stop the flow when the jacket gets hot enough to melt the wax which may have hardened in the paraffin tube. It is not necessary to keep the hot water flowing constantly. The air-tube (A) it will be observed passes to the centre of the paraffin compartment by a double bend, so that the channel of discharge is exactly opposite the opening in the nozzle. Note also that its extremity is made slightly bulbous in order that by screwing the adjustable nozzle (N, Fig. 2) backwards the flow of paraffin may be shut off or regulated with great nicety. The nozzle should be large enough to provide a good hold for the thumb and finger, and should have a deeply milled circumference, otherwise it is sometimes difficult to adjust it properly when the fingers are perhaps slightly covered with paraffin. The thread of the screw should be fine and close fitting in order to avoid leakage. The back of the inside of the nozzle is carefully bevelled so that when screwed home in a backward direction it fits accurately against the bulbous front end of the air-tube, thus completely stopping the flow of paraffin.

The ejector for the cold water (D, Fig. 1) is precisely similar, except that it is not provided with a "jacket," and hence is of simpler construction. No further description will therefore be necessary.

An ejector of convenient size would have, approximately, the following dimensions: Length of hot water jacket, 5 cm.; diameter of hot water jacket, 1.7 cm.; diameter of overflow pipe, 0.5 cm.; diameter of paraffin tube (inside), 0.6 cm.; diameter of air tube, 0.5 cm. This tube is contracted at its outlet, so that it has about half the sectional area of the outlet in the adjustable nozzle.

The size of the outlet in the nozzle will depend upon the size of the spray one wishes to produce. Experience shows that nothing is to be gained by increasing the size beyond a certain maximum, unless for very large surfaces. The diameter of the one I use is as nearly as possible 0.25 cm.

The tube for the paraffin is necessarily about 2 cm. longer than the water jacket, because room is required for the attachment of its corresponding rubber tube behind, and for the adjustable nozzle in front.

The form of air pump (Fig. 1, E) to be used is quite immaterial, provided it will supply a large volume of air at a good pressure—say, 10 or 12 lbs. to the square inch. The cylinder (Fig. 1, F) into which the air is pumped need not be large—about a litre—but should be provided with three or four outlet pipes furnished with stopcocks. These are not all in use at once, but they will be found useful in various ways, as will be described later.

The motor (Fig. 1, G) which I use to drive the pump is about one-third horse power, and requires a current of about 105 volts.

PREPARATION OF SURFACE.

A moist fresh surface, such as a heart, stomach, tumour, etc. (Fig. 4), requires no preparation whatever. The mould will also separate fairly well from the unprepared skin, but it is better to apply a minute quantity of some very fine oil or vaseline. I use a very fine spray of albolene—I believe this is also known as paroline—as this does not in the least obscure the minutiæ of the surface (See Fig. 5.)- and greatly facilitates the removal of the mould. Where the surface is covered with short fine hairs, the oiling requires to be more thorough, or, better still, the part should be shaved. In casting parts or surfaces thickly covered with hair, as the head, pubes, or the fur of an animal (see Fig. 4), the preparation is made in such a way as to secure a more or less accurate cast

of the hair itself. The part is prepared as follows: A sort of cream is made by mixing corn flour, alcohol, and glycerine together. The glycerine is added merely to hold together the particles of flour after the alcohol has evaporated. The proportion of about ʒj of glycerine to ℥j of alcohol is found to work very well. This cream is sprayed upon the hairy parts by means of the simplest form of spray apparatus—namely, that in which a jet of air is directed across the narrowed end of a tube which dips below the surface of the cream. As the spray reaches the surface the alcohol evaporates, leaving a surface coating of flour sufficiently firm to support the fine spray of paraffin. Thus the paraffin is prevented from running into the hair and sticking to it in such a way as to prevent easy removal.

Division of the Mould.

In the case of those objects in which it is necessary to remove the mould in two or more pieces, the division is effected by placing silk threads upon the surface in suitable positions, so that when the mould is completed they may be "cut out" in such a way as to divide it into sections. It is very seldom, indeed, that it is necessary to make more than two sections. The living head, for instance, is cast in two sections by placing a thread in front of the right ear, over the vertex, and behind the left ear. When it is "cut out" from this position, the mould is divided in such a way that the posterior section contains the mould of the right, and the anterior section of the left, ear. Accordingly, while removing, if the anterior section is swung towards the left, and the posterior towards the right, perfect casts of both ears may be obtained. The mould of the hand, foot, leg, or arm, if it is desired to show both surfaces, must of course be cut into two sections, but an object, such as the guinea-pig in Fig. 4, may be—as this was—cast in a single piece.

Spraying the Paraffin.



Fig. 3.—The mould in process of being formed. The two ejectors are held in the left hand, the right [illegible] free to adjust the nozzles, or for any other work that [illegible] required, for example, directing an air current or other spray [illegible] purposes. The foot is shown covered with a thin layer of the solidified paraffin.

Though the paraffin used melts at 125° F., it will be readily understood that it is judicious to have the water in the jacket a good deal hotter than that. Nothing is more aggravating than to find that while the mould is being made the temperature of the water in the jacket falls so low that the paraffin solidifies in its tube, or more likely just at the mouth of the ejector. Hence before starting the spray, care should be taken, not only that the water in the jacket is hot enough, but that it has been so, long enough to completely liquefy the paraffin to the very nozzle of the ejector. It will be found convenient to have a basin of water near the boiling point at hand into which the ejector can be dipped for a moment if it is seen that the wax is sinking nearly to its solidifying point. The hot water can at any time be renewed in the tube portion of the jacket by simply opening the waste water tap (o Fig. 2) for a moment, so that a fresh supply runs down from the tank above. When once the spraying is well under way the constant flow of the hot paraffin from the tank tends to keep up the temperature of the whole conduit; but if the surface to be cast is a large one it is well to renew the hot water in the jacket of the tube occasionally by turning the stopcock (o).

When it has been satisfactorily ascertained that the paraffin is ready to flow the motor is started and the adjustable nozzle (N) loosened from its contact with the bulbous end of the air tube (A) by turning it part of a revolution to the right. This allows the paraffin to flow, and as it passes through the same opening in the nozzle as the air, it is immediately thrown into a fine spray, which cools rapidly as it passes through the air. This spray—at a distance which can only be learned by experience, but which may be stated at from 2 to 4 inches—is directed against the surface of the object (Fig. 3), where it of course solidifies instantaneously, adapting itself as it does so to the minutest details of the surface. The spray should be moved rapidly over the surface so as to deposit a very thin layer at a time. This allows it time to harden, and is much more easily borne if the surface is a sensitive one. A stream of air from one of the extra stopcocks in the air cylinder (Fig. 1, F) may be directed upon the surface at the same time, considerably adding to the comfort of the patient. Recently in casting the head I have used a spray of ether for the same purpose, and found it to work admirably, though it is of course an additional trouble. If a very thin layer is put on at first the heat is not greater than will be well borne by a child of 5 or 6 years. After the surface is once covered even by a very thin layer, no discomfort whatever is experienced. By going over the surface in this way two or three times, an even continuous layer of solid paraffin, about $\frac{1}{16}$ in. thick, is soon formed (Fig. 3). The paraffin spray may now be stopped for a moment, while the whole surface is sprayed with the iced water. This is an advantage if the subject is liable to move at all, as it considerably strengthens the mould, and renders it less liable to be distorted by untimely movements on the part of the patient. It is not permissible, however, to use the water until the whole surface has been quite covered with a layer of paraffin. If it is not deemed necessary thus to cool the inner layer of the mould (and I very seldom find it so) as soon as the surface is seen to be covered, the cold water spray may be introduced and thrown at the same time and upon the same point as the paraffin. The convergence of the two sprays produces a most surprising effect. The instant a particle of paraffin touches a particle of cold water the former, of course, becomes solid. The result is that a sort of spongy tissue is formed with startling rapidity, in the cancellous spaces of which droplets of the cold water become imprisoned. The result is that not only does the cold water greatly facilitate the solidifying of the paraffin, but it enormously increases the speed with which the mould is thickened. This process is continued until the mould over its whole surface has attained a thickness of $\frac{3}{8}$-$\frac{1}{2}$ in., when the paraffin spray is stopped and the iced water continued for a few moments until the whole surface is quite firm.

The mould is then strengthened by being covered with a liberal coating of plaster-of-paris cream, mixed pretty thick. When this has reached the "curd cheese" stage of setting the threads are rapidly but very carefully cut out so as to divide the mould into the requisite number of sections. Experience has taught me that it is wise at this stage to mix another basin of plaster cream, which may be used to strengthen any parts of the mould that are manifestly weak



Fig. 4.—Cast of a guinea-pig, with intestines exposed and partially distended with air. Note the absence of evidence of any compression.

or to patch any portions which exhibit a tendency to crack. In order not to have to wait long for this new coating to set, potassium sulphate, about a drachm to the pint, may be dissolved in the water used to make the cream. This greatly hastens the setting of the plaster. As soon as the plaster has set quite firmly the moulds may be carefully removed with any precautions that the exigencies of the case may suggest.

Making the Cast.

After seeing that the surfaces of the mould are free from particles of plaster, etc., the different sections are fitted together, and the line of junction smeared with plaster cream. No preparation whatever of the surface of the mould, such as oiling, etc., is necessary. Thus no detail is blurred or rendered indistinct. Into the hollow mould thus formed the plaster cream for the cast is poured in the ordinary way.

Removing the Cast from the Mould.

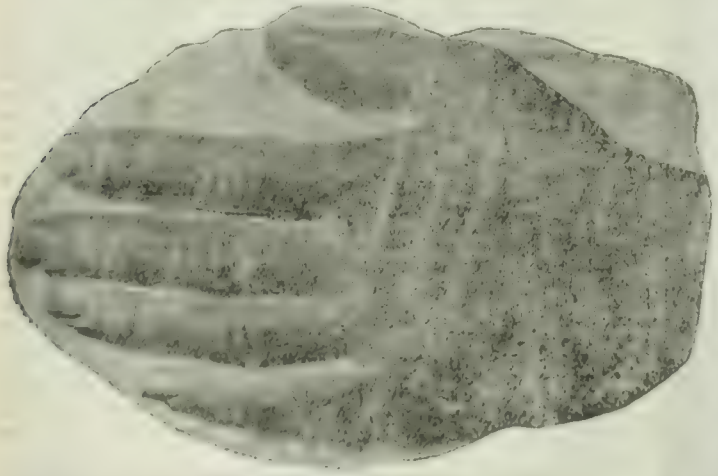


Fig. 5.—Cast of a hand.

Of all the advantages which this process may be considered to present over the older methods, it is my belief that the ease with which the mould can be separated from the cast is one of the most important. The method is as follows: As soon as the plaster in the cast has well set, the whole mass is put into a bath of hot water, say at 110° F. In the course of half an hour or an hour, the heat has penetrated through the outer plaster casing, and warmed the paraffin, so that it becomes soft and plastic. The mass is then removed from the water, and the outer plaster mould broken away in large masses by means of a chisel. Then it will be found that the whole of the paraffin mould can be removed with the greatest ease, simply by seizing it with the fingers and lifting it away from the surface, as one would lift a piece of wet gauze. Thus there is, with ordinary care, no danger whatever of injuring the surface of the cast, and the whole process of separating the mould from the cast, which by the old plaster method of casting is so laborious and fraught with so much danger to the cast, can be done with absolute safety, with perfect ease, and in a very few moments. Moreover, "undercutting" is of no importance whatever, because of the plasticity of the mould, and the possibility of melting it out if necessary without any injury to the cast.

It may be objected that the apparatus is cumbersome and costly, and that the process involves some practice and a good deal of trouble. In reply I would merely say—look at the results. Has it ever before been possible to cast a hand showing such minuteness of detail as depicted in Fig. 5? Has it hitherto been possible to cast such a subject as Fig. 4 at all? In these two subjects are seen the delicacy of the molten paraffin in adapting itself to minute variations of surface (Fig. 5), and (Fig. 4), the absolute absence of the compressing effects which are so noticeable when plaster or other heavy materials are used.

CASES OF DIPHTHERIA TREATED BY INJECTION OF ANTITOXIC SERUM IN UNIVERSITY COLLEGE HOSPITAL DURING 1896 AND 1897.

BY

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In the British Medical Journal of 1896, vol. i, p. 197, is a report by Drs. Martin and Smith of the cases of diphtheria treated in University College Hospital during the year 1895, the first antitoxic year, and a comparison of the results thus obtained with those of the four previous years in which antitoxin was not used. Although the belief in the antitoxic treatment is more widely and firmly held now than at the time of the last report, it seems desirable to continue these comparisons so as to include the last two years; not merely to add another proof of the efficacy of the treatment by antitoxin, but also to illustrate some still unsettled points connected with the proper dose and the best methods of using the serum.

During the years 1896 and 1897 there were 185 cases admitted into the diphtheria wards, but of these cases 7 are not available; 5 (which recovered) because no antitoxin was given as the cases were not considered to be true diphtheria; and 2 (1 fatal) because the antitoxin was only given by the mouth. There are thus left 178 cases treated by the subcutaneous injection of antitoxin to be compared with the cases treated without it. The severity of the cases admitted into University College Hospital, as, we believe, in the other general hospitals, is on the whole rather above the average, since owing to the limited number of beds all cases of diphtheria seen as out-patients cannot be admitted, and preference is given to severe cases, especially those with

laryngeal obstruction. Therefore these cases treated by antitoxic serum can only be fairly compared with the cases in the same hospital during previous years.

Bacteriological Diagnosis.

Out of 178 cases the diphtheria bacillus was found in pure growth or mixed with cocci in 149; in 18 cases the bacillus was not found on examination, and in 11 cases there is no record of the cultivation. A few of the cases in which the bacillus was not found were undoubtedly diphtheria, in fact in two of them paralysis developed; others, though presenting the clinical picture of the disease, failed to give the bacillus in repeated examination and possibly were not diphtheritic. Still, for the purpose of comparison with preceding years, they must be included, since such cases were of course not excluded formerly.

It has been suggested that the lessened mortality during the past few years has been due not so much to the serum treatment as to the introduction of the bacteriological diagnosis of diphtheria into practical work, so that mild cases which formerly would not have been diagnosed as diphtheria are now admitted as such chiefly on the bacteriological diagnosis, that their inclusion in the total number of cases would account for the lowered mortality. This factor can have had no effect in the reduction of our mortality, for almost all the cases were admitted into the hospital on clinical grounds alone, the bacteriological examination being made afterwards.

Treatment Employed.

In all these cases a subcutaneous injection of antitoxin was given within twelve or twenty-four hours after admission, the dose varying somewhat from time to time. In 1896 the dose was between 2,000 and 20,000 normal units, the average being about 7,200; one-third of the cases receiving 2,000 to 4,000 normal units, and two-thirds receiving 5,000 to 20,000. In 1897 the number of units given was between 4,000 and 12,000, the average being 7,000 to 8,000; one-seventh of the cases receiving 4,000, and six-sevenths between 6,000 and 12,000 normal units. In the beginning of 1896 twenty cases were injected with the serum of the Institute of Preventive Medicine, and two with Behring's serum; since then in every case we have used the serum kindly supplied by Dr. Sims Woodhead from the laboratories of the Royal Colleges of Physicians and Surgeons, usually of a strength of 4,000 normal units in 5 c.cm., and have found this concentrated serum very convenient. Local treatment was applied to the throat in almost all the cases. In the majority swabs of chloride of zinc (gr. x to ℥j) were employed; in others sprays of perchloride of mercury or douches of chlorine water were used. All cases had steam sprays of bicarbonate of soda at two-hourly intervals. When we consider the very frequent association of pus and septic micro-organisms with the diphtheria bacillus in the throat, it is clear that we must not rely on antitoxin alone, but must also use local antiseptics in order to obtain the best results. In a few of the cases in which these were not used, there were glandular abscesses in the neck, which were not seen when antiseptics were again employed. Nasal discharge was treated by douches of boracic lotion or chlorine water. For laryngeal obstruction tracheotomy was performed when necessary; in no case was intubation resorted to.

Effect on Mortality.

This is shown in Table I, in which the mortality of the three antitoxin years is compared with that of the four preceding ones. It will be seen that the death-rate both of the laryngeal and other cases has been greatly reduced, and that the total mortality of all cases has fallen from between 33 and 43 per cent. to 28, 17.7, or 17 per cent. for the three antitoxin years.

The three chief points to be discussed in considering the effects of the antitoxic treatment on the mortality are (1) the average age of the patients, the disease being notoriously more fatal the younger the patient; (2) the proportion of laryngeal cases; and (3) the day of disease on which the patients were admitted, for the earlier the disease is treated the lower the mortality. A great preponderance of older patients, a low proportion of laryngeal cases, or a series of cases admitted early in the disease might be factors tending to reduce the mortality for any given year, especially when dealing with a small number of cases. On looking at Table I, the ages of the patients and the number of laryngeal cases being given for this purpose, it will be seen that the first two of these factors do not come into operation. In the first place, the proportion

Table I.—*Mortality of All Cases.*

Year.	Age.	Laryngeal Cases. No. of Cases.	Laryngeal Cases. Deaths.	Laryngeal Cases. Percentage Mortality.	Pharyngeal, Nasal, etc. No. of Cases.	Pharyngeal, Nasal, etc. Deaths.	Pharyngeal, Nasal, etc. Percentage Mortality.	Total. No. of Cases.	Total. Deaths.	Total. Percentage Mortality.
1891	5 years and under	23	18	70.0	14	4	18.7	62	27	*43.5*
	Over 5 years	5	3		18	2				
1892	5 years and under	21	14	60.0	12	1	14.3	60	20	*33.3*
	Over 5 years	4	1		23	4				
1893	5 years and under	32	24	78.0	26	6	10.9	105	39	*37.0*
	Over 5 years	9	8		38	1				
1894	5 years and under	26	3	47.0	8	5	30.0	64	25	*39.0*
	Over 5 years	8	3		22	4				
1895 (1st antitoxin year.)	5 years and under	23	7	33.3	25	10	24.4	75	21	*28.0*
	Over 5 years	7	3		20	1				
1896	5 years and under	18	7	40.0	30	6	10.0	90	16	*17.7*
	Over 5 years	4	2		38	1				
1897	5 years and under	24	6	23.5	29	7	13.0	88	15	*17.0*
	Over 5 years	10	2		25	—				

of patients under 5 years to the total number of cases is in the pre-antitoxin years 63, 53, 56, and 53 per cent. respectively, while in the three antitoxin years it is 64, 65, and 63 per cent.; so that as far as the age of the patient is concerned, since there is a greater number of patients under 5 in the antitoxin years, we should expect a greater mortality in the antitoxin cases. The percentage of laryngeal cases to the total number of patients from 1891 to 1894 was 48, 41, 39, and 52 per cent., while in 1895 to 1897, the antitoxin years, it was 40, 24, and 38 per cent. In only one year—1896—was the proportion of laryngeal cases much below the average. The effect on the mortality of this smaller proportion of laryngeal cases in the antitoxin years would be about equalised by the larger proportion of cases under 5 years. In Table III it will be shown that there is no great difference in the date of commencement of treatment in the two series. In the pre-antitoxin cases 35 per cent. were admitted after the fourth day of the disease; while in the antitoxin series 31.6 per cent. were admitted after the fourth day; but this slightly earlier time of admission is quite insufficient to account for the great fall in the death-rate of the last three years. The examination of the two series of cases, therefore, reveals no factor capable of lessening the proportion of deaths except the effect of treatment; and as the only change in the treatment has been the use of antitoxic serum the lessened mortality may fairly be ascribed to it.

Tracheotomy Cases.

Besides considering the effect of antitoxin on the general mortality, it is worth while looking at its results in the tracheotomy cases alone, for the reason that the severity of these cases varies less from year to year. A case of diphtheria

Table II.—*Mortality of Tracheotomy and Intubation Cases.*

Year.	Tracheotomy. Cases.	Tracheotomy. Died.	Intubation. Cases.	Intubation. Died.	Total. Cases.	Total. Died.	Total. Mortality %	
1890	41	30	1	1	42	31	74	
1891	17	15	17	9	34	24	70	
1892	12	6	8	3	20	9	45	65.5
1893	39	30	—	—	39	30	77	
1894	34	17	—	—	34	17	50	
1895	25	5	—	—	25	5	20	
1896	18	7	—	—	18	7	39	26.4
1897	29	7	—	—	29	7	24	

requiring tracheotomy must always be a serious one; so that a marked lowering of the death-rate of these cases is more certainly than in the pharyngeal cases due to the result of treatment, and not to any variation in the intensity of disease for that year.

With the tracheotomy cases for the years 1890, 1891, and 1892, we must include the intubation cases, for in those years many cases in which the trachea would now be opened were intubated. In Table II it will be seen that the mortality of these cases has been reduced from 65.5 per cent. for the four pre-antitoxin years to 26.4 per cent. for the three antitoxin years; that is, the mortality has been reduced by 40 per cent. A noticeable and important point about these cases is that the operation was performed in almost every case either on admission or within twelve hours; and that no case which on admission was free from laryngeal symptoms developed them in hospital. This illustrates the power of the antitoxin to prevent spread of the membrane. The greater mortality of the tracheotomy cases both in 1896 and 1897 than in 1895, although the total mortality for the same years was much lower, is probably due to the large number of fatal cases which were admitted late in the disease during these two years; of the 14 fatal tracheotomies during 1896 and 1897 no fewer than 8 were admitted after the fourth day, and in 7 cases the membrane had extended into the bronchial tubes before treatment was commenced.

Cause of Death.

It is necessary to state the causes of death, and especially to examine closely for any indication of spread of membrane in fatal cases after the antitoxin injection has been given. Of the 31 fatal results during the last two years, 11 died between the third and eleventh days, with suppression of urine usually accompanied by severe vomiting, the typical toxic anuria of diphtheria. In all these cases the membrane had disappeared before death. It was at first asserted that the antitoxic treatment increased the mortality from this complication, yet larger experience has shown, as in the cases collected by the Committee of the Clinical Society,[1] that the serum treatment has neither increased nor diminished the number of deaths from this complication; but as the deaths from other causes have been much reduced the deaths from toxic anuria probably bear a greater proportion to the total number of fatal cases, and so have come into greater prominence.

Eight cases, all after tracheotomy, died with membrane in the bronchial tubes, usually associated with broncho-pneumonia. In 2 cases death occurred on the first day, in 5 on the second day, and in 1 on the third day after the injection of serum. Two of the patients were moribund on admission, and in none did tracheotomy give complete relief, which, taken with the fact that they all died within three days tends to show that the membrane was present in the tubes before the commencement of treatment, though in these cases it is impossible to say whether or not it afterwards spread. Five patients died of pneumonia without affection of the tubes, 1 moribund on admission within eight hours, 1 on the second day, 1 on the fifteenth, 1 on the thirty-fifth, and 1 on the forty-fourth. In the last 3 cases the children were free from membrane, and the pneumonia was probably an accidental complication. Two patients died from cardiac failure, 1 within eight hours of admission and 1 on the fourth day. Two patients died of gastro-enteritis, 1 on the third and 1 on the fifth day; and 1 died of pneumothorax following tracheotomy on the first day.

Nearly all the fatal cases, except those dying within two days of the commencement of treatment, were free from membrane at the time of death; and in none was there any evidence that the fatal result was due to extension of the membrane after the injection.

Mortality according to Day of Disease in which Treatment was Commenced.

On dividing the cases into two classes, as in Table III, one containing those admitted from the first to the fourth day of the disease, and the other those admitted after the fourth day, we find that the antitoxic treatment has reduced the mortality of the first class from 37 to 14 per cent.; while in those admitted after the fourth day the reduction was much slighter, from 43 to 35 per cent.; in fact, in the first antitoxin year, there was no reduction in this class, and it was only when larger doses of serum were used that any effect was produced in the mortality of cases admitted after the fourth day.

Table III.—*Mortality According to Day of Disease.*

	Admitted from First to Fourth Day of Disease.			Admitted after Fourth Day of Disease.		
	Cases.	Deaths.	Percentage Mortality.	Cases.	Deaths.	Percentage Mortality.
1891	39	19	48.7	21	8	38.1
1892	31	11	35.5	24	9	37.5
1893	50	14	28.0 } 37	34	17	50.0 } 43
1894	36	14	38.8	23	10	43.0
1895	46	8	17.3	28	13	46.4
1896	66	9	13.6 } 14	24	7	29.0 } 35
1897	60	7	11.7	28	8	28.6

This important fact that a marked lowering of the death-rate is only seen in cases treated during the first four days is one brought out by most collections of cases, and is well seen in the reports of the Metropolitan Asylums Board for 1895 and 1896. It has a distinct practical bearing, as it not only explains the importance of giving the antitoxin as soon as the case is seen, but it also indicates the necessity of giving a full dose at once, and not administering the serum in divided doses on successive days; for in this case some of the later doses in patients on whom the treatment is begun on the third and fourth days are not so effective in counteracting the disease as shown by the mortality table.

Dosage of Antitoxin.

In Table I, besides the general reduction of mortality in all the antitoxin years, it is shown that the total mortality of 1895, the first antitoxin year, was 28 per cent., which was much greater than that of 1896 and 1897, the second and third antitoxin years, in which it was 17.7 and 17 per cent. respectively. During 1895 the antitoxin used was obtained from various sources, its strength in normal units was not known, but it was certainly very weak, so weak that an insufficient dose (often under 1,000 normal units) was generally given. The only change in the treatment during the next two years was the administration of a more concentrated serum of known unit strength; and of this a much larger dose, averaging 7,200 units in 1896 and 7,800 units in 1897, was employed. In the later year, six-sevenths of the cases received over 6,000 normal units, and it is now the practice of the hospital to give each patient on admission a dose of not less than 6,000 normal units. One of the most important and instructive results shewn by our cases is this great saving of life which has been effected by the increase of the dose of serum. (See also Table III.)

Effect of Antitoxin on Temperature.

The symptom on which the effects of antitoxin can be best demonstrated by means of figures is the temperature, and Table IV shows that in the cases which recover the temperature falls sooner in those treated by antitoxin.

Table IV.—*Effect of Antitoxin on Temperature.*

Temperature Becoming Normal.	1892-93-94—Pre-antitoxin Years.		1896-97—Antitoxin Years.	
	Cases.	Percentage.	Cases.	Percentage
Before fourth day	68	48	129	83
Between fifth and eighth days ...	40	28	20	12
After eighth day	31	23	8	5

The table shows that, while only 48 per cent. of the pre-antitoxin cases attained a normal temperature before the fourth day, in as many as 83 per cent. of the antitoxin cases did the fever cease during that time, and that therefore there were a very much larger proportion of cases in the pre-antitoxic series in which the cessation of fever was deferred

till after the fifth and eighth days. From this table all cases have, of course, been excluded which ran an afebrile course throughout, and also those dying during the treatment. The figures, therefore, rather understate the result, since in the antitoxic series the mortality is much less, and therefore the number of recoveries of severe cases with more prolonged temperature is greater.

Effect of Antitoxin on Other Symptoms.

Paralysis was observed only in 23 of the 178 cases during the time they were in the hospital; but it occurred after leaving the hospital in several children who attended later as out-patients, and probably in others who were not seen again; so that it is impossible to say in what proportion of cases it was produced; but it is probable that in these cases, as in other recorded series, the frequency of paralysis has not been reduced by the antitoxin treatment.

As to the effect on the duration of membrane in the throat, albuminuria and other symptoms, it is impossible to speak definitely, as no exact particulars as to these facts can be obtained for the pre-antitoxin years, and so no comparisons can be instituted: but it is a matter of ordinary clinical observation that the duration of visible membrane is much shorter in the antitoxin cases; and also that it is extremely rare to observe any spread of the membrane either locally in the throat or to previously unaffected parts such as the nose and larynx, after twenty-four hours from the time of injecting the serum.

Bad Effects of Antitoxin.

In 49 of the 178 cases rashes were observed. The rash was urticarial in 19 cases, erythematous or scarlatiniform in 16, papular or morbilliform in 14. In 8 cases it appeared between the second and fifth day, in 25 between the sixth and tenth, and in 16 between the eleventh and fifteenth. In most cases the rash caused no disturbance or uneasiness except some itching; but in 13 cases there was a rise of temperature, and in four cases more or less severe joint pains with some synovial effusion, affecting only the larger joints, especially the hip, knee, and shoulder. In 3 of these cases with joint pains the temperature reached 104°. In 1 case an abscess formed at the seat of injection. This must have been due to some fault in the technique of the injection and not to the serum; as the serum then in use was at once examined bacteriologically with a negative result both at the laboratories of the Royal Colleges of Physicians and Surgeons and by us. No other bad symptom was seen, which could be ascribed to the antitoxin.

Conclusions.

1. The great reduction seen both in our total and tracheotomy mortality can be only due to the treatment with antitoxic serum, for the examination of the cases reveals no other factor capable of producing this result.

2. The full benefit of antitoxin was not obtained until fairly large doses (on an average between 7,000 and 8,000 normal units) were employed; the mortality then fell from 28 per cent. in the first antitoxin year to 17.7 and 17 per cent. in the next two years. Each case of diphtheria should have an initial dose of not less than 6,000 normal units.

3. Since antitoxin has but little effect on the mortality when given after the fourth day, it should be administered as soon as the patient is seen without waiting for the bacteriological diagnosis, and the full dose should be given immediately in one injection, not in divided doses on successive days.

4. Not only does antitoxin reduce the mortality, but it also distinctly lessens the severity of the disease in cases which recover. This is best shown by the effect on the duration of the fever, which in our series lasted only four days in a very much larger proportion of antitoxin than of pre-antitoxin cases.

5. The effect of antitoxin is chiefly seen in its specific action of the diphtheritic membrane, as shown by the cessation of its spread and more rapid clearance, and also by the greatly-lessened mortality of such cases in which the chief danger is from extension of membrane, the mortality of tracheotomy cases especially being reduced from 65.5 to 26.4 per cent., a greater reduction than seen in the other cases.

Reference.
1 British Medical Journal, 1895, vol. i., p. 1455.

FURTHER NOTE ON BILE AS AN ANTIDOTE TO VENOMS AND DISEASE-TOXINS.

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I have already shown that the bile of several animals possesses antidotal properties against serpents' venom and against the toxins of such diseases as diphtheria and tetanus, and that the bile of venomous, or more correctly of nocuous serpents is specially powerful as an antidote against the venom of serpents.[1] The experiments have been extended, with the result that further proof of these propositions has been obtained.

Taking, in the first place, the dry Indian cobra venom, whose minimum lethal dose for rabbits is slightly less than 0.00024 g. per kilo., in a series of *in vitro* experiments a definition has been obtained of the smallest quantity of the dry bile of several serpents, nocuous and innocuous, and of a number of higher animals, to render non-lethal 0.00025 g. per kilo. of this venom, when solutions of each were mixed together and left in contact for ten minutes. The quantity of each bile required per kilo. of animal was approximately:

Crotalus bile	0.0005 gramme	Indian python bile	0.005 gramme
African cobra bile	0.001 ,,	Grass snake bile	0.0065 ,,
Pseudechis bile	0.002 ,,	Rabbits' bile	0.0075 ,,
Puff adder bile	0.003 ,,	Human bile	0.015 ,,
Daboia bile	0.003 ,,	Ox bile	0.02 ,,
Indian cobra bile	0.004 ,,	Pig's bile	0.02 ,,

Corresponding results have been obtained with the venom of several other species of serpents.

The most important results are that the bile of nocuous or venomous serpents is the most powerful antidote to venom, and is closely followed in efficiency by the bile of innocuous serpents, while the bile of animals having no venom-producing glands—as man and the ox, pig, and rabbit—while definitely antidotal, is less so than the bile of innocuous serpents, and much less so than the bile of nocuous or venomous serpents. It is remarkable to find that the bile of one species of venomous serpent may actually be a more powerful antidote against the venom of another species than is the bile produced by this species, and that there is no direct correspondence between the toxic activity of the venom produced by a serpent and the antidotal power of the bile of that serpent.

Extending these experiments to the toxins of disease, it was found, in the case of a specimen of diphtheria toxin whose minimum lethal dose for rabbits was 0.05 c.cm. per kilo., that a dose of 0.1 c.cm. per kilo. could be rendered non-lethal by:

Daboia bile	0.025 g. per kilo.	Ox bile	0.1 g. per kilo.
Rabbits' bile	0.02 ,,	Human bile	0.15 ,,

When tetanus toxin, tested, however, in guinea-pigs, was similarly examined, in a dose of it exceeding the minimum lethal considerably more than in the experiments with serpents' bile and with diphtheria toxin, the results were that the smallest quantity of bile able to prevent death from occurring was with:

Daboia bile	0.005 g. per kilo.	Human bile	0.15 g. per kilo.
Rabbits' bile	0.005 ,,		

The biles tested against toxins have been comparatively few in number, because the deterioration which rapidly occurs in the strength of toxins prevents a large number of consecutive experiments from being made with the same specimen. With the exception of human bile, all the biles were taken from the gall bladder. The bile, therefore, of the venomous serpents examined has also more antidotal power against the toxins of disease than the bile of the majority of non-venomous animals. It is noteworthy that among the non-venomous animals, the rabbit should produce a bile definitely superior to the others in antidotal quality against not only toxins but also venoms.

As disease toxins and venoms are excreted from the blood into the intestinal canal, the antidotal bile which they must there be brought into contact with, constitutes a potent means of defence of the body by rendering the toxins and venoms inert before they can be absorbed from the intestines into the blood. The therapeutic importance of remedies that are able to increase the hepatic secretion is thus indicated. Although

not yet experimentally demonstrated, it may be inferred, almost as a corollary from the above, that poisons generated in the intestinal canal will also be rendered inert by bile. Traditional belief is clearly in favour of the view that certain forms of disordered health are produced by deterioration in the functions of the liver. Many of these disorders are now referred to auto-intoxication, and the advantage of cholagogue treatment thus finds an intelligible explanation.

While all the biles examined are antidotal against both toxins and venoms, it is shown that the bile produced by an animal in whose body venom is present is much more antidotal against venoms than against toxins. It is thus indicated that a special antidotal constituent, additional to the ordinary constituents, is present in the bile of an animal whose body contains a poison of the nature of the venoms or toxins. In all probability this constituent is antitoxin or antivenene, which has been eliminated from the blood into the bile, and which in an infective disease would thus reinforce the antidotal qualities common to the normal bile of all animals. This, no doubt, is the explanation of the favourable results which have been obtained by Koch and others in the treatment of rinderpest with the bile of animals which have been infected with the micro-organisms, and consequently with the toxin, of that disease.

As in the case of *in vitro* and other experiments with antivenene and venom, the experiments with bile afford strong evidence in favour of the view, which in opposition to prevailing views I had ventured several years ago to suggest, that the antidotal or curative effects of antivenene and of disease antitoxins are of a chemical or physical, and not of a biological, nature.

REFERENCE.

[1] *Proc. Roy. Soc. of Edinburgh*, xxi, 1897, 457-565; BRITISH MEDICAL JOURNAL, September 4th, 1897, p. 595.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

INTESTINAL OBSTRUCTION DUE TO INDURATION OF THE GREAT OMENTUM.

A MAN, aged 66, came under observation in June, 1895, suffering from ulceration of the left leg. The lower half in nearly the whole circumference was a discharging ulcer with three sinuses leading to a thickened tibia. In addition to this lesion he had a scar on the forehead very suggestive of a healed gumma, with exfoliation of the outer table of the frontal bone. A nasal intonation of the voice was present without apparent cause in the soft palate or nose. In addition there was a marked condition of knock-knee on the left side, with considerable enlargement of the internal condyle of the femur. The case was regarded as one of tertiary syphilis. During the succeeding two years he had occasional attacks of vomiting, which easily yielded to treatment, and the condition of his leg improved but never entirely healed up till just previous to his last illness, when the ulcer was replaced by a firm white scar with cessation of discharge from the sinuses. For some months previous to his death he was subject to constipation.

On December 17th, 1897, he commenced to vomit, and had pain in the epigastric region. His bowels were relieved by an enema, and under treatment the stomach became less irritable, and some amount of nourishment was subsequently retained with occasional vomiting. The vomit was not fæcal. Lying across the abdomen from right lower to left upper regions was an ill-defined fixed resistance, best felt on the left side just above the umbilicus, at which spot the fingers below and to the left could define an edge on a level with a transverse division of the rectus muscle giving the impression of a tumour, while at no other point could the limits of it be differentiated. There was no fluid in nor distension of the abdomen.

On December 25th, in spite of his illness, he obtained a small portion of currant cake which he retained. No change in condition occurred till ten days later when with renewed vomiting the currants were returned undigested, the vomit having a faintly fæcal odour. As there had been no relief from the bowels for seven days an enema was administered with practically no result. From this date everything taken by the mouth was immediately returned, and although fed by nutrient enemata his condition did not improve. On January 11th it was obvious that he had peritonitis, and death ensued on the following day.

A *post-mortem* examination revealed the presence of free non-fæcal fluid in the peritoneal cavity with a few flakes of lymph here and there. The large intestine was empty, the small containing a little fæcal matter. The ill-defined resistance proved to be the great omentum, very much indurated, surrounding the transverse colon. Contraction had occurred to such an extent that the lumen of the gut for a length of 6 inches or more would just admit a fine penholder. The stomach was closely attached to this, but there was no abnormality nor disease of it. The pylorus, pancreas, and liver appeared natural.

I am indebted to Dr. C. P. White, Pathologist to the General Hospital, Birmingham, for examining the specimen, and he reports, "Microscopical examination shows great increase of fibrous tissue which stains extremely badly, and here and there a few nodules of granulation tissue. The colon wall contains a large excess of fibrous tissue, and there is some hypertrophy of the muscular coat."

The absence of evidence of malignant disease after death, and the lesions present during life would suggest a syphilitic origin of the induration of the omentum.

Herne Bay. T. ARMSTRONG BOWES, M.D.Cantab.

TETANUS NEONATORUM.

ON July 2nd Mrs. H., wife of an engine driver, was delivered of a healthy female child after a short and easy labour. I was not present at the birth, but saw the infant shortly after delivery. On the fourth day I was sent for to examine the baby, who was reported as being "strongly convulsed." The aspect of the child was very striking; marked risus sardonicus, the lower jaw was protruded and tightly fixed so as to limit the introduction of even my little finger; the spasm of the body was opisthotonic, it extended to all the limbs, and was much aggravated by handling. I directed my attention to the umbilical wound, and found that the cord had separated, leaving an angry inflamed surface, but with no appearance of enlarged veins diverging as described by Gowers. The infant died from exhaustion twenty-four hours after my first visit in spite of the free use of sedatives such as chloral, belladonna, and bromide of potassium.

The most interesting point in the case was the fact that the umbilical stump had been dressed by the "wise woman" with a raisin, which I learnt is a usual vulgar application in this district. One would be tempted to attribute this untoward infection to the seemingly harmless dressing sanctioned by traditional custom, and an opinion that the germs were present in the dried fruit is strengthened when we recall the process used for drying grapes in Southern Italy, Sicily, and other vine-bearing countries. Tetanus is very frequent in Italy, the soil often laden with the bacilli; so the chain of evidence is complete enough to afford a warning.

We could hardly suggest the adoption of Baccelli's injections of carbolic acid for such tender patients, and the lean results of the serum cure do not warrant a general reliance in the antitoxin. One thing we can do, and that is see to the asepsis of the cord and its stump from the first day, and discountenance the fallacious teachings of legendary handywoman-craft.

A. DILLON CARBERY.

Maidstone.

A NOTE ON GLYCERINATED CALF LYMPH.

IN April of the present year I purchased glycerinated calf lymph in capillary tubes from four different sources, and tested them by a series of surface plate cultures with the following results:

Specimen 1.—From 12 to 20 colonies of staphylococcus, streptococcus, and bacilli (nature undetermined).

Specimen 2.—From 20 to 25 colonies of staphylococci, bacilli, and penicillium glaucum.

Specimen 3.—From 4 to 6 colonies of staphylococcus and yeast[1]

Specimen 4.—Four colonies of staphylococcus and bacilli

Whilst the samples examined varied very widely as regards the number of colonies, it is noteworthy that pyogenic organisms were found in all, and that one contained streptococci.

Dr. Copeman has shown that if the lymph be taken and stored with due precaution the elimination of extraneous organisms occurs with marked regularity at the end of the fourth week, so that their presence in the specimens examined is either an indication that the lymph had not been stored for a sufficient length of time or that it had not been collected with sufficient care.

With a view to testing the effect of prolonged storage a second supply of lymph was secured, the dates on which they were taken were ascertained, and plate cultures were made.

Specimen 1, stored 199 days, developed 1 colony of micrococcus tetragenes only.

Specimen 2, stored 184 days, 2 colonies of bacilli, 1 of staphylococci.

Specimen 3, stored 144 days, 2 colonies of staphylococcus, 1 of micrococcus tetragenes.

Specimen 4, stored 74 days, 1 colony of bacilli and 2 of penicilium.

Although in no case was the lymph sterile, yet the effect of prolonged storage was materially to reduce the number of extraneous micro-organisms present. The efficiency of the lymph was in no way impaired, a child vaccinated from lymph No. 3 developing perfect vesicles around which little inflammatory areola developed.

To insure the greater purity of their lymph and increased safety in vaccination, medical practitioners should either store the material themselves for a period of one or two months, or should insist, when purchasing tubes, that the date on which the lymph was taken be stated. In addition, the supply should from time to time be submitted to bacteriological examination in order to test the efficacy of the precautions taken.

J. O. Symes, M.D., D.P.H.Lond.,
Bacteriologist, Bristol Royal Infirmary.

EXOPHTHALMIC GOITRE WITH UNILATERAL EYE SYMPTOMS.

I was much interested in the account of the two cases described by Dr. James Hinshelwood in the British Medical Journal for June 25th, because a similar case was sent to me by Dr. Longbotham, of Middlesbrough, in November, 1897.

The patient was a young unmarried woman, and the symptoms were only of two or three weeks' duration. She had distinct exophthalmos of the right eye; Stellwag's and von Graefe's symptoms were present. The right lobe only of the thyroid gland was enlarged, and there was distinct tachycardia. The history seemed to indicate that mental anxiety may have been the cause, and the patient showed nervous excitability. I had no difficulty in giving a confident opinion that this was a case of exophthalmic goitre in the early stage.

Symptoms of exophthalmic goitre are believed to show a marked preference for the right side of the body, especially in the early stages of the disease. Fitzgerald, of Dublin, who has attempted to explain this preference, believes the tachycardia to be also a right-sided symptom, because the right vagus is probably more concerned with the inhibition of the heart than the left, and also because the heart "soon after its appearance in the embryo projects to the right side, where it comes into relationship with the corresponding vagus." These facts add to the interest of Dr. Hinshelwood's cases, as in both cases the eye symptoms were left-sided.

I have very recently seen the case I have quoted, and there is practically no change in the symptoms.

Stockton-on-Tees. Victor Miller.

Vaccination in Tasmania.—A deputation, representing the medical societies of Hobart and Launceston, recently had an interview with the President of the Board of Health to ask him to introduce a Bill to carry out vaccination on the lines recommended by the Royal Commission for Vaccination in this country. It was urged that children should be vaccinated before the age of six months, that no postponement should be for longer than three months, that calf lymph should be preferred, that patients should have the right to employ their own medical men, and that a permissive clause should be retained. It was understood that the Bill would be redrafted and again submitted to the medical societies.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL HANTS COUNTY HOSPITAL, WINCHESTER.

NOTES OF A CASE OF DIABETES INSIPIDUS TREATED WITH AMYL HYDRATE AND PARALDEHYDE.

(By Ernest F. Clowes, L.R.C.P., M.R.C.S., House-Physician.)

In the *Year Book of Treatment* for 1898 is described a case of diabetes insipidus, which Brackman treated with amyl hydrate. Having a case of this kind in the hospital at the time I read of the above case, it was decided to try the effect of the drug on our patient.

E. A., a general servant, aged 20, was admitted on November 5th, 1897, passing large quantities of urine. She gave the following history. About two months previous to admission she noticed that she was passing much more urine than usual, and that she always seemed thirsty. She says that the thirst had gradually got more marked, and she often drank as much as one or two gallons of water in addition to the ordinary fluids, such as tea, during the twenty-four hours. At first she could do her work as usual, but for three weeks previous to admission she had often felt "giddy and weak." She had always been very nervous, but could not remember having received any shock or fright at the time she first noticed the great increase in the amount of urine passed. There was no history of any diabetes in her family.

She was a well-nourished girl, and was apparently quite healthy. The skin was rough and dry, but not exceedingly so. She complained of her mouth being always very dry. During the first twenty-four hours after admission she passed 196 ounces of urine—clear, of a light straw colour, and faintly acid. The specific gravity was 1002, and it contained a very slight trace of albumen.

From November 5th, 1897, to February 17th, 1898, the following drugs were tried in succession: zinci valerianas, belladonna, codeina, antipyrine, digitalis, ergot, ammon. fort., and also faradism was applied to the spine. All failed to produce any change, and, indeed, the amount of urine passed increased up to amounts varying from 260 ounces to 210 ounces in the twenty-four hours.

On February 17th, 1898, it was decided to try the effect of amyl hydrate; this was started by administering half-drachm doses at night, and then gradually increasing the amount. For the first twenty-four hours after giving the drug the patient passed 244 ounces, but on February 18th this amount fell to 218 ounces. From this date the quantity of urine gradually decreased until March 7th. On this date she passed the least amount since she had been under treatment, namely, 106 ounces. By this time the amyl hydrate had been increased up to 3 drachms nightly. The specific gravity of the urine on this date was 1010, higher than it had ever been before, but it still contained a slight trace of albumen. From this date, March 9th, in spite of the increased doses of amyl hydrate, the quantity of urine passed steadily rose to 120 to 140 ounces a day.

After taking the amyl hydrate for a fortnight, she often asked for the drug in the day time as well as at night, and was very restless and irritable, and it was clear she had developed a great craving for it. To obviate this, the patient was put on paraldehyde in place of amyl hydrate, and the obnoxious taste of this drug quickly cured the craving for the former drug, and, moreover, seemed to have the same effect on the amount of urine passed as the amyl hydrate had.

The thirst very greatly diminished during the administration of the amyl hydrate, and the patient was in no way inconvenienced by it except that she sometimes complained of a slight burning sensation in the throat. During her stay in the hospital she gained 10lbs. in weight. Before her discharge on March 26th she was carefully examined and was found quite healthy.

For permission to publish these notes I am greatly indebted to the kindness of Dr. Fuller England, under whose care the above case was.

BARBADOS GENERAL HOSPITAL.

LUMBRICI IN THE PERITONEAL CAVITY.

(Under the care of Dr. F. B. Archer.)

[Reported by E. M. Skeete, M.B., C.M., Senior Resident Surgeon.]

E. McG., aged 2 years 4 months, was admitted on May 8th, 1898, about 5 P.M. The temperature on admission was 102° F. Its mother gave the following history: There was pain in the abdomen, and "quantities of worms" were present as they were passed "from the mouth and from the bowel." She had given three "worm powders" in the previous week, and worms had passed. The bowels had acted on the day before admission, but on the morning of May 8th the child was still uneasy, and a teaspoonful of castor oil was given without effect.

On admission santonin gr. ij was given with castor oil ℥ij. Later in the evening the temperature seemed to be rising, but there was nothing specially noticeable about the pulse. Phenacetin gr. j every four hours was ordered. The child appeared comfortable, but if the abdomen was compressed, pain was evident. Fomentations were applied, and the patient rested well during the night. Next morning the temperature was 101.4° F. The oil had not acted. An enema was ordered at 11 A.M., but gave no result. Vomiting took place immediately. The enema was repeated slowly without effect. Vomiting continued at intervals. Calomel, opium, and belladonna were administered, but vomiting still continued. About 4 P.M. the temperature began to rise, and the pulse to show signs of collapse. Stimulants were given in the hope that the calomel, opium, and belladonna would take effect. In a case with practically identical symptoms, about eight weeks before, when these drugs were used for a longer period apparently without effect, and the child had been placed on the table for abdominal section, the bowels acted at the last moment, and a perfect recovery resulted. At 6 P.M. Dr. Archer was telephoned for, but the child died before he got to the hospital. It had a copious motion directly after an injection of ether, about ten minutes before death.

At the *post-mortem* examination, on opening the abdomen, peritonitis was abundantly evident. In several places the intestines were matted together, and groups of lumbricoid worms aggregated, while others lay scattered and crawling about the cavity. Further examination showed a large vermiform appendix, in which, almost at its junction with the intestines, was a well-defined round opening about 1.5 cm. in diameter. Its edges were thickened and smooth. There was slight congestion at the other end of the appendix, but none at the opening, across which also a band of organised lymph exudation stretched, attached at a slight distance from the edges of the aperture.

REVIEWS.

Outlines of Practical Surgery. By Walter G. Spencer, M.B., M.S., F.R.C.S., Surgeon to the Westminster Hospital, London: Baillière, Tindall, and Cox. 1898. (Demy 8vo, pp. 694. 120 illustrations. 12s. 6d.)

The author of these "outlines" is evidently endowed with the rare and enviable faculty of being able to impart a large amount of instruction in a very compressed form. This volume, though smaller than most modern manuals on surgery and yet printed in unusually large type, deals with every branch of surgical work except the diseases of the eye. It would be difficult, we think, to find a fault of omission in any one subject if respect be paid to the limits laid down by the author. These limits, however, exclude recent scientific work which must be regarded as of considerable interest, and also, notwithstanding the statement made in the very brief preface, as of decidedly practical importance. It is difficult to conceive how a teacher so able and thoroughly practical as Mr. Spencer could have disregarded the claims of bacteriology to some place in a work intended to meet the needs of the modern student of surgery.

The readers of this work must acknowledge the special fitness of its author as a teacher of surgery. He is well acquainted with the work done by modern surgeons and is himself an able and thoroughly experienced surgeon. He aims chiefly at what is practical, and knows just what is wanted by students or junior practitioners when they are brought into close contact with cases of surgical injury or disease. The work however, it must be confessed, has its drawbacks. As a book of reference it seems to be too large for the junior practitioner and too small for the experienced surgeon. With regard to students for whom it is specially designed, its conciseness is likely to prove a disadvantage, as the study of surgery in order that it may be efficient must be based on and closely associated with a knowledge of scientific principles. We should be disposed to regard it as a profitable addition to any surgical library whether large or small, provided it be used in association with special treatises or as an adjunct to some more compendious work.

Although it may be open to question whether the use of a dark ground promotes a ready and clear appreciation of diagrams, it would be ungraceful not to acknowledge the excellence of the many original illustrations contained in this volume.

The Report of the Royal Commission on Vaccination: a Review of the Dissentients' Statement. By John C. McVail, M.D. London: P. S. King and Co. (Demy 8vo, pp. 128. 2s.)

This work, we are told in a preface by Professor Notter, the President of the Epidemiological Society, is a reprint of a paper read by Dr. McVail before the Society, and is published at the Society's instigation and expense. The Society would have been still more gracious perhaps if the preface stated that the work is a refutation, instead of purporting to be one; for it is an ample refutation, Dr. McVail being the one man in the British Isles most competent for the task of dragging out errors and insinuations on this subject, and exposing them to the light of day. When we have 100 years' experience of the results of vaccination to go on, the Dissentients' Report seems ridiculous in the way in which the early cases of vaccination are elaborately discussed—Woodville's and Pearson's and the rest of them. The Dissentients' Report is a perfect study in the art of throwing dust, and hardly required such a serious refutation as it here receives. Some of the criticisms remind us of the *Lettres Provinciales*, and no higher compliment can be paid than this. A resolution of the Epidemiological Society is appended, in which regret is expressed that the Royal Commission did not recommend revaccination.

Textbook of Diseases of the Kidneys and Genito-Urinary Organs. By Professor P. Fürbringer. Translated, with Annotations, by W. H. Gilbert, M.D. Vol. II. London: H. K. Lewis. 1898. (Demy 8vo, pp. 305. 10s. 6d.)

In 1895 we had occasion to review the first volume of this important work by the distinguished Berlin authority. It dealt with the more strictly medical diseases of the kidney, whereas the second volume treats of diseases mostly of greater surgical interest. Pyelitis, perinephritis, paranephritis, nephrolithiasis, tumours, and abnormalities of the kidney, diseases of the bladder, urethra, and genital organs are thus discussed here. Where the treatment is purely operative the actual surgical technique is mostly omitted. The very important account of pyelitis and perinephritis will be read with interest. The difficult subject of the differential diagnosis of pyelitis and cystitis, or the diagnosis of the combined lesions, are dealt with at length. Under renal calculus the question of the sound kidney receives considerable attention, but it may be open to doubt whether so elaborate a discussion of the solvent treatment of calculus is really necessary. The exact nature of renal neoplasms is a subject which is certainly not fully worked out yet. Here primary carcinoma is said to be rare, and sarcoma very rare, but it is questionable whether this quite represents the usual view. Grawitz's theory of the

origin of the so-called adenoma of the kidney from substance analogous to that of the suprarenal capsule is referred to. Floating kidney is discussed under renal abnormalities. Much attention is given under cystitis to the use of medicinal agents as well as to local treatment. Other diseases of the bladder are adequately described. The chapter on nocturnal enuresis is interesting, but the treatment is not particularly encouraging. Gonorrhœa in the male and female, and gonorrhœal rheumatism are treated fully, but stricture of the urethra only receives brief notice.

In the last part of the work diseases of the male genital organs (excluding the testes) are dealt with. The subjects of spermatorrhœa, impotence, and sterility, etc., as given here deserve special notice. This practical and at the same time learned work of Professor Fürbringer is certain to command a wide circulation, and Dr. Gilbert's translation brings it within reach of the English-speaking profession. For this Dr. Gilbert deserves the thanks of those interested in the subject, but a second edition should see the correction of not a few ambiguities of style and misuse of words.

Spectroscopie de l'Urine et des Pigments [Spectroscopy of the Urine and of Pigments]. Par A. Hénocque. Paris: Masson et Cie. (Cr. 8vo, pp. 204. Fr.3.)

This little book forms the third and concluding volume of a series of manuals of biological spectroscopy, which are very welcome as coming from an observer so skilled as M. Hénocque is in the application of the spectroscope to the study of animal pigments. In addition to chapters on the urinary and fæcal pigments, the book contains an instructive summary of the various classes of animal colouring matters, and accounts of certain individual pigments of special interest. The chapters on technical points contain valuable hints on the methods of examining liquids in layers of varying depth and other matters. The volume concludes with a bibliography of authors quoted, in which the names of observers in various lands are included with admirable impartiality.

The chapters devoted to the urinary pigments are disappointing. A critical summary of this complex subject embodying the outcome of the author's wide experience would have been very acceptable, but of M. Hénocque's own views we learn comparatively little, the account being mainly an exposition of the results arrived at by various observers, who often differ widely in the opinions which they hold.

The section on urobilin commences with the following sentence: "The yellow pigment or urobilin, which it would be preferable, following Gauthier, to designate urochrome, has formed the subject of a considerable number of investigations; it presents characteristic spectroscopic reactions." Such an employment of the word urochrome is calculated to lead to grave confusion, seeing that this name was long ago assigned to a pigment which differs widely from urobilin, and which shows no spectroscopic absorption band. Again the urospectrine of Saillet forms the subject of a separate section, although there can be no question of its identity with the hæmatoporphyrin of other observers.

We have come across several slips of the pen which have escaped correction, such as the statement (on p. 96) that turacin is the pigment of the blue feathers of the touracous, and, curiously enough, the title of the volume is incorrectly given on the outer cover.

Massage Gynécologique: Méthode Thure-Brandt. [Gynæcological Massage: Thure-Brandt's Method.] Par Gustave de Frumerie, Médecin-Gymnaste. Paris: G. Steinheil. 1897. (Demy 8vo, pp. 176, fr. 2.)

This work consists of three parts. The first seventy pages describe the manipulations known as "gynæcological massage." The next seventy pages describe the movements of the limbs and trunk collectively known as "Swedish gymnastics." The last thirty-two pages describe the diseases in which the author thinks these methods of treatment are indicated.

We think we express the feeling of the profession in England when we say that "gynæcological massage" is a thing repugnant to right-minded men, "pression glissante du vagin," for instance—well, the term speaks for itself—and that as a method of treatment it is justifiable only if it is certain that it, and nothing else, will cure certain diseases. We have nothing to say against the Swedish gymnastics. The rest of the book (not dealing with Swedish gymnastics) is nothing but an account of the ways in which the female genital organs may be rubbed and kneaded, and an enumeration of the diseases which the author thinks are benefited by such rubbing and kneading. There is no attempt at supplying or referring to any proof that the rubbing and kneading has had a share in causing the recovery of the patient. No account is taken of the natural tendency of some diseases towards recovery, of the dependence of some symptoms on the condition of the central nervous system, of the ways in which recovery is promoted by inspiring confidence, and suggesting that improvement is in progress.

It will be seen that the book will be useful only to those who are already convinced of the value of gynæcological massage. We are not anxious to see English medical men making prolonged manipulation of the genital organs of women a routine part of their treatment; and therefore we view without dissatisfaction the present want of appreciation of these methods of treatment.

Therapie der Hautkrankheiten. [The Therapeutics of Diseases of the Skin.] Von Dr. L. Leistikow. Mit einem Vorwort von Dr. P. G. Unna. Hamburg and Leipzig: Leopold Voss. 1897. (Demy 8vo, pp. 424. M. 6.)

Dr. Leistikow states in his preface that he has been for a number of years Dr. Unna's assistant in his clinique in Hamburg, and has often been asked to publish the method of treatment which he has had occasion to teach, and he believes that this book is the first comprehensive exposition of the special methods introduced by Dr. Unna in dermatological therapeutics. Dr. Leistikow has endeavoured to make his system of therapeutics harmonise with Dr. Unna's pathological views.

Although the methods of treatment which Dr. Unna has himself introduced (notably the very convenient applications to the skin manufactured by Beiersdorf in accordance with Dr. Unna's suggestions) are fully noticed, the methods recommended in recent dermatological treatises and memoirs receive an equal share of attention. The book is a comprehensive, although concise, index to the methods recommended in modern times in the treatment of diseases of the skin, and in this, it may be noted, lies its strength and its weakness. The immense amount of material which the author has contrived to put into 381 small pages renders it impossible for him to explain sufficiently the indications which should lead the practitioner to choose one method of treatment in preference to another. Many pages contain scarcely more than a list of drugs and prescriptions.

Dr. Unna contributes a short introduction to the work, in which he expresses the view that the chief difference between the modern and the older treatment of skin diseases lies in the fact that whilst formerly attention was chiefly directed to the remedy, modern methods pay more attention to the manner in which the application is made.

The work is divided into an *Allgemeiner Teil* and a *Spezialler Teil*, corresponding to the division made by English authors into so-called "Principles" and "Practice." The *Allgemeiner Teil*—say the principles of dermato-therapeutics—is divided into a discussion of local and general treatment. The local treatment includes the use of water, powder, paste, water-free varnishes, zinc-gelatine, fats, including ointment sticks *(Salbenstifte)*, muslin-spread ointments *(Salbenmulle)*, and glycerine. The "ointment sticks" are recommended as indispensable for the convenient treatment of diseases of the skin, being easy of application and suited for large surfaces. They are made from a mixture of wax and wool fat in the proportion of 34 to 36. The melted mixture is poured into glass tubes, warmed by being placed in warm water. When cold the finger-thick rods are shaken out, cut into pieces the length of a finger, and are ready for use. A variety of substances used in the treatment of skin diseases are mixed with the mass; for example, a zinc ointment stick is made by mixing oxide of zinc, 20; wax, 25; wool fat *(adipis lanæ)*, 25.

The section on General Treatment includes that of

diseases of the lungs, heart, blood vessels, stomach, intestine, liver, kidneys, and nervous system. Under *saftekrankheiten*—which we find difficult to translate, except under the terms of general blood or constitutional diseases—are included anæmia, chlorosis, diabetes, uric acid diathesis, gout, articular rheumatism, malaria, rickets, and scrofula. As skin diseases may complicate any of these morbid conditions, Dr. Leistikow considers it necessary to describe their treatment, a task which he has the courage to do in about a page devoted to each.

As the present interest of the work largely lies in its associations with Dr. Unna's system, and as he alludes in his preface to future editions, we would suggest to him and to the author whether it would not be better in the next edition to suppress this section on the treatment of general diseases and refer the reader to works on the practice of medicine and on therapeutics.

The work is of undoubted utility to a certain class of readers, but we wish we could have unreservedly commended it. We believe it will be found useful by specialists, and by practitioners who are very familiar with the diseases of the skin, and by medical men whose experience is sufficiently ripe to enable them to judge and select for themselves. For students and inexperienced practitioners we do not recommend it. The reader who seeks and who requires instruction in the treatment of diseases of the skin will get lost in the mass of material indiscriminately thrown together; the experienced man who consults it will often be reminded of therapeutic measures which may have escaped his memory, and those who are interested in the very useful preparations which have come from Hamburg will be glad to see the corresponding formulæ brought into convenient and available compass.

The Nervous System and its Diseases: A Practical Treatise on Neurology for the Use of Physicians and Students. By Charles K. Mills, M.D., Professor of Mental Diseases and of Medical Jurisprudence in the University of Pennsylvania, etc. Edinburgh and London: Young J. Pentland. 1898. (Roy 8vo, pp. 1056. 459 Illustrations. 25s.)

The author of this work believes that a "large textbook" on nervous diseases is needed by the English-speaking profession. He commences with a general sketch of the nervous system, its structure, physiology, and chemistry, and proceeds to give an account of the pathology, symptomatology, and treatment of nervous disease in general. The book then deals *seriatim* with the diseases of the brain itself, its membranes and vessels, the affections of the organs of special sense, and those of the cranial nerves. The author strongly advocates the use of abbreviations in nomenclature or "mononyms" in neurology; among others of "lenticula" for lenticular nucleus, "cinerea" for grey matter, and "myelon" for spinal cord. The subject of methods of investigation of nervous disease is somewhat meagrely treated, while electromedical apparatus is discussed at length, and a list of makers is given by whom physicians will be "well served." Under General Therapeutics eighteen pages are wholly or in part occupied by prescriptions, one merely consisting of sodium bromide and distilled water, another of strontium bromide and cinnamon water, and a third of sulphonal alone. There are also formulæ for lotions to be used in irrigation of the stomach in dyspepsia, and a list of drugs that may be obtained in a compressed form.

The subject of thrombosis of the intracranial sinuses is well treated. The author mainly follows the teaching of Macewen of Glasgow. There is a valuable account of cortical localisation and of the effects of lesions of different parts of the cerebrum and cerebellum.

Anæmia, hyperæmia, and "œdema" of the brain have more space allotted to them than they probably deserve. There is a good and detailed account of aphasia, in the scheme of which is included a "naming" or "concept" centre, which the author places in the left inferior temporo-sphenoidal convolution. The best part of the book is the last 340 pages, which treat of the affections of the special senses and of the lesions of the cranial nerves.

There are excellent bibliographical and general indices. The work certainly promises to be a large one, but we are doubtful if it shows any distinct advance on smaller ones. It is full, however, of valuable information; it is thoroughly abreast of recent advances in the anatomy and physiology of the nervous system; it is clearly written, and well illustrated. Its chief faults are the inadequate treatment of the subjects of the physical examinations of cases of nervous disorder and of their differential diagnosis and, if the author will forgive us, its length. It will tend to make the reader well informed if not skilful, learned but hardly powerful.

An Atlas of Illustrations of Pathology. Compiled for the New Sydenham Society. Fasc. xi, Diseases of the Nerves (being a reprint of Dr. Robert W. Smith's treatise on *Neuroma* (1849). London: New Sydenham Society.[1] 1898. (Demy folio, pp. 38, 16 plates, with letterpress.)

The value of this work lies in the accuracy and number of the cases recorded, both from their clinical and pathological aspects. Although the chief facts have long since found their way into general literature, its republication directs attention to a style of work but little known in medical literature in this country—the monograph, produced with the distinct purpose of adding to knowledge, regardless of expense, and it must perhaps be added, regardless also of remunerative sale. The histological nomenclature is easily translatable into what is more recent; all the tumours are obviously forms of fibromata growing from the nerves, not, that is, neuromata in the modern meaning, or tumours composed of newly-formed nerve tissue. The plexiform variety of nerve fibroma is not indicated, and does not appear to have come under the author's notice. And in regard to the bulbous enlargement of nerves which ensues regularly after amputation (traumatic neuroma), although the presence of new-formed fibres is clearly notified, the meaning of such was unknown to the writer: no microscopic study of nerve repair had at that date been made to show that the growth of nerve fibres in such circumstances is an abortive attempt at the reproduction which ensues from the upper when the two ends of a divided nerve are united by suture.

No example of the association of nerve fibromata with multiple fibromata of the skin is given. Although an origin of cutaneous fibromata in terminal nerves has suggested itself to Recklinghausen, histological observation has shown that no such exists, and the cutaneous tumours may arise about the hair follicles, the sebaceous or sweat glands, or the blood vessels. Payne has attempted to explain the coexistence of cutaneous and nerve fibromata by bringing the epiblastic investment of the skin and its appendages into relation with the like source of the central nervous system and peripheral nerves, the overgrowths being in both cases of the associated fibrous tissue. Shattock has inquired whether the multiple tumours on the nerves have an origin in the end organs of the nervi nervorum first described by Horsley, but has answered this in the negative, as the examination of the smallest growths in different cases have shown an absence of any lamellar structure like that which is so remarkable in the end organs. Needless to say, the surgery of this disease has undergone considerable change, in that with few exceptions the recommendation for removal given by the writer is by division of the appertaining nerve trunk above and below without suggestion of sutures or grafting; the systematic enucleation of such growths being held dangerous from the untoward or even fatal results which at times followed—another instance of the wide-reaching part which antisepsis and asepsis have played in the progress of practical surgery.

Die Acardii und ihre Verwandten. [The Acardiacs and their Congeners.] Von Professor Dr. Friedrich Schatz. Berlin: August Hirschwald. 1898. (Roy. 8vo, pp. 64. M.2.)

Among the many difficult problems which teratology has offered for solution, none has proved so refractory as the origin of the curious group of fœtuses known as the Acardiacs. They are not all destitute of a heart, but Acardiac is a convenient if not

[1] The annual subscription is £1 1s. Agent: Mr. H. K. Lewis, 136, Gower Street, London, W.C.

perfectly accurate name for the whole group. These "fractions of individuals," consisting sometimes of a head only, or of a pelvis and lower limbs, or simply of a formless mass, have always given rise to much speculation. It was soon noticed that they were invariably twins, and it was also observed that the co-twin was generally normal. It was not long before it was found that they were always uniovular twins, having a more or less common placental circulation. But their origin was shrouded in mystery. Some, as Panum and Meckel, thought that the acardiac fœtus was developed from an embryo whose heart was already absent or manifestly imperfect. Such an embryo if alone in the uterus would inevitably succumb in the earliest hours of development; but if there existed alongside of it another and a better-formed twin embryo, then its life might be prolonged, and it might become a parasite upon its co-twin. Others, such as Claudius and Ahlfeld, imagine two normal embryos to begin with, but that either through the existence of a weaker blood current in one than in the other, or by reason of the early predominance of the one over the other in the matter of placenta formation, there ensues a struggle for intrauterine life, and the weaker goes to the wall, so to say.

Among recent writers Schatz has done more than anyone else to throw light upon the teratogenesis of these monstrosities, and in the work under review (which is, by the way, a Jubilee offering to Professor Thierfelder) he has gathered together the substance of a series of monographs which have come from his pen during the last 20 years. He rightly lays great stress upon the varieties of placental circulation made possible by the existence *in utero* of uniovular twins; and he groups together several more or less abnormal fœtuses—the macrocardiacs, the microcardiacs, and the hemiacardiacs—and shows that they are the connecting links between the grossly malformed acormics and acephalics and normally-formed twin infants. These are the congeners of the acardiacs. To such as are interested in the more abstruse problems of teratology the work will be invaluable, but it is safe to say that even the expert embryologist will find it anything but light reading.

Technique Microbiologique et Sérothérapique: Guide pour les Travaux du Laboratoire. Par le Dr. Albert Besson. Paris: Librairie J. B. Baillière et Fils. 1898. (Demy 8vo, pp. 592, 233 illustrations. Fr.8.)

Recognising the fact that microbiology and serumtherapeutics play such a prominent part in the diagnosis and treatment of disease, Dr. Besson has undertaken in the work before us to supply a guide for the use of the medical man in carrying on his studies in this important but comparatively new field. That Dr. Besson has been able to provide a work that will meet the requirements of all students of these subjects he himself would be the last to contend, but that he has made it possible for every medical man to make himself acquainted with matters bacteriological will be admitted by anyone who takes the trouble to go carefully through this very well-arranged book. Dr. Besson, in the first part of his work, gives in a little over 220 pages an admirable summary of the preparation of various media, especially those that are in more general use in the bacteriological laboratories. He also gives an exceedingly good account of the various methods of filtration, illustrating the apparatus by means of capital drawings. The ordinary methods of cultivation in aërobic and anaërobic media are lucidly but somewhat briefly explained, as are also the various methods of examining bacteria in fluids and in cells. The methods of inoculation, and especially those that are more commonly in use, are set forth in such a fashion that it is easy to see at once which are the best methods for use in different animals and in the case of various micro-organisms.

In the second part a series of chapters on the different micro-organisms associated with various diseases are systematically described. An account is given of the researches which have been made in connection with the special organisms in relation to disease in human or animal subjects, and this is followed by a description of the morphological characters and the biological properties of these organisms, special stress being laid on the products formed in the body and in artificial cultures, toxins, and the like. Lastly, the question of the production of vaccination and of immunity is discussed, and our present knowledge of the therapeutic action of serum obtained from animals treated with the organisms or their products is given. A short account of the methods employed in the preparation of these serums is given, and in the case of typhoid fever the serum diagnosis of the disease as worked out by Widal and others, is described. In this section are treated the streptothrices, especially those associated with diseased conditions. The pathogenetic yeasts and pathogenetic mould fungi, and the "protozoa" which have been described as occurring parasitically in the intestines, in the organs and in the blood, are also well but briefly sketched.

The last section of the book is devoted to bacteriological examination of water and of air. The methods here given are sufficiently exact for the enumeration of micro-organisms in these substances, but there is little to aid an investigator to judge as to the value of the different methods, especially as applied to water analysis. Taking the work, however, as a whole, we can strongly recommend it to any student or practitioner who wishes to obtain, in a comparatively condensed form, a good account of bacteriological methods, and of the knowledge of the part they play in diagnostic and therapeutic medicine, as collected up to the present year.

NOTES ON BOOKS.

Reports and Transactions.

We have received the twelfth volume of *The Public Health Reports* issued by the supervising Surgeon-General, Dr. Walter Wyman, of the Marine Hospital Service of the United States. The volume consists of the weekly reports for the year 1897, and deals largely with reports as to the occurrence of epidemic diseases in various parts of the world, especially as they may affect commerce.

The Methodist Episcopal Hospital Reports, edited by L. S. Pilcher, M.D., and G. R. Butler, M.D. (New York: Published by the *Hospital*. 1898. Roy. 8vo. pp. 574), is the first decennial report of the hospital. A series of valuable papers is preceded by an interesting and detailed account of the inception and development of the charity, of the early years of struggle and doubt, and of the final completion of the work so unostentatiously begun by Mr. George Senly. The hospital has rapidly taken up a position in the front rank of the large medical charities in America, and the character of the work done within its walls is exemplified by the reviews of each of the chief branches, written by those in charge of the respective departments. Among the ablest contributions we may mention Dr. Lewis S. Pilcher's Clinical Studies of the Surgical Diseases of the Female Generative Organs, Dr. Ryerson Fowler's Clinical Studies in Appendicitis, and The Cases of Fractures of Bone by Dr. J. P. Warbasse. The last-named paper gives an admirable and well-illustrated description of the ambulatory treatment of fractures as practised in one of the first hospitals in English-speaking countries to adopt the treatment extensively. There is a concise and well-written article on Typhoid Fever by Dr. Ross Matheson. The volume, which is well printed on good paper, admirably illustrated, and handsomely bound, affords a striking testimony to the thoroughness and high level of the work done in America.

Guide et Formulaire de Thérapeutic Générale et Spéciale. [Therapeutic Guide and Formulary, General and Special.] Par Dr. V. Herzen. (Paris: J. B. Baillière et Fils. 1898. Crown 8vo, pp. 486. Fr.6.)—The nature of this book is almost indicated by its title. The author has aimed at being concise, clear, and practical, and he has, to use his own term, adopted the telegraphic style, eliminating all superfluous words, and arranging his material as clearly as possible. The book constitutes a dictionary of treatment, in which the headlines are supplied by the names of diseases arranged in alphabetical order. Under each disease the different forms are indicated by subheadings, while the chief symptoms and indications which call for special treatment are designated by heavy type. The book is liberally supplied with formulæ, which will frequently be found to be suggestive, even though they are based upon French methods of administration. The author

addresses this book mainly to young practitioners and senior students, and as a work of reference it will probably be of service. It is well arranged and clearly printed.

The eighty-third number of *Lean's Royal Navy List* brings the information down to July, 1898. The work is singularly complete and conveniently arranged for reference. In addition to the formal lists it contains particulars of the war, and meritorious services of officers on the active and on the retired lists of the Royal Navy and Royal Marines. The price of the volume, which is published by Witherby and Co., 326, High Holborn, is 7s. 6d., post free, to any part of the world.

Notes on Pharmacy and Dispensing for Nurses, by C. J. S. Thompson. (London: The Scientific Press. 1898. Feap. 8vo, pp. 108. 1s.)—This little book describes the various methods of preparing and administering medicines, as well as the therapeutic action of a good many drugs and preparations. In reading it through the old proverb "a little knowledge is a dangerous thing" comes to one's mind, for although it may, as the last paragraph suggests, have the effect of exciting in the reader an interest in the art of pharmacy, and induce some nurses to make themselves competent dispensers, it is to be feared that others who read it may mistake its intention, and on the strength of some of the descriptions administer powerful remedies on their own account, with possibly disastrous results.

Orthopedic Surgery. By James E. Moore, M.D., etc., Professor of Orthopedics in the University of Minnesota. (London: The Rebman Publishing Co. 1898. Crown 8vo, pp. 344, 177 illustrations. 14s.)—This volume the author claims to be a textbook for students and a ready reference book for general practitioners, but inasmuch as there are included in its pages not only orthopædic surgery in the more limited acceptation of the term, but also all diseases and deformities of the joints, it necessarily follows that the size of the book prevents its fulfilling the objects of the writer. It is neither a textbook nor can it be a ready reference book. In an early chapter there is an interesting disquisition on the relationship of orthopædics to general surgery. While the writer believes that the orthopædist should be eminently conservative, he does not believe that conservatism consists in refusing to operate. An obstacle to the rapid advance of orthopædic surgery to-day is alleged to be the tendency of the general surgeon to operate upon every orthopædic case that comes in his way, while the orthopædist too often refuses to operate, applying an apparatus in every case. Between the man who operates upon everything and the man who operates upon nothing treatment is often unsatisfactory. Specialism may easily be carried too far, and everyone interested in some special branch of surgery should also hold a general hospital appointment. It is noteworthy that so rapid is the author's survey of his subject that he dismisses the subject of thoracic deformities in twelve lines, and talipes equino-valgus, calcaneo-valgus and varus in ten lines. There are also many statements which will not bear investigation, for example, "occupation seldom, if ever, causes scoliosis because it begins in children." Again, "Congenital equino-varus is said to be due to failure of inward rotation of the whole limb during fœtal life." Surely the limb undergoes outward rotation through an arc of 90° *in utero*. In this work the writer has attempted to traverse too much ground, and the volume bears evidences of hasty compression.

Rheumatoid Arthritis: Its Pathology, Morbid Anatomy, and Treatment. By Gilbert A. Bannatyne, M.D., M.R.C.P.Ed. Second Edition. (Bristol: John Wright and Co.; London: Simpkin Marshall, Hamilton, Kent and Co., 1898. Demy 8vo, pp. 182. 7s. 6d.)—The first edition of this book appeared some two years ago, when it was reviewed in these columns. Among the many works that have been published upon rheumatoid arthritis, this one stood out from among its fellows by its endeavour to explain the disease on the infective theory. The microbe described by Bannatyne and Wohlmanns still remains practically unconfirmed. It is interesting to note that the author recognises two types of the disease—one acute and of infective origin, and the other chronic and probably degenerative. The infective theory thus limited may prove more acceptable, as there is great difficulty in the way of believing chronic rheumatoid arthritis in elderly people to be a microbic disease. Dr. Bannatyne discusses all the aspects of the disease under the heads of pathology, symptoms, prognosis and treatment. The importance of early treatment is emphasised, and it is pointed out that under these circumstances the prognosis is not nearly so gloomy as was at one time believed. Treatment is very fully described, but some forms of local treatment, such as hot air and counter-irritants, do not appear to be as highly valued as might have been expected.

Raggi di Röntgen e loro Pratiche Applicazioni [The Roentgen Rays and their Practical Use]. Di Italo Tonta. (Milano: Ulrico Hoepli. 1898. Small 8vo, pp. 160, 64 illustrations and 14 plates. L.2.50).—Much has already been written on the subject of the Roentgen photography, and this little book belonging to the series of Hoepli's manuals gives an excellent summary of the subject. In it are considered the behaviour of the Roentgen rays towards various substances, the nature and properties of the rays, the requisite apparatus, and the application of the rays for medico-chirurgical purposes. Their value in the case of foreign bodies naturally receives most attention, but the more recent developments in the shape of its application to the elucidation of disease of the heart and lungs are also considered. One section is given to the action of the rays on the growth of microbes. The trophic disturbances sometimes brought about by the rays are also considered. The only criticism which need be made is to ask whether the author does not sometimes expect a little too much of the Roentgen rays in this otherwise very useful and complete little manual.

Syringomyelia. By Guy Hinsdale, A.M., M.D. (Philadelphia: P. Blakiston, Son, and Co. 1897. Royal 8vo. pp. 80, 1 dol.)—This is a reprint of a prize essay written in 1895. Undoubtedly it is well worthy of publication, for it in many respects is one of the best monographs on the difficult subject of syringomyelia. Dr. Hinsdale has conducted a very exhaustive research into the literature of the subject, and the bibliography which he gives at the end of the book contains more than 500 references, and is likely to be of value. It is indeed surprising to note the large number of papers which have been written on syringomyelia during recent years. The author adopts Charcot's classification in the symptomatology of the disease. The trophic disorders and the theories held as to their causation are well and fully discussed. He does not accept Buzzard's view that the arthropathies which occur in the disease are probably due to an invasion of the medulla, but adopts the theory advocated by Marinesco that the atrophic form of arthropathy resembles that met with in tabes, and is associated with an impaired action of the sensory nerves of the joints. The photographs and diagrams are unusually good. We must congratulate Dr. Hinsdale on the book, which, although it does not contain much original matter, will yet form a useful addition to the already extensive literature on the subject.

Chavasse's Advice to a Mother on the Management of her Children. By George Carpenter, M.D.Lond. Fifteenth Edition. (London: J. and A. Churchill. 1898. Feap. 8vo, pp. 442. 2s. 6d.)—In the production of another edition of this work after an interval of eleven years, it has been necessary to make radical alterations in order to bring it up to date. This fifteenth edition differs from previous ones in being much larger. About 100 pages and 63 conversations have been added. About two-thirds of the book has been rewritten wholly or in part. Only that which was absolutely necessary has been left out, and the style and character of the original work has been as far as possible followed. Only a great book could admit of this treatment. The result is an exceedingly useful handbook containing a mass of sound and clear advice on the management of children, and—for that matter—of parents also. There are, we think, one or two flaws which might have been avoided. For instance, we could produce more than one young and inexperienced mother who would be able to supply the author with two good reasons against, for

every one that he gives in vindication of, the habit of sucking the thumb or any other object by young children. The recommendations for lancing the gums in certain cases of difficult dentition will not commend themselves to many practitioners, and, we venture to think, are not likely to be carried out by those to whom they are addressed. The following statement does not, perhaps, entirely convey the author's meaning: "Small-pox is almost certain death to an unvaccinated infant under 1 year of age, and [this is our point] more than half the unvaccinated children under 5 years of age are killed by it." The book is really interesting, and the spirit of the original text is throughout admirably preserved.

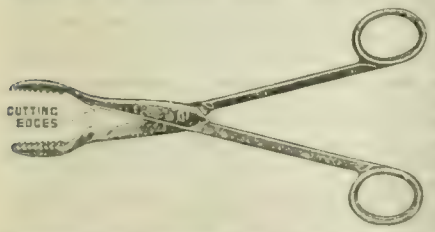
REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Pictet's Ethyl Chloride Spray.—A modification of the ordinary chloro-ethyl spray has been introduced by M. Raoul Pictet (whose agents in this country are Messrs. T. Christy and Co., 25, Lime Street, E.C.). The new apparatus will stand upright, and by means of a curved glass tube inserted into the nozzle and reaching to the bottom of the container the small opening is prevented from becoming blocked, and the escape of the liquid during an operation can be at once arrested by tilting the apparatus, though the screw cap must be soon replaced, as the inner tube does not prevent evaporation.

Whenever the production of local anæsthesia for small operations, such as the opening of abscesses, may be required this apparatus acts well; and if applied with 30 g. of ethyl chloride will suffice for about ten cases. A larger size, with a capacity of 50 g. is also sold. (The price of the smaller tube complete is 2s. 6d., and of the larger 4s.) Pictet's ethyl chloride, with which the instruments are charged, is manufactured at a very low temperature. At ordinary temperatures it evaporates rapidly. The nozzle of the spray, therefore, should be quickly replaced, and should fit exactly, otherwise the ethyl chloride will be lost.

Scissor Forceps.—Mr. H. de Paiva Veale, L.S.A. (late House-Surgeon, Leeds General Infirmary), has devised an instrument which may be used both as surgical scissors and dressing forceps, and also serve the purposes of director and dilator. It consists of a small pair of scissors, the ends of which, instead of being pointed, are converted each into the blade of a medium-sized pair of dressing forceps of the Spencer Wells pattern. It can be obtained with or without detachable blades, is easily cleaned and sterilised, and is a convenient size for the case or pocket. This will be found a very useful instrument by house-surgeons, dressers, and nurses; but as so much in minor surgery has to be done by the points as well as by the edges of surgical scissors, we fail to see the force of the advantage claimed for the "scissor forceps," that it does away with the necessity of carrying more than one instrument. The "scissor forceps" are manufactured by, and may be obtained from, Messrs. Reynolds and Branson, of Leeds.

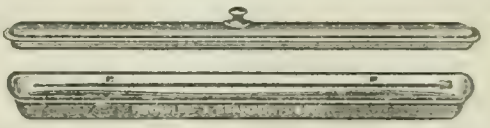


Beraudine Peat Wool.—We have received from the Galen Manufacturing Company a specimen of Beraudine peat wool, accompanied by a pamphlet strongly advocating the use of peat both as a hygienic agent and as a surgical dressing. Although we do not agree with the author in his views of the universal application of peat to the prevention and treatment of disease, we can recommend the peat wool as a soft, cleanly, and cheap agent for surgical purposes, and as a superior kind of absorbent dressing.

Milne's Ribbon Gauze.—The Galen Manufacturing Company have recently prepared, at the suggestion of Mr. Stonham of the Westminster Hospital, a ribbon gauze specially adapted to the plugging of wounds and suppurating cavities. This gauze, which is supplied either in a medicated form or as a merely sterilised material, will on account of its softness be found very suitable for the purpose for which it is intended, and save time and trouble in the course of an operation in which it may be found necessary to plug a large wound.

Rubber-free Elastic Bandages.—The "Eureka" new crêpe Velpeau bandage, which is formed of a rubberless elastic material, seems to be an excellent compressing agent and if in constant use it be found durable is likely to supersede to some extent many of the heavier and more cumbersome forms of elastic bandaging. It is light and porous and can be readily washed. The tension it is stated can be varied, but it is likely to be most beneficial and to afford most comfort in cases in which a high degree of compression is not needed. It is intended for cases—varicose veins, swollen joints, yielding of abdominal wall, for instance—in which elastic bandaging is usually indicated, but we would extend still further its range of application and be disposed to recommend it as a retentive bandage for surgical dressings. It is supplied by Vincent Wood, Victoria House, Albion Place, Blackfriars Bridge.

A New Catheter Dish.—Mr. H. de Paiva B. Veale, late House-Surgeon General Infirmary, Leeds, has designed a dish for the reception of flexible catheters, which though it may seem very simple is likely if not used for more than two or three instruments at the same time to prove serviceable in both hospital and private practice. The advantages of this dish, which is an elongated narrow pan furnished with a lid, are these: It is sufficiently long to admit a catheter of ordinary length without bending; the catheter rests on two transverse ridges attached to the bottom of the dish, so that the antiseptic solution in which the instrument is submerged is in constant contact with almost



every part of its surface; the vessel from its size and shape will be found more convenient than most receptacles used for holding catheters, as there will be less risk of its being upset, and of the catheter being left exposed to the air and of linen or carpet being soiled by antiseptic solution; the shallow depth of the dish and its freedom from angles allow of its being easily cleansed and sterilised. The dish may be also used for drainage tubes. This form of receptacle for catheters which may be obtained from Messrs. Reynolds and Branson of Leeds, is made either of iron, of enamel ware, glass, or porcelain. For obvious reasons one made of enamel ware would be found preferable in most cases.

MEDICINAL PREPARATIONS.

New Tabloids.—Messrs. Burroughs, Wellcome, and Co., Snow Hill Buildings, E.C., prepare in a compressed form zinc oxide for internal administration. The tabloids contain 2 grains of zinc oxide in each. They readily disintegrate in water, and form a reliable and convenient method of administering this drug.

Tabloids hypophosphites compound contain strychnine hypophosphite combined with the hypophosphates of calcium potassium, manganese, iron, and quinine. Two strengths are made, containing respectively $\frac{1}{150}$ grain and $\frac{1}{64}$ grain of strychnine hypophosphite. These tabloids, compared with the compound syrup of the hypophosphites, possess advantages of greater portability and permanency.

The Alvarenga prize of the College of Physicians of Philadelphia has been awarded to Dr. S. A. Knopf, of New York, for his essay, entitled, Modern Prophylaxis of Pulmonary Tuberculosis, and its Treatment in Special Institutions at Home.

LIST OF AUTHORS AND OTHERS WHO HAVE PRESENTED BOOKS TO THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THIRTY-EIGHTH LIST.

Presented by the AUTHORS.

ANDERSON (T.). Yellow Fever in the West Indies. 1898.
COUTTS (F. J. H.). Dissertation on an Experimental Study of the Pharmacology of Hedera Helix, the Common Ivy. 1898.
HAIG (A.). Uric Acid as a Factor in the Causation of Disease. 4th edition. 1897.
O'CONNELL (M.D.). Ague or Intermittent Fever. 1897.

Presented by T. CLIFFORD ALLBUTT, Esq., LL.D., M.D.

REPORT ON THE VITAL AND SOCIAL STATISTICS IN THE UNITED STATES AT THE ELEVENTH CENSUS. 1890. Part 1, Analysis and Rate Tables. 1896.

Presented by the CALCUTTA UNIVERSITY.

CALENDAR FOR 1898.

Presented by the CONNECTICUT STATE BOARD OF HEALTH.

REPORT FOR YEAR 1897.

Presented by the GLASGOW MEDICO-CHIRURGICAL SOCIETY.

TRANSACTIONS OF THE SOCIETY. Vol. i. 1898.

Presented by T. F. GILMOUR, Esq., L.R.C.P., Port Ellen.

THE GLASGOW MEDICAL JOURNAL. Vols. 1 to 5. 1828-32.
CHURCHILL. Midwifery. 5th edition. 1866.

Presented by the MIDDLESEX HOSPITAL.

REPORTS OF MEDICAL AND SURGICAL REGISTRARS FOR 1896.

Presented by the MONTREAL BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

DRUMMOND (W. H.) The Habitant and other French-Canadian Poems. 1897.

Presented by PERCY NEWELL, Esq., L.R.C.P., Crowborough.

Parts of the JOURNAL OF BALNEOLOGY AND CLIMATOLOGY.

Presented by the NEW SYDENHAM SOCIETY.

ATLAS OF ILLUSTRATIONS OF PATHOLOGY. Fasc. XI. 1898.
REPORT ON VACCINATION AND ITS RESULTS BASED ON EVIDENCE TAKEN BY THE ROYAL COMMISSION, 1889-1897. 1898.

Presented by the PHILADELPHIA COLLEGE OF PHYSICIANS.

TRANSACTIONS. vol. 19. 1897.

Presented by the REGISTRAR-GENERAL OF BIRTHS, DEATHS, AND MARRIAGES.

FIFTY-NINTH REPORT FOR YEAR 1896.

Presented by the ROYAL UNIVERSITY OF IRELAND.

CALENDAR AND EXAMINATION PAPERS, 1897-98.

Presented by W. K. SIBLEY, Esq., M.A., M.D., London.

BRAITHWAITE'S RETROSPECT OF MEDICINE, 34 vols. 1874-1891.
BRITISH MEDICAL JOURNAL, 31 vols. 1877-1892.
MIDDLESEX HOSPITAL REGISTRAR'S REPORTS, 1869-70, 1877-87, and other vols.

Presented by A. W. STOCKES, Esq., M.R.C.S., Salford.

BRITISH MEDICAL JOURNAL, 41 vols. 1873-1893.

Presented by the WAR OFFICE.

REPORTS OF THE ARMY MEDICAL DEPARTMENT, 1859-1861, and 1870.

Presented by W. ROGER WILLIAMS, Esq., F.R.C.S., Clifton.

MIDDLESEX HOSPITAL REGISTRAR'S REPORTS, 1882 and 1887.

Presented by the EDITOR of the BRITISH MEDICAL JOURNAL.

ALLBUTT (T. C.). System of Medicine. Vol. 5. Diseases of the Respiratory and Circulatory Systems. 1808.
ANDERSON (W.) Deformities of the Fingers and Toes. 1897.
BEEVOR (C. E.). Diseases of the Nervous System. 1808.
BROWNE (Sir Thomas). Religio Medici and Other Essays. Edited by D. L. Roberts. 1898.
BUROT ET LEGRAND. Les Troupes Coloniales. III. 1898.
CESTAN (E.). La Thérapeutique des Empyèmes. 1898.
COOKE. Tablets of Anatomy. 11th edition. 1898.
DANA (C. L.). Textbook of Nervous Diseases. 4th edition. 1898.
EWART (W.). Cardiac Outlines. 1892.
FRANKLAND (Mr. and Mrs. Percy). Life of Pasteur. 1898.
FREYBERGER (L.). Pocket Formulary for Treatment of Children's [illegible]
GIBSON AND RUSSELL. Physical Diagnosis. 1893.
GORDON (Sir C. A.). Recollections of Thirty-nine Years in the Army. 1898.
HERMAN (G. E.). Diseases of Women. 1898.
INDIA. [illegible] Papers on the Outbreak of Plague. III. 1898.
JULLIEN. Blennorrhagie et Mariage. 1898.
KOLLMANN (J.). Lehrbuch der Entwickelungsgeschicte des Menschen. [illegible]
LANE (W. A.). Cleft Palate. 1897.
LLOBET (A. F.). Onze Années de Pratique Chirurgicale. I, II. 1898.
MACDONALD. Surgical [illegible] and Treatment. 1898.
MALLORY AND WRIGHT. Pathological Technique. 1898.
MARTIN (B. R.). Practical Treatise on Diphtheria. 1894.
MOULLIN (C. M.). [illegible] of the Bladder and Urinary Fever. 1898.
NEW JERSEY BOARD OF HEALTH REPORT. 1897.
SCHROEDER (C. von). Die Zuckerkrankheit und ihrer Behandlung. 2 Aufl. [illegible]
SANARELLI (J.). La Fièvre Jaune. 1898.
SAWYER (Sir J.). Contributions to Practical Medicine. 1891.
SCHOLTZ (W. C.). The South African Climate. 1897.
SENN (N.). Tuberculosis of the Genito-Urinary Organs. 1898.
SIBTHORPE. Clinical Manual for India. 1897.
SKENE, A. J. C. Treatise on the Diseases of Women. 1898.
SMITH (J. Greig). Abdominal Surgery. 6th edition. 2 vols. 1897.
STRÜMPELL (A.). Textbook of Medicine. 1893.
STRÜNCKMANN (R.). Zur Bacteriologie der Puerperal Infection. 1898.
FERRIER, GUILLEMAIN, ET MALHERBE. Chirurgie du Cou. 1898.
TUKE, J. B. The Insanity of Over-exertion of the Brain. 1894.
TWENTIETH CENTURY PRACTICE OF MEDICINE. Vol. 12, Mental Diseases. 1898. Vol. 13, Infectious Diseases. 1898.
WALSHAM (W. J.). Nasal Obstruction. 1898.
WARING (H. J.). Manual of Operative Surgery. 1898.
And other volumes.

BOOKS NEEDED TO COMPLETE SERIES.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

AMERICAN CLIMATOLOGICAL TRANSACTIONS. Vols. 1 to 7.
AMERICAN DERMATOLOGICAL ASSOCIATION TRANSACTIONS. Vols. 5, 7, 8, 9, and 11.
AMERICAN JOURNAL OF THE MEDICAL SCIENCES. New series, vols. 4, 5, 1842-43; vols. 14, 15, 1847-48; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-65; vol. 59, 1892-93; or any parts of these vols.
AMERICAN JOURNAL OF OPHTHALMOLOGY. Vols. 1-9.
AMERICAN LARYNGOLOGICAL ASSOCIATION. Transactions. Vols. 1-6, 8, 9.
AMERICAN OTOLOGICAL SOCIETY. Transactions. Vol. 3, part 2, 1883.
ANNALS OF SURGERY. Vols. 1 to 11; 13 to 16.
ARCHIVES GÉNÉRALES DE MÉDECINE. 1831-39 inclusive; 1846-1855 inclusive; 1857-64 inclusive; 1871.
ARCHIVES OF OPHTHALMOLOGY. Vols. 1-7 and since vol. 13.
ARCHIVES OF OTOLOGY. Vols. 1-7, and 20, 21, 22.
ASYLUM JOURNAL OF MENTAL SCIENCE Vol. 1. 1854, and Title vol. 2.
BENTLEY AND TRIMEN. Atlas of Medicinal Plants.
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SCOTTISH PLUMBERS' CONGRESS. The annual Scottish Congress of the Association for the National Registration of Plumbers was held recently in Glasgow, under the Presidency of Mr. Robert Crawford, D.L., who, in opening the proceedings, sketched the origin and progress of the movement for the registration of plumbers, and expressed his regret that Parliament had not been able to pass the Plumbers Registration Bill, which had for its object the permanent constitution of the movement and the legalisation of registration. After discussion on the need of registration, and the modes of obtaining it, the Congress passed a resolution again expressing its sense of the need for legislation. In connection with the Congress an exhibition of plumbing work and plans was held. The exhibition was opened by Professor M'Kendrick.

THE VACCINATION ACT, 1898.

A Legal View of its Effect.

This Act received the Royal Assent on August 12th. With the exception of the "conscience clause," which then came into operation, it does not become law until the beginning of next year. So much animated discussion has been aroused with regard to this so-called "conscience clause" that the other changes which have been made in the vaccination law are well-nigh unknown. Had Section 11 been introduced *simpliciter* as a modification of the Acts of 1867 and 1871, the cause of vaccination might well have received a staggering blow. A careful study of the new statute will, however, reveal certain other alterations which have been made, alterations which not only facilitate the performance of vaccination, but ensure that it shall be carried out under the most favourable conditions, and with the best and purest kind of lymph which can possibly be obtained.

The chief of these alterations may be epitomised in a very few words:

1. The period within which vaccination is to take place is extended from three months to six.
2. The operation is to be performed if required in the child's home.
3. The use of glycerinated calf lymph is to be encouraged.
4. The conscientious objector is not to be compelled to submit his child to the operation.
5. A recalcitrant parent cannot be convicted more than twice (for example, once under each of Sections 29 and 31 of the Vaccination Act, 1867), and

(6) If imprisoned he is to be treated as a first-class misdemeanant.

No provision for universal revaccination is mentioned, but the speeches of responsible Ministers give us to understand that the subject will demand their earnest consideration in the near future.

The text of the several clauses of the Bill is given below in italics, and is followed in each case by an analysis.

Section 1, Subsection (1).—*The period within which the parent or other person having the custody of a child shall cause the child to be vaccinated shall be six months from the birth of the child, instead of the period of three months mentioned in Section xvi of the Vaccination Act of 1867, and so much of that section as requires the child to be taken to a public vaccinator to be vaccinated shall be repealed.*

Section XVI of the Vaccination Act of 1867, which contained the time limit of three months, now reads as follows:

> The parent of every child born in England shall, or where by reason of death, etc., any other person shall have the custody of such child such person shall cause it to be vaccinated by some medical practitioner.

A prosecution cannot in future take place until after six months have elapsed since the birth of the child. The extension of the period within which vaccination is to take place cannot fail to produce good results. Many parents who have hitherto made the child's tender age and infantile infirmities an excuse for refusing to allow the operation will find the ground cut away from under their feet. The "medical practitioner" above referred to, by whom alone the operation can be performed, must be a registered practitioner. It has been decided that a foreign professional qualification is not sufficient for the purposes of the Vaccination Acts.

Section 1, Subsection (2).—*The public vaccinator of the district shall, if the parent or other person having the custody of a child so requires, visit the home of the child for the purpose of vaccinating the child.*

The bringing of a child to the public station and its consequent exposure has often been the reason why parents opposed vaccination. The genuine conscientious objector is a comparative rarity. It is hoped that rather than put themselves to the trouble of appearing before the magistrates to prove their objection, parents will consent to the operation being performed under their own roof. It will be observed that the public vaccinator is not compelled to visit every house, but he must do so if requested by the parent. In asking the House of Lords to assent to the Bill Lord Harris drew attention to the value of this clause in the following terms:

> There are three classes of parents in question—the unwilling, the willing, and the lazy. The first and second will probably remain unaffected by fresh legislation, but when we come to consider the lazy and negligent parent the Bill offers a distinct advantage. Trouble for the parent is now reduced to a minimum, with the vaccinator in the home, and as to the conscience clause it is obvious that the only people who will have trouble will be those who go to make their declaration before a justice in petty sessions.

Section 1, Subsection (3).—*If a child is not vaccinated within four months after its birth, the public vaccinator of the district, after at least twenty-four hours' notice to the parent, shall visit the home of the child, and shall offer to vaccinate the child with glycerinated calf lymph or such other lymph as may be issued by the Local Government Board.*

Upon the arrival of the public vaccinator the parent or other custodian of the child will have no option but to have the operation performed or else incur the penalty, as the statutory time for conscientiously objecting will have then expired (S. 11, Ss. 1, post.).

Section XVII of the Vaccination Act of 1867, which provided for a second visit to the station after a week had elapsed, now reads as follows:

> In the event of vaccination being unsuccessful, such parent or other person shall, if the vaccinator so direct, cause the child to be forthwith again vaccinated.

There is no provision made for a second visit by the public vaccinator in the new Act. It would seem by the above clause that the use of glycerinated calf lymph, or lymph, at any rate, which is under the supervision of the Local Government Board is to be encouraged. Amongst other advantages which will accrue from its use, the necessity for attending to a large number of cases at once will be avoided, and the public vaccinator will be relieved from having to keep himself supplied with human lymph, but above all the cry of the fanatics who look upon arm-to-arm vaccination as a means of transmitting disease will be practically silenced.

Section 1, Subsection (4).—*The public vaccinator shall not vaccinate a child if, in his opinion, the condition of the house in which it resides is such, or there is or has been such a recent prevalence of infectious disease in the district, that it cannot be safely vaccinated, and in that case shall give a certificate under Section xviii of the Vaccination Act of 1867 of postponement of vaccination, and shall forthwith give notice of any such certificate to the medical officer of health for the district.*

This subsection is quite new. The public vaccinator, who under the new Act is to visit the home of a child which has not been vaccinated, will in future be able to postpone the operation until the surroundings, if unfavourable, have improved. In this way a risk to which children in crowded districts have been exposed will be diminished, as in some cases in which death from septic diseases supervened on vaccination it was caused, not by the bad quality of the lymph, but by the unhealthy condition of the house where the operation took place.

It will apparently be necessary for the public vaccinator to repeat his visits until a favourable opportunity presents itself. The old law as to granting certificates where the child (1) is not in a fit state to be successfully vaccinated, (2) is insusceptible, or (3) has already had the small-pox remains unaltered.

Section 1, Subsection (5).—*Notwithstanding any regulation of any lying-in hospital or infirmary, or other similar institution, the parent of any child born in any institution shall not be compelled under such regulation or otherwise to cause or permit the child to be vaccinated at any time earlier than the expiration of six months from its birth.*

It does not appear that there were any special regulations provided by the former Acts with regard to children in institutions of this kind. The subsection is, therefore, entirely new.

Section 11, Subsection (1).—*No parent or other person shall be liable to any penalty under Section xxix or Section xxxi of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices or a stipendiary or metropolitan police magistrate in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientious objection.*

It was round this section that the keenest controversy raged in Parliament. After having been tossed to and fro between both chambers it has ultimately found its way into the statute book, to become law upon the passing of the Act, and to remain law for a period of at least five years, unless

there is fresh legislation in the meantime. Opinions may differ as to the wisdom of its insertion, but of one thing there can be no doubt, namely, that the action of many magistrates in refusing to convict, has rendered it imperative for the Government to attempt some modification of the law hitherto in force. In dealing with the question in the House of Lords, Lord Salisbury, after commenting upon the opposition of the magistrates, said:

Against that feeling you are powerless. You have not even the gratification of saying that they pretend to be conscientious, and, therefore, you will punish them, because they have not got to advance the conscientious plea that offends you so much. They do it by their own will, and there is no appeal from their action. If they choose not to obey the law, and the law does not sufficiently impress them to induce them to act upon it, the number of cases in which the law is not put in force will grow gradually more, the disrespect in which it is held will increase, the popular respect for vaccination which we desire, and justly desire, to disseminate and to augment will become less and less, and you will have presented to yourselves all over the country a fight in one local body after another, in which the issue will not be so much vaccination or not vaccination, but an issue running into all sorts of collateral political issues, in which you may be certain that the fact that the law only exists by the will of a majority of two in the House of Lords, and has been condemned by a large majority in the House of Commons will not be forgotten, but will be very constantly insisted upon. My lords, I do not look at the effect of this except in one direction. I ask, what effect will it have upon that willing adoption of vaccination which is the only healthy result that you can desire to accomplish? If you pass this Bill you will have a truce, an armistice, the bitterness and agitation will calm down, and you will be able to induce the local authorities to work with you instead of against you in this great enterprise for the health and welfare of the people.

The true intent of the legislature can hardly be more succinctly expressed.

Coming to the Section itself, it will be observed that those who wish to avail themselves of it must not let time slip by. The receipt of a twenty-four hour notice from the public vaccinator (as provided for in Section I, Subsection III) will remind a parent that it is too late to take a conscientious objection. Under Section XXIX of the Act of 1867 a parent in default was fined if he did not render a "reasonable excuse." Efforts were made to include under these words the "conscientious objection," which some parents entertained, but it was decided in a case in the Queen's Bench Division that the meaning of the words could not be thus extended, so that the law on the subject is quite new. It will be interesting to note how the magistrates deal with objectors. It may be assumed that magistrates who are themselves thorough believers in, and supporters of, vaccination, will not be lightly induced to grant certificates. What evidence they will require besides the mere statement of the parent or other guardian of the child has not as yet been put to the test.

Section II, Subsection (2).—*This section shall come into operation on the passing of this Act; but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act.*

That is to say, it came into force on August 12th. The section has already been under discussion before various benches of magistrates, who appear to be somewhat puzzled as to how they are to administer it.

Section III.—*An order under Section xxvi of the Vaccination Act of 1867, directing that a child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child.*

The state of the law with regard to repeated offences under the Acts of 1867 and 1871 was shortly as follows: Under Section XXIX of the former Act a parent neglecting to have his child vaccinated or inspected after vaccination might be fined twenty shillings. He could not, however, be twice convicted under this Section in respect of the same child (Black *v.* Guardians of the Epping Union, 49 J.P., p. 19). By Section XXXI any person refusing to have his child under 14 accinated might be proceeded against and fined 20s. A conviction under Section XXIX was no bar to proceeding under Section XXXI, and convictions might be repeated from time to time as long as the child remained unvaccinated.

The policy of the Local Government Board with regard to recalcitrant parents was made public in a letter to the Guardians of the Evesham Union on September 17th, 1875. By Article 16 of the General Order of October 31st, 1874, it was (in effect) provided that the vaccination officer should not take further proceedings under Section XXXI until he should have brought the circumstances of the case to the notice of the guardians and received their special directions thereon. The following are the salient features of the letter above referred to:

1. The guardians should consider with regard to each particular case the effect which a continuance of proceedings is likely to have in procuring the vaccination.
2. Parents should be assured that in cases of non-compliance proceedings will not be lightly discontinued.
3. A fruitless contest with a parent might have a tendency to produce mischievous results by exciting sympathy with the person prosecuted, and thus creating more extended opposition to the law.

Such, indeed, was frequently the case. A man who went to prison "rather than have his child's blood poisoned" was often looked upon and respected as a martyr.

The new section enables a parent to plead "*autrefois acquit*" in any further prosecution under Section XXXI. With the payment, therefore, of a fine of 20s. under Section XXIX, when he is too late to conscientiously object, and with a subsequent payment of 20s. under Section XXXI, his liability will cease for ever.

Section IV.—*No proceedings under Section xxvi of the Vaccination Act of 1867 shall be taken against any parent or person who has been convicted under Section xxix of the said Act on account of the same child until it has reached the age of 4 years.*

No restriction of this kind was known under the former Acts. The limitation cannot fail to be an advantage. By the time the child has reached the age of 4, infantile complaints will have been overcome, and its parents may have awakened to a sense of their duty. It seems that there is nothing to prevent Section I, Subsection 2, applying to children above the age of 6 months, so that even after the lapse of years the public vaccinator may be required to attend.

Section V.—*Persons committed to prison on account of non-compliance with any order or non-payment of fines or costs under the Vaccination Acts should be treated in the same way as first-class misdemeanants.*

On an information under the Act of 1867, Section XXXI, a person committed to prison was a "criminal prisoner" within the meaning of the Prisons Act, 1865, Section V, and was treated as such while in prison (Kennar *v.* Simmons, 50 L. T., N. S. 28). The Master of the Rolls (then Lord Justice Lindley) said: "The conclusion at which I have arrived is that the plaintiff was not entitled to the benefit of the special rule relating to debtors, and was properly treated in prison as an ordinary criminal prisoner not subject to hard labour." The expression 'first class misdemeanant' is misleading. If the prisoner is in affluent circumstances his punishment is light, for it merely entails a loss of liberty; but in the case of a poor offender, gruel and a plank bed being his only creature comforts, a term of imprisonment with hard labour and good food might often be less disagreeable.

Section VI.—*The Local Government Board may make rules and regulations with respect to the duties and remuneration of public vaccinators, whether under contracts made before or after the passing of this Act.*

Section VI of the Vaccination Act of 1867 is repealed, and the functions of the Poor Law Board set out therein with regard to the terms of the contract to be made with the public vaccinator are now vested in the Local Government Board. Some new system of remuneration will have to be devised as the duties of the officer are greatly increased. If the house to house system is universally adopted, as it probably will be, a large augmentation of the staff of public vaccinators will be necessary.

Section VII.—*The Local Government Board may by order, if in their opinion it is expedient by reason of serious risk of outbreak of small-pox or of other exceptional circumstances, require the guardians of any poor law union to provide vaccination stations for the vaccination of children with glycerinated calf lymph or such other lymph as may be issued by the Local Government Board and modify as respects the area to which the order applies, and during the period for which it is in force, the provisions of this Act requiring the public vaccinator to visit the home of the child otherwise than on request of the parent.*

Special instructions to guardians in the case of epidemics were issued by the Local Government Board in November, 1880. The chief feature of the above clause is the provision for the supply of glycerinated calf lymph. The "modification" of the provision requiring the public vaccinator to visit the home means the temporary recission of that enactment, for as

was pointed out in the above order "the experience of every recent epidemic of small-pox has shown that to attempt at such times an indiscriminate daily performance of vaccination and revaccination leads only to difficulties and disadvantages."

Section VIII.—*The clerk of any sanitary authority which shall maintain a hospital for the treatment of small-pox patients shall keep a list of the names, addresses, ages, and condition as to vaccination of all small-pox patients treated in the hospital, such entries to be made on admission, and shall at all reasonable times allow searches to be made therein, and upon demand give a copy under his hand or under that of his deputy of every entry in the same on payment of a fee of sixpence for each search, and threepence for each copy.*

The value of a record of this kind cannot be over-rated. Its preservation will in time to come render it possible to ascertain what percentage of persons afflicted with small-pox have been vaccinated. Unfavourable statistics may lead to the withdrawal of the conscience clause. It does not appear that any register of this kind has ever been kept officially before the passing of the new Act.

Section IX.—*The enactments mentioned in the schedule to this Act are hereby repealed during the continuance of this Act to the extent specified in the third column of that schedule.*

Section X, Subsection (1).—*This Act shall not extend to Scotland or Ireland.*

Section X, Subsection (2).—*This Act shall, except as by this Act specially provided, come into operation on the first day of January one thousand eight hundred and ninety-nine, and shall remain in force until the first day of January one thousand nine hundred and four.*

Section X, Subsection (3).—*This Act may be cited as the Vaccination Act, 1898, and the Vaccination Act of 1867, the Vaccination Act, 1871, the Vaccination Act, 1874, and this Act shall be construed together as one Act, and may be cited collectively as the Vaccination Acts, 1867 to 1898.*

The application of the Act to England alone, and its limited duration of five years, are both facts which indicate that it is merely tentative in its character.

INFANTILE SCURVY IN NORTH AMERICA.

We have been favoured, by the courtesy of Dr. Floyd M. Crandall, Editor of the *Archives of Pedriatics*, with a copy of the report of the Committee of the American Pediatric Society for the Collective Investigation of Infantile Scurvy in North America. The investigation appears to have been of a most searching nature, both as regards the tapping of all possible sources of information and the thoroughness of the questions asked regarding each case. No fewer than 379 cases, of which 29 were fatal, were collected from the practice of 138 observers, and we select some of the most important of the striking array of statistics relating to them; it will be noted that, as always happens, the replies under each particular head are not quite complete. With regard to race, out of 372 cases, 367 were white, 4 black, and 1 Chinese. In the same number of cases, 189 were male and 183 female, a difference insufficient to establish a sexual factor in the etiology. The disease appears to be most apt to develop between the ages of 7 and 14 months. The youngest case was a child of 4 weeks, who had been ill five days before being seen, the oldest one of 9 years; both were perfectly typical. The statistics as to social position are most interesting: of 379 cases, 83 per cent. occurred in private and only 17 per cent. in hospital practice. Although this classification does not absolutely indicate social status, the figures point very positively to the greater tendency of the disease to occur in the well-to-do. This is further illustrated when the details as to hygienic surroundings are noted. These are described as good, often the very best, in 303 instances, as doubtful in 5, and as bad only in 40. The influence of hygienic conditions on the etiology must accordingly be very limited. The previous health is recorded in 285 cases, in 167 of which it had been good, but of the other 118 cases no fewer than 68 had suffered from digestive troubles, a very significant fact. The family history was good in 129 cases, and negative in 97, while in 74 various diseases, all apparently without etiological importance, are recorded in the families. The diet both from the time of birth and during the period immediately preceding the development of the scurvy was carefully investigated; 275 cases were attributed by their observers to dietetic causes, and only 24 to others. The details of the various foods are too elaborate for quotation, but it appears that 214, or 60 per cent., were fed on proprietary foods. The analysis of the symptomatology is very thorough, but we are only able to touch upon the most salient points. Out of 327 cases pain and tenderness were the first symptoms in 145, the gum affection in 42, interference with motion in 36, anæmia in 27, cutaneous hæmorrhages in 22, and swellings in 16; the other 35 cases manifested 15 different initial symptoms. The most prominent symptom was undoubtedly pain, which was present in 314 cases, the legs being preponderantly affected. Pain when the child was at rest was present in 91 cases, but is definitely stated to have been absent in 134. Interference with motion occurred in 319 cases, again mainly in the legs. The position of the limbs was normal in only 17 out of 205 cases; in 152 of the remainder they were flexed. Weakness of the back was present in 97 cases and absent in 108, depression of the sternum present in 34 and absent in 170. It thus seems that what were described by Barlow as among the most characteristic symptoms are in reality insignificant. The joints or the parts about them were swollen in 165 cases, the shafts of the limbs in 179. Swelling or protrusion of one or both eyes was noted in 49 cases and reported absent in 110. The condition of the gums and mouth is of great interest. In only 16 cases is it stated that the gums were entirely unaffected; in 313 they were diseased, usually swollen, spongy and discoloured, frequently hæmorrhagic, but less often ulcerated. Perfectly typical gum affections appeared before the teeth were developed; the reputed association of the gum condition with the appearance of the teeth is only due to the fact that the disease usually appears at an age when teeth are already present. Cutaneous hæmorrhages occurred in rather more than half the cases and hæmorrhage from mucous membranes in 54 per cent. Fractures are recorded in 9 cases only, while they are distinctly stated to have been absent in 342. Fever was not shown to be a prominent symptom of the disease. Albuminuria was present in one-fifth of the cases examined and hæmaturia in 22. Anæmia is stated to have been present in 254 cases and emaciation in 167 out of 217. With regard to rickets the evidence is strongly against the causal relation between the two diseases. The most striking results in the report are those bearing on treatment; the rapidity with which improvement sets in and ultimate recovery is established with appropriate therapeutic measures is most remarkable. The various methods of treatment are carefully analysed; that most in vogue and of greatest value was change of diet with the use of fruit juice, with or without drugs. The majority report, which was eventually adopted by the Society by 18 votes to 1, affirmed the following conclusions: (1) That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change of diet that at first thought would seem to be unsuitable may be followed by prompt recovery. (2) That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there were certain forms of diet which were particularly prone to be followed by the development of scurvy. First in point of numbers here are to be mentioned the various proprietary foods. (3) In fine, that in general the cases reported seem to indicate that the further a food is removed in character from the natural food of a child the more likely its use is to be followed by the development of scurvy. A minority report (signed by one member) regarded the disease as due to ptomaine poisoning resulting from the absorption of toxins produced mainly by abnormal intestinal fermentation.

PUBLIC HEALTH IN ITALY.

The *Annuario Statistico Italiano* for 1898 has just appeared, and furnishes some valuable facts as to mortality and disease in Italy, as well as some interesting information as to meteorology. For example, the rate of mortality has decreased during a period of 25 years (1872 to 1896 inclusive) from upwards of 30 per 1,000 to less than 25. The exact figures are for 1872, 30.78; for 1896, 24.30; and this decline has been fairly regular and progressive. Taking successive periods of five

years each, the rates have been 30.19, 29.18, 27.62, 26.84, and 25.30. All this seems to point to a decided improvement in sanitary conditions, for the marriage-rate has only declined by a fraction, and the birth-rate from about 37 to a little over 35, so that the population grows at an increasing rate. The only unfavourable symptom is a very decided increase in the number of stillbirths.

When we come to examine the mortality from different diseases, we find that there has been during the last ten years a very marked diminution in almost every item of the infectious class. Thus in the case of small-pox the proportion per million has diminished from 551 to 65,[1] in that of measles from 806 to 369, of scarlatina from 496 to 104, and in that of typhoid fever from 925 to 526. Whooping-cough has fallen from 378 to 213, and what is more remarkable, when we consider that in our own country diphtheria has been distinctly increasing; this latter disease has fallen off pretty steadily during the ten years (1887-1896) from 835 to 205 per million. But croup and laryngitis have not decreased, a fact to be pondered on by those who refuse to recognise the clinical distinction between croup and diphtheria. Influenza and epidemic meningitis have varied extremely from year to year; the former was most severe in 1892, the latter in 1893 and 1894. The mortality from malarial fever and paludal cachexia seems to be declining slowly, owing probably to the draining of marshes and the planting of the eucalyptus; but there are, of course, annual variations depending on the character of the seasons. Syphilis would appear to increase slowly, but perhaps this may be merely an affair of nomenclature. Malignant pustule and rabies decrease.

It is evident that, as in England, the apparent improvement in public health consists largely in the smaller fatality from a few special diseases, as typhoid fever, small-pox, and phthisis; so in Italy, it is the lessening of the mortality from zymotic disease which gives the same impression, there is no real advance in other directions. In Italy, indeed, the mortality from pulmonary tuberculosis does not notably diminish. It is about 1,030 per million, a lower rate indeed than in Britain as a whole, but not lower than in sundry favoured districts of the West of England and the Severn valley. Chronic pneumonia appears to have fallen from 228 to 48; this is doubtless only due to changes in diagnosis and nomenclature. Marasmo senile (old age) is credited with 1,207 deaths to the million instead of 889. Pellagra, the scourge of the maize-fed peasantry of Lombardy, decreases very slowly. Fatal diseases of the nervous system show no remarkable variations. Bronchitis and pneumonia have both increased, the latter most distinctly; they are respectively third and second among the diseases specified in the order of mortality, slaying about 2,300 and 2,500 per million. The former seems to be more under the influence of the seasons. Enteritis, diarrhœa, and dysentery are classed together, and rank first in the list with about 3,500 deaths; they are apparently on the increase. So, too, are diseases of the heart and of the kidneys. Alcoholism increases, but accidental deaths decrease; this is an anomaly. Puerperal accidents and diseases have declined from 235 to 116, which is a sign of advancing civilisation. I suppose we may say the same of a slight decline in the very numerous homicides and a very decided increase in the suicides. Diabetes has increased from 17 to 27, and cancer from 428 to 496. In both cases improved diagnosis may be responsible, but the augmentations are rather large.

Deaths among soldiers serving in Italy have declined much more than those among the civil population, and suicides among them have somewhat decreased. The physical condition of conscripts, however, does not appear to have improved materially.

On the whole there is a good deal of evidence of medical activity and sanitary improvement among the Italians, though poverty and insufficient or bad food, as well as the ignorance of the people, may greatly hinder their beneficial agency.

The climatological tables will be found full of surprises for those who have only the current popular notions about the climate of Italy. Thus, of twelve urban stations scattered throughout the country Genoa has at once the largest rainfall, the largest (with Palermo) number of rainy days, and the driest atmosphere. It has also the lowest maximum temperature, together with the highest mean temperature north of Rome and the highest winter mean temperature north of Naples. So far as figures can tell, Ancona has a very good winter climate, much warmer than that of Venice.

[1] Vaccination is general but by no means universal.

THE MEDICAL SERVICE OF THE EGYPTIAN EXPEDITION.

[FROM A CORRESPONDENT.]

ONCE more, as in 1882, there would appear to be a tendency on the part of certain military critics to attack the Medical Department of the army, and to repeat the cry of a breakdown in the medical organization in the field. Certain questions have been asked in the House, and, judging from a letter published in the *Times*, the gallant member who put the questions is not satisfied with the official answers given. It is not necessary to reply in any detail to the accusations brought forward in this letter, many of which are frivolous, if not manifestly absurd.

General Russell may never have heard of "shady places in the Egyptian desert," but we presume he will not pretend to a local knowledge of the Atbara, and will not set himself up as an authority against the statement of the Sirdar himself as to the wounded being placed in the shade. Nor is it at all likely that the men were better looked after than the officers.

The fact of the matter is that our little wars with only a handful of wounded to be dealt with, have rather spoiled both officers and men, who expect the luxuries of civilisation in the heart of the Soudan. War cannot be made with rose water, and should we ever engage in a European war, the sick and wounded may have to learn a sad lesson of real suffering and privation, when the number of wounded to be dealt with may be so great that hours, if not days may elapse before they can all be attended to.

Of such complaints as deficiency of champagne in the field, and that the personal appearance of the nurses at the base did not entirely satisfy the sick and wounded officers, have, it is stated, been made, but the latter, at any rate, is probably a joke.

There is one point, however, on which we would strongly insist, and that is, that general officers who cut down medical requirements should take their full share of the responsibility when the medical organisation is attacked. It is unjust to the Medical Service that such attacks should be published, that no official inquiry is made, and that the authority really responsible should maintain a judicious silence.

The medical organisation of any expedition is submitted in detail to the general officer commanding, and it is rarely that medical requirements are approved in their entirety. If, in the first phase of the Khartoum expedition, the medical staff was insufficient, the responsibility rests with the Sirdar, unless he can prove that the demands of the medical authorities were met in full.

General Russell rightly remarks, "Success is the first consideration in military operations." If a general officer considers that to obtain this success involves a reduction in the *personnel* and *materiel* of the Medical Department, it is for him to decide, but the responsibility is also his, and if afterwards the Medical Department be attacked, it is his duty to come forward and bear this responsibility.

The lesson of the Egyptian war of 1882 will not easily be forgotten by the Medical Department of the Army. It was the military authorities who decided that the base hospitals should be established at Gozo and Cyprus, it was the military authorities who left the hospital ship *Carthage* at Alexandra, when the entire force was moved round to Ismailia, and it was the military authorities who, in ignorance of the difference between a field and a base hospital, most unjustly cast the entire blame of inevitable shortcomings on the medical department.

This is not likely to happen again and not only will the medical requirements of the present expedition leave nothing to be desired, but Surg.-General Taylor, the principal medical officer of the Force, will see that his reasonable requirements are complied with, and if not, will fix the blame where it is due.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 3rd, 1898.

OLD-AGE PENSIONS AND INVALIDITY.

In England and Wales 20 per cent. of the total population above the age of 65 are said to receive Poor-law relief in one day, and nearly 30 per cent. in one year. These are figures reported by the Royal Commission on the Aged Poor, over whose deliberations the late Lord Aberdare presided. The proportion of the working classes obliged to obtain Poor-law relief must obviously be a much larger one than that of the total population, and Lord Aberdare's Commission "could not but regard it as an unsatisfactory and deplorable fact that so large a proportion of the working classes are, in old age, in receipt of Poor-law relief." Many schemes for providing old-age pensions have been drawn up, and some of them, such as those of Sir Henry Burdett and Mr. W. Birkmyre, have been from time to time discussed in the pages of the British Medical Journal.

The recent Committee on Old-Age Pensions, under the chairmanship of Lord Rothschild,[1] had to consider more than a hundred schemes, and classified them for the most part in four groups, as follows:

1. Schemes involving compulsory contribution towards a pension fund, either by way of the German method of deduction by employers from wages paid by them, assisted by a contribution levied from the employers, or by way of an annual, or a lump, payment made by all young persons before a certain age, and accumulated at compound interest until the pension age.

2. Schemes providing a universal grant of pensions to all persons upon attaining a certain age, without requiring from them any direct contribution, or examining their merits and their needs. There are various modifications, suggested chiefly with the object of fixing the income, above which there should be no grant.

3. Schemes providing special facilities and encouragement to voluntary insurance against old age with material assistance from the State.

4. Schemes providing State aid towards old-age pensions for members of friendly societies only.

Schemes involving compulsion (group 1), those requiring no provision by the pensioners (group 2), and those confined to members of friendly societies and similar institutions (group 4), had not to be considered by Lord Rothschild's Committee according to their terms of reference; so that the third group of schemes remained alone to be enquired into. After careful deliberation the Committee found themselves forced to the conclusion that none of the schemes submitted to them would attain the objects which the Government had in view; they found themselves also unable to devise any proposal free from grave inherent disadvantages.

We have already drawn attention in these columns[2] to the importance of providing for invalidity and chronic illness in connection with any scheme for old age pensions, and it is difficult to see how this can be effected without the co-operation of existing provident societies (friendly societies, etc.). On the other hand, so large an undertaking as this would be, could hardly be placed on a sound basis, unless, as in Germany, the whole arrangements were placed under State control. Intimately connected with this question is the one of workmen's insurance against accidents, and the guarantee of medical and surgical treatment in case of any injury or sickness. It is curious to note that a recent writer on the subject[3] claims a great improvement in medical knowledge and in methods of treatment as one result of the modern German system of State aid to workmen's assurance.

Would the existing workmen's friendly societies and similar associations submit to have their affairs interfered with by the State to the extent that would be necessary if some universal system of workmen's insurance were to be arranged requiring the co-operation of these societies? It is hardly likely that they would. In England, therefore, for this reason alone, the introduction of a complete system of workmen's insurance and old-age pensions is for the present not at all likely to be attempted. The report of Lord Rothschild's Committee mentions, however, at least one cause for satisfaction. The Committee, in the course of the inquiry, has been strongly impressed with the view "that a large aud constantly increasing number of the industrial population of this country do already, by prudence, self-reliance, and self-denial, make their old age independent and respected." They express a strong hope "that the improvement which is constantly taking place in the financial and moral conditions of labour will do much to deprive the problem they have considered of the importance now attaching to it."

[1] Report of the Committee on Old-Age Pensions, 1898, p. 2.

THE REPORT OF THE PATHOLOGIST TO THE LONDON COUNTY ASYLUMS.

It is not so long ago that much of the abundant pathological material obtained in asylums was not utilised to its full extent, and thus a most important source from which information can be obtained, not only upon actual disease of the nervous system, but also upon the functions of the organs belonging to it, was left almost untouched. It should be added, however, that even during this period there were one or two striking exceptions, notably in the case of the West Riding Asylum of Yorkshire, from the laboratories of which most important work was from time to time issued. By the appointment of well-known neuro-pathologists such as that of Dr. F. W. Mott, F.R.S., to the London Asylums Committee, and by the greater interest

[2] British Medical Journal, April 2nd, 1898.

[3] "Die ärztliche Behandlung der Arbeiter in Deutschland." By O. Thilo. (*St. Petersburgher Med. Woch.*, 1898, No. 30).

taken in the pathology of the nervous system by asylum superintendents, all this has been changed, and will still undergo further change with considerable gain to our knowledge.

The important report by Dr. Mott, which is contained in the Ninth Annual Report of the London Asylums Committee just issued, shows that valuable researches have been made in the laboratory which he directs with so much ability into (1) the minute morbid anatomy of general paralysis, including both the nervous system and the heart and respiratory muscles; (2) the question of the relation of syphilis to general paralysis, together with an investigation into the frequency of atheroma in persons dying of general paralysis under 45 years of age; (3) the rarity of cirrhosis of the liver in asylums; (4) the pathology of the neuron in four cases of tabes dorsalis and combined general paralysis and tabes; (5) spinal localisation by Dr. Henry Head; and (6) the pathology of disseminated sclerosis by Dr. Tredgold.

The question of syphilis of the brain is also dealt with in the report, but it is more by way of promise for the future than a record of work done in the past. All interested in neuropathology will look forward to the appearance of the *Archives* promised by Dr. Mott, which will contain among other matter a paper on cerebral syphilis based on the rich material outlined in this report. Not the least important duty of the director of a laboratory is to attract a number of other workers about him, and Dr. Mott has had the good fortune of having Drs. Henry Head, Tredgold, and Barrett working in his laboratories. Dr. Head, we are told, will publish in *Brain* along with Dr. Campbell, of Rainhill, a paper on spinal localisation.

Dr. Mott is a staunch believer in the relation of syphilis to tabes and general paralysis. His figures are small, but they tend to confirm a view now widely accepted. Dr. Wakelyn Barrett, the technical scholar, has found the vagi and sympathetic healthy in general paralysis with one single doubtful exception. Dr. Mott found in a case of general paralysis with a gangrenous bullous eruption lesions in the small cutaneous branches of the anterior crural nerve and also in the spinal ganglia from which this nerve is derived. The researches carried out by Drs. Mott and Halliburton make it appear that cholin exercises a dilating action on vessels. It is present in excess in the cerebro-spinal fluid of general paralytics after death. It is suspected that venous stasis may be caused by it and that a deficient supply of proper blood to the ganglion cells in the brain thus arises. This subject is referred to here as it shows that chemical questions must constantly be borne in mind in pathological investigations.

It will be seen from this short analysis of the report that a great deal of extremely valuable work has been done in the laboratory, yet Dr. Mott makes an apology that the amount of work is not greater. Everyone will regret the cause which he assigns, which was a serious attack of typhoid fever which he himself contracted during the course of his investigation. All will congratulate him upon his recovery, and all will feel confident that the renewed energy with which he has returned to his labours will result in important contributions to neuropathology.

DIPHTHERIA: PREVENTION AND TREATMENT.

The papers on diphtheria which are published in this number of the British Medical Journal form a very interesting series, in the course of which nearly all the moot points connected with the etiology, pathology, and antitoxic treatment of the disease are discussed or touched upon.

Dr. Dixey, in his paper read before the Section of State Medicine (page 611), discusses, in the light of the data afforded by the statistics of the last two years, certain problems in connection with diphtheria which had already been dealt with by him at two previous meetings of the Association. The outbreak of diphtheria in London, which began early in 1892, reached alarming proportions in the autumn of 1893; it then declined, but manifested some slight recrudescence in 1896, followed by a further diminution in 1897, and a continued downward tendency in 1898.

His remarks concerning school attendance are particularly interesting. Dr. Dixey accepts unreservedly the doctrine of holiday influences, and he shows that the conclusions arrived at by Mr. Shirley Murphy some three or four years ago are borne out by figures which have become recently available. Both in 1896 and 1897 the drop in the number of fatal cases corresponding with the period of summer holidays is perfectly apparent, even in the curve for "all ages." The examination of successive ten-year averages shows that as the general prevalence of the disease is increased or maintained, the "holiday drop" exhibited by the ten years' mean becomes more and more distinct. Looking at the facts as a whole, Dr. Dixey sees no way of escaping the inference "that there is a factor at work distinct from ordinary seasonal conditions, which is sufficiently powerful to induce a fairly regular disturbance of the course of fatal diphtheria at two definite times of the year, these times corresponding with the usual holiday periods of schools." He adds that "If this conclusion should appear to be well grounded, those responsible for action in the matter will doubtless not be content with a mere abstract acquiescence in its probable truth."

With regard to the effect of the antitoxin treatment on the case-mortality, Dr. Dixey brings forward new figures which confirm the opinion deduced from those furnished by his earlier analyses; as he says, if anyone doubts that the reduction is due to the introduction of the serum treatment, he may now be fairly called upon to say what other factor can have been at work since 1894 capable of producing the present result. The conclusion is confirmed in a remarkable manner by the results in the series of cases carefully observed and impartially reported by Drs. Sidney Martin and G. Bertram Hunt from University College Hospital (p. 624). They find that the total mortality of all cases, without distinction of ages of patients or the sites of the local lesions, has fallen from between 33 and 43 per cent. in the years before the antitoxin treatment was available, to 28, 17.7, and 17 per cent. respectively in the three years during which antitoxin has been used. The reduction affected both the total case-mortality and the mortality of cases in which tracheotomy was performed, and the writers express the opinion that it must be due to

the treatment with antitoxic serum, since a minute comparison of the cases reveals no other factor capable of producing this result.

It will not escape attention that in the statistics given by Drs. Martin and Hunt the case-mortality in the second and third years during which antitoxin was used was very notably lower than in the first; and the writers distinctly state that the full benefit of the antitoxin treatment was not obtained until fairly large doses were employed, when the mortality fell from 28 to 17.7 per cent.

As to the effect of the antitoxin treatment on the frequency of diphtherial palsy opinion differs. In Dr. Goodall's experience it has increased, but he believes that this is due to the fact that patients now recover who before antitoxin would have died. Drs. Martin and Hunt believe that the frequency of paralysis has not been reduced by the antitoxin treatment. On the other hand, Professor Baginsky expressed the opinion that early antitoxin treatment was of the greatest value in diminishing the number of cases of paralysis in diphtheria. Dr. Sims Woodhead also, whose valuable paper on the pathology of diphtherial paralysis in the Section of Pathology (p. 593) will be read with great interest, said that he was thoroughly satisfied that antitoxin had no power by itself of setting up paralysis, and that the practical outcome was that the antitoxin should be used before degenerative changes had been set up, and that enough antitoxin should be given to neutralise not only the lethal action of the diphtheria toxin, but also its local and paralysis-producing action.

THE PATENTING OF DIPHTHERIA ANTITOXIC SERUM.

It is stated with some authority that the Board of Appeals at Washington, U.S.A., after repeated refusals, have at length granted a patent to Professor Behring for the invention of diphtheria antitoxin. It can only be with pain and regret that the medical profession will learn that any such monopolies should be sought by any of its members. Indeed, we have maintained that it is traditionary in the annals of medicine in this country "that every discovery made by a medical man tending to the relief of suffering or preservation of health should be freely communicated to the world and placed at the disposal of the entire profession." Who can claim to be the true and first inventor of antitoxin? A host of names present themselves to us in this connection, and altogether apart from the principle we have endeavoured to uphold—that it is contrary to the ethics of the medical profession for a medical man to obtain any such monopoly—it would seem impossible that any one individual should succeed in establishing his right to such a grant. There seems something repugnant to the moral sense in the suggestion that any remedy whatever for the prevention or cure of disease should be fettered in its use or sale by the rights of a monopolist, and that the practitioner should have to resort to a patentee or his licensee before he should be able to employ it. We very much doubt, even if such patents are obtainable in this country, that their validity could be sustained, and the same laws will probably be found to prevail in the United States of America. Among the essential conditions, according to the Statute of Monopolies, before a patent can be valid are that the grant must be made to the true and first inventor, that there must have been no prior user of the invention by the public, and that the privilege must not be contrary to law or generally inconvenient. We have no hesitation in saying that such a monopoly would be generally inconvenient, and if not contrary to law in the sense implied in the statute, it would undoubtedly, we think, be contrary to public policy.

THE PEACE SCARE.

Although no immediate practical result may flow from the International Peace Congress which it may be assumed will meet in consequence of the manifesto of the Tsar of Russia—a country which, it may be observed in passing, has just decided to spend two hundred million roubles on increasing its navy—yet the issue of such a document, and the sentiments to which it gives expression, is a sign of the times. The truest observation on the matter has been made by the *Vossische Zeitung*, which said: "War has lost a good part of its poetic charm, and it brings an ever-increasing responsibility with it." This is strictly true. It was one thing to bow to one another and exchange graceful compliments at Dettingen, and quite another to be one of a battalion in which a Maxim-Nordenfelt battery is cutting a pattern at 3,000 yards. It was all very fine to board your enemy's ship cutlass in hand, and engage in a hand-to-hand fight on his quarterdeck, it is a hideous nightmare to run the risk of being drowned like a rat in the barbette of a big ironclad owing to the explosion of a submarine mine or a torpedo which you cannot see. It has always been said that war would be abolished by mutual consent when weapons of offence became so deadly that they meant mutual extermination. We are coming very near to this. The horrors of a military campaign under modern conditions we partly know, but at those of a big naval battle we can only guess, and the picture which the imagination brings up is too horrible to contemplate with equanimity. A battleship going into action is divided transversely into sections by watertight doors; men go into watertight bomb-proof turrets and barbettes to work the guns. Everything is battened down; only a "bolt hole" is left for the stokers, because it is felt that human nature could not endure the thought of being sealed down in a stokehold of a ship which might go down at any moment. It is idle to suppose that any effectual help to the wounded could be rendered during the action; each surgeon would be caged up, like the rest of the ship's company, in some one compartment of the vessel shut off from every other by the watertight doors. He could attend to those about him, but the others must take their chance. These things ought to be known and realised. So again with military actions. The battles of the future between troops armed with quick firing weapons of long range and precision must produce a number of wounded men so enormous that it will be quite beyond the means of any existing medical service of any army of any country effectually to deal with them at once. The romance of war has gone, and we have only its horrors. The modern surgeon can do a great deal more for his wounded man when he gets to him than his predecessor could do. But he will not get to him because he will be overpowered by numbers. It is doubtful whether the public understands all this, but it may not be inopportune to call attention to it, because men's eyes are still dazzled by the false glamour of war, and there is a comfortable disposition to believe that organisation is now so good that, between the medical services of the armies and the Red Cross societies, the wounded will be quickly treated. They will not be quickly treated, simply for the reason that in a big European war they would be so numerous that no organisation now existing or likely to be called into existence would be able to deal with them. Such a war, whether by land or sea, would be fruitful of horrors—horrors so horrible that if the peoples who would suffer them could only be got to realise the probabilities—nay, the certainties—we should be brought much nearer an era of universal peace than we have been by the much-criticised manifesto of the Tsar.

PUBLIC HEALTH AND PARTY POLITICS.

THE system of government by parties is so deeply rooted in the British mind that it has become difficult for us to understand how the work of government can be carried on by any other method. We are puzzled when we read that the Japanese, who have a system of representative Government, do not yet enjoy the blessings of the party system, although the present Government has come into office pledged to establish it. In this country government by party applies practically to every legislative proposal so soon as it becomes sufficiently important to attract a large share of public attention. For a time, indeed, it seemed as if questions affecting the public health might remain outside the sphere of party politics, using that term in the larger sense, for the discussion of such questions has always aroused strong feelings in small boroughs and country districts, where there are ever sure to be "outs" who loudly maintain that the money of the ratepayers is being wasted by the "ins." But it seems to be certain that in future public health legislation will be dealt with on the party system, and that attempts will be made to make party capital out of the introduction and the rejection of public health measures in Parliament. Mr. Disraeli, with a prescience, which in an earlier age might have earned him the name of prophet, saw what was coming, and inscribed on the banner of his party the motto *Sanitas sanitatum omnia sanitas.* But it was not to be expected that so taking a cry as "health for the workers" would long remain the monopoly of any party. The present unsatisfactory position of public health legislation has been the subject of an interesting but desultory correspondence in the *Times.* It was raised by a surgical writer, who said that the fuss which was being made about lead poisoning appeared slightly ridiculous to those who knew how small a part of the total preventable sickness and mortality in the country was due to this cause. The point was perhaps worth making, inasmuch as it may help to impress upon the public mind the enormous mortality, and the perhaps still more serious amount of ill health and diminished activity, due to preventable causes. It would, however, be a mistake to press this line of argument too far, for the British public is apt to proceed not at a steady, continuous pace, but by spasms of virtuous indignation. Our system of education, higher intermediate and elementary, is so woefully deficient on the scientific side that as a nation we are conspicuously wanting in the scientific habit of thought. A subject demanding the scientific attitude of mind for its due consideration, and involving the weighing of scientific principles, does not readily lend itself to party methods. A scientific doctrine or fact may be used as a weapon in the fight by politicians, but it does not easily become itself a cause for which politicians will fight. Our statesmen, with few exceptions, have received no education in science, and though Prime Ministers have translated Homer, and written with more or less learning on Greek Mythology or the early Christian Fathers, Lord Salisbury is, we believe, the first who has had any pretensions to be a man of science. It is, perhaps, the more to be regretted that it is in his time that public health has become a matter of party politics, but under our system it is really rather the part of those whom we call the leaders of a party to read the signs of the time and to give expression to opinions which are forming in the public mind than to educate or form opinion. The chief man of a party, like the shepherd, walks behind his flock, he encourages it with his voice, and takes care that it is difficult for individual members to turn out of the road which he wishes them to follow, but if the flock is wilful, and takes it into its head to scamper off along some by-path, he is helpless unless he have some courageous lieutenant who, like the shepherd's dog, will head off the stampede and bring the flock back into the right road. Looking at the matter from a practical point of view it appears to be useless, and it is therefore probably inexpedient to complain that Public Health questions are becoming more interesting to party politicians. They will deal with them after their own manner. Sanitary reformers must, as practical men, make the best of the situation, and when some striking incident, such as the recent deaths from lead and phosphorus poisoning, has seized upon public attention, take advantage of the opportunity to bring about an improvement long desired by them, although it may readily be confessed that it would be much more rational and logical to attain the desired end by a deliberate process of education.

THE CONGRESS OF GERMAN NATURALISTS AND MEDICAL MEN.

As already announced, the Seventieth Congress of German Naturalists and Medical Men will open at Düsseldorf on Monday, September 19th, but on the previous day meetings of the various Committees will be held, and in the evening the members attending the Congress will be received officially by the officers. The first general sitting of the Congress will be held at 9 A.M. on September 19th, under the presidency of Professor Mooren. Professor F. Klein, of Göttingen, will give an address on University and Technical High Schools, and Professor Tillmanns, of Leipzig, an address on A Hundred Years of Surgery. In the afternoon the Sections will be organised. They will commence their business on the following morning at 9 A.M., and will sit again in the afternoon. In the evening there will be a gala performance of Wagner's *Die Walkure* in the town theatre. On Wednesday the Medical Sections will meet together under the presidency of Professor His, of Leipzig, when a discussion will take place on the Results of Recent Investigations into the Physiology and Pathology of the Circulatory Organs. In the evening there will be a banquet, which will be attended by ladies as well as by members of the Congress. On Thursday the Sections will meet morning and afternoon, and in the evening there will be a ball. The second general meeting will take place on Friday morning, when addresses will be given by Professor Martius, of Rostock, on the Causes of Beginnings of Disease, by Professor van t'Hoff, of Berlin, on the Increasing Importance of Inorganic Chemistry; and by Dr. Martin Mendelssohn, of Berlin, on the Importance of Sick Nursing to Scientific Therapeutics. In the evening the city of Düsseldorf will give a farewell entertainment, and Saturday will be spent in excursions. During the meeting there will be, as has been stated in previous numbers of the JOURNAL, four exhibitions: (1) a historical exhibition, (2) an exhibition of scientific medical, hygienic, chemical and pharmaceutical inventions, (3) an exhibition of photography in relation to science, and (4) a collection of physical and chemical teaching appliances for use in intermediate schools.

INFECTIOUS DISEASE CONTRACTED AT WORK.

IN a letter in our issue of August 20th, Dr. Ogier Ward has again drawn attention to what he considers a defect in the system of notification. He would require a notification of the workplace of the patient to be sent to the medical officer of health of the district in which this is situated. This in London, and to a less extent in the country, would often mean a separate certificate of the case, and to another medical officer, and ought of course, if enforced, to imply an additional fee. Where the workplace and residence are in the same sanitary district this is the less necessary in that one of the first questions put to the patient's friends, when the sanitary officer visits, is, "Where does the patient work?" This information (including in one town we know of not only the name of the school but also the standard in which a child is placed) is usually registered in the zymotic book and in many cases a blank is left for a statement of what measures have

been taken at the workplace. Not only so, but many medical officers inquire as to the workplace of every member of the patient's family, finding this information specially useful in tracing infection through healthy persons. Most officers of health are willing enough to ascribe diseases of long incubation to infection received out of their own district, and where there is a suspicion of this it is quite usual for the medical officer of health in the town where the case is notified to write to his colleague in the district whence the patient has come, or where he usually works. Amongst the information furnished to the Local Government Board prior to the general Act of 1889 by officers of towns having private notification Acts, as to advantages resulting from these Acts, was a statement from Huddersfield, that three cases of typhoid occurring within a few days of one another in different parts of the town had this in common that the patients all three worked at the same office, on visiting which grave sanitary defects were found and remedied. The more frequent and systematic examinations by the health authorities of all schools, offices and workshops, is a thing greatly to be desired. Much has been done for dwellings, but, as Dr. Ward points out, workpeople often spend a large part of their time in unhealthy surroundings of which yet they dare not complain. Our sanitary system cannot be regarded as satisfactory until we periodically examine all houses and workplaces and at frequent intervals retest their drains.

INFECTIVE (?) TINNED SALMON.

An inquest was held on August 24th concerning the death of a young woman of Moss Side, near Manchester. According to the evidence as reported in the *Liverpool Mercury*, she complained on August 10th of slight sickness, but followed her ordinary occupation of dressmaking. On August 11th she formed one of a party of four at tea at a friend's house, where all partook of tinned salmon amongst other things. For a week she complained of feeling sick, but did her work. On August 18th Dr. Pringle found her feverish and complaining of severe diarrhœa. Her symptoms were intensified, and on August 22nd she died. The *post-mortem* examination revealed much intestinal congestion and great enlargement of the spleen. Dr. Pringle found in the blood many putrefactive bacteria, which, he considered, were of a kind to produce septicæmia, and which, in his opinion, were present in the tinned salmon. He thought that the previous illness of the patient rendered her more susceptible, for two of the others who had eaten of the salmon had been affected similarly, though not to the same degree. Dr. Pringle expressly stated that he did not mean that death was due to ptomaine poisoning. This case is therefore one of considerable interest, which would be increased by the publication of fuller details as to the result of the bacteriological examination, especially so should any investigation of the blood have been made previous to death. The medical evidence illustrated a somewhat changed attitude with regard to the nature of these fatalities, arising from the ingestion of food in a state of putrefaction. Such cases would, only a short time ago, have been usually ascribed to ptomaines, but in the light of some recently published instances there is a tendency to investigate the blood, and often a true septicæmic condition is found to exist. Streptococci undoubtedly play an important part in many cases, and that they may find their way into the blood from the intestines has been established. Many pathogenic bacteria have been isolated from the contents of the bowel, some of which have also been isolated from putrefying articles of food. It is probable that passing through a disordered stomach the ptomaines or toxins manufactured by those pathogenic bacteria, as well as others formed by the accompanying non-pathogenic, but saprophytic, organisms, by setting up an enteritis thereby create the "open door" through which the bacteria find admission to the "hinterland" of the system.

THE INDIAN MEDICAL WARRANT.

We may congratulate the Secretary of State for India on the promptitude with which he has issued the Warrant altering the ranks of the officers of the Indian Medical Service. The Warrant, which is printed at page 658, is entitled "Alteration of Ranks." It merely alters the old compound into simple military titles, corresponding with those in the Royal Army Medical Corps. Officers promoted from the Subordinate Medical Department will have "honorary" military titles, from lieutenant to major. There is no indication of any present intention to form the Indian Medical Service into a corps of officers and men; it will remain, meanwhile, like the Indian Staff Corps, a body of officers simply, without men. Ultimately, it may perhaps be designated the Indian Medical Corps.

UNQUALIFIED PRACTICE.

The case of Regina *v.* Matthews reported from the *East Anglian Daily Times* in our Medico-Legal columns deserves more than a passing notice. As will be noted, it was a prosecution by the Medical Defence Union under the Medical Acts 1858 and 1886 of one Samuel Matthews, of the City of Norwich, for wilfully and falsely using the name and title of "Dr." on certain specified occasions, and for having wilfully and falsely used the name and title of "Surgeon" on one occasion. The defendant Matthews was not a registered medical practitioner, and therefore the contention of the prosecuting body was that he had made himself liable under the Act to a fine not exceeding £20. The defence raised by Mr. Wild, the defendant's counsel, was simply an appeal to the gallery, and violent abuse both of the medical profession and of the prosecution. Mr. Wild said that the prosecution was really a persecution; that Mr. Matthews had not become a member of the regular medical profession, not on account of inability, but because he disagreed with them. If one belonged to the faculty, the learned counsel observed, one had to subscribe to all the shibboleths of the faculty; rightly or wrongly Mr. Matthews was a herbalist. His client had been practising since the death of his father in 1878; his father, who also held an American diploma, having begun to practise in 1825. Then followed the statement that "Dr. Matthews was resident accoucheur to the Westminster Hospital School of Medicine in 1858; he took honours in Midwifery in 1858 and 1859 in London." "Everyone in Norwich knew that he (Matthews) disagreed with the profession." In fact, the only defence raised might be summed up in a few words: "We all know Matthews to be a quack, therefore there is no fraudulent pretence; it is true that he calls himself 'Dr.,' but he deceives no one thereby." The magistrates, after considering in private, decided that Matthews was not using the title "Dr." in contravention of the statute, but convicted him for infringement of the same in relation to the title "Surgeon." The paradoxical nature of the verdict is apparent; according to this decision an unqualified person may use—at any rate, in Norwich—the title "Dr." in conjunction with medical practice, but should he add the title "surgeon" he is guilty of an offence under the Act. In the face of previous decisions by judges of the High Court and others this verdict must not pass unchallenged, and we are informed that a request has been made to the Justices to state a case. On the following day the same defendant was fined the full penalty of £20 under the Apothecaries' Acts for practising as an apothecary without a license. The Medical Defence Union again appeared in support of the summons. In this Court, before His Honour Judge Willis, Q.C., a very different state of things was found. It appears from

the report in the *Eastern Daily Press* that there was no defence. All the defendant's counsel could do was to attempt to soften down the offence by abuse of the Apothecaries Act on account of its antiquity. His Honour corrected this statement by reminding counsel that each year former Acts are technically re-enacted, and that the Act of 1815 was now the Act of 1898. He also added that the Apothecaries Act was good law, and if Mr. Matthews practised again as an apothecary he had no doubt further proceedings would be taken against him. With these statements we thoroughly agree.

CONSUMPTION AMONG ENGLISH JEWS.

We published some little time ago a brief summary of the report of a Committee appointed by the Jewish Board of Guardians to investigate the condition of London Jews in respect of tuberculous disease. We have received a paper, read before the same body by Dr. A. Gaster, which gives some valuable statistics relating to the same subject. The author's object was to set before a body of laymen a succinct and popular account of tuberculosis, together with an abstract of the conditions of its spread among Jews. He gives a short account of the tubercle bacillus and its relation to the disease, laying particular stress on the retention of virulence for many months by bacilli dried at a temperature of 725° C., and on their continued activity after prolonged immersion in water or burial in earth. Emphasis is properly laid upon the extreme danger to the community resulting from the continuance of their ordinary occupations by phthisical subjects who are not ill enough to be admitted into hospital. Dr. Gaster states that among Jews the disease mainly affects the intestines, and is due to the consumption of infected food and milk. This view is certainly not that held by most authorities. Pulmonary phthisis is generally regarded as the commonest form in Jews as in Gentiles, and it must be remembered that the Talmudic laws as to the inspection of meat render it almost impossible for a tuberculous carcass to be used as human food. The author quotes some valuable statistics showing that Jews suffer from consumption only about half as often as non-Jews. His results are based upon the burial returns of the United Synagogue from 1889 to 1893, as compared with those of the Registrar-General. He expresses his conviction, which is perhaps rather more patriotic than scientific, that the favourable condition of the Jews is due to race influences. He is, nevertheless, alive to the importance of preventing tuberculosis from seizing upon the Jewish race, and he gives some excellent rules to this end; those relating to the bringing up of children born of a tuberculous stock are particularly commendable. The Jewish Board of Guardians is doing good work in the interest of sanitation for the whole of the East-end of London by the leaflets which it issues on this and allied subjects.

MILITARY HOSPITALS IN INDIA.

A leading article in the *Times of India* (August 2nd), dealing with "The Military Surgeon of the Future," makes some pertinent remarks on the imperfect equipment of our military hospitals. The writer very truly says, "There is only one military hospital, namely, Netley, which is equipped on a scale conformable to modern scientific requirements. In the Cambridge Hospital, Aldershot, and the Herbert, Woolwich, a lame attempt is made in this direction. In India there is no military hospital which in equipment can compare with the large civil hospitals in Bombay or elsewhere; on the contrary, the equipment in all of them is not only decades behind the age, but a policy of niggardliness, even in what little is supplied, is much in evidence." The writer of the article urges the establishment of one large military hospital for each command in India—Punjab, Bengal, Madras, and Bombay—equipped up to modern scientific requirements. Each such hospital might then become a teaching centre to which medical officers should from time to time be attached for instruction. Knowing the difficulties medical officers have experienced in the past in getting recommendations entailing expenses carried out by the Government, we cannot concur with the writer in attaching blame for existing conditions to the heads of the Medical Department, who no doubt are as much interested in the professional excellence of the army surgeon as is the writer of the article from which we have quoted. Nevertheless, the writer's views are worthy of the close attention of the Military Department of the Government of India.

SURGICAL APPLIANCES FOR WOUNDED SOLDIERS.

A new regulation has been approved and is issued in Army Orders, amending the regulations with regard to men who have lost a limb or an eye or have suffered some injury which renders it necessary that they should wear a surgical appliance. The new regulation is contained in Army Order 114, August 1898, and is as follows: "A soldier duly certified to have received a wound, or other injury, either in action or through the performance of military duty not in action, will, if such wound or injury has occasioned the loss of a limb or an eye, be provided with an artificial limb or eye. If certified to have received under the above circumstances a wound, or other injury, which, though it has not occasioned the loss of a limb or an eye, renders it necessary for him to use some surgical appliance, he will be provided with the same." This appears to go considerably further than previous regulations, and it will generally be felt to be no more than an act of justice to men who have suffered in their country's cause.

BASIL VALENTINE THE ALCHYMIST.

There are grave reasons for supposing that Basil Valentine, the monk of Erfurt, either had no existence or was merely a Benedictine laying no claim to the works issued in his name which have caused him to be looked upon as the earliest scientific chemist and a great light in human culture. He is said to have lived nearly a hundred years before Paracelsus, but Mr. C. S. Pierce, in a recent issue of *Science*, supports the attack made by Kopp not only on his reputation, but upon his very existence. He is in danger of becoming as shadowy and mythical a person as Thomas Rowley, priest of Bristol, whose remains were published by Chatterton. Mr. Pierce points out that Basil Valentine, to whom is erroneously attributed the discovery and the naming of antimony, was never heard of until 1599, when Johann Thölde edited and published the first of his six alchemical treatises, and that Johann Thölde was a man of means, part proprietor of a chemical industry—the salt works at Franckenhausen, and for many years the Secretary of the Rosicrucian Brotherhood, a society founded on and saturated with literary fraud. Mr. Pierce examines and weighs the evidence with care, and is driven to the conclusion that Valentine's manuscripts are the forgeries of Thölde and his brethren, who stole the ideas of Paracelsus, and inserted in one only of the books some solid chemistry in connection with antimony. These secrets of antimony were perhaps bought by the wealthy Thölde or by the master spirit behind him from some indigent chemist, and were then worked into the otherwise nonsensical book in which they appear. They are contained in the *Triumph-Wagen des Antimonii*, embedded in vast masses of speechifying, and consist of about thirty plainly described chemical preparations. Seventeen of these are genuine descriptions of experiments by a skilful chemist, and are distinguished from the chemical directions that are to be found in Raymund Lully, in Arnald of Villanova,[1] and other mediæval

[1] British Medical Journal, vol. i, 1897, p. 1091.

alchemists by the far higher grade of chemical knowledge which they evince. The remaining experiments detailed in the book seem to be mere conjectures never put to the test.

A FRENCH MISSION TO DEEP-SEA FISHERMEN.

Stimulated by the admirable example afforded by our Mission to Deep-sea Fishermen, thanks to whose energetic and well directed efforts, the pernicious "Dutch copers," that were so long a disgrace to humanity, have been well-nigh swept from the northern seas, certain French philanthropists decided to do something towards ameliorating the condition of their fellow-countrymen who, to the number of between 13,000 and 14,000 souls, are engaged yearly in the cod-fishery off the shores of Newfoundland and Iceland. In 1895, the Société des Œuvres de Mer was founded. At first all went well, and in less than two years the pioneer hospital ship, a sailing vessel admirably equipped and capable of accommodating thirty patients, was despatched to Newfoundland; but the Society met with a series of misfortunes. The pioneer ship, named the *Saint Pierre*, was totally lost in a fog, and her sister ship, the *Saint Paul*, which left for Iceland soon afterwards, was cast upon the iron-bound coast of that island during a gale of wind. Eventually the *Saint Paul* was redeemed, and she is still afloat; but the Society's ill luck was not yet exhausted, for its third hospital ship, the *Saint Pierre No. 2*, had no sooner arrived off the Bank than she collided with a smack, receiving serious injury. In spite of all these terrible misfortunes, the Society has not lost heart, and in the words of Dr. Bonnafy, of the French navy, whose pamphlet[1] should be read by all who are interested in North-sea fishermen, is still "*au vent de sa bouée*," a nautical phrase, which may be freely translated, as running before the wind. It is sincerely to be hoped that so plucky an association may have better days in store. In addition to its work afloat, the Society has also established *Maisons de famille* on shore for the fishermen, many of whom are no more than boys. In 1896 the daily attendance at these refuges was 122; in 1897 it amounted to 198.

SERUMTHERAPEUTICS IN YELLOW FEVER.

Professor Sanarelli, the Director of the Hygienic Institute of Monte Video, has made[2] a further report of his experience in the treatment of yellow fever with a serum obtained from horses vaccinated with the bacillus icteroides. The horses were inoculated with a virus of gradually increasing intensity for a period of from 12 to 14 months. The serum was used in the case of 8 patients by Dr. Seidl in the St. Sebastian Hospital of Rio Janeiro. Five of them had reached the fourth day of the disease, and were in a highly critical state when the injections were commenced; 4 who had reached the stage of anuria and delirium died, and the fifth recovered after having received 80 c.cm. of the serum. Of the 3 remaining patients 1 had reached the second day of the disease, and 2 the third day. They had all the symptoms of the earlier stages of virulent yellow fever, including albuminuria, but neither suppression of urine nor delirium, and they all recovered after vigorous serum treatment. It was noticed that after each injection there occurred a fall in the temperature. At a later date, 2 children having the characteristic "black vomit," one at the second day of the disease and the other at the third, were treated with the serum by Dr. Sanarelli; the fever and the albuminuria quickly disappeared, the other general symptoms more gradually, but convalescence was well established after the injection of 20 c.cm. and 65 c.cm. of the serum respectively. In another series of 6 cases occurring in an epidemic having a mortality of between 80 and 90 per cent., 4 recovered and 2 died. In 14 other cases the serum was injected directly into a vein; 11 of these more or less rapidly recovered; of the 3 who died 1 had resisted the treatment, another had been delivered of twins a month previously and was very badly nourished, and the third was the subject of pronounced paludism. Thus 66 per cent., or two-thirds of all the cases treated recovered. The serum obtained from an ox, which was found to be less active than that from the horse, was used as a prophylactic in a severe outbreak in an insanitary prison. Four persons had died in the course of a few days. All who were not immune by reason of a previous attack were then injected, and no other case occurred, although the epidemic still raged in the adjacent town.

[1] *Secours aux Marins des Grandes Pêches.* Toulouse: Imprimerie Lagarde et Sebille, 1898.

[2] *Annales de l'Institut. Pasteur*, No. 5, 1898.

THE NEW ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

The Parliamentary Bill providing a site for the New Infirmary on the public land known as the Leazes has received the Royal assent, after passing through the necessary readings in both Houses of Parliament. It now remains for the trustees of the Infirmary to arrange for the transfer of the greater part of the present site to the Corporation, and for the Corporation to purchase and add to the Town Moor a piece of land equal in area to that required for the New Infirmary. No difficulty is anticipated in the adjustment of these matters, and when they are completed Mr. John Hall will be able to carry into effect his munificent offer to build the New Infirmary.

SOCIAL DEMOCRATS AND THE MEDICAL PROFESSION IN GERMANY.

It is well known that the social democratic movement in Germany has been gathering strength for many years, and is constantly presenting new developments and fresh points of contact with existing institutions. A conflict has taken place between the doctors and the club authorities in the town of Barmen not far from Frankfurt. The majority of the industrial population in this town are, it is said, social democrats, and the chief part in the management of the clubs is thus in the hands of this party. There has been a desire lately to economise the club expenditure, and this seems to have been the real cause of friction between the club authorities and the medical officers. The Barmen club consists of 22,000 members, and from 30 to 40 doctors, appointed by the managing committee, are engaged in this practice. The economic theorists appointed a certain Dr. Landmann, who had formerly been in practice in the neighbourhood, and had also had dealings with the club authorities, to make a searching inquiry into the expenditure connected with the medical department. Dr. Landmann appears to have entered upon his duties with peculiar zest, and devised a scheme for revising all the medical prescriptions and striking out those drugs which he considered too expensive. He further issued a proclamation to the club doctors, by order of the Managing Committee, in which the drugs prescribed were not allowed to exceed a certain cost; the doctors were also expected to see that the patients returned the empty bottles and ointment jars to the chemist. If the medical man ordered any expensive drug he was liable to be severely reprimanded by the club authorities. But the new *régime* did not work smoothly. The chemist complained that he found it impossible to make any profit, and looked with contempt on the club doctor, who was prevented from ordering any but the cheapest drugs. The medical men wisely conferred together in order to put a stop to this state of things. They intimated to the club that they would all resign their posts in fourteen days if the following stipulations were not agreed to: 1. That there should be an agreement for three years. 2. That the fees should be increased from 2 marks 75 pfennigs to 3 marks per member. 3. That the prescriptions should not

be subject to alteration. The club refused to accept these demands, and the matter was placed in the hands of the Town Council. This body supported the medical men, but on July 1st all the doctors had resigned except seven. The club advertised and endeavoured in every way to obtain medical aid, but without success, and ultimately the club had to accede to the demands of the medical men.

THE ROENTGEN RAYS IN THE TREATMENT OF HYPERTRICHOSIS.

DR. EDUARD SCHIFF and Dr. Leopold Freund have recently published in the *Wiener Medizinische Wochensch.* (Nos. 22-24, 1898) a description of the removal of superfluous hairs (hypertrichosis) by means of the Roentgen rays. It appears from the cases which they give in their paper that hypertrichosis may be successfully relieved by this means. In order to avoid the production of inflammation they use a current which does not exceed a maximum of 2 ampères, the maximum tension being 11½ volts, and the source of the light is placed at a distance of 20 to 25 centimetres from the skin which is to be subjected to the influence of the rays, which are not allowed to act for a longer period than ten minutes. (When it is desirable to produce inflammation for some therapeutic purpose 3½ ampères, 12¾ volts, and a distance of 10 centimetres are employed.) The apparatus which they used is supplied by M. Kohl in Chemnitz. They report the results of treatment in two lupus cases and seven cases of epilation. In their cases of epilation they obtained the best therapeutic result after seventeen to thirty sittings of short duration. In several of their cases they noticed that from one to two days before the hair fell out the skin showed a brownish discoloration, which disappeared in three to four days after the hair fell out. In several brunettes the hair became, before it fell out, snow-white. They confirm the observation of Freund, and later of Foster and others, that the effect of the *x* rays is cumulative. Schiff was the first to publish a case in which lupus seemed to be cured by the *x* rays, and the cases reported by the authors seem to confirm the result. In the parts treated, where there were previously lupus nodules, there is now small red depressed cicatrices under the level of the skin. From the report of Dr. Schiff and Dr. Freund it appears to be established that hair may be loosened and removed from the skin by the influence of the *x* rays, and they append to their paper a footnote, in which they state that Dr. Joseph Jutassy has, since Freund's first publication, treated forty cases of hypertrichosis by the *x* rays, and in some of them there had been no regrowth of hair after a year.

THE NOTIFICATION OF SYPHILIS IN PRUSSIA.

IN a recently issued rescript the head of the Berlin police, Herr von Windheim, directs the attention of the medical profession of Prussia to the regulations for the compulsory notification of cases of syphilis—regulations which, by-the-by, date back as far as the year 1835. Herr von Windheim quotes a paragraph ruling that notification is not obligatory for all cases of syphilis indiscriminately, but for those cases only where, in the opinion of the doctor, secrecy might be followed by harmful results to the patient or to the community. As regards the army, lay doctors treating syphilitic common soldiers, ensigns, and non-commissioned officers, are bound to report all such cases to the commander of the regiment, or its head military surgeon. Another paragraph enforces of all doctor and surgeons who have cases of syphilis in their practice the duty of searching out the person from whom the infection has been conveyed, and, wherever necessary, of reporting such person to the police. Herr von Windheim adds that the ministry has further ruled that the term "syphilitic disease" is to be held to include gonorrhœa and soft chancre, together with their sequelæ.

WHISKY BISCUITS.

ARDENT spirits have been put before the American public in a new form. Whisky can now be eaten as well as drunk. Enticing-looking jelly cakes and biscuits are sold, which have been found to contain a certain amount of whisky, and the United States Board of Health and the Board of Education are reported to have embarked on a crusade against the shopkeepers selling and the bakers manufacturing the whisky bakers' stuff. It is also stated that alcoholic candy, containing an intoxicating proportion of beer, imported from Germany, is being sold in Manchester.

A PHOTOGRAPHER'S SKIN DISEASE.

DR. LEOPOLD FREUND has called attention[1] to an affection of the skin of the fingers which in recent years he had observed in photographers. In a well-marked case the flexor surface of all the fingers of both hands was the seat of a diffuse dark blue-redness, which disappeared under the pressure of the fingers. The skin felt hard and thickened, and the fingers looked larger than normal. The appearance of the skin was as if the hands were lacquered, and both hands felt cold and dry to the touch. This change extended as far as the wrists; the backs of the hands were slightly affected. The nails and the secretion of sweat were not affected. In the early stage of this affection there is a feeling of numbness and anæsthesia; later the fingers become stiff and are the seat of a disagreeable feeling of tension. There is no itching or pain. The cause of this peculiar affection is believed to be metol, a sulphate of metyl-para-amidophenol, which is now largely used for developing negatives. The condition is similar to what has been described as local asphyxia of the skin, and Dr. Freund emphasises the peculiar varnished-looking appearance of the skin, which is produced by contact with this substance. Recovery takes place spontaneously in two or three weeks, when the workmen abstain from touching metol, the cure being hastened by the use of the ordinary ointments and plasters employed for an inflammatory condition of the skin.

WE learn that Professor Virchow has formally accepted the invitation to the banquet to be given in his honour on October 5th. The number of stewards who have signified their intention to be present at the dinner in now 180. Those who wish to be present should communicate without delay with Mr. Andrew Clark, 71, Harley Street, W. The dinner will be held in the Whitehall Room of the Hôtel Métropole, which, however, only seats 260 guests.

A MEETING of the Metropolitan Magistrates was held on August 31st, to consider what course should be taken in respect to applicants who wish to claim exemption for their children from vaccination, in accordance with Section 11 of the new Act ("conscientious objection.") It was decided that magistrates should hear such applications and would not require applicants to be sworn, but if satisfied upon a verbal statement that the applicant had the conscientious objection the certificate, for which the applicant would be required to pay a fee of one shilling, would be given.

EACH brigade of the Soudan expeditionary force now within a short distance of its objective, Omdurman, has five field hospitals fully equipped. There will be sections of communication at Jebel Royan Island, and others will be established at suitable places further to the front. The sick will be passed down from Jebel Royan to Atbara, where there is a hospital with 200 beds. From Atbara those who can bear a train journey will be sent by that means to Wady Halfa. The more serious cases will be carried to Abadieh, below Berber, by boat. The Principal Medical Officer, Surgeon-General Taylor, has a complement of 58 officers of the Royal Army Medical Corps with the force or on the lines of communication.

[1] *Klinische-therapeutische Wochenschrift*, July 3rd, 1898.

THE CONGRESS OF PHYSIOLOGISTS AT CAMBRIDGE.

The Fourth International Congress of Physiologists met at Cambridge—for the first time on English soil—from Tuesday, August 23rd, to Friday, August 26th. The meeting was an unqualified success, from both a social and a scientific point of view; indeed, most of the members were too industrious in attending meetings to be able to see all that there is to see in Cambridge and around. Three of the Colleges—Trinity, Caius, and Trinity Hall—were made into pleasant temporary hotels, and at the same time the visitors were thus given an insight into the ordinary college life. With the exception of well deserved strictures upon the mediæval sanitary provisions, all agreed in praising the comfort of the arrangements made for them.

Nearly 200 members attended the Congress, and they included representatives from nearly all countries, even from far Japan.

On Tuesday morning, August 23rd, the business of the meeting opened with a brief address from the President (Professor Foster) in which he bid the Congress welcome to Cambridge, and intimated that the object of the meeting was primarily to see demonstrations rather than listen to unillustrated papers; consequently, the afternoon sessions would be devoted entirely to demonstrations.

The first paper, by Professor Kossel, was on the highly interesting subject of the Albumin Molecule. The hexon bases into which it can be split are found in different quantities in different kinds of albumin. They are greatest in histon, least in elastin—an important point in the physiological value of these substances.

Dr. H. Wright demonstrated the microscopic changes in nerve cells as the result of ether or chloroform administration for varying periods of time.

A very striking series of experiments was that by Dr. Porter, who showed that (1) the mammalian heart, if kept distended with blood, will, like the frog's, beat for some time after excision; (2) a portion of the ventricle of the excised mammalian heart, suitably fed through a branch of the coronary artery with blood, will go on contracting regularly; (3) the excised mammalian heart will continue to beat if fed with serum only, provided oxygen under pressure be also provided.

Mr. Leonard Hill showed some new experiments on the influence of gravity on the circulation, and demonstrated how a suitable bath or compression of the abdomen would overcome the evil effects.

On Wednesday, Dr. Langley demonstrated how by union of the central end of the cut vagus with the peripheral end of the cut sympathetic the normal effects of the latter might be produced by stimulation of the former. This increases the probability that all nerve fibres are essentially the same, the difference of function depending on the distribution.

Professor Sherrington showed the inhibition of tonus of extensor muscles or the diminution of knee-jerk, which follows either stimulation of the central end of the nerve supplying them, or kneading or stretching of the antagonistic muscles.

The antidotal action of sodium thiosulphate by its prevention or removing the anæsthetic and toxic effects of malonic nitril, when injected simultaneously with or subsequently to the latter, was strikingly demonstrated by Professor Heymans.

Interesting experiments illustrating the two modes by which accommodation can be effected, namely, (1) alteration in the curvature of the lens, (2) alteration of the distance of the lens from the retina, were shown by Dr. Beer. They should be introduced into every student's experimental work.

M. Nicloux, by means of Gautier's ingenious method for detecting and measuring small quantities of carbon-monoxide, has been able to prove that a minute quantity is normally present in the blood, and that it is increased during chloroform anæsthesia.

On Thursday it was found necessary to form three Sections. In the General Section Dr. Atwater read an important paper on the nutritive action of alcohol. In the Chemical Section Dr. Haldane showed his method of liberating and estimating the amount of oxygen in the blood by means of potassium ferricyanide; whilst in the Neurological Section an exhaustive illustrated summary of the nerve tracts of the fowl's brai was given by Professor Boyce and Dr. Warrington.

In the afternoon Dr. O. Grünbaum showed an experiment demonstrating the impermeability of the salivary glands to molecules above a certain weight. Mr. Leonard Hill exhibited a new and simple sphygmometer, and Professor Bédart read a paper on stimulation of mammary secretion by cutaneous franklinisation—a result of some clinical interest. Altogether nearly one hundred communications were made.

Friday morning was devoted to business, of which the principal items were: (1) The nomination of an international committee for the standardising of physiological instruments; (2) the decision to accept Professor Mosso's invitation to Turin for the next meeting of the Congress in the second half of September, 1901.

A not unimportant part of the meeting were the social functions, in most of which the Congress of Zoology joined. They included a reception by the Mayor of Cambridge, by the Vice-Chancellor of the University, a joint *conversazione* in the Fitzwilliam Museum, and a garden party in the Botanical Gardens.

The banquet was held in the Hall of Trinity College, which fully maintained the reputation of its kitchen and cellar, and nothing but praise was heard from our visitors.

On Thursday afternoon in the Senate House, which was as crowded as in term time, honorary degeees were conferred on the following physiologists: Professor Bowditch (Boston), Professor Golgi (Turin), Professor Kronecker (Berne), Professor Kühne (Heidelberg), and Professor Marey (Paris). The scarlet gowns, the Public Orators' Latin speeches (with Continental pronunciation), and the mediæval ceremonial of admission seemed to impress our Continental colleagues as much as anything they saw in Cambridge.

THE LOCAL GOVERNMENT ACT AND THE PROFESSION IN IRELAND.

Limitations of the Act.

The Local Government (Ireland) Act, 1898 [61 and 62 Vict., ch. 37] received the Royal Assent on Friday, August 12th, 1898, and is now on the Statute Book and the law of the land. The occasion is a fitting one to consider how the Act affects the interests and the status of the medical profession in Ireland.

The measure is intituled "An Act for amending the law relating to Local Government in Ireland, and for other purposes connected therewith." It is clear from this that everything which related to sanitation might appropriately have received recognition in the Act. This, however, is not the case. It is to be regretted that a Government, the lineal descendant of a Ministry which in 1874 adopted as its political motto the phrase, *Sanitas sanitatum, omnia sanitas*, should have neglected to bring the County Councils of their creation into relation with the sanitary organisation of the country. The only duties which the County Councils are to discharge in connection with State Medicine have regard to the provision and management of lunatic asylums, the appointment of medical officers of lunatic asylums, the appointment of coroners and coroners' districts, and the maintenance and management of county infirmaries and fever hospitals. Besides these, Section VI transfers to the Council of each county the business of the Boards of Guardians as local authorities under the Diseases of Animals Act, 1894, and the Destructive Insects Act, 1877. Such, and such only, are the relations of the County Councils to State Medicine.

Public Health Administration.

Both the Local Government (England and Wales) Act, 1888, and the Local Government (Scotland) Act, 1889, contain sections which confer upon the County Councils the power to appoint county medical officers of health on the following conditions, namely, they shall be duly registered medical practitioners under the Medical Acts, they shall be registered in the *Medical Register* as holding a diploma in Sanitary Science, Public Health, or State Medicine under Section XXI of the Medical Act, 1886, unless they have been for three consecutive years medical officers of districts with a population of not less than 20,000, or medical officers or inspectors of the Local

Government Board, and they shall not hold any other appointment or engage in private practice without express written consent of their county council.

There is no analogous provision in the Irish Local Government Act of 1898. Yet it would seem to be possible to call into existence county medical officers of health in this way: Section cv of the new Act provides that the Lord Lieutenant "by Order in Council" may make such adaptations of the Irish "enactments specified in the fifth Schedule to this Act, or of other enactments affected by this Act as appeared to him necessary or expedient for carrying into effect this Act or any Order in Council made thereunder." Now the fifth Schedule includes among Irish enactments which are thus made subject to adaptation by Order in Council the Public Health (Ireland) Acts, 1878 to 1896. Section xi of the Public Health (Ireland) Act, 1878, provides for the appointment of a "medical superintendent officer of health," when deemed necessary, and at the direction of the Local Government Board for Ireland. Finally, Section lxxxiii of the Local Government (Ireland) Act, 1898, provides (among other things) that "the council of a county other than a county borough, subject to the provisions hereinafter contained.....may appoint such assistant surveyors and such further officers as they think necessary for the performance of the duties of the Council."

It would be well worth while to ascertain whether in law under these provisions a County Council in Ireland could not, even under the Local Government Act as it stands, appoint a county medical officer of health. In any event, no time must be lost in carrying an amending Supplemental Bill through Parliament, with the object of giving county councils power to appoint such an officer. Subsection 4 of Section lxxxv provides that "the additional salary granted to the medical officer of a dispensary district by reason of his being (under Section xi of the Public Health Act, 1878) medical officer of health of any sanitary district shall be paid by the council of the latter district."

Lunacy Administration.

Section ix of the Act imposes on the County Council the duty of providing and maintaining sufficient accommodation for the lunatic poor in accordance with the Lunatic Asylums Acts. The Council are to act through a Committee appointed by them; one fourth of the members of the Committee may be persons not members of the Council. Section lxxvi further empowers a County Council to make provision for an auxiliary lunatic asylum for the reception of chronic and harmless lunatics. Section lxxxiv requires the County Council, acting through their Committee, to appoint for each lunatic asylum a resident medical superintendent, and at least one assistant medical officer. Every resident medical superintendent must be a registered medical practitioner of not less than seven years' standing. He must have served for not less than five years as a medical officer or assistant medical officer in an asylum for the treatment of the insane. Every assistant medical officer must be a registered medical practitioner. The Pauper Lunatic Asylums (Ireland) (Superannuation) Act, 1890, is to apply to every officer of a lunatic asylum, "save that all reference in that Act to the approval of the inspectors of lunatics or of the Lord Lieutenant shall be repealed."

Coroners.

Section xiv defines the powers of County Councils as to the appointment of coroners and coroners' districts, and provides for the removal, salary, and qualification of a coroner. A coroner is to be "a qualified person," but as to his qualification nothing more definite is set forth than this significant paragraph (Section xiv, Subsection 7): "So much of any Act as requires that a coroner shall possess a property qualification shall be and the same is hereby repealed."

County Infirmaries and Fever Hospitals.

Section xv imposes on the County Councils the duty of contributing annually to the support of the county infirmaries and fever hospitals "a sum not less than was so contributed out of the county cess in the standard financial year, or any less minimum which the Local Government Board sanction." The salaries of the medical officers are secured in the same way, and we are glad to find that the vested interests of existing officers of the county infirmaries are safeguarded by a special subsection, which runs thus: "(8) Nothing in this Act shall deprive any existing officer of any infirmary or hospital to which this section applies of any privileges enjoyed by him under any Act, and such officer shall not be removed from his office except with the consent of the Local Government Board, but, subject as aforesaid, every officer of the hospital or infirmary may be appointed and removed by the Committee appointed under this section."

In connection with this question of the county infirmaries, we may direct attention to the fact that Section xc provides for the conversion of a workhouse hospital into a district hospital. A Board of Guardians may, with the consent of the Local Government Board, make regulations for the conversion of their workhouse hospital into a district hospital, the transfer of the duties and powers of the guardians in respect to such hospital and its administrative control to a committee of hospital governors appointed by the guardians, of whom two-thirds at least are to be members of the Board, and for "the payment and accommodation under which private patients may be admitted." Certainly it seems rather anomalous to provide in this way hospital accommodation for private patients in a "workhouse hospital." Subsection ii of Section xc also provides that the guardians "may receive and apply for the benefit of such district hospital any endowments or subscriptions given by private persons for that purpose."

Dispensary Administration.

Section xxx is short but important. It transfers to Boards of Guardians the business of every committee of management of a dispensary district within their union, and these committees shall cease to be appointed. This is a step in the right direction.

Superannuation of Poor-law Medical Officers.

The vexed and all-important question of superannuation of Poor-law medical officers arises incidentally in relation to Section cxviii. This section is of so vital interest to these officers that we transcribe it verbatim.

1. Every existing officer who is by this Act transferred to any county or district council, or is an officer of any Board of Guardians, and would, if he were to retire on the appointed day, be qualified for a superannuation allowance, shall, without prejudice to any existing right, when he resigns or ceases to hold his office for some cause other than misconduct, be entitled to receive a superannuation allowance on the scale and according to the Acts and rules relating to Her Majesty's Civil Service.

2. For the purpose of the provisions of this part of this Act with respect to existing officers, the expression "qualified for superannuation allowance" shall mean qualified as regards age and length of service, and, except as respects a medical officer to whom the Medical Officers' Superannuation Act (Ireland), 1869, applies, the devotion of his whole time to the service.

It will be observed that, whereas superannuation was only permissive under the Medical Officers' Superannuation (Ireland) Act, 1869 [32 and 33 Vict., chap. 50]—the words of the Act are: "The Board of Guardians of any union in Ireland may, at their discretion, grant to any medical officer," etc.—a medical officer is now in a position to claim as a right such superannuation, provided he is qualified as regards age and length of service, according to the rules relating to Her Majesty's Civil Service. He "shall be entitled to receive a superannuation allowance."

Unfortunately all other medical officers are apparently left out in the cold as regards superannuation under the Act; and in this respect the measure once more calls for early amendment.

Such is the bearing of the Local Government (Ireland) Act, 1898, upon the medical profession. We have only to add that the Act is to come into operation as regards Rural District Councils and Boards of Guardians on March 25th, 1899, and as regards County Councils and Urban Districts on April 1st, 1899.

The meeting of the German Society of Alienist Physicians will take place this year in Bonn, on September 16th and 17th. Among the subjects to be discussed will be various aspects of hysteria, the value of hydrotherapy, the pathological anatomy of delirium tremens, and the utilisation of pathological material in asylums. The French Congress of Alienists and Neurologists will meet in August, 1899, in Marseilles.

TYPHOID FEVER IN BELFAST.

The Epidemic of last Year.—Recrudescence in August.—Fanciful Etiology.—The Inadequate Water Supply and the New Scheme.—The New Main Drainage System.—Pollution of Subsoil.—Remedies.

We regret to observe that there has been a serious recrudescence of typhoid fever in Belfast. The epidemic which prevailed in the city last autumn gradually declined during the winter months, but the amount of fever continued above the usual average. The month of July was exceptionally dry and hot, while heavy rains have marked the weather since the beginning of August. These are the meteorological conditions known to favour the spread of typhoid fever, and hence some increase in the amount of the disease might be expected. In a city like Belfast, where typhoid fever is at all times abnormally prevalent, and where the causes which create the disease are always actively at work, it is perhaps hardly surprising that the normal autumnal increase should this year have assumed epidemic proportions. The figures are very serious. Compared with those of last year they are as follows:

	1898.		1897.
Week ending June 25th	... 34 cases notified	...	28 cases.
,, July 2nd	... 66 ,,	...	56 ,,
,, ,, 9th	... 57 ,,	...	44 ,,
,, ,, 16th	... 69 ,,	...	43 ,,
,, ,, 23rd	... 81 ,,	...	37 ,,
,, ,, 30th	... 98 ,,	...	59 ,,
,, August 6th	... 195 ,,	...	45 ,,
,, ,, 13th	... 143 ,,	...	61 ,,

On Tuesday, August 23rd, the notifications numbered 82; on Saturday, August 27th, they had fallen to 41; Sunday and Monday's cases (August 28th and 29th) together numbered 72. In the union workhouse the cases of typhoid on August 27th numbered 370, an increase of 170 in a fortnight. To provide for the augmented demand for accommodation the guardians have brought into use exclusively for typhoid patients a building formerly used as a convalescent hospital. In this building 300 cases can be received. Two additional resident medical officers (Dr. Hanna and Dr. Hicks) have been appointed to cope with the large increase of work which the epidemic has thrown upon the medical staff. Arrangements have been made for the appointment of twelve extra nurses.

The death-rate from zymotic disease returned by the medical officer of health in his last report had risen to 5 per 1,000 in the previous week. It will not be denied that this state of things calls for the most serious attention of the City Corporation and its health department, and that it is highly discreditable to so prosperous, wealthy, and progressive a city as Belfast. The local press has taken up the subject, and is debating the causes of the epidemic with much zeal, if not always with much knowledge. Many of the alleged causes may be at once put aside, such as, for instance, unripe or overripe fruit. Several members of the local fire brigade having contracted the disease from eating cockles which had been gathered on some of the slob lands of Belfast Lough, this cause has had a fictitious importance attached to it in some quarters. It is altogether incredible that a widespread epidemic prevailing in every district of a city of more than 300,000 inhabitants, and affecting all ranks of society indiscriminately, should be due to such a cause. There remain three possible causes which demand the most thorough and careful investigation:

1. The water supply.
2. The new main drainage system, not long ago completed at a cost of £300,000.
3. The pollution of the subsoil with filth, and the imperfect removal of refuse matters.

The water supply of Belfast is admittedly inadequate to the needs of the rapidly growing city; and, as our readers are no doubt aware, a scheme for bringing an ample supply of water of the best quality from the Mourne Mountains, distant about thirty-eight miles, has been adopted, and is being pushed forward with reasonable expedition. Several years must, however, still elapse before this admirable scheme is completed. When the new system is in operation there is good ground for hoping that Belfast will possess an unexcelled water supply. In the meantime the city relies upon two sources of supply—the Stoneyford Reservoirs and the Woodburn Waterworks. Neither of these yields water of the first quality. The waters contain an excess of vegetable matter, and the "catchment areas" are exposed to various sources of pollution. But it must be admitted that all efforts to connect previous epidemics of typhoid fever in Belfast with defects in the water supply have failed. It has never been shown that the parts of the town supplied by the Woodburn water suffer more than those supplied by the Stoneyford water, or *vice versâ*. Nor have epidemics in the city ever been proved to be traceable to any temporary pollution of either source of supply. While the water at the catchment areas is of second-rate or third-rate quality, filtering on a large scale is practised with great care, and the various filtering beds have been shown to be thoroughly efficient. On the whole, without attempting to decide the question finally, we are not inclined to attribute the present epidemic to the water supply. It is possible, however, that during the dry weather of July the sewers were insufficiently flushed, and that this may have co-operated with other causes in bringing about the present deplorable state of things.

It is a curious and disquieting fact that since Belfast completed an elaborate and costly system of main drainage typhoid fever has been decidedly more prevalent than it was previously. This in no way proves that main drainage promotes the prevalence of the disease, but it does suggest doubts whether the main drainage system of Belfast has been executed in a thoroughly satisfactory manner. There have always been doubts expressed on this subject in Belfast, and the present time is certainly opportune for a thorough inquiry into the subject.

In the opinion of a large majority of those most competent to judge, the pollution of the subsoil with filth and the imperfect removal of refuse matters, is the chief cause of the undue prevalence of typhoid fever in Belfast. It is a cause always at work and fully adequate for the production of the state of things now existing. Closely associated with this cause, and indeed partly identical with it, must be put the erection of cheap houses upon insanitary sites, and destitute of adequate sanitary arrangements. This has prevailed to a really frightful extent in Belfast, and the city is now reaping the results of the criminal neglect of its corporation, health officers, and town surveyors in past years. Many houses of the poorer class have no waterclosets and no means of removing filth by any backyard or rear entrance. The cleansing of yards, ashpits, privies, etc., is not carried out in any thoroughly systematic and efficient manner. The result is that the subsoil of Belfast is saturated with filth and forms an admirable breeding ground for the typhoid bacillus. The corporation has shown commendable energy in promoting main drainage, and in providing parks and washhouses, but in nearly every other department of public health administration it has failed lamentably.

The Public Health Committee of the Corporation are bestirring themselves, but they have a heavy task before them in attempting to make amends for the neglect of past years. The sanitary defects of Belfast are radical and of old standing, and it would be unreasonable to expect that they could be all at once remedied. What the public of Belfast has a right to demand is that the Corporation shall apply to the urgent question of sanitation some of that energy which they have abundantly shown in other departments, that the causes which have been so long at work to create pollution of the subsoil shall be promptly ended, that the removal of filth shall be systematically undertaken, and that the erection of insanitary houses shall once for all cease. The Public Health Department is undermanned and underpaid, and it is useless to look for efficiency under present conditions. The Corporation will sooner or later find (as Maidstone knows to its sorrow) that a parsimonious, niggardly, and short-sighted policy in matters relating to public health is in the end the most expensive of all policies. We confess we are amazed that so progressive a community as that of Belfast should have so long tolerated the apathy of the Corporation in sanitary questions.

Presentation.—Dr. D. Collingwood, of Summerhill, near Sydney, N.S.W., was, on the occasion of his leaving for a prolonged visit to Europe, entertained at dinner by professional and other friends, and presented with a travelling bag fitted with gold-mounted toilet appliances.

WORKMEN'S COMPENSATION ACT, 1897.

THE Secretary of State for the Home Department has made the following further appointments of Medical Referees for

ENGLAND AND WALES.

CIRCUIT No. 15.—Additional appointment.
James Ramsay, M.D., York.

CIRCUIT No. 24.—Additional appointment.
Thomas Wallace, M.D.R.U.I., M.R.C.S., Cardiff.

CIRCUIT No. 28.
Thomas Dalton, M.D.Edin., M.R.C.S., Llandudno.

CIRCUIT No. 30.

Jabez Thomas, F.R.C.S., Swansea.	W. Frederick Brook, F.R.C.S., Swansea.
Martin Jones, F.R.C.S., Aberdare.	

CIRCUIT No. 37.

Wm. Brown Holderness, M.R.C.S., Windsor.	Horatio Percy Symonds, F.R.C.S., Oxford.
John Gordon Gordon-Munn, M.D. Edin., Bushey.	Robert A. Milligan, M.R.C.S., L.R.C.P., Northampton.
Wm. Lucknow Bradshaw, L.R.C.P. Edin., High Wycombe.	Frank Buzzard, M.D., F.R.C.P., F.R.C.S., Northampton.
William Collier, M.D., F.R.C.P., Oxford.	

CIRCUIT No. 47.—Additional appointment.
Ralph Gooding, M.R.C.S., M.D., Heath Lodge, Blackheath, S.E.

CIRCUIT No. 48.

Horatio Nelson Hardy, F.R.C.S. Edin., 129, Dulwich Grove, S.E.	Charles Pye Oliver, M.D.Lond., Maidstone.
Elliot Daunt, L.R.C.P., M.R.C.S., Sevenoaks.	William Chatterton, A.B.Dub., M.D., Bromley, Kent.
Norman Hay Forbes, F.R.C.S.Edin., Tonbridge Wells.	Charles John William Pinching, M.R.C.S., Gravesend.

CIRCUIT No. 55.

Charles Henry Watts Parkinson, M.R.C.S., Wimborne Minster.	F. W. Ramsay, M.D., F.R.C.S., Bournemouth.
William Rendall, M.R.C.S., Maiden Newton.	H. Coates, L.R.C.P., M.R.C.S., Salisbury.
William Burrough Cosens, L.R.C.P., M.R.C.S., Dorchester.	Edward Charles Garland, M.R.C.S., Yeovil.
William George Vawdrey Lush, F.R.C.P., Weymouth.	

SCOTLAND.

SHERIFFDOM OF LANARKSHIRE.

David Newman, M.D., Glasgow.	G. T. Beatson, M.D., Glasgow.
W. J. Fleming, M.D., Glasgow.	Duncan Macartney, M.D., Glasgow.
James Barras, M.D., Govan.	Jas. C. Renton, M.D., Glasgow.
Hugh Arthur, M.D., Airdrie.	H. E. Clark, M.R.C.S.Eng., L.R.C.P. Edin., Glasgow.
Hector Cameron, M.D., Glasgow.	
T. K. Dalziel, M.B., C.M., Glasgow.	

SHERIFFDOM OF ARGYLL.

Dove McCalman, M.D., Oban.	John Ritchie, M.B., C.M., Dunoon.
James Stewart, L.R.C.P.Edin., L.R.C.S.Edin., Inverary.	John Cunningham, M.B., C.M., Campbeltown.

SHERIFFDOM OF PERTH.

John Mackay, M.D., Aberfeldy.	Robert Stirling, M.D., Perth.
Alex. Thom, M.D., Crieff.	Charles Lunan, M.B., C.M., Blairgowrie.
Andrew C. Buist, M.B., C.M., Dunblane.	

SHERIFFDOM OF THE LOTHIANS AND PEEBLES.

John Shaw Maclaren, M.B., C.M., Edinburgh.	Alexander Ballantyne, M.D., Midlothian.
David Wallace, M.B., C.M., Edinburgh.	Thomas Malcolm Murray Lyon, M.D., Midcalder.
J. C. Dunlop, M.D., F.R.C.P.Edin., Edinburgh.	John George Wallace James, M.B., C.M., Haddington.
Alexander Miles, M.D., C.M., F.R.C.S. Edin., Edinburgh.	John Connel, M.D., F.R.C.S.Edin., Peebles.

SHERIFFDOM OF STIRLING, DUMBARTON, AND CLACKMANNAN.

D. McFadyen, M.D., Stirling.	P. Napier Grant, M.B., C.M., Lenzie.
Alexander D. Fraser, M.D., Falkirk.	Robert Wilson, M.D., Alloa.
Robert D. Cameron, M.B., C.M., Falkirk.	John Barlow, M.D., Glasgow.
W. A. Maclachlan, M.D., Dumbarton.	Samuel Macfarlane Sloan, M.B., B.S., Glasgow.

SHERIFFDOM OF ROXBURGH, BERWICK, AND SELKIRK.

William Jeffrey, M.D., Jedburgh.	John McWatt, M.B., C.M., Duns.
W. Turnbull Barrie, M.B., C.M., Hawick.	Charles Reid, M.B., C.M., Selkirk.

SHERIFFDOM OF ABERDEEN, KINCARDINE, AND BANFF.

Alexander Ogston, M.D., C.M., Aberdeen.	J. C. Ogilvie Will, M.D., C.M., Aberdeen.
James Taylor, M.D., Keith.	John Barclay, M.D., C.M., Banff.

SHERIFFDOM OF ROSS, CROMARTY AND SUTHERLAND.

William Bruce, M.D., Dingwall.	James Berlioz Simpson, M.D., Golspie.
Murdoch Mackenzie, L.R.C.P.Edin., L.R.C.S.Edin., Stornoway.	

SHERIFFDOM OF DUMFRIES AND GALLOWAY.

Thomas Ferguson, M.B., C.M., Dumfries.	D. Duke Monro, M.B., C.M., Stranraer.
W. S. Spence Reid, M.B., C.M., Kircudbright.	

SHERIFFDOM OF FORFAR.

Patrick Murison, M.B., C.M., L.R.C.P.Edin., Dundee.	James Alexander Dewar, M.D., Arbroath.
A. S. McLagan Wedderburn, M.D., Forfar.	David McEwan, M.D., Dundee.

SHERIFFDOM OF CAITHNESS, ORKNEY, AND SHETLAND.

Samuel Elliott, M.D., Wick.	Benjamin Bell, L.R.C.P.Edin.,
Alexander Asher, M.B., C.M., Thurso.	L.R.C.S.Edin., Kirkwall.
	Jno. F. Robertson, M.D., Lerwick.

SHERIFFDOM OF RENFREW AND BUTE.

Donald Fraser, M.D., Paisley.	R. H. Parry, L.R.C.P., L.R.C.S. Edin., Glasgow.
Thomas Graham, M.D., Paisley.	
James Whiteford, M.D., Greenock.	A. E. Maylard, M.B., B.S., Glasgow.
Thomas Philip, M.B., C.M., Greenock.	Robert Allen, M.D., Ardrossan.
	J. N. Marshall, M.D., Rothesay.

SHERIFFDOM OF AYR.

George McKerrow, M.B., C.M., Ayr.	William Macalister, M.B., C.M., Kilmarnock.
James Ross Watt, M.B., C.M., Ayr.	
William Macfarlane, M.D., Maybole.	Robert Allan, M.D., Ardrossan.
William Frew, M.D., Kilmarnock.	

SHERIFFDOM OF FIFE AND KINROSS.

C. E. Douglas, M.D., Cupar.	H. W. Laing, M.D., Kirkcaldy.
Robert Balfour Graham, F.R.C.S. Edin., L.R.C.P.Edin., Leven.	C. A. Sturrock, M.B., C.M., Dunfermline.
J. Sutherland Mackay, M.D., Kirkcaldy.	James Mungle, L.R.C.P., Kinross.

SHERIFFDOM OF INVERNESS, ELGIN, AND NAIRN.

John Munro Moir, M.D., Inverness.	John Dewar, M.B., C.M., Portree, Skye.
Alexander Cameron Miller, M.D., Fortwilliam.	Hugh William Mann, M.B., C.M., Larkfield, Nairn.
Francis William Grant, M.D., Elgin.	

WOODEN PAVEMENTS.

STONE, WOOD, OR ASPHALT?

THE best material for paving the streets of our great cities is still being looked for. The choice at present chiefly lies between setts of granite or sandstone, wooden blocks, and an asphalted surface. Quite recently it was proposed to pave Harley Street with wood, but objections on the part of some of the householders stayed the hands of the authorities. One of the chief advantages of a pavement of this kind lies in its noiselessness, but there are those who allege that this good quality is more than counterbalanced by the unhealthiness of an absorbent material like wood. At the Sanitary Congress at Leeds last autumn, Mr. Mason, the engineer to the St. Martin's (Strand) Vestry, contended that the objections taken to wooden pavements were due chiefly to errors in the choice and treatment of the blocks, to the way in which they were laid, and to imperfections in the method of cleansing.

EXPERIMENTS AT WARSAW.

Dr. Polak, of Warsaw, has recently printed the results of some experiments on this subject in a pamphlet[1] to which Dr. Bonmarriage, Director of the Institute of Hygiene, has prefixed a short introduction. After a short summary of the results of previous experimenters, Dr. Polak sets forth the result of his own observations, chemical and bacteriological, on wood pavements. These were made exclusively on Warsaw pavements consisting of blocks of pine impregnated with copper sulphate.

CHEMICAL EXAMINATION.

The weight of the blocks after desiccation averaged 1,343 g. From one of the blocks he removed portions weighing respectively 50, 39, and 109 g. A portion of thick mud collected from a wood-paved street during a thaw was found to contain 45 per cent. of water as compared with 18 per cent. in the wooden blocks. The three portions of wood were sealed up in an iron vessel with the mud, and they increased in weight by absorption of water—one in 14 days 77 per cent.; one in 33 days 78 per cent.; the other in the same period 86 per cent.

BACTERIOLOGICAL EXPERIMENTS.

Bacteriological observations were made upon blocks which had been down four years. Specimens were taken, with aseptic precautions, from the surface, from a depth of 1 cm. and from a depth of 2 cm. beneath the surface. The bacteria found per gramme of wood in the cultivations at the end of five days were 650,000, 220,000, and 12,100 in the specimens respectively. Beyond five days the liquefaction of the gelatine rendered the counting of the colonies difficult. In another experiment, however, a couple of months later, 1,200,000

[1] *Annales de l'Institut d'Hygiène.* De la valeur Hygienique du pavage au bois. Par le Dr. Polak. Bruxelles: Yve. Larcier, 26 et 28, Rue des Minimes. 1898.

colonies per gramme were found in the surface of the wood, 8,600 colonies 2 cm. below the surface.

Absorption of Organic Matter by Wood.

An estimate of the organic matter absorbed by the wood was attempted in terms of its nitrogen by the Kjeldal-Wiegert process as modified by Argutinski. The first estimation was made upon a wooden block, seven years in use, removed from the middle of an important thoroughfare. The second was upon a block from the same street close to the footway, and a third upon a pavement about a year in use, also from the part nearest the gutter. Dr. Polak considers that these experiments show that the surface layer of wood contains nitrogen in greater amount than the most polluted soil, and that this quantity lessens as the deeper parts of the block are reached. He found also that the defilement of the wood, as shown by chemical methods, was greater at the sides of the street than in the middle.

Comparative Pollution of the Atmosphere.

Not the least interesting of Dr. Polak's observations were those in which he attempted to estimate the comparative pollution of the atmosphere by effluvia from wooden and other pavements. He claims for his method of doing so that it is simple, easy, and, to a certain extent, exact. He placed a definite quantity of dilute sulphuric acid of known strength in a vessel under a large bell-glass half a metre in diameter. This apparatus, under the care of a couple of policemen, was placed in the roadway for three hours in the forenoon, and he then titrated the acid. The experiments were comparative, and were five in number. The first was made simultaneously on either side of the point where the pavement changed from wood to asphalt. The results showed that the sulphuric acid retained 2.6 mg. of ammonia where the apparatus was placed over the wooden, against 0.8 over an asphalt pavement. The experiment was conducted on a cool day, the air having been moistened by a shower. A second experiment at the same place the next day gave 1.6 and 0.6 mg. The third experiment, three weeks later at another place, gave 2.2 and 0.9. The wooden pavement here was seven years old. About a week later (July 28th) a comparison was made between wood and stone. The stone setts yielded 4.2, the wooden blocks 1.8 mg. of ammonia respectively. The fifth experiment gave 2 mg. on a wooden, and too small a quantity for measurement on an asphalt pavement.

The writer's contention is that the results show that asphalt is more wholesome as a pavement than wood. Wooden pavement gives, he considers, absolute protection from contamination to the soil and to the subsoil water, but it gives rise to far greater atmospheric pollution than asphalt.

Cleansing of Street Surfaces.

Probably Mr. Mason might ask in what way the wooden pavement is cleansed—whether, for instance, it is washed thoroughly every night as it should be? There can, we suppose, even without Dr. Polak's researches, be very little doubt that asphalt is more easily cleansed than wood. The single observation of Dr. Polak's on the stone setts would seem to indicate that mere absorption does not account for all the difference between wood and asphalte, and that facility for cleansing plays an important part. Is the advantage of wood over asphalt so great from an economical point of view as to warrant an additional expenditure on the part of the sanitary authority in cleansing it? If so, may we hope for further experiments on the lines of those of Dr. Polak, showing the comparative results of the various methods for more thorough cleansing of wooden setts?

SANITARY INSPECTION IN GLASGOW.

Mr. Fyfe's report on the work of his staff during 1897 contains as usual a good deal of information. Passing over his prelections on the general death-rate, and what he calls the infectious disease death-rate of the city and its divisions, and skipping his disquisition on nuisances at common law, we find that there are 81 common lodging-houses in Glasgow providing sleeping accommodation for 9,351 persons. The new Public Health Act, which makes all lodging-houses for emigrants and boarding-houses for seamen "common," whether clean or unclean, will bring under official inspection 33 others with 750 beds. The corporation of Glasgow, as is well known, have long studied the welfare of the class using these places, and the extended powers given by the new Act have induced the Council to revise the by-laws for their management.

Mr. Fyfe refers us to Appendix VIII for the draft of these new by-laws, but neither they nor the appendix have reached us. Appendix VII, however, contains information about seven playgrounds opened by the Corporation in different parts of the town at a cost up to date of £31,250. The Inspector complains of the inadequacy of the fines inflicted by the magistracy for the serious offence of allowing overcrowding. Of 6,657 offenders brought into Court in the past six years, 4,244 escaped with a scolding, while 2,403 were fined an average of rather less than 3s. 5d. each. As it is only the grosser cases of overcrowding that are prosecuted, a fine of this sort does not deter the lodgings-letter from repeating his offence. It pays him better to pay the fine and take the fees. The report contains two letters from the City Analyst—one on spent ginger in reference to a recent case, the other on "malt" and "raw grain" whisky, and both of interest. The former gives valuable analyses of genuine and purposely-exhausted gingers; the other attempts to prick the bubble that it is the kind, rather than the quantity, of whisky that is specially injurious. Altogether—bar the easy writing which Sheridan so vigorously condemned—the report is a valuable one, and does credit to Mr. Fyfe's department.

LITERARY NOTES.

An Atlas of Bacteriology will shortly be issued by the Scientific Press, London. The *Atlas* will contain 110 photographs of various kinds of bacteria.

A new edition of the *Directory for the Dissection of the Human Body* will shortly be issued by Professors Cleland and Mackay. The book is intended to supplement the volume on *Human Anatomy, General and Descriptive*, issued by the same authors two years ago. The *Directory* will contains copious references, which will enable the student to turn up at once in the systematic work a full description of each structure. The publishers are Messrs. J. Maclehose and Sons, of Glasgow.

Dr. R. W. Felkin will contribute an introduction to the English translation of Herr Georg Schweitzer's life of Emin Pasha. The publishers, Messrs. Archibald Constable and Co. (Westminster), state that for some reason the German compiler of the work has misunderstood the efforts made in this country to aid Emin in retaining the province, of which he was the Governor, for civilization. Dr. Felkin's introduction to the English edition will explain what assistance Emin asked for from Britain and how his requests were fully and generously met. Why he refused the aid thus proffered him and entered German service is clearly shown in the book. The title of the English edition will be *Emin Pasha, His Life and Work, compiled from his Journals, Letters, Scientific Notes, and from Official Documents.*

The laboratory and lecture notebooks of John Dalton, the father of the atomic theory, were recently discovered in the rooms of the Literary and Philosophical Society of Manchester, where all his experimental work was carried on. They have now been edited and published by Sir Henry Roscoe and Dr. Arthur Harden (Macmillan and Co.). The most interesting point which they make plain is that Dalton was not led to the atomic theory in the way which has hitherto been assumed, namely, through the experimental discovery of the law of combination in multiple proportions. Dalton was an ardent adherent of the Newtonian doctrine of the atomic constitution of matter, and was thus led to a realistic conception of the structure of gases, so that

> It now appears that it was from this physical standpoint that Dalton approached the atomic theory, and that he arrived at the idea that the atoms of different substances have different weights from purely physical considerations. This at once led him to conceive of chemical combination as taking place between varying numbers of atoms of definite weight, a position which he then succeeded in confirming by the results of analyses made both by other chemists and himself. The actual relations are, therefore, precisely the inverse of those which are usually accepted. It was the theory of the existence of atoms of different weights which led

Dalton to the discovery of the facts of combination in multiple proportions.

The volume contains a number of interesting letters written to Dalton by Humphry Davy, Berzelius, Brewster, and other distinguished contemporaries, which prove the high esteem in which he was held during his lifetime.

The August number of *Janus* contains an interesting article by Dr. Payne, dealing with some letters and fragments of Thomas Sydenham. The first document is a private letter to Dr. Gould, of Wadham College, Oxford, in which Sydenham says, "I myself was once a fellow commoner of your house .....in the year that Oxford was surrendered, though I had bin of Magdalen Hall some time before." This letter was printed in Dr. John Brown's *Horæ Subsecivæ*, but the need for its republication is shown by the fact that all mention of Sydenham's connection with Wadham is overlooked by Foster in his *Alumni Oxonienses*, though Mr. Wells notes it in his little work on *Oxford and its Colleges*. The second document is a petition in Sydenham's own handwriting addressed to the Great Protector, Oliver Cromwell. It lies in the Public Record Office, where a copy was taken by Mrs. Everitt Green and given to Dr. Gee, who published it in the xixth vol. of the *St. Bartholomew's Hospital Reports*. The petitioner—Captain Sydenham—"humbly sheweth that there was due to my brother, Major John Sydenham, slayne in Scotland, a very considerable arrear for sundry and constant services in England and Ireland.....and would likewise insist on the many services of another brother of his, one Major Francis Sydenham, slayne in the West." The endorsement shows that "His Highness being verie sensible of the matters represented in this petition, is pleased in an especiall manner to recommend it to ye Councill." Sydenham received £600, on which he resigned his fellowship at all Souls', married, and began medical practice in Westminster. The third letter printed by Dr. Payne is one of private advice to a friend, in which Sydenham recommends his favourite remedy, bark, in the treatment of gout. The fourth specimen is of the greatest interest. It is an extract from an English manuscript in the possession of the Royal College of Physicians, entitled, *Medical Observations, by Thomas Sydenham*. The manuscript is partly in Sydenham's handwriting, and contains the first sketch for certain parts of the *Observationes Medicæ*. The portion published by Dr. Payne deals especially with small-pox. It is interesting because it criticises the prevailing treatment with much less reserve than was afterwards considered advisable in the published Latin version.

THE SUPERANNUATION OF POOR-LAW MEDICAL OFFICERS.

The Pershore Guardians and their Medical Officers.

It will be in the recollection of many of our readers that these Guardians attempted to set at defiance the provisions of the Superannuation Act of 1896, when the reappointment of their old medical officers was before them last year. On the facts becoming known the President of the Council of the British Medical Association, Dr. Robert Saundby, wrote a letter calling the attention of Mr. T. W. Russell, the Under-Secretary for the Local Government Board, to the course proposed to be adopted by the Pershore Guardians, and shortly afterwards we had the satisfaction of publishing a letter addressed by direction of Mr. Russell to the Clerk of the Guardians of the Pershore Union pointing out that the course they proposed to take was illegal and could not be sanctioned by the Local Government Board. The letter drew attention to the fact that the guardians are required under Section xii of the Poor-Law Officers' Superannuation Act, 1896, to make a deduction from the officer's salary, and that no agreement between them and the officer or undertaking on the part of the officer not to claim any superannuation allowance can relieve them from this statutory duty or relieve the officer of the duty of making the contribution. The letter further pointed out that the medical officer has a statutory right to a pension, and that the Local Government Board hold the opinion that that right was created, not only in his interest, but also in that of the public.

It will hardly be credited that the Pershore Guardians are now elaborating a fresh scheme to avoid the discharge of their statutory duties, but we learn from the local press that at a recent meeting of the Guardians there was a lengthy discussion as to the course which the Board should take when the subject of reappointment of their district medical officers, who hold annual appointments, comes on for formal consideration, as must be the case before the expiration of the present year.

The plan now proposed by these guardians appears to be not to reappoint on any terms whatever their old medical officers (one of whom has, we understand, served thirty-eight years, and will consequently be able to claim superannuation after two years' longer service), but to introduce younger men, who, though subject to the provisions of the Act, will not under ordinary circumstances be able to claim superannuation for thirty years or more.

Such a scheme can only be regarded as unjust in the extreme, and if it be carried we trust that the Local Government Board will again come to the aid of these old and long-tried officers, and at once decide that they are not to be dismissed simply because they are now within a short period of reaching the time when they will become entitled to that superannuation allowance which the law now awards them, but which the Pershore Guardians desire to avoid giving.

THE FAILURE OF THE WATER SUPPLY IN EAST LONDON.

The Causes.

Once more have the resources of the East London Water Company been found inadequate to furnish sufficient water to the huge district that depends on it for the supply of one of the first necessities of life. There is considerable difference of opinion as to how this has arisen. The Company assert that in consequence of an abnormally low rainfall the volume of water in the Lee and its tributaries is greatly below the average, so that, even with its increased storage power, it is unable to answer the demands on it. It further suggests that it may be necessary in the future to construct still larger reservoirs.

On the other hand, judging from letters in the press and the remarks of speakers at local Board meetings, the validity of this explanation is disputed by many. It is, for instance, alleged that the New River Company—supplied from the same source as the East London—has neither complained of drought nor discontinued its usual supply.

One thing is abundantly clear: the water-supplying power of the East London Company is seriously crippled at the present time; its reservoirs are more than half empty, and only contain enough water at the present rate of demand on them to last a comparatively short time; so that, if heavy rain do not fall shortly, it seems nearly certain that even the present supply to the East-Enders will have to be further restricted.

The Risk to the Public Health.

So far, judging from the reports of the sanitary officers of the affected districts, the evils arising from want of water have been fairly kept under. The great difficulty is to find means of water storage in the thousands of homes of the poorer Londoners. In most cases cisterns have been removed, so that cessation of the constant supply means complete deprivation of water during the time the Company's supply is cut off, unless some measures are taken to collect a store of water while the main in turned on. For this purpose the East London Water Company is supplying gratuitously to all applicants jars for the storage of water.

What increase of sickness the present dearth of water may cause it is impossible to foretell. During the last drought in the East End no distinct increase of zymotic disease was traced to it, though some of the medical officers of health of the affected districts thought there was an increase. As all the watercloset of this district depend for their efficiency on the constant supply, it would not be surprising if there were an increase in the prevalence of such diseases as typhoid and diphtheria. Cholera, too, of late years has more than once threatened our shores; if imported at such a time as the present its power for evil would be greatly intensified.

The Responsibilities of the Company.

The recurring failures of the East London Water Company

to continue its usual supply during the hot months—that is, when it is most required—cannot fail to be regarded with grave apprehension. For some time past many have thought that the responsibilities of this Company are far too heavy, and that it is unable to fulfil the obligations it has undertaken. With diminishing resources it is required to respond to an increased demand for water; and the sanitary welfare of London requires that this question should be thoroughly considered.

It is asserted that the Lee can no longer be relied on as the principal source of the East London Water Company. If so, it may well be asked where the water is to come from to supply the needs of the teeming East End population. Apart from the Lee the Company's resources are insignificant.

The Objections to Cisterns.

Some writers in the daily press urge the necessity of a reintroduction of cisterns, and no doubt, where water is limited in quantity, cisterns are useful to economise it. But practical sanitarians know only too well the evils of cisterns in the homes of the poor: that it is next to impossible to keep them clean, and to prevent contamination of the water. If, then, cisterns are to be reintroduced, it will be distinctly a retrograde step, though it may be a necessary one, if no better water supply for London can be expected in the future. It is not flattering, however, to the enterprise of the chief city of the empire that it should be satisfied with this state of things.

AMBULANCE WORK IN LONDON.

No one familiar with the difficulty of conveyance of the sick or injured in the metropolis will fail heartily to support any well-thought-out scheme whereby the injured in our streets may be safely and rapidly carried to their homes or to the public hospitals. We are not, indeed, without provision in this respect. The work may not be done in a bustling or advertising way, but much efficient service is nevertheless rendered satisfactorily.

In the first place, we have the Ambulance Department of the Metropolitan Asylums Board. The work of the Board is carried out in a quiet yet efficient manner which is creditable to the Ambulance Department. Provision is thus made for the conveyance of the poor who are suffering from infective ailments; but the conveyance of invalids or injured persons across, out of, or into London is left to the efforts of private individuals, or is undertaken by societies more or less philanthropic in nature. The Metropolitan Ambulance Association has, through its Ambulance Department, provided stretchers under cover in many streets whereby persons injured through accidents may be conveyed in comfort. Every constable knows how to open the cover, and as the majority of our constables have been trained in ambulance work, a trained bearer and an ambulance are at hand.

But the greatest of our ambulance services is that of the St. John Ambulance Association. For twenty years this Association has been devoting itself to the training of the public in "first aid" work. There is no public gathering of any magnitude at which the St. John Ambulance Association is not represented by bearers, wheeled litters, and the appliances requisite in case of accident. The work of the Association grows daily. Lately two permanent stations, one at St. Paul's Cathedral, the other at St. Clement Danes in the Strand, have been opened. There trained bearers, with wheeled litters and surgical necessities, are at hand, and during the recent hot weather they have had many calls to render assistance. What is wanted for London is more of these permanent stations. They ought to be established at regular intervals, and be placed upon the public telephone system. The question of expense arises; in the meantime the St. John Ambulance Association, with a liberality worthy of all commendation, finds the £100 a year necessary to equip and carry on each station; and we have no doubt that, were the Association to come to the public with this scheme of street ambulance, the money would be readily forthcoming.

But, beyond this, there is a great public want. How are the sick to be conveyed from, say, their homes to the hospital? The hand litters of the St. John Ambulance Association are no doubt the best methods of conveyance for short distances, but for long distances, say from Willesden to Charing Cross, or from Sydenham to London Bridge, a horse ambulance is required. There are but few of these to be seen in the streets of London. We are not altogether without them, but there is only one Horse Ambulance Centre in London available for the use of the public. Few know of its existence, yet it has done and is doing a great deal of excellent work. At St. John's Gate, Clerkenwell, under the auspices of the St. John Ambulance Association, a horse ambulance centre in the highest state of efficiency is at the public service. Application at the centre will ensure prompt attention, and the supply of all that is best in the matter of transport for the sick. The difficulty of payment arises, as moving by horse ambulance is an expensive process. The Hospital Saturday Fund engaged the St. John Ambulance Association for the work, and pay only a nominal fee.

We confess to a preference for the wheeled litters in the streets of London. They are more easily handled, and are not so apt to get delayed by the traffic as are horse ambulances. We are not, perhaps, quite educated up to the state of the citizens of New York or even of Belfast, where daily may be seen swift horses yoked to ambulance waggons dashing through the streets with the rapidity and shouting of a fire engine. We are doubtful if the public in London would welcome such an increment to their already crowded streets, but with less display it is possible to ambulance the metropolis. Were permanent ambulance stations, on the lines begun by the St. John Ambulance Association, multiplied and connected with the public telephone, we believe the present want would be supplied. Were, in addition say, two horse ambulance stations established on the south side of the river, and another on the north, in addition to the one at St. John's Gate, all connected by telephone, we believe the immediate necessities of the metropolis would be met.

THE PLAGUE IN THE EAST.

India.

Latest advices from India state that throughout the Bombay Presidency, Mysore, and the Punjab, plague is spreading rapidly.

Bombay.—In the city of Bombay, during the past week, 162 deaths have occurred. The citizens of Bombay have come to regard 100 deaths a week as sufficient to stamp the disease as epidemic, and it is to be regretted that the city should find itself once more in that unenviable state. The recrudescence must be regarded as dating from August 6th, for on that day the number of fresh plague cases suddenly rose from about a dozen to over thirty. Since then, although the number has fluctuated, there has been on the average a steady rise, and now the numbers grow once more alarming. Throughout the Bombay Presidency over 2,300 deaths have been notified from plague during the past week, including the 162 cases in the city itself. The worst report comes from Hubli, a town in the Southern Mahratta country, where plague claims as many as 60 victims daily. The districts of Dharwar and Belgaum are widely and seriously affected, and from Belgaum we have the news of the deaths of two English ladies. Miss Duggan and Miss Westbrook died at that place within a week of each other, and the incident has caused alarm amongst the European residents. The two victims were residents of Bombay; they had gone to Belgaum on a visit, and the disease is believed to have been contracted in Belgaum itself. How they were infected remains a mystery, as they were not in any way specially exposed to infection. From the districts of Thana, Satara, Kolhapur, and Kathiawar, reports declare an increase of plague, and a fresh outbreak has occurred in the Hyderabad State.

Madras.—In the Madras Presidency the town of Guntakal is suffering from an outbreak of plague, and in the Mysore State a few cases have occured.

Bengal.—Calcutta is not yet free from cases of plague, although some days elapse between individual cases. The plague hospitals are for the most part empty, and the nurses, engaged at the time of the threatened outbreak, are idle.

ASSOCIATION INTELLIGENCE.

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A meeting of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

Lancashire and Cheshire and North Wales Branches.—A joint meeting of these two Branches will be held at Chester in the last week of September. All communications with regard to papers or reports of cases to be read and all applications for membership should be addressed, if concerning the Lancashire and Cheshire Branch, to Dr. James Barr, 72, Rodney Street, Liverpool, Hon. Secretary of that Branch; if concerning the North Wales Branch, to one of the Hon. Secretaries, Dr. W. Jones Morris, Portmadoc, or Dr. H. Jones Roberts, Pen-y-groes.

East Anglian Branch.—The autumnal meeting will be held at Mundesley-on-Sea on Thursday, September 8th, under the Presidency of Mr. Haynes S. Robinson. Programme of proceedings: 12.30, meeting of Council at Clarence Hotel; 1.30, luncheon at Clarence Hotel (tickets, 2s. 6d.*); 2.30, general meeting. Papers: Dr. Long, Rigors, their Clinical Significance and the Conditions under which they occur; T. H. Morse, A Case of Gasteroplasty; H. C. Nance, A Case of Puerperal Septicæmia Treated by Antistreptococcic Serum: Recovery; Dr. Beverley, Medical Congresses at Home and Abroad. Mrs. Haynes Robinson will be pleased to receive the members and their ladies at afternoon tea at Sea View House (4 to 6 P.M.). *Applications for tickets for members and their ladies to be sent to Dr. Beverley, Norwich, before Tuesday, September 6th. Edgar Barnes, Eye, Michael Beverley, Norwich, Thomas Carr, Braintree, Honorary Secretaries.

SPECIAL CORRESPONDENCE.

PARIS.

Infant Mortality.—Neglected Sanitation.—The Recent Great Heat.—Bequests to the Medical Faculty of Lyons.—General News.

A new philanthropic society has been formed—the "Société Anonyme des Pensionnats Maternels de France." Its object is to organise establishments near Paris and other large towns where infants will be rationally reared. The plan is drawn up as follows: Each establishment is to consist of a series of isolated pavilions. In each there will be ten sets of services, each independent of the other. In each service thirty-two children will be tended and reared. There will be provided a parlour, a covered-in glass gallery, a bath-room with washing stands, two day dormitories and two for the night, and a dormitory for the wet nurses. There will be a day nurse and a night nurse for each dormitory. Children will be admitted from one day to four years of age. Every child will be isolated for twenty-five days after its admission; a special pavilion will be set aside for this purpose. Children who may be ill will be separated from the healthy and treated in another pavilion to be called the infirmary. Electricity, gas, and sterilised water will be furnished by special gasworks and laboratories. Clothes will also be washed and bleached at laundries belonging to the establishments. Cows will be kept in model byres to provide milk, which will be sterilised. A similar establishment, which has been in working order at Porchefontaine, near Versailles, since 1892, was founded and is carried on by private charity. It is not intended for people in easy circumstances. There are only fifty paying cradles, and these are not sufficient to satisfy the demand. An investigation made concerning the children that could not be admitted has shown that the mortality among them had been 34 per cent.; at the establishment for the same period it was 6 per cent. The children not admitted were excluded owing to want of room and not on account of weakness. Parisian families send every year 18,000 children to foster mothers, and according to Dr. Rochard more than half die before they reach the age of one year. Dr. Bertillon estimates that 130,000 could be saved every year without counting those who die in the second or third year or who remain weakly from illness contracted during their early infancy. Four persons have subscribed 6,000 francs to forward this new scheme.

The constant efforts throughout France, and especially in its capital, to improve sanitation makes the fact the more remarkable that the existing facilities for observing sanitary precautions should be neglected. The mortuary depôts are certainly a wise sanitary organisation, and it is unwise not to utilise them. A death took place a few days ago from "cerebral congestion"; the body became offensive the next day. The necessary formalities were instituted; the legal documents were sought for and not found. Permission to bury was applied for. During this delay the stench was so powerful that all the other inhabitants of this house, let out in rooms and small flats, were obliged to go to an hotel. Since 1891 two mortuaries have been established—one at the Montmartre Cemetery, one at Père-Lachaise. The Municipal Council had previously visited those organised in London, Brussels, Cologne, and Mayenne.

During the recent intense heat several cases of sunstroke occurred, followed by some deaths. It is stated, however, that the temperature was higher in London than in Paris. The General Councils of several departments have expressed the wish that the military manœuvres should not take place during the intense heat of August. The War Minister decreed, either in accordance with his own convictions or in consequence of these resolutions, that these manœuvres should take place when the heat had subsided. They are now about to be undertaken, and the Ministerial decree is accompanied by a series of injunctions directing that all unnecessary trials and hardships are to be avoided. Should the heat again become excessive the manœuvres are to be interrupted.

The Medical Faculty of Lyons has lately been enriched by two important legacies. Madame Letiérant has bequeathed £200, directing that the interest is to accumulate during five years. Thus every five years a Letiérant prize will be adjudged for the author of the best thesis on a surgical subject. M. Léon Riboud, formerly a barrister, has bequeathed to the same Faculty the sum of £2,000, of which the interest is likewise to accumulate for five years, when it will be adjudged as a prize to a man of science who has inhabited Lyons five years, or the departments of the Rhone, Loire Saone, and Loire Isère, or Ain, for five years, and has by his works, discoveries, or teaching rendered positive service to sanitary science, to public health, or to medical science relating to the protection of infant life.

The patient known as the "Salpêtrière Centenarian," Madame Simonnet, died a few days ago, at the ripe age of 105 years and 6 months. Her husband died eight years ago, also a centenarian, having lived three days of his 101st year. In 1890 Madame Simonnet entered the Salpêtrière with her widowed daughter, who is now 78 years of age.

The Paris Academy of Medicine has passed a vote of thanks to M. Clozier de Beauvais for his memoir on the treatment of pneumonia by Marmorek's serum.

On September 4th the Asylum Hospital at Longjumeau will be opened. M. Viger, Minister of Agriculture, will preside at the ceremony. Six gymnastic societies will meet,

and about 2,000 members will take part in the athletic sports and matches.

LIVERPOOL.

Diminished Diarrhœa Mortality.—The Workhouse Hospital.—Opening of the Thompson-Yates Laboratories.

The weekly report of the medical officer of health points to a notable improvement as regards the incidence of diarrhœa on the population. The total number of deaths from that cause during the week ending August 13th was 87, against 241 in the corresponding week last year. The improvement is attributed to the cleaner state of the streets, which is largely the direct consequence of the abundant water supply which the city enjoys, and also to the activity of the newly-appointed female sanitary inspectors who are busily engaged in teaching the dwellers in the poorer districts how to feed their children properly. Medical men who see much of the poor are well aware of the astonishing amount of ignorance which prevails among the working classes as to the kind of food a young child requires and is capable of assimilating, and there can be little doubt that improper feeding is largely responsible for the occurrence of diarrhœa, and for the feeble resistance which its victims offer to it. The presence of educated and sympathetic women in the homes of the poor seems to offer the best hope of overcoming this ignorance, and Dr. Hope cordially acknowledges the value of the services which the female inspectors are rendering in this connection. Of the present staff of female inspectors the greater number have been trained by the Liverpool Ladies' Sanitary Association, a society whose existence and usefulness have previously been noticed in the British Medical Journal. It is much to be hoped that the good work which this Society has commenced will be continued in future, but it is to be regretted that those responsible for its management have not yet brought out the syllabus for next session, nor even intimated whether any classes will be held at all. The propagation of knowledge as to the value of vaccination and revaccination affords a wide field for the activity of female sanitary inspectors. This comparative immunity from diarrhœa has been maintained during the following two weeks.

At a recent meeting of the Liverpool Workhouse Committee, an interesting discussion arose in connection with the returns of the number of inmates, which showed an increase of 159 as compared with the corresponding week last year. The increase was mainly in patients in the hospital, a circumstance which seems to indicate that the prejudice which prevents so many of the sick poor from accepting rate-paid medical relief is less active than it used to be. This Mr. Rathbone considered to be highly satisfactory, because the sooner the poor are cured the sooner they will be able to resume work.

The formal opening of the Thompson-Yates Laboratories of Physiology and Pathology will take place on October 8th, the ceremony being performed by Lord Lister, who will deliver an address in the afternoon at University College. In the morning a meeting of the senate of Victoria University will be held in St. George's Hall, for the purpose of conferring an honorary degree of Doctor on Lord Lister. In the evening Lord Lister will be entertained at dinner by the Right Hon. the Lord Mayor. A large number of men eminent in medicine and the allied sciences in various parts of the world have accepted invitations to take part in the various ceremonies.

CORRESPONDENCE.

SELF-INDUCED INSTRUMENTAL ABORTION.

Sir,—In the recent trial Regina *v.* Collins, I believe it was stated in court that it was impossible for a woman to pass an uterine sound upon herself. Now, I know of at least three cases in which a metal catheter has been passed in this way, and in one I was called in to the assistance of the woman, who informed me that she had bought a metal catheter from a man (whose name she would not divulge), who gave her full instructions as to the procedure. She said: "I first boil the catheter, then soak it in one part of carbolic acid added to forty parts of water, then oil it, and pass it in. He told me that I should turn it round once or twice; but I don't do this; but if blood does not come I use it again. There is no danger. The only difference is that I feel a cold sensation and want of feeling at the bottom of my stomach."

I found the patient bleeding profusely and some placental material projecting through the os uteri. I could not remove this easily, and the patient asked me to "just put in a little hook and take it away." I refused, and called in the assistance of an obstetric physician, who dilated and removed the uterine contents.

I may say that this patient had previously to buying the catheter been in the habit of injecting water into the uterine cavity by an apparatus bought abroad, and she was thus to an extent an adept.

It has occurred to me that, as such practices are possible, the profession may be at the mercy of any unprincipled woman who chooses to induce her own abortion instrumentally and then call in a medical man; and the question one asks oneself is, what would be the position of a doctor who had been so called in in the event of death occurring and upon a *post-mortem* examination being made some perforation or other injury to the uterus were discovered.

In the absence of any evidence from the husband (who may be cognisant or not) would not suspicion point to the doctor last in attendance?—I am, etc.,

Aug. 23rd. Edin.

THE VACCINATION SURRENDER.

Sir,—I hope that the members of the Association will not be encouraged by the letter of Mr. Nelson Hardy in the British Medical Journal of August 13th to make what looks very much like a personal attack on Sir Walter Foster for the action he took in connection with the Vaccination Bill. Mr. Hardy seems to forget that the course taken by Sir Walter Foster was practically endorsed not only by all the medical members in the House of Commons, but by Lord Lister in the House of Lords. That a concession of some kind had to be made to determined objectors to infant vaccination is admitted by all who have any knowledge of the state of feeling in the country, and especially in some of the larger towns, on the subject. I venture to think that I am in as good a position to speak in regard to it as anyone considering the communications which I daily receive from all parts of the kingdom. The blunder that has been made was not in accepting the principle of Sir Walter Foster's proposal, but in failing to qualify it by a proviso that the relaxation of the law which he proposed should be only a temporary one, and that the liability of the child should revive when it reached the school age. This is the converse which was urged by the Committee of the Jenner Society before the Vaccination Bill was brought in; but the Government refused to accept it, and lost the opportunity of doing so when Mr. Balfour made his unfortunate surrender.

For my own part, I have no hesitation in expressing my belief that the cause of vaccination would, on the whole, gain greatly if the age of compulsion had been extended at once to 4 years. But, however this may be, I am in a position to state that a leading member of the Conservative party in the House of Commons was on the point of rising to propose the addition of such a proviso as I have suggested—which would probably have secured the support of the large majority of both sides of the House—when unfortunately Mr. Balfour jumped up and, on the part of the Government, practically accepted Sir Walter Foster's proposal *en bloc*. Then, to use a vulgar expression, "all the fat was in the fire"; the mischief was done, and the only possibility of averting it was by independent action in the House of Lords. Here, again, unfortunately circumstances were against us. The Bill was pushed on by the Government with such rapidity that before any effort could be made to take the opinion of the House of Lords on this point the opportunity was lost.

But, whatever we may think of the want of tact and forethought which caused this catastrophe, it would be most unjust to make Sir Walter Foster—with whom we must all sympathise in the sad loss he has just experienced—specially responsible for a policy in which he was supported to a certain extent not only by all the medical members of the Legislature but by the expressed opinion of the Council of the British Medical Association itself.—I am, etc.,

Gloucester. Francis T. Bond.

REVACCINATION OF INMATES OF INSTITUTIONS.

Sir,—In view of the changes in the Vaccination Act, I should be very glad of your opinion as to whether as medical officer to an orphanage I should be justified in continuing to revaccinate all newly-admitted children without consulting their relatives. There is no regulation making it compulsory, only one that each candidate must have been vaccinated. It has been my custom for the last eight years to revaccinate all children, and there is now a very small proportion in the institution not thus protected.—I am, etc.,

Wallington, Aug. 16th. Medical Officer.

*** One of the rules of admission to the institution should be the immediate vaccination or revaccination of every person admitted excepting persons recently successfully vaccinated or revaccinated, or who have already had small-pox. The new Act does not deal with the point raised by our correspondent, but the orphanage should protect itself against the possibility of factitious criticism.

THE CINEMATOSCOPE AS AN AID IN TEACHING.

Sir,—When attending the meeting of the British Medical Association in Edinburgh last month I had the good fortune to be present at the very excellent cinematographic display given by Dr. E. Doyen of Paris. I was then struck by the great possibilities of the cinematoscope in the direction of medical and surgical teaching. I think it would be particularly useful in showing the morbid gaits characteristic of the various lesions of the nervous centres—for example, cerebellar tumours, ataxy, etc. A few cinematographic representations of typical cases of the kind would be worth pages of description to the student, and, moreover, the knowledge would be conveyed to the brain through the optic nerves, better media for the purpose than the auditory nerves, a fact which my respected teacher, Professor Chiene, used to lay great stress upon. I feel sure the idea has occurred to many medical men, and, for aught I know, has been put into practice already. I ought therefore, perhaps, to apologise for troubling you.—I am, etc.,

Belford, Northumberland, Aug. 22nd. G. P. Coldstream.

THE CERTIFICATION OF LUNATICS IN IRELAND.

Sir,—With regard to the statement made by Dr. May, that up to 1875 workhouse medical officers did not consider themselves aggrieved by Cap. 118, Section x, I cannot but think that they did do so, or would have done so, had they been union medical officers only; but, as Dr. May is doubtless aware, many of the workhouse officers held the dispensary appointment also, and, acting as dispensary medical officers, had of course no grievance, as they were entitled to certify under the Act. Dr. May seems to think that the loss of fees to dispensary men would in some degree mitigate the grievance I complain of. I cannot understand why he should think so. When we medical officers have to take charge of acute cases of insanity, all responsibility falls from the dispensary medical man's shoulders once his patient is in the union, whether brought thither by police or relations is little matter. I have had them brought to me by both, yet I am debarred by Cap. 118 from signing the certificate for such case of insanity, although I may have no room or means of keeping them from harm, owing to possible overcrowding of wards, or lack of attendants. Dr. May questions the legality of police action in conveying dangerous lunatics to workhouses. I think it is by no means clear that workhouse officials have the power to detain them when there, and might be held culpable for detaining a man who is an uncertified lunatic in a workhouse against his will, yet it is done by them in the interests of the insane patient. If Dr. May will look at the Blue Book for Scotland for the year 1887, he will read the following extract, which expresses the opinions of the Scotch Commissioners:

> We again call attention to the circumstance that pauper lunatics who are thus sent to Ireland are frequently upon arriving there placed in the ordinary wards of poorhouses, from which they soon discharge themselves and return to this country. In sending such patients repeatedly to and fro a needless expenditure of money and trouble is caused.

Does not this show that our pauper lunatics are not properly certificated, and emphasise the disabilities of workhouse medical officers to send their patients to the asylums of this country? I have known two justices and a dispensary doctor visit a patient and refuse to commit the case to the asylum, believing, through ignorance of the condition of the patient, that it was not a fit case for committal. In justice to the profession, I will state that the dispensary doctor was quite willing to sign the required certificate, but the justices refused to commit the case on the doctor's representation, leaving the patient, greatly to my annoyance, still in the workhouse.

Dr. May I think singularly fortunate in his long experience without a sudden case of mental disease occurring in his public practice requiring immediate removal to a place of safety.

In conclusion, I wish to state that workhouse medical officers, I consider, suffer an obvious injustice by this section of the Act. Workhouse medical officers of Ireland are asylum superintendents upon a small scale without that official's staff of trained attendants or facilities for treatment of the insane poor, and I consider every facility might be given us for the prompt removal of dangerous lunatics to the country asylums, where there exists, or might exist, ample accommodation for their safe keeping and scientific treatment.—I am, etc.,

Rathdrum, co. Wicklow, Aug. 23rd. Richard R. Leeper.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

The following is the text of the Warrant published in the *London Gazette* of Friday, August 26th, granting the corps titles to the Indian Medical Service:

India Office, August 26th, 1898.

Victoria, R.I.

Whereas We have deemed it expedient to alter the Ranks of the Officers of Our Indian Medical Service:

Our Will and Pleasure is that the following alterations shall be made:

Present Ranks.	New Ranks.
Surgeon-Colonel	Colonel.
Brigade-Surg'n.-Lieutenant-Colonel ... ... / Surgeon-Lieutenant-Colonel	Lieutenant-Colonel.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant... ...	Lieutenant.

Officers above the rank of Surgeon-Colonel shall in future be styled Surgeon-Generals (ranking as Major-Generals), and the title of Surgeon-Major-Generals now serving shall be altered accordingly.

It is further Our Will and Pleasure that the following alterations shall be made in the honorary ranks of the Senior Assistant-Surgeons of the Subordinate Medical Department in India:

Present Honorary Ranks.	New Honorary Ranks.
Surgeon-Major	Major.
Surgeon-Captain	Captain.
Surgeon-Lieutenant ...	Lieutenant.

Given at Our Court at Osborne, this tenth day of August, one thousand eight hundred and ninety-eight, in the sixty-second year of Our reign.

By Her Majesty's Command,

George Hamilton.

THE LATE SIR W. A. MACKINNON, K.C.B.

The handsome marble tablet which has been erected on the western wall of the Chapel of Netley Hospital, bears the following inscription: "Sacred to the memory of Surgeon-Major-General Sir William Alexander Mackinnon, K.C.B., Q.H.S., Army Medical Staff. Born at Strath, Isle of Skye, 27th June, 1830; died in London 28th October, 1897. He served in the Crimea with the 42nd Royal Highlanders, and through the Indian Mutiny on the personal staff of Lord Clyde. He also took part in the New Zealand and Ashanti (1873-1874) campaigns; and closed, as Director-General of the Army Medical Department, an honourable and active career which extended over forty-three years. This tablet is erected by his brother officers and several old comrades and friends."

This is the latest addition to the series of marble and brass tablets which adorn the hospital chapel and commemorate the lives and services of such men as Longmore, Aitken, Balfour, De Chaumont, Porter, Godwin, Lewis, Parke, and Keith.

MORALITY AND DISEASE IN THE ARMY.

The following is the text of a memorandum issued by the Commander-in-Chief under date April 28th, and recently published as a parliamentary paper:

It will be the duty of company officers to point out to the men under their control, and particularly to young soldiers, the disastrous effects of giving way to habits of intemperance and immorality; the excessive use of intoxicating liquors unfits the soldier for active work, blunts his intelligence, and is a fruitful source of military crime.

The man who leads a vicious life enfeebles his constitution, and exposes himself to the risk of contracting disease of a kind which has of late made terrible ravages in the British army.

Many men spend a great deal of their short term of service in the military hospitals, the wards of which are crowded with patients, a large number of whom are permanently disfigured and incapacitated from earning a livelihood in or out of the army.

Men tainted with this disease are useless to the State while in the army and a burden to their friends after they have left it.

Even those who do not altogether break down are unfit for service in the field, and would certainly be a source of weakness to their regiments and discredit to their comrades if employed in war.

It should not be beyond the power of company officers to exercise a salutary influence in these matters, more particularly over the younger men. Many of these join the army as mere lads, and are taken away early in life from the restraints and influences of home. They should be encouraged to look to their superiors, both officers and non-commissioned officers, but more especially to the officers commanding their troops, batteries, or companies, for example and guidance amid the temptations which surround them.

The Commander-in-Chief expects officers and non-commissioned officers to be always ready and willing to afford them sympathy and counsel, and to spare no effort in watching over their physical and moral welfare.

Officers should do their utmost to promote a cleanly and moral tone amongst the men, and to ensure that all rowdyism and obscenity in word or action is kept in check. In no circumstances should public acts or expressions of indecency be tolerated, and if in any case there is reason to suspect that immorality is carried on in barracks or other buildings which are under the control of the military authorities, vigorous steps should be taken by surprise visits or otherwise to put a stop to such practices. All persons implicated in them, whatever may be their rank or position in the service, should be punished with the utmost severity.

Nothing has probably done more to deter young men who have been respectably brought up from entering the army than the belief, entertained by them and by their families, that barrack-room life is such that no decent lad can submit to it without loss of character or self-respect.

The Commander-in-Chief desires that in making recommendations for selection for promotion regard should be had to example set to the soldier. No man, however efficient in other respects, should be considered fit to exercise authority over his comrades if he is of notoriously vicious and intemperate habits.

The Commander-in-Chief is confident that officers, non-commissioned officers, and men in the Queen's service, will spare no pains to remove from the army the reproach which is due to a want of self-restraint on the part of a comparatively small number of soldiers, and that officers of all ranks will do their utmost to impress on their men that in the important considerations of morality and temperance soldiers of Her Majesty's army should, as befits their honourable calling, compare favourably with other classes of the civil population.

THE ROYAL NAVY MEDICAL SERVICE.

Surgeon Edward Cuffey, M.B., has been allowed to withdraw from the service with a gratuity, August 13th. His commission was dated February 21st, 1890.

Staff-Surgeon Charles W. Buchanan-Hamilton has been promoted to be Fleet-Surgeon, July 15th. His commission as Surgeon dates from June 4th, 1878; that of Staff-Surgeon from June 4th, 1890. He served throughout the Egyptian war of 1882 in the *Beacon*, and was present at the bombardment of Alexandria (in action with Ras-el-Tin, Marabout, and Mex Forts), the seizure of the Suez Canal, the occupation of Port Said, Suez, and Ismalia, at the surrender of the Aboukir, Damietta, and Ghimileh Forts, and until the end of the war (medal with clasp, Khedive's bronze star). He was surgeon with the Royal Marine Battalion in the Soudan expedition, 1884; surgeon of the Royal Victoria Hospital, and of H.M. *Sphinx* (Commodore's pennant), at Suakin, until the close of the campaign (clasp); surgeon of Naval Brigade in the Burmese war, 1885, and attached to the Burmah Field Force in the advance to Upper Burmah, and in the Indian marine ship *Tigris;* present at the occupation of Mandalay and deposition of King Theebaw, landed and engaged in subsequent operations (India medal with clasp).

Staff-Surgeon John S. Lambert has been promoted to be Fleet-Surgeon, July 25th. He was appointed Surgeon June 4th, 1878, and Staff-Surgeon twelve years after.

The undermentioned Surgeons having completed twelve years' full-pay service, have been promoted to be Staff-Surgeons, August 20th:—Alfred Weightman, James W. O. Underhill, M.B., Charles H. Upham, Frederick J. Burns, M.D., Daniel J. P. M'Nabb, Charles Strickland, James M. France, John Menary, M.D., Walter E. Axford, George T. Broatch, M.B., William Bett, Frederick A. Brice, John W. Slaughter, B.A., M.B., George H. Foott, M.D.

Staff-Surgeon Charles H. Upham has been allowed to withdraw from the service with a gratuity. He joined as Surgeon August 20th, 1886, receiving his commission as Staff-Surgeon twelve years later.

The following appointments have been made at the Admiralty:—Herbert Holdaker, Staff-Surgeon, to the *Pembroke*, additional, August 4th; Harold G. T. Major, Surgeon, to the *Victory*, August 4th; John Lyon, M.D., Fleet-Surgeon, to the *President*, August 27th; William R. White, M.A., M.B., Fleet-Surgeon, to the *Magnificent*, August 27th; George W. Bell, Fleet-Surgeon to the *Hannibal*, August 27th; Edward G. Swan, Staff-Surgeon, to the *Collingwood*, August 30th; Frederick J. Burns, M.D., Staff-Surgeon, to the *Boscawen*, August 30th; Shirley H. Birt, Surgeon, to the *Victory*, additional, August 24th; Henry W. Finlayson, M.B., Surgeon, to the *Trafalgar*, additional, August 4th; Robert S. Bernard, James W. W. Stanton, and Alcibiade Kelsey, B.A., M.B., Surgeons, to Haslar Hospital, August 24th; William Hackett, M.D., Surgeon, to Plymouth Hospital, August 4th; Joseph C. Wood, Surgeon, to the *Britannia*, September 5th; Charles R. Sheward, M.B., Surgeon, to the *Vivid*, additional, September 5th.

THE ROYAL ARMY MEDICAL CORPS.

Brigade-Surgeon Francis Bramley Baker died at Hollfield, Weybridge, on August 11th, at the age of 67. He was appointed Assistant-Surgeon, March 3rd, 1854; Surgeon, January 4th, 1871; Surgeon-Major, March 1st, 1873; and Honorary Brigade-Surgeon on retirement, March 20th, 1880. He was with the 2nd Battalion Grenadier Guards in the Egyptian war of 1882, and was present at the battle of Tel-el-Kebir, receiving the medal with clasp and the Khedive's bronze star.

Deputy-Inspector-General Edward William Bawtree, M.D., died at Mistley Hall, Essex, on August 13th, aged 80 years. His commissions were thus dated:—Assistant-Surgeon, November 24th, 1843; Surgeon, January 18th, 1855; Surgeon-Major, July 6th, 1866; and Honorary Deputy Surgeon-General on retirement, February 24th, 1872. He served in the New Zealand war in 1865-66, and acted part of the time as Senior Medical Officer, taking part in the expeditions against the rebel Maories. During the Abyssinian war in 1868 he was Principal Medical officer to the Second Division from March 9th till the conclusion of the campaign, receiving the medal.

Deputy-Surgeon-General John Riggs Miller Lewis, M.D., died at Kingston-on-Thames, August 13th, aged 77. He entered the service as Assistant-Surgeon, February 11th, 1843; became Surgeon, December 7th, 1855; Surgeon-Major, August 18th, 1858; and Hon Deputy-Surgeon-General on retirement, June 10th, 1872. He served with the Rifle Brigade in the expedition against the insurgent Boers north of the Orange River, and was present at the action of Boem Plaats on August 29th, 1845.

ARMY MEDICAL RESERVE.

Surgeon-Captain D. Lennox, M.D., is promoted to be Surgeon-Major, August 27th.

INDIAN MEDICAL SERVICE.

The Government of India have recorded their high appreciation of the eminent services of Surgeon-Lieutenant-Colonel D. D. Cunningham, Bengal Establishment, who retired in June last. His researches into the causes of cholera, his microscopical work, and his investigations connected with snake-bite are all mentioned in high terms. The warmest thanks of Government are given to Dr. Cunningham, who is well described as "one of the most distinguished of the scientific men who have served the State."

Surgeon-General J. Cleghorn, M.D., C.S.I., Bengal Establishment, is permitted to retire from the service from October 25th. He was appointed Assistant-Surgeon March 31st, 1865, and became Surgeon-Major-General March 29th, 1895. He was made Director-General and Sanitary Commissioner with the Government of India on the retirement of Surgeon-Major-General Rice in March, 1895. His only war record is the Bhootan Expedition of 1865, for which he was mentioned in dispatches, and received the Frontier medal with clasp.

Lieutenant-Colonel A. S. Reid, M.B., Bengal Establishment, is appointed Principal Medical Officer to the Kohat-Kurram Force, *vice* Lieutenant-Colonel W. R. Murphy, D.S.O., who has been granted a year's leave to England on medical certificate.

The Queen has approved of the following admissions to be Surgeon-Lieutenants, dated July 27th: Thomas Hunter, Walter R. Battye, Harold B. Meakin, George Hutcheson, William G. Liston, Harold Boulton, Richard W. Anthony, Ernest F. G. Tucker, George E. Stewart, Frank S. C. Thompson, Thomas S. Novis, John W. Watson, Herbert J. R. Twigg, Charles W. McG. Orpen.

THE VOLUNTEERS.

The undermentioned Surgeon-Lieutenants are promoted to be Surgeon-Captains, August 27th: H. A. Rudyard, 2nd (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment; J. Taylor, M.D., 6th Volunteer Battalion the Gordon Highlanders; E. W. St. V. Ryan, 16th Middlesex (London Irish) Rifles.

Mr. Samuel Braithwaite is reappointed Surgeon-Lieutenant in the 1st (Cumberland) Volunteer Battalion the Border Regiment, August 27th.

Captain John N. Patterson, 1st Volunteer Battalion the Prince of Wales's Volunteers (South Lancashire Regiment), resigns his commission, and is appointed Surgeon-Lieutenant, August 27th.

THE COMMITTEE ON FIELD HOSPITALS, INDIA.

The Committee assembled at Simla has held numerous sittings, and much practical good is expected to result from its work. The chief question, however, is, according to the *Pioneer*, how far any reductions recommended will seriously interfere with the interests of the sick and wounded on service. During the recent campaign any difficulties experienced with field hospitals were chiefly attributable to excessive transport and physically inefficient and inexperienced establishments, two drawbacks not by any means of recent date in our frontier operations.

ALLOWANCES IN INDIA.

A correspondent in India represents what he terms an "urgent grievance," in the denial of horse allowance to army medical officers under the rank of field officer. Such junior officers are called upon to do orderly

duty in large cantonments, which cannot be got through without at least one, if not two, ponies. Latterly, also, weekly sanitary officers have been appointed in large stations, involving in such an one as Umballa a ride of sixty-eight miles a week; yet not an anna is allowed for this; and, when horse allowance is claimed, the evasive reply is given that the "pay and allowances" given are sufficient for the performance of the duties. In a similar way, during the late frontier war, 250 rupees were allowed for charge of a whole field hospital, but nothing for charge of a-half or quarter hospital. Only parliamentary pressure will, it is to be feared, induce the Indian Government to act justly by the army medical officer.

GLYCERINATED CALF LYMPH.

ARMY Orders 115 contain the following paragraph:

Glycerinated calf lymph, as supplied by the Army Vaccine Institute, Aldershot, which has been collected not less than one month, or more than six months, previously, will be used for vaccination purposes. Immediately on receipt at any station abroad, the lymph will be placed in the refrigerator at the station hospital, and kept there till required for use. If no refrigerator is available, every precaution must be taken to keep the lymph in a cool place, and to use it as early as possible.

This paragraph cancels paragraph 569 of the regulations for the Army Medical Service.

THE NEW TITLES.

A RETIRED MEDICAL OFFICER, and liable to recall, wants to know whether he is justified in assuming the new titles to describe himself as "retired" of the Royal Army Medical Corps.

*** We cannot, of course, presume to give any authoritative ruling, but we are disposed to say that he is Lieutenant-Colonel by virtue of the Warrant creating the Royal Army Medical Corps, and therefore must describe himself as of that corps; probably with the word (retired) in brackets after it.

THE SPANISH AMERICAN WAR.

OBSERVER writes: Two medical officers were sent to China and Japan to report when these countries were at war: why were not similar missions sent to report on the late war between Spain and America? We might have learned something from these two advanced nations.

*** Neither of these nations, we fear, have come out of the war with flying colours as far as the medical arrangements were concerned. We are likely to hear a good deal more of the alleged breakdown of the [arrangements for the American army.

THE DIRECTOR-GENERAL AND HIS ASSISTANT.

A CORRESPONDENT asks: Why should the Director-General and his Assistant always be such old and senior officers? Are they not liable to be out of touch with the younger members of the Medical Service? Should not the Assistant, at all events, be of the rank of Colonel or even Lieutenant-Colonel?

*** It would be thoroughly against the traditions of the Service were these important officers to be of any but the highest rank. No one actively engaged in administrative duties ought to lose touch with those under him. The Director-General's professional assistant is his *alter ego*, and of necessity must be of high rank.

THE OLD BRIGADE-SURGEON-LIEUTENANT-COLONELS.

A CORRESPONDENT asks how these officers are now to be distinguished from the former Surgeon-Lieutenant-Colonels in the new corps. That is a point not yet provided for, but it is clear it should be. At present there is nothing to distinguish a "selected" Brigade-Surgeon of thirty years' service from a Lieutenant-Colonel who has just completed twenty: their titles and badges of rank are the same. The new titles have also been extended to retired officers employed; among these there are still six with the honorary rank of Deputy-Surgeon-General. These old officers not only lose their well earned step in rank, but are titularly undistinguishable from officers of half their service.

R.A.M.C. UNIFORM.

WE have been asked whether any changes in the uniform of the new corps are contemplated, and are unable to say. Nothing authentic has as yet become known; but that there will be changes is a matter of certainty.

MEDICO-LEGAL.

PROSECUTION AT NORWICH UNDER THE MEDICAL ACTS AND THE APOTHECARIES ACTS.

AT Norwich Guildhall, as reported in the *East Anglian Daily Times* on August 23rd, before the local bench of justices, Samuel Matthews of Norwich was charged with unlawfully and falsely using the title of doctor, not being a registered medical practitioner, thereby implying that he had been registered under the Medical Act, 1858. The summonses specified various dates on which it was alleged he had infringed the Act. He was also charged with using the title "Surgeon" in the same unlawful manner. Mr. R. W. Turner, instructed by Messrs. Hempson, solicitors to the Medical Defence Union, appeared in support of the information, and Mr. E. E. Wild, [illegible] Mr. A. Keat, defended.

Mr. Turner said defendant had been carrying on a medical practice in the City of Norwich for a considerable number of years. It was necessary that a person in order to incur the penalty of the law should have falsely used one of the titles mentioned in such a manner as to deceive the public. The Act not only applied to unregistered men, but also to men who, although they were on the *Register*, were not entitled to call themselves doctor. Defendant had called himself doctor, and had advertised it on his place of business, in proof of which statement counsel read from advertisements issued by the defendant—"Dr. Matthews' Pectoral Elixir," "Dr. Matthews' Liver and Stone Pills." "Dr. Matthews' Liver and Stomach Pills," and many others. Mr. Turner said he should show further that people had consulted him in the belief that he was a real doctor. In one of his billheads he described himself as a "surgeon, accoucheur, etc." Surgeon was one of the titles forbidden by the Act. Persons had gone to the defendant for a death certificate, and had received one from him, but in those cases the defendant described himself as accoucheur, a high-sounding name which conveyed a lot to poor people. Counsel asked the Bench to dismiss from their minds that this was medical persecution. It was true that the Medical Defence Union took action, as it would be impossible for any one medical man in the neighbourhood to take such a step. It would be grossly unfair if only a small offender was punished and a man like the defendant, who was well known, was allowed to go scot free. Defendant never had any diploma other than a certificate that he had attended some lectures in midwifery at the Westminster Hospital.

Evidence was then given by various persons as to the practice of medicine and the use of the titles "Dr." and Surgeon by the defendant Matthews. In one instance, Mary Louisa Bower, wife of Charles John Bower, St. Philips Road, deposed that to her daughter defendant gave the following certificate of death: "I certify that Kathleen Mary Bower, aged 13 months, of 29, St. Philips Road, died on the 26th May, 1898, and that the cause of death was meningitis. S. Matthews, Accoucheur, etc."

Mr. A. Shorten, registrar of deaths, who produced on subpœna certain so-called certificates of death signed by the defendant, said that Mr. Matthews had been perfectly well known in the city for forty-six years. He regarded Dr. Matthews as a quack, and he believed everyone in Norwich did so.

The case for the prosecution having closed, Mr. Wild opened for the defence. He said the question for the Bench to consider was, Do you believe that Dr. Matthews has done what he has done with the intent wilfully and falsely to deceive the public? He remarked that Mr. Solomon, whose name appeared on the summonses, was not the real prosecutor. The prosecutor was some Medical Defence Association, some young medical practitioner, and it would be interesting to the Norwich public to know who was the person who had been setting in motion this prosecution, which was really a piece of persecution. His name was kept in the background. Since 1825, Dr. Matthews's father, who also held a diploma from an American university, carried on practice in the city, in which he was joined more than forty years ago by his son, the present defendant, the son having been in his apprenticeship six years before that. In 1878 the father died, a respected Norwich citizen, and the son kept up the firm's name. Dr. Matthews was resident surgeon accoucheur to the Westminster Hospital School of Medicine in 1858. He took honours in midwifery in 1858 and 1859 in London. Dr. Matthews had not become a member of the regular medical profession, not on account of inability, but because he disagreed with them. If one belonged to the faculty one had to subscribe to all the shibboleths of the faculty. Rightly or wrongly Dr. Matthews was a herbalist. Everyone in Norwich knew that he disagreed with the profession. Dr. Matthews cured the public and cured them at a cheap rate and the doctors did not like it. An attempt was being made to hound Dr. Matthews out of Norwich so that more incompetent but qualified men might take his place.

Evidence was given by various persons that they knew Matthews as a herbalist and did not regard him as a "regular doctor."

The case having closed, the magistrates announced their decision that they did not think that defendant wilfully and falsely pretended to be registered as a doctor, and dismissed the case, but without costs as to that word. With regard to the use of the word "surgeon," they found that he had infringed the law, and fined him £1 with 12s. costs.

According to a report in the *Eastern Daily Press*, at the Shirehall, Norwich, on August 24th, before His Honour Judge Willis, Q.C., an action was entered for hearing against Samuel Matthews for having acted as an apothecary on certain dates without having a licence from the Master and Wardens of the Society of Apothecaries.

Mr. R. W. Turner, instructed by Messrs. Hempson, Solicitors to the Medical Defence Union, appeared for the plaintiffs; and Mr. E. E. Wild, instructed by Mr. A. Kent, appeared for the defendant.

A special jury was empanelled, but after a consultation between counsel, Mr. Turner stated to His Honour that no question of fact would arise, and the jury might, therefore, be dismissed. The court acquiesced, and the jury retired.

After a further consultation between counsel, Mr. Turner said that the defendant had admitted the offence, and therefore there would be judgment for £20, the amount of the penalty imposed by the Act, as it could be no more and no less. The costs would be a sum agreed upon between the parties, a sum which need not be mentioned in court.

Mr. Wild said he felt it to be his duty to consent to judgment, for the simple reason that there was no alternative. He did not propose to address the court as to the wisdom of the Legislature, for he had no doubt that His Honour would consider himself bound by the old law of 1815.

His Honour said he was not there to administer the law of 1815, but to administer the law of to-day, because every law passed in the past was supposed to be reiterated day by day. If they ought not to be reiterated, Parliament ought to say so.

Mr. Wild then spoke of the proceedings which had taken place on the previous day against his client under the Medical Act, and added that Dr. Matthews was known by everybody to be a quack doctor, and people went to him because he was a good man. It would be idle to say that Dr. Matthews had not done what he was charged with that day, but these proceedings were taken because he was the centre of jealousy, and so that less competent but qualified men might take his place.

His Honour gave judgment for the plaintiffs for £20, and a sum agreed upon as to costs. He was sorry, he stated, that reference had been made to the proceedings of the previous day. In his opinion the law which he had to administer was a good law. If Dr. Matthews practised as an apothecary, further proceedings would no doubt be taken against him.

MUNYON'S REMEDIES.

Charge against the Company's Physician.

James Edward Deane, 44, described as a medical practitioner, but whose name does not appear in the *Medical Register* for 1898, living in Castle Street East, Oxford Street, was charged on August 19th, at Marlborough Street Police-court, with stealing 6s. belonging to his employer, James Munroe Munyon.

Mr. Grain appeared for the prosecution, and Mr. Hawke for the defence.

According to the press reports, Mr. Crippen, manager to Munyon's Company, said that the defendant was employed by the company as consulting physician. All the medicines were made in America, being sent over here unstamped. It was the duty of the defendant to see visitors and prescribe for them, afterwards obtaining by means of a voucher signed by him (the manager) a bottle of the particular "cure" required. Each bottle should bear a stamp: the defendant, however, had permission to keep an unstamped bottle as an exhibit.

In cross-examination witness stated that Professor Munyon was now in America, but instructions had been received from him to prosecute. Witness was not a medical man. Before Professor Munyon left England witness did know that the General Medical Council had their eyes on the company. He had heard customers come in and complain that the medicine was a swindle, but that did not happen very frequently. He had not known of customers receiving extra bottles of "cures" because they were dissatisfied. He did not know that the defendant had instructions to buy tabloids and put them into bottles and sell them as Munyon's "cures." The "cures" were put in 4s. and 1s. packages. As in most homœopathic remedies there was a considerable amount of sugar in Munyon's. He did not know what else was in them.

George Morris, clerk to a mineral water merchant, deposed that he had gone on August 2nd to Munyon's, where he saw the defendant. Acting on instructions he had asked him for a certain cure, for which he paid 4s. He took it from a drawer, and there was no stamp upon it. A few days later he again went to the same place, and purchased a second bottle of the same stuff, the bottle again not having any stamp on it.

Cross-examined: He was not suffering from anything at all, he was acting for Mr. Cumming. What he told the doctor was a lie. He acted as a private detective.

Afterjevidence had been given by Thomas Cheney, a detective, Francis Wright, an ex-policeman, and Ellen Maude Seabrooke, an assistant in Munyon's Company, Mr. Hannay remanded the accused on bail.

On August 20th the accused was charged on remand with the offence in question, and evidence was given by Susan Stopper, in the employ of Munyon's Company, and by Mr. Cumming, the storekeeper to the firm.

Mr. Hawke, in defence, urged that there was no case against the accused, and asked that he should be discharged: he was quite innocent of the charge preferred against him. Mr. Munyon was in America, and was it not a singular fact that he had not come to this country to prosecute?

Mr. Hannay: What salary did the accused receive?

Mr. Hawke: Six pounds a week: and he is charged with stealing 6s.

Mr. Hannay, after the depositions had been read, said he had come to the conclusion that the case was one he could not withhold from a jury. He would, therefore, commit the prisoner for trial, allowing the same bail as before—namely, two sureties in £25.

CENSURE OF A BONESETTER.

We gather from the report in the *Newcastle Daily Leader* of August 19th that an inquest was held on August 18th at the Half Moon Hotel, Gateshead, by the Deputy Coroner, Mr. A. T. Shepherd, concerning the death of a girl named Isabella Keenan, who died on the previous Wednesday after three weeks' illness.

According to the report, the father in his evidence stated that his daughter had been ill for some three weeks past, that for a portion of that time she had been working, but eventually became worse; and Dr. Green was called in, who gave the girl some medicine. She was afterwards taken to Mr. Clayton, the bonesetter, who said her hip bone was out, and bandaged her for it. She got worse, and on the Friday Dr. Green was sent for. His assistant attended, and afterwards Dr. Green himself came again, but in spite of their attention she died on Wednesday morning. He understood that the pain which his daughter had suffered from at first arose from the fact that her sister had jumped upon her back while they were playing together.

Mary Keenan, the sister, then gave evidence as to this occurrence, and other similar evidence bearing thereon was also given.

Robert Clayton, a bonesetter, of the Felling, was then called by the coroner, and, in reply, expressed his willingness to give evidence, from which it appeared that when he was called in he found that the muscles and sinews of the right leg were contracting, and he eased them down and put on a bandage, which went twice round the body. He noticed then a slight blistering on the loins, but did not, he admitted, notice at the time that there was any severer blistering on the adjoining parts of the body. He saw her several times after that, but on Friday the change in her condition became so alarming that he advised them to send for a doctor.

In cross-examination by the coroner, Mr. Clayton considered that, as the girl was suffering from a contraction of the muscles, the case came within his province.

Medical evidence was then given (and after referring in detail to his first and subsequent visits and to the visit of his assistant and Dr. Kempster), Dr. Green stated that when he and Dr. Morrison made the examination they found the girl suffering from a large gangrenous patch of skin at the lower part of her back, the skin being in parts quite black and gathered in places to an inch in depth, and she was also suffering from inflammation of the lungs and was in a dying condition. Dr. Morrison corroborated his diagnosis. He had formed the opinion that death resulted from pneumonia caused by blood poisoning due to the gangrene, which was in turn due to the overtight bandaging.

In summing up the coroner said the evidence tended to show that if Dr. Green had had continual charge of the case the girl might have been still alive. It seemed to him that Mr. Clayton had been somewhat careless in not noticing the severe blisters and in not ascertaining the previous treatment to which the girl had been subjected. Mr. Clayton's conduct did not amount to criminal negligence, and he was, of course, not open to the same consequences as if there had been criminal neglect. However, if the jury wished to make any remarks on that aspect of the case they were at liberty to do so.

The jury intimated a wish to retire, and on their returning the coroner, in calling Mr. Clayton in, said the jury had found that the girl's death was due to the causes enumerated by Dr. Green. Addressing Mr. Clayton, he remarked that the jury desired him to say that they were sorry to come to the conclusion that there had been some carelessness on his part. They considered that it was scarcely a case which he ought to have continued to treat. When he saw that she was not suffering from any fracture or displacement of the bone it would have been proper for him to have advised the parents to call in a doctor. They also thought that he had not made so careful an examination of the girl as he ought to have done, and that if he had made such an examination he would have found that the blistering had been severe, and that he would also have found that the bandages were restricting the circulation of the blood.

Mr. Clayton was about to speak, when the coroner said he could not allow him to address the jury, and the inquiry ended.

PROSECUTION UNDER THE MEDICAL ACT.

We learn from a report in the *Accrington Observer*, that at the Accrington Police-court, on August 17th, John Haworth, of Blackburn Road, was summoned by the Medical Defence Union for having unlawfully, wilfully, and falsely pretended to be, and used the name and title of, "Doctor of Medicine," thereby implying that he was registered under the Medical Act, 1858. The case for the prosecution was conducted by Mr. Slinger, instructed by Messrs. Hempson, solicitors to the Medical Defence Union: the defendant neither appeared in person, nor was he represented. After hearing the evidence, the Mayor stated that the Bench had considered the case, and had decided that the offence was fully proved. The defendant had been before the Court on two previous occasions, on one of which he was fined. The decision of the Court was that the defendant should be fined £10 and costs, or in default two months' imprisonment.

CHARGE OF MISCONDUCT WITH A FEMALE LUNATIC.

Dr. J. A. Campbell, Medical Superintendent of the Cumberland and Westmoreland Lunatic Asylum, Garlands, to whom a retiring pension of £700 a year was recently voted, has been committed for trial at the assizes to be held in Carlisle in November on a charge on misconduct with a female patient in the asylum. According to the report in the *Carlisle Express*, Dr. W. Farquharson, Assistant Medical Officer to the Asylum, stated in evidence that Dr. Campbell had said to him he might have acted foolishly while under the influence of drink, but that he denied the offence. Dr. Campbell reserved his defence, and was admitted to bail on one surety of £500 and his own recognisances for a like amount.

FEES TO MEDICAL OFFICERS OF WORKHOUSE INFIRMARIES.

Query asks if the medical officers of workhouse infirmaries are entitled to receive fees when summoned by the coroner to give evidence in cases of death occurring within the said infirmary.

*** The fees to medical witnesses are regulated by the Coroners' Act, 1887, Sections xxii and xxiii, which is as follows:

"22. A legally-qualified medical practitioner, who has attended at a coroner's inquest in obedience to a summons of the coroner under this Act, shall be entitled to receive such remuneration as follows, that is to say:

"(a) For attending to give evidence at any inquest whereat no *post-mortem* examination has been made by such practitioner, one guinea; and

"(b) For making a *post-mortem* examination of the body of the deceased, with or without an analysis of the contents of the stomach or intestines, and for attending to give evidence thereon, two guineas;

"Provided that—

"(1) Any fee or remuneration shall not be paid to a medical practitioner for the performance of a *post-mortem* examination instituted without the previous direction of the coroner.

"(2) Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital infirmary, or other medical institution, or in a building or place belonging thereto, or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration.

"23. Where a medical practitioner fails to obey a summons of a coroner, issued in pursuance of this Act, he shall, unless he shows a good and sufficient cause for not having obeyed the same, be liable on summary conviction on the prosecution of the coroner or of any two of the jury, to a fine not exceeding five pounds."

It would appear that, under Clause 2, our correspondent is not legally entitled to claim fees, and recently a county-court judge has decided that an infirmary in connection with a workhouse is a "public infirmary" within the meaning of the Act.

PRINCIPAL AND ASSISTANT.

Assistant.—If we correctly understand the facts, our correspondent on his return resumed his employment to the end of the then current month; and this being so, he might be successful if he took

proceedings for the recovery of his salary, and it may be that he also has a remedy in damages for wrongful dismissal. We would recommend our correspondent, however, to act through a solicitor if he intends taking any legal action in the matter.

MIDWIFERY ENGAGEMENTS.

H. R. S. writes: "L.," having spoken to "S." to attend her in her confinement, and hearing some two months before that he is attending "C." and family for scarlet fever, tells "S." that he cannot attend her. After several interviews with "L." and her relatives, "S." is abruptly told that "L." has made her own arrangements, though he had offered to get his partner to attend the scarlet fever cases or give a choice of three medical men to act for him. What compensation, if any, would it be advisable to ask?

*** If sufficient notice was given of the cancelling of the engagement, we do not think that a court of law would give "S." any compensation, and would probably hold that two months was sufficient notice.

A QUESTION OF FEES.

MEMBER B. M. A.—It would seem that the agreement to attend the club members had a retrospective effect, and it is extremely doubtful therefore if our correspondent could successfully maintain a claim to be paid for the medical attendance on the two club members (who called him in prior to the agreement being signed) at any rate for any part of time covered by the agreement. The question involves points of some nicety, however, and it might be desirable for our correspondent to place the facts, together with the agreement, before his solicitor if the amount involved is at all considerable.

INQUESTS AFTER OPERATIONS.

INQUIRER asks: Under what circumstances do coroners hold inquests in cases of death arising after operations in hospitals and otherwise?

*** In all cases of death arising from injury or violence of any kind it is the duty of a coroner to hold an inquest, whether any surgical operation has been performed or not. In cases in which operations have been performed, or those about to be performed, and death occurs whilst the patient is under the influence of an anæsthetic, an inquest is held. In other cases where death occurs during the course of an illness, when an operation is necessary as part of the treatment—as for cancer, tumours, etc.—and the patient dies at or soon after such operation, then, if all parties are agreed that the death arose from natural causes, a medical certificate is granted in the ordinary manner, and, unless some other reason exists for holding an inquiry, such a death would be registered in the usual way. The same rules would apply whether the death took place in any public or private institution or at the home of the patient. With regard to giving information to the coroner, it is usual for the medical attendant or some official of the hospital to communicate with the coroner or his officer, or direct the friends to do so, in all cases in which it is usual to hold inquests, and in such cases where the medical attendant may be in doubt as to giving the usual certificate of the cause of death a letter to the coroner stating the facts will settle the matter.

PURCHASE OF PRACTICE.

NORTHUMBRIAN.—From the statement submitted by our correspondent, it would appear that he purchased a medical practice and negotiated therefor with the gentleman who had been acting as *locum tenens* to the vendor, but nothing is stated as to the basis upon which the purchase money for the practice was arrived at, nor whether there was any negotiation with the vendor direct. Information on numerous points would be necessary before our correspondent could be advised as to whether he has any remedy. On the other point it does not appear that our correspondent introduced into his agreement with the vendor any proviso binding the *locum tenens* not to start practice in the locality.

MEDICAL CERTIFICATES UNDER THE WORKMEN'S COMPENSATION ACT.

J. A. G.—Under the Workmen's Compensation Act the employer can insist on the injured workman being examined by his own doctor. This does not necessarily oust the workman's own doctor from attendance on him, nor render valueless the certificate of the latter. In all cases where a claim is made against another for an injury, it is considered just that the person against whom the claim is made should have the right to send his own doctor to verify this injury.

UNIVERSITIES AND COLLEGES.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen passed the First Examination of the Board under the Five Years Regulations in the subjects indicated:

Part I. Chemistry and Physics.—G. C. J. Acres, St. Bartholomew's Hospital; H. Archer, Yorkshire College, Leeds; R. J. Archibald, St. Thomas's Hospital; H. Balme, King's College, London; E. L. Bartlett, St. Mary's Hospital; A. H. Bateman, St. Bartholomew's Hospital; C. J. Battie, St. Thomas's Hospital; H. O. M. Beadnell, Guy's Hospital; H. F. Bellamy, Birkbeck Institute; P. C. V. Bent, Guy's Hospital; J. G. de G. Best, St. Bartholomew's Hospital; T. H. Bishop, Edinburgh University; J. Bourdas, Charing Cross Hospital and Birkbeck Institute; F. G. Bourns, Westminster Hospital; C. A. Bradshaw, St. Mary's Hospital and Polytechnic Institute; R. H. Bridges, St. Thomas's Hospital; R. D. Brown, St. Thomas's Hospital; C. H. Bubb, Guy's Hospital; W. H. Bush, Guy's Hospital; J. W. Caton, Guy's Hospital; W. G. Cheatle, St. Mary's Hospital; J. W. Cleveland, St. Bartholomew's Hospital; P. P. Cole, Guy's Hospital; J. Corbin, St. Bartholomew's Hospital; R. H. L. Cordner, St. George's Hospital; T. R. Couldrey, St. Bartholomew's Hospital; H. R. Cran, London Hospital; G. R. H. Crozier, St. Mary's Hospital; E. D. Davis, University College, Cardiff; C. H. Denyer, Guy's Hospital; A. Dixon, St. Paul's School, London; N. E. Dunkerton, King's College, London; M. Eager, King's College, London; K. C. Edwards, Cambridge University; E. Faulks, Guy's Hospital; J. W. Featherstone, Guy's Hospital; L. A. Fennell, Birkbeck Institute; A. E. Fiddian, University College, Cardiff; B. M. Footner, King's College, London; E. B. Garrard, Mason University College, Birmingham; B. Glendinning, Guy's Hospital; A. Hallowes, St. Bartholomew's Hospital; C. M. Halsall, University College, Liverpool; R. H. S. P. Harris, St. Mary's Hospital; C. W. C. Harvey, St. Bartholomew's Hospital; F. Harvey, St. Bartholomew's Hospital; W. L. Hawkins, King's College, London; H. W. Hesse, St. Paul's School, London; E. C. Hodgson, St. Bartholomew's Hospital; J. G. Ingouville, St. Bartholomew's Hospital; T. Jays, St. Thomas's Hospital; E. C. Johnson, Westminster Hospital; H. Jones, University College, Cardiff; S. W. Jones, St. Mary's Hospital; W. A. Lambert-Shea, London Hospital; F. S. Lister, St. Bartholomew's Hospital; F. J. Macphail, University College, Liverpool; A. T. Moon, London Hospital; S. P. Mummery, St. George's Hospital; W. H. Neil, University College, London; J. P. Nettell, London Hospital; C. F. Nicholas, St. Bartholomew's Hospital; C. V. Nicoll, St. Bartholomew's Hospital; J. H. Le B. Page, St. Mary's Hospital; H. T. Palmer, Guy's Hospital; E. D. Parsons, St. Thomas's Hospital; E. A. Price, St. Mary's Hospital; H. W. Read, St. Paul's School, London; R. V. de A. Redwood, University College, Cardiff; C. C. Reece, Guy's Hospital; E. A. Roberts, King's College, London; G. F. Rudkin, London Hospital; V. K. Sadler, University College, London; A. P. Salt, St. Bartholomew's Hospital; H. M. Scott, London Hospital; S. Segwin-Strahan, St. Paul's School, London; H. W. Sexton, St. Thomas's Hospital; C. G. Seymour, St. Thomas's Hospital; T. M. Smith, Guy's Hospital; A. J. L. Speechly, St. Bartholomew's Hospital; S. Spencer, Owens College, Manchester; H. E. Stranger-Leathes, St. Bartholomew's Hospital; L. R. Tosswill, St. Bartholomew's Hospital; O. B. Travers, Guy's Hospital; J. E. L. A. Turnley, St. Bartholomew's Hospital; F. G. Walker, St. George's Hospital; H. J. D. Walker, London Hospital; G. D. Walsh, London Hospital; G. S. Welham, Charing Cross Hospital; J. H. Wickert, London Hospital; N. M. Wilson, St. Bartholomew's Hospital.

Part II. Practical Pharmacy.—S. A. Agar, London Hospital; A. G. H. Anthonisz, University College, London; A. J. Arch, Mason University College, Birmingham; H. Archer, Yorkshire College, Leeds; E. W. Aylen, London Hospital; W. A. Bailey, University College, Liverpool; C. R. H. Ball, St. Bartholomew's Hospital; E. J. R. Bartlett, King's College, London; R. L. Beane, St. Thomas's Hospital; J. H. Beasley, Mason University College, Birmingham; G. H. Bedford, Guy's Hospital; H. F. Bellamy, Birkbeck Institute and Charing Cross Hospital; H. S. Bennett, St. Thomas's Hospital; K. H. Bennett, University College, London; C. W. Bond, St. Mary's Hospital; R. E. Brayne, Guy's Hospital; R. H. Bridges, St. Thomas's Hospital; H. H. Burpitt, University College, Cardiff; H. C. Causton, University College, London; R. T. Collins, Guy's Hospital; A. T. Compton, St. Bartholomew's Hospital; R. H. Crompton, University College, Liverpool; J. A. Cronkshaw, Owens College, Manchester; W. E. L. Davies, St. Bartholomew's Hospital; E. D. Davis, University College, Cardiff; E. A. Donaldson-Sim, St. Bartholomew's Hospital; A. S. Downton, London Hospital; P. S. Drabble, Firth College, Sheffield; R. A. Eastmond, London Hospital; T. H. Edwards, St. Thomas's Hospital; G. J. Evans, St. Mary's Hospital; G. S. Ewen, St. Bartholomew's Hospital; A. E. Fiddian, University College, Cardiff; R. S. W. Fitz-Henry, Middlesex Hospital; T. H. Fowler, St. Bartholomew's Hospital; E. B. Garrard, Mason University College, Birmingham; O. B. Gauntlett, St. Thomas's Hospital; A. C. George, Owens College, Manchester; H. S. Greaves, St. Bartholomew's Hospital; H. R. Grellet, Guy's Hospital; P. B. Grenfell, St. Bartholomew's Hospital; W. H. Griffith, University College, Liverpool; E. R. Griffiths, Middlesex Hospital; J. W. Gromitt, Guy's Hospital; R. J. Harris, St. Thomas's Hospital; G. W. Harrison, St. Thomas's Hospital; A. E. U. Hawkes, University College, Liverpool; H. A. Higgens, Guy's Hospital; H. Hipwell, Middlesex Hospital; G. Hughes, St. Bartholomew's Hospital; E. O. Hughes, St. Bartholomew's Hospital; G. F. Humphreys, Guy's Hospital; F. W. Jackson, St. Bartholomew's Hospital; R. Jacques, University College, Liverpool; T. Jays, St. Thomas's Hospital; H. Jones, University College, Cardiff; R. L. Jones, Middlesex Hospital; W. W. C. Jones, Guy's Hospital; C. R. Keed, St. Bartholomew's Hospital; E. H. Kenderdine, Mason University College, Birmingham; W. A. D. King, Middlesex Hospital; W. R. Kirkness, King's College Hospital; S. W. A. Lambert, London Hospital; R. C. Lawry, Guy's Hospital; G. J. A. Leclezio, St. Bartholomew's Hospital; D. S. Lewis, University College, Cardiff; J. Lewis, University College, Cardiff; H. S. Libby, St. Thomas's Hospital; F. S. Lister, St. Bartholomew's Hospital; C. A. Lower, Guy's Hospital; E. J. A. Luxmoore, St. Mary's Hospital; W. McIlroy, Guy's Hospital; H. A Mason, Firth College, Sheffield; H. M. H. Melhuish, St. Bartholomew's Hospital; A. A. Miller, Guy's Hospital; H. Mills, St. Bartholomew's Hospital; T. W. Morcam, London Hospital; T. C. Neville, St. Bartholomew's Hospital; S. L. Pallant, Guy's Hospital; F. D. Parbury, St. Bartholomew's Hospital; W. Parsons, University College, London; J. D. Pearson, Guy's Hospital; R. G. Peel, Yorkshire College, Leeds; F. G. Pierce, Charing Cross Hospital; H. Pierpoint, University College, Liverpool; C. Price, University College, Cardiff, and St. Mary's Hospital; R. V. de A. Redwood, University College, Cardiff; C. M. Row, University College, London; D. S. Sandiland, St. Bartholomew's Hospital; T. Sentchurd, Yorkshire College, Leeds; W. H. Scott, St. Bartholomew's Hospital; H. W. Sexton, St. Thomas's Hospital; E.

W. H. Shenton, Guy's Hospital; E. B. Smith, St. Bartholomew's Hospital; F. G. Snoad, Mason University College, Birmingham; W. Stansfield, Owens College, Manchester; W. Sykes, Owens College, Manchester; S. W. Tetley, Yorkshire College, Leeds; A. E. Thomas, St. Bartholomew's Hospital; R. J. P. Thomas, St. Bartholomew's Hospital; C. W. Turner, Durham University and Owens College, Manchester; H. Upcott, St. Thomas's Hospital; E. L. Ward, University College, Cardiff; R. N. Watson, Westminster Hospital; W. T. Webb, University College, Bristol; J. A. W. Webster, St. Mary's Hospital; H. V. Wenham, St. Bartholomew's Hospital; M. C. Wetherell, Guy's Hospital; C. C. C. K. White, St. Bartholomew's Hospital; T. R. Wilshaw, Mason University College, Birmingham; H. C. Winckworth, Guy's Hospital; G. D. Winston, St. Mary's Hospital; A. C. Young, St. Bartholomew's Hospital.

Part III. Elementary Biology.—C. F. M. Abbott-Brown, King's College, London; H. Archer, Yorkshire College, Leeds; L. D. Bailey, St. Paul's School, London; W. Bain, City of London College; J. H. Bankes, St. George's Hospital; O. M. Bartlett, St. Mary's Hospital; L. B. Bigg, St. Bartholomew's Hospital; A. H. Bloxsome, St. Bartholomew's Hospital; L. T. Booth, University College, Liverpool; G. L. Buckeridge, Oxford University; A. Camacho, Charing Cross Hospital; T. Campbell, University College, Liverpool; C. F. Canton, Charing Cross Hospital; J. W. Caton, Guy's Hospital; C. H. R. Coltart, Westminster Hospital; C. M. L. Cowper, Guy's Hospital; A. D. Crofts, Birkbeck Institute; F. W. Daniels, Birkbeck Institute; E. D. Davis, University College, Cardiff; P. T. Drabble, Firth College, Sheffield; N. E. Dunkerton, King's College, London; F. R. Edmonds, University College, London; W. H. Elwood, Queen's College, Belfast; G. J. Evans, St. Mary's Hospital; H. F. Everett, London Hospital; L. A. Fennell, Birkbeck Institute; B. M. Footner, King's College, London; W. H. Griffith, University College, Liverpool; C. J. H. Gunning, St. George's Hospital; W. L. Hawkins, King's College, London; G. A. Hayman, King's College, London; L. Hill, University College, Glasgow; H. M. Huggins, St. Batholomew's Hospital; G. Hughes, St. Bartholomew's Hospital; M. O. Hunter, St. George's Hospital; W. Ibbotson, Firth College, Sheffield; J. A. Ireland, University College, Liverpool; E. N. Jupp, Guy's Hospital; E. H. Kenderdine, Mason University College, Birmingham; R. Lloyd, Firth College, Sheffield; A. D. Low, St. Mary's Hospital; P. W. McCoy, Yorkshire College, Leeds; F. J. Macphail, University College, Liverpool; J. F. McQueen, University College, Liverpool; P. J. Marett, Westminster Hospital; W. C. Nimmo, Westminster Hospital; W. O. C. Niven, Birkbeck Institute; C. W. O'Brien, St. Bartholomew's Hospital; A. O'Neill, St. Bartholomew's Hospital; G. O. Parsons, St. Thomas's Hospital; B. Pick, St. George's Hospital; T. C. Power, London Hospital; H. E. Priestly, St. George's Hospital; B. B. Riviere, University College, Glasgow; F. B. Shettle, St. George's Hospital; A. H. Smith, Firth College, Sheffield; F. G. Snoad, Mason University College, Birmingham; A. J. L. Speechly, St. Bartholomew's Hospital; O. F. W. Steele, Mason University College, Birmingham; H. D. Stewart, University College, London; H. C. Sutton, Owens College, Manchester; J. H. K. Sykes, Yorkshire College, Leeds; M. B. Taylor, Guy's Hospital; J. L. O. Tilley, University College, Bristol; H. F. Vidal, King's College, London; J. M. Wall, St. Thomas's Hospital; H. W. Wallis, Guy's Hospital; A. L. Walters, St. Thomas's Hospital; S. H. R. Welch, Charing Cross Hospital; J. A. Williams, University College, London; J. Williams, Birkbeck Institute; R. C. Wilmot, St. Bartholomew's Hospital; R. M. Wingent, Guy's Hospital.

Passed under the Four Years Regulations:

Part I. Chemistry, including Chemical Physics.—J. Ewing, Yorkshire College, Leeds; P. S. Cooke, Charing Cross Hospital.

Part II. Materia Medica.—J. Ewing, Yorkshire College, Leeds; J. A. Rooth, St. George's Hospital; A. H. Safford, King's College, London; F. S. Topham, Yorkshire College, Leeds.

UNIVERSITY OF GLASGOW.

POST-GRADUATE CLASSES IN PATHOLOGY AND BACTERIOLOGY.—As in former vacations, Professor Coats and his assistants have arranged to conduct short practical laboratory classes in the above subjects at the Pathological Institute, Western Infirmary. Each class will meet for two hours daily (except Saturday) from September 13th to October 12th, and the necessary apparatus and materials are supplied. These classes are open to fifth year students as well as to Graduates.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, August, 1898.—The following candidates passed in:

Surgery.—H. A. Ahrens, King's College Hospital; M. E. Bennett (Section II), Royal Free Hospital; E. Fryer, Guy's Hospital; J. E. W. McFall (Section I and II), Liverpool; R. O. Jones, Guy's Hospital; E. Mac D. Judge, Guy's Hospital; O. T. A. Phillips, Cardiff and London Hospital.

Medicine.—F. Atthill (Section II), Charing Cross Hospital; W. H. I. Bathurst (Section I), London Hospital; H. R. Cross, Leeds; J. J. Huey, Glasgow; J. Jones, Edinburgh; J. E. W. McFall (Sections I and II), Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; W. J. Schuller (Section II), London Hospital; N. Walmisley, St. Bartholomew's Hospital; J. Welch, Dublin; R. Le G. Worsley (Section I), St. George's Hospital.

Forensic Medicine.—W. H. I. Bathurst, London Hospital; H. R. Cross, Leeds; H. Greenwood, London Hospital; J. J. Huey, Glasgow; J. E. W. McFall, Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; D. C. M. Shaw, Manchester; N. Walmisley, St. Bartholomew's Hospital; J. Welch, Dublin; R. Le G. Worsley, St. George's Hospital.

Midwifery.—J. M. Anderson, Aberdeen; E. C. W. Beasley, St. Mary's Hospital; R. Brookes, Westminster Hospital; T. S. Elliott, London Hospital; D. Fletcher, St. Bartholomew's Hospital; H. Greenwood, London Hospital; J. E. Griffith, St. Bartholomew's Hospital; J. Welsh, Dublin.

The diploma of the Society was granted to Messrs. H. A. Ahrens, F. Atthill, E. Fryer, O. T. A. Phillips, and D. C. M. Shaw; and Miss M. E. Bennett.

OBITUARY.

WILLIAM PEPPER, M.D.,

One time Provost of the University of Pennsylvania.

THE death of Dr. Pepper, at the early age of 55, removes a striking figure, not from the professional stage alone, but from the wider platform of civic and national affairs. There were physicians in the United States his equal in clinical knowledge, there were teachers as competent—though there were few who could hold an audience in an amphitheatre more closely—there were men who had contributed more to the advancement of medicine, but there was no one of this generation whose sphere of action has been so wide or so beneficient. To find a man of the same masterful character in the profession we must go back to his great predecessor in the Chair of Medicine in the University of Pennsylvania, Benjamin Rush.

Briefly given, the chief points in his career are as follows. He was born in 1843, the son of Dr. William Pepper, the Professor of Medicine in the University of Pennsylvania, and a distinguished clinical teacher. After graduating from the collegiate department he studied medicine, and took the M.D. degree in 1864. For several years he devoted himself with great energy to the study of morbid anatomy; and the *Transactions of the Philadelphia Pathological Society* and the museum catalogue of the Pennsylvania Hospital testify to the thoroughness of the foundation which he laid in his early years. After lecturing for some years in clinical medicine, he became Professor of this subject in the University. He occupied this chair until 1884, when he succeeded Dr. Stillé, as Professor of the Principles and Practice of Medicine, a position which he held at his death. Meanwhile he had thrown all his energies into the reorganisation of the Medical School and the removal of the University from the centre of the city to west Philadelphia. So strong was the impression of his executive abilities that in 1881 he was elected Provost of the University. During the thirteen years in which he filled this responsible position, the University made the most remarkable advances, and rose to a position of the first rank. The number of students more than doubled, the land owned increased from 13 to 52 acres, and an entirely new group of technical schools with their laboratories were created. In 1894, feeling that the executive work of the University would be safer in other hands, he retired, but not to rest. For the past four years he has laboured incessantly in the promotion of three large schemes—the Archæological Department of the University, the Commercial Museums, and the Free Libraries of Philadelphia. Last year he presided at a great Commercial Congress, and impressed everyone with his strong grasp of economic problems.

With all these cares (which after all were not more than are borne by many men with great executive gifts), Dr. Pepper not only kept in close touch with the profession, but carried on an extensive consulting practice. There has not been in the past twenty years a single project of general professional interest in which his strong presence has not been felt. In the organisation of the Association of American Physicians, of the Triennial Congress of Physicians and Surgeons, and of the Pan-American Medical Congress (of which he was the President), he took a leading part. The profession of the United States has never had a more public-spirited member.

Dr. Pepper's literary work was continued uninterruptedly from the time of his early contributions to morbid anatomy from the Pennsylvania Hospital. The early volumes of the *Philadelphia Medical Times*, which he founded, are full of articles from his pen. To the *American Journal of the Medical Sciences* he contributed a long series of valuable clinical papers, among the earliest of which was pioneer papers in America on pernicious anæmia, on tuberculosis, on diseases of the heart and arteries, on appendicitis, in which his work was of particular value, and on diseases of the stomach and intestines, in which his communications have been of great value. He was associated with Dr. Meigs in the authorship of the work on *Diseases of Children*, which ran through many editions, and was deservedly popular on both sides of the Atlantic. He edited, in five volumes, the *American System of*

Medicine, perhaps the most elaborate work of the kind issued from the press in the United States, and which is still, on many subjects, a standard work of reference. He edited a smaller *Textbook of Medicine*, which has also had a very large sale. His occasional addresses, medical and general, would fill a good sized volume. Energies of a most exceptional kind, combined with strong executive ability, enabled him to carry on for years the work of several men. He had the faculty, as is common with men of his stamp, of getting men to work for him, and many of the best young men in Philadelphia to-day have been associated with him. The trials and anxieties connected with the organisation and equipment of the new commercial museums and the free libraries told severely on an already sorely tried constitution. A protracted bronchitis in the spring and symptoms of angina pectoris warned him of the necessity for a prolonged rest. He went to California, and there died suddenly in an attack of angina.

Suave in manner, with a Grecian flexibility of mind and an unswerving tenacity of purpose, Dr. Pepper carried out his life-work with an unselfish devotion to the best interest of Philadelphia and of the profession which he served so faithfully. The University of Pennsylvania will be for him an enduring monument, since with his name must ever be associated the new developments which have placed her in the front rank of American Universities. W. O.

GEORGE ROPER, M.D.ABERD., M.R.C.P.LOND.

WE regret to announce the death of Dr. George Roper, which occurred at Southwold, Suffolk, on August 14th. He was the third son of Snelling Drosier Roper, of Colby, Norfolk, where he was born on August 15th, 1823. His father owned considerable property in Colby and other parishes in Norfolk, farmed his own land at Colby (where his ancestors had lived for 300 years), and held a Captain's commission in the Norfolk Yeomanry Cavalry at the time of the expected French invasion early in this century.

George Roper commenced his professional life by being articled to Mr. F. Wildbore, surgeon, of Shoreditch. He received his medical education at Guy's Hospital, and became M.R.C.S. and L.S.A. in 1847. He subsequently graduated M.D. at Aberdeen in 1873, and became M.R.C.P.Lond. in 1874. After qualifying, he went to Hudson's Bay, as Surgeon on one of the Company's vessels, and on his return succeeded Mr. Wildbore when that gentleman retired from practice. He subsequently took Mr. A. Hopkins into partnership, and retired from the practice about 1866.

He was always fond of travel, and of all manly pursuits, shooting, hunting, etc., and in January, 1867, journeyed to China and Japan, returning through Canada and the United States. During the voyage his life was several times in imminent danger, from shipwreck, typhoon, and mutiny amongst the native crew. On his return in 1868, he resided at Aylsham, Norfolk, for several years, spending his time in country pursuits; but from 1874 to 1880 he was Physician to the Royal Maternity Society, and resided at St. Anne's Street and at West Street, Finsbury Circus. He was also Physician, and subsequently Consulting Physician, to the Royal Hospital for Children and Women, in the Waterloo Road. He was at one time Fellow and Vice-President of the Obstetrical Society, Fellow and Member of Council of the Royal Medical and Chirurgical Society, and Member and Vice-President of the Hunterian Society of London, and Corresponding Member of the Gynæcological Society of Boston, U.S.A. He was the author of several papers on professional subjects, amongst which were, "Action of the Ileo-cæcal Valve in Stercoraceous Vomiting," and "Sudden Death occurring during Labour."

In 1886 he travelled for eighteen months to Canada and visited San Francisco and the Yosemite Valley, Salt Lake City, Chicago, etc., and went on to Australia and New Zealand. On his return he resided at Ovington Gardens, S.W., but in 1889 removed to Aylsham, near Colby, where he lived until 1897, when he removed to Southwold. His death occurred there after much suffering from angina pectoris. He was a member of the St. Stephen's Club and P.M. of the Unity Lodge (No. 69) of Freemasons. Altogether Dr. Roper was a man of wide culture, and deep sympathies, and his extreme kindness to all the members of his family was quite exemplary. He was never married, but had a very wide circle of friends. The funeral took place at Southwold on August 17th, and was attended by a large number of sorrowing relatives and friends.

Sir Samuel Wilks (President R.C.P.) writes as follows: "No man have I more respected than Dr. George Roper. Knowing him first as a fellow student, and then through a long life, my estimate of him, both professionally and personally, has been of the highest. I remember Dr. Roper in general practice in the East End of London, and that it was large and remunerative. I had often spoken to him of his choice of locality in a low-class neighbourhood, and he answered me quite characteristically that he would rather earn a guinea by seeing a dozen poor people over whom he had influence than expending the time in talking over the imaginary grievances of some ancient dowager. His straightforwardness and independence of character were his main qualities. He told me that he had never quarreled with a brother practitioner, but had had some severe differences with more than one leading man in the profession, owing to his belief that he had been unfairly dealt with in consultation. He was not the man to accept an insult, and just and generous as he was to others he conceived that he should act in the same manner towards himself.

"He was remarkably acute in his insight into cases, and with a good knowledge of his profession, he made some capital diagnoses in cases of great difficulty. He took a great interest and paid special attention to operative midwifery. In middle life he determined to give up general practice, and devote himself to his more favourite speciality as a consultant. Having no degree, he proceeded to Aberdeen, and nothing better than this determination to do so showed Dr. Roper's indomitable perseverance. He entered the classes and examinations like other and younger students, where his ardour was so marked that he became known as 'Young Roper.' After he took his degree, he became a member of the College of Physicians, and attached himself to the Infirmary for Children and Women in the Waterloo Road, where he had an opportunity of practically applying his knowledge of female diseases, to the great benefit of the institution. He was a diligent member of the Obstetrical Society, to which he contributed many excellent and important papers. (I cannot give particulars of these, as I am writing these notes on my travels, and have, therefore, no means of reference.) Dr. Roper was also a most valuable officer of the Maternity Charity. In a word, I regard Dr. Roper as having been in many ways a model general practitioner, ever ready with his knowledge, influence, and skilled hands to those amongst whom he was placed. When he left them and his consulting practice, he retired into Norfolk, where with his good competence he was not unmindful of those who needed his benevolence. For myself, there was no man I more respected than my life-long attached friend, Dr. George Roper."

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,510 births and 4,749 deaths were registered during the week ending Saturday, August 20th. The annual rate of mortality in these towns, which had increased from 14.7 to 20.5 per 1,000 in the five preceding weeks, further rose to 20.6. The rates in the several towns ranged from 8.6 in Halifax, 12.4 in Burnley, 12.7 in Oldham, and 13.7 in Huddersfield, to 24.7 in Leeds, 26.4 in Preston, 26.9 in Sheffield, and 31.1 in Liverpool. In the thirty-two provincial towns the mean death rate was 21.0 per 1,000, and was 3.4 below the rate recorded in London, which was 23.4 per 1,000. The zymotic death rate in the thirty three towns averaged 5.8 per 1,000; in London the rate was 6.3 per 1,000, while it averaged 5.5 in the thirty two provincial towns, among which the highest rates were 7.7 in Salford, 8.2 in Liverpool, 9.0 in Preston, and 9.2 in Sheffield. Measles caused a death rate of 1.1 in Portsmouth, and 2.1 in Plymouth; whooping-cough of 1.0 in Swansea and in Salford, and 1.8 in Preston; and diarrhœa of 0.4 in Preston and in Leeds, 0.4 in Birmingham, 0.7 in Croydon and in Leicester, 1.1 in Liverpool, and 1.2 in Sheffield. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 51 deaths from diphtheria in the thirty-three towns included 26 in London, 4 in West Ham, 3 in Birmingham, and 3 in Leeds. No fatal case of small pox was registered either in London or in any of the thirty two large provincial towns; and only 2 small pox patients were under treatment in the Metropolitan Asylums

Hospitals on Saturday, August 20th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,321, 2,326, and 2,293 at the end of the three preceding weeks, had had further declined to 2,241 on Saturday, the 20th inst.; 187 new cases were admitted during the week, against 232, 224, and 201 in the three preceding weeks.

In thirty-three of the largest English towns, including London, 6,583 births and 4,988 deaths were registered during the week ending Saturday last, August 27th. The annual rate of mortality in these towns, which had increased from 14.7 to 22.0 per 1,000 in the six preceding weeks, further rose to 23.2 last week. The rates in the several towns ranged from 13.7 in Huddersfield, 16.5 in Oldham, 16.8 in Nottingham, and 16.9 in Swansea, to 30.9 in Liverpool, 32.3 in Preston, 35.2 in Sunderland, and 38.5 in Wolverhampton. In the thirty-two provincial towns the mean death-rate was 24.3 per 1,000, and exceeded by 2.8 the rate recorded in London, which was 21.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 7.2 per 1,000; in London the rate was equal to 6.4 per 1,000, while it averaged 7.7 in the thirty-two provincial towns, among which the highest zymotic death-rates were 10.9 in Salford, 13.6 in Wolverhampton, 13.9 in Preston, and 15.5 in Sheffield. Measles caused a death-rate of 1.2 in Wolverhampton and 3.3 in Norwich; whooping-cough of 1.0 in Sheffield, 1.1 in Sunderland, and 1.5 in Swansea; and diarrhœa of 8.1 in Liverpool, 8.3 in Birkenhead, 8.7 in Leicester, 8.9 in Salford, 12.4 in Wolverhampton, 13.4 in Preston, and 14.2 in Sheffield. The mortality last week from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 45 deaths from diphtheria in the thirty-three towns included 21 in London, 4 in Liverpool, and 3 in West Ham. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last, August 27th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,326, 2,293, and 2,241 at the end of the three preceding weeks, had further declined to 2,178 on Saturday last; 182 new cases were admitted during the week, against 224, 201, and 187 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday, August 20th, 956 births and 546 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 20.0 and 19.8 per 1,000 in the two preceding weeks, further declined to 18.1 during the week under notice, and was 3.9 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.7 in Edinburgh and 16.7 in Dundee to 20.4 in Leith and in Perth and 27.5 in Paisley. The zymotic death-rate in these towns averaged 3.9 per 1,000, the highest rates being recorded in Perth and Paisley. The 261 deaths registered in Glasgow included 5 from scarlet fever, 15 from whooping-cough, 7 from "fever," and 32 from diarrhœa. Eleven fatal cases of diarrhœa were recorded in Paisley and 9 in Dundee.

During the week ending Saturday last, August 27th, 895 births and 556 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had declined from 20.0 to 18.1 per 1,000 in the three preceding weeks, rose again to 18.4 last week, but was 4.8 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.9 in Perth and 13.0 in Leith to 26.4 in Greenock and 28.9 in Paisley. The zymotic death-rate in these towns averaged 4.6 per 1,000, the highest rates being recorded in Aberdeen and Paisley. The 246 deaths registered in Glasgow included 3 from measles, 2 from scarlet fever, 8 from whooping cough, 8 from "fever," and 44 from diarrhœa. Eight fatal cases of whooping-cough were recorded in Aberdeen, and 11 of diarrhœa in Paisley.

THE AYLESBURY GUARDIANS ON THE TRAINED NURSE.

IT is a curious phase in the present controversy on the employment of trained nurses in workhouse infirmaries that all guardians make use of the stock objections—objections which as men of business they know will not hold water, though they seem to think that the public will be convinced by them. They argue that the patients are old; that they (the patients) are perfectly satisfied; that the medical officer urges the employment of the trained nurse because he gets his work done for him; that no complaints have been made; and so content themselves with resolving that "the nursing in the house is all they require." This resolution is arrived at in the teeth of the medical officer's statement that the present system of nursing is inadequate and in defiance of the recommendation of the Local Government Board. What is to be done with such people? How is such bucolic density to be overcome? There is no point of common meeting ground; it is like attempting to argue about a question in Greek grammar with people ignorant of the Greek alphabet. These guardians have to learn the elementary principles of their work before they are in a position to pass resolutions. We are glad to see that the lady guardians were among the enlightened minority of five.

SPACE IN THE REAR OF NEW HOUSES.

DR. W. C. LAKE (Teignmouth, Devon) writes: The Model By-laws 53 and 54 are concerned with "the sufficiency of space about buildings to secure a free circulation of air." By By-law 53 such space may be provided in the front of a house by that obtainable from a street of a width of a certain number of feet. There would seem therefore no *prima facie* reason why such space should not be equally so obtainable for the back of a house. By By-law 54, at the back of a house, "an open space of an aggregate extent of not less than 150 square feet" is required for each house extending laterally throughout the entire width of the building to a certain depth according to the height of such building. Now the by-law speaks of this "open space" as "exclusively belonging to such building," and these words have been considered to mean the provision of ground to not less than the required extent at the rear of each house; but these two by-laws throughout concern themselves with space for the free circulation of air, not with the land as such, either at the back or front of a house, while the expression "to the boundary of any lands or premises immediately opposite" a site appears to me to suppose an interval of ground across which measurement may be taken. When in By-law 53 the 24 feet of open space in front of a house is measured to the opposite side of a street, such open space does not belong exclusively to the house considered, but belongs to it in common with the house fronting it on the opposite side of the street. The same 24 feet which is the open space provided for the one house being that also provided for the other; but the open space having an area of not less than 150 square feet, to be provided at the back of a house, must, as I read it, be calculated for each house exclusively, and not as serving the same purpose for any other house. Two houses thus, whether adjoining or opposite to each other, would require 300 square feet of space; three houses 450 feet, &c. I conceive, however, that it is immaterial, in this respect, whether such space is obtained in whole or in part over the surface of a courtyard appertaining to the house, or over that of a courtyard common to it and other houses, or over the surface of a street or other public place, or over that of an estuary, a river, or any other public sheet of water.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AS PARISH OFFICER.

A. B. C. asks: (1) Can a medical officer of health (without the necessary D.P.H.) for three unions, with an aggregate acreage of 145,604, who is an ordinary practitioner, be appointed parish medical officer, and still hold the M.O.H.? (2) Could he give up one or two of the unions for which he is M.O.H. and keep one or two, as the case may be, and be appointed parish medical officer?

*** The same person may, with the sanction of the Local Government Board, be appointed M.O.H. for two or more districts. If any such district or any combination of authorities forming a combined district exceed 50,000 in population, a health diploma is necessary in addition to ordinary qualifications, unless the candidate had, for the three years preceding January, 1892, been M.O.H. of a district of more than 20,000 population at the last census, or been a medical officer or inspector of the Local Government Board.

The appointment of Poor-law medical officer is made by the guardians subject to the approval of the Local Government Board. It is not usual to appoint a man to a district with a population above 15,000. Preference is usually given to a candidate living in the district, appointments of outsiders being frequently confirmed only for a single year. As the Local Government Board may sanction the appointment of a district (that is, Poor-law) medical officer as M.O.H., we presume they may do the converse if there be no other objection. Large area and population are not objections to sanitary combinations. The Poor-law district officer should not live too far from his patients. Our answer, therefore, to the first query is "Yes, unless there are undisclosed circumstances which forbid."

SUPERANNUATION IN THE IRISH POOR-LAW MEDICAL SERVICE.

W. S. writes: In the BRITISH MEDICAL JOURNAL of August 13th, page 457, it is stated that "Under the Local Government (Ireland) Act, 1898, a Poor-law medical officer who is over 60 years of age and who has served for more than thirty years will be entitled to superannuation as a matter of right upon his retirement from the Poor-law Medical Service." Is this correct? If so, it is good news for Irish Poor-law medical officers.

*** Section 118 of the Local Government (Ireland) Act, 1898, provides that (1) Every existing officer who is by this Act transferred to any county or district council or is an officer of any board of guardians, and would, if he were to retire on the appointed day, be qualified for a superannuation allowance, shall, without prejudice to any existing right, when he resigns or ceases to hold his office for some cause other than misconduct, be entitled to receive a superannuation allowance on the scale and according to the Acts and rules relating to Her Majesty's civil service. (2) For the purpose of the provisions of this part of this Act, with respect to existing officers, the expression "qualified for superannuation allowance" shall mean qualified as regards age and length of service, and, except as respects a medical officer to whom the Medical Officers' Superannuation Act (Ireland) applies, the devotion of his whole time to the service.

IS A DISPENSARY A PUBLIC INSTITUTION?

ASTERION is medical officer to an institution from which the "moderate workman" gets relief conditionally that he obtains a recommendation from a subscriber and also pays 6d. for every two months he is on the dispensary list; 6d. has to be paid also for additional members of the same family. He asks, is he entitled to 2s. 6d. or 1s. for notifying an infectious case?

*** The dispensary can hardly be self-supporting at 6d. a head per patient, and as there are subscribers who give recommendations, we think our correspondent comes under the class certifying as medical officers of public bodies or institutions. The shilling for notification is not a large fee, but it compares well with the sixpence for eight weeks' treatment.

SUCCESSFUL VACCINATION.—Mr. Arnold Thomas, Public Vaccinator, Maidenhead Union, has been awarded by the Local Government Board the special grant for efficient vaccination in his district.

MEDICAL NEWS.

LORD SALISBURY, who has been staying at Contréxéville, has completed his course, and has gone with Lady Salisbury and other members of his family for an after-cure at Gérardmer and La Schlucht in the Vosges.

DR. DAVID MACKECHNIE, J.P., on leaving West Hartlepool lately to take up his residence at Burton-on-Trent, was presented with two illuminated addresses presented to him by the Foresters and Druids respectively.

DIPHTHERIA ANTITOXIN.—The medical report of the French army states that since the introduction of the serum treatment of diphtheria the mortality among cases of that disease had fallen from 11.3 per cent. to 6 per cent.

IN view of the risk of the importation of plague the Governor of the District of Kiao-chau, Germany's new possession in China, has given orders that trading ships must be inspected by a naval surgeon before making any communication with the shore.

THE next examination for the certificate in nursing and attending on the insane granted by the Medico-Psychological Association of Great Britain and Ireland will be held on November 7th. Notices of intention to compete must be sent on or before October 10th to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield, who will forward a schedule to be filled up.

SMALL-POX AT JOHANNESBURG.—A telegram to the *Times* from Johannesburg, dated August 29th, states that the rapid spread of small-pox in the town and suburbs is causing great anxiety. It is added that the town council is attempting to take the control from the Small-pox Committee.

PRESENTATION.—Dr. R. W. Roberts, of Cwmavon, Glamorganshire, was, on August 27th, presented with a public testimonial from the workmen of Cwmavon on the occasion of his marriage. He was given a dining-room clock with ornaments, a drawing-room clock with ornaments, three handsome etchings, and an ophthalmoscope. The gifts bore the following inscription: "Presented to Dr. R. W. Roberts, of Cwmavon, by the workmen on the occasion of his marriage, August, 1898."

MEDICAL VACANCIES.

The following vacancies are announced:

ANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by September 5th.

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer; unmarried. Salary, £100 per annum, with board and apartments in the hospital. Applications to the Registrar and Secretary by September 12th.

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Appointment for one year. Salary, £70 per annum, with board, lodging, and washing. Applications to the Secretary by September 6th.

BELGRAVE HOSPITAL FOR CHILDREN, 77 and 79, Gloucester Street, S.W.—House-Surgeon. Appointment for six months. Board and residence in the Hospital and an allowance of £5. Applications to the Honorary Secretary by September 17th.

BETHLEM HOSPITAL.—Two Resident House Physicians. Appointments for six months from November 1st. Apartments, complete board and washing provided. Applications, endorsed "House Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before October 3rd.

BETHNAL GREEN BOARD OF GUARDIANS.—Second Assistant Medical Officer for the Workhouse and Infirmary, Waterloo Road, Victoria Park, N.E. Appointment for six months, and will probably be extended. Salary at the rate of £80 per annum, with rooms, furnished apartments and washing. Applications, on forms provided, to the Clerk, September 6th.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum, with board and lodging. Applications to the Chairman of the Weekly Board by September 6th.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum, with apartments and board. Applications to the Chairman of the Medical Board by September 10th.

BOLDEN COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried. Salary £100 per annum, increasing to £120, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by September 20th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 6th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Demonstrator, Assistant Lecturer and Demonstrator in Physiology. Appointment for one year. Applications to the Secretary by October 1st.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary to commence, £800 per annum. Applications to Arthur E. Ward, Solicitor, 3, Bedford Circus, Exeter, by September 9th.

DOVER HOSPITAL.—House-Surgeon; unmarried. Salary, £100 per annum, with board and lodging. Applications, on forms provided, to the Secretary, 13, Castle Street, Dover, by September 6th.

EAST LONDON HOSPITAL FOR CHILDREN, Glamis Road, Shadwell, E.—House-Surgeon. Board and residence, etc., provided, and honorarium of £25. Applications to the Secretary, September 10th.

EXETER CITY ASYLUM.—Assistant Medical Officer; unmarried. Salary, £120 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by September 5th.

KENT COUNTY ASYLUM, Chartham, Canterbury.—Third Assistant Medical Officer. Salary £100 per annum, with board, etc. Applications to the Medical Superintendent by September 5th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer for six months. Board, residence, and washing provided, and honorarium of five guineas. Applications to the Secretary by September 15th.

MAIDSTONE: KENT COUNTY OPHTHALMIC HOSPITAL.—House-Surgeon. Salary, £100 per annum, with board and lodging. Applications to the Honorary Surgeon.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—House-Physician, House-Surgeon Assistant House-Physician, and Assistant House-Surgeon. Appointments for six months. Salaries for the two former at the rate of £40 per annum and the two latter at the rate of £20 per annum. Applications to the Secretary by September 12th.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Assistant House-Surgeon Appointment six months. Board, lodging, and washing provided. No salary Applications to the Secretary by September 6th.

SHEFFIELD ROYAL HOSPITAL.—House-Physician. Board, lodging, and honorarium, 25 guineas. Applications to the Secretary, Honorary Medical Staff, by September 5th.

ST. ANDREWS UNIVERSITY.—Professor of Midwifery. Applications to the Secretary of the University Court by September 15th.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Also Ophthalmic Surgeon. Applications to the Secretary by September 27th.

TEIGNMOUTH HOSPITAL, South Devon.—House-Surgeon. Salary, £60 per annum, with board, lodging, and washing. Applications to the Chairman of Committee by September 5th.

WESTERN GENERAL DISPENSARY, Marylebone Road.—House-Surgeon; unmarried. Salary, £60 per annum, with board and residence. Applications to the Secretary by September 6th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Appointments tenable for six months. Applications to the Secretary Superintendent by September 21st.

MEDICAL APPOINTMENTS.

BARRINGTON, Fourness, M.B.Edin., F.R.C.S., appointed Honorary Surgeon to the Lewisham Hospital for Women and Children, Sydney.

BELDING, Dr. D. J., appointed Medical Officer of Health to the Mitford and Launditch Rural District Council.

COLLINS, William E., M.B.Lond., M.R.C.S.Eng., appointed Honorary Surgeon to the Wellington Hospital, New Zealand.

DAY, Dr. E., appointed Medical Officer for the Nettlebed Districts of the Henley Union.

DUNCAN, D. William, appointed Medical Officer of Health to the Clay Cross Urban District Council.

EDLESTON, R. S. C., M.R.C.S., L.R.C.P.Lond., appointed Assistant Medical Officer to the Brentford Union Infirmary.

EDMUNDS, Walter, M.A., M.C., appointed Surgeon to Out-patients on the Honorary Medical Staff of the Evelina Hospital for Sick Children.

JAMES, D. P., F.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Surgeon to the Wellington Hospital, New Zealand.

KITSON, Francis P., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer of Health to the Beaminster Rural District Council.

LETHBRIDGE, C. F., M.R.C.S.Eng., appointed Officer of Health for the North and West Ridings of Ripon Shire, Victoria, *vice* Dr. B. J. Adam, resigned.

MACKENZIE, F. W., M.B.,C.M.Edin., appointed Honorary Opthalmic Surgeon to the Wellington Hospital, New Zealand.

MAKINS, G. H., F.R.C.S., appointed one of the Consulting-Surgeons on the Honorary Medical Staff of the Evelina Hospital for Sick Children.

MARTIN, A., M.D.Lond., M.R.C.S.Eng., appointed Honorary Surgeon to the Wellington Hospital, New Zealand.

MORGAN, Cosby W., M.D.Brux., appointed Government Medical Officer and Vaccinator for the District of Eden, New South Wales.

OLIVEY, W. J., M.R.C.S.Eng., appointed Health Officer for Lawlers, Western Australia.

POLLOCK, J. R. R., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health to the Tiverton Rural District Council.

POWELL, H. A., M.B.Adel., appointed Medical Officer at Kadina, South Australia, *vice* Dr. Robinson, resigned.

SMITH, Mr. Robert A., appointed Medical Officer for the Pinchingfield District of the Braintree Union, *vice* Dr. Hutchinson, resigned.

SNELL, E. Hugh, M.D., B.Sc.Lond., D.P.H.Camb., reappointed Medical Officer of Health to the City of Coventry and Medical Superintendent to the City Hospital.

STREET, A. E., L.R.C.P.Lond., M.R.C.S., appointed Resident Medical Officer of the Dyffryn Aled Branch of the Cheadle Royal Lunatic Hospital.

TEARE, J., M.B.Vic.Univ., appointed Honorary Physician to the Wellington Hospital, New Zealand.

THOMAS, Julia, M.B.Syd., appointed Resident Surgeon to the Children's Hospital, Sydney.

TUBBY, A. H., M.S., M.B., appointed Surgeon to In-patients on the Honorary Medical Staff of the Evelina Hospital for Sick Children.

WALTON, W. R., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Melton District of the Wolstanton and Burslem Union.

WILSON, Dr. T., appointed Health Officer at Cuddingwarra, Western Australia.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

BLOMFIELD.—On August 26th, at the Horsefair, Pontefract, the wife of George Wills Blomfield, M.R.C.S., L.R.C.P., and L.S.A.Lond., of a daughter.

BLUMER.—On August 30th, at St. Mary's Grove, Stafford, the wife of F. Milnes Blumer, of a son.

GOSSE.—On August 24th, at Eccleshall, Staffs, the wife of Hope Wilkes Gosse, M.R.C.S.Eng., L.R.C.P.Edin., of a son.

MARRIAGES.

EDELSTEN—MUSKETT.—On August 10th, at the Parish Church, Corfe Mullen, Dorset, by the Rev. Elliott-Drake Briscoe, M.A., assisted by the Rev. R. Plumptre, M.A., Rector of the parish, and the Rev. P. L. Schreiber, M.A., Ernest A. Edelsten, M.B., M.A. Oxon., M.R.C.S., L.R.C.P., of Brixton, S.W., eldest son of J. Malin Edelsten, Esq., of Grappenhall, Cheshire, to Catherine Helen, daughter of the late John Muskett, Esq., of Diss, Norfolk, and of Mrs. Moon, of Corfe Lodge, Wimborne, and granddaughter of the late John Gould, Esq., F.R.S.

POOLE—HARLAND.—On August 22nd, at Holy Trinity Church, Ryde, I.W., by the Vicar, Rev. W. M. Cameron, M.A., W. Everod Poole, Major, late 60th Royal Rifles, to Fanny Kate Elliott, younger daughter of Henry Harland, M.D., of Eastridge, Ryde, I.W., formerly of Wadhurst and Tunbridge Wells.

SPICER—HUNTER.—On July 7th, at Marylebone Parish Church, by the Rev. F. Elliott, M.A., Vicar of St. Luke's, Owenny Crescent, assisted by the Rev. Alfred Pugh, Assistant Chaplain to H.M. Prison, Holloway, Frederick Spicer, M.D., of Devonshire Street, Portland Place, eldest son of Frederick Spicer, M.R.C.S., of Carleton Road, Tufnell Park, to Florence Annie, third daughter of the late Richard Hunter of The Elms, Hilldrop Road, N.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W. 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Laryngx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 2.30. *Operations.*—M., 9; Tu., 2.30.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

FEE FOR EXAMINATION IN A POLICE CASE.

INQUIRER wishes to know what fee he should charge, or is entitled to, in the following case:

A police sergeant calls him in to examine human remains found at the bottom of an old shaft. He is told to report the results of his examination to the chief constable.

*** We are advised that half a guinea would be a fair charge to make under the circumstances, and one that could not be objected to as excessive by the police authorities.

TREATMENT OF MÉNIÈRE'S DISEASE.

M.R.C.S. asks for suggestions as to treatment of a case of Ménière's disease of over eight years' standing. The patient is otherwise healthy. Hydrobromic acid, potassium bromide, sodium salicylate, hypodermic injections of pilocarpin, quinine, counter-irritation behind the ears, and other forms of treatment have been adopted, but without any lasting benefit.

INTRAUTERINE INJECTIONS IN GYNÆCOLOGY.

M.B. CANTAB writes: In the Epitome of August 27th, Grammatikati, it is stated, confirms his theory of "intrauterine injections causing a complete state of physiological rest of the ovary" by a histological examination of the organ. He finds after 115 injections in a case of pelvic peritonitis and cellulitis, which was afterwards operated on, that "the ovary was anæmic; its tissue poor in cells; there were few primordial vesicles; in one word (he writes) there were no signs of ovular activity." From this pathological observation must it be concluded that the injections were the cause of this condition? Sections of an ovary in cases of chronic inflammation, matted Fallopian tubes, etc., often show the same state of things, although intrauterine injections have never been used. The writer would be glad to know if any practitioner has had the opportunity of observing the same condition of the ovary after a course of intrauterine injections, as mentioned by Grammatikati.

ANSWERS.

JUSTICE should consult the Educational Number of the BRITISH MEDICAL JOURNAL, published on August 27th, 1898.

F. G. H.—When reckoning the value of a practice to be a year and a half's purchase the gross receipts are taken. If the half share of the practice only, then half the gross receipts. A share of a practice will often command a relatively higher price than the sale of the same out and out.

SANATORIA FOR THE OPEN-AIR TREATMENT OF PHTHISIS.

WE have received several inquiries recently from correspondents with regard to places in this country where the open-air treatment of consumption can be followed by persons of moderate means, but it is not easy to give a satisfactory answer, as the provision at present existing is very limited. The National Sanatorium at Bournemouth is, we are informed, putting up some structures in the garden in order to give its patients open-air treatment; they will be taken into use on September 1st. The rate of payment is 6s. a week, but a governor's letter is necessary. Full particulars can be obtained from the secretary of the sanatorium.

Dr. Burton-Fanning, in response to an inquiry, informs us that he has just succeeded in purchasing a site for a small sanatorium for the open-air treatment near Mundesley, on the coast of Norfolk, and that he hopes to begin building shortly. He adds that there are some lodgings and hotels which have been used for this treatment by patients at Sheringham and other villages near Cromer; they are only suitable for fairly robust invalids.

Miss Jane H. Walker, M.D., 62, Gower Street, W.C., who has for some time carried out this treatment on a small scale in a farmhouse for poor patients, has recently opened a new house for paying patients; the terms are fixed provisionally at £4 4s. a week, which includes everything except drugs—of which extremely few are used—wine, and personal washing. The house is a farm built on the lower greensands, and is about twelve miles from the north-eastern seacoast of Norfolk. The bedrooms are furnished as simply as possible, but each patient is provided with a couch for use out of doors. At the older establishment for patients of the hospital class the charge is 15s. a week.

COTTAGE HOSPITALS.

E. G.—The term "cottage hospital" has of late years been used with considerable laxity, and has been applied to institutions which differ in no essential particular, except in size, from the general hospitals which we see in large towns. Originally the cottage hospital was a cottage used as a hospital, but it was quickly found that converted buildings were not altogether satisfactory, and in almost all recent instances cottage hospitals have been planned and erected with a view to their special purpose. It would then be pedantic to insist that a cottage hospital should be, or even be like, a cottage, for practically it is but a small hospital. Still, as having grown from small beginnings, even large cottage hospitals retain traces of their origin, especially in the rules by which they are governed and the staff by which they are worked. Sometimes any medical man practising in the district can attend any patient whom he may send in; even where there is a special staff it often includes a large proportion of the doctors of the place, and as there is usually no house-surgeon, the medical officers have to help each other much more than is generally done in larger institutions, and have to attend at odd hours when emergencies arise. The matron again must be both nurse and housekeeper, and will find it useful to have some knowledge of cooking.

It is a general rule in most cottage hospitals for patients to pay something towards their keep, and sometimes the medical men are allowed

not only to treat their own patients in a cottage hospital, but to charge fees to such as pay for their keep on the higher scale.

It will be seen, then, that although it is impossible to state with anything like exactness "what are the essential points in which a cottage hospital differs from a hospital," it may broadly be stated that a cottage hospital is a small hospital, having (relatively to the number of medical men in the district) a large medical staff and no house-surgeon, open to accidents and emergencies at all times, but usually expecting payment from patients who make a lengthened stay.

THE DENTISTS' REGISTER.

E. A. L.—The Dentists Act, 1878, merely prescribes that a person who at the passing of the Act was *bona fide* engaged in the practice of dentistry, or dental surgery, either separately or in conjunction with the practice of medicine, surgery, or pharmacy, would be entitled to be registered under the Act. Clause 3 required that registration should be effected before August 1st, 1879. There was a saving clause as to articled pupils extending the time of registration to January, 1880.

EXAMINATION FOR THE CERTIFICATE OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

H. R. W.—The Medico-Psychological Association of Great Britain and Ireland does not recommend any special course of reading for its certificate in psychological medicine. We may, however, safely recommend our correspondent to study Dr. Savage's book on *Insanity and Allied Neuroses, Practical and Clinical* (London: Cassell and Co. 9s.), and Dr. Clouston's *Clinical Lectures on Mental Diseases* (London: J. and A. Churchill. 14s.). Dr. Hack Tuke's *Dictionary of Psychological Medicine* (London: J. and A. Churchill. 2 vols. 42s.), though somewhat bulky, is a wonderfully good work on the subject. If our correspondent desires to compete for the prizes, it would be necessary to add to the book by Dr. Savage or Dr. Clouston, some book like that of Dr. Bevan Lewis on cerebral pathology.

NASAL DILATOR.

NIKKO can obtain Moritz Schmidt's nasal dilator from Messrs. Krohne and Sesemann, Messrs. Mayer and Meltzer, and most of the surgical instrument makers. It costs 3s. to 5s. It is made of silver wire, and can be moulded to fit comfortably in any nostrils. Vulcanite and other dilators are made for wearing at night, but Schmidt's is generally considered to be more satisfactory.

AXIS TRACTION FORCEPS.

INQUIRENS.—Besides the discussion on midwifery forceps at the Edinburgh meeting, there was one held this year at the Glasgow Southern Medical Society (BRITISH MEDICAL JOURNAL, 1898, i, pp. 626, 820, 888). From these discussions "Inquirens" will gather that a diversity of views still prevails respecting the relative merits of ordinary and axis traction forceps. He will find a strong advocacy of ordinary forceps in Dakin's *Midwifery*, whilst on the other side he may consult Milne Murray's monograph on Axis Traction Forceps. Most practitioners who have got used to the axis traction forceps employ it exclusively, dispensing with the ordinary curved forceps. On the other hand, one who is accustomed to the ordinary forceps will accomplish nearly, if not quite, as much by their means, though with more expenditure of energy.

DISTANT SURGERIES.

D.—Distant surgeries are never very desirable, and are only to be advised when necessity occurs. We venture to consider the proposed measure an unwise one.

CLUB APPOINTMENTS.

GALLUS.—If a vendor of a practice which includes a club resigns the latter and the members of the club take steps to elect a successor, it is open to any medical practitioner to compete for the post. As to canvassing, this is a question of taste, and although many practitioners would consider it unbecoming to send out circulars or to canvass personally, it could hardly be said to be unprofessional to do so. It is not usual to send diplomas for production at a club meeting

NOTES, LETTERS, Etc.

RETENTION OF FOOD IN STOMACH FOR EIGHTEEN DAYS.

DR. WM. HENRY LEWIS (Llansantffraid) writes: The following case appears to me to be worthy of record as an indication of the time food may be retained in the stomach.

On the morning of July 24th I was called to see Mrs. E., who suffers from malignant disease of the cardiac end (probably) of the stomach. She had had during the night a good deal of epigastric pain with vomiting. The vomit, which I had an opportunity of examining, contained several black currants (ordinary garden variety), hard and leathery, but otherwise little altered by digestion; they had apparently received one bite only before being swallowed. These currants, vomited on July 24th (Sunday), had been eaten on July 20th (Wednesday). On July 27th (Wednesday) my patient again vomited. A portion of this vomit was kept, and I was told that it contained pieces of cabbage. This statement I was able to verify; several pieces of cabbage leaf, varying in size up to that of a threepenny piece, were present in it, only slightly altered by digestion; the veins, for instance, were distinct, and the edges had not lost their sharpness. I was told that Mrs. E. had not eaten cabbage since July 8th (Friday); in other words, the vegetable had been retained eighteen days. This statement seemed so extraordinary that I made further careful inquiry, but both nurse and patient gave it absolute and positive confirmation. I may state that the cabbage had been taken under medical advice given before my visit, so that there could be no desire to conceal anything on that score.

AN OBJECT LESSON FOR THE 'CONSCIENTIOUS OBJECTOR."

A VETERAN, who has long ceased to practise, writes to suggest that the placing in the hands of every public vaccinator of a few photographs of different faces after recovery from confluent small-pox might probably be the best antidote to the reckless literature of the antivaccinationists Anyone whose memory extends into the first half of the century could testify that terribly marked faces were to be seen in thousands. The Local Government Board would be able to overcome difficulties which would meet private individuals in the matter.

PHILANTHROPIC BURIAL AND MEDICAL AID.

A CORRESPONDENT sends us a circular of a "Medical Aid Department" started in Leicester by the Blackburn Philanthropic Burial Society. It appears to be an example of the "touting" species of medical aid society, and members of the profession at Leicester are invited to join the medical staff. To encourage them they are told that "the Society has at present ten regularly occupied canvassing representatives in the town, and intend to appoint twenty others before the end of the year." Our correspondent says he will have nothing to do with such a society. It is to be hoped that all his professional brethren at Leicester will be guided by the same good sense. To say nothing of dignity, it is difficult to see how it can be to the advantage of any medical man to allow his services to be thrown in as a kind of bonus by a canvassing Burial Society.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. R. B. Anderson, London; Dr. C. M. Anderson, Faversham; Anxious to Learn. **B** Mr. W. V. Ball, London; J. Milne Bramwell, M.B., St. Valery-sur-Somme; Dr. G. P. Boddie, Edinburgh; Mr. G. C. Belcher, Birmingham; Dr. R. C. Bickerton, Berlin; Dr. W. Bryce, Glasgow; Dr. T. W. Blake, Bournemouth; Dr. M. Beverley, Norwich. **C** Mr. W. R. E. Coles, London; Mr. R. H. Capper, Battle; Messrs. J. and A. Churchill, London; Dr. C. Calliano, Torino; Dr. C. M. Chadwick, Leeds; J. J. Clarke, M.B., London: Dr. W. F. Cleveland, London. **D** Mr. T. A. Dukes, M.B., Croydon; Mr. W. J. Dunwoody, Ely; Dr. E. W. Diver, Jarrow-on-Tyne; Dr. A. Duke, Cheltenham; Mr. E. Davies, Fochriw; Dr. T. Davidson, Thornhill. **E** Mr. E. Elwin, Dover; E. M. S.; Mr. E. D. Evans, Wrexham. **F** Mr. C. Farmer, Hexham-on-Tyne; W. H. Fowler, M.B., Edinburgh; P. C. Fenwick, M.B., Christchurch, N.Z.; Mr. W. W. Farnfield, London. **G** L. M. Guilding, M.B., Reading; J. F. Gillett, M.B., Andover; A. Green, M.B., Gateshead-on-Tyne; Mr. H. F. Gettien, London; Mr. A. B. Green, Norwich; Dr. E. Goddard, London; Dr. A. E. Giles, London. **H** Mr. H. Hewetson, London; Mr. H. Hilliard, London; Dr. Huchard, Paris; Dr. A. H. Hallen, Natasi, Fiji Islands; F. G. Haworth, M.B., Darwen; Mr. H. C. Hinder, Sydney; Hooba Tea Company, London. **I** Inquirer; Mr. F. L. I'Anson, Whitehaven. **J** Dr. J. J. Johnston, Edinburgh; Justice; Dr. R. Jones, Woodford Bridge; C. R. Jones, M.B., Calverley; R. J. Johnstone, M.B., Edinburgh. **K** A. B. Kelly, M.B., Glasgow. **L** Dr. T. M. Legge, London; Mr. R. Lake, London; Dr. G. M. Lowe, Lincoln; Dr. E. Lanphear, St. Louis, U.S.A. **M** Dr. C. F. Marshall, Birmingham; Member; Messrs. Mottershead and Co., Manchester; Dr. A. Macvie, Baildon; Messrs. McLehose and Sons, Glasgow; M.B.Edin.; Dr. E. F. Maynard, Brighton; Mr. A. H. Martin, Evesham; M.B.Cantab.; A. E. Mole, M.B., Adlington; Mr. C. Muller, London. **N** Mr. R. Nitch-Smith, London; Mr. H. Nestlé, London. **O** Professor Ogston, Aberdeen; Mr. E. A. Onyon, Eye. **P** P. Z. H.; Penarth. **Q** Mr. T. Quinlan, Cardiff. **R** Messrs. Reitmeyer and Co., London; Dr. H. Rayner, London; R.A.M.C.; Mr. H. J. Roberts, Pen-y-groes; Mr. R. W. Roberts, Cwmavon. **S** Messrs. J. P. Segg and Co., London; Mr. H. R. Spackman, Wolverhampton; Mr. A. E. Street, Abergele; Messrs. Southall Brothers, Birmingham; Scientific Press, London. **T** Mr. A. Thomson, Maidenhead. **U** Mr. T. F. Unwin, London. **V** Dr. H. H. Vinke, New York. **W** Mr. S. Welch, London; Mr. J. H. Wilson, Chacewater; W. W.; W. O. C.; Dr. J. R. Wallace, Calcutta; Dr. R. T. Williamson, Manchester, etc.

BOOKS, ETC., RECEIVED.

Uber spermatocystitis Gonorrhoica. Von Dr. W. Collan. Hamburg und Leipzig: Leopold Voss. 1898. M.3.50.

Elements of Pharmacy, Materia Medica, and Therapeutics. By W. Whitla, M.A., M.D. 7th Edition. London: Henry Renshaw. 1898.

The Tax-Payers' Cash-Book. By A. M. Scarff. Third Edition. London: The Income Tax Adjustment Agency. 2s. 6d.

First Aid to the Injured and Management of the Sick. By E. J. Lawless, M.D., D.P.H. London: The Scientific Press. 1898. 3s. 6d.

The Elements of Physical Education. By D. Lennox, M.D., late R.N., and A. Sturrock. Edinburgh and London: Wm. Blackwood and Sons. 1898. 4s.

Les phtisiques adultes et pauvres en France, en Suisse et en Allemagne. Par Dr. G. Sersiron. Paris: Felix Alcan. 1898. Fr. 5.

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Encyklopaedie der Therapie. Herausgegeben von O. Liebreich. Zweiter Band, III Abtheilung. Berlin: August Hirschwald. 1898.

Radiation. By H. H. F. Hyndman, B.Sc. London: Swan Sonnenschein and Co. 1898. 6s.

Practical Pharmacy. By E. W. Lucas, F.C.S. London: J. and A. Churchill. 1898. 12s. 6d.

Ophthalmia in Newly-Born Children. By S. Stephenson, M.B., M.C., F.R.C.S.E. London: J. P. Segg and Co. 1898. 2s.

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Diphtherie und Diphtheritischer Croup. Von Dr. A. Baginsky. Wien: Alfred Holder. 1898. M. 11.60.

Chloroform: its Absolutely Safe Administration. By R. Bell, M.D., F.F.P.S Glasgow: R. L. Holmes. 1898. 1s.

. Inforwarding books the publishers are requested to state the selling price.

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SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF PSYCHOLOGY.

T. S. CLOUSTON, F.R.C.P.Edin., President.

A DISCUSSION ON THE PHENOMENA OF HYPNOTISM, AND THE THEORIES AS TO ITS NATURE.

I.—J. MILNE BRAMWELL, M.B., C.M.,
London.

I PROPOSE first to give a short account of my personal hypnotic observations, and, secondly, to see how far the theories of others are satisfactory in explaining them. I select my own observations for the following reasons:—(1) My patients and experimental subjects were, with few exceptions, natives of our own country. (2) All the observations to which I shall refer were checked by independent witnesses. (3) My hypnotic work was begun over nine years ago, and has been continued ever since; the permanence of the therapeutic results can therefore be fairly estimated. (4) I have had many opportunities of observing hypnotic work abroad, and am in a position to compare the phenomena seen there with the theoretical explanation of them.

CASES.

Here it may be well to state that I have made it the rule to keep my therapeutic and experimental work apart. Most of the experiments were conducted on healthy males, and never without express consent having been given in the waking state. Former patients, after restoration to health, have occasionally, under similar conditions, been the subjects of experiment. I feel strongly, however, that patients, above all others, should be regarded as sacred, and nothing should be suggested to them except what is necessary for the relief or cure of disease. I commenced hypnotic work in May, 1889.

CASE I. *Urinary Fistula: Involuntary Micturition.*—My first patient was an educated man, suffering from urinary fistula, the result of an accident on board a ship which carried no doctor. He was markedly strumous, but not of a nervous temperament. When I first saw him there was a large unhealthy wound from which the urine escaped. I instructed him to pass a soft catheter, and matters improved. Shortly afterwards a mental condition arose which apparently rendered recovery impossible. The idea of urination was immediately followed by an involuntary contraction of the bladder, whereupon the urine escaped from the wound before he could pass his catheter. This appeared to be entirely independent of the psychical condition of the bladder, which did not contract because it was full or uncomfortable, but because the idea of urination presented itself to the patient's mind, and was instantly translated into its physical equivalent. I knew little or nothing of hypnotism, except what I had learnt of the theories and methods of Braid, when a student at Edinburgh University. Although I confessed this to my patient, I had no difficulty in hypnotising him. I repeated the process on the two following days; then suggested during hypnosis that he should cease to think about his bladder, should always be able to pass his catheter, retain his urine eight hours, and sleep well. These suggestions were fulfilled: from that day there was no return of his troublesome symptoms, and the wound healed without operation in about twelve months.

CASE II. *Pruritus Vulvæ and Eczema.*—Mrs. A., aged 40, suffered from pruritus vulvæ and eczema, which four years' careful treatment had failed to relieve. At night the irritation was intolerable, and produced insomnia. The bowels never acted without medicine, and rarely oftener than once a week. The uterus was retroflexed, and bound down by adhesions, the result of former pelvic inflammation. This, together with the chronic constipation, was supposed, in the opinion of a well-known surgeon, to interfere with the rectal circulation, and to play an important part in the origin and maintenance of the disease. He stretched the sphincter ani under ether, but this neither cured the constipation nor relieved the other symptoms. In August, 1889, I tried to hypnotise the patient, other treatment being abandoned. The attempt failed, and was repeated unsuccessfully on sixty-six occasions during the next four months, the condition meanwhile growing steadily worse. At the sixty-eighth *séance* somnambulism was induced. All irritation vanished immediately, and the patient slept soundly on that and the following nights. The bowels acted daily. In a fortnight all trace of eczema had disappeared and treatment was abandoned. Three years later there had been no return of any of the symptoms, and the patient had not required to take even a simple aperient.

CASE III. *Hyperhydrosis:*—Miss B., aged 15, January, 1890. On the back of the left arm, just above the wrist, a patch of skin 2½ inches long by 1½ broad was the seat of constant perspiration. This had existed from early childhood, was always excessive, and invariably rendered more so by emotion or exertion. The forearm was always enveloped in bandages, but these rapidly became saturated and the perspiration dripped upon the floor. On January 10th the patient was hypnotised for the first time, and somnambulism induced. By the following day the perspiration had markedly diminished; the patient was again hypnotised, when the perspiration ceased. Two years later there had been no relapse.

CASE IV. *Headache: Ciliary Spasm.*—Mrs. C., aged 41, March 20th, 1892. Anæmic and emaciated; had had sick headache since childhood. During the preceding twelve years the attacks have occurred daily. She suffered also from dysmenorrhœa, chronic constipation, dyspepsia, insomnia, constant depression. As far as she could remember she had always been short sighted; reading and working—especially by artificial light—soon produced headache. On March 9th, 1889, I sent her to see Mr Bendelack Hewetson, of Leeds, who reported that she was hypermetropic, but that this was over-corrected by ciliary spasm rendering her virtually myopic. She could only read the third line of Snellen's type unaided, and required a minus glass to enable her to read the bottom line. He considered that the headaches were due to the ophthalmic condition, and prescribed glasses. The patient would not persevere with these, and the headaches were unrelieved. Somnambulism was induced at the first attempt, on March 20th, 1892, when all morbid symptoms at once disappeared. In July, 1892, I took her to see Mr. Hewetson, who found the ophthalmic condition unchanged. She could only read the third line of Snellen's unaided, but in response to suggestion, read the bottom line with perfect ease, even when the test type was changed. The definite disappearance of the spasm was then suggested. On June 13th, 1893, Mr. Hewetson wrote as follows:—"Mrs. C.'s range of vision is perfect; Snellen's $\frac{2}{2}$ easily with either eye. There is no evidence of ciliary spasm, although she has been using her eyes very much of late for reading and fine work. She never wears glasses. She is bright, well nourished, and perfectly well."

In March, 1890, Mr. Turner, of Leeds, performed a number of dental operations upon my patients, which he recorded in the *Journal of the British Dental Association*. The most remarkable case was that of a young girl, suffering from valvular disease, from whom he extracted five teeth.

On March 28th, 1890, a number of my patients were operated on at Leeds, in the presence of some sixty medical men, including such well-known surgeons as Pridgin Teale, Mayo Robson, etc. A delicate girl was put to sleep by written orde while I remained in another room, and sixteen teeth were extracted. She showed no signs of pain; there was no corneal reflex, and the pulse fell during the operation. A boy, aged 8, suffering from exostosis of the great toe, had only been hypnotised on two previous occasions. Mr. Mayo Robson first performed evulsion of the great toe-nail, then removed the bony growth, and part of the first phalanx. Some of the patients were strong, healthy labouring men, others were weak, nervous women. None suffered from pain afterwards, and all returned home by train—a journey of over an hour. In every instance the healing process was remarkably rapid.

After the demonstration at Leeds, many patients were sent to me from different parts of the country. I now propose to refer to a few of these, and will afterwards draw attention to the difference in susceptibility observed between my own patients and strangers.

CASE V. *Insomnia: Suicidal Tendencies.*—Mr. D., aged 34, June 2nd, 1890. Barrister. Formerly strong and athletic. His health commenced to fail in 1877, after typhoid fever. He was compelled to abandon work in 1882, and had since been a chronic invalid. He was constantly depressed, and suffered from anæmia, dyspepsia, insomnia, etc. He had frequent suicidal impulses, and once attempted suicide. The least exertion produced acute pain in the lower part of the spine, and he was unable to walk a hundred yards without severe suffering. He had had constant medical treatment, including six months' rest in bed, without benefit. He was hypnotised from June 2nd to September 20th, 1890. By the end of July all morbid symptoms disappeared, and he amused himself by working on a farm. He has not relapsed since, and can walk forty miles a day without undue fatigue.

CASE VI. *Dipsomania.*—Mr. E., aged 33, April 30th, 1890. He had a family history of intemperance, and commenced to take stimulants in excess at 17. In 1884 his friends induced him to place himself under control. This was repeated twice without good results. In 1887 he entered a retreat for a year, but soon after leaving it began to drink as badly as ever. From this time he does not appear to have taken stimulants daily, and according to his own account, struggled hard against the temptation to do so. Any physical pain or mental trouble, however, would start a drinking bout, and of these he had on an average one a week. He was hypnotised from April 30th to May 17th, 1890, and during this time kept sober. He returned home and relapsed in less than a month. He was again hypnotised daily for a week, and from that date, June 1890, until the present time he has not relapsed.

CASE VII. *Dipsomania.*—A patient, aged 47, with bad family history of alcoholism. There has been no relapse since he was first hypnotised on April 22nd, 1895. He had taken stimulants to excess for seventeen years, had had 3 attacks of delirium and 7 of epilepsy.

CASE VIII. *Neuralgia of Leg.*—Miss F., aged 28. July 17th, 1896. She complained of pain in the leg and hip of five years' duration, supposed to be due to sciatica. During the first two years of her illness she never walked more than a quarter of a mile, then this was abandoned, and she took to a bath chair. Treatment: Rest on back in bed for two months; careful drugging; Weir Mitchell massage; electricity; baths at Droitwich and Bath; Paquelin's cautery to leg; 70 applications daily from July 1895 to May 1896, about 20,000 in all. During this time her condition steadily grew worse; all treatment was then abandoned, and she was considered incurable. When I saw her she was emaciated; complained of constant pain; was unable to walk; suffered from insomnia; had lost all interest in life. She was hypnotised July 17th, 1896; completely recovered in two days, and learnt to cycle. At the present date she is well, active, and strong.

CASE IX. *Insomnia, Neuralgia, Menorrhagia.*—Miss G., aged 20. April 6th, 1894. She had suffered from insomnia since infancy; from spinal neuralgia since the age of 8, and had had dysmenorrhœa and excessive menorrhagia since the commencement of menstruation. After a short course of suggestive treatment all morbid symptoms except the menorrhagia disappeared. In June 1896, despite renewed treatment, the menorrhagia was uninfluenced. The periods were excessive, lasting a week, during which time the patient had to keep her bed. Hypnosis was maintained for three days before a period, and again five days during it. Recovered. No relapse.

EXPERIMENTAL PHENOMENA.

I have been able to confirm many of the experimental observations of others, and have found, for example, that the voluntary muscles can be rendered cataleptic by suggestion; the rapidity of the pulse increased or diminished; the muscular sense, thermal sensibility, common cutaneous sensibility, hearing and sight, rendered more acute or the reverse. Anæsthesia, so profound as to render the subject insensible to the faradic brush, can be induced, or analgesia alone evoked, when the subject has a perfect appreciation of tactile impressions, and yet is insensible to what otherwise would be acutely painful ones.

To some other experiments I wish to draw more particular attention.

I.—TIME EXPERIMENTS.

The subject of these experiments was a dressmaker, aged 19, in good health. She was fairly intelligent, and had had a School Board education, but possessed no unusual arithmetical powers in the waking state, nor any particular aptitude for appreciating the passage of time.

These experiments were all of the same character. On each occasion I suggested to her, during hypnosis, that at the expiration of a varying number of minutes she should feel impelled to make a cross on a piece of paper with a pencil, and also, without looking at clock or watch, write down what time she believed it to be, and then immediately compare this with the actual time and, if possible, obtain corroborative testimony from her friends.

The suggestions were often extremely complicated; for example, while she was in the hypnotic state and had no means of determining the time, I suggested that she should make the cross and write down the time in, say, 20,190 minutes, starting from 3.30 P.M. the day before. Sometimes six such suggestions similar in character, but differing as to the number of minutes, would be made quickly one after the other, and only read once. Fifty-five experiments in all were made; of the result of one I have lost the record, while in another the patient had mistaken the original suggestion and fulfilled it correctly in accordance with what she thought it had been. Forty-five were carried out to the minute. In eight the patient recorded the correct time, namely, that at which the suggestion was due, but in these eight cases there were slight differences, never exceeding five minutes, between the patient's estimate of when the suggestion fell due and the moment at which she carried it out. The proportion which these errors bear to the respective intervals varies between 1 to 2,028 and 1 to 21,420.

The patient had no recollection in the waking state that the suggestions had been made to her. After they were made she sometimes remained in the hypnotic trance in my room for an hour or more. The suggestions were arranged to fall due during the waking state, normal sleep, and the hypnotic condition. This made no difference to the results. Frequently the suggestions were fulfilled in my presence, or in that of other trustworthy witnesses, when she had been for several hours either hypnotised or awake under such conditions that it was impossible for her to ascertain the time. After a certain number of these suggestions had been fulfilled, an attempt was made to investigate her mental condition in regard to them. The subject was hypnotised between the giving of the suggestions and their fulfilment, and questioned. She stated that she had not calculated during hypnosis when the suggestions would fall due, and that she had never thought of them since. Immediately before executing them she experienced a motor impulse in the fingers of the right hand, and directly afterwards the idea of making the cross and putting down certain figures arose in her brain. To complicate the experiment still further, she was asked in hypnosis, immediately after the suggestions were made, to calculate when they would fall due. At first her calculations were frequently wrong, but this did not affect the correctness of the results. On being again questioned as to this, she was unable to explain what had happened. She said she had made no further calculations, but was sure what she had told me originally was wrong, and what she had recorded was right.

AUTOMATIC WRITING.

The following is an illustrative case. Here the subject had his attention concentrated upon the act of reading aloud from a book with which he was previously unacquainted, and at the same instant wrote automatically, as far as his primary consciousness was concerned, the result of a problem suggested to him in hypnosis the moment before that state was terminated. The primary waking consciousness retained no recollection of the hypnotic suggestion; did not know that the secondary consciousness, after the hypnotic state had been terminated, first solved the problem and then directed the motor act which recorded it, and was also unconscious of the motor acts themselves.

VOLITION IN HYPNOSIS.

When I commenced hypnotic work I believed that the subject was entirely at the mercy of the operator. I was soon aroused from this dream, however, not by the result of experiments made to test the condition, but from constantly recurring facts which spontaneously arose in opposition to my preconceived theories. I sometimes found that patients who had submitted to severe operations during hypnosis refused at a later date much less important suggestions which they had misunderstood or disapproved of.

These facts led me to make a series of experiments in reference to the mental condition in hypnosis. The plan I adopted was to question profound somnambules during hypnosis as to their own mental condition. Some of the subjects chosen were well educated and intelligent, others were working people. All practically gave similar replies, namely, that when in the hypnotic state they knew that they were hypnotised, but retained completely the sense of their personal identity and relationship with the outer world. They could reason as logically as in the waking state, and were confident that they could resist any suggestion which was displeasing to them.

To the patient, who was the subject of the time experiments, experimental criminal suggestions, similar to those upon which Bernheim founds his theories of automatism, were made. During hypnosis, I suggested that she should steal a watch belonging to Mr. Barkworth, a friend who assisted at the experiment. This watch was placed upon a table, and Mr. Barkworth hid behind a screen. I told the patient during hypnosis that Mr. Barkworth had gone, and had left his watch behind him; that he was very absent-minded, would not remember where he had left it, would never miss it, etc.: suggested that she should take it, that no one would ever know, etc. I awoke the patient. She took no notice of the watch. I asked her, "Where is Mr. Barkworth?" "Gone away." "He has left his watch; would you not like to take it?" The patient laughed and said, "No, of course not." I re-hypnotised her, and asked, "What did I suggest to you a little time ago?" "That I should steal Mr. Barkworth's watch, that he was absent-minded, would never miss it, etc." Then why did you not do so?" "Because I did not want to." "Was it because you were afraid of being found out?" "No, not at all; but because I knew it would be wrong."

At a later date I again questioned her in hypnosis in reference to this supposed theft. I said: "Did you recognise that it was an experiment?" "Yes, perfectly." "Well, then, if you were quite certain that it was only an experiment, why did you not carry it out?" "Because I did not wish to do what was wrong, even in jest." I then asked her if she would put a lump of sugar into someone's tea, if I told her it was arsenic, and she replied she would. When further asked why she would not be willing to take the watch and would yet put the supposed arsenic into someone's tea, she replied as follows: "I would not take a watch, even if I knew the suggestion was made as an experiment, because this would be pretending to commit a crime. I would, however, put a piece of sugar into a friend's teacup, if I were sure it were sugar, even though someone said it was arsenic; because then I should not be the one who was pretending to commit the crime." So subtle a distinction would not, I think, have occurred to the subject in the waking condition.

It is important to notice that this resistance to suggestion did not occur alone in the alert stage of somnambulism, when the subject had his eyes open and his wits apparently about him, but also in profoundly lethargic conditions in which the subject is supposed to be insensible to external impressions. For example, one of my patients, whose anæsthesia was being tested previous to operation, permitted me to pinch her arm and prick the pulp of her thumb with a needle. On being aroused, she retained no recollection of what had occurred. I attempted to repeat the experiments two days later. She permitted the pricking, but strenuously resisted the pinching. Again, awaking was followed by amnesia, but when I told her what she had done, and asked for an explanation, she replied, "My arm was marked by the former pinching, and I made up my mind in the waking state that I would only allow you to prick me with a needle."

According to what I have observed, not only is the volition

unimpaired in hypnosis, but hypnotic experiments or treatment exercise no weakening effect upon the volition in the waking state. Thus, my patients, no matter how frequently hypnotised, can always successfully resist any fresh attempt at will. In no case has any morbid craving for hypnosis been developed or any abnormal dependence upon the operator. On the contrary, the weak-willed, vacillating, and dependent have frequently gained force of character, independence of action, and power of resisting temptation.

Spontaneous Mental Action in Hypnosis.

The subject of the time experiments was sometimes allowed to remain undisturbed for an hour or two in the hypnotic condition while other patients came for treatment. I questioned her in hypnosis as to her mental condition under these circumstances. She stated that she was unable to recall anything that had been said or done, and that she rarely spontaneously thought of anything. She related, however, the following incident: "One day I was troubled about my dressmaking: my employer was ill, and I had more responsibility than usual. I had a difficult piece of work to do, and could not understand how it was to be done. When asleep here I planned how I would do it, and carried this out successfully when I returned home. When I awoke I did not know I had done this. The way out of the difficulty suddenly came into my head on my way home, and I thought I had discovered it at that moment in the waking state. I now remember planning while I was asleep what I afterwards carried out."

Self-hypnosis and Self-suggestion.

I have instructed many patients to hypnotise themselves. This was done by suggesting in hypnosis that they should be able to reinduce the state at a given signal, as, for example, by counting one, two, three. These patients could afterwards evoke the condition at will. I also found that suggestion during hypnosis was not necessary for the induction of its phenomena. On the contrary, the suggestions could be made equally well beforehand in the waking state. The patient was able to suggest to himself when hypnosis should appear and terminate, and also the phenomena which he wished to obtain during and after it. This training was at first a limited one; the patients, for example, were instructed how to get sleep at night and relief from suffering. They did not, however, always confine themselves to my suggestions, but originated others, and widely varying ones, regarding their health, comfort, or work. Some, trained in this way nine years ago, still retain the power of hypnotising themselves.

Memory.

Memory in relationship to hypnosis varies wi'ely. The majority of those who have been successfully treate l by hypnotism suffer no loss of memory. In profound hyp osis, however—the condition usually termed somnambalism—the patient on awaking remembers nothing of what has taken place. On being re-hypnotised, however, the events of previous hypnoses can be recalled by suggestion. When it has been suggested to a hypnotised person to perform some act in the waking state at a subsequent date, this is almost invariably forgotten immediately after fulfilment. The lost memory, however, can be recalled in hypnosis.

Susceptibility.

Some of my earlier cases, drawn from my own practice, were difficult to hypnotise. With the majority, however, the process rarely occupied more than a couple of minutes. In the first hundred consecutive cases of which I have notes there were no failures, and all, except eight, were hypnotised at the first attempt. At this time I believed I had discovered not only one of the most marvellous methods of treatment but one which could be easily and quickly applied in almost every instance. Although I continued to prescribe medicine when I thought this desirable, I hypnotised the majority of my patients on my rounds, and usually left them quietly sleeping.

I found strangers sent to me by other medical men much more difficult to hypnotise than my own patients. In the first hundred consecutive cases of this group there were twenty-two failures, and hypnosis was often only induced after frequent attempts. All these patients suffered from long-standing nervous diseases; the concentration of their attention upon their own symptoms; their hopelessness, as the result of the failure of other methods of treatment, was apparently the cause of their reduced susceptibility.

Concentration of Attention.

Attention in hypnosis varies widely. If the subject is told to attend to a suggested phenomenon he does so. This concentration of the attention, however, does not appear to be necessary for the production of the phenomenon, for it can be evoked equally easily when the attention at the same time is directed into other channels. Many and widely differing phenomena can be evoked simultaneously.

Dangers.

As far as my experience goes, the employment of hypnotism by medical men who are acquainted with the subject is absolutely devoid of danger. I have seen no unpleasant symptom, even of the most trivial nature, produced by the induction of hypnosis. Further, I have never seen any evil after-effects, either mental or physical; and, if such were likely to occur, surely some of my patients would have presented them. I have hypnotised hundreds of persons of both sexes, and of all ages from early childhood upwards, occasionally repeating the process almost daily for months. Some of these were actually insane, while in many the mental condition was far from stable. In a considerable proportion recovery took place after hypnotic treatment and many years have passed without relapse.

This view as to the alleged dangers of hypnotism is largely shared by others. For example, Professor Forel says: "Liébeault, Bernheim, Wetterstrand, van Eeden, de Jong, Moll, I myself, and the other followers of the Nancy school, declare categorically that although we have seen many thousands of hypnotised persons, we have never observed a single case of mental or bodily harm caused by hypnosis; but on the contrary, have seen many cases of illness relieved or cured by it."

Braid's Theories.

I propose to begin my account of hypnotic theories by referring to those of James Braid. My reason for doing so is neither historical nor purely patriotic, although it is well to remember that Braid was a Scotchman by birth, and studied at Edinburgh University. Up to the day upon which Myers prepounded his subliminal-consciousness theory of hypnotism, no scientific work on the subject had been done in any country at all comparable to that of Braid, and the Nancy school itself holds many views which Braid had demonstrated as fallacious. This is strenuously denied by Bernheim and others, but they are only acquainted with Braid's earlier work, *Neurypnology*, and are unaware that this was followed by many others, of which I have been able to trace thirty-five.

The following is a brief summary of the more important points in Braid's theories:—

1. The condition is a purely subjective one, and independent of any mysterious force or power exercised by the operator.
2. The phenomena supposed to arise from the action of magnets, metals, drugs in sealed tubes, etc., were purely suggestive in their origin.
3. Hypnosis could not be evoked by physical means alone; the idea of the state must also be present in the patient's mind.
4. The hysterical and the insane were difficult to hypnotise.
5. The hypnotic condition was one of monoideism; the attention was concentrated on the suggested phenomena, and on that alone.
6. The monoideism was brought about by a physiological and psychological inhibition; the activity of certain nerve centres was suspended, owing to the monotonous stimulation of others. This had its psychological equivalent in the interruption of the voluntary association of ideas.
7. Many points of difference existed between hypnosis and normal sleep.
8. *Rapport*, or that peculiar connection which is supposed to exist between operator and patient, was a purely artificial condition created by suggestion.
9. Suggestion did not explain the phenomena of hypnosis, but was simply the method used in order to evoke them.
10. Crime could not be successfully suggested in hypnosis.

Several of these views differ markedly from those expressed by Braid in his earlier work, but evidence is not wanting to show that they in their turn were undergoing modification. Thus, he referred to the complexity of the hypnotic condition; to the fact that mental and physical activity characterised certain of its stages, and to the phenomenon of "double consciousness." Above all, however, I wish to draw attention to the fact that he ceased to believe in an involuntary monoideism, and stated fully and forcibly that the volition was

absolutely unimpaired. Not only could the subject resist attempts to induce hypnosis, but also, when hypnotised, could reject any suggestion disagreeable to him. The moral sense in hypnosis was raised instead of being lessened, and it was impossible to make a hypnotised subject commit a crime, or even any act which involved the slightest indelicacy. These statements Braid supported by repeated demonstrations.

These views, which I may perhaps be permitted to call those of the Edinburgh School of Hypnotism, were largely reproduced by Professor John Hughes Bennett of Edinburgh in 1851, and, as far at all events as the psychological inhibition is concerned, are now restated by Bernheim in almost identical words. Braid's work is all the more remarkable when we remember that he had no scientific forerunners; he evolved his theories out of the mesmeric superstitions prevalent in his day, and was the first to place hypnotism amongst the sciences.

Two other Edinburgh graduates, Elliotson and Esdaile, must not be forgotten. The former is only remembered as having been cheated by the sisters O'Key into a belief in clairvoyance; but his therapeutic work would bear favourable comparison with that of recent times, and he was a martyr to his cause. Many of his fallacies, moreover, were repeated in even more grotesque form by Charcot and his followers. Elliotson's influence inspired Esdaile to experiment on his own account, and in the Government hospitals of India, before the introduction of ether and chloroform, he performed the most extraordinary series of painless operations ever reported. These comprised 261 capital operations, and many thousand minor ones; he reduced the mortality in the removal of the enormous tumours of elephantiasis from 50 per cent. to 5 per cent. In short, his work forms one of the most fascinating and romantic pages in the whole history of medical science.

Modern Hypnotic Theories.

The hypnotic theories which have arisen since the time of Braid are too numerous to mention in detail. The majority of those who study and practise hypnotism agree more or less with the views expressed by the school of Nancy. I now propose to contrast the theories of that school with those of Braid. On two points they are agreed, namely (1) that hypnosis cannot be evoked by physical means alone, and is not a morbid condition which can only be induced in the hysterical, and (2) that the influence of metals, magnets, etc., is purely suggestive.

Hysteria and Hypnotism.—It is not necessary at the present day to discuss the supposed connection between hysteria and hypnotism. The mass of evidence in favour of the fact that healthy persons can be hypnotised is overwhelming.

Alleged Influence of Metals, Magnets, etc.—In the assertions of the Salpétrière School, in reference to the influence of metals, magnets, etc., we have an exact counterpart of the controversy between Braid and the mesmerists. All the old errors, the result of ignoring mental influences, are once more revived. The absurdity of many of the statements renders argument unnecessary. The chief apostle of these doctrines was Luys, and considerable attention was drawn to them in England in 1893 by popular articles in the daily papers and elsewhere. An attempt was made, and, I think, somewhat unfairly, to present Luys's views as those generally held by hypnotic observers. No mention was made of their refutation by the Nancy school, nor that they were a reproduction of the errors formerly exposed by Braid. Further, no reference was made to the fact that M. Dujardin-Beaumetz had, in 1888, reported to the Académie de Médecine that Luys's experiments were conducted so carelessly as to rob them of all value, and that amongst students of hypnotism they were entirely disregarded.

Concentration of Attention.—In hypnosis, according to Bernheim, the whole nervous force of the subject is concentrated upon a single idea. This nervous concentration may be changed from one point to another in response to the suggestions of the operator; but, though the focus shifts its place, the same concentration continues to exist. Braid, as we have seen, was beginning in his later works to change his opinion as to this; it still forms, however, an essential part of the Nancy theory. Doubtless certain hypnotic states exist in which all the attention, so far as it is called into action, is concentrated upon one idea. In order to prove, however, that directing the attention upon a fresh point necessarily withdraws it entirely from another, it must be shown that the phenomenon which resulted from the first concentration inevitably ceased when the second one arose. This, however, as I have already observed, is not in accordance with fact. Many phenomena can be evoked simultaneously, and this clearly shows that hypnosis cannot be explained by the concentration of the attention on any one given point. If all the attention is requisite for the production of one phenomenon, and while this one still lasts, many other hypnotic phenomena are simultaneously induced, whence do the secondary ones derive that excessive amount of attention which is said to be necessary for the induction of the primary one?

Rapport-Sleep.—According to Bernheim the only difference between hypnosis and normal sleep is the presence of *rapport* in the former. Time does not permit me to discuss these points. Braid's views, however, in reference to the artificial nature of *rapport*, and the differences existing between normal sleep and hypnosis are beginning to be adopted by Moll and other authorities.

Suggestion.—Bernheim, in opposition to Braid, considers that suggestion practically explains all the phenomena of hypnotism. According to him, everyone is suggestible; you take someone and suggest to him to become more suggestible, and that is hypnotism. The success of suggestion depends, however, not on the suggestion itself, but on conditions inherent in the subject. In hypnosis the essential condition is not the means used to excite the phenomena, but the peculiar state which enables them to be evoked. Suggestion no more explains the phenomena of hypnotism than the crack of the pistol explains a boat race. Both are simply signals—mere points of departure, and nothing more. With Bernheim the word suggestion has become mysterious and all-powerful. It has acquired an entirely new signification, and differs only in name from the "odyllic" force of the mesmerists.

Automatism and Crime.

In their earlier writings many members of the Nancy school described the deeply hypnotised subject as a pure automaton, and stated that suggestions were carried out "with the fatality of a falling stone." Now much greater power of resistance is conceded, and Liébeault and Liégeois assert that there are only 4 or 5 per cent. of hypnotised subjects to whom one could with absolute certainty suggest crime. Despite this concession, many members of the Nancy school still regard automatism and weakened will as more or less characteristic of the hypnotic state. As what they describe as automatism is supposed to exist in its most perfect form in subjects who accept criminal suggestions, I propose to take a typical case and to discuss two points: (*a*) Whether the condition is really one of automatism, and (*b*) whether the laboratory experiment proves the possibility of successfully suggesting a real crime.

It is suggested to a high-principled girl, in the alert stage of somnambulism, with her eyes open, that she shall take a lump of sugar from the basin and put it into her mother's teacup, after having been informed that it is really a piece of arsenic certain to cause death. She carries out the suggestion, and on awaking remembers nothing about it. Has the act been an automatic one?

A.

As the word automatism has received two diametrically opposed meanings, one must first ascertain which of the two has been selected by Bernheim. He describes the crime as being analogous to "walking unconsciously when the mind is distracted by various ideas." He therefore considers the suggested crime to be an acquired automatism in the sense generally accepted by science at the present day. Of this form of automatic act, the winding of one's watch may be taken as a typical example. This is at first performed consciously and voluntarily. After a time consciousness sometimes ceases to participate in the action. On attempting to wind a watch, many persons must have occasionally found that they had already done so, although quite incapable of recalling it. Now, this automatic act is simply a voluntary one, performed inattentively or unconsciously; one that has previously been frequently performed, and possesses well-worn nerve channels. It has commenced as a conscious,

voluntary act. It has become unconscious by repetition, but still remains voluntary, in the sense that it is an act which the consciousness would approve of, did it happen to participate in it.

Let us consider the so-called automatic crime of the hypnotised subject, and see how it agrees with this conception of automatism:

1. The crime has not been a habitual one. In the present instance, the very nature of the act renders this impossible. Obviously the subject could not have habitually killed her mother. The alleged automatic act must, then, in this instance, have been performed for the first time. Now the essential character of the acquired automatic act is that it has been previously, frequently, consciously, and voluntarily performed, and possesses in consequence well-worn nerve tracts which offer no obstacle to its fulfilment.

2. The hypnotic act is performed consciously. According to Bernheim, the hypnotised subject is conscious in all stages; and, if amnesia follows on waking, the lost memory can be recalled by suggestion. The genuine automatic act is usually performed unconsciously.

3. In hypnosis, the attention, instead of being directed in other channels as in genuine automatism, is supposed to be intensely concentrated on the operator, or on a signal given by him—a signal sometimes so faint that the subject is only enabled to recognise it by means of the hyperæsthesia of his special senses.

4. The hypnotic crime is sometimes supposed to be performed in opposition to volition as it exists in hypnosis, and is always supposed to be in opposition to the normal volition. The genuine automatic act, on the other hand, has only become automatic because it has previously been frequently performed as a voluntary act; and now, when performed unconsciously, it still remains such an act as the volition, as a general rule, would approve of. The so-called automatic crime of the hypnotised subject not only differs, then, from the general scientific conception of automatism, but is its exact opposite in every detail.

B.

Does Bernheim's laboratory experiment prove the possibility of suggesting real crimes? All that the somnambule did was to put a piece of sugar, as to the composition of which her medical man made various untruthful assertions, into a tea-cup. Bernheim asserts that the subject accepted these absurd statements as true because, being hypnotised, she was unable to distinguish between truth and falsehood; while Delbœuf claimed that she had sufficient sense left to know exactly what she was doing. To none of them does it seem to have occurred to ask the subject during subsequent hypnosis what she thought about the matter herself. If this had been done, she would have solved the difficulty by stating that she recognised the experimental nature of the whole performance. It is to be hoped that in the future we shall hear less of this so-called automatism, and that laboratory crimes will not be cited in support of its existence without an attempt having been made to discover the real mental condition of the subject by questioning during hypnosis.

Strangely enough, the most marked case of resistance to suggestion I have observed was shown by Liébeault's celebrated somnambule Camille. Liébeault informed me that she was a typical specimen of profound somnambulism, illustrating hypnotic automatism in its highest degree. He assured me that the suggestions he made to her were carried out with the fatality of a falling stone. He made a simple experimental suggestion to her, which was not criminal in nature, and which she had previously frequently accepted. She refused to carry it out, apparently from pure caprice, as I saw her accept it on a subsequent occasion.

Bernheim's views as to so-called automatic crime are all the more astonishing when we remember that he asserts that hypnotism does not create a new condition, and that hypnotic acts are only exaggerated normal ones. One can understand, for example, how a prolonged muscular rigidity may be a hypnotic exaggeration of a somewhat shorter normal one: but it is difficult to comprehend how the murder, when hypnotised, of one's mother, can be an exaggeration of the refusal to hurt a fly when awake.

Summary of Objections to the Theories of the Nancy School.

I. The condition cannot justly be described as one of monoideism, because many phenomena can be evoked at the same time.

II. It cannot be explained by the concentration of the attention upon a single point, because, again, many phenomena can be evoked simultaneously.

III. Suggestion does not explain hypnosis; this is merely the artifice used to excite its phenomena.

IV. Hypnosis cannot be explained by a supposed general analogy between it and the normal sleeping and waking states. Because:

(*a*) An analogy, no matter how successfully established, between two sets of phenomena, by no means explains either of them; and

(*b*) Many important points of difference exist between the two sets of phenomena described as analogous.

V. Arrested or impaired volition is not characteristic of the hypnotic state. Thus:

(1) I have never seen a suggestion accepted in hypnosis which was in opposition to volition as it existed in the waking state.

(2) I have observed that suggestions could be resisted as easily in the lethargic as in the alert stage of somnambulism.

(3) I have noticed increased refinement in hypnosis; subjects have refused suggestions which they would have accepted in the normal condition.

(4) I saw Camille refuse a suggestion from mere caprice.

(5) Examination of the mental condition in hypnosis revealed the fact that it was unimpaired.

(6) The arguments of Bernheim are devoid of value as they are founded exclusively on cases where (*a*) a simple and harmless act has been assumed to be thought criminal by the subject, because the operator has stated it to be so, and (*b*) where the subject has permitted something in hypnosis which he would probably have submitted to in the normal state.

(7) The influence of the operator may be entirely eliminated and the subjects trained to evoke the condition and its phenomena by means of self-suggestion.

The theories of the Nancy school, particularly those of Bernheim, must be regarded as falling short of the point which Braid had reached, and show, especially with regard to suggested crime and *rapport*, a reversion to earlier mesmeric types.

The Theory of Frederic Myers.

There is one other theory to which I wish to draw attention. This, instead of attempting to explain hypnotism by the arrested action of some of the brain centres which subserve normal life, would do so through the arousing of certain powers over which we normally have little or no control. This theory may be regarded, I think, as a development of Braid's latest views. Its earliest and clearest exponent is Frederic Myers, and, as he is here in person to represent it, I do not propose to say more than a word in reference to it, namely, that although it forms an advance on all previous theories, it does not fully explain two important points: (1) The origin of the powers of the secondary consciousness, and (2) the connection between the methods of inducing hypnosis and the extraordinary phenomena which follow.

Conclusion.

If Braid and Myers have done much towards giving us a clearer idea of the hypnotic state, they have also added to the difficulties of explaining it. A conception of hypnosis which limited its manifestations to simple automatic movements was comparatively easy to explain. The hypnotic subject who, while he has not lost the physical and mental powers of his waking condition, has acquired new and far-reaching ones, presents a very different problem. How he acquired these powers and why hypnotic methods should evoke them are questions by no means easy to answer. But normal life contains many problems, both physiological and psychological, which are yet unsolved, and some, such as causal connection between mental and physical states, which are apparently insoluble, and while this is so it would be unreasonable to expect a complete explanation of that still more complex state, the hypnotic. Further observation, however, is always giving us clearer insight, if not into the central problem itself, at all

events into the phenomena which characterise it. What increased practical advantage this may give us in curing disease, alleviating pain, or improving moral states, time alone will show.

As the points I have referred to are numerous, I may perhaps suggest the questions I consider the most important. These are:

(1) Are the therapeutic results of hypnotism valuable and lasting?

(2) Is its practice in the hands of medical men acquainted with the subject attended with danger?

(3) Are the Nancy theories satisfactory, particularly in reference to so-called automatism and crime?

(4) Are the phenomena of hypnotism due to the intelligent and voluntary action of a secondary consciousness?

II.—Frederic W. H. Myers,
Hon. Secretary of the Society for Psychical Research.

THE PSYCHOLOGY OF HYPNOTISM.

I must begin what I have to say by warmly thanking the officers of this Association for allowing a layman in this place to say anything at all, and by thanking this learned audience also for showing themselves thus willing to hear me. I feel a quite special diffidence in undertaking my present task; but I can best show my sense of the honour done me by speaking frankly on, without further preface or apology.

I understand that what is asked from me is some attempt at a coherent psychological presentation of the multifarious and perplexing facts now commonly grouped under the name of hypnotism. Purely physiological explanations thereof have, by common admission, thus far failed; and little attempt has yet been made by the able practical hypnotists, to whom the recent advance in our knowledge is owing, to correlate their ever-growing observations from a purely psychological point of view. My late friends, Edmund Gurney and Professor Delbœuf of Liége, did, indeed, apply to these problems minds of unusual acuteness. They and others have said much of value; but much more remains to be said than any of us in this generation can hope to say. My own attempt at synthesis will fall far short both of certainty and of completeness; but its very imperfections may indicate how great the difficulties are which have to be faced; how wide and penetrating a survey is needed if these phenomena, often so superficially described, are to carry us, as they ought some day to do, deep into the mysteries of human personality.

I say then, as my first and surest remark, that in order to understand hypnotism we must bring into comparison a great mass of cognate life-phenomena, both spontaneous and induced. From the lack of wide comparison, from the confinement of attention to some few of the commoner and more obvious manifestations of hypnosis, have sprung most of those narrow and misleading theories of which Dr. Bramwell has spoken. But there is now no excuse for such narrowness. Far more facts have become matter of common knowledge than Despine, or Heidenhain, or Charcot knew; and even a cursory glance at the recent annals of hypnotism will show at how many points its problems touch on problems already familiar in other fields of research.

Let us briefly dwell on each main group of these problems in turn. In hypnotic records we find, to begin with, abundant instances of isolated losses and gains of faculty resembling the fantastic associations and dissociations, dynamogenies and inhibitions, which characterise hysteria. We find, too, that uprush into consciousness of ideas or impulses, matured beneath the conscious threshold, which forms, in my view, the best definition of genius. We find that interruption of external attention, along with that profound organic recuperation, which are the marks of sleep. We find the change of personality, the intercurrence of memories, which in their slighter forms are called somnambulisms, or sleep-waking conditions, and which may exist quite apart from hysteria. Finally, we observe in hypnosis—rarely indeed, yet, as I hold, unmistakeably—certain forms of supernormal sensibility which bring hypnotism into connection with all those facts (as I must needs regard them) to which I have given the names of "telepathy" and "telæsthesia."

Hypnotism and Hysteria.

Let us begin with one of the most obvious of these analogies,—the analogy between hypnotism and hysteria. How far does this analogy extend? In broad outline the answer is plain enough. Both in hypnosis and in hysteria there is a disaggregation of the personality. Instead of the continuous personality of common life, with its one familiar alternation of sleep and waking, there are minor changes of phase, interruptions of memory, irregularities of will, inhibitions of faculty, something capricious and mutilated in the manifestations of the self. In the case of hysteria these changes are plainly degenerative. They indicate what Dr. Pierre Janet calls *misère psychologique*, some weakness in the grasp which holds together all our separate fragments of motor and sensory capacity under that central dominance which makes the organism a unity. Scraps of capacity drop out from that dominance; the muscles, for instance, which are innervated by some special centre, sink down beneath the threshold of conscious will. The hysteric, let us say, gets a fixed idea that he cannot move his left arm. So long as this idea persists, and there is no trustworthy medical method of removing it, the man's arm is in effect lost to him; it is psychically paralysed, and as useless as if the governing brain centres were actually destroyed; and here the thought at once occurs that this is exactly the kind of effect which the platform hypnotist produces by suggestion. His suggestion, like the hysteric's self-suggestion, deprives the man of the use of his arm; he induces a form, though a brief and curable form, of psychical paralysis. The recognition by the Paris school of analogies of this kind between hypnotism and hysteria was originally, as I conceive it, a forward step—a result mainly of the increased care and intelligence with which hysteria had been studied by Charcot and his disciples.

But the last word on the matter has certainly not yet been said. If we look a little deeper into those analogies, we shall discover the point at which they begin to be misleading—the point at which hysterical and hypnotic workings, although *in pari materiâ*, begin to be in effect almost exactly opposite the one to the other.

Expressed in a sentence, the difference is this: In hysteria we lose from supraliminal control portions of faculty which we do not wish to lose, and we cannot recover them at will. In hypnotism we lose from supraliminal control portions of faculty which we wish to lose, or are indifferent to losing, and we can recover them the moment that we will.

A good way, I think, of presenting these two notions together is to call that stratum into which the faculties submerged in hysteria sink the hypnotic stratum, and to describe hysteria as a disease of that stratum, or say an undue permeability of the psychical diaphragm which separates ordinary consciousness from the deeps below. This or that group of sensory or motor ability drops out of waking knowledge or out of control of waking will.

In hypnotism, on the other hand, we gain instead of losing control. Instead of losing control over the supraliminal stratum, we gain control over the hypnotic stratum. We purposely increase the permeability of the psychical diaphragm in such a way as to push down beneath it various forms of pain and annoyance which we are anxious to get rid of from our waking consciousness; while, on the other hand, we stimulate in the depths of our being many sanative and recuperative operations whose results rise presently into the perception of our waking life.

An example will make my meaning clear. One frequent symptom in hysteria is a retrenchment or deformation of the visual field. The hysteric, with his weakened central authority, his enfeebled attention, has lost the use of the outer margin of his normal field; he cannot see a moving finger till it is almost directly in front of him. But now, instead of the finger, bring within the disused margin of the visual field some object associated with the patient's hysterical terrors, as a lighted match or a stuffed mouse. In that case, as Professor Janet has ingeniously shown, the patient will scream and go off into an *accès* long before the mouse has reached the point at which the mere finger would have been noticed. This means that the power of vision over the margin of the field, although lost for practical use, is retained in the hypnotic stratum, and manifests itself again at the bidding of a hurtful hysterical caprice.

Now compare the result if a hypnotic suggestion is made to the patient with the diminished visual field. Professor Janet, for instance, suggests to her that she can really see with the whole normal field. Apparently this is nothing more than an empty remark from which no results can be expected to follow. But if the patient is suggestible, if a certain appeal—whose nature we must discuss further on—is effectively made to the patient's subliminal region of personality, to the hypnotic stratum in particular, then a result does follow. The power of vision begins to return over the outer parts of the field—fitfully, perhaps, and with relapses: but if the suggestion is repeated the sight is often permanently restored. That is to say, hypnotism has exactly repaired the mischief which hysteria has done. It has acted on the same stratum, but with an increase instead of a diminution of central control. In just the ways in which hysteria can destroy hypnotism can fulfil.

Submergence and Emergence.

In describing that most complex of known entities, the human mind, any physical illustration whatever seems even absurdly inadequate. Yet such illustrations we are compelled to use, and, when not pressed too far, they may be more suggestive than long abstract phrases could be. The notion of upper level, middle level, and lower level nerve centres has started many a fruitful thought. And somewhat similarly this present notion—in which the terms upper and lower are used in a different metaphorical sense, this notion of a kind of stratification of the personality above and below the threshold of ordinary consciousness—will be found to suggest new and practical questions to which it is possible to find some beginning of answer.

Thus, it is now natural to ask whether, if faculty which has existed above the conscious threshold and has been unduly submerged may then emerge again above that threshold, other faculty which has not ordinarily existed above the threshold may ever emerge from beneath it? Does this happen in the psychical storm of hysteria? Does it happen in normal waking life? Does it happen as a result of hypnotic suggestion?

Our answer must be, Yes, it happens in all these cases. Even in hysteria we often observe great tactile hyperæsthesia, as in Binet's experiments, where the hysteric perceived the relieved surfaces on an unknown coin pressed to her skin with a delicacy immensely beyond—fifty times, as Binet thought—the range of normal sensibility.

I do not say that this hyperæsthesia was of any practical use, but it was faculty: it was faculty previously unknown, but borne upwards into the conscious stratum by that same psychical disturbance which carried downwards, and away from conscious control, many more important fragments of that patient's sensory and motor power. From the practical or therapeutic side the hysteria brought nothing but loss to the patient; from the psychological side it brought also a certain gain. For the physician man's faculties exist for the benefit of man: if he comes upon rare and useless capacities, he dismisses them as probably morbid, and at any rate uninteresting. For the psychologist, on the other hand, man's faculties exist for the knowledge of man: the more rare and useless the faculty, the more interest it has for him as a possible inlet into some human mystery yet unexplored.

Hypnotism and Genius.

And here, in this very question of the emergence of unfamiliar faculty from a subconscious stratum, our next step shows us faculty thus emerging which is of real use; products of subliminal mentation uprushing into ordinary consciousness with actual benefit to the waking life. This is the reply to our question asked a little way back: Does this emergence occur in normal life? My answer is that it does, and that when it does it constitutes genius.

Here again the psychological view of human faculty will differ from the æsthetic criterion in much the same manner as we just now saw that it differed from the medical. The æsthetic critic asks whether the thoughts and images which surge up ready made into the artist's or poet's mind—his inspirations, as he calls them—are such as to give delight to other men. Unless they are such, the critic refuses to him the name of genius. To the psychologist, on the other hand, it matters little whether other men find joy in the artist's inspirations or no. The question which interests him is, how those inspirations arise? Can we prove that they were matured by subliminal mentation, beyond the artist's conscious control, and then presented to him as finished products from his subterranean workshops? If so, I submit they all share a certain definite character, to which the name of genius might with real significance, although not with practical convenience, be given. And this is true, although the results which can most easily be proved to be of subliminal manufacture are not likely to be results in the highest order of art. Psychologically the best specimen of genius may be the calculating boy's vision of the product of two factors of six figures each, seen in a flash upon a mental blackboard, with no consciousness of the process by which it was attained. The calculating boy's achievement, indeed, may seem a mere curiosity; but without the type of faculty which that boy has shown, the inspirations of a Shakespeare or a Raphael could never have arisen to bring joy to mankind.

Thus prepared, let us go on to the next question, which today most concerns us, the question whether hypnotism succeeds in bringing up faculty from submerged strata into conscious control or enjoyment. My answer is that to do this very thing is of the essence of hypnotism. We have seen how hypnotism brings up again to the surface the portions of faculty which hysteria has submerged. We have seen also—it is an obvious inference from Dr. Bramwell's cases—how hypnotism acts in parallel fashion to genius, by elaborating subliminally certain intellectual results which are then presented ready made to the waking intelligence. Dr. Bramwell's milliner, computing sub-consciously the far-off dates when her suggestions fell due, is a precise parallel to the calculating boy inspired with arithmetical results reached by no conscious working. Or again, when she solved in the trance a difficulty in her work, and that solution came to her in waking hours as an inspiration, she underwent exactly the poet's experience, though the subject matter may have been only the set of a skirt or the trimming of a bonnet.

That which the gift of Nature does in certain limited directions for some few delicately constructed men, that can hypnotic suggestion do for the ordinary clodhopper, with results of course grotesque in comparison to the triumphs of art, but yet quite as striking in proportion to the common man's inferior powers. That "*objectivation de types*," for example, which Professor Richet has best described, that assumption in speech, writing, demeanour, of some suggested character which is one of the commonest platform phenomena, is in fact an inspiration of genius as remarkable for the rustic as the triumphs of a Duse or a Sarah Bernhardt are for their much higher organisations.

And here I come to one of the commonest phenomena of hypnotism—usually spoken of as a mere jest or a mere indication of the hypnotiser's power over his patient—but which the psychologist, I think, is bound to regard as one of the most striking of all our indications of latent faculty. I speak of the hallucinations which the hypnotiser suggests in the entranced, or sometimes even in the waking, subject. Such a hallucinatory image is, strictly speaking, an inspiration of genius, even if it represents nothing better than a black cat. The painter's highest joy consists in the sudden emergence into perceptibility of some fair form created below the threshold; the "flash upon the inward eye" of some remembered or transmuted image which deliberate efforts could neither shape nor recall. As the Sistine Madonna was to Raphael, so to the hypnotised girl is the delusive cat. The girl in her ordinary state can no more conceive with deceptive distinctness that feline image than Raphael every day could hang in heaven a form of supernal beauty. Hypnotised, the girl can see the creature's very crouch and spring; she has evoked from her subterranean treasure-house of imagination a picture incomparably more vivid than waking effort could have afforded her.

Yet all this lies, so to say, but on the fringe of hypnotic power. The main interest of hypnotism lies in a still deeper evocation of latent faculty. The fact which is bringing hypnotism before the medical profession is not its power to imitate and in some sense to outdo the achievements of genius, but its power to imitate, and greatly to outdo, the achievements of sleep.

Hypnotism and Sleep.

The relation of hypnotism to sleep was the next point marked out for our discussion. Here, again, I must begin by giving to sleep a psychological definition.

I regard sleep as an alternating phase of our personality, distinguished from the waking phase by the shutting off of the supraliminal life of relation, of external attention, and by the concentration of subliminal attention upon the profounder organic life. To sleep's concentrated inward attention I ascribe its unique recuperative power. Our entry into this phase of our personality is not wholly a voluntary thing. Sometimes it is hindered by physical causes, as by pain, always (as some hold) it needs to be helped on by physical causes, as by the accumulation of waste products in the brain. The first obvious effect of hypnotism is to bring sleep more fully under our control. Under hypnotic suggestion people fall asleep without fatigue to help them, and sleep on so that no tortures can wake them—sleep on in the dentist's chair or through the great pain and peril of childbirth. They can remain at will in that regenerative phase of personality which for us needs so much physiological preparation, and is subject to so many pathological checks.

It is, of course, from my point of view perfectly natural that an increase of power over the personality should facilitate our transitions between its different phases. But when a phase so profoundly withdrawn from outward stimulus can thus be produced, ought we to give it the name of sleep, or rather of trance? Trance is the better word; for to identify hypnotic with ordinary sleep is to underrate the modifiability of this almost infinite complex of sentient units which we call a man. I have called the act of falling asleep a passage into another phase of personality; but such passages are like the irregular heatings and coolings of a molten mass; the gaseous, the liquid, the solid state each has certain stable laws of its own; but every transition involves millions of molecular changes which can never occur twice in just the same way. There is something in sleep that reminds one of some increase of internal heat caused by the collapse of a cooled surface; for in sleep, along with the decrease of responsiveness to the external world, certain inward movements become more active, more profoundly recuperative; fulfil more subtly the organism's hidden need. In this respect hypnotic trance is like a further stage of sleep. Not that it is necessarily more lethargic, more comatose; it has forms so alert as to be hardly distinguishable from waking. Trance is a further stage of sleep in the sense that it accomplishes more powerfully sleep's characteristic task; the subliminal plasticity is more marked, the subliminal control intenser; until hypnosis sometimes seems to be to sleep what sleep is to waking.

Hypnotism and Sleep-Waking States.

Nay, more. In ordinary sleep, neither hysterical nor hypnotic, certain phenomena from time to time occur which the physician may sometimes wish to check as inconvenient, but which to the psychologist should yield lessons much deeper than he has yet drawn from them. I speak of somnambulisms or sleep-waking states, which in my view are rudiments of new phases of personality, useless for the most part and destined to be abortive and to die away. To these nascent rearrangements of personality the hypnotic trance furnishes abundant parallels. Sometimes it has even happened that for long periods—in one case at least for a lifetime—the new phase of personality, developed by hypnotic suggestion, has been more salutary for the patient than the old. Here also hypnotic artifice has improved upon the hints which Nature spontaneously gave, and has shown that there is no real certainty that the particular disposition of personality with which each man is born must be absolutely the best for all his life on earth, no proof that the kaleidoscope of his being may not be sometime shaken into a more satisfactory pattern. And setting aside those extreme cases where one phase of personality is marked off from another by an actual break in the chain of memory, many of the sanative changes which hypnotism effects are morally and physically so profound as to deserve the name of regenerations. The suicidal melancholic, the brutalised morphinomaniac are hardly the same persons as the active hospital nurse, the successful man of business, into whom hypnotic suggestion transforms them. And be it remembered that these sanative regenerations are both for physician and for psychologist the *leading facts* of hypnotism—the facts which call most pressingly both for explanation and for development.

I have now briefly reviewed the relation between hypnotism and certain comparable, if not strictly cognate, conditions—namely, hysteria, genius, sleep, somnambulism. I have shown by each comparison that the essential meaning of hypnotism is always the same—a fuller control over subliminal plasticity.

Suggestion and Self-suggestion.

But how, after all, is this fuller control effected? How is this subliminal plasticity—this *vis medicatrix Naturæ*—actually reached? On this question Dr. Bramwell has demonstrated, with all the advantage of actual experience, what some of us foreshadowed long ago—I mean the absolute insufficiency at present of any purely physiological explanation. No such explanation, indeed, now survives with sufficient vitality to be worth the trouble of killing anew. The main consensus of living hypnotists declares that hypnotic phenomena are due to suggestion, almost or quite alone. We need not reject their dictum, but we must make it our task to try and find out what that word suggestion can mean. One thing the word certainly cannot mean, if it is to have any explanatory value at all; and that is—mere ordinary persuasiveness. Dr. Bramwell (to take his own instance) is not the first person who has advised the dipsomaniac not to drink. If he succeeds in reforming such a patient, it is because he has managed to touch not his supraliminal reason, but his subliminal plasticity. He has set going some intelligent organic faculty in the man which has laid dormant till that moment, and which proves more effectual for healing than the man's conscious will. How, then, has he done this? He has either infused power, or he has merely evoked it. Either he has added power by some influence, such as Cuvier and many competent men have believed in—some influence itself subliminal, and akin to what I have called telepathy; or else in some empirical way, not as yet understood, he has simply started a self-suggestion; has unlocked, as I say, some fountain of energy which was latent within the man's own being.

Now for my part I certainly believe that subliminal relations between man and man—influences and transmissions as yet unknown to science—do play a real part in hypnotic phenomena, especially and manifestly in the rare cases of the induction of trance from a distance. But I shall not here insist on these transmissive influences; for I believe that the great mass of hypnotic results can be, and are, accomplished without them, especially and manifestly in the fairly common cases where the subject can bring on the trance for himself, with no external suggestion to help him.

Whether, indeed, those results are accomplished without invoking the same agency, whatever it be, which manifests itself in telepathy, is quite another question. What we see in hypnotism is an apparent dynamogeny, or increase in organic energy; but whence that new energy comes we can only conjecture. As to this, all that our review of hypnotism and allied conditions has made plain is that it is from the subliminal region that any new energy or new modification of energy must needs proceed. Beneath the threshold of waking consciousness there lies, not merely an unconscious complex of organic processes, but an intelligent vital control. To incorporate that profound control with our waking will is the great evolutionary end which hypnotism, by its group of empirical artifices, is beginning to help us to attain.

In waking consciousness I am like the proprietor of a factory whose machinery I do not understand. My foreman my subliminal self weaves for me so many yards of broadcloth per diem (my ordinary vital processes) as a matter of course. If I want any pattern more complex, I have to shout my orders in the din of the factory, where only two or three inferior workmen hear me, and shift their looms in a small and scattered way. Such are the confined and capricious results of ordinary hypnotic suggestion. At certain intervals, indeed, the foreman stops most of the looms, and uses the freed power to stoke the engine and to oil the machinery.

This, in my metaphor, is sleep; and it will be effective hypnotic trance if I can get the foreman to stop still more of the looms, come out of his private room, and attend to my

orders—my self-suggestions—for their repair and rearrangement.

The question for us proprietors, then, is how we can best get at our potent but secluded foremen; in what way we can make to our subliminal selves effective suggestions. And here, I think, we are for the present at the end of theory. We must look for guidance to actual experience; not to the experience of the hypnotic clinic alone, but to all forms of self-suggestion which are practically found to remove and soothe the pains and weariness of large masses of common men. Apart from recognised forms of hypnotic suggestion by others, two popular forms of self-suggestion may here stand, for brevity's sake, as types of the rest. Each of these appeals to deep-seated faiths; each is preached in a crude extravagant form from which the man of science turns with repulsion.

The healing fountain of Lourdes draws its prestige from the ancient belief in beings higher than man who concern themselves with even the details of man's physical welfare. So-called Christian Science—or mind cure, to use its less presumptuous name—while still relying on Christian revelation, appeals most directly to the optimistic instinct in man, maintaining that pain and evil are non-existent shadows, and that the only realities are love and joy. The conception of the miracles of Lourdes is too mediæval, perhaps, to maintain itself for long. The vaguer impulse which prompts to mind cure may prove more capable of adaptation to whatever may hereafter be learnt as to the true relation between man's central will and his bodily organism.

Questions like these as to the relative efficacy of various self-suggestions belong indeed to the inmost meaning of hypnotism; but they lie beyond the facts with which the physician needs at once to deal. What is now to be desired is that medical science should recognise that a new task has opened before her; that these hypnotic artifices, empirical as they may be, do yet lie in the true path of therapeutic progress; that hypnotism is no more a trick than education is a trick: but that just as education develops observation and memory, through alert attention, so hypnotism develops organic concentration and recuperation, through their adjuvant phase of sleep.

Finally, if beneath the fanaticism and the extravagance of men blindly seeking relief from pain some glimmering truth makes way, that truth also it must be for science to adopt and to utilise, to clarify and to interpret. By one method or other—and her familiar method of widespread cautious experiment should surely be the best—science must subject to her own deliberate purposes that intelligent vital control, that reserve of energy, which lies beneath the conscious threshold, and works obscurely for the evolution of man.

III.—David Yellowlees, LL.D., M.D.,

Physician Superintendent, Glasgow Royal Asylum, Gartnavel, Glasgow.

The Uses and Dangers of Hypnotism.

I must express the highest appreciation alike of the striking and forcible address of Dr. Bramwell and of the highly philosophic and admirable paper of Mr. Myers. I believe the popular impression that some mysterious power resides in the operator is unfounded, and that the President, for instance, could exert the same influence as Dr. Bramwell over a hypnotised patient. The essential thing is the abnormal condition induced in a patient. My own experience enables me to believe even in the extraordinary cures related by Dr. Bramwell. I have obtained some remarkable results from my own endeavours. On the whole, however, these have been disappointing, chiefly because I have failed to hypnotise the very patients whom I could most have benefited thereby. I have not persisted in my attempts more than six or seven times, and the attempts have been chiefly among the insane, hence perhaps the very partial success. I cannot regard hypnotism as free from danger, nor think it possible that we could often reach and awaken "the subliminal strata of mind" without the risk of injury. I therefore utterly condemn the use of hypnotism for mere experiment or amusement. As to crime in relation to hypnotism, it may be true, as Dr. Bramwell has said, that a hypnotised patient would revolt from any manifest or gross crime, but might she not be told to sign a document, and very great evil thus be wrought?

IV.—M. Benedikt, M.D.,

Professor of Neurology, University of Vienna.

History, Uses, and Dangers of Hypnotism.

Thirty years ago I began to experiment, and I did not dare to give my experiments the true name; I mean experiments on the line of Lasègue, who first induced me to make them. Some years later, at the time when Heidenhain excited the curiosity of the scientific world in these phenomena, I spoke of mesmerism as a species of *katalepsia artificialis*. At that time we, who were interested in these facts, were treated as scientific heretics. Then came the delirious epoch of Nancy, in which no nonsense was too great to be believed. For some time I made no opposition, because paradoxical phenomena must excite paradoxical faith, to enter and to rest definitely in the beliefs of mankind. But this scientific movement was a danger, because it produced mysticism propagated by novelists and other writers. Then I began to oppose them. To-day we can enter quietly into this discussion, and I will state precisely my experience and my conviction. Hypnotism is a fact, though in reality a very rare fact. Its principal and most interesting phenomenon is the condition of the hypnotised individual. When we eliminate the varieties, we can tell that the state of the psychological organ is a cessation of activity with conservation of the faculty, to be put in action by external influence. This state is a specimen of those which we observe in the winter sleep of the marmots. I call this state in German, "*Starrezustaende*." The special intellectual state in hypnotism we could designate as *flexibilitas cerea intellectualis*. In that state we can suggest to individuals ideas, sensations, and also simple acts, which need no farther complications with autonomous ideas and sensations. Such artificial suggestions can be deposited in the brain of hypnotics, so that they become active in a post-hypnotic state. This post-hypnotic phenomenon—memory—is not so enigmatic as it seems at the first glance. I have proved that the suggested phenomena exist in the memory of hypnotics though they themselves know it not. When, after being awakened, different things and names are mentioned to them, they recognise well those which occurred or were mentioned during hypnotism. The suggestions appear suddenly in the memory, as happens in normal states. The difference is that the subjects do not remember the circumstances under which the suggestion was made, and further this form of suggestion acts perhaps more accurately than analogous incitations in normal states. As to the therapeutic value of hypnotism, there are rare cases which are really benefited by it, and in these this method may be superior as a sedative to all others. In such cases, principally of a hysterical nature, there exists a great liability of the nervous system to convulsions, to severe neuralgia, etc. For reasons which I have already published, I prefer the metallic magnet, which influences the patients as a hypnotic remedy. I would insist that hypnotism should not be abused, because it may become dangerous to the nerves, to the intellect, to the strength of will, and to the character of patients. Hypnotism is also dangerous for the physician because he is easily deceived by the patients, and because he is exposed to great delusions. As the cases benefited are rare, there is no place for hypnotic specialists.

V.—John F. Woods, M.D.,

Medical Superintendent, Hoxton House Asylum, London, N.

Hypnotism in Organic Disease.

Having now treated over 1,000 cases of disease by so-called suggestion I have, like Dr. Bramwell, come to the conclusion that it is a potent remedy, and that much good may be done by it if rightly employed. It is commonly thought that only functional nervous disorders, such as neuralgia, are benefited by this treatment. This is not my experience, and my chief object in speaking is to draw attention to the fact that it is applicable to a much wider field of disease. Let us not forget that the nervous system is implicated in almost all disease, and in so far as we can influence it for good we can benefit the disease. Take the case of organic heart mischief. At first sight it may appear irrational—I had almost said ridiculous—to treat it by suggestion. We must remember, however, that in all cases of serious organic disease of the heart there is a strong nervous element; the patient is apt to

be agitated, perhaps he sleeps badly, or there may be pain. Now, if we can soothe the nervous system, secure sleep, and remove pain—we can do all this—we are going a long way to improve the patient's condition. Moreover, in addition to these general effects we can produce a direct and specific effect upon the heart by placing one hand upon the epigastrium and suggesting that the heart shall quiet down, and beat more slowly and calmly. Again, let us take such a disease as rheumatic fever. It might perhaps be thought that this was the very last disease to be benefited by suggestion, and yet, when we come to think of it, we shall find that the nervous symptoms in it are very pronounced; they are evidently produced by the toxins of the disease. Now, although we are powerless to touch the root of the disease by suggestion, we may do much to alleviate symptoms; by removing pain and mental distress, quieting restlessness, and securing sleep. We may even lower the temperature. This I have succeeded in doing not only in rheumatic fever, but in pleurisy, pneumonia, and typhoid. Nothing could more eloquently show the value of suggestive treatment in diseases other than the purely nervous. I will instance just one other organic disease that can be benefited by this treatment—tabes dorsalis—a very unlikely malady one might think to be improved by it. In a patient now under observation I can always remove the girdle and lightning pains, and improve his appetite, spirits, and sleep. As the result of this treatment, he can now walk much more steadily than before, and considers himself a great deal better than when he first came under observation. One word as to the necessity of sending the patient to sleep. This is, in my experience, by no means essential. I have cured many cases without it; we may often succeed in getting the patient into a receptive condition by making him relax all his muscles to the utmost, and composing himself to complete mental and bodily inactivity. I do not agree with Mr. Myers that hypnotic phenomena cannot be explained on physiological lines. Mr. Myers would appear to assume that the subliminal processes to which he refers are purely psychic. I contend that they must have a physiological basis. Time does not permit me to say more than this concerning Mr. Myers's valuable and interesting remarks.

VI.—CHAS. A. MERCIER, M.B., F.R.C.S.Eng.,
Lecturer on Neurology and Insanity, Westminster Hospital Medical School.

SUGGESTION AND CRIME.

I DESIRE to point out that the cases of suggested crime instanced by Dr. Bramwell are entirely beside the question. He has instanced cases in which it was suggested to a patient that the patient should commit a crime as a crime; but this is not the point. The point is, and the fear is, that a patient may be made to commit a crime which has been suggested to him as a purely innocent act. The common exhibition of the itinerant mesmerists is to make a patient eat a tallow candle on the suggestion that he is eating a stick of celery, or to drink soap and water under the suggestion that he is drinking beer. Why, then, might not a butcher cut the throat of a child under the suggestion that he is cutting the throat of a sheep? Why should he not be made to poleaxe a man under the suggestion that he is poleaxing a bullock? Or, to put a more probable and more practical case, why should not a man be induced to sign an important document under the suggestion that he was signing something of a totally different character, and of no importance?

VII.—JOHN HADDON, M.A., M.D.,
Hawick.

DR. HADDON mentioned a case of convulsions in a young woman cured by the late Professor Hughes Bennett by prescribing a bottle of coloured water, and telling her that if she took it regularly she would have no more fits, and she had not. In this case there was suggestion only and no hypnotism. He related a case in which a man talking in his sleep was made to dance, etc., by his companions in the room. He was in a highly nervous state next day, and had to leave his work and go to bed. Dr. Haddon added that he had himself hypnotised a woman with hysterical paraplegia, causing her to sleep when drugs failed.

DR. BRAMWELL'S REPLY.

DR. BRAMWELL said that he was convinced that no improper influence could be exerted during hypnosis. Patients could neither be induced to commit crimes nor to sign documents which they would have disapproved of in the waking state.

A DISCUSSION ON SUICIDE: ITS PSYCHIATRICAL AND SOCIAL ASPECTS.

I.—JOHN SIBBALD, M.D., F.R.C.P.,
Commissioner in Lunacy for Scotland.

THE STATISTICS OF SUICIDE IN ENGLAND AND SCOTLAND.

DURING the period of somewhat over sixty years since the publication of Quételet's great work, *Sur l'Homme et le Développement de ses Facultés*, when statistical inquiry first began to receive an amount of attention commensurate with its importance, immense masses of material have been collected by Government departments and others. These constitute the principal materials from which statistical science has been built up, and they have been studied, collated, and compared by many distinguished workers. The compilations and digests of the multifarious information furnished by our Blue Books and by similar publications issued by foreign Governments have been of incalculable service in the advancement of knowledge, and everyone who has had to deal with statistical questions must recognise the debt which he owes to the able men who have produced them. But it is also true that many of the sets of statistics given in these works are of little use as bases of comparison between different countries or between different periods. Some sets can be accepted at once as trustworthy bases of comparison, because they represent facts which do not admit of being differently recorded under the influence of different legislative, administrative, or social conditions, or of diverse states of public opinion or sentiment. Examples of these are census enumerators of the inhabitants of different countries, and returns relating to total death-rates. There are other sets in which the value and significance of the numbers are so seriously affected by the conditions just referred to that they cannot be accepted without very careful and critical examination. For examples of these, the statistics of crime and of insanity may be adduced, and the statistics of suicide also belong to this class. It seems to me, therefore, that in regard to such statistics the most urgent matter is to subject them to critical analysis in their details, so that when dealing with the numbers referring to different countries, or to those referring to different epochs in the same country, it may become possible to perceive and measure the significance and value of the figures, and the degree to which they may be fairly comparable.

Suicide Rates for Thirty Years: 1865 to 1894.

Quinquennial Periods.	Average Annual Rates per Million of Population.	
	England and Wales.	Scotland.
1865-69	67	40
1870-74	67	34
1875-79	72	45
1880-84	75	50
1885-89	70	57
1890-94	86	54
1865-94	74	48

I have made an examination of the statistics of suicide as they may be gathered from the annual reports of the Registrars-General for England and Wales and for Scotland, and I select for the present occasion those features of the statistics which bear on the question of the alleged

increase of suicide during recent times. I select the figures bearing on this question because of its obvious importance, and because the statistics appear *primâ facie* to support the view that there is really such an increase. The table on p. 678 gives the suicide-rates calculated on the figures given by the registrars, that is, the annual number of suicides per million of the population for the thirty years 1865 to 1894 inclusive. The rates given are the average rates for successive quinquennial periods.

This table shows, as similar tables for most other countries do, a gradual, though somewhat fluctuating, rise in the suicide-rates during the thirty years. The figures for England and Wales show a rise from a rate of 67 in 1865-69 to a rate of 86 in 1890-94, amounting to an increase of 28 per cent., and the figures for Scotland show a rise from a rate of 40 to a rate of 54, amounting to an increase of 35 per cent. in the same period. The *primâ-facie* inference from these figures is that in England and Scotland, as is alleged to be the case in other countries, suicide is becoming much more frequent than it used to be. We have now to consider how far, when carefully examined, they justify this inference.

We have to recognise on the threshold of the inquiry that it is often difficult, and in many cases quite impossible, to determine whether a death is or is not due to suicide. We thus recognise that we have to deal with figures which rest on a somewhat unstable basis. The registration of a death as suicidal or non-suicidal may be influenced in various ways. One very important circumstance which may have an influence is the reluctance which is felt by relatives and friends to believe that a death has been due to suicide: and this reluctance goes so far in many cases as to result in an effort to conceal the fact, even in cases where there can be no doubt as to its character. As an example of the kind of case where it is impossible to ascertain whether a death is suicidal or not, there is the not uncommon case of a death by drowning where no evidence can be obtained to show whether it was suicidal, accidental, or possibly homicidal. Examples of concealment of facts are not infrequent, and several instances have come to my knowledge since my attention has been specially directed to the subject. I have known deaths due primarily to poison and to cut throat recorded as due to syncope and to pneumonia, and the suicidal origin of these conditions left undisclosed.

There is not time on an occasion such as this to go fully into a discussion of all the sources of error which may be due to the views of relatives, or to the bias of registering or judicial authorities. But it is necessary to take account of the fact that there is a greater tendency to error or misstatement, and consequently to incorrect registration, not only in some localities than in other localities, but also at some periods than at other periods. There is little doubt that in most countries the belief that the act of suicide necessarily involves disgrace has greatly diminished since it has come to be regarded, in at least a large proportion of cases, as the result of mental disease; and it is only reasonable to suppose that efforts to ignore or to conceal its occurrence have correspondingly decreased. It would take up too much time to discuss considerations of this kind fully; but it is evident that they cannot be left out of account when considering the figures.

The rates for England and Wales are shown in the table to be considerably higher during the whole thirty years than the rates for Scotland. This is an interesting fact; but I refrain from discussing it because it does not bear directly on the question of the increase of suicide. I therefore pass on to draw attention to the following table, which gives the percentages of the methods adopted by persons who commit suicide.

It will be seen from the table that all the suicides except 8 per cent. in each country were effected by one or other of five methods. These methods are (1) by firearms, (2) by cutting and stabbing, (3) by poison, (4) by drowning, and (5) by hanging. Let us now examine the statistics of these five different methods. It is evident that the chances of imperfect or incorrect registration owing to doubts as to the nature of a death, to erroneous opinions in regard to it, or to intentional concealment of facts are by no means equal in regard to deaths by the several methods. Errors will be most likely to occur in cases of death by drowning and by poison, and least likely to occur in cases of death by hanging, by firearms, and by cutting and stabbing.

Methods of Suicide.

Methods.	Percentage of Total Number of Suicides by each Method.	
	England and Wales (1865-94).	Scotland (1877-94).
Firearms	6	5
Cutting and stabbing ...	19	18
Poison	12	11
Drowning	21	28
Hanging	34	29
Otherwise	8	8
Total	100	100

SUICIDE BY HANGING.

In regard to death by hanging, it may be assumed that a death by that method can seldom fail to become known, and still more rarely can it be regarded otherwise than as suicidal. We have, in short, in the statistics of hanging figures that may be regarded as substantially trustworthy. I have therefore taken the deaths registered as suicide by that method for England and Scotland during the thirty years 1865 to 1894, and calculated separately the average annual rates; first, for each of the two periods of fifteen years 1865 to 1879 and 1880 to 1894; and secondly, for each of the six quinquennial periods included in the thirty years. The results are shown in the following table:—

Suicide by Hanging for Thirty Years—1865-94.

Periods.	Years.	Average Annual Rates per Million of Population.	
		England and Wales.	Scotland.
Periods of fifteen years ...	1865-79	25	16
" " " ...	1880-94	24	16
" five " ...	1865-69	26	18
" " " ...	1870-74	25	14
" " " ...	1875-79	26	17
" " " ...	1880-84	26	15
" " " ...	1885-89	25	16
" " " ...	1890-94	23	16

We ascertain from this table the important fact that in regard to suicide by hanging, that is, in regard to the most trustworthy section of the statistics of suicide, the rates for the two consecutive periods of fifteen years, though they are considerably higher for England than for Scotland, remain for each country practically identical for the two periods. In England they were 25 per million in the first period, and 24 per million in the second period, and in Scotland they were 16 per million for each period. Here, therefore, there is no evidence of an increase. It will be seen in the second part of the table that when the rates for shorter periods are taken they show some fluctuation from period to period; but this does not invalidate the conclusion based on the larger numbers given by longer periods.

The rates for hanging show, as the total suicide rates show, a considerably higher rate for England than for Scotland; but as I have said already, this does not bear directly on the question of the alleged increase. It is relevant to this question, however, to say that though the statistics of different parts of Scotland (and I have studied the Scottish figures more completely than the English figures) show considerable differences in the rates for different localities; these rates, whether high or low, appear to remain stationary from period

to period. I can only give the rates for the years 1877 to 1894, as the Scottish Registrar does not give the figures for the counties separately before that time. I take, however, the two periods of nine years each, 1877 to 1885 and 1886 to 1894, and calculating the rates per million for suicide by hanging, I find that the counties of Forfar and Kincardine, which have the highest rates, show exactly the same rate—26 per million—for each period of nine years. I find, also, that the group of seven counties which form the south-west district of Scotland show a rate for the first nine years of 14 per million and a rate for the second nine years of 13 per million. We thus find that suicide by hanging remains without appreciable increase or decrease either in the localities with high rates or in those with low rates.

SUICIDE BY FIREARMS AND BY CUTTING AND STABBING.

The figures for suicide by firearms and by cutting and stabbing admit of being considered together. It was assumed in regard to deaths by hanging that they could rarely fail either to become known or to be recognised and registered as suicides. Deaths by gun and knife are in a different position. They also will seldom fail to become known, but it is possible, and even probable, that they will often fail to be recognised and registered as suicidal when in actual fact they were suicidal. The trustworthy figures in this case are therefore not the number of deaths registered as suicides, but the total number of deaths by gun and knife, whether attributed to suicide or not. Fortunately we find all these deaths given in the registrar's reports, either among the suicides or the deaths by accident or negligence. It should not fail to be observed here in regard to the accidental deaths by gun and knife, and also in regard to the accidental deaths by poison and drowning, that none of them are among the class of accidents such as railway, factory, and mining accidents, which may be, and indeed have been, diminished in frequency by more careful administration, and by improved appliances to secure safety. Had they been subject to such influences, some of the arguments which follow would be deprived of much of their value. In the table which follows I give the rates for suicide and accident by firearms and by cutting and stabbing for the two periods of fifteen years 1865 to 1894.

Deaths by Firearms and by Cutting and Stabbing for Thirty Years—1865-94.

Periods of Fifteen Years Each.	Average Annual Rates per Million of Population.					
	England and Wales.			Scotland.		
	Suicide.	Accident.	Total.	Suicide.	Accident.	Total.
1865-79 ...	17	10	27	11	7	18
1880-94 ...	21	7	28	14	5	19

I must treat this very briefly. The table shows in the columns headed "Total" the number of deaths by gun and knife, without reference to the disputable question whether they were suicidal or accidental. The figures in these columns may therefore be accepted as substantially correct, and they afford another instance of remarkable steadiness of rate in each country for the two successive periods. The rates are as nearly the same for each period as it is possible they could be without being absolutely identical. In the other columns headed "Suicides" and "Accidents," we have to deal with figures based on registration liable to be affected by honesty of statement or soundness of opinion. Here we find in the figures referring to both countries that the suicide-rate has risen in the second period, and that this rise is balanced by a corresponding fall in the accident rate. I must leave you to judge what is the legitimate inference from these figures. Is it that the rise in the suicide-rate is to be accounted for by the registration of deaths as suicides in the later period which would have been registered as deaths by accident in the earlier period? To my mind this seems the most reasonable hypothesis.

SUICIDE BY POISON AND DROWNING.

The suicides by poison and drowning still require to be dealt with. I have kept them separate from the others because it might be expected that the statistics relating to them would be more irregular in character that the others. It is the fact also that deaths by drowning are very irregular in number, if they are taken year by year, owing chiefly to the influence of weather in causing disaster on the coasts. But the following table shows that if deaths by poisoning and drowning are taken together for a sufficiently long period the irregularity of the figures is less than might have been expected.

Deaths by Poison and Drowning.

Periods of Fifteen Years Each.	Average Annual Rates per Million of Population.					
	England and Wales.			Scotland.		
	Suicide.	Accident.	Total.	Suicide.	Accident.	Total.
1865-79 ...	21	138	159	11	171	182
1880-94 ...	24	113	137	22	159	181

It would have been interesting had time permitted to discuss the statistics of poison and drowning separately. I shall, however, only point to the figures in the table which show that in their general results they agree with the results in the table for deaths by gun and knife. The suicide-rates rise both in England and Scotland, and the accident-rates decrease. In England the rise in suicide is small, and is much more than counterbalanced by the fall in accidents. The exactness of the balance shown by the rates for Scotland is remarkable, but though it seems corroborative of the hypothesis I have suggested it should, I think, be regarded as more curious than important.

I have now examined very briefly and imperfectly the suicide-rates for all the methods except for those adopted in only 8 per cent. of the total number of suicides. I think I have shown that the deaths by all the methods examined, taking those attributed to suicide and to accident together, have not increased, that there has been a really wonderful steadiness in these rates, and that there is some ground for believing that the apparent increase of suicide shown by the figures in the first table may be accounted for by the registering of deaths in recent times as suicides which would in former times have been registered as accidents.

It may be said that this is only a hypothesis. If time had permitted I could have shown grounds for regarding it as more than a hypothesis. But taking it only as a hypothesis, it must be shown to be untenable before we should be justified in asserting that suicide is on the increase in England and Scotland, notwithstanding the countenance given to that view by a superficial reading of the statistics.

I hope I have not in the observations I have ventured to make given occasion for the oft-repeated statement that statistics can be made to prove anything. There is a fine air of superiority in that criticism; but I do not think it is indulged in by those who have honestly and patiently tried to ascertain the real value and significance of statistics. I am more inclined to hold the view expressed by Henry Thomas Buckle, who described them as a "branch of knowledge which, though still in its infancy, has already thrown more light on the study of human nature than all the sciences put together."

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SUICIDE AS A RESULT OF ERROR OF DIET.

I HAVE for the last ten years[1] been pointing out that mental depression and melancholia are due to defective circulation in the brain; that this is due to the blood being rendered impure by the presence of uric acid, and that this uricacidæmia or collæmia is the result of error in diet, and can be controlled or removed by altering it.

[1] *Practitioner*, 1888.

Causes of "Collæmia."—I must shortly point out the ways in which the blood comes to contain an excess of uric acid. If we could wipe out of our diet two substances, animal flesh and tea, we should almost completely eliminate its pathological excess. Even after eliminating these, the blood will still always contain some uric acid, but it would only rarely and exceptionally contain sufficient to produce pathological results, so that in this country at least all uric acid diseases may in a word be said to be due to poisoning by flesh and tea. Among secondary but still important causes of collæmia (that is, excess of uric acid in the blood in colloid form) are those things which affect the solubility of this substance in the blood stream. Among those which increase its solubility and tend, other things equal, to bring it in excess into the blood are warmth, alkalies, and exercise, which increase the alkalinity of the blood, and certain drugs such as salicylates. Among those which diminish its solubility and tend to keep it out of the blood are acids (contained in beer, wine, flesh, and some cereals and pulses, etc.), cold, or sedentary life; many metals which form insoluble compounds with uric acid. Thus an excess of uric acid in the blood of any given patient may be due to

(1) Direct daily introduction in flesh and tea, etc.
(2) Previous introduction accompanied by deficient excretion or retention, as, to take an extreme instance, in a gouty patient with urates visible all over him.
(3) Excessive formation of uric acid from excess of nitrogen above the physiological requirements of the body: especially if that excess of nitrogen comes from animal flesh, the acids in which lead to retention and accumulation, and hence also tend to produce gout.

Characters of Collæmic Depression.—Mental depression due to defective circulation in the brain may be the result of other causes, such as pressure from tumours or new growths, or thickening of bones and membranes; but the depression from these causes will as a rule be progressive and permanent, lasting from day to day and week to week with little or no change. The special characteristic of the form of mental depression of which I am speaking is that it is temporary and paroxysmal, being present to-day or at certain hours to-day, slight or absent the rest of the day, or completely absent to-morrow. It is also contemporaneous with the presence of excess of uric acid in the blood and urine, and with the effects of this excess on the circulation of the blood (the action of the heart and large vessels as well as the capillary circulation) and the quality of the blood, all of which can be easily demonstrated as they alter and change from hour to hour. Under the opposite conditions of relative absence of uric acid from the blood and urine signs of free circulation and improving blood quality, there is just the opposite mental condition, one of well-being and brightness.

Diurnal, Accidental, and Annual Fluctuations in Collæmia.—There is a high tide of uric acid in the blood and urine every day in the A.M. hours, and there is a low tide in the P.M. hours. This is due to the solubility of uric acid dependent upon the greater or less alkalinity of the blood, which is practically dependent upon our hours for meals, and the acid or alkaline substances they contain. In the A.M. hours, when there has been no food for some hours alkalinity is high; but in the evening, when several meals have followed each other quickly, alkalinity is low. By reversing the meal hours or altering their constituents the alkalinity of the blood can be altered, and then uric acid, and its effects and symptoms, will follow this; and the same can be done with drugs to any desired extent. All through the day there are also secondary waves of *plus* uric acid due to exposure to cold or heat, altered food, or food hours, etc., and if a *plus* wave adds itself on to the large morning excretion, pathological depression may be produced; while if a *minus* wave adds itself on to the low evening tide a condition of marked mental activity and well-being is produced. The excretion of uric acid in the urine is generally a safe index of the amount in the blood. Similarly there is an annual high tide of uric acid in spring and summer, because the alkalinity of the blood is increased by heat; so that spring and summer correspond to morning; and there is an annual low tide in the autumn and winter, because cold diminishes the alkalinity of the blood, and thus autumn and winter correspond to evening and night. When the accidental, diurnal, and annual waves all pull together and flood the blood with uric acid, very important pathological results may be produced; but these have their exact physiological counterparts in the diurnal and annual fluctuations which always occur.

Climacterical Fluctuations.—Similarly there are life fluctuations extending over a series of years. (1) A retention or minus excretion of uric acid during the rapid development of youth, because a large nitrogenous metabolism means, other things equal, a high acidity of the urine and a low alkalinity of the blood; but this retention is followed by a corresponding *plus* excretion later on, when the rapid development and metabolism come to an end. (2) A retention less marked but of longer duration in the high nutrition of strength and maturity, this being specially marked in those who take beer or wine, and thus become gouty; and this also is followed by a *plus* excretion later on as nutrition and activity fail with advancing old age, and the urates which caused gout in the joints in previous years now cause high blood pressure, mental depression, anæmia, and gravel of declining years.

Influence of Hour, Season, and Food on Suicide.—Most suicides take place in the morning hours, which are generally regarded as the time of danger. Most, again, take place in the spring and summer, and least in the autumn and winter.[2] Suicide appears to be less frequent in warmer countries and more frequent in cold; and though it is difficult to distinguish between the direct effects of different diet and the effects of climate it is probable that in those countries which have the longest and coldest winters there will be most retention of uric acid and consequently most excessive excretion in the following spring and summer, with its result, most marked depression and suicide; while in countries of somewhat similar temperature there is more suicide in England, where most meat is eaten and beer is drunk, and less in Scotland, where less meat is taken and the beverage is whisky, which is not acid. The same applies to the pathology and causation of gout. Suicide is believed to be increasing in England, and so is the meat eaten per head of population; and suicide is most frequent in and near large towns, where the supply of meat and the quantity taken by all classes is generally greater. It appears to increase with civilisation and culture, but these tend to go with towns and meat-eating, and we must not lose sight of the fact that those who are led to use their brains are generally led to do so because they have better powers than some of their neighbours, and this better power may depend upon large cerebral arteries, which will be more affected by high blood pressure, as I have elsewhere[3] pointed out in the case of migraine (the uric acid headache) and mental depression, and the same argument will apply to suicide.

Suicide and Sex.—The great preponderance of suicide in males may be due to several factors: (1) That men are more exposed to weather than women and exposure may be equivalent to living in a colder climate, which we have already mentioned. (2) Men eat, I believe, more, often much more, meat than women. (3) Women excrete, as I have shown, large quantities of uric acid every month at or just after the monthly period, so that, other things being equal, they will have less retention and accumulation than men: this monthly *plus* excretion accounts for the fact that when they do commit suicide it is often at the monthly period. Again, women suffer much less than men from gout on the one hand and stone and gravel on the other. In just the same way life fluctuations explain why women suffer more than men from 15 to 20 years of age.[4] The uric acid stored or retained in the rapid nutrition of girls about 13 or 14 which comes to an end about 16 or 17 passes through the blood about and after these latter ages, and accounts for the blood and circulation changes which end in chlorosis[1] headaches, depression, epilepsy, and suicide. The opposite side of this picture is the rapid nutrition and retention of uric acid at 13, with the acute rheumatism it produces; in such girls we often get a complete alternation of rheumatism and anæmia, with headache, epilepsy depression, and suicide as more occasional coresults.

Influence of Age.—A precisely similar fluctuation explains the increase of suicide that takes place with oncoming old age from 45 to 65, the uric acid then coming through the blood being the result of the meat and beer of the previous years of

[2] Some other forms of insanity, bad temper and crime, appear to fluctuate in the same way and for the same reasons.
[3] *Uric Acid*, Fourth Edition, p. 204.
[4] *Ibid.*, p. 406.

maturity, and here also mental depression and suicide are associated with the effects on the blood (anaemia) and on the urine (gravel and stone); thus the gout of 45 is related to the anaemia of 65, as the rheumatism of 13 is to the chlorosis of 17, and the suicide of 65 has a similar causation with that of 17.

Influence of Occupation.—The effect of sedentary occupations in increasing suicide is simple, since, if other things be equal, those in good nutrition will retain more uric acid who are most sedentary, for exercise increases the alkalinity of the blood and sedentary life does not; so that sedentary occupations range with cold climates, and imprisonment is generally equivalent to sedentary occupation. The effect of alcohol is again the effect of meat, for alcohol is generally taken to relieve the depression that meat produces; and if meat is given up alcohol is no longer required. The effect of a military life is probably a mixed one, but among other things we may remember that a Scotch or Irish peasant lad who has been accustomed to get animal flesh about once a week is put on joining the army on to meat once a day or oftener.

Influence of Fever.—During the rising temperature of the onset of the fever there is considerable retention of uric acid from dimished alkalinity of the blood, and when later on the fever comes to an end and the alkalinity rises, the retained uric acid passes into the blood in excess, and more or less depression of body and mind results. Thus influenza, pneumonia, or other fevers, or a shock or injury, may cause what I have spoken of as post-febrile collæmia and depression.

Influence of Pregnancy.—Similarly, pregnancy when normal and accompanied by active metabolism and increase of nutritive activity, produces some retention of uric acid; and when later on nutrition is upset by the vomiting and other disturbances of parturition, the blood is seen to be flooded with much of the retained uric acid, and some mental alteration with homicide or suicide may result. Pregnancy has also precisely similar or parallel effects on headache, epilepsy and other diseases which are related to uric acid in the same way as mental depression and suicide.[5]

Weather and Season.—Suicide is at its worst in the warm months when gout is least frequent, or is at its best in chronic sufferers; and suicide is at its best in cold months, when gout is most frequent, and, indeed, the very uric acid which causes the gout in winter may cause the suicide in the following spring or summer; and even as I write I am told by a patient that she had a splendid winter, and was more than usually well, but now (July) she is complaining of headaches and depression. Cases in which mental depression suddenly clears up on the supervention of an attack of gout are by no means rare, so that I have suggested that in similar cases treatment should be directed to producing an attack of gout.

Bright's Disease.—If I mistake not, this has an important relation to suicide, and this is the disease of all others in which an excess of uric acid in the blood is most constantly met with.

Drugs.—The relation of suicide to drugs is that with drugs very similar fluctuations of uric acid excretion and similar results can be produced. Thus people who indulge in opium, cocaine, alcohol, tobacco, chloroform, or ether, may greatly increase the retention of uric acid, and so increase the amount available for future collæmia, entailing circulatory and mental changes; contact in certain trades with metals, such as lead or mercury, may act in the same way.

Diet.—The relation of suicide to diet is that while sufficient albumens for nutrition may be taken without fear of evil results, if these albumens are got from animal flesh there will be some direct introduction of uric acid, and if tea is taken this will be increased, while if more albumen is taken than is necessary for nutrition, there will be some excessive formation of uric acid, and with either excessive introduction or formation there will be some storage or retention furnishing supplies of poison for future toxic symptoms and results. So that suicide is due to errors of diet which may be either those of quality (meat and tea), or those of quantity (excess of albumens above those required for the proper nutrition of the body, so that too much uric acid and too much urea are formed, some of the former being retained).

Conclusion.—In diet, then, lies the cause of suicide, and in a proper and scientific revision of diet lies the hope of prevention; and this justifies a very hopeful prognosis, as it is quite possible by diet to control completely the uric acid in the body and blood.

[5] *Uric Acid*, Fourth Edition, p. 126.

III.—Enrico Morselli, M.D.,

Director of the Clinic of Mental and Nervous Diseases at the University of Genoa.

Dr. John Macpherson, Honorary Secretary to the Section, in the absence of Professor Morselli, gave an account of the classification of the modes of suicide adopted in the paper, and showed that Professor Morselli concluded that the following characteristics should lead to the opinion that the suicide was in a morbid state:

1. Cruel and slow, or eccentric means of death.
2. Obstinate repetition of attempts.
3. Impulsivity in the form of an obsessing idea.
4. Apparent absence of motive.
5. Heredity of the inclination.
6. Sometimes extraordinary precocity of the suicidal impulse.
7. Simultaneous suicide of two or more persons, or on association with the murder of the whole family.

IV.—G. Fielding Blandford, M.A., M.D., F.R.C.P.Lond.,

Visiting Physician to the Newlands and Otto House Lunatic Asylum.

With regard to the difference in the statistics of suicides of men and women, Dr. Blandford remarked that if we had statistics, not of suicide but of attempted suicide, we should find the numbers would be much more equal. A large number of women attempted suicide, but had not the courage or strength to complete it. With regard to the apparent increase of suicide, and Dr. Sibbald's explanation by the less reluctance to acknowledge it, Dr. Blandford said that during forty years he had found the same reluctance to call it by its right name.

V.—M. Benedikt, M.D.,

Professor of Neurology, University of Vienna.

Professor Benedikt remarked with reference to the causes of suicide, that it could not be supposed that the use of meat and tea was a cause, or at least a principal cause, of suicide. In Italy a great part of the population did not use meat regularly, and tea was not known even by name there. The same was the case in the Alpine parts of Austria; and, nevertheless, in Italy as well as in the Alps, suicide existed. Another important question was how to prevent suicide. Professor Benedikt had frequently seen persons with a manifest tendency to suicide which could have been prevented if the law had given the necessary power for that purpose. The Austrian law required the intervention of a medical officer of the police, and the parents of these unfortunate individuals often could not make up their minds to send them to asylums at the proper moment. The ceremony and the preparation for the transport to the asylum was the most dangerous moment. The fear of incarceration among the insane accelerated the accomplishment of suicide. The physician should have the power to transport such persons without any preceding official ceremony, and against the will of the family, to an asylum under his own responsibility. Many suicides would thus be avoided. Among the causes of suicide he would mention two: (1) Conception without libido sexualis or by a man against whom a woman has a passionate antipathy. Such pregnant women had a great tendency to suicide under the aspect of melancholy. (2) In engaged girls, who feared being compromised in the moment of consummation of matrimony, not being intact virgins, or imagining themselves not to be. They became agitated or melancholics. They had a great tendency to suicide, and Professor Benedikt had known of cases in which suicide had been accomplished. Though he felt sure that this act would be performed he was unable to arrange measures to prevent it. It was a curious fact that persons might be found fainting and completely exhausted by hunger without attempting suicide. This proved that in general a pathological state must predispose to suicide, though it could not be denied that the despair of extreme poverty was one of the many causes of self-destruction.

VI.—David Yellowlees, LL.D., M.D.,
Medical Superintendent of the Royal Asylum, Gartnavel, Glasgow.

Dr. Yellowlees believed that one form of suicide was certainly increasing—namely, that form of sane suicide in which a parent destroyed herself and her children to escape from her misery, and to save the children whom she loved from such a wretched life of poverty and want as hers had been. These cases did not seem to confirm Dr. Haig's idea that suicide was due to overfeeding. Though his paper well deserved careful attention, the dogmas about diet threatened serious results. Starchy foods were utterly condemned, animal food was perilous, we must not touch alcohol, and we must never drink tea. If all this were true, the outlook was serious for the human race. He agreed strongly with Dr. Blandford that, if attempted suicides were registered, the suicidal impulse would be found equally strong among women as among men, or perhaps stronger. It was the accident of the proportion of cases in which the attempt was successful that had given the contrary impression. As to the persistence and ingenuity of suicidal attempts, though the presence of others was the great safeguard, it would not always deter; and he cited a cases in which a man committed suicide in a dormitory in the presence of an attendant and a number of patients, and so peacefully and quietly that the death was not discovered until the patients were roused in the morning. He agreed with Professor Benedikt that there were certain cases which give the impression that they would commit suicide, but there was no more legal power in Great Britain than in Austria to commit such persons to an asylum unless they had shown some other overt symptoms of insanity.

VII.—Alex. R. Urquhart, M.D., F.R.C.P.Edin.,
Physician Superintendent James Murray's Royal Asylum, Perth.

Dr. Urquhart desired to congratulate Dr. Sibbald on having, in the fulness of experience, set before them reasoned conclusions supporting the doctrine of averages. He did not believe that the number of suicides had materially increased for many years past. In their special department they had reduced the suicides to a rate which might almost be considered negligible considering the circumstances under which they worked. He called to mind that, on the appearance of Dr. Haig's book, he had welcomed the opportunity of attempting to treat patients on the lines therein indicated. He was bound to say that the results were practically negative. He had got no results demonstrably different from those previously attained. Of course Dr. Haig's views had been actively opposed, and however valuable they were, however suggestive, he had insuperable difficulty in adopting them universally. His experience was that uric acid was only one of many causes; besides, it would not fit the Scottish nation as a whole, where gout was much less frequent than across the Border. Dr. Urquhart concluded by referring to cases of "sane" suicide, and the legal attitude towards attempts at suicide. He was of opinion that "punishment" of those who attempted suicide should be abolished, and that "treatment" should be substituted. He would be glad to hear suggestions as to the methods which physicians should adopt when brought into contact with persons threatening suicide yet not technically insane.

VIII.—John Macpherson, M.D., F.R.C.P.Edin.,
Medical Superintendent, Stirling District Asylum, Larbert.

Dr. Macpherson looked upon this subject from a somewhat different standpoint from Dr. Haig, although he freely acknowledged that his views on this subject proceeded entirely from the suggestive writings and researches of Dr. Haig. He took issue with Dr. Haig on one particular point. He agreed with Grasset of Montpellier and Crocq Fils of Brussels that uric acid was an early symptom of degeneration. What was degeneration? According to Bouchard a metabolic deviation from the normal type of human being. It was accompanied by a functional and structural change in the nervous system, extending from weakness and exhaustion on the one hand to structural change in its architecture on the other. Added to this abnormality there was the toxic influence of disordered metabolism. Among what class of persons was suicide most common? Undoubtedly among the degenerate as a pure impulse, and among the insane chiefly as an impulse disguised under the "*tedium vitæ*" of melancholia. He believed that the impulse to suicide was not a negative impulse dependent upon the loss of the instinct of self-preservation, but was latent in every man, and was only set free by the withdrawal of other and stronger impulses. The degenerate was the class in which obsession and impulse of all kinds was a predominant feature. Under the toxic influence of uric acid the degenerate became depressed, and in that state of mental depression the mind became subject to obsession and impulse, and especially the impulse to suicide.

IX.—Chas. A. Mercier, M.B., M.R.C.P.Lond., F.R.C.S.Eng.,
Lecturer on Neurology and Insanity, Westminster Hospital Medical School.

Dr. Mercier thought that, whatever truth there might be in Dr. Haig's views, they did not touch the heart of the matter. Supposing that we could positively produce the suicidal tendency by injecting uric acid into the blood, and supposing that we could positively abolish the tendency by sweeping the uric acid out of the blood, we should still be far from a complete explanation of the matter. It was necessary to account for the production of a tendency to suicide. Why did not these causes produce exhilaration or some other mental state? Why was the tendency thus produced a tendency to suicide? It was obvious that, unless there was pre-existing in the mind of man some tendency to self-destruction, no amount of uric acid or of any other factor would account for its appearance. The question was whether there was not in the composition of the human mind as an invariable, constant, and integral constituent a tendency to self-destruction. Dr. Mercier believed that the human mind did necessarily contain such a factor, and that it got possession of that factor in two ways. There were two fundamental constituents of human nature which contained as an essential ingredient a tendency to self-destruction, and exaggeration, excess, or perversion of either of these might produce a craving for suicide. The first of these was the reproductive instinct. Reproduction could not take place without sacrifice of the reproducer. In primordial forms of life reproduction involved of necessity the destruction of the parent. In higher forms of life the destruction was not complete, but every act of reproduction brought the parent within measurable distance of its end. The reproductive instinct involved inseparably the self-sacrifice of the parent, and disorder, exaggeration, excess, and perversion of this instinct might easily produce a direct and powerful tendency to suicide. Dr. Mercier suggested that a second origin of the self-destructive tendency was to be found in the primordial combative instinct, which cultivated a readiness for the individual to sacrifice himself for the benefit of the community, and an exaggeration or perversion of this instinct might account for a direct tendency to suicide.

X.—David Nicolson, M.D., M.R.C.P.Edin.,
Lord Chancellor's Visitor in Lunacy.

Dr. Nicolson thought it was not necessary to go too deeply into the part played by uric acid in inducing suicide or to refine too much upon the metaphysics of the question of suicide. We had to do with the practical question, and this appeared to him to be the mental attitude of the individual to his circumstances and to the conditions under which he was living at the time he committed the act. Whether the view the individual took of his surroundings was normal and correct, or whether it was morbid and exaggerated, or whether it was an insane view, the balance of motives formed the test or criterion by which the desire to live, or the desire to die, or the desire to take his life was gauged. Whatever tended to modify the mental operations of the individual tended to modify his relationship to his surroundings, and in dealing with possible suicides this question became the one to which attention must specially be directed.

XI.—Herbert F. Hayes Newington, M.R.C.S.,
Physician, Ticehurst Asylum for the Insane.

Dr. Hayes Newington said that there was a small class of suicides not so far mentioned—suicide from temper or spite. A boy got a slap from his mother for some peccadillo, and

proceeded to make "a hole in the water." These cases, apparently increasing in number, upset any settled foundation in uric acid or psychological tendencies or other matters.

XII.—JOHN F. SUTHERLAND, M.D.,

Commissioner in Lunacy for Scotland.

DR. J. F. SUTHERLAND said the statistics given by Dr. Sibbald, which were remarkable in several respects, revealed the gratifying fact that there was really no increase between the earlier and later periods selected, but there still remained a striking difference between the rate of England and that of Scotland. Was this a real difference or was the much greater ratio in England in a measure due to the coroner's inquest getting more at the truth than the informal and private inquiry in vogue in Scotland? It would be interesting to know the relationship, statistical and otherwise, of suicide to crime, insanity, and poverty. Did they run on parallel lines suggestive of an intimate connection? While figures were open to doubt in regard to poisoning and drowning, some being suicidal and some accidental, this objection did not apply to statistics of suicides from hanging, gunshot, and lethal weapons. Brouardel, the eminent *médecin-juriste* of Paris, said that in France the growth of suicides had advanced *pari passu* with crime and alcoholism. Dr. Haig's theory of the part uric acid in excess in the blood played was worthy of more attention than it received. The mental depression produced by the uric acid diathesis was well marked, and must be reckoned with in any full consideration of the question.

REPLIES.

After a short reply from Dr. SIBBALD, Dr. HAIG said that he did not claim all suicide as a result of diet, but that the diet should be altered, and the effect of this studied. He did not agree as to degeneracy, but believed that some degeneration also was due to diet. Modification of diet must be tried completely, and all meat, eggs, and fish, as well as tea and coffee, left off.

CLINICAL STUDIES WITH SPLEEN AND THYROID EXTRACTS.

BY

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THE investigation of the therapeutic value of spleen extract by Dr. Campbell Clark, and the results published in the *Edinburgh Medical Journal* a few months ago, were followed by us with very great interest. We had opportunities of studying Dr. Campbell Clark's treatment on the spot, and being favourably impressed with his results, he suggested to us that we should take up the matter ourselves, and make a more systematic and thorough examination of the subject.

The following advice was given us: (1) To persevere with given cases over a long period. (2) To watch them closely long after the treatment ceased. (3) To try a course of thyroid after a lapse of time where no mental recovery had been effected by spleen extract.

We were careful to select comparatively recent cases which had failed to improve under other treatment; some had been resident for one year, others for a less period. These patients were put to bed, rest and hospital routine for a week being all the treatment employed. During this preparatory period the blood was examined, the urine analysed, the temperature registered, pulse tracings obtained, the weight taken, and clinical observations made on the state of digestion, on the nervous system, sleep, and the mental condition.

The number of patients treated with spleen extract was 22, 12 males and 10 females. Physical improvement occurred in 10 males, mental recovery in 5. In 7 females physical improvement occurred, and mental recovery in 3. The male recoveries were 3 from melancholia and 2 from stupor. The females were 1 from mania and 2 from stupor.

The treatment was begun with 3 capsules of desiccated spleen, representing 100 gr. each of fresh spleen; this was increased to 6 a week later. Capsules of liquid extract, each containing 20 gr. of fresh spleen were tried some weeks later, and with more distinct benefit.

The results may be summed up briefly as follows:

The Blood.—An examination of the blood was made before treatment commenced, and on an average four times afterwards at intervals of two or three weeks. In several of the cases marked poikilocytosis was observed in the earlier examinations, and disappeared towards the end of the investigations, the cells then being normal in shape and size. In 3 female patients who showed a decided increase in weight there was practically no improvement in the blood so far as concerned the percentage of hæmoglobin, or the number of red blood corpuscles per hæmic unit; but in all the other cases, with one exception—a case of stupor in a male, who is probably phthisical—there was an increase in the percentage of hæmoglobin, and in a large proportion an increase in the number of red blood corpuscles. It would appear, however, that hæmoglobin is more uniformly affected than the blood cells, except in those cases in which it is near the normal standard to begin with, as it was in the 3 female patients just mentioned. The observation of Dr. Campbell Clark that this method of examination is not exhaustive, as it takes no account of the composition of the blood plasma, or the actual volume of blood in circulation is an important point, because the 3 female patients mentioned improved in weight considerably when under treatment.

Weight.—The weights were taken weekly for about 3 months, and it is noticeable that in the majority of cases the first effect was loss of weight. This was made up after an interval varying from 2 to 3 weeks to a couple of months in all the cases with the exception of 2 male adolescents, who were very much addicted to masturbation. In these cases a slight gain was registered towards the end of the treatment, bringing their weight back to what it registered before treatment. It has been noticed that in some of the male adolescents the loss of weight continued for about 2 months and thereafter a steady and decided increase occurred until they were more than one stone heavier than when they were put under treatment. One young fellow gained 17 lbs. in a fortnight. It would appear as if spleen in these cases, acting like thyroid, increased the destructive metabolism, and that thereafter the constructive metabolism was in excess. The waste, however, was so slight that it is not of serious account as in the case of thyroid treatment.

Pulse, Respiration, and Temperature.—The pulse-rate was increased in nearly all the cases. In the female cases the increase was about 15 per cent., but in the male cases the increase was not uniform, being in some 6 per cent. and in others diminished from 10 to 15 per cent. The same applies to the respiration and temperature. The respiration was not taken in the case of the male patients.

Bowels and Urine.—The evidence on this point was not conclusive when Dr. Campbell Clark wrote on the subject. His opinion that the bowels were more active was probably correct, as in several cases which required frequent enemata before treatment the action of the bowels has been more or less restored. In this connection the case of 2 female patients may be mentioned, suffering from inveterate constipation for years. One of them had been treated with various blood tonics and laxatives in the asylum for eighteen months, lost in weight, became more anæmic, and more constipated. She required enemata every second day, and for the first month when under spleen treatment. Thereafter the bowels began to move naturally, and she is now able to dispense with the laxatives and enemata, which has not been done previously for years. The same is true of the other case mentioned. The urine was collected on certain days with a given dietary, so that a fair comparison could be made. The quantity passed in 24 hours was increased in an average 30 per cent. The quantity of urea excreted was not apparently increased for the first two weeks, but thereafter, in most of the cases, there was a decided increase—in 3 female patients as much as 100 per cent. Remembering that the action of spleen is in many cases slow, and that experiments required to be conducted over a lengthy period, we think that there is positive ground for the opinion that there is increased renal excretion and increased peristalsis of the intestine under spleen treatment.

Sensory Functions.—It was observed in several cases, both male and female, that the pupils, which were widely dilated and inactive before treatment commenced, in a few weeks showed a decided improvement, and after about two months they remained medium, and responded much more actively

to accommodation and light. All the other sensory functions were examined and found normal to begin with.

Mental Results.—In estimating the mental results, in order to give spleen extract the full benefit of the doubt, it is premature to say that its effects are now off in the cases which have not yet recovered. Some of these have attained to such a degree of physical restoration that it is reasonable to suppose that mental recovery may yet take place, as we have frequently observed marked benefit mentally as well as physically weeks and even months after treatment had ceased. The 22 cases under treatment included 3 female patients insane for two to four years, 1 of them a masturbator, and 1 female patient suffering from chronic cardiac disease, who is now very much improved in her bodily health; and although yet showing no evidence of mental improvement may yet do so. There were also 7 male patients addicted to masturbation, of whom 4 have been insane for over two years. It will thus be seen that the cases selected were not of the most promising character, and spleen treatment was tried because every other means had failed. It may therefore be regarded as very satisfactory that 8 out of the 22 recovered. One of these, however, owed her recovery partly to thyroid treatment after a course of spleen treatment had been pursued.

Cases most Suitable for Treatment.—Our experience leads us to believe that the cases most suitable for treatment are adolescents, especially males, in a stuporose state; that next to adolescents melancholics are most likely to benefit from this treatment. In male adolescents only have we seen excitement follow the administration of spleen extract, although we have seen mental elevation after a course of spleen and thyroid. An occasional exhibition of temper has been manifested by adolescents when under treatment, and 4 who were in a quiet, listless, anergic state wakened up into a condition of mania, through which they passed on the way to recovery. Of the 8 patients recovered it may be true of 1 or 2 of them that recovery was still possible in some, at least, without this treatment, but we are positive that the others owe their recovery to spleen extract, in 1 case with the addition of thyroid treatment.

Conclusions.

We would sum up the results of our investigations of the matter so far by stating our convictions:

1. That the most general result of this treatment is physical improvement.

2. That its action on the mental state is undoubtedly evident in a fair proportion of cases, especially of adolescents, sometimes direct, at other times owing to improved physical conditions.

3. That it materially assists in rendering thyroid treatment efficacious, the patient, after a course of spleen treatment, being more susceptible to the action of thyroid.

4. That where it fails there may be a defect in the preparation of the extract. We have found that capsules of the liquid extract are best. They have been made for us by Duncan, Flockhart and Co. The desiccated spleen, which is usually employed for tablets, must necessarily lose some of its active properties.

5. It is best given at least half an hour before meals.

In conclusion, it is not necessary to say more than this: That if a collective investigation of the treatment were taken up and persevered with, spleen extract would prove itself well worthy of a place in the treatment of mental disease.

A CASE OF HÆMATOPORPHYRINURIA.

By R. D. Hotchkis, M.B.,

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My object in reporting the following case of hæmatoporphyrinuria is to place on record a somewhat typical case, so that it may furnish an illustration of the dangers which accompany the administration of sulphonal. The notes are made as brief as possible, the main features of the case alone being included.

A woman, aged 54, was admitted to the Glasgow Royal Asylum on May 26th, 1896. Her mental illness came on gradually about five months before admission, and from being a cheerful talkative woman she became quiet and depressed, and latterly unmanageable. The cause was probably the climacteric period, and the attack was her first. Nothing of importance was noted about her family or previous history.

Physical Condition.—She was a tall, thin, anæmic woman, looking fully her years, with no obvious symptom of organic disease, except slight albuminuria. She was covered with bruises.

Mental Condition.—She was depressed, as was shown chiefly by her anxious and careworn expression. She spoke little and showed considerable confusion of ideas, intensified by her aimless and unreasonable conduct. If interfered with she became resistive, and thus proved very troublesome.

Progress of Case.—Her condition during the first week remained unchanged. Her feet then began to swell. There was a slight amount of albumen in the urine, but no casts. During the next month she continued restless and resistive, confused and stupid, and incapable of rational conversation. She was kept in bed and got abundant nourishment. By July her bodily health had considerably improved, but there was no appreciable mental change. In August she had a relapse, and her condition became serious. She would not keep in bed, but insisted on standing all day, slept badly, resisted everything that was done for her, and soon presented a most miserable and wretched appearance. Sulphonal was now begun in 20 gr. doses at night, and this was steadily given for three months with the result that her restlessness and resistiveness were lessened. The depression and confusion of mind still remained. The dose was increased to 15 grs. night and morning for three weeks, and then for a fortnight it was changed to 10 grs. This brings us up to January 3rd, when the first symptoms of hæmatoporphyrinuria appeared (see below). Death occurred on January 29th. The peculiar coloration of the urine had ceased a week or more before death.

Post-mortem Examination.—The appearances bearing on the case need only be described. The muscular substance of the heart was firm, especially that of the left ventricle, but there was no apparent hypertrophy. The peritoneum was normal, and though the stomach and intestines were rather shrunken, their inner surfaces were natural. The liver was large, soft, and fatty (confirmed microscopically). The spleen showed two infarcts, one hard and the other soft and broken down, forming a ragged irregular ulcer on its convex surface. The substance of the spleen was soft and friable, and showed microscopically slight fatty degeneration. Both kidneys showed signs of chronic interstitial nephritis, the capsules being thickened and adherent, and some small cysts were present. This was confirmed microscopically, and in addition there was seen slight fatty degeneration of the cortical cells. The adrenals were apparently normal, as were also the bladder, uterus, and its appendages.

The stages of this form of poisoning were well marked in this case. There were first acute gastric symptoms shown chiefly by constant retching, vomiting, and soreness over the epigastrium, but no definite tenderness or swelling. This lasted about six days, but there was no sharp line of demarcation between this and the stage of progressive paralysis, which began imperceptibly, and could not easily be distinguished from the general weakness and emaciation. The legs were first affected, and then the arms. Twitchings of the muscles came on six days after the paresis had become apparent, and the muscles most affected were those of the face and the flexors of the arms. Though aggravated by attempted voluntary movement they were always present in sleep. During the second stage the irritability of the stomach disappeared completely, and the patient was able to take without obvious discomfort large quantities of nourishment. The vomit towards the end of the first stage was dark greenish in colour, contained bile, and had a ropy sediment which microscopically was seen to consist of *débris*, squamous cells, and a few altered blood cells. It was acid in reaction and contained albumen.

This urine was tested and examined microscopically every day; it was always acid except for a few days towards the end of her illness, when she suffered from slight cystitis, and the guiac-reaction could never be obtained. The specific gravity varied from 1020 to 1030, and the amount, which could only be occasionally measured, was always small, about 20 ounces in the 24 hours. Albumen had been present in small quantities since admission, and with the onset of the hæmatoporphyrinuria it increased slightly. As the disease progressed the increase became marked, especially after the first week, and remained so till the end. The colour for the first two days was deep claret; then it became light claret, and oscillated between these two shades for the first fortnight, when it gradually assumed its natural colour. The microscopical examination revealed two conditions: for the first ten days generally, though not always, red blood cells were seen shrivelled or disorganised, as though the hæmoglobin was gathered up into a heap. These sometimes formed large, irregular, brown masses. During the last fortnight no blood cells were seen, but distinct granular casts of a tubular shape, and often streaked with brown. The spectroscopic examination showed the presence of a substance either hæmatoporphyrin or allied to it. The blood was examined several times during her illness, and the number of corpuscles varied between three and four million in each cubic millimetre, and the percentage of hæmoglobin was about 65. A few corpuscles were altered in shape, but the change seemed slight.

Her temperature is of interest. At first during the acute

gastric symptoms it was irregular, rising sometimes to 100° and 101°. Towards the close of these symptoms and during the first few days of the paralytic stage it fell to normal, but with the onset of the muscular twitchings it steadily rose, and continued slowly rising till it reached 102° F. the day before her death. The pulse corresponded in rate to the temperature, and gradually got softer and feebler. Respiration became quicker when the paralysis supervened, and towards the end was very laboured and shallow, and occasionally of the Cheyne-Stokes type.

Her mental condition showed no permanent change. One day during the beginning of the illness she was much brighter and more sensible, but shortly afterwards got excited and resistive. A few hours before death her mind was much clearer.

Little need be said of the treatment, although much was tried, chiefly symptomatic. During the first stage she was fed entirely by the rectum, and this did well. After the gastric symptoms passed away she took abundant nourishment by the mouth without apparent discomfort, and this with stimulants was mainly relied on. Iron in various preparations was tried, but without result.

In many other reports of similar cases there has been abundant reference to the literature of the subject, so notice will be only taken here of one case reported by Dr. Oswald at a meeting of the Medico-Psychological Association in 1894. This case also occurred in the Glasgow Royal Asylum, and the symptoms were somewhat similar, except that there were no muscular twitchings. This may be accounted for by the fact that the patient died eight days after the first appearance of the hæmatoporphyrin. Turning to the pathological changes, we find that in both cases the liver showed signs of fatty degeneration, the fat being in a finely divided form. In Dr. Oswald's case the kidneys showed, among other changes, granular epithelium, the outlines of the cells and of the nuclei being almost entirely lost. In the case just reported the naked-eye appearances were those of chronic interstitial nephritis, which was confirmed microscopically, and in addition the renal epithelium was granular, the different cells being difficult to make out. Stress is laid on these changes, as it seems evident that both cases suffered from slight chronic renal disease, during which time sulphonal was being regularly given, and in both the final result was the same. Surely, then, the great lesson to be learned from such cases is never to give sulphonal for any length of time, if indeed at all, unless one is certain that the kidneys are healthy. As the object of this paper is to put on record the clinical symptoms of a case that lasted for twenty-six days, many interesting problems connected with it must be left untouched, as, for example, why the symptoms should be so acutely gastric at first and then completely pass away, to be replaced by paralysis. Nothing, also, is said of the proportionate value of sulphonal as a sedative to its dangers as a poison, though this is the most practical consideration, and one which unfortunately cannot as yet be determined by past experience.

THE NEGLECT OF EARLY TRAINING OF THE MENTALLY DEFECTIVE.

By Walter Bernard, F.R.C.P.I.,

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As far back as 1862 Connolly sent forth a series of papers in which he strenuously insisted that the very first recognition of the mentally abnormal in the child should give the impetus to the immediate adoption of remedial treatment. Since that time my attention has been frequently directed to this subject, and in papers read at the Medical Congress at Rome and at the Royal Academy of Medicine in Dublin I aimed at reawakening a more general and keener interest in a question that to me seems full of importance, and involving an incalculable amount of benefit to humanity.

As a general practitioner I have not travelled beyond the experiences that meet one within the limits of domestic clinical investigations in the homes of the people; but in even this humble sphere there comes to a man such strange instances of infantile eccentricities and curious biases of appetite and passion, that one is roused to ask whether there is a remedy for ancestral defects—may the inherited weakness not even yet be counteracted by an inherited strength from some other source that is lying dormant till we catch the clue or thread that leads us on to it? Is it not within the probabilities of medical attainments that we may "minister to a mind diseased" most successfully if we only begin early enough?

I have grouped my views in a few general propositions, which I submit for approval or improvement.

(1) Is not the first manifestation by an infant of mental peculiarities or deficiencies capable of being met by such methods of corrective suggestion, and appeals to imitativeness that the pathological in the child may gradually be guided towards the physiological? May not the adoption of a well-ordered and comprehensive domestic treatment, begun at the very first indication of mental disorder in a child, prove strongly ameliorative and perhaps abidingly effectual?

(2) The special treatment, or education of the separate faculties or characteristics of temperament in life's earliest days, has not received any or much attention from the medical world.

(3) Though medical councils and examining bodies have set out that the practitioner shall possess a knowledge of the ordinary signs of insanity, they have asked for no education as to the earlier recognition of the abnormal and imperfect, or undeveloped mental sides of infant life.

(4) It is not to the recognised treatment of insanity in its later stages, neither is it to the specialist or expert in these matters that the practitioner can look for aid in the early recognition and treatment of mental mischief in the child.

(5) If the practitioner be in a position to give first aid in the treatment of mind deficiency in the child, he may save what otherwise would be a life-long sorrow and regret. It is an accepted fact that early mental sanitation has a diminishing force upon the frequency or recurrence of insanity.

(6) That should this Association devote itself to a thorough examination of this question, and formulate and ratify with the stamp of its approval some rules of guidance appropriate for ordinary medical practice in home life, it would be an immense boon and gratefully recognised as such.

The books already in existence on kindred subjects I acknowledge as works of great use, for which I feel deeply grateful. But these books deal with the patient at a time when life has already swept the circle of several years; the child has reached the stage which in normal children would be marked by speech, memory, and intellect generally, and meanwhile the child in which all these things are lacking has been left not only unaided but actually unattempted.

Can this Section, or some members of it specially interested in this question, not devise a time table for infants which as infants are seen to be mentally deficient? Say: (*a*) Rules of guidance before dentition; (*b*) rules during and immediately after this stage; (*c*) rules up to the third and fourth years, when the books of various recognised writers on the subject of mentally deficient children will come in as valuable aids.

Peculiarities of infantile life indicative of departure from the normal may be detected:

(1) At the very beginning of life among the unconscious but instinctive muscular actions, such as respiration and the action of lips and tongue when engaged in deriving nourishment from the mother. Again the mode in which anger or grief, or the various child emotions are given expression, either in their depth, vivacity, or almost absence.

(2) The process of growth, muscular, physical, or mental, is a field wherein instructive observations might surely be made. Is there normal progress made by the infant in all these departments? If not, is any one side overshadowed by the other, cast out of balance or gear, and, if so, where and how can it be avoided.

(3) Where the powers of speech are gained these observations and the guiding value of them may be made surely much more minute and full of interest.

Discussion.

Dr. Shuttleworth was glad to find that Dr. Walter Bernard laid stress on the desirability of the early recognition and treatment of mental deficiency. That was carrying out the doctrine of the great pioneer in the system of training defective children—Dr. Seguin—that the education of such should commence from the cradle, and that mothers should be taught to be efficient instructors. It was important that

medical men also should be familiar with the physical signs which betokened mental deficiency long before backward powers of walking or of talking were noticeable, these being often the first indications recognised by the parents themselves. In these days of child study there was encouragement in giving hints to parents as to means whereby they might early test the mental as well as the physical powers of their offspring, and frequently appropriate exercises might be recommended to counteract muscular incapacities. The formation of bad habits might be prevented by early and methodical training (for example, as regards regularity of evacuation and the avoidance of drivelling). This sort of parental care would be a valuable preliminary to the educational training which was now beginning to be supplied for defective children, not merely in institutions for idiots and imbeciles, but by many of the more important School Boards throughout the country. Dr. Shuttleworth agreed with Dr. Bernard that a code of instructions for the treatment of defective children during the early period of infancy would be of practical utility, and would much help in the preparation of the pupil for the mental training appropriate to his condition.

Dr. Fletcher Beach said that early diagnosis was no doubt an important point, and not only mothers, but medical practitioners required instruction on this point. The points on which early diagnosis rested were mentioned in books and papers, and could be consulted by those interested in the subject. The causes of the mental defectiveness in children were well known, and among these heredity, as in insanity, played a very important part. So important was this cause, that Dr. Beach believed its presence prevented good results following the early training of these children. Intemperance also was an important cause, but some considerable time must elapse before it could be fully eliminated. One important association doing good in the early training of defective children was the National Association for the Welfare of the Feeble Minded. For some time past small institutions capable of accommodating twenty inmates had been started in various parts of England. Formerly girls aged 16, owing to their feeble moral character, went into the workhouse to be confined of children of feeble mental condition. Now girls of this kind were received into these homes, and though there was no legal detention, yet they were made so happy and comfortable that they remained there and led happy and contented lives. In this way the production of feeble-minded children was lessened, and some of the more favourable cases were able to go into service in the neighbourhood, under the supervision of ladies in the locality who were interested in them.

ANALYSIS OF THE OCULAR PHENOMENA IN FORTY CASES OF GENERAL PARALYSIS OF THE INSANE.

BY

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and

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Among the many points connected with general paralysis of the insane on which wide differences of opinion exist, there is one regarding which all are agreed—namely, the frequency and diagnostic importance of the ocular phenomena, which indeed, in one form or other, are never wanting at some stage of the disease.

Scope of Inquiry.

The observations forming the basis of this paper were made at the Richmond District Asylum, Dublin, on 40 cases of general paralysis, together with 16 cases of other forms of insanity somewhat resembling the severer malady, which have been retained for purposes of comparison, and include 11 cases of alcoholic dementia, 1 case of congenital weak mind, and 4 cases of paranoia.

The cases of general paralysis were unselected, except in so far as to ensure a reasonable certainty of diagnosis, and include 35 men and 5 women. With two exceptions they were all in the pronounced stages of the disease, the two alluded to being rather early cases; but they presented a considerable variety both in mental and physical symptoms, and are, we believe, fairly representative of the different types of the disease, some closely approximating to the old-fashioned clinical picture, others diverging more or less widely from it. Thus as regards the mental symptoms, though all demented in some degree, 12 are noted as elevated at or about the time of our examination, 12 as depressed, and in 16 the dementia was the leading feature, while 19 certainly and 1 probably had grandiose delusions at the time of examination and 5 at previous times, that is, 50 per cent. in all; 8 had more or less melancholic delusions (20 per cent.), 1 had delusions of orientation only, and 11, or 27.5 per cent., do not appear to have had any delusions whatever.

On the physical side it may be noted that of the 34 cases in which the point was observed, gait was in some way affected in 21, while of the remaining 6 cases 1 had Charcot's disease of both knee-joints, and 1 was too weak to stand. Tremor of the tongue was noted in 34 out of 39 cases (over 87 per cent.), speech was affected more or less in 31 out of 40 cases (77.5 per cent.), and there was alteration of myotatic irritability on one or both sides in 36 out of 38 (94.7 per cent.), increase in 21, decrease in 14, while 1 showed increase on the left, decrease on the right side. The ages of the patients are also fairly representative, the youngest being 24 at the time of admission, the oldest 50, while the majority of the cases (26) were between the ages of 30 and 45. The control cases are fairly comparable as regards age.

As regards etiology, antecedent syphilis was ascertained in 11 cases, probable in 6 more, 17, or 42.5 per cent. in all, but in no case was it excluded. Alcoholism was certain in 17, probable in 5 cases, 22 in all, or 55 per cent. In 12 cases the two antecedents (certain or probable) were present together.

The Ocular Phenomena.

Palsies of external ocular muscles were present in 5 cases:—

Case I.—P. D., a probable syphilitic, had left ptosis, with diminution of the consensual and associative, and absence of the sympathetic, reflexes, and reduced myotatic irritability on the side of the ptosis. Four months and a half later the pupils were as on the previous occasion, except that the sympathetic reflex seemed in some degree to have returned, but the knee reflexes were now exaggerated, and at the same time the left eye was turned inwards; there was diplopia, the left image being widely separated from the right, on a higher level, and the upper end tilted inwards.

Case II.—P. M., there was slight ptosis, especially on the right, the knee reflexes were both increased, and the gait was ataxic, but the pupillary reflexes were not very abnormal, though the associative reflex was unfortunately not tested at this time. The sympathetic was noted as absent.

Case III.—T. M. D. had slight right-sided ptosis, and it is interesting that on this side there was total iridoplegia, but a normal tendon reflex; while on the left there was reflex iridoplegia and a reduced tendon reflex.

Case IV.—J. D., a syphilitic and alcoholic case, who was blind from optic atrophy, had slight nystagmus only, with total iridoplegia (the accommodation reflex, however, could not be tested), and reduced knee reflexes.

Case V.—J. C., a probable syphilitic, had convergent strabismus, apparently due to paresis of the right external rectus. He had been treated years before his admission for this lesion, which had yielded to antisyphilitic treatment. The pupillary reflexes were all present except the sympathetic, but the consensual reflex on the right side was reduced. The knee reflexes were reduced, and Romberg's symptom was present, though the gait was not abnormal.

In all these cases, therefore, there was evidence of spinal implication. Three of the five were certainly or probably syphilitic. None of the control cases showed such lesions.

Of the pupillary anomalies one of the most frequent was inequality, which was observed in 36 out of 39 cases (92.3 per cent.), while in two more it appeared on dilatation with atropine. The right pupil was the larger in 25, the left in 11 only, the reverse of the conditions found by some other observers. As the control cases showed inequality of the pupils in 12 out of 16 cases (75 per cent.), and as the condition appears to be not uncommon in other forms of insanity not resembling general paralysis, and is not unknown even in health, we are inclined to agree with Siemerling,[1] that the symptom does not deserve the importance formerly assigned to it. Any value it possesses is purely negative.

As regards the size of the pupils, we find that it has only been noted in 23 cases, but our impression is that it was medium in the others—this, however, is merely mentioned in passing. Of the 23 cases, 8 are noted as showing mydriasis of both eyes, while 6 showed myosis of both eyes, and 3 of 1 eye, and in 1 case there was mydriasis of the right, and myosis of the left eye; total 18 cases (or 78.2 per cent.) of abnormal size. None of the cases showed "pinhole"

pupils; 2 mydriatic and 3 myotic cases had reflex iridoplegia, and 6 mydriatic and 7 myotic cases had altered knee reflexes, and this was also true of the case in which one eye was mydriatic and the other myotic. Lastly, 2 mydriatic cases showed marked changes in the fundus, and also 2 myotic cases, while the double case above alluded to had advanced atrophy of both discs.

Irregularity of outline in one or both pupils was noted in 37 out of 39 cases (94.8 per cent.), but as this condition was also present in all the control cases except one, we are unable to ascribe to it any great practical importance, though its absence would be to some extent against the diagnosis of general paralysis.

Of the reflexes, the sympathetic is that which we have found most frequently impaired, and this corresponds with Dr. Bevan Lewis's observations.[2] The tests used by us were pinching or pricking the neck or stroking the face, and to these we found that the pupils, one or both, failed to act in 33 cases, and reacted badly, if at all, in 5 more—38 out of 40, or 95 per cent. in all; but we believe this symptom to have also merely or mainly a negative value, since in 14 out of the 16 control cases it was present, and since, as numerous observations made by one of us have shown, absence of the sensory reflex is by no means uncommon in asylum patients over middle age. Next in frequency came absence or impairment of the consensual light reflex, which was noted in one or both eyes in 27 out of forty cases (67.5 per cent.), and existed without impairment of the direct light reflex in 11 cases, though in two only of these was it actually absent. The direct light reflex was absent or reduced in one or both eyes in 17 cases (42.5 per cent.), while the associative reflex was absent from both eyes only twice, from one eye four times, and was reduced in one or both eyes in 14 cases altogether out of 39 (35.9 per cent.), being thus the least frequently affected of all the pupillary reflexes.

Control Observations.

Of the control cases, the direct light reflex was only abolished in 1 case, though somewhat impaired in 4 more; the consensual abolished in 1, impaired in 5; the associative abolished in 1, impaired in 1; and Argyll-Robertson pupil was never present in complete form. The case in which the associative reflex was lost was the same in which the others were lost also.

Coming now to the associated reflex lesions, we find that the Argyll-Robertson pupil has occurred less frequently in our cases than some other observers[3] state to be the rule. We have found it present in complete form in both eyes 5 times, in one eye 3 times, while in another case in which the associative reflex appeared reduced it may not have really been so, as one eye was altogether destroyed, and the other was blind from optic atrophy. In the 3 cases of unilateral reflex iridoplegia, the second eye showed a total iridoplegia. In 3 more cases the reaction was present in imperfect form, either because the light reflex was not wholly lost, or because the associative reflex was also reduced. Thus there were 12 cases in all out of 39, or 30.76 per cent. Of these cases, 1 had optic neuritis and 1 advanced atrophy. Both knee reflexes were increased in 4 cases, one in 1 case; both were reduced in 3 cases, one in 1 case—9 cases in all; while in 2 cases they were normal, and the remaining case had Charcot's disease. Syphilis was certain or probable in 6 cases, or rather over the general average.

Total iridoplegia was present in 2 cases only in both eyes; in one eye in 3 cases, the other eye showing reflex iridoplegia, as just mentioned. One of the cases in which both eyes were affected had advanced optic atrophy, sight being reduced to perception of light. In both these cases there was marked dementia, the gait was affected, and the knee reflexes increased.

Our general conclusion from the above and other facts is that the sensory or sympathetic is the most commonly affected of the pupillary reflexes; that involvement of the light reflexes comes next in order of frequency (the consensual being rather oftener affected than the direct light), though the associative reflex may be impaired while the light reflex is normal; and that the associative reflex is very seldom abolished, and relatively seldom impaired. As showing the diagnostic value of reflex anomalies it may be repeated that in the control cases, although, as has been mentioned, the sympathetic reflexes are noted as having been abolished in 13 out of 16 cases, no other reflexes were abolished except in a single case of total iridoplegia.

Ophthalmoscopic Appearances.

We were able to examine the fundus in 30 cases, though sometimes with difficulty. Of these, 3 cases showed advanced atrophy, the discs being white and sight lost in 2 cases, reduced to perception of light in the third. One case showed pronounced optic neuritis, the discs being red and blurred—this was the case in which Charcot's disease was present; and in 3 cases there were signs of slight early neuritis. One case showed slight neuritis, probably of a chronic character, and the white lines along the vessels which are generally believed to indicate a bygone retinitis. The latter condition has been described by Magnan[4] as occurring in general paralysis. There were thus 8 cases out of 30 (26.6 per cent.), or rather over the usual proportion (17 or 18 per cent. or under, as given by the more recent observers)[5], which showed ophthalmoscopic changes; but in addition to these a certain number of cases—6 or 7 more—showed doubtful appearances which may possibly have been morbid. Of the control cases, 3 showed some in distinctness of the discs, in 1 of which there was enlargement and tortuosity of the vessels in addition. Only 13 were fully examined, however.

In conclusion we desire to express our thanks to Dr. Conolly Norman for the facilities which he has afforded us in our work.

References.

[1] *Neurolog. Centralb.*, 1896, No. 20, p. 942. [2] *Textbook of Mental Diseases*, p. 274. [3] O. Schwarz, *Bedeut. d. Augenstör.* etc., p. 42. [4] Quoted by Gowers, *Medical Ophthalmoscopy*, 3rd edition, p. 207. [5] See Lawford, *Dict. of Psych. Med.*, p. 490.

Discussion.

Dr. Conolly Norman said that it gave him particular satisfaction to say that he had learned much from the careful work which his friend, Dr. Dawson, and his assistant, Dr. Rambaut, had done in his asylum. He, like every other busy clinician, had formed certain rough and ready notions about these matters, and it was necessary occasionally to revise them by such careful work as that brought before the Section. For example, he had been in the habit of teaching that irregularity of the pupils was the most constant and characteristic ocular phenomenon in general paralysis. That it was constant Dr. Dawson's paper showed, but its value was diminished through his careful control observations. Dr. Norman did not think that the proportion of syphilitic taint shown in these cases represented the real state of affairs. It was an underestimate. Casually this paper showed, Dr. Norman said, that the delusions formerly entertained—that exaltation was the almost universal condition in general paralysis—deserved to be exploded, together with that other old delusion to the effect that general paralysis was not known in the Island of Saints.

Dr. Wiglesworth (Rainhill) remarked on the somewhat large proportion of cases of paralysis of the third nerve in the cases described by Dr. Dawson, paralysis of this nerve being very uncommon in general paralysis; probably most of these cases were syphilitic. The percentage of cases of optic nerve lesions found by Dr. Dawson was also somewhat higher than that observed by Dr. Wiglesworth. Optic nerve atrophy, though usually a late symptom, occasionally occurred early, before, indeed, any symptoms of mental disturbance, and thus occasionally became of diagnostic value.

Dr. John Macpherson (Larbert) thought the care and accuracy with which this subject had been handled by Drs. Dawson and Rambaut could not be praised too highly. The paper was a clear scientific investigation into clinical facts which were of the highest diagnostic importance in relation to general paralysis. If it missed anything, it was a failure on the part of the authors to assign to these ocular symptoms their real value in the diagnosis of the disease. In his experience the ocular symptoms were not always constant, and were often subject to variation in the individual cases. For instance, the pupillary anomalies which were for ordinary purposes the most easily recognisable, and therefore the most useful aids to diagnosis were subject to great change from time to time. A patient might exhibit inequality of the pupils, irregularity of their outline, contraction or dilatation,

at one time of observation and at another time these phenomena might be absent. Again, the reaction to light and to accommodation might be so sluggish as almost to appear absent, or the Argyll-Robertson phenomenon might be apparent for weeks, while during a subsequent period of the disease the reaction both to light and to accommodation might be normal. He deprecated the tendency of the authors of the paper and of the subsequent speakers to distinguish the ocular symptoms of the syphilitic from the non-syphilitic cases. Views with regard to the origin of general paralysis were undergoing a profound change. Most of the highest European authorities were agreed that the great majority of cases of general paralysis were of syphilitic origin, but they did not look upon it as a syphilitic disease, but as a nutritive sequela of syphilis—a parasyphilitic affection. It was not denied that other constitutional disorders might produce general paralysis, but there was no legitimate distinction which could possibly be drawn between the two.

Dr. Dawson, in reply, said that he agreed with Dr. Norman that the irregularity of the pupils had little diagnostic importance positively, though it had a negative value. He thought the fact that it was difficult to find 40 cases in an asylum of 1,800 patients showed that there was at least not much general paralysis in Ireland. The optic neuritis in one case at least did long precede admission to the asylum. He did not believe that the percentage given at all represented the proportion of syphilitic cases, as in most cases, no history was obtainable.

A GRAPHIC METHOD OF CASE RECORDS IN ASYLUMS.

By Geo. R. Wilson, M.D.,
Medical Superintendent of Mavisbank Private Asylum, Polton, Midlothian.

Dr. Wilson submitted diagrams of two charts—a 28-day chart and a 6-monthly chart. These were designed to ensure a more particular and more individual method of recording routine treatment and symptoms in mental cases. The daily chart, in particular, which was used in about 6 per cent. of the cases, gave at a glance a useful indication of the patient's weight, hours of sleep, the mental state, hours of occupation, hours in the open air, motions, appetite, menstruation, convulsions, any other special symptoms and treatment, including supervision. Anyone desiring copies of empty charts can obtain them by applying to Dr. Wilson; and the full charts in use might be seen at Mavisbank.

ON PAUPER LUNATICS IN PRIVATE DWELLINGS.

I.—SCOTLAND.

By Edgar Hogben, M.D., M.R.C.P.,
Strathmiglo, Fifeshire.

The system of dealing with harmless pauper lunatics by placing them in private dwellings is one which has prevailed for many years in Scotland. The total number of pauper lunatics at January 1st, 1898, is shown by the official returns of the General Board of Lunacy to be 12,361. Of this number 8,786 are in asylums, 921 in lunatic wards of poorhouses, leaving 2,654 who are placed in private dwellings.

Scotsmen have the reputation of keeping a keen eye on the pecuniary aspect of any question. From an economic point of view the system of leaving the insane in private dwellings is highly commended because by it a considerable saving can be effected. Motives of economy, perhaps, in the first instance prompted the parochial authorities to adopt this system. It should be remembered, however, that the lunatic asylum in Scotland is a creation of modern times. In former days the insane pauper was not confined unless he made himself amenable to the criminal law. The village idiot and harmless imbeciles were often maintained by doles from the Kirk Session, the functions of which in relation to the poor were subsequently discharged by the Parochial Board, and now at the present time by the Parish Council. In this way there had existed in Scotland a large number of insane poor placed in private dwellings at a time previous to the General Board of Lunacy beginning its operations. It was only natural to expect that the parish authorities should persevere in the thrifty methods long in vogue in rural parishes. At the present time patients are maintained at something a little over half the cost of inmates of asylums. The ratepayers are saved the expense of large buildings, and a considerable part of the yearly outlay which would be necessary to maintain patients in asylums. The private dwellings also tend to relieve overcrowding in asylums by receiving occasional drafts of unrecovered harmless patients. In this way the necessity for further extension of buildings is removed to a certain extent, and accommodation is left free for the more acute and urgent forms of insanity. The want of some sort of provision to relieve the asylums of their chronic patients is much felt in parts of England and in Ireland. In the latter country, indeed, the overcrowding in asylums is notorious, and the increase of pauper lunacy is a difficulty causing serious anxiety.

Legal Control of Pauper Lunatics.

Every pauper lunatic in Scotland, whether he be in a public institution for the insane or in a private dwelling, comes directly under the supervision of the General Board of Commissioners in Lunacy. A central administration of this sort is peculiar to Scotland. In no other country are all the rate-aided and State-supported lunatics immediately subject to the control and inspection of a central authority. The patients provided for in private dwellings with the sanction of the Board were on January 1st, 1898, 2,654. Of these 1,009 were with persons who were related to them. This class includes a few, a very few, quiet and harmless imbeciles who are allowed to live alone. The remainder, 1,645, were boarded out with persons who were not related to them. The pauper patients living with relations are accommodated singly in houses which require no special licence. Of the others, namely, those with strangers who are not relations, the larger number are accommodated in houses specially licensed to receive two, three, or four patients.

The legal procedure affecting the pauper lunatic in Scotland is comparatively simple, and yet amply safeguards the interests of the poor and the liberty of the subject. Each parish with a separate civil administration has a principal executive officer called the inspector of poor. He has to look after all persons who become chargeable to the rates. It is his duty to notify and obtain medical certificates in each case of lunacy, where relief is claimed, and subsequently to provide for the care of the patient. An inspector of poor may send an insane person directly to the asylum upon a certificate of urgency signed by the parochial medical officer. The more usual way is to obtain an order from the sheriff for the admission of the patient to an asylum. Two medical certificates are necessary. If the patient be harmless, and the medical certificates testify to that effect, the inspector of poor may leave or place him in a private dwelling under suitable guardianship. A warrant of the sheriff is required also in such a case, as well as the sanction of the Commissioners in Lunacy. Pauper lunatics who are not completely recovered, if they be not dangerous, may be removed from the asylum, and placed under the care of "properly remunerated, efficient, and trustworthy guardians" in private dwellings. Lastly, patients may be boarded out on probation for a period—a most useful adjunct to asylum treatment.

Experience of Boarding-Out.

Small settlements of pauper lunatics from large urban parishes are now scattered all over the country from the Shetlands to Dumfries, and from the East Neuk of Fife to the outer Hebrides. Fife has for a long time been regarded by the parochial authorities of our large towns as a county which offers special facilities for the boarding out of harmless lunatics. My experience of this class of patient, though confined to those settled in my own district, will be sufficient to illustrate generally the manner in which the system works and the nature of the homes in which the patients are placed. The rural parts of Fifeshire are dotted over with quiet villages and hamlets consisting for the most part of cottages built in the days when the handloom was a flourishing industry. The population of the villages is small in proportion to the house accommodation. Elderly couples without families, and women living alone are often to be found in cottages with ample spare room. The local industries are not sufficient to attract male

lodgers of the working class. The agricultural labourers are provided with houses on the farm at which they work. For the most part the young men have to leave their homes to seek employment elsewhere. In some of the farmhouses where the farmer himself belongs to the working class excellent accommodation can be found. As long ago as 1862 the City Parish of Edinburgh began to board out its patients in the village of Kennoway, Fife, and the example of that parish was soon followed by the St. Cuthbert's Combination of Edinburgh parishes. The Barony Parish of Glasgow and Dundee have also quartered their patients in various localities in Fife. The result has been that in certain villages there has been an excessive number of insane patients, and these aggregations have been objected to by some of the inhabitants. The General Board of Lunacy has in consequence restricted the number of patients in certain parishes in Fife. Of late years inspectors of poor give the preference to small farms and rural homesteads at some distance from the larger villages.

Householders who undertake the care of insane persons in their dwellings are termed guardians. In the case of pauper lunatics they are selected by the inspector of poor of the parish to which the patients are chargeable, and their appointment is subject to the approval of the Commissioners. It is obvious that great care must be taken that guardians should be persons of good character and capable of discharging their duty to the patients. In a country district the urban inspectors of poor have to depend largely upon the recommendation of the local medical man, or other persons of repute in the neighbourhood. Intelligent and tidy cottagers and small farmers are given the preference as being likely to be more companionable to their patients. The house should be comfortable and dry, and there should be a garden for outdoor exercise. The utmost care is taken in selecting the patients who are boarded out. In a great many instances they belong to the congenitally imbecile class, and have never been in an asylum. Roughly speaking, about one-half of the insane poor in private dwellings suffer from mental defect of a congenital kind, and the other half from acquired mental disorders. Until recent years by far the greater bulk of the boarded-out patients belonged to the former class, but lately a larger proportion of unrecovered chronic lunatics have been removed from asylums and placed in private dwellings. In the imbecile and idiot class patients from asylums compare favourably in respect of their habits with those who have not had the advantage of previous training and discipline. Guardians have a good deal of trouble sometimes with untidy patients of this kind.

The form of insanity from which the patients under private care suffer is not always distinct. Exact classification in some cases is impossible. Too much importance should not be attached to the terms mania, melancholia, and dementia. These conditions or phases of mental disease are apt to merge into each other in chronic patients. Other considerations, such as general character, temper, conduct, habits, and physical infirmities have to be taken into account when it is proposed to remove the unrecovered from the asylum. By a recent regulation, the local medical officer is furnished with a statement as to the condition and past history of each new patient from the asylums, for the guidance of those who are to have charge of him. As a proof of the wise and careful manner in which the patients are selected may be cited the fact that accidents, deeds of violence, and outbursts of acute insanity are extremely rare. On the other hand, complete recovery is not uncommon, and the returns to the asylum are for the most part due to bad temper, unmanageableness, defective habits, or bad health requiring hospital treatment.

Supervision.

The supervision exercised over these patients is perhaps as complete as could be, considering that many of them are placed in remote localities. The inspector of poor or his deputy visits each patient twice a year or oftener, and sometimes he is accompanied by a committee of the parish council. The Deputy Commissioner of the Board of Lunacy visits the villages in Fifeshire two or three times a year, and his inspection is always of the nature of a "surprise visit." The local medical officer pays four statutory visits each year, and he reports upon the condition of each patient and the state of the house. In cases of illness or emergency he attends the patients medically at a fixed scale of remuneration. From his personal intimate knowledge of the guardians in the first instance, and of the patients subsequently, he is often able to advise in the management and control of the latter. For instance, he ought to see that the patients get sufficient outdoor exercise and employment. He has an opportunity of inspecting the food and of recommending additions to the dietary or improvements upon it. He must see generally to the comfort and well-being of the patients. Occasionally he has to suggest removal to another guardian or to the asylum. The ventilation of the sleeping room is a matter often requiring attention. Lazy and apathetic patients sometimes give trouble by keeping in their beds without sufficient cause. Besides the central and local supervision exercised in the manner just described, the eye of the public in rural parts of Scotland keeps everybody's business within its ken. If there were the least suspicion of neglect or ill-treatment on the part of guardians, rumour to that effect would soon be made to reach official ears.

Domestic Life.

The key to the whole position in the relationship of guardian to patient is that the latter shall be one of the family. The insane poor are not to be treated like lodgers, and assigned a distinct room with separate meals. The intention of the system is to secure a degree of comfort, freedom, and contentment without the restraints and discipline which are necessary in a large institution. It is expected that the patients should have their meals with the family, have the run of the house and garden, and enjoy the advantage of mixing with sane persons.

Those whose experience of the insane is derived entirely from asylums will find it difficult to realise the measure of success which has attended the boarding-out system. Of course one occasionally meets with cases of disappointment and difficulty. For my part I have never had any serious complaint to make of neglect or bad treatment on the part of guardians. Faults of temper sometimes occur, but these are usually passing storms. After a time guardians learn by experience that the patients are more easily controlled by firm and gentle management. Indeed, it is surprising how quickly and how well most of the guardians acquire the faculty of managing their patients. Many cottagers in my district have had the same patients resident with them for years. In a good many instances a real feeling of mutual attachment has been established. I have always observed a marked improvement in the bodily health of the patients after they came to this part of the country, and often there is a decided amelioration of the mental condition. Work is, of course, of prime importance, even in incurable cases. Occupation secures contentment, so long as it is agreeable and not too laborious. Even unprofitable work is beneficial. Some of the male patients are most useful in farm work; some show great skill and taste in gardening; others carry water, and and coals, chop wood, go on errands, act as porters, and look after cattle. I have seen the women engaged in almost every domestic pursuit. The presence of young children in the house seems always to interest and amuse them. Visits of the clergy are much appreciated by many. In some houses devotional exercises are regularly engaged in. Some of the patients attend church. Indeed, one young man has been allowed to sit with the choir.

Under the boarding-out system the patient begins to feel at home. He takes an interest in his domestic circle; he is drawn out of himself, becomes less selfish and introspective, and, in favourable cases, he awakens a long dormant capacity for labour. The unnatural environment of the asylum has perhaps imprisoned his potentiality for usefulness. Frequently it happens that an asylum inmate who at first is like a dull log, "a useless lump of clay," brightens into an intellectual being when admitted to a domestic circle.

The attitude of the general public in my district towards these patients is more than tolerant. It is friendly and sympathetic. The village communities have become accustomed to the presence of harmless class, and interference with them would be regarded as unkind and unneighbourly. From another, the pecuniary, point of view, the public are more or less directly benefited by the sum spent in the maintenance of the patients. A few elderly females eke out a livelihood by keeping them, and it is possible that some of these guardians

without other resources might themselves have to seek parochial relief.

While there can be no doubt that properly regulated recreation is a powerful factor in the treatment of the insane, I question very much whether this class of patient appreciates in the least the form of entertainment which is provided for the amusement of asylum inmates. Maldevelopment and impairment of the higher intellectual and æsthetic faculties have obliterated the capacity for enjoyment, such as is derived from concerts, dances, and dramatic performances. Though some of the patients are allowed to go about freely, yet I have observed for the most part they avoid mixing in any concourse of people. On the other hand, the various incidents that make up life about a country place seem to afford them engrossing interest.

Advantages of the System.

Certain members of the general public, who have no knowledge of insanity, and do not even understand what is connoted in the term "unsoundness of mind," look upon all weak-minded persons as dangerous, and fit only to be imprisoned within the walls of a lunatic asylum. Yet again, certain critics, whose authority is of the highest kind, arrive at the same conclusion, because their experience leads them to suppose that mental alienation is a condition which ought not to be treated by any but specialists, and in no place save in institutions specially devoted to such an object. They cannot believe that inexpert guardians selected by a sort of chance from the humbler class of society will be equal to the duty imposed upon them. Though objections based on *a priori* arguments of this sort weigh a good deal with the general public, we can cite the actual experience of the past to show conclusively that the possibility of serious occurrences has been reduced to a minimum. As long as the selection of patients is skilfully and carefully made, and the surveillance of them afterwards is sufficient, so long is there a reasonable probability that accidents will be rare.

Nearly a quarter of a century ago Sir Arthur Mitchell, in his treatise on the *Insane in Private Dwellings*, wrote in terms of emphatic approval of this method of dealing with a large class of insane persons. His wide and valuable experience through the operations of the Board of Lunacy in its early days commend his views to the consideration of all who are interested in this subject. The system was advocated by a series of articles in the *Scotsman* in 1857 and 1858. The views then expressed by Sir Arthur Mitchell and Sir James Coxe would appear to have shaped the general policy of the Commissioners in this country, with the result that the parishes now board out some 2,654 persons of unsound mind, whereas in 1862, the date of Sir Arthur Mitchell's work, the number was 1,741.

II.—FRANCE.

By A. Marie, M.D.,

Physician Superintendent of the "Colonie Familiale," Dun-sur-Auron, France.

Dr. Marie gave an account of the results of the application of this system to the chronic insane of the city of Paris. In making this statement he was making a repayment of services, for it was to Scotland that he came to study the system before making the trial in France. Dr. Marie stated that he had not exactly imitated the Scotch method, for in the centre of this colony of boarded-out lunatics he has established a permanent hospital of 30 beds in 6 wards for the proper treatment of intercurrent medical diseases occurring amongst them. The French colony established at Dun (Cher) consisted of 600 patients in a town of 6,000 inhabitants. It was provided with a superintendent (Dr. Marie), with an assistant medical officer and two assistants, who were medical students. There were also four male and two female attendants, who assisted in treating the sick in the permanent hospital before mentioned, and in the general administration of the colony. Each family had charge of two or three patients. The greater number of the patients were women, and the age, as a rule, was 40 years and upwards. As regards the form of insanity, the preference was given to the various types of dementia (*vésaniques*), or to the chronic psychoses of people past the prime of life. Among this class might be mentioned the large proportion of cases of melancholia with suicidal tendency in the aged. In a large city like Paris, melancholia, the result of poverty and miserable surroundings, was common, and this type might be named the natural melancholia of the aged. These poor senile melancholics, when they received help and were removed from their misery, lost their tendency to suicide; "remove the cause and the effects disappear," and it was possible to place such forms of late insanity in families without danger. The object of forming this colony of boarded-out patients was to disencumber the asylums of Paris, which were specially devoted to the treatment of the curable, of their chronic and inoffensive patients. As a rule, there were no acute patients, but Dr. Marie thought that it would be not only desirable but useful to have a dwelling in this colony for convalescent patients which would serve as an intermediate home previous to sending them home. The average daily cost of boarded-out patients was 1s. 3d. (8s. 9d. per week) for all general expenses, including clothing, and was only half the cost of maintaining the patient in the asylums in Paris. The colony had existed for six years without accident. Dr. Marie was of opinion that this system was a good and successful one; it was not only economical, and removed from asylums many chronic patients, but it was beneficial to the patients themselves, who preferred it, as it was a more natural life than that of an asylum. [Printed documents were handed in by Dr. Marie for the use of those interested in the details of the question.]

THE INSANITIES OF INEBRIETY FROM THE LEGISLATIVE AND MEDICO-LEGAL STANDPOINT.

By J. F. Sutherland, M.D.,

Deputy Commissioner in Lunacy for Scotland.

Inebriety may be reckoned a most potent factor for evil in our social organisation, as evidenced by insanity, degeneracy, delinquency, disease, crime, poverty, domestic unhappiness, and social disorder, far-reaching in their character. After heredity, and falling little short of it, it is the most powerful agent in the production of insanity and imbecility, accounting approximately and indirectly for from 20 to 25 per cent. of those who pass into asylums, and for a deal of insanity unknown to the local or central authorities. There can be little question that many a case of predisposition to insanity would have lain dormant were it not for the advent of inebriety, and that many of the nervous diseases incidental to the tear and wear of modern life might have been cured, alleviated, or remained *in statu quo*, but for the same cause. Some may think the estimate of 25 per cent. too high, but it would be much higher were I to include as insane those who are the victims of dipsomania, *mania a potu*, and delirium tremens, and possibly reach 30 per cent. One may gauge the victims of delirium tremens from the number who die from this disease. Last year the Registrar-General put the deaths at 41, and these presumably do not take cognisance of those who die of intercurrent affections. Taking 25 as a common multiple, the number who had the disease but did not succumb must have been about 1,000; and there can be no doubt the number of dipsomanics in Scotland reaches at least four figures.

History of Legislation.

In 1873 a Bill, which miscarried, followed the Dalrymple Report of 1872, and matters slumbered till 1875, when at the last meeting of the British Medical Association in this city a resolution calling for urgent legislation was passed. We cannot but approve warmly of the Bill of the Home Secretary dealing with the police inebriates, and expressing the hope that no time will be lost in the effort to secure much needed legislation for the non-criminal inebriates, whose case and condition, although not productive of the same social disorder, is as clamant as the other, and productive relatively and absolutely of more widespread misery.

In 1878, Sir Charles Cameron, Bart, M.P., introduced a Bill which, before its passage through Parliament, was shorn of its most valuable clause—the compulsory one. In the interval there has been great activity among sociologists, psychologists,

and jurists to bring about more rational methods of treatment, and to obtain the much-needed compulsion. The Bill of this session, backed by the Home Secretary (Sir M. White Ridley), following on the Reports of the English and Scottish Departmental Committees of 1892 and 1895, secures the former for the police or quasi-criminal inebriate, whose numbers in Scotland may be computed at 1,200. If I may venture from my knowledge of the problem in this and other countries, and the laws which have been enforced to meet it, to suggest one direction in which the Bill may be improved and strengthened, it is this, that in addition to depriving the police inebriate of his liberty for two years, something should be done to protect him by a clause prohibiting the vendor of alcohol from knowingly supplying drink (1) to certified inebriates who are put under recognisances and not yet deprived of liberty; (2) to certified inebriates on probation; (3) to certified inebriates whether discharged on probation or not for a period of three years thereafter. Provision would likewise require to be made making it an offence for an intermediary knowingly to do for the inebriate what he could not do for himself. Of course it will be said such legislation would be difficult to apply. My answer to that is, that it works fairly well elsewhere, and the mere fact that there is such a law in existence would have a salutary effect, even though its success in large centres of population might not be striking or encouraging.

It could be worked in Scotland successfully; in 155 towns with a population under 10,000, the aggregate population of which is 768,000; in 625 villages, the aggregate population of which is 465,800; and in the rural districts, with a population of 928,500—or in all a total population exceeding 2,000,000. I admit there would be considerable difficulties in making it to operate effectively in the 30 towns with populations exceeding 10,000, having an aggregate population of 1,863,300, and there is also to be borne in mind this, that three-fourths at least of the inebriates are to be found in the latter community, that is, in the great industrial centres. Such a proposal as I make is not new even to our laws. An analogue is to be found in the Habitual Criminals Act, Section x, which forbids the vendor of liquors supplying those to whom this Act applies, a proportion of whom are addicted to inebriety.

Consider, for one moment, what are the prospects of many after two years of enforced abstinence, and you must be satisfied something in the direction indicated should be done. Some of them are coming back to contaminating environments, to abodes of wretchedness and squalor, with little or no hope and with little or no future before them. It is not merely a question of lessened will power. They have on discharge to face a condition of things under which stronger and more favoured persons might bend.

INEBRIETY IN TOWN AND COUNTRY.—STATISTICS.

The number (rough approximate) of the non-criminal inebriates in Scotland may safely be estimated at 2,350, or 1 to 1,800 of the population. The criminal inebriates I put at 1,200. Compared with the lunacy of Scotland it is about one-fourth. The distribution of insanity in Scotland is in striking contrast to that of inebriety, and this difference is accentuated when one reflects that while inebriety is a main factor in the production of insanity in industrial centres, it is one of practically no moment in the Highlands and Islands. There is, owing to the prevalence of insanity everywhere, more of uniformity in town and country in its distribution. There are differences in the insanity rate which can on economic and other grounds be explained away, more or less. But as indicated, the inebriety is confined to certain areas. The number of non-criminal inebriates is much greater than the other, but then they are drawn from a vastly larger section of the population.

My investigations into the problem, extending over many years, lead me to the conclusion that inebriety, whether criminal or non-criminal, is a disease or vice, or both, for the vice long indulged ultimately ends in disease, and is in the main like insomnia, neurasthenia, neuralgia, and hysteria, met with in large centres of population, and presumably in great measure due to unhygienic and uncomfortable surroundings, to the facilities for illicit sale, to vicious and contaminating environments, to customs and habits long practised in certain strata of society, to vocations implying hard, unremitting, and it may be uncongenial toil; and to the worries, struggles, and disappointments incidental to all such communities.

Of the 2,300, something like 1,600, or 69 per cent. of the whole, will be found in the eight large cities and burghs with 42 per cent. of the population of Scotland, while 700, or 31 per cent., may be looked for in the small towns, villages, and rural districts with 58 per cent. of the population. The ratio in the former is 1 to 1,000, in the latter 1 to 3,200. The ratio of the Highland counties is 1 to 5,000 of population, of the Border counties 1 to 3,500, of the Aberdeen group on the north-eastern littoral 1 to 3,000, and for the central industrial counties 1 to 1,400. The towns in each county really govern the percentages, and thus it is that in several extensive districts of counties there is no inebriety except what is imported for treatment from England and from the south and west of Scotland.

"THE LIBERTY OF THE SUBJECT."

For the benefit of the non-police inebriates, Lord Herschell three years ago introduced a Bill into the House of Lords. The Court under the Bill in England was to be the High Court and the County Court, with the right of appeal from the latter to the High Court; in Scotland, a judge of the High Court of Justiciary or the sheriff. A jury was not mentioned in the Bill, and it was alleged that a door was being thrown open for what the French call *chantage*, which, I believe, is something not much different from blackmailing.

It is said that the habitual inebriate is violating no law of the land. True, but are you justified in allowing him to go on until he commits a crime of the first magnitude, which many of them do, and many more by the merest accident do not do? If the authorities or citizens know of an alleged lunatic threatening danger to the lieges, they do not as a rule wait until he commits a homicide before putting in force Sec. xv of the Lunacy Act of 1862.

In regard to this far-reaching question, to assume the *non possumus* and to say that it is beyond the wit of man to devise a scheme adequately safeguarding the rights and liberty of the subject, and as adequately as many of our present civil and criminal statutes which break in upon individual liberty, is unworthy of our race and of our age. The liberty of the subject has with a few become a fetish. A law which will prevent and lessen the physical and moral degradation of the individual, the wreckage of family life, and what is a disgrace both to the community and to the commonwealth can in no reasonable sense be considered an invasion of liberty.

The Bill of 1895 could have been amended to meet the most exacting of the advocates of the liberty of the subject. The framework was sound. If a judge is not to be trusted, then for safety by all means concede a jury with the right of appeal. First of all, it is not proposed to deal with any but those whose drunkenness is notorious, whose life and conduct is an outrage to decency, offensive to society, costly to the State, and productive of much and untold domestic unhappiness.

ANALOGUES IN LEGISLATION.

Analogues for legislation with modifications suitable to the case are to be found in our lunacy laws. If a lunatic is found "charged with an offence inferring danger to the lieges, or found in a state threatening danger to the lieges or offensive to public decency," relatives, neighbours, or the police may interpose with the result that the Public Prosecutor or inspector of poor intervenes and practically the lunatic has a public trial, for he is present in person and may be represented by an agent, and he may take part in the proceedings and examine the witnesses. Similarly, a justiciary judge and a jury, or a sheriff and a jury, or a judge aided by expert assessors (this already finds a place in our judicial system) as the inebriate may elect, who would take evidence on oath, as the inebriate may elect, might hold a public or private inquiry, likewise as the inebriate might elect. The trial would only proceed if the Public Prosecutor, after taking precognitions from relatives, neighbours, medical men, the police, and others, believed there was a *prima facie* case for interference. For all reasons the Public Prosecutor is the official to lay the case before a Court, not least that no action would lie against him in the discharge of his duties. Or the inebriate might have the privilege of Chancery lunatics in England. A peti-

tion would be served on the inebriate, and he or she would be given fourteen days to decide whether or not to demand a jury. If a lunatic does not seek a jury the inquiry is held before the Master in Lunacy; if he does, the Lords Justices appoint a visitor to see whether he or she is capable of demanding a jury, and on that report a jury is conceded or refused.

It is difficult to see where the infringement of the liberty of the subject comes in. The present voluntary system of entering retreats would continue, and the French system of *conseil de famille* might be introduced to our legislation as something midway between voluntary submission and compulsion. In the mode of trial suggested there is not anything approaching the simple and uncomplicated procedure applied to ordinary lunatics who are not seen by the sheriff before committal on the strength of two medical certificates. But before the special procedure is put in force the inebriate would have the option of the voluntary entry or the *conseil de famille*, and he would have, if possessed of estate, to submit to the appointment of a curator (not a relative) in the case of "pay-day" drunkards to the sequestration of wages for behoof of dependents. It must also be borne in mind that the final steps would not be taken until everything else has failed. Sometimes one hears, "What about the bread winner?" In many of the cases present to my mind—in most, in fact—his seclusion would be an untold blessing to the long-suffering family, upon which for years he has been a dead weight and an open irritating sore, and none know the real state of affairs better than our profession.

Forms of Insanity produced by Inebriety.

The insanities of inebriety number seven: (1) intoxication, (2) delirium tremens, (3) *mania a potu*, (4) dipsomania, (5) monomania of suspicion, (6) chronic alcoholism or dementia, (7) general paralysis. These do not include the imbecility and neuroses which are often the offspring of inebriety. The number who suffer from the last three may be estimated, as, as a rule, they find their way to asylums. Not so those from the first four, whose numbers at least reach to four figures. In regard to all the seven insanities, the law has all along looked upon all save delirium tremens, dipsomania, and intoxication—which is a transient and temporary insanity—as an excuse for criminal acts: and in later years two of the most eminent judges who have adorned the Scottish Bench—the late Lord President Inglis and the late Lord Deas—put delirium tremens in the same category as the other insanities. The position of dipsomania is not quite so satisfactory: but it may be taken from the ruling of Lord Young in 1893, when a dipsomaniac was tried for the neglect and starvation of her infant child, that it likewise would be a good answer to a charge as barring trial or excusing the offender.

The Attitude of the Law.

But the criminal laws of this country—and in this respect our position is exceptional among civilised nations—is far astray in regard to its attitude towards the authors of homicide, assaults, etc., committed by persons in a state of intoxication: not so, however, the interpretation of it, for some judges in England and Scotland have seen their way to reduce the crime of murder to manslaughter or culpable homicide. But this is not the attitude of all, and so we would like to know where we stand in this matter. Are psychologists and legal and medical jurists in the ancient gallery with Coke, the great legist of the seventeenth cenury, who admitted the insanity (the *voluntarius dæmon*), but considered it not only not an excuse but an aggravation; or with Hale, equally erudite, who termed the condition one of *dementia affectata*, which does not excuse unless the frenzy occasioned becomes fixed or habitual; or are we in the same boat with modern judges, who say that while it may not be an aggravation, it is not an excuse; or are we falling in line with enlightened lawyers and alienists, who look upon the intoxicated authors of crime as insane, and calling for detention in an asylum, or the intoxication as a factor in the case, reducing the crime to murder of the second degree, punishable by lengthened imprisonment?

Intoxication is insanity, fleeting it may be, but from the disorder of the senses and faculties produces as perfect a picture of insanity as is to be met with in the wide and diversified range of lunacy. The condition is fully covered by the one criterion of responsibility known to our law—that laid down by the Bench of Judges in 1843. The civil law of this country has looked upon it as insanity, or something akin to it, and as nullifying contracts, marriages, testamentary deeds, dispositions, etc. Why in reason should there be such a difference between the attitude of the civil and criminal laws?

Crimes of Blood.

Except the homicides and assaults of homicidal maniacs, 95 per cent. of the homicides and assaults of our criminal calendars are committed by persons in a state of intoxication, and some such have forfeited their lives for their crimes.

Some judicial fallacies, if I may venture, with all respect, to say so, have grown round this question. The drinking is said to be voluntary, the act deliberate, and the death sentence a deterrent to drunkards and habitual drunkards and a protection to society. It is no more the latter than in the past times the "cutty stool" was to fornicators, the gallows to sheep stealers, and excommunication and burying of drunkards in the public highway to the drunkards of last century. Drunkenness and habitual drunkenness still go on apace. Is society free from blame in this matter? The drunkard is allowed by the laws to drink to excess—drunkenness *per se* is not an offence—and no hand lifted, although he is known to be a noxious and potentially dangerous subject in the community, until he commits a crime of the first magnitude. There is food for reflection here, for judges as well as society. Moreover, society would be protected by putting the inebriate criminal in "a safe place of custody," and not holding him responsible for an act of which he has on regaining sobriety either no real consciousness or the dimmest.

There is no evidence forthcoming in support of the theory that the gallows is a deterrent to drunkards. Assaults are as numerous as ever, and it is the merest accident many more of them do not terminate fatally. The violence used is not, indeed cannot be, measured.

With regard to the voluntary drinking and the deliberateness of the act, the evidence is all the other way. It may be asked, "Can a drunken man do a wilful act?"—whether at any stage of an habitual drunkard's bout the drinking was voluntary, for that would imply the certainty of the absence of latent or patent mental and physical degeneration; whether recognised by the physician or not (the case for the physical basis of alcoholism has not yet been stated); or whether, in the case of the casual drunkard, admitting that the imbibing of a moderate and safe quantity was voluntary, the moment inhibition is sufficiently impaired, sooner in some than others, by a partial paralysis of the higher nerve centres by the toxic agent, the drinking becomes involuntary, and the crime committed has nothing about it to suggest deliberation. The savage and brutal nature of such crimes is indicative not of premeditation, but rather of blind and furious mania.

My own feeling, in conclusion, is that the plea of insane at the time is a proper special defence, or, failing the acceptance of that, that the crime, after medical and other evidence has been led, should be reduced from murder to culpable homicide. This is all the more reasonable, having regard to the present state of the law, which ignores overt drunkenness and habitual drunkenness: and this other, that the defence of such persons indicted for grave crimes is often conducted without the aid of the specialist, and without any, or a moiety, of the resources at the back of the Public Prosecutor.

Discussion.

Dr. George Wilson (Mavisbank, Polton, N.B.) highly appreciated the instructive paper, and was surprised that Dr. Sutherland or someone else had not made an occasion of this meeting to bring some pressure to bear upon Parliament. He hoped that Dr. Sutherland's recommendations would find some expression in legislation. He also thought that it ought to be emphasised publicly that the Bill at present proposed dealt with the most incurable and most hopeless class of drunkards.

Dr. Ireland (Mavisbush, Polton, N.B.) said he saw no reason why a man known to be a habitual drunkard, to waste his means, and neglect his family should not be treated as one who infringed the criminal law.

Dr. Templeman (Dundee) called attention to one point in the medico-legal aspects of this question not specially mentioned by Dr. Sutherland. The paper was chiefly concerned with the plea of irresponsibility in cases of inebriety, but another point of great importance was the precautions which should be taken that inebriates who had been convicted of serious crimes, and who had been held to have been insane at the time the crime was committed, should only be liberated on parole, and that the State should lay upon some one the responsibility of notifying, as in the case of the infectious diseases, to some one in authority whenever the accused again showed signs of indulging to excess, so that he might be dealt with before he committed any other serious crime.

Dr. Yellowlees (Gartnavel, Glasgow) said that there were two classes of inebriates: 1. A class in which drunkenness was wilful and deliberate, indulgence leading to folly and crime. No one would question that such a drunkard should be punished, and the law provides punishment. 2. A very different class of inebriates in whom will power and self-control and conscience were all destroyed and the man's nervous system and whole nature was utterly deteriorated, so that he could not help drinking on every opportunity. Such cases needed seclusion, care, and treatment—not punishment, which would be cruel and useless. "He did it himself," may be objected, and might or might not be true; very likely it was, but if no disease which the patient brought upon himself was to be treated with skill and care there would be little use for medicine. The only essential thing was that this seclusion and care must be compulsory. Our legislation in this matter had been utterly futile for want of this, and by reason of our absurd reverence for what Dr. Sutherland had properly called a mere fetish—the liberty of the subject.

Resolution.

The following recommendation was moved by Dr. J. F. Sutherland, seconded by Dr. Yellowlees, and unanimously agreed to by the meeting:

That the Psychology Section of the British Medical Association at its annual meeting at Edinburgh in July, 1898, desires to press on the Council of the Association the urgent need of further legislation for the care and treatment of habitual inebriates, and its unanimous opinion that no such legislation will be satisfactory or effectual unless (1) it provides compulsory care for habitual inebriates from all classes of society, and unless (2) it prohibits the sale of intoxicants to known and certified inebriates. The Psychology Section unanimously urges the Council of the Association to use its powerful influence to obtain this much-needed reform.

SECTION OF ANATOMY.

Sir John Struthers, M.D., LL.D., F.R.C.S.Edin., President.

THE SIGNIFICANCE OF ANATOMICAL VARIATIONS.

I.—D. J. Cunningham, F.R.S.

Professor of Anatomy in the University of Dublin.

In dealing with a subject so wide and of such far-reaching significance as that of "anatomical variations," I feel that it is necessary at the very outset to indicate the ground on which I purpose to take my stand, and to set some limitation upon the scope of my remarks.

In the first instance let me lighten my cargo by throwing overboard "acquired variations." I do so reluctantly, but with the declared intention of thereby evading the necessity of entering into the vexed question of the transmission of acquired characters.

Of the variations in structure which remain, a very large number may be placed in one of two categories, namely, those which point backwards and those which point forwards, or to put it in other words, those which relate to the past and those which indicate the possibilities of the future. For want of better terms we may call these two kinds of variations *Retrospective* and *Prospective*. It is with such variations alone that I intend to deal. Retrospective variations act as signposts planted at very irregular intervals and often appearing at very unexpected places, which indicate the path which the individual has traversed in his ontogenetic and phylogenetic development. Prospective variations afford evidence often most uncertain, almost always vague and faltering, which gives us some inkling of the direction towards which phylogenetic evolution is tending.

Retrospective Variations.

Retrospective variations may be separated into two classes which touch each other at their boundaries, and which not infrequently overlap. I refer to:

1. Simple ontogenetic arrests.
2. Atavism or progonism.[1]

Ontogenetic Arrests.—A simple arrest in the natural course of ordinary individual development may present little morphological interest, or it may be fraught with the most important and deep-lying significance. This difference depends chiefly upon the relation which such variations bear to the evolutionary history of the individual. Thus an ectopia vesicæ, or an imperforate anus, although each possesses a very special intrinsic interest of its own, cannot claim rank among the variations which throw light upon ancestral history, and the morphological importance of a variation is tested from this standpoint.

I presume that most of us are believers in the recapitulation theory, and hold that to some extent at least an animal reveals its pedigree in the successive stages of its own development. In their relation to ancestral history certain of these developmental stages are more important than others. This is particularly the case where a stage is reached which represents a point of departure in structural detail from other animal groups which have accompanied the individual in question so far on the phylogenetic path.

These are "critical periods" in individual development, and an arrest at such a stage may lead to very striking results. Such a "critical period" occurs in the development of the primate cerebrum between the third and fourth months of fœtal life. About this time the cerebrum takes that step which lifts it beyond the quadrupedal stage and places it upon the primate platform. Previous to this change the cerebrum presents a form similar to that of a quadruped, but now the occipital lobe takes shape, and the cerebrum assumes a form and an outline which is characteristic of man and the apes, and of them alone.

This is a great advance in cerebral development, and the period at which it occurs is a very natural one for a disturbance of the normal process to take place. Old tendencies, dormant it may be, but capable of being stirred into activity by some unknown cause, counteract the more recently acquired tendencies towards a higher cerebral development, and a defective occipital lobe is the result. This is a leading peculiarity of one form of microcephalic brain, and it expresses in the clearest manner a tendency on the part of the cerebrum to cling to its old quadrupedal traditions, and to lag behind when in the process of development it has reached the quadrupedal stage.

Atavism or Progonism.—Retrospective variations of the atavistic type are, as a rule, much more difficult to determine and correctly appreciate. At the same time they are of greater importance than simple developmental arrests, seeing that in every case they have a direct relation to the ancestral history of the individual. The term "atavism" is employed in different senses by different writers. It is requisite, therefore, that I should define the precise meaning I wish it to convey. "Although it is undoubtedly true," writes Milne Marshall, "that development is to be regarded as a recapitulation of ancestral phases, and that the embryonic history of an animal presents to us a record of the race history, yet it also is an undoubted fact, recognised by all writers on embryology, that the record so obtained is neither a complete nor a straightforward one. It is indeed a history, but a history of which entire chapters are lost, while in those that remain many pages are misplaced and others so blurred as to be illegible."

In a simple arrest of development, an embryonic condition which is normally transient becomes as it were set and crystallised, but this does not necessarily imply that the phase which is produced is one which at any previous period in the phylogenetic history of the individual was characteristic of the stem-form. Something more is required to constitute

[1] An alternative term suggested by Professor Mahaffy

an atavism. It is necessary that certain of those ancestral features which are omitted in the ordinary course of individual development should be reproduced, or that certain of those parts of the phylogenetic history which have become blurred or abbreviated in the ontogeny of the individual should reappear in a distinct and an intelligible manner.

The best example that I can offer of what has seemed to me a plain case of atavistic variation is the convolutionary pattern which is assumed by the cerebral surface in certain forms of microcephalism. The convolutions and sulci on the brain of a microcephalic idiot may assume an arrangement which approaches more closely to the ape type than to the man type, and the significant point is that in these cases there is a mixture of those characters which are distinctive of a high ape with those which are characteristic of a low ape. The general arrangement may differ widely from that seen in the brain of any one ape, but it presents certain features which are peculiar to an anthropoid, and others which are characteristic of, say, a baboon or a macaque. From this we conclude that in so far as its convolutionary condition is concerned the brain has reverted wholly or partially to a condition which existed previously in an early stem-form. I hardly think that it could be argued that the microcephalic idiot has pursued an independent development along a line of its own from the point of divergence of the high and low apes and midway between them.

Whether the brain of a microcephalic idiot ever repeats in its totality the convolutionary pattern which was distinctive of any particular period in the history of the stem-form it is impossible to say, but I am rather inclined to think that such an occurrence is extremely unlikely. Still I have in my possession a microcephalic brain, with a convolutionary arrangement so consistent in its pattern that I cannot shut my eyes to the possibility that in it we may have a tolerably faithful reproduction of the gyri and sulci which were at one time characteristic of an early stem-form of man.

It has become too much the custom to place all anomalies of the muscular system in the atavistic group. Many no doubt are atavisms, and these as a rule are fairly easy to determine, but Macalister, our greatest authority on this subject, rightly protests against what he properly terms the "purely gratuitous assumption," that every muscular anomaly is a retrospective variation.

Some parts of the body are much more liable to atavistic variations than others, and it may be laid down as a general proposition, the truth of which must have struck everyone who has given the matter serious consideration, that stability of structure is a character of those organs which have a long ancestral history, whilst instability of structure is characteristic of those with a short ancestral history. Thus, phylogenetically, old parts are not as a rule liable to variation, whilst parts which are of comparatively recent phylogenetic origin are very prone to variation. In the former, oscillation has to a large extent stopped and a measure of equilibrium has been obtained; in the latter, the oscillations both backwards and forwards are going on, even although the mean position may in a measure have been determined.

In no animal can the truth of this statement be more satisfactorily proved than in man. He is the proud and sole possessor of the erect attitude. The acquisition of this, at no distant period in his ancestral history, has profoundly disturbed his whole anatomy, and is largely responsible for many of the variations which are so abundantly and so frequently met with in his structure.[2]

A variation may occur in man which reproduces a structural character identical with what is seen normally in another animal group. The variation may be truly atavistic, but for all that it does not follow as a matter of course that it is genetically related to the corresponding character in the animal group. In two groups of animals which have separated from each other low down in the genealogical tree, development may go on along parallel tracks, and characters which are similar may be produced in either quite independently of each other. This possibility has always to be borne in mind in determining the proper value of an anatomical variation.

[2] Domestication is also said to produce conditions favourable to variation, and the liability to variation exhibited by the structure of man may also perhaps in some measure be due to this.

Prospective Variations.

A prospective or a prophetic variation may be termed an epigonism—a word which has been suggested to me by Professor Mahaffy, and which seems exactly to suit the case. The law which regulates such variations is absolutely unknown. They appear to be fortuitous, but upon this point we have no sure information. Some of these variations may lead to little or no result; others, which tend to adapt the individual more perfectly to its environment, are strengthened and perhaps perpetuated by natural selection. The latter are the true epigonisms; and, as it will be readily understood, such variations are extremely difficult to interpret aright. In the case of retrospective variations we can consult the ancestral record as revealed to us by the facts of comparative anatomy, and we can compare and check the observations thus gained by reference to the developmental history of the individual itself. In the case of epigonism, the aid obtained from these sources is of a limited kind; each case must to a large extent be judged on its own intrinsic merits, and often under most confusing and misleading circumstances. The difficulties connected with the determination of epigonism are still further intensified by the fact that it does not necessarily follow that because a variation is in process of being perpetuated it is what might be considered to be a structural improvement. It may, indeed, be very much the reverse, and represent a retrograde rather than a forward step. An example of such a character may be found in the progressive blindness of cave-dwelling animals.

As we all know, the lumbo-sacral region of the spine is in a state of very unstable equilibrium, and here I believe we may study examples both of retrospective and of prospective variation. The normal condition is one in which there are twenty-four moveable vertebræ in front of the sacrum, and in which the lower limb is attached to the first three sacral vertebræ. The variations that occur are of two distinct and opposite kinds:

1. A complete or incomplete liberation of the first sacral vertebra, and associated with this a slipping back on the spine of the iliac attachment of the lower limb.

2. A partial or complete inclusion of the last lumbar vertebra into the sacrum, and associated with this a slipping forwards on the spine of the iliac attachment of the lower limb.

In the first case the tendency is towards elongation of the præsacral part of the spine: in the second the tendency is towards abbreviation of the præsacral part of the spine.

Professor Paterson, in his elaborate memoir on the Human Sacrum, has given a most masterly analysis of these two different forms of variation, and he has shown in the most conclusive manner that the number of cases in which elongation occurs is greater than that in which abbreviation takes place. From this he is inclined to argue that Rosenberg is wrong in considering that the vertebral column of the future will be one in which in all probability the præsacral region is shortened by one vertebra.

I am not altogether satisfied that Professor Paterson is justified in coming to this conclusion. A question of this kind cannot be settled by mere statistics. A prophetic or prospective variation is greatly handicapped at the start, and at first it makes little headway against the strong countercurrent of normal and atavistic tendencies. A long period of time must therefore elapse before natural selection strengthens and intensifies it sufficiently to enable it to win its way to a high place on the statistical table.

Let us see what the ontogenetic and phylogenetic records have to say on this matter. The developmental evidence is not conclusive on either side; but the ancestral history of man and those apes most nearly related to him, so far as we know it, seems to me to favour the view of Rosenberg, namely, that there is a progressive tendency in man towards the shortening of the vertebral column.

It is probable that man and the four anthropoid apes have descended from a gibbon-like ancestor (prothylobates of Dubois), and that this stem-form had a spine with at least 26 præsacral vertebræ. In the lower apes of the old world the number of præsacral vertebræ, with very few exceptions, is 26; in the gibbon, 25; in man, the gorilla and the chimpanzee, 24; and in the orang, 23. In the evolution of the higher members of the primate family there appears to be, therefore,

a tendency towards the abbreviation of the præsacral part of the vertebral column, and the orang has travelled furthest along this path.

But in the anthropoid ape, as in man, the lumbo-sacral region is very subject to variation. In the orang this is less evident than in the others. It has reached its goal, and has attained a position of rest in so far as forward movement of the hind-limb on the spine is concerned. There is a strong atavistic tendency present, however, so that although variations exhibiting further præsacral abbreviation are extremely uncommon, variations exhibiting elongation are fairly frequent.

In the chimpanzee and the gorilla variations of abbreviation are more common than variations of elongation (Paterson), and it would seem from this that these apes are following fast on the heels of the orang.

Man, and still more the gibbon, are lagging behind, but both—and more especially man—have made considerable progress along the path which may ultimately lead to the total loss of the præsacral vertebra. These are the facts which have induced me to lean somewhat towards the views of Rosenberg. In connection with this it is an interesting point to note, although this is an argument of no anatomical value, that the æsthetic taste of man emphatically condemns a long trunk and short legs.

Of course, we cannot discuss this matter without taking into account the arrangement of the nerves with reference to the spine and the lower limb. In this matter also we have to fall back on Professor Paterson's paper for information, and from it two points of essential importance can be made out:

1. It does not necessarily follow that a variation in the arrangement of the nerves coincides with a corresponding variation of the vertebral column, and *vice versâ*.

2. That the tendency towards caudad shifting of the hind-limb nerves is much more marked than the tendency towards cephalad shifting.

This is precisely what we would expect, and I do not think that it in any way invalidates Rosenberg's proposition. Nerves are the most conservative of all the structures which go to build up the human body. They cling most tenaciously to old traditions, and travel most pertinaciously along the old beaten paths. In illustration of this, consider the wasting platysma and its large and vigorous nerve of supply, and still more, the interossei muscles in the foot of the horse, which are almost completely transformed into ligamentous tissue (suspensory ligament of the fetlock), in the midst of which we have entombed the old nerves of supply still histologically perfect. It is not surprising, therefore, that the lumbo-sacral variations should indicate that in the abbreviation process the skeleton should be a step in advance of the nervous system.

[Professor Cunningham illustrated the various points which he had brought forward by a series of lantern slides, showing the appearances of the brain of the human embryo at various stages, the brain of microcephalic idiots, and that of the anthropoid apes.]

II.—F. G. SHEPHERD, M.D.,

Professor of Anatomy, McGill University, Montreal.

SIGNIFICANT AND NON-SIGNIFICANT VARIATIONS.

I MUST congratulate Professor Cunningham on his able and interesting paper; the division into retrospective and prospective variations is most ingenious and suggestive. Professor Cunningham has not mentioned one prospective variation which I dwelt on some years ago—the fact that the musculus sternalis is apparently a new muscle appearing in woman; it is more common in females. I also agree with Professor Cunningham that the development of the spinal column is towards abbreviation and not elongation; an instance of this is the occasional occurrence of the dorso-lumbar vertebra, which is more common in the Laplander.

[Professor Shepherd also referred to the occurrence of the pollex in pigs and the reproduction of the os trapezium from the normal rudiment. He divided anomalies into those with and without significance.]

Those with significance are:

1. Reversion to former types, or atavism, as where a structure suddenly appears without a previous rudiment existing—for example, chondro-scapular muscle, occipito-scapular, etc.

2. Increase or development of parts which are rudimentary or have retrograded—for example, epitrochleo-anconeus, coraco-brachialis inferior, supra-condyloid process, lumbar ribs, etc.

Those without significance are:

1. Reduplication or repetition of parts owing to excess of germative material or dichotomy—for example, cases of polydactylism.

2. Anomalies of vessels, chiefly from accidental causes, producing occlusion and consequent development of anastomotic trunks.

3. Persistence of fœtal conditions—for example, imperforate anus and rectum, hare lip, etc.

Another class might be made of those anomalies due to injury of the fœtus at an early stage.

III.—A. M. PATERSON, M.D.,

Professor of Anatomy, University College, Liverpool.

ABNORMALITIES AS A CLUE TO NORMAL DEVELOPMENT.

VARIATIONS may be gross or refined, teratological or anatomical. If any philosophical significance attaches to the occurrence of variations, if they are stepping stones in the pathway of evolution, teratological variations, which are usually of such a kind as to interfere with the well-being of the individual, might be expected to disappear through want of inheritance.

Some gross variations may appear to lie outside the pale of the proper laws of ontogeny. But generally even those most marked can be traced to an excess or arrest of development along the usual lines. They thus have a distinct value (and this is their only scientific value in my opinion) in corroborating and confirming the path of development of the organ in question—for example, spina bifida, cleft palate.

There has been a doubt expressed regarding the method of development usually accepted of the kidney and ureter.[1] Such a variation as that exhibited by Dr. Lawrence at a recent meeting of the Anatomical Society,[2] in which a rudimentary kidney existed along with a rudimentary and separate ureter, lends support to the orthodox view of the formation of the two organs from separate elements.

The occurrence of variations, small or great alike, raise some unanswerable questions. Are twins to be regarded as improper examples of fertility, merely to improve the gaiety of nations? or are they extreme examples of a fecundity that, occurring in a less degree, produces double monsters, parasites like Laloo, double digits, etc.? Or again, is there any evidence to support the conjecture that by their occurrence they associate man phylogenetically with any class of mammals in which a pair of young is the "normal" occurrence?

VARIATION AND SPECIFIC ALTERATION.

The share of variations in determining the relationships of species, in deciding the avenue of evolution of an organ or an individual, in fixing even the path of development of an organ for a single species, is in my opinion of comparatively small account. I do not mean that variations have no value in comparative anatomy or in evolution. On the contrary, it is conceivable that they may have a profound significance in altering the form, structure, and character of an organ under certain conditions—given an inherent "vital energy," a potentiality for adaptation, and a suitable environment. But, to my mind, variations *per se* have no more power in the production of specific alterations than the waves beating on the shore in grinding corn.

FACTORS WHICH DIMINISH THE VALUE OF VARIATIONS.

I.

Differences in Causation. An excessive development (for example, double thumb) is not necessarily an advance in development, and *vice versâ*. A variation may be caused by some disturbance or alteration in the developing organism, quite remote from the alterations produced—for example, Meckel's diverticulum.

II.

Frequency.—Taking two opposite variations in a given organ, are we to regard the more frequent as illustrating a

[1] J. B. Haycraft, Brit. Assoc., Oxford, 1894.
[2] *Journal of Anatomy and Physiology*, July, 1897.

"tendency" in a particular direction? Are we justified in asserting that 65 per cent. *versus* 45 per cent. of two given and opposite kinds of variation are indicative of progressive *versus* retrogressive changes in the organ, or tendencies in the individual?

Teeth.—It is more common to meet with individuals whose teeth are below the normal number, by reason of the rudimentary character of the wisdom tooth, than those whose teeth exceed the normal number. I think we can infer the existence of a tendency to diminution in the number of teeth; an inference strengthened by the comparison: (1) in size and form; (2) in number of the teeth of man and other mammals.

Hair.—It is more common to find a diminution in the extent and quantity of hair than an excessive growth on head, face, or body. We may infer, therefore, that man is becoming less hairy; an inference supported by comparative anatomy.

Rosenberg's Theory of Pelvic Shifting.—The well-known hypothesis of Rosenberg, who has asserted a phylogenetic shortening of the spinal column by a telescoping of the ilia in the vertebræ, breaks down when viewed in this light. An excessive number of præsacral vertebræ (25) is as common as a diminution to 23. If numbers are of any value, the variation of the ilium in relation to the spinal column indicates an equal "tendency" to elongation and contraction of the præsacral portion. This is a case in which neither comparative anatomy nor embryology help much. There is little precision in the arrangement of the vertebral segments in the anthropoid apes, and in the development of the spine there is the same variability in ossification as in adult cases.

III.

Constancy and Determined Character.—The constancy and the determined character of a given variation creates a difficulty in the estimation of its value and significance. A variation occurs apparently without rhyme or reason, but the same variation is so constant, that there are, I understand, anatomists who know the percentage of all the possible variations in the human body. In any organ one can predict the variations most likely to occur. The capacity for variation is restricted to narrow limits easily prescribed.

IV.

The Comparative Value of Variations in Different Organs: (A) *Muscular Variations.*—The perfection and complexity of the muscular system is so great, that a given variation only implies a minute increase or a minute diminution in the complexity of the system. All the muscular variations together afford no clear picture of the evolution of the muscular system, and indeed provide the scantiest evidence of the history of the race. *A deficiency in the diaphragm* may suggest an association with reptiles; but an arrest of development ontogenetically does not, *per se*, represent a case of atavism; and, similarly, the excessive segmentation of a muscular mass gives no right to assert the existence of a "progressive tendency."

(B) *Vascular Variations.*—The variations occurring in the vascular system, except in the main vessels, are of comparatively insignificant importance. The mode of development of arteries, and their habit of inoculation with neighbouring vessels, readily allow of the occurrence of variations, not by any essential characteristic of the vessels themselves, but on account of concomitant variations in neighbouring structures. Any slight obstruction will produce an alteration in the origin and course of an artery.

The middle sacral artery has recently attracted the attention of two accomplished anatomists, who have objected to its title, "sacral aorta," and have sought to prove it an adventitious or secondary trunk formed by the anastomosis of segmental caudal arteries. The variations in origin of the artery are among the evidence brought forward. For my own part, the variations seem to suit either view of the origin of the vessel, and I do not think we are justified in disregarding other circumstances—the normal constitution of the artery, its development and comparative anatomy—all of which should have much greater weight than its variability. The greater weight of evidence points to the acceptance of the orthodox view that the artery is a continuation of the aorta. It occupies that position; it is developed as a pair of vessels which fuse to form a single artery, just as the two carotids in the python do to form a median carotid. It is present in the lowest vertebrates. Its variations appear to arise on account of the profound changes affecting the aorta near its caudal end, associated with the formation of the limbs, and the structures subservient to the processes of embryonic nutrition.

(C) *Osseous variations* appear to me to have a significance only within the narrowest limits.

In the vertebral column two classes of variation occur—correlated variations in the number of vertebræ in each region, and unilateral variations of separate vertebræ. These two classes of variation are, in a sense, similar. Their causation depends upon the suppression or excessive development of an element in the vertebra in one or both sides. The variations in the number and form of the vertebræ throughout the spinal column are not necessarily related to one another—for example, the presence of a cervical rib is not necessarily accompanied by an alteration in the number of the lumbar vertebræ or the position of the sacro-iliac articulation. There are several causes, indeed, which may act together or alone, responsible for the variations in the several regions.

The fusion of coccyx and sacrum is associated with the atrophy of the caudal vertebræ, along with fixation of the pelvis, erect posture, etc. Thoracic and lumbar variations seem to depend on two causes: (1) Elongation or diminution of the body cavity (possibly associated with differences in the size and rate of growth of the viscera); (2) Separation or approximation of the region of attachment of the limbs.

Reference has already been made to Rosenberg's hypothesis made on data entirely insufficient. He regards a vertebral column with an increased number of præsacral vertebræ as "atavistic"; that with a diminished number of præsacral vertebræ as a "future" form of column. The simple fact is that we are here face to face with a mere individual variation, indicating an oscillation of the ilium round its normal attachment; it may catch on to the 24th (last lumbar), or miss its connexion with the 25th (first sacral) vertebra. The two forms of variation occur with equal frequency (5.3 per cent.). They illustrate the mode of growth of the limb, and nothing more. Similar variations are found in birds, reptiles and fishes; and Bumpus, who has lately made an exhaustive study of the variations in Necturus, appears to reject the "atavistic" theory from the evidence at his disposal. The value of these variations becomes extremely restricted when we take into account the weight of evidence from comparative anatomy, and from the concomitant variations in other organs, for example, the nervous system; and when we apply to the question the same arguments as I used in discussing the hair and teeth.

Conclusion.

Anatomical variations are unreliable guides, except within narrow and individual limits. They are exceptions which prove the rule. From an abnormal condition, great or small, no large general conclusion can be drawn.

They serve to corroborate and confirm in cases of doubt the mode of development of an organ; they serve to indicate physiological or morphological disturbances in the district in which they occur; just as in Dundee, an alteration from normal industrial conditions is responsible for the extraordinary variation in the proportion of males to females of marriageable age (15-45). In Scotland generally the excess of marriageable females is 2 in 1,000; in Dundee it is 78 in 1,000.

Anatomical variations do not appear, *per se*, to possess any significance in determining affinities with other species, or in suggesting the existence of any "tendency," except the tendency to vary.

Variability is something inherent in all growing organisms. It is a sign of vitality and individuality. Its importance in the evolution of the species lies in the adaptability of variations to the environment. At the same time, the capacity for variation is extremely limited for organ, individual, and species.

IV. R. J. Anderson, M.D.,

Professor of Biology, Queen's College, Galway.

Professor Anderson said he had been impressed with the fact that anomalies were so common in man compared to other animals. He pointed out the frequency of muscular anomalies compared to that of other tissues, bone and fibrous

tissues coming next, and he upheld the application of the word "crystallisation" as applied by Professor Cunningham to arrested development of certain parts, due to the production of some secretion, either by the cells of the part itself or by those surrounding it, which caused a limit to be set to its further growth in a particular direction. It would be interesting to distinguish between those muscle variations that are the result of imitation, conscious and unconscious, and those that are to be referred to an arrested development or atavism.

V.—J. YULE MACKAY, M.D.Glas.,
Professor of Anatomy, University College, Dundee.

Dr. YULE MACKAY referred to the influence of pathological conditions as affording a classification into pathological and normal. He criticised the use of the terms retrospective and prospective.

CONCLUDING REMARKS BY THE PRESIDENT.

Sir JOHN STRUTHERS congratulated Professor Cunningham on his able paper. It had, he said, been most refreshing for him to hear the subject discussed with such openness of mind, untrammelled by those supernatural and theological opinions which had so long delayed the advance of this part of science. It had been his intention to address the Section on the Teaching of Anatomy, a subject which he considered to be still most worthy of attention, but his recent illness had prevented him. He considered that anatomy had fallen greatly in dignity and importance since the introduction of the new regulations, owing to a want of adaptability of the courses, etc., in that subject to the needs of the first year's student whose head was being confused by a mixture of botany and physics. He advocated the adoption of more practical demonstration and dissection as opposed to descriptive lectures, the former being far more suited for the training of the young student in actual observation for himself.

LANTERN DEMONSTRATION ON CRANIAL TOPOGRAPHY.

By JOHNSON SYMINGTON, M.D.,
Professor of Anatomy, Queen's College, Belfast.

Professor SYMINGTON demonstrated, by means of the lantern specimens and photographs, a method he had devised to illustrate the relations of the scalp and skull to the external surface and to the internal parts of the brain.

The entire head was injected through the carotid and vertebral arteries with a solution of formalin, at first 1 in 5, and subsequently 1 in 10. The injection was repeated, and the head kept in a solution of formalin until it was thoroughly hardened. Before freezing the head it was injected with a solution of gum to prevent, as far as possible, the minute cracking and tearing of the brain which is so apt to occur as the result of the freezing process. The entire head was fixed in position in a box which was filled with a solution of gum. It was frozen, and then cut through a given plane—horizontal, coronal, or sagittal—into a series of slabs. The various slabs were put together again, sheets of cardboard being placed between them to compensate for the thickness of tissue removed by the saw. A photograph was then taken of the side of the head to show the position of the various cuts on the scalp. The soft parts were then removed on one side, *en masse*, down to the bone, and another photograph taken to indicate where the skull was divided. The bone and the dura mater, except in the position of the sinuses, were then removed, and a photo taken of the surface of the brain. The cut surfaces of the various slabs were then photographed, and additional sections made through the brain with a large knife, where necessary, in order to show the extent of the basal ganglia, lateral ventricles, and other internal parts of the brain.

The advantages claimed for this method were that it demonstrated not only the relation of the scalp and skull to the surface of the brain, but also the position of the deeper parts of the brain to the superficial aspect of the scalp and the cranium. From such a series of sections orthogonal projections of the internal parts of the brain could easily be made on to the surface of the head.

The author expressed his indebtedness in the photographic part of this research to Dr. Cecil Shaw and Miss Patterson.

OBSERVATIONS ON THE SHAPE OF THE SOLID ABDOMINAL ORGANS.

By DAVID HEPBURN, M.D.,
Lecturer on Regional Anatomy, University of Edinburgh.

[ABSTRACT.]

DR. HEPBURN described and demonstrated certain characteristic as well as novel appearances in connection with the shape and surface markings of the kidneys, spleen, liver, and pancreas, of an adult male subject. He also made a series of comparisons between these and the corresponding organs of a fœtus: a young child (as seen in the casts prepared by Professor Cunningham), and an adult, as seen in the casts prepared by Professor His. As regards the kidneys and the liver, Dr. Hepburn considered that he had been able to direct attention to a number of features which had hitherto escaped notice.

DISCUSSION.

Professor THOMPSON said he was not of opinion that the facetting of the kidney was a condition present during life.

Professor CUNNINGHAM said that in a properly hardened subject the facetting was most distinct before the removal of the peritoneum from around the kidney.

Professor HUGHES referred to variations of the shape of organs due to position.

Professors BIRMINGHAM and BRYCE spoke on the liver, and on methods of hardening it.

A NEW DISSECTION, SHOWING THE INTERNAL GROSS ANATOMY OF THE HIPPOCAMPUS MAJOR.

By J. G. MCCARTHY, M.D.,
Senior Demonstrator of Anatomy, McGill University, Montreal.

[ABSTRACT.]

THE brain having been previously hardened, and the hippocampus exposed, an incision is made along its convexity, through the white substance and a small layer of grey matter, when a distinct cleavage is seen.

The superficial portion of the hippocampus can be detached, and a number of well-defined, tooth-like processes are exposed, interdigitating with depressions in the grey matter of the outer mass of the floor of the descending cornu of the lateral ventricle. Towards the pes the tooth-like processes are replaced by prominent ridges, which wind around the anterior surface in a somewhat spiral manner. The internal elevations give rise to the notched appearance on the outer surface of the pes. When the outer coating is removed from the hippocampus in a hardened brain, it presents an appearance not unlike a caterpillar, with its legs protruding outwards into the brain substance.

The tooth-like processes above described are in continuity with the grey matter of the gyrus dentatus above the dentate fissure, but do not correspond with its elevations. The theory advanced to explain the hippocampal convolution will explain the formation as seen in its interior. The involuted grey matter being subjected to great pressure during development, the tooth-like processes are pushed out where there is least resistance.

ON THE ARRANGEMENT OF THE MUSCULAR FIBRES (1) OF THE STOMACH, (2) OF THE UPPER END OF THE ŒSOPHAGUS.

By A. BIRMINGHAM, M.D.,
Professor of Anatomy, Catholic University, Dublin.

STOMACH.

THE muscular coat of the stomach consists of three incomplete layers—external, middle, and internal.

1. *The external layer* consists, as usually described, of longitudinal fibres continuous with those of the œsophagus;

best marked on the lesser curvature when the stomach is distended, also well seen on the great curvature and near the pylorus, but represented in practically all other parts by a thin layer, the fibres of which are irregular on the two surfaces some distance below the cardia.

2. *The middle layer* is composed of circular and oblique fibres; the former, which are the more numerous, are found in the form of rings surrounding the stomach from the sphincter pylori, which they form, to the cardia. Beyond this the layer is continued for some distance in the form of oblique fibres, which radiate from the right side of the œsophageal opening downwards and to the left on the two surfaces of the stomach. These fibres, becoming more and more oblique, are continued above into the more superficial of the circular fibres of the œsophagus. The fibres of this layer do not, as usually described, encircle the wide end of the stomach as a series of rings; these rings belong to the internal layer.

3. *The internal layer* consists, like the middle layer, of circular and oblique fibres, but whilst the oblique fibres are but slightly developed in the middle layer, they form an important part of the internal layer. Beginning as a series of circles at the summit of the fundus, it extends in the form of a thin layer of rings, disposed at right angles, to the long axis of this part of the stomach as far as the cardia. Beyond this it is continued by a number of fibres, which radiate from the left side of the œsophageal opening downwards and to the right or both surfaces of the stomach, some of them reaching almost as far as the antrum pylori. These fibres end by turning abruptly towards the great curvature and passing into the circular fibres of the middle layer. The highest of these oblique fibres are continuous above with the deeper circular fibres of the œsophagus.

Œsophagus.

The longitudinal fibres of the œsophagus do not divide above into three bands (an anterior and two lateral) as usually described. At a point on the back of the œsophagus, about one inch and a-quarter below the cricoid cartilage, the longitudinal fibres of each lateral half diverge from one another, forming two "lateral bands" with a V-shaped interval between them. The two lateral bands gradually wind upwards and forwards round the side of the œsophagus, pass up beneath the lower margin of the inferior constrictor (with which a few of its fibres are connected by fibrous tissue), and coming to the front meet, but do not unite, and end somewhere below the middle of the cricoid on a short, common tendon about a quarter of an inch wide, which is attached above to the upper end of the vertical ridge on the back of the cricoid. In describing the longitudinal fibres it is preferable to trace them from the common tendon downwards, spreading dorsalwards, and meeting behind one inch and a-quarter below the cricoid. The V-shaped interval between the diverging bands is filled by the circular fibres of the œsophagus, thinly covered over below by irregular primately-arranged, or decussating, fibres derived from the longitudinal layer, and above by the overlapping lower edge of the "œsophageal portion" of the inferior constrictor, with which the circular fibres blend.

The circular fibres end superiorly: at the back by blending with the fibres of the œsophageal portion of the inferior constrictor; at the sides the highest bundle is prolonged to the outer margin of the common tendon of the longitudinal fibres; whilst in front they gradually thin off, and finally cease a little distance below the middle of the cricoid.

The lower, or "œsophageal" portion of the inferior constrictor differs from the rest of that muscle in that its fibres are continuous from side to side, and do not decussate or join the raphé. It is apparently transitional between the circular fibres of the œsophagus and the inferior constrictor proper.

On carefully removing the mucous membrance, etc., from the back of the tube at its junction with the pharynx, there are generally found running downwards and inwards on each ide of the middle line, a few thin and scattered muscular bundles, constituting a pharyngo-œsophegeal muscle, which arises above from the tissue in which the palato-pharyngeus ends, and terminates below by decussating with its fellow, and joining the circular fibres near the upper end of the œsophagus, which fibres it helps to fix.

Professor Cunningham expressed his surprise at the novelty of the condition and the difficulty of offering any explanation of it.

SOME ABNORMALITIES OF THE OCULAR MUSCLES.

By D. P. Fitzgerald, B.A., M.B.R.U.I.,
Demonstrator of Anatomy, Queen's College, Cork; House Surgeon Cork Eye, Ear, and Throat Hospital.

I wish to direct attention to certain muscular abnormalities that have recently come under my notice. The necessary dissections were made by one of my Prosectors (Mr. Frost) under my personal supervision as Demonstrator of Anatomy in Queen's College, Cork. Any doubt as to the muscular nature of the structures in question was completely removed by a microscopic examination, which showed the bands to be composed of striated fibres. The "subject" was a well-developed man, about 26 years old. I may say that the muscular system generally showed an unusually large number of anomalies, and I am certain that greater care and precision would have materially increased the list. The following illustrations and descriptions will, I hope, make matters clear, and I may add that the former are purely diagrammatic. On thinking over the subject I have ventured on certain explanations, which I would submit for consideration. Diagram I illustrates the condition found in the left orbit, while Diagram II shows that in the two orbits of the same "subject."

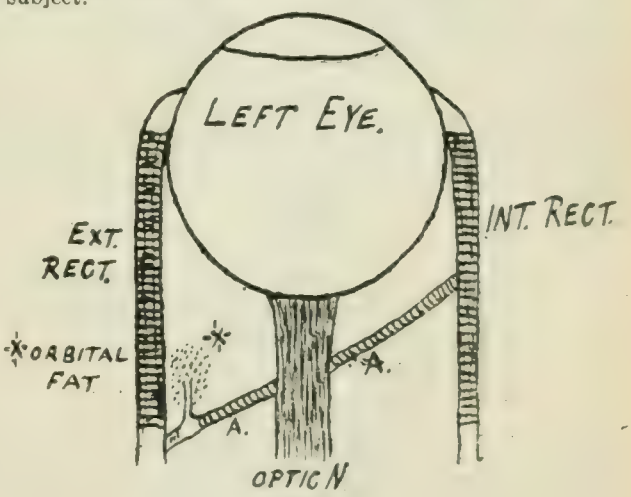


Diagram I.

A muscular band A, one and a-half to two mm. thick, arising by means of an aponeurotic expansion from the ocular surface of the tendon of origin of the external rectus muscle. From the aponeurosis a thin slip passed forwards and ended in the orbital fat. The fleshy fibres formed a compact band, which passed inwards, forwards, and under the optic nerve, and blended by a distinct muscular attachment with the ocular surface of the internal rectus slightly anterior to its middle.

The muscle band A is an accessory to the internal rectus, increasing the latter's action. It may be regarded as an additional origin of the muscle. Its muscular continuity with the internal rectus was very evident. It could have no appreciable influence over the action of the external rectus owing to its attachment to the latter being just at the bone.

Diagram II—A muscular band A, one and a-half to one and three-quarters mm. thick, arising from the under surface of the tendon of origin of the levator palpebræ superioris by a distinct flat tendon about two and a-half mm. long. The muscular fibres formed a well-defined band, which passed forwards and inwards under cover of the levator palpebræ and superior oblique, and gaining the inner side of the latter divided into two fleshy slips B and C. The outer (B) of these blended with the levator palpebræ at the junction of its anterior and middle thirds, while the inner (C) passing forwards and inwards was inserted by an aponeurotic struc-

ture into the internal angular process of the frontal bone at a point about one-fifth of an inch inferior and slightly anterior to the trochlear attachment of the superior oblique. Each of the two slips received a distinct twig from the third nerve and a separate branch from the ophthalmic artery.

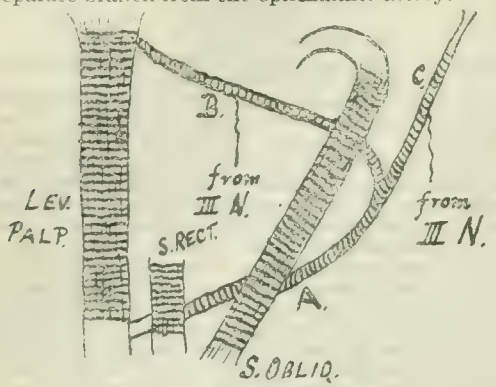


Diagram 2.—Right and left eyes.

It will be noted that there is no appreciable connection between the inner slip (C) and the pulley of the superior oblique. C may represent the tensor trochlea of Budge, while A and B may be regarded as a detached portion of the levator palpebræ, though in this case C would have no influence over any part of the superior oblique. The proximity of its attachment, however, to the pulley of the latter would favour such a view. In this connection it will be observed that the slip C derives its nerve supply from the oculo-motor. On the other hand, the slip B, obtaining its nerve supply from the same source, could act as an accessory to the levator palpebræ, and would tend to draw the upper lid somewhat inwards.

REFERENCE.

[1] *Quain's Anatomy*, vol. ii, part ii, p. 291, Tenth Edition.

PRELIMINARY NOTE ON THE DEVELOPMENT OF THE SYMPATHETIC SYSTEM IN ELASMOBRANCHS.

By A. M. PATERSON, M.D.,
Professor of Anatomy, University College, Liverpool.

[ABSTRACT.]

Professor PATERSON made a preliminary communication, in which he demonstrated the formation of sympathetic ganglia as derivatives of the dorsal gangliar elements, by a process of cellular growth; the union of adjacent ganglia to form a communicating cord, and the junction of a visceral branch of the ventral root, which alternates with the dorsal root, with the cellular ganglionic mass at an early stage in its development. He made further remarks on the position and mode of origin of the dorsal ganglia and ventral roots.

THE ANATOMICAL BASIS OF REDUCTION BY MANIPULATION OF DISLOCATION AT THE SHOULDER JOINT.

By DAVID WATERSTON, M.B., F.R.C.S.E.,
Demonstrator of Anatomy, University of Edinburgh.

THE long-employed method of reducing dislocations at the shoulder-joint by muscular strength has recently been largely superseded by a more safe and elegant method of manipulation, first fully described and explained by Professor Kocher of Berne, in a communication to the International Medical Congress of 1881.

Manipulative movements, combining internal or external rotation with some others, had been previously known, but their effect had not been studied anatomically, and, as far as I am aware, no definite explanation had been advanced. Kocher's method is now extensively employed as being an excellent procedure, though his explanation of its working has been called in question; and I wish to lay before this meeting what I think is a reasonable explanation, as I have found by frequently testing the method on cadavera and dissected specimens; and, as it is a question of surgical anatomy, I trust it may be of interest. As a preliminary, I must explain briefly what is the position of parts in a common form of dislocation—the subcoracoid—which I shall take as being one of the commonest forms, and being specially suitable for treatment by manipulation.

I will take a description of the conditions from a standard work, which runs as follows: "The head of the bone lies on the anterior surface of the neck of the scapula, immediately below the coracoid process, anterior, internal, and inferior to its normal position, that part of the anatomical neck which separates the articular surface from the great tuberosity lying on the edge of the glenoid," with, as Mr. Caird has shown, an indented fracture of the head caused by the lip. "The capsular ligament is lacerated anteriorly and inferiorly, and the subscapularis muscle raised from the neck of the scapula and spread in front of or above the head. The muscles attached to the great tuberosity may be torn away." The movements carried out are—

1. Elbow approximated to side. Outward rotation of the arm, held nearly vertically, elbow flexed, till arrested.
2. Elevation of the elbow forwards and inwards.
3. Rotation inwards.

Kocher's explanation is, that, when external rotation is carried out, the upper part of the capsule and the coraco-humeral ligament are also twisted out, and the posterior and untorn portion of the capsule is removed from the glenoid fossa, while the gap inferiorly gapes wider and wider as the external rotation is carried out. When the arm is raised and carried towards the median line, the head of the bone passes from the edge of the glenoid fossa through the gap. For this latter manipulation relaxes the upper part of the capsule, but renders tense the untorn fibres of the lower part, so that the head of the bone cannot move forwards. Rotation inwards completes the reposition of the head of the bone.

I was not able to satisfy myself that this classic explanation represents the mechanism, for the following reasons:—

1. It is well known that the capsule of this joint is very lax, and that extreme movements in almost every direction are limited by the muscles as well as by ligamentous bands.

2. When the head is removed from its position in the socket, and lies under the coracoid process, the attachments of the coraco-humeral ligament are approximated, and therefore a greater degree of movement should be permitted before the ligament becomes tense; but this is not the case. The arm can be brought to point outwards only to the extent usually permitted, and as the bony surfaces do not impede the movement, we should look to the muscles as being the agents affected.

On making trial on dissected parts, reproducing as accurately as possible the conditions I have described, I found that my views were supported by the facts, and that the parts rendered most tense were the internal rotator muscles, and the lower part of the capsule. I subsequently ascertained that Professor Farabeuf had made similar experiments, and my conclusions were verified by the result of his experiments.

On studying the movements more closely, the important point appeared to me to be that the rotation movement does not occur, in the usual manner, about the axis of the bone. As Mr. Caird has shown, we are justified in regarding an indented fracture on the anatomical neck as invariably present in a typical subcoracoid dislocation. Now this indent is caught on the anterior lip of the glenoid, and forms with it a fixed point, about which rotation occurs, so that what is required happens, namely, the whole head rolls outwards in front of the rent, which is at the same time stretched, and gapes.

Farabeuf claims that the posterior part of the capsule winds round the cylinder of the humerus, and this may be a secondary agency in promoting the rotation outwards, but, in my own opinion, the locking of the glenoid and the indent is the primary, and is assisted by the tension of the internal rotators, which press the head back and outwards as they are wound round the shaft.

The next movement is equally interesting, and is easily understood if we regard the humerus as a lever, whose long arm is at the elbow, to which the power is applied, the head, which is moved as the short arm, and the fulcrum as a point

just below the head, fixed by the muscles inserted there, the latissimus dorsi, teres major, and subscapularis, when intact.

The elbow is moved forwards, upwards, and towards the middle line, and the head passes backwards, downwards, and outwards, in the very direction in which it must go to return to the socket, and the fulcrum is a musculo-fibrous band, consisting of the muscles I have enumerated, and of the lower part of the capsule, which is closely associated with them. The coracoid process appears to have some action as a directing structure, the smooth articular surface gliding back under it.

It is a matter of frequent experience, as shown by published cases, that reduction occurs when the movement of external rotation is completed and when the forward movement of the elbow is commenced, and this would be explained by the head being brought in front of the gaping rent, only a slight indent being present on the anatomical neck, and the tension of the muscles pulling the head back.

The inward rotation, the last movement, disengages the indent from the lip of the glenoid, since the muscles and capsule attached at the neck are so tense that the neck is fixed and the head must roll back into the socket; it cannot roll inwards again. It will be noticed also that the scapula is rendered immobile by the tension of the muscles attached to it, and by the fact that it cannot rotate about a vertical axis; hence there is no tendency for it to move with the movements of the humerus, so that it remains in position. I, therefore, conclude that the reduction does not depend on the coraco-humeral band but on the following:

1. The rotation movement occurring about the posterior part of the head, so that the head moves outwards as a whole.
2. The tension of muscles assisting this movement, drawing the head still further into position.
3. The fixation of the neck, especially by the latissimus dorsi and the pectoralis major muscles, whose origins are separated from their insertions.
4. This fixed point, acting as a fulcrum, on which movements of the head can be brought about by movements of the elbow, and opposite in direction.

Mr. Stanley Boyd agreed with Mr. Waterston that the coraco-humeral band was lax in the sub-coracoid dislocation, and could not cause the check to outward rotation. With regard to the laxity of the capsule of the shoulder-joint, Mr. Boyd thought, it should be taught that the bones are separable only when the arm is sufficiently abducted to relax the coraco-humeral band.

SECTION OF DERMATOLOGY.

William Allan Jamieson, M.D., President.

A DISCUSSION ON THE NATURE AND TREATMENT OF LUPUS ERYTHEMATOSUS.

I.—C. P. M. Boeck, M.D.,
Professor of Dermatology in the University of Christiania.

Etiology.

Since the meeting of the International Medical Congress in 1881 this very strange and peculiar disease has been a standing subject for reports and discussion by dermatologists at almost all their meetings and congresses. In spite of this there remain not only many interesting questions still unsettled as to the clinical forms and the pathology of the disease, but the question of its etiology has above all gained special interest. For the number of those who hold that lupus erythematosus has an intimate connection with tuberculosis, that most murderous of all diseases at the present time, at least amongst civilised nations, is steadily increasing.

In my opinion it is clear that lupus erythematosus is one of the links in the whole series of affections of the skin, which all point back to tuberculosis as their common source of origin. Such a group was, it will be remembered, formed by M. Hallopeau at the Dermatological Congress in London two years ago.

It will be convenient here to include under the term "lupus erythematosus" only such forms as are so-called by all, that is to say, all the common discoid forms. I shall draw no distinction between the deeply infiltrated and the more inconstant and transient forms, since in my experience a successive transition from the most inconstant, for instance, erythema lupinosum (Veiel) to the most persistent forms may easily be traced. They are all of eruptive inflammatory nature. The most persistent and infiltrated patches are at one time more red and inflamed, at another time more pale, and the conditions are thus kept up through a continued series of eruptions. The very rare, more generalised, and more malignant form, the lupus erythematosus disseminatus et aggregatus described by Kaposi, is also unanimously acknowledged to be a form of lupus erythematosus.

The theory that lupus erythematosus is of tuberculous origin, an opinion which Mr. Jonathan Hutchinson was one of the first to maintain, is adopted also by some of the leading men of the French Dermatological School, especially M. Besnier. At the Dermatological Congress in 1892 Dr. Jamieson supported the theory of the tuberculous origin of the disease, but suggested an angeio-neurotic pathogenesis for it. According to M. Hallopeau, most French dermatologists have recently adopted the theory of the tuberculous nature of the disease. Mr. Hutchinson, M. Besnier, and his colleagues were led to infer the tuberculous nature of lupus erythematosus from clinical observation, and at the present time this seems to be the only basis for investigation. Microscopical, bacteriological, and experimental researches have as a rule failed to give positive results. The only reservation to be made is with regard to microscopical investigation, as will be pointed out later. Injections of tuberculin have not given a positive answer, and more is to be hoped for from clinical and statistical investigation.

Statistics.

My own statistics give, in my opinion, an answer sufficiently positive in favour of the existence of a decided connection between this disease and tuberculosis, so also do the French statistics as stated by M. Hallopeau in a recent paper in the *Semaine Médicale*. I have collected from my own practice in recent years 42 cases of the common form of lupus erythematosus. Of these 42 cases, which were not selected, 35 were females and 7 males.

The age of the patients at the onset of the disease was noted in 29 cases; the average was found to be 32 years. Three of the patients were children, and in the youngest of them the disease began at 5 years. The most advanced age at which the disease began was 62 years. This patient was a man. The oldest patient observed was a man aged 64 years. Kaposi has seen the disease as early as 3 years of age, and he adds that he saw it once in "a very old individual." Some months ago Mr. Malcolm Morris demonstrated at the Dermatological Society of London a case in a woman, aged 72; nevertheless, it is, as is well known, rare to find old people suffering from this disease. Whatever may be the explanation of this fact I have frequently observed that when lupus erythematosus is beginning to fade away in elderly persons they themselves suddenly begin to shrink and decay. I have not yet had the opportunity of following up these cases to the end, but it is the general opinion of French writers that these patients very frequently succumb to pulmonary tuberculosis, but it would be of the greatest importance to collect well-established facts bearing on this point.

The Possible Connection of Lupus Erythematosus with Tuberculosis.

Of my 42 cases 28, or exactly two-thirds, presented evident symptoms of present or past tuberculosis, no less than 23, that is, almost 55 per cent., presented evident tuberculous swollen glands and scars produced by suppuration of glands in the neck, 8 patients presented traces of scrofulous affections of the cornea, and 2 patients had been operated upon for severe tuberculosis of bone. Now, it is quite certain that in Norway, as in other parts of the world, two-thirds of the population do not bear evident traces of tuberculosis, nor do we find 55 per cent. of our population affected with swollen tuberculous glands and scars, nor even 19 per cent. with cicatrices on the cornea after tuberculous keratitis.

The objection that I have confounded lupus vulgaris with lupus erythematosus will not, I am sure, be made at this meeting though such an argument has sometimes been put

forward. The only objection which can be made against these statistics is that the number observed is not large enough. Nowadays when the frequency of latent tuberculosis is well known the fact that one-third of the cases were not affected with positive tuberculous symptoms will not be allowed to have weight; it is in fact by no means rare for an individual who suffers from lupus erythematosus to exhibit at first no symptom of tuberculosis, but later to become positively tuberculous. I have recently recorded some cases of this kind. The fact that there is a marked history of tuberculosis in the families of patients suffering from lupus erythematosus has been specially mentioned by Mr. Jonathan Hutchinson, and the fact is often very striking, but as my own statistics on this point are not complete I shall not dwell upon it. I think that the statistics I have given are strong evidence of an intimate connection between the discoid form of lupus erythematosus, to which hitherto I have alone referred, and tuberculosis.

THE ACUTE FORM OF LUPUS ERYTHEMATOSUS.

In the acute malignant form of the disease described by Kaposi this connection also seems very probable. Of the 11 cases originally described by Kaposi 6 ended fatally, and in 3 the cause of death was pulmonary phthisis; in the other 3 it was pleuro-pneumonia. The only case I have myself seen is one which I have recently described. The death of the patient, which occurred at an early stage, was due to pulmonary tuberculosis rapidly developed; other cases ending in the same way have been described by other authors. In Dr. Brooke's case the patient died from abdominal tuberculosis. It must, however, be admitted that in some cases, in those for instance of Petrini and Koch, tuberculosis was not demonstrated.

CERTAIN ALLIED SKIN AFFECTIONS OF UNDOUBTED TUBERCULOUS ORIGIN.

There is another argument which pleads strongly for the dependence of this disease upon tuberculosis, and that is that there are certain skin affections undoubtedly tuberculous in origin which are to be found intermingled in such a manner with lupus erythematosus that an intimate relationship between them cannot be denied. These affections are allied on the one side to lupus erythematosus and on the other to lichen scrofulosorum (Hebra). There is, in fact, an uninterrupted series of transition forms linking these two diseases together. The forms bordering on discoid lupus erythematosus were described by Mr. Jonathan Hutchinson in the second of his Clinical Lectures upon lupus erythematosus.[1] I have myself described the same affection as a peculiar form of lupus erythematosus disseminatus, because (1) the efflorescences, the fundamental type of which is an erythematous lesion, may be found scattered over the whole body; (2) I have found them accompanied by erysipelas perstans (Kaposi); and (3) the microscopical changes are in complete agreement with the tissue changes found in discoid lupus erythematosus. Now these forms are almost always combined more or less with the acne-like and necrotic forms, which, as Hebra in his work on skin diseases pointed out, occur very often in combination with his lichen scrofulosorum. In some cases the erythematous element prevails, in others the necrotic and pustular. Special and attentive observations on this point for the last twenty years have convinced me that discoid lupus erythematosus is linked with lichen scrofulosorum in such a way that we cannot at any point cut the chain without doing violence to Nature. These forms are in France called "folliclis," granuloma innominata, and by other names. In recent years they have been described by many British writers as acne scrofulosorum or acne-like scrofulides. During the present year Dr. Johnston and Dr. Allen in America have described forms belonging to this group, but bordering more on lupus erythematosus, as necrosing chilblains and necrotic granulomata. These forms, too, may, as I have said, be accompanied by erysipelas perstans (Kaposi), and may be found connected both with common discoid lupus erythematosus and with the acute fatal form of Kaposi. It seems to me that these facts also afford strong evidence of the connection between lupus erythematosus and tuberculosis.

THE EXANTHEMS OF TUBERCULOSIS.

I will here digress to refer to two skin affections belonging to the group to which I have applied the term "the exanthems of tuberculosis." (1) The first is the not very frequent eczematous variant of lichen scrofulosorum, to which I have proposed to apply the term "eczema scrofulosorum." (2) The other is one of the most common skin affections to be met with in children; this is the well known whitish macules and scaly spots to be seen on the face of young people and children, the so-called pityriasis simplex or alba. The transition from lichen scrofulosorum through eczema scrofulosorum to this affection is easily traced. The importance of the recognition of this fact is obvious, since the practitioner, especially the general practitioner, will meet with this lesion every day in his practice. If he recognises it he may do much good by advising special care in the case of these young individuals, and may thus prevent tuberculosis from taking more dangerous forms in them.

On the whole, although it cannot be said that the dependence of lupus erythematosus upon tuberculosis is strictly proved, nevertheless I think that it is in a high degree probable, and further investigation will, I believe, finally settle the question.

THE TOXÆMIC TUBERCULOUS THEORY.

If the probability of such connection be granted, it remains to find an explanation. It may be said, and the possibility cannot of course be excluded, that tuberculous infection may here play only a predisposing part, and that the disease itself may be caused by another unknown infection which is favoured by tuberculosis, but I see no reason for having recourse to this hypothesis when we have the well known tubercle bacillus present in the body, and when the existence of this infection will easily account for all the symptoms of the disease. It has been suggested, among others by Brocq, that lupus erythematosus might be produced by various different causes in people weakened and predisposed, owing to tuberculous infection, but this explanation is not satisfactory since a disease so typical as lupus erythematosus must, as it seems to me, be produced by a special and specific cause.

But while we may consider the tubercle bacillus as most probably the real and essential cause of the disease, it must be remembered that this microbe can, for reasons above given, scarcely be supposed to be, as a rule, present in the inflamed skin. There are good reasons, therefore, for looking to the circulating toxins of the bacillus. This toxin hypothesis will also account for all the clinical symptoms of the disease and all the anatomical changes found in the tissues. Clinically the first symptom observed is a very marked hyperæmia due to vasomotor disturbance evidently set up in the vasomotor centres. This can hardly be doubted when we call to mind the sudden and remarkable symmetrical eruption of erythema lupinosum (Veiel). Microscopical examination also shows that dilatation of the vessels is the first pathological disturbance; then follows irritation of the tissue cells, both of the endothelial cells of the vessels, and of the connective tissue cells around them. These cells first show morbid proliferation, and then malnutrition. A general invasion by small migratory cells in masses may then be caused by the chemotactic effect of the abnormal products of the poisoned tissue cells; the inflammation very soon reaches a high degree. The masses of cells at first for the most part lie along the vessels, but the chorion is soon everywhere subjected to cell infiltration, and the intercellular tissue also suffers and is partially destroyed. The central atrophy and loss of substance which finally ensues may thus in part be accounted for. Besides, many blood vessels are rendered almost impermeable by the great proliferation of their endothelial cells, and finally, if the inflammation be very intense, they become the seat of true thrombosis.

Dr. Holder, of New York, has recently called attention to this thrombosis, and preparations which I have made from a deeply infiltrated patch on the cheek showed thrombosis very distinctly. The toxin theory, I think, accounts for all these lesions fairly well, and is also sufficient to account for the very chronic persistent forms. I do not therefore regard the hypothesis of M. Hallopeau as to the presence of any form of tubercle microbe in this disease to be necessary. I have never myself seen giant cells, but Dr. Audry, of Toulouse, found characteristic giant cells in two cases, and though he found no bacilli he nevertheless believes that this observa-

[1] "The Philip Holmes group," pp. 298 and 176.

tion affords a new proof of the tuberculous nature of lupus erythematosus.[2] If true giant cells were to be found more frequently in this disease, its analogy with lichen scrofulosorum, in which they are not seldom seen, would be the more obvious. It is probable that the bacillus itself may sometimes find its way by the blood to such inflamed foci, where it is stopped. This would account for the cases in which the local reaction is produced by tuberculin injections. I have, however, never seen a transition from lupus erythematosus to lupus vulgaris. Our President, Dr. Jamieson, has put forward the suggestion that the trunks of the nerves supplying the affected regions of the skin may, as in leprosy, be invaded, and that the varied appearances met with in lupus erythematosus may be due to neuritis. But against this hypothesis are (1) the distribution of the disease, which does not affect the area supplied by special nerve trunks or branches, and (2) the absence of marked disturbances of sensation in the affected areas. I had the sensibility of the affected areas in a severe case carefully investigated, with the result that it was found that tactile sensibility and sensibility to heat were normal, sensibility to pain was found a little greater in the affected areas, as is shown by the fact that the patient better distinguished between the needle point and the needle head than on the normal skin. The hyperalgesia revealed when an attempt is made to remove scabs and crusts from the affected surface is well known. The rare condition called erysipelas perstans is probably due to some pathogenetic process different from that which produces the other skin lesions of this disease, for it is very often, I might perhaps say as a rule, non-symmetrical; further, the vasomotor paralysis is persistent and will act more deeply on the tissues. Symptoms of peripheral nerve disorder may also be found, as in a case which I have described. This condition, as well as the pleuro-pneumonia which occurs in similar cases, is always accompanied by high fever and much prostration; nevertheless, the symptoms certainly belong to the disease itself, and are not to be looked upon as accidental complications. In one instance I observed such "erysipelas" in a woman, to whom calcium sulphide was given with the hope of inducing shrinking of some large tuberculous glands. Some years earlier the same drug had produced in the same patient a very acute eruption of discoid lupus erythematosus on the face. In a girl treated in the same way for tuberculous glands, ordinary discoid lupus erythematosus appeared on the cheeks and lasted for many years. Such occurrences as these are very well accounted for by the toxin hypothesis. For when a pathogenic microbe—for instance, the bacillus of leprosy—is attacked it will respond by reacting and pouring out its toxins.

It has been argued that the toxin hypothesis is unsatisfactory because lupus erythematosus is very rare as compared to tuberculosis, but to this I need only reply that many people take quinine, but very few suffer from quinine rash.

Nomenclature.

It seems to me that a discussion of the nomenclature of these disorders should be postponed until the etiology both of lupus erythematosus and of other skin affections related to it is more completely known.

Conclusions.

1. Lupus erythematosus is always and in all its forms an eruptive inflammatory disease of which the localisations are determined by the vasomotor centres of the skin. It is never merely a local process.

2. Local irritation by heat, cold, and drugs plays only an accidental and determining part by bringing the vasomotor system into play.

3. In view of the very frequent coincidence with tuberculosis it must be admitted that the latter plays an important part in the etiology of the skin affection, and is probably the real and essential cause of it. The fact that a connection may be traced between all forms of lupus erythematosus and certain affections the dependence of which on tuberculosis is beyond doubt is an evidence for the tuberculous origin of lupus erythematosus.

4. As the tubercle bacillus cannot be proved to be present in the inflamed skin, it is probable that the inflammation is brought about through the toxins of the bacillus which act in the first place on the vasomotor centres, and in the second place on the parts of the skin in which the vasomotor disturbances are set up.

5. The main anatomico-pathological changes are vasomotor dilatation of the blood vessels, secondary poisoning of the tissue cells, and inflammation—the whole resulting very often in atrophy, rarely in necrosis.

[2] A case published this year by Dr. Leredde, in which giant cells were found, may be considered doubtful.

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Guidance from Histology.

A generally recognised method of treatment, and one which necessarily springs from the nature of the disease itself, cannot exist so long as we are totally ignorant of the genesis of this disease.

But even assuming that those authors whose authority I myself so highly respect, such as Besnier, Boeck, Brock, Hallopeau, and Jamieson, are right in their belief that this skin disease has any direct connection with tuberculosis, still in the absence of any generally recognised constitutional remedy for tuberculosis, the difficulty of the local treatment would still remain, and we who do not believe in this connection would still have this difficulty to struggle with. I must confess that even the arguments recently adduced by Boeck and Hallopeau in favour of the tuberculous nature of lupus erythematosus have failed to convince me.

Now if the etiology fails to afford us a firm standpoint for therapeutical methods, we have still the pathological histology to give us a firm foundation. If we knew nothing of this, we would indeed be left to follow the blind path of mere empiricism. But fortunately for us the histology of lupus erythematosus has recently been so thoroughly investigated that it now gives us as clear a definition of the disease as clinical observation has ever done. If we could only succeed in establishing a complete harmony between the characteristic symptoms of its pathological anatomy and the chief properties of our remedies, we should raise ourselves above the low level of empiricism to a really rational treatment, and recognise the clue which would lead us safely through the therapeutical labyrinth. In any case some remedies are sure to remain which give us inexplicable results, and these must be reserved for future investigation; perhaps the study of etiology will eventually throw light upon their action.

What, therefore, I hope to offer as a guide towards the treatment of this disease is of an anatomical nature. The histology of lupus erythematosus is governed by a striking contrast between the processes going on in the epithelial layer and the subjacent cutis. The epidermis is exceedingly dry, hyperkeratotic, and shows horny processes penetrating downwards, which were for a long time mistaken for comedones. The cutis, on the other hand, shows dilatations of the lymph spaces and lymph channels, œdema of the papillary body with the development of larger lymph pools, and a peculiar moist channelling of the cellular territories, which is produced by the atrophy of the collagenous tissue, and the breaking down of the feebly-rooted cells, which are carried away by the lymphatics. The outward appearance of the dry, centrally depressed patches give no indication that beneath these is situated an œdematous, softened, rarefied, readily-yielding cutis. We are, therefore, always surprised when upon very slight irritation, such as the use of a simple soothing ointment, very marked inflammatory œdema suddenly appears, and the patches rise and spread peripherally in a highly unpleasant manner. As I expressed myself two years ago during a demonstration of such a case, the sensation is just such an one as a traveller experiences who is crossing an apparently firm green meadow and suddenly finds himself plunged into a bottomless morass.

The histology of this affection, therefore, leads us—and this is the first, chief rule—to use, in spite of the outward dryness, desiccating agents, such remedies as are suited to reduce an inflamed œdematous patch into a pale, dry, and non-inflammatory condition of the skin. A second and equally important rule which is frequently transgressed is to avoid every remedy which might produce inflammatory

hyperæmia and œdema, even if in other respects it answers certain indications well.

INTERNAL REMEDIES.

From this point of view, let us next consider the internal treatment of lupus erythematosus. We may divide the different internal remedies in use into two groups: First, those which have a favourable influence upon the injurious vasomotor paresis of the face, such as the alkalies, carbonate of ammonia, ichthyol, salicylate of soda, ergot; and secondly, those to which a not easily definable specific action has been attributed, as phosphorus (Bulkley), salicin (Crocker), tuberculin, iodide of starch, iodide of potassium, and arsenic. With arsenic and the iodides I have obtained only negative results; with tuberculin I have had good effects but no cure; with phosphorus and salicin I have had no personal experience. On the other hand, I can point to favourable results from the use of carbonate of ammonia, ichthyol, and salicylate of soda in all cases in which a tendency to œdema and hyperæmia of the skin paralysed the effect of external applications. But I should not like to state—and I do not think that anyone else has ever stated—that this disease has in a single instance ever been cured by any of these internal remedies alone without the aid of external means. On the contrary, many cases have certainly been cured by the sole use of external applications. This fact emphasises the local and unconstitutional nature of the disease. In spite of this, we are not precluded from the hope that in course of time some specific internal remedy may yet be found, and all suggestions in this direction deserve to be thoroughly tested, for it is of the greatest importance for the ordinary practitioner who is not in possession of the entire technical dermatological apparatus, as well as for the public welfare, that we gain more and more of these specifics. But for the small advantage which is sometimes derived from some internal remedy which is not in this sense a specific, and which is meant to be used along with external applications, I confess I could never feel any burning interest. I believe that we are in a position to overcome by a more exactly individualised method and technique of external application those difficulties to conquer which such internal remedies have been requisitioned; and, if it be retorted that it does not matter in what way the treatment is conducted provided it succeeds in curing the patient, I must express my conviction that the more we understand a patient's disease and the exact value of the different remedies we use to counteract it the greater is the advantage to the patient.

EXTERNAL REMEDIES.

There can be no doubt that we have far more opportunity for observation when we use external remedies. We may in each case of lupus erythematosus apply two or three different remedies at the same time to various patches of the disease. Then after a short time it becomes clear not only to us but also to the patient which of these remedies is producing the best result and is being best tolerated. It is the comparative study of the therapeutic effects of different remedies at the same time which most vigorously arouses our own scientific interest and produces a conviction in the mind of the patient that there are remedies, and that there is a help ready to his need. My own experience of the treatment of lupus erythematosus by external means (putting aside some specially refractory cases) has been as a whole not so discouraging as that of my friend Professor White of Boston, who some time ago expressed a rather hopeless opinion. Nor do I believe that the good results which I have had, especially in the last few years, are to be explained by saying that I have been the victim of deception produced by spontaneous cures, for I have seen lupus erythematosus partly, though never entirely, disappear of itself.

Taking into consideration the important rules which I have just mentioned, we may divide the external remedies in use in the treatment of lupus erythematosus into six categories. Three of these include mild remedies, which may be recommended in all cases: (1) The drying, (2) the compressing, and (3) those remedies which tend to reduce hyperæmia. Next we have two categories of much more doubtful value: (4) The necrotising, and (5) the inflammatory, and to these we may add (6) the specific remedies, still to be marked with a point of interrogation. The drying remedies rightly deserve a very wide application, either as powder, paste, or wash with powdery precipitate. All powders in use for skin diseases may be employed, the mineral as well as the vegetable, especially oxide of zinc, calamine, subnitrate of bismuth, oxychloride of bismuth, calomel, oleate of mercury, terra silicea, bolus alba and rubra, salicylate and carbonate of magnesia, amylum. I am in the habit of giving, after a strong night treatment, the following mild powder of skin colour during the day:

Oxide of zinc.
Boli rubræ.
Boli albæ āā 2, o.
Carbonate of magnesia āā 3, o.
Amyli oryzæ 10, o.
M. f. Pulvis cuticolor.

This can also be used with advantage round an obstinate and vigorously treated patch, where we fear peripheral œdema and extension. After a vigorous treatment sometimes such a general sensitiveness of the skin is produced that only applications of flour can be borne, best in the form of powder bags. These have also a good effect together with or after the use of stronger remedies, that is, applied over strong plaster mulls, or after the cautery. Among the pastes the most important is the zinc sulphur paste, with the addition of ichthyol or cinnabar; then the lead vinegar paste (litharge boiled in vinegar) or the following paste, which is very drying:

Past. zinci sulphuratæ 20,
Resorcini;
Ichthyoli āā 1,
M. f. Pasta.

While the powders are used rather in addition to other forms of treatment to fill up intervals between them, these pastes have a special value of their own. Very mild forms of the disease vanish under their use, and stronger inflammations subside. For this reason they are suitable as a preparation for more vigorous methods, or as after-treatment. In the same way act the washes made of dilute acetate of lead, lime water with powdery precipitates as oxide of zinc, talcum, etc., like the liniment of Boeck.

These drying methods are indispensable, their action being always favourable the more inflamed and irritable the skin, but they never effect a complete cure: they only assist the spontaneous tendency to heal in the centre, while they check to a certain extent the unfavourable tendency towards peripheral growth.

The compressing remedies form a second group, which act mildly and always effectively. In a certain sense the drying remedies also tend to produce compression by rendering the horny layer dry and inelastic, and promoting keratinisation. But in order to deplete the lymph and blood vessels we need stronger compressive means, the best of which is collodion. Next to this we have gelanthum, zinc gelatine, and, lastly, the compressing bandages, introduced by Engmann and myself. The elastic rubber bands we can unfortunately not use for the face. Most to be recommended are collodion and gelanthum, more so as vehicles for other good remedies—ichthyol, soft soap, and salicylic acid with collodion, and the same and caustic potash (1-1,000) with gelanthum, have proved of special value. Naturally the collodion produces more compression than the gelanthum, but the latter may be washed off at any moment with warm water. The collodion is therefore better for unexposed parts and in hospitals, the gelanthum better in private practice and for the night only, but I have had a few lady patients who did not object to the use of collodion on the face in the day time. The effect of such a varnish of ichthyol, collodion, or soap collodion applied two to four times a day is often astonishing. Quite lately I showed in my post-graduate lectures given at Hamburg a patient in whom a long-standing lupus erythematosus disappeared totally under continued applications of soap collodion. It is necessary to take care that the collodion is perfectly neutral, as in many instances the collodion of commerce has a strongly acid reaction. For more indolent cases I prescribe

Collodion 20 Sap. virid. 2-4 M.	or	Collodion 20 Sap. virid. 2 Acid salicylici 2 M.

For irritable cases:

Collodii 20 Ichthyoli 2	or	Collodii 20 Ichthyolsulfon. 2

In a third group I place those mild remedies which produce hyperæmia, induce dryness of the cutis, without at the same time producing either surface dryness or mechanical pressure. To these belong pyraloxin, chrysarobinum oxydatum, ichthyolsulfon, mercury, pyoktanin, and lastly, the soaps and alkalies. My micro-cautery, if properly used, belongs to this group of remedies. The pyraloxin which I introduced to the profession two years ago for the treatment of lupus erythematosus, psoriasis, and eczema is a pyrogallol modified by oxidation, which has lost its inflammatory and toxic properties on the healthy skin, but yet diminishes hyperæmia and inflammation in the diseased parts. Pyraloxin has been recommended in the meantime with reason by Jamieson for eczema keratodes of the palms. This is a disease with has a certain analogy to lupus erythematosus in its obstinacy and masked inflammatory nature. The oxidated chrysarobin also, which has by oxidation become ineffective for most parts of the body, is of good effect in cases of great irritability in the facial region, where this affection takes the butterfly form, because in that part the vasomotor system is known to be specially weak.

Ichthyol contains in it ichthyolsulfon and a substance irritating for some skin diseases. If this be extracted there remains the ichthyolsulfon, an oily substance, which is quite harmless, but nevertheless tends to reduce inflammation like ichthyol itself.

Pyoktanin has a similar effect, but because of its disfiguring colour is only fitted for hospital treatment. Also metallic mercury, as we have long known, has a singularly favourable effect, especially in the form of plaster and soap. The salts and other preparations of mercury have by no means so good an effect. Their action is either too weak—as the oxide and subchloride—or too irritating—as the perchloride and nitrate.

The alkalies and alkaline soaps deserve a still wider application, that is to say, the caustics and the carbonates in weak doses; then soft soap, my salve soap (potash soap with an excess of fat), and Hebra's soap spirit. These approach from an anatomical point of view the ideal remedy for lupus erythematosus, for they reduce not only the hyperkeratotic surface, but also the hyperæmia and inflammation of the cutis, at the same time. To attain this good result we must apply them in watery solutions, and be careful not to allow the horny layer to become dry, otherwise the action of the alkalies ceases. The best form of application is therefore the wet bandage (bandages soaked with alkali and covered with impermeables, such as zinc plaster mull or my impermeable masks). An excellent way also of applying alkalies is to make a lather of any of the above-mentioned soaps, softly wipe the affected and well-lathered parts for some time with a sponge, and apply afterwards a bandage moistened with water, lead water, or some other alkaline liquid. Every day, as the tolerance for this treatment increases, we may prolong the duration of the lathering, and we often notice in this way very rapid improvement.

In contrast to the alkalies, the other remedies such as pyraloxin, oxidated chrysarobin, and mercury must be applied in the dry form of plaster mulls or pastes, and may well be combined with drying remedies, namely:

Pasta zinci 20
Pyraloxini 2-5.
M. f. Pasta.

They may also be mixed with soaps, lathered on the skin, and then covered with a wet bandage.

Sapon. kalini unguinosi 20.
Ichthyol sulfoni 2-5.
M. f. Sapo unguinosus
S. Salve Soap.

Even four of these remedies may be with good effect applied at once, namely, we may use a salve soap containing pyraloxin, cover it with a bandage moistened with caustic potash (1 in 5,000), and fix the whole with a mercury plaster mull.

The medicated salve soaps are also very suitable for the treatment of lupus erythematosus of the scalp. In this place, in order to prevent evaporation, fatty preparations should be applied. But generally we must be careful not to use ointments and salve mulls, especially on the nose and cheeks, for after a time erythemata appear, which favour the development of the disease. The effects of otherwise excellent remedies may even be ruined by a fatty vehicle. Fats should be replaced by pastes or cooling salves (that is, ointments containing watery fluids, like ordinary cold cream). The latter may sometimes take the place by day of a stronger night treatment, and may contain, for instance, acetate of lead, or aluminium, lime water, camomile water, cherry laurel water, and so on. In connection with the remedies of this group may be mentioned the micro-cautery, the inflammatory effect of which, under careful handling, may be disregarded. We produce by it at once a complete closure of the blood vessels and capillaries, and thus its action in checking hyperæmia is similar to the action of the antihyperæmic remedies. It is a good method to combine with these remedies the use of the micro-cautery. We may puncture the most inflamed and œdematous spots, and especially the red margins, at intervals of 2 to 3 mm., and cover the cauterised patches with ichthyol collodion, ichthyol gelanth, or a bandage moistened with ichthyol. These three groups of mild remedies I consider not only the best, but also, and especially the third group, sufficient, in almost all cases, to effect a complete cure. They perform this, not perhaps quickly, but surely, and without causing much annoyance to the patient.

Necrosing Remedies.—I cannot say the same for this group. We endeavour by the use of these remedies to destroy at once the diseased patch by chemical or mechanical means, or at least to lay it open by thinning or removing the epidermis. The former only have a definite and justifiable indication where the patches are covered with a very thick horny substance, and yield too slowly to other remedies. Next to the salicylated collodion, salicylic-cannabis-plaster mull has proved most valuable for the purpose. If we decide to apply in such cases a peeling paste, I would advise, in order to avoid ulceration, a smaller percentage of resorcin, and to add a certain amount of ichthyol:

Past. zinci,
Resorcini,
Æthere soluti ichthyoli ää pp. æq.
M. f. Peeling paste.

Ulcerative Remedies.—I can only recommend these remedies with the greatest reserve, although they are extensively employed. The chief representatives of this class are pyrogallol in strong doses and in the form of ointment, sublimate as ointment or with collodion, and the cauterisation with Pacquelin's cautery. To the same series belong the less usually applied chloride of antimony, ethylate of sodium, and the well-known mixture of carbolic acid, tincture of iodine, and chloral hydrate in equal parts. After the necrosis has been produced I would recommend the elimination of the necrosed parts, the process of cicatrisation to go on under mercury, or mercury and carbolic acid plaster mull. I will not deny that in this way definite cures of single patches, and even of single cases, may sometimes be effected. I have seen such myself, and up to three years ago, like most of my colleagues, I continued to follow this system. But about that date, having a considerable number of such cases to treat at once, I began definitely to give it up, because in most cases soon after the scars were healed the disease returned. I go so far as to believe that recurrence in this affection is mostly due to the use of the remedies comprised in these two groups which are too strong and difficult to control, and therefore always perilous. It is true that, for the physician as well as for the patient, wearied by a long and unsuccessful course of treatment, the rapid and apparently thorough destruction of long-standing patches is some consolation, and the patient is willing to put up with the unnecessarily deep scars which follow, because he believes that he is at length on a safe path, but this confidence is often bitterly disappointed and the patient plunged into despair by a partial or general recurrence.

Inflammatory Remedies.—I cannot express myself with much more favour on this widely employed group, such as tincture of iodine, iodine and glycerine, perchloride of iron, nitrate of silver, nitrate of mercury, trichloride of acetic acid, Fowler's solution, carbolic acid, naphthol β, pyrogallol and chrysarobin in weak doses, resorcin in strong doses, to which we may add stroking with Paquelin's cautery, scarification, and electrolysis. Each of these remedies has someone to recommend it, and it is quite conceivable that the personal skill which a dermatologist may gain by continual use of his favourite remedy may enable him always to keep within the limits of a reasonable application. He understands how to

avoid those risks with which the use of those means is surrounded; but for the ordinary practitioner and for general employment the use of these means will always remain too dangerous and unreliable. They are only to be recommended in a few cases, such as lupus erythematosus of the scalp and for specially indolent patches on the body. To detail all these precarious remedies would take too long. I will only mention the very newest recommended by Schütz, Fowler's solution. In one case only I noticed continual improvement in its use, and this was an extremely indolent case in an old peasant woman. In four other irritable cases the success was deferred, or even rendered questionable, by erythema and œdema, and I had the impression that I should have made a quicker and safer cure with soap and collodion. Still, I think that Fowler's solution is one of the safest of this class of remedies, and I should like to ask whether this superiority is caused by the arsenious acid itself, or partly by the excess of alkali necessary to keep it in solution.

Let us now glance back at the numerous remedies contained in these five groups, to see if among them there are any to which we may with reason give the title of specific on account of the speed, safety, and certainty of their action. I am sorry to say the results of such an investigation are somewhat scanty and dubious. The recognised mark of a specific is that, independently of the momentary state of the tissues and under the most various histological conditions, it always produces an easily recognised favourable change as, for example, mercury in all forms of syphilis. Here we must assume that the remedy attacks the actual cause of the tissue change. Now, in the case of lupus erythematosus it is only the group of alkalies and soaps which seem to me in the light of modern experience to approach this definition. Consequently the methods and the extent of their employment increase every day. In the second rank mercury and pyraloxin may be said to have a specific action, if the experience of the profession confirms the good results which I have obtained with the latter.

I should like, in summing up what I have said, to draw up a short scheme of treatment for the practical physician in the light of my own experience during the last few years. From this scheme I exclude all perilous unreliable remedies or those which require special personal skill. The first question after the diagnosis of lupus erythematosus is to ask whether we have to do with an irritable or an indolent case. In general the irritable cases are those on the cheeks, nose, eyelids, ears, the backs of the hands, especially if the patches are only slightly hyperkeratotic, swollen, and of a dark red colour. The indolent cases are those on the scalp, the lateral parts of the face and neck and on the rest of the body. Next to the seat of the disease, the personal factor plays an important part, partly because the vasomotor paresis of the vessels of the skin begins in each individual at a different point of irritation, and partly because each individual may possess a different idiosyncrasy in his tolerance of the various remedies which are capable of producing extraordinary irritations.

As we cannot, however, know beforehand whether an apparently indolent case may or may not react too strongly under a given treatment, the general rule should be to begin the treatment always with one of the mild remedies mentioned, and not to proceed to stronger ones till the former have proved not strong enough. Therefore we can never be wrong if we commence with nothing stronger than lead water dressings, but we may be wrong if without a cautious exploration of the field we begin at once with a strong ointment of pyrogallol.

A cautious treatment may therefore, for instance, begin with bandages of lead water at night, or the application of a powder bag, and during the day with a dusting of pulvis cuticolor, or a zinc sulphur paste, with ichthyol or resorcin eventually, to be rubbed in, or a gelanthum with ichthyol or soft soap, or with both may be prescribed for the night. Under this treatment the inflammation subsides, and it will be possible to distinguish the indolent from the irritable patches. If the latter show signs of fixed œdema, collodion with soap or ichthyol may be applied, while in cases of darker redness it will be advisable to use the micro-cautery. In addition to these applications an external dressing may be used at night consisting of lead water, ichthyol, or very weak caustic potash (1 in 10,000) solution. On the other hand the indolent patches require more vigorous treatment, as pyraloxin paste and the soap treatment, which may easily be modified in strength and quality by using the lather of soft soap, salve soap, or mercurial soft soap. These patches are best covered immediately after such a treatment by a wet bandage, and zinc oxide plaster mull or mercury plaster mull. Strongly hyperkeratotic patches require before the soap treatment a peeling with salicylic soap plaster mull. The patches on the scalp should be treated thoroughly with soft soap and then covered with pyraloxin ointment. In cases of anæmia, flushings of the face, or where digestion is disturbed, an appropriate plan is to give ichthyol internally during the whole course of the treatment. Such a treatment, it is true, does not always work *cito* but *tuto*, and comparatively also *jucunde*.

III.—Alfred Eddowes, M.D.,
London.

Dr. Eddowes said he had taken material from a patch of the disease which he thought might prove to be tuberculous, because of the close connection which the patient had had with a tuberculous family, and had it injected into guinea-pigs in the pathological laboratory of St. Bartholomew's Hospital. The result was negative. As to treatment, he considered that calamine and lead lotion (half and half) as a daily application and a solution of sodium ethylate for use by the surgeon left little to be desired. Acid nitrate of mercury and scarification were also of great service. Quinine often improved the condition but its results did not seem to be permanent.

IV.—Morgan Dockrell, M.D.,
London.

Dr. Morgan Dockrell said he could not understand how such a condition as described by Professor Boeck should exist in Christiania, when undoubtedly the experience in Great Britain was that the disease was not tuberculous. Of course from time to time a lupus erythematosus was met with on a tuberculous soil, just as was the case with other diseases, but this was accidental, and was quite provided for by the variety described by Hebir. He had hoped that the term "lupus erythematosus" would have been expunged in favour of ulcerative erythema, and indeed he failed to see why it should not, as far as the British School of Dermatology was concerned, leaving the old term for those countries where it could be used intelligibly.

V.—H. Radcliffe Crocker, M.D., F.R.C.P.,
Physician in Charge of the Skin Department, University College Hospital

Dr. Radcliffe Crocker said that for the last twenty years he had been on the look out for evidence of the connection between lupus erythematosus and tubercle, and with one exception there was a remarkable paucity of facts in this direction. The exception was that a considerable proportion of patients with lupus erythematosus had a history of phthisis in their family, though tuberculosis in themselves was certainly rare. Since no tubercle bacilli had been found in the skin lesions of this form of lupus, it had been suggested that it might be a tuberculous toxin which was the pathogenic factor. Against this it might be said that the experiment had been made on a large scale since of the many hundreds of phthisical patients subjected to Koch's tuberculin treatment, no instance of lupus erythematosus had been recorded as a consequence. Moreover the age of the patients, and the symmetry, localisation, and general behaviour of the lesions were quite unlike any recognised form of tuberculosis of the skin. On the other hand, there was a good deal to be said in favour of vasomotor nerve disturbance as a factor, and visceral lesions, uterine, gastro-intestinal, etc., were not uncommon in these patients. A secondary microbic invasion of the diseased area was also probable, and must be taken into account in the treatment. He had found salicin very beneficial in the erythematous cases, though he had been obliged to consult the wishes of the patient for local applications, and give soothing lotions, such as that of calamine.

VI.—James C. Johnston, M.D.,
New York.

Dr. Johnston observed that, at the recent discussion on this subject before the American Dermatological Association, Dr. Robinson, of New York, expressed the opinion that the disease was primarily a vasomotor disturbance due to toxin poisoning, and resulting in a condition somewhat analogous to the infective granulomata. The general opinion of the causal connection, in spite of evidence adduced, was that the case was not proven. With regard to treatment, Dr. White of Boston had expressed the opinion that little was to be expected from treatment, in which view many of those who took part in the discussion mentioned agreed. An interesting point in regard to pathology was the suggestion of Dr. Wm. H. Welch that the tubercle bacillus might be present in zooglœic form.

VII.—Dr. Maar,
Copenhagen.

Dr. Maar said that Professor Finsen of Copenhagen had employed his treatment of lupus vulgaris by the chemical rays of electric light or sunlight (by exclusion of the heat rays), also in lupus erythematosus. The few cases in which he had made this experiment had recovered, but only after persevering for a very long time. He thought that the possibility of curing lupus erythematosus by this same treatment (but applied for longer time) might have some interest in connection with the theory of a relationship between lupus vulgaris and lupus erythematosus.

VIII.—W. Allan Jamieson, M.D.,
President of the Section.

Dr. Allan Jamieson said that the forcible statements of Professor Boeck proved that the view of a tuberculous element in lupus erythematosus was not dead. This view was further supported by the admission of Dr. Crocker that it might be caused by a hypothetical toxin. The most important deduction from the observations of Dr. Unna was the emphasis he laid on the employment of mild remedies to the exclusion of caustics, which might occasion much harm. Dr. Crocker had said that it was difficult, if not impossible, to try internal remedies alone. There was a way in which this might be done; if the use of an external remedy were persisted in which had been proved by sufficient trial to be inoperative in an individual case, any improvement which might result from an internal medicament used subsequently in conjunction might be put down to it. Dr. Johnston had represented the gloomy prognosis held by American dermatologists. It would be unfortunate were this accepted. But, though the disease was often obstinate, and any one remedy uncertain, yet many cases were cured, and years had elapsed without recurrence.

Professor Boeck's Reply.

Professor Boeck said that time and continued observation must prove or disprove the observations and arguments set out in his opening paper. With regard to the prognosis of the disease, he said that he had many patients who were cured, and as he believed definitively cured, for he had followed them up for many years. As for the treatment, he agreed with Dr. Unna in every respect.

A DISCUSSION ON THE QUESTION, WHAT ARE WE TO UNDERSTAND BY ECZEMA?

I.—Malcolm Morris, F.R.C.S.Edin.,
Surgeon, Skin Department, St. Mary's Hospital.

Introductory.

The question here proposed for discussion is one that has particularly engaged the attention of dermatologists since the time of Willan, and, although their labours have not been unfruitful, it is still unsettled. We know a great deal about eczema, but we are not yet agreed as to what eczema is. Is it a disease or only a name? A special process following certain laws in its evolution and manifesting itself by definite characters; or a pathological expression denoting the results of several different forms of morbid action? As the word is used at present it is both; or rather it is now one thing and now another according to the meaning given to it by different writers. This indeed is one of the greatest, as it is the first, of the difficulties which meet us in dealing with the question which we are here to discuss. I do not profess to have a satisfactory solution of the problem to offer, and the time at my disposal would not allow me to present it fully worked out if I had. I can only indicate what I take to be the direction in which the solution lies, and call attention to a few salient points which may serve as landmarks to guide us on the way.

Definition.

The first thing to be done is to define the term. I feel strongly with John Hunter that "definitions are the most damnable things," but they are a necessary evil. My conception of eczema is expressed in the following definition, which was given in a work published five years ago and which I have seen no reason to modify: "A catarrhal inflammation of the skin, originating without visible external irritation, and characterised in some stages of its evolution by serous exudation." The terms of this definition exclude all forms of artificial dermatitis—that is, inflammation of the skin produced by chemical substances or mechanical irritants. Lesions due to such causes may be exactly like those of genuine eczema, but there is this fundamental difference: they appear in response to a visible cause, and begin to disappear when that cause ceases to operate. On the other hand, true eczema arises without obvious cause; the skin may be healthy or there may be some pre-existing abnormal condition, but there is no visible source of irritation. Eczema is idiopathic, but to say this is simply to confess our ignorance of the cause.

Nature and Cause of the Disease.

The older dermatologists for the most part followed Bateman in regarding eczema as a vesicular eruption caused by external irritation, as by the rays of the sun (eczema solare), by the irritation of various substances applied to the skin—sugar, lime, arsenic, etc.—(eczema impetiginodes), and by mercury taken internally, though it is often associated with gastro-intestinal inflammation when no mercurial preparation has been taken.

Bazin, whose influence was long predominant in the French school, saw in eczema the expression of various constitutional conditions—scrofula, "arthritism," "herpetism," etc. In this way different forms of eczema were easily accounted for by their dependence on some real or hypothetical "dyscrasia." The constitutional theory in its turn gave place to Hebra's doctrine that eczema was nothing more than superficial inflammation of the skin due to some external cause—an effect of local irritation. At the present day, under the influence of Unna, many dermatologists are coming to look upon eczema as a parasitic disease. Another view, which has not a few supporters, is that the disease has its origin in some disordered action of the nervous system. There are facts in favour of each of these agencies, and I am myself inclined to the view that in many, perhaps in all, cases they are combined, the nervous factor playing a more considerable part in some than in others. This dual causation appears to me to explain the facts better than any other that has hitherto been suggested.

The Parasitic Theory.

Unna has found parasites which he regards as specific both in vesicular and in seborrhœic eczema. These are cocci, which he calls "morococci," because they are often seen clustered together in little masses resembling mulberries. These micro-organisms are very frequently found in the cellular protoplasm of the elements of the vesicle. The morbid process in acute eczema consists essentially in an intense reaction of the skin, characterised not only by the formation of vesicles between the horny and mucous layers, but in congestion and œdema of the dermic structures; this effect is probably due to the action of toxins produced by the morococcus, since the parasite itself grows only in the epidermis. In chronic vesicular eczema morococci and other parasites are found in the scales. In seborrhœic eczema Unna has found morococci, "Flaschen-bacilli," and other bacilli of indeterminate character in the crusts and scales.

Unna has cultivated the morococcus, and by inoculation of the cultures has succeeded in producing acute eczema. That

the disease alike in the chronic and in the acute form is auto-inoculable, that is transmissible from one part of the patient's skin to another, is a fact known to every practitioner. But there is also clinical evidence of the contagiousness of eczema. Jamieson[1] has pointed out that in nurses who carry children affected with eczema of the nates, the disease is often inoculated in the arms. Some instances of the transmission of seborrhœic eczema by contagion have also been recorded.[2]

Seborrhœic Eczema.

With regard to this form of eczema it may be mentioned here that Leredde, a thorough-going partisan of the parasitic theory,[3] holds that Unna's description of it is too comprehensive, as it includes fatty seborrhœa, numerous lesions of the pityriasis type, and others called by Unna "yellow spots," which, neither on bacteriological nor on histological grounds, should be classed with eczema. Stripped of these extraneous elements seborrhœic eczema is still a parasitic disease, but not a pure eczema. It is, he thinks, a mixed infection due to the association of a variety of microbes, such as those of fatty seborrhœa, pityriasis of the scalp, certain micro-organisms which are agents in the production of acne, together with the morococcus, which is the parasite of eczema.

Predisposing Conditions.

On the whole, we are justified in taking it as proved that parasites are capable of causing eczema, and I think we may go further and regard it as highly probable that eczema is a parasitic disease. The fact that the most effective remedies are of the parasiticide class is of itself a strong argument in favour of this view. But whether the morococcus, or some other parasite, or it may be combination of parasites, is the actual cause of the mischief, is a point which we cannot regard as yet finally settled. In any case, the parasite must have a suitable soil to grow in; it cannot strike root in a perfectly normal skin. There are certain conditions of the integument which make it particularly liable to attack. Such are dry, hard, ichthyosis-like conditions: such are also the textural changes which are among the effects of old age. Such, too, particularly are skins which have been the seat of previous affections of long standing, notably the prurigo of Hebra, seborrhœa, varicose veins, and artificial dermatitis produced by chemical irritants or by other parasites, particularly the acarus scabiei. Among other causes of inflammatory conditions of the skin predisposing to eczema may be mentioned the irritation of certain secretions—diabetic urine, sweat, vaginal discharge, nasal mucus, etc.

The Nervous Factor.

Not infrequently, however, eczema develops on skin which is to all appearance perfectly healthy. In such cases it is clear that there is some agency at work which lessens the resistance of the integument to the attack of the parasite. Some passing disturbance of the nervous mechanism in regulating its cellular activity would be sufficient to account for a temporary impairment of nutrition that would make it ready to become the prey of invading micro-organisms. Records of cases in which the onset of eczema in its acutest form has followed worry, shock, mental strain, or other cause of nervous depression in persons with a previously clean bill of health, as far as the skin was concerned, are abundant. Financial panics and similar crises have been known to leave their impression on the skin of those affected in the form of eczema. In women eczema is often associated with menstruation, pregnancy, change of life, or uterine disorder, and in adults of both sexes with gastro-intestinal disturbance. These phenomena may be interpreted as results of reflex irritation.

Whether eczema may occur as an effect of nervous disorder pure and simple is a question which I am not prepared to decide. Leredde says that the nervous origin of eczema, though admitted by numerous writers, has no solid experimental or anatomical basis. He does not, however, refer to the cases reported by Colomiatti and Leloir, in which structural changes were observed in the cutaneous nerves, nor to those reported by Charcot, Vulpian, and others, in which eczema occurred in association with disease of the brain or spinal cord. Whatever may be the value of these facts—and I admit that they are of themselves insufficient to prove that eczema may be of purely nervous origin—the fact remains that there is ample clinical evidence to show that neurotic conditions predispose to the disease. Here, too, the effect of treatment is suggestive as to the considerable part played by the nervous syetem in the pathogeny of eczema. Nerve sedatives, such as opium, and antimony in very acute cases, are among the most valuable remedies we have.

Is Eczema Hereditary?

The statement so generally made by writers on dermatology, that eczema is hereditary, is true only in the sense that consumption is hereditary. Conditions, such as dryness of the skin or instability of the nervous system, which predispose to eczema may be inherited; and if the disease exists in one member of a family the others will be favourably placed for receiving infection.

Eczema and the General Health.

It only remains for me to say a few words as to the relation of the general health to eczema. The eruption is still regarded by many people as a kind of safety valve. Hence patients are often warned that they must bear their skin trouble with such fortitude as they can command lest a worse thing befall them in the form of congestion of the lungs or brain, or other formidable shape of internal disorder. I believe this fear to be absolutely without foundation. As for gout, diabetes, Bright's disease, and chronic dyspepsia, my experience is that in relation to eczema they are "aggravating circumstances," nothing more. They make a case more troublesome to treat than it otherwise would be, but they do not cause eczema nor do they modify its manifestations in any way recognisable by me.

Eczema does not usually affect the general health; it may, however, cause considerable depression by the sleeplessness which it is apt to produce.

Conclusion.

In conclusion, I venture to answer the question: What are we to understand by eczema? broadly as follows: It is a disease the most striking clinical character of which is the infinite variety of lesion by which it displays itself; originating in the action of parasites on a skin the resistance of which has been enfeebled by pre-existing disease or structural abnormality or by disordered innervation; sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health.

II.—Wallace Beatty, M.D.,

Dublin

The Polymorphous Character of Eczema.

The polymorphous character of the eruptions which are comprised under the term "eczema" is very remarkable, and if we are to understand by eczema a definite substantive disease, which manifests itself in many distinct forms, we are called upon to state, if we can, the cause of this disease, and to explain what the general features are which are common to every form, and how the various modifications arise. But at the outset our inquiry is rendered a very difficult one by the fact that the cause of eczema is, in the opinion of most of us, still obscure, and we are accordingly compelled to define its nature by its clinical and anatomical characters, and see how far these characters point to one or other of the three possible causes of disease—physical, chemical, or parasitic.

Anatomical Character of Eczema.

Anatomically eczema is to be regarded as an inflammatory catarrh of the skin, producing more or less exudation, exfoliation of the surface epithelium consequent upon the changes in the epithelial cells induced by this exudation, and irritation by the exudation and possibly structural change in the superficial nerve endings. All the various grades—dry, crusted, weeping—depend upon difference in the intensity of the inflammation, due, (*a*) if we regard the disease as parasitic, to difference in the strength of chemiotactic action, depending on the position of the parasites and on the amount of the toxins manufactured by them, which in turn depend

[1] *Diseases of the Skin*, 4th edition, 1894, p. 243.
[2] Perrin, *Ann. de Derm.*, 1896.
[3] L'Eczéma: Maladie Parasitaire. In *L'Œuvre Médico-Chirurgicale*. Edited by Dr. Critzman. Paris, 1898.

upon their numbers and the suitability of the soil; or (*b*) if we regard it as constitutional, to difference in the intensity of action of the morbific influence (whatever it may be) upon the vasomotor nerves or walls of the superficial blood vessels of the skin.

Clinical Character of Eczema.

Exudation.—From a clinical standpoint eczema is generally attended in some part of its course by a visible serous or sero-fibrinous sticky exudation, which often forms at first transitory, small, closely-set vesicles whose roofs rupture early, and thus a reddened, moist, sticky surface remains. The vesicular character of the disease is often only recognised by the presence of minute, circular, closely set, sero-fibrinous crusts. If we are to look upon the occurrence of this visible exudation as an essential feature of eczema, we must exclude all cases which develop and disappear without showing any trace of moisture; and, in all dry cases which come before us, before our diagnosis can be made, we must either obtain a clear history of exudation in the past, or we must wait for future manifestations of exudation, and so defer our diagnosis indefinitely. The characteristic exudation of eczema is admittedly serous or sero-fibrinous and sticky; this being so, can a pustular eczema exist? Should we not rather look upon the presence of pustules in eczema as a complication and not a part of it, and due probably to the accidental entrance of pyogenic organisms? Whatever the cause of eczema may be, we all admit that its natural tendency is to produce a serous or sero-fibrinous sticky exudation, with but few leucocytes, and it seems hard to believe that the same cause could produce, under any circumstances, an exudation so totally different. On the other hand, the character of the pustules which are seen from time to time in genuine eczema—namely, very small, closely set, and short-lived—give some ground for regarding them as something peculiar to the disease.

Scaling.—If visible exudation is not necessarily present in all cases of eczema, and if it only occurs in cases of some severity, we may consider whether changes in the epidermic layers of an inflammatory nature, and produced by the effect of a minute amount of exudation upon the epithelial cells, are a constant feature of the disease, and we find that in most cases a change, which manifests itself superficially by more or less reddened scaly patches, is present. In the early stages of erythematous eczema of the face we find this scaling absent, but when the redness and swelling which accompany this form lessen, desquamation follows. We may accordingly regard the clinical sign of eczema as an alteration in the epidermic layers, inflammatory in nature, producing more or less scaling.

Eczema and Psoriasis.

But now we must ask how are we to distinguish some cases of dry scaly eczema from psoriasis. The characteristic features of psoriasis are the presence of red circular spots covered with more or less abundant silvery scales, on the removal of which by scratching bleeding points appear. There is a form of eczema (Dr. Unna's psoriasiform seborrhœic eczema) which in its objective character resembles closely psoriasis. How is the differential diagnosis made?

Localisation.—Localisation comes to our aid. The presence of psoriasis on the bend of the elbows and below the knees at the commencement; of psoriasiform seborrhœic eczema on the scalp first and thence spreading downwards are distinguishing characters. At the same time, one meets with psoriasis-like eruptions occurring on parts favoured by true psoriasis, and, as well, on parts specially attacked by seborrhœic eczema; and as the appearance of the eruptions is identical, we are at a loss to decide whether the case before us is all seborrhœic eczema, all psoriasis, or a combined seborrhœic eczema and psoriasis. There is an immense difficulty in deciding upon the nature of some of the squamous cases we meet with.

In calling to our aid locality in the diagnosis of eczema, we find that the different accepted forms of eczema affect different localities. Thus, while eczema is in general prone to attack the flexor aspects, especially of the joints, and the junction of skin and mucous membrane, yet there are forms which mainly avoid these places and attack the extensor aspect rather more than the flexor, namely, so-called "nervous eczema," and Mr. Morris's "eczema folliculorum"; so, speaking generally, locality is not a certain help in the diagnosis of eczema.

An alteration in the epidermic layers manifesting itself by scaling is the most constant of all the objective signs of eczema, but we must except acute vesicular eczema, which runs an acute course, and may heal quickly without being followed by scaling.

Itching.—In the diagnosis of eczema the subjective symptom of itching comes to our aid. This symptom is commonly present, but are we to exclude eczema when it is absent?

The degree in which itching is felt depends not only upon the form of the eczema but upon individual peculiarities. The contrast between the intense itching so commonly experienced in eczema and the burning sensations experienced in psoriasis is worthy of note, but cannot be too closely relied upon. Occasionally pain rather than itching is felt in very acute eczema, for example, eczema of the genital region—acute vesicular eczema.

If the three clinical symptoms, serous or sero-fibrinous sticky exudation, scaling, and itching are present in most eczemas, are we to exclude any eruption in which neither visible exudation nor scaling is present? Where are we to place an acute more or less general eruption, characterised by the presence of minute, red, intensely itchy papules, having their seat at the hair follicles, the papules either scattered or in small groups; an eruption which, formerly called lichen simplex, is now usually described in dermatological writings under the head of papular eczema?

Eczema is Chronic, and Variable in its Manifestations.

An important characteristic of most eczemas is chronicity and variability in their external manifestations: eczema tends, when untreated, to last an indefinite time; dry patches become moist, moist patches become dry and scaly again and again in the course of the affection. These two characteristics are, however, wanting in acute vesicular eczema, and in acute papular eczema above alluded to.

Is Etiology a Factor in Diagnosis?

Etiology is an important consideration with some dermatologists. An eruption resembling eczema in its clinical appearance if brought about obviously by chemical or physical influences, such as poisonous plants, heat of the sun, is excluded by them from the group of eczemas, and, consequently, the diagnosis of eczema cannot be made according to them solely from the objective characters, but all sources of external irritation must be excluded. Some constitutional dyscrasia is at work, according to these observers. An eruption resembling eczema in every particular, if brought about by external irritation, is with them an eczema-like dermatitis, and not a true eczema.

Is Eczema a Parasitic Disease?

If we accept Dr. Unna's view that every eczema is due to the action of micro-organisms, his morococci, the diagnosis of eczema is plain. Just as we require a bacteriological examination to decide whether a membranous sore throat is true diphtheria or not, so we should require, if we accept the parasitic theory, a histological and bacteriological examination of each case of supposed eczema before we could establish our diagnosis. But while in the case of diphtheria the material for bacteriological examination is readily obtained without causing the patient any pain or discomfort, and the discovery of the organisms easy, in the case of eczema excision of portions of skin is necessary, their examination is difficult, and in our country at any rate permission can be but seldom obtained to excise material for such examination. If we accept the parasitic theory and admit that Dr. Unna's morococci are the specific organisms, the explanation given by Dr. Unna of the different clinical appearances depending upon the presence of these organisms in the horny layer is very fascinating and almost carries conviction with it. The absence of scaling in acute vesicular eczema is explained by the deep inoculation beneath the horny layer of the morococci. To diagnosticate eczema all we require is to find morococci; but we must face, if we accept Dr. Unna's view, some difficulties.

1. Eczema is not infectious.

2. Eczema appears in some instances to be kept up by constitutional conditions.

3. If Dr. Unna's morococci are the cause of eczema, then psoriasis, in which he finds these organisms, must belong to the eczemas.

Most of us are unprepared to give up the old well-established view that psoriasis is a distinct disease, and to allow it to be included under the heading of eczema.

The masterly description given by Dr. Unna of one form of eczema, his seborrhœic eczema, has established this form on a firm basis, and whether his view of its pathology be accepted or not, we must all look upon the clinical picture he has presented to us of its elementary and combined forms with eyes of admiration, and acknowledge the immense service he has rendered to dermatology in bringing into one harmonious whole so many hitherto imperfectly classified eczematous dermatoses.

If we accept the parasitic theory are the constitutional conditions which appear to underlie some eczemas to be regarded as simply rendering the soil more favourable to the growth of micro-organisms?

Thus a tuberculous eczema has been described—namely, an eczema affecting the muco-cutaneous orifices of the face, attended with much swelling and discharge, with but little itching, and affecting delicate children or young adults, especially those suffering from enlarged tuberculous lymphatic glands. Eczema presenting these characters is often met with, but I know of no observations which prove conclusively that tubercle bacilli prepare the soil for this variety of eczema. I may mention, however, in this connection that I observed a sudden outbreak of an eczematous eruption by the side of the mouth following immediately upon an injection of Koch's tuberculin in a case of tuberculous bone disease under the care of Mr. Kendal Franks.

III.—FRANK H. BARENDT, M.D.Lond., F.R.C.S.Eng.,
Physician for Diseases of the Skin, Royal Southern Hospital, Liverpool.

DR. BARENDT thought that the definition of eczema which restricted it to a parasitic etiology excluded many examples of the disease identical, clinically and histologically, with parasitic eczema the existence of which it must be remembered had not yet been scientifically proved. He alluded to mechanical irritation, and especially to the pressure of wearing apparel—an obvious fact and yet one frequently viewed as of little value in the production of eczema. One result of such pressure was interference with the circulation and subsequent itching, which in many persons diffused itself over considerable cutaneous areas. The scratching hand was but another link in the evolution of the disease. Again, varicosity of the cutaneous vascular system, especially of the aural region, rendered the superjacent epidermis brittle and fissured. As a result exposure of the nerve endings followed, and the titillation thus induced was relieved by scratching. Eczematous discharge was readily transferred by the interchange of the stocking from the diseased to the sound leg. One ear infected the other by means of the pillow, and intractable patches of eczema of the angles of the mouth in children were caused and kept up by the patient slavering on the pillow at night. He thought that apparently trivial causes, such as the above, were constantly overlooked in the anxiety to refer eczema to some parasitic agent or constitutional disturbance which did not exist or to some dubious hereditary influence. Dr. Barendt believed that the abuse of soap and water was frequently the only tangible cause to which an outbreak of eczema could be attributed. In his experience these two factors should not be overlooked in the etiology of eczema, and, without discounting the influence of parasitism, it was of the first importance to weigh every circumstance that interfered with the nutrition and well-being of the integument and so permitted the dissemination of micro-organisms.

THE TREATMENT OF SARCOMA BY COLEY'S FLUID.

By MORGAN DOCKRELL, M.A., M.D.

ALTHOUGH my experience of Coley's fluid is limited to its use in one case, it is a sufficiently striking experience to be of service to those who contemplate a trial of Coley's fluid in mycosis fungoides.

It may be within the recollection of some of those present that two years ago I exhibited at the Dermatological Congress in London a man, who was recognised as the "withering sarcoma" case. This man had been under observation for upwards of ten years previously, and was well known to the older dermatologists, several of whom had had him under treatment, while others had suggested lines of treatment which had been faithfully carried out, and thus for about ten years the disease seemed to remain relatively *in statu quo*, that is, as one tumour gradually withered another formed.

About the time of the Dermatological Congress he consulted me on account of intense headache, which for a time seemed greatly relieved by Fowler's solution mxv thrice daily; but after six weeks of this treatment acute symptoms of arsenical poisoning set in, so that I was never able to give him more than 5-minim doses afterwards, and these proved practically useless in relieving the headache.

Until early in 1897, there seemed to be nothing different in the general appearance of the growths on the scalp; but at this time it became very apparent that the disease was extending; large tumours formed on the neck, and those already found on the scalp seemed to have stopped in the process of withering. With this sudden increase of the disease the headaches, which had been very distressing, disappeared, and there seemed no alternative but to try Coley's fluid, and, although it may be urged in defence of the fluid that it was tried too late, and although it undoubtedly made a great improvement in the disease as apparent to the naked eye, it also seemed incapable of checking the extension of the disease internally, even if it did not accelerate it.

Before proceeding to read the notes of the case, for which I am indebted to my then clinical clerk, Dr. Burrell, I will briefly mention some of the interesting features of this fluid as described by Dr. Coley. He was originally influenced in making the fluid by the experience that an accidental attack of erysipelas often modified, and sometimes cured, malignant disease. He was supported in this by the observations of Fehleisen that the streptococcus of erysipelas exercises an antagonistic influence upon the cells of malignant tumours. At first Coley injected a bouillon culture of the streptococcus of erysipelas into the tumour, and this, he states, was most successful; but from the fact that in some of his cases no erysipelas was produced he was led to the belief that the curative effect might be due to the toxins rather than to the germ itself. He next found that the solution of the toxins required to be injected in very large doses to produce any reaction, and he therefore took advantage of the principle demonstrated by Roger, of Paris, that the bacillus prodigiosus, a non-pathogenic organism, has the power of intensifying certain pathogenic germs, notably that of erysipelas. This fluid has from time to time been modified and improved, and from my experience, that obtained from Coley's laboratory, which I was enabled to obtain by the courtesy of his assistant, was quite different to that obtained from other sources.

A. H. W., aged 31, was an electrical engineer. No members of the family ever suffered from tumours of any description. There was no history of phthisis, gout, rheumatism, or syphilis on either side.

Previous History.—He has generally enjoyed good health, never having suffered from any serious illness prior to the present. In 1883 he first noticed a small painless lump in the centre of the scalp, which gradually enlarged to the size of half a walnut; the hair came off it, and after some time the mass withered away. Others came and went, all tumours, however, being confined to the scalp. In 1883 he saw Mr. Bond, of Westminster, who in 1884 sent him to Dr. Liveing, and he in turn sent him on to the late Mr. Morrant Baker. The tumours continued appearing and withering until 1889, when there was a very large mass apparent over the left parietal bone, which Mr. Baker removed at St. Bartholomew's Hospital. For those who are interested in this case I may here state that there is a report and drawing in the *St. Bartholomew's Hospital Reports*, a specimen in St. Bartholomew's Museum, and a cast in the College of Surgeons' Museum. In July, 1896, the tumours were large and numerous, and those in the occipital region began to ulcerate.

Results of the Use of Coley's Fluid.—Owing to the tumours becoming more numerous he was ultimately admitted into St. John's Hospital on March 6th, 1897, and treated by the injection of Coley's fluid. The fluid was obtained from Messrs. Burroughs, Wellcome, and Co. On March 9th, mss of Coley's fluid was injected at 10 A.M. into a growth over the anterior fontanelle, and at 2 P.M. the temperature had risen to 100° F. It remained steady for about an hour, slowly sinking to normal.

On March 10th an injection of mj was given at 9.50 A.M.; at 6 o'clock the temperature had risen to 102° F.; the patient did not complain of feeling ill, and his appetite was good. On the following day no injection was

given, the previous rise of temperature not having reached normal until 11 A.M.

On March 12th mj was injected. The temperature rose to 101.6° F. in twelve hours. On this occasion the injection was made in the chest wall.

On March 13th an injection of mj was again made in the chest wall. The reaction was less, temperature being highest at 2 P.M. (101° F.). On the following day no injection was given.

On March 15th an injection of mj was given. The temperature rose during reaction to 100° F.

On March 16th mj was injected, and the temperature rose to 100.2° F. The general condition was good, the ulcerative processes more active, and the tumours certainly diminishing.

On March 17th, 18th, 19th, and 20th, similar injections were made. The temperature was highest generally about ten hours afterwards, but did not reach above 100° F. On March 20th a large piece of the slough was removed from the tumour in the occiput, exposing part of the occipital bone to the left, which was rough and bare.

No injection was given on March 21st, but on March 22nd mj was injected. The temperature rose to 100.2° F.

March 23rd.	Injection of 1½ minim,	temperature	100.2° F.
,, 24th.	,, 2 ,,	,,	100.6° F.
,, 25th.	,, 2 ,,	,,	101.0° F.
,, 26th.	,, 2 ,,	,,	100.8° F.

The tumour on left side had almost disappeared; and on March 27th an injection of 2 minims was given; temperature 101° F. On March 28th no injection was given, but there was a rise of temperature in the evening, which was thought to be due to some sepsis of ulcers as distinct from the reaction due to injection. The injections from this time were gradually increased up to 5 minims, but the temperature never reached more than 101° F.

About this time, although there was a certain diminution of the tumours, the patient had become morose and sullen, and was again complaining of headache and neuralgia. The treatment was suspended for about a fortnight, after which the fluid as obtained from Dr. Coley was used.

April 27th and 28th, mj was injected into one of the tumours, but there was no reaction. On April 29th miv were injected, and the temperature reached 99.8° F. On April 30th mvj of fluid were injected; the temperature reached 101.6° two hours after injection, remained up for an hour, but fell to normal six hours after injection. On May 1st mvj produced a reaction to 102.5° F.; and on May 3rd a reaction to 101.5° F. The growths all over were markedly less; the large nodulated mass on the left temple and behind the ear had almost disappeared. The injections were continued, mvj being given three times a week, the temperature of reaction varying from 101° F. to 105° F.

On June 7th the patient was suffering from vomiting, getting very thin, and complaining of shooting neuralgic pains on the right side of the head, occasional diplopia, great distaste of food, and very marked weakness. It was decided to stop the injections and to send him to the seaside before doing anything further. The tumours at this time were softer and smaller, and showed a marked tendency to wither more rapidly than heretofore. He ultimately went to Eastbourne, and I obtained the following report on June 25th: "His nights on the whole have not been good, as they have often been disturbed by attacks of more or less severe pain in the head and limbs. Vomits two or three times a day, generally first thing in the morning, and frequently an hour or so after food." Dr. Talfourd Jones reported: "I have found the patient with the most extensive sarcomatous disease of the scalp, the whole of his head presenting an irregular, nodulated, pink or flesh-tinted fibro-plastic-looking growths, with considerable ichorous discharg enecessitating frequent cleansing with antiseptic lotions. He seems losing strength, complains of double vision, and sleeps badly."

On July 3rd I saw the patient at his own home, and found him then suffering intense neuralgic pain and somewhat delirious. The tumours of the scalp were smaller, some even had disappeared since I had seen him, but there was considerable sloughing of some of the older masses at the back.

Death.—He died on July 19th, but the doctor under whose care he was being away, his *locum tenens* did not inform me of the death, and I only heard of it some days after he was buried, and was thus prevented from having a *post-mortem* examination. Dr. Blatherwick informs me that for a fortnight before his death the vomiting quite ceased, and there was scarcely any pain. He was quite unconscious during the last week, but for a few days was very delirious and somewhat violent before ultimately sinking into a comatose state.

Pathological Report.—Prior to injection, the following report was obtained from the Clinical Research Association: "The growth consists of oval and cuboidal cells infiltrating the whole of the corium, and raising and stretching the epidermis so that the layer of papillæ is nearly completely effaced, and the epithelium is much thinned. The infiltration causes destruction of the connective tissue bundles, which become first broken up and distributed irregularly, and finally destroyed. In certain localities the connective tissue is arranged in fine parallel strands, having lines of the infiltrating cells between, and in this way simulating the arrangement of a lympho-sarcoma, but this occurs only in very limited localities, apparently in relation to the fibrous tissues surrounding the hair follicles. The growth is well supplied with blood vessels, and these seem in many instances to be distended, but the walls are well developed, and the type of any of the forms of angioma is not followed. In spite of the thinning of the epithelium, the arrangement of the normal layers of the epidermis can still be made out. The stratum granulosum especially may be distinguished over the whole of the area examined. The epithelium of the hair follicles also seems to resist the infiltration, and the follicles, penetrating deeply into the substance of the tumour, retain their normal structure. In the portion submitted for examination no signs of any of the forms of degeneration could be distinguished. The tumour, therefore, appears to be a round or oval-celled sarcoma of the corium."

Bacteriological Report.—"Three organisms were isolated from the purulent material. The first was a staphylococcus albus. The second the proteus vulgaris, and the third probably a form of proteus also, but which we cannot name, owing largely to the meagre description of these organisms in the textbooks."

In conclusion, the points of interest seem to me to be:

1. The marked diminution in the tumours.

2. The fact of the powerlessness of the fluid to check the extension of the disease in this case.

3. Its exact value in cases of mycosis fungoides, and, if valuable, the exact stage at which it should be used in this disease; to my idea not in the first stage, and, indeed, not till the tumours have begun to show a tendency to remain permanent.

Lastly, it is somewhat unfortunate that the use of Coley's fluid has not been attended with the success in this country that it has in America. But this, I think, may be mainly due to the fact that it had not been tried sufficiently early, and that the doses used have been too large to begin with.

NOTES ON A CASE OF SUICIDAL CUT-THROAT.

By HUGH GALT, M.B., C.M.Glasg., D.P.H.Camb.,
Professor of Forensic Medicine and Lecturer on Hygiene, St. Mungo's College, Glasgow; Pathologist to the Victoria Infirmary of Glasgow, etc.,

THE case which forms the subject of the present note occurred on June 16th, 1898. A man, aged 39, cut his throat with a large bread knife about 6 A.M., and was found shortly afterwards lying on his face in a pool of blood. After preliminary medical attention he was taken to the Victoria Infirmary, but the loss of blood had evidently been very considerable, and he died shortly after 9 A.M., or about three hours after the act. I saw the body immediately after death, and made the following notes, looking at the case from a medico-legal point of view:

1. The extent of the wound was 4½ inches, 2½ being to the left and 2 to the right of the middle line.

2. The situation of the wound was, as is usual in suicidal cases, high up in the neck, being fully one-third of an inch above the level of the upper border of the thyroid cartilage.

3. The direction was, as one might *a priori* expect, from left to right. There was considerable "tailing" at both extremities, but particularly on the left side; in the latter situation there was a subsidiary notch running at an acute angle into the beginning of the incision proper, forming a V-shaped origin, as if the knife had been laid lightly and obliquely on the throat preliminary to the main incision. The line of incision was perfectly straight, showing no tendency to curvation at any point: moreover, it was perfectly transverse, the obliquity which is frequently present in such cases being conspicuous by its absence.

4. The depth of the wound was very great. In the middle line, and for about half an inch on either side of this, the knife had penetrated almost to the vertebral column, every intervening structure down to the posterior wall of the pharynx being severed, the latter itself being scored with the edge of the blade for about an inch transversely.

5. The structures involved included for about half an inch on each side of the middle line everything from the skin to the posterior wall of the pharynx, as already indicated. On the right side the wound terminated just short of the anterior border of the sterno-mastoid; on the left the sterno-mastoid showed a distinct notch in its anterior border. All the structures in front of the straight line joining the origin and termination of the wound were severed. It was clear that the head had been thrown well back when the wound was inflicted, as both internal jugulars and carotids escaped. The lingual artery on the left side was divided. A singular point was that a shaving had been taken off the lower border of the body of the hyoid bone. This last may have been due to the blade of the knife having been held with the edge pointing obliquely downwards and backwards, but there was no positive evidence on this point.

A superficial wound, about an inch and a half long, was present a little to the left of the middle line, and about half an inch beneath the level of the main incision. Death was evidently due to hæmorrhage. He had lost a large quantity of blood before he was found, and before the hæmorrhage was finally arrested a further proportion had escaped. Little blood was insufflated into the lungs, as there was no interference with respiration during the three hours of life.

The fatal wound had evidently been made very rapidly, and with great force, as it is to be presumed that the edge of the knife used would hardly be so keen as that of a razor. The perfectly transverse nature of the wound was interesting, as indicating a sudden effort of very short duration; had the wound been an inch longer or more there is little doubt that one or both extremities would have been curved to some extent.

Post-mortem staining was quite distinct in the usual parts of the body posteriorly about 15 minutes after death. The body was allowed to lie on its back for 4 hours, and was then turned on its face. On the following morning, 24 hours after death, the *post-mortem* stains were entirely on the front of the body, and were well marked. In the right ventricle of the heart there was a large, well-formed, and adherent *post-mortem* clot, with the usual distinct division into two layers, one being light yellow in colour, and containing no red corpuscles; the other, very dark, and containing all the red corpuscles in the clot; the yellow layer, however, was placed anteriorly, and in view of the position of the *post-mortem* stains this showed that the position of the body had been reversed some time after death. As the blood in the capillaries was still fluid, the *post-mortem* stains, when the body was again turned on its back, rapidly faded from the front and reappeared posteriorly.

With the view of informing myself as to the production of ecchymosis in a body after death, I used a spine chisel to inflict several very severe blows on the prominence of each shoulder, also over the left iliac crest, in the latter case employing sufficient force to produce a very palpable depression of the bone. This was done 20 minutes after death, and next morning the following appearances were noted: On the shoulders there was no mark which could be detected, while over the iliac crest there was an almost invisible light-greenish coloration, corresponding to the depression of the bone, which would probably have escaped notice altogether had I not examined the part very carefully, with the knowledge of the blow which I had inflicted.

With regard to motive, there seemed none, and the deed was apparently the result of temporary alcoholic insanity. The body was exceptionally well nourished, the layer of fat in the abdominal wall being an inch and a quarter thick; the internal organs were anæmic, the liver enlarged and fatty, the spleen shrunken, and the kidneys cirrhosed.

A STUDY
OF
TWO HUNDRED CONSECUTIVE OPERATIONS FOR THE RADICAL CURE OF HERNIA.

By ARTHUR E. BARKER, F.R.C.S.,

Professor of the Principles and Practice of Surgery and Professor of Clinical Surgery at University College, and Surgeon to University College Hospital.

In a paper which I had the honour to read before the Royal Medical and Chirurgical Society in April, 1890, I analysed my first fifty cases of radical cure of hernia, and I venture to think that a brief study of a further 150 since consecutively operated on may have a certain value.

In the paper referred to three questions were taken as the basis of the inquiry upon which I hoped the 50 consecutive cases would furnish evidence:

1. Is the operation called for?
2. Is it safe (*a*) as regards the patient's life; (*b*) as regards the contents of the scrotum?
3. Does it secure against a return of the hernia?

In order to preserve a certain uniformity between the analysis of the succeeding 150 cases, these questions will be still taken as the text of the following inquiry, which in other respects as well will be made to follow the lines of the first communication as nearly as possible.

The first question now hardly needs an answer, if the operative interference be limited to the young after infancy, and to those who are debarred from this or that calling by reason of the hernia. So far most surgeons are agreed; and in all the cases before me there was good reason for the measure. In many other cases the operation was refused, because there seemed to be very little special reason for its performance. In many cases, too, of strangulated hernia operated on during the same period, a radical cure was included in the procedure, but such are not recorded here, the inquiry being entirely confined to non-strangulated herniæ.

As to the risks of the operation for radical cure, if anything is learned from this series it is that the danger is small. Out of the 200 operations there were only three deaths. And when we consider that the procedure is a lengthy one, and that in many cases the conditions for which it was done were very complicated, and involved considerable risks even without operation, the mortality may be said to be low. And this point is further emphasised when we examine the cause of death in the three fatal cases.

One of these died of ether poisoning. The anæsthesia was begun with ether, which the patient took badly; then he was given chloroform, which was equally troublesome, and finally ether was again administered. Throughout the operation, which lasted 50 minutes, the patient showed considerable cyanosis and respiratory trouble, and just as I had finished, and was putting on the dressings, his breathing became more and more embarrassed, and finally ceased. Artificial respiration was unavailing, and death ensued. The man was 33 years of age, and was apparently healthy, and there was nothing unusual in the operation (Bassini's).

In both the other fatal cases it is a remarkable fact that I had to deal in each with a large irreducible inguinal hernia *containing the sigmoid flexure* of the colon, and in one of them (which had been irreducible for two years) the bladder was found in the sac with the sigmoid flexure, omentum, and large intestine.

In the first of these two, a man aged 61, I was unable to reduce the bowel, and simply closed the wound at once, and the patient died some days later with symptoms of intestinal obstruction like several previous attacks of the same kind for which no cause could be found *post mortem* by the then Surgical Registrar, Mr. Raymond Johnson. There was no peritonitis.

In the second the operation was very long and very difficult. The patient, aged 51, was a large, gross-looking man, with an enormous left inguinal hernia, irreducible for the last two years. On cutting down on it the sac and other coverings were found greatly thickened, and there was much fluid in the sac, besides which the latter was very irregular and loculated. It contained the bladder, sigmoid flexure, large intestine, and omentum. With great difficulty the bulk of the contents was reduced. Then the main part of the sac was cut away, and the rest stitched up, after which it was pushed with the bladder and sigmoid flexure into the abdomen. The opening was closed by Bassini's method. Extensive suppuration followed, and septic peritonitis, from which the patient died on the fourth day. It is quite possible that here the septic matter may have reached the raw surface of the wound through the part of the sigmoid uncovered by peritoneum, and as the latter had to be handled pretty freely, I think this explanation tallies with the appearance seen *post mortem*. Not that the bowel had been perforated, but there is good reason to believe that intestine whose vitality is lowered in any way is traversed by the organisms living in its interior. And if this be true of bowel still covered by peritoneum, it ought to be equally, perhaps more, possible for the same thing to happen where the viscus was not so covered.

These three are the only instances in which death followed the operation among these 200 consecutive cases. But further than this, in no other case had the patient's condition appeared at any time critical. The recognised wound infections were unknown. Indeed, the vast majority healed absolutely by first intention under one dressing. On this point I have examined the series critically, and find that among them all there were 26 cases in which it may be said that there was definite discharge from the wound, varying from slight turbid oozing from a stitch hole or an unclosed angle to plain suppuration. But strictly speaking, in almost all these cases the discharge was very trifling, and in many of them the healing was the nearest thing possible to first intention. The remaining cases may all be said to have united primarily. There may have been here and there a spot of moisture round a stitch or where the epidermal edges were not absolutely in contact when the first dressing was applied, but this is not

incompatible, I hold, with first intention. Within the last twelve months there are no instances of suppuration recorded in over 30 cases. In a considerable number where discharge was present the cause was plainly wetting of the dressing with urine either directly from the urethra or more commonly by tilting of the urinal during use. This is always a great trouble in these cases, especially in hospital, and will necessitate immediate removal of the dressings in spite of the apron of waterproof which is invariably put over the dressings at the conclusion of the operation. A little urine direct from the urethra percolating through an antiseptic dressing does not infect the wound as a rule, but that from a dirty urinal bottle running along the skin under the antiseptic fabric will do so, as has been found in some of these cases. It seems probable that in some of those who suppurated the cause was the patient's general condition. This struck me forcibly in the case of a man on whom I operated three times. On every occasion bad bronchitis followed the operation, and two of the wounds suppurated in spite of the greatest care. I believe this was influenza in each case. Other cases illustrate the same point. One patient had marked diabetes, another cystitis.

Discharge, too, in several of the cases mentioned has been due to small effusions of blood and serum under the skin, which, owing to the fact that drains have been abandoned for a long time past for these operations, prevented the skin from uniting immediately with the deeper parts. But such cases gave as a rule, no trouble; a little serum or blood ran out of the stitch hole when the thread was removed, and soon leaked completely away.

If discharge of any kind occurred, one or more stitches were likely to come away in time. This was most noticed, of course, in those cases which suppurated. But even without the latter a perfectly aseptic stitch may, I believe, give rise to serous effusions. If it is tied too tightly round the fibrous structures of the inguinal rings, it may cause necrosis of the latter, especially if the wound have been long exposed, and more especially if any strong germicide fluids have been used in the wound during the operation. Of late I have always been careful not to put too much strain on the threads in closing the rings, and to avoid the germicides in sponging the tissues.

As a matter of figures I find that sutures came away, either in hospital or later at home, as far as can be ascertained, in 21 out of the 200 cases, but not one during the last year to my knowledge. This last fact is of interest, as silk has been used in all. I am inclined to attribute it to the greater care taken in not closing the sutures with too great pressure, and so avoiding strangulation and consequent aseptic necrosis. It may, however, be due to the absence of any suppuration during the same period.

As to the risks to the structures of the spermatic cord and testis, only two are recorded. In one I inadvertently snipped across the vas deferens, and in another while separating the sac it was broken across with my finger nail. In another case of a man aged 60, with the largest scrotal hernia I have ever, I think, seen, I designedly removed the testis and remains of the sac, after closing the hernial opening on account of a large hæmatoma which formed in the scrotum and subsequently suppurated. The patient had no suppuration in the hernial wound, and made otherwise a perfect recovery, and remained well until his death fifteen or eighteen months later of cerebral apoplexy.

There were no intercurrent troubles except bronchitis, influenza, tonsillitis, cystitis, and bad diarrhœa, gout, and diabetes. But, as mentioned, I believe these decidedly influenced the healing of the wounds in some cases. If these cases so affected were eliminated from the series, the latter would show very few cases of suppuration. The ages of the patients ranged from 3 months to over 70 years: 35 were under 20; 132 between 20 and 60 years of age. Altogether there were 178 patients operated on, 6 of whom were subjected to a second operation on account of recurrence of the hernia. The vast majority suffered from oblique inguinal hernia—155 out of 197, including 30 on both sides. Excluding the latter there were 86 right and 39 left inguinal. Of femoral herniæ there were 10, of umbilical 4, ventral 13.

Among the inguinal series there were several very interesting varieties. The cæcum was found in three right, the sigmoid flexure in three left, inguinal; the bladder, too, in one of the latter.

In one right inguinal hernia the sac came directly through the fibres of the conjoined tendon, quite separate from the cord, which passed out of the abdomen by a very distinct and small internal ring. This is the only case in these inguinal herniæ and in many others operated on for strangulation in which I have found this condition of things. In one femoral case the sac came out between the anterior iliac spine and the femoral vessels by a large opening (Fig. 1). There were two

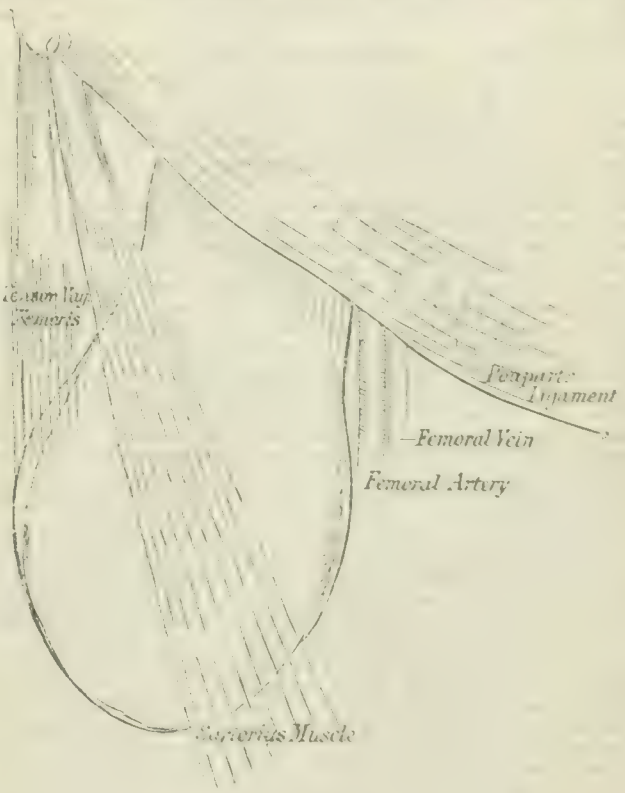


Fig. 1.

interstitial herniæ of the inguinal kind, the sac passing upwards and outwards between the external and internal oblique muscles. In one of these there was a second distinct sac

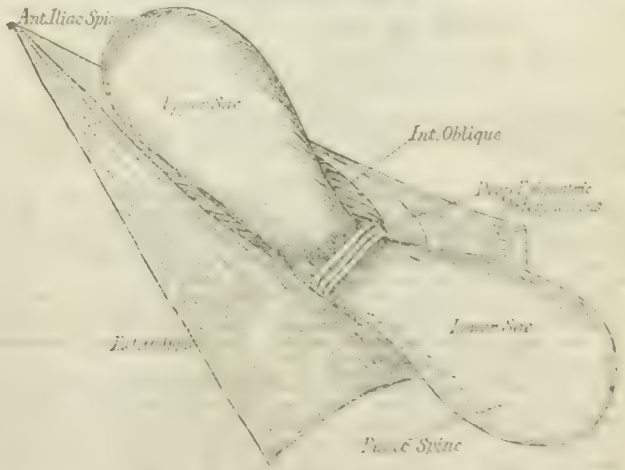


Fig. 2.

passing down into the labium. These sacs were separated at

their necks from one another by the deep epigastric vessels (Fig. 2).

The operations performed on the inguinal herniæ were various. In 79 cases I employed my own method, previously described; in 57, Bassini's method following very closely his original description in *Langenbeck's Archiv*, except in two small details, in which I venture to think I have introduced a slight improvement. In 7 cases Kocher's operation was done following his own modifications as he published them. In only 2 has Dr. Macewen's method been followed. The remaining 10 cases were operated on in the earlier days by irregular methods of suture of the rings before the operations became formulated.

In the femoral, umbilical, and ventral cases I have followed methods I described some years ago, and have only modified them so far as in the last 9 cases of ventral and umbilical cases to use deep buried silver sutures, following a practice from which I have seen very good results in the hands of Professor Max Schede, formerly of Hamburg, now at Bonn. The silver wires appear to me as to him to give a decided mechanical support not obtained by silk. In one case in which I had to operate for incarcerated umbilical hernia in a stout woman five months pregnant, I was greatly struck with the result. She went through her labour without any trouble in the hernia, and I saw her ten months later, with her 5 months' old baby, and could find no trace of the hernia or silver stitches. In one stout man who unfortunately was operated on for umbilical hernia a few hours after admission into hospital, and whose urine had not, by some mistake, been examined, it was found after operation that he had diabetes. Here the wound slowly suppurated, and the silver stitches had to be removed. This case, and one more of a neurotic woman, who thought that the silver stitches pinched her, are the only cases in which they have had to be removed. And to me they appear to have done good service. A larger experience will tell.

In almost every other case hard twist Chinese silk boiled in 1 to 20 absolute phenol was used, my earlier experiences with gut of all kinds not impressing me favourably. Some of these silk sutures, as has been said above, worked out to the surface; but, considering that about a thousand must have been used in the 200 operations the proportion was small.

(3) As to the last question put in regard to the immunity from recurrence after these operations, it is an extremely difficult one to answer. Most of these cases, of course, were hospital patients, and to follow them up has been next to impossible. But this much I can say, namely, that I constantly hear of my patients from various parts of the world in every profession and employment who are quite rid of all their troubles, and that I very rarely now hear of a recurrence. Whether this is due to the fact that Bassini's operation has been the method I cannot say, but I certainly regard it, when carefully carried out, as the best operation of any yet devised.

A CASE OF NOMA OF THE EAR.

By G. MUNRO SMITH, L.R.C.P.Lond., M.R.C.S.,
Surgeon to the Bristol Royal Infirmary.

THE unusual situation of the lesion in this case and the result of the bacteriological examination make it worthy of record.

History.

M. A. V., aged 2 years, a fairly well nourished but rather anæmic child, was admitted to the Bristol Royal Infirmary, September 15th, 1897. There was a history of occasional discharge from the left ear and eczema, otherwise she had been healthy. The mother had suffered from syphilis, and others of her children had been ill with enlarged glands in the neck, etc. No account of any local injury could be obtained.

On admission, the whole of the left auricle was swollen and red, and pus was exuding from the meatus; the cheek was œdematous. There was a small, clean-cut ulcer in the fossa of the antihelix, covered with a greenish grey, slightly adherent slough. The child's general condition was good, and it took its food well.

The ulcer was cleaned, antiseptic dressings were applied, and matters improved until September 25th, when the auricle began rapidly to swell and the patient became worse. On the 26th, an incision was made and a teaspoonful of pus evacuated. On October 1st the ulcer began to spread rapidly. Chloroform was administered, and the sloughing ulcer was scraped and cut away and strong carbolic applied. There was another improvement for a few days, but on October 4th the disease made a fresh start, and from this time onwards its ravages could only be temporarily checked by cutting away the necrosed tissues and swabbing with strong antiseptics. The condyle of the jaw and neighbouring parts became exposed, and on October 27th symptoms of meningitis appeared, and the child died on the 29th.

At the necropsy the external ear was represented by a small, crescent-shaped mass, and a large irregular cavity, with sharply excavated sides, exposed the condyle of the jaw, with the auricular and mastoid portions of the temporal bone (see Fig. 1). The articulation was destroyed, but the

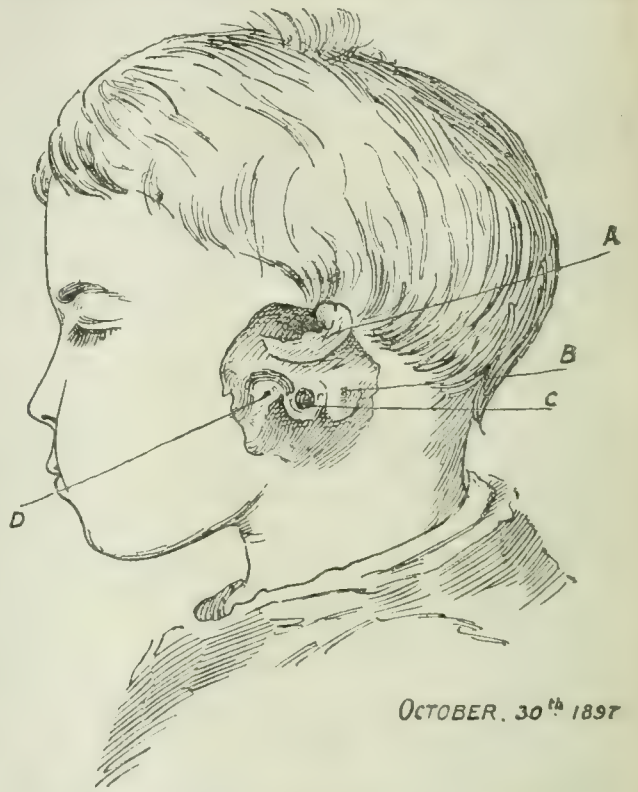


Fig. 1.—A, Remains of auricle. B, Mastoid. C, External auditory meatus. D, Condyle of lower jaw.

tympanum had escaped. On opening the cranial cavity the vessels of the vertex of the brain were much congested, and the lateral sinus was blocked with white adherent clot. There was also a thrombus in the longitudinal sinus.

Remarks.

The clinical features were fairly typical of noma, but there was an almost complete absence of the black slough generally found, and the situation was very unusual. I can find no record of the external ear being primarily attacked. The extensive thrombosis must be considered one of the features of the disease.

Various bacteriologists have found micro-organisms in the tissues involved in noma and in the clots in neighbouring veins, but their relation to the affection is not yet clearly defined. However, in 1889 Schimmelbusch described small bacilli with rounded ends which stained with aniline dyes, but not with Gram's method. Injections into mice and pigeons caused sloughing, etc.[1] Ranke in several cases found only cocci.[2]

Dr. Odery Symes, Honorary Bacteriologist to the Bristol Royal Infirmary, kindly undertook the bacteriological examination, and I am indebted to him for the following report and to the House Physician, Dr. Stack, for taking notes on the daily progress of the disease.

Bacteriological Report.

Dr. Stack inoculated an agar tube from the margin of the spreading ulcer on October 27th. After twenty-four hours incubation at 37° C., there was a growth of greyish-white colonies. Examined microscopically, there were a few staphylococci present, together with a short bacillus, non-motile, rounded at the ends, and staining easily with aniline dyes. The centre of the bacillus often remains unstained. The organisms are often in pairs or chains. On gelatine stroke cultures the growth is very slow, and does not liquefy;

the colonies are greyish-white, granular, and glistening. In gelatine stab cultures the colonies are white. At the *post-mortem* examination, nineteen hours after death, cultures were taken from the spleen and from the thrombus in the longitudinal sinus. The agar tube inoculated from the spleen, after a week's incubation, was still sterile. The culture from the longitudinal sinus gave a pure culture of the bacillus described above. This organism resembles in all points that described by Schimmelbusch as associated with cancrum oris. That described by Lingard is, perhaps, the same.

Dr. Symes forwarded a tube to Mr. Plimmer, hoping that some inoculation experiments might be made, but unfortunately the tube was broken and contaminated in transit, and cultures failed; but the organism was identified by Mr. Plimmer as that described by Schimmelbusch. Fig. 2 is a



Fig. 2.—Cultivation on agar. (Hartnack: Leitz's oil immersion, $\frac{1}{12}$.)

drawing I made of these bacilli.

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HEREDITARY DIGITAL ABNORMALITY.

By D. YOUNG, M.D.,
Parkhead, Glasgow.

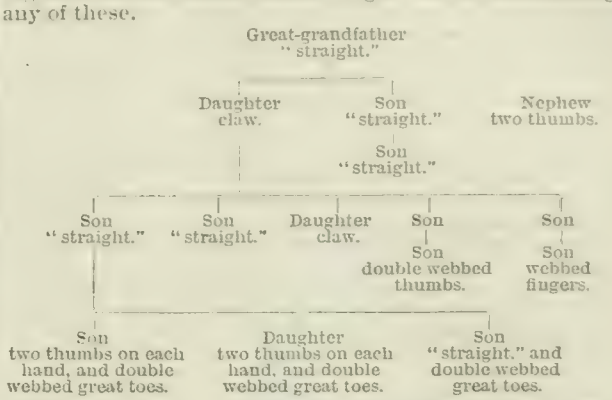
A CASE of abnormality of the thumb having come under my notice some time ago, I instituted inquiries as to the occurrence of similar conditions in near relatives, with the result that the following remarkable series of cases was elicited. The hereditary tendency is abundantly demonstrated, and it is rather interesting to note that the peculiarities have been transmitted almost invariably from the paternal side.

First Generation.—The earliest instance which can be recalled in this family is in the paternal great-grandfather. He had what the family calls "straight thumbs;" this term may be retained, and I offer a few words in its explanation, as three of the descendants presenting it have come under my own observation. The terminal joint is ankylosed, and both phalanges are broad, as if two thumbs had been begun to be formed, producing, however, single flat phalanges with a single broad nail; the first phalanx, moreover, is longer than normal, while the terminal phalanx is short.

Second Generation.—His sister's son (nephew) has grown up with two distinct thumbs on each hand, so that probably the condition goes back to five generations. His daughter has the right thumb bent in like a claw, and his son has "straight thumbs."

Third Generation.—The son last mentioned has a son with "straight thumbs;" the daughter has five children, three of whom are affected; two sons have "straight thumbs," and the daughter an enlarged right thumb turned in (clawed). In the two other sons I know of no defect.

Fourth Generation.—Of these two sons, who themselves did not present the abnormality, one had a boy with double-webbed thumbs on each hand, upon whom I operated successfully, and the other a boy with webbed fingers. One of the sons who had "straight thumbs" has a family of eight, three of whom are affected. The first child (boy) had two distinct thumbs on each hand, and was operated upon by Dr. Turnbull, of Cambuslang, the remaining thumbs being "straight." He is a violinist, and in tuning his instrument catches the keys between the metacarpal bone and hand; in addition, he has on each foot a double-webbed great toe with two nails. The sixth child (girl) had two distinct thumbs on each hand, separate metacarpal joint for each, on whom I operated successfully, and she also has double-webbed great toes. The eighth child (boy 3 weeks old) has "straight thumbs," the terminal joint, however, being a little mobile. I have advised the parents to exercise it; he has also double-webbed great toes. Thus one man with "straight thumbs" transmits through the next three generations digital peculiarities to at least eleven descendants. It would be interesting to know the results which might follow intermarriage of any of these.



MEDICATED WINES.

By FREDERIC C. COLEY, M.D.,
Physician to the Hospital for Sick Children, Newcastle-upon-Tyne, and to the Northern Counties Hospital for Diseases of the Chest.

I HAVE been very glad to have seen more than once of late in the BRITISH MEDICAL JOURNAL protests against the general use of certain fluids largely advertised under the name of medicated wines. There are two classes of such preparations which I think it is not only our duty to avoid recommending, but against which we should warn our readers with the greatest earnestness, and be prepared to explain our reasons for so doing.

The first class to which I allude are called coca wines, compounds which consist of a wine of considerable alcoholic strength (generally, I believe, claiming to be either port or sherry), with the soluble parts of coca, or else a salt of cocaine dissolved therein. Coca and its chief alkaloid, cocaine, are drugs which possess some power of removing the sense of fatigue, just as analgesics remove the consciousness of pain. But they no more remove the physical condition of muscles and nerve centres of which the sense of pain gives us warning than a dose of morphine which relieves the pain of toothache removes the offending tooth, or even arrests the caries in it. The truth of this will be obvious to anyone who remembers enough of physiology to know what fatigue really means. A muscle which is tired out is different chemically from the same muscle in its more normal condition, when it is ready to respond vigorously to ordinary stimuli. It has lost something and is besides overcharged (poisoned, in fact) with the products of its own activity, and it can only be restored by a fresh supply of the material which it requires, and the carrying away of the poisonous waste products. Fatigue of nerve centres is no doubt strictly analogous to fatigue of muscles.

It is practically impossible for us by voluntary exertion to reach the degree of absolute fatigue which the physiologist produces by electric stimulation of a nerve-muscle preparation. The sense of fatigue becomes so intense that voluntary effort cannot overcome it, just as no man can produce asphyxia by simply holding his breath, because the *besoin de respirer* becomes irresistible; but it is quite possible for a narcotic to so dull the sensory part of the respiratory reflex mechanism as to permit asphyxia to take place.

The sense of fatigue and the *besoin de respirer* are both Nature's danger signals. Drugs which hide such signals from us are a more than doubtful benefit. If it were possible for us to suppose that a fraction of a grain of cocaine could afford to exhausted nerve centres and muscles the nutriment which they require for their restoration, and at the same time eliminate the poisonous waste products, then it would be reasonable to prescribe the drug for use by all who are over-

worked, and perhaps suffering from the malnutrition consequent upon "nervous dyspepsia," as well as mere want of rest.

In this go-ahead century it is no wonder that many are but too ready to experiment with a drug which professes to be able to remove fatigue, and to enable a man to go on working when, without its aid, weariness had become unendurable. Cocaine claims all this; and it is most dangerous just because, for a time, it seems able to keep its promise. That is how victims to cocainism are made. Let us be honest with our overworked patients, who want us to help them with drugs; let us tell them that rest is the only safe remedy for weariness.

To combine such a drug as coca, or cocaine, with an alcoholic stimulant is to multiply the dangers of cocainism by those of alcoholism. It would be impossible to find terms sufficiently severe in which to condemn the recklessness of those who promiscuously recommend such a compound for all who are overworked or debilitated. One firm actually has the assurance to advertise a preparation of this kind as a remedy for dipsomania. Truly this is casting out devils by Beelzebub with a vengeance. Invoking Beelzebub for such a purpose has never been a success. And I suspect that any form of coca wine will make a great many more dipsomaniacs than it will cure.

It is, in my judgment, more than doubtful whether any medical man is justified in prescribing coca, or cocaine, in the form of wine, even when he believes that the drug is indicated on satisfactory grounds. Such a form is excessively likely to lead to the abuse of the drug. If the prescription has a real or apparent success, the patient is likely to recommend it promiscously to acquaintances, with disastrous results only too probable.

There is another combination which, though utterly absurd from a therapeutical point of view, is not in itself quite so dangerous as coca wine. It will probably do a larger amount of mischief, however, because more people take it. I refer to the various preparations, so largely advertised, which profess to be compounded of port wine, extract of malt, and extract of meat. To the medically uneducated public this doubtless seems a most promising combination: extract of meat for food, extract of malt to aid digestion, port wine to make blood. Surely the very thing to strengthen all who are weak, and to hasten the restoration of convalescents. Unfortunately what the advertisements say—that this stuff is largely prescribed by medical men—is not wholly untrue.

I do not suppose that any physician of anything like front rank would make such a mistake. But busy general practitioners may be excused if they prove to be a bit oblivious of physiology, and so become attracted by a formula which is more plausible than sound. In the first place, we all know that extract of meat is not food at all. Dogs fed on extract of meat only die rather more quickly than dogs which are not fed at all—which result is only what might have been anticipated. Extract of meat, from the manner of its production, cannot contain an appreciable quantity of proteid material. It consists mainly of creatin and creatinin and salts. These are, it is needless to say, incapable of acting as food. Extract of meat, and similar preparations, have their uses, however. Made into "beef tea" their meaty flavour often enables patients to take a quantity of bread, which would otherwise be refused; or lentil flour or some such matter may be added. In this way, though not food itself, extract of meat becomes a most useful aid to feeding. Persons who are unable to take tea or coffee at supper for fear of insomnia, or cocoa for fear of biliousness, may find some preparations of the meat extract type very useful. Extract of meat is, besides, a harmless stimulant, especially when taken (as it always ought to be) hot. It should be needless to add that to combine extract of meat with port wine is simply to ignore its real use. The only intelligible basis for such an invention must be the wholly erroneous notion that extract of meat is a food.

Extract of malt is useful by itself. But when I prescribe it I like to know both the quality and the quantity of the preparation which my patient will receive.

As to the "port wine," the medical man appears to me strangely innocent and confiding who supposes that he has recommended a good investment when he has told a patient to buy port wine, complicated with an unknown quantity of beef extract and malt extract. Port wine is, at the best, a fluid about the composition of which it is difficult under any circumstances to pronounce with confidence. But when its flavour is confused with that of beef extract and malt extract, the most experienced connoisseur might well decline to venture so much as a guess about such a complicated problem. And when the difference between cost to vendor and cost to purchaser has to provide for a huge expense in advertising, and lavish free distribution of samples, and over all this to furnish large dividends—under these circumstances the antecedent probability in favour of a high quality of genuine wine is not such as to banish scepticism.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A CASE OF VARICELLA GANGRENOSA.

A CHILD, aged seven months, has lately been under my care, suffering from a severe form of this disease. She was the youngest of five, the other four children having had chicken-pox just previously in a comparatively mild form. This particular case, though the child was well-nourished and apparently otherwise quite healthy, began with a very profuse rash over the face, trunk, and limbs, accompanied, according to the mother, by convulsions. On the third day there appeared two or three erythematous patches on the surface of the abdomen, and one on the inner side of the left thigh, and the temperature ran up to 104°, but fell for the next two days to 101° and 100° respectively. At the end of this time two or three of the pocks were noticed to be enlarging, becoming both deeper and broader, and surrounded by a broad zone of inflammation, and having a markedly punched-out appearance. Boracic ointment was applied, but they continued to enlarge, showing a yellow slough, while two or three more pocks underwent the same change, and the abdomen became very distended, the skin being shiny and inflamed. Boracic fomentations were now applied every two hours, but the inflammation went on with great rapidity; and on the eighth day the skin, which was becoming black round the inflamed pocks, sloughed *en masse*, leaving across the front of the abdomen one large gangrenous ulcer, four and a half inches long by two and a half inches broad, and one on the side of the abdomen two inches long by one and a half broad. The edges of these ulcers were steep and well-defined, and contained a yellow slough, which was in parts black and gangrenous, the whole surrounded by a broad zone of inflammation. The child became rapidly collapsed, and died on the ninth day. Dr. Goodhart, in his book on *Diseases of Children*, quotes Dr. Payne as suggesting that "possibly the existence of tubercle in a child might lead to a very severe manifestation of chicken-pox," and further that tubercle had been found to be present in the bodies to which Dr. Payne had had access.

Unfortunately in this case a *post-mortem* examination could not be obtained, but no history of tubercle in the family could be elicited; and, as stated above, the child was well-nourished and well-developed, as were the other children of the family. On the other hand, the patient was the child of poor parents; and though looked after better during its illness, its environments were certainly dirty, sordid, and unhealthy, and the rest of the children in a chronic state of dirt and grime. Dr. Goodhart says, in reference to this, that it might be thought that given the pre-existence of starvation and neglect, the outbreak of a pustular eruption such as this would be likely to engender an ecthyma; but it would appear that this explanation will not hold, for Mr. Hutchinson makes special note of the fact that among his cases the affected children were some of them, at any rate, vigorous and healthy. This particular case seems to form a compromise, and to illustrate the influence of dirt and unhealthy surroundings on an eruption in an otherwise vigorous and healthy child; and I think that, assuming the absence of tubercle, this may fairly be taken as the factor towards this very severe form of varicella and its fatal termination.

Anerley, S.E. A. SCOTT TURNER, M.R.C.S., L.R.C.P.

PROLONGED RETENTION OF PLACENTA IN RECURRENT ABORTIONS.

On July 10th I was summoned to a woman, who had a severe uterine hæmorrhage following an incomplete abortion three weeks previously. She was in a profound state of collapse, rambling at intervals, with extremely feeble pulse and sighing respiration. There was visible proof that she had had a great loss, and on examination large blood clots were found blocking the vagina: the os was contracted, and the cervix bore evidence of long-standing lacerations. Ergot was given in full doses, and after a time the bleeding ceased.

She went to stay with friends on June 13th; while there she had a fright, and aborted on June 18th, being then in the fourth month of gestation. She was assured that everything had come away, but being sceptical as to the expulsion of the placenta, she resolved, after lying up for a few days, to return to her home here on June 24th. I saw her soon after her arrival, and enjoined absolute rest in the recumbent position. For the following three weeks she had neither loss nor fœtid discharge, and latterly was feeling quite well.

The placenta was expelled by natural pains on the morning of July 11th; the membranes were degenerated, but the placenta was fresh and well formed, and no odour of decomposition could be detected.

This is the eighth abortion, and in all—with one exception—the placenta has been retained for periods varying from two to six weeks. She never goes beyond the fifth month of pregnancy, and usually makes a rapid recovery. She is strong and well-built, aged 35, and there is no history of syphilis. Her first three children were born at full time, and in each case forceps were used. At the third parturition extensive laceration took place, and ever since she has suffered from a vesico-vaginal fistula which has baffled the efforts of several hospital surgeons to alleviate; from this period also dates the commencement of her abortions.

Other important features worth noting in this case are (1) the long distance travelled soon after the fœtus was expelled, the railway journey alone occupying nine hours; (2) the flaccidity of the mammary glands continuing long after the expulsion of fœtus, the milk appearing on the third day after placental expulsion, when the quantity became abundant—this condition has existed in all the eight miscarriages. I can personally verify its truth, having attended her in the last four abortions; (3) absence of septicæmia.

Hoyland, Barnsley. B. Wiggins, L.R.C.P., L.R.C.S.Edin.

POISONING BY LINIMENTUM CAMPHORÆ: RECOVERY.

The cases recorded by Mr. Spurgin in the British Medical Journal of July 9th remind me of a case recently under my observation.

About 10 P.M. on June 14th, 1898, I was called to see T. H., a boy 2 years 9 months, who about an hour before had asked for a drink. It was nearly dark; his father poured some herb beer into a vessel containing some linimentum camphoræ. The child took a draught from the vessel, and complained of its nauseous taste. He played as usual for about fifteen minutes when convulsions set in and continued until I arrived, when I found him in the status epilepticus, deeply cyanosed, and almost moribund. With difficulty, owing to spasm of the jaw, with the assistance of Mr. Heptonstall, a gag was inserted in the mouth, the stomach tube passed, and the stomach washed out with warm water. The fluid returned smelt very strongly of camphor. Before the stomach was completely emptied we were obliged to withdraw the stomach tube to allow greater freedom in respiration. The convulsions stopped for a few minutes, and then returned when we passed the tube again, and after washing the stomach out with more warm water, passed in some milk, which was allowed to remain. The convulsions did not return, and the patient slept from 3 A.M. till 7 A.M., and remained drowsy the two following days. A little gastric irritation was treated with liquor bismuthi, and recovery was uninterrupted. I should have expected vomiting to have come on at once before the camphor could act poisonously. In my opinion the stomach pump, or siphon, should be used, if it is possible to forcibly insert the gag, when the spasms are relaxed somewhat or can be overcome. It was pleasing to see how quickly the convulsions subsided when the stomach had been emptied.

Leeds. S. Moore, M.D.

TRAUMATIC PAROTITIS.

On July 1st I was called to see a boy as to whom the following history was given: The boy, 3 years of age, was running with what is known as a butter-tub stick in his hand; he fell, and the stick entered his mouth. The end, which is slightly sharp, stuck in his left cheek, and was with difficulty removed, some considerable force being required. There was a great deal of bleeding; in spitting out some blood a piece of the stick, about an inch long, came away.

Upon examining the child I found a circumscribed hard tumour, about the size of a small orange, situated just in front of the ear and extending to within an inch of the angle of the mouth. There was not much tenderness upon manipulation. Inside the mouth there was a small abrasion of the hard palate, and protruding from a wound in the left cheek a portion of the parotid gland about the size of a walnut, very congested, and not covered by any capsule. Opening the mouth caused so much pain and resistance on the part of the patient that I thought it advisable to have some assistance. I ordered ice for the child to suck, and externally equal parts of lead, opium, and spirit lotion to be applied to the cheek. Returning later with Dr. S—— the child's mouth was opened with a gag, and nearly the whole glandular protrusion reduced back through the opening in the cheek. The wound could then be plainly seen extending for about an inch obliquely backwards and upwards, commencing just anterior to and half an inch above the last lower temporary molar.

The portion of gland that could not be reduced was about the size of a large pea. Thinking that there might be some suppuration, I did not put in a stitch. The mouth was well washed out with Condy's fluid, and the child put to bed. Iced milk was to be given if necessary.

The next morning I found that a small portion of the gland had prolapsed again and had begun to slough; the child evidently had bitten it. A ligature was passed round as close to the cheek as possible, and the end fixed to the cheek outside with strapping. The swelling of the whole gland was most marked; there was slight pyrexia, 102°. The next day but one that part of the gland which had been ligatured came away; the wound healed up in a day or two, and the child made an uninterrupted recovery. The swelling of the gland subsided slowly. There is still a slight degree of hardness to be felt.

Remarks.—For the parotid gland to prolapse through a wound on the inside of the cheek is, I think, uncommon. The direction the stick must have taken to reach the gland, evidently tearing through the fibres of the buccinator, masseter, and possibly the internal pterygoid muscles, as well as the capsule of the gland. The gland itself did not appear to be damaged. Whether the stick had hooked in the substance or in the duct of the gland and so drawn it forward, or whether the gland, swelling rapidly, caused it to follow the path of the stick as it was withdrawn, I am unable to say.

Hyde. Stephen Infield, M.R.C.S., L.R.C.P.Lond.

TRANSFUSION OF SALINE SOLUTION IN COLLAPSE.

I venture to record the following case, which occurred in the Weston-super-Mare Hospital on July 15th, as it illustrates among other points the rapid rise of temperature that may occur in cases of transfusion. The case eventually terminated fatally from syncope.

Mrs. L., aged 59, was suddenly seized with extreme collapse from the passage of a very large gall stone. When I saw her her condition appeared hopeless. The extremities were blue and cold, face and lips livid, eyes glazed, pulse at wrist imperceptible, breathing very shallow and feeble. She was quite unconscious, and did not respond in any way when spoken to. The temperature immediately before the transfusion was 97.2° F. As she was evidently sinking rapidly I at once proceeded to inject saline solution with brandy and liquor strychninæ. Dr. Knox, who assisted, gradually raised the temperature of the water from about 100° F. to close on 112° F. No improvement took place until over a pint and a half had been injected. Then the pulse became perceptible

at the wrist, and improvement was rapid. The hands and feet got warm, colour improved, consciousness returned, so that she replied sensibly when spoken to. The pulse became full and steady, and the temperature at the end of the injection stood at 100.2° F. The transfusion occupied about fifteen minutes, and the amount injected was three pints, with an ounce or more of brandy, and five drops of liq. strychninæ.

Weston-super-Mare. C. PERCIVAL CROUCH, F.R.C.S.

CASE OF VICARIOUS MENSTRUATION.

E. McD., domestic, aged 33, has complained for the last eighteen months of severe pain, localised in the stomach, greatly aggravated after swallowing food. The pain was especially severe after solid or semi-solid food. There were numerous attacks of vomiting, accompanied on various occasions by severe attacks of hæmatemesis.

The above symptoms pointed to gastric ulceration, and there were also distinct signs of gastric dilatation during the progress of the illness. Varicose ulceration of the left leg appeared. With rest and mild dressings the ulcer healed. Menstruation was irregular, one period often being missed on each occasion when menstruation became manifest. She complained of increased pain over the seat of gastric ulceration, which pain was followed by a copious vomiting of blood. The same condition showed itself at the seat of the varicose ulcer. On many occasions, when with careful treatment the ulcer was healed almost to the size of a threepenny piece, bleeding occurred from the raw surface, concomitant with the menstrual discharge. Epistaxis appeared also at certain periods.

Netherton, Ayr. FERGUS MCKENNA, M.B., C.M.Glasg.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LIVERPOOL ROYAL INFIRMARY.

A CASE OF LYMPHO-SARCOMA TREATED BY COLEY'S FLUID.

(By J. H. WILLETT, M.B., Ch.B., Viet., House-Surgeon.)

THE patient, P. C., aged 22, came to the infirmary on October 2nd, 1897, complaining of a lump in the axilla, which he had noticed for about four months, and which was slowly increasing in size. When first seen it was as large as a pigeon's egg, soft, and adherent to the skin. An incision was made over it in the out-patient room, and what appeared like breaking-down lymphatic gland was scraped out. The wound showed no tendency to heal, and the surrounding skin and deep tissues became hard and indurated, so that a more complete scraping was deemed necessary, and he was therefore made an in-patient.

On October 16th Mr. Paul, to whom I am indebted for permission to publish the case, enlarged the incision and scraped out a considerable quantity of similar material to that removed in the first instance. It resembled lymphatic gland without the intervening connective tissue, and microscopically showed the characters of small round-celled sarcoma. There was such involvement of the vessels and nerves in the axilla that anything like complete eradication was impossible. There was a free purulent discharge from the wound for several weeks, the edges became hard, and the skin brawny and adherent. In this condition the patient left the hospital on December 16th.

He was readmitted on February 19th, 1898, the lump having increased to the size of an orange. It had given him very little pain, but interfered considerably with movement of the arm, which could now only be abducted to an angle of 45 degrees with the body.

Operative treatment being out of the question, it was decided to try the effect of Coley's fluid in producing sloughing of the growth. The inoculations were commenced on March 3rd, and were made into the substance of the growth:

Date.	Minims of Fluid.	Temperature. Fahr.	—
March 3	½	99.0°	—
,, 5	1	99.0°	—
,, 7	2	99.0°	—
,, 11	3	100.2°	—
,, 14	Fluid was decomposed	—	—
,, 19	4	100 2°	—
,, 26	5	104.4°	Rigor
April 1	6	101.6°	—
,, 7	7	105.2°	Rigor
,, 12	8	104.4°	,,
,, 16	9	105.0°	,,
,, 23	10	104.2°	,,

There was only slight febrile reaction after the first four inoculations, and with the exception of some increase in the amount of discharge, little change was noticeable in the growth. When the dose exceed 5 minims, each inoculation was followed by a rigor. The skin over the tumour now became red and erysipelatous in appearance, the exposed edges became swollen and everted, and the discharge profuse and exceedingly offensive.

The general health of the patient was fairly well maintained. As the dose was further increased there was more constitutional disturbance—*malaise* and loss of appetite—while locally the effect was to still further increase the discharge and tendency to slough.

By this time the tumour had so extended as to cause marked œdema of the arm from interference with the circulation, and as the fluid did not appear to exercise much influence in checking the growth, inoculation was stopped, the dose having reached 10 minims. Subsequently the patient sank rapidly, and died on July 27th.

Necropsy.—At the necropsy the growth was found to have ulcerated through the thoracic wall into the upper lobe of the right lung, and into the right clavicle and humerus, causing necrosis of the bones. The liver, spleen, and kidneys were undergoing lardaceous degeneration.

REMARKS.—Although the result in this particular instance was unsatisfactory, yet the case is deemed worthy of record, as there has been some recent discussion on the subject. So recently as February last, Dr. Coley records a case of undoubted sarcoma treated successfully by inoculation with mixed toxins.

ROYAL FREE HOSPITAL.

TETANUS: TREATMENT BY ANTITOXIN: RECOVERY.

(Under the care of Mr. BOYCE BARROW.)

[For the details of this case we are indebted to Mr. REGINALD HAYES, lately House-Surgeon.]

E. C., aged 21, a girl employed in housework, was admitted on December 4th, 1896, complaining of inability to open her mouth properly, sore tongue, and stiffness in neck. It was elicited that when scrubbing a dirty floor four weeks previously a large splinter penetrated the skin of right thumb near the base of the nail, and was not removed till a week before admission, having caused a good deal of pain and swelling. About this time her neck became stiff and flexion of the head was painful. Symptoms became aggravated day by day, such as difficulty in opening the mouth, pain in the back and between the shoulders, and a clonic contraction of the masseters, which causing her to bite her tongue produced the pain, which was mainly instrumental in making her seek hospital relief. It was so severe that sleep was prevented for several nights previously, as dozing was followed by the tongue being bitten, which woke her up. For the relief of this symptom she had applied at another hospital a day or two before and been ordered a mouth wash. On admission the patient was dusky-looking, with anxious expression and a marked tendency to risus sardonicus. The pulse was 120 and the temperature 100.2°. There was no perspiration. The terminal phalanx of the right thumb was much inflamed, œdema and discoloration extending above it for 2 inches. She was unable to perform the following movements: 1. To separate jaws for more than a quarter of an inch. 2. To swallow, except with extreme difficulty. 3. To flex her head, which was maintained

in a slightly extended position. 4. To move her tongue, which was apparently much swollen. 5. To walk, this being prevented by pain and stiffness in back.

The following muscles were rigid and contracted:—The masseters, temporals, corrugatores supercilii, trapezii, zygomatici, sterno-mastoids, and apparently all the muscles of the anterior abdominal wall, which was fixed and board-like.

Treatment.—Twenty c.cm. of tetanus antitoxin (prepared by the British Institute of Preventive Medicine) were injected under the skin of the anterior abdominal wall, and after a short interval the patient was seen by Mr. Barrow, who recommended amputation of the thumb, which was performed at the carpo-metacarpal joint, thus leaving a fair margin of apparently healthy tissue. She was then put to bed in a warm, quiet, isolated room (which was kept in semi-darkness), and ordered:—1. Valentine's meat juice, eggs, milk and brandy in small quantities by mouth. 2. Nutrient enemata and syrup of chloral ʒss, 6 hourly. 3. Injection of antitoxin, 25 c.cm., every twelve hours, and the catheter to be passed twice daily.

During the induction of anæsthesia for the operation the patient was seized with a violent spasm, which lasted about a minute, during which the right arm became rigid, hand clenched, and head retracted. When the patient came round a similar seizure occurred, during which respiration became laboured and stertorous, opisthotonos and trismus being well marked.

On the first day after the operation the patient vomited several times, and the masseteric spasm, causing her to bite her tongue, occasioned much distress. Croton oil ɱij administered.

On the second day another seizure occurred similar in all particulars to the former ones, delirium being present at night.

On the third and fourth days chloral, being distasteful, was discontinued, and bromidia in ʒj doses substituted. Improvement being apparent, the antitoxin injections were stopped, till on the fifth day she had two very violent spasms, when they were resumed.

On the sixth day two slight convulsions took place. The hand was dressed, and the wound found to have healed. From this time no more definite seizures occurred, and a gradual amelioration of symptoms commenced, though the girl did not leave the hospital for several weeks. A bacteriological examination of the splinter and tissues in which it had been embedded yielded no trace of the tetanus bacillus.

Remarks.—Some points of interest in connection with the case appear to be: (1) The primary subjective symptom of inability to refrain from biting the tongue, causing, as it did, the disease to be at first overlooked. (2) The marked manner in which the convulsive seizures commenced in the right upper extremity, close to the point of inoculation. (3) The absence of sweating notwithstanding the violence of the spasms and the occurrence of delirium, which is usually present in cases which end fatally.

GLASGOW EAR HOSPITAL.

RUPTURE OF THE TYMPANIC MEMBRANE, WITH CLONIC SPASM OF THE FACIAL MUSCLES, IN A DIVER.

(By James Galbraith Connal, M.B., Assistant Surgeon to the Hospital, and Surgeon Throat and Nose Department, Glasgow Central Dispensary.)

On June 4th a strong well-developed man, aged 36, with no previous history of ear mischief, presented himself, complaining of severe pain, tinnitus, and deafness of the right ear of two days' duration. During the preceding week he had a "cold," and felt his throat a little sore. In his occupation as a diver he had to descend to the bed of the River Clyde in a diving suit.

On June 2nd, whilst descending, the wash of a passing steamer knocked him off the ladder, and he sank quickly to the bed of the river. He immediately felt a severe pain in the right ear and all over the right side of the face. He came to the surface at once, took off the diving dress, and on putting his finger to his right ear he felt a "watery fluid" coming from it. Since then the pain had been excessive.

On the morning of June 4th a "wineglassful (?) of blood and matter" came from the ear, but gave him no relief.

The right tympanic membrane was seen to be of a deep red colour, and bulging in the posterior inferior quadrant. At the apex of this bulging portion a perforation about the size of a pin-head was noticed. There was a small quantity of serous discharge in the external auditory canal. The hearing was very dull; watch, $\frac{c}{36}$. Tinnitus was likened to a "gale of wind whistling through a ship's rigging."

Every few seconds there was a violent spasmodic contraction of all the facial muscles on the right side—screwing up his face and closing the right eye. These contractions, he stated, began about twelve hours after the accident, caused him great pain, and were quite apart from voluntary control. The middle ear was gently inflated by Politzer's method, with the immediate result of stopping the contractions of the facial muscles and easing the pain.

On June 6th the tympanic membrane was still of a deep red colour, and a fair amount of secretion was found in the external auditory canal. There has been no spasm of the facial muscles since inflation. On asking him to hold the nose and force the air to the ear, the facial muscles on the right side again contracted violently, and a little serous discharge was blown from the tympanum through the perforation into the external canal.

On June 9th the ear was quite dry, and the perforation cicatrised. There had been no pain, tinnitus, or contractions of the face. Hearing was slightly improved, watch $\frac{6}{36}$.

The only treatment adopted in addition to the inflation of the middle ear was drying the external auditory canal with sterilised absorbent cotton wool.

Remarks.—It is well known that it is essential to the healthy function of the ear that the pressure on both sides of the tympanic membrane should be equal. This is accomplished through the Eustachian tube. The evil influence of sudden and great changes of pressure can be neutralised by the act of swallowing, or by performing Valsalva's experiment. It is interesting to note that divers instinctively adopt the method of swallowing to equalise the pressure of air on both sides of the tympanic membrane. When a diver—in descending the ladder—feels the pressure of the air in the ears, he swallows saliva. If the "ears crack" he finds he can go down to a considerable depth without discomfort, though the act of swallowing may have to be repeated once or twice before he reaches the bed of the river. If the ears will not "crack" on swallowing, then he ascends a few steps of the ladder and tries again, but if he fails he must come to the surface. As a rule, divers refuse to go on duty when they have a "cold," as they know that there is a great danger of injuring the ears. On this occasion the patient went on duty though he knew the risk he was incurring. The "cold" and slight sore throat from which he was suffering would probably lead to a swelling of the mucous membrane of the Eustachian tube, and render him, when exposed to sudden and great increase of pressure of air in the external auditory canal, more liable to the rupture of the tympanic membrane. Regarding the clonic spasm of the facial muscles, it is probable that in this case the osseous lining of the aqueduct of Fallopius in part of its course along the tympanum was defective, and covered only by mucous membrane. The facial nerve in this way would be directly affected by changes of tension in the tympanum. This would afford an explanation of how gentle inflation of the middle ear by Politzer's method gave relief by opening the Eustachian tube, and thus diminishing the intratympanic pressure, whilst the performance of Valsalva's method two days later had the effect of raising the intratympanic tension, thus causing pressure on the facial nerve, and inducing a recurrence of the clonic spasm of the facial muscles.

Newspaper Prescriptions.—A number of administrative orders issued to the Russian press forbidding the publication or discussion of this or that item of news are published in a periodical called the *Anglo-Russian*. The majority have to do with political matters, but there is one for which something might be said: "Feb. 10th, 1894.—To refrain from writing articles on self-help in cases of illness, especially from giving medical advices and receipts." Recent experience of newspaper prescribing in this country seems to show that a press censorship has some compensating advantages.

REVIEWS.

TABLETS OF ANATOMY. By THOMAS COOKE, F.R.C.S., and F. G. HAMILTON COOKE. Eleventh Edition, 3 volumes. London, New York, and Bombay: Longmans, Green and Co. 1898. (Demy 8vo, pp. 790, 770 illustrations. 28s. 6d.)

COOKE'S *Tablets* have been very useful to a very large number of students. In the original form they served practically as an epitome of those facts of human anatomy which were essential to a student seeking to answer questions at an anatomical examination. The tablets were admirably conceived, accurate, and concise. When the student attended Mr. COOKE'S admirable classes he read the facts of the afternoon's demonstration on the special tablet to refresh his memory, and in the course of the lesson the various points were shown to him on the bones and on the dissected subject. This mode of preparing candidates for an examination is excellent, each class attending a real demonstration or object lesson, a method obviously preferable to that followed by many crammers, which consisted in sketching a bone with white chalk on a blackboard and then covering it with coloured chalks to represent muscles, vessels, and nerves.

In the present edition the tablets are abundantly illustrated with the best figures from the leading English, French, and German anatomical text books, many of which are printed in colour. Indeed, the three volumes contain about 750 woodcuts.

Part I is devoted to osteology. In addition to the woodcuts it contains an addendum entitled "A Graphic Presentation of Some of the Principal Dates of the Appearance of the Several Centres of Ossification and of their Union." We believe the student would find it far less difficult and certainly more agreeable to learn the chief parts concerning the ossification of the skull bones by simply taking the trouble to prepare and disarticulate a fœtal skull for himself.

Part II deals with the anatomy of the limbs, abdomen, and pelvis. It is also interleaved with tablets of white paper containing much sound advice relating to the great value of dissecting-room work (which cannot and never has been denied). It contains also Mr. Thomas Cooke's well-known essay "On the Art of Dissecting," wherein he expounds his "*de fil in aiguille*" (from thread to needle) principle. This essay really concerns the demonstrator rather than the student. Other interspersed white tablets are devoted to observations relating to the morphology of muscles, ligaments, and what the author jocularly terms "the new or 'reconstructed' abdomen." The tablets will be particularly useful to those who passed their anatomical examinations twenty years ago, for it will give them some notion of the great revolution which has taken place in anatomy in consequence of studying the organs hardened *in situ*, instead of giving them imaginary surfaces, borders, and lines from the positions they assumed when lying on a table.

Part III is concerned with the head and neck, thorax, and brain. Here again new matter is introduced on separate tablets easily identified. The careful epitome of the new work on the deep origins of the cranial nerves will be invaluable to many practitioners as well as students. The tablet on the embryology of the great vessels of the thorax is well conceived and useful, as are those relating to newer matter in connection with the brain and its membrane.

Students will be very grateful to Mr. Cooke and his collaborator for the great care and judgment which they have exercised in re-editing the tablets. The many admonitions to stick to plain anatomy and not run after the fairy morphology, which are interspersed throughout the second and third volumes, ought to do much good in warning students that facts which they can observe for themselves are infinitely more useful than those acquired at secondhand. It is abundantly clear to all who have had experience in teaching anatomy that some students find intense pleasure in dissecting, but to very many it is a drudgery. To the former admonition serves as encouragement and a knowledge of anatomy comes easily and abides; to the latter no amount of advice will avail.

The author, not content with the advice scattered irregularly throughout the tablets, has issued an additional pamphlet of exhortations, which he has modestly consigned to a tuck in the cover of Part II. This the reader should be careful to search out and read. A similar tuck in the cover of Part I contains an advertisement tablet with extracts; this is unbecoming so modest an author.

In regard to what Mr. Cooke calls the newer, or scientific anatomy, it is clear, in spite of his denunciations, that it has replaced the vague and meaningless teleology so prevalent before Darwin, and he has acted wisely in incorporating the results of recent research in this edition of the tablets.

SKIN DISEASES OF CHILDREN. By GEORGE HENRY FOX, A.M., M.D. London: J. A. Churchill, 1898. (Demy 8vo, pp. 174, 72 Illustrations. 12s. 6d.)

THIS book is intended to serve as "a concise and practical sketch of the symptomatology and treatment of those eruptions which the practising physician is most likely to meet with amongst children," and differs from other standard works on diseases of the skin simply by its excluding from consideration such skin diseases as are not met with in children. The diseases that are met with in children are, however, for the most part, though not entirely, common to persons of all ages, and these diseases are, as the author intends them to be, concisely considered, and the treatment recommended is useful from a practical point of view. The affections described are alopecia areata, ringworm and favus, contagious impetigo, psoriasis, ichthyosis, eczema, papilloma lineare, nævi (pigmented and hairy), vascular nævus, lupus and other tuberculides, lichen ruber and lichen planus, syphilis hereditaria, erythema nodosum, purpura, molluscum, keratosis follicularis, keloid, and scabies. They are fully, we might almost say profusely, illustrated. There are no fewer than twelve plates in the volume, and sixty figures interpolated in the text. The artistic merit of these figures is commendable, and some of the plates are really excellent. The illustrations of the volume are not only its most striking, but perhaps its best, feature.

Dr. Fox gives an instance of the occasional infectious nature of alopecia areata. The wife of a man who suffered from this disease found within three months after marriage that there were three bald places on her own head. He emphasises a fact that is apt to be lost sight of, that in treating psoriasis with arsenic the drug should not be given until the acute stage is over. Arsenic in the acute condition, when the skin is irritable and the psoriatic patches congested, is worse than useless. In treating eczema in children he wisely discourages the use of strong drugs such as arsenic and antimony. For one case in which they have done good he has seen them do harm in twenty. Arsenic should never be given in the acute eczema of childhood, or in the acute exacerbations of the chronic form.

In the treatment of lupus Dr. Fox dissuades from the use of the knife, the needle, and the cautery paste, and believes that the skilful use of the curette and burr will result in the least amount of pain and discomfort and the least resulting disfigurement. For many years he has used a dental burr of varying size dipped in carbolic acid, and he employs it with ever-increasing satisfaction.

The author confirms the common experience that the treatment of keloid is generally discouraging, excision being usually followed by a return of the growth. Good results, he believes, have been obtained by deep linear scarification, and the application of glacial acetic acid to the cuts; and also by the use of the electrolytic needle.

There is appended to the text a formulary of nearly sixty pages.

TRAUMATIC INJURIES OF THE BRAIN AND ITS MEMBRANES, WITH A SPECIAL STUDY OF PISTOL-SHOT WOUNDS OF THE HEAD IN THEIR MEDICO-LEGAL AND SURGICAL RELATIONS. By CHARLES PHELPS, M.D., Surgeon to Bellevue and St. Vincent's Hospitals. London: Henry Kimpton. 1898. (Royal 8vo, pp. 582. 49 Illustrations. 21s.)

IN the preface to this book the author explains that the title, which to English readers will seem decidedly tautological, is intended to imply "the injuries which the brain suffers from external violence." Much perplexity, and probably some

little prejudice, might have been prevented either by the omission of the word "traumatic," or, better still, by the use of the generally-recognised and well-understood term, "lesion."

Whilst every practitioner will readily assent to the statement made by Dr. Phelps that injuries to the brain form a division of cerebral surgery of the greatest practical importance, many, we are sure, will be disposed to question the opinion that this subject has received the least careful attention. Surely this branch of practical surgery not only occupies a large and prominent place in surgical textbooks, but also, as is shown in the list of references appended to this work, has been fully studied by many eminent surgeons on both sides of the Atlantic.

This volume is made up of two sections—a long series of clinical records which, though for the most part of much surgical and pathological interest, few readers, we imagine, will patiently read to the end, and a discussion, chiefly with regard to symptomatology and clinical detail, of the various injuries of the brain. This portion, which is almost exclusively based on the author's experience, presents evidence of great labour and extensive knowledge of his subject, and certainly is an advance in the difficult task of applying in brain surgery the results of *post-mortem* investigation to a systematic determination of an association of external signs with definite and localised lesions.

Although Dr. Phelps's book will be found dry, and here and there difficult to understand, much will be found of both scientific and practical importance to repay a patient study of its contents. As instances of the author's ability and judgment as a clinical teacher, we would refer especially to the remarks on "unconsciousness as a general indication of cerebral lesions," and on "mental disorders in cases of laceration of the frontal lobes."

A section of this volume on pistol-shot wounds of the head is really an abstract of the results of a long series of experiments on the dead subject, instituted mainly with the object of determining by the results of the injury the circumstances (whether, for example, suicidal or homicidal) under which it was inflicted. The comments on those experiments, though they question the value of the present state of expert evidence in such cases, do not seem to have led to any definite and positive conclusions. The chief value of this section consists in the clear and excellent photographs by which it is illustrated.

Normale und pathologische Anatomie der Nerven-zellen auf Grund der neueren Forschungen. [The Normal and Pathological Anatomy of Nerve Cells based on Recent Investigations.] Von Professor Dr. A. Goldscheider und Dr. E. Flatau. Berlin: H. Kornfeld. 1898. (Roy. 8vo, pp. 146; 8 figures and 7 coloured plates. M. 6.)

The work represented by this book, accomplished by the distinguished authors themselves and other investigators, is epoch making. Its object is to demonstrate, under the microscope, the structural changes that come and go in nerve cells as a result of their activity, and it involves the abolition of the idea of functional nervous disease, or disease without discernible physical change. The first chapter deals with the methods of fixation, section, and staining of the nerve cells, whereby subtle changes in their structure are revealed. The second treats of the normal structure of nerve cells—a formed stainable part known as Nissl's granules, and an unformed ground substance or spongioplasm, together with a nucleus. In the third chapter there is a description of the microscopic differences which exist between nerve cells at rest and during activity. The next chapter is taken up with changes that have been experimentally produced in nerve cells by section of the axis cylinder processes, or by the administration of lead, arsenic, alcohol, mercury, phosphorus, strychnine, and morphine; also the effect on them of the toxin and antitoxin of tetanus, of the toxins of hydrophobia, plague, and leprosy; likewise the changes that result from artificial uræmia and anæmia, from inanition, and from extremes of temperature. The last chapter deals with the changes in nerve cells that have been found in man—in Landry's paralysis, in variola, and other infective diseases, in multiple neuritis, tabes, general paralysis, and paranoia. This advance in our knowledge makes it possible, as the authors suggest, to detect with the microscope special affinities of groups of nerve cells for particular poisons, and even the ultimate meaning of the antagonism of, for example, morphine and atropine, toxin and antitoxin—leading, in fact, from a science of cellular pathology to one of cellular therapeutics.

Pathological Technique. By F. B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard, and J. H. Wright, A.M., M.D., Instructor in Pathology, Harvard. London: The Rebman Publishing Company. 1898. (Royal 8vo, 397 pp., 105 illustrations. 14s.)

This book aims at providing the student with a manual for practical use in the *post-mortem* room and laboratory, when engaged in the study of the various lesions met with either in the corpse or in the course of clinical medicine. Hence it combines the various *post-mortem*, bacteriological, and histological methods in ordinary use, and thereby unites in itself a description of such processes as would otherwise have to be sought in the manuals of each of these branches of pathological study. On the other hand, it makes no pretence to such detailed description of various morbid products as may be found in works on clinical diagnosis, such as those of v. Jaksch, etc.

That portion of the book dealing with *post-mortem* procedure is practical, and the description of the methods employed is full. In the bacteriological part only such bacteria as are commonly met with are described; still we feel that in discussing diphtheria Hoffmann's bacillus should be mentioned, and that to choose the B. mucosus capsulatus as a type, instead of describing Friedlaender's bacillus, is a mistake.

The authors state definitely that the bacillus tuberculosis does not form spores, and that gonococci may be identified in sero-purulent exudates from joints, two points generally held to be undecided. It is certainly unsafe to rely on the microscope alone for the diagnosis of anthrax; and it is not correct to say that mice die in twenty-four hours after inoculation with the pneumococcus, though rabbits do. The description of Widal's serum test is incomplete, as no mention is made of the reaction time to be observed.

In the histological section there is a good description of staining methods; but the references to pathological products are neither complete nor always accurate. The classification of pathological pigments is inaccurate and obsolete; and the description of the examination of fæces and urine is inadequate. We are unable to find any description of the technique necessary in examining pathological urines.

On the Treatment of Uterine Myomata (Fibroids). By J. Bland Sutton. London: The Medical Publishing Company, Limited. (Crown 8vo, pp. 97, 17 woodcuts. 3s. 6d.)

Mr. Bland Sutton's views on the treatment of fibroid disease of the uterus were made known in a communication on the subject read before the Obstetrical Society of London in November 1897, and we commented on those views in an article in the British Medical Journal of November 13th, p. 1441. Mr. Sutton is in favour of early operation, and by operation he means retroperitoneal hysterectomy. He believes that a fibroid does positive harm to the patient, that removal of the appendages is an uncertain procedure, and that panhysterectomy is objectionable, as the very best operator may unavoidably damage the ureters. So far from favouring removal of the ovaries, the author rather prefers to leave them behind even when he removes the uterus.

The present work is a collection of lectures already published in a contemporary, and it contains a very clear synopsis and defence of the author's views and practice. Altogether it seems probable that he is right in his preference for retroperitoneal hysterectomy. He boasts that throughout all his hysterectomies he has never seen the ureters. This is a decided recommendation. Unfortunately, as in the old extraperitoneal operation, the stump is a difficulty and danger. When the cervix is small retroperitoneal hysterectomy or panhysterectomy are alike easy and relatively safe. When the cervix is thick either operation

is difficult and dangerous. Even with Doyen's method, where all the parts are made accessible, the ureters may be divided. On the other hand, Bland Sutton owns that retroperitoneal hysterectomy is troublesome when the stump is thick. "A thick cervix, whether long or short, and especially when it contains an unhealthy endometrium, constitutes an unsatisfactory stump, and is very apt to initiate trouble." As the author states, immediately afterwards, that the "expanded cup-like cervix left after the removal of a large intracervical myoma, gives, as a rule, excellent results," it would appear that when the stump is thick its muscular tissue should be trimmed away as much as possible, so as to leave nothing but an "expanded cup-like cervix." This trimming, however, takes up time and causes hæmorrhage in parts not readily accessible to the operator. In short, the stump is the great difficulty in this as in any other variety of hysterectomy. Yet experience will teach how a thick stump may best be treated, and Mr. Sutton's results are good, though he still finds that "with a thick cervical stump the temperature sometimes ascends to 102°, or even 103°, and may take seven, eight, or even ten days to subside." The author denies that he makes light of hysterectomy, and points out that the greater the necessity the greater the danger—an assertion which few will feel disposed to deny.

The lecture on "oöphorectomy *versus* conservative hysterectomy," deserves close consideration. It is well known that the author is entirely in favor of the latter operation, in which the uterus is removed and the ovaries left behind. Assuredly it is best to remove the fibroid uterus when one or both of the ovaries are inaccessible or cannot be freely extirpated. Some important qualifications, however, may be urged. In the first place, leaving the ovaries usually involves leaving part of the Fallopian tubes, and the canal of a tube occasionally contains septic material. Then, when a fibroid chiefly involves the fundus, which is supplied by the ovarian artery, the appendages are usually easy of access. Removal of the ovaries, provided that no ovarian tissue be left, has been in such cases highly successful in arresting the growth of the tumour. The symptoms of an artificial menopause have to be taken into account, but its dangers have been somewhat exaggerated.

The lectures are published in a very handy form, and the illustrations are good. A few drawings explaining the steps of supravaginal hysterectomy would have been acceptable, though these proceedings are not easily made plain by pictorial art.

THE MINERAL WATERS AND HEALTH RESORTS OF EUROPE. By HERMANN WEBER, M.D., F.R.C.P., and F. PARKES WEBER, M.D., F.R.C.P. London: Smith, Elder and Co. 1898. (Demy 8vo, pp. 524, with a map. 10s. 6d.)

THIS is not, as its title might at first sight suggest, an entirely new work. But it is, and this the title page duly explains, a revised and enlarged edition of the authors' highly successful work on *The Spas and Mineral Waters of Europe*, published in 1896. The size and shape of the volume are both increased, so that not only are there 140 odd pages more in the present edition, but there is more matter on each page. The additions are partly to be found in the detailed accounts of the individual spas and health resorts, which have been considerably elaborated, and partly in fresh departures, enlarging the scope of the volume. The general arrangement is the same as in the original edition, but there are additional chapters, the contents of which account for the altered title of the work. Thus European inland climatic health resorts, as apart from spas, receive special attention, for the good reason that the use of mineral waters must in many cases be combined with or followed by a stay at a climatic health resort. The account of the grape, milk, and whey cures is new, and is followed by a very interesting summary of sanatoria for the treatment of special diseases. To show how fully up to date the work is it is only necessary to note that in the section devoted to the open-air treatment of phthisis reference is made to papers appearing so recently as March last.

The important but often difficult problem of choosing a suitable climatic health resort for rest after a course of mineral water, the after-cure or "Nachkur" receives special attention in a chapter which is full of valuable advice. Another and most useful feature that has been introduced into this volume is a map of the various health resorts of Europe; by consulting it the reader at once obtains a good idea of their relative geographical position.

The great feature of this valuable book is its essentially clinical and practical character. It tells the physician exactly what he wants to know, and does not merely offer him the dry stores of the chemical analysis of various waters, and then leave him to make up his mind as best he may, but it freely gives him the practical outcome of a life-long experience and study of the subject. A complete and interesting source of reference it must long remain, as a tribute both to the medical knowledge and to the literary ability of the distinguished authors.

CHIRURGIE DE L'INTESTIN [Surgery of the Intestine]. Par M. JEANNEL, Professeur de Clinique Chirurgicale à la Faculté de Médecine de Toulouse. Paris: Institut de Bibliographie Scientifique. 1898. (Demy 8vo, pp. 410, 363 illustrations. Fr. 10.)

THIS is a comprehensive work on the surgery of the small and large intestines. Any mention of operative procedures involving the upper part of the alimentary tract above the pylorus, and of the rectum and anus, is purposely avoided. It is a work purely operative in scope; no clinical descriptions are anywhere given. The author considers his work justified inasmuch as no complete treatise has as yet been published upon the surgery of the tract he has chosen. In the description of each operation a definite plan has always been followed. The operation is first named, with the etymology and synonyms; then a brief but comprehensive history, followed by a full description of the technique and of the instruments employed, is given; the after-results and possible difficulties and complications are considered; and finally the indications for each procedure that has been noticed are succinctly enumerated. The work is divided into four sections. In the first the general technique of all operations is reviewed. In the second those operations affecting the small intestine are minutely described. In the third those affecting the ilio-cæcal region; and in the fourth those involving the colon.

The work, therefore, aims at being encyclopædic in character, and, though ambitious, the scheme has been attended with a large measure of success. Practically all the procedures that are recognised either on the Continent or in England or America receive adequate mention, but others, long since laid aside, receive almost as careful elaboration. This is the chief fault of the book. There is a lamentable absence of perspective, and the work partakes too much of the "scissors and paste" order. To some extent, however, it is only fair to add, this is compensated for by a brief, but on the whole temperate and impartial, analysis of the relative values of the methods, wherein the author gives his personal judgment as based upon an extensive experience. With most of his decisions the surgeon will probably agree. It is, however, becoming more and more generally recognised that mechanical aids to intestinal anastomosis, buttons, bobbins, plates, and rings, whose name is legion, have, with possibly one exception, had their day, and soon must cease to be, but no inkling of this could be gathered from any passage in this work.

The illustrations are copious, and though rough are, as a rule, sufficiently clear and obvious. There are not a few typographical errors, and Professor Halsted's name is consistently misspelt.

LA THÉRAPEUTIQUE DES EMPYÈMES. [The Therapeutics of Empyemata.] Par Dr. E. CESTAN. Paris: Georges Steinheil. 1898. (Royal 8vo, pp. 394. Fr. 10.)

THE advance of modern surgery has brought with it a vast improvement in the treatment of empyema, and this improvement may be set down to the credit of the more radical measures for complete drainage which have gradually been adopted. The conditions under which empyema may arise are numerous and by no means fully understood even at the present day. In the large work that he offers to us Dr. CESTAN has taken up and elaborated the work of other French

observers, and has produced an exhaustive treatise in which are set forth the views of a very large number of writers, amongst whom it may be noted that British physicians and surgeons hold a prominent place.

The book is divided into two principal parts, dealing with acute and chronic empyema respectively. The causation of the former is considered at some length and a classification made in which the author makes a definite distinction between purulent effusions set up by the pneumococcus and those produced by the streptococcus. The former he regards as being the least formidable of the two. Tuberculous empyemata are considered separately and are described as occurring more frequently in adults than in children. Staphylococcus he believes may occur in serous fluids without showing any pyogenic tendency.

From the discussion of causation he passes to that of operative treatment, and describes the various methods of tapping which have been from time to time advocated, many of them being clumsy and unpractical, and hardly worth recalling. As regards the washing out of the pleura after tapping, he sums up the evidence against the process, and herein he would probably be supported by all British authorities, if there be any who still advocate the use of the aspirator and the siphon in dealing with purulent effusion in the pleura. The operation of pleurotomy, with or without excision of rib, is next dealt with, and all the arguments for and against operation, or as to its site and extent, are thoroughly sifted, but they lead at last to the very proper conclusion that the pus should be freely evacuated, and that the removal of a portion of rib will do no harm to the patient.

In the second part of the work will be found some important comments as to the possible dangers attending pleurotomy, and some interesting cases of accident due mainly to nerve disturbance are recorded. Sudden death during or shortly after the rapid evacuation of pus is by no means unknown in this country, but the actual way in which it is brought about must remain undetermined. All that is actually known on the subject, and most of the speculations about it, will be found set forth in order and duly discussed by Dr. Cestan. In the final section of the work he attacks the subject of chronic empyema and its treatment, entering at considerable length into the question of the re-expansion of the lung under different circumstances, and the value of the operations that have been suggested by Estlander and others to cause obliteration of the cavity left behind by a collapsed lung. The statistical results of success are somewhat surprising, and the absence of British names from the list of operators would appear to indicate that these operations are but little in favour in this country. The formidable process described as "decortication" of the lung, which consists in stripping down all pleural adhesions and removing thickened tissue from the surface of the liberated lung, appears to have met with some success.

Dr. Cestan's book may be described as a very complete treatise on the whole subject.

A Handbook of Horse-shoeing. By J. A. W. Dollar, M.R.C.V.S., with the collaboration of Albert Wheatley, F.R.C.V.S. Edinburgh: David Douglas. 1898. (Roy. 8vo, pp. 433; 405 illustrations. 15s.)

In the preface it is stated "that Leisering-Hartmann's masterly handbook, *Der Fuss des Pferdes*, has been adopted as the model and substantial basis for the present volume," and while there has been much modification and a considerable addition of new matter, notably Mr. Wheatley's illustrations and descriptions, large portions are free translations of the well-known German work.

After a concise and interesting history of horse-shoeing, this elaborate and profusely illustrated work deals with the subject in sections, describing the Structures and Functions of the Foot, the Shoeing of Healthy Feet, and the Shoeing of Diseased Feet and of Lame Horses. Two Appendices treat severally of the Shoeing of Oxen, and Farriers' Teaching Schools and Shoeing Competitions. A somewhat lengthy Bibliography serves to indicate that the subject has attracted much attention, and that the writers of this work have gone far afield in their endeavours to make it as complete as possible.

The truth underlying the axiom "no foot no horse," renders the subjects of horse-shoeing of very great importance. Advance in anatomical and physiological knowledge and in veterinary science generally, and their application through instruction given by agricultural societies, county councils, etc., have materially raised the art of the horse-shoer, and a somewhat extended field of observation at home and abroad supports the opinion that it is now as intelligently and successfully practised in Great Britain as in any other country.

In the work under review, though much of the matter is derived from the most trustworthy and valued foreign sources, much excellent material is added, and laid with remarkable clearness before the reader, it is somewhat difficult to know for whom the handbook is intended. The chemical composition and the histology of the healthy foot, and the microscopic changes occurring in disease, will scarcely engage the attention of the average working farrier. For his education on such matters the veterinary student will hardly apply to a work on horse-shoeing. It appears to appeal particularly to the medical man, whose work materially depends on the ability of his horse: and to the keen, intelligent horse-owner, who delights in studying the animal and everything pertaining to him.

Though possibly in some minor details of practice there may be room for disagreement, the work, as a whole, commands unstinted praise, does the highest credit to the translators and compilers, and will be found of very great interest and value to anyone desirous of gaining sound information on the subject.

Traité Medico-Chirurgical de Gynécologie: [A Medico-Chirurgical Treatise on Gynæcology.] Par MM. F. Labadie-Lagrave et Félix Legueu. Paris: Félix Alcan. 1898. (Royal 8vo, pp. 1,236, 270 Illustrations. Fr. 25.)

This work not only enters in full into surgical and medical details, but also treats of therapeutics and hygiene. The authors announce that the aim of their treatise is to emphasise the intimate union between medicine and surgery. Since they further treat of pathology fully, we cannot blame them because their work is bulky.

Much is to be said in favour of the principle on which the authors found their work. Too many such treatises give the general medical public an impression that gynæcology is a branch of surgery. We need notice but briefly how the latter science is treated in this *Traité*. The paragraphs on ovariotomy are commendable; a more difficult and less settled subject, hysterectomy for fibroid, is discussed in a yet more satisfactory manner, and well illustrated. Retroperitoneal hysterectomy is absolutely condemned, and it is asserted that panhysterectomy has supplanted all the operations for the same purpose—an inaccurate statement. No doubt, as the authors say, the stump in the retroperitoneal operation may remain as a septic focus which may infect the peritoneum when the retroperitoneal operation is selected. As a rule, however, it does not become septic. On the other hand, these supporters of panhysterectomy devote an entire page to injuries of the ureter, which seems ominous.

The pathological department of the *Traité* is undoubtedly of high excellence. This remark especially applies to the very complete sketch of deciduoma malignum. It is written entirely in the positive sense, being a clear and able summary of the views and experience of the literature of the subject. Though, however, the authors begin the subject by observing that "the tumours which are grouped under this heading are as yet hardly known, their study but faintly traced out and their nature disputed," they omit the negative evidence brought forward by Eden and Kanthack at the Obstetrical Society of London two years since. Still they sketch very lucidly what Continental writers mean when they speak of "deciduoma malignum."

As the authors justly pride themselves on their attention to the medical side of gynæcology, their opinion on therapeutical measures is of interest. They clearly do not place much faith in the semi-medical and semi-surgical practice of electrolysis in fibroid disease. It must not be continued, they insist, till the case is too late for surgery. It can only under certain conditions modify favourably certain symptoms. Pelvic massage meets with more favour at the authors' hands than it is likely to obtain in the United Kingdom. The portion of the

Traité devoted to injections, douches, and, above all, mineral waters is particularly to be commended. It deserves to be studied by the most experienced specialist and will be of high value to the practitioner, in short it supplies a distinct want. The subject of "uterine therapeutics" in the conventional sense is also well reviewed. The authors give a very clear sketch of ovarian opotherapy, and show much judgment in discussing the novelty. After describing the mode of administration, they give their own opinion at the head of their summary of "Indications." "The method," they cautiously admit, "is as yet of too recent date to allow us to foresee all its indications, we therefore confine ourselves here to noting the principles on which it is applied." The indications in question are—constitutional disturbances after removal of both ovaries, disorders traced to ovarian diseases, chlorosis, the troubles incident to the true menopause, and, lastly, exophthalmic goître.

MM. LABADIE-LAGRAVE and LEGUEU have clearly devoted an enormous amount of labour to the preparation of this almost encyclopædic treatise. No reader, even he who simply looks over a page of the volume for reference, will grudge the authors a full meed of praise.

KLINISCHE UND EXPERIMENTELLE UNTERSUCHUNGEN ÜBER DIE INFEKTIÖSEN KRANKHEITEN DER HARNORGANE. [Clinical and Experimental Investigations concerning the Infectious Diseases of the Urinary Organs.] Von Dr. THORKILD ROVSING. Authorised German translation from the Danish. Berlin: O. Coblentz. 1898. (Demy 8vo, pp. 330. M.7.)

THIS book contains an account of the author's work, both clinical and experimental, on the etiology and pathology of infectious urinary diseases, undertaken by him since the publication of his work on inflammatory affections of the bladder in 1889.

The book is divided into six chapters, dealing respectively with (1) Bacteriuria, (2) Pyelitis, (3) Pyelitis complicated with Cystitis, (4) Cystitis, (5) Experimental Observations, (6) Comparison of the author's results with those of other observers. The material on which the book is based comprises 126 clinical cases which are here duly reported, and 28 experiments on animals.

Dr. ROVSING'S conclusions differ considerably from those of some other workers in the same field, especially those of the French school as represented by Guyon, Albarran, and their followers, and notably in regard to the part played by the bacillus coli in the inflammatory affections of the urinary passages. The bacillus coli, Dr. Rovsing agrees, is the microbe most frequently met with in the urinary passages, but in most cases he finds that it is conveyed thither by the blood, and in comparatively few through the urethra; and he states that in by far the greater number of his cases the urethral origin of the microbe could be excluded. Bacteriuria thus set up is in most cases a benign and comparatively unimportant affection. In some cases, however, especially when urinary concretions favour the development of inflammation, the bacillus coli gives rise to slight suppurative pyelitis. Rarely it causes cystitis and nephritis if it is carried to bladder or kidney by the blood, but from the urine the author is of opinion that it usually lacks the power to attack either the kidney or the bladder. Thus, though his own researches lead him to consider the bacillus coli, as a rule, an unimportant pathogenic agent, yet, judging from the experience of others, he admits that in exceptional cases the bacillus may become possessed of highly virulent properties, and may then give rise to serious trouble. But in such cases he thinks it probable that the bacillus has not originated in the patient's own body, but is a specially virulent form introduced from without. The great majority of cases of cystitis are caused by pyogenic microbes, which also have the power of decomposing urea; but this power, according to the results of Dr. Rovsing's inquiries, seems not to be possessed by the bacillus coli. Cystitis, moreover, is a disease which he believes to be much less common than some authors suppose it to be, and in many cases the cystoscope is necessary for an accurate diagnosis.

The book shows abundant evidence of much hard and conscientious labour, and it certainly deserves careful study by all those who are interested in the by no means uncommon, though often obscure, affections which have been somewhat loosely grouped under the name of urinary infection.

NOTES ON BOOKS.

REPORTS AND TRANSACTIONS.

The Fourth Annual Report of the Board of Managers of Craig Colony (Elmira, N.Y.: N. Y. S. Reformatory Press. 1897. Demy 8vo, pp. 124) deals with the fiscal year ending September 30th, 1897. The colony, created by a law of the New York State Legislature in 1894, first received patients in February, 1896; 253 were admitted during the fourteen months after the opening, of whom 214 were resident at the date of the report. The ultimate accommodation at the colony will be for 350 patients; but the managers estimate that 700 or 800 additional cases, now in almshouses, hospitals, and asylums, might advantageously be gathered in. This extension is urged on grounds of "economy to the taxpayer," as training in a colony renders the colonists capable of contributing to their own maintenance. The report of the Medical Superintendent, Dr. Spratling, sums up the general treatment in three words, namely, medicinal, dietetic, moral. Claiming that a reduction of 55⅓ per cent. had been made in the number of seizures in the first 50 patients admitted, he cites cases in which remarkable improvement had resulted. He does not appear to place much reliance on drug treatment, and deprecates the indiscriminate use of bromide. Experiments with urethan do not seem to have been satisfactory. The dietetic treatment is held to be of special value, especially when the patient "can by his own labours produce the very food that he should consume"—from which we conclude that a vegetable diet is preferred. There is no doubt that systematic muscular exercise is a great factor in metabolism and the consequent amelioration of the epileptic. With regard to finance, it is satisfactory to notice the statement that "during the second year of its existence" the colony produced 56.1 per cent. of the entire cost of maintenance. It seems that as many as 76 patients had been admitted who were under 21 years of age, but so far no distinctive arrangements for children have been made. The provision of special homes with school arrangements for such is very properly advocated. The proportion of isolation seems large, it being stated that, "with an average daily population of 175, 20 patients," male and female, required isolation for a combined period of 276 days, and it is proposed to erect a detached building for the suitable care of those suffering from temporary mental disturbance. A table of general medical and etiological statistics concludes the report, in which particulars of each of the 253 cases are noted.

Boarding-Out and College Training Association. Twelfth Report, 1898. (London: Published by the Association. 1898. Demy 8vo, pp.44. 2d.).—This report shows that 6,498 children were boarded-out in England, 4,855 in Scotland (including those with relatives), and 2,032 in Ireland. This Association, which forms a link of communication between Boards of Guardians and Boarding-out Committees, refers with satisfaction to the condemnation and closing of the barrack schools at Sutton, the report by Sydney Stephenson on ophthalmia in Poor-law schools being referred to in further proof of the evil of such a system.

A Report on Vaccination and its Results, Based on the Evidence taken by the Royal Commission During the Years 1889-97. Vol. i. The Text of the Commission Report. (London: New Sydenham Society.[1] 1898. Demy 8vo, pp. 500.).—This reprint of a Government Blue Book should be useful to the members of the New Sydenham Society and also to those whose shelves do not conveniently receive folio volumes. In a prefatory notice it is stated that "It is intended to follow this volume by another containing extracts from the evidence taken by the Commission, more especially with reference to the ill-consequences which occasionally result from vaccination," and it is added that this second volume will probably soon be ready for the press. It should be even more valuable to medical practitioners

[1] The annual subscription to the New Sydenham Society is £1 1s. Agent, Mr. H. K. Lewis, 136, Gower Street, London, W.C.

than the present volume, as every untoward result which can possibly follow vaccination ought to be known and guarded against, however remote the risk. The notice does not state that anything outside of the Blue Books is to be included in the second volume, but unless there is some very good reason to the contrary some of the more salient parts of the detailed criticism to which the grounds of dissent of the two nonconforming members of the Commission have recently been subjected might be profitably reproduced.

The Latin Grammar of Pharmacy. By Joseph Ince, F.C.S., etc. Seventh Edition. (London: Baillière, Tindall and Cox. 1898. Demy 8vo, pp. 376. 5s.)—This little book is meant as a Latin grammar for pharmaceutical students, and as a phrase-book of prescribing in Latin for medical men. It will serve both purposes, and for those who wish to write their prescriptions in Latin, a custom whose chief recommendation is its antiquity, it is a satisfactory repertory of the barbarous language which passes under the name of Latin. We have found no mistakes in it. The question why "*Tere accurate et per cribrum trajice*" is to be preferred to "Triturate carefully and pass through a sieve" remains unanswered.

Appendix XI to the Second Edition of the Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England. By James H. Targett, Pathological Curator of the Museum. (London: Taylor and Francis. 1898. Royal 8vo, pp. 30. 2s.)—From this *Appendix* we find that many additions of interest enriched the Museum of the College of Surgeons in the year ending July 1st, 1897. The collection of instruments is a great feature in this museum. Such an assemblage of old surgical weapons would be out of place in medical schools, being as a rule intrinsically uninstructive, but the museum at Lincoln's Inn Fields, being of a national character, is the right place for them. Two essentially historical sets of instruments are catalogued in this *Appendix*. Mr. Alfred Willett has presented a series of catheters and bougies once belonging to Abernethy, whilst Sir Arthur Wells has added a set of forceps and clamps used by his father in the performance of his earlier ovariotomies. Amongst the pathological specimens we may note Mr. Eve's talipes associated with peripheral neuritis, and an unusually good show of intestinal surgery. Six bottles include the result of Mr. D'Arcy Power's experiments to investigate the nature of intussusception. Two preparations illustrate Mr. J. R. Lunn's interesting case of strangulated obturator hernia reported by Dr. Sinigar in the British Medical Journal, vol. i, 1897, p. 587. Diseases of the blood vessels are also well represented, and here our readers will meet Mr. H. S. Elworthy's case of dissecting aneurysm of the aorta, described and figured in the Journal, vol. i., 1896, p. 398. The specimen, by a kind of judgment of Solomon, has been divided in twain, and distributed to the College and to St. Bartholomew's Hospital. Amongst the teratological specimens we may note Mr. Targett's preparation showing accessory adrenal bodies in the broad ligaments of a fœtus.

Aids to Examinations. Part II. By T. R. Atkinson, M.D. Dunelm. (London: Baillière, Tindall and Cox. 1898. Fcap.8vo, pp. 170. 2s. 6d.)—This is a compact little volume, concisely compiled, and composed of a number of questions and answers in medicine, surgery, midwifery, and the allied sciences. These questions and answers are not arranged on any particular plan, and sometimes—as, for example, in the case of acute yellow atrophy of the liver—sections on the same subject are separated widely from each other. The student desirous of information can, however, consult the index to find what he requires. The work is not intended to supersede textbooks, but only to serve as an *aide-mémoire*, and in this it succeeds.

Brief Essays on Orthopædic Surgery. By Newton M. Shaffer, M.D. (New York: D. Appleton and Co. 1898. Post 8vo, pp. 88.)—Into this little volume Dr. Shaffer has collected seven essays published in various American journals embodying his views of orthopædic surgery and its relation to general surgery. The writer's views will scarcely commend themselves to the majority of surgeons, as he pleads for his subject to be considered and practised in such a manner as to leave it doubtful if the orthopædic surgeon should not be a mere adjuster of suitable apparatus—at least, that seems to us the drift of his views. So thorough is Dr. Shaffer in his opinions that he would not allow an orthopædic surgeon to excise a joint, for example; but he refers all patients, hospital and private alike, "requiring surgical operations, who do not demand special orthopædic care afterwards, to a general surgeon." According to his definition, so long as "special forms of apparatus are used or special mechanical dressings are necessary we are dealing with orthopædic surgery." But if we operate in any way further than tenotomy, the procedure is one of general surgery. Any attempt to define the limits of a speciality by the character of treatment adopted and not by the nature of the affection treated is illogical, and we rise from the perusal of this book with a sense of disappointment that in these days of progressive surgery there should be found one to advocate so limited a view of the subject.

Cycle Touring. By A. W. Rumney, M.A., Tourist Editor of *Cycling*, and sometime Hon. Sec. Camb. Univ. Bicycle Club. (London: G. Bell and Sons. 1898. Small 8vo, cloth, pp. 93, 22 woodcuts. 1s.)—This volume of the excellent "All England Series" of Messrs. G. Bell and Sons is well worthy the attention of riders, whilst its perusal by any person, even of advancing years, who may not be a cyclist is calculated to tempt him or her to take lessons and attain proficiency in order to undertake some of the delightful tours sketched by Mr. Rumney and his friends. A short introductory chapter on this new method of spending a holiday is followed by a historical retrospect of cycle touring since its advent in 1870. The author considers "the cycle with three wheels is by no means to be pooh-poohed," especially for elderly and somewhat stout ladies and gentlemen; he remarks that "the ability to stop it at will without dismounting, and its greater capacity for luggage-carrying, are two important points with the tourist." Attention is, however, chiefly directed to the touring bicycle, and its points are described in detail. Company touring, solitary touring, the important question of baggage, maps, and road books are all fully considered. The questions of clothes, food and drink, waterproofs, and thirst occupy one chapter; whilst others are devoted to hotels, landladies, coffee taverns, châlets, cycle camping and tents, and the Cyclists' Touring Club. The last chapters are devoted to foreign touring and touring grounds and seasons. In an appendix of 25 pages seventeen suggested tours are sketched with admirable minuteness and correctness. These range over the Home Counties, New Forest, Isle of Wight, Devon, and Cornwall, Penzance to London, Malvern and District, North Wales, a Midland tour, North-East England, the Yorkshire Dales, Lincolnshire, the Land of Burns, the South Highlands (including Loch Lomond, Glencoe, Loch Ericht, Killiecrankie, Loch Tay, the Trossachs, Dunblane, and Stirling (297 miles, to which seven days are devoted), Connemara and Donegal, Kerry, and a trip round Normandy. There is no padding in the book, and it should find a place in every tourist's pocket.

Pharmaceutical Formulas. By Peter MacEwan, F.C.S. (London: Offices of the *Chemist and Druggist*. 1898. Cr. 8vo, pp. 664. 7s. 6d.)—This book is a collection of recipes for the drug trade, compiled mainly from the correspondence columns of the *Chemist and Druggist*. The information scattered through fifty volumes of this journal has been collected by a member of the editorial staff. The recipes have been proved and checked by experiment, and comprise formula for toilet preparations and specialities for the hair, dentifrices, perfumes, household and culinary requisites, beverages, antiseptics and disinfectants, inks, varnishes, confectionery, and medicinal compounds. The work has been specially compiled to meet the business wants of the chemist and druggist, and in this respect the information contained in its pages will be of the greatest value.

A Course of Lectures on Medicine to Nurses. By Herbert E. Cuff, M.D., F.R.C.S., Medical Superintendent South-

Eastern Fever Hospital. Second Edition. (London: J. and A. Churchill. 1898. Crown 8vo, p. 264. With Diagrams, 3s. 6d.)—There is much in this work which is most instructive to nurses; the language is free from technicalities, and the explanations are concise and simple. Dr. Cuff wisely places first the principles of the various morbid actions; the lectures on inflammations and germs and infection should enable any nurse to take an intelligent interest in her work. The author in his preface to the first edition anticipates the objection that some will make as to the wisdom of going so fully into matters of treatment, diagnosis, and prognosis, and explains that in his experience the intelligent nurse craves for more information on questions concerning her patients. We are certainly among those who doubt whether, for instance, it is well to describe the characteristics of the pulse, and discuss the light which it throws on the prospects of the patient. All such books will be used by the average nurse, whose mind has not been disciplined, like that of the medical man, to weigh the evidence given by the pulse in relation with that of other symptoms. It can hardly be advisable for a nurse to come to the conclusion that a certain condition of the pulse "indicates cardiac weakness, and consequently the stronger need for stimulants." Considering how patients and their friends hang on the words of the nurse, and how they fidget over the condition of the pulse, it seems to us that it would have been wiser to accept the fact "that the pulse is a source of difficulty to us all," and therefore not within the province of the nurse to interpret. The book ends with good advice to the nurse in charge of infectious patients.

B. Bradshaw's Dictionary of Bathing Places, Climatic Health Resorts, Mineral Waters, Sea Baths, and Hydropathic Establishments. 1898. (London: Kegan Paul, Trench, Trübner, and Co. Fcap. 8vo, pp. 416. With maps, plans, and views. 2s. 6d.) Details of an immense number of health resorts are included in this annual publication, which, although written in a popular rather than a medical style, will be found of considerable use to medical men. In the present edition alterations have been made, and the proprietors tell us in the preface that they have spared no trouble or expense in endeavouring to bring the information provided by them up to date. Under Gastein, Gurnigel, Bex, and Louèche-les-Bains, we notice names of medical men not now practising at the resorts in question, but some errors of this sort can hardly be avoided.

Stretcher Drill Illustrated, including Hand, Seat, and Wagon Drill. By Surgeon-Major J. J. de Zouche Marshall, 3rd Volunteer Battalion East Surrey Regiment. (London: William Clowes and Sons. 1898. Fcap. 8vo, pp. 83, with numerous illustrations. 2s. 6d.).—This little book describes the details of technical drill with which a surgeon requires to be acquainted in order to instruct stretcher bearers. The descriptions are accompanied by diagrams to facilitate the work of those in the Volunteer Medical Staff who are unable to spare the time to go through the regular course at a school of instruction. It also describes the organisation and duties of a bearer company and other details which will be found useful to the medical officer. It has the advantage of being small and suitable for carrying in the pocket.

Proposed Australian University.—The *Australasian Medical Gazette* points out that one of the consequences which it might be hoped would flow from the federation of Australia would be the establishment of a University of Australia in the federal capital. Had the Federation Bill been carried there would have been a federal territory, and the capital would have been in it. It would then have been competent for the federal authority to have established an educational system in such territory including schools and a university. Further investigation of the financial problems involved appears to have shown that the cost of education in the colonies must be handed over to the federal parliament, and it has been calculated that by this transference of the cost of education from the states to the federation these problems would be greatly simplified.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1897.[1]

The Work of the Factory Department.

Not for many years past has the work of the Home Office received so much attention from Parliament and the public generally as it has done within the last few months. Dr. Whitelegge, in taking up the reins of office laid down by Mr. Sprague Oram, has had an unusually difficult task to fulfil; but those who carefully read through his second annual report will at once see how successfully he has discharged it. The work of carrying factory legislation into effect, however, is not the duty of one individual alone, but of all the factory inspectors, male and female, working together in harmony and for the common purpose of securing healthy industrial conditions for the workpeople. The report appears late in the year; but when it is remembered that a considerable part of the time of the understaffed Home Office is spent in elaborating statistics which come in slowly, and that such things as the provision of means of escape in case of fire and the enforcement of the Truck Act have also recently occupied attention, there is some excuse for the apparent delay. In 1897 it became the practice to appoint certifying surgeons to definite areas, instead of simply to a number of factories. It will take seven years to work out this scheme properly.

Accidents.

During the year there were reported to the factory department 40,000 accidents; 200,000 factories and workshops were inspected; in these 4,500,000 persons found employment. There has been an increase in the number of reported accidents. This increase is not confined to any particular locality or industry, but is largely due to better observance of the requirements of the Acts, whereby accidents have been transferred from the unrecorded to the recorded class. The greater number of accidents still occurs in factories as distinguished from workshops, and while hitherto the largest number of accidents has been recorded during November and October, in 1897 the maximum was reached in December. The class affected is adult males principally. In spite of the repeated warnings conveyed by factory inspectors, workpeople, in order to save time, still persist in cleaning machinery whilst in motion. At one place it is the putting of a belt upon a pulley running at full speed, at another the cleaning of a travelling crane in motion, or the gearing of a shoe-heel attaching machine. Men and youths run the risk of losing part of a limb during these processes rather than perform the work while the machinery is stopped. Only 2 deaths occurred from flying shuttles, but 137 accidents were reported therefrom. It is interesting to know that since the guarding of cotton power looms has become more general, there has been a diminution in the number of cases of injury to the eye. Each year that passes machinery will be more and more safeguarded, and while this can only be done at present by the inspector satisfying a magistrate as to the necessity for it, there is little doubt that the Workmen's Compensation Act will indirectly bring about a reduction in the number of preventable accidents. If the Act does not accomplish this, one of the principal reasons for its existence is removed. Poisoning by carbonic oxide in tarworks and ironworks, and by potassium chlorate in chemical works, are alluded to in the report.

Fires in Factories.

The Act of 1895 threw upon the Home Office considerable responsibility in regard to the provision of fire escapes in factories, but in some instances it would appear that local authorities instead of working hand-in-hand with the department have refused to co-operate, while in other places municipalities have assigned this duty of inspection to a special officer. The factory department has done its best to grapple with this question. Before the close of 1897 upwards of 100,000 factories and workshops had been inspected for this particular purpose; in 2,750 of these the means of escape during fire were found to be inadequate.

Pottery Works and Lead Poisoning.

In 1896 there were reported 1,030 cases of lead poisoning; in

[1] Messrs. Eyre and Spottiswoode. 3s. 10d. 1898.

1897 the number rose to 1,214. Potteries and white lead works still return the largest number of cases. The combined mortality of lead workers from diseases of the urinary and nervous systems, according to Dr. Tatham's statistics, is represented by 393 as against 123 only among occupied males in general. The dusty processes of earthenware manufacture claim their victims to an extent that must surely be largely preventable. The comparative mortality figure of potters is 1,706, and of this not less than 1,001 is contributed by phthisis and other pulmonary diseases. It is to be hoped that the experts appointed by the Home Secretary will be able to recommend measures which, if acted upon, will tend to materially reduce this mortality. They will be helped in their inquiry by reading the report furnished to Dr. Whitelegge by the two lady inspectors, Miss Paterson and Miss Deane, who made a special inspection of the principal earthenware works not only in the Potteries but throughout the United Kingdom. They investigated 404 cases of plumbism from 132 factories in North Staffordshire, and they found that of these 404 persons 161 had previously suffered from lead poisoning. Lead poisoning still prevails in the Potteries, and is unchecked, owing to "the superficiality of the factory regulations intended to act as safeguards, and the difficulty of fixing responsibility for the observance of rules." In April, 1898, Professor T. Oliver, of Newcastle, attended the International Congress of Hygiene at Madrid, as representing the Home Office, and in the annual report there is published a note from him of his visit to the whitelead factories of Paris, in which he found this industry carried on under more salubrious conditions than in our own country. He gives as the probable explanation of the absence of ill-health among the workpeople the following: (1) No women are employed; (2) very young men are not employed; (3) the men are obliged to be temperate in the use of stimulants; (4) the workmen are kept moving from one department to another in the factory; (5) there is excellent ventilation and adequate means used for the removal of dust; and (6) thorough cleanliness prevails.

Match Making and Phosphorus Poisoning.

Phosphorus match making caused 2 deaths in 1897. There are twenty-four match works in the United Kingdom in which white or yellow phosphorus is employed. Among the 1,700 persons employed, 24 cases of phosphor-necrosis have occurred since the establishment of special rules in 1893-94. During 1897 there were 23 cases of anthrax reported, 6 more than in the previous year. Special rules have been served upon this trade.

Reports of Lady Inspectors.

In the report of Miss Anderson, the principal lady inspector, kindly allusion is made to the retirement of Mrs. Tennant from the Home Office, and to the work she did. Miss Anderson deals with the reports of the lady inspectors generally. Reference has already been made to the visit of two of them to the Potteries and their report. We have read with considerable interest Miss Deane's experience of the Truck Act, and of the personal difficulties she experienced in trying to gauge its harmful operation among the peasantry of Donegal.

International Congress on Accidents to Workmen.

Mr. Gould, Her Majesty's Superintending Inspector of Factories, and Dr. Oliver, attended in July, 1897, the International Congress on Accidents to Operatives on behalf of the Home Office. From the pen of Mr. Gould comes an interesting and most instructive report. Nine years ago (1889) the first International Congress on Labour Accidents was held in Paris, and since then Berne, Milan, and Brussels have been honoured by its presence. A permanent Committee sits in Paris, whose duty it is to accumulate facts for discussion at the Congress, to group and analyse them, and to publish a quarterly *Gazette*. Ten subjects were considered at the last Congress, many of them so important that they will undoubtedly occupy a place in the future industrial legislation of the various countries of Western Europe. Mr. Gould has wisely included in his report a copy of the tables of M. Darcy, President of the Central Committee of Coal Mines, France, adopted in Germany, Austria, England, France, Italy, and Switzerland in regard to "compensation for accidents."

CONVALESCENT HOMES FOR SOLDIERS.

To formulate any complete scheme for the benefit of convalescent soldiers is difficult because the questions to be answered are these: (1) Are such homes, even if the War Office finally approve of them, to be founded on the basis of a percentage on the annual admissions into hospital in the United Kingdom; or (2) on a percentage of the acute cases treated in various military hospitals? If on the latter it is impossible to furnish the data on which to work, because the statistical tables giving the diseases under each group; for example, circulatory, respiratory, nervous, and febrile groups do not differentiate the acuter forms from those of a milder type, nor is the average time spent in hospital by the former class to be obtained on a reference to departmental Blue Books. Thus we find ourselves compelled to work roughly on the percentage of admissions, and even then the yearly admissions vary considerably; for example, the admission-rate of 1896 showed a decrease of 67.2 per 1,000 on that of the preceding year. If we take the admissions in 1896 and work on these to formulate a scheme of some kind for the accommodation needed for convalescents, say, at the rate of 5 per cent. of admissions to hospital per annum—and this is a small and merely suppositious figure—we should require for 64,000 admissions convalescent hospitals to accommodate some 3,000 patients.

As crowding of a convalescent hospital is not desirable, we should require, say, 20 military convalescent homes or hospitals of 150 beds each. These should be scattered over bracing and mild stations (in England, Scotland, Wales, and Ireland, according to the strength of troops in each) whose health-restoring climates, or positions at the sea, or in the mountains, are well ascertained. Such hospitals could be extended in case of need. In estimating for 5 per cent. on admissions for convalescent patients we must bear in mind that those returning from India the subjects of malarial fevers and other tropical diseases would considerably increase the requirements. In fact, to formulate a complete scheme of convalescent homes or hospitals for military purposes is a most difficult matter. If we turn to these institutions in their connection with civil hospitals we are in a position to give a few guiding facts.

In Charing Cross Hospital, which has 175 beds, provision is made in their convalescent home for 50 patients. In the year 1897, out of approximately 2,000 patients treated in this hospital some 146 were sent to the convalescent home. In the first half year (1898) the authorities of Charing Cross Hospital have already sent 135 patients to their convalescent home. The charge made is 7s. 6d. per week; for outsiders—for instance, those not treated in the hospital—the charge would be 12s. 6d. per week. Soldiers would be taken on the latter terms if medically recommended as fit subjects for the convalescent home.

In the Middlesex Hospital, with 300 beds, where the annual admissions are above 3,000 (for the year 1897, 3,641 admissions), a convalescent home is provided at Clacton-on-Sea, with 50 beds, and to this are sent 1,000 patients a year, roughly about 20 per week. The average usual stay in the Convalescent Home at Clacton is nineteen days, which is prolonged in exceptional cases to sixty days. The cost all round at the Convalescent Home at Clacton, which is conducted on a generous scale, is approximately from £50 to £60 a patient a year. At the Middlesex Hospital the cost a head is about £1 17s. a week.

These facts will be of use in framing a scheme for the establishment of military convalescent homes, since they throw light on the cost at which each patient could be treated. Of course, in civil hospitals a very much larger proportion of serious cases are treated than in military hospitals, and allowance for this must be made in calculating the percentage of possible military convalescents, requiring the benefits of a properly established home, on the yearly admissions to military hospitals. But, as has been before stated, a rough 5 per cent. on admissions in military hospitals is a moderate computation for the United Kingdom.

Failing the establishment of proper military convalescent hospitals or homes, there is no alternative but to give large powers to the administrative medical officers of commands and districts to send all cases requiring change to existing civil convalescent

homes on a fixed payment, and also to permit administrative medical officers to utilise, to a limited extent, for patients requiring convalescence the barrack or hospital accommodation at stations in the Isle of Wight, or at Falmouth or elsewhere near the sea, or in bracing stations in the North. This could be done at very little expense.

That there is a necessity for a convalescent list (not particularised in the Army Regulations) or some special arrangement for convalescence is clearly proved by the following statements which appeared in the *Times* of July 11th: "The Secretary of State for India has given instructions that, in order to check as far as possible the great waste caused by the invaliding of young British soldiers, a certain time shall in future be allowed to elapse, where practicable, when they are discharged from hospital before they are called upon to perform full duties. It has been reported that the health of many young soldiers suffers owing to their being called upon to return to the ranks before they are thoroughly convalescent."

The subject of the Military Hospital at Eastbourne as a convalescent institution for soldiers was alluded to in the answer of Mr. Brodrick (the Under-Secretary of State for War) to Captain Cecil Norton.[1] We are in a position to furnish some particulars regarding it. Here some seventy convalescents are admitted during the year. The great majority of the cases that pass through are chest diseases, chiefly pleurisy and pneumonia, rheumatism, and rheumatic fever, and a few cases of secondary syphilis. The hospital at Eastbourne was established in February, 1892, it is believed at the instance of Lord William Seymour, the General Officer Commanding the District, and was intended principally for convalescents from the Guards. There are twenty beds (not sixteen as stated) and these are not sufficient for more than a few convalescents from London and Windsor. The hospital is conveniently situated near the sea front where exercise can easily be taken by the patients.

We have seen that in some Continental armies special provision is made for their military convalescents, and as Lord Wolseley, our own Commander-in-Chief, has given his unqualified approval of convalescent privileges for soldiers, we may hope that the matter will not be permitted to remain merely a humanitarian theory.

The matter is assuredly not one for public philanthropy as has been suggested, but it is incumbent on the Government and the Government alone to undertake the establishment of convalescent hospitals for our sick soldiers. Properly organised homes or hospitals of this kind need not prove expensive. They are certainly managed fairly economically in civil life, as may be found on reference to the tables and other information in *Burdett's Hospitals and Charities*, 1898.

NOTES ON HEALTH RESORTS.

Pougues-les-Eaux.[2]—The waters of this spa have a very old-established reputation, and the Saint-Léger spring, the only one formerly known, was employed by the French kings, Henri II, Henri III, and Henri IV. It was at Pougues, according to Dr. Janicot, that Jean Pidoux, physician to Henri II, Henri III, and Catherine de Médicis, originated the use of cold douches in France. The Saint-Léger spring yields a cold, gaseous, alkaline-earthy water, containing nearly 2 grammes of calcium bicarbonate in the litre, a small amount of sodium bicarbonate, a little iron, and much free carbonic acid gas. The experiments of Bovet and Hérard de Bessé show that the water, when taken on an empty stomach in quantities of 50 c.cm. to 100 c.cm. and up to 800 c.cm. and 1,000 c.cm., acts as a stimulant to the stomach. The total acidity, the total chlorine, the chlorine in combination, and the free hydrochloric acid of the gastric juice are all increased, whilst the tendency to abnormal fermentation is lessened. On a full stomach the effect is analogous, but not nearly so marked as it is when the water is taken on an empty stomach. The Pougues water is recommended in hypopeptic, atonic and "neuromotor" forms of dyspepsia. In atonic dilatation of the stomach it may sometimes be used for washing out the stomach—a kind of local cold douche which has been found beneficial in many cases. In atony of the bowel or simple intestinal paresis with constipation, Dr. Janicot remarks that during the treatment constipation is almost always increased, necessitating the use of laxatives. It is not until some weeks after the completion of the course that the desired result is obtained, but the after and secondary results of mineral water treatment have the more lasting value. Good effects are likewise claimed in cases of chronic diarrhœa due to a simple chronic intestinal catarrh, usually the result of an acute inflammatory attack. In uric acid gravel and oxaluria the water may do good in different ways, but chiefly by influencing the primary digestive disturbances and arthritic condition. In gouty cases and arthritic glycosuria it is the patients of the asthenic, and not the florid and full-blooded, type who are likely to derive benefit from the treatment. Pougues (650 ft.) is situated nearly in the centre of France. The railway station is on the line between Paris and Nevers, seven miles from Nevers, and may now be reached in little more than four hours from Paris. The thermal establishment lies in a beautiful park, about three minutes' drive from the railway station.

Saint-Christau.[3]—This little Pyrenean spa has recently undergone a change in proprietorship, and extensive alterations and improvements have been carried out. It is pleasantly situated in the Department of the Basses-Pyrénées, at the rather low elevation of 1,050 feet above sea-level, at the entrance of the beautiful Aspe valley. Owing to its sheltered position and its warm and somewhat sedative climate the thermal establishment can be kept open all the year. The railway station of Oloron is about five miles distant, and is connected with the spa by two good carriage roads. The fine park, which protects visitors from excessive heat, has been well cared for by the present management, and lighted up by electricity. The Source des Arceaux, the best known spring at Saint-Christau, is cold and weakly mineralised, but remarkable for containing a minute amount of copper sulphate. It is situated behind the "Bains-Vieux." Two analogous springs, the "Source Bazin" and the "Source Tillot," are at the "Rotonde" establishment, and close to these is a cold sulphurous spring. A thermal spring (temperature about 79° F.), rather richer in copper than the cold springs, has recently been rediscovered. The waters of Saint-Christau are used for drinking, for baths and douches, and for nasal and buccal irrigations. A special kind of douche employed at this spa consists of a number of very fine but forcible jets; it is appropriately called the "douche en épingles," and acts as a powerful revulsive agent on the skin. It is probably, however, the pulverisation treatment which is most characteristic of the spa. This can be applied to the eyes, mouth, nose, and ears. Amongst the affections treated with much success, according to local accounts, are certain affections of the tongue and buccal mucous membrane, including leucoplakia and chronic glossitis of smokers. Chronic rhinitis and pharyngitis, and some ocular troubles, such as chronic blepharitis, are likewise treated. Amongst cutaneous affections, chronic eczema and acne are said to be the most benefited. More general disorders, such as gouty conditions, urinary gravel, and old tertiary syphilitic manifestations, are also said to derive benefit from the use of the waters. There are many pleasant Pyrenean localities which can be visited from Saint-Christau.

Thorenc.[4]—In about 4½ hours by carriage from Grasse, this new climatic station of high altitude can be reached. It is situated in the "Vallée de Thorenc," or "des Thorencs," in the Department of the Alpes-Maritimes. The chief establishment lies in a beautiful position (altitude nearly 4,200 feet) near a forest of firs, and is kept officially open from the middle of May to the end of October. France, therefore, possesses a mountain resort not far from its southern coast, to which some of those who have spent the winter on the Riviera can resort for the summer months. Natives of France, who dislike travelling to foreign countries, have in Thorenc a station of fairly high altitude situated in their own country,

[1] See BRITISH MEDICAL JOURNAL June 25th.

[2] *Health-Giving Waters, being an Account of the Waters of Pougues*, by Dr. J. Janicot. London: Bliss, Sands, and Co. 1898. Pp. 142.

[3] *Les Maladies que l'on traite avec le plus d'avantage à Saint-Christau.* (Basses Pyrénées). Par le Dr. X. [The Affections most Suitable for Treatment at Saint-Christau, in the Department Basses-Pyrénées. By Dr. X.] Pagos 36.

[4] *La Haute Vallée de Thorenc* [The High Valley of Thorenc]. By Dr. A. Philip and Maurice Esmonet. Grasse (Imprimerie E. Imbert et Cie.), 1898, 8vo, pp. 72. With views and map.

and it is to be expected that those of them for whom high elevations are suitable will make great use of their new health resort. The place can be reached in 5½ hours from Cannes and 6½ from Nice. According to observations made at Thorenc, 1896-1897, the mean temperature for June is calculated at 57.7° F., for July at 62° F., for August at 61.1° F., for September at 52.3° F. The Thorenc valley is imperfectly sheltered from the "mistral," but is well sheltered against other winds. The water supply of Thorenc is good. There are "kiosques" and "sun-boxes" in the forest for resting in the open air. Connected with the chief establishment are likewise facilities for hydrotherapeutic treatment.

FAILURE OF THE WATER SUPPLY IN EAST LONDON.

The Quantity of Water Still Supplied—Cisterns or Constant Supply—The Appeal to the Railway and Canal Commissions—What is an "Unusual Drought"?

The drought of water still continues in the East End, the East London Water Company being compelled this week to lessen its supply to four hours daily, and as the prospect of rain in any quantity is very uncertain, further reduction is not unlikely.

In the meanwhile considerable agitation is going on throughout the district. A crowded meeting was held at the Town Hall, Hackney, on Monday evening last, followed by an overflow meeting. Mr. Hosgood, the Chairman of the Vestry, presided, and expressed doubt as to the ratepayers receiving, as asserted by the company, 26½ gallons per head. Professor Stuart, M.P., drew attention to the negligence of the company in not having connected their mains before with the South London Company, seeing that the power to do so had been in its possession eighteen months.

Assertions have been made from several quarters that there is loss of water through leakage from the company's mains; and although the company frequently complains that the consumers grossly waste the water, it is possible the fault is not altogether on one side.

There is much public controversy as to the merits and demerits of the cistern system, which has for some time been discontinued throughout the greater part of the East End of the metropolis, and we are sorry to see that the *Times* condemns the discontinuance, and thinks that steps should be taken to replace the cisterns, apparently on the ground that except for the want of means of storage, little hardship would have been caused by the recent drought.

It may be admitted that much of the present discomfort is due to absence of means of water storage in the small houses of the East End, and that had there been any suspicion in the public mind of the untrustworthy character of the East London Water Company's resources, cisterns would not have been so completely abandoned.

Even admitting that much of the present inconvenience is due to want of means of storage, this surely is no reason for regretting a sanitary reform, much less for advocating its repeal. What must be done is not to adapt the neighbourhood to the supply, but to improve the supply to the utmost requirements of the neighbourhood.

But who is to blame for the present situation? The East London Water Company never suggested that its water would be likely to fail, when everywhere the local authorities were seeking to get statutory powers to compel a constant service. With a *bonâ fide* constant service it was plain that the cisterns then in use were mere traps to spread disease, and that it was unjustifiable to interfere with the sanitary reform wrought by a constant service, for in the homes of the poor it is impossible to have two systems working side by side, one from the mains for drinking purposes, and a second from the house cistern for other purposes. At the time when the various statutory provisions were made by the Legislature for a constant service, no one supposed the East London Water Company would be unable to give it, and that the enactment would be practically nugatory as far as East London was concerned; and it is, to say the least, surprising that the experienced advisers of this company were unable to estimate more accurately its resources. If the company in the past tacitly, if not expressly, gave the public reason to believe it could give its district a constant service, it has no right now to blame the public for having given credit to that supposition.

The Hackney Vestry have appealed to the Railway and Canal Commissioners, who, under an Act of last year, are the arbiters, as to whether a water company has become liable to the penalty under the Metropolis Water Act, 1871, for failure to give necessary water. This is to be tried next month, and a summons also has been granted by Mr. Mead at the Thames Police Court against the Company to "see whether there has been an unusual drought."

Whatever technically may be decided by the Courts as to the amount of drought that will excuse a water company from fulfilling its statutory duties, many people are beginning to think that disabling droughts recur with alarming regularity, and to fear that before long they will be of annual occurrence.

There seems at present to be no distinct increase of disease in the East End attributable to scarcity of water, but diarrhœa is reported to be generally prevalent. During the last failure of the water supply Dr. Warry, M.O.H. for the Hackney District, showed that there was a marked increase of mortality from this disease during the third quarter of that year, which in his opinion was chiefly due to lack of water.

TYPHOID FEVER IN BELFAST.

At the last monthly meeting of the City Council, held on September 1st, a discussion took place upon the existing epidemic of typhoid fever. The number of cases notified during the month of August was 794, as compared with 304 in the corresponding month last year, a time when the disease was also abnormally rife. Fortunately the present epidemic is very mild in character, and the number of deaths has been relatively small. There is a general impression that the epidemic is somewhat on the wane, but it is too soon to be confident on this score. The discussion in the City Council did not throw much light upon the subject, and was of a somewhat acrimonious character. Some members of the Public Health Committee, which is extremely unpopular at present, take refuge in the contention that medical opinion is divided upon the causes of the present epidemic—the inference apparently being that until unanimity as to the causes at work is obtained, it is unreasonable to expect the work of prevention to be efficiently carried out. This is, however, a mere subterfuge. There may be considerable doubt regarding the precise cause of the epidemic—especially whether the water supply is at fault, and if so, whether contamination can be traced to the sources of its supplies, or is incurred somewhere in the area of distribution—but that the sanitation of Belfast is bad and that the causes tending to create typhoid fever are in full operation in the city, no competent person, medical or lay, will for a moment dispute. If the Public Health Committee will begin by removing palpable blots, they may be allowed ample time in which to discover the more occult causes of disease. Let them enforce the Public Health Acts, which have been allowed to become a dead letter in Belfast. Let them see to the cleansing of yards, ashpits, and back passages, let them have the sewers tested, let them urge upon the Corporation the absolute necessity of remedying the faulty and insanitary construction of many of the artisans' houses, let them put an end to cesspools and abattoirs within the city limits, let them have their main drainage scheme overhauled by some competent authority—and, we venture to prophesy, when these things are done, the prevalence of typhoid in Belfast will be restrained within normal limits.

CONTRACT MEDICAL PRACTICE.

Evesham.

A. H. M.—A correspondent from Evesham writes to correct a statement which appeared in a paragraph on "Contract Prices," in the Journal of August 13th last. It was wrongly stated that one of the local practitioners had taken the club at a lower rate. We are informed that the practitioner responsible for the conduct complained of was an outsider, who had only just come into the town.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AT BRISTOL.

THE Sixty-eighth Annual Meeting of the British Association for the Advancement of Science commenced in Bristol on Wednesday, September 7th, under the presidency of Sir WILLIAM CROOKES, F.R.S.

There are at this Meeting nine Sections: *Mathematical and Physical Science* under the presidency of Professor W. E. AYRTON, F.R.S.; *Chemistry* under the presidency of Mr. N. H. HUDLESTON, F.R.S.; *Zoology (and Physiology)* under the presidency of Professor W. F. R. WELDON, F.R.S.; *Geography* under the presidency of Colonel G. EARL CHURCH, F.R.G.S.; *Economic Science and Statistics* under the presidency of Mr. J. BONAR, M.A., LL.D.; *Mechanical Science* under the presidency of Sir JOHN WOLFE-BARRY, K.C.B., F.R.S.; *Anthropology* under the presidency of Mr. E. W. BRABROOK, C.B.; and *Botany* under the presidency of Professor F. O. BOWER, F.R.S. Physiology, it will be observed, is this year placed in a position subordinate to Zoology; one of the Vice-Presidents of the Section is Professor F. GOTCH, F.R.S., of Oxford, and the Secretaries are Mr. W. GARSTANG, Mr. A. J. HARRISON, M.B., of Bristol, and Mr. W. E. HOYLE, Curator of the Biological Museum of Owens College, who is also Recorder.

The Local Secretaries for the meeting are Mr. ARTHUR LEE, J.P., and Dr. BERTRAM ROGERS.

The first general meeting was held at the People's Palace at 8 P.M., when the retiring President, Sir JOHN EVANS, condoled with the city of Bristol on the loss it had suffered in the destruction by fire of Colston Hall, and at the same time congratulated the Local Committee on the admirable way in which they had risen to the occasion of finding a suitable building to replace that destroyed by fire. In introducing the new President, he said that Sir William Crookes had at an early age attained great eminence in chemistry, and that subsequently he had experimented largely on the behaviour of various materials *in vacuo*, so that the Crookes tube was now known throughout the world. The experiments had led to more important results than the radiometer, for from that had risen the discovery of the Roentgen rays.

PRESIDENT'S ADDRESS.

THE WHEAT SUPPLY OF THE WORLD.

Sir WILLIAM CROOKES commenced his address by mentioning that the British Association had already met on two occasions in Bristol, in 1836 under the presidency of the Marquis of Lansdowne, and in 1875 under that of Sir John Hawkshaw. He also referred to the loss which the Association had suffered by the death of Lord Playfair, one of the permanent trustees. He then passed on to the first and main topic of his address—the wheat supply of the world, and the causes which were tending to limit the increase necessary to meet the increment of population.

He said that of the total amount of wheat consumed in the United Kingdom 25 per cent. only was grown within these islands. Our demand for wheat was about one hundred and eighty million bushels annually, while the quantity raised in 1897 was fifty-six and a-quarter million. He then proceeded to show that the problem though most urgent for the United Kingdom, was one of growing importance for other nations, even for countries which like the United States were at present large exporters.

In 1871 the bread eaters of the world numbered 371,000,000. In 1881 the numbers rose to 416,000,000; in 1891, to 472,600,000, and at the present time they number 516,500,000. The augmentation of the world's bread-eating population in a geometrical ratio is, he continued, evidenced by the fact that the yearly aggregates grow progressively larger. In the early Seventies they rose 4,300,000 per annum, while in the Eighties they increased by more than 6,000,000 per annum, necessitating annual additions to the bread supply nearly one-half greater than sufficed twenty-five years ago. To supply 516,500,000 bread eaters, if each bread-eating unit is to have his usual ration, will require a total of 2,324,000,000 bushels for seed and food. What are our prospects of obtaining this amount?

According to the best authorities the total supplies from the 1897-98 harvest are 1,921,000,000 bushels. The requirement of the 516,500,000 bread eaters for seed and food are 2,324,000,000 bushels; there is thus a deficit of 403,000,000 bushels, which has not been urgently apparent owing to a surplus of 300,000,000 bushels carried over from the last harvest. Respecting the prospects of the harvest year just beginning it must be borne in mind that there are no remainders to bring over from last harvest. We start with a deficit of 103,000,000 bushels, and have 6,500,000 more mouths to feed. It follows, therefore, that one-sixth of the required bread will be lacking unless larger drafts than now seem possible can be made upon early produce from the next harvest.

The majority of the wheat crops between 1882 and 1896 were in excess of current needs, and thus considerable reserves of wheat were available for supplementing small deficits from the four deficient harvests. But bread eaters have almost eaten up the reserves of wheat, and the 1897 harvest being under average, the conditions become serious. That scarcity and high prices have not prevailed in recent years is due to the fact that since 1889 we have had seven world crops of wheat and six of rye abundantly in excess of the average. These generous crops increased accumulations to such an extent as to obscure the fact that the harvests of 1895 and 1896 were each much below current requirements. Practically speaking, reserves are now exhausted, and bread-eaters must be fed from current harvests, accumulation under present conditions being almost impossible. This is obvious from the fact that a harvest equal to that of 1894 (the greatest crop on record both in acre yield and in the aggregate) would yield less than current needs.

SUBSTITUTES FOR WHEAT.

The question whether some substitute for wheat as a staple article of diet might not be found naturally suggests itself at this point. But Sir William Crookes sees no solution in this direction. Wheat, he said, is the most sustaining food-grain of the great Caucasian race, which includes the peoples of Europe, United States, British America, the white inhabitants of South Africa, Australasia, parts of South America, and the white population of the European colonies. Of late years the individual consumption of wheat has almost universally increased. In Scandinavia it has risen 100 per cent. in twenty-five years, in Austria-Hungary 80 per cent., in France 20 per cent., while in Belgium it has increased 50 per cent. Only in Russia and Italy, and possibly Turkey, has the consumption of wheat per head declined. Other races, he admits, vastly superior to us in numbers but differing widely in material and intellectual progress, are eaters of Indian corn, rice, millet, and other grains; but none of these grains have the food value, the concentrated health-sustaining power of wheat, and it is on this account that the accumulated experience of civilised mankind has set wheat apart as the fit and proper food for the development of muscles and brains.

MEANS TO THE INCREASED PRODUCTION OF WHEAT.

We are brought, then, to face the problem how the yield of wheat is to be increased, and a question arises which is of direct interest to practical hygiene. The average yield of wheat per acre varies enormously in different countries, and Sir William Crookes referred to the following table:

Average Yield of Wheat per Acre in—

	Bushels.		Bushels.
Denmark	41.8	Poland	16.2
United Kingdom	29.1	Canada	15.5
New Zealand	25.5	Argentina	13.0
Norway	25.1	Italy	12.1
Germany	23.2	United States (mean)	12.0
Belgium	21.5	India	9.2
Holland	21.5	Russia in Europe	8.6
France	19.4	Algeria	7.5
Hungary	18.6	South Australia	7.0
Roumania	18.5	Australasia	6.8
Austria	16.3		

If, however, the cost of producing a given quantity of wheat in the United Kingdom be taken at 100s., the cost for the same amount in the United States is 67s., in India 66s., and in Russia 54s. Cheap labour, fertile soil, easy transport to a market, cheap land, free trade, are all requisite, but labour will rise in price, and fertility diminish as the necessary manurial constituents in the virgin soil become exhausted. The increase of the yield of wheat thus resolves itself into an adequate supply of manure at cheap rates.

Nitrogen for Wheat.

There are, Sir William Crookes continued, several sources of available nitrogen. The distillation of coal in the process of gas making yields a certain amount of its nitrogen in the form of ammonia; and this product, as sulphate of ammonia, is a substance of considerable commercial value to gas companies. But the quantity produced is comparatively small: all Europe does not yield more than 400,000 annual tons, and, in view of the unlimited nitrogen required to substantially increase the world's wheat crop, this slight amount of coal ammonia is not of much significance. For a long time guano has been one of the most important sources of nitrogenous manures, but guano deposits are so near exhaustion that they may be dismissed from consideration.

Much has been said of late years, and many hopes raised by the discovery of Hellriegel and Wilfarth, that leguminous plants bear on their roots nodosities abounding in bacteria endowed with the property of fixing atmospheric nitrogen; and it is proposed that the necessary amount of nitrogen demanded by grain crops should be supplied to the soil by cropping it with clover, and ploughing in the plant when its nitrogen assimilation is complete. But it is questionable whether such a mode of procedure will lead to the lucrative stimulation of crops. It must be admitted that practice has long been ahead of science, and for ages farmers have valued and cultivated leguminous crops. The four-course rotation is turnips, barley, clover, wheat—a sequence popular more than two thousand years ago. On the Continent, in certain localities, there has been some extension of microbe cultivation; at home we have not reached even the experimental stage. Our present knowledge leads to the conclusion that the much more frequent growth of clover on the same land, even with successful microbe-seeding and proper mineral supplies, would be attended with uncertainty and difficulties. The land soon becomes what is termed "clover sick," and turns barren.

The Waste of Sewage.

There is still another and invaluable source of fixed nitrogen. I mean the treasure locked up in the sewage and drainage of our towns. Individually the amount so lost is trifling, but multiply the loss by the number of inhabitants, and we have the startling fact that, in the United Kingdom, we are content to hurry down our drains and watercourses into the sea fixed nitrogen to the value of no less than £16,000,000 per annum. This unspeakable waste continues, and no effective and universal method is yet contrived of converting sewage into corn. Of this barbaric waste of manurial constituents Liebig, nearly half a century ago, wrote in these prophetic words: "Nothing will more certainly consummate the ruin of England than a scarcity of fertilisers—it means a scarcity of food. It is impossible that such a sinful violation of the divine laws of Nature should for ever remain unpunished; and the time will probably come for England sooner than for any other country, when, with all her wealth in gold, iron, and coal, she will be unable to buy one-thousandth part of the food which she has, during hundreds of years, thrown recklessly away."

The more widely this wasteful system is extended, recklessly returning to the sea what we have taken from the land, the more surely and quickly will the finite stocks of nitrogen locked up in the soils of the world become exhausted. Let us remember that the plant creates nothing; there is nothing in bread which is not absorbed from the soil, and unless the abstracted nitrogen is returned to the soil its fertility must ultimately be exhausted. When we apply to the land nitrate of soda, sulphate of ammonia, or guano, we are drawing on the earth's capital, and our drafts will not perpetually be honoured. Already we see that a virgin soil cropped for several years loses its productive powers, and without artificial aid becomes infertile. Thus the strain to meet demands is increasingly great. Witness the yield of forty bushels of wheat per acre under favourable conditions dwindling through exhaustion of soil to less than seven bushels of poor grain, and the urgency of husbanding the limited store of fixed nitrogen becomes apparent. The store of nitrogen in the atmosphere is practically unlimited, but it is fixed and rendered assimilable by plants only by cosmic processes of extreme slowness. The nitrogen, which with a light heart we liberate in a battleship broadside, has taken millions of minute organisms patiently working for centuries to win from the atmosphere.

Sir William Crookes then summed up his argument as follows: I have passed in review all the wheat-growing countries of the world, with the exception of those whose united supplies are so small as to make little appreciable difference to the argument. The situation may be summed up briefly thus: The world's demand for wheat, the leading bread-stuff, increases in a crescendo ratio year by year. Gradually all the wheat-bearing land on the globe is appropriated to wheat growing, until we are within measurable distance of using the last available acre. We must then rely on nitrogenous manures to increase the fertility of the land under wheat, so as to raise the yield from the world's low average—12.7 bushels per acre—to a higher average. To do this efficiently and feed the bread-eaters for a few years will exhaust all the available store of nitrate of soda. For years past we have been spending fixed nitrogen at a culpably extravagant rate, heedless of the fact that it is fixed with extreme slowness and difficulty, while its liberation in the free state takes place always with rapidity and sometimes with explosive violence.

Another Source of Fixed Nitrogen for Wheat.

A gleam of light amid the darkness of despondency in which the President had plunged his audience was afforded by his confident prediction that the artificial fixation of nitrogen was a question of the not far distant future.

If a strong induction current be passed between terminals the nitrogen enters into combination with the oxygen, burning with a powerful flame, producing nitrous and nitric acids. The air in fact takes fire, and the only reason why when once ignited the flame does not spread through the atmosphere and deluge the world in a sea of nitric acid is that its igniting point is higher than the temperature of its flame, not therefore hot enough to set fire to the adjacent mixture.

This experiment, at first sight rather curious than important, may, in Sir William Crookes's opinion, lead eventually to the development of a mighty industry destined to solve the great food problem. One ton of sodium nitrate would require 14,000 Board of Trade units of electricity for its production; using steam engines to drive the dynamos a Board of Trade unit costs at least one-third of a penny, so that at this rate a ton of sodium nitrate would cost £26 as against £7 10s., the price of Chili nitrate. But where water power is available experience at Niagara shows that electricity can be sold at a profit at one-seventeenth of a penny per Board of Trade unit, so that a ton of nitrate would cost only £5. A further calculation shows that Niagara alone is capable of supplying the required electric energy to fix enough nitrogen to produce the 12,000,000 tons of sodium nitrate required without much lessening its mighty flow. The artificial production of nitrate is thus clearly in view. By its use the yield of land devoted to wheat can be brought up to 30 bushels an acre; and Sir William Crookes concluded with the comfortable prophecy that when in days to come the demand for wheat may again overtake the supply, our successors may safely be left to grapple with the stupendous food problem.

Food from the Tropics.

One word more was added on this topic. In the next generation, he said, instead of trusting mainly to food stuffs which flourish in temperate climates, we probably shall trust more and more to the exuberant food stuffs of the tropics, where, instead of one yearly sober harvest, jeopardised by any shrinkage of the scanty days of summer weather, or of the few steady inches of rainfall, Nature annually supplies heat and water enough to ripen two or three successive crops of food stuffs in extraordinary abundance. To mention one plant alone, Humboldt—from what precise statistics I know not—computed that, acre for acre, the food productiveness of the banana is 133 times that of wheat—the unripe banana, before its starch is converted into sugar, is said to make excellent bread.

Considerations like these must in the end determine the range and avenues of commerce, perhaps the fate of continents. We must develop and guide Nature's latent energies, we must utilise her inmost workshops, we must call into commercial existence Central Africa and Brazil to redress the balance of Odessa and Chicago.

The Absolute Zero.

Turning now from what he called "dreary possibilities," Sir William Crookes discussed certain points touching the latest achievements and aspirations of science. He referred first to Professor Dewar's researches at low temperatures, which had resulted in the liquefaction of hydrogen and helium. Static hydrogen boils at −250° C. in a vacuum which is only 23° C. above absolute zero. Since, he continued, what we call matter essentially involves a mode of motion, and since at the temperature of absolute zero all atomic motions would stop, it follows that matter as we know it would at that paralysing temperature probably entirely change its properties. The investigation of the properties of bodies brought near the absolute zero of temperature is certain to give results of extraordinary importance. Already platinum resistance thermometers are becoming useless, as the temperature of boiling hydrogen is but a few degrees from the point where the resistance of platinum would be practically nothing, or the conductivity infinite.

New Elements and New Rays.

Sir William Crookes then, after a brief reference to the new elements discovered in the atmosphere—krypton, neon, and metargon by Ramsay and Travers, and coronium by Nasini, and to the two other celestial elements aurorium and nebulum which remained to be found within the terrestrial sphere—passed on to consider the discoveries of Hertz, Roentgen, Lorenz, and others, who have demonstrated the existence of new forms of radiant energy, and to the practical application of wireless telegraphy. With reference to the last-named device, he said that Oliver Lodge in 1889 had made the observation that an infinitesimal metallic gap subjected to an electric jerk became conducting, so as to complete an electric circuit, was rediscovered soon afterwards in a more tangible and definite form, and applied to the detection of Hertz waves by M. E. Branly. Oliver Lodge then continued the work, and produced the vacuum filing-tube coherers with automatic tapper back, which are of acknowledged practical service. It this varying continuity of contact under the influence of extremely feeble electric stimulus alternating with mechanical tremor which, in combination with the mode of producing the waves revealed by Hertz, constitutes the essential and fundamental feature of "wireless telegraphy."

Let the wave fall on a suitable receiver, such as a metallic wire, or, better still, on an arrangement of metal wings resembling a Hertz sender, and the waves set up oscillating currents which may be led by wires (enclosed in metal pipes) to the coherer. The coherer acts apparently by a species of end-impact of the oscillatory current, and does not need to be attacked in the flank by the waves themselves. This interesting method of signalling—already developing in Marconi's hands into a successful practical system, which inevitably will be largely used in lighthouse and marine work—presents more analogy to optical signals by flash-light than to what is usually understood as electric telegraphy; notwithstanding the fact that an ordinary Morse instrument at one end responds to the movements of a key at the other, or, as arranged by Alexander Muirhead, a siphon recorder responds to an automatic transmitter at about the rate of slow cable telegraphy. But although no apparent optical apparatus is employed, it remains true that the impulse travels from sender to receiver by essentially the same process as that which enables a flash of magnesium powder to excite a distant eye.

The Roentgen Rays.

In the mechanical construction of Roentgen-ray tubes, Sir William Crookes added, I can record a few advances: the most successful being the adoption of Professor Silvanus P. Thompson's suggestion of using for the antikathode a metal of high atomic weight. Osmium and iridium have been used with advantage, and osmium antikathode tubes are now a regular article of manufacture. As long ago as June, 1896, *x*-ray tubes with metallic uranium antikathodes were made in my own laboratory, and were found to work better than those with platinum. The difficulty of procuring metallic uranium prevented these experiments from being continued. Thorium antikathodes have also been tried.

With regard to the theory of the nature of the Roentgen rays, he said that while the general opinion of physicists seemed to be settling towards a wave or ether theory for the Roentgen rays, an opposite drift was apparent with respect to the physical nature of the kathode rays; it became more and more clear that kathode rays consisted of electrified atoms or ions in rapid progressive motion.

While it could not be said that a complete and conclusive theory had been formulated, yet it was generally accepted that collisions among particles, especially violent collisions due to their impact on a massive target placed in their path, gave rise to the interesting kind of extremely high frequency radiation discovered by Roentgen. If the target, he continued, on to which the electrically-charged atoms impinge is so constituted that some of its minute parts can thereby be set into rhythmical vibration, the energy thus absorbed reappears in the form of light, and the body is said to phosphoresce. Without stating it as a general rule, it seems as if with a non-phosphorescing target the energy of molecular impact reappears as pulses so abrupt and irregular that, when resolved, they furnish a copious supply of waves of excessively short wave-length, in fact, the now well-known Roentgen rays.

It now appears that some bodies, even without special stimulation, are capable of giving out rays closely allied, if not in some cases identical, with those of Professor Roentgen. Uranium and thorium compounds are of this character, and it would almost seem from the important researches of Dr. Russell, that this ray-emitting power may be a general property of matter, for he has shown that nearly every substance is capable of affecting the photographic plate if exposed in darkness for sufficient time.

No other source for Roentgen rays but the Crookes tube has yet been discovered, but rays of kindred sorts are recognised. The Becquerel rays, emitted by uranium and its compounds, have now found their companions in rays—discovered almost simultaneously by Curie and Schmidt—emitted by thorium and its compounds. The thorium rays affect photographic plates through screens of paper or aluminium, and are absorbed by metals and other dense bodies. They ionise the air, making it an electrica conductor; and they can be refracted and probably reflected, at least diffusively. Unlike uranium rays they are not polarised by transmission through tourmaline, therefore resembling in this respect the Roentgen rays. He added that M. and Mdme. Curie had announced quite recently the discovery of a new constituent, polonium of the uranium, mineral *pitchblende*, which possessed uranium's mysterious power of emitting a form of energy capable of compressing a photographic plate and of discharging electricity by rendering air a conductor in a four-hundred fold degree. Sir William Crookes then entered on a consideration of the source from which the energy thus dissipated could be derived. Let, he said, uranium or polonium bodies of densest atoms have a structure that enables them to throw off the slow-moving molecules of the atmosphere, while the quick-moving molecules, smashing on to the surface, have their energy reduced and that of the target correspondingly increased. The energy thus gained seems to be employed partly in dissociating some of the molecules of the gas (or in inducing some other condition which has the effect of rendering the neighbouring air in some degree a conductor of electricity) and partly in originating an undulation through the ether, which as it takes its rise in phenomena so disconnected in the impacts of the molecules of the air, must furnish a large contingent of light waves of short wave length. The shortness in the case of these Becquerel rays appears to approach without attaining the extreme shortness of ordinary Roetgen rays. The reduction of the speed of the quick-moving molecules would cool the layer of air to which they belong; but this cooling would rapidly be compensated by radiation and conduction from the surrounding atmosphere; under ordinary circumstances the difference of temperature would scarcely be perceptible, and the uranium would thus appear to perpetually emit rays of energy with no apparent means of restoration.

The total energy of both the translational and internal motions of the molecules locked up in quiescent air at ordinary pressure and temperature is about 140,000 foot-pounds in each cubic yard of air. Accordingly the quiet air within a room 12 feet high, 18 feet wide, and 22 feet long contains energy enough to propel a one-horse engine for more than twelve hours. The store drawn upon naturally by uranium

and other heavy atoms only awaits the touch of the magic wand of Science to enable the twentieth century to cast into the shade the marvels of the nineteenth.

After indicating briefly the mode in which his spectrographic researches had led him to the discovery of the new metal monium, Sir William Crookes passed on to a very different subject.

Hypnotism and Psychical Research.

To stop short, he said, in any research that bids fair to widen the gates of knowledge, to recoil from fear of difficulty or adverse criticism, is to bring reproach on Science. There is nothing for the investigator to do but to go straight on, "to explore up and down, inch by inch, with the taper, his reason;" to follow the light wherever it may lead, even should it at times resemble a will-o'-the-wisp. I have nothing to retract. I adhere to my already published statements. Indeed, I might add much thereto. I regret only a certain crudity in those early expositions which, no doubt, justly militated against their acceptance by the scientific world. My own knowledge at that time scarcely extended beyond the fact that certain phenomena new to science had assuredly occurred, and were attested by my own sober senses, and, better still, by automatic record. I was like some two-dimensional being who might stand at the singular point of a Riemann's surface, and thus find himself in infinitesimal and inexplicable contact with a plane of existence not his own. I think I see a little farther now. I have glimpses of something like coherence among the strange elusive phenomena, of something like continuity between those unexplained forces and laws already known. This advance is largely due to the labours of another association of which I have also this year the honour to be President—the Society for Psychical Research. And were I now introducing for the first time these inquiries to the world of science, I should choose a starting point different from that of old. It would be well to begin with telepathy—with the fundamental law, as I believe it to be, that thoughts and images may be transferred from one mind to another without the agency of the recognised organs of sense—that knowledge may enter the human mind without being communicated in any hitherto known or recognised ways. If telepathy takes place, we have two physical facts—the physical change in the brain of A, the suggester, and the analogous physical change in the brain of B, the recipient of the suggestion. Between these two physical events there must exist a train of physical causes. Whenever the connecting sequence of intermediate causes begins to be revealed the inquiry will then come within the range of one of the sections of the British Association. Such a sequence can only occur through an intervening medium. All the phenomena of the universe are presumably in some way continuous, and it is unscientific to call in the aid of mysterious agencies when with every fresh advance in knowledge it is shown that ether vibrations have powers and attributes abundantly equal to any demand, even to the transmission of thought. It is supposed by some physiologists that the essential cells of nerves do not actually touch, but are separated by a narrow gap which widens in sleep while it narrows almost to extinction during mental activity. This condition is so singularly like that of a Branly or Lodge coherer as to suggest a further analogy. The structure of brain and nerve being similar, it is conceivable there may be present masses of such nerve coherers in the brain whose special function it may be to receive impulses brought from without through the connecting sequence of ether waves of appropriate order of magnitude. Roentgen has familiarised us with an order of vibrations of extreme minuteness compared with the smallest waves with which we have hitherto been acquainted, and of dimensions comparable with the distance between the centres of thes atoms of which the material universe is built up; and there is no reason to suppose that we have here reached the limit of frequency. It is known that the action of thought is accompanied by certain molecular movements in the brain, and here we have physical vibrations capable from their extreme minuteness of acting direct on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves.

Confirmation of telepathic phenomena is afforded by many converging experiments, and by many spontaneous occurrences only thus intelligible. The most varied proof, perhaps, is drawn from analysis of the subconscious workings of the mind, when these, whether by action or design, are brought into conscious survey. Evidence of a region, below the threshold of consciousness, has been presented, since its first inception, in the *Proceedings of the Society for Psychical Research;* and its various aspects are being interpreted and welded into a comprehensive whole by the pertinacious genius of F. W. H. Myers. Concurrently, our knowledge of the facts in this obscure region has received valuable additions at the hands of labourers in other countries. To mention a few names out of many, the observations of Richet, Pierre Janet, and Binet (in France), of Breuer and Freud (in Austria), of William James (in America), have strikingly illustrated the extent to which patient experimentation can probe subliminal processes, and can thus learn the lessons of alternating personalities and abnormal states. Whilst is clear that our knowledge of subconscious mentation is still to be developed, we must beware of rashly assuming that all variations from the normal waking condition are necessarily morbid. The human race has reached no fixed or changeless ideal: in every direction there is evolution as well as disintegration. It would be hard to find instances of more rapid progress, moral and physical, than in certain important cases of cure by suggestion, again to cite a few names out of many, by Liébeault, Bernheim, the late Auguste Voisin, Bérillon (in France), Schrenck-Notzing (in Germany), Forel (in Switzerland), van Eeden (in Holland), Wetterstrand (in Sweden), Milne Bramwell and Lloyd Tuckey (in England). This is not the place for details, but the *vis medicatrix* thus evoked as it were from the depths of the organism is of good omen for the upward evolution of mankind.

A formidable range of phenomena must be scientifically sifted before we effectually grasp a faculty so strange, so bewildering, and for ages so inscrutable, as the direct action of mind on mind. This delicate task needs a rigorous employment of the method of exclusion—a constant setting aside of irrelevant phenomena that could be explained by known causes, including those far too familiar causes, conscious and unconscious fraud. The inquiry unites the difficulties inherent in all experimentation connected with mind, with tangled human temperaments and with observations dependent less on automatic record than on personal testimony. But difficulties are things to be overcome even in the elusory branch of research known as experimental psychology. It has been characteristic of the leaders among the group of inquirers constituting the Society for Psychical Research to combine critical and negative work with work leading to positive discovery. To the penetration and scrupulous fairmindedness of Professor Henry Sidgwick and of the late Edmund Gurney is largely due to the establishment of canons of evidence in psychical research, which strengthen while they narrow the path of subsequent explorers. To the detective genius of Dr. Richard Hodgson we owe a convincing demonstration of the narrow limits of human continuous observation.

It has been said that "nothing worth the proving can be proved, nor yet disproved." True though this may have been in the past, it is true no longer. The science of our century has forged weapons of observation and analysis by which the veriest tiro may profit. Science has trained and fashioned the average mind into habits of exactitude and disciplined perception, and in so doing has fortified itself for tasks higher, wider, and comparatively more wonderful than even the wisest among our ancestors imagined. Like the souls in Plato's myth that follow the chariot of Zeus, it has ascended to the point of vision far above the earth. It is henceforth open to science to transcend all we now think we know of matter, and to obtain new glimpses of a profounder scheme of cosmic law.

At the conclusion of the address a vote of thanks to the President, moved by the Mayor of Bristol, who extended a cordial welcome to the members on behalf of the city, and seconded by the High Sheriff, was carried unanimously.

Number of Members.

Professor Rücker, the General Treasurer, announced that

the tickets issued already reached the grand total of 2,284, distributed as follows: 255 old life members, 16 new life members, 276 old annual members, 86 new annual members, 1,001 associates, 626 ladies, and 24 foreign members.

THE CANADIAN MEDICAL ASSOCIATION.

The Thirty-first Annual Meeting: President's Address: Clinical Papers: The British Pharmacopœia in Canada: Forceps for Suture of Intestine: Marmorek's Serum in Furunculosis: Surgical Treatment of Septic Peritonitis: Interprovincial Registration: Entertainments.

The thirty-first annual meeting of the Canadian Medical Association was held in Quebec on August 17th, 18th, 19th, 1898. The Association, which met in the Reception Hall of Laval University, was welcomed to the City by the Pro-Mayor and representative medical men. Afterwards the visitors were taken over the buildings, and shown the various departments. Laval is a Catholic University, named after its founder Bishop Laval, the first Roman Catholic Bishop of Quebec and of Canada; it has magnificent buildings, containing a vast library of 125,000 volumes, besides duplicates, a fine picture gallery, and museums of natural history. The bibliophiles of the party were much attracted by a jealously-guarded volume in the library, which is believed to be the missal carried to the scaffold by Mary Queen of Scots.

The regular work of the meeting commenced at 4 P.M. Dr. J. M. Beausoleil, in his presidential address, referred to the formation of the Society in 1867, the year of the consummation of Canadian Confederation, and the benefits it had conferred in bringing together its members for the discussion of scientific subjects and the prosecution of reforms. The unification of medical study and licensing for the whole Dominion was referred to, and the hope expressed that success was at last in sight.

In the various sessions a large number of interesting medical and surgical papers were presented. Dr. G. S. Ryerson, of Toronto, described cases of Monocular Diplopia; Strangulated Hernia and Ectopic Gestation were dealt with by Dr. Gibson, of Belleville. Clubfoot was discussed by Dr. V. P. Gibney, of New York, who insisted especially on the need of prolonged watching of each case after operation. Neurasthenia was discussed by Dr. C. Myers, of Toronto; and Tracheotomy *versus* Intubation by Dr. Gandier, of Sherbrooke. Professor Valentine, of New York, showed a number of instruments for use in genito-urinary surgery, and discoursed on the prevalence and fatal character of gonococcus infection. A discussion was opened by Dr. Elder, of Montreal, on Empyema, who recommended a tube for draining the pleural cavity, and deprecated washing out. Cases of Calculous Obstruction of the Bile Duct were reported by Dr. J. Bell, of Montreal. Six cases had been operated on with one death. The technique of the operation was described. A vertical incision was first made, the peritoneum pushed aside, then an oblique muscle and the peritoneal cavity shut off. Old adhesions gave much trouble, and operation was difficult in fat persons on account of the depth. The Physician and Life Insurance was the subject of a paper by Dr. James Thorburn (Toronto), who said that six thousand millions of dollars of risks were held by the life companies in North America, placed on the judgment, probity, and skill of members of the medical profession. The greatest attention therefore should be exercised in every case sent in for examination. Dr. W. H. Drummond, the dialect poet, presented an excellent sketch of the Pioneers of Medicine in the Province of Quebec.

The *British Pharmacopœia* was brought up for discussion by Dr. T. D. Reed, of Montreal. Reference was made particularly to the revised edition of 1898, which contains many changes. In the discussion which followed much confusion was found to exist as to the legal status of the *British Pharmacopœia* in Canada. With a view to bringing about some uniformity, it was finally decided to make a "Dominion pronouncement," and recommend that October 1st be considered the date on which the revised *British Pharmacopœia* would be held to be in force. It was further decided to appoint a committee to endeavour to bring about legislation that would establish the *British Pharmacopœia* as the sole authority throughout the Dominion. Drs. Reed and Blackader (Montreal), A. Marois (Quebec), Mullan (Hamilton), Starr (Nuall), Cameron (Toronto), and Small (Ottawa) were nominated the committee. Dr. Ernest Laplace (Philadelphia) explained and demonstrated on a dog the use of a very ingenious forceps of his invention for facilitating the suture of intestine. It consisted of a ring forceps in four pieces, each the shape of an interrogation mark (?). When these were locked they nipped the mucous membrane and held it while being sutured. After the stitching the ring would be inside, and in an ordinary forceps could not be withdrawn; with this the pieces unlocked, and were withdrawn separately through the small hole remaining. Dr. F. X. Demartigny (Montreal) related cases of Furunculosis, in which he had used Marmorek's serum with brilliant success. The Hon. Dr. Marcil (St. Eustache) dealt with the Surgical Treatment of Septic Peritonitis, and claimed that he had had the first successful case in America.

The Committee on Interprovincial Registration made an important report, showing that the principle had been at last adopted by the delegates from the different provinces, and that it only remained to obtain the necessary legislation to consummate that which had so long been striven for—uniformity of medical entrance, curriculum, and licence, so that a graduate might practise in any part of the Dominion on one registration.

The entertainments included a visit to the Quarantine Station at Grosse Ile, and a carriage drive to the famed Montmorency Falls. The local committee under Dr. C. S. Parke were indefatigable in their attentions to the pleasure of the visitors to Quebec. The next meeting is to be in Toronto in August, 1899, under the presidency of Dr. H. Irvine Cameron.

A Monument to Dr. Pepper.—A memorial bronze statue is to be erected in Philadelphia to the late Dr. William Pepper.

A Pasteur Institute in India.—The urgent necessity for the establishment of a Pasteur Institute in India has been again sadly emphasised by the fact that Mr. Encker, an Assistant in the Punjab Civil Secretariat at Lahore, was bitten by a rabid dog, and is now, on the recommendation of a Medical Board, on his way to Paris to undergo treatment. The fact that the dog died of rabies was proved by *post-mortem* examination.

German Public Health Society.—The German Society for Public Hygiene will hold a congress (its twenty-fifth or jubilee meeting) in Cologne from September 14th to the 17th. Among the subjects put up for discussion are (1) Imperial Legislation on the Measures necessary for combating Diseases dangerous to the Community; (2) Public Hygiene in Railway Traffic; and (3) Regular Supervision of Private Living Houses, and its Organisation on the part of the Authorities.

Operations as Causes of "Death by Violence."—The annual report of the Cincinnati Department of Health for the past year has the following among its statistics: "Violence.—Deaths from violence amounted to 286, of which 204 were accidental, 10 homicides, 69 suicides, and 3 *surgical operations*." It would be interesting to know what the Cincinnati surgeons think of the classification.

Anatomical Research at Berlin.—The second Anatomical Institute of the Berlin University, of which Professor O. Hertwig is the chief, has been reorganised, and is in future to be called "Anatomical-Biological Institute." As the new name implies, the Institute is devoted to work on the borderland of anatomy and physiology. It has three departments—one for histological-biological research, one for embryological-biological work, and one for comparative anatomy.

German Anthropological Congress.—Professor Virchow, as active now as he was in his young days, presided over the Anthropological Congress, which was opened on August 3rd at Brunswick. The great problems of the Stone Age formed the subject of his opening address, in the course of which the president pointed to the importance of the latest discoveries in Egypt. Professor Ranke, who gave the yearly scientific report of the Society, ended by praising Virchow as the master of research. Virchow returned thanks, and added: "In research we are all students; experience only should be our master."

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 10TH, 1898.

HYPNOTISM AND PRACTICE.

The Section of Psychology at the Annual Meeting has once more attacked the problems of hypnotism, and has once more left the subject *in statu quo*. We may now be permitted to hope that it will not recur until there is evidence that the profession generally sees clearly that hypnotism can be adopted as a therapeutic measure which is trustworthy in operation and appropriate in application. We appreciate the ability with which Dr. Milne Bramwell opened the discussion, and acknowledge that no one could read the eloquent address of Mr. F. W. H. Myers without feeling a lively interest in its subtle and suggestive theoretical arguments. But from the point of view of the physician desirous of understanding the agency which he is invited to apply to the treatment of disease, we are compelled to ask, Do Mr. Myers's opinions elucidate difficulties? Does Dr. Bramwell's experience fully convince?

It is not very clear that anything has been gained by the introduction of the term "subliminal consciousness." It would rather appear that, using the example cited by Mr. Myers, the limitation of the visual field in some cases of hysteria is analogous to the limitation of consciousness in daily life, and that we might more correctly and more suggestively speak of the "fringes of consciousness." No doubt the conception of higher cerebral centres controlling lower has proved an admirable working theory of mind, and it would still seem that the theory of the suspension of higher inhibition is generally applicable to the facts of hypnotism. Similar loss of control in cases of mania is surely illustrative of the psychological conditions.

We are not persuaded that Mr. Myers has given us proof that hypnotism has the power to arouse faculties which are dormant in the normal condition. If there be a subliminal consciousness which is but slightly under control, or not under control at all, how and when is it developed? Is it a survival; or is it that "cosmic consciousness" of Dr. Bucke's,[1] which he holds to be the latest achievement of human evolution? Further, granting this subliminal consciousness, how is it to be connected with the method and practice of hypnotism? Mr. Myers cites, as an indication of this latent faculty, the hallucinations suggested to the girl subject, a picture of a black cat "more vivid than the waking effort could have afforded." How can this delusive cat be more real than the real cat, or how can the black cat of hypnotism be more horrific than the terror of a dream? Mr. Myers would reply that the hypnotiser has unlocked some fountain of energy, latent in the girl's being, by some transmissive influence, as who should say that some occult transmissive influence has unlocked the fountain of maniacal energy in a general paralytic. We require further information as to this telepathy before we can allow it to override physiology and pathology. The latest theory of the mobility of the branching neurons, their tentacles withdrawing and breaking contact on exhaustion, is much more satisfactory to the physician trained in exact scientific method.

We agree with Mr. Myers that hypnotism is no more a trick than education is a trick; but when he goes on to state that, just as education develops observation and memory, so hypnotism develops organic concentration and recuperation, we must part company with him. The calmative, hopeful influence of the experienced physician has its value in the practical work of the profession, but vital processes are in no such need of this extraneous assistance of doubtful import, either in health or disease.

Dr. Milne Bramwell laboured to prove that the practice of hypnotism is indicated in the treatment of disease, and is of distinct unalloyed therapeutic value. We would hasten to acknowledge the transparent sincerity of his beliefs, and in differing from him we desire to express our disagreement with the courtesy that is due to an honest and persevering investigator. At the same time we must observe that his records appear to be extremely meagre, and do not prove his main contention, which would ascribe the results to hypnotism. If pruritus vulvæ and eczema are to be cured by this method, if tractable organic changes can be modified by the induction of somnambulism (possible in the vast majority of cases on his own showing), medical practice should by this time have been relieved of many painful experiences.

Dr. Bramwell's complicated time experiments on a single case must stand as an isolated instance until these are conducted in a series of persons on whom hypnosis is induced for the first time, under the careful control of independent observers. The faculty of waking from sleep at a certain time is common enough to afford numerous opportunities, if we could be convinced that it is desirable to make these experiments at all. No one doubts that hypnosis can be induced; the question is whether it be expedient to attempt to induce it. Dr. Bramwell appears to us to claim too much when he states that no morbid craving for hypnosis has been developed to his knowledge, but that it has endowed persons of weak will with force of character. That is not how character is developed according to the general experience of mankind. Character is the result of long-continued right thinking, carved in deep channels along lines of self-development. It inevitably comes into play when problems of life and mind present themselves for solution.

Those who practise hypnotism indiscriminately are using a very dangerous tool, and if Dr. Bramwell has seen no ill effects other observers have—ills varying from sudden access of mania to the weakening of moral fibre. This relaxation of will power, which it is the aim of the physician to conserve and guide in proper directions, must

[1] British Medical Journal, 1897, vol. ii, page 643.

be considered to be a very serious danger, in spite of the commendation which the method received from Sir William Crookes in his address to the British Medical Association—commendation, as it seems to us, founded on an insufficient acquaintance with all the facts. The physician should continue to attack the real fortress of disease, and not content himself with covering up symptoms with soporifics, tangible or intangible.

A word must be said as to the possibility of inducing persons under the influence of hypnotism to commit crimes. Although it falls to the lot of most men to commit appalling crimes without the slightest remorse or astonishment in the restlessness of dreams, it is confidently stated that no criminal hypnotist could induce a law-abiding man to do murder in the hypnotic state. It would imply a very low order of criminal intelligence to suppose that a man of character would prove a fitting tool. Rather would the prime villain seek out one like himself, one to whom crime would come easily. Still Dr. Mercier's point must be insisted on—the subject might, if there is any validity in hypnosis and suggestion, be induced to commit a crime which is represented to him as a purely innocent act. The exponents of the hypnotic faith cannot have it both ways; they cannot urge that hypnotism is effective and yet not effective as may suit the argument of the moment. Dr. Bramwell is rather hard on Dr. Luys, who was just as sure of his facts as Dr. Bramwell is, and had attained the highest position in the profession. We recall the cures so strongly attested as having been wrought by the external application of suitable metals, and the transference of hemi-anæsthesia; we recall the thousand and one tales of pseudo-scientific wonders; we recall the success of Dr. Esdaile in India and his failure in this country, and pronounce for delay in accepting hypnotism as an addition to our therapeutic armoury. There is no hypnosis, in the sense indicated by Dr. Bramwell, without suggestion; and we deprecate its use while it holds out any inducement to a man, however feeble, to resign his responsibility and become the passive agent of another however well intentioned. We agree with Professor Benedikt that hypnotism may become dangerous to the intellect, the will, and the character of the patient; and not free from danger to the physician who practises it, since he is so easily deceived by his subjects and so liable to gross delusions.

THE TONSILS AS THE SEAT OF ENTRY FOR GENERAL INFECTIONS.

That the onset of many acute infectious diseases is characterised by inflammation of the tonsils has long been recognised, but it is only of late that an idea has been gaining ground that these organs may play some part in the causation of such affections. There are many, for instance, who believe that the germ of scarlatina enters by the tonsils, the inflammation of which marks the local reaction at the beginning of the disease, which would thus to some extent fall into line with diphtheria, in which the general effects result from the action of poisons which are, so to speak, brewed locally. But the bacteriology of scarlatina is in a very unsettled state, and its relation to the tonsils is still undecided.

The etiological connection is much clearer in the case of acute rheumatism. As long ago as 1866 Trousseau called attention to the angina which frequently precedes an attack of rheumatic fever, and this subject has since been taken up by Dr. Kingston Fowler and other English observers. Rumpf states that this rheumatic tonsillitis occurs in 30 to 50 per cent. of cases, but these figures are undoubtedly much too high for the adult disease, though they approximate to the proportions found in children. That this tonsillitis is rheumatic in origin is beyond question. It is frequently met with also in cases of chorea. It appears that the epithelium of the tonsil, more particularly that found in the crypt, is looser than that of any other part of the oral cavity, and hence will allow the more ready entrance of micro-organisms. These naturally vary in nature, and so a number of diseases may be evoked. Several of these are referred to in a paper recently read by Dr. Jessen before the Hamburg Medical Society.[1] Thus he recounts the case of a man of 30 in whom the appearance of a tonsillar exudation was attended by severe general manifestations. In a few days erythema nodosum appeared, and there were severe joint pains. In the throat streptococci and staphylococci were found in pure culture. A more remarkable case was that of a woman of 28 who was brought into hospital comatose and died within twelve hours. Uræmia had been diagnosed, but the cause of death was found to have been pyæmia. The tonsils were smooth superficially, but contained deep-seated abscesses, which Jessen regards as the starting-points of the trouble. In another instance, a girl of 17 after a streptococcal angina suffered from wandering pneumonia, pleurisy, and nephritis. She was somnolent and had a roseolous rash; no pneumococci or influenza bacilli were found in the sputum, but only streptococci. In a similar case in which staphylococci were the micro-organisms the angina was followed successively by pericarditis, double pneumonia, and death from general sepsis. At the time of death the tonsils were superficially normal in appearance, but contained suppurating foci in their centres.

Dr. Jessen is no doubt correct in pointing out that a certain number of "cryptogenic" septic diseases arise from tonsillar affections, and that unless the tonsils are seen at the outset the source of infection may be missed. He considers that these cases may be distinguished clinically, even without bacterial examination, by the fact that the tonsillar exudation is seen in streaks and is not merely at the mouths of the lacunæ. The reverse is certainly the case, according to the majority of observers, in rheumatic tonsillitis.

The importance of the tonsils as the route of infection in chronic diseases is also very considerable. Dieulafoy[2] has, indeed, argued from the results of inoculation experiments that chronic tonsillitis and the process which produces adenoid vegetations of the naso-pharynx are in a large proportion actually due to the tubercle bacillus.

His views have not met with general acceptance, and his experimental results have been disputed, on the ground that the tuberculosis produced in animals inoculated with parts of excised tonsils may have been due to bacilli accidentally entangled in the crypts, and not actually established in the substance of the gland. This is a rather

[1] *Münchener medicinische Wochenschrift*, June 7th.
[2] *Bull. de l'Acad. de Méd.*, April 26th, 1898.

fine distinction, and, even admitting its validity, it would only tend to prove that the tonsils are one of the points at which tubercle bacilli are arrested and destroyed. Any failure in the phagocytic activity of the tonsils might be expected to be followed by true infection of their substance, and Dr. Sims Woodhead some time back designated the tonsils as one of the channels of entry of the tubercle bacillus. Following up his work, Dr. Hugh Walsham has recently, in a communication to the Pathological Society of London, shown that tuberculosis of these organs is not so uncommon as generally believed.

The evidence is therefore strong that pathogenic bacteria may find their first nidus in the tonsils, and it has even been suggested that as a matter of prophylaxis they should be removed in order that their dangerous crypts may be replaced by scar tissue—a radical measure which is hardly likely to meet with more popular favour than the similar proposal to remove the vermiform appendix in childhood to avert the possible risk of appendicitis.

REST IN DISEASES OF THE SKIN.

Dr. Allan Jamieson's interesting and instructive address at the opening of the Section of Dermatology[1] has more than a passing value. Under the title of Application of Rest in the Treatment of Diseases of the Skin, he sketched the outlines of the chief problems that now confront the physician who seeks to give his patients the benefit of the latest improvements in cutaneous therapeutics. The author's ripe experience, judicial habit of mind, and philosophical temper admirably fit him to be the exponent of a school of dermatology of which the late John Hughes Bennett may be said to be the founder, and this address bears evidence that nowhere is dermatology cultivated with more zeal and with more success than in the great medical school of Edinburgh.

Dr. Jamieson selects typical examples of various well-known diseases of the skin, and explains how the treatment which is found most successful in dealing with them may be reconciled with the great principle of affording rest to diseased tissues. He emphasises this recognised physiological necessity for rest even in diseases of the skin. It is not the first time, we think, that Dr. Jamieson has spoken severely of the use of tea, which stimulates the nervous system when it needs rest, and leads to a final breakdown, which, although postponed, becomes inevitable. We much fear that this universally used stimulant, although it may be discontinued temporarily in accordance with medical advice, is not likely to be abandoned until some other stimulant is found to take its place. But Dr. Jamieson's opinion on the matter, although it seems more of an impression than a conviction, must be allowed due weight.

Although, as Dr. Jamieson tells us, there is so far no scientific evidence of the association of any morbid condition of the blood with any special disease of the skin, he points out that medicines which alter the condition of that fluid sometimes produce a curative effect on skin eruptions. He is on much surer ground when he points out that resorcin soap employed with an ointment, or in combination with glycerine of starch, diminishes the morbid and excessive production of epidermis, such as takes place in ichthyosis. He would define its action in this condition by assuming that it causes the active epidermis to rest.

It is interesting to note that in seborrhœa Dr. Jamieson not only uses sulphur as a local remedy, and corrects anæmia with iron, but suggests that the vessels of the periglandular plexuses may be contracted by ergot and ichthyol. Fortunately, the cases are rare in which the disease cannot be got under by local remedies, and we do not think it is likely that even Dr. Jamieson himself often finds it necessary to give a drug of such potency as ergot for so manageable a disease.

His remarks on the treatment of pruritus in its various forms well deserve consideration by every practitioner. There is no class of malady which they are more often called on to treat, and in which the treatment is more often ineffectual. We presume that the sudorific action of pilocarpin in calming pruritus is not generally known—at all events, it is certainly not very generally employed. In severe cases the symptoms are sufficiently distressing to warrant the use of this remedy on Dr. Jamieson's advice, in combination with the other remedies which he recommends.

The principle of rest is, perhaps, best exemplified in the treatment of eczema. In this disease the sensitive rete mucosum is in many cases laid bare, and the terminal branches of the nerves are exposed to constant irritation. At the same time the albuminous fluid that is poured out, and the body temperature are conditions which produce a ready culture medium for the micro-organisms that infest the skin. To protect the nerve fibrils, and at the same time to prevent the development of the micro-organisms, is the chief object to be kept in view in treatment. For this purpose Dr. Jamieson recommends starch jelly, combined with a weak proportion of boric acid, and he quotes an instance in which crucial proof was given that the boric acid is effectual in preventing putrefaction. The hint should not be lost on practitioners, nor should the further hint that if the micro-organisms resist boric acid, a dusting of weak salicylic powder or painting with nitrate of silver dissolved in sweet spirits of nitre before renewing the poultice is sufficient to get over the difficulty.

The treatment of old infiltrated eczema by enveloping it closely in strips of salicylic soap plaster is another hint well worth remembering; so also is Dr. Jamieson's experience that zinc ichthyol salve muslin surpasses in its soothing effect any other remedy with which he is acquainted.

We congratulate Dr. Jamieson on his address, which was not only appropriate to the opening of a Section of Dermatology, but contains much information of value to all practitioners of medicine.

[1] British Medical Journal, August 6th, p. 346.

DEATH-DEALING DRUGS.

An inquest was held a few days ago at Milford, near Godalming, on the body of a young married woman who met her death by taking pills intended to procure an abortion. The coroner, at the commencement of the proceedings, said that he thought it wise to abstain from giving publicity to the name of the drug employed and to the effects it was supposed to produce, because it was in the interests of the public that such information should

not be made fully known. It appeared from the evidence, as reported in the *Morning Advertiser*, that the box containing the pills bore a label stating that they were prepared by a physician formerly of the Woman's Hospital, Soho Square, a statement which must be founded on some misapprehension. It was also stated that the Inland Revenue stamp was on the box, a circumstance which may have induced the unfortunate and confiding woman to believe that they were in a way issued under Government sanction. It was mentioned incidentally that thirty-seven pills had been taken; and Dr. Luff gave it as his opinion that death was due to septicæmia and septic peritonitis following and consequent on abortion produced by the pills. The witness said that he thought it ought to be publicly known that no drug was capable of bringing about an abortion without endangering the life of the patient. The coroner said he could not help thinking that it was wrong for the Inland Revenue to take money upon the sale of things which brought on the death of persons; and in summing up he urged that something should be done in the way of legislation to prevent this business going on. The jury evidently adopted this view, and added a rider to their verdict urging that legislation was desirable to stop the practice, and that it should take effect immediately. In connection with this unfortunate case, it may be mentioned that advertisements relating to the sale of drugs intended to procure abortion are much less common than they were a few months ago, the proprietors of most papers refusing to accept them on any terms. There are, however, exceptions to this rule, and in a well-known morning paper claiming to have the largest circulation in the world we find three advertisements which are certainly open to suspicion; two of them are headed "Ladies," and one "Important to ladies." One of them speaks of a "Marvellous remedy for restoring regularity," whilst another "gives relief in a few hours," and is "safe and certainly efficacious." It is difficult to believe that these announcements are inserted in ignorance of their real nature, and legislation for their suppression is the only effectual remedy.

WASTED SEWAGE AND WHEAT STARVATION.

WE generally look to the President of the British Association to supply us with a sensation at this season of the year, and we are seldom disappointed. This year Sir William Crookes has drawn for us a horrible picture of coming scarcity of the staff of life. He founded his vaticinations on a combination of the scientific imagination and statistics, a blend which is in itself apt to produce a depressing effect on the average man, and the results which he reached were certainly not calculated to raise the spirits of his audience. We have reached, he contended, a stage in the world's history, having regard to the present rate of increase in the population of all countries eating wheaten bread and the acreage all over the world suitable for yielding wheat, when the supply of wheat will begin to be unequal to the demand unless the yield of wheat per acre can be very largely increased. Wheat is a crop which must have a large supply of fixed nitrogen; we have been for generations, and at an increasing rate during the present generation, running our manure containing a great part of the world's stock of fixed nitrogen to waste by turning it into the rivers and the sea. Therefore we are within measurable distance of fixed-nitrogen bankruptcy, and not all the nitrate deposits of Chili can restore the balance. The argument is a curious illustration of the fact that if man violates a law of Nature, the consequences recoil upon his head. Our slovenly method of sewage disposal not only brings in its train immediate risks of disease, but future risks of starvation. "The fixation of nitrogen," said Sir William Crookes, "is vital to the progress of civilised humanity. Unless we can class it among certainties to come, the great Caucasian race will cease to be foremost in the world, and will be squeezed out of existence by races to whom wheaten bread is not the staff of life." There is, of course, nothing new in the contention that the waste of sewage must certainly involve great loss. Liebig, as Sir William Crookes reminds us, prophesied the downfall of Great Britain from this very cause, but it is interesting and impressive to have the fact enforced by figures carefully prepared from the best available commercial calculations. It is almost a pity that Sir William Crookes spoilt the impressiveness of the lesson he was teaching by suggesting that electricity generated by Niagara and used for the production of nitrate might after all set the matter right, even though the waste of fixed nitrogen in sewage be continued *ad infinitum*.

THE SANITARY REGENERATION OF HAVANA.

THE *Century* magazine contains an interesting article on the Sanitary Regeneration of Havana, by Dr. George M. Sternberg, Surgeon-General of the United States Army. He quotes the Spanish historian, Pezuela, as stating that "although Havana is situated on the northern boundary of the torrid zone, it was very justly considered one of the most healthy localities on the island before its invasion in a permanent manner by the *vomito negro* (yellow fever), imported from Vera Cruz in the summer of 1761." Since then yellow fever has continued to be the worst scourge of the "Pearl of the Antilles." The researches of the Havana Yellow Fever Commission of 1879 showed that during the ten years preceding their visit to Havana deaths from yellow fever had occurred not only every year but every month in the year. The average number of deaths was greatest in July (328) and least in February (14). The problem of the sanitary regeneration of Havana, indeed, largely resolves itself into the question how yellow fever is to be prevented; for the city has, according to Dr. Sternberg, a much better water supply than Philadelphia, and its typhoid fever rate is extremely low. Yet the actual sanitary condition of the principal ports of Cuba is very unfavourable, since in recent years their death-rates have ranged from 31.9 to 66.7, and the annual death-rate of Havana, estimated from the best attainable sources, was found by Chaillé to be 36.3 per 1,000; of Guanabacoa, 39.8; of Marianao, 39.5. Dr. Sternberg holds that yellow fever is essentially a disease of the sea coast, and especially of large cities in an insanitary condition. He fully believes that it is possible to put Havana in such a sanitary condition that it would be exempt from the disease. But the cleansing of that city will be a veritable labour of Hercules. In Cuban cities generally good drainage is never found, and even in Havana, the oldest and wealthiest of them, the visitor is often astounded, especially in the rainy season, to find impassable mud holes and green, slimy stagnant pools in the streets and in the back yards. According to a report quoted by the Yellow Fever Commission, "Havana has no sewers, save in a few principal streets. These sewers have been built at interrupted intervals, and without reference to any general plan for drainage. They are seldom cleaned, and are generally obstructed in part or wholly with sediment or filth from the streets, and exhale offensive odours. As the sewers are few in number, the greater part of the water of the city empties through the streets into the harbour or the sea, but the quantity flowing into the sea is comparatively small." The streets are for the most part unpaved and very filthy. The population is densely crowded together, and the dwellings generally present a combination of everything that is from a sanitary point of view detestable. All these evils are enormously intensified by the tropical climate. Among the improvements which Dr. Sternberg indicates as necessary for the sanitary regeneration of the city are a complete and satisfactory system of sewers, pavements for the unpaved streets, and reconstruction of the insanitary dwellings in accordance with modern sanitary regulations. The idea, he says, has

frequently been advanced that the prevalence of yellow fever in Havana depends upon the foulness of the water of its landlocked harbour, and the cutting of a canal through from the bottom of the *cul-de-sac* to the sea has been proposed as a remedy for the evil. This matter was carefully considered by the Havana Commission, and there are excellent reasons for believing that no results of importance would be attained by carrying out this extensive undertaking. Dr. Sternberg does not consider the proposed canal an essential feature in the sanitary regeneration of Havana. But there are certain important improvements in connection with the harbour which would contribute greatly towards the accomplishment of the object in view. These are a substantial sea wall along that part of the city fronting on the harbour, and an intersecting sewer in connection with a complete system of sewers, with a pumping station for the discharge of sewage into the ocean.

FREEDOM OF THE GERMAN NAVY FROM SMALL-POX.

In a review by Dr. Onimus (*Arch. de Méd. Navale et Coloniale*, No. 5, 1898, p. 388) of Dr. Globig's "Medical Statistics of the German Navy (Roth's *Jahresbericht*, 1897), it is stated that during the period under consideration, that is, from April 1st, 1893, to March 31st, 1895, there was not a single case of small-pox. Such a result is of course due to the efficient vaccination and revaccination obtaining in Germany. Don Quixote's advice to Sancho Panza, Governor of Barataria, was sound sense: "Publish not many edicts, and when you do, see that they are good ones, and above all, that they are well observed; for edicts that are not kept are as if they had not been made, and serve only to show that the Prince, though he had wisdom and authority to make them, had not the courage to see them put in execution; and laws that intimidate at their publication and are not executed, become like the log king of the frogs, which terrified them at first; but in time they contemned him, and got upon his back."

THE CONSCIENTIOUS OBJECTOR AND HIS REASONS.

Section 11 of the new Vaccination Act requires that the magistrate shall be satisfied as to the conscientious belief of the applicant that vaccination would be prejudicial to the health of his child. The metropolitan magistrates have now decided that a statement to that effect on the part of the applicant will satisfy them. Whether he will be allowed to support his statement by personal expression of his opinion remains to be seen. If so, he may calculate on the publication of a good deal of interesting and amusing evidence as to the way in which conscientious objection is developed. A recent case at the Highgate police court is a good illustration in point. The applicant, who was desirous of giving a reason for his faith, had reduced it to five specific heads. The first, which might, if genuine, have been supposed sufficient to render the others superfluous, was that vaccination was injurious to the health of all children. Here he evidently erred by a more copious generalisation than the law required. His second tenet was that "vaccination was invented by an unqualified doctor's assistant, named Jenner, as a 'cure all,' and not as a specific remedy for small-pox." It is difficult to say whether the confusion of fact or of theory is greater in this deliverance, but it illustrates well the muddle-headed condition of its author. Thirdly, in many cases which had come under his own personal knowledge, children had suffered in health in consequence of having been vaccinated. This display of professional experience is suggestive of the "medical specialist." Fourthly, he averred that the statistics of small-pox in the County of London were systematically falsified by the way in which returns from that disease were entered. But why did he confine himself to the County of London? It is a staple accusation by antivaccination controversialists that all official statistics on the subject of vaccination are systematically falsified. Mr. Alfred Russell Wallace has laid this proposition down unreservedly. The last reason appears almost trivial when compared with the others. It was that no standard lymph had been prescribed for use in vaccination. The applicant would no doubt treat with scorn the undertaking given by the Local Government Board that no lymph will be sent out until it has been standardised by careful examination, and the suggestion that the practical standard of the efficiency of any lymph is the production by it of a true Jennerian vesicle. Altogether this elaborate string of reasons seems to indicate the probability of its being the first attempt to air a declaration drawn up by the Anti-vaccination League for the purpose of being reeled off by dissentients from vaccination when making their appearance in a police court. In that case it may be well that the clerk to the magistrates should be furnished with a corresponding printed statement which should be read as a counterblast in court and handed to the applicant, with his certificate, for his better information.

A NEW LEAGUE.

We are not told whether the frogs, in the well-known fable, when visited by Jove with the infliction of King Stork, in the place of King Log, took it into their heads to form a league for the purpose of dethroning the tyrant. If they did not, they certainly were not so wide awake as some of their downtrodden representatives are in the present day. A society has lately been established in this country under the name of "The Medical Nonconformists' Defence and Protection League," and we are informed that "Foundation Fellows" of the society "shall consist of those whose occupation it is to treat diseases by safe and natural means, and are opposed to the treatment of diseases by serum and mineral poisons." It would seem probable, therefore, that the new league is strictly limited to the practitioners who have hitherto been more familarly known as "medical botanists." But what is rather curious is that amongst a number of other objects which the new league proposes to itself, including the suppression of surgical operations, compulsory vaccination, vivisection, and other recognised antipathies of "medical nonconformity," is included "the exposure of quackery, no matter by whom practised." Amongst other products of this remarkable illustration of co-operative enterprise is a periodical published somewhat irregularly under the title of *The Journal* of the League. This is apparently the organ of the medical herbalist, for whom it claims, and probably with some truth, that they are "the oldest body of medical practitioners in existence," and it contains a good deal of amusing if not edifying reading. There is a fair sprinkling in it, as may be supposed, of information of interest to antivaccinators. They are, for instance, advised that a gentleman who has compiled a pamphlet to prove that vaccination is "legal murder" has "between 400 and 500 of these pamphlets unsold, and would be glad to dispose of them in a job lot or in parcels; no reasonable offer refused." A trenchant article from a largely circulated London weekly entitled "Bill-sticking Quacks," is reproduced, with the apparent object of showing that the members of this new league do not indulge in such reprehensible practices. A perusal of *The Journal*, however, seems to indicate that the members of the league in this respect resemble other sinners, in

> Compounding for sins they have no mind to
> By damning those they are inclined to.

For a correspondent, who writes from a small town in Durham, and whose personality is very thinly veiled, has no difficulty in obtaining publicity in its columns for the statement that whilst people in his district are "dying by the dozen under the allopaths," his "death rate," as a "hy-

gienic herbalist, medical magnetist, and mental therapeutist" is "up to now, *nil* while the cure rate is 100 per cent." Really, it is well that the attention of the General Medical Council should be directed to this organised embodiment of irregular practice.

HYGIENE AT HEALTH RESORTS.

ACCORDING to recent German papers, a young lady from Berlin was attacked by diphtheria whilst on a visit to one of the seaside resorts on the Baltic. The proprietor of the hotel where the lady was staying was not unwilling to allow her to stay on, but the other guests objected. The unfortunate patient had, therefore, to be removed to a house which happened at that time to be empty, and there after a short time she died. The inconveniences to which families are sometimes subjected at health resorts when one of their party happens to be attacked by an infectious disease may be most trying, and it would certainly be satisfactory if in all largely visited health resorts fixed rules could be agreed on as to what is to be done in such circumstances. All much frequented health resorts should have hospitals or isolation houses with adequate accommodation, where visitors suspected to be suffering from infectious diseases can be at once received, and where they can be sure of obtaining proper treatment and attention. In fact, on sanitary grounds, all spas and health resorts may be divided into two classes: first, those where the drainage arrangements and the water supply are good, where there are hospitals or isolation cottages ready for use in case of the outbreak of any infectious disease during the crowded season, and where in addition to the special climatic and balneotherapeutic advantages of the place there are likewise facilities for simple but often most important dietetic treatment. Secondly, the numerous class of health resorts which, though often possessing great climatic and balneotherapeutic attractions, yet in sanitary arrangements are altogether deficient, or, at least, not above the standard of the numberless little holiday and summer resorts with which most countries abound. The second class of health resorts are unworthy of receiving the immense number of invalids and visitors which may suddenly flock to them during the season. It would be well if the managing bodies were in all cases to consider the matter carefully, and, if they have not done so already, settle the question to which class they wish their own health resorts to get the reputation of belonging.

SUMMER DIARRHŒA.

PRIOR to the second week in August the weekly number of deaths from summer diarrhœa in London and the other large cities had been for a long time below the mean of the corresponding period of the preceding ten years, but subsequently those deaths have considerably exceeded the mean. The recent exceptional rise in the mortality from diarrhœa has been determined by the fact that the mean daily temperatures have been exceptionally high, for there are sufficient reasons for believing that the essential cause of the complaint resides in the soil, from which it issues under favourable meteorological conditions (more especially of temperature) to gain access to air, water, and food. It is especially important, therefore, in the summer months to take every possible means of ensuring the freedom of these necessities of life from contamination. Summer diarrhœa must be thought of as something quite apart from the diarrhœa which figures as a cause of death all the year round, for the death-rate from diarrhœa always remains at about the same figure throughout the winter and spring, when the ever-present agency of injudicious dieting is almost alone concerned in its production, but with little preliminary warning, as the mean daily temperatures rise, an extensive outbreak of the summer type of diarrhœa occurs, from which very few of those at the extremes of life—or who are enfeebled—escape. This increase in the death-rate is always mainly due to deaths among the children of the poor, and slightly over 95 per cent. of the total deaths occur during the first five years of life. Infants fed artificially for the first nine months suffer much more from the complaint than those fed naturally from the mother's breast, and where such artificial feeding is necessary, very much mortality would be prevented if parents only studied and practised the advice which health officers and others have so generally and persistently tendered through the medium of handbills. The chief means of reducing the mortality from summer diarrhœa is by giving nothing but well-boiled liquid food for the first nine months of life, and by keeping all milk vessels and feeding bottles scrupulously clean. For the neglect of these simple precautions at this period of the year, the infants of these islands alone are paying a weekly toll of many hundreds of deaths. Summer diarrhœa is the most fatal of all the zymotic diseases, and if the deaths certified as due to gastro-enteritis were included (and at this period of the year they probably all have a common origin) the loss of life from summer diarrhœa would be still further increased to the extent of some 30 per cent.

IRISH WORKHOUSE REFORM.

THE question, Is the reform of the Irish workhouse system desirable? admits of but one answer, and Mr. Charles Eason, honorary secretary of the Philanthropic Association, is of the same opinion. He shows the urgent need of reform, using as the material on which he frames his indictment the report of the Special Commission on the Irish Workhouses published in the BRITISH MEDICAL JOURNAL, the results of Dr. Moorhead's inquiry, and the replies received by the Workhouse Reform Association. Mr. Eason brushes away the oft-repeated objection that the inmates have not been accustomed to anything better, by saying that the guiding principle of all State action should be to elevate, not to degrade, those under its care—words that should be written over the door of every board-room in the United Kingdom. This paper travels over ground which must be quite familiar to all who have been watching the cause of workhouse reform in Ireland, the hopeless condition of the structures, the inadequate sanitary appliances, the inefficient nursing, the absence of classification, the neglect of the aged and infirm, the ignorance displayed in the nursing department, the inhumanity in dealing with the lunatic class: all these points have been placed before our readers over and over again, hence we welcome the readable pamphlet in which Mr. Eason has embodied his arguments as a valuable contribution towards the crusade against the want of humanity and decency which still characterises the administration of the Poor Law in too many places in Ireland. Mr. Eason urges that the one hope of reform lies in the education of the public, and with admirable candour he says "that no class is so much to blame as that to which I myself belong, namely persons who have been and are contented to remain in complete ignorance as to how poor relief is administered, and who consider that the payment of rates and contributions to charitable societies absolve us from the obligation of personal inquiry and effort as to the needs of the helpless poor of our country." It is only by the reiteration of the facts that it is possible to open the eyes of the administrators of the Poor Law to glaring defects; the official mind has so long accepted the principle that all the needs of the pauper are met by four walls and a roof, clothing of a kind, and meagre food. As an illustration we may quote from the *Mid-Ulster Mail* of August 20th, which contains a report of the meeting of the Magherafelt Board. The report of our Commissioner on that workhouse contained some unsavoury details as to the insanitary condition of the hospital, and now the inspector applies the scourge to this department in words that admit of no question, and not for the first time.

What is the action of the Board? Practically nothing: "the report is referred to the House Committee." This is no isolated instance, but until the public conscience is thoroughly aroused, humanity and decency will still be wanting in the workhouses. Reform, however, has begun, and we believe that even Magherafelt will be cleansed.

THE LATE PROFESSOR NASSE, OF BERLIN.

Professor Dietrich Nasse, whose early death has added one more to the long list of Alpine fatalities already recorded this summer, was perhaps best known in Berlin as the brilliant assistant of Professor von Bergmann. His talents had, however, already marked him out, and it is not long since he was selected for a special mission on medical affairs in the East, during which he nearly lost his life as the result of a surgical accident leading to severe blood poisoning. He was a keen and truth-loving observer, an indefatigable worker, and an excellent speaker. But he was more: he had tact, a cheerful courtesy, and that modesty which is more rare nowadays among the younger members of our profession than could be wished. He will be sincerely missed by his many friends, but by none more than by those Englishmen who, within the last few years, have had occasion to visit the Klinik in the Liegle Strasse, to whom Professor Nasse's unfailing and self-sacrificing courtesy has been peculiarly grateful.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY.

As was recently stated in the British Medical Journal, the condition of the Medical Department of the United States army in the recent war has been the object of severe criticism in some American papers, medical as well as political. With reference to these attacks the Surgeon-General of the United States army has addressed the following letter to the *Philadelphia Medical Journal*:

War Department, Surgeon-General's Office,
Washington, August 16th, 1898.

My time is too much occupied with important official duties to justify me in paying any attention to my numerous non-professional critics. But I will take time for a brief reply to some editorials in medical journals which intimate that I owe an explanation to the profession with reference to my management of the Medical Department of the army. I will say, first, that every army corps and every camp has a chief surgeon, who is responsible for the administration of medical matters upon the spot, and whose duty it is to see that timely requisition is made for medical supplies and necessary assistance. I have made every effort to comply with all demands of this kind and to anticipate so far as possible the wants of our soldiers in camp and in active service. Ample supplies were sent to Tampa for use of the Fifth Army Corps, and I am not responsible for the fact that these supplies were not landed at Siboney. Nor am I responsible for the condition of the transports leaving that place with sick and convalescents. Government transports are under the orders of the Quartermaster's Department, but when they are to carry sick soldiers it is no doubt the duty of the Medical Department to see that they are properly supplied with medicines, medical attendance, and competent nurses. Circumstances may, however, make it impossible to accomplish this manifest duty. Whether such conditions existed in front of Santiago at the time the *Seneca* and the *Concho* sailed is a question which everyone who has read the newspapers may decide for himself. But certainly I could not have had supervision over these transports from my office in Washington. At the time they sailed, General Shafter's chief surgeon had broken down in health. In a letter recently received from Lieutenant-Colonel Pope, he says: "As I cabled you, I was relieved from duty as Chief Surgeon on July 23rd because of continued ill-health. General Shafter was good enough to do this, and since then I have been resting in camp, hoping to get into condition again, if possible. My collapse seems to have been the result of a partial sunstroke, which left my brain entirely unable to think or plan or recollect, and, of course, unequal to the heavy responsibilities of my position."—Very truly yours,

Geo. M. Sternberg, Surgeon-General U.S. Army.

It may be added that the testimony of unprejudiced observers is decidedly favourable to the department. The Honourable Sherman Hoar, who, as agent of the Volunteer Aid Association, recently inspected the Massachusetts Volunteers in the Southern Hospital, writes as follows:

In fact, the Medical Department of the army, though overworked, is doing splendid service for our men wherever I have been. Every carefully-considered suggestion is quickly received and acted on, and the malignant criticism too often seen is for the most part undeserved. Mistakes have been made, undoubtedly, but every effort possible is being made to prevent their repetition. I send this in justice to the Medical Department, who, from the Surgeon-General down, are doing indefatigable and valuable work in an emergency which few can appreciate unless they have been in touch with it, as I have been for the last two months. The War Department is doing all in its power to take care of the sick.

This evidence proves that there has been, to say the least, very gross exaggeration in the sweeping charges of neglect and incompetence which irresponsible critics have brought against the Medical Department of the United States army. Surgeon-General Sternberg has asked for a Court of Inquiry.

THE TREATMENT OF TETANUS.

When antitoxic serums were introduced, tetanus was one of the diseases in the treatment of which their value seemed most probable. It can, however, hardly be claimed that results have fully borne out such favourable anticipations. The utility of the antitetanic serum, of which no fewer than three varieties are on the market, is inversely proportional to the acuteness of the disease, or in other words good results can only be awaited with confidence when the symptoms tend from the first towards chronicity. The reason of this appears to be the rapid production of toxin by the bacilli, even when present in limited numbers. As with syphilis the first symptom of the disease indicates that general infection has already taken place, and that the toxic products have obtained a long start. For each hour of this start the quantity of antitoxin required to avert a fatal issue must be increased almost in geometrical progression. In these circumstances it became obvious that the therapeutic action of tetanus antitoxin was in general much less than that of antidiphtherial serum, and most authors have in consequence spoken guardedly as to its value. Ehrlichs's theory that the formation of antitoxins within the body arises from the affinity of toxins for certain cell elements by a mutual adaptation of molecules—the so-called "lock-and-key" theory—has acquired practical importance as the result of the experiments of Wassermann and Takaki on the relation of the central nervous system to the tetanus poison. They find that the spinal cord and brain of every animal which they have investigated possess definite antitoxic properties in respect of the tetanus toxin; furthermore, they can protect if injected in the form of emulsion twenty-four hours before the toxin, and can save life when inoculated many hours after it.[1] The first clinical application of these views appears to have been made by Babes, who, in the course of a paper on Ehrlich and Wassermann's work, read before the Bucharest Scientific Society, incidentally mentioned that he had administered extracts of the central nervous system in cases of tetanus with satisfactory results. The question has since then been taken up, no doubt independently, by Dr. Krokiewicz, of Warsaw, whose paper[2] has a special value in that it compares the old with the new methods of treatment under almost experimental conditions. It happened that Dr. Krokiewicz had in July of this year two cases of tetanus in his wards almost simultaneously; the one was treated with antitoxin, the other with a fresh emulsion of the brain of a calf. There was but little difference in the virulence of the cases, for whereas in the former (a man) the incubation period was shorter and the disease in consequence more acute, in the latter (a woman) there was more marked trismus, with consequent difficulty in feeding, and the general condition was much less good. The

[1] *Berl. Klin. Woch.*, 1898, No. 1.
[2] *Wiener klin. Woch.*, 1898, No. 34.

course under treatment was very different in the two patients. In the woman, two injections of brain emulsion representing in all about ½ oz. of brain substance, effected a complete cure in eleven days, with no ill-effect other than the formation of two small abscesses at the seat of the second injection which was somewhat too concentrated. The man, on the other hand, received four doses of antitoxin (1 in 10,000) amounting in all to 196 c.cm., and yet was not cured for eighteen days. Furthermore the brain emulsion produced an almost immediate alleviation of the tetanic symptoms so that the patient begged to have the injection repeated; the administration of the antitoxin, on the other hand, was followed by severe paroxysms, sleeplessness, fever, and a sense of dread which allowed it to be repeated only under the pressure of dire necessity. Although too much must not be based on the result of a single case, it seems that the injection of brain emulsion may prove to be a valuable remedy in tetanus; the latest statistics of the use of the antitoxin show 11 deaths in 22 cases.[3] In any event a line of treatment has been opened up which may lead into a field of which it is at present impossible to define the limits.

PUFFIN ISLAND BIOLOGICAL STATION.

THE days have long gone by when the accomplished naturalist was usually also a physician, yet the majority of medical practitioners still take a general interest in zoology and botany, and will be glad to have their attention called to the modest little report for 1896 and 1897 of the Puffin Island Committe for investigating the fauna and flora of the coast of North Wales, and for promoting the Sea Fisheries.[4] The report, which is edited by Dr. Philip J. White, gives an account of the useful work which is being carried on with very slender resources by the writer and his friends. The greater part of the papers published in it deal with botanical subjects, but there are some notes on the Welsh fishery exhibits at the Imperial Institute, and a very interesting record of the excavations made by Mr. Hughes in Ynys Seiriol (Puffin Island), while Sir William Turner describes a skeleton discovered there, which may perhaps be none other than that of St. Seiriol himself.

THE PREVENTION OF TUBERCULOSIS.

AT the meeting of the Association Française pour l'Avancement des Sciences recently held at Nantes, the Section of Hygiene, at the suggestion of M. Nicolas, passed a resolution pointing out that the conveyance of tuberculosis by inhalation is only one of the modes of infection, and that a larger part in the diffusion of the disease is played by contagion through the alimentary canal, as proved experimentally and clinically, and urging the necessity of taking adequate measures to ensure the sterilisation and harmlessness of articles of food. In view of the fact that the measures recently recommended for the prophylaxis of tuberculosis by means of isolation in sanatoria, special hospitals, etc., by the use of spittoons and by disinfection, do not meet all the necessities of the case, the Section expressed the opinion that it is desirable in addition to take measures to suppress, or at least diminish, the causes of weakening of the constitution which make it fall an easy prey to the disease—overstrain, *misère physiologique*, confined air, overcrowding, and unhealthiness of dwellings. In every dwelling a sufficient cubic space should be allowed in proportion to the number of the inmates, and all apartments must be freely ventilated and exposed to the sunlight; it is also necessary that low-built houses should be furnished with large courts to ensure perfect aëration. In this respect the English cottage system represents the ideal which should be aimed at. The Section further urged that the widest possible publicity should be given to the modern doctrines as to the contagious nature of tuberculosis and its prophylaxis; this should be done by means of public lectures, and also by the moral influence which medical men can exercise in their own sphere. The curability of the disease should also be strongly insisted upon, since this makes it possible to ask of patients and of those about them the sacrifices necessary for an efficient prophylaxis. A further resolution, proposed by M. Courmont, relative to the prophylaxis of tuberculosis in bovine animals, was adopted. The Section urged that in view of the possibility, demonstrated by experiment, of the transmission of tuberculosis from man to horned cattle, farmers should be warned of this danger, and should be recommended to take every precaution against the extension of bovine tuberculosis, which constitutes a serious economic loss and a new source of contamination for man.

[3] Erdheim, *Wiener klin. Woch.*, 1898, No. 18.

[4] Bangor: Jarvis and Foster. Demy 8vo, pp. 56. 6 plates. 1s.

MEDICAL NOTES OF THE ARMY MANŒUVRES.

THE reports note that the sick from the manœuvres came in to the Cambridge Hospital with great regularity during the week ending September 3rd. On one day alone more than forty men came in, and the total number who came in is estimated at considerably more than a hundred, but no specially serious case is mentioned. In the Southern army two men were killed and others injured by the overriding of a field gun, the rider of the first horse that fell being literally impaled on the pole of the limber. An officer of the Army Service Corps suffered a fracture of the thigh bone from a fall from his horse. A sapper fell beneath the wheel of a traction engine on the road to Shaftesbury, and was crushed to death. At Perham a medical officer was knocked down and rendered insensible by a runaway horse. A man of the 13th Hussars has been seriously injured by a brave attempt to hold on to a bolting horse.

HOSPITAL CONSTRUCTION.

NEW official regulations for the construction and interior arrangements of public and private hospitals and asylums in the province of Brandenburg and the city of Berlin have recently been issued. The institutions affected are divided into three classes: large hospitals with more than 150 beds, medium with 150 to 50, small with less than 50. The hospital must, as far as possible, be built on an open site on healthy soil, and far from any place where injurious manufactures are carried on. Again the hospital buildings must be at least 20 metres distant from each other and 10 metres from other buildings. In larger hospitals, if a single building is preferred, the courtyard must at least be open on one side. In small hospitals no wards must be built round the open court. Corridors must be at least 1.80 m. wide, and must be principally on one side of the buildings; they are only allowed in the middle if they receive light from the outside, and have a width of 2.50 m. Wards must be at least 1 m. above the highest known water level, provision must be made against damp; and if they receive light only from one side, the wards must not face the north. The walls of wards for obstetric cases, infectious diseases, and operation theatres must be smooth, and admit of being washed to a height of 2 m. Floors should be made waterproof. All passages should have windows, and in wards the window space should be equal to at least one-seventh of the floor space. The height of each ward should be at least 3.5 m. Each patient should have a cubic space of 30 cm. in wards and 40 cm. in single rooms. Fresh air should be introduced without incommoding the patients, and the vitiated air suitably removed. The windows should open easily, and be provided with an apparatus for introducing fresh air. Watercloset must be separated from the wards by double doors or a passage. There should be at least one bath room in each hospital. In

lying-in hospitals with more than four beds a separate labour ward is required. In the larger and middle-sized hospitals the kitchen must be in a separate building. Each hospital must have a private laundry. Infected linen must not be washed in the laundry without previous disinfection. Large and middle-sized hospitals must have a proper disinfecting apparatus, if there is not a public disinfecting station near. They must be provided with a mortuary and *post-mortem* room, and must have one or more separate buildings for infectious diseases. Small hospitals, if they admit such cases, are directed to place them in a separate room, and if possible on a separate floor.

A TEMPTING OFFER.

The ideas of the Bingley Local Board upon the usages of professional life in civilised communities are, to say the least of it, rudimentary. They want, or perhaps, to be more strictly accurate, they are obliged by law, to have a medical officer of health. Their professional adviser in health matters must be appointed under the General Order of the Local Government Board of March, 1891; but these ingenious gentlemen have hit upon what they seem to consider an expedient for getting their work done cheaply. Instead of consulting with the Local Government Board as to what salary they should offer they issue an advertisement inviting tenders, and, although they do not indeed state that the lowest or any offer will be necessarily accepted, the form of the advertisement leads naturally to the inference that all medical services being, in the opinion of these persons, about equally valuable, they will select the man for the office who places the lowest money value upon the services he is prepared to render to the community. Possibly the advertisement was not actually intended by these gentlemen to be an insult to the medical men in their neighbourhood. We hope so, but we hope also that the objectionable advertisement will be at once withdrawn, and one substituted for it more in accordance with what common courtesy to members of a learned profession should have dictated from the first.

MEDICAL PRACTICE IN THE TRANSVAAL.

"All is not gold that glitters." This proverbial utterance summarises the experience of a German correspondent of the *Münch. med. Woch.* of August 16th, as to medical practice in the Transvaal. The letter is chiefly valuable on account of the lucid and unbiassed exposition of the present condition of medical practice in that State. In former days, he says, a practice in the South African Republic was no doubt fairly lucrative, but since the Jameson raid there has been a considerable falling off in medical fees. The number of doctors is increasing out of all proportion to the population. The expenses of living are also on the increase, notwithstanding that the mines produce less gold than formerly. These causes are helping to bring about a condition of penury amongst the medical population. It is high time, therefore, to warn some of our younger brethren, who are anxious to make their fortunes in as short a time as possible, that Africa does not hold out the golden palm as in days of yore. All the sanitary arrangements in the South African towns are bad, and this is especially the case in Pretoria, where typhoid is rampant. Bloemfontein has a splendid climate, but has only 4,000 inhabitants; there are already 10 doctors, each of whom keeps a chemist to dispense his own medicines. Johannesburg appears to be overstocked with "doctors," the majority of whom have had no medical education whatever; these satisfy their consciences by buying diplomas on the spot. There seems to be unlimited scope for the unqualified practitioner. A licence to practise is given to any one who pays £25; death certificates can be signed only by those holding this licence. Many men, in order to avoid paying the sum of £25, enter into partnership with one who has already paid this fee. The expenses of living economically amount to £50 a month; this applies to those without families. Unless a man is prepared to spend £600 during his first year his journey to Johannesburg, from the pecuniary point of view, is useless. This account sounds very pessimistic, and we only hope that those who have already embarked on this speculative enterprise will find themselves in more favourable surroundings than our German colleague.

THE AMERICAN TROOPS AT SANTIAGO.

Dr. E. G. Brackett, of Boston, who, under the auspices of the Volunteer Aid Association, has been engaged in the distribution of supplies in Santiago, with the help of General Wood, the present military Governor, states (in a letter to the Secretary of the Association) that the sickness prevailing among the troops could in great part be prevented by a proper quantity of the right kind of food and medicine. He says: "The most urgent need seems to be for the simple forms of foods. The fever, which is extremely prevalent and severe, leaves the men in a condition in which the stomach refuses anything but the simplest of light food. At this time they can take Mellin's food and others of like nature, granum, malted milk, beef peptonoid, powder, etc. There is a need of this which I cannot urge too strongly, and if such can be sent it will be the means of saving many lives. There is also a great need of hospital supplies, particularly disinfectants and medicines. This is general, and their necessity has been urged on me by the authorities to-day. I send you this as a preliminary report. The conditions here defy my description. The mortality in the city is very high, sixty and above daily, and it is approaching the worst season of the year. The condition of things is pitiful, and were it not for the most admirable work done by General Wood since taking command of the city, it would be impossible for one not here to imagine what the condition of the place would have been. I want to enforce on you how much our men need these things. When you see them, particularly the officers, come to you and beg for these foods, etc., not for themselves, but for the others, it is too much for the hardest heart, and the supplies I have here are not a drop in the bucket of necessity."

MEDICINE IN HOLLAND.

The rejoicings which have this week attended the accession of the young Queen Wilhelmina remind us how much science in general, and medicine in particular, owe to the Low Countries. It recalls to us a stately procession of names: Van Helmont, the Faust of the seventeenth century; Swammerdam, great on the natural history of insects; Ruysch, his pupil, and the discoverer of the circulation and of the valves in the lymphatics; Bidloo, the anatomist of of the human body, whose plates were purloined by Cowper; Leeuenhoek, the histologist, who first described the capillary circulation as it is seen in the web of a frog's foot and in other transparent membranes; Reginald de Graaf, whose name still lives in the Graafian vesicle; Boerhaave, the most celebrated physician of the eighteenth century, who was so beloved by his fellow townsmen that they set all the bells a-ringing in Leyden and decorated their houses when he was recovered from a severe fit of the gout; Donders, a founder of scientific ophthalmic medicine; Schroeder van der Kolk, whose pathological specimens form the nucleus of the Pathological Museum at Oxford; and more recently Stokvis, a pioneer in the field of physiological chemistry and experimental pharmacology. Nearly all these great men have been closely allied to us in their work, and have been warmly welcomed when they came to our shores. Throughout the eighteenth century the Royal Society, less exclusive then than now, formed a bond of union for the scientific world, and many Dutch names are included in its roll of membership. Ruysch was elected a

Fellow, and he had already shown his friendly feelings towards this country. Admiral Berkeley was killed in an action between the English and Dutch fleets on June 11th, 1666. The body was advancing rapidly towards putrefaction. Ruysch injected it, and with such success that it was transmitted to England, and the operator was handsomely rewarded. May such feelings long continue, and may we remain as closely allied to our Dutch cousins in science as we are in thought and in speech.

DISCOVERY OF A TEMPLE OF ÆSCULAPIUS.

THE *Gaulois* announces an interesting archæological discovery which has recently been made in the Island of Paros. During the course of some excavations carried out on that island not long ago, by the German Archæological School of Athens, the remains of the celebrated Temple of Æsculapius, described by several Greek authors, were uncovered. The temple, which attracted crowds of pilgrims in antiquity, is in almost perfect preservation; its dimensions are 41.25 metres in length by 19.50 in breath. There is nothing now left of the treasures which once made the temple one of the wonders of Greece. There is neither gold nor ivory, statue nor bas-relief. Everything that could be "looted" was taken at one time or another by ancient collectors of curios, or by pickers up of unconsidered trifles of a different kind. From the purely archæological point of view, the discovery is of the highest importance, for many marble tablets and columns have been found bearing inscriptions of great historic interest. At the foot of a rock not far from the Temple the excavators have come upon a fountain which is believed to date from the fifth or sixth century before Christ. It is of white marble, and the water in it is abundant, clear and fresh, and will form a valuable addition to the water supply of the inhabitants of Paros. Close to the fountain have been found remains of ancient walls as to which there is much speculation among the archæologists. Further excavations are being made.

THE SCROFULOUS EYE.

THAT blessed word "scrofula" appears to have been somewhat ousted from medical literature of late years. The march of scientific precision tramples over all vacillating expressions of uncertain meaning. For whereas the early fathers of medicine attached to it a perfectly definite significance, the advance of pathological knowledge seemed to indicate that it was a name merely covering some of the more superficial manifestations of tuberculosis. Later still it was seen that other cases described as scrofulous were of syphilitic or rachitic origin, while one recent writer holds that many of them result from the mere spreading outwards of a nasal catarrh. In these circumstances it may be admitted that scrofula is a term rather popular than scientific, and it seems rather unfortunate that it should have been used by Dr. Emil Guttmann in the title of his extremely interesting paper on the influence of sex and age on certain ocular diseases.[1] He applies the name "scrofulous" to young ill-nourished patients with pale skins, swollen glands, especially in the neck, eczema of the face and head, chronic nasal and aural catarrh, and obstinate photophobic affections of the eyes. He analyses these ocular affections on the basis of the records of the ophthalmological clinic of Professor Magnus, of Breslau, and groups them together under the name of eczematous kerato-conjunctivitis. This comprises the ordinary phyctenular, muco-purulent catarrh, and eczematous keratitis, but excludes ciliary blepharitis and eczema of the lids; the somewhat arbitrary character of this differentiation illustrates the inadvisability of attempting to bring out-of-date nomenclature into line with modern pathology. In spite of this initial fault, Dr. Guttmann's statistics and deductions are of considerable value. His material comprises 40,000 cases of eye disease investigated in Professor Magnus's clinic during the 14 years ending November, 1897. Of these, 6,500, or just one-sixth, had scrofulous affections. While, however, the total number of cases was almost equally divided between the sexes, the scrofulous subjects showed a preponderance of women in the proportion of rather more than 2 to 1 (4,393 to 2,157 men). When age is also taken into consideration as a factor, some further points of interest come out. Thus of the 40,000 patients, 15,050 were children of less than 15 years of age, girls being to boys in the proportion of 5 to 4; but of these children, 5,070, or rather more than a third, had scrofulous affections, which were nearly twice as prevalent in girls as boys; owing to the numerical preponderance of the former, the actual liability worked out as 40 to 26. In patients over the age of 15, on the other hand, although scrofula was in general much less frequent, it occurred nearly three times as often in females as in males. Dr. Guttmann compares his results with those obtained in similarly large series by other observers—a matter of some difficulty, owing to the differences in nomenclature already noted—and finds that in something like 150,000 cases the male predisposition is to the female as 1 to 1.9. He attributes this disproportion partly to a naturally greater tendency on the part of women to suffer from all forms of scrofula, but more to their greater liability to all forms of external eye disease, a fact which he supports by statistics regarding trachoma; a third possible factor might be a greater female susceptibility in respect of eczema, but this he is unable to definitely establish. The author has also worked out the age liability to these disorders, finding that it is greatest during the period between the first and second dentitions, no less than 42.8 per cent. of the total number of cases occurring between the ages of 2 and 6. From the age of 3, when it reaches its maximum, the liability decreases steadily, except for a break at from 6 to 8, which the author explains as the result of the exposure to infection during the first years of school life. A further interesting point is that the greater female liability is least marked at birth and in early childhood, but rapidly increases as the specific sexual characteristics become differentiated.

[1] *Deut. med. Woch.*, August 25th, 1898.

DR. KESER, physician to the French Hospital and Dispensary, has been made a Knight of the Legion of Honour.

MAJOR C. B. MAITLAND, Indian Medical Service, has been appointed by the Bombay Government a Medical Member of the Poona Plague Committee.

HIS Excellency the Lord Lieutenant of Ireland, K.G., has appointed Mr. John Lentaigne to be Surgeon to the Household in the room of Dr. Thomas Hedley, resigned. Mr. Lentaigne is Surgeon to the Mater Misericordiæ Hospital, Dublin.

WE regret to announce the death of Dr. John Wallace, of Liverpool, Professor of Midwifery in the Liverpool University College, and Consulting Gynæcological Surgeon to the Royal Infirmary, which took place after a very short illness on September 1st.

THE new operating theatre of the Swansea Hospital, which is now approaching completion, will be opened by Sir William Mac Cormac, Bart., President of the Royal College of Surgeons of England, in October. The operating theatre has been presented by Mr. Ben Evans, and is constructed according to the most approved principles.

THE annual dinner of the past and present students of Charing Cross Hospital Medical School will be held in the Venetian Chamber of the Holborn Restaurant on Thursday, October 6th. The chair will be taken by Dr. William Carter, of Liverpool, and Professor Virchow will be among the guests. Applications for tickets should be addressed to either of the Secretaries, Messrs. Donald Naesmyth and P. L. Daniel, at Charing Cross Hospital.

THE SOUDAN EXPEDITION.

The Battle of Omdurman.

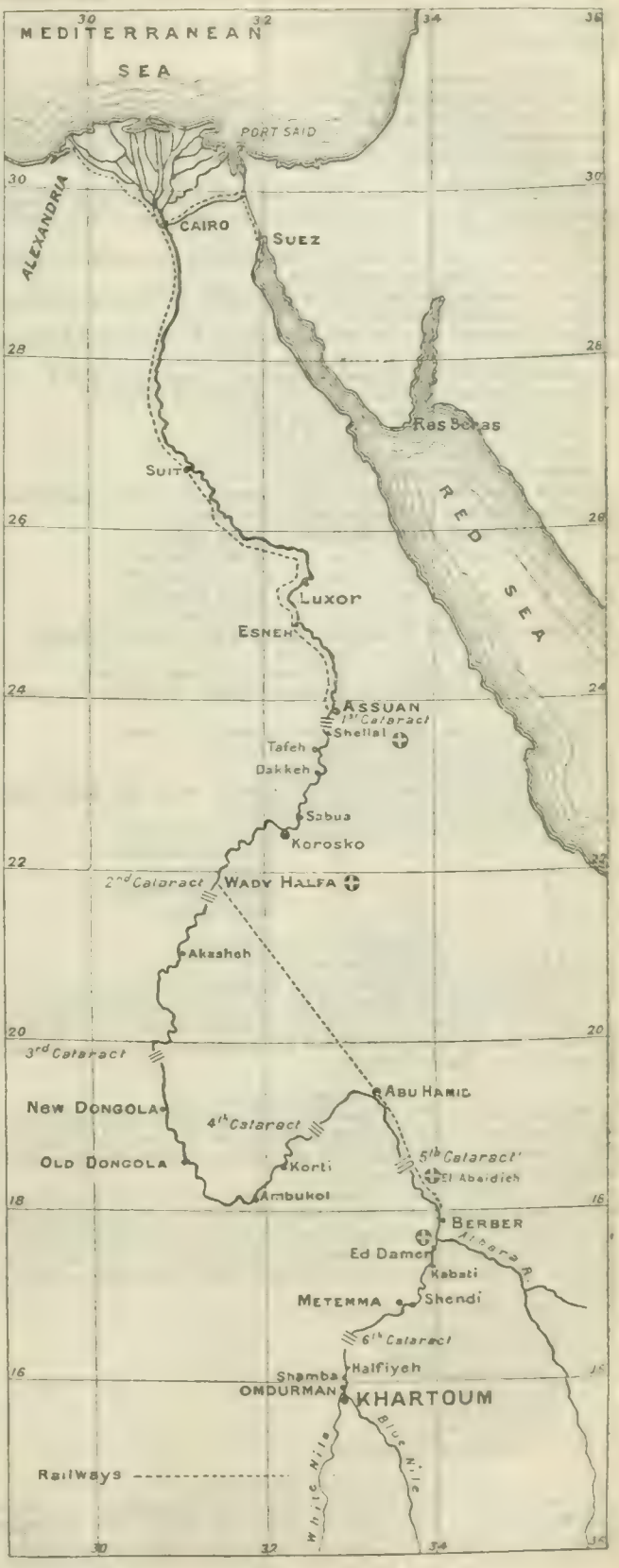
The brilliant victory which has been won at Omdurman by the combined British and Egyptian force under the command of the Sirdar, Sir Herbert Kitchener, is the crowning achievement of many years of hard work and careful preparation. The valour, at once disciplined and impetuous, which, to quote the cordial phrase of the *Temps*, is the great military virtue of the British race, may be trusted to do all that man can do against an enemy who can be seen, but valour would in this case at least have been useless if every detail had not been thought out beforehand, and if the utmost precaution had not been taken to bring the force to the front in good health. The result of the battle itself appears never to have been in doubt; the most difficult part of the advance was over long before the two forces stood face to face. The great merit of the Commander and of his staff has been the frank recognition of the necessity for forming a true estimate of the risks to health involved in moving a large force for so great a distance under a trying climate and under local conditions as to the water supply and camping grounds, which rendered it imperative that every move should be regulated by sanitary requirements. The success of the advance reflects the greatest credit on the medical officers who have advised on these points, and upon the Sirdar, who has known how to value and to accept their advice.

The Royal Army Medical Corps has not had to wait long for its baptism of fire, and the telegrams, though the details they give are few, are yet sufficiently full to show that the works of the corps was done well and quickly. The battle took place on Friday, and on Saturday the Sirdar was able to telegraph that all the British wounded were to go down the river that day. They will be conveyed on the hospital convoy boats, particulars of which are given below, to the large hospitals at Abeidieh. From thence, when fit to move, they can be sent to Wady Halfa by train, from Wady Halfa to Assuan by boat, and beyond that point again by train. As shown below, there are small hospitals at Shellal, near Halfa, and at Assuan, where, moreover, the wounded will be within easy reach of all the appliances of civilisation.

The casualties were: In the British force, 2 officers and 23 non-commissioned officers and men killed, and 7 officers and 99 men wounded. In the Egyptian force, 1 native officer and 20 non-commissioned officers and men killed, and 6 British officers, 8 native officers, and 221 non-commissioned officers and men wounded. In addition, the Hon. Hubert Howard, *Times* correspondent, was killed, and Colonel F. M. Rhodes, *Times* correspondent, was severely wounded by a bullet in the shoulder. As will be seen from the details of the hospital arrangements given below, they are amply sufficient to deal with all the wounded from the battle.

The Royal Army Medical Corps had to pay its toll in wounded at Omdurman. Lieutenant-Colonel A. T. Sloggett, Senior Medical Officer of the First British Brigade, received a severe bullet wound of the left breast, and two men of the corps were wounded, one of them severely by a bullet in the head. Lieutenant-Colonel Sloggett was the senior medical officer of the Dongola expedition, and was mentioned in despatches for his services on that occasion. He arrived safely at the hospital at Abadieh on September 6th with the other wounded, and the Principal Medical Officer there telegraphs that he is "doing well and stronger," and that "all others are doing well, but many will require operative treatment."

Major Pinches, R.A.M.C., who as Surgeon to the 21st Lancers took part in the famous charge, seems to have had a very narrow escape. The correspondent of the *Daily Telegraph* writes: "Out of a total strength of only 320 men with which the regiment went into the fray it lost no fewer than forty killed and wounded. Several horses were quickly hamstrung and their riders were being cut to pieces by the ferocious foe. With one exception, no man who was once actually unhorsed was again seen alive. The single exception was Surgeon-Major Pinches. His horse was brought to the ground and the officer fell amongst the furious Dervishes. Sergeant-Major Brennan, who was riding ahead, saw the Major's peril, and gallantly returned to his assistance. After a tough fight, in the course of which Brennan killed several Dervishes, he suc-



ceeded in getting the officer on to his own horse and back to the regiment."

The Hospital and Sick Transport Arrangements.

The following are authentic details of the medical arrangements for the Soudan Expeditionary Force, and for bringing the wounded home. They have been very carefully thought out, and it is probable that no force has ever been more completely equipped in this respect.

The Principal Medical Officer with the Sirdar (Sir Henry Kitchener) is Surgeon-General Taylor, who has for his Secretary, Major Wilson, C.M.G.

The British force consists of two infantry brigades, the 21st Lancers, artillery, and engineers.

The Principal Medical Officer of the British Division is Lieutenant-Colonel Macnamara.

The following are the arrangements for the two British Brigades.

First Brigade (Brigadier-General Wauchope, C.B.).

Senior Medical Officer.—Lieutenant-Colonel Sloggett.

Warwickshire Regiment.—Major Irwin.

Lincolnshire Regiment.—Major Adamson.

Cameron Highlanders.—Captain Mathias.

Seaforth Highlanders.—Lieutenant Bliss.

There are five sectional field hospitals, each containing 25 beds, attached to this brigade as follows:

No. 1 Sectional Field Hospital.—Major Myles.
2 ,, ,, ,, Major Webb.
3 ,, ,, ,, Major Robinson.
4 ,, ,, ,, Major Wardrop.
5 ,, ,, ,, Major Dodd.

Second Brigade (Brigadier-General the Hon. N. Lyttelton, C.B.).

Senior Medical Officer.—Lieutenant-Colonel Hughes.

1st Battalion Grenadier Guards.—Major Kilkelly, Captain Austin.

Northumberland Fusiliers.—Lieutenant Jephson.

Lancashire Fusiliers.—Captain Luther.

Rifle Brigade.—Major O'Callaghan.

Five sectional field hospitals, each with 25 beds, are attached to this Brigade also, as follows:

No. 6 Sectional Field Hospital.—Major MacNeece.
7 ,, ,, ,, Major Wilkinson.
8 ,, ,, ,, Major Stewart.
9 ,, ,, ,, Major Thompson.
10 ,, ,, ,, Major Jones.

Cavalry and Artillery.

21st Lancers.—Major Pinches.

Artillery.—Major Clarkson and Lieutenant Gaine.

To the cavalry is attached No. 11 Sectional Field Hospital of 25 beds, under the charge of Major Sawyer. To the artillery No. 12 Sectional Field Hospital, with 25 beds, under the charge of Major Barnes.

Communications.

The wounded will be conveyed from the front by convoys on the Nile, that is to say, barges fitted up as temporary hospitals. They will go down the Nile to Atbara, where is the most southern stationary hospital.

Each convoy boat contains 25 beds; there is a medical officer in charge of each boat, who will have under his orders a compounder, sergeant, and four or five privates of the Royal Army Medical Corps. The names of these boats and the officers of the Royal Army Medical Corps in charge are as follows:

A.—Major Hunter, D.S.O.
B.—Captain Reily.
C.—Captain Graham.
D. Lieutenant Huddlestone.
E.—Major Carr.
F. Captain Thomson.
G. Captain Peeke.
H. Lieutenant McKessack.

Stationary Hospitals.

Atbara.—The most southern stationary hospital is at the point where the river Atbara joins the Nile. The hospital originally consisted of hospital tents to hold 100 patients. Recently a hospital of 200 beds has been built of mud bricks the walls are some 3 feet thick, the roof is lofty, and the ceilings are formed with matting, and thickly thatched with dhurra straw. This hospital could, if necessary, accommodate more than the minimum number of 200 patients, and the provision could be raised to meet the needs of 300 patients if necessary by means of tents. The following are the officers of the Royal Army Medical Corps attached to this hospital: Lieutenant-Colonel Leader, Major Smythe, Major Birrell, Lieutenant S. Archer, and Lieutenant Hopkins.

Abeidieh.—At Abeidieh, 15 miles north of Berber, is another large hospital built of mud bricks and providing accommodation for 300 sick or wounded. There is a large staff at this hospital, consisting of the following officers of the Royal Army Medical Corps: Lieutenant-Colonel Clery, Major Geoghegan, Major Battersby, Major Marder, Major Allen, Major Braddell, Major Burrows, Captain Girvan, Captain Borrodaile, Lieutenant M. Corkery, Lieutenant Cummins, Lieutenant McArdle, Lieutenant Stallard. The hospital is well found in every respect, and is provided with proper hospital clothing, and bedding and sheets.

Wady Halfa.—Here, where there is a break between the river and rail, there is a hospital of 50 beds under the charge of the following officers of the Royal Army Medical Corps: Major Baylor and Captain Alexander.

Shellal.—At this point, which is close to Assouan, where there is again a break between rail and river, there is a hospital with 50 beds under the charge of the following officers of the Royal Army Medical Corps: Captain J. Hayes and Lieutenant Hearn.

Roentgen Ray Apparatus.

Two sets of Roentgen ray apparatus have been provided. One of these, which has been taken up the Nile by Major Battersby, will be established at Abadieh. Considerable difficulty and the greatest care had to be exercised to get the apparatus to the hospital in good order. At Korosko the temperature was between 115° and 120°, but by dint of keeping the covers of the apparatus damp, it was got to its destination in good order, and, to the great relief of everybody concerned, was found to work well; the dynamo and tandem were tested some weeks ago. Major Battersby has the assistance of Sergeant-Major Bruce, Royal Army Medical Corps, who has made himself an expert in the manipulation of the necessary complicated apparatus. This will be the main depôt for Roentgen ray work, but Lieutenant Huddlestone, R.A.M.C., has taken a small outfit with 6-inch coil to the front.

Omdurman.

Omdurman, built with more than the ordinary disregard of sanitary principles, is extremely unhealthy. Originally a village, it was converted by the Mahdi into a temporary camp—"temporary" because he affected to believe that he would conquer Egypt and Arabia and die in Syria. The village of 1885 became a great straggling town in 1886, consisting, according to Father Ohrwalder, of a countless conglomeration of straw huts surrounded by small zaribas, with a few mud huts, of which the largest belonged to the Khalifa, the successor of the Mahdi, and to his chief emirs. The straw huts were gradually replaced by mud houses, for the most part miserable hovels, for any appearance of wealth was sure to entail upon the owner confiscation. Each man surrounded his house with a wall built round a yard, and it is not difficult to understand that the streets were no more than foul winding lanes. For police purposes the Khalifa made several wide roads through the town, but the whole place reeked, and no doubt reeks, with filth. The only idea of scavenging possessed by these apostles of a religion which prescribed so minutely the details of personal cleanliness appears to have been once a year to brush the foul accumulations in the narrow lanes out of sight into corners.

It is not surprising therefore to learn from Slatin Pasha that "fever and dysentery are the prevailing maladies in Omdurman," and that "between the months of November and March an almost continuous epidemic of typhus fever rages."

Sir Herbert Kitchener telegraphed on September 3rd, the day after the battle, that the stench in Omdurman was unbearable, and that he had moved the troops to Khor Shambat, apparently the place marked Shambu on the maps, a few miles

below Omdurman, where they were in a good camp on the river.

The intention, it is stated, is to establish a military Government in this part of the Soudan, and from the Sirdar's statement that "Khartoum is the best position," it may be assumed that he will be disposed to keep the bulk of the British force that may be required at this point, and not in or near pestilence-stricken Omdurman. However this may be, Sir Herbert Kitchener has throughout shown so keen an appreciation of the importance of the sanitary aspects of the expedition which he has organised and led with such brilliant success, that we may feel sure that no precautions which military exigencies permit to be taken will be neglected.

ASSOCIATION INTELLIGENCE.

NOTICE OF LAST QUARTERLY MEETING OF COUNCIL FOR 1898.

A meeting of the Council will be held on October 12th, 1898. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before that meeting—namely, September 22nd.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

South-Eastern Branch: East Sussex District.—The next meeting will be held at the Hospital, Hastings, at 3.30 P.M., October 6th.—Members desirous of reading papers or making any communication to the meeting are requested to inform the District Secretary, J. W. Batterham, M.B., Bank House, Grand Parade, St. Leonard's.

Lancashire and Cheshire and North Wales Branches.—A joint meeting of these two Branches will be held at Chester in the last week of September. All communications with regard to papers or reports of cases to be read and all applications for membership should be addressed, if concerning the Lancashire and Cheshire Branch, to Dr. James Barr, 72, Rodney Street, Liverpool, Hon. Secretary of that Branch; if concerning the North Wales Branch, to one of the Hon. Secretaries, Dr. W. Jones Morris, Portmadoc, or Dr. H. Jones Roberts, Pen-y-groes.

SPECIAL CORRESPONDENCE.

SYDNEY.

Consumption Hospitals.—Infectious Diseases.—Criminal Abortion.

Last year, in connection with the Diamond Jubilee of the Queen, a scheme was proposed to provide suitable hospitals for the treatment of pulmonary consumption. The plan proposed was the establishment of a hospital near Sydney for the treatment of more chronic and complicated cases of phthisis, sanatoria in different parts of the country in suitable climates, and, lastly, a hospice for the incurable cases. The amount raised up to date—between £13,000 and £14,000—is not nearly sufficient to complete this plan; but, rather than allow this money to lie idle, it has been agreed that a portion at any rate of the interest derived from its investment shall for the next two years be devoted to assist in the maintenance of the Thirlmere Home for Consumptives, near Picton. This institution was founded and for several years maintained entirely by the generosity of Colonel Goodlet, but it has lately been dependent upon public subscriptions and a Government grant. The funds having fallen very low, an appeal was made to the Executive Committee of the Queen Victoria Home for Consumptives scheme, and the arrangement above referred to was agreed upon. It is, however, to be hoped that before long sanatoria in parts of the Colony suitable for the climatic treatment of consumption will be established.

We have been visited recently by epidemics of different infectious diseases, and under the new Health Act, which requires the notification of cases of typhoid fever, diphtheria, and scarlet fever, a large number of cases of these diseases have been notified. Influenza, with its concomitant respiratory diseases, has been very prevalent, and now cases of measles and whooping-cough are very numerous in city and suburbs. It is some years since such an extensive outbreak of infectious disease has occurred in Sydney.

No fewer than three cases of criminal abortion have come before the city coroner recently. In each case death resulted from septicæmia a few days after the illegal operation, and in one case a large perforation of the uterus had been produced, apparently by the use of a catheter with stylet. Two women advertising as "ladies' specialists" have been committed for trial for wilful murder. The coroner's jury has added a rider to their verdict suggesting the urgent necessity for steps being taken to prevent these open and glaring advertisements appearing in the daily papers.

CORRESPONDENCE.

WATER FAMINES.

Sir,—With the close of summer comes the complaint from many places that the supply of water is inadequate for the work which the local authorities have undertaken to do by means of water; and water purveyors are being unreasonably abused because the rainfall is some 11 inches short of the average.

There appears to be in most places an ample supply of water for cooking, drinking, and washing, but the supply for water closets and sewer flushing is dangerously short. We have come to regard water as our only scavenger, and all must admit that when the supply is ample and money is no object it does sweep out the filth from our crowded manufacturing areas with an efficiency which makes it popular with those who are responsible for the cleanliness of our towns, but who have no direct responsibility in respect of the purity of our rivers or the production of food.

It is a serious matter however when our only scavenger strikes work in the dog days, and one is inclined to ask whether the time has not come when those who may elect to practise "dry methods" of sanitation and who are able and willing to become responsible for the wholesomeness of their own house and premises should receive some encouragement. So long as the charges for water are proportionate to the rateable value of the house and not to the quantity used, so long will householders be thriftless and wasteful in the use of water. In the same way, when every person within a certain district has to pay for sewers and sewage treatment in proportion to the value of his premises and without any reference to the use he may make of the sewers, it is hardly to be expected that the householder will make much serious effort to lessen the difficulties of the "authority" by burying excreta instead of persisting in the difficult task of attempting to poke them down a dry pipe. Every householder who has one-tenth of an acre of garden or even less is perfectly able to dispose of fæcal and other refuse and to purify his slopwater, not only without danger or offence but with manifest advantages on the side of health, beauty, and economy. Why such a householder should not receive some remission of sanitary rates and be permitted to pay for water by meter (if he have no well of his own) I am at a loss to understand. Legislation is now solely in the interests of those who crowd into jerry-built houses with the minimum "model" curtilage; and these un-

fortunate people, to whom life is only made endurable by an extravagant use of water, are naturally prone to turn and rend somebody (no matter who) when the rainfall is short of the average. The space round a dwelling ought never to be taken into consideration when taxing a house for purposes of public sanitation, because every inch of extra curtilage tends to diminish overcrowding. When, however, a garden, no matter how modest, increases the rateable value, and when water and sewerage are paid for in proportion to rateable value and with no reference to the use which is made of water or sewers, it is impossible not to believe that we are making for, even if we have not arrived at, a sanitary *impasse*, because the householder has no method of cleaning his dwelling except by an extravagant use of water, and no incentive to be thrifty in the use of a scarce article. It is needless to say that no towns which do not arrange for a daily removal of excreta can be said to give a fair trial to dry methods of sanitation. Most engineers regard a daily removal as a Utopian dream, but I have no doubt that with suitably contrived arrangements the collection of excreta would become as easy as the delivery of letters. My own twenty cottages are at present cleansed and the excreta disposed of in about half an hour, the scavenger being a feeble old man. Those who wish to see the methods which I advocate well carried out should inspect a row of eight tenements at Bemerton, near Salisbury, where the Rector, Canon Warre, has successfully managed to demonstrate to his parishioners how sanitation can be accomplished without ruinous sewage schemes. These eight tenements can be cleared in about five minutes, that is, the excreta can be removed from the dry-catch privies to a suitable carrying vessel at the rate of about 100 an hour.—I am, etc.,

Andover, Sept. 2nd. G. V. POORE.

THE OPEN-AIR TREATMENT OF PHTHISIS.

SIR,—So much attention is at the present moment being directed to the open-air treatment of phthisis, as to lead one to believe that to many practitioners it comes as a new treatment, and to the majority in Great Britain as rather experimental, and by no means established by clinical observation.

Several inquiries in the BRITISH MEDICAL JOURNAL of September 3rd, the resolution of the Congress of Tuberculosis calling for the establishment of sanatoria, and more especially a request from "Bart's" in the JOURNAL of August 13th for particulars of a private home where the open-air treatment could be carried out, lead me to claim for the practitioners of the Riviera an acknowledgment of their consistent treatment of phthisis on these lines ever since these health resorts were opened up.

The greatest claim for the advantages derived from the climate of the Riviera has always been the opportunities it affords the patient of living out of doors many more hours in the day than can be managed at home in Great Britain, and our great difficulty has been up to now to reassure our patients (who have been thoroughly imbued with the danger of exposing themselves to the outside air in inclement weather) that a *régime* entailing a day spent outside their dwelling and a night in a room with open windows will not bring to a speedy conclusion the life they have been taught is at the mercy of the slightest chill.

In the *Scottish Medical and Surgical Journal* of February I mentioned a striking case of this kind where the symptoms of fever, sweating, and cough disappeared without any aid from drugs by the application of this *régime*, and it is our endeavour to apply it in every case.

Too many patients coming abroad are unfortunately handicapped by unfavourable conditions they do not meet with at home, where they have relatives and friends to provide them with the comforts of life. For such the best results are obtained by residing in homes such as the Ladies' Home at San Remo (a semi-charitable establishment for ladies in ill-health) or in the house of a medical man, of whom several on the Riviera receive patients. There are, however, great numbers of patients who can transport with them to their winter resort their families and servants, and their home physicians may be confident that the open-air treatment will be carried out for them here as efficiently, if not more so, than it can be anywhere else.—I am, etc.,

HARRY GREY.

Strean, Italy, Sept. 5th. San Remo.

"A NEW AND ORIGINAL METHOD OF MAKING CASTS."

SIR,—I am sorry to have to disabuse the mind of Professor Peters that the process of making casts by means of paraffin is either new or original. I invented the process at Bathgate, where paraffin was plentiful, in or about the year 1864, and published it either in the *Medical Times and Gazette* or in *Nature* (perhaps both) about 1867-68. I have not Neale's invaluable *Digest* by me, or I could give the exact reference. I did all that Professor Peters has done, and more; I took life-sized casts of the living head and bust.

I did all this with melted paraffin, a rough painter's brush, a sponge, and some iced water. The ingenious spray is not necessary, and it certainly must be expensive and cumbersome; besides, it cannot be carried about. A far better way of cutting the mould than by laying in threads is my plan of using a fine saw of watch-spring steel.

About the same time I advised paraffin as a substance for the "appareil immobile," superior to starch or plaster, and though similarly recommended many years after by Professor William Macewen, it never seems to have obtained the popularity it certainly deserves.—I am, etc.,

Birmingham, Sept. 3rd. LAWSON TAIT.

APHASIA IN RELATION TO TESTAMENTARY CAPACITY.

SIR,—It has evidently escaped the notice of Sir William Gairdner that my colleague, Sir Frederic Bateman, in the second edition of his well known work on *Aphasia* (published 1890) has devoted a whole chapter (the tenth) to the jurisprudence of aphasia, in which the whole subject is considered at great length. Several instances are cited where wills made by aphasics were recognised by courts of law, one of such wills disposing of the large sum of £30,000. The author concludes by remarking that "aphasia does not necessarily entail testamentary incompetency; in fact, wills or other legal documents should, as a rule, be recognised as valid when the parties understand fully what is put before them, and can express assent or dissent with certainty, whether by articulate, written, or gesture language."—I am, etc.,

Norwich, Aug. 15th. MICHAEL BEVERLEY, M.D.

HOSPITAL REFORM.

SIR,—Will you kindly allow me space to ask your readers whether they are of opinion that it would be desirable and useful to hold a congress in London some time during the coming year to discuss the following subjects:—

1. The reform of the out-patient department of hospitals.
2. The desirability of converting all free dispensaries into provident dispensaries.
3. The best method of conducting provident dispensaries.

I may say at once that the promotion of such a congress would entail a good deal of expense, and we should be compelled to appeal to the profession for special help to carry it out.

The Hospital Reform Association has been able with a very limited income to arouse public interest in the hospital question, and has to a certain extent been the means of bringing about some tangible reforms. Much work, however, remains to be done, and it would be a pity that it should not be accomplished for the want of proper support from the profession.—I am, etc.,

T. GARRETT HORDER.

10, Windsor Place, Cardiff, Sept. 6th.

THE TEACHING OF MIDWIFERY.

SIR,—In the notice of the medical teaching institutions of Glasgow in the recent Educational Number of the BRITISH MEDICAL JOURNAL, no mention was made of the Glasgow Maternity Hospital. Both the indoor and outdoor practice of this hospital are open to senior students. In the outdoor department students are allowed to attend cases after they have been accompanied to their first three by the outdoor resident. They are also allowed to be present at all operations in the hospital, and to attend the clinical lectures.

This year post-graduate courses were commenced by the physicians. The whole work of the hospital is open to the members, and they are given opportunities of applying forceps, etc.

A glance at last year's report, published in the *Glasgow Medical Journal* for August, will show what a splendid field for gaining experience in difficult midwifery is open to students and graduates. In most maternity hospitals contracted pelves are rare, with us they are so common we are never without cases under treatment. Last year about 10 per cent. of the indoor cases were of this nature. Within the last few years considerably over fifty Cæsarean sections have been done.

Some time ago Dr. Cullingworth pointed out that puerperal septicæmia was still frightfully common in England and Wales; I am afraid the same is true of Scotland. At all events, Dr. Edgar has recently shown, in a paper published in the *Glasgow Medical Journal*, that the death-rate from puerperal causes is steadily rising. These are facts which have to be faced.

The question arises, Is the teaching of midwifery in our schools as it should be? In my day—and that is not very long ago—one had only to take six cases, now twelve are required, for the Universities of Edinburgh and Glasgow. Like hundreds of other students, I graduated without ever having seen forceps applied, or any abnormal cases treated. This is not as it should be.

I would suggest that the time has come when, besides attending twelve cases, each student should be compelled to take a three months' course of clinical instruction in a recognised maternity hospital, or maternity department of a general hospital.

Lectures on the theory of midwifery are all very well, but it is impossible for a man to learn midwifery from them alone. His clinical experience has to be gained after he begins to practise, too often at the expense of his patients.

With a five years' course, surely three months can be spared for gaining clinical experience in a branch of medicine of so much importance to the vast majority of practitioners.—I am, etc.,

ROBERT JARDINE, M.D.,
Glasgow, Sept. 4th. Physician to the Glasgow Maternity Hospital.

THE USE AND ABUSE OF MIDWIFERY FORCEPS.

SIR,—Dr. Milne Murray, in concluding an admirable address,[1] said, "One thing, I trust, will be made plain to all who hear what is to be said to-day, or who will read it afterwards, and that is that the use of the midwifery forceps is a matter of grave responsibility." This is assented to by all, yet in spite of it the ranks of the profession are replenished annually by a large body of men sent forth by the teachers of obstetrics totally unprepared to undertake this grave responsibility. Professor Fehling and Dr. Brassey Brierley alone of those who took part in the discussion referred to the means to be used to remedy this reprehensible state of affairs. Midwifery is from first to last a practical subject, and it ought to be taught practically.

Every student should be afforded the opportunity of personally applying the forceps under qualified supervision on more than one occasion before graduation. He would thus acquire a knowledge of the correct application and use of the instrument, and at the same time would carry away with him some idea of the conditions in which forceps are suitable and be in a better position to judge of when the conditions are unsuitable. Until this is done the teachers of obstetrics cannot be freed from blame for much of the injury that may result from an improper use of forceps.

The harm done by the mere unskilful handling of forceps is small and infrequent, I believe, compared with that wrought by the use of the forceps at the wrong time and in unsuitable cases. The former can be reduced to a minimum by proper teaching, but not so altogether; the latter being due either to a wilful disregard of sound principles, for a variety of reasons, or to an error of judgment on the part of the individual practitioner, and these things cannot, by any teaching, however good, be either foreseen or prevented.—I am, etc.,

August 22nd. AN IRISH GRADUATE.

SELF-INDUCED INSTRUMENTAL ABORTION.

SIR,—A lady, long since dead, once told me that she had brought on a miscarriage on herself 35 times. The method she employed was to squat down and pass a thick knitting-needle into the uterus. She was so punctual with her periods that directly she missed one she knew she had become pregnant. She was living apart from her husband. I was more than once sent for to find her in considerable danger from hæmorrhage. The suggestion whether a serious charge might not be brought against a medical man thus called into a case, made by your correspondent "Edin." (JOURNAL, September 3rd, p. 657), is of great importance. I was once called in to see a young lady (unmarried) who was miscarrying and losing rather freely, and I found out that she had just been to a medical man who had used means to induce an abortion, but she would not call him in to finish his work.—I am, etc.,

September 4th. H. S.

THE UNWHOLESOMENESS OF WOOD PAVEMENT: A SUGGESTED REMEDY.

SIR,—It will doubtless have occurred to many who have read in the BRITISH MEDICAL JOURNAL of September 3rd the account of a bacteriological inquiry into the relative merits of wooden as compared with other pavements that the objectionable features of old wooden pavement are obvious enough to our senses, but that the advantages which wood paving possesses, when in good order, over all other kind of pavement render it desirable that every attempt should be made to combat any drawbacks which attend its adoption. The remedy I wish to suggest is a solution—or rather a thin milky suspension—of lime which could be run over the surface so as to fill every crevice, and be reapplied at intervals varying with the amount of traffic upon the pavement and the shrinkage of the wood. There are chemical reasons which render lime specially suitable for the purpose. It would not only thoroughly deodorise and disinfect, but possibly prolong the life of the pavement by slightly petrifying the surface of the wood and making it waterproof. I anticipate several incidental advantages, one of which might possibly be that the greasy condition of the surface, often complained of, would be obviated. The remedy is inexpensive, and deserves a careful trial, as the existing system of wood pavement is a source of danger to the public health.

I have said that there are chemical reasons for my suggesting lime as a dressing for pavement. A moment's reflection and a little observation will satisfy a medical man or anyone who has studied chemistry. How does Nature probably give the finishing touches to egg shell? Why is whitewash sized? Why does the floor of a stable, if made of bricks and mortar, become intensely hard and look like egg shell? Is it not that the lime is there ready for carbonate of ammonia from the urine and albuminous material in the excreta? It is quite remarkable how lime acts even upon living tissues. I remember years ago seeing a boy's eye partially destroyed (with little inflammatory reaction in the surrounding tissues) by a small quantity of not very fresh mortar having been thrown in his face in a friendly fight with another boy. So mild were the symptoms that the poor boy was not brought to me until the mischief was done, forty-eight hours after the accident. Now, if lime can act on living tissues so, what a perfect antiseptic it must be, because its slight solubility will ensure steady, lasting action. In fact, we might almost say that the dirtier the streets the better for the desired chemical change with lime. Would it not also help to prevent the spread of diseases like tuberculosis, which may be and probably are carried in the winds from dried, pulverised, but otherwise unchanged expectoration and discharges?—I am, etc.,

Wimpole Street, W., Sept. 7th. ALFRED EDDOWES, M.D.

ASSURANCE COMPANY'S FEES FOR EXAMINATION IN ACCIDENT CASES.

SIR,—The opinion of other members is requested by "Referee" as to the fees paid for examination of patients and writing a report of injuries under the Workmen's Compensation Act. For seventeen years I have been largely engaged in this kind of work, and have been paid 10s. 6d. a case within a given radius, and larger fees beyond. The scale of fees for the new medical referees appointed by the Home Office is £2 2s. a case, £1 1s. a for a second examination of the same case if necessary, and mileage fees beyond two miles. If the Ocean Company's fee of 2s. is proper, why should the Government pay more than twenty times as much? The surgical facts and skilled opinion called for are the same in both employ-

[1] BRITISH MEDICAL JOURNAL, August 20th.

ments. The fee paid by life offices for examination and report on a policy of less value than £100 is 10s. 6d. The service rendered to accident insurance offices in regard to claims under the Employers' Liability Act and the Workmen's Compensation Act is of equal value and responsibility on the part of the certifying surgeon with that rendered to life offices. There is, therefore, no justification for the ridiculous fee paid by the Ocean Company.

It is for the medical profession to say whether it will permit itself to be sweated in order that an insurance company may carry out a system of "under-cutting" to acquire this class of business, and oust other offices who pay their doctors fairly.—I am, etc.,

August 24th. AN INSURANCE DOCTOR.

INFANTILE SCURVY IN NORTH AMERICA.

SIR,—In an editorial in the BRITISH MEDICAL JOURNAL of September 3rd, page 639, some of the results obtained by a Committee for the Collective Investigation of Infantile Scurvy in North America are reported and commented on. This report, based on an analysis of 379 cases, forms the most important statistical statement on the subject which has been published, and as it is to the writings of Dr. Cheadle and Dr. Barlow that the profession both in this country and in America are indebted for their knowledge of the disease, the writer of the editorial naturally examines the report to see how far their conclusions have been supported. Apparently as regards the symptomatology he is disappointed, for he writes as follows: "It thus seems that what were described by Barlow as among the most characteristic symptoms are in reality insignificant." Curiously enough, however, the report gives the following details of the characteristic symptoms: "Out of 327 cases, pain and tenderness were the first symptoms in 145, the gum affection in 42, interference with motion in 36, etc. The most prominent symptom was undoubtedly pain, which was present in 314 cases, the legs being preponderantly affected. Interference with motion occurred in 319 cases, again mainly in the legs. The position of the limbs was normal in only 17 out of 205 cases; in 152 of the remainder they were flexed." These characteristic symptoms and the lesions producing them—namely, subperiosteal hæmorrhage—formed the most important parts of Dr. Cheadle's and Dr. Barlow's researches, and are the distinguishing features of infantile as contrasted with adult scurvy. It would appear, therefore, that the American report, instead of refuting, has most amply confirmed the views of English authors.—I am, etc.,

Old Cavendish Street, W., Sept. 5th. G. A. SUTHERLAND.

OBITUARY.

THOMAS FRANCIS I'ANSON, M.D.,

Whitehaven.

DR. THOMAS FRANCIS I'ANSON, of Whitehaven, whose death we announced in the BRITISH MEDICAL JOURNAL of August 27th, was a member of an old Yorkshire family, and was born in 1825. He commenced his medical training by serving a three years' apprenticeship at Mount Sorrel, Leicester. In 1842 he entered as a student at St. George's Hospital, and on finishing his curriculum, being still too young to qualify, he went to Paris, where he worked in the Anatomy School at Clamart and in the hospitals. He became M.R.C.S.Eng. and L.S.A. in 1846, taking the degree of M.D. King's College, Aberdeen, in 1848. In 1846 he went to Whitehaven, where he remained up to the time of his death. In 1868 he was admitted a Licentiate of the Royal College of Physicians of London.

Dr. I'Anson was House-Surgeon to the Whitehaven and West Cumberland Infirmary from 1846 till 1849, when he became Visiting Surgeon from 1850 to 1880, when he was appointed a Consulting Surgeon, a post which he continued to hold till his death. In October, 1896, he completed his fifty years' service to the institution, when he was presented with his portrait.

At the annual meeting of the British Medical Association in 1896 in Carlisle, Dr. I'Anson was President of the Ethical Section, when he exhibited great dignity and tact in the discharge of the arduous duties. He was the third President of the Border Counties Branch of the Association, and was a member of the Branch Council as well as a member of the Council of the British Medical Association. He was a man of great literary culture, and kept up the knowledge of French literature which he had gained in his student days. He was keenly interested in the welfare of the Association, and attended several of the annual meetings. He was the third President of the Branch, and his address on Advances of Medicine during the Previous Twenty-five Years was much appreciated. At the time of his death he was father of the medical profession in Cumberland, and was universally beloved by a large circle of friends. His place in the profession and in the public life of Whitehaven will be difficult to fill. In his practice he is succeeded by his son, Dr. Welby I'Anson.

Dr. I'Anson was a member of the Council of the Cumberland and Westmoreland Antiquarian and Archæological Association, until recently, and took a considerable interest in local research. He was a staunch Conservative. He was chairman of the Whitehaven Centre of St. John Ambulance Association, and examiner in the district. For some years he was a trustee of the Town and Harbour, and he was placed on the Commission of the Peace for the county about 1885. He was first president of the Whitehaven Scientific Association, being twice re-elected. He was the originator of the successful West Cumberland Medical Society. At the commencement of the Volunteer movement Dr. I'Anson was Surgeon to the Rifle Volunteers for several years, subsequently to the Militia, the Naval Reserve, and the Furness Railway, and at one time to the lighthouse department of the Admiralty. Amongst other local services may be noted the assistance which he gave in the promotion of successful amateur theatrical entertainments, which owed their inception largely to his assistance; and his generous patronage of the Whitehaven Choral Union, of which he was president. He also assisted to promote the Horticultural Society, was on the committee of the Lifeboat and Rocket Brigade, a trustee of the Whitehaven Savings Bank, vice-president of the Whitehaven District Nursing Association, and a member of the Diocesan Conference. He also contributed to the meteorological reports by his accurate annual statistics of local rainfall.

PROFESSOR LEOPOLD RITTER VON DITTEL, M.D.

PROFESSOR VON DITTEL, the distinguished surgeon of Vienna, who died on July 28th, was born at Fulnek in Silesia, on May 15th, 1815. He was assistant to von Dumreicher from 1853 to 1857. In 1856 he qualified as *Privat-docent* in surgery. In 1861 he was appointed chief of the third surgical section of the General Hospital, Vienna, and in 1867 he became extraordinary Professor. Twelve years ago he resigned his chair but he continued to discharge his duties at the hospital till 1896, when he retired from active practice. The immediate cause of his withdrawal from public life is said to have been the shock which he received from witnessing the sudden death of his son-in-law in his laboratory two years ago. Professor von Dittel was the oldest member of the Imperial Royal Medical Society of Vienna, both in years and in membership. He joined it in 1850, and repeatedly served the office of chairman, being elected vice-president in 1892, and succeeding Billroth as president in 1894. His professional activity covered the whole field of surgery, but he gave special attention to urinary diseases, in which for many years he was one of the recognised leaders. His chief works are the Injuries and Diseases of the Male Urinary and Sexual Organs, forming part of Billroth and Pitha's *Handbuch der allgemeiner und speciellen Chirurgie*, and Strictures of the Urethra in Billroth and Lücke's *Deutsche Chirurgie*. Outside this province of surgery Dittel did important work in orthopædics, especially with regard to flat-foot and coxitis; he was also a pioneer in intestinal surgery, and performed the first resection of the bowel in a case of anus præternaturalis; this being the third case of resection of the intestine recorded in surgical literature after the operations of Gussenbauer and Reybard.

Von Dittel's lectures, which were always admirably illustrated by anatomical demonstrations, were attended by students from all the principal countries of the world, and his counsel was sought by patients from the most distant lands.

His name will remain inscribed on the roll of fame of the great Vienna school in conjunction with those of Rokitansky, Skoda, Hebra, Arlt, Bamberger and Billroth.

Hon. W. GUYBON ATHERSTONE, M.D., F.R.C.S., Grahamstown, South Africa.

By the death of Dr. Atherstone South Africa has lost one of its most interesting personages, and the medical profession in particular one of its most prominent representatives. He went to the Colony as early as 1820, had seen the country develop from what was practically a *terra incognita* into one of the most important of Her Majesty's dominions. The keen interest which he took in everything that pertained to the welfare of his adopted country made him in his old age, "the Grand Old Man" of South Africa. Alike in the legislature, the asylum, the museum, and the hospital, with all of which he was associated, and in botanical and geological pursuits Dr. Atherstone was active to good purpose. He was one of the first to perform a major operation under ether. His geological studies gained for him considerable distinction many years ago, and to his researches may be traced the beginning of what are now the largest and wealthiest diamond mines in the world. It was Dr. Atherstone who recognised the nature of the first stone discovered in 1868, which was ultimately sold for £800. Dr. Atherstone saw active service in several of the Kafir wars on the staff of Sir Harry Smith. He was President of the local Branch of the British Medical Association at the time of his death, and was unanimously elected Hon. President of the South African Association at its first Congress held in Grahamstown in 1896.

The "Old Doctor," as he was affectionately called, had for some years retired from active practice, but to the last his interest in everything referring to his profession remained as keen as ever. He resided in Grahamstown, where he died on June 26th.

Mr. Frederick John Hawthorn, of Oaken, near Wolverhampton, who died on August 1st at the age of 56, studied medicine at the London Hospital, and became M.R.C.S.Eng. and L.S.A. in 1863. He was appointed House Surgeon and afterwards Assistant Surgeon to the Poplar Hospital, and finally settled at Oaken, where he acquired a large practice. He was Medical Officer and Public Vaccinator to the Tettenhall and Codsall District of Seisden Union. Mr. Hawthorn was universally honoured and esteemed throughout the district. He was a man of commanding figure, who won the confidence of his patients by his proved professional skill not less than by the charm of his manner and his genuine kindness of heart. Mr. Hawthorn, who was unmarried, leaves an aged father and mother, aged respectively 86 and 88, to mourn his loss. The cause of his death was heart failure and general dropsy.

One of the best-known and the oldest of the medical practitioners of the Whitworth district passed away not long ago in the person of Mr. James Shackleton, whose death occurred at his residence at Bridgemills on July 20th. He had suffered from lead poisoning some fifteen years ago, from the effects of which he had never thoroughly recovered. He was born at Rochdale in 1828. At the age of 14 he was sent to work a mill, and when a young man he went into the Todmorden district, where he was apprenticed to the foundry business with an uncle. He spent all his leisure time in the study of electricity, magnetism, and other allied subjects. Owing to a breakdown in health he had to leave the foundry. He then became assistant to his brother, who was a chemist at Whitworth. He began the study of medicine in the Pine Street School of Medicine, Manchester, which was the precursor of Owens College. He afterwards studied in London, and in 1864 became M.R.C.S. and L.S.A., and commenced to practise at the Ardwick and Ancoats Dispensary, Manchester, where he remained about two years. He then settled at Whitworth, where he continued to practise till his death. Mr. Shackleton was of a very retiring and studious disposition, and took great interest in science, particularly geology and botany. He was well acquainted with the British flora, and had occupied the position of President of the Whitworth Floral and Horticultural Society ever since its establishment over twenty years ago.

The death is recorded of Mr. Septimus B. Farr, of Andover, at the age of 65 years. He qualified as L.S.A. in 1854, M.R.C.S.Eng., 1855, and L.R.C.P. and L.M.Edin. in 1867. He first began to practise at Andover in 1869, and was for many years Medical Officer of Health for the borough and Medical Officer to the Workhouse. The funeral was attended by a number of friends as well as the Mayor and Corporation of Andover and other borough officials.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE ROYAL ARMY MEDICAL CORPS AND THE *ARMY LIST*.

We observed with regret that in the *Army List* for August the Royal Army Medical Corps was not placed in its proper position among the corps of the army, but was put among the army departments. The error, we understand, is to be rectified in the forthcoming issue of the *Army List*, in which the Royal Army Medical Corps will take its proper position after the Army Service Corps.

ROYAL ARMY MEDICAL CORPS.

Colonel C. F. Pollock, B.A., M.B., retires on retired pay, September 7th. He entered the service as Assistant-Surgeon, October 1st, 1867; became Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1879; was granted the rank of Lieutenant-Colonel, October 1st, 1887; was made Brigade-Surgeon-Lieutenant-Colonel, June 6th, 1893; and Colonel, on August 3rd, 1898. He served in the Egyptian war of 1882, and was at the battle of Tel-el-Kebir, receiving a medal with clasp, and the Khedive's bronze star.

Major A. Harding, half pay, also retires on retired pay, September 7th. He was appointed Surgeon, August 4th, 1878, and Surgeon-Major twelve years thereafter; he was placed on half-pay on account of ill-health in June last. He was in the Zulu war in 1879, in medical charge of the 57th Foot, being present in the engagement at Gingindhlovu and at the relief of Ekowe (medal and clasp); in the Boer war of 1881 in medical charge of Fort Marabastadt from December, 1880, till March, 1881 (mentioned in despatches); subsequently at Pretoria and Standerton until the withdrawal of the British troops; in the Egyptian war of 1882 with No. 2 Bearer Company, being present at the action at Kassasin on September 9th, and at the battle of Tel-el-Kebir (medal and clasp, and Khedive's star); and in the Nile Expedition in 1884-85, when he took part with the Desert Column under Sir Herbert Stewart, and was present at the actions at Abu Klea and Abu Kru, and in the reconnaissance before Metammeh (mentioned in despatches, two clasps).

Surgeon-Major George Schuyler Cardew, M.B., died at Murree, India, on August 17th last, aged 37. He was the son of the late Dr. Carden, Inspector-General of Hospitals, Bengal Army, and entered the service as Surgeon, January 30th, 1886, receiving his promotion to Surgeon-Major, January 30th, 1898.

Major W. C. Beevor has been selected for appointment as medical officer to the 3rd Battalion Coldstream Guards.

ARMY MEDICAL RESERVE.

Surgeon-Captain Robert Stirling, M.D., 4th Volunteer Battalion the Black Watch (Royal Highlanders), is appointed Surgeon-Captain, September 7th.

INDIAN MEDICAL SERVICE.

The undermentioned Surgeon-Lieutenant-Colonels, Madras Establishment, have been promoted to be Brigade-Surgeon-Lieutenant-Colonels from the dates specified: H. FitzL. P. F. Esmonde-White, October 31st, 1897 (first commission, October 1st, 1872); W. R. Browne, M.D., *vice* Brigade-Surgeon-Lieutenant-Colonel D. Sinclair, promoted and seconded, March 1st (first commission, April 1st, 1873); A. H. Leapingwell, March 1st (first commission, April 1st, 1873); H. Allison, M.D., June 30th (first commission, September 30th, 1873).

MILITIA MEDICAL STAFF CORPS.

Surgeon-Captain W. W. Lake is promoted to be Surgeon-Major, July 24th.

THE VOLUNTEERS.

Surgeon-Captain R. P. Mackenzie, M.B., 1st Shropshire and Staffordshire Artillery, and Surgeon-Lieutenant G. A. Skinner, 1st Sussex Artillery, have resigned their commissions, September 3rd.

Surgeon-Captain E. D. Berton, M.B., 2nd Volunteer Battalion the Royal Fusiliers (City of London Regiment), is promoted to be Surgeon-Major, September 3rd.

Surgeon-Captain F. F. Moore, 3rd Volunteer Battalion the King's Liverpool Regiment, has resigned his commission; he is also granted the rank of Surgeon-Major, with permission to retain his uniform, September 3rd.

Mr. Alexander John Campbell, M.B., is appointed Surgeon-Lieutenant in the 2nd (Berwickshire) Volunteer Battalion the King's Own Scottish Borderers, September 3rd.

Surgeon-Captain W. Chalmers-Cowan and Surgeon-Lieutenant G. Halley, 1st Forfarshire Artillery, are promoted to be Surgeon-Major and Surgeon-Captain respectively.

Surgeon-Major A. R. Hopper, 8th Lancashire Artillery, is promoted to be Surgeon-Lieutenant-Colonel, September 7th.

Surgeon-Lieutenants A. Campbell, M.B., and J. Bradford, 9th Lanarkshire Rifles, are promoted to be Surgeon-Captains, September 7th.

ROYAL MEDICAL NAVAL SERVICE.

THE following appointments have been made at the Admiralty: HERBERT HOLYOAKE, Surgeon, to the *Pembroke*, additional, August 21st; GEORGE W. BELL, Fleet Surgeon, to the *Magnificent*, August 27th; JOHN LOWNEY, Staff Surgeon, to the *Proserpine*, September 7th; DANIEL J. P. MCNABB, Staff Surgeon, to the *Northampton*, for the *Calliope*, September 7th.

Staff-Surgeon ARTHUR W. MAY has been promoted to be Fleet-Surgeon, August 21st. He was appointed Surgeon, March 30th, 1878, and Staff-Surgeon twelve years thereafter. He was Surgeon of the *Achilles* during the Egyptian war in 1882 (medal and Khedive's bronze star); he landed with the Naval Brigade for service in the Soudan; with the Nile Expedition for the relief of General Gordon at Khartoum, 1884-85 (Camel Corps); was present in the ss. *Sophia*, with Lord Charles Beresford at the relief of Sir C. Wilson; and was mentioned in despatches for his attention to the wounded under fire (clasp).

MILITARY QUARANTINE IN JAPAN.

THE report of the military quarantine system used in Japan during the war between that country and China, rendered by Dr. S. Goto, Director of the Health Division of the Ministry of the Interior, states that 687 ships and 232,346 men underwent quarantine, while the number of articles of infected clothing treated was 932,779. The report, issued by order of Baron Kodama, Major-General and Vice Secretary of War, shows that genuine good work was done by the quarantine staff, both officers and men.

THE INDIAN PRESS ON THE NEW WARRANT.

THE *Pioneer* of August 13th devotes a leading article to "the R.A.M.C.," and accepts fairly, on the whole, the titles and corps, but admits that in India the army medical officers have not as yet got their full rights. The subject of pay is discussed, and the right of medical officers to demand a proper adjustment admitted. The most important point which is dealt with is the right of officers "to the direct and immediate control" of the *personnel* and *matériel* of hospitals, for which at present there is a divided responsibility between the medical department and the commissariat. To this existing "divided responsibility" can be attributed the grave defects of sick transport (kahars and animals) experienced during the recent frontier war.

Another matter of significance to which attention is drawn is the necessity of Government giving grants to medical officers' messes, which should, the *Pioneer* says, be placed under the same rules as similar establishments for other corps.

ARMY MEDICAL EXAMINATION.

W.O.C.—There do not seem to be any special textbooks on physics, chemistry, and physical geography for the Army Medical Examination, and there are many to choose from. In physics, R. Stewart's *Lessons in Elementary Physics*; Ganot's *Treatise on Physics*; or Glasebrook's *Practical Physics*, may be mentioned. In chemistry there are many textbooks in use at different medical schools. In physical geography there are Geikie's *Elementary Lessons*, and Page's *Advanced Textbook*.

EXAMINATION FOR VOLUNTEER MEDICAL OFFICERS.

PENARTH is a Surgeon-Lieutenant in the Rifle Volunteers, and has to pass an examination within two years of obtaining his commission. He wishes to know what books to read for the examination.

"*" The most recent work of the kind is one entitled, *A Handbook for Volunteer Medical Officers*, by Surgeon-Major Matthews and Surgeon-Captain Harper (London: Allman and Son; 3s. 6d.). All the information required for the examination will be found in that. Another book which would be found useful is *A Manual for Volunteer Medical Service*, by Surgeon-Captain Sleman. But in addition to this, practical work is necessary, and this can be got at the Volunteer Ambulance School of Instruction, 8, Portman Street, Portman Square, W., or if the medical officer cannot come to London he would do well to join the correspondence class of the Volunteer Medical Association, particulars of which can be got from Surgeon-Captain Fletcher Croome, Streatham Park, S.W. The examination is not a difficult one to anyone who will take the trouble to prepare for it.

MEDICO-LEGAL.

PRINCIPAL AND ASSISTANT.

E. D. writes to inquire what notice is necessary for a dispenser's dismissal.

"*" If the dispenser resides in the principal's house, it would seem that one calendar month's notice would be sufficient to determine the employment. If an outdoor assistant it would seem that three months' notice would be required, and in cases where no time is expressed the engagement is considered a yearly hiring, and cannot be terminated before the end of the year. At the time of the engagement was nothing whatever said as to the notice which would be given or required? It is always most desirable to have some agreement on such a point rather than to rely upon law on the subject or upon the "customs" which seem to prevail in the profession with regard to notice.

UNQUALIFIED PRACTICE.

E. H. B.—It would be desirable to obtain particulars of any unqualified practice on the part of the persons whose names are given in the letter of our correspondent, and if any such particulars are procured, to forward the same to the Clerk to the Society of Apothecaries, Blackfriars, London.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,749 births and 5,242 deaths were registered during the week ending Saturday last, September 3rd. The annual rate of mortality in these towns, which had increased in the seven preceding weeks from 14.7 to 23.2 per 1,000, further rose to 24.4 last week. The rates in the several towns ranged from 15.1 in Halifax, 15.3 in Huddersfield, 17.2 in Oldham, and 17.3 in Portsmouth to 31.1 in Bolton, 31.2 in Gateshead, 36.7 in Salford and in Wolverhampton, and 37.0 in Sunderland. In the thirty-two provincial towns the mean death-rate was 26.0 per 1,000, and exceeded by 4.0 the rate recorded in London, which was 22.0 per 1,000. The zymotic death-rate in the thirty-three towns averaged 7.6 per 1,000; in London the death-rate was equal to 5.9 per 1,000, while it averaged 8.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 12.8 in Bolton and in Salford, 14.9 in Sunderland, 16.0 in Wolverhampton, and 17.0 in Preston. Whooping-cough caused a death-rate of 1.1 in Halifax and in Sunderland, and 1.3 in Croydon; and diarrhœa of 11.6 in Salford, 11.9 in Bolton, 12.2 in Leicester, 12.7 in Sunderland, 14.8 in Preston, and 15.4 in Wolverhampton. The mortality from measles, from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria in the thirty-three towns included 19 in London, 5 in Swansea, 4 in Leeds, 3 in Birkenhead, and 3 in Liverpool. One fatal case of small-pox was registered in Gateshead, but not one in London or in any other of the thirty-three large towns; and only 2 small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals on Saturday last, September 3rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,203, 2,241, and 2,178 at the end of the three preceding weeks, had risen to 2,240 on Saturday last, September 3rd; 238 new cases were admitted during last week, against 201, 187, and 182 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 3rd, 929 births and 596 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.1 and 18.4 per 1,000 in the two preceding weeks, further rose to 19.8 last week, but was 4.6 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Perth and 17.4 in Aberdeen to 27.9 in Leith and 28.9 in Greenock. The zymotic death-rate in these towns averaged 4.1 per 1,000, the highest rates being recorded in Greenock and Leith. The 270 deaths registered in Glasgow included 2 from scarlet fever, 13 from whooping-cough, 5 from "fever," and 39 from diarrhœa. Three fatal cases of scarlet fever and 12 of diarrhœa were recorded in Edinburgh; and 2 of measles and 9 of diarrhœa in Leith.

THE VACCINATION ACT.

THE following form of certificate has been approved by the metropolitan magistrates for issue in cases where they are satisfied that an applicant has a conscientious objection to vaccination as provided in Section 11 of the new Act:

Metropolitan Police District. To wit.

I hereby certify that ——, the parent [or other person having the custody] of the child ——, born on the —— day of ——, 18—, has this day stated before me that —he conscientiously believes that vaccination will be prejudicial to the health of the said child, and that —he has a conscientious objection to the child being vaccinated on that ground; and I am satisfied that —he has such conscientious belief.

Given under my hand at the —— Police-court, this —— day of ——, 18—.

——, one of the magistrates of the police-courts of the metropolis.

Sch. III., E. 9, certificate of objection Vaccination Act, 1898 (61 and 62 V., c. 49).

A requisition for 15,000 of these forms in counterfoil, made up in books, has been issued.

INDIA AND THE COLONIES.

INDIA.

THE LADY DUFFERIN HOSPITAL, KARACHI. Some twelve years ago the need of a women's hospital at Karachi was recognised, and steps were taken to supply the want. The appeal, however, was not very successful at the time, and it was not until Mr. Edulji Dinshaw, a wealthy and influential resident of Karachi, came forward and generously offered to provide the necessary funds, that the project of erecting a women's hospital was put into practical shape. By Mr. Edulji Dinshaw's munificence the Committee that had been formed were able to invite Lady Dufferin to lay the foundation stone of the new hospital in 1894. After the ceremony the construction of the hospital was proceeded with, but its completion was delayed considerably by the outbreak of plague, which caused workpeople to leave the town. The delay was, however, only temporary, and on the occasion of Lord Sandhurst's visit to Karachi the hospital, fully completed

and fitted up with every modern requirement, was formally declared open. The hospital has a fine appearance, is two storeys in height, and is supplied with verandahs on both sides. Its cost was Rs. 72,000; it accommodates 40 patients, and special arrangements have been made for maternity cases. The Parsees have separate provision made for them. Miss Arnott is the Medical Officer, and will have under her a staff of nurses. The quarters for her and for the nurses are excellent.

THE INSANITATION OF OOTACAMUND (THE NILGIRIS).—The salubrity of this well-known and attractive hill station is now in question. Last year there was a typhoid epidemic, and it has been followed this year by a still more serious outbreak. Residents are beginning to ask whether something is not radically wrong with the sanitation of the place, and whether independent inquiry by an expert into the origin and extent of the present outbreak should not be undertaken at once to re-establish public confidence.

CALCUTTA: THE HEALTH OFFICER'S REPORT.—The most noticeable feature in the report of Dr. J. N. Cook, the health officer for Calcutta, for the months of March and April, 1898, is the relation of the birth-rate to the death-rate, for the latter far outnumbers the former. The returns give for the two months 1,540 as the number of births, whereas the number of deaths stands at 3,814. This predominance of deaths over births would seem to indicate a rapid decline of the population, but it must be remembered that in all Oriental cities the number of natives is constantly recruited from the country districts, and that adults, chiefly males, seek occupation in the large cities. Vaccination seems to be well appreciated by the natives, for during the two months in question 3,725 persons were vaccinated and 637 revaccinated. Hindus and Mohammedans constituted the bulk of those vaccinated, showing that in India, at all events, the prevention of small-pox by vaccination is firmly believed in. No virulent epidemic prevailed during March and April, but there were 355 deaths from cholera, 691 from bowel complaints, and 1,728 deaths from "fever"; in other words, 2,774 deaths occurred from "preventable" causes. The average death-rate in Calcutta is always high, and compared with the rate of large cities in Britain it must be held to be very high. The average death-rate per 1,000 for the two months stands at no less than 34·45, and this too at a time when no special epidemic disease prevailed.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE EAST SUSSEX LUNATIC ASYLUM, HAYWARD'S HEATH.

According to the thirty-ninth annual report of this asylum for the year 1897, the total number of cases under care and treatment was 1,138. The average daily number resident was 880. The total number admitted was 263, and the discharges numbered 192. Death accounted for no fewer than 101, giving a mortality of 11·4 calculated upon the average daily number resident. The cause of death in 56 cases was some form of cerebral disease; 21 died from thoracic diseases, and 9 from senile decay. The recovery rate calculated upon the number of admissions was low, being 27·8 per cent. The average annual rate of recovery at this asylum from 1857 to the present time is given as 28·5 per cent. Dr. Saunders, in his report, gives a useful table showing the expectancy of recovery on admission, and from it we gather that of the males admitted, 59 were bad or hopeless cases, and 24 were actively suicidal, and of the females 66 were bad or hopeless, and 50 suicidal. Seventy-four suicidal cases admitted in one year means a heavy strain upon the nursing resources of an institution, and it is well to note that the committee have found it necessary to increase the staff by the addition of fifteen nurses (male and female).

Dr. Saunders justly comments upon the large number of senile cases sent to the asylum, and properly remarks that for a mere senile breakdown a person might be spared the association of a lunatic asylum with its life's history, and adds that the combined ages of 4 out of 9 females admitted during February amounted to no less than 340 years.

MR. CHARLES H. B. SHEARS, surgeon to the Liverpool Eye and Ear Infirmary, has been appointed by the Home Secretary ophthalmic referee for County Court Circuit 6 under the Workmen's Compensation Act.

ANTIRABIC VACCINATION.—It appears from a report by Professor Calabrese (*La Rif. Med.*, July 27th, 1898), that 833 persons underwent antirabic-vaccination practised at the antirabic institute in Naples during 1896 and 1897. Of these 6 were bitten by dogs certainly affected with rabies, 371 by dogs which presented signs and symptoms of rabies, and 6 by animals suspected of having the disease. Of the total number 47 were bitten on the face, 452 on uncovered parts, and 334 on covered; 168 were cauterised by fire, 178 by chemical caustics, and 487 left alone; 639 were males, and 194 females. Most of the cases occurred in the late summer. Only 5 cases were unsuccessful as regards results; 2 of these the patient did not come for treatment until seven and seventeen days after the bite. The total mortality was 0.6 per cent. Since the institute was founded (1886) there have been 2,098 cases under treatment, with a mortality of 0.8 per cent. Most of the fatal cases occurred in children, and from bites on the face. Cauterisation seemed to have no beneficial influence.

MEDICAL NEWS.

CREMATION has been officially recommended by the Indiana (U.S.) State Board of Health.

THE Prussian Minister of the Interior, Herr von der Recke, has issued a rescript ruling that in future female doctors are to be appointed for the examination of prostitutes brought in for the first time.

THE Lord Mayor of Manchester will distribute the prizes, certificates, and bronze medal of the Plumbers' Company, awarded in connection with the recent exhibition of plumbers' work in Manchester on September 19th. On the same occasion a lecture on the Registration of Plumbers and Domestic Sanitation will be given by Dr. Mansel-Howe.

PROFESSOR ROBERT KOCH, accompanied by his assistants, Professor Pfeiffer and Dr. Kossel, has left Berlin for several months. His object is to study malaria in Southern Europe. A short book by Professor Koch, entitled, *Travelling Notes on Rinderpest, Bubonic Plague in India and Africa, on Tsetse or Surra Disease, Texas Fever, Tropical Malaria, and Black Water Fever* has just appeared.

MEDICAL REPORTS OF THE HISPANO-AMERICAN WAR. According to the New York *Medical Record*, the army surgeons in the field and camps are sending in complete reports of the cases which have come under their care, both medical and surgical. Although the war was brief, the number of sick and wounded soldiers has been over 45,000. The hospital records of this war will, it is claimed, be most complete, and will be eminently satisfactory from the statistician's point of view.

THE Nurses' Co-operation, 8, New Cavendish Street, Portland Place, has received a most munificent gift from the Dowager Lady Howard de Walden. She has presented an excellent site conveniently near to the offices of the Co-operation for the erection of a Nurses' Home and Club. Lady Howard de Walden has also promised to defray a large proportion of the cost of erecting a suitable building. The plans have already been prepared by her architect, and the ground has been cleared for the new building.

THE INSTITUTE FOR MEDICO-LEGAL MEDICINE IN BUCHAREST.—In a recent number of the *Berliner klinische Wochenschrift* Professor Strassmann gives an account of a visit to the Medico-Legal Institute of Bucharest. He says that the medical profession is treated with much greater respect there, and is given a higher and more independent position in the State than in any of our European cities. Professor Minovici, who is the director of the Institute, is also coroner and director of the Morgue, where the bodies lie until identified; if not indentified they are buried by order of the director. The Institute itself is fitted up in the most elaborate manner; every detail has been carefully considered. A large lecture theatre is now being erected near the Institute for teaching purposes. The *post-mortem* room is large and well ventilated, and on the walls are hung diagrams of the various parts of the body, which can be referred to when necessary. Bertillon's system of anthropometrical measurement is carried out. A bacteriological and chemical laboratory also forms part of the scheme.

THE CLIMATE OF WEI-HAI-WEI.—A correspondent of the *Times* gives an interesting account of our new possession in China, where ultimately our troops will no doubt be quartered. He says that, on the whole, the climate is an extremely good one, and most suited to Europeans, and very little sickness need be expected. British soldiers could work all the day except during July and August between 10 A.M. and 3 P.M. The water is good and fairly plentiful on the mainland from springs and wells, but the supply on the island is very limited and the quality very bad. The people are contented, healthy, and industrious. The town of Wei-hai-Wei is in the north-west corner of the bay, and is surrounded by a wall. It contains about 4,000 people. Sulphur springs are found on the beach. On the mainland are six camps composed of wooden Japanese huts, extremely neat, but unsuited for extremes of heat and cold. Each camp would accommodate about 600 men, although the Japanese had more in them. The country

taken over by the British Government extends ten miles inland, measured from the coast, and there is a twelve mile neutral zone beyond. The hills inland are devoid of trees and nearly bare. The people on the mainland are chiefly occupied in fishing and agriculture, and seemingly industrious and quiet.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been appointed House Officers from September 6th:—*House-Physicians:* J. R. Charles, B.A., M.B., B.C.Camb., L.R.C.P., M.R.C.S.; E. F. Buzzard, B.A., M.B., B.Ch.Oxon. *House-Surgeons:* E. H. Cobb, L.R.C.P., M.R.C.S.; A. C. Robinson, L.R.C.P., M.R.C.S.; F. L. A. Greaves, L.R.C.P., M.R.C.S.; A. H. Greg, B.A.Camb., L.R.C.P., M.R.C.S. *Assistant House-Surgeons:* S. O. Bingham, L.R.C.P., M.R.C.S.; E. M. Corner, M.A., M.B., B.C.Camb., B.Sc.Lond., L.R.C.P., M.R.C.S.; J. A. Barnes, L.R.C.P., M.R.C.S.; J. E. Kilvert, L.R.C.P., M.R.C.S. *Obstetric House-Physicians:* (*Senior*) H. F. Shea, M.B., B.S.Durh., L.R..C.P., M.R.C.S.; (*Junior*) J. F. McClean, L.R.C.P., M.R.C.S. *Ophthalmic House-Surgeons:* (*Senior*) S. N. Babington, L.R.C.P., M.R.C.S.; (*Junior*) J. S. Hall, L.R.C.P., M.R.C.S. *Clinical Assistants in the Special Department for Diseases of the* (*Throat*): G. B. Thwaites, L.R.C.P., M.R.C.S.; A. D. Cowburn, L.R.C.P., M.R.C.S.; (*Skin*): S. H. Belfrage, L.R.C.P., M.R.C.S.; A. E. Stevens, M.B. Durh., L.R.C.P., M.R.C.S.; (*Ear*): W. J. Galt, B.A., Oxon, L.R.C.P., M.R.C.S. Several other gentlemen who held offices before have received an extension of their appointments.

RECOGNITION OF NURSES' SERVICES.—On Saturday, August 27th, their Excellencies the Lord Lieutenant, K.G., and the Countess Cadogan received a party at the Viceregal Lodge, Dublin, when eleven nurses of the Dublin Nursing Institution were admitted Honorary Serving Sisters of the Order of St. John of Jerusalem. The distinction was conferred in consideration of the services rendered by them on the occasion of an outbreak of typhus fever in the Island of Inniskea on the West Coast of Ireland last year. There were in all 70 cases, exclusive of five nurses who contracted the disease. Dr. Pratt, Lord Justice Fitzgibbon, Mr. F. R. Davies, and Mr. Wheeler, F.R.C.S.I., having given a history of the events, the nurses were formally received into the Order. His Excellency then, on behalf of the Queen, gave to each of the following nurses the decoration: Frances Dorothy Macalister, Honora Kenny, Elizabeth Carson, Mary Simpson, Elizabeth Doyle, Flora Kathleen Fitzmaurice, Margaret M'Munn, Grace Simpson, Sarah Jane Caldwell, Kathleen Mary Kinsella, and May Talbut. His Excellency in a short address said their country was grateful to them, and all who were present considered it a privilege to be allowed to take a share in doing honour to them and to the noble profession which they adorned.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer; unmarried. Salary, £100 per annum, with board and apartments in the hospital. Application to the Registrar and Secretary by September 12th.

BELGRAVE HOSPITAL FOR CHILDREN, 77 and 79, Gloucester Street, S.W.—House-Surgeon. Appointment for six months. Board, residence, and an allowance of £5. Applications to the Honorary Secretary by September 17th.

BETHLEM HOSPITAL.—Two Resident House Physicians. Appointments for six months from November 1st. Apartments, complete board and washing provided. Applications, endorsed "House Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before October 3rd.

BIRMINGHAM GENERAL HOSPITAL.—Pathologist. Salary, £100 per annum, with [illegible] residence. House-Surgeon and two Assistant House-Physicians. No [illegible] residence, board, and washing provided. Applications to the House [illegible] September 24th.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried. Salary, £100 per annum, increasing to £120, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by September 20th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 20th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE. [illegible] Lecturer and Demonstrator in Physiology. Appointment for [illegible] Applications to the Secretary by October 1st.

CARLOW COUNTY INFIRMARY.—Medical Officer for the Jamestown Dispensary District. Also Medical Officer and £20 as Medical Officer of Health. Applications to the Secretary by September 14th.

DEVON AND EXETER HOSPITAL.—House-Surgeon; unmarried. Salary, £100 a year, with board and [illegible] Applications to the Honorary Secretary, 13, Castle Street, Dover, by September [illegible]

DUNDEE ROYAL INFIRMARY.—Two Acting Medical Officers.—Applications to D. [illegible] Dundee, by September 15th.

ELLESMERE: [illegible] DISTRICTS.—Joint Medical Officer of Health. [illegible] Applications to the Clerk to the Joint Committee, Ellesmere, [illegible]

EXETER CITY ASYLUM.—Assistant Medical Officer; unmarried. Salary, £120 per annum, rising to £160, with board, lodging, and washing. Applications to the Medical Superintendent, Digby, Exeter, by September 13th.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Resident House-Physicians.—Applications to the Secretary by September 5th.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Resident Medical Officer. Salary, £50 per annum, with board, residence and washing. Senior Clinical Assistant. Appointments for six months, but renewable. Applications to the Secretary by October 1st.

LEEDS CITY HOSPITAL.—Assistant Resident Medical Officer. Salary, £150 per annum, with board, lodging, etc. Applications to the Medical Superintendent, City Hospital, Beckett Street, Leeds, by September 14th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer for six months. Board, residence, and washing provided, and honorarium of five guineas. Applications to the Secretary by September 15th.

MANCHESTER CORPORATION.—Medical Assistant for the Monsall Fever Hospital. Salary, £100 per annum, with board and lodging. Applications, endorsed "Appointment of Medical Assistant," to the Chairman of the Sanitary Committee, Public Health Office, Town Hall, Manchester, by September 16th.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—House-Physician, House Surgeon, Assistant House-Physician, and Assistant House-Surgeon. Appointments for six months. Salaries for the two former at the rate of £40 per annum and the two latter at the rate of £20 per annum. Applications to the Secretary by September 12th.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W.—Three qualified medical women as Clinical Assistants in out-patient department. Appointment for one year. Applications to Secretary by September 28th.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House-Surgeon. Appointment for six months. Board, lodging, and washing provided, no salary. Applications to the Secretary.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum, with board, rooms, washing, etc. Applications to the Secretary, 5, Winckley Street, Preston, by September 17th.

ST. ANDREWS UNIVERSITY.—Professor of Midwifery. Applications to the Secretary of the University Court by September 15th.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Also Ophthalmic Surgeon. Applications to the Secretary by September 27th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Appointments tenable for six months. Applications to the Secretary-Superintendent by September 21st.

MEDICAL APPOINTMENTS.

BONE, B. M., M.B., C.M.Edin., appointed Medical Officer of Health to the Towyn Urban District Council.

BOWDEN, W. J., M.B., Ch.B.Vict., appointed Medical Officer for the Glossop District of the Glossop Union.

BRANNAN, F., M.B., B.Ch., etc., R.U.I., appointed Medical Officer, Castledermot Dispensary, co. Kildare.

CONNOP, H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Brailsford District of the Ashbourne Union.

DURRANT, Charles E., L.R.C.P.Lond., M.R.C.S.Eng., appointed Resident Medical Officer to the National Sanatorium for Consumption and Diseases of the Chest, Bournemouth.

HARRISON, Charles, M.D., appointed Medical Officer of Health to the Bracebridge Urban District Council.

HEDLEY, Arthur Samuel, M.B. and B.S.Durh., appointed Medical Officer for the (East) Rothbury District, and Medical Officer to the Rothbury Union Workhouse, *vice* J. S. Jack, resigned.

HUGHES, J. Medwyn, M.B., C.M.Edin. appointed Medical Officer for the Workhouse and the Ruthin District of the Ruthin Union.

MACQUEEN, A., M.D.Edin., reappointed Medical Officer of Health to the Bloxe Heath Rural District Council.

MUIR, D. K., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer and Public Vaccinator for the Walker District of the Tynemouth Union.

PIRIE, A. H., B.Sc.Edin., M.B., Ch.B., appointed Resident Medical Assistant to the Dundee Royal Infirmary.

RUSTON-HARRISON, G. H., M.B. and C.M.Edin., appointed Senior Resident Surgeon to the Nottingham General Dispensary.

SHARP, Gordon, M.D.Edin., appointed Honorary Medical Officer to the Beckett Home, Meanwood, Leeds, *vice* C. M. Chadwick, M.A., M.D.Oxon., F.R.C.P., resigned.

STRANG, J. Ballantyne, M.B., appointed Medical Officer for the Humshaugh District of the Hexham Union.

TAYLOR, Henry J., M.R.C.S.Eng., L.R.C.P.Lond., appointed Junior House-Surgeon to the Manchester Royal Eye Hospital, *vice* Mr. W. E. Smith.

THOMAS, Dr., appointed Medical Officer for the Guilsfield District of the Llanfyllin Union.

WHYTE, George Francis, M.B., C.M.Edin., appointed Resident Medical Assistant to the Dundee Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

HALL.—On September 2nd, at 195, Belsize Road, N.W., the wife of W. Winslow Hall, M.D., of a daughter.

HARDYMAN.—On September 5th, at 43, Great Pulteney Street, Bath, the wife of George Hardyman, M.B., F.R.C.S.E., of a daughter.

HIGHET.—At Bangkok, Siam, on September 3rd, the wife of H. Campbell Highet, C.M., M.D., of a son.

STAVELEY.—On September 3rd, at 13, South Eaton Place, S.W., the wife of W. H. C. Staveley, F.R.C.S., of a daughter.

MARRIAGES.

DAWSON-SHEKLETON.—On September 1st, at St. Peter's Church, Dublin, by the Very Rev. the Dean of Dromore, father of the bridegroom, assisted by the Rev. A. W. Ardagh, M.A., Vicar of Finglas, and the Rev. Gilbert Mahaffy, M.A., Rector of St. Peter's, William R. Dawson, M.D., M.R.C.P., of Farnham House, Finglas, Dublin, to Florence, second daughter of Robert W. Shekleton, Esq., Q.C., of 31, Fitzwilliam Square, Dublin.

DYER—PRICE.—On September 3rd, at St. Luke's Church, Uxbridge Road, W., by the Rev. W. N. Truss, Chaplain H.M. Prison, Kuntsford, assisted by the Rev. W. St. Hill Bourne, Vicar of the Parish, Sidney Reginald Dyer, M.D.Brux., M.R.C.S., L.R.C.P., D.P.H., Barrister-at-Law of the Middle Temple, Deputy Medical Officer H.M. Prison, Wandsworth, to Rose, daughter of Captain H. Talbot Price, R.N., Governor H.M. Prison, Wormwood Scrubbs, niece and goddaughter of Sir Rose Lambart Price, Third Baronet of Trengwainton, Cornwall, and Rensel Castle, Glamorganshire.

EVANS—PENFOLD.—On September 1st, at the Parish Church, Wimbledon, by the Rev. W. N. P. Beebe, Vicar of St. Luke's, Brighton, assisted by the Rev. A. Wheatcroft, David Robert Powell Evans, of Berth Ddu, Cottenham Park, Wimbledon, eldest son of the late John S. H. Evans, of Berth Ddu, Clynnog Fawr, Carnarvonshire, to Emily, daughter of William John Penfold, of Thornfield, Wimbledon, and niece of Major-General Sir Edward Stedman, K.C.I.E., C.B.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Th. S., 2; Tu. F., 5. *Operations*.—1.-p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 3.
CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances*.—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Th. F.
GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.
KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 11.30. *Operations*.—W. Th. F., 2.
LONDON. *Attendances*.—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.
LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances*.—Daily, 2; Tu., F., 6. *Operations*.—Daily, 2.
METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W. S., 9.30. *Operations*.—Tu. F., 9.
NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*.—Th., 2.30.
ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.
ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9, W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.
ST. GEORGE'S. *Attendances*.—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1-p., Tu. F., 1.45; o.p. M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.
ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M., 9; Tu., 2.30.
ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances*.—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.
ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.
WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

SPEX would be glad to know if there is any danger of rectal paralysis ensuing from the daily use of cold water enemata during pregnancy.

M. O. H. wishes to know where he can obtain full information as to house to house visitation with a view to detection of sanitary imperfections.

ENQUIRER would be obliged for information as to where he could obtain material for the preparation of popular lectures on public health.

E. K. wishes to get titles of works that will give him full information about the origin and history of medical words, and also about the humoral theory, and medicine as practised by the monks in the middle ages.

VIRGIN LEAD.

DR. ALFRED E. MOLE (M.O.H., Adlington) writes: Would you kindly inform me if there is any danger in working with "virgin lead," and also if any precaution should be taken when a manufacturer uses the metal?

*** As regards the dangers from lead the question may be answered thus. Workpeople who manipulate the raw British ore practically speaking do not run any risk. This remark does not apply to some foreign lead ores which are rich in carbonate. The danger commences with the smelting of lead where fumes are given off from the molten metal. Measures should be taken by the manufacturer to prevent workmen inhaling these both by "hooding" the furnaces, and by having the fumes removed by high chimneys. Frequent handling of metallic lead in large quantities may cause poisoning, which may be largely prevented by thorough washing of the hands. The greatest danger arises when metallic lead has become converted into compounds, for example, the carbonate, inhalation of which in the form of fine dust is a common cause of plumbism. Manufacturers should see that all dusty workrooms are well ventilated, should provide adequate washing appliances, and thereby insist upon personal cleanliness of the workpeople, who should be periodically inspected medically.

ANSWERS.

BIRMINGHAM.—Deaf-mutes are received on payment for board and education at 11, Fitzroy Square, W. (Mr. Van Praagh, director), and at the Training College, Ealing, W. (Mrs. A. Kinsey, superintendent), also by Mr. H. N. Dixon, M.A., Wickham House, East Park Parade, Northampton.

MUD BATHS IN NORTH ITALY.

H. J. W.—Our correspondent might consult the second edition of *Mineral Waters and Health Resorts of Europe*, a review of which is published in another column, for Acqui and also for mud-bath treatment. If he reads Italian he might consult P. Schivardi's book on Italian Spas, or a special book by the same author.

STATE-AIDED AND VOLUNTARY HOSPITALS.

HOSPITAL STAFF.—The following references may be of use to our correspondent: BRITISH MEDICAL JOURNAL, September 14th, 1895, p. 650 (abstract of paper read by Dr. W. Knowsley Sibley at the annual meeting of the British Medical Association in London); ditto, August 14th, 1897, p. 415; *State-Aided v. Voluntary Hospitals*, by W. Knowsley Sibley, M.D., London: T. Burleigh, 1896, price 4d.

BINIODIDE OF MERCURY.

H. O. D.—The following formula was given by the late Dr. C. R. Illingworth in the BRITISH MEDICAL JOURNAL of April 6th, 1895, p. 795: "I ask my druggist for a Winchester quart marked at 80 ounces. Into this bottle I put 40 gr. of corrosive sublimate powdered, and 2½ drachms of pot. iod., and fill up with water. This makes a 1 in 1,000 solution of biniodide at once."

DEFICIENT CHILDREN.

R. M. H.—We know of no private institution in or around London where a mentally deficient child would be taken for education at less than about £60 per annum. It is possible that arrangements might be made with the Association for the Promotion of the Welfare of the Feeble-minded (Honorary Secretary, Miss Cooper, 49, Victoria Street, S.W.) to receive a case at the payment named into one of their homes. Certifiable imbeciles are not received.

THE OPEN-AIR TREATMENT OF CONSUMPTION.

A. H. B. might apply for admission to Dr. Meissen, Sanatorium Hohenhonnef, Rhenish Prussia; or to Dr. Hess, Sanatorium Falkenstein, Taunus, Germany. Both of these are admirable sanatoria for the open-air and dietetic treatment of pulmonary tuberculosis. [German is the language naturally most in use.] Further away from England, and a somewhat higher altitude, are the sanatoria at Goerbersdorf in Prussian Silesia. If, however, the case is better suited for high Alpine localities, he can apply either to the Medical Director, Sanatorium Leysin, above Aigle-les-Bains, Switzerland (where French is the language mostly spoken); or to Dr. Turban, Sanatorium Turban, Davos, Switzerland. To whichever sanatorium he goes the patient must be prepared to submit to the requisite discipline, which is such an important element in sanatorium treatment. For further details the inquirer may be referred to the "Report on the Open-air Treatment of Phthisis in Sanatoria," BRITISH MEDICAL JOURNAL, April and May, 1898.

"CHANGING THE DOCTOR."

INQUIRENS.—The incident related by our correspondent is a good illustration of the necessity for medical men to communicate with each other when patients are intending to change from one to the other.

Dr. C. acted quite consistently with ethics in attending for Dr. B., stating his position to the patient, and declining further attendance. It would have been well to have sent a line to Dr. B., saying what he had done. When the patient again sent for Dr. C. he should have declined attending until he was satisfied that Dr. B. had been communicated with and had acquiesced. The difference in the statements of the doctor and the patient more forcibly still points to the desirability of doctors not acting until some mutual explanations have taken place. Patients have a perfect right to change their doctors, but ethical propriety demands that doctors should not allow themselves to act as tools in any such changes, but rather safeguard themselves and others by so acting as not only to maintain the dignity of the profession, but also the friendly relations which should exist amongst professional brethren.

NOTES, LETTERS, Etc.

ALIQUIS has not enclosed his card.

DR. W. W. FARNFIELD (Resident Medical Officer of St. Mary's Day Nursery and Hospital for Sick Children, Plaistow) desires to state that that institution is in no way connected with the Plaistow Maternity Charity and Nurses' Home, Howard Road, Plaistow.

ERRATUM.—In the formula for the stain No. II. given in the abstract of Dr. Richard T. Hewlett's paper on Neisser's diagnostic stain, published in the BRITISH MEDICAL JOURNAL of September 3rd, p. 599, "Two grammes of benzoin" should read "Two grammes of vesuvin."

A DISCLAIMER.

MR. WM. ARMSTRONG, J.P. (Buxton) writes: A most annoying and improper mention of my name having been made in a laudatory article on Buxton and its treatment in Wednesday's *Sun*, I at once addressed a letter of remonstrance to the editor, and this duly appeared. I find, however, that unfair use is being made of the incident, and I venture to ask you to publish this disclaimer.

AN APPEAL ON BEHALF OF THE FAMILY OF THE LATE DR. ARTHUR BARLOW.

WE may recall attention to the appeal made in the BRITISH MEDICAL JOURNAL of May 14th, on behalf of the widow of Dr. Arthur Barlow, who died on March 10th, at the early age of 37. Owing to ill-health he was prevented from making provision for his widow, who is without any means whatever, and is in exceedingly delicate health by the long strain of nursing her husband and the shock of his sudden death. It is proposed shortly to close the list. Subscriptions will be received by Dr. J. W. Moore, 40, Fitzwilliam Square West, Dublin; Dr. John Barton, 26, Upper Merrion Street, Dublin; Dr. G. J. Gibborn, 80, Ovoca Terrace, University Street, Belfast; Dr. L. H. Ormsby, 92, Merrion Square West, Dublin; Dr. Henry, 2, Lewisham Park, Lewisham, London; and Dr. A. Matson, 619, Holloway Road, London. The following additional subscription has been received on behalf of the fund:

Per Dr. Henry:	£	s.	d.
Dr. Snook, Trinity Road, Weymouth	2	0	0

RAPID DILATATION OF THE OS UTERI.

DR. J. J. RIDGE (Enfield) writes: I have just had a case of marginal placenta prævia occurring at the eighth month, without pain or warning. Being suddenly summoned without intimation of the nature of the case, I found severe hæmorrhage going on, and the os uteri only sufficiently open to admit one finger, by which the placenta could be easily felt. I detached as much as I could reach from the lower segment of the uterus, and sent for my "Barnes's bags," but as the hæmorrhage continued, and there was evidently no time to be lost, I tried to dilate with my fingers, and with a little perseverance succeeded in getting first two and then three fingers through, after which the os dilated very quickly indeed, and I soon passed in the whole hand and performed podalic version, the child being born alive. Both mother and child did well, though the former was very blanched and faint. The whole affair was over in about 15 minutes.

A HYPNOTIC SUGGESTION.

BY W. F. C.

When you have done your level best
To cure some nervous paroxysm,
Don't give it up, or be depressed,
The remedy is—hypnotism.

How does it act? Ah, never mind,
The unknown claims to be believed.
Forces are facts; e'en with the blind
Light still is light, though unperceived.

"There are more things in Heaven and earth,"
You know the rest; nay, understand
How some may find potential worth
In strokes of an enchanter's wand.

[illegible] hand and brain
[illegible] organism,
[illegible] can't explain,
But puts it down to hypnotism.

DUBLIN HEALTH CONGRESS.

SOCIUS writes: "All the charming garden party given by the Viceroy [illegible] very tweeds and "bowler," standing [illegible] ov, and amusing themselves by [illegible] pipes, this, I suppose, to show how they despised mere [illegible]

To add to the favourable impression we all formed of our sanitary and medical visitors, another medical gentleman rode up on his bicycle, and came in just as he was, clips on trousers, etc. We frequently provoke the indulgent merriment of our brothers across the Channel by our Irish bulls, but I am not without a hope that, at all events, our manners are better than might be gathered from such eccentricities of scientific genius.

SCARLATINA: DESQUAMATION.

MR. A. W. SENIOR (Levenshulme, Manchester) writes: In or about the fourth week of many cases of scarlet fever one notices that desquamation is complete, with the exception of the hardened epidermis covering the heels and occasionally other like places. On this account the patients, although perfectly well of themselves, are kept in a state of irksome quarantine, until after trying first one method and then another the refractory skin is removed, and the patient is allowed to mix again with the world at large. A quick way to attain the desired result is as follows: A piece of lint is soaked in cold water and lightly wrung out. This is placed on the obstinate area: over this a larger piece of gutta-percha tissue is laid, and a flannel is bandaged over all. In about twelve hours the epidermis, thoroughly softened, peels away quite easily. If nasal or pharyngeal catarrh be absent there is, in my opinion, no reason why the patient should not be released from isolation at a much earlier date than the six weeks generally necessary. This treatment has yielded excellent results in the few cases on which I have tried it, and I firmly believe that if it were universally adopted it would make a considerable difference in the expenses of those hospitals where there are many patients suffering from scarlatina.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Messrs. Arnold and Sons, London; Dr. E. O. Ashe, Kimberley, S.A.; Mr. C. G. H. Aitken, Bedford; Aliquis: Abrolis, Limited, London. **B** Mr. W. Bernard, Londonderry; Messrs. F. and J. Bruce, London; H. P. Barlow, M.B., Tamworth; Mr. A. H. Burns, Ramsgate; Biniodide. **C** Dr. J. A. Codd, Wolverhampton; Dr. H. A. Caley, London; Mr. W. G. Carnt, Derby; Dr. N. H. Choksy, Bombay. **D** W. H. de Silva, M.B., Colombo; D. A. Davies, M.B., Swansea; Mr. F. E. Dava, Bombay; Mr. J. Downing, Enfield; Mr. C. E. Durrant, Bournemouth; Dr. E. T. Davies, Liverpool; Dr. E. W. Diver, Jarrow-on-Tyne. **E** E. K.; E. D.; E. M. R.; Enquirer; Mr. J. M. Evans, Llandrindod Wells. **F** Mr. F. C. Fitzgerald, Limerick; Mr. H. C. French, Weybridge; F. C. L. **G** Good Health Publishing Company, Battle Creek, U.S.A.; Mr. A. Greenwood, London; Mr. J. A. Galloway, Glasgow; J. A. Graham, M.B., Paisley; Mr. J. Gibson, London; H. Grey, M.B., San Remo. **H** Mr. M. L. Hackledorn, Toledo, U.S.A.; F. G. Haworth, M.B., Darwen; H. S.; W. J. Horne, M.B., London; Mr. M. J. Houghton, London; D. F. Harris, M.B., Edinburgh; Mr. T. G. Horder, Cardiff; Dr. R. T. Hewlett, London; A. S. Hedley, M.B., Rothbury. **J** Mr. M. Johnston, Bewdley; E. M. Jenkins, M.B., Calverley; Dr. D. James, London; Dr. R. Jardine, Glasgow; R. J. Johnston, M.B., Edinburgh; J. W. B. **K** Kronthal Company, London; Dr. J. S. Keser, London. **L** Mr. F. W. Lowndes, Liverpool; Dr. B. Lacquer, Wiesbaden. **M** Member; R. U. Moffett, M.B., London; R. C. B. Maunsell, M.B., Dublin; Dr. H. M. Murray, London; Mr. C. B. Maitland, Poona; Mr. J. M. McCandlish, Kingussie; M. O. H.; Dr. R. B. McCausland, Dublin. **P** Messrs. Potter and Clarke, London; P. B. S.; Messrs. Parke, Davis, and Company, London; Dr. G. V. Poore, London; Dr. C. B. Plowright, Kings Lynn; **R** Mr. G. Rendle, London; R. A. M. C.; G. H. Ruston-Harrison, M.B., Carlisle. **S** Dr. C. S. Scott, St. Margaret's; Dr. G. J. Sharp, Leeds; Surgeon General Retired; Mr. R. Stoney, London; Dr. G. A. Sutherland, London; Mr. A. W. Senior, Levenshulme Mr. C. H. B. Shears, Liverpool. **T** T. P. S.; Mr. C. J. S. Thompson, Liverpool; Mr. L. Tait, Birmingham; Mr. J. L. Thomas, Portsmouth. **W** Mr. C. Williams, London; Mr. H. J. Wyatt, Newbridge; Dr. T. Wise, Dartmouth; Dr. J. W. Watson, Limavady; Mr. C. H. Whiteford, Plymouth; Mr. W. Watson, Rochester.

BOOKS, Etc., RECEIVED.

Handbuch der Laryngologie und Rhinologie. Herausgegeben von Dr. P. Heymann. Lief. 25 und 26. Wien: Alfred Holder. 1898.

Imperial Africa. The Rise, Progress and Future of the British Possessions in Africa. By Major A. F. Mockler-Ferryman, F.R.G.S., F.Z.S. Part I. British West Africa. London: The Imperial Press. 1898. 12s. 6d.

Medical Diseases of Infancy and Childhood. By Dawson Williams, M.D. London: Cassell and Co. 1898. 10s. 6d.

Association Française de Chirurgie. Onzième Congrès de Chirurgie, Paris, 1897. Procès-Verbaux, Mémoires et Discussions. Paris: Felix Alcan. 1898. Fr. 20.

Twentieth Century Practice. Edited by T. L. Stedman, M.D. Vol. xiv, Infectious Diseases. London: Sampson Low, Marston and Co. 1898. 30s.

Zig-Zag Rambles of a Naturalist. By R. T. Manson, L.R.C.P., M.R.C.S. Darlington: William Dresser and Sons. 1898.

Transactions of the Dermatological Society of Great Britain and Ireland. Edited by G. Pernet, M.R.C.S., and W. T. Freeman, F.R.C.S. Vol. iv. London: H. K. Lewis. 1898. 5s.

Tests and Studies of the Ocular Muscles. By E. E. Maddox, M.D., F.R.C.S. Bristol: John Wright and Co. 1898. 10s. 6d.

Über die Mischinfektion bei der chronischen Lungentuberkulose. Von Dr. G. Schroder und Dr. F. Memes. Bonn: Friedrich Cohen. 1898. M. 2.

Reise-Berichte über Rinderpest, Bubonenpest in Indien und Afrika, Tsetse oder Surrankrankheit, Texasfieber, tropische Malaria, Schwarzwasserfieber. Von R. Koch. Berlin: J. Springer, and Glasgow: F. Bauermeister. 1898. 2s. 8d.

Briefe über öffentliche Gesundheitspflege ihre bisherigen Leistungen und heutigen Aufgaben. Von J. L. W. Thudichum, F.R.C.P., F.R.C.S. Tubingen: Franz Pietzcker. 1898. M. 3.60.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE IN RELATION TO LIFE ASSURANCE.

Claude Muirhead, M.D., President.

INTRODUCTION TO A DISCUSSION ON THE PROGNOSIS OF CARDIAC DISEASE IN ITS BEARINGS UPON LIFE ASSURANCE.

By Sir William T. Gairdner, M.D., K.C.B.,
Professor of Medicine in the University of Glasgow; Physician to the Queen in Scotland.

The Discussion on Cardiac Cases of Long Standing, Brighton, 1886.

I am not sure that I am not indebted for bringing me forward on this occasion to a circumstance which at first sight seemed to me practically to disable me for the duty, and that is that I had, in regard to one very important branch of the subject, at all events, talked myself out as it were at the discussion which took place in Brighton at the meeting of this Association during the year 1886. I was then invited to take part in the discussion upon cardiac cases of long standing with a view, not especially to life assurance, but to the guidance of the medical profession as to the unduly grave prognosis sometimes given of certain cardiac signs. I had the happiness to follow a very remarkable paper submitted by Sir Andrew Clark on that occasion, and to lead off the discussion. His paper was, I venture to say, one of the most remarkable contributions to medical inquiry on record, from a man in the extremely busy practice he was engaged in at the time. An account of his paper, with my own remarks following, is to be found in the number of the British Medical Journal for February 5th, 1887. In that paper I made reference to 10 cases of cardiac disease prolonged beyond expectation after the physical signs and the symptoms had been fully recognised, and I added 3 cases from the notebooks of a very good friend of mine, Dr. Wallace of Greenock, who occupied the much more favourable position, I think, for speaking upon a subject of this kind, of the family medical practitioner, the man who has been the life-long friend and family attendant of his patients. The other day I picked up something which I had not known, namely, that there was a Committee appointed as the result of this discussion; but so far as I know, that Committee has done nothing. My own contribution appealed to the general practitioners throughout the country. Sir Andrew Clark said the same thing, that it is to the general practitioners we must look for information as to these protracted cases of cardiac disease which greatly outlive expectation. It was fairly to be looked for that this Committee might have managed to scrape together evidence of that kind from the records of general practice. However, I can find nothing as the outcome of this Committee, and I am bound to suppose it died prematurely—that it was not a good life—perhaps, indeed, not insured. Therefore I may say that a good deal of the "casuistic" (as the Germans call it) upon which I am now proceeding is already before the public in the number of the British Medical Journal to which I have referred. However, on due consideration, I thought I could not let that fact stand in the way, and that I might push the subject into further developments on this occasion.

After-History of Certain Cases Recorded in 1886.

Looking back on my own article aforesaid, I do not find there is very much to add to it in the way of "casuistic." I might find some more cases, but I am not aware that I could find anything that would throw any new light or develop any new principles.

Mitral Regurgitation: Disappearance of Murmur in Age.—But I may just state, in order to complete what is there reported, that No. 2 of the 10 cases I referred to was one of the most protracted of them all. It was the case of a medical practitioner whom I knew of as having a cardiac murmur in quite early and middle life; and the condition, moreover, was apparently the result of rheumatism. When I first knew him he had a mitral regurgitant murmur, and he knew the whole circumstances and the whole prognosis of it as well as any man could possibly do. He was pursuing a very busy general practice in a very important town in the south of Scotland. He was a very intelligent man, and never allowed the consciousness of this fact to interfere with his activity, except when now and then he was laid up like other people, and suffered more or less. At various times he did suffer, and I have a distinct recollection of being telegraphed for once or twice by his wife to see him in attacks which were supposed to be more or less of the nature of angina pectoris. He complained of symptoms of that kind occasionally, and therefore the disease was not a mere trifle, but later than this, and after the date of the Brighton meeting, I came to know that the murmur had disappeared; that after being there, I suppose for quite 30 years at least, the cardiac disease had mostly gone into abeyance, or out of recollection. Nothing new occurred, and this gentleman died in the end betwen 60 and 70, if not beyond 70, years of age, of a disease that had nothing whatever to do with the heart; in short, of muscular atrophy. That is the first supplement I have to give to the "casuistic" in that paper.

Post-systolic Murmur: Active Life without Symptoms.—The next is to continue the case of a gentleman whom I saw soon after I went to Glasgow in 1862. He was at that time a schoolboy, perhaps 10 or 12 years old. He had an excessively loud hollow-toned blowing murmur following the first sound, in regard to which some doubt might be raised whether it was pulmonic or aortic—whether it was the right side of the heart or the left—but there was no doubt as to the fact. This murmur had been made known to my predecessor, Dr. Macfarlane, and this young boy was brought to me by his uncle with the view of my corroborating the fact, and giving any advice proper to the occasion. He was subject to slight cyanotic attacks, which I daresay gave his friends more anxiety than they did to the boy himself, and a degree of twitching of the muscles which seemed to lean in the direction of chorea. He never had well-developed chorea, however. All that I thought it necessary to say at Brighton on that case was that he had grown up to manhood, was married, and the father of a family, and able to take a considerable amount of exertion. He was a sportsman, and shot grouse on his own hills, and he behaved very much like other men. I continue that report now. That school-boy of the year 1862 who had this extremely loud murmur is still alive. He is not, so far as I am aware, very much different from other people in regard to health. He still does his shooting. He lost his wife, and has had the whole responsibility of his family on his own hands. He has a large house to keep up, and as far as I know is a man whom I class as fairly healthy. I have had only one chance to examine the heart. People do not like, for instance, to be stopped in the street and told "There is something that I am curious about connected with your heart; would you let me examine it?" but I once got a chance of putting my head upon his waistcoat, and it appeared to me that the murmur had nearly gone. Therefore, there are two cases of practical extinction of well-marked cardiac disease.

Tricuspid Obstruction from Tumour: Survival for Ten Years.—The only other case belonging to the "casuistic" referred to is one on which I need not say much, because it is all in print. It is Case v in the order of those referred to at Brighton, and there is a very slight account given there: but I think it is one of the rarest cases of cardiac disease that has ever been recorded. I may say, however, that I was asked, in consequence of this and other allusions, to place it on record more completely, and have since furnished a very full account of it for the first volume of the *Edinburgh Hospital Reports*. It was a case of tricuspid obstruction by a tumour attached to the wall of the right auricle, but not implicating the valvular orifice, a fact of the greatest pathological rarity

which, with the narrative of the symptoms and physical signs, makes the case, as I believe, absolutely unique; but its importance in regard to this particular point is that this man, having his tricuspid opening considerably obstructed by a ball-valve tumour coming down from the auricle, survived this condition of impediment to the course of the circulation for at least ten years after the signs were first detected. He did not suffer in any remarkable degree from his heart, and he died of pneumonia. The heart was found after death not very considerably altered in its general appearance—not markedly enlarged, not dilated. Altogether the case from that point of view is a very singular one and, as I say, absolutely unique.

The Difficulties of the Assurance Medical Officer.

That is all, you see, from the side of the practitioner. We practitioners in the course of our ordinary affairs want to know what amount of hope we can hold out to our patients when they come to us, and when, unfortunately for them, but fortunately for our professional and scientific curiosity, we discover a cardiac murmur of which, owing to its comparatively mild symptoms, they have taken very little account before this, to them, grave discovery.

But that is not the side we have to speak about to-day. We have to look at it, as it were, almost from the opposite point of view. We are in our ordinary professional avocations looking out anxiously for encouraging cases, cases that shall enable us with a safe conscience to say to our patients that we hold out something less than the usual very grave prognosis attaching to an organic heart disease; but at present, looking at it from the point of view of the insurance office, it is quite the other way. We want to know what amount of loading we are entitled to put upon the policy; we want to know under what circumstances we are justified in rejecting the life totally and absolutely, without taking it twice into consideration; we want to know under what circumstances we are not so justified, but we are justified in saying, "You are not insurable just now, but perhaps, if you go on for two or three years and do not suffer, you will be insurable." These are the questions which are raised by the discussion presented to me under the title with which we have to do to-day. You will observe it is as nearly as possible reversing the position of the ordinary general practitioner.

There were a few words dropped by Dr. Muirhead[1] in which I fully sympathise; in fact, I could push the remark even a little further. I am afraid we have got no very accurate data to proceed upon in these cases, and I do not expect to be able to offer such to you to-day, not at all anything like statistical detail, not anything like the basis of a reasonable calculation derived from numbers. We have not got it simply because the material does not exist. We know of isolated cases, but we do not know of numbers or of large groups of cases. Under these circumstances we have only two ways of dealing with the matter when an extra risk comes in view in connection with disease of the heart: we either shut down the door and refuse to receive the life, a very painful thing to do when the proposal comes from a man who believes himself to be in perfect health, and has never had reason to suspect himself, and who applies with the full confidence that he is going to get insured at the ordinary rates, or that he has a life even above the average; and still more painful is it if you are obliged to give your reason, obliged to tell this man who has come to you in the full enjoyment of perfect health that he has got heart disease. It sends him away home to moon and worry over it, and very likely to kill himself with anxiety. The other alternative is to be a little blind, to overlook the facts, to explain them away to your own conscience, to temporise, to put it upon some other issue, to say "We are not justified in dealing with you to-day; wait a little;" to put off the evil day, as it were, in the hope that something will turn up, and that you will be able to admit the man at an advanced premium. These are the alternatives. I quite agree with Dr. Muirhead in saying that we would like to have something between these alternatives, between shutting down the door and, still worse, giving a reason for shutting down the door, and being blind to the facts and passing the man with the obstinate facts against you, and therefore not doing absolutely your duty to the office.

[1] British Medical Journal, August 6th, p. 350.

I could give you two or three illustrations of this from my quite recent experience. Only the other day a man came to me, not for insurance, it is true, but for examination for employment in one of the great railway companies. The question was not with reference to his heart at all, but with reference to his state of health for serving in tropical climates. That was all I was asked to certify: to examine him and see whether he was fit to be employed in tropical climates. He had been for a quarter of a lifetime in tropical climates, and had been in the service of this same railway company, but they wished a new report because he had been out of their service for a time and they wished to insure themselves before he began again. I commenced to examine him without the slightest misgiving. His whole aspect was that of a man of perfect health, with perfect confidence in himself; but I found he had aortic regurgitation. I was able on this occasion, just because it was not an insurance policy, to temporise. Fortunately he was only to be engaged for a limited period. The disease was evidently not affecting the heart very much, and I said to the company I thought they might engage him for a limited period, but that they were not bound to pay his expenses out. I believe he will get engaged and know nothing about his infirmity until he finds it out in some other way.

Insurance without Medical Examination.

Here is a case of a very different kind. I had lately occasion to observe with great interest, in hospital, a case of aortic aneurysm in a woman. It was a very interesting and, to me, even a very unusual case, as it was one of the very few cases, in fact the only case in a woman (except one) in which I ever knew an aortic aneurysm get to the surface and lead to great external hæmorrhage. What makes it part of the present communication, however, is that this woman had actually insured her life—I think not a year before her death—and after she had been twice in hospital, once in the Royal Infirmary and once in the Western Infirmary, with an aneurysm bulging up into her neck, and as she said, at one time extending as high as the angle of her jaw. How did she get insured? Simply because this was an office or company that did not require a medical report. They took her word for it that she was in good health at the time, and she was insured; and then they came to us to know whether she had the disease at the time she was insured. I simply said, "We are not bound to give any information."

Alternatives for "Loading" or Rejection.

The object of this present paper is to see whether any kind of *via media* can be got; whether any data can be procured—not to-day, for I do not think that we shall arrive at it to-day—but whether any data can be procured that will enable our successors to deal with cases of extra risk in life assurance on better principles than we can now. There is an incalculable element in most of these cases, by which I mean an element that cannot be reduced to a question stateable in numerical terms, and which, therefore, we deal with in the most curiously unsatisfactory way, either by rejecting the life altogether or by putting on a big loading, which it must be admitted we assess upon no very sound or clear principle, or, on the other hand, by winking at the defect and passing it over. I have endeavoured to group the classes of cases in question under eight divisions; and I am only going to say a few words on each of these.

Pericardial Lesions.

First, there are lesions in which, although the abnormality is a fact, is there, and is therefore of a certain amount of importance, possibly organic, the medical examiner still has the distinct impression that it is of comparatively little prognostic importance. It has been long enough there, let us say, to show what it was going to do, and it has not done much harm; or from one or another reason you are induced to take a mild view of the prognosis of what nevertheless you regard as a perfectly unquestionable abnormality. To this class I would refer those murmurs or quasi-murmurs, roughnesses which sometimes seem to be prolongations of the first sound, alterations of quality that you can hardly define but which you recognise as not being quite normal, heard especially over the base and over the right ventricle. I have often speculated about them. What are they? I do not know. I

can only throw out a few hints. I have come to believe that a good many of these are exocardial; that although they may in a way resemble cardiac murmurs, they are not in reality valvular murmurs or endocardial murmurs. I justify this belief to myself by an experience I had fifty years ago when I was acting as pathologist to the Royal Infirmary, Edinburgh. It was my duty to scrutinise very carefully the condition of the pericardium in all kinds of fatal cases and in reference to all the clinical facts. I came to know then (and it is a matter of common knowledge) that there are plenty of conditions in the pericardium which if you look for them you will find and if you do not look you will not find. If you open the body just to find the cause of death and be done with it you will not see them at all, but if you look carefully into every case with a scrutinising and critical eye you will find them there. There are the well-known white patches which have passed under various names; some call them corns on the heart, some think they are due to the pressure of bandages, and there are various other theories about them. For my part I have always regarded them as denoting extinct pericarditis, but a pericarditis that is often localised, and for the most part latent as regards clinical history. They are traces of a lesion which at one time may have been in a more active form but has become extinct. No doubt most of these white patches present no physical signs, but anyone that looks at them carefully with the pathological eye will see that they occur in various forms, and that in some of the forms they must have had physical signs, and that as they are lesions that do not disturb the action of the heart at all, they must have had physical signs which may have lasted over a lifetime. I have a preparation in my museum where a band has been formed between the right ventricle and external pericardium, and that band has been torn asunder by the action of the heart, and has left a rough pencil of lymph projecting freely upon the surface of the right ventricle, and a corresponding one on the parietal pericardium. I know nothing of the state of that man during his life, but I know he must have had a murmur, a roughness, something or other that could have been detected, and yet, from the insurance point of view, it was a lesion of the most absolute insignificance. Then towards the base of the heart and at the attachments of the pericardium at the root of the heart, you constantly meet with bands of lymph, with fringes, with little rough accretions, and no doubt some of these are so placed as to give rise to sounds. I simply propound this as a probable explanation of a number of abnormalities of sound you meet with that are really of practically no importance.

The question arises here: Can a well-ascertained case of acute pericarditis ever undergo healing so as to leave nothing behind that would affect an insurance risk? There are cases which, if they are to be called pericarditis at all, are pericarditis of a latent kind, and with no history; but you now and then meet with cases of acute pericarditis well ascertained, with friction sound, effusion, and all the rest of it, that end apparently well. Have these been completely healed in the sense that an insurance office would be justified in taking a case so defined and so reported as a good life? That is a question that has never yet been answered. The usual reply would be in the negative. You would say that such a pericarditis must end in adhesion, and adhesion, although it does not present very well marked physical signs, is undoubtedly a lesion that would render a life insecure. But I am not so sure that acute pericarditis must needs end in adhesion. Dr. Kirkes long ago had a very interesting paper which came under my notice when quite a young man, in which he maintained the contrary—that acute pericarditis might end in a smooth surface and in complete resumption of the healthy functions of the pericardium and the heart. I am inclined more and more as life has gone on to agree with Dr. Kirkes. I cannot state the whole ground of that here, but I state it as a point, at all events, that may, when further worked out, come to influence this question. I may refer to the case of a very old friend—I can hardly say I know him now, because I have had no intercourse with him for a long period of years—but I did know him very well at one time, when as a young man he came to attend my class of medicine in the year 1853. He was one of my earliest students in practical medicine, and we knew then that he had had an attack of acute pericarditis quite recently certified as such by the medical men who attended him. He came to me in great anxiety as to his future. He told me the diagnosis, and I was bound to accept the diagnosis, for it was made by highly competent men, although the attack was over when I saw him. Now, as a matter of fact, although I know nothing about his medical history for many years, I know that that man is living now. He has retired from practice, but he has gone through a busy life of general practice, and is living now, nearly half a century after his acute attack. I do not think he is in good health, but I hear nothing about his heart.

Organic Lesion without Functional Disturbance.

The second class of cases I have to refer to includes lesions certainly involving organic change, but with almost no disturbance of cardiac action or behaviour. These cases only come to our knowledge at the time of the proposal, or at all events we have had no opportunities of watching or of hearing about them. You are taken by surprise at discovering a cardiac murmur or other change; but it is a purely physical diagnosis. You have no doubt that it is an organic lesion, but to what extent it may influence the probability of life you have no means of knowing. There is no doubt that the principle, and the only just principle on which we can deal with these cases as at present advised is the principle of delay. You must do it as best you can, but somehow or other you must get the proposer convinced that he is likely to be more insurable a few years hence than he is now. You may tell him, if he is a sensible man and able to bear it, the whole truth. But however you may communicate it, you must say, "I have found something or other which makes me hesitate. If you push it just now you may or may not get in, but at all events, you will have to pay a more or less heavy extra premium." That, in my experience, is the only way of dealing with such cases. Have we, or shall we ever have, the means of information which would entitle us to assess these risks upon a fair principle justified by statistics? That is one of the questions we want this Section to help us to solve. It is quite plain we have not got the information now, and the question is, Can we get it?

Senile Degenerations.

The next class includes lesions of very various clinical significance at the time but belonging to the order of the senile degenerations, and met with at a period of life more or less appropriate to these. These are important, as all lesions are, but they are not so important—they do not bring up such anxious or critical questions as the class last referred to. The persons involved are well on in life. They are quite prepared to be told they are not so young as they were. You may have found some degree of degeneration of the arteries and one or two other things of more or less significance, and you may quite frankly tell them, "I notice signs of ageing about you. I do not choose to go further into details, but I recommend you to withdraw this proposal, or if you do not withdraw it to be prepared to pay a considerable addition to premiums." That is the only way, I think, we can deal with these cases under our present information. It includes a very large variety, from the smallest degrees of twisting and degeneration in the radial arteries to cases even of aneurysm or of suspected aneurysm. In all these cases there must be a rejection absolutely or an addition so heavy as to make it doubtful if the proposer will complete the transaction. Sometimes an insurance for a particular term of life—five or ten years—may deal with these cases.

Non-insurable Organic Lesions.

Fourthly, lesions that are certainly organic and with such concomitants as practically to bar insurance altogether. These are plain cases, and I do not think we need say anything more about them. You feel at once that they are uninsurable lives, and you do not hesitate to say so.

Functional Disorders.

Fifthly, lesions which may be non-organic, or what is called functional, but at least they are, or may be, rather staggering facts when you meet with them in a proposer for the first time in reference to insurance. I would give as a typical example of such cases, well-marked irregularity of rhythm. Everyone knows that an irregularity of rhythm may be a very serious

fact, or it may be very much the contrary. Some people have more or less irregularly acting hearts from childhood, and they know that they have had them, and perhaps they have had them long enough not to be disquieted by them. They feel well, and they know they have gone on well for a series of years with this infirmity, as you may call it, and they have neither grown any worse nor any better. They have come to you concluding that, as they have gone on well for so long, they may still go on well for the ordinary term of insurance. These cases, of course, are difficult to deal with, and perhaps in the present state of our information not easy, at least, to deal with on a clear principle, and therefore justly. But they must be dealt with. I would point to one instance of this. A gentleman, who is now in a very active business in Glasgow, came to me thirty years ago to be insured in the Scottish Widows' Fund, and he is alive and well at this moment. He came to me with a very marked intermittency and irregularity in the radial pulse, but nothing else. He did not feel it, but he knew about it, because somebody had detected it before. It was a very large insurance—£5,000, if I recollect rightly—and he had been insured once or twice before in the Scottish Widows' Fund. I thought it worth while to come and take counsel with my friend the late Dr. Warburton Begbie, who was then the chief medical officer of the company. We talked over the whole matter, and we agreed to admit him to one more £5,000 at the ordinary rates; but we said, if he went beyond that, the risk must be shared with other offices. At the same time, we thought as a matter of justice to him we could not put on any loading, he being perfectly sound and healthy. He has justified that belief up to the present time. It may be added, by way of contrast, that my dear friend Warburton Begbie informed me some years later of an irregularity in his own pulse, which, however, was associated with other symptoms of heart failure, and he did not survive long.

Bradycardia and Tachycardia.

Belonging to this class of doubtfully structural lesions there are several kinds difficult to deal with. For example, there is the case where the heart's action is habitually, or even constantly, either too rapid or too slow; or where it is found that under the influence of emotion there is some kind of disturbance; further, after sending the proposer back and bringing him up two or three times for examination you do not get on any further, and you are almost satisfied that in that respect the heart is not a sound one. It is unduly under the influence of the nerves and is acted on in a quite abnormal way by slight causes of disturbance. But the question is how far that compromises the prospect of life. In many of these cases we might pass them at ordinary rates or with a comparatively moderate extra if we had proper data on which to ... the risks. Frequently we find the pulse a little hurried under examination, but we are satisfied and we do not wish to go any further, we accept the life at the ordinary rate. Then there is the case of more permanent tachycardia or brady... on what principle should we deal with this? I declare to you I do not know. We have not got the data as yet, but they might, no doubt, be procured by a concerted and combined effort of several offices. These are things which we want this Section to tell us about. If I were to speak my own mind I would say that bradycardia is of more significance than tachycardia, when it is taken alone, unattended by symptoms, but known by experience to be not a mere passing condition. Perhaps I am a living proof of this myself, because when I was almost a boy, and from this onwards in early manhood, I hardly ever had a pulse below 100, and sometimes it was up to 120. I do not say that I was a very strong man—quite the contrary. I was rather a feeble young man, and I did not think much of my own physical stamina at that period of my life. I even thought at one time I might have fallen a victim to tuberculosis. But there it stood alone, this rapidity of pulse as an individual symptom, and here I am now: My pulse is now very rarely above 80, oftener 70 or 75, and varies extremely little. It is an absolutely normal pulse. I have good reason therefore, for supposing that taking tachycardia within certain limits, it is probably less formidable from the insurance point of view than bradycardia. On the other hand, I think that physicians would probably say that a moderately slow pulse, from 60 upwards, was a sign of good health. You find a strong vigorous man, abounding in all the elements of health, with a pulse of 60 or 65. You say a slow pulse is a point in his favour, but what if it were 50? What if it were 40? What if it were 30? Have we any data to tell us exactly the point at which a slow pulse becomes abnormal, and what is the influence of that single fact on life? I know of no data whatever. This, then, is a point which you may say is very capable of exact statement, almost mathematical, which could be solved by sufficiently extended statistics with more than ordinary precision if anybody would take the trouble. If one could obtain a sufficiently large number of cases of lives exceptionally dealt with on account of tachycardia or bradycardia, and then wait for results, we might come to know more accurately the real risks under these conditions. It would be a laborious business I grant you, but it might be done, and would be a valuable addition to medical information. At present we deal with ends of the scale as under suspicion. We know that a pulse of 60 or 70 is possibly the pulse of a high vitality, and we know that the pulse even of 55 or 50 may be the pulse of a healthy, vigorous man. But we do not know what is the precise significance of 100 or over it on the one hand, or of 20, 30, or 40 on the other. I had once occasion to observe a pulse habitually under 20, but it was in a man whom I believed to be the subject of very serious disease. The patient, a clergyman, had nearly died in his pulpit on one occasion, and the late Dr. Walshe and I agreed that the case was probably one of fatty heart. He died shortly afterwards at 40 years of age. That, of course, is not a case which you could ever have thought of insuring at ordinary or indeed at any rate of premium.

Dr. Kinkead has published in the very last number of the *Dublin Medical Journal* (July, 1898) a most curious case. He gives us details which we must accept in the belief (and of this the record itself is such as to inspire confidence) that he has observed the facts carefully and thoroughly. He counted the pulse as only six in the minute for a time, when, however, the patient had some ugly-looking symptoms. This man appeared to recover, and had a pulse of normal rate again. We do not know what the result of that case may be, but a few cases of that kind carried to a conclusion would be of almost inestimable importance to us in the matter of life insurance.

We all know the tobacco heart. Every medical teacher has three or four of the students coming to him every year with irregular hearts, and when they are questioned they are found to be heavy smokers of tobacco. That only bears on insurance by the fact that if you want to get rid of the symptom the habit must be discontinued.

We all know the senile heart. Dr. George Balfour has written so admirable a book on this subject that I do not think I need dwell upon it. It is not of very extreme importance in relation to insurance, because people at that stage of life do not generally need to insure.

The Heart of Chorea.

I should like to say a few words on cardiac murmurs associated with chorea occurring in early youth. What is the true significance of these? We have had a large amount of literature on the murmurs in chorea, but have we settled what they are? I am very far from thinking so. My own personal belief has been for some time that the murmurs of chorea are usually attended with changes of structure; that they are, in fact, organic murmurs. They get well, and it has therefore been assumed that they are not organic. I do not think that is a safe inference. My belief is that the murmurs in chorea are organic, and that all those factitious explanations made of them are mere gropings in the dark to explain what has a more easy and obvious explanation. It is rather rare to have the opportunity of observing the facts in respect of choreic murmurs with the aid of *post-mortem* examination, because chorea is not a very fatal disease; but now and then we do get the opportunity. At rare intervals a case of chorea is fatal in the acute stage, and I never knew such a case without some change in the endocardium visible on *post-mortem* examination. In such cases I have found the aortic valve fringed with little warty vegetations, and the mitral valve often in the same condition; and this whether murmurs had been observed during life or not. I believe, therefore, that choreic murmurs are usually organic, and this

belief is not to be held as contradicted by the fact that in a great many cases they are completely got over, and the patient is restored to good health, and has no permanent evidence of cardiac change. If so it is a most encouraging fact in regard to the whole history and prognosis of endocarditis.

Large and Small Hearts.

There is the question of the large or small heart. You must take it in relation to the general muscularity of the patient, but you do meet every now and then with patients or proposers who have a heart that seems too large or too small for their bodies. What is the significance of that? We do not know. I think in general terms most people would say it was better to have a small heart than a big one, that anything in the nature of abnormal enlargement is probably a fact of more grave prognosis than a small heart; but, of course, in cases of abnormally large hearts without valvular disease, the source of the organic change may be in the kidneys. We therefore look to the urine and examine it repeatedly as regards all its qualities, and with a suspicion in our minds that there may be a latent kidney disease that is determining the hypertrophy.

Angina and Pseudo-Angina.

There is a very important class of cases characterised by the group of symptoms first described by Heberden, and spoken of as angina or pseudo-angina. We are still, I think, in want of information as to the gravity of these as bearing on the question of life insurance. In many cases such lives are uninsurable, but in some the question arises, Is it angina in the grave sense, or is it what countless writers have written about under the name of pseudo-angina? Can you divide accurately between the one and the other? If a man has been pulled up after taking a few steps with a violent pain in his heart, if he has got over it by rest and goes about his work again, and the pain does not come back, is that angina or pseudo-angina? You examine him and you find nothing wrong. What is the significance of that? We do not know. I cannot for my part make any absolute distinction between angina and pseudo-angina, and I doubt if anybody else can. Sometimes the opinion on this matter is biassed by the family history, and then it becomes a still more difficult problem. A person has had one or two attacks which might have passed for very slight attacks of something or other hard to define, but he has had relatives who have died suddenly, sometimes two or three generations of them. You cannot refuse to reckon these facts in advising as to insurance, but you do not know how to assess them, and sometimes, if you proceeded on our present information, you might assess them very wrongly.

I will give you one very notable instance. There was a very dear old lady whom I knew, from domestic circumstances, extremely intimately, and I am able therefore to speak about the whole case thoroughly. She was a splendid woman to look at, and everybody who saw her said she might have been a duchess. She was very lively, and an active-minded, exuberant person in conversation and in thought. She had ten children, and brought up her family with every circumstance of normality, but when she had passed middle life, if I recollect aright, two of her brothers had dropped down suddenly and perished in an instant. There was nothing more known about these cases except the fact of the very sudden death. Of course this old lady could not but lay that fact to heart. She laid it so much to heart that she thoroughly believed for a series of years that she, too, was bound to die suddenly. Latterly she lived a great deal abroad, in consequence of her husband having died and her household in England being broken up. On the Continent she got hold of a doctor who examined her and pronounced the fatal word angina pectoris, and rubbed it well in. From that moment she always spoke of herself as a woman who had disease of the heart, and would die suddenly, who had, in fact, angina pectoris. I never got a chance to examine her, because the doctor in question never asked me to do so, and I did not choose to raise inconvenient questions; but her son, who was a medical officer in the Indian Service, came home and examined her and wrote to me, "My mother has no more heart disease than you or I have. I rather think that 'angina pectoris' in this case was merely the impression that she derived partly from a medical opinion, and partly from the sudden deaths of her brothers." It may interest you to know that this old lady visited me the autumn before her death. She took great interest in things, and was driving about the country in a very good state of health for her. She died in the course of the winter of senile gangrene, at 79 years of age. It took five months, I think, to produce the fatal result. She survived in a state between life and death, lingering on for five months instead of dying suddenly, and yet nobody can deny that senile gangrene probably means senile arteries, and that she probably had within her elements of a senile heart more or less developed. Therefore she might have died suddenly at any time. But these are the incalculable elements; these are the things about which a discussion may help us to get at more accurate results.

Dr. Symes Thompson (London) drew attention to the fact that, whilst it was comparatively easy to estimate the value of a life in which evidence existed of definite organic disease, it was much more difficult to make a prognosis in cases in which indications of ill-defined disease of the heart existed. If the disease were in the valves—mitral or aortic—we could estimate fairly the probable length of life, but in cases of intermittent pulse, accentuated aortic second sound, alteration in rhythm, etc., it was difficult to say whether an addition should be made or not. Very slow pulse was not, in his view, of such danger to life as Sir William Gairdner had suggested. Dr. Symes Thompson mentioned cases in which life was prolonged to a great age, although the pulse was barely more than 28 or 32 a minute. He mentioned a case in which, notwithstanding this defect, very active and violent exertion was taken without ill effect. He pointed out that when people came for examination for assurance, they came with a less sympathetic mind than when they came to consult a medical adviser. In the last case they came to a sympathetic friend; in the former case they looked at the insurance doctor as an enemy who would try and trip them up. Thus the heart acted tumultuously with much palpitation, and the well-known symptom of "insurance heart" occurred, which could not always be readily estimated. If the applicant were set at his ease the heart's action became quiet, and the doctor had no hesitation in passing the case at ordinary rates.

Dr. Tyson (Folkestone) said the wall of the heart should be considered as much as, if not more than, the valves. The mere presence of a murmur, without taking into account the history of the patient, the general condition of the heart itself, with the presence of any troubles which often accompanied it, might not be of any value. It was hardly fair to take hospital statistics as a gauge of the prognosis of heart disease, because the heart cases in hospital were often weakened in health by poverty, and their systems generally deteriorated, whereas private cases were, as a rule, much better circumstanced. All must have seen patients who had been condemned many years before, and thus made miserable ever since, who yet were living still. He had collected many cases of aortic valvular disease, and believed that the prognosis was much better than was generally believed. He thought that a slow pulse was, as a rule, of better prognosis than a quick one. In a collection of 13 cases which he had made a few years ago he had found that the average age of the cases was 70; 8 of the 13 were women. In considering the question of heart disease in reference to insurance, it had been customary in dealing with what were called second-class lives to add a number of years to the actual age of the candidate, and charge the premium accordingly. This system seemed rather a lottery, and was certainly unfair both to the proposer and to the company. A fairer method was that in which no extra premium was charged, but if the assured died previously to the age at which, as a first-class life, he might be expected to live an equivalent deduction was made from the amount assured, while if the assured lived as long as a first-class life was expected to live the debt was finally extinguished, and the amount of the assurance paid in full at death.

Mr. Horace Jefferies (Bolton) mentioned two cases of bradycardia occurring in perfectly healthy females rejected by a first-class office. He spoke of the importance of the normal apex beat in examination for life assurance, and said his usual practice was to consider no subject could have a perfectly healthy heart without a normal apex beat. He mentioned

cases of accentuated second sound and possibly real dilatation of aorta in hard-working men of early middle age, and asked what was the insurable disability in such cases. He remarked also upon the importance of the medical referee exercising just discretion in the conduct of examinations of apparently healthy people unknowingly suffering from latent disease of serious import.

Mr. G. M. Low (Manager of the Edinburgh Life Assurance Society) said that one point that had greatly struck him in the discussion was the value which was being attached to statistics. In his opinion, they had in the records of the insurance companies the most reliable guide available on many questions to which Sir William Gairdner had referred.

Dr. F. John Poynton called attention to the importance of dilatation of the heart in the prognosis of the rheumatic morbus cordis in childhood. The effect of the rheumatic poison upon the heart wall was grave. Valvulitis was almost a constant occurrence in rheumatic fever; this he had found to be the case when working at the subject of dilatation of the heart in rheumatic fever with Dr. Lees. In an appendix to a paper by Dr. Lees and himself upon Dilatation of the Heart in the Rheumatism and Chorea of Childhood, read before the Royal Medical and Chirurgical Society of London in June, 1898, he had analysed 150 fatal cases of rheumatic fever in children under 12, valvulitis was found in 149. But, though so frequent, it was usually slight, and could hardly explain the sometimes rapidly fatal issue; dilatation was very frequent. Fresh rheumatic manifestations in the fatal illness occurred in 87 out of 100 cases, and this fact pointed to the extremely important part the toxic action of the rheumatic poison played in the prognosis in contrast to any mechanical influences. The prognosis of heart disease in childhood was so intimately bound up with the history of rheumatic fever, that the tendency for any particular patient to contract another attack of rheumatism, and the causes that precipitated these attacks of rheumatism, became points of vital importance in considering the probable duration of life.

Dr. C. Macfie (Bolton) referred to the difficulty of making a definite prognosis of mitral disease for insurance purposes, and illustrated his remarks by quoting two cases. One was that of a lad of 8 years, with a slight but a definite mitral murmur, and symptoms otherwise consonant with the central trouble. There was an indefinite history of a slight rheumatic attack twelve months before. Examination by another medical man was suggested, and it was made some weeks after, when no murmur could be found. The other was a man aged 47 years, a great cyclist, who had a rheumatic attack, leaving valvular trouble behind. In six months after he was quite well. There was need for great care in cases of that kind before giving a definite prognosis. When such a defect was found for how long should a definite prognosis be put off? Personally he would put off coming to a definite conclusion for not less than twelve months. In his practice he had frequently found delay and careful examinations at intervals to the advantage of the patients and not to the loss of the insurance companies.

Dr. Glover Lyon thought the insurance records would not give much information respecting puzzling cases of heart disease, as these cases were generally declined. He advocated the institution of a class of medically doubtful cases—that is, of cases in which there was an abnormality, the importance of which was not estimable. These cases might be placed in a separate class and rated up heavily, with the option of presenting themselves from time to time, when, if they had become normal, they would be put amongst those insured at ordinary rates.

Dr. James Ritchie said that he always viewed irregularity of pulse with suspicion. In a young person it probably had no serious import, but as it was often the first evidence of failing heart it should be very carefully considered if the proposer was past middle life. It might not mean anything serious, especially if there were evidence that it had been of long duration; but in such cases it was generally impossible to obtain any information as to the length of time it had existed. As to the size of the heart one speaker had stated that it was impossible to have a normal heart with an abnormal apex beat, and Sir William Gairdner found that an enlarged heart was less satisfactory than one apparently the reverse. Dr. James Ritchie would like to exclude from the category of unhealthy hearts those of young men from 24 to 32 who were accustomed to active exercise; a large proportion of them had the heart enlarged. In relation to heart lesions in those who have suffered from acute rheumatism, the state of the heart was not necessarily the most important element in relation to life assurance; the length of time which had elapsed since the last attack, a long period of immunity from rheumatism, and an age above 35 would be favourable.

Mr. G. Eastes (London) spoke of the duty of the medical examiner in the case of a would-be insurer exhibiting functional disorder of the heart produced by excessive tea or coffee drinking and tobacco smoking, especially in regard to tea intoxication. He had notes of several such cases. The cardiac irregularity might be so great that any medical examiner must reject the candidate, if afforded only one opportunity of examination. A second examination should be obtained in two or three weeks' time. Tea acted on the accelerators of the heart without clouding the higher cerebral functions, but in very varying degree in different individuals. The chief symptoms of excessive tea drinking were found in the heart's action, though other symptoms which were negligeable quantities in life insurance were added. The cardiac symptoms were: (1) Increased rapidity; (2) intermittency and irregularity, amounting in extreme cases to *delirium cordis*; (3) the pulse was also very irregular, and altered in volume and force; (4) auscultation revealed no valvular nor hæmal murmur, no pericardial rub, though the sounds might be quite arhythmic. If these symptoms were due to tea alone they would disappear in two or three weeks if tea drinking were discontinued. The irregularity was of purely nervous origin, and did not apparently end in organic disease of valves or substance of the heart, except possibly in the direction of dilatation of the cavities. Fortunately, the tea or coffee habit could be easily given up by most persons if they were warned of the ill consequences of persistence therein. In tobacco habit the heart was irregular and irritable. It was another instance of functional disturbance, which did not easily pass on to organic disease, and was removable when the tobacco habit was stopped. The cardiac complications produced by these three substances used in excess were not instances of interstitial degenerations of the heart, such as were amongst the effects of chronic alcoholism, but were transient effects which called for the relinquishment of the habit and the postponement of the medical examination.

Sir W. T. Gairdner, in reply, said that he was pleased at the discussion which his paper had elicited. He was struck with Dr. Symes Thompson's case of a man with a pulse of 26 who was in good health; if other cases of the kind could be produced the evidence would be very valuable, as almost all would regard a man with a pulse below 30 as being in a condition inconsistent with health. It would be just in dealing with a case with incalculable elements to add a year as loading, and if the insurer lived the full term to take off the "loading," or even perhaps add on a bonus. The accentuation of the second aortic sound in a working man was the effect, he believed, of overstrain; the man in whom such was heard was working himself beyond his capacity. It was very difficult to tell some persons with unsuspected heart disease the truth respecting themselves without producing consternation. Still doctors must always deal with the truth, but there were gentle ways of stating it. Blurting out a word, such as angina, was not telling the truth to the individual who was being examined.

DOES EVIDENCE OF LIMITED FAMILY VITALITY CALL FOR AN ADVANCED RATE OF PREMIUM?

By James Ritchie, M.D.Edin., M.R.C.S.Eng.,
Edinburgh.

The necessity for taking into careful consideration evidence of limited family vitality in relation to life assurance has been referred to by several of the speakers at the meetings of the Life Assurance Medical Officers' Association, but only incidentally, and not under such conditions that it could be made the subject of separate discussion. We should not

allow unimportant defects either in family history, personal history, or in physical condition to affect the premium-rate by the imposition of a small extra. Small extras are on the whole prejudicial to the offices. But while we guard against overcaution, it is necessary that we select our risks with care, and it is possible that we may find after a more careful and a more extended investigation that the evidence of limited family vitality requires not a small but a substantial increase in the premium-rate.

As medical officers we have already acknowledged our opinion of the importance of the influence of heredity by the position which we have given to the questions on family history in the medical report forms. Practically we allow evidence of longevity to counterbalance some weak points, it may be in personal history or in physical condition, and frequently these are brought prominently before us in the reports submitted to us, but when there are points which indicate a short life tendency they are often not remarked upon, or it may be they are minimised. Dr. Hermann Weber, in his presidential address before the Association above referred to, gives the family histories of two cases which came under his notice; they were both bad, showing a marked short life tendency, nevertheless in both cases the family history was reported by the examining officer to be good, and the risks recommended for acceptance at ordinary rates. Are we justified in viewing with suspicion cases in which both parents, or both parents and several members of the family died at comparatively early ages?

The influence of heredity in plants and in animals is well known. By careful selection we may perpetuate peculiarities, even those which are markedly abnormal. In relation to the subject under discussion we must remember that the inherent cause of death has a structural existence. It is not the same in all individuals. Different structures have different degrees of vitality, and the same kind of structure has not the same degree of vitality in different individuals. The intrinsic value of organs upon which life depends varies in different individuals. Intrinsic vitality is not a simple quality, but a complex one; it includes the power of assimilating a sufficiency of suitable nourishment, the ability to resist the inroads of morbific influences, and the power to deal with them when they arise either from within or outside the system. Specific characters of structures, including specific powers of vitality, are transmitted hereditarily. Then as to time. Periodic developments agree as to their time of appearance both in parents and offspring; there is also an agreement in the time of disappearance of functions and decay of structures. The order in which structures normally succumb has not been accurately determined; it is not an invariable order. We are accustomed to note an hereditary tendency to the decay of certain external structures, such as hair and teeth; these are not vital organs, but internal organs and structures whose influence is vital follow a similar set of laws. Decay is hereditary as to cause, as to structure affected, and also as to time. These are affected by the interaction of the constitutions of the parents, whereby is produced either an accentuation of the tendencies in certain directions, with a diminution of the vital powers in the progeny, or an increase of the vital powers with a lengthening of the expectation of the children. The early deaths of both parents should always be carefully considered, even although the causes of death should not be those which are ordinarily called hereditary diseases. If diseases, although different, are such as to present evidences of feebleness of vital powers, whether in relation to nutritional defects or to vulnerability to morbid poisons, the risk should be viewed as greater than normal. The history of other children in the family, when there are more than the proposed life, should be weighed, as affording evidence of the kind of physical heritage, the proportion of deaths in the family being of more importance than the actual number. The deaths of young children may be viewed less seriously than those in adult life, and special importance should be attached to deaths between 40 and 60, specially between 50 and 60.

Should both parents die of similar diseases, whether tuberculous (which association is already acknowledged to call for a large extra), or diseases of heart, of blood vessels, of kidney, nervous diseases, cancer, diabetes, or alcoholism, a large extra should be imposed, the amount varying with the nature of the disease, the age of parents, and that of the proposer. We should also remember how intimate are the relations between apoplexy, chronic kidney diseases, and heart troubles.

It is doubtful whether we attach to a family history of consumption the extended influence which it ought to carry. In relation to transmitted constitutional tendency to tuberculous disease probably we attach sufficient importance, but from an investigation made by Dr. Thomas A. Foster, Medical Director of the Union Mutual Life Insurance Company of Portland, Maine, it would appear that, by its natural debilitating influence, consumption in the family history tends to premature death from other diseases.

The deaths of a considerable number of the members of a family from infectious diseases, including pneumonia, calls for careful consideration.

To enable us to place this question on a satisfactory basis we desire to have statistics. It is extremely difficult to obtain reliable statistics regarding short-lived families, and even published statistics in relation to communities are not very numerous. We recognise that members of certain families soon get aged, that some of them are short-lived, and we notice in churchyards that on one family group of gravestones are recorded many early deaths, while on other groups it would appear that there have been many who have lived long. Those who are accustomed to deal largely with figures may perhaps be correct in considering that nothing practical should be founded on such observations.

Mr. Pliny Earle Chase, in a communication to the American Philosophical Society, shows that in Philadelphia during sixty-two years the average mortality was 1 in 47.8, whereas the mortality in the coloured population was 1 in 27.8. Further, that of the white population in Philadelphia, the Quakers had an expectation 24.62 per cent. higher than Philadelphians not Quakers, or a proportionate mortality of 23.37 per cent. less than their neighbours. The hereditary tendency to longevity among Quakers is evidently much greater than among the Philadelphians; and on the other hand, the short lives of the negro population would make them bad risks for insurance companies.

In connection with a company which has been in existence for twenty years, out of 615 claims which have been settled 96 show that at the time the policies were issued both parents were dead at or under 65 years. If we deduct from these cases of death from accident either in parents or in policy holder, there remain 74 to be further examined. The average age of father at death was 54, of mother 49. The average age of assured at entry was 40.5, at death 48.2. It is of considerable importance to note that whereas there are 39 cases in which both parents died at all ages under 60, there are 35 claims in which both parents died between 60 and 65—that is, nearly a half of the whole. What determined the much larger proportion in the latter class of cases, namely, death of one or both parents in the six years from 60 to 65? The number is nearly as large as that of those cases in which one or both parents died at all ages under 60. Was it not that in these 35 cases the individual had reached the age at which the family vitality was exhausted? Nevertheless, they had not reached the ordinary expectation by about twelve years. Of the 73 claims only 10 had reached or passed the age of 60 at the time of death none of them had passed the age of 64. In all except 3 of the 10 one or other parent had also reached the age of 60. These relations of age are of great interest in relation to the question under discussion. There may be among upwards of 5,000 policies which belong to the group examined, and which remain in force, a considerable number of cases in which both parents died comparatively early, but the policy holders may prove to be better lives than those which have already become claims. The experience of older offices would be very valuable in relation to this question. Probably it will be found that evidence in family history of limited vitality should be met not by a nominal, but by a substantial, extra.

Discussion.

Sir Wm. Gairdner said that he had not come prepared to say anything definite on the subject of Dr. Ritchie's paper, but being called upon by the President, he would venture a few words. Looking back over a considerable number of

years, it appeared to him probable that, while in the earlier part of his medical career too much importance was attached in insurance papers to heredity as a counterpoise to the information derived from the individual life, the tendency now was perhaps rather in the opposite direction. The discovery, important as it was, of the tubercle bacillus, and the influence of the writings of Cohnheim, who, even before the day of Koch's discovery, maintained that tubercle was an infection, and therefore could not possibly be hereditary, but must be implanted in the individual, was probably a makeweight against the doctrine of heredity, not only in that particular aspect of it, but all round, as it were. If heredity was a medical superstition, as regards tubercle it was inferred, why might it not also be a superstition or an exaggeration in regard to many other diseases? Perhaps the idea had never been thus precisely formulated, but the trend of opinion had no doubt been in this direction. Sir W. Gairdner remembered at one time getting rather a severe remark from Sir Robert Christison for venturing as a young man to hold that the Standard and the Scottish Widows' Fund offices were too exacting in discouraging absolutely (as at that time was to be inferred from their printed papers) proposals of insurance for persons in whose immediate family history more than one death had occurred from consumption. Sir Robert explained that although that might be the rule, it lay with the medical advisers to admit numerous exceptions. No one would be inclined nowadays to maintain that the practice of the offices was unduly in the direction above indicated, Cohnheim notwithstanding; but taking the argument out of this special field, as the heredity of tubercle or any other disease *per se*, there was no doubt at all, as Dr. Ritchie had very well shown, that long life, short life, and liability to certain modes of termination of life, and that within particular limits of age, did, as matter of fact, run in families, sometimes to several generations. Nay more; the liability to incur, and also to succumb to, certain kinds of infectious disease, for example, typhoid fever, diphtheria, and perhaps scarlet fever, did as a matter of fact run in families, however the fact might be explained. That we could explain these facts did not make them otherwise than facts; any more than the difficulty of explaining how six fingers or toes ran in a family, even to many generations, would explain away the fact that it was so.

GOUT AS A FACTOR IN LIFE ASSURANCE.

By James Meikle,

Actuary of the Scottish Provident Institution.

My observations are based upon 525 lives charged an extra premium by assurance offices in Scotland in consideration of their being afflicted by gout.

Table I.—*Showing the Ages of the Lives on Presentation: they Extended from 21 to 77.*

Under 30	16
30 to 39	116
40 to 49	200
50 to 59	144
60 to 69	43
70 to 77	6
Total ...	

During the period under observation these assurants collectively passed through 4,548 years of life. Ninety-three did not maintain their assurances, 160 died, and 272 were alive at the close of the observations.

"Expected" and Actual Deaths among Gouty Persons.

I have ascertained the number that entered upon each age of life, and I have computed the number that were expected to die at these ages according to the experience of other lives that were, at the time of their assurance, examined by medical experts, and thought to be free from all imperfections, and usually denominated healthy lives. The number calculated to die according to this standard was 120. The actual number who died was 160, or an increase of 33 per cent. This increased mortality, with one exception, pervades the whole range of life.

Table II.—*Showing the Expected and Actual Deaths at Various Ages of Gouty Persons.*

	Years of Life.	Expected Deaths.	Actual Deaths.	Relation to the Standard of Healthy Lives.	Rate per Cent of Excess.
Under 40	526	4.695	8	+ 3.305	71
40—49	1,253	15.689	27	+11.311	72
50—59	1,483	30.929	45	+14.071	46
60—69	990.5	39.396	49	+ 9.604	24
70—79	255	21.656	25	+ 3.344	15
80	40.5	7.656	6	— 1.656	
Totals	4,548	120.021	160	39.979	33

This result clearly demonstrates that gout as a factor in a man's physical constitution when he presents himself for assurance renders his expectation of future life less than the standard of healthy lives, and that an extra charge should be imposed upon all such cases. The amount of this extra charge cannot be ascertained for each individual but only for the group.

Table III.—*Showing the Amount of Extra (in combination with a rate of 3 per cent. interest) that would require to be Paid by Gouty Persons upon the Supposition that the Rate of Mortality which has thus been found to Prevail among such Lives is the Basis of the Required Contributions.*

Age.	Per £100.	Age.	Per £100.
	£ s. d.		£ s. d.
25	0 11 10	60	0 14 10
30	0 12 1	65	0 13 6
35	0 10 5	70	0 9 5
40	0 12 9	71	0 8 2
45	0 13 5	72	0 6 6
50	0 14 0	73	0 4 6
55	0 14 8	74	0 2 0

The offices before whom these persons presented their lives for assurance imposed, for their own protection, certain extra premiums which I have relegated to the corresponding older ages, and, on the assumption that those increased ages are the natural ages, I have repeated the foregoing calculations in order to test whether the value of life was sufficient for the extra risk.

The result clearly demonstrates that the extra charge made by the offices was insufficient to cover the extra risk of persons having gout or having a gouty diathesis, or having a gouty predisposition inherited from gouty parents.

Expectation of Life of Gouty Persons.

I insert a table of the future lifetimes to be expected by healthy lives and by gouty lives:

Table IV. *Showing the Expectation of Future Lifetime of Gouty Persons.*

Age.	Healthy Lives.	Gouty Lives.	Difference.
	Yrs. Mths.	Yrs. Mths.	Yrs. Mths.
25	38 5	32 3	6 2
30	34 8	29 5	5 3
35	31 1	26 7	4 6
40	27 5	23 0	3 5
45	23 10	20 10	3 —
50	20 4	17 11	2 5
55	17 —	15 2	1 10
60	13 10	12 7	1 3
65	11 1	10 1	— 10
70	8 6	8 2	— 4
71	8 1	7 10	— 3
72	7 7	7 5	— —
73	7 2	7 1	— 1
74	6 9	6 9	— —
75	6 4	6 4	— —

It would appear that the expectation of gouty lives after age 70 is not much under healthy lives.

Later History of Gouty Persons.

At the close of the observations there were 272 of the assurances in force. I am only able to trace the issue of 210 of these lives. I have traced the course of these lives, and the result abundantly fortifies and corroborates all the foregoing conclusions. Of these 210, 20 voluntarily terminated their assurances, 184 died, and 6 only are alive at the present date. These 210 lives entered upon 2,623 years of life, and the number that were expected to die according to the standard of healthy lives as before referred to was 111, whereas 184 died, an excess of 73 in number, or of 66 per cent.

Table V.—*Showing the Expected and Actual Deaths among 210 Gouty Persons.*

Age.	Years of Life Entered Upon.	Computed Deaths.	Actual Deaths.	Actual Greater.	Rate Per Cent. of Excess.
Under 50 ...	444	5.361	6	0.639	—
50—54 ...	341	6.058	20	13.942	230
55—59 ...	420	10.195	20	9.805	97
60—64 ...	473	16.562	23	6.438	39
65—69 ...	423	21.039	33	11.961	57
70—74 ...	283	20.901	41	20.099	100
75—79 ...	169	19.119	19	9.115	31
80—84 ...	60	9.766	10		
85— ...	10	2.263	3	0.737	—
	2,623	111.264	184	72.736	66

The evidence of the excess mortality of gouty lives is made stronger by this table, and if this experience had been incorporated with the results that were first exhibited, the combined result would demonstrate that a still higher extra charge would have been required in order that the contributions should pay the claims.

If it be assumed that the possible lifetime of the 184 persons who died was exhausted after the further lapse of 35 years, I have on that basis compared their total expected lifetime with their actual lifetime, and the result is that they did not live up to the tabular expected lifetime by 942 years.

Table VI.—*Showing the Total Expected and Actual Lifetime of 184 Gouty Persons.*

	Total Years expected to Live.	Years actually Lived.	Total Shortage.	Average Shortage by each.
	Yrs. Mnths.	Yrs. Mnths.	Yrs. Mnths.	Yrs. Mnths.
9 lives between 25 and 40	280 11	197 —	83 11	9 4
16 ,, ,, 40 ,, 44	406 7	304 6	102 1	6 5
22 ,, ,, 45 ,, 49	496 11	284 7	212 4	9 8
39 ,, ,, 50 ,, 54	747 9	479 —	268 9	6 10
29 ,, ,, 55 ,, 59	458 8	317 5	141 3	4 10
38 ,, ,, 60 ,, 64	482 9	389 5	93 4	3 2
12 ,, ,, 65 ,, 69	110 —	84 5	34 7	2 10
19 ,, ,, 70 —	140 —	134 7	5 5	— 4
Totals	3,132 7	2,190 11	941 8	(5 1)

It is to be noted, however, that the 6 persons who are now living have over-lived their calculated lifetime by 34 years. The 190 gouty persons have thus underlived their expectation by 900 years or 30 per cent.

I have further taken out the lifetimes of another group of 184 persons in exactly similar circumstances, but who were not charged extra, and I find that they have lived, to this date, 3025.8 years, which is short of the full tabular lifetime by 106 years, but inasmuch as there are 10 still living, and their expected future lifetime is about 63 years, it may be held that they have lived up to the full standard lifetime for healthy lives.

Gout and Occupation.

If we refer to medical authorities on gout, it will be found that the habits of life which conduce to a gouty diathesis are the over-consumption of animal foods and the drinking of acid wines generally, but especially the drinking of cheap beers and of dry champagnes beyond the assimilative powers and capacities of the constitution. In partial corroboration of this statement I may refer to Dr. John Tatham's Report of the Mortality during the three years 1890, 1891, and 1892, of males in England engaged in certain occupations. It is a relative statement. He first places the mortality from gout of occupied males at 100, and he states the relative mortality of persons engaged in certain occupations at figures over and under that of 100, depending upon the intensity of gout as a cause of death:—

Occupied males...	100 die from gout.
Maltsters	150 ,,
Brewers...	500 ,,
Publicans (inn keepers and their servants)...	600 ,,

Dr. Tatham also states that if mortality from gout of all occupied males in England be placed at 2, the relative mortality from gout of hotel servants, innkeepers, etc., ranges from 10 to 20, all other occupations being less.

Another series of facts in the same direction is stated to have been obtained from the Report of the Sanitary Commissioner with the Government of India in the year 1892. The army in India in that year numbered: English soldiers, 68,162; Indian soldiers, 145,340; total, 213,502. Now Surgeon-Colonel P. de H. Haig states that the English soldier consumes of animal food as much in a day as the Indian soldier consumes in a week. The Indian soldier lives chiefly on grain, pulse, and rice; they join on a "long-service" system, and being natives have been exposed to malaria from childhood. Gout is three times more active among English soldiers in India than among native soldiers, as is seen from the following table:

Table VII.—*Showing the Number and Ratio of Invaliding from certain Diseases of English and Native Soldiers respectively in India.*

Disease.	Number.		Ratio.	
	English.	Indian.	English.	Indian.
Alcoholism	272	11	5,232	100
Rheumatic fever ...	115	48	511	100
Gout	13	9	308	100

Causes of Death in Gouty Persons.

I have ascertained the causes of death of the 160 persons who died in the original series of observations (see Table I), and I find that after deducting those who died from various miscellaneous diseases, there were left 97 who may be grouped under certain main heads of disease.

Table VIII.—*Showing Causes of Death in 160 Gouty Persons.*

No.	Died from—	Per Cent.
40	Affections of the brain.	42
25	Affections of the heart.	26
11	Gout.	11
11	Affections of the kidneys.	11
10	Natural decay.	10
97		100

In contrast to these facts permit me to state that I have recently taken out the rate of mortality of abstainers; they numbered upwards of 6,500 and the total number of years to which they were exposed exceeded 31,000. The number who died was only 152, while if the rate of mortality which has been found to prevail among gouty persons had also prevailed among abstainers, the number would have been 553. Truly these are colossal facts.

These remarks on the importance of gout as a factor in determining the value of a life that has been presented for assurance encourage me to give expression to the thought that there may be many other points in a man's career—his occupation, his residence, his habits, his sickness, and his death—which might with advantage be examined by a combination of the special knowledge of the medical profession with the exactness of the actuarial. The medical determines the facts, the actuarial analyses and arranges, combines and classifies.

Discussion.

The President remarked that according to Mr. Meikle the insurance offices should charge about double the extra premium they had been charging. He suggested that the managers of insurance offices should unite in fixing a uniform raised rate for gouty applicants. Otherwise a man, deterred at one office by high rate, would go to another and insure there. That would be fair neither to the office nor to the medical examiner.

Dr. Sprague said that even if applicants did desert one office for another in that fashion, the deserted office would in the long run benefit by its independence.

Dr. Balfour Graham asked what Mr. Meikle meant by gout; it might mean a gouty dyspepsia or a contracted kidney. He spoke of the somewhat alarming statement of the President that Mr. Meikle's extra premium ought to be doubled. Thanks to recent researches, gouty solvents were now known which in his opinion ought to lower rather than raise the risk of gout in future.

Mr. James Chatham observed that the results of the paper based upon office statistics were certainly extraordinary. This might be due to some extent to the manner in which the observations of the early period had been treated; but that objection seemed to be set at rest by the later observations. Attention should be directed in this and other cases to the incidence of the mortality. The medical officer of a company sometimes rated up a life five or ten years; but from the different method employed in calculating the monetary addition in whole life and endowment assurance policies, it sometimes happened that practically no addition was made to the latter class, although the risk fell to a great extent during the period of the insurance.

Mr. Archibald Hewat, F.F.A., F.I.A., hoped that Mr. Meikle's observations as to the statistical method in the matter of rating of risks would be taken to heart. A speaker had said during one of the discussions in the Section that his recommendations as a local medical examiner were sometimes overturned by the chief medical adviser at the head office. But that speaker must have overlooked the fact that he was only one of four who took part in the rating. These were the local examiner, the chief medical officer, the actuary, and the directors. The three first guided the directors in arriving at their decision. The venerable Carlisle life table was the joint production of a medical man and an actuary, and one result of the discussions which had taken place would, he hoped, be an ever closer relation between the medical and the actuarial advisers, to the advantage of the great institution of life assurance.

Mr. G. C. Stenhouse said that it should be recollected that Mr. Meikle's observations were founded on "lives charged extra for gout." No doubt many gouty people would be taken without extra, and the inclusion of these in the observations would perhaps modify Mr. Meikle's view as to the extra which should be charged. It would be necessary to trace the causes of death. As far as the results of the Scottish Widows' Fund went, very few members appeared as having died from gout. Probably further observation would bring out the fact that such a heavy extra as Mr. Meikle suggested was not necessary in cases of gout.

Mr. G. M. Low thought Mr. Meikle's figures very surprising, but pointed out that they dated from 1863, when the term "gout" was used in a much looser way than at present. Gout might in many of these cases have covered many other things than it did nowadays.

Mr. Meikle, in reply, said that in the cases he had taken, the insurance office had charged for gout, and it was upon that he had based his calculations. He was quite well aware of the point urged by Mr. Low; but his results were right according to the information on which he had based his paper.

PREGNANCY IN RELATION TO LIFE ASSURANCE.

BY

John Playfair, M.D., Med. Ref. North British and Mercantile Insurance Co.; Physician to the Royal Hospital for Sick Children, Edinburgh.

and T. Wallace, F.I.A., F.F.A., Actuary, North British and Mercantile Insurance Company, Edinburgh.

Scope of Inquiry.

The object of this paper is to discuss the extra risk to an insurance company in the case of a female who at the date of the insurance is pregnant. It is not intended to consider the extra risk arising from possible future pregnancies of those who, at the date of insurance, are unmarried, or who, being married, are not pregnant. The extra risk in these cases is sufficiently covered by the ordinary premium calculated from a mortality table such as that constructed by the Institute of Actuaries from the experience of insurance companies of healthy female lives assured. The scope of the paper is therefore limited to the question of the extra risk involved in a current pregnancy, which is not covered by the ordinary premium so derived.

This question is not without importance. Although applications for insurance from pregnant females are not common they do occur. In our experience, they have become more numerous in recent years, and it is probable that they will become more numerous still in the future.

Defects of Existing Data.

It is unfortunate that there are no published data by which the extra risk involved in a current pregnancy can be accurately gauged. It is true that we have statistics showing the death-rate in childbed of the general population, the death-rate of lying-in hospitals, and the death-rate of patients in the private practice of certain eminent physicians; but these statistics relate to persons whose circumstances and surroundings are more or less different—in many cases widely different—from the circumstances and surroundings of the females who apply for life assurance; and just as a mortality table of the general population or of a particular district cannot be safely taken to indicate the death-rate of all lives assured, so the statistics just referred to cannot be safely taken as a measure of the extra risk which an insurance company incurs in the case of a woman who effects a policy during pregnancy.

The whole of these statistics present another defect of equal if not of greater moment. They show, and were collected specially for the purpose of showing, the death-rate of or in childbed; and the materials from which they are made up were based on observations extending only from the day of confinement, for a period of from ten or twelve days to a month thereafter. Now the death-rate which we seek is not the death-rate of or in childbed, not the death-rate in the period from confinement onwards, but the death-rate for the whole period from the beginning of pregnancy onward through confinement until complete recovery has taken place. It has been stated that during pregnancy a woman is less liable than at any other time to contract diseases other than those peculiar to pregnancy; and if the statement be correct it might be inferred that the mortality of the period of gestation is comparatively low. It is doubtful whether the statement is correct, and it must not be forgotten that the diseases peculiar to pregnancy are themselves full of danger, and often prove fatal. Besides, when other ailments are contracted during pregnancy they may assume an aggravated form, or they may cause abortion or miscarriage with blood poisoning. A fatal issue in such circumstances is by no means uncommon; or if death does not result the patient will not unlikely be left with a weakened constitution, and so her expectation of life be materially lessened. But whether the mortality of the period of gestation be high or low, that period, as well as the time of confinement and puerperium, should be brought under observation; and the effect of doing so will be to lessen or to intensify the rate of mortality in childbed, according as the death-rate during the period of gestation is low or high.

The statistics of the general population usually give the death-rate *of* child-bed not the death-rate *in* childbed, that

is to say, they do not include the deaths from non-puerperal diseases, even although the deaths occur during the puerperium. For our purpose all deaths from whatever cause should be taken into account. Moreover, the published statistics of lying-in hospitals do not enable us to determine the death-rate in childbed of the married and unmarried separately. Inasmuch as a large number of the latter are included in hospital statistics, these statistics have been thereby, as we shall afterwards see, rendered still more unsuitable for our purpose.

The insurance companies and they alone can furnish data of the character required, for each case usually comes under their observation in the earlier months of pregnancy, and remains under observation until death or recovery, or longer. It is not likely that any individual office will have a sufficiently large number of cases for the purpose, but all the offices might combine their experience of cases of pregnancy as they are now combining their experience of insured lives generally.

Dr. Farr's and Dr. Duncan's Tables.

Among the statistics by which we have been hitherto chiefly guided are the following:

1. Dr. Farr's table published in the *Appendix to the Registrar-General's Seventeenth Annual Report for England and Wales* showing, for decennial age groups, the mortality of women bearing children in the seven years 1848-1854. The married and the unmarried are both included. No distinction is made between first and subsequent confinements. In determining the death-rates Dr. Farr used the actual deaths which had occurred, but the number of births in each quinquennial group, not having been actually ascertained, was determined by estimate only.

2. Dr. Duncan's tables published in his valuable work on *Fecundity, Fertility, and Sterility*, showing for quinquennial age-groups the mortality of child-bearing women in Edinburgh and Glasgow in 1855. Married women only are included, and the death-rates of the primiparæ and of the multiparæ are shown separately. All deaths from whatever cause occurring within one month after childbirth are taken into account.

3. Tables, also by Dr. Duncan, published in the same work, showing for quinquennial age-groups the mortality of child-bearing women in the Dublin Lying-in Hospital. Married and unmarried are included. In one of the tables actual facts are given for primiparæ and multiparæ combined. The other table, which deals with multiparæ alone, does not give actual facts, and proceeds on the assumption that the mortality of the primiparæ is double that of the multiparæ.

Table I.—*Table showing the Death-rates per cent. by Dr. Farr and Dr. Matthews Duncan.*

Age.	Dr. Farr, England. Deaths of Childbed. All Confinements. Married and Unmarried.	Dr. Duncan, Edinburgh and Glasgow. Deaths in Childbed. Married.		Dublin Hospital. Deaths in Childbed. All Confinements. Married and Unmarried.
		Primiparæ.	Multiparæ.	
15—19	0.668	1.208	—	1.312
20—24		1.291	0.711	0.781
25—29	0.425	1.291	0.521	0.772
30—34		2.260	1.115	1.074
35—39	0.633	0.746	0.879	2.148
40—44		—	0.991	1.007
45—49	0·883	—	2.174	—
50—55		—		—

Mr. Coghlan's Tables.

The latest statistics, and in some respects the most complete, are those given by Mr. Coghlan, Government Statistician for New South Wales, in a paper read before the Royal Statistical Society, on June 21st. They are based on the births and deaths registered in that Colony during the years 1893-1896, and are valuable on account of the large numbers (153,090 confinements and 1,015 deaths) with which they deal.

Table II.—*Table showing for New South Wales, 1893-96, the Unadjusted Death-rates per cent. of Childbed for Quinquennial Groups of Ages.*

Age.	Coghlan, New South Wales. Deaths of Childbed.		
	Primiparæ.	Primiparæ and Multiparæ combined.	
	Married.	Married.	Unmarried.
17—19	0.860	0.726	1.199
20—24	0.634	0.439	1.095
25—29	0.935	0.508	0.748
30—34	1.507	0.674	1.038
35—39	1.389	0.855	0.189
40—44	3.247	1.132	0.602

From his adjusted figures Mr. Coghlan comes to the conclusion that "the risk of unmarried women in childbirth is at every age greater than for the married, the disproportion in the ratios being greatest at the lower ages." It is to be regretted that Mr. Coghlan does not give us the means of comparing the death-rates of the married primiparæ with the death-rates of the married multiparæ.

Nearly all of these tables show a minimum rate of mortality at or about the age of 25, and a gradually increasing rate at the higher ages. Some of them also show a very high rate of mortality at ages under 20—due, no doubt, partly to the unmarried included in the data.

Statistics of the Royal Maternity and Simpson Memorial Hospital, Edinburgh.

Before Mr. Coghlan's figures were made public, we had—with the view of procuring, if possible, statistics of recent date which, though known to be still in many respects defective, might perhaps be somewhat nearer what we desire—made application to the officials of the Royal Maternity and Simpson Memorial Hospital, Edinburgh, for permission to make use of the records of that institution. The desired permission was promptly and cordially granted; the registers were freely presented for our inspection, and every facility was given for collecting the material. We take this opportunity of expressing our thanks to the resident physicians for their courtesy and attention all through the investigation, and especially for their valuable assistance in looking into special cases and clearing up points of doubt and difficulty.

The records of the institution have evidently been regularly, methodically, and carefully kept. We are satisfied that every effort has been made to secure as far as possible the accuracy of the recorded facts, not only regarding the intern but also extern cases.

The investigation extended over a period of about 10½ years, from January, 1887, to July, 1897, during which 10,038 cases were treated by the hospital staff. The total number of deaths from all causes amounted to 87, being 0.867 per cent. of the cases treated, or 1 in 115. There were 3,254 patients treated in the hospital, and 6,784 at the patients' own homes. Of the former 52, being 1 in 62, died: of the latter 35, being 1 in 194, died. The heavier mortality among the intern patients is partly, if not wholly, explained by the fact that all extern cases presenting features of difficulty or of danger were at once removed to the hospital, where consequently an unusually large proportion of the serious cases were treated, thus tending to increase the rate of mortality of the intern and to decrease the mortality of the extern cases.

It is the custom in this as in other similar institutions to dismiss the patients at the expiry of ten to fourteen days from the date of confinement. Those who are not then in a fit state to go to their own homes are removed to the Royal

Infirmary or elsewhere for further treatment. Extern patients, also, if not making a good recovery, are similarly dealt with. All cases of this kind have been traced, and the deaths, of which there were several, which occurred among them are included in the number above mentioned.

We have not thought it desirable to give separately statistics relating to the extern and intern cases, because had we done so the value of the results would have been impaired by the paucity of numbers; and although the extern cases are as a rule under observation for only a short period we are satisfied that the records of the institution in regard to such cases can be as confidently relied upon as those relating to the patients treated in the hospital.

Table III shows, in quinquennial age groups, the whole number of cases, intern and extern, dealt with at the Royal Maternity and Simpson Memorial Hospital, the deaths among them, and the percentage of deaths to the number of cases.

Table III.—*Edinburgh Maternity Hospital Experience. Married and Unmarried Combined.*

Age.	Primiparæ and Multiparæ Combined.		
	Cases.	Deaths.	Percentage.
Under 20	797	13	1.631
20—24	2,955	20	0.677
25—29	2,701	18	0.666
30—34	1,799	15	0.834
35—39	1,300	11	0.846
40—44	447	7	1.566
45—	39	3	7.692
	10,038	87	0.867

The lowest death-rate is at ages 25—29, but although showing a tendency to increase it does not vary much during the whole period from age 20 to age 40. At ages under 20, and in the quinquenniad 40—44, the death-rate is much higher. At older ages it is higher still.

Table IV shows the deaths and percentage of deaths in multiparæ and the primiparæ separately.

Table IV.—*Edinburgh Maternity Hospital Experience. Married and Unmarried Combined.*

Age.	Primiparæ.			Multiparæ.		
	Cases.	Deaths.	Percentage	Cases.	Deaths.	Percentage
Under 20	721	12	1.664	76	1	1.316
20—24	1,452	19	1.309	1,503	1	0.067
25—29	453	7	1.545	2,248	11	0.489
30—34	102	5	4.902	1,697	10	0.589
35—39	39	2	5.128	1,261	9	0.714
40—44	10	1	10.000	437	6	1.373
45—	—	—	—	39	3	7.692
	2,777	46	1.656	7,261	41	0.565

Here also it will be observed there is a high death-rate at ages under 20 and over 40. The death-rate is lowest at ages 20-24, and it gradually increases at the succeeding higher ages. The death-rate of the primiparæ is higher at all ages than that of the multiparæ, the excess at ages from 30 upwards being very great.

We refrain from making any comparison of these results with any hitherto published, because none of them have been prepared in the same way, or from materials exactly similar in character.

Of the 10,038 patients under observation, 7,045 were married, and 2,993 were unmarried. Of the former 54, or 1 in 130, died. Of the latter 33, or 1 in 91, died.

Relative Death-Rates of Married Primiparæ and Multiparæ.

In the following tables are given the death-rates for the married alone, and for the sake of comparison we have added to Table V the death-rates given in Table III (married and unmarried combined).

Table V.—*Edinburgh Maternity Hospital Experience. Married Only.*

Age.	Primiparæ and Multiparæ Combined.			Percentage Married and Unmarried Combined.
	Cases.	Deaths.	Percentage.	
Under 20	267	1	0.375	1.631
20—24	1,582	8	0.506	0.677
25—29	2,003	15	0.749	0.666
30—34	1,545	12	0.777	0.834
35—39	1,195	11	0.921	0.846
40—44	416	5	1.202	1.566
45—	37	2	5.405	7.692
	7,045	54	0.767	0.867

It will be observed that by the exclusion of the unmarried the death-rates have been reduced at almost every quinquennial age-period, and that the greatest reduction obtains at ages under 20, in both respects agreeing with Mr. Coghlan's conclusions.

We now distinguish between the primiparæ and the multiparæ among the married.

Table VI.—*Edinburgh Maternity Hospital Experience. Married Only.*

Age.	Primiparæ.			Multiparæ.		
	Cases.	Deaths.	Percentage.	Cases.	Deaths.	Percentage.
Under 20	212	1	0.472	55	—	—
20—24	514	7	1.362	1,068	1	0.094
25—29	179	5	2.793	1,824	10	0.548
30—34	45	5	11.111	1,500	7	0.466
35—39	20	2	10.000	1,175	9	0.766
40—44	4	—	—	412	5	1.214
45—	—	—	—	37	2	5.405
	974	20	2.053	6,071	34	0.560

Owing to the subdivision the figures have now become somewhat attenuated, but the rates are fairly regular, and still bear some of the characteristics shown in the preceding tables. In the multiparæ there is the low death-rate at or about the age of 25, and, with a trifling fall at ages 30-44, an increasing rate at the older ages. The mortality of the primiparæ is much higher at all ages than that of the multiparæ, and increases much more rapidly with the increase in age.

It has generally been assumed that the mortality of the primiparæ is twice the mortality of the multiparæ, and Dr. Duncan acted on this assumption in preparing several of his tables. The figures above given, however, point to a much greater difference between the respective death-rates; and it appears to us that this is a point which demands further careful investigation.

The death-rate among the unmarried is given in the following table:

Table VII. *Edinburgh Maternity Hospital Experience. Unmarried Only.*

Age.	Primiparæ and Multiparæ Combined.		
	Cases.	Deaths.	Percentage.
Under 20	530	12	2.264
20—24	1,374	12	0.874
25—29	698	3	0.430
30—34	254	3	1.181
35—39	105	—	—
40—44	31	2	6.452
45—	2	1	50.000
	2,993	33	1.103

The observations from which the figures now submitted have been derived do not include the period of gestation. On that account, and for other obvious reasons, they are still defective for insurance purposes. Even if they were applicable, they do not show the exact extra premium required to cover the risk of pregnancy. The expected deaths—that is to say, the deaths for which provision is made in the ordinary premium—should be deducted; but as the period of observation is short—about fourteen days only on the average—the deduction is small, and may practically be disregarded.

In practice many offices postpone consideration of proposals from pregnant women until after confinement. Most of the offices which do entertain such proposals usually charge an extra premium uniform in amount for all ages, the extra for a first pregnancy being twice as much as the extra for a subsequent pregnancy.

Conclusions.

The following are the conclusions at which we have arrived from a consideration of the whole of the data above-mentioned:

1. For the uniform extra premium at present charged, an extra, varying in amount according to age, should be substituted.

2. The extra premium for a first pregnancy should be at least three times as great as that for a subsequent pregnancy.

3. A proposal for insurance from a woman aged 30 or upwards, pregnant for the first time, should be delayed.

4. A proposal for insurance from a pregnant woman, aged 40 or upwards, whatever the number of the pregnancy, should be delayed.

We are indebted to Mr. Halliday, F.F.A., of the North British and Mercantile Insurance Office, for valuable assistance in collecting and arranging the data and preparing the tables now submitted.

Mr. G. M. Low (Manager, Edinburgh Life Assurance Society) observed that the first question which arose upon the statistics submitted was whether the mortality in childbed of the women treated at the Maternity Hospital was likely to resemble that of women of the middle and upper classes who became the subjects of life assurance. This was a question which medical men would be better able to answer than actuaries; but, taking it that the figures were appropriate to the case of insuring persons, it would appear that the extra rates hitherto charged by assurance companies for this risk were insufficient.

Mr. McCandlish said that he had looked into this matter many years ago, and from the information he could then gather he had come to the conclusion that the risk of pregnancy among the lives of women likely to assure with ordinary life offices was not nearly so great as among the general population. He drew attention to the importance of ascertaining that genuine good reasons existed for insuring the life, and to the fact that female life generally after the child-bearing period was better than that of males. He mentioned also that he had ascertained in the case of the wives and widows of a certain learned Society that, in later life at all events, their prospects of longevity were equal to those of the general female population five years younger.

Mr. George Eastes (London) pointed out that the statistics of former years, before the antiseptic treatment was adopted, could not be applied to the present day. The mortality from childbirth within the last fifteen or twenty years had very greatly diminished. He also remarked that the mortality amongst the higher classes of society, who had good sanitary surroundings in child-bearing, was below that in the lower classes, with their insanitary surroundings.

Mr. Chatham said that the data were not applicable to insurance purposes, and the discussions had shown that this was the difficulty in most cases. The records of the offices were the proper source for information of this kind, and if the medical officers in Edinburgh would combine and form an association similar to that formed in London, then no doubt the actuaries of offices would meet them and afford facilities for investigations of this nature, because of the very great importance to the offices of such information.

Dr. Glover Lyon agreed with the last speaker in regretting that an effort was not made to combine the experience of the offices on medical points. This was being done in America by means of cards, but the experience thus collected was very new at present and useless for practical purposes.

Replies.

Mr. T. Wallace, in reply, said that the extra premium hitherto charged by the offices for pregnancy was quite inadequate to the extra risk incurred. Under 20 years of age the death-rate in parturition amongst married women was very low, only 0.472 per cent., but with the unmarried at that period of life it was very high—namely, 2.264 per cent.

Dr. J. Playfair admitted that antiseptic treatment in lying-in hospitals had enormously lessened the mortality, but he doubted if it had had a similar beneficial result in general practice. In hospitals the deaths were not now due to septicæmia, but to eclampsia.

Dr. J. Ritchie remarked that formerly the statistics of lying-in hospitals were very bad, but that they were now better than those of private practice.

THE MEDICAL ADVISERS OF LIFE ASSURANCE OFFICES: SOME OF THEIR DUTIES AND DIFFICULTIES.

By John M. McCandlish,

Late Manager of the Scottish Union and National Insurance Company, and some time President of the Faculty of Actuaries in Scotland.

The connection between the medical profession and that great economic enterprise which, under the name of Life Assurance, has made such enormous progress during the current century is so familiar to all of us, and yet admits still of so much scientific inquiry, that it may appear a waste of time and a relapse into commonplace to deal with the principles on which that connection is founded. When life assurance first came into use there was, I believe, no medical examination. Candidates might be subjected to an interview with the directors of a company, who, no doubt, looked at them with more or less capacity for observation. But at first even age was not regarded as a differentiating element, and a uniform annual premium was charged irrespective of age. Life assurance as now practised has for one of its essential foundations the belief that the rate of mortality or of longevity, so utterly uncertain in the case of an individual, may be confidently reckoned on in the mass if some necessary conditions are attended to. The first of these conditions, of course, is the careful investigation and tabulation of past experience, and the comparison of one set of experiences with others, showing whether differences exist, and, if so, how far their causes can be traced.

It is within the recollection of many of us that this subject has come to be treated with any approach to scientific accuracy; that in this country the average rate of mortality among the whole population has been estimated on the basis of an accurate record; that similar inquiries have been made with reference to assured lives, to annuitants, to the members of various professions and the followers of other occupations, and to persons exposed to unusual climatic influence. While these inquiries have afforded to us the conviction that human mortality is subject to laws which can be more or less confidently reckoned on, they have suggested the need and the possibility of effective discrimination.

It is the persons whose lives are assured or who desire to have this benefit who are chiefly interested in the subject. No doubt proprietary companies looking to earn a profit for their shareholders, and the Government, who transact this business through the Post Office, need to be careful that they provide for a rate of mortality not likely to be exceeded. But in all assurance offices, proprietary or mutual, it is the policy holders to whom it is most material that in the first place there shall be no room for any disappointment of their expectations, and secondly that there shall be no unfairness in their relative treatment.

This last consideration, though often lost sight of, will be understood if we imagine the case of half a dozen men of the same age joining together to create a common fund for division among their families at death. One of them we may suppose to be a man in robust health with no hereditary tendencies to disease, and living under the best sanitary con-

ditions. Would he care to contribute on precisely the same terms as the others, if one of these were suffering from some fatal organic malady, if another belonged to a consumptive family, if the drinking habits of a third were obviously sapping his constitution, and if the fourth and fifth were living in an unwholesome locality or exposed from the nature of their business to exceptional risks? As everyone knows, the healthy man might die first, but humanly speaking, the chances are all the other way; and if, instead of its being a case of 1 man among 6 it were that of 10 men among 60 or 100 men among 600, it would become more and more of a certainty that equality in the terms of contribution under the supposed circumstances would operate as a real injustice.

To secure on broad lines a real equality and substantial justice among their contributors is the aim of all well-conducted insurance offices. It is, of course, an obvious fact that the business is founded on the principle that those who live long will pay for those who die prematurely. The points to be aimed at are that, taking these two classes together, there shall, on the whole, be a balance on the safe side, and that each man shall at the commencement have the same chance of belonging to the one class or to the other.

It is to secure these great objects of safety and of justice that assurance offices invite the assistance of the medical profession. The medical examination of a candidate for assurance embraces the discovery and diagnosis of disease, although the conditions are very different from those of ordinary practice. In the latter case if a man submits to examination there is at all events an implied need for it, and he will usually recognise that it is for his own interest to communicate all his symptoms, though no doubt many mistakes are made in this matter, and sometimes wilfully. But the man who is being examined with a view to life assurance is in a different position. We may hope and believe that the majority of men will desire to speak the whole truth and nothing but the truth, and will even regard it as a boon that any report which may be made about them shall lose nothing of its trustworthiness through concealment or misstatement of theirs. They may fear also lest anything of that sort should affect the validity of the policy they are applying for. At the same time we have to reckon on cases of fraud, on ignorance, and even on a morbid indisposition to disclose, or even to recognise material facts. The medical examiner is thus placed in a difficult position even in trying to detect existing disease, and I have known of such cases as where a man with an income of less than £100 a year has been examined by several quite trustworthy physicians, and on their report has had his life insured by speculators for many thousands, because these had found him to be subject to some fatal disease, the existence of which could not be discovered by the usual processes, and the symptoms of which he was induced to conceal.

But though the detection of existing disease is an important element in a medical examination for life assurance, the problem which the examiner has to set his mind to is much larger and more difficult. The question is whether there is anything in the applicant that can be inferred from his present condition, or elicited by inquiry; anything in his heredity, in his past life, in his habits or occupation or residence which is likely to affect his longevity; anything which to the science of the examiner will suggest a greater than ordinary or average risk of his being subject to fatal disease, or of his being less fitted than other men to resist the attacks of disease, or to sustain the wear and tear of life. And a curious element in the question is that habitual ill-health may in itself be of comparatively little consequence, since it is only disease which will shorten life that has an interest for ordinary insurance offices. Some of the elements of the problem are plain and familiar, others are still matters of inquiry, and some of these are happily being dealt with at the current meetings. Within living memory there has been a great development of knowledge on these subjects.

But the problem which the medical adviser has to face is in these days even more complicated. In many cases where there is a divergence from the standard this has to be measured. Happily, a simple form of measurement is possible if we can estimate that, when a man has not the same prospects of longevity as other men of the same age, his prospects are about equal to those of other men five or ten years older than himself; but the fixing of the number of years is of course extremely difficult. It must always be regarded as an approximation merely, but undoubtedly ought to err if at all on the safe side.

It has been suggested that when the apprehensions which have led to an increased rate have not been fulfilled, it would only be fair to repay in some manner to the man who has lived out his days the extra payments which have been exacted from him; and one or two offices have at one time or another given effect to this principle. But it is not difficult to see that it is founded on an error. When a man is assured at an increased rate, it is not because of a conviction that he is certain to die early, but because there is a greater risk of this, and because out of any given number of such cases a greater or less proportion of them, but a larger proportion than of ordinary men, are certain to die prematurely. The increased loss caused by these latter cases has to be met by the increased rates paid by the whole.

A reasonable selection of lives is not a work which is confined to assurance offices and their medical advisers. Thus a man who contemplates the purchase of an annuity on his own or on another life naturally refrains from doing this if he has reason to fancy that the annuitant will not live out his days. The choice rests with himself, and ignorant as most of us are of what our chances may be in this respect, it is a strange fact that the selection so exercised appears to be an effective one. Annuitants as a whole live longer than the general population, and even rival in longevity the most carefully selected assured lives. In the case of annuities purchased from Government, generally of smaller amount, and so on a different class of the population, and often bought by trustees under settlements or others who practically exercise no choice in the matter, the rate of longevity is not so good.

If the selection made by the purchasers of annuities tells in this way, and to a certain extent against the grantors of the annuities, so unquestionably does the selection made by proposers for life assurance unless it is effectively counteracted by selection on the other side. To the man who desires to made provision for his family after his death, and who has some consciousness that his life may not last long, there is a great temptation to slip into the number of assured lives on as favourable terms as possible; still more strong, perhaps, is the temptation in the case of some young man who desires to borrow money in order to keep up a fast life, and who finds that the possession of a policy is a required condition. To such men it may often appear that the *suggestio falsi* or the *suppressio veri* in which they indulge is very trivial; they scarcely feel bound to know the exact disease of which a parent may have died, or to recall the rheumatic fever they may themselves have suffered from, or to explain every little sensation, even though it has caused themselves some anxiety. The protection of the office in such a case will chiefly depend on the medical examiner; on those powers of close and acute observation which are among his professional acquirements; on the tact with which he may elicit information; and on the soundness of his judgment.

But it must be freely acknowleged that there are others who share the duty and responsibility of securing a prudent selection of lives, and I may be pardoned for quoting a few words from an address in which some years ago I dealt with the work of an actuary. "If," I ventured to say, "he has estimated future rates of mortality, it will be for him, in conjunction with directors and physicians, to secure that the actual rate shall not disappoint his predictions. Some acquaintance, therefore, with the effects on longevity of disease and heredity, of habits, occupation and place of residence; some care in the selection of agents and medical advisers, and in securing and discerning trustworthy information, coupled with a self-denying preference for eventual and long-dated prosperity over the more tempting fascinations of an inflated business, will be among the qualifications he will have to cultivate."

A large proportion of all life assurance transactions reaches the company through local agents, and these have often the best means of knowing whether the health and habits of a proposer are unexceptionable, and while their own pecuniary interests are all in favour of the carrying out of a transaction, the offices have, on many occasions to thank their agents for candid and important hints.

To make provision for a risk is the fundamental charac-

teristic of every species of insurance. A common fund is created by the contributions of those who desire to provide for the loss that will arise if their property is burned, or their ships lost, or their own lives or those of others prematurely cut off. The risk attaches to all the losses will certainly arise in the case of some, and the business of insurance is to distribute these losses so that everyone who shares the risk will share the loss, which will therefore not fall with crushing effect on any of them. But the difference between insurance as a sound and scientific business and a species of gambling is the careful measuring as far as possible of each individual risk.

What has to be provided for in the case of life assurance is the risk of premature death, and, though it may be difficult to arrive at a precise measurement, it is possible to approximate to it by the help of the medical profession. It is recognised that to abstain from that help increases the risk. How far it may be right or possible to measure the increase of risk involved in this abstention it is hard to say; but when one speculates on the motives which may induce a man to pay a higher rate of premium or to forego some advantage rather than subject himself to the test of a medical examination, it does seem a matter of considerable uncertainty.

The selection of lives and the measurement of risks being matters, as we have seen, as to which there may be considerable differences in practice, the question naturally arises whether these differences can be traced as having any material influence on the prosperity of offices. If a comparison could be made of the rates of mortality experienced by different offices it might be useful.

Not possessing the means of making such a comparison, a rough method of testing the success of a life assurance society is to take the amount of premiums received during a period of years, and find what proportion of these has been turned into surplus or profit. The returns made to the Board of Trade, and printed yearly by order of Parliament, put us in possession of the requisite figures; but in comparing one office with another, many elements have to be taken into account besides the rate of mortality among the lives assured. One office may owe its larger proportion of profits to its higher rates of premium, to its greater success in investing its funds, to the economy with which its business has been conducted, or even to its making a more slender provision for its future liabilities. And in going into such comparisons it is desirable to take in each case a considerable period of years, lest in any one quinquennium, for example, there should have been exceptional circumstances. It is pretty evident, however, in looking over the figures we are now dealing with, that differences in the selection of lives, and consequently in the rates of mortality, must often have affected the general results. Taking the larger and more prosperous life offices in England and Scotland, the average surplus ascertained at periods of investigation may be reckoned as about equal to 25 per cent. of the premiums received; or in other words, of every pound sterling of premiums paid by the assured, five shillings on an average become a source of profit to the company or of bonus to the assured, chiefly, of course, the latter.

But considerable deviations from this average rate are to be met with, and in two cases, where, owing to peculiar circumstances, the business transacted up to a certain date admits of being made the subject of special investigation, and where the differences found to have arisen can be traced exclusively to the rates of mortality experienced, the proportion of profit to premiums received over a period of about twenty years has been in one case about 29½ per cent., and in the other less than 13 per cent., although the business of the latter was larger and its rates of premium generally higher. If the profits in the latter case had been on the same scale as those of the other, they would have been larger than they actually were by more than £300,000; if they had been up to the general average of 25 per cent., they would have exceeded their actual amount by about £230,000. The differences in these cases displayed themselves in the same direction at each of four successive periods of investigation, and are only to be accounted for by some fundamental and persistent cause which could have been no other than differences in the rate of mortality among the lives that had been insured. I have good reason to believe that the unfavourable results in the second case did not arise from any defect in the medical care or skill at the service of the office, but may be ascribed partly to an unhappy desire for quantity of business with too little regard to quality, and in some degree to an easy-going and kindly indisposition to reject proposals. The results have, of course, been disappointing to the surviving policy holders, and they are referred to here as furnishing a noteworthy illustration of the need and the value of that wise selection of assured lives for which the offices and the assured must be so largely indebted to the medical profession.

Discussion.

The President said that, in regard to the deceitfulness of candidates, a little experience in examination was as a rule sufficient to enable a medical examiner to elicit the truth in the end. Sometimes the examiner himself created difficulties by a harsh, abrupt, dictatorial manner in putting questions. Unless the examiner were sympathetic in manner, he would in all probability intensify the naturally nervous feelings of the candidate under the circumstances. A candidate might, for instance, have the feeling that the doctor was going to discover some deficiency of which he himself was unaware, and would naturally suffer some trepidation for that reason. The highest problems with which the medical examiner had to deal were the prognosis of disease (success in which was only attained after years of study and practical experience), and the estimation of the value of under-average lives. Up to the present time they had gone entirely upon empirical methods in this latter point, and it was a satisfaction to find that even by these methods insurance offices had not come out at a loss, at any rate at a serious loss. There were of course instances where rating, based upon these methods, had been too high, but in the majority of cases it had not been high enough. One of the functions of the Section was to render it possible to fix more definitely the rating by providing statistical information got together by managers and actuaries as to how these under-average rated-up lives had come out in the end. That was a thing medical officers could not do themselves, but if it were done enormous advantage would result, not only to the medical officer, but to the office as well. The local medical officer should in all cases send off his report to the central office, and not let it go through the local insurance agent.

Dr. Muir (Glasgow), in regard to untruthful answers of candidates, mentioned the case of a life about 25 years of age, who assured him that his father died as the result of an accident and his brother from peritonitis, whereas it was subsequently discovered that the father died after a long illness from phthisis, and the brother after a tedious illness of months from tuberculous peritonitis instead of an illness of ten days as the candidate had stated. In another case the candidate stated that he could not just then pass any urine for examination; but he subsequently sent a specimen which was perfectly healthy, but was doubtless not his own, as he died within a year of Bright's disease. Dr. Muir stated that he never now examined urine of a candidate unless it was passed in his presence.

Dr. W. F. Somerville (Glasgow) thought that it would be preferable if candidates were examined by local medical examiners in their own consulting rooms. The plan of examining a candidate who had hurriedly run in from his own business to be examined in the office of the agent was not a good one. He also stated that it would be a great assistance to local examiners if the principal medical officer of the company would occasionally communicate with the local examiner, explaining why an extra or a further extra was added, or the proposal rejected altogether.

Dr. Watson Williams (Bristol) remarked that he had never experienced any difficulty in conducting examinations in any of the offices of assurance companies at Bristol; a few words and a sympathetic attitude would always dispel any sense of diffidence on the part of the candidate. A knowledge of the technique of assurance work was essential for the more complete success of the medical examinations. For instance, a medical examiner could often render assistance when a candidate would not be acceptable as a whole life case by suggesting the advisability of endowment insurance. Gouty cases, for instance, might be acceptable for a twenty years endowment, but might for various reasons be only acceptable

with very heavy loading on the whole life. It was likewise of great importance that the medical examiner should furnish sufficiently detailed information on many points of great importance in estimating the nature of the risk in individual cases.

Mr. David Deuchar (President of the Faculty of Actuaries) expressed his appreciation of Mr. McCandlish's interesting paper, which would be of much use in placing more clearly before medical officers the proper objects to be aimed at in their work. As one holding office in the Faculty of Actuaries, he desired to thank the British Medical Association for having instituted this Section, and for their courtesy in sending cards of admission to members of the Faculty.

EXTRA RATING AS A STATISTICAL PROBLEM.

By George M. Low, F.S.A., F.R.S.E.,
Manager of the Edinburgh Life Assurance Company.

It is not proposed in this paper to discuss what constitutes extra risk—what flaws in the personal condition or family history of a candidate for assurance entail the necessity for an additional premium. The existence of such flaws, and their varying character, are taken for granted, and the question presented for consideration is how best to measure the extra risk involved.

It needs no argument to show that in this, as in most other matters, the only sound conclusions are those which are based upon observed facts. Indeed, we turn instinctively to experience for the solution of such a problem, so that all our estimates of extra risks are based on what we know or believe to have been observed in other cases presenting similar characteristics. This shows the principle to be rooted in our minds that the problem of extra rating is essentially a statistical problem, for the method of statistics is the only one by which the teaching of observed facts can be brought to bear upon the subject with any approach to precision and accuracy. How then may this method be successfully applied to measure extra risk?

The Statistical Measure of Ordinary Risks.

The question may best be answered by considering how the statistical method is applied in measuring ordinary risk. We take the statistics of a population, as determined say by a census, and we compare the numbers living at each age with the numbers who die in a year at the same age. Or we take a large number of insured lives and trace the mortality among them. We find the number that enter upon each year of age, and, making suitable allowance for those who passed from observation otherwise than by death, we get the number "exposed to risk" at that age. Comparing with this the number who died between that age and the next we arrive at the rate of mortality or probability of dying. Upon such results we build up what is known as a mortality table, and from it we calculate our rates of premium.

The Mode of Estimating Extra Risk.

Such a process as this must be followed in order to obtain a true measure of the ordinary risk of assurance, and just in proportion as we are able to follow a similar process shall we obtain a true measure of extra risk where that exists. The essential point is to bring the members dying into comparison with the numbers exposed to risk.

In spite of all the attention that has been devoted to extra risk, no adequate statistical investigation of the subject in its various branches has yet been made. Hence it is that so much inconsistency exists in practice, and that we are still content to treat as matters of opinion many points that are capable of being determined beyond controversy as matters of statistical observation.

Extra Risk of a Phthisical Family History.

Take, for instance, the familiar question of the extra risk due to a family taint of consumption. Some are inclined to think this risk is overrated in practice, while others attach great importance to it, but surely it is possible to arrive at a definite conclusion. The question as it affects our practice has nothing to do with theories of hereditary transmission. It is simply whether, in point of fact, the members of families in which the consumptive taint has appeared are liable to higher rates of mortality than others, and whether the difference is so great as appreciably to affect the cost of insurance.

An attempt towards the statistical solution of this problem was made some years ago by Mr. Manly, Actuary of the Mutual Assurance Society, and the results are published in the *Journal* of that body, vol. xxx, along with a valuable and interesting memorandum by Dr. Glover Lyon, who for the purpose of the investigation examined the medical reports of the Society and selected the cases where there was any family history of consumption or allied disease, the persons assured being themselves presumably of good physique and unimpaired health at the time of admission. I have special pleasure in referring to this investigation as a typical instance of the manner in which such inquiries ought to be gone about, the medical man and the actuary working together, and each contributing the skill and experience which belong to his own department of knowledge. The cases were arranged in groups according as the consumptive deaths had been those of father, mother, father and mother, father and brother or sister, mother and brother or sister, and so on, and the numbers "exposed to risk" and the deaths in each group were separately tabulated. By this means it was shown that there was an appreciable extra mortality among persons who had lost either parent from consumption, but the data were not sufficiently extensive to warrant conclusions on other points, nor even to afford a completely reliable measure of the extra risk arising from consumption in the parent. The investigation, in fact, left open many questions which a more extended inquiry on similar lines would have solved.

The same line of inquiry is capable, however, of being applied on a wider scale and to most, if not all, the causes of extra risk which we meet in practice.

The Incidence of Extra Mortality.

What, for instance, is the extra risk attaching to gout; to heart disease in its various forms; to a family history of apoplexy, insanity, or intemperance; or to any of the other flaws in personal and family history that make lives under average? And what is the incidence of the extra mortality? At what periods of life and after what durations of assurance is it likely to show itself? These questions must be answered before we can properly fix the terms of assurance. Do they not all admit of being treated as statistical questions, if only we had the necessary material collected and tabulated? And is there, after all, any other mode of treating them that is even approximately conclusive or satisfactory?

It may be urged that conclusions drawn from statistics alone are apt to be misleading when applied to particular cases, and that the circumstances of each individual must be taken into account before any proper estimate of the risk can be arrived at. To a certain extent this is true; but, even admitting qualifying circumstances in the individual, how are we to give effect to these unless we have a proper measure of the extra risk in the general case? I am inclined to think, however, that there is great danger in attempting too much discrimination. When we begin to make exceptions to the application of a general rule, we are very apt to be betrayed into doing so on inadequate grounds; and when a life proposed for assurance has characteristics which of themselves involve extra risk, it is safer to treat the case accordingly than to allow qualifying circumstances to influence our judgment. Besides, we must always remember that insurance is based on the law of averages, and hence that there can be no such thing as estimating an individual risk *per se*. It can only be dealt with when grouped with other lives, and in this view the whole business of selection consists in referring each case to its appropriate group.

The Extra Risk of Obesity.

As illustrating what has been above suggested as to the necessity of ascertaining the incidence of extra mortality as well as its extent, I am tempted to offer the results of the following inquiry, although fully conscious that it only adds another to many similar investigations of isolated subjects on more or less inadequate data. The object was to obtain an approximate idea of the extra risk due to obesity. The data were obtained from the experience of a certain assurance

office, during a period of thirteen to fourteen years, among persons classed as "stout" because of their having exceeded the maximum proportion of weight to height indicated by a standard table. There were 587 such persons, and within the limited time mentioned 74 deaths had occurred, as compared with 68 "expected." The excess in the actual number of deaths was thus not quite 10 per cent.; but the mortality presented this peculiar feature, that whereas it was within the normal rate in the early years following admission, it became afterwards markedly abnormal. After five years the actual number of deaths exceeded the "expected" number by no less than 30 per cent., even when the "expected" deaths were calculated by the Hm.(5) Table, which excludes the first five years of assurance. Again, the extra mortality seemed to occur entirely between the ages of 50 and 60, as both before and after that period the actual and expected number of deaths corresponded very closely. If these peculiarities should be confirmed by more extended inquiry, they would materially qualify the appropriate terms of assurance of stout persons.

It may be interesting to know what were the causes of death in this class of cases compared with those among ordinary assured lives. This is shown in the following table. The 68 "expected" deaths are distributed over the various classes of diseases in the proportions which prevailed among the lives assured in ten Scottish assurance companies to 1863, as tabulated by Mr. Meikle.

Table .—*Showing the Number of Actual and "Expected" Deaths among Obese Persons.*

	Actual Deaths (Stout Persons).	Expected Deaths (Healthy Males).	Percentage of Actual to Expected.
Diseases of the urinary organs	6	3	200
Diseases of the digestive organs ...	14	8	175
Diseases of the circulatory system ...	10	7	143
Diseases of the respiratory organs	12	9	133
Diseases of brain and nervous system	16	14	114
Zymotic diseases	8	10	80
Sudden and violent deaths ...	3	4	75
Diseases of uncertain seat (tumour)	1	3	33
Tuberculous disease... ...	[illegible]	8	0
Not classified	4	2	200
	74	68	110

The total absence of tuberculous disease suggests an interesting subject of inquiry, namely, how far a proclivity to certain kinds of disease is compensated by immunity in other directions. This, too, is a statistical problem, but its results would be more interesting than practically useful to assurance companies, who are concerned less about the diseases men die of than about the rate at which they die.

Extra Risks in Dealers in Intoxicants.

The fragmentary and inconclusive character of investigations such as those which have been mentioned suggests very strongly the desirability of co-operation among the companies to investigate the subject of extra risk by means of the incomparably rich material they possess in their proposal papers and death records. A joint inquiry of this kind was undertaken by the Scottish Life Offices to determine the extra risk of insuring persons engaged in the sale of intoxicating liquors. The results were published in the *Journal of the Institute of Actuaries*, and otherwise made known to those interested in the subject. But I may briefly refer to them as showing the lines on which a more comprehensive inquiry into the whole subject of extra risk might proceed. In this case, as the point to be investigated was the influence of occupation only and not any question of disease, personal or hereditary, the co-operation of medical experts was not considered necessary. The investigation was made by a committee of actuaries, who were furnished with particulars of all the assurances effected with the companies in the class of lives in question. The cases having been grouped according to occupation—publican, innkeeper, hotel keeper, etc.,— and arranged according to age, the numbers "exposed to risk" at each age were brought into comparison with the number of deaths, and from those elements were deduced the corresponding rates of mortality. A comparison with the rates of mortality among ordinary assured lives showed the extra risk of insuring persons of those occupations. The following results are typical:

Table II.—*Showing Increased Mortality of Publicans.*

Age.	Annual Mortality per Cent.	
	Publicans.	Other Persons.
30	1.46	0.77
40	2.59	1.03
50	3.08	1.60
60	4.50	2.97

Calculations were also made to show how the actual number of deaths compared with the "expected" number—that is, with the number of deaths that would have occurred among ordinary assured lives. In the case of the publicans it was found that the "actual" deaths exceeded the "expected" by no less than 53 per cent., the numbers being 430 and 235 respectively.

The causes of death compared with those of ordinary assured lives are shown in the following table. They are here given for the first time:

Table III.—*Showing Causes of Death in Publicans.*

	Actual Deaths (Publicans)	Expected Deaths (Healthy Males).	Percentage of Actual to Expected.
Diseases of the urinary organs	26	9	289
Tuberculous disease...	61	28	218
Diseases of the digestive organs ...	62	29	214
Diseases of the respiratory organs ...	64	30	213
Diseases of the circulatory system ...	46	24	192
Diseases of brain and nervous system...	91	48	190
Diseases of uncertain seat (cancer, etc.)	17	12	155
Sudden and violent deaths	17	13	130
Zymotic diseases	32	34	94
Causes not classified	14	8	175
	[illegible]	235	185

The publican is exposed to late hours of business, to confinement in an atmosphere more or less heated and impure, especially towards night, and above all, to the ever-present temptation to over-indulgence in intoxicating drink. These causes seem to entail upon him a largely-increased liability to consumption and to disease of every vital organ.

Such in crude outline are the results which the accumulated experience of assurance companies are capable of yielding.

If what has been said has served in any degree to deepen a conviction of the importance of statistical inquiry for the solution of problems of extra rating, and if it is agreed that an investigation of the combined experience of the offices would be the most suitable form of inquiry, it may be further suggested that the powerful influence of the medical profession would be of incalculable service in promoting such an object, and the help of medical knowledge would be indispensable to its realisation.

Discussion.

Dr. Sprague (Manager of the Scottish Equitable Life Assurance Society) agreed with Mr. Low as to the value of the statistical method. It might be used wrongly, as Mr. Low had shown; but this did not lessen its value when properly used. Dr. Sprague had lately made, in conjunction with Dr. Wyllie, a complete examination of the mortality among about 1,800 lives which were charged an extra premium. These included about 1,000 cases in which an extra premium was charged on account of a consumptive family history. The mortality in these cases was less than was to be expected ac-

cording to the generally recognised standard of healthy assured lives. When compared, however, with the mortality among the lives in the same office which had been accepted at the ordinary rate of premium, it was found that the lives that were charged an extra premium for consumptive family history had been subject to a higher mortality than the others. The general result was that they should have been charged an extra premium, but that the extra charged was a great deal more than was necessary.

Dr. J. Ritchie said that the medical officers present must feel satisfaction in knowing that, should they desire to make an investigation into some of the difficult questions which met them in their insurance work, they might draw upon the wealth of material lying in the depositories of insurance companies, if all managers were of the same opinion as Mr. Low and Dr. Sprague. Medical men could not correctly classify a life unless they were conversant with the vital statistics of diseases. It was not possible to treat all cases on general principles; cases must be considered on their individual merits.

Mr. Low, in reply, asked if the investigation to which Dr. Sprague had alluded referred to all cases in which consumption had appeared in a family, or whether any discrimination was made between cases in which phthisis appeared in one or other parent, and those in which it appeared in the brothers or sisters.

Dr. Sprague replied that special note was taken of these points. He had only given the results of the investigation in the aggregate.

INSURANCE COMPANIES AND MEDICAL EXAMINATIONS: A PLEA FOR UNIFORMITY.

By T. Garrett Horder, M.R.C.S., L.R.C.P.Edin.,
Cardiff.

The presence at our Section to-day of gentlemen officially connected with the management of insurance companies affords us an opportunity of discussing the desirability of attempting to bring about a more uniform system of medical reports than at present exists.

In the first place it seems to me that it would be a better plan to get the candidate to furnish answers as to family history, illnesses, etc., before he presents himself for medical examination. In a large number of instances I have found candidates unable to give satisfactory replies as to the cause of death of their parents and other near relatives. As it is of the highest importance that the particulars relating to family history should be absolutely correct, I am of opinion that the candidate should be asked himself to fill up the paper in which this subject is dealt with. He should be instructed by the agent to obtain official statements as to the cause of death of his parents, of his brothers and sisters, in those cases when he is not in a position from his own knowledge to give that information.

I may point out that in some offices the amount of time taken up in asking questions and writing the answers is very considerable indeed. For the number of questions and for minute details the American offices bear the palm. It is no slight task to write down the answers to over thirty questions exclusive of those connected with the medical examination itself. It would surely be far better to furnish the medical officer with details connected with the family history of the candidate previous to his visit for examination.

Then with respect to the particulars to be furnished by the medical officer after examination, I venture to say that there is room for improvement in the nature of these particulars. The object to be aimed at is to discover whether the candidate is likely to live as long as most persons of his age; and the full responsibility for the answer to that question must (or should) rest with the examiner. Such questions as to the colour of his eyes? whether his complexion is pale, blonde, or otherwise? whether his figure is slim or stout? whether his head is bald or otherwise? are surely not of importance, and are therefore unnecessary. It appears to me that what the offices should require of the medical examiner is something like the following:

Evidence that the principal organs of the body have been examined and have been found free from disease. That the candidate's family history is good, and that his habits and occupation are not likely to shorten the average duration of life.

It is a moot point, and one which is well worth discussion, whether the family medical attendant is, or is not, the most competent person to furnish the most reliable evidence to insurance companies. There is undoubtedly a good deal to be said for and against this proposition; on the whole, I am inclined to say that the balance of evidence is in favour of the family doctor as a reporter.

SECTION OF PHYSIOLOGY.

Professor Rutherford, M.D., F.R.S., President.

DISCUSSION ON THE SECRETION OF BILE IN MAN.

I.—William Bain, M.D.Durh., M.R.C.P.Lond.,
Harrogate.

Body Weight and Bile Secretion.

The large number of researches—some of them involving considerable expenditure of time and patience—that have been undertaken to determine the factors which govern the secretion of bile, shows the importance of the subject; and the diversity of opinion existing regarding the drugs which are supposed to influence the secretion demonstrates the complexity and difficulty of the subject.

The first point to which I wish to draw attention is that there is no relationship between the weight of the individual and the amount of bile secreted. Two instances only are necessary to make this clear. The weight of Dr. Paton's patient was 73 kilo., and the amount of bile secreted was 590 cc. Mr. Robson's case weighed 53 kilo. and secreted 849 cc. of bile in the twenty-four hours. At the present time I think most physiologists regard bile as an excretion. I shall refrain from discussing this matter, but whether we regard it as an excretion or a secretion, it undoubtedly is an indication of the activity of the liver; and in ascertaining the action of drugs upon this organ it is a most important guide.

Influence of Various Factors on the Secretion of Bile.

1. *The Central Nervous System.*—I believe the central nervous system does in some unexplained way influence the secretion of bile, otherwise how can we explain the sudden appearance of jaundice from fright? I am aware that it has been attributed to a catarrhal condition of the bile ducts, but that explanation does not exclude the action of the nervous system. Puncture of the floor of the fourth ventricle produces a transient hyperæmia of the liver. It is reasonable to infer that the flow of bile would be increased as a result of the temporary engorgement of the organ; therefore, I think Claude Bernard's experiment affords us some slight though indirect evidence of the influence of the central nervous system upon the secretion of bile.

2. *Diet.* There is little doubt that the variation in the rate of secretion occurring in health is largely due to the quantity and quality of the food taken. With regard to the influence of liquids upon the secretion of bile, the evidence is very contradictory. Westphalen tried large doses of seltzer water without any effect, while Paton came to the conclusion that the amount of fluid taken "had a notable effect on the flow of bile." In experimenting with euonymin, I gave the patient 12 grains the first day, which purged him freely. The bile only amounted to 710 cc. on that day. Three days after the quantity rose to 904 cc. after the administration of only 2 grains. A similar result occurred in connection with Carlsbad salts; therefore the quantity of bile appears to depend to some extent upon the amount of fluid ingested. If the abstraction of fluid from the system by purging diminishes the flow of bile, it is reasonable to suppose that excessive perspiration will have a like effect.

3. *Exercise.* I have stated elsewhere my belief that exercise which is not accompanied by sensible perspiration increases the secretion of bile. The evidence adduced on behalf of that

opinion was slender, yet from my observation of the case I am convinced of the accuracy of the statement.

4. *Drugs.*—The conflicting nature of the experimental evidence regarding the drugs which stimulate the secretion of bile must be bewildering to the physician who has to prescribe these remedies. It is, however, something to be thankful for that observers agree in regarding bile and bile salts as cholagogues, but there is an absence of unanimity with respect to every other substance investigated. In relation to the reliability of my results, some importance must be attached to the fact that the patient took during the investigation 36 grains daily of purified ox-bile, thereby approximating the experimental to the normal conditions. Four of the drugs with which I experimented were investigated by Professor Rutherford during his gigantic research, and the results are almost identical, the only difference arising in the case of iridin. My patient took iridin on three separate occasions. Judging by the specific gravity, the bile solids were increased on all occasions, and on the last day of administration the quantity of bile was augmented as well as the bile solids. The drug was supplied by Burroughs and Wellcome, but I cannot vouch for its purity, which is a point of importance. Believing, as I do, that an increase in the bile solids is a more certain indication of the stimulating action of a drug on the liver than a mere increase in the quantity of bile, I regarded iridin as a cholagogue of some power, so that the difference between our results respecting this drug is very small. In concluding these remarks, I should like to say that I believe Professor Rutherford's results are in the main reliable. An error may have occurred in connection with one or two of his experiments—for instance, in using mercuric chloride with bile, and ascribing the result obtained to the former substance—but, apart from this and some other criticisms I made in a former communication, his research is of great value.

II.—William Rutherford, M.D.Edin., F.R.S.,
Professor of Physiology, University of Edinburgh; President of the Section.

Observations on the Secretion of Bile in a Case of Cancer of the Pancreas.

Professor Rutherford gave a summary of observations made by Sir Thomas Grainger Stewart and himself on secretion of bile in a case of cancerous affection of the head of the pancreas, common bile duct, and liver. No bile entered the duodenum, and the operation of cholecystotomy was performed. The bile was collected hourly for about three weeks, during which the patient remained in bed and took a diet that was nearly fixed. The secretion of bile was remarkably regular from day to day during the above period. An average of six days showed that the secretion rose after breakfast at 8 A.M., but more particularly after dinner at 1 P.M., and that in both cases the increase occurred within an hour after the food was taken. The high secretion that followed dinner was maintained for about seven hours. A few observations were made on the influence of drugs. Fifty minims of liq. morph. hydrochlor. did not affect bile secretion, although it reduced the pupils to pin-points. Alcohol, in the form of whisky, given in moderate amount did not affect secretion. Salicylate of soda increased the fluid and salts of the bile. Salicin was given on three separate occasions, but the results were conflicting. Other observations will appear when the case is fully published.

III.—S. Monckton Copeman, M.D.,
Medical Inspector Local Government Board, England.

Dr. Noël Paton showed, on behalf of Dr. S. M. Copeman, a series of tracings of the flow of bile throughout the twenty-four hours in the human subject. The tracing was taken by a method devised by Drs. Copeman and Sherrington, and they showed a very uniform flow, uninfluenced by the taking of food, but markedly influenced by such muscular movements as retching.

IV.—E. Waymouth Reid, M.B., F.R.S.,
Professor of Physiology, University College, Dundee.

Professor Waymouth Reid reminded the meeting of the observations of Dastze in Brown-Séquard's *Archives*, which had shown a distinct increase in bile secretion in from six to eight hours after food. This increase had been attributed to the effect of the absorbed food products in stimulating the liver cells directly. He considered that physiologists had been too ready to compare all glandular secretions to that of the salivary glands, and thought that the possibility of chemical stimulation of gland cells must be borne in mind.

V.—A. W. Mayo Robson, F.R.C.S.Eng.,
Professor of Surgery, Yorkshire College, Leeds.

Professor Mayo Robson referred to some observations published by him some time ago on cases of biliary fistula for gall stones. He believed that such opportunities would occur less frequently in the future because of improved surgical methods by which the abdominal wound was closed after the operation. He had found in his cases that very few drugs seemed to influence bile secretion. Soda water seemed to act chiefly by means of the quantity of fluid taken. Iridin had some stimulant action; calomel had not been found to be of great effect; salicylate of soda was the best stimulant of bile secretion in his opinion.

VI.—G. Neil Stewart, M.A., M.D.Edin.,
Professor of Physiology, Western Reserve University, Cleveland, U.S.A.

Professor G. Neil Stewart said it was of interest that Professor Rutherford should again have obtained positive results in the case of sodium salicylate. Everything would seem to point to this substance, and the group to which it belonged, as exercising a peculiar influence on the secretion of bile. Doyon and Dufourt, for example, had recently found that sodium salicylate causes marked acceleration in the biliary flow, and Pfaff and Balch, in the course of a very laborious research, came to the conclusion that, with the exception of course of the bile salts, salol alone, of all the substances investigated by them, was entitled to be considered in any sense a cholagogue.

Replies.

Dr. William Bain said, with reference to the effect of food on the rate of biliary secretion, that he had taken the average of sixteen days, during which his patient was not taking any drugs. The bile was collected four times a day. The average quantity from 8 A.M. to 12 noon was 147 c.cm.; from 12 to 4 P.M., 165 c.cm., which coincided with the principal meal of the day. He thought Professor Stewart was labouring under a misapprehension regarding Pfaff and Balch's experiments, as they had not tried the effect of salicylate of soda, but all observers, with the exception of Neissen, had agreed regarding the action of this drug as a cholagogue.

Professor Rutherford said that it was most important in experiments of this kind to see that the drugs used were genuine. It was necessary to give the resinous drugs, such as iridin, along with some bile to get absorption.

THE ACTION OF ANÆSTHETICS ON VEGETABLE AND ANIMAL PROTOPLASM.

By Augustus D. Waller, M.D., F.R.S.,
Lecturer on Physiology, St. Mary's Hospital Medical School, London.

[Abstract.]

Dr. Waller began by saying that what he was now about to give was an extension of work which he had already done, and in which he had shown that the action of anæsthetics on nerves was typical of the action on other forms of protoplasm. The present paper was to widen the limits of application of this principle, and to show that vegetable protoplasm, the spinal cord, retina, etc., came under the same rule.

The apparatus used was the same as in former experiments—a moist chamber, which completely surrounded the nerve along with the exciting and reading-off electrodes. [Dr. Waller here showed several lantern slides giving results of former experiments on nerve in graphic form.] The action of N_2O was shown to be neutral. CO_2 was shown to have a partially paralysing action on nerve fibre, from which, however, there was rapid recovery. Ether and chloroform gave a great contrast in their action. In the case of the former the paralysing action gradually passed off and the nerve re-

covered, but no such recovery took place under chloroform. Vegetable protoplasm was studied by watching through a microscope the processional movement of the chlorophyll granules in elodea Canadensis in ordinary conditions, and when the vapour of an anæsthetic was applied to the cells, while at the same time a nerve fibre was submitted to the same gas for comparative results, CO_2 arrested the movement of the vegetable protoplasm and at the same time diminished the electro-mobility of the nerve. Recovery followed its withdrawal in both cases. Ether produced temporary abolition of movement, in both cases followed by complete recovery, while with chloroform the arrest was final and permanent in both.

In respect to other animal tissues besides nerve, the retina and spinal cord of the frog had been specially investigated. In the former he had got precisely the same differences in response to the action of the same drugs, only with a little more difficulty, while in the latter he had found complete and permanent loss of reflex action under the influence of chloroform, and only a temporary loss under ether as in the former cases. In the case of the spinal cord these effects were obtained with much weaker strengths of the anæsthetics used than in the experiments on nerve fibre. At the time when the reflexes were completely abolished in the cord, the heart was observed to be unaffected and the electro-mobility of the nerve fibres unaffected.

THE SELECTIVE POWER OF TISSUES, ESPECIALLY AS ILLUSTRATED IN THE MAMMARY GLAND.

By A. Corsar Sturrock, M.A., M.B., C.M.,
Assistant to the Professor of Physiology, University of Edinburgh.

No tissue of the body possesses in so remarkable a degree as the mammary gland the power of selection, for it is engaged in the production of a material for the nutrition not of its own cells, nor of the organism of which it forms a part, but of an entirely different organism. It selects from the blood of the mother a food resembling in the proportions of its constituents the freely-chosen diet of an adult, but differing in the following:

1. The suckling requires more proteid and salts than an adult for the building up of its tissues.

2. The suckling requires more fat as heat material, since it has not, to such an extent as the adult, the muscular source of heat supply.

3. The adult requires more carbohydrate because he performs more work.

The glands of various animals select the constituents of milk in proportions adapted to the diverse conditions of life under which these animals are placed. The following propositions may be submitted:

1. Animals which grow rapidly are supplied with milk containing more of those constituents which prevail for building up of tissues than animals which grow slowly. These constituents are proteids and salts.

2. Animals living under different conditions of temperature are provided with milk containing constituents in proportions more or less useful for the maintenance of body heat.

3. Animals compelled to early muscular exertion receive milk adapted to supply the material for the production of muscular energy.

There is a nucleo-proteid in the cells of the mammary gland which is of a highly complex constitution, containing a nuclein, a carbohydrate and proteid radicle. It may be the antecedent of caseinogen and of lactose. It contains a true nuclein, whereas caseinogen is a pseudo-nucleo-albumin. The nuclein bases are not excreted, but seem to remain in the gland, probably in the nuclei of the cells, as active agents in the formation of more mother substance.

Phosphocarnic acid, described by Siegfried as a constant constituent of milk, is present in the mammary gland in considerable quantities. It can also be split off from caseinogen by the action of rennin, and appears to be merely a decomposition product of caseinogen. It is more largely present in human than in cow's milk, and this may be of practical importance, since it is the richest phosphorus-holding body in milk, and in human milk the greater part of the phosphorus is inorganic, while in cows the greater part is in inorganic combination.

Professor Waymouth Reid (Dundee) remarked that an excellent example of the relation of the nature of milk to the growth of the young animal existed in "pigeon's milk." During the first few days after hatching, while the young birds were fed by their parents on this substance (nucleo-albumin, fat, and salts) they grew at about ten times the rate which obtained during the subsequent period of grain feeding.

INTRODUCTION TO A DISCUSSION ON INTESTINAL ABSORPTION.

By E. Waymouth Reid, M.B., F.R.S.,
Professor of Physiology, University College, Dundee.

[Abstract.]

Professor Waymouth Reid limited his remarks to a consideration of the fundamental point as to how far the experimental evidence justifies us in assuming that the process of absorption of aliment in solution is explicable by the action of known physical principles. Three positions are taken up by physiologists in matters of this class: (*a*) That osmosis and filtration are sufficient in themselves to bring about the absorption of aliment in solution; (*b*) that the epithelial cells of the villi in some unknown manner take an active part in forwarding the solutions from the gut lumen to the capillaries; (*c*) that both processes are in simultaneous action.

If the gut is considered as a membranous tube filled with a solution, and covered with a net of capillary tubes through which another solution with the same solvent (water) is circulated, and the composition of which is, by activities in other parts, kept fairly constant, the principal physical factors are: (1) The composition of the solutions in membranous tube and capillary net; (2) the partial osmotic pressures capable of acting on either side of the membrane under the conditions of its permeability to the substances in solution; and (3) the hydrostatic pressure on either side of the membrane.

[The interaction of these factors was explained by means of diagrams, and special stress was laid upon the error of deductions in physiological research from estimations of osmotic pressure by the cryoscopic method, which is a gauge of the pressure exerted against a membrane which the dissolved substance cannot pass through, so that with the more or less permeable membranes of the body a great overestimate of the acting osmotic pressure results. Attention was also drawn to the variations of physical permeability of a membrane composed of cells, the physical structure of the protoplasm of which is liable to change with the processes of its life.]

All filtration problems in physiological matters involve considerations of the osmotic potentialities of the solutions on either side of the filtering membrane, since filtration takes place from one solution into another; so that the hydrostatic pressure in a blood capillary may exceed that in the lymph space outside it, and yet, quite apart from any consideration of the filtration resistance of the membrane, filtration not occur, if the partial osmotic pressure of some plasma constituents to which the capillary wall is impermeable exceeds the excess of hydrostatic pressure in the capillary over that in the lymphatic space. Indeed, absorption might occur under the circumstances. The conclusion was arrived at that in the case of a substance in solution in the gut, and to which the gut wall is permeable, a suitable mechanism for absorption by the blood vessels on simple physical lines probably exists. If, however, the same solution be placed in the gut as that circulating in the capillaries (plasma), absorption is only physically possible when the hydrostatic pressure in the gut is sufficiently in excess of that in the capillaries to overcome the filtration resistance of the membrane. If the hydrostatic pressure in the capillaries exceeds that in the gut, physical absorption by the capillaries is not possible.

The nearest approach to an experimental realisation of this condition is to place some of the animal's own serum—obtained by the centrifugal machine—in a loop of its gut. If this is done it is found that the serum is absorbed, when there is great excess of capillary blood pressure over

intestinal pressure, and when the lacteals of the experimental loop are ligatured at the mesenteric border. Such a result seems to indicate that in certain cases absorption can occur when osmosis and filtration are out of court, and to raise doubts as to whether a simple physical explanation of the absorption of aliment in solution is after all wholly correct.

Some action of epithelial cells is suggested, and luckily, whether or no the cells are active agents can be tested in a simple manner by their removal (at least in part) in one loop of gut, and contrasting the result, so far as absorption of serum is concerned, with that in a normal epithelium-clad loop in the same animal. Removal of epithelium will, of course, favour the conditions for physical absorption into blood vessels or lacteals by thinning the membrane, while, on the other hand, if the epithelial cells are agents, such procedure should retard absorption. Temporary anæmia of a loop of gut causes a great shedding of epithelium, washing with distilled water instead of "normal saline solution" produces a similar effect, and finally weak solutions of sodium fluoride are very effective. In all such cases the absorption of serum in the loop from which the epithelium has been removed is far behind that in the control normal loop, and often the expected physical phenomenon of absolute standstill of absorption for an hour or so is witnessed in the injured loop at a time when the control absorbs some 50 to 60 per cent. of the serum introduced. Quite apart from actual shedding of epithelium, it is found that any conditions tending to depress protoplasm lead to reduction in absorption, even though during the experiment the circulation in the poisoned loop may be better than in the normal. It is therefore difficult to avoid the conclusion that the epithelial cell is an agent in the absorption of solutions by the gut, though it is by no means necessary that it is the sole agent.

When the conditions for a simple physical absorption exist, as they do when solutions of peptone and glucose are put into the gut, it is, of course, difficult to prove that the absorption which occurs is purely osmotic, purely due to cell action, or a combination of both; and were it not that the serum absorption experiments seem to demonstrate the existence of cell action, the attempt would hardly be worth making. But it is now imperative to try and determine whether aliment in solution simply diffuses into our blood or is in some way actively transmitted by the epithelial cells; in other words, whether the physiological or pathological condition of the gut wall affects the intake of nourishment, in any other way than simply by alteration of its physical permeability.

Since the epithelium of the gut is so delicate a structure, the experimenter is tied down to the use of substances normally absorbed, and in solutions of concentration which will not cause injury. Experiments with various salts of known difference of diffusibility, but easy chemical estimation, are of little value, unless it can be definitely proved that the particular substances cause no injury to the epithelial cells.

Experiments on the point are still in progress, and in the meantime the following facts, which, though by no means conclusive, are suggestive of cell action, may be mentioned:

(*a*) The ratios of diffusibility at body temperature of peptone and glucose through parchment paper into constantly stirred and renewed serum are utterly different to their ratios of absorption, and the same is true of the ratios of diffusion and absorption respectively of two samples of peptone of different diffusibility. This experimental result is not conclusive for cell action in the case of absorption, because the physical permeability of parchment paper and gut membrane may be utterly different, and the relation of the molecules in solution to those of the membrane be of a different order in the two cases.

(*b*) Atropine added to the contents of a gut loop diminishes the absorption of both the peptone and the water of a solution of peptone, in spite of the fact that the blood supply of the loop is increased. Here again, however, it is a perfectly legitimate objection to the experiment, as proving an action of atropine on absorptive cells, that possibly atropine, by combining with some constituent of the cells, alters their physical permeability.

Tiedemann and Gmelin, nearly eighty years back, compared the absorbing villus to an inverted secreting gland, and in recent times Heidenhain supported this idea; but it must be remembered, if gut absorption is to be compared with secretion, that while a secretion can only be studied from the output side of the cells, an absorption can only be studied from the intake side; and, though the matter of the output is in the gross quantitatively that of the intake, the combinations (in secretion at any rate) are by no means the same, and in analytical research it is hence of little value to go beyond estimates of the gross quantities of water, organic solids and salts, in any comparison.

No evidence has been obtained of absorptive nerve fibres in the mesenteric nerves comparable to the secretory fibres in the nerves of the salivary glands, and the activity of the gut epithelium appears to be controlled directly by its blood supply, so that excitation of the mesenteric nerves leads to reduction of absorption by the concomitant vaso-constriction, and, during a temporary ligature of the mesenteric arteries, the absorption is the same, whether the mesenteric nerves are intact, cut, or stimulated.

Little is known of the mode of action of secretory protoplasm, but according to Heidenhain, Werther, and Langley and Fletcher, the concentration of salts in the secreted saliva is a function of the rate at which it is formed, and it might appear worth while to observe whether in the absorption of serum by the gut any such relation between the uptake of water and salt exists at different rates of absorption. At present, however, the only physiological method of varying the rate of absorption is by a temporary anæmia previous to the actual experiment, and by a physiological method is here meant a method clear of drug action, and in which the epithelium remains *in situ*.

Now, the above authors in their study of salivary secretion found that anæmia of the gland, while decreasing the rate of secretion by lowering the irritability of the cells, yet raised the concentration in salts of the secreted saliva, so that the so-called "law of Heidenhain" does not hold in anæmic conditions, and since the anæmic method of varying the rate of absorption is, as just stated, the only physiological method so far practicable, seeing that no absorptive nerves have been found, it is evident that no comparison can be experimentally instituted on this specific point between absorptive and secretory action.

As a matter of fact, when absorption is reduced by previous anæmia, not pushed to denudation of epithelium, the concentration in salts of the fluid taken up by the gut wall from the introduced serum is practically unaltered, even though the rate of absorption may be halved. But even if the action of the gut epithelium in the end turns out to be anything of the nature of a secretory action, it is, of course, by no means necessary that the details should be the same as those of the classical salivary gland, so far, unfortunately, the only secretory apparatus of the mechanism of which we know any details at all.

After some complimentary remarks by the President of the Section,

Dr. Noël Paton (Edinburgh) asked whether in connection with the selective action of intestinal epithelium Professor Reid had considered or experimented upon the question of the different rates of absorption at different levels of the intestine, a question on which curious results requiring confirmation had been recorded.

Professor Reid replied that he intended to experiment on that point in the near future. He had found no special increase in the rate of absorption of bile salts in the upper part of the intestine, nor had he found that bile salts acted as stimulants of intestinal absorption.

EXPERIMENTS ON THE PRODUCTION OF COMPLEMENTARY COLOUR SENSATIONS.

By Dawson F. D. Turner, M.D.,
Lecturer on Physics, Surgeons' Hall, Edinburgh

It is well known that if we tire the eye by staring hard for a short time at a brightly coloured object we shall see on looking aside a ghost of the object of a colour complementary to the original colour. By tiring the eye of red and then admit-

ting white light, a greenish-blue complementary colour is perceived.

Mr. Shelford Bidwell in a communication to the Royal Society on May 13th, 1897, has shown that this preliminary stare may be an exceedingly brief one, and he has permitted me to show you his experiment. The instrument consists of a rotating disc with a black and white surface and an open sector: the disc is so turned that the open sector succeeds the blackened portion. The effect of this short period of darkness is to render the retina hypersensitive. The coloured object is then viewed through the open sector for a small fraction of a second, and then the white sector succeeds. One might expect that one would see first the object in its natural colour, and then a ghost of a complementary hue. But if a proper speed of rotation be maintained and a sufficient illumination, no trace of the original colour will remain, and the object will appear to be only of a complementary colour. Thus a red object will appear to be of a greenish blue, a blue object of an orange, etc.; black letters appear to be silvery white. A skiagraph of the bones is reversed in its shades; the bones are restored to their original white colour. A striking experiment is to pass a coloured picture of the spectrum slowly behind the revolving disc, when the spectrum will appear to be reversed.

Stereoscopic Roentgen Photographs.

The method adopted in obtaining these photographs was to inject the organs of the body in the ordinary way in the dissecting room, and then to take two Roentgen photographs of them from different points of view. Either the object or the Crookes's tube could be displaced; the latter is the most convenient method. The amount of displacement I gave to the tube was in each case 6.6 c.cm., and the distance between the tube and the plate 12 inches. Radiostereoscopy might be of service in indicating to the surgeon the exact position of foreign bodies in the tissues. The stereoscopic photographs are examined with a Wheatstone stereoscope. The portal system of the liver, the distribution of the renal artery, of the coronary artery, and of the splenic artery were amongst those examined.

EXPERIMENTS ON MOLECULAR CONCENTRATION AND ELECTRICAL CONDUCTIVITY.

By G. Neil Stewart, M.A., M.D.Edin.,
Professor of Physiology, Western Reserve University, Cleveland, U.S.A.

[Abstract.]

I.—The Relation between Molecular Concentration (as determined by Lowering the Freezing Point) and the Electrical Conductivity of certain Animal Liquids, with Special Reference to Blood.

In continuation of work laid before the Section at the last meeting in Montreal, the molecular concentration (as estimated by the lowering of the freezing point) and the electrical conductivity of blood "laked" in various ways have been compared with those of normal defibrinated blood. By several of these methods (alternate freezing and thawing, putrefaction, the addition of a foreign serum) it is possible to bring the hæmoglobin out of the corpuscles without producing any marked alteration in the freezing point or conductivity. The electrolytes of the corpuscles still remain (for the most part, at any rate) in the "ghosts" or shadows, and are gradually liberated later on, as the agents that produced the laking continue to act. When blood is laked by the addition of water, the electrolytes of the corpuscles are set free at the same time as the hæmoglobin. The same is usually the case when the laking is produced by saponin or by heating the blood to 60° or 65° C. Blood with nucleated corpuscles (hen, goose)[1] behaves essentially in the same way as mammalian blood. Substances like ammonium chloride, which are taken up by the corpuscles, are liberated on laking, under the same conditions as the electrolytes normally present, but while still within the intact corpuscles they do not increase their conductivity. When cane sugar is added to blood, electrolytes as well as water pass out of the corpuscles. The freezing point and conductivity of the serum have been compared in a large number of dogs with those of the filtered gastric contents obtained at various intervals after a meal. Saliva obtained by stimulation of the chorda tympani, lymph cells suspended in serum, the yolk and white of egg, pus and pleuritic effusions have also been examined in the same way.

II.—The Changes in the Electrical Conductivity and Molecular Concentration of Certain Animal Liquids and Artificial Nutrient Media, with the Growth in them of Putrefactive Micro-Organisms.

The action of various putrefactive and pathogenic bacteria (B. subtilis, B. proteus vulgaris, B. lactis aërogenes, B. proteus Zenkeri, B. coli communis, B. Friedlaender, bacillus of hog cholera) on blood, blood serum, and artificial liquid culture media, in breaking up the complex (proteid) molecules, and has been followed for considerable periods by making determinations of the freezing point and conductivity from time to time. When blood or serum is allowed to putrefy the curves of conductivity and of molecular concentration go on rising for a time, until ultimately a maximum is reached, which is then maintained indefinitely. At the point where the curves become parallel to the abscissa, the liquid is found to be crowded with bacteria that have formed spores. A measure of the intensity of bacterial action may in this way be obtained.

Note.

[1] Incidentally it was noticed that a specimen of hen's blood obtained through a cannula without contact with the tissues, and whipped for 15 minutes, ultimately coagulated, but so slowly that all the red corpuscles had time to sink, and the clear clotted plasma formed a jelly above them. Another specimen from the same animal was whipped for 30 minutes, and remained uncoagulated for an indefinite period. But the addition of a small fragment of the clot from the first specimen caused coagulation in the second in a few minutes.

SOME POINTS IN THE MICRO-CHEMISTRY OF NERVE CELLS.

By A. B. Macallum, M.D.,
Professor of Physiology, University of Toronto.

[Abstract.]

Since the discovery of Nissl's spindles in nerve cells, attempts had been made to raise them in importance, and look on them as integral parts of the cell structure, and to compare them to the zymogen granules of a gland cell. The origin and development of these granules had lately been studied by one of Professor Macallum's pupils, Mr. Scott, especially with reference to their first appearance in the anterior horn cells of the spinal cord of embryo pigs. At a very early stage these cells consisted almost entirely of nucleus rich in stainable matter. Later on the cell body elongated, the nucleus became less rich in chromatin, and a "cap" of peculiar nature, stainable with toluydin blue, appeared close to the nucleus. At a later stage this substance became uniformly distributed throughout the cell. Still later the substance took the form of granules, and these formed the spindles found in the adult. There is, therefore, reason to believe that these spindles are derived from the nucleus of the nerve cell.

The next point was to determine the chemical constitution of the spindles as far as possible. They were found to resist peptic digestion, and to be slowly digested with trypsin, hence were of the nature of a nucleo-proteid.

The micro-chemical test of Lilienfeldt for phosphorus was first applied, but afterwards abandoned for a more exact method brought out by the speaker, in which the hydrochlorate of phenyl-hydrazin is used instead of pyrogallic acid as a reducing agent after first treating the tissues with an acid solution of ammonium-molybdate, as in the first stages of the older method. By this method the phosphorus-holding parts of the tissues are shown up in dark-green colour. In applying this method to the nerve cells, the lecithin had first been extracted by putting the slide with its attached section of tissue into a Soxhlet apparatus, and extracting with ether. The results showed that Nissl's spindles consist of nucleo-proteid, and contain both phosphorus and iron.

In reply to questions asked by Drs. Noel Paton and T. H. Milroy, Professor Macallum stated that water had been used to remove the excess of phenyl-hydrazin, and that Nissl's granules were found to resist peptic digestion.

THE PHYSICO-CHEMICAL STATE OF CASEINOGEN IN MILK.

By David Fraser Harris, M.D., C.M., B.Sc.Lond., F.R.S.E.,
Assistant to the Professor of Physiology, and Muirhead Demonstrator of Physiology, University of Glasgow.

[Abstract.]

There may be said to be three views as to the conditions under which fat and caseinogen exist in milk: (1) That there is a layer or membrane of proteid material surrounding each oil-globule. This proteid was originally called alkali-albumin, then casein ("Ascherson's membrane"), the oldest view. (2) That the globules in milk are composed of fat, and have no envelope, while the particles in milk are composed of caseinogen—that is, are wholly proteid in nature. (3) That there exists around pure oil-globules a more closely "adherent layer of caseinogen solution, or rather milk plasma," so that the following phrase appears justified: "Milk globules contaminated with proteid."[1]

My work has led me to conclusions amongst which are the following:

1. Caseinogen is not in solution in milk plasma, but
2. Is present, along with fats, in both the globules and the particles in a state of minute subdivision—that is, both the fat and the proteid is "particulate" or minutely granular.
3. The globules contain a maximum of fat and a minimum of caseinogen. The particles contain a minimum of fat and a maximum of caseinogen.
4. Thus the globules are not pure fat or oil, and the particles are not pure caseinogen.

The globules are spherical bodies with a diameter ranging from 0.005 mm. to 0.0025 mm.; occasionally very large ones, 0.0103 mm. diameter, are met with; bodies with a diameter of less than 0.0025 mm. may be called particles; their outline cannot be discerned. On optical grounds alone we cannot affirm that there is any difference, at least of composition, between these two varieties of solid body. It is highly improbable that there is any envelope, at least of caseinogen. Cream, which is an aggregation of the larger globules, contains as much caseinogen as does whole milk (3.5 per cent.). This fat-associated proteid in cream is, however, not present in it in proportion to the water (28.675 per cent.) of cream. If the caseinogen of cream were present in it in proportion to the water of cream, there ought to be only 1.3 per cent. of caseinogen, but there is actually present in cream 3.5 per cent. of caseinogen, that is, 2.2 per cent. more than is consistent with its being dissolved in the water. Chemists have for long agreed that if the proteid is present as an envelope it is "imponderable," and therefore *a fortiori* inadequate, to give rise to 3.5 per cent. of caseinogen; further, it is not "carried up mechanically" because in cream there is a notable absence of any solid bodies other than the larger globules. Thus, if it is not in solution in the watery basis of the cream, and not present as the envelopes of the globules, and is not carried up mechanically, it must in cream coexist in an extremely intimate manner with the fat in the larger globules.

It is notoriously difficult to separate caseinogen from fat, and not at all easy to dissolve out the fat from its union with the proteid unless chemicals, calculated to disturb that union or mixture, have been previously added.

Fat is at a maximum in cream, but fat exists in all the solid bodies of milk, for when treated with osmic acid they are all stained black or brown. Further, skimmed milk contains 1 per cent. of fat and "centrifugalised milk" has from 0.1 per cent. to 0.5 per cent.: in both these forms of milk almost all the solid bodies are "particles," therefore the particles contain fat, that is, they are not pure caseinogen.

In skimmed milk there is always a vast number of particles that never rise to the surface (that is, there is a limit to "creaming"), and in centrifugalised milk a like number which are never thrown to one end or other of the tube, therefore these particles cannot be pure fat else they would rise or would be thrown out. They are evidently of the same specific gravity as milk-plasma (1033 to 1037): it must, then, be their associated proteid (caseinogen), which weights them down and raises their specific gravity from that of pure fat to that of milk-plasma.

Buttermilk contains a larger percentage of caseinogen than whole milk does, because the particles of caseinogen previously in the large globules of the churned cream have been dissociated from the fat of those globules but left in the milk, the fat being removed as butter. This is essentially what happens after milk has been shaken for a very long time with ether; there is an increase in the number of proteid "granules" (Hoppe-Seyler) from the breaking up of the globules, the fat being dissolved, the caseinogen particles set free.

100 c.cm. of cream weigh 97.2 g.
100 c.cm. of pure butter-fat weigh 91.5 g.
Difference 5.9 per cent., made up as follows:

Lactose	...	1.7 per cent.
Salts	...	0.7 ,,
Proteid	...	3.5 ,,

This is a further proof that, over and above the lactose and salts, there is 3.5 per cent. of something that is not fat; this, which is proteid, is the caseinogen of cream.

In the clots of milk there are no fibres whatsoever nor any coalesced "oil drops"; a clot is an agglutination of globules to globules, globules to particles, and particles to particles: there is a diminution in the number of globules, as though they had disintegrated previously to their constituent particles adhering. There is no reason to believe that any of the particles of a clot or precipitate in milk are not either pre-existent in the milk or liberated from disintegrated globules.

Name of Cheese.	Antecedent Condition of Solid Bodies.	A. Casein per cent.	B. Fat per cent.	Total per cent.
Camembert (cream cheese)	The larger globules	19.0	21.5	40.5
Skim milk (American)	Mainly particles	32.0	8.5	40.5
Cheddar (whole milk)	Globules and particles	47.0	30.0	77.0

This furnishes additional proofs of what has been said above: (1) In particles there is most casein, least fat; whereas (2) in globules there is most fat, least casein. (3) Note that 21.5+8.5=30.0 per cent. (the percentages of fat). (4) Note that, taking averages in column A, instead of one case, 15.0 (for 19.0)+30.0 (for 32.0)=45.0 (for 47.0) per cent. (5) Lastly, taking these average figures, 15.0+21.5=36.5 and 30.0+8.5=38.5, then 36.5+38.5=75.0 per cent.=45.0+30.0.

In other words, the casein *plus* fat of cream cheese *plus* the casein and fat of skim-milk cheese is equal to the casein and fat together of whole-milk cheese.

Caseinogen is not in solution in the milk-plasma, for the pressure filtrate through a diatomaceous clay filter (Berkefeld) leaves all the caseinogen outside; in short, all the globules and particles remain outside. All the fat and caseinogen is outside, and the filtrate will not clot with rennet; it contains lactose, salts, and of proteid only a trace of lactalbumin. It has been suggested that caseinogen might be in solution, but unable to pass through the pores owing to the "size of its molecule." Hæmoglobin has a very large molecule, and its solution passes through this filter, as also does egg-albumin (10 per cent. solution in water) and alkali-albumin. My inability on a previous occasion[2] to find egg-albumin in the filtrate arose from using not a high enough vacuum and a filter blocked with milk globules or particles.

Ringer's (so-called) solution of pure caseinogen is distilled water, holding in suspension a vast number of milk particles. This is no proteid in solution: the pressure filtrate is water: it is not pure caseinogen, because there is some fat present, a minimal quantity in the particles; the liquid is opalescent because of the particles; when they are dissolved, for example, with weak alkali, the liquid becomes clear, and now it will not clot with rennet.

In Nature "caseinogen" is never seen apart from fat, and in milk the fat never apart from caseinogen: the two substances are produced side by side by the metabolic activity of the protoplasm of the cells of the acini of the mammary gland, so that caseinogen is not a chemical entity *sui generis*, it and the fat together constituting a highly complex organic substance, which might provisionally be called an oleo-nucleo-proteid. The caseinogen, when artificially fat-free, is a nucleo-proteid; but the fat molecule is, I take it, an integral portion of the fully-elaborated product of the cells, which product (oleo-nucleo-proteid) is as much a unique

animal substance as is lactose. There is evidence that the nucleus is the source of the particulate caseinogen of milk.

It is not that the caseinogen of the milk-clot is "contaminated by fat;" it is not that the fat is contaminated by proteid in the cream from milk, but it amounts to this, that caseinogen, apart from fat (even though it be but the minimal trace) is unknown in Nature, is a concept in the mind of the physiological chemist. Nor is such a body improbable from its complexity; hæmoglobin and lecithin are, if anything, more complex; and just as by chemical agencies they can be broken up into their constituents, so by chemical and physical agencies can the oleo-nucleo-proteid of milk. If the term "caseinogen" is to be retained, its connotation must be extended so as to embrace the fat molecule.

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PROTOPLASM AND ZYMIN ACTION.

By D. NOEL PATON, M.D.,
Superintendent of the Research Laboratory of the Royal College of Physicians, Edinburgh.

[ABSTRACT.]

THE difficulty of distinguishing the nature of intra-cellular chemical action was referred to, and the different ways in which the same result might be arrived at were pointed out. In this connection the nature of the conversion of glycogen and glucose in the liver cells was considered. How far is this due to the presence of the disastase, which may be demonstrated in the liver tissue as in the blood and other organs, and how far is it independent of such an action? Experiments were given to show that there is an absence of uniformity in the amylolysis in the *post-mortem* liver and in the liver after treatment with alcohol. The experiments of Cavazzani, showing the absence of relationship between the rate of amylolysis and the amount of zymin under stimulation of the cœliac plexus, were referred to, and experiments were described, showing that chloroform, which so markedly accelerates *post-mortem* amylolysis, does not accelerate the action of the liver after treatment with alcohol. These considerations were held to militate against the view that the conversion of glycogen to glucose is due to a zymin.

AN EXPERIMENTAL CONTRIBUTION TO THE STUDY OF THE MECHANISM OF BILE SECRETION.

By WILLIAM BAIN, M.D., M.R.C.P.Lond.

[ABSTRACT.]

IN this paper Dr. Bain first gave an outline of previous work regarding the influence of the nervous system on the secretion of bile, and then mentioned experiments he had performed on dogs in order to ascertain if stimulation of the vagus had any effect on the biliary secretion. To eliminate the factor of anæsthesia he adopted the method used by Pawlow in proving that the vagus was the secretory nerve to the stomach and pancreas; namely, a dog was pithed, tracheotomy rapidly performed, and artificial respiration established. A canula was then inserted into the common bile-duct, the cystic duct clamped, and the vagus nerves exposed in the neck. The canula was connected by means of rubber tubing with a glass capillary tube about four feet in length, having a capacity of one cubic centimetre and graduated into one hundred divisions, each division being subdivided into halves so that readings could easily be taken and timed. Coloured water was used as an index. The vagus nerves were then stimulated by graduated increasing currents from an induction coil.

The next point he investigated was the manner in which some of the cholagogues act. By injecting drugs directly into the circulation he considered the effect produced was due to the direct action of the drug upon the liver cells or, perhaps, on the nervous mechanism of the liver. The following substances were injected into the jugular vein, and the effect noted; namely, saline solution, solution of Plattner's crystals, sulphur water (Harrogate), barium chloride, magnesium chloride, and sulphide of soda. Charts were exhibited showing the results. The conclusions he drew from these experiments were: (1) That stimulation of either vagus had no effect on the biliary secretion; (2) That 100 c.cm. saline solution injected into the jugular vein had little or no effect on the secretion of bile; (3) That a solution of Plattner's crystals and sulphur water (Harrogate) injected into the jugular vein accelerated the flow of bile, presumably by acting directly on the hepatic cells; (4) The ingredients to which the old sulphur well (Harrogate) owes its efficacy as a cholagogue, are probably barium chloride and sulphide of soda.

CHANGES THAT OCCUR IN SOME CELLS OF THE NEWT'S STOMACH DURING DIGESTION.

By E. WACE CARLIER, M.D., B.Sc.,
Lecturer on Experimental Physiology and Histology in the University of Edinburgh.

ACCORDING to Langley and Langley and Seewall, the cells continue to secrete actively during the period of repair. I have been unable to convince myself of the accuracy of this statement except in a modified form, because of the fact that the cells exhibit a second period of secretion and exhaustion after they have once regained their resting condition. One would have expected complete recovery to be delayed until the stomach had emptied itself of its contents, were repair and secretion going hand in hand. I have also been unable to see any increase of protoplasm during secretion, though it does undoubtedly increase very rapidly as soon as the maximum of the secretory wave is passed, and this is indicated by the staining reaction which changes from feeble affinity for the blue basic dye to an affinity for the acid eosine, indicating, I believe, that an absorption of alkaline lymph from the blood into the protoplasm is taking place.

With regard to the nuclei, they increase slightly in size at the very commencement of secretion, but some become smaller, and finally show great wrinkling and puckering of the nuclear wall owing to diminution of their contents. When repair sets in, which it does soon after it has begun in the protoplasm, the nuclei rapidly lose their wrinkled appearance and swell up to a considerable size, becoming much bigger than at the beginning of secretion, to again diminish somewhat as the resting stage is reached. All the appearances, also, point to an absolute diminution of chromatin. No doubt the chromatin loses some of its constituents, which are again readily replaceable during recuperation; and this, I think, is indicated by the fact that when the cell is nearly exhausted, the affinity of the chromatin for basic dyes greatly diminishes, while its affinity for acid dyes increases to such an extent that the spread-out karyosomes tend to stain red rather than blue. This can only be due to increase of alkalinity. This stage is transitory, the blue reaction coming quickly back again as soon as repair has set in. Of no less interest in connection with this is the growth and extrusion of nucleoli during the period of nuclear activity, which goes on for some time also during the process of repair, getting less and less as the nucleus is nearing the resting condition. I believe extrusion of nuclei to be a constant phenomenon of nuclear activity, as I have observed it in so many different kinds of cells. The nucleoli in this animal I believe to consist entirely of effete material, which is a product of nuclear activity, and that the nucleus is capable of tolerating the presence of this material in certain amount, but that when it becomes excessive it is passed out into the protoplasm, where it soon disappears.

The changes occurring in the nucleo-hyaloplasm, as indicated by the reactions of the lanthanin granules, is also interesting. This material, which is probably a proteid precipitate, stains in the resting condition of a pale sky-blue colour. As activity proceeds, the granules become more and more scanty; but just after the nucleus reaches its maximum of shrinkage the lanthanin becomes very abundant, and stains of a very deep blue colour, which gradually gives place to a beautiful lilac tint as repair goes on, finally returning to pale blue when repair is complete. This denotes that the nuclear juice, from being almost neutral, first becomes extremely acid, then gradually becomes somewhat alkaline, to finally return to its former almost neutral condition.

Macallum described in the pancreatic cells a substance which he called prezymogen, and which he believes to be intermediate between chromatin and zymogen. In private

conversation he has recently assured me that his views on this matter have been completely confirmed, though I believe he has not yet published his results. Taking his results as accurate, I think it is now possible to account for the great nuclear activity observable during the secretion of the gastric juice. It has always been a puzzle to me that the mere excretion of products already formed in the cells should produce such an amount of exhaustion in the nuclei, but this may now be accounted for, I believe, in the following way.

Almost directly after the cell has begun to pour out its secretion, the nucleus begins to form prezymogen at the expense of its store of chromatin, which is passed out into the cell protoplasm, there to remain unchanged until the cell has practically exhausted its store of preformed zymogen. When, however, the maximum of the secretory wave is passed, and the cell begins to take up material abundantly from the blood, this prezymogen is quickly transformed into new zymogen, which is stored up in the protoplasm and not secreted as fast as manufactured. In this production of prezymogen the chromatin also throws off an effete substance in the form of nucleolar matter, there only remaining behind in the karyosomes that essential part of the chromatin which the nucleus cannot lose and still continue to live. The power of the nucleus to manufacture prezymogen is therefore necessarily limited by the amount of alterable chromatin stored in it; when this is exhausted the nucleus must come to rest, and a period of repair and recuperation supervene before the nucleus is again in a fit state to start work. This in the newt takes some four or five hours, and it would seem also that until the nucleus is completely recuperated the protoplasm is prevented from secreting the zymogen granules contained within it, but that as soon as the nucleus has again returned to a condition of complete rest; should there be necessity for it the cell once again starts its secretion, and the nucleus manufactures a new supply of prezymogen to replace the zymogen which the cell is passing out into the gland lumen. In this way the cause of the double secretory wave observed by me is easily accounted for.

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Professor Macallum said he had listened with great interest to Dr. Carlier's paper as he had himself undertaken a very similar research some years, and his observations which were never published went hand in hand with Dr. Carlier's. He had studied the relative amounts of chromatin, zymogen, and a third substance, prosimogen, which had been further investigated in his laboratory by Benthall, and had been shown by the latter to be proportional to the amount of zymogen on the one hand, and to the want of chromatin on the other. If prosimogen were an intermediate stage between chromatin and zymogen it ought to contain phosphorus and iron. This had been demonstrated to be the case by means of his modified micro-chemical method for detection of phosphorus. He was not of opinion that the extrusion of the nucleoli was a passive movement, but an active amœboid one as could be seen in various kinds of cells; for example, epitheluim, liver cells, etc.

Dr. Carlier said he was of opinion that the extrusion of nucleoli by a cell nucleus was an indication of functional activity on the part of that cell.

Professor Macallum said he had seen this extrusion in dying cells of molluscum contagiosum.

Dr. Carlier asked if it were not chromolysis he had seen.

Professor Macallum replied that he believed it to be a true extrusion of nucleoli.

ON THE METABOLISM OF NUCLEINS UNDER PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS.

By T. H. Milroy, M.D., B.Sc., and J. Malcolm, M.B., Ch.B.

[Abstract.]

Drs. Milroy and Malcolm communicated a paper on the metabolism of nucleins under physiological and pathological conditions. They first of all traced the changes which these bodies undergo after ingestion, going on then to the nature of their action on the leucocytes. Nucleins and nuclear-holding tissues produce after absorption a marked hyperleucocytosis. The question was, as to which part of the nuclein acted in this way. They found that after nucleic acid had been taken a marked rise in the number of leucocytes occurred, and this was accompanied by a distinct, absolute, and relative (compared to the nitrogen) increase in the excretion of P_2O_5 in the urine. The rise in the alloxur bodies was exceedingly slight, and not at all comparable to that of the P_2O_5. They drew attention to the fallacy which is so prevalent at present that the rise in alloxuric excretion is a gauge of the amount of nuclear breaking down.

The next body which required investigation was thymic acid, which is obtained from nucleic acid by splitting off the alloxur bases and cytosin. Unfortunately they were only able to try the action of very small doses of this acid, which had no effect on the number of leucocytes or on the P_2O_5 excretion. Metaphosphoric acid was found to have no action either on the leucocytes or on the P_2O_5 excretion: at least the rise in the latter never amounted to more than that derivable from the HPO_3 taken by mouth. The principal pathological condition referred to was that of leucocythæmia (medullary). In this they drew attention to the interesting fact that the P_2O_5 was both absolutely and relatively diminished, while the alloxuric excretion was raised. They believe that this is due to a check in the development of the adult leucocyte in the bone marrow, and hence a check, probably in the leucolysis or in the excretion of the phosphorus-holding decomposition products of the nucleins, derived from the nucleus of the leucocyte. In other words, there is an alteration in the developmental life-history of the leucocyte from that occurring under normal conditions. The rise in the alloxuric excretion is not to be regarded wholly as a sign of increased nuclear breaking down or leucolysis, but rather as a check in the normal nitrogenous metabolism. In a case of plumbism examined, where the leucocytes were slightly increased in number, but where there were no marked alterations in the numbers during the course of the investigation, the P_2O_5 and alloxuric excretion were practically normal.

Dr. Bain (Harrogate) asked how the increased excretion of uric acid in leucocythæmia was to be explained if there was a check to leucolysis in that disease.

Dr. Milroy replied that it was quite possible for uric acid to arise from altered metabolism in the nuclei without their actual destruction.

THE OCCURRENCE OF NERVES ON INTRACRANIAL BLOOD VESSELS.

By G. Lovell Gulland, M.A., B.Sc., M.D., F.R.C.P.E.

[Abstract.]

In a paper published in the *Journal of Physiology* some time ago the author had announced that up to that time he had not succeeded in demonstrating the presence of nerves on any intracranial vessels by any of the usual methods. Early in 1897, Oberstieier, of Vienna, published a short note in the *Arbeiten* from his laboratory, stating that he had found nerves on a pial vessel in an old preparation made by some gold method. This statement led the speaker to make further experiments, which were fruitless for a long time, until he examined this summer some material from human brains and those of dogs prepared by Cox's method, and kindly given him by Dr. W. Ford Robertson. Here he found nerves on a number of the vessels, and saw that they presented the usual appearance of perivascular nerve plexuses—microscopical specimens were shown to illustrate these points. Dr. A. Morrison, of London, had also been able to demonstrate these by Sihler's haematoxylin method. The full results and descriptions are to be published shortly.

Professor G. Neil Stewart said he would like to state, in the interest of his friend Dr. Huber, of the University of Michigan, that five months ago he had showed him some very beautiful preparations of the blood vessels of the brain, stained by the methylene-blue method, and exhibiting nerve fibres in and around them. Professor Stewart was not certain

whether Dr. Huber had as yet published his paper, but at the time he (Dr. Huber) suggested that in view of the undoubted presence of these fibres, the question of the existence of vasomotor nerves for the brain ought to be reinvestigated. He thought Dr. Gulland's demonstration of the nerve fibres was of great interest, for it was difficult to believe that they, or some of them, were not vasomotor.

CHEMICAL CHANGES IN PELAGIC OVA DURING MATURATION.

By T. H. MILROY, M.D., B.Sc.,
Assistant to the Professor of Physiology, Edinburgh University.

[ABSTRACT.]

DR. MILROY made a communication on the changes which pelagic and demersal ova undergo during maturation. The ripe pelagic ova differ from the demersal in being able to float on sea water. The specific gravity of the former is only slightly below that of salt water, while the demersal ova, even when fully ripe, have always a distinctly higher specific gravity than sea water; for example, in many varieties 1054.

The process of maturation, however, in both cases is essentially of the same type. In the immature ovum the germinal vesicle is very large and is centrally placed, and the protoplasm around it varies from a finely granular to a coarsely granular state. The final stage of maturition consists in a marked distension of the egg and a clearing up of its contents. This increase in volume is accompanied by the disappearance of the germinal vesicle. These changes occur in both classes of cases. As an example of a typical pelagic ovum, that of the plaice may be taken. When very unripe it has a specific gravity of from 1070 to 1080, while just before the final distension it falls to 1027. After the final clearing up of the contents, the specific gravity falls to 1024 to 1025. The volume of the ovum during the latter stage increases about three times. As an example of a typical demersal ovum, that of the herring may be taken. When immature, it has a specific gravity of about 1087 to 1090; when ripe, 1066. This fall is mainly due to the passage inwards of water. The unripe plaice ovum contains 57.5 per cent. of water, the ripe one 91.8 per cent., while the immature herring ova contain 46.7 per cent., and the mature ova 70.72 per cent.

There is a distinct rise in the amount of nitrogen in the ripe compared to the unripe ova of both pelagic and demersal ova, and the same holds to even a more marked degree of the phosphorus. There is also a distinct rise in the sodium chloride in the ripe compared to the unripe.

Practically, all the phosphorus that can diffuse out from the ova both in the unripe and ripe conditions is organically bound. When fully mature, a much larger quantity of the organic phosphorus-holding body can diffuse out into distilled water circulating around the ova. Also the albumen in the ripe ova is a more diffusible state than in the unripe. Finally, emphasis was laid upon the essentially similar character of the maturation process in both pelagic and demersal varieties.

DR. NOËL PATON (Edinburgh) said that he had found most, or nearly all, of the phosphorus in the ripe salmon's ovum in organic combination.

DR. MILROY replied that that was just what Miescher had found, but in the case of pelagic and demersal ripe ova a large proportion was still inorganically bound.

A hearty vote of thanks to the President, Professor Rutherford, closed the work of the Section.

[During the meeting an admirable series of microscopic specimens was laid out for examination in the Practical Physiological class-room. The demonstration included specimens of muscle, cochlea, mammary gland, etc., a series of slides to illustrate Dr. Carlier's work on the cells of the newt's stomach, and a set of specimens illustrating the structure of the parathyroid glands by Dr. Welsh.]

THE State Board of Health of Maryland has arranged to establish in Washington County three bacteriological stations. The State Board will supply tubes in which will be placed organisms taken from diseased persons and sent to the State Bacteriological Station, where microscopical examination will be made.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

ALEX. RUSSELL SIMPSON, M.D., President.

ASEPTIC MIDWIFERY.

By ROBERT JARDINE, M.D.Edin., M.R.C.S.Eng., F.F.P. and S.Glasg.,
Physician to the Glasgow Maternity Hospital.

THE MORTALITY OF CHILDBED.

IF we compare the surgical work of the present day with that done before the days of antiseptics, we are at once struck with the marvellous advances which have been made, both as regards hospital and private work. In obstetrical work wonderful advances have also been made, especially in hospital work. Our maternity hospitals are no longer hotbeds of infection, and puerperal fever is in most of them practically unknown. In private work, unfortunately, the same cannot be said. In a paper in the BRITISH MEDICAL JOURNAL of last year, Dr. Cullingworth drew attention to the prevalence of puerperal fever in England. In a paper read before the Glasgow Obstetrical and Gynæcological Society on May 25th, 1898, Dr. John Edgar showed from the Registrar-General's reports for the forty years from 1855 to 1895 that childbirth mortality had slightly increased in each of the four decades. In the first decade (1855-64) it was 1 in 206; in the second 1 in 202; in the third 1 in 192; and in the fourth 1 in 188.5. These are very startling figures. What do they mean? Considering the advances that have been made in the method of delivery and management of our cases, one would naturally expect to find the death-rate steadily decreasing. There is one thing I am firmly convinced of, and that is that puerperal sepsis is still far too common. Not only are valuable lives lost every year, but many women are rendered invalids for life. Dr. Edgar states that "Last year in my wards in the Samaritan Hospital for Women nearly 60 per cent. of the patients who had borne children were suffering from various traumatic and septic sequelæ of parturition. Most of them were admitted for the express purpose of being treated for these lesions." The mortality from septic causes is high, but the morbidity is far higher.

PUERPERAL SEPSIS.

Puerperal sepsis is a preventable disease, and we obstetricians have to face this fact, and do our utmost to accomplish it. If we are not doing this, we are failing in our duties, and may justly be held responsible. The day has gone by when we can fold our hands and say it is the will of God when our patients develop puerperal fever.

In all cases the source of infection is from without; and if we have our cases under our charge from the onset of labour, we should be able to prevent them from becoming septic. I am aware of one condition only where the immediate source of infection is from within, and that is an exceedingly rare one namely, a pelvic abscess present at the time of labour, and bursting into some part of the genital tract during the labour or puerperium. In these cases the primary source is from without. Defective drains is another occasional source, and one which we may not suspect until it is too late. The vast majority of cases are, however, due to want of care on the part of the attendants. It may be the doctor's own fault or the nurse's, but it is on the doctor's shoulders the responsibility must rest if the case has been his from the beginning.

The practice of surgery is in the hands of a comparatively small number of men, who make a speciality of it, but practically all the midwifery is done by general practitioners, many of whom are very busy and cannot afford to spend much time over their cases. Specialisation has now gone to what some are inclined to think is an absurd length, but the important branch of midwifery has not received the amount of special attention it deserves. In our schools clinical midwifery is hardly taught at all. The usual thing is for a man to take out enough cases—twelve in the universities—to gain him his ticket, and he usually takes them out before he has had a lecture on the subject—that is, before he knows anything about it. He is not compelled to attend clinical lectures in a maternity hospital, therefore he never comes near the wards

unless he hears there is to be a Cæsarean section, when he will come any distance to see an operation he will never be likely to do. In fact, a very large number of men qualify without ever having seen an abnormal labour or any obstetrical operations performed. This is not as it should be, and the sooner the General Medical Council take up this subject and make the attendance in the wards of a maternity hospital for several months compulsory, the better for the future practitioners and for suffering womankind in childbed.

Parturition may be said to be a physiological act, but among highly civilised women it is dangerously near a pathological one, and very little may turn the scale. In the vast majority of cases at the onset of labour the genital tract is perfectly aseptic. By this we do not mean that it is free from organisms; on the contrary, it is swarming with them, at least the vagina and lower part of the cervical canal; but these organisms are not only non-pathogenic, but they are actually protective, preventing the pathogenic ones gaining a foothold by rendering the vaginal secretions acid. The vagina has within it a self-cleansing power. The cervical canal has a plug of mucus—the operculum—which shuts off, as it were, the uterine contents from the vagina. The different layers of this plug have been examined bacteriologically, and the upper, or uterine, layer has been found to be perfectly free from organisms. We therefore start with an aseptic uterus and genital tract, and the discharges which come from within, liquor amnii and blood, will not in anyway interfere with that condition, but tend rather to assist it by flushing out to a certain extent anything which may get into the lower part of the tract. Our whole aim is to so conduct the labour that at the end the tract will be as aseptic as when we began. The treatment during the puerperium must also aim at the same thing.

Surgical Cleanliness.

How is this to be done? The answer is by absolute or surgical cleanliness.

In the first place what should a midwifery bag contain? I know a man who is in the habit of telling students that all you require for an ordinary case is a pair of forceps and a bottle of ergot in your pocket. He is the kind of man who does not trouble to wash his hands before delivering a woman.

The midwifery bag should be of fair size, and have a removable canvas lining. Contents:

1. A pair of all-metal axis traction forceps. Milne Murray's are the best in my opinion.
2. A silver or glass catheter.
3. A douche, either what is known as the Rotunda douche, or the alpha douche, which I have found the handiest of all.
4. A channelled curved glass uterine nozzle.
5. A Higginson syringe, to be used for enemata alone.
6. An antiseptic. Lysol I have found the most suitable for all purposes. It does away with the need of a greasy lubricant, which is of vital importance, as the vast majority of so-called antiseptic lubricants are anything but aseptic, especially when kept in boxes or wide-mouthed bottles. It is as well to have perchloride of mercury tablets with you also.
7. Scissors, needles and needle holder, catgut and silkworm gut.
8. A nail brush. I have left this to the last, but it is not by any means the least essential. The *rôle* it plays in aseptic work is a very important one. It is generally conspicuous by its absence.

These are the essentials, but of course the bag should also contain chloroform, ergot, ether, a hypodermic case with ergotin or ergotinin, morphine, and strychnine tablets. Over and above these I always carry absorbent cotton, iodoform gauze, flushing curette, and a transfusion apparatus, so as to be prepared for any emergency.

The instruments should be kept absolutely clean, and before using them they should be boiled or steeped in boiling water for a few minutes and then put into 1 per cent. lysol solution. No grease or soap should be smeared on them.

The genital tract, as I have already said, is at the onset of labour aseptic in the majority of cases and our aim is to keep it so. It may be infected first and most frequently from the examining finger, secondly from the use of septic instruments, thirdly from aseptic fingers or instruments carrying in infection from the external parts of the patient or the surrounding clothing.

To begin with, the attendant's hands and forearms must be washed and sterilised with as much care as would be exercised before doing an abdominal section. They must be rendered as nearly absolutely sterile as is possible. A white cotton overall would be an advantage, but in private work it can be dispensed with as it is apt to look formidable to the patients. When the hands have been thoroughly sterilised you must see to your patient and get the field of operation made as aseptic as possible. The external genitals with their many folds and abundance of hairs make as fine a lair for the lurking microbe as one could well imagine. The parts must be thoroughly cleansed with soap and water and an antiseptic. Lysol I find the best of all for this. I am perfectly well aware that it is impossible in this way to render the parts absolutely aseptic, but that is no reason why we should not attempt to cleanse them as much as possible. Do this yourself. If you were going to do an abdominal section you would never dream of making your incision before rendering the skin as aseptic as possible, neither would you trust to anybody else doing this for you. No examination should be made until the parts are clean; sterilise your hands and do not allow the examining hand to touch anything before the fingers are inserted into the vagina. The woman's buttocks and external genitals must be in full view to enable you to do it properly. No pure-minded woman will object to this. To the pure all things are pure. Now what is the ordinary method? The hands are washed in a perfunctory fashion, sometimes not at all, or at home, as one man confessed to a friend of mine as an explanation of why he had no antiseptics with him. Some lard, fresh butter, castor oil, vaseline, or any dirty grease at hand is smeared over the fingers, then the examining hand is used to lift the clothes out of the way; if she is a poor woman the dirtiest petticoat she has will need to be lifted and then the external parts are touched; probably the fingers passed over the anus with its adherent filth before they find their way into the vagina. I remember I was taught that the proper way to make a vaginal examination was to pass the fingers over the anus and into the vagina so as to guard against coming in contact with the sensitive parts in front. Legion is not the name for the number of microbes which are carried into the vagina in making an examination in this way. The fact—and I admit it is a fact—that many women do not become septic after undergoing such an ordeal goes to show the tremendous cleansing or antiseptic power possessed by the vagina. Why should we test Nature to her utmost or too often beyond what she can stand rather than try in every way to assist her? I assert that any man who does his work in that way is criminally responsible if his patient becomes septic. Strong language some of you may say; but I feel that those of us who profess to be teachers of midwifery are bound to speak out when we know that such work is being carried on, and I feel it my duty to do so.

Vaginal examinations must be as few as possible. If we could do without them in conducting a case the risk would be immensely lessened. By abdominal palpation we can learn a great deal, and it should be practised in every case before making the vaginal examination. Unfortunately there are certain things we cannot diagnose from it, and therefore a vaginal examination becomes necessary, and of course where an operation is necessary, we must work within the vagina. Let the examinations be as few as possible, and always swab the external parts before making them.

The Question of Douching.

In an ordinary case *ante-partum* douching is unnecessary, and in fact is as likely to do harm as good. It will remove the normal secretions of the vagina, which, with their non-pathogenic organisms, are protective. If an antiseptic like corrosive sublimate is used, it will corrugate the tissues, hinder the descent of the presenting part, and render the tissues far more liable to being lacerated. However, under certain conditions a douche is necessary, namely:

1. If there is any purulent or putrid discharge from the vagina, such as from gonorrhœa or cancer of the cervix.
2. If any operation is to be performed where the hand or instruments have to be introduced into the uterus.

A 1 per cent. lysol solution makes the best douche.

Post-partum douching is not necessary in ordinary cases, and should not be done as a routine. Under certain condi-

tions it is necessary, and should be done with care by the medical attendant himself or herself, and not by the nurse. If there is any chance of septic material having been introduced, an antiseptic douche should be given, but if your case has been conducted aseptically from the beginning, and there was no vaginal discharge beforehand, the best douche to use is one of sterilised water. The best position for the patient to be in is the lithotomy one, with her hips at the edge of the bed. The glass nozzle should first be boiled or steeped in boiling water. The first part of the douche is allowed to run over the vulva to throughly cleanse it, and then the vagina is douched before the nozzle is passed on into the uterus. The form of nozzle I have adopted can be passed into the uterus without introducing the finger to guide it into the cervix. A large quantity of fluid should be used, a gallon at least. If you are using perchloride of mercury the douche should be ended with boiled water to wash out the surplus albuminate of mercury which has deposited on the tissues. I have never seen a case of mercurial poisoning yet, although I have frequently used 1 in 2,000 sublimate douches. Of late I have seldom used corrossive sublimate, as I have adopted lysol for use during the confinement.

Under the following conditions I believe one should douche immediately after labour:

1. In *post-partum* hæmorrhage; then it should be given very hot (120° F.).
2. If there has been any purulent discharge previous to labour.
3. If the fœtus has been putrid.
4. If the hands or instruments have been introduced into the uterus.
5. If the parts have been lacerated to any extent, and if the labour has been a very prolonged one.

During the puerperium it is quite unnecessary, unless the lochia become putrid, or when the temperature rises and there is evidently something in the uterus although the lochia remain sweet. The immediate result of an intrauterine douche during the puerperium is almost always to send the temperature up a degree or two, and in many cases the patient has a slight rigor. This is of no consequence, as the temperature falls again in a few hours.

The Management of the Second and Third Stages.

A teacher of obstetrics has said that "the secret of success lies in a clean shirt and a short second stage." That is part of the truth, but a very small part of it indeed. The second stage of labour should not be allowed to drag on indefinitely. It is difficult to lay down absolute rules, as each case must be judged on its own merits; but I think two hours for the second stage in a multipara and three hours for a primipara is quite long enough. If no advance is then being made it is time to interfere. If forceps are to be used they must be sterilised. In the high operation in hospital we always douche beforehand; in private work this is not so necessary.

The third stage must be conducted very carefully, to make sure that nothing is left behind in the uterus.

After-Care.

As soon as the third stage is complete, and the uterus remains firmly contracted, all soiled things must be removed from the bed, and the patient must be thoroughly washed with an antiseptic. This is a most important part of the treatment, and should not be delegated to any attendant unless she is a qualified nurse who knows what she is about, and even then you had better do it yourself if you want it properly done. If a douche is necessary, give it, and do not instruct the attendant to do it, as one writer advises you to do. If there are any lacerations stitch them at once. The nurse can then apply an aseptic napkin and put on the binder. The toilet of the patient should be as carefully performed as after any surgical operation.

In a discussion on aseptic midwifery some months ago, one of the speakers spoke about the difficulty of getting one's instructions carried out among working-class people, and he illustrated his remarks by the following instructive case. He said that when the labour was over he gave instructions to the attendant to remove the soiled things and make the patient comfortable. He then left, and on returning three hours later found the patient lying as he had left her. Two days later her temperature ran up, and he had to deal with a bad septic case, and little wonder. If men will do their work in such a careless fashion how can they expect any other results? It is against such slipshod methods that I wish to enter my strongest protest. If a man is engaged to attend a confinement case, no matter how small the fee is, he is in honour bound to do his work, and has no right to delegate an important part of the work to an unqualified assistant in the form of an old granny.

During the puerperium no soiled things should be allowed to remain under the patient or under her bed—the common receptacle for soiled things among the poor. The napkins must be changed when soiled and the soiled ones burnt. Aseptic napkins cost so little that the poorest can get them. The external genitals must be washed frequently with a warm antiseptic. Condy's fluid is the safest where there is no nurse. The patient should be encouraged to sit up in bed by the third day if she is strong enough, and she should be allowed to rise on her hands and knees to micturate. This ensures thorough drainage of the uterus and vagina. If a patient lies on her back all the time and attends to the calls of Nature with her hips raised on a bedpan some of the lochial discharge will be apt to lie in the posterior vaginal fornix, and stagnant lochia run great risks of becoming septic. The patient should be lifted out of her bed on the sixth or seventh day and allowed to sit in a chair until the bed is thoroughly shook up and made.

If there is retention of urine and a catheter requires to be passed, it must be done with aseptic precautions by sight, not by touch under the bedclothes. As my colleague Dr. Black has neatly put it, "A nurse's fingers may do material mischief, her eyes cannot." Gum elastic catheters should not be used; I know they are handy to carry coiled inside your hat, but that is hardly a sufficient recommendation for their use.

If all these precautions have been rigidly adhered to, there is little fear of sepsis during the puerperium. If sepsis does occur, douching will become necessary. Vaginal douching may be entrusted to a trained nurse, but an intrauterine douche must be given by yourself, and it must be done thoroughly, or you had better leave it alone. Perchloride of mercury, 1 in 2,000, is, I am convinced, the best to use, ending up with sterilised water.

You may ask me if I can prove that a rigid system like this gives any better results than the old happy-go-lucky trust in Providence style. I answer that it undoubtedly does. From the very first of my work I used ordinary antiseptic precautions. At first I always douched after labour, but soon gave that up as unnecessary. In eleven years' private work I have never lost a case from puerperal septicæmia, and have only had two bad septic cases, both of which recovered. One was a case of puerperal fever followed by phlegmasia dolens, and the other was a case of phlegmasia dolens. They were reported fully in the *Glasgow Medical Journal*, November, 1896. I had occasional cases of high temperatures, but since adopting the methods I have described, I have not had a single one; and in my last 100 cases have never had to give an intrauterine douche during the puerperium for sepsis. Among these there were 30 cases of forceps, several versions, 1 craniotomy, 1 induction, and 4 placenta prævia. I think the results are satisfactory.

In the Glasgow Maternity Hospital the difference has been most marked. In 1896 the wards were never free from sepsis and 9 cases of puerperal fever occurred. When I was appointed in the end of 1896 the hospital had just been emptied and cleaned. I have already dealt fully with this subject in an address on aseptic midwifery given in the hospital at the beginning of this year and published in the *Scottish Medical and Surgical Journal* for February, so that I shall not take up time with a discussion of it now, but merely indicate that we have had no cases of puerperal fever since then, and very few minor cases of sepsis. This year I lost a case of Cæsarean section from sepsis, but it originated from septic vaginitis (gonorrhœal) from which she had suffered for two weeks. The case is fully reported in the *Edinburgh Obstetrical Transactions* for this year. We have to admit septic cases from time to time, and as we have no isolation ward we are severely handicapped. Douching during the puerperium is very seldom required, while formerly it was being done daily. Nap-

kins, towels, drawsheets, binders, etc., are all sterilised in a steam steriliser and all instruments are boiled before being used.

These results, I think, show that I have good reasons for the faith that is within me as regards aseptic midwifery. In conclusion, I wish strongly to commend this subject to general practitioners. It entails a certain amount of work, but the good results which follow are more than ample compensation for the trouble taken. As I have before said, puerperal fever is a preventable disease, and if we do not prevent it we may justly be held responsible.

"MISSED LABOUR."

Report of a Case verified by Operation and also Post Mortem.

By Mary Scharlieb, M.D., M.S.,
Surgeon to the New Hospital for Women.

The extreme interest of the subject of "missed labour," and the fact that up to the present time there is no record of a case which has borne the test of either operation or *post-mortem* examination is my excuse for reviewing the leading authorities on this subject and for relating a case which I know to be genuine and believe to be unique. Missed labour is not protracted gestation, although undue prolongation of pregnancy may be the precursor of missed labour. The dividing line must be drawn sharply at the death of the child. Up to this time a pregnancy continuing beyond the usual period is to be classified as protracted gestation and after this as missed labour. The literature of the subject is not very extensive, and some excellent authorities, among them Galabin, say that no well-authenticated case is as yet on record; that cases reported as missed labour are in fact cases of ectopic gestation where a communication has been formed between the sac and the uterus.

Dr. Galabin, at p. 381 of his textbook on *Midwifery*, says that in cases of missed labour the fœtus is retained indefinitely, that this occurrence is very rare, and that it is doubtful whether the supposed cases are not misinterpreted instances of ectopic gestation. He says that in Dr. Oldham's celebrated case the retained fœtus was disorganised and converted into a mass of bones and adipocere. Portions of this mass were discharged through the os uteri for three months from the date of full term. The woman then died, and the remainder of the mass was found in an imperfect cyst formed by the abdominal parietes and the posterior wall of the uterus. This case, Dr. Galabin says, is open to the interpretation of being one in which an extrauterine sac had ruptured into the uterus, although Dr. Oldham said that he had felt the fœtus *in utero* during the woman's life.

In Dr. Galabin's case reported in vol. xvii. *Transactions of the Obstetrical Society of London*, a watery discharge escaped through the cervix uteri for two months after full term after dilatation by a tent the fœtus was felt by the finger through what was believed to be the os internum. The woman died, and at the *post-mortem* examination the pregnancy was found to be extrauterine, the sac having formed an opening into the uterus at the convexity of the bend in a retroflexed uterus.

Dr. Robert Barnes[1] says: "Missed labour means the hypothetical retention of a mature fœtus in the uterus beyond the natural term of gestation, signs of labour at the proper time having been manifested. All the presumed cases are resolved into 'concealed abortions' or 'ectopic gestations.'" In his case the fœtus probably died at the eighth month of pregnancy and was retained till seven months after full term. Dr. Barnes was convinced by the introduction of the hand that the fœtus was situated in the uterus, though there was no verification by necropsy, as the woman recovered. Dr. Barnes concluded that there was no evidence of the occurrence of "missed labour," unless the fœtus had died before the full term of pregnancy. Upon this Dr. Galabin remarks that positive *post-mortem* evidence is not yet forthcoming, but the fact that a similar occurrence has been observed in cows and ewes is in favour of its possibility.

Dr. Lloyd Roberts, in his *Practice of Midwifery*, page 221, appears to recognise the possibility of missed labour. It is, he says, applied to an exceedingly rare class of cases where labour fails to take place at the end of gestation, the fœtus remaining *in utero* for an indefinite period. He also cites Dr. Oldham's case, but does not raise the question of its extrauterine origin.

Dr. Dakin, in his *Handbook of Midwifery*, page 269, says: "If a viable fœtus died and was retained *in utero* for an indefinite period, the condition would be that of missed labour.....In no case has there been *post-mortem* evidence that it is even a possible event. Cases which have been recorded as instances of this are practically beyond doubt cases of an ectopic gestation, which has ulcerated through into the uterus and so gained an exit."

Matthews Duncan, in his clinical lectures on the Diseases of Women, page 21, cites the case of a lady, aged 41, pregnant for the first time. Nothing abnormal was noticed except extreme anteversion of the uterus and pendulous abdomen. Her last period ended on December 12th and on December 15th her husband left home for two months. Her confinement was expected on September 17th. The movements of the child ceased on September 26th. On October 17th she shivered and became feverish without any indication of labour. The mouth of the womb was artificially dilated, and she was artificially delivered the next day, October 18th. The child was enormous, and presented evidence of advancing decomposition. The mother died on October 24th. In this case, says Dr. Duncan, you have with almost scientific certainty slight protraction of pregnancy, and then the condition of missed labour. Unfortunately there was no necropsy. Spiegelberg, in his *Textbook of Midwifery*, p. 501, vol. i, appears to take the fact of "missed labour" for granted, but he quotes no case. He says: "Those cases in which the dead fœtus remains *in utero* for a variable time, possibly even for years, after the normal termination of pregnancy, are totally distinct, and this event may not only occur where death takes place prematurely, but when it occurs at a late period or even during labour ('missed labour' of Oldham). In these instances a parturient crisis sets in at the natural date. The pains pass by, and the uterus comes finally to enclose the fœtus much as it would do a new formation. We cannot say why the expulsive activity ceases without effecting its purpose; sometimes there may be great obstruction.....at other times an abnormally firm connection of the ovum with the uterus."

Fabbri, of Bologna, in 1866, published two memoirs on Missed Labour in Domestic Animals and in the Human Species. He gives an account of twenty specimens of missed labour in animals, chiefly in cows, and remarks, "All are to be referred to uterine pregnancy. The fœtuses do not all present themselves in the same conditions. Some do not appear altered, some are hardened or mummified, one alone is reduced to mere bones. All perished at periods more or less removed from perfect maturity, one only excepted."

He then tells that these twenty specimens had been collected in the course of thirty-three years—1832 to 1865—and that they chiefly came from the public slaughterhouses of Bologna. Many of these he describes fully, and recounts the *post-mortem* appearances, leaving no room for doubt that both missed abortion and missed labour in uterine pregnancies are not uncommon in mares, cows, and sheep, also that an analogous accident occurs in ducks and hens where the egg may be retained.

In the second part of his paper he treats of missed labour in the human species, and begins by quoting from Hippocrates a passage which will, he says, convince anyone who reads it that the accidental omission of parturition in the human species was a well-known fact in remote ages. The passage from Hippocrates runs thus: "The child dies in the womb, and does not escape so long as it is moist and has that which sustains it. When it dies, the child first swells, then the flesh dissolves and becomes corrupt. The bones are expelled last. Sometimes a flux comes on unless the woman dies first."

He also quotes the Arabian physician Albucasis, who gives a graphic description of a case in which "the fœtus not being born died and putrefied in the mother's belly, the bones escaping partly through the vagina (?) and partly through an abscess which opened at the umbilicus, where there subsequently remained a fistulous opening."

Before this happened the woman had conceived again; the second child also died, and no mention is made of its birth;

on this Fabbri remarks that it was probably a case of two successive extrauterine gestations in the same woman.

François Bousset in 1581, writing on Cæsarean section, gives three cases of missed labour with putrefaction of the fœtus and death of the mother. In each case he gives the *post-mortem* notes, which we should like to see in order to make sure of the nature of the case.

On carefully considering these dicta, and on critically reading the cases cited, I am led to the conclusion that a case which occurred in the New Hospital for Women in September, 1895, is unique. Clinically it agrees with the characters of "missed labour," in that the fully mature fœtus was retained *in utero* beyond the limits of normal pregnancy, that it died *in utero*, and was still retained until removed artificially. I further venture to think that the evidence obtained by abdominal section, that the pregnancy was uterine and not extrauterine, gives this case the authenticity which earlier cases are said to lack.

Mrs. W., aged 29, admitted to the New Hospital for Women on September 26th, 1894. She said she had been married eight years, and had had an easy labour with her only child, about seven years before. Her last period was in October, 1893. She believed herself to be normally pregnant, but was ill for a time with pain in the abdomen and fever. After this she was fairly well until May, 1894, when being, as she thought, six months pregnant, she had an attack of cramp-like pains so bad that for a week she could neither lie down nor sleep, and was so ill that she was confined to her room for six weeks. After a short interval she had another attack of pain and fever, and passed a shapeless mass of pink jelly about 2 inches in diameter, followed by clots of blood. She continued very ill up to the time of her expected confinement in July. No labour occurred. Early in September she had a hæmorrhage *per vaginam*, which lasted one week, and was followed by a thick yellow discharge. During this attack she had a few sharp pains like those of the first stage of labour. She was seen by a doctor, who told her she had something amiss with her pregnancy, and advised her to come into hospital.

On admission the patient looked very ill and worn. Temperature 102°, pulse 120, respirations 26. Sordes on lips. Her legs were swollen, the abdomen, tense and œdematous, was enlarged beyond the usual size of pregnancy at full term; no fœtal heart was heard, and no movements were felt.

September 28th. The patient was anæsthetised, the outline of the child could be felt through the swollen tissues, *per vaginam* the lower segment of the uterus was found partly blocking the pelvic cavity, but no sign of cervix or os uteri could be detected. Finally, above and behind the pubes a narrow slit was found through which a bougie could be passed. It entered its full length and appeared to be immediately beneath the skin. The diagnosis seemed to lie between missed labour with atresia of the os and extrauterine gestation. The fact of the bougie seeming to pass through a fissure in the vaginal roof and to lie directly under the skin, the recurrent attacks of pain and fever with irregular hæmorrhages and the discharge of what might possibly have been œdematous decidua in May, led me to incline to the opinion that the gestation was extrauterine.

Operation. A median incision was made from umbilicus to pubes. The muscular wall was very thin, the peritoneum was œdematous. On introducing the hand the gestation was found to be uterine, and the uterus to be adherent, both to the intestines and to the parietes. The uterus was incised in its median line, one sinus only bled, and that was immediately controlled. The membranes were opened and gave exit to an intensely fœtid puriform fluid. The uterus was washed out with 1 in 2,000 solution perchloride of mercury and then the child was removed. It was lying in the second position of the breech with the right foot and leg immediately under the incision. The extraction was easy, the uterus remaining entirely passive. The child was large and well developed, about 12 lbs. in weight. Its epidermis was peeling off—the bones of the head were loose—the umbilical cord was flaccid, flattened, and untwisted. The placenta was adherent to the uterine wall and full of puriform fluid. The uterus was thin, friable, and lined with a greenish-white membrane. It was so disorganised that it fell into many holes under careful attempts to separate it from its adhesions to the intestines. These adhesions were universal, not one square inch was non-adherent, and except in front the adhesions were dense enough to threaten the integrity of the bowels during the process of separation. The broad ligaments were thick and swollen, permeated by large arteries running to them from the sides of the uterus. There was no hæmorrhage on dividing them, as they were all empty or thrombosed. The uterus was amputated just above the reflection of the peritoneum on to the bladder. Then the lower segment which lay in the pelvis was seen to be cup-shaped, and no indication of os or cervix could be found. An unsuccessful attempt was made to strip off the green membrane covering this portion of the organ. It was scrubbed with 1 in 1,000 perchloride of mercury, and the edges were turned in and over-sewn with Lembert's suture, an opening having been made for drainage into the vagina. The abdominal cavity was flushed with warm boracic lotion, and the external wound closed in three layers as usual. When put to bed the patient's temperature was 95° and her pulse 140, but she rallied well from the shock.

September 30th. Patient sick and restless. Temperature normal, pulse 135.

October 3rd. Offensive discharge and fæces *per vaginam*.

October 6th. Cough, pneumonia, and diarrhœa.

October 25th. After a month of alternate improvement and retrogression, patient died exhausted.

POST-MORTEM EXAMINATION.

Pelvic Organs.—The rectum was imbedded in a dense mass of fibrous tissue. There was an ulcerated opening into the pouch of Douglas admitting the tip of the finger.

Ovaries and Tubes absent.

Stump of the Uterus lay in the median line; a small quantity of pus appeared through this on pressure through the vagina. There was an opening into the vagina admitting of two fingers, and several discoloured patches in the floor of the pelvis.

This case seems to satisfy the definition of "missed labour," and was carefully observed at time of operation, as I had the probability of extrauterine gestation in view.

REFERENCE.

1 *Obstet. Med. and Surg.*, vol. i, p. 489; also Obstetrical *Transactions*, vol xxiii.

THE TREATMENT OF CYSTOCELE.

By AMAND ROUTH, M.D., B.S.Lond.,

Obstetric Physician at Charing Cross Hospital; Lecturer on Midwifery at Charing Cross Hospital Medical School; Physician to Samaritan Free Hospital for Women.

THE treatment of cystocele depends greatly upon its causation. A cystocele may be primary or secondary. It may be primary in two ways.

1. From stretching of the anterior vaginal wall in labour, where the bladder has not been drawn up out of harm's way during the first stage, and has been subjected to prolonged distension, together with the anterior vaginal wall. If retention of urine follows, and the fundus of the uterus is somewhat pressing upon the fundus of the bladder, the base of the bladder bulges down through the vaginal wall, and cystocele results, and, if prolapsus uteri is also present, is sure to persist.

2. Primary cystocele may also result where the membranes rupture before the cervix is fully dilated. The head, then, is the dilating body, and may force down the anterior lip, dragging with it the anterior vaginal wall and base of bladder. The ureters are inserted into that portion of the bladder thus drawn down, and if the head is pressing against the pubes, urine collects in the lower prolapsed portion of the bladder, forming an acute cystocele, the upper part of the bladder being empty.

Secondary cystocele is predisposed to by a deficient perineum, from absence of support to the anterior vaginal wall, and is directly produced by prolapsus and procidentia uteri, and by those rare cases of primary hypertrophic elongation of the supravaginal cervix.

Supravaginal elongation of the cervix is much more commonly secondary to the cystocele, and is then usually unaccompanied by a true hypertrophy.

Cystocele is not easy to treat satisfactorily. Success depends much upon whether it is primary or secondary. Treatment by pessaries is usually first tried. If cystocele is secondary to prolapsus uteri, pessaries may relieve by curing the prolapsus; but if it is primary, pessaries do but little good. I do not propose to speak of pessaries, but to describe at once an operation which, in otherwise intractable cases, I have found very useful. It is probably similar to those adopted by others, but I have not seen it described.

Anterior colporrhaphy, involving the removal of varying shapes and sizes of mucous membrane, drawing the resulting free edges together, thus puckering up the underlying bladder, is often very temporary and therefore not satisfactory. If well supported by a posterior colpo-perineorrhaphy, with the use of a vaginal pessary, some relief follows. Lately I have modified this operation by making a central longitudinal incision, stripping off the bladder underneath the anterior vaginal wall, and so freeing this anterior vaginal wall. The edges can then be everted, and the raw surfaces made into a sort of ridge, which is fixed to a celluloid plate, previously prepared, and kept in position for a fortnight. This rigid wall does not give way as easily as the cicatrices of an ordinary colporrhaphy.

The operation, however, which I have found most permanent is founded on my belief that it is useless to expect a permanent cure unless the bladder is completely stripped off the uterus and vagina, as follows: The cervix is drawn down, and an incision is made transversely in front of the cervix, and the bladder is stripped off the front of the uterus as in the operation for vaginal hysterectomy. The anterior wall of the vagina is then seized by its cut edges and drawn down towards the vulva, and the bladder is stripped of its under surface, and turned up, out of the way, above the pubes. To do this effectually it may be necessary to open the utero-vesical fold of peritoneum, but this is not always essential. An incision is then made longitudinally along the centre of this vaginal flap, running from the centre of the transverse incision to the neck of the bladder (Fig. 1).

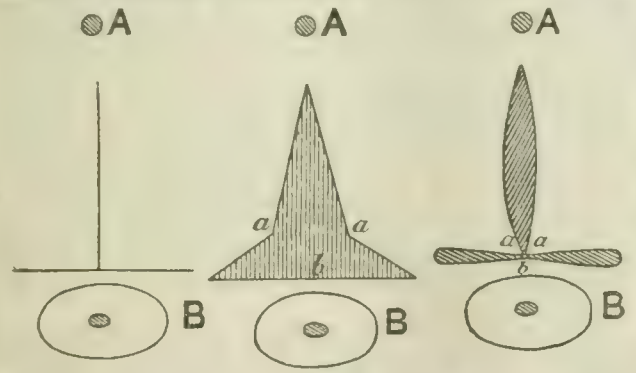


Fig. 1.—Transverse and longitudinal incision. A, urethra; B, cervix.

Fig. 2.—The denuded area; points *a*, *a*, to be sutured to point *b*.

Fig. 3.—*a*, *a*, are united to *b*; the resulting transverse and longitudinal edges are to be united.

The two resulting triangular flaps are then placed in position and made to overlap and the redundant portions cut away both along the transverse and longitudinal incisions. The amount of tissue removed will of course vary, but approximates to that shown in Fig. 2.

The edges are now united. This is best done by drawing down and suturing a point in each lateral edge to the central point of the transverse edge—AA to B (Fig. 2). The result is seen in Fig. 3. All that is then needed is that the raw edges should be united along both the longitudinal and transverse lines. The vagina is thus shortened both ways. It is a good plan to stitch the supravaginal cervix to the vaginal walls; and this anterior vaginal fixation is essential if the uterus is retroverted and prolapsed. To do this it is of course necessary to open the utero-vesical pouch of peritoneum to get the bladder well out of the way, and so be able to stitch the body of the uterus to the vaginal wall.

I remember well a case which had been operated upon by others. She had had a bad procidentia with cystocele. Her vagina had been narrowed by various colporrhaphies, her perineum had been restored, her cervix had been amputated; she had had Alexander's operation performed, followed subsequently by ventrifixation of the uterus. Yet she was not contented. When I saw her the uterus was high up, but the cystocele was very bad. I performed the above operation, stripping off the bladder and fixing the vaginal wall to the still elevated uterus, and though there is still some redundant anterior vaginal wall, it is much thinner does not come down, and is not now adherent to the vaginal wall at all.

Where elongation of the supravaginal cervix complicates cystocele, whether as cause or effect, and failing relief by pessaries, the cervix must be amputated high up. It is useless to do anything else, because the bladder is in such cases attached to about 3 inches of the supravaginal cervix. The bladder anteriorly, and the peritoneum posteriorly, must be separated as high as it is intended to amputate; and it is desirable to ligature and divide the base of each broad ligament, especially if there is hypertrophy as well as elongation of the cervix. The vaginal walls are then stitched to the anterior and posterior lips of the stumps of the cervix. A normal-sized uterus remains, with part of its supravaginal cervix, and with its vaginal connections intact. The results of the few cases that I have done are very good, and at all events compare very favourably with the operations done previously on the old lines.

Discussion.

Professor Saenger (Leipzig) said that he had performed an operation similar to that of Dr. Routh for about eight years, but in a more extensive manner. This method he had lately described in the *Centralblatt f. Gynäkologie* (1898). The operation was based upon the flap-splitting principle of Lawson Tait as adapted for the vaginal walls. He brought down the uterus with a volsella, put in a ligature below the urethra, and so, by traction on both, the field of operation was well exposed without specula, without hooks, etc. Then he made a longitudinal incision from the urethra to the portio vaginalis: two large flaps of the vagina were very quickly detached on both sides, and the bladder was freely exposed. In cases of larger cystocele he put one or several rows of buried sutures into the prolapsed wall of the bladder. Then followed the resection of the vaginal flaps, and a superficial, continuous, or interrupted suture (all with silk). In cases of hypertrophic elongation of the cervix uteri he performed also a high excision of pieces of 6 to 8 cm. and more, after the well-known proceeding of Kaltenbach. But operation for cystocele alone, namely, anterior vaginal colporrhaphy, was by no means sufficient for a cure. When there was cystocele there was always rupture of the perineum, or relaxation of the pelvic floor, or enterocele, etc. Unless an extensive colpo-perineorrhaphy also was performed, a good and durable result would not be obtained. He performed this operation also by a median incision through the posterior vaginal wall from the perineum to the highest point of the posterior fornix. The flap-splitting and denudation of the peritoneum (Douglas's pouch) and of the rectum was facilitated by introducing a finger (protected with a rubber covering) into the rectum, and by putting on the edges of the vaginal flaps a number of Koeberlé's forceps, so bringing down very easily the upper tracts of the posterior vaginal wall. It seemed to him very important to carry the denudation as highly up as possible. The flaps were resected and sutures put in from above downward as far as the perineum, which was dissected near to the rectum. A properly-narrowed vagina was thus obtained, and the strengthened posterior vaginal wall would support the anterior. Certainly Emmet's operation of colpo-perineorrhaphy was a very good one, but, like others of similar kind, it did not go up high enough. He could warmly recommend this high flap-splitting operation, which had given him very satisfactory results.

Professor Fehling (Halle) said that he could not agree with Dr. Saenger's proposition as to the advantage of a large excision of the cervix uteri; he had seen bad relapses of procidentia after this operation. The chief thing was fixation of the uterus in the normal position by ventrifixation or vesico-fixation. An excision of the cervix might, if necessary, be done subsequently, but without that the length of the uterus would soon diminish. Then a large anterior colporrhaphy and colpo-perineorrhaphy followed. The relapses were due to the general retroflexion of the uterus in the bad cases.

Dr. GILES (London) divided cases of cystocele into two classes: (1) Those in which the uterus was in good position, but the vaginal wall low; here anterior colporrhaphy was often sufficient. (2) Those in which the uterus was low down; these cases were generally due to separation of the anterior vaginal wall from the pubes during labour. Here the removal of portions of the vaginal wall would simply have the effect of fixing the uterus in a low faulty position. The ideal plan would be to fix the vagina again in its proper place with attachments to the pubes, but this was made very difficult by the position of the bladder. Consequently a ventrifixation of the uterus was generally necessary, in addition to which colporrhaphy might have to be performed. He must admit that the treatment was rather unsatisfactory, as so many cases showed a return of the condition, necessitating after all the wearing of a pessary.

Dr. A. MARTIN (Berlin), basing his views on more than a thousand observations, recommended the restoration of displaced pelvic organs by repairing the defects of the uterus as well as those of the vagina in one operation. He did excision of the cervix; if necessary, he added curetting and Emmet's operation. Then anterior colpotomy was performed, which gave the opportunity to fix the uterus in young persons up to two centimetres over the internal os, this being quite safe in eventual pregnancy as dozens of cases had proved to him. Anterior colporrhaphy was done, and at all events posterior should be performed at the same sitting; the special method seemed to be of moderate value, as ascertained by the communication of successful cases from so many different sides.

Dr. LAPTHORN SMITH (Montreal) said that he would emphasise the opinion of Dr. Saenger and Dr. Martin that it was quite useless to do any operation for cystocele alone. The method which he had always followed was to—(1) dilate; (2) curette; (3) amputate the cervix; (4) anterior colporrhaphy; (5) posterior colporrhaphy; (6) removal of diseased tubes and ovaries (if they were diseased); and (7) ventrifixation. With this method he had obtained the most satisfactory results; and these seven operations could be done, if the operator did not talk, and if no one else talked, in one hour and ten minutes.

DR. AMAND ROUTH'S REPLY.

Dr. ROUTH expressed his satisfaction at the discussion, which had been extremely instructive, especially from the remarks of Professors Saenger, Fehling, and Martin. His main contention was that it was useless to attempt to cure cystocele unless the bladder was first completely stripped off from both the uterus and vagina, and turned up out of the way. Vaginal fixation of the uterus could be effected if the uterus were displaced. It might also be desirable to amputate the cervix if supravaginal elongation had secondarily occurred. In primary uncomplicated cystocele he had found the above operation successful after two years.

EXTIRPATION OF THE MYOMATOUS UTERUS BY THE VAGINA.

By W. J. SMYLY, M.D.,
Gynæcologist to the Adelaide Hospital, Dublin.

HISTORICAL NOTE.

ALTHOUGH it is dangerous to attribute an operation to any individual, yet I may safely state that this operation is mainly due to MM. Amussat, Péan, and Doyen, and that to the latter is especially due the credit of having so simplified the procedure as to place it within the power of any gynæcologist possessed of ordinary manipulative skill to perform. The first time that I saw it carried out was during a visit that I paid to Berlin in the autumn of 1893. The operator was Dr. Leopold Landau, and I shall not soon forget the astonishment with which I beheld him draw down and slice into fragments, as if it were cheese, a large myomatous uterus, and with little or no hæmorrhage, though no attempt at preventive hæmostasis had been made. Shortly after my return to Dublin I obtained a copy of M. Doyen's pamphlet, containing a full description, admirably illustrated, of his operation, from the perusal of which I felt fully convinced of the value of the proceeding, and, fortified by the practical demonstration which I had witnessed in Berlin, I determined to perform it myself upon the first favourable opportunity. This occurred in April, 1894, and was, as far as I know, the first time that this operation was performed in the United Kingdom. Since then I have done it seventeen times, and will place the results before you.

In recommending a comparatively new method of dealing with a well-known condition, it is I think necessary not only to define the limits of its applicability, but also if possible to show its superiority within those limits to other proceedings more generally in vogue.

INDICATIONS FOR OPERATION.

In the first place I believe that the mere presence of a myoma is not in itself an indication for operation, and that there are a number of cases in which operation is not only uncalled for but to be condemned; and from my personal experience I cannot endorse the opinion that myomata kill as certainly, though more slowly, than cancer. On the contrary, many women suffer no trouble at all from their presence, and, as proved by *post-mortem* evidence, have carried them to their graves in total ignorance of their existence. But even to a woman who does suffer some inconvenience, the loss of her genitalia is a misfortune of more than a sentimental kind, and some suffer so much from nervous symptoms that after the operation they are in a worse plight than before. On the other hand, there is a large number of cases in which operation is called for—a number which has greatly increased as the attendant risks have diminished—and to refuse relief to these sufferers until life is so endangered by hæmorrhage, malignant and other changes, and visceral complications that relief comes too late is a worse error of judgment than unnecessary interference; nor should it be forgotten that the hoped-for menopause is in these cases often indefinitely postponed, and even after its establishment cessation of growth occurs less uniformly than used to be supposed.

The following are, in my opinion, the chief conditions which call for interference: (1) Pressure upon important organs, especially the bladder and rectum; (2) rapid enlargement, especially in young women, whether it be due to simple growth or to cystic or malignant degeneration. It is of very great importance, however, that the enlargement which results from pregnancy, even though it may occasionally be an indication for operation, should not be confounded with these. (3) Suppuration and sloughing of the tumour; (4) pain; (5) hæmorrhage; (6) where a woman who has to earn her living is incapacitated from so doing by the disease; (7) and lastly, an indication which occurred in my own practice lately, where the tumour, though protruding through the os, involved so much of the uterus that its preservation was impossible.

Having then decided to operate, the next thing is to select the best method. We have to choose between abdominal and vaginal hysterectomy, removal of the tumour only, and ablation of the appendages.

In these small tumours vaginal is better than abdominal hysterectomy, because the mortality is less. Shock is less marked, convalescence is more rapid, and there is no abdominal wound to produce a hernia.

MYOMECTOMY.

Myomectomy, or removal of the tumour only, is what is popularly styled an ideal operation: nothing but diseased tissues is removed, and the uterus is left structurally and functionally perfect. In considering this operation we must carefully distinguish abdominal and vaginal methods. Subperitoneal tumours are easily removed, but seldom call for interference. Interstitial growths are seldom single, and, though all recognisable growths may be enucleated, it is generally impossible to remove every nodule, and, as these are liable to further growth, the operation is often a palliative and not radical procedure; and when the high mortality attendant upon it is taken into consideration, it is better to remove the uterus, excepting, perhaps, in the case of very young women, where the growth is evidently single. These objections, however, do not hold good with regard to submucous growths which protrude into the cavity of the uterus or which are polypoid, since their removal is, as a rule, devoid of danger, and if others develop they can be removed in the same way. Hæmorrhage is so frequently associated with submucous tumours, and patients who have been debilitated by prolonged hæmorrhages bear hysterectomy so badly, that for

some years I have made it a rule where hæmorrhage is a prominent symptom, even when the uterus is infested with myomata, to dilate the cervix, explore the uterus, and, if possible, to remove any growths which may be found protruding into the cavity. By this means the patient is probably relieved, and, even should hysterectomy subsequently become necessary, her condition will have improved, so that it can be carried out under more favourable circumstances. I have never yet performed vaginal myomectomy by Dührssen's or Doyen's methods. The latter especially appears to me to be a most excellent procedure, but I have not had the courage to put it into practice. The method which I have employed has been to dilate the cervix with sea tangle tents, and remove the growth with a modification of Schultze's spoon forceps. The increased size and power of this instrument has, in my opinion, materially increased its usefulness. With this forceps pieces of rapidly increasing size are cut and torn out of the growth until at last the entire mass is removed. Excepting, then, submucous tumours which protrude into the uterine cavity, and possibly uninodular growths in young women, I prefer hysterectomy as a safer and more certain means of cure.

Removal of Uterine Appendages.

Removal of the uterine appendages is the operation which is most frequently employed in these countries in the treatment of these small myomatous uteri. It recommends itself as generally simple in performance and satisfactory in its results, but it is not always either the one or the other; it may be a very difficult or impossible proceeding, or the hoped-for menopause may not ensue, hæmorrhage recurring or the tumour continuing to grow.

Vaginal Hysterectomy.

With the exceptions already mentioned I believe that extirpation by the vagina by M. Doyen's method is the best operation in the class of cases which I have been considering. (1) It is a radical proceeding, altogether removing the disease and ensuring a cure. (2) The shock is less and convalescence more rapid than after any abdominal proceeding. (3) The mortality is small. (4) There is no abdominal cicatrix which may cause a hernia.

I need hardly describe the technique at length; anyone unfamiliar with it who thinks of performing the operation should read either M. Doyen's or Dr. Landau's works. The method adopted in my cases was briefly as follows: The vagina having been thoroughly disinfected and in some cases dilated, the cervix was brought into view by a speculum; in some cases I made deep vulvar incisions to gain more room, but this is unnecessary, and sometimes prolongs convalescence. The uterus having been seized with volsella at both sides was drawn forwards towards the pubes; the posterior fornix incised, and, if possible, Douglas's pouch freely opened. The cervix was then drawn downwards, the mucous membrane incised from right to left across the front of the cervix, uniting the ends of the first incision, the bladder pushed upwards as far as possible and protected by a retractor. Then the anterior wall of the cervix was divided with scissors as far up as the retractor, and two Museaux forceps applied, one on either side as far up as possible; traction upon these brought the uterus further down, and the bladder having been pushed up the incision was prolonged towards the fundus, two more forceps being applied. As soon as the peritoneum was incised the opening was enlarged transversely, and the retractor having been pushed into it the bladder and ureters were lifted up out of harm's way. The incision was still carried upwards through the anterior wall, and fresh forceps applied as the uterus was drawn downwards, until at last the entire organ was drawn outside; but it was seldom possible to do this with a single incision, as a rule it was soon found that the organ did not come any further down with traction, and therefore the incision could not be carried higher. It then became necessary to remove a large portion of the anterior wall; this was accomplished by making two lateral incisions towards the cornua and cutting away the included triangle; the uterus now came lower down, and as the included tissue was cut away in as large fragments as possible, the fundus was gradually brought outside the vulva; during this process any myomatous nodules that presented in the wound were removed, generally by morcellation. The anterior wall was usually preferred, but in two cases in which the disease was chiefly developed on the posterior aspect this was first attacked. A point especially emphasised by M. Doyen I found of much use in one case complicated by a subperitoneal pedunculated tumour—namely, to make certain of the number and position of such growths as early in the proceeding as possible, lest any of them should become detached and left behind in the abdominal cavity. The uterus having been brought outside the vulva, the broad ligaments were clamped and the mass cut away. The field of operation was then carefully cleansed with gauze compresses; intestine, if protruding, which only once occurred, pushed back and bleeding points clamped; a long strip of sterilised gauze carried up into the wound, the clamps which had been arranged in two bundles surrounded with more gauze to protect the vagina, the bladder emptied and the patient put to bed, where a small cushion was so placed as to support the handles of the clamps and prevent injurious pressure. The clamps were generally removed after forty-eight hours. In a few cases I used ligatures instead of clamps, and closed the peritoneal opening, but I soon returned to the clamps, which I prefer.

I shall now briefly refer to my 17 cases.

Case I.—M. L., a single woman, aged 38, was admitted into the Rotunda Hospital in April, 1894. She complained of severe pain and constant hæmorrhages. The uterus, which reached nearly to the umbilicus, was infested with myomatous nodules. It was removed April 13th, and the fragments weighed 2½ lbs. She made an excellent recovery, and was up and about on the twelfth day. I believe this to have been the first patient subjected to this operation in the United Kingdom.

Case II.—H. F., a single woman, aged 45. She was a schoolmistress, and was incapacitated by the pain and pressure of the tumour from pursuing her occupation. The fundus, which was chiefly involved, reached to the umbilicus. Operation, May 26th, 1894; fragments weighed 3 lbs.; convalescence was delayed by the perineal incisions which healed by granulation. She, however, made a good recovery, and has since resumed her duties as teacher.

Case III.—M. McC., aged 50; married, but no family. Had suffered from severe hæmorrhages for fifteen months, and was in a very anæmic condition. A myoma as large as a fœtal head occupied the anterior wall of the uterus, and pressed upon the bladder causing much inconvenience from frequent micturition. The sound passed 3⅝ inches, and caused hæmorrhage. The uterus was dilated with sea tangle, and explored with the finger, but neither malignant disease nor any removable growth discovered. It was thoroughly curetted, but with a negative result. A month later, October 10th, 1894, the uterus and tumour were extirpated, and she was discharged November 1st.

Case IV.—M. K., a married woman, aged 55; no family; complained of hæmorrhage and violent pains in back and sides. The uterus reached nearly to the umbilicus, and the sound passed 7 inches. The uterus was dilated and explored, but nothing could be removed. It was extirpated ten days after—October 16th, 1894. The fragments weighed 3 lbs. She was discharged November 15th.

Case V.—M. N., aged 53; seven children and one abortion. Ten years since last pregnancy; complained of severe floodings and loss of strength. Operation, November 13th; fragments weighed 4½ lbs. Discharged December 14th.

Case VI.—C. S., aged 29, married seven years, no family; complained of hæmorrhage, pain, and retention of urine, necessitating the constant use of the catheter. The myomatous uterus reached to the umbilicus, and the sound penetrated 7½ inches. A nodule as large as a fœtal head, springing from the anterior wall, was firmly impacted in the pelvis, and pressed upon the urethra; another tumour occupied Douglas's pouch. The indications for operation were the age of the patient, the rapid growth of the tumour, hæmorrhage, and retention of urine. The operation was performed on January 22nd, 1895, and occupied two hours and a-half. After removal of the uterus the tumour in Douglas's pouch was also removed, and found to be a pyosalpinx. She was discharged on February 15th.

Case VII.—L. K., aged 36, single; complained of retention of urine. The tumour, size of a fœtal head, filled the pelvis and pressed upon the urethra. Operation, February 1st, 1895, proved a very simple one; but the myoma had sloughed, which was not suspected until it was cut into, when a quantity of putrid matter escaped, and, though removed as quickly as possible, it spread about over the neighbouring tissues. The uterus was then removed, and the ligaments secured with ligatures. She died of septicæmia on the third day.

Case VIII.—M. M., a married woman, aged 45, complained of pain and hæmorrhage. The uterus reached two fingers' breadth above the umbilicus. The operation was performed on October 7th, 1895, and proved a very difficult and tedious one; the fragments weighed 5 lbs. She made an excellent recovery, and was discharged on the sixteenth day, but I shall not again attack so large a uterus *per vaginam*.

Case IX.—A. R., aged 33, single; complained of great pain and constant desire to micturate. The myomatous uterus was as large as a fœtal head, and there was also a pedunculated subperitoneal myoma attached to the fundus. The operation was performed October 22nd, 1895, and the uterus removed without difficulty, but the subperitoneal tumour became detached, and had to be pressed down into the wound by an assistant, where it was seized by volsella and removed by morcellation. She was detained in hospital by cystitis until December 23rd.

Case X.—J. S., aged 50, married, no family, complained of pain and hæmorrhage. Uterus reached to within an inch of the umbilicus. Operation November 22nd, 1895; broad ligaments ligatured; made a good recovery.

Case XI.—K. G., aged 37, married, no family; symptoms pain and hæmorrhage. The uterus reached up to the umbilicus; sound passed 7½ inches. Operation, February 21st, 1896, was difficult and tedious,

owing chiefly to a large intraligamentous growth on the left side. She was discharged on March 20th.

CASE XII.—B. L., aged 35, married: greatly reduced by constant floodings; uterus as large as cocoanut. Operation March 6th, 1896. Fragments weighed 2 lbs. Discharged April 9th.

CASE XIII.—E. B., aged 40, married; indication for operation rapid growth of tumour which reached half-way to umbilicus. Operation September 15th, 1896. Discharged October 10th.

CASE XIV.—S. A., aged 49, married, no family: symptoms severe pain and bearing down, which incapacitated her for work. Uterus reached midway between pubes and umbilicus. Operation November 4th, 1896. Discharged December 12th.

CASE XV.—M. T., aged 30, single; complained of severe pain and constant desire to micturate. A uninodular myoma the size of a cricket ball grew from the anterior wall of the uterus and pressed upon the bladder. Operation July 29th, 1897.

CASE XVI.—E. H., aged 27, single. This patient had been for upwards of a year in a hospital for incurables, certified as a case of uterine cancer. It was, however, not of that nature, but a sloughing myoma. The uterus was extirpated on June 1st, 1897, and she has since resumed her occupation as cook.

CASE XVII.—W. C., aged 30, unmarried; indication for operation pain, performed August 21st, 1897. Recovery.

This, then, is my experience of this operation, 17 cases with 1 death, or something under 6 per cent. I believe it to be a good operation, and an important addition to our surgical resources in that class of cases generally treated by removal of the appendages. It is superior to that method in the certainty of cure, the absence of an abdominal wound, and I believe the nervous symptoms following operation are, as has been observed by others, less severe after removal of both uterus and ovaries than where the latter only have been taken away. On the other hand, it is a tedious and difficult operation, but the results more than compensate for the trouble and time involved in its performance.

REMARKS BY DR. LANDAU.

DR. THEODORE LANDAU (Berlin) congratulated Dr. Smyly not only on his good results, but also on his having adopted the vaginal route. In his opinion it was not wise to wait too long before operating for the following reasons:

1. There might be sarcomatous degeneration in the simple myoma. Zweifel had observed this, and in his own clinic they had had three such.

2. There might be necrosis of the tumour owing to obliteration of the vessels by pressure and septic results following.

3. It was not right to believe that the tumour would cease growing after the menopause. Such was not the experience gained in their clinic. Further, the longer the patient was left the more exhausted would she be from loss of blood, and, consequently, she would be less able to withstand the shock.

If they wished to go in for a conservative operation and save the uterus, the vaginal route was well adapted for such a procedure (hysterotomia mediana). And they must always remember that a speedy operator, with thorough asepsis, need not fear making a ventral laparotomy if he found it impossible to finish by the vaginal route.

A SPEEDY METHOD OF DILATING A RIGID OS IN PARTURITION.

By J. FARRAR, M.D., L.R.C.P. and L.R.C.S.Edin.,
Gainsborough.

IN a paper read at a meeting of the Obstetrical Society of London in December, 1894,[1] I had the honour of showing how I had lighted upon a way of dilating a rigid os by what I termed "a new and speedy method." On that occasion I promised that when I had had further experience of the method, and especially if I had any failures, I would duly report the result; and in fulfilment of that promise I now bring before the profession what that experience has been, first giving, however, for the sake of those who may not have seen the paper a few particulars of the cases as therein reported.

CASE I.—I had been in attendance on a primipara on and off for some forty-eight hours. The os was thin, rigid, and obstinately unyielding; frequent attempts at stretching it, first with the finger then with a mechanical dilator, both with and without chloroform, and afterwards with [illegible] had also the internal exhibition of approved medicaments, chloral hydrate, bromide of potassium, and [illegible] however, the os still remained firm, its margin feeling almost like a circle of sheet tin, and as [illegible] strong, frequent, and almost persistent, and the patient—who was, I should add, a deaf mute—was losing self-control. The case was therefore becoming serious, and as it was necessary that relief should be given without further waiting I determined to incise the margin of the os. The woman being, as I have said, a deaf-mute, and exceedingly frightened and despondent at the condition of matters, I could not on the one hand, as in ordinary cases, talk and reason with her, and tell her what I proposed to do; and, on the other hand, I scarcely thought it prudent to further alarm her by the pain she would feel on the incisions being made, as this would probably make her quite unmanageable; and as, further, the administration of chloroform was contraindicated owing to symptoms of approaching exhaustion, I had only local anæsthesia left to me. The anæsthetic I chose was cocaine. With a 10 per cent. solution of the hydrochloride on a piece of rag I smeared the os round and round, first on the outside and then within, finally leaving the rag between the margin and the head of the child. At the end of four minutes, by which time I considered anæsthesia would be sufficiently advanced for my purpose, judge of my astonishment—and, I may say, my gratification—when on introducing the scissors to make my limited incisions, I found the os had not only lost its rigidity, but that it was widely open, and as flexible and distensible as a rubber bag.

Now, how was this? How had this sudden change in the physical condition of the os been brought about? Was it one of those striking cases of coincidence which the medical man meets with occasionally, or was it owing to the application of the cocaine? It struck me very forcibly that mere coincidence could not satisfactorily explain the phenomenon. The change was too striking and too suddenly brought about; and I felt strongly that coincidence had nothing to do with it, but that it was the cocaine, and nothing but the cocaine that I must credit with the alteration. However, before venturing to publish the case, I decided to wait for an opportunity of further testing this supposed power of the drug, and luckily, I had not long to wait; for in a couple of months' time I had a case which I felt would prove to be a severe test for the experiment.

CASE II.—This patient also was a primipara, but one over 40 years of age. The os was obstinately rigid, the pains very strong and frequent, there was a suspicion of approaching exhaustion, and also much despondency on the part of the woman at the slow progress she was making—for she had been in labour nearly three days. After waiting nearly this length of time to give Nature every chance, I applied the solution of cocaine, but not, I must confess, without some degree of "fear and trembling," as to whether the result would confirm my ardent wishes, or leave me disappointed. But lo, and behold! in four minutes' time the os yielded and, as in the former case, was now so distensible that I was easily enabled to slip it over the head of the child, and complete the delivery in due course.

After this I felt there could be no question as to what had brought about this sudden and striking change in the physical condition of the os. Surely it could not simply be an accident of time—a coincidence merely, but rather the direct result of an applied and active cause, this being the application of the cocaine, and nothing but the cocaine.

I accordingly brought these cases to the notice of my *confrères* at a meeting of the Obstetrical Society in London, on the date named, with a promise, as I have previously stated, that if I had a failure in my future trials of the drug I would not fail to publish it. But I have not as yet met with a failure. On the contrary, subsequent trials have proved equally successful and striking, equally sudden in the changed condition of the os, and in all respects equally satisfactory to both patient and doctor.

These further cases I now propose to briefly notice:—

CASE III.—The first of them was, as in the other cases, a primipara, but young (age 19) and strong, and one concerning whose condition and prospects of an ordinary delivery I felt no anxiety, notwithstanding the slow progress she made, owing to the rigid condition of the os. I might have waited in such circumstances, but my "fingers ached" to try the effects of cocaine upon the rigid os, and I applied the drug accordingly. The result, as in the previous cases, was quite satisfactory. There was the same speedy and gratifying relaxation and distensibility of the os, and in four or five minutes' time the first barrier to delivery was painlessly removed, and much subsequent pain saved to the patient, as well as much time and fatigue to the medical attendant, who, thanks to the cocaine, got a night's rest in his bed—quite an improbable event but for the kindly help of the drug in question.

CASE IV.—The second of these fresh cases was like the preceding in being a primipara. The woman had been in labour twelve hours. The os was obstinately rigid, with the usual sharp, thin margin, so characteristic of rigidity in these cases, and there was every prospect of both patient and doctor having a long and wearisome time of it, that is, of course, in the ordinary run of matters. But I soon made up my mind what to do, and without hesitation I applied the cocaine solution. The result, as in the other cases, was that in five minutes the os was found to be fully opened—right to the vaginal walls in fact—and the confinement was terminated within the hour, instead of probably any time between twelve hours and a couple of days.

CASE V.—The last example which I will trouble you with at this time was, like all the preceding cases, a primipara; her age was 30. This woman had a typically rigid os, the margin feeling as sharp and cutting to the finger and as unyielding as a piece of tin plate, and continuing so for at least twelve hours, all attempts at stretching it proving quite futile. I gave the patient plenty of time for the dilatation of the soft parts, leaving her at one time for over six hours; and again, after staying with her a couple of hours, for between two and three hours more, hoping that

in the meantime the os would yield. Finding, however, after this waiting, that I was likely to have a night of it, I applied the solution as before, and which, I need scarcely say, I always now carry with me, and as usual, and quite in keeping with my former experience, the os, in four minutes' time, relaxed, and thereafter everything proceeded quickly and satisfactorily, and I soon got home to a night's rest in bed.

From these results, a continuous and consecutive series of only 5 cases, I grant, but yet without a break, all equally obstinate in the unyielding condition of the os, and all, after the application of the cocaine, equally sudden in its dilatative and distensible character, I think I may fairly claim that the physical change was brought about by the cocaine, and nothing but the cocaine, and that coincidence had nothing whatever to do with the phenomenon.

Whether failure will attend subsequent trials with the drug remains to be seen. So far, however, as I have previously said, I have had no failures; and to speak my very inmost thoughts, I am sanguine enough to say that I do not expect to find failure in cases of undoubted rigidity the result of active physiological causes, and not, of course, in those cases depending upon pathological changes in the os. I venture to affirm that mere coincidence in the cases I have named would be a more curious and striking phenomenon than the results I claim from the application of the drug. One word more—try it for yourselves and report the result.

REFERENCE.

1 *Obstet. Trans.*, vol. xxxvi, p. 321, *et seq.*

DISCUSSION.

Dr. R. JARDINE (Glasgow) stated that he had given a trial to cocaine, using 2-gr. pessaries, but the result had been very unsatisfactory. He did not think it had done any good. He had not used a solution, but he thought 2 gr. in a pessary ought to have given the action as well as a 10 per cent. solution.

Dr. ALICE KER (Birkenhead) described a very simple method of assisting dilatation of a rigid os—douches of very hot water. This she first tried during her first years of private practice, nearly fifteen years ago, on a primipara, aged 36, with very rigid, sharp-edged os, showing no sign of dilating spontaneously. After a hot douche, the next examination, not certainly within the space of four minutes, but in less than an hour, showed the os to be quite soft and dilatable, and the labour terminated naturally in a very reasonable time. Another valuable use of hot water she had found in the employment of prolonged hot sitz baths during the first stage. This treatment not only shortened the tedious first stage in primiparæ, but also diminished the suffering caused by the early pains, frequently so difficult to bear, and, at the same time, so impossible to help by the aid of chloroform. These methods might seem too simple to bring before the notice of this Section, but she ventured to think that was no objection to their being employed; and, if they savoured of hydropathy and quacks, there was no reason, as Professor Playfair said the other day, why useful treatment should be left to quacks.

ON THE CONSERVATIVE SURGERY OF THE OVARY.

By CHRISTOPHER MARTIN, M.B.Edin., F.R.C.S.Eng.,
Surgeon to the Birmingham and Midland Hospital for Women.

THE PHYSIOLOGICAL VALUE OF THE OVARIES.

THE physiological value of the ovaries may be best realised by noting the results of complete extirpation of both glands.

(*a*) The woman becomes absolutely sterile.

(*b*) Menstruation ceases in about 95 per cent. of the cases.

(*c*) The uterus and, to a less extent, the vagina and vulva undergo a process of atrophy.

(*d*) The nervous symptoms of the menopause appear abruptly and violently, namely, heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system.

(*e*) In a considerable majority of cases there is a diminution or total abolition of the sexual instincts.

(*f*) The patient has a tendency to obesity.

Now if one ovary, or even only a portion of one ovary, be left behind, none of these symptoms appear. There is physiologically no difference between a woman with half an ovary and a woman with two ovaries, while there is a great difference between a woman with half an ovary and a woman with none. It is remarkable how small a fragment of ovarian tissue is necessary to preserve the full influence of the gland on the body.

CONSERVATIVE SURGERY OF THE OVARY.

Let me now, very briefly, direct your attention to certain operations on the uterus and its appendages, in which, by a little care, the surgeon can preserve the ovary and at the same time cure the patient.

In the first place, I need hardly point out that in cases of ordinary cystoma of one ovary—the other ovary being healthy—it is unjustifiable to remove both. If, however, the case be one of sarcoma of the ovary, then I think it is not only justifiable, but the surgeon's duty to remove both glands—even if the other ovary appear normal to the naked eye. A sad experience of these cases shows that sarcoma is extremely apt to affect first one ovary and then the other. By taking away both I think we diminish the chance of recurrence.

In cases of inflammatory disease of the uterine appendages (salpingitis, pyosalpinx, ovarian abscess, etc.), if the disease be confined to the organs on one side only, it is unnecessary to remove them on both sides. I have frequently removed the uterine appendages on one side only for such inflammatory disease, leaving the appendages on the other side severely alone; or, if adherent, merely freeing them. The results have been most satisfactory, and I have not, in a single case, had to remove the remaining appendages at a subsequent operation.

On February 3rd, 1896, I operated on Mrs. F., aged 25 years. She had a large inflammatory mass to the right of the uterus—her illness dating from her confinement several months previously. At the operation, the mass proved to be an ovarian abscess, and I removed the diseased (right) appendages. The left appendages were buried in plastic lymph, but not otherwise obviously diseased. I therefore contented myself with freeing them from adhesions. The patient made a good recovery, but for some time the pelvic roof remained fixed and indurated. Gradually, however, all signs of past inflammation melted away. Twelve months after the operation nothing abnormal could be detected on vaginal examination, and she was symptomatically cured. Early in July, 1898, she came to tell me she was three months pregnant, and in excellent health.

In cases of double pyosalpinx it is now my custom to perform vaginal hysterectomy, and at the same time to remove the diseased tubes. In such cases I always endeavour to leave behind one or both ovaries, unless they are obviously diseased.

RESECTION OF THE OVARY FOR FIBROMA, DERMOID TUMOUR, AND CYSTIC DISEASE.

Some years ago, after removing a large fibroma of the ovary, I was struck, when I came to examine the specimen, by the fact that the fibroma had developed in the medulla of the ovary, and had spread out the glandular portion of the ovary (the cortex) as a thin sheet or capsule on its surface. It was quite easy to shell out the fibroma from this follicular capsule. The fibroma, in fact, was a mere foreign body growing in the substance of the ovary, displacing, but not infiltrating, its true glandular substance. In another case, after I had removed an ovary about the size of a hen's egg, I split it open and found I could easily shell out of its substance a small fibroma. In both of these cases it would have been easy to have saved the ovarian tissue proper by incision of the ovary, enucleation of the contained fibroid, and suture of the capsule. Since then I have examined numerous specimens of fibroma of the ovary, and in all of them I find the same relationship of the tumour to the gland.

Recently I had to operate on a young lady, aged 26, suffering from dermoid tumour of both ovaries. She was engaged to be married, and was anxious, if possible, that one ovary should be saved. I found the left ovary was the seat of a dermoid cyst, about the size of a cocoanut, whilst the right ovary contained a small dermoid cyst about the size of a hen's egg. I removed the left ovary entirely, but I was able to shell out unruptured the small dermoid cyst from the substance of the right ovary, and thus to preserve about three-fourths of its glandular substance. I sewed up the incision in the right ovary with fine catgut. The patient made a good recovery.

That the portion of ovary left behind was of physiological value was shown by the fact that since the operation she had menstruated regularly. Had I removed both ovaries it is probable that she would have broken off her engagement to be married, whereas now there is no reason why she should not marry and become a mother.

In a few cases where patients have been the subjects of cystic disease of both ovaries, I have removed the ovary which was more diseased, and have performed resection of the ovary less affected. In these cases I found that the cystic disease

affected only one pole of the ovary. I was able to remove a wedge which included all the diseased tissue, and then to sew up the V-shaped gap by a fine continuous silk or catgut suture. The ovary seems to contain capillary blood vessels only. I certainly have never had any trouble with hæmorrhage from the divided ovarian tissues.

In this way I have now performed resection of the ovary in five cases, and in all with the most satisfactory results. I have had the cases under observation from periods varying from four months to four years, and in not one of them so far has there been any sign of recrudescence of the disease. Three of the five cases were young, unmarried women, aged 20, 25, and 26 years respectively; whilst two were married and aged 22 and 33. In all five the preservation of even half an ovary was a matter of importance to them.

IGNIPUNCTURE OF THE OVARY FOR CHRONIC AND CYSTIC OVARITIS.

I know of no pelvic condition more troublesome to treat than that known as chronic ovaritis. It is associated with, if it is not the cause of, severe dysmenorrhœa, menorrhagia, ovarian neuralgia, hysteria, anæmia, etc. The gynæcologist conscientiously tries drug after drug and remedy after remedy with but discouraging results. Finally, in a considerable proportion of the cases, the surgeon is driven to do something by way of operation to relieve the patient's sufferings. In the past, in too many cases, the operation of removal of both appendages has been performed, and in a large proportion of these I doubt if the patient has been much benefited by the operation. Menstruation usually ceases, but the patient's sufferings continue. As an alternative, the conservative operation of ignipuncture is well worth a trial. It can be done by vaginal section (either by anterior or posterior colpotomy). The peritoneum having been opened, any adhesions binding down the ovary are separated with the finger. The ovaries, one after the other, are drawn into the vagina, and punctured with the fine point of Paquelin's cautery, heated red hot. Wherever there is an indication of a cyst in the cortex or an unusually thick portion of the capsule of the ovary, the red-hot point is inserted. In this way from six to a dozen punctures, each about $\frac{1}{2}$ of an inch in diameter, are made. The appendages having been replaced in the peritoneal cavity, the vaginal wound is closed with catgut, and the patient put back to bed.

I have now performed this operation of ignipuncture for chronic or cystic ovaritis fourteen times. All the patients made an easy recovery from the operation. In five cases the operation failed to cure the patient, and in three of these I had subsequently to perform the operation of removing the appendages. One case has been operated on too recently for me to judge as to whether or not it will be a cure. Of the other eight I have been able to trace all but one patient, leaving seven cases in which a cure has certainly resulted. One of these seven was a woman who had been married for five years but had never been pregnant. She became pregnant three months after the operation, and was confined at the full term of a living child.

CONSERVATION OF THE OVARY IN THE REMOVAL OF PAROVARIAN AND BROAD LIGAMENT CYSTS.

If a parovarian cyst be examined in its early stage it will be found lying in the substance of the broad ligament quite distinct from the ovary proper. In some cases it is pedunculated, in others it is more or less embedded between the two layers of the broad ligament. In these early cases it is very easy to remove the cyst without removing the ovary. Where it is pedunculated the pedicle can usually be tied without including the ovary; where it is embedded it is not difficult to split the peritoneal capsule and shell the cyst out from between the two layers of the broad ligament. The wound in the broad ligament is then closed with a fine continuous silk suture. In more advanced cases the ovary is often spread out as a thin sheet over a portion of the posterior surface of the growth. Even here it will often be found an easy matter to split the capsule of the cyst and peel off the ovary from its posterior surface. If the other ovary is quite healthy, this attempt to save the ovary on the same side as the cyst is unnecessary, if by so doing the surgeon markedly increases the gravity of the operation. If, however, the other ovary be absent or have to be removed, then the surgeon should endeavour to save the ovary in removing the parovarian cyst. In cases of embedded cysts of the broad ligament the surgeon is frequently compelled to enucleate the cyst from between the two layers of the broad ligament, and then *nolens volens* he preserves the ovary intact.

CONSERVATION OF THE OVARY IN HYSTERECTOMY.

If the uterus be completely removed, of course the patient becomes sterile and menstruation ceases; but if at the same time one or both ovaries be left behind, the nervous symptoms of the menopause are slight and often entirely absent. If, however, both ovaries be removed with the uterus they appear. I have observed, however, that patients who have had the uterus removed as well as the appendages suffer from climacteric troubles less severely than do those who have had the appendages alone removed. In some mysterious fashion the uterus (bereft of its appendages) is a source of disturbance to the woman's nervous system. I have come to the conclusion that if both ovaries and tubes have, for any reason, to be removed, it is better at the same time to remove the uterus: on the other hand, if the uterus has to be removed we should endeavour to preserve one or both ovaries.

It would be out of place in this paper to discuss at length the relative merits of the various surgical methods of treating uterine myoma. In my own hands panhysterectomy and vaginal hysterectomy have proved themselves much safer than either the removal of the appendages or the old clamp operation.

An important argument in favour of hysterectomy is that it is generally easy to preserve one or both ovaries, whilst of course the essence of the removal of the appendages consists in their sacrifice.

In abdominal hysterectomy, either where the old "clamp" operation or the more modern method of "panhysterectomy" is adopted, it is generally easy to pass the uppermost ligature between the ovary and the fundus. The ovary is thus left on the proximal side of the ligature, and has its nutrition maintained by the intact ovarian artery and veins. Of course if one or both ovaries are diseased it may be necessary to remove them. Similarly in cases of vaginal hysterectomy the upper ligatures should be passed on the uterine side of the ovaries in order that they may be preserved.

I have now performed abdominal hysterectomy for various conditions 42 times (13 "clamps," 29 panhysterectomies). In 27 of these I removed both ovaries with the uterus; in 15 I was able to leave one or both ovaries behind. I have performed 40 vaginal hysterectomies for various conditions. In 13 cases I removed both ovaries with the uterus, and in 27 I was able to save one or both ovaries. I have been able to trace the after-history of most of these cases, and I do not know of a single case in which this conservation of the ovary has led to any untoward result.

CONCLUSION.

I would urge gynæcologists to give a fair and unbiassed trial to the conservative surgery of the ovary. The reckless way in which in the past uterine appendages have been removed, without adequate justification, is the opprobrium of our art. The profession owes, therefore, a debt of gratitude to men like Pozzi of Paris and Martin of Berlin for their pioneer work in conservative surgery as applied to these organs. The foregoing account is a summary of my own endeavour to follow in their footsteps, and I trust that it will encourage other gynæcologists to give a fair trial to these conservative measures.

TREATMENT OF DISPLACEMENTS OF THE UTERUS BY OPERATION BASED ON 200 CASES.

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VENTRIFIXATION.

Up to May of this year the writer has followed the following definite rules in the treatment of displacements of the uterus:

1. If they caused absolutely no symptoms, and were discovered accidentally, they were left severely alone. This was

rarely the case, however, as women do not as a rule go to a gynæcologist for examination unless they have some pretty urgent symptoms. A few came on account of sterility, and were mostly cured by the treatment.

2. If the uterus was found to be retroverted, gentle efforts were made to replace it either by bimanual manipulation with or without the help of the forceps to draw it down, or of the sound to lift it forwards, or by means of the genupectoral position with the clothing loosened.

3. If it was found to be absolutely free from adhesions, the uterus was replaced and a pessary was introduced to support it, while every effort was made to tone up the muscles of the pelvis and uterus which are concerned in holding the uterus up to its proper level and forwards.

4. Only when several months' treatment with hygienic, medicinal, and mechanical means had completely failed to relieve the patients of their symptoms, was recourse had to operative procures.

5. Then, if the uterus was too long, the cervix was amputated by the method of Schroeder; if chronically inflamed it was dilated, curetted, and treated with rest, hot douches, iodine, boroglyceride tampons, until its size and weight were reduced.

If the vaginal outlet was torn or relaxed it was tightened up by means of anterior and posterior colporrhaphy, and finally, but generally at the same sitting, one of the two following operations was performed:

(*a*) If it were absolutely certain that there were no adhesions, and that the tubes and ovaries were healthy, then Alexander's operation was performed. If the directions laid down by the writer were implicitly followed by others, this operation would make for itself many friends, instead of being—as it is—almost unknown on the Continent, and performed much less often than it deserves to be everywhere else. For the cases above mentioned—namely, of absolutely movable uterus—Alexander's operation is an ideal one. The two charges that have been brought against it are in the writer's experience untrue. In his 89 cases, hernia has not followed once, although nearly all of these cases have been seen several years afterwards, and many of them have been confined, as a result of the operation, after many years of sterility. While the ease with which the round muscles may be found may be judged by the author's deliberate offer to find them with his eyes closed in any average case, after the skin and fascia have been divided. In fact, it is impossible, either not to find the ligaments, or, when found and shortened, it is impossible for hernia to occur if the following simple directions are carried out: (1) Feel for the spine of the pubes, and make an incision over it an inch long. (2) Be sure to go through the superficial and deep fascia, but no further; you will then see the glistening white fascia of the external oblique, and the intercolumnar fibres running across the pillars of the ring. For fear lest you might cut them, use the handle of the knife to make the last part of the incision of the deep fascia. (3) As soon as you have seen the intercolumnar fibres you may shut your eyes if you like, and, placing the tip of your left first finger on the external inguinal ring, sticking the tip of the finger into the ring a little; with the right hand pass a pair of closed Péan's forceps into the canal a distance of half an inch. Now open the forceps so as to allow the tendon of the round muscle to drop into them, and gently draw out what you have caught: there is nothing else there but the round muscle and the ilio-inguinal nerve. Now, with the fingers, gently separate the muscle from the nerve, and also from the little fold of transparent fascia surrounding the muscle, and when this is done you will be able to slip your fingers under it and pull it out. On no account at this stage must knife or scissors be used; if they are, the delicate fan-shaped expansion of the tendon of the round muscle will be split up, and when you pull upon it it will break. The writer has seen some of the very best operators come to grief in this way. When you have drawn out the two tendons a distance of from 2 to 4 inches, generally the latter, then with two or three medium-sized silkworm gut ligatures fasten them to the pillars of the ring, namely, Poupart's ligament and the conjoined tendon, taking in only half of the round muscle so as not to strangle it, but drawing the stitches tightly enough to strengthen the pillars of the ring, and thus render hernia impossible. It is well to have an assistant place the finger in the vagina and he can tell you when you have brought the uterus well up to the symphysis, but it must not be drawn too tightly. The author has had no death, no hernia, and only one relapse, which was afterwards cured by ventrifixation. In three very fat women the round muscles were in a state of fatty degeneration, and broke at the slightest traction; in these cases the abdomen was at once opened and the uterus fastened up. In such cases as these some other operation should be performed. But with these two exceptions, namely, retroversion with fixation and retroversion, even movable, in very fat women, Alexander's operation should be employed for all other cases of backward and downward displacement.

(*b*) If there was the slightest doubt as to the mobility of the uterus, ventrifixation was chosen because fixation of the uterus means invariably disease of the tubes which has set up pelvic peritonitis. By opening the abdomen, these diseased appendages can be dealt with either by detaching them and removing all shreds and opening closed tubes, or by resecting portions of the ovary and removing the tubes. The anterior surface of the uterus was scarified, as well as the corresponding surface on the parietal peritoneum, and the uterus was fastened with two medium-sized buried silkworm-gut sutures.

With the exception of one case of removal of very large pus tubes which had ulcerated into the rectum, and in which the uterus was attached to the abdominal wall, there was no death following ventrifixation in the writer's 111 cases. There was one hernia which was subsequently completely cured by a small operation. There was one relapse in one of the earlier cases, in which there were no buried stitches left in to hold it up permanently. There were five pregnancies, of which one miscarried and one had a dead child at full term. The others had healthy children and normal labours at full term. In seven cases the buried silkworm-gut sutures gave trouble, and had to be removed some months later. So much for the author's own experience, which on the whole has been very satisfactory with both operations, but more especially with Alexander's.

Now let us refer to the experience of 2,500 cases of ventrifixation and ventri-suspension by forty first-class operators, all Fellows of the American Gynecological Society. Out of this number, pregnancy occurred in 146 cases. In 36 of these, there were pain, miscarriages, or difficult labour requiring obstetrical operations, and two of these latter died. These accidents occurred in those cases in which the uterus had been fixed, and not at all in those in which it had been suspended. Many of these operators have therefore discarded fixation entirely, and perform only a suspension operation by fastening each round muscle near the fundus to each side of the abdominal incision. The result in these cases was very good, the only drawback being an occasional suppuration of the buried stitches, necessitating their removal. Others of my correspondents, recognising the great advantage of leaving the natural supports of the uterus to do their work, have opened the abdomen and shortened the round ligament by sewing it upon itself. This method combines the advantage of seeing whether there are any adhesions and of breaking them up with that of bringing it into normal position without fixing it, so that in these cases pregnancy caused no inconvenience whatever. So much for the experience of these forty operators with ventrifixation and ventri-suspension, with the results of which only three or four of them were dissatisfied.

Vaginal Fixation.

Since the writer's visit to the clinics of the leading Continental gynæcologists extending over the last two months he has been so favourably impressed with the wonderful skill of Dührssen, Martin, Olshausen, and Landau of Berlin, and of others in dealing with these conditions by means of cœliotomy through the anterior vaginal wall that his operation for all cases in the future will be the following: The vagina is carefully sterilised with soft soap and then swabbed out with ether and then with sublimate alcohol, and a single incision made from the level of neck of the bladder to the cervix uteri. The sides of this incision held apart and the bladder pushed up with the finger until the vesico-uterine fold of peritoneum can be seen as a transparent membrane. This is picked up and nicked across and the peritoneal cavity opened, when the finger is introduced and the uterus

pulled forwards either with the finger or by means of a bullet forceps, which catches it near the fundus. Martin of Berlin, who does the operation very beautifully and very rapidly, is greatly aided by a bullet forceps and uterine sound combined by means of which he quickly anteverts the fundus even when it is adherent. The fundus is brought out through the opening and the ovaries and tubes are freed from adhesions with the finger and are also brought out, and whatever it may be found necessary to do to them can be done easily and indeed more easily than by the abdomen: while it is much safer, because it may all be done outside of the body and the peritoneal cavity is only invaded for a moment by the sterilised finger, and the bowels are not seen at all. Thus I saw Martin of Berlin destroying cysts in the ovary with the cautery in one case, cutting out a large hematuria of the ovary in another, and sewing up the remaining portion of the organ; while in another case I saw Landau remove large pus tubes. The Continental operators then proceed to fasten the uterus forwards by passing a medium silkworm gut stitch through one side of the vaginal incision, then through the body of the uterus near the internal os, and then through the other side of the incision. This stitch should, of course, include the peritoneum as well as the vagina, and it is important in women who may possibly become pregnant not to fasten the uterus any higher than above directed, for by so doing the uterus is imprisoned in the pelvis, and many troubles may follow. This stitch is not tied until the peritoneum has been closed by a running catgut suture and the vaginal incision by another, after which the silkworm gut is tied and cut off short. If necessary amputation of the cervix may be done before the fixation, and anterior and posterior colporrhaphy afterwards. This operation although a beautiful one, only requiring in the hands of Dührssen and Martin about eight minutes, has not found much favour in America, neither does the writer consider it an ideal one. The operation which he does consider perfect is one often known as vaginal shortening of the round ligaments, which is the same as vaginal fixation, as above described, up to the point of passing a ligature through the uterus. Instead of this the round muscles are hooked down, and a loop is stitched upon itself with fine silk, by which means the uterus is held forward, and yet allowed perfect mobility in the abdomen as in the natural state, so that the accidents recorded after ventrifixation and vaginal fixation cannot occur. This operation has the immense advantage that there are neither the two skin incisions of Alexander's, nor the one incision required in ventrifixation and suspension, and consequently no possibility of hernia and no pain. While, in the writer's experience, many women readily consent to an operation if it can be done by the vagina who cannot be induced to have an incision in the abdominal skin. In the case of unmarried women who may some day marry, it is a great mercy to spare them the scar which may give rise to unjust suspicions and unpleasant recriminations. When done by the vagina no explanations are necessary. It will therefore in future, and until further notice, be the writer's operation of choice for retroversion either with or without adhesions.

TWO SYMPHYSIOTOMIES IN DOMESTIC PRACTICE.

By R. C. BUIST, M.D.,
Dundee.

IT is not always easy to decide how far and what methods of treatment employed in hospital may be placed at the service of patients for whom domestic treatment is, for whatever reason, unavoidable. The two cases here recorded are offered as evidence, so far as they go, on this question, my own experience being to the effect that while domestic treatment is less convenient for the surgeon, and increases greatly the number of details for which he is personally responsible, it does not essentially sacrifice any condition necessary for the patient.

1. Mrs. F., aged 25. First child died in labour (April 3rd, 1892). Difficult forceps delivery, child died in labour (March 30th, 1893). Induced labour at seven months and a half by Krause's bougie method (July 17th, 1895). Child lived sixteen hours. In February, 1897, she was sent to me by Mr. D. M. Greig. The last period had been in June, and the fœtal measurement corresponded to the thirty-first week. Height, 156 cm. (62½ inches). Pelvic measures: Interspinous, 21.3 cm.; intercristal, 25.2; intertrochanteric, 32; diagonal conjugate, 9 (3.6 inches). Distances from os pubis to upper fœtal pole (20 cm.) corresponds to the thirty-first week. Selecting Frank's method for permanent enlargement of the pelvis, I did not wait for the onset of labour, expecting that by the end of pregnancy consolidation of the enlarged pelvis would have been completed. This was, as it turned out, unfortunate. The operation, which consists in chiselling off an anterior layer of the public bones and symphysis, dividing the cartilage of the posterior layer thus left, and suturing the anterior lamella to the gaping bones behind, was performed on February 28th, 1897, with the assistance of Mr. D. M. Greig and Drs. Buchanan and Foggie. The only modification of Frank's technique was that of pinning the bones with silver-plated knitting needles instead of drilling and suturing with silk. After the operation the temperature remained normal, but the maintenance of the dorsal position induced a torpidity of the bowel that proved intractable. Vomiting set in on the second day, and the pulse rose on the third above 100. Tympanites developed, and medicines and enemata alike proving useless had to be temporarily relieved by puncture of the bowel on March 5th. Nutrient suppositories were given, but the patient was very ill, and labour set in prematurely on March 7th. The presentation was right occipito-posterior, and after about twelve hours, the os being dilated, Mr. Greig gave ether, and I delivered with forceps. During labour the silvered needles dragged, and the pelvis gaped widely, and delivery was easy. The pegs were not reinserted. The child was 47 cm. long, and its cranial circumference 32 cm. It unfortunately died of bronchitis on March 20th. After delivery the vomiting soon stopped, flatus passed, and the bowels proved manageable; but on March 9th the temperature rose, and along with breaking down of the previously healed incision there set in phlebitis of the very varicose veins of the right thigh and leg. This gradually subsided, and the whole condition so much improved that on April 2nd she was able to be up in the chair, and on April 28th was walking about, though a little crippled from the remnants of the phlebitis. The pelvis was firmly healed; and on April 17th its measurements were: interspinous, 23 cm.; intercristal, 28; intertrochanteric, 32. The patient has since had a varicose ulcer, but is now well and keeping a shop.

2. Mrs. F., aged 20, a rachitic woman, 146 cm. (57 inches) high, engaged me for her first confinement expected in March, 1898. Her pelvic measurements were 21.5, 23, 29 cm.; external conjugate 16 cm., diagonal conjugate 10 cm. In spite of instructions I was not called till she had been already two full days in labour, and three hours after the rupture of the membranes. The child was lying right occipito-anterior, and the os about 3 cm. dilated. The fœtal heart sounds were vigorous, and the pains regular. Four hours later, at 6 A.M. on March 21st, the os having opened to about the size of the palm, the pains being strong and recurring every two minutes, there had been no descent of the head, which was fixed at the brim, and the caput succedaneum had become much exaggerated, and the heart sounds were becoming weak and less regular. By 7 A.M. I had secured the assistance of Dr. Foggie, and two of the district nurses, and under chloroform performed symphysiotomy by Ayres's subcutaneous method. In this an incision, or rather puncture, is made under the clitoris, a director passed through this in front of the symphysis, a probe-point curved knife is then passed along the track so made, and with its point kept constantly against the left forefinger in the vagina the cartilage is cut through from above downwards, the urethra being held aside with a sound, against which the forefinger presses. My incision was a little to the left of the mid-line, and bled freely, but this was easily stopped by a plug of iodoform gauze. Forceps were then applied, and the child easily delivered, the ends of the bones admitting three fingers during delivery. The uterus contracted well, and the placenta was easily delivered. The child was in light asphyxia, but recovered in a few minutes. The perineum, except at the fourchette, was intact, but the tissues around the urethra looked bruised. The urethra being held out of the way with a sound the pelvis was bandaged, and a reten-

tion catheter introduced. The delivery and operation together took under an hour. The child weighed 8lbs., and its head measurements were 7, 8, 11, and 33 cm. The right temporal region was much depressed, and the caput succedaneum much larger than usual. The child, which was nursed by the mother from the first, has thriven well, and the head deformity is now quite obliterated. The mother's convalescence was fairly satisfactory. The temperature was never very high, though it reached 100° F. several times up to the tenth day. The pulse was, however, rapid, and for two weeks almost continuously over 100, after that it became more normal. The uterus involved a little more slowly than usual, but was never tender. The lochia disappeared normally. The plug was removed from the incision on the second day, but another had to be introduced for the bleeding, and this remained two days more. The catheter came out, and as she passed water then spontaneously was not again inserted. At the end of the first week the patient complained that she could not hold her water, but this condition subsided in the course of a few weeks, and after she was allowed up, four weeks after the operation, incontinence came only on exertion, and retention is now perfect. The patient was allowed up on the twenty-ninth day, though the symphysis was still movable, and ten days later she walked alone. On June 15th, in less than three months, she was at work in the jute mill. The symphysis is still movable.

In choosing a method of treatment for these cases we have to bear in mind that for the child the competing method of craniotomy offers a hopeless outlook, that of induced premature labour involves in this social stratum a sure and early death.

The second patient, a vanman's wife, was treated in a clean tidy house; the first, wife of a millworker in Lochee, had the domestic surroundings of the poorer Irish population, yet if we except the result of attempting to operate before labour, and the loss of the child from bronchitis, which may have been due to inattention, the results must on the whole be pronounced satisfactory. Fortunately the approaching completion of the Women's Hospital in Dundee will render the need of performing operations in such circumstances a less common inconvenience to the surgeon.

References.

[1] See Ayres, The Pubic Symphysis in Parturition, *Amer. J. Obstet.*, 1897, vol. xxxvi. p. 1. [2] Pooth (for Frank), Die künstliche Erweitcrung des engen Beckens, *Monatsch. f. Gebürtsh. u. Gyn.*, 1896, Bd. 3, s. 491.

Professor Morisani, Professor of Obstetrics and Gynæcology at Naples, who spoke in French, said that he wished especially to study the lower limit of symphysiotomy. He had not himself invented the operation, but he had had the good sense to remain faithful to it, and to practise it since 1863, at which date he was able to read a short communication on symphysiotomy in London. A pelvis of 7c mm. diameter in the conjugata vera marked the lower limit of the operation. The actual biparietal diameter of the fœtus at term averaged 95 mm.; now if they considered what degree of enlargement could be secured from the separation of the pubic bones, this was found to be 14 to 15 mm.; in addition to this, it was to be remembered that by the engaging of the parietal prominence in the pubic interval, an additional 8 or 10 mm. could be secured. Consequently, 95 less 23 or 25 gave 70 mm. as the inferior limit of the operation. As to technique he would leave to each operator the fullest liberty. His own method was as follows: 1 cm. above the articulation he made an incision 2 to 3 cm. in length, going down to the bone. The muscular tendons of the right side were separated if necessary, and after cleaning the tissues behind the symphysis he attacked the articulation. The symphysiotome was not necessary; a probe-pointed bistoury would do. True the articulation was sometimes very difficult to find; this was because in the rachitic woman it was often not straight, but oblique from one or the other side; but with a little patience it was always found; and then all that was necessary was to protect the retrosymphysial tissues, and not injure the bladder. Some had said that hæmorrhage was a thing to fear: he had never known this to be serious; all that occurred was an oozing which could be checked at once with a tampon. If, however, following Sigault and Galbiati, a larger incision were preferred, he had no objection to make. As to results, there were numerous and interesting statistics to hand from which positive conclusions could be drawn. He would not quote his own, but he might quote those of Pinard and others who had interested themselves in the operation. Notably, after symphysiotomy women recovered without any alteration in their walking. What procedure could be compared with symphysiotomy? In the interests of the child premature labour was spoken of; but they must remember that it was not enough that the child should be born alive, it must also survive. He would not speak of Cæsarean section because it began where symphysiotomy ended. Lastly, he did not think that the application of forceps was indispensable after symphysiotomy. When the operation was done within the limits of its indications it was not necessary to extract the child: for this purpose the natural forces were sufficient; this, at least, was the practice of Galbiati. In conclusion, he thanked the President for permission to speak in a non-official language.

VAGINAL SECTION.

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Introductory.

Incision into the abdomen by way of the vagina has been practised for many years. Batty, Goodell, Sims, Byford, and others in America have reported cases of removal through the posterior vaginal fornix of diseased ovaries and small tumours. Gusserow in 1887 advocated the treatment of pelvic hæmatocele by posterior vaginal section.

But vaginal section was under a cloud until the results obtained in vaginal hysterectomy by Czerny, Leopold, Fritsch, Péan, Doyen, Landau, and others attracted attention. Then it was made clear how easily and how safely one could open the abdomen through the anterior fornix, and in this way accurately ascertain the condition of the uterus and its appendages. In this connection Saenger, Zweifel, Dürhssen, and Martin have done good service. For a time the anterior fornix was the favourite site of incision, but recently incision through the posterior fornix has again been tried.

During the last six years I have performed vaginal section in 59 cases, excluding cases in which the uterus has been removed. I have arranged these cases in tabular form and in different groups for convenience of reference. They are classified as follows:

1. Exploratory incision (18 cases).
2. Incision for pelvic abscess (11 cases).
3. Incision for ectopic pregnancy (8 cases).
4. Vaginal ovariotomy (20 cases).
5. Vaginal myomectomy (3 cases).

One case, in which the double operation of ovariotomy and myomectomy was performed, appears twice, making the total number 60.

Exploratory Vaginal Section.

The cases in which exploratory vaginal section is indicated vary within the widest limits. In some the operation is simple and safe; in others it may be merely a forlorn hope.

In the 18 cases in which I made an exploratory incision the following conditions were found:

Acute septic peritonitis and cellulitis (7, 14, 15) ...	3 cases.
Subacute pelvic peritonitis (1, 3)	2 ,,
Chronic pelvic peritonitis, with thickening and prolapse of the uterine appendages (2, 4, 5, 6, 10, 12, 13, 16, 18)	9 ,,
Fibromyoma of uterus (9, 7)	2 ,,
Menorrhagia persisting after oöphorectomy (8) ...	1 case.
Nature of case doubtful—inflammatory or malignant (11)	1 ,,

Case 1. *Chronic Pelvic Peritonitis, with Thickening and Prolapse of the Uterine Appendages.*—As an example of the less serious cases we may take the case of Mrs. J. The patient had been ailing since her confinement, 2½ years ago, from irregular and profuse hæmorrhage, leucorrhœa, dragging pain in the abdomen, and general loss of strength. On examination the conditions found were such as are characteristic of what might be called chronic septic infection: a heavy enlarged uterus with marked cervical catarrh, and thickening, prolapse, and adhesion o the tube and ovary on each side.

In cases such as this one will almost invariably find great benefit from curetting alone. But it is such an easy and such a safe procedure to make an opening into the anterior or

posterior pouch of peritoneum, that in cases where the adhesions are well marked I believe it is best to adopt this plan after curetting. In some of these cases it is sufficient to separate the adhesions with the finger, and inspect the appendages; in others we shall find an occluded tube, or a degenerated ovary, and resection of diseased tissues may be practised. Cases of this sort are not suitable for abdominal section, for, although this may be followed by good results, its risks and discomforts, immediate and remote, are greater than those of the vaginal operation. As to the termination of the operation by vaginal fixation of the uterus in cases where there is prolapse or retroversion of that organ, this is a question which does not come within the scope of this paper.

Cases of Acute Septic Peritonitis.

Here the risk to life is great, whether we leave the case alone or have recourse to surgical measures. Each case has to be judged on its own merits, but I believe that in most cases, if any tender swelling could be felt *per vaginam* little or no harm will be done by vaginal section, and much good may follow. Many cases classified as puerperal peritonitis are essentially cases of suppurative inflammation of tubes and ovaries. If in such a case a hard swelling is found behind the uterus, I think it will often prove advantageous to open the pouch of Douglas through the vagina and ascertain what the swelling is. If tubal or ovarian abscess is found, it may be incised, or the diseased organ may be removed. If no pus is found, the mass may be broken up with the finger and packed with iodoform gauze.

When the mischief is diagnosed as cellulitic, we may exercise more patience, but sooner or later in many cases an incision has to be made before a cure is effected. The site of the incision will depend on the situation of the inflammation; if the inflammatory thickening is on the outer portion of the broad ligament it is more accessible through the abdomen, if on the inner third it is most safely reached by an incision in the anterior vaginal fornix, and anterior parametritis is of course easily reached through the vagina. It is perhaps in these cases that the results of gauze packing are most brilliant.

Exploratory Vaginal Section.

This is the best means of clearing up the diagnosis in many doubtful cases of pelvic tumour. It is not possible to enumerate every case of that kind, but some examples may be given. It enables us to distinguish between a small tense cyst and a solid tumour, a distinction which it is occasionally impossible to make by ordinary bimanual examination. Again, in one of my cases the first diagnosis was pyosalpinx, but anterior vaginal section allowed one to explore with the finger the whole of the anterior surface of the uterus, and revealed a soft myoma of the uterus and normal tubes and ovaries. In another case there was some little doubt as to whether a swelling which lay close against one side of the uterus, and bulged into one lateral vaginal fornix, was caused by unilateral hæmatometra. A snip of the scissors in the posterior fornix settled the question and exposed an ovarian dermoid.

Exploratory Vaginal Incision.

This is of great value in cases of injury to the uterus—either caused during labour or by a curette or other instrument. In one case of this kind[1] I ascertained by anterior vaginal section the extent of the mischief; and, finding that the tear ran into the broad ligament, and that the hæmorrhage could not be controlled by plugging, I removed the uterus and clamped the broad ligament beyond the tear.

Vaginal Incision for Pelvic Abscess, Hematocele, and Tubal Pregnancy.

Nineteen of my cases fall under this head. They were as follows:

Incision of pelvic abscess or hæmatocele	9 cases.
Removal of suppurating tubes or ovaries, or of tube attended by tubal pregnancy (incomplete tubal abortion, ruptured tube, and tubal mole)	10

Pelvic Abscess and Tubal Pregnancy.

Cases of this nature may conveniently be grouped together when considering the treatment. It is understood of course that the expectant treatment is not ignored in cases of hæmatocele when this occurs apart from ectopic pregnancy, or when we have reason to believe that it is the result of early tubal abortion or tubal mole. Many of these cases never require operation, but in a certain number there is recurrent hæmorrhage, or the clot undergoes septic change, or after a certain diminution the swelling remains stationary, and in these operation is indicated. Five clinical types of case may be recognised as suitable for vaginal section.

1. *Large Adherent Abscess or Hæmatocele in the Retrouterine Pouch.*—Blood clot in this position generally lies in direct contact with the peritoneal pouch; pus is generally contained in the organ (tube or ovary) in which it was originally developed, but this organ may be prolapsed into and adherent to the retrouterine pouch. In some cases a leakage may occur and the pus be contained directly in the peritoneal cavity. In all these cases, whether of effusion of blood or development of pus, the general peritoneal cavity is shut off by localised peritonitis. The upper limit of the abscess or hæmatocele is formed by organised lymph and matted intestines and pelvic viscera. It is thus possible by an incision in the posterior fornix to open into and evacuate the swelling without opening the general abdominal cavity. Where this seems sufficient the pus or blood may be gently washed out with a stream of warm saline solution and the cavity then packed with iodoform gauze.

2. *Enlarged Tubes which Contain Pus or Portions of an Ovum.*—In cases of large and firmly adherent pelvic abscess it is safest to incise and drain, but in many cases the abscess is smaller, and with a little care can be separated from its surroundings. The diseased tube or ovary (or both) which forms the abscess sac may then be extirpated, with or without previous evacuation of the pus, and this is the best course to pursue. In cases of this sort, as the disease is nearly always bilateral, care must be taken to examine the appendages of the other side. In cases of hæmatocele, when we have reason to believe that a tubal pregnancy was the cause, it is well to make a bimanual examination with two fingers in the interior of the sac, after the blood clot has been washed out. If a tube can thus be felt to be much enlarged, it is best to break through the sac at that part, and pull the tube down and remove it. Occasionally the abdominal ostium of the tube dips into and is connected with the mass of clot, and its condition is then easily ascertained.

3. If the symptoms point to *tubal rupture* with profuse internal hæmorrhage, and a swelling can be felt by the vagina, posterior vaginal section may be performed to extract the fœtus and stop the hæmorrhage. The age of the fœtus and the size and situation of the placenta are important considerations in deciding between the vaginal and abdominal methods. Further experience will enable us to decide as to the limits of the vaginal method in this as in other conditions, but I think that it is the safest route until the end of the third month of pregnancy at least.

4. If an *unruptured tubal pregnancy* is discovered in the earlier months of pregnancy vaginal section may be performed.

5. In *abscesses of the pelvic cellular tissue*, vaginal section is often the safest and most direct method of getting at the abscess cavity.

Vaginal Ovariotomy.

In my 20 cases of vaginal ovariotomy, the tumours may be classified as follows:

(*a*) Small:	
Multilocular ovarian cysts	7
Unilocular cysts:	
Parovarian	2
Cysts associated with salpingitis and chronic pelvic peritonitis	4
(*b*) Large (size of fœtal head or upwards):	
Multilocular cysts	4
Dermoid tumours	2
Unilocular cysts (1 parovarian, 1 tubo-ovarian cyst or ovarian hydrocele)	2

1. When a small ovarian cyst or tumour lies in the retrouterine pouch it is a simple matter to remove it by way of the vagina if the latter is moderately dilatable. The difficulty is to understand why we should have gone on for so long doing abdominal section for these cases. No doubt the fear of septic infection and the dread of injuring important structures were the obstacles in the way of the advance of vaginal section. The earlier advocates of vaginal oöphorectomy seem after a time to have lost their enthusiasm and to have given

up operating in that way. Now that we know that asepsis can be obtained as surely (if not more surely) in the vaginal as in the abdominal operation, and that the risk of injuring neighbouring organs or structures of importance in performing vaginal section is very small if ordinary care be taken, abdominal section seems hardly justifiable for small ovarian tumours.

2. The question as to method of operation is a more open one when we come to larger tumours, or to tumours which we believe to lie between the folds of the broad ligament. The bulk of the tumour, the possibility of adhesions to intestine or parietal peritoneum, the intraligamentous situation of the tumour, or great breadth of its pedicle at once strike one as possible objections. But these difficulties will be found in practice to be less formidable than might be supposed. The mere size of the tumour does not constitute a difficulty, so long as it is cystic; its bulk can always be diminished by means of trocar and scissors, so that it can be drawn through a small aperture. If large size was the only difficulty, all ovarian cysts would probably be removed in the future by vaginal incision. Adhesions constitute a real difficulty if they exist at the upper portion of a large tumour. A cyst which is firmly anchored to the parietal peritoneum or to mesentery beyond the reach of the finger cannot be drawn down with safety, and is therefore unsuitable for removal *per vaginam*. Adhesions to the pelvis, or to coils of intestine low down, may be dealt with by the vagina. The former may be separated by the finger, while adherent intestine may be pulled down by the collapsed cyst until it comes into view, and then gently separated with the finger or with gauze. An intraligamentous tumour can be dealt with perfectly well by vaginal section, as some of my cases show probably better than by the abdominal operation. When the cyst has to be enucleated there is often a good deal of oozing from its cellular tissue bed, and gauze packing may be required to stop the hæmorrhage. This packing is better done through a vaginal than through an abdominal incision if the edges of the incision in the peritoneal covering of the tumour are laid hold of by pressure forceps. It is true that my one fatal case was one of this kind in which death occurred from hæmorrhage between the folds of broad ligament. But I was deceived in the amount of oozing and thought it safe to close up the incision. Had I plugged the cavity from which the tumour was enucleated and drained into the vagina I believe the result would have been different. In another case I was able to antevert the fundus of the uterus with the collapsed cyst into the vagina, to peel the broad ligament off the cyst, and to securely stitch up the gap in the broad ligament with catgut. A broad pedicle may be treated in the same way.

As the result of my experience I believe that the vaginal incision is the best route for the removal of all ovarian cysts which do not reach above the umbilicus, provided there are no signs of firm adhesion to the anterior abdominal wall. At the worst, if one finds the difficulties insuperable there is little harm done and an incision can always be made in the abdominal wall.

Vaginal Myomectomy.

The limits of size suitable for vaginal removal is soon reached in the case of uterine fibroids unless the whole uterus is removed. But for small tumours which project on the peritoneal aspect of the uterus and which give rise to symptoms vaginal myomectomy is the best treatment. The operation is so safe and so satisfactory that I think it is justifiable in all cases of small solitary fibroid causing pain or hæmorrhage unless the patient is presumably near the menopause.

Remarks on Vaginal Section in General.

The advantages of the operation as compared with abdominal section have been already noted in considering the indications for the operation, but we may summarise them as follows:

1. *Absence of Shock.*—This is particularly important in cases in which the patient's resisting power is enfeebled by old age and general ill-health, such as heart disease, chronic alcoholism, etc.; by profuse hæmorrhage, as in rupture of tubal pregnancy; or by septic peritonitis. In such cases abdominal section may be attended with great risk, but vaginal section in itself involves hardly any danger.

2. *The Risk of Septic Peritonitis is Less.*—This will not be readily conceded by some, but clinical evidence abundantly proves it. Death from septic infection after vaginal section or vaginal hysterectomy is a rare event. Even the intestinal paralysis which sometimes follows abdominal section is hardly ever observed after vaginal operation. This is probably due to the fact that there is no shock, little injury to the peritoneum, and that there is rarely any handling of bowel. In a large number of cases the intestines are never seen. Further, in dealing with pelvic abscess there is much less likelihood of the pus being dispersed in the general peritoneal cavity.

3. *Quicker Recovery and Less Troublesome Convalescence.*—In favourable cases the patient, after recovering from the anæsthetic, has no more pain or discomfort than if the operation had been of the most trifling character. As a rule, there is no trouble with flatulent distension of the bowels. The temperature rarely exceeds 100°, and the pulse is generally under 100. The vaginal incision soon closes up, even when a gauze drain has been used. Most of my hospital cases were quite ready to go home a fortnight after operation, and one case of vaginal ovariotomy in which a large dermoid tumour was removed was discharged quite well on the twelfth day. Another patient was sent home eleven days after vaginal ovariotomy.

4. *Avoidance of Abdominal Scar.*—This is an important fact in all cases in view of the possibility of ventral hernia. It is still more important in women who have to earn their living by hard physical work. In young unmarried women it is a great advantage from an æsthetic point of view if we can remove an ovarian tumour without leaving a cicatrix in the abdominal wall.

5. *More Perfect Drainage.*—Any free fluid in the abdominal cavity at once escapes if an opening is made into the pouch of Douglas. A strip of gauze introduced into the pouch of Douglas from the vagina is the most satisfactory method of draining the peritoneal cavity.

6. *Better Control of Oozing of Blood from Pelvic Cellular Tissue or Peritoneum.*—It is sometimes necessary in cases of abdominal section to pack the pelvic cavity with gauze in order to control a general oozing of blood from a raw surface. In these cases the gauze has to be brought out of the abdominal incision, and necessarily lies in close contact with coils of intestine. Its removal is accompanied by great pain, and it is difficult to repack if that is found necessary. From the vagina a strip of gauze can be packed against any tissue that is likely to bleed. It may be left for three or four days, and then is comparatively easily removed, and fresh gauze may with little trouble be introduced.

7. *Simplicity of Procedure in some Cases.*—In this connection we may again draw attention to the ease with which the uterine appendages may be explored without change of position after curetting in cases of chronic inflammatory mischief. The removal of retrouterine ovarian cysts which are pedunculated and non-adherent through the posterior fornix is a very simple matter.

Objections to the Operation.

The objection which is most frequently stated is that the operation is technically a very difficult one. That it may be so is undoubtedly true, but it is only in some cases that serious difficulty is encountered. Other cases are exceedingly simple, and some of the difficulties which are met with in one's earlier operations disappear after further experience. The great difficulty is encountered in cases of long, narrow, and rigid vaginæ. In elderly women with marked senile contraction of the vagina, in young unmarried or nulliparous women, and in women with cicatricial contraction as the result of injuries to the vagina, the technical difficulties may be very great. If the uterus can be pulled down the difficulty may be surmounted; but if in a case such as any of those just mentioned the uterus is fixed by adhesions, then it is better not to attempt vaginal section.

Adhesions alone do not necessarily make the operation difficult if the vaginal vault is fairly easy of access. The fact that we are obliged to separate an adherent pyosalpinx by the sense of touch alone is often advanced as an objection to vaginal section. We are told that we cannot see what we are doing. But in how many cases of pyosalpinx operated on by abdominal section does the operator see what he is doing until the tube is freed and brought up to the abdominal incision?

It may be urged that the vaginal cicatrix may cause trouble in subsequent labours. As far as I know there has been no case of this kind reported. Cicatricial tissue in vaginal mucous membrane after vaginal section rarely gives rise to tense bands, and is nearly always difficult to find a few months after operation.

It has been said that posterior section is liable to be followed by prolapse of the uterus if the utero-sacral ligaments are injured. This statement seems to be founded on theory and not on fact. My own cases have been operated on within too recent a date to allow us to draw conclusions as to the freedom of the operation from disagreeable after-effects, but in about a dozen of them two years or more have elapsed, and there have been no indications of weakening of the pelvic floor.

The escape of pus into the peritoneal cavity may occur during attempts to extract a tubal or ovarian abscess. This danger undoubtedly exists, but in less degree than in abdominal section. The rupture generally occurs at the lowest part of the abscess, and the pus escapes straight into the vagina. If there seems to be danger of rupture of a tumour which may contain pus, it is best to puncture or incise it as soon as it is exposed to view.

A distinct contra-indication to the operation exists in cases where there is a possibility of the tumour being malignant. There is risk then of perforation of intestines, of profuse bleeding, and of dissemination of the cancerous masses in the peritoneal cavity. Even where the exudation is inflammatory, if there is reason to believe that the intestines are much involved, as when the exudation is in front of the uterus, great care should be taken in separating adhesions.

DANGERS OF VAGINAL SECTION.

In my own cases 4 deaths occurred in 60 operations. The mortality was therefore 6.6 per cent. if all the cases are taken as being caused by the operation; but in one of the fatal cases the patient was suffering from acute septic peritonitis, and her condition seemed hopeless before the operation was undertaken. In a second fatal case the patient had been laid up for six months from acute peritonitis, and latterly acute cystitis had developed. She was rapidly becoming worse when the operation was undertaken as a last resource. In both of these cases death would have occurred soon as the result of the disease, and therefore we are justified in excluding them in estimating the mortality of the operation. This gives us 58 cases with 2 deaths, or a mortality of 3.4 per cent. Of the 2 cases in which the fatal result was due to the operation, 1 case was probably inflammatory in origin, but the mass behind the uterus was very hard, and might have been malignant. The finger was pushed into the mass, but only a few shreds of tissue were removed. A gauze drain was pushed into the pouch of Douglas. The patient quickly showed signs of acute peritonitis, and died on the third day. The cause of death was obscure. Probably too much force was employed in separating adhesions, but the mass may have been malignant. No *post-mortem* examination was obtained. The other case was an ovariotomy. There were numerous old adhesions which fixed the uterus, the vagina was very narrow, and the cyst was intraligamentous, and ran between the folds of broad ligament out to the pelvic wall and close up to the sigmoid flexure. There was oozing from the cellular tissue bed of the tumour, but this was unsuspected till too late and the incision was stitched up. The patient died of internal hæmorrhage.

The dangers of the operation arise chiefly from hæmorrhage, septic infection, acute peritonitis, and injury to intestine or important pelvic structures.

Hæmorrhage is not a serious danger if care be taken not to close the vaginal incision, unless we are sure that there is no injury to an artery or free oozing from raw surfaces. If we have reason to suspect that there is arterial bleeding, the uterus must be pulled down, and the anterior and posterior edges of the peritoneum caught in forceps and pulled down, so that we can obtain a good view of the tissues which have injured. In this way, and by the aid of pressure forceps, we shall generally manage to find and control the bleeding vessel. In the case of free general oozing it is sufficient to pack a thick strand of gauze against the raw surface.

Septic peritonitis from general causes is rare if precautions are taken. The real danger from sepsis occurs in cases in which an abscess has been ruptured by the finger, and its contents allowed to escape into the general peritoneal cavity. A similar risk attends the breaking up of old inflammatory tissue or a mass of malignant growth.

Acute peritonitis may be caused by the use of too much force in the separation of firm adhesions, leading to extensive bruising of peritoneum. It may also be set up by the entrance of chemical disinfectants into the peritoneal cavity.

Injury to intestines is most liable to happen when a coil of bowel is mixed up in a mass of inflammatory exudation or malignant growth. The rectum, bladder, and ureters are not liable to be injured if care be taken. There was only one case of an injury of this kind in my list. In that case the rectum was opened instead of the pouch of Douglas, but it was stitched up, and no harm resulted.

TECHNIQUE.

The steps of the operation are so well known that it is not necessary to discuss them here. Two points, however, call for notice: (1) the choice of anterior or posterior incision; (2) the question of drainage.

1. Generally speaking, I believe that the anterior incision is to be preferred in cases of chronic thickening and adhesion of the appendages, in broad ligament cysts, in pelvic cellulitis, in fibroid tumours of the uterus, and in exploratory incision generally.

Posterior incision is most applicable in pyosalpinx and ovarian abscess lying behind the uterus, in hæmatocele and ectopic pregnancy, and in most cases of vaginal ovariotomy.

2. Drainage in vaginal section is always best procured by iodoform gauze. The indications for drainage are the same as in abdominal section. It should be the rule in all cases of incision into hæmatocele and pelvic abscess, in exploratory incision in cases of acute and subacute peritonitis, and in all cases where there is oozing from raw surfaces after the removal of a diseased tube or ovary.

The most careful disinfection of the vulva and vagina must be undertaken immediately before the operation, but after the peritoneum has been divided care must be taken only to use boiled water or saline solution in the douche.

In conclusion, I do not wish to be understood as advocating vaginal section for pelvic diseases indiscriminately and to the exclusion of abdominal section. But I believe we have in the vaginal operation an excellent method of treating many of these diseases and that its introduction marks a great advance in pelvic surgery. Each case must be judged on its own merits. Sometimes vaginal section will give the best results, sometimes abdominal section; and possibly in some cases a combination[1] of the two methods will prove to be best.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1898, i, page 627.

CLINICAL INSTITUTIONS OF BERLIN.—Statistics have been published of the cases treated in the different clinical institutes of the Berlin University during the years 1897-98. Professor v. Bergmann's surgical clinic had 1,780 patients treated for 53,667 days in all; 159 cases ended fatally, 1,467 were dismissed, and the rest were left in treatment; 17,643 were treated in the surgical policlinic of Professor Nasse. Professor Senator's medical policlinic counted 11,254 cases; Professor Schweigger's ophthalmic policlinic had 12,443 patients, while 928 were received into his clinic. In Professor Olshausen's (Royal) female clinic the record number of 1,221 confinements was reached; 948 gynæcological cases were treated in his hospital, 2,857 obstetric cases, and 5,346 new gynæcological cases in the policlinic, with a large number of other cases from former years; 196 patients were treated for 6,981 days in the ear hospital, and in the policlinic belonging to it the number of 6,988 cases was reached. Professor B. Fraenkel's policlinic for throat and nasal disease had 3,411 patients, and Professor Wolff's policlinic for orthopædic surgery 1,322. The dental institute, too, was largely frequented by sufferers, so that, counting these, the total number of those who sought relief in the university clinics during the year was little short of 90,000.

AN INAUGURAL ADDRESS

ON

AN HISTORICAL SKETCH OF THE MEDICAL PROFESSION OR MEDICAL CRAFT IN BRITAIN,

FROM THE EARLIEST PERIOD TO THE VICTORIAN ERA.

Delivered at the Annual Meeting of the Birmingham and Midland Counties Branch of the British Medical Association.

By T. VINCENT JACKSON, F.R.C.S.Edin.,

President of the Branch, and Surgeon to the Wolverhampton and Staffordshire General Hospitals, etc.

The Birmingham and Midland Counties Branch of the British Medical Association was inaugurated in December, 1854, and it has had an uninterrupted existence of forty-four years. The first President was Mr. Langston Parkes, and on the roll of presidents I am, by your permission, the forty-fourth. That position is an honourable one, and he who, by your courtesy, sits here, must remember that he has to attempt to sustain whatever in connection with his office is memorable in the past; he is also largely responsible for its maintenance in the present, and to some extent in the future.

Do I not voice what all my predecessors must have felt when I say, that whilst hitherto none have sought, all have cherished the distinction, and moreover have realised the great compliment and the dignity of being your President—*nec quærere nec spernere honorem?* This status has its pleasureable duties. It has also its penalties, one of which is the obligation to read an address at the annual meeting, and I crave the considerate attention and indulgence of those present whilst I attempt to perform this task.

The selection of a subject becomes year by year, perforce, less easy. Not that material diminishes, but rather on account of its plethora, so to speak, discrimination, perspicuousness, and right decision are required.

For my own part, I propose resting awhile from topics which deal directly with the teachings of science, especially in its more modern and therefore more novel revelations, and rejecting a mere recital, which, after all, would be a compilation of the opinions and work of men, it may be in all parts of the globe, who by bedside observations and laboratory study are striving to winnow the wheat from the chaff, until their efforts are crowned by success which may have an epoch-making result. Meditating then on the subject of my address, I remembered "that every man is a debtor to his profession," and as yours and mine is the "medical profession," it occurred to me that a brief retrospect of this might prove interesting and instructive.

In glancing over the history and progress of the medical profession or "medical craft" in this kingdom, and being concerned mainly with that profession as a distinct class in the community, I find that in the earliest times of Britain no medical profession as such existed. No individual occupied himself exclusively with the practice of medicine, surgery, or pharmacy.

These functions were discharged by persons of other pursuits, such as the priesthood. The first stage of the medical profession may therefore be called the priestly stage, a stage through which medicine has passed probably in every country, and among the principal peoples of the civilised and uncivilised world. Among the ancient Britons medicine was practised by the Druids, but the administration of remedies was subordinated to the means employed to impress the imagination of sufferers.

The Danish and Saxon leeches came next, and are referred to by John Flint South as perhaps more ignorant than the Druids, but he adds "as early as the seventh century there were men who made the science of medicine a study, and who practised it as a profession." This advance was owing to the influence of the clergy, who introduced books from Rome, and it frequently happened that one member of their community was especially qualified and consulted by the people of the neighbourhood as a physician. Most of the monasteries possessed schools and preserved medical works written in this country or brought from Italy. In the Norman times the progress of medicine was aided by the foundation of the medical schools of Salerno in lower Italy, which, as early as the tenth century, enjoyed a wide reputation, as did also the schools of Naples and Montpellier. The former (the most ancient university) conferred licences to practise medicine and surgery as early as the eleventh century, and an attempt was here made to substitute scientific procedures for the generally prevalent superstitions. The statute regarding the licence contains these conditions:

> The person examined must be 21 years of age, and must bring testimonials of having studied physic for five years; and that no surgeon shall be allowed to practise until he has submitted certificates in writing that he spent at least one year in the study of that part of medical science which gives skill in the practice of surgery, that he has studied the anatomy of the human body, and is also thoroughly experienced in the way in which operations are successfully performed, and healing is brought about afterwards. Further, he must refuse fees from the poor, and he was forbidden to enter into partnership with apothecaries, or himself to keep an apothecary's shop.

In the *Craft of Surgery* it is stated:

> The clergy were for many years the only persons who taught and practised physic. These reverend physicians had received their education at Salerno, and derived much of their medical knowledge from Arabian writers.

At Bologna, Padua, and other schools, anatomy, long discarded, was again beginning to be studied, and thus the revival of learning and the foundation of the modern scientific method by Bacon did not find our art quite unprepared to receive them. Universities in this country and abroad were first established during the twelfth century. The University of Paris was incorporated about the year 1200. The University of Oxford is stated to have been fostered by Richard I, and recognised when he was king as an institution similar to the University of Paris. Medicine was not at first taught in these universities.

The priestly era of medicine lasted for several hundred years, and it is averred that medical service was so lucrative that the monks deserted their monasteries to take up the practice of physic, and there were two maxims they never violated, namely, "Never mind the poor and never refuse money from the rich." A Bishop of London who died in 1198 is said to have been apothecary to Henry the Second. At the close of the thirteenth, or about the beginning of the fourteenth, century, by a decree of Innocent the Third, surgery was formally separated from physic, and the priests, upon the ground that the church "abhorret a sanguine," were absolutely forbidden to practise the art. From this time we may date a new era in the progress of the medical profession, an era in which the three main divisions of practice—medicine, surgery, and pharmacy—were undertaken by three separate bodies of men, physicians, surgeons, and apothecaries, into whose hands medical practice was slowly passing, for the larger the sum of medical knowledge grew, the more did men recognise the necessity of conferring the privilege of the practice of medicine, not exclusively on the sacerdotal order, but on other persons who, by their knowledge and ability, showed themselves fitted for it. Each of these three groups became associated together into distinct guilds, companies, or corporations. This brings us to the history of the development of these associations and their connection with each other.

It is recorded that between May, 1421, and May, 1423, a Conjoint College, or Faculty of Physicians and Surgeons, was established and sanctioned by the Mayor and Aldermen of the city of London. Its president bore the title of Rector of Medicine, and the physicians were under the government of the surgeons of physic, and the surgeons under two masters of surgery. This union was short-lived; disagreements occurred, and a dissolution resulted, followed by an antagonism between the bodies lasting more than three hundred years. The evils flowing from the unlicensed practice of physic led to the passing in 1571 of the first Act of Parliament relating to the medical profession. Herein it was enacted:

> That no person within the City of London, or within seven miles, should take upon himself to exercise and occupy the position of a physician or surgeon, except he be first examined, approved, and admitted by the Bishop of London or by the Dean of St. Paul's.

Practitioners in the country were to be examined by the bishop of the diocese, with power to call in such expert persons in the said faculties as he in his discretion shall

think convenient. Through Linacre's influence with Henry the Eighth, and at Linacre's sole expense, the College of Physicians was founded in 1518, the charter of incorporation being dated September 23rd of that year, and by it the power and authority vested in the bishops by the Act previously mentioned were transferred to the physicians, the number of the College's members being limited to 30. The meetings of the College were held first at Linacre's house in Knightrider Street, which house he bequeathed to the College; but at the commencement of the reign of Charles the First, more accommodation being required, the college took a house in Amen Corner. In 1649 this was purchased by Dr. Harvey, and given by him to his colleagues. In 1666, the year of the Great Fire of London, it was burnt down. In 1674 a new college was built by Sir C. Wren in Warwick Lane, and here the business of the College was transacted until 1825, when the present building in Pall Mall was opened by Sir Henry Holland.

In 1618 the first *Pharmacopœia* was published by the College of Physicians; of this at least seventeen editions have since appeared. During the reign of Henry VIII five different Acts dealing with the medical profession became law, and these, when carefully examined, make it clear that medicine, surgery, and pharmacy in those times were one and indivisible. I have already mentioned that the priests were obliged to abandon the practice of surgery. When they did so they delegated their functions to their former assistants, the barbers, who had been employed by them to render help in the performance of surgical operations. Instructed by the monks, these barbers bled as well as shaved their customers, and also undertook minor operations of surgery—

Who shaved, drew teeth, and breathed a vein.

As the time went by the barbers began to practise generally, and, assuming the title of barber-surgeons, formed themselves into a brotherhood, and the best of them qualified themselves further by attending lectures and dissections. The latter body finally separated from the barbers pure and simple, and became a College of Surgeons. Thus three bodies of practitioners, more or less distinct from each other, were now in existence: first, the barbers, who adhered to the work of shaving and who undertook no other surgical operation than tooth-drawing; secondly, the barber-surgeons, who combined shaving with surgery; and, thirdly, the surgeons, who were, however, for the most part very ignorant and unlettered. As an historical fact I ought perhaps to mention that the practice of the profession by women was in the thirteenth and fifteenth centuries fully recognised.

In 1435 the surgeons formed themselves into a guild or fellowship, an oath being administered to every member admitted. Once each year they selected from their number four masters, who ruled and governed the craft, and held the treasure and common goods. Fines were imposed for non-attendance at the quarterly meetings, for slander, and for undertaking serious cases without informing the masters. An annual dinner took place, and it was obligatory upon every member to pay his contribution whether present or absent. An exemption was obtained by the surgeons from the bearing of arms, and from attendance at inquests and assizes. I may remind you that the Chairman of the Court of Examiners at the Royal College of Surgeons in Lincoln's Inn Fields, when admitting new Members, enumerates amongst the privileges conferred by the diploma that its possessors are exempt from service in the militia and from serving on juries. In 1492 arms were granted to the Guild of Surgeons. In 1493 an agreement was made with the Barber-Surgeons, and in 1540 an Act of Parliament was passed uniting the two Companies practising surgery—namely, the Barber-Surgeons and the Guild of Surgeons, and the United Company, as it was called, became a Livery Company.

An idea of the social position of the surgeons may be obtained from the fact that in a certain Act of Parliament—22 Henry VIII, 1530—they were classed with bakers, brewers, scriveners; and their knowledge of the art which they practised was so inferior that a writer of that date, Thomas Gale, a distinguished army surgeon, says, "The greatest number of chirurgeons are so rude and unskilful, having no method, no learning of the principles of chirurgery, and make rather a rude chaos than a perfect art of it." But the reasons for this state of ignorance are at hand. First, the Readerships of Anatomy were held almost exclusively by physicians. Secondly, the supply of subjects for dissection was so scanty that it was necessary to have recourse to the resurrectionist, and dissection was only possible in the private houses of some of the surgeons, the bodies being obtained from the sheriff's officer, who disposed of them after execution. This was a punishable offence. Thirdly, frequent collision occurred with the College of Physicians in reference to surgeons giving internal medicine to their patients; and it was not until the early years of this century that such thraldom as this was removed; for previously the name of the physician was placed conjointly with that of the surgeon upon the bedpaper of a hospital patient, who possibly might require as medicine more than a dose of salts and senna. Fourthly, physicians declined to consult with the surgeons. As time passed, surgeons began to appreciate the disadvantage of a union with the barber-surgeons, and efforts were made to obtain a dissolution, at first unsuccessfully; but on May 2nd, 1745, the Bill separating the two companies, called the United Company, became law. The new Surgeons Company leased a site in the Old Bailey for the erection of a surgeons' hall. This is described in the *Percy Histories* as a fine, though somewhat heavy, building, with a lofty and handsome portico surmounted by the arms of the College, and bearing the motto, "Quæ prosunt omnibus artes."

In 1797 the company sold their property in the Old Bailey to the city authorities, and purchased a house in Lincoln's Inn Fields, and partly on the foundation of this, in 1835, Sir Charles Barry erected the present well-known building, which I opine that on a memorable occasion many who are present have entered and afterwards left with sensations of pleasure and satisfaction.

On March 22nd, 1800, recognising that it was of great consequence to the commonweal of the kingdom that the art and science of surgery should be duly promoted, George III was pleased to incorporate the members of the Company by the name of the Royal College of Surgeons of London. This, through a new charter obtained in the year 1843, is now called the Royal College of Surgeons of England. The College was to be controlled by a Master, two Governors, and a Court of Assistants, consisting of twenty-one members, ten of whom were to constitute a Court of Examiners. In February, 1822, by charter fifteen years before Queen Victoria came to the throne, the title of Master was changed to President, the term Governors gave place to Vice-Presidents, and the Court of Assistants became the Council, and the College became entitled to enjoy the right of having a mace. An account of the historical changes which have occurred in the College of Surgeons from that day to this would be a long and a somewhat chequered narrative. I will remind you only of the following: An alteration of the constitution of the Council and of the Court of the Examiners, by an election to each for a term of years instead of election for life; reforms and improvements in medical education; the establishment of the Fellowship and the election of the Council by the Fellows, while more recently the privilege has been granted to the electorate of voting by proxy instead of personal attendance. The Court of Examiners was opened to Fellows not members of the Council and the President was elected from the whole of the Council instead of from the Board of Examiners as in the old days. At the present moment it is thought by many Members that progressive changes ought still further to be effected in the College of Lincoln's Inn Fields. Recalling probably the mistake which was committed by their predecessors who, in 1843 when the Fellowship was devised, did not make their views heard, and did not remember that before that year they were practically the College, the Members have agitated and are still agitating for representation on the Council, and as it is admitted that they contribute yearly to the income of the College a much larger sum than the Fellows, it seems to many who cannot be called partisans that payment and representation ought to go together, and that the Members might be admitted on the governing body of the College upon terms which ought to be considered equitable by their colleagues, the Fellows. The only consolation I can offer to the Members in their struggle to obtain a recognition of their claims, or as a writer in 1888 says, "to repel the autocracy of the government of the Royal College of Surgeons," is contained in the words of the old saw, "Time comes to him who waits."

Before we proceed further let us pause and hark back for a moment. In the short historical summary of the medical profession which has been brought before you I have purposely confined myself to tracing the development of the profession from the earlier times of Britain, and for lack of space and time I have been obliged to omit distinct references to medical teaching in ancient times in the Middle Ages, in recent, and in modern times, which teaching is full of significance, not only in its relation to the history of medicine and of education, but also generally in its affinity to the history of civilisation, of which it may truly be said to constitute an essential part. Step by step we have travelled over the revelations contained in the records of centuries, from the time when no medical profession existed: through the long period of its association with monastic life, and that of the priesthood generally; its severance from sacerdotal control, influence, and patronage; the era of its emancipation, and the progress which followed. We have noticed the establishment of universities; the creation of medical schools and the study of anatomy; Physicians and their assistants; the Barbers; the College of Physicians; the Barbers, Barber-Surgeons, their union and separation; the Surgeons and the College of Surgeons.

In discussing the medical profession of our day much may be said. Within the Victorian era, science, art, literature, and civilisation have made greater progress than perhaps during any century; and who can doubt that the position of the medical profession as an entire profession has improved? In fact no one will deny that, contemplating it from all points of view, it is as a body immeasurably superior to what it was a generation ago.

A few years ago London was the stronghold of the profession. But is it so now? And has it not been said that the leaders of medicine and surgery in the provinces compete with, if they do not rival, their metropolitan brethren? On all sides, and in every direction, there is growing evidence that the profession enjoys the highest consideration, and how can I better illustrate this statement than by reminding you that a practising surgeon now sits in the House of Lords as a Peer of the Realm? Extreme worth and the utmost capability have led to one of the highest rungs of the ladder of the battle of life, and the Government of the day have obeyed the behest of the scientific and medical world by rewarding such merit in the person of Lord Lister. Gentlemen, there is one honour which has not yet fallen to our profession, and which I covet for it—that a medical man should be "sworn of Her Majesty's Privy Council"—*palma non sine pulvere.*

The personal history of many of the members of the medical profession is in most instances mainly a record from their professional cradle of a continuous and almost unceasing application as well as devotion to their daily routine work. Their Alma Mater disregards them, their licensing authorities take no further interest in them, and as members of οἱ πολλοί day after day and often night after night they pursue the even tenour of their way, which practically means an amount of toil, weariness of spirit, monotony of existence, little dreamt of by those who derive from their services and labours, frequently gratuitous, a restoration to health which is often equivalent to a renewal of happiness and the enjoyment of the pleasures of life to those dependent upon the invalid, if he or she has been the breadwinner or stay or support of the household. An educated and trained professional man is surely worthy of a more varied existence than the monotonous daily round of such routine and often depressing labour. A mere hewer of wood and drawer of water seems to me to be completely wanting in that *vis vitæ* which is, I believe, naturally implanted in us all, but which will in time, like other forces, cease to urge us on if its impulses are checked or neglected.

A one-grooved existence such as this engenders a narrowness of mind and a captiousness of disposition which evoke a tendency to contemplate perversely the conduct and the actions of competing practitioners; there is also an undue readiness to see in this or that act a professional injury. Then is let loose that kind of ill feeling usually described as professional jealousy, and which, when exhibited, exposes the individual to the laughter and sarcasm of the public. According to a French writer, "the jealousy of doctors is proverbial, and the profession of medicine, it is said, predisposes to that infirmity just as marshy districts do to ague." Again, our want of unity is often destructive of our public influence, our want of cohesion is a bar to our political powers, and even to what ought to be our accepted social position. Let us mend our ways, and take a lesson from the lawyers, who seldom litigate among themselves. They know better. Gentlemen, the sun of the medical profession has not yet set, for we are beginning fresh enterprises of humanitarian benevolence, and standing shoulder to shoulder, and using as weapons our knowledge of curative and preventive medicine: we fight against disease, suffering, and death. I admit it is a lifelong and hard battle, for there are few furloughs, and no retiring pension, but what is more noble than the devotion of a life for the perpetuation of the health and happiness of one's fellow creatures? Though "Life is short and the art long, the occasion fleeting, experience fallacious, and judgment difficult;" yet, nothing is more inspiring than the concentration of all human effort to make that life more able, more fit, and more capable to struggle against the anxieties which everywhere meet and beset it.

My last reference to the medical profession is a "grave" one, namely, its high rate of mortality. On January 30th, 1896, at a meeting of the Royal Medical and Chirurgical Society, Dr. William Ogle, Superintendent of Statistics of the Registrar-General's Office, contributed a paper upon the Mortality of the Medical Profession, and he prefaced his remarks with the assertion that all statisticians who from time to time have investigated this subject, have come to the conclusion that it is excessive; and in corroboration of this Dr. Ogle proved in his paper that the mortality amongst medical men in England and Wales had, in recent years, been extremely high, whether compared with the mortality at earlier dates or of other professions and occupations. In other words the mean annual mortality of medical men in this country in 1880, 1881, 1882 was 25.53 per 1,000. Of the legal profession it was 20.23 per 1,000 and of the clerical profession it was only 15.93 per 1,000. The medical mortality was also high when compared with that of almost all considerable trades and industries, with the exception of some few of a notoriously dangerous or unhealthy character. Proceeding further, Dr. Ogle stated that an excess of mortality of medical men occurred under the headings of twenty-four different diseases, there being only three of any numerical importance in which the balance was the other way, namely, phthisis and other diseases of the respiratory organs and accidents. As regards the latter, it was clearly shown in a table prepared by Dr. Ogle, and in which the highly dangerous industries, as mining, quarrying, and sea fishing, were excluded, that the accident death-rate was also high. It was further pointed out that the medical mortality was above the average from erysipelas, typhoid, and scarlet fevers, diphtheria and other infectious diseases, a notable exception being, however, small-pox, doubtless because medical men were as a body better vaccinated than the average public. Attention was called to the excessive mortality of medical men from cirrhosis and other diseases of the liver, from diseases of the digestive and of the urinary system, especially calculus, bladder and prostatic diseases, from gout, alcoholism, and suicide. Gentlemen, in spite of this devastating, melancholy, and unattractive obituary record, an explanation may be forthcoming in the distinctly accurate enunciation that as soldiers we struggle on the battlefield of disease, striving our utmost to seize from the clutches of the common enemy, death, his menaced victims. Unfortunately, this is only accomplished at the expense of a large number of us who, as his opponents, are mown down by his scythe.

Our occupation is a perilous one, and I cannot help reflecting how much the State and the community owe to a body of men imbued with the highest philanthrophy and most unselfish motives, and who never flinch from any personal sacrifice when it is the path to duty. Was not Homer justified when he expressed himself: "That a single doctor is as valuable as many men put together."

In uttering my last word, may I ask you to remember these three great lessons: to honour all men, to love the brotherhood, and to fear God.

Improve the best, so shall your sons,
Better what you have bettered once.

FURTHER REPORT UPON ASEPTIC AND SEPTIC SURGICAL CASES.

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Introductory.

THE following is a continuation of the reports which appeared in the BRITISH MEDICAL JOURNAL on October 25th, 1890; May 28th, 1892; January 27th, 1894; and July 11th, 1896. No alteration whatever has been made in the methods described in the last two reports. With increased experience they give, as will be hereafter seen, very uniform results; indeed, our failures seem to be due more to want of thoroughness in the use of the methods than to faults in the methods themselves. Also, before trying new and unknown methods, we ought to learn exactly what can be done with the old. I propose to give the results of the disinfection of sponges first, but before doing so a possible source of error ought to be mentioned. After the sponges have been cleansed and sterilised by the sulphurous acid method[1] they are kept in freshly prepared 1 in 20 carbolic acid solution. When required for use the sponge is placed in a bowl of 1 in 2,000 solution of biniodide of mercury and handed to the operator or his assistant, who squeezes it out and applies it to the wound. It is at this stage that the sponge is tested by snipping a bit off and dropping it into nutrient broths. Now it is evident that a certain amount of a very powerful antiseptic is conveyed into the broth along with the sponge. In a previous report[2] I tried to overcome this fallacy by showing that very large quantities of 1 in 20 carbolic acid solution, or of 1 in 1,000 mercuric chloride solution, could be added to broth without destroying its cultural properties. We have now gone a step further. On seven occasions everything which had had the mercuric solution applied to it was immersed, after Guppert's method, in a solution of sulphide of ammonium, which had been heated to ensure its sterility.[3] The sulphide of ammonium was washed off with sterilised distilled water before the bit of sponge was put into the nutrient broth. It soon became evident that the chemical transferred with the test-object into the broth could not have had any influence upon the result. On these seven occasions the sponge, towel, silk, and fishing gut, were sterile. On six occasions the skin of the surgeon, of the assistant, and of the patient, were all sterile; once the skin of the surgeon and of the patient were septic, and gave rise to a growth of some form of staphylococcus albus. After this we ceased using sulphide of ammonium because of its offensiveness. I am greatly indebted to Mr. J. Preston Maxwell, who was then house-surgeon, for the great trouble that he took over these experiments.

Disinfection of Sponges.

The sponges were all prepared by the sulphurous acid method.[3] Those which were tested were either new and had never been used, or had been used before, but only for aseptic cases, such as a radical cure of hernia or aseptic laparotomy. When sponges are used for septic cases, such, for example, as septic peritonitis, it is better that they should be burnt. I have no doubt whatever but that the sulphurous acid method sterilises sponges which have been used for septic cases. A sponge which had been used for a case of septic peritonitis due to perforation of the appendix vermiformis, was tested, and found to have been sterilised by it. But it is clear that the process must be harder to carry out upon sponges full of virulent septic material. However conscientious and painstaking be the one to whom the task is entrusted a breakdown might occur. The cost of a sponge is a trifle compared with, say, the risk of suppurative arthritis of the knee after the removal of a cartilage, or septic peritonitis after ovariotomy or hysterectomy. Now I find that since the last report the sponges have been tested forty-one times, and that forty times they were sterile. On one occasion the ordinary potato bacillus grew in the broth, so that the contamination probably occurred during the experiment. These results reflect great credit upon Nurse Johnson and Nurse Mackay, by whom the sponges were prepared. They compare favourably with the results given in our last report, when three out of twenty-two were septic. Sponges are so superior to other materials that I should regret to have had my confidence in them shaken by a continuance of such bad results.

Disinfection of Towels.

It would be impossible to avoid touching the towels which surround the field of operation with the hands, or with sutures or ligatures. It is therefore of prime importance that they should be sterile. It is equally important that those which cover the instrument table be likewise sterile. Forty times the towels were tested after they had been steamed for forty minutes, and then immersed in 1 in 40 carbolic lotion. On thirty-eight occasions the result was sterile; once hay bacillus grew in the cultures, and once the kind of infection was not ascertained. It would be instructive now to have a series of tests made at the end of the operation, and I shall endeavour to get this done.

Disinfection of Silk.

The various sizes of twisted silk which are used for ligaturing vessels and pedicles, and for buried sutures of all kinds, were tested forty times, and were always sterile. They were boiled by the house-surgeon for not less than twenty minutes, and then placed in a bowl of carbolic lotion 1 in 60. It is, at all events, satisfactory to know that the silk is sterile before it has been handled by the surgeon. Its behaviour, when buried in wounds, will be referred to in the paragraph which deals with the results of operations.

Disinfection of Fishing Gut.

Silkworm, or fishing-gut, is used for skin sutures, and also in closing harelips and cleft palates, and in minor cases of perineorrhaphy; in severe cases I still use some silver wire sutures. The fishing-gut is boiled for twenty minutes or longer, and is then placed in 1 in 60 carbolic lotion. It was tested thirty-seven times, and was sterile thirty-five and septic twice. This seems rather a high proportion of sepsis for a material which bears heat so well. Perhaps we shall learn after a time that silkworm-gut, like catgut, is a material which is exceptionally difficult to sterilise. As is well known, the latter is exceedingly hard to disinfect. We have, however, now learnt a simple and, I believe, efficacious method. The ordinary raw catgut bought at the shop is wound upon a piece of board and thoroughly scrubbed with soap and water. Next it is put into ether, and left there until all the remainder of the fat is removed. This stage may take from six to twenty-four hours. Thence it is transferred to a 1 in 250 watery solution of biniodide of mercury. In this solution it remains indefinitely, but is not used until it has soaked for seventy-two hours. I am now using some of this catgut which I know to have been in the 1 in 250 solution of biniodide of mercury for more than a year. It is perfectly tough and good, and an ideal material for wounds like circumcisions in infants, or for tying vessels in septic cases, such for example, as the removal of a gangrenous or perforated vermiform appendix. Unfortunately the exact results of the tests of catgut prepared in this simple manner have not been preserved. I am only in a position to say that upon each occasion, probably about six, in which it was tested the result was sterile. Without doubt the disinfection of catgut mainly depends upon the thorough removal of the grease which the manufacturer uses—a point which was first taught by Reverdin.

Disinfection of Hands.

Since the last report the finger nails have been cut so close that it would have been difficult to obtain any for testing. Hitherto we have almost invariably found scraps of nail to have been septic. The number of experiments, however, is small. I now propose to give the results of forty-one tests of the skin of my own hands. It was aseptic thirty-five times and septic six. Once the growth was hay bacillus, which might have been introduced accidentally; once it was some variety of staphylococcus albus. Just before I had operated upon a case of ruptured perineum, in which there was vaginal discharge. In the other four cases the kind of infection was unknown. This proportion of sepsis is less than formerly, but is nevertheless too high. It is clearly not the fault of the method, because Mr. Williamson disinfected his hands sixteen consecutive times, and Mr. Douglas

disinfected his nine consecutive times. Mr. Maxwell was nearly as successful, and had only one septic result in fourteen tests. Clearly there is little wrong with a method which succeeds thirty-eight times out of thirty-nine. I would try to account for my own failures in two ways: sometimes when many operations have to be done, the repeated application of the disinfectant makes my skin rough, and, presumably, harder to disinfect. Also, I tried at one time to see whether a shorter immersion in the disinfecting solution would suffice. It was found that the results fell off whenever the hands were immersed for less than two minutes. We therefore now adhere scrupulously to our method, which is not less than three minutes' scrubbing with hot water and soap, and two minutes' immersion in a solution of biniodide of mercury in methylated spirit. Further, whilst doing this we look at the clock.[1] Once the hands of a new and inexperienced assistant were tested, and found to be septic.

Disinfection of the Patient's Skin.

The solution of mercury biniodide in methylated spirit (1 in 500) now gives almost as good results in the disinfection of the skin of the patient. The best were obtained by Mr. Williamson, who disinfected the skin of the groin, scrotum, and abdomen twenty-one consecutive times. It is clear that as much depends upon the manner in which the methods are used as upon the methods themselves. We have now realised the extreme importance of extracting all the fat and sebaceous material before applying the disinfectant. This is done with ether or turpentine, after shaving and thorough soaping and scrubbing. Different regions present, as might be expected, different degrees of resistance. The scrotum is particularly hard to disinfect, and also the skin of the groin; these gave our only septic results. Out of forty-five tests of the patient's skin four were septic. The skin of the scrotum was tested thrice, and was aseptic twice and septic once. The skin of the groin was tested twenty-eight times, and was aseptic twenty-five times and septic three. The skin of the abdomen was tested nine times before operations on the gall bladder (3), urinary bladder (1), ovaries (2), vermiform appendix (3), and for removal of fibroma. These were all aseptic, as were also the results of two tests of the skin of the back; once before an operation on the kidney, and once before the opening of an abscess. It is satisfactory to know that the methods we use give such good results when applied to the abdomen. Sepsis is so much more dangerous there than in the case of the scrotum. The skin of the limbs is also particularly easy to disinfect. The skin of the leg was tested twice—once before the removal of a cartilage from the knee, and once before an operation for varix. As in all our other tests of the skin of the limbs, these were aseptic. The skin of the breast and the skin of the neck were tested, each on one occasion, and found to be sterile.

These results are a decided improvement upon those given in my last report. I attribute the improvement to the great care and intelligence with which Messrs. Maxwell, Williamson, and Douglas applied the methods. It would be interesting to learn whether anyone had yet succeeded in disinfecting the scalp.

Results.

Sepsis depends upon a great many causes besides those dealt with in this report; and it is clear that much remains to be explained. For instance, the skin of the scrotum is exceedingly difficult to disinfect, and, with the exception of the scalp, has a higher proportion of sepsis than any other.

Nevertheless, the scrotal wounds have done exceedingly well. For instance, we have only had one suppuration in forty-three wounds made for the cure of chronic hydrocele of the tunica vaginalis. In the case which suppurated, the patient was very careless, and passed urine into his dressing. This comprises all the operations I have done for the radical cure of passive hydrocele of the tunica vaginalis. Another scrotal operation—that for the cure of varicocele—is also attended with little suppuration. Since 1894 I have done twenty-five, and none of them have suppurated. Thus the sepsis of the scrotal skin has evidently a very small influence upon the repair of scrotal wounds.

In the groin the commonest operation is that for the radical cure of non-strangulated inguinal hernia. When these are arranged in consecutive series of fifty, they show that the improvement in methods has been accompanied by an improvement in results.

	Suppurated.
First fifty	7
Second fifty	4
Third fifty	5
Fourth fifty	2
Total wounds 200	Total suppurations 18

This total of eighteen includes every case, whatever the cause, or however slight may have been the suppuration. It is not without significance to note that four times suppuration occurred in the first case prepared by the new house-surgeon. Once a septic sinus was present when the operation was done. Once the patient is known to have thrust his fingers down the dressing. Once the suppuration involved a single stitch hole. In several cases it was so superficial and slight that no deep sutures came out. I regret to say that the fifth series of fifty has begun badly, because we have had a suppuration already in the third case. The case of a boy who died from the anæsthetic is omitted from this series. The only consolation for this calamity is that the operation was one of necessity, for the sac contained adherent omentum, and he was unable to wear a truss.

If suppuration depended entirely upon infection from the skin, instruments, or materials, we should expect a low percentage in abdominal operations. I have, however, been disappointed in this respect. Abdominal operations vary so much that it would be hardly reasonable to lump them all together, as was done with radical cure of hernia, of hydrocele, and of varicocele. For instance, an appendix operation in which pus is met with, or a kidney extirpation with turbid urine, is not analogous to a median laparotomy for the removal of an ovarian tumour, hydrosalpinx, or ruptured Fallopian tube. However, in twenty-four median laparotomies for removal of diseased appendages, ovarian tumours, and so forth, there were three cases of suppuration. In each of these vomiting was exceedingly severe and persistent. In one it led to hæmorrhage, which ran through the dressing. I have no doubt that infection occurred from the exterior during the vomiting. I now endeavour to prevent this by more elaborate dressings. A few wounds were tested at the first dressing by inoculating a tube of nutrient gelatine or broth, with a stitch or with fluid from the drainage tube, or from the edge of the wound. Fluid from drainage tubes in scrotal wounds tested at the end of forty-eight hours was sterile twice and septic once. Stitches removed at the eighth or ninth day were tested eleven times. They were sterile five times and septic six. The edge of the wound was tested three times and was sterile on each occasion. I regret that in this report we have no cases which are known to have reached the highest standard of perfection. In the last report we gave some in which everything brought in contact with the wound was sterile, and also the wound itself when dressed.

Notes and References.

[1] For method of preparation, see British Medical Journal, January 29th, 1894. [2] British Medical Journal, January 29th, 1894. [3] Described in *Aseptic Surgery*, by C. B. Lockwood, p. 183. London: 1896. [4] After having watched various elaborate devices, and after having made inquiries, I have come to the conclusion that a simple earthenware hand-basin is the best and cheapest. This can be sterilised when necessary, and should be placed upon a simple slab, with provision for the escape of dirty water.

ON TUBAL ABORTION, WITH CLINICAL NOTES ON EIGHT CASES OF ECTOPIC GESTATION.

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I put these cases of ectopic gestation on record because the pathology of every one of them is of interest. They are eight in number, are consecutive cases, and are all that have come under my treatment up to the present time. Their special interest to me lies in the fact that they strongly corroborate the views put forward by my colleague, Mr. John W. Taylor, at the British Gynæcological Society in 1894, in a paper on Intraperitoneal Hæmatocele forming a Definite Tumour: The Relation of this to Unruptured Tubal Pregnancy. He showed clearly that "a fairly copious hæmorrhage may become limited within the cavity of the peritoneum and form an intraperitoneal

hæmatocele with definite tumour," also that these hæmatoceles are due in the great majority of cases to hæmorrhage from the outer end of the tube while there is a pregnancy, a "tubal mole" inside the tube. In the records which are appended to these remarks it will be seen how far these views are supported; at the same time two of my cases, while resembling, yet differ in some respects from Mr. Taylor's. They resemble them in that the escaped blood became encapsuled by changes taking place in itself, by the distinct lamination of the outer layers of the clot; they differ in that the fœtus escaped into the interior of the tumour thus formed.

One of them, No. II, is, I believe, a case in which hæmorrhage took place from the outer end of the pregnant tube. The escaped blood surrounded this fimbriated end of the tube with a large clot, the outer layers of which formed a capsule, a spurious wall; more and more hæmorrhage occurred intermittently, increasing the size of the clot; the outer end of the tube was then torn open probably by the actual passage of the mole containing the fœtus. There was in fact an abortion of the fœtus through the torn open outer end of the tube into the interior of the encapsulated clot, which was so large that it extended as a definite tumour nearly up to the umbilicus. The placental remains were partly in the outer opened-out part of the tube and partly in the interior of the clot.

The other case, No. V, was, I believe, at its commencement similar to the above, and I believe that if it had then been operated upon a similar pathological condition would have been found. Instead of which the more fluid part of the blood was absorbed, and the tumour with its fœtal contents became quiescent. It is well known that slight hæmorrhage, especially when intermittent, into the peritoneum will cause a peritonitis limited to the area adjacent to the hæmorrhage and causing adhesions of the clot to surrounding structures. In this case I believe that the small quiescent tumour, with the fœtus inside it and universally adherent, remained stationary for two years. At the end of that time further trouble supervened, for which I was consulted. Part of the intestinal wall adherent to the tumour had gradually thinned from pressure till finally intestinal gases diffused through the part thus weakened, and acute suppuration of the contents of the tumour followed. As will be seen from the record of the case, the pus which was evacuated was very foul, so much so that we had to have the window opened before we could proceed with the operation.

The condition of the clot in both No. II and No. VIII was such that one could not but be struck with the truth of Mr. Taylor's view, that even fairly copious hæmorrhage into the peritoneum may result in the formation of a definite tumour. In both these cases there was a large mass, reaching in No. II nearly up to the umbilicus, the outline of which was perfectly well defined. After opening the abdomen the tumour felt like a not very tense ovarian cyst. From the surface of the tumour in both instances the slightly adherent bowel and omentum were separated without apparently injuring the wall in any way.

In both the mass (the tumour) was entirely due to blood clot, the degree of the clotting varied in different parts, but on the outside were layers of fibrin, pale in colour and sufficiently thick and strong to give it a well-marked outer wall.

I would also draw attention to the histories of these cases. There is such a uniformity in the symptoms that a knowledge of them may be of help to some of my readers in diagnosing such cases.

No. I had missed two menstrual periods, and then was losing on and off for twenty-two days before the operation.

No. II had missed two periods, and then had an attack of severe abdominal pain, followed by hæmorrhage and the passage of a decidual membrane; hæmorrhage for eleven days before the operation. On the ninth day of the hæmorrhage a second attack of severe abdominal pain.

No. III.—No amenorrhœa; constant and severe loss for three months before operation.

No. IV.—Amenorrhœa for two months; very severe loss for five days before operation. Expelled a decidual membrane three days before operation.

No. V.—Amenorrhœa for nearly four months before her so-called miscarriage two years before operation.

No. VI had missed two periods, then losing for seven weeks before operation. Severe pain at the onset of the hæmorrhage.

No. VII went two weeks over her time, then losing on and off for six weeks before operation.

No. VIII went three weeks over her time, then severe loss for nine weeks before operation.

In every case the swelling due to the hæmorrhage into the peritoneum (the tube in No. VI) could be distinctly felt on examination. When there is much hæmorrhage it can be felt filling up Douglas's pouch, and even rising well into the abdomen above and behind the uterus. When small in quantity it may be located to one side, and may even push the uterus to the opposite side. This, however, I have never found to be more than to a slight extent. I need hardly point out how necessary it is to make an immediate and thorough examination in all cases where we have a history of a short period of amenorrhœa followed by severe abdominal pain and hæmorrhage, or even where there is the hæmorrhage without any preceding amenorrhœa. Failure to make the requisite examination, and therefore failure to carry out the proper surgical treatment may result in loss of life. All the cases were operated upon by me within a day or two of my seeing them. They all recovered, and are quite well now.

CASE I.—E. M., aged 26, was first seen June 1st, 1894, at the Women's Hospital, Birmingham.

History.—Married ten years: six children, the last one born twelve months ago. She menstruated regularly during lactation till two months ago, when the baby died. A few days before its death she had an attack of violent pain in the lower part of the abdomen; this subsided in a day or two, only to be followed by the sensation of a weight in the rectum and by severe pain on defæcation. From the onset of her pain in the middle of March up to May 14th she saw nothing, missing two periods. On May 14th she began to lose, and was still doing so when first seen.

Condition on Admission.—I found the uterus pushed over to the left side, while behind and to the right of it was a large firmish mass, completely filling up the pouch of Douglas. Bimanually the fundus of the uterus could be distinguished from the tumour. I diagnosed tubal abortion and advised operation.

Operation and Result.—On June 5th I operated, and found a mass occupying the pelvis, adherent to the walls of Douglas's pouch, and pushing the uterus forwards and slightly to the left, while covering it were adherent omentum and sigmoid flexure. The tumour was so firm and well defined that I thought for a moment that my diagnosis was wrong, and that I had to deal with a small adherent cyst. In separating the adherent omentum, however, I pulled out with it part of the wall of the apparent cyst, and out welled masses of black blood clot. The "wall" consisted of pale-coloured fibrin caused by the coagulation of the blood. The outer end of the Fallopian tube of the right side merged with the clot, and on getting it out I found its outer half to be thickened and dilated and filled with firm clot, while the fimbriated opening seemed to have been torn open. I could not find any trace of a fœtus, but this I think is explained by her history. It will be remembered that she had a sudden attack of severe abdominal pain preceding her amenorrhœa. This I believe to have been due to hæmorrhage into the Fallopian tube in a very early stage of her tubal pregnancy. This would cause death of the fœtus and the formation of a tubal mole; further hæmorrhages taking place would cause the intra-peritoneal hæmatocele. There was, however, apparently a period of quiescence between the first hæmorrhage into the tube and the further hæmorrhage into the peritoneal cavity. She made an easy recovery.

CASE II.—On July 14th, 1896, I was telegraphed for to go and see a Mrs. W., of Devoran, in Cornwall.

History.—Married in February, 1893, one child born January, 1895. Had always had good health. Had missed two periods, and then ten days ago had an attack of severe pain in the abdomen, followed by hæmorrhage and the passage of a decidual membrane. The hæmorrhage persisted slightly. The day before my visit there was a second attack of severe abdominal pain, with collapse. Her medical attendant, Dr. Edwards, found on examining her a mass in Douglas's pouch—had noticed it getting larger, and diagnosing tubal pregnancy, sent for me.

Condition before Operation.—When I saw her on July 15th she had a quick but not very feeble pulse; moderate pallor. The temperature was 99°; the abdomen tender, with some distension of the lower part. A firm, smooth rounded mass could be felt extending more than half way up to the umbilicus. On bimanual examination I could just detect the fundus of the uterus in front of the mass, which completely filled Douglas's pouch. I diagnosed tubal abortion, and decided to operate at once.

Operation and Result.—On opening the abdomen I found a large tumour in the abdomen, feeling at first exactly like an ovarian cyst. The walls were smooth, and so firm that the coils of small intestine and mesentery adherent at places to it were separated without tearing the wall at all. I then saw that it was not a cyst, and in pulling it up into the abdomen my fingers went through a weak part of the wall into a cavity, out of which rushed large quantities of thick black blood. I immediately emptied it of the black clot and of a small fœtus about three inches in length. The emptied sac now came out easily, and was found to be continuous with the Fallopian tube. The outer part of the tube seemed to gradually merge with and become lost in the mass of clot. I removed the entire tube and sac, washed out and drained. She made a perfect recovery, and is now quite well.

Morbid Anatomy.—On further examining the specimen I found the outer wall of the sac to be made of simply laminated blood clot, and the outer end of the Fallopian tube was torn wide open and gaping like the expanded mouth of a trumpet. I have no doubt that here the hæmorrhage was from the outer end of the tube, that it was slight at first, went on gradually

increasing, and shortly before I saw her there was a sudden large increase and at the same time extrusion of the fœtus. This would account for her sudden acute pain and collapse.

Case III.—E. H., age 31, married two and a half years, came to the out-patient's room of the Women's Hospital on August 31st, 1896.

History.—Menstruation quite regular till three months ago. Since this date constant and severe loss.

Condition on Admission.—The patient was blanched. Uterus small, and pushed to the right side. *Per vaginam*—a hard, rather tender, mass could be felt to the left of the uterus with the vessels of the vaginal roof pulsating beneath it. The upper limit of the tumour reached to the pelvic brim, while Douglas's pouch was rather full and distended. The diagnosis was left extrauterine pregnancy.

Operation.—September 4th. The left tube was very dilated, and at its outer end adherent to a cystic ovary, the two forming one mass, adherent to the back of the broad ligament and filling up Douglas's pouch. The cavity of the tube was continuous with that of a cyst of the ovary, and this cavity was filled with dark blood clot. I could not find any embryo. From her history I suspect that hæmorrhage into the tube took place so early in the pregnancy that the embryo perished soon after its conception. The tube on the right side was dilated at about its centre, and on cutting it open after its removal I found that a dark clot of blood was the cause of the dilatation.

Case IV.—S. E., age 25, married nine years. Two children, the youngest age 7. First seen on February 5th, 1897.

History.—Menstruation regular as a rule, but amenorrhœa for the last two months. After missing a period at the beginning of January she began to suffer from pain in the abdomen, which lasted till February 1st, when she had an attack of acute pain in the abdomen, with collapse and vomiting. This pain was very severe for several hours, but with rest in bed and medical treatment it gradually subsided, and she got up on February 4th. The next day, the day on which she would have menstruated if she had been regular, the pain came on again with hæmorrhage, and the passage of clot and membrane. The hæmorrhage persisted till I saw her in consultation with Dr. Neal, of Smallheath, on February 8th.

Condition before Operation.—The abdomen was very tender in the hypogastric region, and especially on the right side. The whole of Douglas's pouch was occupied by a tender immobile mass, rising above the brim of the pelvis. The fundus of the uterus could be felt in front of the mass. Dr. Neal examined her on the 5th and again on the 8th, and he found the mass in Douglas's pouch much larger at the second examination than at the first.

Operation and Result.—February 11th. Filling up the whole of the pelvis and rising above the brim was a mass of dark black blood clot, adherent everywhere to bowel, uterus, and broad ligament. The clot was well defined, and surrounded the outer end of the tube, which was dilated by a firm ovoid clot. The whole of the clot and the tube were removed. Her recovery was rapid.

Case V.—Mrs. M. B., age 36, married 12 years. One child, nearly eleven years old; previously to this had had splendid health.

History.—Has spent most of her life in America, and after the birth of her child ten years ago she suffered from bearing down pain for five years: then while on a visit to England she was advised to wear a pessary, but could only do so for a short time, as it caused great pain. After stopping fourteen months in England she went back to America, and then about four years ago was seriously ill with malarial fever. Some time after her recovery from this she had a miscarriage, being two or three months pregnant; did not recover from this without a serious illness, being in bed for three months at New Orleans with pyæmia and peritonitis. That was two years ago. Ever since she has felt pain on and off in the right ovary, at times very acute; not much worse at her menstrual periods, which have been quite regular. Has been in England for two years in this condition. In June last, two or three weeks ago, while at Harlech, she got a severe chill, with sudden acute pain in the abdomen. This was on Jubilee day, June 22nd. She came home at once to Birmingham, and for the last fortnight has been in pain, with night sweating, loss of flesh, and rise of temperature every night to 101 or 102. Since her attack on Jubilee day she has felt a lump in the right side of the abdomen, gradually enlarging.

Condition before Operation.—When I saw her on July 2nd, with Dr. John Craig, I found the abdomen distended; acutely tender. Dulness in right side, extending above the umbilicus and to the left beyond the middle line, a thrill over dull area, Douglas's pouch tense and very tender. This hardly sounds like the history of an ectopic gestation; in fact my diagnosis was suppurating ovarian cyst.

Operation and Result.—I took her into my private hospital and operated on July 5th. After opening the abdomen I found large and small intestine and omentum firmly adherent over the top and sides of a large mass. I could see at once that it was hopeless to try and peel off the intestine, but I tried to separate the adherent omentum. In doing so I opened the wall of the mass, and out came over a pint and a half of foul, stinking, blood-stained pus. The wall of this abscess cavity, as far as I could tell, was a thin layer of very friable tissue, whether old laminated clot or inflammatory in origin I could not say. I washed out the cavity, and on exploring it found in it a three months putrid macerated fœtus. I am bound to say that I was surprised. I washed out the peritoneal cavity and drained the two cavities separately, packing round the tube going into the abscess cavity with iodoform gauze. After some distension and difficulty in getting the bowels open on the second day, she recovered rapidly, and is now quite well.

I made minute inquiries into the history of this patient's miscarriage of two years earlier, and I found that in 1895 she missed her periods during February, March, April and May, that at the end of March, after missing two periods, she had an attack of severe pain in the abdomen, which was put down to acute ovaritis. The pain persisted, getting worse and then better alternately for seven weeks. She was then examined under chloroform, and told that she was four months pregnant. A few days after this—this was in May—she had some hæmorrhage from the uterus, and passed a membrane. She was told it was a miscarriage, but the fœtus never came, and the hæmorrhage continuing she was curetted, but the uterus was empty. The fœtus was then supposed to have come away unobserved. Three days after the curetting she had another severe attack of abdominal pain, accompanied by much shock and collapse. The diagnosis was rupture of an abscess into the peritoneal cavity, and she was taken into a private hospital at New Orleans for operation. No operation was however done, because she began to improve, and gradually regained good health, which has lasted until this last attack for which I was called in. As far as I could make out the large abscess sac was behind and above the uterus and left broad ligament, and I believe that at the time of her supposed miscarriage she had a tubal abortion with gradually increasing hæmorrhage into the peritoneal cavity. The blood clotted, and the outer layers of the clot became laminated and were strengthened by adhesions to surrounding peritoneum. Hæmorrhage into the centre went on slowly, causing a distension of the intraperitoneal hæmatocele; probably at her last attack of severe pain, at the time of the uterine hæmorrhage. After four months' amenorrhœa the fœtus itself escaped. Some of the clot was afterwards absorbed, and there remained quiescent in the abdomen the sac formed partly of laminated clot, partly of fibrous adhesions and containing the fœtus. Through adhesions to bowel and thinning of its wall diffusion of intestinal gases at last took place, causing acute suppuration of the contents of the sac, rapid distension, and extreme thinning of its walls. I may be wrong in this view of what had happened; the alternative view is, of course, that a rupture took place into the broad ligament; that after a period of quiescence suppuration in the sac supervened. But if this had been the case, the adhesions to coils of small intestine and mesentery would have been of recent date, due to the last attack of suppuration, whereas they were so strong that the coils of bowel and the mesentery seemed to form part of the wall of the sac, having on the inner surface a little soft laminated fibrin. It was an absolute impossibility to separate the adherent viscera from any sac wall; also there was no sac wall strong enough to suture to the incision in the abdominal wall: and after washing out the peritoneal cavity and the abscess cavity, I had to rely on packing round the drainage tube of the latter with iodoform gauze to prevent further infection of the general peritoneum. The abscess cavity went right down behind uterus and broad ligament into Douglas's pouch. Owing to dense adhesions to the posterior surface and fundus of the uterus, and to what I took to be the top of the broad ligament, I was unable to find the Fallopian tube distinctly. I made no attempt to separate the adhesions, for my main endeavour was to do what was necessary for the patient and put her in the best way to recover, which, I am glad to say, she did.

Case VI.—R. D., aged 34, married sixteen years. Was a patient of Mr Taylor's whom I saw on his absence from home.

History.—Eight years previously Mr. Taylor had performed Alexander's operation for her, and four years later he removed a left hydrosalpinx with a twisted pedicle. I took the following notes on September 1st, 1897: Was regular till May last, then missed her periods in June and July; began losing on July 10th, and has been losing on and off ever since. With the first loss she had an attack of severe abdominal pain lasting for a week, but has been somewhat easier since.

Condition before Operation.—Uterus normal in position, slightly enlarged, to the right of it but rather high up and slightly behind it, a firm, tender swelling could be felt.

Operation.—September 2nd I removed an unruptured tubal pregnancy in the uterine end of the tube larger than a walnut. It was so close to the uterus that my ligature included part of the uterine cornu. No blood in the peritoneal cavity; outer end of the tube quite normal in appearance.

Result.—Her recovery was very tedious, owing to the formation of a deep stitch abscess. The presence of such a large unruptured pregnancy so close to the uterus is, I think, worthy of record.

Case VII.—E. J., aged 34, married eleven years. Has had five children, youngest aged fourteen months.

History.—Menstruation as a rule quite normal: missed her last period, going two weeks over her time. She then began to lose, and has been losing on and off ever since for six weeks. Not much pain.

Condition before Operation.—A distinctly tubal mass was felt in Douglas's pouch, chiefly to the left side and pushing the uterus slightly to the right. Acutely tender to palpation.

Operation and Result.—September 4th, when I removed a left tubal pregnancy. The outer end of the tube was adherent to a cystic ovary, the two forming one tumour very adherent to the back of the uterus and to Douglas's pouch. The hæmorrhage had taken place into the cystic ovary; the adhesions, too, between the tube and the ovary had been stretched so as to form an envelope to a large amount of clot between the tube and the

ovary. The clot was very firm and its outer part laminated and pale in colour. Her recovery was easy.

CASE VIII.—H. B., aged 25, married six years; three children, youngest eleven months old.

History.—She had been quite well up to three months ago, when she missed a period, going three weeks over her time. She was then suddenly seized with pain in the abdomen and collapse. This was immediately followed by hæmorrhage, which persisted and lately had amounted to flooding. When I first saw her on December 21st she was absolutely blanched, her mucous membranes being almost colourless.

Condition on Admission.—First seen in the Women's Hospital on December 21st, 1897. There could easily be felt behind the uterus, bulging down into Douglas's pouch and rising above well into the abdomen, a firm, well-defined mass. The fundus uteri could be made out in front of it.

Operation and Result.—Operation December 23rd, and found a large cyst-like mass, made up entirely of blood clot, the outer layers of which formed the spurious wall. Slight adhesions of omentum. The outer end of the left tube seemed lost in the mass. I removed all the clot and the left tube, and found its outer end dilated and occupied by firm clot. There was no trace of any fœtus, but we must remember how early the first hæmorrhage—probably into the tube itself—occurred, and how soon, therefore, the embryo would be destroyed. She made a good recovery.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

DIPHTHERIA OF THROAT, NARES, CONJUNCTIVÆ, AND URETHRA: SERUM TREATMENT: RECOVERY.

ON June 6th, at 8 P.M., I was summoned to attend A. B., male, aged 20. The history was that he had felt "shivery" for a day or two previously, and had some difficulty in swallowing. On examination, I found the fauces, tonsils, and uvula deeply congested but not patchy, and the cervical glands greatly swollen. The temperature was 99.8°, and the pulse 120. I diagnosed the case as one of commencing diphtheria, and ordered a lotion of perchloride of mercury (1 in 2,000) to be sprayed frequently, and another of 1 in 500 to swab the throat three or four times daily. I also gave tinct. ferri perchlor. ♏ xx, and quin. sulph. gr. j every three hours. Strong soups, milk, and alcohol were also given.

On the following day, June 7th, the temperature had risen to 101.8°. There was a greyish-white membrane on tonsils and uvula, and an acrid discharge from the nares, indicating extension of the disease to the nasal mucous membrane. There was also great swelling of the lower eyelids. On the 8th the temperature had risen to 103.8°; the membrane had spread over the soft palate, the discharge from the nares had increased, the eyelids were very swollen and there was membrane on the palpebral conjunctivæ. There was also a patch on the anterior lip of the meatus urinarius, causing difficulty in micturition. I had by this time received a supply of antidiphtherial serum from Burroughs, Wellcome, and Co. Of this I injected 20 c.cm. Improvement rapidly took place, but a similar dose had to be repeated on three other occasions, owing to rise of temperature. The case progressed without a single drawback, the membrane quickly disappearing from all the situations above mentioned. I feared greatly that the corneæ would be destroyed, but this fortunately did not take place, and the eyes have quite recovered. About a fortnight ago I had the secretions from the mouth and throat examined by the Clinical Research Association, and no Klebs-Loeffler bacilli could be discovered. There has, so far, been no sign of post-diphtherial paralysis, and the patient is now at the seaside and in excellent health. A curious point is that he had diphtheria six years ago.

I venture to quote this case because of the unusual number of mucous membranes which were simultaneously involved, and to show the rapid curative effect of the antidiphtherial serum in a case more than ordinarily virulent.

Beverley. W. HERBERT GREGORY, M.D., C.M.Edin.

INVERSION OF THE UTERUS.

MRS. F., aged 23 years, of this town, was delivered of her third child on Tuesday, June 21st, between 7 and 8 P.M. A midwife was in attendance. The labour was a little more lingering than the preceding ones, but everything went on all right. No traction was made on the cord by the midwife, nor any pressure on the fundus for expression. The after-birth came away quite easily with a pain. The midwife told the patient and her friends that there was something more to come away—probably clots. The patient suffered from a constant bearing down, sometimes forcing, and always a feeling of something in the vagina. On Thursday, June 23rd, at 2 A.M., she got out of bed to pass water, and in straining something came down. The woman who attended her was sent for, and when she came advised that a doctor should be called in, as she did not know what it was. My assistant, Dr. Le Grand, went down, and when he saw the condition of things, sent for me. The uterus, about the size of a cocoa-nut, was turned completely inside out; we could make out no os, but could feel the left tube, the placental site being on the fundus and right upper side. The woman had no pain and no hæmorrhage, but was suffering from extreme collapse. Her condition was so serious that we agreed it would not be advisable to do more than return the mass into the vagina, and wait a few hours and give the woman a chance of rallying.

At 10 A.M. we gave chloroform, and after great difficulty Dr. Le Grand succeeded in reducing the inversion. After reduction there was no cervix, the os was as wide as the fundus, the sides of the uterus feeling quite straight. Any intention of keeping the hand in the uterus for contraction or washing out the cavity had to be abandoned owing to the serious condition of the woman. After half-an-hour's artificial respiration and alternate subcutaneous injections of ether and brandy, we had the pleasure of seeing life come back. She never had any trouble after. For two days the lochia was slightly offensive, with a little temperature; but after washing out with iodine water all ceased. The milk came, and on the Sunday but one after she came downstairs no worse than after an ordinary labour. The one thing that struck me in connection with the case is, that it is no use attempting any reduction before the patient is thoroughly under the anæsthetic; as much as you would produce to reduce hip-joint dislocation.

Alfreton. JOHN J. BINGHAM, M.D.

THREE SIMULTANEOUS RASHES.

THE following case is of interest, as it shows an unusual prodromal rash of measles:

H. G., a little girl of 9, was said to be "seedy" on June 10th. I saw her on June 11th; she then had had some sickness and nose bleeding. Temperature was 102°, tongue white and coated, palate injected, and a rash out on both hands and both feet very slightly on the forearm.

The rash consisted of bright coral pink spots, the size of a pin's head, that did not fade on pressure. On the 12th the condition was unchanged, except that the eyes looked heavy, and there was slight cough; nothing abnormal was to be heard in the chest. On the 13th the measles rash began to show on the face, and spread all over in twenty-four hours—marked running at the nose, with more bronchial catarrh than usual. Except that the rash was rather more profuse than usual, there was nothing noticeable about it: it was not purpuric or hæmorrhagic in the slightest. Here and there through it you could see the "coral" spots, now rather darker in tint, but not otherwise altered.

On the next day, the 14th, the little patient showed urticaria affecting the abdominal wall and both thighs, the spots rapidly fusing into big patches.

This caused no constitutional disturbance, as the temperature was then just beginning to fall, and the child made an uninterruptedly good recovery. The spots on the hands could still be traced after the fading of the measles, but gradually they faded into a pale greenish brown, and disappeared. All three rashes were perfectly visible at once. I may mention that her brother and sister subsequently went through an ordinary course of measles.

Haverfordwest. YARNOLD H. MILLS, M.B.Lond, F.R.C.S.Eng.

CHOREA COMPLICATING PREGNANCY.

MRS. L. S. aged 21 years, 1-para, 7 months, came to me on March 20th, 1898, suffering from a minor degree of chorea, chiefly affecting the left side of her face and left arm although her whole body was in constant movement. She gave a history of freedom from rheumatism, scarlet fever, or

previous attack; had always enjoyed good health; was plump, but slightly anæmic. On examining her heart I found a loud systolic mitral murmur. Her other organs were healthy. She has one adult brother epileptic. Having ordered her to bed, I prescribed a mixture of iron and arsenic, t. d. s., and a draught of chloral hydrate, with potassium bromide nightly at bedtime, and occasional doses of cascara sagrada, and plenty of light nourishment. For a few weeks under this treatment she seemed to improve slightly, but after a time, as she could not retain either food or medicine, I had to give it up. The choreic movements now becoming more extended, so much so that a spoon was necessary to feed her, I tried the following pill: ℞ Acid. arsenios. gr. $\frac{1}{60}$; extr. belladon. gr. $\frac{1}{4}$; extr. cascar. sagrad. gr. $\frac{1}{2}$; extr. nucis vom. gr. $\frac{1}{2}$; ferri sulph. exsicc. gr. ij; M. Ft. pil. j., t.d.s. These, which she continued to take until her confinement, had a decidedly beneficial effect. Labour set in on May 31st. As she was so much reduced, and fearing complications, as soon as the os was sufficiently dilated to admit two fingers I ruptured the membranes, forcibly dilated more fully, and with my long forceps rapidly delivered a healthy male child. The following day when I called I found all trace of chorea had left her, with the exception of the heart murmur. She is now well and suckling her child.

Lowestoft. R. H. A. Hunter, L.R.C.P., etc.

INTESTINAL CASTS.

Nine months ago I was consulted by J. K., who complained of severe abdominal pains and other symptoms, pointing to the presence of tape worm. With the third dose of extract. filicis liquidum, the tape-worm, including head, was passed. Two months after this I was again consulted by J. K., who complained of severe colicky pains, which came on every Monday morning, and were followed in an hour or two by looseness of the bowels, accompanied with distressing pain and tenesmus. The stools contained mucus and blood. After one or two such motions an intestinal cast, several inches in length, was passed, and instantaneous relief was experienced. A feeling of rawness or soreness was not complained of afterwards. These paroxysms occurred with regularity every Monday morning immediately after breakfast.

The patient, who is a hale old farmer of over 70 years of age, says that 20 years ago he consulted a doctor and was treated for "small worms," which he now says resembled pieces of tape-worm. At intervals he has continued to pass such pieces for the last twenty years. I think the case is interesting as perhaps explaining the nature of the irritation which has caused this rare condition of the bowel. For treatment various remedies have been tried, including cod-liver oil and pix liquida, which has been suggested as an alterative to the mucous membrane. The results have not been encouraging, and I shall be glad to know of cases in which treatment has been successful.

Esh, Durham. A. J. Mackintosh, M.B., C.M.

A POSSIBLE CASE OF SUPERFŒTATION.

On June 14th I attended Mrs. K., aged 42 years, multipara. There was nothing unusual in the case; the pains being strong and rapid. She gave birth to a full term female child. The placenta and membranes came away some twenty minutes after the birth. On placing my hand over the uterus I found that it was well contracted, but larger than normal; this I could not account for at the time. On seeing her next morning she complained considerably of after-pains; these had kept her awake all night. The discharges were normal. I gave her a draught, consisting of potassium bromide, grs. xv, chloral hydrate, grs. xx. This gave her ease and some hours' sleep. I saw her again on the morning of June 16th; she still complained about the after-pains. I made a vaginal examination, and withdrew a number of clots. On passing my finger through the os a pain came on, and I could distinctly feel a small, round presenting body. On telling her to bear down this was parted with, and proved to be a two or three months' fœtus, born with its sac of membranes intact.

Remarks.—The case is of interest from the fact that the fœtus appeared to be perfectly normal, and bore no signs of atrophy or degeneration as one would have expected if it had been impregnated at the same time as the mature fœtus, and had been less favoured in nutrition. Yet when one remembers the rapid and important changes that take place in the ovum and uterus after impregnation, and the insuperable difficulties a spermatozoon would have to overcome in order to fertilise another ovum, one naturally hesitates to believe that this is a case of genuine superfœtation. Nevertheless, the case is one in which this explanation strongly suggests itself.

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STOMATITIS FOLLOWING THE ADMINISTRATION OF ANTIPYRIN.

A short time ago I prescribed for a patient—a man of about 35—suffering from rheumatic neuralgia, a mixture containing antipyrin. After I had written the prescription he remarked, "My doctor tells me I cannot take antipyrin, as I always get a sore mouth if I do." Having prescribed antipyrin in some hundreds of cases, and having never seen such a result, I ignored this statement and did not tell him I was giving it to him. The next day his pain was gone, and he felt practically well; but the following morning he turned up again to show me his mouth. He had three or four patches of superficial stomatitis on the buccal mucous membrane between the gums and the cheek, and two or three patches on the hard palate. He had no erythematous rash or other symptom of antipyrin poisoning, and the drug used was, I believe, pure.

In the current *Braithwaite's Retrospect* is a report of a case of pemphigus of the mucous membrane of the mouth following antipyrin, and I should imagine that my patient's stomatitis probably started in the same way. The condition is, I believe, very rare. The whole amount of antipyrin taken did not exceed 40 grains.

Bath. G. King Martyn, M.D.Camb.

CANTHARIDES AS A HÆMOSTATIC IN HÆMATURIA AND ITS USE IN ALBUMINURIA.

The beneficial effects of cantharides, taken internally, in certain affections of the kidneys, do not seem to be generally known; hence no apology is needed for bringing before the profession notes of the following case:—

S. H. N., aged 68, a joiner, had always enjoyed perfectly good health until the beginning of August, 1897, when he passed a large quantity of blood with a few clots by the urethra; no pain, however, was experienced. He was ordered rest in bed, and ergot, which stopped the hæmorrhage. It recurred, however, directly the patient got about again. Subsequently all the hæmostatics mentioned in the *Pharmacopœia*—catechu, logwood, galls, oak-bark, alum, iron, ergot, tannin, hamamelis, etc.—were tried with little or no benefit. Last November he went up to one of the London hospitals, where he was seen by a distinguished surgeon, who could not find any disease either of the bladder or kidneys. He was recommended hæmostatics, and if he derived no benefit from these, exploration of the kidneys was suggested to him—a course he would not agree to on account of his age. For five months he took large doses of the prescribed hæmostatics three times a day, but his condition both bodily and mentally became worse and the hæmorrhage increased.

It was in this state that he came under my care at the beginning of May, ten months from the commencement of his illness. The urine on microscopical examination showed quantities of blood corpuscles and a few casts. No enlargement of the kidneys could be detected on palpation, and no pain whatsoever was experienced. I prescribed tincture of cantharides, ℥v, three times a day, and regular exercise. In twenty-four hours all the hæmorrhage had stopped, and the urine became quite clear. I then omitted the cantharides, but in ten days there was again a little blood in the urine, which immediately cleared up after a couple of doses of the mixture. As a precautionary measure, I ordered a dose to be taken occasionally, with the result that no blood has been passed since. I omitted the cantharides entirely a fortnight ago, and put him on a preparation of iron to combat his anæmia.

The effect of the cantharides was marvellous, in that it stopped in twenty-four hours the hæmorrhage, which so far from yielding, had increased under the usual hæmostatics prescribed for a period of ten months. Rest had nothing to do with the

cessation, as I told the patient to be out-of-doors as much as possible.

The diagnosis I dare not venture upon. To the tonic effect of small doses of cantharides on the kidney I ascribe the successful result. This drug also brings about a very striking diminution in the amount of albumen in the urine of patients suffering from "large white" kidney, if given in small doses; whether this diminution is permanent I am at present unable to judge.

Balham. OCTAVIUS BEVEN, M.D., D.P.H.

A CASE OF SULPHONAL POISONING.

AT 10 P.M. on July 9th I was called to see E. C., an anæmic and somewhat neurotic girl, aged 17. She had lately been suffering from neuralgia, and on the day mentioned she had altogether 60 grains of sulphonal—20 grains at 11 A.M., 20 at 2 P.M., and 20 at 3 P.M. Soon after 3 P.M. she began to be drowsy, and went to bed and slept for about two hours, when she woke up with a feeling of nausea, but was not sick. On getting up she was markedly ataxic, and "walked as though very drunk." Her condition rapidly became worse, and at 10 P.M. I was called in. I found the patient lying on the bed with closed eyes, and noticed marked muscular twitchings. The respirations were 48 and shallow, but every few minutes she took several deep breaths. The temperature was 95.4°, and the extremities were cold, with marked signs of cardiac weakness. The pulse was very feeble and hard to count, but I registered it at 58. The pupils were slightly dilated, reacted slowly to light, and the corneal reflex was absent. The patient had hallucinations, thinking she was pursued by beetles and fleas; but when spoken to or roused, she became wildly delirious, striking and fighting with her attendants until completely exhausted. Not knowing the nature of the drug taken, I could only treat the most pressing symptom, and strychnine and brandy were repeatedly administered hypodermically. The patient's condition somewhat improved at 5 A.M.; during the day she slept and took nourishment well, but the bowels were not relieved, and she passed no urine. Towards evening she again became delirious, but her pulse was good. Croton oil was given, and also hyoscine hypodermically. This quieted the patient, and the oil operated freely. After some hours (thirty-six since commencement of the attack), 5 ounces of urine were passed; this contained no albumen. After this the patient made a slow but uninterrupted recovery.

Andover. J. F. GILLETT, M.B., B.C.Cantab.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WOMEN'S HOSPITAL, MELBOURNE, VICTORIA, AUSTRALIA.

A CASE OF HYDATID MOLE WITH STAPHYLOCOCCUS INFECTION.

(By FRANK A. NICLASY, M.B., Ch.B.Melb., Hon. Obstetric Surgeon.)

THERE are several interesting features in connection with this case which appear to me to be worth placing on record. Some brief notes of the history are supplied by the House-Surgeon, Dr. Docker.

E. B., aged 20 years, primipara, admitted on January 6th, 1898, in a somewhat anæmic state. She says that she is nearly three months pregnant, and during the last week has been losing blood, passing large clots on two or three occasions, but has had no pains. She is now losing slightly; the external os is a little softened and patulous, the internal os contracted. The uterus extends to within an inch of the umbilicus. Temperature, 99° F.; pulse, 86. The patient was kept in bed for a week, and as she had neither pain nor hæmorrhage during that time, she was discharged from hospital, but was readmitted on the following day (January 15th) at 6 A.M., bleeding having again commenced at 4 A.M., since which time she has passed large clots. On admission she was very anæmic, os slightly dilated, losing slightly, and getting pains. ℥j of ergot given, and at 10 A.M. a large hydatidiform mass discharged; a good deal more removed by the hand passed into the uterus, making altogether a large dish full. There was very free hæmorrhage at the same time. On account of the very weak state of the patient it was not considered advisable to do anything further for the time being. On the following day her temperature ran up to 103.6°. I now saw the patient, and determined to curette her. This was done under chloroform; some rather firmly adhering "hydatids" were removed; two fingers passed up to the fundus so as to leave no remnants, and the uterus packed with iodoform gauze. The patient's temperature was normal in two days, but on the evening of the third day it suddenly ran up to 104.4°. Her condition was somewhat alarming for the next few days, the evening temperature being a little over 103°, and the morning one a little over 101°, with a weak, rapid pulse, and a blanched, waxy, and exhausted appearance. However, I found the cause of the febrile reaction to be a purulent endometritis, and, as Dr. Nelly's bacteriological examination revealed almost a pure culture of staphylococcus pyogenes albus, I did not use the antistreptococcic serum, but employed on this occasion specially prepared iodoform bougies and gauze drainage.

The appearance of the expelled mass was exactly like that represented *in situ* by Dr. More Madden in his valuable work on *Clinical Gynæcology*. That author, who has had an exceptionally large experience of this disease, states that "there is no possibility of discriminating with certainty between a myxomatous mole and the normal product of impregnation *in utero* before the completion of the fourth month of gestation." The abnormal enlargement of the uterus, with the hæmorrhage present in this case, might have been expected to have aroused suspicion, but as I did not myself see the patient till after the expulsion of the main mass of the mole, I am unable to offer a definite opinion on that aspect of the question from personal observation. The authors of the *American Textbook of Obstetrics* say, "exsanguination of the patient and septic infection are the chief dangers." These were both present in this case, but successfully passed through. Moreover, the patient was young and a primipara, two facts the reverse of usual.

REVIEWS.

TWENTIETH CENTURY PRACTICE OF MEDICINE. Edited by THOMAS L. STEDMAN, M.D. Vol. xiii. London: Sampson Low, Marston, and Co. 1898. (Royal 8vo, pp. 630. 13 illustrations. 30s.)

THE present volume, which is the thirteenth of the twenty that are to make up this encyclopædic production, fully maintains its international character, since out of the eight contributors three are English, one Irish, two French, and two American. In this volume the study of the infectious diseases is commenced by a series of valuable introductory articles dealing with the more general problems. Thus to begin with, Professor Victor Vaughan, of Ann Arbor, Michigan, gives an account of ptomaines, toxins, and leucomaines that shows a full and up-to-date knowledge of this rapidly developing branch of pathology; on the practical side of this subject there is a good description of the various kinds of food poisoning, each of which appears under a new and sometimes startling name; for example, ichthyotoxismus (fish poisoning).

Professor Ernst is fully conscious of the great difficulty of writing a complete account of infection and immunity, subjects that are continually advancing with changing front. He has most conscientiously tackled the matter in hand, and has freely referred to the copious literature that has gathered around it. Following the more theoretical part of the article there is an account of its practical outcome, the serum treatment of disease.

Dr. Dawson Williams deals fully with the incubation and infectiousness of the acute specific diseases.

The much discussed subject of vaccination and cowpox is well handled by Professor Brouardel. The article is (probably from an accident during translation) entitled "Vaccina," not "Vaccinia," as it should be in English. Mumps, exhaustively

described by Dr. Jules Comby, of Paris, is the concluding article in this successful instalment of the *Twentieth Century Practice of Medicine.*

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger. Vols. i and ii. Hand-Atlas Series. London: Baillière, Tindall, and Cox. 1898. (Crown 8vo, pp. 246, 232. 12s. 6d. each volume.)

The first volume of the English edition of this work comprises diseases of the circulatory, respiratory, and digestive apparatus, and is illustrated with 60 coloured plates and 13 figures in the text; the second is illustrated with 52 coloured plates and 17 figures in the text, and deals with the urinary and sexual organs, the nervous system, and bones.

As the title implies, the work is confined strictly to morbid anatomy, and does not profess to treat of pathological histology. Each plate is accompanied by a detailed description of the figures represented, and often with a clinical history. In addition to this there is given a short and concise general account of the morbid changes affecting the various organs, not excluding the bones and joints. The illustrations are intended, however, as the chief feature. Of these it is not too much to say that they have never been surpassed; many of them are even superior to those of the larger Atlas of Kast and Rumpel, much of which has already been published. The style itself is so perfect in result that it must entirely supersede the older method of chromolithography adopted for so many of the illustrated works hitherto published in this country; we no longer discern a ground picture printed in black ink, on which the colours are superimposed, whilst the peculiar grain of the paper gives all the brilliancy derivable from this source, and in several cases, a texture admirably suited to the organ represented. The plates are, with few exceptions, works of chromographic art. Now that illustrations of this excellence are producible, one is almost tempted to doubt the utility of preserving much of what is placed in museums, were it not that time may show the permanent value of formalin methods, and if anything could palliate a non-attendance in the *post-mortem* room it would be the study of such plates as those here presented. Almost the only unsatisfactory figures occur amongst those of the heart, a certain number of which are finished with too little detail, and are, moreover, too much reduced in size. One or two of the uterine figures, though excellent in other ways, offend by reason of the irregular manner in which the organ has been divided. Actinomycosis and glanders unfortunately want plates, and it is not easy to surmise why none is given of so important and characteristic a lesion as mammary scirrhus. In two of the plates a shadow has been needlessly introduced, and with a disfiguring effect, whilst it is to be regretted that seven of the plates have been lettered and inserted in the inverted position.

Les Sérothérapies: Leçons de Thérapeutique et Matière Médicale. [Serumtherapeutics: Lectures in Therapeutics and Materia Medica.] By L. Landouzy, Professor in the Faculty of Medicine of Paris, etc. Paris: Georges Carré and C. Naud. 1898. (Royal 8vo, pp. 530; 27 figures and 1 plate. Fr. 20.)

In these lectures Professor Landouzy not only gives an account of all that is known of serumtherapeutics as applied to human beings and animals, but also enters into the question of serumdiagnosis and the uses of artificial serums (salt solution, etc.). We confess, however, that interested as we have been by the perusal of these pages, we should desire to have seen a considerable number of them omitted. The diseases of which the serum treatment is at all firmly established are at present very few in number. But of these few there is quite enough to be said, without devoting time and space to the narration of dubious experiments made in the hitherto abortive endeavours to manufacture antitoxins of diseases of which the very causes are unknown. While during recent years, both in Germany and in France, much honest work has been undertaken, the value of which can hardly be over-estimated, we are afraid that, on the other hand, whatever may be the cause, a vast amount of rubbish has been floated upon the world. For this, of course, Professor Landouzy is not to blame; but he is to blame when he transfers to his pages such nebulous stuff as is to be found in the seventeenth, twentieth, and twenty-first of the present lectures.

Diphtheria, of all the bacterial diseases, is the one in which serumtherapeutics have proved most satisfactory. Of this subject the author has given an excellent account. We observe that in laryngeal diphtheria he prefers intubation to tracheotomy; and as one of the reasons for this preference he asserts that tracheotomised children rarely attain adult life, but fall early victims to tuberculosis. This statement, we venture to think, is so important that it requires to be supported by stronger evidence than is afforded by the author.

Next to, but a long way after, diphtheria come plague and certain forms of streptococcal infection. Of the value of serumtherapeutics in plague more evidence is wanted. In the case of streptococcal infection the difficulty in obtaining a trustworthy serum appears to lie largely in the fact, that whereas the disease to be treated may be caused by one kind of streptococcus, the remedial serum may have been produced by the aid of another kind; and each different streptococcus will give a serum which will protect against that particular coccus but not against others. Still, there is clinical evidence to prove that certain streptococcal diseases, more especially such as occur during the puerperal period, are amenable to treatment by the antistreptococcic serum of Marmorek and others. In tetanus the antitoxin is of value only as a prophylactic. The author quotes from human and veterinary surgery some striking instances of its use in this respect. Experimentally, the antitoxin of snake-venom is very satisfactory. But however convincing may be the results of experiments on animals, of its value in practice nothing definite can yet be said; though it is to be hoped, when we recall the enormous annual number of deaths from snakebites in British India alone, that means will be taken to introduce the treatment into that country. This number is given in the text as being 2c.000, which is corrected to 2,000 in the list of errata. We believe, however, that the former figure is much nearer the truth than the latter.

Of the other diseases discussed in this work we can only say that at the best the serum treatment is in the hopeful stage. The book is well printed, and will doubtless prove serviceable as a work of reference.

Diseases of the Stomach. By John C. Hemmeter, M.D., Ph.D. London: H. Kimpton. 1898. (Royal 8vo, pp. 778. With many illustrations, some coloured. 30s.)

This work is divided into three parts: (1) The anatomy and physiology of the stomach and intestines, including methods and technique of digestion; (2) the therapy and materia medica of diseases of the stomach; and (3) the gastric clinic. The method of using the stomach-tube and gastric chemistry are fully treated in the first part. Töpfer's method for the quantitative estimation of the various acids in the stomach contents is the one more specially recommended for clinical purposes. As it depends largely on a number of colour reactions it is undoubtedly easier than some other methods, while its accuracy appears sufficient for ordinary purposes. It is perhaps a little surprising to hear how frequently fragments of the gastric mucous membrane are to be found in the stomach wash water. In discussing their diagnostic significance the author bases his conclusion on thirty-eight cases of his own, and the results obtained by Max Einhorn, Colnheim, and Hayem. He says that in half to two-thirds of the cases of hyperacidity there is proliferation of the glandular elements, and in half to two-thirds of the cases of anacidity, atrophy of these elements.

The second part, on treatment, includes several important chapters on diet, one on lavage and the gastric douche, one on mineral springs, and one on special medicinal agents. Somewhat strangely placed in this section there will be found an interesting and important chapter on the effects of stomach diseases on other organs, and *vice versâ*. The urine and blood in gastric diseases are also discussed here by Dr. E. L. Whitney. An adequate account of the surgical treatment of stomach disease is given in chapter eight. In the third part

the following order is adopted: acute and chronic gastritis, ulcer, malignant tumours, the infective granulomata, benign tumours, motor insufficiency, enteroptosis and gastroptosis, neurosis, achylia gastrica, and nervous dypepsia. The description of these diseases is full and precise. Much attention is given to syphilis of the stomach, which is said to occur as (1) Syphilitic ulcer, and (2) Syphilitic neoplasm. The author also thinks that a syphilitic gastritis exists. These syphilitic affections of the stomach are certainly not widely recognised, and perhaps some more evidence, especially in relation to the morbid anatomy, will be required before they find any general acceptance. We seem still hardly in a position to split up chronic gastritis satisfactorily.

Dr. HEMMETER certainly provides a book which is well worthy of a careful study, not only by students but also by those more specially interested in gastric diseases. It treats of many of the subjects in an original manner, and it is not only based on a considerable personal experience, but takes due notice of the labours of other well-known workers in this field. A very useful and full bibliography is to be found at the end of each subject.

LA CURA DIETETICA NELLA FEBBRE TIFOIDE. [Dietetic Treatment of Typhoid Fever.] By Professor G. B. QUEIROLO. Milano: Dottor Francesco Vallardi. 1898. (Demy 8vo, pp. 114. L.3.)

THIS work is founded on a series of observations undertaken by the author with the assistance of Drs. G. Cardi and G. Bertini, with a view to ascertaining the effect of rectal feeding in typhoid fever. The points to be elucidated are: (1) If it is possible to carry out rectal feeding during the whole course of the disease; (2) as to whether the amount of nourishment so conveyed is sufficient to maintain the strength of the patient; (3) whether certain morbid processes and toxic symptoms are favourably influenced by the suppression of gastric feeding; (4) as to whether certain complications—such as hæmorrhage and intestinal perforation—are less liable to occur in the absence of food by the mouth. As far as possible, the author endeavoured to carry out these observations by means of control cases of the same date, and treated by ordinary methods. In every instance a pair of cases was kept under observation for a few days in order that the effects of removal to hospital might be noted. So soon as rectal alimentation was begun, a dose of calomel (60 to 80 cg.) was administered, and all feeding by the mouth stopped. It was found that rectal alimentation practically presented no greater difficulty than in ordinary cases, and, in point of fact, the distaste evinced by typhoid patients for food was no longer a factor in the case. Nor did there seem to be, with very few exceptions, any interference on the part of the rectal mucous membrane, which in some cases was carried out for as many as thirty-five days. As to the results, the author found a considerable diminution in the diarrhœa, and in many cases it ceased altogether. In the thirty-six cases observed there was no instance of hæmorrhage. In two cases there was perforation with fatal result. In the larger number of cases the temperature began to decline as soon as rectal alimentation was begun, while in some others of a more severe nature, it was several days before any marked effect on the pyrexia could be ascertained; but in these, also, good results were observed. The author is of opinion that the amount of nutriment absorbed was quite sufficient.

BEITRÄGE ZUR PATHOLOGIE UND PATHOLOGISCHEN ANATOMIE DES CENTRALNERVENSYSTEMS, MIT BEMERKUNGEN ZUR NORMALEN ANATOMIE DESSELBEN. [Contributions to the Pathology and Pathological Anatomy of the Central Nervous System, with Remarks on its Normal Anatomy.] Von Dr. ARNOLD PICK. Berlin: S. Karger; Glasgow: F. Bauermeister. 1898. (Royal 8vo, pp. 324; 205 figures. M. 12.)

THERE are few, if any, more recondite subjects in medical science than the problems discussed in the earlier part of this suggestive book. It consists of a series of original studies on the mechanism of speech. The distinguished author has done well to concentrate his attention on the pathology of that form of speech defect which is only now beginning to receive the degree of attention which it deserves—the so-called sensory aphasia with which the name of Dr. Bastian is so closely connected in the minds of all neurologists. The series begins with an article on the impairment of the power of identification of objects which results from interference with the senses of sight, hearing, taste, smell, or touch, and is sometimes known as mind-blindness or aperception. Then follow studies on the understanding of speech, on word-blindness in left-handed persons, on the relation of word-blindness to agraphia, on the relation of word-deafness to ordinary deafness, and on the so-called conduction of aphasia. Clinical cases are recorded with the results of necropsies in elucidation of all these problems.

The second part of the book is exclusively either clinical or anatomical. It treats of the diagnosis of tumours of the corpus callosum, of lesions of the interolivary layer, of the so-called comma degeneration in the posterior columns of the cord; of the return of the knee-jerk coincidently with the occurrence of hemiplegia in old standing cases of locomotor ataxia, and of defects of development and malformations of the human spinal cord. The book in its entirety is well worthy of careful study, and the earlier part will, we believe, afford valuable help to all who are interested in the subtle points connected with speech defects, and especially in the centripetal factor of speech.

BLÉNNORRAGIE ET MARIAGE. [Gonorrhœa and Marriage]. Par Dr. LOUIS JULLIEN, Chirurgien de St. Lazare, etc. Paris: J. B. Baillière et Fils. (Crown 8vo, pp. 312. Fr. 3.50).

THE author of this work begins by pointing out that although gonorrhœa is not in itself, at least in its early stages, a grave disease, yet the circumstances in which its treatment is called for, and the consequences to which it may give rise, often put the medical man in circumstances of great difficulty, which call for the nicest discretion. Towards the patient the medical man should, as a rule, be perfectly frank. Difficulties arise when his opinion about such a case is asked by a third person. Again, if a surgeon knows that his patient, who is suffering from gonorrhœa, is about to marry a virgin, what is he to do? To prevent it, of course, if he can. But how? Obviously, in the first instance, by putting before the patient the consequences of the step which he purposes taking. But if the bridegroom is so callous as to be indifferent to these consequences, what then should the surgeon do? Dr. JULLIEN relates one case of the kind in which the surgeon, knowing the iniquity which was about to be perpetrated, went to the bride's father, and said, "Sir, your daughter must not marry ——." By doing this he placed himself above the ordinary rules which enjoin medical men to respect the confidence of their clients, and he made himself liable to legal proceedings (which, however, from fear of scandal, were not taken). For these reasons Dr. Jullien does not recommend that this example should be followed.

He quotes with approbation another case in which the surgeon, having failed by remonstrance to dissuade his client from his intended immediate marriage, finally gave him to understand that if he did not abandon his intention the surgeon would publicly insult him in such a manner as to make a duel inevitable. This may be admirable in France, but would not work in England.

Dr. Jullien's suggestion is, that as, when a marriage is projected between persons of property a lawyer watches over the interests of each side in the arrangement of settlements, etc., so each party should engage a medical man to give necessary advice as to the marriage from the point of view of health; not only as to gonorrhœa and syphilis, but as to family history of insanity, epilepsy, etc. The two doctors would consult together, and express an opinion without violating any confidence.

Dr. Jullien has full belief in the ease and certainty with which gonorrhœa can be distinguished from discharges which resemble it, by the detection of the gonococcus. He accepts also the views originally promulgated by Noeggerath as to the length of time during which the danger of gonorrhœal infection may continue. On these bases he discusses the duty of medical men in the case of acute gonorrhœa, chronic gonorrhœa, and gonorrhœa supposed to be cured, in the male and

in the female respectively. In each form of disease he discusses what advice is to be given (1) before a marriage project is formed, (2) before the marriage day is fixed, (3) after marriage. He does not enter into detail as to treatment; but merely as to how the doctor can best guard the patient and his partner in life from ill consequences arising from the activity of the gonococcus. This is very thoroughly discussed, as will be inferred from comparing the size of the book with the limitation of the questions which form its subject.

Ueber die sexuellen Ursachen der Neurasthenie und Angstneurose [On the Sexual Causes of Neurasthenia and Feelings of Distress]. Von Dr. Felix Gattel. Berlin: August Hirschwald. 1898. (Demy 8vo, pp. 72. M. 1.60.)

The author of this work is a pupil of Krafft-Ebing. He makes distinctions between neurasthenia, feelings of distress, and hysteria; or we should rather say he regards them as different things, though, perhaps from our own fault, we fail to grasp wherein the differences lie. Feelings of distress and hysterical seizures are, in our experience, frequent symptoms in neurasthenia. Dr. Gattel has collected 100 cases presenting the symptoms above mentioned, in which he has gone into the sexual history and found that sexual irregularities of some sort—masturbation, "coitus interruptus"—etc., had preceded the symptoms. He attributes the illness presenting these symptoms to the sexual irregularity.

That neurasthenia is often preceded and accompanied by sexual irregularities will not be novel intelligence to those who have studied the subject. But whether a particular class of symptoms is so especially produced by causes of this kind is another matter; and Dr. Gattel's investigation does not, so far as we can judge from his table of cases, seem to have been conducted with sufficient thoroughness in the direction of excluding other symptoms and other causes to demonstrate this. We do not think that English physicians will agree with him in regarding continence (in those who have been or are married) as an irregularity capable of producing disease. We think he does not attach importance enough to the fact that sexual irregularities are sometimes the result, and not the cause, of nervous disease; although he relates a very interesting case showing this: A boy, aged 9, was thrown out of a waggon, concussion of the brain resulting, and from that time onwards the boy masturbated, although he had never done so before.

Dr. Gattel is of opinion that it is the tendency of the time to cover up everything sexual, and to attribute impure motives to those who speak freely and openly concerning sexual life. He thinks it more impure to keep silence as to what is certainly known, and to follow the beaten track in spite of better knowledge. We should agree with this sentiment if we were satisfied as to the "better knowledge." We will hope that Dr. Gattel may prove to have established his thesis, and so added to our knowledge, but we are not quite sure of this.

Grundriss der vergleichenden Anatomie der Wirbelthiere für Studirende [Outlines of the Comparative Anatomy of Vertebrates for Students]. Bearbeitet von Dr. R. Wiedersheim. Vierte Auflage. Jena: Gustav Fischer. 1898. (Royal 8vo, pp. 584; 361 figures. M.14.)

A work which has passed through four editions in fourteen years, and has come to be recognised as the leading textbook of vertebrate morphology, not only in Germany but also in all English-speaking lands, requires no lengthy treatment at the hands of a reviewer. It must be on the shelves of every anatomist and surgeon who wishes to keep himself abreast of recent advances in the scientific study of the structure of the human body. The great development which has taken place in this department of zoology since the third edition appeared five years ago has necessitated an entire recasting of the whole work, and very great condensation in all parts of it. The more recondite portions, intended only for the advanced student, formerly given in small-type paragraphs, have now been relegated to footnotes; while the names of authorities for different statements have only in exceptional circumstances been inserted, though it is hoped that this omission will be made good by the copious bibliography classified according to subjects, which occupies no fewer than 112 pages (not 212, as would appear from a misprint in the Table of Contents).

Among minor alterations we may note that the anatomical nomenclature has been revised in accordance with modern usage; that headlines indicating the subject of each page have been inserted; and, lastly, that the reference letters in the explanations of the figures have been arranged alphabetically—a small matter, apparently, but practically of great convenience.

For the benefit of the English reader it must be added that this revision was undertaken in co-operation with Professor W. N. Parker, and its results are incorporated in the second edition of his translation—or, to speak more accurately, adaptation—of this work, which was published last year.

Lehrbuch der speciellen Chirurgie für Aerzte und Studirende. [Textbook of Special Surgery for Physicians and Students]. Von Dr. Franz Koenig, Ord. Professor der Chirurgie. Siebente Auflage. Band I. Berlin: August Hirschwald. 1898. (Royal 8vo, pp. 760; 141 woodcuts. M. 14.)

English surgeons who have been acquainted with Professor Koenig's *Textbook of Surgery* will concur with their German colleagues in offering a hearty welcome to a fresh edition—the seventh in the course of twenty-four years—of this full and authoritative work. This volume, which is the first part of the textbook devoted to special, or, according to the usual German arrangement, to regional surgery, deals with injuries and diseases of the head, face, and neck. In this, as in previous editions, the distinguished author has succeeded in his efforts to present a thorough and comprehensive review of modern surgery, including, in addition to the work of others, the results of a large personal experience, extended or gathered in the great Charité Hospital of Berlin. Among the many important additions to the new edition may be mentioned the use of the Roentgen rays in the discovery of bullets and other foreign bodies in the cranial cavity, the treatment of the results of deep-seated aural suppuration, endocranial resection of the Gasserian ganglion, and the operative treatment of goître.

NOTES ON BOOKS.

Reports and Transactions.

The Proceedings of the National Conference of Charities and Correction at the Twenty-fourth Annual Session held in Toronto, Ontario, July 7-14th, 1897. Edited by Isabel C Barrows. (Boston, Mass.: Geo. H. Ellis. London: P. S. King and Son. Roy. 8vo., pp. 534. 8s. 6d.)—These form a large volume, contains over fifty essays and papers, in addition to reports from the several States of the Union, upon subjects of sociological and geneological interest. Mr. C. Garrett's paper on the Necessity of Individual Treatment of Criminals, especially of First Offenders—"treatment in which physical nutrition shall have a part, in which medical considerations shall play an important part"—is very suggestive. The writer contends that "inherent depravity is due to physical abnormality, or in other words, to disease." Such words go far to strengthen the wisdom of the appointment of a Medical Prison Commissioner, as has recently been urged upon our Government. The Colony Care of the Epileptic is dealt with in an instructive paper by Dr. Rutter, who gives a description of the Ohio Hospital for Epileptics at Gallipolis, Ohio, which it seems was established as a State institution in 1890, and now affords accommodation for 900 patients in some dozen detached buildings scattered over an estate of 250 acres. We notice that one of the last added buildings is a "cottage for the insane" with a capacity of 200 beds, so that the lines on which this institution is run evidently differ much from those of our own national institution at Chalfont, from which persons of unsound mind are excluded. Dr. Rutter is of opinion that the effect of witnessing seizures in others is not prejudicial to those prone to epilepsy congregated in the colony. The Industrial Education of

Epileptics is treated by Dr. Spratling, medical superintendent of the Craig Colony, and his experience is that "energy that would be illegitimately expended in a convulsion may be made to expend itself gradually through the medium of legitimate muscular exercise." He cites cases strikingly illustrating this assertion, from those employed in farm and garden work and in the indoor industries of carpentry, ironwork, shoe and mattress making, etc. The After-care of the Insane forms the subject of a paper by Dr. Dewey, who refers approvingly to the work of the English After-care Association. Reformatory systems, charity organisation in its various aspects, and outdoor relief are amongst other subjects dealt with; and there is a very comprehensive paper on the Care of the Feeble-Minded, by Dr. F. M. Powell, who gives statistics of all the institutions for this class in the United States and of many in the Old World. He shows that there are nineteen State institutions in America for this class, with 8,492 inmates; and argues that in the vast majority permanent detention will be necessary in order to prevent the evil being perpetuated in succeeding generations, though education is still necessary to "prepare the mentally weak for the exercise of their limited activities in their circumscribed world." Papers on the State Regulation of Marriage, with a view to the diminution of heritable infirmities, and on Child Study as applied to Defective Children, are also noteworthy.

Medical and Surgical Reports of the Boston City Hospital. Ninth Series. Edited by C. F. Folson, M.D., W. T. Councilman, M.D., and H. L. Burrell, M.D. (Boston, U.S.A.: Published by the Trustees. 1898. Demy 8vo, pp. 286.).—This volume consists of twenty-one articles, many of which attain considerable importance. Of these, Dr. J. H. McCollom's analysis of 800 consecutive cases of diphtheria merits particular notice; many valuable clinical points are clearly brought out. The author has a strong predilection for intubation, in children at any rate, but his statistics do not bear comparison with the recent results of tracheotomy in England. Dr. F. H. Williams publishes in statistical form the details of 71 cases of epidemic cerebro-spinal meningitis; and Dr. Burrell a collection of titbits from the surgical wards during the last three years. Dr. Bottomley gives some interesting statistics as to major amputations, illustrating their decline both in frequency and in mortality since the introduction of antiseptics. Of the special cases recorded, some are very extraordinary, notably Dr. Abner Post's, in which a young man died of congenital syphilis at the age of 22. Dr. Sears's case of gonorrhœal endocarditis, and Dr. Ogden's of hæmatoporphyrinuria also calls for notice; while Dr. Strong publishes two cases of amœbic enteritis, in one of which the amœbæ were confined to the small intestine in the region of some tuberculous ulcers, while at the same time diarrhœa was absent.

Handbook of Obstetric Nursing. By Francis W. L. Haultain' M.D., F.R.C.P.Edin., and James Haig Ferguson, M.D.' F.R.C.P.Edin., M.R.C.S.Eng., Lecturers on Midwifery and Diseases of Women, School of Medicine, Edinburgh. Third edition. (Edinburgh and London: Young J. Pentland. 1898. Crown 8vo, pp. 263. 5s.)—It is not necessary to say much about a book that has been before the public for nine years, and has reached its third edition. It will be enough to mention that this edition has been revised and enlarged; and that if the authors have erred, it has rather been by inserting matter about the diagnosis and pathology of disease which the ordinary nurse does not require than by omitting anything that is important.

Untersuchungen über den Bau der Nervenzellen. [Researches on the Structure of the Nerve Cell.] Von Dr. A. Bethe. (Würzburg: Königl. Hof.-und Universitäts Verlag. 1898. Demy 8vo, pp. 108, 2 lithographed plates and 2 figures in the text.)—The author has made an elaborate comparative study of the minute structure of nerve cells, principally based on the examination of the cells of the spinal ganglia in the different kinds of amphibia, but including, also, those of fishes, birds, reptiles, and mammals, and comprising the cells of the brain and of the anterior horns of the spinal cord in the various classes of vertebrate animals. He has very wisely examined the nerve cells in the fresh condition as well as by staining them with the usual reagents. There is, however, nothing new in his paper that is of particular interest. The principal point which he discusses is whether the "microcentrum" which he describes—a central body situated close to the nucleus from which the radiating fibrils of the cell body diverge—is identical with the cell bodies or centrosomes of other authors. The work is, in short, a careful summary of the entire subject of the histology of healthy nerve cells, including the author's personal observations, together with some theoretical considerations as to the probable physiological significance of their different structural elements.

De la Splénectomie. [Splenectomy.] By Dr. J. Vanverts. (Paris: G. Steinheil. 1897. Royal 8vo, pp. 440).—This book, though the result of long and conscientious labour, cannot be regarded as more than a compilation. Most readers on turning over the leaves of this somewhat bulky volume will, we imagine, come to the conclusion that our present knowledge of splenectomy, and the indications and results of this operation, might well have been compressed into much less space. Nearly two-thirds of the book consists of reports and tables of cases, and a bibliographical index. All this, however, has been well done, and we can recommend Dr. Vanverts's book as very useful for purposes of reference to those interested in the subject with which it deals.

A Complete System of Nursing. Edited by Honnor Morten, (London: Sampson Low, Marston, and Co. 1898. Crown 8vo, pp. 412. 7s. 6d.)—In a brief notice it is impossible to deal with a book of this nature; suffice it to say that, like all works of this kind, it is very unequal. The entire success of such a compilation depends on the skill of the editor, who at least should come to the task with a thorough knowledge of the subject in hand. The internal evidence afforded by this book does not show that it is the compilation of an expert. Some of the articles are written far above the average nurse; indeed, they read as though prepared for the qualified medical man; and in regard to other subjects we are not satisfied that the authors selected are those most competent. We are afraid that this volume will not answer the purpose for which it is intended.

A Manual for Students of Massage. By M. A. Ellison, L.O.S. (London: Baillière, Tindall and Cox. 1898. Demy 8vo, pp. 136. 3s. 6d.)—This book, which consists of 124 pages of matter printed in large type, may be roughly divided into three parts. The first part, from page 5 to page 37 inclusive, treats of the human skeleton, and gives just that amount of elementary information which a person without any technical knowledge of the subject could readily extract from such a work as Gray's *Anatomy*. The second part, from pages 38 to 68, deals with rudimentary physiology, the simple facts of which are set out with a redundance of capital letters and italics. Pages 93 to 123 are devoted to illustrations and to a miscellaneous collection of lists and tables of no particular value. The subject of massage, including the Swedish system, is dealt with in 3 pages at the beginning of the book, and 23 pages later on. The information is of the conventional character, and the only original observation we have encountered is the charming advice: "Don't let a patient become aware by your breath that you are suffering from stomach derangement." Perhaps the most remarkable fact about this book is that a medical man could have been found to write a preface for it. We have grave doubts as to the desirability of nurses being encouraged to publish works on subjects of which they are generally ignorant, and we must confess that we do not think that this compilation is likely to answer any useful purpose beyond that of affording amusement to the medical readers into whose hands it may happen to fall.

Buxton: its Baths and Climate. By S. Hyde, M.D. Fourth edition. (Manchester: J. Heywood; London: Simpkin, Marshall, and Co. 1898. Pp. 103).—This admirable little book is full of information for all interested in balneology. The subject of the climate of Buxton is likewise thoroughly discussed, and Dr. Hyde speaks highly of the tonic effects of the winter climate of Buxton. "It may seem incredible," he says (p. 63), "but it is a matter of frequent observation, that patients obtain more benefit from

visiting Buxton in winter, spring, and autumn than in the hot months of summer, and this applies to the most varied sorts of complaints. During a long experience I have noticed that the cases visiting Buxton do worse in hot seasons than in cool, even though the former be dry and the latter very wet." Even in his first edition the author advocated the establishment of a sanatorium for climatic treatment at Buxton, and we hope to see his suggestion in regard to a sanatorium for poor consumptives carried out.

The Clinical Diagnosis of Lameness in the Horse. By W. E. A. Wyman, V.S., Professor of Veterinary Sciences at Clemson A. and M. College. (New York: William R. Jenkins. 1898. Roy. 8vo. Pp. 170. 32 Illustrations.)—This "little effort," the author states, "is a summary embodying the teachings of Professor Möller, of Berlin, arranged in a practical manner." His first chapter deals with the detection of the lame leg, the second in a general way with detection of the seat of lameness, while the last discusses in detail the diagnosis of lameness arising from various affections of the several regions of the limbs, etc. The arrangement is rational and systematic, and the writer's ideas are clearly expressed in text and illustrations. It is somewhat remarkable that so little should have been specially written on a subject which gives rise to so much controversy, and which is so important to those having the care of horses. In works on veterinary surgery lameness as an indication of abnormality of parts receives much consideration, but Dr. Wyman's book is the first we have met with dealing exclusively with its detection. Probably the paucity of literature on the point is due to recognition of the fact that proficiency in the detection of lameness and its seat cannot be gained from reading alone, but demands long and patient exercise of the powers of observation in presence of the patient. Though there may be little which is original in this work, much may be gained by the reader whose observation is guided by the methods herein set forth.

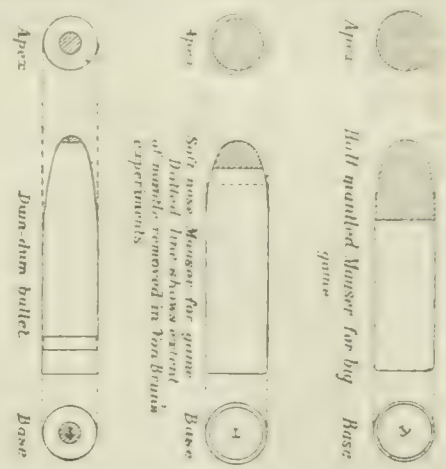
THE WOUNDS PRODUCED BY MODERN SMALL-BORE BULLETS.

THE DUM-DUM BULLET AND THE SOFT-NOSED MAUSER.

"Inhuman" or "Inhumane."

It will be remembered that considerable feeling was aroused in the spring of this year by an address delivered by Professor von Bruns to the Congress of German Surgeons which met at Berlin in April. It was very generally assumed, not by any means only in this country, that his address contained what was practically a charge of inhumanity against Great Britain. The questions discussed by Professor von Bruns have thus been somewhat prejudiced by what was, in fact, an unhappy rendering of the title of the address. To this address, which was a preliminary communication, Professor von Bruns had given the title On Inhumane Military Projectiles, and this was in some quarters translated as dealing with *inhuman* projectiles. As the Dum-dum bullets employed in the recent campaigns on the frontiers of Afghanistan are the only lead-pointed small-arm bullets that have been extensively tested in actual warfare, the error was unquestionably one to be regretted. It is to be hoped, however, that the question raised by von Bruns, which is of wide importance to all nations, and especially to our own, will be considered and discussed in a temperate and unprejudiced fashion, such as it eminently deserves.

Professor von Bruns has now published a volume,[1] for a copy of which we are indebted to him, which deals, as its title shows, with the effects produced by the modern lead-cored, nickel or steel-covered bullets, when they have been more or less deprived at their point of the outer hard covering or mantle in which they were until recently entirely encased for use in all the modern European small-bore military rifles, such as the English Lee-Metford, the German Mauser, the French Lebel, etc. This hard mantle was adopted to enable them to take the grooves when propelled, by the powerful modern explosives, through the rapidly twisted rifling of the barrel, and to withstand the enormous friction and pressure.



The Dum-dum bullet and Mauser bullets with mantles partly removed. The shaded portions show where the mantle is absent and the leaden core exposed.

Rightly to comprehend the question which von Bruns raises, some preliminary remarks are indispensable. It has long been well known to military surgeons and sportsmen who have studied the action of bullets that there are two principal ways in which their energy can be expended when they strike a man or an animal. If the projectile be a hard one, as when its leaden core is enclosed in a hard mantle, or when it is provided with a steel tip, or when it is of lead hardened by alloying it with tin, etc., its energy is mostly expended in penetrating deeply, while the bullet alters little in shape. Such projectiles are often used against hard-skinned animals, such as elephant, rhinoceros, and hippopotamus, or against those which are dangerous from their bold and reckless charges, such as buffalo. Such bullets have the property of penetrating deeply into vital parts through thick and hard skin and bones. But if, on the other hand, they strike a soft non-vital part they may pass completely through, and a large proportion of their energy thus be lost, so that they have little perceptible effect on the animal, and this is particularly found to be the case if their diameter be not great.

If, on the contrary, the bullet be of soft lead, the resistance it encounters, and the heat generated on impact, cause the bullet to alter its shape, and become broader, or even mushroom-shaped at the cost of its length; the deeper it goes the more deformed it becomes; and it inflicts thus a larger wound, increasing in size with its depth, This alteration of shape has been termed the "setting up" of the bullet. With such projectiles the energy is expended in making a large and disabling wound, and the bullets possess more "stopping power" than the hard ones.

Explosive and Expanding Bullets.

Formerly this tendency of the bullet to deform used to be increased by explosives being placed in a cavity in the front of the bullet, so as to detonate upon impact. But "explosive bullets" have long been abandoned by sportsmen, as the same effect is found to be better produced by merely leaving a small empty air chamber in the apex, which rends and widens the projectile on its striking, causing it to be classed as an "expanding bullet." Expanding bullets do not traverse the animal completely, but remain within its body, expending all their energy in disabling it, even when none of the hard parts are struck. They are used against deer, antelope, lion, tiger, and other soft-skinned animals, which, when so struck, are unlikely to move far or fast, or to charge at, or escape from, the sportsman.

All these soft, explosive, or expanding bullets have the dis-

[1] *Ueber die Wirkung der Bleispitzengeschosse ("Dum-Dum" Geschosse).* Von Professor Dr. v. Bruns, Generalarzt à la suite des K. Württ. Sanitätskorps. [On the Effects of Lead-pointed Projectiles (Dum-dum Bullets). By Professor von Bruns, Surgeon-General in the Würtemberg Army Medical Service.] Tübingen, 1898, Laupp'sche Buchhandlung. The volume contains 24 pages, 13 photolithographs, 5 skiagraphs, and 1 woodcut.

advantage that they do not penetrate deeply, and are easily stopped by a large and firm bone or by other resistance, so that they are little used against hard-skinned animals. Man is a soft-skinned and easily disabled animal, and civilised nations have agreed, by the St. Petersburg Convention of 1868, to renounce in war the use of explosive bullets for small arms. But regarding expanding bullets no such agreement exists, or indeed could exist, as all military leaden small-arm projectiles used in 1868, were more or less expanding.

RECENT CHANGES IN SMALL-ARM BULLETS.

Since the date of the Convention of 1868, the small arms of the European Powers have undergone considerable changes, which are mainly the following:

First, by lessening the diameter of the bullet and propelling it by a greater explosive force, the velocity of the bullet has been greatly increased, and since the velocity has much to do with the energy a bullet expends on striking, these bullets at the ordinary distances of warfare possess a greatly increased energy on impact. We have seen that energy can be expended either in penetration or in making a large "stopping" wound, according as the projectile is hard or soft, and hence since,

Secondly, bullets are now encased in a hard mantle of nickel or nickel steel to prevent their losing their shape in passing through the rapid twists of the rifling of the barrel at their present high velocity—our projectiles have gained enormously in penetration (they will traverse three men or more in a row), but exhibit a corresponding loss of their power of producing disabling wounds if they fail to reach a vital part or strike an important bone.

Thirdly, bullets now kill or wound at much greater distances than formerly, that is, their range is increased. They will, for instance, kill even at two miles' distance. But as at these long ranges they have lost most of their initial velocity, they there produce no phenomena on impact that we were not already familiar with in the older weapons, and their increased range is not of special interest to us in connection with the present subject.

Scarcely was the ink of the St. Petersburg Convention dry when questions arose presaging the present difficulty. In the Franco-German war of 1870-71, the newly-introduced Chassepot rifle employed by the French propelled its projectiles with such velocity, that at near ranges, when they struck upon a compact bone, the soft lead composing them frequently flew into fragments, and produced effects resembling an explosion. Kocher, of Berne,[2] experimentally showed that the apparent explosions were due to two causes: first, the bullets, heated and softened by their striking a compact bone with enormous energy, flew into fragments of all sizes, even to minute dust, and tore a large hole; and, secondly, if they struck a cavity filled with fluid or semi-fluid matter, such as bladder, skull, or bone enclosing a medullary cavity, the contents of the cavity were driven by hydraulic force in all directions equally, and the bony or other enclosure was rent into fragments by its own contents after the manner of a shell. Kocher's experiments showed that the apparent explosions were not due to any explosive materials, and the impeachment of the French military bullets went no further.

THE MANTLED LEADEN BULLET.

At the present moment nearly all European troops are armed with small-bore weapons firing the mantled leaden bullet of very high velocity. The cartridge, shell, explosive, and bullet are on the whole very similar among all these nations, although differences exist which should make us a little cautious in concluding that their effects will be absolutely identical.

On these weapons first appearing, they were soon tested by sportsmen against large game, and it was at once seen that the want of setting up or expansion of their bullets on impact was in many respects against them, as the animals were only slightly disabled by wounds involving only the soft parts, or unless some important vital organ or important bone were seriously injured. It was attempted to remedy this defect, first by slitting the mantle so that it might permit the leaden core to expand on impact and next by leaving the apex of the leaden core uncovered, which answered the same purpose better, as the incomplete mantle rent in all directions on striking. Such bullets, called "soft-nosed," are now in use for killing elephants and hard-skinned as well as soft-skinned big game, and are said to excel all former projectiles, both in their penetration and in their disabling power.

[2] Schussverletzungen, Leipzig, 1880.

Experience was gathered more slowly by military surgeons regarding the effects of the new projectiles upon man. From Chili, Greece, the North-Western frontier of India, and, lastly, from the Soudan, information was obtained showing that in mere flesh wounds the injuries produced by the modern bullets were remarkably slight—so slight that a brave and determined enemy was not stopped or disabled in his onset, even if his wound were necessarily mortal in time. So much was this found to be the case when the modern English magazine rifle was employed against brave and fanatical tribes, that the leaden core was in the late Chitral and North-Western frontier of Indian wars, intentionally exposed, and the character of the bullet altered, by the soldiers rubbing a portion of the mantle off the apex; and, finally, this alteration was adopted by the authorities and carried out in the Dum-dum arsenal near Calcutta. Hence the projectiles so supplied, with their core partly exposed, received the now familiar name of Dum-dum bullets. And the bullets so prepared were found to expand on impact, and thoroughly to disable a wounded enemy.

VARIATIONS IN ITS EFFECTS.

It has then to be remembered, in considering the various experiments and conclusions detailed in von Bruns's paper, that the behaviour of small-arm bullets upon impact varies greatly according to circumstances, and tends especially to exhibit the following peculiarities:

1. *Penetrating Bullets.*—Hard and mantled bullets tend to penetrate to great depths without becoming deformed.

2. *Setting-up Bullets.*—Soft leaden bullets of moderate velocity and energy tend to become shorter and broader and even mushroom-shaped at the tip upon impact, which has been termed the "setting-up" of the bullet.

3. *Expanding Bullets.*—Soft leaden bullets with an air chamber at the apex tend to expand to a greater degree than No. 2 when they strike.

4. *Disintegrating Bullets.*—Soft leaden bullets or mantled bullets with leaden tips, when their velocity and energy are great, tend to fly in pieces or disintegrate on impact. This is to be distinguished from the following.

5. *Explosive Bullets.*—Bullets provided with substances that detonate on impact, enclosed in their apex or elsewhere, are the explosive bullets properly so-called.

We can now appreciate the experiments of von Bruns with lead-pointed bullets upon man, published in the work which is the subject of the present review.

VON BRUNS'S EXPERIMENTS.

Von Bruns's experiments were made with the German Mauser bullets, some of which were altered by removing part of the mantle at the apex so as to imitate as nearly as possible what the Dum-dum bullets were supposed by him to be. But it is important to observe that von Bruns has evidently never seen or experimented with the genuine Dum-dum bullet. The results of his experiments were very striking. Using cadaver material and demonstrating the effects by the actual preparations, photographs, and skiagraphs, he showed that at ranges up to 200 metres the leaden-pointed mantled projectiles which he used produced "wounds more severe than any hitherto known gunshot wounds." They had a huge aperture of entrance and a still larger exit wound; the flesh and skin at both were torn into tongues and strips, often like the slashes of a mediæval costume, and the soft parts generally were ragged and pulverised, as if they had been blown from the mouth of a gun. Skiagraphs showed that the bones also were reduced to hundreds of minute fragments, and, although the bullet itself always passed through and escaped, the wound was bestrewn with minute fragments of its metals, from the size of a split pea to that of a pin-point. In every case, even when the soft parts alone were involved, amputation would have been the only possible resource. These results von Bruns terms "explosive action," and he points out that it is present in wounds of the soft as well as of the hard parts. He adds that in acquiring this destroying power the bullets lose in

penetration, and hence at long ranges are inferior in this quality to the completely mantled bullet. At 400 metres the "explosive" effects were produced, though in a less degree. Beyond 500 metres these effects ceased to be commonly observed.

Proposed Prohibition of Leaden-tipped Mantled Bullets.

Von Bruns, as the result of these experiments and observations, proposes that all such lead-pointed bullets shall be pronounced inadmissible in warfare between civilised nations.

There can be no doubt that von Bruns, in the paper before us, has amply proved that the bullets with which he experimented produce dreadful wounds at short ranges, and surgeons are indebted to him for having drawn such marked attention to them. The writer has repeated his experiments with the same Mauser bullets as von Bruns employed, with results which confirm those which he obtained.

There is also no doubt that von Bruns, in treating the subject, has stated his facts and conclusions in a proper and temperate manner, and has used no terms that should offend English susceptibilities in regard to the Dum-dum bullets. Neither in his *vivâ voce* address to the Congress of German surgeons, nor in the report of it since printed and marked "original" in the *Centralblatt für Chirurgie*, July 2nd, 1898, *Beilage*, page 38, nor yet in the pamphlet now before us, has has there been any evidence of harsh or hasty speaking, or of an inclination to make, to the disadvantage of anyone, more of the facts than they deserve. And the facts, as von Bruns in his writings, photographs, and skiagraphs so graphically depicts them, are such that we cannot perceive anything very unreasonable in his having come to the conclusion that "the German military authorities should take steps to obtain, by international agreement, such a modification of the St. Petersburgh Convention that only such small-bore leaden bullets be employed in war as are wholly steel mantled, or at least mantled at their tip."

The Defects of von Bruns's Experiments.

We say it is perfectly reasonable in von Bruns to sustain this thesis. But that it would be wise unreservedly to adopt his conclusions is not so evident. There are several matters that first require consideration, and these may now be stated.

1. In the first place, von Bruns's experiments were not made with Dum-dum bullets at all, but with soft-nosed Mauser bullets, such as are manufactured for German sportsmen for use with the Mauser rifle in shooting big game. As we write there lie before us Dum-dum bullets obtained from the War Office, soft-nosed Mauser bullets such as that shown by von Bruns at Berlin in April, and the *facsimile* of the Mauser bullet drawn in the pamphlet under review. All of these Mauser bullets were procured by the writer last April in Berlin, when von Bruns's communication was first read, and with one or other of them von Bruns's experiments were made. When they are laid alongside the Dum-dum bullet (see diagram) any one accustomed to deal with such questions would certainly decline to admit that experiments with the former necessarily justified conclusions regarding the latter. The Mauser bullet is a more perfect cylinder (that is, tapers less in the front half), its diameter is greater, so are its weight and initial velocity (though slightly); and, lastly, von Bruns's bullets show 5 mm. of lead exposed, while the Dum-dum bullet shows but one, if so much. Looked at from the front, von Bruns's bullets appear all lead, while in the Dum-dum bullet about one-third of the diameter only is uncovered by the mantle. Hence it is clear that von Bruns's experiments were made with projectiles too unlike the Dum-dum to justify us in at once accepting his conclusions as being true of it. They may be probable, but they are not proved.

2. In the second place, retention of the complete mantle would not, in many cases, do away with the disintegration of the bullets on impact at short ranges and their consequent pseudo-explosive effects. This was shown in 1870-71 by the Chassepot bullets, and was due to their great velocity, or rather energy, on impact. So long as it is permissible in war to use weapons which, like all our most modern small arms, discharge projectiles of such high velocity and great energy on impact, anything that will rend the mantle, such as striking a buckle, button, or the like, or a dense compact bone, as well as their impinging upon a cavity filled with fluid or semi-fluid material, will produce a disintegration, or, as von Bruns calls it, an explosion. Such things occurred even with the old weapons. The writer saw in the Sixties a coastguardsman who had shot himself with an Enfield carbine by placing the muzzle against the left angle of his lower jaw. On striking this hard bone with full muzzle velocity the bullet burst into hundreds of fragments which, mixed with pieces of bone, blew brain and skull to the ceiling above in a mingled spray of flesh, bone, and lead. Only by using weapons of less muzzle velocity than our modern small arms can we avoid the frequent occurrence of disintegration of bullets at short ranges.

3. In the third place, the term "explosive" applied by von Bruns to these disintegrating bullets is misleading and open to objection. We have demonstrated that some term such as "disintegration," which we have here applied to the phenomena that have been studied, first by Kocher and now by von Bruns, is required to distinguish them from those of true explosion; and we must therefore dissent from von Bruns's statement that "by the enormous increase of their initial velocity, leaden projectiles themselves become explosive bullets" (Pamphlet, p. 22).

4. Fourthly, von Bruns in none of his papers has any control experiments, photographs, or skiagraphs to enable a comparison to be made between the effects of the lead-pointed projectiles and the fully-mantled bullets. He writes as if the latter were fully known, and to this exception may be taken. In any case, in a scientific treatise aiming at arriving at such far-reaching conclusions, it would have been fitting to furnish such a means of comparison.

5. And, lastly, as we have shown that von Bruns in his experiments neither possessed nor employed the Dum-dum bullets, we consider him inaccurate, beyond what is permissible in such a question, in assuming that they would have given results identical with those of his big-game Mauser bullets. It was at least premature to class them together in the title of his paper as "leaden-pointed projectiles (Dum-dum bullets)," and we believe his doing so is not likely to promote his object of having all such projectiles excluded by international agreement from use in civilised warfare.

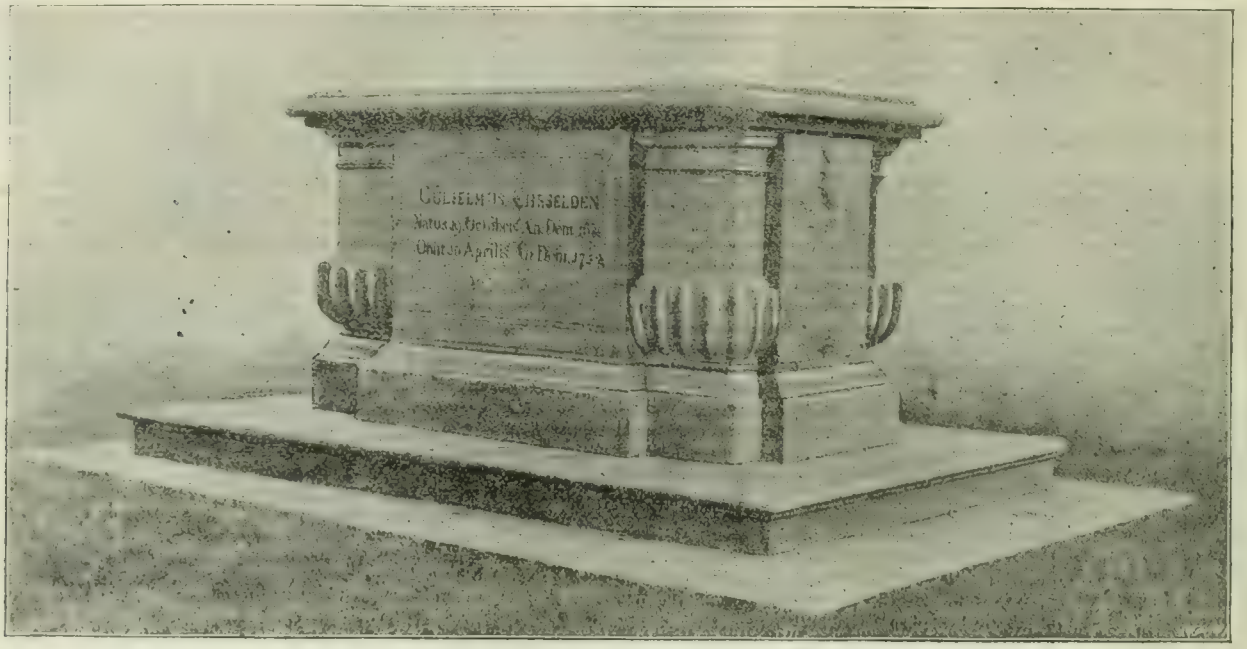
Alex. Ogston.

ARCHÆOLOGICA MEDICA.

XLV.—WILLIAM CHESELDEN, ANATOMIST AND SURGEON.

William Cheselden must be looked upon as the father of modern English surgery, for he belongs as much to the old school as to the new. Born on October 19th, 1688, the son of George Cheselden, then living at the extreme end of Somerby, a village in the County of Leicester close to the great British encampment of Burrow Hill, Cheselden seems to have been descended from a wealthy family of graziers who contributed several members to the medical profession. William Cheselden received a good classical education and was apprenticed to Mr. Wilkes, a surgeon of repute in Leicester. In 1703 he was studying anatomy as the house-pupil of William Cowper,[1] but he appears to have left him when he was only 15 years old, for on December 7th, 1703, he was bound apprentice for seven years to James Ferne, the Surgeon to St. Thomas's Hospital. On December 5th, 1710, he was admitted to the freedom and livery of the Barber-Surgeons Company, and on January 29th following he had a full certificate to practise as a surgeon. He seems to have begun at once to lecture on anatomy, for in 1711 he issued a printed syllabus, which shows that his course consisted of 35 lectures and that it was repeated four times a year. The popularity of his lectures and the way in which they interfered with the routine courses delivered at the Barber-Surgeons Hall are attested by the minute still extant in the books of the Barber-Surgeons' Company, which runs: "At a Court of Assistants of the Company of Barbers and Surgeons held on March 25th, 1714; our Master acquainting the Court that Mr. William Cheselden, a member of this Company, did frequently procure the dead bodies of malefactors from the place of execution and dissect the same at his own house, as well during the Company's public lectures as at other times without the leave of the Governors and contrary to the Com-

[1] See Arch. Med. XLI, British Medical Journal, i, 1898, p. 160.



Cheselden's tomb in the burial ground of Chelsea Hospital.

pany's by-law in that behalf; by which means it became more difficult for the beadles to bring away the Company's bodies, and likewise drew away the members of this Company and others from the public dissections and lectures at the Hall. The said Mr. Cheselden was thereupon called in, but having submitted himself to the pleasure of the Court with a promise never to dissect at the same time as the Company had their lecture at the Hall, nor without leave of the Governors for the time being, the said Mr. Cheselden was excused for what had passed, with a reproof for the same pronounced by the Master at the desire of the Court." The lectures were accordingly continued first at Cheselden's own house, and afterwards at St. Thomas's Hospital for twenty years.

St. Thomas's Hospital appears at this time to have been a hotbed of corruption and dissension, and no active worker was willingly admitted. Cheselden was a candidate for the office of surgeon on two occasions in 1714-15 before he was successful, but on July 9th, 1719, he was elected without opposition in place of William Dickenson, deceased. Installed as surgeon, he seems to have turned his attention more particularly to lithotomy, directed no doubt by the experience of his master James Ferne, whose energies in turn had been stimulated by the success of Raw and the self-advertising of Frère Jacques.[2] He published in 1723 a *Treatise on the High Operation for the Stone*, which was severely criticised by John Douglas, the surgeon, in *Lithotomus Castratus*, but it was not until August, 1726, that Cheselden performed his first operation of lateral lithotomy, though it had been done for the first time in England a few days previously—August 7th, 1726—by John Bamber (1667-1753) at St. Bartholomew's Hospital. The operation was performed by filling the bladder with water, leaving the catheter in the bladder, and then cutting on the outside of the catheter into the organs. Cheselden operated upon 10 patients in this manner and 4 died. This mortality led him to reconsider the details of the operation, and caused him to devise a new method, which was first performed on 3 patients on March 27th, 1727. The success opened a new era in surgery. Twenty-seven patients operated upon in succession all recovered, and the operation of lateral lithotomy became established until it was displaced in our own time by lithotrity. Cheselden thus describes it: "This operation I do in the following manner: I tie the patient as for the greater operation, but lay him on a blanket several doubles upon an horizontal table, 3 feet high, or a little more, with his head only raised. I first make as long an incision as I well can, beginning near the place where the old operation ends, and cutting down between the musculus accelerator urinæ and the erector penis, and by the side of the intestinum rectum. I then feel for the staff, and cut upon it the length of the prostate gland straight on the bladder, holding down the gut all the while with one or two fingers of my left hand. The rest of this operation is done in the same way as the old one; but in this way there being often small vessels, I always tie them with a ligature passed under them by the help of a crooked needle." Cheselden operated with extraordinary skill and brilliancy, and it is told of him that once, having tied up a child for lithotomy, he offered it sugar plums if it did not stir; and the operation over, the patient immediately demanded the fulfilment of the promise. It was not, however, until he had been for some time surgeon to the Chelsea Hospital that he learnt the value of plugging, for he then observed for the first time that "a piece of wetted sponge pushed into a bleeding wound powerfully arrested the loss of blood, and sometimes did away with the necessity for ligature."

Cheselden also operated upon the eye, and in 1828 he published "an account of some observations made by a young gentleman who was born blind, or had lost his sight so early that he had no remembrance of ever having seen, and was couched between 13 and 14 years of age;" and he also described a method of treating certain forms of blindness by the formation of an artificial pupil, for use when the pupil is either totally closed, when it is extremely contracted, or when the inner edges of the iris have grown to a cataract, or part of a cataract, after couching.

Cheselden had many distinguished patients. He was made surgeon to Queen Caroline in 1728, but he had lost favour at Court by 1731, and he was not consulted when she died of an umbilical hernia in 1733. He was living in Queen's Square, Westminster, in 1735-6, and here Alexander Pope became his patient and lay ill in his house.

When St. George's Hospital was founded in 1733-4 Cheselden was elected one of the surgeons, for he had been a surgeon to the Infirmary for the Sick and Needy, which proved to be the mother of the present Westminster and St. George's Hospitals, and on his resignation in 1737 he was made consulting surgeon to the institution. He was appointed surgeon to Chelsea Hospital in February 1737, and on March 29th, 1738, he retired from St. Thomas's Hospital. He filled the usual offices at the

[2] See Arch. Med., XXXVII, BRITISH MEDICAL JOURNAL, II, 1897, page [illegible].

Barber-Surgeons Company, and in 1744 he held the office of Junior Warden, and it is said that, in conjunction with John Ranby, he was instrumental in procuring the separation of the Barbers from the Surgeons, and the establishment of a distinct Surgeons Company, of which he became Master in 1746.

Cheselden was no mean artist. He published in 1733 a magnificent Osteographia or Anatomy of the Bones,[3] and he is said to have drawn the plans for the Old Putney Bridge and for the first Surgeons' Hall in the Old Bailey. "He was a keen patron of athletic sports," says Dr. Payne, "especially boxing." His disposition was gay and genial. He was fond of society, and evidently popular. To his patients he was kind and tender-hearted, and, in spite of his great experience, it is stated that before he operated he was sick from anxiety, and as the moment approached he was pale from fear. He was chosen Sheriff of London June 24th, 1743, but was allowed to "swear off" on the ground that his estate in lands and goods was not of the value of £1,500.

The Royal College of Surgeons of England contains a splendid portrait of Cheselden by John Richardson. It is a half-length, and the figure is clothed in red, as was the usual custom of this artist. The picture was engraved by Faber.

Cheselden married Miss Deborah Knight, the daughter of a citizen of London, by whom he had an only child, Williamina Dorothy, who married Dr. Charles Cotes, of Woodcote, Shropshire, sometime M.P. for Tamworth. Mrs. Cotes outlived both her husband and father, and died without issue at Greenhithe in 1763. Mrs. Cheselden outlived them all, for she died in 1764.

In the latter part of the year 1751 Cheselden had a paralytic seizure, but regained his former health, until April 10th, 1752, when he partook too heartily of ale and hot buns, being then at Bath. A physician who was summoned ordered an emetic, but his advice was not followed, and he died the same day. He was buried, by his own directions, on the north side of the burial ground of Chelsea Hospital, and his tomb (see p. 816) can still be seen from Queen's Road.

Thanks to Surgeon-Colonel Ligertwood, M.D., Physician and Surgeon to the Royal Hospital, the inscriptions have recently been relettered, and, through the kind interest of Major-General Robinson, C.B., late Lieutenant-Governor and Secretary, this and other tombstones have been renovated and the burial ground put in order by the Lords and others, Commissioners of the Royal Hospital, Chelsea.

On the opposite sides of the tombstone are seen the following inscriptions:

Deborah Cheselden
Vidua
Gulielmi Cheselden Armigeri
Obiit Junii 2. A.D. 1764
ætatis suæ 60.

Wilma Deb
Cotes
filia
Gulielmi et Deb
Cheselden
Obiit Dec. 2. A.D.
ætatis suæ 47.

The complete obliteration of inscriptions which has taken place in many of the tombstones in this burial ground—and which is apparently evident in the absence of the year of death in the inscription to "Wilma Deb"—testifies to the kindness of Surgeon-Colonel Ligertwood in saving the inscription to William Cheselden from obliteration.

The tomb of John Ranby requires an act of similar piety. It is situated in the south-west portion of the burying ground, immediately to the south-east of the heraldic monument of Sir Colin Halkett. The square sandstone tomb has a broken slab containing a few lines of an almost illegible inscription.

[3] British Medical Journal, ii, 1895, p. 354.

Poor-law Medical Appointments in Spain.—If it be any consolation in affliction to know that there are others worse off than oneself, it may be comforting to inadequately paid Poor-law medical officers in this country to learn that the following appointments are offered in Spain:—At Arcuna, in Guipuzcoa, the post of parish surgeon with the magnificent salary of four pesetas and a half per month; and at Villar de Gallimazo, near Salamanca, a similar post with the only less magnificent salary of four pesetas per month!

THE DUTIES OF MAGISTRATES UNDER THE VACCINATION ACT, 1898.

The Conscience Clause.

The Conscience Clause—the only section of the Vaccination Act as yet in force—appears to have caused some consternation amongst the magistrates upon whom will rest the duty of administering it. To those of the "Great Unpaid" who have heretofore systematically refused to do their duty it will make but little difference; they will continue to disobey the law with perhaps an easier conscience. Setting them aside, however, we anxiously turn to consider the attitude which those who have always endeavoured to do their duty upon the bench are about to adopt. There is now vested in them a discretion, in the exercise of which their power of suppressing personal feeling will be taxed to the uttermost. No definition of the term "conscientious," no explanatory schedule is inserted in the Act, but it will be the duty of each individual magistrate to decide for himself the grounds upon which he may refuse to compel a parent to have his child vaccinated.

The "conscientious objector" is not wholly unknown in courts of justice. Where a witness refuses to take the oath "from any conscientious motive," the Statute 24 and 25 Vict., c. 66, makes it competent for the judge, upon being satisfied as to the sincerity of the objection, to allow him to make an affirmation in substitution for the oath. Anyone who has had any experience of the criminal practice well knows that the bare statement by a witness that he objects is always deemed sufficient, and that the judge never takes the trouble to go into the question seriously. There is a danger—remote perhaps, but still a danger—of the same state of things ultimately prevailing in courts of petty sessions with regard to vaccination. The clear duty of the magistrate, however, is to satisfy himself in every individual case, and to prevent as far as possible the conscience clause being administered according to mere routine.

"The Conscience Clause," Section 11, Subsection 1, reads as follows:

> No parent or other person shall be liable to any penalty under Section xxix or Section xxxi of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices, or a stipendiary or metropolitan police magistrate, in petty sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientious objection.

When we endeavour to ascertain the true meaning of the conscience clause a number of difficult points appear to arise. In the first place the expression "parent or other person" is ambiguous. In other parts of the Act, and indeed in the older Acts, the custodian of the child is always referred to as "the parent or other person having the custody of a child," and for no apparent reason the expression, "having the custody of a child" has now been dropped.

The objection must be taken within four months of the child's birth. Nothing however is said as to the production of the birth certificate. No magistrate, however lenient he may be with regard to the interpretation of a "conscientious objection," can possibly be satisfied with anything short of the birth certificate or the mother's evidence on oath if it becomes necessary to investigate the date upon which the child was born.

The metropolitan stipendiary magistrates have, as already stated, decided that they will hear applications under the Vaccination Act, and will not require applicants to be sworn; but if satisfied upon a verbal statement that they have the conscientious objection will give the certificate. The terms of this certificate, for which in conformity with the statutory scale of fees in similar cases, 1s. must be paid, were published in the British Medical Journal of September 10th, p. 752.

The first case since this decision was arrived at came before Mr. Plowden at the Marylebone Police-court on September 13th, when a young man made an application stating that he believed vaccination would be injurious to his child's health, and that he founded that belief upon what he had read and upon the experience of his friends. Mr. Plowden observed that this was about as good a reason as could be given. He then made the following remarks, which we quote from the report in the *Times*: Let me say, however, that in no case shall I grant a certificate hurriedly. I should like you to

understand what I think about the matter. You are an anti-vaccinator? Applicant: Well, yes, sir. Mr. Plowden: Well, you may be right or you may be wrong: I express no opinion. At the same time, I cannot shut my eyes to the fact that you represent the voice of a very insignificant minority. That is a fact. Therefore, before granting you any certificate I must be well satisfied that you have what the Act calls a conscientious belief; not a mere loose opinion, but something well founded upon personal experience. You see the Act requires that the magistrate granting the certificate must have a conscience in the matter as well as the antivaccinator. I cannot grant these things carelessly, but must be satisfied. If the views of the anti-vaccinators are wrong, granting you a certificate might mean the encouragement of an outbreak of small-pox. I want you to understand these certificates will not be granted as a matter of course because a person says he objects; it must be a real conscientious belief; the sort of belief that would send a man cheerfully to the stake. Now that I have explained and pointed out the grave responsibility cast on the antivaccinator I hope you will take the opportunity before the certificates are printed to further consider the matter. If you remain of the same opinion you shall have the certificate cheerfully.

The effect of Mr. Plowden's good advice may, however, be gauged from the fact that the applicant demurred at having to lose further time, and asked that the certificate might be forwarded to him, and finally succeeded in persuading the Court to give him a manuscript certificate, with which he departed.

It will be seen from the letter of our Liverpool correspondent that in that city a certificate was granted to a person who merely stated emphatically that he did not believe in the efficacy of vaccination, but gave no reasons for his disbelief.

This, it should be noticed, is the view which is taken by the metropolitan stipendiary magistrates alone, the ordinary justices and other stipendiaries being unrepresented at the meeting. The interpretation thus put upon the Act is undoubtedly consistent with the intention of the Legislature. Upon a little reflection it is difficult to imagine what other meaning can possibly be attached to the words of the clause. No mention of an oath is made, and there is no suggestion that a medical certificate of a doctor shall be forthcoming. Supposing for a moment that the magistrates had decided to require a statement on oath from the conscientious objector, what value could be attached to it? It might be of the form: "I swear that I conscientiously believe, etc.," or "I swear that A.B. told me that vaccination is prejudicial to the child's health." The former would be a mere expression of opinion, the latter mere hearsay evidence, and neither would be of any value as evidence in a court of justice.

In spite of this manifesto from the stipendiaries of London, other stipendiaries and justices of the peace also are, it is submitted, entitled to go their own way, and may, if they cannot feel satisfied without it, demand from a parent or other person a declaration on oath, or possibly a statement on oath, of the existence of certain facts upon which he grounds his opinion. But let us consider for a moment the value of such a declaration. However true the facts may be, however logical the deductions which the parent or other person has made from them, the magistrate is bound to grant the certificate if there is *primâ facie* evidence of a conscientious objection. It does not rest with him to decide whether a parent's reasons for conscientiously objecting are sound; his function is merely to ascertain the existence of the objection. To take a simple instance. Suppose a man were to refuse to allow vaccination on the ground that a former child of his had died soon after the operation, and that he believed it was killed by the communication of some disease. His reasoning no doubt is unsound—any one of a hundred other causes might have brought about the death—but it is nevertheless a conscientious reason, and the magistrate must treat it as such.

University of Vienna.—The number of students in the several faculties of the University of Vienna in the last semester was 4,425, exclusive of 1,285 who entered for particular courses. The number of students in the Medical Faculty was 1,192; in addition to these there were 636 who attended special courses.

NOTES ON OPHTHALMOLOGY IN VIENNA.

By Reginald E. Bickerton, M.B., Ch.B.Vict.

The following remarks apply more particularly to the operative methods and procedures followed in Professor Fuchs's Clinical Department in Vienna, and are all written from personal observation, in most cases as one of the assistants.

Asepsis and Antisepsis.

Sterilisation of Hands and Dressings.—All hand towels, cotton-wool for sponging, dry and wet, for dressings and pads are first sterilised in a hot-air steriliser for at least one hour, usually two. During the process the cotton-wool for sponging is contained in cardboard cases; the cotton-wool pads used for dressings immediately after operations, in porous porcelain jars; the towels and gauze used for dry sponging being put in round metal cases with perforated tops and bottoms. After sterilising, these dressings are never touched by hand again till the operator places the dressing in position after the operation. The cotton-wool which is used for wet sponging is put into corrosive sublimate lotion 1 in 5,000 by means of a pair of sterilised forceps. After washing their hands and sterilising, more or less, with corrosive sublimate lotion 1 in 1,000, the operator and his assistant dry their hands on a sterilised towel, which is then laid across the patient's chest close up to the chin, so that, if any instruments are laid upon it, they do not necessarily become infected.

Irrigation Lotions.—Corrosive sublimate lotion of two strengths (1 in 2,500 and 1 in 1,000) is used. Carbolic acid lotion 1 in 40 is used only for laying instruments in and for boiling and keeping silk ligatures in. Saline solution 1 in 1,000 is used for irrigating conjunctival sacs before operation. Separate irrigation nozzles are kept for purulent cases and for trachoma cases. Boracic acid 1 in 500 was used in one case for syringing out the anterior chamber, the wound having become purulent after an operation.

Preparation of Patient.

Treatment Previous to Operation.—All cataract cases are kept in the hospital for a day before the operation is undertaken. In many unclean-looking cases the eye to be operated on is syringed out with corrosive sublimate (1 in 2,500) the night before the operation and a pad applied. The syringing is repeated on the morning of the operation, and a simple rubber pad is put on without any further dressing.

Immediate Preparation for Operation.—When the patient is on the operating table, immediately before the operation is commenced, the eye is again thoroughly well sponged and irrigated, either by the operator himself or his assistant. If the case happens to be a particularly unclean-looking one, the eyebrows, lids—especially the ciliary margins—and surrounding skin are well washed with a neutral soap and sponged with corrosive sublimate, then dried. In all cases the upper lid is everted and the palpebral conjunctiva well sponged with cotton wool dipped in sublimate—1 in 1,000 first, then 1 in 2,500—particular care being taken to cleanse thoroughly the fornix conjunctivæ. The lower lid is then cleansed in a similar manner, the lachrymal sac being always pressed upon to make certain that there is no retained secretion or abnormal secretion which might regurgitate under the slight pressure of the pad after the operation. The lids are then allowed to fall back into their normal position. Irrigation of both conjunctival sacs is next performed by means of a flattened irrigation nozzle, the fluid used being contained in glass bottles placed some 10 feet from the floor. Saline solution is usually employed, the nozzle being placed well up into the fornix. A thin layer of sterilised gauze dipped in sublimate lotion is now placed over the patient's face, eyebrow, and nose, a hole being made previously in it for the eye. These preparations apply to all operations.

Instruments.

For Aseptic Cases.—All instruments, except those reserved specially for purulent conditions and trachoma, are kept in a glass instrument cabinet with glass shelves and metal racks for holding them. Knives and all cutting instruments are kept in the same way, and not in separate cases, and they do not seem to become rusted from exposure.

For Septic Cases. All instruments used for abscesses,

Saemisch's operation, and purulent conditions generally are kept in a separate wooden box, being well boiled both before and after every operation. Instruments used for trachoma cases of any kind, whether for lid operations or for bulb operations, also Knapp's roller forceps, are kept in a separate wooden case, and not in the general instrument cabinet.

Preparation of Instruments.—The instruments about to be used for any operation are placed in a small metal rack with their points and part of the handles projecting; the whole rack with instruments thereon is then placed in a tin steriliser containing 2 litres of boiling water with 5 grammes of sodium carbonate dissolved in it to prevent rusting. They are boiled in this for two minutes, or never less than one minute. A separate steriliser is kept for abscess and trachoma instruments, similar to that used for non-infective operations. Immediately before use the rack with instruments on it is taken out of the steriliser by means of a wire carrier, and the whole thing placed on a sterilised porcelain plate and covered with a double layer of sterilised gauze dipped in corrosive sublimate lotion. The operator and his assistant are the only persons then who touch the instruments, which are used usually while still warm. If any unusual number of instruments are required they are first sterilised by boiling, then placed in carbolic acid lotion (1 in 40), and used wet. All the knives used, and most of the other "handled" instruments have bone handles, and the boiling for this length of time seemed to have very little effect in loosening the handles. The handles of the instruments used for abscesses always became loose sooner than any others, as these instruments were boiled for a longer time both before and after each operation, sometimes for half an hour after the operation.

Sutures and Needles.

Sutures.—Catgut is used for all conjunctival sutures, and various thicknesses of silk for plastic operations, adjustments, Snellen's sutures. Catgut sutures are kept in a spirituous corrosive sublimate solution, and are not boiled or put into any watery solution before use, but simply laid between the folds of sublimate gauze. The silk used is first wound on to a big reel, and the reel and silk then boiled for an hour and a half in carbolic lotion 1 in 40. It is then removed from the big reel on to smaller glass reels, on which it is kept and from which it is cut off as required. These smaller glass reels are then boiled for another hour in 1 in 40 carbolic, and are afterwards transferred to glass dishes, in which they are kept in 1 in 40 carbolic. These repeated boilings have very little effect in making the silk lose strength.

Needles.—The needles used have patent and split eyes, which facilitated threading. The needles about to be used are first boiled, then the silk threaded, and the needle together with the silk again dipped in boiling water for half a minute. They prove absolutely aseptic, and suppuration never took place round a suture.

Cocaine and Anæsthetic Solutions.

A 3 per cent. solution of cocaine is used for all operations where cocaine is required. A separate bottle and drop tube are kept for all trachoma cases, the bottle being labelled "trachoma" and coloured. Another bottle labelled "abscess cocaine" is kept for all abscess and purulent cases. Thus the risk of carrying infection by contact of the drop tube or bottle from infective cases to non-infective cases is eliminated. All the cocaine used is in sterilised solution, and all cocaine used during an operation, after an incision had been made into the eyeball, is to commence with a sterilised solution put in sterile drop bottles, which are then put in a glass beaker uncovered; the beaker is then placed in the hot-air steriliser for an hour, then taken out and a solution of acid thymol, 3 to 1,000, poured over the bottles till they are completely submerged; they are kept in this, and no one touches them without first sterilising his hands. Atropine and eserine are kept in the same way, being in drop bottles with "turn off" stoppers. Cocaine is instilled a quarter of an hour before any operation, and no fewer than four times during this time.

Hypodermic Solutions.—The solution of cocaine used for hypodermic injections is of the strength of 3 per cent. The syringes and needles are kept in glycerine, and filled with glycerine when not in use; this prevents rusting, and also the entrance of extraneous matter into the barrel of the syringe. Cocaine injections are employed in extirpation of the lachrymal sac and gland, in operations for trichiasis, entropion and ectropion, Panas and Spencer Watson's and von Arlt's operations for advancement of muscles, for Meibomian cysts, styes, Knapp's roller forceps operation for trachoma, and in all small plastic lid operations. The quantity injected is 15 and 20 and 30 c.mm., and in the ten months during which I witnessed several operations performed every day I never saw any ill after-effects from its use. A solution of cocaine with morphine is also occasionally used. Separate hypodermic needles are kept for trachoma cases. Before use the needles are in all cases held in boiling water for half a minute. General anæsthetics, pure chloroform, pure ether, and A. C. E. mixture are employed. Skinners' mask is used in every case.

The Operations.

Position of the Operator.—The operator stands in front of the patient, rarely behind. Right eyes are operated on by the left hand, and *vice versa*.

Light.—Operations are performed by daylight in most cases. When the light is very bright it is admitted from above the level of the operator's head only, so that the light comes from above and not directly from the side, by this means much of the corneal reflection is done away with. A small hand electric lamp is usually used for discissions, and when the daylight is insufficient.

Speculum.—This instrument is not usually used in cataract extractions or iridectomies unless the patient is very refractory. The lids are held apart by the assistant, and allowed to close immediately the primary incision is completed, and also between each step of the operation. The speculum generally in use has an automatic spring, without adjusting screw, and tends to separate the lids always wider and wider apart, in this way causing undue pressure on the eyeball. Desmarre's lid elevators are used in enucleation and exenteration of the orbit.

Cataract Extraction.—The complete operation is always done at one time. A large conjunctival flap is made. The operation with iridectomy is performed slightly more often than the operation without; for example, out of 400 extractions 206 were performed with iridectomy. The number of cases in which prolapse of the iris occurred was very small. Graefe's knife was always used. The lens capsule was opened by means of capsule forceps having teeth on the under side of bent arms. The lens entire, in its thickened capsule, was occasionally removed in this manner. If the forceps failed to open the capsule the cystotome was used. The lens was expressed by pressure applied by means of the finger through the lower lid, the edge of the lid being used in much the same manner as a cataract spoon. The iris almost invariably required reposition after the lens had been removed, when the operation had been done without iridectomy. One or two drops of eserine solution (1 per cent.) sterilised were instilled after reposition of the iris and of the conjunctival flap. This was done only in operations without iridectomy. Both eyes were covered by soft dry wool pads; no head bandage was used, but a Snellen's aluminium shield was placed over the operated eye. If any difficulty was experienced in removing the lens, or of the vitreous presenting before it was removed, a small pair of forceps with curved arms terminating in each in a small hook was used as a vectis; the forceps were passed behind the lens, closed, then opened and drawn forwards, the two hooks being thus driven into the lens, and holding it securely while it was drawn out of the wound. In some cases the vectis (Weber's) was used in place of the hooked forceps. In some four or five extractions a couple of very fine silk sutures were used after the operation was completed, with the object of bringing about union of the conjunctival flap more rapidly, and of lessening the amount of astigmatism after the operation. The results, however, were not considered sufficiently satisfactory to warrant a continuance of the practice. The small electric lamp was used, invariably after the lens had been removed, to examine for any soft matter left behind; if any was seen Daviel's spoon was introduced, and an attempt made to remove it.

Discission.—Discission for high myopia was never done for a less degree than 15 or 16 dioptries. The speculum was used in the majority of cases; a crucial incision was made through

the anterior lens capsule with a somewhat sickle-shaped cutting needle, cutting both in concavity or on convexity (Knapp). In one of the clinics discission in the above cases was always performed by means of a Graefe knife, held on the flat, that is to say, with the blade parallel to the plane of the iris. The knife was introduced into the anterior chamber, and a single vertical incision made through the whole length of the anterior capsule of the lens if possible. It was held by the supporters of this method that the wound so made in the cornea healed better, and left a slighter scar than that left by the needle.

Discission of secondary cataract was frequently done *per scleram*, but also *per corneam*, with one needle and with two. The operation *per scleram* was performed well behind the ciliary region with a single needle, and gave very good results in cases of obstinate thickened capsules. In no case did any severe reaction follow the operation. In some cases of very much thickened capsule, an incision to remove this was made with a keratome as for iridectomy in the margin of the cornea, the capsule seized with a pair of capsule forceps, as used in extraction, and torn out perhaps with the help of a cystotome. In cases of occluded pupil, the operation with a Graefe's cataract knife as described below—iridotomy—was sometimes performed.

Punction and Linear Extraction.—Punction for removal of swollen-up partially absorbed lens matter, following a previous discission, was done usually on the third or fourth day, when the tension had become slightly raised. A very small incision was made usually at the lower and outer margin of the cornea, with a narrow keratome. Much of the lens matter came out at once with the aqueous, which was let out as gently and as slowly as possible. A Daviel's spoon was then placed in the wound and pressure gently applied backwards, more lens substance escaping. After a short pause, during which the anterior chamber was reforming, the spoon was again introduced and more of the lens matter expressed. If necessary a second spoon was used to express the lens from above down towards the wound. The vitreous not infrequently filled the anterior chamber before all the lens matter had been removed. By this operation the period of absorption of the broken up lens is, it is contended, very much diminished, the risk of acute increase of tension in the eyeball done away with, and very little, if any, corneal astigmatism results.

Syringing Out the Anterior Chamber.—This operation was performed in only one case, in which suppuration had taken place in the anterior chamber following on a cataract extraction. The wound was reopened, and the bent and flattened nozzle of a syringe made for the purpose introduced into the anterior chamber, which was then thoroughly syringed out with a sterilised solution of boracic acid 1 in 500. This, though performed two or three times, had very little, if any, effect in checking the course of suppuration.

Iridectomy.—This operation was performed either with a Graefe knife or a keratome. The incision with the latter was always begun in the sclera. The iris was drawn into the wound with small iris forceps, and cut off by means of De Wecker's forceps scissors. In two cases following an iridectomy performed in cases of glaucoma, intraocular haemorrhage took place, the lens, vitreous, and entire contents of the eyeball being gradually extruded through the wound, in spite of considerable pressure applied by means of pads and in a head bandage. The patient suffered great pain at the time.

Transfixion for Iris Bombé.—This operation was performed with a broad Graefe knife held on the flat, that is, parallel with the plane of the iris (normal), and introduced from the outer side in the cornea. Two incisions were made through the iris on both sides of the pupil, four small holes in all being made. Care was taken not to injure the lens or lens capsule while the point of the knife was passing in front of the pupil.

Operation for Synechiæ. This operation was performed with a view to loosening adhesions between the iris and the back of cornea. Lang's synechiæ knives were always used. In two cases in which extensive and very firm adhesions were present, most excellent results followed, the iris after the operation being quite unhindered in its movements, and the pupil later on becoming very nearly normal in shape.

Operation against Commencing Staphyloma with Incarcerated Iris.—This operation, which I have twice witnessed, consisted in the trephining of the cornea with the part of the iris involved, and the complete removal of the commencing staphylomatous part of the cornea, with the piece of iris. The loss of substance in the cornea was then filled up by a piece of healthy cornea of similar size trephined from another eye, which was about to be enucleated. In one case the piece of transplanted cornea, which retained its transparency to some extent, was slightly raised above the surrounding cornea. In both cases the iris was successfully freed, and the cornea given a much greater chance of retaining its shape and nutrition.

Operation for Prolapsed Iris after Injury: Ulcer.—The staphyloma resulting in these cases was carefully punctured by a conical sharp sound, the aqueous allowed to flow away as gradually as possible, the iris then freed all round its adhesions to the corneal wound, drawn out from the wound as far as possible, and cut off with De Wecker's iris scissors. As much of the iris as could be got hold of through the wound was then seized, drawn out, and cut off, until it was in every part completely out of danger of again becoming incarcerated.

Iridotomy.—This operation was always performed by means of a Graefe knife, somewhat narrow, held and introduced through the cornea with the blade at right angles to the corneal surface and with the cutting edge backwards, that is, towards the interior of the eyeball and iris. The point was entered through the cornea from below, and advanced in the anterior chamber till it had reached the opposite limit of the chamber. The handle was then brought upwards, thus depressing the point and blade, and the iris and occluded pupil cut through; the knife was then withdrawn perpendicularly, cutting the iris completely through immediately below the point of puncture. The very best results were thus obtained, and the reaction was slight. This was only done in cases in which the lens was absent; if any of the lens happened to be present, as in many complicated cases, an attempt was first made to extract it by means of an iridectomy and the usual operation, the pupil, if still occluded, was afterwards dealt with in the above manner. Capsulotomy after this method was done also in cases of adherent, thick, secondary cataract.

Optico-ciliary Neurotomy.—The rectus internus was divided and sutured, and the optic and ciliary nerves cut through with a pair of strong, curved, blunt-pointed scissors. The eyeball was meanwhile rotated outwards as much as possible. The internus muscle was then sutured to its tendon, unless it happened that the bleeding was very great, with great protrusion of the eyeball. The bleeding and protrusion in most cases seemed to be considerable.

Enucleation.—This was always done after the Vienna method. No muscle hook was used, but simply two pairs of large straight scissors, with a small curve, one pair of forceps, a strong catgut suture, and a pair of Desmarre's lid elevators. The operation was done from the left always. In the case of the left eye the externus muscle was first cut through, and the eyeball held in the forceps by means of this muscle's attachment throughout the operation. The internus muscle last severed, the last after the optic nerve had been divided. With the right eye the internus was the first muscle divided, and the eyeball was held by means of its attachment, the externus muscle being the last cut through, after the optic nerve. A single thick catgut running suture was then placed in the conjunctiva, and just before it was drawn tight and tied, the cavities were well syringed out with corrosive sublimate solution (1 in 1,000). Iodoform powder was then dusted in, a dry dressing, and head bandage applied.

Mules's Operation.—This was very rarely performed, some three times during ten months. The artificial vitreous used was not spherical, but a flattened, four-cornered, silver-gilt spheroid, with the corners well rounded off. The cornea and sclera were cut away just behind the ciliary processes, and the scleral cavity scraped out with an ordinary Volkmann's scoop. The interior was well irrigated with corrosive sublimate (1 in 1,000), and the wound closed, after inserting the artificial vitreous, by a catgut suture passed through the conjunctiva and sclera at the same time. Dry dressings and a somewhat tight head bandage were applied. Simple evisceration of the globe, without the insertion of artificial vitreous, I never saw performed here during the ten months.

Tattooing for Leucoma.—This operation was performed in the ordinary manner in many cases, but in some the trephine was used to remove the epithelium and upper laminæ of the cornea. A somewhat large trephine, equal to the size of the pupil of the other eye when at rest, was chosen. The piece so marked out was then dissected off, taking as little of the corneal laminæ as possible, and placed on cotton-wool. A few drops of a solution of cocaine (5 per cent.) were then dropped into the wound in order to stop the bleeding. When this had ceased the indian ink was applied with a spatula, and well rubbed and scraped in by the point of a Graefe cataract knife, taking care that the edges of the trephine wound were not notched in so doing. The trephined piece of cornea was then replaced in the wound, but this procedure did not appear very satisfactory, as some bleeding invariably took place under the piece of replaced cornea, raising it up, and it very soon shrivelled and dropped off. The resulting appearance, even if this did take place, was very good indeed, the sharply-defined margin of the tattooed portion giving quite the appearance of a normal pupil.

Extirpation of the Lachrymal Sac.—This was an operation of every-day occurrence. A cocaine injection only was employed. An incision almost vertical in direction was made through the skin on the site of the sac, the wound then kept open by means of Müller's spring wound dilator, and the incision deepened until the internal tarsal ligament was reached. This was then cut through with scissors and the sac dissected free all round: the upper end was raised forwards from the bone with forceps and the sac well cleared of all its attachments, and in most cases of inflammatory adhesions. The lachrymal duct, or rather the mucous membrane lining it, was cut through as deeply as possible with scissors, the duct being put on the stretch meanwhile. The cavity thus left by removal of the sac was well scraped out with a Volkmann's small scoop, syringed out with sublimate lotion (1 in 1,000), iodoform dusted in, and the edges of the skin incision united by three or four silk sutures. Union by first intention was as a rule secured; but, if any of the sac had been left behind, this did not occur, and often rendered a second scraping necessary. This operation was done invariably when ulcus serpens was present. Bowman's sounds were used, but lachrymal styles never.

Removal of Lachrymal Gland.—This was performed in many cases after the above operation. The theory was that the lachrymal gland should not secrete more than could be removed by evaporation. If it did secrete more, then it was held to be abnormal and was removed. The operation was performed through the conjunctiva, the cavity being scraped out afterwards and the conjunctiva sutured by two or three catgut sutures.

Knapp's Roller Forceps Operation.—In trachoma cases in which the palpebral conjunctiva was very rich in trachoma granules, the upper lid was everted and cocaine was instilled, as well as injected in several places under the palpebral conjunctiva. The granules were then punctured with the point of a Graefe knife, the roller forceps applied, and the contents squeezed out.

Extraction of Steel and Iron Foreign Bodies.—When such were lodged in the interior of the eyeball, and known to be present, the patient was at once taken to the big electro-magnet (Haab's), and the piece of metal drawn into the anterior chamber if possible, and then removed by a corneal incision, and the smaller point of Hirschberg's magnet. When it was not known for certain whether a piece of metal was present or not, the patient was taken to be tested by means of the sideroscope, which appeared to give only very doubtful results. With Haab's magnet the diagnosis was made absolutely certain, and in many cases the piece of metal could, when it was lodged behind the iris, be actually seen drawing it forward. If the piece of metal were lodged in the posterior chamber, it never came forward through the lens, unless there happened to be a hole in the posterior lens capsule, but always slipped round it, till it reached the suspensory ligament, which it tore through, with a sufficiently powerful magnet, and came up against the iris. From this position it was with a little manipulation readily brought forward, into the anterior chamber where it fell. Since this magnet has been in use, it has never failed to extract a splinter of iron or steel from the interior of the eyeball, no matter how deeply it had been imbedded.

Sclerotomy.—Both anterior and posterior sclerotomy were constantly performed. Posterior sclerotomy after Priestley Smith's method was invariably performed on glaucomatous globes, in which intraocular hæmorrhage might be expected to occur if an iridectomy were undertaken.

Plastic Operations.—Of the many and various plastic operations I will not attempt any description, as the number is far too great, due to the great amount of trachoma, the resulting scarring and deformities being relieved, or attempted, by all the various typical and atypical operations which suggest themselves. Thiersch's skin grafting is a very favourite method in the case of extensive burns.

Number of Operations.—Of the total number of operations of all kinds performed, some idea may be gathered from the fact that between November 1st, 1897, and July 9th, 1898, 1,499 operations were performed and written up in the operation books, 400 of which were cataract extractions. This number does not include such operations as scraping hordeola, Meibomian cysts, etc.

In conclusion, I will only say that I am greatly indebted to Professor Fuchs for his kindness in having given me a post and duty in the operation theatre, whereby I have been enabled to make the above notes, and also to his assistants for the many opportunities I was given of operating myself.

CLINICAL REPORT OF THE ROTUNDA LYING-IN HOSPITAL.[1]

Dr. Purefoy, the Master of the Rotunda Hospital, has laid the profession under a debt by publishing a clinical report on the work of the Rotunda Hospital for the year ending October 31st, 1897. It is a statistical account of the cases treated in the hospital during the year, with details of the cases of especial interest. Seventeen pages are devoted to the obstetrical part, forty-four to the gynæcological. The obstetrical account gives not only the mortality but also the morbidity; that is, an account of the number of cases of fever, little or much, from all causes, during the year. Such statistics ought to be published by every lying-in hospital. The fact that puerperal fever can be suppressed in lying-in hospitals is now so well established that there is no need to publish reports in further proof. The prevalence of puerperal fever in a lying-in hospital now only proves incompetent management. The true comparative test of good management now is the amount of fever following delivery. Some febrile illness is preventable, some apparently fortuitous. Statistics are needed to help us to distinguish between these two kinds of fever. We hope that in this point other lying-in hospitals will follow the example of the Rotunda, for it is a shame that English accoucheurs should have to look to Germany for information on such points as this.

In the gynæcological report we are struck by the number of cases treated for conditions which are by many regarded as either not disease, or disease too trivial for treatment. Thus we find 39 cases admitted into hospital, and treated for what is termed "pathological anteflexion." Now statistics have been published which show that anteflexion occurs just as often in healthy women as in those who apply for treatment; and there are writers and teachers of high repute who say there is no such thing as a "pathological anteflexion:" that no specimen has ever been exhibited or described showing any morbid effect resulting from anteflexion, and that an ill-effect from anteflexion has not in any other way been demonstrated. We find also 32 cases admitted for "laceration of the cervix." This is, of course, in a sense a morbid condition, being a result of injury, but it is present in nearly all women who have had children, and is by many regarded as such a trifle, that its repair is not worth the cost and trouble of operative treatment. Dr. Purefoy is quite competent to form an opinion on these points, and quite justified in holding it; but we submit that one who practises and preaches the systematic local treatment of such common conditions, so

[1] *Clinical Report of the Rotunda Hospital* for one year: November 1st, 1896, to October 31st, 1897, by R. Dancer Purefoy, M.D., Master; T. Henry Wilson, Henry Jellet, R. P. R. Lyle, Assistant Masters. Dublin: Fannin and Co., 1898. Demy 8vo, pp. 52. 1s.

often occurring in healthy women, should put on record the evidence of the existence of the pathological effects which have led him to consider it necessary to institute treatment. If members of the medical profession are to treat every anteflexion and every laceration of the cervix that they come across, the result would be an amount of meddling with the female sexual organs which would be apt in the end to shake public confidence in the profession. Yet that is the logical result of the theoretical views we have referred to.

We observe that there were nine panhysterectomies with three deaths, fourteen ovariotomies with one death, twenty-one salpingo-oöphorectomies for various conditions—salpingitis, tubal pregnancy, cystic ovaries, uterine adenoma—with one death.

Among the list of deaths we notice one from acute sepsis after curetting, although the curetting was followed by injections of iodine and plugging with iodoform gauze; and another in which acute peritonitis was treated by opening and irrigating the abdomen.

This full and candid record of failures as well as successes is in the highest degree creditable to those who are responsible for the management of this important institution; and the example thus set might with advantage be followed by other lying-in hospitals.

THE PLAGUE IN THE EAST.

Bombay.—During the past week the deaths from plague in Bombay amounted to 170. This number approximates the average for the past three weeks, so that plague mortality remains well-nigh stationary. The general death-rate has, however, increased, and although at this time of the year an increase is to be expected, the number exceeds by 100 weekly the average of the last five years. Fever and diarrhœa are the main causes of death. The citizens of Bombay have come to look upon the present recurrence as a relapse of the epidemic, and conjecture that as it has appeared early it will disappear at a correspondingly early date in the beginning of next year. They have come to recognise the fact that plague in an epidemic form lasts for six to seven months, and that its recrudescence is independent of season.

In the Bombay Presidency 2,800 deaths from plague have occurred, Dharwar and Belgaum being the principal seats of the disease.

Native Discontent.—In Bangalore, Bellary, and Hyderabad State plague cases are recorded, but in none of the southern or central districts has the disease assumed an alarming prevalence. Nevertheless, the authorities in Bangalore have had a considerable amount of trouble with the natives, where as many as 10,000 persons assembled in front of the Governor's residence, and protested against the plague measures which were being adopted. The mob had to be dispersed by the military.

Poona.—Poona itself is practically free from plague at the present moment, but, from several plague stricken districts around, refugees are crowding into the city and causing alarm of a recurrence. Of the towns in the Poona district, Hubli is most seriously affected, as many as 80 deaths occurring daily.

Karachi.—From Karachi the report is that plague is rapidly disappearing from the city and the district around. The importance of the port of Karachi being declared "clean" is great. Karachi is the natural inlet from the sea to the North-West of India and the nearest to Europe, and were the valley of the Indus to be declared free of plague, passengers and goods could go their way into India independently of passing through Bombay.

Calcutta.—In Calcutta during the past week 7 deaths have occurred from plague, but there is no indication of an increase.

Hong Kong. In Hong Kong a Reuter's telegram states that there has been 1 death from plague during the week ending September 7th.

HISTORY OF THE EPIDEMIC IN SIND.

A paper on The Late Outbreak of Plague in Sind, by Surgeon-Major Bainbridge, M.D., F.R.C.S.I., was read at a meeting of the Bombay Medical and Physical Society last July, and is stated to be "the earliest complete account by a medical man of any outbreak outside the city of Bombay."

The first case occurred at Karachi early in December, 1896, and the last towards the end of July, 1897: the mortality out of a total of 6,439 recorded cases was equal to 80.4 per cent. There was no direct evidence to show the route followed by the contagium, but in all probability the germs of the disease were conveyed from Bombay by sea, "for the voyage by steamer lasts but three days at most, and there was no detention except in the case of vessels which had had a case on board, or which carried no doctor."

Inland, throughout the whole province, the plague spread "with deliberate and definitely-timed steps," following "the movements of infected persons;" but although in the author's opinion the disease "almost invariably declares itself by symptoms within the fourth or fifth day from infection," he also states that "the long and tolerably definite interval which elapses between importation and localisation," to which Surgeon-Captain Grayfoot was the first to draw attention, may be regarded as "about one month," the explanation being "that the bacilli do not infect until they have gained a certain degree of potency, and that they require certain media for their development." The author further believes "that infection occurs by inhaling the microbes when in close proximity to the sufferer, or in any place the air of which contains them in certain numbers;" but, also, on the other hand, that fresh air, light, and cleanliness either impair the potency of the germs, or else augment the powers of resistance of the exposed persons. Hence it is that in plague hospitals "the attendants rarely become infected." He does not look upon cutaneous inoculation as a usual mode of infection, and thinks that "plague may originate and, if uncontrolled, spread in India at any season of the year." Rats, no doubt, may "carry the plague from one part of a town to another," but there is nothing to show that they "commonly infect human beings." In dealing with a local outbreak of plague everything depends on the thoroughness and intelligence with which the repressive measures are carried out by individual officials. Given zealous enlightened service, and it should be possible to stamp out the most virulent manifestation. As regards the prevention of diffusion, the author's views are thus expressed: "The only efficient mode of limiting the spread of plague from one place to another is systematic detention for a certain period of all arrivals from infected places; and this should, if possible, be supplemented by restrictions on travelling. Registration and notification of arrivals and departures from infected places would in India be impracticable on a large scale; and even, if possible, would not, owing to the absence of the controlling staff, yield the desired results." In another place the duration of the quarantine is fixed at "a period not exceeding ten days, associated, of course, with isolation of those infected."

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE following additional appointments of referees under this Act have been made by the Home Secretary:

ENGLAND.

CIRCUIT NO. 6.—Further appointment.
Charles Hartley Bedwell Shears, L.R.C.P., M.R.C.S., Liverpool.

CIRCUIT NO. 28.
Thomas Dalton, M.D., M.R.C.S., Llandudno.

CIRCUIT NO. 59.—Further appointment.
Thomas William Shepherd, L.R.C.S.Edin., Launceston.

SCOTLAND.

SHERIFFDOM OF INVERNESS, ELGIN, AND NAIRN.
Murdo Tolme Mackenzie, M.B., C.M., North Uist.

FEMALE EMANCIPATION IN GERMANY.—Some difference of opinion exists amongst the Professors of Breslau University with regard to the admission of women to a course of lectures on hygiene. Professor Cohn, who was the official lecturer on this occasion, addressed a letter to the President of the University, asking him to allow women to attend. The result of the deliberations of the authorities was adverse to the cause of the fair sex. Professor Cohn was also intending to give a course of lectures on the eyesight in childhood. Some eminent members of the University are of opinion that the admission of women to a course of lectures will soon be an accomplished fact, and that only a little agitation is necessary to bring this about.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 17TH, 1898.

PUERPERAL MORTALITY: REAL, SUPPOSED, AND IDEAL.

We publish elsewhere a letter from Mrs. Garrett Anderson which revives an old question oft discussed; but its importance, and the ability with which Mrs. Garrett Anderson has restated that which seems to her the true state of the case, will be recognised.

Mr. T. A. Coghlan read before the Royal Statistical Society on June 21st last a most elaborate and able paper on deaths in childbirth, based on an analysis of 115,669 confinements occurring in New South Wales with among them 813 deaths. This is a mortality of about 1 in 142. The late Dr. McClintock, of Dublin, writing in 1869, estimated the true rate of puerperal mortality to be about 1 in 126. Matthews Duncan in 1871 printed in capital letters the following statement: "Not fewer than 1 in every 120 women delivered at or near the full time die within the four weeks of childbed."[1] Dr. Boxall, writing in 1893,[2] showed that the mean death-rate of childbirth deducible from the Registrar-General's returns from 1847 to 1891 inclusive was 4.85 per mille, or nearly 1 in 200; and that during this period it had not appreciably diminished: for example, in 1892 it was 5.22 per mille, or more than 1 in 200. Now the returns of the Registrar-General (from sources of error which we need not go into here, but which will be found detailed in the writings of R. Barnes,[3] McClintock, and Duncan) do not represent the true mortality; they understate it. But taking all these figures as they stand, they represent the mortality of childbirth as something more than 1 in 200.

Mrs. Anderson thinks that this is incorrect. She has collected figures from various outdoor and indoor maternities, amounting to 71,122 deliveries, with 151 deaths, 25 of which she thinks ought to be deducted, giving a gross death-rate of 1 in 471; or, when deductions are made, of 1 in 563.6. These results lead her to judge that from Mr. Coghlan's figures no statistical deductions of any value can be drawn. She thinks that the mortality in London has been reduced far below that of New South Wales, and that just as the risk of a voyage is properly measured not by the average loss of life at sea, but by the equipment of the ship and the competence of the captain, so the risk to a lying-in woman depends not upon the average puerperal death-rate, but upon "the skill and antiseptic zeal of those who surround her."

The latter proposition is true, but it does not prove Mr. Coghlan's conclusions to be incorrect. Coghlan, McClintock, Matthews Duncan, and Boxall deal with the *real* mortality of childbirth — that which up till now has actually occurred. The *ideal* mortality of childbirth—that which would occur in women attended and nursed in the best possible way, and in the best possible surroundings—is, as Mrs. Garrett Anderson rightly points out, much lower than Mr. Coghlan's estimate. But we have no knowledge from experience what this ideal mortality is: for there is no institution from the management of which human error is absent. The figures which Mrs. Garrett Anderson quotes in support of her view are mainly from outdoor maternities, and represent only the *supposed* mortality. If a case in an outdoor maternity goes wrong, the friends often lose confidence, and call in someone else. McClintock in 1869 said: "A reliable estimate of the mortality among lying-in women confined at their own homes is a very great desideratum. I must honestly declare my conviction that..... there is no reliable return of such deaths." Matthews Duncan, speaking of "the home practice of dispensaries or hospitals," said, "there is no security whatever that the deaths are recorded." Even the in-patients of lying-in hospitals do not beyond doubt show the real mortality of childbirth, for it is impossible to trace the after-history of every case. But the mortality of patients delivered in well-managed lying-in hospitals probably approaches more nearly to the ideal puerperal mortality than that of any class of patients elsewhere.

Three different estimates of puerperal mortality have been often put before the profession, and reappear in Mrs. Garrett Anderson's letter: (1) The *real*, that which has actually occurred, which is difficult to find out, and the best estimates of which up till now are those of Matthews Duncan and Coghlan; (2) the *supposed*, exemplified by the experience of individual medical practitioners, and by the reports of outdoor maternities. These are statements made in perfect good faith by those who promulgate them, but they cannot be accepted without reservations, or what statisticians would term corrections, the exact value of which it is impossible to estimate, as here we have to deal with the statements of many different observers, into each of which the personal equation must enter. (3) The *ideal*, which is what ought to be attained everywhere and at all times, but which has been as yet attained only in a few places and intermittently.

We publish in this number of the Journal another contribution to the estimation of puerperal mortality—the paper on Pregnancy: its Relation to Life Assurance, by Dr. John Playfair and Mr. T. Wallace, the latter gentleman being actuary to a large insurance company. Their object is to discuss the extra risk to an insurance company in the case of a female who at the date of the insurance is pregnant. They point out, as R. Barnes, McClintock, and Duncan have done, that the returns of the Registrar-General underrate the death-rate of childbed. They have studied the records of the Edinburgh Royal Maternity and Simpson Memorial Hospital for ten years and a half—

[1] *Fecundity, Fertility, and Sterility* p. 302.
[2] *Lancet*, July 1st, 1893.
[3] *Dublin Journal of Medical Science*, 1859.

from January, 1887, to July, 1897. In this institution—one which has been supervised by some of the first obstetricians in the world—if anywhere, the ideal puerperal mortality ought to be reached. What are the facts? Out of 10,038 cases, attended in and out of the hospital, 87 deaths occurred, or 1 in 115: a figure very close to Duncan's estimate. In the hospital 1 out of 62 died; at the patients' own homes 1 in 194. The larger mortality within the hospital is due to the fact that all extern cases presenting features of difficulty or of danger were at once removed to the hospital. These figures prevent us from readily accepting Mrs. Anderson's optimistic views. They show that the real puerperal mortality is very much what it was thirty years ago; a figure very different from the supposed and the ideal mortality.

PHYSICIAN AND ACTUARY IN LIFE ASSURANCE.

The experiment of instituting, for the first time in the history of the Association, a special Section at the Edinburgh meeting for the consideration of questions respecting medicine in relation to life assurance was fully justified by the result. We publish elsewhere a report of the papers read at the three meetings of the Section and of the discussions which they elicited. The subjects considered were of high importance both to the public and the insurance companies, and could scarcely have been adequately debated in any other Section. The invitation from the President of the Section to attend the meetings was accepted by the President of the Faculty and by many prominent Fellows both of the Faculty and Institute of Actuaries, some being managers of the best-known Life Insurance Societies, who contributed valuable papers and took their part in the discussions.

This conjunction of medical men and actuaries in debate accentuated the well-recognised fact that although many of the scientific problems involved in the intricate business of life insurance fall naturally and exclusively to the members of the one or the other profession to solve, there are, besides, many abstruse questions connected with the subject which require for their elucidation the special knowledge both of the physician and the actuary. The former has to consider details of this description chiefly as they affect the case of the individual whom he is examining; whilst the latter, putting all cases of one kind together, deduces thence his averages of expectation of life and death.

Such statistical tables, which form the very foundation of all trustworthy insurance business, have for years past been worked out for "first class lives" and for many diseased conditions; but in regard to the effect of a number of abnormalities upon expectation of life the actuary has evidently not yet had his final say. The requisite information upon which to frame tables of the kind for all except the rarest pathological states is contained in the insurance offices in their proposal papers and death records, and through them alone can the necessary statistics be obtained. This point was emphasised by Mr. G. M. Low (Manager of the Edinburgh Life Assurance Society), who said that one matter which had greatly struck him in one of the discussions was "the value which was being attached to statistics. In his opinion they had in the records of the insurance companies the most reliable guide available on many questions." Apparently these records are being so utilised in the United States far more than in the United Kingdom, for Dr. Glover Lyon stated that in America the life assurance companies were wont to expend much larger sums in preparing statistics than British companies ever spent for such a purpose.

Sir William Gairdner in the course of his valuable paper alluded three or four times to the need of further statistics which he experienced in his life assurance work. He remarked, in respect of the principle on which tachycardia or bradycardia (without symptoms) discovered in a candidate for insurance should be dealt with, "We have not the data as yet, but they might, no doubt, be procured by a concerted combining effort of several offices." He said also that there were no data to tell us exactly the point at which a slow pulse becomes abnormal, and what is the influence of that single fact on life; and he expressed the opinion that it was a point capable of exact, almost mathematical, statement, which could be solved by sufficiently extended statistics. In regard to another question, Mr. Low said that in such inquiries the medical man and the actuary should work together, each contributing the skill and experience which belong to his own department of knowledge. He further advocated co-operation among the companies to investigate the subject of extra risk by means of the incomparably rich material they possess in proposal papers and death records; and said that the help of medical knowledge would be indispensable to the realisation of that object. Dr. Sprague (manager of the Scottish Equitable Life Assurance Society) fully agreed with Mr. Low as to the value of the statistical method, especially in regard to the exact classification of lives; and Dr. Ritchie (Vice-President of the Section) was gratified to know that medical officers, in investigating some of the difficult questions which meet them in their insurance work, might hope to draw upon the wealth of material lying in the depositories of insurance companies, "if all managers were of the same opinion as Mr. Low and Dr. Sprague."

There has undoubtedly been achieved by these methods within recent years a great advance of accurate actuarial knowledge upon many subjects, several of which were discussed at the Edinburgh meeting. Both medical men and actuaries, however, have yet much to learn from further investigations conducted upon similar scientific lines and with the same painstaking spirit.

APHASIA AND TESTAMENTARY CAPACITY.

The subject of aphasia in relation to testamentary capacity, raised by the paper of Sir William Gairdner and Dr. Elder, read at a joint meeting of the Sections of State Medicine and Psychology during the annual meeting at Edinburgh, and published in the British Medical Journal of September 3rd, is one of considerable interest. As it chanced that both the papers were written necessarily from the point of view of persons interested in the decisions of Scottish Courts, some readers may share the hesitation expressed as to whether English law may not be somewhat different. This, however, does not appear to be the case. The recent charge of Lord Robertson, a Scottish judge, was quoted by Sir William Gairdner as laying down correctly

the general principles of Scottish law with regard to testamentary capacity. He said that "the jury had not to decide whether the testatrix in question was sane or insane; but merely whether she had mind enough to understand, and did in fact understand, the will she purported to have made. The mere fact that she was alleged to have been eccentric did not render her incapable of making a will, if she had enough sense to understand it. The jury must say whether the will really was her will. They must not decide against it unless they were satisfied either that she was unfit to make it—that is, that she had not sufficient mind to make it—or that she was weak, and was led into making it by other people."

This statement of the Scottish law does not appear to have been quoted from a law report, but it states fairly enough in popular language the principles of English law which are to be applied in all such cases. When a will is produced which has been made in proper form and has been signed by the testator (either in writing or by a mark) in the presence of witnesses, the law assumes it to be a valid will until the contrary is shown. The grounds on which a will is attacked are usually either (1) testamentary incapacity, or (2) undue influence. Incapacity need not be absolute insanity, but has been defined as a "want of mind to understand" the will in question. If the court which has to try the case is satisfied that the testator was altogether insane, it generally follows that his testamentary incapacity will be assumed, though there have been instances in recent years where wills made by persons already certified to be lunatics have been held good. But where the testator is eccentric, and still more where he has been debilitated through illness or bodily or mental failure, the evidence as affecting the question of his power to understand and make a will has carefully to be considered.

It is difficult to lay down general rules which will meet the circumstances of all supposable cases. An aphasic patient, who was originally able to speak and had learned to read and write, but who had lost the power of speech through accident or illness, would probably be considered capable of making a valid will, unless it could be shown that his mental powers had been affected as well as the power of articulate utterance. Some persons, again, who have never been able to speak, are apparently quite able to understand what goes on around them, and are able to communicate with other people by signs or in writing. In their case, the power to make a valid will would hardly be disputed. The proper answer to the question becomes more difficult where the patient, though apparently in possession of his mental faculties, lacks the means of expressing his ideas in such a way as to be intelligible to others. Probably he may possess sufficient understanding to be able to make a will; but still it may be doubtful whether a document, prepared in accordance with what are assumed to be his wishes, and signed by him with his mark in the presence of witnesses, does give such effect to his wishes as to be treated as his will. In such a case much would depend on the credibility attached to the witnesses called on to speak as to the circumstances under which the will was executed, and much on the nature of the will itself; on whether it duly provided for those to whom the testator would presumably be attached, and on similar considerations. Finally, if the symptoms attending the aphasia were such as to lead to the inference that he was suffering from imbecility or mental debility, as well as from loss of speech, there is very little doubt that a will made by such a patient would be held invalid. No general rule can be laid down with regard to aphasics. The circumstances of their affliction vary greatly, and so does their testamentary capacity. Those who are called on to testify in such cases should carefully observe all the circumstances attending the case, and can seldom predict what the decision of the tribunal will be. Each case must be and will be judged on its own merits, and on the opinion which the court may form as to the capacity of the testator. Medical evidence in such cases is most important, but not conclusive, and it must always be remembered that the point to be determined is not the general sanity or insanity of the testator, but his capacity to understand and to make the will in question at the time when it was executed.

THE EAST-END WATER FAMINE.

Now that there seems to be some ground for hope that we are within measurable distance of a termination of the distress due to the abnormal dryness of the season it may be well to review the causes of the so-called "water famine" in the East London Water Company's district, the effects, and the possible remedy.

The cause may be summarised in one sentence—want of storage. For years past the construction of impounding reservoirs in the Lee watershed has been under consideration, and as long ago as 1851 a scheme was proposed by the New River Company for the construction of reservoirs in the several minor watersheds of the Lee Basin. The East London directors, it is known, have given effect to the storage idea by the large works recently carried out and by others now in contemplation, but it will be a long time ere the want of forethought, which, while encouraging an extension of district to be supplied, often involving, as in the Ilford case alone, a population equal to a large town, did not make sure of a supply equal to the demand. Few water companies have been more "up to date" than the East London, and the want of forethought to which we allude is all the more surprising to an outsider. As to Ilford, why is not an impounding reservoir in the valley of the Roding—a considerable watershed—constructed? This would conserve a vast volume of flood water which now goes to waste. Again, the floods in the Lee Valley above the intakes, which have been a fruitful cause of loss to farmers and others on the low-lying districts, might have been impounded, roughly filtered, and stored for subsidence and consequent purification before passing on to final filtration and distribution.

Some years ago, power was taken by the East London to draw water from the Thames at Sunbury—10 million gallons daily—it might have been possible then to have secured the right to take double the volume. The want of foresight of the directors was severely criticised at the time, and much objection was taken to the course adopted. In later years the sinking of wells has been much resorted to with considerable success, and at last the principle of drawing from other companies as an auxiliary supply is

being followed out. It is difficult to understand why the East London did not join the Staines reservoir scheme, as the New River and other companies did. Apparently the directors were too confident in the adequacy of their own sources of supply, a confidence which, as has been proved by recent events, was misplaced.

So much for source of supply; now let us consider distribution. It appears to us, from reports, that a false conception of the constant service system has largely contributed to the distress; it was a matter of instruction that when constant service was adopted the use of cisterns should be abolished, and it is a fact that in those cases where cisterns had been left, and the regulation to abolish them and to draw from the main direct had been ignored, there the scarcity of water has been less felt. Indeed, the company has issued jars or receptacles in which to store the water. Thus the argument that want of storage is a fruitful source of distress is intensified by recent experience.

Now comes the question of waste—a very serious cause of the scarcity of water in the district. By recent reports we find that a volume equal to a minimum of 25 gallons per head per diem has been supplied by the company. Surely this is not a "water famine." The householders protest against its being said that they wilfully waste the water. The fact of the heavy frost from which we suffered two winters since having caused fracture in some of the mains of the East London may be one of the causes of waste. This is, however, doubtful, and has been repudiated by the company, while the London County Council insists on the fact. The East London have a large staff of waste inspectors, whose duty it is to prevent loss of water.

Of course the London County Council lays stress on the scarcity as an argument for going farther afield for a new source of water supply, and we are bound to admit that present conditions tend to support this contention; but it has been over and over again noted that ten to fifteen years must elapse before we could be independent of the present sources; and what are we to depend upon to prevent a recurrence of that which has now well nigh become an annual complaint?

One remedy which has been suggested is to insist upon the erection of cisterns in all cases. Those who know the conditions of life in many districts of the East End of London know that this reversal of the policy hitherto pursued would be fraught with dangers to the public health, even if special regulations for periodical cleaning were enforced. A more satisfactory remedy, which, however, could not be relied upon as a permanent solution of the difficulty, would be legislation directed to encourage combinations of water companies and mutual support in emergencies; it might be advantageous in all senses of the word to bring about a combination of companies under control of a Water Trust, as has been suggested—indeed, if we recollect rightly, it was recommended by the City's Water Inquiry in 1891.

As to source of supply a great deal of nonsense and inaccuracy have found expression in the public papers. The Thames has not yet ceased to flow, nor has the Lee dried up; indeed, it is wonderful that in the circumstances the latter river has shown such signs of vitality, due to the numberless springs in its bed. True it is that the river is very low in volume, and that Chadwell Spring—the source of the New River—has given out during the latter days of the dry weather, but the New River Company has been able notwithstanding to allow from 5 to 6 million gallons of its statutory supply from the Lee to pass on to the relief of the East London, and there has not been any material lowering of the head levels in the navigation.

The remedy for all this scarcity of water is in one word "storage" of water at seasons of the year when it is plentiful, and we submit this for the consideration of all who are interested in the purity and the conservation of "the first necessary of life."

THE MALARIA COMMISSION.

THE Scientific Commission, appointed jointly by the Colonial Office and the Royal Society to investigate the mode of dissemination of malaria with a view to devising means for preventing the terrible mortality which now takes place among Europeans resident in tropical and subtropical climates has now been nominated. It will consist of Dr. C. W. Daniels, of the Colonial Medical Service, British Guiana, who is well known for the many valuable contributions which he has made to tropical medicine; Dr. J. W. W. Stephens, formerly Lawrence Student in Pathology and Bacteriology at St. Bartholomew's Hospital, and the author of the essay on the Bacteriology of Asiatic Cholera in Allbutt's *System of Medicine;* and Dr. R. S. Christophers, of University College, Liverpool. Dr. Daniels will proceed at first to Calcutta, where he will acquaint himself practically with the remarkable work which Surgeon-Major Ross, of the Indian Medical Service, is carrying on into the relation of mosquitos to the dissemination of malaria. Drs. Stephens and Christophers will at at first proceed to Rome, where they will spend some time in studying malaria. Subsequently the Commissioners will meet together at Blantyre, British Central Africa.

PATENT MEDICINES AND MEDICAL SHAREHOLDERS.

WE are often asked whether a medical man should take a share or shares in a patent medicine, or be the owner of a proprietary medicine. The answer is simple. It is for obvious reasons contrary to medical ethics for any medical man to associate himself in any way with a patent medicine. Nevertheless it is the fact that some medical men do hold shares in proprietary and patent medicines without publicly associating their names with the articles. "Conscience doth make cowards of us all!" With regard to another question, namely, whether a fellow practitioner should expose the offender, the answer is not so easy. The motive of punishment in our English law is reformation, and the motive in the mind of a medical practitioner towards his erring brother should also be a high one. The gratification of individual hostility should not be the motive for exposure. Before taking any active steps in bringing the *lâches* of our brothers before any public tribunal, a personal appeal should always first be made. This might be done through the Ethical Committees of the Branches of the British Medical Association, or the Medico-Ethical Societies which now exist in many towns. Medical men may hold shares in companies interested in the sale of certain articles of food, but clearly it is contrary, not only to medical ethics but to general morality, for medical men to exploit the articles in which they are pecuniarily interested in at the expense of their patients. For instance, if we assume that A. is interested in a certain dietetic preparation as a shareholder, it would be reprehensible only to order for his patients the special brand in which he is interested. He might legitimately say, "I am a shareholder in this company, and I think

its preparation a good one." Then the patient would be dealt with frankly. We should never accept commissions, though in many ways we are tempted to do so. Jones offers to paint a portrait free on condition that the portrait is shown to our patients and friends. Smith sends some dozens of excellent wine as a present, with a similar intention. It is deplorable and humiliating that we should have to insist upon such elementary truths, but from our correspondence it is painfully evident that there is a very grave amount of misapprehension, not exactly on medical ethics, but as to what constitutes absolute fair dealing. Obliquity of dealing is but too well known in certain circles outside the profession, but we must at all costs keep our hands clean.

THE ROYAL ARMY MEDICAL CORPS AND THE *ARMY LIST*.

WE called attention in the BRITISH MEDICAL JOURNAL of September 10th to the fact that the Royal Army Medical Corps was not in its proper position in the August *Army List*. We are happy to state that the error has been corrected in the September list, and that the corps is now placed immediately after the Army Service Corps. It is headed "Army Medical Service," but the Director-General himself is the only officer on the active list under that head; then follow the Surgeon-Generals under the designation "Army Medical Staff"; and, lastly, comes the "Royal Army Medical Corps." The military titles having been extended to retired medical officers serving in appointments, these officers are shown under the head of "Army Medical Service" among the Departments; and the military titles of the substantive rank in which they retired are shown after their names, as well as, in italics and brackets, the honorary steps in rank which were granted on retirement; thus, A. B., Lieutenant-Colonel (Honorary Brigade Surgeon, or Deputy Surgeon-General). These officers, we understand, now sign official documents with their military rank; but whether it is strictly correct to put "Royal Army Medical Corps," or only "Army Medical Service," after their rank does not seem to have had as yet an authoritative ruling. We presume they may still use their old honorary rank on their cards if they think fit.

THE THERAPEUTIC VIRTUES OF GOLF.

To many persons, on this side of the Tweed at any rate, golf is what, according to Dr. Johnson, smoking is to the devotee of "My Lady Nicotine"—a means of doing nothing with the feeling that one is doing something. But to the serious golfer the game is not only a physical, but an intellectual and moral, exercise. In a paper read at a meeting of the American Neurological Association not long ago, Dr. Irving C. Rosse sang its praises with a vigour that should delight the heart of golfers on both sides of the Atlantic. He said that, "while doubtless from the sportsman's point of view and that of the hygienist the value of the game is quite apparent, its therapeutic value, not so well established, is practically an untrodden field, and in need of an exponent." This need has now been supplied. Golf as a therapeutic agent has found a *vates sacer* in the person of Dr. Rosse, who affirms that "to the neurologist who trusts to psychic, mechanical, and hygienic influences rather than to drugs for treatment, the theme is replete with magnificent possibilities of prophylaxis and even of therapeutics." The game, he goes on to say, combines exercise, pleasure, and fresh air without that risk of injury to heart, lungs, or nervous system which attends certain other exercises in which there is high blood pressure and arterial tension. It is not contraindicated in "heart lesions, arterial calcification, albuminuria, old age, childhood, or certain hysterical conditions which would be aggravated by such exercise as bicycling, swimming, horseback riding, or by mountain climbing; while in all affections marked by slowing of oxidation, or in those consequent upon intoxication by the products of organic disassimilation, the game of golf is to be recommended as the best method of bringing about a cure." Nor does this list exhaust the magnificent therapeutic possibilities of golf. "The obesity and degeneration of middle age, when the biceps has diminished and one's energy is failing, may be helped by devotion to golf. The further tendency of the exercise is to eliminate the so-called diatheses, and thus do away with gout, lithæmia, headache, and dyspepsia; while its hygienic and therapeutic consequences are admissible in cardiac and pulmonary affections." Dr. Rosse concedes that "moderation is advisable under such circumstances," but he states that "there can be no doubt of the benefit derived in some cases of cough, nervous asthma, and in affections of the bladder and prostate." It is pre-eminently in functional nervous diseases, however, that, according to him, it is to be recommended both as prophylactic and curative. "No exercise or recreation is better fitted for the mentally overworked, the hysterical, the melancholic; none helps more to preserve the concerted action of the eye, brain, and muscle known as the psychological moment; none perhaps, with the exception of swimming, gives one so good an appetite; there is not a more sovereign remedy for dyspepsia, and as to insomnia, such a thing scarcely exists among the devotees of golf." We are not prepared to deny that golf preserves the "psychological moment," though we venture to think that Dr. Rosse uses that expression in a somewhat esoteric sense; but does not his enthusiasm carry him a little too far when it leads him to say that the game "eliminates diatheses"? If golf does this, it is the *Catholicon*, or universal remedy, so long sought in vain, and indeed may be accepted as a passable substitute for the elixir of life. But alas, there are "diatheses" that resist even the eliminative power of golf.

THE PRINCE OF WALES'S HOSPITAL FUND.

LAST year two stamps, intended as a convenient form of receipt for small subscriptions, were issued on behalf of the Prince of Wales's Hospital Fund. They produced a sum of about £35,000, and it is estimated that about 600,000 persons subscribed to the Fund by purchasing these stamps. We are asked to state that new stamps for 1898 will be on sale on September 20th. The new issue consists of four stamps, each of distinct design, with a face value of 1s., 2s. 6d., 5s., and 10s. respectively. The designs for the stamps and the colours in which they are printed were selected by H.R.H. the Prince of Wales. Each stamp contains a vignette of the figure of Charity with the words "Prince of Wales's Hospital Fund," and the date 1898 in the top right-hand corner. A facsimile of the Prince's signature appears at the bottom of each stamp. Messrs. De La Rue and Co. have generously presented the dies to the Prince's Fund free of cost. It has been decided to reduce the number of stamps printed this year to one-third of the number produced in 1897; the plates will be destroyed, and no further stamps will be printed beyond the strictly limited number referred to. It is hoped that the whole of the 340,000 stamps which constitute the entire issue will be taken up between the present time and the end of the year, so that the proceeds may be made available for distribution amongst the hospitals in December next.

SCENTED WOMEN.

THE American papers are amusing themselves by discussing whether it is justifiable for a woman to scent herself by means of hypodermic injections. It seems to us that there is nothing to discuss. Women who have money and no occupation will always do foolish things. They are at the mercy of every quack and charlatan, and nothing that we can say is likely to have much effect on their folly. People who consult palmists and fortune tellers are likely enough to take up any new craze. As a matter of fact, the

custom of scenting the breath and the body by the use of drugs injected under the skin is by no means new, and there are many establishments in Paris and elsewhere which exist solely for this purpose. The massage shops would have adopted the idea long ago, but their customers are exclusively men, and man's folly does not run in this particular direction. We have seen a neat little outfit consisting of a hypodermic syringe and a number of cannulæ obtained from one of the Paris houses, and we have been made acquainted with the formulæ of the solutions employed, but it would serve no useful purpose to make them public. We can only express a hope that the apparatus is aseptic, or at all events that it is occasionally washed, for if this precaution is neglected there is likely to be a pretty general dissemination of disease, and some of the ladies who now find time hang heavily on their hands will be less pleasantly occupied than they had anticipated.

WOUNDS OF THE HEART.

According to popular ideas a person who is wounded in the heart drops down dead on the spot. This notion is erroneous; the victim usually lives for several minutes till sufficient blood has been forced out of the wounded chamber into the pericardium to cause fatal compression of the heart from without. In the more suddenly fatal cases blood escapes freely into the mediastinum through a wound in the pericardium, or death is instantaneous from shock due to damage to the sympathetic or pneumogastric nerve. It has, however, long been known to surgeons that immediate death does not always follow a wound of the heart. Paré, in 1552, reported the case of a duellist who, after receiving a sword-thrust in the heart large enough to admit the finger, pursued his opponent, thrusting at him several times, for two hundred paces, and then fell dead. Billy in 1680 described the case of a patient who lived five days after a sword wound of the right auricle. Dr. Billings found the original report in the *Zodiacus Medico-Gallicus* for April, 1680, which he believes to be the first medical journal ever published. The reports in the *Medical and Surgical History of the War of the Rebellion*, published in Washington in 1870, have done much to afford us relatively precise knowledge about wounds of the heart. Four instances of gunshot wounds not immediately fatal appear in these records. When the force of a musket ball is remembered, these cases prove that pure "shock" does not suffice to kill. The first patient survived a wound of the right auricle by a round musket ball for fourteen days. The second lived an hour and a-quarter after a perforation of the right auricle and left ventricle by a conical pistol ball. The third suffered from perforation of the left auricle and left ventricle, in addition to gunshot wounds of the intestine, axilla, and lung, yet lived for forty-six hours. The fourth patient was wounded in the right auricle by a musket ball. He died two and a-half years later. It was found that the ball had "entered the body between the fourth and fifth ribs on the left side, passed upward and backward and emerged between the clavicle and scapula of the same side, wounding in its passage the anterior surface of the auricle of the heart (*sic*), producing the appearance of a cicatrix on said auricle, organic lesion resulting therefrom, and subsequent decay and rupture of the auricle, causing almost instantaneous death." It is noted that this report, written by two local doctors at Mattawam, in Michigan, gives very positive testimony of the existence of a cicatrix of a musket-ball wound of the right auricle, and of softening and rupture of the muscular tissue two years and a-half after the injury. At the same time we are reminded that "it is known that the milk spots (*macula albidæ*) of Rokitansky have been mistaken for cicatrices." The same *History of the War* gives a very typical history of a death from stabbing, the victim surviving the wound for about eight minutes. The patient had inflicted with a large sheath knife several stabs on an assailant who seized his wrist, turned the point of the knife towards him, and suddenly drove the blade with great force into his chest, the handle still being grasped in the owner's hand. The wounded man fell at once, gasping for breath, his face deadly pale, and died in about eight minutes. The blade of the knife had gone clean through the sternum, traversed the mediastinum, and freely opened the right auricle. The cavities of the heart were empty, the sac of the pericardium and the mediastinum were filled with blood. Putting aside the wound in the bone and the precise circumstances attending the injury, this case closely resembles that of the murdered Empress. The heart was wounded so that a chamber was opened, and the blood in that chamber partly escaped into the pericardial cavity, and thus fatal compression ensued, probably before the system had suffered from sufficient reduction of blood supply to destroy life. The two cases also show that a knife used by a resolute man at close quarters is particularly deadly, and is always aimed at the heart. The assassinations of Henri Quatre, Gustavus III, the Duc de Berry, and President Carnot prove this fact, even though as in Carnot's case the heart is missed. There are several very vital parts not far from the centre of circulation, and the wound in the President's liver was as fatal as though it had lain in his heart. Besides the great American work above quoted, valuable records relating to wounds of the heart were published in Langenbeck's *Archiv* in 1868 by Fischer of Hanover. Out of 452 cases of wound of the heart as many as 72 recovered. Death was immediate in 104 and in 270 the patient lived from one hour to nine months. As for the recoveries, we may be sceptical about the diagnosis in all the reported instances, but a wound of the muscular wall of the heart not penetrating one of the chambers does not necessarily bleed so freely into the pericardial cavity as to cause fatal compression and may well heal. Many believe that the scar in such a case must necessarily undergo fatty degeneration and the fourth of the American cases above quoted seems to support this theory. The same change was supposed to be inevitable when a needle pricked the heart—another injury not invariably fatal. But Otis examined two specimens from patients who had survived for a fortnight or more shot wounds grazing the heart in which the pericardium was thickened and its visceral as well as its parietal layer coated with shaggy exudations, but the muscular substance presented no alterations discernible by the microscope. Professor Gross, as Dr. Lidell informs us, is possessed of a pericardium taken from a man aged 22 which contains an encysted needle, giving evidence of having been for long a harmless intruder. This specimen, as Lidell remarks, illustrates the indisposition of the parts to take on inflammatory action.

WHEAT AND CIVILISATION.

We referred last week to the sensational views expressed by Sir William Crookes in his address to the British Association as to the possible dearth of wheat which awaits us in the future should the present waste of fixed nitrogen in sewage be allowed to go on. There was one other point which appears to call for criticism. Sir William endeavoured to trace the material and intellectual superiority of European races to the consumption of wheat as distinguished from all other grains, which he stated to possess less food value and concentrated health-sustaining power. It is difficult to find the exact grounds for this assertion. Wheat flour admittedly contains a high percentage of proteid material, with rather less carbohydrate than most other cereals, but surely this cannot be taken to account as the cause of Caucasian superiority. Wheat is a denizen of temperate lands, and has it not been found that the inhabitants of these lands have of late been the most successful in the struggle for existence? Other grains

from the same latitudes, such as rye, make an adequate if unpalatable food, and oats can be worked up into the staple of life. Did not the Scots cultivate the Muse on a little oatmeal? We fear that if the President of the British Association is serious he has stuck too closely to his last. Everyone thinks he can tell the human character by means of his own special trade, from the phrenologist through the physiognomist and graphologist down to Mr. Thomas Hardy's bootmaker, who so ably diagnosed Fancy Day's disposition while repairing her shoes. But each of these observers can see only one surface of the truth; for stereoscopic vision all their views must be combined. Nor is it less important in judging nations to endeavour to reach an opinion of solid value in a similar manner rather than to found a paradox insecurely straddling between partially harmonious facts.

SMOKE ABATEMENT AND PARTY CLUBS.

Public sentiment has been shocked by the announcement that the National Liberal Club has been convicted and fined for causing a nuisance by allowing large quantities of black smoke to escape from their works. The representative of the club who attended before the magistrate thanked God, like the Pharisee, that the club was not as other institutions or companies conducted on mundane principles. If all places in London, he said, were as well supplied as the National Liberal Club, the smoke nuisance would be a thing of the past. The magistrate, however, less amenable to fine phrase expressing infinite good intentions than the average voter, found that the club had been greatly aggravating the smoke nuisance of the present, and made an order for the abatement of the nuisance, with five guineas costs to the vestry. That the case was rather a bad one appears to be proved by the fact that, of two other cases before the same magistrate, in the one against an electric supply company he made no order, while in the other against a restaurant the summons was withdrawn. The incident is an illustration of the indifference with which public health questions are regarded by party organisations.

HEART DISEASE FROM LAUGHTER.

The ancients were fond of insisting that laughter might kill. They always had a case in point, and in this instance Philemon, the comic poet, was the hero—or rather the patient—according to Valerius Maximus and Lucian. It is Rabelais, however, who has immortalised Philemon, whom he wrongly calls Philomenes. The poet, he says, found a jackass eating up the figs on his dinner table, so he said to his servant who came in with the wine that he might as well give the ass a drink. Then the poet laughed so violently that his breath failed him and he died. It must be added that the poet was then 95 years old. From this suspicious though amusing legend we can pass to clinical facts which it suggests. Laughter in itself cannot very well kill, but it may do harm. Hysterical girls and boys with kindred nervous affections are often given to immoderate laughter, which tends to increase nervous exhaustion. It would appear, however, that in some cases a primary organic lesion may be produced. Dr. Feilchenfeld[1] relates an instructive case in which a little girl suffered from very definite cardiac symptoms after immoderate laughter. The patient was 13 years old, and had previously been free from any sign of heart disease. After laughing on and off for nearly an hour with some companions she suddenly felt stabbing pains in the chest, and was seized with fits of coughing, followed by cardiac dyspnœa, very well marked. This latter symptom lasted for over three hours; then the girl went to sleep, and woke up early next morning with another attack. Several more fits of pre- or lial pain and dyspnœa occurred next day. Feilchenfeld found the patient deeply cyanosed, with a frequent, filiform pulse. The heart sounds were feeble, but there was no murmur. Camphor and morphine did no good. Dr. Senator was called in consultation, and small doses of phenacetin were tried; this quieted the patient. In the course of a few weeks the attacks grew rarer and rarer. Whilst the heart's action was calming down, very distinct signs of dilatation were detected without difficulty. The fits of cardiac dyspnœa have ceased for the last six months, and no evidence of dilatation remains. Feilchenfeld believes that the cardiac disease directly resulted from immoderate laughing. The violent spasmodic action of the diaphragm during laughter first excited and then paralysed the pneumogastric nerve. The pain, cough, dyspnœa, and hyposystole which occurred in distinct succession in each attack represented this condition of the vagi, and the consequent dilatation of the ventricles. Any relatively violent action of the diaphragm produced the same effect for some time afterwards on the weakened vagi. *La joie fait peur*, they say in France. Let laughter-loving girlhood remember that joy may also make heart disease. Older persons do not seem subject to this form of cardiac affection, for psychological reasons only too obvious.

[1] *Deut. med. Woch.* July 28th, 1898

THE PREVENTION OF CONSUMPTION IN THE COUNTY OF DURHAM.

A Society for the Prevention and Cure of Consumption in the County of Durham has been formed as the outcome of a resolution passed at the annual meeting of the North of England Branch of the British Medical Association held at Sunderland. The Society consists of lay as well as medical members. A meeting will be held in the Town Hall, Sunderland, on September 20th, under the presidency of the Mayor, to elect a committee to carry out the objects of the Society. The following is its programme:—(1) To teach the public that consumption is an infectious disease, how to prevent its spread, and that it is curable in the earlier stages in a large proportion of cases when systematically treated by the open-air method; (2) to urge upon sanitary authorities in the county the necessity of taking steps to stop its ravages, and of obtaining further powers for so doing; and (3) to provide a properly-equipped open-air sanatorium for the treatment of suitable cases, admission to which to be free to the poor, but all patients who can to contribute towards their maintenance, so that the institution may be largely self-supporting when once fully started.

UNBURIED INFANTS.

One of those scandals, which may be expected periodically so long as the present laxity continues with regard to the registration of deaths, has just occurred in Birmingham. As the law requires no registration of stillbirths, the bodies of stillborn children are often treated with an indecency revolting to our sense of humanity. The great majority of such cases occur among the poor, to whom expense is an object, and enterprising undertakers are therefore prompted to resort to every device whereby the expense of burial can be minimised. In the case that has recently excited so much public feeling at Birmingham, it appears from the report in the *Times* that the police found in an attic on the premises of an undertaker's assistant three soap boxes, each containing the body of a child. Behind a tub in the yard they found another body in a box. Two years ago in the same city as many as thirteen infant bodies were found in a cellar. Nor are they always the bodies of stillborn children, for in the same case the police found seven death certificates relating to these infants; so that it would appear that the cheapness with which the bodies of the stillborn can be disposed of serves as an inducement to treat the bodies of children born alive as though they were born dead. There can be little doubt that practices

of this kind are adopted in many parts of the country, and that it is highly necessary for all bodies, whether stillborn or born alive, to be registered alike. This was strongly recommended by the Special Committee on Death Certification appointed by the House of Commons in 1893, over which Sir Water Foster presided. It was then pointed out by the Committee that in addition to the temptation which the present state of the law offered to the poor to save funeral fees by pretending that children were stillborn, it acted as a strong incentive to crime for the following reasons:—(1) Any person practically can give a certificate that a child is stillborn, and it only rests in the discretion of the undertaker whether he chooses to accept it. (2) Many facilities exist for the disposal of the bodies of children said to be stillborn, and in this way it is probable the bodies of many children who have met with foul play are got rid of; the only penalty for giving a false certificate that a child is stillborn being a fine of £10, seldom exacted. (3) The desire for secrecy was an inducement to a certain class of midwives to see that children were stillborn in many cases of illegitimate birth, and the non-registration of such births greatly assisted such malpractices. Sir Walter Foster's Committee reported in 1893 and now it is 1898. How much longer will it be before the Legislature sees fit to take notice of the unanimous recommendation of the Committee specially appointed to investigate this serious public evil?

THE NEW PHOTOGRAPHY.

The possibility of producing photographic pictures without the agency of either camera or light has just been extended to living matter by Professor Percy Frankland, F.R.S., of Mason University College, Birmingham, who has found that cultivations of bacteria exert an influence on the sensitive film of the photographer. At the Chemical Section of the British Association on Friday, September 9th, Professor Frankland gave an account of his experiments and exhibited a series of pictures which he had obtained by placing bacterial cultivations in juxtaposition with the sensitive surface of a photographic plate. Although the action can take place through a distance, it is stopped by the interposition of glass, and hence it is in all probability not due to any form of radiant energy, but to the emission of material particles which enter into reaction with the photographic film. Professor Percy Frankland announced his intention of extending the investigation to other organised structures, vegetable and animal.

THE PROTECTION OF WATER SUPPLIES.

In his paper on the Protection of Urban and Rural Water Supplies, read at the Dublin Congress of the Royal Institute of Public Health, Dr. Thresh dealt with a subject vital to the well-being of the community. It is doubtless unpleasant to be told that "it is the exception to find either public or private water supplies adequately protected;" it is, however, none the less true. In fact, for our part, we would take a still more serious view of the situation, and say that it is the exception to find such supplies protected at all, except in the crudest manner. Dr. Thresh's remedy is legislation and education. Both are powerful agents, and to the latter of them unqualified support may be given. There is, however, room for much valuable discussion as to the best legislative means to be adopted, as was recognised by Parliament when it refused to insert the clauses introduced by the Local Government Board in certain private water Bills, as being of the nature of limited legislation on an important subject. Dr. Thresh suggests, as a basis for future legislation: (1) That sanitary authorities should have power to close any shallow well which it can be proved is liable to pollution. (2) That no shallow wells shall in future be made until the site selected has been approved by the medical officer of health for the district. (3) That sanitary authorities should be empowered to make by-laws having reference to the construction of such wells. That control of water supplies by an authority is necessary all will admit, and that such control should rest, to a large extent, with the sanitary authority, is doubtless desirable for many local reasons; but that it would be wise to vest in that officer the ultimate control of the water supplies in his district we venture to doubt. The water supply of a district is ultimately a physiographical question; and geological formations are not conterminous with administrative districts. A central water authority is the only solution of the control question. On it should rest the responsibility of opening wells, while the local sanitary authority might wisely be entrusted with their enforced closure. Most hygienists will agree with Dr. Thresh' when he says, "I am strongly inclined to think that all public supplies, whether owned by sanitary authorities or water companies, should be under the supervision of some higher authority."

DROUGHT AND DIPHTHERIA.

Those who have not already read "*Ia*," by "Q," should do so. It is fresh and original, and abounds in striking sketches of character of unusual type. The best of these is, perhaps, the doctor of the remote Cornish village in which the plot of the story is laid. He is evidently a study from life, and the medical part of the story is carefully and accurately drawn, correct in the most trivial details. We are interested in him at the present moment on account of the capital sketch of the local sanitary and meteorological conditions which heralded in and were associated with the epidemic of diphtheria which forms an important feature in the story. Here is one of the doctor's terse remarks: "And you say it is good weather, and you are a fool. For it is a dry February, and this is already the third case of French croup that I am going to." Later on we come across the author's sketch of the progress of events. "No rain fell in February; very little in March; nothing in April; and, again, none in May. 'A hot May makes a fat church-hay.' By the middle of the month diphtheria had settled to its work in the lower part of the town..... and killed, and went on killing." Then we learn that "the epidemic reached its height in the last week of June." To many medical officers of health this description will appeal on account of its truth. It is interesting as an independent observation by a layman, without any theories to advance, but who has carefully observed and chronicled the course of a real epidemic. To medical men it appeals as an illustration of the manner in which diphtheria, under the influence of the increased virulence associated with an epidemic, overleaps the boundaries of its customary autumnal incidence; and it is a striking illustration of the thesis advanced by Dr. Newsholme, in his recent work on *Epidemic Diphtheria*, that prolonged drought is one of the most important factors in the pathogenesis of epidemic diphtheria.

PERFORATION OF UTERUS OR SOUNDING OF TUBE?

The dread of perforation of the uterus is very natural, and its diagnosis and significance highly important. Putting aside the question of criminal abortion, there remain cases in which the practitioner introduces the sound without undue force, yet is horrified to find that it passes 5 or 6 inches upwards. Fortunately the accident is, as a rule, remarkably free from disagreeable consequences. In some instances of the kind there is reason to believe that the uterine wall has actually been perforated. Some authorities imply that perforation is the sole explanation of this clinical phenomenon; others have for long insisted that the passage of the sound many inches onwards where there is no evidence of myoma signifies that the instrument has entered the Fallopian tube. They

even go further, and claim that they have deliberately and not accidentally catheterised the tube. This feat has been long held as impossible by other writers, mostly by those who believe that the uterine wall is perforated when a sound passes unusually far. Schultz specifically declared only two years ago that the sound cannot enter the uterine orifice of the tube either in health or in disease. A year ago, however, Ahlfeld succeeded, to his satisfaction, in sounding the tubes, declaring that he could prove his feat by bimanual palpation. Floeckinger,[1] however, claims to have settled the question last January at an operation where a suspicion that he had previously sounded the tube was proved to the eyes as well as to the touch. The patient was a very young married woman, under 18 years of age; the uterus had to be explored in order to remove some placental relics; its cavity measured $3\frac{1}{2}$ inches, and a small subperitoneal myoma was detected on bimanual palpation. The sound was once more introduced; it slipped inwards, without resistance, up to the handle. On palpation it could be felt passing along and beyond the left uterine cornu. These observations were made in August last year. In January, as the patient suffered badly from hæmorrhage, Floeckinger removed the pedunculated tumour through an abdominal incision. The sound was first passed up to its handle, strict antiseptic precautions being taken. It was found to lie partly in the left tube, which was greatly stretched, as was also the uterine wall—a fact worth notice, as it shows that an instrument introduced into the tube can stretch it almost indefinitely without entering the peritoneal cavity; otherwise the end of the sound would quickly enter that cavity through the ostium of the tube, and the result would probably be serious. What was observed in this case explains the absence of any grave symptoms after catheterisation of the tube. Floeckinger succeeded in catheterising the right tube as well at the operation. His experience seems to settle the question. He has since made experiments on the cadaver, and finds that in catheterisation of the tube the instrument can be passed a second time or oftener without meeting with any resistance. On the other hand, when he succeeded in perforating the uterine wall with the sound, he noted that on introducing the instrument a second time, so as to make it enter and slip along the perforation, it always met with resistance, especially at the inner orifice of the false passage.

[1] *Centralbl. f. Gynæk.*, August 27th, 1898.

THE EXTIRPATION OF CONSUMPTION.

The prevention of tuberculosis is decidedly the hygienic question of the day. It is hardly possible to open a medical journal, European or American, without coming across one or more articles on the subject. Everywhere is heard the cry, *Delenda est tuberculosis*. Congresses pass resolutions calling on Governments to take active steps; crusades are organised for aggressive warfare against the great enemy of civilised life; and sanatoria are springing up on every side. It is recognised that the hope of freeing the human race from the scourge lies in isolation of those who have become the prey of the disease. But so far the only means of effecting this object that has been suggested is the provision of sanatoria. A bolder scheme has been propounded in America. In the *Arena* for August, Dr. Lincoln Cothran advocates a plan which in his own words, "amounts virtually to the establishment of a national Molokai for the segregation and treatment of tuberculosis." There are, he says, vast tracts of land in Southern California and Arizona where the air is dry, free from irritating dust, and with uniformly high barometric pressure. He urges that some place in those regions be selected large enough to accommodate all, and that all cases of consumption be transported thither. "Means must, of course, be provided for their residence, subsistence, and employment. Competent medical attendants could be procured. During the greater part of the year life in tents or out of doors would be most enjoyable. All forms of recreation—horseback riding, caring for stock, and tilling of the soil—would make existence bearable, if not pleasurable." Dr. Cothran waxes eloquent as to the advantages likely to flow from this drastic proposal. It means, he says, the saving of inestimable wealth wasted in worthless nostrums, doctors' bills and travelling expenses. It means further, according to his estimate, ten or fifteen years added to the average span of human life. With prophetic vision he foresees the ultimate extinction of consumption in the United States. He points to the extinction of leprosy, which has been accomplished by isolation of a kind similar to that which he proposes for consumption. Unquestionably consumption could be suppressed by isolation carried out with sufficient strictness and for a sufficient length of time, but there are far more difficulties in the way than Dr. Cothran, in his hygienic enthusiasm, seems to dream of. Apart from the financial factor in the question, he appears to have overlooked the objection of the natural man, especially of what is conveniently, if incorrectly, called Anglo-Saxon man, to being too much governed. A democratic government is, as the Duke of Wellington said, the strongest of all governments, and the United States executive has often shown that in matters affecting the public health it is not disposed to treat the sacred principle of the liberty of the subject with superstitious reverence. But the strongest government would probably find such a scheme as that suggested by Dr. Cothran beyond its strength.

EXACT DOSAGE OF CHLOROFORM TO THE LOWER ANIMALS.

Many valuable lives among horses, dogs, and domestic pets have been lost through careless administration of chloroform. Mr. Hobday has for some time advocated a method whereby chloroform vapour can be given in the most dilute strength by permitting the animal to aspirate air over the surface of the anæsthetic, a hand bellows being in one apparatus placed between the face piece and the inhaler, while in another pattern air is propelled from a bellows on the distal side of the bottle holding the chloroform. In the *Journal of Comparative Pathology and Therapeutics* (June, 1898, p. 114) Mr. Hobday gives a report of 500 cases of administration of chloroform to dogs and 120 to cats. He finds that the latter are far more susceptible to overdosage and he quotes three fatalities in 120 cases; in two of these the animals appear to have been killed by the students in charge, who pumped in excessive quantities of the drug, while in one the cat died after a few whiffs of apparently overconcentrated vapour. Mr. Hobday places his animals in the abdominal position, with legs widely spread so as not to interfere with the breathing. In the treatment of overdose of chloroform Mr. Hobday employs Schule's hydrocyanic acid, 2 or 3 minims being placed on the back of the tongue, inhalations of ammonia vapour, and artificial respiration. All who have worked in the physiological laboratory or in veterinary institutions know only too well how easily dogs become overpowered by chloroform, and how frequently they succumb from failure of respiration. It is interesting to note that Mr. Hobday's experience with trustworthy apparatus leads him to believe that with care dogs are really good subjects for chloroform, more so than cats.

PRESCRIBING CHEMISTS AND UNQUALIFIED ASSISTANTS.

An inquest was held at Tottenham on August 30th by Mr. Hodgkinson on the body of Albert Ernest McKenna, aged 11 months which illustrated once more the dangers of unqualified practice. The mother of the child in her evidence, as reported in the *Morning Advertiser*, stated that the child was in good health up to a

few days previously, when diarrhœa and sickness came on. She took the child to Mr. Morris, chemist, of West Green Road, who after looking at him gave some medicine and ordered arrowroot as a food. This witness was asked by the coroner why she took the child to a chemist instead of to a doctor. The reply was that she "thought he would give me something to stop the diarrhœa." The coroner and jury commented upon the practice of chemists prescribing, and one juryman stated that, in his opinion, chemists ought to be stopped from practising as doctors. It appears from the report before us that the chemist himself had not prescribed in this case, but his assistant, who was not a registered pharmaceutist, had done so. This is a condition of affairs which certainly calls for the consideration of the Apothecaries' Society. The medical practitioner is being deprived, and rightly so, of the services of unqualified assistants; here we have a child prescribed for by the unqualified assistant of a chemist, who himself has no right to prescribe. If the medical profession loyally obeys the ordinance of the General Medical Council with regard to the employment of only qualified assistants the Council must see that the legal rights of the profession are secured to them; otherwise obedience to the Council can only lead to a diversion of practice from the qualified to the unqualified. We have already heard of unqualified assistants who being dismissed by their employers owing to the resolution of the Council, had started in practice in the same district as their former employers, defying any efforts to "restrain" them. It is time that united action should be taken both by the General Medical Council and the Apothecaries' Society to protect the interests of the profession.

THE MEDICAL SOCIETIES, 1898-99.

AMONG the signs of the departure of the summer and the end of the vacations are the announcements of the dates of meeting of the Medical Societies. The Wigan Medical Society, which met on September 8th, appears to have been actually the first in the field. The Clinical Society of London has issued its card showing that its first meeting for the session will be held on October 14th, and its first clinical evening on October 28th. The Pathological Society of London will commence work on October 18th.

MEDICINE IN HOLLAND

MR. GEORGE PERNET sends us the following interesting note on the paragraph published under this head in the BRITISH MEDICAL JOURNAL last week: "Will you allow me to point out that Swammerdam was not only 'great on the natural history of insects,' but was also a pioneer in experimental physiology? He was the first to use the muscle-nerve preparation of the frog to demonstrate the contraction of a muscle which follows irritation of its nerve. This experiment was performed in the presence of the Duke of Tuscany in 1658. A description, with figure, will be found in the *Bybel der Nature, door Jan Swammerdam, Amsteldammer, of Historie der Insecten* . . . . . Alles in de Hollandsche, des Auteurs Moedertaale, beschreven . . . . Te Leyden, 1738 (vol. ii, p. 839. Tab. XLIX, Fig. V). Further, the Dutch naturalist and physician, produced contraction in a muscle by the contact of metals, a fact which later was to bring renown to Galvani (1789), but Swammerdam attributed it to pressure (Swammerdam: *Loc. cit.*, p. 849, Tab. XLIX, Fig. VIII). Swammerdam also made experiments on the frog's heart, and insisted on the value of frogs for experimental purposes. These interesting experiments appear to have been overlooked by subsequent writers. As to Leeuwenhoek, he must be looked upon as the father of bacteriology. In a letter to our Royal Society, addressed to Francis Aston, and dated Delft, in Holland, September 12th, 1683, he described the schizomycetes found in the mouth and between the teeth, with figures. He again referred to the subject in another letter to the same Society in 1692. (*De Ontdekking der Bacterien*, door Prof. P. Hartnig, in Album der Natuur, 1884.) (See also Leeuwenhoek: *Opera Omnia, sive Arcana Naturæ detecta*, Leyden 1722; and *Trans. Royal Society*)."

INDEX TO THE VACCINATION COMMISSION'S REPORT.

AN *Index* to the final report of the Royal Commission on Vaccination has been compiled in the Medical Department of the Local Government Board, and can now be obtained from the Government printers in London, Edinburgh, Glasgow, and Dublin, price 9d. The *Index* is limited to the general report, and does not include the appendices nor the dissentient statement of Dr. Collins and Mr. Picton. It is, in fact, an index to the majority's report, and is much fuller than that prepared and issued some time ago by General A. Phelps of Edgbaston, who, it will be remembered, prepared also an index to the dissentient statement.

THE WAR IN THE SOUDAN.

IT is from every point of view gratifying to read in the press that "The Royal Army Medical Corps deserves a complete despatch to itself, so admirably was its work done. There was a perfectly equipped field hospital fifty yards to the rear of the zariba, and a base hospital 400 yards in the rear. The wounded were carried back by reserve companies, and attended to without the least delay or confusion." There appears indeed to be only one opinion as to the highly efficient and successful manner in which the Medical Service has, in the face of very great difficulties, done its part in the Soudan Campaign. The organisation of the medical machinery, and the perfection with which it has worked reflect the highest credit on Surgeon-General W. Taylor and the officers under his command, and also on the Sirdar, who, instead of treating the Medical Service as an inconvenient encumbrance, if not a mere superfluity in the field, has done everything in his power to facilitate its effective action.

SIR J. ACHESON MACCULLAGH, M.D., medical officer to the Derry Dispensary, has been appointed a permanent inspector of the Local Government Board in Ireland.

WE are asked to state that Professor Virchow will deliver the Huxley Lecture on October 3rd not in the Charing Cross Hospital Medical School, but in the neighbouring St. Martin's Town Hall, which will accommodate a larger audience. Admission is by ticket, and seats may still be obtained by early application to the Dean of the Charing Cross Hospital Medical School.

THE list of British casualties in the recent disturbances in Crete includes the name of Lieutenant Clarke, R.A.M.C., who was wounded. Lieutenant T. H. M. Clarke was born in 1873, took his diploma of M.B. at Dublin in 1895, and was appointed to the Royal Army Medical Staff in 1897.

PRESENTATION.—Mr. Ward Humphreys, on the occasion of his leaving Cheltenham, was entertained at a dinner, presided over by the Mayor of Cheltenham, and presented with a silver tea and coffee service bearing the following inscription: "Presented to G. H. Ward Humphreys, Esq., in recognition of his public services during his residence in Cheltenham."

THE TEACHING OF HYGIENE IN FRENCH SCHOOLS.—At the Congress of the French Association for the Advancement of Science, recently held at Nantes, a resolution was passed, on the proposal of M. Brouardel, urging that the teaching of hygiene in *lycées* and colleges should be entrusted to medical men, and that it should be accompanied by the sanctions necessary to make it really fruitful. The same Congress at its meeting last year, passed a resolution with regard to the teaching of hygiene in primary schools.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AT BRISTOL.

THE meeting of the Association, which came to an end as regard the work of the Sections at the general meeting held on Wednesday last, may be pronounced to be one of the most successful held in recent years. The weather, except for one day, was gloriously fine, the work of the Sections was of exceptional interest, and the local arrangements left nothing to be desired, so that Sir Norman Lockyer, in proposing the vote of thanks, was able to congratulate the local committee and officers, and thank them for one of the most enjoyable and complete meetings the Association had been at.

GENERAL ARRANGEMENTS.

The work of the Local Committee was very seriously increased by the unfortunate and disastrous fire at the Colston Hall on September 1st. Here were to have been given the President's address, the two lectures and one *conversazione*, besides which the room was also taken for the dinner in connection with the opening of the Cabot Tower on September 6th, and the Chamber of Commerce dinner on September 10th, and a *conversazione* given by the local Executive Committee. With commendable promptitude the local secretaries and treasurers, immediately on hearing of the fire, arranged for all six events to take place in other halls, taking the entire responsibility on their own hands, and their action has met with the approbation not only of the local Committees, but with that of the members of the Association.

The Reception Room at the Victoria Rooms was fitted with the usual counters and desks, telephones, typewriters, post-office, etc., the general fittings of the room being very artistic and convenient.

Two *conversaziones* were given at Clifton College, the first by the authorities of the College itself, the second, by the kind permission of the Council, by the Executive Committee. At both of these many scientific exhibits were shown, not the least interesting being that of skiagraphs taken without the use of the coil by the Wimshurst machine. These were shown by Mr. Clark, a working man in Bristol, and the skiagraphs shown by him demonstrated the heart, liver, and other organs, while with the use of the fluorescent screen the movements of the heart could be seen.

Not the least important in these meetings is constituted by what have been irreverently called "the side shows," and in these Bristol presented a variety which would be difficult to beat. The Chamber of Commerce dinner, at which several distinguished Canadians and foreigners were present; the *fête* to the officers of the Squadron then anchored off Clevedon; the dinner of the Society of Merchant Venturers; the exhibition of pictures, etc., at the Drill Hall; the Biological Exhibition at the Zoological Gardens; the presence of the four battleships and the feasts given the sailors, and the smoking concert—all these tended to make the meeting one of the most pleasant and varied that has ever been held.

Apropos of the last-mentioned, Sir William Crookes, in a very happy speech, remarked that he had found that Shakespeare, who seemed to know everything in his own time, and even in the future, had evidently referred to the Roentgen rays in *Hamlet*, Act iii, Sc. 4:

> You go not, till I set you up a glass,
> Where you may see the inmost part of you.

It need hardly be said that the "Symposium" was most successful. The programme, which was drawn in a comic vein, was much appreciated.

THE SECTIONS.

It would be difficult, even in a brief space, to enumerate all the important papers that were read, but as usual the members seemed to take most interest in the Anthropological and Geographical Sections, both of which received papers by M. de Rougemont of North Australian fame. On both occasions the papers were of great interest, and though some of his audience went away sceptical, there was nothing said by the author which could not have happened to him. He gave the impression by his simple manner and ready style of being perfectly truthful in all his statements. There was no paper naturally and of purely medical interest, but many no doubt which will be read by those medical men who have studied some scientific subject outside their profession.

THE CABOT TOWER.

Though not directly connected with the British Association, mention must be made of the opening of the Cabot Tower by Lord Dufferin, and the dinner in the evening, at which many distinguished visitors were present. Lord Dufferin, whose oratory is justly celebrated, spoke both at the opening ceremony and at the dinner, and those who were fortunate enough to be near say that his oration was a masterpiece. But perhaps the best speech of the evening was that of Mr. Gilbert Parker, representing the Royal Society of Canada.

THE INTERNATIONAL CONFERENCE OF TERRESTRIAL MAGNETISM.

This conference, which met during the meeting of the Association, did much good work, and the foreign delegates expressed themselves much pleased with the exchange of ideas they were able to make with each other. Curiously enough, during the meeting a large sun spot appeared, followed by a magnetic storm of considerable magnitude and a brilliant aurora borealis. Nothing could have been more apposite than this unexpected addition to the local attractions.

SECTION OF MATHEMATICAL AND PHYSICAL SCIENCE.

THE PHYSICS OF SMELL.

Professor W. E. Ayrton, F.R.S., the President of the Section of Mathematics and Physics, devoted the greater part of his address to a discussion of the physics of smell and the mode in which odours are disseminated. He observed that of the three senses which enabled us to detect the presence of things at a distance—the senses of sight, hearing, and smell—the last had been strangely neglected. He related a number of preliminary experiments which he had made recently, and stated that he had found his own powers of discrimination small, whereas ladies of his family who had assisted him possessed great olfactory quickness. He said: There is a generally-accepted idea that metals have smells, since if you take up a piece of metal at random, or a coin out of your pocket, a smell can generally be detected. But I find that as commercial aluminium, brass, bronze, copper, German silver, gold, iron, silver, phosphor-bronze, steel, tin, and zinc are more and more carefully cleaned, they become more and more alike in emitting no smell, and, indeed, when they are very clean it seems impossible with the nose, even if it be a good one, to distinguish any one of these metals from the rest, or even to detect its presence. Brass, iron, and steel are the last to lose their characteristic odour with cleaning, and for some time I was not sure whether the last two could be rendered absolutely odourless in consequence of the difficulty of placing them close to the nose without breathing on them, which, as explained later on, evolves the characteristic "copper" and "iron" smell. But experiment shows that when very considerable care is taken both in the cleaning and the smelling, no odour can be detected even with iron or steel.

Contrary, then, to what is usually believed, metals appear to have no smell *per se*. Why, then, do several of them generally possess smells? The answer is simple, for I find that handling a piece of metal is one of the most efficient ways of causing it to acquire its characteristic smell, so that the mere fact of lifting up a piece of brass or iron to smell it may cause it to apparently acquire a metallic odour, even if it had none before. This experiment may be easily tried thus: Clean a penny very carefully until all sense of odour is gone; then hold it in the hand for a few seconds, and it will smell—of copper, as we usually say. Leave it for a short time on a clean piece of paper, and it will be found that the metallic smell has entirely disappeared, or at any rate is not as strong as the smell of the paper on which it rests. The smell produced by the contact of the hand with the bronze will be marked if the closed hand containing it be opened sufficiently for the nose to be inserted, and it can be still further increased by rubbing the coin between the fingers.

All the metals enumerated above, with the exception of gold and silver, can be made to produce a smell when thus treated, but the smells evolved by the various metals are quite dif-

ferent. Aluminium, tin, and zinc, I find, smell much the same when rubbed with the fingers, the odour, however, being quite different from that produced by brass, bronze, copper, German silver, and phosphor-bronze, which all give the characteristic "copper" smell. Iron and steel give the strong "iron" smell, which, again, is quite different from that evolved by the other metals. In making these experiments it is important to carefully wash the hands after touching each metal to free them from the odour of that metal. It is also necessary to wait for a short time on each occasion for drying the hands, since it is not until they become again moist with perspiration that they are operative in bringing out the so-called smells of metals.

That the hands, when comparatively dry, do not bring out the smell of metals is in itself a disproof of the current idea that metals acquire a smell when slightly warmed. And this I have further tested by heating up specimens of all the above-mentioned metals to 120° F. in the sun, and finding that they acquire no smell when quite clean and untouched with the hands.

Again, dealing with the copper group, or with aluminium, no smell is produced by rubbing any one of them with dry table salt, strong brine, or with wet salt, provided that a piece of linen is used as the rubber; but if the finger be substituted for the linen to rub on brine, a smell is observed with copper and German silver, this smell, however, being rather like that of soda; and whether dry salt, brine, or wet salt be rubbed on aluminium, a smell is noticed if the finger be used as the rubber, this smell being very marked in the case of the brine or wet salt. Again, although even when linen soaked in brine, or having wet salt on it, is used to rub tin, iron, or steel, a faint smell is noticed; this is much increased when the finger is substituted for the piece of linen.

As a further illustration of the part played by the skin in causing metallic smells, it may be mentioned that the explanation of certain entirely contradictory results, which were obtained in the early part of the investigation, when linen soaked in strong brine was rubbed on aluminium, was ultimately traced to one layer of moist linen of the thickness of a pocket-handkerchief, allowing the finger to act through it, so that an odour was sometimes noticed on rubbing aluminium with the piece of linen soaked in brine. For it was found that when two or more layers of the same linen soaked in the same brine were employed to separate the finger from the aluminium during the rubbing, no smell could be detected.

From the preceding it seems that the smell in these cases is evolved partly by contact with the finger, partly by the action of the solution of salt, and partly by the rubbing of the solid particles of salt against the metals. That the friction of solid particles against metals is operative in evolving smells is also illustrated by the smell noticed when iron is filed, or when aluminium, iron, or steel is cleaned with glass paper or emery paper in the air. Indeed, the smell thus evolved by aluminium Mrs. Ayrton finds particularly offensive. A slight smell is also noticed if iron or steel be rubbed in the air with even a clean piece of dry linen, and each specimen of the copper group, with the exception of the phosphor-bronze, which was tried in this way, gave rise to a faint, rather agreeable smell. No indication of odour could, however, be thus produced with aluminium or zinc when both the metals and the linen rubber were quite clear. It should, however, be borne in mind that all these experiments, where very slight smells are noticed, and especially when the odour rapidly disappears on the cessation of the operation that produced it, are attended with a certain amount of doubt, for the linen rubber cannot be freed from the characteristic smell of "clean linen," no matter how carefully it may be washed.

Before a metal can evolve a smell chemical action must apparently take place, for rubbing the metal probably frees metallic particles and facilitates the chemical action to which I shall refer. All chemical actions, however, in which metals take part do not produce smell; for example no smell but that of soda, or of sugar respectively, can be detected on rubbing any single one of the series of metals that I have enumerated with a lump of wet soda or a lump of wet sugar, although chemical action certainly takes place. Again, no metallic smell is observable when dilute nitric acid is rubbed on copper, German silver, phosphor-bronze, tin, or zinc, although the chemical action is very marked in the case of some of these metals. Weak vinegar or a weak solution of ammonia are also equally inoperative. On the other hand, merely breathing on brass, copper, iron, steel, or zinc, which has been rendered practically odourless by cleaning, produces a very distinct smell, while a very thin film of water placed on iron or steel evolves a still stronger odour. Such a film, however, produces but little effect with any of the metals except these two, and if the whole series is lightly touched in succession with the tongue the iron and steel smell as strongly as when breathed on, the German silver more strongly than when breathed on or covered with a water film, and the other metals hardly at all. Now as regards the explanation of these metallic smells, which have hitherto been attributed to the metals themselves. This, I think, may be found in the odours produced when the metals are rubbed with linen soaked in dilute sulphuric acid. For here, apart from any contact of the metal with the skin, the aluminium, tin, and zinc are found to smell alike: the copper group also smell alike, and the iron and steel give rise to the characteristic "iron" smell, which in this case can be detected some feet away. Now, it is known that when hydrogen is evolved by the action of sulphuric acid on iron the gas has a very unpleasant smell, and this, Dr. Tilden tells me, is due to the presence of hydrocarbons, and especially of paraffin. I have been, therefore, led to think that the smell of iron or steel when held in the hand is really due to the hydrocarbons to which this operation gives rise, and it is probable that no metallic particles, even in the form of vapour, reach the nose or even leave the metal. Hence, although smell may not, like sound, be propagated by vibration, it seems probable that particles of the metal with which we have been accustomed to associate the particular smell may no more come in contact with the olfactory nerves than a sounding musical instrument strikes against the drum of the ear. And the same sort of result may occur when a metal is rubbed; for, although in that case particles may very likely be detached, it seem possible that the function of these metallic particles may be to act on the moisture of the air, and liberate hydrogen similarly contaminated, and that in this case also it is the impurities which produce the smell, and not the particles of the metal with which we have been accustomed to associate it.

The Diffusion of Odours.

From experience of the quickness with which the opening of a bottle of scent can be detected at a distance, I imagined that tubes not fewer than 15 ft. or 20 ft. long would be required for ascertaining the velocity at which a smell travels. But experiments soon showed that when the space through which a smell had to pass was screened from draughts it diffused with surprising slowness, and that feet could be replaced by inches in deciding on the lengths of the tubes to be used. It would therefore appear that the passage of a smell is far more due to the actual motion of the air containing it than to the diffusion of the odoriferous substance through the air. When the room and tube had been freed from smell by strong currents of air blown through them, the tube was corked up at one end and taken outside to have another cork, to which was attached some odoriferous substance inserted at the other end. The tube was now brought back to the odourless room, and placed in a fixed horizontal or vertical position, and the unscented stopper was withdrawn. As a rule, immediately after the removal of the stopper a smell was observed, which had been transmitted very quickly through the tube by the act of corking up the other end with the stopper carrying the odoriferous material. This first whiff, however, lasted only a very short time, and then a long period elapsed before any further smell could be detected at the free end of the tube, whether that end was left open or closed between times. Finally, however, after, for example, about eighteen minutes in the case of a 3-foot horizontal tube, having a large cotton-wool sponge saturated with oil of limes attached to one cork, the smell became definite and recognisable. It would, therefore, appear that the passage of smell is generally far more due to the actual motion of the air containing it than to the diffusion of the odoriferous substance through the air. Further, although the glass tubes were coated outside with a thick layer of non-heat-conducting material, so as to check the formation of convection currents due to difference in the

inside and outside temperature caused by handling, the rate of travel of a smell from a given odoriferous material was found to be much quicker when the tube was vertical than when it was horizontal. But this, I am inclined to think, may have been caused by a small convection current which still was produced in spite of these precautions.

As an illustration of the inefficiency of diffusion alone to convey a smell you will find that if you hold your breath, without in any way closing your nose either externally or by contracting the nasal muscles, you will experience no smelling sensation even when the nose is held close to pepper, or a strong solution of ammonia, or even when camphor or a minute tube is introduced high up in the nostril. Mere diffusion from the lower nasal cavity into the upper cannot apparently take place with sufficient ease to produce the sense of smell, so that an actual stream of air through the upper portion of the nose seems necessary even when the nose is a very sensitive one. This stream, for substances placed outside the nose, is produced by breathing *in*, no smell being detected while breathing *out*. On the other hand, if a substance be placed inside the mouth its flavour is recognised when the air is forced outwards through the nostrils, that is, at each expiration. Hence we may experience alternately two totally different smells by placing one substance outside the nose and the other in the mouth, the one smell being noticed in inhaling and the other in exhaling. And the latter can be increased by smacking the lips, which, I think, has really for its object the forcing of more air through the nostrils at each expiration.

When liquids like ammoniated lavender, smelling salts, solution of musk, and amyl acetate were employed, and various devices were used for introducing the liquid, and preventing its splashing when it boiled on exhausting the air, it was found that the time that it was necessary to leave the two limbs connected for a smell to be just observable was reduced from a few minutes or seconds when the tube was filled with air to less than half a second for a good vacuum; with solid camphor it was reduced from twenty minutes to one second, and when moist rose leaves were used, from fifty minutes to two seconds. But with solid particles of musk the time was not reduced below twenty minutes by taking away the air, while with dried lavender flowers and dried woodruff leaves no smell could be detected after the two limbs had been connected for many hours, and a good vacuum maintained. These experiments are of course somewhat complicated by variations in the amount of odorous surface exposed, but they seem to indicate that with these particular dried substances either the rate of evolution of the scent, or its rate of propagation, or both, are very slow even in a good vacuum.

Another noteworthy fact is the comparatively rapid rate at which grains of natural musk are found to lose their fragrance when exposed to the air. The popular statement, therefore, that a grain of musk will scent a room for years supplies but another example of the contrast between textbook information and laboratory experience. The power of a smell to cling to a substance seems to depend neither on the intensity of the smell nor on the ease with which it travels through a closed space. Musk has but a faint smell, but the recollection of the greeting of a rich Oriental survives many washings of the hands. The smell of rose leaves, again, is but faint, and it travels very slowly through air in a tube, and yet, as Moore put it:

> You may break, you may shatter the vase if you will,
> But the scent of the roses will cling to it still.

SECTION OF ZOOLOGY AND PHYSIOLOGY.

The Statistical Study of Natural Selection.

Professor W. R. F. Weldon, F.R.S., the President of this Section, took for his subject the Necessity of a Statistical Treatment of the Problems Arising in Connection with Variations in Inheritance and Selective Distribution among Animals. He discussed the principal objections which were urged against the theory of natural selection, which he said was a theory of the importance of differences between individual animals. In the form in which Darwin stated it the theory, he said, "asserted that the smallest observable variation may affect an animal's chance of survival, and it further asserts that the magnitude of such variations, and the frequency with which they occur, is governed by the law of chance. Three principal objections are constantly brought forward against this theory. The first is that the species of animals which we know fall into orderly series, and that purely fortuitous variations cannot be supposed to afford opportunity for the selection of such orderly series: so that many persons feel that if the existing animals are the result of selection among the variable offspring of ancestral creatures, the variations on which the process of natural selection had to act must have been produced by something which was not chance. The second objection is that minute structural variations cannot in fact be supposed to affect the death-rate so much as the theory requires that they should. And it is especially urged that many of the characters by which species are distinguished appear to us so small and useless that they cannot be supposed to affect the chances of survival at all. The third objection is that the process of evolution by natural selection is so slow that the time required for its operation is longer than the extreme limit of time given by estimates of the age of the earth."

He observed that the word chance was often used very loosely. If so little was known about a group of events that the result of a single observation could not be predicted, while the result of a long series could be predicted, it was said that those events occurred by chance. The average characters of many species of animals was known, but it was not known how exactly the character of the next individual of these species was to be looked at. So that in the present state of knowledge it was *a priori* certain that the great majority of animal variations should occur by chance, in the sense in which he had used the phrase. If, then, chance was a perfectly orderly and regular phenomenon, then the question whether animal variations occurred by chance or not could be settled by direct observation. Mathematicians had evolved the method of representing observed facts by graphic curves of variation, and a good example of such curves was Mr. Galton's application to the case of human stature. A curve showing the stature of 25,878 American recruits gave the frequency with which each stature occurred, and it was seen to coincide very closely with that indicated by the curve, so that variations in human stature did not occur by chance, and they occurred in such a way that variation in either direction was equally probable. Professor Weldon then went on to speak of Professor Pearson's researches, and then referred to his own statistical inquiries with regard to the magnitude of the antero-lateral margin of 1,000 female crabs and to other enumerations. The general conclusion was that Professor Pearson's method promised to confirm the assertion that organic variation obeyed the law of chance.

"The other objections to Darwin's theory," Professor Weldon continued, "are not so easily answered. It is said that small variations cannot be supposed to affect an animal's chance of life or death; but few persons have taken any pains to find out in any given case whether the death-rate is in fact affected by small variations or not. It is said that the process of natural selection is so slow that the age of the earth does not give time for it to operate, but I know of few cases in which any attempt has been made to find out by actual observation how fast a species is really changing." Professor Weldon showed that small changes in the size of the frontal breadth of a species of small shore crab did under certain circumstances affect the death-rate. In conclusion he said that the law of chance rendered it possible to express easily and simply the frequency of variations among animals and that the action of natural selection upon such fortuitous variations could be experimentally measured, at least in the only case in which anyone has attempted to measure it. "I hope," he said, "I have convinced you that the process of evolution is sometimes so rapid that it can be observed in the space of a very few years. I would urge upon you in conclusion the necessity of extending as widely as possible this kind of numerical study. The whole difficulty of the theory of natural selection is a quantitative difficulty. It is the difficulty of believing that in any given case a small deviation from the mean character will be sufficiently useful or sufficiently harmful to matter. That is a difficulty which can only be got rid of by determining in a number of cases how much a given variation does matter; and I hope I have shown you that such determination is possible, and if it be

possible, it is our duty to make it. We ought to know numerically, in a large number of cases, how much variation is occurring now in animals; we ought to know numerically how much effect that variation has upon the death-rate; and we ought to know numerically how much of such variation is inherited from generation to generation. The labours of Mr. Galton and of Professor Pearson have given us the means of obtaining this knowledge, and I would urge upon you the necessity of obtaining it; for numerical knowledge of this kind is the only ultimate test of the theory of natural selection, or of any other theory of any natural process whatever."

THE STUDY OF HEREDITY.

At the meeting on Friday Mr. Francis Galton read a paper on Photographic Records of Pedigree Stock. In the course of his remarks he said: "I have lately shown how the general knowledge that offspring can inherit peculiarities from their ancestry as well as from their parents may be superseded by a definite law whose nature was first suggested to me by theoretical considerations. This ancestral law proves the importance of a much more comprehensive system of records that now exist. A breeder ought to be in a position to compare the records of all the near ancestry of the animals he proposes to mate together, in respect to the qualities in which he is interested. More especially he ought to have access to photographs which indicate form and general attitude far more vividly than verbal descriptions. But the information in stud and herd books is too meagre for the requirements of the breeder, while the photographs published in newspapers and elsewhere are inadequate for making complete genealogical collections. My principal suggestion is that a system of collecting photographs should be established which would be serviceable to breeders. They should be serviceable to them, not only as portraits, but also as affording means of obtaining measurements of the animal. Such a system might be easily initiated, and be afterwards self-supporting. An habitual study of the form of each pure-bred animal in connection with the portraits of all its nearer ancestry would test current opinions and decide between conflicting ones, and it could not fail to suggest new ideas. Likenesses would be traced to prepotent ancestors, and the amount of their several prepotencies would be defined; forms and features that supplement one another, or, as they term it, "nick in," and others that clash or combine awkwardly, would be observed and recorded; conclusions which are based on incomplete and inaccurate memories of the appearance of the several members of the ancestry would be superseded by others derived from a study of their actual photographs. The value of the ancestral law would be adequately tested, and it would be possible to amend it when required."

The objection that it would be impossible to form a mental picture from an examination of a large series of photographs of ancestors he met by suggesting that composite photographs might be obtained, allotting to each ancestor the appropriate time of exposure. "A photograph," he added, "may be so taken that measurements made upon the photograph, after certain corrections have been applied to them, will be nearly as good as those made on the animal itself. Measurements are of the highest importance, for science is based on numerical data, and the science of heredity is no exception to the general rule. The non-preservation of adequate records of pedigree stock is a cruel waste of opportunity, and has been most prejudicial to the acquirement of a sound knowledge of the art of breeding."

In the discussion which followed Professor Ray Lankester said that the composite photographs appeared to represent the haphazard obliteration of one element by another, but Mr. Galton replied that the real effect of the composite photograph was to bring out what was common to all the components while eliminating what was exceptional.

OYSTERS AND HUMAN DISEASE.

Professor W. A. Herdman (Liverpool) presented a report on The Life Conditions of the Oyster: Normal and Abnormal. The report states that the observations show the frequent occurrence of the colon group of bacilli in such shellfish as have been investigated. Moreover, they clearly indicate that some of the organisms composing this group are more closely related in their reactions to the bacillus typhosus than others are, although none corresponded to that bacillus in all respects. As the result of the investigations, and the consideration of much evidence, from both the oyster growers' and the public health officers' points of view, the Committee recommend: (*a*) That the necessary steps should be taken to induce the oyster trade to remove any possible suspicion of sewage contamination from the beds and layings from which oysters are supplied to the market. This could be effected either by restrictive legislation and the licensing of beds only after due inspection by the officials of a Government department, or by the formation of an association amongst the oyster growers and dealers themselves which should provide for the due periodic examination of the grounds, stores, and stock by independent properly qualified inspectors. (*b*) Oysters imported from abroad (Holland, France, or America) should be consigned to a member of the Oyster Association, who should be compelled by the regulations to have his foreign oysters as carefully inspected and certificated as those from his home layings. A large proportion of the imported oysters are, however, deposited in our waters for such a period before going to market that the fact of their originally having come from abroad may be ignored. If this period of quarantine were imposed upon all foreign oysters, a great part of the difficulty as to inspection and certification would be removed. (*c*) The grounds from which mussels, cockles, and periwinkles are gathered should be periodically examined by scientific inspectors in the same manner as the oyster beds. The duty of providing for this inspection might well be assumed by the various sea fisheries committees around the coast.

AN EXPERIMENTAL STUDY OF ANIMAL INTELLIGENCE.

Professor C. Lloyd Morgan read a paper on this subject, and gave an account of certain experiments undertaken by Professor Thorndike in America in order to test the intelligence of animals. The experiments were mainly conducted with cats. A young cat in a state of "utter hunger" was placed in a small cage constructed of wooden bars, meat being placed outside the cage. Various mechanical devices for opening the door of the cage were adopted which could be readily worked by the cat itself. The object was to observe what length of time was required for the cat to effect its escape, and whether subsequent escapes were the result of its previous experience. These experiments showed that the cat did not at once grasp the situation after effecting one escape, but after a time it did learn how to get out at once. In another experiment the cat was allowed to escape as soon as it licked itself, and after a time the two ideas became so completely associated that the cat began to lick itself as soon as it was put in the cage. It was found that one cat did not profit by the experience gained from watching others. Professor Morgan, after criticising these experiments, related a series which he had himself performed with a fox terrier. The animal had learnt to lift the latch of a garden gate by putting its head between the bars. At first this was quite accidental, but after a time the dog found that the opening of the gate was associated with thrusting its head between particular bars. Professor Morgan also related some observations on the manner in which the same dog pursued a ball thrown against a wall. They seemed to show that its behaviour was merely the result of experience, and not of a reasoning process.

Sir John Lubbock agreed that one animal did not seem to learn anything by watching another, and expressed the opinion that instead of teaching tricks to dogs, animals the limitation of whose minds were very obvious, it would be better to try to give them some means of communicating with us.

SCIENTIFIC GRANTS.

At the final meeting on Wednesday afternoon it was announced that a sum of £1,485 had been granted in aid of scientific research by the General Committee. The grants of medical interest are in the Section of Physiology.

Professor E. A. Schäfer.—Physiological Effects of Peptone ...	£30 0 0
Dr. A. Waller.—Electrical Changes Accompanying Discharge of Respiratory Centres	20 0 0
Professor F. Gotch.—Influence of Drugs upon the Vascular Nervous System	10 0 0
Professor E. A. Schäfer.—Histological Changes in Nerve Cells...	20 0 0
Professor E. A. Schäfer.—Micro-chemistry of Cells	40 0 0
Professor E. A. Schäfer.—Histology of Suprarenal Capsules ...	20 0 0
Professor F. Gotch.—Comparative Histology of Cerebral Cortex	10 0 0

THE PATHOLOGY OF ANARCHISM.

Once more the knife of anarchism, ever ready to strike at the defenceless and inoffensive, has filled the civilised world with horror. So deliberate, but yet almost motiveless, was the crime, that when the first shudder has passed over the public gaze is naturally focussed upon its author. That such notoriety was in this case anticipated by the miserable and cowardly assassin is shown by the statements made by him with so much gusto at his first examination. He had already proclaimed himself an anarchist, and his chief anxiety seemed to be to escape the imputation of insanity. He protested stoutly against this idea, and warned Professor Lombroso *a priori* not to include him in the category of degenerates. But he need not flatter himself that in this respect he will fail to "dree his weird"; the law by which he will be tried may spare him capital punishment, but no power on earth can prevent the psychopathologist from discovering that his superciliary muscles are unduly contracted or his eyes set at different levels, and from branding him with these or other stigmata of degeneracy.

That a certain number of cases of anarchism are of neuropathic origin is undeniable; but to refer every crime of this kind to disease is too sweeping. Yet this is practically Professor Lombroso's attitude, and his work on the subject bears evidence of somewhat Procrustean methods in adapting facts to theories. Nevertheless it contains much that is of value, and the distinction drawn between the two leading types of anarchical criminals is particularly suggestive.

The one class consists of born malefactors, the deficiency of whose moral and intellectual development usually speaks in their countenances. These men—for they are almost invariably of the male sex—may perpetrate their outrages at any period in their career. They often work in gangs, and are liable to sudden gusts of insensate rage. They may brazen out their guilt, but usually cling desperately to their lives.

The other class is that which is the slave of political rather than personal passion. It consists mainly of young men between 18 and 25, but women are by no means infrequently associated with them, or may even act on their own initiative. The criminal of this class, however, usually has no accomplices. His crime is often perpetrated while he is in a condition of ecstasy or frenetic exultation. Once accomplished, he is careless of consequences, usually making no resistance to capture, and facing death with courage. His moral weakness shows itself rather in vainglory and the desire for publicity; the appearance of this kind of anarchist unfortunately leads in most cases to a series of emulative imitations by other psychopaths. These groups do not of course by any means exhaust the varieties, which extend in a well-nigh infinite series from Aristogeiton to the wretched miscreant who stabs a helpless lady in the back. Brutus, as Shakespeare has drawn him, is a good example of the morally noble, and hence perhaps most dangerous, type of anarchist. Cassius, with his personal bias against Cæsar, plays admirably upon the *idée fixe* of a transcendental democracy which he detects in his friend; the weaker spirit is easily worked up to take the actual lead in the conspiracy. Sometimes the anarchist is actually mad, usually with a sort of fanatical altruism, as in the case of Ravaillac, or with a fanatical desire for fame, as in that of Mooney the dynamiter. This latter type is as old at least as Erostratus, and it will hence be seen how anarchism merges into other conditions of intellectual depravity.

The practical corollary is that anarchism is a plague spot eating into civilisation. Such of its devotees as are truly fanatical and who desire publicity above all things, should certainly not be indulged in what is to them the luxury of a publicly reported trial and execution. Let these necessary terminations to their exploits be carried out as quietly as possible and unreported in the press, and the band will rapidly become extinct. Most of the remaining anarchists are cowards and their correction should be dictated by Justice in her grimmest mood. The introduction of corporal punishment would probably deter many a ruffian from his assaults upon society; and the fact that he has a receding forehead or an epileptic grandmother should not suffice to avert the vengeance of a rigorous and outraged law.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A meeting of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on **Wednesday the 12th day of October** next, at 2 o'clock in the afternoon.

Francis Fowke, *General Secretary.*

September, 1898.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

South-Eastern Branch: East Kent District (connected with the East Kent and Canterbury Medical Society).—The next meeting of this District will be held at the Sessions Hall, Bank Street, Hythe, on Thursday, September 22nd, at 3 P.M., Dr. H. Randall Davis in the chair. 2.30. Members are invited to visit Hythe Church, and inspect the skulls there. 3.0. At the Sessions Hall. The Chairman will read a paper on The Bones in Hythe Church. Dr. Latter: The Difficulties of Diagnosis in the More Common Zymotic Diseases. Dr. Thomas Eastes: The Open-air Treatment of Consumption. The Chairman kindly invites members to luncheon at the Swan Hotel, at 1.30 P.M. Members intending to avail themselves of Dr. Davis's hospitality are requested to send acceptances by Monday, the 19th, or they will not be expected. Tea and coffee will be served after the meeting at the residence of the Chairman. All members of the South-Eastern Branch are entitled to attend these meetings, and to introduce professional friends.—Thos. F. Raven, Hon. District Secretary, Barfield House, Broadstairs.

South-Eastern Branch: East Sussex District.—The next meeting will be held at the Hospital, Hastings, at 3.30 P.M., October 6th.—Members desirous of reading papers or making any communication to the meeting are requested to inform the District Secretary, J. W. Batterham, M.B., Bank House, Grand Parade, St. Leonard's.

South-Eastern Branch: North Kent District.—A meeting of this District will be held in the Hall of the Science and Art School, Bromley, on Thursday, October 6th, at 3.45 P.M., Dr. Scott in the chair. The annual dinner will be held at 6 P.M., charge, 6s. 6d., exclusive of wines. The following papers, etc., have been promised:—Dr Barry Blacker: Demonstration of the X Rays.; Dr. Tennyson-Smith: Some Notes on Tubal Pregnancy. All members of the Branch are entitled to attend and to introduce professional friends.—A. Tennyson-Smith, Hon. Secretary, The Birches, Orpington, Kent.

South Midland Branch.—The autumnal meeting will be held at Wellingborough on Thursday, October 6th. Luncheon will be provided, and it is hoped that all gentlemen intending to be present at the meeting will also join the luncheon, so as to render it a success. Notice to the Secretary is requested not later than October 4th. Gentlemen are invited to introduce new members, and to bring specimens, drawings, etc., likely to be of interest to the meeting. Anyone wishing to bring forward a communication of any kind is requested to intimate his intention to the Secretary without delay. The following papers have been promised: Dr. Maguire will furnish a clue to his case of Phenomenal Gestation. Mr. W. Gilford Nash will read Three Series of Cases due to Sewer Gas Poisoning. Dr. Crookshank will read a paper on Hysteria and Epilepsy. Dr. Hollis will introduce a discussion on The Treatment of Dilated Stomach.—C. J. Evans, Northampton, Hon. Secretary.

Lancashire and Cheshire and North Wales Branches.—A joint meeting of these two Branches will be held at Chester in the last week of September. All communications with regard to papers or reports of cases to be read and all applications for membership should be addressed, if concerning the Lancashire and Cheshire Branch, to Dr. James [illegible], Rodney Street, Liverpool, Hon. Secretary of that Branch; if concerning the North Wales Branch, to one of the Hon. Secretaries, Dr. W. Jones Morris, Portmadoc, or Dr. H. Jones Roberts, Pen-y-groes.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish to bring forward any business, to read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretary not later than Friday, October 14th.—H. WILLOUGHBY GARDNER, M.D., Swan Hill, Shrewsbury, Honorary Secretary.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE usual monthly meeting of this Branch was held in the Royal Society's Rooms, Sydney, on June 24th, 1898, Dr. CHISHOLM (President) in the chair. Thirty-seven members and two visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communications.—Dr. CRAGO exhibited a patient suffering from Symmetrical Enlargement of the Epiphyses of the Tibiæ.—Dr. THRING showed, as a recent specimen, a Uterus, together with both Ovaries and Fallopian Tubes. From the upper and right side of the uterus a large single fibromyoma was growing.—Dr. F. H. QUAIFE read some notes of a case of Gastric Ulcer. Drs. JAMIESON and WEST discussed the case. Dr. QUAIFE replied.—Dr. T. S. KIRKLAND read notes on a case of Cerebellar Abscess, following disease of the ear, and exhibited the patient. The paper was discussed by Drs. W. QUAIFE and CHISHOLM.—Dr. BRADY demonstrated on a Skull where the incisions were made in the exploratory examinations.—Dr. MACCORMICK described three cases of Suprapubic Cystotomy, and showed a large number of Calculi; also, the Enlarged Lobe of a Prostate. Dr. CHISHOLM made remarks on the cases, and Dr. MACCORMICK replied.

EASTERN PROVINCE BRANCH, GRAHAMSTOWN.

A MEETING of this Branch was held in the Albany General Hospital on August 5th, 1898.

The late Dr. Guybon Atherstone.—The SECRETARY reported having written, in the name of the members, a letter of sympathy to the family of the late Dr. Guybon Atherstone, in the loss they had sustained by his death.

The late Mr. Ernest Hart.—The following resolution was passed:

Resolved: That the Branch conveys its sympathy to the British Medical Association in the loss the Association has sustained in the death of Mr. Ernest Hart, who for many years conducted so ably the JOURNAL of the Association.

New Member.—Dr. Sidney Jones (Port Alfred) was elected a member of the Branch.

Communication.—A paper was read by Dr. WILLIAM RUSSELL on Diphtheria and Allied Throat Affections in the late Typhoid Epidemic at Maidstone.

Specimens.—The following specimens were shown by Dr. GREATHEAD: (1) A Hydatid Cyst of the Heart. (2) A Large Vesical Calculus.

Medical and Pharmacy Act Amendment Bill.—The following resolution was unanimously carried:

That this Association expresses its approval of the following portion of Clause 9 of the Medical and Pharmacy Act Amendment Bill, namely: "No person shall be entitled to medically treat persons or prescribe medicines by reason that he is a person licensed as an apothecary or chemist or druggist," and strongly deprecates the proposal of the Colonial Medical Council to alter the clause by the omission of the words "or prescribe medicines."

METEOROLOGICAL OBSERVATIONS IN THE STRAITS SETTLEMENTS.—The fourteenth annual report on the meteorological observations for the year carried out under the direction of Dr. Max Simon, Principal Civil Medical Officer, is a very full tabular statement of a vast number of records that are daily taken in various parts of the colony. Most of these are given *in extenso*, and include details of atmospheric pressure, air temperature, temperature of solar radiation, temperature of nocturnal radiation, relative humidity, rainfall and direction and velocity of the wind. The report is prefaced by abstracts and returns of all these observations which will prove useful for future reference. The labour of obtaining this mass of material must be enormous, and it is difficult at first sight to define its precise value. But it must be remembered that if meteorology is to become an exact science, it can only be so as the result of a study of observations, and the collecting of material and its classification is a necessary preliminary.

SPECIAL CORRESPONDENCE.

PARIS.

Measles in the French Army.—The "Open-door" Treatment of Insanity.—Small-pox as Nature's Scavenger.—General News.

ACCORDING to the report of M. A. Marvaux, a medical officer of the French army, measles is the most common contagious disease that afflicts the French army. Small-pox has almost entirely disappeared from the army, but measles and scarlet fever have greatly increased in the last few years. This increase may to a certain extent be explained by the fact that a considerable proportion of the men who undergo military service are very young. The origin of these barrack epidemics Dr. Marvaux attributes to the renewed vitality of germs deposited in a previous epidemic or to the transmission of the morbid element by the medium of a person who has been in contact with a sufferer from measles. The *Journal Officiel* publishes an interesting article on mortality in the French army quite bearing out the assertions made by M. Marvaux. In particular it confirms his statement that small-pox has almost entirely disappeared owing to vaccination.

Dr. E. Marandon de Montyel has come forward as a champion of the "open-door treatment" for insane patients, which he had an opportunity of studying in Scotland. He was not an enthusiastic believer in the non-restraint treatment, but convinced that facts only are real evidence he followed out the treatment as it is organised in Scotland, and the results have convinced him of its value.

The *Médecine Moderne* quotes the following startling statements from the *Libre Parole* for the amusement of the medical world, on the ground that it is always amusing to hear blind people talk about colour. The writer of the article, M. Drumont, begins by saying that Jenner, who invented vaccination, has done more harm to humanity than any other malefactor. Small-pox, he asserts, has never been an illness. It is admirable work done by the organism, a spontaneous process carried out by Nature, rejecting and expelling all morbid elements present in the animal economy. According to M. Drumont it is a "*crise sublime*." Typhoid fever, pulmonary and phthisis, are but inverted small-pox. All that learned academicians say on the question is humbug. There have always been bacilli as there have always been dishonest financial men, but by letting small-pox clear off the bacilli and the galleys get rid of the dishonest financiers, the human body and the social body are both benefited. The caustic substance seeking out its way produces sometimes cancer, sometimes meningitis; in one it attacks the brain, in another the lungs. This, M. Drumont believes, explains the increasing number of suicides resulting from insanity. M. Drumont addresses his observations only to "ripe intellects," capable of thinking for themselves; the mass, he adds, will continue to think Jenner a great man. It would be interesting to know what they are likely to think of M. Drumont.

The mortality from infantile diarrhœa was very considerable last week in Paris—about 350 deaths. This high figure is generally reached about this time of the year.

LIVERPOOL.

The Efficiency of the City Hospitals.—Vaccination in Liverpool: the First Conscientious Objector in Liverpool.—The Closing of the Necropolis.

THE annual inspection of the city hospitals by the members of the Health Committee took place recently, and showed that the whole machinery for dealing with cases of infectious disease was in a highly efficient and satisfactory condition. Amongst other places visited was the site recently purchased at Fazakerley, at a cost of £37,000, comprising 113 acres of land, together with a fine old mansion, Harbreck House, which it is proposed to convert into the administrative block of the hospital, which is to be erected at some future time. The site is considered to be in all respects admirably adapted for the erection of a hospital for infectious diseases. Dr. Thomas Clark, Chairman of the Health Committee, speaking at a luncheon provided at one of the hospitals, adversely criticised the "conscientious objector" clauses of the new

Vaccination Act, and expressed the opinion that before long unvaccinated cases would probably predominate. He considered that this was a very strong argument for the erection of additional small-pox accommodation.

The medical officer of health, Dr. Hope, said that the parish of Liverpool was the most extensively vaccinated parish in England. The latest published returns showed that only 4 per cent. of children born in the parish of Liverpool were not accounted for in regard to vaccination. In West Derby the rate was 7 per cent., and in Toxteth about 9 per cent. So long as the vaccination officers had nothing to contend against but indifference and ignorance, there was no obstacle in the way which could not be overcome; but when every lazy, idle person could be transformed into a conscientious objector, it was impossible to say what the result might be. The first case of application for exemption under the new Act in Liverpool came before the presiding magistrate lately. The objector merely stated emphatically that he did not believe in the efficacy of vaccination, but he did not allege that he feared any ill-effects from it, nor did he offer any explanation to justify the want of faith that was in him. The application was granted. The decision seems to imply that a "conscientious objection" may be merely a groundless objection.

Under the powers of the Liverpool Improvement Act, 1898, which provides for the acquisition and closing of a number of old burial grounds in the city, the Corporation have obtained possession of the Necropolis, compensation being paid to its proprietors to the amount of £3,800. The condition of this cemetery was severely criticised in the report on the health of Liverpool, published last year, and its closure was urgently needed. A number of small burial grounds are being similarly dealt with.

CORRESPONDENCE.

DEATHS IN CHILDBIRTH.

Sir,—The paper on Deaths in Childbirth read at he Royal Statistical Society on June 21st and commented upon in the British Medical Journal of June 25th appears to me to need both study and criticism. The data upon which the paper was founded were taken from the registers of births and deaths in New South Wales for the three years 1894, 1895, and 1896. As a record of facts I am not in a position to impeach its accuracy. I do however venture to urge that no statistical deductions of any value can be drawn from a paper which goes to show that the mortality in childbirth as given by the compiler is in New South Wales very much higher than it is in London. Mr. Coghlan's figures indicate that in New South Wales, and in the years mentioned, taking married and single women together, there was a mortality of 1 in 140, that in married women the mortality was 1 in 158.7, and that in single women it was 1 in 99.5.

Dr. Hingston Fox, in the debate which followed the reading of the paper, described the mortality in single women—that is, 1 in 99.5—as "singularly small." Others would, I think, agree with me in calling it "appallingly high." The difference of opinion between Dr. Fox and myself is due to the point of view from which the facts are observed. Compared with the mortality before Listerian days, 1 in 99.5 is fairly good, but compared with the best work of the present day it is terribly bad. I have had the advantage lately of studying with some minuteness the statistics of the more important of the London maternity charities, of the Rotunda Hospital, Dublin, and of the maternity departments of six of the London general hospitals. Probably Dr. Hingston Fox has not done so. It may be of interest to him and to others if I try to show what the maternal mortality has been in recent years in these charities. In Table A. I have given the actual number of deliveries and of maternal deaths, and the ratio between the two in the maternity charities for the years 1895, 1896, and 1897. In Table B. the same facts are shown for the outdoor maternity departments of six London general hospitals. The figures for Table A. are taken from the published reports of each of the charities; those for Table B. have been collected from the hospital records through the courtesy in each case of the physician in charge of the department.

Table A.—*Maternity Charities for the Three Years 1895, 1896, and 1897.*

	Deliveries.	Maternal Deaths.	Ratio of Deaths to Deliveries.
Royal Maternity Charity ...	12,516	21*a*	1 in 596.0
City of London Lying-in Hospital	6,438	18	1 in 357.6
Plaistow Maternity Charity ...	3,284	5	1 in 656.8
Clapham and Battersea Maternity Charity	3,353	9*d*	1 in 372.5
Queen Charlotte's Hospital ...	6,992	20*e*	1 in 349.6
General Lying-in Hospital ...	1,503	4*f*	1 in 390.7
British Lying-in Hospital ...	1,071	2*g*	1 in 835.5
New Hospital (Maternity Department)	1,163	0	0 in 1,163.0
Rotunda Hospital	6,145	14*h*	1 in 438.9
Total	43,125	93	1 in 463.7

Deaths which might be deducted ... ... Total, 18.

a 1 Cancer of intestine. 2 bronchitis.
b 1 dead before midwife's arrival. 1 "cancerous growth." 1 angina pectoris. 1 embolism.
c 2 Embolism. 1 phthisis. 1 mania three weeks after delivery.
d 1 Mania. 1 diabetes.
e 1 Cancer. 1 embolism. 1 cardiac disease.
f Out-patient mortality not shown in reports, and therefore out-patient deliveries not included.
g 1 Dying with heart and lung disease on admission.
h Out-patients only given for 1897. 1 death from cardiac disease.
Ratio if these are deducted = 1 in 575.

Table B.—*Maternity Department of Six General Hospitals in London for the Years 1895, 1896, and 1897.*

	Deliveries.	Maternal Deaths.	Ratio of Deaths to Deliveries.
St. Bartholomew's Hospital ...	4,999	6*i*	1 in 838.1
St. Thomas's Hospital	6,816	15*j*	1 in 454.5
Guy's Hospital	10,100	24	1 in 420.8
Middlesex Hospital	3,210	6*k*	1 in 535.0
Charing Cross Hospital	917	4	1 in 229.2
King's College Hospital	1,955	3*l*	1 in 651.6
Total	27,997	58	1 in 482.7

Deaths which might be deducted ... ... Total 7.

i 1 Phthisis. 1 typhoid.
j 1 Nephritis, with uræmia. 1 pelvic cellulitis, death five months after delivery.
k 1 *Felo-de-se.*
l 1 Tuberculous meningitis. 1 pulmonary embolism.
Ratio, if these are deducted 7 = 1 in 548.9

Many of the deaths ought to be deducted. I have, however, thought it safer to mention all of them, and to show the two ratios after deducting them and when deducting nothing. The two tables accord remarkably in their results. In Table A. the ratio of deaths to deliveries in over 43,000 cases when deducting nothing is 1 in 463.7; and when deducting deaths not really due to childbirth, it is 1 in 575. In Table B. the same two ratios in nearly 28,000 cases are 1 in 482.7 and 1 in 548.9. Putting the two sets of figures together, we get in 71,122 deliveries, 151 deaths, of which 25 ought to be deducted. The ratios are then 1 in 471, deducting nothing, or 1 in 563.6 when deductions are made. It seems to me, therefore, that to found any statistical conclusions upon a mortality of 1 in 140 would be misleading.

Even if it could be proved, which I do not think it could be, that the puerperal mortality all over England approaches the high rates which Mr. Coghlan gives for New South Wales, no trustworthy evidence as to the risk in a particular case could be gained from the general average. Statistics are often said to be too small to be worth anything, but in this case they would, I think, be too large. The risk to a particular woman is not affected by the conditions which influence mortality on the other side of England, or even in the next house. It is to be measured by the conditions immediately round her, and mainly by the skill and by the antiseptic zeal of those in attendance on her. In the somewhat parallel case of loss of life at sea it would serve no useful purpose to count up all the people who are drowned each year, to divide the number who go voyages by the number of the drowned, and then to say to a man starting for a trip round

the world: "Your risk is so-and-so; the statistics prove it." If he is a sensible man he knows better; he knows that his risk, in a well-found boat, is almost entirely limited to the results of possible human frailty on the part of the captain and officers.

It is important, too, I think, to insist upon the evidence that can be had from large public charities in support of the view that the total average puerperal mortality in England as well as in New South Wales is higher than it ought to be. If it be true that the mortality in 71,122 parturient women can be reduced to about 1 in 500, no one ought to be content with a mortality, say, of 1 in 250 or 300. Nor can it be argued that the conditions surrounding the London and Irish poor are specially favourable. We know that in some important respects the reverse is the case, and yet the results are good. The explanation of the apparent anomaly is probably found in this: that in large towns expert help can be had when wanted without great delay, and that subordinate assistants, midwives, and nurses can be trained and disciplined in towns more readily than where they are more independent and are working practically without supervision. It is likely that from these causes the ratio of mortality in childbirth will at the best always be higher in the country than it is in towns of a considerable size, but it is not desirable that we should accept as inevitable a mortality in the colonies or in country places at home twice or three times as high as that which is shown by the foregoing tables to be attainable.—I am, etc.,

E. GARRETT ANDERSON, M.D.

Upper Berkeley Street.

STATISTICS OF MIDWIFERY CASES OCCURRING WITHIN A PERIOD OF THREE MONTHS IN THE GLASGOW MATERNITY HOSPITAL.

SIR,—In reference to a letter which appeared in the BRITISH MEDICAL JOURNAL of September 10th on the Teaching of Midwifery, I have felt urged to write a short summary (from a statistical point of view) of the cases, normal and otherwise, that occurred during a period of three months while I acted as house-surgeon in the wards of the Glasgow Maternity Hospital.

On comparing previous journals I find that what occurred in my time may be taken as a fair average of the nature and number of the cases during such a course. The list includes merely those cases which were treated in hospital, and in no way deals with the very large number of cases attended by the out-door department.

Total number of deliveries	118
Abnormal and with complication	38
Percentage of normal to abnormal	3½ : 1

From the abnormal cases the following table may be drawn up:

1. Laceration of cervix.	
Too strong pains; specific history; no instruments used	2
2. Abortion at fourth month with severe hæmorrhage	1
3. Contracted pelvis cases	13
(*a*) Slight general contraction (forceps at brim)	2
(*b*) Flattened pelvis, T.C. = 3½ inches (forceps at brim)	1
(*c*) Kyphotic pelvis (forceps at brim)	1
(*d*) Flattened pelvis (craniotomy)	3
(*e*) Flattened pelvis (induction); 1 delivered with forceps, 1 turned, 2 had a natural delivery	4
(*f*) Slight general contraction, T.C. less than 4 inches; natural delivery, large amount of moulding of the head	1
(*g*) Flattened pelvis T.C. = 1½ inch (Cæsarean section)	1
Total	13
4. Uterine inertia (forceps in cavity and outlet)	8
5. Transverse presentation	1
6. Face presentation	1
7. Labour complicated by marked renal and cardiac disease	1
8. Labour complicated by pneumonia	1
9. Funis presentation and prolapse	1
10. Accidental hæmorrhage; 1 with breech, 1 which was pre-	4
11. Retained membranes	4
12. Eclampsia: 1 premature child, mother died; 1 twins, mother recovered	2
Total	38

Certain other complications may be mentioned which were a part of cases already recorded:—

1. Placenta	3
(*a*) Induction case, eighth month version.	
(*b*) T[illegible] case version.	
(*c*) Where [illegible] applied at the brim.	
2. *Post-partum* hæmorrhages	5

Some of these were only slight, indeed the only severe case of *post-partum* hæmorrhage occurred in the eclamptic case, where transfusion was performed with recovery to the woman. It occurred in:

(*a*) Laceration of cervix	2
(*b*) Retained membranes	4
(*c*) Eclampsia	1
(*d*) Induction case, 8th month, placenta prævia marginalis, version	1
Total	8

Surely then with material like this, the experience and advantages gained by dealing with such cases should not be limited merely to the visiting and house surgeons of the hospital.

I do not suppose there is any town in the country where rickets, and consequently contracted pelvis cases, are more prevalent than in Glagow. Why, then, should not Glasgow form a large post-graduate obstetrical school, where with the means at its disposal it could instruct practitioners in the methods of coping with the most serious obstetrical cases, and thus prove a source of good, both to science and humanity?

I have just heard that most probably there will be an extension made to the present hospital, and so allow of a greater number of cases being treated indoors. If there was a system in Glasgow on somewhat the same lines as that at the Rotunda in Dublin, numbers of students, doctors from other towns, and even foreigners, would be attracted to our obstetrical school.—I am, etc.,

Glasgow, Sept. 13th. J. SOUTTAR MCKENDRICK, M.B.

MEDICAL EDUCATION OF WOMEN IN EDINBURGH.

SIR,—In the correspondence between the officials of the Edinburgh School of Medicine for Women and the Court of Edinburgh University which recently appeared in the BRITISH MEDICAL JOURNAL, there was a paragraph which suggested that those responsible for the management of the Medical College for Women, Edinburgh, were disregarding the orders of the Court of the Edinburgh University; and further, as the said correspondence might lead strangers to form the impression that the medical education of women in Edinburgh had received a serious check, or had been entirely suspended, may I be allowed to point out:

1. That the classes, and in fact all the arrangements in connection with the Medical College for Women, Minto House, Chambers Street, are conducted entirely in conformity with the regulations which the Court of the University of Edinburgh have from time to time issued in regard thereto.

2. Ladies desirous of studying medicine in Edinburgh will find every facility for doing so in the Medical College for Women, at which there were eighty-five students during the session just closed.

The Secretary of the Medical College for Women is Miss Mackay, Medical College for Women, Chambers Street, Edinburgh, from whom all information as to curriculum, fees, etc., may be obtained.—I am, etc.,

ALEC. T. HUNTER,
Clerk and Treasurer.

Scottish Association for the Medical Education of Women, Edinburgh, Sept. 9th.

"A NEW AND ORIGINAL METHOD OF MAKING CASTS."

SIR, The method described by Professor Peters, although original in its completeness, can hardly be termed new, as the method of making casts by the application of paraffin, etc., in such thin layers as to rapidly harden is well known. In the *Process Year Book* for 1897, Joseph Lewis, of Dublin, describes his method, and gives several photographic illustrations, including one of a bust. I have used Mr. Lewis's method frequently, and found it easy and accurate.

His method is to melt two parts of spermaceti and one of wax in a double saucepan, and, having oiled the surface, to apply a thin layer rapidly with a flat camel's hair brush. This hardens almost instantaneously, and causes no pain. Another layer is then brushed on, and then another, until the mould acquires some thickness. Mr. Lewis strengthens his moulds by placing slips of net or open muslin on them, and brushing on more solution. By this means a mould which can be safely

removed is made. I have often seen him strengthen the mould by pouring plaster of paris on the outside. The application of the strips is especially useful if the mould has to be cut; the muslin being then laid so as to form supporting edges at either side of the cut.—I am, etc.,

Dublin, Sept. 12th. E. Macdowel Cosgrave.

THE ETIOLOGY OF "RETURN" CASES OF SCARLET FEVER.

Sir,—The exceedingly able and well worked out paper of Dr. Killick Millard on this subject must interest every one of us, as it deeply concerns us all. For many years I have had a theory of my own on these "return" cases, and acting on it have sent convalescents from scarlet fever direct from the sanatorium to the school room after six to eight weeks' isolation with impunity. But I very nearly had a case which would have been scheduled by myself and by the parents as a "return" case, and which would have involved me in no little chagrin and trouble. A Rugby boy had scarlet fever. When he was declared free from infection I was arranging about his going to his home in Ireland, and was urged by the parents to be specially careful on the score of infection, as they had one other child at home, a daughter, who was very delicate. I assured them that, as far as human foresight could affect it, all was done that was possible, and that there was practically no risk; but advised them, as they had a large house, if they were still anxious, to keep the children apart for a week. All was arranged for the boy to go to his home on a certain day, when the parents' hearts misgave them, and they telegraphed that, instead of coming home, the boy was to go to the sea. Three or four days later, there having been no communication between the children or between the boy and his parents, the daughter developed scarlet fever. This seemed inexplicable as the parents lived in a large house in the country; but it transpired that she had ridden in a tramcar, where she doubtless caught it, public conveyances of every kind being a veritable hotbed of infection owing to the unscrupulousness of the public in travelling in an infectious state.

Acting upon my theory, that those convalescing should be kept separate from recent cases, which has ever served me well, I treat my scarlet fever patients in rooms which hold at most two cases, and they are usually occupied by one patient only. The house is heated throughout by hot water pipes. The staircase is a large airy one, and the staircase window is open night and day, and the bedroom door is never shut, the bed being screened from draught. They are thus practically treated in the open air. Further, I never—no, never is too big a word—unless compelled, put a recent case with a convalescent; for I hold that it is almost an absolute impossibility for a convalescent from scarlet fever to leave a room where it has been beside a recent case without the nasal cavity and the fauces being saturated with the fresh virus of scarlet fever, whatever it may be, where it finds a favourable soil for development, and which can but convey infection to the susceptible.

I regard it, therefore, as important for recent cases to be kept apart from convalescents, as it is for the infected to be segregated from the healthy.

As most of my patients are strong and healthy, and as every case is kept in bed for twenty-one days, however slight the illness, clothed in flannel, I rarely see any sequelæ of scarlet fever. When any sequela does show itself, the invalid does not leave my care under any circumstances until he is well—for I regard it as a criminal proceeding for those who are infectious, from even the most trivial ailment, to travel—and then he goes straight to the seaside.

I remember a case where a child travelled in an infectious state from scarlet fever, and there entered the same railway carriage a mother and two children. They all took the fever, and the mother and one child died.—I am, etc.,

Clement Dukes, M.D.Lond., M.R.C.P.,
Physician to Rugby School, and Senior Physician to Rugby Hospital.
September 7th.

Sir,—I have read with the greatest interest Dr. Killick Millard's exhaustive paper reported in the British Medical Journal of September 3rd, and in connection with the subject of "return cases" I should like to ask the following questions:

1. May not the urine of patients carry infection? At one meeting which I attended I gathered that considerable suspicion was attached to patients who "wetted the bed."

2. Has the use of carbolic soap and carbolic oil never been observed to cause a sort of desquamation of the body which has been mistaken for secondary scarlatinal desquamation? Surgeons who practise antiseptic surgery say that carbolic acid causes desquamation.

3. Is it the custom in our metropolitan hospitals to put "Izal," or any other so-called "disinfectant," into the water for bathing, or to oil the patients in any way?

4. Can there be such a thing as a non-poisonous disinfectant?

5. Is it logical to set down a "return case" as undoubtedly due to a patient recently discharged from an infectious hospital, when it frequently happens that a return case occurs (excuse the Irishism) without a patient coming from the hospital at all?—I am, etc.,

Orpington, Kent, Sept. 10th. R. Alex. Shannon.

SELF-INDUCED INSTRUMENTAL ABORTION.

Sir,—In confirmation of what your correspondent wrote in your issue of September 3rd regarding the frequency of the self-abuse of various implements in the production of criminal abortion, it may be useful to mention the following experience, which fell to my lot not so long ago. One evening two women were shown into my consulting-room. One of them, the patient—a parous married woman—I had seen on a former occasion in the out-patient room of the Hospital for Women. She stated that her husband had been absent in America for some considerable time, that she had missed two menstrual periods, and that there was a probability of her being pregnant; and, should I find such to be the case, she wished me to "put her right," as she was departing shortly for America to join her husband. I told her she certainly was pregnant, but as to "putting her right," that was a matter in regard to which I would have nothing to say, and I showed her the door. In parting, she emphatically declared "the business must be done" at any cost before she joined her husband, and that, as I refused, somebody else would do it for her. I replied that that was her own affair and not mine, and she and her companion were soon in the street. In a few days afterwards an urgent message was left in my absence requesting me to call at a certain address which was given, but with no name. In due course I called at the address given, having no notion who my patient might be or what might be the matter with her. I was shown upstairs into a back bedroom and at once recognised the woman who had been to consult me a few evenings previously. She looked ill with a pinched and anxious expression, quick pulse, hot skin, high temperature, and tender abdomen. Her first salutation was that "it was all over." On questioning her as to who had managed the business for her she at once replied that she had done it herself and showed me a thick bone crochet needle used for knitting purposes, and that she had "pushed the bone crochet needle up into the womb." Her story seemed to me so utterly incredible that I felt it my duty to examine her to see what had actually happened and I soon found that she certainly had aborted, and to my surprise I could discover no sign of abrasion or laceration of any part of the genital tract. I felt extremely angry with the woman for placing me in such an awkward position and upbraided her for sending for me in such circumstances. I prescribed an opiate and left as hurriedly as I could, telling her not to trouble me any further in the future. In about a fortnight later she called at my house to pay my fee for the visit to say she was well again and that she would be sailing for America in the course of a few days. Perhaps nowadays when abortion trading is so rampant the foregoing facts may be worth recording from a medico-legal point of view.—I am, etc.,

Liverpool, Sept. 6th. E. T. Davies.

Sir,—When in Wakefield in 1883 I came across a woman who told me she had known several ladies who kept down their families by this dangerous and criminal method. Also a doctor told me that he had several times met women who

had referred to having done so on previous occasions. It follows that a man may be condemned because a female patient has died from the result of an illegal operation though he may truly swear he did not do it, for in fact the patient may herself have passed a catheter into the womb and perforated it.—I am, etc.,

Leyton, Sept. 6th. HARDING H. TOMKINS.

BILE AS AN ANTIDOTE IN VARIOLA.

SIR,—I read with great interest in the BRITISH MEDICAL JOURNAL of September 3rd Professor T. R. Fraser's eminently practical Further Note on Bile as an Antidote to Venoms and Disease Toxins.

In this note he states that it is indicated that "a special antidotal constituent, additional to the ordinary constituents, is present in the bile of an animal whose body contains a poison of the nature of the venoms or toxins."

As experiments with the serum of vaccinated calves or heifers have not proved very successful in antagonising the virus of small-pox or its toxins, is it not more probable after what Professor Fraser has shown in connection with the bile of other animals, that the bile of calves after an attack of cowpox may possess an antidotal constituent as well as the ordinary constituents?

It would be important to test (if it has not yet been experimentally demonstrated) whether such a bile contains antitotal properties, and if it would have any curative action in cases of small-pox. Should the bile of these calves be found to have such an antidotal action, it would also help to prove that variola and vaccinia are identical diseases.—I am, etc.,

Edynbane, Skye, N.B., Sept. 6th. LACHLAN GRANT, M.D.Edin.

OBITUARY.

JOHN WALLACE, M.D.,

Professor of Midwifery and Gynæcology, University College, Liverpool.

DR. WALLACE, whose unexpected death we briefly referred to in the BRITISH MEDICAL JOURNAL of September 10th, was a native of Scotland, and was born about sixty years ago. He



studied medicine at the University of Edinburgh, and was a pupil of the late Sir James Y. Simpson. In 1861 he graduated M.D. of his University, and the following year became Licentiate in Surgery and in Midwifery at the Royal College of Surgeons of Edinburgh.

After spending some years in practice in Scotland he settled in Liverpool, and about twenty years ago was appointed Surgeon to the Thornton Wards of the Royal Infirmary, a position which placed him in the front rank of obstetric practitioners in the city. About the same time he was appointed Lecturer on Midwifery in the School of Medicine, and on the amalgamation of the school with University College he became the first Professor of Midwifery in the latter institution, and was appointed an Examiner in Midwifery at Victoria University. He vacated his position at the Royal Infirmary at the beginning of the present year, in accordance with the law which forbids the medical officers to seek re-election after attaining the age of 60, and he was appointed Consulting Gynæcological Surgeon. By his death the Chair of Midwifery is now rendered vacant.

Dr. Wallace never took any part in public life, but in his earlier days he was actively associated with various medical societies, and was Vice-President of the Medical Institution. He was at one time Editor of the *Liverpool Medico-Chirurgical Journal*, and President of the North of England Obstetrical Society. Various contributions to the literature of his special department of medicine have from time to time appeared from his pen.

Dr. Wallace had been suffering for some days before his death from symptoms of gastric catarrh, but so trivial did they appear that he did not place himself in the care of one of his colleagues until the day before his decease. The sudden onset of hæmatemesis, which proved fatal, came on quite unexpectedly a few hours after his son, Dr. Arthur Wallace, had left home on his wedding trip. In accordance with the expressed wishes of the deceased his remains were cremated at Anfield Crematorium, but the burial service was conducted in the Scotch church in Rodney Street, and was largely attended by the members of the profession in the neighbourhood. Dr. Wallace has left three sons and two daughters. His son, Dr. Arthur Wallace, is Assistant Lecturer on Midwifery at University College, Liverpool, and is on the staff of the Hospital for Women.

WE regret to record the death of THOMAS JOSHUA GITTENS, son of the late Joshua Mayers Gittens, of the Parish of St. Phillip, Barbados, West Indies. Mr. Gittens received his medical education at Guy's Hospital, and became a Member of the Royal College of Surgeons of England in 1868. He afterwards practised for several years in South America, but failing health compelled him to relinquish his work, and eventually he returned to England. For more than ten years before his death he suffered from paralysis agitans, and was an inmate of the Royal Hospital for Incurables, Putney. There, on August 16th, he died as the result of a fall.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

FIELD OFFICER (Royal Army Medical Corps) proceeding to India about November for full tour, would exchange with officer in a Mediterranean Station, Gibraltar, Egypt, or Malta (failing first two), or with a Field Officer ordered to the West Indies or other colony. Even terms. Address, No. 3,160, BRITISH MEDICAL JOURNAL Office.

THE RANK OF MEDICAL OFFICERS IN THE AMERICAN NAVY.

THERE has for some time been great dissatisfaction in the Medical Service of the United States Navy at the position in regard to rank of the medical officers. There seems to be a prospect of this state of things being reformed. The following is (according to the *New York Medical Record*) the text of a short bill to amend the existing regulations as to the rank of naval medical officers which is to be presented to Congress:

An Act to make assistant and passed assistant-surgeons of the navy correspondent in rank with assistant-surgeons of the army:

Be it enacted by the Senate and House of Representatives of the United States in Congress assembled:

That assistant-surgeons of the United States Navy shall, from the date of their entrance into the service, rank with lieutenants (junior grade) of the line

After five years from the date of appointment as assistant-surgeons they shall be examined by a board of medical officers (now existing) and upon the successful completion of such an examination, they are to be promoted to the grade of passed assistant-surgeons, with the rank of lieutenants (senior grade) of the line.

That the higher grades are to take the rank of lieutenant commander, commander, captain, and commodore respectively.

That all benefit derived from existing laws relative to the pay of medical officers is to continue the same, except in the case of assistant and passed assistant-surgeons ranking with lieutenants (junior and senior grade) provided for in this bill, whose pay is to correspond with that of lieutenants (junior or senior grade) of the line.

In the American army medical officers enter the service between the ages of 21 and 28, and take the rank of first lieutenant of cavalry, which corresponds to a junior lieutenant in the navy. Five years from the date of entrance in the army they are, by law, promoted to the rank of captain of cavalry, which corresponds to that of a senior lieutenant of the navy. After this grade they are promoted to surgeon, with the rank of major, which is equivalent to that of lieutenant commander of the army.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—WILLIAM G. AXFORD, Staff-Surgeon to the *Boscawen*, for the *Agincourt*, September 15th; WILLIAM M. KEITH, M.B., Surgeon, to the *Tamar*, for the *Woodcock*, September 7th: WILLIAM E. MATHEW, Surgeon, to the *Tamar*, for the *Sandpiper*, September 7th: JAMES D. S. MILLER, M.B., Surgeon, to the *Prince George*, September 7th; KENNETH H. JONES, M.B., Surgeon, to the *Repulse*, September 7th; HENRY E. RAPER and ALAN G. EASTMENT, Surgeons, to the *Victory*, additional, October 13th; GERALD B. BROWN, JOHN G. CORRY, M.B., and LANCELOT B. TODD, Surgeons, to the *Vivid*, additional, October 13th; WALTER B. MAURICE, Surgeon, to the *Salamander*, September 15th; HENRY C. WHITEHEAD, HERBERT W. B. SHEWELL, M.A., M.B., CHRISTIAN B. FAIRBANK, STRATFORD D. T. HALLIDAY, and REGINALD S. G. S. BOND, M.B., Surgeons, to the *Victory*, October 13th; CHARLES C. MACMILLAN, M.B., and FREDERICK C. B. GITTINGS, M.B., Surgeons, to the *Vivid*, October 13th; HAROLD J. CHATER, RAMSEY M. RICHARDS, and GEORGE E. DUNCAN, Surgeons, to the *Pembroke*, October 13th; JAMES G. WATT and GEORGE E. GLYNN, B.A., M.B., to the *Wildfire*, additional, and for disposal, October 13th.

ROYAL ARMY MEDICAL CORPS.

MAJOR WALTER C. BEEVOR, M.B., is appointed Surgeon-Major Coldstream Guards, on augmentation, September 14th.

Captain WILLIAM P. G. GRAHAM, M.B., retires from the service receiving a gratuity, September 14th. He was appointed Surgeon-Captain July 27th, 1887, and has been for some time in Egypt, at first with the Egyptian army, and subsequently in the Egyptian Sanitary Department. He was present in the operations in the Soudan in 1801, including the capture of Tokar, received the Khedive's star with clasp, and was awarded the 4th class of the Order of the Osmanieh.

Surgeon-Major-General JAMES INKSON, M.D., died at Acton on September 9th, aged 62. He was appointed Assistant Surgeon October 19th, 1857; Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1873; Brigade-Surgeon, May 1st, 1883; Surgeon-Colonel, September 4th, 1888; and Surgeon-Major-General, June 6th, 1893. He was placed on retired pay November 24th, 1895. He served with the Baltic Expedition of 1855, including the bombardment of Sweaborg (medal); in the Indian Mutiny campaign in 1858, including the capture of Jugdespore and the actions of October 17th, 18th, and 20th (medal); and with the Bhootan Expedition in 1865 (medal with clasp).

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Colonel R. de la C. Corbett, M.D., D.S.O.	Dublin	Bengal.
Lieut.-Colonel H. Charlesworth	Bombay	Portsmouth.
,, J. C. Dorman, M.B.	Fermoy	Dublin.
Major C. B. Hill	Parkhurst	Malta.
,, A. V. Lane	Madras	Bombay.
,, W. A. Morris	Punjab	Bengal
Captain G. A. Wade, M.B.	C. of G. Hope	Shorncliffe.
,, V. H. W. Daveron	Dublin	Madras.
,, A. W. Bewley	,,	Hong Kong.
,, R. J. W. Mawhinny	—	Birr.
,, W. E. Hardy	Aldershot	Woking.
,, T. J. Lenehan, M.B.	—	Dublin.
,, B. W. Longhurst	Madras	Punjab.

The newly appointed Lieutenants, namely, W. H. S. NICKERSON, M.B., G. S. NICKERSON, M.B., G. B. CRISP, R. S. H. FUHR, W. JAGGER, M.B., A. B. MACCARTHY, M.B., G. J. S. ARCHER, M.B., R. SELBY, M.B., S. O. HALL, A. E. WELD, J. S. GALLIE, F. J. C. HEFFERNAN, A. E. THORP, C. W. MAINPRISE, H. HERRICK, E. J. DOBBIN, J. COWAN, M.B., A. R. O'FLAHERTY, H. B. G. WALTON, and E. P. HEWITT are stationed at Aldershot.

Major J. H. NICHOLAS, retired pay, and Lieutenant-Colonel H. L. BONOVAN, M.D., retired pay, have been appointed to the medical charge of troops at Devonport and Warwick respectively.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT DAVID R. DOBIE, M.D., 2nd Volunteer Battalion the King's Own Scottish Borderers, is appointed Surgeon-Lieutenant, September 14th.

INDIAN MEDICAL SERVICE.

THE under-mentioned Lieutenants, having completed three years' full-pay service, are promoted to be Captains, from July 29th: *Bengal.*—JOHN STEPHENSON, M.B., FRANK N. WINDSOR, M.B., WALTER B. TURNBULL, M.B., ERNEST E. WATERS, M.B., ASHER LEVENTON, PHILIP F. CHAPMAN, M.B. *Madras.*—FREDERICK L. BLENKINSOP, M.B., EDMUND L. ILLINGTON, THOMAS E. WATSON, M.B., CHARLES G. WEBSTER. *Bombay.*—ALFRED HOOTON, ARTHUR F. W. KING, ROBERT F. STANDAGE, ANDREW A. GIBBS, HENRY A. F. KNAPTON.

Brigade-Surgeon-Lieutenant-Colonel PREO NATH MOOKERJEE, Madras Establishment, died at Sagaing, Burmah, on June 13th. He entered the service as Assistant-Surgeon, April 1st 1868, and became Brigade-Surgeon-Lieutenant-Colonel, July 6th, 1897. He was with the Burmese expedition in 1885-89 (medal with clasp), and with the Manipore expedition in 1891 (clasp).

THE VOLUNTEERS.

THE under-mentioned gentlemen have been appointed Surgeon-Lieutenants in the corps specified, dated September 14th: SHEPHERD MCC. BOYD, 2nd Cinque Ports Artillery (Eastern Division Royal Artillery); LEONARD L. HANHAM, 2nd Devonshire Artillery (Western Division Royal Artillery); JOHN WAYTE, M.B., 1st Volunteer Battalion the Queen's Royal West Surrey Regiment.

Surgeon-Captain C. N. GWYNNE, M.D., 4th West Riding of Yorkshire Artillery (Western Division Royal Artillery), has resigned his commission, retaining his rank and uniform, September 14th.

Surgeon-Major J. L. CROMBIE, M.D., 7th Volunteer Battalion the Royal Scots (Lothian Regiment), is promoted to be Surgeon-Lieutenant-Colonel, September 14th.

THE SWISS ARMY MEDICAL SERVICE.

A RECENTLY-COMPILED handbook, prepared in the Intelligence Division of the War Office in the Swiss army, gives the following particulars of the medical services of Switzerland. The medical units with the field army consists of divisional and corps hospitals. The divisional hospital consists of a staff, 3 ambulances (which we should call field hospitals), and a train detachment supplied by the Landwehr. The staff consists of 1 medical officer, 1 commissariat officer, 1 or 2 chaplains, and 1 non-commissioned officer. Each ambulance numbers 6 officers, 4 non-commissioned officers, and 30 men, of whom 10 are hospital attendants and 20 are stretcher bearers. The train detachment consists of 1 officer, 3 non-commissioned officers, and 20 drivers. The transport consists of 6 2-horse sick transport wagons, 3 2-horse supply wagons, and 1 1-horse travelling kitchen. The corps hospital consists of a staff numbering 4 medical officers, 1 commissariat officer, 1 or 2 chaplains, and 3 non-commissioned officers and men, with 4 ambulances similar to those of divisional hospital. The train detachment furnished by the Landwehr consists of 3 officers and 91 non-commissioned officers and men. The transport comprises 4 4-horse medical store wagons, 8 2-horse sick transport wagons, 4 4-horse reserve wagons, 32 requestioned 2-horse carts for transport of sick and wounded, 4 2-horse supply wagons, 2 1-horse field kitchens.

For the medical service on the line of communications and at the base the following units are provided by the Landwehr, namely, 16 ambulances, 3 medical trains, 5 transport columns, and 8 hospital sections. The Landwehr ambulance consists of 6 officers and 34 non-commissioned officers and men, with a train detachment consisting of 1 corporal and 6 drivers, with 1 medical store wagon, 1 sick transport wagon, and 1 regimental wagon. The medical trains are for the transport of sick and wounded by rail. The *personnel* with each comprises 3 officers and 17 non-commissioned officers and men. The train consists of 1 locomotive, 2 wagons for *personnel*, and 40 axles for the transport of 200 sick, and 2 luggage vans. The staff of a transport column consists of 2 officers and 12 non-commissioned officers and men, with 32 requisitioned wagons and 3 baggage and supply wagons. A hospital section consists of 7 officers, 20 hospital attendants, and 10 stretcher bearers, and is reckoned sufficient for a hospital of 200 beds. The uniform of officers is a light blue tunic with black collar and facings; a dark blue blouse with black facing on collar. The trousers are dark grey with black piping; the shako with light blue pompon. The cloak is the same as infantry, but with black facings. The men, as to tunic and trousers, are dressed like the infantry, but with black shoulder straps, with blue numbers, light blue collar and piping. The cloak and blouse are of dark blue with light blue facings. They have side arms with brass handle.

THE SURGEON ON THE COMMANDER-IN-CHIEF'S STAFF IN INDIA.

CAPTAIN BEYTS, Royal Army Medical Corps, has been appointed on the personal staff of Sir William Lockhart, the new Commander-in-Chief in India. Captain G. W. Beyts's gallant conduct during the operations of the Kurrum Valley under General Yeatman Biggs was alluded to in the BRITISH MEDICAL JOURNAL of December 18th, 1897. Captain G. W. Beyts was mentioned in despatches, and our contemporary, the *Army and Navy Gazette*, expressed a hope that a V.C. would be conferred on him. This reward, however, has not yet come to him.

"BRIGADE-SURGEON-LIEUTENANT-COLONELS."

A CORRESPONDENT writes thanking us for noticing a previous letter on the want of recognition of the old "Brigade-Surgeon" rank in the new titles. There is absolutely nothing to distinguish these officers now from any unselected and unpromoted Lieutenant-Colonel of twenty years' service. It is true that in the *Army List* they are said to be serving under a clause in the Pay Warrant which confers seniority and additional pay and pension, but no distinctive title. He suggests that these officers should get the rank of "Brevet-Colonel" to distinguish them, and the suggestion seems well worthy of consideration. The old

Brigade-Surgeons were semi-administrative, and took the place of a Surgeon-Colonel in emergencies; and a "brevet" would place them in a proper and defined relation to Colonel in the Royal Corps.

ANOTHER CORRESPONDENT, writing on the same subject, suggests that, as the old Brigade-Surgeons were under the compound titles Lieutenant-Colonels, the new title should be quite enough for them now they are quit of the fearful compound designation. The old "Brigade" rank was a mere departmental one, and it is quite enough that it is recognised in the *Army List* and Pay Warrant, without opening any question as to the new, simple, and comprehensive military titles.

THE VICTORIA CROSS.

SURGEON-GENERAL (RETIRED) draws attention to a paragraph in the *World* of August 31st, which means that medical officers are not to have the V.C., even for most heroic acts in saving the wounded in battle, although hitherto many surgeons have won the Cross. If this report be true, it is of vital interest to the medical profession, and must not be allowed to drop,

*** We cannot believe that such a report has any foundation.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.—The following candidates have satisfied the examiners:

Chemistry with Chemical Physics.—*A. H. Bird, L.S.A., St. Mary's Hospital; *W. C. Hayward, M.R.C.S., L.R.C.P., Charing Cross Hospital; *F. W. Woolrabe, L.R.C.P.&S.E., L.F.P.S.G., Melbourne University.

Elementary Anatomy and Biology, Chemistry and Physics.—Honours—First Class: J. B. Waters, College of Medicine, Newcastle-upon-Tyne. Honours—Second Class: N. B. Walker, College of Medicine, Newcastle-upon-Tyne. Pass List: J. W. Crawford, College of Medicine, Newcastle-upon-Tyne; W. M. Emmerson, College of Medicine, Newcastle-upon-Tyne; G. R. East, College of Medicine, Newcastle-upon-Tyne; R. Moyle, Guy's Hospital; R. R. Pirrie, College of Medicine, Newcastle-upon-Tyne; C. A. Ryman, St. George's Hospital; T. Wilson, College of Medicine, Newcastle-upon-Tyne; R. Younger, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—T. E. Amyot, College of Medicine, Newcastle-upon-Tyne; A. B. Bradford, St. Thomas's Hospital; C. H. Cox, Mason College, Birmingham; C. C. Gibb, College of Medicine, Newcastle-upon-Tyne; R. S. Renton, College of Medicine, Newcastle-upon-Tyne, C. R. Stewart, St. George's Hospital; J. B. Thomas, St. Mary's Hospital.

Elementary Anatomy and Biology.—F. G. Armstrong, College of Medicine, Newcastle-upon-Tyne; J. W. Cross, College of Medicine, Newcastle-upon-Tyne; W. H. Lamplough, Mason College, Birmingham; J. H. McDowall, College of Medicine, Newcastle-upon-Tyne; P. M. Rivaz, St. Bartholomew's Hospital; Monica Lucien Mary Robertson, London School of Medicine for Women.

Elementary Anatomy, Chemistry, and Physics.—T. C. Rutherfoord, St. Thomas's Hospital.

Elementary Anatomy.—A. J. S. Brandon, St. Thomas's Hospital; C. Fisher, St. Bartholomew's Hospital; E. H. Milner-Moore, St. Mary's Hospital; J. N. Parrott, St. Mary's Hospital.

* Old regulations.

MEDICO-LEGAL.

SUPERANNUATION UNDER THE LOCAL GOVERNMENT (IRELAND) BILL.

M.B., SUBSCRIBER.—As we have already pointed out,[1] Section CXVIII of the Local Government (Ireland) Act, 1898, entitles a medical officer to whom the Medical Officers' Superannuation Act (Ireland), 1869, applies, "to receive a superannuation allowance on the scale and according to the Acts and rules relating to Her Majesty's Civil Service."[2] The Medical Officers' Superannuation Act (Ireland), 1869, empowers a Board of Guardians to grant a superannuation allowance, as provided in the first section of the Union Officers' Superannuation Act, 1865 (28 Vict., cap. 26), to an officer of a union, "notwithstanding such medical officer shall not have devoted his entire time to the services of the union."

[illegible] of the Union Officers' Superannuation Act, 1865, runs [illegible] The guardians may, at their discretion, with the consent of the Poor-law Commissioners (now the Local Government Board for Ireland), grant to any officer whose whole time has been devoted to the service of the union, and who shall become incapable of discharging the duties of his office with efficiency, by reason of permanent infirmity of mind or body, or of old age, upon his resigning or otherwise ceasing to hold his office, an annual allowance not exceeding in any case Two-[illegible]

Our correspondent, having served for thirty-three years as a medical officer in a union, and being 61 years of age, with a salary of £120 per annum, is entitled under Section CXVIII of the Local Government (Ireland) Act, 1898, to a superannuation allowance not exceeding £80 per [illegible]

INQUESTS AND *POST MORTEM* EXAMINATIONS.

G. P. writes to ask [illegible]ion as to the propriety of general practitioners [illegible] connection with inquests, and he says: "Very few of us, either general practitioners or consultants, are competent to make exhaustive *post-mortem* examinations. Nearly all of us, no doubt, can detect the grosser lesions, but as to giving 'expert' evidence it is absurd to expect it from men who perform on an average one *post-mortem* examination yearly. Many practitioners would, I am sure, be very glad if it were made a rule that all *post-mortem* examinations should be made by one man specially selected for the post in each district."

*** The suggestion made by our correspondent has on many occasions been discussed in our columns, as well as by various medical societies, and many arguments have been advanced *pro* and *con*. The general practitioner who has attended a patient during his last illness, or for injuries causing death, would be a necessary and important witness at the inquest, and, as a rule, he would no doubt be competent to examine the body after death and to report thereon at the inquest. This would apply to a very large percentage of all the inquests held. But there are cases where special medical expert evidence is necessary, and in such cases, which are usually known to the coroner previous to the inquest, there is no difficulty in securing the aid of specialists to make analyses or *post-mortem* examinations, and thus supplement the evidence of the general practitioner engaged in the case. Such special evidence can be procured by the coroner on application to the Home Office or to the county councils. Should the general practitioner be attending midwifery or cases of illness where he deems it in the interests of his patients inexpedient to make a *post-mortem* examination, we feel sure that coroners will always be willing to appoint someone else for the purpose. As a rule in all cases of difficulty or doubt, and where the practitioner desires a second opinion or special help, an early communication to the coroner will meet the difficulty; but it often happens that the coroner anticipates the difficulty by the early selection of an expert. Before our correspondent's suggestion could be adopted some alteration in the law would be necessary.

HOUSE SURGEONS AND CERTIFICATES UNDER THE WORKMEN'S COMPENSATION ACT.

BINIODIDE writes: The action of the Boards of certain provincial infirmaries with regard to signing certificates under the new Workmen's Compensation Act, has raised a question which affects materially the interests of a certain class of the medical profession. The house-surgeons to infirmaries in large manufacturing centres are frequently called upon to fill up and sign certificates (a proceeding usually requiring considerable care and not a little time) on behalf of employers or insurance companies. The Board at one infirmary are prepared to take up the position that subscribers are entitled to have these certificates signed without payment of any fee. At another, the Board are considering whether any fee shall be charged, and, if so, whether the fee shall be retained by the house-surgeon or go to the funds of the infirmary. As I have never before heard the right of a house-surgeon to claim and retain a fee in cases of this nature called in question, I shall be greatly obliged if you will inform me:

(1) Whether a house-surgeon has the legal right to claim a fee of—say, half a guinea—for signing these certificates on behalf of employers or insurance companies?

(2) Whether the Board of an infirmary or hospital have the right to order a house-surgeon to sign these certificates without a fee?

(3) Whether the Board have the right to allocate all, or a portion of the fee to the funds of their institution?

*** The legal right of a medical practitioner to recover a fee for services rendered depends on the implied contract, between him and the person requiring those services, that the proper value for the work done shall be paid. When he makes a specific bargain to give the whole or part of his services in return for a stipulated payment, this implied contract is usually waived, and the special bargain substituted for it. The house-surgeon of a hospital contracts with the hospital authorities to render certain services in return for his salary. What those services are to include varies in different cases, and often is not very clearly defined. If the bargain is that he is to give his whole time, and not engage in private practice, he would have no right to charge a fee for anything incidental to his hospital work, such as signing certificates or attending to give evidence. In such a case, where fees become payable, the hospital authorities might claim to retain them just as an ordinary practitioner might claim fees earned by his salaried assistant. If the house-surgeon's appointment does not preclude him from taking private practice, there seems to be no reason why he should not charge, and keep for himself, proper fees for signing certificates under the Compensation to Workmen Act. The person asking for a certificate must, of course, always be prepared to pay a reasonable fee for it, either to the hospital or to the surgeon. Who is to benefit by that fee is a matter of arrangement between them. Where this is now uncertain the matter should be made clear.

At the Congress of the French Association for the Advancement of Science, recently held at Nantes, a resolution was passed, on the proposal of Professor Brouardel, that it was desirable that vaccination should as soon as possible be made compulsory in France and its colonies. A special resolution, proposed by M. Hublé, that vaccination and revaccination should be made compulsory for natives and for persons of every nationality in Tunis was also passed. Small-pox is endemic in Tunis, and the disease is kept up among the natives by the systematic practice of inoculation.

[1] See BRITISH MEDICAL JOURNAL, September 3rd, 1898, p. 665.
See also BRITISH MEDICAL JOURNAL for August 13th, 1898, p. 457.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,320 births and 5,287 deaths were registered during the week ending Saturday last, September 10th. The annual rate of mortality in these towns, which had increased from 14.7 to 24.4 per 1,000 in the eight preceding weeks, further rose to 24.6 last week. The rates in the several towns ranged from 16.4 in Cardiff, 17.2 in Oldham, 17.3 in Portsmouth, and 17.4 in Swansea, to 30.5 in Preston, 31.3 in Blackburn, 33.9 in Newcastle-upon-Tyne, and 35.5 in Salford and in Sunderland. In the thirty-two provincial towns the mean death-rate was 25.5 per 1,000, and exceeded by 2.3 the rate recorded in London, which was 23.2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 7.3 per 1,000; in London the death-rate was equal to 6.3 per 1,000, while it averaged 8.0 in the thirty-two provincial towns, among which the highest zymotic death-rates were 12.2 in Hull, 12.4 in Wolverhampton, 13.9 in Preston, and 15.6 in Sunderland. These high rates were caused by the excessive fatality of summer diarrhœa. Measles caused a death-rate of 2.1 in Plymouth; scarlet fever of 1.8 in Wolverhampton; whooping-cough of 1.8 in Sunderland; and diarrhœa of 10.2 in Blackburn, 10.7 in Wolverhampton, 11.5 in Bolton, 11.8 in Hull, 12.5 in Preston, and 13.0 in Sunderland. The mortality from "fever" showed no marked excess in any of the large towns. The 62 deaths from diphtheria in the thirty-three towns included 30 in London, 5 in Manchester, 5 in Leeds, 4 in Swansea, and 3 in Birkenhead. No fatal case of small-pox was registered last week, either in London or in any of the thirty-two large provincial towns; and only 3 small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, September 10th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,241, 2,178, and 2,240 at the end of the three preceding weeks, had further risen to 2,300 on Saturday last, September 10th; 273 new cases were admitted during the week, against 187, 182, and 238 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, September 10th, 958 births and 695 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 18.1 to 19.8 per 1,000 in the three preceding weeks, further rose to 23.0 last week, but was 0.6 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 18.7 in Perth and 20.7 in Paisley to 23.8 in Greenock and 29.3 in Leith. The zymotic death-rate in these towns averaged 4.7 per 1,000, the highest rates being recorded in Paisley and Leith. The 320 deaths registered in Glasgow included 4 from measles, 4 from scarlet fever, 2 from diphtheria, 10 from whooping-cough, 4 from "fever," and 45 from diarrhœa. Nineteen fatal cases of diarrhœa were recorded in Edinburgh, and 4 of "fever" in Paisley.

MEDICAL NEWS.

The Italian Congress of Public Health will meet in Turin from September 29th to October 1st under the presidency of Professor Pagliani.

Dr. Voges, Assistant in the Berlin Institute for Infectious Diseases, has been appointed Director of the Bacteriological Institute of Buenos Ayres.

The Middlesex Hospital, which has been closed for repairs and alterations, will be re-opened on Monday, September 19th, on which day both the in-patient and the out-patient departments will be at work.

The President of the United States is endeavouring to form a Commission to inquire into the charges made against the army organisation. Among those who have been requested to serve is Dr. W. W. Keen, Professor of Surgery Jefferson Medical College, Philadelphia, who has, we believe, consented to serve if the Commission should be constituted.

Psychiatry at the International Medical Congress.—The arrangements for the Thirteenth International Medical Congress to be held in Paris, August 2nd to 9th, 1900, are already in active progress. In the Section of Psychiatric Medicine, the organising Committee of which is presided over by Professor Ballet, the following subjects are proposed for discussion:—Mental Pathology: Psychoses of Puberty. Morbid Anatomy: Morbid Anatomy of Idiocy. Therapeutics: On Rest in Bed in the Treatment of Acute Forms of Madness, and of the changes which this might bring about in the organisation of establishments intended for the reception of lunatics. Legal Medicine: Sexual Perversions from the Medico-Legal Point of View. It is proposed that the discussion on each of these questions shall be opened by three members, two foreign and one French.

A Female Medical Officer of the United States Army.—According to the *Philadelphia Medical Journal* Dr. Anita Newcomb McGee, wife of Professor W. J. McGee, of Washington, and daughter of Professor Simon Newcomb, formerly of the Naval Observatory, was regularly sworn in as an acting assistant surgeon on August 29th. Dr. McGee has throughout the war been in charge of the selection of the women nurses, and of the 500 or more now in the field most have passed muster at her hands. Assistant Surgeon McGee sailed on the transport *Seneca* from New York for San Juan on August 31st with 22 women nurses and 12 men nurses.

Wigan Medical Society.—A meeting of this Society was held on September 8th, 1898, Mr. Wm. Berry, F.R.C.S.I. (President), in the chair. Dr. Blair read a paper on the Serum Treatment of Puerperal Septicæmia, which he illustrated with copious notes from a successful case in his own practice. In addition to the usual methods of treatment, antistreptococcus serum was used. The serum was best employed early in the disease, and then towards evening, and in all cases collapse must be watched for and obviated. The belief was expressed that recovery from puerperal septicæmia treated with serum would be more thorough than with other methods alone. Dr. Blair said it was desirable that the serum should be of standard strength and purity, so that definite results could be obtained. Messrs. Berry, Parker, Jones, Graham, Monks, France, and Drs. Rees and Benson took part in the discussion which followed, and Dr. Blair replied. A vote of thanks to Dr. Blair for his paper was moved by Dr. Benson, seconded by Mr. Monks, and unanimously carried.

Sanitary Reform in the Barber's Shop.—According to the *Chicago Record* of August 25th the barbers and some of their friends in the medical profession are preparing a Bill to present to the Legislature which, if it becomes a law, will require barbers to disinfect all tools, towels, sponges, brushes, and whatever articles may be required in the pursuit of their business. Under this law nothing but strictly antiseptic barber shops will be allowed in Illinois. The Bill will provide that all barber shops shall be under the control of the State Board of Health, and each pay a licence of $10 a year. The licence shall only be granted after a thorough examination of the applicant's shop has been made and its sanitary conditions approved. Each individual barber shall also pass an examination as to his knowledge of the trade, and as to his knowledge of the use of disinfectants. The barber shall also have worked at his trade a certain number of years. The tools, brushes, towels, and other articles in use in the shop must be thoroughly sterilised after being used, according to regulations the Board of Health may make.

Mercer's Hospital, Dublin.—The Honorary Secretary of the Medical Board of Mercer's Hospital has sent us the following particulars as to the hospital, which by an oversight was not included among those enumerated in the Educational Number: Mercer's Hospital was founded in 1707. It is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery, of the Royal College of Surgeons, the Catholic University School of Medicine, and within a few minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of resident pupil, etc. There is a very large out-patient department, and a special department for diseases of women and children. Owing to the central position the accidents treated at this hospital are very numerous. During the last year the hospital has undergone extensive alterations in order to bring it up to modern requirements. Appointments: A house-surgeon is appointed annually. Four resident pupils each six months. Clinical clerks and dressers are also appointed from the most deserving of the class. Fees: Winter six months, £8 8s.; summer three months, £5 5s.; nine months, £12 12s. The certificates of attendance at this hospital are recognised by all the licensing bodies. For further particulars apply to the Honorary Secretary of the Medical Board, Dr. Maunsell, 47, Fitzwilliam Square, or to any member of the staff.

THE PASTEUR INSTITUTE OF RIO DE JANEIRO.—In the *Annales de l'Institut Pasteur* of August 25th Dr. Ferreira dos Santos, Director of the Pasteur Institute of Rio de Janeiro, Brazil, gives an account of the results of the preventive treatment of hydrophobia in that institution from February 9th, 1888, to April 30th, 1898. The total number of persons who applied for treatment during that period was 3,973, of whom 2,647 were treated; in the remaining 1,326 no treatment was considered necessary, the animal inflicting the bite not having been rabid. The animals inflicting the bite among the 2,647 cases admitted were as follows: Dogs, 2,344; cats, 280; monkeys, 4; mules, 2; horse, 1; mare, 1; cow, 1. In 10 cases the inoculations were made on account of scratches received in the course of laboratory work; in 3 persons having accidental wounds on the hand were exposed to infection from the saliva of rabid animals; lastly, in 1 the patient was bitten by a human being suffering from hydrophobia. In 30 cases the treatment was discontinued because the animals which inflicted the bite were found to be free from any suspicion of rabies. In 65 the patients abandoned the treatment of their own accord; among these 3 cases of hydrophobia occurred. In 6 cases the disease began during the course of treatment; of these 5 were cases of very severe bite on the head, while in 1 the patient, who had been bitten on the hand, did not apply for treatment till the twenty-first day, and received but two inoculations, hydrophobia breaking out on the twenty-third. In 5 cases death occurred from various diseases having no relation to hydrophobia. Deducting these 106 cases from the total number of 2,647, there remain 2,541 who underwent the treatment. Among these there were 20 deaths due to hydrophobia, giving a total death-rate of 0.78 per cent. Deducting from these 20 cases of death 9 in which the disease developed before the fifteenth day of treatment, the statistics for the period of more than ten years during which the institute has been at work is as follows: Patients treated, 2,532; deaths, 11; mortality, 0.43 per cent. The method of antirabic vaccination adopted in the Rio de Janeiro Institute is practically that in use in the Pasteur Institute of Paris.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer.—Applications to the Registrar and Secretary by September 26th.

BETHLEM HOSPITAL.—Two Resident House Physicians. Appointments for six months from November 1st. Apartments, complete board and washing provided. Applications, endorsed "House Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before October 3rd.

BIRMINGHAM GENERAL HOSPITAL.—Pathologist. Salary, £100 per annum, with board and residence. House-Surgeon and two Assistant House-Physicians. No salary, but residence, board, and washing provided. Ophthalmic Surgeon (Honorary). Dental Surgeon. Honorarium, £50 per annum. Applications to the House Governor by September 24th.

BODMIN: CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer; unmarried. Salary, £100 per annum, increasing to £120, with board, lodging, washing, and attendance. Applications to the Medical Superintendent by September 20th.

BOOTLE BOROUGH HOSPITAL, Derby Road, Bootle.—Junior House-Surgeon. Salary, £40 per annum, with board, lodging, washing, etc. Applications to the Chairman by September 27th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Fourth Resident Medical Officer. Unmarried, and under 29 years of age. Salary, £50 per annum, with board, washing, and residence.—Applications to the Secretary by October 5th.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Temporary Assistant Lecturer and Demonstrator in Physiology. Appointment for one year. Salary, £120. Applications to the Secretary by October 1st.

CARMARTHEN'S [illegible] ASYLUM.—Second Assistant Medical Officer; age not to exceed 30 years. Salary, £120 per annum, increasing to £140, with board, residence, attendance, and washing (to be allowed in lieu of stimulants). Applications [illegible] by October 5th.

CENTRAL [illegible] OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon [illegible] residence provided. Applications to the Secretary by October 8th.

CHILDREN'S [illegible] AND BELGRAVE DISPENSARY, 41, Sloane Square, S.W.—[illegible] to the Secretary before October 1st.

[illegible] unmarried. Salary commencing at £100 a year, [illegible] Applications to the Honorary Secretary by September 26th.

ELLESMERE [illegible] AND RURAL DISTRICTS. Joint Medical Officer of Health. [illegible] num. Applications to the Clerk to the Joint Committee, Ellesmere.

EVIL [illegible] HEADALL (Parish of).—Medical Officer. Salary, £15 per annum, and a free [illegible] of Poor, Evie.

GLA[illegible] Assistant House-Surgeon. Salary £30, with [illegible] to the Secretary, 83, West Regent Street, Glas-

HERE[illegible] —Resident House-Surgeon: unmarried. Salary, [illegible] board, washing, gas, coals, and attendance. [illegible] 26th.

HOSPITAL [illegible] DISEASES OF THE CHEST, Brompton, S.W. [illegible] Applications to the Secretary by September 24th.

HOSPITAL FOR [illegible] THROAT, Golden Square, W.—Resident Medical Officer [illegible] board, residence and washing. Senior Clinical Assistant [illegible] for six months, but renewable. Applications to the Secretary [illegible]

HOSPITAL FOR [illegible] CHILDREN, Great Ormond Street, Bloomsbury.—Resident Medical [illegible] with board and residence. Applications by September 24th.

LEICESTER [illegible] INFIRMARY [illegible] Honorarium, £25 per annum. Applications to the Secretary [illegible]

LONDON COUNTY ASYLUM, Claybury, Woodford Bridge, Essex.—Junior Assistant Medical Officer, between 23 and 30 years of age. Salary, £150 per annum, with board, furnished apartments, and washing.—Applications to R. W. Partridge, Clerk, Asylums Committee Office, 21, Whitehall Place, S.W., by October 5th.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House-Surgeon. Honorarium at the rate of £50 per annum and board.—Applications to G. W. Fox, 53, Princes Street, Manchester, by September 17th.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W.—Three qualified medical women as Clinical Assistants in out-patient department. Appointment for one year. Applications to Secretary by September 28th.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House-Surgeon. Salary, £120 per annum, increasing by £10 a year at discretion of Committee, with furnished apartments, board, and washing. Applications to the Secretary by September 20th.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Physician and House-Surgeon, Appointments for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by October 8th.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Also Ophthalmic Surgeon. Applications to the Secretary by September 27th.

SHREWSBURY COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary to commence at £100 per annum, rising to £120 (and £8 in lieu of beer, etc.), with board, lodging, and washing.—Applications to the Medical Superintendent by September 24th.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Appointment for six months, renewable. Honorarium at the rate of £30 per annum, with residence, board, and washing. Applications to Joseph Worall, Infirmary Office, Cambridge Arcade, Southport, by September 24th.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary, £70 per annum. Also a Junior Assistant House-Surgeon. Salary, £2 per mensem. Board, lodging, and residence provided in each case. Applications to the Secretary by September 20th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Appointments tenable for six months. Applications to the Secretary-Superintendent by September 21st.

WEST RIDING ASYLUM, Menston, near Leeds.—Resident Clinical Clerk.—Applications to the Medical Superintendent.

MEDICAL APPOINTMENTS.

BOND, C. Hubert, D.Sc., M.D., Ch.M.Edin., appointed Senior Assistant Medical Officer to the new London County Asylum, Bexley, Kent.

COLEMAN, M. O., M.D.Aberd., M.R.C.S., D.P.H., reappointed Medical Officer of Health to the Surbiton Urban District.

COWIE, George, M.B.Aberd., appointed Medical Officer to the Holborn Union Workhouse, City Road.

DALLEWY, John, M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer of Health for the Wem Rural District Council.

DENSHAM, W. A., M.R.C.S., L.R.C.P., appointed House-Surgeon to Charing Cross Hospital.

DOWNMAN, C. F., L.R.C.P.Lond., M.R.C.S., appointed Medical Officer of Health to the Burnham-on-Crouch Urban District.

FITZGERALD, D. P., B.A., M.B. R.U.I., appointed Demonstrator of Anatomy in the Queen's College, Cork.

FORBES, D. McD., F.R.C.S.Edin., L.R.C.P., appointed Medical Officer of Health to the Eastwood Urban District.

GIBBON, A. H., L.R.C.P., L.R.C.S.Edin., L.R.P.S.Glasg., appointed Medical Officer for the St. Mary's Parish, and Public Vaccinator for the Borough of Bury, *vice* James Hodges, M.R.C.S.Eng., resigned.

HAYES, G. Constable, F.R.C.S.Eng., appointed House-Surgeon to the Royal Westminster Ophthalmic Hospital, *vice* Dr. Quay.

HEDLEY, A. S., M.B. and B.S.Durh., appointed Medical Officer to the Rothbury Workhouse, and Medical Officer and Public Vaccinator of the Eastern District of the Rothbury Union.

HOOPER, C., M.R.C.S., reappointed Medical Officer of Health to the Aylesbury Urban District.

LIMRICK, W.S., L.R.C.P., L.R.C.S.Edin., reappointed Medical Officer of Health to the Waterloo-with-Seaforth Urban District.

MORRICE, George Gavin, M.A., M.D.Cantab., M.R.C.P., appointed Consulting Physician to the Salisbury Infirmary.

PATERSON, Herbert J., M.A., M.B.Cantab., F.R.C.S.Eng., appointed Assistant Medical Officer to the Hospital of St. Francis, 145, New Kent Road, S.E.

PECK, Herbert, M.B. and C.M.Edin., D.P.H.Camb., appointed Medical Officer of Health to Chesterfield Rural District Council, *vice* Angus Macintosh, M.D., deceased.

REVELY, J. S., M.D., M.R.C.S., appointed Medical Officer to the Tettenhall District of the Seisdon Union.

ST. JOHN, Winstan St. Andrew, M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant House-Surgeon to the Derbyshire Royal Infirmary, *vice* Reginald H. Hill.

SMITH, Dr. W. H., appointed Medical Officer for the Fourth District of the Brackley Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

MARRIAGES.

BOYD—BEVERIDGE.—On July 30th, at St. Mary's Church, Addington, Christchurch, N.Z., by the Rev. W. S. Bean, Vicar, Alexander Brooke Boyd, M.A., M.B.Oxon., of Richmond, Nelson, to Margaret Miller, eldest daughter of Thomas Beveridge, of Pendalton, Christchurch, and formerly of Balado, Kinrossshire.

MACWILLIAM—THOMAS.—At Wrexham, North Wales, on August 14th, John Alexander MacWilliam, M.D., Regius Professor of Physiology in the University of Aberdeen, to Florence Edith, second daughter of William Thomas, Esq., J.P., Bron-Llwyn, Wrexham.

PETYT—HAMMERTON.—On September 8th, at the Parish Church, Beckenham, Kent, by the Rev. W. St. John Field, M.A., Allan I. Petyt, M.A., M.B., B.C.(Cantab.), L.S.A. (Lond.), of Longton, Lancs., to Kate, second daughter of Thomas Moy Hammerton, "Hollington," Beckenham.

TAYLOR—BAILEY.—At St. Michael's Parish Church, Edinburgh, on September 8th, by the Rev. George Wilson, assisted by the Rev. A. P. Taylor, M.A., brother of the bridegroom, H. P. Lechmere Taylor, M.A., M.B., C.M.Edin., Medical Missionary, Sialkot, India, to Harriette F. Bailey, L.R.C.P., and S.E. ("Harrie") only surviving daughter of Wellesley C. Bailey, Mission to Lepers, 17, Greenhill Place.

WALKER—PEDDER.—At St. Michael and All Angels, Helensburgh, on September 6th, by the Rev. W. Perowne Holmes, Vicar of St. Peter's, Leicester, assisted by the Rev. J. Stuart Syme, Rector of St. Michael and All Angels, Walter W. Walker, M.B., B.C.Cantab., Peterborough, to Margaret, youngest daughter of William Pedder, Stirling.

DEATHS.

EDWARDS.—On August 14th, at his residence, Trentham Villa, 42, Bolaize Road, South Hampstead, Edwin Thomas Edwards, M.R.C.S.Eng., and L.S.A., late of Macclesfield.

MCJANNET.—On Tuesday, September 6th, 1898, at his residence, Ivy House, Middlewich, Perguson M. McJannet, M.B., C.M. (formerly of Lonnoxtown). Buried at Middlewich Cemetery, Friday, September 9th, 1898. No cards.

ROGER.—On September 7th, at the Free Church Manse, Johnshaven, Kincardineshire, Daniel Roger, M.B., C.M.Edin., aged 25.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 3; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Tu. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p. daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Tu., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 2; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Opathalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Taroat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDEEN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 3; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Turoat, M. Tu., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

SURGEON would grateful for information as to a private institution for his sister, whose mind is very much astray, but who is quiet and harmless Her income is about £1 per week.

NEPHROLITHOTOMY.

M.D. wants to know the best work or works giving details of this operation.

VARICOSE VEINS AND BICYCLING.

ENTHUSIAST writes: A lady patient of mine, young and active, wishes to ride a bicycle, but her husband, also young and active, says that cycling gave him varicose veins, and that if he now rides it causes pain in the veins. They wish my advice on the subject. I ride a good deal myself, and cannot see that any harm could be done, but I should like the opinion of others more experienced than I am.

PATIENTS AND PRACTITIONERS.

ETHICS writes: If, while doing another man's work during his holiday, a new patient, the father of a family, comes to his surgery and is sent on to me, can I attend this new patient's family (not himself) as my own patients at the request of the father, who has never seen the doctor he meant to see for his own complaint?

*** The fact that the patient applied first at the house of the absent practitioner and so came into the hands of the *locum tenens* imposes on the latter the trust for an absent friend. He should treat the case on this basis, then communicate the facts to the absent practitioner, and let his future action be guided by the result of this friendly intercourse.

THE ARMY MEDICAL EXAMINATION.

R. S. writes: A patient of mine, who intends going up for Army Examination early in December and will have to pass the medical examination a month later, that is, early in January, suffers from a varicocele about the size of a pigeon's egg. To operate on him now would interfere with his studies, and if done after his examination in December healing would not take place in time for the examination in January. In the event of his leaving things as they are and going up for the examination, (1) What are the chances of his passing? and, if rejected, would he be allowed (2) a pass on condition of his immediately undergoing an operation? (3) What is the best advice to offer him?

*** We should advise operation at once so that the part may be sound before the medical examination. If our correspondent appears before the Medical Board with a varicocele he will be rejected, though the Board can recommend that he be operated on and then appear before a second Medical Board at the War Office. This, however, is always a dubious thing to risk.

FRIENDLY SOCIETY STATISTICS.

A. W. S. asks: 1. What is the average payment per member per annum to medical men holding friendly society appointments (club practice)? 2. What is the average number of days' sickness per member per annum? 3. What is the average cost of medicine, etc., per member per annum? 4. What is the average remuneration for each visit or consultation in club practice? 5. What is the average population for each registered medical man in England?

*** 1. The average remuneration paid by friendly societies to their medical officers throughout the country is about 4s. per annum per member. 5. The number of practitioners in England and Wales, according to Churchill's *Medical Directory* for 1898, was 22,562; the population of England and Wales by the last census was 29,002,525. It would therefore appear that there is on the average about 1,285 people to each practitioner. With regard to the other queries submitted by our correspondent we know of no trustworthy reliable statistics.

ANSWERS.

ENQUIRER.—The "board" complained of was probably put up by the architect, and there appears to be no proof that this was done with the doctor's sanction or knowledge.

CHLORIDE OF SODIUM IN THE TREATMENT OF RINGWORM.

F. C. L.—Our correspondent will find reports of cases of ringworm successfully treated with common salt by Dr. F. J. Reilly in the BRITISH MEDICAL JOURNAL, November 23rd, 1895, p. 1295; by Dr. G. Steele Perkins, *ibid.*, December 7th, 1895, p. 1472; and by Dr. David Walsh, *ibid.*, December 14th, 1895, p. 1539.

WORKS ON HYPNOTISM.

A. A.—One of the following works on hypnotism may meet our correspondent's requirements: *Hypnotism and its Application to Practical Medicine.* By O. G. Wetterstrand, M.D. Translated by H. G. Petersen, M.D. (G. P. Putnam's Sons, 24, Bedford Street, London, W.C. 10s.) *Suggestive Therapeutics: a Treatise on the Nature and Uses of Hypnotism.* By H. Bernheim, M.D., Professor in the Faculty of Medicine of Nancy. Translated from the second and revised French edition by Christian A. Herter, M.D. (G. P. Putnam's Sons.) *An Experimental Study in the Domain of Hypnotism.* By Professor R. von Krafft-Ebing, University of Vienna. Translated by C. G. Chaddock, M.D. (G. P. Putnam's Sons.) *Psycho-Therapeutics, or Treatment by Hypnotism and Suggestion.* By C. Lloyd Tucker, M.D. Third Edition. London: 1891. *Neurohypnology.* By James Braid. London: 1843.

History and Etiology of Diphtheria.

D. W. would find the references he requires in any of the large text-books or systems of medicine, such as those of Clifford Allbutt, Russell Reynolds, the *American System* by Pepper, von Ziemssen's, or the *Twentieth Century Practice of Medicine*. There is much information also in the smaller handbooks by Osler, Hilton Fagge, and Bristowe. Further bibliography can be found by referring to the writings of Bretonneau (*Des Inflammations Spéciales du Tissu Muqueux*, 1826), Greenhow (1860), and Morell Mackenzie (*Manual of Diseases of the Throat*).

Detection and Estimation of Inosite in Urine.

W. H. C.—Inosite may be isolated from urine as follows: Remove all albumen, if present, and evaporate the urine to one-fourth of its bulk. Precipitate with neutral lead acetate, filter, warm, and precipitate with subacetate as long as any precipitate forms. Collect the lead precipitate which contains the inosite combined with lead oxide. Wash well and suspend in water, and decompose the lead compound with sulphuretted hydrogen. Filter, concentrate by boiling, the while adding three or four volumes of alcohol. A heavy precipitate falls, which must be removed, and from the filtrate inosite crystals will be deposited. If the deposit has not occurred within twenty-four hours the addition of ether will bring it about. The inosite thus isolated is washed in alcohol, died, and weighed. For the mere detection of inosite, if a solution be evaporated with a little nitric acid on platinum almost to dryness, and the residue be moistened with a little ammonia and calcium chlorate solution, and the mixture again be evaporated carefully to dryness, a vivid rose-red or violet colour arises, which is apparent with even 1 mg. of inosite. The quantity of urine necessary to evaporate must necessarily depend on the proportion of inosite present. Inosite is not a sugar; it is hexahydroxy-benzol, pyrocatechin being ortho-di-hydroxy-benzol. Short descriptions of this process are given in many of the textbooks. Reference may be made to Purdy's *Practical Uranalysis* (London: The Rebman Publishing Company).

NOTES, LETTERS, Etc.

Cards.—It is not usual to put on visiting cards, "Mr. ———, M.D."

Perforated Gastric Ulcer.

A report of a case of perforated gastric ulcer in a child has been received without any name or other means of identifying our correspondent.

Large Fœtus.

Dr. Arthur Dobson (Ilkeston) writes: I think the following case is worthy of being recorded, seeing it is stated in Galabin's book *On Midwifery* (edition 1891) that a fœtus weighing over 12 lbs. is a very rare occurrence. During the latter end of last month I delivered a woman without the aid of forceps of a living male child weighing 16 lbs., the breadth across the shoulders being 6½ inches. I experienced a great difficulty in delivering it; there was no laceration of the perineum, and it was the woman's fourteenth child.

The Medical Education of Women.

In an article on this subject in the Educational Number of the British Medical Journal of August 27th, it should have been made clear that Queen Margaret's College, Glasgow, receives women students only. It should also have been stated that Queen Margaret's College was incorporated with the University of Glasgow in 1892, and is governed entirely by the University Senate and Court, having no separate governing body of its own.

Biniodide of Mercury.

Mr. A. Hanbury Frere (Stradbroke, Suffolk) writes: I notice in your reply to "H.O.D." you give a formula for the above. As I had the privilege of working for some time with the late Dr. Illingworth, and of observing the value of some of his methods in actual practice, perhaps I may be permitted to say a few remarks on the subject. It has always seemed remarkable to me that a combination which has been so long [illegible] disease should prove such a mystery to many. As everyone knows, if a solution of iodide of potassium be added to [illegible] bichloride of mercury, a precipitate is formed which is soluble in excess of the iodide. This is in reality a solution of biniodide of mercury dissolved in iodide of potassium. The simplest method [illegible] 1 in 1,000 is required) is to employ the *B.P.* solution of corrosive sublimate, and add to it sufficient solution (1 in 4) of iodide of potassium to dissolve the precipitate which first forms.

A [illegible] biniodide of mercury; now [illegible] gauze, listed in some of the catalogues. This is no doubt due to the [illegible] mercury over the bichloride as an [illegible] will testify. I shall be happy to furnish any one who wish with full particulars as to the great value of this combination.

D.P.H.R.C.S.Eng., Part II.

A. N. [illegible] didate for the D.P.H.Eng. I beg to differ [illegible] second paper, namely, that it was fair [illegible] was the most absurd paper I ever [illegible] however, that [illegible] time [illegible] over the [illegible] candidate to [illegible] the [illegible] of health, [illegible] experience, [illegible] in the second part. I am now [illegible] y I have no facilities for practical [illegible]

Wh[illegible]

Miss Catherine Dodd has [illegible] ing specimens of the definitions writ[illegible] by the prin[illegible] [illegible] [illegible] [

SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL DISEASES.

Patrick Manson, M.D., F.R.C.P., LL.D., President.

THE MOSQUITO AND THE MALARIA PARASITE.

By Patrick Manson, M.D., LL.D., F.R.C.P.
Medical Adviser to the Colonial Office; Physician to the Seamen's Hospital Society Branch Hospital, Albert Docks.

Dr. Patrick Manson (President of the Section) in the course of a demonstration of the malaria parasite said: Ladies and Gentlemen,—It was only a very few days ago that I received intimation that I might probably be asked to speak to you about one of the more recent advances in our knowledge of the malarial parasite. Unfortunately at the time I was ill, and as a consequence I fear that, what with bad health and want of time, my demonstration and exposition may be somewhat meagre, faulty, and unsatisfactory. However, I trust to your indulgence, and I hope I may be successful in giving you a lucid account of what is really a marvellous story.

Cycle of the Malaria Parasite in the Circulation.

In order that my hearers may have a clear idea of what I am going to say about the life-history of the malarial parasite outside the human body, it is advisable in case some of you may not be familiar with the recent advances on the subject, to give first a short *exposé* of the leading facts of the life-history of the parasite inside the human body. I will be very brief, and not occupy your time with details which you may easily get from most modern textbooks. Unfortunately, I have left my lantern slides behind me, and I must trust to the chalk to illustrate what I am going to say.

If you examine the blood of a patient suffering from ague and select a time just before the stage of rigor, you will find in a proportion of the blood corpuscles a disc of protoplasm, varying in size according to the species of parasite, dotted all over with black specks of the characteristic pigment of malaria. This is a malarial parasite. If you examine the blood of the same patient during rigor, you will find that these black pigment particles become concentrated more or less in the centre of the blood corpuscle, and that the surrounding pale protoplasm has been broken up into a number of spherules. Later on, if you examine the blood during the stage of pyrexia, you will find that the spherules have escaped from the corpuscles into the liquor sanguinis, and many of them have been absorbed by the leucocytes; a few, however, have contrived to enter the blood corpuscles. Later still, during the stage of apyrexia, you will find that these intracorpuscular spherules increase in size, acquire amœboid properties, become pigmented, and by degrees, as you approach the stage at which we began our examinations, these pieces of pigmented protoplasm attain the size that we originally started with. Such, roughly speaking, is the cycle of the malarial parasite in the human body—that cycle of the parasite that subserves the multiplication of the parasite in the human body. There is nothing in this, however, that gives us any idea or suggestion as to the way in which the parasite manages, as all parasites must do, to pass from one host to another.

The Flagellated Body.

If you examine the blood of malarials some time after the blood has been removed from the human body, you will find occasionally a very peculiar and striking organism known by the name of "the flagellated body." This body can only be seen in blood some time after it has been removed from the human body. It is never to be seen in blood immediately after its removal from the circulation—an important fact. This flagellated body consists of a more or less regular, central sphere dotted over with pigment, and, proceeding from the periphery of the central sphere, 2, 3, 4, 5, 6, or more actively-moving, lashing filaments—flagella. If you keep up your observation you will find that after a time many of these flagella break away from the central sphere, and become free and swim through the liquor sanguinis.

Theory of its Function; the Rôle of the Mosquito Conjectured.

Now, fixing my attention on the fact that this peculiar, octopus-like creature, this flagellated body, only comes into existence a considerable time after the blood has left the human host, I concluded that there was probably a purpose in this circumstance—that, in fact, it was intended to subserve the necessities of the organism exhibiting it. I concluded that, because it came into existence after the blood had escaped from the human body, the purpose of this flagellated organism lay outside the human body. But, as it was impossible for the latent form from which this organism originated, and which is easily recognised, to escape from the human body by itself, it was necessary, in order to get it outside the human body, to invoke the assistance of some extraneous agency. It is unnecessary for me to give you here the various reasons and speculations which led me up to the conclusion that that agency was the mosquito. Doubtless I was influenced towards this conclusion by my previous experience of this insect as an agency for the evolution of the filaria sanguinis. Some people have doubted my statements as to the capacity of the mosquito for acting as intermediate host of the filaria. In case there should be any sceptic on this subject here, and as an object lesson to convince you of the power of this insect in spreading disease, I have placed under the microscope in the other room two specimens showing the filaria sanguinis in the thoracic muscles of the mosquito. One specimen shows the parasite in a mosquito which has fed on filariated blood about twenty-four hours before. You can distinctly see the worm lying between the fibres of the thoracic muscle. The other specimen is also a section of mosquito's thorax, in which you will find the filaria at the end of six days or a week after the insect had fed, the parasite being much increased in size and variously developed. It is a valuable object lesson for any sceptics who may doubt the power of the mosquito for taking care of pathogenic organisms.

I concluded, then, that the mosquito was the liberating agent of the malaria parasite as well as of the filaria, and that the flagellated body sucked, in its latent form, so to speak, into the mosquito stomach developed therein; that the flagella broke free from the central sphere, as we know they do on ordinary blood slides, and that in virtue of their locomotive faculty they traversed the blood in the mosquito's stomach, penetrated the wall of the mosquito's stomach, entered some cell and there started the extracorporeal life of the malarial parasite. Originally this was theory pure and simple—theory, however, that was justified, I think, by many facts as well as by analogy; theory which has now been thoroughly borne out by subsequently and carefully-observed facts.

Ross's Observations.

I was unable myself, from various circumstances, to undertake observations in foreign countries with the idea of establishing the truth of this theory; but fortunately my friend Surgeon-Major Ronald Ross, I.M.S., who had already done much work in blood pathology, was so struck with the probabilities of the hypothesis I had expressed, that he undertook to work out the subject on his return to India, now some three years ago.

The first part of the theory he very quickly proved. He found that, true enough, on the malarial blood entering the mosquito's stomach, ex-flagellation almost immediately followed, and that it followed in a proportion of instances very much greater than occurs in malarial blood spread in the ordinary way on the microscope slide. He found that at least 70 per cent. of the crescent form of the parasite, one of the latent forms of the flagellated body, was transformed into the flagellated body. He found also that the flagella all broke away. But he utterly failed to find what became of the

agella. They disappeared, and he did not know where they got to. He searched the tissues of hundreds of insects, but he could find no evidence whatever of the flagella having entered them.

DISCOVERY OF THE PIGMENTED BODY IN THE MOSQUITO.

About a year ago Ross, who had hitherto been working with one or two species of mosquitos only, by chance came across what he called a "dapple-winged" mosquito, a species entirely different from any with which he had previously experimented. This dapple-winged mosquito, of which, unfortunately, he was only able to procure four specimens, he contrived to feed upon the blood of a patient suffering from that form of malaria which is known as the summer-autumn fever, and which is characterised by the presence of the crescent body in the blood. Two to four days after these insects had fed he dissected them. In one he could find no unusual appearance, but in the three others he encountered a very remarkable body. He noticed, embedded in the tissues of the stomach wall, certain peculiar, oval, minute, pigmented cells. The fact of the presence of pigment in these cells arrested his attention. The optical characters of this pigment were such that it seemed to be in every way identical with the pigment which is so characteristic of the malarial parasite. He also observed evidence of growth. In fact, Ross was sure that he had now encountered the extracorporeal form of the malarial parasite. About the same time, by accident, he found one specimen of what is known as the grey mosquito, a common species in the tropics, feeding upon a case of ordinary tertian malaria. This mosquito he captured and kept for a few days, and afterwards dissected it. In this insect, too, he found similar pigmented bodies embedded in the walls of the stomach.

MACCALLUM'S OBSERVATIONS ON HALTERIDIUM.

Here, however, fact and theory seemed to diverge. It was difficult to reconcile the presence of pigment in these cells with the absence of pigment in the flagella which, according to my hypothesis, are the infecting agencies. The pigment always remains in the central sphere, or what may be regarded as the residual portion of the flagellated body; it does not enter the flagella. How then account for it in Ross's bodies if they be the developing malaria parasite? Fortunately at this juncture help came from America, help which apparently reconciled theory and fact. MacCallum, of Johns Hopkins University, observed that in halteridium an intracorpuscular parasite of birds closely allied to the malaria parasite of man, as I shall presently explain, the purpose of the free flagellum is to impregnate certain halteridia, and, as it were, prepare them for entering on a new phase of existence. In watching slides of blood containing halteridium he observed parasites escape from the blood corpuscles and assume a spherical form. Certain of these spheres emitted flagella which, breaking away, accumulated about other spheres which did not emit flagella, and finally entered them. Whereupon, after a time, the impregnated spheres changed shape, and acquired locomotive powers; became in fact, travelling vermicules, containing the entire substance of the original halteridium sphere, including its pigment. They exhibited great powers of penetration, passing indifferently through red blood corpuscles and white blood corpuscles, and moving with freedom and activity about the field. Depend upon it, this locomotive penetrating power exhibited by the pigmented halteridium vermicule has a purpose. Observe that it comes into existence only after the blood containing it has left the body of the bird. What more likely, then, than that this purpose is the attainment and penetration of the walls of the stomach of some special kind of mosquito that has ingested it? It is pigmented. Hence, arguing from analogy, I would suggest the pigment in Ross's pigmented bodies found in mosquitos fed on human malarial blood.

This explanation I think is admissible, although, I confess, it cannot be said that absolute proof is as yet forthcoming.

ROSS'S OBSERVATIONS IN BIRD MALARIA.

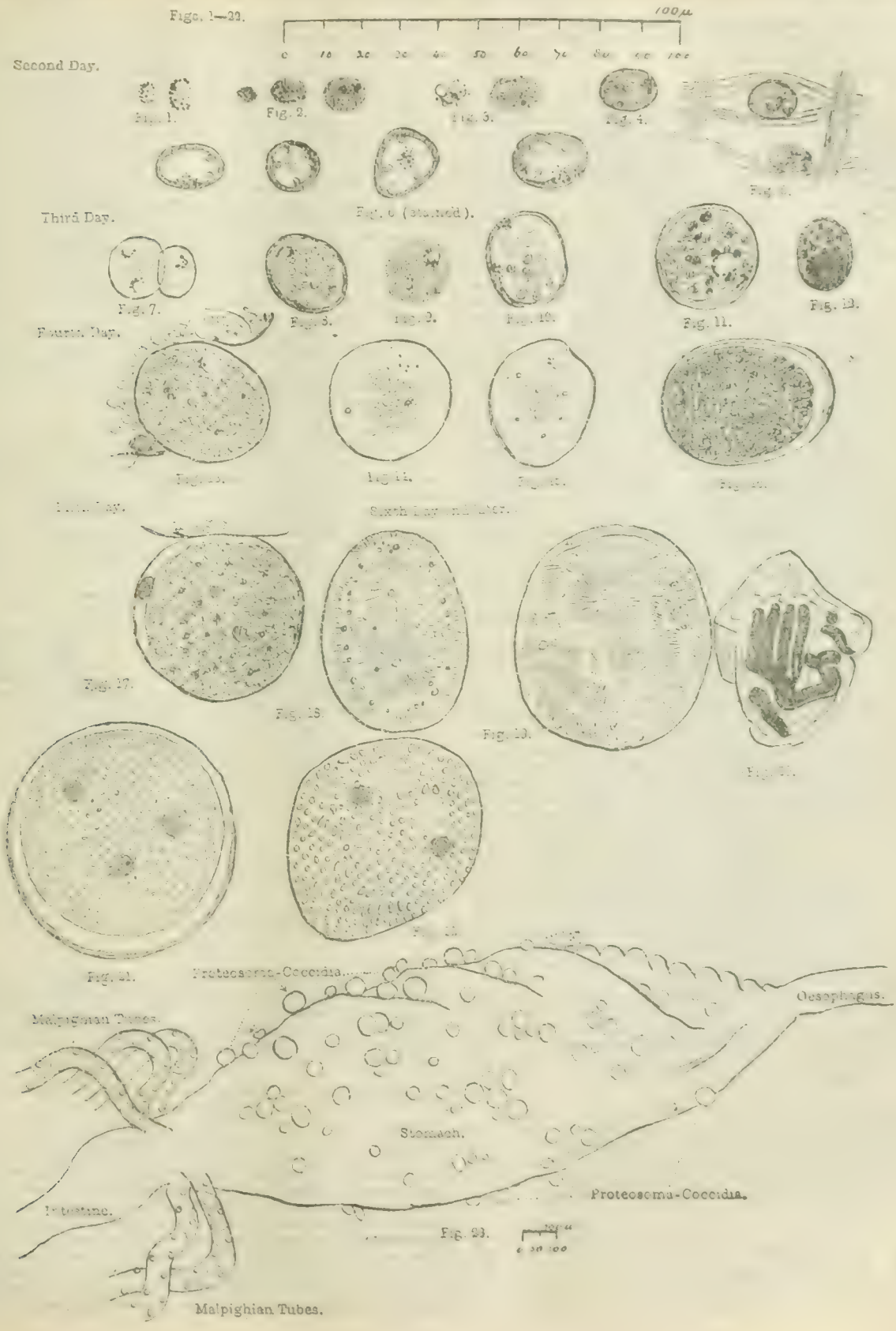
So far Ross's investigations had gone. He had succeeded in interesting a number of people in his work, and fortunately he succeeded in interesting the Indian Government. The Indian Government took him by the hand, relieved him of military duty, sent him into Calcutta, and placed him in a well-equipped laboratory with instructions to work at this mosquito-malaria hypothesis. When Ross arrived in Calcutta in pursuance of these instructions, it was an unfortunate time of year for his purpose. It was not the malarial season, consequently he had a difficulty in procuring human subjects for observation and experiment. With characteristic energy, however, and not to lose time, he turned to bird malaria, and resolved to devote a few months, at all events until he could get a sufficient number of human malarials, to studying the analagous parasites of birds. You know that birds, particularly in warm climates, are subject to what I might call plasmodial infection; that their blood often contains parasites strictly analagous to those characteristic of malaria. There are two important species that have been studied. One of these is called halteridium, by Labbé, a well known French authority. The characteristic of this species is that it extends alongside the nucleus of the bird's blood corpuscle, and forms sporulating appendages at the end of this halter-shaped sort of jugum. The other, very much like halteridium, sporulates in a somewhat different fashion. It is a more concentrated parasite, so to speak, occupying rather the centre of the oval blood corpuscle, and in order to obtain room displacing laterally the nucleus. It is called proteosoma.

Now both of these parasites resemble the malaria parasite in their structure. They are both intracorpuscular, and they are both composed of pale protoplasm carrying a large number of grains of black pigment. They also, like the malarial parasite, sporulate and they form flagellated bodies; so that in every way they seem strictly analagous, and closely allied to the malarial parasite.

DISCOVERY OF PIGMENTED BODIES IN MOSQUITOS FED ON SPARROWS AFFECTED WITH PROTEOSOMA.

Ross gave particular attention to proteosoma. He found that by feeding the grey mosquito on sparrows, larks, and crows containing this parasite, he could with the utmost certainty get a crop of pigmented cells, resembling those he had similarly raised from human malaria, in the stomach of these insects. These experiments he repeated a vast number of times—not one or two insects, but hecatombs of mosquitos he sacrificed in this way in the cause of science. I forget his exact figures, but of 245 grey mosquitos fed on sparrow's blood containing the proteosoma parasite, 178 (or 72 per cent.) showed the pigmented bodies in the walls of the mosquito's stomach. He fed an equal number of mosquitos on human blood, on the blood of birds devoid of this parasite, and in various other ways, and of 249 mosquitos thus fed not one showed these pigmented cells in the walls of the stomach. These experiments seemed very conclusive. I was particularly struck with one experiment which he details. He collected a number of mosquito grubs from a drain near his laboratory, and he put them in a bottle, and allowed them to remain there until the mosquito was evolved from the pupa. Then he fed some of these mosquitos on a bird in whose blood the proteosoma was particularly abundant. Ten mosquitos he fed in this way, killed them, dissected them, and examined their stomachs, and on an average he found that the stomach wall of each mosquito contained 100 pigmented cells. He took another batch of ten of the same mosquitos, and fed them on a sparrow whose blood was but moderately affected with the proteosoma. He dissected their stomachs, and enumerated the pigmented cells he found there, with the result that the average was only 29. Ten he fed on sparrows in whose blood the proteosoma was not present, and these he also dissected and carefully examined with high powers of the microscope, and in not one did he find any evidence whatever of the presence of pigmented cells.

Of the care and accuracy of Ross's observations I can give personal testimony. The preparations of these thirty dissected mosquitos' stomachs were sent to me, and I found under the microscope the pigmented cells, which there was no difficulty in finding, with the result that my count practically tallies with Ross's finding. I could state many more experiments, but these suffice to establish the fact that the grey mosquito fed on sparrow's blood containing proteosoma almost invariably contained the pigmented cell, and that grey mosquitos fed on sparrows whose blood did not contain the proteosoma


Figs. 1—22.
100μ
0 10 20 30 40 50 60 70 80 90 100
Second Day.
Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.
Fig. 5.
Fig. 6 (stained).
Third Day.
Fig. 7.
Fig. 8.
Fig. 9.
Fig. 10.
Fig. 11.
Fig. 12.
Fourth Day.
Fig. 13.
Fig. 14.
Fig. 15.
Fig. 16.
Fifth Day.
Sixth Day and later.
Fig. 17.
Fig. 18.
Fig. 19.
Fig. 20.
Fig. 21.
Fig. 22.
Proteosoma-Coccidia.
Malpighian Tubes.
Oesophagus.
Stomach.
Intestine.
Proteosoma-Coccidia.
Fig. 23.
Malpighian Tubes.

did not contain pigmented cells. The inference cannot be avoided that somehow or other the mosquito subserves the proteosoma, and that the pigmented cell is an evolutionary form of proteosoma.

THEIR POSITION AND DEVELOPMENT.

After thoroughly establishing this fact Ross set to work to find out something about the history of these pigmented cells in the stomach wall of the mosquito, and to endeavour to locate their position exactly. If you examine a mosquito's stomach with the microscope you will find that the wall is made up of several layers. The outer layer is composed of ramifications of the air vessels of the insect. Beneath this you will find two layers of muscular fibres, longitudinal and circular. These cross each other at right angles, producing a sort of rectangular pattern. Below these you will find a structureless sort of membrane which does not stain easily, and below this again, and forming the lining membrane, the mucous surface, so to speak, of the mosquito's stomach, what might be called the epithelial layer, composed of several strata of cells. Ross found that the pigmented proteosoma cells do not occur, as might have been supposed, among the soft epithelial cells lining the inner surface of the stomach, but that they lie either on the outer surface of the homogeneous layer covering this, or between the meshes of the muscular fibres. The diagram (Plate 1, Fig. 5) shows the position of the cells in question. You see them lying between the muscular fibres which they dissociate somewhat in the same manner as trichina spiralis dissociates the muscular fibre of the pig and other quadrupeds. When the parasites grow, as they do by-and-by, to a large size, they gradually protrude as a sort of wart-like object on the outer surface of the stomach, so that finally, after six or seven days, the stomach of an infected mosquito acquires something of the appearance here represented (Plate 1, Fig. 23). A number of wart-like bodies—which are really what Ross calls the "proteosoma coccidia"—protrude into the body cavity of the insect.

Ross has not succeeded as yet in finding the earlier or first-day phase of the proteosoma in the mosquito's stomach wall; but on the second day there is no difficulty—as you can see under the microscopes in the other room—in finding the parasite (Fig. 1-6). It is an oval body some 6 or 7 micromillimetres in diameter; through the homogeneous protoplasm of which it is composed you will find scattered some twenty particles of intensely black pigment. The outline is very distinctly and sharply defined. By degrees the little parasite grows, so that on the third or fourth day it attains a diameter three or four times this, becoming, in certain instances, granular, and exhibiting occasionally vacuoles, and other obscurely indicated marks of structure (Fig. 7-12). By the fourth or fifth day it is more spherical, and has attained a considerable size, sometimes a diameter of 60 to 70 micromillimetres (Fig. 13-16). The wall of the proteosoma coccidium is now thick and dense, and has a capsular appearance, and dim indications of structure can occasionally be made out. One particularly striking appearance is represented here; there is a sort of concentric arrangement of granules recalling what we may sometimes see in show specimens of diatoms (Fig. 21-22).

So far Ross had got with his work when his report (for permission to use which I am indebted to the Secretary of State for India) was written. According to Government instructions, it had to be sent in at the end of three months. Since then he has made remarkable progress. Of this progress I have learned from letters and telegrams.

FORMATION AED DIFFUSION OF "GERMINAL RODS."

Ross found in certain mosquitos, particularly in those mosquitos in which the protruding proteosoma coccidia had ruptured, diffused through the body cavity, and also in the tissues of the insect, certain peculiar bodies which he afterwards called germinal rods (Fig. 2). They are exceedingly minute, spindle-shaped, somewhat flattened bodies. He found these in enormous numbers. He could not at first understand whence they came. After a time, however, he discovered that by dissecting the stomach of the mosquito in salt solution, and by exercising a little pressure on the cover glass, he succeeded in rupturing the proteosoma coccidia, with the result that enormous numbers, myriads, of these germinal rods were extruded from their interior. Thus he accounted for the presence of these bodies in the body cavity of the insects. They were the progeny of the coccidia. He also supposed that they became diffused throughout the insect by entering its blood. They have no very manifest locomotive power of their own, and consequently they could not wriggle their way through the tissues. He therefore concluded that they must be carried through the tissues by means of the blood. To test this he pricked with a fine needle the back of a mosquito at a time when he knew that the germinal rods must have formed in the proteosoma coccidia, and when he knew that these coccidia had in the main ruptured. He obtained a minute droplet of the characteristic white blood of insects, mixed this with a little salt solution, and placed it under the microscope, and therein he found innumerable germinal rods. Later he endeavoured to make out what next became of these rods, what was their purpose and destiny.



Fig. 2.

THEIR PRESENCE IN THE VENENO-SALIVARY GLANDS.

In dissecting the tissues of the insect he, by accident, stumbled across a peculiar gland connected apparently with the proboscis. This gland consisted of a number of plump, clearly-defined cells, arranged along a branching duct. He found that there were at least two such glands, one on either side of the insect's head, and he was astonished at finding in the clear, plump, cells composing the glands enormous numbers of the proteosoma germinal rods (Fig. 3). He found

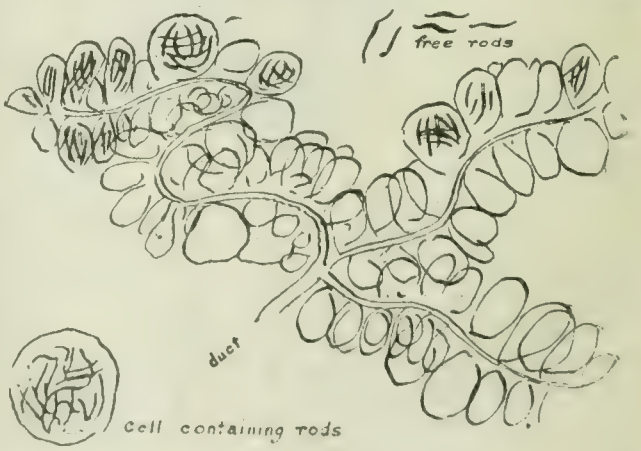


Fig. 3.

them arranged in bunches, as it were, producing in the gland cells an appearance something like the groups of bacilli in the lepra cell. Dissecting them out, and studying them microscopically, he found that the long ducts of the glands uniting terminated in a common trunk opening into the proboscis of the insect.

EXPERIMENTAL COMMUNICATION OF PROTEOSOMA DISEASE BY MOSQUITO BITE.

Ross concluded from this, or rather speculated on the strength of the facts, that very likely this was the route by which the proteosoma germ left the mosquito. Possibly, he thought, it might be the way or a way by which the parasite was introduced into a fresh host. No sooner had the thought occurred to him than he proceeded in a characteristic way to test it by experiment. He got mosquitos that had fed on proteosoma-infected sparrows, and kept them five or six days until he knew the germinal rods had been formed, and were occupying these veneno-salivary glands, for such they undoubtedly are. He then let the insects loose again on sparrows in whose blood careful microscopic examina-

tion had shown there were no proteosoma. Later on the mosquitos bit the sparrows, and then after some days Ross pricked these long-suffering sparrows and examined their blood. He had the gratification of finding innumerable proteosoma in the blood corpuscles.

This is a wonderful and most suggestive result. I believe it, for I have confidence in Surgeon-Major Ross's intelligence and in his honesty. He is an extremely truthful observer, and would be the last to overstretch any fact that he may have observed. He speculates—yes; but when he is speculating he tells you he is doing so; when he states a fact a you may rely upon its accuracy. Much of the information I have just given you came to me by telegram; unfortunately, therefore, I cannot enter into minute detail, for one does not expect to find scientific men investing largely in telegraphic messages, even when communicating important facts of science; but substantially I have not the least doubt that my presentment of the subject is correct.

Bearing of Ross's Observations on the Malaria of Man.

That this is the last word on the subject of the extra-corporeal phase of the malarial parasite I do not believe. I think that malaria may be acquired in this way—that is, by the bite of the mosquito; but that that is the only way I cannot venture to assert, in fact I do not think. For observe; malaria, we know, multiplies indefinitely outside the human body, independently of man. In fact, malaria is most prevalent in places where man is not. Therefore, this extra-corporeal condition of multiplication must demand something more than a short cycle of from man to mosquito and from mosquito to man. My impression is that it requires an infection of mosquito by mosquito; possibly, as in tick disease or as in silkworm disease through the insect's ova, possibly through the larva. Ross's facts supply us, gentlemen, with an explanation of the former sort. They do not tell us how the parasite multiplies indefinitely through generation after generation. Still, it is a most important addition to our knowledge, and I am sure that it will lead to a full solution of the entire problem and to very many advances in this important subject. It may be objected that what holds good for proteosoma may not hold good for plasmodium malariæ; but the similarity of the parasites is so great that one cannot resist the conclusion that their histories are also similar. Moreover, Ross has distinctly shown, as already mentioned, that certain species of mosquito do elaborate pigmented cells when fed on human malarial blood.

I am sure you will agree with me that the medical world, I might even say humanity, is extremely indebted to Surgeon-Major Ross for what he has already done, and I am sure you will agree with me that every encouragement and assistance should be given to so hard-working, so intelligent, and so successful an investigator to continue his work. His observations tend to the conclusion that the malaria parasite is for the most part a parasite of insects; that it is only an accidental and occasional visitor to man; that not all mosquitos are capable of subserving it; that particular species of malaria parasites demand particular species of mosquitos; that in this circumstance we have at least a partial explanation of the apparent vagaries of the distribution of the varieties of malaria. It seems to me that when the whole story has been completed, as it surely will be at no distant date, in virtue of the new knowledge thus acquired, we shall be able to indicate a prophylaxis for malaria of a practical character, and one which may enable the European to live in climates now rendered deadly by this pest. Other practical issues will occur to anyone who thinks of the importance of an accurate knowledge of the life-history of this as of any other parasite.

Future Lines of Study.

What we want now is a complete study of the various species of mosquito in malarial and other lands, and of their behaviour in regard to the various forms of malarial parasites. It is only a question of a little time and of a little money. A few thousand pounds devoted to an investigation of this nature would prove an investment yielding a most liberal return to the country that makes it, and to none more than Great Britain.

Later Observations.

Note.—Letters received from Ross subsequently to the delivery of the foregoing confirm and expand what is therein stated. Many (30) successful experiments on the communication of proteosoma to healthy birds indicate an incubation period of from five to nine days. The intensity of the infection so conveyed gradually increases during several (4) days, until finally as many as from five to ten or more parasites are to be found in every field of the bird's blood. These artificial infections are much more severe than those acquired naturally; the birds may die from them. Ross further states that he has succeeded in communicating sparrow proteosoma to the crow. He also refers to another interesting observation—one which tends to confirm Mannaberg's view of the origin of the crescent body in human malaria. He finds that the large non-sporulating form of proteosoma—that from which the flagellated body is developed, does not begin to appear in artificial infections until three or four days after the sporulating forms are observable; and he further states that it is easy to follow the formation of the body by the conjugation of the associated parasites in multiple infections of blood corpuscles. He has devoted a good deal of attention to the peculiar black sausage-shaped bodies represented in Plate I, Fig. 20. Like the other forms in mosquito proteosoma infections, these occur only in mosquitos fed on proteosoma-containing blood. They are frequently present in great profusion, and, like the "germinal rods," escape on rupture of the enclosing capsule into the body cavity, becoming subsequently diffused through the blood and tissues of the insect. Although Ross made several attempts to get these bodies to develop, hitherto these attempts have failed. The black bodies are not altered if kept in a moist chamber for weeks; they do not develop in the stomach of mosquito grubs fed on mosquitos containing them. That is to say, they resist decomposition and digestion, but, though thus refractory, there can be little doubt that they have a significance in regard to the life-history of proteosoma; possibly they are of the nature of resting spores, and demand some very special condition for their further development.

PAPERS ON PLAGUE.

I.—PLAGUE IN INDIA.

By W. J. Simpson, M.D.,

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I shall confine my remarks to two points: (1) To some of the phenomena connected with plague that are still obscure, and which require special research for their elucidation; and (2) to the increasing importance to India and to England of India's possessing a thoroughly trained health service, in which shall be included along with the European the best native medical element of the country.

Historical.

It may be taken as an axiom that sanitary measures exert a most powerful influence on plague; that social conditions also play an important part; that the incidence of the disease is more severe on the inhabitants of dark, damp, and filthy dwellings, such as are to be seen in their worst form in the large cities of the East: that overcrowding favours its spread; and that sanitation in its widest sense is the best agent to combat the disease.

Not long since it was a current and favourite doctrine that the plague of London was stamped out by the fire of London, which gave a healthier city. Such an explanation appealed to the sanitarian, but when tested as to its truth the fact could not be overlooked that plague continued in London for thirteen years after the fire; that it disappeared as quickly from other towns in England as from London; and that the newly-built London was little better than the old, for Sir Christopher Wren's plans were not carried out.

The information concerning early outbreaks of plague in India is very meagre, and furnishes little material for comparison with the outbreaks in Europe. It is recorded that the Justinian plague of A.D. 542, which is supposed to have arisen in Ethiopia and Egypt, not only spread to the West along the coast of Africa and over Europe, but also to the East over Syria, Persia, and the Indies. Although no special pandemic is noted between 542 and 1334, the epidemics in Mahommed Tughlak's time, and later in 1399, being probably parts of or

remnants of the black death, which is believed to have arisen in China, and is stated to have been very destructive to the inhabitants of India, yet the disease must have been well known to the Hindus, for one of the Purans, written at least 800 years ago, gives instructions to the Hindus as to the precautions they are to take in the event of an outbreak of plague, and one of these instructions is particularly interesting, because it shows that the authors were familiar with one of the methods of spread of the disease, and with the precaution that was to be taken against it. It is to the effect that whenever they observe a mortality among rats they are to leave the locality.

Plague prevailed in Bombay city and its environments in the seventeenth century from 1689 to 1702, forming a part of that general eruption which is recorded as having prevailed in Western India, and possibly even earlier in some parts of India from 1684 to 1702. Fryer, who visited Surat some time before the outbreak there, wonders that a city whose people make the streets a dunghill should never have been visited by the plague. The disease, when it was imported in 1684, continued for six years without interruption, varying in intensity at different seasons of the year. Subsiding during the rainy season—namely, from June to September—the epidemic broke out with fresh fierceness in October, and, again abating the greater part of the cold and hot seasons, raged with renewed fury towards the end of May. The same remarkable immunity of Europeans was noticed in the epidemic of Surat as that exhibited in the recent epidemic in Bombay. It is mentioned that up to 1689 no Englishman had been attacked in Surat, which is in striking contrast to what happened in Bombay in 1690; for in regard to this city it is recorded that, of 800 Europeans, only 50 were left; 6 civilians, 6 commissioned officers, and not quite 40 English soldiers.

After the epidemic in the seventeenth century the plague seems to have disappeared from India as completely and as rapidly as it did from Western Europe, for it is not until 110 years later, at the beginning of the nineteenth century, that a small part of Western India—namely, Kutch, Kattiwar, Gujerat, and Sindh, were again affected with the disease, which continued from 1812 to 1821.

Nothing more is heard of the disease on the western side of India until 1836, when the Pali plague broke out in Marwar in Rajputana, and lasted until 1838.

PROLONGED ESCAPE OF VULNERABLE CITIES.

The intervals of freedom from plague, so far as is known, are as great in India as in Western Europe, and would indicate that the disease is as much an exotic to India as to Western Europe. The tendency to linger a number of years in one locality or district can scarcely be taken as evidence of endemicity, but rather as manifestations of the same invasion in which the germs have not succumbed to the influence of the new environments. The same is seen with cholera, whose home is fairly well defined. Bombay, with its freedom from plague for 184 years, shows a longer interval than Moscow, in 1771, which had not been attacked for 150 years; or Marseilles in 1720, after a lapse of 70 years; or London, in 1499, after an interval of 150 years. These long intervals are worthy of attention because they show a vulnerability of towns, which from their long freedom might be considered invulnerable.

PLAGUE IN THE LEVANT.

The Levant and countries adjoining have been centres of plague for at least 3,000 years, the first notice of the disease being in Syria, when the Philistines, after defeating the Israelites at the battle of Ebenezer, were affected with plague, which attacked city after city, causing a deadly destruction. As a propitiatory offering, the Philistines made images of their emerods and images of their mice that marred the land. It is evident from this reference that the mice were thus early considered to play an important part in plague epidemics. The plague of the Levant has now lost not only its powers of diffusion but also the power of retaining its hold on countries in which it had appeared for centuries almost as regularly as the seasons.

Apart from other considerations as to means adopted to prevent the spread of plague, it is an important question epidemiologically, whether this pandemic of the Far East has enough diffusive power to pass on into the Levantine countries and thence into Europe. If we were to judge by the events at Jeddah, where the plague, though imported, seemed to acquire no foothold, the answer might be no; but the data at present are insufficient for so decided an opinion. One of the features of plague is that it is a disease which is slow in its advancement. All that can be said is that this new recrudescence in the Far East has apparently nothing to do with the old centres in the Levant, and it is necessary to be particularly careful not to be much influenced by the experiences which the Levantine plague has presented to us for the past hundred years, otherwise there is the danger of repeating the mistake that was made in Bombay in 1894, of considering it a local disease unlikely to spread. The plague of the Levant during the past century has presented features unlike the present plague that has arisen in China. The Levantine plague was, and is, distinguished as an inactive, contracting plague, belonging to a species that has had its day and is dying; the Chinese as an active expansive plague, full of potentialities, and only requiring the opportunities, to manifest itself. The rapid spread of the disease in China and now in Western India is sufficient evidence of vitality and diffusive power.

BEGINNING OF THE PRESENT EPIDEMIC.

It is certain that the recognition of plague in Bombay in September, 1896, when it was described as a mild form of plague, was not its first manifestation, and the date has gradually been pushed back to August, July, June, and May, and even to February, when, as described in Mr. Birdwood's able lecture at the Society of Arts, Dr. Kay, medical officer to the G.I.P. Railway Company, treated several plague cases at the Byculla Infirmary of the railway company, which, though he did not recognise them as plague cases at the time, his after experience convinced him had been really cases of plague. It is possible that the date may have to be pushed back even farther than February, 1896, for, as editor of the *Indian Medical Gazette*, I received in 1896 a letter from a medical officer on the Malabar Coast describing some cases of peculiar fever with glandular enlargements under his care, I think in 1895, and over which he was much puzzled; unfortunately I mislaid the letter and was unable to recollect the medical officer's address. Perhaps the mention of it at this meeting may bring this important matter to the medical officer's notice.

That a disease, such as plague, may exist in a mild form for a long time before it manifests itself, either in its more virulent type, or in a local outbreak of considerable dimensions, may be gathered from the occurrences in Calcutta. The facts briefly stated are, that the Shropshire Regiment which distinguished itself in Hong Kong in cleansing plague-infected houses lost three of its number in that colony from the disease, while double that number were attacked. From that time the regiment at intervals suffered in small groups from fever accompanied by glandular enlargements. This illness they brought with them to Calcutta in January, 1895, and then other drafts of soldiers who had never been to Hong Kong but who were brought in intimate association with their affected comrades, were attacked with a similar malady. At first the disease was diagnosed as syphilis, then as malarial fever with bubo, and ultimately the cause was registered as unknown. Some medical officers considered it to be a new disease; one of the medical officers was attacked in June of 1896, and the glands of the groin, axilla and neck were affected. In October, 1896, besides an imported case of illness from Bombay, with fever and glandular enlargements, a number of cases occurred in Calcutta, but with symptoms of a more acute form, and of less duration than the cases in the Shropshire Regiment, which was still continuing to get fresh cases. There was fever, white-coated tongue with red tip and edges, congested eyes, dull intellect and glandular enlargements, mostly in the groin; children and young adults were chiefly affected. An adult who was affected and died had all the typical symptoms of plague. From experience gained later in Bombay and Poona, I have not the slightest doubt that two other suspected cases which proved fatal were cases of plague, and that the other cases of fever with glandular enlargement were benign plague, more severe in its character than some seen by me in Bombay and Poona. A peculiarity of these mild cases was that in some a bacillus similar to the bacillus of plague was found in the

blood. It could not be cultivated, however, unless, as it seemed to me, large quantities of blood or serum were drawn.

In one portion of the town somewhat later there was a glandular and very fatal illness among rats, whose organs were filled with diplobacilli, similar to the plague bacilli. Sick rats left their holes and slowly hobbled about or rested, apparently in a dazed condition. As many as 100 affected rats were counted in one small grain depôt in one day. The houses were treated as plague infected, a campaign was waged against the rats, and evidently with success, for the epidemic among the rats ceased. It is necessary to state here that my views regarding the nature of this glandular sickness among the inhabitants was not held by a higher authority, and that isolation of such cases was considered unnecessary. On the other hand, my further experience convinces me that the medical men who agreed with my views were right in their diagnosis, while some of the microscopical specimens sent to Kitasato elicited the opinion that they were probably plague bacilli.

It appears to me that it is in the milder types rather than in the severe forms, in the pneumonic forms, and in the imperfectly understood disease among animals, that the obscure beginnings of some epidemics of plague, in a previously healthy locality, should be searched for, and that the sanitary officer of the future, if he is to deal with plague in its early stages, must be well versed in the different types of the disease in man and in its manifestation in animals.

Need for Thorough Investigation of Epidemic Outbreaks.

In other respects our knowledge of plague is defective: for instance, the mode of entrance of the microbe into the human body, the medium or media by which it gains that entrance, and the life-history of the microbe outside the human body are still unknown, and consequently the plague is being fought under the most disadvantageous conditions. There are theories and explanations, but there is little on a sound basis. With the exception that the microbe of plague has been discovered, the existing conditions in regard to plague are much the same as those which prevailed 50 years ago in regard to cholera, before Snow's discovery that contaminated water carried the poison. Previous to then the measures introduced to combat cholera were of a general hygienic nature, the special being submerged in the general and not infrequently overlooked, while much energy and money were expended on the rectification of hygienic defects which had little or nothing to do with the spread of the disease. This must always be the case until our knowledge concerning an epidemic disease is complete.

Most of our knowledge concerning plague is in a fluid condition, principally because it is a new disease to the present generation of medical men, and because the opportunities afforded for its study in India have not been taken sufficient advantage of. In fact, they are great opportunities lost. Good work has undoubtedly been achieved by the different foreign Commissions sent out by the several European Governments, and by the Scientific Committee appointed by the Government of Bombay in corroborating and adding to the researches of Kitasato on the bacillus, but the essentially English method introduced by Simon and his contemporaries, and which is continued with such excellent results by the Local Government Board, has not been applied—I refer to the regular and systematic investigation of plague by special and thoroughly trained medical officers, case by case and outbreak by outbreak, including all the circumstances connected with each, and combining with this research laboratory work.

This ought to be done, no matter what is the cost, for at the most it can only be insignificant to the losses which India is being now subjected to. It was reckoned that Bombay at the time of the height of the plague lost £100,000 a day. Over 100,000 persons have died of the plague in Western India. The other day I heard Lord Reay declare that plague is the most important problem that the Government of India has to deal with. There can be no doubt that this is so, politically as well as socially, and I would plead for the inhabitants of India, and for the sake of those who have commercial and social interests with her, and for the sake of humanity, that every effort which science and money can afford should be made to learn more about this disease.

A Sanitary Service Required for India.

A thorough investigation of epidemic outbreaks is impossible under the present arrangements, owing to India possessing no trained sanitary service. This is a subject I dwelt on very fully in 1894 at the Indian Medical Congress, and there was a resolution of the Government of India that such a service was to come into existence in the year 1900. The plague has probably upset the arrangements intended to have been made before such a service can be established, the first arrangement being the education in sanitary science in medical schools of the members of the proposed service. Plague has emphasised the absolute necessity of this service and the utter helplessness of India to combat disease without such a trained service. I divide the medical part of a sanitary service into three branches: (1) the administrative, (2) the investigative, and (3) the scientific, which should be in close connection with one another, and in large towns should form parts of one large department. Broadly in England, the administrative is represented by the local health officers and their subordinates, the investigative by the medical inspectors of the Local Government Board, and the scientific by the laboratory researches made into the causes of disease in connection with special investigations of either the medical inspector or local health officer.

As regards the scientific branch, the Government of India and the Government of the North-West Provinces have been fortunate in possessing for some years past the services of Surgeon-Lieutenant-Colonel D. D. Cunningham and Mr. Hankin. Two laboratories, however, in a vast country like India do not meet its requirements. Moreover, for the past eighteen months Professor Cunningham's laboratory has been closed, owing to his retirement and there being evidently no one to take his place. When the plague broke out in Bombay the Government of India very wisely requisitioned the services of M. Haffkine, who was on a visit to the country pushing forward his anticholera inoculations. And in a short time M. Haffkine announced his brilliant discovery of a new method of combating plague. This discovery was not, I would point out, made suddenly after the Government of India requested him to go to Bombay and provided him with a laboratory, but it was the result of many years' work in the laboratory, beginning at least ten years previously, and from the time M. Haffkine directed his attention to anticholera inoculations. I mention this because there is a disposition in some quarters to consider laboratories expensive luxuries unless some discovery of the first magnitude is speedily made.

Public Health Laboratories for India.

The Government of India has always been imbued with the great importance of establishing laboratories in India, but the state of finances has invariably blocked the way. This difficulty, however, disappeared in a most charming and unexpected manner in 1897, when a number of the Princes in India expressed their desire to commemorate the sixtieth year of Her Gracious Majesty's reign by establishing a Health Institute for India, which should have M. Haffkine as its first director. The spontaneity of the offer, and the generosity with which it was made was enhanced by the peculiar appropriateness of this royal memorial to our beloved Empress-Queen, whose reign has been so distinguished for its advances in scientific and preventive medicine. The Princes were anxious that the site should be chosen and the foundation of the Health Institute laid on the day of the Jubilee. Owing to delays over which possibly the Government of India had not full control, in consequence of its plague and famine work, the auspicious day was allowed to pass and no foundation stone was laid. Everyone acquainted with India will know the importance of an auspicious day. It is the symbol of success and good fortune.

Exciting events follow quickly on each other in India and crowd out the preceding. War, in this case, with its distractions and expenses, burst out in the North-West Frontier, and the golden moment was lost for the establishment of a magnificent Health Institute, which, while serving as a noble monument of the loyalty and liberality of the Princes, would

at the same time have been for India a landmark in the Victorian era. Let us hope that the check, however regrettable, is only of a temporary nature, though it requires a sanguine mind to overlook the fact that delays mean new interests arising, a certain amount of chagrin, and the imperilling of a noble project.

A similar fate, owing to similar causes, appears to threaten the Pasteur Institute of India, for which Rs.77,000 was collected over two years ago, and a site offered by the Punjab Government. A letter from the Committee of Management of the proposed Pasteur Institute was addressed, over eighteen months ago, to the Government of India, asking for their sanction to this site. At a recent meeting of the Committee the members had to adjourn because no reply had been received to their letter.

I have given these instances, not because I think the Government of India unfavourable to these proposals, but as illustrating the fact, which is too familiar with those interested in sanitary progress in India, that under present arrangements, even the most important sanitary matters cannot have the attention paid to them which is necessary, and that the only remedy is a properly-constituted sanitary service, similar to that which I drafted in my address in 1894, and which was approved of then by the Government of India.

As regards plague in India, it appears to me that the disease has come to stay, at least for a considerable time, and it is consequently important on this ground alone, quite apart from other reasons, that a trained sanitary service should be established, and that while every known effective measure is taken to check the ravages of the plague, it is also necessary to systematically investigate and study the disease from every point of view, which cannot be done without laboratories and a specially-trained service.

II.—THE TESTING OF HAFFKINE'S PLAGUE PROPHYLACTIC IN PLAGUE-STRICKEN COMMUNITIES IN INDIA.

BY

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and

Major W. B. Bannerman, I.M.S., M.D., Inspector of Vaccination and Deputy Sanitary Commissioner, Madras.

Laboratory Tests.

The details of the preparation of the plague prophylactic were given in the British Medical Journal in 1897. The first demonstration of the working of the system is made in the laboratory, upon the following plan:—20 rats from a ship that has newly arrived in harbour, say from Europe, where there is no plague, are taken; 10 of them are inoculated with the prophylactic against plague, and the others are left as they are. All the 20 rats are then put together, and a rat that has the plague is introduced among them; or they are infected artificially with virulent plague microbes. In the course of time, 8, or 9, or the whole of the unprotected, die of the disease; while perhaps only a single rat that had been inoculated with the protective lymph, or even not a single one will contract the disease. These observations, made in December, 1896, afforded the first ground for trying the protective method on human beings.

Early Inoculations in Man.

During the month of January, 1897, a large number of leading European and native gentlemen offered themselves to be inoculated, to prove the harmlessness of this method; and by the end of that month this question was solved to the satisfaction of every one who took the trouble to examine it attentively.

The Inoculations at Byculla Prison.

In the last week of January the plague broke out in the Byculla House of Correction, in Bombay, and affected 9 prisoners, of whom 6 eventually died. A couple of dozen professors and students of the Grant Medical College offered to go to the gaol to be inoculated in front of the prisoners, in order to encourage them by an example to try the protective effect of inoculation. When the measure was actually offered to the inmates, a little less than one half of them at once came forward to be inoculated.

On the day of inoculation, January 30th, 1897, before the inoculation was applied, there occurred in the gaol 6 more cases, of which 3 proved fatal. After the inoculation it was discovered that one of the inoculated men had already a bubo, and two others developed bubos on the same evening. These 3 inoculated cases attacked on the day of inoculation, also proved fatal.

The inoculated and the uninoculated remained under absolutely identical conditions of life; had the same food, drink, the same resting and working hours, slept in the same barracks, etc.; were, therefore, exposed to absolutely the same chances of infection. From the next morning after inoculation the following difference, however, showed itself in the plague incidences in the inoculated and the non-inoculated. The epidemic lasted for eight days longer, and of the 173 uninoculated 12 got the disease and 6 died: while of the 148 inoculated, 2 were attacked, and both recovered. This result was considered as distinctly encouraging, but was not accepted as being a final proof of the efficiency of inoculation.

Inoculations in Bombay.

In the course of the next months of the same year no fewer than 8,200 persons presented themselves for inoculation in Bombay. A large number of these persons belonged to the better classes, and their escape from infection would have had little bearing on the question of the efficacy or otherwise of inoculation if it had not happened that of the 8,200, 18, all natives of India, actually contracted the plague during the subsequent months of the epidemic, and went through a full course of the disease; 16, however, of the 18 recovered. The 2 who died had developed the disease within twenty-four hours of inoculation, and most probably had symptoms of plague on them at the time they came to be inoculated. The above information was supplied by the medical officers in Bombay, who were watching the operations and their results with a keen, though certainly a perfectly friendly, criticism. But in a big town like Bombay there remains the possibility of a certain number of incidences having escaped the vigilance even of critics.

Inoculations in a Small Town.

The first small Mofussil station where the inoculations were applied, and where information was obtained as to their effect, was Mora, in the Kolaba District, half an hour journey across the harbour of Bombay. Mora had a population of about 1,000 souls. The plague broke out there in due course, and 429 inhabitants asked to have the preventive inoculation, the rest remaining uninoculated. Of the 429 persons, up to the end of the epidemic, 7 suffered attacks of plague, and all of them recovered. It was found afterwards that, during the same under observation, there were no fewer than 26 attacks among the uninoculated half of the population, 24 attacks ending fatally.

Inoculations in a Portuguese Colony.

The next place of observation was Lower Damaon, the Portuguese Colony contiguous to the Bombay Presidency. No fewer than 2,197 persons were there inoculated, while 6,033 remained uninoculated. A careful investigation carried out towards the end of the epidemic by Professors R. Koch and Gaffky, of the German Scientific Mission to Bombay, Surgeon-Major Lyons, of the Bombay Medical Establishment, and M. Haffkine, showed that, between the end of March and the end of May, 1897, the uninoculated lost from plague 1,482 of their number. The 2,197 inoculated, when compared week by week with the others, and supposing that they had remained as susceptible to plague as their uninoculated neighbours, should have lost 332 individuals. The actual number of deaths among them was 36, which represented a reduction of 89.2 per cent. of mortality.

Inoculations in a Small Hill Station.

The next place where the inoculations were tested was Lanowlie, a small hill station two hours distant from Poona. The plague broke out at Lanowlie while the season visitors were still there, and about 20 cases occurred. The disease

then subsided; but suddenly, a month or so later, when the season was over and the population was reduced to below 2,000 it broke out afresh.

The officers of the Research Laboratory arrived there in the last week of July, and, according to an agreement with the Local Plague Committee, took over charge of the two wards of the city most severely affected, including the old and new bazaars, and the densely populated quarters round them. They began by taking a census of the inhabitants, and found that there were in all 700 persons living in those wards. Their names, father's names, sexes, ages, castes, places of birth, occupation, etc., were all carefully recorded. After that a daily house-to-house inspection was carried out for weeks consecutively in these wards, and, while doing so, inoculation was performed on those who lived in, or close by, the affected houses, and who volunteered to undergo the operation. In the course of the first week 323 persons were inoculated, while 377 remained uninoculated. The result of this, at the end of the epidemic, appeared as follows: Among the 323 inoculated there were 14 cases and 7 deaths, while among the 377 uninoculated 78 persons contracted the disease and 58 died. Supposing that the inoculated had remained as susceptible and as little resistant to the disease as were their uninoculated relatives and neighbours, they should have produced 67 cases and 49 deaths, in proportion to their numerical strength. This number of 49 deaths appeared reduced by 42, which represents a difference of 85.7 per cent. of mortality.

Inoculations at Kirkee.

After Lanowlie, the inoculations were tested at Kirkee, the military suburb of Poona, where, among other people, the native followers of the artillery stationed there contracted the disease. There were 1,530 men, women, and children living in 27 Government barracks on an open lawn, away from the rest of the population. There can be no doubt that the military authorities are infinitely better organised for carrying out thoroughly any executive work, any plan of general measures, than a civil body can ever be. There cannot be either any doubt that these authorities, under the immediate supervision of General Duncan, the officer in command of the Poona District, did every possible thing—that is, absolutely everything which was practicable at the time—for arresting or mimimising the effect of the epidemic on their own servants.

In spite of all, among those who had not the additional protection of inoculation, 1 out of every 6 was attacked, and 2 out of every 3 attacked died. It is probable that if the military authorities had not carried out the programme of preventive measures, even larger numbers than the above would have been attacked and died. In any case, with regard to the specific measure of inoculation, we are in a position to say with a very great degree of accuracy what would have happened to the inoculated if they had not been inoculated. Out of the total of 1,530 individuals, 671 availed themselves of inoculation, while 859 belonging to the same families, living under the same roofs, having the same food, drink, etc., and subject to the same general preventive measures adopted by the military, remained uninoculated. From the time of inoculation up to the end of the epidemic the 859 uninoculated had 143 cases, with 98 deaths. Seeing the absolute similarity of the conditions, the 671 inoculated should have had proportionately 112 cases, with 77 deaths, if they had remained as susceptible to the disease as were their uninoculated brothers, sisters, parents, wives, husbands, children. Instead of that they had 32 cases with 17 deaths. The number of 77 deaths was therefore reduced for them by 60, that is, by 77.9 per cent.

Inoculations in a Bombay Gaol.

Further, at the end of December, 1897, the plague appeared in the second of the two Bombay gaols, the so-called Umarkadi Common Gaol, the population at the time numbering just over 400. Three cases, all fatal, took place before the inoculation was offered. On Saturday, January 1st, 1898, the prisoners were questioned, and appeared all desirous to undergo the protective treatment. It was agreed, however, that, in view of the novelty of the method, and in order to be able to demonstrate its harmlessness and its protective effect, only a half of the inmates should be allowed to undergo the inoculation. For that the whole were brought into the gaol courtyard, and paraded in ten regular rows in the same order as they happened to come. An officer was put over them, and every second individual, without any distinction being made, was marked out and allowed to go to the operation table to receive the inoculation. The operations were performed in the afternoon. Next day being a Sunday, all the inoculated and the uninoculated were free from work; and it was agreed with the gaol authorities that if, on Monday, some of the inoculated prisoners still required leave on account of the inoculation, the whole lot—the inoculated and the uninoculated—should be left free from work; so that, in every respect, in their food and drink, in the housing, clothing, in the hours of work, rest, and sleep, the inoculated and uninoculated, remained in absolutely comparable conditions, and were exposed to the same chances of infection or of natural resistance.

After that date 13 cases of plague occurred in the gaol on eleven different days, the average daily strength of the inoculated and uninoculated on those days being 147 and 127 respectively. The attacks appeared distributed as follows: 10 cases, of which 6 were fatal, occurred in the 127 uninoculated, and 3 cases, which all recovered, were among the 147 inoculated. Surgeon-General Harvey, the officiating Director-General, Indian Medical Service, reports on the 3 cases in the inoculated as follows: "The hospital authorities at Parel were not quite sure that they were cases of plague. If they were, they were so much modified as to be with difficulty recognisable. I saw 2 of them, and they looked to me like mumps." The 147 inoculated prisoners should have had proportionately 7 deaths from plague if they had remained after inoculation as susceptible as were their 127 non-inoculated fellow prisoners, instead of which they had none.

Inoculations in a Village.

The next experiment was made in Undhera. Surgeon-General Harvey reports, under date April 19th, 1898, to the Government of India on this experiment in the following terms:

Undhera, a village about six miles from Baroda, was attacked by plague in January, 1898. On February 5th a careful census was taken, and showed a population of 1,029. Up to, and inclusive of, February 14th, 79 plague deaths occurred, leaving 950 people to be dealt with. Of these, 513 were inoculated, leaving 437 uninoculated. As far as possible an equal number of each sex, age, and family were done; and as all were living under precisely similar conditions as to sanitary surroundings, food, drink, clothing, etc., the case is the best and most conclusive example yet available of the result of inoculation. Except for the inoculations, all were on the same footing, and the disease had got a thorough hold of the place. The usual sanitary precautions as to segregation and disinfection were carried out, all plague cases being removed to hospital, and every effort made to combat the disease in the usual way. The inoculations were done on the 12th, but the following figures are taken from the 15th, so as to eliminate cases incubating plague at the time of the inoculations. Three deaths occurred among the uninoculated between the 12th and 14th inclusive, none among the inoculated. These 3 deaths, together with 2 others which might possibly have been due to diseases other than plague, have been eliminated, so that no exaggeration as to the effects of the inoculation may be possible. The results up to April 2nd are as follows, but no case occurred after March 26th, so that we are probably dealing with a finished epidemic.

Between February 15th and the cessation of the disease plague cases occurred in 29 families living together, as already said, under exactly similar conditions, save that some were and others were not inoculated. These 29 families comprised 135 individuals of all ages, 71 of of whom had been inoculated and 64 not. The 71 inoculated had 8 cases with 3 deaths, while the 64 uninoculated had 28 cases with 26 deaths. Had the inoculated been as susceptible as the uninoculated, they should have had 29 deaths instead of 3, and the inference seems irresistible that the inoculation saved 26 lives out of this small number, or 89.65 per cent. Taking the whole number inoculated, 513 had 8 cases or 1.56 per cent., and 3 deaths or 0.58 per cent., while the 437 uninoculated had 28 cases or 6.4 per cent., and 26 deaths or 5.9 per cent., just ten times as many.

The protective influence of the inoculations is brought out still more strongly in some particular instances. Thus in Hut 84, Ward 4, 5 persons were inoculated and 5 uninoculated in a family of 10. The 5 inoculated remained healthy, while 2 out of the 5 uninoculated got plague and died. In Hut 18 of the same ward, 3 inoculated persons remained healthy, 2 uninoculated died out of a family of 5. In Hut 26, also in Ward 4, 1 inoculated person escaped, 2 uninoculated died out of a family of 3. In Hut 8, Ward 1, 4 inoculated persons escaped, while the 1 who remained uninoculated contracted the disease and died. In Hut 24, Ward 2, out of a family of 2, the inoculated member escaped the uninoculated died. In Hut 20, Ward 3, 1 of 3 inoculated contracted plague but recovered, while 1 of 4 uninoculated got it and died.

In two out of the three huts where fatal cases occurred among the inoculated a death also occurred among the uninoculated, and in only one instance in the whole village did a case occur among the inoculated while the uninoculated went free. This was in Hut 31, Ward 4, where 1 of 4 inoculated contracted and died of plague, while 2 uninoculated escaped.

These figures have been verified by Surgeon-Major Bannerman,

Madras Medical Service, Surgeon-Captain Dyson, Bombay Medical Service, M. Haffkine, and myself, case by case and family by family, and seem to me to prove that, while inoculation as at present practised is not an absolute protective either against seizure or death, it is of immense value both as a prophylactic and as modifying the severity of the disease and reducing the case mortality. This was 37.5 per cent. among the inoculated against 92.85 in the uninoculated.

THE REDUCTION OF MORTALITY PRODUCED BY PROPHYLACTIC INOCULATION.

The next group of people in whom the effect of inoculation was observed, in conditions permitting of a comparison between the inoculated and uninoculated, was the enlightened Khoja Mussulman Community of Bombay. Owing to the initiative of the head of the community, His Highness the Agakhan, 5,184 persons of that community were inoculated between December 27th, 1897, and April 20th, 1898, while 8,146 remained uninoculated. The average daily strength of the inoculated throughout the period was 3,814, and of the uninoculated 9,516. The result observed in this community was the most striking of all hitherto obtained. During the period mentioned above 3 deaths from plague and 4 deaths from other causes took place in the 3,814 inoculated, while the uninoculated 9,516 had 59 deaths in babies below 3 years and in old people above 60, and 118 deaths of all causes, including plague, in the rest of the community. The reduction of mortality from plague attributable to the inoculation of the plague prophylactic amounts, from the above observations, to over 86 per cent. in the average.

III.—AN ACCOUNT OF THE MEASURES TAKEN TO CONTROL THE EPIDEMIC OF PLAGUE IN THE CITY OF BOMBAY DURING THE YEARS 1897-1898.

By Major H. P. DIMMOCK, I.M.S., M.R.C.S., L.R.C.P.

AFTER enumerating the difficulties of sanitary and medical administration in Bombay and amongst natives of India generally, and having related the schemes devised for plague operation, Major Dimmock arrived at the following conclusions as the result of the work of the Committee of which he was a member.

The effect of all the extensive and costly measures has been disappointing in their principal object of stamping out the plague, and yet they have not been without excellent results in many ways. It is certain that the operations have considerably diminished the mortality, which would have been stupendous if the epidemic had been allowed to run its course.

Before the Plague Committee took office the population was allowed to spread all over the Presidency, and though the effect of this was to diminish the virulence of the epidemic in the city of Bombay, it was followed by the infection of many towns and villages. As a result of wide experience we found that the most effective prevention of the epidemic was the system of eviction from badly infected quarters and the transfer of the evicts to a health camp—in simple words, spreading the people out to the influences of light and air. By this method the epidemic was soon stayed, and only a few cases occurred amongst the evicts within the first few days of their arrival in a health camp.

This conclusion has been confirmed by our experience in villages in particular by our treatment of contacts and by the results of hospital management. Numerous instances have been related of villagers going out of their huts and camping in the fields, and finding that the plague then vanished from among them. To carry out such measures for a population of nearly 1,000,000 souls on the limited area of ground available in the island of Bombay is impossible, and we could only treat sections of the city. It is absolutely certain, if this most efficacious measure were vigorously adopted in addition to other measures, that the epidemic can be entirely got under. Examples of this have been seen in the epidemics at Poona and Karachi, which were free from plague for several months. Amongst contacts cases ceased to occur within ten days of their arrival in the Contact Camp. In hospitals the attendants and friends of patients were rarely attacked by plague because the conditions of abundance of light and air were fulfilled.

Vigilance in these matters cannot be relaxed, for as long as cases are occurring anywhere in their neighbourhood it is impossible for communities to be safe from reinfection; and where the people are continually striving their utmost to do the very things that will spread the disease or are ignorantly encouraging its presence, even the most rigid and complete system will fail in preventing it altogether. Again, if cases of plague are allowed to remain in the houses, so many of them will become infected to a great degree, that entire disinfection will always be doubtful; while if there are many concealed cases, the houses infected by them will remain undetected. These facts account for the recrudescence of the disease in city quarters, towns, and villages whence the disease had been apparently quite eliminated, and this will explain the continuance of plague and the severity of its renewed outbreak in Bombay.

PROPHYLACTIC INOCULATION.

There is one measure against plague to which I have so far made no reference, and that is the prophylactic inoculation of M. Haffkine. I was one of the first to acknowledge its efficacy, and I have frequently been associated with M. Haffkine in his work, and I have also been inoculated several times. The composition and preparation of the fluid used by him show it to be a mixture of the toxins and *débris* of plague bacilli, in which all the microbes have been destroyed by heat. The inoculation of a human being with the average dose (5 c.cm.) is followed by an unpleasant reaction with pyrexia (101 to 103°) and general symptoms resembling a mild attack of plague—even in some cases by enlargement of the glands—and lasting several days. The full completion of the process requires three inoculations, and to apply it as a substitute for the other measures against plague has not so far seemed altogether practicable in a large and mixed population. But where it can be applied it is most efficacious and reassuring. As a subsidiary measure I have always upheld it, subject to the willingness of persons to suffer it.

PROSPECTS OF BOMBAY.

The future prospects of the city of Bombay, according to recent returns are still grave, for there is a gradual rise in the plague and general mortality during the rainy months similar to the recrudescence that occurred at the same time last year and from the same causes intensified. The probable outlook is that the disease will continue to recur at regular seasons perhaps for several years as an epidemic, more or less severe, according to the preventive measures it is possible to adopt, and it will thus permeate the whole population until immunity is conferred, when it will gradually disappear.

The prevalence of cases of enlargement of the glands with mild febrile symptoms was a characteristic of the Kattyawar epidemic in 1830-36, and is indicated also now amongst the afflicted people of Bombay.

The Governments of Bombay and of India and the municipalities of Bombay and other places have made the most strenuous efforts on civilised and humanitarian principles to overcome this terrible disease, and these have been baffled, and always will be, until the intimate hygienic condition of the individual natives is vastly improved. As this condition is partly the result of climate and partly the result of thousands of years of blind ignorance and indifference, it seems that the improvement of the social views of the people will require to undergo a great revolution. Let us hope that the sore lesson of this disease and the education of the masses, which is rapidly being forwarded, will teach them the precepts of healthy living. I firmly believe that until overcrowding is prevented, the houses of the poor improved, and the domestic habits of the people are bettered, the perfection of drainage and other general sanitary conditions will not be able to keep this fell disease at bay.

IV.—THE PATHOLOGY OF PLAGUE.

BEING AN ABSTRACT OF THE REPORT OF CAPTAIN L. F. CHILDE, I.M.S., TO THE PLAGUE RESEARCH COMMITTEE IN BOMBAY.

Abstracted and read by Brigade-Surgeon-Lieutenant-Colonel ARNOTT.

(A) THE BUBONIC FORM.

THE glandular lesion is chiefly at the site of the bubo, and

there are but slight general lesions of the lymphatic glands throughout the body, but there are engorgement or petechiæ or hæmorrhages in nearly all viscera, and notably in the alimentary canal, especially stomach and large intestine, the kidneys, ureters, and bladder, the pericardium, pleura and peritoneum, and with enlargement of liver and spleen.

(B) The Septicæmic Form.

There is general involvement of nearly all the lymphatic glands, and lesions in the other organs similar to those found in the bubonic form. "No bubo of the mesenteric glands was ever found; these glands were always examined, and, though changes might be found in them, they were always less marked and less distinct than plague glands found in other parts of the body. In short, there was no necropsy, which went to show that the plague bacillus had reached the stomach or intestines—for example, in food—and thence infected the mesenteric glands."

(C) The Pneumonic Form of Plague Pneumonia.

In this form of plague, the only marked evidences of disease are found in the lungs; the lymphatic glands and other organs are scarcely affected at all.

The Condition of the Lungs.—There was general engorgement with considerable œdema, a reddened condition of the mucous membrane of the bronchi, but no marked evidences of bronchitis, and frothy watery fluid, sometimes blood-stained, could be squeezed from the bronchi. (Pus in the bronchial tubes was only found on one occasion.) A number of pneumonic patches were found scattered through the lungs, varying in size from a pea to an egg. They were light pink or red-grey in colour, solid, airless, and sank in water; they were rounded in shape, and usually separated by a distinct ring of engorgement from the crepitant lung around. Some, instead of being pink, were of a deep blood colour throughout, and less solid, and some of these had a small, greyish, more solid centre. Those of the patches which were situated on the surface of the lung were prominent, and projected distinctly from the surface; whilst the pleura over them was roughened, and showed signs of early inflammation. These patches had, in fact, the appearance of the first and second stages of lobular pneumonia, but no patches were found which had passed on to the third stage of softening and breaking down. In a few cases larger masses of pneumonic lung than these were found, and once about half the lower lung was found in this condition. Petechial hæmorrhages were usually found on the surface of the lung; the bronchial glands were either enlarged, swollen, œdematous, soft, and distinctly engorged, or else they were small and of the usual appearance, perhaps a little engorged. The remaining lymphatic glands throughout the body showed none of the appearances of either the bubonic or septicæmic form of plague; most of them looked absolutely normal, and the only noticeable change was that the axillary, and sometimes the cervical, chains were a little engorged.

The description of the remaining internal organs already given applies equally to this form of plague, except that the large hæmorrhages were absent, but petechiæ on the surface of the heart, in the pelvis of the kidney, bladder, stomach, and intestines were commonly present. Petechiæ in the skin were not observed in this form of plague.

The Combination of Plague Pneumonia with Plague Septicæmia.—In this condition the lungs were found in the state which has just been described, pneumatic patches being scattered through them, and in addition the lymphatic glands of the body presented the appearances seen in cases of plague septicæmia. Thus in these cases the plague bacilli had specially infected both the lymphatic glands and lungs, whereas in the varieties of plague treated of above only one or other of these tissues was the special focus of disease. Allusion must also be made at this place to one case of plague septicæmia, in which the lungs contained a patch of ordinary pneumonia which was not due to plague.

The Microscopic Pathology of Plague.

The Bubonic Form.—The areolar tissue around the glands of the bubo is intensely engorged, free hæmorrhage is seen in the areolar tissue and fat, and all the vessels visible are full of blood and their walls deeply engorged. The glands are uniformly full of extravasated blood throughout, with more intense hæmorrhages here and there, and the gland tissue is so overlaid with blood as to be scarcely visible; in some, probably earlier, glands the blood cells are distinct; in others, probably older, they are not so distinct, and the gland is stained with blood-colouring matter, softer, showing granular *débris*, and the beginning of breakdown in parts. Still there is no distinct appearance of pus and it seems to be a necrotic softening. In some of the smaller glands the exact early appearance is seen, the whole gland is infiltrated with blood, the blood corpuscles being distinct, and at parts there is a large deeply stained hæmorrhage occupying half or more of the gland. So intense is the hæmorrhage that in most glands there is no distinction between cortex and medulla, nor can the gland tissue or blood and lymph vessels be easily made out, but the walls of such vessels as are seen are deeply engorged both in the gland as well as at the hilus. Such lymph vessels as can be seen, particularly at the hilus, are full of lymph corpuscles, and there is some engorgement of their walls, and sections of the lymph vessels seen outside the gland show the same appearance. Specimens were cut to show the glands of the bubo lying against and around the axillary artery and vein; here there is intense engorgement of the walls of these vessels with hæmorrhage into them, but much more of the vein than of the artery; in the vein the extravasated blood comes in most parts right through its wall into the inner coat and as far as the lumen, so that at these parts the inner coat cannot be properly seen at all. Hence one sees the plague gland lying right against the vein, with extravasated blood in the gland in the little connective tissue outside it, and then in the vein wall as far as the lumen; and thus there is a direct path for the passage of the plague bacillus from the gland to the lumen of the vein and so into the general circulation. A similar condition of affairs was observed in those cases in which, instead of a bubo, there was a chain of enlarged plague glands—for example, along the iliac artery and vein.

The remaining glands of the body in a bubonic case showed either a normal appearance or a little engorgement of vessels. Lesions of engorgement or petechiæ and extravasations are also described minutely in the lung, liver, spleen, kidney, ureter, stomach, intestines, brain and spinal cord, and blood vessels, and degeneration of heart muscle, with dilatation of heart and nutmeg condition of liver, associated with the fact that plague patients are liable to die suddenly of heart failure. "The following organs were also examined, but nothing was observed under the microscope except some engorgement: The tonsils, salivary glands, thyroid body, male and female generative organs, cartilage nerve, and thoracic duct. Sections of the skin were also made, and showed engorged capillaries with small hæmorrhages where petechiæ were visible on the surface."

The Septicæmic Form.—The areolar tissue around the plague glands shows none of the intense engorgement seen in the bubonic form. The plague glands themselves are well stained, and all their anatomical features are distinct. All the blood vessels in the gland are distended with blood corpuscles, and at parts hæmorrhage has occurred into the gland substance, which is most frequently seen beneath the capsule, but may also be at other parts. The lymphatic vessels and lymph channels in the gland are wide and distended with lymph corpuscles. The distension of the blood and lymph vessels is always most marked at the hilus, and there may be hæmorrhages into the areolar tissue here. In some glands small areas may be seen, where softening and breaking down is taking place, granular *débris* and broken-down cells being seen here. The glands show these changes in varying degree; in some there is merely slight engorgement with some distension of lymph vessels, in others there is wide distension of both kinds of vessels, with some amount of hæmorrhage into the gland tissue; whilst in others again there are many hæmorrhagic areas which may occupy half or more of the gland, and it is in these glands that breaking down is usually seen. In a septicæmic case the glands, which have not the characteristic plague appearance, show under the microscope either slight engorgement or normal features. With regard to the remaining organs the appearances described under the bubonic form apply also to the septicæmic form of plague.

The Pneumonic Form.—A section of lung tissue, apart from a pneumonic area, shows great engorgement of all large blood vessels, and of the alveolar capillaries as well, and patches of hæmorrhage into the alveoli around these engorged vessels are seen scattered about. In a pneumonic area three zones can be made out. At the circumference there is intense engorgement of all vessels including alveolar capillaries, the alveoli are full of blood, and the hæmorrhage is so intense that many of the alveolar septa are broken down, entirely absent, or represented by mere shreds. Within the circumference is seen a zone in which the alveoli are intact and are completely filled with well-stained cells, so that there is no interval between the alveolar walls and their contents; and at the centre is one universal mass of similar cells, and the cellular infiltration is so extreme that the walls of the alveoli are scarcely visible. Such is the general arrangement of the pneumonic patch, although there may be alveolar hæmorrhage in parts of either the middle or central zone. Under a higher power the alveoli of the circumference are seen to be completely filled with blood corpuscles, and there is scarcely any appearance of fibrin, or none at all; in the middle zone the alveolar contents consist for the most part of catarrhal epithelium with some white and a few red blood corpuscles, and a little fibrin or none at all, whilst the dense central mass of cells consist of catarrhal epithelium and leucocytes with some granular *débris*. Thus the pneumonic area has the appearance of very extreme lobular or catarrhal pneumonia. The walls of the bronchial tubes, as well as of the large veins, show great engorgement, and there are hæmorrhages into the vein walls. Blood and catarrhal cells may be seen in the finer bronchi, but the bronchial mucous membrane is scarcely altered, there being at most a little cellular proliferation. There are the appearances of acute pleurisy over those pneumonic areas which project upon the surface of the lung, with hæmorrhages beneath the pleura. The bronchial glands show engorgement of blood vessels, some hæmorrhage into the gland tissue and distended lymphatic vessels; but in some cases these conditions are only slightly marked and the glands looked nearly normal. The remaining lymphatic glands in the body looked either normal or presented the characters described above to a slight extent. With regard to the other organs, the description given under the bubonic form of plague applies here also, except that generally engorgement and hæmorrhage are less marked.

The Plague Bacillus in Situ.

Sections of the various organs and lymphatic glands showed the plague bacillus *in situ* best when stained with Loeffler's methylene blue or carbol-fuchsin, but they could not be demonstrated with Gram's method.

Lymphatic Glands.—In the glands of the bubo the bacilli could be seen in enormous numbers, both amongst the cells of the gland tissue and also in the lymphatic vessels; they were also seen amongst the blood corpuscles extravasated into the gland, as well as in the hæmorrhage outside the gland. In cases of plague septicæmia they were similarly present in the enlarged characteristic glands. In the kidney the bacilli could also be seen, especially among the blood cells of the tubules into which hæmorrhage had occurred; in the spleen they were also present, sometimes in large numbers amongst the cells of the spleen tissue and in the hæmorrhagic areas; similarly they were found in the liver, especially in those cases where engorgement and extravasation were marked.

Pneumonia.—In cases of plague pneumonia, the bacilli were seen in abundance in the pneumonic areas; they could be found in profusion amongst the catarrhal epithelial cells and leucocytes which filled the alveoli and terminal bronchioles, as well as among the blood corpuscles of the alveoli into which hæmorrhage had occurred. Similarly in the lungs of non-pneumonic cases they could be seen, but in far less numbers, and mostly where small hæmorrhages had occurred into the alveoli.[1]

Morbid Anatomy and Symptoms of Plague Pneumonia.

Professor Childe reports several typical cases of various forms of plague, from which I quote the description of the lungs and the distribution of the plague bacillus in a case of plague pneumonia.

Lungs.—Much general engorgement and œdema of lung substance, some congestion of bronchial mucous membrane, with frothy sero-mucous fluid in trachea and bronchi. Distinct rounded nodules in the early second stage of pneumonia were distributed in the lungs as follows: There were five such nodules in the right upper lobe, varying in size from a hazelnut to an egg, and a few in the rest of this lung, with one mass quite at the base; also the left lung contained a few similar pneumonic patches. Those on the surface projected, and there was early pleurisy over them, also petechiæ under the parietal pleura generally. The nodules were surrounded by a ring of engorged lung in the first stage of pneumonia. The liver, spleen, and kidneys were large and engorged, and the bladder full of urine; the intestines rather engorged, with some petechiæ in the stomach; the brain and its membranes engorged.

Distribution of the Plague Bacillus.—The pneumonic lung in the second stage shows immense numbers of early well-stained bacilli, and some of them are collected into large masses or groups; the pneumonic lung in the first stage shows the same appearance, but not so many of the masses. The general lung tissue shows many of the bacilli, but far less than the pneumonic patches. The fluid obtained from the trachea and bronchi also shows the bacilli in large numbers. The bronchial glands contained plague bacilli in considerable numbers. The spleen showed a few, the liver rather more, and the kidneys still more, but nothing like the numbers in the lungs. The blood of the general circulation showed extremely few, just one here and there. The axillary and cervical chains, the lumbar, iliac, mesenteric, and inguinal glands showed extremely few, only one here and there, as was seen in the blood. Thus the plague bacilli were present in enormous numbers in the lungs, and only to a very slight extent in the lymphatic glands and remaining organs.

Clinical Report of a Case.—Professor Childe writes: "It fell to me to attend on the late Dr. M., and as he died of this form of plague I will mention a few facts about his case. He was in his usual health on January 2nd, and had a sudden rigor in the morning, and felt fever coming on. During the day a bad headache developed, he felt nausea, and vomited several times, and he had pains and a tired feeling in his limbs; his tongue remained clean and moist, and his skin was slightly moist. At 2 P.M. the temperature was 103.4°, pulse 116, respiration 25, and there were but slight variations during the day. On January 3rd had passed a bad night, and felt worse, and all the symptoms persisted, except the aching in the limbs, and he felt very ill. The temperature remained between 103.5° and 104.5°, pulse about 110, and respirations about 23 throughout the day. During the afternoon he felt some pain at the lower part of the left axilla just under the anterior fold, but there was no glandular enlargement or pains in the glands anywhere. On January 4th had passed a bad night and felt very ill, temperature 104.6°, pulse 113, respirations 25, tongue still moist with a little fur behind, and no sordes about the lips or teeth; the other symptoms as before. During the night he began to cough, and brought up some watery sero-mucous fluid, slightly blood-tinged, and the pain remained in the same place, only more diffused now, being felt over an area of a square inch. At this part some moist sounds could be heard, like those of early pneumonia, and they could also be heard just below the left clavicle; the rest of the lungs and other organs appeared to be normal, as did the lymphatic glands. The patient considered that he had pneumonia, but the symptoms were not like ordinary pneumonia, for the onset was different, the condition of the tongue and mouth different, there was no dyspnœa or pneumonic disproportion of pulse and respiration, and the sputum was not at all like rusty sputum, for it was loose and free, coming up with the slightest cough; it was watery, looking more like serum than mucus, and it was slightly pink, not rusty yellow at all. Also there was the striking fact that the patient's general condition was far worse than could be explained by the small amount of lung disease present. So I examined the sputum under the microscope, and found it full of bacilli looking like those of plague, and cultures were made from which a pure growth of the plague bacillus was obtained. During January 4th and 5th patient became steadily worse, his temperature remained about 104°, and his expectoration became most profuse; the moist sounds were heard over a large area, as well as slightly at the bases; the respirations increased to 35, and then to 45, and the pulse to 120 and 135; and he ultimately died early on January 6th.

Morbid Anatomy of Plague Septicæmia with Secondary Deposits in the Liver.

Macroscopic Appearances.—The liver was most peculiar: it was slightly enlarged and congested, as in the early nutmeg condition, and was studded throughout with small, yellow, rounded masses in size from pin's heads to peas. They were rather soft and friable, but not fluid, and there was no area of engorgement around them. They were found both on the surface and throughout the whole substance of the liver. They looked like necrotic foci.

Microscopic Appearances.—In the yellow masses described above an enormous number of distinct plague bacilli were seen, whereas the liver generally showed only a few, about as many as in an ordinary case, and far less than in the yellow patches. Sections of the liver were also examined, and presented the following appearance: The liver was in the early nutmeg condition, the central veins dilated, with some blood corpuscles extravasated around them, the portal vessels also congested, and fat globules in the adjoining liver cells. The liver substance was stained badly and scattered through it, the above-mentioned masses were seen, all better stained than the liver cells and looking finely granular; some were large, some small, and some seen under the microscope which were not visible to the naked eye. The small ones were granular, and stained well throughout, but the large were breaking down in parts, and irregularly stained. The small ones were distinctly rounded and no liver tissue was seen in them, but some of the large were less regular in shape and contained some distinct remains of liver cells; these were probably two or three adjoining masses which had coalesced. Speaking generally, the small masses were mostly situated near the portal spaces, but this could not be said of the larger, as some were as big as two or three lobules. Under higher power the masses were seen to con-

[1] These [illegible] were [illegible] from cases where the *post-mortem* examination was made [illegible] after death, and in which the plague bacillus had been proved [illegible] by the method of cultures, so as to avoid the fallacy of diagnosing plague bacilli from their microscopic appearance alone.

sist of leucocytes, pus cells, granular *débris*, and remains of liver cells, and there appeared to be an excess of leucocytes in the surrounding capillaries; in fact, the structure of the masses resembled that of small, early abscesses. Specimens of the liver were also prepared to show the plague bacilli *in situ* in the sections; enormous numbers of them could be seen in the masses and only a few in the general liver tissue. Cultures also were made from the masses, and typical colonies of the plague bacillus grew in abundance. Thus these small necrotic masses resulted from the growth of the plague bacillus in innumerable definite areas throughout the whole liver, and are comparable with the pneumonic patches found in cases of plague pneumonia due to the same cause. No similar condition was ever found in the spleen or kidneys to the best of my belief."[2]

Mode of Exit of the Plague Bacillus from the Body.

From consideration of the *post-mortem* appearances it is seen that engorgement and hæmorrhage are marked features of plague, and further that hæmorrhage is constantly found on the surface of mucous membranes; consequently, as soon as the bacillus has entered the blood of the general circulation it is possible for it to escape from the body in the hæmorrhages on mucous surfaces. Thus in the urinary system blood may be found in the urine during life, and after death in the tubules and pelvis of the kidney; and, besides, there may be extravasations on the surface of the ureter and bladder; hence by the urine there is a direct route for the bacillus to leave the body.

Again, in the alimentary system, petechiæ are nearly always present in the stomach, and as vomiting is a very constant symptom of plague, the bacillus may escape in the vomit; similarly petechiæ are generally found in the colon and rectum, and hence the bacillus may escape in the fæces. As for the respiratory system, blood may be found in the alveoli of the lungs in ordinary cases of plague, whilst in cases of the pneumonic type it is invariably present; besides in these latter cases the bacillus is present in enormous numbers in the pneumonic patches and in the sputum, and it is extremely probable that plague pneumonia for this reason plays an important part in spreading the disease.

With regard to the bubo itself, in certain cases it suppurates, and it would seem possible for the bacillus to escape in the pus; but this was not found to be the case, for in several instances where cultures were made from the pus no growth of the plague bacillus was obtained. It remains to make a remark about the presence of the bacillus in the blood. In a number of early plague cases which will be detailed hereafter cultures were made from the finger blood, but the bacillus could not be isolated from them—in fact, they all remained sterile; whereas in fatal cases the bacillus could always be grown from the blood after death, even when the *post-mortem* examination was made one hour after death, and in one instance it was grown from the finger blood twenty-four hours before death. Hence one may say that at least in fatal cases—which form the large majority in this disease—the bacillus is present in the blood for a certain time before death, and is able to leave the body in the various secretions which contain blood.

Mode of Entrance of the Plague Bacillus into the Body.

Skin.—Having regard to the fact that the initial bubo in plague is usually situated in the glands of the extremities, especially the inguinal and axillary chains, it appears probable that the bacillus may enter the body through a lesion of the skin—preferably of the extremities—and thence travel upwards to the nearest group of lymphatic glands and thus form the bubo. In order to test this theory a large number of plague cases were examined to see if any primary lesion in the skin could be discovered through which the bacillus had entered; and, as the patients mostly belonged to the lower classes, who commonly go bare-footed and bare-legged, it was usual to find cracks and abrasions about the feet, and also about the hands, the latter resulting from occupation. Further, as various parasitic skin diseases—such as ringworm and itch—are very common among these people, it will be seen that there are many opportunities for the bacillus to enter the body through the skin.

Bearing in mind the analogy of anthrax and syphilis, the skin was examined to see if any characteristic lesion was similarly present in plague. No such definite lesion was found, but in certain cases the bacillus was proved to be present in a particular lesion on the skin, and in each instance the bubo was situated in the glands corresponding to the lesion, this place was believed to be the point of entrance of the bacillus. There was nothing characteristic about the lesion. It was usually a small ordinary-looking papule on a slightly-inflamed base, with a little serum at its apex and partly covered by a scab. In some cases a hair was found growing through its centre, and it seemed to be merely an inflamed hair follicle which had been scratched. These cases will now be given in detail.

Cases in which Infection was probably Contracted through the Skin.

Case I.—Hindu man, aged 40, came to hospital on October 5th, 1896. Three days earlier he had been seized with fever, and shortly afterwards found pain and swelling in the left axilla. On admission he looked very ill, temperature 103°, and there was a large bubo in the left axilla. On the outer side of the left forearm near the wrist there was a small papule the size of a pea, with a hair growing through it; it was slightly red at the base, contained a little serum at the apex, and was partly covered by a scab. It was not painful, and the patient knew nothing about it; there were no inflamed lymphatics leading from it. Cultivations were made from the serum squeezed from the papule, and a typical growth of plague was obtained. Part of the culture was injected into a rat, and the rat died of plague after sixty hours. On the same date, October 5th, cultures were made from the finger blood, but all remained sterile. This man died on October 8th.

Case II.—N. S., Hindu man, aged 28, came to hospital December 1st, 1896. There was a large bubo in the vertical set of the right inguinal glands. He said he had been ill three days. There were many old cracks and fissures about the feet and toes, the skin being thick and horny, and some scratch marks on both legs. On the outer surface of the right calf there was a slightly-raised œdematous portion of skin about 1 inch long, and on it there was a small bleb, the size of a large pin's head. From the bleb some thin serum was squeezed out. Cultures were made from the fluid in the bleb and from the finger blood. A pure growth of the plague bacillus was ultimately obtained from the bleb, whereas the cultures of the blood remained sterile. In this case, too, the patient could give no history of the œdematous patch on the leg, and there was no pain in it.

Case III.—N., Hindu man, aged 30 years, was admitted on March 3rd, 1897, with a bubo at the back part of the right axilla. He had been ill two days. On the back, near the angle of the right scapula, there was a papule, the size of a pea, on a slightly-reddened base and partly scabbed over; it looked like a pimple which had been scratched. Cultures were made from the serum squeezed from this papule and from the finger blood; a pure growth of the plague bacillus was ultimately obtained from the papule, but the cultures of the finger blood remained sterile.

Case IV.—P., Hindu boy, aged 16, admitted on October 26th, 1896. On either side several of the oblique inguinal glands were enlarged to the size of walnuts, and painful. There was a small unopened papule on the glans penis exactly in the dorsal middle line; its apex contained a little pus and serum. It did not look at all like a chancre, and the boy said he knew nothing about it. Cultures were made from the papule and from the finger blood. From the former a pure growth of plague was ultimately obtained. This was injected into a rat, and the rat died of plague. Cultures of the finger blood remained sterile. This patient recovered.

The above are the four cases in which the plague bacillus was found in a certain definite situation on the skin, and this place was believed to be the seat of inoculation of the disease; moreover in each instance the corresponding proximal glands formed the bubo and there was nothing characteristic about the skin lesion. It looked like an ordinary pimple which had been rubbed or scratched, and no local reaction had occurred in it due to the presence of the bacillus; also it was not painful and the patient was unaware of its existence. In a large number of other patients small papules or abrasions were similarly examined, but the plague bacillus was not proved to be present. Thus in one instance a man had acne extensively on the face and a bubo in the left cervical region; in another three small scabbed wounds on the right foot with a bubo in the vertical right inguinal glands: in a third a number of papules on the left arm with a left axillary bubo, and other cases could be quoted. Some of the papules were examined in these cases, but with a negative result. A point remains to be noticed, it may be objected that if the bacillus were already in the blood it could pass with the serum into a papule wherever situated, and its presence there would be the result and not the cause of the disease. But against this view there are the facts (1) that in the above four cases, which were all early, the bacillus could not be isolated from the blood on the same day that it was found in the papule; and (2) that in a number of other early cases pimples situated in various parts of the body were examined, not only on the limb corresponding to the bubo, but the bacillus was not found in them. Also in three early cases of inguinal bubo a small blister was raised upon the chest, but the plague bacillus could not be isolated from the contained serum. The conclusion drawn is that the

[2] These lesions are similar to what was found in a case in St. George's Hospital, Bombay, described in a paper of Dr. Arnott's, published in *The Scottish Medico-Chirurgical Journal* for February, 1898.

bacillus of plague can enter the body through a trifling lesion in the skin, that it produces no local reaction at the seat of inoculation, and that the bubo is formed at the nearest proximal glands.

Food.—No evidence was found *post-mortem* that the bacillus had entered through the stomach or intestines, but cases of cervical bubo might have resulted from infection through abrasions on the lips, tongue, or tonsils.

Primary Plague-Pneumonia.—No evidence of the path of infection was found, but the bacillus was thought to have entered by the respiratory tract, as its growth had mainly occurred in the lungs.

THE OCCURRENCE OF INVOLUTION FORMS OF THE PLAGUE BACILLUS IN THE HUMAN BODY.

In January last M. Haffkine showed me involution forms of the bacillus which he had found in a rabbit dead of plague, and he suggested that I should examine human bodies to see if similar forms could be found. Accordingly in many instances a large number of lymphatic glands and other organs were examined and involution forms were frequently present. The forms seen were mostly of the rounded, or swollen oval shape, and always stained more faintly than the young early bacilli. This investigation was made for the following reason. In cultures of plague, as the culture becomes old, involution forms begin to appear, and the older the culture, within limits, the more distinct are the involution forms. So it was thought possible that a similar condition of affairs might be found in the human body, and that most involution forms would be present in that part where the bacilli had been longest situated, that is, where they had had first begun to grow; thus in a case of plague septicæmia, for example, if most involutions were found in some particular gland, one might infer that the bacilli had first infected and grown in this gland. The inquiry, however, did not bear out this theory, for it was found that the involution forms had a direct reference to the period after death at which the necropsy was made, and in fact they appeared to be a *post-mortem* change. Thus, in necropsies made between one and five hours after death, the plague bacilli always showed a distinct well-stained normal form; in those made between five and ten hours after death early involution forms were seen, rounded in shape and less distinctly stained; whereas in the few necropsies made more than ten hours after death, involution forms were plainly seen of rounded and oval shapes, and still more faintly stained. It may also be noted that in cases of plague septicæmia some glands showed more involution forms than others, but the variations followed no rule, and no conclusions could be deduced from them.

DISCUSSION.

Major RICHARD BAKER (Indian Medical Service) said that he had had three experiences of plague; first in Asia Minor in 1894, next in Sind, and lastly in the Bombay Presidency proper. It was a matter of regret that the steps taken in Bombay were taken so late. This was to be attributed to the non-recognition of the nature of the disease as it first appeared in the city where European medical aid was not often at once sought, and to the reluctance on the part of the authorities to take measures which might interfere with the prejudices of the ignorant native population. He was much impressed with the value of Haffkine's method, and with the absolute necessity for isolation and segregation, prompt and and complete, and with the value of floor disinfection as a matter of daily routine in plague hospitals. This was well exemplified at Karachi and in Sind generally, whilst its neglect was, in several instances, followed by plague spread among the hospital staff. The danger of demolishing infected houses without previous disinfection was shown at Sukkur, where 5 out of 20 coolies thus engaged died within a week. At Sukkur segregation on a large scale was conspicuously successful, and the result of his experience was that where disinfection was prompt and thorough there was no danger of a camp epidemic.

Mr. JAMES CANTLIE (London) observed with regard to the relations of Kitasato and Yersin to the discovery of the plague bacillus in 1894, that the two names were usually associated, and the bacillus was commonly termed the Kitasato-Yersin bacillus. Kitasato, however, had demonstrated the bacillus a week previously to Yersin, and, although Mr. Cantlie felt the greatest respect for the work Yersin did in plague, yet he had no claim to be considered as an original discoverer of the bacillus; that distinction belonged to Kitasato alone. Dr. Simpson had referred to the presence of non-venereal buboes in China and Calcutta, previous to the appearance of plague as an epidemic. Dr. Atkinson had read a paper before the Hong Kong Branch of the British Medical Association in 1893, in which he described the case of a Japanese girl, who had an illness with symptoms which conformed with no familiar disease, and hazarded the suggestion that it might be plague. This was an interesting fact, as it occurred long before plague was heard of in South China. Plague had never been in Calcutta in the memory of man, and, as Calcutta seemed outside the modern plague belt, there was a hope, ill-founded it might be, that plague would not become epidemic there. Although plague was in abeyance in India for the moment, there was no guarantee that it was about to disappear. In fact, it would seem as though India was only commencing its plague troubles.

Lieutenant-Colonel ARNOTT wished to correct Dr. Simpson's statement that at the commencement of the epidemic in Bombay it was not regarded as "diffusive." The medical profession in Bombay had the strongest opinion as to the danger both to Bombay and the whole of India. As to the danger to Europe, it would be grave if plague, as cholera had done, advanced to Central Asia either by way of the Bolan and Candahar, or by way of the Khyber and Cabul. The Government of India should not grudge whatever money was necessary to give officers of the Indian Medical Service opportunities when at home of gaining experience in bacteriology. Professor Haffkine's method of inoculation was valuable, but, owing to the slowness of its preparation, and the disagreeable and sometimes serious symptoms it produced, it could only in its present form play a minor part as a sanitary measure. Dr. Arnott called attention to a report by M. Limond, Director of the Pasteur Institute at Saigon, which claimed only a moderate success for the serum of the Pasteur Institute. He concurred with the recommendations of the Plague Committee. These recommendations had, however, been anticipated by recommendations made to Government at a very early period of the epidemic.

DISCUSSION ON
THE UNCLASSIFIED FEVERS OF THE TROPICS.

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[ABSTRACT.]

THE object to be aimed at in a paper on the unclassified fevers of hot climates, such as I have been asked to read before this Section, is to emphasise the fact that there are certain more or less well-defined clinical types of fever recognisable in hot climates, which have no place in the *Nomenclature of Diseases*, and so to focus on them the attention of pathologists with a view to their identification or differentiation from other fevers of a more recognised type. To facilitate the comprehension of my purpose, I have drawn up a provisional scheme showing what, in my view, is the probable position of the unclassified fevers of India, such as my clinical experience has enabled me to distinguish at the bedside, as constituting different types, sufficiently constant in the picture they present, to be regarded provisionally as separate entities, pending the pathological inquiry which they await:

A PROVISIONAL SCHEME SHOWING THE PROBABLE POSITION OF THE UNCLASSIFIED FEVERS OF INDIA.

I. Non-specific fevers of doubtful causation, probably climatic:
   - a. Ephemeral fever.
   - *b. Common continued fever.
     - 1. Febricula. *Variety:* Nakra or nasha fever.
     - 2. Simple continued fever.
     - *3. Ardent fever.
   - *c. Thermic fever, sirisasis, heat apoplexy.
   - *d. "Low fever."

II. Specific fevers of known or unknown origin:
   - 1. Aphthous fever.
   - 2. "Milk sickness."
   - *3. Urban continued fever.
   - 4. Enteric fever.
   - *5. Non-malarial remittent fever.
   - 6. Malta fever.

*7. Double continued fever (Manson).
8. Relapsing fever.
*9. Acute febrile icterus.
10. Yellow fever.
11. Beri-beri.
12. Cerebro-spinal fever.
13. Typhus fever.

III. Malarial fevers:
1. Intermittent { Quotidian. Tertian. Quartan.
2. Remittent or continued malarial fever (Laveran).

IV. Fevers of compound origin:
*1. Typho-malarial fever.
*2. Kala-azar.
*3. Hæmoglobinuric fever (?)

I have marked with an asterisk the clinical types which I would include under the heading of "Unclassified Fevers of the Tropics."

I. Non-Specific Fevers.

With regard to the first group, that of the non-specific fevers of doubtful causation, and which I will speak of as climatic fevers, we are at once met by the fact that Laveran denies their existence altogether, with the exception of ephemeral fever. This is what he says: "During my stay in Algeria I searched in vain for climatic fevers, and I have come to the conclusion that these fevers do not exist, at least as separate entities." I presume that he founded this opinion on the discovery of the plasmodium malariæ in all such cases, or that they were amenable to quinine, the only two grounds on which malarial are distinguished from non-malarial fevers. Norman Chevers[1] is also inclined to deny their existence. He says, with the emphasis imparted by italics: "*No case of simple continued fever or of ardent fever ever fully developed itself under my observation*," and further that "he who in Bengal treats all cases of ordinary fever (excluding jungle fever, enteric, and the exanthemata) with quinine as soon as perspiration shows itself will find febricula a very ephemeral disease indeed, and that his experience of common continued and ardent fever is extremely small." He regards them as the most usual types in which intermittent fever attacks the robust, full-blooded, and perhaps free-living European who arrives in the hot weather.

It is not easy to understand Chevers's contention, because these fevers are distinguished by their having only one paroxysm, and when the stage of perspiration occurs the attack is over, and will not recur whether you give quinine or whether you do not. The common experience is that quinine is of no avail during the continuance of the fever, and as they have no tendency to relapse it is not essential in the sweating stage. I have myself treated many hundreds of such cases without a single grain of quinine.

With regard to the determination of their malarial nature, I know of no observations in Bengal except those of Maynard and myself. In February and March, 1895, I examined 50 cases of fever admitted to the General Hospital in Calcutta, and found evidences of the malarial parasite present in only 4, that is, in less than 10 per cent. Maynard, who continued the observations in the Medical College Hospital during the subsequent hot weather, found them in 28 per cent. of the cases. At another season of the year, that is, from September to November, they were present in some 75 per cent. of the cases admitted. It is clear from these observations, as well as from common experience of the inefficacy of quinine to modify their progress, that fevers of a non-malarial continued type of varying duration are of frequent occurrence in Bengal in the spring and hot season, along with ordinary cases of malarial type, which, however, are of greater frequency in the later months of the year. The former are what we are justified in the meantime in distinguishing as climatic fevers. The most common causes are exertion in the heat of a ship's hold, or on the parade ground during the hot season of the year, route marching at the same season, in the case of sailors "chipping" or painting a ship's side, or scraping her masts during the heat of the day; chills from sudden alterations of temperature such as follow a "nor'-wester," or a sudden squall at night when sleeping in a verandah. Such causes produce a fever of one, two, or more days' duration and of continued type.

Ardent fever is of the same type but of greater severity and continuance, and heat apoplexy is merely the highest expression of the same condition. The reasons advanced for regarding heat apoplexy as being due to a specific cause are not convincing, and the gradation of symptoms from the mere temporary elevation of temperature which invariably accompanies exercise in the hot moist climate of Bengal (I have known my own temperature rise to 99.9° F. as the result of an hour's walk in the month of August) through a few hours' febricula or a few days of continued fever, up to ardent fever and siriasis, point rather to their being the result of a temporary paresis of the heat regulators under the embarrassments of the conditions of high temperature and humidity.

Nakra, or nasha, is a form of febricula which requires a passing notice, because it is so often pointed out to one in Bengal. It is a fever of a day or two's duration, accompanied by tumefaction of the Schneiderian mucous membrane. It is a condition which appears to affect natives only, and its existence as a specific disease is much disputed although it is firmly believed in by the laity.

"Low fever" is of a distinctly different type from the foregoing climatic fevers. It is characterised by a persistent low elevation of temperature of indefinite duration, without any specific symptoms, except those traceable to the feverish condition itself. It begins insidiously with slight *malaise* and anorexia. The temperature ranges from 99° F. in the morning to 101.5 F. in the evening, never falling below 99°, and rarely rising above 101°, and it may continue for many weeks, unaffected by quinine or arsenic, pushed to extreme doses, or by any other medicinal treatment, but usually yielding at once to change of climate. It would appear also to be due to embarrassment of the heat centres, because it ceases generally at once when the climatic conditions are improved by the patient going to the hills or to sea. If it were due to a specific cause this would not be the case. If it were due to a micro-organism in the blood, the cessation of the symptoms would not be as immediate as happens so constantly with this form of fever on change of climatic surroundings.

II. Specific Fevers.

The unclassified fevers obviously belonging to this group are what I have ventured to call "urban continued fever," "non-malarial remittent fever," the "double continued fever" of Manson, and "acute febrile icterus." They differ from the climatic group inasmuch as they run a specific course which can be foretold, and which is therefore due to the presence and action of some specific organism.

Urban Continued Fever.—In my presidential address in the Section of Medicine and Pathology at the first Indian Medical Congress in 1894, I mentioned this fever as being known locally as "Calcutta fever," "Bombay fever," etc. The name I now provisionally give it emphasises the fact that it is especially a fever of large tropical or subtropical towns. I do not say that it is unknown in the Mofussil, but it is of markedly frequent occurrence in towns. It has been called "three weeks fever," because that is its average duration, but it sometimes lasts a fortnight, and it sometimes extends to four weeks. It is a mild fever, of typhoid type, but without any of the specific symptoms of enteric fever. Some practitioners regard it as being, in fact, mild typhoid fever, and the general progress and character of the febrile curve give grounds for such an opinion; but as it presents none of the clinical picture of typhoid, it remains for them to prove its identity. The Widal test makes this so simple, that there ought to be no longer any delay in doing so; but it shows rather a limited conception of the possibilities of bacterial pathology to argue that every continued fever of about three weeks' duration must be caused by Eberth's bacillus, whether it has the pathognomonic symptoms of enteric fever or not, especially as we know that at least one other bacillus, the bacillus coli communis, is capable under certain circumstances of giving rise to symptoms closely resembling those of typhoid, including ulceration of Peyer's patches. The older writers on Indian diseases all describe what they called "congestive fevers" with ulceration of the small intestine, some of which were undoubtedly typhoid, but others were very questionably of that nature, as is the case now in the reports issued by the Sanitary Commission with the Government of India. As long ago as 1876 I published a number of cases[2] in which the intestinal ulceration was transvere, not longitudinal, as in typhoid, as was also seen in a case recently commented on by Sir William Broadbent.[3] We are therefore,

I think, justified in the meantime in maintaining, as we have done in India for many years, that the cases I am now referring to constitute a type distinct from enteric fever, and calling for special pathological investigation.

Non-malarial Remittent Fever.—This is a fever, which though sometimes seen in Europeans, is especially a fever of natives. It is most often seen in natives under 30 years of age, and is frequent among native children. It sometimes begins insidiously like typhoid, but more frequently it is distinctly intermittent in the first few days, so much so as to have led some authorities to regard it as essentially malarial in character. The absence of the malarial parasite in the blood, and the inefficacy of even the most heroic treatment by quinine, prove that this is not the case. Typical cases of typhoid often begin in India with intermittent symptoms, due to the presence of the malarial plasmodium in the blood at the beginning of the attack, which disappears during the continuance of the fever, to reappear again during convalescence (Laveran). So it may be with non-malarial remittent fever, without the essentially non-malarial nature of the infection being affected thereby. After the first three days the fever becomes continued, and rapidly reaches continuous high temperatures, 104° and 105°, after the fourth day being the rule, with a remission of not more than 1.5° in many cases, though in others the remission amounts to 2° or 2.5° at some part of the twenty-four hours. With these continued high temperatures head symptoms are early and severe, with delirium and coma. The size of the spleen remains little altered, but the liver is early affected, becoming enlarged and congested, and a bilious diarrhœa, and perhaps slight jaundice are the rule. About the eighteenth to the twenty-fourth day in bad cases, congestion of the backs of both lungs, will generally be detected, and death is not uncommon about this period. In more favourable cases the above symptoms continue for another fortnight, the average duration of this fever being six weeks. Relapses after a week of apyrexia are not unknown, but are not usual.

This fever has nothing in common with enteric fever, and it is certainly not malarial. The diagnosis from malignant malarial fever is, however, not easy, especially when the cases begin with daily intermissions; and the detection of the malarial parasite in malarial remittent is often difficult. It is, therefore, usual to begin the treatment with large doses of quinine, until it is found to be useless; persistence in the use of quinine in these cases is then not only useless but obviously harmful, and has done more to damage the reputation of quinine than anything else in India, where it is much dreaded, on account of the distress caused by its indiscriminate use in unsuitable cases.

Is this fever due to the action of some specific organism as yet unrecognised, or is it representative in India of the malignant type of Malta fever? There is no doubt that it presents a clinical picture very closely resembling the latter, and there is a growing belief that Malta fever is not uncommon in India. This suggestion was first made in a paper by Dr. A. E. Wright and Surgeon-Captain Smith in the British Medical Journal of April 10th, 1897. These gentlemen examined the blood of ten invalids from India, and found a positive reaction with the serum-sedimentation test in all of them. Several of these invalids were suffering from symptoms identical with the sequelæ of Malta fever. I admit that it would not be difficult to select temperature charts from the hospitals of India presenting a course of fever having the same general character as those given by Surgeon-Captain Hughes in his recent work on Malta fever. But it has been my fortune to watch 20 cases of that disease, which were brought straight from Malta, and admitted to the General Hospital in Calcutta, and I have no hesitation in saying that they presented a type peculiar to themselves, and differed from anything we were accustomed to see in the wards of that hospital. They had a persistence of an undulatory description, and sequelæ of a neuralgic, arthritic, and orchitic kind, to which we were altogether unaccustomed; and if it should be proved that Malta fever is common in India, then we must admit a fourth type of that disease peculiar to India, and without the manifestation of the usual sequelæ. Hughes says that rheumatic affections occur in 40 per cent. of the cases of Malta fever, and they were present in several of the patients admitted to the General Hospital on the occasion referred to. Rheumatic affections and neuralgias are rare in Indian continued non-malarial fevers. For these reasons I am unable to admit that our cases of non-malarial remittent fever are really Malta fever, but their resemblance to the malignant type is sufficiently close to make the inquiry imperative on those who are equipped for the purpose. I am more inclined to the opinion that they are due to some other, possibly similar, organism as yet unrecognised.

Double Continued Fever.—This is a peculiar fever met with by Manson[4] in South China both in Amoy and Hong Kong. It was characterised by an initial pyrexial stage of from ten to fourteen days' duration, followed by a stage of from three to seven days' relative or absolute apyrexia, which in turn was succeeded by another spell of about ten days' duration of smart fever, and then by convalescence. Both in the primary and terminal fever the temperature may reach 104° and 105°. Manson has seen, on at least two occasions, the same succession of events occurring almost simultaneously in two patients living in the same house. My memory does not serve to recall any such occurrence in my own experience, but now that it has been pointed out instances may be met with in other tropical and subtropical countries than China.

Acute febrile icterus (Weil's disease) has been met with in India in epidemic form, though its true nature was not recognised. The native doctor who reported and described the cases returned them as yellow fever. It is an acute infectious disease characterised by fever and jaundice. Its onset is abrupt, often with a rigor, and with marked intermissions. The liver and spleen are enlarged, and the former is tender; jaundice is early and may be severe, with clay-coloured stools. There are no gastro-intestinal symptoms, and the duration of the attack is about fourteen days. From observations and experiments the opinion has been formed that it is due to a bacillus, the bacillus proteus fluorescens.

IV. Fevers of Compound Origin.

(*a*) *Typho-malarial Fever.*—In India the combination of malarial infection with that of typhoid fever serves to obscure the early symptoms of typhoid, giving us, I think in the majority of cases, a violent and sudden access, instead of the usual gradual step-like rise of the first three or four days. In such cases the plasmodium malariæ may be detected in the blood during the first week, and again during the first week of convalescence (Laveran), introducing the intermittent character so often seen at those stages of typhoid fever in India. Beyond giving rise to this increased difficulty in diagnosis, and delaying convalescence, I do not think that the moderate presence of the malarial habit has any appreciable effect on the progress of an ordinary case of typical typhoid in India. The older authorities on Indian fevers frequently mention a type of fever in which, together with an enlarged spleen, there were congestion and swelling of Peyer's patches. Dreschfeld, in Allbutt's *System of Medicine*, also alludes to it under the title of spleno-typhoid; but I doubt whether this combination of typhoid and malaria is entitled to a separate place in the *Nomenclature of Diseases*.

(*b*) "Kala-azar," which is at present devastating large tracts of country in Assam, would appear to be a combination of the effects of a malignant form of malarial poisoning, together with the debilitating effects of large numbers of the ankylostomum duodenale in the bowel. But the whole relationship of the disease has not yet been quite satisfactorily cleared up.

(*c*) "Hæmoglobinuric fever," the "blackwater fever" of Africa and the West Indies, is practically unknown in India. Koch appears to favour the opinion that it is somehow due to the effect of large doses of quinine in persons affected by malarial poisoning. The fact of its absence in India, where malaria in all its forms is habitually treated by very free dosage with quinine, is alone, I submit, sufficient to controvert this hypothesis. Quinine in quantities ranging from 60 to 90 gr. a day, is constantly given in India in malarial fever, and yet I have only seen hæmoglobinuria in two cases. If hæmoglobinuric fever is due to the malarial parasite, its limited geographical distribution excludes quinine, as the secondary cause of the peculiar symptom which characterises the disease, which must be due to a cause more locally distributed.

References.

[1] *Diseases of India*, 1886, p. 216. [2] Report on the Fevers of Burmah. [3] *Lancet*, July 30th, 1898. [4] *Tropical Diseases*, p. 216.

II.—Major RICHARD BAKER, I.M.S.

MAJOR BAKER said: I wish to express my sense of the great value of the introduction of this subject by Surgeon-Lieutenant-Colonel Crombie—in a form so thoughtful and so instructive. I am satisfied that for the present Class I (Climatic) fevers must be included in any classification pending the recognition of their *causæ intimæ*. As regards Class III (Compound) we must be satisfied to meet, recognise, and deal with two or more forms of these organisms, though doubtless as regards treatment we will always find one occupying the position of the predominant partner. In my experience, drink or habits of drink has much to do with the occurrence of thermic fever among Europeans in India. While I have seen no evidence of its microbic origin, facts and records in Hyderabad go far to negative the theory, as it has always prevailed at the period of highest temperature in June of each year. I saw 56 fatal cases in one week in June, 1896. I was associated with the late Dr. Vandyke Carter in an investigation into what is called Bombay fever, and I am not certain whether the atypical appearance and position of the intestinal lesions may not be a means of distinguishing what Dr. Crombie has so well described as "urban continued fever" from true enteric; while it is quite possible that the cases of typhoid fever among natives reported by the late Surgeon-Major Mauser and others were of this type.

III.—Captain M. LOUIS HUGHES,
Royal Army Medical Corps.

CAPTAIN HUGHES said: Besides abortive and undefined short cases of fever, there is a short attack, often called febricula, which appears to be of a specific nature. It is common in hot countries, and attacks almost everyone there, often year after year, and in a large number of cases at the same time of each year. It is a filth disease, and not the result of exposure to sun. The pyrexia lasts some three or four days, with pain in the back and head, foul tongue, and but little else. In the army and navy we are frightfully handicapped by two points, which the authorities in many places have not yet relinquished: (1) That there is a disease called typho-malarial fever. Though abolished from the *Nomenclature* at last, it still comes to the fore. There is no difference between enteric fever attacking a malarialised subject and enteric fever attacking a syphilised or tuberculous subject from a nosological point of view; while the condition may be compared to a broken leg complicating a case of enteric or other attack of fever. Though the two diseases coexist, their coexistence does not constitute a new disease. (2) Enteric fever is enteric fever all the world over, and does not become a climatic disease directly we leave the confines of Europe or America. Consequently preventive measures are called for in India as in England. An Englishman and his wife, who live long in India, may alter their habits and even appearance to suit their new environments, but for all that they and their children continue to be English. So the enteric poison may become modified in virulence, etc., by climatological or topographical conditions; but it does not cease to be enteric fever, the result of the enteric microbe, and therefore of a preventable nature. Anomalous forms of fever, which may seem to negative this view, need working out, when they will be found to have their own cause. Lastly, Mediterranean, Malta, or undulant fever is a specific disease, and probably exists in many warm climates. It is the result of the micrococcus melitensis, and has no connection whatever with enteric fever, however much it may resemble that disease clinically in some cases; in spite of the fact that it appears in the *Nomenclature* as No. 17 (*a*) (enterica being No. 17).

IV.—Major DAVIDSON,
Royal Army Medical Corps.

MAJOR DAVIDSON said: I wish to draw attention to Dr. Sambon's theory that ardent fever is due to some germ. As evidence of this he points to its geographical distribution, and states that it is unequally prevalent when we have the temperature equally high, and that moisture is necessary for its production. Probably these fevers are explained by the temperature being raised by exercise, as stated by Captain Hughes, and that much moisture in the air prevents the evaporation of moisture from the skin, thus raising the internal temperature. This would probably account for ardent fever being absent on one side of the Mississippi and present on the other, the wind probably blowing moisture to that direction, where it is prevalent. Its sudden onset is also against the idea of its being due to a germ.

V.—Brigade-Surgeon-Lieutenant-Colonel ARNOTT
Indian Medical Service Retired).

BRIGADE-SURGEON-LIEUTENANT-COLONEL ARNOTT said: I wish first to say how entirely I concur in what Dr. Baker has said regarding the very high scientific value of the thoughtful, clear, and comprehensive address of Brigade-Surgeon-Lieutenant-Colonel Crombie. In the first place, though I cannot agree with the opinion that all fevers in India and so-called tropical countries are malarial and curable by quinine and other "antiperiodics," still the great difficulty is that malaria is so widespread, and its influence almost universal, and its manifestations often so obscure and universal, that it is extremely difficult to say that a given case of fever is not malarial more or less. Often a fever which at one time seems not malarious subsequently develops symptoms quite unequivocally malarious. I recall the case of a child in India who for a long time had a low fever which puzzled all who saw her, but after coming to Scotland a cold day developed a very fine ague showing that the child was malarious, though the fever she had suffered from had not the symptoms or local enlargement of liver and spleen expected in malarious cases. In the next place, I think that practitioners in India treating fever every day are apt to call all cases of pyrexia "fever," ignoring those other causes of pyrexia which in this country are regarded as sufficient causes, such as disorders of the stomach and bowels, of the secretions, local inflammation, overwork, etc. As regarding sunstroke, a moist climate is not, as stated by Dr. Sambon, a factor in India. In Bombay, with a climate in which just before the monsoon and in the early months of the monsoon the atmosphere is almost saturated with moisture, sunstroke is comparatively rare. It is not a common cause of death in St. George's Hospital, and is less common in Bombay than in the very hot and dry climates up-country. In regarding it as a summer disease due to heat, perhaps to electric conditions, and similar to the high temperature found in injuries and disease of the nervous system, I have seen no evidence of contagion. I concur with Dr. Baker that it is common in the intemperate; for instance, it is a common cause of death in alcoholism and delirium tremens, and among intemperate soldiers. As regards the urban fever with which may be grouped Dr. Crombie's typho-malarial fever in Bombay, it is found chiefly among natives. Among Europeans it is seldom impracticable to diagnose a case of this class either as enteric or malarial fever, but I have seen cases in which during convalescence from enteric fever life was endangered by the development of malarial fever, of which probably the cause had been present throughout the course of this attack of enteric fever. The Mohammedans, Mahrattas, and especially the Parsees are meat eaters, and the Parsees' diet is similar to that of Europeans, and yet they only rarely have enteric fever; and I think it is also comparatively rare among Eurasians and country-born Europeans. I therefore do not agree with Dr. Crombie's opinion that it is only found among meat-eating and up-country natives, and is, as I understand him to say, due to their diet. While feeling that many fevers in India are cases of obscure malaria, I fully agree with Dr. Crombie that the subject requires further study, and that in all probability careful observations, and especially bacteriological observations, will eventually clear it up, and result in a more complete and accurate classification, and in the proof of the specific nature of many of the hitherto unclassified fevers.

VI.—Dr. HAYMAN THORNHILL,
Senior Medical Officer, Northern Province, Ceylon.

DR. THORNHILL said: I rise to refer only to one point—kala-azar—and to endeavour to remove a misapprehension under which Lieutenant-Colonel Crombie labour when he stated that Dr. G. M. Giles said that kala-azar was merely ankylostomiasis. I am sure that if Dr. Giles

were present he would tell you that this was an entire misrepresentation or misunderstanding of his views, and that what he did say was that many cases shown to him as kala-azar were merely ankylostomiasis, and that in his opinion the state called kala-azar was the result of malarial cachexia and ankylostomiasis combined in the same individual, that is, that ankylostomiasis was merely one of the factors in kala-azar, malaria or malarial cachexia being the other. What Giles had to investigate in Assam was: "What was the cause of the increased mortality there?" and this he clearly stated was ankylostomiasis. In this I am sure he was quite correct; but this is very different from taxing him with saying that kala-azar was ankylostomiasis. In his letter on page 861 of the BRITISH MEDICAL JOURNAL, March 26th, 1898, Giles writes: "To prevent misunderstanding I should like to state that I have from the first regarded kala-azar as a mixed anæmia brought about by ankylostomiasis acting on a population worn down by chronic malarial poisoning." I am myself convinced that further investigation will show the erroneousness of Rogers's views that kala-azar is an infectious malarial fever, and will prove it to be a mixed or parasitic anæmia the result of ankylostomiasis supervening in a case already broken down by chronic malaria or *vice versâ*, that is, that it is nothing more or less than a malario-dochmial or dochmio-malarial cachexia.

VII.—Dr. CAUSLAND,

Swatow, China.

DR. CAUSLAND said: I am familiar with what Dr. Crombie in his classification has called "low fever" in Europeans, both adults and children, at Swatow, China. So far I have not been able to find any literature describing it. The clinical symptoms, absolute uselessness of drugs and speedy cure brought about by change of air correspond with Dr. Crombie's description. Sometimes such a slight change as from one side of the harbour to the other, a distance of about a mile, would effect a rapid cure in cases in which the condition had continued for weeks. In one case the condition ran on for eight months, the temperature rising from 99° at night to 100°, or rarely 101°, during the day, with at first marked depression of spirits. During the menstrual periods the temperature was continuously subnormal. Drugs had no effect whatever on the temperature. No marked anæmia resulted, but the steady loss of strength necessitated the patient's removal to the Pacific coast of the United States of America after the illness had persisted for five months. Three months' residence there sufficed to bring the temperature to normal. Facts which have come under my notice both in China and America point to a connection between the condition and a malarious climate.

BLACKWATER FEVER.

By L. WESTENRA SAMBON, M.D.,

Naples.

THE opening up of the Dark Continent as a new field of enterprise for the white man brings very forcibly before us the question of blackwater fever. This dreaded disease, so prevalent throughout tropical Africa, is causing appalling mortality among the pioneers of civilisation and the missionaries of Christianity.

Of late years there has been much discussion on blackwater fever, but the almost universal opinion is still in favour of the old idea that it is merely an aggravated manifestation of the ordinary malarial paroxysm.

I do not pretend to state definitely what blackwater fever is, but I believe we have a large body of fact to show what it is not; and, surely, the explosion of errors and misconceptions is of no small importance in scientific investigation.

Before entering on the discussion of this disease, it is necessary to note that authors have often confounded hæmoglobinuria with hæmaturia, a very different condition, which is distinguished by the presence of blood corpuscles in the urine, and may be due to injury or to some toxic substance, or be symptomatic of disease of the urinary tract, such as calculus, cancer, nephritis, or of some general disease such as purpura or scurvy.

Of the many names given to the disease under consideration, I have chosen that of "blackwater fever" (Febris melanurica) because it involves no preconceived idea as to its pathogenesis, and has the further merit of being the one most widely used in medical literature and common language. We should never commit ourselves to names expressing opinions which may turn out to be erroneous, and would therefore entail a frequent and confusing change of nomenclature. The name blackwater fever simply denotes the most striking and characteristic symptom of the disease—the presence of dark pigment in the urine.

CAUSES OF MELANURIA IN GENERAL.

In studying the blackwater fever of Africa and other tropical countries we naturally inquire into all such diseases and conditions as produce melanuria. Thus in several parts of Europe and in North America we find a disease of comparatively rare occurrence which resembles the blackwater fever of tropical regions in the most striking manner. Authors have called it paroxysmal hæmoglobinuria, and, being unable to agree on its etiology, have ascribed it to cold, that *deus ex machinâ* of most maladies. Then there is the so-called infantile hæmoglobinuria, or epidemic hæmoglobinuria, an outbreak of which was described by Winckel as it occurred in the wards of a lying-in hospital at Dresden in the spring of 1879. It is probably no other than paroxysmal hæmoglobinuria. Further, we know that the absorption of certain poisons will cause melanuria. Among such are carbolic acid, hydrogen, arsenoid, chlorate of potash, and others. Transfusion of blood may also cause melanuria, especially when the blood of an animal of one species is introduced into the circulation of an animal of another species, the red corpuscles of the transfused blood being rapidly destroyed during their passage through the blood vessels of the animal into the circulation of which they are received.

Of paroxysmal hæmoglobinuria I shall speak presently. As to toxic melanuria we know very little. All I can say is that the symptoms induced by some drugs—potassium chlorate, for instance—resemble a paroxysm of blackwater fever, just as acute arsenical poisoning may resemble an attack of cholera.

THEORIES OF BLACKWATER FEVER.

The ideas now generally prevalent on blackwater fever are:

1. That it is an unusually severe paroxysm of the ordinary malarial fever.
2. That it is a peculiar condition caused by the administration of quinine in malarious patients.

It is these erroneous conceptions that I desire to disprove in this paper.

NATURAL HISTORY OF THE DISEASE.

I will first give a short sketch of the disease, and call attention to some very important points in its natural history, which have hitherto been neglected.

Geographical Distribution.—This, one of the most important elements in the study of a disease, is unfortunately, in the case of blackwater fever, for various reasons, most indefinite. The disease was first described in the small island of Nossi-Bé, off the north-west coast of Madagascar. It is prevalent throughout tropical Africa, especially along its great waterways. It is found all along the West Coast from the Senegal to the Coanza, but especially on the Congo and on the deltas of the Niger and Gambia rivers. On the East Coast it is also widely spread, especially along the Zambesi and on the shores of Lake Nyassa. In America it extends over the southern States of the Union, especially in Florida, Georgia, and the Mississippi bottoms. It is greatly prevalent in the plains of Venezuela and in the island of Cuba. It has appeared now and again in Java and New Guinea. Several cases have been reported from India, Assam, and Cochin-China. In Europe its occurrence has been established for Sicily, Sardinia, the Roman Campagna, and the Greek archipelago.

Endemic Prevalence.—Although blackwater fever has a wide distribution, it is limited in its endemicity to low grounds and lands that are occasionally overflowed with water. Several authors have reported its occurrence at high elevations, but we must not forget that in blackwater fever, as in malarial fevers and other diseases, relapses may occur at long intervals and far from the place in which the disease was contracted. Moreover, the swamps at the foot of

mountains are the very habitat of blackwater fever, and we know also that the disease may have a long period of incubation.

Seasonal Prevalence.—In the Southern States of the American Union blackwater fever is reported to be especially frequent in late summer and in autumn. On the West Coast of Africa it prevails after the rainy season is over, when the atmosphere is hot and moist. It is therefore apparent that, like many other diseases, it requires peculiar conditions of heat and moisture. Relapses of the disease may occur at any season.

Epidemics.—Blackwater fever at times assumes an epidemic form. It may not be seen for years in a district, and then numbers of cases may occur within a short time. It was epidemic among the labourers employed in making the canal through the Isthmus of Corinth. In 1885 there was an outbreak of the disease in Castiadas (Sardinia), when twenty were attacked in one prison. Of late years blackwater fever has become far more prevalent in some regions, while in others it seems to have been only recently introduced.

Generally follows Malaria.—It is of the highest importance to note that blackwater fever is seldom a primary disease. Authors, from all parts, are unanimous in stating that the liability to infection is constantly associated with the occurrence of malaria. On the West Coast it has been observed that the disease seldom comes on within the first year of residence. Another fact worthy of notice is that strangers are far more liable to the disease than the natives of the place.

Symptoms.

General Course.—The onset of blackwater fever is usually abrupt. A violent rigor invariably ushers in the attack, while the temperature rapidly rises to 103° or 104° F., and may later reach 106°. In most cases it only lasts a few hours, and then, with profuse sweating, falls to normal. The patient complains of pain in his head, back, and loins; he is excessively thirsty, and experiences a sensation of distress about his epigastrium. From the outset there is profuse bilious vomiting and sometimes diarrhœa; the scleræ and the skin over the entire surface of the body become of a deep yellow colour, which is characteristic; but the most striking symptom is that of the urine, which becomes of a dark red colour, and sometimes almost black. The patient at first may show great mental anxiety and apprehension, but soon passes into a state of prostration. About the third day, in a severe case, the breathing becomes very laboured and deep owing to the increasing poorness of the blood. Sometimes the urine becomes exceedingly scanty or entirely suppressed; the patient falls into a state of collapse and dies. The duration of the attack varies greatly; it usually lasts from four to six days. In severe forms death may ensue on the second or third day. The attack usually consists of two, three, or more paroxysms, corresponding to successive broods of the parasite. If the patient recover he is liable to relapse. The interval between the relapses may be considerable in duration; weeks, months, nay, even years may elapse. Relapses are usually milder than first attacks. Reinfection may take place.

Urine.—The urine in blackwater fever is generally strongly acid. Its specific gravity varies inversely to the amount passed; it is usually above normal. On shaking it produces a greenish-yellow foam. On standing it deposits a thick reddish-brown sediment, which is chiefly composed of an amorphous yellow pigment, aggregated into rounded masses or forming regular casts of the renal tubules. By gradually raising the urine to the boiling temperature a reddish-brown coagulum is formed, which consists mostly of cell globulin. Occasionally a very few corpuscles may be detected in the sediment as the result of renal congestion, but, as a rule, they are totally absent. Of course, nephritis may be associated with blackwater fever, and then hæmaturia may complicate or follow hæmoglobinuria and the urine will contain blood corpuscles and serum albumin. Formerly the colour of the urine was attributed to the presence of bile, but now we know that bile is either entirely absent from the urine, or is present in insignificant amount. The spectroscopical examination exhibits the two absorption bands of oxyhæmoglobin.

Blood.—If the blood be examined during an attack of blackwater fever, the red corpuscles are found to be undergoing rapid destruction; their number may fall in less than twenty-four hours to a third of the normal. At a certain moment of the paroxysm there does not seem to be one sound corpuscle in the patient's body. But the destruction, however intense, seems to be almost immediately replaced by a rapid regeneration, then blood corpuscles of every size, nucleated corpuscles, and large quantities of blood plates will be found under the microscope. At the same time will be witnessed a marked leucocytosis, which begins with the paroxysm and persists for a certain length of time thereafter; it is in every way similar to that which meets the invasion of the spirillum Obermeiri in relapsing fever. If freshly drawn blood be allowed to stand the serum will be found to present a very dark red colour, indicating the presence of much colouring matter in solution.

Pathology.

Parasitology.—The parasitology of blackwater fever is far from being settled. In several cases the parasites of æstivo-autumnal fever have been observed, especially in the form of crescentic bodies. This fact is considered by most authors as a final confirmation of the idea that the disease is malaria. F. Plehn described a separate variety of parasite, much smaller and ovoid in form, which does not become pigmented. Fisch also described a distinct organism; and Manson, though believing melanuric fever to be a malarial disease, is of opinion that its organism is specifically different from the malaria parasites already identified. Albert Plehn, who studied 43 cases of melanuric fever in Cameroon, considers it possible that the disease may be caused by a separate type of organism, but he could detect no morphological difference between the parasites which he found in these cases and those occurring in æstivo-autumnal fever. Yersin found a cocco-bacillus in the urine of his patients, and claimed it to be the cause of melanuric fever. Breaudat found the same organism in several cases, and recognised it to be bacillus coli communis.

Morbid Anatomy.—The *post-mortem* appearances in cases of blackwater fever are usually complicated with those produced by malaria. When these are eliminated and when death occurs early during an attack, and the necropsy is made soon after death, the following special conditions are found: The liver, spleen, and kidneys are enlarged. The liver is of a yellowish-brown colour on section; it shows marked cloudy swelling of the cells, which contain granules of yellow pigment. The gall bladder always contains much bile, and is sometimes greatly distended. The spleen is congested, its capsule is thick, and the parenchyma is black and soft. Masses of dark yellow pigment are to be found both between and within the cells. The kidneys show intense hyperæmia. The cortical substance on section is found to be of a pale yellowish colour, the pyramids showing brown streaks, especially towards their apices. There is marked infiltration of leucocytes in the interstitial tissue, and the epithelium of the secreting tubules shows cloudy swelling. The convoluted tubules are filled with granular pigment, which is partly free in their lumen, partly contained within the lining cells. This pigment, together with shed epithelium, forms regular casts within the straight tubules.

Is Melanuria a Symptom of Malaria?

Now let us examine on what grounds authors have believed blackwater fever to be a manifestation of malaria.

1. The disease is met with in malarious countries.
2. It is usually preceded by attacks of the ordinary malarial fever.
3. The malarial parasite or pigmented cells have been found in the blood and organs of those suffering from the disease.

At first sight these facts seem to be very strong evidence; but they soon crumble on accurate investigation. Laveran still holds the opinion that the various types of fevers and their peculiar organisms are but the modifications of one type under varying conditions; but opinion is now almost universally agreed on the plurality of types. With which type of malaria is blackwater fever associated? Possibly with any; but in regions in which it is most prevalent we find it associated with that form of malaria which has been called summer-autumn fever. On the West Coast of Africa, where so many cases of blackwater fever occur, summer-autumn fever is exceedingly prevalent, whilst tertian and quartan

fevers seem to be totally absent. On the other hand, we find blackwater fever to be unknown in regions highly infected by the summer-autumn fever. Thus we begin by noting the fact that the geographical distribution of blackwater fever does not coincide with that of malaria. Then, again, the relative prevalence of blackwater fever and malaria varies greatly in the different regions in which both diseases occur; and moreover, though the same conditions of soil, temperature, and moisture seem to favour both diseases, their seasonal maxima bear no relation to each other.

The summer-autumn type of malaria is characterised by the fact that its paroxysms do not present the chill which is so striking a feature of tertian and quartan fevers, but blackwater fever always begins with a severe chill; it is, therefore, in this respect, in marked contrast to the form of malaria of which it is supposed to be a paroxysm. Another distinguishing feature is the marked leucocytosis of blackwater fever, which is absent in uncomplicated malaria.

Even in the seventeenth century Torti of Modena succeeded in distinguishing malarious fevers from the chaos of diseases with which they were confounded by the fact that they yielded to quinine. The discovery of the parasites of malarial fevers has made us forget the diagnostic value of quinine, although its specific action in the treatment of these diseases has been fully confirmed. In blackwater fever, on the contrary, quinine is not only useless, but possibly injurious.

In all forms of malaria there is certainly an extensive destruction of blood corpuscles. In severe æstivo-autumnal infection, the destruction in a single paroxysm may amount to a third of the entire number, and yet no hæmoglobinuria occurs. But in malaria we know that the parasite transforms the corpuscular hæmoglobin into black pigment, which is only very gradually eliminated. In blackwater fever a very different process is at work. No black pigment is formed, but the infected red corpuscles are rapidly disintegrated and eliminated, possibly in the same way as the corpuscles of transfused blood from an animal of different species.

To explain why blackwater fever occurs in some of the regions in which malaria prevails and not in others the usual and comfortable explanation of "special climatic influences" has been adopted, but in the same locality we usually find blackwater fever and tropical malaria coexisting at the same time, and besides, the geographical distribution of blackwater fever shows that the disease can prevail under the most varied climatic conditions. Then again, it is well known that people who have suffered from blackwater fever in tropical Africa may have relapses of the disease in England many months after their return, probably in midwinter.

As already stated, the parasite of summer-autumn fever has been at times demonstrated in patients suffering from blackwater fever, but this is no proof that it is the cause of the disease. We know that melanuric fever usually attacks those suffering from æstivo-autumnal fever, and we also know that the crescentic bodies associated with this malady may be found in the peripheral circulation even months after the patient has apparently entirely recovered. No wonder, therefore, that it should be found in the subject of blackwater fever. But observations have demonstrated that, when present, the parasites of malaria diminish considerably in number during the hæmoglobinuric paroxysm, and besides, in quite a number of cases, no malarial parasites could be demonstrated.

Some have asserted that blackwater fever is always preceded by several paroxysms of the ordinary malarial disease, but we know of several cases now in which melanuric fever was contracted within a few weeks of landing, and without any previous attack of malaria.

Finding that malaria alone could not account for blackwater fever, and that climatic conditions were not sufficient to explain its occurrence, authors looked for some other agent, and quinine was incriminated.

IS IT QUININE POISONING?

The idea that quinine, the great specific remedy for malaria, could produce blackwater fever in patients suffering from ordinary summer-autumn fever originated with Tommaselli, of Catania. It is a misinterpretation of the fact that the administration of quinine, even in small doses, may excite a paroxysm of blackwater fever in a patient who has previously contracted the disease and still bears it in a latent form. But quinine, even in large doses, never produces blackwater fever in healthy people, nor in malarial patients who have not previously suffered from the disease. Besides, blackwater fever has frequently spontaneously appeared in patients who had never taken quinine, and moreover several authors claimed to have cured blackwater fever with large doses of quinine. Then the idea of a special idiosyncrasy was put forward to account for this peculiar action of quinine in malarious patients, but the explanation is not admissible, seeing that in regions in which blackwater fever prevails quinine may excite a paroxysm in quite a number of those who have contracted the disease, but in the regions from which blackwater fever is absent quinine never produces it in anyone. In examining the hundreds of cases of so-called quinine hæmoglobinuria we find invariably this to be their history: A patient suffered repeated attacks of malaria, which were satisfactorily treated by quinine in the usual doses. One day, suddenly instead of the usual paroxysm, blackwater fever manifests itself and the administration of quinine seems to aggravate its symptoms and excite new paroxysms whenever administered. Later the blackwater fever disappears and the administration of quinine, even in large doses, never causes it again. But quinine is not the only agent that will excite a paroxysm of blackwater fever; just as often relapses are caused by fatigue and chill. Thus we come to the conclusion that blackwater fever is not malaria modified by special climatic conditions or the influence of quinine. What is it, then?

I will say first of all that I believe it to be very closely related to the paroxysmal hæmoglobinuria of temperate regions. I do not mean to say by this that all cases of hæmoglobinuria should be considered as cases of blackwater fever, but that such are most cases of so-called paroxysmal hæmoglobinuria. Several authors have pointed to the fact that the two diseases are clinically indistinguishable, and Dr. Wheaton proved that in their morbid anatomy they are also identical. The only difference is that while blackwater fever has a very high mortality, paroxysmal hæmoglobinuria seldom proves fatal; but we must not forget that the mortality of blackwater fever varies greatly in different regions, and I believe its deadliness on the West Coast of Africa and in other regions can be fully explained by the fact that in those regions it attacks the wrecks of severe tropical malaria.

The recognition that blackwater fever is the same as paroxysmal hæmoglobinuria gives us no clue to its pathogenesis, because practically nothing is known regarding the latter.

Far more light is shed on our subject by the hæmoglobinuria of cattle which has been so thoroughly and successfully investigated by Babes in Roumania, Smith and Kilborne in the United States, Krogius and O. von Hellens in Finland, Sanfelice and Loi in Sardinia, Celli and Dionisi in the Roman Campagna, and Koch in East Africa. These authors have found that the hæmoglobinuria of cattle is caused by an hæmatozoon which Babes classed between bacteria and protozoa.

Starcovici believes that the hæmoglobinuria of cattle is not caused everywhere by the same parasite, but by various types which differ somewhat morphologically from the pyrosoma bigeminum described by Smith. However this may be, it is reasonable to conjecture that the parasite of blackwater fever, if not identical with that which causes the hæmoglobinuria of cattle, very probably belongs to the same group.

The hæmoglobinuria of cattle resembles very closely that of man. It prevails under the same climatic and seasonal conditions; it gives rise to the same symptoms, and its *post-mortem* appearances are identical. The descriptions which F. Plehn gives of the parasite found in blackwater fever seem to confirm my view.

Dr. GEORGE PRENTICE (Blantyre, Central Africa), said: Dr. Sambon's paper is of great practical importance to me and to my fellow practitioners in British Central Africa. Dr. Ker Cross, the Administration Medical Officer at Blantyre, British Central Africa, in his report for the year 1897-98 to the Foreign Office, says: "The one outstanding disease of this country is blackwater fever. In most cases a "dose of fever"

is nothing; this form of fever is, however, in every case a menace to life. We are certain that 9 out of the total number of deaths (32) registered must be put down to blackwater fever. But besides the deaths from this form of fever, there have been out of a population of fully 303, as far as we can gather, 27 cases of blackwater fever in all. Out of 27 cases 9 ended in death." Those of us whose duties lie within the Protectorate have our time too fully occupied to make a thorough study of this disease, and we are anxious that a specialist should be sent out to thoroughly investigate it. Dr. Sambon mentioned that great heat and a certain amount of moisture seemed to favour the development of blackwater fever. I believe it is specially apt to manifest itself when people who have been living in a low-lying locality—say under 1,000 feet above sea level—move to a higher lying district. In the warm, low-lying districts the skin acts freely, but on changing one's abode to a district above 3,000 feet above sea level, the skin to a greater or less degree ceases to functionate, and great strain is thrown upon the kidneys. Given an attack of fever on the top of this, the chances of its being hæmoglobinuria, with kidney mischief and resulting suppression of urine, seem considerably enhanced. I would point out that in many cases not simply the urine but the stools also are black; probably hæmoglobin is excreted in this way. I have known of several cases in which blackwater fever has followed a severe chill, as when a man out hunting got thoroughly drenched, and was unable immediately to change. I had recently under my care two young men who had been making merry over a bottle of whisky. One developed bilious fever, the other bilious hæmoglobinuria. The two fevers otherwise ran much the same course. Why in one instance it should simply be bilious and in the other hæmoglobinuria I cannot say. It is very desirable that some one should be sent out thoroughly equipped to grapple with this pernicious form of malaria, and I know of no more suitable district in which to study it than Blantyre, B.C.A. Blantyre is central for a large European population, and is easily reached from the Lower Shire and Upper Shire districts. In the township of Blantyre there is already a European hospital. The Foreign Missions Committee of the Church of Scotland, the Livingstonia Committee of the Free Church of Scotland, and the African Lakes Trading Corporation, acting upon the advice of their medical officers, have already sent a deputation to the Foreign Office, where by arrangements previously made with Lord Salisbury, the deputation had a conference with the Hon. Mr. Bertie, Assistant Under-Secretary for Foreign Affairs, on blackwater fever and the desirability of sending a specialist out to get to the bottom of it. It was agreed to await the result of the deliberations of the Council of the British Medical Association before bringing pressure to bear upon the Government to take the matter in hand. I beg to submit the following resolution, and to ask this Section to approve of and forward it to Her Majesty's Secretary of State for Foreign Affairs:—

The Section, recognising the wide distribution and appalling mortality from blackwater fever in tropical Africa, would appeal to the Council to urge on the Government the desirability of sending properly qualified men to investigate the nature and cause of this disease, with the view of devising effective measures for its prevention and treatment.

The resolution was carried unanimously.

Dr. Symes Thompson (London) drew attention to the fact that blackwater fever was a cause of terrible mortality among our pioneers in Central Africa and elsewhere. As a friend of Dr. Livingstone and Mr. Moffat, Dr. Symes Thompson urged upon the Section to do all that was possible to strengthen the hands of the Government in sending out a Commission to investigate the nature, causes, prevention, and cure of the disease. Speaking in Edinburgh, the home of medical missions, he called upon his professional brethren to do all that was possible to strengthen the hands of medical men abroad, and to assure our medical missionaries that they had the support of the profession behind them. In London a scheme was in progress, supported by Sir Henry Acland, Sir James Paget, Sir William Broadbent, Sir Dyce Duckworth, and other leaders of the profession with the object of increasing the number of medical missionaries, giving them the fullest knowledge of tropical medicine and sanitation, and so equipped that they might efficiently fight against blackwater fever and allied destructive diseases.

THE PARASITE OF THE PERNICIOUS MALARIAL FEVERS OF BRITISH GUIANA.

By George Thin, M.D.,
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Amongst the work which is still to be done in connection with the parasite of malaria, one of the least ambitious parts, although none the less necessary and interesting, is to compare the parasite that is found in one part of the tropical world with that which is found in another. The parasites of the malarial fevers in Europe have been, from the morphological point of view, carefully examined, and the records of many observations are to be found in classical works and papers. It is, perhaps, correct to say that as regards the size, number of spores, and cycle of development of the tertian and quartan types very little remains to be done. This cannot yet be said of the parasites associated with the pernicious and malignant fevers outside Europe.

Dr. Daniels of Georgetown, Demerara, has, at my request, been so good as to forward me portions of tissues from two fatal cases of pernicious malaria which occurred in that town, and an examination of these tissues has enabled me to observe the parasite of that part of the world, and to compare it with the analogous parasite described by the Italian authors, and with that observed by myself in tissues from fatal cases sent me by Surgeon-Captain Duggan from Sierra Leone.

The appearances found in the tissues from these two cases are so similar that I will not occupy time and space by describing them separately. One of the cases is described by Dr. Daniels as that of a very anæmic child, aged about 4, who was said to have had fever for two days, and who died within a few hours after admission to hospital. There was no cerebral congestion, although death was by coma and convulsions, as is usual where there is much congestion. Dr. Daniels remarks that he had seen another case of marked cerebral anæmia with similar symptoms, in which plasmodia were found. In that case there was very profuse epistaxis. In the other case from which tissues were sent to me the organs were much congested. There was nothing unusual about the symptoms before death.

In the lung tissue I found a few scattered pigment-bearing leucocytes. In the spleen and liver many pigment-bearing cells were to be seen, differing in no respect from those described by Bignami in the Italian fevers, and by myself in the fevers of Sierra Leone. In the kidneys comparatively few changes were found. Pigment-bearing cells were to be seen in sections of the Malphigian bodies, but the epithelium of the convoluted and straight tubules was for the most part normal in its appearance.

The diseased appearances were centred in the brain—in the cerebrum and cerebellum. In many capillaries and in small veins great numbers of parasites were to be seen. In the small veins these were, as is usually the case, to be found in blood corpuscles lying close to the endothelium. In some of the veins numerous single spores were to be seen scattered thickly amongst the blood corpuscles all through the calibre of the vein. Some of these were lying between corpuscles, but most of them had already attacked a red corpuscle. In the capillaries and very small veins sporulating forms were mostly found. This applies to both cases. In one of the cases, in which most of the appearances were studied and examined, whilst single spores and the sporulating bodies were abundant, very few intermediate stages were observed. I infer from this that most of the parasites in this patient's case were at the time of death nearly at the same stage of development, and that at the time death occurred a certain number of sporulating bodies had burst, whilst still a considerable number of them, although quite mature, had not escaped from the red corpuscle.

As regards the size of the spores and of the sporulating bodies, I cannot detect any essential difference between them and those that I have studied in the Sierra Leone fevers (compare A Note of the Appearances found in the Tissues in a Fatal Case of Pernicious Malaria at Sierra Leone,[1] and A Further Contribution towards the Pathology of the Pernicious Malarial Fevers of Sierra Leone and our Knowledge of the Parasite with which they are Associated[2]), except perhaps that the spores in the Demerara cases were more numerous than in the

African cases. In the Sierra Leone cases I consider that the number of spores varied from five upwards to sometimes eight or nine, in this respect not differing essentially from the malignant parasite of Italy figured by Marchiafava and Bignami. In the Demerara parasite the majority of the sporulating bodies which I studied contained from five to eight spores, but some of them contained more, and I have counted as many as fourteen spores in one body, but this was exceptional. In some I only detected three or four.

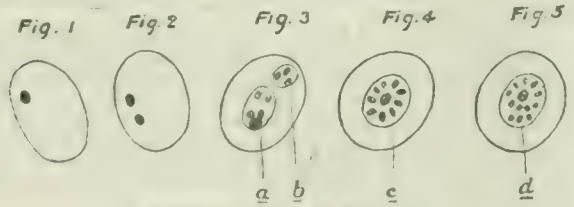
The diameter of the fully developed sporulating body was about one-half that of the red corpuscle. The proportions as regards size are given with exactitude in the accompanying figures.

In one case I observed what I have not observed before, and which must be somewhat rare: two bodies forming spores in the same red corpuscle. Whilst it is not uncommon for two or more spores to attack a red corpuscle, usually only one goes on to full development. Fig. 3 reproduces the appearance observed in one of these cases in which two sporulating bodies were detected. In one pigment formation was complete; in the other no pigment was observed, there being only four spores in the pigmented, and three in the unpigmented body.

The sporulating body of the pernicious Demerara fever, like that of the Italian and West African pernicious fevers, differs from that observed in tertian and quartan fevers both in size and in the number of spores. Whilst the quartan body quite fills the corpuscle and the tertian fully developed body exceeds the red corpuscle, in these fevers it does not more than fill one-half of the red corpuscle—a fact which is to be taken in connection with its rapid development.

The Demerara parasite, as is the case in the majority of pernicious cases, forms pigment.

Whilst in all the African cases which I examined I found the kidney epithelium greatly injured and degenerated by the action of the toxin, in these two cases the epithelium was intact. Whether this may have had to do with the duration of the fever or with a diminished force of toxicity must at present remain undecided, but the fact is worth bearing in mind.



DESCRIPTION OF THE FIGURES.

All the figures are prepared from camera drawings, and are strictly to scale, the magnification being 2,000 diameters. The spores represent the bodies that take on deep colouring by various aniline stains, and probably represent the nucleolar element of the spore, the protoplasm surrounding each spore being probably unstained.

Fig. 1.—A red corpuscle attacked by one spore.

Fig. 2.—A red corpuscle attacked by two spores.

Fig. 3.—A red corpuscle containing two sporulating bodies: (*a*) Four spores with pigment; (*b*) three spores without pigment.

Fig. 4.—A red corpuscle containing a sporulating body with nine spores, with central pigment. (*c*) Sporulating body.

Fig. 5.—A red corpuscle containing a sporulating body, with (*d*) twelve spores and central pigment.

In connection with these figures it must be borne in mind that the action of the alcohol in hardening has had a shrinking effect. The size in the drawings of the spores and sporulating bodies and red corpuscles is exact.

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MALARIAL AFFECTIONS OF THE EYE.

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TEXTBOOKS on diseases of the eye as a rule dismiss the subject of malarial eye affections in a few words; in fact, I am only aware of one[1] in which anything like an adequate summary of the state of present knowledge of this important class of diseases is given. When we consider the large amount of space often devoted in these works to diseases and congenital defects of excessive rarity to the curiosities of ophthalmology, so to speak—the absence of detailed reference to malaria becomes astounding.

Most medical men in practice in the tropics are familiar with a distinctively malarial class of eye diseases, with characteristic symptoms, characteristic ophthalmoscopic signs, and, above all, characteristic pathology; and few writers on tropical diseases omit more or less detailed allusions to the subject.

Malarial eye lesions all originate in circulatory troubles, and may be conveniently classified under the following heads: 1. Neuritis; 2. Retinal hæmorrhages; 3. Retino-choroiditis; 4. Effusions into the vitreous.

I.—MALARIAL NEURITIS.

From one of my Hong Kong casebooks I take the following brief notes of a typical case of malarial neuritis.

Private A. F., admitted to hospital complaining of supraorbital pains, dimness of vision, and photophobia. During preceding 12 months he had been in hospital seven times with malarial fever; no attack of exceptional severity; he is thin, anæmic, spleen slightly enlarged; temperature normal, urine normal. Vision $\frac{6}{60}$ each eye; fields normal; colour perception unimpaired; disc raised, reddish-grey, margins blurred; rest of visible fundus normal save for a slight haze. He was placed on light nutritious diet—chicken, fish, beef-tea—and given quinine. A week later the visual acuity had improved to $\frac{6}{18}$, but reverted after three days to $\frac{6}{36}$, and varied between that and $\frac{6}{24}$ for some time. Five weeks after admission it suddenly became $\frac{6}{12}$, at which it remained. The supraorbital pain and photophobia ceased a fortnight after admission. After seven weeks in hospital he was sent to the sanitarium on the "Peak," and from thence invalided to England a month later with "malarial cachexia." Examined again before leaving: V. A. $\frac{6}{12}$, fields normal, with the exception of a very slight contraction on the nasal side; colour perception normal; fundus normal, with the exception of a slight greyness of the temporal half of optic disc. Signs and symptoms binocular throughout. No history of syphilis.

I have selected the above case as embodying most of the characteristics of the disease. (1) It will be seen that the patient had suffered from repeated attacks of malarial fever. (2) In the commencement supraorbital pain and photophobia are almost constantly present: night-blindness frequently. (3) Colour-perception remains unimpaired, except in the rare case ending in complete atrophy. (4) The variations in the visual acuity in the course of the malady form the most characteristic symptom and distinguish malarial neuritis from all other forms. A diminution of the V. A. to $\frac{1}{10}$th can rise in two or three weeks to $\frac{1}{2}$ or $\frac{2}{3}$, falling again perhaps in two or three days. (5) Fields intact or only slightly contracted. (6) The fundus changes visible with the ophthalmoscope include swelling of the papilla, which assumes a greyish-red colour, œdema of the circumpapillary retina, with effacement of the papillary margins, and enlarged and tortuous veins. The peculiar coloration of the papilla—*teinte rouge-grisâtre*—due to parasites in its capillaries is pathognomonic. In about a third of the cases tiny peripheral retinal hæmorrhages are also found. (7) About 80 per cent. of cases terminate in a partial atrophy, indicated by varying diminution of visual acuity, irregular contraction of the field, and slight greyness of the disc; many end in apparently complete recovery; some rare cases go on to complete atrophy.

Pathology and Morbid Anatomy.—For our knowledge of this branch of the subject we are mainly, if not entirely, indebted to Poncet,[2] who shows conclusively that the changes in the disc and retina in this disease are due primarily to melanæmia with increased vascularisation, the subsequent atrophy or partial atrophy being explained by consecutive endarteritis of the vessels. The affection is always binocular, although it does not usually begin in both eyes at the same time.

II.—RETINAL HÆMORRHAGES.

Two varieties of retinal apoplexy are found in association with malaria:

1. *Minute Peripheral.*—Minute hæmorrhages in the ciliary zone of the retina are frequent in acute attacks of fever; they are often so very minute and so far forward as to be easily overlooked. Poncet found them in all cases of death from malaria. They may accompany or follow neuritis,[3] but often form the only apparent lesion of the fundus. It seems probable that many of the transient disturbances of vision so commonly seen in malarial fevers are due to slight œdema of the retina, followed by these tiny hæmorrhages.

2. *Large Peri-papillary and Macular.*—The large peri-papillary and macular hæmorrhages are much less frequent, and, like the neuritis which they sometimes accompany, are usually seen only in malarial cachectics. These are of much

graver import, always causing some impairment of vision, and occasionally even absolute loss. I believe many of the cases of "sudden and persistent amaurosis" described by writers on malaria to be due to macular hæmorrhages. In a case of malarial cachexia invalided from the Indian Frontier, which I recently saw at Netley by the courtesy of the Director-General, Army Medical Staff, there were several hæmorrhages arranged in a curiously symmetrical manner along the inferior temporal vessels in both eyes: V.A. in right = $\frac{6}{12}$, in L. = $\frac{6}{9}$; urine normal. Microscopic examination shows these retinal apoplexies in malaria to be due to infarcts of parasites followed by extravasations.

III.—Retino-Choroiditis.

In about 20 per cent. of acute intermittents, generally towards the end of the hot stage, patients complain of supra-orbital pains, tenderness on pressing the eyeballs, photopsies, and photophobia. Examination then discloses a general hyperæmia of the fundus, mainly venous; red, slightly swollen papilla, surrounded by a grey veil; and general haziness of the retina, which appears to have an undulating surface—"dunes" with intervening depressions.

This œdematous state of the ocular membranes—the first stages of malarial retino-choroiditis—general subsides without leaving any appreciable trace.

I have been able to watch the progress of such a case in a man—a discharged soldier who had suffered much from malaria in Burmah—who has been attending Moorfields for the last twelve months; the fundus is now of an almost uniformly grey colour, as though powdered over with pepper, the disc is pale, and the arteries reduced to fine threads; the distribution of the choroidal vessels is mapped out with extraordinary clearness, the vessels seem almost white, with a central red streak; pigment layer of retina and choriocapillaris atrophied; vision $\frac{6}{6}$ in one eye, $\frac{6}{9}$ in the other; some myopic astigmatism, but the correcting glasses only improve to $\frac{6}{6}$ and $\frac{6}{12}$: fields irregularly contracted. When first seen he had only general haziness, and loss of lustre of retina, with V — $\frac{6}{12}$ in each eye, with correction. The subsequent capillary atrophy of the choroid, and partial atrophy of the optic nerve is due chronic inflammation of the choroidal and retinal vessels, set up by the irritation of the plasmodia, ending in atrophic changes.

IV.—Effusions into Vitreous.

White Infiltration of Vitreous.—This rare and curious affection was first described by Seely,[4] and consists in an infiltration of the vitreous, forming in stages, causing almost complete loss of vision for a time, and giving a characteristic white reflex with reflected light. Seely attributes it to a serous infiltration due to chronic paludism. In his two cases the progress of the disease was oscillating for several months; eventually the visual acuity became normal under prolonged quinine; in one case mobile opacities persisted.

Obscure Affection.

It remains only to enumerate some of the rare or obscure affections mentioned by writers on malaria.

Sudden and Persistent Amaurosis without Visible Fundus Change.—Well-authenticated instances of this are on record. They can only be attributed to some obscure focal brain lesion.

Periodic Amaurosis.—See remarks on œdema of retina and retinal hæmorrhages. Possibly also due to quinine.

Sudden Amaurosis ending in Atrophy.—Possibly due to hæmorrhage into the sheath of the optic nerve; occasionally cases of quinine amaurosis.

Persistent Central Scotoma.[5]—I have never seen a case that was not due to macular hæmorrhage.

Periodical Blue Vision.—Baas[6] describes a case of malarial fever in which this curious symptom was present. I am unable even to conjecture an explanation.

The treatment of malarial eye troubles is the treatment of malaria; most essential of all is the early removal of such cases to a non-malarious country. A prolonged course of iodide of potassium is generally of benefit in hastening the absorption of vitreous opacities.

Heurteloup's artificial leech to the temples, protection from light, blisters, are useful in relieving local symptoms.

Quinine Amaurosis.

Slight degrees of quinine amaurosis, are amongst the familiar experiences of all practitioners in malarious countries. A certain amount of amblyopia is almost invariably present in cases of cinchonism synchronous with the aural symptoms, and due to spasmodic contraction of the arteries. In very susceptible individuals this may amount to absolute blindness, persisting for hours and even days. In severe cases varying amounts of concentric contraction of the field remain, central vision, colour, and light senses being as a rule unaffected. In slight degrees of quinine amaurosis the ophthalmoscopic appearances are normal; in severe cases, with persistently-contracted fields, pallor of the disc and thready vessels are found.

Treatment.—The stoppage of quinine with tonics and nitroglycerine generally leads to ultimate cure. I need hardly add that in treating ocular affections in malarials the possibility of the symptoms being produced by quinine should never be overlooked.

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EPIDEMIC CEREBRO-SPINAL FEVER IN INDIA.

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[Abstract.]

Though cerebro-spinal fever has no claim to be considered as a strict tropical disease, yet the fact of its existence in tropical countries—for example, India, is not as well known as it should be. Having recently had the opportunity of seeing four cases of this disease, and having, as I believe, been able to demonstrate the existence of the diplococcus intracellularis of Weichselbaum in the pus cells taken from the spinal membranes of one fatal case, I think it worth while to record the same, and give a brief account of this disease as it has been met with in India, the more especially as the publication of Councilman's exhaustive and valuable report on the recent Boston epidemic has again attracted attention to the disease.

I have recently seen 3 cases in the Central Gaol, Buxar, and 1 case in the Central Gaol at Midnapur; the notes of 3 cases are given, those of the fourth non-fatal case having been mislaid.

Case I.—Prisoner Kanoo, aged 21, admitted to Gaol Hospital, Buxar, on April 6th, 1898, from Ward 19, with high fever (103° F.), pain in neck and back, constipation, severe headache, and redness of eyes. Pulse on second day was noted as "slow and regular," with a temperature of 102° F. On another occasion pulse 66, with 102.4 F., pupils normal, no paralysis. Later on marked retraction of the head, and slight strabismus left eye; bowels generally moved once daily. Towards the end diarrhœa. Abdomen noted as rigid. Pulse varied. Temperature, taken mostly four times daily, ranged from 101° to 104° F. Delirium set in fifth day, then coma, alternated with partial or complete consciousness. Died on twenty-second day of illness at 3 A.M. Retention of urine during last three days.

Post-mortem Examination (after five hours).—Sinuses full of dark fluid blood. A large amount of yellow purulent exudation over membranes of both brain and spinal cord. Turbid fluid in the lateral ventricles. Old dysenteric ulceration in the lower portion of the large intestine.

Case II.—Prisoner Mukwa, aged 24, admitted to Gaol Hospital, Buxar, on April 17th, 1898, from Ward 20. Fever 100° F., great restlessness. Is quite unconscious. The attack came on very suddenly without any premonitory symptoms, patient having been at work the evening before. Had clonic convulsions of arms and legs shortly after admission to the hospital ward. Constipation, retention of urine. When conscious skin was hyperæsthetic; great pain in head and nape of neck; no hepatic nor splenic enlargement; eyes and pupils normal. On the sixth night the temperature fell to normal, and patient asked for food, which he ate (sago and milk). He remained certainly free from fever till the ninth day, when the temperature rose to 100.2°, falling again to normal before evening. After this it remained certainly normal for four and a half days, during which period his condition improved, and he was thought to be convalescent, but on fourteenth night temperature rose again, the pain, semi-unconsciousness, and delirium returned. The pyrexia continued remittent or intermittent till the thirty-seventh day, when he died, with the thermometer marking 103° F. The pain in the head and neck are noted as "unbearable." Perspirations were noted three or four times, but not in connection with any remission of the fever. Retention of urine throughout the case: urine: specific gravity 1015; no sugar, no albumen. The pulse bore no regular relation to the temperature. During the last few days he lay in a curved position on one side, generally

the right. He died on the thirty-seventh day of illness and twenty-third of the relapse.

Post-mortem Examination (two hours after).—Yellowish white exudation over the membranes of the brain and spinal cord. A large collection of pus at the base of the brain. No bone disease, no ear disease; other organs normal.

CASE III.—In Midnapur Central Gaol, Prisoner Luchman, pariah, aged 25. Previous health bad (spleen), but had improved since arrival in gaol two months previously. Came to hospital complaining of fever (101.2° F.) and pain in head and neck. Was suddenly attacked while at work under cover in a weaving shed. No cough, no sputum, spleen much enlarged. Had severe convulsions on second day, and died on morning of third day in hospital after having a second (or possibly third) convulsive attack. No eye symptoms. Patient was unconscious nearly whole time in hospital.

Post-mortem Examination (within one hour).—The spinal cord and brain membranes were covered with thin yellow lymph. The brain substance was intensely congested. The lungs were also affected. Right lung full of red blood, but in centre of left lung was a mass of hepatised tissue (size of an orange) distinctly marked off by its deep red colour and solidity from the surrounding tissues. Other organs normal, except the old malarial spleen.

Bacteriological Examination.—I at once prepared slides of the purulent matter from brain and spinal membranes, staining with a watery solution of gentian violet: six slides were prepared. In all I found a diplococcus within the pus cells answering in all particulars to that of the diplococcus intracellularis of Weischelbaum. In some slides only a few were present, but in others they were abundantly seen. No tetrads were seen. I also inoculated three agar-agar tubes with some thin fluid from spinal canal, but they all failed to show any growth except one, which, on twelfth day, showed numerous small white colonies all over the surface. These I tried to inoculate on another agar tube, but they failed to grow. Agar-agar I find is inferior to blood serum for the cultivation of this diplococcus, and often fails. On another occasion I will try lumbar puncture.

HISTORY OF CEREBRO-SPINAL FEVER IN INDIA.

This must next be sketched as far as available records permit. The most complete accounts of this disease in India are to be found in Surgeon-Lieutenant-Colonel Moorhead's paper in the *Transactions of the First Indian Medical Congress*, 1894,[1] and in the Official Report[2] to Government of the Committee appointed in 1885. The disease has chiefly been noted in the large central gaols of Bengal, and under the strict conditions of gaol life such cases cannot well be overlooked, and their early and previous medical history is usually obtainable; moreover, except in gaols, *post-mortem* examinations are difficult to obtain in India. Next to the gaols we find the disease most commonly recorded in emigrant ships trading with the West Indies and in emigration Coolie depôts in Calcutta. Up to the present year cases are constantly recorded in such ships and depôts. Occasionally we hear of a case in private practice, but a very few have been recorded.

SYMPTOMS.

Vomiting is met with frequently in 60 per cent. of Councilman's cases. Delirium is common. Pain of a severe character occurs in head, neck, back, and joints. Retraction of the neck or stiffness is usual. Coma is frequent. Skin eruptions are rare, petechiæ and herpes being the commoner forms. No specially-marked abnormalities affect the organ of sense, the joints, the blood, or the bowels. Pericarditis seems more prevalent in the Indian cases than in those related by Councilman, of Boston, U.S.A.

The condition of the lungs in cerebro-spinal fever is of the utmost importance, both from a clinical and etiological point of view. In 2 fatal cases I have recently seen the lungs were quite normal. In another affected (*vide* above). Moorhead gives details of the lungs in his 12 fatal cases. In two fatal cases (which lasted over 20 days) the lungs were intensely bloodless. In 5 nothing abnormal was detected; in 5 there were distinct morbid changes. In 1 the whole right lung was hepatised, and the left lung intensely congested. In a second the same condition, with recent pleurisy. In a third case there was recent pleural lymph, and a part of one lung hepatised. In the fifth the left lung only was congested. In the Boston cases congestion was found in 13, in 7 broncho-pneumonia, in only 2 croupous pneumonia with fibrinous pleurisy (pneumococci were found). In 8 cases pneumonia due to the diplococcus was found. It is said that the characteristic diplococcus pneumoniæ consists of small foci of consolidation and necrosis in various parts of the lungs, but especially in the lower lobe and under the pleura. In some cases these areas coalesced so as to resemble croupous pneumonia. "Lung complications due to the diplococcus may take place at any period of the disease."

Spleen.—Not often or much affected. In one of Moorhead's cases the enlargement was known to have been of (previous) malarial origin (see Case 3, *supra*).

ETIOLOGY.

A review of the history of the disease shows many guesses and suppositions, but little definite fact. The attempt to connect the disease with overcrowding and with bad ventilation altogether failed in Calcutta. Hot and cold weather have little influence. Food grains have been suspected by the late Sir W. B. Richardson, but no evidence has ever been produced. The rice used in Alipur Gaol was certified as free from any disease by Dr. D. D. Cunningham. One fact stands out clear in the history of the disease in every country, namely, the tendency to attack bodies of men, whether collected in regiments, gaols, coolie depôts, or emigrant ships. It is, however, probable that this is partly because of the care and attention bestowed on the diagnosis and registration of disease among such bodies of men.

The disease never becomes epidemic in the sense that cholera or plague are epidemic. A few isolated cases or a series of two or three cases at a time in any particular place is the usual history. Connection can seldom be traced from one case to another. The disease in Bengal gaols has always been treated as if contagious, but no evidence pointing to infection is forthcoming. Its persistence in Alipur Gaol for ten successive years is very remarkable. In considering the question of contagion, if we admit it to be a specific febrile disease it is of necessity in some way communicable, but with the organism shut up as it were in the closed cavity of the brain and spinal cord, it could not well escape except by the lungs or nose, and as the diplococcus has been found both in the nose and lungs, it is not improbable that it is by no means of cases in which these organs are affected that the spread of the disease takes place. This point, at least, is worth paying attention to it in future outbreaks.

Two diseases, cerebo-spinal fever and Malta fever, have thus been rescued from the *cloaca maxima* of the remittents as seen in tropical countries. That yet another as yet undifferentiated fever of a continuous type exists is my firm belief, but, so far, the evidence in favour of this view is too indefinite to do more than allude to the belief here. That the disease here called cerebro-spinal fever (as in *Nomenclature of Disease*) is identical with the epidemic cerebro-spinal meningitis of Continental and American writers will be clear from the above account.

DIAGNOSIS.

The diagnosis of isolated sporadic cases will always be doubtful without bacteriological examination. The other forms of meningitis are: (1) Pneumococcic, due to pneumococcus, and met with rarely in acute croupous pneumonia cases; (2) Streptococcic, due to septic ear disease, erysipelas, etc.; (3) Tuberculous, so common in children; (4) Due to any other infective agency, for example, anthrax.

REFERENCES.

[1] Thacker, Spink and Co., Calcutta, 1894. [2] Report dated April 22nd, 1886, Calcutta.

ON BERI-BERI OCCURRING IN TEMPERATE CLIMATES.

By CONOLLY NORMAN, F.R.C.P.I.,

Medical Superintendent, Richmond Asylum, Dublin.

Distribution of Beri-beri in the Tropics.—Of the many puzzling questions connected with the disease now commonly known as beri-beri, not the least difficult is the question of its distribution. This difficulty is not confined to countries where it is new.

Ceylon.—There seems to be no doubt that it was formerly one of the most prevalent and destructive diseases in Ceylon. It is now though not unknown comparatively rare in that country.

China. In China, where in early times it was one of the most frequent diseases, it has in recent years declined to such a degree that Scheube was able to affirm that it appears now to have almost died out. That such is not the case we know through the labours of Manson; but, still, there has evidently been a remarkable ebb in the disease in that country.

Japan. On the other hand, it would appear to be increasing in Japan. According to Japanese writers it was almost confined to the chief towns Tokio and Kioto at the beginning of

the current century. Since then it has spread not only to the other great towns and seaports, but to the interior of the country, and to comparatively high levels. According to Grimm beri-beri has made remarkable strides since 1880 in the northernmost island of the group, Yezo. On the other hand, the southernmost island, Kiushiu, now presents the fewest cases and of the most favourable type.

Brazil.—The history of Brazil with regard to beri-beri is most remarkable. Almost simultaneously with the Batavian observer, Bontius, who, writing in 1642, was the first European to describe beri-beri, Piso in 1648 described an evidently identical affection as among the common chronic diseases of that country. Though attention was drawn early in the present century to the fact that a disease locally known as "airs" was probably beri-beri, the physicians of Brazil seem to have given little thought to the matter until Da Silva Lima recognised beri-beri in the epidemic of 1863. If the disease existed in the interval between Piso and Da Silva Lima in anything resembling the type which prevailed between 1863 and 1866, when the mortality among those attacked was 74.5 per cent., it is impossible to think that the affection can have been overlooked. So that we are led to believe that, if it did not wholly die out, it only existed in a mild form and to no great numerical extent.

No plausible explanation of this ebb and flow in the prevalence of this disease has ever been offered as far as I am aware.

New Epidemics.—Within recent years beri-beri is supposed to have appeared for the first time in Manila (in 1882), in Penang, in New Caledonia, and in the Fiji Islands. Besides spontaneous outbreaks, Fiji is liable to the importation of beri-beri through Hindu and Japanese coolies. Beri-beri has been frequently observed of late years in Australia (New South Wales), but I understand chiefly, if not altogether, among sailors and Chinese labourers. Under similar conditions it is reported from New Zealand. It has occurred of recent years in Natal. My friend, Dr. Hyslop, of the Pietermaritzburg Asylum, informs me that it is not infrequent in that town, and prevails not only among coolie labourers, but also among European settlers. It has been generally observed to occur chiefly on the coast in various countries or along the course of great rivers. On the other hand it has prevailed in Central India, in Assam, in Paraguay, and in the great central province of Brazil known as Matto Grosso. Some allowance must also be made for the fact that in many parts of the East only the coasts are known to European observers.

On the whole, though Japan and the Malayan Archipelago may be described as the headquarters of the disease, it is nevertheless found in very many tropical and subtropical countries, and in several of these it seems to be now spreading.

Beri-beri in Cold and Temperate Climates.—In temperate climates European and American observers have until 1894 chiefly observed beri-beri in Lascar sailors, or in Europeans who have just returned from some tropical station where it prevails. Manson has recorded cases which appeared for the first time in the Port of London, developing among Asiatic crews of vessels that had been lying up there for several months; and a very interesting account has been given by Dr. J. S. Jameson of an outbreak of beri-beri among the Lascar crew of an outward bound vessel running from Liverpool to Rangoon. The disease appeared a day or two after leaving port.

It may be held that small isolated epidemics of this kind are not inconsistent with the generally received idea of beri-beri as a tropical disease. But there are reasons for thinking that the limitation implied in the term "tropical disease" is not properly applicable to beri-beri. In the East, according to Manson, beri-beri has been observed as far north as Saghalien. That island lies between degrees 46 N. and 54 N., ranging roughly parallel with England as far north as Leeds, and France as far south as Lyons, but its winter temperature is arctic, and its mean annual temperature is about that of the northern extremity of the Scandinavian peninsula. Grimm, in his *Clinical Observations on Beri-Beri* (Berlin, 1897) combats the idea that this disease is a tropical one. His statements are very direct. He says, "We have repeatedly opposed the notion of the geographical limitations of beri-beri, and we are not now prepared to recede from our opinion—namely, that it is as little a tropical disease as leprosy. Our own observations, and those of others, have established that it appears in many thousands of cases in Yezo, the most northern of the great islands of Japan, with a thoroughly temperate climate, and a cold winter lasting for six or seven months." He speaks also of the outbreak of the epidemics which he has there observed in severe winters, when there was deep snow and a temperature as low as 15° below zero (Centigrade). Again, in the west, an affection apparently identical with beri-beri, has been observed in an epidemic form among the New England fishermen off the Newfoundland coast, as Putnam has recorded.

An epidemic of scorbutus has been described, which occurred among the French troops round Paris during the siege, and which in some cases was accompanied by symptoms resembling beri-beri. The consensus of French opinion, however, appears to have been that these cases were not true beri-beri. I may venture to say that from the descriptions given I am inclined to adopt this view.

Epidemics identified as beri-beri occurred at the Richmond Asylum, Dublin, in the summer of the year 1894, and again in 1896, and again in 1897; at the Suffolk County Asylum, Melton, Suffolk, in the winter of 1894-5, and in 1896-7; at the Alabama State Asylum, Tuscaloosa, Alabama, U.S.A., in 1895, and in 1896; and at the Arkansas State Asylum, Little Rock, Arkansas, U.S.A., in 1895. The association of these epidemics in time and by the nature of the institutions in which they broke out, is very singular. The earliest and the most serious was that occurring in Dublin in 1894.

Besides these, two cases of a form of peripheral neuritis, strongly resembling beri-beri (though not so called) have been reported by Orthmann as having occurred among nurses in the Grafenburg Asylum in North Germany in 1897,[1] and Tippel mentions similar cases from the well-known asylum at Alt Scherbitz, near Leipzig. These cases were all suspected to be due to malaria, and those occurring at Alt Scherbitz were associated with disturbance of the soil for the purpose of laying foundations for new buildings.

General Description of the Epidemics which occurred at the Richmond Asylum, Dublin.—In order to enable my hearers to discuss the nature of the disease which appeared among my patients in Dublin, I shall briefly describe its phenomena. The first condition observed was usually œdema occurring over the front of the tibia. The insane do not complain as other men do, but tenderness on deep pressure was generally early noticeable. A certain amount of superficial anæsthesia could be usually made out. Those who could and did explain their feelings generally at this stage complained of cramps in the calf muscles, and also of a greater or less degree of painful formication or a distressing sense of numbness. Always in some stage of the ailment, and usually, from the very first, cardiac disturbance made itself evident. Dealing, as often happened, with large numbers of occurring cases, we based our diagnosis roughly on this combination: (1) Œdema of the shins, without albuminuria; (2) tachycardia and cardiac irregularity; (3) pains in the legs; (4) anæsthesia of the integuments of the legs. Of these it was somewhat difficult, owing to the mental condition of our people, to estimate the degree of pain, etc., and often impossible to be sure of the existence of anæsthesia.

The cardiac conditions were somewhat variable. The most constant was extraordinary irritability, very slight exertion causing an alarming acceleration of pace; tachycardia, irrespective of exertion, was general; there was frequently a singular condition which I call unconformability of heart and pulse; thus the heart was bounding with a seemingly strong impulse and the pulse extremely feeble; spontaneous variations in the rhythm of the heart sounds occurred; bounding action with visible heaving of the chest was not uncommon; the area of cardiac dulness was commonly increased, especially to the right; this increase often appeared with extreme suddenness; in some cases tic-tac sounds replaced the normal order, particularly when the heart was accelerated after slight exertion; the second pulmonary sound was usually accentuated at the apex; reduplications were frequent, generally of the second sound at apex producing a sort of triple sound, occasionally also of the first; occasionally *bruits* were audible of a variable and inconstant character, the most common a soft blowing murmur over pulmonary area, less frequently

a *bruit* with first sound at apex sometimes only appearing after exertion. Præcordial weight and anxiety were not rare even in mild cases. Similarly, breathing was usually quickened with oppression. Sense of weight in the stomach region was often complained of. Vomiting occurred in about 5 per cent. of all cases. In the first epidemic it generally ushered in a fatal termination; in the later it did not seem to have this significance. A few cases were preceded by vomiting and sometimes diarrhœa, but this concurrence was rare. Loss or impairment of voice occasionally occurred. Sometimes even in favourable cases there was an inability to cough deeply or to sneeze. The respiration was often thoracic, apparently from feeble action of the diaphragm.

Motor Symptoms.—The first and most remarkable was loss of power in the peroneal muscles and the flexors of the foot; as a result there was almost invariably a tendency to drop and invert the foot. In advancing cases all the leg muscles became affected. The engagement of the gait was very various; most patients walked slowly and swayingly, some attributing this condition, perhaps correctly, to mere pain, others complaining of "weakness in the legs," which rendered them unable to use them freely. Occasionally the patient's gait was to all appearance perfectly normal.

A very common condition which seemed to give the most characteristic gait was a tendency to raise the feet very high in order to enable the dropped and powerless toes to clear the ground; the foot was then flopped heavily on to the ground, something after the manner of a tabetic patient, and as the patient leaned upon the foot he swayed backwards and forwards unsteadily. This condition, which was very well marked in a number of patients, is, I think, identical with that which occurs in the very common condition of pressure interference with the sciatic, which we know as the leg "going to sleep." It was occasionally mixed with and obscured by other symptoms. Thus, one patient, whose photograph is submitted, lifted and planted one foot just in the way described, while he added on the other side a slight tendency to drag the foot laterally like a hemiplegic.

In a small number of cases the muscles of the forearm and arm were tender and the power of extension was impaired; the grasp was often feeble (dynamometer). Actual drop-wrist occurred in less than 1 per cent. of all our cases, and was only extreme in one case.

The extensors of the thigh were often paralysed. Many patients when sitting on the floor could not get up without help. One or two who were restless used to progress along the floor by sitting on the buttocks and helping themselves along by the hands. Several used to help themselves into bed in this way, and when they had got their hips on the bed used to swing themselves round so as to get their lower extremities into bed without any movement of the muscles of the thigh. Patients who were getting ill of this condition, or who were convalescing again, were often noticed to be unable to stoop without collapsing. They could stand quite straight, but as soon as the knee was bent they sank down through impairment of the quadriceps. A general muscular feebleness with unwillingness for exertion of any kind was common. The calf, and occasionally other muscles, often presented in the earlier stages a hard feeling. This was sometimes limited to peculiar longitudinal masses, especially on the outer head of the gastrocnemius. Later on in atrophic cases the muscles became of course not only small, but soft.

In one case unilateral paralysis of the third nerve occurred, ptosis, dilatation of the pupil, and external strabismus.

Tendency to contractures in the paralysed lower extremities appeared in about half a dozen cases, and was sometimes difficult to deal with owing to the patient's mental state. However, only two patients have remained crippled from this condition. A very interesting, constant, and well-marked condition was extreme relaxation of the joints, especially knee and ankle, due no doubt in part to muscular wasting, but also apparently to a relaxed condition of the ligaments.

Sensibility. In the same the first symptom of the disease was often a sense of weariness in the calf muscles; patients complained of weakness and heaviness of the feet; cramps were frequent, and numbness. My head nurse found that she could not feel her soles on her bicycle pedals, nor distinctly her pen in her hand; stabbing, burning, boring pains were present most commonly in the skin of the legs. A very frequent complaint was a sensation like the stinging of nettles. Some patients complained of pains in the soles of their feet; one said he felt as if his feet were plunged in hot lime.

Aching in the muscles was complained of in some cases, and sometimes was very severe. Occasionally there were pains shooting down the limbs. But the most frequent spontaneous complaint was of pain as if insects were creeping over a sore surface (painful formication, the *pirri-pirri* of the Japanese). A nurse suffered agonies from this condition.

Cutaneous anæsthesia was mixed up with various paræsthesiæ. A very common condition was the existence of insensibility to a very gentle touch (the drawing of a pencil lightly over the skin), while firmer pressure on the same area caused pain of a formicating character. We often noticed a phenomenon—as far as I am aware not before described, namely, the existence around each zone of hypoæsthesia (as Scheube calls it) of a zone of very distinct hyperæsthesia. In some cases, sensations of numbness, impaired recognition of objects, distances, etc., were accompanied by pain.

Anæsthetic or hyperæsthetic patches and tracts were found in various cases in many parts of the body, though they were most frequent on the legs, where also they mostly first appeared, but they were found on the thighs, on the trunk, on the upper extremities, on the nucha, and on the face. In two cases isolated patches of anæsthesia were found on the lips. They sometimes lasted for a considerable period, seemed to spread gradually, and to decrease gradually. More frequently they varied a little daily, and often disappeared with curious rapidity. In some cases the painful formication, often associated with anæsthesia, was worst at night. The fugacious and variable nature of the anæsthesia in some cases was often noted, and more than once we have confirmed the curious observation of Scheube that it is sometimes to be found only in the morning, disappearing again in the evening.

The calf muscles were always found tender on deep pressure, save in those whose mental condition precluded the possibility of testing. The superficial nerves were tender, sometimes exceedingly so. This condition was specially observable on the peroneal nerve, pressure on which almost always caused wincing.

At the suggestion of my Dutch friends, Drs. Verschuur and Eysellsteyn, we tested a few cases for anæsthesia of the pharynx, and found it always present. The reflexes, both superficial and deep, were generally exaggerated in any cases which came under observation early. As the case progressed, the knee-jerks usually became diminished, not always equally on both sides, and when there was marked loss of power they were always abolished.

Muscular Atrophy.—In a few cases atrophy appeared when there had been no œdema observed, but generally it was noticed when œdema passed off. In some cases, again, there was slight and fugacious œdema, and some little time later atrophy was observable. I suspect in no case was œdema absent, but in slight cases it did not attract attention, and the earliest condition noticed was loss of power with wasting. However beginning, the atrophy was often very marked, the wasted muscles being soft and flabby. Some of the photographs shown exhibit conditions of very marked wasting in cases also photographed in the dropsical state.

Œdema.—Œdema was, I believe, a constant condition, though in a few cases it was very slight at first or even escaped attention, and the patient appeared to pass directly into the "dry" or atrophic state. In slight cases and in early cases it was most marked along the inner side of the tibia, forming the pear-shaped swelling of Pekelharing. Less constantly the feet and legs generally were swollen. Œdema could usually be detected also over the sacrum, often over the sternum or ribs, over the ulnar border of the forearm, and not infrequently, even in slight cases, the face was puffy. Some cases presented general anasarca, often extreme. Œdema of the lungs was common, and hydropericardium and hydropleura also occurred. The superficial œdema was curiously variable: in some cases pitting was readily produced, in others there was doughy, myxœdematoid condition with much swelling and little pitting. In marked cases the œdema was sometimes noted to shift with posture more readily than is common in other forms of anasarca. It also disappeared in some cases with singular rapidity. Œdema of the fundus oculi was found in some cases by my

friend, Dr. Swanzy, who was so good as to examine some of my patients. There was occasionally slight effusion into the joints, particularly the knee.

Course of the Cases.—Usually the cases began insidiously. In the sane a feeling a weariness in the legs, with occasional cramps, often preceded more definite symptoms for a considerable time. It was generally difficult to obtain evidence of prodromal symptoms among the insane. Sometimes the earlier symptoms were accompanied by a smart rise of temperature, but this soon subsided. Two cases began during convalescence from typhoid, and several patients were attacked after recovery from dysentery. The course of the affection was extremely variable in different cases. Sometimes it was steady, much more often jerky. Quite characteristic were the features observed in other epidemics of beri-beri: sudden changes for the worse in cases which were apparently doing well; extreme frequency of relapse; occasional quite sudden deaths, not infrequently occurring when convalescence had been apparently progressing favourably. The length of an attack was perfectly uncertain: on the whole the severer cases of the first epidemic tended to terminate, either favourably or the reverse, more quickly than the milder cases of the later epidemics. Speaking generally, the cases tended in the early stage to increasing dropsy and increasing loss of power, then the dropsy passed off and marked muscular wasting was apparent, which again gradually became rectified, paralysis and anæsthesia passing off at the same time. Death occurred in a variety of ways. That terrible condition, so often described in connection with beri-beri, known to the Japanese as "shiyo-shin," and apparently dependent upon failure of an overworked and weakened heart, carried off several patients, after longer or shorter periods, often coming on with fulminating rapidity, of extreme suffering (restlessness, vomiting, violent pulsation of heart, dyspnœa, cyanosis, orthopnœa, etc.). Death was often due apparently chiefly to œdema of the lungs. Syncope, apparently due to degeneration of heart muscle (found after death) was not a rare cause of death. Sometimes, as mentioned, this mode of death occurred in a case which had been apparently convalescing. Hydropericardium and hydropleura probably contributed to an unfavourable termination in several cases. In some cases mere general exhaustion seemed to be the immediate cause of death. This occurred particularly among the old and debilitated. Sufferers from beri-beri readily succumbed to other diseases. Paralysis of the respiratory muscles, particularly the diaphragm, alone or in combination with heart failure, sometimes caused death.

Electrical Reactions.—With regard to electrical reactions we are not in a position to add any evidence to the statement of Pekelharing and Winckler that it is possible to make the diagnosis of beri-beri before the advent of œdema by means of electricity, because almost every case which has occurred in the Richmond Asylum has been first brought under our notice by the observation of œdema. In some cases we could not detect any electrical change.

There were many cases where the electrical changes were very small, and in many the electrical changes disappear early in recovery. The heart symptoms may still persist when the electrical changes are no longer to be observed. In this our observations confirm what has been observed by Zwardemaaker and Krafft, that the electrical changes often disappear long before the heart trouble.

There were many cases in which no abnormality was to be observed, but that to galvanic stimulation the contractions were slow and the latent period long, the changes being only of a quantitative nature. For instance, KOC could not be obtained without giving more pain than could be borne.

The cases in which there was marked atrophy of the muscles showed reaction of degeneration. Thus the reaction of nerve to faradism was completely lost, and the reaction of nerve to galvanism was completely lost, while the reaction of muscle to faradism was lost, and the reaction of muscle to galvanism showed polar changes.

No electrical changes were observed in muscle or nerve of the upper extremities. The trapezius was not examined.

Post-mortem Appearances.—It is unnecessary to mention the less essential changes, or those common to many dropsical affections. Nothing distinctive was found in the brain or cord. The peripheral nerves (branches of vagus, phrenic, peronei, etc.) showed parenchymatous degeneration, with, in some cases, a slight degree of interstitial inflammatory change. The heart muscle almost invariably showed fatty changes, sometimes extremely well marked. The muscles of the extremities which had been involved showed granular degeneration.

With regard to the bacteriology of the disease, I am sorry to say our results were on the whole negative. We believed at first that we had succeeded in isolating a coccus resembling that described by Pekelharing; but there are reasons to believe that we were mistaken in this particular, and our results were certainly not constant.

History of the Several Epidemics.—The first epidemic occurred in 1894. The precise period of its outbreak is doubtful. I am sure that at first many mild cases were overlooked and many cases were misunderstood. I may perhaps be pardoned for pointing out that similar mistakes occur among those who first see beri-beri even in its recognised habitats and in a sane population. In the year 1894, the average daily number of patients resident in the asylum was 1,503. During the year 174 cases of beri-beri were registered; of these, 127 were male and 47 female patients. No members of the staff (sane persons) were attacked in 1894. The monthly distribution of the occurring cases showed that they increased, gradually at first and then more rapidly, from June to September, and then decreased rapidly in October, after which month no fresh cases occurred. Eighteen male and seven female patients were registered as dying from this cause. I believe that, for a reason suggested above, all these figures represent a considerable underestimate. Taking the figures as they stand, however, they show that 14.3 per cent. of those attacked died. No fresh cases occurred during the year 1895.

In the year 1896 the daily average number of patients residents was 1,686. Beri-beri reappeared in July, and increased till September. Cases continued to occur until the end of the year. The total number attacked was 114, being 31 male and 76 female patients, with 7 (sane) nurses. Two male and 6 female patients (about 7 per cent. of those attacked) died. None of the nurses died.

In 1897, with an average insane population of 1,800, there occurred 246 cases, 47 male and 199 female. Among these were 2 male attendants and 6 nurses (8 of the sane staff). None of the staff died. The deaths numbered 11, 3 males and 8 females (4.4 per cent. of those attacked). Four cases, which ought properly to be reckoned in the previous epidemic, occurred in January; then none occurred till June, 134 occurred in July, 50 in August, 7 in September, 3 in October, 37 in November, and 6 in December. The three epidemics show a total of 534 recorded cases, with 44 deaths (equal to 8.23 per cent.).

The following remarks must be made: (1) It must not be forgotten that the record for 1894 is an underestimate. (2) The epidemic of 1896 extended into the following year, and would perhaps better be described as beginning in the July of 1896, and ending in the February of 1897. (3) The epidemic of 1894 attacked more males than females, as is usual with beri-beri. This proportion was reversed in the following epidemics.

There were remarkable differences between the three epidemics. In the first there was high mortality, *shiyo-shin* was common, there were a large number of cases of general, well-marked œdema, and motor paralysis was pronounced. In the second mortality was lower, *shiyo-shin* rare, general anasarca, though it occurred, was infrequent, and motor troubles were less marked. In the third the great majority of the cases were of that mild type which Scheube calls rudimentary; general anasarca scarcely occurred; loss of power of walking was very rare; but there was a quite special tendency to the occurrence of painful formication (*pirri-pirri*); yet in each of the later epidemics there were cases—often cases of relapse—which recalled the conditions prevalent in the first. It has often been observed how much various epidemics of beri-beri differ from each other. Mortality appears to range from 2.5 per cent. (Bälz) to 74.5 per cent. (Da Silva Lima). It has often been noted that the first epidemic at any given place is the worst, and that as the disease tends to become endemic it grows milder. Notably this has been observed in the Straits Settlements.

Local Causes.—The etiology of these epidemics remains obscure. There is no reason to believe that the disease was personally imported. It does not appear to have broken out elsewhere in Dublin either before or during its prevalence in the asylum. The Richmond Asylum is the asylum for the insane poor of the city of Dublin and the counties of Wicklow and Louth, and the patients from the city form about three-fifths of the whole. The older part of the buildings, now reserved for women, dates mostly from 1814; the newer part (male asylum) is about forty-five years old. The institution stands on about fifty-nine acres of ground. It is entirely within the city boundary. Portions are closely surrounded by the dense habitations of the poor, and in immediate contiguity with the older part stand a large public hospital, a great workhouse, and a prison. The buildings stand relatively high, at levels varying from 90 to 120 feet above the mean level of the estuary of the river Liffey, on which the city is built. The surface soil is shallow, and consists largely of "made earth." The subsoil is the prevailing boulder clay of the neighbourhood, a clay formed chiefly by trituration of the middle limestone, containing many beautiful specimens of ice-worn boulders, but in the mass tough and impervious.

The hygienic condition of the asylum had been in some respects bad. Consumption was very unduly prevalent. Other zymotic diseases of various forms were rarely absent altogether. Dysentery, once a very prevalent disease in Ireland, little known there for the last forty years, a scourge in the old asylums everywhere, happily rare in modern asylums, seems to have always remained prevalent in the Richmond Asylum. This I attributed to the condition of the sewerage of the buildings, which was in the worst state imaginable, and in consequence of the representations which I made on my appointment as medical superintendent of the institution in the year 1886, an entirely new system of drainage was adopted on good modern principles. Nevertheless, some more or less permanent injury appeared to have been done through saturation of the soil under and round the buildings with sewage, because although the death-rate declined for a time and dysentery became less frequent, the improvements in either respect did not continue.

The institution had been overcrowded since at least 1886. It is difficult to set forth in precise figures the extent of overcrowding which existed, as all kinds of makeshifts were adopted to increase accommodation, but it may be briefly said that the officially-recognised accommodation of the asylum in the beginning of 1894 was 1,100, and this was admittedly an overestimate, the full population for the space contained in the buildings being about 1,000. At the same date the actual population was 1,498. Roughly speaking, the population exceeded the due accommodation in the ratio of 3 to 2. As the insane probably require more room than any other folk, this represents a very deplorable state of things. It may be briefly said that the staff were nearly as much crowded as the patients, and that all the offices (stores, kitchen, laundry, and the like) were faulty in construction and quite insufficient in size, so that workers there were crowded and huddled together in a very insanitary way.

Through large portions of the institution the arrangements for ventilation were very imperfect, the window frames being made of iron and only opening a very little way.

The floors were largely so defective that it was impossible to wax and polish them as is usual in most asylums nowadays, and they were consequently often damp from constant washing in our humid climate.

Administrative reasons necessitating the treatment of certain classes—the sick and the epileptic for example—in separate wards, these wards, originally badly enough constructed, became overcrowded to a degree disproportionate to the rest of the buildings.

The water supply is the common supply of Dublin city, and is good and abundant. It is not spoiled by being stored in tanks, and it has often been tested as drawn from the taps, and has been found to be of the best quality.

With reference to diet, there is nothing to suggest a dietetic cause. In the first place, the inmates of the asylum get no food which is not in common use in the city of Dublin generally. Again, the dietary which was always a little ahead of that given in many Irish asylums and had been improved of late years, was in 1894 good and sufficient. Each patient received as ordinary diet ½lb. bread and 1 pint of tea for breakfast and the same amount of bread with cocoa for supper. Dinner consisted of 8 oz. for men and 7 oz. for women of cooked fresh beef five days in the week, the same amount of bacon on one day in the week. The supply of vegetables was abundant, being computed at 1lb. of potatoes daily and 1lb. of other vegetables, cabbage, etc. Rice was little used, practically only as a medical extra. The decorticated variety which is that commonly sold in the city of Dublin was the kind in use. One change had occurred in the beginning of the year 1894. Half a pound of dried ling for each patient had been added to the dinner for Friday (heretofore merely bread and coffee). Dried ling, probably coming from Newfoundland, where beri-beri is perhaps endemic, might be suspected, but the bulk of the working people in Dublin use just the same fish for their Friday dinner. Besides, by an odd chance it happened that for certain administrative reasons it was impossible to give a fish dinner at that time in the epileptic wards and proportionately more cases occurred in the 1894 epidemic in the epileptic wards than anywhere else.[2] Finally, towards the close of 1894, fresh native fish was substituted for imported ling, and this fresh fish has been continued since; nevertheless beri-beri after being absent for a year broke out again in 1896 and returned again in 1897.

On the whole, the history of these various recent epidemics suggests the possibility that beri-beri may for some reason be spreading, or may exist in hitherto unsuspected localities. There is apparently some condition in asylums that is favourable to the appearance or spread of the disease. Its appearance in so many different institutions of the same kind so far apart suggests this, but at the same time is against any dietetic theory of origin. In Little Rock and at Tuscaloosa malaria was, perhaps somewhat vaguely, suggested as a cause. Bad hygienic conditions, antecedent overcrowding and prevalence of dysentery, pre-existed in the Suffolk Asylum, and were also present in the Dublin Asylum. Though I incline to attribute great importance to these factors in the actual development of the disease, no modern physician will probably recognise that they are in themselves sufficient to produce it. In view of the recent revival of the views connecting beri-beri with rice, the negative evidence of these asylum epidemics is perhaps of some value.

REFERENCE AND NOTE.

[1] *Alg. Zeit. f. Psych.*, Bd. LV, H. 1. [2] Dr. Bondurant in his account of the epidemic at Tuscaloosa has drawn attention to the special liability of epileptics to attacks of beri-beri.

Dr. W. OSLER (Baltimore) said that beri-beri in the United States was limited to a few cases imported from the West Indies, and to the fisher-folk about Cape Cod. Dr. Birge, of Provincetown, Mass., told him a few months ago that cases still occurred, but that there had been no widespread epidemic. The suggestion of the President that many outbreaks in institutions were overlooked seemed unlikely in a disease so marked and peculiar.

TREATMENT OF ACUTE DYSENTERY BY LARGE ENEMATA.

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Dysentery in Egypt.—Dysentery used to be one of the chief diseases of Egypt, both among natives and Europeans. Griesinger (in 1851) found 186 cases among 363 necropsies in Cairo, of which he called 96 primary or idiopathic and 90 secondary.[1] Many old inhabitants of Egypt have told me that so lately as thirty years ago dysentery was one of the chief troubles which affected the English residents. This scourge is now happily quite rare among them. As regards natives, I have had in the two years 1896-97 29 cases admitted into my wards—namely, 10 acute, of which 4 died, and 19 chronic, of whom 3 died.

Failure of Ipecacuanha.—Like everyone else brought up on English textbooks, I originally employed ipecacuanha by the mouth as the specific treatment for all cases. I was often disappointed with the result, and I am now glad to see an increasing number of complaints against it as a stock remedy, even when used in the desemetinised form. Among recent

writers are Dr. Wyatt Smith,[2] Dr. Attygalle, of Colombo,[3] and Captain Buchanan, now at Midnapore.[4]

Magnesium Sulphate.—In 1885 I learned to discard ipecacuanha almost entirely for magnesium sulphate in doses of 5j every hour until the bowels were well emptied. This method of Bartholow's, followed by the administration of bismuth, I have found much more useful than ipecacuanha, and several of my old students have told me that their experience agrees with mine.

Enemata.—Lately I have trusted a great deal to enemata, on the grounds that the disease is at its onset local, and should be attacked by local remedies, and also that we now know that the amœbæ can be destroyed by antiseptic solutions such as quinine, 1 in 5,000 (Lösch). I used to employ nitrate of silver, but now prefer sulphate of copper. I will now quote very briefly notes of the only four cases which I have had under treatment during the first half of 1898. I must first state that all cases were treated in the usual way as regards rigid rest in bed, with compulsory use of the bedpan, and that the abdomen was swathed in cotton wool and flannel belt. The anus was kept clean, and a cocaine suppository was used when the enema caused pain. The food was chiefly rice water, boiled milk, lime water, and soda water with brandy in small doses if necessary.

Case I.—A. S., an Egyptian, aged 50, was suddenly taken ill on January 23rd, with abdominal pain, colic, giddiness, rigors, and ten motions in the twenty-four hours. After a week he had thirty bloody motions a day, with mucus, tenesmus, albuminuria, fever, dry tongue, thirst, and loss of sleep. He refused to come into the hospital on February 25th, and was given drugs as an out-patient. On March 17th he came a second time in a dangerous state of exhaustion, and stated he had had severe dysentery ever since the original attack fifty-three days before. This time he was willing to submit to any treatment. On admission he had fifteen motions a day, blood, mucus, tenesmus, great pain in abdomen, and dry coated tongue. Temperature 100° A.M. and P.M. As the case was now not very acute, he had an ounce of magnesium sulphate, and on March 18th he was given the following enema daily for three days. Copper sulphate gr. xv; tincture of opium mxv; starch 1 ounce; water ½ pint. By the mouth he took bismuth salicylate gr. xv every four hours. On March 20th, 2 pints of boracic and starch enema were given to him daily, besides the one copper injection. On March 22nd he was so much better that all enemas were stopped. I kept him until April 18th; his bowels acted normally once or twice, and he gained 4 lbs. weight in hospital. The man was cured in three days of severe symptoms which had lasted seven weeks.

Case II.—S. H., Egyptian, aged 30, was admitted to hospital March 26th. He had only been ill since the previous day, and had already had twenty-five motions, blood, mucus, tenesmus, pain in the abdomen, chiefly in the colon, very coated tongue, no albumen; temperature 100.5° A.M., 102.2° P.M. On March 26th he was given magnesium of sulphate and another twenty-five motions occurred. The next day he began daily one copper enema and one boracic enema, both with starch, and took bismuth salicylate gr. xv ever four hours. The number of motions fell to sixteen, fourteen, six, and four daily. On April 1st his tongue became normal, and he still had four motions. On April 2nd there were only two motions, and on April 3rd they contained blood for the last time. On April 5th the enemas were discontinued, and on April 18th he left the hospital, having gained 1 lb. in weight. He never had any pain after the enemas except for ten minutes after the first copper injection. This man was treated for ten days by enemas.

Case III.—A. B., Egyptian policeman, aged 30, was admitted April 11th for his first attack of dysentery. While on night duty about 4 A.M. a few miles above Cairo, he was suddenly attacked with pain in the belly, colic, blood, mucus, and tenesmus, which kept him constantly at the stool. He was sent to hospital at 6 P.M., fourteen hours after the first symptoms; the temperature then was 100.4°; ten motions in twenty-four hours. The house-physician gave him a dose of castor oil, but the next morning I gave him an enema of copper, starch and opium, 2 pints, besides bismuth waters; six motions. On April 13th he had one boracic and starch enema of two pints and had only two motions. He required no more than these two enemas, and left the hospital cured on April 21st. This may have been a mild case, and the patient was strong and healthy, but I think the cure was as rapid as could be expected by any other treatment.

Case IV was an English child, aged 3 years and 9 months, to whom I at once ordered 2 ounces of boracic and starch enema because I did not like to begin with the copper. Two days later, on May 22nd, I saw her again and found her much worse; the temperature was 100.1°. All the typical symptoms and twenty-five motions a day. I at once ordered a copper enema (1 in 2,500) twice a day. For the next three days the motions numbered twenty-nine, seventeen, and six. On May 26th the child had fifteen motions, and her temperature was 103.8° A.M. I doubled the strength of each copper enema, and the motions at once fell to four, three, two, and one. The temperature became normal on May 29th, and I saw the child for the last time on June 6th quite convalescent.

Enemata in Acute Dysentery.—While writing this paper I have naturally consulted recent authorities to see if they agree that acute dysentery may be treated with silver or copper injections. The second volume of Allbutt's *System* contains an excellent article by Dr. Andrew Davidson, in which such enemata are not mentioned, though he states (p. 436) that a large tepid boracic water enema is often useful at the beginning of acute dysentery. In the same volume, however Dr. Lafleur, of Montreal, writes (p. 781): "Local treatment by means of rectal injections or by irrigation of antiseptic solutions commends itself as being the most rational and direct method of medication, and the results achieved, though not brilliant, warrant a further trial." Schreiber[5] says nothing of large injections for acute dysentery, and Manson[6] distinctly states that "this splendid remedy must never be practised when acute symptoms are present." In spite of adverse opinions I can say that I have now practised or inspired this treatment in about twenty cases, and I have never regretted it. I have, on the contrary, seen many cases in consultation which I think would have had a more satisfactory result if large enemas had been used instead of the routine ipecacuanha. Enemas should be given as early as possible in the case, when perforation and peritonitis are not dangers to be feared, and they should probably be continued for two or three days after the disappearance of symptoms. My chief reason for saying this is because I have found in several cases that living amœbæ are found in the motions a few days after blood, mucus, tenesmus, pain, and fever have all disappeared. Lastly, this treatment is only one of the aids towards cure, and must be used in conjunction with other well-known methods of treatment.

References.

1 *Du Climat de l'Egypte*, by Dr. B. Schnepp, Paris, 1862, p. 305. 2 British Medical Journal, January 29th, 1898. 3 *Ibid.*, May 7th, 1898. 4 *Lancet*, July 2nd, 1898 p. 52. 5 *Die Krankheiten der warmen Länder*, 1896, p. 370. 6 *Tropical Diseases*, 1898, p. 314.

Discussion.

Dr. Osler (Johns Hopkins University, Baltimore, U.S.A.) said that he regarded enemata in cases of acute dysentery with some disfavour on account of the acute pain caused when the diseased bowel was filled with fluid. The exhaustion consequent on the operation was also a deterrent to its use, and however valuable in chronic ailments of the large bowel the method was not without objections in acute cases. He had at times allayed the pain of enemata by the use of cocaine.

Major Davidson, R.A.M.C., said that the treatment of dysentery was difficult in many cases, for probably there were many forms of dysentery. Some of the worst forms were probably the result of septic organisms superadded to the disease. When the pathology of dysentery became better known, it would become possible to treat better its different forms. Ipecacuanha was useful in checking it, in early stages, from causing exudation from the mucous membranes, and thus removing tension and inflammation. Some cases were probably more amenable to salol and other disinfectants. Antiseptic injections would also do good by acting locally. The essentials of treatment might be said to be rest, warmth, a purge (for example, castor-oil), and bland diet.

Dr. George Prentice (Blantyre, Central Africa) said that after a considerable experience in dysenteric cases in British Central Africa his routine treatment in native practice was to give castor-oil, and follow it up by tincture of opium mxx, followed in half an hour by ipecacuanha gr.xx. The opium and ipecacuanha were given three or four times a day. In the case of Europeans he gave an enema frequently to prevent tenesmus, and overcome the disagreeable taste of ipecacuanha by using wafer papers.

Brigade-Surgeon-Lieutenant-Colonel Crombie, I.M.S., insisted that cases of dysentery must be classified before any agreement could be arrived at as to treatment. The great majority of cases of so-called dysentery which came for treatment were in reality not dysentery, but simply rectal catarrh. The usual classical symptoms were present in these cases, but there was no ulceration of the bowel. These cases had been paraded as supplying evidence of the benefit of treatment by ipecacuanha, which, however, was quite unnecessary. They would get well by rest in bed, appropriate diet, warmth to the abdomen, and a little opium. They would also get well equally quickly under the ipecacuanha or any other judicious treatment. There were other cases—those of chronic and extensive ulceration of the bowel—in which ipecacuanha was either useless or positively harmful. In the residue of cases of true acute dysentery distinguished by pyrexia and pain on pressure over the colon, most frequently in the cæcum and sigmoid flexure, ipecacuanha was of signal service. He advo-

cated the use of chloral previous to the administration of large doses of ipecacuanha, and also ipecacuanha *sine emetinâ*. He had seen relief given by copious enemata of hot water, holding in solution some mild antiseptic, such as boracic acid in cases in which the bowel was filled with acrid irritating secretions. It should be followed by an opium enema. He had not had very satisfactory results from the systematic use of this treatment, and it had generally to be abandoned in persistent cases in which it seemed most indicated in consequence of the exhaustion and pain it frequently caused.

Dr. Ozanne (British Guiana), speaking from a rather large experience in the treatment of dysentery, said that the cases varied in character, and each needed to be treated on its own merits. In some mere rest and antiseptic diet (by which he meant plain sterilised milk diet) sufficed, in others it was necessary to use stimulants; others intestinal antiseptics, as beta-naphthol and bismuth salicylate or salol. Every specific treatment would show about the same results.

Sir Joseph Ewart said that he was in India at the time when the paper written by Dr. Docker recommending the treatment of acute dysentery by large doses of ipecacuanha reached that dependency. It fell to his lot to compile the statistics of the European and native armies of India with a view of testing the results of the new treatment in acute forms of dysentery. The figures showed a remarkable reduction in the death-rate from this disease. This reduction, he believed, had been fully maintained. The treatment by large doses of ipecacuanha had many advantages. It promptly relieved the congestion of the chylopoietic viscera, and consentaneously diminished peristalsis, thus giving repose to the injured intestinal mucous membrane, and placing the diseased parts in the most favoured position to undergo speedy repair. In this way not only was the dysenteric process checked, but the danger of lapse into chronic dysentery prevented, hence the experience at home of the corresponding decrease in the cases of chronic dysentery. The association of certain cases of abscess of the liver with dysentery was well known, and these had diminished in number. This favourable result was largely due to the ipecacuanha management of acute dysentery.

Dr. Bentley (Cairo) concurred that each case must be treated in accordance with its characteristics. There was no specific. What cured one case might have no good effect on another apparently of the same character. Large injections of medicated water were exceedingly trying. What was wanted in all cases was absolute rest, and as rest was impossible with large injections, he thought that, except in chronic cases, this treatment was of doubtful value. The distress it caused was too much for delicate or nervous patients to permit of its habitual or continued use. Rest, restricted diet, and intestinal disinfectants (chief amongst which he put salol) was the best line of treatment for acute dysentery, having first cleared out the intestinal tract and unlocked the secretions by a dose of ipecacuanha, a dose of magnesium sulphate, or castor-oil. Foremost amongst these remedies he placed ipecacuanha.

FILARIÆ AND FILARIAL DISEASE IN BRITISH GUIANA.

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[Abstract.]

I. The Filarial Origin of Elephantiasis.

To most workers in the tropics the evidence of the dependence of elephantiasis on filarial infection by the filaria nocturna seems so conclusive that the need for any further confirmation may seem superfluous, but as doubts are still expressed it may be useful to give such evidence bearing on the point as I have been able to obtain from local sources.

Geographical Distribution.—One of the more important arguments for the view that elephantiasis is due to the filaria nocturna is based on the fact that the two have the same geographical distribution. Thornhill in Ceylon has strengthened this argument by showing that the rule also applies to the local distribution of the disease in that country, as in districts where elephantiasis is met with the filaria is common, whilst where it is not found neither is the filaria. Similarly, in British Guiana the races inhabiting the coast lands are the only ones amongst whom elephantiasis is found, and amongst these the filaria is common, whereas the aboriginal inhabitants of the interior are free from the disease, and in no case has the filaria nocturna been found in their blood.

Racial Incidence.—Experience in this Colony has long shown that even amongst the coast inhabitants some races are more commonly affected than others, and that females are more often attacked than males. Dr. Grieve confirmed statistically this popular belief by an analysis of the cases in the Berbice Lunatic Asylum in 1883. This showed that 0.6 per cent. of the male East Indians, 4.6 per cent. of the male negroes, and 7.2 per cent. of the female negroes had elephantoid legs. The Portuguese and mixed races were attacked in a still larger proportion, but the numbers of these races were small. In 1895 Dr. Conyers and myself determined the incidence of the disease amongst the inmates of the Public Hospital, Georgetown, and this year I have continued the determination so as to have figures sufficiently large to minimise the probability of error.

My investigations show clearly that whilst some races are rarely attacked, in others elephantiasis is common, and that among the natives the women are more frequently attacked. This unequal incidence of elephantiasis amongst the races has been used as an argument against the probability of the filaria being the true cause of the disease. It was considered that people living under such similar conditions would all be equally exposed to the attacks of the parasites, and that therefore the racial element *per se* must be an important factor. A determination, however, of the proportion of persons harbouring these parasites, no selection of cases being made, shows that the proportion of infected persons also varies amongst the different races, and, moreover, that the relative incidence varies in the same manner as the incidence of elephantiasis. Thus we find that a study of the race incidence of the filaria and of elephantiasis goes only to strengthen the view of the dependence of the one on the other.

Cause of Different Racial Incidence.—We have therefore to inquire what difference in the racial habits is responsible for the different proportion of persons who are attacked living under the same climatic conditions. The inquiry is rendered simple, as the life-history of the F. Bancrofti has been so fully worked out, and we know that for human infection it is requisite that the person attacked must have drunk water in which has been deposited the body of the intermediate host, a certain mosquito, which in its turn had fed on the embryo-laden blood of the original host, an individual harbouring the parent worm. Now, the aboriginals are under entirely different conditions to the other races. Amongst them there are no infected hosts, the intermediate hosts, mosquitos, are rare, and perhaps not of a species capable of serving that purpose, and they use running water from the creeks and never store it. The East Indians, who form the great majority of the hospital patients, live sufficiently amongst the other races for the conditions as regards the primary host to be much the same, and the intermediate hosts must be the same. The water they drink is, however, little likely to be the recipient of the bodies of the mosquitos, as it is either pipe or the slowly-running creek water. The East Indian rarely takes the trouble to collect rain water, and does not go to the expense of storing it. The opportunities he has of acquiring the parasites are therefore restricted. The negro and coloured races have a very decided preference for rain water, and dislike the taste and smell of the peaty creek and pipe water. If vats are not available they catch the rain water and store it in casks close to and sometimes inside their houses. The Portuguese are as a rule in a rather better position, are still more careful and particular in their storage of water, and live a more domesticated life, and therefore have still more special opportunities of imbibing the immature parasite. Females as a rule live more at home than the males, and in a like manner have increased risks. An analysis of the source of the drinking water used by 54 unselected cases in whose blood filaria had been found will show how favourable the conditions are for the acquisition of the parasites. Of these 54, in 2 no clear history was obtainable, 2 expressed no preference as they used either creek or rain water indifferently. The remaining 50 all used rain water when they

could possibly obtain it, and all but 13 denied taking pipe or creek water at all or for many years—forty, thirty, twenty-five in three cases. Of the 13 who admitted using pipe or creek water, 6 state that they always leave it to settle in a cask for days before using it. From a study, then, of the liability of the races to infection and their conditions of life in relation to the life-history of the parasites, it would appear that this varying incidence of infection among the different races depended on (1) the presence of infected primary hosts, (2) suitable intermediate hosts, (3) a water supply in which storage in small receptacles allows of the ready deposit and concentration of the intermediate hosts with their embryonic contents.

Summary.—Two facts, which are not disputed, are urged against the acceptance of the filaria as the true cause of elephantiasis: (1) That elephantiasis indistinguishable from that met with in countries where the filaria is found is, though very rarely, seen in England and other temperate climates. It is not requisite to believe that the filaria is the only agent capable of causing lymphatic obstruction; in fact, we know that it is not. Hutchinson states that when lupus affects the extremities, it causes an elephantiasis indistinguishable from tropical elephantiasis. Similarly in this colony the granuloma pudendum, when it involves the penis, scrotum, or vulva, produces an elephantoid condition quite irrespective of and indistinguishable from that produced by the filaria. (2) That in many cases of tropical elephantiasis no filariæ are to be found in the blood.

II.—The Pathology of the Lymphatic Obstruction.

Probably the obstruction may be caused in many ways. The first, which is probably only of importance when the larger lymphatic vessels are involved is by the parent worm causing hæmorrhage into the lymphatic channels. In several *post-mortem* examinations of patients with dilated lymphatics in the pelvis the point of obstruction has been found, and appeared to be due to an organised coagulum in the thoracic duct. We have no evidence as to the frequency with which the occurrence of hæmorrhage takes place. It would only be indicated by pain when sufficient in amount to cause tension, or by a tumour when in such a position as to be visible.

A second, and as far as clinical evidence goes a commoner, method of obstruction is by the parasites setting up inflammation of the lymphatic channels. These attacks are common in patients with filariæ, are accompanied by fever and ague, and are frequently excited by some trivial cause. They usually recur, sometimes frequently, and in many cases pass on to elephantiasis. The majority of cases of elephantiasis give a history of such attacks before the elephantiasis developed, but this method cannot be held accountable for the large minority, as these come on without such antecedent attacks of lymphangitis and without fever.

Neither of the above methods satisfactorily explains the cases in situations where there is free collateral lymph circulation, and particularly those where a small region only is involved.

The theory advanced by Manson gives a much more satisfactory explanation. He supposes that under certain conditions the female aborts, and instead of discharging embryos discharges ova into the lymph stream. The smallest diameter of these is three times that of the uncoiled embryo. These ova would therefore block channels through which the embryo could pass, and the process continuing would in turn block every path of exit for the lymph. Manson, in support of this, records that he has on several occasions found ova in the fluid from chyloceles and elephantoid tissues. The narrow tubular orifice of the genital organs of the parental worm, just sufficient for the embryo to pass, would seem to be designed to prevent such an accident, but these observations show that that safeguard occasionally fails.

There is thus evidence (1) that the parental worm can cause obstruction by exciting hæmorrhage; or (2) by exciting frequent attacks of lymphangitis; or (3) that the embryos may be discharged into the lymph stream still in their egg capsules, in which case, from their size, they would be stopped at the next lymphatic glands, and thus cause obstruction. In the first two cases the worms would be included in the blockage, and would either die, or if they escaped below the obstruction their embryos could not reach the blood circulation. In the third case the parent worms would always be below the points of obstruction. It follows that filariæ will be frequently absent in the blood of persons in whom lymphatic obstruction has resulted from the filaria, even when the adult worms are still living.

III.—The Incidence of the Forms of Filarial Disease.

The regions of the body attacked are much the same as in other countries where elephantiasis is common. Out of 137 cases, in 80 the legs, in 51 the glands alone, and in 6 the genital organs were attacked. This is the order given by Manson for China. The most important difference is that chyluria and hæmaturia are rather more common, as they are met with quite as often as scrotal elephantiasis, whilst they are much rarer in China.

IV.—The Embryonic and Adult Forms of the Filaridæ.

The parental form, the F. Bancrofti, and its embryo, the F. nocturna, have been identified in India, China, Queensland, and in British Guiana, and, as the filaria was not indigenous in America but was introduced with the negroes from Africa, we can assert the complete identification of the parasites for all elephantoid regions but Polynesia, where the embryos only have been observed. Except among the aborigines and a few other persons who have resided in the interior I have found no other form but the F. nocturna in the cases I have examined. I have not found the filaria Demarquayi in any of the West Indies, including six from St. Vincent. The aboriginals who inhabit the interior of British Guiana harbour one or two species of filariæ. They were found by Manson and described by him at the Montreal meeting of the Association, and were named by him the filaria Ozzardi. Dr. Ozzard and myself have in all examined over 250 persons, and find that these parasites are present in 58 per cent. of the cases examined. We have found them in persons from all parts of the interior, including a few living on or near the Dutch, Brazilian, and Venezuelan frontiers, so that they are probably widely distributed through Central South America. There are reasons for believing that the distribution is not uniform. Dr. Ozanne informs me that in some villages or families all the individuals have them, and in others none.

The question as to whether or no these two forms are distinct species is not yet definitely settled. The blunt-tailed are much more common, but in the 18 cases under my observation, if a sufficient number of slides were examined, one or more sharp-tailed specimens were found. On the other hand, the relative proportions of the two forms vary greatly in different cases, whilst not differing greatly in different examinations of the same case. The commonest proportion is 1 sharp to from 6 to 12 blunts. The smallest proportion where both were found was 1 sharp to 56 blunts.

Both forms vary much in size according to the mode of preparation, the blunt the more so. The sharps are slightly longer and in their broadest part thicker. When stained the nuclei are found to extend to the top of the tail in the blunts, whilst in the sharps the finely-pointed tail extends for a considerable distance beyond the last nucleus. In the living specimens the sharp tail is more difficult to find or to keep under observation, as its movements are so rapid. Its tail remains sharp, and the worm does not appear to elongate and contract in the marked manner that the blunt tail does.

If these two forms represent distinct species, the blunt-tailed may be the same as the African F. perstans, as it resembles it in size, shape, structure, and movements, as well as in the absence of periodicity. Of this embryo the adult form was found in two cases. It was found in both cases in the upper part of the mesentery, and in the second case also in the subpericardial fat. They appeared to be in the connective tissues, not encysted, and are very difficult to remove entire. They are difficult to see, but are more readily found if a watchmaker's glass be used and the tissues slowly dissected. They are a little shorter than, but little more than half the thickness of, the F. Bancrofti, which they resemble in the general anatomical features.[1] The embryo *in situ* can hardly be distinguished, but in all cases where they were allowed to escape they were found to be blunt-tailed, and no sharp tails were found, so that this must be considered as the parental

form of the blunt tails at least. No other parental forms were found, and the examination was sufficiently thorough to render it probable that none were present in any part of the visceral cavities or organs, the cavities of the heart, the larger blood vessels, or the thoracic duct.

If the two forms represent one species it is not the African F. perstans, as that is never sharp tailed. We must also assume that in some of the embryos some further development takes place either before or when they reach the peripheral circulation, and that this change occurs more readily in some individuals than in others, as such differences as 16 sharps without any blunts, and 56 blunts to 1 sharp cannot be otherwise explained. If the sharp-tailed embryos represent another species, it has yet to be decided whether it is a new one or the F. Demarquayi.

So far we have no evidence of any pathological *rôle* played by these parasites, and it is difficult to predict what form of disease would be likely to be caused by parasites in the position in which these are found. Mosts of the hosts, even when the parasites are numerous, have been in good health; in the others there was no disease that could be attributed to the parasites. None of the cases had elephantiasis or any signs of lymphatic obstruction. In several cases under observation for months there were no cutaneous eruptions or anything resembling the African "Kra-kra," nor did the patients show any signs of lethargy. On the other hand, our knowledge of the diseases of the aboriginals is very small.

Nothing is known of the life-history of the parasites. The embryos do not leave their host in any of the natural discharges, at least they have not been found in any of them, though repeated examinations have been made. Dr. Ozanne found them in one case in the pus from an abscess in the arm. It seems probable that they are removed by some blood suctorial insect, but certainly a different one to the carrier of the F. nocturna, and probably not a mosquito, as the drinking water used is not likely to be contaminated by that insect.

REFERENCE.

1 BRITISH MEDICAL JOURNAL, April 16th, 1898.

INSANITARY ENVIRONMENT THE CAUSE OF THE SPREAD OF YELLOW FEVER AND OF BUBONIC FEVER.

By Inspector-General TURNBULL, R.N.

IN maintaining the view that insanitary environment is the cause of the spread of yellow fever and of the bubonic plague, I shall briefly detail from naval records and from my own observations and research the grounds for this assertion.

In 1818 Staff-Surgeon Veitch, at the desire of the Commissioners for Transports and Sick and Wounded Seamen, addressed a letter to them on the non-contagiousness of yellow fever. He had been for five years in charge of the Naval Hospital, Antigua, and for other five acting physician to the West Indian fleet. He reports as follows:

I had ample opportunities of witnessing the character of this fever and the result of my experiences and observations leads me to state decidedly that this fever, which destroys so rapidly the young vigorous European, and on which the name of Bulam fever has been improperly imposed, is not contagious at Antigua nor in any part of the West Indies.

In 1844 H.M. paddle wheel steam sloop *Eclair*, a new ship of 1,059 tons, commissioned at Woolwich, reached Sherboro, on the West Coast of Africa, in January, 1845, with a complement of 146 officers and crew. In February she was healthy, and detailed a party of from 30 to 40 men and officers for boat service, in the creeks of that river, they were thus employed during April, May, and June for a week at a time exploring these creeks, sleeping as a rule in their boats, but sometimes on shore. Thirteen cases of remittent fever occurred, of which 7 proved fatal in from four to seven days, while 2 fatal cases occurred on board the ship an officer and man who had never left her. On July 5th the *Eclair* arrived at Sierra Leone, where the crew were employed in clearing out the *Albert*, iron steam storeship, a healthy ship, but whose holds had been long undisturbed and were found to contain much offensive refuse. Day leave was granted to her crew to land; many, however, broke their leave, remaining ashore for even four days; much drunkenness and other irregularities were reported. On July 23rd the *Eclair*, towing the *Albert*, moved to an anchorage some distance off the coast. On July 27th a case of yellow fever with black vomit occurred, followed by 12 others, with 8 deaths—excluding that of a civilian passenger—up to August 9th, when the *Eclair*, still towing the *Albert*, proceeded to the Gambia; the disease continuing, she left for Boâ Vista, one of the Cape de Verd Islands, and on August 21st arrived there, 3 further deaths having occurred. At Boâ Vista the fever was considered to be severe malarious remittent, and the Portuguese authorities sanctioned the landing of the officers and crew; then the ship was cleared out and cleaned by native labour. The disease and mortality increased from August 21st to September 13th, and 29 deaths occurred during this period. On the latter date, by the advice of the medical officers, the officers and crew, as also the sick, were re-embarked, and the *Eclair* steamed for England *viâ* Madeira, arriving at the Motherbank, inside the Isle of Wight, on October 28th, by which time 14 more deaths had occurred. The surgeon recommended the landing of all hands, and the head of Haslar Hospital desired that the sick should be transferred to that establishment; the quarantine authority refused consent, and caused the *Eclair* on October 1st to proceed, after embarking a pilot, to the quarantine station at Sandgate Creek, in the Thames, opposite the modern Port Victoria, where she arrived on the following day. On the evening of October 3rd the healthy men, including the pilot, were transferred to a clean hulk, the convalescents to another, while the sick remained in the *Eclair* until October 8th, when they were moved to the *Forester* hulk. The pilot was seized on October 7th and died on October 11th, while on October 12th the last death occurred; this officer had passed through the whole epidemic, and paid most assiduous attention to the sick. A surgeon who had joined at Madeira died two days previously. The total mortality from yellow fever was 63, from remittent fever 12; grand total 75, or more than half the ship's complement. Six medical officers contracted the disease, 4 of whom died; of the 2 who recovered 1 had joined the ship at Sandgate Creek. The ship had long been infected and insanitary.

H.M.S. *Growler*, a vessel similar to the *Eclair*, communicated with the latter vessel at Boâ Vista and Madeira; fever resulted, but no death, prior to arrival in England, and she was granted pratique, and proceeded to Woolwich to pay off; on October 9th and 11th, she landed 2 cases of yellow fever at the naval hospital there; no spread of the disease followed in the hospital, though the *Growler's* men died with black vomit.

H.M.S. *Bristol*, a fine frigate, at Sierra Leone on December 28th and 29th, 1865, detailed a party of 112 men and 4 officers to unmoor, and shift H.M. storeship *Isis*, a notoriously yellow fever infected ship; 38 cases of yellow fever resulted, with 23 deaths. All were treated on board the *Bristol*, but no medical officer or attendant contracted the disease, which was strictly confined to those who worked on board or visited the infected storeship *Isis*.

In 1871 I was in a gun vessel anchored off Buenos Ayres, when yellow fever broke out in that city; my ship was at once ordered away, but on her subsequent return I found the official return of deaths from this disease was 13,614. A reliable newspaper stated that in April at the height of the epidemic only 30,000 inhabitants remained in the city, and of these 9,200 perished. Citizens engaged by day in business or otherwise in the city during the epidemic, as also the captains of the immense shipping in the outer roads, who landed daily with their boats' crews, escaped the disease, as the former left the city at night to sleep in the country adjacent, on the same level and subject to the same climatic influences as the city, while the latter repaired on board their ships anchored off the city, in the full swing of the tide. Buenos Ayres at this time was devoid of drains, and sewers honeycombed by cesspits old and new, with adjacent rain-water tanks for household use, all situated in the *patio* or inner court around and above which in many cases the residences were built.

Similar experiences were reported from the riverine towns on the banks of the tributaries of the Rio de la Plata. The hill stations in Brazil, Petropolis, and St. Paulo, as also Newcastle in Jamaica, long free from yellow fever, are now no longer so, insanitary conditions having become established. Prior to 1847 Rio de Janeiro, now an endemic site of

yellow fever, was a sanatorium for our ships serving on the West Coast of Africa.

The experience of bubonic plague in Hong Kong has been similar, and no European has been affected who had not been more or less intimately associated with the native victims their dwellings and insanitary environment.

APPEARANCE OF PIGMENTATION IN LYMPHOCYTES IN RELATION TO THE DIAGNOSIS OF MALARIA.

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In the *Annales de l'Institut Pasteur* of December 25th, 1897, Vincent, in the course of an interesting article on Leucocytosis in Malaria, states that the phagocytic function as regards the malaria parasite is performed almost exclusively by mononucleated leucocytes (microphages and macrophages). He further states that occasionally, though rarely, the small lymphocytes also have the property of including the parasite, and, in an illustration, he figures a lymphocyte showing a speck of black pigment lying in the narrow peripheral cytoplasmic zone. Most observers are agreed as to the activity of the large mononucleated leucocytes in malaria. Metchnikoff, however, explicitly states that the lymphocytes are completely passive in this respect, and are never phagocytic in malaria. So far as my observations have gone they bear out Metchnikoff.

I believe that Vincent, as well as others who share his opinion with regard to the phagocytic action of the lymphocytes, have been misled by a feature which must be regarded as being perfectly normal to a considerable proportion of the lymphocytes. This feature may be observed in all bloods, whether from the subjects of malaria, or from persons who may never have been exposed to malarial influences. The lymphocytic pigmentation, described and depicted by Vincent, is therefore a physiological and not a pathological pigmentation.

If we examine properly prepared blood slides from healthy persons we find that in 20 to 30 per cent. of the lymphocytes a minute black dot (in some instances very minute, in others of considerable magnitude) can be seen. Occasionally there are two such black dots, very rarely three. They lie in the cytoplasm, and usually close to the nucleus. By raising the lens their intense blackness becomes merged into a brightly refulgent speck. In accurate focus they are as black as, and quite indistinguishable from, malarial melanin. In those works on the histology of blood which I have consulted, I find no mention of this speck. Friends, with a special knowledge of the histology of the blood, to whom I have spoken on the subject of this lymphocytic speck say they are not aware of its having been described, and cannot suggest an interpretation. It is difficult to believe that this appearance can have been overlooked by the many careful observers who in recent years have made a special study of the blood; but it is certain that there is no allusion to it in the textbooks, nor in works specially devoted to malaria.

I have thought it right to call attention to the matter, as it is more than likely that, in attempting diagnosis, some may be misled into giving a diagnosis of malaria on finding this appearance of pigmentation in the lymphocytes.

PELLAGRA IN EGYPT.

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[Abstract.]

In 1893 I became aware that a large number of my ankylostomiasis patients showed a symmetrical eruption, which sunburn, chapping, and dirt could not explain. I eventually decided that some of them had pellagra in addition to their anæmia. Since 1893 I have had more than 500 cases of pellagra in my wards.

Geographical Distribution.—The geographical range of the disease depends on the food supply and the poverty of the inhabitants, and is not affected, except perhaps in a minor degree, by latitude.

Age.—The majority of the cases are men in the prime of life.

Sex.—In three years, out of 437 cases, only 8 have been females. This differs from the returns from Italy, where more women suffer than men.

Nationality.—All cases were Egyptian, not Nubian or Soudanese.

Occupation.—Eighty-eight per cent. of the cases were peasants, and the remainder were masons, labourers, boatmen, etc.

Causes.—The essential causes of pellagra are bad maize, poverty, and exposure to the sun. Of these bad maize is the most important, and it is necessary that it be diseased, and also that it be one of the chief articles of diet.

General Symptoms.—Of the early symptoms, constipation or diarrhœa, thirst, pains in the epigastrium or abdomen, and all the signs of dyspepsia, prevail. Then follow headache, vertigo, noises in the ears, lassitude, pains in the back, sleeplessness, and depression of spirits, besides anæmia and palpitation on exertion. The two symptoms last named are probably caused by ankylostomiasis rather than pellagra. The tongue, the parotid gland, the teeth, the gums, the bowel, and the urine all present variations, more or less frequently, from the normal. A marked symptom is loss of weight.

The Eruption.—This, being the most apparent sign, has received the greatest amount of attention. It begins as an erythema not unlike severe sunburn on the exposed parts of the body. The erythematous patch in course of time desquamates, and the rough surface becomes coated with dirt and excretion. Year after year the erythema returns, and in time an atrophied condition obtains.

Nervous Symptoms.—The chief spinal symptoms are changes in the reflexes and pain or tenderness in the dorsal region. The knee-jerk, in 165 cases in which it was noted on admission, was normal in 3 only; in 48 cases it was slightly exaggerated, in 76 very brisk, in 15 feeble, and it was absent in 23.

Mental Symptoms.—In Italy 10 per cent. drift into lunatic asylums, but the proportion in Egypt of those who become insane is far less.

Diagnosis.—The existence of denuded tongue, altered knee-jerk, and tenderness on pressure near the dorsal vertebræ will help to decide doubtful cases. In pellagra there is a history of a fairly exclusive diet of maize, and more or less skin eruption recurring at the beginning of the year, besides signs of general poverty and peasant life.

Pathology and Post-mortem Appearances.—The great feature of fatal cases is general emaciation with consequent brown atrophy of the heart, degeneration and atrophy of the liver and spleen, and sometimes also of the kidneys. Tuczek states that he found symmetrical sclerosis of the posterior columns, and specially of Goll's columns, and also in the pyramidal tract, but he found the posterior roots intact.

Treatment.—I believe rest is the most important thing. Ordinary mixed diet is given unless diarrhœa be present. Good maize even is avoided, as maize is regarded as unsuited to pellagra patients, however good it may be. Lately I have given fresh bone marrow in tablets and cod-liver oil. The skin is rubbed daily with zinc ointment, partly to assist desquamation, and partly as a mild stimulant. Strychnine is useful as a tonic, but there is no specific drug treatment for pellagra. Every individual is an early case of ankylostomiasis, therefore the thymol and iron cure is obviously indicated.

Prevention.—The Egyptian Government should now imitate that of Italy, which, besides teaching cleanliness and general hygiene to the affected peasants, has for some years had soup kitchens and retreats for the poor, and has also encouraged the people to sow better maize, to dry it more thoroughly, and to keep it as dry as possible.

Medical Temperance in Holland.—The Dutch Union for the Abolition of Strong Drink embraces abstainers from distilled spirits alone as well as from all varieties of intoxicating beverages. There are 100 members of the Students' Total Abstinence League, and at least 30 abstaining medical members of the Medical Temperance Union in Holland and its Colonies. Several medical practitioners are actively engaged in the abstinence propaganda.

AFRICAN HÆMOGLOBINURIC FEVER, COMMONLY CALLED BLACKWATER FEVER.

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Types of the Disease.

Hæmoglobinuric fever is a disease of Europeans resident in Western Equatorial Africa, and is an acute specific fever, characterised by rapid jaundice, hæmoglobinuria, and frequently suppression of urine. Three varieties exist—the sthenic, the insidious, and the pernicious. In the first, from which recovery is common, the attack is sudden, the fever is high at the beginning, and the urine is copious. In the second the attack is insidious, as in a case of remittent fever, but hæmoglobinuria and jaundice intervene and early suppression of urine occurs. In the third the onset is sudden, the temperature quickly rises high and quickly falls, jaundice appears at once, and suppression of urine occurs within twenty-four hours. Recovery is not to be expected in the insidious and pernicious varieties. This disease is to be found amongst Europeans resident in Western Equatorial Africa from the Senegal to Loanda, and in Madagascar. The cases which are reported from Mauritius, Java, and Hong Kong are unlikely to be fever of the African type.

Morbid Anatomy.

The *post-mortem* appearance is somewhat different in the three varieties but the condition of the kidneys is the same. In the sthenic variety the jaundice is slight and confined mainly to the face; but in other cases, though it fades before death, it again deepens, and is of an intense saffron-mustard colour. The body is generally emaciated, the face, upper and lower extremities, exhibiting marked wasting. On section, the icteric hue is found to penetrate through the entire skin, but not to extend to the deeper tissues—as the muscles, connective tissues, and nerves. Plehn, who saw the disease in Cameroon, describes the muscular tissue as stained yellow. This discoloration is due to altered blood pigment. The adipose tissue is generally diminished.

The brain and membranes are not stained, but are generally in a condition of extreme anæmia, and the lateral ventricles contain an unusual quantity of fluid, most marked in a case of the sthenic variety.

The lungs are extremely pale and light-ashen in colour, very little congestion being visible even in their posterior bases. On section, only a very light-red mucus and serous frothy liquid appears.

The heart is usually of a pale-grey colour, and the muscular fibres are easily separated. The walls of the ventricles, even of the left, are exceedingly fine and thin. Frothy light-red blood is met with in the right auricle and ventricle, but the left side of the heart is empty and in a state of collapse rather than of contraction.

The liver exhibits very remarkable changes; in the sthenic variety, as death usually occurs early, before extensive alterations have had time to become manifest, the colour is a light drab, a pale ochre, or a deep fawn. The capsule is loosely adherent. On section, a light-red frothy blood flows. In the other varieties the liver is of a deep saffron colour, with numerous nodules of a more intensely bright yellow under a loosely-adherent capsule. These nodules differ in size from that of a pin's head to that of buckshot, and on section are found to be cysts containing a thick, liquid, cheesy matter, bright yellow in colour. The liver, in fact, looks like an immense golden lemon, and the characteristic colour pervades its entire substance. No blood issues on section, and the cut ducts and vessels gape widely. The gall bladder is generally full, and its contents dark green. Microscopically, the liver cells seem to have disappeared, and to have left merely open spaces, empty, or partially filled with an amorphous material. The smaller ducts are tortuous or obliterated. There may be a small amount of blood in the portal vein, but the inferior vena cava is generally filled with a light-red frothy liquid, without clots.

The kidneys are enlarged and generally weigh over 8 ounces, and present an appearance resembling that seen in acute desquamative nephritis. The cortical portion is red, the renal substance is readily friable, and the capsule loose. The infundibula appear swollen, and the pelvis contains a dark slimy fluid. Though the kidneys are rather friable, microscopic examination reveals little beyond petechiæ and a swollen and disorganised condition of the uriniferous tubules, with occasional masses of hæmoglobin blocking up the lumen.

The spleen is enlarged and friable, and weighs from 14 to 16 ounces. The capsule peels off like the finger of a glove, and a red, frothy, blood-like fluid exudes on section. There are scattered dark patches of hæmorrhage in the substance of the spleen, and masses of hæmoglobin appear with broken-down pulp tissue under the microscope.

The stomach is distended and generally inflamed in certain areas, most frequently along the inner surface of the greater curvature. Masses like lumps of black currant jelly are to be found in the stomach in the pernicious variety.

The small intestines show scattered patches of congestion, except at the entrance of the common bile duct, where there is intense yellow staining. Internally they are lined with muco-gelatinous material, varying in colour from light green to deep black; the valvulæ conniventes and even the mucous membrane in bad cases seem worn away.

The large intestine appears congested, and through the entire rectum breaches of surfaces, petechiæ, and areas of torn membrane are apparent.

The pancreas seems normal, as is also the bladder, which is usually empty. In some cases a few drops of bloody or pale yellow urine, neutral or alkaline in reaction, are to be found.

The Sthenic Type.

In a typical case of hæmoglobinuric fever of the sthenic variety, which is popularly known as "blackwater fever," the invasion is sudden, but preceded by one or two days of a general feeling of indisposition, nausea, and anorexia. A sensation of general languor and lassitude exists, unfitting the patient for any exertion, and though vague feverishness is felt, a rigor or chill is rare. The actual attack is introduced with a flush of burning heat through the body, agonising pains in the back and loins, shooting down through the lower limbs, intense frontal headache, an unquenchable thirst, bilious vomiting, tenesmus, and a desire to void urine and go to stool. A rise of temperature to 103.5°, 104°, or 105° quickly ensues; the pulse is found to be weak, small, and rapid, generally over 120; the tongue becomes covered with a thick yellow fur; the respiration is hurried, loudly nasal, and made with effort; the skin is dry and hot, the forehead feeling particularly so; the conjunctivæ are injected and the pupils exteremely contracted.

When urine is passed it is seen to be of the colour of stout, with a red-tinged froth. It is acid in reaction, and microscopically large numbers of red blood corpuscles are present, some unchanged, but the majority with frayed margins, and with the hæmoglobin escaping. Masses of hæmoglobin abound. The alvine evacuations are in the initial stage copious, dark yellow or black and tarry, and of an intensely foul and penetrating odour.

After a period varying from twelve to twenty-four hours a stage of remission is entered, though generally not without treatment. A profuse perspiration gradually steals over the whole body, the headache becomes less, and the other symptoms enumerated above become alleviated, except vomiting and painful retching, which are always difficult to check. The temperature tends to fall two or three degrees, and the pulse-rate becomes diminished. Prostration and vertigo become pronounced, and insomnia is constant. The urine is still of the same character as at first, and diarrhœa may continue. This stage usually endures for twelve or eighteen hours, and in a favourable case is succeeded by a stage of lysis or decline, which is gradual and slow. The temperature falls a little little daily, the pulse grows firmer, and the urine begins to change colour after the third day, proceeding through alterations from black to light red and deep yellow.

Convalescence begins about the sixth day from the commencement of the attack, and is generally prolonged and tedious. Indications of intense prostration and anæmia are present, and frequently a livid pallor or a light jaundice appears. A deposit continues in the urine on standing, and enlargement of the spleen becomes very manifest. Insomnia and inability to obtain repose often occasion much trouble,

and health is rarely re-established without a change of climate.

All cases do not, however, terminate in this manner. The stage of remission is often followed by a fresh access of fever, and the urine continues dark in colour, and generally diminished in quantity. Perspiration is absent, and difficult to produce, and hyperpyexia is a pressing and dangerous sign. Early delirium and a tendency to coma are always present in fatal cases. The ordinary symptoms of an acute malarial fever are of exceeding intensity, and almost impossible to alleviate. Should suppression of urine complicate the disease, the symptoms of acute uræmia speedily arise, and coma and hyperpyrexia intervene. Death occurs usually after the fifth day, though many cases terminate fatally as early as the third, and is preceded by uræmic convulsions.

The Insidious Type.

This form begins like an attack of ordinary remittent fever of a low type, and generally occurs in subjects weakened by exposure, bad food, and long residence in the West African climate. The temperature rarely rises above 102° F., and the pulse is not rapid, though weak. But there is an ashy pallor on the face, the tongue is large and flabby, the appetite is lost, and the bowels are intensely confined. A feeling of unrested fatigue is very constant. Antipyretics act with ease, and the skin is found cool and moist. After the first remission suspicious signs are to be noted. The temperature rises and remains unchanging, the eyeballs feel dry and tense, œdema of the eyelids gradually appears, the pupils become contracted, and the pulse is small and wiry. The skin is dry and wrinkled, and perspiration generally absent. Headache is present in every case, and a feeling of intense languor throughout the frame. An unfailing sign of approaching trouble is the scantiness of the urine.

The stage of jaundice is reached about the third day. Headache becomes intense, thirst increases, painful bilious vomiting gives much distress, the bowels are obstinately confined, and the urine becomes absolutely black, though with a red tinge, and the quantity is decreased. Icterus gradually appears over the entire body and limbs, at first merely a dull metallic bluish tint being remarked in the face, succeeded by a greyish-yellow, and finally by a mustard-yellow hue. In a short period, varying from three to eight hours, complete jaundice is established. It is not as a rule very noticeable to the patient. The skin may feel a little cool and moist, and the temperature rarely exceeds 101° F.

A stage of collapse soon follows. The icterus deepens, the urine becomes suppressed, the stools contain no fæculent matter, twitching of the facial muscles begins, and a distressing hiccough which it is almost impossible to palliate shakes the body of the patient, and renders swallowing difficult. The temperature falls, and the pulse becomes almost imperceptible. The skin still may feel a little cool, but not moist, presenting a wrinkled or glazed appearance. The tongue is dry and cracked, brown or black, and the lips and teeth are covered with sordes. The pharynx and larynx soon become involved. The throat is sore and the voice husky. Thirst tortures the patient, and owing to the vomiting and hiccough cannot be slaked. Insomnia remains persistent, but a semi-comatose state is common.

After a period of forty-eight to seventy-two hours the temperature becomes normal, the pulse disappears, coma advances, and death occurs after some slight convulsions, the body and extremities being cold for some hours before death. It frequently happens that during the last twelve hours the patient at times seems dead, but slowly revives. Temperature falls to 97° F.

The Pernicious Type.

In this form of hæmoglobinuric fever there are usually premonitory symptoms, a feeling of general *malaise*, languor, loss of appetite, epigastric depression, and constipation. A slight rise in temperature may be noticed, and pain in the hepatic area is constant. These symptoms may last for two or three days. The invasion is sudden, and is marked by a flush of ardent heat passing over the body, accompanied by agonising abdominal pains and vomiting, and a desire to go to stool. A prolonged rigor soon seizes the patient, and a sensation of dyspnœa, amounting to intense oppression and to a fear of suffocation occurs. Headache—which has been described as a feeling as if an iron clamp were tightened around the skull, and as if a nail were driven into the brain—is early present; and excruciating pains shoot down through the spinal column, through the loins and lower limbs. The tongue is covered with a thick creamy fur, but there is generally no peculiar odour from the breath. Tenderness exists in the right hypochondrial region, and dulness is increased, extending for about half an inch below the normal limit. The stools are yellowish brown in colour, containing some mucus and much undigested food. The urine voided is absolutely black, the colour of stout.

The temperature rises to 103° F., and the pulse is rapid and full, reaching to 120 or 132. Two or more severe rigors occur, and within about three hours from the beginning of the actual attack a jaundiced hue appears. It is at first slight, but is rapidly deepened and intensified; in less than a quarter of an hour a complete alteration to a full yellow colour is produced. The colour extends uniformly over the entire trunk and limbs, into the conjunctivæ, under the nails, and over the scalp under the hair. The lips become stained, but the tongue escapes, and the ears are brilliantly saffron over the whole helix and concha. Insomnia and extreme restlessness weary the spirit, and a feeling of terror occupies the mind.

The stage of suppression of urine is entered after a period varying from twelve to twenty-four hours. The general condition appears somewhat improved, the temperature falls considerably, to 100° or 101° F., the pulse becomes calm, and the respiration almost normal. The skin grows cool, but dry and tense, and perspiration is absent. A mental rally is experienced as the severity of the symptoms abates, but vomiting still continues, and the stools are numerous and of an excessively foul odour; this odour soon ceases, and the colour becomes a dark green. Urine is completely suppressed, and the catheter will draw only a few drops of blackish mucus, alkaline in reaction. The nervous symptoms are slightly alleviated, but insomnia remains.

Rigors of great severity occur and elevations of temperature to 104° or 105° after a few hours, which are not, however, of long duration. The skin assumes a colour more intensely yellow, if possible, than at first, becoming of a mustard hue, the lips are baked and bluish, thirst grows insatiable, and a hiccough begins. The stools are usually not fæculent and generally green. A mental confusion without actual delirium is common. As the disease progresses the temperature tends to fall to normal, whilst the pulse-rate remains generally above 100 and out of proportion to the temperature. Hæmatemesis is frequently copious, but the characteristic black vomit of yellow fever is absent, though a vomit of clots, mucus, and membrane-like shreds occurs. Intense adynamia is manifested, and the heart sounds grow feeble, an anæmic murmur being occasionally audible.

If convulsions or coma have not cut short the illness, an algid stage or stage of collapse is entered about the third or fourth day, if life is prolonged so far. The temperature becomes subnormal, whilst the pulse remains above normal, varying from 96 to 112, and the respiration is quickened, varying from 36 to 48 at the end of the disease. The sensation of weakness is appalling, pains shoot through the chest and abdomen, and muscular twitchings and cramps seize the limbs, and insomnia hardly yields to any treatment. The extremities become cold, and the yellow colour fades to some extent from the conjunctivæ, ears, hands, and feet. Papules may appear scattered over the face and body with solid caseous contents, and a petechial rash is visible. The tongue and lips are black, vomiting continues, and hæmorrhage from the gums, mouth, and back of the throat breaks forth in addition to the hæmatemesis. The end is reached from syncope after a short period of delirium or transient convulsions.

The following cases are selected to illustrate the three varieties of hæmoglobinuric fever above described:

Case I. Sthenic Type.

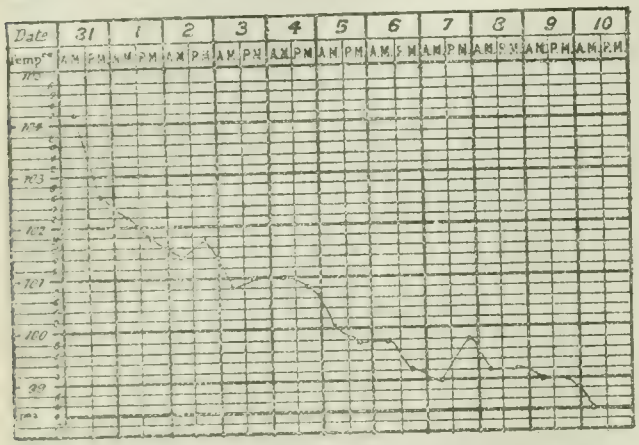
W. M., in the P.W.D. of the Gold Coast, had been for some months much exposed to malaria and sun, and had been working during January, 1895, in swampy ground along the river Pra, and dwelling in insanitary native houses.

January 31st. About noon he was attacked by great pain in the back and loins and through the lower limbs and by intense frontal headache. He complained of a parching thirst, vomited bile constantly, and was seized with colicky pains in the abdomen, producing a desire to go to stool. He

was breathing hurriedly, his tongue was covered with a thick yellow fur, the skin was dry and hot, the conjunctivæ injected, the pulse was weak, small and rapid—132.

At 5.30 P.M. he passed a large quantity of urine, nearly the colour of stout, frothy, and with a red tinge; and vomiting continued to be very troublesome. Frequent dark-coloured stools of a very foul odour were passed.

February 1st. At 7 A.M. the pulse was 108, and the urine of the same character as on the previous day, and evacuations rather copious and foul; weakness, vertigo, and retching complained of.



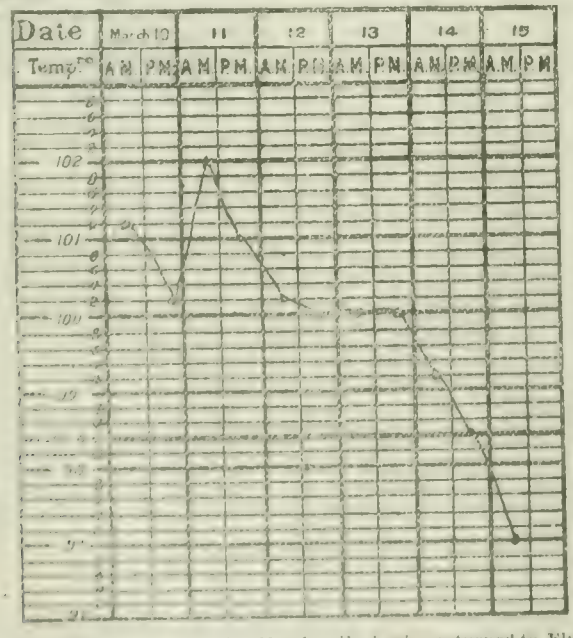
February 2nd. The pulse was 100. The patient had slept well, but felt extremely weak and consumed by a burning thirst. The urine continued to be of the same character as before.

February 3rd. The patient had slept well, the hypnotic on this occasion being sulphonal, and felt refreshed, though weak. The colour of the urine began to change, and varied during the day from a light red to a deep yellow. Bovril, corn flour, and soda and milk were added.

After this date the patient continued to improve. On February 9th the temperature remained at 99°, the urine was clear without a deposit, and on February 11th he proceeded to Grand Canary, to try a sea voyage for the anæmia remaining.

CASE II. INSIDIOUS TYPE.

G. B., French Roman Catholic Missionary, 30 years of age, had been for three years on the Gold Coast without a change, and in September, 1892, had been treated by me with arsenic for anæmia and malarial œdema



from which he recovered. On March 10th, having returned to Elmina the previous day, he felt unwell, fatigued, inclined to vomit, and absolutely without appetite. Pulse 96, and labouring. The bowels were confined, the tongue was large and flabby, and, though no actual pains shot through the body, a feeling of intense weariness and epigastric depression possessed him. The skin was cool and moist. Sulphate of magnesium was given and vomited, but was retained when repeated. After a motion, 20 gr. of antipyrin were given and as soon as perspiration occurred, quinine was administered. He was allowed bouillon freely, diluent drinks, and stimulants, and his condition improved towards evening.

March 11th. He felt worse. His face was of an unusual pallor, and a headache commenced. In the evening the pulse was 96, small and wiry; and a slight œdema of the eyelids was apparent.

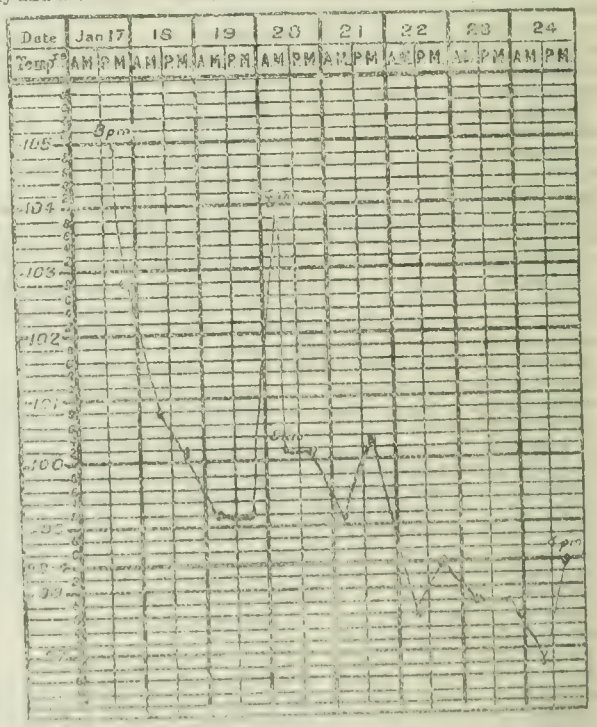
March 12th. He had had a bad night, passed urine perfectly black in colour, and began to change colour. At 8 A.M. he was quite yellow, but the skin was cool. After this hour he passed only three ounces of black urine.

On March 13th distressing hiccough began, which nothing could alleviate, and on March 14th the patient was semi-comatose and remained in this condition all day. Even iced drinks could not be swallowed owing to the hiccough. The pulse in the evening was 80.

March 15th. After some convulsions the patient died at 4 A.M., the colour of the skin being then an intensely brilliant saffron hue. The temperature was 97°, and for some hours before death the pulse was imperceptible and the body and extremities quite cold.

CASE III. PERNICIOUS TYPE.

D. E., aged 29, a District Commissioner, who stated that on January 16th he felt free from any feeling of "seediness," and went about his work as usual, was on January 17th, after the usual midday meal, reclining, and was suddenly seized with piercing pains in the stomach and abdomen. He began to vomit, and had a prolonged rigor. He was obliged to go to stool, and noticed his urine was turned porter-coloured, a fact that alarmed him greatly. Flushes of heat then passed over his body, and pains shot through his head from forehead to occiput, through his back, loins, and lower limbs. About 4 P.M. his skin began to change colour, and in less than a quarter of an hour a complete alteration to intense yellow was produced. Within the next eight hours three severe prolonged rigors occurred, during which he suffered from a sensation of suffocation. That afternoon the temperature was 105° F., and the pulse rapid and strong. The urine voided, at first about 12 ounces, was porter-coloured, but with a faint red tinge, and contained masses of hæmoglobin, grouped together, singly and with torn red corpuscles. The reaction was acid.



On January 18th the pulse was 96, and the respirations 28. He had had a bad night, slept little, was extremely restless, and in a state of terror. He had been to stool twenty times, and the evacuations were yellowish-brown in colour and intensely foul smelling. He passed about 10 ounces of porter-coloured urine during the night and early morning, but after 8 A.M. urine was suppressed. At 6 P.M. the pulse was 88.

January 19th. There was no sleep during the night and no urine was passed. The icterus was, if possible, more intense than at first, but the patient attributed the discoloration of his hands to the blankets which covered him, and which were red and white. In the evening the pulse was 104. Large doses of the bromides were given with chloral.

On January 20th the pulse was 124. Sleep was broken by a rigor of great severity occurring at 4 A.M., during which the temperature rose to 104°, falling gradually with the administration of antifebrin and warm drinks. Sulphonal produced about four hours' sleep during the day.

On January 21st the pulse was 92. His condition was unchanged, though a fairly good night had been passed. Hiccough was very troublesome; ice failed in its effect, and hæmatemesis occurred. The pulse in the evening was 104.

On January 22nd the pulse was 84. He had had a bad night, sleep disturbed by hiccough, and great weakness present. The lips and tongue were brown and thirst insatiable; the heart sounds were extremely feeble. Intense prostration, restlessness, and insomnia were present, and feelings of constriction around the chest were complained of, which friction with brandy dissipated. In the evening the pulse was 84. Next morning the pulse was 92. He had had no sleep during the night, hiccough being continuous and weakness appalling; hæmatemesis also occurred. The colour of the skin seemed to become a lighter yellow, and to fade slightly from the conjunctivæ. The pulse in the evening was 96. Sulphonal as well as bromides were given without result.

On January 24th the pulse was 108. The body was very cold and difficult to warm. Hiccough was extremely troublesome and tongue and lips were black. A hæmorrhage burst from the mouth, and about 4 drachms of acid albuminous urine were passed voluntarily. Stimulants were taken every quarter of an hour, and consciousness remained up to five minutes before death, which occurred at 5 P.M. At 4 P.M. the temperature was 98.5°, pulse 104, and respirations 48.

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REMARKS ON YELLOW FEVER IN JAMAICA.

By JASPER CARGILL, L.R.C.P.Lond.,
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Recent History of Yellow Fever in Jamaica.

For some time past yellow fever has been rare and almost unknown in Jamaica. I have often been asked by recent arrivals how it was that no one heard anything about a disease that used to be so common and fatal in Jamaica. I have never been able to give a satisfactory answer to the question. Even sporadic cases appeared to be things of the past, and there was a growing confidence that the dread disease had died out. Unfortunately the late outbreak indicates that, whatever may have been the cause of the happy lull, yellow fever is still a Jamaican disease, and only wants something to start it, and pabulum to keep it going. It may be that the recent outbreak was determined by the periodicity which is supposed by some to regulate epidemics, acting at a time when sanitary matters were not as they should have been. As soon as the disease showed itself in Kingston there were many and various speculations as to the cause. Dr. Anderson, late of Jamaica, in his useful little book just published, has truly said:

> It may occur in the most healthy country localities with perfect sanitary surroundings and be absent in city slums where from filth, overcrowding, and malaria it might be expected to exist. I do not believe that the very worst conditions of sanitary neglect will ever by themselves alone generate a case of yellow fever; something else must be added thereto.

In the recent outbreak in Jamaica the spread of the disease could not be accounted for, nor could the cases be linked on to one another. There was apparently some general atmospheric condition which affected more or less the whole island nearly at the same time. There were a few individual instances of the disease being carried from place to place, but most of the cases could not be traced in this way. It was a significant fact that while yellow fever attacked certain persons, there was at the same time a general occurrence of malarial fever, especially amongst the natives. To each case of yellow fever in my practice I had at least 30 cases of malarial fever, some of them of a pernicious type. There were some unacclimatised Europeans who did not contract yellow fever, but suffered from malarial fever. During the outbreak an officer living within two miles of Up Park Camp brought his wife and nine children out from England. In a short time I had them all under my care, not with yellow fever, as was expected, but with well-marked malarial fever; some of them were very ill. Amongst the black and coloured people I had a few cases of pernicious fever, some with jaundice and a few with albuminuria, the temperature going as high as 106° F. The mortality was not high, the disease yielding to quinine. All my cases of yellow fever were Europeans, and with one occasion severe hæmorrhagic cases. The mortality in my practice, not counting the cases I saw in consultation, was 37.5. The treatment I adopted was that known as Sternberg's. I had one well-marked case of hæmoglobinuric fever, the so-called blackwater fever of Africa, not a common disease in Jamaica. Of my yellow fever cases only one died from suppression of urine. This was a bad case from the start; the patient died on the fourth day, and had only secreted 6 ounces of urine during her illness. The "walking cases" are not often met with in Jamaica. Dr. Anderson in his large and long experience never saw a case. I had one some years ago. The disease was then epidemic in Port Royal, and very fatal amongst the sailors and white artillerymen.

Case of Ambulant Yellow Fever.—The commodore and family had a hill residence in St. Andrew, about twelve miles from my house in the Liguanea plains. One night the commodore sent for me to see his secretary, who had the morning before left Port Royal, and had ridden up the hill apparently well. I arrived at midnight, and found my patient lying dead fully dressed. His half-smoked pipe lay on a chair near the bed. The story told me was this. He had felt feverish soon after arriving from Port Royal, but had gone about the garden. An army surgeon who had passed by had seen him, and prescribed quinine. Towards evening, not being able to pass water, he complained to the commodore, who, imagining that it was a case of retention of urine, sent for me, requesting me to bring my catheters. At 10 P.M. he lay down without undressing, and after I had been sent for was found dead. I was able, by slightly inverting the body, to get black vomit to ooze from the mouth, and in drawing off with the catheter about one ounce of urine, all there was in the bladder. I found it one mass of albumen. The skin was slightly yellow, and one nostril blocked with a blood clot. I was informed that he was walking about the grounds a couple of hours before lying down.

A year or two before this I had a case which I think worthy of notice as indicating (1) rapid incubation, (2) decided infection, and (3) much muscular power during the first few hours of a quickly fatal case. In Quain's *Dictionary of Medicine* this case is alluded to in the article on "Incubation of Yellow Fever."

Case of Infection: Sudden Death after Exertion.—Yellow fever was not epidemic at the time, but a fatal sporadic case had occurred in Spanish town in a European inspector of police in a lodging house. After his death the bed had been sunned, but no disinfection of the room had been resorted to. About three days after a young Russian lady, who had been in Jamaica some months as governess in a country family, passed through Spanish town on her way to St. Ann's. She was quite well when she arrived at the lodging house in which the inspector of police had died, and she was put to sleep in the same bed which had only been sunned. The next morning very early she rode on horseback thirteen miles to Linstead, where I was then practising. When she arrived at the house of the rector of the parish, she felt faint on getting off her horse, and on being placed on the sofa vomited. I was sent for and was able to diagnose yellow fever at once. By evening black vomit and retention of urine were present; hæmorrhages soon followed, and she died early next day suddenly from heart failure, falling back on the bed while combing her hair. She had got out of bed, and had taken a looking glass in order to put her hair to rights.

The infection in this case was as rapid as typhus. There can be no doubt that during the stage of calm many deaths occur from injudicious muscular exertion. A patient of mine on the tenth day, while progressing favourably, got up against orders, and walked to the closet in the next room. Hæmatemesis and prolonged convalescence were the consequences. An army surgeon, some years ago, at Up Park Camp, while convalescing, walked to a friend's room near by, and sat up for some time. He became faint, and died the next day from heart failure.

Errors in Diet.—As Dr. Anderson points out errors in diet may have a fatal result. A Royal Engineer officer had apparently weathered the storm, so much so that the mail conveyed to his wife in England comforting accounts of his recovery. His nurse (one of the "Grannies") permitted him to share her breakfast, consisting of salt fish, yam, and roasted green plantains. Soon after he complained of acute pain in the stomach. This was followed by vomiting of blood and speedy collapse.

Although suppression of urine generally brings the case to a rapid end, cases now and then occur in which the patient lasts out three or four days without secreting one drop of urine.

Prolonged Anæmia.—An officer at Up Park Camp, whom I saw frequently in consultation some years ago, lived over 162 hours in this condition with a clear mind until he died in uræmic convulsions. He sat up and was writing a letter when seized with convulsions.

Diagnosis.

Dr. Anderson's remarks on mixed cases are well put an

worthy of consideration. I am quite sure that errors in diagnosis are often made by a too strict adherence to microscopic "rule of thumb" observation. The indications of malaria as revealed by the microscope may be mixed up with yellow fever, and an absence of these indications may also lead to wrong conclusions. When the two fevers are prevalent at the same time, as recently in Jamaica, such mistakes, especially with acclimatised natives, are very apt to occur.

INFECTION.

I have no doubt, from actual observation, that infection through fomites is sure and powerful, but whether the diseaes is spread from person to person, as small-pox, measles, and scarlet fever are, I very much doubt. When I was a student in the Public Hospital, Kingston, Jamaica, many years ago, the cases of yellow fever—very numerous there—were treated in the same wards with other diseases. One morning thirteen sailors were admitted. They nearly all died. I opened and examined five bodies, and took no extra precautions after leaving the deadhouse. The late Dr. Andrew Dunn, of Kingston, did not believe in infection. I was attending a case of yellow fever some miles away, and during the night my shirt was saturated with black vomit. I was not able to change until the next day. I never could trace infection from these and similar occurrences.

TREATMENT.

Dr. Dunn had a large experience in yellow fever, and was most successful in treating his cases. I had the advantage of seeing many of his patients with him. He was essentially a "calomel doctor," and prescribed calomel with a liberal hand from beginning to end. The first case I saw with him was an English official who had just lost his wife from yellow fever. He was in the stage of calm and profusely salivated. This gentleman recovered, but lost all his teeth. Dr. Dunn used to say that nothing pleased him better than to see his yellow fever patients salivated. I had under my care some years ago a clergyman and his wife, and a colonel of the Royal Engineers, his wife and daughter, all with yellow fever at the same time. I treated them with calomel, but without salivating them. They all recovered. Dr. Sternberg gives the perchloride of mercury throughout the whole attack in yellow fever.

As far as our present knowledge extends, there is no drug which has any specific influence over yellow fever. The time-honoured calomel purge to start with seems not only to be the custom amongst the physicians of the old school, but also of the young school. The experienced man must be ready to meet emergencies as they arise. The late Dr. W. B. Keech, one of the medical officers of the Public Hospital, Kingston, when I was a student there, had charge of most of the cases of yellow fever. He had been some time in Cuba, and after the usual calomel purge, would give equal parts of castor oil and olive oil, and, above all things, would starve his patients for two or three days, giving them as much water as they wanted. He would let them have orange-leaf tea, and, if they liked it, small drinks of black coffee. He considered blisters contra-indicated as liable to set the kidneys wrong. For suppression of urine he would apply over the loins large and oft-repeated hot linseed meal poultices, and give largely diluted doses of gin and nitre. He was considered very successful in the treatment of yellow fever. He seemed to be a disciple of Dr. James Lind, whose essay on *Diseases Incidental to Europeans in Hot Climates, etc.*, written in 1792, is worth careful reading. A case occurred within my recollection illustrating the benefit of starvation during the early stage of yellow fever. A sailor in order to avoid being sent to the hospital, hid himself under a wharf, taking his blanket and a pan of water with him. At the end of four days he crawled out, his beard and shirt being stained with black vomit. He recovered, having "cheated the doctor," as he expressed it. One of my patients during the late outbreak lived for over three days on wine-glassful doses of warm barley-water taken occasionally. His nurse forced him to take milk and soda once, but this he immediately vomited, and refused to repeat the experiment. Of course, he drank water. A young English lady told me after she had recovered from an attack of yellow fever that she used to throw more than half her nourishment into the utensil, watching her opportunity when the nurse was not looking. My own opinion, based on experience, is that during the first stage of yellow fever patients should be very sparingly fed. It is better to starve than to over feed them.

CHRONIC DYSENTERY.[1]

BY ALFRED P. HILLIER, M.D., C.M., B.A.,
Late Surgeon to Kimberley Hospital, Frere Hospital, and Kaffrarian Rifles.

DEFINITION.

ALTHOUGH the chronic form of dysentery is that to which I propose specially to direct attention, it will be necessary to begin by briefly considering the nature of dysentery generally, and the first step to a clear comprehension of our subject will be a definition of the term.

Under the term "dysentery" is embraced a group of diseases affecting chiefly the large intestine. These diseases are mostly similar in their symptoms, but they differ in their etiology and in their pathological results.

GEOGRAPHICAL DISTRIBUTION.

Dysentery occurs both sporadically and in epidemics. In temperate and cold regions it is comparatively infrequent and mild in its occurrence, while in the tropics and subtropical countries Hamilton West, an American writer, ranks it "in malignancy and mortality with yellow fever, small-pox, and cholera as one of the four great epidemic diseases in the world." That this disease, as well as all forms of gastric and enteric catarrh, increase, generally speaking, in frequency and severity as the tropics are approached and the temperature rises, there is no question.

Thus the dysenteric death-rate in the French army for 1872-1880 was 0.22 per 1,000, that of the English army in Egypt for 1884-1888 was 2.24 per 1,000, while in Senegal about 13° N. the deaths from dysentery, according to Doutroulau, form more than one-third of the total mortality. Although these figures doubtless represent approximately the relative frequency of the occurrence of the disease in different latitudes under normal conditions of life, great havoc has been wrought by it at different times under exceptional conditions of living even in the temperate latitudes of Europe. Thus it has often proved the scourge of armies, notably among our troops both in the Peninsula and Crimea. It is the disease of famished garrisons and ill-fed prisoners. And while in the tropics and subtropics dysentery becomes one of the most familiar diseases with which the physician is called upon to deal, yet even in these latitudes it is especially the attendant upon the traveller, the explorer, the hunter, the missionary, the gold prospector—all, in fact, who live a wandering open-air life, sleeping in tents or in the open, exposed to wet and cold or extreme heat, drinking frequently of impure water, and eating at irregular hours and of uncertain rations. I have during my sixteen years' sojourn in different parts of South Africa only once suffered from an attack of dysentery myself, and that was after a forced march during a campaign, when I went for nearly twenty-four hours without food, and then ravenously fed upon some very imperfectly cooked meat.

Dysentery appears to be occasionally, though not usually, contagious; and Sir Joseph Fayrer believes that it is sometimes transmitted by the effluvia of the discharges from a dysenteric patient to other patients in the same ward. I confess that I have not personally observed such a case, although I have frequently treated dysenteric patients in the general hospital ward, but mere negative evidence of course proves nothing.

ETIOLOGY.

Dysentery is such a ubiquitous disease, and certain well-known predisposing causes are so frequently followed by it, that one is compelled to believe that if a micro-organism be indeed the cause, any condition setting up intestinal catarrh will provide a suitable soil for the growth and development of such micro-organism, and that from the readiness of the onset of dysentery in a subject under the influence of these predisposing causes, the micro-organism itself is even more omnipresent than that of tuberculosis. In addition to exposure to wet and cold, extreme heat, impure water or food,

[1] Presented to the Section of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1898.

starvation, and irregular feeding must also be accounted predisposing causes.

Clinical Forms and Pathology.

Provisionally, dysentery may be considered as occurring in four different forms:

1. *The Catarrhal Form.*—This form may occur as a sporadic or endemic disease. It is the variety almost invariably seen in temperate climates, and is common both in the subtropics and tropics. The large intestine is the part affected, and in rare cases the ileum. There is an injection of the mucous membrane which is covered with mucus, and an enlargement of the solitary glands, causing them to stand out prominently. These occasionally suppurate, and sloughing and ulceration follow. Diarrhœa usually precedes an attack, and at first is not painful. Then follow griping abdominal pains, frequent mucoid blood-stained stools with straining, burning of the anus and tenesmus; later the stools become more gelatinous and bloody. The disease may last from a week to a month, and is usually followed by recovery, though death occurs in cases of severe sloughing and ulceration. The affection also not infrequently—especially in warm climates—becomes chronic. This form of the disease has not yet been assigned any specific micro-organism, although Osler states that the "cercomonas intestinalis" is seen in large numbers.

Amœbic Dysentery.—Some writers, notably Losch, Councilman and Lafleur, Osler and Kartulis, have observed a large number of amœbæ in the stools of dysenteric patients, which are regarded by them as the cause of the disease, and to which has been given the specific name of "amœbæ dysenteriæ." It is admitted that the amœbæ are found not infrequently in the stools of healthy men, but Quincke and Roos recognise three forms of parasitic amœbæ, two of which they say are pathogenic. Kartulis at one time believed he had succeeded in cultivating the amœbæ in straw infusion, but this has since been doubted, and all attempts so far to cultivate the amœbæ outside the body are now held to have failed. On the other hand, dysenteric discharges as well as some of the contents of a dysenteric liver abscess, both containing large quantities of the amœbæ, have been injected into the bowels of cats *per rectum*, and a hæmorrhagic discharge, in some cases followed by death, produced. The stools of the cat thus treated were found to contain the amœbæ, and the amœbæ were also discovered in the mucous membrane, though, according to Muir and Ritchie, "the deep infiltration of the submucous coat by the amœbæ, which is so characteristic a feature in the human disease, does not occur in these animals." Sloughing ulcers with undermined edges occur in the large intestine of men suffering from amœbic dysentery, and there is tendency to affection of the liver in the abscesses of which the amœbæ are abundantly found. Clinically, amœbic dysentery does not differ much from the catarrhal form, although Osler holds that it has certain distinguishing characteristics. It may come on either suddenly or after a preliminary attack of diarrhœa. Subsequently the cause is more irregular and marked by exacerbations and intermissions. High temperatures, both in this and the catarrhal form, are not common, and may be entirely absent. Liver abscesses are formidable complications, especially in India; the course of the disease is longer and more uncertain, and the mortality is said to be higher than in catarrhal dysentery.

Diphtheritic Dysentery.—This is not a common form of disease, and is variously regarded by different writers. Thus Kruse and Pasquale class it with catarrhal dysentery as not being due to amœbæ, but possibly to bacteria. Osler writes of it as a distinct form of dysentery. The bowel is lined with a tough yellowish membrane, with necrosing patches, which leave ulcers when they are detached. Fayrer described a specimen of this kind before the Medical Society of London as follows: "The gut is diseased from the cæcum to the anus; it is swollen and rigid." While Osler speaks of the walls of the intestine as "thickened, stiff, and infiltrated."

The Japanese Form of Dysentery remains to be mentioned. It was investigated by Ogata, who failed to find amœbæ, but discovered in sections of the affected tissues large numbers of bacilli—about the same thickness as tubercle bacilli but shorter. He obtained cultures on gelatine, in which the bacilli produced liquefaction. By injection and feeding with the bacilli the disease was produced in cats and guinea-pigs.

Chronic Dysentery may follow an acute attack—or may be only subacute from the outset. It varies greatly in its duration and intensity. In some cases it lasts for months, in others for years. Exacerbations, sometimes of an acute character, occur, and while in some cases it is so mild as to be little more than chronic looseness of the bowels, and produces no great inconvenience, in others it is accompanied with disordered digestion, a red glazed or cracked tongue, profound anæmia, and a steadily progressing emaciation, while at the periods of exacerbation all the acute symptoms of griping, tenesmus and burning are apt to return.

With these wide differences in the clinical course of the disease there naturally exists a corresponding diversity in the anatomical changes of the affected bowel.

There may be little or no ulceration, and only a roughness or puckering of the bowel, which has a slate-grey or blackish colour. In prolonged cases there is usually a thickening of the submucosa and muscular coat. In the more severe forms ulcers are invariably present.

The stools, which number from four to a dozen in the twenty-four hours, are also variable in character. They sometimes contain mucus, the fæces are thin, frothy, and occasionally have undigested fragments of food. Cases occur in which constipation alternates with looseness. During the exacerbations blood and mucus, together possibly with pus, reappear in the stools. With the exception, perhaps, of malaria and malignant disease, there is nothing which produces such gaunt, living spectres as prolonged and severe chronic dysentery. The disease occasionally produces a narrowing or stricture of the gut. In common with acute attacks it is liable to produce that most formidable of complications with which the physician or surgeon is called upon to deal, a liver abscess. The liability to liver abscess is undoubtedly greater in India and the tropics, where it is a comparatively common disease.

Diagnosis.

The diagnosis in acute attacks is as a rule not difficult, but in countries where chronic dysentery is common there is a tendency on the part of the public to attribute any chronic disturbance of the bowels to this diesase, and this impression so far prevails with medical practitioners as occasionally to mislead them. Local affections of the rectum, especially of a syphilitic or malignant character, often produce tenesmus and frequent blood stained mucoid stools.

I can recall three cases in South Africa, two in men and one in a woman, who came to consult me about chronic dysentery, for which they had been undergoing treatment and in whom I found malignant disease. It is therefore desirable to examine the rectum in all obstinate and obscure cases.

Complications of Dysentery.

The two diseases most liable to have dysentery superadded to their other symptoms are malaria and scurvy. In both a chronic form of dysentery is not an uncommon modification.

Treatment.

Dysentery in its acute stages has had at different times so many different modes of treatment that I will not attempt here to do more than enumerate them and will pass on to consider more fully the measures advisable in chronic dysentery. Ipecacuanha must be placed first as the great remedy universally used in the tropics. Docker's method of administration is the one generally used in India and is fully described by Davidson. Ipecacuanha has not however the same repute in America, according to Osler, as in India, and even in India other modes of treatment are preferred by some physicians, owing to the heroic character of the remedy and the difficulty often experienced on the part of the patient in tolerating it. The saline treatment had a strong advocate in Trousseau. The sulphates of sodium and magnesium are the salts chiefly used, and both in India and South Africa there are physicians who prefer these salts with their aperient action to any other drugs. Calomel is sometimes tried.

Injections of the bichloride of mercury have been recommended, though owing to the poisonous character of the drug they must be used of very weak strength and with caution. Injections of quinine enemata 1-4,000 or stronger are recom-

mended by Councilman and Lafleur, who have written on their researches with regard to amœbic dysentery.

It is, however, to the chronic form of dysentery that I am specially going to direct your attention, to those obstinate, severe, and exhausting cases which, a burden to themselves and their friends, too often wander from one doctor to another in fruitless search for relief. They try ipecacuanha, calomel, opium, salines, bismuth, Bael fruit, quack medicines, and a host of other things, sometimes with temporary relief, but seldom with cure. The very number of remedies which are used and recommended for this disease testify to its obstinacy to any particular treatment.

There is, however, one line of treatment by drugs which I have found infinitely superior to any other. It is a simple one, and one which, after years of trial of all sorts of remedies, I now almost invariably first resort to. It consists in the administration of castor oil and opium combined at comparatively short intervals, and in small doses. A drachm to 2 drachms of castor oil, with about 4 to 10 minims of tr. opii three times a day, is a favourite prescription of mine. With this should be combined a simple diet largely of milk and broths. In dysentery milk, or in some cases whey, is the diet *par excellence*. So great was Dr. Jameson's belief in milk that when in practice in Kimberley he was very fond of large enemata of warm milk, slowly injected into the bowel with a long tube, both in acute and chronic dysentery.

I frequently use the milk enema, especially in obstinate chronic cases. It thoroughly cleanses and empties the gut, and is more easily tolerated than any medicated and especially astringent lotions. In fact it is not merely tolerated, but it has a bland and soothing effect on the irritable bowel which is most grateful to the patient. Rest is of course an essential in cases of any severity, and even in the milder forms has an undoubtedly beneficial effect.

Hare of Edinburgh has recommended in these chronic cases injections of nitrate of silver, and Osler recommends 20 to 30 grains to the pint, of which, if possible, from 3 to 6 pints at a temperature of 100° should be injected. This may be tried if no progress is made with the foregoing treatment, but it sometimes produces such pain as to be almost immediately rejected.

In conclusion I will merely add this final piece of advice: Before trying any other remedies in chronic dysentery, the physician will be wise to give a full and patient trial to milk, castor oil, and opium.

TREATMENT OF ENTERIC FEVER BY CARBOLIC ACID AT THE BRITISH GENERAL HOSPITAL, NOWSHERA, PUNJAB.

By CAPTAIN R. C. THACKER,
R.A.M.C.

ON April 12th I was placed in medical charge of the special enteric wards attached to the above hospital. A most excellent opportunity was afforded of giving a further and more extensive trial to the carbolic acid treatment in enteric fever, and the following has been the result up to the present date:—

Number of cases treated	...	...	...	79
Number of deaths	...	...	...	11
Percentage of mortality	...	...	...	13.9 per cent.

All these cases were, in the first instance, diagnosed in the field hospitals at Landi Kotal, Ali Musjid, and Jumrood respectively, and on arrival at the base were most carefully examined both by Major Flanagan, R.A.M.C., the Principal Medical Officer, and myself. Only well-marked typical cases of the malady in which there was a concurrence of opinion were at first admitted to the special wards; so that I consider that I may fairly claim that the diagnosis was accurate and above suspicion. Owing to the exigencies of field service numbers of the patients arrived in a very advanced stage of the disease, suffering from cardiac asthenia and low vitality, unquestionably associated with the prolonged physical effort and exhaustion attending long marches in dhoolies, a railway journey of 25 miles from Peshawur, and a most trying climate—circumstances in themselves in no way conducive to a successful issue in the treatment of this treacherous and fatal malady.

TREATMENT.

Carbolic Acid.—On the arrival of the convoy of patients from the railway station they were invariably at once seen and examined, after being thoroughly washed and cleansed and placed on a comfortable spring mattress with clean sheets and body linen. Carbolic acid was then prescribed, four doses of ♏iv each, well diluted with iced water, were ordered in the twenty-four hours. This was supplemented during the night, if the skin was hot and burning and the temperature running high, by two full doses of ordinary diaphoretic mixture. The formula generally used for the carbolic acid was Calvert's pure carbolic acid ♏iv, spirits of chloroform ♏xv, compound tincture of cardamoms ♏xx, with syrup and water to 1 fluid ounce. This mixture was kept in the ice box, and was thus administered cool and refreshing to the sufferers. Without any exception it was well tolerated by the stomach, caused no unpleasant symptoms, and was thoroughly liked by the patients as a palatable medicine. In fact, in more than one instance it was reported to me by the sister on duty that the patients frequently asked for an extra dose. This, though a trivial incident, showed that the medicine was liked, and that the patient had some faith in its efficacy, a point of no small importance when treating soldier patients.

Dietary.—The principal article of diet consisted of three pints of fresh-boiled milk of excellent and irreproachable quality in the twenty-four hours; 5 ounces were given every two hours, and was supplemented by 1 pint of sound carefully-prepared chicken broth. Two pints of iced barley water flavoured with lemon were also allowed as a cooling drink (4 ounces every hour) if so desired. The enteric evacuations were examined daily with care, and on the first suspicion of "solid" curd appearing in the stools, or the slightest tendency to irritability of the stomach, the milk was either peptonised or alkalised, the latter being usually carried out by the sister on duty by adding a powder containing sodium bicarbonate, potasssium bicarbonate, and sodium chloride of each 6 gr. to each pint of milk. This simple procedure proved most beneficial and effectual in many cases.

Stimulants.—Owing to the weak and prostrate condition of many of the patients on arrival, brandy had in most cases to be administered early in small quantities freely diluted. If grave symptoms supervened, such as a dry, brown, tremulous tongue; quick, weak, and irregular pulse; rapidly failing first sound of the heart, and low muttering delirium, the amount was rapidly increased up to 8 or 10 ounces in the twenty-four hours, with a pint of champagne if necessary and indicated. Stimulants in grave and malignant cases of enteric fever in India are, in my experience, well borne by the patient, and in most cases essential to a thorough and sound convalescence.

Nursing.—The nursing arrangements were efficient, and I would wish to record my thanks and appreciation of the untiring energy and devotion of the sisters.

COMPLICATIONS.

Complications were, I regret to say, frequent and severe, and included hæmorrhage. Cardiac asthenia, with hypostatic congestion of the lungs, hyperpyrexia, perforation, secondary bronchitis and pneumonia, tympanites, nervous symptoms, and phlegmasia.

Hæmorrhage.—Hæmorrhage occurred in four cases. The quantity of milk given every two hours was at once reduced to half, and given iced; stimulants were stopped altogether if admissible, or at least reduced to a minimum. Ice in small quantities was given to suck and allay thirst; ice was applied over the right iliac fossa and abdomen generally by means of ice trays. An enema in the ward of Dover's powder 10 gr., tannic acid gr. 20, in ℥ij of mucilage of starch, which was kept ready, was administered. At the same time a mixture composed of gallic acid, aromatic sulphuric acid, and liquor opii sedativus was given by the mouth every hour for six doses if necessary. This method was introduced by Dr. Burney Yeo, and he states "that lives have been saved by the precaution of having it kept ready at hand," and I can quite endorse his opinion. Turpentine was freely used in cases of protracted hæmorrhage, and found most beneficial. A combination of turpentine ♏15, with ergotin gr. 3, and ♏ 10 of liquor opii

sedativus was usually prescribed. Ergotinine was also given hypodermically in doses of gr. $\frac{1}{30}$ every fourth hour.

Cardiac Asthenia.—Cardiac asthenia with hypostatic congestion of the lungs proved a most frequent, dangerous, and trying complication to deal with, owing to its sudden onset and rapidly fatal termination. Stimulants were given freely, and also combined with tincture of digitalis ♏x and liquor strychninæ ♏iij in ʒss of brandy freely diluted. The most satisfactory results were obtained from the hypodermic injection of strychnine in doses of $\frac{1}{30}$ gr. every four hours until some improvement was observed in the first sound of the heart and in the pulse. I have no hesitation in saying that many lives were saved by these injections of strychnine. In many of the cases it had to be exhibited from the first day of admission.

Hyperpyrexia.—Hyperpyrexia caused anxiety in several cases. It was treated by ice sponging, ice pack, ice to the head and neck, with ice trays suspended over the abdomen; and internally mistura diaphoretica, with small doses of potassium bromide. Powerful antipyretics were carefully avoided owing to their depressing effects on the circulation.

Secondary Bronchitis and Pneumonia.—These complications were usually treated with diffusible stimulants and expectorants; counter-irritation by means of mustard and linseed-meal poultices, turpentine fomentations and dry cupping.

Tympanites.—Tympanites was rare, and occurred in very few cases to anything like an excessive extent. It was readily controlled by the ice cradles suspended over the abdomen. Hot flannel stupes of turpentine and opium liniment also were used, and internally ol. turpentine in ♏x doses every fourth hour.

Diarrhœa.—Excessive diarrhœa gave very little trouble and caused no anxiety; it was easily controlled by ordinary astringents, while the amount of milk was diminished, peptonised, or alkalised as the symptoms indicated.

Nervous Symptoms.—Nervous symptoms in the majority of cases were slight and quickly yielded to opium, potassium, bromide, and tincture of hyoscyamus judiciously administered.

Phlegmasia.—Phlegmasia occurred in four cases; the foot of the bed was elevated and the affected limb painted with equal parts of glycerine and belladonna liniment and then wrapped in cotton wool kept in position with a wide flannel bandage.

Remarks.

The following favourable signs appeared after the administration of the acid:

1. A rapid cleaning of the tongue with the abolition of the characteristic unpleasant enteric odour from the breath.
2. A sustained and remarkable lowering of the febrile temperature with a well-marked morning remission in many cases.
3. Marked improvement in the unpleasant odour from the stools, which in a few days become practically deodorised.
4. Tympanites, diarrhœa, and delirium were rarely excessive and easily under control.
5. A most favourable convalescence with a sound recovery.

NINE CASES OF HEPATIC AND BILIARY SURGERY.

By RUSHTON PARKER, M.B., B.S., F.R.C.S.,
Professor of Surgery in University College and Surgeon to the Royal Infirmary, Liverpool.

The cases to which I desire to draw attention belong to three categories, abscess of the liver, hydatid tumour, and impacted gall stones. The diagnosis was in each case usually made by a physician, who also suggested the treatment which I followed. It is chiefly with regard to the operation performed that I relate the cases, which have a never-failing interest now that modern surgery so largely rescues them from the unfortunate fate formerly awaiting most of them. Three were cases of hepatic abscess, four of hydatid cyst, and two of gall stones. I might have added a few where obstruction was caused by malignant disease in the biliary passages, but they possess chiefly an incidental pathological interest in contrast with the curable cases of cholecystotomy, and will therefore be omitted on this occasion.

Hepatic Abscess.

Case I.—A man, aged 38, had been a sailor for twenty years, but had never had dysentery or other disease accounting for the abscess, which had only troubled by pain for nine weeks. His temperature was 100° F. on the evening of admission into a medical ward in March, 1894. The next day pus was drawn off by exploratory puncture and the temperature rose to 101°, where it remained for two days, falling next day to 100°, and on the fourth below 98°. The abdomen was opened that day, the tumour tapped with a long curved trocar, the liver sewn to the abdominal wall and then incised, washed out and drained with two glass tubes. An uneventful recovery took place and complete healing resulted in six weeks.

Case II.—A seafaring man, aged 45, had been told three years before that he had abscess of the liver. On admission in February, 1896, to a medical ward his temperature went up to 100° and 101° some evenings, but most evenings not higher than 99½°. Exploratory puncture revealed pus. He was transferred, and aspiration was practised at intervals for five weeks, on four occasions the amount drawn off varying from 12 to 22 ounces. These operations, including the exploratory puncture, were done through an intercostal space. On some of these occasions salt solution, glycerine and iodoform, and zinc chloride, were injected; but although the sensation and health of the patient improved, and the temperature became normal, the contents of the abscess did not diminish, as much as 22 ounces coming away on the last occasion. So, on March 30th, 1896, incision was made along a costal cartilage, that structure being then removed. On passing inwards, layer by layer, complete adhesion was found between the diaphragm, pleura, and liver, so that the affected organ was simply opened without further precaution, and washed out. A large cavity remained and gradually closed. After twenty-four days the patient got up daily, quickly improved in health, got fat, and healed completely some weeks later.

Case III.—In August, 1897, a chief officer of the mercantile marine, aged 34, came under the care of Dr. Bradshaw, who expressed the opinion that hepatic abscess existed, deep in the right hypochondrium. Here there was no fever, and preliminary puncture was deliberately avoided until the arrangements were made for the complete evacuation by incision. I wondered if the absence of fever were consistent with the existence of hepatic abscess; but Dr. Bradshaw informed me that such concurrence had been referred to by Dr. Murchison. Aspiration was performed through an intercostal space, giving vent to fœtid pus, and incision was made over a rib as in the previous case. Part of the rib and its cartilage were removed, and on incising further the pleura was exposed, and no adhesion found. The diaphragm was closely sewn to the thoracic wall and then incised, exposing the liver, on which the peritoneum was also found free from adhesions. Some clear fluid escaped, and then the liver was aspirated, with issue of about a pint of fœtid pus. The liver was then incised, and the edges stitched in a few places to the diaphragm and peritoneum. About two pints of pus now escaped, and the resulting large cavity was washed out, and drained with glass tubes. The patient has gone on uninterruptedly well, and has changed from emaciation to stoutness.

Hydatid.

Case IV.—A girl, aged 12, was tapped by me in four places with an exploring trocar on October 11th, 1895, in three places on November 13th of the same year, and in one place in March, 1896. She was brought to me by Dr. Dimond of Liverpool, and the operations were performed without chloroform in my house. Hooklets were found in the fluid by Dr. Abram, and the patient was reported free from disease early in 1897.

Case V.—The same treatment was attempted in a woman, aged 49, two simple tappings in January, 1897, having let out clear fluid containing hooklets. On February 1st the fluid was yellowish and turbid, and on March 4th purulent and fœtid. On March 5th the liver was opened and the cyst pulled out. The cavity in the liver was treated with glycerine and iodoform, and healed gradually without suppuration in a couple of months.

CASE VI was of unusual interest, having been admitted into a medical ward with dulness in the right side of the chest, suggestive of a tumour of the pleura, in December, 1896. She was 26 years of age, and by September, 1897, had undergone considerable expansion of the right side of the chest and region of the liver in the upper abdomen. By this time there was no difficulty in recognising the case to be one of hydatid of the liver, for which operation was performed on September 29th. A preliminary tapping in the epigastric region revealed the clear saline fluid of hydatid. An incision was made in the middle line, and on exposing the liver a further tapping was done, to reduce the size of the cyst, which was then incised, liver substance to the thickness of half an inch or more having to be divided. The cyst membrane was unusually thick, but easily removed. After attaching the liver to the abdominal wall, the cavity was drained as in the previous case, and she rapidly gained flesh and strength.

CASE VII was sent to me by Dr. Seagrave, of Milnthorpe, a boy, aged 14, who occupied a private ward in the Royal Infirmary. He arrived at my house in good health on October 30th, 1897, when I drew off about half an ounce of the usual clear saline fluid with a fine trocar. The operation of incision and evacuation was performed at the hospital some twenty-two hours later. On opening the abdomen fluid escaped, which I was surprised to find already purulent; while the omentum and all the neighbouring parietal and visceral surfaces were brightly injected. The liver was opened and the cyst extracted, slightly purulent fluid escaping also from it; the opening in the liver was attached to the abdominal wall, and all the upper peritoneum well washed out. A long glass tube was then passed from the epigastric opening down into the pelvis, and hot water washed through, when I was somewhat dismayed to find abundant flakes of puriform lymph escaping. The abdomen was then opened in addition above the pubes, and copious hot irrigation of the whole cavity through both openings carried out for a prolonged period, with a little zinc chloride and tincture of iodine in the water. There was universal peritonitis, as evinced by vascular injection everywhere, and by the purulent fluid above referred to; but there was no adhesive lymph anywhere. The abdomen was closed in the epigastric region above and below the opening in the liver, and also at the suprapubic wound except where a glass tube drained the pelvis. A certain amount of collapse occurred on the day of operation, and some sickness a couple of days later by the intrusion of a knuckle of intestine into the wound beside the tube. But this was reduced, the tube removed, two spare stitches tied, and the abdomen finally closed. The patient was convalescent in a few days, and returned home in good health after a month with a small packing of cyanide gauze in the much-reduced hepatic cavity. He wrote in January, 1898, reporting himself fully healed and well.

GALL STONE.

CASE VIII.—A woman, aged 42, had suffered for more than 15 years off and on from hepatic pains and occasional jaundice, with latterly tenderness and swelling over the gall bladder. After treatment at many hands, with temporary relief, she was admitted into a medical ward in the Royal Infirmary, and transferred to me after a period of observation. On April 1st, 1897, the abdomen was opened over the obviously distended gall bladder and the latter incised, with issue of many ounces of fœtid pus and afterwards bile. The opening was stitched to the peritoneum and muscles in the middle of the wound, while omentum was drawn into the opening and attached to the wall above and below the aperture in the gall bladder, to prevent leakage of the septic discharge into the peritoneal cavity. With the fluid that first escaped there was a single gall stone about half an inch wide. The patient recovered quickly without notable incident, and left hospital in less than four weeks. After a period of convalescence at the seaside, she resumed her duty as cook, in excellent health.

CASE IX.—A woman, aged 43, was sent to me from Kendal by my brother, who, in consequence of a two years' history of pain in many attacks and a state of intense jaundice of three months' duration, concluded that the case was one of gall stones. On May 26th, 1897, the abdomen was opened over the gall bladder, which could not at first be seen, and only with difficulty felt, under the liver in a very contracted form. On feeling further the common bile duct and gall bladder, and I think the cystic duct also, were manifestly packed with numerous concretions. The anterior end of the gall bladder was opened and many small gall stones removed with a small lithotomy scoop. One much larger, over half an inch in width, was broken with the scoop, and then dislodged from the common duct. In all 73 were taken out, and on probing downwards the instrument passed a long way, evidently into the intestine. The gall bladder was stitched to the deeper parts of the wound and a glass tube put in. The patient made a slow but excellent recovery. Retention of urine necessitated the catheter for a few days, during which she had also uneasiness about the wound. The jaundice disappeared very gradually, but was gone in a month's time. After a fortnight the tube was replaced by a packing of cyanide gauze dipped in warm water. At the time of operation a scanty brownish biliary mucus escaped, but afterwards a copious discharge of green fluid filled the dressing. She was healed in less than five weeks and returned home. On November 15th, 1897, I heard that she had had occasional twinges of pain in the affected region, and some flatulent distension, due to habitual constipation, but that otherwise she kept well. I saw her on August 31st, 1898, in perfect health.

REMARKS.

The cases of hepatic abscess resolve themselves chiefly into questions of technical surgery; and yet not altogether, for although the diagnosis was in each case confirmed by exploratory puncture, that incident did not occur in the third instance until the moment preceding the complete evacuation by incision. Moreover, the absence of fever, although the abscess proved to be fœtid, and the total absence of adhesion in either peritoneal or pleural cavity, are significant facts; the former in the medical analysis of symptoms and the latter in relation to the details of surgical treatment.

In the cases of hydatid the question of puncture is evidently one of considerable importance. In Case IV that act sufficed, though several times repeated, to get rid of the disease without any ill-effect on the patient's health. She was a mere child, which may have been in her favour. And puncture is a recognised mode of treatment, formerly relied on almost as a matter of routine, but one that may now be profitably reviewed as fit subject for discussion. In Case VI no puncture was made until the moment preceding incision, and therefore without possible harm. In Case V puncture was performed on several occasions, without local or constitutional injury. But although twice at intervals the fluid evacuated was clear and saline as usual, on the next occasion it was turbid, and on the last purulent and fœtid, on which incision and evacuation were arranged for the morrow. Case VII appears to me, however, to have been in great jeopardy, owing to universal peritonitis, purulent and flaky, which is apparently traceable to nothing but the puncture performed less than twenty-four hours before. It is not easy to understand how this could result from issue of the clear saline fluid ordinarily filling a hydatid cyst. Be the cause what it may, it appears, as I am informed, to be the experience of our Australian brethren, who are understood to meet with hydatids on a much larger scale than we do; that cases submitted to mere puncture, single or repeated, prove fatal in a by no means insignificant proportion—a statement which, coupled with this example, will make me very chary of puncturing in future, except when prepared to incise and evacuate immediately.

AMMONIUM CHLORIDE IN THE TREATMENT OF TROPICAL DYSENTERY.

BY SURGEON-GENERAL WILLIAM STEWART, M.D.
R.A.M.C. (Retired).

For some time past various letters have appeared in the BRITISH MEDICAL JOURNAL in which ipecacuanha is described as "useless," and sulphate of magnesia is lauded, at least in one instance, as practically a specific in the treatment of tropical dysentery. In the BRITISH MEDICAL JOURNAL of May 7th, Dr. W. S. Attygalle, of Colombo, Ceylon, in an interesting letter, offers to place chloride of ammonium in the same list.

My experience leads me to differ from all these writers in regard to ipecacuanha being useless. In the course of my long service in various parts of the East, Ceylon among the rest, I have found it most valuable in cases of acute tropical dysentery. In a pamphlet published in Rangoon in 1870, and in subsequent papers in the *Indian Medical Journals*, the *Lancet*, and British Medical Journal, on the Treatment of Hepatic Disease by Chloride of Ammonium, I pointed out, not only the special curative action of the ammonium chloride in congestion of the liver and other hepatic affections, but its efficacy also in dysentery, more especially when that disease was dependent on hepatic trouble, simple enlargement, hepatitis, etc. In my pamphlet I gave the case of an officer who was invalided from the Andamans on account of dysentery, and who *en route* to England came under my care at Rangoon. In his case ipecacuanha and other treatment had failed, the dysentery being the result of hepatic and portal congestion. One or two doses of chloride of ammonium relieved him of all his distressing symptoms: the salt acted characteristically and effectually. Indeed, he was so well in the course of a few days that he was undecided whether he should take advantage of the leave granted him for the recovery of his health.

At p. 25 of my book on the *Treatment of Hepatic Disease by Chloride of Ammonium*, London, 1879, I gave an explanation of the special action of the drug in hepatic disease, and showed how a local depletion is not only effected in the congested or inflamed liver by each succeeding dose but how the entire portal circulation is relieved from congestion, preventing the occurrence of dysentery, so apt to supervene in hepatitis, and particularly in hepatic abscess. In a paper in the *Lancet*, 1891, vol. ii, p. 707, will be found my latest views on the subject. The case of the officer above described shows the value of the ammonium chloride in what may be called hepatic dysentery, and points to the necessity of a careful examination of the hepatic region in all cases of dysentery, inasmuch as the usual symptoms of hepatic congestion, pain, etc., may be masked by the severity of the dysenteric symptoms, the patient, perhaps, never complaining of liver symptoms at all. In but 1 of the 153 cases of hepatic disease (shown in Table II, p. 78 of my book, in which chloride of ammonium was persistently administered from an early period of the disease) was dysentery observed to supervene, an occurrence which under previous methods of treatment was not infrequent. Its occurrence in this instance was in all probability owing to the inflammation of the liver going on unchecked for six days after admission to the hospital through the early symptoms simulating and being mistaken for gastritis. The true nature of the disease having been ascertained by careful examination, the chloride of ammonium treatment was at once commenced. After five days (during which the remedy was persistently administered with much relief to the pain in the hepatic region and decrease of the fulness and tenderness of the right side of the chest and the abdomen) dysenteric symptoms supervened, and for three or four days the dejections were fœtid and frequent, as many as seven or eight in the twenty-four hours, and this in spite of ipecacuanha administered in large doses in enemata, as there was fear of damage to the repair going on in the liver and related parts through vomiting if given by the mouth.

At length, as the patient was rapidly sinking, 30 gr. were given by the mouth, with attention to the usual precautions to prevent vomiting. The dose was retained without discomfort, and acted like a charm; from that time the patient was free from dysentery. Under the continued use of the chloride of ammonium for the hepatitis, he ultimately made a good recovery.

Here, then, we find a single dose of ipecacuanha administered with due precautions as to its being retained in the stomach, once and for all arresting acute dysentery secondary to hepatic trouble, which the chloride of ammonium failed to subdue single-handed. The older writers held that the "antidysenteric root" was less efficacious in cases of dysentery coexistent with, or secondary to, hepatic congestion or inflammation. The result attainable by the combined ipecacuanha and ammonium chloride treatment of such cases is confirmatory of this view, and offers one explanation of the apparent inutility of ipecacuanha in certain cases of dysentery - that is to say, in those cases coexistent with, or secondary to, hepatic congestion or inflammation. Again, the uselessness of trying to cure dysentery with small doses of ipecacuanha should ever be borne in mind, for in addition to the large dose being the only effectual one, it is less likely to cause vomiting than a small one. Ipecacuanha can now be obtained from which the emetine has been extracted. It is said to act equally well in dysentery. Should this prove to be the case it will be a great desideratum.

The diseases under consideration being so often associated, and being the cause of so much sickness, invaliding, and mortality among Europeans resident in the tropics, must be my excuse for the length of this communication. The subject is one of much interest and importance in view of the great colonial expansion now taking place.

THE EPIDEMIC MALARIAL FEVER OF ASSAM, OR KALA-AZAR, SUCCESSFULLY ERADICATED FROM TEA GARDEN LINES.

By LEONARD ROGERS, M.D., M.R.C.P., B.S., F.R.C.S.,
Indian Medical Service.

The Mode of Spread of Kala-Azar.

I have shown in my report[1] on the diseases known in Assam under the name of kala-azar, or black fever, which has decimated a tract of the Brahmaputra Valley over 200 miles in length, that it is an epidemic malarial fever which arose owing to the intensification of that of the notoriously unhealthy district of Rungpore in Lower Bengal by an extraordinary succession of five out of six years of deficient rainfall in the Seventies. I traced its spread along the lines of communication throughout the affected districts of Assam up to the present time. I also showed that the disease is undoubtedly slowly communicated from person to person, although it is generally necessary for a person to live in the house of a sufferer from the disease, or at least to reside for some time in a badly-infected village in order to contract the fever. I also recorded my opinion that the infection (using this word in its widest bacteriological sense) is usually indirect after the virus has passed through the soil. This, it will be observed, is a very different thing to saying that it is as infectious as small-pox, an opinion which some of my critics have incorrectly attributed to me. I further recorded evidence to prove that the disease has a very seasonable distribution too that of ordinary malarial fevers in Assam, and declines to a very great extent in the cold dry four months of the year, when the ground is dried up, during which time infection rarely occurs.

Advised Means to Check its Spread.

On these and other observed facts I based my recommendations for controlling the epidemic, the most essential of which was that during the cold weather months when the fever was at a minimum, all the healthy people in any infected coolies' line or village should be removed to a new site, which need not be more than a few hundred yards from the old ones.

Results.

Fortunately, as several medical officers of tea gardens in Assam (from whom I received much assistance in the course of my investigation) were willing to carry out my plans in anticipation of the publication of my report, I am now able to give the results of this measure, the importance of which can hardly be overrated in face of the continued spread of the disease, and the fact that although my recommendations with regard to the treatment of infected villages were sanctioned by the Chief Commissioner of Assam, but little progress has yet been made in carrying them out.

Dr. Lavertine, of the Nowgong District, writes that as yet he has only been able to carry out my recommendation that all new coolies should be placed in new lines and not in old infected ones. The result is that "there has been no case of kala-azar amongst 264 new coolies who have been up for eight months or over," and that although "we are still getting new cases amongst the coolies in old lines." He is now segregating every case of the disease and all their relations, and destroying the old houses that they occupied. This is the measure that I advised in the case of lines which were only

slightly infected. Dr. Lavertine's adoption of this measure leaves no doubt as to his belief in the communicability of the disease, which is all the more important as he has had several years' daily experience of it. The same is true of the other two medical men who have carried out these measures, and, further, they all agreed with me that the disease is entirely malarial in its origin and nature.

Dr. McIntyre, of the Mangaldai District, also writes to me that the moving of the recently-infected coolie lines on a garden he was in charge of has proved a success; but as he has since been transferred to a different part of the district, he has not been able to furnish me with any figures.

Thirdly, again I am indebted to Dr. Dodds Price, of the Nowgong District, for the following very instructive and conclusive figures, showing the good effect of moving out the healthy coolies from a very badly-infected line to a new one on a site about one-third of a mile away. As I saw this measure carried out myself, I can testify that the new lines were on a similarly-situated site to the old ones, and the surrounding and sanitary conditions were similar in the two cases, so that any result must be due solely to removal of the coolies out of the range of infection. I cannot do better than give Dr. Price's report verbatim.

In the Old Solona lines (the infected ones) there were 240 working souls, including boys and girls, and in the lower lines 60, the latter being free people (not under contract), having lived in these lines from time immemorial, figuratively speaking. Of the 240 souls in the old lines, I found 146 either suffering from kala-azar or with it in their houses (in other words, infected people). Of these we cancelled the contracts of 17 adults and cleared them out; the remainder we sent to the infected lines at Rangamati. The 94 healthy people we drafted into the new lines at Old Solona, and all new coolies as they arrived were sent there, so that yesterday (June, 1898) the population stood at 416 souls without a single kala-azar case among them. To begin with we had one or two doubtful cases among the old line coolies, but these were immediately sent over to the camp at Rangamati. To be accurate, there were 5 cases, 2 of which subsequently died; the other 3 recovered, and were kept at and are still at Rangamati. By acting promptly we thus kept the new lines free from kala-azar, and now fifteen months since their completion there has been no death from the disease. Now, as to the 60 coolies living in the lower lines. These, being old residents and free people, could not be interfered with, and refused to be saved from themselves. Kala-azar has spread to them, and accounted for 6 deaths up to the end of the year; 2 more deaths have taken place this half, and there are 10 cases now in the lines, several of which I consider will end fatally.

Of the 129 souls that we sent to the infected lines and houses in Rangamati 8 died, 10 had their contracts cancelled and were cleared out (all of them would have died), and 22 were yesterday still suffering either from the disease or from debility after a mild attack. These people are kept entirely to themselves, and are not allowed under any pretext into the lines on the Solona side of the manager's bungalow or in the new lines we have started towards Rungagora.

From the above it will be seen that with the exception of the five cases which appeared shortly after the removal from the infected lines, and which had evidently contracted the disease before removal, there has not been one case of the epidemic disease among the 94 healthy coolies moved, although the lines in which they had lived before were so badly affected that more than half their entire population were either suffering from the fever, or had cases in their households, and over one-third of them subsequently suffered from the disease. Again nearly one-third of the old coolies living close to the infected lines suffered from the disease within 15 months of its spreading to them. The success of the measure adopted is evident, and will be very encouraging to those who have to face the suffering and loss which this epidemic has hitherto inevitably caused when once it has got a footing on a tea garden. It is also to be hoped that their success on tea gardens, where they can be easily carried out, will lead to more energetic steps being taken to afford the villages in the affected districts the benefits which the measures I have recommended will assuredly bring to them in exact proportion to the efficiency with which they are carried out, although the problem is admittedly a more difficult one in their case.

Kala-Azar and the Plasmodium Malariæ.

Lastly, I wish to point out that the facts detailed in this paper afford strong support to my view that the infection in this epidemic malarial fever is an indirect one, by means of the passage through the soil of the plasmodium malariæ which is constantly found in this disease. How the organism escapes from the body, whether by the aid of some living agent as the mosquito, or by passing out in one or more of the evacuations or secretions, or as I am disposed to believe by being breathed out from the lungs, it is impossible to say at present. When this stage of the life-history of the organism is finally settled, then we may also hope for a solution of the mystery of the communicability of this decimating epidemic malarial fever of Assam.

REFERENCE.

1 *Report of an Investigation of the Epidemic of Malarial Fever of Assam or Kala-Azar.* 1897.

REMARKS ON THE DEATH-RATE OF DYSENTERY AND ON DYSENTERY AND LIVER ABSCESS.

By W. J. BUCHANAN, B.A., M.B.,

Dipl. State Medicine, Dublin; Captain I.M.S.; Superintendent, Central Gaol, Dacca, Bengal.

The Case Mortality of Dysentery.

On reading Dr. Manson's valuable book on *Tropical Diseases*, I find he quotes 37.0 per cent. as a case-death-rate from dysentery among natives, as also does Davidson. Such a death-rate can only have reference to natives admitted to public hospitals after days or weeks of self-neglect in their own homes; it certainly does not apply to dysentery treated promptly and efficiently.

In old days dysentery used to be the opprobrium of our Bengal prisons, but within recent years great improvement has taken place. In the years 1896-7, of 7,626 cases admitted to all gaol hospitals only 293 died; that is, only 3.8 per cent. of the cases—about one-tenth of the above-quoted percentage. Even in the extremely unhealthy malarious year, 1894, I find from the figures of certain prisons which I happen to have collected, that the death-rate from dysentery was only 9.0 per cent. Such figures include all forms of dysentery, from the mild to the chronic relapsing (non-amœbic) form, which in Bengal is too often the terminal episode in many cachectic conditions—malaria, tubercle, syphilis, famine, etc. Among Sepoys—picked men in the prime of life, and living under good sanitary conditions compared with the populace generally—the dysentery death-rate is also said to be about 3.0 per cent. The explanation of these low death-rates is that in regiments, as well as in gaols, a man who is ill, being unfit for work, is at once sent to hospital and treatment begins in time; in public hospitals natives often do not come till they are in the last stage of weakness and emaciation from this exhausting and anæmia-producing disease. For a similar reason, the prison death-rate from pneumonia in Bengal is only 12 to 14 per cent.—a very low figure for pneumonia among malaria-stricken people. (Sturges gives 19 per cent. for pneumonia in England.)

Liver Abscess and Dysentery.

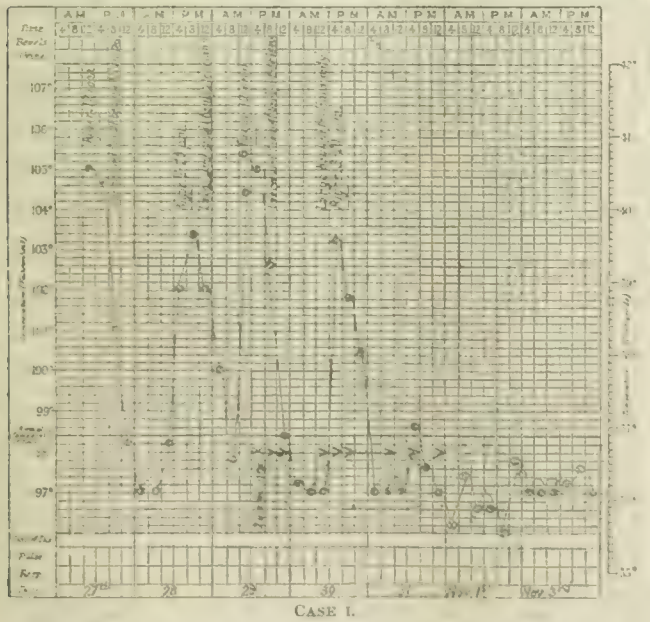
In over six years' prison experience, in charge of over 1,200 prisoners daily, I have never seen in gaol a single case of liver abscess, while I have had abundance of dysentery (I refer to natives of India only). Few natives escape dysentery; hence in them a mere history of the fact of previous dysentery is worth little in the etiology of liver abscess. Nevertheless, some French and American authors write as if "amœbic dysentery" and "tropical dysentery" were synonymous terms, though they themselves have shown that liver-abscess follows "amœbic dysentery" in the proportion of 1 case in 4. I believe the B. coli, the B. pyocyaneus, etc., are more often the cause of dysentery than the much-talked-of amœba. "Everywhere," says Davidson, in Allbutt's *System*, "natives of tropical countries are *less* liable to liver abscess," and we may add that everywhere they are extremely liable to dysentery. If dysentery is so important a predisposing cause, how is the rarity of abscess of the liver to be explained among natives in the Straits Settlements, West Indies, among native Egyptians, at Zanzibar, in the Seychelles, and in Brazil and Cayenne? (*v.* Davidson's chapter, *op. cit.*). In most of these places malaria is common and in some very severe, and in all dysentery is common. Liver abscess of pyæmic origin is certainly not uncommon outside public hospitals in India, but I am here only concerned with the fact that while dysentery has been extremely common in Bengal prisons, liver abscess has been extremely rare. A medical subordinate of mine in this large central gaol (1,200 prisoners), who has served here for ten years, has seen many hundred

cases of dysentery and only one case of liver abscess (in gaols all cases which die are examined *post mortem*). This ounce of fact—the great rarity in natives of liver abscess contrasted with the abundance of dysentery—should be remembered in discussing the question.

AN EPIDEMIC OF MALARIA ON BOARD SHIP, WITH A RECORD OF BLOOD EXAMINATIONS.

By D. C. REES, M.R.C.S., L.R.C.P.,
House-Surgeon, Seamen's (Branch) Hospital, Albert Dock, E.

Outbreaks of malarial fever in ships at sea have been frequently recorded, but, so far as I am aware, in none of these has there been a systematic examination of the blood for the plasmodium. I thought, therefore, that an account of a ship epidemic in which such an examination was made might be worth recording. The ship in question—a steamer, with a mixed crew of Europeans and natives, numbering ninety-one in all—left Glasgow on August 4th, 1897, and arrived at Calcutta on September 3rd. She remained at this port, lying alongside the quay, for seventeen days. The weather all the time was extremely hot and oppressive. She started on the homeward voyage on September 20th, the health of the crew at this time being good. Water had been taken on board in Calcutta, and stored in the ordinary covered tanks. The first port touched at was Colombo, which was reached on September 25th. The ship remained here only a few hours, and was anchored just inside the breakwater, some 400 yards from the shore. A fresh supply of water was taken on here. The health of the crew was still good. Nine days after leaving Colombo, while the ship was in the Red Sea, one after another of the crew became affected with fever; the exact number of cases is not known, but there is a definite history that 22 men were laid up at this time; 3 of these were Europeans—namely, the second and third engineers, and 1 quartermaster; the remaining 19 being natives—namely 1 quartermaster, 1 saloon butler, 1 messroom boy, 1 chief cook, 1 barber, 1 Lascar, 1 deck boy, 1 Lascar cook, 5 firemen, 1 coal trimmer. The sick were treated by the ship's surgeon; some apparently recovered quickly, some suffered a relapse after about six days, and some were sick during the rest of the voyage. The ship reached London on October 25th.



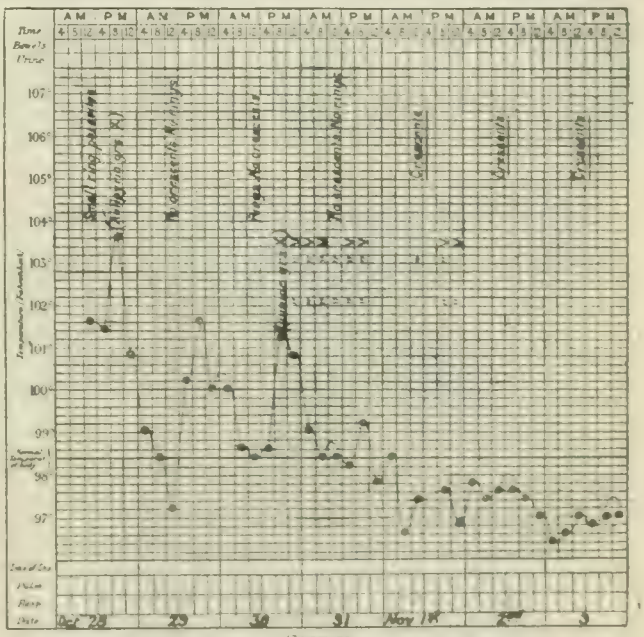
Case I.

The above account is not so complete as could be wished, but unfortunately I have been unable to communicate with the ship's surgeon, and consequently I have been obliged to rely on the ship's officers and the patient's themselves for these details. Four of the crew were admitted to this hospital under the care of Dr. Manson. The following is a brief summary from the notes of each case.

Case I.—J. M. A., quartermaster, aged 27, a Scotchman, had been at sea for fourteen years, but never had malaria or any other illness before. He went on shore at Calcutta on one occasion only for an hour and a half. He did not land at Colombo. His first attack of fever occurred on the ninth day after leaving Colombo, and he suffered with attacks off and on during the rest of the voyage. He was admitted on October 27th. Temperature 105° F., sweating, and anæmic; spleen enlarged and tender; the other abdominal viscera normal; thoracic viscera normal. Blood examination revealed a double benign tertian infection, one group of the parasites being in the early non-pigmented stage, and the other group being in the large pigmented intracorpuscular stage, and occupying about two-thirds of the red corpuscle. The subsequent clinical features of the case were those of a typical double benign tertian ague.

His temperature chart demonstrates very well the double character of the fever. Thus on October 27th and 29th rigor occurred at noon, and the temperature rose approximately to 105°, whereas on October 28th and 30th rigor occurred between 2 and 3 P.M. approximately, and the temperature rose to 103.2°. Quinine was given on October 29th during the sweating stage. It was interesting to observe that the drug destroyed the plasmodia liberated on that day, and which otherwise would have matured and caused a paroxysm on the 31st; whereas it failed to affect the half-grown parasites born on the 28th: these matured on the 30th, the rigor occurring at the expected time. Blood examination on the 30th, before rigor, revealed a single infection only. No relapse took place, and the patient was discharged as convalescent on November 4th. His blood was free from parasites and spleen much reduced in size.

Case II.—D. B., quartermaster, an Indian, had been at sea all his life. He stated that he had suffered from fever before, but not during the last eighteen months. He went ashore repeatedly at Calcutta, but not at all at Colombo. The first attack of fever occurred on the ninth day after leaving Colombo. He had daily bouts of fever on the next six consecutive days. He was treated by the ship's surgeon, and remained free from fever until two days before admission. He came to the hospital on October 26th, looking very ill, with staggering gait, sweating, and vomiting bilious material. The temperature was 103.6°. He was cachetic, the spleen was enlarged and tender, and the liver was enlarged. Blood examination revealed many small ring parasites; doubly infected red corpuscles were frequently met with; brassy bodies and pigmented leucocytes were also observed, but at that period of illness no crescent bodies. Antipyrin was given to relieve his distress. He had a rise of temperature on the next two days, but no definite chill occurred. Quinine was given

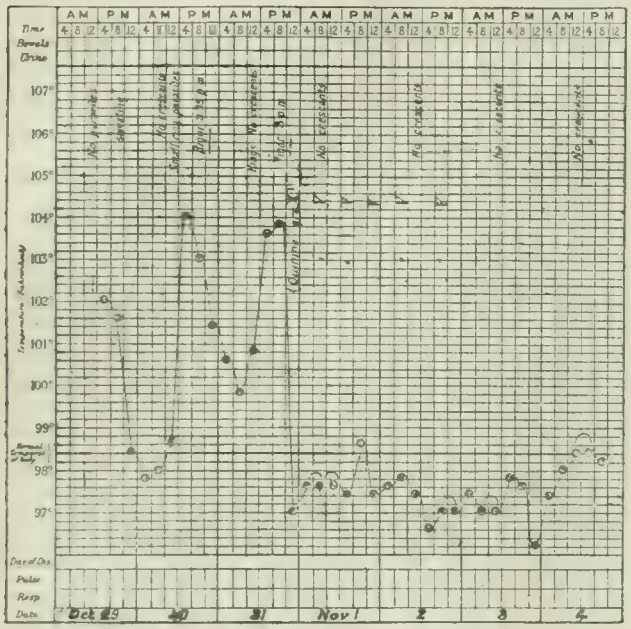


Case II.

on October 30th, and the fever did not recur. The blood was examined daily. Crescent bodies first appeared on the fifth day after admission, that is on the seventh day from the onset of the last attack of fever. The crescents subsequently became very numerous, four or five being present in each field. Exflagellation took place with great readiness, occurring in five minutes if the slide was breathed upon, or if the droplet of blood was exposed on the finger for 20 to 30 seconds. He was discharged by his own wish on November 16th much improved, a few crescents being still present in his blood.

Case III.—A. B., a Lascar, was admitted on October 20th. No reliable history as to dates could be obtained, but the native quartermaster testified to the fact that he was laid up with the rest of the crew in the Red Sea. The temperature was 102°; he was sweating and anæmic; the spleen enlarged. Blood examination revealed a large number of small ring parasites, and some pigmented leucocytes; no crescents found. On

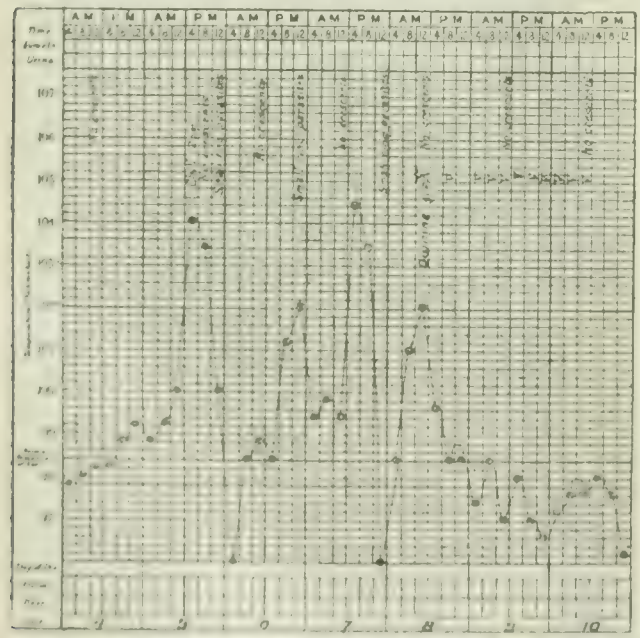
the two following days he had fever of a somewhat irregular character, the highest point 104°. (See temperature chart below). Quinine was then



Case III.

administered. This patient remained under observation until November 24th. No relapse occurred. The blood was examined repeatedly, but no crescent bodies were observed—a circumstance possibly due to the patient being so thoroughly cinchonised two days after admission.

CASE IV.—K., a coal trimmer, an Indian, presented himself at the out-patient department for burns on his hand. We noticed that he looked extremely ill and wretched. On ascertaining that he came from the same ship as the above cases, and suspecting from his appearance that he was the subject of malarial infection, we examined his blood. Many crescent bodies and pigmented leucocytes were found. He was admitted. The temperature was normal; the spleen moderately enlarged, and he was markedly cachectic. He said that he had been ill when the ship was in the Red



Case IV.

Sea on the homeward voyage, but that he had recovered. We kept him in bed and fed him well. Daily blood examinations were made; the crescents became fewer and disappeared from the finger blood on the eighth day after admission. The blood had the characters of a profound oligocythæmia, the corpuscles were also very pale and irregular in size and shape. On the ninth day the patient had a sharp chill, temperature rising to 104°; this was followed by prolonged hot and sweating stages. During the paroxysm the blood was found to contain very many small ring parasites. Fever continued for the next three days; during the whole of this time the patient was ill. The temperature chart suggested that in this case the infection was a double tertian one. I was unable to prove this by the blood examination. The small ring parasites were found on the three first days of fever, but no differences were detected. Quinine was given on November 8th. Daily examinations of the blood were continued. The crescents reappeared in the blood on November 14th, that is on the tenth day after onset of the attack of fever. They never became numerous and disappeared in three days. This patient remained under observation until December 8th, no further relapse occurred and his general health improved remarkably.

Case IV was especially interesting, because it demonstrated so well the value of blood examinations as an aid to diagnosis. The true nature of this patient's condition might have been overlooked but for this examination. It was also instructive because we were able to watch the gradual disappearance of the crescents, and then the bout of fever and finally the reappearance of the crescent bodies ten days after onset of the ever.

Before the steamer from which these cases came left London I went on board and obtained indiscriminately blood films from forty-two of the native crew. These were stained and examined. It was found that specimens from six individuals apparently not suffering at the time contained parasites, three were the benign tertian form and three were the crescent form of the malaria parasite. As the crew numbered ninety-one it is quite probable that another six or seven men were also infected.

The time and the source of the infection are interesting features in relation to this epidemic. With regard to the time, the question suggests itself, Did the infection occur while the ship was at Calcutta, or while she was at Colombo? The experimental incubation period of malaria is from eight to twelve days, or, in the case of some crescent-forming parasites, even earlier; if, therefore, infection took place at Calcutt, it was a little prolonged, being in fact fourteen days. Calcutta is decidedly malarious; the ship lay alongside the quay there for seventeen days, and fever is reported to have been very prevalent during the past season. Colombo, on the other hand, is comparatively healthy; the ship remained there only a few hours, and was anchored a considerable distance from the shore. On the whole, it seems probable that the infection originated at Calcutta, and that the incubation period was extended to fourteen days—rather longer than that usually assigned to experimental malaria. With reference to the source of infection, unfortunately we have no precise knowledge as to how the plasmodium gains access to man. The balance of opinion is in favour of its being airborne, entering either by the respiratory or alimentary canals. There are some points in connection with this epidemic which make one at least consider the possibility of water-borne infection. Assuming that the infection was an aërial one, the crew were probably exposed to infection during the whole of their stay at Calcutta, and we should have expected that fever would have occurred amongst the men before or soon after leaving Calcutta. We should not in fact have expected such a simultaneous outbreak of malaria fourteen days after leaving port. The water supplies at Calcutta and Colombo are both considered good, so that if the infection was water-borne the contamination was probably accidental.

Another interesting feature of the outbreak is that while some of the crew became infected with the benign tertian parasite, others contracted the æstivo-autumnal or crescent-forming parasite—the exact proportion of examined cases being 4 benign tertian and 6 æstivo-autumnal. Laveran leads one to infer that he believes that the same source of infection may give rise in one individual to the large benign parasite, and in another individual to the small malignant parasite. This epidemic to some extent seems to bear out his views on this point. Our knowledge of the extracorporeal phase of the malarial parasite must be much more complete, however, before we can definitely settle a point such as this. It seems conceivable that at the onset the infection may have been a very mixed one, and that for some unknown reason in one man the benign tertian form predominated, and the malignant form became suppressed and failed to multiply in the body, and that in another man the reverse took place.

It is noteworthy that the incubation period appeared to be the same for the two forms of the parasite, for the two quartermasters were both taken ill on the ninth day after leaving Colombo, one with benign tertian, the other with the small malignant parasite.

It has been said that Europeans are more likely to contract the malignant malarial infections, and natives the benign forms; the reverse, however, occurred in this outbreak.

Rogers in his recent work on kala-azar states that the crescent body is rarely met with in Indian fevers; this outbreak does not bear out his assertion, but concurs rather with the experience of Ross, Carter, and others, who affirm that the crescent parasite is frequently seen.

I beg to acknowledge the kindness of Dr. Manson in giving me permission to publish these notes, and also for the trouble he took in confirming my diagnosis of the blood parasites.

THE EFFECTS OF A CHILL DUE TO A SUDDEN CHANGE IN TEMPERATURE, AMOUNTING TO 150° F.

By CHARLES D. MUSGROVE, M.D.Edin.,
Penarth, Wales.

In September, 1894, on board a steamer, of which I was surgeon, while crossing the Indian Ocean, 5 degrees south of the equator, an engineer, with his fellow engineers, was called upon one afternoon to undertake some repairs in a chamber which was situated immediately above the boilers, and surrounded by the tubes leading from the furnaces to the funnel. The temperature in this compartment was 160° F., and on this account the work had to be conducted in spells of two or three minutes at a time, as it was found that by the end of even this short period the men were threatened with symptoms of heat apoplexy. In the intervals the men came out to "cool" themselves on deck, where the heat was of course excessive at that time of day. After an hour or more of this the work was completed, and the engineer in question entered the compartment once more for the purpose of making a final inspection. He was attired in the thinnest of cotton suits, and perspiration was pouring off him from head to foot; and it was in this condition that on emerging from this atmosphere of 160° F. he immediately descended and entered the refrigerating chambers, where the temperature was more than 20° F. below freezing point, in fact few degrees above zero; the walls and floors were covered with a thick coating of snow. Without even an overcoat or a scrap of clothing in addition to his sweat-saturated cotton suit, he remained for a quarter of an hour in this atmosphere.

On retiring to his cabin he had a headache, and spent a restless night. When I saw him at 8 A.M. next day his temperature was 104° F., the pulse and respirations rapid. He was shivering violently, and was lying on his side with his knees drawn up on account of severe pain in the abdomen, the walls of which were rigid and acutely tender to pressure, sufficiently so to indicate that peritonitis was present. The bowels were costive, but this condition gave place during the next day or two to diarrhœa, with motions characteristic of inflammation of the lining membrane of the colon. The urine was loaded with albumen; circumstances did not permit of a microscopic examination for casts. In the chest there were rhonchi to be heard at various parts, with patches and tubular breathing, and signs of pleurisy, with doubtful effusion at the bases behind. Over the heart, in the second and third left interspaces close to the sternum, there was a to-and-fro friction murmur heard, but it was indefinite in character, and he could not hold his breath so as to enable one to differentiate it; it disappeared in the course of a day or two, and was not accompanied by any irregularity in the pulses, so that it was probably not due to pericarditis.

The progress of the case was characterised by a gradual subsidence of all the symptoms, and by an absence of anything in the nature of a crisis. From the afternoon of the first day the temperature and pulse-rates fell steadily, and by about the fourth day they had reached the normal. The abdominal pain became less intense, and in forty-eight hours had disappeared, and the diarrhœa which had supervened passed off a couple of days later. The pulmonary symptoms abated also, and by the end of the first week the lungs had completely cleared up. By the end of this period also the amount of albumen in the urine was a mere trace, and within ten days from the onset of the illness the patient was in comparatively good health, and able to resume his duties. One point of interest is that throughout the case there was an entire absence of any rheumatic symptoms or pains in the limbs or joints.

Such an experience as this, involving a sudden variation in the temperature of the surrounding air, amounting to 150° Fahrenheit, must be almost unprecedented, and the surprising fact, to my mind, is that the congestion which occurred in consequence of it left no evident permanent change behind. Probably the widespread nature of the congestion was the patient's safegard, as the view may be held that the engorgement of each organ would act to some extent as a drain or a poultice to that of the other organs, thus preventing any great amount of inflammatory effusion in any particular viscus.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE CLINICAL VALUE OF ENLARGEMENT OF THE SPLEEN.

In all textbooks of medicine, uniform enlargement of the spleen is mentioned very prominently, as a symptom in certain common diseases. The chief are—leukæmia, engorgement from cirrhotic liver, amyloid disease, tuberculosis, peritonitis, acute miliary tuberculosis, malaria, pyæmia, erysipelas, typhoid fever, and some other zymotic diseases.

How often have those who have carefully searched for splenic enlargement actually discovered it? Of course, in surgical conditions of the spleen, one can do much both by percussion and palpation, but in the majority of likely medical cases, one rarely feels satisfied that enlargement of the spleen exists. In some cases of thin children, when the fingers can be doubled in under the edge of the ribs, the spleen can be readily felt. There can, however, be no doubt that enlarged spleen is a very valuable symptom, but it is a mistake to exalt its clinical significance seeing that it is usually only found *post mortem*. One may safely say that many famous physicians have failed to recognise enlarged spleens which have been proved, *post mortem*, to be twice the normal size. The most cautious decline to say that a spleen is enlarged till they actually feel it.

Physiologists have shown that the spleen is actively engaged in important metabolic processes. It has a very distensile capsule and plexus of veins. Even in good health it varies much in size, being largest about five hours after a heavy meal. This would constitute an initial difficulty as to the normal size of the spleen in the living subject. The spleen is also a very movable organ. If a patient be corpulent with much fat in the great omentum, if the stomach and adjacent colon be overloaded or the reverse, if the over-lying lung above be diseased, or if there be pleuritic adhesions, if the kidney be larger than normal or have much perinephric fat, obvious difficulties will arise in percussion and even in palpation.

Different percussors will bring out different results. It is wise, therefore, to warn the student not to be disappointed at not being able to discover enlarged spleen in all diseases where it is found *post mortem*. By all means let him try to discover it.

Robert Turner, M.A., M.D., F.R.C.S.Edin.
Eastwood, Notts.

YAWS IN MOTHER AND INFANT.

M., the wife of a native official at Nailaga, was confined of a child on February 26th, 1898. She was attended on the same day by Avisai, the native practitioner from whom I gathered the history of the child previous to March 17th, on which day I saw them both. The child was reported to me to be suffer-

ing from a peculiar eruption, and this I found to be ordinary encrusted yaws, the only peculiarity being its appearance during the first month of life, a thing sufficiently rare to surprise the natives. The disease is so common that it usually excites no comment. It is ordinarily contracted by contagion or purposed inoculation in childhood. A belief obtains among natives that it is necessary for healthy development that every child should contract it, and also, perhaps with more truth, that the symptoms are more severe if it be contracted in adult life. As a consequence, scarcely any natives reach adult life without experiencing its ravages. The following exact history was obtainable in this case: The child when born had a peculiar eruption like prickly heat (*karokaro*) on the ring finger of the left hand, and on a small area of his back. On the ninth day the eruption was observed to have assumed the characteristics of *coko* (pronounced *thoko*). From the original localised yaws, the disease became a general one, and involved in scattered patches covered with thick yellow crusts the whole body, while the hands and feet were distorted by more deeply situated tissue growths. I now examined the mother, who said she had contracted *coko* in childhood, and not since, and that she was not then its subject. I found on her right wrist, on the cheeks, on the upper sternal region, and on the thighs, typical warty growths of yaws such as the subjects often present when the force of the disease is in a measure abated. She was suffering from gonorrhœa, and had been so suffering at confinement.

I diagnosed, in the mother, a second infection by yaws, and in the child yaws contracted in the act of birth or closely thereabout. I dismiss as improbable the theory that the yaws in the mother was a recrudescence of disease contracted in childhood; because, if the disease had retained any virulence it would have displayed itself in a woman of the patient's age (over 30) rather in tertiary form than as warty excrescences; while, again, had these warty growths been the secondary product of a declining later infection, the history of a succession of crops of yaws in diminishing intensity would have been obtainable. As it was, the comparatively mild character of the eruption, too insignificant to attract the subject's attention, rather supports the theory of a comparatively recent new infection of a subject to a degree protected by a previous attack.

I may mention that I have seen two other women, nearly certainly infected in childhood, in whom the order of infection in the above case was reversed, the disease being contracted from the children they were suckling. The disease was in both cases localised, as far as I could observe, to the immediate vicinity of the nipple, the mammary gland being enlarged and indurated. I was unable to see them more than once.

Natasi, Ba., Fiji Islands. A. Herbert Hallen, M.D.

SEVERE DYSENTERY: CARDIAC FAILURE; HYPODERMIC INJECTION OF ARTIFICIAL SERUM: RECOVERY.

In May, 1898, I received an urgent call to attend a young man who, I was told, was suffering from very severe diarrhœa.

On arriving at the house, some six miles distant, I found that he had had continuous diarrhœa for three days. The features were pinched, the tongue furred and dry, and there was severe tenesmus and abdominal pains. The stools, which were passed in quick succession, in fact about every quarter of an hour, were most offensive, containing large quantities of blood and mucus.

I at once put him under treatment, trying all the different recognised remedies for dysentery without avail, when, as a last resource, I injected an enema of nitrate of silver (g. 1 to ½ litre of water) well up the lower part of the descending colon by means of a soft indiarubber catheter. This enema had the desired effect, as soon after the evacuations became much less frequent. He continued to progress favourably for some two or three days, when I suddenly received a very urgent message.

On arriving at his bedside I was astounded to find him in a state of collapse; his face was pinched and anxious-looking, his extremities were cold, his pulse could hardly be felt, and was 140 a minute. He complained of a feeling of great oppression in the chest, with considerable difficulty in breathing, a rattling sound being heard in the throat at each inspiration. The heart sounds in the mitral and aortic areas were decidedly faint, in the tricuspid slightly more pronounced. The dysenteric evacuations had once more returned with their former severity; in fact I considered the case almost hopeless. However, after applying hot bottles to the extremities, and again injecting another enema of nitrate of silver well up the lower bowel, and giving small quantities of stimulant by the mouth frequently repeated, I determined to try the effect of the injection of the salt solution prepared according to the following formula: Sodium chloride g. 9, distilled water g. 1,000. I disinfected the patient's abdomen over the spot where I intended making the puncture, and as soon as it was possible injected half a litre of the so-called artificial serum hypodermically.

I was surprised to see the difference in the patient after this half litre of fluid had been properly absorbed. I was able to note a distinct difference in the pulse; from 140 it had come down to 120; it could now be distinctly felt. The patient was able to answer any questions put to him, and told me that the great sense of oppression he had recently felt in his chest had almost entirely disappeared; in fact he said he felt a different man. Twenty-four hours later I injected another half litre of salt solution, after which I was glad to find my patient quite out of danger.

I publish this case as I consider it shows what faith we can put in this salt solution injected hypodermically, even when it appears that life is fast ebbing away, and I am firmly convinced that it only needs to be tried to prove itself a most indispensable adjunct to modern therapeutics.

Herbert J. Walker, M.B.Edin.

Durazno, Central Uruguay, S. America.

ON SAWDUST BAGS AS A SURGICAL DRESSING.

Materials Required.—(1) Clean sawdust passed through a sieve of ⅛ to ¼ inch mesh; (2) bags of muslin or butter cloth of various shapes and sizes.

Method of Preparation.—(1) Slightly moisten the sawdust with 1 in 1,000 solution of mercury perchloride, and then fill the bags, and lightly stitch up the open end; dip one surface into 1 in 20 carbolic lotion, and place the bag with the wet surface down on an aseptic tray; the next bag is dipped, and placed similarly on top of the first, and so on, until all the bags are damp with the lotion; (3) the whole set is now placed in a sterilising oven, and heated to 100° C. for one hour.

Method of Use.—The bags are now ready for use. A deep dressing of Lister's double cyanide gauze is used, and the bag bandaged on outside. If preferred, however, one surface of the bag may be impregnated with double cyanide by mixing the latter into the carbolic lotion (30 gr. of double cyanide to one pint of 1 in 20 carbolic lotion).

Advantages.—These bags are cheap, thoroughly absorbent, comfortable, easily applied, and reliably antiseptic. If the bags are sufficiently damp they are not dusty.

Ernest F. Neve, M.D., F.R.C.S.Edin.

Mission Hospital, Kashmir.

MALFORMATION OF KIDNEY AND URETER.

May I add another variety to the long list given by Dr. Newman in the British Medical Journal for September 3rd? My specimen was taken from a man aged 65, who died of uræmia, the right kidney and ureter being distended with purulent urine, the bladder hypertrophied and sacculated. The bladder, ureters, and kidney were dissected out *en masse*. The left kidney was represented by a small fibrous mass, in size equal to half a chestnut. From this mass the left ureter, very thin walled and distended to double its normal size by thin, turbid fluid, terminated in the highest part of the left seminal vesicle. There was no continuation of ureter to the bladder, nor was there any suggestion of an opening to be found on examination from within the bladder. The abnormality is congenital, the ureter and vesicula having protruded from the Wolffian duct in conjunction instead of separately. There are two similar specimens in the museum of St. Bartholomew's Hospital.

Plymouth. C. Hamilton Whiteford.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

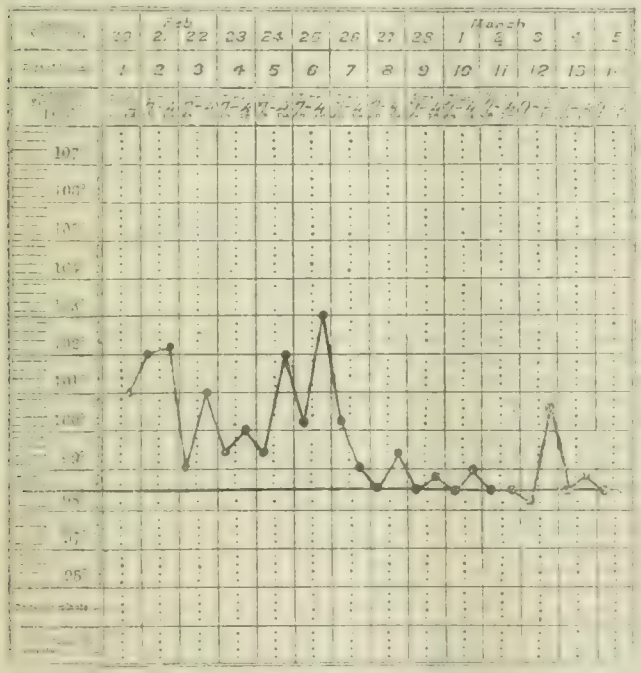
CIVIL HOSPITAL, ELLICHPUR, BERAR, INDIA.

PENETRATING WOUND OF ABDOMEN, WITH PROTRUSION OF INJURED INTESTINE.

(By Captain George Bidie, I.M.S., F.R.C.S.E.)

The patient, a young lad aged 15, was brought in a country cart from a village five miles distant on February 20th, 1898. The boy received his injuries while tending a herd of cattle, one of which (a bull) charged him, and one of its horns penetrated the abdominal wall in the left inguinal region, about 2 inches above the line of Poupart's ligament.

It was found that 1½ feet of intestine, in all probability the descending colon and sigmoid flexure, were protruding through a wound, linear as if cut with a knife, about 2 inches in length. The coils of intestine were smeared over with cow-



dung (a favourite remedy with natives), and covered up with a piece of cocoanut and peepul leaves, applied by his friends. The accident had occurred about six hours before admission, and on clearing away these applications and carefully cleansing the parts with mercury perchloride solution (1 in 2,000), the piece of gut was found to be much inflated and congested, and the external coat torn in three or four places. These superficial wounds in the gut were sewn up, and the coils of intestine (after being examined for further injury) carefully manipulated into the abdomen without enlarging the wound in the abdominal wall, which was then sewn up. The parts were well dusted with iodoform, and a pad and bandages applied, while opium gr.j was ordered at bedtime.

Some trouble was apprehended when, on February 26th and 27th, the patient passed stools containing mucus and traces of blood, which undoubtedly came from the local injury to the gut, though the external coat only was apparently injured. The patient vomited twice, on February 21st and 26th. The temperature rose on the following dates: February 24th and 25th, and March 3rd. February 24th and March 3rd were the local weekly "bazaar days," when it was ascertained that the patient had been visited by his village friends, who had given him native sweetmeats, etc. The further progress of the case was uneventful, and the boy was discharged as cured on March 9th.

The following points appear to me to be of interest in this case:

1. Total absence of any shock, although the accident occurred six hours previous to admission, and the patient was brought in a common country cart over five miles of very bad road.

2. The linear form of the wound in the abdominal wall, just as if it had been cut with a knife, though it was inflicted by the bull's horn.

3. The escape of the intestines from more serious injury by the penetrating horn, and from absorption of poisonous matter from the cowdung, etc., applied by the boy's friends previous to admission.

EUROPEAN GENERAL HOSPITAL, ADEN.

INTERESTING CASE OF SHARK BITE AT ADEN.

(By Captain J. Lloyd T. Jones, R.A.M.C., M.D., D.P.H., Acting Port Surgeon, Aden.)

A Somali boatman, aged 24, in the employment of the P. and O. Company, had on the afternoon of July 15th been doing some work in connection with the s.s. *Oceana* in the outer harbour. Feeling hot, he took a dip over the side of the small boat he was in. He was almost immediately seized in the right forearm by a shark, and dragged under water for some little distance; he shortly reappeared about twelve paces from the boat, and was then apparently struggling with the shark; the water around became tinged with blood. His companions at once pulled to the man's rescue; and, seizing him under the arms, pulled him into the boat; he all the time was able to do little for himself, on account of the severe injuries he had received. A remarkable thing was that, although the shark was, it is said, several times struck by oars from the boat, it reappeared several times, and made repeated attacks on the unfortunate boatman struggling in the water; these repeated attacks will account for the fearful mauling received.

I saw him immediately on his arrival in hospital. He was blanched from loss of blood; his face and forehead were covered with a cold and clammy sweat, and he was much collapsed, but there was little or no hæmorrhage. The following are details of the injuries:

Right Upper Extremity.—The forearm had been bitten off midway between the wrist and elbow-joints, exposing both the bones of the forearm and also the muscles and tendons, and giving a jagged and lacerated appearance to the wound.

Left Upper Extremity.—The skin of the forearm was torn and lacerated anteriorly and posteriorly below the lower half; the superficial and deep layers of muscles and tendons were in places exposed; the skin of the dorsum of the hand and wrist was torn away, exposing all the tendons. The wrist-joint was opened.

Right Lower Extremity.—There was one large oval wound about 8 inches in length and 4 inches at its greatest breadth on the outer side of the right thigh, commencing opposite the knee-joint, exposing the tendon of the vastus externus. The right leg had several lacerated wounds on its outer side, most of them superficial, and varying from 2 to 4 inches in length. In one of the wounds, 2 inches above the ankle on the front of the leg, a part of both tibia and fibula was exposed; the skin of the dorsum of the right foot was considerably torn.

Left Lower Extremity.—This part was scarcely recognisable. Nearly the whole of the front of the leg, from the ankle-joint to above the knee-joint, was torn away, leaving flaps of skin loose in places, and exposing the tibia and fibula in several places, and opening both the ankle and knee-joints.

The whole appearance gave one the idea that the man had had a bad mill or machinery accident.

Operations.—It was found necessary to amputate: (1) The right arm above the elbow; (2) the left forearm a little below the junction of the upper and middle third; (3) the left thigh in its lower third. There was practically no choice or selection in the kind of amputation to be performed in each case, as the skin was so torn and so jagged, and flaps had to be

made from parts least injured, and in each case as low down as possible. Before the operation was commenced stimulants were administered, and twice during the operation hypodermic injections had to be administered—one of ether and brandy and one of liquor strychninæ. The operations took approximately about and hour and three quarters.

Result.—Unfortunately a large quantity of blood had been lost by the patient prior to admission, and the shock was very considerable even before the very severe operations which had to be performed on him. He lived for three days, and died in the evening of July 18th. The after-treatment was, of course, entirely a stimulant one.

The appearance of the stumps after death was all that could be desired.

The case was well looked after in hospital by Assistant-Surgeon Dias, the house-surgeon. My warm thanks are due to Staff-Surgeon Bassett-Smith, H.M.S. *Cossack*, for his kind and able assistance during the operation.

Remarks.—The case is interesting, as showing the havoc occasionally caused by sharks in Aden Harbour, especially in the monsoon months; instructive because it shows the extraordinary vitality in some natives; and unusual because three limbs were amputated at the same time in the same subject.

COLONIAL HOSPITAL, FREETOWN, SIERRA LEONE.

A CASE OF ELEPHANTIASIS OF THE VULVA.

(Under the care of Dr. William Renner, Acting Colonial Surgeon, Sierra Leone.)

Mrs. H. D., aged 29, a trader in this colony, was admitted on March 17th, 1898. She had never had any children, and the menstrual functions had never been interrupted, nor had she suffered from difficulty of micturition. She had never had any venereal complaints, nor received any injuries on the genital parts. No members of her family had ever suffered from elephantiasis.

She could give no accurate history as to the commencement of the disease, but could, however, remember the vulvar parts to be first swollen about three years ago. She had had during that period several attacks of fever. From that time the right labia majora, which was swollen, continued to grow larger until it attained to a size much larger than a full-grown adult's head. The left was only slightly enlarged (*vide* photograph illustrating the case).



The labia majora were somewhat hypertrophied. The tumour reached below the knees in standing, and there was an ulcer on its posterior aspect; its surface was rough and warty and its consistence hard. Her general health not being satisfactory, the operation for the immediate removal of the tumour was postponed. Under generous dietary the ulcer healed.

On June 1st the tumour was removed by elliptical incisions. It weighed 6 lbs. 10 ozs. The patient's subsequent progress up to date was most satisfactory. The temperature did not rise higher than 101.4°.

Remarks.—This tumour is larger than that recorded and illustrated in Gould's *Yearbook of Medicine and Surgery* for 1897, which weighed 5½ lbs. No filaria was found in this patient's blood. The case is interesting from the fact that elephantiasis of the vulva producing tumours of such size is very uncommon. To my mind it opens also the question as to the relative liability of the sexes to this disease and the influence exercised by the filaria sanguinis hominis as a cause. It is very peculiar that in the Krim country of Mendiland, south-east of the Protectorate of the Colony of Sierra Leone, where the disease is endemic, so much so that in some villages eight out of every ten men are to be found suffering from elephantiasis in one or more of its usual forms, the women are to a large extent free from it. In some parts of that country it is considered amongst the men an abnormality not to be in the possession of an elephantoid scrotum, whilst to the women it is a disgrace to suffer even from elephantiasis of the leg. If it is true that the disease is produced by the filaria, and it is conveyed to the human subject by drinking water in which their host the mosquitos die, why in the same region should a larger number of men suffer than women? Taking the whole West Coast of Africa generally and not a particular district, the same proportion is to be found, and to return to the Krim country of which I know the most, there the women and not the men are the workers and the more exposed, and they drink a larger quantity of water than the men and take moderate quantity of spirits, whilst the men habitually drink large quantities of German trade gin. If therefore water drinking is the channel of infection, the female population should suffer more and not conversely.

MISSION HOSPITAL, KASHMIR.

HYSTERICAL APHASIA CURED BY THE ADMINISTRATION OF CHLOROFORM.

(By Ernest F. Neve, M.D.)

V. K., a Hindu, aged 25, came to hospital on May 15th. He was suffering from aphasia. The history was that he had been in this condition for three months. He could write and read printed and written words and sentences, but was unable to utter an articulate sound. There was no abnormality of the cranium, no scar on the scalp, no vomiting, no headache, no impairment of vision, no paresis of face or limbs. The knee and ankle reflexes were slightly increased. The appetite was bad. The diagnosis was evident, and my friend, Dr. Graham, suggested that we should carry out Dr. Bastian's recommendation and try the effect of the administration of chloroform. This was at once done. At first the drug was taken quietly, but after three or four minutes the patient began to struggle and then to speak. I then applied actual cautery to the scalp over the situation of Broca's convolution. Half an hour afterwards the patient had again relapsed into an aphasic condition. I at once repeated the chloroform and cautery, this time with permanent results. The patient left hospital a few days later quite well.

REVIEWS.

Travels and Life in Ashanti and Jaman. By Richard Austin Freeman, late Assistant Colonial Surgeon, and Anglo-German Boundary Commissioner of the Gold Coast. Westminster: Archibald Constable and Co. 1898. (Royal 8vo, pp. 580, 100 illustrations and 2 maps. 21s.)

This handsome volume contains an account of a journey made by the author as a member of an expedition which in 1888-89 visited Ashanti and Bontúku, the capital of Jaman, which has since passed within the French sphere of influence. The success of the expedition was marred by various circumstances, but the account of its progress, of its journey through the forest, of its reception at Kumasi by King Prempeh, of the barbaric splendours of the court of Ashanti, and of the author's prolonged residence in the semicivilised town of Bontuku is extremely interesting.

Dr. Freeman is severe on the errors of policy which he believes to have been committed by this country, especially in dealing with Ashantis, of whose mental and physical endowments he has formed a higher opinion than that usually held. In particular he praises their commercial instincts, and speaks in high terms of their artistic capability—an opinion which he supports by some excellent drawings and photographs of the decorations used in their domestic architecture. He records also many valuable facts as to the ethnography of the peoples inhabiting these regions, and the friendly relations which he succeeded in establishing with individual natives enables him to give many interesting particulars as to their habits and customs. The author has a vein of quiet humour which makes his pages the more agreeable to read. Without this fortunate endowment life in these regions would be well nigh intolerable to the European. He himself suffered from a severe attack of fever at Kumasi, and like all thoughtful men who have written on the development of these regions, he is impressed with the fact that the prevention of malaria, at any rate in the severe form in which it now prevails, is a necessary antecedent to any effectual occupation, much less colonisation, by Europeans. In a chapter on Malaria he gives a good account of recent progress in knowledge of the pathology and etiology of malarious diseases. This description (for advice in the writing of which he expresses acknowledgments to Dr. Manson) is illustrated by drawings of the hæmatozoon in its various stages. He makes the interesting observation that during his residence on the Gold Coast he met with no case of heat apoplexy, those which presented symptoms of this order being in reality examples of hyperpyrexial pernicious fever. This statement lends support to the view that the symptoms attributed to sunstroke are in reality due to infection, in a large proportion of cases at least. After giving an account of the theory that the mosquito is the extracorporeal habitat of the malarial parasite—a theory first fully enunciated by Manson, recently supported by the admirable researches of Ross, and, it would seem, now adopted by Koch—he states that there is a belief "very general among old 'coasters' that the mosquito-curtain is to some extent a protection against malaria." He adds that mosquitos do not appear to suck the blood of persons suffering from blackwater fever, and that it is generally recognised that old "coasters" of perhaps five or six years' standing are but little troubled by these insects. He also states that his experience leads him to believe that lands in which extensive swamps and lagoons occur are especially malarious, while the dense forest, contrary to a common belief, is comparatively free from malaria. In confirmation he mentions that Axim, the only forest station on the coast, is notoriously the healthiest in the colony.

Dr. Freeman takes a very gloomy view of the future if no means are found to check the prevalence of malaria and blackwater fever. As to the latter he states that old "coasters" believe that the present great prevalence is a comparatively new feature of coast life; and as to the former he expresses the opinion that there are grounds to fear an increase in the prevalence, especially of the more virulent forms. He points out that blackwater fever seems only recently to have made its appearance in British Central Africa. We can only express the hope that the investigations undertaken by observers of more than one nationality, and in which this country is about to take part officially through the special Commission recently appointed, may result in so large an addition to knowledge that before many years have passed we may be in possession of means for checking the ravages of these terrible scourges of the white man in the tropics.

Die Kamerun-Küste. Studien zur Klimatologie, Physiologie, und Pathologie in den Tropen. [The Cameroon Coast. Studies in the Climatology, Physiology and Pathology of the Tropics.] Von Dr. Friedrich Plehn, Regierungsarzt beim kaiserl. Gouvernement von Deutsch-Ostafrika. Ehemaliger Regierungsarzt von Kamerun. Berlin: August Hirschwald. 1898. (Royal 8vo, pp. 364, 47 illustrations, 1 map. M. 10.)

Although Dr. Plehn's work is in the first instance ostensibly directed towards an exposition of the diseases observed by him on the Cameroon Coast of West Africa, he brings to bear on his subject a wide experience of tropical diseases acquired before he went there. His previous training had eminently qualified him for study of this kind. He was for several years Assistant in the Institute for Hygiene at Jena, and had special opportunities of scientific study in the State Moabit Hospital at Berlin. It was whilst in this hospital that he published in the *Zeitschrift für Hygiene* (Bd. viii, Heft 1) a contribution to the doctrine of malarial infection, and he is the author of a pamphlet published by Hirschwald in 1890, entitled "Etiological and Clinical Studies in Malaria." He subsequently made two voyages to India and Eastern Asia, where he studied the conditions of climate in the Eastern Seas, and the physiological changes that take place in the human organism under the influence of tropical climates. During this time he visited Penang, Singapore, Hong Kong, Batavia, Samarang, Soerabaya and Malang. Some of the results of these studies are recorded in a paper on the "Pathology of the Tropics" in *Virchow's Archiv* (Bd. cxxix, Heft 2. 92.) Immediately after his return he was sent to the Cameroons by the Colonial Department of the German Foreign Office, where he remained from the spring of 1893 till the winter of 1894, and where he had abundant material for study.

The results of these opportunities, diligently and intelligently used, are seen in the volume before us, which contains a description of certain diseases of the tropics. After a chapter on the physical and climatic condition of the Cameroons, and another on the effects produced on some of the physiological functions of Europeans in tropical seas and low-lying coasts, we come to the most important chapter of the book, that on malaria in the Cameroons, which occupies 142 pages of the work. The preponderating influence of malaria in these countries is shown by the fact that the chapter which deals with diseases in the Cameroons that do not depend on malarial infection occupies only 82 pages, in which no fewer than 73 diseases are mentioned or treated at various lengths, amongst which we may number cholera, yellow fever, typhoid, denga fever, diphtheria, influenza, tuberculosis, leprosy, dysentery, diseases of the spleen, liver, and kidneys, beri-beri, etc. The author himself states that so important is the question of malaria for the Cameroon coasts that, so far as Europeans at least are concerned, if malaria did not exist, the Cameroons might be considered as a healthy country. In 624 cases of illness in Europeans which he had to treat during the eighteen months he was in the colony, 438—about 70 per cent.—were cases of malaria. Of the cases of death amongst Europeans which were not due to violence, 77 per cent. were due to malaria. The native races in the Cameroons suffer from fever, but in a much less degree than Europeans, a fact which holds good for the native races in other parts of Africa; but on changing their climate they are liable to acute outbreaks of malaria.

Dr. Plehn's contributions in this book to the knowledge of the symptoms and pathology of "blackwater fever" are of great importance at the present time. That the appearance of the hæmoglobinuria in these cases indicates an attack of fever which, in many respects, differs from the ordinary malarial attacks is very evident, and is clearly brought out by these cases, but the record in many of them of the parasites in the blood shows clearly the malarial element in the case. It has been recently suggested that blackwater fever is due to quinine poisoning, and not to malarial infection. We select a case to show that this view cannot be correct:—

Case xxxiv.—A man 31 years of age, who had been two months in the Cameroons and who had had no fever and had taken no quinine, was seized with an attack of fever, accompanied by violent retching, slight jaundice, slight enlargement of the spleen, urine deficient in quantity (420 c.c. in the first twenty-four hours), voided with pain, and of a deep red colour and neutral reaction, and containing albumen. Unpigmented small ring-form parasites found in the blood. This man recovered, and during the course of treatment quinine was given. The hæmoglobinuria and albumen lasted from eighteen to nineteen hours.

Whilst Dr. Plehn was in the Cameroons he found the negro apparently free from blackwater fever, but he states in his preface that, since he left, information has been received that an unusually severe epidemic of malarial fever has occurred. Many of the cases were examples of hæmoglobinuric fever, and occurred not only amongst the Europeans, but also amongst the negroes, particularly amongst those who came from the interior to the coast.

IMPERIAL AFRICA: The Rise, Progress, and Future of the British Possessions in Africa. By Major A. F. MOCKLER-FERRYMAN, F.R.G.S. Vol. I, British West Africa. London: The Imperial Press. 1898. (Cr. 8vo, pp. 528, 56 illustrations and 9 maps. 12s. 6d.)

THE aim of this work, which forms a volume of the "Imperial Library," is to give an account, conveniently arranged for reference, of the history, present condition, and future prospects of Gambia, Sierra Leone, the Gold Coast, Ashanti, Lagos, and the Niger Coast Protectorate. The information it contains appears to have been carefully compiled, mainly from official sources, and the volume will certainly serve its purpose as a work of reference. It affords also some good miscellaneous reading, historical and other, and will thus be found an agreeable companion for a leisure hour.

Throughout the whole book, however, the reader is oppressed by the sense of the uncertainty of life for the European in these countries. Everywhere the problem of prime importance is that of malarial diseases and of the dreaded blackwater fever. "Malarial fever," we read, "is accountable for nine-tenths of the deaths of the Europeans on the coast; how many men it invalids home it is impossible to say, since the published statistics stop short at deaths."

Apart altogether from the deplorable loss of life, it is apparent from the history of every colony that the recurring bouts of fever which sap the health and exhaust the energies of the most robust are the true underlying causes of the slow development or actual retrogression of those colonies, which possess so many natural advantages. Officials are given leave after a year, or at most fifteen months' service, if they succeed in holding out so long, and a man engaged in commercial pursuits no sooner begins to become acquainted with the natives and with the resources of the country than he has to abandon the helm to a new comer, who has to learn the same lessons, and finds equally little opportunity to profit by them. Something may be done, as the author of this work suggests, by the exercise of greater care in the selection of recruits and the choice of stations, but until science has gained precise knowledge of the etiology of malarious diseases and of blackwater fever we shall be groping in the dark.

UNTERSUCHUNGEN ÜBER DEN LEPRABACILLUS UND ÜBER DIE HISTOLOGIE DER LEPRA. [Investigations regarding the Leprosy Bacillus and the Histology of Leprosy.] VON Dr. VICTOR BABES, Professor der pathologischen Anatomie und Bakteriologie an der Universität Bucharest. With 11 Figures in the Text and 8 Lithographed Plates. Berlin: S. Karger. 1898. (Royal 8vo, pp. 112. 18 illustrations. 8s.)

PROFESSOR BABES in this work deals with leprosy almost entirely from the point of view of histology and the bacillus, and has produced a work which places on record the present state of knowledge of the bacillus and the changes it produces in the tissues. In the eight coloured plates which illustrate the volumes—plates which are of very high artistic merit—the various phases of the bacillus are admirably portrayed. Although the book must chiefly interest pathologists, yet certain inferences are drawn from the histological exposition which have a bearing on the whole leprosy question. Professor Babes considers the evidence to be sufficient to show that the disease is caused by the bacillus. He believes the bacilli of leprosy and tubercle to be related, as is shown by the reaction of the former to stains, and its association with a substance of the nature of tuberculin, and by the fact that the leper reacts generally and locally to tuberculin. In the leprosy bacillus, as well as in the tubercle bacillus, club-shaped and branched forms are found, which would seem still further to suggest a relationship. The intimate structure of the leprosy bacillus, however, although very like that of the tubercle bacillus, can be distinguished from it by special colour tests and by its special colony formations, which are not produced by the tubercle bacillus. They are also distinguished by the fact that so far the leprosy bacillus has not been cultivated.

The author has found in all fatal cases of leprosy that the bacillus is associated with pus cocci and a diphtheroidal bacillus. He considers that the proof of the presence of bacilli in the hair follicles and on the surface of the skin, as well as in the various secretions, suggests the possibility of infection from direct contact, although cases are wanting in which this direct infection has been proved. The manner in which man becomes infected has not yet been made out with certainty. Professor Babes thinks it probable that it takes place through wounds or through the ducts of glands; perhaps also through the tonsils, the nasal mucous membrane, and the conjunctiva. The mode of infection in nerve leprosy is even more obscure.

The tissue cells in leprous growths are little injured by the bacilli, and it is only very slowly that an inflammatory group of mononuclear round cells, with a few of the fixed cells, gradually enlarges until giant cells are formed, in which a symbiosis with the bacilli takes place. In severe cases of leprosy Sudakevitch has found bacilli in the interior of the ganglion cells of the spinal ganglion, although very seldom outside them. They were very seldom found in the ganglion cells of the sympathetic. Babes states that in most cases of tubercular and nerve leprosy he found the bacillus in the spinal ganglia and in the Gasserian ganglion; only in two cases in the sympathetic ganglia.

The references to the literature of the subject, and the text itself, and particularly the illustrations, commend this book to those who occupy themselves seriously with the leprosy bacillus.

A PRACTICAL TREATISE ON SEXUAL DISORDERS OF THE MALE AND FEMALE. By ROBERT W. TAYLOR, A.M., M.D. New York. London: H. Kimpton. 1897. (Roy. 8vo, pp. 451; 81 illustrations. 12s.)

JUDGING from a somewhat inflated preface it would appear that the author of this work starts with the assumption that "antecedent treatises on this subject" have been a failure, and for this "failure.....to present to the reader clearly cut and practical information" he offers the, at first sight, rather curious explanation that "symptoms of sexual debility overmastered the minds of the writers."

The sexual disorders of men are first considered, and Dr. TAYLOR expresses the opinion that by far the most frequent cause of sexual weakness and impotence is chronic inflammation of the prostate gland, and he is also of opinion that very many cases which are now classed under the title "phosphaturia," and in which it is supposed that some disturbance of the nervous system causes the excess of phosphates, are really instances of chronic catarrhal prostatitis. As in some other American works of recent date the practice of massage of the prostate is here spoken of with approval, as is also what is called in America "stripping" or "milking" of the vesiculæ seminales when these organs are "distended, pouchy, or brawny;" but at the same time Dr. Taylor points out that at the best only the lower half of the vesicle is accessible to the "stripping process," and that the utmost that can be accomplished is to act upon about one quarter of the whole structure. In connection with this it is worth noting that Mr. Godlee in his article on diseases of the prostate in *Quain's Dictionary of Medicine* states that the vesiculæ seminales are beyond the ordinary reach of the finger, and that when infiltrated by disease their apices, or perhaps only the vasa efferentia can be detected. In the treatment of acute inflammation of the same organs Dr. Taylor says that "the rectum may be packed with ice if the procedure is pleasant to the patient." With regard to this we can only remark that it seems difficult to imagine any condition in which such a procedure could be pleasant to anyone, even in the absence of acute inflammation close by, and even supposing that an irritated sphincter ani would allow it to be carried out without doing more harm than good.

The sexual disorders of women are dealt with only in a fragmentary manner. The causes of sterility are noticed in a short chapter of five pages, and the remaining six chapters are devoted exclusively to certain affections of the vulva, namely new growths, hypertrophy, and ulceration of various kinds and its consequences. About these Dr. Taylor gives a good deal of interesting information based on his large experience of such cases at the New York Charity Hospital and

elsewhere. It will thus be seen that the portion of the book which relates to women—though good so far as it goes—does not go very far. But respecting sexual disorders in the male the book contains much useful, and to some extent original, matter bearing on both impotence and sterility, and it may be commended to the notice of anyone who wishes to treat to the best advantage a class of cases often difficult to deal with, and too often mistaken or misunderstood.

The illustrations, which with the exception of seven are stated to be original, are good, but in those showing microscopical preparations the magnifying power employed should have been stated.

NOTES ON BOOKS.

A Manual of Gaol Hygiene for the Use of Medical Subordinates. By Surgeon-Captain W. J. Buchanan, B.A., M.B. (Calcutta: Bengal Secretarial Press. Demy 8vo, pp. 90. Rs. 3.)—This little work is intended to supplement the official regulations contained in the *Bengal Gaol Code* by expounding the principles upon which the hygienic management of gaols in India is founded, thus imparting to medical subordinates an intelligent interest in their work, and being, in addition, of general educational value. This idea is admirably carried out, and the information conveyed on such important subjects as ventilation, food, clothing, conservancy, water supply, disinfection, the management of infective diseases, etc., is detailed and accurate, and conveyed in clear and simple language. Particular diseases, such as cholera, plague, enteric fever, malarial fever, diarrhœa, dysentery, etc., are briefly described, and the most recent views regarding their causation and prevention stated. Scurvy and anæmia are also fully discussed. The *Manual* cannot fail to be most helpful and improving to the class of officers for whose benefit it has been composed, and indeed to all gaol officials in India.

Il Risanamento D'Alessandria D'Egitto: Osservazione e Proposte. [The Sanitation of Alexandria: Observations and Proposals.] Pel Dottore Alfredo Veronesi. 2nd edition. (Perugia: Unione Tipografica Co-operativa. 1897. Demy 8vo, pp. 80.)—Dr. Veronesi was sent by the Italian Government to inquire into and report upon an epidemic of cholera in Alexandria in 1896. In the volume before us we have a succinct account of the sanitary condition of that city, with various suggestions as to the best methods of procedure towards improvement. The necessity and advantage of the assistance of a hygienist as well as a purely sanitary engineer in dealing with such questions are shown in more than one place. Most of the points discussed are in their details chiefly of interest to specialists in sanitation and hygiene, but the problem of how to turn such a city as Alexandria, with its mixed population and still more mixed Government, into a salubrious and sanitary abode, is of interest to all, all the more in view of the increasing facilities for travelling eastwards. Not much is said about the treatment of cholera itself, as the author believes it should be mainly preventive. Pfeiffer's serum was tried without much benefit; better results were obtained by Haffkine's method of vaccination.

The Chemist's Compendium. By C. J. S. Thompson. Second Edition. (London: Whittaker and Co. 1898. Fcap.8vo, pp. 313. 3s. 6d.)—This work is designed to be a handy book of reference for the pharmacist. The contents consist of concise information upon the many subjects of which he is required to have a knowledge. Very nearly half the volume is occupied by a synopsis of the formulæ and processes of the *British Pharmacopœia, 1898.* This is really a reprint of the greater part of the *Pharmacopœia.* A great many formulæ are given, including those of the British Pharmaceutical Conference, and selections from the French *Codex*, the *Pharmacopœia Germanica*, and the *United States Pharmacopœia.* The methods of preparing antiseptic dressings, stains for microscopic objects, and solutions used in photography are very clearly given. To new remedies, their characters, doses, and modes of administration, are devoted fifteen pages. The author has certainly collected all essential points and arranged them in a very convenient form.

THE MOSQUITO.

The mosquito has always been looked upon as *hostis humani generis*, but hitherto he—or, rather, she—has been regarded less as a positive source of danger than as an annoyance owing to the way in which her too pressing attentions interfere with sleep and rest, and increase the fatigue of life in the tropics. Recent researches which have shown that the mosquito may be the host of parasites of the type of that which causes human malaria have lent a new and more lively interest to the study of the habits and life-history of this widespread genus. In connection with Dr. Manson's paper in another column, in which he gives an account of the most recent observations and experiments of Major Ronald Ross, I.M.S., the following brief account of some points in the life-history of these insects will, we believe, be read with interest.

The Life-history of the Mosquito.

The mosquito is a dipterous insect belonging to the genus *Culex*. How many species should be distinguished is not well established, but there are undoubtedly a considerable number. Thirty are known to inhabit the United States. There is, however, a great similarity in the habits and structure of all varieties. The male mosquito is not a blood sucker,[1] but the female mosquito after her meal of blood conceals herself near stagnant water. At the end of about six days she quits her shelter, and, alighting on the surface of the water, deposits her eggs thereon in a boat-shaped mass. This takes place at night, and the number of eggs in each mass varies from 200 to 400. She then dies, and, as a rule, falls into the water alongside her eggs. The eggs float about for a time, and then in due course—it may be within as short a time as sixteen hours[2]—each gives birth to a swimming larva. These larvæ, in virtue of a voracious appetite, grow apace, casting their skins several times to admit of growth. Later they pass into the nympha stage, during which, after a time, they float on the surface of the water. Finally, the shell of the nympha cracks along its dorsal surface, and a young mosquito emerges. Standing, as on a raft, on the empty pelt, the young mosquito floats on the surface of the water, while its wings are drying and acquiring rigidity. When this process is complete it flies away.

The young mosquito larvæ, to satisfy their prodigious appetites, devour everything eatable they come across, and one of the first things they eat, if they get the chance, is the dead body of their parent, which has become soft and sodden from decomposition and long immersion. They even devour their own cast-off skins. In examining mosquito larvæ it is not uncommon to find the alimentary canals stuffed with the scales, fragments of limbs, and other remains of the parental insect and larval pelts.

As an entire generation may be completed in ten days there are many generations in the course of a season, and the insect may breed successfully in a more or less transient surface pool of water. On the other hand, if the weather be cool, the length of time required for the completion of the cycle may be much longer, and in the adult condition mosquitos hibernate in cellars and outhouses and under all sorts of shelter. The degree of cold makes no difference to successful hibernation. Mosquitos are abundant in Norway and some parts of Canada, where the winters are long and severe, and even in the Arctic regions.

The Poison Apparatus of the Mosquito.

The oral armature or proboscis of the mosquito is of special interest, as it is the part by which the wound is inflicted on the human victim. It consists (see Fig. 1) of a labrum, two mandibles, and two maxillæ, surrounding a hypopharynx, all enclosed in a loose scale-covered sheath, which is the labium. They are nearly 3 millimetres long, about four times as long as the head, and all except the sheath are smooth, chitinous stylets. The maxillæ bear maxillary palps, scaly, four-jointed, and about as long as the

[1] Manson, Goulstonian Lectures, II, British Medical Journal, 1896, vol. i, p. 710.

[2] *United States Department of Agriculture, Circular No. 13* (Second Series).

head. The hypopharynx is in the axis of all these mouth parts, being inserted by a basal enlargement close behind the oral aperture, and flattened so as to form the floor of a sucking tube whose sides and roof are formed by the grooved labrum (or labrum-epipharynx according to Dimmock). This sucking tube extends back in the head, piercing between the upper and lower brain, and enlarged in the posterior part of the head into a large pumping organ, which forces the imbibed fluid backwards into the œsophagus and stomach.

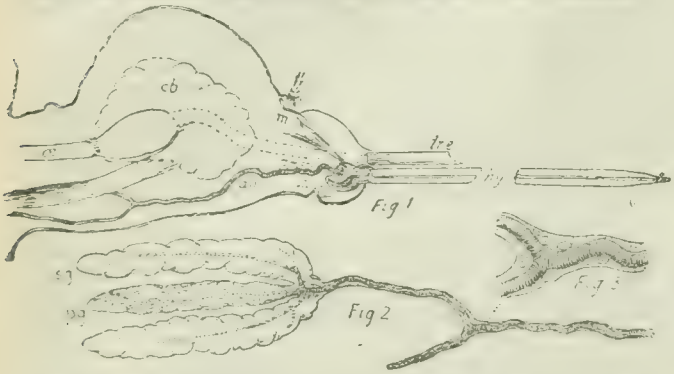


Fig. 1.—Median section of head, showing (*du*) the veneno-salivary duct, with its insertion in (*hy*) the hypopharynx; (*cb*) cerebrum: below this is the cerebellum and the pumping enlargement of (*œ*) the œsophagus; (*lr, e*) base of labrum-epipharynx; (*m*) muscle; (*n*) nerve commissure. Other parts removed.

Fig. 2.—The veneno-salivary duct, showing its bifurcation and the three glands on one of its branches; (*p g*) poison gland; (*s g*) marks the upper of the two salivary glands.

Fig. 3.—The bifurcation of the duct with its nucleated hypodermis.

It had been very often suspected that the poison duct is contained in the hypopharynx, which has a thickened axis, like a rod, supposed by some observers to be tubular. Dimmock made out the tubular character of the corresponding part of some of the larger non-poisonous diptera, but he was not able to demonstrate its tubular character in culex. Professor George Macloskie, of Princetown University, New Jersey, has recorded[3] the results of a careful dissection, and we are indebted to him for permission to reproduce the illustration which accompanies this article. He states that it is possible to see the veneno-salivary duct shining through the skin at the base of the head and neck, even in an undissected specimen. A longitudinal section (Fig. 1) shows the insertion of the duct into the base of the hypopharynx and its course below the nerve. In teased and stained glands (Fig. 2) their structure and relations are better seen. It was observed that fine droplets of a yellow, oily-looking fluid escaped from the apex of the hypopharynx (Fig. 1).

Professor Macloskie was able to trace the course of this fluid down through the axis of the hypopharynx; the tubular structure of this organ was indicated by the fact that the fluid was divided in parts into droplets. He found that the base of the hypopharynx is enlarged like the mouth of a trumpet, and provided with a sac-like reservoir, into which the end of a fine duct is inserted. The duct has the usual character of salivary ducts in the diptera, but is much finer than usual, being less than 8 microns in diameter, against 37 microns in the house fly. A high microscopic power is required for its identification. It has the usual chitinous lining, surrounded by the nucleated hypodermis which secretes it, transversely striated as in the trachea (Fig. 3). It is distinguished from the trachea by the comparative smallness and constancy of its diameter, and by the absence of ramifications. It runs back in the lower part of the head, beneath the nervous commissure (Fig. 1) for two-fifths of a millimetre. In the throat it bifurcates, its two branches being each as long as the undivided segment, and running on the right and left of the nerve cord in the prothorax, where they terminate in glands of characteristic structure.

The glands, according to Professor Macloskie are in two sets, one on each side in the antero-inferior region of the prothorax. Each set consists of three glands, two of which are of the usual aspect of salivary glands, resembling in structure, but not proportionately as long as, the single salivary gland on each side in the prothorax of the house-fly. The third gland, that occupying the centre of each set, is different, being evenly granular and staining more deeply than the others; its function being without doubt the secretion of the poison. Each gland is about one-third of a millimetre long, and one twenty-fifth of a millimetre broad; the three are arranged like the leaves of a trefoil; and each is traversed throughout by a fine ductule, the three ductules uniting at the base to form a common duct, which is like a pedicle of the trefoil and is one of the branches of the bifurcated veneno-salivary duct. The ductules of the lateral glands of each set receive a minute branchlet near the base. Thus there are six glands, three on each side, two of them poisonous and four salivary, their secretion diluting the poison. The two efferent ducts, one from each set of glands, carry forward and commingle the veneno-salivary products in the main duct; and the stream is then carried by the main duct to the reservoir at the base of the hypopharynx. There is no other exit for the contained fluid. Professor Macloskie believes that muscles are inserted on the framework of this reservoir (Fig. 1, *m*). But apart from this the pressure exerted on it by the surrounding parts, when the mosquito inserts its piercing apparatus into the flesh or through the epidermis of a plant, would undoubtedly be sufficient to propel the poison through the tubular axis of the hypopharynx into the wound. The distal orifice of the hypopharynx is not exactly terminal, but subapical, as is usually the case with fangs; the very tip is somewhat flattened and sharp, so as to enter easily into and to enlarge the wound made by the adjoining organs. Professor Macloskie's observations were made on the adult females of culex (*C. tæniorhynchus*, Desv.), and on a species of the allied genus *Anopheles*, which is characterised by its long maxillary palps.

[3] The *American Naturalist* for October, 1888.

PREVENTIVE MEASURES.

The natural enemy of the adult mosquito would appear to be the various species of dragon flies, and there is evidence that a large flight of these insects, which are called in some parts of the United States "mosquito hawks" are capable of clearing localities of mosquitos even when the pest has been most severe. But the dragon fly, even if it could be used in large numbers, which does not appear to be possible, attacks the pest at too late a stage. Far more hopeful means of fighting mosquitos are those directed to the abolition of its breeding places or the destruction of the larvæ. It is true that measures of this kind are not everywhere feasible, but in many places there is no reason why the mosquito plague should not be at least very much diminished by the draining of ponds and marshes, the introduction of fish into fishless ponds, and the use of kerosene on the surface of the water.

Drainage of marshes and stagnant pools in the neighbourhood of houses is obviously the most radical remedy, for the drying up of such places will prevent mosquitos from breeding therein, but the conditions of a successful application of this measure will, it is equally obvious, vary with each case. In this connection it should be observed that mosquitos can breed in butts used to catch and store rain water, and that a surprising number of the insects may be yielded by a single bath.

The introduction of fish into fishless ponds is feasible and advisable. In tanks supplying drinking water, for example, fish would destroy the mosquito larvæ as fast as hatched. A case is recorded in *Insect Life*, vol. iv. p. 223, where carp were employed in this way with perfect success by an English gentleman living in the Riviera. At San Diego, Texas, the people use for this purpose a little fish called there a perch. The common stickleback, which is very voracious, would, it is believed, be equally useful.

Probably the best, and certainly the easiest, of wholesale remedies against mosquitos is the application of kerosene to the surface of breeding pools. The suggestion that kerosene could be used as a remedy for mosquitos is not new, but exact experiments out of doors and on a large scale were first made in 1892 by Mr. L. O. Howard, entomologist to the United States Department of Agriculture. These and subsequent experiments show that approximately 1 ounce of kerosene to each 15 feet of water will suffice on small pools, and will effectually destroy all the larvæ and pupæ in that pool, with the additional advantage that the

adult females, not deterred from attempting to oviposit, are killed when they alight on the kerosene-covered water. Ordinarily the application need not be renewed for a month, though varying circumstances may require more frequent applications in certain cases.

Since 1892 several demonstrations have been made in the United States of the practicability of this method on large and small scales. Under Mr. Howard's supervision two localities were rid of mosquitos by the use of kerosene alone. It will, however, probably not prove feasible to treat in this way the large sea marshes along the coast where mosquitos breed in hordes, although even here the remedy may prove to be practicable under certain circumstances and in certain situations. In inland places, however, where the mosquito supply is derived from comparatively circumscribed pools, the kerosene remedy may be expected to prove most useful.

According to the circular from which we have already quoted, simply pouring the oil from any point of the shore will answer tolerably well, since it will spread of itself, but if for any reason it is desired to coat the pool rapidly with kerosene, it may be advisable to spray the oil through a spraying nozzle, either from the bank or from a boat. The method of application will vary with each case, but in the case of pools which can be most advantageously treated, namely, those of small size, the oil can be well spread by throwing it on to windward with a wide sweep of the arm.

ARCHÆOLOGICA MEDICA.

XLVI.—HOW OUR FOREFATHERS FOUGHT THE PLAGUE.

An epidemic disease, having the characters of bubonic plague, is referred to by old writers as prevalent at various periods in Egypt, Lybia, and other parts of northern Africa, but the first unmistakable visitation in Europe of which there is record occurred in the sixth century of the Christian era. Beginning in Egypt in A.D. 542, it invaded Europe by way of Constantinople (where it is said to have killed 10,000 persons in one day), ravaging Italy and Gaul, and overrunning the whole Roman world. From the sixth century to the seventeenth there is frequent mention of plague in the history of all European countries. The most appalling visitation was that in the fourteenth century known as the Black Death. The disease was brought from the East about the end of 1347, and spread over the whole of Europe, reaching England in 1348. The mortality caused by the Black Death has been estimated at two-thirds or even three-fourths of the population in various parts of Europe; in England, according to Dr. J. F. Payne, it was even higher. Hecker calculates that 25 millions of persons, or one-fourth of the whole population of Europe, perished in this epidemic. The total number of victims claimed by the Black Death throughout the world has been placed at 40 millions. Throughout the fifteenth and sixteenth centuries frequent waves of plague passed over Europe, each sweeping away vast numbers of people. In the seventeenth century the disease was less prevalent, though breaking out with great violence from time to time. In 1630 occurred the great plague of Milan, in which, according to Ripamonti, the heaps of dead bodies lying in the streets made of the whole city one vast grave. In 1656 the disease in five months carried off some 300,000 persons in Naples. In 1665 the Great Plague of London caused, according to the bills of mortality, 68,596 deaths in a population estimated at 460,000, out of whom two-thirds are supposed to have fled to escape the contagion. Payne thinks this estimate too low. After 1666 there was no epidemic of plague in this country. Other parts of Europe were, however, visited at different times in the eighteenth century, the most severe outbreak being at Marseilles in 1720, when from 40,000 to 60,000 people perished. This epidemic caused a panic in England, and on the advice of Dr. Mead, a system of quarantine was employed for the first time in this country. Since then, in spite of occasional passing alarms, the plague has been for us the mere shadow of a name of fear which in bygone days could almost freeze the blood of the bravest men.

What did people do in days when nothing was known as to the origin and mode of conveyance of infectious diseases, and medical science was a compound of fanciful theory and mere superstition, to protect themselves against this fearful scourge? One gets from Procopius a notion of the light in which the problem presented itself to the most learned. Speaking of the first appearance of the plague in Europe, that writer says:

> About the same time (542) there broke out an epidemic which destroyed nearly the whole human race. It may happen that subtle spirits think of referring the origin to some occult influence proceeding from heaven. Those who pretend to be familiar with these problems often give themselves up to great fluxes of words in order to demonstrate the intervention of certain causes which are beyond the reach of the understanding; and while propounding theories drawn from their imagination much more than from the observation of Nature, they know well that all this verbiage is without value. But they are satisfied if they are able to impose upon some credulous hearers. As for me, it seems to me impossible to attribute this disease to any other cause than God himself. For it rages, not in any limited part of the earth, nor on one single race of mankind, nor within a determinate period of the year, which might suggest some conjectures as to its origin, more or less plausible or probable. It overran the whole world, cruelly smiting the most diverse peoples, sparing neither sex nor age. Differences of dwelling, of mode of life, of temperament, of profession, or of any other kind did not check it. Some were attacked in summer, some in winter or in the other seasons. Let the philosopher gravely discourse, let the meteorologist give judgment, each according to his point of view. My object is to make known the place of birth and special characters of this epidemic.
>
> It started from the city of Pelusium in Egypt, whence it spread in a double stream, on the one hand, to Alexandria and the rest of Egypt; on the other, towards Palestine, which is adjacent to Egypt. Afterwards it invaded the universe, always marching onwards at regular intervals of time and place. It seemed, in fact, to obey a law laid down beforehand, and it stopped at each of its resting places a fixed number of days, respecting, as it travelled on, the intermediate peoples, and propagating itself in all directions, even to the ends of the world, as if it feared lest in its passage it might forget the smallest corner of the earth. There was no island, no valley, no height inhabited by man that it did not visit. If it passed some place without touching it, or only as it were skimming over it, it quickly came back to it, this time disdaining the neighbouring places which it had already laid waste: and it departed only after claiming this time a tribute of victims proportional to that which it had already levied from the surrounding places. It always began on the sea coasts and advanced thence progressively inland.

Procopius then gives a graphic description of the symptoms of the disease, adding that no one understood anything about this strange visitation. Certain physicians believed that its secret source was in the buboes, and they endeavoured to get some knowledge of the matter by opening dead bodies, but without success. Naturally the doctors knew neither how to cure nor how to prevent the disease. In a short time the life of the city came to a standstill. No one was seen in the streets except those whose duty it was to bury the dead. Then came famine to complete the havoc. The only attempt at prophylaxis appears to have been a liberal use of prayers and religious ceremonies.

Of the Black Death there is a striking description by the Emperor John Cantacuzenus, who saw it as it raged in his capital, Constantinople. He says that medical art was compelled to acknowledge its helplessness. Here again the people looked to religion as their only safeguard. With regard to the same terrible epidemic in Italy as it appeared in Florence in April, 1348, Boccaccio says:

> To cure the malady neither medical knowledge nor the power of drugs was of any avail, whether because the disease was in its own naturel mortal, or that the physicians (the number of whom—taking quacks and women pretenders into account—was grown very great) could form no just idea of the cause, nor consequently ground a true method of cure: of those attacked few or none escaped, but they generally died the third day from the first appearance of the symptoms, without a fever or other form of illness manifesting itself. The disease was communicated by the sick to those in health, and seemed daily to gain head and increase in violence, just as fire will do by casting fresh fuel on it. . . . . .
>
> Strange were the devices resorted to by the survivors to secure their safety. Divers as were the means, there was one feature common to all—selfish and uncharitable as it was—the avoidance of the sick, and of everything that had been near them: men thought only of themselves.
>
> Some held it was best to lead a temperate life and to avoid every excess. These, making up parties together, and shutting themselves up from the rest of the world, ate and drank moderately of the best, diverting themselves with music and such other entertainments as they might have at home, and never listening to news from without which might make them uneasy. Others maintained that free living was a better preservative, and would gratify every passion and appetite. They would drink and revel incessantly in tavern after tavern, or in those private houses which, frequently found deserted by the owners, were therefore open to anyone; but they yet studiously avoided, with all their irregularity, coming near the infected. And such at that time was the public distress, that the laws, human and divine, were not regarded, for the officers to put them in force being either dead, sick, or without assistants, everyone did just as he pleased.
>
> Another class of people chose a middle course. They never restricted themselves to the diet of the former nor gave way to the intemperance of the latter, but eating and drinking what their appetites required, they went about everywhere with scents and nosegays to smell at, since they

look upon the whole atmosphere as tainted with the effluvia arising from the dead bodies.

Others, again, of a more callous disposition, declared, as perhaps the safest course in the extremity, that the only remedy was in flight. Persuaded, therefore, of this, and thinking only of themselves, great numbers of men and women left the city, their goods, their houses, and kindred, and fled into the country parts, as if the wrath of God had been restricted to a visitation of those only within the city walls, and hence none should remain in the doomed place.

Guy de Chauliac has left an account of the Black Death as he saw it at Avignon "in the year of Our Lord, 1348, in the sixth year of the Pontificate of Clement VI, in whose service I, unworthy of his favour, then was." Here for the first time we have, in addition to a description of the symptoms, some details as to treatment and prophylaxis. After complaining that the epidemic was "useless and disgraceful to the doctors, the rather that they dared not visit the sick for fear of being infected, and when they did visit them they did nothing and got no fee, for all the sick died except a very few towards the end," Guy goes on to say:

In regard to prophylaxis, there was nothing better than to flee the region before being infected, and to purge one self with aloetic pills, and to diminish the blood by phlebotomy, to improve the air by fire, and of comfort the heart with theriaca, apples, and things of good odour; to correct the humours with Armenian bole, and to oppose putrefaction by acid substances. In regard to cure, bleeding and evacuation were practised and electuaries and cordials were given; the external imposthumes were matured with figs, and cooked onions, peeled and mixed with yeast and butter; they were then opened and treated as ulcers. Carbuncles were cupped, scarified, and cauterised.

Guy adds with engaging frankness that he did not dare to go away, lest he should incur infamy, "but in continual fear I guarded myself as much as I could by means of the aforesaid remedies." Nevertheless, towards the end of the epidemic he was attacked and was in great danger of his life; but, he says, "the imposthume having been matured and treated as I have said, by the will of God I escaped."

In the famous *Regimen Sanitatis* of the School of Salerno, first drawn up in the twelfth century, but added to later, the following rules are laid down for the prophylaxis of plague:

REGIMEN TEMPORE PESTIS.

Devita coitum, infirmos, balnea, fructus;
Sit cibus atque tuus bonus, et vinum tibi potus;
Illud sit vinum puro quoque flumine mixtum;
Adde ciboque tuo, cum prandes, semper acetum.
Ex aloe myrrâque, croco, fit pilula firma;
Mane laves vultum, dentes, manus per acetum;
Sed caveas oculos ne tangas, nam nocet illis.
Assatum panem perarctum, propter odorem,
In manibus serves, sed si fuerint tibi glaucæ,
Sanguine te minuas, infectum teque noscas.
Sic pestem fugies, hanc formam si bene serves.
Nux, ficus et ruta, muscatum, quatuor ista
Jejune sumpta; depellunt quæque venena.

From this it will be seen that temperance and cleanliness, with such simples as figs, nutmeg, and rue were recommended as the best preservatives.

In Ambroise Paré's *Book of the Plague*, which was published in 1568, the following prophylactic measures are recommended[1]:

Therefore those surgeons who shall be called to attend patients with the plague must first get purged and bled, if they have need of it, to make their bodies wholesome and proof against the poison of the plague. Next, the surgeon must have two issues made—unless he has already some running sore—one on the right arm a little below the deltoid, and the other three fingers' breadth below the left knee, on the outer side; for truly we know from experience that they who have such open sores have not been subject to the plague, and have taken no harm, though they were every day among cases of it.

Also they must wash the whole of their bodies very frequently with this water, which has great aromatic virtue, and is full of vaporous and subtle spirits, and wholly opposed to the poison.

A PRESERVATIVE WATER.

℞ Aquæ rosarum aceti rosati aut sambucini, vini albi aut malvatici ... ana ʒvj
Rad. enulæ campanæ, angelicæ, gentianæ, bistortæ, zedoariæ ... ana ʒiij
Baccarum juniperi et hederæ ... ana ʒij
Salviæ rorismarini, absinthii rutæ ... ana mj
[illegible] ʒss
[illegible] idatii ana ʒj
[illegible] conquassentur, et bulliant lento igni, et serventur ad usum.

They must wash the whole body with a sponge in this water, making it just warm: and it is a good thing to wash the mouth with it, and draw a little of it [illegible] put a few drops into the ears.

[illegible] wear over the region of the heart a sachet or [illegible] I have already described; for Jean Baptiste [illegible] of his *Medical Letters* written to Athanase, a Florentine [illegible] it is useful to wear arsenic or some other poison over the heart, to accustom the heart to the poison of the plague and to fortify it, since all poisons alike seek the heart. But as to this you will note what I have said already.

Their clothes shall be of camlet, Arras serge, satin, taffeta, or the like. If they cannot afford these they must have morocco or German twill, or some other fine black stuff; not cloth, or fricze, or fur, lest it harbour the poison, and they carry death to them that are healthy. They must frequently change their clothes, shirts, and vests, if they have sufficient store of them, and must perfume them with the smoke of aromatic herbs; and when they come to their patients they must be careful not to inhale their breath, or the smell of their excretions, also not to use their clothes or bed clothes, and not to eat and drink with them, or partake of anything that they have tasted.

Moreover, they must breakfast early in the morning; and if they hate breakfast, as some men do, they may instead of it take this or that preservative drug which I have already mentioned; and when they come near the patient they must keep in their mouths a clove, or a morsel of canella or angelica root, or a juniper berry, or some such preventive to occupy and fill the void interstitial spaces, and so the vapour of the plague will find no lodgment in them.

In Italy, France, Germany, Belgium and elsewhere physicians and surgeons who ministered to plague-stricken patients wore a special dress such as is represented in Fig. 1. The



Fig. 1.—A mediæval physician in his plague dress (from Muratori's *Il Governo della Peste*).

mantle, breeches, shirt, boots, gloves, and hat were generally of morocco leather. The beak attached to the mask was filled with aromatics, over which the air passed in respiration. A drawing of an actual mask from the old lazzaretto of Venice is reproduced in Fig. 2.

The disinfectants in general use were vinegar, sulphur, nitre, incense, and various gums. The method of use was almost universally by fumigation. Articles of clothing were placed in a cylindrical cage (Fig. 3) and thoroughly exposed to the fumes of a disinfectant mixture placed underneath. Letters were fumigated in a box (Fig. 4) and handed to the patients with long pincers (Fig. 5). Money was also placed in boxes (Fig. 4) and soaked in vinegar or other disinfectants.

Of the great plague of London the most vivid account and doubtless the most accurate in general effect, if not in minute detail, is contained in Daniel Defoe's *Journal of the Plague Year*. This is not, strictly speaking, a historical document, but it is founded throughout on the testimony of eye witnesses and contemporary records, and its substantial truthfulness

[1] The [illegible] is from Stephen Paget's *Ambroise Paré*, 1897.

The Flagellation of Jesus. (From a painting by Guido Cagnacci in the Naples Museum)

is accepted by historians. Speaking of the people at the height of the panic Defoe says:

So they were as mad upon running after quacks and mountebanks, and every practising old woman, for medicines and remedies; storing themselves with such multitudes of pills, potions, and preservatives, as they were called, that they not only spent their money, but even poisoned themselves beforehand, for fear of the poison of the infection, and prepared their bodies for the plague, instead of preserving them against it. On the other hand, it is incredible, and scarce to be imagined, how the posts of houses and corners of streets were plastered over with doctors bills, and papers of ignorant fellows quacking and tampering in physic inviting the people to come to them for remedies; which [invitation] was generally set off with such flourishes as these, namely, Infallible Preventive Pills against the plague, Never-failing Preservatives against the infection, Sovereign Cordials against the corruption of the air, Exact Regulations for the conduct of the body in case of an infection, Antipestilential Pills, Incomparable Drink against the plague, never found out before, An Universal Remedy for the plague, The Only True Plague Water, the Royal Antidote against all kinds of infection.

The following is the composition of a "plague water" recommended by the College of Physicians in 1665:

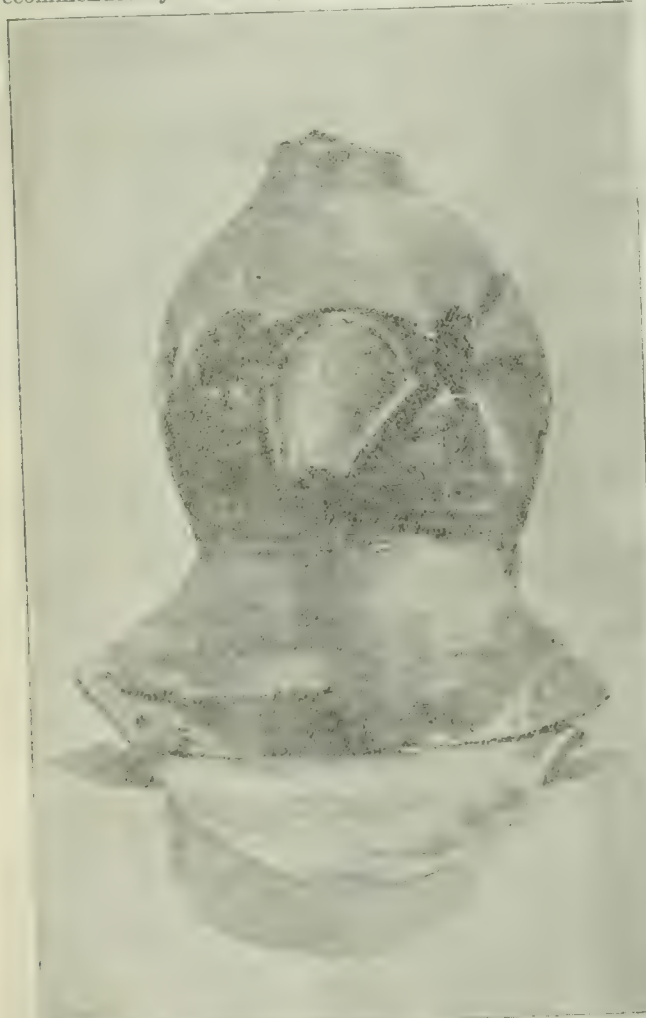


Fig. 2.—Plague mask of a mediæval physician (from a drawing by Dr. Sandbom).

THE PLAGUE-WATER OF MESSRS. OF ROYAL PHYSICIANS.

Take the roots of [illegible], angelica, peony, zedoary, liquorish, elecampane, [illegible] the leaves of sage, scordium, celandine, rue, [illegible]wort, burnet, dragons, scabious, [illegible] the less, marygold's leaves and flowers, of each [illegible] let them all be cut bruised, and infused three days in eight pints of white wine in the month of May, and distilled.

In the *Intelligencer*, No. 49 (June 24th), a preparation called *spiritus antibromicus*, or an antidote against the plague, was advertised as selling at Amen Corner, under the authority of the College of Physicians.

The following are specimens of quack advertisements which appeared in the *Newes* (Nos. 38 and 42), May 18th and June 15th of that fatal year:

Constantine Rhodocanaceis, Grecian, hath, at a small price, that admirable preservative against the plague wherewith Hippocrates, the Prince of all physicians, preserved the whole land of Greece, etc., etc. To be had in London, next door to the Three Kings' Inn in Southampton Buildings, near the King's Gate in Holborn.

One, Dr. Stephanus Chrysolitus, a famous physician, lately arrived in these parts, having travelled in several countries infected with the plague, hath found by experience to be very beneficial (by the blessing of God) for preventing the infection thereof, to eat raisins in the sun in the morning fasting, and Malaga raisins either baked or boiled, and this he hath published for the public good.

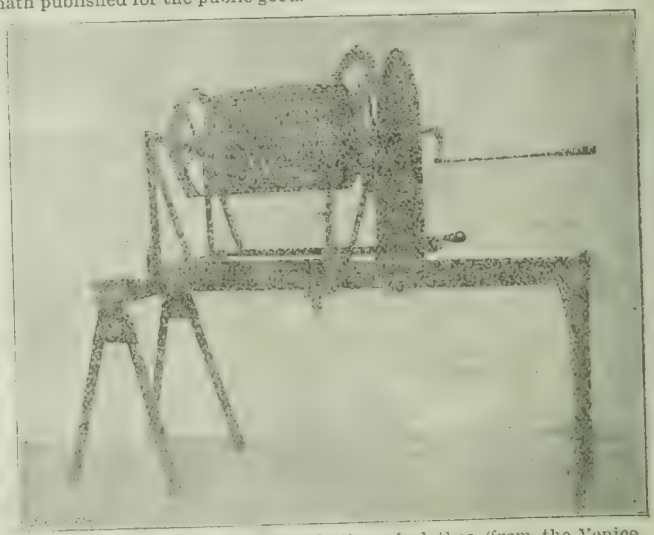


Fig. 3.—Apparatus for the disinfection of clothes (from the Venice Lazzaretto: seventeenth century).

Elsewhere Defoe says:

Some recommend one thing as most sovereign, and some another; some think that pill, ruti [a composition of aloes and myrrh], which is called itself the antipestilential pill, is the best preparation that can be made; others think that Venice treacle is sufficient of itself to resist the contagion, and I, continued he, think as both these think, namely, that the first is good to take beforehand to prevent it, and the last if touched to expel it. According to this opinion I several times took Venice treacle and a sound sweat upon it, and thought myself as well fortified against the infection as anyone could be fortified by the power of physic.

Dr. Nathaniel Hodges, who afterwards wrote the most authoritative history of the plague, under the title of *Loimologia sive Pestis nuperæ apud populum Londinensem Narratio*, which was published in 1672, and translated into English by Quincey in 1720, like Sir John Falstaff, found "great virtue in sack." Of this pleasant remedy, he says:

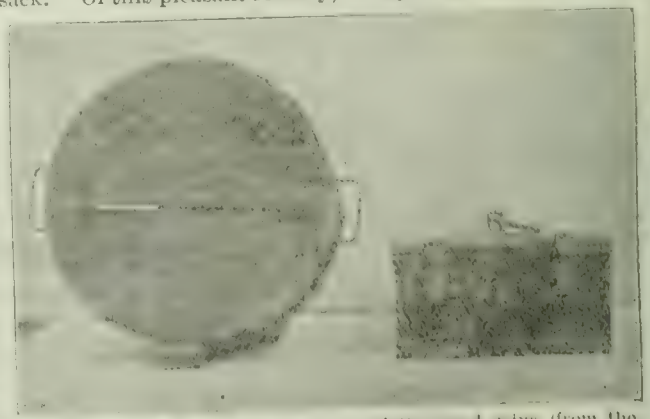


Fig. 4.—Boxes for the disinfection of letters and coins (from the Venice Lazzaretto: seventeenth century).

"But before I proceed further, gratitude obliges me to do justice to the virtues of sack, as it deservedly is ranked among the principal antidotes, whether it be drunk by itself or impregnated with wormwood, angelica, etc.; for I have never yet met with anything so agreeable to the nerves and spirits in all my experience. That which is best is middle-aged, neat, fine, bright, racy, and of a walnut flavour; and it is certainly true that

during the late fatal times both the infected and the well found vast benefit from it, unless they who used it too intemperately; many, indeed, medicated it with various alexipharmic simples.

How Hodges took his preservative appears from the following passage:

Before dinner I always drank a glass of sack to warm the stomach, refresh the spirits, and dissipate any beginning lodgment of the infection. I chose meats for my table that yielded an easy and generous nourishment, roasted before boiled, and pickles not only suitable to the meats, but to the nature of the distemper; and, indeed, in this melancholy time the city greatly abounded with variety of all good things of that nature. I seldom likewise rose from dinner without drinking more wine. After this I had always many persons come for advice; and as soon as I could dispatch them, I again visited till eight or nine at night, and then concluded the evening at home by drinking to cheerfulness of my old favourite liquor, which encouraged sleep and an easy breathing through the pores all night. But if in the daytime I found the least approaches of the infection upon me, as by giddiness, loathing at stomach, and faintness, I immediately had recourse to a glass of this wine, which easily drove these beginning disorders away by transpiration. In the whole course of the infection I found myself ill but twice; but was soon again cleared of its approaches by these means, and by the help of such antidotes as I kept always by me.

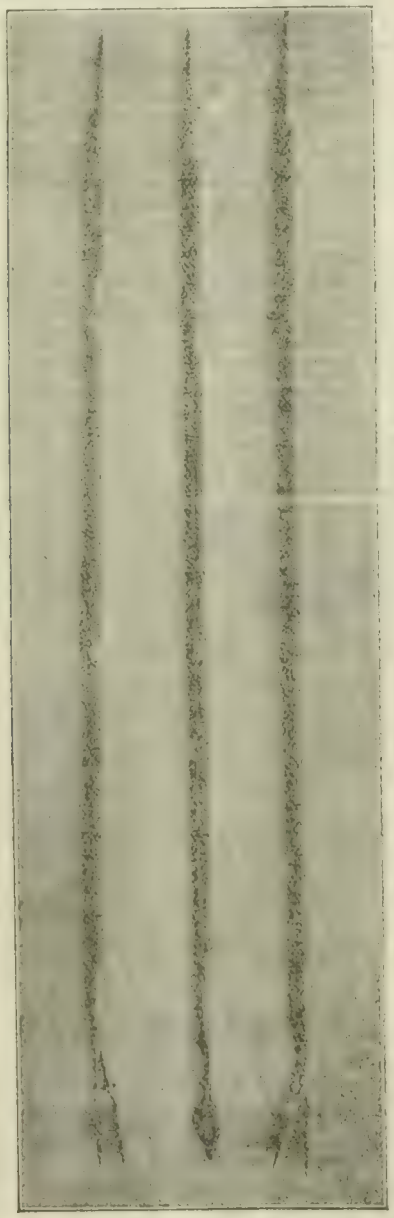


Fig. 5. Pincers for handing letters (from the Venice lazzaretto: seventeenth century)

Of tobacco, on which many were inclined to pin their faith in that time of trouble, Hodges says:

I must confess at uncertainties about it, though as to myself I am its professed enemy, and was accustomed to supply its place as an antidote with sack.

Not all physicians were so sensible as Hodges. Thus we read that on May 13th a Court of Privy Council was held at Whitehall when a Committee of the Lords was formed for "Prevention of the Spreading of the Infection," and under their orders a small quarto pamphlet was issued, intituled "Certain Necessary Directions as well for the Cure of the Plague as for Preventing the Infection," which had been drawn up by the College of Physicians. Among the remedies therein prescribed is the following:

Pull off the feathers from the tails of living cocks, hens, pigeons, or chickens, and, holding their bills, hold them hard to the botch or swelling, and so keep them at that part till they die, and by this means draw out the poison. It is good to apply a cupping glass or embers in a dish, with a handful of sorrel upon the embers.

The principal prescription of the doctors was, however, "the electuary of the three adverbs"—namely, *cito*, *longe*, *tarde*—which means that to keep oneself from plague one should go away from the infected place quickly and as far as possible, and not come back for a long time.

During the Plague of London, and, to a much greater extent in the epidemics of older date, public prayers and religious observances played a large part in the prophylactic measures adopted. In Catholic countries reliance was placed on processions and solemn exorcisms. Special medals were struck—a specimen of which is shown in Fig. 6—in Italy and elsewhere, which were worn by devout believers as preservatives of sovereign virtue. The Saints whose aid was especially invoked against plague were St. Roch and St. Sebastian. The

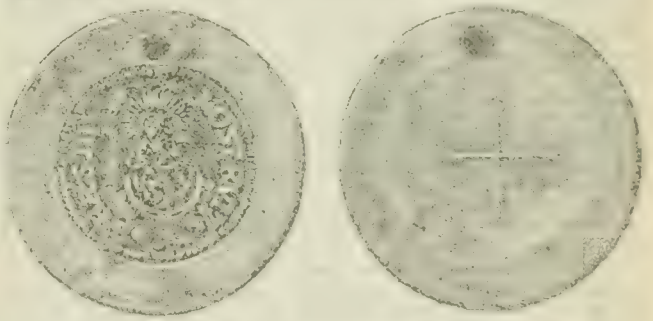


Fig. 6.—Plague Medal.

former plays a large part in the art of the plague: several pictures and statues of him—all of which show the "plague spot" on the leg—are reproduced in Charcot and Richer's *Les Difformes et les Malades dans l'Art* (Paris, 1889). Prayers and hymns to St. Roch are numerous. Such was the prophylactic virtue attributed to his relics that a portion of them was stolen from his shrine at Montpellier, and carried off to Venice when that city was threatened with the plague in 1434.

When other pious exercises failed, there was the resource of propitiating the wrath of heaven by sacrificing any Jews that might happen to be at hand. They were accused of poisoning wells, and by torture were persuaded to confess any misdeeds that might be imputed to them. At Strassburg on one occasion a hecatomb of 2,000 Hebrews was offered. At Basel a number of Jews were shut up in a wooden building and burnt. Similar occurrences were not infrequent in other parts of Europe.

If no Jews could be got, the panic-stricken people found other victims in poor creatures who were accused of smearing walls with plague virus. In the great plague of Milan two innocent men charged with this offence were ruthlessly tortured and burnt. In the picture of the plague at Naples in 1656 (reproduced in the full-page illustration) similar incidents are represented. We naturally shudder at these atrocities, but it may be useful to recall that even in this century of light the slaughter of doctors is still regarded as a useful prophylactic measure by the populace in Russia, Italy, Spain, and other countries.

Of the manner in which public authorities endeavoured to safeguard the health of the people, we may form a notion from certain ordinances promulgated to the sound of eight trumpets

by the Municipality of Barcelona on April 20th and 21st, 1651. By these all persons were enjoined

(1) To cleanse their consciences by means of a holy and good confession; (2) penalty of death was decreed to any person who having gone outside the city should, on coming in again, be considered by the physician and surgeon appointed for that purpose to be infected; and a penalty of 100 lashes to such of them as were found to be healthy, they not being soldiers or in the enjoyment of military privileges, in which case they were to pay 200 ducats; (3) penalty of death to all persons attempting to penetrate into the city from outside; (4) penalty of death to those scaling the walls or attempting to throw over clothing, even though it were prove that the articles did not come from an infected place; (5) a fine of 3 Catalonian pounds for each time that one neglected to sweep the part of the street in front of his own house; (6) a fine of 50 Catalonian pounds for cultivating silk; (7) a fine of 50 Catalonian pounds for selling fish in public places; (8) a fine of 10 Catalonian pounds for each time that a gardener or other person watered his garden with water which had been used for washing; (9) a fine of 25 Catalonian pounds for taking clothes for the wash, whether from healthy or from infected houses; in case of inability to pay, 100 lashes; (10) penalty of death, "without hope of reprieve," on every person of whatever rank or condition entering a house containing persons sick or suspected of contagion; the same penalty to all who removed from one house to another, even if not under suspicion, furniture, clothing, or bedding without leave of the Council or of the person having care of the health of the same house; (11) a fine of 25 Catalonian pounds for each time that schoolmasters and schoolmistresses gathered together any pupils; (12) a penalty of 50 Catalonian pounds (or of 100 lashes) for selling clothing of silk or of linen that had been worn, and for making clothes with such materials; (13) a fine of 10 Catalonian pounds for failing to kill dogs and cats in private houses; for each such animal killed in the street a reward of 10 sueldos; (14) penalty of death "without hope of reprieve," for taking anything out of an infected house; (15) penalty of 100 lashes, or, in the case of soldiers, banishment or other punishment, for failure to report oneself to the proper authorities of feeling ill; (16) penalty of death for coming out of the house of a sick person unless the same had been disinfected; (17) loss of fees and compulsory quarantine for the physicians and surgeons who fail to show their badge, that is to say, a strip of white taffety on the breast in the street. A fine of 25 ducats (or 100 lashes), for gravediggers who do not display their badge, that is to say, a sash glazed buckram of yellow cloth; (18) penalty of death, "without hope of reprieve," on gravediggers or persons who, under pretext of removing sick persons or cleansing houses, shall appropriate any article, however trifling in value. A reward of £100 is promised for every time that such misconduct is reported; (19) loss of employment for the physician or surgeon and a penalty of 100 lashes to gravediggers, sanitary officers, or other persons in the receipt of pay from the city for taking money or other payment, even when voluntarily offered; (20) penalty of death on gravediggers who, without having completed the term of forty days of purification, shall remove to any part of Catalonia; (21) penalty of 100 lashes for throwing rags into the street.

The civil power of Barcelona evidently looked upon an epidemic as a kind of rebellion, to be put down by declaring a state of sanitary siege.

In other parts of Europe the measures taken to fight the plague, if less drastic, were yet sufficiently severe. Thus by an ordinance dated October 27th, 1668, issued by the Burgomasters of Liége and the Directors of the Company of Health, the citizens were "very seriously forbidden, under penalty of perpetual banishment," to admit to their houses any tramps or strangers; they were also forbidden to give alms to poor persons, except those belonging to their own parish, or elsewhere than at their own door. It was further enjoined that beggars, tramps, and loafers should not gather together to play at cards, dice, or the like games in any part of the city, or sleep in boats, public places, or on steps of quays or houses, on pain of being flogged and put in prison. Citizens were forbidden to go out after 9 at night or before 6 in the morning. It was further ordered that all persons infected, or who had been exposed to infection, should remain shut up in their houses for periods of forty days and nine days, and should keep their doors and windows closed from 6 in the morning till 9 in the evening, during which time they could clean their houses, the penalty for disobedience being that their fellow citizens could fire upon such rebels and contumacious persons. All those living near infected places were peremptorily ordered to kill or cause to be killed their dogs and cats within twenty-four hours; should they disregard this injunction the other citizens were enjoined to carry it out. It is curious that the harmless necessary cat, whose mission in life is to suppress the rat, which is now known to play a considerable part in the diffusion of plague, should have been looked upon as public danger.

By an ordinance issued by the Baron de Mérode, Governor of Huy, in Belgium, in the seventeenth century, persons infected, or suspected of infection, were forbidden to open their doors or windows except towards midnight, on pain of being fired upon. Sick persons were forbidden to leave their houses on pain of being put to death.

During the great plague of Marseilles in 1720 orders were sent from Paris that as soon as the epidemic broke out in any part a cordon of troops was to be placed around it On any attempt being made to force the blockade, the officer in command was directed not to hesitate to march with fixed bayonets on those trying to come out, threatening to kill them, but "not firing upon them except in case of necessity." But if any escaped they were to be brought back and killed before the others, as an example. Doctors who shirked their duty were to be summarily dealt with—*pour encourager les autres*—as appears from the following passage:

Inasmuch as the physicians and surgeons often run away and are unwilling to look after the sick, if it is not possible to recall them to their duty by sentiments of religion and honour, or by the promise of a substantial reward, they must, in case of necessity, be forçed to it by the fear of a death more certain and more swift than that which they seek to avoid.

Truly the "conscientious objector" would have had short shrift in those days! But it is well to remember that it is only a few years since a man suffering from small-pox who attempted to land from an American river steamer, the captain of which insisted on his leaving, was shot in the name of the public safety. The isolation of cases of yellow fever has also, unless we mistake not, been enforced by the threat of a similar method of repression.

INDIA AND THE COLONIES.

INDIA.

SANITARY REPORTS.

BENGAL SANITARY REPORT FOR 1896.—The main facts of the year are admirably summarised in the Review of the Local Government, which presents in a few pages the essence of an enormous book consisting of some 315 folio pages; 133 of these are occupied with one statistical form (No. II), the utility of which it is difficult to understand. It is too general for local use and too particular for general interest, and is largely inaccurate and perfunctory. The report itself is not unduly lengthy, and has been drawn up with intelligence and care by Surgeon-Major H. J. Dyson, whose work during the year is warmly commended by the Government of Bengal. The year was a notably unhealthy one. The meteorological conditions were abnormal, and the resisting power of the people was impaired by scarcity and high prices. The provincial birth-rate was 38.03 and death-rate 34.17 per 1,000. There was a marked increase of mortality due to cholera and fever, the latter alone accounting for a mortality of nearly 25 per mille. Cholera was worst in the Orissa division, in which it was spread by pilgrims. The disinfection of wells by permanganate of potash is favourably reported on, and some promising data are recorded touching the prophylactic value of M. Haffkine's inoculations. Sanitary works, special and routine, receive ample notice in the report, and local bodies appear to be fulfilling their obligations with respect to these satisfactorily. In this they are greatly encouraged and aided by the Provincial Sanitary Board and the Government.

MEDICAL AND SANITARY REPORT OF THE PROVINCE OF COORG.—The Province of Coorg is a small mountainous tract situated on the Eastern Ghat, near the Malabar coast of the Madras Presidency. Its elevation is over 3,000 feet above sea level; area, 1,583 square miles; population, 95,007 males and 77,148 females. The mean temperature is 69°, and the annual rainfall over 150 inches. It is sparsely populated, the people living in scattered farms often separated by high hills and thick jungle. Coffee cultivation is worked by European agency, considerable numbers of coolies being imported for the purpose. A report for the year 1896, prepared by Surgeon-Major D. G. E. Bain, Civil Surgeon of Coorg, furnishes details regarding the general health of the population, the transactions of civil dispensaries, vaccination, and sanitation. The birth-rate of the year was 26.62, and of deaths 26.43 per 1,000, but registration is acknowledged to be defective. The fever-rate was 20.53. Bowel complaints are rife, 40 deaths being caused by cholera, 18 by small-pox. There are 7 dispensaries in the province, in which 48,147 patients were treated; 10,000 persons were vaccinated; the percentage of success was 90.8, the proportion of successful results per head of population being 55.40. Animal lymph is used. Efforts are being made to improve the water supply and conservancy of towns, but the want of sweepers is a great hindrance. The province is a small and difficult one, but medical and sanitary matters evidently enlist the anxious attention of the administration.

TRINIDAD.

FROM the annual report of the Surgeon-General for 1897, we gather that on the whole the general health of the colony was satisfactory compared with former years. Epidemics of whooping-cough and influenza prevailed for some months. Dysentery and the various forms of malarial fever were less common than usual, and there were fewer cases of typhoid fever than have generally occurred. The medical officer's report on the health of the newly-constituted Bocas District shows that much benefit has been derived by the inhabitants from having a medical officer within comparatively easy reach. The report shows that although cases of yaws continue plentiful in most districts, the system of treating the disease by means of dispensaries has certainly reduced the numbers. The proportion of vaccinations to births was 86.47 per cent., a result which is 5 per cent. above that of 1896, and 4.47 per cent. more favourable than the average of the last five years.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

SUBSCRIPTIONS to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, SEPTEMBER 24TH, 1898.

MEDICINE IN THE TROPICS.

SEVEN or eight years ago we heard little about tropical medicine. So far as this country was concerned, the remarkable discoveries in this department made during the preceding decade or two had fallen flat, and we were in the main content to jog along in the old, time-honoured groove. The Army Medical School at Netley, it is true, furnished an education in their special requirements to the medical officers of the Queen's and Indian armies; but in this respect the naval and colonial services, the increasing body of medical missionaries, and the vast crowd of civil practitioners connected with our tropical possessions were, as they had ever been, utterly neglected. Meanwhile the empire continued to expand, and other countries entered on the colonial race. The French, the Germans, the Italians, and the Japanese not only competed with us for territory, but with the vigour born of youth and novelty grappled with many colonial questions, including not a few of the associated disease problems which had been listlessly disregarded for so long by our countrymen. The rising American school of pathologists, particularly those of the Johns Hopkins University, also stepped in, and did much to impart new life to what, so far as the British branch of the Anglo-Saxon race was concerned, was a languishing subject. Such was the state of matters until very recently. At last, however, we are glad to see that Englishmen are throwing off their lethargy, and, after having neglected for a time the practical monopoly of medical opportunity in tropical countries which they for so long enjoyed, are awaking to a sense of duty and responsibility, and that they are beginning to do something worthy of the country of Annesley, Malcomsen, Twining, Waring, Morehead, Lewis, Vandyke Carter, and other worthies of a bygone time who had built up for this country a leading place in the annals of tropical medicine.

The British Medical Association through its JOURNAL, through its Colonial Branches, and through the efforts of individual members, may justly claim to have contributed powerfully to this awaking. Our columns have always been open to our tropical contributors, and from time to time have chronicled important discoveries in this branch of medicine—a branch whose claims we have for years persistently and consistently advocated. Whatever may have been our share in bringing it about, we heartily welcome the growing interest in what, to Englishmen especially, is a subject of the highest importance.

As evidence of the activity of the new movement, we would point to the recent institution of lectureships on tropical diseases in several of our metropolitan and provincial schools; to the circular of the Secretary of State for the Colonies on the necessity for increased attention by medical teachers to instruction in tropical medicine; to the several textbooks recently published on this subject; to the appearance of a *Journal of Tropical Medicine*; and to the founding of a school in connection with the Albert Dock Hospital of the Seamen's Hospital Society, Greenwich, which, we understand, is to be devoted exclusively to the study and teaching of tropical disease.

Recognising that the times were ripe, the Association instituted at their Edinburgh meeting, for the first time, a special Section devoted to this subject. How thoroughly the new departure was justified, the large attendances and animated discussions at the meetings of the Section, and the quality of the work done, amply demonstrated. Most of the papers read on that occasion we publish to-day. These papers are not only of value in themselves, but they have the further merit of drawing attention to a vast mass of work in their particular subjects, waiting to be overtaken. Some of them also indicate directions in which tropical medicine might very well throw valuable sidelights on unsettled and obscure points in general pathology. They further open up important problems in hygiene and, if we may use the expression, in practical politics. As an example may be cited the case of Ross's remarkable discoveries described by the President of the Section. Results of the utmost value to humanity may very well accrue from Ross's demonstration that the mosquito is an element in the propagation of malaria. This fact distinctly points to the possibility of a practicable prophylaxis to this worst scourge of mankind; a prophylaxis which, if effectual, will do more to open up and civilise Africa and other dark places of the earth than even the Sirdar's brilliant victories. The enemy of civilisation and colonisation in Africa is not so much Mahdism as malaria; abolish or counteract the latter and in a very few years Africa will become as settled and civilised as India. Apart from its bearing on the hygiene of the tropics the discovery that insects play an important part in the spread of one of the principal diseases of man is a hint not to be overlooked by European investigators in connection with the etiology of such diseases as acute rheumatism, cancer, relapsing fever, cerebro-spinal meningitis and yet othe diseases.

But although the conquest of malaria must ever be the supreme ambition of the tropical practitioner, there are other disease problems which loudly call for his attention. Blackwater fever, for example, is a disease which seems to be on the increase and extending in endemic area, especially in Africa, and one which yearly claims hundreds of valuable lives. Indeed, at the present moment, it is probably a principal obstacle to the successful settlement of such promising fields for European colonisation as British Central Africa, and to the civilisation and successful government of the vast areas drained by the Gambia, the Niger, the Congo, and the Zambesi, not to mention the British and German protectorates on the eastern side of

the Continent. Our old ideas on the etiology and treatment of this disease are at the present moment being rudely shaken. Its claims to be regarded as belonging to the malarial group are in dispute, and until this point is settled the important matter of treatment cannot be authoritatively settled. Some, whose opinion is expressed by Dr. Sambon's paper in another column, aver that it is a disease *sui generis*, and probably allied to the ixodic fever of cattle; others, as Tomaselli—followed by certain Continental authorities, including Koch—maintain that it is merely a manifestation of quinine poisoning in malarial cachectics. It is high time that this very practical matter were settled. Meanwhile, until this is done, the African practitioner is between the horns of a very awkward dilemma. For if blackwater fever be malarial in nature, to withhold quinine is culpable; if it be not malarial, to give quinine is probably worse than useless; and if it be a manifestation of quinine poisoning, to exhibit quinine or to persist in pushing this drug is homicidal. We trust that the commission which —as we stated last week—the Royal Society, at the instance of the Colonial Office, is about to send to Central Africa, will successfully deal with this highly practical point.

Yet other questions in respect to the etiology and pathology of the many diseases somewhat loosely grouped under the terms dysentery, tropical diarrhœa, hill diarrhœa, sprue, psilosis, and so forth, though of great importance to the European as well as to the native in tropical climates, have as yet hardly been attacked on the lines of modern investigation. Most of these diseases are doubtless of microbic or parasitic origin; yet, with the doubtful exception of so-called amœbic dysentery, not one of them has hitherto yielded up the secret of its origin.

Other questions of the hour are the possibility of a practical application of Sanarelli's serum in the cure and prevention of yellow fever, and of Haffkine's injections in cholera and plague. Beri-beri is another of the diseases requiring careful investigation both from the clinical and the etiological standpoint. As regards the former there is a lurking suspicion that under the term beri-beri two or more distinct diseases are included—forms of peripheral neuritis; and as regards the latter it may be said that the results of numerous bacteriological studies are most contradictory. Then again although dengue, Mediterranean fever, and typhoid in the tropics have been thoroughly separated from the malaria group of fevers, this is not the case with the large residuum of unclassified fevers peculiar to warm climate; for these imperfectly known fevers we are badly in need of a Jenner to differentiate and of a Murchison to describe them. Besides these we might point to dozens of other diseases, to negro lethargy, to lathyrism, and other food diseases; to the practically unworked skin diseases, especially the epiphytic diseases, of the tropics; to the important subject of helminthology, including the group of grave affections caused by the ankylostoma, by bilharzia, by the newly-discovered bloodworms, by the liver and lung distomes. Truly the field for the tropical pathologist is immense. It is a fascinating one, full of novelties and surprises, and one which should prove highly attractive to the student grown stale over the threadbare subjects and over-refinements of European pathology.

A scientific knowledge of the etiology of disease is the only sound foundation on which to build efficient prophylaxis and treatment. Such a knowledge has proved of enormous value in preventing disease and in lengthening and promoting the comfort of life in Europe. Undoubtedly a similar knowledge of the causes of the diseases of tropical climates would be correspondingly rewarded. We must bear in mind that in the past our conceptions of the nature and causes of tropical diseases have been dominated far too much by the idea of climate, that is, of heat and moisture; far too little has been made of the influence of germs.

If climate pure and simple be the cause of the unhealthiness of the tropics, the position is hopeless; we cannot materially modify climate. But, after all, it is mainly the parasites of malaria, of dysentery, and of typhoid that make the tropics so unhealthy to Europeans; it is not the meteorological conditions. Take away the malaria microbe and the dysentery microbe from West Africa, and this deadly country would become as healthy as Europe.

We trust that this point—the etiology of disease—will be kept steadily in view by the teachers in the new school for tropical medicine. The details of the organisation of this institution have not as yet been made public, but we hope that the practical demonstration of these micro-organisms, the familiarising of the student with the best methods for their detection, the study of their life-histories and of their action on the human body, will be leading features in the teaching. In these days the place of the academic lecture is in great measure taken by the textbook; the work of the medical school should lie principally in demonstration, and in teaching the student to do things for himself. If this new school be conducted on the lines we indicate, it is safe to say that not only will the class of practitioner in the tropics be greatly improved, but also that there will ensue a great advance in our knowledge of tropical medicine—this latter inasmuch as the school will yearly send out many men properly equipped, not only as clinicists but also as investigators with knowledge abreast of the times, and with a training which will enable them to advance this knowledge still further.

It must be no small encouragement to those engaged in this movement to know that they have the sympathy and practical support of so acute and practical a statesman as Mr. Chamberlain. The Indian Government from time to time has doled out some niggardly aid to pathological investigation; this is the first time, however, at all events in recent years, that the Colonial Government has given it material support, and we have in great measure to thank Mr. Chamberlain for this new departure. In former days the Colonial Government has sent commissions to investigate the diseases of plants and cattle, but it is only now that it is actively concerning itself with the diseases of men. The duration of empire depends, in the long run, on the way in which the duties of empire are discharged. The health of the people is surely not the least of those duties. This is a consideration which should enter largely into the thoughts and plans of those who cherish and work for the Imperial idea.

THE SECTION OF TROPICAL MEDICINE AT THE ANNUAL MEETING, JULY, 1898.

Whether regarded from the point of mere numbers, the enthusiasm of the speakers, or the scientific importance of the communications read or spoken, the Section of Tropical Medicine held at Edinburgh was a success. The inclusion of such a Section in the programme of the annual meeting was in the nature of an experiment, but it was justified by the result.

The practice of medicine in the tropics differs in many respects from medical practice at home. Not only are the diseases in many instances totally different, not only is life generally more precarious, but the practitioner himself stands on a different footing professionally as well as socially. In all but one or two of the larger cities, the medical practitioner in the tropics has thrust upon him the responsibility of his profession to a degree unknown in European practice. He is brought face to face with many diseases which rapidly tend towards a grave issue. What seems a simple case of fever may in a few hours develop into a condition of hyperpyrexia requiring attention, courage, and skill of the highest order; what appears to be a simple case of diarrhœa may assume choleraic symptoms of a virulent type; a dysentery may become malignant, or a crisis from pernicious malaria may arise which the practitioner has to deal with, promptly and decidedly. There is no consultant near who can be called in; there may be no other medical man within many miles; time is of the greatest importance, and a rapid decision of vital consequence. Such emergencies arise not occasionally but frequently; in a large practice they are almost of daily occurrence, and they necessarily react on the character, professional and personal, of a man who has to deal with them. If he is made of the right stuff he becomes resourceful and self-reliant to a degree rarely found in practitioners whose lines are cast in smoother places, and he meets difficulties with a confidence begotten of hard-earned and frequently bitter experience.

Of this stamp were the men who took part in the work of the Section of Tropical Medicine at Edinburgh, and it is only those who have been isolated in tropical practice who can appreciate what it is to meet and to exchange views with men who have had practical experience of its special difficulties. The weekly or monthly medical periodical has perhaps been for several years their sole means of knowing what is taking place in the world of medicine, and they long for opportunities of discussing with brethren similarly situated many of the matters regarding which they are in doubt.

The diseases of Europe have been studied and written about until it is not easy to find anything new to say about them; but as regards the diseases of the tropics, it is the very elements which have to be discussed. Even the rudiments of the most common diseases supply ample material for debate, while the less known ailments constitute practically an unexplored region of pathology. Many of them, indeed, have not yet found a place in scientific nomenclature, and bear the names given to them by the savages among whom they are indigenous.

A practitioner at home carries out the treatment laid down by enlightened experience and sanctioned by scientific authority for diseases which have been familiar to mankind since the dawn of medicine. He has nurses at hand, consultants whose assistance he can invoke in any perplexity, and all the aids and resources of civilised life. The practitioner in the tropics has to deal singlehanded, as best he may, with cases which do not come within the category of scientific nosology, and for the treatment of which the text-books of medicine give him little help.

Can it be wondered at that men in tropical practice are as a rule ardent students, keen to learn, and anxious to exchange ideas with men of experience in other tropical spheres? Every man is acquainted with, and has to follow, general practice, but this is a practice apart—a practice in which new diseases have to be studied, new symptoms have to be observed, new remedies have to be tested, and new conditions have to be grappled with. The result is that he becomes a specialist in his work, and learns to use his own judgment, to look at things with his own eyes, and to interpret what he sees in a manner that tends to make him not only an independent observer, but a practical man in the best sense, unswayed by authority or by medical dogma, and relying on his own gained knowledge in positions of difficulty.

The first paper read at the meeting was one by Lieutenant-Colonel Crombie, entitled, "Unclassified Fevers of the Tropics." The very title stamps the position of our knowledge of tropical diseases. "Unclassified" fever is an admission of ignorance, and it is but a type of our position in regard to other diseases. When Dr. Sambon had finished his interesting and valuable paper on Blackwater Fever, a resolution was drawn up by the Section to the effect that Government should be asked to send out a Commission to investigate this obscure disease. This betokens again how ill-acquainted we are with tropical ailments. Beri-beri, although it has recently occurred near Dublin, and so has had the advantage of being studied by pathologists, and bacteriologists of the highest eminence, is still a disease of unknown etiology. The treatment of so comparatively familiar a disease as dysentery was shown at the meeting to be purely empirical, and the very signs and symptoms of this disease were regarded as presenting matter for discussion. These are but a few examples, and many others might be cited to show that tropical pathology is still in its infancy, and that the treatment of tropical diseases offers a vast field for practical study.

But while we thus confess ignorance of many tropical diseases, it would be unfair not to mention several which have been submitted to scientific investigation, with the result that their pathology has been more or less satisfactorily elucidated. Filaria in its numerous relations has been placed in a clear light, and great increase of knowledge concerning that most important disease, malaria, has been made during the last twelve months. In India, Major Ronald Ross, I.M.S., has been working at malaria from the standpoint of Dr. Manson's theory of the possibility of infection by the mosquito. The outline of his work was sketched in a special lecture given at the Edinburgh meeting by Dr. Manson. The appreciation of Ross's contribution to our knowledge was testified by a formal vote of congratulation being drawn up by the members of the Section of Tropical Medicine, and despatched for transmission to Major Ross in Calcutta. It is scarcely possible to

exaggerate the importance of that distinguished investigator's work, whether from a scientific or a practical point of view.

The knowledge that it is the mosquito that may be the means of spreading the disease opens up a vast new field of inquiry in which perhaps we may find the solution, not of malaria alone, but of many other diseases which have hitherto baffled the resources of medical art, and which check the expansion of our Colonial empire.

On the whole, the Association may be congratulated on the result of the labours of the Section of Tropical Medicine. The work of that Section is one of many signs that a new era in the study of tropical pathology is about to dawn.

THE ACCLIMATISATION OF WHITE MEN IN THE TROPICS.

MR. BENJAMIN KIDD, the distinguished author of *Social Evolution*, has recently in a series of articles published in the *Times* dealt with the question of the "control of the tropics." The commercial and politico-social aspects of this problem do not concern us here, but the possibility of the acclimatisation of white men in the tropics, which is one of the elements in the problem, is essentially a medical question.

It appears to us all the more necessary to discuss it from the scientific standpoint. Mr. Kidd deals with it not only somewhat perfunctorily but with a dogmatism hardly warranted by his knowledge of the subject. His conclusion is briefly that our future policy in regard to the tropics, if it is to be successful, must be based on a frank recognition of the fact that the attempt to acclimatise the white man in the tropics is a blunder of the first magnitude.

Mr. Kidd is very positive on this point. "In France," he says, "a literature in itself has gradually arisen, dealing with the acclimatisation of the white man in the tropics. Yet anyone who endeavours to follow it for himself, and who has been able to approach it with an open mind, will probably find himself possessed, sooner or later, of an overmastering conviction of the innate unnaturalness of the whole idea, and of every attempt arising out of it to reverse by any effort within human range the long slow process of evolution which has produced such a profound dividing line between the inhabitants of the tropics and those of the temperate regions. To scarcely any of the facts commonly adduced in favour of the idea will it be found possible to attach any real weight on analysis. The unusual triviality of the facts on the one side, and the apparently massive and overwhelming character of the evidence on the other, will probably bring most unbiassed minds to feel that it is a matter upon which, in the end, there can hardly be room for any important difference of opinion."

We may, perhaps, be allowed to hint that this *ex cathedrâ* pronouncement appears to be founded more on a preconceived idea than on a careful study of the facts in the light of modern research. Mr. Kidd refers to the French literature on the subject, but seems to be ignorant of the English and German literature, which we venture to think is far more important than the French. A number of authors might be cited who maintain the possibility of the acclimatisation of whites in the tropics with arguments grounded on an abundance of established and decisive facts. We need only refer to some of the most recent of them. In a paper published in the BRITISH MEDICAL JOURNAL of January 9th, 1897, and again in a communication made to the Royal Geographical Society on April 27th of this year, Dr. Sambon brought forward a large amount of weighty evidence that the causes of disease, deterioration, and deaths in the tropics are due not so much to the influence of climate as to pathogenic germs, which have their limited and peculiar geographical areas, and differ greatly in the various tropical regions. If heat were the difficulty in the way, of course acclimatisation would be altogether hopeless, and white men would have to live in the tropics "like divers," as Mr. Kidd puts it. There appears to be good reason, however, to believe that the real enemy is the microbe; and, if so, we may hope to fight against it in the tropics as successfully as has already been done in temperate zones by sanitation and the gradual acquisition of immunity. This doctrine is strongly supported by some of the highest authorities in tropical pathology. Dr. Manson has publicly stated that in former years, under the influence of early teaching, he shared in the pessimistic opinions then current as to tropical colonisation by the white races, but that in recent years his views on this subject have undergone a complete revolution. He has expressed the same opinion in his recently published *Manual of Tropical Diseases*.

Another distinguished worker in the same field, Dr. F. Rho, Director of the Medical Department of the Italian Navy, has also strongly supported the possibility of tropical acclimatisation in his recent treatise on the diseases of warm climates.

But, setting aside theories, is not the revolution which improved sanitation has wrought in all tropical colonies a striking proof of what can be done to make acclimatisation possible? The West Indies, which used to be called the white man's grave, now rank amongst the best sanatoria. The death-rate of European troops in the tropics, which used to be from 100 to 129 per 1,000, is now as low as 12 per 1,000 in India. In Trinidad and Barbadoes the sickness and mortality among European soldiers are actually less than at home.

We would further invite the attention of those who may be prepared to accept Mr. Kidd's views to the examples of successful Aryan acclimatisation in tropical countries from the remotest periods. What about the Parsis in India and the Kabyles in Algeria? If they have undergone a certain evolution, that does not invalidate the argument. The Englishman transplanted to America and Australia differs already as much from his prototype in physical and psychical characters, but surely he has not degenerated. Evolution is constantly at work all over the world, but meteorological elements are not its only instruments; it uses a variety of agencies, the most important of which are perhaps food and occupation.

But have we not more recent and more striking examples? What about the Dutch in South Africa, the Spaniards in Costa Rica: have they degenerated? The Costa Ricans are handsome stalwart men, as often fair-haired, red-cheeked, and blue-eyed as their kinsfolk of Europe. If not better, they are certainly quite as good men as their forefathers of the

seventeenth century. The Boers are the finest men in South Africa. The Portuguese under unfavourable social conditions have been totally absorbed in India, but in Guiana and Brazil they have thriven remarkably well. Spaniards and Italians have become completely acclimatised in the tropical parts of both North and South America. The death-rate of the Spaniards at Cuba is less than in Spain, and their birth-rate is greater. Our own countrymen have lived and worked in tropical Australia without loss of energy.

Unfortunately the subject of tropical acclimatisation has hitherto been discussed mostly by statesmen, geographers, meteorologists, and journalists, who were necessarily obliged to base their conclusions on such medical opinion as was accessible to them, no matter how obsolete and erroneous. The present pessimism on the question of the tropical acclimatisation of whites has a parallel in that which was so strongly expressed by Dr. Knox and others about the English settled in the United States and in Australia.

It is surely time that this question, which is of such vital interest to us, should be discussed in the light of science. France and Germany have understood that the future of the old States lies in expansion, and they have entered keenly upon the struggle for the possession of tropical regions; and we, notwithstanding our immense empire, are still bound to open up new fields of enterprise, because in the temperate zone further immigration is practically at an end.

It is hardly reasonable to dispute any longer the possibility of tropical acclimatisation. Already more than 10,000,000 white men and their descendants are settled within the tropics, laying the foundations of new and perhaps greater civilisations. The question has, in fact, been settled by the *solvitur ambulando* argument. What has now to be done is to study the means and conditions which may lead us to a complete victory over the tropical microbes which are the real enemies to be conquered.

THE RESPONSIBILITIES OF EMPIRE.

The proceedings of the Section of Tropical Medicine, and other papers published in this issue of the British Medical Journal, deal with some of the problems which are engaging the attention of those members of our profession who practise in tropical countries. The value of such discussions as those which took place at Edinburgh lies mainly in indicating the deficiencies of present knowledge, and in defining the problems which await solution. The ease and rapidity with which a man may now pass from the tropics to the temperate zone imposes upon every practitioner in this country the duty of gaining at least some general notions on the nature and treatment of malaria, dysentery, and indeed many other diseases chiefly prevalent in tropical climates, for he may any day be called upon to treat a patient suffering from a recurrence or a sequela of one of these disorders. A very great responsibility also rests upon this country as the ruler or the mother country of the great districts within the torrid zone. The British possessions in tropical and subtropical regions cover some four and a-quarter million square miles, and are inhabited by at least one hundred and sixty million souls. For the welfare of these people we have made ourselves more or less directly responsible. We are responsible for giving them just laws, a duty which we have discharged with a good deal of success, and we are responsible for providing that they should live under conditions conducive to health —a duty which we have discharged with less success. The responsibility, however, must be recognised, and it does not end with the inhabitants of the tropical colonies and dependencies; we owe it to the rest of the world that defects in our administration should not favour the development of epidemic diseases and their extension to other countries. In many tropical parts of the British Empire the main difficulty which, in one or other of its ramifications, overshadows all others with which local governments are confronted is the terrible rate of mortality and morbidity among Europeans. Before any considerable diminution can be hoped for, a more precise knowledge of the causes to which this sickness is due must be gained. To attain this we must look to more extended and systematic pathological investigations linked with statistical inquiry, which, however, might with advantage be relegated to a more subordinate position than it has hitherto tended to occupy.

LEPROSY AND THE ANNEXATION OF HAWAII BY THE UNITED STATES.

In the *North American Review* for September, Dr. Burnside Foster discusses the problem presented by the prevalence of leprosy in Hawaii, a question which has become of pressing importance now that Hawaii has been annexed by the United States. Till 1849 leprosy was unknown in the Sandwich Islands. In that year, according to tradition, there landed in Hawaii two Chinese sailors, both of whom were lepers. The disease spread rapidly, and to-day it is estimated that nearly 10 per cent. of native Hawaiians are lepers, while many thousands have died of leprosy since the introduction of the disease fifty years ago. Unless the progress of the scourge is checked there can be little doubt that the native race will in no long time be entirely swept away. Now, however, that the United States Government has assumed the responsibility of the welfare of Hawaii, there is every reason to hope that vigorous measures will be adopted to avert this consummation. Dr. Burnside Foster suggests first of all that a department of Public Health, with a Cabinet Minister at its head, should be added to the existing administrative machinery of the United States Government. Next, a Leprosy Commission should be appointed to investigate the subject on the spot. This Commission should be instructed to make an accurate census of the lepers in Hawaii, now estimated as not fewer than 6,000, and to see that all infected persons are completely segregated. The laws at present in force in Hawaii authorise the segregation by the health authorities of all known lepers, and it is believed that the laws are strictly enforced, but it is known that for various reasons many lepers escape detection. The number of those with pronounced leprosy who remain at large is probably small, but there are undoubtedly several thousands of persons who have already become infected, but in whom the disease has not yet produced symptoms making its nature manifest. It is, of course, among such cases that the great danger of disseminating the disease lies. Among the early results of annexation will probably be a largely increased immigration to, as well as emigration from, the islands. Many of those who either know or suspect that they have the disease will undoubtedly attempt to escape to the United States, while immigrants who settle in Hawaii will be thrown into more or less intimate relations with the already infected but unrecognised lepers. The extinction of leprosy in Hawaii can be effected only by complete segregation of those suffering from the disease.

THE KHALIFA'S MEDICAL PRISONER.

From an article in a recent number of the *Vossiche Zeitung* it appears that Dr. Karl Neufeld, who was among the prisoners long held in bondage by the Khalifa who have been delivered by the Sirdar's great victory, is a member of the

medical profession. Neufeld studied medicine at Leipzig University, and went early in life to Egypt, following first his profession as a medical man and subsequently as a merchant. In the early Eighties he had a practice at Keneh, Upper Egypt, where several Germans, and also natives of his own home, saw him. Subsequently he set up as a merchant at Assouan. After the fall of Khartoum and the firm establishment of the Mahdi's power at Omdurman, Neufeld seems to have formed a scheme for opening up commercial intercourse with the closed Soudan, for he equipped a caravan with which he proceeded to Berber, which was then in the hand of Osman Digna. The latter sent the German, whom he looked as a dangerous spy, to the Khalifa Abdullah. This was in 1886. Neufeld was condemned to death, and was taken to the place of execution. He behaved there with such courage that the Khalifa was struck and respited him under the gallows. He was, however, taken to the general prison with heavy chains on his hands and feet, and treated in a most abominable manner. Then an endeavour was made to utilise his knowledge. He managed to manufacture powder, and he was also ordered to invent a machine for coining money. His captivity was then made less onerous to him, and he received from the Khalifa a monthly salary of 15 Maria Theresa dollars, which was subsequently doubled. The Austrian Catholic Mission, induced by Father Ohrwalder, Slatin Pasha, the British Government, the German, and more especially the Austrian representatives at Cairo, all endeavoured to further the escape of Neufeld. He frequently received money, but he refused to escape, as he would not accept liberty without his wife—an Abyssinian slave presented to him by the Khalifa—and the two children whom she had borne him. As he could draw well he was ordered to decorate the mausoleum of the Mahdi. It is also said that he has written Arabic books and illustrated them. The latter part of his twelve years' detention appears to have been less onerous, as after the escape of Slatin he had to be interpreter to the Khalifa and translator of European newspapers, which the ruler of the Soudan received regularly. It is expected that a narrative of his exerience in the Soudan will be shortly published by Dr. Neufeld.

TRICHINOSIS.

THE British tourist has a great mistrust of foreign sausages, and, if a traveller in Germany watches the diners at a restaurant, he will generally find that those who come from the United Kingdom look askance at the *Delicatessen* and absolutely reject a *Wurst*. They have heard of a disease caused by a parasite derived from sausages and badly-cooked pork, and their fears are not groundless. Even the native is aware of the danger, and some thirty years since this fact was made the subject of a caricature in a German paper. A professor had ordered a sausage, and when the waiter asked, "With sauer-kraut?" the man of science retorted: "No; with a microscope!" As the parasite invades the muscles, the classical mode of making the diagnosis is to remove a piece of muscular tissue from a muscle, by means of a punch, after the application of cocaine. Usually the parasite can then readily be detected by the microscope. But the test may fail. Dr. Thomas Brown, of Baltimore, has recently published some valuable researches on the pathology of this disease based on the examination of three cases. He finds a remarkable change in the blood as the result of trichinosis. The normal proportion of the eosinophilic cells to all the white cells is from about 2 to 4 per cent.; in trichinosis there is a great increase of white cells, but this leucocytosis is of a special kind. An extraordinary relative and absolute increase of eosinophiles occurs. In one severe case they rose to 68 per cent. when the symptoms were at their height. The proportion fell in all cases as the patient got better. This excess must profoundly affect nutrition, if it be true, as Kanthack and Hardy believe, that, unlike other leucocytes, the eosinophile cannot act as a phagocyte. Dr. Brown fortunately traced one patient, and once more examined his blood, five months after he had been discharged with nearly 35 per cent. of eosinophiles in his blood. The man was then free from all other symptoms of trichinosis, and remained so to the end of the five months. Dr. Brown found, according to a note in the *Boston Medical and Surgical Journal*, that the eosinophiles had dropped down to 3 per cent. Hence, as Dr. Brown remarks in his original memoir, published in the May number of the *Journal of Experimental Medicine*, if further observation shows eosinophilia to be characteristic, we shall be furnished with a symptom of great diagnostic value in trichinosis, a symptom which, perhaps, may help to clear up some of the cases which are regarded as rheumatic in nature during life, the true diagnosis being revealed only years afterwards on the necropsy table.

THE SANITARY CONGRESS.

THE seventeenth Sanitary Congress of the Sanitary Institute will be held at Birmingham next week, from Tuesday to Saturday. A very large local committee, under the presidency of the Lord Mayor (Mr. Councillor C. G. Beale) has been perfecting the arrangements, and the Midland Institute and Mason University College have been set apart for the meetings. Sir Joseph Fayrer, Bart., is the President of the Congress, and will deliver his inaugural address on Tuesday afternoon, and in the evening the Lord Mayor will open a great exhibition of appliances, machinery, food products, and the like, which is the usual feature of the Congress, and lasts a month. On Wednesday municipal representatives, medical officers of health, sanitary engineers, sanitary inspectors, and ladies will hold conferences, read and discuss papers. Thursday and Friday are devoted to sectional work, and there are two important lectures, one to the Congress, and one to the general public. Amidst the several topics of current interest to be discussed are the Relations of Medical Officers to Vaccinal Legislation, the Milk Supply, Water Analysis, Bacteria and Infectious Disease, Hygiene in Dress, the Decrease in the Birth-rate, and the Ethics of Inspection.

RICE AND BERI-BERI.

DR. C. L. VAN DER BURG has published in *Janus* (July-August, 1898) a review of some recent Dutch literature on beri-beri, including a report by Dr. A. G. Vorderman of the Dutch Colonial Medical Service of his special mission of inquiry in Java and Madura. Dr. Vorderman started with the theory, founded on an impression gathered from his general experience, that it would turn out that persons who fed on white rice were liable to suffer from beri-beri, while those who ate red rice escaped. The main difference between white and red rice is stated to be that the latter retains the pericarp which constitutes 4 per cent. of the weight of the grain. The general result of his statistical inquiry, which was directed to the prison population, was that in those prisons in which the rice eaten retained its pericarp the ratio of beri-beri was 0.09 per mille, in those in which the rice was deprived of its pericarp the ratio was 27.9 per mille, while in those in which both sorts were eaten the ratio was 2.4 per mille. An analysis of the statistics to ascertain whether the country in which the rice was grown had any effect on the rate of attack by beri-beri showed that this factor had no influence. Dr. C. Eijkman has observed in Batavia an epidemic polyneuritis in fowls. The birds attacked were exclusively those fed on white rice and they recovered when fed on red rice. Dr. Vorderman considers that this observation is of great interest in connection with his own researches as to the influence of decorticated rice in producing beri-beri, and concludes that

the pericarp contains some substance which has a therapeutic influence on beri-beri especially in its earliest stage. He believes that the true cause of the disease is a specific microbe, and that for the prevention or arrest of epidemics the most effective means are the disinfection or where this is possible the destruction of buildings in which cases have occurred. Dr. E. van Dieren of Amsterdam, who has given much time to the study of the literature of beri-beri, believes that the records prove that it is due to poisoning by some substance which under certain circumstances is produced in rice. He is indeed a very ardent advocate of this theory, for when confronted with the contrary opinion of so large a proportion of those medical men who have actual experience of the disease he makes the astonishing response that this opinion is to be attributed to an imperfect judgment due to the fact that they have all been for some time rice eaters and are consequently already suffering from the first stage of the poisoning!

A HÆMATOZOON IN GOITRE.

At a recent meeting of the French Académie des Sciences Professor Grasset, of Montpellier, communicated the results of a study, extending over ten years, of persons suffering from goître in the Puy-de-Dôme department. In that region there are places where the disease is endemic, and others where it is entirely unknown. The affection is observed to develop after menstruation, childbirth, emotional disturbance, or a chill; often it appears consecutively to a slight fever or an attack of gastritis. From these facts Grasset concludes that goître is a general disease with a dominant local symptom—to wit, the enlargement of the thyroid gland. This feature of the affection he regards as analogous to the enlargement of the spleen characteristic of malaria. He points out that both diseases have a special geographical distribution, both affect a gland with internal secretion, and both end in cachexia. In the blood of eight patients suffering from recent goître (ten to fifteen days) Grasset found special parasitic elements. He describes these as spherical bodies larger than blood corpuscles, having no nucleus and containing red pigment. Each has a free flagellum, four times as long as the diameter of a red blood corpuscle. There are also segmented bodies, agglomerated or separate, and, lastly, there is a body of irregular contour containing red pigment but no nucleus. These elements recall the hæmatozoa of Laveran, from which, however, they differ by the presence of the pigment, and by the absence of crescentic bodies. They resemble the parasitic elements found by Danilewski in the blood of healthy birds. None of the goîtrous patients whose blood was examined was the subject of malaria, or has since become affected with that disease. Grasset thinks that the existence of a specific hæmatozoon of goître makes it probable that the disease is infectious.

THE FIJIAN FIRE CEREMONY.

At a meeting of the Otago Institute, Dunedin, New Zealand, on May 14th, an interesting discussion took place on the fire ceremony in Fiji. Drs. Hocken and Colquhoun of Dunedin, who had recently returned from a trip to the islands where they had an opportunity of watching the ceremony, were present, and the proceedings were described by Dr. Hocken. The ceremony is now seldom performed, and the power, as far as Fiji is concerned, appears to be confined to a family resident on Mbenga, an islet lying twenty miles south of Suva. These people, almost nude and with bare feet, walk quickly and unharmed across and among the stones, made white-hot, forming the pavement of the cooking oven. An attempt was made to register the heat, but when the thermometer had been placed for a few seconds about 4 ft. or 5 ft. above the stones it had to be withdrawn, as the solder of the tin covering began to melt. The thermometer then registered 282°, and Dr. Hocken estimated that the range was over 400°. The fire-walkers, seven or eight in number, then approached and in single file walked leisurely across and around the oven. The leader was a second or two under half a minute on the stones. The heaps of the soft and succulent leaves of the hibiscus were thrown into the oven, causing clouds of steam, and upon the leaves and within the steam the natives sat or stood. The men were carefully examined by Drs. Hocken and Colquhoun both before and after the ceremony. The fire had not affected the simple articles of dress they wore. The soles of their feet were not thick or leathery. The men showed no symptoms of disease and their pulse was unaffected. The soles of the feet were not in the least blistered. Simple tests made failed to show that there had been any special preparation. Both doctors, while denying anything miraculous about the experiment, expressed themselves unable to supply any scientific explanation of the matter. The subject was not long ago discussed by Mr. Andrew Lang (in the *Westminster Gazette*) with abundant but inconclusive learning.

UNIVERSITY COLLEGE, LIVERPOOL.

The new Laboratories of Physiology and Pathology which University College, Liverpool, owes to the generosity of the Rev. S. A. Thompson Yates will be opened on October 8th by Lord Lister, President of the Royal Society. By his benefaction Mr. Thompson Yates has strengthened the Medical School of the College in a very marked degree, and has enabled the Professors of Physiology and Pathology to take advantage of the most recent additions to our knowledge in their lectures and laboratory instruction. Lord Lister will be accompanied on the occasion by a large and distinguished party. The Lord Mayor will represent the University; Earl Spencer, Chancellor of the Victoria University, has promised to attend and admit Lord Lister to the degree of D.Sc. conferred on him by the Victoria University; Lord Derby, President of the College, will be present, with the authorities of the Victoria University and its colleges. Among those who have accepted the invitation of the College Council may be mentioned: Lord Kelvin, the Bishops of Liverpool, Chester, Carlisle, and Ripon; Sir Samuel Wilks, President of the Royal College of Physicians; the Vice-Chancellor of the University of Cambridge, Professor Rudolf Virchow of Berlin, the Presidents of the Royal Colleges of Surgeons and of Physicians of Edinburgh; Sir Wm. Turner, President of the General Medical Council, the Secretaries of the Royal Society, and many others. The degree ceremony will take place in St. George's Hall at 3 P.M. At its conclusion the company will adjourn to the College, where the Laboratories will be opened. Tickets of admission may be obtained by application, in writing, to the Secretary, Lister Reception Committee, University College, Liverpool.

HALIFAX PROVIDENT DISPENSARY.

It would appear, from correspondence and comments in the *Halifax Guardian*, that the Provident Dispensary in that town is by no means popular at present, and that there is considerable reason for dissatisfaction can be easily understood from the following facts. The membership of the institution is about 1,900. The amount subscribed by the members this year is £235, that is to say, about 2s. 6d. per head; from which it may be assumed that the provident payment averages about 4s. a year. It seems that the membership includes a large number of women and children. If so, the contribution of 4s. is decidedly inadequate. Complaints are made of want of attention on the part of the medical officers, and it is evident that the members are surprised beyond measure that they do not receive instant attendance at all hours from gentlemen whom they remunerate at the princely rate of rather more than three farthings a week. We are glad to observe that the medical men in Halifax seem unanimous in refusing their support

to the dispensary, because the Committee have determined to appoint a medical officer to undertake the entire work, and to remunerate him with a salary of £100 per annum. The sooner the people of Halifax learn that cheapness is poor economy in the matter of medical skill, the less will they waste in illness prolonged from the want of efficient advice. The stand taken by the profession in this matter is evidently the wiser if the mayor is to be accepted as a fair exponent of the views of his fellow-townsmen. He is reported to have publicly expressed the opinion that "when they heard the medical men were not looking with very great favour upon it (the provident dispensary), it was pretty good evidence that it was doing a good work." Such public utterances can hardly increase the respect which might otherwise attach to the office of the Mayor of Halifax; and so deliberate an insult to the medical profession on the part of this official will, we imagine, tend still further to alienate medical support from the institution which he praises and supports. We advise the medical practitioners who are concerned to organise a provident scheme of medical aid entirely under their own control, and we can hardly believe that under the circumstances any other practitioner will be found to accept the undignified and badly paid post of medical officer to the present Halifax Dispensary.

THE HEAT IN AMERICA.

New York has suffered severely from the recent heat wave, which first made itself felt there on September 1st, on which day there were 2 deaths from insolation. On the following day 28 deaths were recorded as caused directly by the high temperature. On September 3rd the deaths numbered 61; on the 4th there were 56; on the 5th 47; on the 6th, 12; and on the 7th the mortality was 10. The total number of deaths from heatstroke during the week was therefore 216, while the number of cases of non-fatal heat prostration reported to the police was over 600. One of the victims of sunstroke was a man of the Seventy-First New York Volunteers, then on furlough, who had passed safely through the campaign in Cuba. The mortality of the week indirectly caused by the heat was especially heavy among babies. A report issued by the Board of Health gives the number of deaths of children under 2 years for the first five days of the week as 240. Of this number 139 were male children and 101 female.

THE "TRIPOD OF LIFE."

Now that the time for inaugural addresses is drawing nigh, we must look forward for a few stock phrases usually to be found in such orations. We do not wish to add to the anxieties of those who will go through the fatiguing duty of haranguing a medical school early next month, but we may win some gratitude by reminding them of Dr. Gee's warning in the current volume of the *St. Bartholomew's Hospital Reports* as to the use of the term "Tripod of Life." A mistake about the authorship of a phrase is not serious, and it is quite allowable for the lecturer to say, "As a great authority has remarked,", or, if very uncertain, "as has been said." But the term itself must be expressed correctly—that is, literally, or, at the most, with such grammatical modifications as will not alter its sense. The lecturer, too, must never modify the original application of the term, except on his own responsibility, openly declared before his audience. The "tripod of life" is a phrase which has been particularly ill-handled in the way above indicated. Dr. Gee quotes Huxley's remark in his well-known *Elementary Physiology*. "These three organs," says the great biologist, "the brain, the lungs, and the heart, have been fancifully termed the tripod of life." Many of us, we suspect, think that Huxley was the actual inventor of the term. He admits that it is otherwise; unfortunately his quotation is not only incomplete, but also inaccurate. This was not Huxley's fault, as Watson, from whom Huxley seems to have taken the term, falls into the same error. Watson in turn must not bear all the blame, as he apparently quotes Laennec. It happens that Laennec was a pupil of Bichat, who taught that all kinds of sudden death begin by the interruption of circulation, respiration, and the functions of the brain. Laennec seems to have compounded his master's teaching with a sentence in Bordeu's *Recherches sur les Maladies Chroniques:* "The brain, the heart, and the stomach are thus the triumvirate, the tripod of life." Elsewhere in the same work Bordeu writes: "The head, the epigastric, and precordial regions, three important centres, and the true tripod of life" (*trépied de la vie* are the original words in both sentences). Let the inaugural lecturer remember the above remarks and thank Dr. Gee; let him take warning as to other phrases, and make sure that he quotes them accurately after finding their original source. For in this instance, let it be noted, the inventor of the phrase made the stomach, not the lungs, one of the legs of the tripod, contrary to what is represented by those who now speak of the "tripod."

NORTH-WEST LONDON CLINICAL SOCIETY.

We are asked to state that the first annual dinner of this Society will take place on Thursday, October 27th, at the Café Royal, Regent Street, at 7.30 p.m. precisely. The President, Mr. Victor Horsley, F.R.S., will take the chair, and will give the annual address on the Rational Treatment of Goître at 6.30 p.m. in the same place.

THE TIME OF BIRTH AND THE TIME OF DEATH.

There are a great number of curious superstitions as to the time of day when a dying person is most likely to draw his last breath, and the tide, the moon, and the wind have all been supposed to have some share in the matter. Raseri,[1] who has analysed 25,474 cases of death, and 36,515 of birth, where the exact time of day was noted, finds that the maximum number of deaths take place in the early afternoon (2-7 p.m.), and the minimum in the last hours before midnight, while the maximum number of births occur in the early hours of the morning, and the minimum in the early hours of the afternoon. As regards the cause of this, he points out that the hours of the maximum number of deaths are precisely those when the pulse rate and temperature are at their highest in health, and when there is a febrile exacerbation in illness. For births the matter is more complicated. (1) It has been shown that an accumulation of CO_2 in the body is probably the factor which stimulates the uterus to contract. Now the amount of CO_2 excreted diminishes during the night under the influence of rest, fasting, constant temperature of the surroundings, etc. Again, the CO_2 exerted rises with the blood pressure; hence in the early morning hours there is probably a rise of CO_2 in the uterine venous plexus, owing to a nocturnal fall of blood pressure. (2) Another cause is that during the night the inhibitory action of the brain and spinal cord on the sympathetic is removed, whereby the sympathetic becomes more active. Mosso has shown that the maximum inhibitory power of the central nervous system coincides with the early hours of the afternoon, when births are least frequent. Thus the greater number of births in the early morning would be analogous to the greater frequency at night of epilepsy, asthma, and some other nervous diseases in which the sympathetic is a factor, than in the day time.

We regret to announce the death of Dr. J. Crocq, Professor of Special Pathology and Therapeutics in the University of Brussels, which took place on September 18th. Professor Crocq, who was 74 years of age, was a member of the Belgian Senate.

[1] *Arch. Ital. de Biologie*, Tome xxviii, Fasc. iii, 1897.

THE PREVENTION OF TUBERCULOSIS.

TUBERCULOSIS AND THE MILK SUPPLY: A PRACTICAL EXPERIMENT.

All pathologists at the present day would probably agree to the proposition that of the various routes by which tuberculous infection may gain access to the human body and, when the soil is suitable, become established therein, two—the lungs and the alimentary canal—overshadow all others in practical importance.

The Relative Frequency of Infection through the Alimentary Canal.

As to the relative frequency with which infection takes place by these two channels respectively there is room for some difference of opinion. The great preponderance of pulmonary phthisis among tuberculous lesions at adult ages, and the undoubted fact that it may be produced by inhalation of specifically infected dust has led to the very general acceptance of the opinion that this is the most important mode of infection, and that regard must chiefly be had to it in taking steps to prevent the continued prevalence of the disease.

Without wishing in any way to minimise the importance of this mode of infection, or of the measures of prevention which its recognition renders obligatory, the fact that tuberculosis in infants and young children is in the majority of affected individuals either a general disease with, in many cases, a special localisation in the cerebro-spinal membranes, or a disease affecting the intestines and their related lymphatic glands, affords good grounds for the belief that the infection, in childhood at least, finds its entry in a very large proportion of cases by way of the alimentary canal.

Further, the experiments and observations of many investigators, those of Woodhead in particular, render it in the highest degree probable, if indeed they may not be held to have proved, that the lungs may be invaded secondarily, the parts in which the tuberculous process first becomes established being the lymphatic glands of the mesentery, the neck, and those at the roots of the lungs. In some cases it would appear that the glands first infected are those of the mesentery, the point of entry of the tubercle bacillus being the intestinal mucous membrane. In other cases it seems that the cervical glands are the first to be involved, the point of entry of the bacillus being the tonsils and lymphoid tissue of the naso-pharynx. In either event the tracheo-bronchial glands readily become infected. These glands enlarge, they become adherent to the lung, and presently the tuberculous process spreads by continuity of tissue into the lungs, or first along the pleura and then into the lungs.

To what extent this way of entry of the infection may prevail in the adult cannot be stated with any certainty. But if for the moment we set aside altogether the question of its probability at that age, it needs little consideration to show that the ingestion of food containing the active infective agent of tuberculosis cannot be regarded as free from danger at any age, while it has been proved to be a source of great danger in infancy and childhood.

The fact that cow's milk enters so largely into the diet of infants and children, and that it is practically the only food of hand-fed infants, is sufficient in itself, taken in conjunction with the special character of the distribution of the lesions in infancy and childhood, to arouse the suspicion that milk is the most usual vehicle of infection in them. Suspicion is converted into certainty by the results of experiment, for few facts in pathology are better established than that the milk of a tuberculous cow, when the disease has reached the stage in which the udder is involved, does contain the tubercle bacillus in an active state, in a state, indeed, of quite exceptional virulence.

The Safeguarding of the Milk Supply.

Two means of preventing milk from acting as a vehicle of tuberculous infection exist. Taking the milk without inquiry as to its source, we may sterilise it, or we may take effective measures to obtain milk only from cows proved to be free from tuberculosis. The first method is troublesome and costly, and its efficacy as a preventive depends upon the care and skill with which it is carried out. It does not, in fact, require any argument to prove that, if practicable, the second method would be in every way preferable. While the disease is still in an early stage it is never easy, and often impossible, to make a confident diagnosis of tuberculosis in the cow if reliance has to be placed upon symptoms alone. Tuberculosis in the cow is, as a general rule, a somewhat chronic disease, and animals which have suffered from it for some considerable time may still yield a fair supply of milk, may keep in good condition, and can even be fattened for the butcher. The introduction of the tuberculin test, however, affords a means of making an early diagnosis. When this has been applied, whether on a small scale to particular herds or on a large scale as in Massachusetts, it has revealed so extensive a prevalence of tuberculosis among cattle as to create a very natural alarm in the minds of dairy farmers. When it appeared that from a-half to three-quarters of all the animals in a herd were suffering from tuberculosis in various stages, a number of economic questions arose, and risks of loss were involved of a character more serious than the ordinary farmer could be expected willingly to face. Still, to obtain milk from cows proved to be free from tuberculosis is so obviously the right course to adopt, and the one which in the long run must be expected to give the best economic results, that a great deal of practical and scientific interest attaches to the public-spirited attempt which Lord Vernon is making at Sudbury in Derbyshire to find a working solution of the practical difficulties. The object at which he is aiming is to produce on a large scale a supply of milk from cows proved by the tuberculin test to be free from tuberculosis. The experiment is the more interesting and instructive because his scheme does not include the establishment of a model dairy farm, which practical farmers, who as a body are extremely conservative, might condemn as the hobby of a rich man. His plan is to hold out an inducement to tenant farmers to maintain herds of cows free from tuberculosis by contracting to take from them the milk at a slight advance on the market price.

Milk from Tuberculin-Tested Cows.

On September 15th a large party of medical officers of health and other members of the medical profession who have given special attention to this great question of the prevention of tuberculosis visited Sudbury at the invitation of Lord Vernon to see the farms, his milk and butter factory (or creamery), and to listen to an address by Professor Sheridan Delépine, of Owens College, Manchester, on Tuberculosis and the Milk Supply. The party were conducted to the various points of interest by Dr. Livesay, of Sudbury, who has assisted and advised Lord Vernon in making the necessary arrangements. The farm buildings held by the farmers under contract to supply the milk from cows free from tuberculosis are not newly-constructed model farms. They are ordinary farm buildings which have been cleaned, modified, and when thoroughly out of repair reconstructed, so as to afford sufficient cubic space, adequate ventilation, and reasonable facilities to ensure cleanliness in dealing with milk. In a cowshed, for instance, which formerly had a low ceiling and little or no ventilation, the ceiling has been taken out up to the roof, ventilation has been provided by louvre ventilators

by openings in the eaves, or at the rooftree, the floor has been made impervious, and the walls whitewashed. The yard into which the milk is brought is paved with asphalt and has a suitable fall, so that it can be kept clean, and separate fold yards has been provided for airing the cows in winter. By this plan, which will eventually be applied to all the farms, the cows never enter the yard into which the milk is brought. Each farm is provided with a refrigerator through which the milk is passed immediately after milking. It is then taken in churns to the dairy factory, where it is hoisted to the sterilising room or to the separating room, as the case may be. The tuberculin-free milk is first of all put through a centrifugalising machine to get rid of the slime, and is then run into a vessel where the two parts are mixed. From the mixer it is decanted into bottles by an arrangement of machinery which obviates the necessity of touching the milk by hand. The whole of this apparatus is thoroughly scalded after use. The bottles having been filled are introduced in batches into the large steriliser, and the temperature is raised to 186° F. The bottles are then removed from the apparatus, cooled rapidly, and kept for two hours. They are then replaced in the steriliser, which is raised to a temperature of 212° for about twenty minutes. As the bottles are removed from the steriliser an automatic arrangement closes them hermetically by special stoppers, and they are then again cooled. They are then kept in racks for a short time, and tested to ascertain that they have a good vacuum. This is shown by holding the bottle neck downwards with one hand and giving a sharp tap in the bottom with the other. This ought to produce the sharp metallic sound known as the water-hammer sound. The milk intended for butter making is not sterilised; it is received in a different chamber, separated, and made up into butter, scrupulous attention being given throughout to every detail to ensure cleanliness in every stage of the operation. A small milk laboratory has been established at the factory, and is at present under the direction of Dr. Leonard Robinson. Here a check is kept both upon the chemical constitution and bacteriological purity. It is found that the preliminary operation of separation to get rid of the slime gets rid also not only of the greater part of the gross impurities, but also of a certain proportion of the microbes. The "forewarming" or preliminary heating in the steriliser to 186° F. (85.5° C.) further largely reduces the number of microbes capable of being cultivated from the milk on gelatine; the final heating to 212° F. produces complete sterilisation.

Address by Professor Delépine.

In the afternoon a meeting was held in the schoolroom at Sudbury, under the presidency of Sir William Broadbent, Bart., M.D. Among those present on the platform were Mr. Walter Long, M.P., Sir James Crichton Browne, Dr. Buzzard, Professor Blundell (Royal College of Agriculture, Cirencester), Dr. Sims Woodhead, Dr. Allan Macfadyen (Director of the British Institute of Preventive Medicine), Dr. Ransome, F.R.S., Dr. Niven (M.O.H., Manchester), and Dr. Vacher (M.O.H., Cheshire). The audience included a large number of farmers, who followed the proceedings with great interest and attention.

Sir William Broadbent, in opening the proceedings, said that the meeting had originally been arranged with the object of enlightening the tenants on the Vernon and other neighbouring estates, as to the dangers arising from tuberculous disease in cattle, but the presence of so many gentlemen who took a deep interest in public health questions had invested the occasion with much greater importance. Consumption, he continued, was no longer to be regarded as "a visitation of God," to be borne with as much resignation as man could muster. It was now known to be the result of man's ignorance and carelessness, and among the means by which it was disseminated, one of the commonest and most important was the daily milk supply.

Professor Delépine then gave an address of a practical character, which was illustrated by a series of photographs shown by lantern.

The Prevalence of Tuberculosis in Children, Calves, and Cows.

He gave a sketch of the pathology of tuberculosis, and expressed his opinion that the distribution and intensity of the lesion in the lymphatic glands were reliable indications of the path followed by tubercle bacilli in the body. He quoted Woodhead's statistics, showing that in a large majority of children dying of tuberculosis in the first 5½ years of life the intestines and mesenteric glands were affected, and that in 14 per cent. the mesenteric glands alone were tuberculous. Of the deaths from tuberculosis during the first year of life very few occurred during the first 10 weeks, and it was also known that it was very rare indeed for calves to be born tuberculous. It was very uncommon to find in any district that the proportion of calves affected with tuberculosis amounted to 2 *per mille*, whereas the proportion in animals over 1 year old was 400 to 500 *per mille*. In a small herd which he had recently tested with tuberculin the following was the result:

—	Number.	Tuberculous.	Percentage Tuberculous.
Animals under 1 year	5	0	0
,, 1 to 3 years	17	6	35
,, 3 to 5 ,, ...	8	5	62
,, 5 years and over ...	9	6	66
Total	39	17	43.6

The Extent to which Commercial Milk is Infective.

Professor Delépine then related the result of a systematic examination in his laboratory of a large number of samples of milk, some taken by the Medical Officers of Health of Liverpool and Manchester, and others from other sources. During the last four years, but mainly during the last two years, 208 samples had been examined in the following manner. The samples were:

(1) Collected in sterilised vessels and rapidly examined on their arrival at the laboratory. (2) The colour, reaction, specific gravity, proportion of cream and sediment were noted. (3) The sediment (or slime) and often the cream separated by centrifugalisation were examined microscopically for dirt, morbid products, various cocci, bacilli, vibrios, yeasts, and moulds. (4) Guinea-pigs were inoculated with small quantities of sediment, and dissected after death to find whether any lesions had been produced. (5) The lesions produced in the guinea-pigs were further examined in various ways for the purpose of finding out whether they had been produced by the bacillus tuberculosis or other microbes.

The samples comprised:

(*a*) Seven of unmixed milk from cows showing no evidence of tuberculosis; none of these caused tuberculosis.

(*b*) Twenty-two of unmixed milk from cows showing distinct evidence of advanced tuberculosis, disease of the udder being certainly present in 8 and suspected in 8. In 6 instances (27.24 per cent.), in all of which there was evidence of disease of the udder, tuberculosis was produced.

(*c*) Fifty-four of mixed milk from town dairies produced tuberculosis in 3 instances (5.55 per cent.).

(*d*) One hundred and twenty-five from country farms, collected by sanitary inspectors at the railway stations immediately after the arrival of the cans from the country. Tuberculosis was produced in 22 instances (17.6 per cent.).

Professor Delépine then pointed out that milk might communicate serious disorders other than tuberculosis. This was specially true of mixed milk, which, whether it came from the country or from the town, was capable of producing a very serious form of infection, in fact, septicæmia, in some 9 per cent. of the cases examined. In addition to this from 16 to 24 per cent. of the samples were capable of producing considerable irritation of the tissues. The microbes to which these effects were due were introduced into the milk either at the time of milking or by dirty vessels. These microbes, when the temperature of the place in which the milk was kept was high, multiplied rapidly, and when ingested might either produce infection, or, by irritating the bowel, prepare the way for the penetration of tubercle or other bacilli. If the milk were kept on ice this risk was diminished. Of the milk supplied to Manchester and Liverpool in the ordinary course of trade, about 60 per cent. was innocuous, so that obviously

there was no difficulty insuperable by farmers in the way of supplying wholesome milk.

Precautions which may be Taken.

Professor Delépine then discussed various precautions which had been suggested.

Boiling.—This was effective, and the objections to its use had been exaggerated, but it did not protect against tuberculous cream, butter, and cheese, it did not diminish the risk of having so many tuberculous animals in the country, and did not lessen the losses caused to the farmer by tuberculosis.

Periodical Chemical and Bacteriological Examination.—This, it had been suggested, would render it possible to exclude all milk not free from infectious properties from the markets. It was not a practical remedy, because while it was easy to detect common adulterations by chemical tests, it took a comparatively long period, during which the consumer was not protected, to say whether a sample of milk would produce tuberculosis. The method was of use to serve as a check on other preventive measures.

Inspection and the Tuberculin Test.—A careful veterinary surgeon, by making a thorough inspection of the byres and cows, and applying the tuberculin test, could almost always determine whether a cow was tuberculous or not. As it was impossible to say when the udder of a tuberculous cow would become diseased, the untreated milk of all tuberculous cows should be excluded from the market; after sterilisation it might still have a good commercial value. He added that Bang had stated recently that good butter could be made from cream which had been kept for some time at 85° C.

Segregation.—The next step would be to deal with tuberculous cows and infected sheds by (1) separating the tuberculous cows from the healthy; (2) fattening tuberculous cows for the butcher when the disease was not too advanced, and slaughtering those in which it was; (3) disinfecting the cowsheds; (4) improving the cleanliness, lighting, and ventilation of the sheds.

Exclusion of Fresh Sources of Infection.

The precautions already suggested would need to be supplemented by measures directed to prevent the introduction of tuberculous cattle into any county or other area in which an attempt to deal efficiently with tuberculosis was to be made. It was evident, however, that action in isolated counties would be ineffectual to stamp out the disease, and that national or Imperial action was necessary. The measures to be taken with regard to any area would comprise: (1) Examination by a veterinary surgeon acting under the direction of the sanitary authority of the area of animals brought into the area. (2) Registration and marking of all cattle in the area, so that it might be known which animal had been registered, inspected, and tested. (3) Inspection at least twice a year of all cowsheds, and the weeding out of animals which had escaped previous inspections. (4) Encouragement of the breeding of healthy cattle, and the feeding of calves on sterilised milk, by which means they would be easily protected against chance of infection if the other preventive measures mentioned were taken. (5) The complete exclusion of tuberculous servants from sheds and dairies. (6) Scrupulous cleansing of milk pails and other utensils.

Administrative Measures.

The systematic periodical inspection of herds and cowsheds should include all the cattle kept within defined administrative areas, and for the first year or two should be supplemented by paying compensation for losses incurred, except when there had been culpable or gross neglect on the part of the farmer. After the transitional period, the presence of a case of advanced tuberculosis in a cowshed should render the owner liable to a penalty. A corollary to this was the testing of all cattle brought into the area to prevent the introduction of fresh sources of tuberculosis. The adoption of such methods would render it just and expedient to take steps to ensure that foreign dairy produce should not enter the British market unless good guarantees were afforded that proper measures had been taken at the place of origin to safeguard the interests of the consumer.

Individual Efforts.

It was to be feared that it would be long before general measures of the nature indicated would be taken, but work such as was now being done by Lord Vernon on his Sudbury estate must, if carried out in various parts of the country, ultimately induce a general demand for wholesome milk. This demand, which would force the farmer to free his stock from diseased animals, and to collect and forward the milk under conditions which would ensure the safety of the consumer, would probably be supported by better prices when the risks now run were more thoroughly understood, for the consumer should certainly bear his share of any increased expense. Dr. Livesay, who had so ably supervised the work done at Sudbury, informed him that a number of farmers on Lord Vernon's estate had agreed to submit to certain regulations ensuring the exclusion of tuberculosis and the purity of the milk, and received as compensation 1d. a gallon more for this tested milk than would be given for ordinary milk. Professor Delépine believed that the time would come when this inducement would cease to be necessary, inasmuch as the exclusion of tuberculosis from a herd would be found to be a source of profit. In Massachusetts, where since 1894 a fight against tuberculosis in cattle had been waged, the result had been that though the measures had not been so thoroughly and generally applied as to ensure a diminution in the number of cases, yet cases of generalised tuberculosis had diminished. Thus among animals slaughtered after being shown to be tuberculous by the tuberculin test, generalised tuberculosis was found in 1895 in 32.6 per cent., in 1896 in 25.1 per cent., and in 1897 in 3.5 per cent. When it was remembered that a carcass with general tuberculosis had no value, whereas one with a slight degree of tuberculosis but otherwise in good condition had a very fair value in England, it was evident that early diagnosis of tuberculosis must in the end be a source of profit to the farmers. Under present conditions, more than half of all cows, after the age of 3 years—that is, as soon as they became useful for breeding and dairy purposes, were doomed to tuberculosis. Moreover, a certain proportion would rapidly reach the wasting stage, and would then lose much, if not all, their value as beef. Were an affected animal sold to the butcher at the proper time, and replaced by a cow free from tuberculosis, the loss to the farmer would be the difference between the price of the beef and of the milking cow. Delay in taking this course involved, in the first place, a loss from a diminution in the yield of milk, and in the second place the absolute loss of the beef value of the carcass. Further, during the time it was kept, the animal would be liable to infect other milch cows. When once he had freed his herd from tuberculosis the farmer should buy only cattle certified by competent veterinary inspectors to be free from tuberculosis. He might have to pay a little more for the certified cattle, but the value of his head of stock would ultimately be increased.

Discussion.

Dr. Livesay then gave some account of the arrangements which had been adopted at Sudbury and of the results of the testing of animals. He said that the enterprise was as yet in the stage of experiment, but Lord Vernon had arranged for the meeting because the experience already gained at Sudbury had convinced those who were engaged in the work that they were on the right road, the road which others would have to travel in the search for a purer milk supply. He believed that it was in Sudbury that the first large creamery or milk factory in England was established, and when the conviction grew that the dire scourge of tuberculosis in man might in a large measure be averted by practical work in the farm and in the dairy, Lord Vernon determined that this challenge to the agricultural interests should be taken up. The practical work already done included the remodelling of farm buildings, the testing of cows for tuberculosis and the isolation of those found to be infected, better handling of the milk, and finally complete sterilisation. He believed that it would be interesting to the visitors from other districts to see the alterations which had been made to adapt old farm buildings to the now settled requirements as to cubic space, lighting, drainage, ventilation, and what might be called the furniture and toilet of the cow. The simple nature of the alterations which in some cases were

alone considered necessary would, he thought, to those who understood the difficulties which would stand in the way of the general erection all over the country of model farms, be a more useful object lesson than could be afforded by the inspection of more perfect sheds. He said that 200 cows belonging to various farmers had already been submitted to the tuberculin test. Of these 175 were required to supply milk for sterilisation. Of these 175, 95, or 54 per cent., passed the tuberculin test; and Mr. Abell, M.R.C.V.S., of Derby, in his report upon the tests, observed that though at first sight it did not seem altogether satisfactory that 46 per cent. of the cows had been found to be tuberculous, yet the result compared favourably with those obtained in other dairying parts of the country. Mr. Abell had further reported that none of the animals which had reacted showed before injection any signs of the disease which could in any way be relied on for the formation of a correct diagnosis. On the contrary the animals were all in good health and condition. One herd, in fact, was of exceptional merit. Dr. Livesay observed that, after persuading the more intelligent stockholders in a new district to consent to the testing of their cows, there still remained difficulties as to the isolation of part of the herd till the diseased animals had been drafted out and their places taken by sound animals. Beyond this loomed the largest problem of all, that of the slaughtering of diseased cows. With regard to the sterilisation he said that as the milk was obtained at a short distance from the factory and as the healthiness of the cows and the cleanliness of all the operations of milking was ensured, he hoped that it would be possible to produce a milk which would keep well with the minimum amount of sterilisation, so that it would not have the boiled flavour which was apt to be a drawback to milked treated in this way.

Dr. NIVEN said that the Sanitary Committee of the Manchester Corporation had determined if possible to put a stop to the importation of tuberculous milk into their city. Out of 93 samples taken at random in Manchester railway stations, 18 samples were found to be tuberculous. Unfortunately, the sanitary authority had no legal power to prevent the sale of such milk. In Manchester they were not by any means satisfied with the condition of the law which compelled them to see this diseased milk, which caused death to numbers of children, brought into the city without giving them any remedy against the importer. The condition was the more intolerable when it was realised that the measures proposed to remedy this state of things were not necessarily attended by any loss to the farmer.

Dr. RANSOME, in the course of a few observations, said that the example set by Lord Vernon was one which promised incalculable benefits to the public health.

Professor BLUNDELL said that the problem of supplying the British public with good and pure milk was a difficult one to the farmer, and insisted upon the advantage from every point of view of ensuring a healthy stock. He placed great reliance upon the application of the tuberculin test, and urged farmers in their own interest, not less than that of the public health, to realise that unhealthy stock could not really be profitable, however cheap it might appear to be.

THE ATTITUDE OF THE GOVERNMENT.

Mr. WALTER LONG, M.P., President of the Board of Agriculture, expressed his great interest in the system instituted by Lord Vernon, and said he hoped that the example set would be imitated in other districts, for the effect would be to benefit all those concerned in the great dairy industry. In dealing with the suggestions made by Professor Delépine, he said that he had gathered that milk might be perfectly sound in the first instance, but was liable to become infected from dust. Now the law was precisely the same for man as for beast: it required that people suffering from various forms of disease which were scheduled should not work in a dairy, but phthisis was not scheduled. As representing the agricultural interest he ventured to express the opinion that the law should be altered with regard to human beings before agriculture was blamed. The law, in fact, was not sufficiently strict. He would give the suggestions made by Professor Delépine his most careful consideration, but he feared that they were too comprehensive. As a politician he would not be averse to the suggestion that for two years compensation should be paid to farmers who slaughtered their diseased cattle, leaving to his successor the unpleasant duty of prosecuting farmers who after that date had diseased cattle on their premises. Speaking seriously, however, he said he thought that there was some misunderstanding as to the position taken up by the Government, and by the department over which he had the honour to preside in particular, with reference to the recent report of the Royal Commission on Tuberculosis. It had been said that the Government would do nothing, but it was the duty of the Government in the first place to see how much could be done by private enterprise. The Royal Commission had recommended that the Government should issue tuberculin from a central station, and should pay a fee estimated at two shillings for each test operation performed by a qualified person; but as Minister for Agriculture he could not ask the Treasury to sanction an expenditure of perhaps £5,000 a year unless certain conditions were fulfilled. In the first place there must be a practical consensus of scientific opinion that the tuberculin test would be entirely satisfactory, and would show with certainty whether the disease did or did not exist in the cow into which the injection was made. Upon this head he frankly admitted that the statements made by Professor Delépine had carried them a considerable distance. In the next place it would have to be shown that the demand for pure tuberculin could not be satisfactorily met by private enterprise without the assistance of the Government; he would welcome a movement in that direction initiated and carried on without the aid of the central authority, although he realised that a time might come when the executive Government ought to come to the assistance of those who were trying to help themselves. As soon as he was satisfied that action on the part of the central authority was necessary, and provided that he received applications from representative bodies such as the county councils or the great agricultural institutions representing that there was a difficulty in applying the test owing to the want of pure tuberculin, he would certainly be prepared to consider favourably any such application, and would approach the Treasury with a hope of getting their permission to make the necessary provision. The conditions, however, which he had mentioned must first be satisfactorily fulfilled. He was glad to know, and he realised that it was a fortunate matter for the agriculturist, that some of the most distinguished men of science of the day had taken part in initiating this movement; and he was glad to see that men like Lord Vernon were ready to put the scheme to a practical test. He trusted that the question would by further discussion and inquiry be kept well to the front, and he was certain that the Government would not put any obstacle in the way if the British people showed that they were determined to exterminate the disease which had brought so much suffering to all concerned.

RESOLUTIONS.

The following resolution was then moved by Canon RAWNSLEY and seconded by Dr. BUZZARD, who insisted upon the great practical importance from the point of view of the practising physician of the prevention of the dissemination of tuberculosis. It was carried unanimously:

That this Conference, impressed with the danger to our national health of a tuberculous milk supply, urges the subject upon the attention of the County Councils and Urban District Councils, and cordially invites the co-operation of their chairmen in bringing ascertained facts before the members of their bodies and the areas of their jurisdiction. It further suggests that the results of any experiments at County Council farms in isolating tuberculous cattle, in applying the tuberculin test, and in milk-sterilisation should be made as widely known as possible in their respective counties, and it calls upon the executive of the Association for the Prevention of Tuberculosis to undertake the work of correspondence with the County and Borough Councils and the County Council Associations in this matter.

Sir JAMES CRICHTON BROWNE, on behalf of the visitors, moved a vote of thanks to Lord Vernon for his generous and graceful hospitality. Their experiences at Sudbury had convinced them that his lordship was not merely a pioneer in the dairy world, but that he was himself richly endowed with the milk of human kindness free from any tuberculous taint. It had been exceedingly interesting to the visitors to visit these singularly well-appointed farms on the Vernon estate which they had inspected that day, and also the admirably-arranged

dairy factory with its bacteriological laboratory attached, and it had been a satisfaction to them to take part in that conference at which purely scientific workers were able to compare notes with those who had to grapple practically with tuberculosis on their farms. The recent Royal Commission on Tuberculosis recommended that funds should be placed at the disposal of the Board of Agriculture to enable them to print and circulate throughout the country instructions for the proper use of the tuberculin test, with explanations of the significance of reaction, and directions for the effective isolation of reacting animals. Well, conferences like that in which they were taking part fulfilled the same end as that aimed at by the Commission in recommending the scattering abroad of literature bearing on tuberculosis. It removed prejudices and disseminated accurate information as to the protective measures to be adopted in matters of vital importance. They welcomed at that conference the Minister of Agriculture. It was a good sign of the times when a great Minister of State came down to a provincial meeting to acquaint himself with their difficulties and their wishes; and the admirable remarks made by Mr. Long showed how thoroughly he had mastered the subject, how much he was in sympathy with them, how ready he was even to beard the lions of the Treasury in their den in the interests of agriculture and scientific progress. Professor Delépine's lucid and convincing address would have an influence extending far beyond that conference. It would be reported and read, he trusted, far and wide, and bring home to farmers the importance of the tuberculin test, the application of which at Sudbury had been described to them by Dr. Livesay. The results of that test as hitherto used in England showed what must be regarded as an alarming prevalence of tuberculosis in cows—the percentage of these reacting was far higher than that in Denmark, which was 31 per cent.—and indeed the figures suggested that while human tuberculosis, at least as it affected the lungs, had been declining amongst us, bovine tuberculosis had been increasing in a manner that seriously threatened the health and life of infants and young persons who were mainly dependent on milk as an article of food. There was one matter to which he (Sir James) was particularly anxious to call attention, especially as the Minister of Agriculture was present, and that was the importation of fresh foreign milk into this country. It would be in vain that we muzzled our own dogs if foreign dogs were allowed to be brought freely into the country, and to roam it at large without let or hindrance. Under such circumstances rabies and hydrophobia would crop up again and again, and so it would be in vain that we should safeguard our own home milk supply if the importation was permitted of fresh foreign milk as to the origin and character of which we had no guarantee. Fresh foreign milk had appeared in our markets. The trade was still small in amount, but it might any day swell out into large dimensions, and it was important that it should be dealt with at once, before large vested interests had been created. Some of that foreign milk might come to us loaded with tubercle bacilli. The best plan would seem to be to prohibit the importation of fresh foreign milk altogether, just as we prohibited the introduction of Tauchnitz editions of English literature. But if that plan were considered too drastic then all foreign milk should be tested bacteriologically at the port of importation, the cost of the examinations being borne by the importer. No vouchers by foreign officials of whose qualifications we knew nothing could ever be satisfactory to us in this country. Bacteriologists would not work for nothing, and tests involved delay, so that the plan suggested as an alternative to prohibition might prove itself tolerably prohibitive. They were all deeply indebted to Lord Vernon for instructive lessons that day. He had shown them what model farms and cowhouses should be, and how to ensure safe and sound and palatable dairy produce. His thoughtfulness and kindness were illustrated by the fact that while he (Sir James) was speaking a note from Lord Vernon had been put in his hand desiring that special acknowledgment should be made to Dr. Livesay for the pains he had taken in carrying out the tuberculin test on the Sudbury estate and in 'arranging that conference. Dr. Livesay was a country doctor who had kept abreast of all modern advances in scientific medicine, and therefore he was able to initiate and direct these important experiments which he had so clearly described to them. Sir James moved a cordial vote of thanks to Lord Vernon, which being put from the Chair was carried by acclamation.

THE PLAGUE.

Plague Administration in Sind.

We have received a report and Government resolution on an outbreak of plague which occurred in Kotri, a small town on the river Indus. The writer of the report is an assistant collector, and he gravely discusses the scientific aspects of the question with the assurance of an expert. If the disease was not brought in from outside, he states, we must suppose one of two things: Either it was continued from the previous outbreak, by a series of mild and undiscovered cases, which developed, when circumstances became favourable, into a malignant type, or else the bacillus remained quiescent from the previous epidemic, and was revived by its favourable surroundings. Just so. It would, however, be better to depend less on supposition, and to leave an inquiry of this kind to medical men. Non-professional plague authorities are a new feature, and are useful in their way, when guided and under the control of medical men; but we fear in India the disposition is to put the cart before the horse, and assistant collectors talk quite learnedly on professional matters, and consider themselves competent to criticise medical opinion. Under the circumstances it is not surprising that the knowledge of the disease seems "almost to be within yet constantly to elude control." If the Government of Bombay wants to know something of the disease it must not depend on its assistant collectors, political agents, and superintendents, who are preparing their reports on this interesting subject.

Report of the Bombay Plague Research Committee.

The Plague Research Committee, which was appointed by the Government of Bombay in October, 1896, to inquire into the nature and history of the disease, stated to be bubonic plague, has now issued its report. The President, Dr. Manser, contracted plague and died, and his place was taken by Surgeon-Major Lyons, who now issues the report. Dr. Surveyor, one of the members of the committee, unfortunately fell ill, and was unable to continue his work, while Surgeon-Major Lyons and Surgeon-Captain Childe were handicapped by having to carry out their researches at such times as they could spare from their other duties, which, owing to the presence of the epidemic, were unusually heavy.

Considering the difficulties of the position the officers here concerned have done some very brilliant work. The report contains an excellent description of the clinical features of the bubonic, septicæmic, pneumonic, and abdominal varieties of plague, together with a careful report on the *post-mortem* appearance of plague, also a consideration of the modes of entry of the plague bacillus into the body with its exit therefrom. Many of the facts ascertained are embodied in a communication made to the Section of Tropical Medicine at Edinburgh (see pp. 858-862).

The prophylactic measures recommended by Surgeon-Major Lyons on the occurrence of a case of plague in a family are the removal, when practicable, of the unaffected members from the house to allow of its being properly cleaned and of the patient to a hospital, where he can receive proper care and attention unless suitable provision can be made for his treatment at home. All those who have been living with him should undergo inoculation against plague, as this is found to diminish the risk of infection by 70 to 80 per cent., and to increase the prospect of recovery in those attacks after inoculation by 68 to 70 per cent. The patient's sputa and excreta, and all discharges from buboes and sores should be received in vessels containing suitable disinfectants, and on the termination of the illness everything which was used by him or had been rendered liable to contamination should be thoroughly cleansed and disinfected, or if practicable burnt. Nurses and attendants who are in close and constant attendance on plague patients should undergo inoculation. All wounds and abrasions on the hands should be protected from the risk of infection, and the hands should be thoroughly washed and disinfected after dressing sores or otherwise becoming soiled. Their natural immunity should be increased as much as possible by regular meals, and sufficient exercise and rest to ensure their keeping in good health.

RINDERPEST IN SOUTH AFRICA.

Preventive Inoculation.

Drs. George Turner and Wilhelm Kölle have recently issued a further report on the cure and prevention of rinderpest based on experiments performed at the Kimberley experimental station.

Simultaneous Inoculation.

The authors report that the results of their further trials with the method of simultaneous inoculation are even more favourable than could at first have been anticipated. This method, it will be remembered, consists in inoculating an animal simultaneously with virulent rinderpest blood and serum. Since this method was originated over 9,000 inoculations have been done, with the result that the death-rate among the protected animals has been reduced to 1.4 per cent. Many objections have been raised to this method. On purely theoretical grounds it was urged that it was physiologically impossible to infect animals with rinderpest in such a way, as the serum would destroy the virus contained in the blood inoculated at the same time. This objection has been completely disposed of by inoculations made in perfectly clean herds on Robben Island. The results are fully given in the report. There can be no reasonable doubt of the efficacy of the method, which must be counted as another triumph of preventive medicine.

When it is remembered that the authors of this method have been working with a micro-organism which has as yet never been seen with certainty, and which can only be judged of at present by its effects, the excellence of this piece of work will be all the more evident.

Much difficulty has been experienced in transporting virulent blood over long distances. This difficulty has been overcome by the ingenious expedient of inoculating a sheep, and sending the living animal which thus carries the infected blood in perfect condition.

Parasitology.

Some criticisms and remarks on the organism of rinderpest are worth repeating. Nicolle's recent assertion that the blood of oxen suffering from rinderpest contains plasmodia with an irregular contour, and a little smaller than red blood corpuscles, which contain coccidia in greater or less numbers, has not yet been investigated by the authors; but the statements of Nencki, Sieber, and Wyzinkiewicz are severely criticised, for the authors state that the objects described are most certainly not contained in the blood of animals suffering from rinderpest in South Africa. Either, then, the disease known as rinderpest in South Africa is not identical with the Russian rinderpest, or the Russian experts are mistaken. The authors conclude that there is no reason for the former supposition, while there are many in favour of the latter. It would seem, then, that at present we are no nearer the discovery of the rinderpest organism.

As to the possibility of its being discovered, the authors entertain no doubt. Virulent rinderpest blood, in which the corpuscles have been broken up by salt solution, may be filtered through a Pasteur filter, and the filtrate injected into animals without causing any ill symptom, while the material remaining in the filter is virulent. The organism, or *materies morbi*, not only gives evidence of its presence by the fact of its being arrested by the filter, but for the same reason is presumably particulate.

Preventive Methods.

The various methods which have been practised for stamping out rinderpest are ably reviewed as a conclusion to the report. The bile method which was discovered in such a remarkably short time by Professor Koch is stated to be in no sense curative. Even after inoculation the animals were liable to infection for about a week; moreover the number of animals which were necessarily slaughtered to provide the gall amounted to from 3 to 7 per cent. Koch, himself, was aware of these disadvantages, but he was not certain that the immunity were off after some months.

The glycerinated gall method labours, it is said, under the same disadvantages, and the use of defibrinated blood as advocated by Theiler, Pitchford, Danysz, and Bordet was not only extravagant in blood, but admitted the danger of other diseases being conveyed. All these methods have been useful, but must now only be regarded as steps on the road to the more perfect serum method as elaborated by Turner and Kölle.

TYPHOID FEVER IN BELFAST.

Continuance of the Epidemic.—The Health Committee: Its Sarcasm.—Its Offensive Drains.—Its Dry Closets.—Its Suspected Water Supply.

The typhoid epidemic in Belfast shows no sign of distinct abatement. For the week ending September 10th the number of cases notified was 270, the death-rate for the city being 27.9 per 1,000 and the zymotic-rate being 10.8 per 1,000. This last figure is very serious. The Public Health Committee and the Corporation have not, so far, formulated any comprehensive scheme of sanitary reform such as the situation calls for. Public opinion is now fully aroused and they will have ample support if they show themselves capable of grappling with the problem which the sanitary state of Belfast presents. The last report of the Public Health Committee is, however, not encouraging. In the following passage it is suggested that the large number of cases of notification of typhoid fever is in considerable measure due to the same cases being notified twice over:

> It has occurred that a second medical practitioner has for some reason or other being called in to consult about or take charge of patients whose cases have already been notified, and he in due course on becoming aware that the patient is suffering from "an infectious disease" also notified the fact. Many cases are thus duplicated, a result evidently not contemplated by the framers of the Act.

This is an extraordinary contention. In the first place, the Notification of Infectious Diseases Act makes it compulsory upon every medical man who has professional cognisance of any case included under the Act to notify the same, whether it has already been notified or not. A consultant or other medical man who sees a case already notified has no choice but to notify it again. But what are we to think of the method of registration adopted by the Public Health Committee of Belfast, if they are not able to exclude cases of double notification? Their contention amounts to a palpable confession of incompetence. The same report contains the following paragraph:

> Numerous complaints were received as to the offensive smells arising from sewer ventilators, the evident impression being that these gratings were expected to emit vapour with a fragrant bouquet, and that the Public Health Committee were responsible for the disappointment. The objectionable air must be allowed to escape in the open, or it will escape through the drain pipes and closet fittings of the dwellings.

Under the circumstances the sarcasm of the Public Health Committee seems singularly ill-timed. In the *Northern Whig* of September 16th there was a letter signed "H. G.," in which the following statements occurred:

> Typhoid fever is endemic in our midst, and has been so for many years. In particular the Sandy Row district has never been free from it, and now is a veritable hotbed of the disease. There are many evident causes for this, but at present I shall refer to one only—the number of dry closets. This point has been investigated for me by a friend who is in intimate business relations with 146 families, occupying 146 houses in the Sandy Row neighbourhood. Of these houses 101 have waterclosets, and in them there are 8 cases of typhoid fever, or rather less than 8 per cent. of cases in houses with waterclosets. The other 45 houses have dry closets, and in these there are 16 cases of typhoid fever, or roughly, 35.5 per cent. Surely these figures are striking enough to suggest one cause at any rate of the present outbreak, and also to suggest the remedy. To the mass of the townspeople the abolition of dry closets seems absolutely indispensable.

The Public Health Committee have instituted a bacteriological examination of the water supply, which is being conducted by Dr. Lorrain Smith at the Pathological Laboratory of the Queen's College. This is right and proper, but the inquiry will be a very lengthy one, and the results cannot be expected for a considerable time. If the water supply should be found to be contaminated this will be most important, but pending the results of Dr. Lorrain Smith's investigations, which will be received with confidence, it is the imperative duty of the Public Health Committee either to put an end to the sanitary scandals which admittedly exist in Belfast, or to resign their functions back into the hands of the corporation. They complain, and probably with reason, that in the past they have not received adequate moral support in their efforts at reform. Let them now boldly throw the onus of the existing state of things upon the corporation by presenting a well thought-out and comprehensive scheme of reform, and by intimating that if it is rejected they will resign in a body. Public opinion is ripe for some decisive step.

THE UNDERMANNING OF THE INDIAN MEDICAL SERVICE.

FOR many years the strength of the Indian Medical Service has been kept so low that furlough could seldom be obtained when it was first due, while privilege leave could rarely be granted at all in the civil department. It is not surprising, then, that a complete breakdown of the arrangement for leave has been brought about by the great strain put on the service by the series of military expeditions, the famine, and the plague. For the greater part of four years these causes have prevented all leave being given except on medical certificate. That the calls of duty have been nobly responded to by the service is universally admitted, but things have now reached such a pass as to demand prompt relief being afforded.

The following table showing the leave granted in the Bengal Presidency, including the North-West Provinces and the Punjab, with and without medical certificate at three different periods, will be sufficient to prove the case is not overstated. The first date, October, 1894, shows the normal condition before the Chitral expedition; the second, April, 1897, that resulting from the strain of plague and famine duty, but before the recent frontier troubles broke out; and the third, July, 1898, the present state of the department, three months after the demobilisation of all the troops except those which are still garrisoning the Tochi, Khyber, and Malakand.

Date.	October, 1894.			April, 1897.			July, 1898.		
Strength of service...	375			372			368		
	Mil.	Civil.	Total.	Mil.	Civil.	Total.	Mil.	Civil.	Total.
Ordinary leave	21	34	55	15	21	36	0	12	12
Leave on medical certificate ...	3	5	8	11	9	20	23	27	50
Total	24	39	63	26	30	56	23	39	62

From this table it will be seen that in the normal period of 1894 there were 55 officers (34 civil and 21 military) on ordinary leave, while 8 (5 civil and 3 military) were on leave on medical certificate. At the present time these figures are nearly reversed, for there are 12 (all civil) on ordinary leave, while there are 50 (27 civil and 23 military) on sick leave. The figures for 1897 are intermediate between those of the other two years. Thus we see that nearly one-seventh of the entire medical service of these provinces have had their health broken down by the strain of the last four years, and the large proportion of them who have had to take extensions of sick leave shows how ill they must have been before they appear before a Medical Board.

Again, in April, 1897, there were 20 officers of these provinces on plague and famine duty, and 12 remain so at the present time, although this Presidency has been very little affected so far, and in spite of the number of civil medical men who have been sent out by the India Office for plague work. It is now quite evident that the plague cannot be expected to die out in this country for at least several years to come, while the newly-garrisoned posts on the frontier will necessitate a larger number of medical officers than usual being retained in military employ for a considerable period, so that the present strain on the service can only be met by an increase in its *personnel*.

Turning now to the civil department, we find a state of affairs even more serious. We have previously pointed out in these columns that the present system of "lending" from the military service for employment in the civil department medical officers who are always liable to be recalled at a moment's notice to military duty, while the number of medical men who can be obtained for civil work is always dependent on the number that can be spared from military duties and not on the needs of the civil work department, is a constant cause of the greatest difficulty to the civil administrative officials, and greatly impairs the efficiency of the civil department. The recent frontier operations have proved the truth of this contention in the most startling manner. Taking the civil list of the North-West Provinces for April, 1898, we find that out of a total of 37 medical officers in civil employment, 2 were at that date on leave on medical certificate, no fewer than 9 had been recalled to military duty, 4 were on plague duty, and 4 more were unavailable for district work for various reasons. Thus 19, or just over one half, of the entire list were absent from district work. As a result of this, only 16 districts of this province had commissioned medical officers, 16 were held as "additional charges" by the same officers, which means that they are in charge of unqualified native assistants, but are visited once in three months by commissioned officers, and 10 were held by assistant-surgeons educated in India. Moreover, 5 out of the 13 assistant-surgeons belonging to the department were also recalled to military work. Thus only 18 districts had commissioned medical officers while 27 were without them. It should be mentioned that 2 districts are always held by uncovenanted medical men, while some of the smaller districts are often held as "additional charges" in order to allow of some leave being granted. The seriousness of the present state of affairs will be realised when it is remembered that many of these districts have a million or more inhabitants, while the European officials and their families very naturally strongly object to being left in the hands of native practitioners who do not possess a British qualication.

A very similar state of affairs exists in the Punjab and Bengal; the latter province, for instance, was short of 13 commissioned medical officers in August last, most of whom had reverted at a few days' notice to military duty. Even at the present time, three months after the breaking up of the Tirah Field Force, and the return to civil employ of the great majority of those who reverted to military duty, the department in the North-West Provinces is short of 13 men (8 of whom are on leave on medical certificate), and 22 districts are still without commissioned officers, yet the military department will not be able to spare any more men for civil work for some time to come.

These facts justify the contention that the present establishment of the Indian Medical Service is unfitted to meet the prolonged strain to which it has been subjected continuously for the last four years, and the end of which is not yet even in sight. An immediate substantial increase of the *personnel* of the service is needed for military purposes alone, while for plague duty more men should be sent out specially for the work. With regard to the civil department, it would appear that improved organisation is required, which, while retaining the great advantage of being able to obtain men from the military department, who have already had several years' experience in India, will at the same time make the supply dependent solely on the needs of the civil department, and not on the exigencies of military administration.

THE NEW MATCHES.

THE NEW FRENCH "S. C." MATCH.

To make a match capable of striking anywhere, and into which white phosphorus shall not enter, has been a problem that has long engaged the attention of chemists and manufacturers. Beyond the extreme utility of the ordinary lucifer there is nothing in favour of its retention, while there is much to recommend its abolition, particularly when we know the risk of necrosis run by those who are employed in its manufacture. Continental Governments, especially the French, have given this subject careful consideration, with the result that in all probability a match can now be made free from white phosphorus, and capable of igniting upon any dry surface. The French Government, which monopolises the manufacture of matches, is able to put upon the market a new type of match "sans phosphore blanc," the invention of M. Sevine, a factory inspector, and M. Cahen, a State manufacturer. The match-boxes carry the initials "S.C.," those of the inventors. The matches have already been favourably received by the public, and it is said they can be transported without risk. For the last three months they have been manufactured in large quantities in the State factories at Trélazé, Bégles, and

Saintimes, and without the slightest accident. It was to overcome the dangers of necrosis from handling ordinary matches, and the inconveniences attendant upon the use of "safeties," that these and other new matches have been invented. In their earlier attempts to make the production of these a success, inventors began by substituting red for white phosphorus. In ordinary match-heads there is usually some potassium chlorate. A combination of potassium chlorate and red phosphorus was tried, but the mixture was found to be too explosive, and the matches spluttered too much when struck. Owing to the high explosive character of the paste, the men who mixed it ran greater risk to life than those who made white phosphorus paste. Potassium chlorate was therefore set aside, and potassium permanganate was tried, but it also had to be abandoned for it decomposed too readily, and oxidised the other substances present in the paste, rendering them useless. Salts of lead, especially the oxides, received a trial; but as these of themselves are not sufficiently combustible in the presence of red phosphorus, chlorate of potassium had to be added, with the result that the matches exploded too much when struck. Besides, in using the oxides of lead in the making of matches a new danger was incurred—namely, that of plumbism. In 1895 the French Minister of Finance appointed a Commission to help him in deciding upon the merits of "sans phosphore" matches, submitted to him by various inventors, and among these ranked Messrs. Sevine and Cahen.

THE ADVANTAGES OF SESQUISULPHIDE OF PHOSPHORUS.

So favourable was the impression made upon the Commission and the Minister by the invention of Sevine and Cahen that these experts were invited to undertake more important experiments, and to carry out their methods at greater length in one of the State factories. These gentlemen forthwith proceeded upon new lines. Retaining in their paste as an essential ingredient potassium chlorate, they united with it the sesquisulphide of phosphorus, a substance which, apart from such indispensable qualities as stability and resistance to atmospheric agents, has two other very desirable properties. It ignites, for example, at 95° C., much nearer the temperature of white phosphorus (60°) than that of red, which is 260°, and it contains in addition very little latent heat. Red phosphorus does not lend itself well to being mixed with potassium chlorate. The sesquisulphide of phosphorus by its low point of ignition and the facility with which it mixes with the potassium salt, approaches in these respects white phosphorus; it contains too less latent heat, and neither in their manufacture nor their transport do the matches made from it readily catch fire. The sesquisulphide contains as impurities only a small quantity of red phosphorus and water. It has a special odour; it is very fixed, does not therefore evolve fumes at the ordinary temperature, and is non-phosphorescent. The toxicity of the sesquisulphide of phosphorus, too, has been determined by Messrs. Sevine and Cahen, and shown by them to be practically *nil*. They gave 3 centigrammes daily to guinea-pigs for a period without any bad results, although the ingestion of 3 milligrammes of white phosphorus in a control experiment caused rapid death; and, when we remember that the 3 centigrammes given to guinea-pigs correspond to 3.5 grammes given to man—that is to say, the amount of sesquisulphide of phosphorus contained in 6,000 matches—some idea may be gained of its harmlessness compared to white phosphorus. An article in the *Revue d'Hygiène et de Police Sanitaire* for August, 1898, expresses the opinion that in France the problem of abolishing matches made from white phosphorus has now been solved, and the hope is confidently expressed that other nations will adopt the use of the sesquisulphide, since consumers will not be able to tell the difference between matches made from it and ordinary white phosphorus. It is claimed that the new match will strike well anywhere. If the practice of the future confirms the expectation of the present, Messrs. Sevine and Cahen will deserve the congratulations and support of the public. Experience, however, will tell. Hitherto the French Academy of Science has given annually a prize to those who have advanced the cause of hygiene in dangerous trades. The opportunity is now given to the Academy to indicate its appreciation of the services rendered by these two gentlemen.

A GERMAN PATENT.

Almost contemporaneously with the placing of the S.C. match in the market by the French Government comes from Berlin the announcement of the manufacture of matches, free from white phosphorus, by M. Rosenthal and Dr. S. J. von Kourocki. To M. Rosenthal belongs the credit of the invention. The matches are said to strike readily on any dry surface, and do not evolve unpleasant fumes. The paste has been analysed in London by a firm of well-known assayists, and been pronounced free from even a trace of white phosphorus. For the manufacture of these matches patents have been taken out in the United Kingdom and in eleven foreign countries.

The announcement of these inventions has elicited through the press the statement that Mr. Cordes, an employee of the London County Council, succeeded four months ago in producing a non-phosphorus match. He makes no secret of its composition—namely, potassium chlorate, whitening, plaster-of-paris, ground glass, glue, and amorphous phosphorus; and of the fact that, while it will strike upon any rough surface, it will not strike upon the trousers. Mr. Cordes has apparently repeated the experiments of the French manufacturers.

Should these new types of matches fulfil the expectations of the inventors and meet with public approval, it will serve to illustrate what human invention can accomplish once it is stimulated either by the wish to abolish industrial disease or by the prospect of financial gain, and, should experience prove that the dangers to health incidental to match-making have been abolished, there is no reason why with similar enterprise lead poisoning should not disappear from the Potteries.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on **Wednesday the 12th day of October** next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

September, 1898.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

NORTH OF ENGLAND BRANCH.—The autumn meeting will be held at Durham on Thursday, October 6th, at 4.30 P.M. Members desirous of reading papers, reporting cases, showing specimens, or making any communication to the meeting are requested to give notice to the Honorary Secretary, T. BEATTIE, M.D., 26, Ellison Place, Newcastle-upon-Tyne. Members of the profession who are not members of the Branch will be welcome to attend the meeting.

BORDER COUNTIES BRANCH: SECTION FOR THE COUNTIES OF ROXBURGH, BERWICK, SELKIRK, AND PEEBLES.—A meeting of the above will be held in the Baillie Memorial Hall, Newtown, St. Boswell's, on Thursday, September 29th, at 3.30 P.M., Dr. Blair, of Jedburgh, in the chair, who will introduce a discussion on Influenza, its Varieties and their Treatment. Dr. Haddon will speak on the Desirability of Returning to our Original Diet, with Illustrative cases. Dr. Cullen will read notes of a Case of Injury to Arm, and show Skiagraphs. Dr. Calvert will show some Specimens.—W. HALL CALVERT, Melrose, Hon. Secretary.

South-Eastern Branch: East Sussex District.—The next meeting will be held at the Hospital, Hastings, at 3.30 P.M., October 6th.—Members desirous of reading papers or making any communication to the meeting are requested to inform the District Secretary, J. W. Batterham, M.B., Bank House, Grand Parade, St. Leonard's.

South-Eastern Branch: North Kent District.—A meeting of this District will be held in the Hall of the Science and Art School, Bromley, on Thursday, October 6th, at 3.45 P.M., Dr. Scott in the chair. The annual dinner will be held at 6 P.M., charge, 6s. 6d., exclusive of wines. The following papers, etc., have been promised:—Dr Barry Blacker: Demonstration of the *X* Rays; Dr. Tennyson-Smith: Some Notes on Tubal Pregnancy. All members of the Branch are entitled to attend and to introduce professional friends.—A. Tennyson-Smith, Hon. Secretary, The Birches, Orpington, Kent.

South-Eastern Branch: East Surrey District.—The next meeting will be held at the White Hart Hotel, Reigate, on Thursday, October 13th, at 4 P.M., Mr. W. A. Berridge, of Redhill, in the chair. Dinner at 6 P.M., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Agenda: 1. Minutes of Croydon meeting. 2. To decide when and where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. The following papers, etc., have been promised: The Chairman will at 4 o'clock show Cases of Tuberculosis of the Udder, of the Uterus, and of the Intestines of the Cow, with other specimens kindly lent by Dr. G. Sims Woodhead. Dr. W. J. Hadley will show Microscopic and Culture Specimens of Tubercle. A discussion on Tuberculosis will be opened by Sir Richard Douglas Powell, in which Dr. W. J. Hadley, Mr. J. Hutchinson, jun., Dr. Edward Seaton (Medical Officer of Health to the Surrey County Council), and Dr. John E. Ranking will join. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Hon. Secretary. N.B.—The Hon. Secretary would be much obliged if members would kindly inform him by postcard whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner.—Henry J. Prangley, Hon. Secretary, Tudor House, Anerley.

South Midland Branch.—The autumnal meeting will be held at Wellingborough on Thursday, October 6th. Luncheon will be provided, and it is hoped that all gentlemen intending to be present at the meeting will also join the luncheon, so as to render it a success. Notice to the Secretary is requested not later than October 4th. Gentlemen are invited to introduce new members, and to bring specimens, drawings, etc., likely to be of interest to the meeting. The following papers have been promised: 1. Dr. Maguire will furnish a clue to his case of Phenomenal Gestation. 2. Mr. W. Gifford Nash will read Three Series of Cases due to Sewer Gas Poisoning. 3. Dr. W. S. Colman (National Hospital for the Paralysed and Epileptic) will read a short paper on the Palliative Treatment of Locomotor Ataxy, with a Demonstration of Frænkel's Re-education Exercises. 4. Dr. Crookshank will read a paper on Hysteria and Epilepsy. 5. Dr. Hollis will introduce a discussion on The Treatment of Dilated Stomach. 6. Dr. Newman will exhibit some *x*-ray pictures, with remarks.—C. J. Evans, Northampton, Hon. Secretary.

Shropshire and Mid-Wales Branch.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish to bring forward any business, to read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretary not later than Friday, October 14th.—H. Willoughby Gardner, M.D., Swan Hill, Shrewsbury, Honorary Secretary.

BRITISH GUIANA BRANCH.

The third quarterly meeting of this Branch was held at the Public Hospital, Georgetown, on August 11th, 1898, Dr. Godfrey, President, in the chair. Twelve members attended.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Representative of Branch on Association Council.—Dr. Jones's appointment on the General Council of the Association was also confirmed.

The Serum Treatment of Yellow Fever.—A circular from the Government on Dr. Sanarelli's serum treatment of yellow fever was circulated among the members.

Dr. Palmer Ross.—The President proposed and Dr. Edmonds seconded that a letter of condolence be sent to Dr. Palmer Ross, C.M.G., Surgeon-General of the colony, expressing sympathy in his recent sad bereavement, which was unanimously carried.

Malarial Amaurosis.—Dr. Gewand read a paper on Malarial Amaurosis. His attention was first drawn to the subject when he was in charge of the Nickerig Medical District of Dutch Guiana in 1891. The sufferers were all British East Indian immigrants, suffering from malarial fever in different forms and stages. After repeated negative ophthalmoscopic examinations, he was inclined to think the patients were shamming, but during a very severe malarial epidemic there it again became impressed on him, as other portions of the population began to complain of the same thing who could not possibly have any object in shamming. He then fully described the affection, namely, loss of vision occurring in about 4 per cent. of patients suffering in some form or stage of malarial fever; there was one prominent symptom, that is, a peculiar searching with the eyes at objects, coupled with feeling about, characteristic of blind people. In most cases they can find their way about, but stumble over objects near at hand. In most cases there was a dirty cream colour of the conjunctiva; no conjunctivitis. The pupils reacted to light. Ophthalmoscopic examination revealed nothing abnormal excepting that he had sometimes noticed a slight opacity of the mediæ. He had tried to frame some hypothesis as to the cause, but did not recommend any for acceptance: (1) That it may be due to the presence of a special kind of malarial plasmodia in the capillaries of the retina; (2) a neurosis. He could set aside quinine amaurosis, as in most of the cases no quinine had been used. It might last a week, or two months, or longer. The prognosis was always good. As regards treatment, quinine, arsenic, and iron were recommended. The President and Drs. Edmonds, Ozzard, Daniels, Anderson, and Shannon, who took part in the discussion which followed, were all inclined to regard it as more of a toxic condition, as in tobacco amblyopia, etc. A cordial vote of thanks was passed to Dr. Gewand for his very interesting paper.

Mortality in Georgetown.—Dr. Wishart read an exhaustive paper on the high rate of mortality of the city of Georgetown, giving statistics comparing it with other places, and stating that he considered the two chief causes were the high infant mortality due to ignorance and neglect of mothers in rearing their offspring, and to tuberculosis, both of which were in a great measure preventable, and recommending several ways of preventing them.—The President said Dr. Wishart had left very little for them to discuss, as they all agreed with what he had said; there was no doubt that much could be done in the way of improving the health of the community, but unfortunately it cost a lot of money, and until a severe epidemic or something akin to it occurred little or nothing was done.—A cordial vote of thanks was passed to Dr. Wishart for his paper.

Departure of Dr. Shannon.—The President said that before separating he wished to say a few words, as this would probably be the last time Dr. Shannon, who was leaving the Colony, would attend any of the meetings. They all knew what an interest Dr. Shannon took in the Branch, and in fact in everything medical in the Colony: how he often put himself to great inconvenience to attend the meetings, and he could not let him leave without wishing him *bon voyage* and long life to enjoy his well-earned rest.—Dr. Shannon feelingly replied.

CEYLON BRANCH.

An ordinary monthly meeting was held on July 30th, at 2 P.M., in the Colonial Medical Library. Surgeon-Major Perry, P.C.M.O., presided, and ten members were present.

New Members.—The minutes of the previous meeting having been read and confirmed, the President announced the election to the Association and Branch of the following members: E. W. Scharenguivel, L.R.C.P. and S.Edin.; E. R. Loos, L.C.M.C.Ceylon; S. Arumugam, L.M. and S.Madras; Hugh P. Joseph, L.C.M.C.Ceylon.

Medical Registration.—The Hon. Secretary read the resolution brought forward by Mr. V. C. J. Vanderstraaten *re* Registration of Medical Practitioners in the Island, which was as follows:

That the members of the Ceylon Branch of the British Medical Association being of opinion that the time has arrived when a scheme of medical registration in Ceylon should be adopted, respectfully beg the Principal Civil Medical Officer to submit to Government the draft of an ordinance on the lines of Part I, Divisions 1 and II, Medical Practitioners, of the Medical Act, 1890, of the Legislative Assembly of Victoria.

A brief discussion followed, and the following Subcommittee was eventually elected to report as to the lines on which the Ordinance of Medical Registration in the Island should be drafted: Drs. J. L. Vanderstraaten, J. Loos, L. Pinto, T. F. Garvin, P. S. Brito, S. de M. Aserappa, C. W. Van Geyzel, W. G. Vandort, E. Gratiaen, and W. H. de Silva (Hon. Secretary).

Vote of Thanks.—After the report of the Subcommittee on the Rules and Regulations of the Branch had been submitted,

the meeting terminated with a vote of thanks to the Chairman and Dr. Hughes, Secretary of the Melbourne Branch of the Association.

EAST ANGLIAN BRANCH.

A MEETING of the members of this Branch was held at Mundesley-on-Sea, Norfolk, on September 8th, 1898, under the presidency of Mr. HAYNES ROBINSON.

New Member.—Mr. John Stafford Mellish, L.R.C.P., M.R.C.S., Wells, Norfolk, was elected a member of the Association and Branch.

Communications.—Dr. LONG (Norwich) read a paper on Rigors, their Clinical Significance and the Conditions under which they Occur.—Mr. MORSE (Norwich) read a case of Gasteroplasty.—Mr. NANCE (Norwich) read a case of Puerperal Septicæmia treated by Antistreptococcic Serum; Recovery.

Luncheon, etc.—Prior to the meeting the members lunched together at the Clarence Hotel. After the meeting Mrs. Haynes Robinson received the members and their ladies at afternoon tea at Sea View House.

CORRESPONDENCE.

THE COLONIAL MEDICAL SERVICE.

SIR,—Having read with interest the accounts of the recent meeting and discussion on the reorganisation of this service, I venture to submit the following remarks:

The prospect of this widespread and important service being put on a definite basis seems to meet with general favour. It has, however, been suggested that a competitive examination on the same plan as the Army Medical Service should be held. Surely in this age such an antediluvian scheme is out of place. Why should candidates fresh from the schools be forced to spend time and money in cramming up subjects from the earlier parts of the curriculum which will be of no use in after-work, and in which the candidate has already shown sufficient knowledge?

Granted that competitive examination is an excellent plan to ensure a good class of men, why should not such a scheme as the following meet all requirements:

(*a*) *Compulsory Subjects:*

1. Tropical medicine.[1]
2. Medicine.[2]
3. Surgery.[3]
4. Public health.[4]

} Maximum, 1,000 each.

(*b*) *Optional Subjects:*

1. Ophthalmic medicine and surgery
2. Bacteriology.
3. Photography.

} Maximum, 300 each.

By this means the *sine quâ non* for exemption from examination in any subject is of sufficiently high standard to ensure competent men; and the fact that only minimum pass marks are allowed when exempted, would encourage proficiency in the optional subjects.

I have suggested photography as the third voluntary subject, and this demands more comment than the first two, which will be generally acknowledged as of the highest importance. Photography has never yet formed part of any examination connected with medicine, but surely there are excellent reasons for establishing a precedent. The cause of medicine and of science generally would be benefited to an unexampled extent if medical men could only take good photographs of every case of interest and importance. Then microphotography would secure a permanent record of microscopical and bacteriological research from distant parts of the earth, when the keeping or transmitting of slides is a difficult or even impossible matter.

Or again, leisure evening hours could well be employed in the manufacture of lantern slides from good negatives, and thus a collection of views, cases, microscopic subjects, etc., would be formed which would be of great value for scientific or popular entertainments. I mention this because all the necessary plant can be procured nowadays at such trifling cost as to bring it within the range of almost all.—I am, etc.,

GILBERT E. BROOKE, B.A.Cantab., L.R.C.P.Edin., etc.
Government Medical Officer, West Indies.

August 13th.

[1] That a course of lectures in this subject be compulsory. That selected candidates who have passed the examination shall be ensured practical training by a three months' course at the base hospital of the district or colony before taken up his post. [2] That a candidate who has held a six months' appointment as house-physician to a large general hospital be excused examination in this subject, should he so wish it, and the minimum pass marks allowed him for the same. [3] Ditto, house-surgeon. [4] That the possession of a D.P.H. will excuse examination in this subject under same conditions of marking as in case of examination in medicine.

BLACKWATER FEVER AND HÆMOGLOBINURIA.

SIR,—The recently expressed opinion of Professor Koch that hæmoglobinuria (blackwater fever) is only another name for quinine poisoning is one calculated, I am afraid, to do much harm. Such at least is my opinion, believing, as I do, that with quinine and quinine alone can we combat the disease with any hope of success.

Speaking with all due humility and respect, I must confess that I think Professor Koch should have kept his theory to himself until he had absolutely proved its truth beyond a doubt.

It is difficult enough at all times to get patients to take quinine properly. Anyone who has had much experience with malarial patients has heard such objections as these: "It" (quinine) "makes me deaf," "Gives me a head," "Upsets my stomach," "Nasty taste," etc.

A new terror now awaits the unfortunate medical man when he tries to treat his patients with quinine. Koch's theory will be thrown in his teeth, and should his patient die after taking quinine and developing blackwater fever, the doctor will have to incur the odium of being the cause of the fatal termination. It is a subject of the greatest interest to all those exposed to malaria, and I may mention that almost every man whom I met in East Africa during the last few months questioned me eagerly about it. The pernicious results of Professor Koch's theory on the lay mind are already manifest. One man stationed in a very unhealthy part and much troubled with fever informed me that in future he intends to have nothing to do with quinine. His future history will be interesting, and it is comforting anyway to think that his folly may perhaps be of service in the cause of science, since he is practically offering his constitution as an illustrative case.

Two leading London papers have had articles on the subject, so that Professor Koch's theory is being spread widely. This, to my mind, is a serious thing. Professor Koch may be right in saying that quinine poisoning causes hæmoglobinuria. I do not possess sufficient knowledge to criticise that statement. This much I will say, that after seven years in Eastern Equatorial Africa, during which time I have treated many hundreds of cases of malaria, I have never seen a man die of fever when quinine was given properly and early in the case. The fatal cases, whether complicated with hæmoglobinuria or not, have all been those in which for some reason quinine has not been administered, or was given in very small doses, or else resorted to only when the case was practically hopeless.

Of blackwater fever I have seen but little, for our European population in Uganda has up to now been small, and as far as my experience goes the disease does not occur among natives. Out of 9 cases of blackwater fever which I have actually treated myself 2 were fatal; in both the administration of quinine was neglected until too late. All the cases which recovered were treated with heroic doses of quinine with one exception. In this one case quinine was given in fairly large doses (30 gr. in twenty-four hours), and the attack lasted four days, the hæmoglobinuria subsiding gradually. In the other cases in which much larger doses were administered (60 to 120 grs. in twenty-four hours) the hæmoglobinuria only lasted from twenty-four to thirty-six hours, and stopped quite suddenly.

In ordinary cases of malignant tertian fever I have pushed quinine until I myself have begun to think that the limit of safety had been reached, and that the patient was well nigh poisoned with the drug, but never in such cases have I seen hæmoglobinuria supervene. Speaking in the light of much experience, I can only say that my humble opinion is that there is only one treatment for malaria quinine, more quinine, and yet more quinine!—I am, etc.,

R. U. MOFFAT,
London, Sept. 1st. Principal Medical Officer, Uganda Protectorate.

DEATHS IN CHILDBIRTH.

Sir,—In your comments on the midwifery statistics published by me in the British Medical Journal of September 17th the point of my paper seems to have been imperfectly appreciated.

I want to find out the present rate of puerperal mortality in London hospital practice. We cannot get at this by quoting time-worn statistics going back fifty years. Antiseptic methods have not been thoroughly adopted, even in the best maternity hospitals, for more than a few years; they are not even now universally adopted in family practice. In 1898 we are not in any way concerned with the average mortality since 1847. What we want to know is the proportion of deaths which still occur in midwifery practice when antiseptic methods are carefully followed, and where skilled assistance can be promptly obtained for cases which require operative treatment. I will not call this "the irreducible minimum" of puerperal mortality, as we all hope for further advances in the future, but it would be the minimum mortality at the present time, and it would furnish a standard to which all practitioners should strive to attain.

So far as the figures collected by me can be accepted as trustworthy, it appears that this present minimum mortality in London hospital practice is less than 1 in 500. No one can go behind the published hospital reports, but surely it is not likely that people in the position of hospital physicians would wish to suppress facts, or that they could do so if they did wish it. Every death in a hospital is known to a great many people, an omission would be at once detected, and it would generally be some one's welcome duty to expose it. There is more room for error in the out-patient department, but as every case is tabulated, and as students report to the medical officer and midwives to the secretary, by whom they are paid; it is not likely that any large number of deaths would occur without being recorded.

As I said in my previous letter, it is unfortunately true that the puerperal mortality all over England is higher than it ought to be. If 1 in 500 is anywhere near the present minimum rate in London, it is far better than the average rate over the whole country. The responsibility for this rests in great measure with the examining bodies.

When they recognise that a sound and extensive knowledge of practical midwifery is infinitely more important to a practitioner than a minute acquaintance with organic chemistry and with the refinements of physiology there will be a chance of improvement, but not till then. At present organic chemistry and physiology claim, from a London University student, at least one full year out of the five years' course. Practically they usually occupy much more time than this. Midwifery can be squeezed into a few weeks. The chemistry and physiology, so laboriously arrived at, are almost completely forgotten six months after the examination is passed, while if started in country practice without a really solid knowledge of midwifery the practitioner is handicapped for life. At present the majority of students trust to learning midwifery by "experience." They do not recognise that experience based upon ignorance is a bad teacher, besides being, what all experience is, "so very expensive." If every medical student were compelled to spend six months in acquiring skill in midwifery the puerperal mortality all over the country would probably soon approach that which I think it is at the present moment in the London maternity charities, namely, about 1 in 500.—I am, etc.,

E. Garrett Anderson, M.D.

Upper Berkeley Street, Sept. 21st.

Sir,—It appears to me that the pursuit of inquiry into statistics as to puerperal mortality is a matter of a very small import. The matter of importance is the safety of the puerperal women and the children. The safety of the women can be adequately provided for by the provision of competent accoucheurs. The safety of the children is a matter more complex, because so many considerations come in. Now these mortality statistics have been used for what I may call mere political considerations. There is the party who desire to push forward the midwife women, and there is the party who consider the interests of the parturient women, without consideration of the matter from the point of view of those who are interested in these midwife women.

I said at the outset that statistics were of very small import. I said so because the causes of puerperal mortality ought now to be well known. No statistics can alter the knowledge of the causes of the puerperal death-rate. Puerperal death-rate is not conditioned by matters of sanitation. It is possible to perform obstetrical operations both at the time of delivery and during the puerperium with the same success in the hovel as in the hospital.

What is the reason, then, that puerperal statistics vary so much in different parts of the country? In the first place there are the geographical differences, in the second place there are the social, and in the third there are the differences in the controlling heads and hands.

It is a significant fact that so long as maternity hospitals had a very high mortality, very little was heard of the question. As soon as the authorities of these hospitals have learned how to manage their institutions, a great outcry is made about the terrible mortality outside them, as they term it. The mortality outside these hospitals, as a matter of fact, taking the country throughout, has not been made out to be, and is not, anything but what could be expected. One does not hear an outcry about, for instance, such an operation as the removal of adenoid growths, because here and there a patient has suppuration affecting the parts in their neighbourhood, or because a patient occasionally dies after the operation, but one does hear the wailings and lamentations of those who think it possible to reduce the puerperal mortality by the introduction of the less trained midwife attendant, in the place of those who are more highly trained, or ought to be.

The fact is, the sooner the medical profession is led to believe and to hold as an article of faith that, if every labour is looked upon in the same light as a surgical operation is, the sooner puerperal mortality will be reduced. Every panacea may be tried, but in the end it will be found that nothing else is at the bottom of the whole matter.—I am, etc.,

Hatfield, Sept. 20th. Lovell Drage.

ASEPTIC MIDWIFERY.

Sir,—I have read with much pleasure the very able and interesting paper by Dr. Jardine, given in the Section of Obstetrics and Diseases of Women. It is the outcome of practical experience, and as such is well worthy the perusal and study by the great body of general practitioners.

I am glad he has laid such stress on cleanliness, especially *post partum*. This is very important, and often neglected by the patient and her friends, and unless specific instructions are given, and seen to be carried out at once, the patient is allowed to lie for some time in a mess of blood and discharge, in order to give her a "rest."

Dr. Jardine says "if you want a thing done properly, do it yourself," and in many instances it is quite necessary, although it is hardly the duty of a medical attendant to remove the soiled linen from the bed. My custom is never to finish with the patient till I have seen her made clean and comfortable.

Another point is the washing of the external genitals. This is never done, or even thought of, and it is quite necessary to tell the patient and friends to have it done with warm water and some antiseptic, and where either they cannot or will not get an antiseptic, I leave a packet of potass. perman., with instructions for use.

In the paragraph on puerperal sepsis, Dr. Jardine says we begin with an aseptic uterus and genital tract. Is it not possible that we may end with the passages in the same condition by the action of the secundines, the placenta acting as a swab and clearing out all foreign bodies?

It is with some diffidence that I venture to disagree with the teaching of a master, but there are two points I must take exception to:

1. *Ante-partum* washing of external genitals. In some cases, no doubt, this is necessary, and might be done with an educated person; but, as we descend the social scale, it is astonishing to find the great amount of mock modesty, and I am afraid few women would allow themselves to be exposed as Dr. Jardine advocates. I remember one case in which the woman was so hypersensitive that it was with the greatest

difficulty that I was even allowed to make a digital examination under the clothes.

2. Digital examination. Dr. Jardine takes exception to the use of any lubricant, but I think the use of antiseptic vaseline in collapsible tubes is a necessity, and protection to the patient as well as to the attendant. He also says that the examining hand is used to lift the bedclothes or a dirty petticoat, and comes in contact with an anus and its adherent filth before touching the external genitals. As to lifting the clothes, etc., this is not the duty of the examining hand, but of the left hand. As to touching the anus with its adherent filth, I think this is when the antiseptic vaseline acts as a protective, and prevents the filth sticking to the fingers and being carried into the vagina.—I am, etc.,

Sunderland, Sept. 19th. HENRY LISTON.

SIR,—I am constrained to write to you on the above subject after reading an article on Aseptic Midwifery, by Dr. Jardine, appearing in the BRITISH MEDICAL JOURNAL of September 17th. I suppose the procedure there advocated is the practice of the Glasgow Maternity Hospital, and as I learnt my practical midwifery in that institution under the late Dr. Tannahill, I will not be charged with undue prejudice against it; but as a general practitioner who has had 1,753 cases without a maternal death, or, so far as I can now remember, a single case of septic inflammation, I may claim to write on this matter as well as for the many general practitioners with results nearly, if not quite, as good as my own. Dr. Jardine says on page 783, BRITISH MEDICAL JOURNAL: "The external genitals, with their many folds and abundance of hairs, make as fine a lair for the lurking microbe as one could well imagine. The parts must be thoroughly cleansed with soap and water and an antiseptic.....Do this yourself. If you were going to do an abdominal section you would never dream of making your incision before rendering the skin as aseptic as possible, neither would you trust to anyone else doing this for you.....The woman's buttocks and external genitals must be in full view to enable you to do it properly. No pure-minded woman will object to this. To the pure all things are pure.....Strong language some of you may say." Nonsense, I say!

Antisepsis has revolutionised surgery and our hospital mortality. Brought up in the school where Listerism was first enunciated, I would be last to deny it. But antisepsis is more concerned with pathological than physiological conditions, and even Dr. Jardine admits that the normal birth of a child is a purely physiological act. Where does the man's logic come from who compares an ordinary labour to an abdominal section? In the light of Dr. Jardine's paper the case of the exquisite gentleman who rode back five miles for a metallic catheter to rupture the membranes, and returned to find the child born and dressed, is no longer a "funny story."

I do not wish to be misunderstood. I am not advocating slovenliness nor dirtiness in the care of the lying-in; but I want to emphasise the fact that in a purely natural process, such as childbirth, the usual precautions are enough. At any rate there is no call for such elaboration as Dr. Jardine advocates. What self-respecting woman outside an institution would submit to have the genitals exposed, and washed and scrubbed by the doctor? How many practical obstetricians in this country could say they ever did such a thing, or thought it necessary as part of their midwifery practice? The principle which has always guided my midwifery practice has been to expose the patient as little as possible, and I believe I have thereby gained the gratitude of my child-bearing patients. That my results are as good as Dr. Jardine's must be evident; indeed, I hereby challenge him to say if they are not better. In the hope of inducing other general practitioners who conduct their practices by some commonsense as well as theoretical deductions, I have taken the lead in this revolt against the "hyperæstheticism" of this branch of medicine.—I am, etc.,

Tarporley, Sept. 17th. ALLEN MCCULLOCH.

PROFESSOR KOCH, who is now in Italy studying malaria, will shortly proceed to Athens, where the professors and students of the University are organising a series of celebrations and festivities in his honour.

OBITUARY.

RICHARD ELLIS, F.R.C.S.EDIN.,

Newcastle-on-Tyne.

WE regret to announce the death of Mr. Richard Ellis, which took place at his residence, 100, Rye Hill, Newcastle-on-Tyne, on September 14th.

Mr. Ellis, who was 67 years of age, was born in Dublin and studied medicine there, afterwards in London and Edinburgh, qualifying in 1857. In the same year he worked with great diligence at the subject of artificial respiration, publishing papers on that and other allied subjects. In 1860 he settled in Newcastle, where he soon became a successful practitioner. About twenty years ago he directed his attention to diseases of the throat and ear, and he was chiefly instrumental in founding the Hospital for Diseases of the Throat and Ear in Newcastle. The hospital was opened in 1878 and he remained associated with it as surgeon until his death. This appointment brought about a considerable change in his work. He took the Fellowship of the Edinburgh College of Surgeons in 1879 and gradually abandoned general practice, becoming a specialist well known to the public and to the profession throughout the North of England.

Mr. Ellis wrote various popular pamphlets, one on the throat and ear running through fifteen editions. He was also the local correspondent of the *Lancet* for many years. He was Vice-President of the Otology Section at the annual meeting of the British Medical Association in Newcastle.

It was always a pleasure to meet and talk to Mr. Ellis. He had a genial open disposition and a gentle wit which never failed him even under the pressure of serious trouble. He was devotedly attached to his wife, who died about six weeks ago after a long illness. He never recovered from the blow. He went to Scotland for a change, however, but when he returned home he had septic thrombosis of the veins of the leg, starting from a varicose ulcer, and after less than a fortnight's illness he sank and died. His old friend, Professor Philipson, and his neighbour, Dr. Scott, attended him. He was buried beside his wife in the grave where she had been laid only a few weeks before.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A FIELD MEDICAL OFFICER under orders for India (Madras) this cold season desires an exchange to remain another year at home.—Address to Persevere, BRITISH MEDICAL JOURNAL Office, 429, Strand, London, W.C.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—JEREMIAH SUGRUE, M.D., Staff Surgeon, to the *Dido*, September 14th; ANTHONY KIDD, Staff Surgeon, to the *Isis*, September 14th; EDWARD J. MORLEY, Staff Surgeon, to the *Australia*, September 23rd; RICHARD A. ROSS, M.B., Surgeon, to the *Dido*, September 14th; HAROLD G. T. MAJOR, Surgeon, to the *Isis*, September 14th; JOHN A. KEOGH, B.A., M.B., Surgeon, to the *Jupiter*, September 14th; WILLIAM R. M. YOUNG, Staff Surgeon, to the *Diadem*, September 15th; WILLIAM BETT, Staff Surgeon, to the *Centurion*, for the marine force at Wei-hai-Wei, September 14th; CHARLES STRICKLAND, Staff Surgeon, to the *Medea*, September 14th; NORMAN L. RICHARDS, Surgeon, to the *Diadem*, September 15th; JOHN C. DURSTON, Surgeon, to the *Wildfire*, September 15th; JOHN W. BIRD, Surgeon, to the *Impregnable*, September 15th; JAMES M. FRANCE, Staff Surgeon, to the *Briton*, September 29th; EDWARD D. J. O'MALLEY, Surgeon, to the *Victory*, additional, and for disposal, September 16th; WILLIAM E. MARSHALL, Surgeon, to the *Melita*, additional, September 25th.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR F. F. MOORE and Surgeon-Captain R. P. MACKENZIE, M.B., having resigned their appointments in the Volunteers, cease to belong to the Army Medical Reserve, September 21st.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. P. GREANY, M.D., Bombay Establishment, has been promoted to be Brigade-Surgeon-Lieutenant-Colonel, from June 9th. He was appointed Assistant-Surgeon, March 31st, 1875, and Surgeon-Lieutenant-Colonel twenty years after.

Captain CHARLES DONOVAN, M.D., Madras Establishment, is appointed Secretary to the Surgeon-General with the Government of Madras.

MEDICAL NOTES OF THE MANŒUVRES.

THE Commander-in-Chief has called for returns from all officers commanding units in the recent manœuvres, reporting on the physical condition generally of the men and on the manner in which they bore fatigue; also as to the numbers that went into hospital from heat, fatigue, or other causes, and allied matters, and it is to be hoped that the information supplied will be made public. The Connaught Hospital at Aldershot, which practically constituted the "base" of the Northern Army, received, it is stated, during the operations not far short of 1,000 cases, mild and severe. These were mainly composed of men who had been returned "unfit" for duty owing to sore feet, heat-stroke, exhaustion, etc.; these were detained for some time in the field before being sent into the Connaught Hospital. Many of the cases were drafted off from time to time from the Connaught Hospital to the Cambridge and Third Station Hospitals in Aldershot Camp.

The sick of the Southern Force were sent chiefly to Portsmouth, and it is reported that somewhere about 1,000 men were disabled temporarily or otherwise, and so sent to hospital there. A number of these were cases of sore feet and exhaustion owing to excessive marching, which, after short detention, were returned to duty. Trying marches in the burning sun, in some cases with an insufficient supply of drinking water, or no water at all, led to much discomfort. These are said to be the hardest manœuvres that any troops have ever gone through, and the failure of civil transport is now well known. The cases of sickness due to heat are reported to be to some extent due to the scanty protection to the head afforded by the field service cap. Some of the battalions at Aldershot seem to have borne the fatigue and heat well, for they contributed very few cases to the sick list during the fortnight the manœuvres lasted. The troops, on the whole, seem to have returned to Aldershot camp in very good condition, notwithstanding a daily round of "early rise, a long march, a wearisome wait for baggage till nightfall, and bed."

A word or two must be said as to incapacity to march owing to sore feet. How is it that so many cases are now reported? During the Aldershot manœuvres, 1870, with a force of some 29,000, only 1 per 1,000 of strength was the number incapacitated for duty from "footsoreness." During 1895, in the report on the New Forest Manœuvres, the Duke of Connaught stated that footsoreness was "very prevalent among the infantry;" 824 cases of blistered feet occurred on the march to the forest, 114 cases during the manœuvres, and 19 on the return march. The figures of this year will afford further data for the investigation of this very important subject.

A circumstance connected with arrangements for the reception of the sick which created public alarm and indignation at Aldershot has been, on investigation, completely cleared up, and the "responsible authorities" (which, we suppose, means the medical and military authorities) have been exonerated from blame. The blundering regarding the sick on arrival not being met by the necessary transport arose in the first instance from the action of a corporal in charge of the party detraining at Aldershot Station instead of at Farnborough Station, at which his railway warrant directed him to alight with his party, and where ambulances were duly awaiting the party of sick.

The Royal Army Medical Corps receives commendation for good work done from the Aldershot correspondent of a service contemporary.

MEDICO-LEGAL.

LEX.—Prosecutions have taken place under circumstances similar to those stated, and it is believed that convictions have been obtained. A practitioner or a nurse who caused the death of a patient under the circumstances stated would certainly be liable to indictment, and, if convicted, would probably receive a severe sentence.

MEDICAL WITNESSES AT INQUESTS.

J. W. B.—Neither the Coroners' Act nor any other statute limits the number of witnesses who may be called on to give evidence at an inquest. Those called—whether medical or lay—are entitled to their proper fees for attendance. The right to fees for making a *post-mortem* examination depends on the fact of such examination being ordered by the coroner. Any qualified person whom he may instruct to make it is entitled to his statutory fee for the work so done. If he has done the work on the request of an unauthorised person, he must look to that person for his remuneration.

CHARGE OF PROCURING ABORTION.

THE case of John Lloyd Whitmarsh, L.R.C.P.Edin., L.S.A., has already been referred to in the BRITISH MEDICAL JOURNAL (July 16th and August 13th). The result of his trial at the Old Bailey for the alleged murder of Alice Basly was that the jury failed to agree and they were discharged. The prisoner will be tried at the next sessions. Bail was refused.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.—The following candidates have satisfied the Examiners:

Anatomy, Physiology, and Materia Medica.—Honours, First Class: A. Parkin, College of Medicine, Newcastle-upon-Tyne. Honours, Second Class: G. Mack, College of Medicine, Newcastle-upon-Tyne; T. Y. Simpson, Cooke's School of Anatomy; T. S. Coates, College of Medicine, Newcastle-upon-Tyne. Pass List: C. C. Adeniyi-Jones, College of Medicine, Newcastle-upon-Tyne; E. P. Appleby, College of Medicine, Newcastle-upon-Tyne; A. J. S. Brandon, St. Thomas's Hospital; F. Clarkson, St. Thomas's Hospital; F. B. H. Caudwell, M.R.C.S., L.R.C.P., Charing Cross Hospital; H. W. Dudgeon, M.R.C.S., L.R.C.P., Guy's Hospital; W. R. D. Daglish, College of Medicine, Newcastle-upon-Tyne; G. E. Froggatt, Middlesex Hospital; J. H. Graham, College of Medicine, Newcastle-upon-Tyne; J. H. S. Hawes, St. George's Hospital; R. S. Hindmarch, College of Medicine, Newcastle-upon-Tyne; A. E. Hodge, College of Medicine, Newcastle-upon-Tyne; E. L. Jenkins, Cooke's School of Anatomy and Westminster Hospital; J. H. Martin, College of Medicine Newcastle-upon-Tyne; J. W. H. Morrison, College of Medicine, Newcastle-upon-Tyne; W. A. Murray, College of Medicine, Newcastle-upon-Tyne; A. H. Proctor, College of Medicine, Newcastle-upon-Tyne; M. J. Quirke, Mason College, Birmingham; T. B. Rhodes Mason College, Birmingham; H. Reah, College of Medicine, Newcastle-upon-Tyne; S. Raw, College of Medicine, Newcastle-upon-Tyne; F. K. Scott, College of Medicine, Newcastle-upon-Tyne; W. Waters Stainthorpe, College of Medicine, Newcastle-upon-Tyne; F. W. Syme, Guy's Hospital; G. de B. Turtle, King's College; W. Wakefield, Mason College, Birmingham.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,504 births and 5,165 deaths were registered during the week ending Saturday last, September 17th. The annual rate of mortality in these towns, which had increased from 14.7 to 24.6 per 1,000 in the nine preceding weeks, declined to 24.0 last week. The rates in the several towns ranged from 15.1 in West Ham, 15.8 in Swansea, 16.3 in Croydon, and 16.5 in Portsmouth to 34.8 in Salford, 37.0 in Bolton, 37.2 in Gateshead, and 46.0 in Sunderland. In the thirty-two provincial towns the mean death-rate was 25.9 per 1,000, and exceeded by 4.7 the rate recorded in London, which was 21.2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 7.2 per 1,000; in London the rate was equal to 5.4 per 1,000, while it averaged 8.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 12.3 in Bolton, 12.6 in Norwich, 13.6 in Gateshead, 14.0 in Salford, and 17.4 in Sunderland. These high rates were caused by the excessive fatality of summer diarrhœa. Measles caused a death-rate of 1.1 in Plymouth; scarlet fever of 1.0 in Huddersfield; whooping-cough of 1.5 in Cardiff and 3.2 in Halifax; "fever" of 1.0 in Salford and 1.4 in Norwich; and diarrhœa of 10.2 in Huddersfield, 10.7 in Norwich, 11.4 in Salford, 11.9 in Bolton, 12.6 in Gateshead, and 15.2 in Sunderland. The 70 deaths from diphtheria in the thirty-three towns included 29 in London, 10 in Leeds, 6 in West Ham, 5 in Manchester, 4 in Swansea, and 3 in Liverpool. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and only 2 small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, September 17th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,178, 2,240, and 2,300 at the end of the three preceding weeks, had further risen to 2,319 on Saturday last; 242 new cases were admitted during the week, against 182, 238, and 273 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 17th, 924 births and 567 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 18.1 to 23.0 per 1,000 in the four preceding weeks, declined to 18.8 last week, and was 5.2 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 16.4 in Edinburgh and 17.0 in Greenock to 19.8 in Glasgow and in Leith, and 20.4 in Perth. The zymotic death-rate in these towns averaged 5.2 per 1,000, the highest rates being recorded in Greenock and Dundee. The 276 deaths registered in Glasgow included 3 from diphtheria, 7 from whooping-cough, 6 from "fever," and 49 from diarrhœa. Six fatal cases of measles, 6 of whooping-cough, and 15 of diarrhœa were recorded in Edinburgh.

PLURAL OFFICES.

THERE is no law prohibiting a duly qualified medical practitioner from holding the appointments of public vaccinator, medical officer of health for an urban sanitary district, and medical officer to a Poor-law union together. Opinions differ as to the desirability of several offices being held by one person, but the duties appertaining to the offices named do not seem to be necessarily conflicting. The Local Government Act, 1888, provides that county medical officers shall not hold any other appointment except that of district medical officer, and may not engage in private practice. In other cases the authority which makes the appointment can prescribe the conditions under which it is to be filled up.

POOR-LAW MEDICAL OFFICERS AND SECURITY OF TENURE.

M. B. A. writes regretting the small attendance of Poor-law medical officers at the annual meeting in Edinburgh, and expressing the hope that the question of security of tenure for parochial medical officers in Scotland will be pressed to the front.

SALARIES OF POOR-LAW MEDICAL OFFICERS.

"MEMBER" writes to draw attention to an advertisement which has just appeared in the *Devon and Exeter Gazette* for a medical officer to the Bampton District of the Tiverton Union. The salary offered by the Guardians is £72 15s. per annum, this to include all extra fees except for midwifery, vaccination, and lunacy. Our correspondent asks whether the British Medical Association cannot get Government to make it illegal for Guardians to contract themselves out of the liability for the extra fees ordinarily awarded to district medical officers for special cases. We have already expressed the opinion that contracting out of the liability for these extra fees should not be sanctioned by the Local Government Board, and we cannot understand on what grounds it is so

often allowed, it being a direct contravention of Art. 177 of the Consolidated Order July 24th, 1847, which is as follows: No salary of any district medical officer shall include remuneration for operations and services of the following classes, etc. These being specified as certain fractures and dislocations and certain operations. We believe the Local Government Board have the power to exempt certain unions from the operation of this regulation, but when this power is exercised it renders the regulation seriously misleading. It is, we consider, much to be regretted that it should not be invariably enforced.

MEDICAL NEWS.

THE Third Italian Congress of Pædiatrics will be held at Turin from October 1st to 6th.

ITALIAN CONGRESS OF MEDICINE.—The ninth meeting of the Italian Congress of Internal Medicine will be held at Turin from October 3rd to 7th. The questions proposed for discussion are: (1) Bleeding; (2) Organotherapy.

PRINCE OF WALES'S HOSPITAL FUND.—The Prince of Wales's Hospital Fund has received a cheque for £500 from Mr. Patrick Vans Agnew Reid as a thanksgiving. The donor wishes the sum to be invested, the interest alone being applied to the benefit of the fund.

TORQUAY MEDICAL SOCIETY.—A special meeting of this Society will be held on Friday, October 7th, at 4.30 P.M., Mr. R. H. Grimbly in the chair, when an address on Gastric Perforation will be delivered by Mr. T. Pickering Pick, F.R.C.S. All members of the profession will be welcomed.

LADY SUSAN GEORGIANA BROUN, C.I. (daughter and co-heiress of the great Lord Dalhousie), who died on January 22nd, left estate sworn at £25,679 14s. 8d. Letters of administration have been granted to her husband, Mr. W. Hamilton Broun, of Colstoun, N.B. Mr. Broun—who changed his name on his marriage—will probably be better known to our readers as Surgeon-Lieutenant-Colonel Briggs, whose victorious struggle with the War Office excited so much interest some years ago.

THIRSTY PURITANS.—That our Puritan forefathers did not believe in the healthfulness of water as a beverage (says the *New York Medical Record*) would seem probable from a copy of a record of the town of Beverley, Mass., on the occasion of a minister's ordination in 1785. It is as follows: "Thirty bowles of punch before they went to church, £3; 80 people eating in the morning, at 16d., £6; 10 bottles of wine before they went to meeting, £1 10s.; 68 dinners at 30d., £10 4s.; 44 bowles of punch while at dinner, £4 8s.; 28 bottles of wine, £2 14s.; 8 bowles of brandy, £1 2s.; cherry rum, £1 10s.; and 6 people drank tea, 9d."

THE REGISTRATION OF PLUMBERS.—The Lord Mayor of Manchester presided at a public meeting in Manchester on September 19th, at which Dr. Mansel-Howe delivered an address on the Registration of Plumbers and Domestic Sanitation. Mr. Lees Knowles, M.P., said that all parties in the House were committed to the principle of the Bill, the main object of which was to afford additional safeguards to the public health by enabling persons employing plumbers to select, when they desired to do so, those who had given evidence of their qualification for plumber's work. What, however, was wanted was the support and assistance of the general public opinion. The Government required to be stirred up in the matter, and he suggested that the supporters of the movement ought to make a representation to Parliament, and explain what their views were, pointing out that it was to the advantage of the country that the Bill should be passed.

THE LOSSES OF THE AMERICAN ARMY IN THE WAR.—According to an estimate prepared by a New York newspaper, during the recent war there were killed in the army 260, in the navy 12, in the marines 7; while the wounded of the army number 1,400, in the navy 10, in the marines 13, giving a total of 279 killed and 1,423 wounded. After the declaration of peace the figures are stated to be as follows: Died in camp at Santiago, 341; died on home-coming troopships, 95; died in camps of recuperation, 150; died in camps of mobilisation, 300; miscellaneous (hospitals and homes), 70; giving an estimated total of those killed by disease at 2,086, while the estimated total of those stricken by disease was in round numbers 40,000. The American papers are full of complaints of the mismanagement of the War Department. The camps are said to have been hotbeds of disease; the doctors had not a sufficient supply of medical necessaries, and the soldiers had not enough food. Men who went unscathed through the campaign are said to have died of starvation on their return to their own land. It is possible, of course, that these statements are exaggerated, but there certainly seems to be a case for a searching public inquiry.

EPISCOPAL PROHIBITION OF CLERICAL QUACKERY.—The Bishop of Augsburg recently issued an ordinance to the following effect: "Deplorable statements of recent date compel us in the strongest manner to warn our diocese and clergy to observe the decrees of the church as to the illegal practice of medicine by clergymen, and, above all, to see to it that they keep on good terms with the members of the medical profession." The ordinance is clearly directed against Wörishofen, which is situated in the diocese of Augsburg, and in which certain clerical disciples of the late Father Kneipp continue to practise his system of treatment.

MEDICAL VACANCIES.

The following vacancies are announced:

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer.—Applications to the Registrar and Secretary by September 26th.

BETHLEM HOSPITAL.—Two Resident House Physicians. Appointments for six months from November 1st. Apartments, complete board and washing provided. Applications, endorsed "House Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before October 3rd.

BOOTLE BOROUGH HOSPITAL, Derby Road, Bootle.—Junior House-Surgeon. Salary, £40 per annum, with board, lodging, washing, etc. Applications to the Chairman by September 27th.

BRADFORD ROYAL INFIRMARY.—Honorary Physician. Applications to the Secretary by September 26th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Fourth Resident Medical Officer. Unmarried, and under 30 years of age. Salary, £30 per annum, with board, washing, and residence.—Applications to the Secretary by October 5th.

BURY INFIRMARY, Lancashire.—Junior House-Surgeon. Salary, £60 per annum, with board, residence, and attendance. Applications to the Honorary Secretary.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Temporary Assistant Lecturer and Demonstrator in Physiology. Appointment for one year. Salary, £120. Applications to the Secretary by October 1st.

CARMARTHEN JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer; age not to exceed 30 years. Salary, £120 per annum, increasing to £140, with board, residence, attendance, and washing (5 allowed in lieu of stimulants). Applications to the Medical Superintendent, by October 8th.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon: unmarried. Salary £50 per annum, with board and lodging. Applications to the Secretary by October 15th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Board and residence provided. Applications to the Secretary by October 8th.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, 41, Sloane Square, S.W.—Surgeon. Applications to the Secretary before October 1st.

CROYDON GENERAL HOSPITAL.—House Surgeon. Salary £100, increasing to £120 per annum, with board and residence. Applications to the Secretary by October 4th.

ELLESMERE URBAN AND RURAL DISTRICTS.—Joint Medical Officer of Health. Salary, £60 per annum. Applications to the Clerk to the Joint Committee, Ellesmere, by October 3rd.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary £50, with apartments and board. Applications to the Secretary, 88, West Regent Street, Glasgow, by September 26th.

GREAT YARMOUTH HOSPITAL.—House-Surgeon.—Salary £90 per annum, with board and lodging. Applications to the Hon. Secretary by October 1st.

HEREFORD GENERAL INFIRMARY.—Resident House-Surgeon: unmarried. Salary, £100 per annum, with furnished rooms, board, washing, gas, coals, and attendance. Applications to the Secretary by September 29th.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Resident House-Physicians.—Applications to the Secretary by September 28th.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Resident Medical Officer. Salary, £50 per annum, with board, residence and washing. Senior Clinical Assistant. Appointments for six months, but renewable. Applications to the Secretary by October 1st.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Resident Medical Superintendent. Salary, £105 per annum, with board and residence. Applications (on forms provided) to the Secretary by October 8th.

KILBURN PROVIDENT MEDICAL INSTITUTE.—Vacancy on the Medical Staff. Applications to the Secretary, 7, Cavendish Road, Brondesbury, by September 30th.

LEEDS: GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £50 per annum, with board and lodging. Applications to the Secretary to the Faculty by October 4th.

LIVERPOOL DISPENSARIES. Assistant Surgeon; unmarried. Salary £80 for the first year, increasing to £90, with apartments, board, and attendance. Applications to the Secretary, 34, Moorfields, Liverpool, by September 28th.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon. Appointment for six months. Salary £25, with board and lodging. Applications to the Honorary Secretary by September 30th.

LIVERPOOL: UNIVERSITY COLLEGE (VICTORIA UNIVERSITY).—Professor of Midwifery and Gynæcology. Applications to the Registrar by October 8th.

LONDON COUNTY ASYLUM, Claybury, Woodford Bridge, Essex.—Junior Assistant Medical Officer, between 25 and 30 years of age. Salary, £150 per annum, with board, furnished apartments, and washing.—Applications to R. W. Partridge, Clerk, Asylums Committee Office, 21, Whitehall Place, S.W., by October 5th.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to House Governor by October 14th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Appointment for six months. Board, residence and washing provided, and honorarium of £5. Applications to the Secretary by September 28th.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W.—Three qualified medical women as Clinical Assistants in out-patient department. Appointment for one year. Applications to Secretary by September 28th.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon. Appointment for six months. Board, lodging, washing, and honorarium of £10.—Applications to the House-Surgeon by October 1st.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Physician and House-Surgeon. Appointments for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by October 8th.

PLYMOUTH, SOUTH DEVON, AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, but renewable. Salary at the rate of £50 per annum, with board and residence. Applications to the Honorary Secretary by October 5th.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum, with board, rooms, washing, etc. Applications to the Secretary, 5, Winckley Street, Preston, by September 24th.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Appointment for four months. Salary at the rate of £50 per annum, with board, residence, and washing. Applications to the Secretary by October 5th.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. House Physician and Casualty House Surgeon, appointments of two latter for six months. No salary, but board, etc., provided. Applications to the Secretary by October 10th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House Physician. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Applications to the Secretary by October 5th.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford Street, and 15, Hanover Square, W.—House Surgeon and Anæsthetist; unmarried. Appointment for six months, but eligible for re-election. Salary £100 per annum, with partial board and residence. Applications to the Secretary by October 8th.

RUTHIN RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary, £60 per annum. Welsh essential. Applications to the Clerk by September 24th.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer. Appointment for six months. Salary at the rate of £40 per annum, with board, lodging, and washing. Also Ophthalmic Surgeon. Applications to the Secretary by September 27th.

SOUTHAMPTON: ROYAL SOUTH HANTS INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing. Applications to the Secretary by October 5th.

SOUTHPORT EYE, EAR, AND THROAT HOSPITAL.—Honorary Surgeon to the Throat Department. Applications to the Honorary Secretary, 13, Scarisbrick Street, Southport, by October 10th.

TEIGNMOUTH HOSPITAL, S. Devon.—House-Surgeon. Salary £60 per annum, with board, lodging, and washing. Applications to the Chairman of Committee.

VENTNOR, ISLE OF WIGHT: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer; unmarried. Salary £80 per annum, with board and lodging. Applications to the Board of Management, 34, Craven Street, Charing Cross, by October 6th.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Appointment for one year, but eligible for election as Senior. Salary £50 per annum, with board, residence, etc. Applications to the Secretary by October 3rd.

MEDICAL APPOINTMENTS.

BLACK, J. R., M.D.Edin., appointed Visiting Surgeon to the Greenock Infirmary, *vice* Dr. Paton, deceased.

BROWN, J. P., M.D., C.M., appointed Medical Officer of the Fourth District of the Thingoe Union.

CANDLER, John, M.R.C.S.Eng., L.S.A., reappointed Medical Officer of Health to the Depwade Rural District Council.

CHRISTMAS, T., B.A., L.R.C.S., L.R.C.P.Edin., appointed Medical Officer to Howden Union Workhouse and District, East Yorkshire, *vice* Henry Tireman, M.R.C.S., deceased.

EASTMENT, J. W., M.R.C.S.Eng., L.R.C.P., appointed Medical Officer for the Fourth District of the Saffron Walden Union.

ELLIS, R. K., M.B., B.Ch., appointed Medical Officer for the Third District of the Southwell Union.

FAY, Frederick S., F.R.C.S., appointed Surgeon to the London Hospital *vice* J. McCarthy, F.R.C.S., resigned.

HENDERSON, G. C., M.R.C.S., L.S.A., appointed Chief Medical Officer for Zululand, and District Surgeon for Eshowe Division, Zululand, *vice* Dr. Balfe, transferred.

KELLY, Dr. M. T., appointed Medical Officer of the Workhouse and the Coddenham District of the Rosmere and Claydon Union.

LATCH, John W., M.A., M.B., Ch.B.Glasg., appointed Junior Assistant Medical Officer to the Counties Asylum, Carlisle, *vice* T. D. Bell, M.R.C.S., L.R.C.P., resigned.

MCCARTHY, Jeremiah, F.R.C.S., appointed Consulting Surgeon to the London Hospital.

MEAKIN, Ethilda, M.B., appointed Junior Medical Officer to the Camberwell Infirmary.

MORSE, Edward, L.R.C.P., L.R.C.S.Edin., reappointed Medical Officer of Health for Great Torrington.

MUIR, D. K., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the South Longbenton District of the Tynemouth Union.

PIMBLETT, W. H., M.B., and C.M.Edin., appointed Medical Officer for the Seventh District of the Preston Union.

RANDLE, J. M., L.R.C.P.Lond., M.R.C.S.Eng., reappointed Medical Officer of Health to the Ivybridge District Council.

RENWICK, A. C., M.B., Ch.B.Edin., appointed House-Surgeon to Noble's Isle of Man Hospital, Douglas.

RICHARDS, Dr., appointed Medical Officer of Health for Dronfield.

SELLAR, Hugh Stewart, B.A., M.B., B.C.Cantab., L.M., appointed Assistant Resident Medical Officer in the North Dublin Union.

SPRAGUE, W. C., M.D.Edin., M.R.C.S.Eng., appointed Medical Officer for the Seventh District of the Saffron Walden Union.

WARREN, Ernest D., M.R.C.S., L.R.C.P., appointed Senior Assistant Medical Officer to the Counties Asylum, Carlisle.

WILLIAMS, J. Humphry, M.D.Edin., reappointed Medical Officer of Health to the Flint Town Council.

WRENCH, E. B., M.B., B.C.Cantab., appointed Medical Officer for the Baslow District of the Bakewell Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

MARRIAGES.

CARLYON—MACNAGHTEN.—On September 15th, at St. Andrews, Ashley Place, S.W., by the Rev. Canon Hamilton, uncle of the bride, Frederick Harold Carlyon, M.B., C.M., of Truro, Cornwall, to Violet Isabella, elder daughter of the late Colonel Wm. Hay Macnaghten, C.B., Commandant 13th Bengal Lancers, of 15, Evelyn Mansions, S.W.

KNOWLES—NICOL.—On September 14th, at St. George's Church, Leeds, by the Rev. J. J. Millie, M.A., Principal of Seafield Technical College (brother-in-law of the bridegroom), assisted by the Rev. J. C. Wright, M.A., Vicar of St. George's, Thomas Knowles, M.B., C.M.Edin., of the Crofts, Gargrave-in-Craven, son of the late William Knowles, of Kirkby Malham, to Christian Isabel, second daughter of William Henderson Nicol, of 12A, Clarendon Road, Leeds.

DEATHS.

ELLIS.—On September 14th, at 100, Rye Hill, Newcastle-on-Tyne, Richard Ellis, F.R.C.S. Edin., in his 67th year.

SKIPPER.—On September 13th, at 128, Tollington Park, N., Edward Skipper, M.D.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Tu. S., 3; Tu. F., 5. *Operations*.—1.p., Tu., 2.30; o.p., F., —.

CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances*.—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Tu., 2.30; Throat and Ear, Tu. F., 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Th. F.

GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.

KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.p., daily, 3.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Tu., 10; Skin, W., 1.30. *Operations*.—W. Th. F., 2.

LONDON. *Attendances*.—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.

LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances*.—Daily, 2; Tu., F., 6. *Operations*.—Daily, 2.

METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W., S., 9.30. *Operations*.—Tu. F., 9.

NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*.—Tu., 2.30.

ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.

ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Opthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances*.—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Tu. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Tu., 3; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Opathalmic), F., 10.

ST. PETER'S. *Attendances*.—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.

ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; [illegible] Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, except S., 1.30; M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; [illegible] ties, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Tu., 2; (Gynæcological), Th., —.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Tu., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.

WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who want notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

PROVINCIAL U.S. will be grateful if a recent candidate for the Intermediate M.B.Lond. will briefly indicate the nature and scope of the practical portions of the examination, particularly with regard to anatomy, physiology, and pharmacy.

G.H.W. will be glad to be informed whether at any time in any country or State the medical profession has been directly under State management, that is, under a system by which every medical man would be a State official. If so, he will be glad to be put in the way of obtaining information as to the working of such a system.

A MEMBER writes: I shall be glad if some member will explain the cause why rheumatism is sometimes so troublesome in bed, though one is fairly free from it in the daytime, and what is the best line of treatment. Salicylate of soda, iodide of potash, antipyrin, and colchicum, have been tried with indifferent success, as also hot sea baths, a six weeks' course of massage, and lastly, the rubbing in of a strong sulphur ointment. The diet has also been attended to—meat and eggs but sparingly partaken of, and all alcohol avoided except a little whisky at night. Would sleeping in flannel and blankets act as a prophylactic? I am of a distinctly rheumatic diathesis, and have suffered severely from lumbago and sciatica.

ANSWERS.

R. A. M. C.—The surgical practice of all hospitals in Paris is, we believe, open free to professional visitors. Application should be made to the Dean of the Medical Faculty or the Minister of Public Instruction.

EDIN.—Under the circumstances as described B. is absolutely a free agent, any objections of C. can only be based on strictly private considerations. There is no reason to doubt that the neighbourhood will as hitherto support two independent practices.

LITERATURE ON DIPHTHERIA.

DR. GORDON SHARP (Leeds) writes: D. W., who asks for literature on the history and etiology of diphtheria, may find something useful in a paper of mine on the Soil in relation to Diphtheria and its Organisms read in the Section of Public Medicine at the annual meeting at Carlisle, and published in the BRITISH MEDICAL JOURNAL, of August 22nd, 1896. The following references may also be useful:

1. *Medico-Chirurgical Transactions*, vol. lxii (year 1879). This is good on the historical aspect.
2. *Memoir on Diphtheria*. By Bretonneau, Trousseau, Guersant, Bouchut Empis, and Daviot. Translated by the New Sydenham Society (year ——). This is also good on the historical and etiological aspects.
3. *Transactions*, International Congress of Hygiene and Demography, 1891.
4. *History of Epidemics in Great Britain*. By Chas. Creighton. This is good on the historical aspect of the question.

CURDS AS AN ARTICLE OF DIET IN DIABETES.

SIGMA writes: I have a diabetic patient who cannot digest cream, but can digest the curds from milk easily (junket). Am I right in stating that practically the whole of the sugar which is in milk is in the whey? If so, the curds must be a perfectly innocent kind of food for my diabetic patient, and a food of which he may freely partake. May I through your columns ask the opinion of my fellow-practitioners?

*** We are indebted to Dr. Saundby for the following observations on the point raised by our correspondent:

"Curds of milk in the form of junket contain so much whey that the quantity of sugar is not reduced except in so far as part of it has been converted into lactic acid. If the curd is pressed and the whey removed the sugar is greatly reduced, but is still present. Such pressed curd, however, is less digestible and could not be eaten in large quantities. In kefir or fermented cow's milk the sugar is got rid of by fermentation, and kefir Nos. 3 and 4 contain little sugar. Such kefir or cow [illegible] supplied by the Aylesbury Dairy Company. Milk sugar is [illegible] by many diabetics, and the use of milk as an article of diet in [illegible] to ½ pint daily has been advocated by many recent [illegible] suitability for each case must be tested by experiment, beginning with half a pint daily and increasing the amount as examination of the urine shows that no harm results."

CHANGING THE DOCTOR.

Two [illegible] practitioners, A and B, submit the following case for an opinion: A [illegible] practises in the same town. They meet in consultation [illegible] A's patient selecting B as consultant. Three [illegible] and A's patient resume work. A's attendance [illegible] paid. Three weeks after A's last attendance the patient, [illegible] some of the old symptoms and fearing a re[illegible] C. B who declined to attend except in consultation [illegible] C was called in. 1. Would B have been justified in meeting in consultation another practitioner in the case? 2. After what lapse of time or under what circumstances can B with strict propriety take the case? 3. Could B's partner take the case?

*** Precedents may be laid down. It is an accepted axiom that no practitioner should attempt to accept the patients of a brother practitioner without a distinct mutual understanding that is, that the patient desires change and the doctor intended urge accepts the inevitable. A good deal in these cases depends on etiquette being tempered by common sense. When in the case quoted B was asked to attend the family, it was hardly wise to have refused point blank. No good came of it to either A or B, and C stepped in. B should have declined until he was satisfied that the patient had communicated her intention to change to A, and B had written to A for guidance from his standpoint. This course preserves the good understanding between practitioners and commands the respectful acceptance of the patient. 1. Under no circumstances could B have been justified in taking the case. 2. Had another practitioner been called in, and B was summoned as a consultant, it would be his duty to attend. 3. The time and circumstances must be governed by action previously laid down. 4. Partners must be held to be one.

NOTES, LETTERS, Etc.

SCISSORS FORCEPS.

DR. DAVID JAMES, Bedford Park, W., writes, with reference to the notice of scissor forceps invented by Mr. H. de Paiva Veale, and noticed in the BRITISH MEDICAL JOURNAL of September 3rd, p. 635, that scissor forceps, the invention of Dr. Stephanus Jacobus Meintjes, were in use in Professor Syme's wards in the Royal Infirmary of Edinburgh in 1859 or 1860 as an instrument to twist and cut the silver wire sutures then recently introduced. Dr. Meintjes's invention, therefore, has priority over that of Mr. de Paiva Veale.

STOMATITIS FOLLOWING THE ADMINISTRATION OF ANTIPYRIN.

DR. C. HERBERT HALL (Watford) writes: With reference to Dr. G. King Martyn's note in the BRITISH MEDICAL JOURNAL of September 17th, it may be of interest to him to know that in the *Berliner klinische Wochenschrift* of August 22nd, 1898, there is a report of a case of antipyrin poisoning with implication of the oral and genital mucous membranes.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Abrolis Limited, London; F. S. Arnold, M.B., Manchester. **B** Mr. T. C. Bailey, Crewe; R. Ballantyne, M.B., Birstall; Mr. M. R. J. Behrendt, Scunthorpe; Mr. W. B. Brooks, Bootle; Dr. J. Beattie, Newcastle-on-Tyne; Rev. C. F. L. Barnwell, Uttoxeter; P. M. Braidwood, Aylesbury; Dr. E. G. Barnes, Eye; Rev. C. F. L. Barnwell, Uttoxeter; Messrs. Baillière, Tindall, and Cox, London; Mr. G. L. Bland, Leamington Spa; Sir J. Crichton Browne, M.D., London; J. B. Blaikie, M.B., Derwentwater. **C** Mr. J. Chestnutt, Howden; F. H. Carlyon, M.B., Truro; Componere lites; Mr. J. S. Croucher, London; Mr. R. H. Cowan, Wigan. **D** "D. W. T.;" Mr. H. R. L. Davies, Gargrave-in-Craven; Mr. J. R. Dasent, London; Miss C. P. Dawson, Portadown; Dr. A. Duke, Cheltenham; Dr. J. R. Day, London; Dr. H. Dutch, London; Mr. M. Dobbs, Leeds. **E** Mr. J. R. Essex, Pontypool; Enquirer; Mr. C. J. Evans, Northampton. **F** J. F. S. Powler, M.B., Georgetown, British Guiana; W. H. Fowler, M.B., Edinburgh; Mr. A. F. Firth, Lightcliffe; Fiat Justitia; Dr. A. F. Fergus, Glasgow; Dr. W. F. Farquharson. Carlisle; J. Fotheringham, M.B., Motherwell. **G** Mr. A. Goodere, Dewsbury; Dr. H. W. Gardner, Shrewsbury; Mr. D. S. Sleith, Rathmines; Mr. G. Grimshaw, Hull; Dr. J. E. Gould, Bolton; S. Gillies, M.B., Sydney; G.; Mr. W. Gordon, Salisbury; D. W. Geddie, M.B., Banff; Mr. H. R. Greene, London; Mr. R. T. Glazebrook, Liverpool; Dr. S. Griffith, Portmadoc. **H** Mr. F. E. Hare, Buxton; J. W. Hyslop, M.B., Menston; Miss Hoyle, Brighton; Dr. G. C. Henderson, Eshowe; Dr. W. Habgood, Marple; C. H. Hall, M.B., Watford; Mr. J. Hutchinson, jun., London; Dr. W. A. Hatton, Westhoughton; J. Huskie, M.B., Chester; Mr. H. Hodgkin, London. **J** "J. W. H.;" Mr. J. Jones, Croydon; Mr. G. Jozeau, London; Mr. F. R. Jones, Coalville; W. D. Johns, M.B., Bournemouth. **K** Mr. H. P. Kennard, London. **L** Mrs. H. Lewis, Folkestone; Mr. C. E. Lister, London; Dr. J. Lowe, London; Mr. H. S. Lyle, Liverpool; Mr. R. Lake, London. E. A. Lermitte, M.B., London; Mr. H. Liston, Sunderland; Mr. W. W. Leigh, Treharris. **M** Mr. F. C. Melhado, London; Mr. F. W. Marsden, Burnley; Mr. C. Matthews, Birmingham; A. McCulloch, M.B., Tarperley; Member; J. G. McKay, M.B., Brae; M.D.; Rev. J. J. Mercier, Tewkesbury; M.R.C.S.; Dr. C. K. Millard, Birmingham; Dr. G. S. Mill, Ossett; J. Mackenzie, M.B., Manchester. **N** Dr. H. Nuttall, Sunderland; J. H. Nicoll, M.B., Glasgow; Dr. A. G. Nicholls, Montreal. **P** Mr. G. Pernet, London; Dr. Peypers, Neuenahr; T. G. Paterson, M.B., Manchester; Provincial H.-S.; Poor Law; T. Proudfoot, M.B., Edinburgh; Mr. C. Parker, London; Mr. W. Phillips, Northampton; Mrs. Peel, Cremes, Anglesey. **R** Mr. S. T. Ross, Bedford; A. E. Russell, M.B., London; Mr. C. Rout, Rye; R.A.M.C.; Dr. J. M. Rodermund, Appleton, U.S.A.; Dr. H. Rayner, London; Dr. N. Raw, Liverpool; Mr. A. C. Rinwick, Douglas, I. of M.; Mr. T. P. Roberts, St. Albans. **S** Mr. H. A. Scott, Newton Heath; Mr. F. C. Simpson, Great Berkhamsted; Spes; Mr. J. I. Sankey, Paddock Wood; J. H. Saunders, M.B., Geraldston; Surgeon; Mr. D. S. Shroff, Bombay; Dr. A. Schetelig, Homburg; R. W. I. Smith, M.B., Sheffield; Dr. J. G. Sharp, Leeds; Sanitary Wood Wool Co., London. **T** Dr. St. C. Thomson, London. Dr. S. G. Toller, Cairo; Dr. J. A. Thompson, Sydney; Dr. H. Tilley, London. **V** Professor R. Virchow, Berlin. **W** Dr. J. Wilson, Glasgow; Messrs. Wills, Limited, London; Mr. J. H. P. Way, Southsea; W. W.; Mr. O. H. Woodcock, Manchester; G. E. Williamson, M.B., Newcastle-on-Tyne; Rev. W. A. Willis, Monmouth; W. K. D.; W. J. S. Mr. V. Wood, London. **X** X.

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SIXTY-SIXTH ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

G. W. Balfour, M.D., F.R.C.P.Edin., President.

A DISCUSSION ON THE SIGNIFICANCE AND CONSEQUENCES OF DIFFERENT STATES OF VASCULAR PRESSURE, WITH THEIR GENERAL MANAGEMENT.

I.—Sir William Broadbent, Bart., M.D., F.R.S., F.R.C.P.Lond.,
Physician to H.R.H. the Prince of Wales.

The subject which you have done me the honour to ask me to present for discussion before this Section—The Significance and Consequences of Different States of Vasular Tension, with their General Management—is so extensive that it is only possible to consider it in some of its aspects. I shall not, for example, even allude to the varying degrees of tension present in different parts of the venous system.

The question to be discussed, then, practically resolves itself into arterial tension—the degree of stretching to which the arterial walls are subjected by the fluid pressure of the contained blood. Vascular tension, arterial tension, blood pressure, vascular or intravascular pressure, thus refer to the same thing and, although not strictly synonymous, may be used as convertible terms. As we habitually estimate this pressure by the resistance to compression and other points when feeling the pulse, it is not infrequently spoken of as pulse tension, which is less accurate.

A further limitation, imposed by the time at my disposal, is that I cannot enter upon the question of the determination of the degree of intravascular pressure by the various instruments which have been devised for this purpose.

The heart is, of course, the source of all intravascular pressure, which must primarily depend on the amount of blood delivered into the aorta in a given time, and the force with which this blood is propelled. In order that the circulation may be maintained, the fluid pressure in the arterial system must be sufficient to carry the blood through the capillary network into the veins, and along the veins into the right auricle, or, at any rate, until the flow of blood towards the heart is reinforced by the movements of respiration.

But the degree of pressure maintained in the arterial system depends also on the resistance to the onward movement of the blood met with at its termination in the capillary system, and will vary with the degree of such resistance. If the outflow is unresisted, the pressure cannot be kept at a high point, however vigorous the action of the heart; if, on the other hand, the resistance in the peripheral vessels is considerable, the pressure must be raised to a point sufficient to overcome it, or the circulation will cease and death ensue.

Resistance at the Periphery.

In discussing the significance of variations of vascular tension, therefore, we have to direct our attention mainly to conditions influencing the resistance at the periphery.

The obstruction to the onward movement of the blood by the friction arising from the subdivision of the arterioles into a multitude of minute intercommunicating channels only just allowing of the passage of the corpuscles, would of itself account for much. It is evident, however, that the state of these capillary channels will affect the flow through them favourably or unfavourably. If they are tortuous, and if their walls yield to the pressure of the contained blood so as to allow of bulging, it is obvious that there will be a liability to stagnation; if, on the other hand, the channels are uniform and direct, the passage of the blood along them will be facilitated. But another important influence may come in. Water rises in a minute glass tube, mercury is depressed; water, again, is depressed, and almost refuses to enter the tube if its interior is greased. This difference is due to the presence or absence of some attraction between the walls of the tube and the contained fluid, and a varying relation between the capillary walls and the blood may greatly affect the movement of the blood in the capillaries and the force required to propel it.

The character and activity of the nutritional and functional reactions between the tissues and the blood will influence such changes; it is this fact which constitutes the physiological basis of the expression, *Ubi stimulus, ibi fluxus.*

It must be borne in mind that pressure in the capillaries themselves serves a very important purpose; it favours the transudation of nutrient fluid from the interior of the capillaries, where it is out of reach of the tissues, into the intertextural spaces, where it can be appropriated by the cells. Salts and gases in the blood and tissues can respectively change places by diffusion through the capillary walls, but the albuminoid liquid, from which the structures are renewed, only traverses a membrane under pressure. For the production of this intracapillary pressure mere retardation by friction throughout the network would not suffice; there must be obstruction beyond the network or in its distal parts, as, for example, where the capillaries converge to form the venules. The pressure in the veins, again, must be reckoned as resistance to outflow from the capillary system, and when it is increased by obstruction there is a tendency to excessive exudation through the capillary walls, which may give rise to œdema.

But an obstruction to the flow of blood may be interposed between the heart and the capillaries by contraction of the arterioles. This may be carried so far as to exclude the blood completely for a time from a capillary area, as when the fingers go dead after washing in cold water, and even to give rise to gangrene, as in Raynaud's disease. Contraction of the arterioles has an exactly opposite effect as regards nutrition to obstruction on the distal side of the capillaries, and, called into powerful independent action, would defeat its purpose. But obstruction in the capillaries and contraction of the arterioles are usually correlated, obstruction in the capillaries calling into action a defensive contraction of the arterioles.

Variations in Intravascular Pressure.

Variations in the vascular pressure may be discussed as occurring in the individual, or as presented by different persons or in different states of health.

In studying the fluctuations in the individual we must know what his average pulse tension is, and in making inquiries as to the significance of the varying degrees of pressure met with in different states of health, we have to refer them to an ideal standard which we call normal.

It is by means of the pulse that we estimate the different states of vascular tension for clinical purposes, and it is of very great importance that its readings should be properly interpreted.

In feeling the pulse, the first point to which attention should be directed is the size of the vessel. This may vary greatly at different times in the same person, and as a constant feature in different individuals. According to the size of the artery will be the amount of blood passing, supposing the pressure and resistance to be equal.

The next point to be noted is the state of the vessel between the beats, whether, that is, it remains full and round, so that it can at all times be rolled under the finger; or, on the other hand, allows itself to be flattened in the interval between the pulsations by the slightest pressure, so as scarcely to be felt. It is by the full and tense, or empty and flaccid condition of the vessel between the beats that we get the best idea of the degree of obstruction in the periphery, which is the essential element in the production of vascular pressure. Further evidence is furnished by the character of the *ictus* or stroke of the arriving pulse wave; it is sudden and sharp when the artery has allowed itself to be flattened, particularly if at the same time it is large and dilated; a gradual heave, when the vessel is full and unyielding. A corresponding difference is observed in the character and duration of the pulse wave

itself. It is short, and falls abruptly with a marked dicrotic rebound, or long and gradual in its subsidence. A final test is the degree of pressure required to suppress the pulse and prevent the onward transmission of the blood.

The Causation and Significance of Low Intravascular Pressure.

It may be stated at the outset that a pulse below the average tension is often found in long-lived families. Neither heart nor vessels wear out, and we constantly meet with very old people who tell us that they have had a weak heart and poor pulse all their lives.

Before any inference is drawn, whether from *plus* or *minus* vascular tension, it is to be understood that the heart will be examined as well as the pulse. Sometimes there is an apparent contradiction between the two when the pressure in the arteries is low. The pulse will be small, short, and compressible, while the cardiac impulse is vigorous and the sounds are good. This may arise from imperfect filling of the left ventricle, or sometimes from diversion of the blood to the abdominal viscera.

When unduly low pressure in the arterial system is the fault of the heart, it may be from structural disease of its walls, degeneration or dilatation, or from asthenia of the heart muscle specially, or due to general or nervous debility, or there may be valvular insufficiency, mitral or aortic.

There being deficient *vis a tergo*, the pulse will be compressible whether the artery is full between the beats or not. The actual state of the heart, to which it is due, will be ascertained by physical examination.

The most striking illustration of lowered vascular tension from diminished resistance in the capillaries is seen in febrile conditions. This is probably one of the causes of the wasting which attends fever, and of the transverse grooving of the finger nails which follows it, and is perhaps even more important than the increased metabolism. There is not sufficient resistance in the capillaries to insure the exudation of nutrient material. The absence of obstruction may be carried so far that the blood shoots through the arteries and capillary network without losing its pulsatile movement, and pulsation can be seen in such veins as are favourably situated for showing it—in the veins of the back of the hand, for example. This is very common in pneumonia.

The relaxation of the arterioles and capillaries which permits of this is not a mere matter of temperature. It varies greatly in different diseases; in scarlet fever we have a high temperature and contracted peripheral channels. The diminished resistance of the febrile state is often attributed to vasomotor paresis of central origin. I am disposed to think that the relaxation of the capillaries is the direct effect of some blood condition, and that vasomotor paresis of the arterioles is secondary to this. The extraordinary effect of a minute dose of nitroglycerine, or of one of the nitrites, suggests itself as an analogy to what takes place in fever.

Lowering of the vascular tension takes place in fever, in spite of frequent and powerful action of the heart. In the absence of fever, vascular and cardiac asthenia frequently go together, and may be associated with neurasthenia.

There may be loss of flesh as well as loss of strength, even when the appetite and digestion are unimpaired. Here, again, it seems probable that the pressure in the capillaries is not sufficient to cause adequate exudation of nutrient material, and the tissues and organs may be starved, so to speak, in the midst of plenty.

Debility as such is not necessarily attended with low pulse tension, and an abnormally low vascular pressure does not necessarily indicate weakness, but there are striking examples of the association of a pulse of low tension with special forms of debility. One of these is epilepsy, and I am not clear in my own mind whether the cardio-vascular asthenia is one of the effects of the state of the nerve centres in epilepsy, or a cause of imperfect nutrition and defective stability of the cells of the cerebral cortex, and of the fluctuations in the circulation in the pia mater, which give rise to the convulsions. A similar uncertainty pertains to melancholia when associated with low pulse tension.

High Intravascular Tension.

Undue y high is more common than abnormally low vascular pressure, and more interesting from the variety of effects which are traceable to it. It runs in families, and we find high tension pulse in children, and see the tortuous arteries which we usually associate with age coursing across the temples of quite young men. The states of system with which it is associated—renal disease, gout, lead poisoning, lithæmia, constipation—are all, or nearly all, characterised by imperfect elimination or imperfect metabolism of nitrogenised matter. This for the most part is the causation and the significance of the high tension pulse, the resistance being primarily in the capillary network, and the stopcock action of the arterioles secondary and defensive. The effects are numerous and varied. First hypertrophy, and then degeneration of the walls of the arterioles and arteries, abolishing their function of regulating the local blood supply and impairing the adjustment of the circulation to varying external conditions; dilatation of the aorta and its main branches, with atheroma of the arterial tunics and loss of the elasticity which converts the intermittent propulsion of blood by the heart into a continuous current, thus approximating in character the radial to the aortic pulse; hypertrophy or dilatation of the heart, or both, or fibroid or fatty degeneration, with their respective consequences; thickening and deformation of the valves with obstruction or incompetence. Other effects, structural or functional, too numerous to specify, and too familiar to need description, flow from these changes in the heart and vessels.

While it would be waste of time to go over the old, well-trodden ground, the variations in vascular pressure are of almost universal clinical application, and to some of these I may be permitted to allude.

For many years I have been accustomed to take as one of the chief guides in the prognosis and treatment of the multitudinous functional derangements of the nervous system which have come to be grouped under the name neurasthenia, the plus or minus tension presented by the pulse. There is more scope for treatment, and better promise of relief in cases in which the vascular pressure is high than in those in which it is unduly low. When the tension is high there is the possibility that the impurity in the blood, which gives rise to resistance in the capillary circulation, may also act as a poison to the nervous system, causing a sense of intense depression and obstructing the development of nervous energy, and that this may be eliminated: a simple illustration is the effect of a blue pill, which sometimes seems to change the entire aspect of the world to the sufferer from what is called biliousness. This may be looked upon as an acute form of a condition which, when chronic, may give rise to melancholia. A most interesting paper appeared in the *Lancet* of June 25th, 1898, in which Dr. Craig, of Bethlem Hospital, has shown that in melancholics the vascular pressure is high: in maniacal excitement low, and that modification of the tension is attended with more or less of a corresponding effect on the symptoms. A valuable point in this communication is the explanation of the disappointing results of hypodermic injections of morphine in states of excitement. Instead of sleep there is often an aggravation of the excitement, which is a consequence of the lowered vascular pressure produced by the morphine. This effect of morphine on vascular tension is an important factor in its favourable influence in angina pectoris and in the relief of distress in some cases of aortic incompetence.

Among the diseases in which it has seemed to me that vascular pressure or arterial tension may be a means of discrimination between cases which require different treatment is epilepsy. The two extremes of tension are met with in association with periodical attacks of general convulsions of the epileptic type; when it is low the prognosis, according to my experience, is much more unfavourable than when it is high. The epileptic tendency is probably inherent in the nerve centres, and the fits not dependent on external influences.

Uræmic Convulsions.

I may perhaps here again express my opinion that uræmic convulsions are directly related with high vascular pressure, and are produced by arrest or disturbance of the capillary cerebral circulation, and not by the mere presence in the blood of any urinary poison. Uræmic convulsions do not follow ligature of the ureters, and cannot be produced experimentally by injecting urea or any of the renal derivatives. They supervene at periods of renal disease, when the accumulation of

such poison cannot be great, and often fail to come on when the uræmic saturation has obviously reached an extreme degree. Convulsions of identical character are sometimes seen when there is no renal disease at all, but high arterial tension due to some other cause. A medical man is still alive and well whom I bled to 30 ounces, 20 years ago, for severe convulsions; he had extremely high arterial tension, but never at any time presented indications of disease of the kidneys, and he had never had syphilis.

Chronic Bronchial Catarrh.

Another affection in which the clue to treatment is often furnished by the degree of vascular pressure is chronic bronchial catarrh, especially, perhaps, when it is associated with asthma. We are all familiar with the term gouty bronchitis, and this need not be a mere refuge for ignorance, or a convenient phrase for the satisfaction of the patient and his friends in the presence of intractable disease. In many of these cases of recurrent bronchial catarrh the pulse is one of high tension, and the blood is charged, if not with uric acid, with some nitrogenised waste which in some way or other predisposes to catarrh of the bronchial tubes. In such cases, while attacks may be warded off by wintering in the south, much more effectual relief may be afforded by eliminants.

Cheyne-Stokes Respiration.

I should like also to point out once more the association of Cheyne-Stokes breathing with high arterial tension. In the course of many years' observation, extending now over hundreds of cases, I have never seen true Cheyne-Stokes respiration without high intravascular pressure. It has been argued with equal plausibility and cogency, so far as I can judge, that it is attributable to excessive and defective irritability, or functional activity of respiratory centres, interference on the part of the cerebral hemispheres, or suspension of their normal control. Whatever the hypothesis may be it must be reconcilable with the fact that this breathing may go on for months in men who are capable of attending to business and appear to have little else the matter with them; that it may be present continuously, whether the patient is awake or asleep, or may in some cases be replaced by normal breathing during sleep. I am not sure that it is ever present only during sleep.

More than once I have seen concomitant variations of Cheyne-Stokes breathing and high arterial tension. This was recently illustrated in a remarkable way in a case of combined kidney and liver disease, watched for many weeks with Dr. Hale and Mr. Frank Easton. The arterial tension was extremely high, and the respiratory distress during the breathing periods very great, which I may observe is very rarely the case. The only relief we could give the patient was by injections of pilocarpin. During the perspiration which resulted there was always remission both of the high pulse tension and of the respiratory paroxysms.

Treatment of Low Pressure.

In the general management of unduly low vascular pressure the first object will be the identification of the underlying vice of nutrition. This may be some derangement of the digestion or of the process of assimilation, or there may be failure or preversion of one of the glandular secretions which have been found to play so important a part in nutrition, such as the suprarenal or thyroid, or organic disease may be destroying some important organ or undermining the vital energies. Cancer, for example, proves fatal not merely by its local effects, but by pouring into the blood some deleterious material; or a primary affection of the nervous system may exercise an unfavourable influence on nutrition and on the circulation. The cause having been ascertained, the chief treatment will be such as is directed to its removal. The cardio-vascular tonics, digitalis and the like, are often useful accessories, although they deal only with effects and not with the cause of the low tension.

Treatment of High Pressure.

When the vascular pressure or arterial tension is unduly high, elimination is usually indicated. Regulation of the diet is of course important, chiefly in the direction of limitation of nitrogenised food and alcoholic drinks. The elimination will be predominantly cutaneous by means of exercise and baths, and diaphoretics, or renal through copious draughts of water apart from meals, alkalies and other diuretics, or hepatic, or alvine, according to the requirements of the case. In the employment of aperients it is not a matter of indifference what purgative is given. When the object is to lower arterial tension, some preparation of mercury ought to form part of the aperient. A greater effect in this direction may be obtained by means of a pill containing a small dose of calomel, or blue pill, or grey powder, than from much more powerful purgation produced by other aperients. A widespread opinion prevails that mercury ought never to be given when there is albuminuria, or, at any rate, when there is disease of the kidneys. There could be no greater mistake. One would not give a course of mercury in Bright's disease, but uræmic headache and dyspnœa can often be dismissed, and uræmic convulsions may be prevented, by a good dose of calomel.

The vascular relaxants find a useful place in the relief of unduly high pressure in emergencies such as angina pectoris, or to meet urgent symptoms, or to gain time, and when elimination is inadequate to keep down tension, they may come to constitute the most important part of the treatment. While amyl nitrite, nitroglycerine, and nitrite of sodium, are invaluable when an immediate effect is required, erythrol tetranitrate, which I am glad to see is to be brought before the Section of my friend Professor Bradbury, promises to be of the greatest permanent benefit, and to have the widest application.

II.—J. B. Bradbury, M.D., F.R.C.P.,
Downing Professor of Medicine, University of Cambridge.

Low Tension.

The part of the subject in which I am most interested is the general management of vascular conditions. This naturally always raises the previous question of their significance and effects, as rational treatment must always be based upon a correct diagnosis; and in many instances the pulse is an important indicator in this direction, as, for example, in some cases of cardiac dyspnœa. This may occur with a low tension pulse or a high tension one, and the line of treatment in the two cases is different.

Of the opposite conditions of intra-arterial blood pressure, high tension is the more important. Low tension is mainly of prognostic and therapeutic value, and is dependent upon some condition apart from the blood and blood vessels. Palpitation is the most common symptom of relaxed arteries, but in most instances this is primarily of nervous origin. The treatment of low tension is that of its cause.

The Causes of High Tension.

High tension, on the other hand, is directly dependent on blood conditions, and, to a certain extent, on hereditary and nervous influences, and it is an important causal factor in disease. Certain poisons—lead, alcohol, alimentary toxins, the poison of gout, syphilis, influenza, etc.—seem to cause an arterio-capillary contraction, intra-arterial blood pressure is raised, and, apart from immediate symptoms, changes in the heart and vessels, and subsequently in other tissues, occur. Owing to this, treatment of high arterial pressure becomes an important measure, and much may be done to alleviate the condition. With care the patient may even live to a good old age. Thus an old lady, aged 89, who has been under my care for about ten years, suffered from copious attacks of hæmatemesis when I first attended her, and these gave her much relief. Latterly she has been less troubled with the "black-vomit," but has found relief from distressing head symptoms, including "word blindness," etc., by frequent doses of mercurials and saline aperients, and a carefully regulated diet. Her case is a typical one of what my colleague, Professor Allbutt, has designated "senile plethora."

Clinical Classification.

From the point of view of treatment, cases of high arterial blood pressure may be divided into the more or less curable and the incurable. In some conditions—for example, pregnancy it is merely temporary, and passes away with this condition; in anæmia it is quite curable, but this is not the case so much in other diseases. In these, especially after

middle age, pathological changes have occurred in the arteries and other tissues, and these changes tend to keep up the high arterial pressure. In old people, where the arterio-sclerosis is extreme, complete cure cannot result.

All grades of this condition occur, and in all some improvement may be expected. The essential object in the majority of cases is to rid the blood of its toxic substances, to prevent their reaccumulation, to keep down the arterial blood pressure by careful dieting, judicious medicinal treatment, and moderate daily exercise. Potassium iodide and purgatives, mercurial and saline, are extremely useful, but often they are insufficient, especially if relief—as when pain, dyspnœa, etc. (symptoms for which the patient usually seeks advice)—is required. Here vaso-dilating drugs are necessary, and amyl nitrite, nitroglycerine, chloroform, or, when a long-continued action is required, erythrol tetranitrate may be used.

ERYTHROL TETRANITRATE.

This drug is especially adapted to those cases in which pain is not severe but of long duration, or in warding off expected attacks for a time—cases of which the following are types:

A. B., aged 62, suffered from oppression behind the sternum. There was no history of gout, but he had had intermittent fever and lumbago, and tonsillitis. There was no cardiac *bruit*, but marked increased arterial tension. The condition had existed for about six months. The appetite was good, the bowels costive, and he slept fairly well. The attacks came on in the early morning, and lasted for about five minutes. Erythrol tetranitrate, 1 gr., gave great relief; nitroglycerine very little. A course of blue pill, and later, potassium iodide, with occasional purgatives, was enjoined, but although considerable improvement occurred, erythrol tetranitrate had constantly to be taken to ward off the attacks, which it did most effectually, if taken the last thing at night.

In the BRITISH MEDICAL JOURNAL for April 10th, 1897, I described a case of angina pectoris which erythrol tetranitrate (1 gr. every four hours) kept at bay. Unfortunately, somewhat larger doses had to be resorted to, until the patient was taking 30 gr. in twenty-four hours. But this was subsequently reduced. No ill-effects followed this large dose, except occasional heartburn (relieved by soda) and slight tinnitus aurium. This patient also tried mannitol hexanitrate in 3-gr. tabloids at 10 A.M., at 2 P.M., and at 6 P.M., but the effect was not so satisfactory as with the erythrol tetranitrate. In fact, the patient gave it up for the latter drug.

Professor Clifford Allbutt and Dr. Owen Williams have sent me notes of cases of angina which have been markedly benefited by this drug. An interesting case simulating Raynaud's disease has recently come under my notice:

J. R., aged 49, an express-engine driver, married, was sent to me on June 10 h, 1898, by Dr. Fordyce, suffering from attacks of extreme coldness, with numbness and dark discoloration of the thumb and index and middle fingers of the left hand. The other two fingers and the right hand were normal. The condition had lasted a fortnight, but for five weeks before this he had suffered from twitchings in the feet, which had increased so much as to prevent sleep. Previous to my seeing him galvanism had been applied to the arm, and it is said had "restored warmth and comfort to the hand." But no real improvement occurred. The attacks still came on at any time, and even during the hottest weather the fingers were icy cold. As the condition was evidently due to arterial spasm, and as no indication of other mischief was present, erythrol tetranitrate was prescribed, (one grain thrice daily) and the patient greatly improved; the coldness and asphyxia became much less marked, but he complained of an uncomfortable sensation in the head as the result of the medicine.

This case is of interest as M. Huchard has endeavoured to show that spasm of the arterioles, producing arterial hypertension, is an early phenomenon of arterio-sclerosis, and that it often long precedes the material lesion properly so-called.

Dr. Duncan has sent me notes of a case of interstitial nephritis with uræmia, in which he believed the patient's life was saved by erythrol tetranitrate, suggested by Dr. Hawkins. There was œdema of the lungs, with very distressing dyspnœa, and Cheyne-Stokes respiration; very high tension pulse; most irregular action of the heart; insomnia (in spite of hyoscine hydrobromide given hypodermically up to 1.75 gr.) practically for six days, with the exception of fifteen or twenty minutes in each twenty-four hours, scanty urine, and for the two nights previous to taking the erythrol tetranitrate, delirium. Dr. Duncan wrote on July 11th:

The patient a fortnight ago yesterday—that is, on June 26th—was apparently morituna, but erythrol tetranitrate was given as a last resource. The effect [illegible] and the patient has improved every day since. On July 6th—he was able to [illegible]. The pulse is now quite regular and soft, the œdema of the [illegible] and the amount of urine has greatly increased, amounting to nearly 60 ounces on some days.

III.—T. D. SAVILL, M.D., M.R.C.P.,

Physician to the West End Hospital for Diseases of the Nervous System.

DR. T. D. SAVILL wished to draw attention to what in his opinion was the most serious consequence of prolonged, or continuous, high arterial tension. Ten years ago he was struck by the fact that in the *post-mortem* room, in many old people, the arterial walls throughout the body were notably increased in thickness, and especially the middle or muscular coat; that is, the functionally active part of the arterial system. Upon further investigation he found that such cases had prevented characteristic symptoms during life (see BRITISH MEDICAL JOURNAL, January 23, 1897) by which the condition (for which he provisionally suggested the title "Arterial Hypermyotrophy") could be recognised clinically. In 1891-92, during 18 months, out of about 280 necropsies which he had made, 39 cases were found to be affected with a notable degree of this "arterial hypermyotrophy"—14 per cent., not counting many which exhibited a less degree. Thus the condition was by no means uncommon. These cases had all evidenced during life symptoms of high vascular tension for long periods at a time, and this undoubtedly had been the cause of the muscular increase. The majority of these cases were free from renal disease. Specimens and photographs were shown side by side with normal sections, and it was pointed out that the changes was a true hypertrophy, though this hypertrophy might, or might not, be attended by the senile changes such as atheroma, endarteritis, etc. A granular condition, combined with a swelling of the individual muscular fibres of the arterial walls, was a very frequent, indeed a constant, senile change, but this occurred in other cases which had been free from these symptoms. The essential change was a true hypertrophy, a numerical increase of the involuntary muscular fibres of the middle coat, and it was an illustration of the physiological law that increased function leads to increased growth. As a consequence of this change there was a perpetual state of high arterial tension in these cases; it was one of the symptoms of the disease, besides the headache and giddiness, and the thickened elastic feel of the arteries, which could be made out during life. It was most important to recognise this condition, arterial hypermyotrophy, for these patients were very liable to apoplexy and other hæmorrhages which could be prevented by appropriate means.

IV.—HENRY HANDFORD, M.D., M.R.C.P.,

Physician to the Nottingham General Hospital.

DR. HANDFORD mentioned a class of cases in which extensive œdema resulted from disturbance of tension in the capillaries without heart or kidney lesion. In these cases he considered that both digitalis to increase the pumping power and vascular depressants, like iodide of potassium, to diminish the peripheral resistance might completely fail until the mechanical pressure of the extravasated fluid in the tissues was removed by drainage. In such a case recently the removal of fluid by incisions in the legs, without drug treatment, led to an increase of urine from 40 ounces daily to 140 ounces, which continued until equilibrium was restored. The urine gradually fell to 60 or 80 ounces daily, and the patient remained well.

V.—D. W. SAMWAYS, M.A., M.D.,

Mentone.

DR. SAMWAYS said that in his opinion the importance of altered, especially elevated, arterial tension was very liable to be overestimated. The left ventricle, he stated, was normally generating a much higher arterial blood pressure than was necessary for supplying the capillaries with sufficient blood. If the arterial system were enlarged in the same way as the venous, and no special resistance wilfully inserted at the small arterioles, the rate of blood flow would be halved for the same quantity passing, and the frictional resistance, which diminished approximately as the square of the velocity, would be still further reduced. Thus the left heart could be, say, a quarter its present thickness, and still conceivably circulate the blood sufficiently. Resistance, he said, was wilfully inserted to force up the blood pressure, and that apparently for three purposes. (1) That the supply of blood to a limb, and the body generally, might be secured in all attitudes of

elevation and depression; (2) that local variations, in supply, might be readily secured; (3) that pressure variations in the arterial system might be but a small proportion of the great total pressure, thus saving the heart from marked and rapid changes in its load, which would "foul it up," like any other engine so treated. If a high arterial tension were such an evil, why, he asked, was it normally many times greater than it need be? Additional tension, he thought, would probably not trouble either the heart or arteries much were it not for some concomitant evil which really produced the mischief. In conclusion, he said, "eliminate the toxins which may be present, correct the nervous or other element which is disturbing the healthful life of one or other tissue, and the high blood pressure will either disappear or produce by itself no harm."

VI.—W. J. Tyson, M.D., M.R.C.P.,

Senior Medical Officer, Folkestone Hospital.

Dr. Tyson observed that there were 32 or 33 clinical states in which high tension existed, and which were amenable to treatment; in the first place, there was a form of headache which came on after nervous exhaustion or closeness of work. The symptoms were a dulness across the forehead, flushing of the arterial vessels, incapacity for work, etc., followed in a few hours by a large flow of clear urine, when the headache began to disappear. This form of headache should act as a signpost for diminishing work or lessening of anxiety. Again, there were certain people who were unable to take the smallest amount of alcohol without high tension coming on, and a general fulness of the vessels accompanied by headache. In these peculiar cases it seemed necessary that total abstinence from alcohol should be enforced; the condition was not necessarily found in those who took much alcohol. Then, again, in those cases of biliousness which came on constantly in visitors to the seaside, the symptoms were headache, loin pains, and general lassitude, slight jaundice and sickness, often accompanied by sleeplessness; and it was in these cases that some form of mercury was most useful, not only for removing the general depressing symptoms, but to cure particularly the sleepless condition.

VII.—P. Watson Williams, M.D.,

Physician to Clifton College, and to Out-Patients at the Bristol Royal Infirmary.

Dr. Watson Williams said that the physiological significance of variations in arterial tension was fully recognised, a general or local increase or decrease in arterial tension serving a useful purpose in the ever-varying environment or physiological state of the individual. Might not the increased arterial tension in certain pathological conditions—for instance, in acute and chronic nephritis—be a physiological effort to meet the exigencies of the particular pathological defect, which Sir William Broadbent had aptly termed "the underlying vice of nutrition?" the increased tension being a favourable condition to be encouraged, just as the compensatory hypertrophy of the heart in many valvular defects was regarded, not as a pathological hypertrophy to be combated, but as a physiological hypertrophy to be encouraged. Thus, while removing as far as possible, by diet and eliminants, the necessity for increased tension, it was desirable to endeavour to avoid directly reducing the arterial tension, except for special complicating factors. In the same way, many cases of angina vaso-motoria must be regarded as failure on the part of the neuro-vascular system to maintain arterial tension at a relatively high pitch. Often enough the tendency to anginal attacks might be relieved by the administration of digitalis, cactus, strychnine, or other drugs which directly or indirectly tended to increase or maintain arterial tension, without robbing patients of the physiological advantages of their high arterial tension by nitrites, etc. Of course, in a large number of patients such ideal conditions could not be attained, and failure must be covered by reducing arterial tension, just as too often it was necessary to resort to so-called antispasmodics in treating asthmatics. He ventured to say that often hardly sufficient reluctance was shown before interfering with increased arterial tension.

VIII.—J. Haddon, M.A., M.D.,

Denholm.

Dr. Haddon said when working with the sphygmograph he found that when pregnancy occurred arterial tension increased, and by watching women he believed that he could diagnose pregnancy, and perhaps menstruation, by the sphygmograph. He had come to the conclusion that high tension was an effect, not a cause, and that to treat arterial tension was to grope in the dark.

IX.—A. Haig, M.A., M.D.Oxon.,

Physician, Metropolitan Hospital and Royal Hospital for Women and Children.

Dr. Haig said that he had previously suggested that high blood pressure was due to excess of uric acid in the blood. It could in many cases be shown to be contemporaneous with excess of this substance in the urine and blood. He had also suggested that this high blood pressure was the result of the mechanical blocking of the capillaries by colloid uric acid, acting very much as the similar colloid urate of silver in blocking the interstices of an asbestos filter, and rendering filtration difficult. An excess of uric acid was certain to be met in the blood in Bright's disease, and also as its result, high blood pressure. In migraine (the uric acid headache), which he had suggested was but an early stage of Bright's disease, similar conditions were met with. "Milk diet" was very generally recognised as the best means of lowering high blood pressure. If a man had a headache, or an attack of giddiness, a threatening of paralysis, or a hæmorrhage in his retina, accompanied by undue vascular tension, no matter what drugs were given, he would certainly be put on a milk diet. Exactly the same held for migraine and Bright's disease. Milk diet lowered the blood pressure, and if it were still possible, cured the disease. It did not act owing to any positive characters of its own, but simply because it excluded the poisons contained in animal flesh. The blood then gradually became clear of uric acid, blood pressure fell, and the disorders due to impure blood, defective capillary circulation, and high blood pressure ceased. Let the radial artery be measured, the uric acid in blood[1] and urine estimated, and the blood decimal recorded month by month in persons suffering from high blood pressure, headache and depression, with or without Bright's disease, and an epitome of the effects of uric acid on the body and its nutrition, the blood and its circulation would be obtained; and with its gradual removal the equally gradual removal of its effects would be witnessed. The uric acid in the urine might be reduced from 20 grs. a day down to 12 or 13 grs. With this the blood decimal would rise some 15 to 20 per cent., and the radial artery might be reduced almost to one-half of its original diameter. Dr. Haig did not mean to say that all high blood pressure was due to uric acid, but that in migraine and Bright's disease high blood pressure was due to uric acid. It is found in constant association with excess of this substance in the blood and urine, and it could be relieved or cured by the diet, which would shut out this poison.

X.—D. Drummond, M.A., M.D.,

Lecturer on Pathology, University of Durham, and Senior Physician, Royal Infirmary, Newcastle-on-Tyne.

Dr. Drummond referred to the low pulse tension of old people who enjoyed good health, and thought that it should be made very clear that these people were not necessarily suffering from weak heart, an opinion they often received. This was to be deprecated as inflicting a lasting injury upon them. He called attention to the pseudo-high tension of diabetes, and invited Sir William Broadbent to give his views upon it. He could not agree with Sir William's opinion that Cheyne-Stokes respiration was always associated with high tension.

Sir William Broadbent's Reply.

Sir W. Broadbent said: There is not time for the discussion of all the interesting points raised. Perhaps the most important to be taken up is the idea which seems to have been suggested by my paper that high tension as such is always an evil. Dr. Handford has pointed out that in the early stages of acute renal disease it may be beneficial. In this I quite

[1] British Medical Journal, September 3rd, 1898, p. 610.

agree with him, and I have gone so far as to say that the early development of high tension in renal disease is a favourable prognostic indication. The worst cases are those in which the vascular pressure remains low. I might almost say that in the first instance high arterial tension is always defensive. For the most part what we try to remove is not the tension but its cause, unless by its degree and persistence it has become a source of danger to the heart and vessels. Dr. Haig asks why I do not definitely assign uric acid as the cause of high tension. From the first I have named uric acid as a cause, but I am not yet convinced that it is the sole cause. Dr. Haddon speaks of diagnosing pregnancy by the sphymograph. He may be the first to have done this, but from the very earliest days pregnancy has been known to give rise to high arterial tension. Professor Bradbury tells us that he has found erythrol tetranitrate to act as a diuretic. This I think is explained by the greater flow of blood through the kidneys, which will follow the relief to the heart by the general diminution of resistance in the peripheral circulation. I cannot deny myself the pleasure of reading a note passed down to me by my old pupil and friend, Dr. Horace Sworder, of Luton. He reminds me of a patient, aged 35, whom he sent to me on account of frequent and severe epileptic attacks many years ago. He was found to have extremely high arterial tension: he ate three 'meat meals a day, and took very little exercise. His mode of life was changed, and eliminants were given, and from that time he had no more fits. Ten years later, however, he had severe hæmoptysis—the bronchial hæmorrhage sometimes met with in high arterial tension. Finally, at the age of 50, the patient died from cerebral hæmorrhage.

THE ALTERNATING ADMINISTRATION OF DRUGS BY ROTATION AS A PRACTICAL PRINCIPLE OF TREATMENT.

By WILLIAM EWART, M.D., F.R.C.P.,
Physician to and Joint Lecturer in Medicine at St. George's Hospital and Physician to the Belgrave Hospital for Children.

[ABSTRACT.]

THE outline of this very large practical subject can be put in a few words. There is no novelty in the occasional interruptions for rest in the monotony of prolonged courses of treatment. Indeed, with some drugs, a periodical rest has been recognised as an advantage, with others as a necessity. Nevertheless, at least in this country, the prevalent method of administration is one in which the gradual development of a toleration for the remedy which is continuously administered for prolonged periods is not always taken into practical account.

1. Some drugs—and these are chiefly the stimulants and the sedatives—lose more and more of their effect the longer they are continued.

2. Other drugs, being slowly eliminated or distinctly cumulative, acquire through prolonged administration an increased activity, and in some instances a modified, and sometimes a dangerous, action.

3. The most active dose, in the case of any stimulant or sedative, and in that of many tonics, is (putting aside summation of doses or of their effects) the first dose.

These considerations have led the writer more and more to the adoption of a principle which may be regarded as novel, less in itself than in its practical application, that of a systematic "rotation of drugs," which, not unlike the farmer's "rotation of crops," rests as well as fertilises.

Without advocating an excessive polypharmacy, he believes that patients may often be placed with advantage under the joint influence of several drugs; but he also believes that they would derive most benefit from a frequent renewal (thanks to intervening breaks) of the first impression which had been produced by each drug. An alternating rotation—daily, tertian, or of any other period of the drugs to be administered would work in that direction, not with one drug only, but more or less in the case of each of the remedies included in the series.

The same practical rules and management could not be consistently applied to all groups of remedies, nor even to the several members of each group; and this remark unfolds at once the wide scope of this subject; but the present being merely a preliminary communication, its details cannot be gone into. It will suffice to call attention to the chief clinical point interesting every practitioner, namely, to the opening which the adoption of this method would supply for almost unlimited ingenuity and judgment in varying the combination of drugs and the order and periodicity of their rotation, to suit the individual cases.

THE IMPORTANCE OF INCREASING THE RESPIRATORY CAPACITY IN THE ANÆMIAS OF YOUNG ADULTS.

By W. F. SOMERVILLE, M.D., F.F.P.S.Glasg.,
Glasgow.

BREATHLESSNESS, palpitation, neuralgias, disorders of menstruation, muscular weakness, and a ready sense of fatigue, may be mentioned as a few of the symptoms which are frequent amongst young adults as results of anæmia. In all such cases it is no doubt the prime object of the practitioner to restore the prejudiced blood function, and the essential pathological condition, namely, a deficiency of hæmoglobin, naturally leads to the administration of iron with or without the addition of arsenic.

It is, however, to be remembered that increase of hæmoglobin is only a means to an end; for hæmoglobin is mainly of value in so far as it improves the function of the blood in securing the respiratory activities of the tissues. Hence, mere addition of the sum of hæmoglobin in the body is not by itself sufficient, unless at the same time there be given to the increased hæmoglobin abundant opportunities for union with the oxygen which has to be distributed through the body by its agency. It is important to emphasise this view, because it is one readily overlooked largely in consequence of the direct connection between the usual therapeutic practice and the abnormal state of the blood. Moreover, it is this oversight which explains the not infrequent complete or partial failure which attends the administration of iron, even though this is pursued for long periods.

For some years I have been convinced that the view here stated is not only accurate, but is also of great practical importance. It is only by the complete restoration of blood function in anæmia that a cure of the patient is attained and the accompanying state of chronic ill-health removed. The administration of iron and the consequent increase of blood colouring matter is only one, though a very important, step in this direction. It is therefore wisely associated with general directions in favour of fresh air, outdoor exercise, careful attention to diet, etc. But what I now wish to state is that these directions ought to be combined with education of the respiratory mechanism. It is very frequent indeed to find that a patient has for some time been engaged in following the usual line of treatment with but partial relief, and also to discover that the cause of this failure is imperfect discharge and performance of thoracic and abdominal respiration. Irregular and limited action of the respiratory muscles means necessarily incomplete expansion of the chest, a scanty supply of air to the lungs, and consequent imperfect aëration of the blood and tissues. Hence, though the hæmoglobin may have been increased by the administration of iron, there is no corresponding addition of the necessary oxygen, and the tissues of the patient fail therefore to reap the expected benefit.

The plan of improvement is obvious. It is to educate the individual to use rightly the respiratory muscles, and such education is much more frequently required than is generally recognised. Further, such a process necessarily means improvement in the strength and tone of these muscles in accordance with well recognised physiological rule. The failure to fully employ the respiratory muscles is easily detected if rightly sought for. The spirometer indicates scantiness in the volume of the air expired. The chest expansion as measured by the tape is defective, and there is a want of correspondence in extent between the elevation of the ribs and the descent of the diaphragm. It is specially important to observe this latter defect and to take steps to remedy it.

The cultivation of respiratory efficiency should be perseveringly pursued by a definite method, having for its object full and complete elevation of the ribs with accompanying descent of the diaphragm. This implies a proper carriage of body, slow and ordered respiratory exercises and the use of the nostrils as a natural avenue to the respiratory tract. It is surprising to note the great increase in the extent of thoracic expansion which can be attained by measures directed to these ends. In the course of a few weeks one frequently finds that the spirometer indicates an increase of 50 per cent. to 100 per cent. There is permanent increase of the chest circumference, as well as of the range of thoracic expansion. What all this means is sufficiently obvious, and the value of such a line of treatment in cases of anæmia is explained on physiological grounds, no less clearly than it is justified by experience. Subordinate, but by no means unimportant effects which follow the cultivation of respiratory efficiency by muscular exercises are the improved carriage of the patient, increase of appetite and the relief of constipation, the last so frequently a troublesome and injurious symptom in anæmic patients.

ETHER PNEUMONIA.

By David Drummond, M.A., M.D., D.C.L.,
Senior Physician to the Royal Infirmary, Newcastle-upon-Tyne.

It has long been known that the administration of ether is attended by more or less risk from its action upon the bronchial mucous membrane; and surgeons have consequently exercised care in selecting suitable cases so as to avoid the danger as far as possible. My object in bringing forward the subject is to draw attention to the nature of the pulmonary mischief that arises from ether, which has not apparently received as much notice as it deserves; for, as far as I know, our textbooks contain neither a pathological nor a clinical description of the disease.

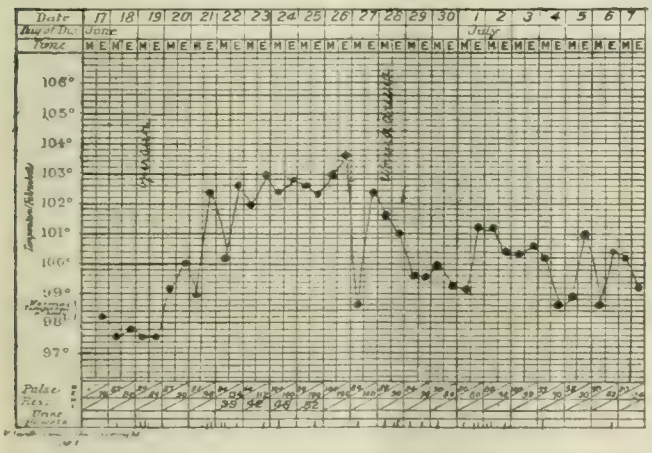


Chart 1.—Mrs. I. M., aged 36; fibroid of uterus; removal of adherent ovarian cysts on both sides.

The subject was brought under my notice some time ago by my colleague, Mr. Rutherford Morison, who has kindly allowed me to examine a number of cases that occurred in his practice. These cases were chiefly abdominal operations, and this is a point of very considerable importance. I am not able to offer a statistical statement as to the frequency of pneumonic complications in cases of ether administration, but propose simply to make a few observations upon the physical signs significant of the condition and to record the result of two necropsies with microscopical examination of the lungs.

That the subject is of importance is made abundantly clear by the fact that I have two *post-mortem* examinations to record, and I am of opinion that if the lesion were more generally recognised a number of deaths, now ascribed to sepsis after operation, might more correctly be laid to the charge of ether.

An examination of the temperature charts shows that the fever does not run any regular course. In seven out of eight cases the temperature rose within twenty-four hours after the operation to 101° or higher. In one the elevation did not occur until the morning of the fourth day, and this proved a very slight attack, as the temperature fell to normal on the fourth day, and did not rise again. In one of the fatal cases death occurred on the tenth day, and the temperature rose to 104° on the sixth day, where it remained nearly stationary until the ninth, when it rose to 105°, and to 107° on the day of death. In the other death occurred on the fifth day, and the temperature was high from the beginning. The following clinical note refers to the first of these fatal cases:

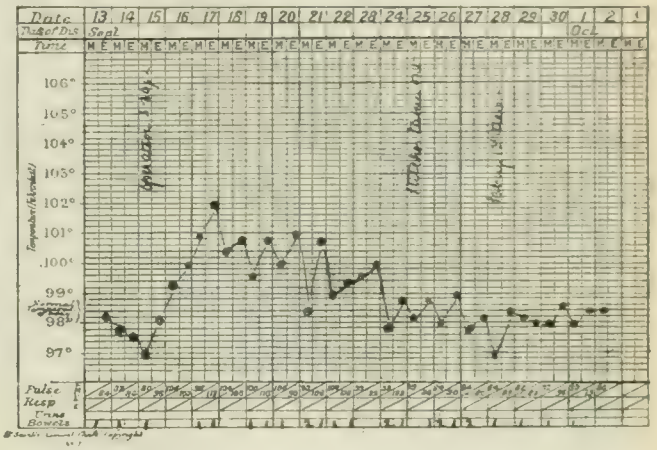


Chart 2.—Mrs. A. S., aged 43; dislocated liver; abdominal section.

Mr. T., aged 45, had his left kidney explored for symptoms of calculus, and the operation lasted an hour; a considerable quantity of ether was used by means of an Ormsby inhaler. Cough was troublesome from the first, and the patient experienced great difficulty in expectorating. On the evening of the day following the operation the temperature rose to 102°, and on the morning of the third day dulness on percussion was detected at the right base. In this area the breath sounds were feeble, and inspiration was attended by insuffled crepitations. The dulness gradually increased, and on the day before his death it was as high as the fourth rib in front. The stethoscopic signs varied from day to day; at times the breath sounds were indistinct, or again, tubular breathing could be heard in patches, whilst coarse *râles* were not infrequent. The vocal fremitus was generally lessened, and, as a rule, there was a decided diminution in vocal resonance. But little expectoration was expelled, and what was obtained was muco-purulent. The pulse was fast and small from the beginning, varying from 110 to 140, and showed a tendency to rise towards the end. The breathing was rapid, and the patient's general condition that of a case of asthenic croupous pneumonia. From the third day he became more or less somnolent, and at times could only be roused with difficulty.

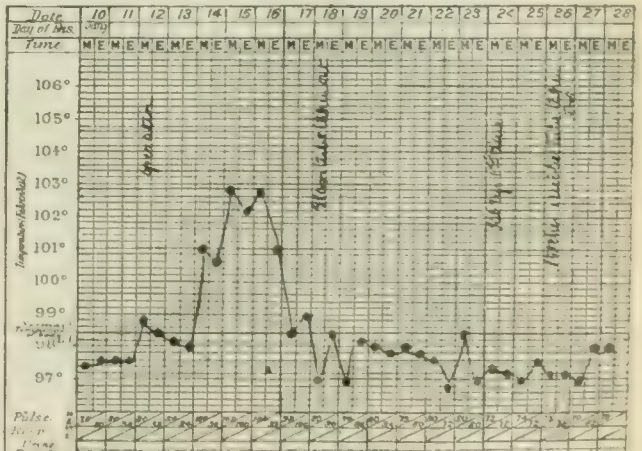


Chart 3.—Mr. A. B., aged 42; cirrhosis of liver; epiplorrhaphy.

A limited *post-mortem* examination was made. The wound was healed. The left kidney bore but slight evidence of the operation in the shape of

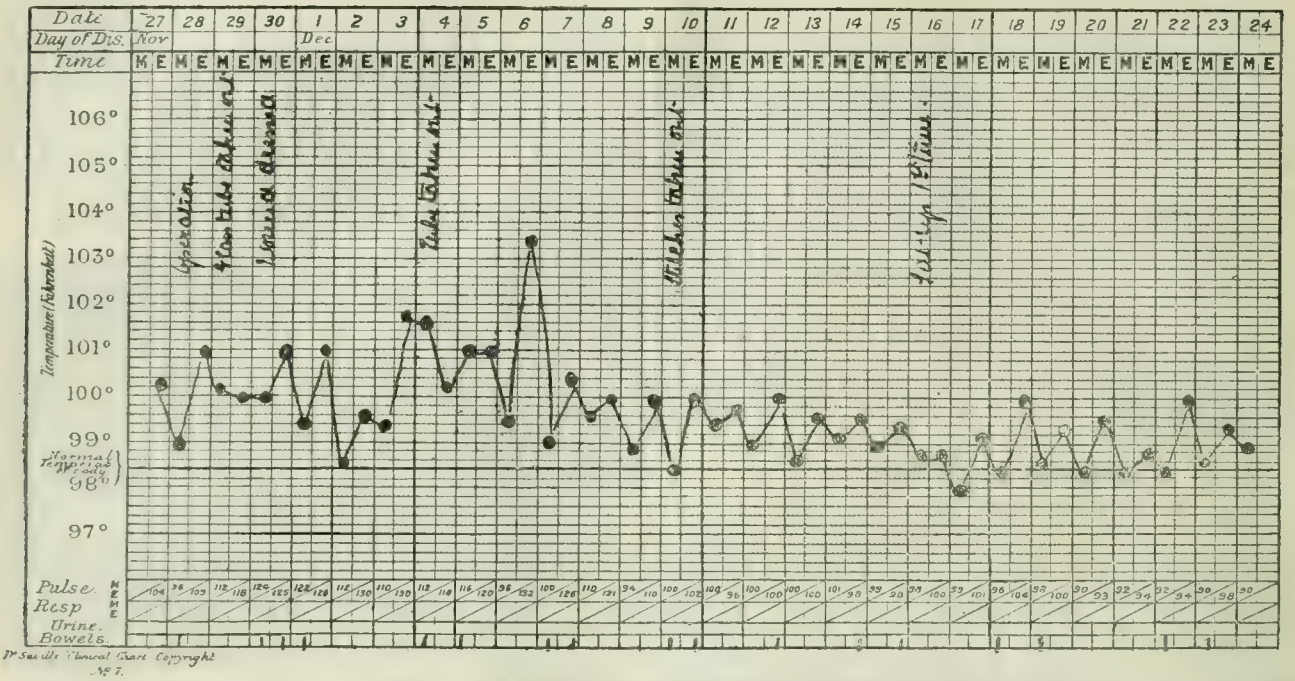


Chart 4.—Mrs. R., aged 34; ectopic gestation; laparotomy.

some blood clot beneath the capsule; the mucous membrane of the pelvis was inflamed (pyelitis). The right lung was in a state of intense engorgement with œdema. Throughout the lower lobe were scattered red patches of semi-consolidated tissue resembling splenification. The tubes were filled with frothy serum and muco-pus. The mucous membrane of the bronchial tubes was swollen and deeply injected. At the apex an old tuberculous nodule was found, composed of putty-like matter. The upper and middle lobes were markedly emphysematous.

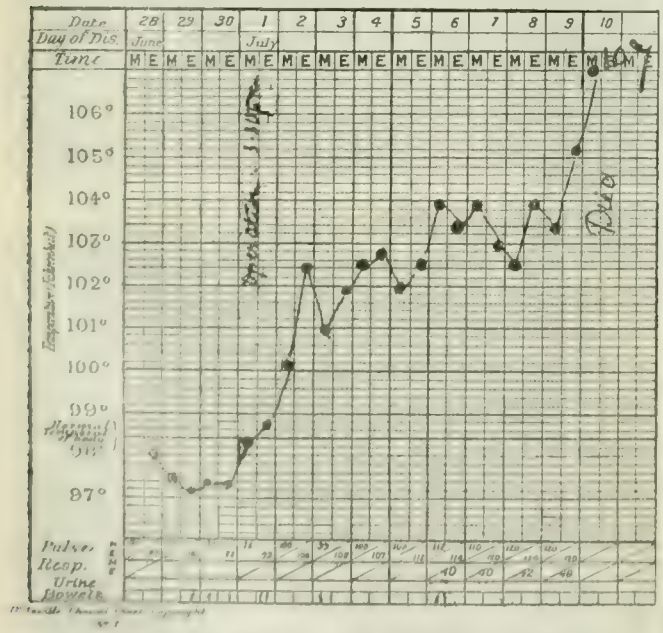


Chart 5.—Mr. T., aged 45; pyelitis; exploration of kidney.

The second fatal case was that of J. L., aged 50, who was brought into the infirmary for severe crush of the foot. Amputation was performed, and he was under the influence of ether for an hour. The temperature rose next morning to 101°, and to 103° on the third day, and later to 104°. He died on the fifth day. From the first there was obvious embarrassment of breathing, frequent cough, and copious muco-purulent expectoration, which was expelled with great difficulty. The rapid breathing was attended by loud wheezing rhonchi, and diffuse coarse *râles* were audible all over the back of both lungs. A patch of dulness was found in the right interscapular region, where, in addition to *râles*, there was tubular breathing.

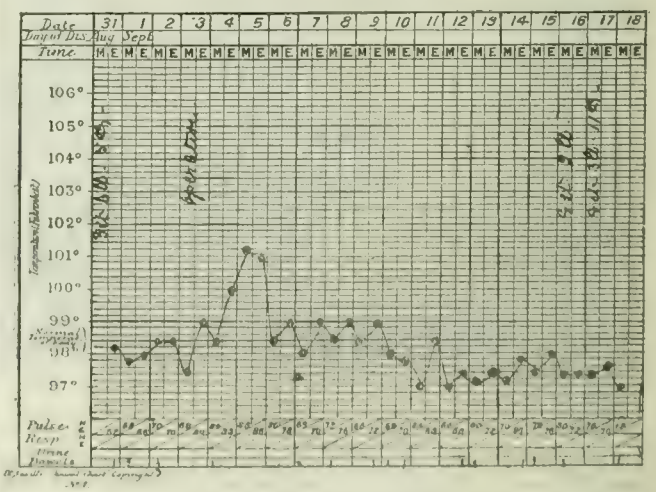


Chart 6.—Mr. S., aged 56; stricture of pylorus; pyloroplasty.

At the *post-mortem* examination old adhesions of the right pleura were found, and some recent lymph over both lungs. The lower part of the right upper lobe showed patches of consolidation, with œdema of the intervening lung substance. The lower and middle lobes were deeply engorged, and also contained a few consolidated lobules. There were some old tuberculous scars at the right apex. The bronchi were red, and the smaller tubes were full of thick creamy muco-pus. In the left lung a few patches of consolidation were found, with the appearance of general bronchitis.

Various parts of the lungs from both these cases were examined microscopically. The exudation in the tubes was found to consist of pus cells, large granular corpuscles, and ciliated columnar epithelium, which was present in great abundance. The consolidated lobules showed the appearances typical of catarrhal pneumonia, the alveoli being filled with desquamated epithelial cells, and in both cases they contained a

considerable number of red blood cells. In the first case this was marked to an extraordinary degree, and here and there little else than red cells and material that resembled broken-up red blood corpuscles was to be seen. The fine tubes were uniformly blocked with pus and catarrhal cells, and the large tubes contained vast numbers of desquamated columnar epithelium. The condition in both cases was that of acute catarrhal or lobular pneumonia, though red-blood cells entered into the alveolar contents in an unusual degree.

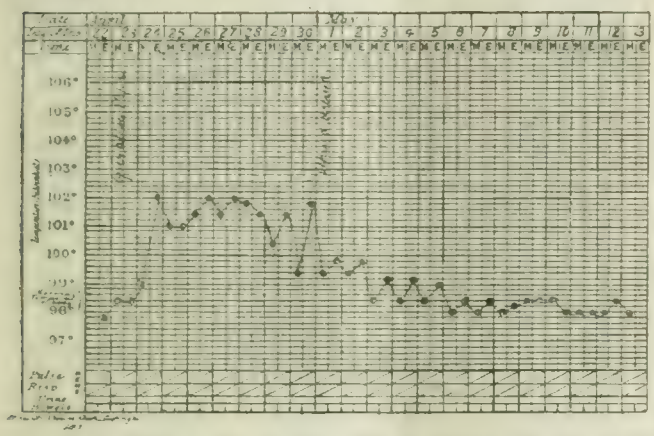


Chart 7.—Miss W., aged 25; cystic ovarian tumour of both sides; laparotomy.

The remaining 6 cases recovered after a pneumonic illness attended by fever which varied from three to eighteen days. In 2 the febrile symptoms continued for nine days, in 1 for four, and in 1 for twelve. In all abdominal operations had been performed: 2 double ovariotomy, 1 pyloroplasty, 1 laparotomy for ectopic gestation, 1 epiplorrhaphy in case of cirrhosis of the liver, and 1 an exploratory operation in case of dislocated liver. In all the physical signs were those of bronchitis with varying degrees of consolidation. The expectoration was invariably muco-purulent, and in some instances was exceedingly copious, whilst the patients that made the most successful attempts at coughing did best.

With reference to the question of causation, it has been maintained by Dr. Whitney, in a paper that appeared in the *Boston Medical and Surgical Journal*, under date September 23rd, 1897, that ether pneumonia is a microbic disease, and may be prevented by thoroughly cleansing the mouth, nose and palate of the patient, and the mouthpiece, etc., employed by the anæsthetist. The author, however, in my opinion, weakens his position by stating that "the most careful observations have shown that the disease in the fatal cases differs in no way from the ordinary fibrinous form" (of pneumonia), a view with which I cannot agree. I regret that there was no bacteriological examination made, and therefore I am not in a position to deny the presence of microbes; indeed, I have no doubt they existed in the bronchial discharge and contents of the diseased alveoli; but I venture to maintain that the ether is the most important cause of the mischief, the microbe notwithstanding, and that it is to this factor we must turn our attention when considering the prevention of the disease.

Two other points would seem to play important parts, first a susceptibility on the part of the patient owing to previous pulmonary attacks, and secondly the nature of the wound making it difficult for the patient to cough, for it must be borne in mind that the majority of cases follow abdominal operations.

Dr. J. M. Anders, of Philadelphia, states in a paper read before the recent meeting of the American Medical Association that ether pneumonia occurs once in about 300 cases. This I suspect is understating the case, though as I have said, I have no statistics to offer. The author also lays stress upon the antecedent lung disease as a predisposing factor, and with this opinion I fully agree.

THE TREATMENT OF CONGESTION OF THE LIVER NOT DEPENDENT UPON ORGANIC DISEASE OR ASSOCIATED WITH FEBRILE DISORDERS.

By William Bain, M.D. M.R.C.P.Lond.,
Harrogate.

The nomenclature of congestion of the liver is somewhat perplexing and not sufficiently differentiated. There are two recognised varieties, the active and passive; the latter term being generally applied to that form depending upon heart disease. Under the heading of active congestion is placed what is designated as "liver chill." As this is usually accompanied by a rise of temperature, it is excluded from consideration.

The type I wish to consider is the chronic form of active congestion which is independent of any organic disease, is apyretic, and has existed for a few weeks or months.

The liver, owing to the richness of its double blood supply and its close association with the gastro-intestinal area, is particularly prone to congestion. The degree of physiological hyperæmia of this organ which occurs during digestion depends upon the quantity and quality of the material brought to it by the portal blood, or, as Hunter expresses it, "the degree of congestion of the liver in health is a question mainly of gastro-intestinal chemistry."

Our knowledge regarding the influence of the nervous system upon the activity of the liver is very meagre. It has been shown by Claude Bernard that puncture of the floor of the fourth ventricle produces a transient hyperæmia of the gland with glycosuria. From this it has been assumed that the blood supply to the organ is regulated in some way by the central nervous system. Further, a vaso-constrictor influence has been attributed to the vagi. I found that the stimulation of either vagus with gradually increasing currents from an induction coil had no effect on the secretion of bile. If the vagus produces, as alleged, a constriction of the hepatic vessels, one would expect that stimulation of this nerve would be followed by a diminution in the flow of bile, but no such effect was observed.

An important factor in facilitating the flow of blood through the liver are the movements of respiration, the organ being directly pressed upon by the diaphragm—a fact which is taken into consideration in discussing the treatment.

Etiology.

I will merely enumerate the causes of this affection—alcohol, rich and highly-seasoned foods, sedentary habits, gout, gastric catarrh, constipation, intestinal catarrh, residence in the tropics, and it is sometimes associated with the climacteric.

Symptoms.

The symptoms naturally vary according to the cause. The following are frequently complained of: Lassitude, loss of appetite, nausea, bitter taste in the mouth, a feeling of discomfort, weight, or constriction in the hepatic region and occasionally pain, constipation, pain under the right shoulder, flatulent distension, headache, giddiness, irritability of temper and mental depression. Many of those are due to the gastric catarrh associated with the hepatic disorder. Some patients suffer from insomnia and irritability of the skin. The tongue is furred, complexion is often muddy, and the sclerotics of a dirty white hue. The liver may be appreciably enlarged, and pressure over the organ always elicits tenderness, which may, however, be slight.

The urine is high coloured, concentrated, and deposits lithates. An important point is to distinguish between chronic congestion and cirrhosis of the liver. In cirrhosis Bunge found that the ammonia in the urine was increased to about 2 g. I can corroborate Bunge's statement, and I regard this marked increase in the ammonia as a valuable differential diagnostic sign. Whether the ammonia is slightly increased in congestion of the liver I am not in a position to say, as the wide variations occurring in health render it difficult to arrive at a satisfactory conclusion.

Dilatation of the venous radicals is sometimes observed in

the skin over the hepatic area, a sign which has hitherto been recognised as indicative of organic changes in the organ.

TREATMENT.

There are two modes of treating this derangement, the one at home and the other at a suitable spa. In either case the diet should be carefully supervised, so that the food taken is easily digested, and alcohol should be absolutely forbidden. Liquids should be taken sparingly at meals, but a fair quantity may be allowed between meals, or, better still, at bedtime. Exercise in the open air is decidedly beneficial. That form of exercise which has an exhilarating effect on respiration does the most good, such as walking up inclines, horse riding, bicycling, and rowing. Respiratory exercises are also beneficial.

It is desirable to impress upon the patient the necessity for keeping regular hours and habits, not only while he is under treatment, but afterwards.

It should be remarked that chronic congestion of the liver may be the first step in the development of hepatic cirrhosis, and according to our present knowledge such an undesirable issue can be prevented; therefore we should demand strict compliance with our instructions.

If a patient is treated at home, I should advise a bath varying from 70° to 90° F. every morning, according to individual requirements, and some form of counter-irritation to the hepatic region every alternate night. For the gastric catarrh, alkalies, bismuth, nux vomica, and papain are suitable remedies. For diminishing the hyperæmia of the liver, cholagogues ought to be administered. I think it is advisable to combine one which increases the quantity of the bile with one that augments the bile solids. The combination of podophyllo-resin one-fifth of a grain, euonymin two grains, and calomel one grain is a useful one, the calomel acting as an intestinal disinfectant. Another efficient combination is euonymin and iridin about two grains of each. One of these pills should be taken each night at bedtime, and on the following morning a draught of effervescing Carlsbad salts. The dosage should be sufficient to act adequately on the bowels. If the treatment here indicated be persisted in for about three weeks it will be attended with encouraging results.

There are patients who do not carry out their medical adviser's instructions, and these gravitate to the various health resorts. One of the great advantages possessed by the spa treatment is the complete relaxation on the part of the patient from the ordinary cares of life while he is taking the waters and baths. A spa should be selected whose waters are known to have a cholagogue effect.

The plan usually adopted at Harrogate is to give a large dose of the old sulphur well before breakfast. This water is a powerful cholagogue, and it also produces a copious evacuation of the bowels. It is taken for ten or more days, according to the severity of the case. In addition the patient is ordered a full-length sulphur bath at a temperature of 98° F. for fifteen minutes, to be followed by a liver pack for about ten minutes. These measures produce a determination of blood to the surface, thereby ameliorating the congested state of the liver. Precautions against cold should be taken after these baths, unless, as in mild cases the stimulating needle douche is also prescribed. In certain cases the Kissingen water, which is also a cholagogue, may with advantage be substituted for the strong sulphur, and in most cases it is wise to give the Kissingen water after a course of the old sulphur. It is sometimes desirable to use cholagogues such as podophyllo-resin and euonymin in conjunction with the waters.

The Scotch or alternating douche to the hepatic area is recommended by some practitioners. I have not tried it.

Deep massage of the liver is an agent often made use of, but care must be exercised in performing it, otherwise harm may arise.

This is simply a brief outline of the methods employed at Harrogate. It is almost unnecessary to say that it would be unscientific and opposed to rational therapeutics to treat alike all cases of congestion of the liver. The results obtained by the judicious use of the remedies suggested have been most satisfactory.

THE DIAGNOSIS OF EARLY THYROIDAL FIBROSIS.

By GEORGE R. MURRAY, M.A., M.D.Camb., F.R.C.P.,
Heath Professor of Comparative Pathology in the University of Durham
Physician to the Royal Infirmary, Newcastle-upon-Tyne.

THE object of this short communication is to draw more attention to a class of cases of early disease with partial disablement of the thyroid gland which are more common than is generally supposed. The symptoms in these cases are not as yet sufficiently well recognised, and are apt, therefore, either to be passed over or attributed to some other cause than the right one.

We are all perfectly familiar with the symptoms of advanced or even total thyroidal insufficiency which are seen in typical cases of myxœdema, symptoms which are identical and equally the result of loss of glandular tissue, whether it occurs in association with thyroidal fibrosis or as a result of removal of too much of the gland in the operation of thyroidectomy for goître. Minor degrees of thyroidal insufficiency are less easily recognised, and it is to some examples of this condition that I wish to draw attention. In my own cases the symptoms appear to be the result of a certain amount of atrophy of the glandular tissue of the thyroid with fibrosis, as this coincides with modern views as to the secondary nature of fibrosis to atrophy. It is, of course, possible that the fibrosis is primary, leading to atrophy of the secreting epithelium as a secondary result; this question cannot, however, be discussed in this paper.

The following four cases are given as examples out of a larger number of similar cases which have come under my observation in both private and hospital practice.

CASE I.—J. D., aged 44, married, boot repairer. He had measles in childhood, and influenza three years ago; otherwise the health has been good until six or seven weeks ago, when he began to feel weak and to suffer from dyspnœa on exertion, loss of sleep, and fatigue at his work. About a fortnight after this his wife noticed that the cheeks had become swollen and flushed in the centre. The skin became yellow in colour, so that his friends thought he was suffering from jaundice. For the last month (April) he has often felt cold, and has been obliged to sit close to the fire to keep warm. His mother is said to have died at 71 from "jaundice," but she had been almost entirely confined to her bed for five years with yellowness of the skin, swelling of the face, and sensitiveness to cold, so that possibly she suffered from myxœdema. It is now only six weeks since the commencement of the illness; the face looks rather full as the cheeks are swollen, and there is a patch of dilated venules in the centre of each. The eyebrows are scanty, and are slightly elevated while there is a slight but distinct swelling just above the upper eyelid. There is no swelling beneath the lower eyelids, though his wife says she has noticed some swelling in this situation at times. The nose and lips are slightly swollen. The skin of the face is yellowish-brown, and the exposed portions of the orbital conjunctiva are lemon-yellow in colour. On raising the upper or depressing the lower eyelids, this yellow colour is seen to be due to thin triangular layers of yellow subconjunctival fat corresponding in size and shape to the exposed portions of the orbital conjunctiva on each side of the cornea but not extending beyond this. The tongue is not enlarged, but there is a small amount of swelling beneath the chin. Fig. 1 shows the appearance of the face, but a great deal is lost by the absence of the somewhat striking colouring just described. The skin of the neck is yellowish-brown; on the trunk it is yellowish in colour in places as at the folds of the axillæ. Perspiration is said to be diminished, but the skin feels warm and moist, and the temperature is 98.8° F. The mucous membranes are pale, and there is a slight amount of œdema just above the ankles. The thyroid gland can just be felt in the neck but it appears to be somewhat diminished in size. There are no hallucinations or other mental symptoms. He was treated for two months and a half with thyroid extract; the swelling, the yellowness of the skin, and the layers of subconjunctival fat all diminished. He became stronger and more active, and was able to resume his work. After this he ceased to take the extract, and was not seen for three months, when he reported himself as feeling as well as he ever did in his life. After this he was not seen again for seven months and a half. When he came again it was found the symptoms had gradually returned, as he had taken no thyroid extract for more than ten months. When the thyroid treatment was resumed, with the addition of iron as he was very anæmic, the symptoms again subsided. In this case the long interval of ten months without treatment which elapsed before the symptoms were as pronounced as they had been a year previously is of interest, and indicates the limited extent of the thyroidal fibrosis. The diagnosis was confirmed by the beneficial effect of the treatment.

CASE II.—A. P., aged 50. She has had ten children and two miscarriages, and passed the menopause nine years ago. About eight months ago she lifted a heavy weight, after which she had a series of fainting attacks followed by copious hæmatemesis, her own estimate of the amount of blood vomited in the course of twenty-six hours being "five quarts." She complains of feeling cold and shivery, and is subject to both auditory and visual hallucinations. She sees people whom she knows are not really present, and cats or rats running across the floor. She also hears the voices of the people she sees, and occasionally is troubled by a humming noise in the head. The skin of the face is yellowish in colour, and there is a well marked pink flush in the centre of each cheek. The eyebrows are constantly elevated, and the forehead is deeply wrinkled in a trans-

verse direction. There is a slight amount of swelling of the lower eyelids, cheeks, lips, and chin. The nose is unaltered, but the tongue is slightly increased in size. The hair is uniformly grey, fine in texture, but it does not come out as much as it did formerly. The hands look rather broad, and they are slightly swollen at the back. The front of the trachea can be distinctly felt in the neck, but the isthmus of the thyroid gland cannot be made out.



Fig. 1.

Case III.—Mrs. S., aged 43 (Fig. 2) brought her daughter to the hospital for advice, but made no complaint of ill-health herself. The following facts were obtained by an inquiry which was suggested by her appearance. She has lived in Newcastle for the last seventeen years. Lately her memory has become rather defective, and she is more sensitive to cold than she used to be. At times she sees stars of various colours and hears sounds as if bells were ringing. The skin of the face is yellowish-brown in colour, as if she had been living out of doors in the country exposed to plenty of sunshine and fresh air, and there is a central pink flush in each cheek. The forehead is slightly wrinkled in a transverse direction, and both upper and lower eyelids are somewhat swollen, as are also the cheeks and chin. There is no enlargement of either nose, lips, or tongue. Scarcely any of the teeth are left. The hair is rather fine in texture, and is coming out. The hands look rather broad, and the skin on the backs of them is wrinkled. The skin on the knees is rather dry and rough. The isthmus of the thyroid gland can be felt in front of the trachea, but the gland does not appear to be diminished in size.

Case IV.—Mrs. W. 53, widow (Fig. 3). For the last ten years the skin of the arms and legs has been dry, and the patient has often noticed that when she removed her stockings at night a quantity of fine white powder fell from them. For the last eight or nine years she has noticed marked wrinkling of the skin of the forehead with some swelling beneath the eyelids and also of the arms and legs. She has, however, always perspired freely even after slight exertion, especially over the lower part of the back, in the lumbar region. Of late there has been some loss of hair. About three months ago she was chilled by sitting in a carriage after perspiring freely, and since that time the back and arms have always felt cold in spite of warm clothing, and the red colour in the cheeks has become less marked. When out walking she has sometimes had the sensation as if someone was passing her when no one was there. Two months ago she had a more complicated hallucination of a man kicking a woman downstairs and catching her before she reached the foot of the stairs, and throwing her from him again, both persons being unknown to her.

The face is rather broad and heavy in appearance as there is some swelling of the subcutaneous tissues causing a slight thickening of the nose, lips and chin. The skin of the forehead is transversely wrinkled above each eyebrow, but the wrinkles on each side are not continuous as they are interrupted in the middle line by two vertical wrinkles running up from the root of the nose. The skin beneath the lower eyelids is also much wrinkled. The skin of the face is yellowish-brown in colour with a central flush in each cheek. The tongue is slightly enlarged. The teeth are rather brittle, but otherwise in fairly good condition. The temperature is normal. In the front of the neck the isthmus and two lobes of the thyroid gland can be distinctly felt, as the gland is larger and harder than normal. The skin covering the hands, knees and feet is thickened and dry while on the trunk it is moist. The hair is rather fine and wavy. She complains of occasional attacks of pain in the cardiac region. The cardiac impulse is diffuse, the apex beat being in the sixth left intercostal space midway between the nipple-line and the anterior axillary line. At the apex both sounds of the heart are audible, and there is a soft blowing systolic mitral murmur. The pulse is soft and compressible, and the frequency varies from 80 to 104. The urine is normal.

This case is of interest on account of the duration of some of the symptoms for ten years without further advance of the disease. This, I think, can only be explained by assuming that the thyroidal fibrosis was arrested in an early stage, and that recently there has been a further advance in the local disease of the thyroid indicated by the addition of fresh symptoms.



Fig. 2.

These four cases are good illustrations of the symptoms which occur in the earlier stages of thyroidal fibrosis. In the first place we find that the appearance of the patient may sometimes suggest the nature of the disease, even before any actual complaint of ill-health is made. The most striking changes in the appearance of these early cases may be due to an alteration in the complexion of the skin rather than in the expression of the face. Thus the yellowness of the skin of the face is often a striking feature, and accompanied as it generally is by the central pink flush in the cheeks, it imparts a false appearance of good health, as if the patient had spent much time in the open air in the country. When this appearance is seen in a patient who has not been thus exposed, it should always lead to further inquiries being made for other symptoms of thyroidal insufficiency. The presence of yellow subconjunctival fat I believe to be rare, though it may be mentioned in passing that I have seen all the fat in the body of a monkey, which died after thyroidectomy, of this same golden yellow colour.

In these cases the subcutaneous swelling is, as a rule, only slight. The cheeks may appear rather full and the chin be rounded, changes which may readily be attributed to the

presence of subcutaneous fat. Swelling of the subcutaneous tissues of the eyelids may be slight or absent altogether, while there may be no visible swelling of the nose, lips, or tongue, although elevation of the eyebrows with transverse wrinkling of the forehead may be present early. Consequently the change in the expression of the face and hands is not nearly so marked as in the advanced stages of the disease. The skin may be rather drier than usual, and there are frequently dry scaly patches over the knees and elbows, but in some cases at this stage the skin is still soft and moist, and at times there may be free perspiration. Some hair may have been lost, but often it is not more than might be expected considering the age of the patient.



Fig. 3.

The subjective nervous symptoms are often striking. Complaint is made of lassitude, and fatigue is somewhat easily induced. Both visual and auditory hallucinations are not uncommon. The former take the form of ill-defined objects, sometimes thought to resemble mice or rats rapidly crossing the floor, or rats and cats are distinctly seen running across the room, while brightly coloured stars are also sometimes seen. Noises, such as bells ringing or voices, are heard. It is an interesting and suggestive fact that these hallucinations or subjective sensations resemble the aura of an epileptic fit, and although epilepsy is uncommon in ordinary cases of myxœdema, I have on several occasions witnessed a typical epileptic fit in a monkey after thyroidectomy. Patients show a certain disinclination to speak of these sensations, although they are perfectly aware of their subjective nature. These nervous symptoms occurring in women between 40 and 50 are sometimes mistaken for those which so commonly occur at the menopause, but from which it is of the greatest practical importance to distinguish them.

The temperature in these early cases is generally normal or only occasionally subnormal, consequently the cold is not felt nearly so acutely as in advanced cases. Another interesting point is that in some of these cases the thyroid gland can still be felt, and is not appreciably diminished in size; in one of the cases described it was even enlarged. None of the cases which I have seen have to my knowledge died, so that I have no actual observations of the condition of the thyroid gland to record. One of my objects in bringing forward the subject is to urge the importance of a careful microscopical examination of the gland should the opportunity arise owing to death from some intercurrent disease. There can, however, be little doubt that the partial thyroidal insufficiency in these cases will turn out to be due to fibrosis similar to, but in an earlier stage than, that which is found in typical cases of myxœdema. In the latter the fibrosis may be extreme. In one of two advanced cases which I have examined not a trace of glandular structure could be found in what remained of the thyroid, as it was entirely replaced by fat and fibrous tissue, while in the other, an illustration of which has already been published,[1] only the remains of a few alveoli were visible. It will be of much interest to ascertain how much fibrosis is already present in such early cases as those I have described.

If any doubt exists as to diagnosis in these cases it can easily be solved by a short course of treatment by thyroid extract. If the symptoms are due to thyroidal insufficiency they shortly disappear. For this purpose I find my original liquid thyroid extract, which has been included in the new *Pharmacopœia* of 1898 under the name of liquor thyroidei, the most suitable preparation. It is most conveniently given in daily doses of five to ten minims in water.

REFERENCE.
1 British Medical Journal, 1896.

A PLEA FOR THE MORE GENERAL USE OF TUBERCULIN BY THE PROFESSION.

By McCall Anderson, M.D.,
Professor of Clinical Medicine in the University of Glasgow and Physician to the Glasgow Western Infirmary.

When the remarkable discovery of Koch was given to the world, it was hailed with enthusiasm, alike by the profession and the public, and it was thought by many to be the dawn of that happy day when tuberculous diseases would cease from troubling, and the tubercle bacillus be no more.

But a change has come over the spirit of our dream, for the extravagant laudation which accompanied its introduction has given place to an equally ridiculous depreciation of its merits.

I think I am within the mark when I say that, in this country, there is not one medical man in a hundred who is in the habit of using it. At any rate I know that, amongst the numerous medical officers connected with my own hospital, it is not used by any of them, all the tuberculin cases being treated in my own departments. The reason for this neglect of a valuable remedy is, however, not far to seek. It simply arises from the circumstances that far too much was expected of it, that a large proportion of the cases treated were quite unsuitable—many of them being beyond the hope of cure—and that, in too many instances, the initial dose was too large, or the intervals between the injections too brief. After a pretty wide experience, I see no reason to depart from the opinion which I ventured to express in 1890, that the discovery of tuberculin "marked the commencement of a new era both in diagnosis and therapeutics."

With regard to the preparation of tuberculin, which should be selected, I desire to speak with great reserve, for while I have had much experience in the use of the old, I, of course, have had comparatively little of the new tuberculin.

I am inclined to think, however, that the latter is the safer of the two, because in appropriate doses it produces much less reaction, but for that very reason it is not so reliable as the former as a diagnostic test; and a serious objection to the new tuberculin is its cost, particularly when the higher doses are reached, which precludes its use amongst the poor, except in the case of those who are privileged to be received into hospitals with large pecuniary resources. The initial dose of the old tuberculin is from ½ to 1 c.cm. of 1 in 1,000, that of the new 1 c.cm. of 1 in 5,000; while the final dose of the first is 1 c.cm. of 1 in 10, and of the second 2 c.cm. undiluted. Now, the final full dose of the old tuberculin costs less than a penny, while that of the new is 17s., so that it is mainly a luxury for the rich. It is to be hoped, however, that the time is not far distant when it may be obtained at moderate rates.

The uses of tuberculin are threefold:

1. As a diagnostic test.
2. As a means of discovering additional foci of disease of which there is no evidence whatever at the bedside.
3. As a curative agent.

It is not my intention to go into the question of statistics, which are too often unsatisfactory, and I content myself with a few illustrations of the three propositions just stated.

1. Tuberculin as a Diagnostic Test.

Case I.—A servant girl, aged 19, was admitted into the Western Infirmary on January 15th, 1898.

Family History.—This was excellent, except that one brother, aged 4 years, was said to have died of tuberculous peritonitis.

Patient's History.—Two years before admission a small, dark red, almost livid spot appeared on the outside of the left thigh, which gradually healed in the centre and spread at the edges; the surface was dry and scaly, and there was neither pain nor itching. Shortly afterwards a similar patch appeared below the knee, which ran a like course, but it had healed up before admission, a cicatrix, which was brown at the edges, being left. Nine months before I saw her pustules formed in the centre and at the upper part of the first patch, which ended in ulceration. The ulcerated surface continued to discharge a thick yellow pus, and undermined the skin, which had a livid tint. The diagnosis lay between hereditary syphilis and tuberculous disease. As I was inclined to think that it was probably tuberculous, I determined to test the point with tuberculin.

Treatment with Tuberculin.—The first injection of the old tuberculin was given on January 15th, but there was no decided reaction till the third of 3 c.cm. of 1 in 1,000 on the 20th, which sent up the temperature to 100.4°, while the fourth (same dose) on the 23rd sent it up nearly to 103°, thus leaving no doubt of the tuberculous character of the ulceration. This treatment was therefore continued till the end of February, there having been twenty-one injections in all, the initial injection being 0.001 c.cm. and the largest 0.175 c.cm., the total quantity used being nearly 1 c.cm. of the undiluted tuberculin. The only other treatment was 3 ozs. of cod-liver oil daily, and she was dismissed quite well on March 24th, the whole duration of the treatment being about two months (chart shown.

It is unnecessary to give further proof of the first proposition, because it is universally admitted by those who have had experience in the matter that the value of tuberculin as a diagnostic test is very great, so that even if it had no other quality, it would be well worthy of the attention of every medical practitioner.

2. Tuberculin as a Means of Discovering Additional Foci of Disease of which there is no Clinical Evidence.

In a case of lupus which I treated some time ago with the old tuberculin, and which resulted in recovery, there was no suspicion of any disease beyond that visible on the cheek; and yet the second injection lighted up pain and inflammation in the right elbow-joint, which, however, disappeared in about ten days, while the treatment was being continued.

In a case of phthisis, to which more particular reference will be made presently, the disease was supposed to be limited to the left lung, careful examination of the right by several observers having failed to elicit any trace of abnormality; and yet after the second injection well-marked moist *râles* appeared over an area about the size of a crown piece in the right mammary region, which disappeared altogether in about a week.

It is reasonable to conclude that in these, as in many similar cases which might be quoted, the tuberculin found its way to small deposits of tubercle, excited inflammation, and destroyed them.

3. The Use of Tuberculin as a Curative Agent.

Case II.—R. M., aged 11½ years, consulted me at the latter part of January, 1891, on account of a glandular swelling on the left side of the neck at the posterior border of the sterno-mastoid muscle, of six months' duration.

Condition on Admission.—It was about 1¾ inch in diameter, tender, and distinctly fluctuant on pressure, but the skin over it was not discoloured. Above, and on the same side, was a cicatrix an inch long, consequent upon the removal of an enlarged gland three years previously.

Treatment and Result.—He was treated with the old tuberculin; twelve injections were given—the first of 1 c.cm. of 1 in 1,000 on January 31st, the last, thirty times stronger, on March 2nd. After the first few injections the gland became more prominent and more tense; subsequently it gradually became smaller, flatter, less prominent and tense. On March 6th, there still being evidence of very limited suppuration, a small puncture was made, and a very little pus, mixed with calcareous matter, evacuated. The incision healed at once, leaving only a minute cicatrix.

Case III.—W. S., aged 28, was admitted in the second week of January, 1891.

History.—He had had 5 attacks of hæmoptysis within thirteen months, occurring at intervals of two or three months, and he had 2 fistulæ *in ano* of nine months' duration. An examination of the chest showed entire absence of physical signs, with exception of weakened respiratory murmur at the right base.

Treatment and Result.—He was treated with the old tuberculin, 13 injections were given in all, the first of 2 c.cm. of 1 in 1000 on January 16th, and the last 50 times stronger, on February 17th. Before dismissal on March 13th, the following report was made: He has had no hæmoptysis for six months, and *râles* which appeared along with much pain, at right base, after second injection, gradually disappeared within a fortnight, and there are now no physical signs. Both fistulæ have completely healed. There has been great improvement in the general health with an increase in weight of 9½ lbs.

The following is not an illustration of a cure, but of great improvement, and seems worthy of being reported, especially as it is the last case of phthisis in which I have employed Koch's treatment—the new tuberculin having been used.

Case IV.—J. M., aged 34, stationer, was admitted into the Western Infirmary on December 1st, 1897, on the recommendation of Dr. Service, of Mossend.

Family and Personal History.—The only flaw in the family history is that one brother died of hæmoptysis at the age of 30. He had never been well since an attack of influenza three years before, and two years ago a short hacking cough set in, accompanied by a muco-purulent expectoration, in which he sometimes noticed blood. About this time also he began to lose flesh, and during the last two years had lost 2 stone. For eighteen months he had suffered from night sweats, and, during the last six, had had 2 attacks of hæmoptysis. For a few months, too, his strength had failed very much, and lately he had been almost unfit for work. Shortly before admission he was seen, after a long interval, by Dr. Service, who wrote: "When I saw him I was greatly shocked at his appearance; he had the appearance of a dying man, and came, as he said, that I might tell him the worst, and how long he had to live."

Condition on Admission.—He was found to be pale and emaciated, with no appetite, troubled with night sweats, and with much expectoration, in which tubercle bacilli were found in great abundance by Dr. Ferguson, but there was no fever. There were no physical signs in the right lung. Over the upper lobe of the left lung in front there was moderate flattening and defective movement, decided dulness, marked increase of vocal fremitus, and slighter of vocal resonance, whilst moist *râles* with tubular breathing were heard on deep inspiration. Tubular breathing was also detected in the supraspinous region, and moist *râles* between the scapula and the spine. At the base there was slight dulness and feeble breathing: indeed, there is no part of the lung which is altogether free from signs of disease.

Treatment and Result.—Dr. Service sent him to me with a view of having a course of tuberculin treatment, and although I did not consider the case a very hopeful one, I decided to give him a chance with the new tuberculin, the only other treatment being cod-liver oil—up to 3 ozs. per day. the first injection of $\frac{1}{1000}$ mg. was given on December 12th, 1897, the largest, 2½ mg., on February 26th, and the last of 1 mg. on April 22nd, 1898, the total amount used being about 31 mg. in 47 injections. From the time the treatment was commenced he improved steadily, more particularly as regards his general condition, and was dismissed at his own request on April 28th, when the following report was taken: "The patient feels in good health; he can now read with comfort for hours, whereas formerly his eyes soon got tired with reading; his appetite is completely restored; the night sweats have long disappeared,, his cough and expectoration are almost gone, and he has gained about 1 st. 6 lb. in weight."

After-history.—The last time I saw him was on July 14th, when he visited me at my request. I found that he had not fallen off in any respect, and that he had gained 7 lbs. since dismissal, making a total gain of 2 st., his weight now being 12 st. 3 lbs., which is his normal weight. He also stated that he could now do an ordinary day's work without fatigue. The improvement in the general was more marked than in the local condition. The expectoration showed that bacilli were still present, but in small numbers, and mostly found lying separately. The right lung remained healthy, while the condition of the left was as follows: The flattening defective movement and dulness in front are not nearly so pronounced, and the *râles*, though still present, are scanty, while between the scapula and spine they have entirely disappeared, only puerile breathing being heard. The dulness and feeble breathing at the base are hardly perceptible. In a letter which I received lately from Dr. Service he said: "When I saw him last, at the beginning of this week, he looked better than I have ever known him; he eats and sleeps well, and has hardly any cough. I feel satisfied that, whatever his ultimate fate, he would now have been in his grave had it not been for the treatment which was followed. On my advice he is looking out for a situation abroad.

It will be observed that the tuberculin treatment was not steadily increased, owing partly to a change of assistant during its course, and partly to the stock of tuberculin having temporarily run out. The full dose, too, was not reached, 2½ mg. being the largest injection, instead of the maximum of 20 mg., because the patient felt so well as to desire to return home. The improvement, however, was so marked as to show undoubtedly the beneficial effect of the new tuberculin treatment even in pretty advanced cases.

It is the almost universal experience of those best qualified to judge that, when employed in suitable cases, and with all due precautions, improvement results from the use of tuberculin. It is, however, the experience of many that this improvement is but too often temporary, the morbid condition relapsing sooner or later after the treatment is stopped. The accuracy of these observations cannot be gainsaid, but it appears to me that sufficient weight has not been given to the circumstance that two factors have to be taken into account in dealing with tuberculous disease: (*a*) the tubercle bacillus; and (*b*) the soil favourable to its life and development. It is obvious, then, that in addition to the use of tuberculin, means must be simultaneously taken to change the soil upon which

the micro-organism flourishes by means of good food, pure air, cod-liver oil, and other antistrumous remedies, if we would hope to obtain permanently successful results.

A DISCUSSION ON THE OPEN-AIR OR HYGIENIC TREATMENT OF CONSUMPTION.

I.—T. F. S. CAVERHILL, M.B., F.R.C.P.Edin.,
Medical Officer of Health to the County of Haddington.

THE VALUE OF SANATORIA AND THE NEED FOR THEIR ESTABLISHENT IN GREAT BRITAIN.

HISTORICAL.

THE open-air or sanatorium treatment of phthisis may be defined as a hygienic and dietetic method carried out in pure air under the direct supervision of a physician in specially constructed hospitals or sanatoria.

In phthisis, as in other infectious disorders, it is now generally accepted that the aim of treatment should be to support and increase the patient's strength by all the dietetic and hygienic means at our disposal, including an abundant supply of pure air, as the extension of the disease beyond the point of invasion depends upon the resistive power of the tissues of the lung.

There is nothing novel in the open-air treatment of phthisis: it has been recommended and acted upon since the time of Hippocrates. But its importance for us now is that it has been systematised, and patients living in a sanatorium must yield implicit obedience to all the rules and regulations of the institution. Accumulated experience of nearly forty years has shown that no other method of treatment is comparable with it in every stage of the disease.

Since Dr. Brehmer of Görbersdorf in Silesia first established in 1859 his open-air treatment of phthisis many sanatoria have been erected in Germany and in other countries. In all, uniformly good results have been obtained, although the greatest differences exist in respect to altitude, dampness, cold, rain, and sunshine. The conclusion seems to be inevitable that climate and weather have little to do with the result, and that the one constant factor in all is the purity of the atmosphere.

Experience has further shown that many of the original requirements of the open-air treatment, as laid down by Brehmer, are unnecessary. All that is now insisted on is that the sanatorium should be at a distance from traffic, and that the air should be as free as possible from dust, smoke, and organic impurity. Mountain air is undoubtedly the best, principally on account of the comparative absence of microbic life, but as far as possible, the cure should be carried out, if not near the patient's home, certainly in a climate as similar as possible to that in which he has to live and work.

THE OPEN-AIR TREATMENT IN GERMANY AND GREAT BRITAIN.

At Nordrach in the Baden Black Forest, the summers are hotter and the winters colder than in this country, while patients state that the weather is as changeable as it is in Scotland, and rivals many parts of it in its abundant rainfall. At Falkenstein, the winter much resembles our own with frequent mists and rain. Dr. Felix Blumenfeld published in 1892 his researches on the influence of meteorological conditions on the health of its consumptives. He proved that neither fogs, mist, cold, excessive rainfall, nor changes in the barometric pressure had any appreciable influence. Northerly and easterly winds alone proved to be somewhat unfavourable. Dr. Dettweiler, indeed, thinks the influence of weather exaggerated, and certainly cold rainy weather is quite well borne by the consumptives at Nordrach, who spend five or six hours walking about daily in all weathers.

In the BRITISH MEDICAL JOURNAL of July 23rd, Dr. Philip gives his experiences in the Craigleith Consumptive Sanatorium near this city. In the *Lancet* of March, 1898, Dr. Burton-Fanning gives the history of 24 cases treated in a convalescent home at Cromer. The proportion of cured and arrested cases in these two institutions much resembles what is met with abroad. In Mr. Quarrier's Consumptive Hospital for Women in Renfrewshire, where 10 patients have been under treatment practically in the open air for nearly two months, the increase in weight in all quite equals the amount seen in the most favourable cases in foreign institutions.

With sufficient protection against wind, and other simple precautions, there seems no reason whatever why the open-air system should not be successfully carried out in this country. Wherever the sanatorium is situated it is absolutely necessary to have the constant personal supervision of a physician who will strenuously carry out every detail of the system.

APPLICATION OF THE METHOD.

It is indispensable in the first place that the patient be informed of the nature of his disease. With the improvement in his symptoms, which is usually rapid, he loses his depression, and is soon thoroughly convinced that his only hope of safety lies in the most strict adherence to all its requirements. The physician regulates the supply of nourishment, and sees that it is consumed. He prescribes daily the amount of repose and exercise, and he keeps a close watch on the temperature and circulation. His authority must be unquestioned, and nothing must be done without his permission.

If a patient on admission is much reduced in body with febrile symptoms, he is kept in bed, but with all the windows in his room wide open (or partially open if the weather is stormy); the room is thus flooded with fresh air, winter and summer, by day and night. After the first few days the patient is obliged to eat the prescribed quantity of food, which is usually considerable, even at that early stage.

When his temperature, always taken in the rectum, has been normal for a week, he is allowed to be outside in verandahs or pavilions, and when short walks are not followed by undue elevation of temperature, he gradually increases the distance to eight or nine miles, in which stiff hill climbing is often included. Walking must be slow with frequent rests, and five hours a day are usually passed in this manner. The patient himself takes and marks his temperature on a chart four times daily—on waking after exercise (morning and afternoon), and on going to bed, so that the physician, who usually visits him three times a day, can see at a glance the progress of the case.

In some sanatoria, such as Falkenstein, much methodical hill climbing is not insisted on, and they trust more to mental and bodily rest on lounge chairs, in pavilions, or other sheltered places. The patients in these usually spend from seven to eleven hours daily in the open air, in spite of rain, fog, snow, and a temperature often as low as 12° F. below freezing point.

Much was formerly made of frictions and cold douches in hardening the skin, and increasing resistance to colds and catarrhs, but the use of the latter has been largely given up, and now hot or cold douches are given indifferently for purposes of cleanliness. It is remarkable how quickly the hardening process is brought about, and in a few weeks, sometimes even in a few days, patients can rest and sit about till bedtime with wet boots, stockings, and trousers or skirts. At Nordrach in the Black Forest, 1,300 feet high, clothes and boots are seldom changed, even if damp, after the morning walk. Patients of both sexes sit at meals and lie down for the prescribed periods of rest, and only remove their wet garments on going to bed.

Such a procedure is only possible if the consumption of fat be large and the diet abundant. To withstand the cold and exposure to draughts and stormy weather, and to oppose the enfeeblement and wasting induced by the disease, it is necessary to eat largely, first, of fats, usually butter; secondly, of sweets, farinaceous foods and vegetables; and, thirdly, of nitrogenous foods. The two former must always be taken in full quantity. Repugnance to food is often a psychical condition; it is the function of the physician to overcome this, as well as to stimulate the stomach, which has become weakened by a too limited dietary, both in quantity and variety.

The main features of the treatment, then, are mental and bodily rest, regulated exercise (walking or hill climbing), overfeeding (or what seems to the patient overfeeding), principally with fats, vegetables, and farinaceous foods, and finally abundant fresh air. In a short time the indications of improvement are apparent. These are: (1) loss of night sweats; (2) feeling of well-being; (3) increased appetite and

a gain in weight of from 2 to 5 lbs. a week in the first month; (4) increased ease of respiration, diminution of cough, and of the tendency to catch colds and catarrhs; (5) rapid improvement in the power of walking and hill climbing; (6) often rapid diminution of fever.

Results of Treatment in Private Sanatoria.

Knopf has collected the results of treatment in fifteen private sanatoria in various countries. He found that with 4,500 patients, after a mean duration of three months' treatment, 630 were absolutely cured, 630 were relatively cured—that is, able to work with every appearance of good health, but with some slight physical signs—1,890 were improved, while 1,350 were either not improved or had died. Dr. Brehmer, of Görbersdorf, reported that of over 5,000 cases, 27.8 per cent. in the first stage were cured, and 6.83 of these in the second stage, whilst in addition 31 per cent. in the first stage, and 14.6 per cent. in the second, were nearly cured. By this method, then, every fourth consumptive of the well-to-do class has either been cured completely or has been cured sufficiently to return to work with every appearance of good health.

In order to test the persistence of cure, Dr. Dettweiler sent 99 letters at the end of ten years to those of the 132 completely cured at Falkenstein whose addresses were known; 96 replies were received. Eleven had died from diseases other than tuberculous; 12 had relapses of short duration; 3 were still ill. Of the 72 cases who remained perfectly well over a period of from three to nine years, 4 only required a second visit to Falkenstein. All the others had continued at work since their discharge.

Dr. Wolff found that of the number who had left Görbersdorf Sanatorium as relatively cured in 1876, 59 per cent. remained in apparently thoroughly good health 14 years later. Similar results are seen by the statistics of Von Ruch in America.

Sanatoria for the Poor.

There are two kinds of consumption, said a French writer: that of the rich which is sometimes, that of the poor which is never, cured. In the main that holds good in this country; some cases of cure are seen after a sojourn abroad of from one to three years at some climatic health resort, but of these a very few can live at home, the larger number can only remain well by emigration to some distant colony.

Since 1859 many sanatoria have existed in Germany for the better classes, but it is only since 1892 that these have been erected for the poor and lower middle class consumptives. They are now however being erected in large numbers in Switzerland, France, Russia, Norway, and in the United States. In many of these countries also societies exist for the suppression of tuberculosis and for the establishment of sanatoria for the poor and others unable to take advantage of the more expensive institutions. Within the last five years a crusade against consumption has thus been inaugurated, and very shortly over a hundred sanatoria in Europe and the United States will be available for both rich and poor.

This country, which up till now has been the pioneer of sanitary science, and was the first to found separate hospitals for consumption, has for the moment fallen behind in the race of philanthropy. The erection of sanatoria is imperatively demanded; the evidence in their favour is now conclusive. Yet only a small number of the 250,000 consumptives in the British Islands can possibly be accommodated in them, and it is to preventive measures that we must look for any serious diminution of the disease.

It is unnecessary here to touch on the large question of the general prevention of tuberculosis, but every practising physician must recognise that our local authorities and public health bodies can do much in this direction by providing open-air sanatoria as adjuncts to fever hospitals. Thousands of weak and susceptible convalescents would in this way be prevented annually from drifting into incurable lung disease.

[Dr. Caverhill exhibited three cases of consumption cured in from four to twelve months at Nordrach. They had remained well while working hard for periods of 6 months, 12 months, and 3 years respectively. He also exhibited a photograph of a group of six patients cured at Nordrach, as well as photographs of various German sanatoria, including Hohenhonnef (Rhine), Falkenstein and Ruppertshain (Taunus Mountains), Nordrach (Baden Black Forest).]

II.—William Calwell, M.A., M.D.,

Assistant Physician to the Belfast Royal Hospital; Physician to the Throne Consumptive Hospital.

THE HYGIENIC TREATMENT OF CONSUMPTION INDEPENDENTLY OF SANATORIA.

The treatment of consumption may be divided into three parts: (1) Preventive treatment, (2) treatment of the disease itself, and (3) treatment of symptoms and complications. We are fairly clear as to the preventive treatment, but we do not carry it out to its logical conclusions. We are fairly clear as to the symptomatic treatment, and carry it out well. We are not clear, in practice, as to the specific treatment, and consequently cannot carry it out. It is, I am confident, in the experience of nearly every medical man to find that patients, omitting of course advanced and hopeless cases, improve on changing from the unhygienic life of a town to the hygienic life of the country. One must admit that there are cases which do badly under all circumstances, but the percentages of improvement and of recovery are higher, far higher, under such a change of life than under the administration of any drug, combination of drugs, or indeed of any form of medical treatment. The prevalence of consumption is proportional to overcrowding, dampness of soil, bad food, overwork, exhaustion, alcoholism, and above all to smallness of room and absence of ventilation and sunlight, especially when combined with overcrowding, as it universally is. We notice also that the two animals that suffer most from this affection are free when in the wild state. I refer to man and to the milch or dairy cow; it is when they are herded together in close quarters that they suffer; although there may be a special susceptibility to the bacillus tuberculosis, yet it goes hand-in-hand with a general weakness of constitution, a general loss of power of resistance to microbic disease; and we may legitimately go still further and say that preventive treatment and the remedial treatment is the same for both. Tuberculosis is a disease of the transition period in which we are at present, a transition period from the open-air life of the savage to that ideal hygiene of the future. It is this open-air life of the savage, combined with the hygienic comforts of our own age, and systematised with military precision, that the Continental sanatoria compel the patient to live, and such is the specific treatment of consumption.

I shall not attempt any description of the life, or of any of the institutions I have seen, but shall content myself with mentioning the important features:

1. The continuous living in the fresh air, whether sleeping, lying under verandahs, or walking.
2. The great attention paid to nourishment.
3. The amount of exercise regulated by the condition of the lung and the effect on pulse and temperature.
4. The healthy site of the institution in the purest air, far from human habitation.
5. The absence of any unnecessary furniture in the sleeping rooms or elsewhere, to catch dust.
6. The continuous medical supervision.
7. The efforts made to harden the skin by dry rubbing, by sponging with spirit and water, by douching.

The aim is to make the patient lead the highest hygienic life, and so I think the "hygienic treatment" is the better name, although the open-air factor is the most important.

Regarding the establishment of such sanatoria here, which may or may not be done, I should deplore very much the necessity of waiting for such to carry out the treatment.

The Problem of the Consumptive Poor.

The present aggregation of large numbers of consumptives in hospitals and infirmaries is not treatment. Three courses seem open to us:

1. Go on as we are doing, till we are forced by popular opinion to do otherwise.
2. The formation of special wards, verandahs, and dietary in our infirmaries, with special regulations. Many of our infirmaries are well situated, and a small expense would go a great length.
3. The endowment of special sanatoria in the most favour-

able sites throughout the kingdom, where patients could be sent in the earliest stages.

About the selection of cases for sanatoria there can be little doubt. As one would expect there is a strongly expressed desire by all the doctors for patients to come early. It is worse than useless to send patients who are far advanced; for medium cases a trial should be made, but for early cases the outlook is the most hopeful; they fit into the mode of life at once, and they are in the condition to benefit most by the opportunities offered. It is criminal to tinker with cases in the early stages with drugs and slight changes from one side of the town to the other. There must be no half-hearted dealing with such cases; a complete abandonment of all the injurious customs of civilisation should be insisted on. The medical man must put aside his timidity in two directions as regards tuberculosis. He must insist on the danger of carelessness as regards the habits of the consumptive. There is a dread of hurting the feelings of the sick or causing alarm to friends; but both patient and friend soon adapt themselves to any course of conduct which they are informed is necessary. Secondly, the medical man must abandon his timidity as to informing a patient or his friends of the existence of incipient apical phthisis, and must be no longer content to "try" measures good enough in themselves, without realising the fact that these consumptives are unfit for civilised life, and must practically go back to the life of their ancestors, modified by hygiene, whether that be on the mountain valleys of Switzerland, on the sandy deserts of Egypt, on the hills of the Adirondack, among the pines of the Black Forest, or in the green pastures of their native land.

III.—B. J. GUILLEMARD, M.D.,
District Surgeon, Aliwal North, and Surgeon to the Cape Government Railway.

THE OPEN-AIR TREATMENT OF PHTHISIS IN SOUTH AFRICA.

DR. GUILLEMARD described the High Veldt treatment of phthisis in South Africa. He stated that coast districts were not advisable for invalids, the best districts being at altitudes over 3,000 feet. The soil was old sandstone, broken up with outbreaks of volcanic rocks; the air was extremely dry and aseptic, and meat could be kept in the open air in winter without decomposition.

The winter, he said, was rainless; there were frosts at night, but the days were almost invariably sunny and without wind, the sun being warm. The summer was the rainy season, and the temperature went up to 90° F. in shade, the rain, however, came on in storms which were quickly over; the days were fine and bright.

The country, he considered, was specially one for open-air treatment all the year round, and it was not necessary for patients to move about at change of season. The accommodation, unfortunately, was not entirely satisfactory, but, given suitable quarters and constant exposure to open air all day and every day, very good results were to be obtained in cases of phthisis. Early cases almost always recovered, and many serious cases lived for years in South Africa. Bad cases, however, should never be sent out.

IV. A. BOURCART, M.D., Cannes, and J. E. VIVANT, M.D., Monte Carlo.

THE IMPORTANCE OF CLIMATE IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

ADVANTAGES OF A SUNNY WINTER CLIMATE.

AIR and light being recognised essential agents of cellular oxidation, and consequently chief factors of the climatic treatment of tuberculosis, we maintain that the results obtained in the sunny countries of the mild regions of Europe must logically be superior to the results obtained in northern climates where one has to struggle against cold winds and fogs.

During the last ten years we have followed the rules of hygienic treatment as they are observed by most practitioners and in most sanatoria in over 290 cases of pulmonary tuberculosis. We have on several occasions visited the best known of these establishments, and have also sent patients to them. The results of our experience are the following:

1. The length of the day, from the medical point of view, is longer in our regions than in those we visited, because we have not to fight, as in the north, with fogs and cold winds.

2. If the conditions of hygienic treatment are the same, the results of treatment in the South of France are more favourable than elsewhere.

RESULTS OF HYGIENIC TREATMENT IN THE SOUTH OF FRANCE.

As regards our statistics, we may divide our cases into three groups.

(1) *Early Stage.*—The number of early cases of different types (congestive, pleuritic, bronchitic, etc.), with definite proofs of tuberculosis in the auscultation phenomena or in the bacteriological examination, was 123. Fully half of these cases had already had treatment in other climates with little or no improvement. The percentage of recovery in this class exceeds 90 per cent. We must in addition say that we have often seen patients rapidly get rid of fever, a fact quite opposed to the opinion so often expressed of the so-called congestive action of our climate. These exceedingly satisfactory results seem to us to be attributable chiefly to the greater duration of real aëration and to the superior quality of that aëration.

(2) *Hectic Stage.*—More than one-half of our cases (127) came in what we call the hectic period (softening of the tubercle). (*a*) About 40 of these cases came in an absolutely hopeless condition, both in their doctor's opinion and in ours. A certain number of these cases certainly did not recover, but many are now alive and have reached the ordinary term of life. (*b*) We have still to speak of a group of 87, our most difficult and at the same time our most interesting cases—patients who are discouraged, who have passed from hand to hand, from disillusion to despair. In a sanatorium such patients are put under observation for a certain length of time, and if no improvement takes place in their condition in a fornight or a month, they are told that the climate does not suit their case, and a milder air is recommended. Even in this group our recovery rate exceeds 20 per cent. A reason for not giving a higher rate is that a considerable portion of these patients are still under observation, or their improvement is too recent to justify us in considering them as recoveries.

(3) *Surgical Tuberculosis.*—As to the other forms of tuberculosis, the beneficial effect of a mild climate is even more striking. One of us has studied specially the influence of the climate of Cannes on the so-called "surgical" forms of tuberculosis. Statistics of 106 cases (from the Children's Hospital at Cannes) were published in 1890: we add to-day 98 fresh cases from private practice, a total of 204 cases. In those categories of tuberculosis (tuberculosis caries, hip joint disease, glandular enlargements, etc.). We have observed an extraordinary rapid recovery even in the case of patients whose conditions had not been improved after months of treatment elsewhere.

CONCLUSIONS.

1. Recovery is due to the increased daily period of aëration, plus the excellent quality of that aëration and the intensity of the light.

2. Improvement in tuberculous patients is more striking in the South of France than we might expect, considering the large number of hopeless cases.

The best proof of this contention lies in the number of physicians from different parts of the world who arrive as patients and recover sufficiently to bear the fatigues of practice.

We most decidedly do not pretend to have the monopoly of aëration. We know that aëration may be applied everywhere with more or less beneficial results, as we have been able to notice in our professional tours. What struck us more forcibly, and what we wish to bring forward more clearly, since it seems to us that its importance is not realised nowadays, is this: the superiority of the air cure, as it can be applies in countries and climates where it is possible for a patient to benefit at the same time from a longer sojourn in the open air and from the invigorating action of radiant light. Patients who are able to stand and afford the journey would be wise to give the preference to sunny and dry countries.

V.—P. Sydney Jones, M.D.Lond.,

Consulting Physician to the Prince Alfred Hospital, Sydney, N.S.W.

CASES SUITABLE FOR THE OPEN-AIR TREATMENT IN AUSTRALIA.

Dr. Sydney Jones said that he spoke from thirty-seven years' experience in Sydney, New South Wales. For many years he had advocated the open-air treatment of consumption, and urged the establishment of lightly constructed wooden buildings on the high inland plains or mountain slopes which were the parts of the Australian continent suitable to the consumptive invalid. He hoped that at this day medical men in the British Isles were alive to the fact that the climate of the seaboard of Australia, especially on the eastern coast, was most unsuitable for the phthisical patient. The proportion of recoveries from consumption, if not too far advanced, was large among those who sought the high altitudes where the air was dry and light. On the other hand, the consumptive who remained in the moist heavy air of the seaboard usually became steadily worse. Unhappily, the consumptive whose means were very small, or entirely wanting, was compelled to remain on the seaboard, where the large cities and towns were situated, because there only could be found such light employment as he was able to pursue. This fact, Dr. Sydney Jones believed, explained the diminished degree of confidence which British practitioners now seemed to have in the curative value of the Australian climate in consumption. His special object in speaking was to point out what he thought to be an incorrect statement in some recently published articles—namely, that altitude was not an important factor in the outdoor treatment of consumption. He could not say how far the statement might be correct in the northern hemisphere, but, as far as Australia was concerned, he felt bound to give it an unqualified contradiction. He feared that if allowed to go forth without modification it would be productive of mischief, as it would induce the patient so advised on going to Australia to remain in the low-lying districts. The benefits derived from residence at the high altitudes were obtained notwithstanding that, as a rule, highly nutritious food was less easy to obtain than in the coastal low-lying districts.

VI.—Miss Jane Walker, M.D.,

Physician to the New Hospital for Women, London.

EXPERIENCE OF THE OPEN-AIR TREATMENT IN ENGLAND.

Dr. Jane Walker said that she had had six years of practical experience in the open-air treatment of consumptive patients. She began with patients in an ordinary farmhouse in a very healthy part of Norfolk. Its advantages were a very intelligent woman at the head of it, and a large amount of shelter for wet and windy weather. During this time she had had 22 cases, of whom 4 had died, 8 were under treatment, and the remainder had returned to work and were doing well. She kept them under observation, and they came to report themselves every few weeks. There were obvious advantages in keeping patients in this country, most people dreaded being sent away even to the Continent, not to speak of California or South Africa. With regard to the question of altitude, she considered that it was a comparative question. What was high here would not be high in California or South Africa, or even in Switzerland.

VII.—W. A. Denton Johns, B.A., M.B.,

Bournemouth.

Dr. Denton Johns said that, with the kind assistance of Dr. Ransome, he had conducted a private sanatorium for eighteen months. He spoke on the practicability of carrying out the open-air treatment of phthisis in this country, and said that he had never found any difficulty in exposing his patients to the maximum amount of open air. He was not in favour of sending patients to various remote parts of the earth, but rather of keeping them at home. He also mentioned some of the difficulties of enforcing the rules of the sanatorium. This was particularly with regard to diet. It was no easy matter to insist on a certain quantity being taken daily, as was the custom in the sanatoria abroad. It was also difficult to get suitable cases in the early stages of the disease, therefore it remained for physicians to diagnose their cases early, and not to hesitate to acquaint patients with the position in which they stood.

VIII.—Frederick Churchill, M.D., F.R.C.S.,

Late Surgeon, the Victoria Children's Hospital, Chelsea, S.W.

OPEN-AIR TREATMENT IN SEASIDE VERANDAHS.

Dr. Frederick Churchill showed plans prepared by Messrs. Humphreys for the erection of corrugated iron verandahs against the chalk cliffs at places on the coast for the treatment of all kinds of tuberculous disease. The vast acreage of unoccupied lands around the coast lent itself to the provision of suitable buildings to which tuberculous patients of all kinds might be sent with advantage. The verandah buildings might be arranged with sun blinds for the summer, and revolving glass casements for the winter. The executive buildings and more prominent wards might be erected on the cliff, and access to the block dwellings provided for by lifts. Constant currents of sea air through these verandah buildings when closed might be obtained by the provision of the places with upcast shafts to exhaust the foul air. Minor details of executive arrangement might be arranged after the buildings had been erected. The economical advantages of making use of these localities and this method of building required, he thought, very little argument when the vast number of patients for whom it was impossible to find treatment at more distant places was considered. The equability of climate in these undercliff localities, sheltered from high winds and humid exhalations from waterlogged soils was well known.

IX.—W. Bezly Thorne, M.D.,

London.

THE OPEN-AIR TREATMENT IN LONDON.

Dr. Bezly Thorne remarked that on his return from a stay at the Falkenstein health resort in 1893, he had been consulted with regard to a young lady who had been pronounced to have a tuberculous deposit at the left apex. Circumstances rendered it impossible for her to go abroad for treatment. Under protest she remained in London rather than in her home on a clay soil only slightly raised above a river. She slept throughout the winter with open windows, spent the day from after breakfast till sunset in the higher part of Kensington Gardens, with the exception of an interval devoted to luncheon, and gave herself over to a hygienic diet and regimen. By the following spring the physical signs had cleared up, and the patient was comparatively well. Since that period the function of menstruation had returned after a long abeyance, and at the present time the patient was in good health and leading a very active life.

A DISCUSSION ON CLINICAL VARIETIES OF HEPATIC CIRRHOSIS.

I.—Alexander James, M.D., F.R.C.P.E.,

Physician to the Edinburgh Royal Infirmary, and Lecturer on Practice of Medicine to the Edinburgh School of Medicine.

Mechanical Theories of its Causation.

To those who were inclined to seek for explanations of disease along definite mechanical lines, who approached the study of diseased conditions imbued with the spirit which modern experimentation and instrumentation tended to foster, and who were probably in consequence of this inclined to cast aside as negligeable any suggested factors which did not seem to be explicable along physical lines, to all these the study of liver cirrhosis presented a peculiar charm. From the points of view alike of causation, morbid anatomy, clinical symptoms, and even treatment, the phenomena of this disease offered themselves at first sight as more simple, more clear, and more easily comprehended than did perhaps the phenomena of almost any other disease.

What could be more simple than the following: An irritant, usually alcohol, is constantly being introduced into the stomach. It is absorbed by the portal vein radicals, and carried to the liver. There it acts so irritatingly as to cause cell proliferation in the interlobular connective tissue. These proliferated cells become transformed into fibrous tissue and contract, causing, in the case of the liver cells, compression and destruction, and in the case of the portal veins, compression and obstruction.

From the aspect of symptoms a like mechanical view seemed appropriate. From the obstruction to the portal veins

ensued overfilling of the blood vessels of the stomach and intestine, and consequent gastric and intestinal catarrh, hæmorrhoids, hæmatemesis, melæna, ascites. Hence followed also enlargement of the spleen. Then the impeded circulation in the portal vein accounted for the loss of strength and flesh, for the portal blood carries in it much of the nutritive material derived from the stomach and intestine. Lastly, this block to the portal vein in the liver tended to cause its peripheral branches to form anastomoses with systemic veins, internal mammary, epigastric lumbar, iliac, etc. Hence resulted the well-known venous distension over the abdominal wall.

In this way then all the features which from those different aspects cirrhosis presented seemed easily interpreted and dealt with, whilst a practical experience of a few cases followed to their fatal terminations, and verified by *post-mortem* examinations, led to a strengthening of the idea that this disease tended to follow a very uniform, definite, and typical course.

But ere long in our theoretical study and practical experience we began to discern that in those various aspects to which we have just referred, the disease was not so definite and well defined as at first sight it had appeared to be. Thus from the point of view of causation, we found that, although the presence of alcohol in the portal blood was a very common factor, there yet might be many other irritating substances. Also that the irritant might be in the hepatic artery blood, and that indeed there might be cirrhosis, in which for the irritating factor we had to look elsewhere than to the blood. Next from the point of view of morbid anatomy, we found grounds for modifying our view as to the definiteness of the disease. Thus, we found that though the liver was often smaller than normal, cases occurred in which it was increased in size. We were, of course, taught that in the early stage the liver was large, owing to hyperæmia and cell infiltration. But this was not satisfactory, because we saw or felt by the uneven, irregular surface of the organ that, though the liver was large, the so-called contracting stage had really been reached. Moreover, we knew of the hypertrophic or biliary cirrhosis. We knew that in it we had formative cells, and in time fibrous tissue, not so much around and between the lobules as among and between the liver cells. We were taught that in this form of cirrhosis the liver was large, dense, and tough, but that its surface was smooth and even. We thought it peculiar that whilst in the so-called atrophic cirrhosis the formative cells produced fibrous tissue which contracted, and as it were strangled the liver parenchyma and vessels, yet that in this so-called hypertrophic form these formative cells did not seem to do so.

When again we came to the consideration of the symptoms and course we met with other apparent discrepancies. No doubt on the theory that as the result of cicatricial contraction around the flow in the interlobular veins was blocked, we often saw the symptoms occur which we expected, yet there were many things which we could not understand. Thus, assuming that cicatricial contraction had reduced the liver to a fraction of its normal size and had blocked the portal radicals, why had it not blocked the bile ducts and caused jaundice as well? Of course explanations of this were not wanting. We were told that in the first place many of the liver cells had been destroyed and that thus the formation of bile was diminished, and secondly that some pressure on the bile ducts did occasionally occur, because in a certain proportion of cases of cirrhosis jaundice was present. But these explanations did not appear satisfactory. Thus whilst cases of hypertrophic cirrhosis were met with which ran their course to a fatal termination with jaundice and no distinct indication of portal block, and cases of atrophic cirrhosis were met with which presented indications of portal obstruction and no jaundice, yet exceptions were extremely common. For example, patients were met with who had been ill for months with jaundice, who had a large smooth liver and no splenic enlargement nor ascites, and who six months or a year afterwards presented themselves with little or no jaundice, a smaller nodulated liver, some ascites, and a marked enlargement of the spleen. It was difficult to explain this sequence along purely mechanical lines, for in this way it appeared as if the cirrhotic contraction which had tightened the portal channels had opened out the bile ducts.

Jaundice in Cirrhosis.

To this association of jaundice with liver cirrhosis I would wish to refer a little more in detail. Thus in the table, which

Table I.—*Cases which had or had had Jaundice.*

	Age.	Sex.	Causation.	Liver.	Spleen.	Ascites.	Hæmorrhage.	Course.
B. S.	60	M	Fever	+	+	o	o	30 years (?).
B. G.	10	F	Tubercle	+	+	o	o	8 years; died.
D. M.	27	M	Chill	+	+	—	o	Over 3 years.
E. B.	22	F	,,	=	+	+	=	,,
R. J.	34	M	Alcohol	+	+	—	o	Over 1 year.
M. D.	27	F		—	+	o	o	Over 5 years.
J. C.	6	M	Tubercle	+	+	o	o	3 years; died.
R. J.	44	M	Alcohol	+	+	+	+	6 months; died.
F. F.	16	F	,,	+	+	—	o	Over 6 years.
T. F.	46	M	,,	—	=	+	o	1 year; died.
D. K.	55	M	,,	—	+	+	o	18 months; died.
M. W.	58	F	,,	—	+	+	=	Over 3 years.
R. F.	44	M	,,	+ +	+	o	o	5 years; died.
M. M.	31	F	,,	+	+ +	o	o	1 year; died.
T. S.	34	M		+	+	+	+	1 year: not improved.
J. R.	49	M		—	+	—	+	Over 3 years.

Cases which never had Jaundice.

D. G.	23	M	Lead (?)	=	+ +	+	+	4 years; died.
J. W.	20	F	Syphilis congenital	+	+	+	o	Over 5 years.
C. M.	53	M	Alcohol	=	+	+	o	1 year.
W. L.	65	M	Localised hepatitis	+	+	+	o	Over 26 years.
R. A.	38	M	Alcohol	=	—	—	+	5 years; died.
R. L.	43	M	,,	+	=	o	o	Over 1 year.
R. B.	41	M	,, and lead	—	=	o	o	,, ,,
T. K.	35	M	,, and malaria	—	+	o	+	Over 2 years.
J. M.	54	M	,,	+	+ +	+	o	5 years; died.
M. M.	40	M	,,	+	+	+	=	1 year; died.
R. N.	54	F	Perihepatitis	+ +	+	+	+	6 months; died.
T. W.	46	M	Alcohol	+	+	+	o	Over 1 year.
P. T.	23	M	,,	+ +	=	o	o	Over 6 months.
J. M.	52	M	Dyspepsia	—	+	+	o	9 months: died.
N. M.	45	M	Syphilis	+	+	o	o	Over 5 months.
F. K.	49	M	Alcohol	+	=	+	o	Over 8 months.

represents 32 cases, it will be seen that although the small liver is most frequent in those cases in which there is no jaundice, yet there are many cases of jaundice in which the liver is not enlarged, and there are many cases in which jaundice was absent and in which the liver was enlarged.

That the liver should usually be larger in those cases where there has been jaundice we can easily understand. The secretion of bile is only one function of the liver cells, the other functions of these cells go on, and so the organ retains its size. But when the irritating substance which causes the cirrhosis is carried to the liver by the blood of the portal vein or hepatic artery, then all the functions of these cells will be impaired, their disappearance will follow, and the liver will sooner diminish in size.

Hæmorrhage in Cirrhosis.

But, next, the association and sequence of other symptoms compel us to think that the mechanical explanation is not satisfactory. Thus we often find a very large spleen and no ascites. More rarely we find ascites with no great enlargement of the spleen. Again, we might have marked ascites requiring several tappings, and find on *post-mortem* examination that the liver cirrhosis has been very slightly marked, whilst beyond the liver condition there was absolutely no other explanation of the occurrence of the ascites. Or, again, we might find great ascites requiring tapping several times, and we might find this followed by improvement, yet some weeks or months afterwards, both liver and spleen having markedly diminished in size, we might meet with a huge hematemesis or melæna. Hæmorrhages, as the table shows, often occur without ascites. They are usually associated with a large spleen, but they also occur with a large liver. The fact that they sometimes occur in cases where lessening ascites and lessening spleen would indicate that portal block is being relieved seems to indicate that blood changes rather than venous congestion must occasionally be their cause.

Duration of Cirrhosis.

When finally we turn from the symptoms to the course of liver cirrhosis we meet with variations no less extreme. Of the cases referred to in the table, the shortest showed a duration of 6 months, the longest showed a duration of from 25 to 30 years, and one of these at least is alive yet. It is further interesting to notice that, of the 7 in whose cases the duration is stated to have lasted under 18 months, 2 had or had had jaundice and had a large liver, 2 had or had had jaundice and a small liver, 2 never had jaundice and yet had large livers, 1 had never had jaundice and had a small liver. Of the 14 in whose cases the duration was three years or over, 7 who had or had had jaundice had a big liver, 3 who had or had had jaundice had the livers small, 2 never had jaundice and had big livers, other 2 never had jaundice and had small livers.

The conclusions which we draw from this then are: That the course in liver cirrhosis is anything but a definite and typical one, and that this course is manifestly dependent on many other factors than that which determines the mere size of the liver.

Relation of Cirrhosis to Acute Yellow Atrophy.

A subject of very considerable interest in connection with liver cirrhosis is acute yellow atrophy of the liver. In the most severe forms of this disease we know that after a few days' illness, with such symptoms as gastro-intestinal irritation, vomiting, jaundice, hæmorrhages, and serious toxic nerve symptoms, the patient dies. On *post-mortem* examination the liver is found much reduced in size, with its cells in a state of necrotic destruction. In the less rapid cases of this disease, however, we find that after similar symptoms the *post-mortem* examination reveals that, with the same destruction of liver cells, there has occurred a distinct increase in the amount of its fibrous tissue. Moreover, another noteworthy point is that in acute yellow atrophy there is usually found a marked formation of new bile ducts. That is to say, then, that in acute yellow atrophy we find changes in connection with the fibrous tissue and bile ducts almost identical with what we find in cirrhosis, and specially in biliary cirrhosis.

In this way, then, another important conclusion is forced upon us. This is that in liver cirrhosis, in the sense in which we ordinarily regard it, not only do we find it a disease which presents great variations in different cases, but we find it a disease which presents very striking resemblances to acute yellow atrophy. We have only to imagine a very, very slow case of acute yellow atrophy with its gastro-intestinal irritation, its vomiting, its hæmatemesis, melæna, its enlarged spleen, and its terminating coma, and we get a wonderfully complete clinical picture of a type of liver cirrhosis.

But still more strikingly we find that there are certain toxic substances which, administered to an animal in huge doses, will produce the symptoms and pathological changes of acute yellow atrophy; and conversely, administered in continued small doses, produce the symptoms and pathological changes of cirrhosis. The effect of lupins on the horse's liver is, perhaps, the best example of this.

Determining Causes.

And now, how can we best do what we proposed to do at starting, that is, How can we best form for ourselves a picture of the clinical varieties of hepatic cirrhosis? We can best do this, I think, by a careful study of the conditions which lead to cirrhosis, and by a proper interpretation of the data so obtained.

First, as regards its causal conditions, we are entitled to assume that it must be something which we call an irritant:

1. This irritant may be something carried to the liver by the blood of the portal vein or hepatic artery. It may be toxic, as alcohol, lead, glucose, products of dyspepsia, etc.; or infective, as syphilis, malaria, tubercle, etc. In the case of such a substance as alcohol, the irritant may act primarily, that is, the alcohol may act primarily on the liver's tissue. But the irritant may also act secondarily, that is, the alcohol, through its disturbing effects on digestion, etc., may cause the transmission of toxic substances to the liver.

2. The irritant may be backward pressure in the hepatic veins; we know that a form of cirrhosis may occur in heart cases. Here, again the irritating factor may be primary or secondary, that is, the venous congestion may act of itself, or by disturbing digestion, etc., it may cause the passage to the liver of irritating substances.

3. The irritant may be in connection with the bile ducts. It may be a calculus, acting mechanically; it may be the distended ducts and check to liver function which an impacted calculus induces. Further, the irritant may be what appears at first as a simple catarrhal jaundice. Many cases of biliary cirrhosis begin in this way, just as many cases of acute yellow atrophy begin in this way. But in biliary cirrhosis, as in acute yellow atrophy, we know that something more serious than a simple catarrhal block has been taking place. Further, we know that the liver cells are developed from the bile ducts, and that where the bile duct epithelium ends and the liver cells begin there is really no hard and fast line. Moreover, jaundice often seems to occur in epidemics, and that a catarrh should spread from the large bile ducts to the small, and thence to the hepatic parenchyma, seems no less unlikely than that a catarrh should pass from the trachea and large tubes to the small tubes, and thence to the large air cells.

4. The irritant may be developed in connection with the surface of the liver. For example, a gastric ulcer forms adhesions to the under surface of the liver, and from the cicatrix, as from a focus, the fibrosis may extend into the substance of the organ.

5. The irritant may be developed in connection with the interior of the liver. Thus, for example, although in hydatids of the liver a new growth of fibrous tissue is limited, so as to form a capsule round the cyst, in certain cases this fibrous tissue may extend so as to form a cirrhosis. In a specimen of hydatid liver in the Royal College of Surgeons, Edinburgh, in which the hydatid cysts were small and numerous, a distinct cirrhosis was found. It appears to me not unlikely that the cicatrix of a liver abscess might act in this way, and I have seen several instances of subacute circumscribed inflammatory affections of the liver prove to be the beginning of a cirrhosis. To such cases I cannot refer in detail, but I should like to say that those were for the most part diagnosed at the time as malignant tumours of the liver.

Mode in which an Irritant Acts.

To answer, How does an irritant act? I must revert again to acute yellow atrophy of the liver. In this disease we have as the irritant a toxic substance of very great severity, so virulent, indeed, that within a few days the disintegration and destruction of liver tissue is sufficient to kill the patient. As we have already mentioned, however, there occurs in the less rapid examples of this affection an overgrowth of fibrous tissue. The toxin, therefore, of acute yellow atrophy, whilst it so acts on liver cell tissue as to destroy it, so acts on the fibrous tissue of the liver as to cause it to reproduce itself in considerable quantity. How is this?

This is not the place or time to discuss biological problems. But to the question just asked it may be replied in brief that the effect of an irritant on living tissue is increased metabolic activity, and the effect of increased metabolic activity is the sacrifice of growth and development to reproduction. Of course if the irritant is of intense power, it kills a tissue right off. But if it is not sufficiently intense to do this, it acts as has been stated, that is, it causes reproduction at the sacrifice of growth and development.

Let us now apply this biological consideration to the consideration of the phenomena met with in the liver in the less rapid cases of acute yellow atrophy, that is, in those cases in which we have disintegration and destruction of liver cells, with increase in the fibrous tissue.

Here there is a very powerful toxin. It exists, we may suppose, in the blood, and acts simultaneously on the liver cells and fibrous tissue. But the liver cells are elaborated, complex, as it were patrician tissues, in which development and specialisation have reached a relatively high grade. The toxin acting on these has the effect of causing great disturbance, for the cells, in their struggle to live and reproduce, must yield up development and specialisation.

With the fibrous tissue of the liver, however, it is different. The fibrous tissue is a much more simple and unelaborated tissue. It is, as it were, plebeian, and it is commonplace, for we find it everywhere, round about, and holding together the specialised tissues. Being less elaborated, its wants are

smaller, and it can live and reproduce itself in circumstances in which the elaborated liver cell tissue cannot. The effect of the toxin of acute yellow atrophy on the fibrous tissue, therefore, is much less serious. It of course irritates the fibrous tissue, and increases its metabolism, but before the toxin has had time to kill it, or the patient, it has been able to multiply itself to a considerable extent.

Hence, then, in reply to the question, How does an irritant act on the liver? we say that it is by interfering with the normal processes of growth, development, and reproduction, and so causing a great degeneration and destruction of the elaborated and specialised cells, and a certain amount of degeneration but relative increase in the amount of the simple and little-specialised fibrous tissue. Liver cirrhosis, therefore, is exactly like cirrhosis, or fibrosis, or sclerosis elsewhere. In brain or cord, in nerve, in muscle, in heart, kidney, spleen, or lung, the simple and lowly connective tissue normally acts as a support and packing material to the elaborated, complex, patrician tissues around. Let, however, what we call an irritant arise, the effects of the excessive stimulation to metabolism which it entails will be relatively great disintegration and disappearance of the complex cell structures, and relative increase of the simple fibrous tissue to fill up the gap. With cirrhosis elsewhere as with cirrhosis of the liver we must always bear in mind that, however varied the irritating factors may be, the modes of reaction of the tissues to those irritants are very limited.

MAIN TYPES OF HEPATIC CIRRHOSIS.

When now we pass to the consideration of the clinical varieties of hepatic cirrhosis this last sentence contains, I think, the gist of what we have to keep before us. Bearing in mind that the modes of reaction are limited, we can in our mental picture of the disease put aside as subordinate such distinctions as hypertrophic and atrophic cirrhosis, biliary and portal cirrhosis, localised or general cirrhosis. But bearing in mind that the irritants are numerous and varied, that their potency differs within the widest possible limits in different individuals, and that their potency varies in the same individual at different ages and at different times, we can understand that the clinical varieties of hepatic cirrhosis are well nigh interminable.

As the table shows, the disease presents the greatest possible diversities as regards age, sex, symptoms, physical signs and course. Many other cases could be added to the table and would make the diversity in those different respects still greater.

Still, in a paper on the clinical varieties of hepatic cirrhosis it seems fitting that an attempt should be made to picture the more outstanding forms. I shall therefore do this, and if my pictures strike you as being impressionist rather than real, I have the impressionist's excuse that things are known to us only as we are impressed by them, and that it would be absurd to suppose that we should all be impressed exactly alike.

1. A man has been alcoholic practically all his life, but so long as he was young, the trophic power of his liver tissue has been able to withstand the chronic irritation. He is now older, over 40, and has noticed for the last four or five months that his digestion has been impaired. He has discomfort after food, vomiting, flatulence, and ascites. On examination, we find the liver small, the spleen large. In spite of temporary relief from paracentesis, he gradually becomes weaker, then comatose, and dies after a few months' longer illness.

2. A man has been alcoholic for many years. As the result of a slight exposure to cold he gets an attack of what appears to be catarrhal jaundice. This jaundice does not improve, but as the weeks go by, gets more intense. He is troubled with dyspepsia, flatulence, etc., and, on examination, the liver is found much enlarged. The spleen is also somewhat enlarged, but there is no ascites. He gradually gets weaker, becomes comatose, and dies within a year.

3. A man has been alcoholic for many years. As the result of an exposure, he gets jaundice. After some weeks, the jaundice does not improve, the dyspepsia, vomiting and flatulence become aggravated, ascites develops, which has to be relieved by tapping, and the removal of the fluid; the spleen is found to be enlarged. He improves considerably after this tapping. The jaundice disappears more or less completely. The ascites does not return, the liver gets smaller and the spleen gets smaller. This man, if he is careful, may live for many years. If he returns to his alcoholic indulgences, symptoms of portal obstruction, ascites and hæmatemesis supervene, and death occurs within a few weeks or months.

4. This variety occurs in young people, often young women. There is no history of alcoholic indulgence, but there are appearances of hereditary weakness, congenital syphilis, or tubercle. There may possibly be a history of peritonitic trouble. After some exposure to cold, and with or without slight jaundice, the patient suffers from dyspepsia, flatulence, possibly ascites. On examination the liver is found large, with its surface somewhat irregular. The spleen is also found enlarged. This patient may live a long time. There may be ascites requiring tappings occasionally, but after a tapping the patient remains well for months or years.

Other varieties will be met with, but in cirrhosis of the liver, as with other diseases, we have to remember that what we have to study is not so much the disease as the patient who has it.

In conclusion, I would add that a paper on liver cirrhosis would not appear complete unless reference were made to the fact that in the liver of one of the lower animals, which as far as digestion is concerned seems most closely to resemble man, there is between the liver lobules in the normal condition a considerable amount of fibrous tissue. The animal to which I refer is, of course, the pig; and this condition is interesting as showing that what is disease in one animal may be practically a healthy condition in another. But it is also interesting to notice that the development of fibrous tissue in the pig's liver seems to take place mostly after birth, and that the fibrous tissue forms very much in the same way as does the cirrhotic tissue in human cirrhosis. One would like to be able to interpret the meaning of this liver condition in the pig; one can only say that there is no doubt that it will serve a useful purpose. Whether or not, there is a salutary influence to be recognised in the development of the cirrhotic liver in the drunkard, we need not, however, do more than suggest.

II.—WM. OSLER, M.D.,

Professor of Medicine, Johns Hopkins University, Baltimore.

DR. OSLER could have wished for more definite statements upon the form of hypertrophic cirrhosis described by the lamented Hanot, and in France called by his name. He would like to refer to it more particularly since it did not seem to have sufficiently engaged the attention of British physicians. In the first place, it was a clinical entity easily separable from the enlargement of the liver in common cirrhosis, and in the other from the common enlarged and fatty cirrhotic, alcoholic organ. The age of the patient—usually between 20 and 35—and the absence of alcoholic history were two most important points in the pathology. Possibly the infectious diseases might play an important part. Hereditary influences were at work in some cases. Two brothers suffering from the disease had recently been under his care. It could not be said that all cases of Hanot's cirrhosis had an alcoholic history, but the most typical cases occurred in young temperate persons. The clinical history was most characteristic; the slow course, lasting for eight, ten, or even fifteen years; the chronic, slight jaundice, the absence of ascites, and of all signs of portal obstruction, the attacks of local pain in the liver, even simulating gall-stone colic; and attacks of fever, sometimes markedly remittent, in other cases of a high and continuous type. He wished to call attention particularly to the terminal symptoms in some of the cases. The picture was that of an icterus gravis, high fever, coma, delirium, or convulsions, intensification of the jaundice, and all the signs of an acute toxæmia. In two such cases the condition was shown to be a streptococcus septicæmia; organisms were isolated from the blood during life, and from all the organs after death. It was remarkable, too, how similar the terminal features of these cases might be to those of acute yellow atrophy, without diminution of the volume of the liver. Even leucin and tyrosin might be present in the urine.

III.—Professor Dr. S. S. Rosenstein.

University of Leyden.

Professor Rosenstein considered that the cases of cirrhosis without jaundice were those in which the pathology was most obscure. He thought that the most convenient form of classification was into three forms: (1) The ordinary contracted form; (2) the large liver which tended to contract; and (3) the true hypertrophic form, in which the liver remained large and never showed any tendency to contract. He then referred to cases which clinically only differed from malaria in the fact that no plasmodia could be found in the blood of the patient. With regard to etiology, he was of opinion that the importance of alcohol was much overrated.

IV.—W. Ewart, M.D., F.R.C.P.,

Physician to St. George's Hospital.

Dr. Ewart observed that the influence of alcohol could not be traced in all cases, and that it was difficult to explain why alcoholic excess should not invariably produce cirrhosis. Nevertheless, it was impossible to refuse to admit in many instances a dietetic and an alcoholic factor. Indirect support was given to the alcoholic theory by a case now under his care. The patient, a woman of healthy constitution and previous history, who had always been temperate, had suffered for several years from a nodular cirrhosis. This, although it had led to recurrent ascites, which had to be relieved by tapping 50 times, still, owing to the scattered distribution of the cirrhotic changes and to the apparently large amount of secreting substance which had escaped, allowed the patient to retain a fair amount of energy. In this case the disease seemed to have been mainly due to the excessive use of vinegar. From an early age the patient had been addicted to this form of intemperance. She often would empty a bottle of vinegar in a day, and she devoted to the daily purchase of vinegar any pocket money she could spare.

V.—J. B. Bradbury, M.D.,

Physician to Addenbrooke's Hospital and Downing Professor of Medicine in the University of Cambridge.

Professor Bradbury mentioned three cases of hypertrophic cirrhosis attended by a considerable rise of temperature. He considered that they were due chiefly to taking highly-seasoned food. The first was that of a boy, aged 12, who had a very large liver. He had been fond of condiments, especially mustard. The second case was that of a lady who lived chiefly on *entrées* and other rich food. Her temperature chart looked like one of hepatic abscess, and her liver was twice punctured without any pus being withdrawn. The third case was that of a woman with acute pain over an enlarged liver. She also had been fond of spiced food. Her temperature was high, and the liver was aspirated without any pus being found. He thought the occurrence of pyrexia with cirrhosis was not sufficiently recognised by medical writers.

VI. James Barr, M.D.,

Physician to the Royal Infirmary, Liverpool.

Dr. Barr entered very fully into a discussion on hypertrophic cirrhosis, as distinguished from the atrophic variety. He thought that it was a mistake to look upon hypertrophic cirrhosis as synonomous with biliary cirrhosis: Both were attended by great enlargement of the liver, but in other respects they were essentially different. In cases of biliary cirrhosis there was an obstructive jaundice accompanied by dilatation of the bile ducts and proliferation of the intercellular tissue around the bile ducts; but in ordinary cases of hypertrophic cirrhosis there was great enlargement of the liver, moderate proliferation around the portal veins, and a condition of nutmeg liver due to passive congestion of the organ. In the majority of these cases alcohol was the exciting cause of the disease, and there was no more potent agent in producing cardiac asthenia. If these cases were carefully examined, it would be found that there was invariably regurgitation through the tricuspid orifice with consequent hepatic congestion. These cases were very amenable to treatment, and if they came under observation fairly early they were quite curable, always provided that the patient would abstain from alcohol in the future. The small cirrhotic variety was very difficult to treat, and too frequently the best that could be done was only palliative. The association of pyrexia with cirrhosis was not a necessary part of the disease but a complication, due, as Professor Osler had said, to streptococcus infection or perihepatitis, or some such inflammatory cause.

VII.—M. A. Boyd, M.D.,

Physician to the Mater Misericordiæ Hospital, Dublin.

Dr. Boyd said that the confusion in the classification of cirrhosis seemed to arise from the tendency to classify it under two heads, hypertrophic and atrophic. A more simple classification would be, cirrhosis arising from within the gland and from without, as in cirrhosis of the lung as described by Sir Andrew Clark. This would also indicate the various situations from which the irritation began which started the fibrous deposition. Consequently cases might be classified as follows: (1) Cirrhosis beginning from the portal side; (2) cirrhosis beginning from obstruction of biliary ducts: (3) cirrhosis from obstruction of the hepatic vein, as in disease of the heart: (4) cirrhosis from the peritoneal side and capsule, as in syphilis and tubercle. The pathological changes were the same in all, differing only in the sources from which they sprang, and the size of the liver when the deposition began. In the biliary form and that due to the disease of the heart hypertrophy was greatest, and in that due to portal irritiation atrophy. In the invasion from the portal side the fibrous distribution was multilocular, more widespread and rapid, and involved both the portal and hepatic radicals. It was accompanied by arteritis, or periarteritis of small and large arteries, which explained the frequent coexistence of valvular disease of the heart in the advanced stages of atrophic cirrhosis. The fibrous distribution so abundant in this and all other forms of liver cirrhosis pointed to the influence of either a toxin or a microbe which might be ultimately proved to exist. Hæmatemesis and ascites were due to the same vascular cause, and when anastomosis between portal and systemic veins took place, the ascites might disappear, and cerebral symptoms and toxæmia occurred from poisons carried into the blood through this source.

VIII.—Henry Handford, M.D.,

Physician to the Nottingham General Hospital.

Dr. Handford doubted whether pathological knowledge was in advance of clinical experience, but the two were very imperfectly co-ordinated. Tuberculous cirrhosis was a pathological fact, but Dr. Handford had no experience of it as a clinical entity. Syphilitic cirrhosis was very rare except in congenital syphilis, unless it was considered to play a part in hypertrophic (biliary) cirrhosis. Possibly the large form of alcoholic cirrhosis, with abundant ascites and little jaundice, occurred in those who were large eaters as well as drinkers; and the form in which the liver was small on the first onset of symptoms occurred in those in whom heavy drinking led to disgust for food and deficient nutrition. The great difficulty was the diagnosis of the early stage. Only a minority, possibly a very small minority, of unduly large or unduly small livers were cirrhotic or even gave rise to other symptoms of cirrhosis than digestive disturbance common in all alcoholics. Further, there was little at present to guide the prognosis as to the probability of temporary cure by tapping.

IX.—Professor Dr. Gerhardt.

University of Berlin.

Professor Gerhardt referred to the condition occasionally met with in old people in whom cirrhosis of the liver was associated with an affection of the spleen, both of which were associated with phosphorus poisoning. He then discussed the different varieties of icterus met with in cases of hepatic cirrhosis. They fell, he considered, into two classes; in the one he included the true yellow condition which was associated with the hypertrophic form of the disease, and in the other the brownish-grey coloration which, although it occurred with an atrophied liver, was yet frequently due not to the essential disease, but to complications arising in its course.

X.—DAVID DRUMMOND, M.A., M.D.,

Lecturer on Pathology in the University of Durham, and Senior Physician to the Royal Infirmary, Newcastle-on-Tyne.

DR. DRUMMOND entered a protest against the tendency shown by speakers to belittle alcoholic poisoning as a cause of cirrhosis. He admitted syphilitic varieties and scarlatina as a cause, but felt that it was even unwise to accept the view that alcohol had nothing to do with the so-called biliary cirrhosis. He gave examples in which a very careful inquiry disclosed a history denied in the first instance, which seemed to suggest that in some way alcohol was responsible. He referred to an interesting clinical variety marked by anæmia without hæmorrhage, and by enormous enlargement of the spleen with leucocytosis. He referred also to cases marked by recurring attacks of coma with high temperature, lasting a few days and apparently depending upon constipation, as the symptoms passed off, as a rule, after free purgation. In these cases a large vein of Sappey was generally found.

XI.—Professor Dr. O. ROSENBACH,

University of Berlin.

PROFESSOR ROSENBACH discussed the connection between disease of the heart muscle and true cirrhosis of the liver. He, of course, excluded those cases of weakness of the heart causing stasis of blood in the liver, which resulted finally in cirrhosis. He referred only to a form of cirrhosis ordinarily accompanied by atrophy and not connected with jaundice, or only showing the slightest signs of it. He was in doubt whether this should be regarded as a constitutional disease affecting at the same time the heart and liver, or whether there was a particular weakness of the heart muscle, so that a kind of stasis caused slight injuries to become dangerous to the liver. That the heart muscle was attacked in the first place was shown by minute investigation, by which it was found that important signs of heart affection, particularly dilatation of right ventricle, always occurred in these cases.

XII.—T. M. ALLISON, M.D.,

Newcastle-on-Tyne.

DR. ALLISON considered that Dr. James had brought out two interesting points:—(1) That the clinical pictures of cirrhosis of the liver depended upon the rapidity or slowness of the process underlying it. This was supported by the fact that in thyroid cirrhosis the clinical picture of myxœdema was completed sometimes in weeks, at other times in years. (2) That whilst alcohol strongly predisposed, there was probably a secondary cause or causes at work to explain the clinical differences. The number of alcoholics and the few cases of cirrhosis supported this. In conclusion, he observed that the importance of a knowledge of the true causation of cirrhosis was great, as if known, cirrhosis not only of the liver, but of the kidney, lung, and thyroid might be avoided, as also those forms of cirrhosis known as palmar and penile contraction, which, in his experience, always occurred in alcoholic subjects.

XIII.—THEODORE FISHER, M.D.,

Physician to Out-patients, Bristol Hospital for Sick Children and Women, and Pathologist to the Bristol Royal Infirmary.

DR. THEODORE FISHER mentioned an example of a form of cirrhosis of the liver described by Dr. Banti, of Florence, and already referred to by Dr. Drummond. In this form an enlarged spleen was noticed for some years. At the time of death ascites was present, and at the *post-mortem* examination cirrhosis of the liver was found. A case answering to this description occurred at the Bristol Royal Infirmary. A young man, aged 19, was admitted five times in three years for pain over the spleen with some rise of temperature. At the necropsy the spleen was found to weigh 29½ ozs., and the liver, which weighed 35½ ozs., showed well-marked multilobular cirrhosis.

REMARKS ON LOCOMOTOR ATAXY.

By Professor Dr. O. ROSENBACH,

University of Berlin.

IN the following paper I propose to call attention to the following points concerning the theory and the clinical aspect of locomotor ataxy.

1. That there is an individual, probably innate, disposition to locomotor ataxy.
2. That syphilis is not a factor in this disease.
3. That there is no pathognomonic symptom of tabes.
4. That two symptoms here described are of use in making an early diagnosis.
5. That tabes dorsalis does not depend on so-called tactile anomalies, though it is based on ascending sensory nerve troubles.

Since Westphal showed the importance of the patella reflex (knee-jerk) I have examined this reflex in every patient without exception, and at the slightest alteration I made a thorough investigation for locomotor ataxy. Thus I have been able to collect in connection with the early forms of this disease much material from which I am convinced that as a first sign of the series of symptoms which, when fully developed, is called locomotor ataxy, tabes can be generally found at a very early period of the disease, much earlier than is commonly believed by physicians who are consulted generally by patients who have marked symptoms. Naturally it is difficult, nay, impossible, to fix the beginning of the disease exactly, when the first examination for symptoms of locomotor ataxy is made at a later stage, that is, at the period when marked symptoms of organic lesions are present, such as lightning pains and other troubles of sensibility, alterations of touch and of sight, immobility of pupils, gastric crises, serious ataxy, impotence, incipient paralysis, dysuria, or strangury, etc.

The ordinary conclusion that the disease might have begun only a short time before the first examination, due to the patient not having observed any kind of trouble until the symptoms incidentally became more marked, is erroneous. To the scientific observer the conclusion *post hoc ergo propter hoc* seems *a priori* to have no sure foundation when chronic disease is the subject of inquiry.

Of course, from a scientific standpoint in etiology, we cannot identify the stories of patients about the influence of incidents in their opinion connected with the disease with the true causal factors. Nor can we, without scrupulous investigation, accept the dates given by them as a sure basis for a chronological statement. What physician, for instance, would date the beginning of diabetes from the first discovery of sugar in the urine, or conclude from its mere presence an incurable diabetes?

If there have not been exceptional conditions in my long and extensive experience, I am forced to conclude that the disposition to tabes is inherited, this opinion being based on the fact that typical symptoms of tabes (or rather of functional troubles in the musculotonic apparatus, resulting often in locomotor ataxy and tabes) are often found in patients of about 20 years of age, who have consulted the physician on account of some other complaint.

These observations lead me to believe: (1) That there must often be an inherited anomaly (individual atonic disposition) of the reflex action, principally of the neuro-muscular system, which is generally followed by or connected with anomalies of the cutaneous nerve system and of the voluntarily muscular innervation; and (2) that this anomaly results in anatomically-marked atrophy of the centripetal fibres and certain parts of the spinal apparatus (posterior cords, Clarke's columns, etc.), both in those cases in which we know of the existence of dangerous influences which alter the normal physiological conditions, and in those in which no recognisable cause can be found.

Among secondary causes, disposition being the first, or accidentally important causes which change symptoms (only discoverable by scrupulous diagnostical investigation) into marked disease may be mentioned cold, immoderate muscular strain, overwork, protracted tension in lifting heavy weights, too much standing principally in damp or cold, and nervous exhaustion from venereal excesses, which latter, although a chief cause in neurasthenia, is ordinarily overestimated in the case of locomotor ataxy.

Nothing better proves the importance of an inherited insufficiency or weakness of musculotonic apparatus than the fact that in the great majority of cases we cannot find, even after scrupulous investigation, anyone of the above named influences as the responsible factor. Hence we must refer to the embryonic disposition rendering musculotonic apparatus

tender enough to be damaged by the ordinary functions of life. I must particularly remark that in the cases on which I base this opinion of the origin of locomotor ataxy, this disease is not found in the parents or relations of the patient, but seems to be a primary anomaly in the condition of the spinal cords or of the nervous system, pointing plainly to an individual weakness of formation which has ensued either in the act of generation or during the process of gestation.

Among these important secondary causes I am not inclined to reckon syphilis,[1] first, because other acute and chronic infectious diseases do not play a part in the etiology of tabes; and, secondly, because the ordinary conclusion as to the close connection of syphilis and tabes, based merely on the fact that relatively very many victims to locomotor ataxy have suffeaed from syphilis, cannot be accepted. According to this reasoning, phthisis also must be closely connected with syphilis, as phthisical patients, at least in my experience, have been remarkably often attacked by syphilis.

The foregoing statements make no attempt to discuss thoroughly the difficult question of etiology; thus I have not touched upon the important question of the connection of tabes with general paralysis in the insane, but are intended principally to give an impulse to the examination of young persons, and even of those who make no complaint of nervous trouble nor show at the first glance any symptoms of tabes.

By making such special examination we shall soon have sufficient material for deciding whether my opinion that hereditary or embryonic individual disposition is one of the first causes of tabes is admissible. Further, we shall perhaps be able also to institute early measures in order to strengthen by suitable exercise nerves which are weak, or to preserve them at least from deleterious influences. We shall be able also to decide with greater certainty the connection between tabes and syphilis. Any such connection seems doubtful to me for the further reason that syphilis is generally acquired in the third decade of life, whilst symptoms of musculotonic anomaly are shown by younger people, in whom therefore proclivity to locomotor ataxy is suspected.

I now intend to describe two symptoms upon which I believe may be based an early diagnosis of locomotor ataxy, which I distinguish from tabes.

Tabes is a complex of symptoms comprising locomotor ataxy, neuromuscular musculotonic abnormality connected with perverse voluntary and reflex innervation of striped muscles and sphincters *plus* sensible or tactile abnormalities, which increase of course the muscular troubles, and produce others, etc. But before describing these two symptoms I will remark that the knowledge of new symptoms, which marks some progress in the method of diagnostics, called by me functional diagnosis,[2] seems to be important not from the fact that it enables us by means of so-called pathognomonic symptoms to announce a sentence of death to a patient, but because we can thereby fix the true value of symptoms, and thus show the fallacy of pathognomonical symptoms.[3] Such symptoms, however characteristic they may appear at first glance, are of course not to be taken as in any way signs of a destroyed function or even of degeneration of tissue, but are only signs of an alteration which neither develops in every case to a state of complicated disease (locomotor ataxy) nor terminates fatally by the degeneration of organs indispensable to life (tabes dorsalis). Thus I believe there will not exist any clinical symptoms which may correctly and directly be referred to a serious trouble of function or an organic lesion, until after an accurate clinical analysis has been made.

Every symptom is only a signal to call the physician's attention to the need of prophylactic action concerning a function or an organ which perhaps may be endangered by unhealthy conditions of life. Thus in the majority of cases the presence of tubercle bacilli in sputum is not identical with the clinical or anatomical form of phthisis. That is a particular process often ending in a total destruction of lung tissue. Nor can we identify any of the so-called tabetic symptoms with anatomically-defined spinal or nerve degeneration, because we have often seen patients who had tubercle bacilli evidently recovering, and even entirely recovered.

In the same way a long observation of a great number of cases with distinct troubles in the musculotonic or muscular reflex function, and very few or no troubles in voluntary innervation without decided alteration of tactile sensibility, has proved to me that the mere functional troubles, signalised by the abnormal condition of reflexes or very slight troubles of muscular co-ordination in executing difficult movements, do not develop in every case into the typical form of tabes, but may stop at any stage, though the abnormal state of reflexes will remain constant. Hence we must conclude, and this conclusion is not at all new, that even Westphal's sign, important as it may be as the expression of an abnormal state of musculotonic action resulting from abnormal checking or excitation, or even from insufficiency or paralysis due to nerve degeneration, cannot be characteristic of the entire series of symptoms anatomically represented by so-called grey degeneration of the posterior cords. Westphal's sign is really characteristic of more serious disease, when other symptoms also indicate anomalies of spinal and cerebral functions, of which an important muscular representative is alteration of the pupillary reflex, which bears a complete and close analogy to tendon reflexes, if the definition of general flexor function, given later, is accepted. Want of time, however, forbids me to insist upon this point, which is of the greatest theoretical interest, nor will I discuss the value of the different symptoms, however fascinating it might be to explain their importance in connection with the two branches of tabes—namely, the muscular troubles arising from interior muscular reflex abnormality, ataxy, and the troubles in tactile or mere sensitive function respectively, which in my opinion, at least in the beginning and in slight cases, are different functional forms.

I intend only to mention two symptoms to which I called attention many years ago,[4] and the presence of which in connection with other phenomena denotes the existence of functional trouble, which may become dangerous. The first of these symptoms is a remarkable increase of the abdominal wall reflex in tabetics, already emphasised by me in my first description of abdominal wall reflex, and the importance of the same as a sign of cerebral hemiplegia. Though we have not an exact means of measuring with precision the extensity or intensity of this reflex, experience quickly enables us to distinguish the variable forms of this simple phenomenon at different ages and in different individuals. The reflex, which is very well marked in young people, may be sometimes rather weak in elder persons, so that the act, which can be repeated many times in young people ordinarily, ceases for a period after having appeared two or three times, in elderly persons who have atrophic or wrinkled skin. The phenomenon cannot in such cases be produced at once, except by means of a particular proceeding—namely, by very quickly or suddenly striking over the whole abdominal wall, so as to overcome exhaustion or diminished excitability of the reflex apparatus.

The reflex is often not well marked, or is confined to a small region of the upper abdomen, in persons who are in the habit of using purgatives for chronic constipation, in emaciated persons, and in women who have lax abdominal walls from repeated deliveries. So it may be said that the abdominal and other cutaneous reflexes are generally diminished by age and laxity of muscles; but a striking exception to this rule is found in persons with lack of patellar reflex from tabes, so that we can almost take it for granted that in such cases there will be found an abdominal reflex of extraordinary strength.

From my own experience, confirmed by the accurate and extensive investigations of other authors, it is proved that the lack of abdominal and other skin reflexes is a characteristic phenomenon in cerebral hemiplegia; it is further proved that generally in such cases, some days after the beginning of paralysis, and when the attack is not accompanied by phenomena of irritation or contracture, a remarkable increase of the patellar or tendon reflex on the paralysed side will often be found. From this, and also from the examination of other reflexes, I have come to the conclusion that (1) abdominal or other kind of skin and tendon reflexes are antagonistic phenomena; (2) that this antagonism may serve in doubtful cases as a means of diagnosis; (3) that patients during the first period of locomotor ataxy with loss of patellar reflex have an unusually marked abdominal reflex, whilst lack of the latter along with an increased patellar

reflex shows cerebral lesion which causes no irritation in the neighbourhood of the affected spot.

I may add that in well-defined tabetics who show Westphal's sign, considerable loss of tactile sensibility, etc., the reflexes produced by tickling or by firmly and quickly striking the soles of the feet, are generally remarkably strong. This fact also demonstrates the contrast between the skin and tendon reflexes, which have, as I believe, a thoroughly different mechanism, but are yet altered in locomotor ataxy from the same cause.

A second sign, which seems to me to be of some diagnostic importance, is the behaviour of the patient when asked to rise on his toes with eyes closed and to remain standing. Patients in the first period of locomotor ataxy, with the slightest symptoms of musculotonic troubles and without any sensible alteration, are not able to execute this order, even after making the greatest efforts. In cases which are advanced but not typical, this movement can not be executed even with open eyes.

In examining this side of the co-ordinatory function, the fact must not be forgotten that a great number of healthy, nervous, corpulent, or awkward persons find it very difficult to balance themselves in this way, and one must reckon with this circumstance by first ordering the movements to be made with open eyes. After two or three repetitions every healthy person should be able to do this satisfactorily, whilst anyone who has the slightest defect in co-ordination cannot execute this movement. On the contrary, in every case of locomotor ataxy, however slight it may be, each attempt is less successful. Ataxy is markedly obvious when the patient, trying to raise his body with a great jerk, is not able to retain this position, but sways to and fro, and soon falls if not supported. It must be remembered also that this test is not applicable in cases of mere muscular weakness, which condition is not found ordinarily in tabetics, who, on the contrary, during the first and second period show normal muscular strength. Naturally it makes no difference to persons with great weakness in the lower extremities whether they attempt to rise with eyes open or closed, for in neither case are they able to do so.

This mode of examining the muscular equilibrium or the co-ordinatory faculty of the lower extremities seems to me to give a surer basis for arriving at an early judgment than Romberg's popular method, requiring as it does an extraordinary effort of muscular tonus and co-ordinatory faculty.

In my opinion, the fact that a tabetic cannot conserve his position with closed eyes, is not entirely explained by the impossibility of his taking a view of surrounding objects in order to adjust his equilibrium. For instance, if we make the patient look at the sky through a double tube, and thus deprive him artificially of the faculty of seeing anything except light, this does not cause him to fall or sway to and fro. From this we can conclude that not the loss of the faculty of regulating the equilibrium by self-direction to objects, but the thorough prevention of light is the cause of Romberg's phenomenon. Closure of the eyes cuts off an important source of musculotonic impulses, based on light rays, so that in cases of extensive muscular ataxy having its origin in the spine, one of the chief compensatory agents is wanting when the eyes are closed.

Thus a person with locomotor ataxy resulting, as I believe, from abnormal (diminished) spinal tonus, must naturally be troubled in walking or even standing in the dark, or when the quantity of light is markedly diminished, whilst a healthy man stands as well in darkness as in light, because light energy is not directly necessary for keeping the tonicity of the lower extremities in a normal state, though no doubt it is an important factor. The fact that we hurt ourselves much more when encountering an impediment in the dark than in the light, however cautiously we may walk, shows that the measurement or regulation of the innervatory impulses is not so exact in darkness as in the light, and thus we may conclude that impulses, which in intention are supposed to be very slight, produce in darkness greater effect than in light. In keeping with this is the fact, which I described[5] on a former occasion, that those who are deaf and dumb from birth make a relatively great noise in walking and running, because probably the regulation of movements by the ear is wanting; courtiers and cats, on the contrary, walk inaudibly. We may conclude also that there are two quite different effects of light, one tonic, the other enabling us to discern objects and to keep our position in relation thereto.

Hence I believe I am right in recommending the two proceedings here referred to as an advantageous means of making an examination in doubtful cases or in the early state of locomotor ataxy. These two signs, in addition to Westphal's or Robertson's phenomenon, in my opinion, enable us to form a sure diagnosis of insufficiency of the musculotonic apparatus, that is, they form a series of symptoms involving co-ordination which do not depend in the first place on tactile anomalies or alterations in the sphere of consciousness, which may be wanting for a long time and in rare cases entirely. According to my opinion the presence of lightning pains is the first indication of the beginning of troubles in the tactile sphere, and the increase of sensible troubles make up the complex of symptoms called tabes dorsalis, which is a disease based on a lesion or a real waste of nerve fibres along the posterior cords.

Many observations show that inco-ordination, that is to say, troubles in voluntary automatic and reflex acts are not closely connected with anomalies of tactile insensibility, though often the troubles will be found together in tabetics, when lesions are becoming aggravated or are spreading. Thus the mere alteration of tactic sensibility (which always requires consciousness of impulses, or, at the least, the participation of the long ascending paths) cannot be the true or only cause of the anomalies of interior muscular tonicity, which seem to take the major part in producing the symptoms of inco-ordination in spinal ataxy.

These facts are of great importance, not only for the theory of locomotor ataxy, but also in connection with other questions in neurology, especially with the proclivity of the different groups of muscles to be paralysed by a lesion which attacks the nerves which are common to antagonistic groups. There is a striking contrast between extensors or abductors and flexors or adductors respectively, according to the definition or function which I gave many years ago in my first communication on double-sided recurrent paralysis, namely, that flexors, adductors, and sphincters are closely related in general function. Flexors, etc., form a functional group, which draws a limb to the body or the centre of an organ, or reduces the volume of the body or an organ, and in this way also opens an aperture, whilst extensors, abductors, and dilatators act in the opposite manner.[6] When the sphincter pupillæ is in the greatest activity, namely, straightening or closing the pupil, the iris itself has the greatest extension. The sphincter muscle is also the real dilator of the iris, and shows a correct analogy to extensor muscles, etc., whilst the dilator of the pupil acts in analogy with the flexors reducing the volume of the iris.

Trying to derive an explanation of the phenomena in total paralysis of recurrent nerves from the fact that in central or peripheric profound lesions of motor nerves (descending nerves) or centres, abductors and extensors suffer first or more than flexors, I constructed the hypothesis that the inspiratory lock of the glottis in such cases is due to perverse innervation caused by the prevalence of adductors, as impulses given by the centre work only in the paths of adductors. The same opinion on the proclivity of abductors to paralysis was also expressed by Sir Felix Semon about the same time.

In opposition to this rule, we find, when the function of ascending nerves—I avoid saying sensory or tactile—is altered, that extensors suffer less than flexors, as is shown clearly in locomotor ataxy and other abnormal states, which I here cannot enlarge upon. Thus in locomotor ataxy—a type of a lesion in ascending sensory nerves—the extensor muscles make excessive movements in automatic and voluntary acts, proving that there is a perverse innervation in favour of extensors; for we never see that in walking or in other acts flexor movements increase markedly.

Again, as only excessive extensor movements are produced where the harmony of the antagonistic groups of muscles is disturbed by a fault in the ascending nerves by particular spinal weakness, we may further conclude that the greatest part of ascending tonic innervation, which is not identical with the execution of motor impulses, which go down in the lateral cords, is ordinarily given to extensors and abductors by the ascending paths going along the spine to the infra-

cortical brain. This organ sends the tonomotor impulses by the descending paths of the anterior cords, whilst flexor and adductor tonicity directly results from spinal influence, or, better, from the ascending nerves ending only in the spine and forming the short first reflex arc. Or to repeat, there is an antagonism between the brain—namely, the parts below the cerebral cortex, the cortex natually acting by will impulses on both groups—and the spinal cord, which gives all the motive energy to both groups as chief accumulator of nerve energy, but gives tonic innervation only to flexors. We may also say that there is an antagonism between the long ascending, so-called sensory, paths going to the brain, and thus giving the tonicity of extensors or abductors, and the short paths going directly to the spinal cord, and thus giving tonicity to the functional group of flexors, etc.

The brain giving tonicity to extensors checks indirectly the proclivity of the flexors to contraction, and on the other side the spinal cord—that is, grey matter, giving the tonicity to flexors, checks or stops the influence of the brain to extensors—an influence causing the proclivity to extensor contraction. Hence results the normal equilibrium of the limbs, which take an almost mean position, though the influence of flexors slightly prevails.[7] So long as the long ascending paths coming from the periphery or spinal cord respectively and giving tonicity to the infracortical brain are in good activity, whilst the short paths are affected, we find a diminution of tendon interior reflexes, which are in my opinion generally extensor reflexes, as defined above. On the contrary, skin or sensible muscle reflexes are principally flexor reflexes.

It may at first appear strange to hear that increase of tonicity of extensors makes tendon reflexes weak, or checks them, and that their cessation in locomotor ataxy may even be attributed to a stronger tonicity. But this opinion will seem less remarkable when we consider that the tonicity of a group or muscles or the strength of interior tension is the basis of voluntary or automatic contraction is the opposite of proclivity to reflex action, the groups of movement proceeding from a different direction of impulses. Voluntary and automatic contraction is caused by a stimuius in descending motor paths; whilst the mere reflex depends on a stimulus in ascending sensory paths. So, in an extensor muscle having stronger tonicity a stimulus coming from the outside (such as a knock on the tendon) does not produce any effect, whilst a voluntary impulse gives immoderate movement.

On the contrary, the muscle which possesses less tonicity, as flexors in locomotor ataxy, must show a proclivity to reflexes, since it is in a state of extension caused by the stronger tonus in antagonists. There must be an increase of skin reflexes in tabetics, flexor reflexes being as shown above, especially skin reflexes. Hence results the difference between brain and spinal diseases, expressed in the striking difference of the forms of tendon and skin reflexes, voluntary movements, and contractures.

In locomotor ataxy the more the patient intends to make a strong movement, the more he gives a stronger impulse in the paths of extensors, which are better conductors of impulses, and thus is developed the impossibility of bringing the body or a limb exactly to the intended position, because the abnormal state of the ascending tonic nerves does not allow an equal distribution of automatic or voluntary impulses to the antagonistic groups. When not only a single column, but the entire spinal cord is cut off from the brain, we have after the cessation of irritation phenomena naturally an equal enormous increase of both forms of reflexes, as shown clearly by cases of myelitis totalis transversalis spondylarthrocacia, etc. This increase is due to the lack of checking impulses from the brain to the extensors, whilst ascending impulses take short paths, and so irradiate with great force only in the flexors.

But we must stop here, having only touched on the points of theoretical interest, which are:

1. That tonicity of extensors seems to come largely from the brain, whilst the tonicity or excitability of flexors comes principally from the spinal cord.

2. That there exists in affections of sensory ascending nerves, as well as in those of motor nerves, an antagonism between flexors and extensors, though in an opposite manner.

3. That there is an antagonism between long and short ascending sensory nerves, as well as between descending tonic and motor nerves.

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CASE OF PROTRACTED SLEEP EXTENDING OVER FIFTY DAYS.

BY

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H., aged 17¾ years, one of five children of a Clifton physician, spent the year prior to November, 1897, in severe study, without allowing himself sufficient time for sleep. Early in the month named he was examined by a medical Board at the Admiralty, London, and was declared to be physically fit for the Naval Service. Thereupon he presented himself at a competitive examination for an assistant clerkship in the Royal Navy. He gained one of the 15 appointments, for which 85 candidates competed.

During the six weeks that followed the announcement of his success he occasionally complained of feeling rather "tired" after what to him was very moderate exertion. This was looked upon as merely the result of excitement in connection with his outfit preparations for foreign service.

On January 16th, 1898, he exhibited some drowsiness during a visit of a schoolfellow at his father's house. On the following day he left home to join his ship at Plymouth. He was seen off (apparently in good health) from the Bristol railway station by his sister. On his way down he was met at Newton Abbot by a clerical friend, who accompanied him to the end of his journey. He had always been very communicative to this gentleman, and yet, although he had not seen him for some time, he fell asleep immediately after the two began to talk, or as soon as the train started from Newton Abbot. He was very drowsy on his arrival at Plymouth, where he was met by a naval officer, at whose house he was to spend the night. He retired to his bedroom within half an hour of his arrival, and slept calmly and soundly (after a very light supper). The next forenoon his host had great difficulty in keeping him sufficiently awake to dress himself and go by train to the Admiral's office, two or three miles distant. On returning with his friend to the latter's house he fell asleep; and each day from that time on he became more and more drowsy and less inclined to take food unless it was pressed on him.

Accordingly his father took him back home to Clifton on January 27th. On the following day he was placed under our medical care. Some hysteroid symptoms suggested the treatment then tried. Every effort was made—by getting him to join in games and by taking him out to walk—to keep him awake; but, as he used to fall asleep while on his feet, and sometimes just after sitting down to a meal with the family, this method of treatment was abandoned after ten days' trial.

On February 4th an examination by the ophthalmoscope led to a suspicion—which the family history more or less supported—that there might be tuberculous mischief. (One of his sisters had died of phthisis.) Small frequent doses of iodide of mercury were prescribed; but after this had been pushed to salivation and a second examination by the ophthalmoscope had revealed nothing marked in the appearance of the discs, all treatment by drugs was given up on February 10th, with the concurrence of Dr. Michell Clarke, who had been called into consultation.

Thereafter attention was directed merely to the prevention of body waste, there being the greatest possible difficulty in getting him to take any food even in a liquid form. At this time his pupils were much contracted and but little affected by light even after he had been roused as much as possible from sleep. There was nothing in any way suggestive of catalepsy. There was a good colour in cheeks and lips; the extremities were fairly warm; there was no anæsthesia; he

never complained of headache; the pulse was slow and weak; the temperature normal; there was nothing remarkable about the urine, but the tongue was thickly coated with light brown fur; the knee-jerk was exaggerated, particularly on the left side, and there was at times some ankle clonus.

He lay in a calm, placid sleep uniformly, and when roused to take liquid nourishment (every four hours) he would speak, in reply to direct questions, very much as one does who talks in his sleep. It would sometimes take ten minutes or a quarter of an hour to rouse him sufficiently to prevent his being choked in the attempt to get down the egg and milk, or beef-tea, or other nourishment. Indeed, he would frequently drop off to sleep while in the act of putting the cup between his lips. The sleep was never a "profound" one, and when the calls of Nature demanded his attention there was an obvious desire to respond to them; but he would frequently drop off to sleep again before he could be assisted, and the inclination to evacuate his bowels or bladder would then disappear. Gradually this partial response ceased, and he passed in bed his motions, which cascara sagrada kept fairly free. Every effort was made to get him to empty his bladder naturally by propping him up against the wall and otherwise, but it was generally a failure. During this period priapism was very marked, but there were never any seminal emissions, and his hands had to be tied to the bedstead to prevent his practising onanism—a habit to which he had never been addicted. Another troublesome symptom was the frequent sickness, principally after the first meal of the morning, but this rarely occurred more than once in the twenty-four hours. It may be mentioned that ever since an attack of rheumatic fever, by which his heart was affected, at the age of 8, there had always been a great difficulty in getting him to take sufficient breakfast for a growing lad.

He remained in this condition till the middle of March; then he began, while half awake and half asleep, to talk as if in a dream, sometimes saying things which were ridiculous, and occasionally asking how long he had been ill. He also showed evidence of an emotional tendency unusual to him. His weight, which previously had been gradually decreasing, began now slowly to return to the normal condition, and he was allowed to sit up for an hour or two daily from March 30th. The sense of taste, which was apparently quite absent previously, also gradually returned, but was not entirely restored till very recently.

The first thing he had to do when he commenced to stay partially awake for any length of time was to learn how to balance himself standing; and, next, to learn how to walk without falling to one side. (Even at the present time—six and a half months since his seizure, and nearly four months since the end of his sleep—he is somewhat unsteady in his gait, particularly if he is the least fatigued.) On April 10th he was taken out in a wheel chair, two months and six days after he had been put to bed. Ever since that date he has been spending as many hours as possible in the open air.

There is no impairment whatever of his mental faculties. His memory is quite clear with regard to events prior to his journey to Plymouth on January 17th, and those which have happened since the beginning of April last. As to what occurred in the intervening period, he has no recollection whatever beyond the fact of his brother and sister meeting him at the Bristol Station on January 27th. Everything between that date and the end of March is to him a complete blank.

He is still unable to read for any length of time, or to watch a game of tennis without a feeling of local ophthalmic exhaustion. The condition of his pupils, however, is quite natural. The morning sickness still occurs occasionally, but it is very slight. The staple articles of diet with him are milk and cream. Of the former, he never takes less than three pints daily. Drug treatment is confined to cod-liver oil. He is not, as already stated, quite as firm in his walking as one might expect after the three months' practice he has had; his head shakes a little when he gets in any way excited in conversation, but otherwise his condition is normal.

His progress towards complete recovery has been very marked during the last few weeks, and one may fairly anticipate that, his general health being now so good, his full vigour of body will soon be re-established. There has been no definite evidence of any organic lesion, nor has he once complained of headache.

In conclusion, it may be mentioned that only 18 other well-authenticated cases of such protracted sleep are recorded in the annals of medicine. Of these, only 8 recovered completely; 4 died in sleep. An epitome of the 18 cases by Weir Mitchell may be found in the *Transactions of the College of Physicians of Philadelphia*, vol. iii. Interesting information on the subject is given in a condensed form in chapter xvii of Gould and Pyle's *Anomalies and Curiosities of Medicine* (London, 1897).

Note by the Authors, September 27th, 1898.—The officer whose case was read at Edinburgh two months ago has now regained his strength almost entirely. He is serving at present on board a line-of-battle ship at a home port, and does his clerk's work without any evidence of his long illness.

REMARKS ON THE ALCOHOL NEUROSIS.

By J. STRACHAN, M.D.

THAT there is a disease of alcoholic intemperance must be borne in upon the mind of everyone who has any lengthened experience in medical practice—that there are men and women who have no more power to resist "drinking to excess" if they "drink" at all than they have to prevent the symptoms and the course of any other disease, the poison of which has entered and is working in the blood. The most powerful motives which can influence the conduct are appealed to in vain, and the wretched victim will, by any artifice or any meanness, sacrifice everything to obtain the poison which is rendering life far worse than death.

This neurotic intemperance (if I may suggest a name) possesses several features which serve to distinguish it from the common vice of occasional and deliberate drunkenness, and it is of great importance that the distinction should be fully recognised.

1. Whereas the *vice*, once so prevalent and even fashionable among the men of all classes, is now all but confined to what are called the lower orders, and is, we may hope, being driven ever lower in the social scale, the *disease* is confined to no class, and to neither sex, and instead of diminishing seems decidedly on the increase, as is shown not only by the number of cases to be seen in every community, but also by the increasing number of "retreats" and homes for inebriates, and the more and more pressing calls for legislative restraint for those so afflicted.

2. While the vice of drunkenness is very much a matter of occasion and opportunity, and is perfectly under control when a sufficiently strong motive is operative, the disease is to a great extent periodic in its onset, and quite unaccountable in its course. The occasional drunkard is, as a rule, a habitual drinker, and indulges to excess only on occasions of conviviality; the neuro-inebriate may have long intervals when he has no desire for and does not take stimulants, but has periods of resistless craving which run a more or less definite course. As the disease progresses, however, such intervals tend to become shorter, and the intoxication more or less continuous, culminating at times in delirium tremens or convulsions.

3. The occasional drunkard seeks companionship in his cups, and is generally more or less noisy and uproarious in his intoxication; but the victim of this disease inclines rather to shrink from observation, and is generally quiet and morose under the influence of alcohol.

The morbid and irresponsible condition of the so-called habitual drunkard is, I think, too much regarded as a result of previous over-indulgence, and thus brought under the stigma properly attaching to the vice of drunkenness. Without going so far as to say that a long course of dissipation may not have such a result, I would point to the fact that the prevalence of the vice bears no such correspondence to that of the disease as would indicate a relation between the two as cause and effect. We must therefore look elsewhere for a cause, and deal with the disease apart from moral considerations.

There is, I think, no doubt that the taking of stimulants by children and adolescents is a powerful factor in the production of this disease, a large proportion of the cases which come later under observation presenting such a history. Every medical man should be careful, when occasion arises, to warn parents of this danger.

Women are more susceptible than men, but are less exposed to danger from the drinking customs of the country. The fashion which prevailed in the profession some twenty or thirty years ago of ordering whisky and brandy to delicate ladies was responsible for a number of very sad cases which came under my own observation. The men who fall victims to this malady are as a rule, if not invariably, of an almost distinctively characteristic nervous temperament, of the soft, genial, kind-hearted, feminine type. Heredity plays an important part as a predisposing cause, and the families of those actually affected by the disease ought to regard alcohol in any form as a deadly poison, their only safety lying in total abstinence.

It is important that the affection should be regarded from the pathological rather than the moral point of view. The craving is for relief from suffering. Persons presenting the alcohol neurosis are very susceptible to the alcoholic stimulus; a comparatively small amount produces exhilaration. This is followed by reaction amounting to an extreme degree of nervous depression. A repetition of the stimulus gives immediate relief, but at the expense of further reaction and still greater depression and more urgent craving for relief. More and more is required to keep off, as it has been expressed by a sufferer, "the horror of getting sober." Here it is the first glass of whisky, which does not carry with it any moral delinquency, and, according to the usual drinking customs of the country, is very difficult to avoid, which does the mischief. The attack usually culminates in severe gastric irritation and complete nervous prostration, perhaps delirium tremens, on recovery from which the craving is found to have passed off, and the patient is full of good resolutions. For a longer or shorter time all goes well, and there is not even any desire for stimulants. Then the patient—he still is a patient although he does not know it—feeling himself stronger, or feeling dull and low spirited, for such neurotics are subject to fits of depression quite apart from the use of stimulants, and are easily upset by business worries, etc., thinks that a glass will set him up and let him get on with his work. An attack follows and runs its course as certainly as an attack of fever when the poison enters the system. If, after careful examination, we tell a man that he is so constituted that potatoes are very bad for him, and that even to take one will certainly make him very ill, there will be no difficulty in getting him to abstain from them entirely. He will be very pleased to say at table that his doctor has forbidden him to take potatoes. Why is it that we have not the same powers to forbid alcohol? Because to act upon such advice would be to confess to a moral fault which few inebriates are strong-minded enough to do. If we could get rid of the moral element in the question, and convince such patients that it is altogether a matter of constitution that alcohol in any form or any quantity is exceedingly bad for them, and certain to bring on serious illness, might we not hope for more success in dealing with them? However it may be brought about, there is, I am fully convinced, no cure and no preventive for this disease except total abstinence from alcohol, which is comparatively easy, though moderation to such persons is impossible.

As to legislative protection I am no believer in compulsory detention except while such detention lasts, or unless followed by total abstinence, and I am doubtful whether total abstinence is much easier after such detention than it is after any of the attacks. A more logical and effective mode of legislative protection would be, instead of locking up the victim to lock up the poison. I would suggest that the actual or dangerous poison might be found to be only the strong drinks—whisky, gin, brandy, etc., which are used in their full strength by comparatively few, and required, except as a medicine by none. If these could be classed as poisons, to be obtained only from the apothecary under the restrictions of the Poisons Act, which might even be strengthened, I believe a great step would be taken to eradicate this terrible curse from the land. To the cry against sacrificing the pleasure of the many to the weakness of the few, I would reply, first, that the sacrifice of the strong drinks, provided the weaker be left, and perhaps cheapened, would not be great; secondly, the "few" taking them, at about one-half per cent. of the population, amount to some 200,000 in Great Britain and Ireland; and, thirdly, that however safe the many may feel in themselves, who can tell how they may be made to suffer through those whom they love perhaps more than themselves?

ON FOUR OBSCURE CASES OF INTRACRANIAL DISEASE.

By H. J. Campbell, M.D., F.R.C.P.,

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The following four cases of intracranial disease are of interest, partly from their rarity and partly from the apparent obscurity of the symptoms in relation to the pathological lesions as manifested after death.

The first case is one of hemiplegia due to the invasion of the cortex of the motor area by tubercle bacilli, death being due to general tuberculosis. In this case, which was sent to me by Dr. Sinclair, the cortex was kindly examined for me by Dr. Eurich.

The second case is one in which the symptoms were those of a tumour of the pituitary body; but the necropsy showed that the pathological lesion consisted of a pachymeningitis in the region of the sella turcica. After death the evidences of swelling of the tissues and consequent filling up of the space were not so great as the symptoms would have led one to expect; but this would be accounted for by the vascularity of the parts. Mr. Targett suggested that the condition in this case was probably syphilitic, but the history gave one no reason to suspect syphilis. The notes of these two cases were taken by Dr. Gladstone, House-Physician to the Bradford Infirmary, the second having been sent up to me by Dr. Eames, of Shipley.

The third case is that of a boy of 15 whom I saw in consultation with Dr. W. Denby. It is of interest from the rarity with which hæmorrhage occurs at that age, and also from the causal association of hypertrophied left heart, adherent pericardium, and congenital cystic kidneys.

The fourth case is one of embolism of the posterior cerebrals and basilar by two emboli, which first cut off the blood supply from the perforated space, and later occluded the basilar, the only cardiac lesion being that of mitral stenosis. I saw this case with Dr. W. Mitchell.

W. C., aged 19, a spinner by trade, was sent into the hospital by Dr. Sinclair. A weakly-looking youth, always has been delicate. Two years ago had severe earache on left side but no discharge. This lasted for about a month, and he had been slightly deaf on that side since. For the last year had been depressed. Four months before admission to hospital he commenced to suffer from headache; the pain was general and came on every day, being sometimes very severe. No vomiting until two weeks before admission and then only after food. A week before admission the headache became much better. Two days before coming in it was noticed that he dragged his right leg. At this time the arm was unaffected and the speech was normal. The next day the arm was found to be paralysed on the same side, and there was complete aphasia. Sensation was impaired over the whole of the right side and the patient was extremely restless.

On admission, the inner edges of both discs were found to be somewhat blurred, the veins dilated, and the arteries small. The patient was extremely irritable, constantly moving the left arm and leg, frequently moaning, and putting his left hand to his head. There was no retraction of the neck, the right facial muscles were slightly paretic, and there was slight right-sided ptosis. There was no paralysis of eye muscles, the pupils being equal and of medium size; the right, however, reacted very sluggishly to light, whilst the left was very sensitive. The right arm was rigid with the fingers flexed; at times there were slight voluntary movements of the fingers; the right leg was flaccid and paralysed; the knee-jerk on this side was increased, and there was slight ankle clonus; the plantar reflex was present but diminished, the abdominal reflex was absent; sensation was lost in the right arm and leg, and there was partial anæsthesia of the right side of the face; cutaneous hyperæsthesia was present on the left side of the head in front of the parietal eminence, and over this region signs of pain were induced by deep percussion. Temperature 99.2°, pulse 84, respirations slightly accelerated,

heart and lungs normal: no bogginess over mastoid, and membrana tympani normal on either side.

The condition remained the same for two days except that the respirations became more rapid, coarse *râles* appeared all over both lungs, and the boy became somewhat cyanosed. The temperature, which had fallen to 99°, then rose to 100.2°, the pulse became very rapid, and death somewhat suddenly occurred.

At the necropsy the left lateral ventricle was found to be somewhat distended with cerebro-spinal fluid: the left cerebral hemisphere was distinctly softer and more friable than the right, and there were a few tubercles on the vessels at the base, but no lymph. On section no tubercles were found on the vessels of the left internal capsule. There were scattered miliary tubercles in both lungs, on the surface of the liver, in both kidneys, and in the spleen.

Dr. Eurich kindly made sections of the cortex in the motor area for me, and found numerous tubercle bacilli in the grey matter of this region. The hemiplegia was therefore apparently due to pressure upon the cortical cells by the inflammatory œdema, caused by the presence of the micro-organisms in this region.

The second case is that of M. H., housewife, 33 years of age, the patient having been sent in to the infirmary by Dr. Eames, of Shipley, on October 26th, 1897. The illness commenced thirteen weeks before admission with precordial pain, constant vomiting after taking food, and severe, at times agonising, headache. During the whole of this period patient has been dull and listless; she has not wasted, and no peculiarity of gait has been observed. Two and a-half weeks before admission the right eyelid was noticed to droop, and three days later there was loss of sight of the right eye, followed in eight days by loss of vision on the left side. There is said to have been some strabismus for a few weeks. Ten days before coming in patient had a fit, during which the whole body was said to have been convulsed, and on the day following two more fits occurred. There was no evidence of the patient having had syphilis.

On admission the patient was found to be dull, drowsy, and heavy, resisting interference and inclined to moan. There was right-sided ptosis; the pupils were dilated and equal; there was apparently ophthalmoplegia externa on the right side, and much inco-ordination of the muscles of the left eye; no perception of light; marked optic neuritis on both sides. No facial or lingual paresis; some paresis of both arm and leg on left side. Patient is conscious, remembers the events of her illness, answers without much delay, but tends to ramble. Speech is drawling and toneless. Tongue coated, breath foul. Well nourished. Great epigastric tenderness. No enlargement of the liver or spleen. No œdema or ascites. Knee-jerks not obtained. Plantar reflexes present and active. No rigidity. Sensation seems to be impaired all over, except in epigastrium. Constipation. No incontinence of urine. There was no vomiting now.

Two days later incontinence of urine came on, the coma became deeper, and the left lid began to droop. On the next day the patient became more conscious, asked for vessel, and was able to answer questions. The headache had now disappeared. At this time some rigidity of the neck muscles appeared, and the patient became more or less constantly noisy and restless. Two days later incontinence of urine and faeces recurred, and two days later, again, she had a fit, in which the left side of the face and the right arm were convulsed. This was followed in an hour by a second fit, in which the left side of the face only was involved. The patient then became unconscious, and died in six hours. During her whole time in the hospital, with the exception of the night of admission, the temperature was either normal or subnormal. The pulse varied from 82 to 92, until just before death. There was a trace of albumen in the urine, but otherwise nothing abnormal.

The diagnosis seemed to be fairly clear, and with some confidence I decided that there was a tumour in the neighbourhood of the sella turcica, in the interpeduncular space, more on the right than the left, and pressing upon the right crus.

On making a necropsy there was found some thickening of of the membranes at the base of the brain, and both optic nerves were adherent and flattened. There was no basal tumour. The anterior part of the basi-sphenoid bone showed, however, considerable changes, including the sella turcica, the clinoid process, and the optic groove. The periosteum was much thickened, the sella turcica being partly filled up. The surface of the bone was at parts superficially eroded. A section was taken from the bottom of the sella turcica, and was kindly examined for me by Mr. Targett; this showed a thick layer of inflammatory tissue from the dura mater, and here and there there were evidences of caseation.

The third case is that of a boy, T. R., aged 15, whom I saw in consultation with Dr. Walter Denby. He was a well-grown, well-nourished schoolboy. No previous history of illness, except anterior poliomyelitis in childhood and a doubtful history of scarlatina or measles some three to four years ago. There was nothing after the appearance of the rash to suggest nephritis. During the week immediately preceding the present illness the boy had a slight cough and seemed to be somewhat dull and languid; he had, however, been regularly to school. Family history good. The father stated that the boy had always appeared to require to pass water more often than was natural, and until two years ago had suffered from occasional attacks of incontinence of urine. Had always been easily upset by rich food, but had not been subject to attacks of vomiting. Had always been strong and active, and had not suffered from dyspnœa or headaches. Had been bright mentally, although at times rather dull at his lessons. On the afternoon of April 3rd he ate some sweets and had cold sausage for tea, after which he went to church; during the service he complained of a slight headache and felt sick; he consequently left the church, and at once vomited, after which he walked home and proceeded to his bedroom. He tried to avoid vomiting until he could get across the bedroom to the basin, but was unable to do so. In the act of vomiting he fell down unconscious, and was then got on to the bed. Before being undressed he had slight general convulsions. Dr. Denby saw the boy a few minutes later after he had been got into bed, and found him to be unconscious, with heavy breathing, feeble pulse, and flaccid limbs. At 10.30 we saw him together, and found the condition to be as follows: Deep coma, marked Cheyne-Stokes breathing, with pauses of occasionally ten to fifteen seconds between the groups of respirations, pulse somewhat irregular, feeble, and rapid (90), some blueness of hands but none of lips or ears, the skin dry and warm, the face pale and somewhat pinched, corneæ insensitive, pupils equal, slightly dilated, and insensitive to light, mucous *râles* in chest but air entering well all over, no heart murmur, both superficial and deep reflexes brisk, no œdema of legs, no smell to breath. The optic discs were slightly blurred, but there was no definite papillitis, retina congested, the lower segment of the right retina not clearly seen, but looking as though it were detached by a hæmorrhage behind it. Immediately above and to the outer side of the right disc there was a small hæmorrhage. The condition remained unchanged for six hours, except that the breathing became gradually shallower, and at the end of this period the boy died.

At the necropsy, made thirty-three hours after death, we found the right half of the brain suffused with blood under the pia from the rupture of small vessels on the surface; the lateral ventricles, the iter, and the third and fourth ventricles all distended with blood clot, the source of the hæmorrhage being the choroid plexus apparently in the right ventricle, this being more distended than the left. The lungs were normal. The pericardium was universally adherent, the cavity being quite obliterated. The pericardium was also adherent to the adjacent lung and chest wall. The right ventricle was dilated and empty, the left being much hypertrophied. The spleen was large, but otherwise normal. The thymus was large. Both kidneys were very large, and were typical examples of congenital cystic degeneration. The stroma presented the naked-eye appearances of fatty degeneration. The bladder was large and thick walled. The stomach was empty and somewhat dilated. All other organs were normal.

The fourth case is that of a woman, Mrs. J., aged 42, seen by me in consultation with Dr. William Mitchell. Spare, rather ill-nourished woman. Had had mitral stenosis for some years. She had had several miscarriages, and was subject to attacks of acute hysteria. About six months ago she had an attack which was looked upon as hysterical, and during which she was unable to walk for some days. Two days

previously, whilst out driving, had an emotional attack, which was thought to be hysterical, and for which she was given brandy, and then driven home. On arrival she was found to be semi-conscious. She remained in this state for some hours, and on regaining consciousness was found to have left hemiplegia, and to be unable to talk. On the next day she was able to move her left leg and arm, but there was some rigidity of the arm; the left side of the face was paretic. Both third nerves were paralysed. There was no optic neuritis. Speech was inco-ordinate. Mentally she seemed fairly clear, but she was very emotional. The diagnosis we made was embolism, occluding one or more branches of the basilar at its anterior part, affecting the nuclei of both third nerves. The temperature was normal. Patient remained in about the same condition for a fortnight, and then slowly improved, the speech becoming more distinct, and the ocular paralysis gradually passed away. On getting out of bed a few weeks later, she had an attack similar to the previous one, but on this occasion did not regain consciousness, and died in a few hours.

On making a necropsy we found the basilar plugged with an *ante-mortem* clot of quite recent date, and an old adherent clot on the anterior wall of the posterior cerebrals at their point of origin, occluding the vessels going to the posterior perforated space. There was also a recent hæmorrhage on the surface of the right occipital lobe from the posterior cerebral. Except for mitral stenosis the other organs were healthy.

SECTION OF NEUROLOGY.

Byrom Bramwell, M.D., President.

A CASE OF BILATERAL OCCIPITAL PORENCEPHALY.

By T. A. Clinch, M.D.
Pathologist, Durham County Asylum.

It is with considerable diffidence that I have chosen the above title for the case under discussion. The term porencephaly has, however, been widened to a great extent, and is no longer limited to those cases in which there is a direct communication existing between the ventricle and one of the subarachnoid spaces. But even granting this, it is by no means clear that the case should be placed in this group. At a recent meeting of the Neurological Society, at which the subject for discussion was cerebral tumours, the rareness with which any implicating the occipital lobes were described formed one of the most striking features, and has also had a large share in inducing me to record the notes of the present case, more especially as I have photographs of the brain.

Report of Case.

History.—The patient was a woman admitted to the Durham County Asylum in 1878, at the age of 18. She was an imbecile, was able to look after herself moderately well, and had a slight appreciation of the value of figures and of money. She suffered from occasional attacks of mania, but never from fits. The only abnormality of the nervous system recorded on her admission was that she had internal strabismus of the right eye, a point which, in view of the later history, may have some importance, though I do not wish to lay any special stress on it. No history of her birth or general state previous to her admission could be obtained.

Progress.—Her progress was retrograde; she grew steadily more dirty and more untidy. At the end of four years she appeared to pay no attention to anything about her, and her expression was silly and vacant; occasionally she laughed to herself. Two years later her bodily health failed, and eight years after admission she had marked phthisis of the right side. At this time she apparently had an attack of localised pneumothorax which was followed by empyema. When this was opened she cried out for the first time for many months. As the empyema closed the signs of phthisis gradually grew less and finally disappeared, and her mental state also showed slight improvement. A year later she seems to have returned to her former state of brutishness. At the end of twelve years she was reported to be violent occasionally. Three years later she had an attack of pneumonia of the same lung. This apparently started the tuberculous process again. At the commencement of 1898, that is, nearly twenty years after her admission, the phthisis took on a more severe character, and a typical hectic temperature developed. In February she suffered from exceedingly foul breath, which was supposed to be due to septic cavities. At this time gradually a tonic contraction of the muscles set in, the arms were drawn to the chest, and the wrist and fingers flexed on the pronated and flexed forearm. The legs were drawn upwards with all the joints flexed. There was no shortening of the muscles at any time, and it was not till the beginning of May that this state was fully developed. With the increased tonicity were associated increase of the reflexes, and in the later stages, when a clonus was fairly started, which was difficult on account of the spasm, the violence of the movements was quite out of the common. Both ankle and patellar clonus could be obtained, but only an ordinary jerk from the muscles of the arms. No reflex could be obtained till repeated flexion and extension had to a slight extent induced the muscles to relax, so that superficial examination would have led one to declare that the reflexes were abolished. The head was flexed on the chest and the back was convex. The odour of the breath, and, indeed, of the body generally, was now such that ophthalmoscopic examination would have demanded an amount of scientific enthusiasm I must confess that I did not possess. Lateral nystagmus was well marked even when the eyes were at rest. The patient appeared to be able to see, but as she took no notice of anything said or done to her it was difficult to be absolutely sure. The pupils were very widely dilated but reacted fairly well to light. There appeared to be some paralysis of both sixth nerves as neither cornea ever reached the external canthus properly whereas they did reach the internal.

With a hectic temperature and gradually emaciating she went rapidly down hill, and died on June 13th, 1898, aged 38. There was occasional vomiting and generally severe constipation, which towards the end alternated with diarrhœa of tuberculous origin. The mental state of the patient was too low to permit of any exact examination of sensation, and only severely painful impressions elicited response. Towards the end there appeared to be hyperæsthesia of the deep senses, but even this was problematic.

Necropsy.

The *post-mortem* examination was made eighteen hours after death. The body was very thin; there were no bedsores. Rigor mortis had passed off; well-marked lividity. The head was very small; the scalp was thick, tough, and dry; the skullcap soft and thickened, somewhat congested; the diploe well marked, the left posterior fossa enlarged posteriorly. The dura mater was toughened and thickened; the sinuses contained clot and fluid blood. The arachnoid veins were moderately full; membranes soft, slightly thickened, opaque, very œdematous, and stripped freely. The basal membranes were somewhat thickened.

Cysts.—On removing the dura mater on the left side a large cyst was seen, the wall of which was so thin that it at once gave way in one or two minute holes, and the fluid within spurted out to a considerable height (Figs. 1 and 2). It lay on the enlarged occipital fossa of the skull, and replaced most of the occipital lobe. On the right side was a similar cyst of a smaller size (Fig. 1), the external wall of which was, however, somewhat thicker, and did not give way before the internal pressure. These cysts appear to be formed externally by the arachnoid; they were lined internally by the pia mater, and laterally the pia and arachnoid had fused, keeping them more or less watertight. They were crossed by vessels and thickened fibres of subarachnoid tissue.

Brain.—The convolutions behind the pia mater were distinctly radiate in their arrangement; they terminated in the centre in a smooth convex surface, which was composed of compressed nervous tissue and thickened ependyma, and was in fact the termination of the dilated posterior horn of the ventricle (Fig. 3). This was seen much best on the left side. Externally they became continuous with the usual convolutions which lay close to them. The brain was very small; it weighed only 29 oz.; it was atrophied, as over 5 ounces of fluid escaped during removal and dissection; it was œdematous and

soft. The convolutions were simple in their arrangement. The development of the basal ganglia was normal and duly proportionate to the size of the brain. The pons cerebellum and medulla were normal. The optic nerves and tracts were much atrophied. The posterior cerebral arteries were the same size as the superior cerebellar, and consequently, instead of having as usual an apparent bifurcation of the basilar artery, we had here what looked like a quadruple division of this vessel.

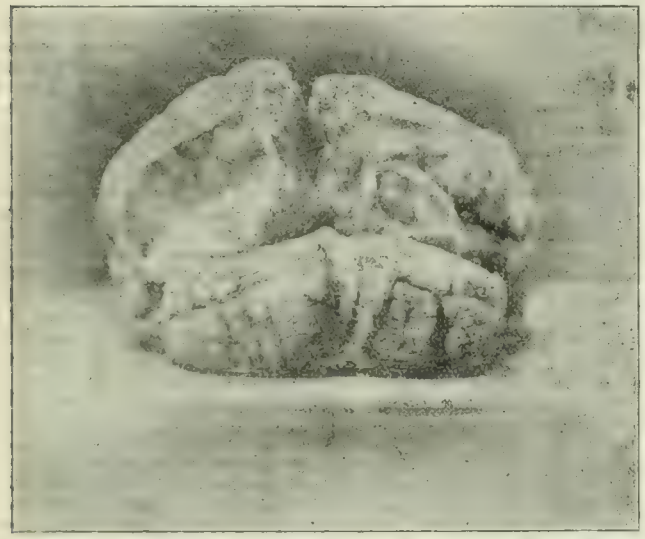


Fig. 1.



Fig. 2.

Lungs.—The left lung showed acute phthisis at the apex; the right was firmly bound down throughout: it was very small and fibrotic; the apex was converted into cavernous fibrous tissue. Below this and throughout the lung acute broncho-pneumonic tubercle of fairly recent date was present, and breaking down was commencing at several points near the apex.

We have, then, in this case atrophy and destruction of the occipital convolutions, which have the radiate arrangement said to be typical of congenital porencephaly. The ventricle is dilated and projects into a cyst, where the pressure is much higher than the normal intracranial pressure, and so we may assume that the intraventricular pressure is likewise increased.

The formation of the cysts is anatomically the same as the arachnoid cysts—or cisterns, as they are termed by some—commonly enough seen in cases of chronic insanity; from these, however, they differ in that the pressure within is raised, which in my experience never occurs in the arachnoid cysts, and the thinning of the arachnoid is also a point of difference.



Fig. 3.

The localisation is interesting, and, in association with the other evidence of congenital origin, suggests that it may have had origin in a delivery which was tedious and prolonged. Most porencephalies can be traced to a vascular or hæmorrhagic origin; but here we find only a small part of the area of distribution of the posterior cerebral has been affected, though the artery itself has been very much reduced in size.

Two of the most important symptoms clinically were the internal strabismus and nystagmus and the optic atrophy, and these may be localising symptoms of some importance. It will be observed that on admission, twenty years ago, the right eye alone deviated.

A CASE OF LOCALISED PONTINE LESION.

By J. Walter Carr, M.D., M.R.C.P.,

Assistant Physician to the Royal Free Hospital; Physician to the Victoria Hospital for Children, Chelsea.

The following case is interesting as presenting a somewhat unusual combination of symptoms, due probably to a very localised lesion in the centre of the lower part of the pons.

History.—A woman, aged 51, married, was admitted to the Royal Free Hospital on September 21st, 1897. The family history was good, both parents having lived to over 70. There was no history or evidence of the patient having suffered from rheumatic fever, gout, or syphilis. She had been quite well until September 9th, when suddenly, whilst doing the family washing, she felt giddy and faint and fell down, but was able a few minutes later to walk with assistance to another room. There was no loss of consciousness. Speech at once became indistinct, her face was drawn to the right, and the right arm and leg were said to be paralysed. There was no headache or vomiting. She remained in bed until brought to the hospital fifteen days later.

Condition on Admission.

She was unable to walk or stand, but could sit up and turn over in bed. There was no paralysis of any limb, but the grip was weaker on the right side than on the left (dynamometer—right 25, left 15; patient was not left-handed). There was no affection of co-ordination, sensation, or of the sphincters. The knee jerks were normal and equal, but the plantar reflex could not be obtained on either side.

Cranial Nerves.—Smell was normal. Both pupils reacted to light and to accommodation. There was no ptosis, and the movements of elevation and depression of the eyeballs were normal, but there was complete absence of any lateral movement (paralysis of the internal and external recti on both sides), except for a very slight movement of convergence. The left masseter muscle contracted less strongly than the right. There

seemed to be some loss of sensation to pain on both sides of the face. On the left side all the facial muscles supplied by the seventh nerve, including the orbicularis palpebrarum, were absolutely paralysed; on the right side also there was probably some weakness, but the complete paralysis on the one side made it very difficult to be certain of slight weakness on the other. The left facial muscles gave the reaction of degeneration, and did not contract at all to faradism; on the right side they responded normally to both currents. There was acute conjunctivitis of the left eye, due probably to loss of the protective movements of the eyelids, for it subsided in a few days when the eye was kept covered. There was profuse sweating on the right side of the face, and more over the right side of the body generally than over the left side.

Taste.—All over the tongue, salt was said to be sugar: sugar was not recognised; quinine was described as sweet and pleasant. Hearing was normal, and there was no tinnitus. Deglutition was rather difficult, and sometimes caused cough, but there was no regurgitation through the nose. Articulation was very indistinct. The tongue was protruded to the left. There did not appear to be any mental impairment.

Circulatory System.—A systolic murmur was heard at the base of the heart and at the aortic cartilage, with accentuation of the second sound at this spot; but there was no evidence of any enlargement of the heart, and the apex beat was internal to the nipple line. Pulse full and regular; arteries degenerate.

Abdominal Organs.—Liver was slightly enlarged, reaching about an inch below the costal margin. The urine—specific gravity 1020 to 1030—occasionally contained a very faint trace of albumen.

Progress of Case.—Whilst in hospital, the patient distinctly though slowly improved; articulation and deglutition got much better, and she became able to walk with assistance, but the paralysis of the facial and ocular muscles remained entirely unaltered. She suffered a good deal from headache at times. The only drugs given were iodide of potassium in 5-gr. doses, three times a day, and laxatives when necessary. She left the hospital at her own wish on November 21st, and unfortunately I have been quite unable to trace her since.

In considering this case the exact anatomical diagnosis may conveniently be dealt with first. Assuming, as I think from the history we fairly may, that there was only one lesion, the bilateral character of the symptoms and the evident involvement of the trunks or nuclei of the sixth and seventh and to a less extent of the fifth, eleventh, and twelfth cranial nerves, clearly point to a lesion in the centre of the lower part of the pons extending rather more to the left than to the right side of the middle line; nowhere else could a single lesion account for all the symptoms which were present and for their very definite limitation.

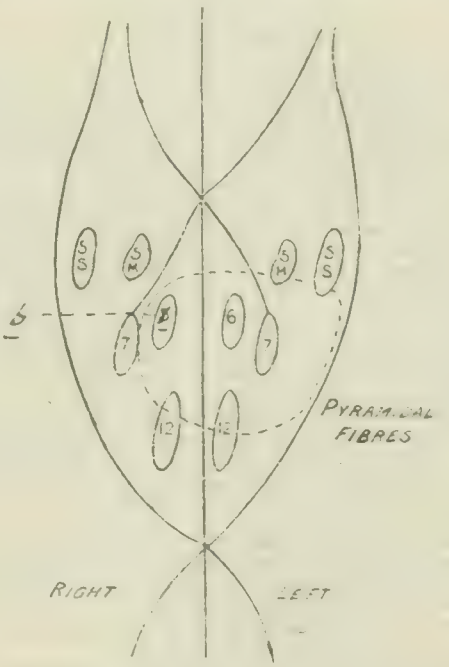
The complete and persistent paralysis of both external recti indicated destruction of the nuclei of both sixth nerves, where they lie close together on either side of the middle line beneath the floor of the fourth ventricle; but how are we to explain the paralysis also of both internal recti, all the other muscles supplied by the third nerves escaping? We know from the phenomena of so-called conjugate deviation of the eyes that the external rectus of one eye works in conjunction with the internal rectus of the other eye, and that for this mechanism fibres connect the third nerve nucleus with the opposite sixth nerve nucleus. Hence it follows that destruction of, say, the right sixth nerve nucleus not only causes paralysis of the right external rectus, but also of the left internal rectus, at any rate so far as the associated movements of the latter muscle are concerned. But if the left sixth nerve nucleus were also destroyed we should have in addition paralysis of the left external rectus and of the right internal rectus; in other words a kind of double conjugate deviation, resulting in complete loss of the lateral movements of the eyeballs, though a certain amount of convergent movement might remain, the internal recti then acting independently of the external and probably through separate nerve channels. This is precisely the condition which obtained in the case under consideration; both the sixth nerve nuclei were doubtless completely destroyed, hence total loss of the associated lateral movements of the eyeballs; the third nerve nuclei were intact, and consequently some power of convergence was retained.

The facial nerve nucleus and the nerve itself are, as is well known, in most intimate relation with the nucleus of the sixth nerve; hence the lesion which destroyed the latter probably destroyed also the seventh nucleus on the left side, causing complete left facial paralysis, and damaged it on the right side sufficiently to lead to slight muscular weakness.

Above and outside the nuclei of the sixth and seventh nerves lie those of the fifth, and slight damage to the latter is probably accountable for the perversion noticed in the sense of taste. The motor root is the more internal, and the weakness of the left masseter would seem to indicate its involvement on the left side. At the lower extremity of the lesion the hypoglossal and the upper end of the spinal accessory nuclei were probably involved, hence the affection of speech and deglutition; the more extensive damage on the left side being again indicated by the protrusion of the tongue to the left.

Finally, further away and anteriorly, lie the pyramidal fibres descending to the limbs, and not yet decussated. On the right side the lesion did not extend sufficiently to affect these fibres, but on the left side they were evidently slightly damaged, hence the paralysis of the right arm and leg recorded at first, which rapidly improved, and was represented only by slight weakness of the arm when the patient first came under observation. At first the case was doubtless a typical example of alternate hemiplegia, the facial fibres being damaged after, and the limb fibres before, their decussation.

The appended rough diagram may serve to give a better idea of what would seem to have been the probable position of the lesion.



It is somewhat surprising that hearing was not affected, as the lesion must have been very close to the nuclei of the auditory nerves.

Secondly, as to the pathological diagnosis. The sudden onset points clearly to a vascular lesion. There was nothing to indicate any syphilitic endarteritis, which moreover is very rare after fifty years of age. Embolism is also unlikely at this age, although the murmur heard over the aortic area might seem to indicate the existence of a possible cause for an embolus. It is probable, however, in the absence of any history of rheumatism or of any sign of enlargement of the heart, that this murmur was merely due to some atheromatous thickening affecting the root of the aorta or the cusps of the valve, a degenerative change but little prone to lead to detachment of emboli, which are usually a result of acute endocarditis in earlier life. Moreover, the manner in which the small median branches of the basilar artery are given off at right angles to the main trunk is not such as to favour the entrance of emboli.

As between hæmorrhage and thrombosis, the diagnosis is more difficult. The patient's age and degenerate arteries fit in equally with either condition, and points in favour of hæmorrhage are the fulness of the pulse, the accentuation of the aortic second sound, and the onset of the symptoms during exertion. Probably the strongest objection to this view is the absence of any loss of consciousness at the commencement. True, if there were a hæmorrhage, it must obviously have been

a very small one; but it seems hardly possible that in a part of the central nervous system so all-important as the lower portion of the pons, a vascular rupture could occur sufficient to lead to such definite bilateral symptoms as were present, without producing at least a temporary disturbance of consciousness.

On the whole it is perhaps most probable that the lesion was a softening due to thrombosis from atheroma, which is a very common condition after middle life in the arteries at the base of the brain, especially at the orifices of the branches coming off from the large vessels. The median branches of the basilar artery pass through the pons, and provide the main blood supply to the nerve nuclei, and it was most likely at the commencement of one of these branches that the thrombosis occurred in the case here described: the greater damage done on the left side being due either to the particular vessel involved being distributed more to the nuclei on that side, or to freer anastomoses on the right side.

A DISCUSSION ON
THE TREATMENT OF INTRACRANIAL TUMOURS.

I.—David Ferrier, M.D., F.R.S., F.R.C.P.,
Professor of Neuro-Pathology in King's College, London; and Physician to King's College Hospital and to the National Hospital for the Paralysed and Epileptic.

The Prognosis of Intracranial Tumours.

The treatment of intracranial tumours forms rather a melancholy chapter in therapeutics. Whereas in other parts of the body tumours are classified as benign or malignant, and if the former may only cause deformity or inconvenience, every intracranial tumour is virtually malignant. For, apart from any local irritative or destructive influence it may exert on the part it primarily invades, its universal malignity, whatever be its nature, consists in the injurious pressure which its growth exercises on the contents of the closed and practically unyielding walls of the intracranial cavity.

There are few tumours in other parts of the body which are capable of satisfactory treatment otherwise than by the scalpel or its equivalent. And the same holds in respect to tumours of the brain. Hence medicinal remedies—except in the case of the gummata—are unavailing, or at best only palliative.

Cerebral tumours are, with few exceptions—so few as to be capable of being treated as a negligeable quantity—progressive in character. Hence the dread diagnosis is, so far as purely medical aid is concerned, practically a sentence of death, either appalling in its suddenness, or after months or years of lingering and often intolerable suffering.

It was natural, therefore, to hail as of beneficent promise to those afflicted with otherwise incurable cerebral maladies the convincing demonstration given by experimental physiology of the comparative safety of surgical operations on the brain under Listerian precautions, and of the principles by which an accurate regional diagnosis of a cerebral lesion might in many cases be arrived at. Nor have our hopes in this respect been disappointed. For we can boast of a long array of splendid results in the surgical treatment of cerebral affections, such as abscesses, hæmorrhagic effusions, and cortical lesions, in which the indications for operation have been guided entirely by the principles of cerebral localisation; in addition to the hosts of instances in which the surgeon of to-day fearlessly and successfully deals with cranio-cerebral injuries which formerly would have been regarded as hopeless and beyond all aid.

If cerebral surgery has not done all that we might have expected, and the newborn enthusiasm of some ten years ago has not been fully borne out of late, this is in great measure a result of indiscriminate application, and underestimation of the formidable from what in all circumstances must be regarded as a serious undertaking.

Proportion of Operable Cerebral Tumours.

Unfortunately for those so afflicted, the great majority of cerebral tumours are so situated, or of such a nature, as to preclude the possibility of their successful removal. The percentage of operable cases has been variously estimated by different observers: by Seydel at 2 per cent., by Oppenheim and Bruns at 4 per cent., by Hale White at 9 per cent., by Starr at 10 per cent., by Bramwell at 12 per cent., and by Beck at 15 per cent. It is a fair estimate to say that only 7 per cent. of cerebral tumours are capable of being surgically dealt with.

Those cases only are considered operable in which the tumour is situated on or near the cortex—central, pontine, and basal tumours being practically inaccessible.

At best, however, it is evident that the proportion of cases of cerebral tumour in which there is a reasonable prospect of successful surgical interference is a comparatively small one. This is a conclusion much to be deplored, but we must accept the facts, and recognise the limitations which they place on our efforts.

Results of Operation.

The question is whether, with the experience of ten years, in seven cases in every hundred cerebral tumours, we can diagnose their position with sufficient accuracy, and operate on them with such success as to place the surgical treatment of cerebral tumours among the triumphs of modern therapeutics. If success in this respect were the rule, and failure the exception, we should undoubtedly be justified in so regarding it. For it is never to be lost sight of that we are dealing with a desperate and otherwise necessarily fatal disease. If, however, it should prove on investigation of the results achieved that only a certain proportion of operable cerebral tumours can be successfully removed, still if our successes are at least as great as those obtained in the other major operations in surgery, the surgical treatment of cerebral tumours would have vindicated its position as a beneficent extension of the healing art.

If, on the other hand, our operation should not always entirely cure, but merely mitigate suffering and prolong life, it would still deserve to be regarded as a valuable addition to our therapeutic powers. And, further, if the difficulties of diagnosis should be such as to make the operation purely a tentative one, and if the tumour should not be found, or, if found, prove not to be operable, yet if the advantages of such an operation should outweigh the risks attending it, it would in my opinion deserve to be regarded as a beneficial and commendable one.

Looking at the subject from these different points of view I need hardly say that uniform success in the removal of cerebral tumours has not hitherto been obtained. Even when the tumour has been found, and successfully removed in the surgical sense, this does not imply that the patient has recovered. This is an important distinction which has largely been lost sight of in the surgical statistics, which are thus rendered in many respects unreliable. I should not myself consider a case a successful one unless the patient had lived at least a year after the operation, and had been entirely out of the surgeon's hands.

Starr's[1] statistics, which are the most complete, are largely vitiated by the absence of particulars as to the after-history of the patients. I will, however, give the results at which he has arrived from an analysis of the cases reported up to 1896. The total number of cases operated on for intracranial tumour was 162—namely, 137 cerebral and 25 cerebellar. In 48 of these—namely, 39 cerebral and 9 cerebellar—the tumour was not found. In 7—namely, 5 cerebral and 2 cerebellar—the tumour found was not removed. In 72 cases—namely, 65 cerebral and 7 cerebellar—the tumour was found and removed, and the patients recovered; while in 35—namely, 28 cerebral and 7 cerebellar—the patients died. The recoveries therefore amount to 44 per cent. of the total number operated on.

As I have already remarked, however, these statistics do not give us satisfactory information as to the proportion of real or permanent recoveries, since in many cases at least the term recovery meant only recovery from the operation. In order to arrive at more precise information as to the after-effects of the operation, I have, with the assistance of my colleague, Dr. Whiting, analysed all the cases reported in the medical journals from January, 1896, up to the present time. This collection begins where Starr has left off, and includes the cases he has since reported in the British Medical Journal for October, 1897. The total number operated on is 55; of these 20—namely, 16 cerebral and 4 cerebellar—died within a few hours or days after the operation, that is, 36 per

[1] *Brain Surgery*, 1893; *New York Medical Record*, 1896; British Medical Journal, October 16th, 1897.

cent.; 16—namely, 11 cerebral and 5 cerebellar cases, that is, 29 per cent.—died within the year; 12—namely, 10 cerebral and 2 cerebellar, that is, 22 per cent.—recovered and passed out of the hands of the surgeon, but their after-history is uncertain; 7—namely, 6 cerebral and 1 cerebellar—recovered and were alive at least a year, in some cases several years, after the operation. This gives us 13 per cent. of complete recovery, and if we put together those whose after-history is uncertain and those who lived several months, we get a total of 51 cases of relief or partial recovery: a curative or beneficial result in 64 per cent. against death in 36 per cent.

These statistics, however, are founded on cases collected from all sources, and embracing as they do many factors not strictly comparable with each other—of which one, namely, the personal equation, if I may term it, of the operator is exceedingly variable—they require to be received with a certain degree of caution.

Recent Statistics of the National Hospital for the Paralysed and Epileptic.

It has seemed to me therefore that more reliable conclusions as to the results of operation for cerebral tumour might be arrived at by examination of the records of cases under the care of myself and colleagues at the National Hospital for the Paralysed and Epileptic, where we have the advantage of the surgical skill of Messrs. Horsley and Ballance, the former of whom has deservedly gained a world-wide reputation in this department of surgery. The records have been examined and analysed for me by our Registrar, Dr. Whiting.

The total number of cases recorded within the last ten years is 38—namely, 31 cerebral and 7 cerebellar tumours. In 20 of these—namely, 16 cerebral and 4 cerebellar—the tumour was removed wholly or partially; while in 18—namely, 15 cerebral and 3 cerebellar—the tumour was not removed.

Of those removed, 3—namely, 2 cerebral and 1 cerebellar, that is, 15 per cent.—died within a few hours or days. Seven—namely, 6 cerebral and 1 cerebellar—died after some weeks or months, that is, 35 per cent. One of these lived 5 weeks; another 6 weeks; another 3 months; another 6 months; another 9 months; another 10 months.

In 4—that is 3 cerebral and 1 cerebellar—the patients lived some weeks or months, but the after-history is uncertain, that is, 20 per cent.[2]

Six—namely, 5 cerebral and 1 cerebellar—lived a year or more. One is alive after 1¾ year; 1 lived 2 years and died of an accident; 1 lived 2 years; another 4 years or or more; and another is alive 4 years after the operation. This gives a percentage of 30 recoveries in the cases in which the operation was completely carried out.

In the 18 cases in which the operation consisted merely in exposing or exposing and incising the tumour, 4 cerebral cases died within a few hours or days, that is, 22.2 per cent. Seven cerebral and 1 cerebellar died within the year, the longest survival being 11 months. This gives a percentage of 44.4. In 3 cerebral cases the results were uncertain. One lived at least 5 months, another 9 months, and a third is still alive and going about (the operation was performed only two months ago), that is, 16.6 per cent. Three, namely, 1 cerebral and 2 cerebellar cases lived a year or more. One lived 1½ year, and of the 2 cerebellar cases 1 is alive after 1¾ year, another after 6½ years. This gives a percentage of 16.6 of complete recovery.

The total immediate mortality, therefore, of all operations for the removal of cerebral tumour amounts only to 18 per cent. Against this we have in those cases actually operated on and not merely examined, 30 per cent. of complete, and, in round numbers, 50 per cent. of partial, recoveries. As regards the degree of recovery some idea may be gained by a few particulars as to the after-history of some of the patients we have been able to trace or communicate with.

The man to whom the skull which I show belonged was a patient of mine some ten years ago. From this enormous hole in the left side of the head, measuring some 4½ by 2½ inches, a large infiltrating sarcoma, several ounces in weight, and several cubic inches in size, was removed by Mr. Horsley. The patient made an excellent recovery, and, with only a slight addition to the hemiplegia from which he suffered before the operation, he continued in good health and spirits for two years. He was looked upon as a marvel in the little country town in which he lived, and was accordingly frequently invited to relate his wonderful experiences, and much treated in consequence. This had no very beneficial influence on him as may be imagined, and one night he fell down a stone staircase on going up to bed and fractured his skull, of which he died. It was satisfactory to know that this was not the result of his disease, which had been completely extirpated and showed no sign of recurrence.

The next relates to a boy under the care of Dr. Beevor, from whose right cerebellar lobe a cyst (sarcomatous?) was removed by Mr. Horsley two years ago. His headache disappeared, his optic neuritis subsided, and he is still alive and well. The following is from his father, of date July 4th, 1898:

> I am pleased to say my little boy (so far) has been going on capitally. The violent headaches and brain sickness have not recurred, the only thing I am concerned about is that he has never lost his staggering gait. He is very strong physically, fat, and eats anything and everything.

Another patient whose cerebellum was incised, but whose tumour was not found, writes after six years:

> I am pleased to tell you that with care my health is quite satisfactory. I still have the swelling at the side of my head, but it causes no inconvenience except being rather sensitive to touch. I also still have the weakness down the right side, but this is much better than before I left the hospital. Indeed, it will give you an idea how much better I am when I tell you I have been able to cycle for two seasons.

Another patient, whose skull I show you, had an enormous tumour removed from his right hemisphere. He was already comatose at time of the operation, but regained consciousness, and recovered so far as to be able to leave the hospital and transact business. Unfortunately the tumour recurred in some months and caused his death, yet for the time he was practically as one rescued from the grave.

I think that the facts which I have brought forward are sufficient to prove that cerebral surgery in the case of intracranial tumours, as well as in the other forms of cerebral disease to which I have already alluded, has been a beneficent extension of the healing art. There is indeed a large mortality, but the immediate mortality compares favourably with that of many of the other major operations of surgery. Thus, according to Treves's *Surgery*, the mortality after gastrostomy is 30 per cent.; gastro-enterostomy, 35 to 55 per cent.; nephrolithotomy, 43 per cent.; nephrectomy, 40 per cent.; strangulated hernia, 30 per cent. And it is estimated that only 30 per cent. of patients operated on for cancer of the breast remain free from recurrence.

The Causes of Death at or about the Time of Operation.

The immediate cause of death has been for the most part shock, hæmorrhage, or septic inflammation, which occasionally occurs even in the most skilful hands, but which should be entirely preventable. And it is possible that the risks from shock may be lessened if, as Mr. Horsley advocates, the operation should not be completely carried out at one sitting. I am inclined to think that in some at least of the fatal cases of operation for cerebral tumour death cannot be directly attributed to the operation, for the mortality, even where no attempt has been made to remove the tumour, appears to be larger than that from simple trephining for other forms of disease.

Sudden Death in Cerebral Tumours.

It is the fact that in cerebral tumours where all seems to be going on as usual sudden death is apt to occur; and a coincidence of this kind, on or after removal of the patient from the operating table, would be apt to swell the mortality.

In illustration I would mention the facts of two cases in which I was about to have an operation performed. In one of these, a young man, the symptoms were those of a progressive lesion in the left hemisphere suggestive of tumour, but there was a total absence of all the general symptoms of this disease. He had no headache either spontaneously or on percussion, no neuritis, no vomiting. Waiting till signs of neuritis

[2] Since this was written I have received a communication respecting one of these cases, A. W. He remained free from fits till within a month or two of his death, which occurred two years and three months after the operation. This was due to recurrence of the tumour, the formation of a large cyst, which was twice tapped, but without lasting result. The optic neuritis, which had disappeared after the operation, had again manifested itself.

made their appearance, I immediately ordered operation. Everything was being prepared, when the patient suddenly died. A large tumour the size of a hen's egg was found under the cortex in the Rolandic zone. Had death occurred on the operating table it would undoubtedly have been attributed to the operation.

Again, in a case in which the symptoms were those of tumour at the upper part of the Rolandic zone in the left hemisphere, though the patient was otherwise in good general health, sudden death occurred the night before he was to have been conveyed in an ambulance from his country residence to London for purpose of operation. Had death occurred during the journey to town I should probably have been blamed, or, if on the operating table, the operation would have been credited with the untoward result.

It would not be difficult to multiply similar instances illustrating the uncertainty of life in all cases of cerebral tumour, and due weight must be given to them in estimating the mortality of operations for their removal; and when we further take into consideration that many of the cases of cerebral tumour are operated on when already *in extremis* and as a forlorn hope, the mortality is likely to be much greater than in ordinary cases of trephining for injury, focal epilepsy, and the like.

I am clearly of opinion that when once the diagnosis is certain, and the tumour one which is considered operable, the operation should be carried out without delay, before the patient becomes exhausted by suffering, or plunged into stupor or coma.

Infiltrating Tumours.

It is unfortunately the case that a large proportion of the tumours which invade the brain are of an infiltrating character, and apt to recur in spite of apparently the most complete extirpation. One can scarcely hope for a cure, therefore, under such conditions, but, nevertheless, there are many cases in which extirpation of such tumours has, for a time at least, rescued the patient from impending coma and death, and restored him for a time to clearness of intellect and a fair degree of comfort. In some, repeated operations have been successfully performed on recurrent tumours, and in one or two the tumour has undergone retrograde metamorphosis. Some reliable method of checking the growth of tumours which cannot be effectually excised is a great desideratum.

Diagnosis of Site and Nature of Tumour.

Most of the operations for cerebral tumours have been performed on the assumption that the patient is suffering from tumour, and that the tumour is situated in the particular area which is selected for exposure. Both assumptions have, however, been repeatedly falsified.

Though the diagnosis of cerebral tumour is in general comparatively simple, there are exceptions; and though the position of the tumour can often be determined with accuracy, this is not always so, even in the hands of the most skilful, and there is not one of us who could not from his own experience furnish illustrative instances in point. Thus I had under my care some eighteen months ago a young woman whose symptoms led me to diagnose a tumour in the right frontal lobe. The mental symptoms were characteristic: optic neuritis first occurred in the right eye; she developed some degree of left hemiplegia, and weakness of the right external rectus. There was also apparently pain on pressure over the right frontal region. Mr. Horsley trephined over the right frontal lobe. The patient died. There was no tumour in the right frontal lobe, but a large glioma invading the left frontal lobe, where, according to the symptoms, it ought not to have been. And we have not yet discovered any certain criterion by which to distinguish between cortical and subcortical tumours; nor can we determine with certainty whether a given region whose function is disordered is primarily invaded, or whether it is pressed upon from above, or below, or from some other quarter. These difficulties will serve, in some measure at least, to explain the very large number (nearly 30 per cent. in Starr's collection) in which the tumour was not found on operation. And even if no mistakes were possible as regards regional diagnosis, we cannot tell with any degree of assurance what is the nature of the tumour, whether encapsuled and removable, or diffuse and the reverse.

But, notwithstanding all these doubts and difficulties, exposure of the supposed seat of the disease is called for if only as an exploratory measure. For the tumour may, after all, prove to be of an operable character, and the risks of the operation are less serious than the evil of allowing a case to perish which the necropsy might prove to be one that might have been dealt with successfully. And there is this consolation, that even if the tumour is not found, or, if found, is not removable, the free opening of the skull and dura mater has often a beneficial influence as a palliative measure by relieving the pressure and freeing the patient from his apathy or stupor, his headache, his vomiting, his optic neuritis and risk of blindness from post-neuritic atrophy should he survive, as he may, for any length of time. The subsidence of optic neuritis is, as has been pointed out by Taylor,[3] a very common result of operations for the removal of cerebral tumour, even when the tumour itself has not been excised or otherwise interfered with. This is either due to the relief of tension by the free escape of cerebro-spinal fluid, or by the tumour in its growth exerting its pressure in the line of least resistance through the opening in the dura.

This favourable result is not, however, an invariable or immediate occurrence. I have at present under my care a patient operated on only two months ago for tumour of the left angular gyrus. The tumour was found to be subcortical and infiltrating, and, though incised, was not removed. This patient is, with the exception of his word blindness, otherwise in good health and free from suffering; but, though his tumour is bulging through the opening in the dura mater, his optic neuritis, which at first showed no sign of diminution, is steadily subsiding without obvious atrophic changes. We can therefore count with probability, if not with certainty, on the subsidence of optic neuritis after free opening of the skull and dura mater. And this has an important bearing on another question which has been the subject of discussion—namely, whether (even in those cases in which there are no localising symptoms, or, if so, such as indicate a quite inaccessible or inoperable tumour) it would be justifiable or advisable to open the skull and dura mater merely as a palliative measure for the relief of the general symptoms and their consequences, of which blindness from post-neuritic atrophy is one of the most dreaded. I think the answer to this question must depend upon the individual case. I can conceive it possible that it might be of the utmost importance to rescue a patient who is lapsing into coma even for a short time; and in such circumstances the free opening of the intracranial cavity might so relieve pressure as to effect the desired end, and restore the patient temporarily to clear consciousness and exercise of his intellectual faculties.

So, again, a patient may exhibit intense neuritis, and yet in other respects have a fair prospect of months', or even years', survival, notwithstanding some degree of infirmity. And this not infrequently happens, more particularly, in my experience, in cases of cerebellar tumour. In order to obviate the risk of great impairment of vision or total blindness, an operation for the relief of intracranial pressure might be undertaken with reasonable hope of success. Or, again, the general symptoms, such as headache, vomiting, etc., may be so intense and distressing as not to be capable of amelioration by medicinal remedies, and in such circumstances all might be relieved as if by magic by free opening of the skull and dura mater.

I should be inclined to leave the decision as to the question of operation to the patient himself or his relatives, taking care to point out the risks, and the chances for and against a successful result. If he should elect to incur these risks for the sake of the relief which he might temporarily obtain, I see no reason why the operation might not be resorted to.

In such circumstances the opening of the skull and dura mater would be most effectual over the region where the pain on deep pressure of the skull is most readily elicited. If this is not present at all, a free opening, more particularly over the occipital or frontal region, would, I think, be best calculated to serve the end in view.

The Kind of Tumour most Amenable to Operation.

The hard or encapsuled tumours are generally considered the most suitable for surgical treatment. This is readily in-

[3] *Trans. Ophthal. Soc.*, vol. xiv.

telligible, as they can be most easily enucleated or shelled out of the tissue on which they are situated with the least risk of recurrence. Unfortunately the sarcomata which, after the tuberculous, are the most common form of cerebral tumour, and *a fortiori* the gliomata and gliosarcomata, are not so easily separable from the healthy tissue, and therefore there is a greater tendency to recurrence. It is on the whole better not to attempt to remove a tumour which proves to be a soft infiltrating one without distinct demarcation from the healthy brain substance. Solitary tubercles being so often associated with tubercle elsewhere, and particularly in the meninges, are less favourable for removal than some others, but yet they cannot, in face of the actual successes reported, be considered inoperable; and I also agree with Mr. Horsley in regarding gummatous tumours and cicatrices which have not yielded to vigorous antispecific treatment as fit for operation.

Cerebellar Tumours.

Oppenheim, Bruns, and others look on cerebellar tumours generally as inoperable, but this I regard as too sweeping an assertion. It is no doubt true that the mortality after operation for cerebellar tumour is relatively greater than for cerebral tumour. Operations on the cerebellum are more dangerous than on the cerebrum, probably from the greater tendency to shock from proximity to the vital centres of circulation and respiration. Yet the experiments of Luciani, and those of Turner and myself, on monkeys, have shown that even the whole cerebellum can be removed consistently with long survival. And a large portion of the cerebellum can be destroyed without great permanent infirmity.

But the difficulties of exact diagnosis are great, and unless there are accessory symptoms, such as indications of pressure on some of the cranial nerves on the side of lesion, it is frequently impossible to make an accurate regional diagnosis. But, assuming all these to be overcome, I see no reason why, in suitable instances, an operation should not be undertaken. We have on record several remarkable cases of recovery, complete or partial, after removal of cerebellar cysts and tumours. I have at present under my care a boy who was admitted into the National Hospital for the Paralysed and Epileptic with typical cerebellar symptoms. On examination it was found that the left occipital region yielded readily to pressure, and bulged perceptibly more than the right. Mr. Horsley removed the bone, which was as thin as paper, and exposed a large tumour of the left lateral lobe, which a few days later he successfully removed. The tumour, which was of the size of a tangerine orange, proved to be a solitary tubercle, tending to break down in the centre. The little fellow is still alive, though he has had a febrile temperature, the exact cause of which is uncertain.

Treatment by Drugs.

I have not specially alluded to the medicinal treatment of cerebral tumours; and indeed there is little to be said on the subject which is not trite and commonplace. It is the custom, and, in my opinion, a commendable one, to give the patient, even in cases in which there is no obvious specific infection, the benefit of vigorous antispecific treatment. For large doses of iodide frequently give great relief even in tumours other than of gummatous nature. How long this should be persisted in is a matter of opinion, but in the absence of distinct signs of improvement, or rather the reverse, though the patient is obviously constitutionally affected, I should consider it necessary to think of surgical interference, if the case should otherwise appear to be an operable one.

II.—F. X. Dercum, M.D.,

Philadelphia.

Dr. Dercum called attention to the especial value in inoperable cases of potassium iodide as a palliative measure in gliomata. This was first pointed out by Seguin in glioma of the cerebellum, and later by Starr in glioma of the cerebrum. Dr. Dercum also referred to a case of tuberculous tumour of the cerebellum in which treatment by oxytuberculin failed. This remedy was first advocated by Hirschfelder, of San Francisco, in general tuberculosis. It was never followed by any unfavourable reaction, although no good resulted in Dr. Dercum's case. Professor Ferrier had covered the subject of the surgical treatment so thoroughly that practically nothing could be added. He fully agreed with him as to the utility and propriety of simple trephining and opening of the dura mater in inoperable cases, for the relief of headache, and to influence—for the better—the course of the optic neuritis.

III.—Joseph Collins, M.D.,

New York.

Dr. Collins said that Dr. Ferrier's statistics showed that his results were nearly of twice the worth of those of other recorders. He suggested that lumbar puncture should be employed early and repeatedly in the hope of influencing intraventricular pressure, and thus delaying the intensest degree of optic neuritis. With the recommendation of Professor Ferrier as to the advisability of operating as early as possible when the localising diagnosis could be made, he hoped everyone would agree. Personally he felt that valuable time could be, and often was, sacrificed in giving a course of potassium iodide, although he hoped he would not be understood to belittle the efficacy of this drug in some cases of tumours of the brain. Nevertheless, when there was no history and no indication of syphilis, and the neoplasm was localised, it should be removed at once without particular consideration of its histological structure. Dr. Collins said that latterly he had felt that the last word had been said on the treatment of brain tumour, but since listening to Dr. Ferrier's paper he had undergone a change of mind. With the general principles of treatment therein laid down everyone who had had experience must agree. The most remarkable statement made by Dr. Ferrier, and one that would be hailed with delight, was that 14 per cent. of brain tumours under the care of himself and his colleagues had yielded to surgical treatment, and that more than 50 per cent. had been greatly benefited. When it was considered that Dr. Ferrier had used the word "cure" in a very strict sense, astonishment at his brilliant statistics increased. It was well known that during the past decade there had been a progressive indisposition on the part of physicians to urge surgical interference. The consensus of opinion seemed to be that about 7 to 10 per cent. of intracranial tumours were amenable to surgical treatment.

IV.—Sir William Broadbent, Bart., M.D., F.R.S.,

Physician Extraordinary to the Queen.

Sir Wm. Broadbent complimented Dr. Ferrier upon his paper, and spoke of the gravity of operations for intracranial tumours. He discussed the means available for the prevention or relief of optic neuritis, and added a few remarks as to treatment by drugs.

V.—John M. MacCormac, M.D.,

Physician, Victoria Hospital for Diseases of the Nervous System, Belfast.

Dr. MacCormac said that though many held pessimistic views on this subject, he personally took the side of the optimist. He looked upon the results already achieved, brilliant as many of them undoubtedly were, as only an indication of what might be hoped for in the not remote future, though he realised that unfortunately in many cases the tumour, from its nature or location, must render treatment hopeless. Present-day statistics supported the conclusion that 3 per cent. of all forms of brain tumour could be successfully removed. It was surely encouraging to realise that, with the present knowledge of diagnosis, of all the cases of tumour operated upon, no less than 47 per cent. were accurately located and successfully removed, with recovery of the patient. The basis of all operations aiming at curative or palliative results must necessarily be accurate diagnosis, not only of the existence of an intracranial tumour, but also of its nature and location. In many cases such diagnosis might be difficult or even impossible in the present state of knowledge, for though much had been done in the localisation of tumours of the brain, yet a large growth might be found in certain parts such as the frontal region, the existence of which was unsuspected, as there might have been present only headache and some mental symptoms, with, perhaps, a slow pulse. In such cases much remained to be learned, and Dr. MacCormac thought that good results might arise from an exact investigation and

comparison of the mental symptoms. Most of the varieties of brain tumour except carcinoma had been successfully treated by the surgeon. A gumma might be removed if specific treatment failed, and when it was remembered how extremely tough such a tumour might be, it was not wonderful that iodides failed to cause its absorption. It was very important to remove early those growths which by their nature and location were suitable for operation, especially when it was remembered that their presence by compression of vessels might cause secondary results such as thrombosis of sinuses, œdema, and cerebral softening. In connection with palliative treatment Dr. MacCormac referred to two symptoms—headache and vomiting. Headache might be much relieved by phenacetin gradually and carefully given in doses up to gr. xx combined with caffeine gr. v, repeated if necessary in three hours. Vomiting might be relieved by giving $\frac{1}{100}$ gr. of hydrobromate of hyoscine every four hours. Mercurial treatment might be tried not only in cases of syphilitic tumour, but also for glioma and sarcoma.

VI.—C. E. BEEVOR, M.D., F.R.C.P.Lond.,
Physician to the National Hospital for the Paralysed and Epileptic, London.

WITH regard to statistics, Dr. Beevor had seen 4 cases operated on and a tumour removed, and the patient was alive now, at least two years after; in 2 cases four years after; 1 case was lost sight of. Of 3 cases, 2 were operated on three months ago and were relieved; 1 was relieved for some months, but subsequently died; 5 cases were not accurately diagnosed, and died. Antisyphilitic treatment was certainly to be recommended for six to eight weeks: if no improvement occurred it was desirable to operate. A case was reported who had signs of a tumour in the motor cortex sixteen years ago, and who practically recovered under antisyphilitic treatment, and was alive now. Operation was required for (1) removal, if the growth could be localised; (2) as a palliative measure, by removal of bone and opening the membranes where the growth was too large to be removed or the position was not localised. It was recommended to trephine over the occipital region and puncture the lateral ventricle and drain, in cases in which the position could be localised.

VII.—HERBERT F. WATERHOUSE, M.D., C.M.Edin., F.R.C.S.,
Senior Assistant-Surgeon and Lecturer on Anatomy, Charing Cross Hospital.

MR. WATERHOUSE said he would confine his remarks to the lessons which his experience—limited in comparison with that of many other surgeons—had taught him. First with regard to gummatous tumours. The fact that symptoms of cerebral tumour had become intensified under treatment with iodide of potassium by no means proved the case not to be of syphilitic origin. A. N. was seen after he had been treated with potassium iodide and mercury for four weeks. Iodide in large doses gr. xxv. t.i.d. were given for a further period of five weeks, as the case was clearly one of intracranial gumma. In spite of this the symptoms of cerebral tumour steadily increased until the patient became hemiplegic, then comatose, when a large gumma was removed from the left Rolandic area. Recovery in this case was rapid and complete. His experience of tuberculous tumours of the brain had been limited to three cases. In all the patients were children under 13 years of age. In no case was the tumour single. Two deaths within forty-eight hours of operation, and one partial recovery for four months, followed by death from another tuberculous tumour formed a gloomy picture. It was, however, in those cases which were generally considered unsuccessful operations, those in which an infiltrating tumour which did not admit of removal had of necessity been left to take its own course, that he had had results as gratifying as they were astonishing. In 4 such cases in which he had trephined only to find that the neoplasm could not be removed (in 1 case it was not discovered at the operation), he had found that the agonising headache, the vomiting, and the optic neuritis had all disappeared, at least for some weeks. The patients' lives had been changed from unendurable suffering to comparative comfort during the few months that remained to them; and every one of the four patients had expressed gratitude for the relief that the trephining afforded, and the unhesitating conviction that the operation was more than justified by the relief given to the distressing headache. In every case of cerebral tumour, therefore, he would urge an exploratory trephining, for operation offered even in the worst classes of cases—namely, those in which the growth could not be removed—a certainty of great mitigation of the distressing symptoms from which patients afflicted with cerebral tumour suffered. The situation of the headache was a very uncertain guide to the situation of the neoplasm; particularly was this the case in an instance of tumour in the occipital lobe with headache constantly present in the frontal regions. Tenderness on pressure when present was a valuable localising symptom.

VIII.—E. F. TREVELYAN, M.D.,
Professor of Pathology, Yorkshire College, Leeds.

DR. TREVELYAN referred to two cases of intracranial tumour treated by operation. One was a case of gumma of the Rolandic area, and the other of a large sarcoma in the right cerebral hemisphere. The first case improved temporarily under antisyphilitic treatment, but relapsed. Both cases died soon after the operation, but in one case from causes quite independent of it. From a study of a considerable number of tuberculous tumours Dr. Trevelyan thought them unsuitable for operative treatment on account of their multiplicity, situation, and the presence of tuberculous lesions elsewhere.

IX.—J. MICHELL CLARKE, M.D., F.R.C.P.,
Physician and Pathologist, Bristol General Hospital.

DR. J. MICHELL CLARKE said that before an operation for removal of an intracranial tumour the diagnosis from general and localising symptoms should be certain. Unfortunately the determination of the nature and size of the tumour was so difficult as in most cases to be impossible. The most suitable cases for operation were those in which the course was not too rapid and the symptoms gradually produced. In cases in which the symptoms were very intense and rapidly produced, and the tumour therefore probably a rapidly growing and malignant one, an operation should be undertaken with any chance of cure. Of course, operation could be done in such cases as a palliative measure only. With regard to treatment by potassium iodide, if in a case of intracranial tumour it was certain that there had been no syphilitic infection, and the tumour could be accurately localised, then treatment should be by operation: but if there was any doubt as to history of syphilis, or if, though the general signs of a tumour were present, its position could not be diagnosed, or it was inaccessible to the surgeon, then treatment by potassium iodide should be carried out. In most cases of intracranial growths the diagnosis of syphilis must be uncertain. With the energetic treatment by potassium iodide mercurial inunction should be combined. In suitable cases trephining as a palliative measure should be carried out, an opening being made preferably over the right parietal eminence, and might give great relief to symptoms, allow the optic neuritis to subside, and obviate optic atrophy and consequent blindness. In a case of tumour of the frontal lobe, where palliative trephining was done, the result was most successful, the patient being able to leave the hospital. The severe headache and vomiting never returned, and the patient retained his vision until his death. In another case of cerebellar tumour, however, the result was not so fortunate; a large hernia cerebri formed which caused the patient's death a month later. In a third patient there was relief to mental symptoms for some time after opening the skull in attempted removal of a growth at the posterior end of first frontal and upper part of ascending parietal convolutions. He questioned, however, whether operation merely for palliative purposes should be done in children. Lastly, there was a very small proportion of cases with symptoms of intracranial growth in which recovery took place and which were non-syphilitic. Dr. Williamson of Manchester had reported a remarkable example of a healed tuberculous tumour, and Dr. Clarke had had two cases under his care in which from symptoms presence of an intracranial tumour seemed certain, but which recovered. There was a strong tuberculous family history in both patients.

X.—J. M. Cotterill, M.B., F.R.C.S.,
Surgeon to the Royal Infirmary, Edinburgh.

Mr. Cotterill spoke of the generally unsatisfactory nature of the operative treatment of brain tumours. He insisted on the advisability of exploration and the frequency of alleviation of symptoms as a result of removal of pressure, and mentioned two cases as examples:

Case I.—A woman, aged 35 (under the care of Dr. Russell), who had marked symptoms of cerebral tumour, situated in the supramarginal convolution. The tumour was removed, with the exception of a deeper connection, which was out of reach. The operation gave very great relief from fits which had occurred previously, and other symptoms. These, however, recurred in three months, when a second similar operation was done, with a similar result.

Case II.—A lad, aged 19, with marked symptoms of intracranial tumour, especially agonising pain, entirely removed by operation. A very large hernia cerebri resulted, but this had gradually disappeared, and the patient (now one year after operation) was in perfect health with the exception of slight hemiplegia.

Mr. Cotterill described a method of operating by the flap method, which had certain advantages over other methods which were in common use.

XI.—Byrom Bramwell, M.D., F.R.C.P.Edin.,
President of the Section.

Dr. Byrom Bramwell said that he was sure he was expressing the feeling of the Section in returning their best thanks to Professor Ferrier for opening the discussion, and for the able and admirable address which he had given them.

He agreed with almost all of the conclusions which Professor Ferrier had laid down. His own experience pointed very strongly to the conclusion that it was only in a very small proportion of cases that an intracranial tumour could be completely and satisfactorily removed by the surgeon. For the purposes of this discussion he had analysed all the cases of intracranial tumour which had come under his notice during the past twenty-five years. They numbered 123. The analysis brought out the following facts: In 2 cases a tumour was found, the presence of which was not suspected during life; in other words, in which there were absolutely no symptoms. In 23 cases there were well-marked "general" symptoms, but no localising symptoms. In 2 cases, in which very definite localising symptoms were present, no tumour was found at the operation. In one of these the symptoms clearly pointed to a tumour in the motor area; at the *post-mortem* examination, a tumour was found in the optic thalamus, pressing upon and involving the motor strands of the internal capsule. In another case, in which the symptoms clearly seemed to point to the cerebellum as the seat of the lesion, no tumour was found, although the patient was trephined first over the left and then over the right lobe of the cerebellum. In 25 cases the position of the tumour precluded successful operative procedure: in 3 of these cases the tumour was situated at the base of the brain, outside the pons Varolii; in 4 the tumour involved the pituitary body, in 12 the pons Varolii, and in 6 the crus cerebri. In 9 cases, not included under any of the other headings, the cerebellum was the seat of the lesion; but it was very doubtful whether in all or any of these cases the tumour could have been successfully removed. He would refer to this point again presently. In 11 cases the tumour, as shown by the symptoms during life, by actual operation, or on *post-mortem* examination, was found to be too extensive to permit of removal. In 3 cases there were multiple growths. In 8 cases the tumour was malignant—cancer or melanotic sarcoma. In 1 case in which a healed syphilitic gumma was the cause of sensory Jacksonian epilepsy, the irritating cause might have been removed by operation, but malignant disease (epithelioma of the tongue), was present, and precluded operative procedure. In 31 cases the symptoms were relieved by medicinal treatment, and an operation consequently rendered unnecessary. In 24 of these cases the tumour was syphilitic; in the remaining 7 syphilis could be definitely excluded. In one of these 7 cases the surgeon who was consulted refused to operate; the patient improved markedly for a time under treatment (iodide of potassium), but relapsed and died soon after his discharge from hospital. In 5 of the remaining cases in which the symptoms had entirely, or almost entirely, subsided up to the present time, the exact nature of the pathological condition was perhaps doubtful. Dr. Bramwell used to be in the habit of regarding cases of this sort as cases in which the tumour had become quiescent; but latterly he had come to doubt whether this opinion was correct, at all events in all cases of the kind: he was now disposed to think that in some of them, at all events, the pathological lesion was probably a dilated condition of the ventricles, due to localised meningitis and closure of the foramen of Majendie. He would refer to this point again presently. In 1 case in which the symptoms pointed very definitely to a localised tumour in the motor area no tumour was found at the operation, though *post-mortem* examination subsequently showed a small glioma in the suspected situation; it was situated about 1½ inch below the surface. In the remaining 6 cases an operation should perhaps have been performed. In one of these cases (a scrofulous tumour of the cerebellum) the patient refused to allow of operation. In 2 cases the patient was only seen once and it was not known whether the symptoms were relieved by drug treatment or not. In the remaining 2 cases in which there was no *post-mortem* examination, the tumour appeared to be situated in the frontal lobe; in 1 of these cases the tumour seemed to be an extensive infiltrating glioma. In another case the tumour was situated in the occipital lobe; this patient was only seen once in consultation and there was no *post-mortem* examination.

Dr. Bramwell's pathological experience entirely corroborated his clinical observations and showed that very few cases of intracranial tumour which were examined *post mortem* could have been successfully removed by the surgeon. There were of course fallacies, for at the date of the necropsy the tumour was often very much more extensive than in the early (clinical) stages of the case. Further, tumours which one observer considered unsuitable for removal might by another observer be considered suitable.

Dr. Bramwell thought the question of operation was especially difficult in cases of cerebellar disease. He had met with at least 3 cases in which all the characteristic symptoms of a cerebellar tumour were present; but in which *post-mortem* examination showed, instead of the tumour which had been diagnosed, that the lesion was a dilated condition of the ventricles, apparently due to a localised meningitis which had blocked the foramen of Majendie. In one of these cases the patient was trephined. In all of these 3 cases the symptoms were of considerable duration (several months); in one of them the symptoms followed an attack of influenza, and in that case there was febrile disturbance during the early stages of the case; in the other 2 cases there was no history of fever and no symptoms indicative of meningitis. These cases seemed to suggest that in some of the cases at all events in which a cerebellar tumour had been diagnosed, and in which the symptoms subsided and the patient got well, the diagnosis was perhaps erroneous. He thought it probable that in some of these cases the pathological lesion was probably a dilated condition of the ventricles.

His experience entirely coincided with that of Dr. Trevelyan—namely, that it was exceedingly rare to meet with healed tumours, or cases in which the tumour had become encapsuled, latent, and quiescent, in the *post-mortem* room. During the whole course of his pathological experience he had met with only 1 case in which there was reason to suppose that a healed tumour was present. He did not, of course, in this statement include the syphilitic cases.

Now, if, as his experience clearly showed, cases were not very uncommon in which patients who presented all the general symptoms of a cerebellar tumour got well, it must, he thought, be granted that if in these cases the diagnosis was correct the remains of these healed tumours ought to be much more frequently found after death than appeared to be the case. Consequently, as the result both of his clinical and pathological experience he concluded that in some of these cases, at all events, the pathological lesion was a localised meningitis with ventricular distension and increased intracranial pressure and not a cerebellar tumour. The question was one of great practical importance, for if this conclusion were correct one would necessarily hesitate to recommend operative procedure in cases of supposed cerebellar tumour until drug treatment had been very fully tried for a considerable length of time. But if this course were adopted, one ran some risk of the patient dying suddenly, as some of the cases to which Professor Ferrier referred had done, and as had happened in more than one

case which had come under his own observation. Hence one was on the horns of a dilemma.

Further, as Professor Ferrier had pointed out, the dangers of operating on cerebellar tumours appeared to be considerably greater than in tumours of the cerebral hemispheres. Again, in some cases of cerebellar tumour, the middle lobe was involved, or a tumour of the lateral lobe was so extensive that its complete removal was very difficult or impossible. Again, in many cases of cerebellar disease it was extremely difficult or impossible to determine during life the exact part (lobe) of the cerebellum which was involved; and a double operation, first on one lateral lobe and then on the opposite lateral lobe, was undoubtedly attended, so far as his experience enabled him to judge, with considerable risk to life.

For all of these reasons, although undoubtedly in some cases of cerebellar tumour the tumour might be removed, and brilliant results obtained by operation, the proportion of such cases seemed to him to be exceedingly small.

Four years ago he had published a list of 82 cases of tumour of the brain, and analysed them for the purposes of a similar discussion. He had concluded that in only 5 of these would an operation have, as far as he could judge, been attended with success, even if it had seemed to be advisable (and in most of these cases this did not seem to be the case) while the patient was under his observation.

Since these statistics were published he had met with 41 additional cases, and in none of them, although he had been on the look-out for cases suitable for operative treatment, had the tumour been successfully removed by surgical procedure. As a matter of fact, an operation was performed in 14 of his cases. In some of these 14 cases the object aimed at was the removal of the tumour; in others, in which there was no definite localising symptoms, the operation was performed merely as a palliative measure (for the relief of headache, etc.); and in others (although the symptoms seemed to preclude successful removal of the tumour) on the off-chance that the diagnosis of tumour might be erroneous, and that an abscess or some other removable lesion would be found. The following was an illustration of this group of cases:

A man, aged 47, who had for some two or three months suffered (but not at all severely) from headache, gradually developed a left-sided hemiplegia and hemianæsthesia; the paralysis commenced in the hand, and slowly (in the course of ten days or a fortnight) extended to the leg and face. There was no optic neuritis, no vomiting, and no giddiness. The headache was comparatively slight. All conditions, such as ear disease, likely to be the cause of an abscess could be excluded. It was obvious that there was a progressive lesion in the centrum ovale, involving the internal capsule; and it was thought that the lesion was an infiltrating glioma. An operation was advised, not with the object of attempting to remove the tumour (for if the diagnosis was correct that of course was out of the question), nor with the object of relieving the symptoms (for there were no urgent symptoms requiring operative procedure), but on the mere chance that the diagnosis might be mistaken, and that an abscess, for which there was no apparent cause, would be found.

Last year he had published a case in point, in which a gradually developed hemiplegia, headache, and double optic neuritis were due to a cerebral abscess, and in which no cause of abscess was detected either during life or after death. It was the recollection of that case, in which operative procedure was carefully considered and negatived, which led him to recommend operative procedure in the present case.

The patient was trephined over the motor area; no superficial lesion (tumour) or abscess was found. Some three months after the operation the patient died, the symptoms having in the meantime gradually progressed and other symptoms corroborative of the original diagnosis having developed. On *post-mortem* examination a large infiltrating glioma of the centrum ovale, involving the internal capsule, was found. The specimen was one of those shown in the museum.

Dr. Brumwell's experience, therefore, in regard to the success of operative procedure differed notably from that of Professor Ferrier, for in none of his fourteen cases in which an operation had been performed had a tumour been successfully removed by the surgeon. He could only account for this difference by supposing that he had had an unfortunate run of cases (a series of cases unsuitable for operation), or that Professors Ferrier and Victor Horsley had made a selection of their cases, rejecting those (such as infiltrating glioma) which their wide knowledge and experience seemed to show were unsuitable for operation. It was only in one or other of these ways, or by supposing that their experience enabled them to localise cerebral tumours more accurately, or to remove new growths more satisfactorily, than himself and some of the other observers who had published their results, that one could account for the difference in the results to which Dr. Collins had referred.

Though in some cases marked benefit had been obtained by trephining for the relief of symptoms, he had, on the whole, been somewhat disappointed with the result of those cases in which "palliative" operations had been performed. He entirely agreed, however, with Professor Ferrier and the other speakers in thinking that if, after a reasonable time, drug treatment failed to give relief, an operation should be performed, even although the conditions for operation did not appear to be satisfactory or hopeful. In the vast majority of cases of intracranial tumour (the syphilitic cases of course excepted) the only chance of course was operative procedure. The additional experience of the past few years had entirely confirmed the conclusions which he had arrived at, and which had been published in the *Edinburgh Medical Journal* four years ago.

PROFESSOR FERRIER'S REPLY.

PROFESSOR FERRIER, in reply to Dr. Collins, discussed the advantages of lumbar puncture to relieve extracanial pressure, and expressed the opinion that benefit might result. As to the proportion of recoveries in his statistics, Professor Ferrier, in reply to the President, said that his cases were not picked, and that he was exceedingly careful in pointing out the dangers and risks connected with operation to the patient.

A DISCUSSION ON THE INFLUENCE OF MICRO-ORGANISMS AND THEIR TOXINS IN THE PRODUCTION OF DISEASES OF THE CENTRAL AND PERIPHERAL NERVOUS SYSTEM.

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IT will generally be allowed that micro-organisms may exert their influence upon the nervous system either directly by their presence in the affected parts, or indirectly by means of the circulation of their toxins. In the former case the effect may probably be produced either primarily upon the nerve cell or secondarily upon it through lesions of the blood vessels or of the supporting interstitial tissue. In the latter case the toxin may either be produced within the body, probably by the micro-organism acting on certain constituents of the tissues, or outside the body as in the case of alcohol.

Tetanus and diphtherial paralysis will be accepted as typical examples of disease of the nervous system produced as a result of specific infection by a microbe. In each of these cases four conditions are observed: (1) A wound or surface favourable for the reception of a micro-organism; (2) the actual presence of the bacillus, usually confined to the wound or favouring soil, as the case may be; (3) evidence of the presence of chemical products associated with the growth of the organism and acting as toxins; (4) diphtherial paralysis has practically been shown by Sidney Martin to be dependent upon chemical substances, the product of the growth of a bacillus in the characteristic membrane; whilst tetanic spasms terminating in death have been found by various observers to result from the injection into mice of bacteria-free filtrates of pure cultures of the tetanus bacillus. So far as I am aware, in no other disease of the nervous system does the evidence of its origin from bacterial infection attain this completeness. In epidemic cerebro-spinal meningitis we have, I believe, the micro-organism and the resulting toxin, but the mode of entry of the organism is not evident. In syphilis, on the other hand, the method of entry by a breach of continuity is

certain, and inferentially the presence of a toxin practically indisputable, but as is well known the association of a specific organism with the disease has not yet been unquestionably demonstrated.

Infantile Paralysis.

In view, therefore, of the very varying conditions as regards wound, or receptive surface, identification of bacillus, and presence of toxin, which are observed in the instances adduced, it is evident that we may well be prepared to meet with examples of disease in which there is no evidence of breach of continuity, and no microbe can be perceived, whilst the existence of a toxin is only to be inferred from the clinical symptoms. I cannot help thinking that infantile paralysis is a case in point. There is a growing impression, in which I strongly share, that this disease may be the result of infection, though how this is usually introduced there is no evidence to show. This view, however, is combated by not a few, so that it is worth while considering the strength of its position.

Dr. Still has shown[1] that the simple posterior basic meningitis of infants is a specific disease, due always and only to a particular micro-organism. Of 49 cases of the disease which were verified by necropsy at the Hospital for Sick Children during the last ten years all were sporadic; none of them formed part of any outbreak which could be considered epidemic. This observation goes far, I think, to dispose of the objection often advanced against the view of infantile paralysis being due to specific infection, namely, that the disease is practically always sporadic. Even if infantile paralysis were always sporadic, that circumstance would not be an argument against its infective origin. It is doubtless exceptional to meet with more than one case of infantile paralysis in a household or district. But putting aside the evidence afforded by the occurrence of large epidemics, to which I shall presently refer, it is possible that the exception is not quite so marked as at first sight would appear. In my own limited experience during the last three years, I have met with examples which appear to point to coincidence of seizure:

1. A boy was attacked with fever, headache, and drowsiness, followed by characteristic atrophic paralysis in one arm. Two days before his seizure a sister suffered from fever, headache, and drowsiness, sleeping almost constantly for two days and then recovering without paralytic symptoms.

2. A girl was attacked with headache, vomiting, and fever, resulting in atrophic paralysis of one lower extremity. On the day previous to this attack her sister was affected with similar symptoms, which passed off without paralysis. A fortnight previously a child living in the immediate neighbourhood was similarly attacked, with resulting paralysis in both legs.

3. Two sisters were under my care in hospital last spring who were seized with infantile paralysis within six days of each other, and two other children in an adjoining street were similarly attacked in the same week, and were left paralysed in the legs.

Whilst writing this I received from Mr. Holden, of Bellerive, Tasmania, notes of an interesting example of a small epidemic, by which three children were left crippled (each in one leg), thus described by the father of one of the patients:

The three children were attacked within the same week ..... and in each case the symptoms were identical. Dr. X. attended the children for "gastric fever," and in each instance paralysis suddenly (*sic*) supervened as the patients apparently approached convalescence. In the case of my boy, his mother spoke of having him out of bed one day and next morning saw him paralysed in the left side, the leg from hip down most affected.... The children lived within 150 yards of each other, and almost certainly had never been in any other village in their lives.

The place was a seacoast village. This account, although imperfect from lack of technical details, certainly points, I think, to cases of poliomyelitis. Dr. C. S. Caverly also has been kind enough to send me notes of an epidemic of acute anterior poliomyelitis[2] which prevailed in the state of Vermont, U.S.A., chiefly in a single valley, during the summer of 1894.

The outbreak consisted of upwards of 130 cases of disease in which the commonest clinical manifestation was some degree of motor paralysis of widely varying extent and severity. As in the epidemics recorded by Medin[3] and W. Pasteur, exclusive adherence to the classical type of infantile paralysis was not observed, but, with numerous exceptions, there yet remained a sufficient preponderance of cases pointing to this affection to render it most probable that the essential cause of the cases of disease was that which lies at the origin of acute anterior poliomyelitis. Out of the 130 cases both legs were involved in 69, and in 10 the arm and leg on one side, whilst in general terms more or less of the extremities were paralysed in 115 cases. Eighteen deaths occurred. Time will not admit of further analysis of the report of this important epidemic, and I would only add that during its course and in the same geographical area, an acute nervous disease, paralytic in its nature, affected domestic animals. Horses, dogs, and fowls died with these symptoms. In the case of a horse a section of the lumbar portion of the cord showed a "granular degeneration and pigmentation of the ganglion cells of the anterior cornua and atrophy of the anterior nerve roots."

In a recent lecture[4] I have referred to the epidemics described by Medin and W. Pasteur, and also to a case under my colleague, Dr. Bastian, in which an attack of acute anterior poliomyelitis followed a wound upon the knee, to staunch the bleeding of which moss from the roadside had been used. It is very uncommon in my experience for this disease to be preceded by a recognised wound of the skin; the sequence is probably as exceptional as is the occurrence of tetanus without a preceding wound. It would be important to learn whether cases of the kind are more frequent than is supposed.

In the epidemics observed by Medin, Pasteur, and Caverly, although the brunt of the attack appeared to fall upon the anterior horns of the cord, there was also evidence of more remote portions of the cerebro-spinal axis being either exclusively or concurrently affected. In some of Medin's cases *post-mortem* examination showed lesions of the bulb, antero-lateral columns, peripheral nerves, and cerebral cortex. Amongst the cases described by Dr. Pasteur,[5] a boy had primary fever followed on the fifth day by flaccid paralysis of the entire left upper limb. In another primary fever was followed by right hemiplegia with rigidity, and transient paralysis of the right side of the face and palate. A girl had primary fever followed on the fifth day by paralysis with rigidity of the left lower limb. A boy had primary fever followed by general tremors lasting a few days. A girl had primary fever followed by partial tremors lasting a few days, and strabismus of short duration. In two other members of the family primary fever took place, but was not followed by paralysis. There can be, I think, little doubt that in view especially of the experience afforded by epidemics we shall have to look upon infantile paralysis as the result of an infective agent which, whilst its dominant influence is exerted upon the large ganglionic cells in the anterior horns, may affect many other portions of the cerebro-spinal axis. The term "anterior acute poliomyelitis" would seem to be too narrow a designation of this disease. Unconsciously misled by it have we not in the past drifted too much into the way of picturing infantile paralysis as an inflammatory lesion confined to the anterior horns, and rather ignoring symptoms which point to lesions of structures remote from this limited area? We ought not to forget the not infrequent occurrence of convulsions, of intense and often enduring pains in the extremities, of occasional spasticity in the sporadic cases which commonly come before us.

So far as I am aware, no bacteria have been found in these cases, but opportunities for examination in the acute stage are rare. Goldscheider[6] searched for them without success in a very early case. The experiments of Thoinot, who injected preparations of the B. coli communis and staphylococcus, and produced spinal lesions, the peripheral nerves remaining intact, are of interest in this connection. Marked vascular changes were associated with the influence of the toxin upon the neuron.

Selective Action of Toxic Bodies on the Nervous System.

For some reason that cannot be explained it is in the district of the anterior spinal arteries that the most destructive effects occur. It seems likely from the clinical symptoms that whilst at the onset there is a profound interference with the nutrition of neurons (especially, though not exclusively, direct motor neurons) over a very widely extended area, recovery rather rapidly occurs in such as do not suffer destructive change in their nucleus. Should, however, this happen, the lesion is permanent. It is remarkable that, although there is ample evidence of sensory neurons being sometimes affected in this disease, a resulting destructive change in them is, I think, rarely if ever observed. We have of course no evidence to show whether the (assumed) pathogenic organism in these cases is "specific."

Whether one can properly compare the essential conditions

[1] *Journal of Pathology and Bacteriology*, vol. v, No. 2.
[2] *Journal of the American Medical Association*, January 4th, 1896.
[3] International Medical Congress, Berlin 1890.
[4] Cases Illustrating the Infective Origin of Infantile Paralysis. *Lancet* March 26th, 1898.
[5] *Transactions of the Clinical Society of London*, 1897
[6] *Neurolog. Centralbl.*, 1894 p. 174.

in infantile paralysis with those which obtain in diseases like diphtherial paralysis and in chronic alcoholism I am not sure, but it is important to remember that in these latter various portions of the cerebro-spinal axis appear in different cases to receive the brunt of the toxic influence. Although, for example, the toxin of diphtheria most commonly occasions symptoms suggesting peripheral neuritis, this is not always their character. I have now under observation a young patient suffering from left hemiplegia with rigid contracture and occasional epileptiform convulsions, whose seizure, pointing to cortical encephalitis, occurred during recovery from diphtheria of the throat. Alcohol, again, may affect the cerebral cortex, occasioning eclampsia or mental deterioration in one case, whilst in another it is in the peripheral nerves, motor, sensory, or vasomotor, that its effects are most evident. In a case now under observation both eclampsia and polyneuritis are present.

Insular Sclerosis.

There is a growing opinion, especially supported by Pierre Marie, that insular sclerosis may be found to depend on an infective agent. It is well known that the disease, or at all events a condition characterised by its pathological lesions, may show itself in the more or less immediate sequel of some of the infective fevers. It is sufficient here to refer to the reported observations, amongst others, of Charcot, Kahler, Pick, Marie, Whipham, Myers, Barlow, Dawson Williams. It is not satisfactory to speak of a form of disease as though it were a distinct entity, and therefore, perhaps, it is best to say that more or less extensively disseminated patches of myelitis and encephalitis have been found in the sequel of cases of infective fever. I have had several such under observation, and at the present time am attending one which in the circumstances appears to point strongly in this direction.

The patient is a lady, aged 38 years. Until the year 1890 she was in absolutely perfect health. On December 31st, 1889 (the winter in which it will be remembered influenza appeared in this country in a virulent form), her father suffered from a severe attack, and this daughter helped to nurse him. Her mother and other members of the family succumbed in turn to the disease, and she herself was prostrated by it in the middle of January, 1890. She had another violent attack of it in the beginning of February, and was left in a very weak state, complaining of various paræsthesiæ, and with frequent action of the bladder. She did not regain her health, and in the following spring difficulties in walking began, and she has since presented symptoms of confirmed insular sclerosis. I have had the advantage of consultation upon this case with my friend Dr. Ferrier.

In the absence of evidence that disseminated patches of myelitis are occasionally found in the sequel of infective fevers, it would not be permissible to cite such a case as this as affording any strong evidence on the point. But supported as it is by recorded anatomical observations, as well as by an overwhelming amount of evidence that influenza is liable to be followed by disease of the nervous system of various kinds, I think that we must allow the inference to be reasonable. It is notorious, however, that the greater proportion of cases of insular sclerosis cannot be satisfactorily associated with a preceding attack of infective fever of a recognised type. Many observers, indeed, are disposed to draw a hard-and-fast line between a case of disseminated myelitis occurring in the sequel of infective fever and one of disseminated sclerosis, when this is subacute or chronic in character, and not ushered in by evident febrile movement. I am not myself inclined to recognise this distinction as militating against the view that the latter condition, like the former, is of infective origin. It seems more reasonable to suppose that circumstances, either, for example, the varying intensity of a toxin, or relative immunity in the individual, may be sufficient to explain the greater or less acuteness of the form in which the disease displays itself. More time than I have would be necessary to go into details on this point. But it must be remembered that, putting aside cases which are evidently associated with some recognised specific fever, we meet with examples of disseminated sclerosis of such varying degrees of acuteness that there seems to be no point at which we are able to say, "Here begins a chronic disease of totally different etiology from the preceding examples of a more or less acute affection." The cases in my experience glide imperceptibly from the very acute ones in which death may occur in a few weeks (death took place after an illness of twelve weeks in a case which I saw last year), through others lasting a somewhat longer period (like one which died in hospital after an interval of nineteen months, the characteristic lesions of disseminated sclerosis being verified by necropsy), and so on by gradual increments of time to such as, dragging on a slow and often interrupted course, extend over five, ten, twenty, or more years.

Now if a disease characterised by the presence of islands of interstitial myelitis can be associated with infective agents apparently so various in character as those of measles, smallpox, varicella, and influenza, it is allowable to suppose that other organisms not associated with well-known types of acute febrile disorder may be capable of bringing about similar lesions. The mere circumstance, therefore, of an attack of disseminated sclerosis not having been preceded by any of the recognised zymotic diseases is quite insufficient to disprove its origin from infection. It is certain that some mode of infection would best explain the clinical features and pathological anatomy of the disease. I would suggest especially that the frequent and remarkable tendency to more or less long continued periods of remission of symptoms followed by a fresh outburst point with much force in this direction. It is a feature which reminds us strongly of that which is so very apt to occur in the course of syphilis, a typically infective disease. In connection with this we must not forget that organisms usually saprophytic—for example, the bacillus coli communis—may, under altered circumstances, acquire pathogenic characters of extreme virulence.

Peripheral Neuritis.

In March last Dr. Eustace Smith showed me a girl, aged 16, in whom measles had commenced on February 23rd. On February 28th she began to complain of tenderness of the legs and pains about the body and limbs, which ceased the following day, when it was found that the knee-jerks were absent. I saw her next day, when there was no very definite loss of power in the limbs, and no anæsthesia. The knee-jerks remained absent till the middle of March, and then returned, the patient being convalescent. Are we right in calling such a condition peripheral neuritis?

The affection may be much more severe. Morton[7] reports the case of a child $2\frac{3}{4}$ years of age, in whom paralysis after measles involved, besides the extremities, the muscles of the neck, of phonation, and deglutition. Four months after the commencement the child had not fully recovered, though the knee-jerks and faradaic excitability had returned. In a case which I saw with Dr. Sidney Phillips the effect of the toxin was more profound and extensive.

A girl, aged 9, had suffered from enteric fever of moderate intensity without complications. After fall of temperature to normal for six days, and when she was convalescing, on March 27th, 1896, temperature began to rise again, with intense pain about the abdomen and chest. There were rigors and rise of temperature to 105° on April 1st. On April 4th there was pain in the muscles and skin of abdomen, chest, and back, with intense hyperæsthesia, followed by great tenderness in the muscles of the right thigh, and later in those of the legs. The diaphragm became paralysed and there were repeated suffocative attacks, with cyanosis and almost imperceptible pulse, and attacks of intensely painful cramps of lower limbs; movements of the body occasioned great pain. The knee-jerks were very active. After May 14th she began to improve; the muscles of the lower limbs then wasted considerably, with lowering of faradaic excitability. After many weeks she lost her pain, and gradually regained power.

It is well known that multiple neuritis is always of toxic origin (organic or inorganic), but we must recognise that there is probably a great difference between the probable anatomical changes in the instances related above. In the first the short duration of the symptoms appears to negative the possibility of advanced degenerative changes in the peripheral nerves, for these would take months to repair. But they probably occurred in the other two. We see similar variety in diphtherial paralysis, which is sometimes, though rarely, attended by such symptoms as severe lancinating pains, tenderness of the muscular masses, powerlessness of the upper and lower extremities, dropped hands and feet, and so on, closely resembling alcoholic paralysis, in which *post-mortem* examination reveals profound changes in the peripheral nerves. In the more common examples of diphtherial paralysis there is weakness and ataxy rather than marked paralysis, a varying amount of cutaneous anæsthesia, pains either absent or of trifling character, no muscular atrophy, electric relation to induced currents either normal or but slightly reduced. It seems likely enough that in the less

[7] *University Medical Magazine*, 1897.

severe cases any change may be of a very transitory and localised character. Ceni[8] says that, as a general rule, the diphtherial poison produces lesions limited to the protoplasmic prolongations, leaving unchanged the body of the cell and the axis cylinder.

Myelitis.

Myelitis would appear capable of being caused by a variety of infective agents, its occurrence as a sequel of influenza, small-pox, typhoid, syphilis, gonorrhœa, being familiar examples. F. Widal and F. Bezançon[9] relate that out of 116 rabbits inoculated with 89 varied streptococci myelitis was induced in 7 cases (flaccid subacute paraplegia 4 cases; paralysis with contracture 3 cases). The numerous examples of myelitis in which chill or fatigue appears to have been the only notable antecedent suggest the question whether they may be due to the action of parasitic bacteria derived in favouring circumstances from saprophytes. The following case, which I saw last year, points perhaps to such an origin:

A student, aged 23, whose general health had always been good, got a chill when out otter hunting on a very wet day. The same night he had a little shivering, and next morning there was more, with much occipital headache. In the afternoon his temperature was 102°, and there was vomiting and prostration. Next day he could not brush his hair from loss of power in the shoulder muscles. This was more marked on August 23rd. On the 24th temperature became normal, and the attack was over, leaving both deltoids (except the anterior divisions) pectorals, some muscles at the back of the neck, and a portion of the right triceps paralysed.

Locomotor Ataxy.

The evidence that tabes may be dependent at least for one factor upon syphilis is, I think, unquestionable, and I need not dwell upon that which is a matter of common experience. A recent observation of Albert Bernard is very striking.

Two individuals contracted syphilis from the same person at a few hours' interval. They both became affected with tabes twenty-one years later. In both the disease had been characterised by the same symptomatology (predominance of ocular troubles). This case is a pendant to that of Morel-Lavallée, in which 3 individuals out of 5 who had become infected with syphilis from the same source are said to have become general paralytics, the other 2 suffering from cerebral syphilis. The occurrence of tabes in husband and wife who are both syphilitic is equally important. The following example occurred in my own experience.

Syphilitic Tabes in Husband and Wife.—A man, aged 40, had syphilis in 1880, and married within two months. In 1882 he had ptosis and mydriasis, and in 1890 he came to me with typical tabes. His wife had a swelling in the groin two months after marriage, and lightning pains six years later. In 1890 she came to me suffering from tabes, and I attended her for this disease at the same time with her husband.

Other instances have been reported, notably one by Dr. Trevelyan.[10]

The view that an essential feature of this disease is a degenerative change in the sensory neurons of the spinal ganglia appears to be strongly supported. At the meeting of the Neurological Society at Cambridge last April Dr. Mott showed sections of the fourth lumbar spinal ganglion from a case of tabes with advanced degeneration of the posterior roots and posterior columns. The ganglion cells were shrunken, pigmented, unequal in size as compared with the normal. In many the nucleus was absent and the cell only represented by a little clump of badly-stained protoplasm. The changes were not so obvious as might have been expected, but Dr. Mott attributed this to the integrity of the peripheral portion of the neuron; the peripheral nerves were not markedly affected. He finds that simple section of the posterior roots produces no appreciable change in the appearance of the posterior spinal ganglion; but it has been shown that if the peripheral nerve be cut marked degenerative changes occur. He also showed sections of the fourth lumbar spinal ganglion (stained by Pal's method) from a case of combined degeneration of posterior and lateral columns in a case of syphilitic disease, with unilateral softening in the pons (from thrombosis of a small vessel=endarteritis). The degenerated cells were stained deep purple owing to fatty degeneration of the protoplasm. Most of the degenerated cells were large. He did not think that the unilateral softening in the pons had anything to do with the bilateral systemic degeneration in the cord.

[8] *Revue Neurol.*, 1896, p. 303.
[9] *Revue Neurologique*, 1895, p. 189.
[10] British Medical Journal, 1898

It would be foreign to my purpose to travel any further into the question of the anatomico-pathology of tabes. I would merely point out that in this latter case there is evidence of syphilis, as it affects the arterial system (pontine endarteritis) along with, but evidently not directly connected with fine changes in the cells of the spinal ganglion. It is interesting to note this combination which apparently shows that a toxin may induce at one and the same time degeneration in the parenchymatous nerve substance and coarser changes in extraneural tissue. This circumstance appears to me to have possibly an important bearing upon the pathology of disseminated sclerosis.

Disseminated (Insular) Sclerosis.

The question is still by no means settled whether in this disease the lesion is always at first inflammatory and extraneural, the atrophy of nerve fibres being secondary. Redlich, amongst others, finds nerve fibres profoundly affected along with relatively little-changed neuroglia, and says that vascular changes happen only in a certain number of cases. He thinks that we have first to do with a degenerative process attacking the nervous tissue, whilst the glial change is secondary. Weigert had given a similar opinion and Wernicke concurs with Redlich, so also O. Huber, who has found extensive atrophy of nerve fibres without any, or but trifling change of neighbouring interstitial tissue. On the other hand Fuerstner supports the vascular theory, and Dr. Risien Russell informs me that in three recent cases of disseminated sclerosis which he has examined, he found the lesions such as would most naturally be explained by a primary overgrowth of connective tissue intrenching upon and destroying the parenchymatous tissue. I cannot help thinking that in view of these differing experiences, and having regard especially to Dr. Mott's observation in a case of syphilis, to which I have just referred, it may be found that the (assumed) toxin which is the essential cause of disseminated sclerosis, may occasion fine degenerative changes in the nervous parenchyma in some localities coincidently with (coarse) vascular changes in others. Indirectly bearing upon this is an observation by Oettinger and Marinesco.[11] In a case of Landry's paralysis they found vascular changes as well as evidences of direct action of organisms, and also of their secretions.

Specificity of Infection.

The question of specificity has an interesting bearing upon tabes. It is striking that tetanus, diphtheria, epidemic cerebro-spinal meningitis, and posterior basic meningitis, amongst other affections of the nervous system are characterised by the presence of specific organisms, whilst infective neuritis, on the other hand, may undoubtedly be induced by more than one form of micro-organism, and in cases of acute ascending paralysis there has been no uniformity as regards the organisms discovered. In a patient of mine with acute ascending meningo-myelitis Dr. Russell found a diplococcus which does not appear to conform to hitherto described examples, whilst Barrié[12] in a case of very similar character found only staphylococci, whose virulence had apparently been intensified by their association with gonococci. So generally has the necessary association between tabes and syphilis come to be believed that with many to describe a patient as suffering from tabes is equivalent to saying that he is syphilitic. Should inquiry into his past history elicit (as it often does) only a description of a soft chancre, it is apt to be concluded that along with this there must have been mixed up a true syphilitic infection. Should the occurrence of gonorrhœa be alone described, it is thought that there must have been a hidden hard chancre. Is this quite logical? Is it not rather a *petitio principii*? It is notorious that in the large majority of cases of tabes evidence of gross lesions of tertiary character is absent. It is rare, for instance, in that disease to see characteristic syphilides, throat troubles, gummata, periostitis. According to Alfred Cooper the chancroid, the soft and so-called non-infecting sore, is much more frequent than true syphilis. The evidence associating the soft chancre with a specific micro-organism (Ducrey and Unna) seems to be considerably stronger than that which connects syphilis with Lustgarten's or any other bacillus. In view of all these circumstances and re-

[11] *Semaine Médicale*, 1895, No. 6.
[12] *Revue Neurologique*, 1895, p. 211

garding, as we must, the soft chancre as a disease proved bacteriologically to be distinct from true syphilis, is it right to assert that the chemical products of the bacterium concerned in the former can have no part in the production of fine changes in sensory neurons, and that this effect is limited to syphilis?

The pathology of the nerve cell in relation to the influence upon it of micro-organisms and their chemical products is becoming, thanks to the work done by Nissl, Mott, Marinesco, Andriezen, Lugaro, Klippel, and many others, a subject of extreme interest and importance. To conclude without reference to it on this occasion would be indefensible, but it is impossible in the time at my disposal to do more than allude to it. My deficiency in this respect, as in so many others will, I trust, be supplemented by those of my hearers who have been working in this direction.

II.—F. X. DERCUM, M.D.,
Philadelphia.

DR. DERCUM expressed his high appreciation of the value of Dr. Buzzard's paper, and said that the theory of the action of toxins on the nervous system was one of the most important questions now engaging the attention of neurologists. He also said that in studying the subject he had been impressed by the importance of regarding the action of the toxin as one upon the nervous system as a whole; and further, that we should look upon the neuritis, poliomyelitis, generalised myelitis, and encephalitis hæmorrhagica following influenza as simply the localised expressions of the general action of a toxin. Regarding tabes dorsalis, Dr. Dercum said that the theory that tabes had its inception in disease of the cells of the spinal ganglia was most captivating. He believed, however, that lesions of these structures were demonstrated only exceptionally. He had searched for them a number of times himself, and had failed to find such alterations. Tabes, like some of the other diseases presumably the result of the action of toxins, was a disease of the nervous system as a whole, and the changes in the spinal ganglia when found, like the changes in the tracts, were to be looked upon as the accentuation of the action of the toxin upon these structures—structures presenting less resistance to its action than other portions of the nervous system.

III.—JOSEPH COLLINS, M.D.,
New York.

DR. JOSEPH COLLINS said that he would like to express his conviction that anterior poliomyelitis was both toxic and infectious oftentimes, although not always. The epidemic forms of anterior poliomyelitis were often the expression of widespread involvement of the grey matter, not alone of the cord, but of the brain, the bulb, and the basal region as well. The propriety of the nomenclature of these cases might be questioned. It seemed to him that the burden of evidence relating to the causation of cerebro-spinal meningitis went to show that the sporadic cases were dependent upon the diplococcus pneumoniæ, and that the epidemic form was due to the micrococcus intracellularis. The genetic relationship of infection to insular sclerosis did not appeal to him as strongly as it seemed to its promulgator, Marie. He was quite prepared to believe that the cases which had been put forward to substantiate this view were in reality cases of insular myelitis and not pure insular sclerosis. The course of the disease and the morbid lesions militated against this view. There could be no question that many brain conditions which were now grouped under the head of encephalitis, such as those following influenza, sunstroke, etc., were often toxic or infectious, but anterior to this they were nutritional. The relation of syphilis to tabes was now universally accepted, but while the trend of modern thought seemed to be that an organism must be found as the causative agent of disease, and while this was quite legitimate, yet it should never be forgotten that there was more than one factor to be considered in every instance. The stability of nutrition and the conditions that maintained it must always be given much weight.

IV.—FRED. J. SMITH, M.D., F.R.C.P.,
Physician to the London Hospital.

DR. SMITH related two cases of peripheral neuritis arising from septic wounds, in which the neuritis seemed to transmit itself in a peculiar manner to the opposite side of the body. This Dr. Smith believed to be due to nerve influence as opposed to inflammatory or even septic transference.

V.—JOHN M. MACCORMAC, M.D.,
Physician, Victoria Hospital for Diseases of the Nervous System, Belfast.

DR. MACCORMAC observed that while certain nervous diseases such as tetanus, rabies, certain forms of neuritis, and some others must be believed to be caused by a "toxin" of microbial origin, yet in the case of some of the more chronic nervous diseases such as the different scleroses difficulties arose, and the discrepancies between various observers were very marked. Fournier, for instance, held that 90 per cent. of the cases of tabes dorsalis were due to the syphilitic poison, while Storbeck traced only 8 per cent. to this cause. Experiments and observations seemed to show that when certain microbes and their toxins found their way into the substance of the spinal cord, proliferation of the interstitial cells and of the neuroglia ensued, causing retrogressive changes in the nerve cells. Even if it were held that microbes and their toxins might induce sclerosis of the central nervous system, it must be remembered that such agents as alcohol and arsenic might produce the same results, and that, again, exposure to cold followed by an increase of normal temperature, by producing an altered condition of the chemical processes within the body might induce sclerosis such as posterior spinal sclerosis. Was it not possible to fix attention too exclusively on specific microbes and their toxins as a cause of pathological change in the nervous system, and to forget chemical agencies? Indol, skatol, and phenol, toxic products of intestinal putrefaction, might produce structural change in the liver, and nervous symptoms might follow such as delirium, convulsions, and coma. Was it not quite possible that structural changes in the central nervous system might under certain conditions supervene? He was inclined to the belief that the immediate cause of structural changes in the central nervous system and nerves was chemico-physical, that is, that foreign chemical substances were deposited in more or less immediate contact with the nerve cells, and induced atrophy of them and proliferation outside these cells, which might eventually end in a sclerosis. Such an agency could be conceived as in operation for a very lengthened period.

VI.—JOSEPH A. ORMEROD, M.D., F.R.C.P.,
Physician to the National Hospital for the Paralysed and Epileptic and Assistant Physician, St. Bartholomew's Hospital.

DR. ORMEROD expressed his admiration at the excellent way in which Dr. Buzzard had dealt with this important and difficult subject. He pointed out that in many instances the action of micro-organisms and other toxins coincided with some special proclivity in the individual, as shown by the occurrence of tabes in men rather than women, and in certain cases when specific diseases served to bring on a family predisposition to chronic nervous disease, as in Friedreich's disease. While always content to follow Dr. Buzzard as a pioneer in difficult points of neurology, he yet hesitated wholly to assimilate ordinary cases of infantile paralysis to the rarer instances of epidemic infantile paralysis, and on the other hand, to pronounce in favour of the infective origin of disseminated sclerosis.

VII.—ROBERT A. FLEMING, M.D.,
Pathologist, Royal Infirmary, Edinburgh.

DR. FLEMING said that he wished specially to refer to alcoholic neuritis. He showed several sketches of hæmorrhages and thrombosis taken from the spinal cords of patients who had died of alcoholic neuritis. He said that while he admitted the central origin of puerperal neuritis, he considered there was almost definite evidence of a local lesion. There was inflammatory effusion, if it was right to call it inflammatory, and there were changes in the vessels and in the nerves. These changes, described first by Manukow in 1888, consisted in increase in size and number of the nuclei of the endothelial cells of the intima, which was most marked, and of the nuclei of the media and adventitia, though not so markedly, the smaller vessels, especially of the peripheral nerves, were affected. These exudations and vascular changes were closely

associated, and therefore it was probable that while these phenomena might mean that vasomotor cells were affected by the toxin, still they suggested a local action of the toxin on the vessels at least. The well-known fact referred to by Dr. Buzzard that sensory fibres suffered less than motor in infantile paralysis and many other forms of cord and nerve disease, was interesting. He stated that he believed that these fibres had a dual trophic centre, one being peripheral in the sensory end organs, and he brought forward in evidence the fact that after division of a nerve and reunion some months afterwards by suture, return of sensation often appeared in a few days. This he considered was due to the sensory fibres in the peripheral end of a divided nerve retaining their trophic activity and nutrition in virtue of the sensory end organs being intact. Dr. Fleming also expressed the opinion that neuroglia or connective tissue replaced degenerated fibres alone was inaccurate, in so far as effusion or exudation were often replaced by such tissue, and were present in many parts of the nervous system in peripheral neuritis, anterior poliomyelitis, insular sclerosis, etc.

VIII.—F. W. Mott, M.D., F.R.S.,
Pathologist to the London County Asylums.

Dr. Mott referred to the changes which he and Dr. Barratt had found in the nerves and muscles of two cases of beri-beri under the care of Dr. Manson. This disease was regarded by many authorities as due to a micro-organism. He had observed fatty degeneration of the muscles and heart muscle, and also Wallerian degeneration of the nerves, but no definite organism had been found. He thought the muscular degeneration could not be entirely accounted for by the influence of the toxin upon the nerves. It probably acted upon the whole neuron and the muscle.

IX.—David Ferrier, M.D., F.R.S.,
Professor of Neuro-Pathology, King's College, London.

Dr. Ferrier expressed his obligations to Dr. Buzzard for a most suggestive communication, which he had no doubt would be productive in his own case, as well as in that of many others, of more careful attention to the etiology of the diseases which in future come under care. Dr. Buzzard, though he had acted the part of the advocate of the toxic origin of many forms of nervous disease and degeneration, had, however, been judicial, as he had himself indicated the weak points of his own position. With regard to disseminated sclerosis in particular, Dr. Ferrier agreed with Dr. Ormerod in regarding the toxic origin as "not proven," yet it was in many respects a very seductive theory. For if there were no objections to it otherwise, it would afford a satisfactory explanation of the occurrence of this dire malady in such numbers of young people of both sexes living under the most healthy conditions, and who had not been subjected to the usual causes of nerve disease and degeneration. In reference to the relation of tabes to syphilis, to which Dr. Buzzard had also alluded, Dr. Ferrier said that formerly he was not quite persuaded of their universal causal relationship, but the more he inquired the more convinced he became that tabes and general paralysis were essentially post-syphilitic affections; so much so that if he were satisfied that there had been no syphilitic affection, he was disposed in obscure cases at once to exclude tabes and general paralysis. This might be to go a little further than the actual evidence would justify; but he believed that the amount of error or injustice would be infinitesimal. In general on the questions raised by Dr. Buzzard, Dr. Ferrier said that he retained an open mind, and would gladly welcome more light and guidance.

X.—Alexander Bruce, M.D., F.R.S.E.,
Lecturer on Pathology, Edinburgh School of Medicine; Assistant Physician, Royal Infirmary, Edinburgh.

Dr. Alexander Bruce said that he had examined several cases of insular sclerosis. In one of his cases a number of foci of the disease had been observed passing through every stage of the degenerative process. In every focus Dr. Bruce observed a small blood vessel, and from that vessel a substance had oozed out which had had a marked action upon the myelin in the vicinity. Dr. Bruce regarded this action as a simple solution of the myelin. All the fibres were observed to be attacked alike, and the spread of the process was of the nature of a diffusion, leaving islets and projections sharply cut off. Dr. Bruce further expressed his belief that the disease was caused by a poison, and that it was not inflammatory in nature.

XI.—E. F. Trevelyan, M.D.,
Professor of Pathology, Yorkshire College, Leeds.

Dr. Trevelyan referred to cerebro-spinal meningitis, infantile paralysis, and acute myelitis as diseases due to infection. The perivascular lesions found in these cases favoured this view, as the disease producer must arrive by these channels, and related the following case of acute meningo-myelitis. A man, aged 37, was exposed to severe cold on March 22nd. Great pain in the back was complained of from March 24th to April 11th. Retention of urine occurred on April 11th, and a very rapid oncoming paralysis on April 13th. On admission into the Leeds General Infirmary on the 15th there was complete flaccid paraplegia, sensory loss tactile and thermal, absence of reflexes, retention of urine, etc. Death occurred unexpectedly on the eighteenth day after the onset of the first bladder symptoms. There was a suppurative external meningitis in the dorsal region of the cord, and an intense myelitis of varying degree extended from the fourth dorsal down to the third lumbar segments included. There was also pus in the muscles of the back, and a very small empyema. The same micro-organism was cultivated from the pus outside the dura and also from the substance of the cord. No experimental pathology. The presence of acute myelitis in dogs in association with distemper, chorea, and paralysis, tended to show that this myelitis was of infective origin.

XII.—Byrom Bramwell, M.D., F.R.C.P.Edin.,
President of the Section.

Dr. Byrom Bramwell expressed the very great pleasure with which he had listened to Dr. Buzzard's most able and interesting address. The Section were much indebted to Dr. Buzzard for consenting to open the discussion. The subject was a very difficult but, at the same time, a very important one. Like all Dr. Buzzard's, the address was replete with valuable clinical material and carefully weighed judicial conclusions. He would not attempt to discuss the numerous important questions which Dr. Buzzard had raised in detail, but would merely refer to some points.

In addition to the reasons which had been adduced in favour of poliomyelitis anterior acuta being due to a toxin produced by micro-organisms, Dr. Bramwell referred to the very rare occurrence of second attacks. The same thing was seen in herpes zoster, which, as he had suggested some years ago, was probably the result of micro-organisms. His impression was that cases of facial paralysis not infrequently occurred in runs, just as cases of herpes zoster did; and he thought he had observed some connection between the occurrence of outbreaks of these forms of peripheral neuritis and the occurrence of pneumonia and ulcerative endocarditis. He had not had time to analyse all his cases and to give exact data; he merely stated his general impression, but he hoped to be able at a future period to give more definite details.

He had been much interested in Dr. Mott's statement that in some cases of beri-beri which he had examined muscular changes, apparently independent of preceding nervous alterations, were present. He had recently had the opportunity of examining a case of sprue in which the most profound muscular atrophy was slowly developed before death. In that case, which had been examined by Dr. Muir and himself, there were no changes in the peripheral nerves or spinal cord, but most remarkable changes—enormous increase of nuclei and atrophy of the muscular fibres—in the muscles themselves. It seemed probable that in this case the muscular lesion, which, so far as he was aware, had not been previously described, was the result of the absorption of a toxin from the intestine.

He referred to another case in which the most extreme muscular atrophy was slowly and gradually developed in all the muscles of the body. The patient was a man, aged 64. In that case the nerves and spinal cord were quite healthy,

but remarkable changes, very similar to those observed in the case of sprue to which he had just referred, were present in the muscles. The only possible cause which could be blamed for the muscular atrophy was nicotine poisoning; the patient for many years had smoked and chewed tobacco in great excess.

With regard to the difficult question of the etiology of multiple sclerosis, he agreed with Dr. Buzzard in thinking that the manner in which the lesions were so widely spread throughout the nervous system and the apparent relationship of the lesions to the vessels which was, so far as his observation enabled him to judge, undoubtedly present in some cases, were highly suggestive of a toxic cause. At the same time, he thought it premature to conclude that the toxic agent was necessarily the result of micro-organisms.

He had been in the habit for several years of teaching that several different diseased conditions—such, for example, as chorea, acute rheumatism, perhaps many inflammations which at first sight were apparently the result of cold—were perhaps due to the production in the body of some toxic agent, the result of deranged metabolism, possibly in the liver or some other organ. The remarkable fact that local exposure to cold could rapidly produce great destruction of red blood corpuscles and hæmoglobinuria could only, he thought, be satisfactorily accounted for by the rapid production of some toxic substance, the result of disturbed metabolism. He supposed that the exposure to cold acted reflexly through the nervous system on some central organ—perhaps the liver—and produced a poison which was the cause of the rapid blood destruction and hæmoglobinuria. If this were so, he saw no reason why such a disease as multiple sclerosis might not be the result of a chemical poison developed in the body as the result of some disturbance of metabolism, or possibly of a poison generated and absorbed from the gastro-intestinal tract. Perhaps the lesions in multiple sclerosis were not the result of a toxin properly so-called, but were merely due to the fact that the composition of the blood was so altered that some substance or substances necessary for the nutrition of the nervous tissues, especially of the nerve tubes, were absent, or that the blood contained some substance or substances which acted in an injurious manner upon the nutrition of the nerve tubules. Possibly the nervous lesions in multiple sclerosis were produced in a somewhat similar way to the nutritional changes in the nervous system which were developed in myxœdema.

He agreed with Dr. Buzzard, in opposition to Dr. Collins, that the frequent occurrence of periods of improvement and retrogression were rather in favour of a toxic cause than the reverse. As a case in point he referred to the exacerbations which so frequently occurred in pernicious anæmia, and which were clearly the result of the absorption into the portal tract of fresh doses of some poisonous substance.

He thought that in future the attention of observers should be directed, in such diseases as multiple sclerosis and peripheral neuritis, not merely to the detection of micro-organisms, but to the far more difficult question, the detection of a chemical poison. Because micro-organisms could not be detected in the nervous tissues in such diseases as chorea, multiple sclerosis, etc., it did not of course prove that these diseases were not due to the presence of a poison produced by micro-organisms in some part of the body other than the nervous tissues which were more directly implicated. The first thing, he thought, was to determine whether or not such diseases were the result of a toxin, and, having decided that point, to try and identify the poison, which he was disposed to think was perhaps in some cases a chemical product of disturbed metabolism rather than a toxin produced by micro-organisms.

With regard to the relationship of syphilis and tabes, he entirely agreed that syphilis was a most important etiological factor. At the same time he recognised the fact which Dr. Ormerod had emphasised, that in the production of tabes and general paralysis of the insane, associated causes, more particularly, he thought, cord strain and brain strain respectively, had in many instances at all events a most important influence in the development of the condition. He looked upon syphilis as the predisposing rather than the exciting cause. He thought that syphilis led to the production of a condition of the nerve centres which predisposed the nervous tissues to be excited injuriously by certain conditions, sexual excess, for example, in the case of tabes; the "strain," as he termed it, or irritation due to the strain being the immediate exciting cause of the lesion. Dr. Buzzard's suggestion that the toxin which was the cause of tabes might perhaps be the result of the soft rather than of the hard sore, was, he thought, highly suggestive. In practice he found it extremely difficult in many cases of tabes to determine whether the sore was a hard or a soft one. In many cases of mild syphilis the patients merely remembered that they had had a sore, and could not say whether the sore had been followed by secondary symptoms or not. Owing to this difficulty, one in many cases had to be content with the fact that the patient had had a venereal sore. The question of gonorrhœa was of course more difficult.

ON THE BILATERAL ACTION OF THE LATISSIMUS DORSI IN HEMIPLEGIA.

By Charles E. Beevor, M.D., F.R.C.P.,
Physician to the National Hospital for the Paralysed and Epileptic.

For some time past I have been endeavouring to find some muscle in the living human body which in one class of movements would act unilaterally, and in another class would be associated with its fellow of the opposite side and act bilaterally. The muscles which suggest themselves most likely to possess this double action are those which, while they are muscles of the upper limb, at the same time are muscles of respiration, and act with their fellows of the opposite side. As an example of such a muscle, Dr. Hughlings Jackson has called attention to the highest or so-called respiratory fibres of the trapezius muscle, which pass from the occipital bone to the clavicle. This muscle acts unilaterally in elevating the shoulder of one side, and bilaterally in deep inspiration, and it has therefore a double action; and in hemiplegia it has been observed that the muscle is paralysed for the unilateral action of shrugging the shoulder, but is not paralysed for the bilateral movement of deep inspiration.

While examining a patient's chest I observed that in coughing the latissimus dorsi contracted on both sides, giving a powerful expiratory effort, and this action can readily be felt by anyone placing the finger and thumb on the muscle at the posterior border of the axilla and giving a strong cough. Now in the textbooks on anatomy this muscle has always been described as a muscle of inspiration, and never, as far as I know, as one of expiration.

On placing the hand on the posterior axillary fold and inspiring deeply, some contraction can be felt, but it is very much less than the powerful movement felt on the expiration produced in coughing. It is difficult to understand how the same muscle can be both inspiratory and expiratory, and in a previous paper[1] I have made the statement that there is no example of a muscle acting diametrically opposite to its usual direction of action, but the latissimus dorsi must be an exception. The latissimus dorsi has an extensive origin, and I would suggest that in the action of expiration the part of the muscle which arises from the iliac crest and the spine compresses the abdominal cavity and assists the expiratory movement, while in inspiration the action is produced by the part of the muscle, which arises from the three or four lower ribs, elevating them. This respiratory movement is the bilateral action of the muscle, and always affects the muscles of both sides in health.

The unilateral action of the muscle is that on the upper limb, and it is best brought about by making a patient adduct to the side of the chest, the upper limb placed in the horizontal position, and in this movement the muscle acts quite independently of its fellow of the other side.

As a cough can be voluntary or reflex, we have three conditions of action of the muscle, but in the case of a sneeze, which is an involuntary expiration, only two. We have, therefore:

1. Reflex coughing or sneezing; bilateral action.
2. Voluntary coughing; bilateral.
3. Voluntary adduction of humerus; unilateral.

The next question was to examine as to the presence or

absence of these actions in hemiplegia; and I have now examined about a dozen cases of hemiplegia, in all of which the unilateral voluntary power of adducting the humerus to the chest wall was lost. In ten of these cases the symptoms were those of hemiplegia, and the lesion was presumably cerebral, and probably in the internal capsule. In two of the cases the lesion was definitely ascertained. In all of these cases, with the exception of two, the following conditions were found:

1. In reflex coughing the expiratory action of the latissimus dorsi was about equal on the two sides.

2. In voluntary coughing the action of the latissimus dorsi was obtained on the paralysed side, but frequently diminished in action or occurred later than on the normal side.

3. In all cases the unilateral voluntary action of adducting the shoulder-joint was absent.

Of the two cases in which the lesion was certainly known, one was a man with fits beginning in the right big toe, and was operated on by Mr. Victor Horsley, who removed a growth from the front of the upper end of the fissure of Rolando, and extending to the median edge of the hemisphere, about 2 inches in diameter, and of the surrounding cortex; this was followed by complete paralysis of the lower limb and of the upper limb, with the exception of the thumb and index finger. On voluntarily coughing it was observed that the latissimi of both sides contracted, but on the normal side better than on the paralysed side. Subsequently all the movements of the upper limb returned before those of the lower limb, the last to recover in the upper limb being the movement of shrugging the shoulder.

The other case was that of a tumour in the centrum ovale, and extending down into the internal capsule of one side. There was a progressive hemiplegia, and when the movements of adducting the shoulder were lost by reason of paralysis of the latissimus dorsi, this muscle still contracted in voluntary expiration, though not so powerfully as its fellow.

In two of the cases where there was an exception to the general rule given above, it was found that no contraction of the latissimus dorsi of the paralysed side was obtained to attempted voluntary movement of the shoulder, and no movement could be obtained on voluntary coughing, though movement was perceived with a reflex coughing, or with sneezing. In both of these cases of hemiplegia it was noticed that the paralysis of the face on the one side was very complete, and that unlike most cases of hemiplegia the face movements were lost not only to voluntary efforts, but also in one case they did not take part in the emotional movements of laughing, and in the other only when the emotion was intense.

Hence it appears that a lesion of the motor cortex or of the internal capsule will paralyse the opposite latissimus dorsi as a unilateral upper limb muscle, but will not paralyse it when it acts as a bilateral muscle of respiration, even in most cases when this is voluntary.

The explanation of this I consider to be that for the upper limb movement, the latissimus dorsi of one side must be represented unilaterally in the cortex cerebri of the opposite side, and that for respiratory movements both muscles must be represented in the cortex of each side, but that each muscle is represented more in the cortex of the opposite side; so that in a lesion of the cortex or of the internal capsule of one side the unilateral action for the opposite upper limb, which is represented in that cortex, will be paralysed, but the bilateral respiratory movements which are also represented in the intact opposite cortex will be retained.

In other words taking the action of the *right* latissimus dorsi:

1. In voluntary movements on the right arm the action can only be produced from one cortex—the left.

2. In voluntary movements of coughing the muscle acts with its fellow of the other side, and can be brought into action either by the right or the left cortex, but it acts stronger through impulses from the left cortex.

As a means of diagnosis this differentiation is of great importance in separating cerebral lesions from those of the spinal cord and peripheral nerves, and it would be of special value in cases where the arm and leg of one side are involved without the face.

For instance, in a case where the latissimus dorsi could not be caused to contract either for the voluntary movements of the arm, or for the movements of coughing and sneezing, the lesion would be either in the muscle itself, in the peripheral nerves, in the anterior horns, or the spinal cord above the brachial enlargement; while in a case where the latissimus dorsi did not act as an upper limb muscle, but acted to voluntary coughing, the lesion would be probably in the cortex cerebri or the internal capsule. As to the significance of the absence of the upper limb movements and of the voluntary coughing movements, and the preservation of the reflex coughing effect, I think we want further evidence, but it is quite possible that it points to the lesion being below the level of the optic thalamus, which has been considered by Nothnagel to be the seat of the emotional movements of the face in laughing.

On the other hand, further evidence is required to settle how high up in the cord a lesion can exist to paralyse the reflex coughing movement of the latissimus dorsi, but theoretically a one-sided lesion might be as high as the vagus nucleus.

REFERENCE.
1 *Brain*, 1891.

SECTIONS OF LARYNGOLOGY AND OTOLOGY AND MEDICINE IN RELATION TO LIFE ASSURANCE.

[JOINT MEETING.]

CLAUD MUIRHEAD, M.D. (President of the Section of Medicin in Relation to Life Assurance), in the Chair.

INTRODUCTORY REMARKS.

DR. MUIRHEAD, in opening the proceedings, said the subject of that day's discussion was, as they could see, Ear Disease in Relation to Life Insurance, and they had the advantage of having conjoined with them Dr. McBride and his Section of Laryngology and Otology. Medical referees to insurance offices had had considerable difficulty many a time in dealing with those ear cases, and in fact, as a matter of justice to the office and equity to the insurer, they usually referred the cases to experts before adjudicating upon them, in order to learn the exact condition of the ear and also to have an opinion as to the effect of the affection upon the eligibility of the life. They hoped to hear those gentlemen give expression to their opinions on this subject, and to hear much from these experts which might guide them in the future, for they themselves came there really to hear and to learn. The subject had bulked pretty largely of late in insurance offices, and his own opinion was that they had made rather too much of it—that is to say, they had been disposed to regard middle-ear disease as too grave a disorder, so far as eligibility of life was concerned. However, they would hear a little more from their friends on this point. He would not detain them any further, but would at once call on Dr. McBride to open the discussion.

A DISCUSSION ON EAR DISEASE AND LIFE ASSURANCE.

I.—P. McBRIDE, M.D., F.R.S.E., F.R.C.P.E.,
Aural Surgeon and Laryngologist, Royal Infirmary, Edinburgh; President of the Section of Laryngology and Otology.

IT is somewhat difficult to introduce this subject before what I may term a mixed audience, because it is necessary to avoid medical technicalities as far as possible in addressing the non-medical insurance expert; while if I do not give chapter and verse, my medical friends may be inclined to criticise the omission. However I shall do my best to avoid both Scylla and Charybdis.

I suppose that for the purposes of this discussion we may limit ourselves to a consideration of suppuration of the middle ear, and of such suppurations it is the chronic form which is of most interest.

Acute inflammation of the tympanum is, however, not quite free from danger. I am happy to say that I have very rarely met with a fatal result; but in statistics which I have compiled from the reports of Schwartze's clinic

Report of the Work in the Ear Clinic of the University of Halle. (Under the Direction of Professor Schwartze.)

Recorded by						Chronic Middle Ear Suppuration.	Deaths.	Acute Middle Ear Suppuration.	Deaths.
Bernhard und Ludewig,	*Arch. f. Ohrenheilk.*,	xxvii,	p. 201.	1887-88	...	308	6	210	2
Ludewig,	,,	xxix,	p. 263.	1888-89	...	349	11	206	3
Ludewig,	,,	xxxi,	p. 31.	1889-90	...	323	5	256	3
Panse,	,,	xxxiii,	p. 38.	1890-91	...	295	5	214	1
Grünert und Panse,	,,	xxxv,	p. 231.	1891-92	...	*	*	*	*
Grünert,	,,	xxxvi,	p. 278.	1892-93	...	307	9	198	2
Grünert und Meier,	,,	xxxviii,	p. 205.	1893-94	...	345	11	221	1
Grünert und Leutert,	,,	xlii,	p. 233.	1894-95	...	344	7	217	1
Grünert,	,,	xliv,	p. 1.	1895-96	...	325	11	251	0
Grünert,	,,	xliv,	p. 26.	1896-97	...	446	11	250	1
		Totals			...	3,042	76	2,032	13

* Omitted as no mention is made of deaths from acute cases, and it is not quite so clearly tabulated as the others.

Gruber (*Monats. f. Ohrenheilk.*, July, 1896) together with his assistants, made a very elaborate investigation of the ear as a cause of intracranial inflammation. They went over the section records of the Vienna Hospital from 1873–1894, which comprised 40,073 necropsies. Among these there were 1,806 instances of intracranial inflammation; and of these again 232 were shown to be due to ear disease—that is, 0.58 per cent. There were probably more due to this cause, as Gruber considers that this may have been overlooked in some, if not indeed in many instances. Moreover, these figures can only be taken as applying to persons over 6 years of age, and dying from diseases such as are admitted to general hospitals.

I find that 13 deaths occurred out of 2,032 cases. With regard to the occurrence of acute otitis media from a life assurance aspect, we need not say much, as no office would accept a patient while the disease was in progress, and in most instances we cannot say whether or not it is likely to recur. There are, however, certain conditions of the nose and throat—notably adenoid vegetations in children and young persons—which predispose to acute inflammations of the middle ear.

With regard to chronic suppurations I have found it extremely difficult to collect any statistics of a reliable nature, and in the absence of such statistics on a subject so important, it is not to be expected that a mere expression of individual opinion can have much value. I must ask you, therefore, to be very critical and even sceptical in accepting mere opinions from myself or anyone else.

With the hope of obtaining some definite data I have spent a good deal of time in going over the records of different hospital departments, but eventually came to the conclusion that those from Schwartze's clinic at Halle were the only writings which seemed to afford any prospect of even approximate accuracy.

My reasons were the following:

1. So far as I can gather from the literature emanating from Professor Schwartze and his school all fatal cases are kept and treated to their termination.

2. The reports from this clinic give the impression of great and painstaking accuracy.

By taking the results over a period of nine years, estimating the number of cases of chronic middle-ear suppuration observed in this hospital department and comparing this number with the number of deaths, it has seemed to me that some idea as to the risks might be obtained. From 1887 to 1897 (excluding the year 1891-92, because in this year the data were not quite so clearly given as usual) I find that 3,042 cases of chronic middle-ear suppuration were seen, and 76 deaths resulted, giving a death-rate of about 25 per 1,000 from this cause alone. Obviously we must add to this the death-rate from other causes—say 15 per 1,000—giving a total of 40 per 1,000. Statistics from a somewhat different point of view have been compiled by Gruber of Vienna.[1]

Gruber with assistants analysed the *post-mortem* records of the Vienna Hospital, extending over the period 1873-1894, and found out of a total of 40,073, 1,806 instances of intracranial inflammation, of which 232 were traceable to ear disease, that is 0.58 per cent.

It must be noted that Gruber thinks that in some—if not indeed many—cases, ear disease may have been overlooked, that the figures only apply to persons over 6 years of age, and to those dying of such diseases as are admitted into a general hospital.

These then, gentlemen, are all the statistical data I can lay before you. They seem to me to show that suppurative ear disease is dangerous, but I question whether they justify anything like the sweeping assertions which have been made as to rejecting all cases of chronic middle-ear suppuration.

Thus, as I understand him, Politzer,[2] recommends the refusal of all such cases, and I believe that most authorities who have written on this matter more or less take up the same position.

It appears to me that in estimating the advisability or the reverse of accepting a person afflicted with chronic middle-ear suppuration, we must be guided by various data.

In the first place it is very important to consider the history of the case. If during the course of a chronic middle-ear suppuration there have been attacks of pain in the ear, I should feel inclined to consider the application for insurance with grave suspicion.

Again, the objective evidence afforded by examination is of great importance. Thus I would certainly reject a case in which polypi or granulations were present. Both conditions can, of course, sometimes be readily cured, and afterwards the position of matters may be reconsidered. It must, however, be borne in mind that the existence of this condition is usually associated with defective drainage or imperfect cleansing.

The presence of diseased bone is of course an absolute bar to acceptance, while the same is true of cholesteatoma of the middle ear. Again, if in a case of suppuration, the external meatus be contracted either by thickening of the soft parts or by growth of bone, the life should be refused, and the same is true of still active suppuration complicated with facial paralysis.

There are, however, a considerable number of cases in which none of these complications exist—in fact, where we have only a perforated membrane through which pus is discharged. In estimating such cases we must be guided by:

1. *The Perforation.*—If it be small and high up in the membrane the risks are greater than if it be large and lower down.

2. *The Amount and Character of the Discharge.*—If this be in very large quantity, and more particularly if it be copious and fœtid, the case should be rejected.

3. *The Social Position and Habits of the Patient.*—I cannot but lay very great stress upon this point, for in my experience fatal cases of ear disease are relatively far more common among the poorer classes, in whom there is generally a tendency to neglect a discharging ear so long as no painful symptoms arise.

Given a case of uncomplicated ear suppuration, what are the objective characteristics which make us take a relatively favourable view of the case?

In the first place the discharge must be small in amount and not fœtid. A source of fallacy must be guarded against here. We sometimes meet with very large perforations amounting to destruction of almost the whole tympanic membrane, in which there is only a small amount of pus

[1] For the information of those present who are non-medical, I may mention that the dangerous complications of ear disease are almost all due to changes within the skull.

[2] *Lehrbuch der Ohrenheilkunde*, 3rd Edition, p. 474.

secreted, and no very marked fœtor is detected by the superficial observer. In these cases, however, a bent probe introduced into the attic of the tympanum will be found extremely offensive when removed. Again, in some cases of perforation of Shrapnel's membrane the discharge may for a time be almost sweet; but, again, a probe introduced can be made to reveal the fallacy. There is, however, another form of middle-ear suppuration, in which the perforation is of a fair size and usually in the lower part of the membrane, the discharge is slightly, if at all, fœtid, and may be muco-purulent in character, and often ceases for long periods after appropriate treatment. In these cases I think we may say that there is a minimum of risk. Again, when a discharge has lasted for many years without ever causing pain, when it has remained small in amount, and when, although untreated, it has not given rise to granulations, the conditions seem to me relatively favourable.

I have not attempted to give a complete account of ear disease in its relation to life assurance, but rather to indicate some of the points which seem to me deserving of consideration. I leave it to those who are statisticians to decide how far the figures which I have adduced, meagre as they are, can be utilised to arrive at any definite conclusion as to the dangers of suppurative ear disease, more especially when they are considered together with the undoubted fact that some forms are very much less likely than others to lead to dangerous complications.

II.—Thomas Barr, M.D.,
Lecturer on Diseases of the Ear, Glasgow University.

Middle-Ear Disease in Relation to Life Assurance.

An important question in connection with this subject is, What is the annual death-rate from purulent middle-ear disease? Unfortunately our data for forming an opinion on this important point are meagre and defective. The Registrar-General's returns do not yield us reliable information. There is often an unfortunate lack of exactness in the statements as to the cause of death furnished by medical practitioners; while the actual connection of certain symptoms with a purulent ear disease is probably in many cases undetected. Dr. James Begbie in 1868 pointed this out, and what he said then is still to a great extent true. "It is to be regretted," said Dr. Begbie, "that the medical attendant, in certifying the cause of death, is so often satisfied by merely recording the name of the fatal disease without referring to its connection with other morbid conditions from which it springs, such as dropsy, etc." With regard to the subject at present interesting us, how many cases certified as dying from disease of the brain, meningitis, encephalitis, and even fever and pneumonia, may really have their primary sources in the cavities of the middle ear? Hence we are justified in regarding the statement in the Registrar-General's returns, that 50 cases of death from otitis and otorrhœa occurred last year in the 8 chief towns of Scotland, as much under the actual fact. Probably Dr. Barker, of London, is not overstretching the case when he says that the numbers given in these returns should be multiplied by four or five times. We are justified in expecting that, with the increasing interest in diseases of the ear now taken both by the public and the profession, and especially as the result of fuller and more correct knowledge of the serious consequences which are apt to attend them, the value of statistics bearing upon this subject will yearly increase.

It is likewise equally impossible to give a reliable answer to the question—Is the mortality of the otorrhœal members of the community larger than the average mortality of the whole community, and, if so, can we ascertain the extent of this? While it is alleged, and no doubt with truth, that sufferers from otorrhœa have not the average duration of life, and that they frequently fall victims at a comparatively early age either to the direct consequences of the disease, or to phthisis or other wasting diseases, we have as yet no exact information on this important point. All we can say is that while this disease comes extremely frequently under our notice in children and persons under 30 years of age, we meet with it very much less frequently after middle age (even in the form of the dry perforation) than the frequency of the active disease in early life would have led us to expect. More exact information as to the mortality of patients who have or who have had chronic discharge from the ear is extremely desirable. This might be attained in some such way as the following, namely, by noting the addresses of say 5,000 hospital patients suffering from this condition, and arranging after a few years that a competent person should visit at each address and ascertain, if that be possible, whether the patient be still alive, or, if dead, find the cause of death. Although, no doubt, involving a large amount of trouble, this would, if due consideration were given to the ages of the patients, furnish us with most important information as to the death-rate of this limited number of the community compared with that of the general community.

In regard to the risks of otorrhœal patients from an insurance point of view, it is important to point out that purulent middle-ear diseases exist much more frequently at an earlier age than that at which life insurance is usually effected. I understand the average age at which life insurance is effected is 35 years. In the great majority of cases of serious complications from ear disease which have been operated upon during the last ten years the ages have been much below this average insurance age; the ages of those who have died of this disease without operation bear out the same fact. This is, no doubt, an important point to be remembered in calculating the risks, and seems to indicate that in such cases the most dangerous period of life has passed before life assurance is usually applied for.

In furnishing a report in connection with a particular life, where an otorrhœa exists, I am in the habit of laying great stress upon the effects of treatment in deciding as to its safety from a life insurance point of view. If the applicant has a chronic purulent disease of the middle ear which has practically received no treatment, I would advise that the office should decline having anything to do with the life until the effects of rational treatment have been determined. If rational and long-continued treatment fail in putting an end to the purulent process, acceptance should as a rule be postponed, or the life should be very considerably loaded. If, on the other hand, treatment be attended by complete cessation of the purulent process, with cicatrisation of the perforation, the life might then be accepted without reservation. If, however, a permanent, although in the meantime a dry perforation remains behind, should the risk of the recurrence of the disease be met by some addition to the annual premium? Here the problem is not so simple. I think that in the majority of cases such a life might be accepted unreservedly. It may not be an ideally perfect life from an insurance point of view, but if such were insisted upon, insurance offices might "shut up shop." No doubt if the case has been one of disease in the attic or antrum, or both, with perforation of the membrana flaccida, we might well hesitate when we consider that caries or dangerous inflammatory products may still remain in these cavities exposing the patient to fresh attacks of the disease. If with such conditions the patient be young, and if comparatively recently there has been a discharge from the ear, a more serious view might readily be taken, and an increase in the premium insisted upon. Where, however, a dry perforation exists, without any special involvement of the attic or antrum, and where likewise we have reason to believe that the patient is a person able and disposed to be careful, and to follow out the advice given by his medical adviser, the life might, I think, be accepted on the usual terms.

Another problem sometimes presents itself—namely, a patient has undergone an operation for the cure of middle-ear disease, with success in putting an end to the purulent disease, but with the effect of leaving behind a large open cavity in the temporal bone. Should such a person be accepted on the usual terms? A case of this kind was referred to me by a well-known company not long ago. The patient had been operated upon by Schwartze, of Halle; a very large cavity existed in the temporal bone, with, however, a perfectly dry condition, and I recommended acceptance on the usual terms. Notwithstanding, I can conceive of conditions in connection with those cases in which one would feel constrained to recommend an addition to the premium. While admitting that there are still gaps in our knowledge of this subject, we must all agree that the existence of a discharge from the ear, even a bygone one, should be taken into account in calculating the probable duration of life; and that forms of proposal issued to

intending insurers should contain a question bearing upon this point. Some offices have already wisely included such a question in their forms of proposal. I have met with applicants for life insurance suffering from otorrhœa, who did not think it necessary to give information as to their ear condition, because such had not been invited in the direct form of a question. There is no doubt, also, that some persons have a purulent condition of the middle ear who are not really aware of its existence, or who regard the condition as already cured. To provide for such it would be well that the question should include not merely the existence of a discharge from the ear, but also the state of the hearing function in each ear. The ocular examination of an ear reported upon as being dull of hearing would, in some cases at least, show that the defect is due to purulent disease.

I do not know that it is within the scope of this discussion to consider whether a person who suffers from extreme deafness, not of a purulent character, should be accepted on the usual terms if otherwise healthy. It is obvious that persons with this affliction are exposed to many dangers of accident in crowded thoroughfares or in the path of moving vehicles not incidental to a hearing person. Probably, however, this form of middle-ear disease was not contemplated when the discussion was decided upon.

III.—URBAN PRITCHARD, M.D., F.R.C.S.,
Aural Surgeon, King's College Hospital.

DR. PRITCHARD said so much had already been said on this subject, that he was afraid that most of his remarks would be only saying over again what had been said, but he would ask them to excuse him if he did. He would like first to emphasise that practically it was only the suppurative condition they had to consider. The importance of suppuration from the point of view of infection and production of intracranial disease was so generally admitted that one need not go into that matter at all. The important questions that occurred to himself were first of all the amount of risk, and, secondly, what were those cases that required absolute rejection, what were those in which they should advise the putting on of an extra premium, and what were those that they might pass? Unfortunately they had not satisfactory statistics, and those they had, although valuable, must be taken with a grain of salt, because first of all those taken from other countries could not be quite right for our own country, and if they tried to get statistics as he had done for their hospitals in London it was practically impossible, as the patients went from one to another. Many of the cases that died did not come under the eye of the aural surgeon at all, and therefore he thought, as a rule, they were apt to think that the mortality was not so great as it really was. Of course, the risk was very greatly reduced by careful cleansing. By that he meant keeping the ear as aseptic as possible, and then, as had already been mentioned, many patients would do well, so that had to be taken into consideration. What were those cases which they should reject at once? He need hardly say any of those cases already showing signs of pyæmia, intracranial mischief, antral or attic mischief, or symptoms of necrosis or caries. In one insurance form there was a question as to the evidence of necrosis and polypi, whereas caries and granulations, which were much more common, should have been included. Necrosis must include that of the ossicles. Then there was that peculiar condition known as cholesteatoma, a collection of epithelium, which got into the cavity; that, he considered, was a very serious condition, and all these cases should be rejected, and also those cases where there was facial paralysis with the suppuration. Then, with regard to those cases where there were recurrent attacks of pain, and especially those in which the pain was situated about 1½ inch above the auricle, he always looked upon this as a very serious position for pain; so also of course was pain in the mastoid region. Exostosis or any other form of obstruction of the meatus preventing the discharge freely coming out and preventing treatment had to be considered. He need hardly mention tuberculous otorrhœa in a phthisical patient, as of course the physician would reject that case. There were also cases of malignant disease; of course these should at once be refused. To come to those that were to be passed with an extra premium, these cases were very difficult to decide. He did not believe one could lay down any fixed rule at all; each case had to be taken on its own merits. The insurance offices looked upon these cases not from our scientific point of view, but from a common sense point of view. They took a certain amount of risk; they wanted a healthy life, but did not want a scientific healthy life that never existed. In deciding these the position of the perforation, as had already been stated, was very important. A perforation of Shrapnel's membrane was a very serious condition; it generally necessitated absolute rejection, but he would not say always so. There were undoubtedly a certain number of cases that one would pass with an extra premium. Where there was any suspicion of caries he would introduce a fine mop rather than a fine probe through the perforation to discover signs of fœtor. There was another perforation which was serious, and that was the perforation in the upper and posterior quadrant. This was frequently an indication of caries of the incus, and that was a serious condition. Then he came to the question of those very large perforations, which were, in his mind, very difficult to decide upon for insurance; a large proportion were not of much moment, but he had seen some which were very serious. A large number of cases of otorrhœa seen in hospital were in young children and were not the cases that came up for insurance; these need not be considered. The cases of otorrhœa that occurred for the first time between 45 and 55 were the cases that had a large mortality, greater than we should expect; he might say more especially when due to influenza. As regards the character of the discharge, he emphasised the fact that a large amount of dirty fœtid discharge in cases which had been well treated was a most serious sign. Such a case should never be accepted. Then, as Dr. Barr had said, much must depend upon what treatment had been carried out and if done effectively. With regard to those cases which might be passed, here the same difficulties came in. Each case must be treated on its own merits, but he thought that a large number of simple uncomplicated cases might pass readily without any extra premium, and especially those cases where they had a careful patient who would follow out the treatment. Next came the question of those cases in which one had to advise the office that it had better postpone the proposal and the question as to how soon after healing one might accept.

IV.—T. MARK HOVELL, F.R.C.S.Edin.,
Aural Surgeon, London Hospital.

MR. HOVELL said an important matter in the question of life insurance was exostosis. If the exostoses were small he thought that they need pay no attention to them from the insurance point of view, as they were then of no importance; if large and the opening small, although there was no suppuration, then this should be taken into consideration. They all knew that if in these cases the meatus were slightly blocked up by multiple exostoses suppurative disease of the middle ear was a far more difficult matter, and probably involved removal of the posterior wall of the meatus, in order that the effects of the middle-ear suppuration might be got at; therefore he thought that matter ought to be taken into consideration in the discussion.

V.—R. MCKENZIE JOHNSTON, M.D., F.R.C.S.,
Assistant Surgeon for Ear and Throat, Royal Infirmary, Edinburgh.

DR. MCKENZIE JOHNSTON said the subject under discussion was one of great interest to the insurance world as well as to the otologist, but unfortunately it was not possible to treat it with that mathematical accuracy which the actuarial mind would appreciate. He first desired to consider whether the loss of life from ear disease was a serious item as compared with the total mortality. He had extracted from the Registrar-General for Scotland's reports for the ten years prior to 1896 the number of registered deaths due to ear disease, and the total deaths for the same period. Without troubling them with the detailed figures, he might say that it worked out to about 1 per 1,000 of the total mortality from all causes. He was quite aware that these figures, although taken from an official source, could not be accepted as perfectly accurate, owing to errors in diagnosis and incomplete certificates. He would, however, point out that the steady increase in the death-rate, which one might have expected from the greater attention paid to such cases and to improved methods of

diagnosis in recent years, did not appear to have taken place. The considerable increase noticed in one or two years, as in 1894, might perhaps be explained by some special cause, as the influenza epidemic. He thought that his figures probably bore a nearer approach to the true death-rate from ear disease than was generally admitted. As an aurist he did not desire to minimise in any way the grave risks associated with ear disease, nor could he help recognising that some chronic otorrhœas, with complications, were among the most anxious, the most dangerous, and the most difficult cases that they could be called upon to treat. An insurance company dealt with averages, and could not generalise from individual cases. The aurist, surrounded by an atmosphere of ear disease, very properly looked with anxiety on each individual case, but perhaps he was too apt to generalise from the few serious cases. Let any aurist consider the enormous number of suppurative cases seen by himself in a year, and then recall how few deaths from ear disease he would see in a like period. The result would be, he believed, to bear out the point which he desired to emphasise: that looked at from an insurance point of view the mortality from ear disease was not so great as was supposed. He next desired to ask in what class was a candidate to be placed who had a perforation without any of the complications referred to by previous speakers, with a dry healthy perforation? He could not be called an absolutely first-class life. He had a weak spot in his armour through which active mischief might easily be started, especially if he were neglectful. A very small extra might be required to meet this risk, but when the extra required was very small it produced so much irritation among the insured, and was of so little benefit to the office, that it was better not to demand it. He therefore thought that such a life might be taken as an average risk. It was quite otherwise where there was suppuration, granulations, attacks of pain, disease of bone, etc. Then the case must be carefully considered along with the history, and either delayed, rejected, or placed as a second-class life with a very considerable loading. The much greater prevalence of ear disease and its complications under 30 years of age had already been referred to by Dr. Barr, and this was a point which he thought of importance in estimating the eligibility of a case for insurance. Persistent nasal catarrh or obstruction should be looked upon with disfavour, especially if there was a perforation, owing to their tendency to cause or maintain catarrh of the middle ear. It had been said that every soldier carried a possible marshal's bâton in his knapsack, but it was known that every soldier did not become a marshal. So they should recognise that every patient who had a suppurative condition of the middle ear ran for a time the risk of a serious and even fatal intracranial complications. They should recognise this, but looking at the matter from the broad standpoint of the insurance company, they should be careful not to exaggerate this risk.

VI.—Herbert Tilley, M.D.Lond.,

Surgeon, London Ear and Throat Hospital.

Dr. Herbert Tilley said that no cases deserved more to be treated on their own merits than such as those under discussion, especially in their relationship to life insurance. As had already been remarked, some cases of chronic suppuration were practically devoid of danger, others were of much greater importance, and in these latter cases he thought insurance companies would best consult their own interests if they referred them to experts for a special report. In some of the cases referred to, for example, suppuration in the attic, in which the patient was practically sitting over a powder magazine, much might be done by treatment, and a life at first refused might be made acceptable almost on ordinary terms, although a case which had been apparently cured was not always free from a recurrence of serious symptoms. He related a case where a child had been operated on when 4 years of age for mastoid disease following chronic middle-ear suppuration. She remained apparently well till 9 years of age, when the disease again lighted up and terminated in a temporo-sphenoidal abscess of the brain, which he operated on with apparently permanent relief, as the child was now in perfect health.

VII.—E. Cresswell Baber, M.B.Lond.,

Hon. Surgeon, Brighton, Hove, and Sussex Throat and Ear Hospital.

Mr. Cresswell Baber said he would consider as cases to be taken without extra premium those where suppuration had ceased, with or without a perforation remaining; but of course obviously there was a great risk if it continued. Persons subject to giddiness and vertigo, which were very common in middle-ear disease, ran an extra risk, and should not of course be without an extra risk until these symptoms were relieved or cured.

VIII.—W. L. Muir, L.R.C.S.Edin., L.F.P.S.Glasg.,

Glasgow.

Dr. Muir dealt with the subject from the general practitioner's point of view. He knew of very many cases of ear disease following the ordinary exanthemata: how many cases of this ear disease did they know as general practitioners which ended in a fatal result? In his mind's eye he could only bring up one, and one alone, of all these cases, that had ended fatally, where the fatal issue was due to the ear disease. He could carry in his mind personally many cases of men whom he had been able to attend, and the majority of cases got well; others did not get quite well, but were subject generally to the suppurative disease, and were subject now and then, on exposure to cold, to some such things as these: to slight recurrent attacks of pain, and some discharge of serous or slightly suppurative attacks that passed off again. Those people he referred to were in perfect health, and the men who did a great deal of life assurance work had different fancies. He did not feel, in cases of that kind, justified in advising the office to refuse the life, although he picked it out as a flaw in the life—of course they all had flaws in their lives, unknown to many of them; it was not, in his opinion, sufficient to justify the office losing that life. That was the usual advice that he gave; unfortunately the local medical practitioner who acted as the insurance referee, no matter how carefully one might put it before him in a specially written letter (because one could hold too hard and fast a law) must follow it up with an explanatory letter. If in any case he had advised a slight extra premium it had always been doubled. He would have the general insurance man put a great deal on the general physical condition of the patients that came before him. When a person came before him for life assurance, first of all he took him in as a man by the eye, then he examined him and if he was satisfactory to the eye generally, and a typical specimen of a man, even with a little suppurative disease, while he noted the suppurative disease carefully, he did not think that the risk to the office was such that they need not accept the life.

IX.—G. M. Low, F.S.A., F.R.S.E.,

Manager of the Edinburgh Life Assurance Company.

Mr. Low said that in looking at the figures which had been given by Dr. McBride, it appeared to him that in regard to this question, the aspect of it as it affected life assurance, the figures were very useful. This aspect was also dealt with by Dr. McKenzie Johnston when he showed that the proportion of deaths from ear disease to the total number of deaths in a population was very small. The Vienna figures quoted by Dr. McBride gave something like 6 to the 1,000, while Dr. Johnston gave 1 to the 1,000. He did not know what the cause of the difference might be, but in either view the proportion of deaths in this class of disease to the total number of deaths from all causes was certainly very small. If the question were as to the insurance companies taking a broad view of their risks and considering whether it was worth while to inquire into the existence of ear troubles, the figures seemed to suggest that, other things being carefully guarded against, this particular inquiry might almost with safety be left out. But he did not think any insurance company would be content to take such a broad view. This brought them to another aspect of the question, which he ventured to think they had no statistics to enable them satisfactorily to deal with. They knew of the existence of ear affections in some of their proposers. Were they to reject such cases or to admit them at extra rates, or to charge an extra premium in one class of cases not in another? There was no sufficient inform-

ation bearing on that subject, and it was very difficult to see where it was to come from. He suggested that they should investigate the cases that had come before insurance companies. They had there the fact stated in so many hundreds of cases that this and that person had a discharge from the ear—presumably disease of some kind or another. If the medical men took those cases and grouped and classified them so far as might be necessary, the actuaries could then proceed to take up the statistics, and to see what the death-rate was and what was the extra risk involved in the different classes of cases. In the course of the discussion the expression had more than once been used that each case must be taken on its merits. That was a very sound view in one aspect. In another aspect it was misleading and almost dangerous. He was specially interested to notice that one gentleman who used the expression said immediately afterwards that in one class of cases he would do one thing, and in another a different thing; that was to say, that he would deal with such case as belonging to a class. In fixing the rules for life insurance they had nothing to do with the individual as a unit. They could only deal with him by placing him in the group of cases to which he belonged. It might be long before an investigation of the experience of assurance companies could be carried out. The number of cases that would have to be put together might take a long time to collect; but until they were able to do something like this they would be groping more or less in the dark as to the proper mode of dealing with this class of cases from an insurance point of view.

X.—William Hill, M.D.,

Surgeon, Aural Out-patient Department, St. Mary's Hospital, London.

Dr. Hill said it seemed to him that Dr. McBride's cases of suppurative catarrh of the middle ear ought to be divided into two groups for insurance work: into those where there had been more than one attack of pain and otorrhœa, and those in which there had been only one attack or none at all. They would be the last to speak too definitely or firmly on any individual case; experts were only asked once a year. Many questions were asked, such as if it made any difference to a case whether there was pain or not. He had been asked what effect, in his judgment, would it have on the life if the patient, having had two attacks of acute middle-ear disease on former occasions, had it completely healed. He supposed that would not make much difference, but on the whole the fact of pain should be taken into account.

XI.—J. Dundas Grant, M.D., F.R.C.S.Eng.,

Surgeon, Central London Throat and Ear Hospital.

Dr. Dundas Grant had hoped for statistics of results of insurances either from their actuarial friends or from other specialists. He trusted that Mr. Low or some of his esteemed colleagues would be able to supply them within the next year or two. As Dr. Hill had said, cases came comparatively seldom before the experts, but within the last few months he had been consulted as an aurist in two. In one instance a gentleman who was insuring his life for a very heavy sum was in some risk of being rejected or being seriously loaded because he had had a slight discharge from his ear. In this particular case, by examination, he was able to make out that the membrane was perfectly whole. There was desquamative myringitis, and he was able to explain this to the medical officer, so that the life might be accepted without any hesitation whatever. In another instance he was asked to give an opinion with regard to a man on whom he had operated about a year previously. He had not the opportunity of seeing him again, but the reports from his family practitioner were that, although the discharge from his ear had not entirely ceased, he was quite free from the pain from which he had previously suffered. This gentleman's health was very considerably improved. The question of the general health was of extreme importance, and ought to be before the mind of the operative aurist. Disturbance to health from chronic ear disease was with him a very considerable element in determining the question of undertaking operations. Thus there was another set of statistics which it would be most important for the otologist to be able to bring before the actuaries, namely, the ultimate results in a very large number of cases of chronic otorrhœa in which operation had been performed, and a similar number in which it had not been performed. The results of treatment had a great deal to do with the genuine prognosis. He had had cases where the candidates had been refused assurance until they had been submitted to treatment, and in time no doubt it would in certain cases be made a condition that the patient should be submitted to the radical operation. This would be no departure from the principle laid down by some insurance offices, where the patient with hernia was insured on his undertaking to wear a truss; they had an analogous condition in otorrhœa.

XII.—Thomas Glover Lyon, M.D.Camb., M.R.C.P.Lond.,

Physician, City of London Hospital for Diseases of the Chest.

Dr. Glover Lyon said the discussion reminded him very much of a discussion on hernia at the last meeting, or nearly the last, of the Life Insurance Medical Officers of London. The subjects were very analogous. In the first place, in both cases the difficulty very seldom occurred. One very seldom got a case with discharge from the ear coming before him at all. A problem like this came before one: Suppose a man of about 40 or 35 had discharge from the ear, what were his chances of dying? That did not often come before them; when it did, it was puzzling and annoying. It was very annoying to find that it was so indefinite. It was the same with hernia as in discharge from the ear; the danger was very small, yet although very small, it existed, and the question then arose, How should they treat this group of cases? The duty of medical officers, it seemed to him, was to treat these cases from a practical point of view: if a case came before them refer it to a specialist; then after he had treated the case they should have a report from him, and they should throw the responsibility of prognosis entirely upon the specialist.

XIII.—James Ritchie, M.D.Edin.,

Surgeon, Heriot's Hospital, Edinburgh.

Dr. Ritchie said the question of the relation of hernia to otorrhœa had been raised, but they had to consider a perfectly different class of case. They always took the hernia at the ordinary rate where the proposer wore a truss. He considered the truss in a patient the subject of hernia as almost an absolute curative agent, whereas in chronic middle-ear disease they had no curing whatever. They got statistics that the deaths were only a small proportion to the number of cases, and he agreed with Mr. Low as to taking out the cases with slight amount of discharge; there was nothing in fact in the ear disease to take them out of the ordinary category of cases. For cases a little worse a little amount might be added. One must take up the whole class of cases; he did not agree with the suggestion to discriminate cases. If a patient was suffering from a recent acute attack of middle-ear disease, he thought they should consider such an uninsurable life, but they should have him put under treatment for some time to see the result. He thought that should not be a bar in time to come, but if the subject of chronic middle-ear suppuration were seen he should be sent back to a specialist to be treated for a certain time before insuring. Granulations and polypi he practically looked upon as due to heat and moisture, polypi being simply large granulations. There were different classes of polypi, but where there were polypi or granulations he was inclined to decline the life at once, because they might very quickly block the exit for the discharge or suppuration, and one had then real danger menacing the patient and that might bring about a serious result. The cases of chronic middle-ear suppuration he was inclined to look favourably upon were those where the perforation was low down and of moderate size; these were the cases one might take with a moderate addition of premium, but he thought they would be wrong in picking out cases with slight discharge and favourable symptoms without an extra premium, and in other cases taking an extra. Unless one took an average of the cases it would require an extraordinary addition of premium.

XIV.—Louis H. Prigler, M.D.,

Surgeon, Metropolitan Ear, Nose, and Throat Hospital, London.

Dr. Prigler said Dr. Barr had brought out an important

point: the question as to whether the life should be loaded where an operation had been done with an apparently successful issue. He quite agreed with him that a certain extra premium should be put on, because he had seen cases where that idea had been borne out within the last two months. A child of 2 years had a mastoid operation done some time ago for mastoid disease, and after three weeks in hospital went out quite well. From the age of 3 to 9 she had an interval of perfect health, but there must have been some mischief left behind, as there was a recurrence of the old trouble, which spread to the brain, and temporo-sphenoidal abscess resulted, and as the child was in a critical condition he operated. Next morning he went down to see her, as he thought, dead, but he found her well. The case did splendidly, and she went out apparently perfectly cured. But the question arose, if that life was to be insured, what were they to do, as there might be a recrudescence? One point they should insist upon was that, even though operation had been done, the patient might be sitting over a powder magazine, or one might get a recrudescence of the disease. In this operation complications might not have occurred if the original Stacke's operation had been done instead of trephining the mastoid antrum only, as the cavities were not thrown into one, and therefore some disease was probably left behind. Every case must be treated on its own merits; that was very important and obvious to all of them. They got on the forms of insurance companies certain questions and were asked, and, so to speak, to draw a hard-and-fast line. It was absolutely impossible to draw a hard-and-fast line; it was very important when it got into a law court. It was ridiculous and foolish to swear anything absolute in reference to the human body, for cases must be treated on their own merits, and it seemed to him that it would save insurance companies a lot of risk, and would be of some advantage if, if in doubt, the person referred to consulted an expert, and each case was treated absolutely on its own merits.

Dr. McBride's Reply.

Dr. McBride, in reply, said he could only thank them for the very kind way in which they had received his contribution, and also for the valuable contributions to the discussion. There were really very few points to take up. Dr. Barr's valuable suggestion to have a register of 5,000 cases, and to follow them out would be of the greatest value in making statistics, but he feared the class of cases seen in hospital clinics were a floating population, disappearing from one town to reappear in another, although he admitted the idea was a most excellent one. With regard to Dr. Pritchard's remarks, he could agree with most of what he said, but he thought that where he used a mop, he (Dr. McBride) had used a probe; he used a probe because he did not know how to sterilise a mop, whereas one could sterilise the probe before passing it. Then he ventured to discuss also another point of detail which Dr. Ritchie also mentioned, and really he thought the difference between polypus and granulation was purely accidental. Of course, he was aware that pathologists found epithelium in the polypus, not in the granulations; but the terms were more academic than practical. With regard to Mr. Low's and Dr. McKenzie Johnston's statistics, he thought Dr. Johnston's statistics referred to the death-rate; his statistics referred to the total death-rate in relation to death-rate from ear disease. Then he thought that the remarks of Dr. Muir called perhaps for some reply. Dr. Muir had treated the matter with considerable oratorical skill, and that oratorical power was apt to carry conviction with it where no conviction ought to be carried, if he might say so without offence, and, as it were, sweep the specialist to one side. He would be inclined to take up the same position in regard to cough as Dr. Muir assumed in relation to ear disease. He could not classify all cases of coughs and occasional pain in the side; no more could Dr. Muir classify all cases of middle-ear disease with occasional attacks of pain; it was of serious importance. He was strongly inclined to think that most of them overrated the danger, but on the other hand Dr. Muir inclined to underrate it. It was of great importance not to overestimate the dangers; it was equally important that the question should not go forth that they homologated any expression of opinion that seemed to indicate that the risks were very slight. He thought perhaps that some of his friends—not necessarily those present—who had written textbooks and papers, were inclined to lay too much stress upon the importance of ear disease. He was willing to draw deductions from statistics, but he, as one who had written upon this subject, had taken great pains first of all to get valuable information, then had taken great care to try to impress upon his readers, as Drs. Pritchard and Greville MacDonald had done, that a larger number of deaths were due to middle-ear disease than his figures indicated, and were to be deprecated on that account. On the other hand, Dr. Muir seemed to attach rather too little importance to statistics.

REMARKS ON THE RATIONAL TREATMENT OF PHTHISIS, WITH REFERENCE TO NORDRACH SANATORIUM.

By R. MANDER SMYTH, M.D.Lond.,
Late House-Physician Hospital for Consumption and Diseases of the Chest, Brompton.

The Question of Climate.

The almost mediæval darkness which exists amongst the public as regards the necessity of fresh air for all human beings, and especially for those suffering from pulmonary tuberculosis, has of late been considerably enlightened. It is to be hoped, however, that while importance is being rightly attached to this factor of sanatorium treatment, others of equal or even greater moment will not fall meanwhile into the background.

A recent distinguished writer, relating his experiences in the treatment of consumption, states that the only remedies he knew were air and sunshine. Doubtless we must not take this too literally, for a consumptive cannot live, still less make progress, on air or even sunshine, but one might say with some degree of truth that it was a treatment not infrequently attempted.

Diet, and the improvement of nutrition, rest and exercise, and their right adjustment to febrile and quiescent cases, supervision and regulation of every habit of life, are of far higher importance to the consumptive than excessive purity of the air he breathes, or the amount of sunshine he is able to enjoy, desirable as these factors undoubtedly are.

The idea so firmly rooted amongst even medical men that the one thing needful for a consumptive was to live in a "climate" selected with reference to some artificial classification of cases, is gradually giving ground to one more rational—namely, constant treatment in any right environment of all cases regarded from an identical pathological standpoint, that of, pulmonary tuberculosis.

Whilst we shall hardly differ much now as to the value of sanatorium treatment, we are by no means necessarily agreed as to its best form. What is the right environment, and what the most successful system? The present attitude of medical thought in this country is directed towards the collection of data to form opinions upon these questions, and for this purpose the already established Continental sanatoria are eagerly reviewed.

It is now forty years since Hermann Brehmer, the founder of sanatorium treatment, was denounced as a charlatan in Germany for treating consumption in a systematic way, on the assumption that it was curable. Some of his ideas have, it is true, proved erroneous; notably the supposed necessity for carrying out the treatment in a district which was itself immune from the disease, and also his dogmatic requirement of a definite minimum altitude above sea level varying with the latitude. But, on the other hand, his excellent and oft-repeated advice against placing sanatoria in or near centres of life and traffic, or in a health resort frequented by other invalids and pleasure seekers, the need for strict supervision, and for carefully graduated exercise as well as for rest, have all been often disregarded since in practice.

Nevertheless, results more or less favourable have been published by many of these institutions, and although I am far from agreeing with those who pronounce them "superb," yet observers of such experience as Dr. Hermann Weber consider them to be somewhat better than those obtained outside sanatoria in the open health resorts of high altitudes. The success of a sanatorium, however, naturally depends upon

many factors, and not only upon the principles of treatment professed, but upon the thoroughness with which these are actually carried out in practice.

Peculiarities of the Treatment at Nordrach.

There is at least one sanatorium on the Continent which stands out pre-eminent both in its methods and results. It has fallen to my lot to obtain a somewhat deeper insight into the working of this sanatorium—namely, Dr. Otto Walther's at Nordrach in Baden—than can be obtained in the flying visit which a busy medical man can usually afford. I became acquainted with the existence of this institution about five years ago through the illness of a relative, and was later myself a patient there, a sufferer from acute phthisis, having after recovery enjoyed the privilege of assisting Dr. Walther in his work.

The methods of treatment differ materially in practice, if not in theory, from those of all other described European models, and the results are proportionally different. It is time, therefore, to draw attention to the exceeding importance of Nordrach in connection with the present movement for the suppression of tuberculosis, which, if it takes the right direction, will be the means of doing untold good in reducing the sum of human misery in our land.

It may appear strange that an institution so successful, beset by applicants at all seasons, should have remained so much unmarked by the medical profession in Germany, as also in England. It is still quite unique, although Dr. Saugmann is engaged in founding what purports to be a similar sanatorium on a fiord of the East Coast of Denmark, near Vejle, and I am engaged in establishing a small one in England. The reason is chiefly the careful avoidance of publicity by the physician and the remote and private nature of the institution, which for the sake of the patient's quiet is not open for every visitor to make a stay in.

One result of this seclusion from the world has been that until quite recently the cases received have been of a serious character, many a patient, drifting from bad to worse in different "climates," and not infrequently in other sanatoria, having come there as a last resource, not usually at the recommendation of his physician, but of some friend who had been cured there.

I am not in a position to publish statistics of the results. Dr. Walther has never done so, considering that as his sanatorium has only been in existence nine years the space of time was not long enough to enable him to make weighty statements about the permanence of cures. I am only able therefore to state as the result of my own observations that though the cases treated are probably of a more advanced nature than those of better known sanatoria, and certainly than those sent to high altitude resorts, the results are actually far better than those obtained in these places.

In reading some recent favourable statistics of treatment in high altitudes one is struck by several things. One is the very high proportion of cases in the first stage of phthisis; in the instance I refer to, 65 per cent., as compared with about 27 per cent. in one of the larger German sanatoria. These cases, it is not too much to say, are rarely seen at Nordrach. Yet the average length of treatment in high altitudes was about twelve months, whereas the average for all cases at Nordrach is about five months. Another aspect of the same point is the careful exclusion of all severe and advanced cases from high altitudes. Pyrexial and acute cases of all kinds, cases of double cavities, "catarrhal phthisis" (whatever that may be), and laryngeal cases, were all unsuited for the "climate." Of course, a careful selection of cases makes a vast difference to statistics. Even under ordinary and disadvantageous conditions of life the earlier lesions tend to heal, as every *post-mortem* room amply shows, but the difficulty of making a cure progresses *cæteris paribus* in a geometrical ratio with the extent of the disease. I do not believe, therefore, that altitude has any favourable effect on the course of the disease, and as we see it is said to be prejudicial to the advanced cases. That also I doubt, except in cases in which the loss of lung is so great as to influence respiration in the rarefied atmosphere. It is indeed treatment that is required for these cases, not climate, and hotel life in a high altitude health resort is not treatment, or at any rate it is a very bad one.

I have seen at Nordrach occasional relapses in cases which were expected to remain well, but it must be remembered that comparatively few of the patients come from the leisured classes, and that much depends on the patient's circumstances and way of life in the two years following his cure. Sometimes necessity demands that he should at once return to hard work, sometimes he lives foolishly afterwards. Still, these relapses usually prove slight.

One was the case of a young German who had previously spent two periods of several months each at a famous sanatorium to no effect. He came to Nordrach, became rapidly well, and in the following year went to work on a plantation in Honduras. In an expedition on the coast he had a very severe attack of malarial fever, which brought down his weight. It recurred on his return to Germany. With this upset of his general health there was a slight return of his former symptoms of phthisis. He came to Nordrach last winter, and in two months completely regained his health and strength, and is now at work again in Germany.

Perhaps a good test of the results of treatment is afforded by the case of an English doctor who was the subject of advanced disease, and had tried in turn a voyage to South Africa, a residence in the Riviera, and our own South Coast. He made a complete recovery at Nordrach, returned to London, and there soon fell ill with typhoid fever, losing 40 lbs. in weight and suffering from double pneumonia as a complication. Instead of old cavities bursting into activity as one might have supposed, the lungs emerged perfectly sound from the trial, he regained the weight lost, and now, nearly three years since, he maintains robust health in full work, is able to take long bicycle rides, and to lead a perfectly active life.

In contrast to the list of contraindications given for high altitudes, I have never observed at Nordrach any prejudicial effects of change of season or bad weather upon the patients, and the fact may be emphasised that the inclemency of the weather is often just as great there as in this country, the winters being much more severe. The results are solely dependent upon the character of the disease and the co-operation of patients in their treatment. Results are the same in winter as in summer, and I have seen rapid cures made in periods of comparatively sunless weather. Sunshine, therefore, is by no means essential, though one naturally would not elect to do without it.

Nor, indeed, is extreme purity of the air, though desirable, of such prime importance as has been supposed. I have seen better progress on Nordrach lines made by patients in the dust-laden atmosphere of great cities than one would have expected them to make in the Alps; and I have at present a case under observation, in a great Midland manufacturing town where the leaves of trees become covered with a thick deposit of dust, making the most striking advance under very disadvantageous circumstances.

Pathology of "Chills" and Common Colds.

The timidity of some writers on sanatorium treatment with regard to what they apparently deem the vital factor of treatment, namely, fresh air, is lamentable. "The patient must have fresh air in abundance," say they, "but he must be moderate in its use." He must be well wrapped up, screened from wind, "which lowers the electric tension of the body." His skin must first be rubbed with spirit and douched to enable him to withstand "chills" and cold. Too much fresh air is apparently as bad as too much drink. One writer gravely states that "a species of drunkenness is produced on the first occasion of going out after a more or less prolonged seclusion in the house." One has heard the expression "air as strong as wine," but never before of the production of actual intoxication!

It is indeed greatly to the credit of Dr. Walther that he has been the first to teach the absolute unimportance of the weather, however bad, in the production of a common cold, which he believes to be due to an infection somewhat similar to influenza, and also with regard to the state known as a "chill," loosely used by the laity to mean as a rule nothing, sometimes a cold or a rigor, but which as applied to consumptives in nine cases out of ten is a definite though insidious relapse due to overexertion, and marked by pyrexia and increased expectoration.

If Nordrach taught us no more than this, it would still be worthy of distinction, and it is necessary to be very clear about these facts, because there is an extraordinary confusion of ideas on the subject. These "chills" occur frequently enough in the populous health resorts, from simple lack of measures for their prevention. Common colds occur, also, accompanying civilisation, though I do not believe more frequently in consumptives than in other classes of people. The overexertion "chill" or relapse rarely happens at Nordrach, because the small number under supervision renders it possible to guard against it, and great care is taken that this is done. A fresh acute cold or catarrh we never see at Nordrach, because the isolation and the open-air life render the chance of direct infection practically impossible; but when occasionally a cold is taken, it is transmitted from a visitor or some member of the staff, and can be traced to the village or station below. A remarkable confirmation of this theory was afforded by the analogy of an outbreak of influenza last winter traced to a travelling pedlar in the valley. Many members of the staff were infected, some quite severely, while not one of the patients, who are constantly exposed to draughts and all weathers, was attacked.

Nor are fresh attacks of bronchitis, pleurisy, and other complications so common in the progress of phthisis, and so often attributed to "fresh cold," ever seen at Nordrach. Where all are making progress towards recovery, symptomatic treatment is reduced to a minimum, and drugs are therefore hardly ever called for.

It is apparent that if the risk of colds and "chills" from exposure can be disregarded, all difficulties in the way of enjoying the fresh air, even in the most changeable climate such as our own, are at an end. At Nordrach, therefore, no unnecessary "hydrotherapy" or "acclimatisation" is indulged in. Patients are at once encouraged to discard overcoats, macintoshes, and all heavy clothing, in walking, whatever the season of the year, though for the sake of comfort they may wrap up as much as they like while at rest, but with open windows. No regard is paid to wearing sound boots or keeping the feet or clothes dry, nor even to wearing flannel next the skin, the patient's comfort being his guide in such matters.

Sandals or thin canvas shoes are often worn in winter to prevent chilblains, and in summer on account of the heat. These are soaked through in the first puddle. Personally, in common with others, I practically never wore an overcoat during the last two winters either in England or Germany, and in the country rarely a hat, nor carried an umbrella. I have, while a patient, worn wet shoes for days together, sat by open windows for hours in draughts when the temperature of the room was at freezing point, waded in ice-cold water, etc., on purpose to test the truth of this infection theory. But like the schoolboy, who also tried similar means to get a bad cold and play truant, I failed entirely, neither did any other evil follow. It is in truth certain that no harm need be apprehended from an absolutely fearless exposure of consumptives to any weather, in our country as on the Continent, provided overexertion is avoided. A strong wind is not injurious *per se*. It is only in walking against it that a patient is liable to dyspnœa and fatigue—in a word—overexertion. At rest there is no harm, but always good, to be obtained from the free draught.

Treatment of Fever.

Brehmer's original ideas included seclusion for febrile cases, and carefully-graduated exercise combined with rest for those free from fever, but most of the modern institutions which have spread through Germany and Switzerland have deviated from these principles, and adopted the less troublesome and less effectual "rest treatment" in the open air, started by Dettweiler, of Falkenstein, which consists in immobilising even febrile patients on couches in *Liegehallen*, large verandahs open to the air, for the greater part of the day.

This treatment has also influenced experimenters in our country. At Nordrach, however, the principles of Brehmer have in reality been more strongly emphasised, and I think it should be stated "that the proper place for a patient whose disease is in any degree active, that is to say, a patient whose morning temperature does not keep below 37° C. (in the rectum), and the evening temperature below 38° C., is in bed, alone in his room with wide-open windows in all weathers, obtaining the maximum amount of rest, which is certainly not possible on a couch in a *Liegehalle*, amongst talkative neighbours and other distractions. Rest on a couch is not the same as rest in bed, and is unfit for all pyrexial cases, although it is largely practised. In fact, the pyrexia of pulmonary tuberculosis is inconsistently accorded far less importance than is demanded in other diseases, the acute specific fevers for instance. It is this inconsistence much more than climatic considerations which still impedes the successful treatment of phthisis in this country as in others.

The Value of Regulated Exercise.

On the other hand after the temperature has remained practically normal for a week, and the chronic, or acute, inflammatory process is in a quiescent state, regular exercise without fatigue, however slight, is urgently needed to strengthen the weak heart, to stimulate all the functions, to bring about a reorganising effect on the constitution, and eventually to fit the patient for the stress of everyday life again. This exercise has to be apportioned according to the patient's strength, state of nutrition, and even his temperament, and above all with constant regard to the temperature; so that the quiescent state is never interfered with, but goes on gradually to ultimate arrest. This is obviously a matter that can only be undertaken in surroundings which afford every advantage, and by a physician who devotes his whole energies to the task.

My indictment of the open-air "rest treatment" is therefore, that it does not provide adequate rest for patients with active disease, nor properly graduated exercise for those whose disease is quiescent. In consequence I have seen patients coming from other Continental sanatoria with, it is true, a certain accretion of subcutaneous fat, but with flabby tissues, unequal to any exertion when they returned home, and uncured. I have seen these same patients go away after a course of treatment at Nordrach, fully nourished, very muscular, capable of considerable exertion, long walks, etc., and with their disease completely arrested. These facts, I think, clinch my argument.

The Environment desirable for a Sanatorium.

The environment, therefore, of a sanatorium is of far greater importance than meteorological conditions, and the success of Nordrach is in some measure due to the isolation of the sanatorium from towns and traffic. The nearest stations are nine and ten miles away, the nearest town seven miles distant, and cut off by hills rising 1,500 feet above the sanatorium. It is, therefore, impossible for any but the strongest, who are nearly ready to leave, to make these walks, and without making invidious comparisons, I need only give one instance out of many to show the importance of this. A young English girl who was for some months at a large German sanatorium, and who has since been cured at Nordrach told me that patients used to go out into the adjacent villages to drink, and that she had sometimes seen them driven home drunk. Comment is needless, except perhaps to add that where such things are possible, no wonder "*hydro*-therapy" is found necessary to prevent "chills"!

The Advantages of Small Sanatoria.

Another very important point is the size of the sanatorium. In a large barrack a patient is lost in the crowd, so to speak. The Nordrach sanatorium has been wisely limited to 45 patients, distributed in four houses of 4, 5, 16, and 20 beds, although great pressure is put upon the accommodation, and vacancies are taken up two, three, and four months in advance. Probably no sanatorium should have more than 50 beds, and not even so many unless the supervision is highly satisfactory. To quote yet again. A German gentleman, who had been treated at a large sanatorium, told me that he once went away for three days to the neighbouring city for amusement without his absence being noticed by those in charge of the institution!

Some sanatoria allow friends to visit the patients from the very commencement: at one it is possible for the whole family to live with the patient. This execrable arrangement contravenes the first essential of sanatorium treatment—namely, that the patient should be absolutely removed from his home

surroundings, and detached from the environment in which he continues to lose ground or to remain stationary.

At all events it is most essential that at first he should be left entirely to the doctor and nurse, until indeed he is fully settled in the new way of life. The influences of friends, however intelligent and well intentioned, are in the majority of cases undesirable. It must naturally be so, for the friends know nothing of the patient's needs and supply him with sympathy when he wants only rest and quiet; and those whose needs are the greatest, who must refrain from conversation and mental exertion, who must conserve in short their diminishing vital energy are often visited for the very reason that they are ill in bed.

The way of life in the great health resorts is of course worse still. Such a place as Davos reproduces and perhaps adds to all the evils of the home surroundings. Hotel life in a town, with "caretakers," that is, untrained friends in attendance upon the invalids, brings with it temptations of all kinds in the shape of amusements, theatres, balls, even violent exercises, which so far from conducing to the patient's health in many cases produce "chill" after "chill," that is, relapse after relapse, so that what may have been an early and curable case becomes perhaps well nigh hopeless. Even amongst these however I have seen the most extraordinary arrests produced under the *régime* of Nordrach, arrests that one would have deemed incredible had not one observed their whole course.

The physicians at most of the high altitude resorts are practically consultants, although I understand that many arrange now for a season fee in order to see their patients as often as they like. That is a step in the right direction, but the control is very slight, and however good advice may be it is impossible to be sure that the patient carries it out. No wonder we find medical writers seeking a refuge in a list of contraindications. "Pyrexial cases," says Dr. Theodore Williams, "should not go to high altitudes, for as a rule the climate augments the pyrexia." Why? Is it indeed the climate that is to blame, or is it the mode of life the patient leads in that climate? In the few cases I have investigated in high altitudes the persistence of pyrexia was simply due to the fact that the patients were walking about with active disease.

Von Jaruntowsky says that the "action of the climate is too strong for the late stages of phthisis." Perhaps his remark had been better altered in translation to "the treatment is not usually strong enough for such cases." Amusements, in the usual acceptation of the term, are not so necessary when the treatment is efficacious, for then the patient's mind takes a positive emotional tone from the hopeful character of his surroundings, the disease loses its terrors as its curability is demonstrated, and he finds an occupation and interest in "working out his own salvation."

It is certainly a plausible theory that amusements are harmless in moderation, and even necessary for the patient's comfort. Unfortunately human nature, especially consumptive human nature, is not firm enough to draw the line at strict moderation. Even in a small institution it is difficult enough to regulate individual temperament unless amusements are very limited and unexciting, as Brehmer himself well knew. One of his sayings was—and there is no truer maxim in his writings—"*Der Mensch stirbt an seinem Character.*" And again, in quoting from the *Daroser Blätter*, he says: "What kills us at last is not usually consumption but our temperament." In fact, at many health resorts one would imagine that the patient's business there was to be amused, rather than to be cured.

For this reason, also the principle laid down by Dr. Léon Petit—that access to a sanatorium should be easy and not far from a railway station—is thoroughly bad in practice. Easy access means the proximity of that civilisation which it is so necessary to avoid if absolute quiet is to be obtained, and the nearer the civilisation the more difficult is rendered that *al fresco* and unconventional life which the patient ought to lead.

Diet.

There are other points which might be touched upon, more especially the great question of diet. It will, however, suffice for the present to say that in many sanatoria there is no proper guidance for the patients in the selection of their food, and too many meals are usually provided. Only three meals a day are given at Nordrach, and yet a much greater improvement of nutrition is usually brought about there than in other institutions. Forty or 50 lbs. (German) is by no means an uncommon increment. In one case a patient weighing under 100 lbs. (German) went away 190 lbs. In another case a lady who weighed 60 lbs. went away over 150 lbs. Both these cases were most serious; the latter was for weeks subject to profuse diarrhœa, probably tuberculous. They have been both cured, the latter for the last seven years.

Discipline.

The methods of a rightly-conducted sanatorium are, then, strictly analogous to the splint, which in surgical cases of tuberculosis keeps the diseased part continuously at physiological rest. The methods of a populous health resort hardly constitute a splint at all, and whatever restraint the treatment affords is customarily applied only in the winter. What surgeon would commit the folly of treating a tuberculous ulcer in the winter only, allowing the patient to be practically free from treatment during the summer months? And yet this is precisely what happens to many a similar case of tuberculous ulceration of the lungs, owing to our fallacious notions about climate.

In a sanatorium much depends, as I have already said, on the degree to which theoretical principles are put into practice. The splint may be so loosely applied that it may only be effective in comparatively slight cases. The best climate, then, is not, as has been poetically said, that which woos one most into the open air, but that in which this "splinting" is most effectively carried out.

It has been said that English people do not care to submit to the rigid discipline practised abroad. An observation of the faces gathered around the dining table at Nordrach will entirely dispel this idea, and will demonstrate that hope is more effectual than dissipation and distractions in making the invalid contented with his temporary lot.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

ANOTHER CASE OF POISONING BY LINIMENTUM CAMPHORÆ: RECOVERY.

B. MacG., a girl, 2 years, was brought to me on September 1st, at 1 P.M., her mother explaining that she had taken at least two tablespoonfuls of "camphorated oil" half an hour previously. No symptoms had arisen until the child had taken several mouthfuls of her dinner, consisting of meat and potatoes, when she suddenly "went in a fit." Her mother then found that she had burnt her gums, that the breath had a strong smell of camphor, and that the bottle of oil with which the child had been meddling showed the above quantity deficient. On examination the patient was unconscious, pupils dilated, deeply cyanosed, limbs and trunk rigid, and pulse hardly perceptible. I administered 5 gr. of sulphate of zinc in solution, and introduced my finger into the pharynx. The recently-taken food was ejected with a strong odour of camphor. I then had the child placed in a hot bath, applied cold to the head, and repeated the dose of the emetic. The child vomited several times in the bath, the fluid ejected having the characteristic odour of the poison. The rigidity subsided, and consciousness gradually returned. The child then slept for three hours, and when I saw her again at 6 P.M. was quite herself. There were no convulsions throughout. No after-trouble.

This is the second case I have had in this year with the same alarming symptoms. I attribute their severity to the fact that mothers like to keep the oil "by them" for external use in any and every complaint, and that as time goes on the camphor collects near the bottom of the bottle, converting the fluid there into a strong poison. As Dr. Moore remarks in his case reported in the British Medical Journal of September 10th, so in both my cases, the camphor acted as a poison on the circulatory and nervous systems, rather than as a gastro-

intestinal irritant. I consider that pharmacists should not supply this application without a poison label, although it is not in the schedule of drugs requiring that label under the Act.

J. H. Frederick Way, M.R.C.S., L.R.C.P., L.S.A.
Southsea.

TOXIC SYMPTOMS PRODUCED BY A "HEADACHE POWDER."

As acetanilide and its allies are now so extensively used, the following case of toxic symptoms produced by an ordinary dose may be of interest:

On September 5th last I was called at 9.30 P.M. to Mrs. B., a young married woman, who was suffering from symptoms alarming to her friends. She had complained of feeling unwell for some days past, and on September 5th had purchased a headache powder, which she took at 1 P.M. It quickly cured the headache, but soon produced effects of a most unpleasant kind. These included a feeling of numbness and "pins and needles" in the limbs, faintness, lividity, coldness of the extremities, and a feeble pulse, with other symptoms of collapse. The temperature was normal, and the mental condition unaffected. As an emetic would probably have been useless, the lady was successfully treated by stimulants, inhalation of ether, and the application of warmth to the extremities. The next day she was feeling fairly well, though hardly fit to perform her usual duties.

R. E. P. Squibbs, M.R.C.S.Eng., L.R.C.P.Lond.
Lenton, Nottingham.

SLOUGHING OF ABDOMINAL WALL AND PROLAPSE OF FŒTAL INTESTINE IN A TRANSVERSE PRESENTATION.

On Wednesday, August 24th, at 9.30 A.M., I was called to see a primipara, who was stated to have been in labour since the morning of the previous Monday. I found her having severe and almost continuous labour pains. The nurse in attendance showed me in a diaper a long stringy substance, which she said had been coming from the vagina. Examination showed that the os uteri was high up, in fact, only just to be reached by a pretty long examining finger. Abdominal examination showed an evidently small fœtus lying transversely. Under chloroform I was enabled to introduce the right hand into the vagina, when I found the membranes ruptured, and the os dilated to about 3.2 centimetres in diameter, and a soft pulpy mass with a hole in the centre presenting. Passing the finger through the hole, I felt what seemed to be long thin webbed fingers. On getting between the presenting mass and the edge of the os I was able to bring down a leg. In a short time, the pains continuing, a small fœtus of about seven months' development was born, and soon afterwards the placenta. The fœtus had a round opening, about an inch in diameter with soft ragged edges, situated on the right side just above the iliac crest. Through this hole the finger passed into the abdominal cavity, and felt the free ends of the lower ribs. The skin of the fœtus was peeling in places, and the head was pulpy. The infant had undoubtedly been dead for some days; labour had set in, and presenting transversely, on account of the severity of the pains and the length of time—some forty-eight hours—which had elapsed since the commencement, the part encircled by the partially dilated os had sloughed with the result above mentioned. What had been coming away from the mother before I saw her was now recognised to be the intestines of the fœtus. The woman made an uninterrupted recovery.

Tamworth. H. P. Barlow, M.B.Edin.

DEATH FROM LIGHTNING.

It may be of interest to note the marks observed on the body of a workman, who died while on his way to work from the effects of lightning, on the afternoon of August 21st. The body was found on the highway, face downwards. The lower lip had been cut in the centre to the depth of an inch, and the tip of the nose denuded of skin. The hairs on the left side of the body, beginning with the left eyebrow, were very slightly singed, more so on the left side of the chest, and most on the front of the left thigh to a few inches below the knee. The clothes bore not the slightest trace of singeing. Both pupils appeared to be slightly dilated. The palms of the hands were quite clean. A small patch of *post-mortem* discoloration was seen on the chest, immediately below the neck. From evidence produced he could not have been dead more than two hours before the body was found.

Fochriw, Aug. 23rd. E. Davies, L.R.C.P. and S.Edin.

"MEASLES IN AN INFANT: POSSIBLE INFECTION AT BIRTH."

Under the above heading, in the British Medical Journal of May 7th, Dr. Carstairs Douglas records an interesting case. I am enabled to give particulars of a similar case.

On May 7th I attended Mrs. F., aged 38, in her fifth confinement, and delivered her of a healthy female child. The puerperium was normal, and the mother nursed her baby. On May 13th, seven days from birth, the infant was sneezing, coughing, eyes running, and very restless; and on May 15th appeared a well-marked characteristic rash of measles covering the greater part of the body. The rash commenced to fade on May 17th, and had all disappeared by May 20th. The infant remains perfectly well.

The interest in this case lies in the fact that measles was already present in the house, in the person of a child of 3 years, whom I attended, and upon whom the mother was in close attendance until her confinement.

The contagion in this case may have been received by the infant either by contagion or inoculation. As to the latter, however, I may say that I disinfected my hands carefully.

Limerick. F. Charles FitzGerald, L.R.C.S.I., etc.

A CASE OF HÆMOPHILIA.

E. L., aged 7 years, has attacks of hæmatemesis at intervals varying from two to four weeks. I have never measured the quantity vomited, but it is considerable and of a bright colour. The first attack occurred when she was still in long clothes. Her motions are usually dark coloured and several times there has been decided melæna. A very slight pinch causes bruising, and the mother states that she noticed this characteristic within a few days after birth.

When the little patient first came under my notice in January last she had slight swellings of both knees and wrists, which became discoloured a day or so later. A small pin prick in February bled for 24 hours and about the same time one of her teeth came out, 36 hours afterwards the blood was still oozing from the gum. I was informed that the bleeding lasted for nearly a week when another tooth was extracted the previous year.

The midwife who attended at the birth of the child tells me there was nothing abnormal at the confinement, but that a few days later some bleeding occurred "round the insertion of the cord."

This is evidently a case of true hæmophilia. The two features that render the case noteworthy are—first, the sex; secondly, an absence of any family history of bleeding on either parents' side.

Bunbury, Tarporley. C. Royds Jones.

ECZEMATOUS ERUPTION PRODUCED BY ATROPINE.

On August 9th H. H., aged 55, consulted me regarding defective vision in his left eye. On ophthalmoscopic examination a satisfactory view of the fundus oculi could not be obtained, so I instilled two or three drops of liq. atropinæ sulph. (*B.P. 1885*) and asked him to return the following evening for further examination. On his return he presented a curious condition. The left side of the nose, the left cheek, and the left half of the upper lip exhibited an acute eczematous condition. After the atropine had been instilled the tears had trickled down that side of the face, no doubt carrying some of the atropine with them, and within a few hours he complained to his wife of feeling a burning sensation all over the area subsequently affected. The treatment consisted in covering up the affected area with starch paste, to which a few grains of boric acid powder had been added, and in four or five days the condition had disappeared. Throughout the pulse and temperature remained normal, and the local condition was the only cause of complaint.

On further inquiry I find that he is very susceptible to the action of belladonna. Four months ago he sprained his right

wrist, which was treated with a liniment containing belladonna, and this gave rise to a similar eruption all over the part. He is also subject to lumbago, which can be relieved by the application of a belladonna plaster, but the eruption caused by this is so bad that he declares the cure is worse than the disease.

During the last nine years I have used atropine almost daily, but never before have I met with a similar experience.

Glasgow. WILLIAM BRYCE, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHILDREN'S HOSPITAL, BRADFORD.

ECTROPION OF THE FEMALE URETHRA.

(By ISAAC MOSSOP, F.R.C.S.Edin., Honorary Surgeon to the Bradford Children's Hospital.)

ECTROPION, or prolapse of the female urethra, is not often met with, and is, in children, usually ascribed to irritation from intestinal worms, especially ascarides, less frequently to vesical calculus and other conditions. Its occurrence cannot well be overlooked, because, on careful examination, the urethral opening is at once visible in the centre of the rounded projection, its complete disappearance on reduction, and reappearance when the support is withdrawn. The symptoms are frequent and painful micturition, with occasional bleeding on straining.

NOTES OF CASE.

The following notes of a typical cases are by Dr. J. H. Patterson, house-surgeon to the hospital:

"Patient, a well-nourished girl, aged 9, attended out-patients with a history of frequent and painful micturition, and passing of blood, of from two to three weeks' duration. Patient has never suffered from cough, worms, or constipation, and no history of any straining can be elicited, and no predisposing cause could be ascertained.

"On examination, a small rounded swelling the size of a cherry, and of a dark-red colour, was seen situated around the orifice of the urethra, the meatus being in its centre. The swelling appeared to be very tender to the touch, and bled slightly. Careful examination revealed that it could be reduced. This was done repeatedly by means of a small piece of cotton wool on sinus forceps. The swelling immediately returned as soon as the pressure was removed. The urine had a specific gravity of 1020, and there were no abnormal constituents. Astringent lotions were ordered, which slightly altered the character of the swelling; it became more flattened, somewhat reduced in size, had lost its congested appearance, and resembled a rosette.

"The bladder was sounded for stone; no stone was detected, and it was decided to operate. Under chloroform Mr. Mossop removed an elliptical portion from either side of the prolapse, and stitched the opposing surfaces together.

"There was no difficulty of micturition after the first day, no pain, and the frequency diminished.

"When seen three weeks after the operation the condition was completely relieved."

REMARKS.—My reason for drawing attention to this case is that, from a very considerable experience of children's ailments, I have not previously met with this condition. Several cases have been recorded within recent years, and it is described in some of the modern works on gynecology and children's diseases. I have been informed by several well-known authorities of wide experience that they have never met with a case of this disease. I am inclined, therefore, to think that its occurrence is somewhat rare. A point of interest is that there was no assignable cause.

SIR WILLIAM BROADBENT, Bart., will open the Huddersfield Sanatorium, Mill Hill, on October 22nd, at 2.15 P.M.

REVIEWS.

A TEXTBOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia, etc. Two volumes. London: Rebman Publishing Company. 1898. (Roy. 8vo, pp. 1,287; 78 illustrations. 36s.)

THIS book differs notably from the majority of American textbooks of medicine which are at present multiplying in so prolific a manner. These are in the main written from a rigidly scientific standpoint, and frequently suffer from the abstract view which is taken of disease. Dr. ANDERS's book, on the contrary, is essentially and avowedly clinical, the definitive teaching of a careful and experienced physician. The pathology of each disease is briefly given before its etiology, and due stress is laid upon bacteriology, though the author certainly gives the impression that his information under this head is not original. The clinical pictures of the various diseases are, as a rule, clear, and often striking, and their value is enhanced by a number of comparative tables illustrating differential diagnosis; no fewer than fifty-six of these will be found scattered through the work, and most of them are stated to be original. A considerable number of formulæ are introduced, and the doses in these are printed according to both the English and the metric system of weights and measures.

While the general scheme of the book and much of its application are to be praised, it must be confessed that the section relating to the nervous system is neither adequate nor accurate. The author has obviously failed to grasp some of the leading conceptions which underlie the fabric of modern neurology, and at the same time he has sought to incorporate these new scientific principles with the clinical study of the nervous system by older and in general less valuable means. The result can only be described as unfortunate; the description of the pyramidal tract on page 1020, for instance, is brimful of errors, even the direction in which it conducts being—possibly by accident—wrongly described.

The rest of the book is, as already indicated, of much greater value, and the clear and definite way in which it is paragraphed and classified make it well adapted for teaching purposes. The Latin and Greek terms employed require, however, careful revision, and the English reader is likely to be irritated by a particularly barbarous-looking system of orthography, which appears to have been extended in some measure to proper names. The work is printed in two volumes though continuously paged; it has, consequently, an advantage as regards portability over most of the other books in the series to which it belongs.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY, AND THERAPEUTICS. By W. HALE WHITE, M.D., F.R.C.P. London: J. and A. Churchill. 1898. (Crown 8vo, pp. 621. 7s. 6d.)

IT is scarcely necessary to attempt to review exhaustively a textbook which has reached a third edition in a comparatively short time, more particularly when the changes made in the volume are those necessitated by the publication of the new *Pharmacopœia*. In the present work, Dr. HALE WHITE has introduced the various changes so far as they concern the subjects dealt with in his textbook. He has therefore incorporated the alterations in strength, in doses, and to some extent in modes of preparation; moreover, he has reprinted from the *Pharmacopœia* the lists of drugs which have either been added to the present edition, or, having been official in the 1885 *Pharmacopœia*, have now been omitted, or else transferred to the appendix for testing purposes. In the preface, in which these lists are placed, he also includes some instances in which the names of pharmacopœial substances have been altered altogether, with indications of the more important alterations of composition and of strength. It must not, however, be considered that this textbook embodies the whole of the alterations in the *British Pharmacopœia*; in fact, Dr. Hale White definitely states that the alteration

which have been necessitated amount to several hundreds' but as the *Pharmacopœia* consists of several hundred pages, and there are alterations in nearly every sentence, it is obvious that Dr. Hale White's book retains its value as a text-book, and does not attempt to rival or to infringe in any way upon the scope or copyright of the *Pharmacopœia*. To take one instance out of many, the characters and tests of concentrated phosphoric acid in the latter volume extend to over half a page, while in the work under consideration they are reduced to two lines. This textbook, however, includes sections dealing with pharmacology and with therapeutics which more nearly meet the requirements of medical students, and in these sections but few alterations have been required. Notwithstanding the rapidity with which this new edition has been produced the author has succeeded in bringing the book thoroughly up to date, and there can be little doubt that the present will retain the favour extended by students to the earlier editions.

Forensic Medicine and Toxicology. By J. Dixon Mann, M.D., F.R.C.P. Second Edition. London: C. Griffin and Co. 1898. (Demy 8vo, pp. 698. 21s.)

The sections in this new edition of Professor Dixon Mann's well-known book, which are either entirely new or so completely rewritten as to be practically new, are those relating to sudden death, professional secrecy, blood poisons, and death from the electric current, though, curiously enough, under this latter head we find no reference to this method of carrying into effect capital punishment in the United States. Sudden death, under which title Professor Mann very rightly includes unexpected death, is classified under three heads: (1) Deaths due to a disease which is universally recognised as being liable to terminate suddenly in death, and which as a rule leaves satisfactory *post-mortem* evidence of its presence; (2) deaths due to a disease which when fatal does not usually end life abruptly, and which consequently is not generally regarded as a cause of sudden death; in such cases *post-mortem* examination frequently yields inferential rather than conclusive indications of the cause of death; (3) cases in which no ascertainable disease is present, and consequently *post-mortem* examination yields absolutely negative results.

As to professional secrecy, we take it that all will agree with the author when he states it as a fundamental proposition that a secret which is acquired by a medical practitioner from a patient, whether orally or by examination of the person, remains the secret of the patient. But we are by no means clear whether this unwritten law should hold good in suspected criminal abortion. Dr. Mann says the practitioner would be "overstepping the bounds of his professional obligations were he to use for hostile purposes that which was imparted to him," etc. A good deal turns on the meaning of the word "hostile," or rather on the question to whom the hostility is applicable. If a doctor finds his patient in danger of death from a wound in any other part of the body, he would surely tell his patient so, and the nearest relative, husband or wife, as the case may be; and the only reason he may not do so in the case of abortion is that the patient is a *particeps criminis*. We quite agree, however, with Dr. Mann that the law relating to the subject is very unsatisfactory. Throughout the volume there is evidence on almost every page of careful revision, and we can cordially recommend the book as likely to be of service to advanced students and to practitioners.

Lehrbuch der Histologie des Menschen einschliesslich der mikroskopischen Technik. [Textbook of Human Histology, including Microscopical Technique.] Von A. A. Böhm und M. von Davidoff. Second Edition. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. (Roy. 8vo, pp. 411; 251 illustrations. 7s.)

The first edition of this book appeared in 1895, and was reviewed in the British Medical Journal of June 8th of that year. We should not, therefore, expect to find any material alterations. The fact that the first edition has sold rapidly shows that the favourable opinion which we expressed regarding the book has been justified, for it has evidently supplied in Germany a want which had been felt by students.

Some of the defects which were pointed out in the review of the first edition have been corrected, although others have not, and the authors still show no consciousness that any histological work has ever been published in the English language. The student is, however, no longer led to suppose that there is but one kind of microtome, although the authors have evidently but little personal acquaintance with any but the one kind which they originally described, and the methods which are recommended also show in some other instances deficiencies which ought not to occur in a book intended for the serious study of the subject. Thus, to take the central nervous system alone, no account is given of Nissl's method of staining nerve cells (although the results of such staining are depicted), and, what is still more striking, there is no mention of the invaluable method of showing degenerated nerve fibres in the central nervous system which we owe to Marchi, whose name is not, so far as we can find, so much as mentioned.

The new illustrations are quite up to the level of those which had already appeared; indeed, without desiring to depreciate the value of the text, it is quite certain that the main value of the book lies in these, which are natural and less diagrammatic than most illustrations met with in older works on histology. This is no doubt largely owing to the fact that it is easier now than it used to be to reproduce sketches almost in facsimile. One illustration will be startling to most microscopists—a figure of a section through the spleen showing the pulp occupied by canals (probably blood capillaries, according to the authors, but this is very doubtful) lined by striated epithelium, and looking in section by no means unlike the convoluted tubules of the kidney. The authors described this in the former edition, but did not figure it. What it exactly means is not easy to say without seeing preparations, but the figure given shows indications that the specimen of spleen (human) from which it is taken was very ill preserved, if not pathologically changed. As a general rule, however, the illustrations give evidence of being taken from well-preserved specimens, and are mostly typical of the structures they are intended to illustrate. The authors are to be congratulated upon the evident success of their joint venture.

Atlas of Methods of Clinical Investigation; with an Epitome of Clinical Diagnosis, and of Special Pathology and Treatment of Internal Diseases. By Dr. Christfried Jakob. Authorised Translation from the German. Edited by A. A. Eshner, M.D. London: The Rebman Publishing Co. 1898. (Crown 8vo, pp. 259, with 182 coloured illustrations and 64 other illustrations 12s. 6d.)

The first division of this work is made up of 68 beautifully-executed plates with explanatory notes on the apposed page. The first part of this division treats of clinical microscopy and chemical colour reactions, and illustrates practically everything of importance in this department which may be met with in clinical work. The accuracy with which the colour of both stained microscopic specimens and of the various colour tests has been reproduced will make this part of the book of no inconsiderable value to the student who thus wishes to control his results. The specimens are also very adequately described in the text.

The second part gives coloured illustrations (*a*) of the normal projection of the viscera on the surface of the body, and (*b*) of schemes representing the various physical signs to be met with in diseases of the lungs, heart, and abdominal organs. Opposite each illustration of these abnormal physical signs is given a short synopsis of a case, including diagnosis, prognosis, and treatment. The symbols by which the various physical signs are represented compare favourably with the unnecessarily elaborate ones sometimes suggested.

The second division of the work contains in Section I an account of the examination of the patient, and in Section II

considerations upon methods of examination in general. The latter includes a very short account of bacteriological methods. Somewhat strangely the author does not mention that serum is the best culture medium for the diphtheria bacillus (p. 27), and the method of applying Widal's serum test for typhoid fever is not that most usually followed.

Section III contains an account of the diagnosis of the diseases of the internal organs with the exception of the nervous system, which is not included in this book.

Sections IV and V constitute the least satisfactory part of this work. A little over 100 pages is not sufficient space even for an epitome of special pathology and treatment, including therapeutic notes. It becomes one dry record of facts, or supposed facts, of which the value to the student is more than doubtful. With perhaps this exception Dr. JAKOB'S work, which is to some extent a new departure, deserves nothing but praise. The information is accurate and up to present-day requirements, and the work of translation has been admirably done.

THE ESSENTIALS OF HISTOLOGY. By E. A. SCHÄFER, LL.D., F.R.S. Fifth Edition. London: Longmans, Green, and Co. 1898. (Demy 8vo, pp. 359, 392 illustrations. 8s.)

THE demand for a fifth edition of this favourite and useful book shows that it still continues to meet the requirements of students. The improvements which Professor SCHÄFER has now introduced bring the work abreast with the advances in histology which have been so rapid of recent years. The book has increased in bulk by a little more than fifty pages, but this is chiefly due to the introduction of nearly seventy additional illustrations. The actual text is not much increased; the descriptions of the tissues and organs are models of succinct and accurate statement. The practical nature of the work and wealth of illustration still remain among its principal characteristics. We congratulate the author on the continued success of his efforts to provide the students of the day with a trustworthy guide.

NOTES ON BOOKS.

Die Zelle und die Gewebe. Grundzüge der allgemeinen Anatomie und Physiologie. Zweites Buch. *Allgemeine Anatomie und Physiologie der Gewebe.* [The Cell and the Tissues. Elements of General Anatomy and Physiology. Second Book. General Anatomy and Physiology of the Tissues.] Von Professor Dr. OSCAR HERTWIG. (Jena: Gustav Fischer. 1898. Roy. 8vo, pp. 314, 89 illustrations. M. 7.)—To those who are acquainted with Professor Hertwig's work, it is hardly necessary to say that he writes with authority on the subject he has taken up. The work is a weighty contribution to scientific literature, and is treated in a clear and philosophic manner. As would have been expected, it is the development of the cell and tissues which forms the principal theme, and the influence of both external and internal factors in the process is given with that wealth of detail which the author's extended observations in all parts of the animal kingdom have enabled him to utilise.

Elementary Practical Zoology. By FRANK E. BEDDARD, M.A., F.R.S. (London: Longmans, Green and Co. 1898. Crown 8vo, pp. 218, 93 cuts. 2s. 6d.)—This little work appears to be called "practical" for the sake of symmetry, because it forms one of an "elementary practical" series; certainly it has no intrinsic claim to the designation. It is singularly free from anything in the way of a practical suggestion. In the description of the amœba, for example, there is no statement that it is a small creature, or that a microscope is required for its investigation, though the reader of the preface may find a hint to this effect. This question of title apart, the book contains a large amount of useful information well set forth, and will doubtless be much appreciated by those who wish to pass the science and art examination in zoology, for whose use it is particularly designed. Among its best points may be mentioned the account of the earthworm, as might have been expected from the author's reputation as a specialist on the group, and the discussion of the differences between animals and plants. There are a good many more misprints than there ought to be in a work of so small a size.

Praxis der Harnanalyse. [Methods of Urine analysis.] By Professor LASSAR-COHN. Second edition. (Hamburg: Leopold Voss. 1898. Demy 8vo, pp. 40. M.1.)—This little guide to the chemical examination of the urine and stomach contents has passed through a first edition in some seven months, so that it has obviously supplied a want. At the time of its first appearance we had occasion to review it in these columns, and to express appreciation of both the general arrangement of the subject matter and the selection and description of the tests. From the students' point of view it may be undesirable to have the chemical separated from the microscopical examination, for in many cases the latter should follow upon the former. The directions for the artificial preparation of pathological urines are of service. In the section on quantitative analysis the determination of various sulphuric acid compounds is very properly included, as this is of some importance in investigating metabolism. The guide is in every sense reliable, and may be commended to the student.

Mikroskopie des Auswurfes. [Microscopical Examination of the Sputum.] Von Dr. ALBERT DAIBER. (Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. Demy 8vo, pp. 17; with 24 illustrations in 12 plates. 3s. 9d.)—We had occasion not very long ago to review Dr. Daiber's excellent monograph on the microscopical examination of urinary sediments. The little work before us represents a similar illustrated guide to the examination of the sputum. It is divided into two parts, consisting of the text and illustrations respectively. In the text the author gives an account of the elements both organised and unorganised which are to be found in the sputum, and refers the reader to the corresponding illustration. The pathogenic microbes dealt with here are the tubercle bacillus, the pneumococci, the actinomyces, and the micro-organisms of pus, but the tubercle bacillus naturally receives most attention. The methods of staining and mounting these microbes are given, as well as the general examination of the sputum, including the requisite reagents and stains. The author points out in the text the fact that no conclusion can be drawn from the number of tubercle bacilli in the sputum, yet the illustrations taken from early and late phthisis might convey a contrary impression. The elastic fibres represented in Fig. 7 do not show the alveolar arrangement often supposed to be characteristic. This little work may certainly be highly commended: the text is clear and to the point, and it would be difficult to find a series of plates more beautifully executed than those given here.

The Cure of Consumptives. By W. H. DAW, M.R.C.S., L.R.C.P.Lond., late House-Physician, Royal Hospital for Diseases of the Chest. The Burdett Series, No. 7. (London: The Scientific Press, Limited. 1898. Fcap. 8vo, pp. 79. 1s.)—The medical profession has declared war against tuberculous disease, and has opened an organised campaign. One of their most effective weapons will be found in the education of the public as to the nature of the disease, and the rational means of preventing it. Much good work in this direction can be done by nurses, who can bring such knowledge into the household, and put into practice the precautions which constitute the chief element in the suppression of the disease. But the nurses must first be educated themselves, and in the small work before us they will find an excellent summary of those facts which it is necessary that they should know, and a detailed account of the duties of the nurse in relation to the care of consumptive patients. The acute and chronic forms of the disease, the complications which are most likely to be met with, and short but clear instructions as to the best methods of dealing with them under the physician are given with judgment and precision. The nurse's care of her own health, and the relative risks which must be taken into account are clearly defined, although perhaps even more stress might be laid upon the one great fact which outweighs all others in importance—that it is in the sputum of the consumptive that lies the danger to others. A short chapter on the principal health resorts to which consumptives are commonly sent concludes a very useful and practical little handbook.

ARMY MEDICAL EFFICIENCY.

Mortality of French and British Military Expeditions.

The adage about things being better managed in France than with us has doubtless occasional and specific application, but at the same time it is often decidedly belied by notorious facts.

Perhaps in nothing is the proverb more falsified than in the army vital statistics connected with the so-called colonial enterprises in tropical and subtropical regions of the French, compared with similar military expeditions of our own. The French know well and unreservedly acknowledge our great superiority in such enterprises, and of late some of their medical writers have been investigating and discussing the cause—or rather causes, for there are more than one—of their inferiority in this respect.

It is easy to ask, but more difficult to answer, why our soldiers withstand tropical climate and influences better than the French; for, although some of the reasons are on the surface and but too apparent, others lie deeper and are more recondite. But, before seeking for an explanation, it is well to show the statistics, compiled from absolutely trustworthy data, upon which we base our remarks; they are exhibited in the following table:

Table Showing the Mortality, from Disease Only, in the British and French Armies Respectively, when Engaged in Active Operations in Tropical or Semi-Tropical Countries.

British Army. Name and Date of Campaign.	Died of Disease. Percentage of Strength.	French Army. Name and Date of Campaign.	Died of Disease. Percentage of Strength.
Suakin, 1884	Nil.	Tonkin, 1884	6.0
Soudan, 1889	0.06	Tunis, 1881	0.1
Mashonaland, 1896-7	0.20	Mexico, 1862-3	7.1
Suakin, 1885	0.22	Tonkin, 1885	7.5
Soudan, 1885-6	0.41	Dahomey, 1893	8.7
China (Talienwan), 1860	0.54	Tonkin, 1886	9.9
Ashanti, 1895-6	0.56	,, 1887	10.6
Egypt, 1882	0.57	Cochin China, 1863	10.7
Abyssinia, 1867-8	1.21	Soudan, 1887-8	11.6
Galeika Gaika, 1877-8	1.40	Cochin China, 1862	11.7
China Field Force, 1860	1.49	China, 1862	11.8
Matabeleland, 1896	1.65	Tonkin, 1888	13.3
Ashanti, 1874	1.74	Cochin China, 1861	14.0
Zululand, 1879	2.48	Soudan, 1885-6	20.0
Chitral, 1895	2.51	,, 1886-7	22.0
Nile, 1884-5	3.64	,, 1884-5	22.5
Dongola, 1896	4.66	,, 1883-4	28.0
Afghanistan, 1878-80	9.37	Madagascar, 1895	30.2

A glance at the figures will at once explain why the French are both puzzled and alarmed at the losses borne by their troops in the tropics compared with ours. Comparisons, of course, are difficult, and even misleading, where conditions are unequal; but it so happens the campaigns here referred to on both sides were carried out under climatic conditions not dissimilar, and in a number of instances practically the same.

The Soudan is the Soudan all over; Dahomey and Ashanti are alike; Tonkin and China are the same.

Herein appears the remarkable fact that, with the single exception of the very arduous Afghan campaign of 1878-80, which suffered a heavy cholera mortality, our most unhealthy war had a smaller mortality than the most healthy of the French! It was in view of this truly extraordinary fact that the Director-General Army Medical Service, on a late public occasion, commented with natural pride on the genuine efficiency of our medical services; for the credit does not belong to the army alone, but is shared by the Naval and Indian Medical Services, in so far as they took part in certain of the campaigns named. And let it not be forgotten the admirable results were attained notwithstanding whilom defects in the status and autonomy of our Army Medical Service, drawbacks of which we hope we have now seen the last.

Selection of Soldiers for Tropical Service.

But to return to the question, Why do the French soldiers suffer more disease and death in the tropics than ours do? In the first place it is probable that the French conscripts, drafted wholesale into the army, do not possess the initial stamina of the more carefully selected British recruits; for our men undergo a far more searching medical examination on entering the service than is practised in conscription countries. This surmise receives countenance from such writers as MM. Burot, Legrand, Reynaud, and Mahy, who all insist upon a severe selection of men for tropical service; they would reject all not absolutely of good physique and under 22 years of age; especially would they put aside all of anæmic appearance, or who showed a strumous or arthritic habit of body.

In short they would pick the men, showing how large must be the proportion of men of poor physique in the French ranks. We, of course, weed our regiments going abroad, but nothing to the extent here recommended, while no man is sent to India under 20 years of age.

Inappropriate Clothing.

In the next place these experts declare that the French soldiers' dress and equipment is ill adapted to tropical service; his headgear is absurd; he wears cotton or linen where he should have light woollen underclothing, and is not sufficiently protected against diurnal ranges of temperature. His rations leave much to be desired, and are often ill suited for tropical digestion. He is indifferently housed. Indeed, the French do not seem yet to have recognised that the best protection against tropical malaria is to live and sleep in a house with a current or cushion of air between the floor and the ground; they do not seem to be acquainted with the light wood and iron huts so constructed, which have been found so comfortable and healthy in Bermuda and elsewhere in the West Indies.

Sanitation and Drill.

The French soldier's drinking water is less carefully looked after than with us; it is not recognised that malarial poisoning is probably as much from waterborne as from airborne sources. In all matters relating to general conservancy, in camp and quarters, the French are unquestionably behind us. But there is one matter which French army medical experts declare to be a prime factor in breaking down the health of the French soldier, which has hardly any parallel in our army, and that is overdrill and excessive so-called "instruction;" he is in fact vexed with everlasting parades, even in the tropics. The commanding and superior officers are to blame for this, because they leave "instruction" practically in the hands of non-commissioned officers who do not always temper zeal with knowledge.

We have heard a martinet commanding officer described as a cross between a sergeant-major and a master tailor: not with the idea of disparaging these important non-commissioned officers; but because a superior officer should be above and something beyond the rigid and mechanical functions which inspire the drill sergeant.

Now the average French regimental officer is notoriously little in contact or sympathy with the rank and file; too much is left to the non-commissioned ranks; and in this way the private's life is often made miserable by unnecessary drills and instructions.

In the British army, where the superior officers are in much closer relations with those under them, such overparading would not be allowed; and, even if it were, it would soon be toned down on the representation of the medical officer, who apparently is much more listened to than his French brother. There can be little doubt that not a little of the French soldier's disease and mortality may be laid at the door of the careless and heartless martinetism of superior officers, who apparently treat medical advice with cynical indifference.

Remedies.

From all of the above, we are warranted in concluding that much of the sad mortality of French soldiers in the tropics arises from preventable causes, which may be summed up as follows:

1. Defective stamina in the average French conscript, necessitating thorough and severe weeding of troops for tropical service.
2. Complete overhaul of equipment, dress, housing, conservancy and commissariat supplies.
3. Closer supervision and attention of superior officers over

their men, so that they shall not be worn out with unnecessary work.

The Lesson of the Madagascar Expedition.

That we cannot be far wrong in the above conclusions seems certain, from a glance at the very worst of France's bad tropical performances—Madagascar. Anything more scandalous and culpable than the conduct of the Madagascar campaign of 1895 it were hard to conceive or parallel in modern times; it was so shameful as to cause dire heart-searching among thoughtful and humane Frenchmen.

Well may MM. Reynaud and Mahy write: "There is not in military history a more remarkable example of discipline and courage than that displayed by the handful of heroic soldiers in their self-abnegation and devotion overcoming such trials." But these trials were largely unnecessary, and could have been for the most part prevented, or at all events mitigated, had it not been for the insensate folly of the French military authorities. They, and the general officers in command, in their ridiculous pride and self-sufficiency, absolutely refused to listen to the most elementary medical precautions recommended beforehand. These autocrats were much above such warnings; and thought they could make the conquest of Madagascar a mere military promenade; and that *élan* would defy malaria. Consequently no sufficient hospital or ambulance equipment was provided for the march inland, and no proper base hospital or ships for the reception of sick. What was clearly foreseen and proved to be a "doctors' war," if ever there was one, was entered upon even more lightly than an autumn manœuvre, but with disastrous consequences.

The badly-weeded and ill-found expeditionary army was recklessly pushed up from the coast through swamps and jungles reeking with malaria; the men fell sick in droves; and instead of being transferred to a comfortable base were left in detached camps; and employed, so far as their poor strength permitted, in making roads, and, of course, died like flies; some corps, such as the Engineers and 200th Regiment, were practically annihilated, and the whole force lost one-third of its number by death! All this happened because the obstinate French army staff refused to adopt the most ordinary and necessary precautions against disease. There was no cholera or other epidemic to swell the mortality; it was entirely caused by the ordinary tropical malarial diseases. Somebody ought to have been disgraced or shot, but we have not heard of punishment being meted out to those who so richly deserved it.

The moral of the whole is—May our neighbours reform through their misfortunes; may we profit by them.

There is no teacher like experience, and we fear our American cousins have had a severe lesson at Santiago. They have at all events found that it is impossible suddenly to create an efficient army out of volunteer raw material. Brains and hands must be educated and skilled in warfare as in other professions, and this applies to the medical as much as to any department of an army.

It is well that our successes as well as our deficiencies should be chronicled and contrasted with those of other nations in the art of war. Whatever may be our failures, we, at all events, do manage some things better than the French, and one of these is tropical warfare.

CONTRACT MEDICAL PRACTICE.

Tunbridge.

A correspondent from Tunbridge sends us a cutting from the *Kent and Sussex Courier* with a report of a general committee meeting of the Tunbridge Friendly Societies' Medical Association. We are assured that the members, male and female, pay 4s. per annum without any wage limit, and another 4s. per annum to include all children up to 16 years of age. Midwifery fees are 10s. 6d., of which the doctor gets 5s. 3d. The work appears to be too much for one medical officer, and a second is to be added to the staff if, as our correspondent says, one can be found to occupy the position.

THE JAPANESE NAVY DURING THE CHINO-JAPANESE WAR.

The Annual Report of the Health of the (Japanese) Imperial Navy for 1895 (or the 28th year of Meiji), Tokyo, is printed in English. It is concisely worded and very creditably drawn up, and the statistical tables in the large appendix embrace particulars of a novel and interesting nature. It is also satisfactory to know that the Director-General Vasuzumi Saneyoshi is an F.R.C.S.Eng.

The contents include, first, under the head of Total Force, 38 references of importance, occupying 14 pages; and secondly, a bulky appendix in the form of 27 statistical tables, from page 17 to page 67 inclusive.

As the battle of Wei-hai-Wei and the rebellion of Formosa occurred in this year, the number of those injured and drowned was naturally greater than that of ordinary years. Moreover, many of the sailors who were at Port Arthur and Formosa suffered from the infectious diseases prevailing there. But the result, as shown in the report, may on the whole be regarded as satisfactory. Fifty-one persons were either killed in action or drowned, and 24 died of infectious diseases such as cholera and typhoid fever. An increase in the number invalided was chiefly due to the fact of 40 persons being invalided on account of injuries (25 of whom were injuried in battle).

The mean daily force in service was 13,006 men, an increase of 2,003 men on the previous year. Of the total number of 13,006, 3 were under the age of 15, 745 were between the ages of 15 and 20; 4,981 between the ages of 20 and 25; 4,107 between the ages of 25 and 30; 2,458 between the ages of 30 and 35; 562 between the ages of 35 and 40; 136 between the ages of 40 and 45; and 14 between the ages of 45 and 50 (as the terms of service were lengthened by the Japan-China war there were some men over forty-five years of age). Of the mean force, (13,006) 163 were cadets, 1,932 petty officers, 10,691 seamen, 117 employees, and 103 prisoners.

The total number of the cases of disease and injury entered on the Sick List was 5,134 (of these, 96 were either killed or injured in action). The average number of men sick daily was 531.74, and the total number of days' sickness 194,085. The total number of persons invalided was 125, and the number of deaths was 193, or 14.84 per 1,000. The hospital cases numbered 2,161, and the number of days' sickness in hospitals was 108,912.

Diseases of the respiratory system—451 cases; or of pleuritis, 149; phthisis, 91; bronchitis, 82; laryngeal catarrh, 68; and the remainder was furnished by other diseases. Of the cases of phthisis 40 were invalided and 12 died. Diseases of the circulatory system—18 cases were returned. The invaliding was 1 for aneurysm, and the deaths 3 from valvular disease, and 1 from paralysis of the heart. Diseases of the absorbent system—23 cases. Diseases of the digestive system.—The principal diseases amongst 510 cases were catarrhal enteritis, 175; and catarrhal gastritis and gastro-enteritis, 89 cases. Diseases of the genito-urinary system—131 cases. Diseases of the nervous system—73 cases. Three persons died from meningitis, and 2 each from cerebral apoplexy and cerebral emboli, and 1 each from myelitis and sunstroke. Diseases of the skin and cellular tissue.—Under this head 387 cases were recorded. Diseases of the organs of locomotion.—123 cases. Infectious Diseases—439 cases. Malarial fever—123 cases. Typhoid fever—106 cases. Cholera—90 cases. Dysentery, 34 cases. Influenza 37 cases. Measles—5 cases. Kak'ke, which is usually understood to be synonymous with beri-beri, was formerly more frequent than at present; thus, as shown in a table in the year 1878, with a force of 4,528, there were 1,485 cases, where, as in 1895, with a force of 13,006 only 17 cases were recorded, the scale of diet was so much improved. Venereal diseases and their sequels accounted for 1,982 cases during the year, the ratio being 152.39 per 1,000 of force. The principal diseases were bubo, 669; soft chancre, 633; and gonorrhœa, 246.

Much more interesting matter may be gleaned by the further perusal of the report, in respect to the health of the shipyards and arms factories. Vaccination, food, and the subject of body weight are set forth, with other important particulars, in the tables.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 1ST, 1898.

SHALL WE OPERATE OR NOT IN MALIGNANT DISEASE?

What is the present attitude of surgery towards malignant disease? The question may well and opportunely be asked at the present moment. A recent discussion at the Royal Medical and Chirurgical Society and the publication of an important work by Dr. Severin Robinski[1] have attracted interest afresh to the matter. Perhaps the first point that requires elucidating in attempting to answer the question is that which concerns itself with the nature of malignant disease generally, and of epithelial growths more particularly. Two theories have been, and still are, held as to the essential nature of cancer: (1) The embryonic or evolutional theory; (2) the parasitic theory. In support of the former are many sound observations. That an adult, fully-developed cell can revert to an earlier and more primitive form, and thereby give origin to a tumour, seems beyond dispute; and that embryonic remnants are found in fully matured organs has been distinctly proved by the elaborate observations of Malassez, whose *débris épitheliaux paradentaires* in the gum form the starting points of tumours of the jaw; and by Klein, who has observed in the healthy normal testicle remnants of the Wolffian body, which are very possibly the points of origin of some forms of testicular growths. But though these arguments and observations are interesting, and not without import, the embryonic theory is wholly insufficient to account for all the protean manifestations of cancerous disease.

The more fascinating, and probably the more correct, theory of malignant disease is the parasitic. Investigations bearing upon this began practically with Nepveau in 1872. This observer asserted that microbes were present in epitheliomata. In 1885 Morau found that an epithelial growth in a white mouse caused cancer in 8 white mice out of 10 upon whom he performed inoculations; and some instances sufficiently well authenticated would seem to indicate the possible transference of cancer from the uterus to the penis. In 1887 Scheurlen laid claim to the discovery of a specific organism of cancer, but his researches lacked corroboration. Then followed the observations of Virchow and others on the protozoa in human tumours; and in 1890 Russell described fungi which he had found in cases of epithelioma, and Banti recognised the same or similar bodies in Paget's eczema. In 1895 Sanfelice and Roncali of Rome published observations upon the connection of blastomycetes with cancer. Blastomycetes have been found by them in and around the cancer cells in the periphery of a cancer mass; they have been cultivated in acid solutions (this point is of great interest and importance), and have been inoculated and have produced, in animals, tumours corresponding to those from which they were originally derived. The forms of blastomycetes observed are not the same in all cases. Sanfelice describes a "saccharomyces lithogenes," and Roncali a "blastomyces vibro-simile degenerans," names which indicate the characteristic properties of the fungi.

If we assume for the sake of argument that cancer is in at least some, if not all, cases parasitic in origin, then there must unquestionably be a time when the growth is localised at the point of inoculation, and, if so localised, there can be no doubt that early operative and radical removal is a means of cure, so far at least as that inoculation is concerned. Robinski's statement that operation is not justified in cancer must therefore be decidedly and strenuously negatived. It lacks the smallest shred of evidence or observation, clinical or experimental, to support it. The local deposit of cancer is diffused, as we know, mainly through the lymphatic system. If then cancer is at first local and becomes constitutional by diffusion through the lymphatic system, it is further necessary that the complex system of the lymphatics should be studied with greater accuracy than heretofore. What Heidenhain has done for the breast and what Küttner has more recently done in the case of the tongue, by exhaustively describing and most graphically delineating the lymph vessels and glands, must be done in an equally thorough manner elsewhere. With a wide local removal and a clearing away of lymph channels and glands based upon such investigations, we should then logically expect to attain more permanent results in the treatment of cancer. That treatment carried out, so far as our present imperfect knowledge permits us, upon these lines has justified the anticipations which were held out, is beyond dispute. The careful work of Watson Cheyne and Halsted has proved conclusively that intelligent operations such as these are attended with no greater immediate mortality, and are followed by a very much longer duration of life in a larger proportion of cases.

The question then as to the propriety of the use of the knife in malignant disease can be considered permanently settled. Our efforts must now be directed to a close study of the earliest manifestations of malignant growths in their various sites, and to a laborious and exhaustive investigation of the intricate lymphatic channels. With knowledge thus perfected we can, until the day of inoculation arrives, feel justified, nay, rather compelled, to advocate the most prompt and intelligent active surgical interference in all cases of accessible malignant growth.

[1] *Operiren oder nichtoperiren bei Krebs-Erkrankungen*, Dr. Severin Robinski. Berlin, 1898, Robinski and Co.

Presentation.—The members of the King's Cross (Great Northern Railway) Division of the Metropolitan Corps of the St. John Ambulance Association have presented each of their honorary surgeons, Dr. J. Brunton, Mr. G. H. French, F.R.C.S., and Dr. R. Main, with a cigar and cigarette case as a mark of appreciation. This makes the sixth presentation which the Division has made to Dr. J. Brunton.

THE CYCLE AND ITS MEDICAL FOES.

There are many persons who fail to distinguish between use and abuse, and their erroneous reasoning becomes especially conspicuous when they criticise a fashion like bicycling. The experience of the last few years has sufficiently proved that the bicycle is an excellent instrument for exercise. It has once more made familiar our old roads and the grass-grown streets of sleepy country towns. For the middle-aged it is less fatiguing than walking; in youth it is an admirable resource. In France the bicycle has done wonders, as those who remember Paris, Fontainebleau, and the intervening districts thirty years ago can bear witness if they once more revisit that pleasant part of the world. The native has given up sugared water, dominoes, and gudgeon fishing for the bicycle. Woman has profited greatly by this invention, and as the race of Englishwomen is manifestly improving in strength and beauty, cycling cannot be doing them much harm. On the contrary, when properly used, it is probably of great benefit to them.

The bicycle, however, as was to be expected, has found its detractors. D'Alessandro, in the *Policlinico*, declares that it is a dangerous exercise for women. He believes that the only ladies who should stride the wheel are such as are obese, apathetic, or past the climacteric. Should his advice be followed the aspect of a West End thoroughfare or a road in the Thames Valley would at once undergo a very manifest modification, for the most picturesque element would be entirely obliterated. Dr. D'Alessandro, very properly, turns to biology and physics to find support for his theory. The psoas and iliacus muscles, he finds, are overworked, so that the transverse diameter of the pelvic inlet is diminished, and damage is done to the internal genital organs. Here is a very definite statement. Italian ladies must present remarkable anomalies in nutrition; our own girls are strong and muscular, but we doubt if they ever acquire such a degree of hypertrophy of the psoas and iliacus as to cause appreciable narrowing of the pelvic inlet. A moderate amount of bicycle exercise could not bring about such a result; excessive and exhausting cycling would certainly affect the psoas, but not by causing hypertrophy. Muscular pains and even atrophy are the natural results of exhaustion.

Dr. D'Alessandro also insists that the female cyclist is faultily seated, but he lays no blame on the saddle, nor does he seem to take into account that there are good as well as bad forms of saddle. He believes that the ischia are too high and that the pubic arch lies too near the front of the saddle. No doubt the position of the pelvis is not so much shifted in bicycling as in riding, but all saddles do not involve a faulty level such as the Italian critic indicates. He believes that the muscles of the arms are too much stretched by the grasping of the handle bar, placed in his opinion too low; but this defect is surely open to remedy. Dr. D'Alessandro finds that there are other objections to women using the bicycle. As the thorax is pressed forward during progression and already compressed by stays, the respiratory type changes from the costo-superior, normal in woman, to the costo-inferior. The antero-posterior and transverse diameters of the thorax remain unmodified, the vertical being, on the contrary, increased by the pushing down of the abdominal viscera. The borders of the ribs are brought close to the iliac crests, causing simultaneous diminution of the thoracic and abdominal cavities. As the perineum is, according to D'Alessandro, closely pressed against the saddle, the pelvic viscera are subjected to compression from two opposite directions.

These statements no doubt seem very formidable to persons without any biological knowledge. They assume, however, that the trunk is absolutely fixed during a bicycle ride, and that the perineum is necessarily pressed against the saddle; but the trunk is in constant gentle motion, and as to the diminution and increase of diameters, that occurs in any movement of the body. The alleged pushing down of the abdominal viscera appears to have been disproved, as we shall presently show, by more precise researches. The reference to stays signifies that tight lacing is as bad for the bicycling damsel as for others, but on this head nobody can blame the bicycle.

In short, none of these objections are strictly valid as pure theory, whilst experience shows that they are all but imaginary. Nor does the average bicyling lady—or gentleman—necessarily contract heart disease, as a writer in a daily paper seems to believe. Use is not sufficiently distinguished from abuse. Sickly and weakly persons must be careful about cycling, as well as about any other exercise; nor must the robust be careless. They must use the cycle for exercise, and not for record beating, else very probably they may contract heart disease, or at least suffer from the distressing effects of severe and acute exhaustion.

Regnault and Bianchi read some interesting researches on the record beater and professional bicyclist before the Académie des Sciences on August 8th. These researches were conducted during the recent 72 hours' race at the Parc des Princes. By using the phonendoscope they were enabled to obtain, as they believe, a complete and rapid reproduction of the viscera, and a record was made by a drawing. Miller, Frederick, and Faure went through this process before, immediately after, and a few days after the race. It was found that the thoracic viscera were unchanged. Much subcutaneous fat disappeared, whilst the spleen, liver, and stomach were found to be much smaller after the race. These changes were clearly due to the great call on nutrition, the rapid tissue waste involved in the athletic struggle. The three champions had sound hearts; it was otherwise with several competitors who gave up early in the race.

Regnault and Bianchi found also that the continued movements of the legs and pelvis whilst the trunk was bent forwards caused distinct upward displacement of the abdominal organs, which in turn pushed up the thoracic viscera. The right lung was especially affected by this upward pressure from the liver. Let it be observed that this fact is quite at variance with D'Alessandro's theoretical assertions.

There is little fear however that the average bicyclist will ever compete in a 72 hours' race. He, or she, after moderate exercise is most probably free from any appreciable diminution of organs through tissue waste; indeed their nutrition cannot fail to be improved by a judicious employment of the cycle.

THE ABOLITION OF "THE VIEW" AT INQUESTS.

Last year there was introduced into Parliament a Bill the first clause of which enacted that "it shall not be obligatory upon the coroner and jury to view a dead body at any inquest except in cases where the coroner shall deem a view necessary." The Bill was withdrawn, but some modification of the compulsory character of the ancient, yet still operative, law relating to the view of the body by the coroner's jury is pretty generally admitted to be desirable, in spite of the powerful conservative sentiment—especially strong in criminal law—which makes for the preservation of ancient customs long after they have outlived their usefulness, and have become a mere burden to the community. Such an Act must before long find its way into the Statute Book.

Week after week juries on whom this particular burden falls protest against the waste of time involved in carrying out a disagreeable and even revolting duty, which has ceased to be of any use in the vast majority of cases, and yet must be observed in all. Session after session Bills are introduced and questions asked in Parliament on the subject, and although nothing has been accomplished by reformers as yet, public opinion, and even the opinions of coroners themselves, we suspect, are slowly but surely maturing in favour of certain changes.

It is true that it is no light thing thing to meddle with the functions of a judicial machine so ancient, so complicated, so bound up with the traditions of the people for nigh a thousand years, so absolutely unique, and yet so useful in a humble way, as the coroner's inquest. But even crowners' quest law must adapt itself to its environment in these days, when institutions, like species, are dying out on all sides, because they cannot or will not so adapt themselves as to be, in fact, the fittest to survive. The highest courts of law are gradually adapting themselves to modern ideas. Can it be doubted that the coroners' courts must soon follow their example? It is therefore well that all whose interests may be affected by changes in the law should consider beforehand what changes are necessary or desirable for the public interest, and how they can best be effected without injury to private or professional interests.

The medical profession is specially interested in this question, because its members are the referees of the community, acting through the coroner, in all cases of death from obscure or possibly criminal agencies. Moreover they have a very living personal interest in the terms on which the State compels them to discharge their duties as such referees.

Now what is the object of the view? What are the objects of the inquest itself? They are, briefly, to ascertain (1) whose body it is that lies dead; (2) under what circumstances the deceased came by his death, and (3) who (if anyone) is responsible in law for the death, and to what degree responsible. In its origin the view was intended to enable the jury to answer the first two of these questions. In primitive times, when the idea of witnesses other than the jurors themselves was imperfectly applied, and when, in particular, medical witnesses and *post-mortem* examiners were absolutely unknown, the scrutiny and examination of the dead body by the jurors themselves was the only way by which they could ascertain the after-death appearance; and it was for that scrutiny and examination that the view was essential. But all the circumstances now are absolutely different. The jury are no longer dependent on their own observations, either as to identity or as to cause of death; and, indeed, they are not encouraged to make any such observations. The body is usually lying in the coffin or covered with a sheet, with only the face visible. In all well-equipped mortuaries recently built, the jury actually "view" the body through a window, themselves standing outside.

How can such a casual glance help the jury to ascertain the cause of death? But even if the view involved a careful inspection of the whole body, can it be contended that a jury of laymen could thereby solve the problem of the cause of death in any but the most obvious case? What, indeed, but ignorant guesses, more or less at variance with the reasoned inferences of the medical expert, can be expected? And in what but error and confusion can such variance result?

But there are undoubtedly cases now and then in which the view may help the jury to understand the evidence, and to appreciate its bearing on the verdict they wish to bring in. Such, for instance, are cases of neglect and ill-usage. Emaciation, bedsores, bruises, etc., are easily understood and appreciated. Again, the view might conceivably be resorted to with advantage to decide some obscure or disputed point arising during the inquest. Perhaps the greatest objection to absolute prohibition of the view is that the public might sometimes suspect the coroner or the doctor, or both, of trying to hush up matters and conceal the truth from them.

For these and other reasons it is important that the view should not be absolutely done away with in all cases without distinction. It would be preferable to leave to the coroner a discretionary power to order a view when he thought it necessary or desirable, and to leave to the jury, or possibly to each individual juror, the right to view if they or he wished to do so.

But if the view by the jury be dispensed with the view by the coroner himself becomes more important than ever. The view by the coroner is not open to the objections urged against the view by the jury. Even if not a medical man the coroner has some experience, and is not so liable to be misled by external appearances. He is not shocked by a sight with which he soon becomes familiar. He can make his own arrangements and view when convenient, without keeping the whole court waiting. He is one, not many. His duties are voluntarily undertaken, and are paid for. Moreover, there are several weighty positive reasons for retaining the view by the coroner. It is of the utmost importance that the body should be absolutely under the coroner's control, and legally in his possession, so that he may be able to deal with it as circumstances require, removing it, having it examined by experts, taking photographs, etc., and preventing it from being in any way tampered with or disposed of until he is satisfied that it can yield no further evidence. The law as it is, and has been from time immemorial, gives the coroner ample powers of control for these purposes, and there does not seem to be any reason for altering it. To omit the view by

the coroner would be to throw away the one outward and visible sign by which his direct control is manifested independently of police and magistrates. Again, even a casual inspection of the body by the trained eye of an experienced coroner, especially if he is a medical man, helps him immensely in his interrogation of the medical witness, suggesting the line to take, enabling him to go straight to the point, and avoid many useless irrelevant questions. It helps him to grasp more quickly and unerringly the meaning of the medical evidence, and to make it clear, as is sometimes necessary, to the jury.

So much for the general aspect of this question as it affects the safety of the public at large and the convenience of jurors. How would the change be likely to affect the medical profession? The abolition of the view by the jury would inevitably make medical evidence more necessary than ever. The jury, having no observations of their own to go upon, would be all the more desirous of "hearing the doctor." Indeed, the Bill introduced last session proposed that "in all cases where a view of the body has been dispensed with, it shall be obligatory on the coroner to order a medical man to examine it, with or without a *post-mortem* examination, and give evidence thereon at the inquest." The clause as it stands is not very carefully drawn, and would in practice render the proposed abolition of the view a dead letter in all cases where medical evidence could add nothing to the explanation of the death—as, for instance, where a man is seen to get run over and killed on the spot by a train. County councils would object to paying a doctor's fee in such cases, and the coroner would not call him, and so the view by the jury would be retained. It would be wiser to leave to the coroner discretionary power. But the clause shows that its authors recognised the greater importance of medical evidence in the absence of the view by the jury. Any addition to the discretionary powers of the coroner as to ordering a view by the jury, or as to the necessity of medical evidence in the absence of the view, would obviously be most effectively exercised by a medical coroner.

But if the view by the coroner himself is abandoned, the consequences may be regrettable in more ways than one. The office itself may be endangered by first stripping it of its medical functions, and then transferring its judicial functions to magistrates, with the results that medical coroners would cease to be appointed, and the fees for attending and giving evidence would dwindle down to the half-guinea fee of the police courts.

THE PATENTING OF DIPHTHERIA ANTITOXIC SERUM.

Attention was called in the British Medical Journal of September 3rd to the action of Professor Behring in applying for a patent for diphtheria antitoxin, an application which after several refusals has eventually been granted by the United States. We expressed the opinion that Professor Behring's action could not but be the cause of pain and regret to the medical profession, inasmuch as it was the tradition of the profession that every discovery made by a medical man tending to the relief of suffering or preservation of health should be freely communicated to the world and placed at the disposal of the entire profession. Professor Behring has published in the *Deutsche medicinische Wochenschrift* an explanation of his position, which, as we understand the matter, is that he has now ceased to be a practising member of the medical profession. He adds that when he first published his researches with regard to diphtheria antitoxin, he stated that the provision of the antitoxin for practical purposes was a public question, and that the Government ought to undertake the duty. He points out that this was done in France, where a sum of 1,000,000 francs was given by the French nation to the Pasteur Institute for this purpose, together with an annual allowance of 200,000 francs. Nothing of the kind was done in Germany, and Professor Behring considered himself justified in entering into an arrangement with a pharmaceutical company for the preparation of the antitoxin on a commercial basis. That being so, he appears to consider that the sale of the antitoxin should be conducted on purely commercial principles. We believe, however, that the course which he has adopted will be viewed with deep regret by all members of the profession to which Professor Behring still belongs, even though he has ceased to be a practising member of it.

THE TREATMENT OF PAUPER IMBECILES AND EPILEPTICS.

At the North-Western Poor-law Conference, recently held at Bangor, an interesting paper was read by Dr. J. M. Rhodes, of Manchester, on Combination among Unions for the Treatment of Imbeciles and Epileptics. Pointing out the unwisdom of keeping at home persons whose mind was in any degree unsound, especially amongst the poorer classes, where the charge of such a case would often keep from work one of the wage-earning members of the family, and the risks both to the patient and the community of such a course, he argued that permanent sequestration was the most efficient and humane manner of reducing the number of the feeble-minded. With regard to epileptics, the initial difficulty in providing for them was the absence of accurate statistics as to their number; but bearing in mind the hereditary character of the neurosis, he was strongly of opinion that epileptics ought to be separated from the ordinary population, preferably in industrial colonies. The impossibility of their obtaining employment often led to mental and physical degeneration, not infrequently to insanity and suicide. Dr. Rhodes thought that epileptics had a fair case for State aid, as well as the insane, and believed that the class was too large to be dealt with by voluntary effort alone. The best practicable method of providing for them would seem to be by combination among Boards of Guardians to establish epileptic colonies on the models of those in Germany, that at Chalfont being on too expensive a plan for Poor-law purposes. He mentioned especially the establishment at Wuhlgarten, near Berlin, as an example to be followed; in this, in addition to husbandry, several useful trades were practised, the products of which were used to meet the requirements of the asylum. In conclusion, Dr. Rhodes pointed out that the public institutions of a country were the standard of its civilisation, and that England must not lag behind America and Germany in its provision for the epileptic and feeble-minded class.

THE PREVENTION OF CONSUMPTION.

A meeting was held last week at Sunderland under the presidency of the Mayor in furtherance of the objects of the Society for the Prevention and Cure of Consumption in the County of Durham. Dr. W. Robinson delivered an address in which he explained these objects, which were set forth in the British Medical Journal of September 17th. One of the objects is the provision of a local sanatorium for the open-air treatment of suitable cases of phthisis, and Dr. Robinson mentioned that three gentlemen had offered to contribute £100 each towards this pur-

pose. He stated that they did not propose to set up a charitable institution such as the infirmary, it being the intention that those who could afford to do so should contribute towards their maintenance. If subscriptions were not large enough to enable them to build a special sanatorium, he suggested that they should secure some building for the purpose. It was agreed that a central committee should be formed to carry out the objects of the Society, and a subcommittee was appointed to arrange a public meeting. It was also agreed that the matter should, in the first instance, be confined to Sunderland instead of being extended to the whole county. At a recent meeting of the Committee of the Mill Road Infirmary, Liverpool, Dr. Nathan Raw read a paper on the Open-air Treatment of Tuberculosis in Sanatoria. He suggested that, in view of the enormous population within the area of the West Derby Union, and the large number of cases of tuberculosis with which they had to deal every year, it was desirable that a sanatorium should be established near Liverpool for the treatment of early cases of the disease. Only cases in the early stages of the disease would be accepted, and therefore only a small building would be required at first—one say to hold thirty or forty patients, with four nurses supervised by a visiting physician.

THE INTERNATIONAL OTOLOGICAL CONGRESS.

The Sixth International Otological Congress will be held in London on August 8th, 9th, 10th, 11th, and 12th, 1899, under the presidency of Dr. Urban Pritchard, Professor of Otology in King's College, London. The subject chosen for special discussion is Indications for Opening the Mastoid in Chronic Suppurative Otitis Media. A British Organisation Committee has been formed, of which the Treasurer is Mr. A. E. Cumberbatch, 80, Portland Place, W., and the Honorary Secretary, Mr. Cresswell Baber, 46, Brunswick Square, Brighton. The meetings of the Congress will be held at the Examination Hall and Laboratories of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The Congress, which meets every four years, assembled last in Florence, where a successful meeting was held under the presidency of Professor Grazzi.

PERFORATION OF UTERUS OR SOUNDING OF TUBE?

A correspondent writes to us taking some exception to the substance of a paragraph bearing the above title in the British Medical Journal of September 17th. The subject seems to be treated, in his opinion, as a novelty, and entire credit is given to foreign observers. In respect to the latter statement it will be seen that the paragraph is really a piece of news concerning an opinion recently expressed by Schultz, and the still more recent experience of Ahlfeld and Floeckinger. The subject was not treated as a novelty in the paragraph, for it was said that "some authorities imply that perforation [of the uterus] is the sole explanation of this clinical phenomenon; others have *for long insisted* that the passage of the sound many inches inwards [the 'phenomenon' in question] where there is no evidence of myoma signifies that the instrument has entered the Fallopian tube." The words "for long" were purposely inserted to imply that the subject was no novelty. A leading article on Canalisation and Catheterisation of the Fallopian Tube, which appeared in the Journal, vol. i, 1887, p. 947, like the recent paragraph, was based on the experience of a foreigner (Gönner), but the opinions of Tyler Smith in 1849 and of Matthews Duncan are explained in full. We agree with our correspondent that Matthews Duncan believed that he had completely established the permeability of the Fallopian tube by the ordinary uterine sound—or "probe," as he always termed that instrument. Our paragraph of September 17th announces that Floeckinger has confirmed the permeability of the tube by ocular proof. Our correspondent further reminds us that fifty years since Simpson declared that perforation of the uterus by the sound was perfectly innocuous. Mr. Lawson Tait later showed that permanent metroperitoneal fistula, from injury at labour, was occasionally met with. In conclusion, in the paragraph referred to it was not intended to ignore native talent, but simply to relate the recent experience of foreign workers, who certainly have thrown some light on the subject in question.

DIABETES IN FRANCE.

In 1891 Dr. J. Bertillon published some statistics which appeared to show that in the course of the preceding 30 years there had been a steadily progressive increase in the prevalence of diabetes in Paris. The proportion of deaths from that disease among 100,000 of population was estimated by him as 2.0 from 1865 to 1869, 2.9 from 1870 to 1874, 4.6 from 1875 to 1879, 6.8 from 1880 to 1884, 12.2 from 1885 to 1889, and 16.0 from 1890 to 1891. Thus it appeared that in 28 years the mortality from diabetes had increased eightfold. Allowing that 30 years ago a considerable number of cases escaped detection, it is difficult to believe that at that time seven-eighths of patients suffering from diabetes died without their condition being recognised. With the object of throwing further light on the question, Professor Lépine has had the deaths in Lyons for the year 1897 analysed; it was thus found that of 8,000 deaths, 41, or about 5 per cent., were due to diabetes. This gives a ratio of 8.9 per 100,000 living inhabitants. As hospital records are presumably more trustworthy in respect of diagnosis than municipal registers, the cases of deaths in the Lyons Hôtel-Dieu for the eighteen years, 1880-1897, were examined. The total number was 24,912, of which 137 were attributed to diabetes, a proportion of 5.5 per cent. Analysing the figures further, it was found that the proportion of deaths from diabetes per 1,000 of total mortality was from 1880 to 1884, 5.0; from 1885 to 1889, 5.7; from 1890 to 1894, 5.7; and from 1895 to 1897, 4.6. Thus there appeared to have been no increase in the prevalence of the disease at Lyons in the period referred to. The admissions to hospitals were next analysed, and it was found that of 203,104 patients admitted during the eighteen years in question, 465, or 2.28 per 1,000, were suffering from diabetes. Statistics obtained from hospital physicians and private practitioners in other parts of the south of France seem to show that while diabetes is of common occurrence at Nantes, Bordeaux, Toulouse, Dijon, and in the coal basin of the Loire, it is, according to M. Lépine, difficult to say whether or not it is increasing.

DRUNKENNESS IN A HORSE.

Temperance orators are in the habit of holding up animals as examples to mankind in the matter of temperance. It may be freely admitted that beasts are in general not addicted to alcohol. Now we are far from agreeing with Lord Byron that "man, being reasonable, must get drunk," but we suspect that it is the want of reason that to a large extent keeps animals sober. Besides, is not their sobriety exaggerated? Some time ago Mr. Andrew Lang gave currency to a painful scandal about certain geese in the north of Scotland which he said were in the habit of getting drunk by drinking the water of a stream into which a brewery discharged its refuse. It turned out that the charge was unfounded, and Mr. Lang withdrew it, with an apology to the calumniated fowls. Bees, however, have been known to acquire a taste for alcohol. The lamented Jumbo, we believe, drank with evident relish any number of bottles of whisky offered him by his admirers. M. Zola, in his unsavoury novel *La Terre*, gives a lively description of the disorderly conduct of a donkey, by name Gédéon, who drank a quantity of new wine at a vintage feast. Now there comes, on the authority of our

sober contemporary *Le Temps*, a strange story of a horse belonging to a wine merchant, which was found, like Bill Nye, "in a shockingly dissolute state," lying in the midst of broken bottles in a cellar. When placed on his feet, the animal at once fell down again, and the help of a body of *sapeurs-pompiers* was required to get him out of the cellar to his stable. He was thought to be suffering from some mysterious disease, but the veterinary surgeon who was called in declared that he was dead drunk, adding that he presented all the signs of being a confirmed tippler. His owner then recalled the fact that for some months it had been observed that the horse had attacks of what was taken to be vertigo, staggering and falling down without apparent cause. During the same period a series of depredations had been committed in the wine cellar, the most puzzling feature in the matter being that the thief did not carry away any wine, but consumed it on the premises. It was then remembered that the attacks of vertigo with which the horse was afflicted coincided with the supposed thief's visits to the cellar. The origin of the poor beast's fall into these deplorable habits was traced to what may be called a therapeutic administration of the stimulant. On one occasion, when the horse had been overworked, his oats had been steeped in wine; this acted so well that it was repeated, till a lazy stable-boy, to save himself trouble, made the horse drink the wine out of the bottle. The next step was that the intelligent animal, at night, when all was quiet, found his way to the cellar and drank at his ease, opening the bottles, as it would appear, by breaking the neck. The moral of this edifying story is obvious.

THE CENTRAL COMMITTEE AND THE PASTEUR INSTITUTE FOR INDIA.

This Committee has met at the office of the Director-General, Indian Medical Service, Simla, under the presidency of Surgeon-General Harvey. It was decided that any attempt to start an institution for the sole purpose of antirabic treatment was out of the question, owing to the insufficiency of the funds at the disposal of the Committee, and that the most practical course would be to await the eventual outcome of the proposed Chiefs' Institute. It was therefore resolved that the Government of India be asked whether it could give any information as to when the Chiefs' Institute of Public Health was likely to take practical shape. Until a reply is received nothing definite will be done. Lieutenant-Colonel Roe, Secretary of the Institute, is proceeding on leave, and Major C. J. Bamber has taken up the officiating appointment. It will be remembered that some time ago we referred to the proposed Institute of Public Health which was to be founded by the generosity of the Indian chiefs.

A GREAT COMPOSER'S EAR.

The Italians have an expression, "*voce di compositore*," indicating that the quality of the vocal apparatus is often defective in musical composers. But if a composer need not have a voice, he must have a good ear. It would seem, however, that a good ear need not be a beautiful one. In the Mozart Museum at Salzburg there is a small water colour painting representing two human ears. The drawing is described in the catalogue as "Mozart's ear and an ordinary ear." Dr. Gerber, *Privat-docent* in the University of Königsberg, has recently published in the *Deutsche medicinische Wochenschrift* an anthropological study on Mozart's ear. The fact that the great composer had ears of a peculiar shape suggests the notion that there is some connection between the form of the ear and the musical faculty which shows itself in earliest youth. Such an idea, however, rests on a very slender basis of fact, as there have been few opportunities of establishing its truth. Mozart's ears were of the flat-eared type, especially seen in the lower races of man, as, for instance, in negroes, and must therefore be looked upon as a mark of a low grade of development. Whilst the normal ear is curved in beautiful lines and has a longish form, Mozart's ear was flat, presenting obtuse angles instead of curves, so that it might be described as misshapen. The complete want of lobe is a well-known mark of low development, especially when, as in the case of Mozart, it occurs in connection with a flat ear. It is surely an example of Nature's irony that the man whose inner ear was of the very highest grade of development had an outer ear not merely misshapen to the point of ugliness, but of a retrograde type generally found only in the lowest savages.

THE LONDON POST-GRADUATE COURSE.

The next term of the London Post-Graduate course will commence on October 10th and will end on December 2nd. Lectures and demonstrations will be given on Skin Diseases at the Hospital for Diseases of the Skin, Blackfriars; on Mental Diseases, at Bethlem Royal Hospital; on Diseases of the Throat, Nose, and Ear, at the London Throat Hospital, Great Portland Street; on Bacteriology, at King's College; on Hygiene, at the Parkes Museum, Margaret Street; and on General Medicine and Surgery, at the Infirmary in Cleveland Street. The fees are from one to three guineas for each course, and the whole set or any portion can be taken out. It is hoped that the work of the course will be merged in that of the Medical Graduates College, Bloomsbury, which will, it is anticipated, be opened early in January next. Meanwhile particulars as to the present course can be obtained on application to the Secretary, Dr. Fletcher Little, 32, Harley Street, London, W.

VACCINATION AND SMALL-POX IN BAVARIA.

Considerable interest attaches to any information on the subject of vaccination from Bavaria, from its having been one of the earliest countries to adopt the practice, and from the thoroughness with which in recent years it has been carried out there. The vaccination of infants was introduced into Bavaria so far back as 1807, though it was not actually insisted on until the child reached its third year. Even then a certain number escaped, for one reason or another, but at 6 years of age a second line of defence was erected, because at that age school attendance is compulsory, and every child on entering school is bound to produce its vaccination certificate. The result of this generally effective system of primary vaccination was well illustrated in the great pandemic of small-pox which attacked Europe in 1870-73. In 1871 there were 30,742 cases of small-pox in Bavaria, of which 29,429, or 95 per cent., were in vaccinated persons. This at first sight appears to be a heavy indictment against vaccination, and has been used by antivaccinators as such. But this assumption is entirely negatived when we learn that of the 5,070 deaths from the disease only 137 were between the ages of 2 and 5, and only 48 between 6 and 10, the period of highest protection; whilst 3,970 of them were over 20 years of age. These figures show in the clearest way that the mortality, which increased steadily from 11 to 60 years of age, was the result of the gradual weakening of the protection given in infancy. Further corroboration of the value of vaccination is derived from the experience of the Bavarian army, into which revaccination was introduced in 1843. From this date until 1870 only 6 deaths from small-pox occurred in it, whilst from 1828 to 1836 there had been 52 deaths. In 1874 Bavaria came under the operation of the general law of revaccination, which was applicable to the whole German Empire, and the most recent results of that law are recorded in the consular report on Bavaria for 1897-8 presented to Parliament in July last. In this report the vaccination statistics for 1897 show that out of 164,800 children born, 150,942 were vaccinated for the first time, and 147,714 of them successfully. Of the 13,858 children who were not subjected to vaccination, only 1,050 evaded

the law purposely; the remainder were excused on medical grounds, or were absent from home, or not to be traced. Of the 124,277 persons liable to be vaccinated for the second time, 120,523 were successfully vaccinated, and only 235 evaded the law wilfully. With such effective vaccination as this we are not surprised to be told that during 1896 only one case of small-pox occurred in the whole of Bavaria. It is also interesting to learn that the 484,000 charges of calf lymph used during the year were supplied by 88 calves, or an average of 5,500 from each calf. During the epidemic of 1871 less than 1 per cent. (0.68) of the whole population of the country were attacked. If Bavaria had to go through such an ordeal now the number of cases would, in all probability, be much more insignificant.

THE HANDWRITING OF MEDICAL MEN.

Some time ago the question of the handwriting of prescribers was made the subject of some remarks in the general press here, but British doctors appear not to be the only ones whose prescriptions are occasionally of a hieroglyphic character. The *Médecine Moderne* has recently had something to say on the subject. After sympathising with the pharmacists, whose difficult task it is to decipher these illegible documents, the writer adds that the matter has attracted the attention of no less a person than the Dean of the Medical Faculty of Paris. Professor Brouardel is concerned as to the dangers to the public likely to be caused by the execrable handwriting of many physicians. In a recent interview he is reported to have stated that he would take the earliest opportunity of bringing the matter to the notice of the professors of the Faculty. What that body can do in the matter, however, is not very clear. We do not think that among ourselves the evil is of sufficient magnitude to call for any extraordinary measure of reform, such as the intervention of the General Medical Council. That the handwriting of many members of the profession is anything but legible is unfortunately too well known to us from our editorial experience. Indeed, we are sometimes tempted to say in our haste that some of our correspondents regard writing, as Talleyrand defined language, as a means of concealing thought. On this subject it is needless to say much, but if writers only realised that their handwriting is often a bar to the insertion of communications, and still more often a cause of avoidable errors, especially in names, quantities, and so forth, they would, we think, take a little more trouble about this small matter than they do.

MENTAL DISEASES IN NORWAY.

From a recent report by Dr. Holmboe on insanity in Norway, it appears that according to the last census, made in 1891, there were in that country 7,749 persons suffering from mental disease, of whom 2,341 were idiots and 5,138 lunatics, being relatively to the population a proportion of 1.22 per mille of idiots and 2.66 of lunatics. A comparison of these figures with the official statistics for the years 1835 to 1865 shows that idiocy increased slowly up to 1855, then rapidly decreased till 1865, after which it remained almost stationary. On the other hand, insanity, which had increased very slowly up to 1865, has augmented by 43 per cent. in the last 25 years. Analysis of the figures shows that idiocy most largely affects the male sex, while the majority of the lunatics are women. No conclusion, however, can be drawn from this as to the existence of a greater predisposition to mental disorder in women, since up to the age of 20, that is to say at the time of life when idiocy is most frequent, the males are in a large majority, while over that age women considerably outnumber men. Both lunacy and idiocy, but particularly the latter, are much more frequent in rural districts than in towns; allowance must, however, be made for the fact that a considerable number of lunatics belonging to towns are sent in to the country and consequently figure in the rural statistics. With regard to the causes of the increase in lunacy, Dr. Holmboe points, first, to emigration, which during the period to which his statistics relate has sometimes reached the proportion of 1.5 per cent. of the population. A large part of the healthiest element in the population is in this manner taken out of the country, while the weaker vessels are left behind. Emigration has had an influence in another way, by the depression which the departure of loved ones causes in those left behind. This explains how it is that mental disorder is most rife in the districts from which the flow of emigration has been largest. Another cause has been the agricultural distress which has prevailed during the period in question; political and religious excitement must also be reckoned as a factor. Influenza, too, has played a part in increasing the prevalence of lunacy in Norway since 1889.

BLINDNESS IN SPAIN.

In a recent communication to the Berlin Ophthalmological Society, Professor Hirschberg stated that the large number of blind beggars seen by him in travelling through Spain some years ago, led him to investigate the subject. The only official statistics which he could find—those of the Government Census of 1860—gave the proportion of blind persons as only 11 per 10,000 of the population, a figure which appeared incredibly low in view of the numbers of blind persons seen in the streets and other public places. Further investigation showed that ever since the beginning of the present century travellers in Spain have noticed the large number of blind persons seen in that country. The official statistics have in fact been so carelessly collected that they are of no value. Diseases of the eye have for a long time been spreading to an alarming extent in the Peninsula. Hirschberg says that he has never seen such marked phthisis bulbi, or so many cases of it, as he met with usually in Spain. Even among well-dressed people it is, according to him, quite common to see individuals who have lost an eye, and persons of the well-to-do classes who have lost both eyes are by no means rare. At the Congress of Hygiene held at Madrid in the spring Professor Hirschberg uttered a grave note of warning as to the prevalence of such preventable diseases as purulent ophthalmia neonatorum and trachoma, and urged in the interest of the Spanish people itself, as well as of its neighbours, that the medical profession of Spain should pay more general attention todiseases of the eyes.

THE HISTORICAL REMEDY FOR STAMMERING.

Many persons know that history has recorded that Demosthenes had an impediment in his speech when young, and that he cured it by walking along the seashore with his mouth full of pebbles and delivering speeches to the wild waves. Many a stammerer, having heard of the practice, has given it a trial. Dr. Chervin, of Paris, manager of an institution for stammerers, has exploded the legend and indicated its origin. Already several physicians and elocutionists have shown from experience that filling the mouth with pebbles does not cure stammering. As substitutes small india-rubber balls, and even a kind of snaffle-bit, have been devised, but to no purpose. They only increase the stammerer's nervousness. Demosthenes never filled his mouth with pebbles to cure stammering. He did so because he was a bad speaker, and Satyros, a comedian and elocutionist, prescribed the pebbles as a part of a general training. Satyros found that when the pebbles were taken out speech seemed to be easier to his pupil; but we must remember that he laid no stress on this detail, which probably played no part in improving Demosthenes's elocution. Above all, the great orator did not stammer. The original anecdote is to be found in Plutarch, and the word *traulotes* has been misconstrued "stammering." It really means lisping

affectedly or talking as a little child talks. Aristophanes says the same of Alcibiades, using the more classical terms *traulos* (remarkably like "drawl") and the verb *traulizein*. The young hero, on the direct authority of the great dramatist, drawled out *holas* for *horas* and *theolos* for *theoros*. Alcibiades was a great dandy, and spoke affectedly as dandies spoke in France under the Directory a hundred years since, and in this country some thirty years ago. Demosthenes began life speaking in the same vicious manner, just as thousands of British youths affected the Dundreary lisp in 1864. When he tried public speaking before multitudes, Demosthenes rapidly became exhausted, and nobody listened to him. So he went into training under Satyros, who made a speaker of him. But Satyros did not cure his stammering, for he had never stammered. Persons who really stammer may henceforth spare themselves the pebbles, which will not cure their affliction, but may find their way into the trachea and bronchi. The golden youth of the present day likewise need no pebbles. Unlike their predecessors of the last generation, they speak with remarkable distinctness. This reformation is said to be due in part to the great interest which they take in amateur theatricals.

THE MEDICAL SOCIETY OF LONDON.

THE first general meeting of the Medical Society of London will be held on Monday evening, October 10th, when the President will deliver an address at 8.30 P.M. The Lettsomian Lectures will be delivered before the Society on February 6th and 20th and March 6th, 1899, by Dr. Samuel West, who has taken for his subject Some of the Clinical Aspects of Granular Kidney. The annual oration will be delivered on May 15th, 1899, by Mr. Alban Doran, F.R.C.S.

A ROYAL THERAPEUTIST.

THE introduction of cinchona bark into European medicine is a subject which has been fairly worked out, but M. Baudot, a chemist at Dijon, has brought to light some valuable manuscript notes written by Philibert de la Marc. In Louis XIV.'s days everybody who had the ear of a great man seems to have covered reams of paper with journal notes, although keeping a journal exposed the author to great danger. De la Mare jotted down the following remarkable note: "The King has an apothecaries' laboratory at Versailles, where he works by himself trying to make up remedies for hernia, said to be infallible, and lest his secret should be found out he openly orders a great variety of drugs which are of no use for the cure of that malady, so as to throw the inquisitive off their scent. He will make his secret public all in good time, just as he published the secret of the English physician for the treatment of fever after the death of the latter. He works by himself at these remedies, which smell very nasty." As for looking for drugs intended to cure hernia, Louis XIV. was under no greater illusion than many doctors of medicine of his day. De la Mare shows that he himself shared in the errors of his time by his observation about drugs "of no use" for the purpose, which implies that he thought that other drugs were really of service in the treatment of hernia. The English physician's "secret" is a much more interesting matter. Dr. Cabanès has found that the physician's name was Talbot. French writers of the day, with their national instinct, still so vigorous, of spelling English names wrong, wrote of him as Tabor. The King bought the secret in 1672 for 2,000 louis d'or, and generously allowed Dr. Talbot a pension of 2,000 livres. This secret remedy for fever was undoubtedly a compound of which the chief ingredient was bark, and thus the Grand Monarque played a share in generalising the use of that invaluable drug. For this we may be grateful to Louis XIV. It is a pity that he was so much perverted from strictly scientific lines of thought and action through the errors of his contemporaries. That he was naturally enlightened we can judge from his order abolishing punishment for witchcraft, in 1670, in spite of solemn remonstrances from high dignitaries.

INCREASE OF WEIGHT IN DYING INFANTS.

IN many countries, including our own, there is a popular objection to the weighing of a baby, but the experience of maternity institutions shows that the rate of increase of weight is of high importance. Durante has made a remarkable discovery in the course of investigations made in M. Porak's wards at the Maternité in Paris. Loss of weight is, as we all know, a grave symptom in an infant, especially in an institution where the responsibility of bringing it up by hand is undertaken. Durante finds that under certain circumstances gain of weight is equally serious. For "certain" we should rather say "uncertain." He admits that in the eleven infants where the phenomenon was observed lesions very varied in nature or even undefinable were noted. Thus, in one case an infant 3 months old gained no weight for eight days, then became heavier by 5 ounces in five, when it died. Miliary tuberculosis of the lungs was discovered, also two small vomicæ, the former of these very objective lesions being, of course, the more recent. On the other hand, a child died when 1 month old after ten days' illness. During the first five days it lost 2 ounces, passing undigested matter; thenceforward to its death it gained nearly 3 ounces, with no other abnormal symptom. At the necropsy no lesion could be detected. In a third case the infant had convulsions, and then syphilis was diagnosed. Specific treatment was prescribed. For a month the weight remained almost stationary. Then in five days there was a gain of 7 ounces, on the next day of 3, and a further gain of 3 ounces on the next, when the child died 2 months old. A syphilitic gumma was found in the optic thalamus. In another instance, where 7 ounces were gained in five days, the thymus was found enlarged, but it was not at all clear that this hypertrophy was the cause of death. In three cases, active fatty degeneration of the liver, and in one syphilitic sclerosis of that organ, were discovered after death; to the three former two may be added: one where jaundice was noted in an infant at birth, but it diminished daily till the child's death at the end of a week, yet, though very sickly, there was a gain of 4 ounces between birth and death; unfortunately there was no *post-mortem* examination; some hepatic lesion no doubt was present. In another case precisely similar, there, also, was no examination of the viscera after death, and there was likewise no necropsy in one case where a child, aged 2 months, had a suppurating scratch on one leg. There was no icterus, but, after the infant had gained little or no weight for a month, it suddenly increased by 4 ounces in seven days, and then expired. All the eleven cases seem to have died suddenly. They are published in full in the September number of the *Annales de Gynécologie et d'Obstétrique*. Durante notes that in the majority of cases the liver seemed at fault; possibly that organ failed to destroy excreted toxins, which accumulated and added to the infant's weight. He wisely suspends judgment, however, until more cases are at his disposal. At least he claims to have discovered that an increase of weight in an infant following a loss of weight or an abnormal stationary condition in that respect, is a sign of approaching death if the infant's general condition does not improve as it gains in ounces.

THE afternoon demonstrations at the Clinical Museum, 211, Great Portland Street, will be resumed by Mr. Jonathan Hutchinson on Wednesday next, October 5th, at 4 P.M., and will be continued weekly at the same hour. All members of the profession are invited to attend.

THE REPORT OF THE LUNACY COMMISSIONERS.

Increase of Lunatics officially known.—Ages on Admission.—Statistics of the Character of Patients.—Overcrowding and New Accommodation,—The Work of the Commissioners.—An Inadequate Staff.

The report in its opening paragraph records an increase of 2,607 officially-known lunatics in the year 1897, making the total of such lunatics on January 1st, 1898, 101,972. This increase is less than that of the preceding year, which amounted to 2,919. The increase was 1.49 per cent. in the private and 2.75 per cent. in the pauper class, the ratio per 10,000 of the population remaining unchanged in the private but being advanced 0.47 in the pauper class.

The additions to the officially-known lunatics are apparently helped considerably by the greater proportion of senile cases now sent to the asylums, old age being given as an assigned cause in 6.5 per cent. of males and 7.3 of females, these figures in 1896 being 4.9 and 6.1 respectively. The differences between these percentages on some 16,000 admissions is considerable. In the private class it is worth noting that old age is given as a cause in little more than 3 per cent. of the cases. The discharges, recovered, were 38.35 per cent. of the admissions, being 0.18 per cent. lower than in 1896, and 0.64 per cent. lower than the average of the last ten years. The death-rate was 9.43 per cent. on the average numbers in the asylums, being 0.38 per cent. higher than the previous year, but 0.25 per cent. lower than the average for the last ten years. Both these factors would be affected by the increase of aged admissions, and both the lessened discharges and the lessened deaths would add to the accumulation of lunatics.

The increase of institution lunatics is also aided, as the Commissioners point out, by the more ready transfer from home care to institutions of the congenitally weak minded.

The fresh admissions to the asylums are only 283 in excess of last year, the total being 16,447. Of these 2,653, or 16.1 per cent., were readmissions into asylums from which they had been previously discharged, the percentage of such readmissions having risen to this extent from 14.3 per cent. in 1894. This is an important matter, and it would be very desirable to know whether this very great and striking increase in readmissions was due to any change in the character of the cases treated, or to undue haste in their discharge. The latter would seem to be the more probable explanation, since the superintendent of one large asylum has complained of the pressure made to obtain vacancies where the accommodation for lunatics was inadequate to the number requiring admission.

These variations in the admissions, recoveries, and deaths, however valuable, throw little light by themselves on the problems relating to the absolute increase of insanity and the results of asylum treatment. The tables giving the ages of these three classes, which the Commissioners have given in the last few years, will soon become valuable, by making it possible to form some idea in regard to occurring insanity after the date of these tables. It is much to be desired that the Commissioners should delve into their records, and, even at considerable outlay of trouble and cost, work out the age statistics as far back as their records admit. This would yield valuable information of universal interest, and would go far to solve the questions referred to above, which for the past cannot be solved without such assistance. The reef is obviously rich and well worth working.

The usual statistical tables in regard to causation, cause of death, forms of insanity, etc., are given, but contain no evidence of other material change from last year's report. The duration of treatment in those discharged, recovered, or dying, is not given; tables supplying these facts would in a few years give valuable data of the results of treatment, and are much to be desired.

A very important additional table (T. XIII, Appendix B), given for the first time, relates to facts which are to some extent evidence of the character of the patients in each asylum and of the general management. Percentages for each asylum are thus given of the numbers of epileptics and general paralytics, of *post-mortem* examinations, and bedsores found at death, of patients attending chapel and entertainments, of those walking beyond the grounds or confined to airing courts, of those employed, and lastly, but by no means least in importance, of the number of attendants with less than a year or over five years' service.

Overcrowding is reported to be far too frequent, and no fewer than twenty counties and districts are named as having patients boarded out in other asylums.

The new accommodation about to be provided and the amount of expenditure in alterations and improvements appear to be more considerable than usual, and may well give the ratepayer occasion for thought; 2,500 additional beds, at at average cost of £200 per bed at the least, means the annual expenditure of half a million of money, without reckoning the cost of maintenance.

The report gives evidence of the vast amount of work and responsibility thrown on the Commission. Beyond the inspection of the county and borough asylums, public lunatic hospitals, private asylums, and the visitation of workhouses, there are special inquiries, legal prosecutions, the inspection of the plans of alterations in the asylums, and much other general work of which no mention is made. Such an array of facts suggests the question whether the *personnel* of the Commission is equal to the tasks thrust upon it, or whether the work can be fulfilled as thoroughly as might be desired.

The prevention of improper incarceration or detention in asylums is one of the great functions which the public considers is discharged by the Lunacy Commissioners, yet it is surprising that they should be content with the amount of inspection actually given.

One medical commissioner, for example, once a year visits an asylum containing, say, 2,400 patients; in three days, amongst a multitude of other matters, he has to satisfy himself that every patient is justly detained. This means, even if all his time is devoted to this work alone, that the cases are decided at the rate of three per minute. In practice the rate is probably much more rapid.

The three medical men on the Commission have practically to safeguard from wrongful detention upwards of a hundred thousand patients scattered over the length and breadth of England and Wales, either singly in private houses, or in the workhouses, hospitals, etc. A simple calculation will give the fraction of a minute of personal consideration that can be given to each.

So loud an outcry has been raised, in regard to the safeguarding of the liberty of the subject, in lunacy legislation that if the public once comes to know the practical outcome of all this profession, the present utterly inadequate working power of the Lunacy Commission would soon be remedied. It is astonishing indeed that such a gross and palpable defect should so long have escaped public exposure. This no doubt is due to the gradual growth of the defect, from the time when the three medical Commissioners had only 30,000 to supervise to the present 100,000.

Three Commissioners were inadequate even in the first state, but how much greater is the inadequacy now, when their work has grown in so many directions!

The report bears evidence not only of the activity and industry of the Commission, but also of its earnest aims at progress and improvement. It is to be wished, however, that it possessed a larger medical element by which its power and influence for good would assuredly be largely increased.

THE MAIDSTONE EPIDEMIC OF ENTERIC FEVER.

The report of Mr. J. S. Davey, Dr. Thomson, and Mr. G. W. Willcocks, Local Government Board Inspectors, upon last year's epidemic at Maidstone has but recently appeared in print, although the public inquiry conducted by the three inspectors was opened at the Sessions House, Maidstone, on January 31st, and lasted only eight days.

It is an exhaustive account of all the ascertained facts bearing on the epidemic, and Dr. Adams, the Medical Officer of Health, is to be congratulated on the fact that the conclusions arrived at by the Commissioners are in perfect accord with the opinions which he himself formed long before the inquiry was held. The volume contains numerous maps and illustrations, and no fewer than fourteen separate appendices, most

of which consist of reports upon the many samples of water submitted to different experts for bacteriological and chemical examination.

The epidemic commenced in September of last year, and gave rise to over 1,800 cases of infection and some 130 deaths in a population of 34,000.

The Maidstone water supply is derived from three independent sources, namely the springs of Boarley, Cossington, and Farleigh, and the evidence that contamination of the latter supply was alone responsible for the appearance of the epidemic is incontrovertible. During the first six weeks of the epidemic 1,560 persons were attacked, and a spot-map of these cases practically defines the area supplied by the Farleigh water; moreover the heavy incidence (107 cases) on the Barming Lunatic Asylum, where the drainage was modern and sound, could not possibly be accounted for except by the fact that the water supply was derived from the Farleigh spring.

The conclusions arrived at by the Commissioners appear to be amply justified by all the evidence adduced. They could not be more clearly and succinctly stated than in the following concluding paragraphs of the Report:

On a review of the whole of the epidemic we have no hesitation in coming to the conclusion that the epidemic was caused by the pollution of the water supplied by the Maidstone Company from their Farleigh sources. It is true that there is abundant testimony to show that grave sanitary defects exist in the construction of some of the sewers and of many house drains and watercloseets within the borough: while one of the expert witnesses, Dr. Corfield, said that, in his opinion, these defects were sufficient to account for the epidemic. But the sudden and simultaneous outbreak of fever over a wide area, and the rapidity with which the epidemic grew, cannot be accounted for by the existence of defective conditions of sewerage and drainage. Further, the facts as to the local incidence of the disease are not consistent with the theory that these conditions had anything to do with its origin. The old brick barrel sewers are almost all in the lower part of the town, which was comparatively free from attack, and the hand-flushed and defective house drains are distributed pretty equally over the whole town, whereas the cases of typhoid fever were confined to the Farleigh area of water supply to an extent which quite precludes the possibility of mere chance. We are of opinion that many of the typhoid cases in the borough were due to defects of drainage and sewerage, with consequent pollution of the soil underlying the town.

At what point or points the specific infection was introduced has not been ascertained with certainty, but that the neighbourhood of some of the springs was polluted with human excrement is positively known. It is a reflection on the adequacy of our present bacteriological methods that that science rendered so little assistance in the inquiry, although the bacillus of enteric fever was undoubtedly present in the water, and bacteriologists of repute were engaged in the search, none of the efforts made to find it proved successful.

The Commissioners, in their concluding remarks, make reference to a most important matter:

The history of the epidemic appears to us to raise the question as to how far the regulations of the Board relating to the duties of medical officers of health and the statutes which regulate the powers and obligations of private water companies are sufficient to ensure a reasonable amount of protection to the public health. The general order of the Board of 1891 prescribes that the medical officer of health "shall inform himself as far as may be practicable respecting all influences affecting or threatening to affect injuriously the public health within the district." This regulation might be held to make it the duty of the medical officer to inspect the works of a private water company supplying water to [illegible] even though the works were situate outside it, as is the case at Maidstone. This, however, was not the construction put upon the [illegible] Mr. M. A. Adams, the medical officer for Maidstone, and, as a matter of fact, he had never seen the sources of the water supply furnished to the Farleigh area. He pointed out with considerable force that he had no legal right of access to the works, and as to taking samples of the water. Yet Section VII of the Public Health (Water) Act, 1878, imposes [illegible] authorities the duty of taking such steps as may be necessary to ascertain the condition of the water supply within their [illegible] be stated, however, that it did not appear that any [illegible] or to take samples of the springs separately [illegible] of the water company by either of [illegible]

The inadequacy of the present measures for the protection of public water supplies (including every contributory source) and the desirability of their periodical inspection by health authorities, is a subject on which all sanitarians are thoroughly agreed, and in the face of this fact, and of the occurrence of such incidents as the one which forms the subject of this report, Ministers assume a heavy responsibility in delaying to take the necessary steps to place the whole matter of inspection of public water supplies on a more satisfactory basis.

The public have a right to demand, when a necessity of life is made a monopoly of and they have no option but to consume and pay for it, that every possible effort should be made to ensure its freedom from danger to the consumers. It is nothing short of a national disgrace that we in Great Britain, who are regarded by our neighbours as the great apostles of sanitation, should neglect such an elementary principle in preventive medicine, and that a state of things is possible that will enable a commission to report, as of the Farleigh springs at Maidstone, that the whole of the supply was exposed to the risk of pollution.

THE PLAGUE IN THE EAST.

Bombay.—A slight abatement in the number of fresh cases and the deaths from plague is recorded in the city of Bombay during the past week, but the mortality is still high. The actual number of deaths officially recorded is 127, indicating a diminution of about 20 from the previous week. Taking the three past weeks into consideration, the numbers are respectively 170, 149, 127. This is a fairly satisfactory record, but it is scarcely justifiable to conclude that the present recrudescence of plague is on the wane. From the Bombay Presidency the returns as a whole show a diminution in the death-rate from plague, being some 500 less, or in actual numbers 2,500, as against 3,000 for the preceding week. The native population in Bombay are becoming accustomed to plague, as they have been in the past to cholera and small-pox, and at the mills and other business centres the work is being continued as if no epidemic existed in the city. In the Poona district the town of Hubli still shows a high mortality from plague, as many as 50 deaths occurring daily. Southward from Poona, in several towns and villages, plague is increasing in virulence. Dharwar and Bangalore are suffering severely; in the Hyderabad State and in Mysore cases are recurring with persistent frequency, but nowhere in the southern districts has the disease attained epidemic proportions. Calcutta reports remain as heretofore, a case or two occurring now and then followed by a complete intermission, and although the authorities are anxious concerning the future, there is no reason for alarm in the meantime. From Dharwar, where Haffkine's treatment has been largely tried, very encouraging reports are to hand as to its efficacy. Out of a population of 38,210, 37,196 have been inoculated, and of these only 37 have been attacked, against 393 of the uninoculated. Although the result of the 37 protected persons who have had plague is not stated, the proportion of deaths amongst the unprotected is such that, if the disease continues, there seems to be a prospect of the whole of the unprotected community being carried off.

RENAL TUBERCULOSIS AND ITS SURGICAL TREATMENT.

THE history of tuberculous disease of the kidney begins with Rayer in 1841, and surgeons have ever since been interested in the question of a primary renal tuberculosis. Conflicting evidence and conflicting opinions were given by prominent and authoritative surgeons. Latterly, however, the belief in a primary affection has been steadily gaining ground, and the clinical evidence in its favour has been daily accumulating. *Post-mortem* room evidence is, as Donnadieu and many others have pointed out, of little or no value. At the time of death the disease, wherever beginning, will have spread so widely that it is impossible to recognise its earliest inroads with any certainty. It is to close and continued clinical observation that we look for a final solution of the problem. Collinet, from a study of reported cases, came to the conclusion that tubercle may begin in any part of the urinary tract primarily except the ureters, and that 1 out of 18 cases of tuberculosis begins in the genito-urinary organs. Camargo states that in most cases tuberculous disease of the urinary system is primary in the kidney; and James Israël expresses his conviction that a primary disease of the kidney is very much more frequent than is supposed. But it is chiefly in the numerous and valuable papers of Tuffier, and especially in a recent pamphlet,[1] that we find the strongest evidence and most

[1] *Tuberculose Rénale.* By Dr. Tuffier. Paris: Masson et Cie. 1898. Demy 8vo, pp. 98. Fr. 1.25.

strenuous arguments, hardly admitting of denial, brought forward. Tuffier without hesitation affirms the existence of a primary renal tuberculosis. The classification given by him of the various forms of tuberculous disease is as follows:

1. Miliary tuberculosis.
2. Tuberculous infiltration { a. Nodular infiltration, with or without cold abscess. b. Tuberculous pyelonephritis. c. Massive degeneration of the kidney. d. Tuberculous hydronephrosis.

In primary disease the earliest change is an interstitial one close to the vessels. Hektoen has described in tuberculous meningitis an endovascular inflammation as the earliest pathological disturbance, and Senn has suggested that a similar process may occur in the kidney. In both primary and secondary diseases the condition of the ureter, due to the spread of the disease upward or downward, is, Tuffier insists, of chief importance but frequently overlooked. When the ureter is permeable or enlarged—an infrequent condition—the kidney enlarges little if at all. When narrowed there results a pyelonephritis with distension or a pyonephrosis with intermittent emptyings. If obliterated there develops either a massive degeneration of the kidney or a tuberculous hydronephrosis.

Diagnosis is often, indeed almost always, difficult, but great advance has been made since Simon, Pawlik, and Kelly have perfected the methods of ureteral catheterisation. W. Meyer has described as an early sign a ring of granulations round the ureteral orifice in the bladder seen by the cystoscope. An S-shaped arrangement of tubercle bacilli in the urine has been asserted by Trisch to be peculiar to kidney disease, and other observers believe that this sign is of importance. In doubtful cases it has been suggested that an exposure of the kidney and the removal of a fragment of it for subsequent microscopic examination might be a valuable aid in arriving at a certain diagnosis.

Operation may be called for by the urgency of one or other of the chief symptoms, hæmaturia, pain, and so forth, but, as a general rule, it is the cumulative evidence, subjective and objective, upon which intervention is founded. Nephrotomy, nephrectomy, partial or complete, and combined or not with a removal of the upper portion of the ureter, are practised. In one case Trendelenburg successfully removed the kidney, ureter, and a portion of the bladder, but hardy operations of this kind are of doubtful utility, and are better left in "splendid isolation."

The following are the chief statistics of importance that have been published recently. Vigneron, 1891 (*Thèse de Paris*) collected 55 nephrotomies from the literature and classified them as

Deaths	=21 cases	7 as direct result of operation	=12.72 per cent.
		14 after some weeks	=25.44 ,,
Relieved	=31 ,,	... ...	=56.36 ,,
Cured	= 3 ,,	... ...	= 5.45 ,,

Palet, 1893 (*Thèse de Lyon*), collected 136 nephrectomies:

Primary nephrectomy, 110 cases	Deaths from operation,	32 cases	=29.00 per cent.
	after some weeks,	42 ,,	=38.18 ,,
Secondary nephrectomy, 26 cases	from operation,	6 ,,	=23.00 ,,
	after some weeks,	9 ,,	=34.60 ,,

Israël, 1896, in 11 consecutive cases:

Nephrectomies	Total	Deaths	2 cases=18.18 per cent.
		Relieved,	5 ,, =45.45 ,,
		Cured	3 ,, =27.27 ,,
	Partial	...	1 case recovered.

The partial nephrectomy was the first operation of the kind practised. The upper half of the kidney was removed. The woman was well and five months' pregnant one year after the operation.

Tuffier's latest statistics are:

Nephrotomy, 7 cases	Deaths from operation,	2 cases.	
	Relieved,	3 ,,	
	Cured,	2 ,,	
Nephrectomy, 9 ,,	Primary	Total,	6 recoveries.
		Partial,	1 recovery.
	Secondary,		2 recoveries.

These last results, mentioned by Tuffier at the Moscow Congress, are the best so far recorded. In the discussion which followed his paper Küster, Israël, Jonnesco, and D'Antona gave expression to opinions coinciding with those of Tuffier as to the advisability and propriety of surgical intervention in suitable cases of renal tuberculosis, whether primary or secondary.

THE RED CROSS SOCIETY'S STEAMER *MAYFLOWER*.

We have received from the National Society for the Aid to the Sick and Wounded in War the following particulars as to their steamer *Mayflower*. This vessel has recently been chartered by the Society for service on the Nile, with the sanction of the Government authorities for the purpose of rendering supplemental aid by transporting sick and wounded soldiers in the Soudan Expedition from Assouan to Cairo.

The *Mayflower* is a stern paddle steamer 140 feet long, and carries two medical officers and eight men of the Royal Army Medical Corps, lent by the Government, and two nurses sent out by the Society. She is reconstructed from a pleasure vessel into a hospital ship to hold 52 sick and wounded, and, on an emergency, 72 patients. She is fitted with the most modern medical and surgical appliances, and medical comforts of every description. The sick and wounded will thus enjoy the luxury of being conveyed by river, and be saved the heat, choking dust, and severe discomforts of the railway journey of about 600 miles between Assouan and Cairo, which a high authority has described as the worst part of the transit between Khartoum and Cairo. The ship was inspected by the General Officer Commanding, started on September 6th on her first voyage of mercy, and left Assouan for Cairo on September 15th, with 28 wounded and 24 sick, including six officers—(Molyneux, Hopkinson, Clark, Geohegan, Sloggett, and Dyke)—all doing well.

We may add that the National Society for Aid to the Sick and Wounded in War has been represented in Egypt and the Soudan by a Commissioner (Colonel I. S. Young) since the early part of August. Three nurses were also despatched by the Society on August 29th.

SMALL-POX IN THE SOUDAN.

There are some interesting references to small-pox in Father Ohrwalder's account of *Ten Years' Captivity in the Mahdi's Camp* (by Colonel F. R. Wingate, popular edition, 1898), which might be meditated on with profit by some people with a "conscience." In the chapter on the Mahdi's last days the following passage occurs (*Op. cit.*, p. 51, *et seq.*):

> Famine and war had brought disease in their train. In addition to fever and dysentery, small-pox, which in the Soudan is endemic, increased with fearful rapidity. In Omdurman hundreds died, and the principal business of the *beit el mal* was distributing "kafans" (shrouds). It was curious that the Soudanese, who much dread this disease, should have attributed it to the English, but that they did so is a fact, and this is how it came about. When the English retired from Gubat they left behind them a quantity of preserved stores and tinned meat. The Dervishes, in spite of the belief that they contained pork, which is an abomination to them, were so hungry that they consumed almost everything they found, and it is said that almost immediately afterwards they were attacked by small-pox, which gave rise to the idea that the English had mixed their food with the germs of the disease, and this was implicitly believed in.

This reasoning of the Soudanese is on a level with the notion prevalent among antivaccinationists and among the lower classes (and many members of the middle and upper classes, who ought to know better) that every disorder which occurs after vaccination must be due to the latter.

> Owing to the prevalence of small-pox in Omdurman many people fled to Kordofan, Darfur, and other places, and consequently caused the disease to spread over the whole country. Several false doctors, with the sole object of making money, guaranteed to check the disease by inoculation, but as the inoculated matter was frequently in itself diseased the epidemic still further increased.

Further on Father Ohrwalder again refers to small-pox in El Obeid (*Op. cit.*, p. 58). He says:

> That evening soldiers came and dragged us and our slender property to the zareba; and while waiting till huts should be made for us we were housed with slaves suffering from small-pox. This disease was then very prevalent in El Obeid, and horrible sights continually met our eyes. These unfortunate sufferers had no one to help them, and they were left to die either of the disease or of hunger; they lay about under the trees in the market place shunned by everyone; often, when still living, they were dragged off by men, who tied ropes round their bodies, and pulled them along the ground till they were beyond the outskirts of the town, and there they were left to be devoured by the hyenas. A dreadful famine prevailed..... The air in the zareba was poisoned by the number of people suffering from small-pox, but, curiously enough, the disease never seemed to touch the white people.

This last statement is important, for in El Obeid the white captives, although suffering from the effects of privation, ill-

treatment, dysentery, and living under the most insanitary conditions and in the closest proximity to small-pox patients, were not attacked by the disease. Father Ohrwalder never seems to have thought of vaccination, as he merely looks upon the fact as a curious circumstance, when it was a most natural one and in agreement with what we know of the value of vaccination. It is fair to assume that Father Ohrwalder and his fellow missionaries had been vaccinated in infancy, and probably revaccinated before leaving Europe. Such an object lesson is surely more valuable than the absurd opinions of persons on things which they do not understand, persons who would be the first to resent being taught their own business or profession. But *Gegen die Dummheit kämpfen die Götter selbst vergebens!*

In El Obeid, if anywhere, all the conditions relied upon by antivaccinationists were present, yet the whites did not contract the small-pox. In a further passage (*Op. cit.*, page 73) the death of the great religious sheikh, Abu Gemaizeh, from small-pox, "struck down in the zenith of his success," is recorded.

DEATHS DURING THE ADMINISTRATION OF ANÆSTHETICS.

CHLOROFORM.

AN inquest was held at the workhouse, Bolton, on September 23rd, upon the body of William Owen, a weaver, aged 66, who died at that institution on September 4th while under the influence of chloroform. Dr. Lewis Buck, resident medical officer, deposed that deceased was an infirm old man, and had been under his care in the workhouse infirmary for three years. Recently he had suffered from cancer of the larynx, for which tracheotomy and removal were recommended. To this deceased consented, and with the assistance of Dr. Panton, the administration of the A.C.E. mixture was commenced, but it was afterwards changed to chloroform on account of the irritation which it caused. In about a quarter of an hour, and before the man became insensible, he suddenly ceased to breathe. All the usual means of restoration were adopted, and artificial respiration was continued for half an hour without avail. The jury returned a verdict of "Death by misadventure," adding that no one was criminally responsible.

ARCHÆOLOGICA MEDICA.

XLVII.—FREDERICK THE GREAT AND MEDICINE.

THE following is significant of the Great Captain's solicitude for his troops. In his instructions to Duke Ferdinand of Brunswick, Frederick wrote thus from Potsdam, August 15th, 1756:

"Each captain shall take with him a little cask of vinegar, of which, as soon as the regiments get to camp, he must give me a reckoning, and I will then have him repaid. This vinegar shall solely and exclusively be employed for this purpose, that in places where the water is bad, there be poured into it for the soldiers a few drops of the vinegar to correct the water, and thereby preserve them from illnesses."[1]

When the Great Frederick was on the march for the third time to Silesia, Carlyle states that "the arrangements of the march, foreseen and settled beforehand to the last item, are of a perfection beyond praise." In the General Order, we note that "all generals, chaises, money wagons, and regimental surgeons' wagons remain with their respective battalion- . . . ."[2]

The King's prescription for *die gelehrte Krankheit* ("disease of the learned," dyspepsia so-called) was to ride daily, and take a dose of rhubarb every week.[3]

The domestic government of Frederick was no less thorough than his direction of warlike operations. He had an eye to sanitation, for we read in connection with the newly-acquired Polish province that while "the diplomatic squabbles about this acquisition were still going on (no time to wait evidently for the upshot of black artistry), he had already sent a body of his best official people into this waste-howling scene to set about organising it. The *Landschaften* (counties) were divided into small circles; in a minimum of time the land was valued and an equal tax put upon it; every circle received its *Landrath*, law court, post office, and sanitary police."[4]

The interview of Zimmermann (the author of the book *On Solitude*, and a pupil of Haller) with the King is also of interest. According to Zimmermann, "Our dialogue became extremely brisk. The King quickened into extraordinary vivacity, and examined me in the character of doctor, with such a stringency as, in the year 1751, at Göttingen, when I stood for my degree, the learned Professors Haller, Richter, Segner, and Brendel (for which Heaven recompense them) never dreamed of. All inflammatory fevers, and the most important of the slow diseases, the King mustered with me in their order. He asked me how and whereby I recognised each of these diseases; how and whereby distinguished them from the approximate maladies; what my procedure was in simple and in complicated cases; and how I cured all these disorders. On the varieties, the accidents, the mode of treatment, of small-pox especially, the King inquired with peculiar strictness; and spoke, with much emotion, of that young Prince of his House who was carried off, some years ago, by that disorder (suddenly arrested by it while on march with his regiment, near Ruppin, May 26th, 1767). Then he came upon inoculation; went along over an incredible multitude of other medical subjects. Into all he threw masterly glances, spoke of all with the soundest" (all in superlative, adds Carlyle) "knowledge of the matter, and with no less penetration, liveliness, and sense."[5]

Making every allowance for Zimmermann's enthusiastic description of the interview, we can well believe that Frederick was keenly alive to the importance of the subject, especially as it related to the maintenance of the health of his troops, and it cannot be doubted that nothing was left undone by him to place the Prussian Army Medical Service on a sound footing.

The King's interest in the small-pox shows once again how this disease was dreaded, and the death of the young Prince is another instance to be added to many others of exalted persons carried off by it. That Frederick would have welcomed Jenner's great discovery there can be no manner of doubt; a discovery which in Prussian hands has banished small-pox from Prussian territory. But in the country where vaccination originated it is still (1898) allowed to be criticised by any man in the street who likes to give an opinion before a Royal Commission. Truly a wonderful procedure, which would not be tolerated in the ordinary affairs of life.

Other points of medical interest might be touched upon, such as that Frederick was sent into the hospitals by his father, Friedrich Wilhelm, that the effects of the venereal diseases might serve to him as an example, the use of bark in ague, etc. Sufficient has been said, however, to reveal a side of Frederick the Great not often referred to.

[1] Carlyle, vol. vii, cheap edition, p. 37.
[2] Vol. ix, p. 37.
[3] Dialogue with Gellert, *op. cit.*, vol. ix, p. 110.

NOTES ON HEALTH RESORTS.

KEPHISSIA: A GREEK HEALTH RESORT.

(By G. SICHEL, Surgeon R.N.)

SITUATION AND SURROUNDINGS.

KEPHISSIA has been from time immemorial a summer resort for the rich Athenians. It is situated on the western slopes of Mount Pentelicus, about nine miles from Athens, and can be reached from that town either by rail or road. The road is excellent, both for driving and cycling; but of course nearly every yard of it is uphill, as Kephissia is some 600 feet above the capital. Just about here one leaves the dried-up looking region around Athens, and enters the fertile district surrounding Tatoy, where there is a royal palace, which accounts for the excellence of the road. Firs and Greek oaks in all their variety abound; in fact, any member of the vegetable kingdom appears able to flourish. Coming by road from Athens one first of all passes through the old part of the village, and then comes to numerous villas of the moneyed class.

SANITATION.

As far as can be ascertained, the water supply is derived

[4] *Op. cit.*, vol. x, p. 41.
[5] *Op. cit.*, vol. x, p. 51.

from several springs and wells; but it all probably ultimately comes from a spring called the "Cephalaria," which is situated a little higher up on Pentelicus than Kephissia proper. The spring is quite unprotected, and when I visited it ducks were swimming in it; a man came and washed his hands and face in it, and spat into the water; another man ate his meal on the banks, and threw crumbs to the ducks. From the spring the water runs first in an open stream, then under a road, into an open aqueduct. Twenty yards below the spring a man watered his horse. Just by the spring is a small chapel, and just above it are two houses to the right and one to the left. The water itself is fairly cool, clear, and sparkling. The bed contains bits of broken crockery, old tins, and other refuse. The soil around is a firm, sandy gravel: a little way higher up the mountain, marble comes to the surface, supplying the celebrated Pentelicus quarries. The ground immediately around the spring is evidently used as an open-air restaurant in the summer.

The drainage of Kephissia is by cesspools. At present the village appears to be healthy, but in view of the important defects in the management of water supply and drainage, it is impossible to recommend any but the inhabitants of Athens to choose it as a health resort.

The dreaded "Greek fever"—probably a mixture of malaria and "sewer-gas fever"—does not exist there, and typhoid only occurs as an occasional sporadic or imported case, though this has evidently been more a matter of luck than good management on the part of the sanitary authorities.

It is but fair to say that when I was there (October and November, 1897), water pipes in one part were being laid down; it will be well if, before it is too late, a proper drainage system be inaugurated.

Accommodation for Visitors.

There is an excellent hotel there; cooking and accommodation good. The building is in part new, and bedding, etc., is clean. In the winter Kephissia is a cold, dreary place, and before I left snow had been lying pretty thickly on the ground. Taken altogether, Kephissia is quite capable of being a most perfect health resort, especially for early phthisis, but until the serious defects above mentioned are remedied, it must of necessity be looked upon as a dangerous place to send invalids—a place where at any time a single pollution might cause a terrible epidemic of such a disease as typhoid or dysentery. The season there is the summer and autumn.

LITERARY NOTES.

During the past academic year 661 theses for the degree of Doctor of Medicine were presented to the Paris Faculty. All these theses are in the library of the British Medical Association.

In connection with Mr. John Poland's forthcoming work on *Traumatic Separation of the Epiphyses*, Messrs. Smith, Elder and Co. will publish a *Skiagraphic Atlas* by the same author. The atlas illustrates the development of the wrist and hand as displayed by the Roentgen process. This is, we believe, the first instance in which a series of skiagraphs showing the ossification of the bones of these parts has been traced over a period of years from early infancy. Such an atlas is likely to be of great practical use to the surgeon and student.

We are asked to announce that *Public Health*, the official journal of the incorporated Society of Medical Officers of Health, will in future be published by the Rebman Publishing Company, 129, Shaftesbury Avenue, to whom all communications relating to the business part of that journal should be addressed.

Messrs. Cassell and Co. will publish immediately a second revised edition of Mr. Malcolm Morris's *Diseases of the Skin*. In addition to a good deal of new matter in the text, the work will contain a considerable number of new illustrations.

Messrs. Baillière, Tindall and Cox announce for publication during the coming season the following new editions: Sir William Broadbent's *Diseases of the Heart* (third edition); Professor Stewart's *Manual of Physiology* (third edition); Professor Mayo Robson's *Diseases of the Gall Bladder* (second edition); Mr. Gant's *Guide to the Examination of the Conjoint Board* (seventh edition); Mr. Lennox Browne's *Diseases of the Throat and Nose* (fifth edition); Dr. Muter's *Manual of Analytical Chemistry* (eighth edition); Dr. Hime's *Guide to the Public Health Acts* (second edition); Dr. Max Einhorn's *Diseases of the Stomach* (second edition); the Medico-Psychological Association's *Handbook for Attendance on the Insane* (fourth edition), and Messrs. Pearmain and Moor's *Applied Bacteriology* (second edition, with coloured plates). The following new works are quite ready: *A Pocket Dictionary of Hygiene*, by Mr. C. T. Kingzett, F.I.C., and Mr. D. Homfray, B.Sc.; *An English-French Medical Dictionary*, by M. de Mérie; *Cattle Tuberculosis*, by Dr. T. M. Legge, Secretary to the Royal Commission of Tuberculosis; and a translation of Professor Bollinger's *Pathological Anatomy*, with atlas of 120 coloured plates.

The following are among Mr. Young J. Pentland's announcements for the autumn: *Contributions to Clinical Medicine*, by T. McCall Anderson, M.D., F.F.P.S.Glasg., Professor of Clinical Medicine, Glasgow University; Physician, Glasgow Western Infirmary, etc. *Textbook of Physiology*, by British Physiologists, edited by E. A. Schäfer, F.R.S., Jodrell Professor of Physiology, University College, London; volume ii. *Diseases of the Heart and Aorta*, by G. A. Gibson, M.D., D.Sc., F.R.C.P.Edin., Assistant-Physician, Royal Infirmary, Lecturer on Medicine, School of Medicine, Edinburgh. *The Principles of Treatment*, by J. Mitchell Bruce, M.D., F.R.C.P., Physician to, and Lecturer on, the Practice of Medicine, Charing Cross Hospital; Physician, Hospital for Consumption, Brompton, London. *The Principles and Practice of Medicine*, designed for the use of practitioners and students of medicine, by William Osler, M.D., LL.D., F.R.S., F.R.C.P., Professor of Medicine in the Johns Hopkins University, Physician-in-Chief to the Johns Hopkins Hospital, Baltimore; third edition. *Lectures on Giddiness and on Hysteria in the Male*, by Sir Thomas Grainger Stewart, M.D., LL.D., Physician-in-Ordinary to Her Majesty the Queen for Scotland, Professor of the Practice of Physic and of Clinical Medicine in the University of Edinburgh. *Textbook of Medicine*, by British Teachers, edited by G. A. Gibson, M.D., D.Sc., F.R.C.P.Edin., Assistant-Physician Royal Infirmary, Lecturer on Medicine School of Medicine, Edinburgh. *The Radical Cure of Hernia, Hydrocele, and Varicocele*, by C. B. Lockwood, F.R.C.S., Assistant-Surgeon and Demonstrator of Practical Surgery, St. Bartholomew's Hospital, Surgeon Great Northern Central Hospital, London. *Manual of Midwifery*, by R. Milne Murray, M.B., F.R.C.P.Edin., Assistant-Physician Royal Maternity and Simpson Memorial Hospital, Lecturer on Midwifery and Diseases of Women School of Medicine, Edinburgh.

To the *Phonographic Record* for September Sir William Gowers, President of the Society of Medical Phonographers, contributes a paper on Syphilitic Disease of the Cerebral Arteries, in which he says that the characteristic symptom is generally a sudden hemiplegia, through occlusion of a narrowed vessel, by a clot beyond the narrowed part; but should the disease of the arterial wall have been lessened by treatment the symptoms are usually more chronic. Dr. Fletcher Beach concludes his interesting observations on Mentally Deficient Children, and Dr. Peyton T. B. Beale advocates the use of alcohol as a local dressing to fresh wounds.

A once familiar name has reappeared in *Virchow's Archiv*. An article was published in the July number on a special method of physiological injection of blood and lymphatic vessels, and the name of its author is Professor N. A. Trzaska-Chrzonszczewsky, of Kieff. We find from the perusal of the article, which is of high interest to the pathologist, that the author is the same Dr. N. Chrzonszczewsky, who wrote a valuable and original monograph on the anatomy and physiology of the liver, published in the same *Archiv* in 1866. The last generation of British medical students were very familiar with the learned professor's name placed in parentheses in certain textbooks, as one who, like Beale and Kiernan, held views on the origin of the bile ducts. They will be glad to find that the learned professor still lives and writes valuable papers. We may perhaps be permitted to add that the newly-affixed surname given above only adds to the awe which the name of the great Muscovite physiologist never failed to

inspire in the mind of the student of "Quain" and "Kirkes" twenty years since. How many hundreds of us know the name—by sight!

Our interesting and meritorious trilingual contemporary, *Janus*, which takes the history of medicine, the geographical distribution of disease, epidemiology, medical folk lore, and other by-ways of medicine for its province, proposes to transform itself into a monthly from a bimonthly periodical. The editor, Dr. H. F. A. Peypers, of Amsterdam, is, we think, entitled to the highest credit for his efforts to make his journal fulfil the promise of its name by looking backwards as well as forwards. He deserves the support of all interested in the past as well as the future of the healing art.

Mr. Oliphant Smeaton, of Edinburgh, has written *The Story of the Scots Resurrectionists*, a record of the body-snatching which at one time flourished in Scotland, where it was marked by specially gruesome incidents.

Messrs. Macmillan will shortly publish another novel by Dr. Weir Mitchell. It is entitled *The Adventures of François*, and the scene is laid in France during the great Revolution.

As the editor of the *Archiv für pathologische Anatomie*, Professor Virchow recently published an appeal to scientific medical authors for shorter papers and fewer drawings, especially coloured ones. "No doubt many among the younger authors," he says, "have no idea of the expense of many-coloured illustrations, a single one of which sometimes costs as much as a whole number in type, whilst a black and white diagram would answer their purpose just as well." Virchow concludes with the following remark: "The young generation should learn to exercise a certain economy both in writing and illustrating. The more pregnant the description, the greater the chance of being read and exercising an influence."

THE SANITARY CONGRESS.

The annual Congress of the Sanitary Institute was opened in the Birmingham and Midland Institute on September 27th.

President's Address.

In his presidential address Sir Joseph Fayrer surveyed the progress of preventive medicine or hygiene during recent times. In bringing about that progress the Sanitary Institute had taken an important part. He described the conditions under which the people lived fifty years ago, and contrasted them with the present conditions. Upwards of 200 millions had been spent on sanitary work with great benefit to the public health. Popular teaching and example and the general diffusion of education were still necessary in order to convince the proletariat of what so intimately concerned their vital interests. It would perhaps not be until the more complete organisation of the public health administration under a Minister of Public Health were effected that the full benefits of sanitary legislation would be realised, and the people attain to that standard of health and duration of life for which they had a right to hope. He showed the effect of hygienic measures upon certain well-known diseases, and with regard to vaccination he said the evidence seemed to show that there could be no doubt as to its value. As to the methods by which every individual was to be vaccinated or revaccinated, that was a subject for the State to determine. That the Acts in existence up to the present time were inadequate to this end was plainly shown by the fact that large and increasing numbers of the population were known to be unvaccinated, despite the compulsory character of the Acts. The most recent Vaccination Act, whatever might be its advantages, was certainly defective in this that it made no provision for revaccination, the necessity for which was universally admitted by the medical profession, whilst it was very doubtful whether the modification of the compulsory clauses would have the effect, as it was hoped, of extending vaccination. The scope and aim of sanitary science in its preventive aspects should not be limited to the consideration of zymotic and other acute diseases, but should extend to the results of abnormal social conditions arising out of the strain and struggle for existence, involving over-competition in various occupations by which life was supported or wealth and distinction acquired, and under the pressure of which so many lost their health or even succumbed. He quoted from the Registrar-General's returns to show the influence exerted on vital statistics by sanitary science. He dwelt at some length upon the beneficial results of sanitary work in India, and concluded by saying that evidently a great future was before preventive medicine, and they might confidently look to the eminent men of science who were now pursuing with such indefatigable zeal their researches into the mysteries of bacteriology for its fulfilment. But those who admired and appreciated their work the most and looked forward hopefully to its results were anxious that progress should not be retarded by hasty deduction and premature generalisation, which might only end in disappointment, however great might be the importance of the study of bacteriology and the various conclusions resulting from it.

The Medical Profession and the State.

On September 28th, at the Conference of Medical Officers of Health the President (Dr. J. C. McVail) dealt with The Medical Profession and the State: their Relationship, especially with regard to Vaccinal Legislation. He said they were probably all agreed that revaccination, as well as primary vaccination, required legal provision; that sanitary authorities, instead of Poor-law authorities, should have charge of vaccinal administration; that all required vaccination prosecutions should be conducted, not by local authorities, but by public prosecutors; that vaccination certificates of private medical men should be paid for by the State, as were similar certificates by public vaccinators; and that all vaccination certificates should place on record the number of marks. There was good reason to hope that next session they would see the introduction of a Revaccination Bill. Regarding the conscience clause, they might be satisfied, as a profession that their withers were unwrung. In this country vaccination, though called compulsory, had never been compulsory. The public must be educated, and they must pay for their education. In so far as they would accept no other schoolmaster than small-pox, their education would be all the more costly, but the lesson once learnt would be all the more thorough. He passed on to the consideration of the relation of the medical profession to the prevention of small-pox in presence of the new law of vaccination, and said that they must do their utmost to protect the public against itself, and not stand by and sulk because so-called compulsion had been temporarily abolished. They must educate the public who chose the lawmakers in the very truth about vaccination.

Miscellaneous Communications.

Dr. J. W. Washbourn discussed bacteriological and clinical diagnosis in relation to some of the notifiable infectious diseases.

Dr. Meredith Young (Crowe), in a paper upon Regulations for the Burial of Persons who have Died of Infectious Diseases, suggested that there should be some regulation of the funerals of persons dying of Asiatic cholera, small-pox, scarlet fever, diphtheria, membranous croup, typhoid fever, and probably also of measles.

Mr. E. Parkes, M.P., the Chairman of the Markets and Fairs Committee of the Birmingham Corporation, contributed a paper upon Municipal Authorities and Public Slaughterhouses.

Resolutions.

Dr. McVail proposed:

That the condition of the sanitary administration in the rural districts in Ireland is unsatisfactory owing to the want of independent supervision, and that the Government be urgently requested to remedy that defect by introducing a Bill early next session requiring the new county councils to appoint a medical officer of health for each county with the same tenure of office as the present county surveyors; and the Council of the Sanitary Institute be requested to approach the Government on the subject.

Dr. Browning (Weymouth) seconded the motion, which was agreed to.

On the motion of Alderman Harrison (Sunderland), seconded by Bailie Dick, it was resolved:

That the Council of the Institute be recommended to urge upon the Government the necessity for legislation to secure the registration of ice-cream vendors and the sanitary control of places where ice cream is made.

University of Cracow. During the academic year 1897-98 the degree of Doctor of Medicine was conferred by the University of Cracow on 71 candidates.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on **Wednesday the 12th day of October** next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

September, 1898.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting will be held at the East Sussex Hospital, Hastings, on October 6th (Thursday), at 3.30 P.M., Dr. Bagshawe, Mayor of Hastings, in the chair. Dinner at 5.30 P.M. at the Grand Hotel; charge 6s., exclusive of wine. Mr. Pearce Gould, of Middlesex Hospital, will read a paper on Trendelenburg's Operation for Varicose Veins. Dr. Bagshawe: A Case of Hydropericardium, with specimen. Mr. Nicholson: A Case of Supravaginal Hysterectomy, with specimen. Dr. Allen: A Case of Dislocation of the Ankle. Dr. Hewland: Cases of Hay Fever treated by Electrocautery.—J. W. BATTERHAM, M.B., Honorary Secretary, Grand Parade, St. Leonard's-on-Sea.

SOUTH-EASTERN BRANCH: NORTH KENT DISTRICT.—A meeting of this District will be held in the Hall of the Science and Art School, Bromley, on Thursday, October 6th, at 3.45 P.M., Dr. Scott in the chair. The annual dinner will be held at 6 P.M., charge, 6s. 6d., exclusive of wines. The following papers, etc., have been promised:—Dr Barry Blacker: Demonstration of the *X* Rays; Dr. Tennyson-Smith: Some Notes on Tubal Pregnancy. All members of the Branch are entitled to attend and to introduce professional friends.—A. TENNYSON-SMITH, Hon. Secretary, The Birches, Orpington, Kent.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT.—The next meeting will be held at the White Hart Hotel, Reigate, on Thursday, October 13th, at 4 P.M., Mr. W. A. Berridge, of Redhill, in the chair. Dinner at 6 P.M., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Agenda: 1. Minutes of Croydon meeting. 2. To decide when and where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. The following papers, etc., have been promised: The Chairman will at 4 o'clock show Cases of Tuberculosis of the Udder, of the Uterus, and of the Intestines of the Cow, with other specimens kindly lent by Dr. G. Sims Woodhead. Dr. W. J. Hadley will show Microscopic and Culture Specimens of Tubercle. A discussion on Tuberculosis will be opened by Sir Richard Douglas Powell, in which Dr. W. J. Hadley, Mr. J. Hutchinson, jun., Dr. Edward Seaton (Medical Officer of Health to the Surrey County Council), and Dr. John E. Ranking will join. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Hon. Secretary. N.B.—The Hon. Secretary would be much obliged if members would kindly inform him by postcard whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner.—HENRY J. PRANGLEY, Hon. Secretary, Tudor House, Anerley.

SOUTH MIDLAND BRANCH.—The autumnal meeting will be held at Wellingborough on Thursday, October 6th. Luncheon will be provided, and it is hoped that all gentlemen intending to be present at the meeting will also join the luncheon, so as to render it a success. Notice to the Secretary is requested not later than October 3rd. Gentlemen are invited to introduce new members, and to bring specimens, drawings, etc., likely to be of interest to the meeting. The following papers have been promised: 1. Dr. Maguire will furnish a clue to his case of Phenomenal Gestation. 2. Mr. W. Gifford Nash will read Three Series of Cases due to Sewer Gas Poisoning. 3. Dr. W. S. Colman (National Hospital for the Paralysed and Epileptic) will read a short paper on the Palliative Treatment of Locomotor Ataxy, with a Demonstration of Fraenkel's Re-education Exercises. 4. Dr. Crookshank will read a paper on Hysteria and Epilepsy. 5. Dr. Hollis will introduce a discussion on The Treatment of Dilated Stomach. 6. Dr. Newman will exhibit some *x*-ray pictures, with remarks.—C. J. EVANS, Northampton, Hon. Secretary.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish to bring forward any business, to read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretary not later than Friday, October 14th.—H. WILLOUGHBY GARDNER, M.D., Swan Hill, Shrewsbury, Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The autumn meeting will be held at Durham on Thursday, October 6th, at 4.30 P.M. Members desirous of reading papers, reporting cases, showing specimens, or making any communication to the meeting are requested to give notice to the Honorary Secretary, T. BEATTIE, M.D., 26, Ellison Place, Newcastle-upon-Tyne. Members of the profession who are not members of the Branch will be welcome to attend the meeting.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE usual monthly meeting of this Branch was held in the Royal Society's Room, Sydney, on July 29th, Dr. E. T. THRING, Vice-President, in the chair. There were thirty members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The election of the following new members was announced: Drs. Sinclair Gillies, Charles MacLaurin, R. A. Robertson.

The Reporting of Deaths to the Coroner by Medical Men.—The CHAIRMAN then called upon Dr. Gregory O'Neill to open a discussion on the duties of medical man in reporting deaths to the coroner.—Drs. SAWKINS, THRING, BOWKER, BINNEY, ARTHUR, F. H. QUAIFE, CLEDDEN, and RENNIE took part in the discussion.—Dr. RENNIE proposed:

That the Council be empowered to bring this matter prominently under the notice of the Premier, so that some definite legislation may be proceeded with, with a view of dealing with the question of the registration of deaths and the duties of medical men in reporting deaths to the coroner.

This was seconded by Dr. O'NEILL and carried.

SPECIAL CORRESPONDENCE.

PARIS.

Special Courses in the Paris Medical School.—The Medical Attendance at the Bureaux de Bienfaisance.—The Prevention of Bovine Tuberculosis.—The Notification of Childbirth.—Stray Dogs.—Medical Councillors.—General News.

THE feeling has long existed in Paris that, in addition to the official medical teaching, opportunities of further instruction, to be paid for by the students directly to the teacher, should be provided. This is called "*l'enseignement libre.*" At the medical school Drs. Hartmann and Terrier have organised paying courses of practical and operative surgery. This class supplies a want in the official teaching. At the Andral Hospital a staff of distinguished men will lecture on the diagnosis and treatment of diseases of the stomach. These lectures will begin at the end of October; they will be the first paying lectures given in a French hospital.

M. Barbillon has recently called attention to the perfunctory manner of treating the poor in the Bureaux de Bienfaisance. He declares that both the examination and the treatment are insufficient. It is necessary, in order to arrive at a satisfactory result, not only to treat the patients of the Bureaux de Bienfaisance medically, but also to inquire into the condition of their homes. M. Barbillon wishes to see the children in poor homes removed to places of safety, and he is of opinion that the Communal schools could organise a service for these children.

The General Council of the Côte-d'Or has passed a resolution calling upon public authorities promptly and seriously to study the advisability of using tuberculin, and urging that a law be passed rendering it compulsory for all animals intended for purposes of food, or to be used for the milk supply, to be treated previously with tuberculin, and that the observance of all sanitary measures in order to stamp out bovine tuberculosis should be enforced.

A French legal tribunal has lately given judgment that the medical man attending childbirth is not called upon to notify the child's birth when the father is present. A midwife was proceeded against for omitting to notify a birth. She was acquitted on the ground that the father was present.

During the period of intense heat which has just come to an end, the police regulations concerning dogs have been followed out to the letter. The number of dogs taken to the *fourrière*—the Government depôt for stray dogs—has been considerable. These instructions were given in accordance with the advice of the Conseil d'Hygiène. In 1897 more than 1,400 people were bitten in Paris by dogs, cats, and horses known or suspected to be rabid; 350 have been treated at Pasteur Institute 6 among the 350 died.

Many medical men have been elected General Councillors, but it is difficult to arrive at the exact number. A good medical authority states that of the 87 departments of France, 11 have medical men acting as members in their general councils.

The sum of £200,000 has been bequeathed to the Marseilles hospitals on the condition that the patients are tended by the sisters of a religious order. This renders the proposed laïcisation of these hospitals a difficult question.

BERLIN.

Congress of Scientists and Medical Men at Düsseldorf.—The Germans at Kiantchou.—Professor Behring and his Serum Patent.—Sanitation at German Health Resorts.—The Decrease of Tuberculosis.

TUBERCULOSIS was one of the chief subjects at this year's Congress of German Naturalists at Düsseldorf. A whole sitting was devoted to the theme, at which numerous papers were read on the disease itself and on methods of combating it by legislation, sanatoria, etc. General approval was given to the Committee's proposal of a Tuberculosis Congress to be held in Berlin next spring. Among the papers read at the general meetings, Professor Tillmans's (Leipzig) historical review of surgery during the last hundred years contained a hit at the Dum-dum bullet, which the speaker characterised as "cruel." Professor Kruse (Bonn), in an address on physical degeneration and the defensive power of nations, came to the comforting conclusion that civilised mankind is by no means on the way to physical degeneracy, but that the European races of to-day can hold their own as regards size and strength against those of former ages, as far back as measurements, etc., have come down to us. Mr. Hankin (Agra) aroused much interest by his address on the plague, which was given in excellent German. Experience, he said, had conclusively proved rats to be the carriers of the epidemic. Where rats abounded the disease was violent in character; wherever the rats had been successfully destroyed the disease had died out. The remedy to seek, he said, was a wholesale destructive agent for rats.

Contrary to general expectation, the German naval surgeons in Kiantchou have not met with any leprosy cases as yet. They have abundance of material for observation, too, for since consulting hours for Chinese patients have been established, natives come to be treated from far and near.

Professor Behring has published a letter in the *Deutsche medicinische Wochenschrift* explaining his position with regard to his American serum patent, and replying to the attacks made on him by many of his colleagues. His chief argument is that, having given up his medical practice, he is obliged to seek other ("*geschäftlich*" or "business") means of earning enough money to carry on his experimental researches. Finally, he complains that in 1892 (a time when, he says, the importance of his discovery was already fully recognised) an appeal which he made to the German Government and to the general public for funds with which to carry on his investigations was totally disregarded. Not a hand, he says, was opened to him, whilst shortly afterwards in France a million francs were collected and presented to the Pasteur Institute to help forward the practical utilisation of the serum, and the Institute was further endowed with an annual subsidy of 20,000 francs by the Government for the same purpose.

A fatal case of diphtheria which occurred a short time ago in one of the German seaside places has drawn general attention to the defective sanitary arrangements of many so-called "health resorts." Professor Lassar, who, in a letter to the *Hygienische Rundschau*, speaks plain words on the subject, warning the public of the dangers lurking in the badly-arranged closets and defective cesspools of many summer resorts, should be thanked for an excellent suggestion to the guidebooks, namely, that a special mark (say a nought o) be placed against hotels and lodging-houses with insanitary closets and bad drainage arrangements; and another mark (a note of exclamation, !) against those where all is safe in this respect. Such marks would prove a real boon to the public, and would soon force hotel and lodging-house proprietors in their own interest to make the necessary improvements.

Statistical researches on the subject of tuberculosis, which have been carried on for some time in the Imperial Board of Health, are now concluded. They prove that tuberculosis has decreased in almost all European States since 1880.

ROME.

Professor Koch in Rome.—Foundling Hospitals in Italy.—The University of Bologna.—Professor Lustig's Serum for Plague.—Death of Professor Toscani, of Rome.

PROFESSOR KOCH, with his assistants Professor Kossel and Dr. Pfeiffer, is at present in Rome studying the malarial question in all its aspects. The Italian Government has placed the State laboratories at his disposal, and the Minister of the Interior entrusted Professor Santiliquido, the head of the laboratories, to welcome him on behalf of the Government. Permission has also been granted him to study the cases of malaria admitted into the Military Hospital and into the Hospital of Santo Spirito. Professor Koch has told me that he is disappointed with the small number of cases of malarial fever which he has found in these institutions, particularly in the military hospital, although September as a rule is the month in the year when the greatest number of cases of malaria are received in the hospitals from the Roman Campagna. The Professor and his assistants work daily in the laboratory of the Santo Spirito Hospital, and they make occasional visits to the most malarial districts around the city. He also informed me that he was led to study malaria in Italy because the Italian school had written and investigated much about it, and the views of the leaders differ so much in many important points that he was anxious to come to a definite conclusion on the whole subject, if possible. In discussing Ross's work in India in connection with Manson's mosquito theory, Koch spoke in the highest terms of Ross's investigation. Professor Koch intends to leave Rome about the end of September when he and his assistants most probably will go to Greece to continue their malarial studies in that country. Before coming to Rome Koch made some studies in Milan and Pavia. In the latter city he was disappointed at finding that Professor Golgi, a former pupil of his and one who has done such excellent work in connection with malaria, was absent in England, where he was attending the Congress of Physiologists at Cambridge.

The Commission appointed by the Italian Government to inquire into the condition of the Foundling Hospitals in Italy is still continuing its investigations. The Minister of the Interior has lately sent a circular to the Prefects of the Kingdom in which further information has been requested in reference to the working of the *brefotrofi* existing in the different provinces. They are also requested to obtain information from the various local authorities as to how the funds for the maintenance of the foundlings are provided, and if maternity hospitals exist or special maternity wards are attached to the general hospitals in their communes. In those provinces where *brefotrofi* do not exist the Prefects are requested to instruct the local authorities immediately to send particulars as to the number of infants who were supported by them in the years 1895-97.

The ancient University of Bologna, which has fallen so much from its ancient splendour and renown that it is now one of the most backward universities in Italy, chiefly owing to want of funds, will in all probability soon be in a position to recover some at least of its former glory. Professor

Baccelli, the Minister of Public Instruction, has promised that during the coming session of the Italian Parliament he will introduce a Bill to provide the necessary means for its rejuvenescence.

It has been announced that the authorities of Bombay have provided the necessary means for the foundation of a laboratory in that city for the preparation of Professor Lustig's curative serum for plague. The director of the laboratory will be Doctor Galeotti, Professor of Pathology in Florence.

The death of Davide Toscani, Professor of Legal Medicine in the University of Rome, took place in that city on September 15th, after a long illness. He occupied the chair of Legal Medicine for forty years, and he was President of the Medico-Chirurgical Faculty for five years. Some twenty-five years ago he established the Municipal Office of Hygiene in Rome and was its director for twenty years. The great improvement which has taken place in the sanitary condition of Rome in that time is largely due to his labours.

ABERDEEN.

Resignation of Professor Ogston.—Typhoid Fever at Aberdeen and at Aboyne.—The Water-supply of Aberdeen.

Professor Ogston has resigned his post of surgeon at the Royal Infirmary. The fact causes the deepest regret among those connected with the institution, and will be greatly felt by the medical school of Aberdeen, and by the public in the North of Scotland. Though Dr. Ogston has been repeatedly urged by the directors of the infirmary to reconsider his decision, he feels that his strength will not permit him longer to undertake the increasing duties of the post.

Some anxiety has been felt in the town owing to the marked increase of cases of typhoid fever which has occurred lately. The matter has received the careful attention of the authorities, and the majority of cases are said to have been traced to the supply of milk from two dairies in the neighbourhood. Though investigations at the farms has apparently given no indication of the origin of the infection, and all the arrangements connected with the dairies were found in good order, the supply of milk from the dairies in question has been temporarily stopped. A slight outbreak of typhoid fever is also reported at Aboyne. The patients have been removed to the isolation hospital there. Steps have been taken to prevent any spread of infection from the discharge of the sewage of the hospital to the irrigation ground worked by the city in its neighbourhood.

The uneasiness felt at these outbreaks is aggravated by the sense of a not wholly satisfactory condition as regards the water-supply of the city. Various plans for its improvement are being discussed; one suggested by Mr. Jamieson, the city analyst, that water shall be carried from the Avon, a remarkably pure tributary of the Spey, has received a good deal of attention.

LIVERPOOL.

The Thompson-Yates Laboratories.—Inaugural Meeting of the Session of the Medical Institution.—The Ladies' Sanitary Association.

In view of the inauguration of the Thompson-Yates Laboratories, which is to take place on October 8th, the acting staff of the Medical School, no less than the contractors, are working at high pressure, and the elaborate fittings are rapidly approaching completion. Among many alterations in the aspect of the School resulting from the present extension of the buildings one change is most welcome from an æsthetic point of view, namely, the pulling down of the old wall which hid the College from the Royal Infirmary and the planting of an ornamental rockery facing the latter. The opening ceremony, prefaced as it will be by conferring of the degree of Doctor of Science on Lord Lister, will take the form of a great academic function, and all university graduates who are invited to attend are requested to wear full academical dress.

The inaugural meeting of the ensuing session of the Liverpool Institution is to take place on the evening of October 7th, when the President, Dr. W. Maefie Campbell, will deliver an address on Some Old Authors and their Books, with lantern illustrations. It is expected that several of the distinguished visitors who will be in Liverpool for the opening of the Thompson-Yates Laboratories next day will be present at the meeting. After the delivery of the address members will be entertained by the President at supper, which will be followed by a smoking concert.

The Ladies' Sanitary Association has opened its classes for the session, and has already a fair number of students enrolled.

CORRESPONDENCE.

ASEPTIC MIDWIFERY.

Sir,—In the practice of midwifery there are two facts that we have to face—namely, (1) that puerperal septicæmia is still very common, (2) that it can be prevented. In hospital practice, where it was once so common, it is now rarely seen, but the Registrar-General's reports tell a very different story about private practice. How is it that the places which were once hotbeds of infection are now free from it, while in private work the scourge is still at work? This is a very serious question which practical obstetricians must answer.

The scourge has been driven from our hospitals by the rigid practice of either antiseptic or aseptic midwifery. The latter, I believe, to be the better; at all events, we have found it so in the Glasgow Maternity Hospital. Under the antiseptic system cases of septicæmia cropped up every now and again, and cases of minor sepsis were quite common. For nearly two years now, under the aseptic system, we have had no cases of septicæmia and very few of minor sepsis.

If such results can be got in a hospital, where a very large percentage of abnormal cases are dealt with, there is no reason why, with the same precautions, as good results should not be got in private work. In my recent paper I gave a sketch of the system we have adopted in the hospital work, both indoor and outdoor, and which I also carry out in private work. I am glad to see that it has attracted sufficient attention to call forth letters of criticism.

I am much obliged to Dr. Liston for his appreciation of my paper, but he is mistaken when he supposes I object to any lubricant; I only object to a greasy one. I always use a solution of lysol. So-called antiseptic vaseline on the fingers, instead of preventing dirt being carried into the vagina, is just the thing to collect it, and ensure its entrance. What I maintain is that before making an examination the external parts should be cleansed, and then there would be no filth to carry in.

Both correspondents raise objections to this *ante-partum* cleansing of the external parts on the assumption that the patients will not allow it. On what do they base this assumption? They cannot speak from experience, while I can. I have never yet had a single patient, educated or uneducated, make the least objection. The students and nurses do it in our outdoor work, and I hear no complaints of patients objecting. With the patient in the left lateral position there is very little exposure—nothing more than is inevitable when the child is being expelled.

Dr. McCulloch seems inclined to make merry at my expense, and takes pride in leading a revolt of general practitioners against this "hyperæstheticism." He evidently considers that he conducts his midwifery on common sense lines, and the inference is that I do mine on nonsensical lines. If he will allow his mind to travel back to the end of the Seventies, when, if I mistake not, he was a student in Glasgow, perhaps he may be able to recall the condition of affairs in the maternity hospital where presumably the work was conducted on common sense lines with no "hyperæstheticism" about it. The inscription over the door of the hospital of that day might well have been that which Dante assigns to the portals of another place. Sepsis was so rampant that few of the women escaped, and normal recoveries were practically unknown. Stone and lime was blamed, and the hospital pulled down. Will he kindly compare the results of those days with our present results, which are got by the rigid application of aseptic midwifery?

If the system has done so much in our hospitals, I fail to see where I am wanting either in logic or common sense if I believe it should be applied to private work.

In passing I would ask Dr. McCulloch if he considers it fair criticism to omit eight consecutive sentences from the body of a quotation and label the result "nonsense"?

I beg to congratulate him on his wonderful success. As I know nothing about the nature of his cases or the conditions under which they were attended I cannot compare them with mine. I have stated the nature of my last 100, which have been conducted on aseptic principles, and as he knows Glasgow he can judge the conditions and draw his own conclusions.

I agree with Dr. Lovell Drage that "the sooner the medical profession is led to believe and to hold as an article of faith that if every labour is looked upon in the same light as a surgical operation is, the sooner puerperal mortality will be reduced." I maintain that a man should be as careful in his antiseptic or aseptic precautions in attending his midwifery cases as he would be in doing any surgical operation. These precautions have freed our hospitals from puerperal septicæmia and I am firmly convinced they will give the same results in private work. Until the General Medical Council make clinical midwifery a compulsory subject I am afraid there will be little chance of making men realise the importance of asepsis in their work.

Perhaps some of the general practitioners who have been unfortunate enough to have had septic cases will be good enough to give us their experiences and methods.—I am, etc.,

Glasgow, September 26th. ROBERT JARDINE.

SIR,—The correspondence concerning aseptic midwifery going on at present in the columns of the BRITISH MEDICAL JOURNAL is of great interest and importance.

Dr. McCulloch has raised a protest against carrying the practice of antiseptic midwifery to a ridiculous point in ordinary cases of labour, and I think he is to be congratulated on the safe conduct of 1,753 cases without a maternal death. I presume Dr. McCulloch in ordinary cases sees that his hands are scrupulously clean, as far as soap and water can accomplish it, and perhaps uses a little soap or other emollient for anointing his finger.

During four years' practice in the Highlands of Scotland, using such simple precautions, I only saw one case of septic mischief, which occurred in the practice of a midwife who had been reckless in the management of the afterbirth. In the Highlands, however, gonorrhœal infection is practically unknown. This, I believe, constitutes a radical difference between town and country practice. So that what often passes under the name of a normal labour, as far as the purity of the hands of the accoucheur and the mechanism of delivery are concerned, is indeed abnormal in the sense that the vaginal canal is in a pathological condition. Consequently, if tears, abrasions, lacerations, or ruptures occur during the labour, septic infection is the probable result, with a quick pulse and a dry tongue setting in, in a few days which, however, a few douches of creolin soon put matters right.

Further, in some of these cases the eyes of the child show signs of septic infection. And I believe it to be a mistake to assert that septic infection is always from without, if this implies that the nurse or the physician is to blame. I am afraid in not a few cases the fault redounds to the husband. Lastly, whenever I see the tongue of a patient after labour getting dry or the pulse unnaturally quick and hard, I introduce a speculum into the vagina, and so far have been able to detect some local explanation of these symptoms.

It would be interesting to learn from Dr. McCulloch if he finds any occasion in his practice for antiseptic douching *post partum*.—I am, etc.,

Glasgow, Sept. 24th. JOHN T. MACLACHLAN, M.D.

SIR,—I am afraid that Dr. Allen McCulloch's letter in the BRITISH MEDICAL JOURNAL of September 24th will call forth a good many more protests than Dr. Jardine's admirable paper has called forth. Dr. McCulloch must be congratulated on working among such a healthy community, and on obtaining such excellent results, if it is really his practice to discard all but "the usual precautions." Probably if his memory carries him back far enough he will recollect that the methods adopted in the Glasgow Maternity Hospital in his day were not quite so successful as his own to-day. At any rate, "the usual precautions" which he advocates as sufficient have been found wanting in most maternity hospitals, that of Glasgow being no exception. Indeed, it is a simple matter of fact that it has only been by the enlightened application of such principles as Dr. Jardine has expounded that hospital statistics have shown in recent years such a saving of maternal life. The need to-day is not for protests against "hyperæstheticism" in this branch of medicine; it is rather for the warning, which cannot be repeated too often, that in obstetric work the practitioner cannot be too careful—too aseptic.

In the light (or rather in the darkness) of Dr. McCulloch's letter, the still too large number of deaths in the puerperal state from sepsis (which is preventable, and is therefore culpable) ceases to be problematic. And besides the question of mortality, there is the larger one of morbidity. It is the experience of all who have had to do with hospital practice that nine-tenths of gynæcological complaints date from confinement—confinements carried out, probably, with "the usual precautions," and not with slovenliness or dirtiness. It is really wonderful to think how much clap-trap can be covered by such *quasi*-scientific phrases as "physiological act" or "natural process," "common sense methods" (phrases which are oftener than not a balm to the consciences of the smart men, and an excuse to the busy for saving trouble); but a natural process must be carried on in perfectly "natural" conditions, and purely "physiological acts" can only be treated with the levity of Dr. McCulloch when the patient is in ideal health. In the usual conditions of our modern life the distinction between the purely physiological and the pathological is apt to be overdrawn, and it is not infrequently the case that the adoption of "the usual precautions" merely may be sufficient to transform a purely physiological into a dangerous pathological condition. Dr. Jardine is by no means illogical in comparing an abdominal section to an ordinary parturition, for the healing of a section is a purely "physiological act," a "natural process" not less than a childbirth, and both require and ought to get the most careful aseptic treatment. Dr. McCulloch certainly deserves, and no doubt will get, the sympathy of his professional brethren, seeing that his efforts to practise the inspection branch of physical diagnosis have not met with more approval from his patients, but at the same time the principle of treating patients so as to gain their gratitude (even when that principle seems to be backed by such statistics as are offered by Dr. McCulloch) is not one to be adopted by a practitioner without due consideration. Your correspondent would probably advocate the passing of the catheter without inspection, with the aid of the *tactus eruditus* merely. It may be a sign of expertness to dispense with the means of diagnosis, but the uninitiated like to have at their command every means of informing themselves when the "natural process" of labour develops, as it so often nowadays develops, into the pathological process.

It is certainly a good augury for the future health of the childbearing population of Glasgow that the Maternity Hospital has on its staff a doctor of the calibre of Dr. Jardine who has the courage to advocate and to put into practice the sound teaching enunciated in his recent article in the BRITISH MEDICAL JOURNAL. It is only a matter for regret that Dr. Jardine and others like him do not receive more support in their efforts to counteract the plausible but pernicious empiricism which is advocated by some. Surely the sting in the tail of Dr. McCulloch's letter is singularly pointless. "Hyperæstheticism" can only be applied to the fastidious patients who prefer palpation to inspection, or to the practitioners who, like your correspondent, shrink from exposing their patients, and adopt only "the usual precautions," not to those whose whole effort is only to make the natural process as natural as possible; to make the chances of the "purely physiological" becoming the "pathological" as remote as scientific knowledge and skill can make it, and to save their child-bearing patients from future trouble.—I am, etc.,

Glasgow, September 26th. ALEX. MACLENNAN.

SIR,—When a student, about fifteen years ago, I attended some two dozen cases of midwifery in the poorest parish district of Belfast. In some instances the women lay on a heap of rags on the floor, and in most of them the woman herself,

her clothing, and her surroundings were unspeakably dirty. My presence was often resented at first, and it was only by the exercise of tact that I was permitted to make an examination. Had I proposed to wash their genitalia and buttocks I would have been hunted ignominiously from the houses, and my chances of seeing the requisite number of cases would have been very small. Not one of these cases was ever washed or douched before or after delivery, and some of them had not a change of clothes. Under such conditions one would naturally expect septicæmia to be common, but these poor women, in defiance of all the teaching of the schools, had the hardihood to get well, one or two of them being about within a week! This I can state because I undertook the self-imposed duty of visiting the cases for some days after confinement.

Perhaps this was an unfortunate experience for me before I began practice, but be this as it may, while always adopting every reasonable precaution, I have never yet scrubbed any woman's buttocks and genitalia before delivery, and I have fallen so far from aseptic grace that I do not even now intend to adopt that procedure. I venture to say that any young practitioner who allowed himself to be carried away by such antiseptic enthusiasm would have reason to deplore the fact that his midwifery practice was not increasing.

There is one aspect of puerperal fever I would like to elicit opinions about, and that is the social position of its victims. Although my own practice is principally among the working classes, my sphere of observation is wider, and I have come to the conclusion that among the well-to-do, who are surrounded by comfort and cleanliness, there is relatively more puerperal fever than among the poorer classes. In a population of nearly 4,000 under my immediate care, where the women are certainly not deficient in fecundity, there has not been a case for years. Can the scrubbing school show any better results?—I am, etc.,

September 26th. ANTI-HUMBUG.

SIR,—In the BRITISH MEDICAL JOURNAL of September 24th, under the above heading, I notice a letter from Dr. Allen McCulloch in which the following sentence occurs: 'I do not wish to be misunderstood. I am not advocating slovenliness nor dirtiness in the care of the lying-in, but I want to emphasise the fact that in a purely natural process such as childbirth the usual precautions are enough." May I ask Dr. McCulloch what he means by "the usual precautions," as he objects to Dr. Jardine's precautions, which, in the main, I have been taught to regard as the "usual" ones.—I am, etc.,

Dublin, Sept. 26th. HENRY JELLETT.

DEATHS IN CHILDBIRTH.

SIR,—Mrs. Garrett Anderson has honoured me by alluding, in the BRITISH MEDICAL JOURNAL of September 17th, to some remarks of mine before the Royal Statistical Society on June 21st, from which, however, she entirely dissents. I need do little more than refer to your comprehensive leading article upon the subject in the same issue, which sustains the position I took—namely, that despite the application of antiseptic principles to midwifery, the mortality of mothers in childbed in this country has not yet begun materially to decline.

Allow me to refer to two points only. Mrs. Garrett Anderson states that I described the mortality of unmarried women in childbirth in New South Wales, returned as 1 in 99.5 (it should be 100.2; all the figures computed from Mr. Coghlan's paper seem to be not quite accurately given), as "singularly small." This was, of course, by comparison with other facts, and not with an ideal mortality. My reasons for thinking the rate small were briefly these: The mortality of all mothers taken together was returned as 1 in 142.3. It is well known that the mortality at first labour is nearly double the average rate at subsequent labours. It is to be assumed that the large majority of the unmarried cases were first confinements. In addition to this, the nervous distress and shame in illegitimate births add seriously to the risk; and lastly, the conditions of colonial life, which is spread over a wide area, with skilled help therefore less available, would render the risk yet greater. On these grounds the death-rate of 1 in 100.2 mothers seemed singularly small. I believe the explanation to be that "the bulk of the confinements of unmarried women take place in public institutions" in New South Wales.

The second point I would allude to is in favour of Mrs. Garrett Anderson's contention, so far as it goes. It is that the slight improvement noticed by Dr. Boxall in the puerperal mortality of the metropolis has been continued since he wrote (1893). Thus for the ten years 1886 to 1895, the rate for the county of London was 4 deaths per 1,000 births, or 1 in 250, against 1 in 199.6 for England and Wales; and for the year 1896 (the last for which abstracts have been published) it was 3.92 per 1,000, or 1 in 255.1 in London, against 1 in 200.8 in England. I find, too, that during the thirty-eight earlier weeks of the present year down to September 17th, the number of deaths in London from puerperal causes has been only about two-thirds of the corrected average for the past ten years. The figures are 248, against an average of 368.5; and the improvement is most marked in the deaths from puerperal fever itself. There is one more circumstance which tells in the same direction, and this is that much pains have been taken during recent years, by a system of inquiry respecting obscure certificates, to render the Registrar-General's returns of deaths more complete and accurate. This has resulted in adding a good many unclassified or ill-classified deaths to the puerperal list. Hence the nearly stationary returns for the whole country may be equivalent to a decline. For the last four years published the rate has been: 1893, 6.51 deaths per 1,000 births; 1894, 5.36; 1895, 4.57; and 1896, 4.98 deaths.

From all these signs we may, I think, hopefully augur a future of diminished risk for the mother, although the proportion of 1 death in 400 or 500 belongs, I fear, rather to that future than to the present.—I am, etc.,

Finsbury Square, E.C., Sept. 27th. R. HINGSTON FOX.

SIR,—The experience of the Maternity Hospital here is interesting. In a recent examination of the books (which were freely placed at my service), I began at January 1st, 1845, and I concluded at December 31st, 1896. Several years are blank, and a few are incomplete. The figures appended only apply to complete years and intern cases.

Assuming antiseptics to have been introduced in, say, 1880, the following are the figures:—

—	Years.	Cases.	Deaths.	Death-rate.
Without antiseptics	23	4,961	78	1.572 per cent.
With antiseptics	17	4,799	69	1.437 "
Total	40	9,760	147	1.504 per cent.

—I am etc.,

Edinburgh, Sept. 19th. THOMAS PROUDFOOT, M.B.

THE REMOTE RESULTS OF PERICARDITIS.

SIR,—I should not have thought of trespassing upon your space again had it not been for the receipt of a letter from my dear friend Sir John Banks, which, although evidently not intended for publication, seems to me to hold out a reasonable hope of further contributions from private practice or personal experience, to the very interesting question raised as to the remote results of pericarditis, a question briefly discussed at Edinburgh, and reported in the BRITISH MEDICAL JOURNAL of September 17th. Sir John Banks writes as follows: "One remarkable case I recall—a boy of 13 or 14: Rheumatic fever, pericarditis, a good recovery. He went into the army, and at intervals when in Dublin on leave I saw him, as his family were intimate friends of ours. He won the Victoria Cross by a wonderful feat; I have no *Army List*, so cannot tell you the date, but he died about two years since, a general officer. He died in England, and as far as I know his death was caused by some acute illness."

Possibly many parallel cases to this one may be known to your readers, the value of them as contributions to the general subject being in proportion to the cogency and exactness of the evidence they afford of long survival after an attack of acute and general pericarditis such as to afford strong presumption of the formation of adhesions. As stated in my previous communication, it cannot be held to be absolutely determined on evidence that adhesions are the necessary

result even of acute pericarditis; but every fact well recorded of long survival after a well-marked attack of this kind without symptoms of cardiac disease adds to the weight of testimony in the negative sense, and even one or two instances of such a history, with a *post-mortem* examination showing the absence of adhesions, would of course be invaluable.

Meanwhile, and leaving this pathological question as it stands, the really incalculable elements in the prognosis are strikingly illustrated by the following case of forty years ago, which was carefully but in a somewhat informal fashion placed on record at the time, being that of a very intimate friend and hospital assistant of mine. In writing his obituary notice for the *Edinburgh Medical Journal*, 1859-60, vol. v, p. 95, I stated, with many pathetic details which may be omitted here, the following well ascertained facts. J. M. H. C. was an army medical officer of the time of the Crimean war, who died very suddenly in his 27th year, when in barracks at Chichester, after a period of active service extending from the battle of the Alma to the storming of the Redan fort. In both of these great actions, as well as in the bloody but glorious battle of Inkerman, he was in the thick of the fight, and was exposed to the double risk of wounds or death in the field, and great physical and mental exhaustion from the exertions required of him as a surgeon in the midst of hygienic surroundings which in the very earliest encounters caused the death from cholera of two of his surgical colleagues, Mackenzie and Thomson. He afterwards suffered from scurvy, and later from rheumatic fever, which last caused him to be sent to the temporary hospital at Scutari; later he was supposed to have recovered and joined his regiment again to work in the trenches before the Redan, and witness the *dénouement* of the great drama—the fall of Sebastopol. As he never complained, it is not quite clear at what precise time he began to have cardiac symptoms, but it was known to his mother that he had been "asthmatic" from infancy, and that he had some vague anticipations of cardiac troubles, and even of early or sudden death, before the rheumatic attack. The fatal illness occurred in the midst of apparent good health and complete repose, and lasted barely an hour. After death the heart was found small in size, perhaps fatty, and hampered by chronic pericardial adhesions, which may have led to *ante-mortem* coagulation, as "large masses of yellow fibrous coagula" were found in the interior. No positive sign of disease of the heart existed prior to his Crimean experiences, nor did any of his comrades suspect any disabling infirmity up to the moment of the fatal seizure.

It is clear, therefore, that Corvisart's too gloomy motto (as Dr. Walshe, on the whole, rightly considers it) prefixed to his work on *Diseases of the Heart*—"*Hæret lateri lethalis arundo*"—cannot as yet be got over, from the insurance point of view, without a much larger collection of data such as can be procured only from the lifelong experience of physicians who have had the good fortune to be long in the confidence of their patients, and are thus able to adduce instances of survival parallel to that of Sir John Banks's patient, and the one of whom I gave a slight sketch in the paper already referred to.

The prognosis of pericarditis ending in adhesion has been very carefully, and I will add very judicially, dealt with in a little volume by Dr. John F. H. Broadbent,[1] but I think the author would be the first to affirm that much more of the kind of evidence pointed to in this letter is still required before even an approximate estimate, for insurance purposes, of the effects of an attack of pericarditis on the length and comfort of life can be formulated so as to apply to individual risks. Such at least is my own impression ever since I wrote On the Favourable Terminations of Pericarditis in 1851,[2] and as my pathological experience at that date, though on the whole confirmed, has not been very greatly aided by the results of consulting practice, I am led to believe (as stated at Brighton both by myself and Sir Andrew Clark) that in the further prosecution of this and similar inquiries we must look to the data chiefly of family and general practice.—I am, etc.,

Glasgow, Sept. 21st. W. T. GAIRDNER.

[1] *Adhærent Pericardium*, London, 1895, pp. 21, 59.
[2] *Edinburgh Medical Journal*.

WASHING APPARATUS FOR HANDS.

SIR,—When so many hospitals are introducing, or have introduced, the latest forms of washing basins with pedal taps and other improvements, it is rather interesting to note Mr. C. B. Lockwood's views, expressed in a small note at the end of his paper in the BRITISH MEDICAL JOURNAL of September 17th. He says: "After having made inquiries I have come to the conclusion that a simple earthenware hand basin is the best and cheapest. This can be sterilised when necessary." I have, if I may say so, come to the same conclusion myself. No fixed basins with plugs or other points capable of being fouled can be safe unless the whole can be sterilised. The pedal taps are very useful, and worth retaining. My suggestion and reason for troubling you is that the mechanism should be made as follows:

1. An earthenware hand-basin perfectly simple and entire (metal can be used).

2. A metal framework into which the basin fits easily; this frame to include a ring on pivots, so that the basin may tip backward; the tip to be obtained by a pedal.

3. A catchment basin, or, better, an inclined slab down which the water falls easily and freely without splashing back.

4. Taps with pedals to work them.

The advantages are that the basin can be sterilised, and that it may be replaced or destroyed when chips or cracks appear, or for other reasons. Also the tip-back facilitates rapidity of renewal of water.

The slab inclined away from the user of the basin, and having an open gutter at its lower end, presents perhaps the simplest way of preventing splashing of the users, and is probably the cleanest.—I am, etc.,

Birmingham, Sept. 21st. FRED. EDGE.

THE ROYAL ARMY MEDICAL CORPS.

SIR,—I know nothing much of the Army Medical Service, but I suppose its needs are much the same as those of the sister service, and I have learnt something of what we want in the Naval Medical Department. Mr. Owen, in the first place, wants to give candidates marks for physical proficiency, but there is always a physical examination, and I fancy that if a great many candidates appear for examination and the examiners see a lot of fine young fellows coming up, they will unconsciously have their idea of the minimum physique required rather raised, and conversely. Then in his ideal examination he would have as the subjects medicine, surgery, surgical anatomy, and operative surgery (does he mean 75 per cent. for surgery and only 25 per cent. for medicine?) Diseases of women and children are to be left out; and throughout he talks only of the house-surgeon, and nearly all his contentions are for surgery after the physical competition shall be past. I think this illustrates a very common error. We are called surgeons, and the world supposes our work is nearly all surgical. But it is not. I had the curiosity to-day to add up the number of days' illness to be credited to different sorts of disease in the navy in 1896, and I found that so far as one could judge there were 450,510 days of medical, 322,806 of venereal, and 265,435 of surgical diseases (a similar investigation cannot easily be made for the army, as they publish no table of illnesses in the total force as do we). Some of the venereal days should be credited to medicine and some to surgery, so I do not think we shall be very far wrong if we give half the days of illness throughout the service to medicine, half to surgery. Then the major part of our work is really preventive, and that tells chiefly by reducing the medical illnesses, which clearly reduces the proportionate importance of surgery. I cannot but think that Mr. Owen's experience, which impresses on him so much the amount of surgical disease in the world, prevents him from appreciating the all-roundness required in a practitioner who is to work in the services. I think that the examination as it is, especially now that the maximum marks for chemistry have been reduced, is a very useful test, and that with good examiners (where I find myself completely in accord with Dr. T. Dixon Savill) you can trust to it to give the service the sort of doctors it needs. I would give more marks for physical geography and geology, and fewer for zoology and botany, as I think an officer who knows something of geology, etc., will be more helpful to

a general choosing a site for a camp than will another without this knowledge.

Broadly speaking, an officer will find after he has joined that, in the general service apart from special billets, he is more advantaged personally by coming in the moment he is qualified than by spending an extra year on his education by taking a house-surgeoncy or house-physiciancy. He gains something considerable in knowledge, but loses very substantially in pay. Coming in a year later a man has lost a year's pay, and not a year's pay as surgeon, but next year's pay in whatever rank he finds himself: for example, when he has reached the end of his twentieth year (which might have been his twenty-first had he not come in so late) he is to leeward of his twenty-first year's pay, which under other circumstances, this being a seniority corps, would now have been in his pocket. This seems unfair, and is so until the time comes after about thirty years for promotion by selection, when no doubt knowledge and ability will tell. But so also will youth and health, that is, still remaining energy, and in this too the man who has come in later is at a disadvantage.

To me this seems unfair: To meet it I would propose to take in a few men every year with a D.P.H., F.R.C.S., M.D., or some such evidence of continued work and probably greater ability, and promise than that they should only serve as surgeons for nine years instead of twelve; put them, in fact, in a similar position as regards the ordinary surgeons that a Lieutenant T. or Lieutenant G. is in as regards the ordinary lieutenants in the service. These torpedo and gunnery lieutenants are nearly certain to be promoted a couple of years sooner than their fellows; why should not something of the same sort be done for doctors so as to leaven our ranks with a certain number of men of better education who have not improved themselves wholly at their own expense but are being paid by the service for the better work they are doing and the consequent diminution of sick lists and suffering?

We have in the natural science and foreign language examination a little inducement to men with some general, apart from purely medical, education to come into the service. Do not take that inducement away. If you do, you will lower the credit of surgeons in the service. We are in the navy almost the only people who have had an ordinary shore-going education. Paymasters, engineers, and executive officers all come in as boys. Chaplains and naval instructors, who are few, and ourselves are the only people who come in as men; let us come in as well-educated men. General education does little harm.—I am, etc.,

A Doctor in the Navy.

September 7th.

"THE SINS OF TEETOTALLERS."

Sir,—Some weeks ago there appeared in the columns of the widely read British Medical Journal the report of an address on The Sins of Teetotallers. It was not the sins of some teetotallers; there was no limitation or restriction; all were included in the sweep of the orator's condemnation, because, according to his statement, some of the local teetotallers had not aided in getting a supply of pure water in that locality. Perhaps if he had the opportunity of hearing their statement of the case, a different construction could be put upon their action. I have in mind a case where the action of certain ratepayers in opposing measures with which intrigue was associated, and which, when carried, led to enormous and unnecessary cost, might have been construed or misconstrued into another "sin of the teetotallers." But, apart from that, is it fair to hold all responsible for the mistakes or misdeeds of some? I enclose a cutting from the *Northern Whig* of Monday, September 19th, giving a report of a speech made by Mrs. Byers, principal of the Victoria College, Belfast, at the opening of a fancy fair, the object of which is to raise funds for a temperance institute for the locality. In it she recounts some of the efforts of temperance workers in the North of Ireland. These include (*a*) a prison gate mission for women, with a residence house; (*b*) founding of homes for destitute little girls, many of them the children of drunkards, and of others beaten in life, at a cost of £7,300; (*c*) other practical works by individual members, too numerous to mention, such as Miss Fleming's dining hall for men, near Harland and Wolfe's shipyards; (*d*) many separate and conjoint efforts to teach a knowledge of cookery and of household sanitation; (*e*) visiting of the sick by a sick nurse is the line taken up in one place: (*f*) in Larne a place has been started at a cost of £750 to supply refreshments without strong drink, and in the evening to serve as a safe and pleasant social meeting place for working men. Other similar places have been started in Ballymoney and Coleraine.

Must these efforts, too, be included among "the sins of teetotallers?"—I am, etc.,

Ballymena, co. Antrim, Sept. 22nd. A. Mullan, M.D.

THE TREATMENT OF CHRONIC DYSENTERY.

Sir,—In the British Medical Journal issued on September 24th, the subject of chronic dysentery is dealt with by Dr. Hillier. May I supplement his observations on the treatment of that obstinate affection, one that is frequently a severe test on the patience of doctor as well as patient?

Dr. Hillier has omitted all reference to a drug the good virtues of which in chronic dysentery are fairly well known in India. I allude to cannabis indica. In my experience it is a most valuable remedy in the disease under consideration; judiciously given, in conjunction with warmth, rest, and a purely milk diet, it rarely fails to bring about rapidly and permanently a healthy condition of the intestine.

I have always used the tincture, and have given it thrice daily in 20-minim doses combined with tincture of capsicum and mucilage.—I am, etc.,

R. H. Quill, M.D.,
Lieutenant-Colonel R.A.M.C.

Chatham, Sept. 26th.

THE ETIOLOGY OF "RETURN" CASES OF SCARLET FEVER.

Sir,—I quite agree with your correspondents, Dr. Clement Dukes and Mr. R. A. Shannon, that a certain number of so-called "return" cases may have no real connection with the return home of a previous case, but are explicable as mere coincidences. I could instance several cases parallel to the one related by Dr. Dukes. I maintain, however, that they only constitute a very small proportion indeed of the total and that it is a pity to be led away from the search after real causes by the consideration that an individual case may, perhaps, after all be a coincidence.

In Table I in my paper, in which I have tabulated my return cases according to the "interval," I have shown that return cases occur in a steadily diminishing series until after six weeks from the return home of the supposed "infecting" case they have practically disappeared. Obviously, "coincidence" would not be thus affected by time, but would continue to act indefinitely.

As regards Dr. Dukes's plan of keeping his convalescents apart from acute cases, we have for some years adopted the principle in some of our blocks, whilst in others, where for administrative reasons it is not convenient, no separation is effected. I have not been able to satisfy myself that it has much, if any, influence in preventing the occurrence of return cases, but I believe in it for other reasons. I doubt whether there is much risk of a healthy throat or nasal cavity carrying out infection to others, even though the patient had been living in an infected atmosphere. Were it so, nurses and wardsmaids would be almost as much a source of danger in this respect as convalescent patients, whereas practice shows that with proper precautions as to change of dress and disinfection of the hair, etc., they may mix with the public with impunity.—I am, etc.,

C. Killick Millard, M.D., D.Sc.

City Hospital, Birmingham, Sept. 20th.

SELF-INDUCED INSTRUMENTAL ABORTION.

Sir,—I had a very similar experience to that of Dr. E. T. Davies some two years ago, but did not then record the facts of the case, as I believed that such horrid and dangerous practices on the part of pregnant women were sufficiently well known to the profession generally. Interest in this subject has recently been aroused, and it may be to the advantage of the profession to have records of well-authenticated cases of women resorting to such measures for one reason or another.

I was telephoned for one evening, some two years ago,

between 8 and 9 o'clock, to see a woman. When I arrived at the address given me I found a young married woman in bed, complaining of abdominal pain. She had a temperature of about 100° F., a quick pulse, and slightly furred tongue. On investigating the cause of her condition I learnt that she had been some weeks pregnant, and had been taking the usual various drugs in order to get rid of the fœtus. She determined, the drugs having failed to accomplish her desire, to resort to instrumental interference. The instrument used was an ordinary long wooden knitting needle, which she said she had pushed up into the uterus, without having even first washed it. The process caused her some pain. I examined her to see if I could verify her story, but could find no perforation or laceration of the uterus. She maintained that everything had come away. This had occurred four days before I was sent for. The discharge, when I saw her, was not markedly offensive and was not very free. She got perfectly well.

She had acquired venereal trouble from her husband during her second pregnancy, which had been imparted to the child. She had, consequently, made up her mind never to have any more children. I spoke very sharply to her about the criminality and danger of her procedure, but her only reply was that she would rather die than bring another child into the world.—I am, etc.,

Chester, Sept. 20th. JAMES HUSKIE.

OBITUARY.

JEAN JOSEPH CROCQ, M.D.,

Professor of Medicine in the University of Brussels.

PROFESSOR CROCQ, whose death was announced in the BRITISH MEDICAL JOURNAL for September 24th, was born at Brussels in 1824, and after studying medicine in the Universities of Ghent and Brussels he graduated in the latter seat of learning in 1848, with such distinction that the Belgian Government awarded him a special grant, which enabled him to visit the medical schools of Paris, Berlin, and Vienna. Not long after graduation he became an *agrégé* Professor in the University of Brussels, and in the following year he founded, in conjunction with three or four colleagues, the *Presse Médicale Belge*, to which he continued to contribute to the end of his life.

In 1849 he did such good work among the poor during an outbreak of cholera that he received a silver medal from the Government; in the same year the Belgian Royal Academy of Medicine awarded him a gold medal of the value of 1,000 francs for an essay on the Treatment of Fractures of the Limbs. In 1850 he was awarded another prize by the Academy for a paper on the Application of Auscultation and Percussion to Chest Diseases in the Horse.

In 1855 he was appointed Professor in the University of Brussels. In 1857 he took a leading part in founding the Belgian Pathological Society, of which he was afterwards President. In 1859 he was appointed Professor of Clinical Medicine in the St. Pierre Hospital. In 1862 he was elected a member of the Royal Academy of Medicine, and in 1865 he became President of the Belgian Medical Federation, a position which he held for ten years, during which he took an active part in the preparation of a new law regulating the practice of medicine.

In 1870 he was chosen Vice-President of the Academy of Medicine, becoming President in 1883. He was elected a member of the Belgian Senate in 1877 and was prominent in the discussion of questions relating to education, army organisation, the employment of women and children in workshops and factories, the suppression of duelling, and many others. Professor Crocq was a Foreign Corresponding Member of the Paris Académie de Médecine, and he was a member of many other learned bodies, Belgian and foreign. He took an active part in all the international congresses of medicine and hygiene from the first congress of hygiene held in Brussels in 1852. He was for many years a member of the Belgian Superior Council of Public Health.

Professor Crocq was deservedly held in high honour in his own country. In 1862 he was created a Knight of the Order of Leopold, being promoted to be Officer in 1875 and Commander in 1888. He was the first President of the Medico-Chirurgical Society of Brabant. He had a great reputation as a teacher and had the gift of inspiring his pupils with scientific enthusiasm. He contributed very largely to medical literature. He was a man of encyclopædic knowledge and his writings deal not only with medicine, but with surgical, sanitary, political, and other subjects. As showing the variety of his attainments it may be mentioned that at various periods in his career he lectured on surgery, on general and microscopic anatomy, on clinical medicine, on mineralogy and on geology.

Professor Crocq was the foremost man in the medical profession of Belgium. He was a man of strong character, of strict integrity, and of genuine kindness of heart, though his manner was somewhat cold to strangers.

GEORGE WILLIS, M.D.,

Monmouth.

DR. GEORGE WILLIS, J.P., of Oak House, Monmouth, who died on September 14th, at the age of 69, was born at Coote Hill, co. Cavan, Ireland, in 1828. He was the lineal representative of Captain William Willis, first High Sheriff of the County of Fermanagh (in 1591). After serving his apprenticeship to a practitioner at Enniskillen, he studied medicine in the University of Glasgow. After holding the office of House-Surgeon in the Royal Infirmary, he volunteered for the post of House-Physician to the Cholera Hospital in the great epidemic of 1848. His services in that capacity were acknowledged by a handsome testimonial from the Committee. He took the degree of Doctor of Medicine in the University of Glasgow in 1850, becoming a Licentiate of the Edinburgh College of Surgeons and of the London Society of Apothecaries in the same year. After being assistant to Dr. Hooper May, of Tottenham, for a short time, he settled in Monmouth.

He was one of the founders and nearly to the end of his life one of the Physicians of the Monmouth Hospital and Dispensary. He was Surgeon to William Jones's Charity and Medical Officer of Health for the Whitchurch Sanitary District. He took a prominent part in the public life of the town in which he practised his profession for nearly half a century. He was three times Mayor, and resigned his seat as an Alderman at the Council Board only about four years ago. He was a J.P. both for the borough and for the county.

Dr. Willis was a fine type of the old-fashioned general practitioner, and had a large practice extending beyond the limits of his own county. He had a remarkable memory, and his social gifts and kindness of heart made him deservedly popular. He was an active politician on the Conservative side. He married in 1850 the daughter of Mr. Thomas Owen, of Tottenham. By her he had five children, only two of whom survive him. Mrs. Willis died in 1892.

Dr. Willis was buried in Dixton Churchyard, near Monmouth.

WE regret to announce the death of Dr. GEORGE HART, of Bolton, which occurred on September 27th, at the age of 38 years, from the effects, it is believed, of the bite of an insect. He had been in his usual health up to about September 17th, when he complained of a sharp pain near his right eye, the eyelid of which soon afterwards began to swell, and a small pustule to form. Upon his return from a night visit on the morning of September 20th he had a rigor, which was followed by the development of pneumonia and extensive cellulitis in the neighbourhood of the pustule. Septicæmia was diagnosed by his professional colleagues and by Dr. Thomas Jones, Professor of Surgery, Victoria University, Manchester. Anti-streptococcic serum was administered, and the part freely incised, but despite the most constant medical attention and careful nursing, the patient succumbed to the disease, the symptoms of which somewhat resembled those of anthrax in their character. Dr. Hart leaves a widow, but no family, and his death is deplored by the large circle of friends and patients, to whom his genial, open nature and his sympathetic personality had endeared him during his life-long residence and his thirteen years' practice in Bolton. He studied medicine at Owens College, Manchester, and qualified as M.R.C.S. in 1885.

We regret to announce the death of John Thomas Nicholson Lipscomb, J.P., of St. Albans, on September 21st, in his 80th year. He received his medical education at Guy's Hospital, and was admitted a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1841. He took the M.D. degree at St. Andrews in 1844, and was elected a Fellow of the Royal College of Surgeons in 1856. Dr. Lipscomb was Consulting Physician to St. Albans Hospital, Physician to the Marlborough Almshouses, Surgeon to Her Majesty's Prison at St. Albans, Medical Visitor of the Lunatic Asylum at Harpenden, and a Certifying Factory Surgeon. He was a Fellow of the Medical Society of London and a Member of the British Medical and St. Andrews Graduates Associations.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Ubald Laurier, of Quebec, brother of Sir Wilfrid Laurier, Prime Minister of Canada; and Dr. Max Wiener, Extraordinary Professor of Midwifery in the University of Breslau, aged 48.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Benjamin G. Heather, Surgeon, to the *Pembroke*, additional, for disposal, September 20th; Andrew Cluckie, to be Surgeon and Agent at Stranraer and Cairn Ryan, September 26th; Welby J. Anson, M.B., to be Surgeon and Agent at Whitehaven, September 26th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel W. H. Macnamara, M.D., is promoted to be Colonel, *vice* C. F. Pollock, retired, September 7th. Colonel Macnamara entered the service as Assistant-Surgeon, October 1st, 1867: became Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1878: was granted the rank of Lieutenant-Colonel, October 1st, 1887; and made Brigade-Surgeon-Lieutenant-Colonel, July 6th, 1893. He served in the Egyptian war in 1882 attached to the 1st Battalion of the Royal Irish Fusiliers, and was present at the battle of Tel-el-Kebir, receiving a medal with clasp and the Khedive's bronze star. He was also with the Nile Expedition in 1898 as Principal Medical Officer to the British Brigade, and was mentioned in despatches for his services.

Colonel R. de la C. Corbett, M.D., D.S.O., who is serving in the Bengal Command, is appointed Principal Medical Officer, Oude and Rohilkund Districts.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel C. W. Carr-Calthrop, M.D., Bengal Establishment, is appointed to officiate as Principal Medical Officer, Assam District.

The retirement from the service of Surgeon-Colonel Sir George Thomson, K.C.B., Bengal Establishment, dated July 6th, has received the approval of the Queen.

Lieutenant-Colonel Joseph O'Brien, M.D., Bengal Establishment, has retired from the service, August 10th. He joined the department as Assistant-Surgeon, April 1st, 1870, and became Brigade-Surgeon-Lieutenant-Colonel, May 9th, 1896. He was with the expedition against the Naga Hill tribes in 1879-80, and was present at the assault of Konoma, receiving the Frontier medal with clasp.

Surgeon-Lieutenant-Colonel Kali Pada Gupta, M.B., Bengal Establishment, has also retired from the service, from June 20th. His first appointment dated from April 1st, 1879; that of Surgeon-Lieutenant-Colonel, April 1st, 1889.

The retirement from the service, dated September 8th, is also approved of Major Alexander F. Ferguson, M.D., who was appointed Assistant-Surgeon, October 2nd, 1880, and Surgeon-Major twelve years after. He served with the Burmese expeditiou in 1885-87 (medal with clasp).

THE VOLUNTEERS.

Surgeon-Lieutenant R. L. Clark, M.B. 1st Cumberland Artillery, is promoted to be Surgeon-Captain, September 21st.

Mr. John Alfred Fox is reappointed Surgeon-Lieutenant in the 1st Cornwall Artillery (Duke of Cornwall's) (Western Division Royal Artillery), September 28th.

Surgeon-Lieutenants J. A. Clark, M.B., A. Macdonald, M.B., C. B. Ker, M.B., and J. Pirie, M.B., the Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment), are promoted to be Surgeon-Captains, September 28th.

Surgeon-Lieutenants C. J. Jacomb-Hood, 1st Volunteer Battalion the Royal Sussex Regiment, and A. A. Abraham, 5th Volunteer Battalion the Durham Light Infantry, are also promoted to be Surgeon-Captains, September 28th.

VOLUNTEER MEDICAL STAFF CORPS.

The Rev. C. G. Duffield, M.A., is appointed Acting Chaplain to the Maidstone Company, September 21st.

THE RELIEF SEASON: ROYAL ARMY MEDICAL CORPS.

HOMEWARD.

Nubia, October 7th.—	Majors Lucas and Stables, Captains Mason and Potter.
October 14th.—	Majors Russell and Baird, Captains Poole and Faichnie.
Delwara, November 11th.—	Majors Gerrard and Birch, Captains Knaggs and Begbie.
Dunera, November 26th.—	Majors Kirkpatrick and James, Captains Tacker and Buist.
Nubia December 8th.—	Majors Winter, Anderson, and Hathaway, and Captain Alexander.
Simla, January 3rd, 1899.—	Majors Nichol, Johnston, and Daly; Captain Crawford.
Delwara, January 13th.—	Majors Nicholson, Burtchap, and Fryer; Captain Symons.
Dunera, January 26th.—	Lieutenant-Colonel Thomsett, Majors Miles and E. Davies, Captains Holt and Lawson.
Nubia, February 10th.—	Lieutenant-Colonel Bennett, Majors Cree and Skinner, Captains Buchanan and Henessey.
Simla, March 3rd.—	Majors Poole, Keogh, and Melville; Captains Pilcher and Tyacke.
Delwara, March 18th.—	Lieutenant-Colonel May, Majors Wills and Woodhouse, Captains Faichnie and Kellie.
Dunera, March 25th.—	Lieutenant-Colonel Anderson, Majors Fitzgerald and A. M. Davies, Captains Witness and Martin.

THE RANGE OF THE NEW TITLES.

We have received a number of letters on the subject of the permissive use of the new military titles. Our answers to such inquiries must, of course, be taken as purely speculative, having no official inspiration or authority. We are asked, Are medical officers of the Indian Medical Service, liable to recall, entitled to use them? We should say decidedly so; although we are not aware of any official authority so to use them, as in the case of army medical officers liable to recall. We think it would clear up doubt if the India Office would issue such authority.

The permissive use of the new titles by medical officers just retired, and yet not liable to recall, opens up a distinct question. It seems hard that such officers should be debarred from using them; yet we presume a line must be drawn. For instance the old surgeon-majors who received the title after twenty years' service only were considerably handicapped when the designation was conferred on those promoted after twelve years' service, because the old hands ranked as lieutenant-colonels and the new ones as majors. In the same manner, when the title surgeon-general was revived, the old inspectors of hospitals could not claim it. There are even anomalies connected with the new titles; there is, for instance, nothing in the rank of lieutenant-colonel to distinguish those in the superior former rank and still recognised rank of brigade-surgeon from an unpromoted and unselected lieutenant-colonel who has just completed twenty years' full pay service. These anomalies will probably in time call forth some official ruling; meanwhile they are undoubtedly perplexing.

The accident of employment under a certain clause of the Pay Warrant confers the new titles on retired officers, and of course those who may be employed in the near future will also assume them, but those not so employed continue, as our correspondent puts it, "weighed down" with the cumbersome compound titles. He suggests that the new titles should at least be permissive to all, whether retired, liable to recall or not, who on retirement bore the compound titles, and the suggestion is worthy of consideration.

SICK TRANSPORT IN INDIA.

The following comments appear in the course of a leading article in the *Times of India* on The Transport Problem. They are worth reproduction, as they substantiate what has already been stated in the British Medical Journal, and they should be instructive to the Committee now sitting at Simla to inquire into these matters: "The great problem of transport for the sick and wounded will have to be taken up by the Committee. And here again, apart from the question of stretchers and ambulance, the great and all-important item of the personal element comes in. It is not of the least advantage to have the most carefully-devised appliances, if there are no men, or not the right sort of men, to carry them. This want has been much felt in recent campaigns, and a remedy will have to be found. The Transport Department, which is at present responsible for the recruitment of the bearers, declares that the old class of *kahars* is extinct, and that, therefore, resource has perforce to be made to inferior material. The medical authorities, on the other hand, declare that there are many thousands of *kahars* who would gladly enter the Government service under more popular conditions. What these conditions are it will be for the Committee to thresh out: but one point stands out clear, that whether the bearer establishment remains under the Transport Department, or is transferred to the Medical Department, the personal element, the actual feeling of protection which the close control of a British officer ensures, must be insisted on."

VOLUNTEER AMBULANCE INSTRUCTION.

The Volunteer Ambulance School of Instruction has issued a syllabus of courses of instruction and classes for training of stretcher-bearers. Two classes will be held, an elementary and an advanced, both of which commence on October 3rd, and are to be held at the London Rifle Brigade Headquarters. Prizes are offered for competition in both classes, that for the senior being given by the senior medical officer [illegible] may also be made for the Challenge Bowl presented by Surgeon-General Hamilton, which is at present held by the Commanding Officer of the London Scottish R.V. At the competition, those [illegible] half marks are allowed to go up for the official examination for the Army Ambulance Certificate, which entitles them to wear the new permanent badge

for regimental stretcher-bearers. Medical men serving in the ranks are eligible for the official examination, but are not allowed to enter for the prize competition.

GERMAN VOLUNTEER AMBULANCE SERVICE.

According to the *Standard*, the German Emperor has ordered a new organisation, uniform, and equipment for the male volunteers for the ambulance service in time of war. They are to be organised in four classes—namely, those attached to the military hospitals, those who accompany the troops, those entrusted with the transport of the sick and wounded, and those attached to magazines. They are to be further organised in bodies consisting of two sections each of twelve men. The uniform is to be a blouse of grey cloth with shoulder pieces, the collar bearing a red cross on a white ground. Trousers and cloak are also to be grey, and the hat white with a black band. The leaders are to have silver badges indicating their rank. Each man is to have a knapsack or satchel of brown waterproof cotton, a bread bag and aluminium water bottle, and a cup and cooking utensils. Tools and materials for erecting tents are to be distributed among the men.

GALLANT CONDUCT OF A NAVAL SURGEON.

A private account of the fighting at Candia by an officer on board H.M.S. *Astrea*, published in the *Times* of September 19th, says: "The *Hazard's* men behaved magnificently, and I hope they get something out of it. Their doctor should get the V.C. His clothes were shot through in at least a dozen places whilst he was helping the wounded, and he escaped marvellously without a scratch."

The "doctor" here alluded is, according to the official *Navy List* for April, Surgeon William J. Maillard, H.M.S. *Hazard* (Mediterranean service) appointed in August, 1897.

THE VICTORIA CROSS.

Miles writes: With reference to the editorial remarks in the British Medical Journal of September 17th on "Surgeon-General's (Retired)" letter drawing attention to a paragraph in the *World* of August 31st, I am able to throw some light on the subject. The writer in the *World* is perfectly correct in what he has stated. I am in constant touch with men who know what is going on, and I have been informed from a very reliable source that the present Commander-in-Chief has expressed a view that the V.C. was never intended for doctors; and I have little doubt that this feeling on the part of the present Commander-in-Chief will be carried out to its practical conclusion, at all events as long as he occupies the chair.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF ST. ANDREWS.

The St. Andrews University Court have appointed Robert Muir, M.A., M.D.Edin., Professor of Pathology, and J. A. C. Kynoch, M.B., C.M., Dundee, Professor of Midwifery.

UNIVERSITY OF DURHAM.

Third Examination for the Degree of Bachelor in Medicine.—The following candidates have satisfied the Examiners:

Second Class Honours.—J. R. Burn, College of Medicine, Newcastle-upon-Tyne; F. W. Lambelle, College of Medicine, Newcastle-upon-Tyne; R. H. Dix, College of Medicine, Newcastle-upon-Tyne; T. S. P. Parkinson, College of Medicine, Newcastle-upon-Tyne; R. Peart, College of Medicine, Newcastle-upon-Tyne.

Pass List.—R. Alderson, College of Medicine, Newcastle-upon-Tyne; C. H. Brookes, St. George's Hospital; H. Eggleston, College of Medicine, Newcastle-upon-Tyne; J. J. French, College of Medicine, Newcastle-upon-Tyne; D. M. Johnston, St. Bartholomew's Hospital; F. Stuart, College of Medicine, Newcastle-upon-Tyne; Eleanor Shepheard, London School of Medicine for Women; W. J. Symes, Sheffield School of Medicine; L. S. Smith, Mason College, Birmingham; R. H. Vincent, St. Bartholomew's Hospital; E. S. Wilkinson, St. Bartholomew's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.

Pass List, September, 1898.—The following candidates passed in:

Anatomy.—G. H. Bedford (Section I), Guy's Hospital; F. P. Bush, [illegible] Hospital; H. H. Cotman (Section I), Aberdeen and London [illegible]tal; H. L. Heath (Section II), Toronto and Cambridge; J. W. [illegible] and II), Charing Cross Hospital; E. C. Scarlett [illegible] Free Hospital; A. E. Shaw, Cambridge and St. [illegible]

Medicine.—[illegible] II (Section I) [illegible] and Westminster Hospital; [illegible] Aberdeen; H. [illegible] Section I), Aberdeen [illegible]; H. L. Heath [illegible] on II), Toronto and [illegible] Liverpool.

Pharmacy.—[illegible]all, Leeds and Westminster Hospital; [illegible]

Midwifery.—C. G. Catterall, Leeds and Westminster Hospital; H. H. [illegible] E. L. D. Dewdney, King's [illegible] A. H. Safford, King's College Hospital.

The diploma of the Society was granted to Messrs. H. L. Heath and J. W. King.

The annual meeting of the Reading Pathological Society will be held on Thursday, October 6th, when Mr. Malcolm Morris will deliver an address on the Use and Abuse of Internal Remedies in the Treatment of Skin Diseases.

MEDICO-LEGAL.

EMPLOYERS' LIABILITY ACT.

J. A. G.—The paragraphs in question were only intended to point out that an employer could not insist on his injured employee being attended by his own doctor, though he could demand that the injury should be certified by the latter.

SUPERANNUATION UNDER LOCAL GOVERNMENT (IRELAND) ACT.

W.J. S. writes: With reference to the various explanations of the provisions of the recently passed Local Government Act for Ireland dealing with the superannuation of Poor-law medical officers which have appeared in the British Medical Journal, would it not be well if you quoted in detail the portion of the Acts and rules relating to, and the scale governing superannuation in Her Majesty's Civil Service? I have been informed that a medical officer who will have completed ten years' service or upwards on the "appointed day," namely, March 31st, 1899, will be entitled to a superannuation allowance according to this scale, if he then or at any future time resigns his office. I should be glad to know if this is the case. If it is, the position of Poor-law medical officers in Ireland has been very much improved by the Local Government Act.

*** It has already been pointed out in the Journal that Section cxviii of the Local Government (Ireland) Act, 1898, applies to a medical officer who is entitled to a superannuation allowance under the Medical Officers' Superannuation (Ireland) Acts of 1865 and 1869, and apparently to him alone. As regards the claim of such a medical officer to a retiring allowance on the scale of Her Majesty's Civil Service, Section 11 of the Superannuation Act, 1859 (22 Vic., c. 26) provides as follows: "Subject to the exceptions and provisions hereinafter contained, the superannuation allowance to be granted after the commencement of this Act to persons who shall have served in an established capacity in the permanent Civil Service of the State, whether their remuneration be computed by day pay, weekly wages, or annual salary, and for whom provision shall not otherwise have been made by Act of Parliament, or who may not be specially excepted by the authority of Parliament, shall be as follows (that is to say): To any person who shall have served ten years and upwards and under eleven years, an annual allowance of ten-sixtieths of the annual salary and emoluments of his office. For eleven years and under twelve years, an annual allowance of eleven-sixtieths of such salary and emoluments. And in like manner a further addition to the annual allowance of one-sixtieth in respect of each additional year of such service, until the completion of a period of service of forty years, when the annual allowance of forty-sixtieths may be granted; and no addition shall be made in respect of any service beyond forty years."

SUPERANNUATION UNDER THE ACT OF 1896.

Poor Law writes: In the event of a Poor-law officer having (on appointment many years ago) made an error in stating his age, would there be any trouble when at 65 he claims his superannuation under the Act?

*** We think it not unlikely that there would be some trouble in such a case. We gather that "Poor Law" has made one statement about his age which he then expected the guardians to accept, and he now contemplates making another at variance with the first. It is probable that the guardians will regard as correct the one which best suits their side of the question. As "Poor Law" knows better than we do what class of guardians he has to deal with, he can best judge of the difficulty which he has now to face.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,520 births and 5,072 deaths were registered during the week ending Saturday last, September 24th. The annual rate of mortality in these towns, which had been 24.6 and 24.0 per 1,000 in the two preceding weeks, further declined to 23.6 last week. The rates in the several towns ranged from 15.9 in Portsmouth, 16.0 in West Ham, 16.4 in Swansea, and 18.5 in Leicester, to 32.4 in Manchester, 35.8 in Salford, 37.0 in Sunderland, and 38.7 in Gateshead. In the thirty-two provincial towns the mean death-rate was 24.9 per 1,000, and exceeded by 3.3 the rate recorded in London, which was 21.6 per 1,000. The zymotic death-rate in the thirty-three towns averaged 6.8 per 1,000; in London the rate was equal to 5.1 per 1,000, while it averaged 7.9 in the thirty-two provincial towns, among which the highest zymotic death-rates were 13.2 in Bolton, 13.3 in Salford, 14.0 in Sunderland, and 16.1 in Gateshead. Measles caused a death-rate of 1.1 in Plymouth; whooping-cough of 1.1 in Sunderland; "fever" of 1.8 in Sunderland; and diarrhœa of 10.9 in Hull, 11.2 in Norwich, 11.8 in Salford, 12.0 in Sunderland, 12.1 in Bolton, and 15.1 in Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 11 deaths from diphtheria in the thirty-three towns included 29 in London, 5 in Swansea, and 4 in Liverpool. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and only 1 small-pox patient

was under treatment in the Metropolitan Asylums Hospitals on Saturday last, September 24th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 2,319 at the end of the four preceding weeks, had further risen to 2,353 on Saturday last; 288 new cases were admitted during the week, against 238, 273, and 242 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, September 24th, 957 births and 595 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 23.0 and 18.8 per 1,000 in the two preceding weeks, rose again to 19.7 last week, but was 3.9 per 1,000 below the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Perth and 14.1 in Aberdeen to 21.4 in Edinburgh and 21.4 in Glasgow. The zymotic death-rate in these towns averaged 5.2 per 1,000, the highest rates being recorded in Paisley and Greenock. The 298 deaths registered in Glasgow included 5 from diphtheria, 10 from whooping-cough, 4 from "fever," and 55 from diarrhœa. Four fatal cases of scarlet fever and 20 of diarrhœa were recorded in Edinburgh, and 6 deaths were referred to "fever" in Paisley.

DOMESTIC WATER SUPPLIES.

M.O.H. wishes to know if it is his duty to test a sample of water from the water supply to every new building in his district before the sanitary inspector gives his certificate. His District Council wish him to be responsible.

*** The question of actual testing is one to be determined in each case by "M.O.H." himself. Some supplies are obviously bad and chemical tests can only measure the proportion of organic pollution at the time the sample was taken. Any water subject even to occasional pollution from animal excreta is unfit for a drinking supply, whatever proportion of organic ammonia or oxidised nitrogen a single analysis may reveal. It is right to condemn such waters even without an analysis. A few waters are so obviously above suspicion that an analysis may be dispensed with. Where a legal contest is likely to arise it is better to suggest to the authority that the services of the public analyst, and in some cases even of the professional bacteriologist, should be invoked. It is certainly the duty of the medical officer of health to make himself acquainted with the nature of the water supply in his district. A qualitative analysis is often of assistance, supplemented occasionally by a quantitative estimate of ammonia and organic ammonia, chlorine, and oxidised nitrogen. The most important evidence, however, is not that of the test tube.

MEDICAL NEWS.

Dinner to Dr. Edgar Flinn.—On Saturday last Dr. Edgar Flinn, who has recently been appointed a medical inspector on the permanent staff of the Irish Local Government Board, was entertained at dinner in the Royal Marine Hotel, Kingstown, by his friends. The toast of the evening was proposed by Mr. Swan, President of the College of Surgeons, who paid a fitting tribute to Dr. Flinn's marked abilities, and congratulated him upon his appointment to the high office which he now holds. The toast was received with enthusiasm, and Dr. Flinn replied.

Dr. W. G. Grace and the Bristol Guardians.—Dr. W. G. Grace, the cricket champion, has, it is stated, a little difference with the Bristol Board of Guardians. The Board recently re-arranged their medical officers' districts, and required those taking appointments to be at a surgery in a district away from their residence. Dr. W. G. Grace, who was one of the old officers of the Board reappointed, declines to accept office under the altered conditions, and has intimated to the guardians his intention to send in a claim for superannuation and compensation.

The Guild of St. Luke.—The Medical Service in State at St. Paul's Cathedral originated by the Guild of St. Luke has been such a success in the two previous years that apparently it may now be regarded as an annual function. We understand that this year it will take place on October 19th at 7.30 P.M., when the Bishop of London will preach and the London Gregorian Association will provide the music for the service. Graduates and Fellows of the Colleges are requested to attend in academical costume, but practitioners not wearing robes are equally welcome. All medical men residing in London will receive letters of invitation, but provincial practitioners wishing to attend are asked to apply for tickets to the Registrar of the Guild, Dr. Russell Wells, 24, Somerset Street, Portman Square, W. This year's service will be notable as furnishing the first opportunity in London for Fellows of the Royal College of Surgeons to appear in the special gowns granted them by the Council of the College.

Morphinomania in Prussia.—According to official statistics recently collected as to the prevalence of the morphine habit in Prussia, it appears that of 92 male victims of the habit under treatment in institutions in Prussia in the year 1895, nearly one-third (30) belong to the medical profession. Among 18 married women under treatment for the same habit, there are 3 wives of medical men.

A Lady Inspector under the Infant Life Protection Act.—Mrs. S. A. Lofthouse, of Newlands Park, Sydenham, the widow of a physician and surgeon, has been appointed Inspector of the Kingston Union under the new Infant Life Protection Act at a salary of £100 per annum. There were 177 applicants for the post, of whom 31 were from ladies.

Cornell University.—The Medical Department of Cornell University has received from Colonel Oliver H. Payne a donation of one and a-half million of dollars (£300,000) for the erection of new buildings. These are to be erected in New York. This magnificent gift will, it is said, place the Cornell Medical Department among the foremost in the United States. The curriculum will be of four years, the first two of which may be taken at Ithaca.

Society for the Study of Inebriates.—A quarterly meeting of this Society will be held in the rooms of the Medical Society on Thursday, October 6th, at 4 P.M.; Dr. Norman Kerr, President, in the chair. The President will read a paper entitled a Reply to Dr. Archdall Reid's Biological Attack on the Temperance Movement. A report on the Therapeutic Prescription of Alcohol in the Trinidad Hospitals will be presented by Surgeon-General the Hon. F. H. Lovell, C.M.G.

The Gresham Lectures.—Dr. E. Symes Thompson, Gresham Professor of Medicine, will deliver four lectures in Gresham College, Basinghall Street, E.C., on October 4th, 5th, 6th, and 7th, at 6 P.M. The subject of the lectures will be the Borderland between Health and Disease. The first lecture will deal with the Borderland between Sleep and Waking, the second with Pain and Ease, the third with Normal and Abnormal Nerves, and the fourth with the Borderland between Sanity and Insanity.

West London Medico-Chirurgical Society.—This Society has secured considerably extended accommodation for its members in the new wing of the West London Hospital, through the kindness of the authorities. Its membership of over 500 produced such a large attendance during the last year that the space afforded by the Board room of the hospital was wholly inadequate. The first meeting of the winter session 1898-99 will be held on Friday, October 7th, at 8.30 P.M., when the President, Dr. S. D. Clippingdale, will deliver his opening address on Some Considerations of the Life and Work of a General Practitioner.

Railway Accidents in America.—From statistics furnished by the Interstate Commission it appears that the total number of casualties to persons on account of railway accidents in the United States for the year ending June 30th, 1897, was 43,168. Of these casualties, 6,437 resulted in death, and 36,731 in injuries of varying character. Of railway employees, 1,693 were killed and 27,667 were injured during the year. The total number of passengers killed during the year under review was 222, injured 2,795; 93 passengers were killed and 1,011 injured in consequence of collisions and derailments. Other than employees and passengers the total number of persons killed was 4,522, injured 6,269. Included in these figures are casualties to persons classed as trespassers, of whom 3,919 were killed and 4,732 were injured. From summaries showing the ratio of casualties it appears that 1 out of every 486 employees was killed, and 1 out of every 30 employees was injured during the year. One passenger was killed for every 2,204,708 carried, and 1 injured for every 175,115 carried. Basing ratios upon the number of miles travelled, it appears that 55,211,440 passenger miles were accomplished for each passenger killed, and 4,385,309 passenger miles for each passenger injured.

THE Russian Minister of Public Instruction has, it is announced, issued a decree forbidding young girls studying in the universities and schools of music and art of Russia to wear stays. In explanation of his decision, the Minister states that, from a careful inspection of girls' schools, he has been led to the conclusion that the wearing of stays is injurious to health and hinders physical development.

MEDICAL VACANCIES.

The following vacancies are announced:

BETHLEM HOSPITAL.—Two Resident House Physicians. Appointments for six months from November 1st. Apartments, complete board and washing provided. Applications, endorsed "House Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before October 3rd.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund Street, Birmingham.—House-Surgeon. Appointment for six months. Honorarium, £21 on completion of appointment, with board, lodging, and washing. Applications to the Honorary Secretary of the Medical Committee by October 18th.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Fourth Resident Medical Officer. Unmarried, and under 30 years of age. Salary, £30 per annum, with board, washing, and residence.—Applications to the Secretary by October 5th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer; age not to exceed 30 years. Salary, £120 per annum, increasing to £140, with board, residence, attendance, and washing (£5 allowed in lieu of stimulants). Applications to the Medical Superintendent, by October 8th.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon: unmarried. Salary £50 per annum, with board and lodging. Applications to the Secretary by October 15th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.,—House-Surgeon. Board and residence provided. Applications to the Secretary by October 8th.

CROYDON GENERAL HOSPITAL.—House Surgeon. Salary £100, increasing to £120 per annum, with board and residence. Applications to the Secretary by October 4th.

ELLESMERE URBAN AND RURAL DISTRICTS.—Joint Medical Officer of Health. Salary, £60 per annum. Applications to the Clerk to the Joint Committee, Ellesmere, by October 3rd.

HOSPITAL OF ST. FRANCIS, New Kent Road, S.E.—Assistant Physician and Assistant Surgeon. Applications to Philip Tovey, Hon. Secretary.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Resident Medical Superintendent. Salary, £105 per annum, with board and residence. Applications (on forms provided) to the Secretary by October 18th.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Third Assistant Medical Officer; unmarried and under 30 years of age. Commencing salary, £120, with board, washing, and furnished apartments. Applications to the Medical Superintendent by October 10th.

LEEDS: GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £50 per annum, with board and lodging. Applications to the Secretary to the Faculty by October 4th.

LIVERPOOL: UNIVERSITY COLLEGE (VICTORIA UNIVERSITY).—Professor of Midwifery and Gynæcology. Applications to the Registrar by October 8th.

LONDON COUNTY ASYLUM, Claybury, Woodford Bridge, Essex.—Junior Assistant Medical Officer, between 23 and 30 years of age. Salary, £150 per annum, with board, furnished apartments, and washing.—Applications to E. W. Partridge, Clerk, Asylums Committee Office, 21, Whitehall Place, S.W., by October 5th.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to House Governor by October 14th.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon. Salary, £100 the first year and £110 the second year, with board and residence. Applications to the Secretary by October 12th.

MIDDLESBOROUGH-ON-TEES: NORTH RIDING INFIRMARY.—House-Surgeon. Salary, £100 per annum, with lodging, board, and washing, and £5 a-year instead of beer. Applications, marked "Application for post of House-Surgeon," to the Secretary by October 11th.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon. Appointment for six months. Board, lodging, washing, and honorarium of £10.—Applications to the House-Surgeon by October 8th.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Rev. Philip Lancashire, M.A., Honorary Secretary, by October 11th.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Physician and House-Surgeon. Appointments for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by October 8th.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL. Assistant House Surgeon for six months, but renewable. Salary at the rate of £50 per annum, with board and residence. Applications to the Honorary Secretary by October 5th.

QUEEN CHARLOTTE'S LYING IN HOSPITAL, Marylebone Road, N.W.—Assistant Medical Officer. Appointment for four months. Salary at the rate of £[illegible] per annum, with board, residence, and washing. Applications to the Secretary by [illegible].

ROYAL [illegible] HOSPITAL, Gray's Inn Road, W.C.—Senior Resident Medical Officer. [illegible] and washing. House Physician and [illegible] for six months. No salary, but [illegible] by October 10th.

ROYAL [illegible] FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—[illegible] Appointment for twelve months. Salary, £70 per annum, with [illegible] and washing. Applications to T. S. Conibeer, Secretary, by October [illegible].

ROYAL [illegible] FOR DISEASES OF THE CHEST, City Road, E.C.—House Physician [illegible] for six months. Salary at the rate of £40 per annum, with [illegible] washing. Applications to the Secretary by October 5th.

ROYAL [illegible] Oxford Street, and 15, Hanover Square, W. [illegible] unmarried. Appointment for six months, [illegible] per annum, with partial board and residence.

ST. [illegible] must be F.R.C.S.Eng. Applications to E. M. [illegible].

ST. [illegible] HANTS INFIRMARY. House Surgeon. Salary [illegible] apartments, board, and washing. Applications to the Secretary [illegible].

SOUTH [illegible] EAR, AND THROAT HOSPITAL. Honorary Surgeon to the [illegible] Applications to the Honorary Secretary, 21, Scarisbrick Street, [illegible].

WEST [illegible] EYE HOSPITAL.—House Surgeon. Appointment for one year [illegible] with board, apartments, washing, and attendance. Applications [illegible] 10th.

VICTORIA [illegible] FOR CONSUMPTION [illegible] HOSPITAL FOR CONSUMPTION [illegible] Assistant [illegible] married. Salary £80 per annum, with board [illegible] of Matrons, 34, Craven Street, [illegible].

WEST HAM [illegible] Junior House Surgeon. Appointment for one year [illegible] Applications [illegible] per annum, with board, resi[illegible]

MEDICAL APPOINTMENTS.

BUIST, R. C., M.D., appointed Medical Officer in the Department of Obstetrics and Gynæcology of the Dundee Royal Infirmary.

CAIRNS, L. M., M.B., C.M.Edin., appointed House-Surgeon to the Cumberland Infirmary, Carlisle.

CROSSLEY, H. J., M.R.C.S.Eng., L.R.C.P.Lond., appointed Junior Resident Assistant Medical Officer to the Crumpsall Workhouse Infirmary, Manchester.

DOMMISSE, F., M.B., Ch.B., appointed Clinical Assistant to the Chelsea Hospital for Women.

GAMAN, F. R. S., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer of Health to the Caistor Rural District Council and Medical Officer for the No. 1 District and the Workhouse of the Caistor Union, *vice* Alex. Cameron, M.D.Glasg.

GODSON, John H., M.B., reappointed Medical Officer of Health to the Cheadle and Gatley Urban District Council.

GRIFFITHS, John Crisp, M.B., B.Sc.Lond., M.R.C.S., L.R.C.P., appointed Medical Officer and Public Vaccinator for the Tealby District of the Caistor Union.

KERR, P. Murray, M.B., C.M.Edin., appointed Surgeon to the Dumfries and Galloway Royal Infirmary, *vice* Dr. Lorraine, resigned.

KYNOCH, J. A. C., M.B., C.M., appointed Medical Officer in the Department of Obstetrics and Gynæcology of the Dundee Royal Infirmary.

MOLESWORTH, T. H., M.B., B.C., M.R.C.S., appointed Senior House-Surgeon to the Stockport Infirmary.

PATON, B. Lewis, B.A., M.B., C.M., appointed Clinical Assistant to the Chelsea Hospital for Women.

PECK, Herbert, M.B., appointed Medical Officer of Health to the Chesterfield Urban District Council.

PERROTT, Dr. C., appointed Medical Officer for the Kingswood, Oldland, and Hanham Abbots District of the Warmley Union, *vice* R. W. Brimacombe, M.R.C.S.Eng., L.R.C.P., resigned.

RAY, J. H., M.B.Viet., Ch.M., appointed Medical Officer to the Salford School Board.

REID, Stuart B., M.A.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the East London Hospital for Children, Shadwell, E., *vice* W. Evans, M.R.C.S., L.R.C.P., resigned.

RICHARDS, H. Meredith, M.D.Lond., appointed Medical Officer of Health to the Dronfield Urban District Council, *vice* A. Mackintosh, M.D.

RICHMOND, Reginald T., B.A.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant House-Surgeon to the Salisbury General Infirmary, *vice* S. Gross, resigned.

ROWLANDS, Hugh P., M.D.Durh., reappointed Medical Officer for the Llanegryn District of the Dolgelly Union.

STRATTON, Percy H., M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Children's Hospital, Bradford.

TURNER, P. E., M.B., B.S.Durh., M.R.C.S., L.R.C.P., appointed House-Surgeon to the Kent County Ophthalmic Hospital, Maidstone.

WILSON, George, M.D., reappointed Medical Officer of Health to the Meriden Rural District Council.

DIARY FOR NEXT WEEK.

TUESDAY.

Gresham College, Basinghall Street, E.C., 6 P.M.—Dr. E. Symes Thompson: On the Borderland between Health and Disease. Gresham Lecture I.

WEDNESDAY.

Obstetrical Society of London, at 8 P.M.—Specimens will be shown. Papers:—Drs. J. and A. R. Walters: Case of Puerperal Septicæmia treated by Antistreptococcus Serum. Dr. Dullingworth: Early Ectopic Gestation (? Tubo-uterine), complicated by Fibromyomata of the Uterus.

Gresham College, Basinghall Street, E.C., 6 P.M.—Dr. E. Symes Thompson: On the Borderland between Health and Disease. Gresham Lecture II.

THURSDAY.

Society for the Study of Inebriety, 11, Chandos Street, Cavendish Square, W., 4 P.M.—Dr. Norman Kerr: Reply to Dr. Archdall Reid's Biological Attack on the Temperance Movement. Surgeon-General the Hon. F. H. Lovell: Report on the Therapeutic Prescription of Alcohol in the Trinidad Hospitals.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical Demonstration to Senior Students.

Gresham College, Basinghall Street, E.C., 6 P.M.—Dr. E. Symes Thompson: On the Borderland between Health and Disease. Gresham Lecture III.

FRIDAY.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W.—Opening Address by the President, Dr. S. D. Clippingdale: On Some Considerations of the Life and Work of a General Practitioner.

Gresham College, Basinghall Street, E.C., 6 P.M.—Dr. E. Symes Thompson: On the Borderland between Health and Disease. Gresham Lecture IV.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

MARRIAGES.

BLABER—DAWSON.—On September 22nd, at St. Patrick's Church, Hove, by the Rev. R. Daniel-Tyssen, M.A., Vicar, assisted by the Rev. T. R. Hall, M.A., Curate, Percy Leonard Blaber, M.R.C.S.Eng., L.R.C.P.Lond., of Sunnybank, Shoottup Hill, West Hampstead, youngest son of William Blaber, of 34, Cromwell Road, Hove, and "Beckworth," Lindfield, Sussex, to Agnes Frances (Effie), second daughter of Richard Dawson, M.B.Lond., of 15, Brunswick Square, Hove.

BRICE—CARMICHAEL.—On September 24th, at the Parish Church, Aldridge, by the Rev. C. M. Roberts, B.D., Rector of Aldridge, Ernest Brice, L.R.C.P., L.R.C.S., L.F.P.S., of Chasetorrace, seventh son of the late John Brice, of Leicester, and of Wirksworth, Derbyshire, to Olive Gorrie, eldest daughter of Peter Carmichael, of Chasetorrace, near Walsall. No cards.

CHALMERS—CANNINGTON.—On September 21st, at Wesley Chapel, Waterloo, by the Rev. H. J. Pope, D.D., of London, uncle of the bridegroom, assisted by the Rev. T. Hardwell Mawson, of Newcastle-on-Tyne, Albert John Chalmers, M.D., F.R.C.S., surgeon, son of the late Rev. James Chalmers, M.A., to Alice, second daughter of Wilson Cannington, J.P., of Beach Lawn, Waterloo, Lancashire.

DEAN—GEDDIE.—At the Free Church Manse, Banff, on September 16th, by the Rev. And. McWillie, D.D., Edinburgh, uncle of the bride, George Dean, M.A., M.B., C.M., British Institute of Preventive Medicine, London, to Laura Hope, daughter of the Rev. J. Watson Geddie, B.A., Free Church, Banff.

WALLERS—HOLT.—On September 21st, at the Parish Church, Blackburn, by the Right Rev. Bishop Cramer Roberts, D.D., assisted by the Rev. F. W. E. Chadwick, B.A., William Wallers, M.R.C.S., Blackburn, youngest son of the late Thurman Wallers, of Manchester, to Lily, only daughter of Geo. H. Holt, A.M.Inst.C.E., Helmsley, Blackburn. At home Thursdays and Fridays, October 20th, 21st, 27th, and 28th.

DEATHS.

LIPSCOMB.—On September 21st, at St. Albans, John Thomas Nicholson Lipscomb, M.D. St. Andrews, F.R.C.S.Eng., in his 80th year.

WILLIS.—On September 15th, at Oak House, Monmouth, George Willis, M.D., J.P. County of Monmouth, in his 70th year.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

Cancer, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

Central London Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily.

Central London Throat, Nose, and Ear.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

Charing Cross. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

Chelsea Hospital for Women. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

City Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

East London Hospital for Children. *Operations.*—M. W. Th. F., 2.

Great Northern Central. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

Guy's. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

Hospital for Women, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

King's College. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Tu., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

London. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

London Temperance. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

London Throat, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

Metropolitan. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

Middlesex. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

National Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

New Hospital for Women. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

North-West London. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

Royal Eye, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

Royal Free. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

Royal London Ophthalmic. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

Royal Orthopædic. *Attendances.*—Daily, 2. *Operations.*—M., 2.

Royal Westminster Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

St. Bartholomew's. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

St. George's. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

St. Mark's. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

St. Mary's. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

St. Peter's. *Attendances.*—M. 3 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

St. Thomas's. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

Samaritan Free for Women and Children. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

Throat, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

University College. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

West London. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

Westminster. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications for the Current Week's Journal should reach the Office not later than Midday Post on Wednesday. Telegrams can be received on Thursday Morning.

Communications respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the Journal etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate beforehand with the Manager, 429, Strand, W.C.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look to the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that all letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not to his private house.

Public Health Department.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are directed will be found under their respective headings.*

QUERIES.

Hemiplegic.—A member who is a right hemiplegic of nine months' standing would be glad of suggestions as to treatment.

J. Herbert Dixon, M.B., C.M.Edin. (Birkenhead) would be glad to have any information in reference to the Pacific Islands' drug "kava-kava," or to know from what source he could obtain any information.

M.B. will be grateful for information as to (*a*) the best books to read for the B.S.Lond.; (*b*) the amount of anatomy which it is requisite to read for this examination.

X. Y. Z. asks if anyone can inform him if there are published any large printed sheets or circulars with instructions as to precautions to be taken against lead poisoning, suitable for posting up in works where lead is used in such a form as is likely to be a source of danger to the employer.

A. B. C. asks to be referred to any account of instances where it has been shown that, owing to milch cows drinking sewage-polluted water, their milk became vitiated and caused illness among persons consuming it. The idea of drinking milk from such a source is repulsive: but the average bucolic mind resents fault being found with the milk on this score, among others, that a cow will take such water in preference to that from a pure spring.

Practitioner of Fifteen Years' Standing will be grateful if a candidate who has recently obtained the M.D.Durh. for practitioners will advise him (*a*) as to the work required for the Latin, Greek, Moral Philosophy, etc., part of the examination, and the nature of that examination; and (*b*) as to the books recommended for reading for the second part; (*c*) is it advisable to read with a tutor?

King Williamstown, South Africa.

Inquirens asks for information about the suitability or otherwise of King Williamstown, South Africa, for a patient in the commencing stage of phthisis.

*** We have referred our correspondent's question to Dr. Alfred P. Hillier, who writes as follows: King Williamstown is approximately about 800 feet above sea level. It is among those districts which I classify as "coast terraces," and by no means so adapted to phthisical cases as the towns of the interior plateaux. In deciding whether any particular district is or is not suitable, however, one has to be guided by the stage of phthisis reached in the subject under consideration.

Blackwater Fever and Hæmoglobinuria.

W. S. writes: In Dr. Moffat's interesting letter on the above subject he states as his opinion that the only treatment for malaria is quinine, but adds that patients say: "It (quinine) makes me deaf." "gives me a head." "upsets my stomach," "nasty taste." It would be of interest to hear from Dr. Moffat if he has observed any variations in the effects of the different salts of quinine, as I have lately used a tasteless salt of this drug called euquinine, which, though as efficacious as the bitter salts, does not appear to possess the objectionable characteristics named. I have not, however, been able to try it in malaria, and though the literature states that excellent results have been obtained, it would be interesting to hear the opinion of independent observers.

ANSWERS.

Componere Lites.—Each of such cases must be judged on its own merits. There seems to be no objection in the case submitted for judgment.

A. T. S.—We can only suggest that the attention of the university and college from which the practitioner whose name figures in the advertisement referred to holds his qualification be called to the circumstances.

F. E. H.—Full information as to the conditions of practice in Klondyke may be found in the Educational Number of the British Medical Journal, published August 27th, p. 572. The Registrar of the Territories is Dr. H. N. Bain, Prince Albert, N.W.T.

W. K. D.—The indication of a specialist's department of practice on his doorplate is contrary to the ethical laws of our profession, and is a very unusual course to adopt. We make our reputation by deeds not by doorplates.

M.O.H.—The Associateship and Fellowship of the Institute of Chemistry—A.I.C. and F.I.C.—are obtainable by fulfilling the requirements of the Institute as to the study of theoretical and analytical chemistry, physics and mathematics (at least three years' systematic training in approved institutions for admission to the Associateship examination), and passing the examinations of the Institute, which are held twice yearly. The regulations can be obtained from the Secretary at 30, Bloomsbury Square, W.C. Fellowship of the Chemical Society may be obtained by election on the written recommendation of a certain number of Fellows. The elections are by ballot. The Fellowship of the Chemical Society is not a qualification.

AVERAGE SICKNESS IN FRIENDLY SOCIETIES.

DR. JAMIESON B. HURRY (Reading) writes: In the BRITISH MEDICAL JOURNAL of September 17th, "A. W. S." inquires: "What is the average number of days' sickness per annum of a member of friendly societies?" The reply is that, taking all ages from 15 to 65, the average sickness per individual per annum in weeks is for males 1.314, for females 1.334. This is roughly equivalent to nine days. "A. W. S." will find fuller information on the subject in Neison, *Contributions to Vital Statistics*: Newsholme, *Vital Statistics*, and Clifford Allbutt, *System of Medicine*, vol. i.

THYMOL IN WHOOPING COUGH.

DR. THOMAS RUTHERFORD (Kelso) has called our attention to the doses of thymol in whooping cough referred to in a paragraph in the EPITOMÉ, par. 199, BRITISH MEDICAL JOURNAL, September 10th, 1898. The doses are undoubtedly large, and many would rightly hesitate to employ them. The dose of thymol is usually put down at from ½ to 2 gr., but Dr. Lauder Brunton places the higher limit at 10 gr. The largest doses up to 30 gr. have been used in ankylostomiasis, but here, as Dr. Patrick Manson in his recent textbook on tropical diseases points out, certain precautions should be adopted. Thus the patients must not take any solvent of thymol such as alcohol, oils, etc., after the administration of the remedy. Dr. Manson also refers to some recorded cases of fatal poisoning by thymol, and states that an equally efficient but safer drug is a desideratum in the treatment of ankylostomiasis. The comparative innocuousness of thymol is due to its insolubility. It is employed in ankylostomiasis merely on account of its local vermicidal effect, but in whooping cough it could only exercise a beneficent action, if any, when absorbed. At this point of absorption the possible dangers of poisoning must be reckoned with.

RHEUMATISM.

FELLOW SUFFERER recommends "A Member," who asked for advice as to rheumatism especially troublesome in bed, to sleep in silk and wool or flannel and rolled in a thin blanket.

DR. JAMES CAMERON (Edinburgh) strongly recommends "A Member" to let "drugs" slide, along with supposed prophylactic lines of treatment based on dogmatic theories of the "uric-acid mania" type, and if possible take a six months' holiday in any of the drier parts of the country, where he can go in for plenty of golf and get into condition, under the influence of generous diet (meat and eggs included), fresh air, and flannel. There appears to be no satisfactory explanation of the occurrence of the pains after getting warm in bed. Possibly they may be due to the stretching of the fibrous tissues from hyperæmia of the abundant anastomoses of vessels round the joints, which are comparatively superficial and thus readily influenced by warmth. This will, however, probably continue in spite of "drug" treatment as long as "A Member" is below par, and at least six months' (or a year's) fresh air holiday—or until good form is attained—is necessary.

NOTES, LETTERS, Etc.

AN APPEAL ON BEHALF OF THE FAMILY OF THE LATE DR. ARTHUR BARLOW.

THE following additional subscription has been received on behalf of this fund:

	£	s.	d.
Dr. W. Brooks	1	1	0

ROYAL MASONIC INSTITUTION FOR GIRLS.

MR. F. TAYLOR SIMSON, Past Master (Northumberland Avenue, W.C.), writes: For the election on October 13th I notice two daughters of deceased surgeons and one daughter of a deceased hospital steward. Many medical brethren would doubtless wish to support them. If any Masons care to send me their balloting papers duly signed, I shall be pleased to divide the votes equally between the three candidates in question and thus avoid waste.

CANTHARIDES AS A HÆMOSTATIC IN HÆMATURIA, AND ITS USE IN ALBUMINURIA.

MR. F. S. ARNOLD, M.B.Oxon. (Manchester) writes: In the BRITISH MEDICAL JOURNAL of September 17th is an interesting account by Dr. Beven of a case of hematuria and albuminuria, which, after proving refractory to various methods of treatment, was finally put right by small doses of cantharides. Dr. Beven says: "The beneficial effects of cantharides taken internally in certain affections of the kidneys do not seem to be generally known." This is perfectly true so far as regards the majority of the profession. May I ask you in fairness, however, to let me point out that the use of cantharis in such cases as Dr. Beven describes has been a commonplace of homœopathic practice ever since Hahnemann's time, the choice of the drug being of course based on the fact that hæmaturia and albuminuria with casts are, as everyone knows, among the most prominent symptoms caused by toxic doses of cantharides.

DR. J. ROBERTSON DAY (Queen Anne Street, W.) also writes to point out that Dr. Beven's experience of the effects of cantharides in hæmaturia is "one of the many instances of the law *similia similibus curantur*. Large doses of cantharides cause hæmaturia, small doses cure hæmaturia when it exists as a pathological condition."

BINIODIDE OF MERCURY.

MR. T. R. JONES, M.B. (Coalville, near Leicester), writes: Both your [illegible] Hanbury Frere, in estimating the [illegible] the [illegible] get [illegible] Mr. Hanbury Frere, in [illegible] and not 1 gr. in 1,000 by measure.

LETTERS, COMMUNICATIONS, ETC., have been received from

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BOOKS, ETC., RECEIVED.

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THE HUXLEY LECTURE

ON

RECENT ADVANCES IN SCIENCE AND THEIR BEARING ON MEDICINE AND SURGERY.

Delivered at the opening of the Charing Cross Hospital Medical School on October 3rd,

By Professor Dr. RUDOLF VIRCHOW,
University of Berlin.

The honour of being invited to deliver the second Huxley Lecture has deeply moved me. How beautiful are these days of remembrance which have become a national custom of the English people, and through which the memory of intellectual heroes is kept alive to posterity! How touching is this act of gratitude when the celebration is held at the very place wherein the genius of the man whom it commemorates was first guided towards its scientific development! We are filled not alone with admiration for the hero, but at the same time with grateful recognition of the institution which planted the seed of high achievement in the soul of the youthful student.

That you, gentlemen, should have entrusted to a stranger the task of giving these feelings expression seemed to me an act of such kindly sentiment implying such perfect confidence that I at first hesitated to accept it. How am I to find in a strange tongue words which shall perfectly express my feelings? How shall I in the presence of a circle of men who are personally unknown to me, but of whom many knew him who has passed away, and had seen him at work, always find the right expression for that which I wish to say as well as a member of that circle itself could? I dare not believe that I shall throughout succeed in this. But if in spite of all I repress my scruples it is because I know how indulgently my English colleagues will judge my often incomplete statements, and how fully they are inclined to pardon deficiency in diction, if they are convinced of the good intentions of the lecturer. I may assume that such a task would not have been allotted to me had not those who imposed it known how deeply the feeling of admiration for Huxley is rooted within me, had they not seen how fully I recognised the achievements of the dead master from his first epoch-making publications, and how greatly I prized the personal friendship which he extended towards me. In truth, the lessons that I received from him in his laboratory—a very modest one according to present conditions—and the introduction to his work which I owe to him, form one of the pleasantest and most lasting recollections of my visit to Kensington.

The most competent witness of Huxley's earliest period of development, Professor Foster, presented in the first of these lectures a picture of the rapidly increasing extension of the biological knowledge, which must have excited not only our admiration but also the emulation of all who study medicine. Upon me the duty is incumbent of incorporating with this presentment the newer strides of knowledge, and of stating their influence upon the art of healing. So great a task is this that it would be presumptuous even to dare to attempt its accomplishment in a single lecture. I have decided, therefore, that I must confine myself to merely sketching the influence of biological discoveries upon medicine. In this way also will the example of Huxley be most intelligible to us.

Huxley himself, though trained in the practical school of Charing Cross Hospital, won his special title to fame in the domain of biology. As a matter of fact at that time even the name of biology had not come into general use. It was only recently, as I showed in my lecture "On the Position of Pathology amongst Biological Studies," that the idea of life itself obtained its full significance. Even in the late middle ages it had not sufficient strength to struggle through the veil of dogmatism into the light. I am glad to be able to-day, for the second time, to credit the English nation with the service of having made the first attempts to define the nature and character of life. It was, as I then pointed out, Francis Glisson, who, following expressly in the footsteps of Paracelsus, investigated the *principium vitæ*. If he could not elucidate the nature of life he at least recognised its main characteristic. This is what he was the first to describe as "irritability," the property on which the energy of living matter depends. He thus succeeded in setting aside the mystical idea of the spiritualistic *Archæus* which Paracelsus and his followers had placed in the forefront of their deliberations, and in locating the *principium energeticum* in matter itself.

How great was the step from Paracelsus to Glisson and—we may continue—from Glisson to Hunter! According to Paracelsus, life was the work of a special *spiritus* which set material substance in action, like a machine; for Glisson matter itself was the *principium energeticum*. Unfortunately, he did not confine this dictum to living substances only, but applied it to substance in general, to all matter. It was Hunter who first announced the specific nature of living matter as contrasted with non-living. But he also did not attain perfect clearness of vision, because in the development of English medicine the idea had been allowed to take root and grow, that life was not bound up with structure, so that Hunter also was led to place a *materia vitæ diffusa* at the head of his physiological and pathological views. Hence he arrived at the assumption of the so-called plastic substances in respect of which the blood served both as rallying-point and seat of formation, and so it happened that in place of the old Greek humoral pathology which Paracelsus had overthrown, a new humoral pathology arose—hæmatology. According to the teaching of Hewson and Hunter, the blood supplied the plastic materials of physiology as well as the plastic exudates of pathology.

Such was the basis of the new biological method, if one can apply such an expression to a still incomplete doctrine, in 1842 when Huxley was beginning his medical studies at Charing Cross Hospital. Of pathology in England, John Hunter was the accepted master, and so remained for many years thereafter. So great was his influence that Continental medicine also recognised it. To this I can myself testify, as I was at this time at the end of my university studies. It would lead too far afield were I to recount in this place how it happened that I myself, like Huxley, was early weaned from the pernicious doctrines of humoral pathology; it must suffice to say that salvation lay in the same science which had already once before, in the sixteenth century, brought about deliverance from humoral pathology. It then came about that Vesalius threw over the authority of Galen and founded human anatomy upon direct observation, on necropsy. Since then anatomical studies have been much widened and improved. When Huxley himself left Charing Cross Hospital, in 1846, he had enjoyed a rich measure of instruction in anatomy and physiology. How great this was can be gathered from the interesting statistics which Professor Foster has collected with the aid of Huxley's distinguished fellow student, Sir Joseph Fayrer. Of the lectures which junior students attended, one hundred and forty in each of the three years of study were devoted to anatomy and physiology. Thus trained, Huxley took the post of naval surgeon, and by the time that he returned, four years later, had become a perfect zoologist and a keen-sighted ethnologist. How this was possible anyone will readily understand who knows from his own experience how great the value of personal observation is for the development of independent and unprejudiced thought. For a young man who, besides collecting a rich treasure of positive knowledge, has practised dissection and the exercise of a critical judgment, a long sea-voyage and a peaceful sojourn among entirely new surroundings afford an invaluable opportunity for original work and deep reflection. Freed from the formalism of the schools, thrown upon the use of his own intellect, compelled to test each single object as regards properties and history, he soon forgets the dogmas of the prevailing system and becomes first a sceptic and then an investigator. This change, which did not fail to affect Huxley, and through which arose that Huxley whom we commemorate to-day, is no unknown occurrence to one who is acquainted with the history not only of knowledge but also of individual scholars. We need only point to John Hunter and Darwin as closely allied examples.

The path on which these men have achieved their triumphs is that which biology in general has trodden with ever-widening strides since the end of last century; it is the path of

genetic investigation. We Germans point with pride to our countryman who opened up this road with full conviction of its importance, and who directed towards it the eyes of the world—our poet-prince Goethe. What he accomplished in particular for plants others of our fellow-countrymen achieved for animals. I recall Casper Friedrich Wolf, Döllinger, Joh. Friedrich Meckel, Carl von Baer, and our whole embryological school. As Harvey, Haller, and Hunter had once done, so these men began also with the study of the "ovulum," but this very soon showed that the egg was itself organised, and that from it arose the whole series of organic developments. When Huxley after his return came to publish his fundamental observations, he found the history of the progressive transformations of the contents of the egg already verified, for it was by now known that the egg was a cell, and that from it fresh cells, and from them organs, arose. The second of his three famous papers, that on the relationship between man and the animals next beneath him, limned in exemplary fashion the parallelism in the earliest development of all animal beings. But beyond this it stepped boldly across the border-line which tradition and dogma had drawn between man and beast. Huxley had no hesitation in filling the gap which Darwin had left in his argument, and in explaining "that in respect of substance and structure man and the lower animals are one."

Whatever opinion one may hold as to the origin of mankind, the conviction as to the fundamental correspondence of human organisation with that of animals is at present universally accepted. All biological science, especially physiology and pathology, creates hence the impulse to corresponding studies, and in particular all that has to be based on experiment must in the first instance be investigated in animals, while all that requires morphological confirmation finds support in comparative anatomy, histology, and embryology. The basis of our comprehension of the theory of medicine actually rests nowadays on minute microscopy, for the elaboration of which the animal tissues form an indispensable control object. Suffice it to say that in scientific biology the division between man and beast becomes less and less defined, but only let it be remarked the division between the abstract man and the abstract animal. It is the same relation as meets us in the differentiation between plants and animals. How many definitions of this have been put forth in the course of time, and how one after the other has been wrecked? But if we place a given animal and a given plant side by side we overcome the difficulties which we had only raised by our own definition.

The greatest difficulty in biology has arisen in this way—that mankind, following a natural tendency, has set the search after the unitary basis of life in the foreground of its consideration. As a matter of fact, what is more natural than the conclusion that life as a special phenomenon must also have a special basis, and that the material process of life must be derived from a common cause? During the last century an attempt was made to satisfy this claim by the assumption, with ever-increasing conviction, of a special force—vital force. Nowadays we can still perceive the logical errors which this assumption rendered possible. Time has, however, passed judgment upon it, and to-day no one continues to speak of vital force. And yet the necessity for a single basis of all vital manifestations remains. How is this to be satisfied? This is a question which is not alone of great theoretical interest, but which has become an indispensable foundation for practical work, and particularly for medical practice. But in order to reach this foundation, it is first of all necessary to dispense with all the dogmas of the schools, and to seek to construct an objective picture of the nature of vital processes.

As regards material construction, man, and the higher animals and plants, are no unitary, simple beings; on the contrary, they are put together from many units. They are hence called organisms. If they possessed but one single power which set all their parts in action, it would be impossible to understand how the special kind of activity which each one of these organisms exercises in its individual way comes about. This specific activity is present in the organism not alone in its perfect or fully-grown form, but also during its development and growth. How can a single power, whether we call it in the spiritualistic sense spirit, soul, *spiritus rector*, or, in the physical sense, vital force or electricity, build up such diverse organisms? Or if this power resided in a single organ—were it in brain, or spinal cord, or heart—how could those brainless and heartless creatures be explained which present so abnormal a condition that at the beginning of this century they were the proper battle-ground of the mystics?

There is here, in my opinion, only one solution possible. The life possessed by the higher organisms is not a single one. Their life and all their activities only become intelligible when we go back to the exact representation, based upon a kind of instinctive observation, of the life of their parts. Each constituent part of a living organism has its special life, its *vita propria*. No one of the older authors proclaimed this more distinctly than Paracelsus. But he at once undid this good idea again by attributing to each living part a particular *spiritus*, a special *Archæus*. The best of the succeeding biologists were also held by this notion as in a snare; instead of busying themselves in the observation of *vita propria*—that is, the action of the parts, they continued to devote themselves to research on the *Archæus*.

The advances in general science based upon personal observation, and particularly those in medicine, have completely turned the attention of true observers to the study of individual parts. As I pointed out at the Medical Congress at Rome,[2] it stands most clearly revealed in the history of pathology that the division of the body first into larger regions (head, breast, abdomen, etc.), then into organs, then into tissues, and finally into cells and cell territories, was the first step which opened up to us the comprehension of disease. The study of regions was followed by that of organs, and this again by that of the tissues, and finally by the cellular theory. But what is true of pathology must hold also for physiology, and as a matter of fact physiology has passed through the same developmental phases. One gradually comes to understand that the life of the individual parts is perfectly clear if one looks away from the *Archæi* of the organs or the tissues, and keeps in view only the life and activities of the single cells. For the life of an organ is naught else than the sum of the lives of the single cells which are gathered together into it and the life of the whole organism is not an individual but a collective function.

If such a collective being is analysed, no matter whether it be the whole organism, or a single organ, or only one tissue which is presented in its vital activity, the first requisite for a correct interpretation is that one should discard the fabled unity, and should regard the single parts, the cells, as the factors of existence. Single cells can be separated out even in a complex organism, but we should with difficulty arrive at a satisfactory theory if we did not also meet with single free-living cells in Nature. These have provided the first basis for objective investigation. Unicellular plants and animals have during this century been continually more fully and better studied. Botanists and zoologists have become the teachers of physiologists and pathologists. The ova of animals and the corresponding germ cells of plants have bridged the gap between isolated living cells and higher organisms. It was the recognition of this fact which first raised the famous theorem of Harvey to the high position which it merits.

In a medical school, where the teaching is almost entirely concerned with human beings, we might put this sentence at the head of the lesson: "The organism is not an individual but a social mechanism." An exact anatomical analysis of this mechanism always brings us at last to cells; they are the ultimate constituents of all tissues as they were their origins. Hence we call them the living elements, and hence we regard them as the anatomical basis of all biological analysis, whether it has a physiological or a pathological object in view.

In relation to this two propositions must be stated: (1) That every organism, like every organ and tissue, provided it is alive, contains cells; (2) that the cells are composed of organic chemical substances, which are not themselves alive, but the mechanical arrangement of which determines the direction and power of their activity.

The first proposition has of late slowly come to be realised. Schwann, who recognised the origin of tissues from cells, still clung to the opinion that in the further develop-

ment of many tissues the cells were used up. Among these he reckoned that important group which has subsequently become known as the supporting tissues, because it ensures form and stability to single organs, and to the whole organism. First among these stand the osseous and connective tissues, which also form so large a fraction in the quantitative constitution of higher organisms. The conception of the osseous and connective tissues as free from cells must now be given up. Where formerly only empty spaces or mere leaks (lacunæ, holes) were seen in the tissue, we now can demonstrate actual cells. We can even isolate them. Hence it is now desirable that the name "tissue," in the sense of living tissue, should be applied only to such parts as contain living cells. Outside the cells the tissue may contain a more or less rich share of organic (chemical) material, but this intercellular or extracellular substance must be regarded as an additional endowment, and not as a vital factor. Such parts as arose originally from living cells, but of which the cells have perished, must be excluded from biological consideration. As examples may be adduced the epidermis and the hair belonging to it, together with the enamel of the teeth. These consist in reality of dead tissue.

As regards the second proposition that no living organic chemical substance exists, the fact has been objected that all living matter is put together from organic chemical materials; but whoever raises this point must have well-nigh overlooked the fact that these two kinds of substances, the living and the non-living, cannot be identified with one another. In spite of chemical similarity or even correspondence, they exhibit recognisable differences, not alone physiological, but also mechanical and physical. Thus since the application of dyes has secured us a glimpse of the variety of the finer mechanical, or if one may say it molecular, arrangements of matter, it has become possible to differentiate living and non-living parts *de visu*. We are admittedly only on the threshold of these investigations, but the latest researches upon ganglion cells have shown that even beyond the effects of staining differences between living and no longer living parts may become optically recognisable.

The enthusiasm with which for centuries the doctrine of formative principles and nutritive materials was built up has already become much abated, and has, in part, been entirely abandoned, through the knowledge that no single chemical substance, no kind of nutritive or formative material which can be employed as such, and without further change, for the origination or formation of cells, has ever been found outside the living organism. And yet a chemist of Liebig's importance actually believed that fibrin could be conveyed directly from the meat consumed into the juices of the body, and thence deposited in the tissues. This was a misconception—a relic from the time of the old humoral pathology—which regarded the living body and its constituent parts as arising simply from the coming together of a few ground substances (*humores cardinales*). Hence arose the doctrine of plastic materials which were pre-existent in the food and blood. With an obstinacy which was only surpassed by their superficiality, these theorists remained convinced that the plastic materials as such effected the construction and maintenance of living matter. They failed to see that the nutriment taken in had first to be prepared by special juices secreted by the cells of the digestive organs, and that both the digestive material and the plastic substance of the blood were rendered assimilable only by means of a new change, which had to be effected by the agency of the tissue cells.

The doctrine of plastic material appeared to have gained new strength through Schwann's cell theory. One must be careful not to misunderstand this designation. Since the cellular theory of animal and plant life has been established, many have maintained that Schwann's cell theory is identical with it. Not only is this not the case, but the two stand in exact opposition to one another. Schwann assumed, and believed himself to have directly observed the process, that cells arose in undifferentiated matter, in a fluid or a semi-solid mass, in the following way: First, small particles of a firmer kind were separated off, then these came together into little heaps or clumps, by the internal transformation of which a cell nucleus gradually arose. Round this a new precipitate of firmer substance now slowly accumulated, and from this arose the body of a cell. Hence the original amorphous substance would be the special constructive material, while the nucleus was the true cell builder; Schwann called the former cytoblastem, the latter cytoblast.

It is obvious that from these premisses people must have been logically led to the conclusion that every form of organic tissue or organism, every kind of new cell must be separated from the preceding by a definite gap (hiatus), so that each new formation must be grouped as a discontinuous vital origin. Strangely enough, this classification arose and was accepted at a time when Darwin was already at work proving that new species arise by the modification of pre-existing forms. But Schwann's cell theory was in truth a resuscitation of the archaic doctrine of spontaneous generation (*generatio æquivoca*, *epigenesis*). With the rule of such a creed Darwinism was incompatible.

The supports of this *generatio æquivoca* have been, as far as zoology is concerned, gradually demolished. The formation of tissue cells from the egg and its partition has been observed throughout the whole animal kingdom. Apparently eggless animals, such as the cestoids and trichinæ, have one after the other been brought under Harvey's law; we know their eggs, their embryos, and their wanderings. There remains, in fine, but one great domain, though this is of the highest importance: it belongs particularly to pathology, and is that of the plastic exudates, which accompany the most important clinical processes, particularly the inflammatory.

It will readily be understood that so essentially pathological a subject would have but little interest for pure natural philosophers. They left it to medical men, who have to occupy themselves with it all day long. But in medicine this territory was held sacred; no one doubted that therein spoke old, well-attested experience. We old students were endowed with the so-called theorem of the plastic exudates from our earliest studies. Translated into our latterday parlance, such a theorem would recognise discontinuity in most pathological new formations; it would establish—and this is well worthy of note—the grounds for the dogma of the origin of life from non-living matter. Experience has taught us the exact opposite.

Permit me here, gentlemen, to speak a little more personally than is elsewhere my intention. Perhaps it will be more intelligible to the students of this hospital, and will make more impression if I narrate how I myself arrived at quite other views.

It was towards the end of my academical studies, more than fifty years ago, that I had to take up the work of assistant in the ophthalmic clinic of the Charité Hospital at Berlin. My attention was at once directed to the diseases of the cornea. We had severe cases of keratitis, but I saw in them no exudation; numerous cataract operations were performed and the wounds closed, but not by plastic exudation; this was absent from all corneal scars. Could this be explained by the circumstance that the cornea, apart from its circumference, is a non-vascular tissue? My interest was at once focussed on the non-vascular tissues. I turned first to the articular cartilages, and behold, here also I found the greatest changes without the presence of exudation, or, at any rate, of plastic exudation. I need only recall the form of inflammation which I named arthritis chronica deformans, and which is described by French physicians as *arthrite sèche*. My experimental studies on the inflammation of the walls of blood vessels showed that the equally non-vascular intima of the larger arteries, and in part also that of the veins, can undergo great changes without even a trace of exudation being produced. Later on anatomical investigations on endocarditis led to the same result, provided that parietal thrombi were not regarded as exudations. But in all these cases and in every place there were found changes in the tissue cells, active such as swelling, multiplication of nuclei, etc., or passive as fatty degeneration.

I next turned my attention to vascular organs, and in particular to those which were recognised by pathology as the common seats of exudation processes. I refer, first, to the medullary infiltration of the lymphatic (follicular) tissue of the intestine and mesenteric glands in typhoid fever so strikingly depicted by the Vienna school: instead of the amorphous abominous exudate which was described, I found only cells, and cells of the same kind as those which are normally present in

these situations. The same was revealed in the so-called caseous exudates which were at one time ascribed to scrofula, at another to tuberculosis; the cheesy material was admittedly in the main amorphous, but it was in reality not an exudation at all, above all, not a primary product of disease, but rather the secondary product of degenerative necrobiotic changes in parts of the tissues which had formerly been organised, and not infrequently actually hyperplastic.

It is not necessary to go further into details in order to show how great is the realm of this pseudo-exudative process. But I cannot help referring to another series of morbid processes affecting the bones. It was whilst studying rickets that I first learnt the biological significance of the cartilage corpuscles, the nature of which had till then been interpreted in very different ways. I believe that I was the first to distinguish in these corpuscles what must be actually recognised as cells from the merely capsular and extracellular coverings. The rachitic disturbance now brought into fullest evidence an appearance, which was repeatedly misunderstood even by later observers; this was the increase of these cells by division, and the consequent growth of the cartilage.

It was not difficult to follow out the direct transition of the epiphysial cartilage into the periosteum of the neighbouring bone, and thus into connective tissue. At this time the whole world was convinced of the correctness of the statement made by Duhamel that increase in thickness in the long bones was effected by the periosteal vessels exuding a nutritious juice out of which the new bone substance was formed. Pathologists had extended this formula to periostitis and the formation of exostoses and hyperostoses; they assumed that between the periosteum and the bone a plastic exudation was excreted and stored up, in which the new osteophyte arose by secondary organisation. The consequence of my investigations was that in not one of these spots, neither in the cartilage nor in the periosteum, neither in normal growth nor in rickets or periostitis, was organisation preceded by the presence of a recognisable amorphous exudation. On the contrary, it was indubitably shown that the first stage of the changes was an active productive process of cell multiplication; that at the same time the intercellular substance altered in character and underwent a series of successive changes till it assumed an osteoid appearance; and that then, and not till then, followed calcification and true ossification. There was also no difficulty in adducing the proof that the separate stages of these processes in cartilage and in periosteum ran a perfectly parallel course, although the new tissue was in the one case at first true cartilage, in the other only cartilage-like. If one wishes to designate this process in general it must be called proliferation. Most of these processes are of the nature of proliferation. Whoever calls the proliferative layer an exudation will never obtain an objective view of the actual proceeding.

There is thus not the slightest necessity for the genuine observer to hold to the arbitrary and totally erroneous formula of a plastic exudation. There is no such thing as a plastic exudation which is ever simply amorphous; the cells which may be found in it have not arisen there. With this proof, which can be obtained in numberless other places, the doctrine of the discontinuous origin of pathological new formations is set aside. Every such new formation presupposes a tissue from which its cells arise; this is its matrix. There is no difference in principle between the descent of men and animals from one mother and the descent of pathological new formations from one matrix. Pathology has been somewhat late in arriving at the knowledge of this correspondence, but I think that it has acquired especial value for biology in general.

In order to avoid misunderstanding, it may be noted that not every living cell is capable of becoming a matrix. All cells which are destined for the highest animal functions prove sterile, or at least very hypothetically capable of proliferation. Ganglion cells, primitive muscle bundles, red blood corpuscles do not come under consideration as regards the theory of pathological descent. The more indifferent cells, on the other hand, above all those of cartilage, connective tissue, and epithelium, exhibit a marked proclivity to bring forth new cells. Many cells again, such as bone corpuscles and fat cells, require a special preparatory metaplastic stage before they can produce a new brood.

Proliferation is an active property of special cells. That it cannot be performed by all cells alike in no way alters the fact that it can only be performed by cells. It is just as little a function of an entire organism, for this itself would then have to be unicellular. In this property lies the explanation of the origin of a whole organism from a single egg cell, that wonderful process which comes to pass but once in the life of an animal. Once tissues have arisen each cell of a matricial tissue may in respect of proliferation be compared to an ovum; it brings forth a new progeny from which new tissue grows. This tissue bears, as a rule, the stamp of its matrix—it is built on the maternal type. This is the nature of descent, and herein lies the key to the knowledge of heredity, that puzzling appearance with which mankind has ever busied itself.

According to the humoral theory heredity was derived from the body fluids and in particular from the blood. According to this idea the blood furnished the means of the continuance of the family and the race; blood relationship explained the similarity not only of the juices but also of the organs and the whole body. The blood according to its nature determined the goodness or badness of the organisation; noble blood generated noble men and healthy organs, bad blood a debased posterity and organs predisposed to disease. In scientific works naught remains of these fantastic surmises; they persist like a superstition in lay circles, but no one now maintains their correctness in serious debate. In their stead has arisen the recognition of the particular value of the mother tissue and its cells. These are the factors of inherited properties, the sources of the germs of new tissues and the motor power of vital activity.

During the development of a higher organism the constitution of the individual tissues changes; they become differentiated by means of metaplastic processes which are in their turn connected with cells and cell-territories. Thus it comes about that people have for ages spoken of dissimilar parts. The complete full-grown organism is built up of similar and dissimilar tissues: their harmonious working gives the impression of a unity of the whole organism which is as a matter of fact non-existent. For the further the organism develops the more its social constitution comes into evidence. It consists of innumerable independent parts which together constitute a single social body. If we take the ultimate elements of these parts we must call them all without exception cells, for cells alone are truly alive and scientific judgment is in the last instance concerned with them.

So little is the whole organism a definite unit that the number of its living constituents is in the highest degree inconstant. Looking at the gross structure of organs we are accustomed to regard a certain number of them as typical peculiarities of human beings or the various genera and species of animals. We expect to find two of each paired organ and one of each unpaired in a single individual. Man, like all other mammals, has a fixed number of bones and teeth, and these numbers are rightly used as diagnostic of man or of the particular variety or species of animal. But these numbers form no essential condition of existence; a man with six fingers or seven toes remains a man, just as a lung with supernumerary lobes or a kidney with an excess of corti medullares remains a lung or a kidney. A woman with three, four or even more mammary glands is thereby no more a lower animal than a man with a tail would be. These are theromorphs ("sports") which can have no influence on our opinion as to the sex of the affected individual or its position in the animal scale.

But it will be a long time before general opinion on the significance of "sports" will, even among experts, become unanimous. One sect will connect them with descent, and see in them a proof of atavism; while the other will regard them only as a pathological formation, and will trace this back to an acquired lesion. During the last century we have gone through violent disputes as to whether certain malformations were inherited or acquired. Those who pinned their faith to inheritance had very generally the *arrière pensée* that the variation was atavistic, and the question soon presented itself as to whether the atavism was derived only from human ancestors, or whether one would have to go back as far as the lower animals to account for it. A universally valid explanation of theromorphism has not yet been found. In my

opinion it will never be found. Each single example must be separately studied and explained, and the general value of this explanation will be by no means increased if we find atavism in any single case. Doubtless an acquired variation can also be transmitted, and the circumstance that it is animal-like (theroid) does not go to prove a not acquired but atavistically transmitted condition. In connection with this I may refer to my paper on Race-Formation and Inheritance.[3] I can here discuss only the principal ground for the disputes regarding hereditary diseases which are special to pathology.

Medical men are accustomed to describe as hereditary all diseases which reappear in different generations of the same family. Thus one speaks of hereditary arthritis, hereditary tuberculosis, hereditary cancer. It is in fact not difficult to produce genealogical tables which demonstrate the recurrence of a paternal or maternal disease in children or grandchildren. Much trouble has been devoted, in my opinion without result, to seeking the germs of such diseases in the ovum or the semen. One is hence compelled to pass on to generations of cells which took origin after conception. Here we reach what Roux has designated the *post-generative* formations. The further we pass away from the time of conception the more numerous examples do we find of alterations in the formation of cells and in the formation of embryonic tissues. But there is at the same time the greater possibility of the alteration having arisen after the formation of the first cells, and hence that the existing cause may have commenced to act at that time. If we set aside this possibility nothing else remains but to assume that from conception, or even from the organs which produced the ovum or the spermatozoon, a predisposition is transmitted which is already present in the earliest cells, even if it cannot be recognised in them.

Upon this theory are built up all interpretations of the inheritance of pathological and, we may add, physiological structures. There are, for example, many extraordinary anomalies in the disposition of hair, either through excess or through defect, and nothing is more common than to see the inherited transmission of such anomalies. But hairs are post-generative structures, and a disturbance in their development can make its first appearance only in a later period of fœtal life; not infrequently, indeed, it is first seen after birth. If such a peculiarity recurs through many generations in the branches of a family or a race it is called hereditary, and referred to a *hereditary predisposition*. But as undoubtedly excesses as well as defects in hairiness are brought about by acquired disturbances, such as actual diseases, it becomes necessary to seek a recognisable cause for such great anomalies as well. If such an one is found, the aid of a predisposition need not, as a rule, be invoked; one may be quite contented with the cause, which is then the *causa efficiens*.

Very recent medical history affords the most striking example of a rapid and comprehensive change in opinion regarding a disease formerly regarded as hereditary. Leprosy has for thousands of years passed as a contagious disease. But when about a generation ago the number of lepers in Norway increased to an astounding extent, and one family after another was seized with the malady, the question once more came up as to its hereditariness. Zealous investigators ransacked genealogical tables and church registers, and families were discovered in which leprosy had persisted for decades, or even centuries. So universal was this conviction that the Government, with the consent of the clergy, wished to promulgate a marriage-forbidding decree; only a small majority in Parliament threw out the proposition. I was then requested by the Government to travel through the leprous districts and to make a report; I succeeded in collecting a certain, though small, number of indubitable cases in which all suspicion of inheritance could be excluded. These were in particular persons who came as healthy adults from quite leprosy-free neighbourhoods into the infected districts, and after a long sojourn there developed leprosy.

A few years later Armauer Hansen discovered the leprosy bacillus. Medical opinion changed in a moment. The venerable idea of the contagiousness of the disease was revived. Inheritance was denied and predisposition vanished from the treasurehouse of dogmas. I will not assert that the grounds for embracing the present view are absolutely convincing, but I am positive that it is far to be preferred to the dogma of inheritance. And it is an experience instructive to all of us that one single fact, the discovery of a *causa viva* should have sufficed to dash down the apparently best grounded theory. The safely-established recognition of a known cause has at once converted leprosy from an inherited into an acquired disease.

A similar thing happened a few decades earlier with two skin diseases which were, according to the views of humoral pathology, traceable to a change in the blood, a dyscrasia, namely tinea (favus, porrigo) and the itch. The first actually bore the name of tinea hereditaria, or in German *Erbgrind*. But the microscope revealed to Schönlein that favus arises from a mycelial fungus, and as regards scabies the popular Italian view was confirmed, namely that a mite (acarus sarcoptes) was its cause. So unstable are the most plausible theories in the light of an objective, practical knowledge.

Exactly the same experience has been met with in relation to certain diseases of the hair. When fungi were found on the hairs, no one cared any more about predisposition, although this possibly does occur. It is certain that there are parasitic forms of alopecia. But fungi cannot be found in every case of alopecia. Still less is this the case in anomalies of the hair associated with excessive growth. Here no other explanation is possible, except the assumption of a predisposition. This holds equally for hirsute races and for families of hairy men as well as for those single hairy cutaneous patches (nævus pilosus) which are regarded as hereditary. The factors in the predisposition are the hair roots, and moreover those which, although arising during fœtal life, belong also to the post-generative group, since they are called later into increased activity.

The general cutaneous covering, in brief the "skin," although doubtless a kind of unitary structure of a generally similar type, is nevertheless in a double sense a socially constituted organ. Not only is it composed of numberless independent cells and cell territories of dissimilar kinds; apart from the vessels and nerves, of the connective tissue, the cutis proper, and the horny epithelial tissue, which forms also hairs and glands, the individual constituents of the skin have a special disposition and are exposed to various external and internal influences. This is best shown by the numerous morbid states to the definite scientific classification of which English dermatologists so early devoted themselves. The existence of maculæ, papules, pustules, and all the various other kinds of skin spots is demonstrated by the fact that in the skin a large number of little communities may be noted from the first as independent or hereditary factors of a particular predisposition. When mothers' marks (nævi), hairs, or even spines grow from them, it follows that in spite of their common origin there must exist a lasting difference between the various localities.

There is another highly remarkable question which every year claims the attention of medical men more and more; this is what was described in the old medicine as *aberratio loci*, in the new as *heterotopia*. It has long been known that hairs are present, not alone on the external skin, to which they properly belong, but also in internal organs where they are quite out of place; and further, that other cutaneous structures, such as epidermis, sebaceous glands, and cutis appear in such places. We unite this whole group under the general term "dermoids." Modern histologists have long struggled against this theory of aberration, but they have finally had to quit the field, and the view has become dominant that as a matter of fact even in fœtal life smaller or greater rudimentary fragments can be separated from their natural places of abode, and removed to other spots, where they, so to speak, find a new home, and can undergo all the further changes which are dependent on their cutaneous nature. It is thus that cysts and other tumours can arise from them.

The most remarkable examples of such heterotopias are afforded by certain glandular organs which under normal conditions present communities of similar parts, arranged in special divisions. Among them a high place is taken by two organs which have recently demanded much attention, the thyroid and the suprarenal glands. On their surface may often be observed the pushing forward and progressive isolation of separate parts in the form of nodules or small lobes.

But occasionally these nodules pass completely out of association with the main body of the gland, and are found disconnected in a perfectly strange place more or less removed from their seat of origin. The farthest journeys are those of the broken-off nodules of the suprarenals; their wanderings lead them to neighbouring spots on the kidneys, or even into the interior of those organs, and in other cases over the kidneys into deeper parts of the peritoneum as far as the pelvis. And at all these places they may undergo further change, thus affording starting points for tumour formation.

The same wandering has long been known in respect of teeth, and one knows that large tumours can arise from misplaced tooth germs. The like holds with regard to cartilages, in which similar separations are noted in fœtal life. The history of rickets has shown that islands of cartilage which were originally connected with the primary cartilages of the epiphyses or diaphyses come later in the course of bone growth to lie in the interior of the bones, completely separated from their matrix. From them may arise other new formations such as enchondromata and osseous cysts.

Extraordinary, even astonishing, as many of these cases are, they lose the character of perfect strangeness which they exhibit on superficial examination when we recall a frequent heterotopia which was produced at first rather by accident, then in surgical practice, and finally experimentally, and which is known by the name of transplantation. Since the grafting of pieces of the epidermis has come into use in rhinoplasty, and has been applied, often with great success, to the healing of refractory ulcers, it is no longer surprising to think that living pieces of tissue may continue to exist in unwonted situations, and can there undergo further development. Experimentally—and this has also become important in surgical practice—the first place under this head is taken by the transplantation of periosteum, which can be carried into every possible corner of the body, even through the circulation into the lungs, and which in all these places conserves its vitality and also its power of serving as a matrix for osseous tissue.

In my opinion, the bearing of these observations upon medical theory has been overrated, in that a property possessed by the transplanted tissue, to wit, the property of forming a tumour by proliferation, has been applied to the explanation of tumour formation in general. This is a mistake. Transplanted tissue has no fresh properties beyond those of the mother tissue from which it is separated.

That a sarcoma can arise from a nævus is only possible because the latter is a part of the skin, and because the skin itself can also produce sarcomata. A cartilaginous tumour can arise from an aberrant piece of cartilage in the middle of a bone, and give rise to an enchondroma, but it may also grow out as a simple cartilaginous hypertrophy (ecchondrosis) from permanent cartilage. A dermoid cyst can serve as the basis for the outgrowth of a cutaneous horn, but cutaneous horns and spines can also grow out of ordinary skin. In each of these cases there is only the realisation of a possibility of formation which is present in the matrix in general. At the same time each of these cases illustrates the law of the *vita propria* of the tissues and of their activity linked to this life.

It is not without great scientific and practical interest to reflect that these observations illustrate another ancient doctrine, the doctrine of parasitism. This doctrine also is traceable back to Paracelsus, who wished to have disease in general regarded as a parasite. One century after another spread this theory abroad, or at least kept its memory green, although there is a fundamental error of logic in assuming the universality of parasitism. For if the living organism is constituted by separate and independent living parts, each of which [illegible] itself, and of which most can propagate themselves and possess their special functions, each one of these individual parts must occupy the position of a parasite with respect to the others: it lives on and lessens the common stock of nourishment. The generally-accepted view regarding parasitism postulates at the same time the harmfulness of this condition. In reality, every part is endowed with individual life so that it can act prejudicially on the remainder of the [illegible] if its activity becomes excessive or [illegible] that becomes a sarcoma can assume a really hurtful significance. Hence it is requisite to remove the sarcoma but it is not advisable to remove every nævus. Only an excess of caution can lead to an operation which finds its sole excuse in the possibility that a nævus can conduce to the formation of a sarcoma. In like manner every excessive proliferation (luxuriation) can act harmfully; it may then be described as malignant. But many proliferations are useful, benign or even salutary, as, for instance, the scars which cover a loss of substance. It is just for the sake of a trustworthy prognosis that one must be extremely careful in the application of designations which group whole categories of morbid processes under a common aspect.

The idea of parasitism which we have here discussed in regard to the relation between different parts of the same organism fits in much better where living organisms of a different variety or species enter into an organised corporation, and continue their special life in commensalism. The animal parasites, which exist as entozoa in man and other animals, have been longest known. Since the end of the last century our acquaintance with these entozoa has greatly broadened. Many structures which were formerly regarded as mere bladders (cysts) have been recognised as cestoid worms (entozoa cystica). The trichinæ, apparently sexless animals living in the interior of muscles, were first discovered in this century at Edinburgh; later experimental research succeeded in proving that after the consumption of infected meat these little worms rapidly became sexually ripe in the bowel, and produced not alone ova, but also living embryos and larvæ. Thus one comes to the worms which live in the blood, distomata and filariæ, and which later wander into the tissues. They all have a period during which they have their dwelling as organozoa in the midst of the living tissues of the organism, and become so perfectly incorporated that they carry on their own lives just like the proper cells. Quite new and pertaining exclusively to the investigations of our own time are the parasitic protozoa, beings of so rudimentary a kind that their position in the biological system is even yet not quite clear. Chief among these are the protozoa of malaria, quite microscopical organisms, many of which are such pigmies that they can penetrate into the smallest cells, such as the red blood corpuscles. The darkness which for thousands of years had enveloped a group of most dangerous diseases—the tropical fevers—has been dispelled by the discovery of these tiny creatures. Important links in the history of these parasites are still wanting; we know nothing definite as to their origin or their career outside the great organisms which are their temporary dwelling place, and nothing, also, as to their mode of action within these organisms, but we hold the threads by means of which perfect knowledge must be attained.

Lastly comes the equally new field of microscopic plants which appear sometimes as mere grains (cocci), at others as minute rods or chains (bacilli), and from which many of the most severe diseases, the *élite* of the parasitic infectious maladies, take origin. Their recognition began with the study of two very great and most widely spread processes, fermentation and putrefaction. It will ever remain the imperishable merit of Pasteur, not only to have firmly established the dependence of these processes on the activity of microbes, but to have elucidated the further life-history of the germs and their power of producing active chemical or physico-chemical substances. Here for the first time were subjected to experiment parasitic beings which live and carry on their work outside the organism. Hence has been attained the wonderful result which has unlocked new methods both in medicine and in technical science. Above all, the results of microscopical research have been supported by trustworthy experiments, and their significance raised above all doubts; hence pathology in particular has won in directions which had hitherto been shunned by all who studied the nature of its processes, a clearness and certainty which has been reached in few other fields.

The first great stride in the special domain of pathology was made in veterinary medicine. The discovery by Brauell of the anthrax bacillus opened the long series of new, and as we now call them, pathogenic bacilli. It would lead too far afield to refer to all of these, or even to enumerate them; it must suffice to mention the two severest diseases, the dreadful effects of which are accounted for by the action of bacilli—tuberculosis and Asiatic cholera. In both cases it was Robert Koch who was fortunate enough, by means of

careful, and in part very delicate procedures, to demonstrate the constant presence of certain bacilli in the organs of patients. At the same time it became plain that in spite of the presence of bacilli in both diseases a totally different kind of infection could be recognised in the two; thus, while tubercle bacilli invade the organs, and therein exhibit their deadly action, the cholera bacillus remains almost exclusively in the intestine, and develops more after the manner of an infusorial plant.

For our discussion to-day it is inadvisable to go into minuter details. Only a few of the greater landmarks can be referred to. One of them I will mention but briefly, as I have written many long papers upon it: the necessity for distinguishing between the cause and the essential nature of infectious diseases. Parasitic beings, including, of course, bacteria, are never more than causes; the nature of the disease depends upon the behaviour of the organs or tissues with which the bacteria or their metabolic products meet. From my point of view this distinction is of cardinal importance.

Both my other landmarks require somewhat fuller statement. The first is the general relation of the smaller parasites to the diseases determined by them. Under one name, which reaches back even into the old days of humoral pathology, and which I was the first to introduce into common parlance, are grouped all the processes which are produced by the invasion of morbid substances, under the general designation of infection. The Latin *inficere* means as one should say to "dirty." The polluting substance (*res inficiens*) has been called for ages dirt, *impuritas*. The products of putrefaction (*materiæ putridæ*) served as its prototype. In Greek they were called miasms (from *μιαίνω*, *inficere*), so that these latter names were applied chiefly to such uncleanness as had been produced outside the body. That which had arisen inside the human or animal body was called contagium. Both miasmatic and contagious substances produced by their penetration into the body severe attacks recalling poisoning. To distinguish such a substance from a true poison (*venenum*) it was designated a virus. The relationship between infection and intoxication was presumed, but it was not without good reason, considering the origin of the impurity, that the difference in designation was retained.

Among the innumerable infectious diseases it was the contagions which owing to the associated danger to health and life not for individuals only, but for numbers of men and animals, came most prominently to the front. Thus the remarkable property was observed in contagia that they multiplied in the body and so besides infection as such produced an immeasurable quantity of fresh virulent substance. In this respect they approached living beings and the thought arose that they themselves were alive (*contagia viva*). With the discovery of parasitic animals and plants this conjecture soon became a fact. Nothing was easier than to generalise this fact and to assume the presence of independent organisms in each contagious disease. The younger generation of doctors and students disregarded with fiery enthusiasm the necessity of a practical proof, and was filled with the conviction that all infection depended on the invasion of parasitic organisms. And since it was just the severest infections which were produced by the minutest plants and in which bacilli and cocci, or as they are called for short bacteria, were found in greatest abundance there was circulated for some time that beatific axiom, "Infection is pollution by bacteria."

It was known however that parasitic animals and protozoa can also give rise to infection, and that between bacteria and fungi there is more than a slight difference, but for convenience the name of bacteria is retained as a general designation. Further, a peculiar circumstance happened in that for most of the so-called bacteria there were no botanical names. Owing to the novelty of the circumstances in which they are placed, botanists have not even yet succeeded in their customary duty of giving every new plant its special name, of determining its genus and species, and of assigning it to its proper systematic situation. This can easily be understood and forgiven. But it does not in any way alter the erroneousness of a method which attributes every impurity to bacteria on the sole ground of its contagiousness. It may be said that a contagious disease affords suspicions of a bacterial origin, but it should not be called simply bacterial. To do so hinders further research and lulls the conscience to sleep.

Some of the most important contagious diseases have succeeded in resisting the struggle to find in them a parasitic contagium. For example, many have been the sanguine hopes of finding the parasite of venereal disease and as many have been the failures. The coccus of gonorrhœa alone has been discovered; the bacterium of syphilis itself remains a *pium desiderium*. With certainty was it expected that a pathological parasite would be tracked in variola: more than one bacterium was actually found, but none pathogenic. In hydrophobia (lyssa, rabies) all appearances seemed to promise that it would prove to be a microparasitic disease: its contagiousness is undoubted; even a vaccine has, as with small-pox, been prepared and yet no one has been able to cultivate a specific bacillus. And the same is the case with some of the most dreaded contagious diseases. Painful as it may be one can do nothing but wait, observe, and experiment. Perhaps pathogenic bacteria will be found, but as long as they are not discovered all assumption is useless if not dangerous. To have learnt this is a good omen for a mighty stride in biological methods.

The other, much further elaborated, point in the study of infectious diseases is the question of the mode of action of infection. As long as infection by animal parasites was regarded as the type of infection in general, the destructive action was described as the result of a mechanical action just comparable to a bite or devouring. But the exact study of the larger entozoa and organozoa soon brought about a complete conversion. Neither the tænia solium nor the tænia echinococcus possesses an oral opening. They undoubtedly take in nourishment and draw it from their autosites, or, as they are poetically called, their hosts, but this applies only to the absorption of fluids. The feeding of bacteria and other vegetable and plant-like parasites has to be regarded in the same way. They certainly injure the tissues and organs in which they reside by the consumption of important materials, but their action is not limited to this. This much we have already learnt in the study of fermentation and putrefaction. It is admitted that organic matter is destroyed by them, but in addition they produce new substances, some of them eminently poisonous. Thus, it has been known for centuries that alcohol is produced by fermentation. The putrefaction poisons could for a long time not be isolated; first Selmi and then Brieger achieved this result. Gradually one ptomaine after the other was found; for the whole group the new term of toxins has been introduced by Brieger instead of the name virus. They are in part crystallisable, invariably diffusible, chemical substances which are bound up neither with cells nor other formed elements, though they are produced by the cell action of the parasites. They are nowadays described by preference as metabolic products, a perfectly platitudinous notion which has far more sound than sense. In former times people were contented to call them secretory products, and I venture to believe that it is better to stand by this term in order not to lose the analogy with glandular secretion.

There are thus two sides to infection; on the one the actual living parasites, on the other their often poisonous secretions. In the individual diseases now one, now the other property comes to the front. In the case of the hæmatobiotic parasites poison formation may well as a rule count as more important; with those that live in the organs the deprivation of nutriment is much more immediately evident. The invention of artificial nutritive media for bacteria has now provided us with a convenient field for research and observation regarding all these questions.

It would be called carrying coals to Newcastle were I to sketch in London the beneficial effects which the application of methods of cleanliness has exercised upon surgical practice. In the city wherein the man still lives and works who by devising this treatment has introduced the greatest and most beneficent reform that the practical branches of medical science have ever known, everyone is aware that Lord Lister, on the strength of his original reasoning, arrived at practical results which the new theory of fermentative and septic processes fully confirmed. Before anyone had succeeded in demonstrating by exact methods the microbes which are active in various diseases, or in establishing the special functions that they perform, Lister had learnt in a truly prophetic revelation the means by which protection against the action of putrefactive organisms can be attained. The opening up of further regions of clinical medicine to the

knife of the surgeon, and a perfect revolution in the basis of therapeutics, have been the consequence. Lord Lister, whom I am proud to be able to greet as an old friend, is already and always will be reckoned amongst the greatest benefactors of the human race. May he be long spared to remain at the head of the movement which he called into existence.

It remains for me to say a word concerning the other great problem, the solution of which the whole world is awaiting with anxious impatience. I refer to the problem of immunity and its practical corollary, artificial immunisation. It has already happened once that an Englishman has succeeded in applying this to the nearly complete destruction of at least one of the most deadly infectious diseases. Jenner's noble discovery has stood its trial as successfully, except in the popular fancy, as he hoped. Vaccine is in all hands, vaccination is, with the aid of Governments, spreading continually. In the same direction Pasteur worked resolutely, even with boldness; he introduced into practice the vaccines of chicken cholera, anthrax, and rabies. Others have followed him, and the new doctrine of antitoxins is continually acquiring more adherents. But it has not yet emerged from the conflict of opinions. Still less is the secret of immunity itself revealed. Even if everything points to the view that immunity is based on the condition of the cells and the juices of their parenchyma, and not on the serum or the humours—these being probably only the means of transport for the immunising as for the infecting fluids—we must still become well accustomed to the thought that only the next century can bring perfect light and certainty on those points. The homœopathic notion that toxin and antitoxin are one and the same, seems so foreign to our biological ideas that very many experimental and practical proofs will be required before it can be admitted into the creed of the future. Before then we must at least have succeeded in finding a way of strengthening the cells in their fight with bacteria by means of immunity.

Let us, in conclusion, turn once more to the special cells which build up the body, and which arise from proliferation within the body. These exhibit numerous analogies with microbes. They also are independent living beings, or, as Brücke said, elemental organisms implanted in the social structure of the body. They can be removed, transplanted, and grafted in a new situation. If they increase, and thus form a tumour, this can produce metastases by transplantation. But the process as such is always bound up with a certain number of living elements, is always cellular in character. It is not the flowing blood which makes a tumour or a cell; it is the mother cells, from which all new formation originates.

From this consideration I have for decades drawn the conclusion that the local action of the cells, bound up as it is with certain matricial parts, dominates pathological laws, and must also determine the practice of physicians and surgeons. Cellular pathology demands above all treatment attacking the affected parts themelves, be this treatment medical or surgical. It is with great joy that I see this deduction ever becoming more widely generalised, be it with more or with less conscious knowledge. Hence follows in surgery the recommendation of early operation or destruction of the focus of disease.

But cells also, just as bacteria, exercise chemical influences. Apart from the destruction which they effect by absorption, they secrete chemical substances. These appear first as tissue fluids, passing later into the circulation. Thus arises a change in the composition of the flowing juices, particularly of the blood, in fact a dyscrasia. This is, as I have always explained, a secondary dyscrasia, quite distinct from the primary dyscrasias of the humoral pathologists, by localisation of which topical diseases, and particularly tumours, were supposed to arise. According to my view, each dyscrasia is determined by the taking in of products of tissue secretion which may now be called metabolic products, or according to the old dictum, recrementitious substances.

The tissue-juice, and the excreted material which is returned into the body have of late years gained much esteem. The semen, which I myself have always indicated as the classical example of such a tissue juice, and exhibited as the prototype of secretion by tumours and organ-cells, has provided materia medica with spermin, as has the thyroid juice with thyroidin and thyroiodin. New substances, some resembling alkaloids, others albuminates, are isolated from various organs, experimentally tested and technically worked up. So arose injection or serum-therapeutics, on the results of which we are not yet in a position to pass a final judgment, though everyone who is sufficiently unprejudiced must admit that they have in many cases been good. Experience will determine the value of these methods; you must learn by the aid of practice to deduce the lasting theoretical truths. But never forget that the source of all these substances and secretions is the cell activity of living tissue, and that its therapeutical or pathological action on the individual organs or tissues can thus accomplish no aim beyond that of exercising a regulatory influence on cell activity.

May the medical school of Charing Cross Hospital continue upon the newly-opened path with zeal and good fortune. But may its students at the same time never forget that neither the physician nor the naturalist dares dispense with a cool head and a calm spirit, with practical observation and critical judgment.

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AN ADDRESS
ON
UNIVERSITY WORK IN RELATION TO MEDICINE.

Delivered at the Opening of Mason University College, Birmingham.

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THE SCHEME FOR A MIDLAND UNIVERSITY.

So soon as I began to strive to put together a few words to speak to you on this occasion, there came into my mind, not once only, but again and again, the thought that Birmingham is soon to have a university of its own. I have the honour this evening to give the signal for the commencement of the winter session of medical studies. For many years in the past the medical school connected with the General and the Queen's Hospitals pursued an honourable career as a provincial school of medicine. Of late years that independent school has become—may I not say happily become?—the Queen's Faculty of Medicine in the Mason University College. Soon, we hope and believe, yet another step will be taken, and the teaching of medicine in Birmingham will be carried on not as the action of isolated hospitals, not as part of the work of what some would call a mere college, but as the labour of the constituent faculty of a midland university. Hence I have been led to consider how this step will affect medical studies here, and this consideration naturally began with the question—What is the real nature of the step? What does it mean? This again leads in turn to the question—What is a university? How does it differ from a college, or from a school, or from any other institution devoted to learning? What are its essential features? What are the central ideas which distinguish it from everything else?

THE SCOPE OF A UNIVERSITY.

If this question were put to the world at large the answers would, I imagine, be very varied. Many, very many, would reply at once without any hesitation, "A university is a machine for granting degrees." To-day, as of old, men are for ever asking for a sign. We all of us go about among ourselves, more or less hidden from each other, each one wondering what sort of man his brother is. We are very thankful for any token which will help us to this knowledge. Once upon a time a man's clothes told much of his story, but that time is past and gone. Nowadays, to appraise a man by his

coat needs special sartorial training, and is at the best perilous. Hence we find it a great help to possess brief hieroglyphic signs, signs which he who runs may read, telling the world that he who bears them has spent a certain time in a certain way with a certain result. And a university, so some think, exists to stamp such signs.

Others, led by what proves to be a false etymology, will say that a university is a seat of learning and of teaching which differs from all other like seats, inasmuch as it is universal in its embrace. Other institutions may busy themselves with the study of this or that branch of knowledge, but a university deals with all knowledge. It is a home of the *omne scibile*. Its saving mark is that whoever comes to it is not compelled to tread in one narrow path, or in one of a few narrow paths, but is, according to his powers and impulses, free to choose a road stretching to any point of the intellectual compass; and, moreover, while keeping, if he pleases, mainly to his own chosen track, may at the same time see something of the good and of the beauty of other lines.

Others, again, will have quite a different idea of the real value of a university. These, brooding over the fact that acquired knowledge—the body of things which have to be or can be learnt—is increasing, at a rapid rate, to such dimensions that only a relatively small bit of it can be squeezed into one human head, the limited capacity of which is one of the fundamental facts of Nature, have created for themselves a spectre which they call the danger of specialisation. These further, brooding also over the experience that the bit of new knowledge which at once, and in such an obvious way that no one can mistake it, makes for the good of man, which helps to fill his mouth or smooth his way, is prized by the world over and above other bits of knowledge which have no such clear or immediate use, are impressed with the need of securing the knowledge which the vulgar is thus tempted to neglect. Accepting the classification of desirable things into the true, the beautiful, and useful, and the dictum that the useful will take care of itself, they have come to the conclusion that the distinctive work of a university is to cultivate that kind of knowledge which shall be of general benefit to all, no one receiving profit for any particular line of life, and to cultivate that knowledge in such a way that the garments of the scholar shall be kept unspotted from the useful, that being driven off to technical schools where specialisation may run riot at its will.

Which, if any, of these views, or of others on which I might dwell, is true; or how much of truth is there in any of them?

Mediæval Universities and Guilds of Learning.

In attempting to answer this question, I must go back for a moment to history. I am not about to discuss the origin and development of universities, interesting as that story is. Should any of my hearers wish to find a brief but bright sketch of that story, I would bid them read the admirable address by Sir Roland Blennerhassett, delivered at Queen's College, Cork, last year. I will content myself here with calling your attention to the fact that universities took origin in the Middle Ages as guilds or corporations of scholars or learned men. The word "universitas" was then used simply in the sense of "guild" or "corporation"; it meant nothing more than a number of men bound together into a body for some special purpose or purposes. The age when the early universities were founded was an age of guilds or corporations, and I need not in this place dwell on the worth of corporations. In that age, the world—that is to say, the world of Europe—was active; but the activity was not the same as the activity of to-day. The arts were in the full tide of their development; painting, sculpture, architecture were triumphant; and the great art of war lay close to almost everybody's hand. Learning, however—that by which man influences man through the signs of words—though waking from a long sleep, was, as compared with to-day, scant and feeble. In that age every art, every occupation in life, in relation to which a man could teach his brother man something, had its guild, its university. For the art of war, the army, or the mere troop, was itself a guild; and the painter, the sculptor, the mason, the artificer of whatever kind, and even the chapman, the forerunner of expanding commerce, had his guild. The object of each guild was the development of the art to which the guild was devoted, as well as the instruction, guidance, and protection of those who followed the art.

Thus, first at Salerno, then at Bologna and Paris, subsequently at Oxford and elsewhere, those who followed learning gathered themselves into guilds and founded universities. Their object was so far like that of other guilds, in that it was the development of learning and the protection of the scholar; and the first and chief means of securing this object was to ensure for themselves leisure and opportunity for study free, so far as possible, from the disturbing influences of the rough life surging round them. Hence their guilds took on, so far as possible, the form of quiet academic retreats.

Aims of the Early Universities.

Examining these guilds or early universities more closely, we may early discern two ends which the scholars gathered together in them had at heart. Their first and chief end was the advancement of learning; their main object was what we now call research. They came together that they might learn from each other; that, mind striking fire from mind, new ideas might be born of their studying in common. And the great value of their having a local habitation was that it might serve as a beacon guiding the wandering scholar to a spot where minds other than his own were eagerly seeking truth. This brought to them now some lonely soul whose main qualification as scholar was a thirst for knowledge, now some well-trained intellect from a distant land, whose presence spurred them to fresh efforts, or quickened them with the new ideas which were moving other men elsewhere.

Inquiry was their chief but not their sole occupation. While learning themselves, they strove to teach others; and in this they had a double aim in view. On the one hand, they sought to raise up scholars like themselves; to bring forth by intellectual travail minds which should continue the work at which they were labouring, and carry down the coming years the torch of truth which they were fanning. On the other hand, though their own life was a purely intellectual life—though they lived apart from the busy world, pursuing truth for truth's sake, and taking no part in the struggles in which their fellow men spent their days—they were well aware, and other men besides themselves were well aware, that the abstract learning to which they were devoting their days was the keystone to success in certain walks of active life. Those walks were few, in fact three only. The knowledge which was possessed by them, even by those of their number who were knocking at the outermost doors which shut in the known, offered little or no help in the majority of daily avocations; it seemed wellnigh useless to the soldier, the merchant, the artificer, or the tiller; but it was all in all to the divine, to the lawyer, and to the healer. It was early seen that the man who for one reason or other looked forward to a career in the church, or in the courts, or in medicine, gained a great vantage by a sojourn in the guild of the learned. And since they who follow truth for truth's sake alone, without regard to what else may come after, are and must always be few in number compared with those who seek knowledge as a weapon wherewith to fight their way in the world, it soon came to pass that the scholars who flocked to the university as a profitable if not a necessary gateway through which to enter upon one or other of what were beginning to be called the learned professions, far outnumbered those who were drawn thither for other reasons. So much was this the case, and that so early, following so closely upon the foundation of the guilds, that almost from the very beginning a university marshalled its scholars into three companies, the faculties of divinity, law, and medicine.

He who takes the trouble to study the earlier records of these older universities cannot but be struck by the prominence in them of the conviction that what was taught at them was not only of the most direct value for practical life in the three careers spoken of, but even necessary for any marked success. Some there were, doubtless, who came to the university simply led there by the pursuit of knowledge and by the love of truth; and still more were there who, coming for whatsoever reason, stayed for the same ends, men who studied heedless of practical gains. These were the heart and life-blood of the place. Others there were who, drawn to academic studies by a love of

knowledge, specially of new and startling truths, and by a natural fondness for intellectual activity, but having no stay in them, were soon content with the culture they received, and after a brief sojourn went their way. Not only, however, from the nature of the organisations which the universities early adopted, but also from many incidental references in the writings of the times, it is clear that the great bulk of the students were drawn to the seats of learning itself, not for the sake of general culture, but to fit themselves in the best way then known for practical life. To a great extent the university was in its earliest days, for the most part, what we nowadays call a technical school.

University Degrees.

In all these ancient guilds there were two grades of membership. A youth was admitted as an apprentice, and, after a period of probation of apprenticeship, if he stood the tests by which his worth was gauged, became a master. During the first stage he was governed by the rules of the guild; as master, he shared in the government, and helped to frame the rules. In these features the guild of learning or university was no exception to other guilds; but it soon adopted special terms. The apprentice was spoken of as a scholar. The master was called either simply a master (magister) or a doctor; in the earliest times these two titles had the same significance; one was used in one university, the other in another, or both might be used indifferently in the same place. Out of this simple distinction between scholar and master, between him who is still learning and him who has learned and knows, has in the course of time sprung the whole of our present complicated system of university degrees.

The initiation of the scholar into mastership was accomplished through prolonged and severe trials. Time went slowly in the early days of which I am speaking, and writing materials were scarce. The flight from the stool of the scholar to the chair of the master was not in those days accomplished in a few hours by means of a pen and sundry sheets of paper, on the judgment of a single or it may be a pair of judges. A troop of learned masters were solemnly deputed to ascertain by repeated and prolonged interviews the worth of the aspiring scholar; their duty was not to take a hasty glance at his supposed acquirements, but, so far as possible, to turn him, intellectually, inside out, and lay his mind quite bare. Moreover, what could be learnt was then limited in extent, and the search of these "examiners"—shall I call them?—was directed, not so much to find out how much had entered into the young scholar's mind, but how it lay when it had got there, and what use he promised to make of it.

Very noteworthy is the fact that one of the most conspicuous privileges which the scholar gained upon admission to the mastership was the permission himself to teach. As a scholar, his place was to learn, not to teach; and, though by a wise foresight which might serve as an example to us moderns, part of the scholar's probation in its later stages consisted in his being allotted certain teaching duties under due supervision, the right of independent teaching belonged to the master alone. Even more noteworthy is the conclusion to which I venture to think he who studies the records of the time must come, that the granting of the right to teach was the reward not of a display of didactic ability but of the signs of power to grasp the truth, and so of the promise of success in inquiry. Inquiry in those days as compared with inquiry in our own day may seem to have been a barren thing; to a great extent the mental qualities, which under the direction of modern influences have become fruitful in research, took on in those days the form of what we now regard as mere intellectual agility. Still inquiry in those days, even though it at times moved round in a circle, was inquiry, was based on a love of truth, and where possible of new truth. And it is, I venture to think, a notable matter that our early academic forefathers, amid all their shortcomings, or what seem to us such, appear to have grasped the view that inquiry into the unknown and teaching of the already known ought always to go hand in hand and not be divorced; or at least that teaching ought not to attempt to walk alone without inquiry, even if inquiry, being the stronger, may sometimes stand by itself; and that the spirit at least, if not the actual talent of the investigator, is an important element in the calling of the teacher.

Aims of Modern Universities.

I have been speaking of the universities of old, of times long ago, when the sum of human knowledge was a mere tiny ball, and the yet unknown, but possibly knowable, surrounding it, seemed but a narrow fringe of mist. Since then men have run to and fro, and knowledge has been increased, the tide of science has surged, or is surging, into the corners of the earth—the tide of science which as it goes turns things upside down—while the dim zone of the unknown, and yet possibly knowable, now seems stretching away almost to the infinite. But may we not say that the aim of the university of old is still the aim of the university to-day? Our forefathers of old, if there be any truth in what I have just been saying, were governed by a conviction of the double nature of the task of a university. A university was in their eyes at once an engine for the preservation and advancement of true knowledge of every kind, and a machinery by which those who came to seek it might find the special knowledge which should help them in their daily life. The university of old was a guild by means of which the beginner was brought under the influence of the sage; a guild in which those who knew gave of their knowledge to those who wished to learn, amid surroundings which were rich in aspirations for wider and fuller truth; a guild continually made young by the continual bringing into the fold of new members, but only such as had proved upon trial their love of knowledge and their power to grasp it.

Are not these things the aim and the tokens of the university of to-day?

Here I seem to hear someone say, "But if these things be so, if this be the real idea of a university, we have been a university in Birmingham these many years past." Indeed, I think you have been so in spirit if not in name; and it perhaps is because you have been so in spirit that you are about to become so in name.

Among the various changes attendant upon your conversion into a university in name two seem to stand out prominent above all the others.

In the first place, there will be, it is both hoped and believed, a very large increase of the funds which can be devoted to academic purposes. Knowledge, if it is to grow strong, needs to be fed on gold; and that natural knowledge which we call science is of the hungriest, always asking for more. If your university is to be worthy of your town, it must be able to walk abroad well clothed and well fed, not shrinking into by-ways, hungry and in rags. But the whole story of the world, not the least of these latter days, has shown again and again how great are the returns which money invested in knowledge brings. I need not dwell on this; there are already many tokens that this truth is known to those able to act upon it.

In the second place, you will be able to put your own mark on the material which has passed through your hands. Hitherto, after you have purified and rolled and otherwise prepared your metal, you have had to send it elsewhere to be stamped, and you have had very little to do either with the cutting of the die or with the way in which the coins are struck. You naturally wish to have the whole business in your own hands, and may I say not without reason?—think that if it were so you could turn out better results.

The True Value of a Degree.

In due time you will be busy drawing up constitutions and framing regulations for your new university. May I take advantage of the present occasion to urge upon you not to exalt the value of a degree, not to put too great trust in the results of an examination however carefully planned, however searching and prolonged? In the old time, as we have seen, the conferring of the degree was the token of admission to the guild. It was the sign that the bearer was worthy to belong to the brotherhood of learning. In the early universities degrees were of secondary importance compared with opportunities for learning and inquiry. They seem, indeed, to have been instituted mainly in defence of the university. The members of the guild, jealous of its good

fame, reflected that such and such a fellow who had been among them for a short while only, going out into the world again, might boast that he was one of them. How was the world to know whether this were true or no without some recognisable token? The degree was such a token. It was a sign that the bearer had not only been with them but of them, that for a period he had so diligently submitted himself to the influences of the guild as to be moulded thereby. It had and could have only a relative, not an absolute, value.

May I say to you, Follow, with such changes as the changes of time call for, the example of our forefathers? Do not strain the examination overmuch. Do not suppose that any examiner, however acute, however careful, can fully appraise the real worth of the examinee. One thing he can do—he can do to-day, as they did of old, determine, with fair success, whether the apprentice has with due diligence so availed himself of the opportunities of his apprenticeship that the guild will not suffer by his becoming a member. But when he tries to go beyond this, when he attempts decisions as to the real worth of those who come before him, certainly when he attempts decisions which are to be regarded as forecasts of careers to come, those will be found to be uncertain, or even wrong, the more so the finer the decision. Moreover, all examinations necessarily tend to take on the characters of machinery, and machinery, while it is admirable for turning out things by the dozen, is by its very nature an enemy to the development of individual power. And yet that, in a world where a multitude of influences tend to nurse the commonplace and repetitive, is the very thing which a university should be most jealous to advance.

Medical Degrees.

Let me, however, turn aside from generalities such as the above to say a few words about the particular degrees which are special to the present occasion—degrees in medicine.

I shall, I trust, carry you with me when I say that the object of the institution of medical degrees is to select out of those who press forward to join the medical profession the men who give promise of becoming real doctors. It is a means of marking those who may be expected to show by their subsequent careers that they possess the power to heal the sick. When in the early days of the universities the academic rulers prescribed certain studies for those who sought to be doctors of medicine, and insisted on those studies being diligently and successfully pursued, they did so under the conviction that each and all of these studies gave power to the arm of the doctor in his struggle with disease. As I have said, they believed that what they taught was useful and necessary for practical life. The degree which they bestowed was undoubtedly honourable, but they never looked upon it as ornamental. They gave the doctor a special robe that men seeing it might know at once through what studious labours the wearer had passed, and how he thereby differed from other men. They never thought of it, or of the degree as a thing to be flaunted, for pride's sake, in the face of the people.

Let us follow their example. Let us, as they thought they did (they may have been mistaken in their details, but this does not detract from the value of their purpose) see to it, that the studies which are demanded of the doctor are those which are calculated to fit him in the best possible way for his task in life. Now success in a medical career—and that is the real proof of the possession of power to heal or to relieve the sick—is contingent on many things, on the concurrence of many diverse qualities. Of these some, and those by no means unimportant, cannot be taught by any professor, cannot be tested beforehand in any school; of such the world is the only schoolmaster and life itself the only examiner. One need not live long to have come across men full of knowledge, quick to see, sure in judgment, and nimble of hand, who yet have failed to gain power over patients because they have lacked something. At the very best any test of a doctor which a university can apply is a partial one, and, viewed as a guarantee that the patient will find in the doctor what he expects, in many ways imperfect.

Bearing this in mind, ought we not to be all the more careful in seeing to it that in the matters in which we can apply tests, our tests should be of such a kind as to anticipate, so far as may be possible, the judgment of the world, that the men whom the university stamps with its approval should be men having the promise of real skill? Ought we not to avoid attaching too much weight to purely academic acquirements? Is not this all the more necessary in view of the ever-increasing range of theoretical studies through which the neophyte must labour before he comes even within sight of his real goal? In the old days of which I have spoken things moved slowly, time was plentiful, and that which could be learnt lay within a narrow circle. The doctor of medicine in those days spent many years in study for his degree, and there was very little call for him to make a choice in his studies, so many of the things which the university taught were thought to fit him for his future life. Nowadays, while the increasing struggle for existence has made time more and more precious, and so puts a premium on the rapidity with which the qualification for any post in active life can be secured, the knowledge which the doctor must possess, if he is successfully to compete with his fellows, is continually and rapidly expanding, and so demands a longer as well as a more exacting novitiate. Clinical knowledge rests as on a basis of pathology, pathology rests on anatomy and physiology, or more widely on biology, biology rests on chemistry and physics, and these in turn on mathematics. Each of these sciences is stretching out day by day not only wider but deeper, and a knowledge of each one of them is only possible through a knowledge of that which is its basis. Put together, they form a staircase, the steps of which year by year become more numerous, steeper, harder to climb; yet up this expanding staircase the student must painfully toil, in the hope that when the summit is reached he may have leave to earn his bread by caring for the sick. He must do this, and while he is climbing or before he begins to climb, he must learn yet other things which fit him to be a citizen of the world.

Selection of Test Subjects.

Now it is obvious that, whatever may have been possible once, it is impossible nowadays to demand that all of each of these things should be learnt by the student of medicine. Though possibly the power of man to learn is increasing, though each science as it becomes more and more consolidated can be expounded and apprehended with greater ease, though the grasping of one science is in itself a help to the grasp of other sciences, yet beyond doubt that which has to be learnt is enlarging far more rapidly than is man's ability to learn. And, though it is doubtless true, so varied in its attributes is the art of healing, that almost every scrap of knowledge may in due time and place serve the healer in good stead, yet some choice must be made in the things which he who sets out to be a doctor is bidden to learn.

A still stricter choice ought to be made of the things in which tests are applied in view of the reward of a medical degree.

Object of Examinations for Medical Degrees.

An examination for a medical degree, as I have asserted, is or ought to be a test whether the examinee gives adequate promise of being able to cure or relieve the sick, whether he possesses the knowledge and ability to apply the teachings of science to the removal, mitigation, or prevention of disease. It is not to be used, as some other examinations are or may be, to test a man's mental agility and alertness, his power of rapid and correct expression, his coolness and presence of mind amid difficulties. It ought to be directed solely to appraising professional skill; simply this; all else is irrelevant.

Now I can quite conceive that this might be satisfactorily accomplished by a final clinical examination—a prolonged and searching examination it may be, but one essentially clinical, or at least professional in nature. It would, I believe, be possible to conduct such an examination in such a way that the candidate must show, by his attitude towards clinical problems, whether he had rightly grasped pathological truths; and this in turn, in like manner, would show how far he had laid hold of physiology, and therefore of chemistry and physics. Our justification for insisting on the study of these preliminary sciences is that a knowledge of them leads up to, being the basis of, clinical insight and skill. If this be so, the effects of those studies ought to be recognisable at the end. If our system of training be really a sound one, if

at each step an indelible stamp is left on the learner, then at the end we ought to be able to trace backwards the road along which he has trod.

I conceive it possible, I say, to test the fitness of the candidate at one step by one adequate final test; but there are obvious reasons, on which I need not now dwell—reasons pertaining to the economy of time, to the advantages of stimulating the more slothful student, of more continually watching over the wayward one and of early eliminating the hopeless one—in favour of the plan of arranging that the degree should be the final goal of successive examinations at the several stages of study. It will be the duty of the authorities of the new university, when it comes into being, to prepare regulations for its medical as for its other degrees. It is not for me, and, even if it were so, this is not the occasion, to dwell on the details of the regulations which ought to be adopted; but perhaps I may be allowed to make some general suggestions, to give utterance to some reflections which my experience, now not wholly brief, has borne in upon me.

The Essentials of Medical Education.

As I said just now, it has already been impossible to insist by the tests of an examination on the student gaining a knowledge of everything which has a bearing, even a very direct bearing, on the medical art. We must not attempt to make the field of examination coterminous with the field of knowledge; we must restrict the field within narrower limits; and as years go on, and science grows more and more, the restriction must become more and more decided. The wise man will look ahead and strive not to frame regulations which within a relatively short time circumstances will compel him to mend.

Looking ahead, we may be sure that our efforts at restriction can be conducted along certain lines only. Far away in the future it will remain as true as it is to-day, and perhaps appear even more clear, that sound practice must rest on a wise pathology; this, in turn, on an enlightened biology; this, again, on a firm basis of chemistry and physics. It is not possible to-day, nor will it ever be possible in the future, to lighten the burden of the medical student by throwing out any one of the sciences which in an ascending series form the basis of the science of medicine; if you attempt to draw any one of these sciences out and away from one of its fellows, the educational edifice falls to pieces.

Yet it is absolutely impossible, in view of the expenditure of time and money, to say nothing of brain capacity, that each student on his way to become a doctor should become in turn a physicist, a chemist, an anatomist, a physiologist, or even a pathologist. A cutting away must be done within each science, and as time goes on the pruning knife must be used with greater and greater effect. How should the cutting away be done? There is, I venture to think, a bad way and a good way.

One way is to pass in review each of the sciences and pick out the bits, the separate facts, and even the disjointed laws or doctrines which are known at the present time to be used in the construction of medical science or in the applications of medical art. We might, for instance, ranging over the wide and varied field of physical science, choose the particular bits—bits of mechanics, bits of hydraulics, bits of electricity, bits of optics, and the like, which the teacher to-day in physiology or in pathology takes for granted as known and acknowledged when he is expounding the solution of a physiological or pathological problem, or which are called into play in the sick room as part of, or guide to, some therapeutic means. And so with the other sciences. We could thus undoubtedly lighten the overloaded medical back. But with what result?

I will say nothing of the task of getting these disjointed fragments, held together by no logical ties, deprived of all suggestive connections, securely lodged in the learner's head, a task of great and disheartening hardness, a task, moreover, which would probably, through its repellant difficulties, be found to consume well nigh all the time and energy which the proposed restriction was supposed to save. It will be enough I cannot help thinking, if I ask the question, Who is to be the authority to decide which bits of this and that science are pertinent to medicine? Who is to pick them out and frame them into a schedule? It will be enough, at least, if I add the reflection that when we have gathered these various bits together we shall find them a shifting mass. Each science is for ever changing; new facts are being discovered, new truths are coming to the light. That which to-day is unknown, or if known would be rejected, as having no relation to medicine, by the builders of a schedule such as I am imagining, may to-morrow become the corner stone of new medical truths. Were such a schedule in existence, few years would pass before the man in active practice would be heard lamenting his misdirected education, in which, while he was taught much which he now finds to give him no help in his daily life, that which he would now find most useful, even though then known, was left untaught. Moreover, the wheels of the academic machinery, which enacts and changes regulations, move slowly with much friction. Again and again it would be found that medical theory, and therefore medical practice, was being powerfully swayed by some bit of chemistry or physiology long before the academic authorities had time to insert it in their schedule.

Am I not right in saying that this is a bad way?

But there is another way.

From time to time the man of science is, according to his mood, pained or amused at a man of letters of repute or even of eminence—a poet, a historian, or a novelist—delivering himself upon a difficult, disputed question of science. The man of letters may be acute and logical, may have diligently studied the special facts bearing on the problem; and yet, to the man of science his conclusions merely raise a smile or a sigh: they are so preposterous, so obviously wrong, that they will not bear for a moment the test of rigid scientific scrutiny. So again, within a narrower circle, the physicist or the chemist from time to time flounders conspicuously when he attempts to solve biological problems; the biologist when he pronounces judgment on physical or chemical theories; and either of them when he delivers himself of his views on questions of abstract philosophy. And that though each in his treatment of the subject may show talent, acumen, and knowledge. There have been instances to the contrary, but it is the above which the more often happens. A master in one branch of learning, if he attempts to go beyond the tether of his accustomed thinking, is apt to expose himself to defeat at the hands of a mere disciple. For each kind of learning, each branch of science has what may be called its own way of thinking. Different phenomena observed by different methods, different ideas born in different ways, different devices for overcoming different obstacles: all these go to create different attitudes of mind and different modes of laying hold of truth. Not until the mind has been accustomed to watching the phenomena which constitute the subject of a branch of science, not until has been learnt by practice the ways in which in the past the problems presented by these phenomena have been solved, is it ripe for the attack on problems yet to be solved, or for critical judgment upon solutions offered by others. This is, at once, the only real and the royal road of learning a science, getting to be able to think in it, to grasp the ideas which form the body of it in such a way as to be able, if opportunity offers, to add to it new consonant ideas, or at least to judge truly new ideas offered as being so consonant.

Training to Think.

This is the kind of learning which the doctor needs. His life is, in one aspect of it, a prolonged investigation—not a continuous inquiry into one homogeneous problem, but a repetition of attempts to solve the multitude of diverse problems presented to him day after day. His success, on this side of his life, at least, will depend on his power of right thinking; and his power of clinical thinking is in part the outcome of his being trained to think in other things. He needs to be trained to think in physics and in chemistry in order that he may use these sciences aright when he attempts to study biological, physiological problems. He needs to be trained to think in physiology in order that he may think aright in pathology, and so, with his feet set in the right path, may, in his future life, be able, through the instincts as it were of a well-built mind, to recognise swiftly the value of the right views and the worthlessness of the wrong views, which from time to time will be offered to him, touching the nature and causes of disease. It is not the facts of physics, of chemistry, and of physiology which form the most important part of the doctor's training during his novitiate of study (the facts of anatomy stand on quite a different

footing); it is the right way of viewing these facts, the right way of thinking about them, which is the essential need. If the mind be put in the right way, the facts can be gathered up and put in their proper place at any time, even in late after-life. But the mind can be fixed aright only in the early years of training.

Teaching and Research.

Here I fancy I hear someone say, "I thought you were proposing to lighten the burdens of the medical student; surely it is not a blessing but the reverse, which, if I rightly understand you, you are now offering to him. We are groaning under the heavy burden of having to compel the student to study these sciences ancillary to medicine; we hitherto have been content that he should know; you are proposing that he should not only know but understand. Do you call this a help?" Yes, much help every way, but only on two conditions touching the way in which the affairs of a university are conducted.

The first condition is that the authorities to whom is entrusted the appointment of the teacher, professor, call him what you will, of each of these sciences, should, in the selection of the holder and in the award of the emoluments of the chair, recognise, and that the teacher himself should recognise that the office is one not of teaching only, not of didactic exposition only, but of learning, of inquiry and research. I know very well that the gift of investigation and the gift of facile exposition do not always, possibly do not often, go hand in hand. But the power of thinking in a science on which I have been dwelling is not taken in as drops falling softly from the lips of the teacher into the open mouths of the passively recipient hearer; it has to be gained by the exertions of the learner, and largely by active work in the laboratory. And I never heard of anyone having in him the true spirit of inquiry who in the quiet studies of the laboratory failed to carry his pupils with him onward from truth to truth, however sorry a figure he might cut when he attempted in a formal manner to thump the professorial pulpit. On the other hand, if the spirit of inquiry be lacking, an exposition clear as crystal, aided by elaborate diagrams or a projection lantern, while it seems to be wholly luminous, may leave the mind of the hearer really dark. The art of teaching in the true sense of the word is not the art of pouring into empty vessels; it is the art of awakening latent powers, the art of nursing that feeble infant, the desire to know, until, growing strong in limb, it is able to walk alone and go on its own way. The only teacher who can truly teach is one who is himself bent on going forward, to whom each bit of new knowledge which comes before him is not something to be stuck in its proper place in the catalogue of things known, but a stepping-stone from which to make a new stride.

Examinations.

The second condition is that the tests, trials, examinations, call them what you will, by which the progress of the student is measured, should be directed to appraising his intellectual growth, not his accumulated knowledge, to determining how far he has got on the road, not the amount of luggage he has gathered on the way. This cannot be achieved solely by means of one or two trials of written questions and answers, even with the aid of a string of manipulative puzzles, often called a practical examination. By hypothesis we are striving to lighten the burden of the medical student, we are desiring to find out the minimum of knowledge of any one science, say physics, possessing which he may be permitted to pass on to the study of the other sciences. I am arguing that it will be enough if we can be assured that he has learnt to think in physics, that he has grasped the methods of physical inquiry to such an extent that when in some other science, in pathology for instance, a problem is being treated by physical methods he can comprehend that treatment. No stranger examiner, even though he had the skill of an angel, could gain that assurance by merely shooting questions at the student on one or two formal occasions. One person only is in a position to form a judgment on the matter, the teacher who has really taught the student, who has brought him on his way, not by formal lectures only, useful as these are in their proper place, but by frequent intercourse in the laboratory, watching him at his repeated exercises, sounding again and again by quiet talks the stream of his thoughts. He alone is in a position to say that which we are supposing is all that need be said, "Such and such one understands what he has been taught and may now safely pass on to other studies."

If it be feared that such a judgment is a responsibility too great to be laid on the shoulders of one person, seeing how personal predilections or other motives might come in to warp it (though in a well-ordered mind and a well-ordered university loyalty to the science on the one hand and to the university on the other ought to be a safeguard strong enough to render such a fear of little moment), let the judgment of the teacher be checked by someone else; let the student's fitness be declared out of the mouth of two witnesses to his work. But so far as I can see it is only by taking the teacher into full confidence, and making large use of him, that we can hope so to adjust the increasing demands of the sciences ancillary of medicine to the fixed and stationary capacities and opportunities of the student, as to train up men in such a way that their purely scientific studies shall be wholly a help to and not at all a drag upon their strictly professional learning.

Endowment of Teaching and Research.

Here it may be said, "This proposal to lessen in the case of the medical student the demands on the ancillary sciences will bear hard upon the teacher. It lessens the time to be given up to each science, and so virtually lessens the number of the teacher's students and, therefore, his fees, while at the same time it increases the labour which he spends on each student; moreover it cuts away, so far as the medical student is concerned, the higher teaching of science. The life of the teacher is a hard struggle as it is. If the artificial props by which he is supported be taken away he will fall to the ground."

Here comes in the idea of the university. A university is not an educational institution directed by the principle of "payment on results." It does set itself up as a rival to a system of classes which proposes at the least expenditure of time, money, and, it may be added, of brains, to drive a herd through the same narrow gateway of this or that formal examination. The great reason for its existence is the encouragement of learning, and that irrespective of the immediate benefits of new truths. Because it works for ends the good of which may not be seen at once it cannot be conducted as a "paying concern." If it is to flourish it must not be expected to live from hand to mouth, its livelihood must be assured to it by the gifts of its friends, or, failing that, by the aid of the State.

As the university looks to be treated by the world so it must treat those who do its work. Since it lives for the advance of knowledge, it must see to it that the men who are for the time being its flesh and bones are placed in circumstances so far as possible favourable for their doing their best to push forward the limits of the known. Part of these men's work is, as we have seen, available for immediate use, and as such may be duly appraised; but the value of much of it lies hidden in the future. It is just this uncertain moiety which needs the most kindly care. The worth of a university is to be measured not alone by the number and quality of the graduates which it turns out into the world, but also, and even more so, by the number and quality of the new truths which go out into the world from its laboratories and lecture rooms: by its work of research will it in the end be judged. Research grows on leisure and quiet; only in rare cases will it flourish in the midst of turmoil and with the wolf crying at the door. By all means, as I have already urged, let teaching and learning stand side by side; bid the teacher investigate and the investigator teach; but let the teaching be so ordered and so rewarded that the teacher has ample time and repose for his research, and, content with his hire, is placed beyond the temptation of giving up to the search for gold the time and energy which ought to be spent in the pursuit of truth.

You here, in Birmingham, have a great opportunity before you. You are not trammelled by historic bonds, or by vested interests, or by ties of the State. You are free to mould your new university as your judgment directs. May I bid you not to copy slavishly the outward lines of any model, old or new? Do not, on the one hand, attempt to wear the clothes of the old universities, the fashion of which has been determined by a past which you have not. Do not,

on the other hand, be led to think that when you have spread a net of examinations you have built a lasting house. Strike out a path for yourselves. In doing so let the spirit of inquiry be your guiding spirit; you shall find that as you follow it other things will come in its wake. If your teachers be men busy garnering new truths their pupils will gain real knowledge. With such teachers and such pupils you may safely throw aside many of the present devices, at once irksome and insufficient, for testing the work of the scholar. You will be able to afford to make your degrees at once efficient and economical, inasmuch as they will be remunerative not merely by the possession of them, but in the very getting of them. If you do this it will be strange if you do not reap the reward not of honour alone, but also of material success.

I fear that I may have been preaching heresy, and that in many things which I have said I have been very bold, but I have been encouraged to think that I might speak freely in a place which in times past and in other things has shown that it is not afraid of leading the way. One word more and I have done. I have been speaking this evening chiefly of matters medical, and have been urging the claims of scientific development, but I would not wish to be thought the advocate of science alone. Though it is true that the term "university" does not mean the care of universal knowledge, it is equally true that the full good which a university may gain cannot be gained if it narrows itself to one line or even to a few lines of study. For each branch of learning nothing is so good as to be continually in touch with other branches. In the ideal university whosoever comes finds what he wants to learn, whatever it be. May I hope that your university will draw near to the ideal, that it will set itself to nurse every kind of learning, disdaining no kind of knowledge because it seems useless, being afraid of no kind of knowledge because it is openly, even glaringly, useful.

AN ADDRESS
ON
MODERN UNIVERSITIES.

Delivered at the Opening of the Medical School of University College, Cardiff.

By ROBERT SAUNDBY, M.D., LL.D., F.R.C.P.,

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Introductory.

I am honoured by being asked to address you at the opening of your winter session, and to have this opportunity of seeing your college, of meeting your teaching staff, and of saying a few words of welcome to those who commence, as well as to those who rejoin, their classes in this medical school.

Before going on I desire to say how much I regret the absence from ill-health of our friend Professor Haycraft, and I am sure you share my hope that he may speedily be restored to health and to those studies by which he has built up a brilliant reputation for himself and has conferred lustre upon this college.

I should like to congratulate you who are students of medicine upon the career you have chosen. There may be professions in which the work is better paid and less exacting, but there is none the practice of which affords the same varied interest if we come to our work in the proper spirit—that of naturalists or observers of Nature. The present is the time for you to cultivate this faculty, and for this purpose may I urge you to study botany, not in books only, but in the laboratory and the field on every opportunity?

This practice will not only initiate you into scientific methods and familiarise you with the great principles of organic structure and function, but will form the groundwork of a study which, in many of the phases of life, opened up by a medical career, may very reasonably be pursued with pleasure and profit. Therefore, neither despise this study nor regard it as of merely passing interest. Make a point of going to every botanical excursion, for you will find that you can learn more from these pleasant holidays than from much reading of books.

I hope you will excuse me for having fallen into the temptation which such an opportunity as the present affords to offer advice. But as I have said so much will you bear with me if I make another suggestion? Learn to read French and German with such facility that the periodical scientific literature of these two great nations shall be open to you. Nothing is easier than the acquisition of this amount of knowledge, as it requires only a dictionary, a reading book, and a sufficient stock of perseverance. Above all, recollect that you are not here merely to learn how to pass certain examinations, although that is a duty which has to be kept in mind.

Most of you will have in these few years of study your only opportunity of obtaining systematic instruction in scientific principles. You may not learn here how to diagnose measles or to treat whooping-cough, but you ought to acquire what is of far more importance, those habits of scientific thought which will make you accurate diagnosticians and rational practitioners.

The University of Wales.

You are fortunate in the conditions under which you are beginning your professional studies. You are students in a college possessing faculties of arts and science in which students may proceed to the degrees of B.A., B.Sc., etc., so that you are associated at the outset of your professional education with a broader culture than that of a purely medical school.

I hope many of you have taken advantage of that wider instruction before beginning your present studies. You are *alumni* of a college which is a constituent part of a university. The University of Wales is the youngest institution of its kind in the kingdom, and, like all young things, it is interesting because of the immense possibilities for good or evil that lurk behind the veil that hides the future. My interest is of the most sympathetic kind, for no one recognises more than do I the influences for good which such a university may exercise under proper conditions. Doubtless for sufficient reason your college does not attempt to give a complete course of medical instruction, but limits its functions to the first two years of professional study—that is to say, you are taught here only botany, geology, chemistry, physics, anatomy, physiology, materia medica and pharmacy. I should like to suggest the addition of bacteriology to this list as being most fittingly taught in its broad general principles during these years. Although there can be no difficulty in completing your school by the addition of Chairs of Medicine, Surgery, etc., whenever your Council shall see fit, there is such a well marked natural line dividing the subjects taught from those omitted that students may without disadvantage study here for two years and then proceed to some other great school for the concluding part of the curriculum.

The Principality of Wales may be proud of these first steps in the development of its medical school, and should rejoice that that school is connected with its University.

The Scottish Universities.

English medical education has unfortunately proceeded upon other lines. The English Medical Schools have been purely professional training places, and have grown up in connection with our great hospitals. They have given an excellent practical training, but their deficiencies in other respects have of late years become too obvious to be denied. Hence has arisen the demand for a university for London which shall be really a place of teaching and with which the medical schools of London may become properly related. In Scotland the national universities, having their seats in populous centres and not despising the encouragement of "bread studies," have fostered flourishing medical schools which have derived great advantages from their university connection, and have contributed no little in return to the prosperity of those seats of learning.

At St. Andrews alone has medical education stagnated, no doubt on account of the small size of the town; but the munificence of a nobleman well known in Cardiff the Marquess of Bute has now provided a building well equipped for the provision of just the same limited medical course as you

have here, and it is to be hoped and anticipated, in view of the crowded state of the other Scottish medical schools, that a career of usefulness now lies before the St. Andrews Medical School.

English Intermediate Schools.

Why is it that England should have shown herself in the past so strangely indifferent to University education—nay, one might say so indifferent to education of all kinds? One hardly likes to say, with the Bishop of London, that the English public cares nothing for education, because it is difficult to conceive any apology for such an attitude that would not be too uncomplimentary to our fellow-countrymen. I am inclined to think better of them than this, and to believe that it is mainly because of the sort of thing which has been so long associated in their minds with the word "education" that they care so little for it. What wonder is it if John Bull undervalues education when he sees how little learning results from four years at a great public school, followed by three years at a still greater university, each claiming to give the best education in the country? The day has hardly yet passed in which education at a great public school consisted in practising the art of writing bad Latin verses, and the after-years spent at a university still implied, for the great majority, no substantial addition to the scanty store of school-acquired learning. With universities and public schools in which play takes the place of work, and the art of teaching is held of no account, why reproach the British public with want of care for education? The fault lies with our educationists who neglect to teach, who despise the duty of preparing for the professions, who have allowed the pursuit of athletics to be elevated to such a height that the future captains of the schools will not be the heads of the sixth forms, but the captains of cricket, football, or boating clubs. Such an exaggerated estimate of athletics as at present finds favour in English public schools and universities is madness. It amounts to a vast waste of enormous national resources, and is little short of a breach of trust on the part of heads of schools and colleges, who cannot conscientiously believe that they are doing their duty to the boys confided to their care. We, who as teachers and examiners, have to do with the unfortunate products of the present public school system, know the extraordinary difficulty which they find in passing their examinations, and we attribute this to their having undergone no previous mental discipline; they come to us without having acquired the power of application which it is above all the business of a schoolmaster to develop.

Defective University Organisation in England.

No doubt there are hardworking grammar schools in our great cities—such as St. Paul's School in London and King Edward's School in Birmingham—where teaching is still regarded as the duty of the teacher and application is required from the taught; but such schools have no corresponding universities to which to send their boys. They must go either to Oxford or to Cambridge, where the demon of athletics reigns supreme, and where professional studies are deprecated, if not despised. These universities, moreover, by reason of their remoteness from the paternal home and the consequent increased expense involved, are in many cases beyond the reach of those who desire and would profit by the educational opportunities which a university affords.

In spite of public indifference and class prejudice, the demand for more universities has made itself heard, so far, at least, that charters have been granted to the Victoria University and to the University of Wales.

In your own case there has been a recognition, if parsimonious, of the principle that the State must provide the necessary funds. We in Birmingham believe that a university is a necessary complement to the educational system of our city, and we are endeavouring with some success to take the needful steps for its establishment. But the great difficulty is the want of money. No one wishes a shabby half-starved university, with a poor library, badly equipped laboratories, and an underpaid teaching staff. The ideal modern university must of necessity be an expensive institution—a few class-rooms grouped round a common hall can no longer suffice for its installation.

A German University.

Let me describe to you one of the smaller German universities, that of Strassburg, which has an annual attendance of about 1,100 students, and may therefore fairly serve as a model of a provincial university, such as we should like to see not only in Birmingham, but in other great English cities.

The university buildings comprise forty special institutes fully equipped for teaching theology, law, philosophy, philology, geography, archæology, ancient and modern languages, chemistry, physiology, pathology, geology, physics, botany, pharmacy, pharmacology, bacteriology, etc. The maintenance of these buildings costs the university about 360,000 marks, or £18,000 sterling per annum.

The library contains 730,000 volumes, and possesses an annual budget of 127,000 marks or over £6,000 sterling. The teaching staff consists of fifty-six ordinary professors who divide among them 523,000 marks, or an average income of £465 per annum. There are thirty extraordinary (honorary) professors, thirty-three *Privat-docenten* and two lecturers, the last two classes of teachers being paid by students' fees.

The total annual expenditure of the University amounts to 1,052,370 marks, or in round figures £52,000 sterling, of which sum the State contributes more than nine-tenths.

No one who knows the Germans will say that they are an extravagant people, and it is certain that money in many respects goes farther among them than with us, so that we may assume that £50,000 a year is not an excessive estimate for the expenditure of a properly equipped modern University.

The Duty of the State towards Universities.

Where is the money to come from? There can only be one answer to this question:—From the State. The State, which has given free elementary education, must complete its work and give, not free, but State-organised and state-equipped secondary and University education. The Lord President of the Council is reported to have said in a speech delivered by him not long ago in Manchester, that it was impossible, and in his opinion, undesirable, that universities should derive their main financial support from the State, for the reason that State assistance to such an extent would involve State control, and this he thought incompatible with the perfect and complete efficiency of an independent college. He admitted the indignity of colleges having to canvass for subscriptions, and he saw no other source upon which they could rely than the generosity of private donors. It is not encouraging to have such opinions expressed by the official head of the educational business of the country. One can hardly believe that the speaker has got beyond the common English idea of a university as a luxury for the well-to-do.

If the establishment of universities is for the benefit of the nation at large, the nation must and will pay for them. Are they, or are they not, beneficial? This is the only question worthy of discussion. The objection that State control is opposed to university efficiency is contradicted by the experience of all civilised countries, England alone excepted, where, be it observed, it has never been tried! In Scotland the universities receive very substantial assistance from the State, and this has not been accompanied by any paralysing effect. On the whole there is much to be said for a certain amount of State control, as in all university matters a Minister is a more impartial referee, able and willing to hear all sides of a question and to decide without respect to local considerations, and in the long run it is certain that national rights will never be sacrificed to those of a class, as has happened so often when funds have been placed in the keeping of private trustees. The worst of all evils in a university is the want of adequate funds, and I would rather see the establishment of our Birmingham university postponed for a generation than get one to-morrow which would be badly equipped and cramped in every direction, or worse still, that it should under pressure of competition attempt too much and do nothing well. I trust we shall show a strong determination to work within modest limits until the public comes to our aid and insists upon proper State support being given to institutions able to put forward such claims upon the national purse.

What are these claims? The national importance of the work done, and the impossibility of raising sufficient money

in any other way. There are only three possible bases upon which a university can be carried on.

The first of these is a commercial basis. Universal experience has failed to produce a satisfactory example of this type of institution, nor need we go to America for illustrations of the bad results which the commercial spirit, stimulated by want of funds, can produce in university affairs. The second basis is private benefaction or endowment, by which means great universities have been founded in America, but there is not the same rapid growth of wealth in this country, nor is there any modern instance here of the gift of such a vast sum as would be needed to build and endow a single university. No doubt there have been several cases in America, notably the Universities of Cornell and Johns Hopkins.

To build and endow a modern university would require about two millions sterling, but even if this vast sum could be obtained it would not be under proper public control, and there would be no guarantee that it would always be applied for the national benefit. Permanent endowments in private trusts are not the most desirable social institutions, and no country has more illustrations of money misapplied in this way than has England. To tell us, as did the Lord President at Manchester, that we must wait until some benevolent persons provide these great sums is equivalent to postponing the foundation of suitable modern universities to the Greek Kalends. The third and only practicable basis for a university is that of State support, which has in its favour the very strong argument that it has been accepted by every civilised country in the world, England alone excepted.

France spends 7½ million of francs (£300,000) on university education, having nearly doubled the State contributions during recent years. In 1870 they amounted to only 4,215,521 francs (£168,620 17s. 6d.). She has, moreover, found it desirable to encourage provincial towns to find funds for university buildings, and has granted to each provincial faculty the title of "university," so that there are now fifteen universities in France expending over 12 million francs (£480,000) of which 7½ millions, as already stated, are derived from the National Exchequer. These fifteen universities educate 26,000 students, which is in the proportion of 1 student to 1,400 of the population of France, the cost of each student to the State being about £11 10s. Taking the population of France at 38 millions, she has 1 university to about 2½ millions of people.

In the whole of Germany there are 21 universities, educating 300,000 students, giving a proportion of 2,100,000 persons to a university, and 1 university student to 1,400 of the general population. I cannot give you the total expenditure, but the Government contributions amount to upwards of 14 millions of marks (£700,000), and the annual cost to the State of a university student is something like £23.

England possesses 4 universities, not one of which is equipped so as to fulfil modern requirements. They are in the proportion of 1 to 6½ millions of the population. They educate 9,000 students, which number gives one university student to every 3,000 persons.

I am quoting these figures in order to show you what vast sums two great nations are now spending upon university education, and to contrast with them the miserable £25,000 which our Government deems sufficient for the needs of England with a population of 27 millions, whose welfare, livelihood, nay, very existence, depends upon the maintenance of the commercial and industrial supremacy which the country has enjoyed for more than a hundred years, but which is in danger of ebbing away to better educated rivals. I may be told that the sort of education the university affords is not of much use in trade. This is the often-heard fallacy, but even were it true, it is also true that education proceeds from above downwards and not from below upwards, and that if you want to improve our national education and to give it that practical character which is needed, you must have teachers who are imbued with the modern spirit, and have been educated in universities of the modern type.

The Status and Duties of University Professors.

We hear a great deal of nonsense talked about the danger to a university if studies are pursued there for any other purpose than the love of learning, but we do not hear of the danger of stagnation which results when the university excludes from its walls all interest in the busy active life of the world. Does Oxford, where this doctrine is carefully cherished, contrast favourably with the universities of Germany where professional training is not despised? Which is more in touch with modern thought? Which contributes most to the progress of science or even of scholarship? The answer cannot be doubtful. I admit that in a country like ours, which is saturated with the commercial spirit, there cannot be so great a devotion to pure science and scholarship as in Germany, and it may be conceded that students, professors, and governing bodies in this country, are all alike too apt to consider what will pay them best, but although this tendency needs a check, it is better than the stagnation which takes place when an institution is shut off completely from the main stream of human interests and ambitions.

In the modern university, just as the students go there not to play but to learn, the professors should be appointed to teach and to inspire a love of learning, not to enjoy leisured ease or the empty dignity of an academic title and position. Heaven forbid that I should suggest that the sole duty of a professor is the oral delivery of lectures in a class-room! I admit with regret the existing tendency in some quarters to impose far too much class-room teaching upon professors, but there is the opposite extreme where the titular professor gives no lectures, takes no part in training anybody, or delivers an occasional brief course which forms no part of the work of the student for his degree.

The professor must not only teach but must be capable of inspiring a love of learning, to do which he must be himself a student, working at the head of his class, leading the way to new ideas, fresh facts, and broader inductions. The teaching of the professor must be supplemented by tutorial classes, "conferences" on the French and German plan, where all the talking is not on one side, where questions and answers bring out and test the student's knowledge, clear his ideas, and fix them in his mind. Finally, there must be compulsory attendance at frequent written class examinations. Such work in the class-room should be in part the preparation for, in part the complement to, work in the museums and laboratories. The modern student must not only read about the thing taught but he must see it, and, if possible, handle it. This condition demands space and materials, which cost money, but such a real and truth-promoting method will surely have the approval of a practical people, and will not be allowed to lack the necessary means. I believe that the more the nation hears about modern educational methods the sooner the prejudice against university education will die away, and the demand for the establishment of the necessary institutions will become irresistible. Unfortunately, it is not possible to demonstrate to a popular audience the work done in a laboratory. For popular instruction the lecture system is alone fitted, and popular lectures, that is, lectures which seek to be intelligible to persons who possess no previous training on the subject, must give a poor idea of the practical side of modern scientific education.

Defects of the Federal System in University Organisation.

The passage through Parliament of the University of London Reconstruction Bill has given a final blow to the hapless idea that a university might be merely an examining board, whose students could be left to acquire instruction how and where they pleased. But a not less objectionable makeshift is now popular, namely, that of uniting together a number of different colleges, heterogeneous in essential features, situated perhaps in widely-separated cities, composed of persons who cannot be expected or desired to see everything eye to eye with each other, possessing different aims and aspirations.

From this ill-assorted union is formed a so-called federal university. The chief merit of the plan is that it economises parchment; but this hardly seems a sufficiently important ground for such a departure from the lines upon which universities have hitherto been successfully established. The failure of this method in Ireland is most conspicuous, and it is much to be regretted that it still finds favour with our educational rulers. It is, of course, for the State to determine in which centres universities shall be established, but

it is impossible for a university to distribute itself satisfactorily over several different and distant places. The unfortunate result is a plurality of second-rate colleges, and nowhere that superiority of, at least, some one department which gives character to a university and raises the tone of the whole of its teaching. I am aware that your university has been patched together in this way, but you are still in the early days of the experiment. I recognise that there may have been a difficulty in adopting any other plan, but it will be most unfortunate if the precedents of Victoria and of Wales are regarded by the Government as a justification for the extension of the process to other localities where no such reason exists.

In reading the charter of your university, I was much surprised at the prohibition against the possession of real property to a greater value than £10,000 per annum. At the present time the restriction is probably not very burdensome, but it is difficult to understand why a Royal Charter should impose a disability from which other corporate bodies are free, or why it is that the State, which takes such a narrow view of its financial obligations towards university education, should seek to hamper such institutions in the nature of the bequests they may receive or the investments they may hold. This restriction is in the spirit of the Mortmain Act, which, whatever its utility in the Middle Ages, is now out of date.

Universities and Professional Education.

The other disability imposed by your charter is the clause withholding the power to grant degrees of medicine. I suppose the reason for this was the non-existence of a medical school in connection with either of your colleges, but I think it would have been better if the power had been granted subject to the supervision of the General Medical Council, which has statutory control over all qualifying examinations and courses of study. The relation of universities to medical education can only be solved in one of two ways—either the State, as represented by the General Medical Council or some other statutory body, must itself conduct qualifying examinations, or this work must be left to the universities, and the State content itself with the right of supervision. On the whole, the latter seems to be the plan which has the advantage, for it is not only that which at present exists, but is the one which most civilised nations have adopted. I suspect that there was no great anxiety on the part of those who had to do with procuring this charter for what they perhaps considered the doubtful privilege of engaging in medical education. Unfortunately, we know that such an objection exists in certain quarters, and has played no small or doubtful part in hindering the progress of medical education in England. If Cambridge has within the last generation burst asunder the bonds of prejudice and has founded a flourishing medical school, Oxford still misapplies its medical endowments, and declines to reorganise its medical faculty. I hope the University of Wales will always welcome medical students, and that when circumstances permit the completion of this medical school steps will be taken to acquire the necessary powers for conferring degrees in medicine.

I would urge upon you that the modern university, if it is to have popular support and to play the part that it should do in our national life, must not despise what the Germans call "bread studies," but must feel pride in training men to be useful as well as learned citizens. Law, medicine, engineering, architecture and music are not unworthy to be associated with the most distinguished culture, and while those who study them in a university gain incalculable educational advantages, the university which undertakes these functions can be no loser from being thus brought into relation with the highest and best of the secular professions. I do not wish to disparage Oxford or Cambridge, which are delightful places for study and for amusement, affording a choice of either to those so fortunate as to be able to live there, but they are not and cannot be popular universities such as the nation needs.

The Need for Universities in Industrial Centres.

These must be seated in our great and populous cities and be near the home of the youth of both sexes who demand university education. In such universities the study of ancient languages and higher mathematics cannot be allowed so preponderating a position as has been assigned to them at Oxford and Cambridge, although their educational value must be duly recognised. In this respect the University of Wales has begun well, the syllabus of its course of art studies offering much worthy of imitation by similar bodies.

There should be universities in Manchester, Liverpool, Birmingham, Leeds, Newcastle, and Bristol, and we should look forward to seeing one before long at Nottingham, and another at Norwich, or in some city of East Anglia. As already contended, the new universities must be mainly supported by the State, but the Government may fairly claim that a certain proportion of both capital expenditure and income should be provided locally. This would afford evidence of the reality of the demand.

In the expenditure upon sites of buildings the Goverment might ask that half the cost should be borne by the localties, but a smaller proportion of the annual budget, such as a third or two-fifths, would be enough to stimulate local liberality and to prove the seriousness of the promoters. Once these institutions are established and get into working order I do not fear for their future. The good they will do will secure public recognition, and will make it impossible for any Government to refuse whatever sums may be necessary to maintain their efficiency. This question of modern universities for our great cities is one in which all classes may be asked to interest themselves, for all are members of the Commonwealth and share in its well-being. But it is a matter that chiefly concerns those who live by their own labour, whether of head or of hands. This class is much larger than any other, and under our democratic constitution is able to control the Government. The one thing necessary is to rouse it to a sense of its needs, and this work of awakening can be effectively carried on by every man who believes what I have said to be true.

Our task is to explain the aim and the method of a modern university, to show the people the advantage to them of having near their reach such institutions in which their sons and their daughters may gain the advantages of a splendid practical education, and to urge that, following the example of other civilised Governments, it is the duty of our Government to aid by substantial money grants the formation without further delay of such univerities in our principal English cities.

I think the establishment of the succession duties affords an additional claim for Government help, as this heavy tax is levied upon those very sources of charitable bequest which the Lord President regards as the only available means for providing more universities. This tax has been so successful and the total amount of revenue now raised is so enormous that it is incredible we should go on spending so much upon the navy which is to protect our trade and so little upon the higher education which is needed to keep any trade to be protected.

The Prospects of the Medical Profession.

Just one parting word to you, to whom I am especially speaking to-night, the medical students of Cardiff. You have made choice of a noble profession. See to it that you live nobly, for if you wish to understand goodness, or beauty, or religion, you must, as Schopenhauer says, evolve them in your lives. Time will bring its roses to all of you, but not to all fame or wealth. But if I cannot promise that you will all become medical baronets, or even medical knights, I can assure you that there is no profession in which success more certainly attends attention to business or in which so good an income can be as readily secured. Do not despise the expression "attention to business," for it is just in business qualities that so many of us fail, and whatever the sphere in which your talents place you, the common virtues of industry, order, and punctuality will more than anything else determine the relative amount of your success. Bear in mind that success has its dangers, and that the "millstone of poverty" (to quote Carlyle) may often be "the necessary ballast that keeps our centre of gravity right." No profession is more exposed to the temptation to petty acts of injustice or more in need of the prayer against envy, hatred, malice and all uncharitableness. We are given to magnify trifles and quarrel over twopence-halfpenny, talking much about ethics and doing things which are truly feminine in their petty meanness.

We are prone to cry out against all that exists and to say

with Jack Cade, "There shall be in England seven halfpenny loaves sold for a penny, the three-hooped pot shall have ten hoops and I will make it felony to drink small beer." This revolutionary spirit, be it well understood, applies only to matters medical, for in general politics we are usually very conservative.

The clamour for better pay and greater privileges depends in part upon inability to recognise the true position which we hold in society. That position depends mainly upon the public belief that we are a disinterested profession, and that belief rests upon the vast amount of public work we do for nothing. But if we follow the advice of some of our friends and seek to put the market price upon all our services, must we not reckon upon a change on the part of the public which may not be to our advantage?

Many acts which are full of grace and are accepted gratefully as free gifts become of doubtful worth when their value has to be appraised in hard cash. Would not our relations with the public lose their character of friendly intimacy which now distinguishes them, and in return for a more strict debit and credit account should we not find ourselves placed upon a purely business footing? Is it therefore certain that we should improve our position by seeking the uttermost farthing of the debt due to us? In your relations with your colleagues avoid giving offence, and if you have any differences strive to make as little noise about the matter as possible. Do not indulge in personal controversies, and shun the men who do.

> Surely, after all,
> The noblest answer unto such
> Is perfect silence when they brawl.

Be honest men and gentlemen. In time to come most of you I hope will know the joy of wife and child, and with that substantial basis for your happiness you should find pleasure in your work and human and scientific interest sufficient to satisfy you so long as your lives shall last.

AN ADDRESS
ON
THE IMPORTANCE OF PERSONAL CHARACTER IN THE PROFESSION OF MEDICINE.

Delivered at the Opening of Yorkshire College, Leeds.

By CHARLES J. CULLINGWORTH, M.D., F.R.C.P.,
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I CONSIDER it a very great honour to have been invited to take so prominent a part in the interesting ceremony of to-day. As an old Leeds student, and a native of this city, it is with both pride and pleasure that I observe the unmistakable signs of healthy prosperity in my old school, now the medical department of the Yorkshire College. Your buildings, your laboratories, your teaching appliances, and, of course, your fine hospital, will not only bear comparison with other similar institutions in this country, but are so modern and so complete as to warrant a passing twinge of envy in the breast of a London teacher. I should, however, be making but ill use of an exceptional opportunity if I wasted the few minutes at my disposal in elaborate compliments, however well deserved they may be. My desire to-day is to say a few words that shall, if possible, be encouraging and helpful—first to those of my younger brethren who are still *in statu pupillari;* and, secondly, to those who have just completed their curriculum, and are about to engage in that struggle for existence which is apparently becoming every year more severe and more hazardous to the well-being of the individual practitioner, both "in mind, body, and estate."

First, then, allow me to address myself to those who are still students. It is now a good many years since Sir James Paget, published in the *St. Bartholomew's Hospital Reports*, a short paper embodying the results of an inquiry as to what became of a thousand of his pupils within fifteen years of their entrance at St. Bartholomew's Hospital. It was a most interesting article, and is still well worth reading in its entirety, for what was true of the medical student of thirty years ago is, in the main, equally true of the medical student of to-day, and, so far as I am aware, no similar inquiry has been made either before or since. Of the total number of Sir James's pupils during the period embraced in the inquiry (1839-59), many had, of course, been lost sight of, but the career of a thousand of them was known either to Sir James Paget himself or to his colleagues, the late Mr. Callender and Mr. (now Sir) Thomas Smith, both of whom were engaged with him in the investigation. The result is shown in the accompanying table. Of the 1,000:

23	had achieved	distinguished success;
66	,,	considerable success;
507	,,	fair success;
124	,,	very limited success;
56	had failed entirely;	
96	had left the profession;	
87	had died within twelve years of commencing practice, 21 of them from diseases incurred in the exercise of their professional duties;	
41	died during their pupilage, 17 of them from consumption.	

It may be explained that in this summary "distinguished success" means that those classed under this heading had gained leading practices in counties or very large towns, or held important public offices, or had become medical officers of large hospitals or teacher in great schools. Those are stated to have attained "considerable success" who had gained and still held at the time the paper was written "high positions in the public services or leading practices in good districts," or who had already retired on their earnings, or who had won for themselves "much more than ordinary esteem and influence in society." The rest of those who could be said to have achieved any sort of real success constituted the third class. This class, which might be called the moderates, embraced more than half the total number of those whose histories were known. Of the other classes I need not here speak in detail beyond calling attention to the curiously large number that left the profession, nearly 10 per cent. of the whole. Most of those who are classed under this heading discarded the medical profession for other pursuits—the church, the army, the stage, commerce, and agriculture.

It is the concluding portion of the paper, however, that made at the time the strongest impression on my mind, and that induced me even after this lapse of years to bring it before you to-day. "Of course," says Sir James Paget, "in watching and reflecting on the careers of my pupils I have come to some strong beliefs on subjects of medical education, but this is not the place for publishing them. Only one I will set down, which may be of use to future pupils, and is justified by some hundreds of personal recollections. In remembering those with whom I was year after year associated, and whom it was my duty to study, nothing appears more certain than that the personal character, the very nature, the will of each student had far greater force in determining his career than any helps or hindrances whatever. All my recollections," he continues, "would lead me to say that every student may draw from his daily life a very likely forecast of his life in practice, for it will depend on himself a hundredfold more than on circumstances. The time and the place, the work to be done and its responsibilities, will change; but the man will be the same except in so far as he may change himself."

It may be said that this was all very well thirty years ago, but that times have changed, and that whereas it may have been, and no doubt was, then possible for a man with character and perseverance by sheer force of good behaviour and steady plodding to come eventually to the front, no man could do so to-day unless he also possessed a more than average share of intelligence. For the general standard of knowledge in our profession has been raised and the range of knowledge greatly widened, so that much more is required to-day both in quantity and quality even of the ordinary pass-man, to say nothing of the honours men and prize winners. This way of putting the matter sounds exceedingly plausible, but it leaves out of view the fact that entrance into the profession is now guarded in a way that it was not guarded during the period of which Sir James Paget was writing, and that whereas a man could then enter upon his course of medical study without having given any proof of having received a fairly liberal education it is impossible for him to do so now. The preliminary examination in general education, which must be passed before a student can register,

though not a very severe test, is quite severe enough to keep back the hopelessly ill-educated man, whatever good qualities he may possess. Hence the struggle is not, as might be supposed, between the man who has character without intellectual training and the man who has character with it, but between the man who has intellectual training with character, and the man who has intellectual training without. In such a struggle victory rests in the end with the man who to his intellectual attainments adds character. As Sir James Paget says: "The time and the place, the work to be done and its responsibilities" may change, but the personal character of the student remains now, as then, the chief factor in determining his ultimate career.

It is sometimes said that the men who win prizes during their student life are not the best men, and seldom fulfil the expectations of their teachers and friends. I have a shrewd suspicion that the author of this dictum was some ingenious but lazy man who thought to cover his own deficiences by belittling the successes of his more industrious fellow students. Let anyone who is interested in the subject and anxious to arrive at a correct estimate of the amount of truth in this statement take up a London University Calendar and refer to the Honours Lists in the various subjects of examination for the degrees in medicine. Here and there, of course, he will find an unfamiliar name amongst those who from year to year have taken the highest honours, but he will probably be astonished at the comparatively large number of names that have since become well known, and, in many cases, even distinguished as those of recognised leaders of our profession. Amongst those, for instance, who in the years long gone by obtained scholarships and exhibitions in the examination for the degree of Bachelor of Medicine will be found the familiar names of Richard Quain, Edmund Parkes, George Johnson, Alfred B. Garrod, William S. Savory, Samuel Habershon, John S. Bristowe, J. Russell Reynolds, Henry Thompson, Joseph Lister, William Roberts, and William H. Broadbent, all of whom may certainly be said to have fulfilled the promise thus given of future distinction and success. I speak of the London University because I happen to know it best. I have no doubt the same is true of the other universities, including your own still youthful Victoria University, in which, as some of you know, I take a special interest in having borne a somewhat active part in the work of administration during the anxious and perilous years of its early infancy. Holding this view of academic distinctions, the spectacle of a student stepping forward to receive a prize has for me far more than a mere passing interest. I am conscious of having witnessed an important scene in the drama of a life. He must be a singularly unemotional person who can, for instance, witness such a ceremony as we have witnessed to-day without having his pulses stirred and his sympathies excited. For surely no study is so absorbing as that of the development of the story of a human life, especially when events have shown that life to be one of more than ordinary promise. I shall certainly hope and expect to hear again of the recipients of to-day's honours, and to learn that the successes of to-day have been a mere forecast of the many that are to follow. The conditions of success are pretty much the same in student life as they are elsewhere. The essentials—those conditions, namely, upon which all the others necessarily rest—have long ago been summarised in the well-known motto, *Mens sana in corpore sano*. There is at present no need to emphasise the latter part of this motto. The tendency appears to me rather in the direction of giving it undue prominence. I do not yield to any in my sense of the importance both to the race and to the individual of outdoor games, athletic exercises, sports, and all the various means of developing the capacities of the body, and keeping them at their best. But when I find them the all-absorbing topic of conversation, when I realise that athletic achievements are the surest way to distinction and popularity, when I observe that an increasingly large part of our newspapers is filled with the record of them, and that no part of the day's news is read so widely or so eagerly, and when I am actually assured that schools and colleges are selected on considerations affecting their athletic fame rather than their reputation for scholarship, I am tempted to wonder whether the first part of the motto I have quoted is receiving sufficient attention, and whether the needs of the body are not absorbing a little more than their share.[1] "Propose this test" says Browning:

> Thy body at its best,
> How far can that project thy soul on its lone way?

I have said enough, however, on this head. The strong common sense of our English-speaking race may be depended upon for sooner or later adjusting the balance, and for taking care that whilst the body receives its due share of cultivation, the needs of the mind shall not be seriously overlooked.

"There is no profession," said an English bishop, preaching recently to a medical congregation in St. Paul's Cathedral, "except perhaps that of the Church, in which character counts for so much as it does in the profession of medicine." If that be true, and I feel certain that it is true, it becomes of the highest importance to keep up during student life a high moral standard. The true greatness of any school or college, medical or otherwise, must always depend in the long run not upon its athletic or academic achievements, but upon the high standard of its moral tone. If you desire your own college to enjoy the best kind of pre-eminence, it must be by every one of you, senior and junior, helping to keep up the standard. You who are here to-day for the first time will find it a great change from ordinary school or college life, with its discipline and supervision, to the life of a medical student. During a great part of every day you will be free to go where you like and do what you like, and your future much depends upon the use you make of this freedom. And you who are seniors must remember that the juniors will take their tone from you. The influence of the senior students upon the junior is incomparably greater than that of the teachers on either, and gives the senior student a position of great responsibility.

I must now, however, pass on to say a word to those of you who will no longer be students in the technical sense of the word—those, I mean, who have completed their curriculum and obtained their diploma to practise. Students in the broader and equally true sense of the word, you will, I hope and believe, continue to be to the end of your lives. In fact, your experience will be very different from that of the majority of your brethren if, after being a few years in practice, you do not find that you have learnt more of your profession since you became qualified than you did before. At present, no doubt, the feeling uppermost in your minds is one of thankfulness that you have at last come to the end of what at one time must have appeared to be an almost interminable series of examinations. I entirely sympathise with my old friend and teacher, Mr. Pridgin Teale, in his opinion that the medical student is overexamined. And yet it is difficult to see in what other way than by examination his knowledge and his fitness to practise his profession can be adequately tested. I am quite sure of this, however, that although Mr. Teale did not succeed in carrying his resolution in the General Medical Council, his forcible speech in moving his proposition and the discussion that followed will prove to have had an excellent effect upon the examiners. It is well that examiners should be reminded from time to time of the main object of examination—namely, to test the fitness of the candidate to be entrusted with the care of the sick. The importance of keeping this in view was brought home very forcibly to all who were present by an amusing incident that took place at a meeting of the Board of Studies when the regulations of the Victoria University were under discussion. A member of the Board, overflowing with compassion for the unfortunate candidate, proposed to lower the pass standard for the M.B. degree from one-half of the maximum number obtainable to one-third. It was a bold suggestion, and, after the resolution had been duly seconded, there was for a few moments an ominous silence. Then one of the arts professors rose and asked the Chairman, in the most innocent manner, if he was correct in supposing that this degree would confer upon its possessor a legal qualification to practise his profession. The Chairman replied that it would. "Then, I presume," con-

[1] To show that this is not an overstatement of the exaggerated and even absurd importance at present attached to these matters, we may give an instance in point. In one of the University cricket matches played on Lord's ground a representative of Oxford made an unexpected, and very score, what in cricketing language is called a century. It is reported that this gentleman thereupon received two telegrams, each of them offering him a mastership in one of our public schools.

tinued the professor, still in the blandest tone, "that if we vote in favour of this resolution it will be equivalent to saying that we shall be quite satisfied if, when the newly qualified graduate has become the medical attendant in our own families, he is correct in his diagnosis and treatment once out of three times." It is needless to say that nothing more was heard of the resolution. Obviously, the community must be considered in this matter as well as the candidate.

But I am now addressing those more especially to whom the question of examinations has fortunately ceased to be of immediate personal concern, and I may, therefore, leave a subject which is always liable to awaken at least some unpleasant recollections.

It is well for those of you who are about to enter upon the practice of your profession to be reminded at the outset that the practice of the medical profession is not altogether a life of luxury and ease. You will have a great many unpleasant experiences. You will find, for example, that you will not have one hour out of the twenty-four that you can positively call your own—in the sense, that is, of being free from the liability to interruption by a professional call. You will sometimes feel, when you have an anxious case under your care, overwhelmed by a sense of awful responsibility. You will then realise what it is to have in your hands, resting on your decision, the issues of life and death. Nothing can make these things endurable but enthusiasm. You must love your profession with a devotion not merely sufficient to counterbalance all its difficulties and drawbacks, but intense enough to make you blind to them. Given this devotion, and the vocation of the doctor becomes to my mind the finest in the world.

I spoke a few moments ago of the danger of men during their student life in their eagerness to promote the health of the body neglecting the cultivation of the mind. This danger is by no means at an end when a man has left the school and hospital and entered upon active practice. Henceforward it takes the form of a tendency to become absorbed in his profession and to neglect other means of mental cultivation. None of us is strong enough to bear with impunity the strain of professional life without some kind of habitual mental recreation. It is, therefore, of the highest importance to set up a hobby. It does not much matter whether the hobby be a branch of natural science, or a department of general literature, or something different from either. The essential thing is to have an intellectual hobby of some kind, so as to be saved during the absorbing activities of our professional life from professional narrowness and that partial atrophy of the mental faculties that comes of disuse, and also in order to be provided, when our working days are over, with an unceasing source of wholesome interest.

The keenness of the struggle for existence is constantly in danger of making us forget our high calling, forget that we are members, not of a trades guild, but of a learned profession. I would not, on any account, utter one word in disparagement of trade. It would particularly ill become me to do so in a city whose trade is the source of her greatness. But I hope I may without offence venture to point out that the commercial code of ethics differs in some important respects from the professional code. The first consideration with the business man, for example, in regard to any given transaction is how it will affect his own interests, or the interests of those whom he represents. It is for his customers to judge for themselves how far they are likely to benefit by the bargain. The professional adviser, on the other hand, is expected to make his patient's well-being his chief care, and not to be influenced in the advice he gives by motives of self-interest. Mr. Brudenell Carter tells us that the late Sir Prescott Hewett was in the habit of saying it was not enough for a medical man to be honest, he must be chivalrous. We are ready enough to take to ourselves the title of a noble profession, but we must remember that to be truly noble our profession must set before it, and act up to, a high ethical standard. Its spirit and its methods must leave no room for the taunts of cynicism. There must be, amongst its members, no mean attempt to displace professional rivals by offers of cheaper service, or to discredit them by whispered suggestions of professional incompetence. There must be no aping of the advertising methods of the charlatan or lowering our professional societies by the introduction of some of the more objectionable features of trades unionism. There must be no practising for private gain under the misleading name of a dispensary, or indiscriminate recommendation of costly methods of treatment in which the prescriber has a pecuniary interest. And yet, I fear, some of these things are not altogether unknown amongst us. We want you, of the coming generation, to realise that the fair fame of our beloved profession in the immediate future rests with you. We trust to you to keep up its best traditions and to maintain that reputation for nobility of aim and conduct which it has hitherto possessed and which of right belongs to it.

Let me conclude with one or two extracts from a very ancient document dating from the fifth century before the Christian era, and known as the oath of Hippocrates. The best authorities believe it highly probable that the document was actually written by the great sage himself. If not, it is practically certain from internal evidence that it was written in the Hippocratic age. It appears to be in the nature of a declaration made by the pupil when the master is about to undertake his instruction in the art of medicine. "I swear," says the youth, "by Apollo the physician, and Æsculapius and Hygeia and Panacea, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and stipulation. I will reckon him who taught me this art of medicine as dear to me as my parents. I will share my substance with him, and relieve his necessities if required. I will look upon his offspring as my brothers, and if they wish to learn medicine will teach them without fee.....I will prescribe such a regimen for my patients as shall, according to my ability and judgment, conduce to their benefit. I will abstain from whatever is evil and unjust.....In innocence and in purity I will pass my life and practise my art..... Whatever houses I enter I will enter them for the benefit of the sick, and I will abstain from every intentional act of mischief and corruption.....If I see or hear in the exercise of my professional practice, or even apart from it, anything in the life of men which ought not to be spoken of abroad, I will not divulge it, regarding in such case discretion as a duty. While I continue to keep this oath unviolated may it be granted to me to enjoy life and the practice of the art, held in perpetual respect by all men. If I violate it and perjure myself, may the contrary be my lot."

Is it possible to conceive a finer testimony to the high standard of professional conduct aimed at in those remote days? May you and I, throughout our professional lives, emulate the generous and pure spirit that inspired these famous words!

If, in the battle of life that is before you, anything that I may happen to have said to-day may help you to fight manfully and to win your way to honour and success, I shall indeed be glad. "I have great confidence," says our dear old friend Wendell Holmes, "in young men who believe in themselves.....When a resolute young fellow steps up to the great bully, the World, and takes him boldly by the beard, he is often surprised to find it come off in his hand, and that it was only tied on to scare away timid adventurers." And so, with these closing words of encouragement, I bid you one and all God-speed!

A MILITARY ACADEMY OF HEALTH IN SPAIN.—In order to enable doctors who are about to enter the Spanish army to complete their studies with a view to their future duties a Military Academy of Health is to be opened in Madrid. The head of the establishment will be the Subinspector of the First Class who directs the Institute of Military Hygiene. The instruction will be given by six surgeon-majors or first surgeons with the title of Professor, and two second surgeons as assistant Professors; subinspectors of the first class rank as colonels, those of the second class as lieutenant-colonels. The doctors or licentiates who take the best places in the yearly examinations are to have the preference for admission into the Academy, and the students to be admitted are to receive pay at the rate of 1,500 pesetas a year. Students will be received for the course from October 1st to the 15th, 1898. This lasts one year, and embraces, among other subjects, the special pathology of hot climates, the organisation of the the Spanish and foreign armies in matters of health, regulations and services, sanitary material, and ambulance tactics.

SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

J. O. Affleck, M.D., President.

THE PHARMACOLOGY OF THE ALKALOIDS OF ACONITE (A. NAPELLUS).

By J. Theodore Cash, M.D., F.R.S.,
Professor of Materia Medica, University of Aberdeen.

The alkaloids derived from the monkshood have received much attention from both chemists and pharmacologists since the time when Stoerk indicated the importance of this plant as a therapeutical agent. This city has itself yielded more than one contributor to these investigations. Before the close examination of the active principles of a plant can be carried out, their separation from one another in a state of purity is essential. Professor Dunstan, who with the collaboration of Mr. Carr and others has devoted much time to the separation of the aconite alkaloids and the determination of their chemical properties, has recognised two other alkaloids in addition to aconitine as present; to these the names of benzaconine and aconine respectively have been given. These three bodies, as well as a number of derivatives, have been supplied me from Professor Dunstan's laboratory.

One main reason for the thorough investigation of these bodies lay in the fact that many aconitines which have been employed, more especially abroad, have been found to be far below the strength of a pure specimen of aconitine of British preparation. It is now evident that many of these samples, especially of German manufacture, have consisted to some extent of the two alkaloids just mentioned—benzaconine and aconine. When I mention the lethal dose (per kilo. body weight) for rabbits and frogs it will be seen that the relative toxicity of these bodies towards aconitine is low. The inter-relationship of the lethal dose holds within narrow limits for all animals examined.

	Rabbit.	Frog.
Aconitine	0.00012 g.	{ 0.000586 g. (March). 0.0014 g. (July).
Benzaconine ...	0.0272 g.	0.284 g.
Aconine	probably 0.28 g.	1.055 g. to 1.75 g.

Aconitine is therefore approximately 200 times as toxic as benzaconine, and 2,000 times as toxic as aconine.

As to the action of these alkaloids individually. Aconitine produces a slowing and steadying of the pulse, with slight fall in blood pressure when given in small doses, this effect being mainly attributable to a stimulation of vagus roots and a slowed cardiac rhythm. In so far its effect is producible by small doses of the tincture of aconite when given in sharp febrile conditions; the respiration is steadied and diaphoresis is produced. But after larger doses the further action of the alkaloid begins to develop, as shown by pulse acceleration, and following this an occasional imperfect or missed pulse due to the failure of the ventricle to perform a propulsive systole. An arhythmic systole of the auricle occasionally originates this condition. There is no failure during this stage in the myocardium, the excitability of which is actually increased. Although there is some evidence that the sequence of ventricular upon auricular action is interfered with this effect is slight in comparison with that which ensues in the next stage, for in this a large proportion of the ventricular beats may have no auricular precedent. Thus the rhythm may be as 2 to 1, or periods of independent action alternate with due sequence, so occasioning great and rapid fluctuations of pressure. During part of this phase vagus stimulation often raises the pressure by promoting the tendency to a natural sequence. The pulse is of course greatly accelerated and of the most irregular character. Finally, ventricular delirium, without more than an occasional trace of co-ordination, supervenes, death speedily resulting. In this delirium the auricles do not participate. Ventricle is throughout synchronous with ventricle and auricle with auricle. Death is primarily due to respiratory failure, for after a temporary stimulation of the respiratory centre a depression ensues, and the sensory fibres of the pulmonary vagi are paralysed. The movements become slow and dyspnœal in character, even after sublethal doses of aconitine. As regards the central nervous system, stimulation of the medullary centres yields to depression, though the vasomotor is relatively only slightly involved. Spasm is mainly respiratory in origin, but not exclusively so. General sensation is impaired, and to this in minor degree the value of aconitine taken internally in severe facial neuralgia is due. Whilst the peripheral sensory nerves are strongly depressed (hence the main use of the local application of aconitine ointment in neuralgia), the motor nerves are scarcely at all affected, and the same may be said of skeletal muscular tissue. Twitching of the muscle bundles, which is often observed as a local effect of aconitine, may modify the curve of muscular contraction; it is due to the stimulation of the nerve-end plates, and is abolished by curare. The body temperature falls after quite small doses of aconitine; the less the surface is protected from loss of heat the greater is the total reduction. This effect is largely due to circulatory and respiratory changes and to increased diaphoresis, whilst the reduction of protoplasmic oxidation (due to aconitine) acts in the same direction.

The alkaloid benzaconine, though much less toxic, has a very interesting and pronounced action. It is bitter, but does not cause tingling or numbness of the mucous surfaces. It slows the heart beat, and that often to an astonishing extent, but its effect is brought about in an altogether different way from that following aconitine. Not infrequently the slow deliberate pulse following benzaconine represents a ventricular effort which has two or even three auricular predecessors, so that a certain number of the latter have failed to rouse the ventricle to action. It is certainly a condition of asequence, but of an almost reversed character to that following aconitine. The ventricle never beats without a precedent auricular effort, that is to say, the complete dislocation of rhythm seen after aconitine has no parallel here. A block in motor impulses between auricle and ventricle is present, and in addition times of absolute quiescence in the heart walls (auricular as well as ventricular) show that the apparatus upon which the origination of motor impulses depends is gravely involved. Such pauses end by the auricle spontaneously resuming action. There is some antagonism, as may be readily foreseen, between this body and aconitine with respect to their action on the mammalian heart. Whilst the blood pressure is greatly reduced, benzaconine is not lethal owing to its action on the heart, but rather from respiratory failure. No acceleration of the respiration precedes the slowing induced by benzaconine. Unlike aconitine, this body leaves sensory nerves almost unaffected, whilst it greatly interferes with motor nerves, and to some extent with muscular contraction. Such effects are evidenced by rapid failure of response under stimulation, but recovery after a rest interval. The fall of temperature is much less than after aconitine, and it is not believed that this body will prove at all comparable to aconitine as an antipyretic remedy.

The third alkaloid aconine, though bitter, causes neither numbness nor salivation. It is not merely non-toxic towards the heart, but actually strengthens the ventricular systole and opposes the asequence and inco-ordination which aconitine so actively produces. There is little doubt that both this substance and benzacone might be of value as therapeutical agencies (if they can be procured in sufficient quantity) in some conditions of accelerated and irregular heart's action. In addition to this action, aconine (in very large doses) depresses respiration, and so acts upon motor nerves as to suspend their function. It is possible so to graduate the dose as to administer to a frog an amount which, whilst compatible with vigorous circulation, abolishes all motility for four or five days, after which respiratory and voluntary movements begin to develop. A mammal receiving a parallel dose would neces

sarily die unless artificial respiration were practised. The curare-like action is, if the dose be smaller, reduced to a re-current or intermittent response of the muscle to stimulation. Skeletal muscular tissue is unimpaired in action.

From this very brief outline of a research which has been of a very extensive character, it is clear that these alkaloids show considerable divergence in action, not only in degree but also in kind.

Whilst the introduction into aconitine of two additional acetyl groups (as in diacetyl-aconitine) gives rise to a derivative much weaker than, but in general character of effect very similar to, aconitine, the loss of the acetyl group, as in benzaconine, almost entirely abolishes all resemblance to the parent alkaloid. On the other hand, the removal of the benzoyl radicle from benzaconine (aconine remaining) produces a change which is much less striking in character, though it greatly reduces the toxicity and modifies the action occasioned by benzaconine on the circulatory and motor systems.

NOTE ON THE ACTION OF BROMIDE AND IODIDE OF STRONTIUM ON EXOPHTHALMIC GOITRE IN CHILDREN.

By A. LOCKHART GILLESPIE, M.D., F.R.C.P.Edin., F.R.S.Ed.,
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DURING the last few years I have met with several cases of thyroid enlargement, along with rapid pulse, among the deaf-mute children in Donaldson's Hospital (in Scotland the word "hospital" often represents a school upon a charitable foundation). In each case I prescribed the bromide and iodide of strontium with exceedingly favourable results. The thyroid swelling quickly diminished, lost almost all pulsatile movement; the increased force and diminished tension of the pulse and the rapid action of the heart were altered to more normal conditions; all breathlessness on exertion subsided; and if there had been any undue prominence of the eyeballs, which was absent or only slight in any of them, this disappeared. Additional evidence as to the nature of the malady is afforded by occurrence of loss of hair, and of flushing, and by more or less marked changes of temperament.

Why should the salts of strontium be used instead of the corresponding sodium or potassium compounds? It seems to me that more than one reason can be adduced. Strontium salts do not seem to cause so marked constitutional effects; none of the cases treated showed any signs of bromism or iodism. Again, it is a tenable hypothesis to suppose that salts of a metal not present in the body, except perhaps in traces, may exert a more profound effect upon an abnormal condition of the organs and upon pathological processes, even although they are not so poisonous in other directions, than the corresponding salts of metals already abundantly present in the tissues. Short details of the cases considered are given below.

Date.	Circumference of Neck.	Pulse-rate. Resting.	Pulse-rate. After Exercise.
March [illegible] 18[illegible]	12½ inches	[illegible]	[illegible]
,, 8th ,,	12¾ ,,	86	122
,, [illegible] ,,	12 ,,	70	110
,, [illegible] ,,	11¾ ,,	76	112
,, [illegible] ,,	11 ,,	80	102
,, [illegible] ,,	11 ,,	78	105
,, [illegible] ,,	11 ,,	90	100
[illegible]	11 ,,	[illegible]	[illegible]
April 1st, ,,	11⅝ ,,	[illegible]	[illegible]
,, 5th ,,	11 ,,	[illegible]	[illegible]

Case II., aged 11, a female deaf-mute, sister of Case II, similarly [illegible] ment of the thyroid gland was first noticed, [illegible] March [illegible]. The pulse-rate was 100, rising to 140 on [illegible] exam. The girl looked healthy and strong, had [illegible] the colour of her cheeks was rather too pro[illegible] very breathless on exertion, and unable to join [illegible] children at play. Her temperament also changed; she became dull and lethargic. There was no distinct exophthalmos, nor were Graefe's nor Stellwag's signs present, but the thyroid gland formed a double pulsating swelling in the neck joined by a visible isthmus; the neck over the most prominent part of the tumour measuring 13 inches. The hair fell out in considerable quantities when the symptoms were most marked. Strontium iodide and bromide were ordered, 10 gr. of the first and 5 gr. of the second, to be given thrice daily. The medicine was begun on March 3rd, 1893. Three days afterwards the pulse-rate was 82, and 120 on hopping as before. The neck gave 12¼ inches in its circumference.

The drugs were stopped on April 5th, as the thyroid enlargement was scarcely visible, the pulse had become regular, and there was no breathlessness. On March 14th, 1894, a year afterwards, the neck measured 11¾ inches, the goitre was still slightly visible, but the pulse-rate did not exceed 80, was quite regular, while there were no symptoms of breathlessness. In December, 1895, the circumference of the neck was barely 12 inches, the pulse 80, regular. The patient has now left school, but her mother writes me that she is free from all symptoms, but that her eldest sister, whom I have not seen, is still troubled with the symptoms attendant upon this kind of goitre whenever she catches cold.

CASE II.—A. H., a younger sister of the previous patient, a deaf-mute, nearly 10 years old in the spring of 1895 when symptoms of the same disease gradually commenced, presented analogous symptoms, and was treated in the same way with success. On December 12th, 1895, measurement showed that the circumference of her neck was 11⅞ inches compared with 13 inches when the goitre was first observed and treated in the earlier months of the year. All the symptoms remained in abeyance until April, 1898, when the patient was 12 years of age, or rather close upon 13. In April she was a strong-looking, well-built, ruddy-faced girl. She was, however, very breathless on even slight exertion. On April 29th her pulse-rate reached 98 when she was at rest, over 120 after any slight exercise. The thyroid gland was enlarged, pulsated markedly, exhibiting both lobes and the isthmus very clearly, but was not tender even to pressure. Both carotids showed an extremely noticeable degree of visible pulsation. There was no appreciable exophthalmos; von Graefe's and Stellwag's signs were absent. The neck measurement over the most prominent part of the glandular swelling was 14½ inches. The strontium bromide and iodide mixture was at once given in the same dose as before, was stopped on May 20th when the pulse-rate had gone down to 72, the neck measurement to 12½ inches, and all evidences of cardiac and respiratory disturbance had disappeared. On June 13th the neck measured 12 inches, the pulse was 82, regular, and the thyroid showed no visible pulsation.

Cases I and II are interesting in that the patients are sisters, both deaf-mutes, and with two other older deaf-mute sisters likewise presenting pulsating enlargements of the thyroid gland. Their parents were not related to one another before marriage, are unaware of any instances of deaf-mutism or goitre among their ancestors or relatives. The mother is said to be "nervous." Their family consists of eight in all, six girls and two boys; four of the six girls were born deaf and dumb, and all have goitres. The others show no sign of thyroid enlargement. The goitres appeared in each case at or about the age of 10 years.

CASE III.—R. B., male, deaf-mute, 9 years old in March, 1894. There is no history of deaf-mutism in his family, and he was either born deaf and dumb or became so after a fall downstairs when 18 months old. A maternal uncle suffered from goitre. He had always been a healthy boy until March 3rd, 1894, when suddenly a pronounced swelling of the thyroid gland was noticed, bilobar, rather more prominent on the right side than on the left, and showing marked pulsation. The pulse-rate was 110, jumping in character, but very slightly irregular. The heart sounds were pure. There was no exophthalmos nor any evidence of von Graefe's and Stellwag's signs. The patient slept for 36 hours continuously, waking up with the condition fully developed, of which no sign had been previously apparent. The neck measured 13½ inches in circumference.

On March 7th, 5-gr. doses of strontium bromide and 10 gr. of strontium iodide were given thrice daily.

	Pulse.	Neck.	Goitre.
March 9th, 1894 ...	84, slightly irregular	12½ in.	Pulsating. Right lobe 2 in. from above down. Left lobe 1½ in. from above down.
,, 12th, ,, ...	76, regular	12 in.	Left side much less, 1⅛ in.
,, 14th, ,, ...	80, ,,	11¾ in.	Thyroid gland pulsating feebly. Much smaller.
,, 19th, ,,	78, ,,	11½ in.	
,, 23rd, ,, ...	76, ,,	11¼ in.	

The medicine was stopped in the beginning of April, and the boy remained perfectly healthy until the earlier weeks of this year. The thyroid gland was always slightly prominent, but did not pulsate, nor was he breathless on exertion. His skin was always very dry and flabby, in fact on more than one occasion scarlet fever desquamation was simulated by its "peeling" to a remarkable degree.

In February of this year I found that the former symptoms had reappeared, that is, four years after their first appearance, or at the age of [illegible]. Their onset was gradual, and marked by a pulsating bilobar goitre, rapid irregular pulse, and great breathlessness on even slight exertion.

No symptoms of iodism or bromism were noticed, indeed, the matron [illegible] accustomed to the appearance of an iodide cold or rash and well [illegible] quainted with the premonitory symptoms of these accompaniments was always expecting the onset. Indeed, she was much surprised with such relatively large doses of the salts without the slightest sign of discomfort or poisoning in any of the patients.

Table of Neck Measurements in Inches.

	Cases.					Decrease.					Decrease p.c. from Original Figures.				
	I.	II.		III		I.	II.		III.		I.	II.		III.	
		a.	*b.*	*a.*	*b.*		*a.*	*b.*	*a.*	*b.*		*a.*	*b.*	*a.*	*b.*
Before treatment	13	13	14½	13½	14	—	—	—	—	—		—	—	—	—
3 to 5 days after	12	—	—	12	13½	1	—	—	1½	½		—	—	11.1	3.5
10 to 12 ,, ,, ...	11	—	—	11	12	1½	—	—	1½	1		—	—	12.9	8.9
13 to 20 ,, ,, ...	11	—	—	11	12½	1½	—	—	1½	1	11.5	—	—	14.8	13.4
21 to 35 ,, ,, ...	11½	—	12½	11½	—	1½	—	2	2	—	11.5	—	15.5	14.8	—
36 to 50 ,, ,, ...	—	—	12	—	—	—	—	2½	—	—	—	—	17.2	—	—
After 110 days	—	—	—	—	11⅝	—	—	—	—	⅛	—	—	—	—	17.0
,, 12 months	11⅜	11⅜	—	11½	—	1½	1½	—	1⅝	—	9.6	9.6	—	12.0	—
,, 21 ,, ...	12	—	—	—	—	1	—	—	—	—	7.9	—	—	—	—

In addition to the 3 cases detailed above, three other instances of goitre with circulatory disturbance can be recorded here, although they were not treated with bromide and iodide of strontium. Those patients were deaf-mutes all of about the same age at the commencement of the symptoms. Two were sisters of Cases I and II as already noted, and one a deaf-mute girl, but who presented such slight symptoms that it was unnecessary to place her under treatment.[1] No specific history could be traced in any of the 6 cases.

	Pulse.	Neck.
February 23rd, 1898 ... ... (Same drugs given as before)	97, irregular, jumping.	14 in.
February 28th, 1898	—	13⅜ in.
March 4th, 1898	82, very slightly irregular.	12⅜ in.
,, 7th, ,, ...	84, ,, ,,	12⅜ in.
,, 9th, ,, ...	80, regular.	12⅜ in.
,, 13th, ,, ... (Medicine stopped)	76, regular, no breathlessness.	12⅜ in.
May 2nd, 1898	70, ,, ,,	11⅞ in.
June 13th, 1898	78, ,, ,,	11⅝ in.

Remarks.

The neck of children between 9 and 15 years should measure a little less or a little more than 11½ inches. This is a very similar figure to those obtained in the 3 cases after treatment, that is, (I) 11½ inches, (II) 11⅜ inches and 12 inches, (III) 11½ and 11⅜ inches. Comparative figures are tabulated above.

Practically the average diminution in the circumference of the neck amounted to $\frac{1}{10}$th inch per diem for the first 16 to 20 days in each case, or 2 inches in 20 days, about 0.735 per cent. each day of the total circumference. The most marked diminution occurred within the first 5 days, amounting on the average of 3 observations to 0.21 inch per diem or 1.5 per cent. of the totals.

The fact that all the patients were deaf and dumb is of interest. The occurrence of 4 cases in 1 family is by no means out of the common; the disease frequently attacks more than one member of a family.

Exophthalmic goître is not very common among children below 15 years. Out of 21,831 patients treated in the medical wards of the Edinburgh Infirmary between 1891 and 1896 only 95 suffered from this disease, or 0.43 per cent. of the total number; only 2 of these were below 15 years of age. Among the 5,941 patients treated in the Middlesex Hospital during the years 1890-91-93-95, 16, or 0.2 per cent., were admitted for exophthalmic goître, none being below 20 years of age. That is, of 111 patients affected with the disease out of 27,772 treated, only 2 were under 15 years of age, or 1.8 per cent. Buschau's figures in his book give 15 cases out of 495 under 10 years of age, or 3.03 per cent. Ord and Mackenzie, in Allbutt's *System of Medicine*, state that only about 30 cases have been hitherto recorded in children. I am able to add 6 to this roll. Of the 6 cases mentioned only 1 was of the male sex. Buschau gives the proportion of the sexes at all ages as 2 males to 9 females, Eulenberg as 1 to 2, while Ord and Mackenzie only found 5 males in 100 cases, or 1 to 20.

[1] September 29th, 1898. A younger sister of the last mentioned, also deaf and dumb, has just developed marked symptoms of goitre and circulatory disturbances.

The salts of strontium, I believe, deserve to be better known, and to be employed much more extensively than they are at present. I have used the lactate in chronic kidney disease with very favourable results. None of the patients to whom I have given either the bromide or the iodide separately, or the two together, have ever suffered any inconvenience even from massive doses. The nitrate of strontium has been used in doses of from 30 grains to 4 drachms in articular rheumatism, while the phosphate may partly take the place of the same calcium salt as a tonic remedy. The tartrate has also been employed.

The 3 cases I have referred to may be unusually tolerant of the salts given, and they are too few upon which to found any decided opinion. Constantly a drug recommended for its successful effect upon disease by a physician proves of little use on wider trial. Good fortune supplies responsive patients to the observer, while such patients may only rarely be met with by others.

Although chemically closely akin to barium (indeed, strontium was for long neglected owing to the idea that the action of its salts corresponded to that of salts of barium), strontium appears to exert beneficial rather than harmful effects upon the body. Several authorities credit the salts of strontium with a pronounced tonic effect, increasing the body weight and the general health. Germain Sée found that the bromide benefited dyspeptic conditions. The salicylate has been successfully used for acute rheumatism and in treating intestinal fermentation.

One word of warning in conclusion: the strontii bromidum is deliquescent, and should be prescribed in solution, not in powder form. The dose of the bromide for an adult is generally given as from 10 to 30 grains, of the iodide from 3 to 5 grains and upwards.

ALCOHOL IN DRUGS AND DRUG PREPARATIONS.

By Norman Kerr, M.D., F.L.S.,
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This paper is not written with any design to the denunciation of alcohol administered scientifically as a medicinal remedy, though, in nearly forty years of professional life, but very rarely have I seen it necessary, in definite doses and for the occasion only, to prescribe it therapeutically. Alcohol is so dangerous a drug, and so many patients are by inheritance or otherwise so susceptible to its anæsthetic and narcotic properties, that I never order an alcoholic intoxicant beverage if I can find anything else which will answer the immediate purpose. Pharmaceutically, too, the action of some drugs is more rapid and potent in non-alcoholic than in alcoholic preparations. For both these reasons glycerine tinctures or other non-spirituous modes of exhibition—such as a simple watery solution, tabloids, perles, etc.—have often proved safer and more reliable.

The object of the paper is to call attention to the increasing peril from the rapid expansion of the traffic in proprietary so-called "remedies" containing alcohol, morphine, cocaine, and other strongly-poisonous drugs, without the purchaser having the slightest suspicion of the presence of any narcotic poison. Not long ago I found a distinguished ecclesiastical dignitary, the sworn foe of alcohol and its

congeners, giving one of his children a generous daily allowance of a "wine" containing not only alcohol in substantial proportion, but in addition a still deadlier drug. In various instances the distressing phenomena of addiction to alcohol and other narcotic inebriants, a diseased condition which renders the sufferer, till cured, helpless to resist the characteristic overpowering morbid impulse to intoxication, have been initiated by the use of so-called "cures," the drinkers, all unconscious of danger, having gradually and insensibly glided under the dominion of the drug.

Worse still, not a few persons who, recognising the peril of an increasing tendency to excess, have resorted to "wines" or other proprietary preparations containing alcohol or other similar unsafe drug, have resorted to the alleged curative and restorative liquids only to bind their narcotising chains more closely around them. In one such medicated "wine" analysis revealed 25 per cent. of alcohol, an intoxicating drink more alcoholically strong than a large proportion of the ordinary intoxicants freely consumed as such by the general population. Crothers narrates the case of a male inebriate who had been taking a certain so-called "tonic," which contained 40 per cent. of alcohol, who thought he was being cured of inebriety, but who suddenly had an attack of delirium tremens. In some of the so-called "cures" for inebriety alcohol has been detected, and I have found it present in varying proportions in preparations lauded by even advocates of temperance as both curative and antidotal.

Without going further into the matter, is it not abundantly clear that the general public should be protected against such unjustifiable practices? The prescriptions of the enlightened medical practitioner openly declare the drugs and their doses which he prescribes. The ordinary intoxicating liquors sold under their several names confess themselves as intoxicating. But so-called "temperance drinks," "antidotes" to, or "cures" for narcomania, which contain and yet conceal their alcoholic intoxicating contents are practically dishonest and deceptive.

If men and women wish to drink intoxicating beverages, these are open and above-board, so far as their nomenclature goes. But if liquids that are really intoxicating are sold as "temperance drinks" or "cures," or "tonics" for inebriety, there is neither openness nor honesty. Surely it ought to be the province of the medical profession to bring pressure to bear upon the Legislature for the adoption of such legislation as shall secure the open disclosure on the labels of all alcoholic intoxicating drinks and drug preparations which are not recognisable as intoxicating. By such a provision buyers would know what they are buying, and the safety of neither inebriate, moderate drinker, nor abstainer be endangered by the unwitting use of alcoholic or other concealed intoxicating proprietary articles. These observations apply with equal force to morphine, opium, cocaine, and other poisonous inebriants.

THE PURE AIR TREATMENT OF CONSUMPTION.

By Samuel Hyde, M.D.,

Buxton.

[Abstract.]

If there be one fact established more clearly than another as a result of recent investigation and discussion, it is that in all climatic treatment of consumption purity of air is the essential factor necessary to obtain successful results. The main consideration in such treatment, then, is to provide for the patient an abundant and constant supply of the purest air that can possibly be obtained. It is, of course, evident that this cannot be got in cities, towns, and other centres of population, nor can it be met with even in the open country where the subsoil is waterlogged, the atmosphere humid, and the air stagnant. Hence the climates which possess the maximum purity of air are found on seas and oceans, on sea coasts, on plains and deserts, and lastly in upland and mountainous districts.

All these classes of climates have been proved to exercise a curative influence on the disease, but high altitudes are more beneficial than any of the others. It thus becomes a question of very great importance to consider whether we have in this country any altitude climates possessing the necessary quality of purity and other conditions by which such climates on the Continent, in Africa, and in America excel over other kinds of climate.

It would seem that the profession, in its anxiety to meet the natural desire of patients for mild, genial, and sunny resorts has given to them a preference over our inland and upland climates which has not worked altogether for success in British climatotherapy.

Dr. Theodore Williams has published statistics of 1,000 cases of phthisis, of which 247 were treated in high altitudes, 292 in home climates, 210 on the Riviera, and 65 by sea voyages. The cases of high altitude came out easily first, being 83 per cent. in general improvement, as against 63 per cent. for home climates. In respect to local results, his figures are: In high altitudes, 75.5 per cent.; in sea voyages, 53 per cent.; in home climates, 38 per cent.; and in the Riviera, 36 per cent. of cases improved. It may be that these statistics of Dr. Williams are not altogether conclusive, but they are probably the best at present available. And what do such figures prove? First, they place it beyond doubt that altitude climates exercise a more beneficial influence than any of the other three classes of climate.

It thus becomes a fair question to ask whether the vast differences in these last figures of 75.5 per cent. benefited by altitude treatment as against only 38 per cent. benefited by home climates is not due to what may be described as the one-sided character of the climatic treatment of consumption in this country? It seems almost incredible that hitherto it should have scarcely occurred to those who so justly appreciate the altitude resorts of other countries, to make use of the various mountainous upland climates of Great Britain and Ireland. Yet it is a fact that there are many such elevated districts in the British Isles, the climates of which are capable of exercising probably a greater curative influence in consumption than is obtained in our coast resorts. May not the apparent small success of home climatic treatment be due in large measure to this neglect of our elevated inland climates? In consequence of the unpopularity of the home altitude resorts for consumptive cases, the information and statistics upon the subject are of a meagre description. Speaking, however, from my own experience extending over nearly a quarter of a century in an English upland district varying from 1,000 to nearly 2,000 feet, I can state that of the limited number of cases that have come under my observation during those years, a very large proportion have been benefited by that climate. Indeed, the immediate and permanent benefits have often been remarkable. Of this beneficial influence of the climate of Buxton in consumption I recently received confirmation from an unexpected quarter. Conversing with Professor Clifford Allbutt, he informed me that he had found the climate of Buxton very valuable in consumption, and could recall some actual cures of cases of his that he had sent there.

The great objection generally raised to our home altitude stations is, of course, their variable and uncertain atmospheric conditions. But this objection also appplies to many similar stations abroad, which have nevertheless a favourable reputation for the treatment of phthisis.

"The success which attends the treatment at Falkenstein," said Dr. Theodore Williams not long ago, "had often struck him, but Falkenstein had not a good climate, having in winter a good deal of mist, and during the greater part of that season was very cold, while there was also a good deal of wind." Nor are Falkenstein and some of the other air-cure resorts of the Continent much superior to many of our own as regards altitude. Falkenstein is only about 1,200 feet, and Goerbersdorf, where Dr. Hermann Brehmer founded the first sanatorium for carrying out this treatment, is only about 1,700 feet above the sea level.

If it has to be admitted that we do not possess in the British Isles climatic stations of very high altitudes, it may be pointed out that our elevated climates are probably more tonic and invigorating than climates at double their altitudes in Switzerland and other Continental countries. This fact, which is due to the nearness of the sea surrounding these islands, is of very great importance, in that it renders available numerous altitude stations varying from 500 to 1,500 feet, the bracing effects of which are most likely equal to altitudes

on the Continent of from 1,000 to 3,000 feet. Of such stations I only need mention a few, such as Dartmoor, the High Peak district of Derbyshire, the uplands of Yorkshire and Lancashire, the mountainous districts of Wales, Cumberland, and Westmorland, as also the Highlands of Scotland and Ireland, which present varying altitudes of from 500 to over 1,500 feet.

Many suitable sites might be found in these localities for the erection of hospitals where the pure-air treatment of consumption could be carried out under conditions more favourable to a cure than can be obtained in the low-lying localities so often selected for the purpose. It is much to be desired that this fact should receive proper recognition in connection with the present praiseworthy movement to stir up national sympathy in a supreme effort to check the spread of this terrible disease.

Personally, I cannot view a cold temperature and the frequent prevalence of high winds and heavy rainfalls with that uncompromising disfavour with which they are regarded by so many. Such characteristics of a climate doubtless entail certain disadvantages, but they are factors of climate which often exercise a counterbalancing influence for good greatly in excess of their drawbacks. A frequent rainfall not only cools but purifies the air, and high winds move and change the atmosphere, thus preventing that stagnation so conducive to an impure climate. Likewise, a low temperature is of further advantage mainly in two ways: First, it is unfavourable to the existence of micro-organisms in the air, and also tends to the destruction of the tubercle bacillus in the lungs of the patients. In the second place, cold improves the appetite and digestion, quickens the respiration, accelerates the circulation, and thus improves the quality of the blood, promoting the general process of nutrition and the repair of diseased tissues. Hence, cold and warm climates may be compared to drug tonics and sedatives. The one class, although sometimes at first tending to increase the cough and discomfort of the patient, increase the strength and build up the health; whilst the other class, soothing the cough and giving a certain kind of relief, impair the appetite and digestion, lower the strength and general nutrition, thus leading to waste of tissue and encouragement of the degenerative processes.

Whilst dealing with this part of my subject I would express an opinion which I have long held, that sparseness of vegetation, like thinness of population, is a climatic factor favourable to the treatment of consumption. Where vegetable life abounds, there vegetable decomposition must also abound, and *vice versâ*. Wherever there is life we have a corresponding amount of death, accompanied necessarily by the products of decomposition. And here I would offer a word of warning to some of our English health resorts against an undue zeal in the promotion of tree planting in their immediate vicinities. It may often be desirable to secure a certain amount of protection from adverse winds by means of sheltering plantations and to provide the pleasant and welcome shade of green foliage; but this is a matter which may, I think, be carried too far, so as to prove injurious to health, and certainly to retard the restorative effects of climate in consumption.

If, then, as seems now to be admitted, pure air and plenty of it is the great desideratum of this treatment, the open-air method carried out at the various elevated inland resorts of this country would seem to offer chances of success equal to many of the most noted German and Swiss sanatoria.

My friend, Dr. Vicary Snow, of Bournemouth, has said that "in theory, steadiness of temperature with slight nocturnal fall of the thermometer is important; in practice this condition is, however, of insignificant value, and the best climates for the arrest of consumption in an early stage are deficient in this element of theoretical success."

It is much to be desired that the open-air treatment of consumption, which is now attracting so much attention in this country, will escape the damaging influence of unwise and reckless advocacy which has befallen the Nauheim treatment of cardiac disease, and other useful therapeutic methods. Indiscriminate recommendation, unreliable statistics, and undue haste in the publication of results are the rocks which should be shunned in order to ensure for the treatment real success.

A DISCUSSION ON
THE TREATMENT OF CHRONIC RENAL DISEASE.

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In discussing the treatment of chronic renal disease it is necessary to commence by some subdivision of the subject further than that indicated in the official programme, since chronic renal disease includes several conditions which differ in their pathology and symptoms quite as much as in their etiology. For the purpose of the present discussion it may be convenient to divide the subject according to broad pathological lines under the headings of chronic nephritis, renal cirrhosis, and lardaceous disease.

The first condition is that which includes chronic forms of renal disease which are commonly consecutive to an acute attack, and the anatomical changes are partly connected with the glomerulus, partly with the tubules of the renal epithelium, and partly with the interstitial tissue. The principal changes, however, affect the two former structures.

With renal cirrhosis we are dealing with a disease of perhaps more chronic type, which commences very insidiously, taking its origin in irritation due to alcohol, to gout, or to other forms of chronic irritation. In this disease the interstitial tissue is chiefly affected by an overgrowth at the expense of the secreting structures, and the vascular system is also greatly altered, the left ventricle is hypertrophied, the apex beat displaced, the arteries thickened, and the blood pressure raised.

In the third division, lardaceous disease, the capillary tufts and the small arteries are primarily affected, but it is rare for this condition to exist without some interstitial changes, and inasmuch as lardaceous disease commonly results from some chronic suppurative process, the symptoms are those of the original disease rather than of renal affection. Taking these three types, then,—chronic nephritis, renal cirrhosis, and lardaceous disease—the subject laid down for discussion is the treatment applicable to the various conditions, and since the last mentioned plays such a secondary part and since the treatment is necessarily almost entirely restricted to the surgical treatment of the primary cause, it will perhaps be more convenient to limit attention to chronic nephritis and to renal cirrhosis. Of these two conditions there is much room for discussion concerning hygiene and diet. Can we by any hygienic change or by any dietetic measures modify the course of these conditions? Can we by these means retard the disease, or is it possible to exert any curative effects? Or, on the other hand, are our efforts in these directions to be limited solely to the relief of prominent symptoms as they arise?

In chronic nephritis there is a tendency to the occurrence of subacute attacks with small provocation. Patients who have been passing a fairly large amount of albumin in urine of almost normal specific gravity may from time to time pass blood, and the appearance of the urine might in the absence of history lead to a diagnosis of acute nephritis. These subacute attacks during the early stages of chronic nephritis form, perhaps, the greatest danger to which these patients are liable, since there is fair reason for believing that such attacks indicate an extension of the disease to some portion of the kidney, which was previously but little affected. Hygienic treatment, therefore, has largely to be directed towards diminishing the risk and frequency of these subacute attacks, and there is very little doubt that these risks may be diminished by the avoidance of exposure to sudden alterations of temperature; and if the means of the patient do not permit him to change his occupation, or to winter abroad so as to avoid the proverbial uncertainties of the British climate, much may be done by clothing in non-conductors which readily absorb moisture, and from which evaporation proceeds slowly. Such non-conductors are, of course, to be found in various forms of woollen garments, and while it is advisable that patients should be thoroughly clad in wool, it is especially advisable that they should wear a broad flannel binder round the waist, similar to the woollen "cholera belt" of tropical countries. Precautions of a like character may sometimes also be taken in connection with cases of renal cirrhosis, but the occurrence of subacute attacks is less to be feared, since

it is less frequent. The prejudicial influence of over-exertion and of mental strain is likely to be felt in connection with both of these types of chronic renal disease, and it therefore becomes necessary to recommend that patients should, so far as possible, guard against business anxieties and worries, and against late hours and other forms of excess. In both conditions, however, it is undesirable that the patient should be encouraged to lead a life of idleness, since one of the most troublesome features connected with chronic renal disease is the tendency to mental depression. In both conditions moderate exercise is likely to be beneficial during the early stages, and with renal cirrhosis, where the drain of albumin is comparatively small, the progress of the disease may be delayed considerably by judicious outdoor exercise. I have known one case of renal cirrhosis which has remained almost stationary during the last twenty years, the patient having been so placed that he was able to indulge in golf, in cricket, and in hunting, while of more serious work he was able to undertake the duties of a justice of the peace and also to interest himself in local politics.

The problems concerning the dietary of chronic renal disease do not, I think, leave much room for difference of opinion. It is possible to prejudice the well-being of the patient by undue restrictions as much as by too great liberality. It is undoubtedly possible by carelessness to increase the amount of albumin lost in chronic nephritis, and, on the other hand, it is possible to weaken the patient materially by persisting with a dietary containing but few albuminous articles.

Chronic nephritis probably calls for greater care than renal cirrhosis, since the drain of albumin is greater, and since carelessness, more particularly with regard to alcohol, is liable to favour the supervention of the subacute attacks. During the occurrence of a subacute attack the dietary of the patient has to resemble that ordinarily adopted during acute nephritis; but after the disappearance of blood and after the albumin appears to have reached a fairly constant stage, there is no advantage in a strict non-albuminous form of diet; and, on the other hand, there may be considerable disadvantage in endeavouring to force the patient to persist with a distasteful dietary of milk and beef tea to the exclusion of solids. From time to time it has been held that in cases of chronic nephritis, albuminous substances in the dietary should be reduced in quantity from the dread that they might increase the loss of albumin, and experiments have been made with a view of showing that, for example, the consumption of eggs is likely to be followed by an increased loss of albumin. It is, of course, somewhat difficult to estimate whether the increased loss bears any definite ratio to the increased consumption of albuminous substances; but inasmuch as the well-being of the patient depends not upon the amount of albumin lost but upon whether the loss is greater than the gain, it will be evident that in determining whether albuminoids such as eggs or meat should be given, we have to be guided mainly by the effect upon the strength and comfort of the patient. The foregoing is, however, only true during the early stages of chronic nephritis, and it is generally admitted that as the disease progresses and as the tendency to dropsical effusion becomes more marked the diet has to be modified somewhat, so that larger quantities of bland, unirritating fluids have to be taken with the view of increasing the eliminative work of the kidney.

In considering the dietary of patients with chronic nephritis or with renal cirrhosis it must be borne in mind that in both conditions there is extreme probability of dyspeptic disturbance, and the dietary of the individual has, to a great extent, to be modified in accordance with this danger. On the other hand, it must not be forgotten that dyspeptic disturbance in both of these conditions may form indications of the onset of uræmic symptoms, and it has even been suggested that this might result from a dropsical condition of the mucous membrane of the stomach and the intestine in cases of chronic nephritis. This tendency to dyspepsia generally leads patients to have some aversion to many forms of diet, in particular they frequently rebel against meat, and accordingly it is generally desirable almost entirely to eliminate ordinary butcher's meat from the dietary, so that the tendency to anorexia is minimised. Similarly it is usually advisable to encourage these patients to take a fairly large proportion of milk, though not to enforce a milk diet. Milk appears to stimulate the kidneys slightly, and to promote the removal of nitrogenous waste. Frequently, however, it is found to be constipating in its effects, and to necessitate the occasional employment of some mild laxative.

While it is possible to favour the extension of chronic nephritis by excesses with alcohol, we are often asked whether alcohol should be taken at all by these patients, and if so in what form, and in what amount. The use of alcohol will probably leave room for much difference of opinion, and I fully anticipate that the course of the discussion will, to some extent, turn on this question. My own feeling is that it is generally better not to interfere with the ordinary habits of the individual with regard to alcohol, provided, that is, that these habits do not lead to excessive consumption of stimulants. I would defend my practice by a reference to the well-known mental depression and lack of appetite so frequently shown by patients with chronic nephritis. As in delirium tremens it will often be found that small quantities of alcohol will enable food to be taken even when the appetite and digestive powers appear to be at a low ebb, and, on the other hand, that total abstinence is likely to be followed by severe depression, which is not only a source of discomfort to the patient and his friends, but also a source of weakness. As to the form of alcohol, I think it is better to avoid the use of malt liquors, though small quantities of bitter beer seem to do very little harm, unless the patient is suffering from renal cirrhosis of a gouty type. More commonly one is in the habit of encouraging patients of middle age to take at meal times small quantities of pure spirit well diluted. I lay some stress upon the need of purity since, in these cases, the spirit that is permitted is used as a drug, which is intended to counteract depression and to assist digestion, and inferior forms of spirit are only too likely to increase the tendency to headache of which these patients so frequently complain. From the foregoing remarks it will be seen, I think, that when chronic nephritis or renal cirrhosis exist the dietary has to be planned so as to avoid further extension of the disease, and that the utmost that can be hoped for is to arrest rather than to cure.

Medicinal Treatment.

The medicinal treatment of chronic nephritis is not very hopeful, and our attention is generally confined almost entirely to the treatment of various symptoms which develop in the course of the disease. When there is reason to believe that the disease results from malaria or syphilis, the ordinary treatment adapted for these diseases may be employed. Efforts have been made from time to time to relieve the inflammatory condition which has been found to continue during the greater course of chronic nephritis. Various astringents have been used with the view of controlling inflammatory action, while tartar emetic and nitric acid have been recommended for the same purpose. It is much more hopeful, perhaps, to consider the symptomatic treatment than to pursue the chimera of a continued attempt to treat the disease as an entity. Apart from uræmia, the three conditions desirable to cope with are: First, diminution of urinary secretion; secondly, albuminuria; and, thirdly, dropsy.

1. The diminution of urinary secretion is frequently an accompaniment of increased dropsical effusion, hence the difficulty of its separate consideration. The two conditions may be treated simultaneously. When the diminution in the excretion of water depends upon a subacute attack, diuretics must be avoided and the case must be treated on the same principles as acute nephritis. On the other hand, when there is no evidence of active engorgement, cardiac tonics, such as strophanthus and digitalis, are frequently of great service. Of the two digitalis is perhaps the more useful, but it is frequently necessary to alternate their employment as in ordinary cases of weakness of the heart. It is sometimes desirable to use theobromin, caffeine, or diuretin, either alone or in conjunction with strophanthus and digitalis. I remember one case in which, although the dose of digitalis had been increased, very little alteration in the quantity of urine passed had been noted until diuretin was used. Of all diuretics however water is undoubtedly the best and can be given freely, unless it is found that the dropsy increases while

the elimination of urine shows no change. Milk is often employed as a diuretic in these cases, but, as previously indicated, it is undesirable to attempt to limit the patient to any fixed diet. The work of the kidney is often improved by a temporary rest such as results from the administration of saline purgatives, which are, however, more frequently used with the idea of affecting dropsy than with the simple object of increasing the work of the kidney. Ringer speaks very strongly in favour of the use of large doses of iodide of potassium, and he thinks that their diuretic influence is by no means limited to syphilitic cases.

2. Next, with regard to the loss of albumin, this is sometimes found to be reduced during the early days when the patient must be kept in bed. Of the drugs which have been employed with the object of reducing albumin the greatest favour has been shown to the class of astringents. Of these the salts of iron are perhaps those which give the best results, though the improvement is often to be seen in a diminution of anæmia rather than a diminution in the loss of albumin. Many of the astringents have the disadvantage of favouring indigestion, and their range of utility is therefore greatly limited. Acetate of lead has been recommended, more particularly in cases associated with much hæmaturia, but this latter symptom is, I believe, better treated with rest, warmth, and diet than with the administration of drugs. Similar considerations generally affect the administration of ergot, which has sometimes been used with the intention of reducing albuminuria. Tannic acid and gallic acid, and the newer combinations such as tannaform and tannalbumin, have lately been brought into notice, but notwithstanding the weakening influence of a great drain of albumin, it is, I believe, desirable to watch the general condition of the patient rather than to concentrate attention upon the albuminuria, since so many of these astringents interfere so greatly with the digestive powers.

3. The treatment of dropsy may be considered under the headings of Treatment with Diaphoretics, Diuretics, and Hydragogue Purgatives, though in extreme cases it is necessary to adopt surgical measures of relief. Of the diaphoretics there is perhaps but little room for discussion connected with the external agencies to be employed. Many are in favour of the use of the wet pack, and often before the use of the wet pack the action of the skin may be stimulated by vapour baths or hot-air baths, or even by the use of hot-water baths, and the diaphoretic action may be increased by giving copious draughts of water while the patient is in the bath. Turkish baths have been recommended, but these can only be employed in mild cases, and are wholly unsuitable when there is much dropsical effusion. It is unnecessary to enter into details here regarding the various devices by which patients have been submitted to the action of heated air. More important, perhaps, is the question of pilocarpin. Few drugs have given rise to so much disappointment, although perhaps the reaction against it at the present time has been rather too great. I have seen some advantage result from its employment as the starting point of diaphoresis, which has been continued by the subsequent use of the bath. It is well recognised that exceptional cases are from time to time met with in which it is difficult to induce action of the skin, and in these the bath is apt to produce considerable discomfort and headache. In such cases pilocarpin may be tentatively employed, the effect on the circulation and dyspnœa being carefully noted during the administration of the drug. It must not, however, be forgotten that although some observers praise pilocarpin, there is considerable evidence of dangerous results from its employment. Thus Proben[1] has found that it causes an increased frequency of the heart's action, the pulsations sometimes increasing 40 or 50 to the minute, and that there is a simultaneous lowering of the blood pressure, which he attributes not only to vasomotor paralysis, but also to direct depressant influence on the cardiac muscle, and he states that severe collapse, nausea, vomiting, and diarrhœa may sometimes ensue. Another contraindication to the use of pilocarpin lies in its influence upon the pulmonary circulation, since it favours rapid transudation and œdema of the lungs, and Proben indicates a further danger in the possibility of filling the bronchial tubes with saliva, if the reflex activity of the larynx is diminished owing to coma. Summing up the contraindications to the use of pilocarpin, one must mention progressive weakening of the wall of the heart, either from fatty degeneration or from passive dilatation and conditions of engorgement of the lung, or accumulations of fluid within the pleural cavity. In any of these the drug, if used at all, must be employed with great caution, and it must be regarded as a starting point for diaphoresis, and not as the sole active diaphoretic agent.

[1] *New York Med. Journ.* July 18th, 1896.

It is probably unnecessary to spend time over the benefits to be obtained from the use of saline and hydragogue purgatives. These are so well recognised that it will be unnecessary to do more than to mention the value of sodium sulphate, acid potassium tartrate, sodium potassium tartrate, jalap, scammony, and perhaps mercury. Of the diuretics which favour the removal of dropsy the salts of lithium, potassium, and sodium need only be mentioned. Balsam of copaiba has been recommended, but has been found to be somewhat uncertain in its effects, and hæmaturia has often been attributed to it.

Cirrhosis of the Kidney.

With cirrhosis of the kidney, treatment has to be almost entirely symptomatic, though from time to time certain drugs have been advocated for the treatment of the disease; for example, iodide of potassium in large doses has been given for a length of time, and some observers speak highly in favour of the use of chloride of gold and sodium. This treatment has, however, found greater favour in America than in this country, and even those who speak well of it indicate that it occasionally leads to dyspeptic troubles. Of the symptoms requiring relief in connection with cirrhosis, one of the most prominent is persistent headache. Mild purgatives may occasionally give some relief; more commonly, however, it is necessary to employ remedies calculated to reduce arterial tension. Of these perhaps the best known is nitro-glycerine, which, either in the form of the tabellæ of the *Pharmacopœia* or as the solution of trinitrine, has been largely employed. Nitrite of sodium has also been used, and more recently other preparations have been added by Dr. Bradbury. It may be remembered that nitro-glycerine is more continuous in its effects than nitrite of amyl, although it exerts similar action in dilating peripheral vessels and thus lowering the arterial tension. This effect of nitro-glycerine is perhaps partly to be explained by its more slow absorption from the stomach, as compared with the rapid absorption of nitrite of amyl from the bronchial mucous membrane, and it is also partly to be explained by the gradual splitting up of the molecule of nitro-glycerine after it has been passed into the circulation, and the drug is hence particularly adapted to the relief of a chronic condition, while nitrite of amyl finds its special applicability in the relief of the symptoms of more urgent development.

In passing, I may perhaps be allowed to refer to an alteration in the composition of the tabellæ trinitrini in the new *Pharmacopœia*—the increase in the bulk of chocolate to be used, though the amount of nitro-glycerine in each tablet remains as before. It is interesting to note that one of those who make these tablets on a large scale protests against this change, and urges that it must render the action more slow, overlooking the fact that, if more slowly absorbed, it acts for a greater length of time, and that therefore, so far as kidney disease is concerned, it becomes a more desirable compound to employ. It may further be remarked that this change was largely the outcome of the headache so often induced by the former tabellæ nitro-glycerini, which led patients to break the tablets into fragments of uncertain size and dose.

Dr. Bradbury, endeavouring to discover preparations which would be yet more permanent in their power of lowering the arterial tension, found that erythrol tetranitrate had this power, and it has accordingly been employed not only in cases of heart disease, but also in some of those special forms of headache connected with renal cirrhosis. These particular forms of headache have also occasionally been treated with antipyrin and antifebrin, especially when the headache is associated with much pain of a neuralgic character.

Another common symptom which demands special treatment is the tendency to sleeplessness, and this is frequently conjoined with either the persistent headache which has been already mentioned, or with pains of a more neuralgic cha-

racter which come and go in more irregular fashion. The sleeplessness of renal cirrhosis may sometimes be diminished by methods calculated to relieve tension of cerebral vessels. Sometimes sleep may be obtained by employing a hot foot bath just before going to bed and by wrapping the feet in warm blankets, so as to further maintain the freedom of circulation. Should the patient suffer habitually from coldness of the extremities, sleep may further be favoured by the use of a hot-water bottle; frequently, however, it is found necessary sooner or later to have recourse to drugs, and the selection of a hypnotic for a patient with renal cirrhosis demands considerable caution, since, although these patients are generally losing very little albumin, they are also excreting very little nitrogenous waste; hence it is important to avoid employing any remedy which might interfere with the eliminative work of the kidney. Foremost amongst such remedies stands opium. Concerning the use of this remedy, I venture to think that we may obtain some valuable experiences in the course of this discussion, since, while some observers consider that it is a dangerous drug to use and are never weary of warning against the risk of producing uræmic symptoms by its administration, others, on the contrary, have recommended its employment with the view of diminishing the severity and frequency of uræmic attacks. I must confess that, for my own part, I am averse to the employment of opium or of any of the salts of morphine for the relief of insomnia due to renal cirrhosis, although I must admit that I have not seen any of the dangerous symptoms so often mentioned in connection with its use. Sir George Johnson was, however, very emphatic concerning the risks of opium and of morphine, and I have, on several occasions, heard him inveigh against the almost criminal folly of using this remedy, which, in his belief, had frequently favoured the onset or the return of uræmic convulsions which proved fatal. On the other hand, it must not be supposed that in foregoing the use of opium and of morphine I am in favour of taking no measures to treat the insomnia. Many years ago, when the employment of hyoscine, which has lately been rendered official in the *Pharmacopœia*, was still in its infancy, I had to treat a patient with renal cirrhosis for troublesome insomnia, and I endeavoured to use the then new hypnotic, and administered subcutaneously a dose of one-hundredth of a grain, and the result was somewhat curious. The patient almost at once sank into a quiet, tranquil sleep, and the pulse, which had previously been somewhat irregular, became steady. The following morning he told me that he had had a most delightful night, and that he had slept soundly all through. But this account did not coincide with that given by the nurse, who said that shortly after I left him the patient commenced to exhibit symptoms of delirium, and that he appeared to be under the impression that he was present at a supper party of a somewhat gay character, and that he shouted instructions and orders, and occasionally sang scraps of comic songs of some antiquity and of doubtful propriety. In other words, the dose employed, although it procured unconsciousness for the patient, caused delirium of the type so commonly seen with belladonna poisoning; and, accordingly, on subsequent occasions, when this patient complained of sleeplessness, I employed a smaller dose with equally satisfactory results to the patient and with far less fatigue to the nurse.

Of other hypnotics which have given satisfaction in this form of sleeplessness must be mentioned sulphonal and paraldehyde. The former I employ somewhat largely, and although it is but sparingly soluble, and acts somewhat tardily, yet its administration has, in my experience, been generally followed by good results. Moreover, I have found that it is possible gradually to reduce the dose of sulphonal after the habit of sleeplessness has once been broken. The question of hypnotics, however, formed the subject of debate at the meeting in Montreal, and it may, perhaps, be inadvisable to reopen the discussion in this direction, since at Montreal the various speakers said almost all that there was to be said concerning the employment of hypnotics.

It is somewhat difficult to draw a sharp line of distinction between the treatment of many of the symptoms of cirrhosis of the kidney and the treatment of one of the forms of uræmia, since under the term uræmia must be included a consideration not only of uræmic symptoms of an acute and violent character which constitute uræmic convulsions, but also of a more chronic type, in which the symptoms frequently simulate those due to diseases of less severity; thus, as examples of chronic uræmia must be mentioned the dyspeptic troubles which frequently occur in the course of renal cirrhosis, and may assume a severe type before its close, when vomiting and diarrhœa may both become persistent and uncontrollable. As the distinction is therefore so difficult to make, you will perhaps pardon me for a gradual transition from the medicinal treatment of renal cirrhosis to the treatment of uræmia. The treatment of dyspepsia is perhaps of greater importance in the early stages of renal cirrhosis, since there is very little doubt that prolonged attacks of dyspepsia may favour the onset of this disease. It is, I think, no mere coincidence that I have found a very large proportion of patients with symptoms of cirrhosis occurring amongst those who admit the existence of chronic dyspepsia from an early age, and frequently in connection with bad teeth. It is well known that patients who, either on account of defective teeth or from other conditions of their life, get into the habit of bolting their food, suffer from dyspeptic troubles, and amongst these troubles must be reckoned alterations in the characters of the urine. Those who pass uric concretions frequently are also prone to exhibit indications of chronic renal changes, though in these cases possibly the albuminuria takes its origin in irritation of the kidney. Hence it becomes important to rectify any errors of diet, any errors of habit, or any errors of digestive functions which may favour the formation of such concretions. Sometimes benefit may be obtained from the use of the ordinary digestives, from the administration of pepsin and hydrochloric acid, from the employment of diluted hydrocyanic acid, or from the salicylate of bismuth or other bismuth preparations, but in advanced cases of the disease these remedies are generally powerless, and the symptom then has to be treated as one of uræmia rather than as one of simple chronic dyspepsia.

Turning now to the consideration of acute uræmia, the condition marked by convulsive seizures which may be repeated at frequent short intervals, the treatment naturally divides itself into two groups: (1) The treatment during the convulsion; and (2) the treatment during the intervals between the convulsions. During the convulsions various vaso-dilators have frequently been employed, and those which appear to have been most hopeful are those which act most promptly. Foremost stands nitrite of amyl, which can be administered by inhalation to an unconscious patient; other nitrites and nitrous compounds have also been used, such as nitrite of sodium, nitro-glycerine, either in the form of tabellæ or of the official solution of trinitrine. In my hands these have not given much encouragement. The duration of the convulsive seizure has not appeared to be reduced by their employment, nor has the frequency of the seizures been diminished; and although these remedies undoubtedly possess great power of lowering the blood pressure by the dilatation of the smaller arteries, they seem to find their chief applicability in the relief of headache, or neuralgic symptoms which result from persistent high tension, and to be of comparatively little or any service in the treatment of uræmic convulsions. The severity of an attack may sometimes be controlled by the inhalation of chloroform, but this must be used with considerable caution, since the heart is frequently weakened, and the patients are therefore not fit subjects for the prolonged use of anæsthetics.

More hopeful is the treatment with purgatives or with diaphoretics, but in many cases of uræmic convulsions one is tempted to defer the use of diaphoretic measures until the convulsions have ceased. Although the convulsions may succeed each other with great rapidity the individual convulsion commonly does not last very much longer than the ordinary epileptic seizure, and it is therefore frequently impossible to employ any remedy at all during the convulsive attack, and treatment accordingly has to be confined more purely to the subsequent coma. For rapidity of action and for efficacy no remedy can compete with croton oil, which may be administered with great ease even to an unconscious patient, and it is the more desirable to employ a strong derivative of this nature on account of the comparative frequency with which uræmic convulsions may be associated

with symptoms of a hemiplegic type, in all probability dependent upon rupture of one of the cerebral vessels. Under such conditions, therefore, the value of any remedy which will speedily deplete the vessels, and thus diminish the risks of hæmorrhage, can scarcely be over-estimated. With uræmic coma, pending the action of croton oil, it is frequently advisable to endeavour to stimulate the action of the skin, and this may be effected in some instances by the use of a wet pack, or hot air, or vapour bath, as has been previously mentioned in connection with the treatment of dropsy. Even these measures, however, require to be used with great care, since it is not uncommon for it to be extremely difficult to excite the skin to act, and unless free diaphoresis is produced there is some likelihood of increasing the frequency of the uræmic convulsions.

Perhaps the most debatable question connected with the treatment of uræmia lies in the use of morphine or of opium. These remedies, more particularly the former, have been credited with the power of diminishing the frequency of uræmic attacks, and it has been asserted that periods of special danger may be safely tided over by the employment of morphine injected hypodermically. On the other hand, numerous observers consider that there is great risk in the use of morphine in the treatment of uræmic convulsions, and I must confess that I should prefer to treat either convulsions or coma by measures calculated to remove nitrogenous waste from the system rather than by measures which, while they quiet the nervous system, at the same time diminish the eliminative work of the kidney. It will be noted that I have said nothing in this connection of the use of diuretics, and I intentionally avoided mentioning them hitherto because the relief afforded is likely to be more slow and more uncertain than that which may result from either hydragogue purgatives or diaphoretic measures. Further, when patients are suffering from uræmic symptoms, that fact alone is strong evidence that the kidney is not capable of performing efficient work, and therefore it seems rather an anachronism to employ stimulant remedies intended to promote the work of the kidney.

With uræmic convulsions in chronic nephritis there is every probability that very little of the renal structure is capable of doing work, and this difference in the condition of acute uræmia must be carefully contrasted with that of acute uræmia occurring in connection with acute nephritis. In the latter, although the work of the kidney may be temporarily arrested owing to renal engorgement, there is fair ground for hoping that if this engorgement can be reduced for a time by relieving the engorged vessels through the eliminative action of the skin and the bowels, the normal circulation will once more be re-established through the healthy portions of the kidney, and the renal secretion will once more be resumed. With chronic nephritis, on the other hand, such hopes are likely to prove fallacious unless this symptom occurs suddenly as the result of a subacute attack. There is, of course, very little room for discussion connected with the dietetic treatment of uræmia after it assumes the acute type, since patients are so frequently reduced to the condition of coma, during which it is difficult to do otherwise than to employ liquid forms of diet. This perhaps forms the chief reason for the use of milk and of beef tea in nephritis, unless complicated by subacute attacks; but when dealing with a case of coma or with a case marked by frequent convulsions, the only possible dietary is that which can be given in a liquid form.

You already know from the programme that Professor Ewald proposes addressing you on the benefit of repeated tapping and venesection in chronic kidney disease, especially in uræmia, and in this connection, therefore, a recent paper and discussion at the Royal Medical and Chirurgical Society becomes of interest. The writer of the paper maintains that in cases of œdema it was possible and desirable to keep the legs down and to thus attempt to drain fluid from the trunk and upper limbs, and in the course of discussion he further explained his belief that it was possible by these means to remove accumulation of fluid from the pleural or peritoneal cavity. He laid great stress upon bringing the fluid down to the feet by a slanting bed. I should much like to hear the experience of others regarding this change of posture and treatment, since, although I have frequently seen much relief follow the removal of fluid from the legs by Southey's tubes or by small incisions, I have not in any case witnessed the draining of the pleural cavity which could be attributed to such an alteration in the posture of the patient. One has often seen patients improve in a marked way after the removal of fluid from the extremities, but by posture alone I believe it is quite impossible to drain fluid from the peritoneum, the pericardium, or the pleura.

In conclusion, I venture to think that the subjects which may most usefully be discussed are:

1. The question of expatriation, of occupation, and of the administration of alcohol.
2. The possibility of limitation of albuminuria by the administration of drugs.
3. The treatment of acute uræmia by bleeding, by nitrites, by morphine, and by intravenous injections of water, or by transfusion.
4. The treatment of chronic uræmia by nitrites or by the separate treatment of the individual symptoms of chronic uræmia.

II.—Professor Dr. C. A. Ewald,

University of Berlin.

Tapping and Venesection in Nephritis and Uræmia.

Mr. President and Gentlemen,—It is a well-known fact that the question as to how diuretics act in kidney diseases is not yet settled. While some still believe that their action is due to increased blood pressure, or to some relief of the circulation through the kidneys, most authorities at the present time are of the opinion that they act by direct irritation of the secretory elements of the kidneys. However that may be, so much is certain that the effect of the heightened diuresis or the diversion of fluid to the intestinal canal, provided of course it succeeds by internal medication, is to cause but very slow absorption of fluid in œdematous tissues or in the peritoneal cavity or other serous spaces. On the other hand, practical experience teaches us that diuresis always increases as the decrease of fluid in the subcutaneous tissues and in the serous cavities progresses.

Physicians have always tried to dispose of these transudates by mechanical means. From the various serous cavities the fluid is withdrawn as far as possible by puncture. From the subcutaneous tissue it is withdrawn by means of diaphoresis, by hot baths, by scarification and by puncture with small needles (Southey, Gerhardt, Curschmann, and others). In my opinion, however, the treatment by none of these methods is carried out energetically enough, and the scarifications and removal by puncture with small needles are not complete enough, and, secondly, have too many inconveniences attached to them.

Puncture for ascites and pleurisy is done too seldom—that is, the physician waits until a considerable amount of fluid has collected. Several weeks are allowed to elapse between the punctures, and in the meantime the organism is exposed to all the dangers, local and general, that a collection of fluid in a serous cavity brings with it. The spontaneous resorption of the fluid is rendered extremely difficult by the pressure exerted upon the blood and lymph vessels of the pleura and peritoneum by the presence of the fluid. The endothelium of the serous membranes suffers in time in its nutrition. The organs contained in these cavities are more and more compressed and their function disturbed.

These are sufficient grounds to justify the making of punctures in such cases as often as the slightest indication presents itself. To this it is objected that experience shows that transudates removed by puncture are renewed very rapidly, and some have even believed that their removal of itself constituted an irritation sufficient to lead to their rapid renewal. It was thought, too, that the removal of a transudate deprived the organism of an important amount of albumin. Neither of these objections holds. The albumin in such cases is in a form in which it cannot be of use for organic metabolism, and it is in such small quantities that its loss, as I showed years ago, cannot be of the slightest importance. As to the renewal of the fluid, that is due to the course of the disease, not to the puncture for its removal. When the affection grows better the repeated punctures cease, and they have had an important influence for good.

In such cases I puncture and withdraw the fluid that has collected as often as enough fluid has collected to make puncture possible, that is, under circumstances every third or fourth day, and with excellent results. I am convinced that I have by this means, and the proper treatment of the œdema, brought about the cure of nephritis in a number of cases.

The drainage of the œdema I effect by means of long needles such as are used for tapping the pleura. They are inserted into the subcutaneous tissue, as far as possible parallel to the skin, and the part that projects is covered with a layer of salicylic cotton and iodoform collodion. To the end of the cannula a rubber tube is attached that hangs down alongside the bed, in a vessel placed to receive the fluid that trickles through the tube. By means of a safety pin, the rubber tube is fixed on the mattress and not allowed to pull upon the needle persistently. Into each leg one or more needles are inserted, and it is thus possible to withdraw 3 to 5 litres of a clear amber-coloured fluid in a day. As the subcutaneous areolar tissue is everywhere freely in communication with other parts, the fluid is withdrawn not alone from the legs but from the abdominal walls and the scrotum as well. As because of the œdema the limbs are heavy and difficult to move, it is not difficult to keep the patients quiet in the position best calculated to favour the outflow of the fluid.

Of course these manipulations must be carried out under the strictest antiseptic precautions. Erysipelas, gangrene, or any other serious accident, I have never seen except in one case. Erythematous conditions sometimes set in, but disappear promptly under an alcohol bandage. This procedure has these advantages over scarification—it is much more cleanly, and does not cause the skin to be soaked with œdema fluid for long periods, and much larger quantities of fluid are removed with less inconvenience.

In this way I have in a single case of chronic nephritis, from September 10th to December 3rd, 1896, removed 22,500 c.cm. of fluid, and during the period from October 6th, 1896, to March 13th, 1897, 140,000 c.cm. of ascitic fluid in forty punctures. During December and January a puncture was made about every third day. Four punctures of the pleural cavity were made and 15 litres of fluid removed. The result was complete disappearance of the anasarca and complete recovery of the patient.

I may remark in concluding that repeated careful estimations of the albumin in the ascitic fluid showed that it was between 0.6 (six-tenths) and 0.75 (seven-and-a-half-tenths) per cent., and the amount of albumin thus removed then was equal to about 3,136 g. of meat.

The symptoms of uræmic intoxication present, as is well known, a most varied picture. They may occur in acute or chronic form, from slight headache and nausea (gastric catarrh) to uncontrollable vomiting and diarrhœa, from nervous unrest and a feeling of anxiety to the severest epileptiform attacks, from the lowest grade of benumbed sensation up to deepest coma. They may present themselves in varying forms. They may appear under the form of chronic insanity, or of periodic attacks of confusional insanity, or as light attacks of delirium, or may simulate asthma, angina pectoris, or cardiac asthma; they may be complicated by hemiplegia or monoplegia, anæsthesia, slight pareses, attacks of vertigo, nose bleeding, or disturbances of sight or hearing, etc.

There is manifestly always question of an autointoxication—that is, of a toxic effect of products in the circulation which should have been excreted by the kidneys. May not these products give a direct irritation or act indirectly by augmentation of the blood pressure? Nothing would seem more feasible and more likely to be of benefit than to withdraw a portion of the blood and so decrease the absolute amount of toxin and make the blood more watery especially if you infuse, as von Leube does, after the venesection a certain quantity of physiological salt water. Medical men have, in my opinion, in recent times neglected venesection too much in such cases. Long ago your countryman, Archibald Pitcairn (1713), recommended venesection.

Bartels got excellent results from venesection in cutting short acute attacks of uræmia. Krönig and Senator have recommended it after personal experience in recent years. I am far from saying that venesection should be done in every case. But where the strength of the patient will permit it, and where the conditions of the heart do not prevent an evident uræmia, as soon as the other well-known remedies have no quick effect, he should be treated without delay by plenteous bloodletting, that is, by the abstraction of 200 to 400 g. of blood. In future I shall combine with the bleeding an infusion of saline water, as von Leube recommended it.

A few years ago Jacobi, of New York, introduced into medical literature the words of warning, *Nil nocere* (be sure you do no harm), and they have met with universal approval. But by venesection under such circumstances we can never do harm. The passing or permanent success of this method of treatment has, in my cases, been equal to 62½ per cent. of the occasions on which it has been employed. That furnishes ground enough, to my mind, to justify me in recommending the employment of venesection in uræmia.

III.—James Barr, M.D.,

Physician, Royal Infirmary, Liverpool.

Dr. Barr gave it as his opinion that the albumin and urea excreted were not to be regarded as of importance. It was not what was excreted but what was retained which was to be considered. It was the effete products of the blood retained in the organism which gave rise to the symptoms. It was a matter of great importance to allow the kidneys to rest, and to give them as little work as possible to do. The question, he said, was mainly one of dietetics, and was best answered by permitting the patient to take a carbohydrate diet pure and simple. He cited a case of a patient in uræmic convulsions, with high arterial tension and a small total daily excretion of urea, recovering under a carbohydrate diet. He thought that Professor Ewald's recommendation of venesection in all cases of uræmia was not to be upheld, as it was far from being of service in many cases, and might even be decidedly harmful except perhaps in cases of high arterial tension. Referring to the use of pilocarpin, he said he had pointed out many years ago that it was a very dangerous drug. The amount of water eliminated from the system might prove decidedly harmful, and in cases where the patient was in an unconscious condition, and could not get rid of the poison, so great was the increase of the various secretions that the patient was practically drowned in them. He had not prescribed it for years, and opined he would never order it again. He insisted on the importance of improving the vascular condition of the patient, and recommended a light farinaceous diet. The intestinal tract must be kept in as antiseptic a condition as possible by means of such drugs as salol. He regarded the whole question as chiefly one of dietetics.

IV.—D. C. McVail, M.B., F.F.P.S.G.,

Professor of Clinical Medicine, St. Mungo's College, Glasgow.

Dr. McVail begged to differ from the opinions expressed by Dr. Barr as to the unimportance of the quantity of urea passed. He thought it of supreme importance. If the quantity was large in amount he regarded the case as a hopeful one, but if small then the case was of more serious import. He recommended leaving the case for a few days without treatment, noting the amount of urine passed; if it was more than 50 ounces then it depended on the amount of urea whether or not the urinary flow should be increased. The diuretic he strongly advised was simply water in abundance, in the form most agreeable to the patient, aërated or otherwise. If patients objected to this treatment then he administered salines in repeated doses, particularly chlorate of sodium. In some cases where the amount of urine was less than 50 ounces in spite of treatment, and the urea remained small in amount, nothing would cause a rise in the flow. When he had a patient waterlogged he had recourse to Southey's tubes, which were not nearly so formidable as those which had been shown to the Section by Professor Ewald, and the quantity of fluid drawn off were also not so great as Professor Ewald had obtained. In one case so treated the quantity of urine suddenly went up without any change of treatment. In speaking of diet he said that, like many others, he had long been under the influence of the teaching of Sir George Johnson. Following his practice he gave milk for many months; but he had entirely abandoned this method of treatment, and recommended fish and chicken, etc., in moderate quantities. He was not at all afraid of giving

opium in its various forms, and had had no bad results from its administration. He was sorry to have heard the disparaging way in which pilocarpin had been spoken of, for he considered it of the utmost use, especially in uræmic conditions. He expressed it as his opinion that public aid should be given to patients with chronic nephritis unprovided with sufficient means, in order that a prolonged treatment might be carried out. Professor Ewald had spoken of a case which had been cured, but he did not think this could be claimed unless the case had remained well for some time.—[Professor Ewald: Years.]—In that case he had nothing further to say.

V.—Robert Saundby, M.D., LL.D., F.R.C.P.,

Professor of Medicine, Mason University College, Birmingham; President of Council, British Medical Association.

Professor Saundby agreed with Professor Ewald as to the need for early tapping in the case of dropsy in renal disease. In so doing he had obtained much benefit from careful elevation of the limb, massage, and then the application of a bandage, in ridding the part of chronic œdema. In the treatment of chronic albuminuria he had tried all the drugs he could think of, but without good result. In the treatment of uræmia one had to distinguish between the form which came on suddenly and was of recent occurrence and the form which was of long standing. The former was the easier to treat. Though he did not reject venesection as a method of treatment, yet he rarely employed it himself. He said that injection of cold water into the rectum produced beneficial results, as it seemed to diminish the intoxication. If dyspnœa should occur erythrol tetranitrate had proved of great use in his hands. He had had two successful cases whose recovery he attributed to the employment of this drug. He agreed with what Dr. McVail had said concerning milk diet in chronic renal disease. Dr. Tirard had referred to the use of alcohol, but he could not agree with him and rather advocated abstinence.

VI.—C. J. Macalister, M.D., M.R.C.P.,

Lecturer on Practical Medicine, Royal Southern Hospital, Liverpool.

Dr. Macalister advocated the treatment of uræmia by oxygen. He knew that it was held that the red blood corpuscles could not hold more than a certain amount of oxygen, and that that amount always could be and was obtained from the ordinary air. He doubted this, however, and did not think it held good under unhealthy conditions. It had been said by Haldane that the specific gravity of the urine increased *pari passu* with the amount of urea, and he had even stated that the amount of urea present might be estimated by the specific gravity of the urine alone. These observations, he maintained, had been taken from healthy urine, and not from urine obtained from patients suffering from Bright's disease. In uræmic urines the case was reversed, as the specific gravity was highest when the urea was of small amount. He had found in a case where dyspnœa and coma were intervening that after the inhalation of pure oxygen by one nostril and air by the other, the symptoms rapidly disappeared. The urine was now large in amount, with a low specific gravity, while the urea was increased. In uræmic patients the inhalation of oxygen appeared to decrease the lividity, and to increase the urea eliminated. Regarding dietetic treatment, he endorsed Dr. McVail's opinion that chronic kidney cases should be under treatment for a long time. He strongly advocated milk diet, and thought it should be kept up for six months and more. He had had good results from such treatment. He also allowed fish and chicken after some time. He never administered pilocarpin when the patient was unconscious, as he had seen some very bad results from so doing. In cases of sleeplessness he had found morphine and opium of great value. When the pupils were widely dilated morphine was best, but it should never be given while they were contracted. He used hazeline as an astringent because he found it did not disorder digestion.

VII.—Ralph Stockman, M.D., F.R.C.P.E., F.R.S.E.,

Professor of Materia Medica, Glasgow University.

Professor Stockman could not agree with Dr. Macalister as regards the efficacy of oxygen in the treatment of chronic renal disease. He did not see how it could possibly act, as he thoroughly believed that the red blood corpuscles could not be forced to take up any more oxygen than they got from the air, unless the pressure of the blood was increased. He had tried for two or three years treating cases with oxygen, allowing it to play about the patient's head, but with no good result. He held an exclusive milk diet to be objectionable, as the patient was liable to become anæmic, there being but little iron in milk, and he might also become dyspeptic.

VIII.—W. Ewart, M.D., F.R.C.P.,

Physician, and Joint Lecturer on Medicine, St. George's Hospital.

Dr. Ewart remarked that too much was thought of the albuminuria and too little of the patient as a living organism. He regarded proper feeding of the first importance, as helping Nature to bring about a cure by her own recuperative forces. Intoxication from food had to be avoided, and in cases of dropsy this could be done by securing a free escape for the pent-up fluids. As a preliminary the gravitation of the fluid towards the lower extremities was encouraged by raising the head of the bed 6 or 8 inches. Deep incisions were then made near the ankle, with due antiseptic precautions, and the drainage kept up for as long a period as possible with the help of a liberal supply of beverage. An exclusive milk diet was to be adopted at first, but this could soon be exchanged for a liberal and varied dietary, under which the albuminous character of the serum was gradually restored, and the patients' strength rapidly improved, so that they were able to sit out of bed and to walk about, the active exercise combined with massage assisting the continuance of the serous outflow. So long as free drainage could be maintained the feeding could be kept up without any risk, and the urinary flow was increased. In favourable cases a long-continued drainage led to recovery. In others, where the serous outflow spontaneously ceased before the renal function was completely restored, an important advantage had been gained during the period of feeding, and the subsequent treatment as well as the diet had to be shaped according to the indications.

IX.—T. M. Allison, M.D.,

Newcastle.

Thyroid Extract in Chronic Bright's Disease.

Dr. Allison said: There is one phase of Bright's disease which has not, I think, received the attention it deserves. I refer to that form occasionally found in connection with myxœdema. In some of the textbooks absence of albumin is given as one of the distinctions between myxœdema and chronic Bright's disease. This cannot, however, be altogether depended upon, as albuminuria is not an infrequent symptom in myxœdema. In other words, the general slowing down of cell activity and interference with cell life in myxœdematous patients may set up such changes in the renal epithelium as to produce serious kidney mischief; and this mischief, whilst functional in the early stages, may later produce the grave consequences usually associated with advanced Bright's disease.

Thus in four cases of myxœdema which I exhibited before the Section of Medicine of the Association in Newcastle in 1893, three presented marked symptoms of urinary complication, and one has since died of cerebral hæmorrhage.

In Case I, a woman, aged 53, who at the time had had myxœdema fourteen years, the urine was of low specific gravity, alkaline in reaction, and loaded with pus and phosphates, whilst micturition was frequent and painful. In the first week of October, 1892, I put this patient on fried thyroid glands, being one of several observers who independently originated this method of treatment. The bladder was also treated locally by mild antiseptic douches. Gradually all the symptoms cleared up, the urine, after containing albumin for some months, eventually becoming normal, and the patient is now alive and well.

In Case II, a man aged 50, myxœdematous for 8 or 9 years, the urine was watery in tint, of low specific gravity, acid in reaction, cloudy with mucus, and exhibiting a distinct ring of albumin when run on to cold nitric acid. After taking cooked thyroids for some months the albumin completely disappeared and has not recurred. The patient is now in good health.

In Case III, a woman, aged 66, myxœdematous for 9 months, no albumin was present.

Case IV was a woman aged 53, myxœdematous for 10 months, and weighing 16 st. 3 lb., from whom I could get no history of previous kidney trouble. The urine on July 18th, 1893, was pale and watery, of sp. gr. 1008, alkaline in reaction, and cloudy with mucus, whilst alkali-albumin was present in large quantity, a few hyaline casts being also visible under the microscope. She was put on cooked thyroid glands for a few days, one lobe daily. At the end of five days the urine had become normal in colour, the reaction was now distinctly acid, the specific gravity had gone up 10° and

abundant acid albumin was present. A fortnight's treatment on smaller doses found the urine darkish in tint, of sp. gr. 1018, acid in reaction, and albumin abundant. I could not prevail upon this patient to continue the treatment, although thyroid tabloids were procured for her use, and on calling some time afterwards I was surprised and sorry to find that she had been suddenly struck down unconscious, had developed hemiplegia, regaining consciousness for only a short time, and after one or two convulsions had died after a few days' illness—a medical man near the spot being called in to attend her. The kidney involvement was here undoubtedly the cause of death.

Whilst treating these cases, I was struck by the fact that not only did large masses of chronic eczema disappear, and the skin become normal, but that considerable albuminuria also disappeared at the same time. The inference seemed clear that not only had the cutaneous epithelium become renewed, but that the kidney cells had also been reproduced, and that the kidney itself had again become functionally active.

Hence I was hopeful that, as good results were obtained in skin medication in persons other than myxœdematous, so by increasing the cell-renewing power of the renal epithelium, one might do good in certain cases of chronic albuminuria (the cirrhotic kidney being obviously out of court). And after trial, though no brilliant results have occurred, I venture to think that thyroid medication deserves a place in renal therapeutics.

Thus in two typical cases, in young women, of albuminuria following scarlatina and influenza, I have perseveringly tried thyroid treatment during the last five years—cases of the kind being unfortunately scanty in my practice. These two cases presented the complete clinical picture of chronic Bright's disease, as usually seen, but neither had, beyond intense headache, any sign of uræmia. I do not purpose going into detail, as nothing approaching the satisfactory result seen in myxœdema has been accomplished; but I have certainly found thyroid extract (in moderate doses, say ½-gr. tabloids every three or four hours) to be of much service in promoting diuresis, reducing dropsy, and generally helping the patient. The amount of albumin is also somewhat lessened, in quantity, but to no great extent.

One of the patients, after being looked upon as hopeless by three other observers, has enjoyed fair health for the last eighteen months. Her dropsy, however, was so extensive that I did not dare to trust to thyroid alone, but used tapping, digitalis, and nitro-glycerine, and other diuretics.

In the other case, however, which has been under continuous observation for five years, the remedy has been fairly tried, and although cure is quite out of the question, yet it has helped her through several crises, has prolonged life, and perhaps helped to avert convulsions.

The cases are, of course, much too few to found data upon, and whilst disappointed in a sense with the results of the cell-renewing property of thyroid medication, we ought, I think, to remember that in skin medication some observers have got good, and others equally disappointing, results with the same remedy. Thus it is stated that in psoriasis with subnormal temperature it does good, whilst in psoriasis with normal temperature it has little effect.

I have ventured, however, to draw the attention of the Section to the treatment, as it certainly possesses some advantages; and in cases following diphtheria or scarlet fever, or where patients with an acute attack tend to drift into a chronic condition, it might, I think, in small doses of a pure preparation perhaps turn the scale in the patient's favour.

In conclusion, the therapeutic properties of thyroiodin may for the purposes of this paper be shortly summed up as follows:

1. It increases fatty and nitrogenous metabolism.
2. It is diuretic, increasing the volume of urine and the amount of urea; the specific gravity goes up.
3. It tends to increase albumin when present, and to deepen the tint of the urine, hence more colouring matter, perhaps a factor in producing uræmia, is got rid of.
4. It hastens cell life and development.
5. In large or impure doses it is a general and cardiac depressant.

Finally, this paper is not a record of medical triumph. It is merely an attempt by a general practitioner, with limited material, to work out an interesting problem in the interest of cases who are amongst the most hopeless of any we are called upon to treat.

X.—W. C. Sillar, M.B., B.Sc.,

Assistant to Professor of Materia Medica, University of Edinburgh.

Dr. Sillar agreed with Professor Stockman's remarks as to the employment of oxygen. He thought that much of the difference of opinion had been due to the use of the drugs in different doses, and thought that in every case quoted the exact amount of the dose employed should be stated.

Dr. Tirard's Reply.

Although it was impossible to consider in detail the numerous observations that had been made, Dr. Tirard thought it might be useful to refer to some of them. With regard to the "cure" of chronic nephritis, a term employed by Professor Ewald and by Dr. McVail, although certain chronic cases might show no albuminuria for months or even years, Dr. Tirard would hesitate to call them cured. He thought that chronic cases always left some traces of pathological renal changes, and these traces might, under unfavourable conditions, form the starting-points for an extension of the disease to some portion of the kidney previously unaffected. He hesitated to say that any chronic case had been cured until, the patient having died from some other malady, *post-mortem* examination disclosed healthy kidneys. He contrasted the treatment of œdema of the extremities advocated by Dr. Saundby and by Dr. Ewart, the former recommending elevation of the lower limbs and massage, while the latter thought that the fluid should be drained into the lower extremities by raising the head of the bed. Although œdema could be thus greatly reduced, Dr. Tirard had not found that it was possible to remove fluid from the pleural or peritoneal cavity by draining the extremities; it was much more satisfactory, when there was much interference with respiration, to remove the fluid by aspiration. Dr. McVail had spoken in favour of the judicious use of pilocarpin. Dr. Macalister, of Liverpool, thought the use of this drug demanded caution, and instructed his house-physician never to employ it without first consulting him through the telephone, while Dr. Barr, also of Liverpool, said he had not used it for fifteen years, and hoped never to prescribe it again as long as he lived. In carefully-selected cases, and as a means of initiating diaphoresis, which could be prolonged by other measures, Dr. Tirard thought pilocarpin was sometimes an extremely valuable drug, so much so that he hoped that such cases would not fall into the hands of those who were strongly prejudiced against the employment of this drug. He thought that the present relative disuse of pilocarpin probably resulted from its former prolonged employment in inordinate doses, and that its sphere of usefulness should not be limited by possible errors of dosage or administration.

THE PHYSIOLOGICAL ACTION OF HYDRASTINE HYDROCHLORATE.

BY

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Introduction.

Hydrastis Canadensis, yellow root or golden seal, is a small herbaceous perennial, indigenous to most parts of the United States and Canada; it belongs to the *Ranunculaceæ*. In the rhizome of the plant are contained the following active principles: hydrastine, berberine, and canadine; in addition to sugar, albumin, and extractives there is a resin and a small quantity of an ethereal oil. Hydrastine is a derivative of isoquinoline, and its formula is, according to Freund and Will, $C_{21}H_{21}NO_6$. It was first isolated by Durand in 1851.

Results of the Present Work.

In our experiments pure hydrochlorate of hydrastine was used on account of its solubility in water. A few experiments were made with pure hydrastine and with the liquid extract of hydrastis; but on account of the insolubility of the former and the presence of alcohol and other substances in the latter, the results were unsatisfactory. The method of administration of the hydrochlorate was by subcutaneous injection of aqueous solutions.

Effects of Poisonous Doses.

In frogs 20 decimilligrammes ($\frac{1}{3}$ gr.) caused within twenty minutes paralysis of the fore limbs, succeeded in a minute or two by spasms similar to those produced by strychnine; the frog recovered by the next day. A dose of 81 decimilligrammes ($\frac{1}{2}$ gr.) caused convulsions within fifteen minutes; the body during a spasm was rigid, and rested on the mouth and

toes of the hind limbs. Death generally occured within two hours.

In mice a similar dose to the last produced convulsions within fifteen minutes, and death within half an hour. A dose of 486 decimilligrammes (⅛ gr.) had apparently no effect upon rats, but double that amount caused within twenty minutes paralysis of the hind legs, succeeded within an hour by convulsions, and by death within three hours. A dose of 0.1296 g. (2 gr.) quickened these stages and caused more marked convulsions, together with salivation.

In rabbits no effect beyond a quickening of respiration and increased liveliness was produced by a dose of 0.7776 g. (12 gr.). In the case of a half-grown rabbit 1-1.5 g. (15½-23 gr.) caused convulsions within twenty minutes; the head was thrown back and the legs extended: tonus and clonus were well marked, and death occurred within an hour and a-half.

The cat is much more susceptible to the action of the drug than is the rabbit. A dose of 0.6480 g. (10 gr.) produced a very profuse salivation, commencing within thirty minutes of the injection; the respiration was very rapid, and there was considerable depression. In all cases there was marked loss of appetite, widely-dilated pupils, slight spasms, and incoordination; in some there was also vomiting. Death followed convulsions in one case, a strong full-grown male, on the second day after a dose of 1 g. (15.4 gr.).

Cases of Recovery after Poisoning.

Three or four frogs after showing typical convulsions recovered when kept in moist surroundings; one frog remained apparently well for five days, but on the sixth day was again seized with convulsions and died.

A kitten 2 days old recovered after spasms produced by a subcutaneous injection of 108 decimilligrammes (⅛ gr.) of the drug.

Action upon the Heart.

The direct application of two or three drops of a solution containing 1 part of hydrastine hydrochlorate in 200 parts of tap water produced a marked effect upon the heart of a frog. The rate of the contraction was diminished, but the force and duration were augmented; thus in one case there were two contractions in fifteen seconds as compared with two in four seconds before the application of the drug, and the duration and force of the ventricular contraction were more than doubled.

After the application of a few drops of the solution (1 in 200) to the sinus of the frog's heart, strong faradic excitation of the vago-sympathetic produced no inhibition. Stimulation of the crescentic groove, however, stopped the contraction of the heart. The effect of the drug was chiefly upon the sinu-auricular junction. Thus, if the contractions of the auricles and ventricle were separately recorded, no appreciable effect was observed if the surface of the ventricle, or of the auricles, was painted with the solution of the drug. The application, however, of the solution to the sinu-auricular junction quickly produced a slower and more powerful beat of the ventricle and auricles; finally these ceased to beat and the sinus alone continued to pulsate.

The action of the vagus was also suspended in mammals by the direct application of the drug to the heart. Thus stimulation of the vagi did not stop the contraction of a rabbit's heart after the injection of 10 ♏ of 1 in 200 tap water at 37° into the pericardial sac. Before the injection a much weaker stimulation readily produced inhibition.

Action upon the Blood Vessels.

The drug produced contraction of the arterioles, but this effect appeared to be brought about chiefly through the nervous system. There was, however, some local action, as shown by the application to an inflamed conjunctiva of a solution containing 1 part of hydrastine hydrochlorate in 200 parts of tap water.

Action upon the Nervous System.

It has already been mentioned that poisonous doses of the drug produce convulsions similar to those caused by strychnine. In frogs the cutaneous sensibility is so much increased that a slight touch or puff of wind suffices to send the frog into convulsions. The convulsions are of central origin, for section of the nerves abolishes them. The rate of contraction of the muscle is from 8 to 10 per second. The tonic contractions are followed by well-marked clonus. In some cases the drug first causes partial paralysis, but this in most cases appears to be due to the local action of the drug around the seat of injection. Thus in a rat the left hind limb was paralysed for motion and sensation after the injection of 2 grains of the drug dissolved in 15 ♏ of tap water. This limb was not so much involved as the others when later the body was convulsed. We observed in cats that the pupils were stationary at first, then widely dilated, and even more so the day after the injection of 10 grains of the drug.

The direct application to frog's nerve and muscle of a solution containing 1 part of the drug in 1,000 parts of tap water had apparently no effect upon their excitability. A stronger solution, 1 in 200, appeared to act first upon the nerve endings and then upon the muscle. A gastrocnemius muscle placed in a watch glass containing such a solution quickly failed to respond to stimulation of the sciatic nerve, which was outside the liquid, but contracted on direct stimulation. Soon the muscle became more opaque in appearance and quite inexcitable.

In both warm-blooded and cold-blooded animals fatal doses of the drug caused respiration to cease some time before the failure of the heart's action.

Action upon the Digestive System.

No effect was observed upon the digestive system of the rabbit and rat, but in the cat there was marked salivation, vomiting, and loss of appetite for several days after a large dose of the drug. In one cat, which died after receiving 1 g. (15 gr.), there was no gastric inflammation, but much bile in the gall bladder and bile-stained liquid in the stomach and upper part of the small intestine.

The saliva collected within 15 and 25 minutes of the injection of 0.648 g. (10 gr.) of the drug into a cat produced fatal results in frogs; the quantity of saliva injected hypodermically was 15 and 20 minims respectively.

Action upon the Urinary System.

The drug is rapidly excreted by the kidneys, for we found that the urine passed within 25 minutes of the injection of 0.6480 g. (10 gr.) into a cat caused typical convulsions in a frog, but a toxic quantity was still discharged on the second and third day. Normal urine when injected into a frog produced no effect.

Action upon the Generative System.

Pregnant rats and rabbits did not abort even after receiving large doses of the drug, but one cat aborted twelve days after a hypodermic injection of 1 g. (15.4 gr.), a second cat four days after, and a third cat twelve hours after, a dose of 0.6480 g. (10 gr.). The fœtuses in each case showed no sign of life, and there is little doubt that they were killed by the drug before abortion commenced. The difference between the results in the case of the rabbits, rats, and cats is to be attributed to the marked susceptibility of cats to the action of the drug. The liquor amnii was found by experiments on frogs to contain poisonous doses of the drug.

Experiments upon rabbits and cats failed to show any action of the drug in producing contraction of the muscle fibre of the uterus.

Post-mortem Appearances.

Rigor mortis comes on exceedingly quickly after death from poisonous doses of the drug, in some cases even within a minute or two of death. The rigidity is so marked that it was possible to hold the dead body of a cat upright by grasping one of its hind limbs.

The following conditions were observed: Marked distension of the right side of the heart, congestion of the pia mater, and an abnormally large quantity of bile.

Action upon Low Forms of Life.

Weak solutions, 1 in 1,000, quickly produced the disintegration of infusoria, and putrefaction was delayed or suspended in the bodies of animals poisoned by the drug.

At the opening of the academic year in the University of Prague on September 25th, the new Rector Magnificus, Professor Géza von Mihalkovics, delivered an address on the progress of biology. The newly-elected Dean of the Medical Faculty, Professor Ferdinand Klug, also delivered an address.

A DISCUSSION ON THE THERAPEUTIC VALUE OF RECENT SYNTHETIC ANALGESICS: THEIR BENEFITS AND ATTENDANT RISKS.

I.—Ralph Stockman, M.D., F.R.C.P.E.,
Professor of Materia Medica, Glasgow University.

In opening this discussion I am at the outset confronted by two difficulties, the first of these being the very large number of substances with which I should have to deal if I made the attempt to overtake all the synthetic analgesics brought forward during recent years, and the second being that Dr. Lockhart Gillespie has enjoined me to compress my remarks into the space of twenty minutes, so that we may be able to overtake the other business of the Section. Under these circumstances it is quite impossible for me to do more than glance briefly at a few of the more important analgesics, and to touch on their more salient characteristics. This is to some extent an advantage, as I cannot pretend that I have a practical clinical knowledge of the relative value and defects of more than a small number of these substances, for as it requires long and careful observation to become thoroughly acquainted with the possibilities and best modes of using even the most commonly employed medicinal remedies, so in practice I have confined my clinical observations to a small number of analgesics only. Most of them have been introduced to us, not so much in the character of analgesics as in that of antipyretics, but, at the present time, and speaking very generally, their employment to reduce temperature has assumed less importance than their value in reducing pain. This is due very largely to the fact that the direct antipyretic treatment of feverish conditions has to a great extent gone out of fashion owing to the more specific treatment by means of serum antitoxins, which is at present receiving such a wide trial.

Long experience has now demonstrated very clearly that the administration of medicines, which—so far as we know, at least—merely reduce temperature, has comparatively little beneficial effect on the course of a continued fever, such as typhoid, and as a routine method of treatment they have been practically abandoned. On the other hand, their combined power of reducing temperature and of relieving the pain and discomfort consequent on fever make them of great practical value in certain diseases accompanied by marked pyrexia. From my own experience I would mention two of these especially—namely, acute rheumatism and malaria—where the combination of an analgesic and antipyretic, such as phenacetin, with the more specific remedies, salicylates and quinine respectively, conduces very greatly to the comfort of the patient, if not to a direct cure of the disease. It is, however, more directly with their value as analgesics that we are concerned to-day.

At the outset, I may state my opinion that no one of them hitherto tried acts in an ideal way, either in reducing temperature or in relieving pain, and that no one is without more or less serious drawbacks for general and frequent use in practice, although I am inclined to think that their dangerous effects have been greatly exaggerated. Both their remedial and poisonous actions can be best and most clearly studied by briefly tracing their chemical genealogy, when we shall see that all of them are closely related, both chemically and in their effects, to the well-known substance, phenol, and to a body very nearly allied to it, anilin. By chemical modification of these bodies and their derivatives changes in action can be brought about in certain directions, our efforts being directed to lessen their toxicity and to increase their analgesic action. Unfortunately our studies as to the relationship between chemical constitution and physiological action have not yet led us to such a wide and comprehensive grasp of the subject as to enable us to prophesy beforehand what will be the result of any given alteration; hence each new aspirant for therapeutical favour has to undergo a long and tedious experimental trial before its ultimate value can be determined.

To illustrate the close chemical relationship of these substances, and for easy reference as we go along, I have put up a table of their structural formulæ, from which it will be seen that their relationship to phenol is always more or less a close one:

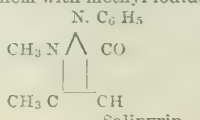
C_6H_5OH ... ... Phenol.
$C_6H_5.COOH$ ... ... Benzoic acid.
$C_6H_4.OH.COOH$ ... ... Salicylic acid.
$C_6H_5.NH_2$ ... ... Anilin
$C_6H_5.NH.COCH_3$... ... Acetanilide. Antifebrin.
$C_6H_5N<\begin{matrix}CH_3\\COCH_3\end{matrix}$ ... ... Methylacetanilide. Exalgin.

Acetyl, benzoyl, salicyl acetanilide.

$C_6H_4<\begin{matrix}OC_2H_5\\NH.COCH_3\end{matrix}$ } Ethoxyacetanilide. Acetphenetidin. Phenacetin.
$C_6H_4<\begin{matrix}OC_2H_5\\NH.C_3H_5O_2\end{matrix}$ } Lactyl phenetidin. Lactophenin.
$C_6H_4<\begin{matrix}OC_2H_5\\NH.COCH_2.NH_2\end{matrix}$ } Amidophenacetin Phenocoll.
$C_6H_5.HN.NH_2$ ... ... Phenylhydrazin.
$C_6H_5.HN.NH.COCH_3$ } Pyrodin. Acetylphenylhydrazin.
$C_6H_5.HN.N.C_5H_6O_2$ Antithermin.

Phenylhydrazin is formed from anilin.

By heating together phenylhydrazin and aceto-acetic ether, and treating them with methyl iodide, antipyrin is formed.



Phenyldimethylisopyrazolon.
Phenazone. Antipyrin.

Salipyrin = Salicylate of antipyrin.
Tolypyrin = Tolyldimethylpyrazolon.
Tolysal = Tolypyrin salicylate.

There are numerous other analgesic bodies formed in the same way by ringing the changes on the various kernels, but I need scarcely go into them further, as we see that all these substances are closely allied chemically, and there is little difficulty in tracing also their close affinity in action. In the doses ordinarily given phenol exercises little effect on the nervous system or blood, but when these doses are exceeded the cord and brain are greatly depressed by it, leading to stupor and the abolition of reflexes, while the blood corpuscles are broken down, the temperature falls to an alarming degree, and excessive sweating occurs, effects which can be traced all through the series.

In salicylic acid the toxicity has been greatly lessened, but large doses produce cutaneous anæsthesia in the dog, with ataxic gait and stupor; while none of us are unaware in man of the skin eruptions, excessive sweating, depression of the heart and anæmia, which are apt to follow on its therapeutical use. Its analgesic effects in acute rheumatism are also well known.

When we come to consider the anilin we find that its action is such as to make its medicinal use highly dangerous. It is a very powerful depressant of the nervous system, causing stupor and general depression, but its most remarkable effect is on the blood, where such changes are wrought in the hæmoglobin as to cause marked cyanosis of the skin and severe dyspnœa.

Phenylhydrazin has also a most destructive effect on the red blood corpuscles, and converts their hæmoglobin into methæmoglobin, besides causing thrombosis and marked changes in the kidney. So much is this the case, that any combination of it which is not a very firm one tends to be extremely poisonous, and on this account two of the substances I have already mentioned, namely, pyrodin and antithermin, are to be reckoned as poisonous rather than as therapeutical agents in practice.

Coming now to derivatives of these substances, which have been so modified chemically as to bring into prominence their beneficial effects and to diminish their poisonous actions, we find that all of them have substantially the same kind of action. This consists essentially in an action on the grey mater of the spinal cord, by virtue of which the conduction of painful impressions from the periphery is rendered more difficult. At the same time the perceptive activity of the grey matter of the cerebrum is slightly but not very visibly depressed, and no doubt the perception of impressions is to a certain degree lessened. It is on these actions that their analgesic power depends. Motor power and conduction are affected at the same time but to a much less degree, while the brain retains its ordinary acuteness, and hence the person, while obtaining alleviation from pain, is able to go about and per-

form his ordinary business, and herein consists the great practical utility and value of this class of analgesics.

Looking at our requirements as physicians, we need two analgesic substances having somewhat different degrees of action, one which will exert its effects on the pain-conducting paths in the cord, leaving the remainder of the nervous system intact or nearly so, and another which in addition will exert a hypnotic or gently narcotic action on the cerebrum. One such drug would suffice if the difference in effect could be obtained by graduating the dose. Now it would be too much to expect that substances having such a pronounced action on the nervous system as these newer analgesics have, should not occasionally cause unpleasant symptoms by manifesting too great an activity in certain directions leading to undesired, and sometimes alarming, results. It would be wonderful if it were not so, for drugs, like men, have the defects of their qualities. Thus we find that their depressing effect on the medullary centres may lead to respiratory and cardiac embarrassment; their action on the vasomotor centre may cause sudden dilatation of the blood vessels, with consequent faintness or syncope, while a continued dilatation leads to severe sweating, œdema, and eruptions on the skin and mucous membranes. Any great depression or collapse from an action on the nervous system is extremely rare, and probably has only occurred in persons greatly reduced by disease. We shall never get an analgesic substance quite free from the risk of causing such slight accidents and inconveniences, because, as I have just stated, these are simply exaggerations of the action which we wish it to produce on the nervous system, and it is quite impossible that we can accurately foretell the exact degree of sensitiveness of a patient's nervous system to such drugs. This varies not only in individuals but in the same person at different times. The most we can hope to accomplish in this direction is to diminish the chance of such inconveniences by using a drug which is not too active, so that by increasing the margin of dosage we may at the same time increase the margin of safety.

On the other hand, it is a very different matter when we come to consider the action of these substances on the hæmoglobin and their effects in causing disintegration of the red blood corpuscles and anæmia. These must be uncompromisingly regarded as drawbacks to their use, for they subserve no useful purpose, and have no bearing on their action as analgesics. Fortunately many of these drugs have this effect, only in a subordinate degree, and in ordinary doses and under favourable conditions never manifest it.

Owing to this action being so pronounced in the case of acetanilide I have given up its use entirely for years past, and all the more willingly because the smallness of its dose easily allows one to overstep the margin of complete safety. Antipyrin is very much safer, and on the whole acts well as an analgesic, but it also I seldom use now, being convinced that phenacetin is equally powerful and at the same time much less apt to be attended by occasional disagreeable consequences. The only other member or the series in which I place equal confidence as an analgesic is lactophenin, a substance practically identical in constitution with it. I have never seen any unpleasant results of any kind from either of these, although I am aware that a few such cases have been reported.

In conclusion, I may state my opinion that if given with care and in suitable cases any ill-effects are extremely infrequent. Their value, however, is limited by the fact that they do not subdue very severe pain.

II.—C. D. F. Phillips, M.D.,
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[Abstract.]

It is doubtful if, with one exception, the recent synthetic analgesics even approximate in their therapeutic value to the older ones, such as antipyrin, antifebrin, phenacetin, and exalgin. They group themselves into three main divisions, according as they are derived from chinolin, anilin, or salicylic acid. One alone is derived from chinolin, namely analgene. The derivatives of anilin are euphorin, methylene blue, pyoktanin, agathin, malakin, neurodin, lactophenin, apolysin, and citrophen; also a subgroup consisting of pyramidon, salipyrin, tolipyrin, tolisall, and ferripyrin, compounds of antipyrin, and another subgroup consisting of phenocoll which is derived from phenacetin.

Salophen, salocoll, salipyrin, tolisall, malakin, and agathin are derived from both anilin and salicylic acid.

Analgene, although it cannot be considered a very powerful analgesic agent, yet has the advantages of but slight toxicity, of tastelessness, and of easy solubility in acid media, so that, being readily absorbed from the stomach, its action is quickly produced. On account of its tastelessness and comparative harmlessness it is of especial value in the treatment of painful conditions in children. It has proved of value in many diseases, among which are spinal caries and hip-joint disease. Its effect is transient, but this, if it be a defect, is easily overcome by a frequent repetition of the dose. It has sometimes succeeded after antipyrin and phenacetin have failed. Its great evil depends on the destructive action it exerts on the red blood corpuscles resulting in urobilinuria. Although untoward effects such as nausea, vomiting, diarrhœa, tremor, vertigo, and rashes, have followed its use, yet, as a matter of experience, these unpleasant accidents rarely occur.

Euphorin is without doubt a powerful analgesic; it is said to have the activity of twice its weight of antipyrin. But like some other powerful analgesics it tends to interfere with the respiratory processes and to weaken the heart's action, and produce cyanosis with collapse. A negative advantage it has in that it does not induce changes in the blood or affect the kidneys. It has proved of especial service in the pain of orchitis. Although its toxicity, in carefully regulated medicinal doses, cannot be called great, yet it always produces extremely profuse perspiration, frequently a subnormal temperature, and occasionally cyanosis. The great disadvantage of its use depends on the difficulty of predicting what its action will be on different individuals, and it should therefore obviously be given in the first instance in a tentative manner.

Methylene Blue is a distinctly useful analgesic, particularly in functional neuralgias and in all kinds of nervous headache. It, however, changes the hæmoglobin of the blood into methæmoglobin, and causes irritation of the stomach, leading to vomiting and diarrhœa, and also of the urinary tract, having caused in different cases albuminuria, retention of urine, strangury, cystitis, and spasmodic contraction of the bladder. In large doses it has caused muscular paresis, loss of sensibility, and dyspnœa.

Pyoktanin is not of sufficient therapeutic value to need more than a mere reference.

Agathin is said to be both slow in its action and unreliable in its effect. It has caused vomiting, diarrhœa, insomnia, vertigo, loss of consciousness, and even increase of the pain which it was given to relieve. It is probably not worthy of a place among valued analgesics both on account of its limited applicability and because of the accidents which have followed its employment.

The *Compounds of Antipyrin*, namely, pyramidon, salipyrin, tolipyrin, tolisall, and ferripyrin, have, as analgesics, merely a weak action of their antipyrin element. They are harmless, but not as a rule sufficiently powerful for the treatment of urgent pain.

Those which are derived from *Salicylic Acid, as well as Antipyrin*, namely, salipyrin and tolisall, are of use in painful states of rheumatic origin, but otherwise they are comparatively unimportant.

Malakin, being only slightly soluble in the ordinary menstrua, is slow in its action, very much slower than phenacetin, antifebrin, or antipyrin, and is in every way much inferior to them; with the exception, however, that it may be given for a long period of time without disordering digestion. It has been found of distinct service in acute rheumatism. It has no deleterious action on the blood or kidneys, being indeed practically free from risk.

Neurodin, one of the para-amido-phenyl derivatives of anilin, is another remedy which is feeble in its action, but harmless in doses sufficiently large to elicit its analgesic effect. Not only is it weak, however, but it is uncertain, and must be considered greatly inferior to phenacetin and antipyrin.

Lactophenin appears to be more active as a mere sedative to the nervous system (relieving irritability, restlessness, and

depression) than as a pure analgesic. It is comparatively free from risk, although in medicinal doses it has produced vomiting, coldness of the body surface, cyanosis, and collapse. But its great disadvantage is that it is inconstant in its analgesic effect; it has been known to fail completely in relieving the pain of multiple neuritis and of intercostal neuralgia.

Citrophen has not so far been much used as an analgesic. Its applications are much the same as those of phenacetin, but its attendant risks are greater, while its benefits are much less distinct. It has exerted in medicinal doses a gravely toxic effect on the blood, and has produced serious irritation of the intestine and kidney. It probably ranks very much below phenacetin.

Apolysin closely resembles phenacetin in its effects; it is said to produce analgesia even more vigorously than that remedy, but to be likewise more toxic. As it is much more soluble than phenacetin and the other members of the same group its action is correspondingly more prompt. It has been of especial benefit in migraine in diminishing the violence of the pain, in allaying the cutaneous hyperæsthesia, and in shortening the duration of the attack. It is well tolerated in large doses, continued over long periods of time, without showing any tendency to accumulation or produce intestinal or renal irritation, or indeed any material injurious result. Its toxic effects, which are those of phenacetin but more pronounced, are especially liable to occur if it is given on an empty stomach, or when that organ is producing an excessive amount of acid secretion. It is a remedy which, I think, may prove a valuable supplement to the phenacetin-antipyrin-exalgin group.

Phenocoll Hydrochloride is a derivative of phenacetin, and is said to be as powerful an analgesic as it, and, being more soluble, it acts more quickly. Even if this be granted, it cannot be considered so safe a remedial agent. Its special use has been in neuralgias brought on by cold, that is, of rheumatic origin. But in children, and in debilitated adults, more especially in cases of advanced phthisis, it has caused alarming collapse with cyanosis. In other cases it has produced labial herpes, vertigo, and general *malaise*. It is, however, a substance which, and as I expect, may take an important place in the future as a means of relieving painful states generally.

The *Salicylate of Phenocoll* or *Salocoll* has no advantage over the hydrochloride of phenocoll except that advantage which is due to the action of its salicylic acid element. It is said not to cause any gastric irritation, or indeed any untoward effect when given in medicinal doses.

Salophen is probably the best of the recent synthetic analgesics. It was introduced to replace salol, and has instead of its phenol radicle the acetyl-para-amido-phenyl radicle. Like salol it is not decomposed until it reaches the intestine, so it does not produce any gastric disturbance, as do the salicylates. Its toxicity is very slight, and is apparently due, when given in very large doses, to the salicylic acid it contains, but in medicinal doses it does not even produce the tinnitus and headache characteristic of the action of the salicylates. It has been of benefit in painful states of all sorts, but of special value in the neuralgias of children. When it is used to relieve the pains of influenza it is necessary to continue its administrations for a few days after the pains have been relieved. It is held, and with considerable reason, to be as effective and as safe as, or safer than, antipyrin and phenacetin, and it is probable that before long it will take rank with these substances.

Conclusions.—I would submit that salophen, phenocoll hydrochloride, apolysin and methylene blue are substances of high therapeutic value, and, without attempting to arrange them in order, would single out salophen as of exceptional promise; that agathin, being slow, unreliable, and even dangerous in its action, should be avoided; that some hesitation should be exercised in employing analgene and citrophen because of their toxic action on the blood, in using euphorin and lactophenin because of their inconstancy and tendency to produce collapse, and in choosing malakin because of its tardy action; and that pyoktanin, ferripyrin, pyramidon, salipyrin, tolipyrin, tolisall, and even salocoll, although they may be well and safely used as substitutes for better remedies, are unnecessary

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Dr. Gillespie pointed out the danger of such drugs as exalgin in the hands of the public, and illustrated his remarks by reference to a case where the patient had taken from 80 to 90 grains in a few hours. Very pronounced poisonous symptoms followed. As the pupils were markedly dilated and convulsions had set in, morphine was injected in large doses. The patient speedily recovered. He also called attention to the benefit derived from adding caffeine to such analgesic drugs as antipyrin. He recommended migrainin as a very good analgesic which had the advantage of producing no deleterious action upon the heart.

IV.—D. J. Leech, M.D., F.R.C.P.,
Physician, Manchester Infirmary; Professor of Materia Medica, Victoria University.

Professor Leech agreed with what had been said by Dr. Stockman. He thought that there was hope that an ideal analgesic would yet be discovered. Dr. Phillips had spoken of a great number of the less known drugs, but he did not think that, excluding perhaps one or two of them, they could be recommended as being of practical value. Many grave mistakes arose from wrong dosage, and many of the evils ascribed to antipyrin ought to be put down to this cause or to other accidents. Idiosyncrasy must always be allowed for in treating cases for the first time. He had had very good results from antipyrin. Pyridin was, he considered, decidedly harmful. He had seen many cases in which evil results had followed the use of exalgin. Of all the analgesics he thought phenacetin and antipyrin the best.

V.—John Liddell, M.D.,
Honorary Physician, Harrogate Royal Bath Hospital.

Dr. Liddell had used exalgin extensively, and had seen no ill-effects from it when given in proper doses. He had found that antipyrin rather tended to increase the depression of influenza. He thought a field was open for someone to discover an analgesic which should prove of value as a local anæsthetic.

VI.—J. R. Hamilton, M.D.,
Hawick.

Dr. Hamilton never used phenacetin or antipyrin without caffeine. The evil effects produced by antipyrin were often entirely due to overdosage. He complained of the great number of useless drugs under the heading of analgesics, which the student was supposed to know, and said he had found a deplorable lack of familiarity with the proper doses of the more important every-day drugs among his young assistants just coming from medical schools. He would like to see much of the list given in the classification by Dr. Phillips expunged altogether.

VII.—William Gordon, M.D.,
Physician, Devon and Exeter Hospital.

Dr. Gordon had prescribed antifebrin for many years with no harmful results. In treating pain, it must not be forgotten that it might be due to more than one cause. The true origin has to be ascertained before a right treatment could be adopted. In treating *malaise* in infants he had had very good results from 1 to 2 gr. of antifebrin. Exalgin in ½ to 2 gr. doses was very good for local pain, such as for toothache, and also for pains of a neuralgic character. Antipyrin was not to be recommended unless in combination with caffeine, and he thought it was too promiscuously prescribed by chemists and others. Phenacetin he held to be a drug of great value.

VIII.—W. S. Frew, M.B.,
Medical Officer, Her Majesty's Convict Prison, Dartmoor.

Dr. Frew used three or four of the chief drugs indifferently, and could not say that he had found much difference in result. Antipyrin was of great use in treating children's complaints. Antifebrin he had employed extensively, and considered it to be of much value in the relief of pain. It did not seem to be more dangerous than antipyrin, except perhaps because of its smaller dose. Moreover, it was far cheaper—a great considera-

tion. All the evil results from its use were due to too large doses. Though the combination of caffeine was usually good, yet it might prove harmful from its action in producing high blood pressure and stimulating the cerebrum. The condition of the patient must be carefully studied in every case before advising its administration.

IX.—J. O. Affleck, M.D., F.R.C.P.,

Physician, Edinburgh Royal Infirmary; President of the Section.

Dr. Affleck thought that much of the bad results produced by the better-known analgesics were due to indiscriminate use by the general public. He had known cases where the patient had treated one of their symptoms—headache—by liberal doses of one of these drugs, producing fatal results by its effect upon the primary diseases from which they were suffering. The whole question depended on the care with which the drug was given, and on the peculiarities of the patient and his malady. Exalgin was of great service in reducing pain, especially in cases of cancer of the stomach. He saw fewer ill-effects produced by phenacetin than by any other of these drugs. Salicylic acid was very useful in relieving pain, especially that of acute rheumatism, but its administration was sometimes followed by delirium; this was probably due to idiosyncrasy.

Professor Stockman's Reply.

In replying on the discussion, Dr. Stockman pointed out the danger of giving such substances as phenylhydrazin and anilin, or their derivatives, to a patient *de novo*. He was inclined to agree with Dr. Frew in thinking that as caffeine produced high tension and stimulated the cerebrum and cord it was rather to be avoided. He pointed out that the depressant action of analgesics was not, as some of the speakers had seemed to indicate, directly due to their action upon the heart, but to their influence upon the vasomotor centre, and it was this action which was affected by caffeine. The little known drugs had their uses, and they should be thoroughly investigated before being abandoned. He said that Dr. Liddell's desire for a local anæsthetic would probably never be fully satisfied; in the meanwhile, ethyl chloride and cocaine were all that were required. Dr. Frew had not been able to detect any difference in action between certain drugs. This, he thought, was possibly correct, but still, in order to get the best results, the actions of each should be minutely studied.

A NOTE ON THE NEW *PHARMACOPŒIA*.

By J. C. McWalter, L.R.C.S.I., etc.,

Dublin.

Take it for all and all, the *British Pharmacopœia, 1898*, is an improvement on its predecessor. This does not imply that the summit of perfection has been attained, or that the work is above criticism.

Hitherto new editions of the *Pharmacopœia* have appeared in a most capricious and irritating fashion. We had one in 1864 and another in 1867. An appendix to the latter was issued in 1874, and another edition in 1885, whilst the additions to the latter were made official in 1890. It is difficult to imagine what good can be achieved by revising the work in this erratic manner, or by keeping secret the date on which its appearance may be expected. The *British Pharmacopœia* might surely be revised at definite and regular intervals of ten years, and a short list of additions made official five years after each issue. Practitioners, pharmacists, and persons compiling works treating of materia medica would then have the advantage of being prepared for any change which might take place.

Another reform is needed as to the exact time at which a new edition becomes official. The present edition became official and binding when its publication was announced in the *Gazette*, but it was impossible to procure a copy of the book, to say nothing of making preparations from it, for some afterwards. A kind of tacit compromise had been arrived at amongst pharmacists that the work should not be deemed to come into force for some months, and at the present time no man knows whether his prescription will be made up according to the new *Pharmacopœia* or the old—it depends altogether on the view of the chemist into whose hands it may fall. This surely is an anomalous state of affairs. A reasonable but definite interval should be allowed to elapse between the circulation of a new *Pharmacopœia* and the date on which it should become official. Both physicians and pharmacists would then have an opportunity of mastering its details before subjecting it to practical use.

It is an unfortunate and notorious fact that thousands of medical practitioners profess complete indifference as to the *Pharmacopœia* and its contents, and refuse to be limited or controlled by it. If they were afforded an opportunity of having a voice in its preparation, at least to the extent of expressing an opinion on proposed omissions, they would probably treat the work with more respect and utilise it more freely. It is true that the members of this Association have been invited to express their opinions on certain suggested alterations, and that the Pharmacopœia Committee have been guided by their reports; but as every person on the *Medical Register* has a voice in the election of a direct representative, so he ought also to have a vote on what remedies might be omitted from the National Medicine Book.

Everybody will agree that the *Pharmacopœia* should not be too bulky, but because a new remedy is admitted to its pages an older and tried one need not necessarily be displaced. Many will miss their favourite preparations from the volume, and will regard the reasons suggested for their deletion as inadequate. Thus, barley tea is not a very potent drug, and the *Pharmacopœia* is not a compendium on dietetics, but being so largely used in the feeding of infants, there might as well be some definite strength for it. Many medical men still order infusion of linseed as a mucilaginous vehicle in cough mixtures, and since the expulsion of that remedy from the *British Pharmacopœia*, chemists are at liberty to make it how and of what strength they list. Decoction of cetraria might have been allowed fixity of tenure for the same reason, or if only to insist that it should not be made with Irish moss. Treacle is treated with the contempt which the vulgar pour on it, but it must still remain the backbone of many dispensary formulas, and it has a peculiar and unique effect in allaying certain forms of cough. But as the Pharmacopœial monograph under "theriaca" describes an article known to commerce as golden syrup, a saccharine residue of no particular value, its absence may be condoned. The exclusion of vinegar will probably have an unlooked for effect. Public analysts have been in the habit of appealing to the *Pharmacopœia* as an authority that the article must be something other than dilute acetic acid, but now there would seem to be no such restriction as to what may be supplied when vinegar is asked for.

There is no astringent available for general use as efficacious as decoction of oak bark, and no sedative so useful as poppy head fomentation. These might very well have been retained, if it were only to impress on the student that the seeds should be removed from the poppies in making the latter, and that the oak bark should not be boiled in an iron vessel.

There are few remedies for dysentery more reliable than bael fruit, and not many stomachics better than canella; larch bark and matico leaves still have many admirers, and savin and rue are in daily use; berberine is found by many to be useful when quinine cannot be tolerated. The hospitality of its pages might even yet have been extended to them by the *Pharmacopœia*.

As an excuse for the disappearance of the vapours, poultices, and enemata, it has been stated that the function of the *Pharmacopœia* is not to indicate the methods in which drugs may be employed. But surely an important function of such a work must be to lay down what doses may be employed with safety in normal cases, and according to the different methods of introduction into the circulation. If a pharmacist is handed a prescription calling for a dose of tincture of opium to be administered in an enema, and is doubtful whether the symbol signifies half a drachm or half an ounce, there is nothing in the *Pharmacopœia* which will assist him to solve the difficulty; because, for all he knows, laudanum may be comparatively inert when administered *per rectum*. The compilers of the *Pharmacopœia* would seem to be strangely oblivious of the use to which chemists put the work as a final court of appeal in deciding on doses which appear doubtful or dangerous in a prescription. The vapours, it is true, are little

used, but surely some recognition might still be made of the fact that medicines can be administered in that form, and some adumbration of the modification of dose required. Future students of materia medica cannot be compelled to give even the wildest guess if they are asked how much prussic acid it would be safe to give as an inhalation.

Of the two preparations of bismuth which have disappeared few will mourn the loss. The galenical preparations of bismuth of the *Pharmacopœias* have always had an unfortunate reputation, and are still overshadowed by the repute of the solutions of certain chemists. The liquor ferri dialysatus, when properly made, is probably the ideal form for the administration of iron, and one which, although liable to decomposition, keeps a reasonable length of time. Its omission is decidedly unfortunate, if only for the fact that it throws practitioners who may wish to prescribe it on the advertised proprietaries of certain manufacturers. Another admirable solution of iron, one of the very few we can prescribe with salts, the stronger liquor of the acetate of iron, has been deleted. The weaker preparations of this did not keep, and the other forms of iron—as pil. ferri iodidi, pil. ferri carb., etc.—which have been omitted, will never be missed.

The most elegant and least objectionable form for the exhibition of opium was the vinum opii, consisting as it did of the extract with aromatics dissolved in wine. It certainly never was much prescribed except by ophthalmologists, who objected to the aromatics; but this is merely because it was not worth anyone's while to draw attention to its advantages. For some occult reason this has been omitted, and the liquid extract, originally intended as an imitation of a certain proprietary solution, has been retained with its strength altered. The standardisation of tincture of opium is a step in the right direction; but our knowledge of the alkaloids of belladonna is scarcely sufficient to warrant the insistence on a certain alkaloidal equivalent in tincture of belladonna. There has been more juggling with the salts of morphine, the sulphate and the bimeconate, which is an undoubtedly excellent salt, having been removed after a tenancy extending through one edition of the *Pharmacopœia*, whilst the tartrate has been introduced, and a most confusing change made in the strength and preparation of the hypodermic injection.

Hitherto, when one asked the chemist for essence of peppermint or essence of aniseed, he was supplied with a solution containing 20 per cent. of the oil. Now the pharmacist may sell his essences of what strength he chooses, for the *British Pharmacopœia* does not recognise such preparations. The compilers seem sometimes to forget that the standards of strength and tests for purity are not merely in the interests of practitioners but also of the general public, who are entitled to demand a criterion for popular remedies. Dilute lactic acid, corn plaster, and brown-soap plaster are of no particular importance or interest, and were very properly deleted, but galbanum plaster is too useful an application to be left out, as are the extracts of gelsemium and hops and the decoction of cinchona. By the omission of this last there is now no aqueous preparation of cinchona which one can prescribe with an alkali.

We have heretofore had four solutions of ammonium citrate and acetate. Two of these, the stronger and stable preparations, have been omitted. The weaker solutions, certain to decompose, have been retained.

Mistura ferri aromatica has been left out, probably from a legend in a chemical textbook that it contained only about a grain of iron in a pint. Although unsightly when badly made, and chemically incompatible, it is physiologically a most active compound, and of far greater activity than mistura ferri composita. The oils of savin and rue are amongst the most efficient of emmenagogues.

As a flavouring and colouring agent, no tincture was more useful than that of cardamoms with chloroform; a couple of drachms revolutionised the appearance and taste of a mixture, hence its omission is much to be deplored. The tinctures of ergot, valerian, galls, and lobelia, are wisely left out. The removal of the stronger tincture of ginger is a blunder which will not be repaired by the elaborate rules laid down for making a tincture to prepare the syrup of ginger, especially as no one is likely to follow the instructions.

Of the ointments omitted, tartar emetic is the most to be regretted. It is an excellent if old-time remedy, and the plentiful pustular eruption which it produces has puzzled many an embryo dermatologist.

Punctilious etiquette is surely carried to an absurd extent when our national *Pharmacopœia* will not grant recognition to water or spirits of wine. The former is represented by distilled water, and the latter as alcohol from 10 to 20 per cent. To term an article alcohol which consists of four-fifths water seems an abuse of nomenclature. Other objectionable changes of terminology are extractum ergotæ, the new name for what is familiar as ergotine, and which is now sure to be confused with the fluid extract: and liquor iodi fortis, the fanciful term under which linimentum iodi now masquerades. The small quantity of glycerine which the former preparation contained prevented it from having too corrosive an action on the skin, but this has been removed for some obscure reason.

To increase the strength of tr. chlorof. et morphinæ co. to four times the original proportion of morphine is a strange innovation. Those familiar with chlorodyne are well aware that its effects are very different in intensity from a similar solution of morphine of the same strength. Hence fatal errors may occur if practitioners who are only acquainted with the older preparation have the new one supplied to their prescriptions.

The recognition of organotherapy afforded by the introduction of the pancreatic solution, and the solution and powder of thyroid is gratifying, but there is a painful haziness about the monographs treating of these subjects. Thus, when preparing the thyroid solution we are told that the glands should be used immediately after killing. This is quite right, if immediately be interpreted as within a few minutes. But the instructions for the preparation of the dried gland say that it should be "fresh," and this may mean anything short of putrefaction. Again, we are told to preserve the thyroid solution in sterilised bottles, but nothing is said of the necessity of sterilising the flask in which it is to be made, and the glycerine to be used in the preparation.

The liquor pancreatis is not a creditable preparation. It should answer the test in thirty minutes instead of an hour, and would be improved by the addition of glycerine. Moreover, it is not sufficient to insist that the gland should be fresh; it ought to be warm from the animal.

Many of my observations are, I fear, wearisome, and few of them new, but perhaps it is fitting the meeting of the Association which follows the publication of a *Pharmacopœia* should devote one short paper to it.

DISCUSSION.

Professor LEECH (Manchester) said he wished in the first place to deny the statement that the time of the publication of the *Pharmacopœia* had been purposely kept secret. It was published as soon as possible after the revision was completed, but it was not possible to say until a late period when the work would be duly accomplished. He quite agreed with the writer of the paper that it would be well if revision took place at definite intervals, and was certainly of the opinion that a *Pharmacopœia* should only become legally official some time after its contents had been fully made known to medical men and chemists. A special Act of Parliament, however, would probably be required to prevent the *Pharmacopœia* being legally in force immediately it was published. The General Medical Council could only act in accordance with the law as it existed. He regretted that he had been unable to follow the reader of the paper in all his criticisms. None of those he had heard seemed to have much force, and he should only be able to allude to a few of them. He could in no way join in Dr. McWalter's lamentation with regard to the exclusion of barley tea, linseed tea, treacle, etc., nor did he think the medical profession on the whole would be grieved with their disappearance from the *Pharmacopœia*. The most ancient of *Pharmacopœias*, that of the old Egyptians, was full of such dietetic substances, but it was hardly a book to be followed now. With regard to the suggestion that the deletion of vinegar would render the prosecutions for the adulteration of this article of diet more difficult, he would point out that such prosecutions were conducted under an Act which had no connection with the *Pharmacopœia*. It did not seem to him desirable that a substance should be kept in the *Pharmacopœia* simply to supply a standard of purity or support prose-

cutions which had no relation to medical men or medicine. Concerning the advisability of a few of the omissions doubts might be raised. Bael fruit, for example, was no doubt regarded by some as a useful remedy, but inasmuch as it was not very often used in this country, whilst it was much employed in India, it was perhaps well that it should not appear in the body of the work, but be placed in the Indian appendix when this was published. He confessed that he had heard with much astonishment an expression of regret that mistura ferri aromatica had been omitted. Iron in any form seemed to serve a good purpose, and mistura ferri aromatica contained a small though probably a variable amount of iron; but why an inelegant and unchemical mixture, which seemed to have nothing but antiquity to recommend it, should be bemoaned he was at a loss to imagine. He was still more astonished that anyone at the present day should regard poppy-head fomentations as worthy of inclusion in the *British Pharmacopœia*. Vinum opii had been at one time doubtless used by oculists, but of late years he had met with few general practitioners or specialists who now employed it. It was uncertain in composition, and its retention seemed quite unnecessary. He understood the writer of the paper to regret that the revisers of the *Pharmacopœia* had standardised the strength of the belladonna preparations according to the amonnt of one alkaloid contained in them. This, however, he would like to point out, was not the case. The belladonna preparations were now made to contain a definite quantity of the alkaloids of belladonna root, but not of any one single alkaloid. The change of strength in the hypodermic injection of morphine which Dr. McWalter viewed with regret, he believed the majority of the profession would rejoice at. The injection of the 1885 *Pharmacopœia* was far too strong, and owing to its strength several cases of poisoning had occurred. The new strength would, he thought, be acceptable to the great majority of medical men, and, as the injection was now made with the tartrate, it would keep much better than the old one; it could, too, be made more easily. The only other point he would allude to was the criticism on tinctura chloroformi et morphinæ. The *Pharmacopœia* was a book for the use of medical men and chemists, and was not published to facilitate domestic treatment. Now, chlorodyne was a popular domestic remedy, and when employed without the intervention of a medical man, it was very necessary that it should not contain more than a very minute quantity of morphine. The quantity of morphine in the old chlorodyne was too minute to bring about that relief of pain which medical men were expected to give by their remedies. Tinctura chloroformi et morphinæ co. should be used by medical men only, and $\frac{1}{12}$ grain of morphine in a 10-minim dose did not make it too strong as an anodyne. Everyone, of course, would have his own views as to what should be omitted and what left in the *Pharmacopœia*, but it did not seem that serious objections had been so far raised to the deletions made by the General Medical Council.

Dr. Tirard (London) speaking as Secretary of the Pharmacopœia Committee, repudiated the idea that the medical profession had not been sufficiently consulted in the preparation of the new *Pharmacopœia*, and reminded the reader of the paper of the request for suggestions addressed to the various medical authorities by the General Medical Council, and also of the inquiry undertaken independently by the Therapeutic Committee of the British Medical Association. With regard to the latter, Dr. Tirard referred to the large margin of error for which allowance had to be made, and said that when further detailed inquiries had shown that in a certain proportion the precise scope of the inquiry appeared to have been misunderstood. As examples he mentioned extract of aconite and extract of conium, regarding which the answers clearly indicated that the replies referred to the tinctures or other preparations, and not to the extracts. In consideration of such lack of care Dr. Tirard thought that more extended inquiries addressed to every member of the profession might only lead to the accumulation of a large amount of information with which it would be extremely difficult to deal. He thought that the work of a Committee might be considerably hampered by such an inquiry, and that it would be absolutely impossible to produce a *Pharmacopœia* which should embody the views and wishes of every member of the medical profession. He said that although many medical men spoke of the list drawn up by the Therapeutic Committee as a "most useless set of drugs," it was noteworthy that every single drug there named appeared to be "often" employed by a certain proportion of the profession, a fact which has caused this list to be used with great caution by the Pharmacopœia Committee.

A PRELIMINARY NOTE ON THE PHARMACOLOGICAL ACTION OF STIPA VIRIDULA.

By A. Lockhart Gillespie, M.D., F.R.C.P.E., F.R.S.E.

[From the Research Laboratory of the Royal College of Physicians, Edinburgh.]

In some parts of the United States, especially in those which lie further south, travellers on horseback or cowboys driving herds of cattle from one place to another over the higher prairie regions are often astonished and put to no little inconvenience when they wake some morning in the encampment chosen for the night's rest to find their horses, and maybe their cattle, unfit to proceed on the journey. They, should the facts be new to them, imagine at once that the animals showing signs of indisposition have been poisoned; indeed, the severity of the symptoms is often so great that speedy fatal results are generally apprehended.

The traveller's horse is a pitiable object. He stands with head and tail drooping, his form quivering, streams of sweat pouring down his sides, his respiratory movements hurried and panting, his heart's action increased in force, judging by the evidence of palpation; while his excretion of urine is markedly increased, with symptoms of irritation and strangury accompanying its expulsion. The animal is incapable of movement. He appears about to die. As far as my informant could say, no death, however, either in horses or cattle is known to have actually been caused by the grass, for all these symptoms follow ingestion of a rare grass, the Stipa viridula, growing in scattered bunches over the elevated prairies in New Mexico and Texas. The facts given above have been derived from descriptions of the effects as personally studied by an acute observer who has lived for some years in the country mentioned, and who, indeed, presented me with the grass whose virtues I am investigating.

The plant grows in clumps or bunches of closely-applied, tall, elegant stems, surmounted by a large culm. The stems are firm, jointed, and when dry are straw-like. They rise to a height of 2 feet or more from thick masses of short rhizomes, bearing numerous rootlets in company with several other stalks. When grown from seed it appears not to flower during the first year, but, sending up a few leaves, extracts from the earth enough nutriment, which is stored in the rhizomes, to permit of its full maturation during the following season. The culms are jointed, long narrow leaf blades springing from each node. The terminal part bears a bloom, with hermaphrodite spikelets, each one-flowered, and with two empty glumes. The flowering glumes are entire, hard, narrow, and furnished with a long, stout, persistent awn. The ends become in course of time very hard in texture. It is often termed locally "sleepy grass," but has been identified, through the kindness of Professor Balfour, with Stipa viridula, whose properties, he also informs me, have not been thoroughly investigated, as far as can be judged from reference to the literature available in this country, or from the statements of experts.

Haeckel[1] mentions that this Stipa exerts toxic effects on cattle, that Stipa inebrians, another American species, acts similarly, in addition to the Stipa sibirica of the Russian steppes. The results which follow the ingestion of Stipa viridula are so well illustrated by the term "inebrians" that the active principle present in them may probably be discovered to be the same. Another Russian variety (Stipa capillata) causes very great annoyance to shepherds, as the pointed, hairy, callus of its glume can work its way without much trouble into the skins of sheep, and penetrating the epidermis, aided by the backward direction of the hairs which cover it, frequently reaches the vital organs of the animal, and may bring about a fatal result. Stipa spartea, or the "porcupine grass" of North America; Stipa tenacia, or the esparto grass of Spain; and Stipa pennata and Stipa tirea of Russia are closely allied forms.

From the personal evidence tendered, the action of the

grass on horses and cattle—it has no action as far as my information goes upon sheep—resembles that of a narcotic, along with stimulation of the respiratory and urinary centre, disturbance of the cardiac mechanism, and the production of irritation in the urogenital tract. In increasing the flow of sweat it acts like opium. In about two days the more acute symptoms have passed off, but the general health of the animal suffers for some time. One of the inhabitants of the district was, at my request, induced to eat some of the fresh grass, and experienced very much the same symptoms; here, however, my informant cannot condescend to particulars.

The results which ensue upon the ingestion of Stipa viridula have nothing in common with the symptoms caused by the loco weed. These are not due to any definite plant, but to organisms living on and swallowed with various kinds of fodder.

A weak solution of hydrochloric or acetic acid in water was found to be the most effective in the extraction of what presumably contains the active agent. Alcohol did not remove so much of the active body; its addition to the concentrated watery extract produced a copious precipitate, which was not inactive.

This paper simply purports to be a preliminary notice, and quantitative experiments have been found to be impracticable at present owing to the difficulty hitherto found in separating some active body stable enough to resist drying and weighing even in the form of a salt. Injections of a liquid extract were not satisfactory; they certainly produced symptoms, but to what these symptoms were due it was impossible to say. Again, the acid extracts could not be used without at least partial neutralisation, and partial neutralisation precipitated much of the solid material present.

If to an extract, made with dilute acetic acid by percolation for a day or two, carbonate of sodium or caustic soda was added, an almost white precipitate was produced, but a large excess of the alkali was required before the total precipitate obtainable appeared. The filtrate of this was yellow-brown in colour, and if shaken up with ether, separated, and acidulated, and water added to the ether, minute quantities of a white amorphous body were obtained. The precipitate, washed on a filter paper with dilute acetic acid, yielded, on adding carbonate of sodium to the filtrate, a precipitate of small white crystals or flocculi, soluble on heating, reappearing on cooling, soluble in acids but precipitated partially by alcohol. The precipitate remaining dissolved in dilute hydrochloric acid, and only gave a small precipitate on adding an alkali, unless great excess was used, when a much denser yellow-white substance formed and fell. On evaporating any of the solutions to dryness, when by evaporation of water the acid remaining became of great strength, decomposition occurred with the formation of coloured bodies. Pure sulphuric acid added to the flocculi which fell on the addition of an alkali, after they had been purified and dried at a low temperature over sulphuric acid, gave a bright red-violet colour.

A [illegible] extracts were used at first, with a strength equal to two parts by weight of the grass in one of the extract. This extract was gently heated to drive off the alcohol, and then made up to its former strength with water. Analysis showed that it contained:—Total solids, 0.88 per cent.; ash, 2.68 per cent.; organic solids, 7.20 per cent. Chlorides and sulphates were present.

EXPERIMENT I.

[illegible], weighing 22 g., was injected with 6.53 c.cm. of the extract, or from 1.66 g. of grass, equal to 24 c.cm. of the extract and 48.18 g. of the grass per kilo.

5.40 P.M. A discharge of green fæces from the bowel.

5.46½ P.M. Lying flat on back, motionless.

5.47 P.M. Able to move very sluggishly.

5.48 P.M. Respiration only 32 per minute, deep and full, one hind leg dragged.

5.55 P.M. If turned on back, is unable to regain normal position; breathing 85 per minute, shallow; sits up with difficulty; cannot jump; hind legs weak.

5.58 P.M. All legs weak but also in spastic condition.

[illegible] can turn half over from back, but legs extend on exertion, wanders, does not jump, bringing forelegs alternately high and straight out, and dragging hindlegs; sits with hindlegs curled up in front resting on forelegs.

Later. Gradually recovered from all the symptoms.

EXPERIMENT II.

1.15 P.M. A frog weighing [illegible] on an injection of the extract equal to 24 c.cm. per kilo. [illegible] of the original grass. The organic [illegible]

[illegible] tion of feet caused movement of leg, no [illegible] cle. Practically dead. Killed; the heart [illegible] es in the minute, the ventricle [illegible] more strongly. Two [illegible] the vigour, but not the rate [illegible]

12.53 P.M. Heart stopped.

EXPERIMENT III.

Another [illegible] ected with 0.07 g. per kilo. showed similar symptoms, but to a [illegible] ree, and recovered from the effects in some hours.

EXPERIMENT IV.

The very copious precipitate which fell on the addition of a moderate excess of carbonate of sodium was treated with dilute acetic acid after it had been caught on a filter paper, and washed with a solution of the same salt. The acetic extract was made alkaline again with the carbonate, and thoroughly shaken up with ether in a separator. The watery portion of the mixture was removed after twenty-four hours, and a small quantity of a solution of hydrochloric acid in water added to the ether and shaken up with it. The acid watery solution was then removed from the ether. Carbonate of sodium added to alkalinity, and the resulting white precipitate washed by decantation with weak solutions of the salt.

Only a qualitative experiment was made as to the effect of this precipitate, which was only slightly crystalline under the microscope, largely amorphous. Attempts to weigh the amount of the actual body present at 100° C. failed.

A large rabbit was injected at 12.50 with 25 minims of a suspension of this precipitate, which was so fine that no difficulty occurred in its injection.

12.50 P.M. 25 minims injected under skin of back. Pupils widely dilated.

12.52 P.M. Legs paretic. Shivering.

12.53 P.M. Both front legs lame.

12.54 P.M. Pupils contracted, breathing hurried, restless in aimless way.

12.57 P.M. Every now and then stopped moving, and seemed about to fall asleep.

1 P.M. Inclines to one side when moving, cannot hop, drags hind legs.

1.1 P.M. More restless again. Movements when walking similar to crawling.

1.2 P.M. Pupils less contracted.

1.3 P.M. Heart beating 143 to minute. Breathing rapid.

1.5 P.M. (15 minutes interval). Same dose repeated. Pupils dilated at moment. Contracted almost at once after the injection.

1.6 P.M. Appeared frightened from imaginary causes. Went backwards for some years. Pupils almost pinpoint, but changing very irregularly. Breathing 184 a minute.

1.10 P.M. On several occasions almost closed eyes; remained quiet; appeared to be nearly asleep. Movements crawling.

1.30 P.M. Has become brisker; still unable to move freely by hopping. When sitting head leans to one side and legs are spread out.

2 P.M. Lethargic, stupid, not so paretic, but less inclined for voluntary movements.

No urine or fæces were passed. The rabbit lost all its previous plump, puffed-out look, its hair flattening down and becoming awry.

As far as these observations go little more can be advanced than that Stipa viridula contains some body or bodies which it is difficult to isolate, but which cause marked symptoms in frogs and rabbits as well as in the horses and cattle observed in its native habitat. From the descriptions given based upon frequent personal observation, the grass appears to act not only as a powerful nervous narcotic but as a diuretic, a sudorific, and as an irritant both of the respiratory and cardiac organs.

In the frog and rabbit a narcotic and paralytic power is well shown, but in the frog the respiratory movements appear to be slower, the heart acted in a manner somewhat recalling digitalis, while in the rabbit the pupil is contracted, the respirations and heart-beat are quickened, while the behaviour of the animal strongly suggests the idea that it suffers from hallucinations. The movements of fright shown by the rabbit evidently arising from imaginary objects apparent in front of it were most marked, and culminated in its progression backwards for some feet, a mode of progression unsuited to the rabbit's conformation, and most unusual in the species, while alarm was indicated the while by the position of the ears and the constant shrinking back of the head.

Though Stipa inebrians and Stipa viridula may be different plants the effects on the rabbit undoubtedly suggest that Stipa viridula was the cause of this cuniculus inebrians.

REFERENCE.

1 *Die natürlichen Pflanzen-familien.*

A PRELIMINARY NOTE ON THE PHARMACOLOGY OF THE ALKALOIDS DERIVED FROM THE MESCAL PLANT.

By WALTER E. DIXON, M.B., B.Sc.Lond., etc.,

Salters Research Fellow in Pharmacology at St. Thomas's Hospital.

THE plant Anhelonium Lewinii belongs to the small group of the Melocacteæ, and is native to Mexico. It is used by the Kiowa and other Mexican Indians during certain religious ceremonies; they eat the so-called dried fruits, or, as they are termed by the natives, "mescal buttons." Lewin, Prentiss and Morgan, Weir-Mitchell and other Americans, have made some few experiments by eating the buttons, but no account has at present been given of the pharmacology of the derived alkaloids. Heffter has described a method by means of which four alkaloids were prepared.

Mr. Edmund White, B.Sc., pharmaceutist at St. Thomas's Hospital, by a method modified from Heffter's, prepared for

me four crystalline alkaloids from the "mescal buttons"; the alkaloids and percentages obtained were as follows:

1. Mescaline	...	... 1.16 per cent.
2. Anhelonidine		
3. Anhelonnine ...	...	... 0.46 ,,
4. Lophophorine...	...	... 0.13 ,,

All are freely soluble in water, and possess a remarkable similarity in their physiological actions. It is not proposed here to give detailed differences between these substances, but only to indicate the general conclusions obtained. The following data apply to all:

Skin.—Absolutely non-irritant, hence injection is a suitable mode of administering the alkaloid. A 5 per cent. solution has no effect when applied directly to the conjunctiva.

Mouth.—The substance behaves as a specific sialagogue.

Gastro-intestinal.—After large doses nausea and vomiting may occur. Small doses are apt to cause constipation, but, when the dose is large, diarrhœa sometimes occurs, and in exceptional cases even bloody stools have been observed.

These results are produced whether the alkaloid is given by injection or by the mouth.

Blood.—No effect.

Circulatory.—From the therapeutic point of view this is the most important action, although any action on the circulatory system by this plant has been denied by some observers. Small doses slow the heart, and cause it to beat much more vigorously, whilst after a varying period, dependent on the dose, the beat recovers its normal rate, and generally exceeds it, but is never very rapid.

There is also a considerable rise in arterial pressure. These results are probably due (*a*) to direct stimulation of the intracardiac ganglia and nerve terminals of the vagus, and (*b*) to stimulation of the vasomotor centre.

In toxic doses paralysis of the nerve endings of the vagus and subsequently of the nerve cells occurs. In a cat, after section of both vagi, the heart beat was slow and arterial pressure increased by an injection of 0.025 g. of the alkaloid, when a strong stimulation of the vagus failed to produce inhibition.

Respiration.—In moderate doses no effect. Toxic doses give rise to rapid shallow respiration and death subsequently occurs from failure of the respiratory centre. This is the main danger to be apprehended when experimenting with the drug in the human subject.

Nervous.—There is a preliminary stage of excitement, talkativeness and exuberance of spirits followed by a stage of intoxication. Like Indian hemp its effects vary considerably in different individuals. During the stage of intoxication there are increased reflexes, wide dilatation of pupils, auditory and nasal hyperæsthesia, inco-ordination, tremors, blunting of cutaneous sensation, a rapid flow of ideas with difficulty in concentrating the attention and sensory hallucinations, especially visual.

These latter consist of a kaleidoscopic play of colours ever in motion and the tints constantly changing. The movements may be linear, rotatory, or pulsating. The visions generally are only seen with closed eyes. Colouring of external objects is exaggerated. Intellection and introspection seem to the experimenter to be normal. Occasionally there is an indescribable sensation of dual existence.

Lethal doses produce complete paralysis, and death is due to respiratory failure. *Post mortem*, a faradic current applied to the motor nerves produces contraction.

The important effects of these alkaloids in therapeutic doses would appear to be:

1. A direct stimulation of the intracardiac ganglia.
2. An initial slowing of the heart.
3. An elevation of arterial tension.
4. A direct stimulation of the brain and motor centres of the cord, as shown by the increase in reflex excitability.

A Fund for Women Medical Students.—According to the provisions of the will of the late Miss Arethusa L. Forbes, of Brooklyn, the residuary estate, after a few bequests to relatives, is left in trust with instructions "to apply the net income of all the estate which shall remain after the payment of existing debts to the payment of the tuition and instruction of meritorious young women at the Women's Medical College of the New York Infirmary."

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF HÆMORRHAGE INTO THE PONS VAROLII.

The following case presents some points of practical interest: On September 11th I was sent for to see an old man at a public-house. The only history I could get was that he was found lying on his back on the bed with his feet on the floor, and quite unconscious. He had gone to bed in his usual condition, "drunk."

I found him comatose, with contracted pupils, livid countenance, and heavy breathing. He was quite powerless, and his head dropped forward unless propped up. He appeared like a person suffering from opium poisoning. He died about two hours after I saw him.

With the assistance of Dr. A. J. Wheatley I made a *post-mortem* examination. The only point calling for notice was the condition of the brain. The dura mater was adherent in two or three places to the surface of the brain. There was some subarachnoid effusion of bloody serum. The pons Varolii contained a clot about the size of half a walnut communicating with the floor of the fourth ventricle. There were no other visible signs of disease in the brain.

Leonard Cane, M.D.Lond., B.S.,
Physician to Peterborough Infirmary, etc.

CONGENITAL SUBLUXATION OF THE HEAD OF THE FIBULA.

The following case was sent to me for examination by Dr. Brittin. The patient was a child, aged 9 months, and since it was 3 months old the parents had noticed that "one of the bones of the left knee slips in and out." On examining the knee there was apparently nothing abnormal, but when the child moved the leg the head of the fibula suddenly appeared prominent under the skin at the side of the knee, the biceps tendon at the same time standing out like a cord. Another movement sent the head back with a loud crack, and the tendon disappeared. I could not produce this dislocation by manipulation, but by standing the child up it immediately reappeared, and reduced itself with another crack. The tibia remained in its normal position, so I concluded that there was probably some congenital absence of the tibio-fibula ligaments, as the head of the fibula was quite movable when thrown out of its place.

P. Clennell Fenwick, M.B.Lond.,
Christchurch, New Zealand. M.R.C.S., L.R.C.P.

A CASE OF HYPERPYREXIA.

At 7 P.M. on September 25th I received an urgent call to a single woman, aged 20, wildly singing and shouting, and requiring restraint. She was so violent, trying to bite and so on, that it was impossible to examine her properly. Her previous history gave no clue at all. The present attack was said to have commenced with absolute suddenness, and with no immediate cause. It appeared to me to be an acute maniacal attack. I quieted her with an opiate, and saw her early the next morning, when she was quiet. The most obvious symptom about her was anæmia. She was somewhat undersized, perhaps, but not at all wasted; the clavicles were well covered. The finger nails were very extraordinary, being all of them markedly concave. No *râles* in the apices. Temperature 97, and pulse 120. The heart sounds were ful and rapid, but quite pure. No œdema of feet or elsewhere tonsils swollen.

Not satisfied with the want of relation between pulse and temperature, I visited her again between 5 and 6 P.M., and took the temperature very carefully: it was 97.2°. The patient was quiet, and answered questions intelligibly. I ordered a sleeping draught at 8 P.M. Nevertheless, a fresh maniacal attack broke out soon after, and was not quieted till after two more doses. The next morning I saw her about noon, and found her temperature 106.2°. I had some antipyrin with me, which I at once administered,

and ordered ice. At 2.30 I called again, and found her no better; and, the ice arriving, I cleared the room, took the vaginal temperature, 108.2°, and sedulously rubbed her down with ice and ice-cold cloths. The bladder appearing to be full, I drew off about a pint of urine, which, after examination, proved to contain a little albumen; but am I right in supposing that the hyperpyrexia alone might account for that?

I succeeded in reducing her temperature to 102.2,° and then wrapped her in a blanket. In this more complete exposure of the body I found a little pleurisy over the left base, but both lungs seemed to fill with air well and equally. Nothing else abnormal was observed. She was in a comatose condition when I saw her at noon, and never rallied, dying about 7 P.M. There was no *post-mortem* examination.

I must confess I am at a loss to understand the sequence of events, particularly perhaps the subnormal temperature, but on the whole I am inclined to think an overwhelming attack of rheumatic poison entering by the tonsils was the cause of the trouble. Perhaps the fatal course of events was assisted by defective kidneys.

Horncastle. H. ALSTON, M.D.

SCLEREMA NEONATORUM.

ON April 17th, 1898, I delivered at full term a well-developed male child. The infant presented a remarkable appearance. The skin was a dusky red colour, and universally indurated. It was quite impossible to pinch it up between the finger and thumb or to move it over the subcutaneous tissues, presenting a marked contrast to the supple skin of a normal child. The movements of the larger joints were limited somewhat, but still obtainable, otherwise the child could not have occupied the usual flexed position *in utero*. On pressure there was no indentation of the skin. The palms and soles differed in colour from the rest of the body, being reddish-purple, and they were so tense as to prevent movements of the fingers and toes. The eyelids were stiff and raised with difficulty. The rigidity of the lips prevented sucking, and necessitated careful feeding with a spoon.

The child took very little nourishment, and rapidly emaciated after a few days, the indurated skin of the body and extremities wrinkling in stiff folds as the wasting advanced. The skin of the head and face wrinkled but slightly, retaining in the main the board-like condition noticed at birth. The swelling of the palms subsided a little a few days after birth, but the soles retained their original condition to the end. A few pustules appeared on several parts of the body before death, and the skin faded to a dirty yellow tint. The child gradually sank, and died fourteen days after birth, apparently from asthenia.

Sclerema neonatorum, of which disease this seems to be an example, is said by the textbooks to commence a few days after birth, spreading from the lower extremities upwards. This case was hidebound at birth.

E. ARTHUR WILKES, M.R.C.S.Eng.,
Birmingham. L.R.C.P., D.P.H.Lond.

MULTIPLE INFLAMMATION IN SEROUS MEMBRANES.

M. S., aged 10 years, was admitted to hospital on December 7th. She was sent in as a supposed case of typhoid. On examination the abdomen was found to be swollen and tympanitic, the knees were drawn up, and there was a good deal of pain and tenderness on pressure. Bowels constipated. Tongue furred. She was very restless. Pulse 130 and feeble. Face shrunken. Temperature on evening of admission was 100°; next morning it rose to 101.8°; it then fell and was only 98°, the following evening. She was treated with pulv. ipecac. co., gr. iij, every third hour, and opium stupes applied to abdomen. The patient lapsed into a state of coma, and died on December 10th.

Necropsy.—Heart presented evidence of fatty degeneration, valves normal. Left lung showed signs of recent pleuritic exudation, otherwise fairly healthy. On right side there was extensive pleurisy, with effusion of thick green exudation. On opening the abdomen the viscera were matted together with greenish, purulent exudation. This exudation appeared to penetrate some distance into the under surface of left lobe of liver, as there was localised grey discoloration for about ¼ in. below the surface. Spleen small, soft on section, and covered with pus; kidneys small and anæmic; stomach, uterus, and bladder normal. There was no ulceration of the intestines. The pelvis was full of pus, which covered all the organs. Mesenteric glands enlarged, but no evidence of suppuration having taken place.

The suppuration in this case would appear to be analogous to empyema as a sequel to pleurisy. It is probable that the case was one of severe multiple inflammation of the serous membranes, the pleuræ and peritoneum being attacked simultaneously, or more probably consecutively, the peritoneum being the original seat of the morbid process, which spread through the lymphatics of the diaphragm to the pleuræ.

J. C. MARTIN, L.R.C.P.,
Assistant Medical Officer, Donegal District Lunatic Asylum, Letterkenny.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CITY OF DUBLIN HOSPITAL.

EPITHELIOMA OF LIP IN A YOUTH 18 YEARS OF AGE.

(Under the care of G. JAMESON JOHNSTON, M.A., M.B., F.R.C.S.I., Surgeon to the Hospital.)

HAVING consulted Mr. Bland Sutton's work on *Tumours, Innocent and Malignant*, I found the statement that epithelioma of the lip has been recorded as early as 25. In a limited further search I have been unable to trace any case occurring in a patient as young as the one I wish to record.

T. B., aged 18, was admitted to the City of Dublin Hospital under my care in March last complaining of a small sore on his lower lip which would not heal. It had commenced about Christmas, 1896, as a small "sore or blister"; it periodically became covered with a scab, which remained for a space of two or three weeks, when the scab fell off leaving a raw surface, which did not bleed. Pain was not complained of unless the sore was touched. There was a history of occasional but not frequent smoking, and the patient did not remember holding the pipe more frequently on one side of the mouth than the other. There was no known cancerous disease in his family. The only treatment which had been adopted was that some saltpetre had been rubbed into the sore and the occasional use of carbolic lotion. The sore was about the size of a threepenny piece, and situated on the left side of the lower lip near the angle of the mouth; it partly involved the red margin of the lip, and was not distinctly demarcated, being surrounded by an irregularly indurated zone slightly inflamed; the edge was raised, slightly everted and uneven; the floor was depressed and covered by a scab, which left on removal a ragged floor devoid of granulations. Palpation revealed no enlarged glands.

It was decided to remove the growth, and this was done by means of a V-shaped incision, including healthy tissue on either side. The sides of the incision were brought together by silkworm-gut sutures, and the whole covered with collodion. The operation wound healed by first intention. There is at present no indication of disease. A microscopic examination of the part removed was made by Professor Sullivan, of Trinity College, and I am indebted to him for the following report:

"Microscopic section showed a depression on the outer surface of the lip covered with a thick layer of horny epithelium. The layers of epithelium under this were very irregular in thickness, sending deep prolongations into the subjacent tissue. The subcutaneous tissue was thickened and infiltrated, and contained numerous masses of epithelium concentrically laminated and degenerated in the centre. The muscle fibres were extensively infiltrated with small round cells and atrophied, and numerous cell nests were found among the muscle bundles similar to those in the subcu-

taneous tissue. The growth of epithelium did not penetrate to the mucous glands on the inner side of the lip."

As a curious coincidence, I might add that a fortnight after above case was operated on I removed the left breast of a boy, aged 17 years, for a tumour which, on microscopical examination, turned out to be an adenoma-carcinoma. I intend to publish details of this case later.

REVIEWS.

A Manual of General Pathology. By Walter Sydney Lazarus-Barlow, B.A., B.C., M.D., M.R.C.P. London: J. and A. Churchill. 1898. (Demy 8vo, pp. 808. 21s.)

The appearance of a work like the present is a sign of the growth of pathology. For the first time probably in English the attempt is made to consider morbid function rather than morbid anatomy on the one hand, or clinical disease on the other. The chief textbooks of medicine, especially Fagge's wonderful work, devote considerable space to the discussion of pathological theories, but of necessity subordinate it to the clinical and therapeutic sections. The present volume is devoted to the pathological theories, and though throughout illustrated by clinical facts, and resting on morbid anatomy, subordinates both of these to its main subject. Thus in the pages devoted to pericarditis, after briefly describing the appearance of the pericardium and the symptoms of the disease, the author refers these to increased intrapericardial pressure, and illustrates the effect of this by the results of experimental injection of oil into the pericardium. Having stated what changes in arterial and venous pressure occur, he explains these by the obstruction to the inflow of blood into the auricle, and shows that the rise of venous pressure is itself an effort at compensation. A few words are added explaining the cyanosis seen in the disease, and noting the difference between the gradual distension of pericarditis and sudden distension, such as that caused by hæmorrhage into the sac. Similarly the effects of valvular or vascular disease are examined in thorough detail, and shown to depend upon the physical laws governing fluids contained in cavities and tubes. Yet neither here nor elsewhere does the author fail to indicate where, as in cardiac irregularity, physical explanations are inadequate, and we are obliged to suppose some nervous mechanism as yet unknown. This clear appreciation of the limits of knowledge is one of the most valuable features of the book.

The most original chapters are those on œdema. Briefly the author's view, supported by many ingenious experiments, differs from the ordinary in laying greater stress upon the part played by the living tissues. He finds experimentally that increased lymph formation follows starvation of tissues or accumulation of waste products, and explains the various forms of œdema as examples of one or both of these cases, in which what we may for the present call a vital influence is combined with others of a mechanical nature. The mechanical causes taken alone he shows to be inadequate to explain œdema. Renal œdema he divides into three—that accompanying acute nephritis, which is chiefly due to accumulation of waste products in the tissues; that of interstitial nephritis, which is usually cardiac and associated with insufficient supply; and that of lardaceous disease, due to insufficient supply like the last, but from vascular obstruction rather than from cardiac failure. There is no doubt that by laying stress upon the part which the tissues take, an idea of considerable importance has been introduced.

The greater part of the book is, of course, rather an analysis of the views of others than original hypothesis. But these chapters, or sections, the writer has spared no pains to render full and complete accounts, while a lucid style and a well-balanced judgment make them very interesting reading. We may especially instance the chapter on infection, and the sections on albuminuria and uræmia.

It is not to be expected that a critic should confess himself unable to find fault. On p. 65 the author promises to examine the conditions of functional murmurs such as those of anæmia, but we cannot find that the promise is anywhere fulfilled. In the sections on thrombosis no attempt is made to explain the commonest clinical variety (the anæmic) of that disease. Some stir has been made of late by the theory of auto-intoxication, and we are disappointed, though we know the evidence adduced is very fragmentary, that some mention has not been made of it. We are perhaps purists, but we have a certain loathing for the term "pulmonary apoplexy," and we think that pseudo-leukæmia is not an apposite name for a disease (Hodgkin's) in which an alteration in the proportion of leucocytes or lymphocytes is by no means universal. These are minor faults, however, and do not materially lessen the warm praise which we gladly give to the book.

A Manual of Clinical Diagnosis by Means of Microscopical and Chemical Methods. By Charles E. Simon, M.D. Second edition, revised and enlarged. London: Henry Kimpton. 1898. (Royal 8vo, pp. 563; 133 illustrations and 14 coloured plates. 16s.)

The necessity of microscopical and chemical investigation in clinical work can scarcely be better illustrated than by the number of books upon the subject which have appeared during the past few years. The present work has passed through a second edition in less than two years, showing that it has received the welcome which we anticipated for it in reviewing the first edition. The blood occupies the first chapter, the physical and chemical properties being first described. In the section on the microscopic examination the important subject of leucocytosis is fully detailed, much attention being given to the making of blood films. In his observations on the parasites of the blood the author somewhat strangely appears to attach as much importance to Ehrlich's reaction as to Widal's serum test in the recognition of enteric fever (p. 80). In Chapter III, in which the gastric juice and contents are discussed, the considerable additions to our knowledge are duly reflected. The dimethyl-amido-azo-benzol test is preferred for free hydrochloric acid and Töpfer's method for the quantitative estimation. Much more proof is needed before the author's view regarding indicanuria and the amount of free hydrochloric acid in the stomach contents (p. 178) is accepted. Chapter IV contains the account of the examination of the fæces both physical, chemical, and bacteriological including animal parasites.

The urine is very fully dealt with in all its aspects in Chapter VII. In Chapter II the secretions of the mouth are described, in Chapter V the nasal secretion, in Chapter VI the sputum, and in Chapters VIII to XIII inclusive the subjects of transudates and exudates, contents of cyts, cerebro-spinal fluid, semen, vaginal discharge, and mammary secretion respectively. The normal appearances are always dealt with before the pathological, and the alteration in secretions and excretions in the various diseases are set forth, but hardly to the same extent as in V. Jaksch's admirable work.

Dr. Simon's book constitutes an excellent guide to subjects which are not infrequently of considerable difficulty. His descriptions are clear and easily followed, and the illustrations to the point and well executed.

Le Cancer. [Cancer.] Par Dr. F. J. Bosc, Professeur Agrégé Chargé de Cours d'Anatomie Pathologique à l'Université de Montpelier. Paris: Georges Carré et C. Naud. 1898. (Roy. 8vo, pp. 266, 45 illustrations. Fr. 20.)

Die Protozoen als Krankheitserregen des Menschen und der Hausthiere. [The Protozoa as Causes of Disease in Man and the Domesticated Animals.] Von Dr. Georg Schneidemühl, *Privat-Docent* of Veterinary Medicine in the University of Kiel. Leipzig: Wilhelm Engelmann. 1898. (Roy. 8vo, pp. 202. M. 6.)

Dr. Bosc's work may be described as an excellent summary of what relates to the histology of malignant tumours, considered from the point of view of the parasitic theory, and more definitely that the parasite is a protozoon of the group of sporozoa. The coloured plates excellently reproduce the various appearances now so well known to those interested in this subject, but the meaning of which still remains undetermined.

On this point it cannot be said that the author has added

anything material. It is, therefore, with much interest that one turns to the section devoted to the culture of the hypothetical sporozoa, as it is upon the carrying out of this that the whole issue of the controversy hangs. The author's observations upon this heading are limited to culture experiments made with four growths, one of these being an epithelioma of the lip, the external and exposed character of which renders any conclusions that might be drawn as to the living organisms in malignant tumours in general valueless.

Seeing that pathologists of high repute are divided upon the question as to whether the anomalous bodies under dispute are microparasites at all, it is disappointing to find this all-important matter dealt with in nine pages of a work which occupies 250. No figures are given in illustration of this section, and it is therefore impossible to grant that the protozoic nature of the bodies under discussion has been determined by the writer. The ordinary culture media have been used, including fluid blood serum, and into these media pieces of the recently excised tumours were placed.

The author's statements point to a multiplication in the culture media, etc., yet no one acquainted with the circumstantial and dogmatic statements that have been made on opposite sides at different epochs in this discussion will be satisfied by the author's own conclusions, resting as they do upon so few observations, and unaccompanied as they are by any figures. If the second postulate of Koch, however, had been fulfilled, it is difficult to see why the third should be wanting, and why the introduction of the cultured protozoon should not have been carried out in order to apply the crucial test as to the nature of the bodies under dispute.

Besides the portion of the work relating more immediately to the histology of malignant tumours, the author gives a short account of the sporozoa in general, a knowledge of which is imperative in any attempted interpretation of the minute appearances presented by malignant tumours.

The chief portion of Dr. SCHNEIDEMÜHL'S work is devoted to the consideration of the sporozoa, and though full, it is not so comprehensive or so well illustrated as the monograph on sporozoa which was published in 1896 by Dr. von Wasielewski.[1] It includes, however, two additional classes of protozoa—rhizopoda and infusoria—not without interest in human pathology. Under rhizopoda is described the amœba coli and its relation to dysentery. Under infusoria, besides the trichomonas hominis (intestinal canal), the trichomonas vaginalis, and lamblia intestinalis, the author notices the paramœcium coli, the last-named having been found mostly in connection with cholera, typhoid, tropical dysentery, acute gastritis, as a secondary or epiphenomenon. Besides the well-known normal habitat of the frog's cloaca, the paramœcium coli is found normally in the intestinal contents of swine. So far as the human subject goes, it is in some form either airborne or more directly ingested with food or water.

THE JOHNS HOPKINS HOSPITAL REPORTS. Report in Pathology. A Review of the Pathology of Superficial Burns, with a Contribution to our Knowledge of the Pathological Changes in the Organs in Cases of rapidly Fatal Burns. By CHARLES RUSSELL BARDEEN, M.D. Vol. VII, No 3. Baltimore: Johns Hopkins Press. 1898. (Roy. 8vo, pp. 44.)

CONTRIBUTION CRITIQUE A L'ETUDE DU TRAITEMENT DES BRULURES SPÉCIALEMENT PAR L'ACIDE PICRIQUE. [A Critical Essay on the Treatment of Burns, particularly by the Picric Acid Method.] Par H. N. DAKHYL, M.D. Paris. 2e Edition. Paris: Ollier Henry. 1898. (Roy. 8vo, pp. 106.)

THESE two volumes may fitly be considered together, for the solid scientific work of the American school is well set off by the lighter touch of Dr. DAKHYL, once Professor of Greek, French, and Arabic, in the St. Joseph University and in the American College (Beyrout). Such books, too, are much needed at the present time, when our knowledge of the pathology of burns is nearly as inchoate as their treatment.

Dr. BARDEEN makes a tragedy minister to the advance of knowledge. Three children were burnt to death, and thus he was afforded an opportunity to make an exhaustive examination of their tissues. He adds details of two other cases, and a careful consideration of the literature of the subject. At present there are three hypothesis to explain the cause of death after burns. It may be the result of shock leading to the dilatation of the vascular system. It may be due to thrombosis caused by the accumulation of blood platelets and of the red blood corpuscles, which have been altered in form and functional activity by the heat to which they have been subjected. It may, on the other hand, be the result of toxæmia. Dr. Bardeen believes that each may be an important factor in producing the fatal symptoms which so often follow burns, but he thinks that in each of the five cases he examined, death was the result of an acute toxæmia. The most striking changes took place in the lymphatic glands. They were swollen by œdema, which was specially marked at the germinal centres and in the swollen lymph sinuses. The constituent cells also underwent certain degenerative changes and similar areas of fæcal degeneration were found in the bone marrow. It is remarkable that similar lesions can be produced experimentally in animals by certain complex organic poisons like ricin, abrin, and the diphtheria toxin. Dr. Bardeen argues that "it is not unfair to assume that in our cases of skin burn a toxin-holding plasma escaped with more than normal rapidity near the centre of the follicle. This rapid flow of plasma has given rise to the œdematous swelling, and has tended to sweep the lymphocytes into the perifollicular lymph sinuses. At the same time the noxious materials contained in the blood and escaping plasma have had a destructive effect on the lymphocytes, and it is not impossible that these changes in the lymphocytes indicate an abnormal and fruitless attempt at cell reproduction."

The treatment of burns in accordance with the principles of modern surgery seems to possess a peculiar fascination for the French, who long since rejected the oily dressings once employed universally and still largely used in England. Dr. Dakhyl discusses with great moderation the picric acid method. He points out where it is useful, why it fails, and in what way it is superior to such methods as those adopted by Madame Nageotte amongst many others. The use of picric acid dressings in cases of burns is now well known, and it has been sharply criticised by those who like to possess a routine plan of treatment for every case. But it is not every burn that lends itself to the use of picric acid. The substance acts by coagulating the albuminous exudates of the body and by increasing the tendency to proliferate, which is possessed by the deeper layers of epithelium. The method is therefore best adapted for superficial burns in which the whole of the epithelium is not destroyed. It is ill adapted for cases in which the burns are deep, for those in which there is sloughing, and for old suppurating ulcers. Dr. Dakhyl lays stress upon two important principles in the treatment of burns: first, that the injured part should be left alone so long as it is dry, for every change of dressing injures the delicate epidermis; secondly, that no burnt surface should be left soaking in its own discharge, especially if that discharge be purulent. The dressings must be changed therefore when the wound is moist, but infinite care must be taken not to injure the epidermis. Picric acid dissolved in ether or alcohol and applied on gauze gives better results than the watery solution, because the rapid evaporation allows the picric acid to be precipitated as an impalpable powder all over the burnt surface. Dusting with picric acid is to be avoided, because it has sometimes produced poisonous symptoms; picric acid wool is unsatisfactory because it sticks so tightly to the wound that it is difficult to remove without tearing the skin: the use of picric acid in vaseline may cause an erythemæ. Dr. Dakhyl has used picric acid successfully in burns produced by vitriol and phosphorus.

THE DEVELOPMENT OF THE CHILD. By NATHAN OPPENHEIM, Physician to the Children's Department, Mount Sinai Hospital Dispensary. London and New York: Macmillan and Co. 1898. (Demy 8vo, pp. 306. 5s.)

THE author of this book is a fervent disciple of Weismann, or if we may venture to coin a word, a "nutritionist," and the book is a plea for the proper nourishment of the child and for

[1] *Sporozoenkunde*, Gustav Fischer, Jena.

the abandonment of popular superstitions concerning what is called heredity. Not until environment has been made to account in full for its handiwork does the author allow heredity to account for anything. It is unusual to find anyone who believes as strongly in the all-potent effects of environment as does Dr. Oppenheim. He forces us, however, to admit that the child, however much he may serve as a means of education of, and an excuse for vain theorising on the part of his teacher, is by no means as certainly the recipient of "nutrition" for himself. In the opening chapters on Facts in the Comparative Development of the Child, it is maintained that the child should be considered for all practical purposes not an undeveloped adult, but a being of almost a different species, and "nutrition" provided accordingly. There are most interesting chapters on the Child as a Witness in Courts of Law, Development of the Child Criminal (which should rather be named Manufacture by his Parents and Guardians of the Child Criminal), and the Profession of Maternity, in which last the veil of the future is lifted, and a glimpse given us of the ideal parent. The book is lucid and delightful, and places our responsibilities towards the child with leaden weight upon our shoulders. As for the poor child himself, we can only repeat of him that, considering all his present conditions, he has "expiated an eternity of offences in advance."

The Mental Affections of Children: Idiocy, Imbecility, and Insanity. By William W. Ireland, M.D.Edin. London: J. and A. Churchill. Edinburgh: James Thin. 1898. (Demy 8vo, pp. 442; 20 full page illustrations. 14s.)

In this work we have the author's more mature views of the subjects treated of in his book on *Idiocy and Imbecility* published in 1877. The principal additions are the pages on the Development of the Brain in Childhood, the Pathology of Genetous and Paralytic Idiocy, the chapters on Sclerotic and Syphilitic Idiocy, and that on Insanity in Children. Those who are familiar with the many-sided mental activity of the author will not need to be told that he has gathered up from the polyglot literature of the subject all that is most valuable and interesting, and that he has collated and criticised with rare discrimination varying views as to the etiology and classification of these affections. The classification adopted in this volume is indeed mainly that originally proposed by Dr. Ireland in 1872, with the addition of the two groups of Sclerotic and Syphilitic Idiocy. The discussion of neuropathic heredity leads to the conclusion that hereditary predisposition alone is, in most cases, insufficient to be the cause of idiocy, and must be reinforced by other unfavourable influences. Dr. Ireland does not accept the doctrine of atavism as applied to mental pathology, and argues that the habitual malefactor is rather a degraded product of our complex civilisation than the result of reversion to primitive savagery.

In the chapter on Genetous Idiocy, a designation used by the author to connote "cases whose pathology cannot be properly diagnosed till after death," we find included those of the so-called Mongolian type. This type with its very characteristic features, both physical, pathological, and mental, would seem to be deserving of a separate class, including as it does at least 3 or 4 per cent. of all idiots. Some recent researches as to the histological character of the brain in idiots, especially those of Hammarberg, are referred to as pointing to the correlation of mental deficiency with deficient number of the pyramidal and spindle cells. The chapter on Microcephalic Idiocy is very full and exceedingly well illustrated, the monograph by Professor Cunningham and Dr. Telford-Smith on the Brain of the Microcephalic Idiot having been freely used, though exception is taken to the view advanced by those authors that the microcephalic brains of "Fred" and "Joe" truly represent the brain characters of an "early stem form of man."

The chapter on Paralytic Idiocy contains some interesting observations on porencephaly. Under the head of Traumatic Idiocy the influence of injuries to the head at birth is considered in relation to the use of the forceps, the conclusion being that unduly prolonged unassisted labour is likely to be more prejudicial than instrumental delivery. The increased pressure due to the larger size of the male head is probably one reason for the preponderance of male over female idiots, but not the sole one, as Dr. Warner's researches show that most developmental defects are more common in the male sex. Hypertrophy of the brain is alluded to in the chapter on Inflammatory Idiocy; and it is suggested that in such cases trephining to relieve pressure might be justifiable. Sclerotic Idiocy, a form described by Dr. Bourneville fifteen years ago, is briefly discussed, and the symptoms by which it may be distinguished from that resulting from meningitis pointed out. In the chapter on Syphilitic Idiocy we miss any reference to the numerous cases of so-called general paralysis in children, which have of late years been repeatedly described, and which would seem to be more or less connected with a syphilitic taint. Dr. Ireland's views on insanity in children and insane idiots are extremely interesting, and the increased tendency to suicide at any early age (as shown by statistics), more especially in Continental countries, is a deplorable fact.

Dr. Ireland's book is a valuable storehouse of information for all who are interested in the mental abnormalities of childhood. The full-page illustrations are excellent, though in some cases (as in that of the Danish "genetous imbecile,' opposite page 66) hardly attractive. Illustrative cases cited in connection with each division of idiocy add to the clinical interest of the work.

L'Allaitement Mixte et L'Allaitement Artificiel. [Natura and Artificial Feeding of Infants.] By H. de Rothschild. (Pp. 659. 48 Illustrations.)

Owing to the excellent results obtained from the use of sterilised milk by Professor Budin and by himself in his Polyclinic in the Rue de Picpus, M. de Rothschild, in the volume before us, warmly advocates the sterilisation, "complete and absolute," of all milk given to infants.

While we deplore with the author the evils wrought by the use of ordinary milk, and admit the superiority of sterilised to pasteurised, we regret he has not discussed a yet more excellent way—that of preventing the milk from becoming contaminated in the first instance. Troublesome and expensive as is the adoption of this principle, at first at all events, in practice, it is probable that this solution of the problem will ultimately prove to be the right one. The author does not touch on this view of the question, nor does he mention the occasional occurrence of scurvy in connection with the use of sterilised milk. He confirms Budin's observation that sterilised milk agrees with healthy infants better undiluted than diluted. The description of a model dairy and of the various methods of sterilising, humanising, and peptonising milk are excellent, while the charts and statistics appended well repay careful study.

About one-half of the book is devoted to a truly magnificent bibliography. The fact that there are nearly 3,000 bibliographical references will give the reader some idea of the extent of the literature which has grown up around this subject, one which until recently was regarded with something approaching contempt by the average practitioner. While some additions even to this list might be made from British medical literature, M. de Rothschild has, by the compilation of so admirable a bibliography, laid future workers in this field under a deep obligation.

NOTES ON BOOKS.

Ophthalmia in Newly-born Children. By Sydney Stephenson, M.B., F.R.C.S.Edin. (London: J. P. Segg and Co. Demy 8vo, pp. 40. 2s.)—This pamphlet gives a satisfactory account of gonorrhœal ophthalmia in infants, its diagnosis from non-gonorrhœal ophthalmia (stress being laid on the value of cover-glass preparations), its prognosis and treatment. The author mentions argonin and protargol, but thinks it is yet too early to say whether they are efficient substitutes for silver nitrate.

Baby Feeding: a Doctor's Advice to Mothers on the Rearing and Management of Infants. (Bristol: J. Wright and Co. London: Simpkin, Marshall, Hamilton, Kent and Co. 1898. Fcap. 8vo, pp. 62. 4d.)—Almost everything in this little book is good and useful to the educated mother. It is, how-

ever, not likely to be of the same benefit to the poor. The feeding mixtures of cow's milk are excellent; but the ordinary mother thinks in spoonfuls, not in ounces. Few mothers have any notion what "proteids 3.76" should convey. Condensed milk does not receive the discussion it demands as a popular article of food. The recommendation to "add brandy according to the age of the child"—quantity unspecified—is bad, and the author's explanations of his reasons for withholding his name from the work not easy to comprehend.

Diseases of the Upper Respiratory Tract, the Nose, Pharynx, and Larynx. By P. WATSON WILLIAMS, M.D., Lond., etc. Third Edition. (Bristol: John Wright and Co. 1898. Demy 8vo, pp. 282. 8s. 6d.)—Within a short space of time another edition of Dr. Watson Williams's handbook has been called for. A few changes have been carried out, but not such as to alter the character or size of the book in any degree; in point of fact, it is essentially a reprint of the former edition, with which we were most favourably impressed. It is probably the best work of its size upon the subject, and we gladly repeat our recommendation of it. The reappearance of a few blemishes in the matter of latinity is somewhat singular, but these do not detract from the practical value of the work.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICINAL AND DIETETIC PREPARATIONS.

Sterilised Pure Milk and Humanised Milk.—Messrs. J. Emerton and Son, of Grove Road, London, N., send out milk which has been heated to a temperature of 210°, in hermetically-closed bottles, under the above-mentioned title. The results of our analysis of a sample of the preparation show that it had the composition of a cow's milk of good quality. It was perfectly fresh when the bottle was opened. We have analysed also two samples of the humanised milk, respectively marked No. 1 and No. 2, prepared by the same firm. From the results of our analyses, and having regard to the figures representing the composition of human milk which are given by various authorities, we consider that the samples submitted to us were correctly and properly described as "humanised milk," leaving out of consideration that to No. 1 the makers have added a little bicarbonate of soda, and to No. 2 a little lime water on the grounds that No. 1 is to be given to children in ordinary health and No. 2 to sickly infants. The percentages of fat, milk, sugar, proteids, and mineral matter were found to be, in each case, within the limits which can fairly be taken. The samples were found to be free from chemical "preservatives," and were well put up in hermetically-closed glass bottles. We are able to recommend these preparations upon the results of the analyses of the particular submitted to us.

Fluid Beef and Extract of Beef.—We have examined a sample of the fluid beef prepared by Lipton and Co., of City Road. The results of our analysis enable us to say that the sample examined consisted of a well-made meat preparation of the so-called "fluid beef" class. It contains meat fibre, and is very similar in character and composition to some other well-made preparations of this particular kind. We have also examined a sample of the extract of beef prepared by Lipton and Co. The sample analysed consisted of a well-made meat extract of proper composition and character. It is claimed that these preparations are supplied to the public at a lower rate than that charged for other well-prepared meat extracts of the kind.

Vimbos.—The results of our analysis of a sample of the preparation sold under the name of "Vimbos" shows that it is a well-made meat preparation of the class to which it belongs, containing meat fibre. It appears to us to be a reliable product of good quality. It is prepared by Vimbos, Limited, 130, Queen Victoria Street, E.C.

Hansen's Oatmeal Cocoa.—This preparation is stated to be a compound of oatmeal and cocoa. Our analysis shows that the statement is correct. It is put up in the convenient form of small cubes. The London agents are the Servus Company, 65 and 66, Basinghall Street, E.C.

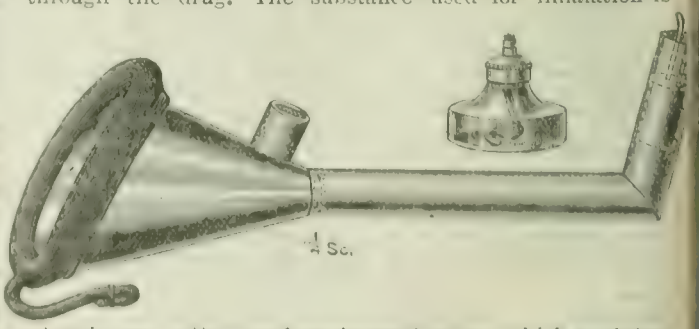
Radnor Spring Mineral Water.—We have examined a sample of this water, the proprietors of which claim that it is a pure natural mineral water, and the results of our analysis lead us to the conclusion that the claim is justifiable. The amount of organic matter contained by the water is low, and is unobjectionable in character so far as this can be ascertained by chemical analysis. The water contains bromides in small amount. It is pleasant and palatable. The water can be obtained in this country from the Canadian Produce and Consignment Company, 18, St. Swithin's Lane, E.C.

Bismuth Subgallate Tabloids.—Bismuth subgallate is an odourless, yellow, insoluble powder, resembling powdered iodoform in appearance. It is non-irritant, and possesses antiseptic properties. It has been given internally for diarrhœa with good results in doses of 30 to 90 gr. daily, and on the Continent in typhoid fever, gastric catarrh, and Asiatic cholera. The salt, being insoluble in water or alcohol, is best given in powder or in a compressed form. Messrs. Burroughs, Wellcome, and Co., Snow Hill Buildings, E.C., prepare 5-gr. compressed tabloids of bismuth subgallate. They quickly disintegrate in water, and form a convenient method of administering this drug.

Iodoformogen.—This preparation, which has been introduced by Messrs. Knoll and Co., of Ludwigshafen, as a staple compound of iodoform with albumen, is likely to prove useful as a substitute for iodoform in many cases of ulcers and superficial wounds. Although no reliance can be placed on any iodoform preparation as a sure antiseptic, this preparation will be found to possess the same qualities as ordinary iodoform when used as a dressing for foul and specific sores. Iodoformogen has some decided advantages over iodoform; it is lighter, and consists of an extremely fine powder, which does not cake and adhere to the open surface to which it has been applied. On the other hand, it may occasionally be found more irritating; and with regard to its freedom from odour, on which much stress is laid, we find that, though it has not the intensely disagreeable and penetrating odour of iodoform, which is certainly a great advantage, it does give off one which, though far less evident and penetrating, is not likely to be found inoffensive by very sensitive patients. This powder is supplied by B. Kuhn, of 36, St. Mary-at-Hill, London.

MEDICAL AND SURGICAL APPLIANCES.

Ori-Nasal Inhalation Tube.—This instrument has been designed by Mr. H. Hibberd Beale of Somerley, Reading, for the effectual inhalation of various medicinal substances. The mask fits comfortably on the mouth and nose, and is supplied with metal valves which prevent the expired air passing back through the drug. The substance used for inhalation is



placed upon cotton wool or pieces of sponge which are introduced into the extremity of the long tube. Not only is the instrument available for the inhalation of volatile oils, but, being made of plated metal, heat can be applied to it from a spirit lamp so as to volatilise more stable medicaments. The inhaler can be kept thoroughly cleansed, and is, of course, not fragile like those made of glass, china, etc. It is manufactured by Messrs. Maw, Son, and Thompson, Aldersgate Street, E.C.

INTRODUCTORY ADDRESSES

AT

THE OPENING OF THE MEDICAL SCHOOLS.

ST. GEORGE'S HOSPITAL.

By G. R. Turner, F.R.C.S.,
Surgeon to the Hospital.

THE MEDICAL PROFESSION: ITS DIFFICULTIES AND ITS REWARDS.

[Abstract.]

After some introductory remarks, in which allusion was made to the deaths of Dr. Wadham and Mr. Henry Lee of the consulting staff and that of Dr. Leonard Remfry of the acting staff, it was pointed out that education for the medical profession demanded now an industry on the part of the conscientious student greater, perhaps, than that required by any other vocation, but which was well repaid by the greater interest of the study. "Walking the hospitals" necessitated on the part of the modern student the attendance on more than a thousand lectures and demonstrations during five years, quite apart from his purely hospital work. In a review of the past St. George's year reference was made to the recently-published *Life of Sir Benjamin Brodie*, an old surgeon of the hospital, by Mr. Holmes, the Treasurer. The extreme value of a medical treasurer, who had already spent many years of his life on the honorary staff, was insisted upon, and for the benefit of hospitals such appointments should be more frequently seen.

A review of the athletic achievements of the St. George's students for the past twenty-five years showed of what stuff the modern medical student was made. This comparatively small school had produced amateur champions in running, rowing, boxing, cycling, cricketers who had played for their counties, many university oarsmen and runners, international football players, a lawn tennis champion, and authors of books on mountaineering, skating, and cycling, some of whom had contributed to the Badminton library of sports and pastimes. More than natural aptitude and physical development is wanted for such athletic success: self-denial, self-restraint, perseverance, and patience must accompany these—qualities the public are not wont to credit the medical student in his lighter hours with, but which he possesses to a marked degree.

His work, too, has a distinct pecuniary value, saves his hospital the employment of extra staff and nurses, and in this work he may have opportunities of showing disregard of danger, devotion to duty, and self-sacrifice. The courage of the medical man is tested without accompaniment of the skirl of the bagpipe or the beat of drums, but may equal that of the soldier. In his struggle with disease no publicity awaits the wounds he may receive; his life he may lay down in doing his duty, and those near and dear to him are too often left in poverty with no grateful country to provide for them. Save to a very few honoured with the rank Sir Gorgius Midas accepted with indignation as that given to a successful Sawbones, there comes no rank, no title, no distinction to mark the experienced veteran from the latest recruit.

The medical student, so amusingly and graphically portrayed by Dickens and Thackeray, has too long been taken by the public to be typical of low fastness, uneducated, unclean, redeemed only by the saving grace of humour and a love of practical jokes. The worst types of a bygone age, when anyone who chose could call himself a medical student, have led in the past to this conception of him. To-day students are largely recruited from public school and university men. At Cambridge alone, in the last ten years, 9,437 undergraduates have matriculated. No fewer than 1,253 are registered students of medicine—more than 13.2 per cent., nearly 1 in every 7—a splendid tribute this to the work done by the late Sir George Humphry. At Oxford, in nine years, but 212 undergraduates out of 7,330 have elected to follow medicine. This number, now that the claims of science are to be more recognised there, will doubtless be materially increased. The behaviour of the 3,000 London medical students compares not unfavourably with that of the admittedly well-behaved undergraduates of Oxford and Cambridge, who have less temptation and more restraint. Not only Dickens and Thackeray have been hard on the medical student, but Tennyson, in his poem, "In the Children's Hospital," has been unfair to surgery; thousands have read the poem, and pictured the surgeon, very few are aware that Tennyson expressed to the late Sir Andrew Clark his regret that he ever wrote it. The writings of Molière, like those of Dickens, Thackeray, and Tennyson, live after him, and careless readers may forget that the doctors whose pretentious ignorance he ridicules were those of 240 years ago, who had the ignorant confidence of empiricism combined with a fatal activity of treatment now happily absent.

To live down the writings of such masters of literature would have been a hard task for any class of students, for any profession; the medical one is now very fit for anyone with high ideals, good health, good intellect, and a capacity for hard work. It is as philanthropic as the clerical but receives less State and social recognition. Surely the fascination of scientific study should attract more of the intelligent well-to-do than it does. By the triumphs of preventive medicine, hygiene, and sanitary science, the overstocked medical profession is rightly and honourably doing all it can to prevent work for itself. This unselfish action is too often misunderstood, and doctors are said to "have fads," and are suspected of furthering instead of standing in the way of their own interests. The profession is infested by quacks, forestalled by prescribing chemists, sweated by clubs and medical aid associations, and the hospitals that are so largely gratuitously served by its members lend themselves, however careful may be their supervision, to an abuse that diverts many a fee from the struggling practitioner. In London alone nearly 17,000 maternity cases are treated by the general hospitals, more than 1,200,000 out-patients and casualty cases, nearly 70,000 in-patients. Here must be an enormous number of unsuitable cases for charity at the expense of the involuntary philanthropist, the general practitioner. No wonder that the building of a hospital in a new locality is regarded by him with very mixed feelings.

We of the profession (Mr. Turner went on to say) know these things, for are they not written every week in our chronicles, has not everyone with experience been a personal sufferer? The public, however, who subscribe to the various Hospital Saturdays and Sundays, to royal, emergency, and other funds: the public who by their liberality and legacies have hitherto prevented the institution of State-aided hospitals and their inmates being a burden on the rates; that liberal public which supports by voluntary contributions 23,204 beds in the 716 hospitals of the British Isles, on which more than a million and a half (£1,629,114) is spent annually, is it aware of what "the doctors" do? Not only are there 716 hospitals, but dispensaries and convalescent homes swell the number to 1,155 institutions, spending nearly three millions a year (£2,825,376).

The immortal Darwin, by means of the brightness of his genius and patient research, first threw light on the dark places of the earthworm, showed how ceaseless is the good silent work that the lowly humble creature does, how greatly vegetable and animal life are indebted to it. Sir Henry Burdett, to whose great statistical work on hospitals and charities I am indebted for the figures I have quoted, has made himself a benefactor to the medical profession by the mere enumeration of its ill-rewarded labours in all the centres, in all the out-of-the-way dark corners of the United Kingdom, wherever there is suffering, wherever there is poverty or distress, wherever, in short, there must be medical charity. He has done much by compiling statistics to tell of the ubiquity of medical gratuitous labour, the unlimited potentiality of the poor and others who are not poor, and should be ashamed to pauperise themselves to command the best advice in their neighbourhood. In London alone I find there are 7,540 hospital beds and 14,597 in Poor-law infirmaries, making 22,137 beds for the poor man and his family. Something has been done by Burdett to show how the medical labourer is rewarded, but statistical tables on this last point are almost necessarily absent. I have made inquiries at the various general hospitals in London, numbering some twenty-

four, and having an annual expenditure of £487,248—nearly half a million. Of this amount I find by inquiry there is paid to medical men, resident and non-resident, there being in all some 165 resident and 466 non-resident appointments, a total sum of under £13,000, that is to say, 2.66, a little more than 2½ per cent. of the whole amount.

An analysis of these payments at hospitals with medical schools attached to them shows there are 256 unpaid and 170 paid medical officers; were it not that one institution pays every one of its 64 officers this proportion of the (inadequately) paid to the unpaid would be much less; thus, 11 hospitals have 256 unpaid officers and pay but 106. They expend £6,890 in doing this at an average of £65 to each paid officer. Curiously enough the average of payment at St. Bartholomew's, paying £4,188 to its 64 officers, is also just over £65 a head, but there all are paid something. The payment, even when existing, is admittedly inadequate. Hard work of from three to six hours a day, requiring a highly qualified, trained, skilled man to do it, is rewarded, perhaps, by £50 a year; such, for instance, is the work of a registrar. Only four hospitals pay anything to their visiting staff. The other eight hospitals pay but 38 out of their 240 officers.

The total expenditure of these hospitals with medical schools is £392,488 per annum; £11,078 pays their 426 doctors. Probably hospitals with no schools attached are even less generous to their medical staff. The truss and surgical aid societies expend £20,492 paying their medical officers as far as I have been able to ascertain £850. I do not say that it is wrong that so little should be given for so much—that hospitals are so literally medical charities; but I do say, without fear of contradiction, that such pecuniary facts as I have collected are not generally known by the public, and that were they known and taken as a type of what our profession—the only one save the clerical—that habitually and constantly gives its services for practically nothing—a type of what our profession does—I say that that profession would be more widely respected, more esteemed, more honoured, and have more social consideration shown to it than it has at present.

Those in authority and power might possibly not only compliment us on our noble calling, but by occasionally actually ennobling our really scientific leaders, give a bench of bishops and distinguished law lords suitable companions in that Upper House where now Lord Lister sits alone. Who could be a more worthy representative and more typical of the profession at its best than this man, who has already by his practical application of the discoveries of science restored the health of more people and saved more lives than the greatest warrior lord of any time has ever crippled or destroyed?

These pecuniary facts are not generally known by the subscribing public nor is the enormous private charity of even the poorest general practitioner. Hospital service is more onerous, demands more time, and is not now indirectly paid for as much as formerly, nor is there much profit to the teacher from medical education. So-called pay hospitals are too often patronised by the comparatively rich, and the pay is diverted from the medical men. This state of things is not confined to England. Dr. Wiggin, of New York, in a paper on the existing abuse of medical charity, considers it is established that not far from 50 per cent. of all applicants for free medical relief in the larger cities are not persons who require it. The cult of altruism is a luxury getting beyond the means of the ordinary members of the medical profession, and well might the medical man with an execution in prospect paraphrase Madame Roland, and say, "Oh, Charity, what things are done in thy name!" There has come a time when this charity is no longer requested, but demanded of him, sometimes by locally powerful organisations, such as clubs and friendly societies. It is his duty to his medical posterity to resist this, and to see that an abuse admitted by all is not allowed to spread.

How would the great profession of the law regard the erection of suitable law courts by public subscription all over the country, the payment of all engaged therein save solicitors, counsel, and judges, the unpaid to wait for years before being allowed to practise to show their capacity—being liable if thought or found incapable to lose their reputation and to be cast in damages to be paid to the pauper and other litigants—the reward of the successful few being a private practice elsewhere, and even those who succeeded to still give their services in the gratuitous courts?

What is done all over the kingdom by the medical profession, not by any means a rich body of men, and which I am far from saying is wrongly done by them, seems Gilbertian and grotesque when applied to any other profession, save perhaps only the clerical. In the latter, however, there are lord archbishops, one of whom takes precedence of all but the blood royal, there are lawn-sleeved bishops in the Lords, there are plums and palaces, and the clergyman, poor though his stipend and emoluments may be, humble, too, perhaps his origin, is received into rural and city society because of his profession, where his brother philanthropist the modern missionary, the medical man is often excluded simply because of his.

The medical profession must be militant also, and militant not only against disease. Too long has sufferance been the badge of all our tribe. The world is governed by sentiment not by science, and sentiment, her appetite growing by what she feeds upon, demands rather than asks for gratuitous scientific service. Many of the lay resemble the old lady who was so much moved by the sermon that she borrowed from her neighbour a sovereign, not perhaps ever returned, to put into the plate that was presented for her charity. The profession has too long been lending that sovereign and on too many days of the week—the old lady partaking meanwhile of the satisfaction born of good works—the good work of using the services of another.

So-called hospital scandals where, sometimes committee, sometimes medical officers, have erred, and sometimes erred together, usually seem to end in resignation of the medical and the continuance in office of the lay element; the medical scapegoat is brought to the door of the tabernacle, has the sins of the people laid on him, and is sent away with his burden into the wilderness.

Would this scapegoat be found so often in our ranks were they firmer, more animated by *esprit de corps*, more determined to stand shoulder to shoulder, to resist to the last? It is a great thing, and conduces to peace, to be known to be ready, if necessary, with the pistol. *Noli me tangere* should sometimes be a medical motto, and anyone of us or any body of us justly struggling for some right should be able to be sure that whatever the result there will be no underselling, no supplanting by those from whom moral support, at least, should come—the medical profession. That this is not so is one of the sources of our weakness, one of the reasons of the rarity of successful resistance, one of our obvious faults.

Such resistance should not be limited to those immediately concerned, but should be supported, led, and, if need be, initiated by the well-to-do and prosperous of a profession too often, and in too many places, unable to assert itself because of its very numbers, of its keen competition, and its poverty induced thereby.

The methods and manners of trade unions are to be deprecated, the profession is admittedly something nobler than a trade, but medical charity has outgrown its proper limits, and its further extension and multiplication will kill what little independence remains in a sorely tried profession.

We must all be in some sense dependent; none can be absolutely free; but there is a servile dependence ignoble and dishonourable, as there is a dependence that is honourable, right, and worthy of the labourer, as he himself is worthy of his hire: a dependence worthy of a profession at all times and in all places, ready to give its services to the really poor and needy in all walks and ranks of life: a dependence that will still allow of the maintenance of that which should belong to all of us, and is the due of each member of an honourable calling—self-respect.

MIDDLESEX HOSPITAL.

By Arthur Voelcker, M.D., F.R.C.P.,
Assistant Physician to the Hospital.

SCIENCE AND CHARITY.

[Abstract.]

The lecturer, after observing that the introductory lectures afforded opportunities to medical men to give advice to those entering the profession, pointed out that they also enabled the public to learn more of the aims and needs of the profes

sion. Although it was undesirable to dwell too much on the virtues of the medical profession as a whole, or to bewail their hardships, it was necessary that the public should ask themselves whether they were doing their duty to the profession. To engage in acts of charity was one of the highest privileges of the profession, but if, under this plea, medical men were imposed on and exploited by so-called philanthropists, he warned them that the relations of the profession to the public would be placed on a much more business basis in the future. After welcoming the new students on behalf of his colleagues, he offered them his congratulations on having chosen a school whose past was the record of the work and lives of some of the greatest ornaments of the profession, whose present bore the impress of growth and the recognition of the necessity for thorough equipment in all the branches of practical and scientific medical study, and whose future was in their own hands.

Those who were continuing their medical studies would find additional facilities for work in the new laboratories of anatomy, physiology, pathology, and bacteriology. It was most important to learn how to make use of opportunities, for as Goethe says:

Doch der den Augenblick ergreift,
Das ist der rechte Mann.

The student of the present day was too apt to expect all his information to be condensed and rendered easily assimilable for him by his teachers instead of educating his own powers of observation and assimilation. A medical education on such prepared food was very apt to have the same result on the student's mind which artificial food substitutes too often had on the infant's body. Ruskin recognised this tendency and reproved it. "To be excited for an hour," he wrote, "if possible amused, to get the knowledge it has cost a man half his life to gather, first sweetened up to make it palatable, then kneaded into the smallest possible pills, and to swallow it homœopathically and be wise—it is not to be done."

Lectures were unpopular among students, who preferred demonstrations, and who claimed that they could read the subject up much better in a textbook, but who forgot that the lecturer was enabled to point out the relative importance of the different facts, and could give his hearers the benefit of his personal experience.

Attendance on lectures was rightly insisted on, and parents and guardians had a right to expect it. The habit of note-taking should be carefully practised. The demand for increased practical instruction was well justified, and the new school buildings of the Middlesex Hospital were an eloquent expression of the recognition of the desirability and necessity of expansion in this direction. When spoken of, by some hostile critics, as decaying, the school for answer might point to our new laboratories, and ask if these are the sign of decay. Does a dying tree send out fresh branches?

Laboratories were absolutely essential for the adequate teaching of the medical man, not only for the acquaintance it gave him with the manipulation of instruments of precision and the habits of observation, but also for the habit of self-help and concentration of his energies.

There was a danger lest an unchecked enthusiasm should lead to the encouragement of a fatal faculty for flirtation with work, instead of keeping one object in sight at a time. Some shortsighted people had asserted that it was an injustice to the patients of the charity that the Middlesex Hospital should have taken any part in the erection and furnishing of these new buildings, but they forgot that the aim and object of all these buildings was to enable those in whose hands the maintenance of the health of the community in the near future will be placed to be thoroughly trained, and just as a well-trained and equipped navy and army were the best guarantees for peace, so the hospital was best studying the interests of those it desired to help by providing them with a well-trained and equipped medical force to protect them from and aid them against the onslaughts of disease. In commercial undertakings it had been found advantageous to secure the services of highly-trained scientific men who by their researches in laboratories, equipped and maintained at the expense of the proprietors of such undertakings, were enabled to give such advice as amply to repay the outlay involved, and in medical undertakings the same would hold good. It was practically impossible for a medical man to live on the return from the pursuit of the purely scientific side of his profession, and he should not be asked to devote himself to such work without being offered some return which might at least enable him to pay his way. Medical men were entitled to look to their profession for the earning of their livelihood, and if the public only knew what their indebtedness was to those who, often under great disadvantages, work at the scientific side of medicine, many would come forward and encourage and render possible the continuance of that work by the endowment of laboratories and lectureships.

Laboratories and other increased facilities for work laid the students under increased responsibility for their proper employment. No laboratory or lecture room alone ever made a good man; they must be used as adjuncts to clinical work and not as substitutees for it. Disease could only be studied at the bedside. Here not only disease but human nature was studied, and the medical man learnt how to deal with people, how to give them confidence and sympathy as well as how to relieve them.

The student should be very careful of the way in which he spoke of medical matters in lay circles. The public were inclined to regard everybody connected with a hospital as a doctor, and the loose and random talk of an irresponsible student acquired the weight attached to a medical opinion. The public, though much informed, was not well informed on hospital matters, and modern sensational journalism, while it attracted readers, gave them a very false impression of actual facts. It was easy to give a gruesome account of any operation, and to mistake calmness for indifference, interest for curiosity, and satisfaction for "gloating," but it was incumbent on the student, both from his sense of loyalty to his hospital and the knowledge of the high aim of the profession he had chosen, to avoid anything which might give those outside any cause to accuse him of callousness, cruelty, or any behaviour unworthy of a gentleman.

Besides difficulties connected with work, the student had difficulties connected with play. He had to strike the happy mean between the claims of Æsculapius and Hercules. The danger was perhaps greater in the direction of over-work than over-play. The legitimate engagement in any branch of true sport harmed no one; by true sport was meant that the man should engage in it himself, and not merely be a hanger-on. In mapping out his work the student should leave a margin, and that not too small a one, for other things than strictly professional work. To allow recreation to usurp the place of work was disloyal to the hospital and dishonourable to those who enabled him to study at the hospital. In sport, as in work, it was steady consistent effort that succeeded, and the training of the mind, like that of the body, was a gradual process, too much of either making a man "stale," too little making him "soft." For some, sports had no attractions, let them, as well as their sporting colleagues, cultivate some hobby, something apart from their work, which would give relaxation without idleness, and whatever form this hobby took let it be done as well as possible, and without interfering with work.

The medical student would do well to use his opportunities in London to cultivate his æsthetic tastes, for now was the time when relaxation from work was to be found in recreation, and recreation not only in athletics but in the cultivation of the mind. In no profession was it more desirable to resist the all-absorbing interests of professional work. The cultivation of a suitable hobby added years to life, breadth to the mind, health to the body, and pleasure to those around. These benefits reacted on strictly professional work, and enabled it to be done all the better.

The student might ask what advantage he was to gain from all this, and for answer was reminded of a translation of some lines by Goethe, bidding him "Do thine own task, and be therewith content, and all beside leave to the Master Power."

UNIVERSITY COLLEGE, LONDON.

BY

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THE MEDICAL PROFESSION IN ITS RELATION TO THE STATE.

[ABSTRACT.]

RUSKIN has said that man's proper business in this world falls mainly into three divisions. First, to know themselves and the existing state of things they have to do with. Secondly,

to be happy in themselves and in the existing state of things. Thirdly, to mend themselves and the existing state of things as far as either are marred and mendable. Shall we apply these rules to the medical man? A little introspection may be a good thing, for is it not well to stop some time or other during the year's work and inquire how we stand? What is the existing state of things?

It will perhaps not be either profitable or wise to speculate how the profession of Medicine has been left behind by both the Church and the Law in the race for supremacy in the State, and indeed, there is some difference of opinion amongst members of our profession as to the advisability of our taking part in any such struggle. At any rate, it cannot be denied that whilst both the Church and the Law are very strongly represented in the Legislature, Medicine is, numerically, without its due recognition, and thus it has come about that our statutes are much more concerned with commercial and financial affairs than with the value of human life and health.

I think, however, that most of us will also agree that medicine irrespective of purely political considerations must continue to rely mostly upon its own good work in order to increase its authority. It has been said that authority is the chief privilege of age, and medicine, as we have seen, has probably a better claim to it than the law if not than the church.

It is difficult to avoid the confession that medicine up to the present has not been able to speak with the same weight of authority as either the church or law, and whilst we may say that the medical profession does not wish to obtain any aggrandisement of a personal nature other than that which enables it the better to fulfil its destiny, we must at the least demand that it shall have full scope for working out its noblest ends, and until this be granted we cannot ignore the necessity for some self-assertion, for it is not only the ignorant who merely remain indifferent that require instruction. As you know, gentlemen, there are those who have received a liberal education, who from some obliquity of mental vision are not merely unable to appreciate the benefits of medical science, but even feel constrained to actively oppose and obstruct. The recognition of "conscientious objection" should now logically be extended to "peculiar people," and the question indeed arises whether there is any good to be derived from attempting to convince such persons, or whether it would not be wiser to leave them and their descendants to the action of those natural forces which eliminate the unfit. But this suggestion opens up a vast problem.

It has been urged that hospital work, and medical skill generally, interferes with the natural evolution of the race by the preservation and multiplication of the unfit; and perhaps we must content ourselves by saying that such treatment is a part of our civilisation, which itself is a factor in evolution. In any case, if it is to be decided by legislation whether a parent is to be allowed to "conscientiously object," or, on the other hand, to be forced to accept parental responsibility, it must, I think, appear evident that we cannot all rush into the breach and carry on a vigorous political attack. This must be left to the few who, from special personal qualifications and exceptional opportunities, seem more fitted for such work. For the large bulk of the profession nothing remains but to practise their calling honourably, and to use their influence quietly, but not the less effectively, in the more limited sphere of the "common round," and in this way help to educate the public mind. They should, however, keep themselves well-informed as to any new legislation which may affect them, and take favourable opportunity of discussing such things with their fellows.

Quite recently we have had an opportunity of observing the value which is placed upon medical authority and expert opinion by the passing of the Vaccination Act. In spite of weighty official representations as to the necessity for vaccination, the conscience clause was accepted by both Houses. But the impression left upon one's mind by the discussion was, that the majority did not really dispute the value of vaccination, but for some reason or another succumbed to the views of so many of their constituents and Boards of Guardians throughout the country. Whilst we may express gratification at the protest by the House of Lords, I think we need not on the whole feel too much regret at the new legislation, especially if supplemented by an insistance upon revaccination. Without going into the question of "liberty of the subject" and "conscientious objection," one may recollect the unpleasant task it always was to vaccinate the offspring of an unwilling parent. There is still one danger remaining under the new Act which seems to have escaped attention. In spite of improved lymph, I venture to prophesy that there will still occur occasional instances of "bad arms." As in the past, certain ignorant mothers will endeavour to rub the lymph away directly the operator's back is turned, and the fact that vaccination is now to be performed in the private dwelling house instead of a public station, will, in my opinion, conduce quite as much to the introduction of other inoculation than vaccinia. In any case the antivaccinators have now provided the nation with a monster experiment upon the living subject, which, whilst not needed by the majority, will be none the less interesting to watch from the ratepayers' point of view, if from no other.

Let us conclude our brief sketch of the existing state of things by a more pleasing reference to the new Army Regulations for the Medical Service. The number of army surgeons is slightly over 800—too small probably, but their recognition now as something better than "camp followers" reflects honour on the profession to which they belong. The formation by warrant of the Royal Army Medical Corps will do something towards giving the surgeons a proper standing; they have, I believe, a larger proportion of Victoria Crosses than any other arm of the service, and will doubtless continue to maintain the high reputation for devotion to duty which army doctors have always held.

Can we, then, take Ruskin's advice and be happy? I think so; but it is, of course, a question each will answer for himself. That we are not completely satisfied and content need not make us unhappy. It is said that the happiest man is he with the least ambition, and therefore with the fewest disappointments. That is not the kind of happiness the medical profession should enjoy, and we may, perhaps, remember that our text allows us to alter the existing state of things so far as they are "marred and mendable." There is no difficulty in framing a list of needed improvements; one is embarrassed only at having to select examples.

Leaving on one side the question of representation in Parliament and at the General Medical Council, to which allusion has already been made, I would suggest that one of the great necessities in the future is a continuance of the struggle to keep the practice of medicine upon professional lines. It is essential that the patient should feel that he is being treated by one whom he may trust to do the best for him with the least possible admixture of the commercial spirit, whose diagnosis, treatment, and prognosis run no chance of being vitiated by any ulterior motive of increased pecuniary gain. With these objects in view it might be well, for instance, that as far as possible the medical man should dispense with dispensing, and that the supplying of drugs should be left in the hands of pharmaceutical chemists, who may properly claim by their training to do this work. I know that in some country districts it is impossible, and that in some particular cases the patients themselves might prefer the present method. But I think the time has come for the medical practitioner to charge his fee for the actual attendance and skill, and not for supplying material. The sweating of medical men by certain medical aid societies is another phase of commercialism, for which it must be hoped some remedy can be found.

Passing from this subject, one may next notice the existence of unqualified practice by absolutely irresponsible persons, which brings much discredit. Nothing short of preventing unregistered persons practising "for gain" is, I am afraid, likely to stop this, and even then, unless there is some amendment of the Companies Acts, there would be an opportunity for escape. Many are not aware that under the present Act an unregistered man who has been successfully prosecuted can proceed, with the help of half a dozen relations, to "turn himself into a company," and as such may legally do exactly the same thing which was illegal for him as an individual. This is perhaps the most "marred and mendable" thing before us, and fortunately there is reason for thinking that the present Government intend to deal with it.

ST. MARY'S HOSPITAL.

By H. A. Caley, M.D.Lond., M.R.C.P.,
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PREVENTION IN MEDICINE: THE NEED FOR A FORWARD MOVEMENT.

[Abstract.]

The earlier the student appreciates the responsibilities which the practice of medicine involves, and the range of influence which may one day be his, the more intense and earnest will be his interest in the successive phases of that course of study and experience which are designed to fit him for a life-long conflict with disease and death. Owing to the restricted and specialised sense in which preventive medicine is frequently regarded, I fear that this aspect of medical work does not receive due attention.

To cope with preventable disease is regarded too much as the business of those who devote themselves to public health work, and too little as the concern of every practitioner of medicine, still less as that of the community. It is not, however, by the foresight and expert knowledge of the few, but by the energetic co-operation of the many, acting under the guidance of expert knowledge, that a decisive blow can be struck against the forces of preventable disease.

In the popular conception of preventive medicine in this country, no disease occupies a more prominent place than typhoid fever. It is a matter of common knowledge that sudden epidemic outbreaks of typhoid fever are most commonly due to waterborne infection, and next most commonly to milkborne infection, and that consequently the surest means of prevention against such outbreaks is purity of water supply and of milk supply, whether that purity be due to absolute purity of source or be induced by efficient sterilisation. On the basis of these simple facts much has been done to prevent epidemic outbreaks of this disease, how much yet remains to be done the events of the last twelve months can testify.

Epidemics such as those which have so recently involved the sacrifice of hundreds of lives are essentially preventable if local authorities, communities, and individuals would but do their duty in the sanitary sense—a high and costly standard of duty it may be, attainable it certainly is. Whilst too much attention cannot be given to purity of water and milk and other articles of diet which may convey typhoid infection, it is important that more attention should be given to factors of another kind; particularly does this apply to isolated cases and limited outbreaks, and still more so to recurrent outbreaks or more or less persistent prevalence in certain localities.

During the past year much evidence has been accumulating in favour of the view that organically polluted soil, by favouring the persistence in more or less active type of the typhoid organism, has much to do with the tenacity of typhoid fever in certain localities.

The researches recently undertaken by Dr. Sidney Martin, at the instance of Sir Richard Thorne, certainly demonstrate that the condition of the soil is of prime importance in modifying the vegetative activity of the bacillus typhosus.

Dr. Martin finds that in certain samples of organically polluted soil the bacillus is capable not only of retaining its vitality for as long a period as seven or nine months, but also of multiplying and permeating the adjacent soil, whereas with virgin soils no sign of vitality could be discovered as the result of testing fourteen, twenty, and twenty-three days after inoculation.

Striking collateral evidence which tells in the same direction is afforded by a study of the topographical distribution of typhoid fever in this country. It is remarkable that whilst the disease has been undergoing enormous diminution, the areas of both its maximum and minimum incidences have remained practically the same during the twenty years (1871-90), and further, that much of the persistence of the disease is associated with those sanitary conditions which involve organic pollution of the soil.

The bearing of such facts as these on prophylaxis is obvious, having reference not so much to direct channels of infection as to the conditions of environment which are most favourable to the vitality and multiplication of the organism of the disease.

In view of the officially expressed opinion of Sir Richard Thorne that the death-rate of "this typically preventable disease" would seem to be coming to a standstill, it is surely time to advocate a fresh forward movement towards its eradication. To be successful, prophylactic measures must be comprehensive, and take account not only of infected water, milk, and other articles of diet, but also of factors of another kind—infected soil, lax disinfection in the management of individual cases, and, under certain circumstances, infected dust also. A wide and practically new field for prevention in medicine is being opened out by increasing knowledge of tropical diseases, one of far-reaching importance to this country with its world-wide empire. On this occasion appreciation must be expressed for what foresight and efficient organisation have accomplished in the medical arrangements of the Soudan Campaign, recently so brilliantly concluded. The newly constituted Royal Army Medical Corps had not long to wait for active service. Thanks to the Marquis of Lansdowne and those associated with him in this important reform, the aspect of affairs in regard to the medical department of the army has changed since last October, and there is now every reason why some of the best of our students should be proud to serve in the Royal Army Medical Corps.

If much yet remains to be done to prevent typhoid and other infectious fevers, what shall be said of that essentially preventable but far more disastrous disease, tuberculosis, which is still allowed to a large extent to run riot in our midst?

The knowledge that tuberculosis in its varied forms and diverse manifestations is a specific infective disease renders a policy of inaction indefensible and active measures for combating its prevalence imperative. Long before Koch's memorable discovery of the bacillus tuberculosis in 1882, far-seeing workers in preventive medicine had initiated hygienic measures which have done much to reduce the phthisis mortality in this country. The incidence of human tuberculosis is now well known to be intimately connected with insufficient or impure air, deficient sunlight, overcrowding, insanitary houses, damp subsoil and other hygienic defects, and the need for further improvement in general hygiene is correspondingly evident. But, in addition, the attack must be pushed forward in other directions. One great bar to progress at the present time is the inadequate recognition of the essentially infective nature of tuberculosis. Not that tuberculosis is, in the popular sense of the word, infectious, but infective in that the disease cannot exist in the absence of the specific organism, however strong the predisposition to it may be. The first step in advance is the practical recognition that by the adoption of systematic measures to destroy or limit the dissemination of the specific organism on the one hand, and to remove associated factors and predisposing causes which favour its prevalence on the other, the prevention of tuberculosis is actually attainable.

Much has of recent years been done towards the adoption of systematic measures for disinfection in the management of phthisical patients, as yet but little towards disinfecting rooms, dwellings, and belongings which may harbour and maintain in a state of latent activity the deadly germs of the disease. Important to all, this is doubly so to delicate or predisposed subjects, and should never be lost sight of in the selection and preparation of dwelling houses. In this matter of disinfection we are far behind some other countries—for example, Italy and France.

The danger, more especially to children, of infected milk is now widely recognised, and the report of the Royal Commission on Tuberculosis, issued this year, has given prominence to the extent of the danger by laying stress upon the extraordinary virulence which such infected milk may possess. Fortunate as it is that sterilisation by boiling is so reliable a safeguard, the aim of the future must be to secure an uncontaminated milk supply to start with, and it is to be hoped that the Government will in the near future take steps to carry out the recommendations of the Commission as to dairies and dairy stock. The danger from meat has, as the Commission point out, been much over-estimated, and it seems clear that it could be reduced to insignificant proportions by provision for systematic meat inspection by properly-

qualified inspectors, a matter urgently requiring the attention of the public authorities. The advisability of making tuberculosis a notifiable disease has been much discussed. No drastic steps in this direction seem practicable, or even desirable, but in my opinion regulations for a modified notification, similar to those in force in New York since 1893, might with advantage be adopted in this country, particularly in our large cities, and would probably in time pave the way for more comprehensive measures, as has been the case there.

In any organised attempt to control tuberculosis, protection of the healthy and facilities for the efficient treatment of the diseased must go hand in hand; hence the pressing need that exists for the provision of suitable sanatoria in this country where open-air and dietetic *régime* can be carried out under strict medical supervision, and under the most favourable hygienic conditions. With due care in the selection of sites, the essential requirements of purity of air, relatively large amount of sunshine, dryness of subsoil, and protection from cold winds can certainly be fulfilled. There is every reason why English sanatoria should be as successful as those in Germany and elsewhere, and the Association for the Prevention of Tuberculosis has acted wisely in assigning a prominent place to the sanatorium question.

Measures for the prevention of tuberculosis must necessarily cover a wide field, but to organised and sustained effort a large measure of success is assured.

When one is engaged in urging the necessity for a vigorous forward movement against preventable disease, it is not inspiriting to recall that in the case of small-pox the highest executive authorities have within the last three months carried out a "strategic movement to the rear," which has placed the nation in the illogical position of watching a "tremendous"—and, as most of us think, uncalled-for—"experiment" in a matter of literally vital importance. It is true that, owing to the attitude of local authorities, the state of affairs as regards vaccination was, under the previous Act, becoming increasingly unsatisfactory; but surely the rational remedy was not in the direction of the very open door of a "conscience clause." In matters of public health we look to the Government of the country, influenced by the weight of expert evidence, to lead the way in the path of progress, and not to modify its policy in the face of an adverse wave of popular opinion. However, the law being as it is, we must make the most of the good features of the Act of 1898, and for the time being, concentrate attention on pressing home the true facts of the case respecting vaccination and revaccination, so that the number of those availing themselves of the conscience clause shall not be such as to put to the full test the potentialities of this remarkable innovation in public health legislation.

The principle of prevention is also capable of a widespread and increasing application in connection with diseases of degenerative or of toxic origin. Many degenerative diseases, for example, of the central nervous system are now known to be secondary to some antecedent morbid process, microbic, chemical, or nutritional, and come within the range of a comprehensive preventive medicine. The same holds good in the case of many diseases of the heart and circulation. How many cases of death due to apoplexy, angina pectoris, and other heart affections might be prevented or postponed were preventive measures employed to arrest or control insidious changes of mortal tendency.

The principle of prevention has likewise an important bearing on the actual treatment of disease. Frequently danger comes not from the steady advance of the primary malady, but from some secondary or incidental development, which if taken in time may be warded off. Thus is it that in the treatment of disease the principle of prevention is as fundamental as in the preservation of the health of the individual or in the prophylaxis of the plagues of humanity in the aggregate. The community needs to appreciate that in each and all of these directions there is need for a forward movement—an advance in practice commensurate with the advance in knowledge.

PROFESSOR LUDWIG BREGER, of the Institute of Infectious Diseases in Berlin, has had the title of Geheim-Medicinalrath conferred upon him.

THE ROYAL FREE HOSPITAL SCHOOL OF MEDICINE FOR WOMEN.

By J. WALTER CARR, M.D.,
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THE INFLUENCE OF FASHION ON MEDICINE.

[ABSTRACT.]

DR. CARR dwelt upon the influence which had always been exerted upon medicine, and especially upon medical treatment, by fashion, custom, habit, and authority, as illustrated by the way in which methods of treatment at one time universally practised had completely, or almost completely, been abandoned, and sometimes absolutely opposite methods adopted. Going back only to the beginning of the present century, examples were given of the depletory treatment of fever and inflammation then in vogue, especially by bleeding; whilst towards the close of the century this had almost completely been given up. The result was that whereas at the commencement of the century a doctor might well have been accused of malpraxis because he did not bleed for a fever, towards its end he might equally have been subject to the same accusation if, under similar conditions, he had bled his patient.

The practice of venesection was partly due to erroneous views of the causation of fever and partly to its being undoubtedly beneficial in a certain number of cases, and from the successful cases two fallacious arguments arose which were always liable to be a source of danger in medical treatment, namely: first, that because a little blood-letting sometimes did good, that more would do more good, or that if one bleeding failed to give relief, repeated withdrawals of blood might attain the desired end; and secondly, that because venesection was beneficial in some cases of fever or inflammation, that, therefore, it would probably do good in all, forgetful that other circumstances might be entirely different.

The excessive and extreme employment of venesection and depletion led, as was inevitable, to a reaction equally extreme, with the result that an actively stimulant treatment was introduced, and examples were given of the enormous quantities of alcohol sometimes administered to fever patients about the middle of this century. Again came the natural reaction, and, just as vegetarianism was to be regarded as the practical protest against our national habit of excessive meat-eating, so the outward and visible sign of the reaction against unreasonable alcoholic stimulation was the Temperance Hospital. Yet surely a protest so extreme was as unscientific as the practice protested against. Disease might undoubtedly be treated, and successfully treated, without bleeding, and yet its timely employment might certainly be of the utmost value. Why abandon the practice altogether because it had been abused? So no doubt we could to a considerable extent substitute other things for alcohol; but why deliberately deprive ourselves of even a single remedy which might at times, at any rate, be of the greatest utility?

A few years later came the fashion of trying to reduce the temperature in fever cases by the use of powerful drugs, of which antipyrin was the best known and most used. As a consequence, when influenza appeared, the public thought they had learned the secret of its successful treatment, and that sufficiently large doses of antipyrin would soon cure them. They were hardly to be blamed for endeavouring merely to improve upon the teaching of their professional advisers, although in many cases the results were disastrous. Nature taught us to regard moderate fever rather as a friend than an enemy, for the most fatal varieties of inflammation were those in which fever was absent—such, for instance, as some of the latent forms of pneumonia and peritonitis.

Two fashionable tendencies were to be especially noted in modern medical treatment—one, the increasing use of animal extracts and antitoxins, the other, the growing power and influence of the advertising chemist. Most remarkable were the results obtained by treatment with thyroid extracts, and doubtless preparations of some other glandular organs might have correspondingly favourable results in suitable cases; but was there not the usual danger of going too far, and of making

the whole thing ridiculous by administering extracts of practically every organ and tissue of the body?

Similarly there was no doubt a great future before the anti-toxin treatment, as shown by the excellent results it produced in diphtheria; but we must not think that on these lines we were going to cure all the diseases due to micro-organisms.

Still greater was the risk of the practitioner allowing his therapeutics to be dictated to him by advertising chemists, so that prescribing seemed likely to become a thing of the past, tabloid No. —, or palatinoid No. —, etc., being ordered instead of a special mixture, pill, or pharmacopœial preparation.

What we needed was to learn a lesson of humility, remembering that "knowledge comes, but wisdom lingers"; to cultivate a more judicial spirit, not adopting some new drug or method as a universal panacea one year and entirely discarding it the next, but seeking the good in every system of treatment, avoiding, on the one hand, the danger of pushing it to excess, and so provoking an equally harmful reaction; and on the other hand the risk of ignoring it altogether, remembering that we are very far from finality in our knowledge.

Whilst we were constantly and rightly searching for curative remedies, the good results we could obtain from the best specifics could be but partial, and our real object must ever be to ascertain the cause of disease and so prevent it. Our endeavours at cure must never lead us to overlook the paramount importance of prevention. Thus, though salicylate of soda was so successful in rheumatic fever, yet the disease was as common as ever, and its consequences almost as disastrous, and the good effects of colchicum on acute gout would really be in the long run detrimental to our patients, if they were in consequence led to think that there was no need for them to alter the habits which produced the gout; whereas typhus fever—a disease over which we had very little more control when it did occur than we had a century ago—had been practically exterminated in England, simply by the discovery and removal of its great causes—dirt and overcrowding. So, whilst we ought to try to cure typhoid fever, we should also remember that we could practically prevent it altogether in this country by providing pure drinking water, and at the same time we could thus avert, also, all danger of cholera and dysentery. We might try to cure phthisis, but if we left untouched its chief causes, especially the breathing of air which had been breathed before or which contained irritating dust, Nature would still in one way or another punish us for the violation of her laws, and, if we evaded the penalty in one direction, it would certainly be exacted in another.

Medical men would exercise the most valuable and far-reaching influence as more and more, avoiding the danger of becoming entirely absorbed in the petty details and routine of ordinary professional work, they become preachers of hygiene in the broadest sense and of physiological righteousness in every-day life.

Reference was next made to the extraordinary development of nursing during the past generation. We might fairly congratulate ourselves upon the present system of nursing in our large hospitals, but possibly in private work a danger existed of the movement being carried too far, for, as nurses increased in number, there was a great risk of a falling off in quality. In private work the nurse was thrown much more upon her own resources, and consequently was capable of doing much more harm than in a hospital. However necessary the trained nurse might be in cases of severe or protracted illness, it was surely unwise to allow the nursing of the sick in the homes of the middle classes of our country to pass entirely into the hands of strangers. One great feature of woman's character and of woman's influence in the home would be lost were she wholly to abandon to outsiders the nursing of those near and dear to her, and especially of her own children in sickness.

In conclusion, the lecturer referred to the present position of the cause of medical education of women; was it to be only a passing fashion, or was it a true evolution destined to take a permanent place in the medicine of the future? The question might seem superfluous in view of the immense progress made during the past few years, and of the appointments which were being thrown open to medical women by Government and by public bodies all over the country. But the perils of prosperity were often more to be feared than the dangers of adversity, and there was a risk that with an increasing number of students might come a falling-off in quality, and any such deterioration, any indication that even only a few medical women were unsuited for their work or unworthy of the duties thrown upon them, would lead a thoughtless and indiscriminating public to infer the incompetency or culpability of all, and so the success of the movement might be seriously jeopardised. Hence the enormous responsibility resting upon each individual woman student and practitioner, and the need for them to take advantage of every opportunity of thoroughly fitting themselves for their life's work.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

ST. BARTHOLOMEW'S HOSPITAL.

Old Students' Dinner.

The beginning of the new winter session was celebrated at St. Bartholomew's Hospital by a large gathering of the old students at the hospital on Tuesday, October 4th; Sir William Turner, of Edinburgh, presided. Much interest was excited by the well-known picture of Hogarth on the staircase leading up to the hall, which has recently been cleaned most judiciously and with excellent effect. The good Samaritan, who might up to quite recently have been described, so far as the picture is concerned, as a mythical personage, now comes out in his true colours, and for the first time—at any rate within recent years—he is really seen to advantage. The crowd of sightseers on the staircase quite impeded the bringing up of the dinner, and made the hour of commencement a few minutes later than it should have been; but when once the dinner had commenced, it was served with commendable speed and to the complete satisfaction of everyone. Sir William Turner, after giving the toasts of "The Queen and Royal Family," proposed that of "The Hospital and School," and felicitously alluded to an excellent piece of dissection at the hands of Sir Trevor Lawrence, then a student of the hospital, and now its Treasurer. The toast of "The Army, Navy, and Reserve Forces" was proposed by Sir Dyce Duckworth, and coupled with the names of the Directors-General of the Army and Navy. Dr. Norman Moore, whose speech was received with much applause, proposed "The Health of the Distinguished Visitors," amongst whom were Sir Frederick Abel, Professor Ray Lankester (who replied), and others. The audience were especially amused when Dr. Moore, after applauding the value of a powder judiciously administered, said he doubted if any of them had so quieting an effect as those prescribed for the army by Sir Frederick Abel. After "The Health of the Chairman and Secretary" had been proposed, the company adjourned for coffee to the library, when old scenes were revisited and old friendships renewed.

CHARING CROSS HOSPITAL.

The Huxley Lecture.

The fame of the lecturer attracted a large audience to the Huxley Lecture, which was delivered in St. Martin's Town Hall on Monday afternoon by Professor Rudolf Virchow. The platform was chiefly occupied by the staff of Charing Cross Hospital and many other men of light and leading in the profession, among them the Presidents of the Royal Colleges, Sir William Broadbent, Sir Dyce Duckworth, Sir William Gowers, Sir John Williams, Sir Henry Thompson, besides scientific luminaries like Sir Norman Lockyer, Sir Douglas Galton, and Sir Frederick Abel. The address is published in full elsewhere. We need not say that Professor Virchow, was received with prolonged cheers. The Professor looked remarkably well, and his pronunciation of our language was almost perfect: it was not surprising, however, that towards the end of the address the veteran pathologist's voice showed signs of fatigue.

Lord Lister, in introducing the lecturer, observed that the illustrious orator needed no introduction, but that it would be graceful to thank him beforehand for his kindness in coming all the way from Berlin in order to deliver an address. There was enthusiastic cheering when, in the course of the address, Professor Virchow turned to the noble

chairman and hailed him as a benefactor to the human race. In proposing a vote of thanks Dr. Green observed that the juniors beginning work that day must already know the name of Virchow. Never had a medical school opened the session under more favourable auspices. Dr. Watt Black seconded Dr. Green, and Lord Lister declared that the audience owed to Professor Virchow an immense debt for his learned, profound, and beautiful address.

In conclusion Professor Virchow thanked the company for the glorious reception with which they had honoured him. He felt proud to address the staff and students of Charing Cross Hospital, which had produced such famous men, and he would never forget this reception in the days that he remained in our midst. He exhorted the new students to follow in the footsteps of their prototypes, so as to develop into good, honest, scientific teachers and doctors.

The Hospital Club.

The annual dinner of the Charing Cross Hospital Club, which consists of the members of the medical and surgical staff of the hospital, took place on Monday evening at the Hôtel Métropole. Mr. J. H. Morgan, the Treasurer of the Charing Cross Hospital Medical School, was in the chair; and Lord Lister, Professor Virchow, Mr. Bryant (in his capacity of President of the Royal Medical and Chirurgical Society), and Sir Felix Semon were present as guests. It is against the rules of the Club to have after-dinner speeches, but the occasion being recognised as a special one, the rule was "honoured in the breach. After the customary loyal toasts, the health of "The Guests" was proposed in a happy speech by the Chairman. All four guests replied. Professor Virchow gave some interesting reminiscences of his career, and incidentally mentioned that his new museum (which he hinted he would have had twenty years ago but for political influences) was approaching completion, and he hoped to be able to welcome his entertainers in the building next year. He added that it had been the ambition of his life to do for Berlin in the matter of a museum what John Hunter had done for London. Lord Lister proposed the health of the Chairman, who made a suitable acknowledgment.

ST. GEORGE'S HOSPITAL.

Dinner of Past and Present Students.

The annual dinner of past and present students was held on October 1st at the Whitehall Rooms, Hôtel Métropole, under the chairmanship of Mr. Timothy Holmes, Treasurer and Consulting Surgeon to the hospital. The attendance was nearly up to the record, being 124. In proposing the toast of "The Medical School," the Chairman recalled the time (50 years ago) when he entered as a student, and referred to the enormous advances of surgery, almost all due to Lord Lister, that had occurred since then. He mentioned that he was the first Dean of the Medical School, and paid a tribute to his successors in that office—Drs. Wadham, Whipham, and Isambard Owen. Dr. Isambard Owen, in reply, dwelt on the debt of gratitude that the school owed to Mr. Holmes for his work as Dean in the past, and for his kindly actions as Treasurer of the hospital at the present time. The ensuing year would be rather a critical time for the London schools of medicine, since a Statutory Commission on the subject of London University would begin action. It was to be hoped that the solidarity of the medical schools would be left intact, since any steps tending to loosen it would have a deleterious effect on medical students. Mr. Warrington Haward, in proposing the health of "The Governors of St. George's Hospital," said that while their policy was conservative of the good traditions, it was at the same time liberal in desirable reform; much of the success and prosperity of the hospital was due to the exertions of the Treasurer, Mr. Holmes. Dr. Duka returned thanks in graceful terms. The health of "The Orator of the Day," Mr. G. R. Turner, who had delivered the introductory address in the afternoon, was very happily proposed by Dr. Cavafy, the Senior Physician. Dr. Whipham proposed the health of "The Past and Present Students," to which Dr. Cowan (Bath) and Mr. C. R. Keyser responded. Dr. W. H. Richardson proposed "The Chairman," who in reply toasted the Secretaries, Drs. Dakin and Penrose, to whom the success of the dinner was largely due. During the evening songs were given by Dr. H. Powell ("Back to the Corner Again," and "Oh, would I were a Surgeon"), and Mr. Trevor.

GUY'S HOSPITAL.

Students' Dinner.

The session was opened by a house dinner in the Students' Club. Mr. C. J. Symonds, Treasurer of the Club, took the chair in the unavoidable absence of Dr. P. H. Pye-Smith, the President. He was supported by Sir S. Wilks, Bart., P.R.C.P., Mr. H. Cosmo O. Bonsor, M.P., several members of the staff, and a large number of the past and present students of the hospital. The only toasts were those of "The Queen" and "Treasurer of the Hospital," and to the latter Mr. Bonsor responded.

Sir Samuel Wilks on Medical Education.

Adjournment was then made to the new school buildings, where a meeting of the Pupils' Physical Society took place. Sir S. Wilks, Honorary President of the Society, who was in the chair, congratulated the freshmen on having entered such a noble profession, and on their choice of Guy's Hospital as their medical school. They would find their studies most interesting, and although they might have taken up the work as a matter of breadwinning, he hoped they would regard it as something more, something higher than that. They would first have to learn all about the healthy body, and then about the diseased body. The course of education was not always so. In the education of men and of mankind generally science came last of all the knowledge acquired. It was the doctor's duty to bring the patient back to health. The present method of medical education was perfectly natural, and comprised the learning of something of almost all other sciences, such as the laws of motion, hydrostatics, chemistry, etc. Formerly all the knowledge of disease was fanciful, evolved out of fancies and ideas: only in the Baconian age had medicine become scientific. Nor had the ancient cabalistic methods of treatment yet gone out. In 1815 the Apothecaries' Company were requested by the Government to take charge of medical education because they made up physic. Materia medica in those days was almost the chief thing to be acquired. Chemistry was of use for the making up of a bottle of physic, botany because it enabled one to spot plants used in medicine. All this was on a wrong basis. They would find that in many cases people were ill because they had deviated from the laws of health, and all that was necessary to restore health was to induce them to cease disregarding those laws. Heredity, again, was often stated to be a cause of disease. Frequently it meant only a disposition, a tendency to disease, and was nothing more than a part of physiology. A first-rate Cambridge cricketer had four sons, who went to Australia, and all played cricket well. They had that capacity, but it would be difficult to show a special cricket cell in the brain. Similarly, no special disease was thus transmitted, but the tendency was transmitted; also all persons inherited tendencies to change in various directions. All students should gain a practical knowledge of disease. Some parts of knowledge were to them, therefore, much more important than other parts. A practical man, who had stopped a bleeding nose when two other men could not do so had his success first established thereby. Lately, he had at the seaside seen a drowned man brought ashore. Whilst the crowd stood doing nothing a young man went up to the drowned man and worked at him. When spoken to by Sir S. Wilks he said that he had seen two cases so treated at St. Bartholomew's Hospital. He was an example of a noble profession, in that he could do so much for another in dire distress when all others stood around not knowing how to do anything. Their function was to assist Nature in her recuperative powers in all directions. He advised all to work hard, industriously, honestly, and with integrity; and they would be true members of a noble profession, and be themselves greatly respected.

The Treatment of Malarial Fever and Blackwater Fever.

Mr. W. H. Crosse, F.R.G.S., read a paper on this subject. After some introductory remarks, he said that having lived for about nine years in the Niger regions, he would first give a general account of Nigeria, then some few notes on its chief

diseases, and would afterwards show some pictures of the country and the natives. His chief remarks would refer to a disease called blackwater fever, and to certain statements which Professor Koch had recently made about the connection between the administration of quinine and this complaint. Medical men had played a very important part in tropical Africa. The heroic Mungo Park, for example, about a hundred years ago discovered the Niger. On his first journey in West Africa he started from Gambia and struck the Niger at Segu; on his second journey, in 1805, he made a rough boat out of old canoes: this he named H.M.S. *Joliba*, and in it he literally fought his way down the Niger as far Boussa, where, being attacked by the natives, he jumped into the river and was drowned, and thus the world lost one of the greatest explorers of this or any other age, and medical science one of its most distinguished sons. Park's last dispatch to Lord Camden showed what manner of man he was. He wrote: "My dear friend, Mr. Anderson, and likewise Mr. Scott, are both dead: but though all the Europeans who are with me should die, and though I were myself half dead, I would still persevere, and if I could not succeed in the object of my journey, I would at least die on the Niger."

Park's work was taken up and completed by Richard Lander, who in 1830 followed the river from Boussa to the sea, and thereby for ever solved what had been a great mystery, for it had been thought that it ran either into the Nile or the Congo, or into an inland lake.

The Niger, rising behind Sierra Leone, is over 2,000 miles long, runs north-east, then south-east, and finally south; near the sea it divides and subdivides and encloses a delta covering thousands of square miles, and empties itself into the sea by more than twenty mouths.

Considering recent events, it is well to remember that to our countrymen alone is due the credit of the discovery of this river and the solving of the Niger problem, though, alas, England at present can only claim a part of this grand waterway, and the country surrounding it.

To the foresight and energy of the Right Honourable Sir George Goldie, the Governor of the Royal Niger Company, is mainly due the fact that the large region recently named "Nigeria" belongs to the British Empire.

For many years there were on the Niger various trading houses; these were amalgamated into one company, the National African. In 1886, a charter was obtained, and the Royal Niger Company was formed; this Company is a trading one, but it also administers under the Secretary of State for Foreign Affairs, and I am able from personal knowledge to state that it has nobly performed the administrative duties which it undertook when the charter was granted.

When I went to Nigeria in 1886, as the first principal medical officer, intertribal wars were common; the weak were oppressed, and the most horrible practices, such as the burning of witches and the sacrifice of slaves when their masters died, were the rule. I lived long enough under the firm wise rule of the Niger Government to see the old order of things rapidly passing away. To show to you that the task undertaken by the Government has been no light one, I may tell you that I have myself been present in at least a dozen actions in the course of campaigns undertaken by the Government with the view of freeing the enslaved, and making the lives of the oppressed more bearable, and establishing law and order.

Since my time, other Guy's men—for instance, Drs. Stanton and Mottram—have been, as the Americans say, "keeping up our end of the plank."

The West Coast of Africa has a very bad name; in fact, it is called the "White Man's Grave," and it certainly to a large extent deserves it, for it is a hotbed of malarial fevers, which are the great obstacles to efficient, continuous work. Still alcoholic and other excesses are partly to blame.

Malarial Fever.

Of the ordinary attacks of this disease, very little need be said. They are either remittent or intermittent in type, the remittent being the more serious and frequent. Deaths from these fevers are very rare, though repeated attacks soon break down the constitution, and therefore invaliding is common.

The special form of the disease to which I wish to draw your attention is called blackwater or hæmoglobinuric fever, which is characterised by redness of the urine, jaundice, and in nearly all severe cases persistent vomiting, generally of green bile, frequent hiccough being not uncommon in dangerous attacks. The urine may be bright red, like port wine, or so deep in colour that in bulk it looks black, like stout. Some observers say that they have seen the urine absolutely as black as ink; it is this darkness of the urine which gives the disease its name; the hæmoglobinuria may be continuous or intermittent.

Most doctors are agreed that blackwater fever is not a separate disease, and that it is only a form of malarial fever—a pernicious form—but still a malarial fever. Blackwater fever comes on in those who, from various causes, have become broken in health. Hardly any European in West Africa escapes malarial fever, and repeated and neglected attacks soon bring on the unhealthy and anæmic condition which appears to be necessary for the appearance of this dreaded complication. It seems to me that there can usually be found, if looked for, some determining cause.

In my own case, while feeling rather unwell from a slight fever, I had to travel for some distance in an open canoe, and my back was exposed for a considerable time to the direct rays of the sun. I began to feel very ill, and on returning to my house a white man remarked how yellow I was; later on I shivered, had persistent green vomiting, and the urine became red; in short, I was down with blackwater fever. The vomiting was so distressing that, at any rate for a time, I could not take quinine or any other remedy.

I could multiply instances like the above: for example, another doctor had a somewhat similar experience, in which a fever patient, being light-headed, in the night walked out into the rain; within twelve hours he was jaundiced, had persistent vomiting, and was passing dark, dirty, red urine. The disease is rare till after the first year of residence, and is unlikely to appear, for the first time, after three years have been spent in West Africa.

Professor Koch, who has possibly spent as many months as I have years in Africa, and who, as far as I know, has not resided any length of time in West Africa, the home of blackwater fever, has caused a very great deal of anxiety by his assertion that quinine is the cause of blackwater fever in many instances. He says: "This much is certain, that the treatment of blackwater fever with quinine must henceforth cease completely, and that with malaria patients who have had already an attack of blackwater fever, quinine must be used with the utmost caution, or better still, be replaced by something else." Koch, however, does not mention what other treatment he would advise.

My experience is that those who take quinine, and take it freely, do not get blackwater fever. In my own case I attribute my attacks—and I have had at least ten severe ones—partly to my neglecting to take quinine, which I dislike very much; and to the fact that very often, when unwell, I had to be about attending to others who were more ill than I was myself.

I have at times given very large doses of quinine. For example, I have at one sitting injected 30 gr. of the lactate of quinine (under the skin of a very sick man), which, I take it, is equal to 60 or 90 gr. given by the mouth, but it did not cause blackwater fever.

Two years ago I was very ill, suffering from enlargement of the liver and spleen, and threatened with an ischio-rectal abscess. During my illness, while in a nursing home, I was attacked by malarial fever. Dr. Hale White prescribed 30 gr.-doses of quinine, which I took with the result that I rapidly improved. In this case, surely, many of the conditions were present conducive to an attack of blackwater fever, which I had had often before, even without the quinine which Professor Koch, on insufficient grounds I think, so readily condemns, and I believe that the large amount of quinine which I took prevented an attack of hæmoglobinuria.

That a malarial parasite has been frequently found in the blood of blackwater fever patients there can be no doubt, and I am certain that a malarial parasite is, under suitable conditions, the cause of hæmoglobinuric fever, in which enormous quantities of red blood cells appear to be broken down in circulation by the plasmodia malariæ.

So great is the destruction of the red cells that some

patients sink at once as if from shock, while others die later on from absolute suppression of the urine due to congestion and blocking up of the kidneys by the *débris* of the broken-down blood cells. The jaundice is, we believe, a hæmatogenous jaundice, and is analogous to the yellowness of the skin caused by a bruise, and to the universal jaundice that may follow a snake bite; for Thoma has described jaundice due to changes in blood pigment apart from any hepatic disease.

The vomiting of green bile is not easy to explain, and although this symptom is not always present, yet it is so frequent that it is, I believe, as characteristic of blackwater fever as black vomit is said to be of severe cases of yellow fever.

The complaint is so serious that one can hardly blame quinine for being unable to cure all attacks. But many cases on the Niger have been cured by this drug, not only in my own practice, but in those of my assistant medical officers.

I have just heard from the great explorer, Mr. H. M. Stanley; he is of opinion that exposure to sun, fatigue, and damp, is the active cause of blackwater fever, and that this disease yields to quinine. In his own attack he did not recover till he took 60 g. of quinine in a single dose.

Dr. Moffat, Principal Medical Officer Uganda Protectorate, writing in the BRITISH MEDICAL JOURNAL of September 24th, remarks that the pernicious results of Dr. Koch's theory on the lay mind are already manifest, and this is also my belief. Dr. Moffat also states that he has never seen a man die of malaria when quinine has been given properly and early; furthermore, he says that fatal cases, whether complicated with hæmoglobinuria or not, have been those in which quinine has not been administered, or was given in very small doses, or not given until the cases were practically hopeless. Dr. Moffat treated 9 cases of blackwater fever; 2 died (in both the administration of quinine was neglected until too late). The cases which recovered were all treated with quinine, 6 of them with heroic doses, 60 to 120 gr. in twenty-four hours.

In Africa the difficulty is to get men to take quinine now; fortified by Koch's statement many men are already refusing absolutely to take quinine at all. Professor Koch is much struck with the circumstance that European women and natives are only exceptionally attacked with hæmoglobinuric fever. This is perfectly true for natives, and this fact about them has been well known for many years. I do not remember ever having seen a case of blackwater fever in a native, though I am aware that cases have been recorded, but I have given large amounts of quinine to a great number of natives. The reason they do not get blackwater fever is not, therefore, because they do not have quinine; probably it is because no malaria attacks natives, in their own country, so seriously as it attacks Europeans.

With regard to European women Koch's statement is not true. I have seen cases of blackwater fever in European women, and if white women were as much exposed to fatigue, long marches, chills, etc., as white men are, there is every reason to believe they would have blackwater fever at least as often, for under favourable conditions they do get it. Thus when I was surgeon to two Roman Catholic societies I saw blackwater fever amongst the ladies of these missions. Now these particular women often stayed in West Africa for some years at a stretch, and they were in the habit of going, without having taken food, to mass in the very early morning, when it was dark and the air chilly and laden with moisture. Under these conditions they developed blackwater fever, and it is interesting to observe that they had taken very little quinine.

As showing that blackwater fever does attack women, I may mention that a white lady, who had suffered from malaria after a bad confinement, which took place in West Africa, rapidly developed blackwater fever and died. Another case of blackwater fever in a white lady is given in my book, *Notes on Malarial Fevers*.

Not only do I disbelieve that quinine causes blackwater fever, but I think it helps to cure it and to prevent it; for instance, a great friend of mine, after having had many fevers, was attacked by blackwater fever, from which he recovered after the usual treatment by quinine. Now when a patient has had blackwater fever once, he is very liable to have it again and again. I impressed upon him the necessity of taking quinine regularly, and gave him 10 gr. on two consecutive days each week. The result was highly satisfactory; for though I attended this man for some years, he only had slight and infrequent attacks of fever, and did not again have blackwater fever. More recently he told me that he had grown sick of quinine and had left it off; his fevers returned again, and he then began to take quinine, and found that his attacks abated in severity and frequency.

A most instructive case is given in Davidson's work on *Diseases of Warm Climates*. The patient, who had previously suffered from three attacks of blackwater fever, in which the hæmoglobinuria always came on after rigors, was taken ill, and treated with injections of quinine, and the blackwater fever disappeared while he was taking these large doses, so we may conclude that the quinine could not have caused it; and that blackwater fever is not, as Professor Koch seems to think, simply another name for quinine poisoning.

I have dwelt long on this subject, for it is of the very greatest importance, and my advice to those going to tropical Africa is not too readily, even on the advice of so great an observer as Professor Koch—for whose opinion we naturally have the very greatest respect—to give up, in blackwater fever, a tried friend like quinine.

Some will ask: Why has blackwater fever become so common recently? The first case on record in the Niger Territories was, so far as I know, my own some ten years ago. The first case in the Niger Delta is said by some old coasters to have occurred in 1882. It seems to me that since we have begun to turn up virgin soil for coffee and other plantations the disease has become common. When I went to the Niger in 1886 there was not a single plantation. Very soon large plantations were started. I believe I was the first to start them, for I took out with me a great many seeds of English fruit, and soon after these were planted, an experimental plantation was started, first at Asaba, then at Abutshi, some 150 miles up the river.

It is significant that our first three gardeners died of blackwater fever, and that for some considerable time cases only occurred near the plantations, and as plantations became more common so the disease spread to the other stations in the territories. Dr. Castellote notes a case in which a white man personally superintended the digging of a grave, and stood about in the sun for two or three hours. Next day he had severe fever, which developed into blackwater fever.

It is generally conceded that the turning up of virgin soil is one of the most fruitful causes of malignant malarial fevers, and numberless examples of this are given in textbooks on the subject. Even now there seems to be a great and unfounded prejudice against the hypodermic administration of quinine. I use the tabloids of lactate of quinine; these are boiled in water, and the solution is injected while still warm. If the patient's skin and that of the doctor's fingers is aseptic, and if the syringe is absolutely clean, there is little fear of any bad after-effects. Many cases of tetanus are said to have followed the hypodermic injection of quinine; of course, if a dirty syringe is used and if the bacillus is injected, tetanus is likely to follow.

I firmly believe in quinine as a preventive of malarial fevers. Dr. Cargill has recently returned from the Niger after serving for two years, during which time he was frequently much exposed and had very heavy work to do. During his term of service he took 5 gr. of quinine daily, and, though he constantly noted his temperature, he tells me that he never found it above 98.6° F., and that he did not have a day's sickness.

I am far from saying that quinine is the only drug which is of use in malaria, or that it will cure every case. Many drugs find their place; antipyrin and phenacetin, Warburg's tincture, calomel, opium, bismuth, hydrocyanic acid, carbolic acid, ammonia, and other drugs are used at times with very great benefit. Opium I have found of very great service. I believe that more than once it has in my own case cut short an attack of fever.

Much interesting information on the use of this drug for malaria can be found in the medical part of the Report of the Royal Commission on Opium, so ably written by Sir William Roberts, which should be read by every medical man interested in malarial diseases. Narcotine, which is the active tonic and antiperiodic principle of opium, is in the report called "anarcotine."

Sir William Roberts makes some extremely significant re-

marks about narcotine which appear to me to be of the very greatest importance, seeing by whom they are made, and they have only been made after a very long and careful investigation. I give you his own words: "And it is not improbable that.....anarcotine may come to play a larger part in the treatment of Indian fevers in the future than in the past, and that anarcotine may eventually take its place, not as a rival to quinine, but side and side with it, as a twin antidote to malarial poisons, each being superior on its own special ground."

To cool water—we can very seldom obtain cold water in West Africa—as an aid to treatment must be given a place of honour. I am almost inclined to believe that running cool water will alone cure most ordinary fevers. I never had the courage to trust to it only, but I have regretted that in some of my own attacks I did not give the treatment a fair trial. I had a patient in the medical house at Asaba, his temperature was 107° and drugs seemed either not to be absorbed, or if absorbed to be powerless to bring down the temperature. The patient was in a semi-comatose condition, his skin was dry and hot, and as he lay mumbling to himself his case appeared to be hopeless.

In his room there was a large bath; I filled it with water at about 78° F., and, as the patient was so ill, he was lifted on his mattress, in his clothes, from his bed, and put in the bath. Instantly an improvement was noted; the temperature began to fall at about the rate of a degree every quarter of an hour, the mind became clear, and before long the patient, in language more plain than polite, was able to show an intelligent interest in what was being done.

I had several labourers carrying and emptying water into the bath, so that the water, which all the while was running out, was being immediately replaced. A spray of cool water played over the patient's head constantly, and soon he went to sleep in the bath. When he awoke I gave him champagne and soup, and when the temperature registered 99° in the rectum he was put to bed.

Whenever the temperature began to rise, the same treatment was adopted, and before long the patient was so well that he was able to take his own temperature, and I constantly found him either dodging into or out of the bath. Within four days he managed to have over thirty baths. This was some five years ago; the man is alive and well, and is still on the West Coast.

[Mr. Crosse then exhibited sixty or seventy West African lantern slides, nearly all taken by himself, and gave a running description of matters suggested by the slides thrown upon the screen. The paper and exhibitions were both received with much applause.]

Mr. F. E. Fremantle proposed a hearty vote of thanks to the reader of the paper, who had not been content to settle down at home, but had gone to the extremity of the empire for his sphere of work. He referred to other Guy's men also doing good work in Africa as pioneers of civilisation. Certainly the medical profession was bearing no inconspicuous part in the epoch-making work of advancing the boundaries of the British Empire.

Mr. Cleveland seconded the vote, which was carried with renewed applause.

Mr. F. Shufflebottam proposed a vote of thanks to Sir S. Wilks, who for upwards of fifty years had been a member of the Physical Society. Notwithstanding his other onerous duties, he could always find time to preside at the opening meeting of the session. Might he for many years to come continue to discharge the duties he had so characteristically fulfilled that night.

Sir S. Wilks said he would have been a loser if he had not come to that meeting. He was reminded by the paper that the Epidemiological Society owed its origin to an expedition to the West Coast of Africa undertaken in the Forties.

Exhibition.

The proceedings in the Theatre then ended. Subsequently in the Physiological Laboratory several microscopes and microscopical specimens and drawings of pathological conditions were on view; and a fine collection of native weapons, clothes, ornaments, etc., brought by Mr. Crosse from Nigeria excited considerable interest.

KING'S COLLEGE HOSPITAL.

Dinner of Past and Present Students.

There was a large gathering of old King's men at Limmer's Hotel on Monday evening, under the chairmanship of Mr. Boyce Barrow. The proceedings throughout the evening were marked by a cordiality and enthusiasm which were symptomatic of the prosperity which we are glad to hear is returning to the medical department of King's College, and which, it is reported, is practically shown by a decided increase in the entry of new students. Upwards of 100 old students assembled—a larger number than the October dinner has drawn together for many years past. Mr. Boyce Barrow was supported by all his surgical colleagues, and by many of the physicians of the staff. In proposing the toast of the evening, "King's College Hospital and its Medical School," he dwelt on the need for further subdivision of teaching, and explained how this had been met, and many other steps taken to promote the prosperity of King's as a medical school. The toast was replied to by the Rev. Dr. Robertson, the Principal of King's College, and Mr. C. Awdry, the Treasurer of the hospital. Other toasts were proposed or acknowledged by Colonel Jelf, C.M.G., R.E., the name of whose family has long been associated with King's College; Captain Louis Hughes, R.A.M.C., Dr. Duffin, Dr. Salter, Dr. Walters (Reigate), Dr. Low, and Mr. Richardson Cross, who received a warm welcome in honour of his recent election at the head of the poll for the Council of the College of Surgeons. Sympathetic reference was made to Colonel Arthur Sloggett, R.A.M.C., a well-known old student, who was severely wounded at the battle of Omdurman. The "Hospital Chorus" was sung with more than usual enthusiasm. The feeling of good fellowship between old students, and the cordial relations existing between them and the members of the staff were very much in evidence, and it was unanimously agreed that a heartier gathering had not taken place for many years.

LONDON HOSPITAL MEDICAL COLLEGE.

Old Students' Dinner.

The annual Old Students' Dinner was held on Monday, October 3rd, in the Library of the College. Mr. C. Mansell Moullin occupied the chair. More than 120 guests were present, including several members of the House Committee, and Mr. Brudenell Carter, who was the senior "old student" present. The toast of "The Queen and the Royal Family" was proposed and received with enthusiasm, after which the Chairman gave the toast of the evening, "Success to the London Hospital and Medical College." In proposing this toast, the Chairman alluded to the great progress lately made at the College and Hospital, to the numerous departments and buildings added, and to the improvements still to be made. He also congratulated the students on their recent successes before the Examining Board, and on their success in sports. Mr. Douro Hoare, the Chairman of the College Board, in reply, stated that the House Committee, the College Board, and the staff were thoroughly in accord in their endeavour to make the London Hospital and Medical College the very best in London. The record of 1898 had been excellent with regard to improved buildings, good results in the pass lists, and in sports, and he assured all present that he and his colleagues would do their utmost to make things still better in the year to come. He was glad to say that the entry of students was quite up to the average, and he trusted that they would be even better than last year. He hoped that the glass case at the entrance of the hospital would next year have even more silver cups in it than it had at present.

THE MIDDLESEX HOSPITAL.

Dinner of Past and Present Students.

The annual dinner of the past and present students of the Middlesex Hospital was held on October 3rd at the Café Royal, with the Right Hon. Sir Ralph Thompson, K.C.B., in the chair. Over 160 guests were present. After the loyal toasts had been duly honoured the Chairman proposed the "Middlesex Hospital and Medical School." In reviewing the past year, Sir Ralph Thompson said that the hospital had steadily continued its career of usefulness and prosperity.

The extensive buildings which were now nearly completed would place exceptional opportunities within the reach of the students for the study of disease, and he sincerely hoped that the acquisition of the new cancer wing would lead to some real progress being made concerning the history and nature of that terrible malady. Dr. Cayley, in responding, spoke of the desire of the hospital authorities to send out their students into the world with the best possible knowledge for fighting against disease, and he also alluded to the excellent nursing which was so valuable an aid in the successful treatment of all diseases. The Dean (Dr. Pasteur), who also replied, referred with pride to the many successes attained by students during the past year, which included no fewer than eleven university degrees and forty-seven diplomas, results which would be a credit to any school. Equipped with new buildings, there was no doubt that the medical school would be one of the best in the metropolis, and Dr. Pasteur felt sure that a future of prosperity might confidently be anticipated. Mr. T. W. Nunn proposed the "Past and Present Students," to which Mr. E. A. Fardon and Mr. C. G. Pugh replied. Mr. Stephen Paget proposed the "Visitors," and especially thanked Mr. Wilhelm Ganz for his kindness in providing charming music during the evening, to which Mr. Ganz made a suitable reply. Mr. Pearce Gould, in proposing the "Chairman," dwelt on the tact and courtesy which Sir Ralph Thompson always showed in the management of all affairs of the hospital and school.

ST. MARY'S HOSPITAL.

DINNER OF PAST AND PRESENT STUDENTS.

THE annual dinner of the Past and Present Students and of the Athletic Clubs was held at the Holborn Restaurant on Monday, October 3rd. Covers were laid for 211, and this proved a record number. Additional interest was added to the dinner by the presence of certain students, at the special invitation of the School Committee, who had distinguished themselves both in scholarship and in athletics during the past year.

The chair was occupied by Mr. J. N. Moore, J.P., who was supported by Sir Wm. Broadbent, Bart., Dr. Cheadle, Mr. George P. Field (Dean), Mr. Owen, Mr. Malcolm Morris, Mr. Anderson Critchett, Dr. Lees, Mr. Herbert Page, Dr. Waller, F.R.S., Dr. Handfield-Jones, Dr. Sidney Phillips, Dr. Maguire, Dr. Luff (Sub-Dean), Mr. Pepper, Lord Granville Gordon, and Dr. Anderson, C.I.E., and many past students.

After the toast of "The Queen and Royal Family," proposed by the Chairman, had been duly honoured, that of "The Services" was given by Dr. Havell, and responded to respectively by Fleet-Surgeon T. J. Preston, R.N., Lieutenant-Colonel A. B. Myers, and Captain Whitcombe. The Chairman then proposed the toast of the evening, "St. Mary's," and in a happy speech compared the St. Mary's of his day with that of to-day, and while modestly ignoring his own claim to having added any lustre to his old Alma Mater, he maintained that he yielded to no one in his love and gratitude to her. Dr. Cheadle responded, and after enumerating several reasons for the success of St. Mary's, proposed "The Health of the Present Dean" (Mr. Field), who replied, and proposed "Past and Present," to which Mr. Noble Smith (Past) and Mr. C. W. Buckley (Present) responded. Humorous speeches followed from Mr. Owen, who proposed "Athletics," and Mr. Lane, who replied for Past, Mr. A. G. Butler doing so for Present. The "Health of the Chairman," on the proposal of Dr. Handfield-Jones, was enthusiastically drunk. A short musical programme followed.

ST. THOMAS'S HOSPITAL.

DISTRIBUTION OF PRIZES.

AT St. Thomas's Hospital the Bishop of Rochester distributed the prizes to the successful students; the ceremony took place in the Governors' Hall.

The Treasurer, Mr. J. G. Wainwright, who took the chair, laid stress in his record of the year's work on the fact that St. Thomas's was a City hospital, a fact which would be emphasised by the opening of a City of London ward, and had been recalled to their memory by the generous gift of £10,000 from the Mercers' Company.

The Bishop of Rochester, in addressing the students, said that from his forefathers he had received the motto "*Humanum nihil alienum*," and the man who accepted such a motto should be one to whom nothing could appeal in vain. It was true that the medical man had acquired considerable knowledge of the structure of the human body and of the functions of the various organs; he had even classified him in his place in the animal kingdom; but man was something more than "*homo*," a fact that must always be borne in mind, and one which all processes of inductive logic and all knowledge of the conclusion of life tended to emphasise. A mind that could discern differences was as important as a mind that could see likeness. The region where the material and mental aspects of life met and interacted was a profoundly interesting one into which much investigation has been carried of late. It was on the frontier of this region that medical students stood, and it was a region as scientific in the sense of the operation through it of the great laws of tendency and consequence, and as interesting, and with even more claims upon attention, as that with which a medical student became familiar in the course of his studies. It was admitted by the best men in the profession that one of the finest parts of medical work would be missed unless the faculty for sympathetic observation were cultivated and assiduously used. Diligent and watchful account must be taken of the moral and spiritual element of living men, and unless this were done the study of vital phenomena would be full of pitfalls, in the same way that life would be full of paradoxes to one who had only studied matter in inorganic or dead forms. It was this that justified the statement that in many cases a doctor's word or tone was of as much importonce as his pill or tonic. It was this faculty of sympathetic observation that made the noblest doctors men of such fine and rare culture. To attain to this faculty students should embrace every opportunity of interest in the world of human experience and emotion, whether in fact or fiction. It was foolish to despise the help of moral and spiritual forces; there really was no danger of religious mania. It would be strange indeed if religion did not make for sanity. He did not ask from the medical profession the work of the clergy, but only that they should act as high-minded, honourable, delicate, and tender-hearted men.

OLD STUDENTS' ANNUAL DINNER.

The old students' annual dinner took place on October 3rd at the Whitehall Rooms of the Hotel Métropole. Dr. Leonard W. Sedgwick was in the chair. The attendance was large and the dinner in every was most successful. The Chairman having proposed the toast of "The Queen and Royal Family," was followed by Sir William Mac Cormac, the President of the Royal College of Surgeons, who, in proposing the toast of "The Hospital and Medical School," gave some interesting reminiscences of the hospital as it was when he joined it twenty-five years ago. The Treasurer, Mr. Wainwright, in response commented on the thorough equipment of the hospital, and in thanking Sir William Mac Cormac for his appreciative remarks on the interest taken in the hospital by the Governors, said that they had in view various schemes for still further improvement. Dr. Hawkins, the Dean of the Medical School, referred to the steadily increasing entries as an indication of the school's efficiency; the number of medals gained at London University, and the very successful results at the College examinations also attested the same fact. He commented on the loss the hospital had sustained by Dr. Toller's appointment as physician to the hospital at Cairo. Mr. Mackellar also had resigned through ill health. Dr. A. F. Stabb had been appointed Assistant Obstetric Physician to St. George's Hospital. He also referred to the appointment of Dr. Perkins as Fourth Assistant Physician. Dr. Bulstrode having spoken was followed by Dr. Crosby, who proposed "The Chairman." Dr. Sedgwick, in reply, spoke of the staff as it was when he joined the hospital fifty-three years ago, when Green, Grainger, and Marshall Hall were prominent figures. The toast of "The Secretaries" was proposed in a most amusing speech by the Rev. Dr. Merry and suitably acknowledged.

UNIVERSITY COLLEGE, LONDON.

Dinner of Old and Present Students.

On Monday evening, October 3rd, the annual dinner of old and present students of University College Hospital took place at the Hotel Cecil. The chair was taken by Dr. Frederick Roberts, who, after the toast of "The Queen" had been duly honoured, gave that of "Prosperity to University College and University College Hospital." He related some reminiscences of the staff of the hospital when he first joined it, and spoke of the educational disabilities under which Nonconformists in Wales laboured in his boyhood. It was the great merit of University College that it had, at a time when religious tests placed an obstacle in the way of those outside the communion of the Church of England who desired university education, stepped into the gap and provided what the older universities then refused to give. From various causes University College had fallen upon evil days, and the hospital in particular had suffered most acutely from the want of financial support. For years it had been in contemplation to rebuild the hospital, but that hope seemed impossible of attainment, until the munificence of Sir Blundell Maple had at once removed the difficulty, so far as the rebuilding was concerned, though there remained anxiety as to the annual sum required for maintenance. The toast was acknowledged by the Dean, Mr. Godlee, who said that he had that day inspected the progress of the new building, which he was able to pronounce satisfactory. The first storey of the theatre block was almost complete and one set of wards was in a forward condition—an announcement which was received with much applause. Dr. Poore then in a happy speech proposed the health of Dr. Hare, the senior member of the consulting staff, who he said had always shown and still continued to show the greatest interest in the work of the hospital and an admirable diligence in rendering service in the conduct of its business. Dr. Hare replied in a short speech, in the course of which he said that, when on leaving the University of Cambridge he took the then unusual course of entering at University College Hospital, he did so because after careful inquiry he had satisfied himself that the type and spirit of the instruction there given were superior to that to be obtained at the time elsewhere in London. The health of the Chairman was proposed by Dr. Talfourd Jones in a speech full of reminiscences and briefly acknowledged by Dr. Roberts.

WESTMINSTER HOSPITAL.

Medical School Dinner.

The members of the medical staff, House Committee, and past and present students, together with their friends, dined at the Holborn Restaurant on Monday, October 3rd. The chair was taken by Sir George Robertson, K.C.S.I., a former student and member of the teaching staff of the hospital, and famous for his heroic defence of Chitral and his writings on Kafiristan. Under the Chairman's genial influence a very pleasant evening was spent, the function being deemed the best of recent years in point of view of numbers and enthusiasm.

After the usual loyal toasts the Chairman proposed the toast of "Prosperity to the Westminster Hospital Medical School," and said that he felt proud to remember that he had been an alumnus of Westminster. He referred to the good work done at the school and to the successes recently obtained at examinations. Mr. Tubby, as Vice-Dean, replied, and urged the necessity of keeping the school thoroughly in touch with the progressive spirit of the times.

Mr. Bond then proposed the toast of "The Old Students," to which Dr. Gandy, of Upper Norwood, replied in a felicitous manner.

Dr. Potter spoke of the distinctions and merits of "The Visitors," coupling with the toast the name of Major Harley, D.S.O.

"The Health of the Chairman" evoked from Dr. Allchin some happy remarks; and Sir George Robertson, in replying, said "he had come to feel that medical training, if it did nothing else, taught a man not to shirk responsibility whenever and wherever it might come."

The German Association of Scientists and Medical Men will hold its annual meeting in 1899 at Munich.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

Address by the President.

On Saturday afternoon, October 1st, the College was opened for the winter session. The chair was taken by the President of the College, Professor Philipson, and there was a crowded attendance, including a large number of ladies and students. Amongst those present were the Bishop of Newcastle, the High Sheriff of Northumberland, the Mayor of Newcastle, who as usual attended in state, Principal Gurney, and many others.

The President, in opening the proceedings, gave a cordial welcome to the influential gentlemen supporting him on the platform, including among them their valued former colleague, Dr. Embleton, the first Professor of Medicine in the University of Durham, who that day celebrated his 88th birthday. The President said that the various departments of the College were in a satisfactory condition. The number of entries over the whole five years' curriculum showed a large increase during the past two years. This was very encouraging. At the November examination last year for the appointment of Surgeon in the Royal Navy a graduate in medicine at the University of Durham obtained the highest place. This was the third occasion on which a graduate of their University had gained the first place. The President then referred to the satisfactory decision of the Secretary of State for War with regard to the claims of the medical profession to army rank, and also to the letter of Mr. Chamberlain to the medical schools of the country urging the necessity for special education in tropical medicine. Arrangements had already been made both in the College of Medicine and in the Royal Infirmary to carry out Mr. Chamberlain's suggestions.

Distribution of Prizes.

Sir David Dale, Bart., then distributed the prizes and scholarships to the successful students, and gave a short address. After some introductory remarks, he said that when he was about sixteen years of age, the reading of the life of Sir Astley Cooper inspired him with a strong desire to become an eminent surgeon, for it seemed a matter of course that one had only to go through the necessary training to become an eminent surgeon, who would lead a life full of interest in London, would accumulate wealth, would be recipient of honours, would confer great benefit upon the community, and would be commemorated in an interesting biography. He laid these views before an elderly local general practitioner, who asked him why he should expect any higher position in the surgical profession than he himself had attained. He advised him to limit his expectations to that which he had reached, to dismiss from consideration any prospect of wealth and honour; to test his zeal by nobler motives and simpler aims, and by whether he had any real attraction towards such subjects as would constitute the professional training of a surgeon. Thereupon he handed down the *Surgeon's Vade Mecum*, told him to study it and come back in a month and report what his feelings then were. Well, he did make a gallant attempt to master and to become interested in the *Surgeon's Vade Mecum*, but at the end of a fortnight he went back to his adviser to confess that he must give up being a surgeon, eminent or otherwise, and so ended his ambition to enter that profession. Still there had lingered with him a certain observant interest in it, and sympathy with those who were entering upon it. Having remarked upon the need for constant study, even after a student had become a practitioner, Sir David Dale enlarged upon the opportunities which the profession afforded for tenderness, for sympathy, for comforting and for consoling. Still, without claiming that the medical student felt such a call as did many to the work of the ministry or as did a few to the sacrifices of the missionary, there might be, and he hoped there was with most of them a recognition that theirs was a noble profession, both in relation to the intellectual training required and to the moral qualities needed for its exercise. The proceedings terminated with the usual votes of thanks.

The Sale of Narcotics in the United States. A Bill regulating the sale of morphine, opium and its preparations, and cocaine, recently passed its third reading in the Louisiana State Legislature. It is believed to be likely that the Bill will become law.

ENTRANCE SCHOLARSHIPS.

THE following entrance scholarships have been awarded in connection with the opening of the winter session:

Charing Cross Hospital Medical School.—Livingstone Scholarship (100 guineas), to Mr. G. E. Bellamy; Huxley Scholarship (55 guineas), to Mr. B. R. Bickford; Universities Scholarships (each of 60 guineas), to Mr. H. G. Gabb and Mr. B. G. Fiddian. Entrance scholarships have also been awarded to Mr. R. H. Cooper (60 guineas), Mr. D. M. Davies (40 guineas), and Mr. T. Law (30 guineas); and exhibitions of 30 guineas each to Mr. A. C. Ingram, G. O. Lambert, and B. R. Lloyd.

Guy's Hospital Medical School.—The University Students' Scholarship of £50, H. S. French, Christ Church, Oxford, C. J. Claxton, King's College, Cambridge, being given the certificate. The open Science Scholarships were distributed between C. H. B. Wilson, Guy's Hospital Medical School, £150; F. Rogerson, Guy's Hospital Medical School, and N. S. Spriggs, private study, £30 each; certificates being given to H. D. Smart and H. S. Brown. The open Arts Scholarships were awarded to: R. F. MacDonald, Buncroft's School, £100; W. G. Taylor, Aberdeen University, £50; J. W. Walton, Folkestone Grammar School, £30; certificates being given to G. Hamilton, Asker's School, New Cross; G. A. Horton, University Tutorial College; and J. James, St. Bee's School.

London Hospital Medical College.—The Price Scholarship (£12), Mr. F. W. Jones; the Epsom Scholarship (£126), Mr. Colmer; the Price University Scholarship (£60), Mr. Bousfield; Science Scholarship (£60), Mr. J. W. Fox; Science Scholarship (£30), Mr. Rainforth.

Middlesex Hospital Medical College.—The First and Second Entrance Scholarships were awarded to Mr. W. Cameron Macaulay and Mr. William Gordon Taylor, M.A., respectively.

St. Mary's Hospital Medical School.—Natural Science: Mr. E. W. C. Bradfield, £144; Mr. N. T. Spriggs, £78 15s.; Mr. H. A. Haig, £78 15s.; Mr. J. H. Burgess, £52 10s.; Mr. E. L. Ash, £52 10s. University Scholarships: Mr. H. E. Corbyn, B.Sc., £57 15s.; Mr. W. H. Clayton Greene, B.A., £57 15s.; Mr. W. T. Shaw, B.A., £57 15s.

St. Thomas's Hospital Medical School.—Natural Science: Charles Michael Roberts, £150; Harry Mellor Woodcock, £60; an exhibition of £20 was awarded to Charles Hugh Latham.

University College London Medical Faculty.—H. A. Haig, 131 guineas; M. Stewart Smith, 55 guineas; W. M. Sadler, 55 guineas.

THE NATIONAL AID SOCIETY'S WORK IN THE SOUDAN.

THE following interesting letter from Major W. A. Cowen, R.A.M.C., to the Commissioner of the National Society for Aid to the Sick and Wounded in War, has been sent to us by Lord Wantage for publication:

(Copy.)

SS. *Mayflower*,
Cairo, Sept. 18th, 1898.

To the Commissioner, National Society for Aid to the Sick and Wounded in War.

SIR,—I beg to submit the following report *re* the trip of the National Aid Society's steamer *Mayflower* for the conveyance of sick and wounded from Assouan to Cairo. On September 6th I took over medical charge of the ship, having under my command one medical officer, one sergeant, one corporal and six privates of the Royal Army Medical Corps. The medical and [illegible] equipment was supplied from the military hospital at Cairo, and [illegible] for the purpose. Three civil nurses were sent out from [illegible] Society; they gave great satisfaction, and were zealous [illegible] performance of their duties. The sick and wounded received [illegible] the journey, which were supplemented with the Society's stores or substituted where necessary. The ship was accommodated for [illegible] berthed cabins on the upper deck to accommodate 30. On the lower deck the arrangement of the cabins had been altered, the partitions between the cabins being taken away, and the berths arranged in two tiers, twelve on the starboard and ten on the port side. This proved of great convenience, as it enabled stretchers to be taken inside the cabin and right up to the berth's side. All cases confined to bed, such as wounds of the leg and dysentery, were treated, as far as accommodation permitted, on the lower deck. Assouan was reached midday of September 13th. At 10 A.M. on the 15th a sick convoy, consisting of 6 officers and 44 men, arrived by train from Shellal, the embarkment took place at once, and within an hour the ship left for Cairo. Of the 6 officers 4 were wounded, 3 bullet and 1 sword, and the other 2 were suffering from dysentery. Of the 44 men, 27 were wounded and 17 dysentery and fever. The wounds consisted of bullet, sword, and spear, some of the men being wounded in two and three places. The great feature in the ship, in my opinion, is that wounds could be kept at physiological rest, this being conducive to treatment and comfort not to be obtained in a railway journey. Then again wounds could be, and were, dressed daily on strictly antiseptic principles, thereby minimising considerably deleterious after-effects.

In conclusion, I beg to express the surprise and delight of both officers and men at the ship and its comforts provided for them, and which, I feel sure, will be most gratifying to the Society. One or two of the many remarks I heard may be of interest. One soldier, when he saw the clean bed provided for him, recalled to mind what he had gone through, and could hardly believe it was intended for him, and although badly wounded, refused to go to bed until he had been washed, as he said he would not like to dirty the sheets. Colonel Sloggett, R.A.M.C., who had been shot through the chest, said he had suffered very much from the jolting of the train on the way to Assouan, and could not help comparing what he called the "absolute peace" of the ship. The Hon. Molyneux, Royal Horse Guards, severe sword wound of arm, greatly pulled down from loss of blood, derived great benefit; said after two days that "he never felt better in his life," and was loud in praise. The ship arrived at Cairo on the afternoon of the 18th September, when the sick and wounded were conveyed by ambulances to the hospital.

I beg to remain, yours faithfully,
(Signed) W. A. COWEN, Major,
Royal Army Medical Corps.

The following telegram has been received from Colonel J. S. Young, the Society's Commissioner in Egypt:

Society's hospital steamer *Mayflower* reached Cairo on Saturday evening; the 1st instant, with the last of the wounded from the battle of Omdurman, namely, 3 officers—Brinton, Nesham, and Nicholson—and 44 men; also 2 officers—Graham and Archer—and 2 men sick. All benefited by the care bestowed upon them while on the steamer, which left on Sunday (2nd instant) for Assouan to bring back the remainder of the sick from the front.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on September 23rd. There were present Dr. de Havilland Hall (in the chair), Dr. J. B. Ball, Mr. J. Brindley James, Mr. F. Swinford Edwards, Mr. William Thomas, Dr. M. Greenwood, Dr. W. Knowsley Sibley, and Dr. Alfred S. Gubb.

The accounts presented showed a good sickness claim record for the summer months. During the early part of the year the claims through incapacity caused by sickness or accident were unusually heavy. In the period January to April, 1898, the Society paid away more than £2,600 as sickness pay, by far the largest amount ever disbursed in so short a time. But since April the claim list has steadily declined, and the total amount paid since January is well under that expected and provided for in the premiums.

The long list of claims which the Committee have to consider at every meeting has always contained a considerable number of accident cases. The experience of the Society from the commencement of its operations in 1884 shows that medical men are specially liable to accidents, which, although in many cases of a not very serious nature, are sufficiently severe to incapacitate them from performing professional duties. A certain proportion of these arise from causes specially connected with medical work, but the majority of them are mishaps which occur in riding and driving, and the use of the bicycle has certainly added to the number of these. Wheeling accidents were at first of very small average duration, but the Society has now experienced some heavy claims arising from them. In one case a member who was thrown from a bicycle in December last year is still totally unable to resume professional work, and has received continuous sickness pay for ten months.

Prospectuses and all information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

HUMANITY OF A SPANISH SURGEON.—Now the heat of the conflict is passing away, it is coming to be admitted by the Americans that the Spaniards are not quite the inhuman monsters they were represented to be during the war. An American journal states that in an attack on the landing party from the *Gloucester* at Guanica, Port Rico, one of the volunteer soldiers, outrunning his comrades, advanced far ahead of his line. When he had nearly reached the Spanish position, he was overcome by the heat and fell in a semiconscious state. A Spanish surgeon and two hospital corps men ran out to him with a stretcher, administered the necessary restoratives, and had him conveyed at once within the American lines.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 8TH, 1898.

PROFESSOR VIRCHOW'S ADDRESS.

The address delivered by Professor Virchow last Monday may well serve not only as a brilliant introduction to the winter session, but also as a stimulus to medical work throughout the country. Many obvious features render it memorable. Few men of Professor Virchow's age could perform the mental and physical feat of coming a thousand miles to pronounce a lengthy oration before a strange audience and in a foreign tongue; fewer still could have built up the heterogeneous elements of their discourse into so compact and logical a structure, or have expressed their conclusions in such well-balanced and lucid diction. But the rarest quality of all was the venerable lecturer's freshness of mind; the broad-minded scepticism which lay at the root of all his great discoveries was still evident, but showed no sign of the incrustation by prejudice which is too often the attribute of those who have left the ranks of the fighters to sit over them in judgment.

The address itself was, as Dr. Green said, calculated to appeal to the seniors present rather than to the students. For it must be very hard for the younger generation to realise by how short a period of time they are removed from the days when spontaneous generation, free cell formation, and the discontinuity of species were the pillars upon which all biological theory rested. Still more incredible must it have seemed that this year's Huxley lecturer was one of the little band of pioneers who overthrew the time-honoured theories and broke the old idols, that he was in truth among the first to carry the spirit of biological inquiry into medicine, and so to found the modern science of pathology. The truths by which he took his stand, and for which he fought with all his might, have become the current coin of this science. The battle ground of yesterday is the cornfield of to-day, and it is but rarely that the plough of the modern husbandman turns up a relic of the ancient fray.

It was, therefore, well that in his address Professor Virchow elected to expound his original thesis that pathology is in reality a branch of biology, and to illustrate it by the plain story of his own conversion. What is to the superficial observer a simple statement of facts actually touches the hidden springs of all scientific endeavour. We recognise the keen eye, observing for itself, and not through the spectacles of tradition, every fact around it, even the most seemingly commonplace and trivial; and the firm hand, ready to put to the touchstone of proof every theory and every statement, however venerable and however hallowed. There is the noble spirit of inquiry demanding an explanation of all with which it comes in contact, and the almost mysterious gift of a vision that penetrates through the common things of life, and sees their foundations in the ultimate laws of Nature.

We may thus learn, and Professor Virchow reminds us that such knowledge is essential to all future advance, that our present position, final though it may at first appear, is but a stage by the way. The path by which we shall at length attain biological truth is hardly entered upon; it may be that at this very moment we are at the parting of the ways, and that some unsuspected road will lead us to a point of wider outlook. The most familiar phenomena of physiology and pathology still await explanation; we do not know the essential cause, or indeed the essential nature, of coagulation, of inflammation, or of fever. And it is only the humble consciousness of our ignorance which can prepare us for actual progress.

Not less eloquent was Professor Virchow's appeal against hasty generalisation. The advance of biology must be wholly inductive, each theoretical idea being tested by the successive introduction of new facts requiring explanation. Should this not be forthcoming, the hypothesis, however magnificent or simple, is shaken, perhaps overthrown. Every great scientific discovery arrives trailing clouds of misconception; its acceptance is followed by its immediate application to all the unsolved problems of Nature. The history of "Phlogiston" suffices to illustrate this. Professor Virchow points out how the theory of heredity has also been extended beyond its just limits in the attempt to attribute all tumour formation to a common cause. And this is even more markedly the case with the doctrine of parasitism. The germ theory of disease has passed far beyond the bounds laid down by scientific observation, and its indiscriminate employment cannot fail to be a drag upon the wheel of true progress. Bold assumption may be useful, even necessary, as providing a working hypothesis, but it can never take the place of exact research and critical judgment.

It is very refreshing to turn from these solemn, necessary warnings to the positive, constructive side of the address. One theme pervaded the whole of this. The cell is the unit of biology, and therefore of pathology. So simple does this appear to us, so readily is it now taken for granted, that Professor Virchow's description of the way in which it was established by Huxley and himself sounds like a romance. The fallacies of the humoral pathologists are exposed by Professor Virchow with the remorselessness of one who had to fight for years against them and their evil consequences. To complete as far as possible the inductive proof of his great theory has been Professor Virchow's life-work. For more than fifty years he has laboured unremittingly, till now it stands so firm as to appear unshakeable. This tireless energy, this enthusiastic devotion, are in themselves an object lesson, for if there is one thing more than any other that is to be learnt from our illustrious visitor, it is that of unflinching industry in the pursuit of truth. May he long be spared to watch the triumph of his work, and its dissemination by his pupils, secure in the assurance that he has won his crown and is already among the immortals.

THE UNIVERSITY IDEAL.

Two of the addresses published in the British Medical Journal this week are mainly devoted to the discussion of the nature and scope of a university, the duties which it ought to discharge towards the nation, and the duties of the nation towards the university. The two speakers approached the subject from somewhat different points of view: Professor Michael Foster from that of a teacher of physiology in a famous university which has long enjoyed all the advantages which a great tradition and large, if still inadequate, endowments afford; Dr. Saundby from that of a practising physician in a great industrial centre and a teacher of medicine in a college which has recently developed a most legitimate ambition for university honours. The general purport of the two addresses is very similar, and the conclusions to which the reader is brought are almost identical.

What is a university? Neither etymology nor history will supply an altogether satisfactory answer to this question. The word does not signify an institution which deals with universal knowledge. It is not now, if it ever was, merely a guild or corporation of learned men devoted to the development of learning, as a trade guild was devoted to the development of the trade. It has become an essential element in national life, and in addition to its original function of developing all the powers of the mind, has undertaken the duty of giving practical education for certain callings. This sometimes seems a new thing because some of the older universities were a little slow in growing with the times. It is really not new, though the complexity of modern civilisation has increased the number of callings for which the higher education that a university ought to afford is required. Indeed, Professor Foster is ready to admit that in its earliest days the idea of a university was for the most part the same as that which now attaches to the term "technical school." Dr. Saundby urges that the modern university, if it is to have popular support, and to play its proper part in national life, must not despise what the Germans call "bread studies," but must train men to practical callings, such as law, medicine engineering, architecture, and music.

If, then, to restore its old ideal to the University we emphasise its responsibilities towards callings concerned with the practical affairs of life, we may well agree with Dr. Saundby that universities should be established in great centres of population which do not now possess them. No harm to true education can come from the multiplication of universities if the standard of learning and of teaching is kept high in all. Professor Foster insists that a university is not an educational institution which can be directed by the principle of "payment by results," for it works for ends the good of which may not be seen at once—for the encouragement of learning, irrespective of the immediate benefits of new truths.

Since a true university cannot exist on a commercial basis, it must get its funds either from the pious benefactor or from the State. The contention so dear in the past to those who control the national purse-strings, that professional education ought to be self-supporting, finds fewer supporters nowadays when it has come to be generally recognised that it is the duty of the State to give aid to technical education. Dr. Saundby devoted a considerable part of his address to setting out the grounds upon which the State may be asked to contribute to the cost of university education, and his facts and arguments will be read with interest, and will, it may be hoped, have weight with those who are responsible to the nation in educational matters.

All will agree with Dr. Saundby that a starved university is worse than none. Professors are, after all, human beings, and it is impossible for a man to take a real living interest in the subject which he has to teach unless he has opportunities to extend its boundaries, and a chance to inscribe his own name on the roll of fame. "Fame is the spur that the clear spirit doth raise (that last infirmity of noble mind) to scorn delights, and live laborious days," and ambition burns in the breast of the professor as in that of other men. If he is to be a real educator he must be himself animated by enthusiasm. The professor, as Dr. Saundby said, must not only teach, but must be capable of inspiring a love of learning, to do which he must be himself a student, working at the head of his class, leading the way to new ideas, fresh facts, and broader inductions. We must—to quote again the words of Professor Foster—bid the teacher investigate and the investigator teach. His labour cannot be directly remunerative, and he ought not to be placed in a position in which he may be tempted to sell his birthright for a mess of pottage.

Dr. Saundby, in the early part of his address, spoke strongly on the imperfect methods and false standard of attainment which prevail too largely in the public and other secondary schools in this country. This is a point upon which we have frequently had to dwell, and it is one which needs to be emphasised. Teachers and examiners, he tells us, who have to do with the products of the present public-school system know the difficulty which the lads and young men find in passing their examinations. Imperfect education at school means imperfect power of making use of the opportunities afforded to the student at his medical school, and is thus largely responsible for the present domination of education by examination. Unfortunately, any criticism of the present system of education in the public and secondary schools is apt to meet with uncompromising resistance from schoolmasters. It is interpreted merely as an attack on the old learning. You want, they say, to replace classics by "stinks." It may be that the best way to learn to write English is to study the Latin grammar, and that precision of thought and accuracy of expression are best gained from a study of, say, Ovid and Herodotus. But systems must be judged by results, and the fact is that lads sent up from the public schools are, the bulk of them, very imperfectly taught in the subjects to which they have been called to devote so much time, and quite untrained to use their minds in the study of a new subject. They have not, to quote Dr. Saundby, acquired the power of application which it is above all the business of a schoolmaster to develop. This is at the root of the many complaints which we hear on all sides with regard to the overburdening of the medical student, and the imperfect results of medical education as tested by examination. It is not in reality so much that the curriculum is overweighted as that the student is not properly prepared for the struggle.

THE WILL AND ITS DISEASES.

A VOLUNTARY action is a reflex action, with a difference. Like a spinal or mid-brain reflex, it consists of stimulus, central change, and efferent impulse, and, though the stimulus may be central, or the efferent impulse, or both —as when a problem excites an effort of reason—the case is not altered thereby. The lower reflex is accompanied by physical changes, and we believe the same of the voluntary; but the former we know under a physical aspect alone, whereas the central changes of the latter are recognised only as conscious states accompanied by pleasure or by pain. Were consciousness not present, the voluntary would differ from the involuntary reflex only by the greater complexity of its middle term, just as a mid-brain differs from a bulbar, and this in turn from a spinal, reflex.

Wilful efforts are all marked by consciousness and the idea of pleasure. But these are not conterminous, for things perceived may be indifferent and then lead to no resolve. It is pleasure which creates desire, and this precedes the resolution. Pleasure occupies an area within the field of consciousness, like the macular area of best vision within the general field. It is peculiar to and therefore the most distinctive attribute of voluntary acts.

Men differ in capacity at every stage of the central process—in perception, in the association of ideas that rise therefrom, in the vividness of pleasure that they cause, in the strength of consequent desire, in the association of ideas which now again takes place, as it were a second capillary system in the circuit, in their combination, in the strength and permanence of the consequent determination, and in the clearness of the idea of the coming act. The connoisseur perceives better, the man of culture has a richer stock of ideas, and the emotional man a more vivid pleasure; the passionate desire more strongly, but the constant can longer retain desire; the man of caution considers more widely, the man of judgment best combines these ideas into determination, the resolute determine more strongly, the tenacious for a longer time, and, lastly, the man of action has a clearer idea of the step he means to take. There is no place for a fresh force in a sequence when each step depends upon the previous; the analysis of willing has ousted will.

Here M. Dallemagne,[1] whose teaching we have with some latitude been following, passes the torch to M. Janet, saying that further advance will be through minute observation of particular cases.

Disease has been our scalpel for dissecting speech, and hysteria interpreted by M. Janet[2] performs the same office for the will. In one case perception may be lost, in another a fixed idea prevents the usual association, in a third no clear conception can be formed of the necessary act. Observation shows a still wider truth. Mind cannot think itself matter, nor a man feel his brain to be himself; yet we must believe consciousness the highest nervous activity, and mental states an aspect of cerebral changes. Hysteria is a failure of consciousness, but many mental processes take place unconsciously in it, as in healthy life Day dreams are but a slighter form of the self-absorption which makes the hysteric patient anæsthetic or cataleptic. Hypnotism shows the hysterical mind in activity though consciousness, as in sleep, is lost. Consciousness is, in fact, an effort which many cease to make at times, and to which the hysterical are unequal. Thus M. Janet, to whose acumen, to whose industry, and to the beauty of whose writing we do scant justice.

Though resolve be the highest activity it need not be the most perfect state. The earliest and most perfected functions—digestion and circulation—have now wholly passed from voluntary control. Respiration, more lately developed, has almost reached that stage. Locomotion is half way thither, for its mechanism once set agoing by the will works the better the less closely it is supervised. Dexterity requires voluntary effort at first, but cannot reach high excellence till this has given place to automatic movement. Attention has been estimated by the latent period of a movement, but M. Janet finds that the interval, shortened by attention, is shortest in an automatic state. In intellect and morals the aim of education is to form "habit," which, like automatic action of the body, is voluntary in the least possible degree. The voluntary then appears but a necessary step to the more perfect involuntary, and the will seems of value chiefly as the producer of reflex action. True, yet not all the truth. Each is indispensable to the other, for, as the habit cannot be formed without effort, neither can the will establish its dominion over fresh fields without rising on the stepping stone of habit, its dead self, to higher things.

[1] *Physiologie de la Volonté.* [Physiology of the Will.] By Dr. J. Dallemagne, Professor of Forensic Medicine at the University of Brussels. Paris, Masson and Gauthier Villars. 8vo, 202 pp.

[2] *Névroses et Idées Fixes.* [Neuroses and Fixed Ideas.] By Dr. Pierre Janet, Professor of Philosophy at the Lycée Condorcet, and Director of the Psychological Laboratory at the Salpêtrière. Paris: Felix Alcan. 1898. 8vo. 490 pages and 61 illustrations.

INTERNATIONAL COURTESIES.

THE occasion of Professor Virchow's visit to England, the primary object of which was to deliver the Huxley Lecture, published elsewhere, was taken to give some testimony to our distinguished guest of the admiration which is felt in this country for his scientific achievements, and, we may add, of the affection with which his personal character has caused him to be regarded. During the delivery of the Huxley Lecture a cordial reference by Professor Virchow to Lord Lister's services to medical science gave rise to an interesting little episode. "I am proud," said the Professor, "to be able to meet him as an old friend"; and, during the burst of applause which followed, Professor Virchow, turning from his desk with a sudden impulse, grasped Lord Lister's hand. The incident recalls to mind a somewhat similar occurrence which took place nearly six years ago on the occasion of the celebration at the Sorbonne, in Paris, of the 70th anniversary of Pasteur. Sir Joseph Lister, as he then was, had addressed M. Pasteur in the name of medicine and surgery, and at the close, deeply touched, Pasteur rose, and gave to Lister the *accolade fraternelle*, which may be taken to be the Gallic equivalent of the warm handshake which comes more naturally to the Teutonic and Anglo-Saxon races. On Monday after the delivery of the Huxley Lecture, Professor Virchow was entertained by the staff of Charing Cross Hospital Medical School at their club dinner, which was attended also by Lord Lister and the President of the Royal Medical and Chirurgical Society (Mr. Bryant). On Tuesday evening Sir Felix Semon gave a private dinner, where Professor Virchow had the opportunity of meeting the Presidents of the Royal Colleges of Physicians and Surgeons in England, and of the Pathological Society of London, and Lady Semon afterwards held a reception, which was largely

attended. On Wednesday evening Professor Virchow was entertained by the medical profession in the United Kingdom at the banquet of which a report is published in another column. This was one of the most remarkable and representative gatherings of the medical profession which any social occasion has ever brought together in this country, and the enthusiasm displayed must have convinced the guest that the friendly feelings towards this country which he expressed are reciprocated to the full. On Saturday Professor Virchow will take part in the proceedings connected with the opening of the Thompson-Yates Laboratory at University College, Liverpool, by Lord Lister, and in the presentation of an honorary degree to Lord Lister by the Victoria University, a ceremony at which Earl Spencer, K.G., the Chancellor of the University, will preside.

RUDOLF VIRCHOW.

PROFESSOR VIRCHOW has so long been a commanding figure in the scientific world that there are very few men in the profession who can be called his contemporaries. A few details of his career may therefore be interesting. Rudolf Ludwig Karl Virchow, to give him his full complement of names, was born on October 13th, 1821, at Schivelbein, a small town in Farther Pomerania. He received his early education in the gymnasium of Cöslin, where he was thoroughly grounded in the Latin and Greek languages, and where also he learnt Hebrew so well that he took it up as a voluntary subject at his *Abiturienten-exámen*, which he passed in 1839. In the same year he entered the Friedrich Wilhelm Institute, for the training of army surgeons, in Berlin. At this medico-military academy—from which have come at different times many men of the highest distinction, such as Nothnagel, Leyden, Hueppe, Loeffler, Gaertner, Schmidt-Rimpler, Fraentzel, and others—Virchow had Hermann von Helmholtz among his fellow students. Among his teachers were Johannes Müller, Schoenlein, Dieffenbach, and Casper. The teacher who most influenced him was Müller, who, in Virchow's own words, "founded no school in the sense of dogmas, for he taught none, but only in the sense of method." Virchow took his doctor's degree in 1843, his inaugural thesis bearing the title "De Rheumate præsertim Corneæ." Soon after graduation he was appointed Prosector in the Charité Hospital, where he laid the foundations of his future fame as a pathologist. In 1848 his name first began *volitare per ora virûm* in consequence of his being sent to investigate a severe epidemic of typhus in Upper Silesia. The report which Virchow presented on that occasion was not only a masterpiece of scientific investigation, but marked him out as a man of the most enlightened philanthropy. What he saw in the course of that inquiry converted him to Radicalism, a political creed which he has ever since professed. He insisted strongly on the necessity of social as well as sanitary reform for the prevention of evils such as came under his notice in Silesia. On his returning to Berlin, while continuing to add new truths to the new science of pathology which he was creating, he was very active as a reformer of society in general and of his own profession in particular. In conjunction with a kindred spirit he founded a journal entitled *Die medicinische Reform*, in which the wrongs and grievances of the profession in Germany were discussed in a remarkably outspoken manner. This periodical ceased to exist on Dr. Virchow being called to occupy the Chair of Pathology in the University of Würzburg in 1849. At Würzburg he remained seven years, his fame meanwhile spreading over the whole world, so that when a vacancy in the corresponding chair at Berlin occurred in 1856 he was appointed to it in the teeth of strong political opposition. It would be out of place here to attempt to give even a summary of his scientific achievements. It is sufficient to recall that his great work *Die Cellularpathologie in ihrer Begründung auf physiologische und pathologische Gewebelehre* began to appear in 1855. In that work the far-reaching doctrine, *Omnis cellula a cellulâ* was enunciated, and from this "cell" has come the long and splendid series of its author's later contributions to knowledge. In 1858 appeared Virchow's other great work *Die krankhaften Geschwülste*. Reference should also be made to his famous *Archiv*, which a year or two ago celebrated the jubilee of its foundation, and which still stands in the front rank of publications devoted entirely to scientific medicine. A list of his writings would occupy several pages of the BRITISH MEDICAL JOURNAL. Among Virchow's great works may be counted his famous museum, which when he first became professor in Berlin numbered only some 1,500 specimens. But Virchow is not merely the greatest of living pathologists: he has for half a century been equally prominent in his own country as a politician. He has for many years been the leader of the Opposition in the German Reichsrath, and between thirty and forty years ago he had the honour of being challenged by Prince Bismarck. It is much to Virchow's honour that he had the courage to decline to risk a life so valuable for science and humanity in a foolish duel. Even pathology and politics do not exhaust the intellectual activities of this many-sided man. He is President of the German Geographical Society, in the work of which he takes the keenest interest. He is also justly famous as an anthropologist and archæologist. It may be added that in his writings he shows a feeling for literary form rare in medical authors, and especially rare in German professors. His lucidity of style and the logical order in which he unfolds his thoughts make his works a pleasure to read.

THE MIND OF THE MAGISTRATE.

THE vital part of Subsection 1 of Section 11 of the Vaccination Act, 1898, enacts that no parent is to be subject to penalties for the non-vaccination of his offspring if within four months of the infant's birth "he 'satisfies' two justices or a stipendiary in petty sessions that he conscientiously believes vaccination will be prejudicial to the health of the child." Let us look at the mind of the magistrate who is to be "satisfied." He has no guidance from the Legislature as to the mental process by which he is to arrive at the doctrine of satisfaction. Every magistrate in the eyes of the law is equal to every other, and no magistrate is bound by the decision of any other. It therefore follows that every magistrate can interpret this word as he pleases—*tot magistri tot sententiæ*. An applicant who cannot succeed in satisfying two justices or a stipendiary has no appeal to quarter sessions, for such right of appeal is a creation of statute only, and so right of appeal is given by the 61 and 62 Vic. cap. 49. It is not inconceivable that an applicant might satisfy one of two justices in petty sessions and not the other; in that case he would not fulfil the requirements of the Act, nor could he appeal to the whole body of magistrates in Quarter Sessions, for no appeal lies. Suppose, then, an applicant to whom a magistrate has refused a certificate desires to appeal against this decision, what can he do? He may go to the Court of Queen's Bench for the sovereign remedy of a *mandamus*, or for the statutory rule provided by 11 and 12 Vic., c. 44, sec. 5, but in both these cases the magistrate, it is contended, can only be made to do some act, and cannot be compelled to place on record that he is "satisfied" if he is not. By using the word "satisfy" the Legislature clearly gives the magistrate a judicial discretion; and, though the Queen's Bench could send an application back to a magistrate for reconsideration, with an intimation that he ought to grant the certificate, there seems to be no legal machinery that can compel a magistrate to be "satisfied" if in fact he is not. In other words, there may be conscientious objectors on the Bench besides those in the

well of the court. The fault for this uncertainty lies with the Legislature, which has given to justices of the peace a judicial discretion instead of a merely ministerial duty. The more a justice is himself convinced of the value of vaccination—and most of them are the more difficult it is for him to be "satisfied" by the absurd reasons for exemption given by the ignorant applicant. There is also this further point to consider: The magistrate has not only to be convinced that the applicant has a conscientious objection, but he has to be convinced that the objector "believes that vaccination would be prejudicial to the health of the child;" in other words, before he can satisfy himself, he must of necessity inquire into the applicant's grounds of belief. The more ignorant the applicant the less easily of necessity is the magistrate convinced. By this vague statute, therefore, the magistrate has, by a process of inquisition, to inquire into the conscientious beliefs of applicants, and then to determine if the magisterial mind is satisfied that these beliefs are founded on reason and solicitude for the health of the child. Surely there is no stranger Act than this on the statute book, and the criticism of the Press on those justices who make a practice of reasoning with applicants is entirely beside the mark. As the law stands at present, it is clearly the duty of the magistrate—presumably a man of some education—to point out to the ignorant objector the dangers to which his children will be exposed if he neglects the safeguards which medical science provides. Such warnings as these, coming from the magisterial Bench, cannot fail to impress that class which regards the dispensers of summary justice with a reverence amounting to awe. In one case, at Harwich, where the Petty Sessions were presided over by a medical man, just the right word of warning was given from the Bench, and a reminder of the small-pox epidemic at Harwich, which the present generation seems to have forgotten. Such medical men as sit at Petty Sessions should not forget that their discretion in granting certificates is judicial, and it is their duty to satisfy themselves that objections are conscientious, not the result of ignorance.

ENTERIC FEVER AND DEFECTIVE WATER PIPES.

Paisley seems destined to serve as an object lesson to the towns of Scotland in the matter of enteric fever epidemics. Five years ago there arose an epidemic prevalence of enteric fever in the town and district, and some 800 cases occurred. The disease is now again epidemic, 179 cases having occurred within a comparatively limited period. On the former occasion the infection was indubitably waterborne. Almost to the bitter end, however, the municipal authorities, who are the custodians of the water supply, declared that the water was above suspicion. Once more the water supply is inculpated, and again the water department loudly resents the imputation. From the material at our disposal no other conclusion can be drawn than that the medical officer of health is justified in advising the local authority that the present epidemic is due to contamination of the water supply. Of the 179 cases which have occurred as many as 112 have arisen within a limited area in the east centre of the town. There is no community of milk supply. There is no suggestion of general participation in infective ice creams. The only theory which will account for all the facts of the case is that of a local and particular contamination of the water supply in the locality referred to, with a slighter more generalised infection. Local insanitary conditions doubtless lend their aid to the spread of the disease, but the water supply is clearly the main vehicle of infection. The locality which has suffered so sorely is characterised, we learn from the report of the medical officer of health, by having an exceptional number of dead end water pipes. These are, as usual, provided with scour pipes, but, as is happily not usual, these scours discharge directly into the sewers. The pipes are old and much, although irregularly, encrusted, so that their interiors furnish an innumerable series of small pockets, or as they may be designated, with a suggestion of theory, cultivation beds. The valves, like the pipes, are old, and may not improbably be as defective as the pipes. The production of intermittent, induced, or in-suction currents in water pipes is well authenticated. But in the present instance the theory of in-suction is strongly supported. It appears that immediately before the commencement of the epidemic there occurred a series of "bursts" in a new main which serves the distributing pipes in question. On these occasions, as the direct result of the bursts, as well as in sequence to the turning off of the water to permit of their repair, a diminution in the water pressure, occasioning a partial vacuum in the pipes, was inevitable. Given dead ends on the distributing pipes, terminating by scour pipes in the sewers; old worn valves upon the scour pipes; sewers, admittedly defective, into which had been discharged the dejecta of a series of typhoid cases; a partial vacuum in the distributing pipes; pockets in the pipes; and an exceptionally hot, close autumn; and having in regard recent researches as to the propagation of the typhoid bacillus—the conclusion is irresistible that there have been present in Paisley all the conditions necessary to the infection of the water supply. The local authority ought, without delay, to disconnect every scour pipe from its sewer connection, beginning with the specially infected area, and afterwards flush out all dead ends, but most urgently those of the special area, again and again, regardless of the expenditure of water involved. In the meantime, the citizens of Paisley would do well to drink only water which has been boiled or passed through efficient porous porcelain filters.

THE CAMPAIGN AGAINST CONSUMPTION.

Our Edinburgh correspondent writes: Under the heading of the "Campaign against Consumption" two extremely interesting and valuable articles have recently appeared in the *Scotsman*. They are understood to be from the pen of the able and energetic Convener of the Public Health Committee of the Town Council, Bailie Pollard. These two articles have aroused considerable interest among the lay public, and at the meeting of the Public Health Committee on October 4th an informal talk on the subject took place. In connection with a statement in the second article that "the question cannot be long delayed, whether it is not as much incumbent upon municipalities to provide for the treatment of consumptives, at all events in their most infective—that is, their last—stages, as to provide for the treatment of patients suffering from other forms of infectious disease," there appeared to be a strong feeling in favour of the proposal to make consumption a notifiable disease. As, however, notice of a motion to this effect before the Town Council has been given by Bailie Pollard and Councillor Brown, it was thought better to defer the matter till the next meeting. The trend of opinion is undoubtedly largely in the direction of the municipal corporation providing hospital accommodation for consumption, and it is, perhaps, not a rash prophecy to make that it is not unlikely that Edinburgh will in the course of the next few years have one of the largest consumption hospitals in the kingdom.

COTTAGE HOMES FOR PAUPER CHILDREN.

The new cottage homes erected by the Chorlton (Lancashire) Union at Styal, Cheshire, were opened on October 4th by Dr. Rhodes. After the Chairman had delivered an address contrasting the Poor-law system now with its condition fifty years ago, the new homes were inspected. They consist of fifteen cottages, each designed to accommodate from ten to twenty children. There are also workshops, baths, and a kindergarten school, so that the whole

forms a hamlet. A school for elder children has been erected at a distance of about half a mile, and will be open to the children of the locality, as well as to those of the hamlet. The children will be dressed in ordinary clothes, not in any uniform, and it is hoped that the children's life in the hamlet will more nearly approximate to that of children who are not deprived of the ordinary influences of the home and family. The boys will be instructed in gardening, shoemaking, tailoring, and plumbing, and also electricity, for there is a generating station on the spot for the lighting of the hamlet. The girls will receive an ordinary domestic training, and in the case of both sexes it has been arranged that they may remain in the homes for two years or so beyond the age of 14, at which children are ordinarily discharged from a workhouse. The hamlet has been erected on a portion of an estate of 200 acres purchased by the Chorlton Board of Guardians for £20,000. About 40 acres is required for the purposes of the new hamlet, and it is believed that the guardians will be able to dispose of the remainder of the land at a profit.

THE PROPOSED NATIONAL PHYSICAL LABORATORY.

THE report of the Committee appointed by a Treasury Minute on August 3rd, 1897, to consider the desirability of establishing a national physical laboratory for the testing and verification of instruments, for the construction and preservation of standards of measurement, and for the systematic determination of physical constants and numerical data useful for scientific and industrial purposes, has now been issued. The report of the Committee, which sat under the chairmanship of Lord Rayleigh, refers to the work carried on for many years at the Kew Observatory under the direction of a Committee of the Royal Society. The total number of instruments, which include watches, thermometers, barometers, and other apparatus used for scientific or industrial purposes verified and tested annually is about 22,000. The institution has an endowment, the Gassiot Fund, which produces about £470 a year, and receives annually from the Meteorological Office £400, part of which is the ordinary grant made to a first-class meteorological station. The fees received for the verification and testing of instruments amount to about £2,000 a year, and the institution is not only self-supporting, but has usually a small annual balance which is devoted to scientific investigation and to the extension of the work, including the erection of new buildings. It is, however, not in a position to undertake the more extended work contemplated in the reference to the Committee, which has come to the conclusion that an institution should be established for standardising and verifying instruments, for testing materials, and for the determination of physical constants. The Committee further recommends that this institution should be established by extending the existing Kew Observatory. Further, it recommends that the Royal Society should control the proposed institution by nominating a governing body on which commercial interests should be represented, and of which the Permanent Secretary of the Board of Trade should be a member.

INDIARUBBER MANUFACTURERS AND CHILD LABOUR.

A FIRM of manufacturers has recently been fined for breaches of the Special Rules under the Factories Acts. The firm was summoned for employing a child, aged 13, in a room where bi-sulphide of carbon is used, and also for employing a youth, aged 18, working more than five hours on any one day under similar circumstances. It may or may not be true, as was pleaded in defence, that it is impossible for the manufacturers to carry on their trade if men's labour has to be substituted for that of children and young people. That scarcely comes before us for discussion. The subject of the use of bisulphide of carbon in indiarubber works, and its effects upon the health of the workers has been reported upon by the Dangerous Trades Committee. The bisulphide is employed in the process of vulcanising very fine indiarubber goods. The effect of inhaling it is sometimes seen in the peculiar intoxication which it causes, making the victims stagger as if drunk, followed by an intense drowsiness. In the more chronic forms of bisulphide poisoning peripheral neuritis leads to paralysis of the limbs. It is astonishing that, knowing these disastrous effects, manufacturers should still be found risking the health of young children, who are naturally more susceptible than adults, by exposing them to bisulphide of carbon vapour. Nor is it right that a workman should be exposed to the bisulphide, especially in such hot weather as in June, from 6 A.M. to 6 P.M., with only intervals for meals. It is to be hoped that the Home Secretary, who, it is said, has been petitioned to relax the rules, will decline to do so.

TUBERCULOSIS AND MILK.

AT the opening of the session at the Royal Veterinary College, Professor Shave delivered the introductory address, in which he considered at some length the subject of bovine tuberculosis and the transmission of tubercle by means of contaminated milk. As to the prevalence of the disease among cows, there could be no question; and it was well established that the disease could be and was transmitted to man by means of milk from animals suffering from the disease. The matter was a grave public danger which had not received the attention it deserved, but much might be done by adopting the recommendations of the Royal Commission of 1898—namely, the inspection of dairy cows by veterinary surgeons, and the giving of powers to medical officers of health, on the certificate of a veterinary surgeon, to stop the distribution of milk drawn from diseased animals. As a means of diagnosis, tuberculin was a perfectly trustworthy agent, if used by competent observers; and Professor Shave strongly advised that it should be used freely for this purpose.

THE PRISON COMMISSION.

THE Queen has been pleased, on the recommendation of the Secretary of State, to approve the appointment of Dr. Horatio Bryan Donkin to be a Commissioner of Prisons for England and Wales in place of Captain W. J. Stopford, C.B., retired. The appointment of a member of the medical profession to so responsible a position will be a matter of general congratulation not only to the medical profession, but to all those who take an enlightened interest in the many important social questions which are bound up with the efficient and humane working of the prison system. Dr. Donkin brings to his new post a wide general knowledge of medicine gathered during his prolonged experience as a hospital physician, broad sympathies, and an independence of judgment which will serve him well in his new office. The gain of the Prison Commission is, however, the loss of the Westminster Hospital and of the Shadwell Hospital for Children, to both of which institutions Dr. Donkin has rendered unwearied service for many years past. All connected with both these institutions will feel that they have lost one who ever strove to advance the best interests of the hospitals and of their patients. We venture to hope that the selection of a medical man to be a member of the Prison Commission in England and Wales may be regarded as establishing a precedent which will be followed in the case of the existing vacancy on the Scottish Commission. It has come to be recognised that prison administration is more than a question of the incarceration and discipline of law breakers, that crime is something more than law breaking, that it is frequently the sign of some degree of mental defect or aberration, and that the units of which our criminal population is composed are entitled to individual consideration. Public opinion requires that the Prison Commissioners shall be something

more than superior jailors, and is no longer satisfied with a routine system of appointing retired army men to the vacancies which occur. In Ireland there is a medical member of the Prisons Board, and Dr. Donkin's appointment now places the English Board upon a similar footing. There is no reason why Scotland should lag behind the sentiment of the day. We are informed that Dr. McNaughton, at present Medical Officer of H.M. General Prison at Perth and Medical Superintendent of the Criminal Lunatic Department, is a candidate for the vacancy, and in view of his long experience in the service, extending to over twenty-two years, and his intimate knowledge of criminal psychology, it is felt that his claims are strong.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

The Harveian Oration will be delivered by Sir Dyce Duckworth at 4 P.M. on Tuesday, October 18th, at the Royal College of Physicians, Pall Mall East. The Bradshaw Lecture will be delivered by Dr. W. M. Ord on Thursday, November 10th, at 5 P.M. Dr. Ord's lecture will be on Myxœdema and Allied Conditions. As already announced, the Goulstonian Lectures will be given next year by Dr. G. R. Murray, of Newcastle, who has taken for his subject the Pathology of the Thyroid Gland. The Lumleian Lectures for next year will be given by Dr. Samuel Gee. The Croonian Lecturer for 1899 is Professor Bradbury, of Cambridge, and for 1900 Dr. F. W. Mott, F.R.S.

THE LOCAL GOVERNMENT BOARD FOR SCOTLAND.

The Queen has been pleased, on the recommendation of the Secretary for Scotland, to confer the appointment of Medical Member of the Local Government Board for Scotland upon Dr. James Burn Russell, Medical Officer of Health of the City of Glasgow. It has for some time been an open secret that the Secretary for Scotland was extremely desirous of securing Dr. Russell's services for the post, and the formal announcement of the appointment has given the most unqualified satisfaction both to the general public and to the public health service in Scotland. Dr. Russell is held in the most affectionate regard by all who know him, and it is felt that his high literary and scientific attainments, his rare sympathetic insight, and his eminently judicial temperament conspicuously justify the mark of Her Majesty's favour which has been bestowed upon him. His departure from Glasgow will be a serious loss to the medical profession and to the city. Dr. Russell was a Glasgow student, and graduated in medicine in 1862. He commenced practice in Glasgow, and became Editor of the *Glasgow Medical Journal*, but his attention was soon turned towards public health matters. In 1863 Professor Gairdner was appointed Medical Officer of Health for Glasgow, and some few years later Dr. Russell was placed in medical charge of the City Fever Hospital. When in 1872 Sir William Gairdner found it necessary to give up the appointment of Medical Officer of Health, he had no hesitation in recommending Dr. Russell as his successor, and the choice was well justified: for during his long tenure of office as medical officer of health Dr. Russell has achieved a striking success, and has secured for Glasgow a high reputation in regard to the perfection of its sanitary arrangements. In these days of rapid progress in this special department Dr. Russell has always been in the forefront, and has contributed many important papers to the literature of his subject.

AN ANTIVIVISECTIONIST FIASCO.

A meeting was held in Bradford, on Friday, September 30th, under the auspices of a body calling itself the Church Antivivisection League. This body, it would appear, keeps a van which was conducted by the Rev. T. Perkins, M.A., F.R.A.S., and from which leaflets containing the most extravagant, false, and spiteful charges against the medical profession in general, are distributed. At the meeting referred to the reverend gentleman took the chair, and was supported by certain of his clerical brethren; the audience, which was large, comprised many members of the medical profession in Bradford and the district. The meeting was opened by the chairman, who delivered a long address consisting of the usual blunderings and false statements in which the persons who carry on this agitation indulge. After a time, Dr. Septimus Gibbon, of London, protested that the chairman was occupying too much time. Thereafter the meeting appear to have been extremely uproarious. Dr. Hime, who spoke amid considerable disorder, proposed the following resolution:

> That in the opinion of this meetin human interests are of paramount importance as compared with those of other living creatures, and therefore we are justified in utilising the lower animals for the preservation of human health and life, all unnecessary suffering being avoided.

After a great deal of disorder, Dr. Gibbon succeeded in seconding the resolution. Subsequent proceedings, as reported in the local papers, are extremely confusing, but Dr. James Kerr so far succeeded in making himself heard as to inform the meeting, quite correctly, that many of the statements in the pamphlets and leaflets distributed were utter false. A lady, who appears to have been the secretary of the Church League, also obtained a hearing, but thereafter a number of ladies all talked together while Dr. Hime was endeavouring to obtain permission to reply. Dr. Hime's resolution was eventually carried by an overwhelming majority. The medical profession in Bradford are to be congratulated upon the result of the meeting, though its conduct, for which they were not responsible, appears to have been rather disgraceful. In Bradford, as on other occasions upon which antivivisectionist agitators have been boldly met, the falsity of their assertions and the emptiness of their arguments have been plainly demonstrated to all reasonable-minded persons. The result of their van expedition and public meeting at Bradford has been not merely that they have been defeated, but that they find themselves covered with ridicule, perhaps the best weapon to use against persons of this calibre.

THE LAST ILLNESS OF RICHELIEU.

M. A. Corlieu, who for many years past has devoted himself to the task of telling "sad stories of the deaths of kings," mostly those of France, has now turned his attention to eminent personages of a more interesting kind. He has recently published the results of some researches on the illness and death of Cardinal Richelieu, who died in 1642, at the age of 57, quite worn out by the "fever called living," which in his case was particularly acute. Richelieu was in person tall, thin, and of the temperament which the old writers called "nervoso-bilious." Like most people of that complexion he was in the habit of taking physic freely. It is on record that in a single year (1635) he had administered to him 75 clysters and swallowed 127 boluses of cassia, without reckoning a number of laxative remedies supplied to him by his apothecary, whose bill for that year amounted to 1,401 livres 14 sous. After all this drastic purgation, it is hardly surprising to read that the Cardinal suffered severely from hæmorrhoids. In his later years these became ulcerated, so that he was unable to ride in a carriage. In the last year of his life he accompanied Louis XIII on his campaign for the reduction of the Roussillon territory. Perpignan capitulated on September 9th, but for some time before that Richelieu had been very ill. An abscess formed in the right arm which prevented his writing; his will, which bears date May 23rd, 1642, is signed by proxy. The abscess had to be opened, and left an unhealthy ("rotten" is the word used by a contemporary who did not love him) wound, and the limb wasted. His weakness and infirmities increasing, he had to be carried about in a large wooden palanquin containing a bed, which it took twelve men to carry. At the end of

November he was seized with violent shivering and pain in the side. He was bled freely; many counsellors were called in; even the aid of quackery was invoked; but in spite of all that the healing art of his day could do, he died on the fifth day of pneumonia, as it would appear. There is no mention of a complete necropsy, but the brain was examined. A contemporary account states that 'one need not be astonished, inasmuch as the organs of the intellect were found to be two or three times the normal size, that he had a mind which stopped where it pleased him, and detached itself when he wished, with such ease that it seemed that there were in him as many different minds as there were different affairs which he handled." We may take it that by the expression "two or three times the normal size" nothing more is meant than that the brain was exceptionally large. Bouvard, physician to Louis XIII, who attended the Cardinal in his last illness, was a thoroughgoing believer in the remedial virtues of the lancet. In one year he ordered the King to be bled forty-seven times. He was even more sanguinary in the case of his own nephew, Cousinot, a Doctor-regent of the University of Paris, whom he caused to be bled sixty-four times in eight months for rheumatism. It was an age of heroic bleeding, for we learn from Guy Patin that another Doctor-regent, Jacques Mentel, was bled thirty-two times for a continued fever; and another physician, Brayer, was bled eighteen times for a fever, while Guy Patin himself was bled seven times for a cold. If these things were done on members of the Faculty, it may be conjectured that from ordinary patients an amount of blood was drawn that would the multitudinous seas incarnadine.

PATHOLOGY AT EDINBURGH.

THE managers of the Royal Infirmary will almost immediately proceed to the appointment of a pathologist as successor to Dr. Robert Muir, who has been elected to the Chair of Pathology in the University of St. Andrews. A strong opinion has lately been expressed in Edinburgh that the post of Pathologist should no longer be allowed to be regarded only as a stepping-stone to an Assistant-Physicianship, but that a man or men should be appointed who have already given evidence of being competent pathologists, and who intend to devote themselves to the study of that subject. The infirmary managers have also forthwith to appoint a Surgical Registrar. For both appointments several candidates are in the field.

LABOUR AND REFRESHMENT.

HARD-WORKING men, especially in the learned professions are often puzzled as to the right hours for their meals and the right diet to be taken at their meals. The much graver question of stimulants also interests them personally. The fear of a mid-day meal is very common amongst brain-workers. A good luncheon is apt to interfere with inspiration, especially if any form of alcohol be taken. Tea, very popular with scholars, is less objectionable as to its immediate effects, but it is very dangerous to digestion, especially amongst scholars who, like workwomen, nearly always take too much and prefer their tea to be strong, "red as blood," as Garrick used to say. The chief danger in taking too light a mid-day meal is that the student is at his worst, physically, just before dinner time. Hence dinner is rendered a fresh source of dyspepsia, and if he strolls about before the evening meal he is apt to take cold. The special stimulants of great men have been recorded in their memoirs. One of most remarkable records of this kind has come to light in Aubrey's *Brief Lives*, founded on notes taken by the author in the middle of the seventeenth century. Few drinks are more distrusted amongst brain-workers in these days than ale, but Prynne seems to have thought otherwise. He was a voluminous writer, and his pamphlets lost him his ears and endangered his head. Aubrey informs us that "About every three hours his (Prynne's) man was to bring him a roll and pot of ale to refocillate his wasted spirits; so he studied and drank and munched some bread, and this maintained him till night; and then he made a good supper. Now he did well not to dine, which breaks off one's fancy, which will not presently be regained." The danger of *a priori* reasoning may be seen from the above quotation. Those who have forgotten about Prynne would take him from this note of his diet to be a Bohemian of a well-known old-fashioned type; yet he was a stern uncompromising Puritan who suffered mutilation and the pillory, and had a violent and very un-Bohemian prejudice against the stage. The diet does not then proclaim the man. We doubt, however, if the serious student of the end of the nineteenth century would do well to "refocillate his wasted spirits" by drinking a pot of ale every three hours. Prynne was perhaps wise not to dine, which meant to lunch in those days, and implied a very heavy meal. But the munching of rolls all day and the "good supper" were questionable. His style was very caustic; perhaps because of the misrule of Charles I, but possibly also through dyspepsia, which also had so disastrous an influence on the literary temper of Thomas Carlyle.

LEGACIES BY PATIENTS TO MEDICAL PRACTITIONERS IN FRANCE.

A CURIOUS case has recently been tried in a French law court. By the terms of Article 909 of the Civil Code a medical practitioner cannot benefit by any legacies made to him by patients whom he has treated in their last illness. In the case in question, which was tried at Lyons, the plaintiff was a quack, to whom a lady who had been under his treatment bequeathed a considerable sum of money. The quack pleaded that, as he was not a member of the medical profession, the legal enactment in question did not apply to him. This ingenious plea was, however, rejected by the court, which laid down that it is not necessary that a person who has treated a patient should possess any knowledge of medicine for him to come within the scope of the law forbidding such legacies.

DR. J. WARD COUSINS, President-elect of the British Medical Association, and Dr. Saundby, President of Council, were at the last moment unavoidably prevented from being present at the dinner to Professor Virchow on October 5th.

THE second Hunterian Society Lecture will be delivered by Dr. Frank Payne at 8.30 P.M. on Wednesday next, October 12th, at the London Institution, Finsbury Circus. The subject of the lecture will be the Increase of Cancer. We are asked to state that the members of the medical profession are invited to attend.

IT is announced in the *London Gazette* that the Queen has been graciously pleased to nominate and appoint Sir William MacCormac, Bart., President of the Royal College of Surgeons, and Sir Francis Henry Laking, M.D., to be Knights Commander of the Royal Victorian Order, and Alfred Downing Fripp, Esq., F.R.C.S., and Fleet-Surgeon Alfred Gideon Delmege, M.D., to be Members of the Fourth Class of the same Order, in recognition of their services in connection with the recent accident met with by His Royal Highness the Prince of Wales.

DEATH FROM LAUGHTER.—According to the New York *Medical Record*, a man literally died of laughter in New Orleans not long ago. He was at the theatre, and laughed so heartily that he lost control of himself and fell to the floor, where he died of syncope. He had suffered for some time from valvular disease of the heart.

COMPLIMENTARY DINNER TO PROFESSOR VIRCHOW.

The presence of Professor Virchow in London during the present week was taken advantage of by his many friends and admirers in the medical profession in Great Britain and Ireland for entertaining him at a dinner, which took place at the Whitehall Rooms of the Hôtel Métropole on Wednesday evening last. Lord Lister occupied the chair, being supported on his right by the guest of the evening and Sir William Mac Cormac, and on his left by Sir Samuel Wilks and Sir William Turner. There were also present Sir Trevor Lawrence, Sir W. H. Broadbent, Sir Thomas Smith, Sir Henry Norbury, K.C.B., Sir Henry Thompson, Sir W. Roberts, Surgeon-General Jameson, C.B., Sir John Williams, Sir Douglas Powell, Sir William Gairdner, K.C.B., Sir Dyce Duckworth, Sir Felix Semon, Sir Robert Craven, Sir William Gowers, Mr. Hutchinson, Mr. Butlin, Professor Chiene, and Professor McCall Anderson, whilst the entire company numbered over 220.

The toast of "The Queen" was proposed by the Chairman, who said that Great Britain was happy in having a Sovereign whom all nations revered, whilst she was adored by her own people.

Sir W. Broadbent, who proposed "The Naval and Military Services," said it was the first occasion on which the medical departments of the two services had been recognised by a special toast, and of this they were undoubtedly worthy. All medical men were proud of those departments. Campaigns were ruined for want of medical knowledge and professional skill. The recent campaign in the Soudan might have been absolutely ruined by a mismanaged attack of cholera. There was happily now a great public recognition of the services rendered by the medical departments of the navy and the army. The late struggle of the Army Medical Department for recognition had not been for empty titles, but was a struggle for increasing its usefulness and efficiency For the future, the general in command of any of our armies, on going into battle, would be relieved of much anxiety in respect of his medical department. As regarded the medical department of the navy, it might well be proud of having given to the world such a man as Huxley.

Sir Henry Norbury, K.C.B., Director-General of the Medical Department of the Navy, in replying, said that the navy was never more efficient than to-day. In the recent Benin and Nile expeditions the navy had shown its capacity for performing its special duties in the most efficient manner.

Surgeon-General Jameson, C.B., Director-General of the Army Medical Staff, said that the responsibilities of the Royal Army Medical Corps were increasing at a great rate. No medical service could be created to withstand defeat in battle: all our arrangements were always framed on the supposition that victory would fall to our side: but the unexpected sometimes happened. In the recent campaign in Afghanistan, although there were many men wounded, there was not a single case of septic disease from the beginning to the end of the war, a result which had been obtained by following the principles laid down by the chairman (Lord Lister). Our experiences in Egypt were not quite so favourable, since from Khartoum and Cairo all along the Nile typhoid fever was always present as an endemic disease. Nevertheless, it was marvellous that such excellent results had been achieved. One of the officers of the Royal Army Medical Corps, Lieutenant-Colonel Sloggett, had been wounded at the battle of Omdurman by a bullet which entered the chest just above the left nipple. The wound was dressed antiseptically, and in three days was well. Three days since he had presented himself in London looking very well, and, being asked how the shot had missed his heart, said he could only account for it on the supposition that his heart must have been in his boots at the time of the battle! A medical officer in the present day was between the devil and the deep sea; the former in the shape of the Quartermaster-General's Department being anxious to cut down expense; whilst the deep sea, represented by the ubiquitous newspaper correspondent, was anxious to make copy, and was apt to forget that in war one could not have everything surgically perfect as in a London hospital, but that in war the French saying was always true, "*à la guerre comme à la guerre.*"

Lord Lister, before proposing the toast of the evening, read three letters which had been received. He said there is one from the veteran John Simon in these terms: "It is a matter of sincere regret to me that I can have no hope of joining in the tribute of respect you propose to pay to Professor Virchow on October 5th. If I should then be alive I shall be on the verge of my 82nd year, and the infirmities of advanced age have long put it out of my power to indulge in any such festivities. May I, however, beg you to express for me to Professor Virchow the warm respect and regard of one who has witnessed the whole of his illustrious career, and my regret that on this occasion I can only hope to read of his presence among us." [Cheers.] The next letter is from Mr. Stephen Paget, who writes on behalf of his father. Those who remember the dinner given to Professor Virchow five and a half years ago will recollect that Sir James Paget's eloquent voice gave the speech of the evening. [Cheers.] I am sure that we all regret that the infirmities of age have prevented him from being with us to-night. [Hear, hear!] "My father asks me to send his very best wishes for the success of the Virchow dinner, and to say that he is truly sorry that he cannot come to it." The third letter is from Sir Thomas Grainger Stewart, President of the British Medical Association regretting his inability to come to London to attend the dinner. I have now the very great honour of proposing the toast of the evening, "The Health of our Honoured and Beloved Master, Professor Virchow." [Cheers.] Many of those present have had the advantage of his personal instruction. All of us may rank as his disciples—[cheers]—for the truths which he has enunciated have been studied and learnt by us all. Comparatively few in the present company, I dare say, recollect the effect which was produced by the first production of his *Cellularpathologie*, which swept away the false and barren theory of a structureless blastema, and established the true and fertile doctrine that every morbid structure consists of cells which have been derived from pre-existing cells as a progeny. No part of the great discourse which we heard two days ago was of deeper interest to us than that in which he introduced, in too few words, the observations which led him into the true path. Cellular pathology is now universally recognised as a truth. [Cheers.] Even those morbid structures which deviate most from the normal structure are known to be derived as a progeny from normal tissue -from normal cells, driven to abnormal development by injurious agencies. One portion of Virchow's doctrine enunciated in that volume has, indeed, required some modification—that portion in which he ascribes suppuration to proliferation of cellular elements. That this is a universal truth we know now not to be the case. Certain collections, which we may admit to be of pus, are now known to be the result of the migration of leucocytes; but that all suppuration is produced in that way is what I do not myself believe. Many years ago I devoted a large amount of labour to investigations in this subject, and, without going into details, I came to the conclusion that there was a great deal more truth in Virchow's original view than has been generally assumed. [Cheers.] Another kind of cellular pathology has come into existence in comparatively recent years, namely, that which teaches us that the abnormal conditions of tissues and functions, which we term diseases, are very often induced by the actions, not of cells constituting the body, but of cells introduced from without—parasitic cells, whether vegetable or animal. Those who heard the Huxley Lecture two days ago will know that Professor Virchow is thoroughly alive to the progress of this new cellular parasitic pathology. [Hear, hear.] It was evident, from the way in which he spoke, that he is not so wedded to his own original ideas that he cannot be receptive of new truths. [Cheers.] On the contrary, while he raised a wise warning voice against too hasty generalisations, he at the same time welcomed with the utmost cordiality all that is established as true in this department of research. [Cheers.] Gentlemen, it is no doubt in pathology that Professor Virchow reigns supreme. [Cheers.] But there are various other departments of human activity which he has made his own. There is, I imagine, no man living who is better versed in the history of medicine

than Virchow. He is an acknowledged authority in anthropology, and he is a distinguished antiquarian. From an early period in Virchow's life he interested himself deeply in politics. [Cheers.] He did much to ameliorate the governmental conditions of his own country, and later on in life his activity in the Reichsrath was so powerful that he became the leader of the Opposition. [Cheers.] Politics, as we all know, are matters on which there is ample room for difference of opinion. [Laughter.] But one thing must be admitted by all—that Virchow's voice was ever heard in defence of liberty, truth, and righteousness. [Loud cheers.] There is another feature in Professor Virchow's career and character that commands our admiration—I should say, by the way, that there is one feature which also commands our astonishment. It is very rare indeed for one man to excel in so many departments of human knowledge and effort; but it is almost a miracle that a man should at his age retain his powers of intellectual faculty and physical endurance as Professor Virchow does. [Cheers.] But we must not omit to notice his large-hearted benevolence, his amiable character, which make him always ready to recognise work done by others, whosoever they may be. [Cheers.] We in this country have particular reason to be grateful to Professor Virchow for the generous recognition which he has made on more than one occasion of the work of British physicians and surgeons. [Hear, hear.] I am sure that I only give utterance to the feelings, not only of this company, which so grandly represents the medical profession in Britain, but of the whole medical profession in the British Isles, when I say that we desire cordially that Professor Virchow may long live in health and happiness, and that his wonderful powers may long be preserved in activity and usefulness.

The toast was then drunk with the greatest enthusiasm, the whole company upstanding. When the cheering, which was mingled with cries of "Hoch," had subsided, Lord LISTER called for one cheer more, and this was heartily given.

Professor VIRCHOW, who on rising to respond was received with prolonged cheering, said: The most kind and flattering words of your Chairman have much surpassed, not only my expectations, but my merits. [Cries of "No."] I was prepared to find a friendly reception in your country, in which I have so often been hospitably received, and where I always feel at home. [Hear, hear.] I am no stranger amongst you. You all know that I have always been a friend of England. [Loud cheers.] Even long before I had had the privilege of friendly relations with many of its best sons, I had learned to admire the country and the people which, steadfast amongst the storms of the political movements of Europe, has preserved and developed the principles of civic and religious liberty—a glorious example for the whole of mankind. [Cheers.] My inclination towards historical studies had made me familiar with the long roll of able and successful investigators who had opened up, to an unexpected degree, the knowledge of Nature in general, and more particularly the knowledge of the nature and the internal processes of man. With respect and admiration I gazed at the work perfected by so many leading spirits. And then it was that I learned with delight how generously this people appreciates the work of foreign science, and how solid and lasting is the friendship accorded to those whom it considers to be its friends. [Hear, hear.] Thus I have gladly accepted the invitation which has called me here now, and thus I feel again as if I were at home. [Cheers.] Again I am under the hospitable roof of my old friend and pupil, Sir Felix Semon, who has so often been my guide and *fidus Achates* amongst you. Thus I see again the large number of distinguished men who are never tired of showing me that they are fond of me. [Loud cheers.] Above all, I wish to return my heartiest thanks to my venerable friend Sir James Paget, whom neither age nor infirmity prevented from calling on me. [Hear, hear.] I salute with genuine emotion Lord Lister, whose immortal claims to glory outshine even his exalted position. [Cheers.] I see around me the representatives and members of the oldest and greatest medical corporations of Great Britain, from whose works I have derived much instruction, much instigation to further labours. To-day, I think, I may say how much I have been touched by the confidence you have placed in me in choosing me to renew the remembrance of the great investigator whose commemoration we have just been celebrating. My task the other day demanded that I should demonstrate Huxley's influence upon the development of medical science. To-day I wish to emphasise that his merits in anthropological and ethnological respects are so great in the eyes of German *savants* that they alone would suffice to procure immortal reverence for his name. [Cheers.] We shall not cease to follow in his footsteps and to defend the place which he has assigned to man in nature. Together with you we will try to clear up in every direction the biological history of man. May this task still further confirm and strengthen the solid union of English and German science. [Hear, hear.] May the corporations of Great Britain and Ireland, which form a bulwark of medical science and practice that has remained unshaken for centuries, continue to give the world by teaching and example a guarantee that the results of our science may benefit mankind in an ever increasing degree. [Cheers.] Before I sit down I ask you to drink with me to the health and prosperity of the medical corporations of Great Britain and Ireland, coupling with that toast the names of the Presidents of the Royal Colleges of Physicians and Surgeons, my old friends Sir Samuel Wilks and Sir William Mac Cormac, as well as of that distinguished representative of Scottish science, Professor Chiene, the President of the Royal College of Surgeons of Edinburgh. [Loud cheers.]

Sir SAMUEL WILKS said that Professor Virchow belonged to no country and to no time or age. Pathology made the whole world kin: and he looked upon Virchow as a brother. When he and his contemporaries some forty years ago were groping their way in pathological work in the dark, as it were, a light came upon them suddenly from afar, a light which penetrated and gave a new insight into physiology and pathology. Virchow had come to generalise, and like another Newton he gave the *Principia* of medical science. With a slight change he would use Pope's lines:

> Nature and Nature's law's lay hid in night;
> God said, "Let Virchow be," and all was light.

He rejoiced that a Fellow of the Royal College of Physicians had first collected and translated Virchow's lectures, and had first made him known to English-speaking men of science. It was a happy thought that they should give Professor Virchow a dinner, for some young men who knew him as the greatest medical light in the world might think of him as a kind of Olympian Jove, living on ambrosial food and having nectar for his drink, and now they had him actually come down to dine with ordinary mortals. They not only admired his genius, but also his character, amiability, and good nature. Virchow and Lister were two of the most prominent men in the medical world; but their merits were known to all present, and he could not "gild refined gold, nor paint the lily, nor throw a perfume on the violet."

Sir WILLIAM MACCORMAC said that everyone present desired to offer his tribute to Professor Virchow, who, he hoped, would carry back to his own country a pleasant recollection of that evening. No one more appreciated the great biological collection contained in the Hunterian Museum than their guest. Nothing, he might add, exceeded the scientific erudition and renown of Professor Virchow—except his modesty and his kindness.

Professor CHIENE said that science knew no boundary, and recognised no nationality; its sphere was the universe, its object the good of humanity. As a Scotchman, he was proud to join in honouring Professor Virchow. All medical bodies throughout the kingdom desired to do him honour; and in honouring him they were also honouring themselves. In the name of the Fellows and Members of the Royal College of Surgeons of Edinburgh he thanked Professor Virchow for the light he had thrown on the dark problems of pathology. It was to Goodsir, a Scotchman, that Virchow had dedicated the first edition of his *Cellular Pathology*—giving most generous testimony to Goodsir's labours and results.

Sir WILLIAM TURNER proposed "The Health of the Chairman." That was an eminently representative gathering of the medical men of Great Britain and Ireland. They had met to do honour to a distinguished German, and had been presided over by a distinguished Englishman, the immense benefit of whose discoveries had been well indicated by the recent campaign in the mountains of Afghanistan, as the

Director-General of the Army Medical Staff had that evening informed them. They had to thank him also for his excellent performance of his duties that evening, and for the eminently practical speech in which he had placed before them the many excellences of Professor Virchow in science and in politics.

The toast was received with great enthusiasm.

Lord Lister briefly replied, and said he was almost overpowered by the kindness of Sir W. Turner's words and the reception by the company which they had had. He had experienced great pleasure in presiding; and felt that they had worthily entertained their guest.

Before sitting down, he presented to Professor Virchow a book containing the signatures of all those present.

During dinner a programme of music was played by the band of the Royal Artillery, which was conducted by Sergeant-Major W. Sugg. The occasion brought together one of the most representative gatherings of the profession ever held in London; and the whole of the proceedings were excellently organised. For this happy result great credit is due to Dr. J. Rose Bradford, Mr. Andrew Clark, and Mr. D'Arcy Power, the Honorary Secretaries to the banquet.

THE ITALIAN MEDICAL CONGRESS IN TURIN.

[From our Special Correspondent.]

The Italian Medical Association.

The Italian Medical Association is holding its annual Congress in Turin this week. This Association had its origin at a meeting of the Italian Association of Medicine and Surgery at Pavia in 1887, when a few members decided to form a purely Medical Society for the discussion of practical and scientific subjects. The suggestion was warmly taken, the Association was quickly constituted, and it was decided that the annual meetings should be held alternately in Rome and in some other Italian city. Most of the meetings have, however, been held in Rome; in fact, before this year only one has been held elsewhere—that which met in Naples in 1897.

It was determined to hold the Congress in Turin this year, in recognition of the fiftieth anniversary of the Italian *Risorgimento*, the impulse towards which took origin in Turin in 1848. The Council of the Association consists of representatives of various Italian universities chosen by ballot, and is presided over by His Excellency Professor Guido Baccelli, Minister of Public Instruction. The Association numbers only 176 members, but all Italian physicians are entitled to attend its congresses and to take part in their proceedings on payment of a fee of 10 lire. The Society has already done good work, and the interest shown in the present meeting promises well for the future.

Opening of the Congress of 1898.

The meeting of the Congress began on October 3rd, when the members assembled in the great hall of the University.

After a few words of welcome from Professor Bozzolo, His Excellency Professor Baccelli read the inaugural address. After comparing himself to the quondam charger who at the sound of the trumpet joined his old squadron for the charge, and after saying that though for the time being he might be a Minister, yet he was always a physician, he went on to review the progress of medicine. He referred especially to the work of Pasteur and Koch, and the latter's present visit to Rome to work at malaria. He foresaw the day when there would be a specific antitoxin for every infectious disease. He then briefly referred to the value of bloodletting in various conditions, more especially in nephritis. He recognised the desirability of intimate collaboration between the clinic and the laboratory.

The peroration was an impassioned address to them as the centre of the movement for the unification of Italy under the reigning dynasty, and as a place where modern science and industry were working hand in hand for the advancement of knowledge and the material wellbeing of mankind.

The Museum of Medical History.

After the address, the members of the Association visited the Museum of Medical History in the Laboratory of Materia Medica, near the entrance to the exhibition.

The Exhibition of the History of Medicine contains many exhibits of a most interesting character, varying in antiquity from the flint instruments of prehistoric man down to eighteenth-century documents of various kinds.

Professor Bellucci's collection of amulets includes the flint instruments above mentioned, which, when found in more recent times, were supposed to be of supernatural origin, and were used as charms against the pestiferous influence of the evil eye.

Next in chronological order comes an interesting collection of instruments found in Pompeii. Of these, many are obstetrical instruments, and included forceps and specula of rough make, but resembling in general form those of the present day.

Among the most precious of the exhibits of Roman times is an athlete's outfit, consisting of a bronze ring with four dependent strigils for scraping the arm after inunction. The Roman athletes appear to have had a reputation as surgeons and advisers on dietetic treatment.

Claudius Galen is represented by a treatise in Greek, lent by the University of Munich.

Several herbalists' books from various parts of the country were exhibited, some of them with good illustrations of plants, and one with the plant itself fitted in between a drawing of its root and inflorescence. The latter work is supposed to be of the school of Coracci of Bologna, and belonged to the famous naturalist Ulysses Aldrovandi. At the commencement of this millennium, apart from Arab schools, in Spain, the only European school was that of Salerno, which was accorded the privilege of granting diplomas by Ruggero of Sicily in 1140 and Frederick II of Swabia in 1241. Several manuscripts of this school are on view from Gorioponto to Constantine Africanus and some of his successors. At this period the subjects for the teaching of practical anatomy were the bodies of pigs, and a fragment of a work entitled *De anathomie porci* is on view. Of the same school are some works with illustrations of surgical operations belonging to the 13th century.

THE SANITARY INSTITUTE CONGRESS HELD AT BIRMINGHAM.

The Congress under the Presidency of Sir Joseph Fayrer, Bart., M.D., F.R.C.S., was opened on Tuesday, September 27th, by a reception of the members by the Lord Mayor of the city. An account of the proceedings of the first two days of the Congress of the Sanitary Institute in Birmingham has already appeared in the British Medical Journal. Thursday and Friday, September 29th and 30th, were devoted to meetings of the various Sections, and a brief report of the proceedings is given below.

On Saturday—the last day of the Congress—a large number of the members present availed themselves of the opportunity of visiting various places of interest near Birmingham. Excursions were arranged to Stratford and Warwick, to Malvern, to Dudley Castle, and other places of interest.

The Congress was in every way a most successful one. There was a total attendance of 1,979, or about 50 per cent. more than at the last one. The attendances at the various Sections was good, and varied from 85 to 260. It is an interesting fact that the largest attendance was at the meeting of the Ladies' Conference on Domestic Hygiene held on Wednesday under the presidency of the Lady Mayoress.

Section of Sanitary Science and Preventive Medicine.

Food Preservatives.

The President (Dr. Alfred Hill, M.O.H. Birmingham), in his address, drew attention to the enormous use at the present time of substances with this object. Many of them had uncertain physiological effects. After reviewing various

methods of preserving food—such as by dry heat, salt, sugar, etc.—he referred especially to the more modern methods of adding chemical substances, such as boric acid, borax, salicylic acid, and formic aldehyde. For the preservation of milk, butter, cream, and meat, boric acid was principally and very largely used. It had been shown that borax was fatal to the lower animal and vegetable organisms, and he contended that it was also injurious, if not fatal, to higher organisms. Although some authorities argued that the small quantities in use as preservatives could not be prejudicial to the human organism, they overlooked the fact that at present there was no limit to the quantity which might be added. He wished to point out particularly that several individuals might add a small quantity successively, so that the resulting amount might be sufficient to cause an increased secretion from the intestines, with serious diarrhœa as a consequence. Opinions of experts, such as Drs. Stevenson and Luff, were quoted to show that the precise amount which might be added and yet be harmless had not been determined, while the notions of food purveyors were much too indefinite to be safe. The only proper course, then, would be to prohibit the use of such substances altogether. He held very strongly that milk, of all foods, should not be tampered with. It had been conclusively proved that in well-conducted dairies the milk issued would keep good for forty-eight hours, and this was quite long enough for distribution. Added to that of the presence of chemical preservatives there was another danger, namely, that food preserved in this way might not be originally fit for consumption, so that its real condition would be masked. In New York there was a law to the effect that "milk is adulterated to which has been added or introduced any foreign substance whatever," and he thought a similar enactment should be enforced here. Cold properly applied would, in his opinion, be far superior to any other method of food preservation, and he gave instances to show how this method had already been most successfully used in the transport of meat from Australasia and elsewhere.

Dr. FOSBROKE (Worcester C.C.) in moving a vote of thanks to the President, said that he looked upon boric acid in some respects as he would arsenic—namely, as useful in small amounts and in skilled hands only. It should never be given as a preservative to children and invalids.

Dr. ROBINSON, in seconding the vote, added his testimony from personal experience to the bad effects of boric acid as a preservative.

Dr. MCWEENEY (Dublin) pointed out that what might be harmless to persons in health might have a markedly deleterious effect upon others. He instanced the difficulties which persons suffering from chronic kidney disease, and children, would have in eliminating boric and salicylic acids.

On the motion of the PRESIDENT, seconded by Dr. V. JACKSON, it was resolved:

That Section I of the Congress recommends the Council of the Sanitary Institute to present a memorial to the proper authority calling attention to the recommendations of the Food Products Commission, and urging that investigation by recognised scientific authorities into the effect of preservatives on health be forthwith set on foot, and that a court of reference be established.

Endemic Typhoid and Disinfection of Excreta.

Dr. P. BOOBBYER (Nottingham) read an important paper on this subject with special reference to the town of Nottingham. His experience led him to the conclusion that typhoid fever was spread by soil pollution, and not necessarily by being taken into the system in water. He showed by means of a geological map of the district that Pettenkofer's theory did not hold with regard to the outbreak of typhoid fever in Nottingham.

Dr. ARMSTRONG (Newcastle) then read a paper on the Disinfection of Excreta, which followed to some extent the same lines as the previous paper.

In the discussion which followed these papers the principal speakers were Dr. COOPER PATTIN (Norwich), Mr. E. HILL (Durham), Dr. SCURFIELD (Sunderland), Dr. POUTER (Southport), Dr. WATERS (Southend), Mr. WILLIAMS, C.E., Dr. CLARE (Hanley), and Dr. SYERS (St. Pancras).

Suggestions for the Improvement of Milk Supplies.

Dr. H. SCURFIELD (Sunderland) read a paper in which he advocated the raising of the Somerset House standard for milk fat to at least 3.25 per cent. He thought that every dairyman or purveyor of milk ought to be obliged to furnish the medical officer of health with a list of his customers when so desired, and that a purveyor of milk ought to be compelled to state where his milk was obtained. More stringent measures with regard to the sale of milk from tuberculous cows was required, and valuable suggestions were made in the direction of meeting this danger.

Dr. J. NIVEN (Manchester) read a paper on Tuberculous Meat and Milk, in which the subject of tuberculous infection from cows was ably treated.

Hygiene in Elementary Schools.

Miss A. RAVENHILL (National Health Society) read a paper on the Position assigned to the Teaching of Hygiene in our Elementary Schools. She urged that simple lessons in hygiene should be given to children in place of such subjects as Euclid, so that the large sum expended yearly in education should benefit the health of the community by inculcating a practical knowledge of health laws. The following resolution, moved by Miss RAVENHILL, and seconded by the PRESIDENT, was carried unanimously:

That this meeting begs to recommend to the Council of the Institute the advisability of memorialising the Education Department with a view to including the teaching of the outlines of hygiene in the obligatory subjects of compulsory education.

Mrs. WHITE WALLIS'S paper on Hygiene of School Life in Practice was somewhat similar in aim, and dealt more immediately with the condition of school buildings and appliances. The following resolution was passed:

That the Council be recommended to represent to the proper quarter the necessity for sanitary authorities having the same power over schools as they have over workshops.

SECTION OF ENGINEERING AND ARCHITECTURE.

The Evolution of Domestic Sanitation.

In his opening address, Mr. HENMAN, the President, predicted that the day would come when all "interceptors" and "traps" would be abolished, and with them the sewer gas which they retained about our dwellings. A new era in sewage disposal might be at hand if the "septic tank" fulfilled the promise of its rapid advance in public estimation, and a dual arrangement of sewers and stone water drains would not be necessary. In regard to the ventilation of large buildings, there must always be failure until it was recognised that a change of air from seven to ten times an hour was necessary.

Dr. A. BOSTOCK HILL read a paper on the Construction and Ventilation of House Drains. The effect, he said, of the disconnecting trap between house drains and compound drains now required by law was to obstruct the flow of sewage matter and to precipitate its solids. He uttered a protest against the system of dealing with sewers which, instead of preventing the formation of poisonous gases, bottled them up and discharged them a few feet above the house roofs.

Dr. JOSEPH PRIESTLEY, D.P.H., read a paper on Combined Drainage—its Pros and Cons.

SECTION OF PHYSICS, CHEMISTRY, AND BIOLOGY.

Tuberculosis, Diphtheria, and the Treatment of Sewage.

Dr. G. SIMS WOODHEAD, in his presidential address to the Section, observed that many changes had taken place recently as regarded the light in which they viewed certain of the infectious diseases, but in no two diseases had the changes been so startling as in tuberculosis and diphtheria. Thanks to recent researches they now knew that there could be no tuberculosis without the tubercle bacillus. This statement meant that no member of a tuberculous family need despair of evading the dread enemy of his race. Bang of Copenhagen had shown that even in cattle it was possible to obtain a healthy progeny from tuberculous herds if care were taken to remove the calves from tuberculous mothers, and to feed them on milk free from tubercle bacilli. Dealing with diphtheria Dr. Woodhead said he was satisfied that antitoxin, when given early enough and in sufficient quantity, was practically a specific in the treatment of the disease. Although it could never take the place of improved sanitary conditions

in doing away with the breeding places of the diphtheria bacillus outside the human body, it might be looked upon as an almost perfect protection against the action of the poison in the body. Post-scarlatinal diphtheria had at one time a mortality of over 60 per cent. At the present time under the antitoxin treatment this mortality had been reduced in one hospital, of which he had statistics, to 2 per cent. It had been found conclusively that whichever agent, toxin or antitoxin, first gained access to the tissues, it held the field except against the attacks of enormously larger quantities of the other. Hence the extreme value of protective inoculation in all cases of doubt or after exposure to infection. Dealing with the treatment of sewage, Dr. Woodhead referred to the statement by Sir William Crookes to the effect that fixed nitrogen to the value of no less than £16,000,000 was annually poured down the drains and watercourses into the sea. Great advances had been made in recent years towards the problem of solving the disposal of sewage to the best advantage. At the Congress last year one of the most interesting discussions was that dealing with bacteriolytic sewage beds. During the past few months he had had the opportunity of checking some further experiments by Mr. Scott-Moncrieff as to the formation of nitrates in the soil; and there seemed some prospect that in the future much of this fixed nitrogen in sewage that at present went to waste might, in the form of nitrates, be returned to the soil. Every such gramme of nitrate which could be rescued from the sewage would be a clear gain to the community.

Interpretation of Results of Water Analysis.

Dr. Sidney Barwise read a paper which was a protest against the too frequent practice of some analysts of giving definite reports on the suitability of samples of water for drinking merely upon the results of a single chemical analysis. He pointed out that it would be a much better practice for analysts to submit the results of their analyses to be interpreted by some person who had a thorough knowledge of the pedigree of the water in question derived from a careful inspection of its source.

The Biology of Sewage.

Drs. H. Kenwood and W. Butler read a paper on some observations on the Natural Purification of Sewage; and Mr. W. D. Scott-Moncrieff read a paper on the Biolysis of Sewage. He pointed out that the process of purification by biolysis was not instantaneous but gradual. In these various stages no one kind of organism was capable of flourishing in all the different media and stages equally well. The most interesting results of the experiments which had already been made was the rapid conversion of nitrogen-containing compounds into nitrates.

"Unnatural Death."

Dr. Alex Hill, Master of Downing, and Vice-Chancellor of Cambridge University, gave a popular address on "Unnatural Death." He said that every year there were born in England and Wales in round numbers 900,000 infants, and he proceeded to examine the fate which awaited them. He said that if for convenience a million children were taken as the number to be dealt with, it would be found that about 30,000 died a violent death by accident, that about 120,000 were the victims of tuberculosis in its various forms, and that about the same number would die from other preventable causes such as small-pox, measles, and scarlet fever. One quarter of all the diseases which destroyed life were absolutely preventable, and if the practice of hygiene were on a level with its theory the average lifetime would be raised at once from 50 years to 65. To attain this object the co-operation of the public was necessary, and every citizen should have an exact knowledge of the causes of preventable diseases. He said that about one-third of the cows in the country were tuberculous, and that a series of careful and elaborate observations made in a certain town showed that the milk supplied by three-fifths of the dairymen contained the bacillus of tubercle, since it produced tuberculosis when injected beneath the skin of a guinea-pig. The report of the Royal Commission had shown that when calves were fed upon the milk of tuberculous cows a large proportion of them contracted the disease, even when they were free from any sores favourable to infection. It was probable that practically all the cases of tuberculosis in infants, whether of the lungs, the bowels, or the membranes of the brain, were due to infected milk. Dealing with the measures which should be taken to prevent the present great mortality from tuberculosis among children, he said that a simple precaution was to boil all milk before use, and that personally he was no more afraid of a boiled bacillus than he was of a well-cooked lion. He urged, however, that the public ought not to be reduced to such a precautionary measure, and observed that even if the palate became reconciled to the flavour of boiled milk, it could not seriously be proposed to boil butter or cream. It ought to be possible to buy milk which did not need to be boiled. He believed that if the public demanded pure milk dairymen would supply it; and suggested to the trade that if they would sell milk from cows guaranteed by properly qualified veterinary surgeons not to react to tuberculin, an indisputable proof of the absence of tuberculosis, they would find customers ready to pay more than would recoup the cost of professional assistance and the losses sustained through the sacrifice of unhealthy stock.

ROYAL ALBERT ASYLUM, LANCASTER.

Reports of the Committee and Principal.—Report of the Medical Superintendent.—Laying of the Foundation Stone of a New Wing.—Opening of the Storey Home for Feeble-minded Girls.

Wednesday, September 28th, was a red-letter day in the annals of this institution for idiots and imbeciles of the Northern Counties. It was marked by a triple function: the thirty-fourth annual meeting of the supporters of the charity (held quinquennially at Lancaster); the laying of the foundation stone of an extension for epileptics and cripples; and, last but not least, the presentation to the Committee of the Home for Feeble-minded Girls, erected in the asylum grounds by the munificence of Sir Thomas Storey.

The report of the Central Committee—which was adopted on the motion of Mr. E. Lawrence (Liverpool)—showed that there were in the asylum 582 patients, namely, 389 boys and 193 girls, the average number resident during the year having been 581. The general financial condition of the institution was satisfactory, £20,624 10s. 3d. having been received on maintenance account during the year. The amount received from payments for patients (large and small) was £10,766 1s. 4d. The ladies' associations had collected in the aggregate £2,584 15s. 7d. The estimated cost of the extension of the asylum in the form of an annexe of two floors was £15,000, towards which £11,000 was in hand. Sir Thomas Storey had at his own expense erected, furnished, and equipped a most suitable detached home for forty senior feeble-minded girls. Dr. W. H. Coupland had succeeded Dr. Douglas as assistant medical officer.

The report of the Principal and Secretary (Mr. J. Diggens) urges the necessity of care in the selection of candidates for admission, having regard to the educational aims of the institution. The various modes of school and industrial training are commented on, and reference made to the prizes gained by patients in the Lancaster Arts and Crafts Exhibition of last year.

The report of the Medical Superintendent (Dr. Telford-Smith) sets forth the numerical changes in the asylum population during the year, showing that 77 patients had been admitted, 57 had been discharged, and 11 have died; the death-rate (calculated on the average number resident) was 1.89 per cent. only. With the exception of colds of an influenzal type, no infectious disease had occurred during the year. At least half the mortality had been due to some form of tuberculous disease, and it was hoped that the improved air space and facilities for outdoor exercise which the extension would afford to the crippled and epileptic inmates, would tend to diminish this in future years. As a matter of precaution, all newly admitted patients were quarantined on the upper floor of the detached infirmary. Of the new admissions, 25 were classified as idiots, 52 as imbeciles; and of the 57 patients discharged, 5 only had not improved. But of the 32 most improved, Dr. Telford-Smith could only say that they would be capable of looking after themselves fairly well at home, though probably not competent to earn their living away from

care. Custodial homes were badly needed even for improved imbeciles, and the preventive aspect of lifelong institution care was not to be lost sight of. Legislation in Connecticut forbidding the marriage of feeble-minded persons was referred to; and the necessity of protection for adult female imbeciles insisted on.

The annual meeting was presided over by the High Sheriff of Lancashire, in the absence (through domestic affliction) of Lord Derby; and subsequently the foundation stone of the new wing for the accommodation of 100 cripples and epileptics was laid by the Right Hon. Sir J. T. Hibbert, Chairman of the Central Committee and of the Lancashire County Council. A banquet was afterwards held under his presidency, and in the course of a speech he mentioned that no fewer than 2,019 patients had in the aggregate been admitted to the institution. Of these 390 had died, 582 remained in the institution, and 1,047 had been discharged. Of the last category a portion only had undergone the full seven years' training, but it was satisfactory to record that at least seven were making their own way in life; while of the rest, 254 had been markedly improved, and 662 to a less degree, only 124 having been returned as unimproved.

At a later hour the Storey Home was opened by the Countess of Bective. This house, situated at some little distance from the main buildings of the asylum, is a picturesque structure, containing ample day-room and dormitory accommodation for 40 girls, with laundry, etc. It is proposed to use this valuable annexe for senior girl pupils who have passed out of the imbecile into what is now usually designated the "feeble-minded" stage, in preparation for their discharge into the outer world, or possibly to give permanent protection and employment for those who have no suitable homes to shelter them. There is no doubt that advantage will accrue by separating girls of higher mental grade from needless association with those who are idiotic or imbecile; and the experience of small training homes established of late years in London and elsewhere for adolescent feeble-minded girls has been thoroughly satisfactory, though in these there is no compulsory power of detention. The circumstance that Sir Thomas Storey, the generous benefactor of the asylum, was, through illness, unable to take part in the day's proceedings, was the only thing which detracted from the success of the festival.

OPENING OF NEW OPERATING THEATRE AT THE BRISTOL ROYAL INFIRMARY.

The Greig Smith Memorial.

In the presence of a large number of visitors Sir William Mac Cormac, President of the Royal College of Surgeons, on September 30th formally opened the new operating theatre at the Bristol Royal Infirmary. Some considerable time ago it was decided that the arrangements were antiquated, and that it was desirable to re-equip the room more in accordance with modern ideas. At this time Mr. Greig Smith was alive and took great interest in the work, but at the time of his death the project of reconstruction had not advanced beyond designs and plans, and knowing how much he had the work at heart, the Committee formed to erect some memorial to him thought that the balance of money in their hands, after placing a bust in some conspicuous place, could not be better expended than in assisting the infirmary authorities in carrying out the work upon which they had embarked.

The Needs of the Infirmary.

The chair was taken by the High Sheriff of Bristol, Mr. F. Richardson Cross, M.B., Ophthalmic Surgeon to the infirmary, in the absence of the President; and among those present were the Duke and Duchess of Beaufort, Sir W. H. Wills, M.P., the Dean of Bristol, Mr. J. Storrs Fry, and the medical and surgical staff.

In opening the proceedings, Mr. Cross referred to the finances of the institution and the great increase in the number of both in-patients and out-patients, which latter he felt required some supervision. He hoped that the infirmary, as well as the other institutions, would benefit in the future by the Hospital Sunday Fund, as the increased demands on its funds for reconstruction of the theatre, out-patient department, and nurses' home were very great.

The architect then described the work that had been carried out, which is dealt with below.

Address by Sir William Mac Cormac.

Sir William Mac Cormac said that it gave him great pleasure to be present. He referred to the time when the elements of sanitation were neglected in operating theatres and cleanliness in a surgical sense by the surgeons themselves, and the new theatre which he now had the honour to declare open was symbolical of the amazing advances of surgery during the last quarter of a century. After referring to his experiences in the Franco-German war of 1870, when antiseptics were only scantily used, he instanced the wonderful results following their more extensive use in the Egyptian campaign of 1882, the Russo-Turkish war of 1877, and particularly in the recent Nile Expedition. Turning to the Infirmary itself, he spoke of the many distinguished surgeons who had been connected with it, not the least of whom was James Greig Smith, to whose memory the theatre he was now opening was dedicated. Fifty years ago, he said, most surgical cases came to London, but the skill of provincial surgeons now was so great that a new order now reigned, and though the London surgeons might suffer, the gain to the public was great.

The Duke of Beaufort proposed and Dr. Shingleton Smith seconded a vote of thanks to Sir William Mac Cormac for his excellent address.

Description of the Theatre.

Regarding the theatre itself, it may be said that it is the old one refitted in accordance with the most recent experience and requirements of aseptic surgery. The infirmary is now fitted with three operating rooms, a large general one, a smaller and quite new one for septic cases, and one for ophthalmic operations. Adjoining the first two, which are close together, is a room in which patients are anæsthetised.

The chief room is 21 ft. 4 in. by 15 ft. 6 in., and 26 ft. 6 in. high, and is lighted by two ranges of windows facing north, with an additional top light. The walls to a height of 15 ft. are lined with glazed tiles, the upper part ivory-white in colour, the lower of green, while the remainder of the walls, made of Portland cement and finished with Parian cement, will eventually be painted a light colour. The floor is made of concrete and marble terrazzo, the corners between the floor and walls being rounded, and the whole sloping slightly towards a sink. The fittings are two large sinks to be used specially for sponges, while between them is a wringer, two lavatory basins with treadle action, a large slop sink with a good flush of water, and several glass shelves on gun-metal brackets. There is also a new glass and iron instrument case, instruments, and dressing tables. At present the operating table is one designed by Mr. Greig Smith, but this will shortly be replaced by an improved one. The room is separated from adjoining ones by polished teak doors, and lighted with electric light as well as gas, and we are informed that the arrangements of the former are most satisfactory.

The whole place has been arranged so that a hose can be turned on and the room thoroughly washed down with water, but it is to be feared that the multitudinous taps, pipes, levers, brackets, as well as the gallery for students with its railing round, will offer opportunities for the settlement of dust, and that the work of keeping all these parts clean will occupy a very considerable amount of the nurses' time.

The warming is done by passing filtered air over radiators placed in a recess under the windows, but an ordinary open fireplace is also provided. The smaller operating room is much simpler in construction; the materials used are of the same kind as those in the larger room, but it has the advantage of fewer pipes and levers, and could thus be more easily kept clean and free from dust. In the ophthalmic operating room the architect has had to make the most of a small and not well-shaped room. The fixtures are few, but why the sink should have been placed on the level of the floor is not very apparent. The room is well lighted, and warmed by an asbestos gas fire. On the whole, the new theatres are a distinct advantage over the old ones, and will no doubt prove convenient. The memorial medallion of Mr. Greig Smith placed in the large theatre is not a speaking likeness, and unless kept constantly cleaned will harbour dust. It is per-

haps a pity it was not sunk in the wall and covered with glass, as we believe was the original intention. The cost of the alterations came to £2,700, of which £300 was given by the Greig Smith Memorial Committee.

CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS.

The seventieth meeting of German Naturalists and Physicians (*Versammlung deutscher Naturforscher und Aerzte*) took place at Düsseldorf from September 19th to 24th. As is customary at these assemblies, a number of addresses were delivered, to which the members of all sections were invited, while the bulk of the work of the Congress was referred to thirty-six special sections.

General Addresses.

Among the general addresses may be mentioned Professor Tillmanns's discourse on the development of surgery during the last hundred years. Professor Tillmanns showed how surgery had made use of scientific discovery so as to become gradually the science that it actually is to-day, taking to itself the treatment of diseases which formerly belonged to the domain of internal medicine alone.

Professor Martius spoke on the causation of disease and of disposition to it. He pointed out the fallacy—prevalent at the beginning of our bacteriological era—which supposed that every infection must necessarily be followed by disease. He cited Rumpf, who, during the well-known Hamburg epidemic, had examined sixty healthy persons, and found cholera vibrios in nineteen instances. Similar observations had been reported as to the bacteria of diphtheria and even tuberculosis. The more we searched the more we should find in healthy individuals pathogenic germs which, tested by means of the experiment on animals, proved to be virulent. What finally determined disease was not only the specific agent causing disease, but also a certain disposition toward disease. In fighting disease, consideration must be given to these factors.

Dr. Mendelsohn spoke on the place which nursing holds in regard to scientific therapeutics. To understand Dr. Mendelsohn fully, it must be remembered that the art of hospital and private nursing is but in its infancy in this country, and that Dr. Mendelsohn is trying to popularise the subject among doctors. His thesis that nursing is a therapeutic agent of high order is generally approved.

Proceedings of Sections.

Of the thirty-six sections above mentioned that of Hygiene dealt with subjects which more particularly interested medical men.

Small-pox and Vaccination.

Dr. E. Pfeiffer (Weimar) spoke on recent small-pox epidemics in England and the new vaccination law. The two epidemics more particularly studied by him are those of Dewsbury 1891-92, and Gloucester 1895-96. He called attention to the relative high number of cases in vaccinated children under 10 years of age. Dr. Pfeiffer expressed the opinion that English vaccination laws need reform, but that the technique of vaccine preparation should also become more perfect, and that nothing but animal lymph should be used.

Dr. L. Voigt (Hamburg) then gave an account of the protection afforded by Hamburg lymph. Of his conclusions the following may be mentioned: The protective power of vaccine is not the same in different vaccines; it depends on the energy of pustule formation; efforts should be made to obtain everywhere a vaccine of as high efficiency as the Hamburg vaccine.

Dr. G. Paul (Vienna) made a communication on a method of obtaining lymph as free as possible from foreign germs. Besides obtaining a lymph of high efficiency the efforts now made tended to obtain a lymph free from foreign germs, the ideal being to have a lymph containing nothing but the (thus far unknown) vaccine germ. Dr. Paul showed that a great deal can be done by using a suitable cotton wool dressing. The pustules developed very well, and a good lymph—comparatively germ-free—was obtained

Bactericidal Substances in Leucocytes.

Dr. O. Bail (Prague) said that animals into which a mixture of virulent staphylococci and living leucocytes were injected survived. Dr. Bail explained this fact on the theory that the bacterial toxins destroyed the leucocytes, which in their turn yielded to the body an immunising substance contained in them.

Plague in India.

Mr. Hankin (Agra, India) gave an address, illustrated by numerous instructive maps, on the mode of propagation of plague. He explained how the disease was spread by infected rats, giving a good deal of epidemiological detail. The possibility of an infection by means of contaminated water was of secondary importance. In one instance he had been able to demonstrate the presence of plague bacilli in water. Mr. Hankin also reported some experiments on rats. He had proved by means of intratracheal injections that the resistance of plague bacilli to desiccation was by no means as slight as has been hitherto supposed.

The President of the Section, Professor Blasius, thanked Mr. Hankin, and expressed a hope that he would continue his studies at Bombay if possible, these studies being of interest and importance to European hygienists.

Agglutinating Bodies.

Dr. Blachstein (Göttingen) spoke on some chemical agglutinisers. He said that while we had as yet no substances to replace antitoxic serums, we could at least replace one bactericidal serum—that of cholera—by a number of chemically defined substances. Of these, chrysoïdin was of practical importance. Besides agglutinating cholera vibrios, it was a disinfectant of high order (1 in 10,000) without being poisonous. Experiments were further reported on so-called wheat bacteria. It was shown that an anilin colour (Victoria blue) was an agglutinine to both cholera vibrios and wheat bacteria. Victoria blue was therefore a more general chrysoïdin, a more special agglutinin.

Bacteriology of Noma.

Dr. Petruschky reported a case of noma which he had examined bacteriologically. Beside staphylococci and a number of bacteria which had found entrance from the mouth he found typical Loeffler bacilli. In consequence of this the case was treated with repeated injections of Behring's serum, and recovery resulted. This was the second case of noma reported by Petruschky in which Loeffler bacilli were found.

The Etiology of Diphtheria.

Dr. Zupnik (Prague) gave an address on the etiology of diphtheria. Dr. Zupnik proved himself to be quite a bacteriological Radical. He did not recognise the Loeffler bacillus as causing diphtheria. There was not, he said, one typical Loeffler bacillus but a whole group of bacteria, different races having been isolated by him. Further, he alleged that it was not found in every case of true diphtheria, while it was found in the mouths of healthy children and the sputum of phthisical patients.

An animated discussion followed. The part which streptococci played was recognised, but the Loeffler bacillus was pointed out as the characteristic bacillus furnishing the well-known toxin which was successfully neutralised by serum.

Soluble Ferments.

Dr. Hahn (Munich) spoke on the chemical and immunising properties of plasmines. Dr. Hahn referred to the well-known experiments of Eduard and Hans Buchner, who had proved that fermentation could be produced by adding the juice pressed out of yeast cells to sugar solution. This juice was freed from particles and smallest fragments of the living cells by filtration through porcelain filters. Beside the enzyme, which causes sugar to ferment, the liquid contained a proteolytic ferment. He had prepared cholera and typhoid plasmines analogous to this yeast plasmine. They were said to cause immunity against intraperitoneal infection of cholera and typhoid bacilli in laboratory experiments.

The Alleged Degeneration of Civilised Races.

Professor Kruse (Bonn) gave an interesting lecture on degeneration and fitness for military service. From an

examination of the recruiting lists of France, Switzerland, Austria, and Germany, he had come to the conclusion that physical degeneration could not be proved, but that, on the contrary, there seemed to be a tendency for the better.

Disinfection by Formaldehyde.

Dr. Czaplewski (Köln) spoke on the disinfection of rooms by means of formaldehyde. While some years ago formaldehyde was recommended for general disinfection, the conservation of articles of food, and even for the cure and prevention of disease, the tendency at present was to employ it for the disinfection of rooms. A number of apparatus had been constructed to serve this purpose, namely, the Tollens' lamp, which furnished formaldehyde gas by the slow combustion of methyl alcohol, and which was principally meant to be used in the sick room. After referring to various forms of apparatus, he described the Lingner apparatus, which mixes formaldehyde with steam, glycerine being also added to the liquid used. It was asserted that in this way those parts of a room which were reached by the steam were disinfected in about three hours, the trouble being that corners, crevices, vacant spaces under bedsteads, furniture, etc., remain as a rule undisinfected.

In the discussion following Dr. Czaplewski's remarks it was further pointed out as an inconvenience of Lingner's apparatus that everything was soiled by the glycerine, so that, while the room was, perhaps, disinfected in a short time, it took too long to get everything clean again.

Tuberculosis.

A permanent Committee, consisting of university professors, Government officials, and practitioners, was appointed to deal with this subject.

Professor Finkler (Bonn) spoke on the nutrition of tuberculous patients. He insisted on the importance of a highly albuminous diet.

Dr. Möller (Görbersdorf) demonstrated organisms closely allied to tubercle bacilli (timothy-grass bacteria). Dr. Möller's organisms cause lesions in animals which resemble tuberculous lesions very closely.

Herr Heydweiller (Altona) discussed the question: Who is to build sanatoria for the poor?—the answer being the large institutions for the insurance of sick workmen. A model sanatorium for phthisical workmen had been founded by a Hamburg insurance company at Andreasberg in the Harz Mountains, and others had followed the example.

Dr. Liebe, in an address on alcohol in public sanatoria, assumed a very strict temperance standpoint. He claimed that the alcohol question was of extreme importance, and closely allied to that other great question—how successfully to check the spread of tuberculosis.

A number of other practitioners gave their experience and advice.

Professor Hueppe (Prague), summing up, said that the Section had gained new stimulus for further work, and that the zeal of all those concerned in the study of tuberculosis would not abate.

THE RED CROSS EXHIBITION IN BERLIN.

Official Exhibitors.

The remarkable and most instructive Red Cross Exhibition, which was opened in Berlin on October 1st in the grounds of the Permanent Exhibition building, can best be characterised as a gigantic object-lesson on the progress achieved of late years in the care of sick and wounded both in peace and war.

Chief among exhibitors are the German War Ministry, the Naval Ministry, the German Red Cross Society, the organisation known as the "Vaterländische Frauenverein," the two Berlin Ambulance Societies, and the Berlin Fire Brigade. Following the example of the late Empress Augusta, whose active interest did so much to help on the Red Cross cause, the German Empress has given her patronage to the exhibition, which was opened in her name by Herr v. der Knesebeck, Chamberlain to the Court, and President of the Red Cross Central Committee.

The Scope of the Exhibition.

The exhibition contains a most interesting collection of field hospitals, ambulance trains, city ambulances, and appliances of all kinds for the care and treatment of the sick. They are grouped under eight headings—namely, (1) First aid, (2) Transport, (3) Abode, (4) Housekeeping appliances and arrangements for the abodes of the sick, (5) Medical and surgical appliances for the abodes of the sick, (6) Appliances for sick nursing generally, (7) Clothing and equipment of voluntary ambulance workers, (8) Literature and educational appliances.

War Ambulance Work.

The war ministry in its department omits no phase—scarcely any detail—in the treatment of a wounded soldier, from the moment of his removal from the battlefield until his return home. The naval ministry has utilised a miniature lake in the grounds for arranging a life-like picture of a bandaging and dressing place during a naval engagement.

The German Red Cross Society.

Count zu Sohns-Baruth, the Imperial Commissioner and military inspector of German voluntary ambulance organisations, gave a dinner in honour of the Committee of the Red Cross Exhibition in the hall of the Kaiserhof Hotel on Sunday evening, October 2nd. The table was decorated with crosses composed of red chrysanthemums. Among the guests were many representative men of the official world, Cabinet Ministers of the Empire and of Prussia, and a number of medical celebrities, among whom may be named Dr. von Coler, Dr. von Leuthold, Dr. von Leyden, Dr. von Bergmann, Professor Ewald, Dr. Fraenkel, Dr. Baginski. The Imperial Patroness of the exhibition was represented by Herr von der Knesebeck. Only two toasts were given, "The Emperor," "The Empress." The latter was proposed by Herr von Gossler (Minister of War), who in his speech dwelt on the efficient work done by the German Red Cross Society, work which had succeeded in removing every vestige of the prejudice which he acknowledged his Ministry had formerly felt against voluntary ambulance work in war. In fact, he said, the War Department acknowledged itself most grateful for help from the Society even in times of peace, in cases such as for instance the late typhoid epidemic in Gaarbrücken.

Ambulance Display.

Südende, near Berlin, was the scene of a well-organised and thoroughly successful practical exercise on the part of members of the Red Cross Society—ambulance columns from München, Hamburg, and Berlin under the guidance of army surgeons. An imaginary battle was supposed to have left a large number of wounded (personated by soldiers). These were searched for, bandaged, carried away, and eventually transported by rail. All passed off well without a single accident, and the experiment was considered successful as a piece of practice.

TYPHOID FEVER IN BELFAST.

Decline in the Epidemic.—A Warning by the Ulster Medical Society in 1890.—Discussion in the City Council.

We are glad to note a considerable decline in the epidemic of typhoid fever in Belfast. The number of cases notified during the week ending September 24th was 164, as compared with 247 for the previous week, and 270 and 271 for the last week in August and the first in September. The death-rate according to the last report of the Medical Superintendent Officer of Health was 28.9 from all causes and from the principal zymotic diseases 9.9. These figures show a material improvement on the previous report, but still indicate a most unsatisfactory state of affairs. It is a great pity that the Public Health Committee still persist in wasting their time and irritating the public by making futile attempts to cast discredit upon the returns furnished under the Notification of Infectious Diseases Act. Mistakes may have occurred, but no one outside the City Council will for a moment believe that such mistakes have been sufficiently numerous and widespread to vitiate seriously the accuracy of these returns.

Instead of making ridiculous charges against the medical practitioners of Belfast, the Corporation would be much better employed in setting about the work of sanitary reform, which it has so long neglected, in spite of repeated warnings on the part of medical and sanitary experts. As far back as the year 1890 the Ulster Medical Society endeavoured to rouse the Cor-

poration to a sense of the dangerous state into which sanitary matters had been allowed to drift, but nothing substantial came of these efforts. Belfast is now reaping the consequences of its failure to act upon these warnings. There is something comic, if there was not a grim tragedy behind it, in the openly-expressed regrets of some members of the City Council at having supported the adoption of the Compulsory Notification of Infectious Diseases Act. The press, lay and medical, is laying on the lash, and the victim publicly protests that he dislikes the operation.

At the monthly meeting of the Corporation held on October 1st a long and animated discussion took place on the sanitary state of the city, and at length some progress was made in the right direction. The resolution adopted at a joint meeting of the Public Health and Town Improvement Committees was passed. This resolution runs as follows:

That a systematic test of all drains in the city be made, and that the head officers of the Public Health and Improvement Committees report what additional officers are necessary for this purpose, and that such officers be appointed, and that a weekly return of the drains so tested be made to the above committees.

We are glad to note that this vitally important subject was brought before these Committees by a member of the medical profession, Councillor Dr. O'Neill, and that the adoption of the above resolution was seconded by another member of the profession, Councillor Dr. O'Connell. Both these gentlemen deserve credit for their efforts in the cause of sanitary reform. The debate on the above resolution was eminently instructive, if somewhat saddening. The Vice-Chairman of the Public Health Committee (Mr. Barklie) is reported to have said that "The Improvement Committee of the past had allowed drains to be constructed of the most imperfect character. In some cases ordinary field drains were provided to carry sewage away, and in one district he was well acquainted with people were living in houses in which there were attached no drains whatever. The Improvement Committee had neglected one of the strict provisions of the Public Health Act, that no house should be allowed to be inhabited until it was examined and a certificate given as to the sanitary condition by the borough surveyor. He was glad that the testing of drains was now being carried out; but they required to go a good deal further. The Public Health Committee were, so to speak, on their trial in Belfast, and they were receiving the blame for the present epidemic of typhoid fever. But they were in this position, that the sins of their fathers thirty years ago in that Corporation were being visited on the present Committee and on the Corporation generally. Thousands of houses were allowed to be erected without any back passages, and with small yards in which the filth was allowed to accumulate for years before it was removed." Thus out of the mouth of one of its prominent members is the Corporation condemned. During the course of the debate the very serious allegation was made that at the present time houses are still being erected destitute of the necessary sanitary arrangements. Inquiries are to be made, and it is much to be hoped that the Corporation will not sanction any further violations of the letter and the spirit of the Public Health Act. If they do, their condemnation will be swift and well merited.

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

Sir James Crichton Browne gave an introductory address to the students of the Pharmaceutical Society of Great Britain on October 3rd.

Pharmacy and Medicine.

In the course of his address he expressed his sympathetic interest as a physician in the life-work of the pharmaceutical chemist. It was indeed difficult in many cases to say where the doctor ended and the chemist and druggist began, but while for his own part he trusted that the line of demarcation between them would become more and more sharply defined as time went on, so that we might have fewer prescribing chemists on the one hand, and fewer dispensing doctors on the other; there might always remain a close alliance between the two callings.

Reviewing, from his own standpoint, the movements which had taken place in pharmacy, he could not but be struck by the great progress that had been accomplished, but while all must rejoice at the "rectification and sublimation" of chemists and druggists that was going on, it must be made clear that that process should not be carried too far or unduly accelerated. It was necessary to indicate certain risks which lay ahead, and which would, it was to be hoped, be obviated as they arose, by the wisdom and caution of the Council of the Pharmaceutical Society.

As regarded the present curriculum of examinations, the important point in connection with the Preliminary Examination was that it should invariably be surmounted before apprenticeship was begun, so that preparation for it might not interfere with strictly professional studies.

As to the minor examination, it was suggested that it should be divided into two parts, in accordance with a principle which had been adopted with advantageous results in the case of medical examinations.

It was sincerely to be trusted that the major examination, the last barrier to the higher education of the chemist and druggist, although optional, and now no longer necessary for admission to the membership of the Pharmaceutical Society, would attract a large and growing number of candidates.

Reviewing the progress of the past year, a work in which leading pharmacists had rendered signal service in the revision of the *British Pharmacopœia*. Some discontent was always bred by the shifting of landmarks, but, having had their grumble, it must be cheerfully admitted that the new *Pharmacopœia* was worthy of all acceptance.

Another notable event of the year has been the addition to the Statute Book of a Pharmacy Amendment Act which, owing to the determined action of Mr. Walter Hills, had survived the slaughter of the innocents. Unlike all previous pharmacy enactments, it had nothing to say about poisons, but as poisons would very likely be made the subject of a Bill in the next session of Parliament, it was not inappropriate that Poisons and Poisoning should be the theme of address for the afternoon.

Poisons and Poisoning.

Defining a poison as a substance that small in amount had by chemical action hurtful or lethal effects on the animal economy, Sir James briefly reviewed the history of criminal poisoning to the present time. In looking into that history, nothing was so obvious as the way in which it repeated itself from generation to generation. Putting aside the stories of subtle and secret poisoning of bygone days as fabulous, it would be found that in the vast majority of cases it was some preparation of arsenic that was employed. It was unpleasant to have to admit it, but it was none the less a fact that women and doctors had supplied the most numerous and notorious poisoners. It might have been thought that medical men, with their knowlege of drugs and command over them, would have been able to ring the changes in an infinite variety of ways, to employ alkaloid and other organic poisons in such a manner and in such combinations as to perplex the clinical observer, baffle the pathologists, and set at naught the skill of the analyst. But not so. With what might almost be called infatuation, they had all but invariably worked on the old grooves, and carefully prepared a net for their own ensnarement.

Of late years medical science had attained to enlarged views as to the part played by poison in the causation of disease, and pathology had been remodelled on a toxæmic basis. It was now known that the human body in a normal state was a cupboard of poisons, harmless as long as they remained shut up in their own boxes, but capable when let out of inducing disastrous and even fatal consequences to their individual owner or to his neighbours, for human beings in close aggregation poisoned each other. With the knowledge that existed at the present time of poisons and toxins it was strange that they had never been used for criminal purposes; and it must be admitted that the science of toxicology was becoming infinitely more complex and intricate than it had hitherto been, and that very difficult and curious problems were not unlikely to arise in connection with its relation to medical jurisprudence.

Sir James felt strongly that all the advantages sought by the Bill of last session could be secured by the inclusion of the substances named in its schedule in Schedule A of the

Pharmacy Act, and it was most important that the Council of the Pharmaceutical Society should continue to advise the Privy Council as to the articles to be comprised in that schedule. But whether the powers and duties of pharmaceutical chemists in connection with poisons were to be extended or not, there could be no doubt that the subject of poisons must henceforth engage attention to a far larger extent than ever before. It was not improbable that at no distant date many antitoxins would be prepared by chemical methods; and in view of this fact and of the recently-acquired knowledge in connection with organic poisons, it might be expedient that a knowledge of bacteriology should be included in the course of study necessary for a chemist and druggist.

THE PLAGUE IN THE EAST.

PROGRESS OF THE EPIDEMIC.

THE Bombay Presidency still retains the unenviable notoriety of heading the plague list returns. In the city of Bombay itself the improvement recorded last week has not been maintained. The returns for the week ending October 1st show a serious recrudescence of the disease, as compared with those of the previous week; 209 deaths are the record for the week ending October 1st, as compared with 127 for the week previous. It is disheartening in the extreme to the authorities of Bombay that their city is again visited by an outbreak of plague, the third in succession in as many years.

On the main line of railway south from Bombay the towns of Satara, Kolhapur, Belgaum, and Dharwar are all seriously contaminated with plague; and still further south, in Bangalore, plague has during the past week claimed 124 victims. Bangalore is a great traffic centre, several of the important southern Indian railways converging there, and we may assume that, although the city of Bangalore is alone reported upon, the district around this great centre is also infected by plague.

From other districts there is fairly satisfactory news. Calcutta has had no case of plague for a week. Karachi returns declare only one case there. The Madras Presidency, from all its districts, mentions but 16 cases. The Punjab and Hyderabad State have only had 3 deaths each.

The accounts of abatement of the disease here and there however give no definite promise that plague has disappeared for good in these districts. With the example of Bombay and its recrudescences of plague before us, it is difficult to be sanguine that the disease has permanently disappeared from any place in which it has appeared at any time within the last three years.

NEW METHODS IN BOMBAY FOR DEALING WITH PLAGUE EPIDEMICS.

The Bombay Government has made an alteration in the rules to be adopted in dealing with the plague, which is at once striking and courageous. The authorities have laid aside the idea that plague can be "stamped out," and have now come to to the conclusion that the disease is governed by its own physical laws, and that it will run its natural course. This conviction seems to be a retrocession in sanitation, and its adoption will be put down by many that it is not really a scientific view, but that it is merely pandering to the wishes and demands of the natives to be let alone. We confess sympathy with the authorities, and with the natives; with the former because they have had to recede from the position they assumed when the "stamping-out" idea was in the ascendant, and with the latter because all their submission to the harassing conditions imposed upon them for three years are now officially declared to have been fruitless.

"It is some two years ago now since we declared in favour of controlling plague and dealing with it by palliative measures rather than by the "stamping-out" processes. We were also declared to be thwarting sanitation when we gave expression to the fear that, in spite of the rigorous methods then adopted to "stamp out" plague the disease would recur. Those who held opposite opinions had not yet learnt the lesson plague teaches. It was believed, even in high quarters, that the eradication of the disease was only a question of a few months, and it was taken amiss that it should be said that, judging by the history of plague epidemics, it would be a question of years before it could be even hoped that plague would disappear from Bombay.

Whilst, therefore, laying aside the "stamping-out process," there need be no abatement in the rigid enforcement of wise sanitary measures. Segregation and quarantine are now set aside as was the rash proposal to burn down infected quarters in Bombay. Short, however, of these heroic measures, there are many methods to be adopted, and the first principle to be inculcated is that the disease is capable of being controlled. In Bombay the mortality of plague has been kept within limits unknown in earlier days, and there is no reason to doubt that by systematic and continuous control, by inoculation and by careful medical inspection, plague will be limited in its spread and in its virulence. These measures demand continuous and assiduous work on the part of the authorities, the medical men, and the sanitary expert.

REPORT OF THE LUNACY COMMISSIONERS FOR SCOTLAND.

Increase in Number of Lunatics in Asylums.—Question of Age.—Present Condition of Asylums.—Want of Accommodation for Poorer Private Patients.—Expenses.

THE Fortieth Annual Report of the Scottish Lunacy Commissioners states that the number of lunatics officially known in Scotland on January 1st, 1898, was 14,906 persons, of whom 2,295 were maintained from private sources, 12,555 by parochial rates, and 56 at the expense of the State.

There is an increase among registered lunatics since 1896 of 406, of whom 73 were private patients and 333 paupers. This increase is found to be in those in establishments 419, while there is a decrease of 13 among those accommodated in private dwellings, and the increase is made up of 73 private patients and 346 paupers, as against 51 and 194 respectively for the years 1891-95.

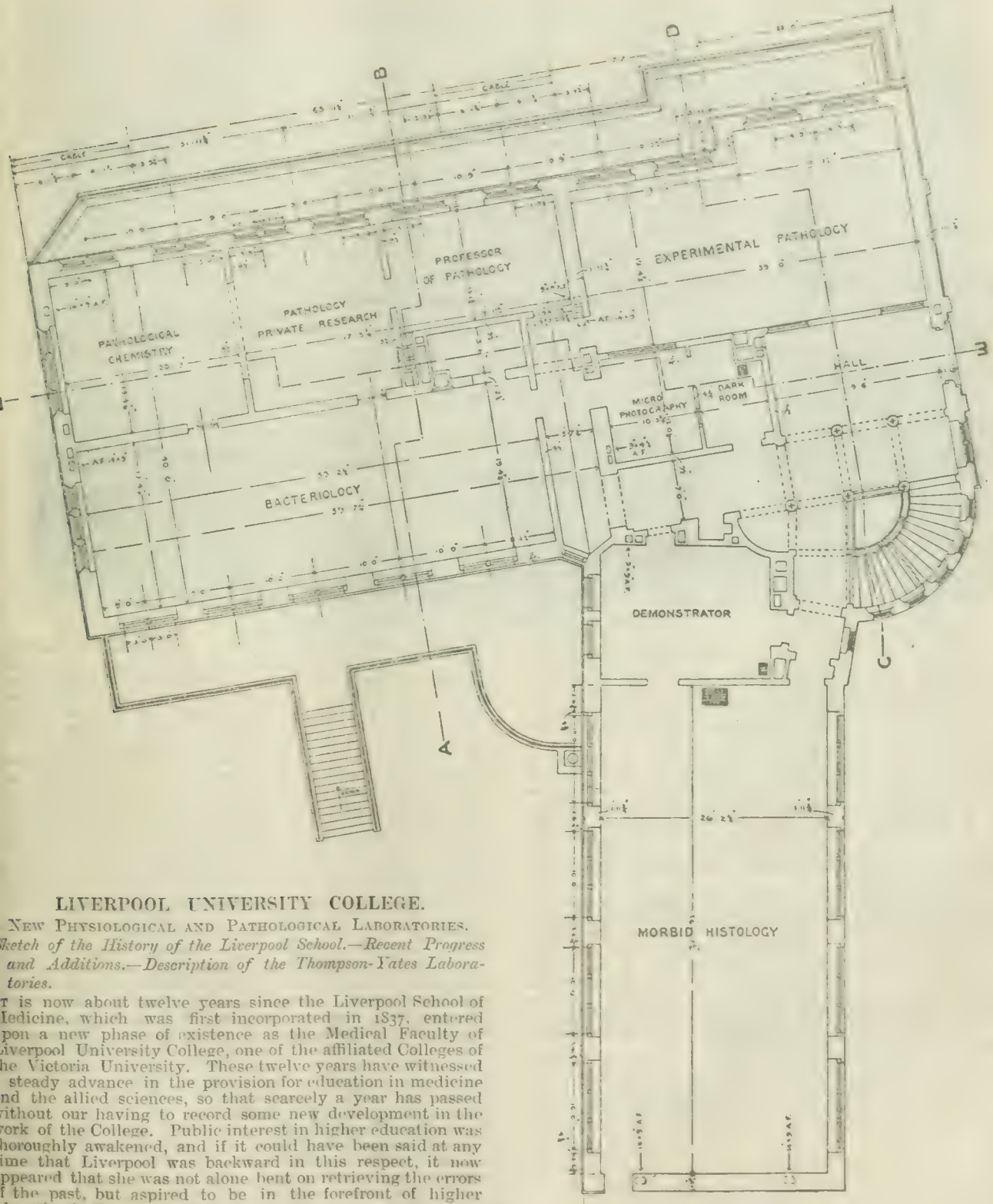
It is found that the increase is chiefly among the female poor in early life and the male poor in mature life up to old age, and to a still greater extent among those who have attained old age, especially females.

The percentage of increase of direct admissions to establishments per 100,000 of the population is—from 10 to 40 years, 15.2; from 40 to 70 years, 20.9; and 70 years and over, 38.9; and the Commissioners are of opinion that while the figures show that a greater number of lunatics are being sent to asylums they cannot be safely relied upon as furnishing any larger inferences.

The increase in the number of pauper lunatics has occurred chiefly in the counties lying between the Firths of Forth and Clyde, Lanarkshire contributing 199, or more than one-half of the increase, and this increase was anticipated as being likely to follow the opening of three large asylums in a county which has for long been sufficiently supplied with asylum accommodation.

A detailed account of the present condition of establishments for the insane is given, followed by an account of the position of patients in private dwellings and the amount of official supervision they receive. With very few exceptions the pauper lunatics of Scotland are disposed of either in asylums erected for them by the districts to which they belong, or in asylums with which the District Boards have made contracts, but there is continued want of accommodation for the poorer class of private patients, and the Commissioners repeat their opinion that permissive power should be given by statute to District Boards to provide this accommodation, and express the hope that a Bill will be laid before Parliament as soon as possible.

The amount of expenditure for pauper lunatics for the year is £285,372, an increase of 64 per cent. on the period 1874-79, but due to an increase in numbers rather than to a larger expenditure on each patient, the expenditure per head being £23 11s., as against £23 9s. 3d. in 1896 and £24 0s. 5d. in the quinquennial period 1874-79, and these figures show that the insane poor are being maintained with a due regard to economy.



LIVERPOOL UNIVERSITY COLLEGE.

New Physiological and Pathological Laboratories.

Sketch of the History of the Liverpool School.—Recent Progress and Additions.—Description of the Thompson-Yates Laboratories.

It is now about twelve years since the Liverpool School of Medicine, which was first incorporated in 1837, entered upon a new phase of existence as the Medical Faculty of Liverpool University College, one of the affiliated Colleges of the Victoria University. These twelve years have witnessed a steady advance in the provision for education in medicine and the allied sciences, so that scarcely a year has passed without our having to record some new development in the work of the College. Public interest in higher education was thoroughly awakened, and if it could have been said at any time that Liverpool was backward in this respect, it now appeared that she was not alone bent on retrieving the errors of the past, but aspired to be in the forefront of higher education in the future.



Liverpool University College: New Laboratories.

The delay which preceded the new development in medical education in Liverpool has not been without its compensating advantages. Laboratory and hospital construction has undergone striking changes during the last twenty-five years, and although it cannot be supposed that finality has been reached, it is unlikely that the methods of scientific investigation and instruction at present in vogue, and the main outlines of hospital construction which have been followed during the last decade, will be materially modified for many years to come. Consequently the designers of University College have been able to learn by the experience of kindred institutions, and it may safely be said that the medical school and the closely associated Royal Infirmary will enter on the next century with an equipment more free from the errors of the past than will often be met with in similar institutions which boast a longer history.

Among the important changes and additions which have contributed to bring the school to its present state of efficiency during the last twelve years we note especially the endowment of the chairs of physiology, anatomy, and pathology, and the appointment to them of professors of well-known reputation in their several branches. No less important was the opening in 1890 of the new Royal Infirmary, and the creation in connection with it of several special departments, and of a highly organised outpatient clinic, officered by a large staff of assistant medical officers.

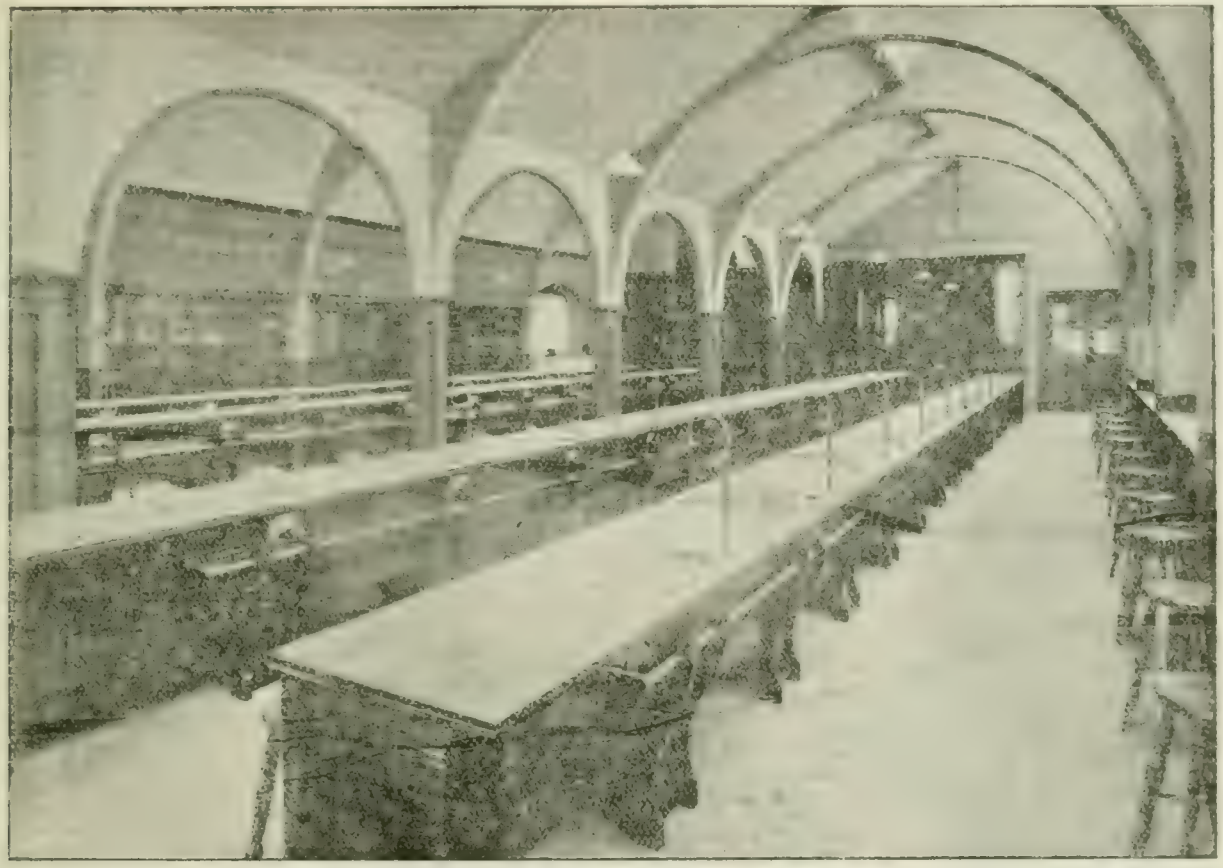
The completion of the Tate Library in 1892 was of no small importance to the school, and the same may be said of the Gossage Chemical Laboratories, which were opened in 1896. The anatomy rooms, which were of no mean merit even in the older days of the school, have been largely remodelled and extended during recent years, and the laboratory of Ashton Hall, which has served as the temporary home of pathology since the appointment of Professor Boyce to the chair, has been equipped and conducted in a manner which has left nothing to be desired in point of efficiency.

The last addition to the buildings of the medical faculty, which is to be formally opened by Lord Lister to-day, is a spacious and handsome block which is to be devoted to physiology and pathology, and is to be called the Thompson-Yates Laboratories. The entire building and the internal equipment, which have been completed at the cost of about £35,000, are the gift of the Rev. S. A. Thompson-Yates.

The general outline of the ground plan roughly resembles the letter L, the building consisting of two wings uniting at nearly a right angle. This arrangement secures a much greater amount of window space than would be possible in a rectangular block. There are four storeys, including the basement, throughout the building, and three mezzanines adjoining the main staircase, but not extending into the wings.

The ground floor is devoted to pathology, one wing being occupied by the class room for practical morbid histology, which is 56 feet long and 26 feet wide, and is fitted up to accommodate about 60 students. It opens directly into the pathological museum. In the other wing is located the room for bacteriology, 53 feet by 19 feet. Great care has been devoted to the sanitation of this room, and the tops of all the benches are of opaline so as to obviate all risk of the retention of infective materials. Adjoining this is a spacious suite, including a constant temperature room and rooms for pathological chemistry and for photography. The ample facilities for photography provided in all the departments are a notable feature of the new laboratories; and the same may be said of lantern demonstrations, for which provision is made in all the principal class rooms.

On the first floor is the large theatre, which will be used in winter for physiology and in summer for pathology. Here every modern contrivance has been adopted which can help to supply the wants of lecturers and students, a notable feature being a row of "aërial footlights," so arranged that by tilting the beam which carries them their light can be thrown either on the lecture table or on the diagrams, or



iverpool University College: Normal Histology Class Room.

wherever it is required. On the same landing is a large class room for drum work, where each student is supplied with one of Professor Sherrington's drums and has his own independent motor. Here we find a large room for physiological chemistry, a chemical balance enclosed in a large dust-proof chamber, a preparation, a research, and an electrical room.

On the second floor the large wing is occupied by the practical histology room, the largest apartment in the building, 60 feet by 40 feet, which is fitted up to accommodate 80 students, and could be made to accommodate several more. Each worker has his own electric light and gas and water supply. There is a small aquarium in this room, and on the same floor are an animal room, a preparation room, and combustion and photographic rooms.

The basement contains a cold storage room kept at a constant low temperature by the ammonia process, a laboratory for carrying on the work of the Clinical Investigation Society, and rooms for other kinds of experimental work. An important item is a large well-lighted students' Common Room, fitted up so that it can be used for the meetings of the Students' Debating Society.

The erection of the new laboratories has occupied two years. The architect is Mr. Alfred Waterhouse, R.A., of London, who designed the Royal Infirmary and the other buildings of University College.

It may be asserted without fear of contradiction, that in respect of completeness and efficiency, the Thompson-Yates laboratories are unequalled by any physiological and pathological laboratories in the United Kingdom, and are probably not surpassed by any of the great laboratories on the Continent.

In future medical degrees of an Austrian University will only enable the holder to practise in Austria. Hungary is to have "home rule" in the matter of medical qualifications.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on **Wednesday the 12th day of October** next, at 2 o'clock in the afternoon.

The following Committees will also meet:

Tuesday, October 11th, 1898.—2.30 P.M., Premises and Library Committee.—3.0 P.M., General Practitioners and Ethical Committee.—4.0 P.M., Arrangement Committee. *Wednesday, October 12th, 1898.*—10 A.M., Journal and Finance Committee.—5.0 P.M., Parliamentary Bills Committee.

FRANCIS FOWKE, *General Secretary.*

October, 1898.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

OXFORD AND DISTRICT BRANCH.—The next meeting will be held at the Radcliffe Infirmary on Friday, October 28th, at 3 P.M. Agenda: (1) Con-

firmation of minutes. (2) Election of candidates. (3) Short papers and notes of cases: (*a*) Mr. Innes Griffin: Severe Brain Injury; (*b*) Dr. Batt: A Case for Diagnosis; (*c*) Dr. Proudfoot: A Case Simulating Perforation of Gastric Ulcer; (*d*) Dr. Collier: An Unusual Case of Diabetes; (*e*) Mr. M. Style: Sudden Death of a Young Child; (*f*) Communications; (*g*) Propositions. Members wishing to read papers, etc., are asked to communicate with Secretary at once, WILLIAM COLLIER, M.D., St. Mary's Entry, Oxford.

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT.—The next meeting will be held at the White Hart Hotel, Reigate, on Thursday, October 13th, at 4 P.M., Mr. W. A. Berridge, of Redhill, in the chair. Dinner at 6 P.M., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Agenda: 1. Minutes of Croydon meeting. 2. To decide when and where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. The following papers, etc., have been promised: The Chairman will at 4 o'clock show Cases of Tuberculosis of the Udder, of the Uterus, and of the Intestines of the Cow, with other specimens kindly lent by Dr. G. Sims Woodhead. Dr. W. J. Hadley will show Microscopic and Culture Specimens of Tubercle. A discussion on Tuberculosis will be opened by Sir Richard Douglas Powell, in which Dr. W. J. Hadley, Mr. J. Hutchinson, jun., Dr. Edward Seaton (Medical Officer of Health to the Surrey County Council), and Dr. John E. Ranking will join. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Hon. Secretary. N.B.—The Hon. Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner.—HENRY J. PRANGLEY, Hon. Secretary, Tudor House, Anerley.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish to bring forward any business, to read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretary not later than Friday, October 14th.—H. WILLOUGHBY GARDNER, M.D., Swan Hill, Shrewsbury, Honorary Secretary.

EAST KENT DISTRICT: SOUTH-EASTERN BRANCH.

THE 148th meeting of this District was held at Hythe on September 22nd, Dr. RANDALL DAVIS in the chair. There were twenty-five members and visitors present, including Professor Victor Horsley, and Dr. Bond of Leicester.

Visit to Hythe Church.—A visit was paid to Hythe Church, and the skulls and stack of bones there were examined.

Confirmation of Minutes.—The minutes of the last meeting (annual) at Canterbury were read and confirmed.

Chairman of the Next Meeting at Canterbury.—On the motion of Dr. WHITEHEAD REID, seconded by Dr. FOGARTY, Brigade-Surgeon Tomlinson (Folkestone) was appointed Chairman of the meeting to be held in November in Canterbury.

The Bones in Hythe Church.—The CHAIRMAN read a paper on the Bones in Hythe Church. The origin of this collection of bones was first discussed, and it was pointed out that the so-called crypt of Hythe Church, where they now were, was not in any sense a crypt, but was a subway beneath the choir, which was necessitated by the lengthening of the eastern limb in the thirteenth century. As this passage was in daily use in pre-Reformation times, and as the bones were not mentioned by Leland when describing the church, they could have been placed in their present site scarcely before the latter half of the sixteenth century. The Rector of Cheriton, writing about 1700, described the bones, but said that the inhabitants of Hythe could give no account of them whatever. Hence they could scarcely have occupied this site later than the early part of the seventeenth century. Of some 700 skulls examined, 16 presented injuries which must have been inflicted before death; 2, at least, lived some time afterwards; and 1 apparently recovered altogether. The measurements of the skulls showed great diversity of shape and size, a few being extremely dolichocephalic, having a cerebral index varying from 71 to 77, while others are remarkably brachycephalic, the extreme breadth of one particular skull being only 1 centimetre less than the extreme length. The great majority were, however, of the brachycephalic type, having indices of 80 and over. The frontal suture persists in 36 instances, or about 5 per cent. None of the perforations presented any evidence of having been caused by the operation of trephining; and it might be said decidedly that no examples of this custom were to be found here. Most of the skulls, and indeed the bones generally, were in a remarkably good state of preservation, from which it was concluded that they could never have been subjected to ordinary burial.

The Diagnosis of the Commoner Zymotic Diseases.—Dr. LATTER (Folkestone) read a paper on The Difficulties of Diagnosis in the More Common Zymotic Diseases. In private practice the newly qualified man was often sorely puzzled by anomalies in the early manifestations of febrile disorders—especially if his experience had been confined entirely to hospitals. Rashes, in particular, were apt to be misleading, and usually it was not advisable to arrive at a diagnosis on the strength of a rash alone—measles, scarlet fever, German measles, urticaria, and small-pox being all deceptive as regarded their cutaneous manifestations. Some help might be gained from bacteriology, but here again the reports of the Metropolitan Asylums Board showed that the verdict of the laboratory was sometimes directly opposed to that of the bedside. Dr. Latter urged that the safest guide to correct diagnosis was gained from a broad survey of the clinical aspect of the disease—a combination of symptoms should be looked for rather than one infallible diagnostic sign. The experience gained under the old apprentice system was in many cases of the greatest service, and was sorely missed by many a man nowadays during his first years of private practice.

SECTION OF BORDER COUNTIES BRANCH.

A MEETING of Section of Border Counties Branch was held at Newtown St. Boswells, on September 29th, Dr. BLAIR (Jedburgh) in the chair. There were also present Drs. Menzies, Somerville, and Tyrrell (Galashiels), Dr. Young (Earlstoun), Dr. Haddon (Denholm), Dr. Marr (Greenlaw), Dr. Cullen (St. Boswells), and Dr. Calvert (Melrose).

Next Meeting.—Dr. HADDON moved and Dr. YOUNG seconded:

That the next meeting be held in Hawick in the end of November.

Dr. Haddon agreed to introduce a discussion on Hypnotism.

Chairman's Address.—Dr. BLAIR then thanked the members in a very able speech for electing him to the chairmanship. He referred to the difficulties of practice, to the rapid advance of new methods and to other points bearing on the work of the profession which necessitated conference and interchange of thought amongst its members. He concluded by introducing a discussion on Influenza, its varieties and their treatment. He dwelt on its universality in all countries, seasons, soils—its history—mentioned that a hundred epidemics had been noted and described. He held there was an atmospheric influence in its propagation, there was direct contamination also. The specific agent therefore must be in the atmosphere. The usual incubation was one or two days, sometimes longer. The three principal varieties were (1) Respiratory, (2) Abdominal, (3) Nervous. The one important symptom in all cases was prostration. The realisation of this was the guide to its treatment.

Vote of Thanks to Chairman.—Dr. SOMERVILLE moved a hearty vote of thanks to the chairman for the excellent address to which they had just listened. He hoped the formation of the Section would foster the feeling of comradeship among the medical brethren practising in the same district.—Dr. HADDON, in seconding the vote to Dr. Blair, said he had listened with great pleasure. The address was second to none he had heard in the Border Counties Branch. He expressed the wish that in some way the address could be put before all the members of the Section. The vote was unanimously carried.

Discussion on Influenza.—A discussion followed on influenza.—Dr. YOUNG quoted cases showing that the incubatory period was not more than five days, although it might be shorter.—All the members present spoke and related their experiences of recent epidemics.

Skiagraphs of Injury to Forearm.—Dr. CULLEN showed skiagraphs of injury to forearm, which resulted in complete loss of power. The skiagraphs showed it to be due to extensive callus in the neighbourhood of the elbow, pressing on the median nerve, and causing fatty degeneration of the muscles supplied by it.

ABORTION IN CANADA.—A discussion recently took place at an Anglican Conference held in Montreal as to the low birth-rate in Ontario, and the cause was asserted to be the wide prevalence of criminal abortion and of the use of artificial means to prevent conception. The low birth-rate (says the New York *Medical Record*) may be due partly to the cause assigned by the ministers, but it is also associated with a very low marriage-rate, which would seem to account for it in a measure.

SPECIAL CORRESPONDENCE.

PARIS.

A Metropolitan Railway for Paris.—Dispensary Midwives.—A Doctorate of Pharmacy.—Intermittent Hemeralopia.—A Dental Congress.

The medical press accords its approval to the scheme of a Paris Metropolitan Railway. This scheme is now on the way to be realised. One result will be that the traffic of Paris will be lessened, and consequently fewer people will be run over. In one year 240 persons were run over at the cross roads of the rue Drouot, the Faubourg Montmartre, and the rue Lafayette. The easy access to country places afforded by the Metropolitan Railway is favourably regarded by sanitarians, if only as a means of occasionally breathing pure air, but this is not all; it is firmly believed that the overcrowded Paris flats will be deserted for the more healthy dwellings in the suburbs. A sanguine prophet predicts that the real improvement in the drinking water supply now about to be accomplished will be followed by the purification of the Paris atmosphere.

On December 24th, 1897, a proposal was made to the Municipal Council to organise a service at the dispensaries for the purpose of improving the home medical treatment of parturient women. The administration, having studied the question, believes that considerable improvement will soon be effected. The midwives attached to the Bureaux de Bienfaisance have been authorised to prescribe the antiseptic specified in the decree issued on January 19th, 1896—namely, a mixture of vaseline and mercury. The Bureaux de Bienfaisance are called upon to furnish the midwives with all the instruments necessary for the treatment of lying-in women. Midwives are to be paid 15 francs for each patient they attend, even when the family doctor sends the patient to the hospital before the labour has ended. Each dispensary is to be provided with medicines and instruments which midwives are likely to require in the exercise of their vocation. It is likewise suggested that a service should be organised for medically examining pregnant women. This modification will be studied by the Conseil de Surveillance de l'Assistance Publique.

The Medical Association of the Loire and the Haute-Loire, which met at Roanne, have voted that the Lyons University be called upon to revoke their decision to create the title of Doctor for pharmaceutical chemists. The medical profession is opposed to the proposal; it considers that medical men are not sufficiently protected in the present state of affairs, and would be greatly injured by the creation of doctors in pharmacy.

During the last military manœvres it was observed that some of the soldiers became completely blind during the night. Sight returned with the rising sun, and disappeared again at dusk. This intermittent hemeralopia continued during several days, and then finally ceased. The affection is attributed to sunstroke, either direct or indirect, from a glaring sun, to marching over light ground, or to the glare transmitted from lime-washed buildings. The patients were cured by putting them in the middle of the day in a dark place, and making them promise not to look about and try to see objects. In two or three hours they recovered their sight.

The fourth Dental Congress has lately been held at Lyons. Dr. Arloing presided over the Congress, and Dr. Lecoudez is the permanent President.

LIVERPOOL.

The Professorship of Midwifery.—Visit of Professor Virchow.—The late Sir A. B. Forwood, Bart.

The last day for sending in applications for the post of Professor of Midwifery and Diseases of Women in University College is October 8th. It is understood that four candidates are at present in the field, namely, Dr. T. B. Grimsdale, Surgeon to the Thornton Wards in the Royal Infirmary, and Dr. Briggs; Dr. Gemmell and Dr. Wallace of the Hospital for Women.

Amongst the distinguished visitors who will be present at the ceremonies in connection with the opening of the Thompson-Yates Laboratories on October 8th, few will be received with more interest and veneration than the veteran Professor Virchow. The presence of the Father of Cellular Pathology will bestow a special lustre on this last addition to the means for carrying on the work which he inaugurated.

The career of the Right Hon. Sir A. B. Forwood, Bart., M.P., which came to a close at the end of September after a few days' illness, was of no small interest from a medical point of view. As Chairman of the Health Committee for some years he had a large share in carrying out the great improvements in the sanitary state of the city which have marked the past quarter of a century. He was especially active in promoting the destruction of insanitary property and the compulsory notification of infectious diseases. The Ladies' Charity and Lying-in Hospital owes its existence in its present form to his efforts. Up to the year 1880 the Lying-in Hospital and the Hospital for Women together occupied a building in Myrtle Street which is now the Cancer and Skin Hospital. About that time, however, the mortality of lying-in cases in the hospital became so excessive that a large number of the medical officers and others connected with the place advocated the abolition of the lying-in wards altogether. This, however, was strongly opposed by Sir A. B. Forwood, with the result that the two institutions were separated, and the present lying-in hospital was opened in Brownlow Hill. It was subsequently found that the drainage of the hospital in Myrtle Street was in a shocking condition, the drains being entirely disconnected with the main sewers, and discharging their contents into the soil.

CORRESPONDENCE.

APHASIA IN RELATION TO TESTAMENTARY CAPACITY.

Sir,—Owing to my having been on holiday recently my attention has only just been directed to a letter of my friend, Dr. Beverley, of Norwich, in the British Medical Journal remarking on my not having alluded to a chapter in the second edition of Sir Frederic Bateman's work on *Aphasia*, in opening the discussion in Edinburgh on Aphasia in relation to Will-making. I must plead frankly guilty of the omission, which I now much regret, as the chapter in question is a most curious and interesting one; and I can only account for my oversight by the fact that the opening of the discussion in question was pressed upon me in the midst of mental occupation with a quite different class of subject, and that while long familiar with the first edition of Sir Frederic Bateman's work, I had practically no acquaintance with the second, which, however, was alike my fault and my misfortune, as the case of the Rev. J. T. L., a local *cause célèbre* (as it is very properly called), would have aided me very much in the statement of my argument. In this case a man of 63, presumably well educated and highly intelligent, and a widower, became aphasic when in full expectation of contracting a second marriage, and although "unable either to speak or to write," succeeded in conveying to his medical attendants a clear impression of his deliberate intention to leave the usufruct of £30,000 to the lady to whom he was engaged, the capital sum afterwards to revert to his own family, and "be divided fairly and equally."

The details of the method adopted, as given in abstract, are most valuable as far as they go; and for the benefit of the readers of the British Medical Journal I may give here the reference to *Law Reports, Probate Division*, vol. xii, 1887, p. 8. This case is all but conclusive as to the legal position in England; for although probate was not, in fact, granted, it was held that it might have been granted had the mark by which the testator signified his intentions (and which was duly witnessed as such) been placed at the foot of the card in which verbal expression was given to those intentions, instead of in the middle of the card. The technical flaw, therefore, in this case, was one which would have equally defeated a non-aphasic will, and would have been avoided had a well-informed lawyer been a party to the transaction, along with the two medical attendants. As it was, the "position (of the mark) was not such as to satisfy the provisions of the statute of the Wills Act (IV Vic., chap. 26, sec. 9), or of Lord St. Leonard's Act (XV Vic., chap. 24, sec. 1), and the instrument was not duly executed, and consequently not entitled to

probate, which was accordingly refused." All which goes to show that the difficulties in the way of an aphasic, as such, in making a valid will, are difficulties of detail and not of principle. As I remarked at Edinburgh, the *onus probandi*, which in the case of a normal will lies upon those who dispute its validity, is shifted to the defenders of the will, in so far, at least, that they have to show that these difficulties have been successfully overcome. I do not know if the Scotch law would have differed from the English in the case here referred to.

In the case of which I have already given some account in a letter in this JOURNAL (June 12th, 1897), very briefly alluded to in the discussion at Edinburgh, I am still precluded from full access to the precognitions and other documents; and as the case was not brought into court I can only say that it would have been at least as interesting, and as full of instruction as the one just cited from Sir Frederic Bateman's valuable work.—I am, etc.,

Glasgow, Sept. 14th. W. T. GAIRDNER.

DEATHS IN CHILDBIRTH.

SIR,—The Plaistow Maternity Institute is one of the maternity charities whose statistics are quoted by Mrs. Garrett Anderson in her letter of September 17th. I was medical officer to that institution for one of the years referred to, and I had ample opportunity of noting the accuracy of the records. They were kept during that time with a view to publication, and with full appreciation of the distinction between "real" and "supposed" mortality as referred to in your remarks.

In 1897 the institution, including its Custom House branch, attended 1,549 extern cases, 153 of these being primiparæ, 1,396 multiparæ. Every one of these cases was attended through the whole puerperium, a daily record being kept, and the complete records were carefully filed. The total mortality was 4. These occurred in multiparæ only, and were due to the following causes: 2 to pulmonary embolism, on the tenth and fourteenth days respectively; 1 to rupture of the uterus, death occurring on the seventh day after abdominal section, which was carried out in the patient's own house; 1 to phthisis, death occurring on the fourth day from pneumothorax. As this last case had been treated as an in-patient in a chest hospital previous to pregnancy, it may be deducted from the total number on which calculations are based. This gives a mortality of 1 in 516, or 0.19 per cent.

Other three cases may be referred to, mainly as indicating the trouble taken to ensure the accuracy of the after-history. The cases died within a few weeks after the puerperal period was over, from the following causes: One from phthisis, the patient having meantime moved into another district; one from organic cardiac disease; one from gliomatous tumour of the cord, symptoms having first developed during the last week of pregnancy, the patient being removed to King's College Hospital after a normal puerperium. The figures therefore represent the "real" mortality in a large maternity charity carrying on its work under circumstances certainly not the most advantageous, and the results are largely due to the thoroughness of the methods used as regards cleanliness and asepsis.

The statistics I have given, limited though they are, show that the views expressed by Mrs. Garrett Anderson are not perhaps so optimistic as you suggest.—I am, etc.,

Edinburgh, Sept. 27th. MARY C. WATSON, M.D.Edin.

ASEPTIC MIDWIFERY.

SIR,—I should like to suggest as a compromise between the *nimia diligentia* of some in aseptic midwifery, and the *laissez faire* of others, that the right moment psychologically and physiologically for rendering the external genitals as aseptic as possible in parturition is when the perineum and vulva are being distended by the fœtal head. The woman is then either under chloroform or in so much pain as to be indifferent to considerations of delicacy. The stretching of the parts at that stage enables an antiseptic to be applied more thoroughly than at any other time. It can be done without exposure. A towel soaked in a hot solution of perchloride of mercury or carbolic acid wrung out and held *in situ* is all that is required. This is comforting to the patient; the heat helps to relax the tissues, and if carbolic acid is used is anodyne as well as antiseptic.—I am, etc.,

Wigton, Sept. 28th. THEOBALD A. PALM, M.D.

SIR,—I have read with much interest Dr. Jardine's letter dealing with aseptic midwifery. His insistence upon the cleansing and disinfection of the genitals of the "lying-in woman" must of necessity produce some good result. But as a surgeon and a general practitioner I cannot agree with all his deductions. To treat the woman's genitalia as one would treat the skin and its connections before doing a surgical operation is for many obvious reasons a practical impossibility, and half measures, if one is trying to produce an aseptic condition of regions, are useless. Also it is impossible to keep the parts aseptic during labour. To treat the genitals and keep them in such a condition as one tries to keep a wound after operation is equally impossible. But I admit that everything should be done that is practically possible to keep the parts clean and antiseptic before, during, and after labour. I would try to do this myself, and would give definite instructions to the nurse to do likewise. But to "fully expose" the genitals and scrub them, and apply antiseptics in such a manner that the parts may be reasonably considered aseptic, and to instruct "students" to do this is, I think, a step from the sublime to the ridiculous.

I do not see that there is any similarity between "a natural labour" and "a surgical operation," nor do I see why we are not to look upon the one thing as a natural process and the other as a proceeding calculated to arrest real disease. I believe that in nine cases out of ten the septic conditions occurring in connection with parturition are carried to the patient from without, and that strict cleanliness and antisepticism on the part of the practitioner and the nurse are of more importance than the cleansing of the patient herself. This, however, I would also insist upon as far as was reasonable and practicable. A dirty condition of the parts would no doubt help to produce a suitable soil for specific germs to grow in.

I have dealt with many hundreds of cases of labour, including 900 whilst house-surgeon nearly twenty years ago at a maternity charity. It has been my good fortune never to have lost a case of my own through septicæmia.

Of course, the genitals and their surroundings could not be made really aseptic (as for a surgical operation) unless the hair was shaved off. Do the Glasgow students go to their lying-in cases armed with a razor?—I am, etc.,

Reading, Oct. 3rd. W. T. FREEMAN, F.R.C.S.

SIR,—In answer to Dr. Jardine's challenge in his letter in the JOURNAL of October 1st, I propose to state my experiences and methods in general midwifery practice.

During the past six years over 1,270 cases have been entered in my books; of these, I have attended personally over 1,200; the sanitary surroundings of the majority were far from satisfactory, nor was it possible to carry out the elaborate aseptic precautions suggested by the speculative scientist; it has been my constant care to avoid even the *post-partum* douche (so fruitful a source of sepsis when administered by the "handy woman"), and yet I can only find two cases of septicæmia amongst those I have attended. Of these, one ended in death, and was due to adherent placenta, a small portion remaining glued to the uterus after the major part had been detached; the other case recovered, and here it was clearly proved that the poison had been introduced by an officious mother-in-law, who without my advice—indeed, against my wishes—administered some so-called antiseptic douches with a lethal instrument, which once might have been a Higginson syringe with vaginal pipe attachments.

The usual precautions—that is, the common-sense precautions I adopt—consist in clean hands and an antiseptic lubricant—carbolic ointment, to wit.

It is with a lively horror one looks back upon the scientific hospital treatment where the shivering parturient lies upon mackintosh sheeting in a state of partial nudity, smothered in soap suds and running with outlandish liquids, and the lying-in room suggests nothing save a back kitchen on a washing day. The position of accoucheur is surely delicate enough without heaping up futile and ridiculous ritual food for the satire of some twentieth-century Molière; a little more

gentleness and a little less asepsis is what all women would prefer.—I am, etc.,

September 30th. G. P.

Sir,—In Dr. Jardine's paper in the British Medical Journal of September 17th upon aseptic midwifery, there is a statement to the effect that "in all cases of puerperal sepsis infection is from without;" and I observe that Dr. Jardine's technique in the lying-in room is directed almost wholly upon this hypothesis. He takes every care to accentuate the importance of external cleanliness, and rightly so; but it will strike many practitioners, as it would seem to have struck Dr. Maclachlan, that too much confidence is placed in the so-called asepsis of the genital tract, and that Dr. Jardine's technique is insufficient to meet the very serious and often hidden dangers of intravaginal sepsis and gonorrhœa.

It is true that, in known cases where such source of infection existed, Dr. Jardine would use the safety douche; but obviously it is not always possible in the lying-in room to differentiate such cases; and hence the importance of the employment of the douche not as a matter of option but as a matter of routine; and I think that probably a good deal of Dr. Jardine's success in his last 100 cases was due to the fact that most of them were out of the ordinary, and would have the advantage of douching. It is often the simplest cases that go septic: the cases in which everything outside is scrupulously clean, and in which no vaginal examination has been made. The reason is to be found more often than not in conditions obtaining within the genital tract; and so long as such conditions escape the routine technique, so long will our results bring disappointment, and puerperal mortality increase.—I am, etc.,

Carlisle, October 3rd. C. Crawford Aitken, M.B.

Sir,—That sufficient time has elapsed since the principle of asepsis was first introduced to warrant a decided opinion, and that we hold abundant proofs of the benefits of that principle, can scarcely be called into question. Asepsis and antiseptics are indicated in all obstetric operations, from the "natural" to the "operative." It is no argument against the general carrying out of these principles to say, as Dr. McCulloch says, that because he had 1,753 cases without a maternal death or a septic inflammation that the "usual precautions" are sufficient.

Dr. Jardine, in his paper on puerperal sepsis, says "that in all cases (except the case of a pelvic abscess bursting into the genital tract) the infection is from without, and that in the vast majority of cases the genital tract at the onset of labour is perfectly aseptic and that non-pathogenic germs in the vagina, by rendering the vaginal secretion acid, prevent the pathogenic ones from gaining a foothold." Is it not a fact that it is a pure question of the survival of the fittest—a fight for existence between the prepondering varieties of non-pathogenic and the pathogenic organisms? And may not the non-pathogenic ones, if carried by the finger from the vagina to the uterine surface, take on pathogenic properties? May not some of the non-pathogenic organisms themselves if carried *in utero* cause sapræmia, or symptoms resembling septicæmia; and may not these same organisms *in utero* in a phthisical subject give rise to symptoms simulating septicæmia? I think all cases of supposed septicæmia should be carefully diagnosed by at least three medical men. I should also like to know if the diagnosis of septicæmia does not mean the diagnosis of death, and that if the case should recover then it was not a case of septicæmia. If the genital tract is so perfectly aseptic in the majority of cases, then the question of *ante-partum* douching should never arise in such cases.

As regards the washing of the external genitals before examination in cases not requiring interference, I do not think it is necessary; and, should anyone wish it done, then I think it belongs more to the part of the obstetric nurse. I think in all cases after the third stage, and the external genitals having been washed antiseptically, an antiseptic pad (a clean napkin or towel well soaked and rinsed out in 1 in 500 perchloride or other strong antiseptic solution) should be placed over the external genitals for the sake of keeping the lochia sweet, and of covering the patient's labia.

Dr. Jardine forgets that most women do not understand our principles, and that modesty alone would be sufficient to give them a real conscientious objection without necessarily being impure-minded. At the same time, I believe the majority of women would permit a pure-minded obstetrician doing his work after his own fashion without objection, and so in such cases I think the obstetrician should see what he is about.

As regards the use of antiseptic vaseline, whilst I do not use it, yet for those who have no faith in their own powers of carrying out the principles of asepsis, its use is rather to be advised than discouraged. The fact that many women do not become septic after an examination by means of antiseptic vaseline cannot be held as proof of such a mere assumption as the "antiseptic power of the vagina." If the vaseline is antiseptic, then the power of the antiseptic cannot be altogether overlooked, and the fact that vaseline is sticky must also be remembered.

I agree that *ante-partum* douching is necessary under the conditions mentioned, but if for any reason frequent examinations for example, consultations on a case—are necessary, an *ante-partum* douche would be good practice, as all men do not agree in their method of aspeticising their fingers. By a vaginal douche is not to be understood a mere passage of an antiseptic solution into the vagina, but that the folds of the vagina are to be well washed out by means of the hand during the flow of the antiseptic.

The use of corrosive sublimate for a vaginal douche is to be objected to, not because it corrugates the tissues (it must be used stronger than indicated to do this), but because, on account of the large amount of albumen present in the vagina the albuminate of mercury is easily formed, and so the solution is inert. I think a solution of creolin best.

As regards intrauterine douching with corrosive sublimate solution, the serum albumen is not met with in such quantity as to affect the solution very materially, and so I think sterilised water is not indicated after such douching. If it were it would be better to use a solution of creolin which is non-poisonous in addition. Furthermore, a mere boiling of water in a patient's house does not necessarily mean it is sterilised absolutely. I do not think that in a laceration of the perineum it is necessary to douche the uterus, and I fail to see why a prolonged labour *per se* should indicate such a douche.

Dr. Jardine says that "in the high forceps operation in hospitals a douche is used beforehand, but that in private work this is not so necessary." Why not? Dr. Jardine towards the end says, "stagnant lochia runs risks of becoming septic." Surely this is against his antiseptic powers of the vagina.

In conclusion I have to say that in connection with a good principle it is everyone's duty not only not to object to it from one's own limited results, but also not to carry it to absurdity—both of which are antagonistic to the proper success of the principle.—I am, etc.,

A. G. Newell, M.B., C.M.Glas., L.M., D.P.H.Cantab.

Greenock, October 4th.

Sir,—I published recently in the *Caledonian Medical Journal* statistics of 1,000 labours, in which I stated that there had occurred 6 maternal deaths, 3 of them being due to heart disease, 1 each to placenta prævia and eclampsia gravidarum, and 1 to septicæmia. Since compiling that list I have attended upwards of 500 more cases without a maternal death.

The case of septicæmia referred to was induced by the filthy surroundings of the patient, and my object in joining this discussion is to draw attention to a point which has, I think, been omitted by correspondents so far, namely, that in some cases of septic poisoning the surroundings of the patient are to blame.

The accoucheur may antisepticise his hands and instruments, may scrub and shave the genitalia of the patient, may forego the use of all greasy lubricants, and may (?) even never examine the patient *per vaginam* at all, but how is he to guard the vaginal orifice immediately after delivery against the inroads of bacteria, which swarm on the bed, clothes, or napkins (often a dirty rag), etc., of the patient in the poorer or lowest classes of our cities, and which must sometimes, in my opinion, be the cause of this disease?

I have always used ordinary precautions (and frequently extra ones) as regards cleanliness in my midwifery practice,

but I should not like to assert that I have always used strictly antiseptic or aseptic measures in my labours; in fact, I maintain that in the hurry and bustle of general practice such stringent precautions are impossible, although in the practice of a specialist or hospital such measures may be carried out.

As regards the small amount of practical obstetric work demanded from students before admission to the final examinations, I consider it a perfect farce, and a disgrace to a country which is supposed to be in the van in such matters.—I am, etc.,

Yeadon, Oct. 3rd. CHAS. J. R. McLEAN, M.D.Edin.

SIR,—There is a view of the question of aseptic and antiseptic midwifery that has not been clearly stated, so far as I know, in the interesting correspondence now going on. Antiseptic and aseptic are the greatest words in the surgery of this or any other century, that we all recognise; but can the same words, by any stretch of courtesy, be applied to midwifery? When the skin of the patient, the surgeon's and assistant's hands, the sponges, instruments, ligatures, dressings, and in fact everything that can by any possibility come in contact with the wound have been rendered really aseptic, so as to give negative results on cultivation, a definite position has been attained, scientifically demonstrable and of inestimable value. Here is a goal for everyone to realise and aim at.

But now as to midwifery. Supposing the scrubbing brush has been used, as in Glasgow, does anyone imagine that the anus and vulva have been rendered thereby surgically aseptic? Surely not. And supposing for a moment that they had, what percentage of women defæcate promptly afterwards, and then where is the asepsis? Is the scrubbing brush to be reapplied *post partum*?

I would ask those gentlemen who profess to treat every case of parturition as a surgical operation how they dress their "wound" afterwards, and for how long? How about the ordinary acts of Nature during the first few days after parturition? When do they retire in favour of natural safeguards? But granting for a moment that it were possible—which or course it is not—to render the parturient woman surgically aseptic and keep her so, say, for a week, what about the nightgown, the bed clothes, the bedroom, the monthly nurse? If the word aseptic is to retain any definite meaning, let us clearly understand that it is a surgical word and belongs to the surgeon. Parturition, on the other hand, is a physiological act which is best, as far as possible, left alone in normal cases.

We have learned something about infection, and it is a criminal act knowingly to carry infection to a parturient woman from *post-mortem* room, scarlatina, or any other source. Soap and water and nail—if not scrubbing—brush are very applicable to the hands of the accoucheur; cleanliness and a rigid avoidance of sources of infection are binding on him, but asepsis is for the surgeon.

[illegible]septic cases do occur among the patients of the private practitioner with all the possible sources of infection to which his patients are exposed and over which he has no control is surely not to be wondered at, nor is it matter for surprise that when patients can be strictly isolated and put in clean surroundings in a hospital septic cases should practically disappear, but I see no great cause herein either for self-glorification on the one side nor severe censure on the other.—I am, etc.,

Redhill, Oct. 3rd. S. W. MACILWAINE.

SIR,—I consider the letter signed "Anti-Humbug" contains a good deal of sound common sense. How can all the washing and scrubbing of the female organs prevent abrasions and fissure of the mucous surface occurring unseen during the [illegible] morbid germs will enter?

Is not the patient's general health previous to confinement not to be taken into consideration? A lady in the better classes, of bad physique (however cleanly kept) runs a far greater chance of septicæmia than a robust, healthy female of the class so well described by "Anti-Humbug." Surely in midwifery practice, as in all other matters, "circumstances alter cases." The truth lies between the two extremes: those who will take no trouble in the way of cleanliness and the school so aptly called by your correspondent the "scrubbing school."—I am, etc.,

October 2nd ANOTHER ANTI-HUMBUG.

ABOLITION OF "THE VIEW" AT INQUESTS.

SIR,—I agree with you that the present method of viewing bodies by the jury is a disagreeable and even revolting duty, and of no use in the majority of cases. Take, for instance, the county of Anglesea, surrounded, as it is, by the sea. Bodies—many of them in an advanced state of decompositson and past recognition—are constantly being thrown upon its shores. What possible good can result from "viewing" in such cases. A great percentage of those liable to be called to serve upon the jury resort to all manner of schemes with a view of evading the summoning officer. In 80 per cent. of cases, "viewing" does not help the jury to ascertain the cause of death. In my opinion the only practicable way of settling the important question would be to leave to the coroner a discretionary power to order a "view" when he thought it necessary or desirable, and to grant leave to the jury, or, as you say, to each individual juror, the right to "view" if they or he so wished to do so. But it ought to be imperative that the coroner could "view" in each case at any time before the inquest held, as this would facilitate matters very much in the examining of witnesses.

The proposal to compel the coroner to call in a medical man to examine and report on each case would simply be absurd, as in a great percentage of cases lay evidence is sufficient as to the cause of death.—I am, etc.,

ROLAND P. WILLIAMS, M.D., D.P.H.,
Deputy Coroner for the County of Anglesea.

Holyhead, Oct. 1st.

ASSURANCE COMPANY'S FEES FOR ACCIDENT REPORTS.

SIR,—I have read the letters appearing in your columns, and I may say I have acted as referee for the company so ruthlessly attacked for many years, and I think your correspondents have come to some hasty conclusions from inexperience. The company named only pays 2s. for reports under the new Workmen's Compensation Act, and your correspondents evidently overlook the factor of quantity. For an isolated report, for one just now and again, the fee would be "ridiculous," but as some referees receive such reports in little batches the number makes all the difference. Besides, I understand the fee has been fixed by a combined arrangement amongst the several offices.

After all, is this not a question as to what an office can afford to pay for this class of work? I never knew a company to be really mean. I act for several in my district and they all allow me extra charges for distant or intricate work. Again, if the offices find this new business to be more remunerative than they now expect the surgeon's fee will I am sure expand, but for the present the sick-and-death-rate is an unknown quantity, hence economy is their watchword. The accident report form under the new Act is very simple. I could fill in eighty in an hour.

"An Insurance Doctor" inquires why "the Government pay more than twenty times as much"? For the simple reason that Government inspectors may require an hour or more for a thorough investigation, as all injuries referred to them are disputed or intricate cases calling for more thought and time than a simple declaration that a man is totally disabled because his hand is off.—I am, etc.,

September 20th. M.R.C.S.

SURFACE DRAINAGE AS A SOURCE OF DRINKING WATER.

SIR,—The village of Woodcote, which is situated on the Chiltern Hills between Wallingford and Henley, under ordinary circumstances derives its water supply partly from the cottage roofs, but chiefly from several roadside ponds which receive the surface drainage from the adjoining fields and highways. At the present time both these sources have entirely failed, and water has to be carried from the Thames or the lowland wells, the double journey involving a walk of from six to eight miles. The population of the village is between two and three hundred persons, and there are a num-

ber of other villages amongst the Chiltern Hills where the same conditions as to water supply obtain.

A deep well might be bored at an expense which would represent a cost of under 10s. per cottage per annum for about thirty years. But the majority of the inhabitants have hitherto considered the pond water to be ample and satisfactory, and up till the present the schemes suggested for boring a deep well have been rejected on the grounds of expense, and on the assertion that no disease has been traced to the pond water. Am I right under these circumstances in stating that surface drainage water subjected to no process of filtration is essentially a dangerous and undesirable beverage, and that the comparatively good record held by the district as to health is no guarantee of future safety?

I should be glad if any correspondents who have extended experience in matters of village water supplies would offer an opinion.—I am, etc.,

CHARLES REINHARDT, M.D.Brux., L.S.A.Lond.

Southstoke, Oxfordshire, Sept. 28th.

VINEGAR AS AN ALLEGED CAUSE OF HEPATIC CIRRHOSIS.

SIR,—Some remarks made by me at the annual meeting in connection with the suspected causation of cirrhosis by the prolonged and excessive use of vinegar, and accurately reported on page 953 of the BRITISH MEDICAL JOURNAL of October 1st, call for a further statement in the light of subsequent events. The patient upon whose case these remarks were based died after the fifty-third tapping, but the liver was not cirrhotic. The recurring ascites was connected with an unusual condition of the heart, a description of which is intended for future publication. The liver itself presented only slight fibroid changes and chronic congestion. My desire that this failure in diagnosis should not be the source of a misleading impression in connection with the etiology of cirrhosis must be my excuse for begging your insertion of correction.—I am, etc.,

Mayfair, W., Oct. 3rd. WM. EWART.

SANITARY INSTITUTE CONGRESS.

SIR,—The newspaper reports of the Congress at Birmingham are in error in attributing to me a motion regarding sanitary administration in Ireland. The motion was made by Dr. J. H. Fergusson, Killygordon, Donegal. Your insertion of this correction will oblige.—I am, etc.,

Glasgow, Oct. 3rd. JOHN C. M'VAIL.

OBITUARY.

JAMES EDWARD TIERNEY AITCHISON, M.D., C.I.E., F.R.S.,

Indian Medical Service.

THE announcement of the death of Dr. Aitchison on September 30th, at the age of 63, will cause a feeling of profound regret and sorrow amongst a wide circle of friends. He had suffered for several years past from valvular disease of the heart; but the immediate cause of death was a biliary calculus, for which he was operated upon a couple of months ago.

The second son of Major James Aitchison, H.E.I.C.S., he was born at Neemuch, India, but received his education at home in the Grammar School, Dalkeith, and the Edinburgh Academy, afterwards entering the University of Edinburgh, where he graduated M.D. in 1856. He also became Licentiate and Fellow of the Royal College of Surgeons, Edinburgh.

In 1858 he entered the Honourable East India Company's service as Assistant Surgeon, and he married, in 1862, Eleanor Carmichael, daughter of Mr. R. Craig, Craigesk, N.B. In 1872 he was British Commissioner in Ladak: and six years later served with the 29th Punjab Regiment, N.I., in the Kurram Field Force, for which he received a medal and clasp. His appointment as Botanist to the above-named Force followed in 1879 to 1880; and in 1884-85 he was made Naturalist to the Afghan Delimitation Commission.

Some of his published works are: *Catalogue of the Plants of the Punjab and Sindh* (London, 1869); Flora of Lahal (*Journal of Linnean Society*, vol. x, 1869); Vegetation of the Thelwar District of the Punjab (*Journal of Asiatic Society*): *Handbook of Trade Products of Leh* (Calcutta, 1874); Flora of Hushiarpur (*Journal of the Linnean Society*, vol. ii, 1869); Flora of the Kurrum Valley (*Journal of the Linnean Society*, vol. xviii, 1881); Botany of the Afghan Delimitation Commission (*Trans. Linnean Soc.*, 1888); *The Zoology of the Afghan Delimitation Commission*; *Notes on the Products of Western Afghanistan and North-East Persia*; and other papers.

From this list it will be seen that his chief scientific work, outside the ordinary duties of a surgeon in the army, was in the sphere of botany. As a collector of specimens, few equalled him in describing the uses that the products of the soil were put to by the natives in whose countries they were found. It may have been this faculty, which he possessed in a high degree—a faculty of acute observation—and a desire, maybe, to enrich our own list of drugs, which led him in the first instance to study botany on the spot in those little-known regions to the north-west of India—Afghanistan, Beluchistan, and Persia. Opportunities such as these may present themselves to any surgeon in the India Service, and the usefulness of the work he may accomplish will in great measure depend upon the knowledge of botany which he has been forced to acquire in most instances in the early period of his medical studies. Dr. Aitchison collected 10,000 specimens, as naturalist to the Afghan Delimination Commission, alone; and such a mass of vegetable products becomes a most valuable possession when preserved and studied, as they are, in such an institution as the Herbarium at Kew. Information is obtained of the highest value in economics as well as in the arts and sciences. And it might almost be demonstrated that this little-known adjunct to the numerous military expeditions sent into the lands of rebellious tribes on our borders is often the most fruitful part of it.

Mr. Hemsley, of the Kew Botanic Staff, was closely associated with Dr. Aitchison in the most important part of his botanical work, and published, in conjunction with him, the more strictly scientific portion of it; but that the botanic work accomplished by Dr. Aitchison was deemed worthy of high commendation is sufficiently attested by his selection in 1883 for the Fellowship of the Royal Society. He had already been elected Fellow of the Linnean Society in 1863, but in addition to these distinctions he was made Honorary Member of the Pharmaceutical Society of Great Britain. The Government, too, in recognition of his services, created him C.I.E. in 1883, and his own Alma Mater conferred upon him her LL.D. After his retirement from the Indian service he, in 1892, contested Clackmannan and Kinross in the Liberal Unionist interest, but without success.

Dr. Aitchison was a man of upright character and high principle. Having very pronounced views on many subjects he was ever ready to fight for them. He criticised fearlessly that which he believed to be wrong, even in the acts of his superiors; but his nature was a generous and affectionate one, and his greatest pleasure appeared to be in helping and pleasing others.

As a surgeon, and one who had come under the influences of such teachers and exemplars as Syme and Simpson, he was a bold and successful operator; and the natives with whom he came in contact in those remote countries where his work lay, soon learned to hold him in high esteem, for philanthropy mingled strongly with his other qualities. His loss will, however, be felt most by those who numbered him among their friends.

MAURICE DAVIS, M.D., J.P.

ON Thursday, September 29th, 1898, at his residence, 11, Brunswick Square, Bloomsbury, in the 77th year of his age, Maurice Davis, M.D., J.P., peacefully passed away. He was born in Oxfordshire on October 8th, 1821, and entered King's College, London, as a matriculated student in May, 1849, and received the diploma of Associate of the College in 1852. In the same year he received all his medical qualifications: M.R.C.S.Eng., L.S.A.Lond., M.D.St. Andrews.

At King's College and King's College Hospital, he had a distinguished career, gaining the first prize in Medicine and the first prize in Clinical Surgery, the first certificate of honour, equivalent to the second prize in Surgery (the first prize being gained by the late John Whittaker Hulke, Presi-

dent of the Royal College of Surgeons), and the first certificate of honour in Clinical Medicine, equal to the second prize. He served the posts of dresser in the hospital to Henry Lee, afterwards surgeon to St. George's Hospital, and of Clinical Clerk to Dr. Arthur Farre, Sir George Johnson, and Dr. Todd.

On the completion of his curriculum, he betook himself directly to the practice of medicine, in which he met with much success.

In October, 1887, he was placed on the Commission of the Peace for the County of Middlesex and Liberty of Westminster, and became by statute Justice also for the new County of London. By this appointment he became an *ex officio* member of the Board of Guardians of the district of St. Pancras. He served for a time on the Committee of the Infirmary of Highgate. He was at one time a member of the Council of the Metropolitan Branch of the British Medical Association, and of the Board of Directors of the Society for the Relief of Widows and Orphans of Medical Men. He occupied for some years a seat at the Jewish Board of Guardians until obliged to resign by stress of work, retaining, however, his connection with the Board through the Sanitary and Industrial Committees as its medical adviser. For a considerable period he served as a member of the Council of the Anglo-Jewish Association, and of the Medical Staff of the Jewish Convalescent Home.

Dr. Davis possessed literary gifts of a high order. He had an extensive knowledge of English etymology, and his style, as displayed in his articles and private letters, was at once forcible, clear, and harmonious, closely akin to that of some of the descriptive writers of the earlier days of the present century. He contributed to the *Sanitary Record*, a series of valuable communications on Sanitary Defects in Houses which appeared in that periodical from 1884 to 1890; and in 1875 an interesting essay appeared in the *Jewish Chronicle*, entitled The Cosmopolitanism and Longevity of the Jewish Race. In some addresses for dramatic performances and extravaganzas he was most happy in subjects and methods of treatment. These were executed for the benefit of King's College Hospital and the Great Northern Hospital, of which latter he was a life governor.

He possessed a technical and wide knowledge of architecture, and perhaps there is not a cathedral in Europe worth seeing that he had not visited. A comprehensive knowledge of subjects belonging to the more refined side of life is also seen in connection with his collections of old china, engravings, lace, etc.; and possessed as he was, even up till the last, of an excellent memory, his accumulated information made him a most delightful companion. One of the truest of friends, ever ready to help in any difficulty, the wholehearted loyalty which on every occasion he displayed towards his medical brethren, has carved for him an indelible memory on the hearts of not a few who knew him.

He married, in 1854, Esther, daughter of James Graham Lewis, founder of the firm of Lewis and Lewis, solicitors, Ely Place. The death of his wife in September, 1891, made his life desolate. Sorrow had stripped him of endurance, and he retired from the active duties of medicine, but not into idleness. Soon he drifted into judicial work, and especially (in his magisterial capacity) into the examination of lunatics. The number of cases examined in his district, together with those arising out of his duties as one of the Committee of Visiting Justices at Holloway Prison amounted to from three to four hundred every year, and every case was examined with most conscientious care.

HENRY LEWIS, M.D.Brux., M.R.C.S.

We regret to chronicle the death of Dr. Henry Lewis at his house at Folkestone on September 5th at the age of 62 years. He had been in failing health for two years past; but death, which was due to cardiac failure, supervened somewhat unexpectedly. He died almost in harness, having seen a few patients during his last week of life. He received his medical education at St. George's Hospital, and was House-Surgeon there. Subsequently he was Assistant Medical Officer of the Chester County Lunatic Asylum. Going to Folkestone some thirty years ago he at first acted as House-Surgeon to the dispensary, and joined his friend Dr. Bowles in a partnership which lasted fifteen years. In 1886 he became for three years President of the Brussels Graduates' Association, and more recently had been President of the British Balneological and Climatological Society, of which he was one of the founders. He was also a Fellow of the British Gynæcological Society, and a member of the Medico-Psychological Association.

Dr. Lewis was much attached to his profession and devoted to his patients, of whom for years he had a very large number. He was a Liberal in politics before the introduction of the Home Rule Bill; he subsequently abjured party politics altogether.

He was buried in Folkestone Cemetery on the Friday following his death. Nearly all the members of the medical profession resident in the town were present at the graveside. He leaves a son, Dr. Percy G. D. Lewis, who had been his partner for the past eight years. Mrs. Henry Lewis also survives her husband.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Slawiansky, Professor of Gynæcology in St. Petersburg; Dr. H. Koch, specialist in ear diseases, of Brunswick, aged 47; Dr. Betancès, of Paris, formerly well known in Cuba, not only as a physician, but as a prominent "rebel"; and Dr. Carl Mettenheimer, of Schwerin, an active promoter of sanatoria for children on the German coast, aged 74.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Major, Royal Army Medical Corps, returning to Malta in December to complete tour of service, which will expire in March, 1901, is open to an exchange with an officer proceeding to India this trooping season.—Address, "Leonard," care of Messrs. Holt and Co., London.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Edwyn R. Grazebrook, Surgeon, to the *Empress of India*, September 27th; James H. Fergusson, Surgeon, to the *Thunderer*, additional, September 27th; Ernest E. Bray, Staff Surgeon, to the *Dido*, September 29th; Shirley H. Birt, Surgeon, to the *Icarus*, additional, October 1st.

Staff-Surgeon Octavius Stephens Fisher, H.M.S. *Rodney*, died at South Queensferry, N.B., on September 28th, aged 35. He was appointed Surgeon August 20th, 1885, and Staff-Surgeon twelve years later. He was a son of the late Joseph T. Fishor, of Stroud, Gloucestershire.

THE EXPEDITION TO KHARTOUM.

The *London Gazette* of September 30th contains the despatch of Sir Herbert Kitchener, Sirdar of the Egyptian army, describing the operations in the Soudan of the troops under his command, culminating in the battle at Omdurman on September 2nd. Sir Francis Grenfell, the General Officer in Command of the forces in Egypt, in forwarding the despatch, acknowledges the services, among others, of Surgeon-General H. S. Muir, M.D., Principal Medical Officer in Egypt.

Sir Herbert Kitchener, after relating the nature of the service undertaken by the troops, goes on to say: "The medical department was administered with ability and skill by Surgeon-General Taylor, Principal Medical Officer, who was well assisted by Colonel McNamara, whilst the medical organisation of the Egyptian army fully maintained its previous excellent reputation under the direction of Lieutenant-Colonel Gallwey and his staff. The general medical arrangements were all that could have been desired, and I believe the minimum of pain and maximum of comfort procurable on active service in this country was attained by the unremitting energy, untiring zeal and devotion to their duty of the entire medical staff."

The names of the following officers of the Royal Army Medical Corps are specially brought to notice:

Lieutenant-Colonel A. T. Sloggett (wounded)
Lieutenant-Colonel G. A. Hughes
Major C. A. Webb
Major G. Robinson
Major G. F. A. Smythe
Major D. Wardrop
Major R. W. Barnes
Major E. M. Wilson
Major A. Dodd
Major M. O'D. Braddell
Major C. R. Kilkelly
Major W. H. Pinches
Major M. H. Adamson
Major D. M. O'Callaghan
Major H. B. Mathias
Captain A. Y. Reily
Captain R. H. Penton
Captain H. E. Hill Smith
Captain C. S. Spong
Captain P. H. Whiston
Captain G. A. T. Bray
Captain J. W. Jennings
Captain H. N. Dunn
Lieutenant E. W. Bliss
Lieutenant S. L. Cummins

First-Class Staff-Sergeant Holst
Sergeant Scruse

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel M. O'Dwyer, M.B., Bengal Establishment, retires from the service from November 30th next. He was appointed Assistant-Surgeon, September 30th, 1878, and Lieutenant-Colonel, September 30th, 1898. He was in the Afghan war of 1879, and has the medal granted for that campaign.

Major J. Shearer, M.D., D.S.O., Bengal Establishment, has been appointed Secretary to the Principal Medical Officer Her Majesty's Forces in India, *pro. tem.*, from August 13th.

Surgeon-General James Cleghorn, M.D., C.S.I., Bengal Establishment, Director-General Indian Medical Service, is appointed Honorary Surgeon to the Queen, *vice* Deputy Surgeon-General S. B. Partridge, C.I.E., deceased, October 5th.

Major M. B. Braganza, Bombay Establishment, Medical Officer 30th Bombay Infantry (3rd Belooch Battalion) is permitted to retire from the service from September 15th. His first commission dates from April 2nd, 1881; that of Major from twelve years later. He was with the Burmese Expedition in 1886, and has the Frontier medal with clasp.

THE VOLUNTEERS.

Surgeon-Lieutenant J. Young, M.D., 1st (City of Bristol) Volunteer Battalion the Gloucestershire Regiment, is promoted to be Surgeon-Captain, October 5th.

THE DIRECTOR GENERAL'S TENURE OF OFFICE.

It has been decided that the tenure of appointment of the Director-General of the A.M.S. shall in future be for five years, unless the term be specially extended by the Secretary of State for War for a further period not exceeding two years. It will be in the recollection of our readers that Captain Cecil Norton, M.P., urged the desirability of this change during the discussion on the medical vote in Parliament. Presumably the order will not apply to the present occupant of the post.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The winter work of this school was commenced on October 3rd, when two large classes paraded for instruction under Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., and Surgeon-Captain E. Ryan. One class is being given a course of roller bandaging and duties in hospital, the other in first aid and stretcher drill. As both classes are well attended it is announced that no more can be taken in after October 10th. The officers' class recently held at the headquarters of the first Middlesex Rifle Volunteers was well attended, and altogether nearly 300 officers have now passed through the school.

CONVALESCENT HOMES FOR SOLDIERS.

The *Army and Navy Gazette* states that the feasibility of carrying out the scheme for such homes was much discussed before Parliament rose, and that the heads of the War Office are now going into the whole question. The Secretary of State for War is willing to adopt the views set forth in the British Medical Journal on September 10th, and in other papers, but the Treasury stands in the way.

VOLUNTEER MEDICAL OFFICER'S PROFICIENCY EXAMINATION.

Surgeon-Lieutenant writes: I beg to enclose copy of questions submitted at the Proficiency Examination held on October 4th. For the information of surgeons in Volunteer regiments it may be as well to let them know that the examination consists of two parts—a written and an oral. For the written the best book to read is without doubt Matthews' and Harper's *Handbook for Volunteer Medical Officers*. For the drill an intimate knowledge of words of command for company drill (infantry) is absolutely essential, especially as regards advancing and retiring. For stretcher drill details are required as wells as words of command, and especially the full details of preparing and closing stretchers. The textbook I recommend is Marshall's *Stretcher Drill Illustrated*.

Questions.

1. Describe the services performed in an action by the ambulances of a bearer company. How many ambulances are there, and what medical supervision is there during their journey?
2. What directions would you give to a stretcher party which was about to dress and carry off the field a man with a penetrating wound under the right nipple?
3. Give the *personnel* of a field hospital, and state the number of beds. Whence are its diets derived and whence its extras?
4. How is a goods waggon made suitable for the reception of sick wounded?
5. In recruiting how do you test the eyesight, and how do you measure chest girth?
6. How may water be purified on service?
7. When a soldier is admitted into a station hospital what becomes of (1) his uniform, (2) his money and valuables?
8. When a case of enteric fever develops in barracks, state steps which medical officer in charge is required to take?
9. Describe generally the duties of a wardmaster in a station hospital.
10. Mention the points to be considered in selecting a camp.
11. How are regimental bearers trained? What is their number per company? What are their duties in an action where a bearer company is also present?
12. What is the regulation cubic space in (1) barracks at home, (2) hospitals at home? How do you calculate the number of men to be put in any given room?

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

At the Convocation, held on September 24th, the following degrees were conferred:

Doctor in Medicine.—G. Gocher, M.B., B.S.Durh.; G. R. Hall, M.B., M.S.Durh.; T. G. S. Hodson, M.B.Durh.; H. M. Meyrick-Jones, M.B., B.S.Durh.; T. B. Poole, M.B., B.S.Durh.; T. Sanderson, M.B., B.S.Durh.; G. W. Scott, M.B., B.S.Durh.; J. D. Shapland, M.B., B.S.Durh.; F. H. Simpson, M.B., B.S.Durh.; C. Stewart, M.B., B.S.Durh.; T. Streatfield, M.B., B.S.Durh.; W. R. Thurnam, M.B., B.S.Durh.; F. S. Walker, M.B., B.S.Durh.; A. Warner, M.B.Durh.

Doctor in Medicine (Practitioners of Fifteen Years' Standing.—T. W. Aird, M.R.C.S., L.R.C.P.; R. R. Allen, L.R.C.P., F.R.C.S.I.; A. F. Blagg, M.R.C.S., L.R.C.P., L.S.A.; W. E. Cree, M.R.C.S., L.R.C.P., L.S.A.; E. O. Croft, M.R.C.S., L.R.C.P.; G. W. H. Cumming, M.R.C.S., L.R.C.P.; H. P. Dimmock, M.R.C.S., L.R.C.P.; A. W. Emms, M.R.C.S., L.S.A.; G. Frost, M.R.C.S., L.R.C.P.; W. H. Gimblett, L.R.C.P., L.S.A.; B. J. Glissan, L.R.C.P.E., L.F.P.S.G.; S. S. Hoyland, M.R.C.S., L.S.A.; A. S. Morton, M.R.C.S., L.S.A.; T. W. Scale, M.R.C.S., L.R.C.P., L.S.A.; H. F. Stokes, M.R.C.S., L.R.C.P., A. Warburton, M.R.C.S., L.R.C.P.; T. Wingrave, M.R.C.S., L.S.A.

Master in Surgery.—W. E. Alderson, M.D., B.S.

Bachelor in Medicine (M.B.)—A. S. Arthur, College of Medicine, Newcastle-upon-Tyne; J. E. Baker, College of Medicine, Newcastle-upon-Tyne; G. B. Brown, L.S.A., Guy's Hospital; F. A. Cooke, College of Medicine, Newcastle-upon-Tyne; H. C. Coxon, College of Medicine, Newcastle-upon-Tyne; L. S. Davison, College of Medicine, Newcastle-upon-Tyne; H. H. C. Dent, M.R.C.S., L.R.C.P., Mason College, Birmingham; C. E. Fenn, King's College, London; H. A. Fielden, College of Medicine, Newcastle-upon-Tyne; J. M. Gover, College of Medicine, Newcastle-upon-Tyne; H. G. Harris, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; M. Joyce, London School of Medicine for Women; G. W. Middlemiss, College of Medicine, Newcastle-upon-Tyne; R. F. Moorshead, University College, Bristol; W. B. Milbanke, College of Medicine, Newcastle-upon-Tyne; Claudia Anita Prout Rowse, London School of Medicine for Women; Grace Harwood Stewart, London School of Medicine for Women; G. G. Turner, College of Medicine, Newcastle-upon-Tyne; L. H. Walsh, M.R.C.S., L.R.C.P., King's College, London; W. H. Warwick, College of Medicine, Newcastle-upon-Tyne.

Bachelor in Surgery (B.S.)—A. S. Arthur, College of Medicine, Newcastle-upon-Tyne; J. E. Baker, College of Medicine, Newcastle-upon-Tyne; G. B. Brown, L.S.A. Guy's Hospital; F. A. Cooke, College of Medicine, Newcastle-upon-Tyne; H. C. Coxon, College of Medicine, Newcastle-upon-Tyne; L. S. Davison, College of Medicine, Newcastle-upon-Tyne; H. A. Fielden, College of Medicine, Newcastle-upon-Tyne; J. M. Gover, College of Medicine, Newcastle-upon-Tyne; H. G. Harris, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Margaret Joyce, London School of Medicine for Women; A. P. Lloyd, M.B., College of Medicine, Newcastle-upon-Tyne; G. W. Middlemiss, College of Medicine, Newcastle-upon-Tyne; R. F. Moorshead, University College, Bristol; W. B. Milbanke, College of Medicine, Newcastle-upon-Tyne; Grace Harwood Stewart, London School of Medicine for Women; G. G. Turner, College of Medicine, Newcastle-upon-Tyne; L. H. Walsh, M.R.C.S., L.R.C.P., King's College, London.

Bachelor in Hygiene (B.Hy.)—J. Wreford, M.B., M.R.C.S., L.R.C.P.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,652 births and 4,695 deaths were registered during the week ending Saturday last, October 1st. The annual rate of mortality in these towns, which had declined from 24.6 to 23.6 per 1,000 in the three preceding weeks, further fell to 21.8 last week. The rates in the several towns ranged from 13.8 in Croydon, 15.5 in Cardiff, 16.4 in West Ham, and 16.5 in Leicester, to 28.8 in Hull, 32.3 in Sunderland, 35.7 in Gateshead, and 35.5 in Salford. In the thirty-two provincial towns the mean death-rate was 23.3 per 1,000, and exceeded by 3.6 the rate recorded in London, which was 19.7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 5.2 per 1,000: in London the rate was equal to 3.9 per 1,000, while it averaged 6.1 in the thirty-two provincial towns, among which the highest zymotic death-rates were 10.2 in Salford, 10.9 in Hull, 11.1 in Gateshead, and 13.1 in Norwich. Scarlet fever caused a death-rate of 1.0 in Salford: measles of 1.9 in Norwich; whooping-cough of 1.5 in Gateshead; "fever" of 1.6 in Huddersfield, 1.3 in Bolton, and 1.4 in Birkenhead; and diarrhœa of 7.2 in Sunderland, 8.5 in Salford, 9.0 in Gateshead, 9.3 in Manchester, 10.0 in Hull, and 10.7 in Norwich. The 60 deaths from diphtheria in the thirty-three towns included 33 in London, 6 in Swansea, 5 in Leeds, 3 in Birmingham, and 3 in Liverpool. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last, October 1st. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 2,353 at the end of the five preceding weeks, had further risen to 2,459 on Saturday last: 300 new cases were admitted during the week, against 273, 242, and 288 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 1st, 889 births and 577 deaths were registered in eight of the principal Scotch towns. The annual

rate of mortality in these towns, which had been 18.8 and 19.7 per 1,000 in the two preceding weeks, declined to 19.1 last week, and was 2.7 per 1,000 below the mean rate in the same period in the thirty-three large English towns. Among these Scotch towns the rates ranged from 15.7 in Leith and 17.6 in Glasgow to 25.5 in Greenock and 28.2 in Paisley. The zymotic death-rate in these towns averaged 4.2 per 1,000, the highest rates being recorded in Dundee and Paisley. The 245 deaths registered in Glasgow included 6 from scarlet fever, 10 from whooping-cough, 6 from "fever," and 32 from diarrhœa. Three fatal cases of diphtheria, 4 of whooping-cough, and 14 of diarrhœa were recorded in Edinburgh; and 5 deaths resulted from "fever" in Paisley.

SERVICE RECKONED FOR SUPERANNUATION UNDER ACT 1896.

INCERTUS asks whether service in one union for the past fifteen years, and also in another union (concurrently) for the past six years, is to be reckoned as fifteen or twenty-one years' service.

*** As the total duration of service is fifteen years only no longer time than this can be reckoned, but if "Incertus" continues to hold both his present appointments till he can claim superannuation, he will of course then have a claim against both unions.

MEDICO-LEGAL.

INQUESTS AND *POST-MORTEM* EXAMINATIONS.

MR. A. BRAXTON HICKS (The Coroners' Society of England and Wales, 20, Lupus Street, London, S.W.), writes: In the BRITISH MEDICAL JOURNAL of September 17th, page 848, there is a heading "Inquests and *Post-mortem* Examinations." Without discussing the general question, I think you should be aware that coroners at times have great difficulty in obtaining from the Home Office and the county councils the expert assistance considered necessary, and the Coroners' Society is bringing the matter to the notice of the Home Office.

BANKRUPTCY AND POOR-LAW MEDICAL APPOINTMENTS.

ANXIOUS writes: If a medical man becomes a bankrupt will he lose his qualifications or any appointment such as Poor-law medical officer's post he may hold?

*** The law imposes no such disqualification as is suggested; but a Board of Guardians or other governing body might possibly consider that bankruptcy would interfere with the proper discharge of his duties by their officer, and consequently dismiss him or insist on his resignation.

"ARE THE POLICE LIABLE?"

FAIRPLAY writes: A police constable called me up at 1 A.M., saying he had a man coming along, carried by some men, and he thought with fractured skull. On arrival, I found that the patient, a labourer, was seen by his bearers to fall (evidently through drink) and cut his head. I dressed a slight incised wound on his head; there was no other injury, and as he had no home had him taken to the station and kept under observation. The man after a good sleep left in the morning none the worse for his fall. The usual fee from the police for night work is 7s 6d. I believe, but no medical order is forthcoming.

*** We are certainly of opinion that our correspondent is entitled to his certificate for 7s. 6d., the granting of such certificates for similar services being a matter of everyday occurrence in the Metropolitan Police district. Application by letter should be made to the nearest superintendent, and if any further difficulty arises the case should be reported to our Parliamentary Bills Committee.

MEDICAL NEWS.

THE late Sir Benjamin Ward Richardson left a considerable number of unpublished memoirs of leading physicians. These have been collected into two volumes, and will, it is announced, shortly be published under the title of *Disciples of Æsculapius*. The work contains a large number of portraits and illustrations.

THE UNIVERSITY OF ST. ANDREWS.—A short and interesting article on the University of St. Andrews, under the heading of 'The Oxford of Scotland," appears in *Chambers's Journal* for October. In this article it is pointed out that each undergraduate "enjoys—or can enjoy if he chooses—a bursary that is never lower than £10, and may rise to £30 a year. St. Andrews also promises to become the favourite University for girls in Scotland . . . it is already recognised as the Scottish Girton." The Edinburgh Medical School has given two of her very ablest young teachers to St. Andrews—namely, Drs. Musgrove and Robert Muir.

ALCOHOL IN THE HOSPITALS OF TRINIDAD.—In his last annual report to the Legislative Council of Trinidad, Surgeon-General Hon. F. H. Lovell, C.M.G., again records his great satisfaction at the decreased consumption of alcohol in the hospitals of that colony. In a previous number of the BRITISH MEDICAL JOURNAL it was pointed out that there had been during the past years a reduction of about 60 per cent. in the alcoholic expenditure. The Surgeon-General states that, though there had been a nominal increase in 1897 over 1898, accounted for by internal rearrangements, etc., the proportionate reduction had been maintained. As a matter of fact, the amount consumed at Port of Spain, San Fernando, and the Leper Asylum, per number of diets, was less in 1897 than in 1896, or in any of the last five years. In 1896 the cost for alcohol for 381,301 diets was £227 10s. 4d.; and in 1897, for 14,149 diets more, £381 14s. 4d.

TATTOOING IN AMERICA.—It is said that since the outbreak of the late war tattooing has come greatly into vogue among the American sailors, who are all anxious to have their chests, backs, or arms decorated with designs of anchors, guns, shells, and so forth. The design most in demand, however, is a representation of the blowing up of the *Maine* on the chest. The operation appears to be performed by an improved process; instead of the needles and special ink formerly in use electricity is employed, and the operation, instead of being spread over several sittings, is completed in half an hour.

THE PREVENTION OF SLANDER ON HEALTH RESORTS.—Health resorts are naturally jealous of their good repute, and as nothing is more damaging to them than rumours of epidemics, the authorities of such places are extremely sensitive with regard to such reports. They will doubtless be interested to learn that it is proposed to introduce a Bill in the Florida Legislature making the spreading of false and malicious reports as to the existence of infectious and contagious diseases in the State punishable by a fine of from 100 to 1,000 dollars (£20 to £200) or by imprisonment for three to six months.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—A meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the Derby County Asylum, Mickleover, near Derby, on Wednesday, October 12th. After luncheon, provided by Dr. Legge, a paper will be read by Dr. James Middlemass on the Treatment of Insanity by Thyroid Extract. After the meeting members will be shown through the asylum, and will dine together at the Midland Hotel, Derby at 8 P.M. A meeting of the Western Division of this Association will be held at the Grand Pump Room Hotel, Bath, on Wednesday, October 19th, at 2.45 P.M. The discussion of Dr. Blachford's paper, read at the last meeting, will be taken; Dr. Bristowe will read a paper on Lunacy in Private Practice, and Dr. Weatherly a paper on Lunacy and the Public. Members will afterwards dine together in the Hotel.

THE SPANISH DRUG BILL IN CUBA.—A German medical journal states that from the commencement of the Cuban insurrection in February, 1895, to the end of January, 1898, there were sent from Spain to Cuba 20,000 kilograms of various preparations of quinine, 400 kilograms of opium, 2,890 kilograms of carbolic acid, 1,400 kilograms of corrosive sublimate, 2,370 kilograms of iodoform, 350 kilograms of rhubarb, and 2,530 kilograms of castor oil. In the way of dressings there were 16,000 metres of diachylon plaster, 66,070 kilograms of cotton wool, and more than 545,000 metres of gauze. The total value of these consignments is estimated at nearly three million and a-half pesetas (£140,000). The medical service of the Spanish army comprised from five to six hundred medical officers and about one hundred pharmacists. During the three years 50 medical officers and 16 pharmacists died, mostly of yellow fever.

ONE of the Sections of the forthcoming International Medical Congress to be held in Paris in 1900 is to be devoted to "Urology." Professor Guyon is the President, and Dr. E. Desnos Secretary, of the Section. This is, we believe, the first occasion on which urinary diseases have been assigned a section to themselves at any International Congress.

YELLOW FEVER IN THE UNITED STATES.—Isolated cases of yellow fever have been reported in New Orleans, and in Jackson, Oxford, and other places in Mississippi. Precautions are being taken by the authorities to prevent the spread of the disease.

A course of lectures will be given by members of the staff of the Hospital for Sick Children, Great Ormond Street, on Thursdays at 4 P.M., from October till Christmas. The first lecture was given on October 6th. The course is free to qualified medical practitioners.

A SYSTEMATIC course of lectures and demonstrations for sanitary inspectors has been arranged at King's College, London. The introductory lecture will be given by Professor W. J. Simpson on Friday, October 14th, at 8 P.M., on which occasion the chair will be taken by Mr. T. McKinnon Wood, Chairman of the London County Council.

THE winter course of clinical lectures at the National Hospital for the Paralysed and Epileptic, Queen Square, London, W.C., will commence on Tuesday, October 11th, when Dr. Beevor will give a lecture on Cerebral Localisation at 3.30. Subsequent lectures will be given by various members of the staff at the same hour on Tuesday afternoons, terminating on December 20th. The course is free to students and practitioners.

MEDICAL VACANCIES.

The following vacancies are announced :

AYR COUNTY HOSPITAL.—House-Surgeon. Appointment for one year. Salary, £50 per annum, with residence, board, and washing. Applications to the Secretary by October 22nd.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund Street, Birmingham.—House-Surgeon. Appointment for six months. Honorarium, £21 on completion of appointment, with board, lodging, and washing. Applications to the Honorary Secretary of the Medical Committee by October 18th.

BURY INFIRMARY, Bury, Lancashire. [illegible] House-Surgeon. Salary, £60 per annum, with board, residence, and attendance. Applications to the Honorary Secretary.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House-Surgeon: unmarried. Salary £50 per annum, with board and lodging. Applications to the Secretary by October 15th.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon and Clinical Assistants. Applications to the Secretary by October 10th.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary, £100 per annum, with board and lodging. Applications to E. Elwin, Honorary Secretary, 13, Castle Street, Dover.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department. Appointment for six months (renewable). Salary at the rate of £100 per annum. Applications to the Secretary by October 22nd.

EVIE AND RENDALL PARISH OF.—Medical Officer. Salary £45 per annum, with free house. Applications to Inspector of Poor, Evie.

GRAVESEND HOSPITAL.—House Surgeon. Salary, £80 per annum, with board and residence. Applications to the Honorary Secretary by October 15th.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging. Applications to R. F. E. Perrier, Honorary Secretary, 33, Hall Plain, Great Yarmouth, by October 14th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Resident Medical Superintendent. Salary, £105 per annum, with board and residence. Applications (on forms provided) to the Secretary by October 18th.

HOSPITAL FOR WOMEN, Soho Square, W.—House Physician. Appointment for six months. Salary, £30 for that period. Applications to the Secretary by October 19th.

INFIRMARY FOR CONSUMPTION AND DISEASES OF THE CHEST AND THROAT, Margaret Street, Cavendish Square, W.—Physician-in-Ordinary. Applications to the Secretary by October 14th.

LEEDS UNION.—Assistant Medical Officer for Workhouse Schools and Infirmary; unmarried, and not above 35 years of age. Salary, £100 per annum, with board, washing, apartments, and attendance. Applications, endorsed "Assistant Medical Officer" to J. H. Ford, Poor Law Offices, East Parade, Leeds, by October 11th.

LEICESTER INFIRMARY.—House Surgeon. Tenure of office not exceeding three years. Salary, £120 for the first year, rising at the rate of £10 per annum until the the third year, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by October 24th.

LEWISHAM UNION INFIRMARY.—Second Assistant Medical Officer. Appointment for six months. Salary, £80, with usual resident allowances. Personal applications between 10 A.M. and 12 noon to the Medical Superintendent.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to House Governor by October 14th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Appointment for one year [illegible] Salary, [illegible] per annum, with board, lodging, and washing. Appli[illegible] October 21st.

LONDON THROAT HOSPITAL, [illegible] Street.—Non-resident House-Surgeon. Appointment for six months. [illegible] the rate of £25 per annum. Applications to the Honorary Secretary of the Medical Committee by October 25th.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon. Salary, £100 the first year and £110 the second year, with board and residence. Applications to the Secretary by October 12th.

MIDDLESBOROUGH-ON-TEES: NORTH RIDING INFIRMARY.—House-Surgeon. Salary, £100 per annum, with lodging, board, and washing, and £5 a-year instead of beer. Applications, marked "Application for post of House-Surgeon," to the Secretary by October 11th.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland Street, W.—Anæsthetist. Applications to the Secretary by October 26th.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Rev. Philip Lancashire, M.A., Honorary Secretary, by October 11th.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E.—Resident Medical Officer. Appointment for twelve months. Salary, £70 per annum, with board, lodging, and washing. Applications to T. S. Conisbee, Secretary, by October 12th.

UGANDA RAILWAY.—Junior Assistant Medical Officer. Salary, £300 per annum, rising to £400. Applications to the Crown Agents for the Colonies, Downing Street, by October 15th.

VENTNOR, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer. Unmarried. Salary, £80 per annum, with board and lodging in the Hospital. Applications, addressed to the Board of Management, 34, Craven Street, Charing Cross.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—House-Surgeon. Appointments for twelve months. Honorarium of £50, with board and lodging. Applications to the Secretary by October 15th.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Physician. Applicants to attend the House Committee on Tuesday, October 18th, at 10 A.M.

MEDICAL APPOINTMENTS.

ALFORD, H. J. M., L.R.C.P., M.R.C.S., appointed Resident Dispensary Medical Officer to the Weston-super-Mare Hospital.

BAILEY, Matthews, M.R.C.S., L.R.C.P., appointed Senior House-Surgeon to the Bootle Borough Hospital.

BOULTON, A., L.R.C.P., M.R.C.S.Eng., D.P.H., appointed Medical Officer of Health to the Horncastle Rural District Council.

CAHILL, M., L.R.C.P.I. and L.M., L.R.C.S.I. and L.M., appointed Medical Officer of the No. 2 Division of the Pelkard Dispensary District.

CLARE, Andrew, F.R.C.S., appointed Consulting Surgeon to the St. Marylebone Dispensary.

CONNON, Middleton, M.B., C.M., D.P.H.Aberd., appointed Medical Officer of Health for the Burgh of Montrose.

CROSS, G. F., M.B., B.Ch., appointed District Medical Officer to the Downham Union.

DAVIS, A. N., L.R.C.P.Edin., L.R.C.S.Edin., appointed Medical Superintendent of th County Asylum, Exminster, *vice* E. G. Symes Sa[illegible] M[illegible]

DOWN, A. E., L.R.C.P.Lond., L.S.A., appointed Medical [illegible]

GRINLING, F. N., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health to the Walker Urban District Council.

HEADLEY-HARDING, C., L.R.C.P.Lond., M.R.C.S., reappointed Medical Officer of Health for the Whittlesea Urban District.

KITCHON, H. H. I., L.R.C.P.Lond., M.R.C.S., appointed Medical Officer of Health for the Heywood Borough.

JONES, T. C., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer of Health to the Ruthin Rural District Council, *vice* J. M. Hughes, resigned.

REED, A. K. L.R.C.P., L.R.C.S.Edin., appointed District Medical Officer to the Taunton Union.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8 P.M.—General Meeting. 8.30 [illegible] Mr. Edmund Owen (President): Remarks introductory to the Work of the Session. Dr. W. H. Allchin: Some Considerations Preliminary to the Study of Dyspepsia.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Dr. Edward Law: Examination of the Ear, Throat, and Nose.

TUESDAY.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Mania—Acute; Hysterical; Acute Delirious. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Prurigo and Pruritus.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Beevor: Cerebral Localisation.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. T. D. Savill: On the Diagnosis of Disorders of the Nervous System, illustrated by cases of Syphilitic Affections.

WEDNESDAY.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Refuse Removal and Disposal.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy of the Head and Neck.

Hunterian Society, 8.30 P.M.—Dr. J. F. Payne: On the Increase of Cancer. Hunterian Society Lecture II.

THURSDAY.

British Gynæcological Society, 8.30 P.M.—Specimens will be shown by Messrs. Arthur Giles, R. H. Hodgson, F. Bowreman Jessett, J. Macpherson Lawrie, Christopher Martin, and J. W. Taylor. Paper by Mr. Christopher Martin: On some Moot Points in the After-Treatment of Cases of Abdominal Section.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture or Demonstration of Recent Specimens.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Mr. Jonathan Hutchinson, F.R.S.: Clinical Lecture.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Dr. Mitchell Bruce: Clinical Demonstration on Cases in the Wards.

FRIDAY.

Clinical Society of London, 8.30 P.M.—Address by the President. The following papers will be read: Dr. Herringham: A [illegible] Myxœdema Operations, with Special [illegible] Patient. Dr. Arthur Edgar: [illegible] the Association [illegible] Heart Disease with the Mongolian Type of Idiocy. Dr. Still: Erythema Enematogenes (Enema Rash) in Children.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy of the Abdomen and Thorax.

London Post-Graduate Course, Bacteriological [illegible] College, 3 to 5 P.M.—Practical Course [illegible] The Microscope and Methods of Observation.

West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, 8.15 P.M. [illegible] Clinical Cases, Specimens, [illegible] Demonstrations [illegible] Mr. Bruce Clarke: [illegible] Dr. Dowse: [illegible] Dr. Percival: Cases from the Lewisham Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

LANGDON-DOWN.—On September 21st, at Carina, Teddington, the wife of Reginald L. Langdon-Down, M.B., M.R.C.P., of a daughter.

MARRIAGES.

MACLEOD—BUDD-BUDD.—On the 5th inst., at St. Peter's Church, Brighton, by Prebendary Hannah, Charles Edward Alexander MacLeod, F.R.C.S., of Pembridge [illegible] Surgeon-Colonel A. C. MacLeod, F.R.C.S., late [illegible] Royal Field Artillery, fourth daughter of P. J. Budd-Budd, [illegible] West [illegible]

WORTHINGTON—POWELL.—On September 1st, at All Saints, Wellington, by the Rev. Charles Powler, D.C.L., M.R.C.S., [illegible] Vicar, Reginald Hamilton Worthington, [illegible] L.R.C.P., M.R.C.S., of Lancaster, to Mary Ethelwyn, daughter of R. P. Powell, J.P., [illegible] L.R.C.P., [illegible] Doncaster.

DEATH.

SEMPLE.—At Kamchi, Punjab, [illegible] on August 31st, of enteric fever, Marion Ethelwyn the dearly loved wife of Major J. Semple, R.A.M.C.

☞ Queries, answers, and communications relating to subjects to whic special departments of the BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

DR. BOND (Gloucester) would be glad to know if there is any work giving details of the arrangement, cost, etc., of the construction of cottage hospitals for general purposes other than that by Sir. H. Burdett?

A. D. H. L.—The memorial as to fees to medical witnesses has been transmitte l to the Home Secretary, and an official acknowledgement of its re ei pt received.

FORCEPS asks for information as to where he can get some practical instruction in the use of the midwifery forceps. He is fully qualified, and has a diploma in midwifery.

D. C. E. would be glad to know the best bicycle saddle for a man with chronic prostatitis, said to be of a gouty nature. He would probably be benefited by cycling if pressure on the perineum is avoided.

H. S. S. would like to know of any institution, preferably within twenty miles of London, to which a young lady suffering from phthisis could be sent for open-air treatment. A statement of inclusive terms is also solicited.

M.D. will be much obliged for advice about a stove for a consulting room. He has had the "Salamander" recommended, also Pither's "Radiant" stove. Would it answer to burn coke in these, as anthracite cannot be obtained in small quantities and he has no storage for it? Gas stoves are not satisfactory.

ANSWERS.

D. F. H.—Lantern slides of bacteria may be obtained from Messrs. C Baker and Son, 244, High Holborn, who have a good list. A number of very good slides may also be obtained from negatives taken by the late Mr. Coghill. These at present are in the charge of Mr. Doudney, Examination Hall, Victoria Embankment, W.C.

SENEX.—The Secretary to the Society of Apothecaries of London informs us that there is no exemption from any part of the Final Examination. Candidates will be excused any or all of the subjects of the Primary Examination on producing evidence that they have passed an equivalent examination before an Examining Board recognised by the Society.

A MEMBER.—The question is one for an actuary. The usual law in purchasing is two years' purchase when a practice is transferred, one year when the previous holder is dead; other matters are private arrangements. The payment of £1,500 for a practice worth £1,140 per annum with a six months' introduction seems *primâ facie* favourable to the purchaser. If the purchase money is paid down at once the vendor might be entitled to half the earnings so long as he remains at his post. Half the earnings should cover every demand up to the twelve months. This must all be private arrangement.

G. C. P.—A short account of the various London Hospitals to which medical schools are attached will be found in the BRITISH MEDICAL JOURNAL, 1895, vol i, p. 1388 and p. 1451, under the head of "Medical Institutions in London. Historical accounts are prefixed to most of the calendars or prospectuses issued by the medical schools at the beginning of every winter session, and additional details can often be found in the earlier volumes of the *Reports* of each hospital. The *History of Guy's Hospital*, by Sir Samuel Wilks and Mr. Bettany, is already published. Dr. Payne and the late Mr. Rendle have written much about the early history of St. Thomas's, whilst Sir James Paget, Dr. Norman Moore, the late Mr. Morrant Baker, and Mr. D'Arcy Power have contributed to the history of St. Bartholomew's Hospital.

APPOINTMENTS AND THE VALUE OF PRACTICES.

ON.—It is scarcely possible to give a direct answer to our correspondent's question, as we should find great difficulty in defining either the ethical or the legitimate limits of "expectations." It is not clear from the speech to which our attention is directed that either candidate had really promised to pay something to the former holder of the office, but it is quite a common thing for practices to be sold at a price depending in part upon the purchaser securing the vendor's paid appointments, and this is a custom which we are not prepared to condemn.

NOTES, LETTERS, Etc.

ERRATUM.—Under the heading "Contract Medical Practice," which appeared in the BRITISH MEDICAL JOURNAL of October 1st, page 992, the town mentioned should have been "Tunbridge Wells," not "Tunbridge."

A Correspondent (Dr. HEMINGTON PEGLER (Welbeck Street, W.), writes: In the BRITISH MEDICAL JOURNAL of October 1st a speech is published under the subject of Life Assurance and Aural Disease, which I did not utter. Though present during the discussion I did not take part in it.

A LIBRARIAN'S APPEAL.

MR. L. M. GRIFFITHS, M.R.C.S., the Honorary Librarian of the Bristol Medical Library, University College, Bristol, writes: We are anxious to get the following numbers. We should be very grateful if you would make it known through the BRITISH MEDICAL JOURNAL. *Journal of Anatomy and Physiology*: Vol. i, pt. 2, May, 1867; vol. ii, November, 1867, May, 1868; vol. v, November, 1870, May, 1871; vol. vi, pt. 2, May, 1872; vol. vii, November, 1872, May, 1873; vol. viii, November, 1873, May, 1874; vol. ix, November, 1874, May, 1875; vol. xiii, pts. 3 and 4, April, July, 1879; vol. xiv, pt. 4, April, July, 1880; vol. xxii, October, 1887, January, 1888; vol. xxiv, pt. 4, July, 1890; vol. xxv, October, 1890, January, 1891; vol. xxvi, pt. 1, October, 1891. *Brain*: April, July, 1891; vol. xxvi, pt. 1, October, 1891, January, 1892, to July, 1892; October, 1894, to January, 1895.

SCISSOR FORCEPS.

DR. GERALD W. ADAMS (Birmingham) writes: Permit me to point out in reference to the so-called "new" scissor forceps noticed in the BRITISH MEDICAL JOURNAL of September 3rd, that I had made for me by Lynch and Bateman similar scissor forceps in 1883, and some few years back by Philip Harris, of Birmingham, and used them ever since. The wonder is that so useful a little contrivance has not been in general use long ago.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. J. Abercrombie, London; Mr. F. Addiscott, London; Dr. B. Addy, Southport; Another Anti-Humbug: D. W. Aitken, M.B., London; Dr. R. S. Anderson, Spennymoor; C. C. Aitken, M.B., Carlisle; Dr. J. Arnott, Edinburgh. B Mr. W. B. Brooks, Bootle; Rev. R. A. Bull, Southborough; B.A.; Dr. A. Blackstein, Göttingen; Mrs. K. Behnke, London; Mr. L. A. Bidwell, London; B. C Dr. W. C. S. Clapham, Rotherham; Dr. A. R. Coldstream, Florence; Cumberland; Messrs. J. and A. Churchill, London; Mr. R. H. Cowan, Wigan; M. Connon, M.B., Montrose; Dr. W. H. Calvert, Melrose. D Dr. A. F. Dimmock, Harrogate; D. C. E.; R. A. Dove, M.B., Tynemouth; Director-General of the Army Medical Service, London; Dr. A. T. Davies, London; Dispensary; Mr. A. N. Davis, Ivybridge; Dr. W. Dixon, London. E Mr. E. Elwin, Dover; Mr. J. F. Elliott, Madeira; E. M. C.; Dr. W. Ewart, London; Mr. J. B. Endean, Cockington; Enquirens. F Mr. W. T. Freeman, Reading; Mr. W. Fearnley, Harrogate; Fairplay; Fairplay and no Favour; Mr. R. F. E. Ferrier, Great Yarmouth; Dr. A. F. Fergus, Glasgow. G Dr. A. L. Gillespie, Edinburgh; G. P.; Dr. E. W. Goodall, London; Mr. L. M. Griffiths, Bristol; H. Grey, M.B., San Remo; G. C.; Mr. P. Giles, London; Dr. W. Gray, West Hartlepool. H H. M. J.; Dr. C. F. Harford-Battersby, London; Dr. Holman, London; Mr. F. Haydon, London; Mr. L. H. D. Hale, Eton; Mr. S. Hull, London; Mr. T. G. Horder, Cardiff; Mr. A. B. Hicks, London; Dr. F. de R. Hall, London; Dr. J. P. Henry, London; Mr. J. H. Harris, Dartmouth; Healing; Howard Association, Secretary of, London. I Ignoramus; Incertus; Income Tax Repayment Agency, London; Mr. E. Irwin, London. J Dr. J. Johnston, Bolton; Dr. E. L. Jones, Cambridge. K Mr. A. W. Knott, Worcester; Mr. A. Kidd, Dartford. L Mr. J. Llewellyn, Spondon; Mr. H. S. Little, Reading; Miss F. Lankester, London; H. G. Langwill, M.B., Leith; Mr. A. D. H. Leadman, Pocklington; Dr. W. Lattey, Southam; Mr. H. Liston, Sunderland; Mr. A. J. Laurie, Edinburgh; Dr. A. E. Lloyd, Rhyl; Lancastrian; Dr. P. Letters, Valencia Island. M Mr. C. D. Marshall, London; Member B.M.A.; Mr. P. Micheili, London; Mr. S. W. Macilwaine, Redhill; Dr. H. W. G. Macleod, London; Dr. P. W. MacDonald, Dorchester; M.B.M.A.; M.D.Lond.; Dr. C. J. R. McLean, Yeadon; Mr. L. S. Meade, London; M.R.C.S.; M.O.H.; Mr. F. H. Madden, London; Mr. J. McKay, London. N A. G. Newell, M.B., Greenock; Mr. J. Neish, London; J. Niven, M.B., Manchester. O Mr. F. Osborne, Dover; Old Member; Dr. P. O'Connell, Stillorgan; Dr. H. O'Neill, Belfast. P Dr. T. A. Palm, Wigton; Mr. J. R. Polson, Worcester; Mr. J. P. Parkinson, London; R. Parker, M.B., Liverpool; G. Peterkin, M.B., Forfar; Mr. T. H. Pounds, Derby. R Dr. C. E. Reinhardt, South Stoke; Dr. J. M. Redmond, Dublin; Mr. T. F. Raven, Broadstairs; Miss E. L. Robertson, Warwick; Dr. C. M. Rogerson, Huddersfield. S Dr. W. J. Sykes, Croydon; Messrs. Street and Co., London; Mr. B. Spicer, London; Mr. F. Stokes, London; Mr. F. C. Simpson, Great Berkhamsted; Dr. R. P. Smith, London; Suum Cuique; Spes; J. Spurway, M.B., Tring; Dr. H. S. Sandifer, London; Scotus; Dr. D. Sommerville, London; Mr. T. Stopher, Ipswich; Messrs. Street Bros., London; Dr. A. Sheen, Cardiff; Mr. M. Scott, London; Dr. T. D. Savill, London; W. R. I. Smith, M.B., Sheffield. T Dr. H. Tilley, London; Mr. R. R. B. Taylor, Santander; R. M. Trotter, M.B., Cramlington; Mr. C. Truman, Reading; Dr. H. C. Thomson, London. V Mr. J. G. Vokes, London; Lord Vernon, Stockport. W Mr. S. Wyborn, Windsor; Mr. G. Walmesley, Kingston-on-Thames; Mr. W. H. Watson, Braystones; Dr. F. Willcocks, London; Dr. H. C. Wilkins, Coventry; Dr. T. Wallace, Cardiff; W. J. D. P.; Dr. R. P. Williams, Holyhead; Dr. P. W. Williams, Bristol; Mr. W. A. Willis, Monmouth; Dr. R. T. Williamson, Manchester; Mr. E. W. Wallis, London; Mr. C. J. Wright, Leeds X X.

BOOKS, ETC., RECEIVED.

Die Lehre von der Pellagra. Aetiologische, klinische und prophylaktische Untersuchungen von Cesare Lombroso. Unter Mitwirkung des Verfassers deutsch herausgegeben von Dr. H. Kunella. Berlin: Oscar Coblentz. 1898. M.7.

Imperial Britain. By Rev. T. Johnson. Vol. I. London: Imperial Press. 1898. 7s. 6d.

Diet and Food. By A. Haig, M.A., M.D., F.R.C.P. London: J. and A. Churchill. 1898.

Essentials of the Diseases of the Ear. By E. B. Gleason, S.B., M.D. Second Edition. London: Henry Kimpton. 1898.

University and Social Settlements. Edited by W. Reason, M.A. London: Methuen and Co. 1898. 2s. 6d.

The Living Organism. By A. Earl, M.A. London: Macmillan and Co. 1898. 6s.

A Clinical Treatise on Diseases of the Breast. By A. M. Sheild, M.B., F.R.C.S. London: Macmillan and Co. 1898. 15s.

Methods of Staining the Nervous System. By Dr. B. Pollack. Translated from the Second German Edition by R. W. Jack, M.D., B.Sc. Glasgow: F. Bauermeister, and London: Whittaker and Co. 1899. 4s.

Manual of Ophthalmic Surgery and Medicine. By W. H. H. Jessop, M.A., M.B., F.R.C.S. London: J. and A. Churchill. 1898.

A Textbook upon the Pathogenic Bacteria. By J. McFarland, M.D. Second Edition. London: Henry Kimpton. 1898. 16s.

A Manual of Modern Surgery, General and Operative. By J. C. Da Costa, M.D. London: Henry Kimpton. 1898. 21s.

A Short Manual of Analytical Chemistry. By J. Muter, Ph.D., F.R.S.E., F.I.C., F.C.S. Eighth Edition. London: Bailliere, Tindall, and Cox. 1898. 6s. 6d.

Traumatic Separation of the Epiphyses. By J. Poland, F.R.C.S. London: Smith, Elder and Co. 1898. 52s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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N.B.—It is against the rules of the Post Office to receive letters at *Poste Restantes* addressed either in initials or numbers.

AN ADDRESS

ON

THE USE AND ABUSE OF INTERNAL REMEDIES IN THE TREATMENT OF SKIN DISEASES.

Delivered at the Annual Meeting of the Reading Pathological Society, Thursday, October 6th, 1898,

By MALCOLM MORRIS, F.R.C.S.Edin.,
Surgeon to the Skin Department, St. Mary's Hospital.

Gentlemen,—Allow me in the first place to thank you for the great honour which you have done me by inviting me to address this which I believe is the oldest Pathological Society in England. I appreciate the honour all the more when I recall the names of those who have occupied this place before me. But, on the other hand, the thought that I have to follow such men as Jonathan Hutchinson, Frederick Treves, and Stephen Mackenzie makes me fear that I have been rash in undertaking the task. I am here, however, to discharge it to the best of my ability, and I can only crave your indulgence for my shortcomings.

The first difficulty which confronted me in the preparation of an address was the choice of a subject. In regard to pathology, with which this Society chiefly concerns itself I am as one of the profane, and I have no wish to bring myself within the scope of the poet's denunciation of the fools who rush in where angels fear to tread. As a mere specialist whose lot is to grub laboriously in a narrow space, there are but few matters on which I could speak with any authority which are likely to interest an audience of men whose professional life is spent in the ampler ether of general practice. In selecting the subject on which I am about to speak I have been guided by the consideration that the right use of internal remedies in the treatment of diseases of the skin concerns alike all, whether specialists or general practitioners, who have to deal with these affections. Specialists as a class are often charged with an undue neglect of constitutional treatment; on the other hand, perhaps, general practitioners are apt to rely too much on internal medication. I have had the opportunity of studying this question from both sides, and I propose to place before you the conclusions to which an experience of more than twenty years of dermatological practice has led me.

Local Treatment in Skin Diseases.

There is no doubt that, concurrently with the great increase of knowledge of the nature of diseases of the skin that has been gained in recent years, there has been an increasing tendency among dermatologists to trust more to external than to internal remedies in the treatment of these affections. So many cutaneous diseases once believed to be expressions of an intangible or purely hypothetical "diathesis" have been traced to causes which can be removed or held in check by local measures, that it is natural to suspect a like origin for many more. It is also natural that, in default of any other definite indications, action should be taken on such suspicion, and in a large proportion of cases the treatment is justified by its success. The immeasurable superiority in appearance, convenience of application, accuracy of dosage, and efficiency of the pastes, varnishes, "sticks," and so forth, which (thanks to the inventiveness of Unna, Pick, Brooke, and others), have displaced the dirty ointments, clumsy plasters, and abominable poultices of a former day, has powerfully helped to extend the use of local remedies.

This improvement in our methods of local treatment is attended with certain disadvantages. The very excellence of our weapons tempts us to rely too exclusively upon them. If our scientific forefathers were too ready to invoke the aid of the constitution as a *deus ex machinâ* in dealing with every blotch or pimple, we on the other hand are perhaps too much inclined to leave it out of account. As usual the pendulum has swung too far in the opposite direction; the abuse of internal remedies has engendered an exaggerated disbelief in their use. Not, of course, that any dermatologist with a scientific character to lose treats every skin disease by local applications alone. This would indeed be to substitute quackery for superstition. Internal remedies are often necessary instruments in working what Mr. Hutchinson has called the "miracle of cure;" still more often they are indispensable adjuncts to local treatment. It would, however, be an impertinence, as well as a waste of time, to labour so obvious a point or to dwell on what is a commonplace of rational medicine. All are agreed that internal remedies have a place in dermatological therapeutics; but it may not be unprofitable to endeavour to define their sphere of influence, and to determine the conditions in which they are useful and the manner in which they may with the best effect be used.

The Evils of Polypharmacy.

Before entering on the discussion of these several points there is an important matter connected with the use of internal remedies which calls for some consideration. If these remedies are to do the good which, rightly used, they are capable of doing, they must be given with a definite purpose. In prescribing the practitioner should put clearly before his mind the effect which is required, and he should use the appropriate remedy in the way best fitted to produce that effect. This of course is a truism, but unfortunately in medicine, as in morals, it is the truisms that are most neglected in practice. I think it was Archbishop Whately who said that most preachers aim at nothing, and hit it. The same may be said of too many prescribers. A superfluity of drugs in a prescription may serve to conceal the want of knowledge, as a superfluity of words in a discourse may hide the want of matter. But polypharmacy, however useful to the doctor as a cloak for ignorance and to the druggist as a source of profit, is an absurdity and an abuse. To the patient it is always more or less injurious. In the practice of our art we must often do evil that good may come of it. This is particularly the case in respect to the administration of internal remedies. Every drug taken into the stomach deranges to some extent the delicate machinery of the body, though this may be disregarded in view of its beneficial action in remedying more serious mischief. But a number of medicinal substances thrown together in a man's inside—what can come of this but trouble? The patient is lucky indeed if they simply neutralise each other, or if they move the overburdened stomach to eject them all impartially. It is this more than anything else that has made our art a stone of stumbling to the wise and a laughing-stock to scoffers. Practitioners of the old school were cynically described as pouring medicines of which they know little into bodies of which they know less. And the pity of it is that even now the gibe has not lost all its point. We no longer (at any rate of malice aforethought) prescribe such monsters of the pharmaceutical imagination as the "electuarium opiatum polupharmacum," which consisted of seventy-two ingredients. But this fearful and wonderful farrago was still in the *Codex Medicamentarius* of France not very many years ago, and I have myself seen in this country prescriptions of the same order of architecture though less flamboyant in detail. Even at the present day mixtures of half a dozen ingredients are quite common, and sesquipedalian formulæ are by no means unknown, at least among dermatologists.

Nothing probably has hindered the progress of therapeutics as much as polypharmacy. If we fire charges of medicinal small shot at a disease, how are we to tell which of them hits the mark? And how is it possible to gain an accurate knowledge of the action of remedies if we administer them in mixtures as complex in their ingredients as the *bouillabaisse* so lovingly described by Thackeray?

The following passage from an article written many years ago by Dr. Peter Mere Latham expresses so exactly and so well what I have been struggling to say on this subject, that I make no excuse for quoting it:

> I have myself a reasonable amount of faith in the power of medicine over chronic diseases. I have laid up a certain sum of experience fairly collected, as I believe, from experiments which I have been making all my life. But, then, all my life I have been careful about my experiments in this respect; especially I have sought to manage my cases of chronic diseases (in other words, to work my experiments) as much as possible by single remedies. On any other terms I do not see how it were possible that I should have any faith at all. It is a mystery to me

how such prescriptions as the following for any known forms of disease can end in any trustworthy experience:

Quinine	Ipecacuanha
Steel	Stramonium
Zinc	Colchicum
Valerian	Iodide of potassium.
Nux vomica	

Such complex prescriptions render the knowledge of the remedial effects of particular substances absolutely impossible. Do the prescribers impute a distinct effect of its own to each of the ingredients, and so reckon the separate instalment brought by each to the remedial mass, or are they content to take it in the lump and rejoice in the oneness of the effect?

My excellent friend Dr. Chambers, as soon as he had chosen medicine for his profession, did not think it beneath his dignity to work at a great pharmaceutical chemist's, compounding medicines and making up prescriptions. Here he saw what had been carefully preserved, the autograph prescriptions of bygone physicians. And those which bore the initials of the most eminent were remarkable for these two characteristics, their plain and legible penmanship and the very few and simple articles which they directed. Surely, it is not unsafe to read the men's minds in these documents, and conceive the character of their thoughts and proceedings in the great business of their lives. The men were evidently candid and clearsighted and of simple purpose; and among them were the best of their time—Dr. Heberden, Sir George Baker, the elder Dr. Warren, Dr. David Pitcairn, and Dr. Baillie. In our day, the profession of medicine needs a little gentle pressure from some such hands as these, to steady it and keep it within bounds.

A gentleman went from Scotland to consult a celebrated watering-place physician. His complaint was asthma. A scheme of diet was laid down for him, scrupulously and minutely strict: and he followed it to the letter. A mixed multitude of medicines was prescribed for him, which had an unpromising look of strife and incongruity. But he took them all bravely and obediently; and verily he had his reward. He obtained relief of his asthma; but the asthma would still return, and so often as it returned he betook himself to his dietetic and remedial discipline, and it went away again; and so his faith was confirmed. In process of time, however, whether the diet was too austere, or the medicine too nauseous, and so the flesh began to rebel, or whether a laudable curiosity set him to find out the secret of his treatment and relief, he certainly began to question the necessity of all the means to the end. So, on his next attack, adhering to his dietetic rules, he bravely took no physic. But the asthma abided, and would not leave him until he had recourse to his accustomed medicine. On the following attack, he set at nought his dietetic rules, and scrupulously took his physic; and the asthma passed away as usual.

It was pretty plain that the physic bottle contained the cure. But to which of the many ingredients did it belong? To one or two or three, or to the whole hotch-potch working mysteriously together for good? In a matter which so nearly concerned him, the patient might be pardoned for laying his rash analytical hands upon the mysterious mixture. It contained, among other things, a few grains of iodide of potassium. Ingredient after ingredient was deducted; and, simpler and simpler as the mixture became, it still had equal power to abate the asthma, until the iodide of potassium was deducted in its turn, and then its sovereign power was gone. Again, all the ingredients together were tried, excepting only the iodide of potassium; but altogether they did not touch the asthma remedially. Finally, every other ingredient was excluded, and the iodide left alone; and alone it displayed a sovereign remedial power.

Fortunate the man who can get rid of an asthmatical attack on any terms; but unfortunate the art that is content with a rare fortuitous and unaccountable success: it must be either retrograde or stationary. To scatter about twenty remedies, and to let hit which may, is like pigeon shooting in companies. The bird falls; but whose gun was it that brought it down? Nobody is reputed the better marksman after a hundred volleys.[1]

THE SPHERE OF INFLUENCE OF INTERNAL REMEDIES.

Coming now to the sphere of influence of internal remedies in skin diseases, it may be said in general terms that they are the chief means of controlling lesions directly dependent on a constitutional taint (as in syphilis); or disordered action of the nervous system (as in certain forms of erythema and pemphigus) or on that unknown factor which makes certain diseased conditions tend to repeat themselves or to become inveterate by the establishment of a depraved habit in the structural elements of the skin (as in psoriasis, lichen, and certain forms of eczema). It will be convenient to consider the last class of affections first, as our knowledge of them, particularly in the matter of etiology, is much less precise than in the case of the others, and it is therefore with respect to them that difficulties as to the use of internal remedies are most likely to arise.

THE ACTION OF ALTERATIVES.

Dr. Creighton[2] attributes the morbid habit to which reference has just been made to the action of an "unconscious memory" resident in the cells or in the nervous system. The "memory" of past developmental phases may lead to the production of mesoblastic tumours which are the results of revived embryonic activity. A chronic catarrh of the respiratory or urethral mucous membrane is a reversion to "a more elementary, primitive, or embryonic kind of epithelial function." In skin eruptions the morbid habit depends on implication of the nervous system, "whether" (he says) "it takes the form of mere dogged persistence—*ici je suis, ici je reste*—or of coming back time after time at the same spots or of encroaching on areas of skin unimplicated before habit has become the second nature of the eruption; and the memory or retentiveness doubtless resides in the nerves and nerve-plexuses of the skin." Dr. Creighton works out his theory with a fulness of knowledge and an ingenuity which make his little book most interesting and stimulating reading. The theory has important practical applications. If a skin disease persists when the operation of the primary cause has ceased to be due to the formation of a bad habit, the indication clearly is to eradicate the habit. How can this be done? By the use of certain remedies, such as arsenic, antimony, phosphorus, zinc, and so forth, the action of which is ill-defined, and hence is expressed by a term of corresponding indefiniteness. They are called "alteratives" because they are supposed to change something in the economy in some way that makes for betterment. That they do good is a fact confirmed by the universal experience of mankind; how they do it is a question that still vexes the scientific mind. Hence it is the fashion in these days of higher scientific criticism to doubt the usefulness of alteratives. But practical-minded men will, I think, agree with Professor H. C. Wood that "to deny, as has been done, the existence or value of medicines of this class because we cannot tell why mercury relieves syphilis, or why iodide of potassium cures rheumatism, is as absurd as to deny the existence of the syphilitic or rheumatic dyscrasia because they do not know their ultimate nature." Dr. Creighton's explanation of the action of alteratives upon chronic skin diseases is at least plausible. He says: "Their action is simply to break the habit, to banish the usurping memory, to give the indwelling or proper action of the part its long-deferred opportunity of coming in again." But to discuss this fascinating theory here would take me too far out of my way. There is a story of a Cambridge tutor who said to a metaphysical undergraduate who showed an inconvenient curiosity as to the meaning of the Greek philosopher whom he was construing: "Our business at present, sir, is to translate Aristotle, not to understand him." In like manner we have to do here with the effects of alterative remedies in skin diseases, not with the manner in which these effects are produced.

ARSENIC.

Among the alteratives that are particularly useful in skin diseases, the first place must be given to arsenic. With that drug I would group antimony and phosphorus. Whether or not those substances can be said to "pluck from the memory" of other parts of a body "a rooted sorrow," there can be no doubt that they "raze out the written troubles" of the skin in a number of diseases in which other agents are powerless. In regard to arsenic, this is so well recognised that many practitioners apply to it Hoyle's famous rule for leading at whist: when in doubt they give arsenic. Now the notion that arsenic is a panacea in skin diseases is simply a mischievous superstition. It is a most valuable remedy if properly used, but in many skin affections it is useless, while in some it does harm and may even be dangerous.

I do not propose to inflict upon you a full account of the physiological and therapeutic properties of arsenic. Indeed the physiological properties, so far as they have been ascertained, throw very little light on its action in diseases of the skin. Our knowledge of its use in this department of medicine is chiefly empirical. It was used as a secret remedy in skin affections long before it was adopted into the fold of orthodox practice. There is no mention of it in the first edition of Willan's famous treatise on cutaneous diseases, though Bateman, in his edition of that work, published in 1819, speaks of Fowler's solution as being extremely beneficial in most cases of lepra, owing to its power of supporting the strength and stimulating the cutaneous vessels. Rayer, in his *Traité des Maladies de la Peau* published in 1826, mentions arsenical preparations among the remedies useful for chronic cases of almost every form of skin disease; in the introduction, however, he says that "for his own part he ardently hopes that experiments of another description, put to the

same test, may cause these violent remedies to to be superseded by external medicines more rational, more immediate in their effects, and less dangerous." Arsenic was warmly and somewhat indiscriminately recommended by mid-century writers of the English and French schools. Hebra, however, as might have been expected from his thoroughgoing belief in local treatment, was more critical in his estimate of its therapeutic value; but he admitted that in psoriasis arsenic had a decidedly curative action, and had the effect of making the disease undergo involution for a time, if not permanently. He also found it useful in lichen ruber, but in regard to eczema he says, "I cannot concede to arsenic the undefined blood-purifying and eczema-curing powers which are attributed to it by English and French physicians."

In the first edition of Erasmus Wilson's work on *Diseases of the Skin* arsenic does not figure conspicuously among the remedies recommended. It is mentioned with several others as being suitable for chronic and obstinate forms of eczema, and the following somewhat vague account is given of its action: "Arsenic, when it acts on the nervous system, performs the part of an alterative, but when its effects are directed upon the membrane of the kidney, namely, by counter-irritation, by exciting inflammatory action in the interior and thus determining from the surface."

From these quotations it will be seen that the belief in arsenic as a universal specific in skin affections which some years ago had almost established itself as a tradition in the medical profession is of comparatively recent origin. Anyone interested in the history of its use will find the subject set forth in considerable detail in an article which I contributed to the *Practitioner* many years ago.[3] It may there be seen that the drug in relation to the therapeutics of the skin has had a somewhat chequered history. Its success in controlling one or two forms of skin diseases has led to its being tried at one time or another in all. It has been used by some too timidly, by others too recklessly; it has been unduly extolled and it has been as unduly depreciated. We in these days, like those who have gone before us, employ it mainly on empirical grounds. But our empiricism has a wider basis, consisting of our experience added to theirs. Let us consider what this experience teaches as to the internal use of arsenic in skin diseases. If I appear to speak dogmatically, you will remember that I am here to place before you the facts which I have myself observed and the general conclusions to which these observations have led me.

First of all, let me state as a cardinal rule of practice that arsenic should never be given in acute conditions; it only serves to fan inflammation to a fiercer glow. This general principle applies to all forms of skin disease. It is in chronic conditions alone that the "alterative" properties of the drug find a proper field for their activity. Another rule in the administration of arsenic is that it should be given in very small doses at first. The practitioner will do well to feel his way cautiously with the drug, increasing the dose gradually according to the tolerance displayed by the patient. During a course of arsenical treatment the patient should always be kept under close observation, and the drug should be discontinued as soon as any constitutional symptom referable to its use—such as coryza, redness of the eyelids, conjunctival injection, gastric or intestinal irritation—is observed. A better effect is often obtained by discontinuing the administration of arsenic for a short period from time to time, thus, as it were, "breaking the habit," that might be induced by too continuous use.

Another point which should never be lost sight of is that arsenical medication, if too long persevered with, may produce effects as troublesome as, or even worse than, the disease which it is intended to cure. The prolonged administration of the drug or its use in excessive doses is likely to produce deep brown pigmentation of the skin and thickening of the epidermis of the soles and palms. Not long ago I showed at the Dermatological Society a woman who had been treated for lupus erythematosus with arsenic; the drug had been pushed till all trace of the disease had disappeared. The arsenic had, so to speak, swept the skin clean of the original affection, but in place of it had brought chronic changes of a different kind, pigmentation extending over the whole of the body, keratosis of the palms, and loss of hair. Hutchinson has described corn-like growths, sometimes assuming a malignant form, which he considers to be the result of a prolonged course of arsenic. Peripheral neuritis is another well-known consequence of overdrugging with arsenic.

Apart from such consequences of the abuse of arsenic, it must not be forgotten that the possible influence of idiosyncrasy must be reckoned with. In certain persons arsenic, even if given with all proper precautions, produces eruptions of various types—papular, vesicular, urticarial, pustular; sometimes even boils and carbuncles.

Lastly, a word should be said as to the form in which the drug is best administered. For most purposes Fowler's solution is the most convenient preparation. It is unquestionable, however, that better effects are often obtained by the administration of arsenical waters, such as La Bourboule and Levico, than by solutions of arsenious acid. The good effect of these waters is due to the relatively small amount of arsenic which they contain; small doses of the drug can thus be given for a long time without producing any toxic symptoms. Arsenical waters taken internally, however, do not protect against relapse so effectually as when administered in the form of baths. The good effect in the latter case is due not so much to absorption of the drug as to its action on the nervous system through the cutaneous nerves. Some American dermatologists, however, prefer arsenious acid or arseniate of soda, and recommend that the remedy should be given after, not during, meals. In France the usual plan is to give Fowler's solution (from 2 to 10 or 15 drops in the day) or arseniate of soda in granules of 1 milligramme, or in solution in such a way that 2 to 10, or even 20, milligrammes are taken in the day.

Passing now from the general to the particular, the disease with regard to which arsenic most nearly fulfils the idea of a specific is pemphigus vulgaris. Here, if anywhere, we can speak at any rate without glaring absurdity, of working the "miracle of cure;" and yet even in pemphigus arsenic sometimes fails. I generally give it in the form of Fowler's solution, beginning with 3 minims thrice a day, and increasing the dose gradually to 5, 7, 8, and even 10 minims, making a total daily amount of 15 to 30 drops. When after a fair trial arsenic proves ineffectual, it may be supplemented or replaced by quinine, opium, phosphorus, ichthyol, or belladonna. In other bullous eruptions arsenic is more uncertain than it is in pemphigus. It is often useful in cheiropompholyx, either alone or in combination with iron. In dermatitis herpetiformis it is more efficient than any other remedy—"yet that's not much," as Othello says, for that mysterious disease is but slightly influenced by drugs of any kind. Yet arsenic does to some extent favourably modify the process in certain cases, but too often such good as it does is only of a transient character. Smaller doses of arsenic are required in dermatitis herpetiformis than in pemphigus. Another affection in which the good effects of arsenic are frequently strikingly manifest is psoriasis. It is true that this disease can often be successfully dealt with by the local application of chrysarobin or pyrogallic acid, and indeed these agents are, as a rule, so effective that arsenic internally is not required. In young children, however, strong external remedies are dangerous, and for them arsenic is the drug "of election."

In young persons suffering from a first or second or even third attack arsenic is to be preferred. It is also most useful in adults when the process is very chronic and non-inflammatory type. In such cases I usually give Fowler's solution freely diluted, beginning with a dose of 3 to 4 minims, after meals, three times a day, increased by degrees up to 10 minims. Kaposi administers arsenic in "Asiatic pills," of which the following is the composition: Arsenious acid gr. 66⅔, powdered black pepper ʒix, gum arabic and water q.s., to be divided into 800 pills, each of which contains gr. 1/12 of arsenious acid. He begins by giving one of these pills three times a day, and the number being gradually increased to ten or twelve in the day. The treatment is continued, if necessary, for several months, I presume, with intervals of suspension. If after the patient has swallowed 500 or 600 pills, no marked effect is visible, the remedy is considered to have failed. Arsenic is contraindicated in psoriasis when the eruption covers the whole or a large part of the cutaneous surface.

In eczema the sphere of usefulness of arsenic is much more restricted. Here it is still more necessary to emphasise the warning already given that the drug does harm rather than

good in acute cases. It is especially likely to be beneficial when small chronic patches which resist local treatment remain as a legacy from an acute attack. In certain cases in which a nervous element is clearly present the drug is also likely to be of use: this remark applies with special force to those cases in which eczematous outbreaks alternate with attacks of asthma. In seborrhœic eczema as a rule arsenic is not required.

In lichen ruber planus arsenic is often of great value, but it must be given in large doses, and its use must be continued for a considerable time. Kaposi following Hebra, looks upon this drug as a specific in this disease. To children he gives Fowler's solution, beginning with two drops daily and increasing the dose by very slow degrees, and to adults he gives the Asiatic pills aforesaid in much the same manner as in the case of psoriasis. As a rule no improvement is perceptible before a period of six to eight weeks has elapsed, in which time the patient will have taken from 200 to 500 pills. He goes on taking eight to ten pills daily till his skin is almost clear of any trace of the disease, when the daily dose is gradually reduced to six pills, which he continues to take for three or four months after his integument is to all appearance sound. I agree with Besnier, however, who, while admitting that arsenic often gives satisfactory results in lichen, says that in some cases it fails, while others get well without it. I do not doubt the efficacy of this treatment, carried out under the supervision of the distinguished dermatologist of Vienna. I venture, however, to congratulate him on the perseverance of his patients, an essential factor in the success of the treatment which it would be difficult to secure among the stiff-necked generation with whom we have to deal in this country. I may add that in my opinion the use of arsenic in such heroic doses is hardly to be recommended anywhere as a routine practice.

In rosacea arsenic is seldom of use; indeed is generally harmful. In lupus erythematosus it is said by some to be useful. In chronic urticaria when unaccompanied by intestinal irritation the symptoms are much mitigated, and a cure is often effected by a course of arsenic. Zoster runs a definite course uninfluenced by drugs, but the neuralgic pain which frequently persists long after the disappearance of the eruption may be greatly relieved, especially in elderly patients, by the internal use of arsenic.

Other conditions in which the internal administration of arsenic is beneficial are a peculiar inflammation of the lips, which become troublesome owing to the frequent relapses which occur, and atrophy of nails without eruption elsewhere. In both these conditions the drug should be given in small repeated doses.

Lastly, there can be no doubt that in certain cases sarcoma can be favourably modified by large doses of arsenic. I have myself seen a case of malignant disease of this nature cured by the internal administration of arsenic in large doses; and similar cases have been recorded in Germany and elsewhere.

To sum up: Arsenic is far from being a specific in skin disease, but, on the other hand, it is not the delusion and the snare which, under the influence of a reaction from the exaggeration of Hunt and other enthusiasts, it is sometimes said to be. In the words of Brocq,[1] "it has precious properties if one only knows how to use them; it has a real action on the mucous layer of the epidermis, and it is indicated in all scaly, dry, non-inflammatory dermatoses." It is significant, however, as showing the unsatisfactory nature of our knowledge of the use of arsenic in skin diseases, that while agreeing with the general statements just quoted, I cannot subscribe to the opinion which the eminent French dermatologist goes on to express: that arsenic is "above all efficacious in lichen ruber planus and in the dermatitis herpetiformis of Duhring, diseases of which it may be regarded as the specific." That no doubt represents his experience. I have told you mine. You must "try all things" for yourselves.

Antimony.

As to the other two drugs which I have grouped with arsenic as useful "alteratives" in diseases of the skin, there is less to be said. Antimony, which I venture to claim some credit for having at least to a certain extent popularised in dermatological practice,[2] is as much the drug "of election" in acute eruption as arsenic is in chronic conditions. It is especially indicated when the arterial system is in a state of great tension. Small doses of the vinum antimoniale quickly relieve this, and, as a consequence, subdue or markedly reduce the local inflammation. In acute eczema, if the patient is otherwise healthy, I generally begin by giving 10 to 13 drops of the wine, repeating the dose an hour later, and if there be still no abatement of the symptoms, again two hours afterwards. The administration is continued at gradually lengthening intervals, while the dose is diminished till a limit of 6 drops is reached. This should be continued three times in the twenty-four hours as long as the acute symptoms persist. In acute forms of psoriasis, and particularly in cases where the subjective symptoms are very pronounced, I also find antimony of great service; here I give the wine in somewhat smaller doses (♏ v-x thrice daily). In the early stages of dermatitis herpetiformis, erythema multiforme, and generally speaking in all forms of cutaneous affection when the inflammatory phenomena are very prominent, antimony is most useful.

It is important to note that antimony has a twofold action according as it is given in large or in small doses. In large, that is to say relatively large, doses it controls vasomotor disturbances, lowers the blood pressure, and so, as already said, reduces inflammation. In smaller doses its action has an "alterative" character similar to that of arsenic. In certain conditions, as in painful irritable psoriasis, chronic eczema with relapses, I find the remedy very valuable given in very small doses and continued for a considerable period of time. Antimony is contraindicated in depressed conditions of the system, and in all cases in which its administration is continued for any length of time, a careful watch must be kept on the patient's state, especially in regard to the heart's action. It must also be remembered that in some cases the internal use of antimony is followed by the appearance of vesiculo-pustular and urticarial eruptions; occasionally the rash is varioloid in character.

Phosphorus.

Of the action of phosphorus in skin affections we have hardly any precise knowledge, even of an empirical character. It is useful chiefly in conditions in which the nervous system requires support, as in the later stages of dermatitis herpetiformis, in certain cases of pemphigus in which arsenic has been found wanting, in eczema of the neurotic type, in psoriasis, and in lupus in nervous subjects. The general principle of its use is that it should be given in small doses combined with iron, strychnine, or quinine, as may seem appropriate, in all cases of skin diseases associated with neurasthenia.

Iodide of Potassium.

I need not dwell on the virtues of iodide of potassium in the late syphilitic affections of the skin. There are, however, other diseased conditions of the integument in which it is useful. Haslund regards it, when given in very large doses, as almost a specific in psoriasis. I have no experience of this treatment, but am inclined to look upon the beneficent effects of the drug as due to its "lowering" action. Psoriasis, as is well-known, appears to require a substratum of robust health for its full development; the removal of this by anything which causes depression is likely to be followed by abatement of the disease. Erythema keratodes has been known to yield to iodide of potassium administered in an erroneous diagnosis of syphilis. In actinomycosis the drug often has a curative effect so marked as almost to warrant one in calling it a specific. The administration of the drug should be begun at the earliest possible moment, and in order to get the full effect it must be given in full doses. Beginning with 10 or 15 gr. three times a day, it should be steadily pushed to 20, 30, 40 gr., and even larger doses if necessary.

In connection with this drug it may be pointed out that in its administration, as in that of other remedies, much depends on the vehicle in which it is given. Iodide of potassium is in my experience much less efficacious when given in water than when given in decoction of sarsaparilla. It also acts well when given in coffee, tea, or brandy and water; it is, in fact, more quickly absorbed and better assimilated in such vehicles. I have often seen severe cases of late syphilis in which iodide of potassium in water was inoperative, but quickly effected a cure when given in tea, coffee, or sarsaparilla. The same

statement holds good regarding quinine and biniodide of mercury.

The Salicylates.

Salicin and salicylate of soda have recently been highly praised by a leading dermatological authority, Dr. Crocker, as the most useful of all internal remedies in nearly all forms of psoriasis. I have tried it in what appeared to be suitable cases, and I can only say that I have never found it of much use. I have also tried salicin in lichen ruber planus without success. The drug has occasionally seemed to be of some service in eczema, not in cases of the seborrhœic type but rather in those with a nervous origin. In erythema nodosum salicylate of soda in doses of from 10 to 15 gr., according to the age of the patient, is useful if there is any evidence of a rheumatic taint.

Thyroid Extract.

This agent has been credited with effects little short of marvellous in psoriasis and some other affections of the skin. Here, again, I am unable from my own experience to confirm the reports of Dr. Byrom Bramwell and others. The thyroid did in some cases seem to influence the condition for a time, but the effect after all was slight and extremely transient. Moreover the remedy is, especially in elderly persons with weak hearts, distinctly dangerous, and even in healthy people it is apt to cause grave systemic disorder.

Internal Antiseptics.

I pass next to an important class of remedies which, for convenience of grouping, I will call "internal antiseptics." The part played by derangement of the digestive apparatus was doubtless greatly exaggerated by dermatologists of the older school, who found in that a convenient explanation of all sorts of skin affections. That toxic substances circulating in the blood do produce eruptions on the skin is shown by the effect of many articles of food, notably shell fish, in causing urticaria, and by the action of many drugs which cause medicinal rashes. It is highly probable that like effects are produced by toxins secreted by micro-organisms in the stomach or intestine. I have myself no doubt that ptomaine poisoning is accountable for some skin diseases, notably some varieties of erythema, perhaps lichen ruber planus and some forms of eczema. The skin lesions produced by intoxication of the kind referred to are probably reflex phenomena due to the action of the poison circulating in the blood upon the nerve centres. Unfortunately, the relation between ptomaine poisoning and diseased conditions of the skin is still very imperfectly known; it seems to me to offer a good field of investigation to the pathologist.

As examples of internal antiseptics, I will take mercury and ichthyol. Salol is also very useful, but need not engage our attention here, as it is employed on general principles which are familiar to every practitioner. These remedies have a threefold action: (1) on the stomach and intestine, (2) on the blood, and (3) on the skin. They disinfect the gastro-intestinal canal, increase the number of red corpuscles in the blood, and subdue reflex irritation of the vasomotor system in the skin.

Mercury.

Taking mercury first, it is now recognised that, if given in small doses frequently repeated, it is a useful tonic, promoting metabolism and making the blood richer in red corpuscles. The specific action of mercury on the poison of syphilis need not be dwelt on here. In acute skin diseases, as a general rule, calomel is most useful; but it should not be given in all cases as a kind of ritual observance which must on no account be neglected. The indiscriminate administration of aperients in inflammatory affections of the skin is one of the most serious abuses of internal remedies. It is when the attack is not only acute but general that calomel is most serviceable: this is particularly the case in regard to eczema. Biniodide of mercury I have found to be of the greatest service in hypertrophic forms of lichen planus. I prescribe it as follows: R Liq. hydrarg. perchlor., ℥j; hydrarg. iod., gr. v; decoct. sarsæ co. ad, ℥j. M. fiat mist. Sig. Two tablespoonfuls three times a day after meals. This remedy has, as I have said, given most satisfactory results in the generalised form of the disease; in the chronic localised form it is useless.

Ichthyol.

Ichthyol disinfects the stomach and intestine and checks flatulence. It also causes an increase in the number of red corpuscles somewhat similar to arsenic but to a slighter extent. Further, by its action on the nerve centres it controls the vasomotor reflexes; it is, therefore, useful in the erythemata, and generally speaking in congestive conditions. I usually begin by ordering 5 gr. in capsules, tabloids, or pills, to be taken on an empty stomach early in the morning and late at night or after meals. In a few days I increase the dose to 7½ gr., and afterwards to 10 gr. and upwards until the desired results are obtained. Its efficacy is sometimes increased by the addition of small quantities of quinine. This combination is very useful in controlling the flushing of the face and other vascular disturbance of the menopause. It may be given in the forms of a pill as follows: R Ichthyol, gr. iij; quin. sulph., gr. ¼. One or two to be taken after each meal.

Ichthyol in doses of two to three grains gives relief in pruritus; in urticaria it is generally most useful in gradually increasing doses. It is of service in lupus erythematosus by reducing hyperæmia. Its peculiar power of controlling local circulatory disorder makes it particularly useful in rosacea, marked improvement becoming manifest within a few days of the commencement of the administration.

Nerve Sedatives.

Another class of internal remedies which are of the highest use in the treatment of skin disease is nerve sedatives. These I am compelled to pass over very rapidly. First among them is opium, which is indicated in all conditions when the nervous symptoms are pronounced. In eczema, in lichen, and in all cutaneous affections in which itching is a prominent symptom, nervous excitement combined with loss of sleep tends to exhaust the patient. Opium in small doses counteracts this. In bad cases it may be advisable to keep the patient almost continuously under the influence of opium or morphine. In such cases the constipating effect of the drug should be counteracted by giving a mild aperient, such as Carlsbad salts, Friedrichshall, or other saline purgative in the morning. If prostration is marked, quinine may with advantage be combined with the opium. If opium disagrees, chloral, sulphonal, or phenacetin may be substituted for it.

Tuberculin.

Although tuberculin is not in strictness an "internal remedy," it still less comes under the head of local treatment. I may, therefore, say a few words about it here. I have given it both in its original and in its improved form (TR), and I am compelled on the whole to report against it. In lupus it undoubtedly modifies the process in a marked degree for a time, but the effect is not lasting. The new tuberculin at first appeared to act like a charm, and I confess I was deeply impressed by the immediate results.[6] But the new tuberculin has already proved as disappointing as the old: in all the cases in which it seemed at one time likely to effect a cure the disease has recurred and their last condition is just as bad as their first. One good effect may, however, be claimed for tuberculin. If used as a preliminary to surgical treatment it modifies the process in some way which I do not profess to explain, but which makes surgery more permanently effectual than it otherwise would be.

Of the serum treatment as applied to syphilis, leprosy, and one or two other affections I am unable to speak from any experience of my own. I may say, however, that the reports of those who have tried the remedy do not encourage me to follow their example at present.

Constitutional Treatment.

Of constitutional treatment in the ordinary sense it hardly falls within my province to speak here. I may say, however, that a great deal too much has been made of the necessity for treating "diatheses," real or imaginary, which are supposed to have an etiological relation to skin diseases. As has quite recently been said by no less an authority than Professor Virchow, the diathesis theory is largely a confession of ignorance of the true cause. We know, indeed, that certain constitutional states—notably gout and diabetes—are often associated with morbid processes on the

skin, but no amount of "constitutional" treatment will alone cure eczema, psoriasis, or lupus erythematosus, or any other skin affection. Gout, diabetes, and debility must, of course, be dealt with by appropriate remedies in patients afflicted with skin diseases as in others. In short, constitutional treatment is a useful—if you will, a necessary—adjuvant to dermatological therapeutics; but it can never be a substitute for remedies, internal or external, which have a special action upon the skin.

CONCLUSION.

In conclusion, I must apologise for the discursive and, I fear, superficial character of this address. I have not attempted to deal with the subject exhaustively; to do this would require not an address but a course of lectures. Many drugs that are well spoken of by authorities I have not mentioned. I have confined myself to a rapid review of those which I habitually use and find beneficial. However little value this report of my own practice may have, it is, at any rate, more profitable than a compilation of the experience and opinions of others. In dermatology, as in every other department of medicine, progress has been greatly hindered by blind adherence to tradition and authority. Tradition tends to keep alive superstitions like the "constitutional" bogey; authority creates fallacies of its own. These, as has been pointed out, largely spring from an unscientific use of a multiplicity of remedies, which leads to effects being attributed to wrong causes. Voltaire says, speaking of magic: "It is unquestionable that certain words and ceremonies will effectually destroy a flock of sheep—if administered with a sufficient quantity of arsenic." We have still a vast amount of "words and ceremonies" to get rid of in dermatological practice before we learn to use with precision the arsenic or other agent which is the efficient cause of cure in skin diseases.

For my own part I say with Hebra: "I set not the slightest value on any remedies except those which (after repeated trials, and when I am accurately acquainted with the complaint) I find to produce a favourable change in its course, or, in other words, to cure the patient. I never attribute therapeutical powers to a medicine, unless I observe its employment to be invariably and constantly followed by some change in the morbid products, and by the termination of a disease in a shorter time than when it is allowed to undergo spontaneous involution."[1]

NOTES AND REFERENCES.

[1] General Remarks on the Practice of Medicine: a Series of Articles written and published in the BRITISH MEDICAL JOURNAL during the years 1861, 1862, and 1863; *Collected Works*, New Sydenham Society, London, 1878, vol. ii, p. 512. [2] *Unconscious Memory in Disease*, London, 1896. [3] *The History and Therapeutical Value of Arsenic in Skin Diseases*. [4] Brocq et Jacquet, Précis Elémentaire de Dermatologie, *Pathologie Générale Cutanée* (L. Brocq), p. 104. [5] See a paper read by me at the Liverpool meeting of the British Medical Association, 1883. [6] See a report of six cases of lupus vulgaris treated with Koch's new tuberculin, BRITISH MEDICAL JOURNAL, July 24th, 1897. [7] *Diseases of the Skin*, New Sydenham Society *Trans.*, vol. xi. p. 80.

ST. BARTHOLOMEW'S HOSPITAL.—The entrance scholarships have been awarded as follows: Junior Scholarship in Chemistry, Physics, and Biology, value £150, C. C. Robinson, J. Binfield (equal); Senior Scholarship in Biology and Physiology, value £75, L. J. Picton; Preliminary Scientific Exhibition in Chemistry, Physics and Biology, value £50, A. F. Forster; Jeaffreson Exhibition in Latin, Mathematics, etc., T. Jefferson Faulder; Shuter Scholarship in Anatomy, Physiology, and Pharmaceutical Chemistry, value £50, F. C. Shrubsall.

MUNIFICENT BEQUESTS.—The late Mr. James B. Thomson of Glasgow has by his will bequeathed the following legacies to Glasgow medical institutions, in addition to numerous other bequests: Royal Infirmary, £4,000; Western Infirmary, £3,000; Victoria Infirmary, £2,000; Sick Children's Hospital, £200; Lock Hospital, £200. The trustees of the will are further directed to divide among charitable, benevolent, or educational institutions in Glasgow or the West of Scotland the residue of the estate, which, it is estimated, will amount to about £60,000.

A NEW convalescent home erected at Kemp Town, Brighton, as an adjunct of the French Hospital in London, was opened on October 8th by Baron de Courcel, the retiring French Ambassador.

AN ADDRESS
ON
THE LIBRARY AND THE WORK OF THE MEDICAL SOCIETY OF LONDON.

Being the Presidential Address at the opening of the 126th Session on October 10th.

BY EDMUND OWEN, F.R.C.S.,
Surgeon, St. Mary's Hospital.

[ABSTRACT.]

AFTER some introductory remarks, Mr. Owen proceeded: As every Fellow of this Society knows, we owe our foundation, and the vigour and prosperity which we now enjoy, to the devotion, foresight, and liberality of J. C. Lettsom, who was from the first keenly interested in the creation and development of our Library. Ours was, I apprehend, the first medical library ever established, and in those days, when books were comparatively rare and expensive, the collection must have been of the greatest service and advantage to our growing Society. Under the constant and fostering care of the Honorary Librarian, Dr. Allchin, the Library has lately undergone and is still undergoing, great improvements and alterations, whilst his able assistant, Mr. Hall, our Resident Librarian, is always in attendance, and willing and ready to place his able services at the disposal of readers.

A CLERICO-MEDICAL DIARY.

Amongst the many treasures of our library are fifteen leather-bound volumes of manuscript which formed the diary or rather common-place book of the Rev. John Ward, M.A. Oxon., who was vicar of, and medical practitioner at, Stratford-on-Avon from 1662 to 1681. His handwriting is small and for the most part hard to read, but with the help of a book which was published in 1839 by Dr. Severn, a former Registrar of this Society, it is easy to obtain a good general knowledge of the contents of the volumes. It is probable that they formed part of the library of Dr. Sims which we acquired by purchase at the very end of the last century.

Ward took his Mastership in Arts in 1652, and I think I see him sometimes leaving his divinity lectures to work at natural science and medicine. At any rate, as soon as he was able to do so he came up from Oxford to the Bell in Aldersgate Street, so as to be near the Barber-Chyrurgeons' Hall, in Monkwell Street, in order to study practical anatomy under Dr. Scarborough, the friend of Harvey, who gave demonstrations there upon the bodies of persons who had been executed for crime, for by a charter of Henry VIII the Barber-Chyrurgeons were entitled to receive each year a certain number of bodies for this purpose.

Not very many years ago it was, as we know, quite usual for the professions of Divinity and Medicine to be combined in the one individual, and it certainly is to the advantage of our profession that in England the custom no longer obtains. But I fear it must be admitted that a class of persons still exist in whom the survival of the dual office lingers: of vicars and vicaresses who cannot keep themselves from dabbling in medicine and quack remedies. Many a country village still contains such unorthodox practitioners, who dispense medical advice to the peril of their too-confiding practitioners, and not infrequently to the annoyance of the local doctor.

But let it be clearly understood that the Rev. John Ward was not an empiric of this sort. Though he would be out of place to-day, history shows that he had worked diligently to acquire a knowledge of our profession, and I feel sure that he was well fitted to practise it under the licence which he doubtless received from his bishop at the same time that he entered upon his clerical duties.

In his diary Ward asked himself specially to remember that he must also "studie such diseases as are peculiar to women, and also to children, so as to be ready at them when I come into the country." He evidently meant to be a good all-round man.

But the point to which I am coming is this, that, taking up his work in Stratford-on-Avon in the forty-sixth year after Shakespeare's death, he must, both as vicar and doctor, have

been told of many facts concerning the Bard by those who had been personally and intimately acquainted with him. Unfortunately he does not say much about him, but what he did say in these memorandum books has been already seized upon by the industrious Halliwell Phillipps, and duly recorded in his *Life of Shakspeare*.

Here is one of the extracts, which, coming as it did from a highly educated and learned man, who had lived in the village of the Shakspeares, is of undoubted biographical value:

I have heard that Mr. Shakspear was a natural wit, without any art at all; hee frequented the plays all his younger time, but in his elder days liv'd at Stratford and supplied the stage with two plays every year, and for that had an allowance so large that hee spent at the rate of £1,000 a year;

which in those times was a very large amount, corresponding, perhaps, to £3,000 or £4,000 sterling of to-day.

One other extract I will give, and will pass round the duodecimo volume that you may read it for yourselves just as Ward wrote it nearly two centuries and a half ago; it is a quarter of the way down on the right hand page where the book is opened:

Shakspear, Drayton and Ben Jhonson had a merry meeting and itt seems drank too hard for Shakspear died of a feavour there contracted.

In those times it was customary to call obscure diseases "feavours," just as they are now called "influenza," or "neuroses"; but whatever was the actual cause of Shakspeare's death, it is evident that local tradition ascribed it, rightly or wrongly, to that "merry meeting." At any rate, it is a matter of satisfaction to us to know that this interesting and important memorandum is in the possession of our old Society.

Yes, no doubt that was a "merry meeting." Just think of those three friends together: Shakspeare, Ben Jonson, and Drayton! A pity that Ward could not have been there unobserved with his notebooks!

Time permits me to make but a brief reference to the medical and surgical jottings of the diary; Dr. Severn has, however, conveniently collocated them in his book. And, considering the period at which they were made, some are highly suggestive and advanced.

Thus he alludes to a man at Cambridge who cured ague by making injections into the veins "as Mr. Wren did into the veins of a dog." What was the drug, I wonder? Was it a solution of some preparation from willow bark, or of some metallic germicide?

We are now only just beginning to realise that by intravenous injections powerful results may most rapidly be obtained, as with the hot saline infusions in the collapse after diarrhœa, cholera, and hæmorrhage, and in the washings out of the entire vascular system in septic conditions. In syphilis corrosive sublimate solutions are being employed in like manner, and who could say but that the successful attack of the mean germs of tubercle may be at last secured by some such treatment? Ward says that it was a "Fellow at Cambridge" who was working on these advanced lines, and he would be greatly interested to hear that there may still be found at Cambridge Fellows who are doing great work in connection with laboratory experimentation and the advance of medical education generally—Gaskell, Kanthack, Michael Foster, and their associates. Ward was not satisfied with Oxford as a medical school; at any rate, he left it to come to London for his clinical education, and he quotes Sydenham to the effect that "one had as good send a man to Oxford to learn shoemaking as practising physic."

In the seventeenth century, as to-day, the first essential for the successful teaching of the art of practising our profession must be the command of clinical material, and in this respect no town or city in the kingdom can ever equal London. Possibly Ward thought the Oxford system of practising medicine in those days was too speculative. This is what he writes:

A scholar att Oxford applying himself to an elderly physitian of that university, to know whether hee was in a consumption or not, hee askt the schollar, whether hee spitt blood or not? he answered negatively: then said hee, "'tis but a physick cough, and I will warrant you from a consumption": but three months after, his body went to the wormes.

Our clerico-medical diarist took a lively interest in practical pharmacy, and said that it would be an excellent way for physicians to make up all their physic in troches. In this respect also his thoughts were in advance of his time. It could not be done whilst medical men charged for the medicine which they supplied; but at the end of the nineteenth century pretty nearly every combination of drugs is made up in troches, cachets, tabloids, or varnished pills, and, kept in stock at the stores, may be bought by the handful for a few pence. Subscribers can choose them for themselves by the list numbers; and if the hard or varnish-coated drugs pass undissolved through the alimentary canal, at least they have done no harm.

In the interesting diary, constant reference is made to small-pox and its ravages, but in the face of the "tremendous experiment" which it has just pleased the Government to institute with regard to this loathsome disease, I have not the heart to make further allusion to it. Government has, indeed, sown the wind; but when the reaping of the whirlwind comes, the plentiful harvest will unfortunately be composed of the innocent, helpless, and ignorant—the very people whom a civilised Government are most bound to protect.

Our illustrious Jenner was, you may remember, the last recipient of the John Fothergill Gold Medal. Could it be that the appreciation which the Medical Society of London showed of his work in 1803 was but the hysterical adulation of incompetent judges? Or was it not rather the deliberate expression of opinion of medical men who had known England unvaccinated and pock-marked, and had witnessed the magic change which his beneficent discovery had wrought?

Ward insisted on the need of fresh air for children; he advised the scraping of chronic ulcers, and he gives a graphic account of subcutaneous tenotomy, in the instance of a mountebank who "cutt wry necks by making a small orifice with his launcet and lifting up the tendon for fear of the jugular veins, then by putting in his incision knife and cutting them upwards: they gave a great snap when cut..... When he had cut it he bends the child's head the other way, and so by constant bending it becomes straight."

Had we known more of the treasures of our Library, we should not have regarded subcutaneous surgery as altogether a modern invention. The method has now had its day, however, and is rapidly giving place to a less speculative treatment.

A Past President.

[After referring to the fact that the Library of the Society is a lending library, Mr. Owen went on to say:]

Even those who have but a slight acquaintance with the early history of this Society are familiar with the name of Dr. James Sims, who occupied the presidential chair for twenty-two years in succession. It was he who from the first had been the great law maker of the Society, but he found it just as easy to break the laws as to make them.

A hundred and ten years ago, when he was beginning that long reign, he was reported to the Council for having taken a pamphlet from the rooms of the Society without leaving regular notice thereof "as expressed in the laws." He was accordingly fined to the full amount, which he duly paid, returning the book.

It was Jacob Rayer, the caretaker of the Bolt Court premises, who gave the information regarding Sims's irregular conduct, and in the following year Rayer had again to report him for retaining two copies of the *Monthly Review*. Sims said that he had lost one of the books, but the Society made him buy a copy to replace it, and fined him for the other. Possibly Sims found it cheaper to "lose" that book than to pay the accumulated fines. Of course I do not relate this little bit of history with approval of Sims's behaviour, but to show that the Library was freely used and well cared for in those days, and that, having laws, the Society enforced their observance without fear or favour.

From time to time I go into our Library, and examine the monthly reviews and journals alluringly spread upon the table; but I regret to say that I never see one which I am for a moment tempted to purloin or take away and "lose." Perhaps the fault is mine, but I cannot help thinking that the cheapness of paper and printer's ink, and the inconvenient growth of medical journalism, have led to such a watering down of literary talent, that there is no inducement to risk being fined. Would it not be a delight if for one whole year no medical book, review, or journal should be published? And what a happy period of scientific progress it might be made!

Whilst speaking of abstraction of books, may I be per-

mitted to confess that the proudest moment of my life was when the late Mr. Bailey told me that a book, of which I was the humble author, had been purloined from the College Library? Would it, thought I, be possible for an intelligent reader to pay a writer a higher compliment?

The Length of Papers.

With societies, as with individuals, age brings tolerance. But a century and a quarter ago the Medical Society regarded diffuse communications with intense horror; they would not have them at any price. Even Lettsom had his manuscript on Intussusception taken back to him for abridgment. And, if such treatment of communications was desirable when the Society was small and when there was sometimes a dearth of communications, it is positively necessary now. Let me beg, therefore, that everything brought before the Society be short, sharp, and to the point.

Our Society was always anxious that the papers read before them should be discussed. And to see that they had the right sort of material for their meetings the Council used to read through every communication before sanction was given to its being brought before the Society. For obvious reasons this desirable course can no longer be pursued, and responsibility in this matter now rests chiefly with the Honorary Secretaries. It is intended, however, during the coming session to relieve the Secretaries of much of this inconvenient responsibility by more generally referring proposed communications to the various Committees of Reference.

In the infancy of the Society the procedure in connection with each paper was as follows: The paper was read by the Council, and, if approved, was ordered to be brought before the Society. On the first occasion of its being read before the Society, however, it was not discussed, but on the conclusion of the reading, a vote was taken as to whether it should be publicly read a second time. If this was declared in the affirmative, the discussion took place after the second reading, and a vote of thanks was then passed to the reader. It is impossible to go back to that plan, but we must all feel that it had much to commend it. The Fellows of a Society derive more benefit from the full discussion of a few papers of high merit than from hearing many papers of lesser value.

A Surgical Confessional.

In the oration which I had the honour of delivering before this Society about eighteen months ago, I made a suggestion, in all seriousness, that it might be advantageous if we set apart one meeting in the session for the discussion of unsuccessful cases, or those which had ended in disaster. I now ask how it would fall in with the views of the Society to make the last meeting in this year a "Surgical Confessional evening." I do not know if my own experience differs widely from that of other surgeons, but I am the unhappy possessor of considerable wealth of clinical material for such an evening, which, in the silent watches of the night and at other times is apt to thrust its records before my inward eyes. I would be willing, therefore, to start the business of the evening. There would, of course, be no report of that meeting: possibly, indeed, the reporters would themselves like to bring forward a case or two of their own. At any rate, I should be glad to hear what my surgical *confrères* think of the idea.

Advantages of the Society.

In conclusion, permit me to make a request of each one of you, namely, that you specially endeavour to bring recruits into the Society. We want particularly young men, though, of course, we shall gladly welcome those who can no longer claim the privileges and advantages of youth, for we have no age limit. But young men are those who are going to do and to carry on the work of the Society, so we must have a fair proportion of young recruits. As you well know, you can safely advise your friends to join our Society, whatever their line of practice is going to be—medical, surgical, obstetric, general, or special. In our rooms they will make the acquaintance of men in all lines of practice, and they will soon find acquaintanceships ripening into friendships. At our meetings they will hear all subjects treated of in turn and discussed in a bright and practical manner; I am glad to say that the discussions are sufficiently informal not to create weariness or inspire awe.

Lastly, the annual subscription is small, and it entitles one to a copy of the *Transactions* of the Society, a work which seems steadily to be increasing in value and interest. But beyond all this, and beyond the various and manifold benefits offered by the Society, the working Fellow will discover advantages in our Library which, considering the smallness of his annual payment, certainly cannot be offered by any other Society in London and probably are without equal in any other city in the world.

May this, the 126th year of the useful life of the Medical Society of London be as happy as any one of those through which it has already passed; may there be no falling off in practical value of the work done in it, and may the spirit of tolerance and fraternity which Lettsom breathed into that little group of medical friends in the month of May, 1773, continue to increase amongst our Fellows not only for the session which is now beginning, but until time itself shall be no more.

THE NATURE OF THE ANTAGONISM BETWEEN TOXINS AND ANTITOXINS.*

BY

C. J. MARTIN, M.B., D.Sc.Lond., Acting Professor of Physiology in the University of Melbourne.

and THOMAS CHERRY, M.D., M.S.Melb., Demonstrator and Assistant Lecturer in Pathology in the University of Melbourne.

In the *Deutsche medicinische Wochenschrift* for 1894 a controversy appeared on this subject between Behring and Buchner. Behring maintained that the antagonism was of a chemical nature, and that the antitoxin neutralised the toxin much as an alkali neutralised an acid. Buchner, on the other hand, adduced results opposed to this view, pointing to the interpretation that the action was an indirect one, due to the antitoxin operating in some indirect way through the medium of the cells of the organism. Since this controversy many investigations have been made with the object of deciding this fundamental point. At the present time, however, opinion is still divided; Behring, Ehrlich, and Kanthack being principal exponents of the direct chemical view, whilst Buchner, Roux, and Metchnikoff still maintain that the interaction takes place only through the intervention of some cells in the body.

We will briefly review the more important observations which bear directly upon the subject of our paper.

I.—Observations favouring the Interpretation that the Action of Antitoxins is Indirect.

Calmette[1] in 1895 made experiments with the toxin of cobra poison and its antitoxin, which he had recently succeeded in producing. Cobra poison is not apparently attenuated by heating its solutions to 68° C. for ten minutes. The antitoxin is, however, completely destroyed by this treatment. Mixtures of cobra poison and antitoxin which produced no symptoms when injected into a rabbit killed similar rabbits in a few hours if after the mixture had remained in contact for ten minutes it were heated for another ten minutes to 68° C. before injecting. From his experiments Calmette concluded that the toxin of snake venom does not interact with its antitoxin *in vitro*, but only *in corpore*, and therefore that its action cannot be explained as a simple chemical operation between the two.

Wassermann[2] found that the toxin produced by the bacillus pyocyaneus was not destroyed by boiling, whereas its antitoxin was. The amount of toxin and antitoxin which neutralised each other was first determined by experiment, then the same quantities and proportions of these substances were allowed to remain in contact and afterwards heated to boiling. The animals receiving an injection of this heated mixture died, whereas the control animals which received an equal dose unheated recovered. From these experiments Wassermann concluded that the toxin of pyocyaneus does not interact with its antitoxin *in vitro*, but only *in corpore*, and therefore that it cannot be explained as a simple chemical operation between the two.

Nikanorow[3] discovered that the precipitate formed by the

* Read before the Royal Society, June, 1898.

addition of a 1 per cent. solution of cupric acetate was possessed of antitoxic properties and the filtrate not. A 1 per cent. solution of cupric acetate does not, however, precipitate the toxin. Mixtures of the two could thus be separated by the use of this reagent. Experiments conducted along the lines mentioned in the experiments above [illegible] identical results.

Marenghi[4] made some observations with the toxin and antitoxin of diphtheria which were identical in principle with those of Calmette and Wassermann. In this case, however, it is the toxin which is destroyed at the lower temperature (60° C., Roux and Yersin), whereas the antitoxic properties still remained after heating the serum to 70° C. Mixtures of the two in such proportions as to cause no symptoms when injected into a guinea-pig were made. After heating such mixture to a temperature sufficient to destroy the toxin, the mixture was discovered now to possess antitoxic properties which could be titrated against a fresh amount of toxin.

II. Observations Favouring the Interpretation that the Action of Antitoxins is Direct.

The view that the operation is a direct one has always received support from the general truth of the "law on multiples," on which indeed the antitoxin notation has been founded. It is further strengthened by the observations of Kanthack and Ehrlich.

Kanthack,[5] in 1896, demonstrated that the influence of cobra poison in preventing the coagulation of *shed* blood, observed by Cunningham, was prevented by the previous admixture of some of Calmette's antivenomous serum to the solution of cobra poison.

Ehrlich[6] found that if a solution of ricin be added to defibrinated blood (? animal) the corpuscles are precipitated in a clump. A ricin solution of the same strength, but containing a little serum from an animal immunised against ricin, failed to produce this result.

Within the last few days we have received a short account of some experiments by Stephens and Meyers,[7] bearing upon the same point. Cobra poison exercises a hæmolytic action upon blood *in vitro*. After admixture of the poison with antivenomous serum this hæmolytic action was absent. The necessary precaution of making the solution of the venom with saline solution approximately isotonic with blood serum was taken.

Before relating the results of our own experiments we may point out one source of fallacy in the conclusions drawn by Wassermann, Calmette, Nikanorow, and Marenghi—namely, that they take no account of the factor, time, which may be a very important element in any possible chemical interaction between toxins and antitoxins. Every chemical reaction has a certain definite velocity coefficient, and the rapidity of action under any circumstances where the reacting compounds are in solution depends upon this coefficient, and also upon the product of the active masses of the reacting bodies present. Temperature will also exercise an important influence.

As we shall later show, the experiments quoted by these observers can easily be repeated and the same results obtained. Nevertheless, their conclusions are quite unjustified, and by modification of the factors—time, temperature, and active masses—exactly opposite results may also be obtained.

Experimental Results obtained by the Authors.

Our experiments have been conducted with the toxin of diphtheria, and one of the constituents of the poison of the Australian tiger snake (hoplocephalus curtus).

The diphtheria toxin was prepared by cultivating the organisms in broth made from well-hung beef, after the method of Spronck.[8] It was filtered through a sound Pasteur-Chamberland filter, and the toxin strength of the filtrate determined by injection into a series of guinea-pigs. That with which most of our experiments were conducted had a minimum lethal dose of 0.12 c.cm. per kilogram in forty-eight hours.

The antitoxins used were Behring's No. 1 and serum from the Pasteur Institute, Paris.

The constituent of the venom used was the one which is not destroyed by heating a solution of venom to 90° C. This constituent resembles most closely, if indeed it be not identical with, the principal constituent of cobra poison; and, as shown by one of us,[9] Calmette's antivenomous serum possesses a small but decided counteracting action upon it. This action, although unfortunately of little or no practical importance, is sufficient for our present purpose, for in our experiments we could mix comparatively large quantities of the serum with small fatal doses of the venom *in vitro*. Under these circumstances one could easily neutralise the poison.

The antitoxin was the antivenomous serum prepared by the Pasteur Institute at Lille, and bore date November, 1896.

We endeavoured at the outset to determine whether the action of antitoxins upon toxins were chemical or physiological, by a direct physical method. In 1896 one of us[10] published an account of a method of separating substances of large molecular size from those of smaller, in solutions containing both. This method was simply by filtering through a film of gelatine, supported in the wall of a Pasteur-Chamberland filter. The filtration was accomplished by a pressure of 50 atmospheres.

A standardised solution of diphtheria toxin was filtered through such a filter. The filtrate was found to contain diphtheria toxin. This filtrate was then tested to ascertain whether it were as toxic as the original solution. As will be seen from the protocols it was somewhat diminished in toxic power (Protocol I).

The antitoxin of diphtheria, as was shown by Brodie,[11] does not pass through such a filter. When antitoxic serum is filtered through gelatine, the whole of the proteids, and together with them all antitoxic virtue, are absent from the filtrate (Protocol II). As the toxin is not held back by the filter, whereas the antitoxin is, one is provided with a simple physical means of separating them, provided they have not reacted upon one another.

We mixed a solution of toxin containing eight fatal doses per kilogram of guinea-pig in each c.cm., with sufficient Behring's antitoxin to more than completely neutralise all the toxin. This mixture was allowed to remain in contact at 30° C. for two hours, and then filtered through the gelatine filter. Varying quantities of the filtrate were injected into guinea-pigs up to nearly 4 c.cm. per kilogram of body weight, that is, a quantity originally containing thirty-two fatal doses. The filtrate was quite innocent. The guinea-pigs suffered no inconvenience, and gained weight while under observation in small cages. The injections produced no local œdema.

If the toxin had remained unaffected beside the antitoxin there was nothing to prevent it passing through the filter in virtue of its relatively small molecular size. As, however, it did not do so, we can only conclude that it had entered into some sort of chemical relationship with the relatively large molecules of the antitoxin during their sojourn together prior to filtration.

Having obtained results so definite, and in apparent contradiction to those of the authors quoted in the beginning of this paper, we next experimented with snake venom in order to repeat Calmette's[12] observations.

We took a series of rabbits (Protocol V) and injected them with mixtures containing one constituent of the venom of hoplocephalus curtus and Calmette's antivenomous serum. On reference to the protocols of this series of experiments it is seen that 2 c.cm. of this sample of serum was sufficient to counteract an amount of the poison contained in 0.002 g. of the dried venom. This amount killed control rabbits in about eight hours (Protocol IV).

In some of the experiments this amount of venom and serum was allowed to remain in contact for fifteen minutes at the laboratory temperature (21° C.), and then heated to 68° C. for ten minutes to destroy the antitoxin. In Calmette's experiments the rabbits injected with this heated mixture died, whereas the controls injected with the mixture which had not been heated lived. From this he concluded that the serum and venom were merely existing side by side, and had not reacted upon one another. In our experiments, on the contrary, the rabbits injected with the heated and unheated mixtures of venom and serum alike lived, nor did any of them suffer from symptoms such as loss of appetite, loss of weight, or diminished temperature. The only conclusion to be drawn from these experiments is that during the time which elapsed between the mixture of the venom and serum

the latter had acted upon the former, so that there was no longer a fatal dose of venom present. The protocols will show that heating for ten minutes to 68° C. has no influence upon the venom.

These results, while they lead to results in entire agreement with those drawn from the filtration experiments with diphtheria toxin and antitoxin, are diametrically opposed to the results obtained by Calmette. As the experiments are so simple as not to leave any possibility of experimental error, we turned our attention to any existing difference in the conditions under which Calmette and ourselves worked. As previously pointed out, Calmette absolutely neglected the possible influence of time, temperature, and the relative proportions of the active masses of the toxin and antitoxin present in his mixture. Up to the present we have investigated the value of the factors, time and proportion of active masses, and have shown that these are most important. Indeed, by altering either the one or the other we can produce results which, if these factors be neglected, would lead to diametrically opposite conclusions.

The toxin and antitoxin of this venom are both of great molecular size and complexity. The former is a deutero-albumose and the latter probably a globulin,[13] or at any rate its molecular size is of the same order. *A priori* one would expect the velocity coefficient of any reaction between such complex molecules to be a high one, and in addition, from their great molecular weight, the solution will contain relatively few molecules: so that it is not surprising that any chemical operation in which they are concerned should occupy a very appreciable time.

The value of the factors time and influence of proportion of active masses will be best seen in reference to the table below, which is compiled from Protocols VII, VIII, IX, and represents the results of twenty-one experiments. On reading along any horizontal line will be seen the influence upon the result of the time during which the toxin and antitoxin were allowed to operate upon each other, with proportion of active masses constant. On reading any vertical line the influence of varying proportions of active masses with time of operation constant is indicated. The thick line separates off the fatal results from those in which the rabbits lived. All other factors were kept constant. The solutions were mixed in the varying proportions and stood at laboratory temperature (20-23° C.). At stated intervals, by a stop watch, portions were pipetted off, and the reaction terminated by rapidly raising the temperature to 68° C. in a water bath. They were kept at this temperature for ten minutes, cooled, and kept for injection.

Proportion of Toxin to Anti-toxin per kilo.		Control Venom only.	Time allowed for Interaction of Toxin and Antitoxin, Temp. 20-23° C.						
Anti-toxin.	Toxin.		2 mins.	5 mins.	10 mins.	15 mins.	30 mins.	Injected un-heated 8 mins.
1 c.cm.	2 fatal doses	Died 15 hours	Lived (very ill for 2 days)	Lived; ill 1 day	Lived; no symptoms	Lived; no symptoms.	Lived; no symptoms.	Lived; no symptoms.
1 c.cm.	1 fatal dose	Died 1 hours	Died 20 hours	Died 28 hours	Lived; ill 2 days	Lived; ill 1 day	Lived; no symptoms	Lived; no symptoms.
1 c.cm.	½ fatal dose			Died 15 hours	Died 2 hours	Lived; very ill 2 days	Lived; no symptoms.	Lived; no symptoms.

In our experiments with diphtheria we allowed abundance of time (two hours) for the reaction between the toxin and antitoxin to take place. The surplus of antitoxin was also large, so that the active masses were considerable and the temperature was favourable, namely, 30° C. (Protocol III). We have not yet determined the influence of temperature upon the rapidity of the reaction, but our results so far seem sufficiently conclusive to decide the question, and leave no room for doubt that the antagonism between the toxins of diphtheria and snake venom and their relative antitoxin is due to a direct chemical action which takes place between them. Further, that the opposite conclusion come to by Calmette, and presumably those of Wassermann, Nikanarow, and Marenghi, were due to their disregard of the value of time as a factor in such chemical action.

PROTOCOL.

A.—EXPERIMENTS WITH DIPHTHERIA TOXIN.

I.—*Experiments to ascertain whether the Toxin of Diphtheria passes through a Gelatine Filter.*

The toxins were prepared by the method stated above, and filtered through a Pasteur-Chamberland filter to free them from bacilli. The minimal fatal dose calculated for one kilogram weight of guinea-pig was 0.12 c.cm. of toxin No. 1, and 0.6 c.cm. of toxin No. 2. Portions of each of these toxins were filtered through gelatine, and afterwards injected into guinea-pigs. As seen below, the filtrates in each case contained toxin, but in less amount than the original solutions.[11]

Toxin No. 1.

	Amount Injected.	Weight of Animal in Grms.	Result.
Before filtering through gelatine	0.25 c.cm.	502	Died under 36 hours.
.. .. ..	0.5 "	540	.. ..
.. .. ..	1.0 "	655	.. ..
After filtering through gelatine	0.12 "	187	" in 41 hours.
.. .. ..	0.24 "	176	" in 30 hours.

Toxin No. 2.

	Amount Injected.	Weight of Animal in Grms.	Result.
Before filtering through gelatine	0.5 c.cm.	377	Died in 56 hours.
After filtering through gelatine	0.5 "	275	.. 72 hours.

II.—*Experiments to confirm Brodie's*[15] *Statement that the Antitoxin of Diphtheria does not pass through a Gelatine Filter.*

0.5 c.cm. of Pasteur Institute antitoxin was mixed with 1 c.cm. of toxin No. 1 (=8 fatal doses per kilo.), and injected into a guinea-pig weighing 260 g.

The animal remained well, and gained 26 g. during the four days it was kept under observation. The same sample of antitoxin was passed through the filter. Of the filtrate 0.6 c.cm. was mixed with 0.6 c.cm. of the same toxin, and injected into a guinea-pig weighing 163 g. The animal died in 22 hours.

III.—*Experiments to show that when Diphtheria Toxin is mixed with Diphtheria Antitoxin in sufficient quantity, and allowed to remain in contact for a sufficient time, the filtrate which has passed through a Gelatine Filter is free from Toxin.*

Sixty c.cm. of toxin No. 1 (containing approximately 500 lethal doses per kilogram) was mixed with 2.5 c.cm. of Behring's antitoxin (=600 units). The two were well mixed and allowed to stand at 30° C. for two hours before filtration.

The filtrate was injected subcutaneously into guinea-pigs as under:

	Amount injected.	Amount per Kilo. of Body Weight.	Result.
	5 c.cm.	=20 fatal doses	No symptoms.
	1.0 c.cm.	=32	.. ..

The animals were absolutely unaffected. They never failed in appetite, nor was there any local œdema.

B.—Experiments with Snake Venom.

IV.—*Experiments to determine the Minimal Fatal Dose of the Poison Used.*

The venom employed was that of hoplocephalus curtus. This had been procured free from admixture with saliva by making the reptiles bite into a watch glass covered with thin rubber sheeting. The liquid poison was rapidly dried at ordinary temperatures (15° to 20° C.) over calcium chloride, powdered, and stored in a stoppered bottle. All weights of venom mentioned below refer to this dried venom. About 2 to 3 milligrammes were weighed out for each experiment, and dissolved in 0.9 per cent. NaCl solution, so that 1 c.cm. contained 0.0001 g. of dried venom.

The solution was then heated momentarily to 90° C. in order to destroy one of the poisonous constituents of the venom of this snake, a proteid which coagulates at 85° C.[16] This was done because Calmette's serum possesses little or no immunising action against this constituent.[17]

In all our experiments the same sample of venom was used, and it was treated in the way described above. The injections were always made subcutaneously into the flank.

Animal.	Weight in Grammes.	Amount of Original Venom per Kilo. of Body Weight in Grammes.	Result.
Rabbit ...	1,360	0.0004000	Died in 5 hours.
,, ...	1,020	0.0002000	,, 8 ,,
,, ...	910	0.0020000	,, 9 ,,
,, ...	1,250	0.0001600	,, 10 ,,
,, ...	1,705	0.0001500	,, 10 ,,
,, ...	1,250	0.0001000	,, 10 ,,
,, ...	1,240	0.0000800	,, 12 ,,
,, ...	1,030	0.0000750	,, 10 ,,
,, ...	1,220	0.0000500	,, 16 ,,
,, ...	1,370	0.0000360	,, 24 ,,
,, ...	1,300	0.0000300	,, 48 ,,
,, ...	1,380	0.0000300	Lived. Very ill 3 days.
,, ...	1,820	0.0000275	Died in 24 hours.
,, ...	1,430	0.0000250	,, 3 days.
,, ...	1,140	0.0000200	Lived. Very ill 3 days.
,, ...	1,300	0.0000200	,, ,, ,,

From the above series it appears that 0.000025 g. per kilo. of body weight is about the lowest fatal dose. In the present paper, in speaking of so many fatal doses, this has been taken as the unit.

V.—*Experiments to ascertain the value of Calmette's Serum in counteracting the Poison after it had been deprived by Heat of One Constituent.*

The solution of venom was prepared as in Series III. Calmette's serum bore date November, 1896. The two were mixed together in varying proportion, as stated below, and allowed to remain at laboratory temperature (23° C.) for fifteen minutes. They were injected subcutaneously in amounts corresponding to the body weight of the animal.

Animal.	Weight in Grammes	Amount of Venom in Grammes per Kilo.	Amount of Serum in c.c. per Kilo.	Result.
		= 16 fatal doses.		
Rabbit	1,350	0.0004	None.	Died 5 hours.
,, ...	1,370	0.0004	0.25	,, 6 ,,
,, ...	1,330	0.0004	0.5	,, 10 ,,
,, ...	1,370	0.0004	1.0	,, 12 ,,
,, ...	1,375	0.0004	1.5	,, 16 ,,
		= 8 fatal doses.		
,, ...	1,240	0.0002	1.0	,, 38 ,,
,, ...	1,220	0.0002	1.5	Lived. Ill 2 days.
,, ...	1,690	0.0002	2.0	,, No symptoms.
,, ...	1,380	0.0002	3.0	,, ,,

Two c.cm. of the serum completely counteracts 0.0002 g. of the venom deprived of one of its constituents.

VI.—*Experiments to determine whether Mixture of Venom and Serum (in such proportions as to completely deprive the former of any toxic properties) regained Toxic Properties after destroying the antitoxin by heating to 68° C. per 10 minutes, subsequent to admixture.*

The venom solution and serum were mixed in the proportion of 1 c.cm. of serum to every 0.0001 g. of venom. This proportion was found by the previous series of experiments to be adequate. The two solutions were mixed together, and allowed to remain thirty minutes at a temperature of 23° to 24° C., after which the mixture was heated to 68° C. for ten minutes to destroy the antitoxin. They were then cooled, and injected subcutaneously in varying quantities per kilo. weight of the animal. The injections had no effect upon the animals, although they contained originally eight fatal doses of venom. This must, therefore, have been neutralised by the antitoxin during the time which elapsed before its destruction by heat.

Animal.	Weight in Grammes.	Amount of Venom per Kilo.	Amount of Serum per Kilo.	Result.
i. Rabbit	1,140	0.0002	3 c.cm.	Lived. No symptoms.
ii. ,,	710	0.0002	2 ,,	
iii. ,,	1,210	0.0003	3 ,,	
*iv. ,,	1,020	0.0002	None.	Died in 9 hours.
v. ,,	1,160	0.0002	None.	,, 8½ ,,

* In Experiment No. iv no serum was mixed with the venom, but the venom solution was heated alone to 68° C. for 10 minutes to show that this treatment has no influence upon it.

VII.—*Experiments to determine the influence of Variations in the Time during which Venom and Antivenomous Serum operated upon one another.*

In this series of experiments the same samples of venom and serum were employed as before. The relative proportions of the two were kept constant. The venom solution and serum were mixed together in the proportion of 0.0001 g. of venom to 1 c.cm. of the serum and well stirred. After they had remained in contact at the temperature of the laboratory (21° C.) for times varying from two to thirty minutes, portions were pipetted off, and rapidly raised to 68° C., at which temperature they were kept for ten minutes. The portions were then rapidly cooled, and injected subcutaneously in quantities proportionate to the body weights of the animals. Amounts of venom and of serum equivalent to 0.0001 g. and 1 c.cm. respectively per kilo. of body weight were injected in each case, except the control, when this quantity of venom was employed.

Animal.	Weight in Grammes	Time during which Venom and Serum were in contact before heating.	Results.
i. Rabbit ...	1,370	Venom only (control)	Died in 9 hours
ii.	1,[illegible]	2 minutes	,, 13 ,,
*iii.	1,[illegible]	5 ,,	,, 15 ,,
iv.	1,[illegible]	10 ,,	,, [illegible] ,,
v.	1,220	15 ,,	Lived. Very ill 2 days
vi	1,160	30 ,,	,, No symptoms
vii	8[illegible]	Not heated at all	,, ,, ,,

VIII.—*Similar to* VII, *except that the Preponderance of Antitoxin was greater, namely, 0.000075 g. of Venom and 1 c.cm. of Serum per kilo. of Body Weight in each Case.*

Animal.	Weight in Grammes.	Time during which Venom and Serum were left in contact before heating.	Results.
i. Rabbit	1.025	Venom only (control)	Died in 12 hours.
ii. ,,	1,130	2 minutes	,, 20 ,,
iii. ,,	1,130	5 ,,	,, 28 ,,
iv. ,,	1,060	10 ,,	Lived. Very ill 2 days.
v. ,,	1,250	15 ,,	,, Ill 1 day.
vi. ,,	1,210	30 ,,	,, No symptoms.
vii. ,,	1,070	Not heated at all	,, ,,

IX.—*Similar to* VII *and* VIII, *but the Preponderance of Serum is still greater, namely, 0.00005 g. of Venom and 1 c.cm. of Serum per kilo. of Body Weight in each Case.*

Animal.	Weight in Grammes.	Time during which Venom and Serum were in contact before heating.	Result.
i. Rabbit...	1.070	Venom only (control)	Died in 15 hours
ii. ,, ...	1,200	2 minutes	Lived. Very ill 2 days
iii. ,, ...	1,170	5 ,,	,, Off feed 1 day
iv. ,, ...	1.130	10 ,,	,, No symptoms
v. ,, ...	1,030	15 ,,	,, ,,
vi. ,, ...	1.450	30 ,,	,, ,,
vii. ,, ...	1,050	Not heated at all	,, ,,

NOTES AND REFERENCES.

[1] *Ann. de l'Inst. Pasteur*, 1895, p. 250. [2] *Zeit. f. Hyg.*, 1896, B. xxii, p. 521. [3] *Vratch*, 1896, vol. xxxi, abstracted, *Jour. Phys. Chem.*, 1896, p. 983. [4] *Cent. f. Bakt.*, 1897, vol. xxii, p. 521. [5] Demonstrated at the meeting of the Physiological Society, October, 1896, not published in *Proceedings*. [6] *Fortschritte der Med.*, 1897, No. 2. [7] Report of Proceedings of Pathological Society of London, *Lancet*, March 5th, 1898, p. 644. [8] *Ann. de l'Inst. Pasteur*, 1895. [9] C. J. M., *Intercolonial Medical Journal of Australasia*, August, 1897. [10] C. J. M., *Journal of Physiology*, vol. xx, 1896. [11] *Journal of Pathology*, 1897, p. 460. [12] *Loc. cit.* [13] Brodie, *loc. cit.* [14] This small diminution in toxic power by filtration may possibly be due to the action of oxygen at high tension (50 atmospheres of compressed air) or to the size of the toxin molecule being of the order of the molecular size of albumoses. Albumoses as shown by one of us (*Journ. of Physiology*, 1896) passed through gelatine, but less readily than water, and the filtrate is consequently less concentrated than the original solution. [15] *Loc. cit.* [16] C. J. M., *Proc. Roy. Soc. N.S.W.*, 1896. [17] C. J. M., *Intercol. Med. Jour.*, August, 1897.

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CASE OF EXCISION OF A MASS OF ENLARGED CERVICAL GLANDS (TUBERCULOUS) WITH A PORTION OF THE INTERNAL JUGULAR VEIN.*

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OWING to the frequency with which tubercle primarily manifests itself in the lymphatic glands there is no subject more important to the surgeon and the general practitioner than its treatment. Upon this point a good deal of controversy has taken place, especially (and this for æsthetic reasons) in relation to cervical tuberculous lymphadenitis, but I think most surgeons have now come to recognise the fact that, as tuberculous glandular disease manifests itself clinically in many ways, so the line of treatment must vary to meet these different morbid conditions. Broadly speaking, the main groups under which cervical tuberculous lymphadenitis presents itself are three in number.

1. A single movable gland.

2. A bunch of movable glands, all of which remain separate and distinct from one another.

3. A large mass of glands matted together and embedded in dense, fibrous tissue. When grasped it is felt that the mass, though movable as a whole, has firm and deep attachments, and that the individual glands composing it are blended one with another.

My own line of practice as regards the first two groups is rather to rely on constitutional treatment, but if resolution does not take place, and caseation and softening are imminent, to proceed to incision with complete evacuation of the tuberculous contents by the sharp spoon, followed by stuffing with Berlin wool (Stiles) impregnated with iodoform. Very careful subsequent dressing gives excellent results, and the small incisions made become in time very slightly noticeable.

It is a different matter when one has a case that belongs to the third group, where the anterior and also the posterior triangle of the neck is occupied by a large and fixed tumour of considerable size, which is not yielding to the constitutional measures of treatment that have very properly been advocated in the earlier stages of the disease. The first thing to be done in such a case, of course, is to be sure that what we are dealing with is a local tuberculosis of the lymphatic glands; a condition unquestionably of an infective nature, as shown by its passing from gland to gland, and yet not necessarily part of a general tuberculosis. We must also be satisfied that the swelling is not of the nature of a lymphadenoma, that is, a special affection of the lymphoid tissue throughout the body, nor either of those forms of sarcoma known as lymphosarcoma and lymphatic gland sarcoma. This point having been cleared up (if necessary, by a preliminary incision to remove a small gland or a portion of a larger one) we have then to decide what should be the treatment of so extensive a local tuberculous lymphadenitis.

One point that must always weigh with us is the age of the patient. In young children excision is not to be recommended. Reliance must be placed on caseation and softening of the glands with subsequent incision and scraping. No doubt some risk of general tuberculosis is run, but very young children do not bear well the lengthy and severe operative measures that such cases undoubtedly entail. It is different, however, with young adults. If they are otherwise in good health excision is, I consider, the best treatment for any big mass of enlarged cervical glands that, notwithstanding constitutional treatment, is rather increasing in size and extent. It was on these grounds that I decided to operate on a case that was sent to me by Dr. Moorhouse of Stirling.

She was a young girl of 17 years of age, of slight build and rather delicate appearance. She stated that for some time, even as far back as March, 1897, she had had pain in the left side of her neck, but it was not until last November that she noticed any swelling. Since then there has been a great increase in its size and also in the local uneasiness. When I first saw her at the end of January, the enlarged glands not only occupied part of the anterior triangle of the neck on the left side, but also extended under the sterno-mastoid muscle into the posterior triangle, forming a continuous mass along the posterior border of that muscle and the anterior border of the trapezius as far down as the clavicle. When grasped they felt firmly anchored down to the deeper structures, and I had no doubt they were adherent to the carotid vessels and the internal jugular vein. I advised a further trial of constitutional measures, but towards the end of February it was clear no improvement was taking place and that the case could only be met by operative measures. The operation that seemed to me called for was the removal of the glandular mass on the lines recommended by Mr. Watson Cheyne in Vol. i of *King's College Hospital Reports*, one of the distinctive features of which is the excision of any portion of the internal jugular vein involved in the swelling. This was accordingly done on March 2nd. The incision chosen was the S-shaped one that has been recommended by Senn. (See Fig. 1). The first part of it runs parallel to the body of the lower jaw, and it then passes backwards towards the occiput. After describing a good curve it is carried forwards again towards the clavicle, to be continued backwards in a second curve, if necessary, and then end at the acromion.

When this flap was reflected forwards, I found that the sterno-mastoid muscle was adherent in its full extent to

* Patient was shown on April 1st, four weeks after operation, at the meeting of the Glasgow Medico Chirurgical Society.

the glandular tumour. It was freed from its origin to its insertion and held aside, and I found it unnecessary to divide it, as is sometimes recommended. The glandular mass was now fairly exposed, and at its lower part I was able to define the internal jugular vein. It was secured between two ligatures and divided, and I then proceeded to strip it up, along with the enlarged glands, from the carotid vessel and the vagus nerve. This was not so difficult a procedure as I expected. While working upwards every tributary vein was carefully tied with a double ligature before being divided, and all small arterial vessels were similarly secured, so that very little hæmorrhage occurred. When I had got well above the tumour, I secured the internal jugular vein with a double ligature close to its exit from the skull, and then divided it across. This done, the mass of glands was separated from the parotid gland, to which it was adherent, and eventually completely removed by freeing its posterior portion in a downward direction towards the clavicle, care being taken to dissect it carefully off the branches of the cervical plexus.



Fig. 1.

When this was accomplished, the edges of the incision were brought together by a number of horsehair stitches of coaptation, a few relaxation ones of silkworm gut being also employed. No drainage tubes were used.

The glands excised (see Fig. 2) formed a mass measuring 5¼ inches vertically and 2¼ inches transversely at the widest part, the upper portion being made up of a number of large glands (some softened) firmly matted together. Passing downwards the glands were smaller in size, forming a narrow neck where they passed beneath the sterno-mastoid muscle and ended in a small mass consisting of fat and a number of small glands. It was this portion that lay in the lower part of the posterior triangle. On the inner aspect of the mass (see Fig. 2 A) may be seen a portion of the internal jugular vein measuring 2½ inches in length, and forming, along with a portion of the common facial vein, the letter Y. It is embedded in the enlarged glands, and it is evident that any attempt to dissect it off them might easily have led to its being wounded.

One of the glands, the size of a bean, was examined microscopically. The greater part of the gland proper had caseated and did not take on the stain. Towards the periphery some gland structure remained, and scattered through it were numerous giant cells, with the nuclei arranged in a peripheral manner. The gland capsule was found to be thickened, and showed considerable proliferation of connective tissue cells (endothelial cells), and there were present here and there giant cells similar to those already described. Stained for tubercle bacilli, one or two were found.

The after-progress of the case was very satisfactory, and the wound healed without suppuration. The only observations I would make in reference to this case are that, where such an extensive operation has to be done, I think the S-shaped incision is the best for giving that free access to the part that is so necessary, being preferable to the one along the anterior border of the sterno-mastoid muscle. I believe, too, it will eventually leave the least deformity. Fig. 1 bears this out, although the incision was purposely darkened with a blue pencil so as to make it distinct in the photograph. The experience of this case also satisfies me that for thoroughness of removal



Fig. 2.

the ligature of the internal jugular vein is necessary, while it undoubtedly simplifies the removal of the glands, prevents venous hæmorrhage, and does away with the risk of entrance of air into the veins. I think, too, that it shortens the length of the operation. I was fortunate in this case that none of the glands were advanced in caseation, the result being that in the unavoidable manipulations none of them gave way and infected the wound with their contents. In those cases where isolated glands have softened it would be better to open these glands first, scrape them, and, having stuffed them with iodoform gauze, go on with the operation. Formidable as this operation is, I believe that for cases of an advanced type, such as the present one, it is our only hope of satisfactorily removing a tuberculosis which is very apt to become general. A recent letter from Dr. Moorhouse tells me that the patient has already improved in health.

CHRONIC DILATATION OF THE STOMACH ASSOCIATED WITH CHRONIC GASTRIC CATARRH.

By EDWARD F. MAYNARD, M.D.Edin.,
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From the observation of a good number of cases of chronic catarrh of the stomach, I have come to the conclusion that this condition is very frequently responsible for chronic dilatation of that organ.

This does not appear to have been the teaching at all events until quite recently. The two diseases are associated in the volume of Dr. Clifford Allbutt's *System* dealing with Diseases of the Stomach and Bowels.

During the past eleven months I have examined 87 cases of chronic catarrh of the stomach, and find that in 19 of them—that is, in between 21 and 22 per cent. there was chronic dilatation.

I may here say that in none of these cases have I considered the stomach dilated unless:—

(*a*) Its greater curvature descended within one inch of the umbilicus in the middle line.

(*b*) There was a distinct splash over the organ on palpation.

(*c*) The percussion note was continuous with that heard over the normal stomach area.

In addition to these proofs, in many cases I have inflated the organ with effervescing powders, and heard the effervescence over the area of supposed dilatation; as also a metallic ring on striking coins together over the part, the sound being quite different from that heard over ordinary undistended stomach.

The symptoms of this form of dilatation appear to be fairly coincident with those of chronic gastric catarrh. Vomiting is, in my experience, distinctly uncommon, though nausea is nearly always present. A sense of fulness and weight at the lower end of the sternum is perhaps the most common complaint, and apparently the ingestion of food neither increases nor allays the discomfort. Interscapular pain is nearly always spoken of, and a furred, pale, indented tongue is nearly always seen.

No symptom has presented itself to me which would lead me to suppose that I had to do with a case of catarrh *plus* dilatation rather than one of catarrh alone, and therefore it would seem that in all cases of chronic catarrh of the stomach an abdominal examination is of the utmost importance, for the treatment of the two conditions is diametrically opposed, particularly as regards diet.

I have found a dry, finely divided, diet most successful in cases with dilatation; indeed in one case I could get no improvement until all fluid by the mouth was stopped, thirst being relieved by a slowly injected enema of one pint of water every day.

As to drugs, dilute hydrochloric acid and strychnine have seemed to benefit these cases; but I believe that drugs are valueless in themselves, though they may assist the stomach to deal with its contents both as regards digestion and locomotion.

OBSERVATIONS ON SANATORIA FOR CONSUMPTIVES.*

By F. RUFENACHT WALTERS, M.D., M.R.C.P.,
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Sanatoria for consumptives are capable of rendering valuable services to both preventive and curative medicine, and of leading to results otherwise unattainable. In hospital and sanatorium alike the patient receives through co-operation a more efficient and thorough treatment than would be possible at the same cost outside. But a sanatorium is placed in a more favourable situation for the open-air treatment than most hospitals; its treatment is mainly hygienic, and its aim is educational as well as curative. Although patients at a chest hospital are put under as good hygienic conditions as are possible under the circumstances, there is little or no attempt at hygienic instruction, whereas this is the essential feature of sanatorium treatment. Now, a far-reaching hygienic programme can only be carried out under constant medical supervision, unless the patient is unusually gifted and already somewhat of a doctor himself. The medical officer of a sanatorium has many duties. He must direct the open-air treatment, the amount of rest and the rising scale of exercise, the patient's occupation and amusements, and the hydropathic and other precautions against catching cold. He must see to the ventilation and warming of rooms, which are apt to be overheated by many consumptives. In the Loomis Sanatorium in winter the bedroom temperature at night is not allowed to exceed 40° F. The diet must also be medically supervised. Other matters of great importance are the proper disposal of the sputa, the cleansing of the dwelling without raising dust, and the disinfection of rooms, furniture, and linen. Add to this the symptomatic treatment, physical examinations, and bacteriological work, and it can readily be understood that thirty or forty patients are considered abroad as the largest number which can be properly managed by one medical officer.

I need not dwell on suitable sites for such sanatoria, but I may say in passing that our inland bracing regions have, in my opinion, been unwisely neglected. For the proper carrying out of graduated walking exercises the sanatorium should have use and control of a large area of ground. The sanatorium should be planned in such a way as to have abundance of fresh air and light in every part occupied by the patients; to be readily cleansable and free from dust traps; dry and above suspicion in its sanitation; with abundant provision of shelters out of doors for both rest and exercise, and so arranged as to avoid unnecessary exertion on the part of the patient and unnecessary noise and smell. There are considerable advantages in the scattered villa system, but it is more expensive both to erect and to maintain, and in this climate would necessitate connecting corridors. Many of the usual modes of architecture are inadmissible for a sanatorium.

There are at the present time nearly a hundred sanatoria in existence, being built, or projected. In Germany alone there are now forty-three in working order, of which seventeen are for patients paying from £3 to £6 per week. The German sickness insurance companies have this year set aside between 3 and 4 million marks for the erection or subvention of sanatoria for consumptives. In America there are nineteen, besides one which is being built.

Sanatoria are intended for presumably curable patients. Advanced and incurable cases should be sent to special homes or refuges. Sanatoria should not, if possible, be the property of individual physicians. They should be rendered self-supporting, either by a system of insurance or directly by the fees of the patients.

There are absolutely no valid arguments against these institutions. The dangers of aggregation in sanatoria are more fancied than real; and I look forward to the time when many will be established in various parts of these islands.

* Abstract of a paper read at the annual meeting of the North of England Branch of the British Medical Association.

The Alleged Inhumanity of the Spaniards.—Lieutenant-Colonel Senn, U.S.A., in an interesting article on the Invasion of Puerto Rico from a Medical Standpoint, published in the *Medical News* of September 17th, says that from his own observations he is sure that the Spaniards have respected the Red Cross; in fact, he says the Red Cross people of Puerto Rico, composed largely of Spaniards, have shown the greatest activity and interest in their humane work during the entire campaign.

Chelsea Clinical Society.—This Society will hold its opening meeting for the session 1898-99 in the Holy Trinity Parish Hall, Pavilion Road, Sloane Square, on Tuesday, October 18th, at 8.30 P.M., when an inaugural address will be delivered by the President, Dr. J. Foster Palmer, on Certain Undefined Factors in the Spread of Disease.

Manchester Medical Society.—At a meeting on October 5th, 1898, Mr. G. Wright, President, in the chair, an address was, at the request of the committee, delivered by Mr. W. H. A. Jacobson, F.R.C.S., entitled, Some Remarks on Accuracy in Diagnosis or Clinical Precision; Some of the More Common Causes of Failure.

SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

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PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

JOSEPH BELL, M.D., F.R.C.S.Edin., President.

OPENING REMARKS BY THE PRESIDENT.

JOSEPH BELL, M.D., F.R.C.S.Edin.,
Surgeon to the Royal Infirmary, and to the Royal Hospital for Sick Children, Edinburgh.

MR. JOSEPH BELL, in his opening remarks, welcomed the members attending the Section at Edinburgh. After giving a short outline of the programme of the Section, he alluded to the advance that had been made in Edinburgh in the study of diseases of children owing to the increased hospital accommodation, and invited members to visit the Children's Hospital. In his opinion, it was a mistake to send into hospital many slight surgical cases in children, which should be, and quite easily could be, treated at home. The great middle class were only too ready to avail themselves of hospital treatment for their children. They ought, however, to be reminded of their responsibilities. No amount of good nursing could compensate a child for removal from its mother. The family tie and the family doctor ought both to be considered. Even in unfavourable surroundings it was possible to keep surgical wounds aseptic, and it was the surgeon's business, if necessary, to manage this. As a highly interesting discussion was looked for, he would not delay them longer, but would call for Mr. Victor Horsley's paper.

A DISCUSSION ON THE TREATMENT OF SPINAL CARIES.

I.—VICTOR HORSLEY, M.B., B.S., F.R.C.S., F.R.S.,
Surgeon to University College Hospital and the National Hospital for the Paralysed and Epileptic, London.

TREATMENT OF EARLY CARIES.

To simplify the position which I wish to take up in opening the discussion on this subject, I would like to say at the outset that I propose to raise before you certain problems relating to difficult and complicated cases; and I have nothing to say with regard to simple commencing cases of caries of the spine, because I take it the treatment of these is now thoroughly understood, and that the fixation and rest to the spine are obtained according to some by the use of jackets and apparatus, according to others, among whom I wish to stand, by the horizontal position in bed and the application of elastic extension to the body—that is, the head and feet, such fixation being accompanied by the usual treatment by drugs.

In dealing with any marked case of tuberculous caries, it seems to me that, surgically speaking, there are two perfectly distinct considerations presented to us: First, how can we deal with the mischief as being an instance of tuberculous osteitis? and, secondly, how can we deal with it as being productive of deformity which may be of serious import to the patient, from the secondary consequences it entails?

Of these two points, the first is by far the more important. The universally-accepted treatment of tuberculous osteitis in any part of the body at the present time is that the diseased bone should be exposed and removed, and the cavity disinfected so as to ensure, as far as possible, the destruction of any tubercle bacilli that may have escaped removal. There is no reason why tuberculous osteitis of the vertebra should be treated in any other way from that of tuberculous osteitis in any other part of the body. It has been the time-honoured custom, however, in case of caries of the spine, to trust to rest—that is, fixation—with the view of checking the activity of the tuberculous process and of securing ultimately complete arrest of the mischief, for the reason that such arrest is obtained in a certain number of cases by the method of simple fixation. That same result, however, is only reached in a certain number of cases, and seldom or never without very considerable deformity and risk of relapse from further outbreaks of tuberculous mischief later in life. If, therefore, we are to treat tuberculous caries of the spine on the same lines as that developed in other parts of the body, it is plain that we should cut down upon it and remove the diseased bone. The ideal treatment, therefore, of caries of the spine is early operation.

In view of the ordinary idea of dealing with the disease in this situation, by what will no doubt for many years be called the safer treatment by rest, it is plain that, to arrive at a correct conclusion, we must consider the relative risk attached to the course proposed. To decide in favour of the older one of rest it would be necessary to establish the thesis that some special risk attaches to aseptic operations on the spine. I do not suppose that anyone would be prepared to maintain such a thesis nowadays.

Personally I do not believe that there is any risk in operating on an early case of tuberculous caries. While speaking of risk from any operation for caries of the spine, one may refer to the risk in severe cases. In such cases there are two possible risks. The first is the question of shock. I have once seen a patient—a very delicate child—succumb to shock at University College Hospital, but I think that can be avoided perfectly well in the future by dividing the operation into two stages—a course I have adopted for several years in respect to head cases. The other risk is that which is common to all operations upon tuberculous foci; namely, the chance of bringing about a general infection, or what is perhaps an equally probable explanation of the circumstances, a rousing up of pre-existent but quiescent disease. A case of this class I have observed once in private practice and once in hospital practice; in both there was pre-existent visceral disease, and on necropsy in each case there was found evidence of recent proliferation in the neighbourhood of the visceral lesions. Acting on the assumption that during the scraping out of the caseous material from the tuberculous focus it is possible to introduce fresh virus directly or indirectly into the circulation, I myself always now irrigate the wound during such scraping out with 1 in 500 sublimate solution, and later, finally wash it out with 1 in 1,000. I have seen no ill-effects from the free use of such sublimate solutions in an open wound.

With regard to the matter of deformity and the mechanical disadvantages resulting therefrom, early operation, by securing the arrest of the mischief in an early stage, averts both the deformity and the further risk of latent tuberculous infection to which the patient is always subject. The first conclusion I wish to suggest is that we should give up the present means of dealing with marked caries cases by rest only, and substitute early operation with temporary fixation.

By this I mean the employment of elastic extension. As regards the actual employment I should like to say that after some thirteen years' experience of this valuable method I look upon the extension of the body by an abdominal or pelvic belt to be inadequate, and believe that for all cases it is better to make the lower extension by means of anklets from the extremities of the lower limbs, and in the same way undoubtedly the most effectual method is only reached when head extension is employed as well as that applied to the axilla.

THE TREATMENT OF COEXISTENT ABSCESS.

So far I have referred to mild and early cases I now wish to take up the next point, namely, the treatment of cases in which it is possible to diagnose the existence of an abscess. I do not know that any rules have been formulated for the special detection of abscess, but I believe that the steps generally taken are simply those of palpation, and where that fails, as for instance in the dorsal region of the spine, an attempt is made by gauging the constitutional condition of the patient and the presence of pyrexia. I would suggest that neither of these conditions is available for utilisation as a final guide, and that in the absence of any changes in the spinal cord, to which I shall refer directly, the presence of an abscess

can only be guessed at by appreciating the degree of collapse of the bodies of the vertebræ, inasmuch as a marked angle in the curvature can only be obtained by noteworthy destruction of one or more bodies, which condition of necessity entails the coexistence of an abscess. The probable existence of an abscess being determined, the question next arises, How is it to be dealt with?

Lumbar or Psoas Abscess.—At the present time a lumbar abscess or a psoas abscess is easily treated by free incision, scraping out, disinfecting and sewing up with or without drainage for a short time, the abscess being reached by Treves's method. Difficulties arise, however, when we are dealing with caries of the cervical and thoracic vertebræ.

Cervical Abscess.—When caries of the cervical vertebræ produces post-pharyngeal abscess this should never be subjected to a procedure not infrequently adopted even at the present time, namely, incision of the abscess from the front. The whole chance of arresting a tuberculous focus depends upon our securing its complete disinfection and the prevention of the introduction of any pathogenic organism such as inevitably follows the opening of a tuberculous abscess into the oral cavity. The abscess can be so readily approached at the side of the pharynx, by incision as for ligature of the internal carotid and then drawing backwards the artery in question, the sac can be readily scraped and disinfected without the risk of any contamination. And since too the carotid lymph glands are almost invariably simultaneously affected, these can be conveniently removed at the same time.

Dorsal Abscess.—The main definition of this whole subject is of course of an abscess in the dorsal vertebra, not only because it tends to force its way down the posterior mediastinum and to appear in the abdomen, or that it also tends to spread laterally under the pleuræ, but that from the position of the parts it is the more serious condition to deal with of those we have been describing, chiefly because it is difficult to follow up the abscess into all its recesses.

To reach the abscess various methods have been employed. I have always used simple laminectomy, and then when by examination of the tissues in front or at the side of the spinal cord the abscess has been discovered, I have removed the pedicles of the nearest intervertebral foramen to secure the thorough laying open of the cavity, providing for its continued drainage as well as disinfection. Mandl's modification of this consists only in removing the halves of the laminæ involved, but I have not been able to find that this method possesses any advantage over the completer laminectomy, and have indeed been obliged to reoperate in such a case and to remove the bone, so as to convert it into a complete laminectomy.

Forcible Reduction of Deformity.

I hope that this discussion will result in an expression of opinion on the only other method I am aware of which seeks to diminish the activity of the destructive process, and which at the same time is designed to restore the continuity of the spine and to avert as far as possible some of the practical disadvantages resulting from the existence of a deformity. Calot's operation of rachiclasis does not to my mind offer any advantage over the simple laminectomy, and if early operative treatment of this condition be adopted, it would find no place in surgery, because it would never be required. At the present time it is employed on the same principle as osteoclasis; that is to say, the forcible refracture of the bone faultily united and causing mechanical disadvantage to the patient. Calot's method in nowise deals with the abscess, nor does it afford any measure of guarantee that it will interrupt the further progress of the mischief. I do not think it ought to be brought forward in the category of treatment of caries of the spine, because it is simply a treatment of the deformed position of the spine, and not of the osteitis which brings about that malposition. As an example of osteoclasis it would seem to be a return to a somewhat barbarous method which has now been given up in the treatment of long bones and its place taken by a deliberate operation, in which the bones are divided exactly as much as may be necessary.

Further, I have never found that the curvature of the spine offers any serious mechanical disadvantage. For all these reasons I have never performed the operation of rachiclasis myself, but fortunately we have present some who use it, and I hope that this discussion will result in our now being able to form some general conclusion as to whether forcible reduction should be included among our surgical procedures for the alleviation of this serious condition.

II.—Robert Jones, F.R.C.S.,

Honorary Surgeon, Royal Southern Hospital, Liverpool.

Mr. Robert Jones disagreed with Mr. Horsley as to the value of extension. He thought it difficult of application, and less efficient than carefully-adjusted support. Surgeons did not realise the importance of the prevention of deformity as a means of modifying the course of disease. He contended that the patient should during the early stage of the tuberculous activity be kept upon a splint so designed as to keep the back in a position of lordosis. This, by separating the anterior part of the bodies of the vertebræ, effectively prevented the development of deformity. He agreed that were it possible to remove every element of dead bone by operation, it would be excellent treatment, but this was, in the majority of cases, absolutely impossible. Such treatment involved either operating upon early cases which might with advantage be left alone, or upon cases so advanced as to render complete operation impossible. He would have preferred not again at this stage to refer to immediate rectification of the hump until further time had elapsed. Suffice it to say, that of ninety-three cases operated upon by him during twelve months, seven had died. In only two of these cases could death be described as the result of operation. The deaths were in all cases similar in character to those occurring without operative procedure. The percentage of deaths was not in excess of that where extension was not practised. Paralysis was directly recovered from in several cases. It was premature, after so short a trial, to speak of ultimate results.

III.—R. W. Murray, F.R.C.S.,

Surgeon to the Children's Infirmary, Liverpool.

Mr. Murray said that with regard to forcible straightening of the spine, during August and September last he thus operated upon fourteen children, and his experience in these cases had not been such as to encourage him to continue. When this subject was discussed at a meeting of the Clinical Society in London last year, he drew attention to the well-known fact that in tuberculous disease of bone there was a marked deficiency in the formation of new bone, and he ventured to express a doubt whether the gap formed between the diseased vertebræ by forcibly straightening the angular curvature would subsequently be filled by material sufficiently strong to bear weight, and so prevent the recurrence of the deformity. Further experience had proved his doubt to be reasonable. The ages of the fourteen cases in which he forcibly straightened the spine varied from 2½ to 9 years. Most of them were at the time of operation in good health, but one had a small psoas abscess and another was paraplegic. In three of the cases the curvature involved the cervical region, in nine the dorsal region, and in two the lumbar region. The operations were uneventful, except in the case of the paraplegic child, who was suffering from cervical caries. During the process of straightening his breathing became seriously embarrassed. All the children were fixed in plaster of paris, after the spines had been straightened; at the present moment the majority of these children were in good health, though in every instance the deformity had recurred. Two had died, one, two months after operation, from pneumonia, which the necropsy showed to be non-tuberculous, and probably quite unconnected with the operation. The other child died three months after the straightening from general tuberculosis, the immediate cause of death being tuberculous meningitis. In neither case was there, *post mortem*, any sign of bony repair, but a false joint had formed between the diseased vertebræ. The slight movements permitted in these false joints might account for the dissemination of the tubercle. A third case had since operation developed a large psoas abscess, the discharge from which was rapidly exhausting him; and in two other cases there was now marked wasting and evidence of marked tuberculosis. Possibly he had been exceptionally unfortunate in his series of cases, and the numbers were perhaps too small for any definite conclusions to be drawn, seeing that great uncertainty

existed respecting the prognosis in Pott's disease. At the same time his numbers being small he had been able to follow each individual case, and the impression left on his mind had been one decidedly unfavourable to the immediate and complete reduction of an angular curvature of the spine. For two of his fourteen cases had died, and three others were likely to die shortly, most probably from the indirect results of the straightening. In no case had the deformity remained obliterated, and in no case had he reason to suppose that the straightening of the spine had helped towards the cure of the disease.

IV.—Noble Smith, F.R.C.S.Edin.,

Surgeon to the City Orthopædic Hospital, London.

Mr. Noble Smith stated that, after thirty years' experience in the treatment of caries of the vertebræ, he had come to value the careful use of efficient apparatus as the most satisfactory basis of treatment. This method of fixation had been found absolutely more effective than any elastic extension. There were many operative procedures necessary in caries of the spine, such as the early opening of abscesses and their treatment by irrigation, curetting, etc., but the entire removal of all tuberculous bone was impracticable, and its attempt involved a formidable surgical operation. He had found that given a patient whose health had not been already undermined by the disease, or, in other words, who was not suffering from general tuberculosis, the disease in the spine could be arrested and the patient practically cured. Moreover, when the mechanical and general treatment had been thoroughly carried out, he had never known any increase in the deformity, but, on the contrary, a general lessening of it. He had performed laminectomy not for active caries, but for deformity with spinal irritation after a full trial of apparatus; but he thought that to remove the pedicles or laminæ was often to remove the only sound parts of the vertebræ.

V.—A. H. Tubby, M.B., M.S., F.R.C.S.,

Surgeon to the Evelina Hospital for Children, London.

Mr. A. H. Tubby regretted that he had no experience of the removal of bone as a set operation for spinal caries. The successful treatment of the disease varied with the stage at which it was seen, but there could be no doubt that cure without deformity could be obtained in early cases treated by recumbency supplemented by slight lordosis and subsequent support. But in a different class of case considerable interest had been evoked by Calot's method of forcible reduction of the deformity. It was, however, too early to give final results of one's personal experiences. In addition to the cases mentioned by Mr. Robert Jones, he had himself operated on twenty-nine such cases. Of these one had died two months after the operation and at the *post-mortem* examination general tuberculosis of the lung, an old tuberculous cavity, and an abscess in the posterior mediastinum were found. Two other cases had developed abscess and the remainder were alive and well. In four cases the spine was completely straight and most marked improvement in the curve was obtained in the majority. But the matter was still *sub judice*. He thought that if cases were carefully selected the operation held out distinct prospects of success in those otherwise hopeless so far as the deformity was concerned. It should be remembered that it was one thing to obtain reduction of deformity, partial or complete, and another thing to maintain it. He had for this latter purpose used plaster of paris or the splint designed by Mr. Robert Jones.

VI.—W. Thomas, M.B., F.R.C.S.,

Senior Surgeon to the Children's Hospital, Birmingham.

Mr. W. Thomas said the treatment of spinal caries might be divided into the treatment of the early, second, and chronic stages. That of the early stage was most important as it tended, if carried out well, to prevent more serious later conditions. In this stage the spine should be fixed and all hygienic measures carried out for a long time. In the second stage, where there was good evidence of the formation of abscess, fixation should be continued and opening delayed until it was absolutely necessary. The danger to the patient was not rendered greater by waiting, but less. When opening was decided on it should be freely done with every aseptic and antiseptic precaution, and closed again, not drained. Each case must be treated according to its special characters. In the chronic stage, when deformity had ceased to progress, Calot's operation would probably be of use in the slighter forms, but as yet it was too early to give a correct verdict as to its value.

VII.—Frederick Churchill, M.D., F.R.C.S.,

Late Surgeon, Victoria Hospital for Children.

Mr. Frederick Churchill spoke of the importance of conservative treatment of spinal caries. Having regard to the friable nature of the bodies of the vertebræ and the spongy condition of the cancellous tissue, and the numerous joints associated with the different processes of the spinal vertebræ, the well known axiom of John Hilton regarding rest in the surgical treatment of disease was particularly applicable in spinal disease. Perfect immobilisation by careful and skilful application of a Sayre's jacket to the whole length of the spine should be aimed at, securing absolute fixation. After surgical treatment by some such method of immobilisation, and the antiseptic treatment of sinuses and removal of diseased bone, hygienic measures and surroundings were of great importance. Children could be transported in a recumbent posture by train in flat wicker baskets, with horsehair mattresses, to the country or seaside, and such patients greatly benefited in health by continued exposure to sea air. With immobilisation early in the disease before much destruction of the bodies of the vertebræ had come about we might confidently look forward to most satisfactory results.

VIII.—L. S. Luckham, M.R.C.S.,

Surgeon, Salisbury Infirmary.

Mr. L. S. Luckham said that the majority of speakers seemed to be in favour of conservative treatment. In country hospitals this could certainly be pursued for a longer time, and even advanced cases were found to recover in a wonderful way. Before opening abscesses he always aspirated and injected iodoform emulsion. Some cases required no further treatment, but if operation became necessary afterwards, the abscess cavity could be more easily kept aseptic.

IX.—H. G. Dyer, M.D., M.R.C.S.,

Medical Officer of Health, Ringwood, Hants.

Mr. Dyer expressed views similar to those of Mr. Luckham, laying stress on fixation of the spine as an important element of cure.

[Mr. Horsley having been compelled to leave Edinburgh, no reply to the various speakers was possible.]

A DISCUSSION ON RHEUMATIC HEART DISEASE IN CHILDREN.

I.—D. B. Lees, M.A., M.D., F.R.C.P.,

Physician to St. Mary's Hospital; Physician, Hospital for Sick Children, Great Ormond Street, London.

Rheumatic Carditis.

The disease which, for want of a better term, we still call "acute rheumatism," is one of the chief destroyers of children. Those who study it only in adults can have but very inadequate ideas of its virulence in childhood. In adults it is rare for a fatal result to be caused directly by a rheumatic attack; in children it is much less uncommon. My friend Dr. Poynton collected from the *post-mortem* records of the Hospital for Sick Children and of St. Mary's Hospital 150 cases of fatal rheumatic heart disease in children; in nearly one-third of these (35 of 115 available) the fatal attack was the first that had occurred. He found also that of 100 cases, the clinical history of which was recorded with sufficient details, as many as 86 had exhibited symptoms of fresh rheumatism during the fatal attack, indicating that death in the majority of instances was caused not simply by previous heart disease, but in part by a recent toxic process.

Acute rheumatism in childhood, not so obviously and rapidly fatal as this, often does such serious damage that the patient dies during adolescence or in early adult life. This destruction is brought about by the pernicious action of the rheumatic poison upon the heart. In the Lumleian Lectures

for 1894 my late colleague, Dr. Sturges, drew attention to the frequency and fatality of rheumatic "carditis," and stated that of sixteen cases of this severe type which he remembered twelve died.

Endocarditis.

The fatal result is not, as a rule, due to endocarditis. Evidence of recent or of former valvulitis is indeed almost invariably found in the hearts of children dead from rheumatic heart disease, but it is often quite slight in amount, and can have been only a minor factor. The mitral valve was implicated in all but one of the cases analysed by Dr. Poynton, but in seventy-six the damage to this valve was apparently very slight, and consisted only in some thickening or small vegetations. Marked thickening and puckering of the valve segments was recorded in only three cases, and marked mitral stenosis in only nine. "Marked mitral regurgitation" was recorded in eleven cases, but it is not unlikely that it many of these it was really due to dilatation of the orifice rather than to deformity of the valve segments.

The aortic valve is implicated much less frequently than the mitral. In the 150 cases analysed it was affected in only 51, or 34 per cent., and in only 9 of these was the affection more than slight.

Pericarditis.

Pericarditis is a much more striking phenomenon than endocarditis in the *post-mortem* appearances of rheumatic heart disease in children, and probably contributes much more largely to the fatal result. In only 9 of the 150 cases is it definitely stated that the pericardium was healthy. It was found to be more or less adherent in 113 cases (75 per cent.), and in 77 of these, or one-half of the entire number, the adhesion was complete over the whole surface of the heart. It is clear, therefore, that more than 50 per cent. of the fatal cases have suffered from severe pericarditis, and this is doubtless a very considerable factor in the arrest of the heart's action. How pericarditis produces this pernicious effect is well worthy of consideration. It will probably surprise many to learn that it is rarely by the effusion of any great amount of fluid into the pericardial cavity. The figures with reference to this are very instructive. In only 38 cases of the 150, or 25 per cent., is it noted that any fluid at all was present in the pericardial cavity, and in many of these the amount was small. In not more than twelve was the amount estimated at more than two ounces, and in only six at more than three ounces. The highest estimates were five and six ounces, and each of these in one case only.

These facts show that "pericardial effusion" in rheumatic fever is of much less frequency, amount, and importance, than would naturally be inferred from the statements of the text-books, and that the disastrous effects of pericarditis are not produced by mere effusion of fluid.

To understand how pericarditis kills it is necessary to examine carefully the condition of the muscular wall of the heart. The visceral pericardium is really part of the heart itself; its interstitial connective tissue is continuous with that of the cardiac muscle, and the cardiac nerves, vessels, and lymphatics course in the subpericardial tissue. It is hardly possible for the pericardium to be inflamed without some damage to the superficial part of the cardiac wall. Careful observations are greatly needed to determine whether this damage is always appreciable by the microscope, how deeply it penetrates, and whether it is more intense in the neighbourhood of the fibrous valve-ring than elsewhere. But an investigation of this kind is difficult, and a satisfactory result will probably not be attained without improvements in our present histological methods. Meanwhile, it is important to observe whether any gross changes in the cardiac muscular wall are revealed by *post-mortem* examination of fatal rheumatic heart disease; and on this matter Dr. Poynton's analysis yields some valuable information. In 34 of the 150 records analysed, or 23 per cent., the existence of some morbid condition of the myocardium is specially mentioned. In 13 of these it was soft and pale, in 4 fatty, in 8 tough and fibroid. These statements suggest that if a careful microscopical examination had been made in each of the 150 cases some evidence of myocardial change would have been detected in a considerable number.

Two important consequences may possibly follow from the injury to the muscular wall of the heart by the pericardial inflammation. The weakened cardiac muscle may be stretched by the internal blood pressure and the heart become dilated. Such dilatation, allowing a larger quantity of blood in the ventricles during diastole, will give the heart a harder task during systole, and may thus lead to hypertrophy. It becomes of interest, therefore, to ascertain whether these results are apparent in the *post-mortem* records. Dr. Poynton found special mention of hypertrophy in 58 of the 150 cases. But special mention of dilatation was found in no fewer than 92 cases, and of these 56 were markedly dilated. Thus it is clear that dilatation is a much more common and striking phenomenon than hypertrophy in the hearts of children who have died from rheumatic heart disease. And it is possible that the disproportion may be even greater than appears at first sight, for it is quite likely that some of the "hypertrophy" may not be genuine, but merely a thickening of the cardiac wall by œdema and inflammatory change, and thus be not compensatory, but only a further evidence of cardiac weakness.

The Main Causes of the Large Mortality.

The conclusions to be drawn from this analysis seem to be that endocarditis and pericardial effusion have very little share in the production of the fatal result in the rheumatic heart disease of early life, and that the main factors responsible for the mortality and for a large part of the cardiac crippling in those who survive are (1) pericarditis of plastic type; and (2) dilatation of the heart.

These facts ought to be carefully kept in mind when we proceed to examine clinically the heart of a child suffering from rheumatism. Let us remember that murmurs are of comparatively small importance in the immediate prognosis, and that the points which it is essential to determine are: (1) evidence of pericardial friction; and (2) evidence of cardiac dilatation. With regard to the first of these points it is hardly necessary, before the present audience, to say anything.

Cardiac Dilatation.

But it seems desirable to direct special attention to the question of cardiac dilatation. I have hitherto spoken of this only in connection of pericarditis, and it certainly often accompanies that condition. I discovered this for myself while studying the curative influence of the icebag in pericarditis, not then knowing that it had been pointed out by Sir William Gull years ago. It seemed at first easy to explain the dilatation by the weakening effect of pericarditis on the cardiac muscle. But further study soon showed that this was not the complete explanation, for I found that more or less dilatation is usually present in a rheumatic attack in which there is no proof of either pericarditis or endocarditis; in subacute first attacks with slight pyrexia and little arthritis; in adults as well as in children. By careful light percussion it is generally easy to demonstrate a decided increase in the area of deep cardiac dulness, especially towards the left, and a shifting of the left margin of the heart outwards, so that it passes no longer within the nipple line, but through the nipple, or outside and above it. The cardiac impulse is enfeebled and diffused, and the site of the maximum impulse shifted towards the left, into the nipple-line, or even external to it, though not so far to the left as the left margin of dulness. The first sound becomes somewhat altered in character. There may be no murmur at all, or only a faint blowing systolic murmur over the right ventricle, such as occurs not rarely in perfectly healthy children.

Tracings shown by Dr. Poynton and myself at the last meeting of the Royal Medical and Chirurgical Society, and to be published in the next volume of its *Transactions*, show that in all there is evidence of dilatation of the left side of the heart sometimes of the right side also; that the dilatation tends to diminish as the rheumatic symptoms subside, and that it may increase again if the rheumatism relapses.

It is clear from evidence of this kind that dilatation of the heart is a common phenomenon in rheumatism, and that it is by no means limited to the cases which suffer from pericarditis, though it may become much more pronounced when pericarditis is present. It appears to be due to a toxic action of the rheumatic poison on the cardiac muscle. A similar acute dilatation occurs in influenza, and is often the cause of severe symptoms, sometimes of a fatal result. Both in influenza and in rheumatism the cardiac dilatation caused by

the acute attack may remain when the attack is over, gradually producing symptoms of increasing cardiac failure, and death a few years afterwards. It cannot be doubted that in influenza the deleterious action on the heart is the effect of a toxin produced by a microbic growth; it seems highly probable that the same is true for rheumatism.

A child who has once suffered from rheumatism is very liable to have subsequent attacks. Often the dilatation caused by the first attack has not subsided when the second attack occurs, and causes further dilatation. The heart may thus become of very large size; the dulness may extend as far as 3 or even 4 fingerbreadths to the left of the nipple, the left margin crossing the nipple-line 2 or even 3 fingerbreadths above the nipple; and it may extend 2 or even 3 fingerbreadths to the right of the sternum in the fourth right space. Upwards it may extend as high as the upper border of the second left costal cartilage, without any pericardial effusion.

Pericardial Effusion.

Sometimes doubtless the presence of more or less fluid in the pericardial cavity further increases the precordial dulness, but usually the major part of the enlargement, and often the whole of it, is due to dilatation. The figures quoted above show how rarely any considerable quantity of fluid is found in the pericardial cavity after death. Is it possible to determine clinically with any certainty whether pericardial effusion is present in addition to the dilatation? In this connection Dr. Sansom lays stress on a considerable extension of dulness in the third and second intercostal spaces. This sign is of value, for the fibro-serous inflammatory product of early rheumatic pericarditis is most abundant at the base of the heart, around the great vessels. It has been suggested that dulness in the fifth right space is indicative of fluid in the pericardium, but this is certainly incorrect, for it may be caused by dilatation of the right auricle. Dr. Ewart thinks that fluid in the pericardial cavity distends the pericardial sac at its attachment to the diaphragm, and that the right and left margins of the precordial dulness then slope outwards as they descend, meeting the horizontal line of absolute liver dulness at an acute angle. The fact of cardiac dilatation accompanying rheumatic pericarditis makes this point very difficult to determine with accuracy, and practically deprives it of value. Nor has any *post-mortem* evidence been adduced to prove that the presence of fluid in the pericardium could produce such angular outlines.

In the treatment of an acute rheumatic attack it is extremely important to remember that a rapid increase in the area of precordial dulness, which is very liable to be attributed to effusion into the pericardium, is mainly due to acute dilatation of the heart, and may be wholly due to it.

Chronic Dilatation.

In chronic heart disease resulting from former rheumatic attacks, chronic cardiac dilatation, the permanent result of a former acute dilatation, plays a large part. If during life there is evidence of adhesion of the pericardium, or if such adhesion is found after death, the damage to the heart is usually attributed to "adherent pericardium." When external pericardial adhesions exist, fixing the heart to the sternum, the pleuræ and lungs, there can be little doubt that these have an injurious effect, especially if they at all constrict the great vessels. But it is doubtful whether simple adhesion of the two pericardial surfaces does much harm, except in this respect: that it tends to render permanent an acute dilatation and to hinder its diminution.

Systolic and Presystolic Murmurs.

If, again, as is often the case, along with the permanent dilatation, a systolic murmur at the apex is audible, the symptoms are usually thought to be due to "mitral regurgitation" pure and simple. Now it can hardly be doubted that a persistent and unvarying systolic murmur at the apex, conducted towards the axilla, is good evidence of more or less regurgitation through the mitral orifice, and it seems certain that mitral regurgitation, by causing increased intra-auricular tension, and therefore increased intraventricular tension during diastole, must tend to produce some dilatation and hypertrophy of the ventricle. But it is probable that a large part of the dilatation observed in chronic heart disease resulting from acute rheumatic attacks is not really due to the coexisting mitral regurgitation, but that both dilatation and regurgitation are persisting effects of the acute attack: the former due to its poisonous influence on the cardiac muscle, the latter to the synchronous endocarditis. It has often been noticed in necropsies on cases of "mitral regurgitation" that the apparent damage to the mitral valve is far too slight to account satisfactorily for the symptoms of cardiac failure. Probably in such cases it has played only a minor part in producing such failure, the main cause having been the persistent dilatation remaining after the original rheumatism. Thus it is easy to attribute too much importance to the presence of a systolic apex murmur; the prognosis depends far less on this than on evidence as to the size and strength of the heart.

The meaning and importance of a presystolic murmur in a child requires careful consideration. We may best arrive at the truth by carefully watching its development as the result of a rheumatic attack. The first indication of endocarditis is always the appearance of a systolic murmur at the apex, the second sound being still audible. In many cases it may be observed that after a time this second sound becomes doubled, so that the systolic murmur is followed by two second sounds of similar quality, which may be indicated by the symbol "whoo-ta-ta." This doubling is only heard in the apex region, it is not audible at the base; it is, therefore, a different thing from the reduplicated second sound often heard over the base in cases of advanced mitral stenosis. No explanation of its production that I have seen has seemed to me quite satisfactory. I believe that the first of these two sounds is the normal second sound of the heart, compounded of the aortic and the pulmonary second sounds. This is caused, not by forcible closure of the aortic and pulmonary valves but by the sudden extra strain thrown on the already closed valves and on the aorta and pulmonary artery by the diastolic expansion of the ventricles. I think that the second of the two sounds, similar in quality to the first, is caused by the tension of inflamed and stiffened mitral flaps produced by the same rapid expansion of the ventricle. The observations of Ludwig and Hesse, quoted by Dr. MacAlister in the British Medical Journal in 1882, show that in the healthy heart during full diastole the mitral flaps do not "hang loosely down, but are stretched taut from basal ring to muscle tip." The rapid expansion of the ventricle, caused by its elastic rebound after systole, carries with it the papillary columns implanted in the ventricular wall, and thus through the chordæ tendineæ tends to fix and stretch the mitral flaps. If any sound is normally produced by this sudden tension of the mitral and tricuspid valves, it will coincide in time with the sound caused by the sudden strain on the aortic and pulmonary valves by the sudden diminution of pressure below them, and will thus form a part of the normal second sound. Now, if the mitral flaps are thickened by inflammation, they will be somewhat more slow to move, and it may well be that it will take a little longer to stretch them fully, and the sound produced by their tension will no longer accurately coincide with the sound of the strained valves at the root of the vessels, and may be so much delayed as to be distinguished by the ear as a second "second sound."

The first element of the double second sound at the apex never alters in character—it always remains a sharp short sound so long as it is audible at all. But the second element is liable to alteration; in place of a sharp short sound a short blowing murmur becomes audible. The descriptive symbol is no longer "whoo-ta-ta," but "whoo-ta-who." The time of this murmur in the cardiac rhythm would be described by some observers as "early diastolic," by others as "mid-diastolic." It is doubtless produced by a slight vibration of the stiffened mitral flaps caused by the commencing inrush of blood from the auricle, resulting from the suction action of the rapid ventricular expansion. It will sometimes be noticed that the rhythm of the murmur seems to change when one listens over the cardiac septum, a little internal to the apex: here the murmur may distinctly precede the systole instead of following it—it is presystolic. This must be due to the contraction of the auricle forcing a stronger blood stream against the thickened mitral flap. At a later stage, there may be at the apex a systolic, immediately followed by a short early diastolic murmur, or a short presystolic followed by a

longer and louder systolic. It should be carefully noted that this presystolic is of a blowing character, and usually short. The combination of a short presystolic and a long systolic—both of blowing character, the systolic often the harsher of the two—is common in children after a rheumatic attack. It is usually accompanied with evidence of great dilatation of the heart. It must not be taken to mean definite mitral stenosis. A necropsy shows a dilated heart, with or without pericarditis; and little or no contraction of the mitral orifice, though the valve flaps will be found to be opaque and somewhat thickened and stiffened. Occasionally the presystolic murmur becomes a little vibratile, or very slightly rumbling; it may end sharply with the systole, or it may be prolonged backwards and occupy the greater part of the diastole. But it very rarely has the loud rough churning character of the presystolic murmur often found in children over 15 or in young adults. And the analysis quoted above shows that marked mitral stenosis is quite rare in children under 12; in the 150 necropsies it was found only nine times. The narrowing of the orifice is a slow process; it takes years for its full development.

AORTIC MURMURS.

Aortic murmurs are in young children much rarer than mitral ones, and are of very little value in the immediate prognosis. They may indeed be accompanied by great cardiac dilatation, and by a sudden, large, somewhat collapsing pulse. But these phenomena may be present in as great amount when the aortic valves are unaffected. The dilatation is of the greatest importance as an element in the prognosis, but any actual aortic regurgitation is usually very slight and of no immediate importance. Care, however, should be taken not to put down to commencing aortic disease a soft double sound at the base, which may be the first indication of pericarditis. Such an error is doubly unfortunate, for the exocardial lesion is much the more serious of the two, and it also is much more open to active treatment.

CONCLUSIONS.

To sum up, I would assert that the prognosis in rheumatic heart disease in young children is not to be deduced from a consideration of the valvular lesions believed to be present, except in the very rare cases of advanced mitral stenosis; but that it must be founded mainly on three facts—the amount of cardiac dilatation, the presence or absence of pericarditis, and the evidence of a fresh rheumatic toxæmia, as shown by sore throat, erythema, rheumatic nodules, arthritis, and chorea.

II.—WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins Hospital, Baltimore

DR. OSLER expressed his appreciation of the great value of Dr. Lees's paper. It seemed to him that in the prognosis of any case of rheumatic heart disease in a child there were two important factors. First, did pericardial adhesions exist? He did not refer to the simple adhesions between the epicardium and pericardium, but to widespread adhesions between these layers and the external tissues of the pleura and mediastinum. The condition could usually be recognised by valuable physical signs. The outlook in these cases was bad. The second factor of importance was the persistent recurrence of rheumatic manifestations. With each attack the heart was further damaged, partly by increased endocarditis, partly by myocarditis. He would refer to one additional point, namely: Dr. Rotch's sign—the increased dulness in the first right space. He could not agree with Dr. Lees that it had no value. He thought (and in the differential diagnosis between dilatation and slight effusion there was always an element of doubt) that he had frequently determined the existence of this sign, the importance of which had been corroborated by Ebstein.

III.—Sir WILLIAM H. BROADBENT, Bart., M.D., F.R.S.,

Physician Extraordinary to the Queen.

SIR WILLIAM BROADBENT paid a tribute to the value of the work done by Dr. Lees, and felt himself in entire agreement with the conclusions at which he had arrived. He emphasised the insidious manner in which the heart became affected in children as the result of mild rheumatic attacks, which frequently passed almost unnoticed. He had on two occasions proved the truth of Dr. Lees's views with regard to the absence of fluid in the pericardium, when there was an increase in dulness on the right side of the sternum, by inserting a hypodermic needle. No fluid was discovered in either case.

IV.—WILLIAM EWART, M.D., F.R.C.P.,

Physician, Belgrave Hospital for Children, and St. George's Hospital, London.

DR. EWART said, that though he believed in the frequent occurrence of a slight dilatation of the heart in rheumatic fever, he had been unable to obtain evidence of the dilatation. In a series of adults whom he had carefully studied throughout their rheumatic attacks, he had in a large proportion of the cases, met with extensive enlargements of the precordial dulness which in their outline, in the suddenness of their appearance and disappearance, in their evanescent character, in their tendency to relapse, and in the remarkable circumstance that they were not accompanied by any urgent symptoms or dyspnœa closely resembled the dulness described by Dr. Lees. He was able to identify these dulnesses with the presence of fluid. He based his diagnosis on three tests, two anterior tests and one posterior. He had described the latter as the "posterior lower dull patch." The occurrence of this dulness was in the adult a reliable sign of fluid in the pericardium. Anteriorly the position of the apex beat which remained unaltered, and could sometimes be felt even during the period of extension of the dulness at the left base, was strong evidence, which was confirmed by the angular outline of this extension. Still more striking was the test yielded by the angular shape of the dulness at the right base. Dr. Rotch had long ago given out that dulness at the right fifth intercartilaginous space was evidence of fluid in the pericardium. It was now well known however that this dulness might be due to great dilatation of the right auricle. The real test was the shape of the outline of the dulness: pericardial fluid gave an acute angle outwards, the auricle invariably yielded a curved outline, ending at the xiphoid notch. A combination of these methods afforded full proof of the existence of effusion. Although these cases (of which Dr. Ewart exhibited tracings) were all cases of adults it seems improbable that similar dulnesses should be due to different causes in his series and in that of Dr. Lees.

V.—Professor Dr. ADOLF BAGINSKY,

Director of the Emperor and Empress Frederick's Children's Hospital, Berlin.

PROFESSOR BAGINSKY said he was much interested in Dr. Lees's paper, having a few weeks ago himself read a paper on pericarditis before the Medical Society of Berlin. He had been appalled by the number of children who had died of pericarditis accompanied by cardiac dilatation and hypertrophy. He had come almost to the same conclusion as Dr. Lees, that pericarditis was in a much greater degree than endocarditis a source of danger to children. They did not usually die in the first, but after two or three attacks of rheumatic fever, often at an age about the onset of puberty. In such cases the heart was found, *post mortem*, so large that it was almost impossible to believe without knowing the facts that it was the heart of a child. As regarded the diagnosis, the first sign of mischief was often irregularity of pulse and cardiac impulse, something like what was called in Germany the *Galopp-Rhythmus*. There was sometimes no enlarged area of dulness on percussion. This had been the case in a case he had recently observed in which there was, however, enlarged liver, œdema of the face, and anasarca of the feet. *Post mortem*, the heart was found to be dilated but not to a marked degree, and not hypertrophied. Pericarditis was present and the fatal result had supervened on the extensive adhesions which existed. In this case percussion had not suggested the presence of pericarditis at any time.

VI.—JAMES FINLAYSON, M.D.,

Physician, Royal Hospital for Sick Children, Glasgow.

DR. FINLAYSON said that he wished to express his appreciation of Dr. Lees's paper, with the main ideas of which he was disposed to agree. In the acute phases he quite thought that the cardiac muscle was often implicated from the affection of the pericardium or endocardium, or otherwise, so as to lead to dilatation. When the case assumed a more chronic condition he thought that the mechanical valvular defects were often

responsible for the perpetuation and aggravation of the heart disorder. The only criticism he would venture to make on Dr. Lees's paper was that perhaps he rested too completely on the results of cardiac percussion. He thought no part of the physical diagnosis was less certain than this percussion. Of course he naturally attached some importance to percussion as practised by himself from time to time. He had no doubt that Dr. Lees and others found percussion as practised by themselves equally useful to themselves, and the results quite comparable with each other from time to time. If these cardiac diagrams, however, executed by many distinguished physicians, were compared with one another, the results would, he believed, be more amusing than instructive. It might surprise many present in the Section to hear that when he began to study diseases of children at the Clinical Hospital in Manchester immediately after graduating, a current idea in the profession was that heart disease was rare in children, and this idea received countenance from well-known textbooks. The first thing he learnt on residence there (after learning his own inability to grapple with the diagnosis of young patients without previous training) was that cardiac disease was very common, for under Sir W. Gairdner's teaching that part of diagnosis had been learnt. How common heart disease in children actually was must be well known to all who attended the out-patient department of a children's hospital. Another idea traditionally current then was, in children "with youth on their side," there was good hope of the growing heart out growing the defect. He confessed he could not give encouragement to this view. Of course in many cases cardiac murmurs disappeared, but when one arrived at a definite diagnosis of valvular defect the tendency of advancing years was to make the mischief worse instead of better.

VII.—Theodore Fisher, M.D.,

Pathologist to the Bristol Royal Infirmary and Physician to Out-patients, Bristol Hospital for Sick Children.

Dr. Fisher said that he was interested in Dr. Lees's paper because he had arrived at similar conclusions from data furnished by the *post-mortem* room. He considered that rheumatic disease of the heart of the children ought to be looked upon as a toxæmia of which pericarditis and endocarditis were pathological manifestations, and that the poisoning of the heart muscle could be present without these manifestations. He referred to cases showing evidence, on microscopic or macroscopic examination, of changes that were insufficient to account for death in cases of pericarditis. He also mentioned others in which there was evidence of disease of the heart muscle, in which there had been no previous myocarditis.

VIII.—Frederick John Poynton, M.D.

Medical Registrar, St. Mary's Hospital, London.

Dr. Poynton, in considering the question to what extent the myocardium differed from the rheumatic poison, thought that as far as possible the evidence for or against it must be kept free from theoretical considerations. It was, however, impossible to avoid all theory until the exact etiology of rheumatic fever was settled. The researches of Dr. Pierre Achalone in reference to this point were of great interest, both in the discovery of an aërobic bacillus, and in the results of inoculation of the cultures into animals, which, among other results, produced great œdema and swelling of the cellular tissues, dilatation of the arterioles, and necrosis of muscle. Whether or not these researches were confirmed, the present aspect of the etiology of rheumatism in no way discountenanced the view that myocardial change might be frequent. The evidence from microscopic examination of the heart wall must prove of great value, but there was no doubt that the technique involved in fixation of the muscle nuclei and protoplasm was a difficult undertaking. Of late years the pathology of cardiac muscle had been advanced by the experimental inoculation of animals with toxins. The researches of MM. Mollard and Regaud upon the myocardium of animals inoculated with diphtheria toxin, published this year in the *Annals of the Pasteur Institute*, showed that there were changes in the nuclei and protoplasm in the connective tissue and vessels. Unfortunately, it was not possible as yet to obtain the rheumatic toxins and inject them thus; but such work as the above must prove a useful guide. In the experiments he quoted he had been personally struck with the complexity and diffuseness of the changes in muscle which occurred.

IX.—John Lindsay Steven, M.D.,

Physician, Glasgow Royal Infirmary: Extra Physician, Royal Hospital for Sick Children, Glasgow.

Dr. Lindsay Steven contributed the following note to the discussion: In the very few remarks which I shall contribute to this very interesting and important discussion I shall confine myself to two points: (1) The relationship of rheumatic heart disease in children to chorea, and (2) The prognosis of rheumatic heart disease in children. First let me state my impression, not based on an actual scrutiny of figures but on personal observation during ten years of several thousands of children, that as met with in out-patient practice in Glasgow heart disease in children apart from chorea and rheumatism is not a very frequent disorder. I do not think that this impression is due to my having overlooked the presence of cardiac lesions, as in our out-patient room it is the routine rule to have every child stripped for examination, and the condition of the thoracic viscera is ascertained in practically every case. I believe that all true chorea in childhood is of rheumatic origin, and my experience in the out-patient room of the Royal Hospital for Sick Children, Glasgow, has been such as to lead me fully to accept the teaching of Cheadle on this subject. Chorea is a rheumatic manifestation, and therefore, in my opinion, a cardiac lesion arising in connection with chorea, either before or after the time the choreic attack may have shown itself, is of necessity a rheumatic lesion. For another purpose I have exhaustively tabulated ninety-six successive and quite non-selected cases of chorea coming under my personal observation and treatment in the dispensaries of the Glasgow Royal Infirmary, and the Royal Hospital for Sick Children, and I shall now read a short analytical table showing the number of cases in which the heart was affected.

State of the Heart in 96 Cases of Chorea Treated in Out-patient Room.

	Cases.
Heart not affected	54
Heart affected	37
Condition not noted	5
Total	96

Details of Cardiac Lesions in 37 Cases of Chorea.

	Cases.
Mitral disease with persistent apex V. S. murmur ...	18
Mitral disease with occasional apex V. S. murmur ...	5
Mitral disease with A. S. and V. S. murmurs... ...	4
Mitral disease with V. S. and V. D. murmurs... ...	1
Mitral and aortic disease with V. S. and V. D. murmurs	1
Accentuated second sound at base and reduplication	6
Irregular and excited cardiac action...	2
Total	37

In all of these cases the state of the heart was ascertained with considerable precision, and in many of them the results of physical examination were recorded with great minuteness of detail. As a general rule, however, we do not see the end of choreic heart disease in childhood. In a number of my cases the heart disease did not supervene until after the second or third attack of chorea. In a similar manner I shall tabulate with reference to heart affection the cases of chorea treated in my wards at the Glasgow Royal Infirmary during the last three sessions:

State of the Heart in 17 Cases of Chorea Treated in the Wards of the Glasgow Roya Infirmary.

	Cases.
Heart not affected	7
Heart affected	10
Total	17

Details of Cardiac Lesions in 10 Cases of Chorea.

	Cases.
Mitral disease with persistent apex V. S. murmur ...	[illegible]
Mitral disease with occasional apex V. S. murmur ...	1
Diastolic murmur in pulmonic area	1
Pericarditis	1

During the same period there have been [illegible] wards 10 cases of cardiac disease in children un[illegible] of 14 in whom no history of chorea could be as[illegible]. Of

these at least 8 had suffered from one or several attacks of articular rheumatism; 5 presented the signs of mitral regurgitation: 4 of mitral stenosis, and 1 of aortic disease. Three of the ten cases developed well-marked signs of pericarditis in the course of the rheumatic valve disease, and of these an opportunity of *post-mortem* examination was obtained in two, confirming the diagnosis both as to the pericardial and the endocardial lesion. With regard especially to the physical signs of rheumatic heart disease in children I have but little to say. Occasionally I have found that a marked reduplication or accentuation of the second sound, chiefly the pulmonic, is the precursor of a characteristic valvular murmur. As a rule, when cardiac murmurs are present in children they are loud, long, superficial, and sometimes musical. Occasionally the murmurs observed over a period of months disappear. Enlargement of the heart is frequently accompanied by precordial bulging of the chest wall. Marked irregularity of the cardiac action I have not often noted. As to the prognosis of rheumatic heart disease in children, it is difficult to be precise and impossible to be dogmatic. On the basis of a limited but on the whole carefully-recorded experience, I might venture to make the following general remarks. The immediate prognosis is on the whole good. Children under rest alone recover in a marked manner from failing compensation, and occasionally murmurs disappear altogether. As compared with chronic affections, particularly tuberculous diseases of the chest and abdomen, the immediate prognosis of rheumatic cardiac disease is good. The remote prognosis must always be grave, and sometimes very grave. I have already remarked that it is not in childhood that we see the end of cardiac lesions, but rather in youth and early adult life. It is then that the disastrous effects of failing compensation are met with. If heart disease proves fatal in early childhood, the unfavourable termination is not uncommonly brought about by the supervention of pericarditis, as I have not infrequently observed.

X.—D. W. SAMWAYS, M.D.,
Mentone.

DR. SAMWAYS said that in cases in which pericarditis occurred with rheumatic heart disease, it was conceivably better that cardiac dilatation should accompany it, since adhesions forming round a dilated heart were less likely in the future to prevent a sufficient cardiac diastole than if the pericardium tightened on a heart of normal size. The compression of a pericardial effusion, also, on a dilated heart might even act as a support to it, usefully diminishing its capacity. The heart when dilated laboured under enormous mechanical disadvantages. Over each unit area of its surface the muscle was necessarily much thinner, whereas the blood pressure on that area was not correspondingly reduced; thus a heart whose diameter was doubled would have a wall one-quarter its former thickness. Its contraction would also be less usefully exerted, for the heart walls being less curved in the larger heart, their contraction was more tangential than formerly, and the resultant pressure inwards on the blood—that is, the radial pressure—was diminished in consequence. A heart whose diameter was thus increased not only had much more blood to throw out, but its power of doing it diminished, approximately, from mechanical causes, inversely as the cube of that increase. Everything should be done to ease the labours, therefore, of a dilated heart; but if a plastic pericarditis were present it was probably better, for the future diastolic freedom of the heart, that the dilatation should last at least as long as the pericarditis was active.

XI.—G. F. STILL, M.D.,
Medical Registrar and Pathologist, Hospital for Sick Children, Great Ormond Street, London.

DR. STILL suggested that a further point in favour of Dr. Lees's view that the dilatation of the heart in rheumatism was toxic in origin might be found in comparison with pericarditis due to other diseases. Thus, in the pericarditis associated with pneumonia or tuberculosis, and also with the form of polyarthritis in childhood described by Dr. Still elsewhere, there was often a striking absence of dilatation, and even when present it was always quite slight in comparison with that due to rheumatism. It would seem, therefore, as though there were some other factor in the cases of rheumatic dilatation with pericarditis than the mere inflammation of the pericardium, and it seemed probable that it was to be found in some rheumatic toxin.

DR. LEES'S REPLY.

DR. LEES said, in reply to what had been said by Dr. Osler regarding the dulness in the fifth interspace as indicative of the existence of pericardial effusion, he thought that question had been sufficiently answered by Sir William Broadbent, who had demonstrated that in such cases fluid was not present. Dr. Ewart had said that if the phenomena of dilatation existed in children it should exist in like cases in adults. He thought that such cases did exist in adults; he had observed dilatation in young adults as well as in children. As regarded the admitted difficulties of diagrammatic representation of these dilated hearts, it must be remembered that the tracings were all on one plane, whereas the heart was not. He had proved, *post mortem*, that his tracings were, as he claimed them to be, relatively correct. He wished to point out that his method of percussion was a different one from that of Dr. Ewart. Dr. Ewart used a pleximeter which covered an inch and a half of area and needed a rapid and forcible percussion, which he himself did not think the most advantageous or precise method of mapping out the cardic dulness. As regarded the "posterior lower dull patch," which they were indebted to Dr. Ewart for first noting, he recognised that it occurred, but thought its meaning needed further investigation before a diagnosis could be based on it. Professor Baginsky had pointed out what an enormous size these dilated hearts might be, he though this point needed a more general appreciation. As regarded the prognosis of rheumatic endocarditis, he agreed with Dr. Finlayson that it was a terrible disease for children. He thought Dr. Fisher's testimony of great value. He had to thank Dr. Poynton for his support. He was in absolute agreement with Dr. Still that it was only in rheumatic pericarditis, and not in other varieties, that the marked dilatation to which he had referred occurred.

THE TREATMENT OF CLUB-FOOT.

By R. W. MURRAY, F.R.C.S.,
Surgeon, Liverpool Infirmary for Children.

So much has been written about the treatment of congenital club-foot, and so many different methods of operating have from time to time been advocated, and the various mechanical appliances for straightening these crooked feet are so numerous that I think it will severely tax man's ingenuity to describe any really new method of treatment for the cure of this deformity. I certainly have no intention of attempting such a task, but wish to direct your attention for a few moments to certain methods of treatment I usually adopt, and to show you some illustrations from photographs of children taken before and after treatment. I will confine my remarks to the treatment of the most common variety of congenital club-foot—namely, talipes equino-varus, and will in the first place consider this deformity as it occurs in infants and subsequently in older children.

Given, then, a case of club-foot in an infant, I take it we are all agreed that the sooner treatment is commenced the better.

In cases where the deformity is only slight manipulation alone may suffice, or manipulation and splints, after division of the tendo Achillis. But in the more severe cases, examples of which I will show you presently, I almost invariably perform the following operation: The infant being under chloroform I pass a tenotomy knife immediately in front of the internal malleolus and divide subcutaneously the plantar fascia and all the resisting structures on the inner border of the foot down to and including the astragalo-scaphoid capsule.

Mr. R. W. Parker long ago pointed out the important part this capsule plays in maintaining the deformity, and I have by dissection verified the truth of his observations and clinically demonstrated their value.

After thus dividing all resisting structures I over-correct the varus deformity and then divide the tendo Achillis. A cyanide gauze and wood-wool dressing is applied at the points of puncture, the foot and leg from the toes to below the knee

covered with a domet bandage, and the foot fixed in the corrected position with a plaster of paris bandage; the foot, of course, being held in the corrected position until the plaster sets. On the fourth or fifth day the dressings are removed, the foot dusted with zinc and starch powder, and the plaster reapplied over a domet bandage only. I usually change the plaster of paris about once in three weeks, and in favourable cases dispense with plaster or splints of any kind at the end of two months, relying then upon constant manipulations by the nurse or mother and occasionally by myself to keep the foot straight. If at any time there should be a tendency to inversion of the foot I reapply the plaster of paris bandage.

I have during the last eight years thus operated upon 117 patients, and have every reason to be well satisfied with the results.



Fig. 1.—C. B., aged 2 weeks. Before operation.

We will now consider the case of children who have already learnt to walk and whose club-feet have either not been treated or in whom the treatment has not been successful. I believe that in the majority of such cases a more extensive operation than the one I have just described is necessary, for here besides the ligaments and plantar fascia the altered



Fig. 2.—C. B. Six months later.

bones (more especially the astragalus) play an important part in maintaining the deformity. Other things being equal the older the child the greater the importance of the bony deformity. In many cases when the club-foot has not been of a severe type I have obtained good results by performing the same operation I practise on infants. But when a child has reached three or four years of age and the deformity is of a severe type I am convinced that something more than the division of tendons and ligaments is necessary in order to get a foot of this kind straight and to keep it straight.



Fig. 3.—R. H., aged 1 week. Before operation, which consisted of subcutaneous division of all resisting structures on inner border of foot down to and including the astragalo-scaphoid capsule, and then division of the tendo Achillis.

The methods of operating most commonly practised in cases of this nature are wrenching, Phelps's operation, excision of the astragalus, and the removal of a wedge of bone from the outer part of the foot. My objections to wrenching are that it has to be repeated from time to time, the after-pain is severe, and I believe the tendency to relapse considerable. The necessary frequent repetition of the operation is an obvious disadvantage when patients come from a distance. However, I do not speak from practical experience, and it is only fair to



Fig 4.—R. H., aged 3½ years.

say that my friend Mr. Robert Jones, of Liverpool, who has had an exceptionally large experience of wrenching, is a strong advocate for this method. Phelps's operation I have never done. It consists in a free division of all resisting structures on the inner border of the foot including the skin, and going



Fig. 5.—Cast of foot, in the case of R. D

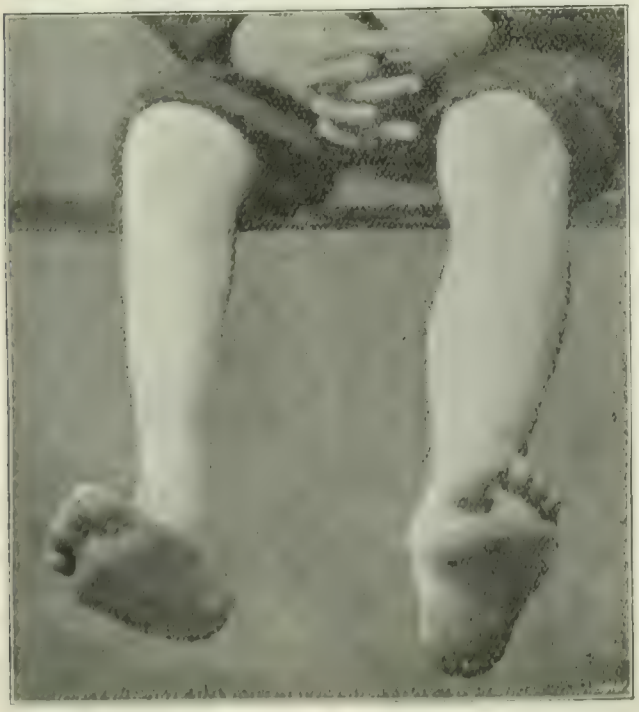


Fig. 6.—R. D., aged 7 years. Tarsectomy. (Same case).



Fig. 7.—R. D., aged 7 years. Tarsectomy. (Wedge operation) for congenital talipes equino-varus of right foot.



Fig. 8.—Cast of feet of A. P. before operation.

right down to the bones, the foot being then straightened. It seems to me that as a result of such a procedure one of two things must happen: either the wide gap made on the inner side of the foot subsequently filled up by cicatricial tissue will contract, and so cause a recurrence of the deformity, or if the foot remains straight, it will be weak and flail-like.



Fig. 9.—A. P., aged 9½ years. Tarsectomy in both feet three and four years ago.

The removal of the astragalus would on pathological grounds appear to be the most logical course to adopt, for the astragalus has been shown to be the bone chiefly at fault, and Mr. Lund, of Manchester, and other surgeons speak well of this operation. But, from a purely mechanical point of view, the straightening of the curved foot, and the keeping of it straight by the removal of a wedge of bone from the convexity of the foot, appeals to me more strongly still.

I have performed this wedge operation for club-foot 52 times on 42 patients. It is unnecessary for me to describe it in detail, for it is practically the same operation as first performed by Mr. Davies-Colley in 1875.

I wish, however, to mention one or two points.

In the first place it is very important before operating to thoroughly cleanse the child's foot; more especially is this the case in hospital patients, for the children are accustomed to walk on the part of the foot that will be operated upon, and the skin here is often exceptionally thick and dirty, and in order to obtain a good result, the wound must heal by first intention.

A point I would especially emphasise is that the wedge of bone removed should be sufficiently large to allow of the foot being not only easily straightened but of the varus deformity being slightly over-corrected, for I feel convinced, not only from the result of my own experience, but from what I have seen of the work of others, that many failures resulting from this operation have been due to insufficient removal of bone.

The varus deformity being corrected, I then divide the tendo Achillis. The tarsectomy wound is completely closed and the foot fixed on a back-splint with a foot-piece before removing the tourniquet.

On the seventh or tenth day the dressings are removed, the foot fixed in plaster of paris, and the child sent home. A fortnight later the plaster is taken off, the stitches removed, and the plaster reapplied. Two or three months after the operation the child is encouraged to walk in the plaster splint, and subsequently in ordinary boots.

I show you some photographs of patients taken before and after operation so that you may be able to judge of the results obtained. I have no desire to overstate my case for tarsectomy. That I have occasionally failed to obtain good results, more especially in my earlier cases, I candidly confess; and these failures were, without exception, due to one of two causes, either the wounds suppurated or I did not remove a sufficiently large wedge of bone.

In conclusion, I wish it to be clearly understood that I do not for one moment suppose that no good result can be obtained in bad cases of club-foot except by tarsectomy, at the same time I may perhaps be pardoned for thinking that when the deformity is severe no other operation can produce better results, both in respect to the duration of treatment and as regards the subsequent appearance and utility of the foot.

ON THE OCCURRENCE OF A PAD ON THE DORSUM OF THE FOOT IN RICKETS.

By A. H. Tubby, M.S.Lond., F.R.C.S.Eng.,

Senior Assistant Surgeon to the Westminster Hospital; Surgeon to the National Orthopædic and Evelina Hospitals.

In the course of examining a large number of rickety children I was much struck by a peculiar appearance on the dorsum of the foot, and occasionally of the hand, but more often seen on the foot. I believe that this appearance has not hitherto been described. It is well known that in infants the dorsum of the foot is somewhat prominent and the soft tissues are fuller, but the appearance and feel of this part are totally different in healthy and rickety children. In the latter, the soft tissues are decidedly thicker than in healthy children at this spot, and the swelling may be a flattened elevation or dome-like. Its colour is that often seen in the skin elsewhere in rickets, and may be compared to that which would be produced by the injection of white wax, slightly tinted to a yellowish shade, beneath the skin so as to give it a distinct tint and a semi-transparent look.

As to the consistency of the swelling, if in a healthy child the skin of the dorsum of the foot be pinched up between the fingers, it can be moved independently of the subcutaneous tissue; but in many rickety children skin and subcutaneous tissue are quite inseparable, and only a more or less thick fold composed of both can be made. It appears in many cases as if solid œdema were present in the skin and subcutaneous tissue.

The pad, however, is not due entirely to changes in the subcutaneous tissue, but in some cases originates in swelling and thickening in the neighbourhood of the epiphyses of the metatarsal bones; hence the pad is more frequently seen rather towards the anterior than the posterior part of the dorsum. When the bones are so affected, distinct beading may be felt about the epiphysial lines, and doubtless the perichondrium and periosteum are thickened as well. But to return for a moment to the consistency of the swelling. In early cases of rickets it is often semi-fluid. In cases of a few months' duration it is semi-solid, and in those of more than a year's duration it is hard and resistant.

I have tabulated 100 cases of rickets, but it is somewhat difficult to fix the date of onset of the attack, so it has been customary to ask the mother the following questions: When did the child's head begin to sweat at night persistently? When did he cry as if he were tender all over? When did he appear to be weak in his back and to go off his legs? When did the motions become evil-smelling and the abdomen to swell? By carefully noting the answers to these questions—some, of course, being in the negative—it has been possible to fix the date of the onset of the attack with some degree of accuracy. Taking one hundred tabulated cases of rickets, 86 had dorsal pads and 14 none. The 86 have been divided into three classes:

(*a*) Those children in whom the pad was marked, but was semi-fluid, and no affections of the bones could be felt. Of the 86, 20 cases came under this category, the average age being 17 months and the duration of the rachitic attack 2 months. This statement bears out another observation, namely, that before the signs of rickets are seen or felt in the bones, the skin and subcutaneous tissues generally are affected, being puffy and of a tallow-candle appearance.

(*b*) Those in whom the pad is well-marked, nearly dome-shaped, and solidly œdematous to the touch. Of the 86 cases, 49 presented this appearance; the average age was 27 months, and the average duration of the attack was 11⅝ months.

(*c*) Those in whom the thickening was mainly bony, the

swelling being of a firm, hard, resistant character, and beaded. Of the 86 cases, 17 came into this category, their average age being 4 years, and the duration of the disease 27 months.

Although only 100 cases have been tabulated, yet a very large number of other cases have been examined and have appeared to me to bear out the preceding observations, and to indicate that if cases be watched over a long period the pad goes through three stages, namely, semi-fluid and confined to soft tissues, semi-solid with some implication of the bones, and firm, resistant and irregular, due entirely to the fact that the bone lesion is the last to disappear.

In conclusion, I would then advance the following points for criticism:

1. In a large proportion of cases of rickets the feet show definite dorsal pads, and in a smaller proportion of cases the same appearance is seen on the backs of the hands.

2. This pad is of varying consistency and origin.

3. If the disease be of recent duration—that is, two to six months—the thickening is subcutaneous and is semi-fluid.

4. If rickets have existed from six to eighteen months, the pad is best marked, and is made up of thickened subcutaneous tissue and periosteum and overgrown epiphyses.

5. At a period of eighteen to thirty-six months after the onset of the disease, the subcutaneous pad disappears concurrently with the general flabbiness and undue pallor of the skin, and leave the bony changes well-apparent to the touch.

DISLOCATION OF THE HIP-JOINT ARISING IN CONNECTION WITH ACUTE FEVERS.

By H. STANSFIELD COLLIER, F.R.C.S.,

Surgeon to Out-patients at St. Mary's Hospital, and at the Paddington Green Children's Hospital; Joint Teacher of Practical Surgery at St. Mary's Hospital Medical School.

IT will, perhaps, be best to introduce this small paper with a short account of the two cases to which my experience is limited.

CASE I.—*Scarlet Fever: Suppuration either in or near to the Right Hip-joint: No Evidence of Bone Disease: Dislocation of Right Femur upon Dorsum Ilii: Extensive Myotomy and Reduction after Six Months: Recovery with Ankylosis in Position of Slight Flexion.*

For the notes of the case I am indebted to my clerk, Mr. W. A. Trumper.

D. R., aged 13 years, was admitted to St. Mary's Hospital, June 16th, 1897. He had been a healthy boy until six months previously, when he was seized with scarlet fever, for which he was admitted to a suburban isolation hospital. From notes kindly sent from this hospital it was learnt that the illness had been very severe, and that there had been much ulceration of throat, dacryocystitis, and double median otitis; that about the seventh day of the illness there was great pain in the right hip region, and the temperature, which had fallen somewhat, rose to 104°. The boy also complained of pain in the left leg and the left shoulder. Two abscesses showed themselves, one in the outer part of Scarpa's triangle of the right side, and the other immediately behind the right trochanter major. These were incised. The abscess in Scarpa's triangle soon healed, but that behind the trochanter did not cease to discharge until nearly five months had passed. No bone disease was discovered.

Condition upon Admission to St. Mary's Hospital.—A well-grown boy, much emaciated. Signs of dislocation of the right femoral head are well marked. The thigh is flexed to a right angle and cannot be extended. There is much adduction and inversion. The balls of the toes can reach the ground on standing only when the body is much bent forward. The top of the trochanter is two inches above Nélaton's line. The head of the femur can be easily made out through the much wasted muscles. It lies upon the dorsum ilii and feels natural in shape and size. There is movement of the limb through a very limited range, and this is unattended by bony grating. There is no pain. The flexor group of muscles, the ilio-tibial band, and the adductor group of muscles are obviously taut. The patient was put to bed, and a weight extension apparatus was applied to the right [illegible].

On June 30th I divided, subcutaneously and very freely, the adductor muscles close to their origins, and made manipulations for reduction without success. I then made a long incision between the sartorius and tensor vaginæ femoris, and in this wound divided the ilio-tibial band and [illegible] the outer part of the illacus, and notched very [illegible] alternately upon opposite sides the sartorius and [illegible] the joint capsule appeared to be intact and thick. The limb was now flexed, abducted and everted, and the head of the bone readily and almost silently slipped into the acetabulum. Still, complete extension of the limb was impossible, and in the wound one could feel that the psoas tendon was the chief resisting agent. A weight extension was applied. There was not much pain, and the wound healed perfectly. The boy left the hospital on July 30th with the hip joint ankylosed in a slightly flexed position. I have recently seen the patient. He has had no pain, is able to walk with comfort, but presents all the disabilities of an ankylosed slightly flexed hip-joint.

CASE II.—*Fever, probably Scarlet Fever: History of Injury on Fifteenth Day of Illness: Dislocation of Right Femur of Sciatic Variety: Extensive Myotomy and Reduction without opening Capsule Three Years after: Recovery with Movement, but with Shortening to the extent of half an inch.*

J. W., aged 10 years and 8 months. Admitted to Paddington Green Children's Hospital on September 24th, 1897. He is said to have been perfectly healthy until three years ago, when, according to the mother's statement, he had a severe attack of scarlet fever. He was very ill for many days, and became much wasted and passed everything under him. He had much pain all over, but his mother did not think that the pain was in the joints, nor that the joints were swollen.

On about the fifteenth day of the illness the boy slipped off the bed and fell upon his knees. This caused him to scream for a short time. A week later he was seen by a doctor, who ordered his removal to an infirmary because he was so ill and weak. The mother was unaware of the joint trouble until the patient was discharged from the infirmary three months later, wearing crutches. He has not complained of pain since.

Present State.—He appears to be healthy, though he is very thin. He shows plainly dislocation of the head of the right femur, which can be felt through the wasted buttock. The head of the bone lies in the position of the anterior part of the great sciatic foramen. Extension is greatly limited, the limb is adducted and inverted. He can flex the limb well, and through a limited range rotation movements can be made.

A skiagraph shows that the femoral neck is bent somewhat downwards, so that the top of the trochanter is on a level with the highest part of the head; the head appears to be compressed from above downwards, and the upper border of the neck continues the convex curve of the head.

After remaining in bed for a fortnight with extension of the limb by weight the head of the bone was replaced by an operation precisely similar to that adopted in the first case. The top of the trochanter after the reduction lay half an inch above Nélaton's line, and this fact was attributed to the alteration in shape of the upper end of the femur. As in the first case the psoas tendon was found to offer great resistance to complete extension. Healing was perfect. A weight extension was applied, and the boy was discharged on November 29th. The limb was capable of complete extension and possessed of a fair range of movement.

I have lately seen the patient. He wears a half-inch sole to his right boot; he walks with a slight limp. Rotation movements are rather deficient, but considering the duration of the dislocation there is very good function of the joint.

REMARKS.

The term "spontaneous" has for many years been applied to such dislocations, and for inclusion in this series it appears to be necessary only (*a*) that a dislocation shall have occurred in the absence of such violence as can dislocate a normal joint, and (*b*) that the form of the bones shall not have been materially changed prior to the dislocation.

I wish to draw your attention to those dislocations only which are connected with acute fevers. Dislocations have been many times recorded in connection with typhoid fever and acute rheumatism; a few times in cases of scarlet fever, and very rarely in the course of typhus. On reading the records of cases one is struck with the marked clinical difference between the typhoid and the rheumatic cases.

The salient features of dislocation connected with typhoid appear to be these: Dislocation has usually occurred in the early days of convalescence when the patient has been profoundly feeble. In many cases the precise instant of displacement has not been noticed. In other cases some slight strain, as in getting out of bed or turning in bed, has been recognised as a contributing cause. As far as I have sought, in no case have any joint phenomena been noticed antecedent to the occurrence of dislocation, and in many cases there is the positive statement that the dislocation has been the first fact observed. The dislocation has usually been attended and succeeded by very little pain. Reduction has usually been easy even after some weeks, and recurrence has happened in several cases.

In the rheumatic cases the dislocation has been preceded by marked evidence of acute inflammation, attended by terrible suffering, and a vicious attitude of exaggerated flexion. The occurrence of dislocation has been almost immediately followed by great relief of pain. Of the cases occasioned by scarlet fever, most have conformed to the typhoidal type, in that they have occurred suddenly without previous evidence of joint disease. I think my second case falls into this group, and regret that it has been impossible to obtain a more definite history. There is little doubt but that my first case was secondary to acute suppuration in the hip-joint.

Of the pathological anatomy of the subject, I have found very little information. Mr. William Adams,[1] in a case of excision for rheumatic dislocation of the head of the bone upon the ilium, found the capsular ligament ruptured and the torn margins of the rent closely embracing the neck of the bone.

Dr. Rawdon,[2] of Liverpool, having excised the head of the bone for a dislocation following typhoid, only mentions that he found the head globular and undiminished by any considerable absorption, and that the cartilage was healthy, except for a little absorption at its periphery.

Verneuil's theory of the pathogeny of such dislocations seems

to me to command great respect. May I remind you that he attributes the chief cause to the condition of the surrounding muscles, some of which he believes to be in a paretic condition from alteration of structure, while antagonistic muscles not so altered, and acting relatively excessively, apply force in an abnormal direction, thrust the head of the femur out of the acetabulum, and push before it the softened capsule, or push the head through the capsule?

My cases throw no light upon the behaviour of the capsule in these cases. I do not know whether the capsule was torn as in Adams's case. I do not think that it was merely stretched and elongated. It may be that there was a separation of the back part of the capsule at its attachment to the femur, which allowed the displaced head to carry with it a hood of capsule and synovial membrane. This would be able to explain the absence of bony grating, the ultimately easy reduction of the dislocation, and, in my second case, the good mobility of the joint.

The clinical records of typhoid dislocations do not convince one that inflammation of the joint is necessary for the production of so-called "spontaneous dislocation."

One must admit the rare occurrence of quiet monarticular synovitis with effusion in patients convalescing from typhoid, but in my reading I have not found that this was observed in any case antecedent to the dislocation. Perhaps degenerative changes, analogous to those occurring in muscle fibres, soften the ligaments, or their attachments to the bones.

Bibliography.

The following papers upon the subject are of great interest:

Stanley, "On Dislocations, especially of Hip-joint, accompanied by Elongation of the Capsule and Ligaments," *Med. Chir. Trans.*, vol. xxiv, p. 123. Wm. Keen, *Tonor. Lectures*, 1876 (Smithsonian Collections). Verneuil, *Bulletin de la Société de Chirurgie*, Oct. 31, 1883. Kendal Franks, *Trans. of the Royal Academy of Medicine in Ireland*, 1883, p. 161. Rawdon, *Liverpool Medico-Chirurgical Journal*, 1882, p. 22. Phocas, *Gazette des Hôpitaux*, Paris, 1894, pp. 1,233, 1,262. Raymond Sainton, *Rev. d'Orthopédie*, vol. iii, 1892.

References.

[1] British Medical Journal, November 1st, 1884, p. 860. [2] *Liverpool Medico-Chirurgical Journal*, 1882, p. 22.

Discussion.

Mr. Noble Smith (London) said he had met with a similar case to those described by Mr. Collier, which had supervened on an attack of some infectious fever and which had been of two-and-a-half years' duration. Liston's splint had given great relief and got the contracted leg into better position. The patient was able to walk comfortably soon after the operation, and six months later the position of the limb was better still. He had in this case divided the contracted adductors.

Mr. Robert Jones, (Liverpool) recalled two cases of dislocation occurring respectively after attacks of scarlet and typhoid fever. The dislocations were easily reduced and the patients ultimately walked quite comfortably.

Mr. Stansfield Collier said, in reply, that in both cases he had found it necessary to divide the adductors very freely.

ON TENDON GRAFTING OR "FUNCTION TRANSFERENCE" IN THE TREATMENT OF INFANTILE PARALYSIS.

By Frederic Eve, F.R.C.S.,

Surgeon to the London Hospital and to the Evelina Hospital for Sick Children; Lecturer on Surgical Pathology in the London Hospital.

The idea of reinforcing paralysed or paretic muscles by attaching or grafting on to them the tendon of a neighbouring healthy muscle undoubtedly originated with Nicoladoni[1] as long ago as 1882. In a case of paralytic talipes calcaneus he attached both peronei to the tendo Achillis with a good result. No further development took place until 1892, when Parrish[2] of the United States, and Drobnik[3] in Posen applied the same method to other forms of paralytic club-foot. The former, in a case of pes talus paralyticus with paralysis of the tibialis anticus, reinforced that muscle by attaching to it the extensor hallucis. The latter (Drobnik) in a case of pes equino-varus attached the extensor hallucis to the paralysed extensor communis digitorum.

In 1894 Winkelmann grafted a strip of the tendo Achillis on to the paralysed peronei for paralytic club-foot.

Drobnik[4] was the first to publish and analyse a series of cases (sixteen in all), thus placing the operation on a firm basis. Latterly Goldthwaite (United States) has published four cases.

The technique of the operation of tendon grafting must necessarily vary with the muscles paralysed, the position of the foot being determined by their antagonists. Although each case requires separate consideration and scope exists for the exercise of ingenuity, yet useful facts may be learnt from practical experience and the study of published cases. Some one group of muscles must at least be possessed of a fair amount of power, in order that the requisite force may be obtained. Cases of flail-like joints, in which all the muscles are paralysed, are only suitable for arthrodesis.

It may be laid down as a general rule that in selecting a muscle for grafting the one should be chosen whose action is most nearly allied to that of the paralysed muscle or group, not only because such muscles are nearest, but also because restoration of voluntary function is more readily obtained. But the converse of this is sometimes, in my opinion, advisable; and we may select an antagonist of the paralysed muscle. Thus in paralysis of the tibialis anticus with valgus, we may attach to it the peroneus longus, with a view to weakening the action of the muscles whose uncontrolled contraction is producing the deformity.

It must also be stated that before the operation we are considering is carried out any faulty position of the foot must be rectified by manipulation, the application of plaster splints, etc.

Talipes cavus will require preliminary operation in some instances. The equinus so often existing should be corrected either before or at the same time as the operation of grafting.

In two of my cases I elongated the tendo Achillis—as I think now, unwisely—at a period subsequent to the grafting operation. This I did by what is termed the Z method. This consists in splitting the tendon longitudinally and cutting outwards through the lateral strips in opposite directions at the upper and lower ends of the incision in it. The lateral strips are then approximated and sutured together in such a way that the tendon is elongated to the required extent. This operation has previously, I believe, been chiefly, if not entirely, employed for shortening the tendo Achillis in cases of talipes calcaneus.[5]

Turning now to the operations appropriate to the special deformities of the foot, we may illustrate what may be done in cases of paralysis of the extensors by reference to the following case, in which all the extensors and the peronei were completely paralysed as the result of an injury to the external popliteal nerve.

Case I.—W. G., aged 9 years, was run over by a van on August 14th 1897, and sustained a wound on the outer side of the popliteal space, for which he was treated at St. Thomas's Hospital. He was admitted to the Evelina



Fig 1.—Case I. W. G. (foot resting over table).

Hospital on October 21st, three weeks after his discharge from St. Thomas's. The knee was flexed owing to contraction of the hamstring muscles, and there was "foot drop." None of the muscles supplied by the external

popliteal nerve reacted to faradism. November 13th: The external popliteal nerve was exposed, resected, and carefully united. It was atrophied and fibrous at the seat of injury. A plaster splint was put on and after an interval massage and electricity were applied to the paralysed muscles for a considerable period. On March 8th no improvement existed and the paralysed muscles neither reacted to faradism nor galvanism.

Operation.—March 17th. The tibialis posticus was divided near its insertion and attached just below the ankle to the tendons of the extensor longus digitorum. Then the tendo Achillis was exposed and a longitudinal incision about three inches in length having been made towards its outer side, the band thus separated was divided near its insertion, and its lower end being carried round the fibula just above the external malleolus was attached to the tendon of the peroneus longus where it passes along the outer surface of the os calcis. On April 21st he had regained some power of dorsi-flexion of the foot, which instead of dropping is now at right angles to the leg and he walks firmly upon it (Figs. 1 and 2).



Fig. 2.—Case I. W. G. (standing).

In a similar condition resulting from infantile paralysis, Vulpius[7] relied entirely on the well-developed gastrocnemius. One-third of the tendo Achillis was attached to the tibialis anticus, the second third was sewn on to the peroneus longus,



Fig 3.—Case II. M. A. K. (foot resting over table).

while the remainder was elongated to correct the equinus. As a result the foot was held in a slightly over-corrected position, and the patient, a girl of 18, could walk without an apparatus in ordinary shoes.

In an example of talipes equino-varus with paralysis of the peronei and extensor longus digitorum, a somewhat similar operation to that one was performed.

Case II.—M. A. K., aged 6½ years, was admitted to the Evelina Hospital on December 8th, 1897. The left foot was in a position of extreme equino-varus as the result of infantile paralysis of the peronei, which did not react in the slightest degree to faradism. The extensor longus digitorum only reacted slightly.

Operation. December 14th. The tendon of the tibialis anticus was divided and attached to the peroneus brevis, and the tibialis posticus tendon, after division, was carried above the internal malleolus and attached to the extensor longus digitorum. The child developed scarlet fever, and was discharged from the hospital with the foot in a plaster splint on January 12th. April 11th, 1898, the tendo Achillis was lengthened. At the present time the child walks fairly well with the foot flat on the ground. There is good power of dorsi-flexion, and no adduction (Fig 3).

The object of this operation might also have been accomplished by attaching the tibialis anticus to the extensor longus digitorum and a portion of the gastrocnemius to the peronei.

In another case (III) the extensor longus digitorum was paralysed, together with the tibialis anticus.

Case III. E. W., aged 11 years, was under my care in the London Hospital. Dr. Hedley reported that the extensor longus digitorum did not react at all to stimulation at the motor point, while the tibialis anticus showed a very markedly diminished force of muscular contraction. No voluntary action of this muscle could be obtained.

Operation.—The tibialis posticus tendon was divided at its insertion and attached to the tibialis anticus, while, to reinforce the power of dorsi flexion of the foot, the peroneus brevis was attached to the tendon of the extensor longus digitorum. By a subsequent operation the tendo Achillis was lengthened. The foot is now braced up at right angles to the leg, and he walks firmly upon it without any tendency to eversion (Fig. 4).



Fig. 4.—Case III. E. W. (foot resting over table).

In Case IV the foot was in a position of equino-valgus, and the adductors of the foot were chiefly affected.

Case IV. B. G., aged 2⅔ years, was admitted to the London Hospital November 24th, 1897. There was old infantile paralysis of the right leg, with "foot-drop" and eversion. The child walked on the inner side of the foot. The peronei acted well. The foot could be everted and slightly flexed but inversion was completely lost.

Operation.—The peroneus longus tendon was attached to the extensor longus digitorum and the peroneus brevis to the tibialis anticus. Both the peronei were used for grafting, it being these muscles which mainly produced the deformity. On January 18th the limb was examined electrically by Dr. Hedley, and dorsi-flexion of the foot was obtained on stimulation of the peroneal muscle. May, 1898. The foot is now in fairly good position, but progression is impossible, owing to genu valgum and weakness of thigh muscles, with flexion of knee. July 1st, 1898. No eversion of foot. There is distinct voluntary power of dorsi flexion. The knee was straightened and the femur divided to rectify the genu valgum.

The above cases were shown at the Clinical Society last May.

In the somewhat unusual event of single muscles being paralysed, less complicated procedures are necessary. Thus, the extensor longus digitorum may be reinforced by the extensor hallucis and half the tendon of the tibialis anticus. In paralysis of the tibialis anticus alone, Vulpius[8] suggests that the displacement of muscles should be gradual, that is,

that half the extensor longus digitorum should be attached to the tibialis anticus, the former being again strengthened by suturing to it the peroneus brevis.

In peroneal paralysis the outer third of the tendo Achillis may conveniently be taken as a graft, and to this may be added, if necessary, the outer portion of the extensor longus digitorum. I have not yet treated by "function transference" a case of talipes calcaneus. After shortening the tendo Achillis the procedure of Nicoladoni may be adopted, the peroneus longus being sutured to its outer side. If necessary, the calf muscles may be further reinforced by the tibialis posticus or a portion of the flexor longus digitorum, should these muscles be unparalysed.

In the first two cases submitted to operation the tendons were exposed by long oblique incisions in the required positions and usually placed over the dorsum of the foot near the ankle. I found, however, that such an extensive division of veins led to œdema of the distal portion of the foot. In the last cases a different plan was adopted. The insertion of the tendon to be transplanted (for example, the tibialis posticus) was exposed by a small incision about an inch in length and the tendon was divided. Then a similar incision was made over the tendon of the same muscle, just above the internal malleolus, and the divided tendon was pulled through it. Next, supposing it was intended to attach it to the tibialis anticus, this tendon was exposed just below the front of the ankle by a similar incision. The skin and fascia intervening between this last incision and that through which the tibialis posticus tendon protruded above the internal malleolus was tunnelled under by means of scissors. The free end of the tibialis posticus was pulled through this tunnel and attached to the tendon of the tibialis anticus, the foot having first been placed in the position desired. The tibialis posticus would be attached to the anticus in such a state of tension as to retain the foot in the improved position.

Goldthwaite's plan of uniting the tendons was carried out in all cases. This consists in splitting longitudinally with a tenotomy knife the tendon of the paralysed muscle, and drawing the divided tendon of the functioning muscle through the hole thus made, union being effected by three or four sutures passed through both tendons. In all the five cases upon which I have operated the wounds have healed by first intention, there has been no sloughing of tendons, and the union in all cases has been firm, as shown by the application of the faradic current to the "force-giver."

The tendon of the paralysed muscle is always slender and atrophied. It is therefore inadvisable to divide or to split it (as has sometimes been suggested), since these procedures are liable to interfere with firm union between it and the graft. It may, however, in some instances be necessary to divide the power of the force-giver by splitting its tendon.

The improvement effected by this operation is brought about in a variety of ways. Where the action of the graft or functioning muscle is nearly allied to that of the paralysed one, which it enforces, the patient is soon able to accomplish voluntarily the new movement. This occurs, for example, when one of the peronei or the tibialis anticus are attached to the extensor longus digitorum respectively, and when the flexor hallucis is fixed to the extensor of the toes.

In Case 1, with complete paralysis of all the extensors, where the tibialis posticus was attached to the extensor longus digitorum, the patient was soon able to accomplish a certain amount of dorsi-flexion of the foot voluntarily. Other factors also come into play in furnishing the patient with a firm base of support adjusted to the normal position.

In the first place, the graft or functioning tendon acts mechanically as a supporting band, applied where it is most required, to the ankle and foot.

Secondly, if one or more of the contracted antagonists be selected for reinforcing the paralysed muscles, the antagonists are weakened, and the deformity is thus treated as by tenotomy.

Thirdly, the involuntary contraction, on placing the foot to the ground, of the functioning muscles used as grafts, and acting in the required direction, gives the foot the necessary firmness, even although the patient cannot *voluntarily* accomplish the movements normally performed by the paralysed muscles.

That the force-giving muscles can really be made to perform the movements of the paralysed ones may be demonstrated by applying the faradic current to their motor points.

The operation of function transference has also been applied to contractures of the wrist, resulting from infantile paralysis; and a healthy sartorius has been used to strengthen a paretic quadriceps extensor.

Dr. A. A. Eulenburg has also employed the method in the treatment of cases of spastic cerebral paraplegia.[7]

NOTES AND REFERENCES.

[1] *Arch. f. klin. Chir.*, Bd. xxvii, s, 660, 1882. [2] *New York Med. Jour.*, 1892. [3] *Zeitschrift f. Chirurgie*, Bd. xliii, s, 473. [4] *Op. cit.* [5] In selecting this particular mode of elongating the tendo Achillis, I was unaware that it had been recommended by Vulpius. [6] *Sammlung klinischer Vörträge*, No. 197, November, 1897. [7] *Deut. med. Woch.*, April 7th, 1898.

NOTE ON THE OPERATION FOR MASTOID DISEASE IN INFANTS AND YOUNG CHILDREN.

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Middle-ear suppuration is a common affection in infants as well as in children. The acute and chronic cases merge into one another, and many of the latter are either tuberculous from the outset or become so secondarily. Intracranial complications appear to be relatively less frequent in children than in adults; this is, in children, no doubt due to the absence of mastoid cells, and to the fact that the antrum, being situated well above the tympanic cavity, drains directly into it, and thence through the perforated or deficient drum into the meatus.

While intracranial complications are comparatively rare, mastoid abscess—with or without caries, sinus, or sequestrum—is more frequent, and constitutes in fact the commonest complication of middle-ear disease in infants and young children.

As long as the aditus ad antrum is not blocked, and as long as the membrana tympani is more or less deficient, pus will not be retained under tension within the antrum, and the discharge may go on for months, or even years, without any complication. If, however, the inflammatory products within the antrum are unable to escape by way of the tympanum and auditory canal, the infective material finds its way to the surface, in the majority of instances through the thin outer wall of the antrum, either along the course of the minute veins which traverse the bone in this situation, or by carious invasion.

No doubt the presence of the squamoso-mastoid suture, which crosses the outer wall of the antrum in the infant, favours the transmission of the inflammatory process to the surface.

When the discharge from the ear is profuse and of long standing, caries or necrosis is almost invariably present in the neighbourhood of the antrum, even although there be no abscess. Less frequently the inflammatory process extends through the tegmen tympani into the middle fossa, or through the posterior wall of the antrum to the lateral sinus, and still more rarely alongside the Eustachian tube to the posterior wall of the pharynx, where it gives rise to a lateral retro-pharyngeal abscess.

The above facts, which are familiar to all, are mentioned in order to show that the operation of opening the mastoid antrum is frequently called for in infants. In this short communication I wish more particularly to point out the importance to the surgeon of a proper appreciation of the peculiarities of the anatomy of the temporal bone in the infant as compared with the adult.

Strange to say, the excellent textbooks which we possess upon surgical diseases of children lead the surgeon to infer that the operation is the same in the infant as it is in the adult. While this is essentially the case, there are, however, certain points of difference, which if not kept in view are liable not only to mar the success of the operation but even to lead to disaster. Let me refer briefly to the more important anatomical peculiarities in the temporal bone of the infant from a surgical point of view.

[The specimens which I now show have been exhibited in the Museum.]

As is well known, the mastoid process is absent in the

infant, and does not begin to develop until the second year. The absence of the mastoid process leaves the stylo-mastoid foramen—and therefore the exit of the facial nerve—exposed upon the lateral not the under surface of the base of the skull. In an infant three months old this foramen is situated at a point 3 mm. behind the middle of the posterior segment of the tympanic horseshoe and a little less than 1 cm. below the floor of the mastoid antrum.

The posterior extremity of the temporal crest in the adult forms a distinct ridge, crossing the base of the mastoid process, and constitutes the surface guide to the level of the roof of the antrum. In the infant no such ridge can be felt.

The relatively large size of the antrum, the thinness of its outer wall, and the relatively greater distance of the lateral sinus behind it, all help to simplify the operation in the child.

The absence of the mastoid cells and the rudimentary condition of the osseous portion of the external auditory canal are of less importance to the operator.

Lastly, as regards the anatomy, it must be remembered that the antrum is situated altogether above the level of the tympanic cavity, its floor being on a level with the upper edge of the tympanic membrane.

With these anatomical data the steps of the operation for opening the mastoid antrum in the infant may be given as follows:—

The knife is introduced at a point a little above the upper attachment of the auricle, avoiding the temporal artery, and an incision is carried downwards and backwards close to the attachment of the auricle. As far as a point on a level with the middle of the meatus, the incision should extend through the temporal muscle down to the bone; but below this point it should divide integuments only, in order to avoid injuring the facial nerve.

The periosteum along with the cartilaginous portion of the external auditory canal is then detached forwards and downwards until the rudimentary osseous roof of the canal is exposed. The divided lower edge of the temporal muscle, along with the subjacent periosteum, is then separated upwards and backwards, so as to expose the whole of the outer wall of the antrum.

The chisel, or in infants the burr, is then applied at a point a quarter of an inch above and behind the roof of the osseous meatus, that is to say, a few millimetres above the tubercle at the upper extremity of the posterior segment of the tympanic horseshoe.

It would be a mistake to introduce the finger into the wound with the object of feeling for a ridge formed by a temporal crest such as exists in the adult, because in doing so the surgeon would come upon the posterior root of the zygoma. If the ridge formed by the root of the zygoma be taken as the guide, and if an opening be made immediately below it, the operator will find that he has passed directly into the middle fossa of the skull immediately in front of the antrum. Having got into the antrum, the opening is cautiously enlarged and the inflammatory products are removed.

Should a sinus exist it will generally be found to traverse the outer wall of the antrum. In those instances in which the sinus is placed further back than usual, it must be enlarged in a forward direction, or it may be necessary to make a fresh opening into the antrum in front of it, in order to avoid the lateral sinus. As a comparatively thick plate of bone intervenes between the posterior wall of the antrum and the lateral sinus, the latter ought not, with ordinary care, to be unintentionally opened into.

In cases where the mastoid disease is acute, it is not always necessary to enlarge the opening into the tympanic cavity and to clear out the latter.

I make it a rule, however, to open the antrum in all cases of mastoid abscess, whether acute or chronic, and whether the bone is obviously diseased or not. If, for example, in acute mastoid abscess the surgeon contents himself with simply incising freely down to the bone, as has been recommended by Wilde, a second operation involving the opening of the antrum will almost certainly be called for at a later period.

In chronic cases, after freely opening the antrum, it is always advisable to test the patency of the auditus, for which purpose a bent probe is usually employed. In place of a probe I prefer to use an instrument used by dentists for introducing soft filling into teeth—an instrument shaped like a miniature sound but with a more bulbous extremity. I am in the habit of referring to this instrument as a mastoid sound. To the opposite end of the instrument may with advantage be added a small sharp spoon, which should be placed at a slight curve to the handle.

Should the auditus be found to be narrowed or blocked, it is often advisable to remove with a small sharp hook, at any rate the incus, and in some cases also the malleus. And in order to do this satisfactorily, it will be necessary to remove that part of the osseous roof of the canal which intervenes between the extremities of the tympanic horseshoe, in other words to perform Stacke's operation. In performing Stacke's operation there is, as in the adult, the same danger of injuring the external semicircular canal and the facial nerve, as it lies in the aqueduct of Fallopius. Injury to the external semicircular canal is a serious accident, as it is liable to be followed by septic meningitis of the posterior fossa, the result of septic matter being conveyed to this region along the auditory nerve.

It should be remembered, however, that facial paralysis following this operation may be due not only to injury of the seventh nerve as it lies in the Fallopian canal, but as has already been mentioned, in infants under one year, to the nerve being divided at the lower extremity of the first incision, if carried right down to the bone.

After, or even before, the end of the second year, the mastoid process, the outer wall of the antrum, and the osseous meatus undergo rapid development, so that when the child has reached the age of 3 or 4, the operation is practically the same as in the adult.

THE RADICAL CURE OF SPINA BIFIDA.

OBSERVATIONS ON CERTAIN POINTS IN A SERIES OF OVER THIRTY CASES OF SPINA BIFIDA TREATED BY OPEN OPERATION.

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OF late not a few surgeons have, in dealing with cases of spina bifida, discarded injection as being less efficient and more risky than the open operation which modern aseptic practice has made possible, and as being, whatever its merits in times past, unsurgical in the light of present knowledge.

To one who has arrived at this position cases of spina bifida coming up for treatment present themselves in certain more or less definite classes with reference to the operative measures to be adopted. Whether these classes should include one in which operative measures are to be regarded as futile or unjustifiable remains to be seen. I, for one, have not yet arrived at a decision in the matter. Further observation will be necessary.

It is not my intention in this paper to submit a detailed or tabulated statement of the cases (upwards of thirty) on which I have operated. To do so at present would be to incur the risk of conveying more than one erroneous impression. This will be clear when the following points are borne in mind:—

1. Of the various cases I have from time to time shown, I have brought forward no case which has not been operated on at least a year previously. A certain period ought to be allowed to elapse after operation, during which the diminution or increase of paraplegia and hydrocephalus, or any tendency to recurrence of the spina bifida tumour, may be observed ere the case is recorded as a success or a failure. Several of the cases mentioned below illustrate the necessity for this.

2. I have made it a rule to refuse to operate on no case sent to me. The effect on the statistics of rigidly following this rule may be gathered from the following instance.

In March, 1898, I had at the same time in the M'Alpine Nursing Home, Glasgow, three infants sent to me with spina bifida. They were three of the most unfavourable cases for operation I have had. The history of these cases is briefly as follows:

T. M., aged 5 months, extremely emaciated and feeble, complete paraplegia; spina bifida tumour of size of small orange in lumbar region. This child died, apparently from asthenia, two days after admission, no operation having been done.

M. B., aged one month, well-nourished, but with decided tendency to hydrocephalus, accompanied by convulsions; spina bifida tumour in lower dorsal region of size of hen's egg. On the morning of March 24th, while Drs. Kay and Archibald Young were with myself preparing for the operation in the theatre, the nurse reported that the child was dying in a convulsion. Operation was abandoned. The child lived for twenty-four hours through a succession of convulsive seizures, finally dying in one, no operation having been done.

D. M., aged 7 months, extreme hydrocephalus, strabismus, facial twitchings and slight convulsive seizures; spina bifida tumour in dorso-lumbar region of size of medium orange. On March 15th, assisted by Dr. Archibald Young, I proceeded to operate. Before operation was commenced the child became apnœic under chloroform. Under the measures adopted breathing was restored, but, looking to the condition of cerebral compression from hydrocephalus, I decided not to renew the attempt to anæsthetise; I therefore had to abandon the idea of excision. The child remaining for some time more or less dazed, however, I did carry out a modified operation (described below). The result was more or less complete thickening and consolidation of the sac during the four weeks which passed between the operation and the death of the child from hydrocephalic coma.

Of this group of three cases, the first two, of course, having died before operation, do not affect the statistics. The last, however, though also dying from natural causes, does.

Of thirty-two cases operated on up to the end of May, 1898, seven died within one month of operation, and, therefore, may fairly be included in the mortality statistics by opponents of open operation. The unwisdom of this, however, and the necessity for bearing in mind that my rule has been to operate on *all* cases brought me, *without exception*, will be apparent in the light of the facts of two of those fatal cases.

A. B., aged 1 week, brought to me at the Children's Hospital in January, 1898. The child was obviously very ill—thin and feeble, with temperature 101.4°. In the lower dorsal region was a collapsed and partially sloughing spina bifida sac, which was said to have ruptured during birth. This was at once resected under chloroform. The child died on the sixth day after operation, having developed an eruption which was pronounced by a medical man to be chicken-pox. I am, for my own part, not clear that the eruption was not due to septicæmia or pyæmia.

Baby C., sent to me in November, 1897, by Dr. J. Turnbull Smith. Spina bifida tumour of size of large orange in lumbar region. Extreme hydrocephalus, the cranial bones of the vault rocking freely on the contents. On November 28th I excised the sac, and before suturing and closing the neck, I elevated the child's head and allowed a considerable quantity of cerebro-spinal fluid to drain away. At the end of a week, the wound having healed by first intention and the health being perfect, we allowed the child, who had during the week been kept horizontal, to sit up. The result was disastrous. In two hours the head had "caved in" like a cracked nut, and in a few hours more the child had expired in convulsions.

Of these two cases, the first died either from chicken-pox or from sepsis originated before operation, while the second succumbed, not to the operation for spina bifida, but to undue haste on my part in allowing the child to assume the perpendicular, and thus perish from the effects of my effort to cure or diminish its hydrocephalus at the same time as its spina bifida.

My experience has been such as to convince me that in the matter of mortality it would probably not be difficult to produce a series of cases operated on for spina bifida in which the mortality would compare favourably with that of the operation for the radical cure of inguinal hernia. To attain this result it would be necessary to reject for operation cases in which the sac had burst or was sloughing, and cases with very pronounced hydrocephalus. A moderate degree of hydrocephalus I have found no bar to success.

Over and above the mortality of the operation there remain certain questions to be decided:—

I. The method, or methods, of operating which in the different varieties of spina bifida offer the best results in the way of permanent cure.

II. The effect of operation in the relief of, or the production of, paraplegia.

III. The effect of the operation on hydrocephalus, and possible measures to be taken for its amelioration or cure.

These questions will ultimately be decided by the accumulation and comparison of the records of different operators. At present they must be regarded as open.

The object of this paper is to put on record such observations as I have had opportunity of making as may be at this date advantageously compared with the results of other workers.

I. Method of Operating.—In all my cases I have made use of (*a*) flaps of as much of the skin as was necessary, and (*b*) flaps of mesoblastic tissue—muscle, fascia, and, in a few instances, bone, this last obtained by including in the mesoblastic flaps the extremities of the abortive vertebral laminæ. I have in no case felt the necessity of attempting transplantation of bone or other tissue from remote parts of the patient or from animals.

In showing cases to students, and to different societies, I have repeatedly drawn attention to the fact that the gap in the spinal canal, closed by fibrous tissue and muscle only, in most cases becomes very solid and tough indeed.

In dealing with the sac I have adopted various methods, which may be briefly indicated:—

1. In cases in which, after freeing the sac and its neck, I have opened it and found its interior free from nerve cords, I have simply cut it away, closed its neck, and then sutured the mesoblastic flaps, and subsequently the skin flaps, over the stump.

The wound is dressed with some aseptic or antiseptic material secured by strapping, collodion, or bandage.

For a week the child is nursed night and day prone over the nurse's knee, and the back is kept bare of all clothing in order that any accidental soiling of the dressing by urine or fæces may be at once detected and rectified. Indeed, it may fairly be said that in cases of spina bifida situated in the lower lumbar region, the success of the operation is as much in the nurse's as in the surgeon's hands. The operation itself in cases of pure meningocele is of the simplest, and, when the tumour was placed in the dorsal or cervical region, I have more than once operated on cases in the out-patient department, and had them taken home and nursed by the mothers with complete success.

Several points seem worthy of mention:

Escape of Cerebro-spinal Fluid.—Formerly I took precautions by various means to prevent escape of the fluid while the sac was being removed and its neck closed. Latterly I have given this up, opening the sac and proceeding with excision and suture without any effort to prevent escape of the fluid. Further, as stated below, in cases of hydrocephalus complicating spina bifida, I purposely elevate the child's head to permit of escape of a certain amount of fluid before closing the neck of the sac.

Closure of Neck of Sac.—In a few cases of small sac a ligature is sufficient. In larger sacs I employ rows of catgut sutures. It is a somewhat curious fact that the only two instances of relapse I have had have been in cases where ligature was employed. Fig. 1 represents one of these cases, operated on in the M'Alpine Home in July, 1895. Six months after operation a fresh sac, about one-third the size of the original one, formed slightly to one side of the middle line. This I knew, from my experience of the former sac, to be a pure meningocele. I therefore passed a needle into it and tore and scratched it to pieces. The result has been as shown in the plate. The site of the secondary sac is occupied by a swelling which is a firm fibrous mass, insensitive to pressure and in no way altered in size by it. The child is in perfect health.

Size and Apposition of the Flaps.—In most of my cases I have left the flaps long. The redundant margins of the mesoblastic flaps I have, by means of several rows of catgut sutures, "piled up" into a median ridge curled inwards on the stump of the neck much as the cut margins of intestine are piled up against each other, and curled inwards by the Lembert suture in circular enterectomy.

The redundant margins of the skin flaps I have similarly piled up into a ridge, but curled outwards. The advantages of this are, I believe, two:—On the one hand, it leaves a bulky mass of tissue to close the gap in the spinal canal. On the other, in place of there being opposed edges, there are flat opposed surfaces, rendering the escape of fluid and the entrance of sepsis more difficult. In time the ridge on the skin becomes more or less completely obliterated.

Figs. 2 and 3 illustrate this.

2. Cases in which the sac on being freed and opened is found to contain nerve cords. In my earlier cases, several of which were shown on different dates to the Glasgow Medico-Chirurgical Society, I followed the practice of dissecting the cords off the interior of the sac. This is not free from risk, and in one case, operated on in 1895, I produced damage in detaching the nerves which caused paralysis of one leg, which has remained permanent.

To avoid such risk I adopted a plan which, in connection with the demonstration of several cases of cured spina bifida,

I described to the Glasgow Medico-Chirurgical Society in November, 1897. The method is as follows:

Flaps of skin and mesoblastic tissues are dissected up in the usual way. The sac is freed and opened. Such portions of it as are free from nerve tissue are excised. The remainder is "cut into ribbons" by incisions made from the interior, parallel with the nerve cords incorporated with it, and thoroughly roughened with the point of knife. The "slashed" and roughened sac is then placed in the patent spinal canal, over which the flaps are sutured in the usual way.



Fig. 1.

In a certain number of cases—two of which have been mentioned above, and two of which (Figs 4 and 5) are described below—I have still further extended the principle and considerably modified the method of this operation, with good [illegible]

M. D., (Fig. 4) shown to the Glasgow Medico-Chirurgical Society in April, [illegible] was sent to me, at the age of 5, in 1896, by Dr. Lamont, of Ch[illegible]

[illegible]—Spina bifida tumour 8 by 9 inches across. Complete [illegible] incontinence of urine; condition of bowel in which [illegible] with incontinence of fæces and flatus.

[illegible] by incision shown in plate—found [illegible] is that excision of even small por- [illegible] knife I carefully tore such small [illegible], and gently, but pretty thoroughly, [illegible] ling the surface of the nerve cords in [illegible]

[illegible] shown in April, 1898, nearly two years after operation:— [illegible] lobulated fibrous mass, shown in plate. This is [illegible] ing sac, measuring 4 inches by [illegible], and altered in size by pressure, and [illegible] resemblance to a lipoma or fibroma by various members of the [illegible] who examined it. The child can walk several miles at a time, and has nearly perfect sensation in the legs, which are, however, in some respects like the limbs of infantile paralysis, being bluish and distinctly deficient in muscular bulk. The bowel acts regularly, and the sphincter is now efficient. Urinary incontinence has completely ceased except that, as the mother states, a little involuntary escape is apt to occur if the child is made nervous or excited.

Infant at present in the M'Alpine Nursing Home (Fig. 5). The plate shows a hard fibrous mass, unaffected by pressure, occupying the site of a former spina bifida tumour of nearly thrice its size.

The sac was opened five weeks ago by a median incision, and was found largely covered by nerve cords. Its interior was roughened in the manner above described, and closed by suture.



Fig. [illegible] Excision of spina bifida sac. Scar of wound eight weeks after operation—showing puckered elevated ridge produced by method of suturing. Ridge already largely obliterated.

It is now practically obliterated. My reason for breaking the rule I have laid down for myself, and producing this plate at this early date after operation, is that, as will be gathered from the plate (Fig. 4), the case illustrates what I believe to be a fact—namely, that unless present in an extreme degree hydrocephalus constitutes no bar to successful operation on spina bifida. The figure indicates what is the fact, that the patient suffers from very pronounced hydrocephalus.

At the meeting in November, 1897, when I first described this method of operating, I stated that, in searching the literature of the subject, I had found a paper by Mayo Robson, of Leeds, in the *Annals of Surgery* for July, 1895, in which most interesting communication Professor Robson says:—"In cases where the cord is expanded, or nerves are blended with the sac, excision of redundant parts or incisions between manifest portions of nervous structures reduces the tumour, and enables it to be placed in the canal, and usually there is no difficulty in covering the replaced structures."

The method, therefore, into which my experience has gradually led me would seem to be in some respects a combin-

ation of the principles of Professor Mayo Robson's operation for spina bifida and Professor Macewen's operation for aneurysm.

It differs from Professor Robson's in that no attempt is made to reduce the bulk of the tumour by the operation, that end being attained by the fibrous contraction and consolidation which follow; and, further, in that the operative procedures are not confined to the portions of the sac between the nerve elements; and, finally, that in certain cases (namely, such cases as Fig. 1, where the sac was torn and roughened internally by a needle passed into it through the skin) the procedure has no similarity whatever with Professor Robson's operation.



Fig. 3.—Excision of spina bifida sac. Scar of wound three years after operation—position of extremities indicated by pencil marks. Puckering completely obliterated, and scar very faintly seen.

II. Paraplegia.—As to the effect of operation in the relief of, or the production of, paraplegia, accounts of two cases have been given above, in one of which the operation certainly produced this condition and in the other cured it.

With larger experience, and adopting in cases containing nerves either Mayo Robson's method or the method I have detailed above, such an unfortunate result of operative interference as paraplegia should be little likely to occur.

With reference to the relief or cure of paraplegia, I prefer to reserve opinion till the final result of certain cases at present under observation becomes clear. The desirability of this course will be plain when it is kept in mind that, in the case of Dr. Lamont's patient (Fig. 4), for instance, a period of two months elapsed after operation before motor and sensory power began to be evident in the legs, and it was more than double that time ere the patient could walk unassisted.

III. Hydrocephalus.—On this point, also, I should wish to reserve judgment.

That the operation has any effect in the production of the condition I have no reason to believe, though in this connection the case of Baby L., sent to me by Dr. Carmichael, of Cathcart, may be noted. During convalescence the child was



Fig. 4.—Case of M. D. Scar of operation-wound very faintly shown.

nursed in the usual position—horizontal—and, because of some tendency to diarrhœa, I directed the nurse to keep the buttocks well up and in view, to facilitate prompt attention to, and cleansing away of, each motion. The resulting dependent position of the head produced turgidity of the scalp veins, tenseness of the fontanelle, and a distinct squint. Raising the head removed these symptoms within a few days. It may be mentioned that a former child of the family died of hydrocephalus.

That the operation may be made the means of relieving, and

even curing, hydrocephalus I have some reason to believe. I have at present under observation several cases in which the evacuation of fluid during operation for spina bifida has had at least a temporary effect. Whether this simple measure is to prove capable of permanent relief or cure time will show.



Fig. 5.

There remain certain further measures, the value of which I am testing as suitable cases occur, but concerning which I am not at present in a position to express a positive opinion. These measures are—(*a*) The establishing of a drainage channel from the spinal canal (at the site of, and during the operation for, spina bifida) into either the peritoneal cavity or the cellular subcutaneous tissue, or both; (*b*) drainage of the cerebral ventricles, either externally or into the meninges; (*c*) application of various solutions to the interior of the cerebral ventricles.

HARE-LIP AND CLEFT PALATE.

By R. W. Murray, F.R.C.S.,
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During the last eight years I have performed 195 operations for hare-lip and cleft palate, and though I have nothing particularly novel to relate, I thought it might be of interest to summarise my experience and to direct your attention to certain details I have found of advantage.

For hare-lip I have operated 122 times. The deformity in the great majority of cases involved the left side of the lip, and was associated with a cleft palate. The age at which the operation was performed depended, of course, upon various circumstances, but I selected about the fourth week. I have frequently operated during the first week of life, but these early operations are not entirely free from risk, and I well remember a case in point. Some few years ago I was urged to operate upon an infant two days old, who had a hare-lip and cleft palate, but otherwise was apparently a well-formed child. I declined to operate because, although the child appeared healthy, she constantly vomited what nourishment was given. This she continued to do until her death a few days later. We fortunately obtained permission to make an examination, and found the small intestine to be completely imperforate.



Fig. 1. Fig. 2. Fig. 3.

Diagrams of single hare lip, indicating incisions.

The method of operating I usually adopt is very similar to that suggested by Mr. Edmund Owen. The infant being under chloroform, I freely divide the lip on either side from the maxillæ and alveoli, and feel sure the success of the operation largely depends upon the freedom with which this is done. I then prepare the edges of the cleft in the manner indicated in the diagrams.

It is well not to interfere with the premaxilla, by bending the bone back or otherwise, for it is quite remarkable how the closure of the lip influences the subsequent growth of the bone. I have noticed in a large number of cases, where the gap in the alveolar margin has been considerable, that a few months after the closure of the soft parts over it, the gap has practically disappeared, the alveolar margins being almost in contact. As regards sutures, I have never used hare-lip pins, preferring silkworm gut and horsehair.

The advantage of this particular method of operating is that it ensures a continuous line of mucous membrane for the upper lip, and the subsequent scar does not suggest a hare-lip to anything like the same extent as if the scar was vertical. But, after all, the chief difficulty in these operations is not with the lip, but with the nose.

Before operation, when the cleft is complete, the ala of the nostril on the affected side is markedly flattened, and I have often noticed in my own practice and in the practice of other surgeons that, although the result of the operation has been satisfactory in respect to the lip, the result has been marred by a falling away of the nostril on the affected side.

To obviate this, I have for the last few years approximated the ala of the nostril on the affected side to the nasal septum by means of a button suture—an illustration of which, in position, is given in the accompanying photograph. This



Fig. 4.—To illustrate the application of a button suture used in hare-lip operations to approximate the ala of the nostril on the affected side to the nasal septum, and so prevent the ala from subsequently "falling away." The suture is removed on the fourth or fifth day.

suture also tends to steady the whole lip, and so save the strain on the sutures when the child cries. This button suture should be removed on the third or fourth day, otherwise the nostril on that side is apt to remain too compressed.

In cases of double hare-lip, when the intermaxillary bone is prominent, I almost invariably remove it, and a week or so afterwards proceed with the closure of the lip. A great deal has been written both for and against the removal of this bone, but to my mind the advantages of removal when the bone is prominent far outweigh the disadvantages. If the bone is retained it acts as a wedge, preventing the closure of the anterior part of the palate; besides, in many cases the presence of this bone, even after being pushed back, would, considering the small amount of material we have for the formation of an upper lip, render the operation upon the lip extremely difficult.

The main objection to the removal of this bone is, that the upper lip becomes shortened, and the lower lip consequently

projects, producing an under-hung appearance. But this flattening of the upper lip can, to a very large extent, be bviated if the bone is removed subperiosteally.



Fig. ..

Aged 5 weeks. Aged 11 months.
Button-suture used for nostril.



Fig. 3.

Aged 2 months. Aged 8 months.
Button-suture used for nostril.

In cases in which the clefts are complete, extending into both nostrils, I endeavour to economise what tissue we have for the formation of the lip in the following way. I first close one side in the manner illustrated in the diagrams, and so



Diagram of double hare-lip, indicating incisions.



Fig. 4.

Double hare-lip and cleft palate. T. G., after operation,
T. G., aged 1 year. aged 3 years.
The intermaxillary bone, which was very prominent, has been removed.

utilise the middle piece to the utmost, thus converting the double into a single hare-lip, and two weeks later operate upon the other side. By thus operating in two stages we obviate as much as possible the shortening of the upper lip.

Now, let us consider briefly the closure of the cleft palate. In all surgical textbooks, and in most of the works dealing especially with this subject the age stated at which the palate should be operated upon is somewhere between the third and sixth year. This I am convinced is a mistake, for after all the chief object in closing a cleft palate is to render the powers of speech more perfect than they otherwise would be. If operation is delayed until the third year or later the child by that time has learnt to talk, and necessarily to talk badly—a habit which, when it is once acquired, it is very difficult to overcome completely. The point I wish especially to emphasise is this: the palate should be closed before the child has learnt to talk at all. This being the case, the sooner the cleft is closed the better, and I have on several occasions operated upon children during the first few months of life, but have come to the conclusion that, as a rule, it is not advisable to operate so early. When performed at this early age the operation is difficult owing to the small space one has to work in; the tissues are extremely friable, and require to be handled with the greatest care; besides which the halves of the uvula are then so small that, after paring their edges, there is hardly sufficient tissue left with which to form a uvula.

During the last four years I have delayed operating until the child is about twelve months old, and I much regret that geographical considerations prevent me showing you some children whose cleft palates were operated upon during infancy, and must ask you to take my word for it that the children now talk quite naturally, it being impossible to detect from their speech that they ever had cleft palates.

In these particular cases the cleft of the palate was not associated with a harelip. When the deformity includes both the lip and the palate I operate upon the lip about the fourth week, close the soft palate at the end of the first year, and subsequently close the hard palate. In this class of case the result of operation, as regards the powers of articulation, is necessarily not so satisfactory as when the palate only is cleft; but in favourable cases the defect in speech is not very noticeable.

REMARKS ON HARE-LIP.

By I. Mossop, F.R.C.S.E.,
Honorary Surgeon Children's Hospital, Bradford.

The methods of operating in severe cases of hare-lip cannot vary to any great extent: to make the most of the material at your disposal is all that you can do, and any adjunct to the information we already possess is welcomed by the operator. My remarks do not refer to the simple notch or cleft in the lip, but to those widely-divergent gaps which are usual in hare-lip associated with cleft palate, with scanty material to work upon. At the Newcastle meeting of the Association in 1893 I was greatly interested in a paper by Mr. Thomas, of Birmingham, on Some Points in the Operative Treatment of Severe Hare-Lip. He described a method of procedure which, in my experience, has proved successful, and which I strongly commend to your notice. His first aim is to secure symmetry of the nostrils; when that point is attained he later on deals with the notch which remains. He looks upon the formation of the nostril in severe hare-lip as the most important step in the operation, and rightly so, for if you fail in this you cannot afterwards rectify it, as you can that of an uneven cicatrix of the lip itself. There can be no doubt that the removal of the projecting premaxillary bone is in the greater number of instances an absolute necessity, and if after its removal the lip is flattened and appears to hang back from the lower lip, the dentist can in after-life remedy the defect.

The procedure suggested by Mr. Thomas is, in short, to restore the nasal aperture by bringing up the termination of the cartilage to the base of the column, and thus form a floor margin to the nostril.

I propose briefly to describe a case which was operated on by me at the Bradford Children's Hospital, and which appeared suitable as a test case. It was one of severe single hare-lip on the right side, with cleft palate.

D. S., aged 6 months, was admitted in May 1894. Early in July I operated. After freely separating the cheek and nostril from the facial bone, pierced the lip with a tenotomy knife below the termination of the carti

lage, and divided it downwards and slightly inwards. This when raised up to its position on the opposite side formed two raw convex surfaces. I then pared two corresponding surfaces on the opposite margin of the cleft, one on the outer side of the base of the column, the other below and continuous with it. The two convex surfaces of the outer margin fitted into the two concave surfaces of the inner margin. Three catgut sutures were applied, one in the centre and one above and below. The wound was dusted with iodoform. The tension on the sutures was relieved by plaster thoroughly applied. In ten days it was so far healed and firm that I was enabled to proceed with the last stage: namely, to close up the notch in the lip, which was done in the ordinary way.

I am strongly of opinion that dividing the operation into two stages with a reasonable interval of time, as recommended by Mr. Thomas, is advisable for several reasons: (1) There is less bleeding to contend with; (2) the child does not require to be so long under the anæsthetic; (3) you can deal with the cleft with more deliberation, and so ensure a more perfect union of the muco-cutaneous margins.

CLINICAL TYPES OF INFANTILE PNEUMONIA.

By James Carmichael, M.D., F.R.C.P.,
Physician, Edinburgh Royal Hospital for Sick Children; Clinical Lecturer on Disease in Children, University of Edinburgh.

In introducing this subject to the Section I desire to refer to acute pneumonia as met with in the early years of life, during the period of infancy (properly so called) and until the fifth year of child life. During this period, as I shall attempt to show, acute pneumonia assumes certain types not so distinct and definite as manifested by the same disease in the adult. The advances made during recent years in the pathology of the disease, more especially from the bacteriological standpoint, have contributed largely to a clear understanding of the subject, and form a basis upon which a true classification of the disease may be founded.

In a paper recently read before the Edinburgh Medico-Chirurgical Society, while treating of pneumonia in its clinical relations, I made reference to classification, and in these few remarks to which time assigns a strict limit, I shall endeavour to enlarge upon them.

Acute pneumonia, whether in the adult or child, is now known to belong to the group of infective diseases, and that it may be produced by a variety of infections is proved beyond dispute. The various micro-organisms during their growth and development give rise to toxæmia, as evidenced by well-marked pyrexial symptoms, which have a more or less sudden onset and termination by crisis or more or less rapid lysis. Not infrequently the constitutional symptoms are out of all proportion to the local lesion in the lung.

Before referring to the clinical types it is well to allude to the pathological appearances found in the lungs. True fibrinous pneumonia, although relatively rare in infancy, is met with in a minority of cases. The appearances show solidity of the lung with lobar consolidation. The air cells are filled with fibrinous exudate containing red and white blood cells and desquamated epithelium. Pleurisy is present. The cut section of the lung shows a smooth solid surface. Very different are the appearances in catarrhal pneumonia. The lung in this variety is vesicular; the cut surface shows isolated lobules or groups of these, prominent, and of a purplish colour, which soon become scarlet on exposure to air. On squeezing the lung catarrhal fluid exudes from the smaller bronchi. Microscopical examination shows the air cells filled with muco-purulent fluid and cellular elements. The cells are found to be germinating epithelial cells, which are rapidly thrown off from the alveolar wall, filling up the air cells. The older epithelial cells rapidly undergo fatty degeneration. The pathological process is essentially a catarrhal one. While these morbid appearances in the two forms alluded to are sufficiently distinct, the [illegible] fibrinous pneumonia, showing little variation in its different stages; in the catarrhal variety the appearances vary according to the duration of the process and the time the child has lived. When life has only been prolonged for a few days the appearance of lobular involvement is less distinct, the evidence of bronchial catarrh alone being well marked with a congested, sometimes slightly œdematous, lung. In many cases in a more advanced stage the lung shows evidence of more or less consolidation in large areas, a process of splenisation having taken place with some fibrinous exudation into the lung tissues. On microscopical examination in these cases the proof of this is shown by the exudation of red and white blood cells, which crowd the alveoli and lung tissue. Numerous blood extravasations may also be met with beneath the pleura. These appearances characterise what is termed the mixed form of the disease where fibrinous and catarrhal changes are combined. Clinically we can differentiate four distinct types.

(*a*) Complete consolidation, with lobar distribution and absence of signs of bronchial catarrh.

(*b*) No sign of consolidation; bronchial catarrh generally distributed over one or more—frequently both—lungs.

(*c*) Bronchial catarrh, with small areas of incomplete consolidation, lobular distribution.

(*d*) Bronchial catarrh, with larger areas of incomplete consolidation; lobar distribution.

The first form, or type (*a*), the true fibrinous or croupous variety, is distinct and definite both in its clinical relations and pathology. The main factors are complete consolidation, sudden invasion, rapid crisis in from seven to ten days, symptoms not always proportionate to the degree of lung involvement, but rather to the toxæmia.

Type (*b*): Clinically the features are those of bronchial catarrh, involving the minute bronchial ramifications (capillary bronchitis). The type of fever is similar to the other varieties of broncho-pneumonia. No evidence of lobular involvement can be made out by physical examination. *Post-mortem* examination shows catarrhal inflammation of alveoli and smaller bronchi.

Type (*c*): Signs of bronchial catarrh, sometimes chiefly confined to one lung, often to both; small areas of incomplete consolidation (lobular distribution). The type of temperature is irregular compared with the fibrinous form; the onset is gradual, not sudden, the duration of the disease from 10 to 14 or 21 days, ending by lysis, rarely but occasionally by crisis. The pneumonic areas can only be detected with certainty by the stethoscope, percussion being unreliable. The auscultatory signs are limited areas of broncho-vesicular breathing, with increased crying resonance and crepitations heard both during inspiration and expiration finer than those heard in the bronchi over the other portions of lung.

Type (*d*): Signs of bronchial catarrh, with larger areas of incomplete consolidation. These cases usually are classed under the "mixed type." The auscultatory signs are similar to those of the former type (*c*), with this difference, that the percussion is impaired in proportion to the extent of lung involved. The note shows dulness, not so absolute as in the fibrinous form, as the lung is more or less vesicular. Of 142 of my hospital cases during the last five years, 107 showed the clinical features of broncho-pneumonia of various types, 35 showed all the features of the fibrinous form. This accords generally with universal experience, showing that the acute pneumonia of infancy and early childhood is a broncho-pneumonia in the majority of cases. The infections being the same, why should the disease assume the form of broncho-pneumonia in the child and fibrinous pneumonia in the adult? Infection (micro-organisms) attacks the most vulnerable tissues, those possessing the least immunity. Recent investigations on the anatomy of the fœtal lung at a late period show that at this time the alveoli have not appeared, the ultimate bronchial ramifications end in a loose connective tissue, which later on becomes thicker and stronger, and in which the vascular network is distributed. Over this, flat epithelium becomes developed, and can ultimately be differentiated from the columnar variety lining the minute bronchial ramifications. It is not until the fourth or fifth year of extrauterine life that the delicate tissues constituting the alveoli of the lung become fully developed. Prior to this time the air cells are relatively smaller than in the adult, their walls thicker, and the interstitial tissue larger in amount. The blood vessels of the alveolar walls are also very abundant. The connective tissue cells in the stroma, and also the epithelial cells, are very numerous and readily proliferate. Such being the anatomical conditions met with in the infantile minute bronchial tubes, alveoli, and interstitial tissues, the presumption is that these growing and immature tissues possess less immunity to the inroads of infective micro-organisms than the fully-developed structures of the adult lung.

In conclusion, I could hardly omit in these few remarks a reference to the bacteriology of the acute pneumonias as dis-

closed by recent investigations. Valuable information is afforded us from the researches of Netter, Durck, Mosny, Meunier, Darier, Grancher, and others, which demonstrate that quite a number of micro-organisms are met with in this disease. The micro-organisms met with may be single or multiple whether in the primary or secondary pneumonias. In the primary pneumonias of the fibrinous variety, Friedlaender's coccus or pneumo-bacillus, or Fraenkel's capsuled coccus, are the predominating organisms; streptococcus or staphylococcus being also found in a minority of cases. In primary catarrhal pneumonias one or other variety of pneumococcus may be found alone, or streptococcus alone, or these two organisms combined.

In the secondary pneumonias of measles, diphtheria, influenza, pertussis, tuberculosis, in addition to the organisms peculiar to these diseases streptococcus is frequently met with, more rarely pneumococcus. Bacteriology thus shows that acute pneumonia is in no sense a specific disease as produced by any special organism.

I conclude by quoting the words of Grancher, who in his recent treatise says: "The bacteriology of broncho-pneumonia is very complex . . . . depending on numerous pathogenous organisms, for whereas fibrinous pneumonia is associated almost invariably with pneumococcus, catarrhal pneumonia is produced by a variety of infections."

NOTES OF A CASE OF "APPARENT" SUPERNUMERARY TESTICLE.

By J. K. Tomory, M.D.,
Caithness.

A. M., aged 3½ years, healthy child except for the presence of eczema capitis during dentition.

History of Case.—About beginning of June the mother first noticed a swelling in the left groin, but did not think much of it. However, after about three weeks she began to suspect rupture and told her husband. Shortly after this—that is, about the end of June—I was asked to see the child. On first examination there was evident swelling over the left inguinal canal, and the external abdominal ring was, if anything, larger on this side than that on the right side. In the middle of the canal, about halfway between the ring and the commencement of the scrotum, was a hard, freely movable body of testicular shape, in size larger than a bean, and considerably larger than either of the testicles, which were both normal. On pressure the body still remained, but could by manipulation be retracted through the external ring. It did not seem to be at all adherent either to wall of canal or to spermatic cord. On squeezing the body between the fingers there was no pain caused; so that the body was evidently not sensitive, such as would have been the case in a normal testicle. I asked my friend Dr. Alexander to see the case with me, as I looked on it as a sort of curiosity. He, on examination and by means of pressure, got rid of the body *pro tem.*, but it soon descended. In a day or two I again made a thorough examination, and found that I could make the body disappear apparently through the external ring, but in the course of a few minutes it reappeared. I did this several times in order to satisfy myself that the body was not attached in any way.

Family History.—The other members of the family are all healthy. The father's brother had an undescended testicle, but otherwise I could gain no precedent for this extraordinary appearance.

Diagnosis.—The question now arises—What is this body?

On consulting available authorities I can find no case similar mentioned. Mr. McCarthy, in his article on Diseases of the Testes, in *Quain's Dictionary*, says of supernumerary testicles:—

"Supernumerary testicles have been described, and men not infrequently believe themselves to be so gifted. The mistake has arisen from the presence of encysted hydroceles, or of fatty or fibrous tumors of the cord, or of old epiplocele. There is no well authenticated case recorded of the presence of more than two testicles."

Now in this case it is certainly not an encysted hydrocele, else it would not have been freely moveable and the feeling on palpation would have been altogether different. It is not an epiplocele as the body is well defined and not attached to the omentum or bowel at all. I do not think from its extreme mobility and "feel" that it is a tumour of the cord, else there would be some attachment (and a short attachment) in so young a child.

The differential diagnosis between supernumerary testicle and hydrocele of the cord seems to be more difficult; and I can only say that were this a case of hydrocele of the cord I should expect to be able to locate some attachment, whereas this body is perfectly mobile in all directions and is not attached, as far as I could make out, either to the walls of the canal or to the cord.

By a process of exclusion I consider the body in question to be a gland similar in formation to a testicle but apparently wholly, or almost wholly, devoid of nerve supply, else there would be pain on pressure. At all events the case is almost interesting one, and I hope worthy of your consideration.

A DISCUSSION ON SOME ASPECTS OF CONGENITAL SYPHILIS.

I.—Jonathan Hutchinson, F.R.C.S.,

Consulting Surgeon, London Hospital; Senior Surgeon, Hospital for Diseases of Skin, Blackfriars, London.

Mr. Hutchinson said that he did not think he had anything new to communicate on the subject, but possibly the negative rather than the positive information which he had been able to accumulate during twenty-five years would not be without interest. This concerned the relative frequency of late manifestations of hereditary syphilis. Regarding diseases of bone in children affected with hereditary syphilis, he had lately seen a good many cases of that variety, somewhat resembling osteitis deformans, characterised by great enlargement and bending of the bones. As regarded syphilitic keratitis the facts remained the same. It was a remarkable phenomenon that in some few cases the keratitis might be deferred as long as thirty or forty years, but the explanation of this very late manifestion probably lay in the development of the tissues and not in an actual recrudescence of the disease. As regarded the simultaneous affection of joints, this always occurred in young patients and never in those over twenty years of age. Neither did deafness occur at a late period. Gummata and other syphilitic affections of the tongue were also exceedingly rare as a result of hereditary disease, but he had recently seen a most typical example in a young woman of 33 whom he knew to have been the subject of hereditary taint. In this case the gumma was in the tongue and disappeared in six weeks under potassium iodide. As regarded affections of the nervous system, it was perhaps rather more common to find degenerative changes late in adolescent life. He had seen several cases in which there was a condition of partial idiocy. Mr. Hutchinson referred to a remarkable case in which there had evidently been some damage to the brain in the infantile period. The subject was affected with a curious partial word blindness, and though his mind was absolutely unaffected, he could never learn to read. His sight also was very bad, though this alone did not account for the condition. As regarded all forms of chronic skin disease occurring after infancy with the exception of phagedænic lupus there was no reason to attribute them to congenital syphilis.

Chronic forms of lupus, psoriasis, and such-like eruptions, did not occur. These few accidental symptoms he had mentioned were the only ones known to occur; otherwise the subjects of infantile syphilis had excellent health in later life, and in most it was impossible to recognise that they had suffered from the disease in early life.

As regarded the marriage of the subjects of hereditary taint there was nothing to prevent it. The evidence was strongly against the transmission of disease to the third generation, and was so improbable that they were justified in believing it to be impossible.

As regarded certain difficulties of diagnosis, there were so many fallacies to guard against that if a thing were improbable or rare, it was better to doubt its existence than to be misled into thinking it was of more common occurrence than the facts warranted. He wished strongly to insist on the fact that there was very little bad health in the general population which could be attributed to hereditary syphilis. Of late years his own practice had been mainly among the

richer or more special classes than among the poor. The more pronounced among such cases were often brought to him, and he had seen much disabling disease; still he wished to take this opportunity of expressing his emphatic opinion that the popular fear of the hereditary disease was very much exaggerated. Owing to the social considerations depending on the view taken in this matter, it would be extremely unfortunate if the medical profession and others should take up an alarmist position which was not based on the true state of the case. For his own part, he believed in no preventive measure except the promotion of marriage. As regarded the time of marriage for syphilitics, he thought two years was a sufficient interval. A period of longer waiting might only produce more unhappy results than it would prevent. It was true that congenital syphilis was transmitted in some cases after two years and, especially if the mother were diseased, might be transmitted indefinitely; but it was rare, even if the eldest child suffered from it, for the younger children of the same family to do so. In a few cases one or more children suffered, but he believed that the taint did usually die out even when both parents were affected. He thought that there were very many apparent cases in which the diagnosis was really not correct, and deprecated any diagnosis being made only from the condition of skin eruption shown by any given infant. Fallacies were very numerous, and unless there was corroborating evidence or history, it was unwise to trust to this sign alone.

II.—Henry Ashby, M.D., F.R.C.P.,
Physician, Manchester Hospital for Children.

BRAIN LESIONS OCCURRING IN THE COURSE OF CONGENITAL SYPHILIS.

Sir William Jenner once said to his students: "Gentlemen, when you see a child don't always think of grey powder." This is excellent and perhaps was much needed advice. Yet I fear that some of us who see a good many children in the hurry and scurry of the out-patient room have had reasons at times to regret that we did not think of grey powder soon enough. We are hardly likely to overlook a typical case of congenital syphilis in the exanthematous stage, but we know how easy it is to overlook syphilis in its relapses, and when the classical signs and symptoms are slight or absent. We have sometimes to ask ourselves, "Is this syphilis?" in cases where there is no history of specific symptoms and when the signs present are ill defined, or are perhaps only those which Fournier has called "parasyphilitic." Thus there may be present such symptoms as anæmia, enlarged spleen, marasmus, eclampsia, etc., which may owe their origin to the syphilitic virus, or, on the other hand, may be non-syphilitic. Under no circumstances is this difficulty more real than when symptoms are present which suggest some cerebral lesion in a patient in whom syphilis is present or suspected. In any such case during infancy we naturally think of tuberculosis or hæmorrhage before syphilis, as syphilitic are infinitely more rare than tuberculous or hæmorrhagic lesions.

In discussing the brain lesions occurring in connection with hereditary syphilis in early life, it will be convenient to distinguish between the three periods included in: (1) Fœtal syphilis; (2) infantile syphilis including relapses; and (3) tertiary syphilis which occurs before or about the period of puberty.

1. *Fœtal Syphilis.*—There is but little evidence on record of typical gummatous inflammations affecting the brain during fœtal life. Heubner quotes a case of Schott's, in which some yellow-coloured swellings or exudations were found at the base of the brain in a newly-born child, and also a similar case of Jürgens. It is curious that while gummata are not uncommonly found in the liver, lungs, kidneys, testicles, etc., in newly-born infants who have suffered from fœtal syphilis, there should be so little evidence forthcoming of a similar affection of the brain. Meningo-encephalitis of a more or less patchy character occurs during fœtal life, which gives rise to sclerosis, microcephaly, and also internal hydrocephalus; but these cases have not been regarded as syphilitic by some authors. Such cases have been reported by Osler, Dereum, and others. Fournier also remarks that he has seen cases of microcephalic idiots born of syphilitic parents.

The following illustrates this class of case, and also some of the difficulties of diagnosis.

An infant of two weeks old, microcephalic and suffering from frequent fits, was brought to the out-patient room of the Manchester Children's Hospital. The head measured 10½ inches in circumference. When first seen syphilis was not suspected, but when the infant was 2½ months old it suffered from marked coryza, and the mother then stated that it had "snuffled" ever since birth. The father had suffered from sore throat, rash, and serpiginous ulcers in the legs. The mother when pregnant had sore throat, and in the summer of the present year (1898) had a squamous syphilide on her face; and a child born since the one with microcephaly suffered from coryza and eclampsia. The microcephalic infant was an idiot, unable to recognise or take notice of anything. The eclampsia continued, the limbs on both sides became paralysed and later spastic. It died at 5 months of age. During the last two and a half months it had been taking a grain of hyd. c. cret. daily. The brain weighed 3¼ ozs. (after having been in weak spirit). There was excess of subarachnoid fluid, the arachnoid was milky, there was no recent lymph, but at the base of the brain there was yellowish friable detritus. There had evidently been a fœtal meningo-encephalitis, patchy in character, especially affecting the Sylvian fissures and the convex surface of the frontal lobes. The convolutions in front of the Sylvian fissures had mostly disappeared, the surface being irregular and nodular. There was a well-marked depression over the right frontal lobe. There had been a meningitis of the choroid plexuses and internal hydrocephalus. As a result of the inflammatory process the brain had become sclerosed.

Dr. G. F. Still was kind enough to examine the arteries taken from the Sylvian fissures; he found no evidence of endarteritis.

In another case, the brain of which I showed some years ago at the Pathological Society, the brain was completely sclerosed, the convolutions on the convex surface had completely disappeared, the surface resembling a "hob-nail" liver. There had been a meningo-encephalitis during intra-uterine life. The boy had suffered from coryza, eclampsia, idiocy, and a general spastic paralysis. He died at the age of 22 months. Both these cases were, I believe, syphilitic, the lesions of the brain being the result of a chronic meningitis or meningo-encephalitis occurring during fœtal life.

Infantile Syphilis.—Passing on to that form of syphilis which first manifests itself during the first weeks or months of life, we find a fairly large number of cases recorded, though the brain symptoms correspond more with relapses than with the exanthematous stage of the disease. The common lesion is an endarteritis and a consequent softening, accompanied perhaps by a chronic meningitis. In rare cases, such as Barlow's, gumma are found situated on the sheaths of some of the cerebral nerves, giving rise to paresis. The following cases may be taken as typical examples:

An infant, 3 months old, suffered from a typical, roseolous rash, well-marked coryza. A week later there was epiphysitis affecting the lower ends of the radius and ulna, and also the tibia of the left side. The specific symptoms disappeared, but the child remained under treatment as it had attacks from time to time of bronchitis and diarrhœa. When 8 months of age it suffered for the first time from convulsions. These were slight at first, always beginning in the left arm but becoming general, and coming on several times in the 24 hours. The left arm would jerk and twitch, the eyes work to and fro; then there was general clonic spasm. In the course of a month or two there was retraction of the head, the left elbow-joint became stiff and flexed, the fingers also were flexed, and the arm pronated; later the left leg, and in a lesser degree the arm and leg of the opposite side became affected. The child ceased to take notice of what was going on around it, and gradually became completely idiotic, with neck retracted and limbs flexed and rigid. It died at 14 months of age. At the necropsy the arachnoid was opaque and thickened, with much clear fluid beneath it, especially over the convex surface and in the Sylvian fissures. There was no lymph anywhere; the convolutions were flattened. On cutting into or scraping the grey matter of the convex surface, it was clear that there was extensive softening on the surface; the grey and white matter being soft and containing glistening, fatty particles. The white matter was also diffluent, and there was a patch of red softening in the right caudate nucleus. The large arteries at the base, and in the Sylvian fissure, appeared normal to the naked eye and to microscopical examination; the smaller arteries which pass from the pia mater into the grey substance of the convolutions were extensively diseased, their intima being thickened, and in many instances their lumen being blocked by threads of fibrin. In the grey matter of the cortex the nerve cells had almost entirely disappeared, being replaced by fatty and granular *débris*. In this case there had been unquestionably an endarteritis and a consequent softening.

In another case the infant was seen when 14 days old suffering from coryza. The mother stated the infant was her only living child; she had had three miscarriages, and had lost three infants within a few weeks of their birth. The patient never had any rash, but at 4 months of age suffered from epiphysitis at the lower end of the left humerus and upper end of the fibula of the same side. When 18 months old it had convulsions, retraction of the head, paresis of right arm; later the right arm and leg became spastic and rigid. The child became mentally dull, and finally idiotic. He died at the age of 22 months; unfortunately no necropsy was allowed.

These cases are, I think, fairly typical. An infant of a few weeks of age suffers from coryza, rash, and very likely epiphysitis. It apparently gets well, or, at any rate, the specific signs and symptoms pass away. A few months after, perhaps during the last half of the first year or during the second year, eclampsia of the Jacksonian type supervenes; the convulsions beginning in one hand and then become general, but they are frequent rather than severe. The arm in question suffers

from paresis, and gradually becomes spastic. In the meantime there is exaggerated tendon-reflex, and the leg of the same side becomes affected; first paresis, and then contracture. The arm and leg of the other side becomes affected sooner or later. The child sooner or later becomes dull mentally, and later a condition of dementia supervenes. There was no optic neuritis or choroiditis in my cases, but the latter has been observed, and so also rare attacks of laryngismus or spasm of the glottis. The course is run in some 6 months or a year from the onset of the convulsions. At the *post-mortem* examination extensive softening is found with endarteritis.

In some cases, with symptoms similar to the above, at the *post-mortem* examination, the brain has been found adherent to dura mater by a sort of gelatinous membrane, covering the convexity and base; with some patches of sclerosis in the area of the Sylvian fissure (Carr).

When the symptoms are present in a child who has suffered from undoubted syphilis, there can be but little difficulty in diagnosis, but we know that cases occur not infrequently in infants of eclampsia with mental dulness, the origin of which is unknown, or at least is doubtfully specific. Thus spasm of the glottis or laryngismus and convulsions are frequently associated with rickets, but infants with syphilis not uncommonly die suddenly in convulsions and also suffer from laryngismus, at the necropsy no brain or other lesion is found. Recently Dornblüth has emphasised his belief that the virus or toxin of syphilis may—without producing any lesion of the brain—give rise to eclampsia and epileptic attacks, during the first year or two of life, associated with dementia of varying degree. There can be no doubt that there are a goodly number of cases of eclampsia of the *petit mal* type associated with more or less mental dulness or idiocy which occur during the first year or two and, moreover, some at least of these cases immensely improve under treatment as they grow older. The fits become less numerous and the children brighten up mentally, but I doubt very much if syphilis is the cause of the disease in the vast majority of such cases. Mercury and iodides are disappointing in such cases according to my experience, or it is only very occasionally that they appear to do good. Eclampsia of the Jacksonian type occurring in infants or young children and followed by paresis is very suggestive of a syphilitic lesion of the brain, but I have my doubts if the virus of syphilis has any marked effect in producing epileptic attacks apart from brain lesions.

Syphilis has been frequently credited with originating the simple posterior basal meningitis in infants, which runs a subacute or chronic course, accompanied by vomiting, eclampsia, retraction of the head, blindness, and internal hydrocephalus. The recent important investigations of Dr. G. F. Still have shown the disease to be due to a specific micro-organism, and consequently removed it from the category of diseases produced by syphilis. I have never seen a typical case of this disease associated with a syphilitic history.

Syphilis does not play a prominent part in the production of the common type of infantile hemiplegia. In the majority of such cases the paralysis sets in suddenly during infancy or early childhood, being associated with convulsions or some febrile condition. Gradual improvement usually supervenes, but a certain amount of fixed flexion of the affected limbs remains perhaps for life. Osler, in his work on cerebral palsies in children, only noted one case out of 180 cases there recorded, while Sachs and Petersen noted 2 cases out of 83 cases collected. Hadden records a somewhat larger percentage, for out of 25 cases of hemiplegia with acute onset, two were certainly syphilitic and in eleven there was a suspicion of syphilis. I believe, some at least of these cases of sudden hemiplegia are due to haemorrhage secondary to convulsions; I feel sure that in a very great majority of such cases described syphilis has no hand in their origin.

Numerous writers have remarked on the fact that chronic hydrocephalus is sometimes associated with hereditary syphilis; but inasmuch as both of these diseases are tolerably common in the out-patient room, it is possible the connection may, in most of the cases, only be the result of a coincidence. It is certain, I think, that in a large number of cases chronic hydrocephalus has nothing to do with syphilis. It is only in a minority of cases there is a history of syphilis; as in the following case which I saw a few days ago. An infant of four months was brought for treatment on account of its large head, the mother stating she had had one child born alive, then three miscarriages, then the present patient was born healthy with a normal shaped head. It snuffled soon after birth and had continued to do so, there had been no definite rash, the head began to enlarge a month ago. The infant had a moderate degree of hydrocephalus and had marked coryza and pallor. It is difficult to avoid the conclusion that syphilis had in some way been instrumental in its causation. I am inclined to think that in the same way hydrocele of the testis in infants is in some cases connected with syphilis. In connection with this I must say that I have never been very successful in the treatment of chronic hydrocephalus in infants by mercury or iodides, but as chronic hydrocephalus runs a very protracted course we are apt to lose sight of the patients. Certainly some cases get well. I have made a goodly number of necropsies on hydrocephatic children and have never seen any evidence of syphilis. The following case recorded by Heller[1] is of interest as showing the connection of syphilis and hydrocephalus.

In June, 1890, Heller attended a woman, aged 36, in her confinement with a first-born infant. Forceps were used, but the head was not pathologically enlarged. Towards the end of July the infant exhibited an undoubted syphilitic rash, and was treated with bichloride of mercury, baths, and calomel (½ grain) three times a day. By the beginning of October it appeared quite normal and healthy. When seven months old it was seen again, suffering from chronic hydrocephalus. The head was enlarged, the fontanelles were wide open and bulging, and the veins of the face and scalp were dilated. The child was treated with potassium iodide internally (two or three grains daily), and in five months all signs of chronic hydrocephalus had disappeared. The author kept the child under observation, seeing it several times a year. There was nothing of interest to note till the summer of 1897. When the child was over seven years of age it suffered from a double interstitial keratitis. Later on condylomata developed on the lower lip, and periosteal gumma on the left humerus and tibia. The upper incisor teeth were distinctly "Hutchinsonian." The child was treated with mercury and iodide, and made a good recovery.

Elsner,[2] among eighteen cases of chronic hydrocephalus in infants, observed three with well-marked syphilitic symptoms and two more with enlarged liver and spleen, which he believed also were syphilitic. Cnopf[3] saw an infant with convulsions, opisthotonos and chronic hydrocephalus, which died at the age of six months. At the necropsy there was a syphiloma of both corpora striata and sclerosis of the posterior lobes of the brain, with internal hydrocephalus. The father had suffered from syphilis eight years previously. Leon D'Astres noted chronic inflammatory changes in the plexus choroidis and membrane lining the ventricle in two cases of infants dying with chronic hydrocephalus in association with syphilis.

Tertiary Syphilis.—A well-marked group is formed by those cases of inherited syphilis in which brain symptoms make their appearance at or just before puberty. In the majority of these cases which have come under my notice, the patients have presented evidence—in their teeth, noses, scars, etc.—that they had suffered from infantile syphilis. There was also choroiditis and more or less deafness. Gradually a paresis of the lower limbs supervene, and a clumsiness in the use of their hands. They cannot run, and easily lose their equilibrium. In a few examples there are choreic movements and eclampsia. They become dull mentally, though as they usually suffer from deafness, their stupidity is at first attributed to their difficulty of hearing. The progress is very slow, but they gradually lose the use of their limbs and become bedridden. Dementia gradually supervenes, and they become quite helpless and unable to feed themselves or attend to their wants. They drift into the workhouse infirmary, rather than the asylum for idiots, on account of the general paralysis preceding the dementia. In the minority of cases the course is more rapid. At the necropsy there is chronic meningo-encephalitis, with atrophy of the brain, thickening of the dura mater and bones of the skull. There is also usually endarteritis. It must not be forgotten that such cases may occur in children in whom there is no history of syphilis, nor yet an external evidence of syphilis.

[1] *Deut. med. Woch.*, No. 5, 1898.
[2] *Jahrbuch f. Kinderheilk.*, Band. xliii, Heft 4.
[3] *Ibid.*, vol. xxxvi, Heft 4.

Dr. Thomas Dalton of Llandudno has been appointed a medical referee for County Court Circuit No. 28 under the Workmen's Compensation Act.

III.—ADOLF BAGINSKY, M.D.,

Director of the Emperor and Empress Frederick's Hospital for Children, Berlin.

DR. ADOLF BAGINSKY thought that there were many cases of infantile syphilitic disease which were difficult of diagnosis. There were many cases—such as those of children with atrophy, ear disease, etc.—in which it was almost impossible to say whether the symptoms were due to syphilis or not. In older children a correct diagnosis was much more possible. There were certain cases of melæna, and of a very severe and intractable form of diarrhœa, which, he thought, should be ascribed to congenital syphilis. In one child he had observed syphilitic ulcers of the intestine, but these were extremely rare. He had not seen a microcephalic case from this cause, but he had known a case in which spastic paralysis from chronic pachymeningitis ensued, and which terminated in idiocy. He did not believe in the transmission of syphilis to the third generation, though he cited a case which pointed perhaps in that direction.

He also mentioned the case of a child of four who presented an obscure enlargement of the spleen with anæmia. He suspected the syphilitic origin, and a year afterwards his suspicions were confirmed by seeing one of the worst cases of the disease he had ever seen in another child of the same family. He had seen cases in which osteochondritis was the only manifestation of the disease.

IV.—Professor JULES COMBY, M.D.,

Senior Physician to the Hôpital des Enfants Malades, Paris.

PROFESSOR COMBY, who spoke in French, said that it was very important to recognise syphilis in the newborn at an early date, so as to lose no time in beginning treatment. In some cases the child was born with a skin eruption, pemphigus, etc., which clearly showed the nature of the disease. In other cases there was a condition of perfect health for several weeks before characteristic signs, such as mucous tubercles of the anogenital regions, labial fissures and syphilides of the face appeared. But before the appearance of any of these signs there was very often a facies ("*un masque spécial*") which was diagnostic, and which had been well shown in Dr. Thomson's book on the *Clinical Examination and Treatment of Children's Diseases*, 1898. In this condition the complexion was pale, the skin and mucous membranes washed out, anæmia was present, and, above all, in the neighbourhood of the natural orifices, eyes, nose, and mouth, there was a dull, earthy brownish coloration of irregular and ill-defined extent. Even when slightly marked this facies was of value, especially if it occurred in conjunction with the characteristic chronic, obstinate sanious coryza, which was nearly always found in hereditary syphilis. When in addition to the earthy complexion there was a papulo-squamous eruption on the forehead, lips, or genitals, together with fissures of the mucous membrane and crusts about the face, simulating impetigo or the eczema of breast-fed children, it was impossible to avoid the conclusion that the case was one of hereditary syphilis. About the buttocks and anogenital regions a lenticular erythema with raised squamous or vegetating patches, suggesting mucous tubercles, but of doubtful pathology, were often found. In some children also a persistent irritation might give rise to a papulous erythema, which, however, must not be confounded with a true syphilide. When there was no eruption on either face or buttocks the recognition of syphilis was more difficult. Persistent coryza in the newborn should, however, always excite grave suspicion. The pseudo-paralysis of Parrot, and the osseous lesions in the limbs supervening about the third or fourth month in children of otherwise healthy appearance must be distinguished on the one hand from obstetric paralysis, which is an earlier manifestation, and on the other from spinal paralysis, which is a later manifestation. Syphilitic pseudo-paralysis responded promptly to mercurial treatment. The signs which Parrot considered characteristic—such as cicatrix about the buttocks, desquamation of the tongue, natiform cranium, and craniotabes—were not to-day recognised as diagnostic. Dental erosions, deafness, Hutchinson's keratitis, were of serious import in the diagnosis, while periosteal and subcutaneous gummata, bones and deformities of the tibia, and perforation of the palate were purely syphilitic phenomena. The treatment of hereditary syphilis was very simple and efficacious when the child was in good surroundings and breast fed. Mercury should be given at once and with a free hand. Treatment of the mother with a view to influencing the disease in the child was useless, as the mercury absorbed through the milk was too minute in quantity. Treatment of the mother should be pursued during every pregnancy to avert disease in the offspring, and the father should also be treated in order to secure full term and viable children. The best treatment for infants was by means of mercurial friction with the double mercurial ointment or with Neapolitan ointment—that is, equal parts of mercury and lard. Two grammes of the ointment should be rubbed into the skin twice a day. If there were cutaneous eruptions a bath of bichloride of mercury, 1 in 10,000, should be given twice a day. Under this treatment symptoms rapidly disappeared. To make the cure certain and to avoid later manifestations the mercurial treatment should be continued for two or three years, the treatment being suspended for one month in every three. After the second year iodide of potassium should be given; also with suspension of treatment from time to time. Mercury alone sufficed to cure early hereditary syphilis; it was prudent later on to add iodide of potassium. Both these drugs were well borne by children, even if given in large doses.

V.—T. TELFORD-SMITH, M.A., M.D.,

Resident Medical Superintendent, Royal Albert Asylum, Lancaster.

DR. TELFORD-SMITH said: A discussion on certain aspects of congenital syphilis would hardly be complete, I think, without the question "Is there any causal connection between congenital syphilis and idiocy or mental deficiency" being asked and considered. That congenital syphilis would be found as a frequent and active factor in the production of congenital and developmental idiocy and imbecility is, at first sight, a proposition which might be readily accepted. But the experience and statistics of the various asylums for idiots appear to negative this proposition in a remarkably emphatic manner. Dr. Langdon-Down wrote in 1887[1]:

I have made a very careful examination as to the relation of syphilis to idiocy, and my later inquiries have confirmed the opinion I have long taught, that syphilis is not an important factor in the production of idiocy. In not more than 2 per cent. are there signs of inherited syphilis.



Syphilitic imbecile (congenital), aged 20. Height 4 feet 5½ inches; weight 5 st. 4 lbs. (average weight of a boy of 11 years.)

[1] *Mental Affections of Childhood and Youth.* J. Langdon Down. 1887.

Drs. Shuttleworth and Beach,[2] after a close scrutiny of the family histories of 2,380 cases of idiocy and imbecility in the Royal Albert Asylum and in Darenth Asylum, found in only 28 cases, or a percentage of 1.17, an undoubted history of congenital syphilis.

I have lately, with the help of Dr. Coupland, the Assistant Medical Officer, gone through the family histories of the 580 present inmates of the Royal Albert Asylum, and find in only 3 cases an acknowledged history of congenital syphilis, and after a clinical examination of the same 580 patients, we found only 8 cases with marked stigmata of the disease, although in many more cases a strong suspicion was aroused; so that, even allowing for the frequency with which a history of syphilis may be concealed by the parents, it must be admitted that the percentage of syphilitic idiots is undoubtedly extremely low, or rather—should we not say—that the percentage of syphilitic idiots over 6 years of age, and found in asylums, is extremely low. For it would, I think, be a somewhat hasty and unjustifiable conclusion to draw from the 2 per cent. of asylum cases that syphilis has little to do with the production of idiocy. Is it not highly probable that the majority of children born with a sufficiently strong taint of syphilis to produce congenital idiocy would die in infancy or in early childhood, and would not reach the minimum age at which most idiot asylums receive patients, namely about 6 years?

Hereditary syphilis has a very important influence on infantile mortality.[3] In London alone, during twelve years (1854-65), there were 3,370 deaths from syphilis among children, and 2,587 of these were under a year old. Professor Fournier found inherited syphilis to be fatal to the offspring in the following proportions, according to its source: Paternal, 28 per cent.; maternal, 60 per cent., and where both parents were syphilitic, the mortality reached 68.5 per cent. of the pregnancies.[4]

The vitality of the congenital idiot is low, but that of the syphilitic congenital idiot must be very low. The mortality of such children during the first six years of life must be very high when we consider the numerous and serious diseases which are likely to claim them as victims; for example, marasmus, rickets, hydrocephalus, teething fits, epilepsy, meningitis, phthisis, etc.

When we remember that of 1,000 children born 264 (26 per cent.) die in the first five years of life,[5] we are justified in thinking that a considerable proportion of these 264 would prove to be congenital syphilitic idiots or imbeciles.

Also the proportion of stillbirths to total births in this country is supposed to be about 4 per cent.[6] Is it not probable that many of the stillborn children of syphilitic parents escaped the worse fate of being congenital idiots, had they been born alive. Tarnowsky[7] in his experience, found that "71.0 per cent. of women suffering from syphilis either give birth to dead children, or bear children which die within a year of birth;" and he records the history of three families, whose fathers had contracted syphilis six, five, and four years respectively before marriage.

All these men appeared to be cured when married, and all their children were born healthy—that is, they showed no symptoms of syphilis. In these three families there were 22 children, and of these only 1 grew up to healthy maturity. Five were premature, 3 died of inflammation of the membranes of the brain before attaining their second year, 2 were imbecile, 2 were idiotic, 1 had numerous signs of degeneration, 1 was weak in intellect, 1 insane, 2 hysterical, 1 epileptic, 1 a deaf-mute, and 2 had water on the brain. Of the 13 still alive when these statistics were taken, 8 were incapable of earning their living, the remaining 5 being sickly and nervous.[8]

We know that there are many cases of congenital idiocy for which no adequate cause can be assigned. May there not in some of these cases be an unacknowledged or an untraceable history of syphilis? The history of the disease may be lost or may date back for one or more generations, but it seems probable that in many more cases than we can bring proof of, the syphilis of the fathers has been visited on the children to the third and fourth generation, in the form of congenital mental defect.

[2] *Dictionary of Psychological Medicine*, Hack Tuke. 1892. Article, Etiology of Idiocy and Imbecility.
[3] *Vital Statistics*. Newsholme.
[4] *Marriage and Disease*. Strahan.
[5] *Vital Statistics*, Newsholme.
[6] *Der Kinderarzt*, October, 1890.
[7] *English Life Table No. 3*. Dr. Farr; Longmans and Co. 1864.
[8] *Marriage and Disease*, Strahan.

As Gowers[9] says:—

Whatever proportion of syphilis is found (in tracing the effect of syphilis in the causation of disease) will fall short of the truth. This is certain from the fact that persons occasionally suffer from syphilis and do not know it, or know it only with a knowledge which soon passes from their memory. This fact is well known, but it is so important that I venture to emphasise it with a few instances. A gentleman had once—and only once—a slight sore. He showed it to a doctor, who said it was of no importance, and touched it with caustic. In a few days it was well, and was soon almost forgotten, for no after-symptoms occurred to keep it in mind. In a year or so he married a lady in his own station. She bore him two dead children, and then a living one. The latter soon showed signs of syphilis, and became paralysed and imbecile.

If, then, we recognise the profound tendency to degenerative changes in the nervous system which so often results from syphilis, it seems at least reasonable to say that the question of the degree of influence which congenital syphilis has in the production of idiocy is still an open one; but that this influence is much greater than the present incomplete statistics would lead us to suppose seems highly probable.

VI.—Jonathan Hutchinson, Jun., F.R.C.S.,

Surgeon, London and Lock Hospitals.

Mr. J. Hutchinson, jun., believed that congenital syphilis was frequently overlooked in young adult patients, because too great importance was attached to the presence or absence of the typical malformation of the teeth and of interstitial keratitis. Probably these symptoms were absent in about 50 per cent. of those who had inherited syphilis and who lived to adult age. Our knowledge of the disease of lymphatic glands due to syphilis had in the last few years materially increased. Besides the symmetrical synovitis of the knees, which occurred about the time of the interstitial keratitis, it was certain that a form of osteo-arthritis, and of joint disease closely resembling tuberculous arthritis, might develop from inherited syphilis, apart from nodes on the joint ends of the growing long bones. The speaker described cases of apparently gummatous disease of lymphatic glands—cervical, mediastinal, etc., and also of chronic renal disease associated with inherited syphilitic enlargement of the liver and spleen. The hepatic lesions due to this disease might obstruct the inferior vena cava, just as a mediastinal gumma might involve the superior vena cava. Cases of both kinds were related.

VII.—James Hudson, M.B., M.R.C.S.,

New Zealand.

Mr. James Hudson gave an account of a strong young man who contracted syphilis in March, 1893. He came under treatment for palmar and plantar psoriasis in September of the same year, other symptoms of syphilis being present. In October, 1894, he married. His wife became pregnant in April, 1895, and a healthy full-time child was born in January, 1896. She has since had a second child. Neither mother nor children had shown any signs of syphilis, nor had they had any antisyphilitic treatment. The father was improving under large doses of iodide of potassium and bichloride of mercury, but he had never entirely lost his psoriasis. The interest of the case lay in the fact that he had not transmitted his disease to either wife or children.

VIII.—James Finlayson, M.D.,

Physician, Western Infirmary, and Royal Hospital for Sick Children, Glasgow.

Dr. Finlayson expressed the satisfaction he had felt in listening to Dr. Ashby's able and interesting paper, and he also admitted the great difficulty of diagnosis in visceral and cerebral syphilis in children. He had seen many cases very similar to those described by Dr. Ashby, of chronic hydrocephalus, convulsions, or imbecility, in which one was forced to consider the question of inherited syphilis as a cause. He recalled a case in which the child was the subject of Jacksonian epilepsy, followed later by grave nervous symptoms and an imbecile condition. Information was supplied to him of the existence of old-standing syphilis in the father, but he had never been able to regard the case as one of inherited syphilis, and antisyphilitic treatment failed to effect any improvement. He congratulated the office bearers of the Section on the interesting discussion they had arranged, and he hoped Mr. Hutchinson and Dr. Ashby in their reply might

[9] *Syphilis and the Nervous System*, Gowers, Lettsomian Lectures for 1890.

give their views on a point referred to by Dr. Comby, namely, the relative value in particular stages of mercury and iodide of potassium in the treatment of congenital syphilis.

IX.—JOHN THOMSON, M.D.,

Extra Physician, Royal Hospital for Sick Children, Edinburgh.

DR. THOMSON said that certain symptoms, such as snuffles and the characteristic rash of congenital syphilis, were met with in the great majority of children affected with the disease. Its less common manifestations, when present, were found in various combinations. The facts of the following family histories seem at least to suggest that in the rare cases in which several syphilitic children in a family survived, there was a tendency for the same organs or tissues to be specially affected

1. In a family of 12 children, only 2 girls survived infancy. When seen, they were 13 and 10 years old respectively. They had both characteristic syphilitic teeth, and were deaf.

2. In a family of 10 children, the 5 later ones showed no signs of syphilis. Of the 5 older children, 3 died in infancy and 2 grew to boyhood. Both of these suffered severely from periostitic swellings on several bones of the upper and lower extremities, beginning between 10 and 12 years old.

3. The third instance, although unsatisfactory, seemed worth mentioning. A father and mother, who had both been exposed to venereal infection before marriage, had three children. They all developed slight snuffles soon after birth, but had no rash. Although they appeared fairly strong at birth, they soon became very feeble, and rapidly sank with more or less dyspeptic symptoms, dying at the age of 10 weeks, 5 weeks, and 8 weeks respectively. In the first 2 cases permission for a *post-mortem* examination was not obtained. In the third, extensive intercellular cirrhosis of the liver, with some peritonitis, was present. As this child's symptoms closely resembled those of the other two, it seems not improbable that they also suffered from hepatic cirrhosis.

4. In a family of 4 children, the 3 first suffered from syphilis. In all these there was snuffles, then a characteristic rash (beginning between the 3rd and 5th week), and then pseudo-paralysis from multiple epiphysitis, beginning between the 4th and 6th week.

5. The last instance was the most striking. In a family of 7 children, out of 5 who had survived infancy, 4 showed evidence of choroido-retinitis, and 2 of these had also optic atrophy and brain disease. In none of the children had there been any deformity of the teeth, or keratitis or ear disease.

X.—GEORGE F. STILL, M.D., M.R.C.P.,

Medical Registrar and Pathologist, Hospital for Sick Children, Great Ormond Street, London.

DR. STILL said that among the chronic degenerative changes of the nervous system, locomotor ataxia had been occasionally recorded in children, but it seemed probable that some at least of these were in reality cases of intercranial tumour. Dr. Still referred to one case—in a boy aged about 14 years—in which symptoms of locomotor ataxia certainly seemed to be present with congenital syphilis. The rarity of gummatous affection of the spleen contrasted curiously with the frequency of the enlargement of that organ clinically; only six cases were to be found on record of gumma of the spleen in congenital syphilis. Enlargement of the lymphatic glands was probably more common as a result of congenital syphilis than was generally supposed, but there was very little reference to it in literature. He had recorded one case in the *Pathological Society's Transactions*, and he had since observed two other cases, in which considerable enlargement of lymphatic glands in one case in one iliac fossa; in the other of the retro-peritoneal glands, and also the mediastinal glands existed in children who were the subjects of congenital syphilis.

XI.—W. LANGFORD SYMES, F.R.C.P.I.,

Dublin.

DR. SYMES hoped that members would pause before rejecting the conclusions of the late Mr. Colles. Anyone who knew the work and life of Mr. Colles would hesitate very greatly before doubting his conclusions.

MR. HUTCHINSON'S REPLY.

MR. JONATHAN HUTCHINSON, in his reply to previous speakers, said he was a firm believer in Colles's law. He saw no reason to forbid any mother from nursing her infant, and it was, he thought, very rare for a mother to contract a sore on the nipple in this way. Many cases which were quoted as exceptions to Colles's law were not true exceptions. As regarded the case mentioned by Dr. Still, he had never himself seen any case of ataxia from congenital syphilis. He thought that Dr. Thomson took an alarmist view, and his cases implied that a long series of children in one family might suffer—a view he did not himself hold. In the absence of typical lesions, it was perhaps doubtful if the evidence of hereditary disease in the cases quoted by Dr. Thomson was clear enough. He had not himself seen any cases like those quoted by Dr. Thomson, in which there was a family tendency to a special degeneration. He wished to remind his hearers that very many cases of congenital syphilis escaped any symptoms whatever throughout their lives, though born tainted. The same thing was, of course, true of acquired syphilis, in which many cases had no secondary symptoms and no others except tertiary manifestations all through their lives. He believed this state of things to be very common. Consequences were far less inevitable than they were accustomed to think. With regard to the treatment of congenital syphilis, on which other speakers had laid stress, he now insisted less upon it than he used to do. He did not believe in a routine specific treatment, but rather in treating the symptoms as they arose and keeping the child alive. He therefore did not think it particularly important to diagnose and treat doubtful cases. Moreover, mercury did not check the symptoms in young children, and this was another reason why he was not anxious to treat these cases. He thought it was impossible to give a long course of mercury to an infant without producing malformed teeth—a serious matter in itself. He never gave potassium iodide to child or man if he could help it, and never to an infant. With reference to Dr. Telford-Smith's communication on the infrequency of idiocy as a result of congenital syphilis, this was a piece of negative testimony of far greater value than any speculations as to its frequency. With regard to lupoid disease, they should remember that it was more frequent in children with acquired syphilis than among those born diseased. He had allowed numbers of his syphilitic patients to marry, and his experience had been that some of the healthiest children had been born from these marriages.

DR. ASHBY'S REPLY.

DR. ASHBY said that Mr. Hutchinson's curious case of word-blindness suggested a possible origin for a large number of cases of a somewhat similar kind which were to be found in Board Schools. In such cases it was possible to teach the children affected almost any subject except reading, and in this the children were extraordinarily backward and difficult to teach. It was, of course, quite a question whether these cases could be attributed to lesions consequent on hereditary syphilis. As regarded the use of mercury in treating hereditary syphilis, he thought there was no doubt about its value in the acute stage. Later, or when there was anæmia, or the child was not getting on, it was not the same use. Mercury did not prevent symptoms. Potassium iodide was valuable in sloughing of the hard palate and similar acute cases, but not in chronic cases.

MOVABLE KIDNEY IN CHILDREN.

By Professor JULES COMBY, M.D.,

Senior Physician, Hospital for Sick Children, Paris.

ALTHOUGH floating kidney is fairly frequently found in adults, and especially in women, it has not often been observed in children, and the silence of the profession on this latter point may well make us believe that the condition is not found in children. But having for several years looked out for displacements of the kidney among the children who came under my observation, I was surprised at the relatively high number of cases which I was able to find—eighteen in all—and I am now convinced that the condition is common at all ages. My personal observations have brought out certain facts with regard to age, sex, other morbid conditions, etc. Out of the

18 cases 2 were aged respectively 1 month and 3 months, 6 between 1 and 10 years, 10 were above 10 years of age. But these figures corresponded only to the dates of the examination and diagnosis; the mobility no doubt dated further back than this; 16 of the cases were girls, 2 were boys, the same proportion of the condition in the female sex observed in adult life. In 14 of the cases the mobility was associated with dyspepsia and dilatation of the stomach, hereditary syphilis was obvious in 2 cases, chlorosis in 2, lienteric diarrhœa in 1, migraine in 1, and psoriasis in 1. In nearly every case the affection was latent, in two it had been mistaken for a chronic appendicitis, twice it had been found and treated. As regards cause it was not possible to attribute it to the pressure of the corset, as the greater number of the patients wore neither corset nor belt. It is true nearly all were dyspeptic, having gastric troubles or pains in the stomach, suffering perhaps as a result of gastro-intestinal distension to which ill nourished children are subject, from elongation of the suspensory ligaments and prolapse of the viscera. But in the 2 subjects of hereditary syphilis, in whom the floating kidney was discovered *post mortem*, the children having died after a few months, none of the above causes could be admitted, but the affection must be regarded as congenital. The congenital origin of floating kidney is believed by Litten, Gutterbock, Ewald, Albarran to be the explanation of all cases. The kidney is possibly provided with a too lengthy pedicle, which causes it to float in the abdomen either spontaneously or as the result of some special effort of a distension of the stomach, of a tight constriction, or of a hypertrophied liver, or an injury, etc. It is difficult to say why women are more liable to this organic displacement than men, but no doubt it has some connection with the abdominal conformation of the former.

The symptoms are very variable, and do not at any time afford much guide to diagnosis; often the affection is absolutely latent, and is passed over. Sometimes there is paroxysmal pain, which, on account of its seat on the right side, is attributed to appendicitis. The pains may come on after some unusual effort or fatigue. In these somewhat rare cases the kidney may become twisted and the ureter occluded, and a hydronephrosis, which may be either transitory, intermittent, or persistent, may supervene. Dyspepsia or constipation are often associated with a movable kidney. But no one symptom can be relied on, and the right iliac region must be carefully explored. If there is movable kidney one finds on palpating before and behind near the umbilicus and in the hypogastrium a hard round movable mass, fugitive, often not painful, which one can often seize between the hands, the left supporting the lumbar region, and the right pressing into the right side of the abdomen. Diagnosis is the more difficult the younger the child. The condition is often undiscovered because there are no symptoms, investigation of the part is difficult, and a child does not lend itself satisfactorily to exploration. But none of these difficulties are insurmountable. Among the conditions with which it may be confused are to be remembered: Coprostasis, appendicitis, different cystic or solid tumours of the kidney, perinephritis, stone, etc. It is not impossible to eliminate these different possibilities before proceeding to diagnose the existence of movable kidney.

The treatment is medical and surgical. When the affection is latent or well borne, when the pains are moderate or intermittent in character, rest and an abdominal belt may suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. A flannel bandage wound several times round the body, and supporting the entire abdomen, is the best means of immobilisation that can be devised. The dyspepsia and constipation, which are so often present, should not be overlooked, as the greatest relief often results from their removal. Should the pains persist or become unbearable, or attacks of peritonitis or hydronephrosis through twisting of the ureter occur, an operation should at once be performed for fixing the kidney to the posterior abdominal wall. This operation was done in the case of one of my little patients with the very best results.

Discussion.

Dr. Burn Murdoch (Edinburgh) expressed his interest in Dr. Comby's statement that he had found a large majority of the children affected with movable kidney to be females. This bore out his own experience in the case of adults. He thought the reason might possibly be looked for in the pelvic conformation. He thought further study of the question was necessary, and alluded to the great rarity of the affection in children.

Dr. G. F. Still referred to two cases of movable kidney in infants; one recognised during life in which the right kidney was freely movable, and could be pushed up under the lower margin of the liver and downwards on to the brim of the pelvis. The other case was found accidentally *post mortem*, the right kidney being easily pushed about an inch or more upwards or downwards under the peritoneum. In neither of these cases were there any clinical symptoms which could be attributed to the renal condition. In the former case the child was fat and well nourished, and there could be no question of any laxity of tissues produced by wasting as suggested by Dr. Jules Comby. It was not very rare to find a slight degree of mobility of the kidney *post mortem*, and probably, if one examined all cases specially for this condition, one would find it more frequently during life. It seemed almost certain from the early age of some of the cases recorded that the mobility of the kidney was congenital.

Dr. Theodore Fisher (Bristol) referred to a case of displaced kidney, occurring in an infant aged 18 months, which he had seen in the *post-mortem* room. There had been great distension of the abdomen, rotating the liver so far backwards that its posterior surface rested upon the iliac crest. The right kidney had been displaced downwards by this rotation of the liver, and rested in the iliac fossa.

THE TREATMENT OF HYDROCEPHALUS BY INTRACRANIAL DRAINAGE.

BY

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and

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The following observations refer to the treatment of that class of case in which hydrocephalus has been present from birth, or has developed during early life without any apparent cause. In those cases which come to a necropsy one frequently finds the membranes of the brain absolutely normal, and no pathological condition present save enormous dilatation of the ventricles. In the absence of any definite knowledge of the pathology of the condition, treatment is naturally directed to the relief of the hydrocephalus, which, although probably secondary, is really the cause of those grave symptoms which but too often lead to a fatal termination.

It may be assumed that in chronic hydrocephalus there is a closure of some part of the channel through which the fluid secreted in the lateral ventricles naturally passes to reach the subarachnoid space outside the foramen of Majendie. The result is that the ventricular fluid increases in amount, gradually distending the ventricles more and more, compressing the brain tissue already formed, and preventing the normal growth of brain tissue in early life. This is a purely mechanical view of the production of hydrocephalus, but it seems to be, from our reading and observation, more probable than any other, and it has formed the basis of the method of treatment to be described.

The subject of the physiology of the cerebro-spinal fluid has been frequently investigated within recent years, amongst others, by Dr. Leonard Hill.[1] He finds as the result of a series of experiments, that "the tension of the cerebro-spinal fluid and the cerebral venous tension are normally the same." This condition is dependent on the fact that "fluid escapes directly into the veins from the subdural and subarachnoid space at any pressure above the venous pressure." He was further able to prove experimentally that "no pathological increase of cerebral tension can be transmitted by the cerebro-spinal fluid, because this fluid can never be retained in the meningeal spaces at a tension higher than that of the cerebral veins." In hydrocephalus there is cerebro-spinal

[1] *The Physiology and Pathology of the Cerebral Circulation.* London, 1896.

(ventricular) fluid under considerable tension, namely, that produced by the stretching of the brain and cranium. As long as this fluid is locked up in the ventricles, the tendency will be for it to increase in the absence of any channels of absorption; but if an outlet for it were provided into the meningeal spaces, then, according to Dr. Leonard Hill's observations, it would rapidly be absorbed by the veins until the cerebral venous pressure and the cerebro-spinal pressure were again equalised. It was resolved to test this in hydrocephalus by making an opening through the cortex cerebri, and introducing a drain into the ventricle which would allow for some time of the free passage of fluid from the ventricle into the subdural space. It may be noted that in connection with this method of treatment, the terms "subarachnoid space" and "subdural space" may be taken as synonymous, fluid passing from one to the other with the greatest ease.

This method has been employed in two cases of hydrocephalus, of which the following condensed notes may be given:—

Case I.—A male infant 6 months old had suffered from birth from progressive hydrocephalus, for which medical treatment had proved unavailing. The head was much enlarged in all its dimensions, and the other signs of hydrocephalus were well marked. The bones of the cranium were widely separated, the vertex being represented by a large membranous space measuring 9 in. by 9 in. at its widest parts. The mental development was practically *nil*. The following operation was performed. A curved incision about an inch and a-half long was made over the left lower angle of the anterior fontanelle, and the skin and deeper tissues were turned down from off the dura mater. A small incision about a quarter of an inch in length was then made. There was no fluid in the subdural space. Before the operation a catgut drain was made as follows: A bundle of finest catgut, containing 16 strands and about 2 inches long, was prepared, one end of the bundle being tied together and the other being free. As soon as the dura mater was incised, the tied end of this bundle was seized with a pair of sinus forceps and pushed downwards and slightly backwards between the brain and the dura mater for about an inch. The other end of the drain, which projected through the slit in the dura mater, was then grasped with sinus forceps and pushed through the substance of the brain into the expanded lateral ventricle. The brain was very thin at this point, and clear fluid escaped immediately. Having thus arranged one end of the drain in the subdural space and the other in the ventricle, three fine catgut stitches were employed in completely closing the opening in the dura mater, and the skin was stitched up with a continuous silk suture.

When the dressings were removed on the fifth day after the operation the wound was healed. The head was distinctly smaller in all its dimensions, and there was a complete absence of the tension which had been present before operation. This diminution in the size of the head steadily continued, and in a few weeks the spaces between the cranial bones were entirely obliterated, the bones were beginning to override, and the anterior fontanelle was much smaller, depressed, and pulsating. At the same time it was noted that the shape of the head was very asymmetrical, the left [illegible] appearing to be smaller than the right, and to have receded backwards. Although the changes in the head were so marked, there was no improvement in the infant's mental condition or physical development. The diminution in the size of the head continued until the bones were overriding to an extreme degree, and any further diminution by falling in of the bones was rendered impossible. Three months after the operation the child died with symptoms of basilar meningitis. At the necropsy a considerable quantity of straw-coloured fluid was found in the subdural space. The ventricles were both dilated but not distended with fluid. The membranes at the base were thickened, and the ependyma of the ventricles formed a distinct membrane of a dark purple colour, firm but not granular. The opening into the left ventricle made at the operation was quite evident, and some strands of catgut lay in it, while the rest of the drain could be traced up to the opening made in the dura mater, at which point the brain was adherent to the dura mater. The adhesions formed were soft and easily broken down, and amongst them lay the external ends of the catgut drain. The brain was soft, cystic in parts, and very imperfectly developed.

Case II.—This was also a case of advanced hydrocephalus in an infant 3 months old. All the bones of the skull, vertical and basal, were widely [illegible] and physical development had been stationary [illegible] At operation exactly similar to the one described in the last case was performed on the left side of the head. The brain tissue was extremely thin and anæmic at the site of operation. The disturbance caused by the operation was trifling and transient, there being a rise in temperature for a few days, some restlessness at night, and vomiting [illegible] removed on the sixth day and the wound was found to be [illegible] was smaller in all its dimensions, the tension of the [illegible] the spaces between the individual bones were [illegible] of the eyes was not so marked. The skull appeared to [illegible] real, as if the left side had moved backwards on the right [illegible] fortnight after the operation it was noted that the bones [illegible] the skull and the fronto-parietal bones were overriding, [illegible] till a slight interval between the two parietal bones. A [illegible] was applied to the head in order to keep up the [illegible] and absorption. A few days later a slight in- [illegible] in the fontanelle, but this soon passed off.

A month after the [illegible] ation the child was taking nourishment well, the [illegible] the head was moved freely. The bones of the cranium were [illegible] ling, and the only unclosed space was the anterior fontanelle, which measured three-and-a-half inches in the transverse diameter. The site of the operation wound, which was at the left [illegible] now lay over the parietal bone, and was [illegible] from the scalp. For the next two-and-a-half months the condition remained practically stationary, and during this period the patient passed successfully through an attack of measles. There was a luxuriant growth of hair on the head, which concealed the shape of the skull, but ultimately it was observed that the fontanelle seemed rather prominent on the right side. The head having been shaved, the following curious state of affairs was manifested. The asymmetry of the skull which had been previously noted was much more marked, the right side being evidently larger than the left. The right side of the fontanelle was prominent, tense, and fluctuating, and on a tracing being taken was seen to cover a much larger area than the left half, which was not elevated. The left parietal was overriding the left frontal bone, while on the right side the corresponding bones were merely in contact. It was apparent that while the drainage of the left ventricle had been as complete as possible, that of the right had come to a standstill, and the fluid was again increasing. Accordingly an operation was performed on the right side of the head similar to that performed on the left four months previously. On opening the dura mater the brain bulged at once, there being no adhesions and no extra-cerebral fluid. On puncturing the brain fluid was reached at a very short distance from the surface, and flowed at first with some force. A catgut drain was introduced in the usual manner. This operation was followed by complete disappearance of intracranial tension and gradual diminution in the size of the right side of the head. At the present time, six months after the first operation and a month after the second, the fontanelle measures two inches transversely, and all the bones of the cranium are overriding in an extreme degree. There is now a conjunctival reflex, and the child can see. She is gaining weight, and moves the head and limbs much more freely. There are no evidences of mental development.

From these cases it will be seen that the observations of Dr. Leonard Hill on the absorption of cerebro-spinal fluid through the meninges under physiological conditions also hold good in the pathological condition of hydrocephalus. No other mechanism will explain the disappearance of all tension, and the steady diminution in the size of the cranium which followed the operation. The process consisted in making an outlet for the ventricular fluid through the cortex of the brain, and as the external wound had healed in a few days there was no channel open to the fluid except through the meninges. In cases of hydrocephalus, where the ventricles have been tapped through the cranium, the usual course of events has been for the fluid to reaccumulate rapidly in the ventricles. As a result of this method, on the other hand, the observer could note the head diminishing in size week by week, and that without any sudden alterations in the intracranial conditions, such as have produced disastrous results in various forms of operation for hydrocephalus, and have led many physicians and surgeons to discard all operative measures in its treatment.

We think it may be taken as proved that if a permanent opening can be made through the cortex cerebri in hydrocephalus, Nature will do the rest as regards removing the fluid and preventing the recurrence of any injurious intracerebral pressure. But the establishment of this permanent opening, that is, the method of drainage, is a matter of some difficulty in certain cases. In the above the drain composed of strands of catgut seemed to act efficiently during the period the patients were under observation. In a third case, however—the only other one of chronic hydrocephalus which has been thus treated—the result was not successful.

The patient was 15 months old and had suffered from hydrocephalus for two months. The anterior fontanelle measured 5½ inches transversely. An operation similar to that described was performed. The brain cortex at the site of puncture was about ¾ inch thick. No decrease in tension or in the size of the head followed this operation, and it was repeated a fortnight later. The former drain was removed and a fresh one introduced. Unfortunately the patient happened to be in the incubation stage of measles, which appeared in a few days, was accompanied by broncho-pneumonia and terminated fatally a fortnight after the operation. At the necropsy both lateral ventricles, the third ventricle, the iter, and the fourth ventricle were much distended with fluid, but no obstruction at the base in the shape of thickened or adherent membranes could be discovered. In the right lateral ventricle lay the ends of the catgut drain which could be traced up to the surface of the brain. At the site of operation the dura mater was adherent to the pia arachnoid and no fluid was present there or in the subdural space, nor did it pass out of the ventricle until the catgut drain was removed. There was no evidence of any inflammation around the site of operation—cerebritis or meningitis—and the operation had not affected the health of the child or the hydrocephalus.

This case suggests two difficulties in connection with the establishment of drainage. First, the brain tissue between membrane and ventricle may be so thick as to close in around the catgut drain and to prevent the passage of fluid. This difficulty did not arise in the two cases previously related because in them the brain tissue was extremely thinned out by long continued intra-ventricular pressure. Secondly, the inflammation set up by the wounds in the dura mater and the cerebral cortex may lead to the formation of adhesions around the artificial outlet which seal it up. This difficulty may be met by making the opening in the cortex as far as possible from that in the dura mater and allowing so much fluid to escape as will prevent the opposed surfaces from coming im-

mediately in contact. Further experience is required both as to the best kind of drain for the purpose and the manner in which it is to be employed.

In chronic hydrocephalus the communication between the lateral ventricles is as a rule very free through the much enlarged foramen of Monro, in rare cases this opening is closed. Hence we thought that drainage of one ventricle would probably ensure an equal diminution in the amount of fluid contained in the other, and the operation was performed only on one side of the head. In both of the cases related, however, it was noted that the diminution in the size of the head was more marked on the side operated on, and in the second case it became clear after a time that the discharge of fluid from the ventricle on the side not operated on had ceased, and that the fluid was in fact reaccumulating. It seems probable that at first there had been a communication between the ventricles, but that later this had become closed, possibly by the descent of the falx cerebri, as the head diminished in size. To ensure equal and symmetrical relief of the hydrocephalic condition, it might be better to do two operations—simultaneously or with a short interval—one on each side of the head.

In this communication we have referred to intra-cranial drainage as applied to cases of chronic hydrocephalus. There are of course many forms of disease, acute and subacute, in which ventricular distension is the most serious complication, such as tuberculous meningitis, simple basilar meningitis, tumor cerebri, etc. In these also treatment by intra-cranial drainage affords some hope of relief and we propose to give the results of our investigations on this subject later on. In considering the question of operation in chronic hydrocephalus we have to keep in view first the relief of tension and secondly the restoration of cerebral function. The relief of tension is secured by the removal of the fluid accumulated in the ventricles aided in certain cases by the diminution in size of the distended cranium. The restoration of cerebral function is dependent on the development of the brain. If the case is one of congenital hydrocephalus and there have been no signs of mental development before operation, the prospect of the growth of cerebral tissue becomes less with each month that the infant has lived. If the hydrocephalus has developed in infancy, with failure of mental power, loss of sight and hearing, etc., a time is soon reached after which complete recovery cannot be looked for. The importance of an early diagnosis is manifest, and treatment should be adopted as soon as the affection is clearly recognised as chronic progressive hydrocephalus.

Discussion.

Dr. A. J. Stiles (Spalding) said he had done three operations on the same lines as those suggested by Mr. Watson Cheyne, and at his suggestion. The first was an ordinary case of congenital meningocele. The child died of meningitis on the fifth day. He had used catgut sutures in this case. In the second case he used horsehair instead of catgut. The wound healed on the sixth day, and the child seemed to be generally improved, but the head was found on measurement to have increased in size after the operation. In the third case the child died the same night. In an experiment he had made in which he had injected the carotid arteries with formalin, he found on removing the brain that the fluid, instead of being enclosed in the ventricle, had escaped through a communication between the lateral ventricles and the subarachnoid space. An enormous subarachnoid cyst was formed and the cerebellum pressed down. He thought that they could not look for much benefit from this operation. In a case of simple basal meningitis he had trephined above the foramen magnum, and in this case there was obstruction to the passage of the fluid. The child, however, died of surgical kidney on the ninth day. In cases of simple inflammation with adhesions it was possible that benefit might result.

Dr. G. F. Still said it was important to differentiate the cases of hydrocephalus which were congenital in origin from those which were due to simple posterior basic meningitis. In the latter class one practical point in the bacteriology of that disease was to be remembered; namely, that the diplococcus of posterior basic meningitis might survive in the fluid in the lateral ventricles long after the acute stage of the disease was over; thus in one case pure growths were obtained as late as the 103rd day from the onset of the disease. It seemed possible that in such cases there might be a risk of further infection if the fluid from the ventricles were drained with its micro-organisms into the subdural space, but such a risk could be avoided by postponing operation until the microorganism had already disappeared. The date of this disappearance could only be determined by further bacteriological investigations. It certainly seemed to vary considerably; thus in one case the ventricular fluid proved sterile on the 75th day; in another, as already stated, the micro-organism was still present on the 103rd day of the disease. In one case, an infant in whom artificial communication was established between the lateral ventricles and the subdural space, death occurred a few days after the operation, and was preceded by a rise of temperature. In this case the operation was done on the 30th day, and the fluid from the lateral ventricles gave pure cultures of the diplococcus of posterior basic meningitis. No necropsy was obtained, but it seemed possible that in such a case a further infection might have been caused by allowing the ventricular fluid, which contained large numbers of the diplococci, to run into the subdural space. This was, of course, merely a suggestion, and one was fully aware that the occurrence of pyrexia was too common after certain operations on the brain to be of much value as evidence of infection. But the suggestion was, perhaps, worth bearing in mind if the operation described by Dr. Sutherland and Mr. Cheyne were found worthy of further trial. Repeated lumbar puncture had been advocated, but he had found absence of the iter in some cases; so that in these the procedure would have been useless.

Dr. Sutherland's Reply.

Dr. Sutherland agreed with Dr. Still that lumbar puncture was often useless on account of obstruction. He alluded to the rapid rise of temperature and sudden death which occurred if the ventricle were emptied rapidly.

THE MICRO-ORGANISM OF SIMPLE POSTERIOR BASIC MENINGITIS IN INFANTS.

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The simple posterior basic meningitis of infants—a non-tuberculous form of meningitis which occurs mostly within the first year of life, and affects especially the posterior portion of the base of the brain and also the spinal cord—is a condition of no great rarity. In the earlier half of the year it is always more or less prevalent in London, and there can be little doubt that many cases which appear in the Registrar's returns as tuberculous meningitis are in reality cases of simple posterior basic meningitis. It has been shown on clinical grounds that there is good reason for believing that this form of meningitis is a specific disease, and I venture to bring before you some observations from the pathological and bacteriological standpoint which seem to confirm this view.

It is not my purpose to speak here in detail of the clinical symptoms of this condition. It will be sufficient for the identification of the disease if I briefly sketch its characteristic symptoms. An infant becomes fretful and feverish, has one or more convulsions, and vomits: then the head is noticed to be drawn back, or perhaps the head retraction is the first symptom noticed. Weeks pass by, and the head retraction persists, almost always the most striking symptom, perhaps so extreme that the occiput almost touches the buttocks. The limbs are often rigid, and in many cases there is blindness, although it is very rare to find any inflammatory change in the optic disc. The child slowly emaciates, and in most cases some degree of hydrocephalus supervenes. Death occurs usually three or four months after the onset; sometimes, however, it occurs within six or seven weeks, and I have seen a fatal result in three weeks. On the other hand, in quite an appreciable percentage of cases there is more or less complete recovery.

I wish to draw attention particularly to this variation in the duration of the disease, for it explains, I think, to some extent, the discrepancy of opinion which has existed as to its pathology and etiology.

The cases may be divided into three groups: (i) Those fatal within six weeks—that is, during the acute or inflammatory stage; (ii) those fatal at the end of three or four months—that is, during the chronic or hydrocephalic stage; (iii) those in which recovery occurs.

Corresponding with these variations in the duration of the disease, there are differences of pathological appearance in groups (i) and (ii). In the former there is much lymph over the base of the brain and on the spinal cord, in the latter there may be no trace whatever of lymph, only thickening and opacity of the pia arachnoid, with adhesions especially between the medulla and cerebellum. These are briefly the morbid changes found, and it is important that it should be realised that there are such differences in the morbid anatomy of this disease in its early and in its late stages. In the early stage the condition has not been sufficiently differentiated from what one might call "secondary" suppurative meningitis, particularly the common form due to the pneumococcus. In the late stage it has almost certainly been labelled sometimes as healed tuberculous meningitis, sometimes as a chronic syphilitic change.

I wish to lay great stress on one negative point in its morbid anatomy which is curiously constant and characteristic.

In the simple posterior basic meningitis of infants it is almost invariably the case that no lesion, except such accidental complications as occur in any prolonged disease during the last few days or hours of life, is found in the viscera: whereas in other forms of meningitis exudation in the meninges is almost invariably secondary to some obvious focus of infection elsewhere. In 15 consecutive cases of suppurative meningitis which I examined, all except one, in which there was doubtful pneumonia, showed an obvious primary focus of infection, as may be seen from the following figures:—

Lesions Associated with Ordinary Suppurative Meningitis in Fifteen Consecutive Cases.

Empyema	5
Thick lymph on pleura	3
Slight pleurisy	1
Recent pneumonia (?)	1
Ulcerative endocarditis	1
Membranous colitis	1
Necrosis of petrous bone	2
Erysipelas	1

In 15 consecutive cases of posterior basic meningitis which I examined not a single case showed any inflammatory lesion elsewhere, excepting 2 cases in which a lymph exudation about certain tendon sheaths was found, to which I shall refer again, and one in which early tuberculous lesions were found in the viscera—evidently a mere coincidence.

The middle ear in these cases, as in the vast majority of children who die of any disease lasting more than a few days, contains mucopurulent secretion, but I have never seen a case of posterior basic meningitis in which there was any bone disease in connection with the ear, or any evidence whatever of extension of inflammation from the ear, and the same may be said of the nose.

Simple posterior basic meningitis, therefore, differs markedly from other forms of meningitis in its morbid anatomy, and this fact, together with the constancy of its clinical and pathological features, seems to point to its being a specific disease due to some micro-organism. In 7 out of a series of 8 cases reported at the Pathological Society of London last year I found a diplococcus, which, so far as the evidence went, appeared to be the specific cause of the disease. The one case which proved sterile died three and a half months after the onset of the disease.

I have since then made four *post-mortem* examinations of infants with this disease, and in two of these the micro-organism was present in the exudation at the base of the brain, apparently in pure growth, but owing probably to the use of strong carbolic acid for the sterilisation of instruments no cultures were obtained; the other two cases died respectively on the seventy-fifth and eighty-ninth day after the onset of the disease, when all exudation had already disappeared.

In another case I have recently obtained pure cultures of the micro-organism from the cerebro-spinal fluid taken from the lateral ventricles during life, in the course of an operation for the establishment of artificial drainage. It would seem, therefore, that the micro-organism is present during the earlier stage of the disease, but disappears later. In one case, however, I obtained it in pure growth from the depths of the lateral ventricles as late as the 103rd day.

The diplococcus of posterior basic meningitis sometimes appears to be in the cells of the exudation, but more often it is outside the cells. The two cocci of which it consists have their opposed surfaces usually more or less flattened, and often closely resemble gonococci, especially when the intracellular appearance is seen. The diplococci are often in pairs side by side, so that an almost sarcina-like appearance may be produced. Growth is rapid on agar-agar or glycerine agar, and reaches its maximum after about thirty-six hours. There is no growth at the ordinary room temperature, nor on gelatine, and growth on blood serum is scanty. It grows well in milk or broth. It is easily stained by methylene blue, but does not stain by Gram's method.

An important feature is its long vitality; it often lives thirty days, or even longer, on agar-agar or glycerine-agar, and this constitutes the most striking difference between this micro-organism and the diplococcus intracellularis described by Weichselbaum.

Inoculations were made into mice, rabbits, and guinea-pigs, and it was found that subcutaneous inoculations did not prove fatal in any case; intraperitoneal injection was sometimes fatal, sometimes not.

This micro-organism differs widely from the pneumococcus. I have pointed out the differences elsewhere,[1] and only mention the most important of them here. The diplococcus of posterior basic meningitis is smaller; it is never lanceolate, its growth is thicker and more opaque, its vitality is far greater, and it does not stain by Gram's method. On the whole it seems most reasonable to regard the diplococcus of posterior basic meningitis as a modification, by a process of natural variation, of the diplococcus intracellularis, and this modification of characteristics may possibly account in some degree for the clinical differences between the simple posterior basic meningitis of infants and the epidemic cerebro-spinal meningitis of which the diplococcus intracellularis is probably the cause.

The specific nature of the diplococcus of posterior basic meningitis seems to be confirmed by its presence in pure growth in the lymph about the tendon-sheaths in the curious periarthritis, which is almost the only complication, and that a rare one, of this disease. The finding also of this micro-organism in the cerebro-spinal fluid during life gives further confirmation. An infant, aged 5 months, under the care of Dr. Lees for typical symptoms of posterior basic meningitis, was trephined by Mr. Ballance, on the thirtieth day of the disease, with a view to establishing communication between the lateral ventricles and the subdural space. A trocar and cannula were passed into the lateral ventricle and the cerebro-spinal fluid was received directly on to agar-agar and glycerine-agar media. Pure cultures of the micro-organism were obtained on both, and moreover some cells in the fluid were found to contain the micro-organism.

From the pathological point of view the presence of this micro-organism if it be, as seems almost certain, the specific micro-organism of this disease is of considerable importance. I have already pointed out that in the early stage the disease may be confused by the pathologist with other forms of meningitis. One would probably be right in saying that whenever an exudation of lymph is limited, or almost limited to the base of the brain and to the spinal cord, and there is no visceral lesion or obvious focus of infection elsewhere, the condition is almost certainly not due to the pneumococcus or to any of the ordinary pyogenic organisms, but is due to the specific disease, posterior basic meningitis, and can be differentiated bacteriologically in the earlier stage of the disease by the presence of the micro-organism which I have described.

A certain number of cases have been recorded in which adhesion and thickening of the pia mater at the base have been taken as evidence of past and recovered tuberculous meningitis.

One of the cases which I examined seems worth mentioning in this connection. An infant, aged 11 months, developed symptoms of meningitis; there was persistent head retrac-

[1] *Journal of Pathology*, vol. v, 2.

tion, and vomiting with irregular pyrexia for a few weeks, and a diagnosis of posterior basic meningitis was made. The infant survived the acute stage, and lived on with slight hydrocephalus for nearly four months from the onset. There was slow emaciation, and death apparently from exhaustion. At the necropsy the brain showed no trace whatever of lymph, but only fibrous thickening of the pia arachnoid at the base and some adhesion between the medulla and cerebellum. The lungs showed early tuberculous foci, with caseous mediastinal glands; there was very early tuberculous ulceration of the intestine and slight caseation of the mesenteric glands.

Here, then, is a case which so far as morbid anatomy goes, appears at first sight to be almost positive proof of the possibility of recovery in tuberculous meningitis. The infant had a meningitis at the base of the brain which recovered, and within a few weeks of the meningitis it died of generalised tuberculosis.

Fortunately, however, cultures were made from the fluid in the recesses of the lateral ventricles, and pure cultures of the diplococcus of posterior basic meningitis were obtained. Had the micro-organism already disappeared, as usually happens at so late a period in the disease, one can well imagine that such a case would have gone to swell the number of supposed recoveries from tuberculous meningitis.

This case at least emphasises the necessity for caution in deciding the nature of a past meningitis. Simple posterior basic meningitis may occur in a tuberculous infant, and an infant with simple basic meningitis may, especially in its enfeebled condition, develop tuberculosis.

Much the same might be said of syphilis. It would be strange indeed if this form of meningitis did not occasionally occur in a syphilitic child. In such a case the fibrous thickening at the base of the brain in the chronic stage of posterior meningitis might easily be mistaken for a syphilitic condition. The periarthritis which I have mentioned is also a possible source of error. I have once at least known the dusky reddening and swelling round a joint to be regarded as a point in favour of the meningitis being syphilitic. It was in that particular case that pure growths of the diplococcus of posterior basic meningitis were obtained both from the meningitis and from the exudation around the tendon sheaths close to the joint, which itself was healthy.

I may say, in conclusion, that my observations were all made on cases under the care of Dr. Barlow, Dr. Lees, and Dr. Penrose, to whom I am indebted for permission to make use of them.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CASE OF RECURRENT POISONING BY THE PRIMULA OBCONICA.

In October, 1896, I was called to G. W., aged 40, head gardener on an estate near. I found him suffering from tremendous œdema of the right hand, with well-marked lymphangitis of right arm, and tenderness in axillary glands. Next day there began a profuse serous discharge from several points on the back of the hand, and from between the second and third fingers. The pain in the joints was excessive, and the patient was slightly feverish. The discharge continued for eight days, gradually decreasing.

In June, 1897, the patient had a similar attack, all the symptoms of the first being reproduced, only with less severity. This attack yielded to treatment in a week.

In September, 1898, a third attack came on, this time in the right foot. Pain, œdema, and slight serous discharge from dorsum of foot. The discharge was much less than in the two attacks in the hand, and on the fourth day the swelling had completely disappeared.

Diagnosis.—When called in the first time I could discover no skin abrasion whatever, and inquiry failed to trace any of the usual causes of local blood poisoning. Careful questioning, however, disclosed the fact that a few days previously the patient had handled a number of plants of the primula obconica. These plants were subsequently banished from the greenhouses. In the second and third attacks there was again no abrasion on hand or foot, and the patient had handled none of these plants since October, 1896. I concluded, therefore, that the poison must still be in the tissues in spite of the lapse of time (two years) from its first effect.

Treatment.—In each attack I applied a carbolic poultice locally, and administered liquor ferri perchlor. internally. The symptoms began to abate from the commencement of treatment in each case, having up to then gradually got worse.

Note.—The time between the first and second attacks was eight months; between the second and third sixteen months; indicating a gradual elimination of the absorbed poison, also proved by the lesser severity of the symptoms.

Query.—For what length of time should one expect a patient to be liable to these recurrent attacks?

Gerald R. Leighton, M.B., C.M.Edin.
Grosmont, near Hereford.

FOREIGN BODY IN LUNG. ABSCESS: RECOVERY.

I was called to see H. D., aged 9, on February 23rd. I was told that he had swallowed the claw of a small crayfish the day before, that he complained of pain in the stomach, and had vomited a few times. There was a slight urticarial rash over the chest and abdomen. I did not notice any difficulty in breathing nor any laryngeal symptoms. I prescribed medicine and diet.

On May 20th I was called again, and found pneumonia of the upper lobe of the right lung, and moist sounds an inch and a half from the sternum, extending to the lower border of the second to the upper border of the third rib. The temperature was 103.4° and the pulse 130. I was told that he had had a cough from about a fortnight after I had last seen him, and had the day previously coughed up a portion of the claw. The mother then informed me that after he had "swallowed" the claw he had a fit of choking: she had thrust her finger down his throat and brought up her finger with blood on it. The portion of claw had unfortunately been thrown away, but on May 24th he coughed up the terminal joint, which was handed to me; it is ¾ inch in length and covered with spines. He made a somewhat tardy recovery, pus appearing in the sputa till about the middle of June.

J. H. Murray-Aynsley, L.R.C.P.Lond., M.R.C.S.
Eketahuna, New Zealand.

TENDER HEEL DUE TO EXOSTOSIS OF THE OS CALCIS.

Among the minor complaints met with in general practice, but not frequently seen in hospitals nor described in textbook, is one that is characterised by lameness due to pain in the heel when it is pressed on the ground, completely disabling the patient from the ordinary avocations of life.

In a typical case there is no pain when the foot is at rest, but on pressing the part of the heel over the posterior tuberosities on the inferior surface of the os calcis about the points of the ligamentous attachments, considerable tenderness is felt, extending in some cases round the bony ridge to the superior surface anterior to the tendo Achillis.

The pain is usually described as resembling the prick of a needle or piece of glass, and as if penetrating the bone. On examination one can sometimes feel a small nodular substance in the most painful part.

I have recently examined six cases by radiography 5 women past middle life and 1 a man, aged 28, a clerk in an office. Considerable care and patience were necessary to get a good representation of the true condition on the negative, but by fixing the tube at a distance of from 20 to 40 inches from the plate, according to the substance of the foot, with an exposure considerably less than that required to define the normal bone shadow, I obtained excellent negatives showing a ring of bony growth surrounding the posterior end of the os calcis, and giving it a hammer-head appearance, a condition somewhat similar in a minor degree to the bony outgrowths fringing the small joints of a patient with rheumatoid arthritis. Four of my cases were women engaged in shop work, very energetic in character, on foot the whole day, and habitually wearing rather thin shoes. One case was a lady of active habits, but reduced in health and strength by a long resi-

dence in India. The sixth case was a young man whose days (of ten hours) were spent standing at a desk. In all the cases, except only in that of the young man, in whom both heels were affected, the pain was noticed somewhat suddenly in one foot. There was no rheumatic history or constitutional complication in any of the cases.

The treatment recommended consisted of hot douches, application of belladonna plaisters, and a circular pad to relieve the pressure.

Lincoln. G. M. LOWE, M.D., F.R.C.P.Edin.

POISONING BY CANNABIS INDICA: RECOVERY.

ON a Friday evening at 10 P.M. I was called to see a gentleman, aged 39 years, who was found lying "in a faint on the floor" in his lodging. The patient had been seen by his friend, who came for me, at 9.15, and he was then in perfect health. I found the patient lying on his back breathing quietly but feebly, his pulse was weak and irregular, the heart sounds were just audible. The whole body was bathed in perspiration and felt cold to the touch, the limbs flaccid, plantar reflex absent. Eyelids closed. On opening them the pupils were found widely dilated. There was a slight contraction of the pupils on bringing a candle close to the eyes, but they dilated immediately on removing the candle, though the room was brightly lighted. The patient could not be roused by shaking or by shouting in his ear. There was no movement of the eyeball or lids on touching the conjunctiva.

I injected $\frac{1}{20}$ gr. strychnine sulphate hypodermically, and in a few minutes the patient opened his eyes and looked round in a frightened sort of way and tried to raise himself, but was unable to do so. I asked him what had happened to him. He tried to speak and pointed in the direction of the fireplace. Looking in the direction indicated I saw two phials on the mantelpiece. One was unlabelled and nearly empty, having only a few drops of a dark brown sweet smelling liquid in it. The other bottle, an ordinary 2 ounce phial, was labelled "Indian Remedy," and was about three-fourths full of a greenish coloured liquid. I tasted the liquid, and as it reminded me of cannabis indica I asked, "Indian hemp?" The patient nodded his head and then went through the motion of putting something to his lips and drinking, and then pointed to the bottle in my hand and again went through the movements as if drinking. I asked him, "Did you drink all this? do you understand what I say?" He nodded and said something which sounded like "Yes, all."

I gave him a hypodermic injection of $\frac{1}{10}$ gr. of apomorphine, with the result that in less than five minutes he vomited a large quantity of dark green fluid. He was then given a breakfast cupful of black coffee which he seemed to relish, but vomited again in a few minutes. He then lay back and slept for about a quarter of an hour. On waking he said he felt better, but complained of numbness in his arms and legs. We put him to bed between the blankets and he fell asleep almost immediately. I left him asleep at 11.45 P.M. At 1.30 A.M. I was called again as the patient had been sick five or six times within an hour and his friend had got nervous. I found him sitting retching violently, but bringing up nothing. I gave him a little iced milk and soda, which relieved him almost at once and he again lay down and fell asleep. I saw him again at 10.30 A.M., he seemed very comfortable, said he slept from 2.20 till 8 o'clock, when he had a small cup of bovril and some dry toast.

He says he must have taken about two teaspoonfuls of the poison, which was the ordinary *B.P.* tincture of Indian hemp. He has been in the habit of taking a few drops occasionally for sleeplessness, but does not know why he took so much this time. He had taken a little hot gin and water a short time before and thinks he must have been a little "confused." After taking the dose he sat down in an armchair and he remembers no more till he found me bending over him. He had no pleasant sensations, but when he awoke felt frightened and though he knew what was going on he had no power to answer my questions at first.

I saw the patient on the Sunday forenoon following and he said that though weak he had nothing to complain of, and he expressed himself as sorry for all the trouble he had given, but was more than grateful that he had been "saved."

New Cross, S.E. T. EDMONDSTON SAXBY, L.R.C.P., L.R.C.S.E.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GUY'S HOSPITAL.

CASE OF IMPACTED RENAL CALCULUS IN LEFT URETER AND ATROPHIED RIGHT KIDNEY: SUPPRESSION OF URINE: OPERATION: DEATH: NECROPSY.

(Under the care of Mr. HOWSE.)

[Reported by Mr. MONTAGUE WAY, M.R.C.S., L.R.C.P.Lond., House Surgeon.]

A MAN, aged 47, was admitted for suppression of urine. He gave a history of his having suffered from "colic" for the last sixteen years, which he described as sudden attacks of extreme pain in the left loin, descending to the left testicle, accompanied with collapse and vomiting and followed by presence of blood in the urine. On the night previous to admission he went to bed feeling quite well, but was soon awakened by an attack of colic of unusual severity, which lasted an hour; he vomited several times and had the desire to micturate, but could only pass an ounce of blood-stained urine.

When he came up to the hospital he had passed no urine for twelve hours, but had the desire to do so. He was admitted, and ordered a hot bath; while in the bath he passed half an ounce of blood-stained urine. A catheter was passed, but no urine came away; this was done again twelve hours after with the same result. The man appeared extremely ill, suffering great pain; the left testicle was retracted and somewhat atrophied. There was considerable pain on palpating the left loin, but nothing definite could be felt. Impacted calculus in the left ureter was diagnosed and an operation was advised. A.C.E. mixture was given, and an incision in the loin over the left kidney was made and the kidney exposed. It was found to be considerably larger than a normal kidney and of a hard leathery consistence. No calculi could be felt. An incision was made along the convex edge of the kidney and a small calculus was found and removed.

A trocar and cannula were passed into the pelvis of the kidney and some blood-stained urine drawn off. A sound was then passed down the left ureter for 6 inches, but no obstruction was found. The hæmorrhage from the incision in the kidney was extraordinarily severe, very much more so than usually results from such an incision; it quite precluded the possibility of prolonging the operation. The patient being extremely collapsed a drainage tube packed closely round with iodoform gauze was placed in the wound, dressings applied, and the patient put back to bed. Patient never recovered from the collapsed condition and died 4½ hours after the operation.

At the necropsy a small uric acid calculus was found firmly impacted in the left ureter 2 inches from the bladder; the pelvis of the left kidney was not dilated, but contained four minute calculi. The right kidney was very small, the kidney substance being completely disorganised and atrophied. The lobules were distended with thick cheesy pus, probably of a tuberculous nature. The right ureter was very much thickened throughout its whole extent, and its lumen was completely blocked. Thus the left kidney was the only working organ, and this may very probably explain the very severe hæmorrhage met with. The whole specimen is preserved in the Guy's Hospital Museum.

MEDICAL STUDENTS IN GERMAN-SPEAKING UNIVERSITIES. According to the most recent issue of the German *Universitätskalender* the number of students of medicine in the several universities is as follows: Munich, 1,416; Vienna, 1,192; Berlin, 1,090; Würzburg, 680; Leipzig, 630; Freiburg, 522; Kiel, 428; Graz, 417; Erlangen, 414; Breslau, 364; Zürich, 340; Bonn, 337; Strassburg, 324; Greifswald, 323; Tübingen, 278; Marburg, 274; Heidelberg, 272; Geneva, 270; Königsberg, 249; Halle, 245; Giessen, 240; Göttingen, 225; Jena, 222; Bern, 189; Lausanne, 145; Basel, 141; Rostock, 99.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

Edmund Owen, F.R.C.S., President, in the Chair.

Monday, October 10th, 1898.

After the business of the general meeting had been got through, Mr. Edmund Owen, the newly-elected President, delivered his introductory address, an abstract of which is published at p. 1118.

Some Considerations Preliminary to the Study of Dyspepsia.

Dr. Allchin observed that there was no department of practical medicine or group of clinical phenomena which was investigated, described, or considered with greater vagueness and looseness of thought and method than the subject of indigestion. He contended that there was nothing to justify this attitude in view of our knowledge of the physiology of the subject and the frequency with which instances of these disorders came under observation. The very word "digestion," or "dyspepsia," with which it was synonymous, was employed with much uncertainty and variability of meaning. He urged that this term ought to denote the entire series of changes which the ingesta underwent during their passage along the alimentary canal, and it ought not therefore to be restricted to changes which occurred in the stomach only. Of the four successive stages of digestion, the oral or salivary, the gastric or peptic, the pancreatico-biliary and the intestinal, the gastric was probably far from being the most important, any deficiency being made up for at other stages. He pointed out that very little absorption, if any, of digested proteids took place from the stomach, and there was much reason to believe that the gastric functions might, in great measure, be compensated elsewhere in the canal, in proof whereof he instanced the remarkable case of Dr. Schlatter's in which the stomach was extirpated without entailing much subsequent inconvenience to the patient. Digestion should not be taken to include the function of absorption, which was wholly different in its nature from the complex chemical changes which constituted digestion. He classified the disorders of digestion from a causal point of view as follows: (1) Errors of diet; (2) diseases of the digestive organs, structural, nervous, or in connection with the blood or lymph; (3) improper bacterial action in the gastro-intestinal contents; (4) defective absorption of the digesta; and (5) abnormal intestinal excretory processes. He pointed out that diseases of the organs of digestion not only gave rise to the symptoms of dyspepsia proper, but also to symptoms of their own, such as hæmatemesis, ectasia, etc., so that a given case of dyspepsia might comprise symptoms of a complicated kind due to the combination of the two sets of symptoms. He enumerated the signs and symptoms of dyspepsia, adding that it was not so much the number and variety of these symptoms that made the investigation of the subject difficult as the fact that many totally different conditions gave rise to similar symptoms. An important point in the diagnosis, as bearing on treatment, was to distinguish between dyspepsia due to errors of diet and that due to morbid states of the digestive organs. This differentiation was rendered the more difficult by the very small part that physical examination played in the detection of disease of the alimentary viscera. He protested against the use of such terms as "functional disorders" of the stomach or bowels, urging that all such conditions were presumably associated with, and due to, structural changes. He then proceeded to discuss the condition described as "nervous dyspepsia," concluding that, at most, this would not indicate a group of symptoms, but indigestion primarily of nervous origin.

Dr. Maguire remarked that in nervous diseases entailing loss of functions neurologists were agreed that the functions disappeared in a definite sequence, those which were the last to be developed being the first to disappear. He pointed out that in the animal organism the fœtus first fed on the cell albumen, which did not require digestion. After birth it fed on milk, which contained proteid in the form of casein, carbohydrates, and fats. The only constituent of milk that required digestion was proteid. The digestion of fat only amounted to emulsification, and in milk it was perfectly emulsified, and of course the milk carbohydrates could be absorbed without digestion of any kind. The digestion of carbohydrates did not commence until the seventh month of extrauterine existence, and was probably not complete until after 12 months of age. The digestion of fat probably did not take place to any great extent until after puberty—witness the general distaste of children for fats. The sequence of development of these functions was, therefore, first proteid, then carbohydrates, and lastly fats. In dyspepsia they disappeared in an exactly opposite order. Rest was the great treatment for all disordered functions, and this might be afforded in respect of starches by the so-called Salisbury treatment. He suggested that the acids contained in lemon squash might assist in the emulsification of fats and so assist in their absorption.

Dr. Allchin, in reply, did not think a classification of dyspepsias on a developmental basis was practicable, and before accepting the statement that the various functions of digestion disappeared in the order stated he should require further evidence. He demurred to the view that fats only required to be emulsified to undergo absorption, adding that this was not the view actually entertained. Moreover, in certain morbid conditions of the stomach interference with proteid digestion was present from the first.

OBSTETRICAL SOCIETY OF LONDON.

C. J. Cullingworth, M.D., President, in the Chair.

Wednesday, October 5th, 1898.

Puerperal Septicæmia treated by Antistreptococcus Serum.

Dr. J. Walters and Mr. A. R. Walters read a paper on a a case of peurperal septicæmia treated by antistreptococcus serum. Mrs. F., multipara, aged 34, had a child in April, 1895. She again became pregnant in March, 1897. Severe flooding set in in May, followed by irregular hæmorrhages and foul discharge, which lasted till April, 1897. The uterus was dilated and freely curetted on May 9th, with strict antiseptic precautions, and was afterwards swabbed with carbolic lotion and with iodine liniment. On May 10th the patient was comfortable and the temperature normal. During the next five days there was slight fever, and the remains of a macerated fœtus were passed. On May 16th intense headache urticarial rash, discharge more offensive; temperature 98.5° to 102.5°, pulse 100. The uterus was washed out with perchloride of mercury (1 in 2,000). At 10.30 P.M. the patient had a severe rigor, and the temperature rose to 104.5°, and the pulse to 120. On May 17th the tongue was dry, the temperature 101° to 103°, pulse 120. Ten c.cm. of antistreptococcus serum was injected. At 8.30 P.M. the patient was bright and cheerful, and the skin moist; temperature 98°, pulse 80. On May 18th headache returned, and the temperature rose to 100.5°, the pulse to 100. A second injection of 10 c.cm. of serum was given, and the temperature fell to 98° and the pulse to 75. The second injection was followed by very great depression, which lasted for several days; there was also transient albuminuria. The patient recovered, and the authors stated that there could be no reasonable doubt that the recovery was entirely attributable to the use of the serum.

Dr. Amand Routh said it was difficult to be sure in any given case, when several methods had been adopted, that the successful ending was due to one of them. Out of five or six cases treated by himself one had recovered from the septicæmia as a result of the antistreptococcus serum alone. It was not wise to inject a potent agent unless it had previously been ascertained that the infection was due to streptococci, and the ordinary treatment, especially removal of all *débris*, should not be omitted.

Dr. Eden also thought it very important to ascertain the nature of the infection before using the serum. In Dr. Haultain's series a different form of infection was present in each case; in one the Loeffler bacillus was present, and the case was successfully treated by the diphtheria antitoxin.

Dr. Robinson agreed that it would be interesting to ascertain what microbe was producing the disease; but he feared that this would be practically impossible. He had investigated a number of cases bacteriologically, but the results had been unreliable. Out of seven cases he had treated with the

serum five had died, the treatment apparently having no effect. Two of the cases recovered. In one of these, the only effect was that the patient seemed to sleep better afterwards. In the other patient, who had on the eleventh day a temperature of 104°, and a pulse of 120, and membranous vaginitis, the injections of the serum were followed at once by a fall of temperature, and the patient rapidly convalesced.

Dr. MCCANN said it was probable that more than one microbe was the cause of puerperal septicæmia. He suggested that the serum should also be used as a preventive in cases where sepsis would be likely to follow.

The PRESIDENT did not quite agree with the opinions that had been expressed that the serum ought not to be administered until it had been definitely ascertained that the offending microbe in the cases under observation was the streptococcus. He thought, as streptococci were usually present, we ought to give the serum without waiting for bacteriological investigation. The safe rule of practice was to explore the uterus digitally with the finger, under an anæsthetic (decomposing *débris* should be removed by the finger, and reliance must not be placed upon the douche), and then to administer the serum without delay.

Dr. JOHN PHILLIPS had administered antistreptococcic serum in several cases, but in only one was he certain that the patient's recovery could be attributed to its use. The patient had been ill for some weeks with acute septicæmia. Curettage had failed to produce benefit. Twenty injections were given in the course of twelve weeks. The temperature, which was very high, was always lowered, the delirium ceased, and the skin acted, the effect lasting several hours. In this case repeated examinations of the discharges for streptococci gave a negative result.

Dr. TATE had seen several cases treated by the serum, and in some of them the results appeared to be good. In one case the first injections were followed by improvement, but afterwards failed to give relief; possibly this case was one of mixed infection.

Dr. J. WALTERS replied.

ECTOPIC GESTATION COMPLICATED BY FIBROMYOMA.

The PRESIDENT read a paper on a case of early ectopic gestation (? tubo-uterine) complicated by fibro-myoma of the uterus. The patient, aged 33, was admitted into St. Thomas's Hospital on September 4th, 1897, said to be suffering from retroversion of the gravid uterus. Attempts had been made to reduce the supposed displacement, but without success. The patient had had one child nineteen years ago, and had last menstruated during the last week of April, 1897. Five weeks later she fell down some steps and had pain in the back and abdomen. This passed off, but returned three weeks later, and continued, gradually increasing in severity. A fortnight before admission clots were passed, and since than there had been an offensive discharge, and for the last five weeks sickness every evening. Further attempts were made to reduce the supposed displacement. On October 5th the patient was examined under ether, and the diagnosis was made that the uterus was enlarged by fibroids, and that there was also a pelvic hæmatocele due to an arrested tubal gestation. On October 21st an operation was performed, and the fibroid uterus and gestation sac were removed. After careful examination of the parts removed, the author concluded that the gestation was originally tubo-uterine, and that the fœtus had been extruded either into a diverticulum of the tube (which was more probable) or into the abdominal cavity.

Mr. ALBAN DORAN observed that in pure tubal pregnancy the fœtus and placenta had been found to be in separate dilatations (Chaput's case). Hence, in the President's case, the fœtus possibly lay in a true diverticulum of the tube. Rupture had occurred early, but the membranes had partly protruded to stop up the leak, and the fœtus had slipped into the protruding part, the placenta remaining behind.

Dr. AMAND ROUTH thought that Mr. Doran's explanation was probably correct.

Dr. ARTHUR GILES referred to a case which he had published in last year's *Transactions*, which also simulated retroversion of the gravid uterus.

The PRESIDENT, in his reply, said that this was the first case that had occurred in his practice in which a tubal pregnancy had involved the intramural portion of the tube.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—This Society held the first meeting of its seventeenth session on Friday, October 7th, at the West London Hospital, when the PRESIDENT (Dr. S. D. Clippingdale) delivered the inaugural Presidential Address on 'Some Considerations of the Life and Work of a General Practitioner.' He said the position held by the doctor in various ages could be ascertained by consulting contemporary literature, and he referred to allusions to the profession in Chaucer, Shakspeare, Burton, Molière, Pope, Dryden, Dickens, Whittier, and others to show that the doctor's position was one of increasing esteem and influence. He referred to the opinion expressed by Mr. Gladstone that doctors would eventually become the leaders of the people. He deprecated the entrance of medical men into local boards, believing the contentious proceedings of such bodies to be incompatible with the quiet necessary for medical life. The political doctor he considered as unsatisfactory as the political parson. Government should be advised in matters medical by a Minister of Health, while the profession itself should be represented by life peers created on the nomination of the Royal Colleges of Physicians and Surgeons. The doctor's duty as an instructor in hygiene was increased now that the Legislature had declared that a man might place his conscience above the law, especially as such "conscience" was the possession of ignorant people. In the interests of his patients the medical man would find it both profitable and pleasant to spend his holidays in visiting health resorts. Referring to the hard lot of medical men in poor districts, he expressed a hope that it might be possible to imitate the "affiliation scheme" among the churches and upon equitable and recognised principles for an interchange of practices to take place occasionally between practitioners in the east and west. In conclusion, he pointed to the advantages to be obtained from general practice, the variety, the insight into human nature, the affection shown by patients, and pointed to Mr. Luke Fildes's picture which had attracted so much attention as the picture, not of the Court physician or fashionable specialist, but of the family doctor in the humble cottage.—A vote of thanks to the President for his address, proposed by Mr. F. LAWRENCE, and seconded by Dr. H. P. POTTER, was carried by acclamation.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The following gentlemen have been elected officers for the ensuing year, 1898-99: *President:* Dr. Middlemass Hunt (Liverpool). *Vice-Presidents:* Dr. Davison (Bournemouth), Mr. John Bark (Liverpool), Mr. Wyatt Wingrave. *Council:* Dr. Dundas Grant, Dr. W. Hill, Dr. Greville Macdonald, Dr. Abercrombie, Dr. Percy Jakins, Dr. H. Woods (Dublin). *Treasurer:* Dr. McNeill Whistler. *Hon. Secretaries:* Mr. St. George Reid and Dr. Furniss Potter.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The inaugural meeting of the Society for the session 1898-9 was held on October 6th, Dr. T. D. PRICE (President) in the chair.- An address was delivered by Mr. W. H. BENNETT, Surgeon to St. George's Hospital, on Varix, its Causes and Treatment, with Especial Reference to Thrombosis. The causes of varix were divided into four groups, namely, congenital, obstruction, strain, and thrombosis. Congenital varix might be one of three kinds: (1) Subcutaneous only; (2) subcutaneous, but with communications with the deep veins; and (3) an overdevelopment of the venous system in a locality. Obstruction caused varix only when it was sufficiently prolonged to cause failure of the valves. Strain, even in the young, would cause varix to appear if persistently recurring. The yielding of the valves might be quite sudden, and be felt to have occurred by the patient. When this happened there was often to be heard a *bruit* if the stethoscope were applied over the vein. An illustrative case of this was mentioned. Thrombosis was by far the most important cause of varix on account of its danger to the utility of the limb, or even to life itself. The area of liability to thrombosis lay about the position where movements of flexion and extension were common; for example, in the neighbourhood of the knee, from just below the middle of the thigh to about 3 inches below the knee-joint. This situation was designated by Mr. Bennett "the dangerous area of varix." With special reference to treatment the varieties of varix were divided into two main groups: (1) those

where superficial veins alone were affected; (2) those which had important communications with deep veins. Whilst thrombosis was usually a danger on account of its liability to extend to the deep veins, and by the detachment of fragments to cause pulmonary embolism, yet it was occasionally a means whereby "spontaneous cure" was effected. Mr. Bennett gave an illustrative case of this occurring in a a varicocele, where an injury caused thrombosis in the varicocele and resulted in complete cure of that condition. In relation to the operative treatment of varix, Mr. Bennett did not think that all cases of varix required operation, but he was emphatic in his opinion that operation should be performed in thrombosis, especially where any tendency to embolism could be detected. A case illustrating the importance of operation in such cases was recorded. The operation which he recommended wherever possible was that of excision of the whole length of the thrombosed vein and ligature above and below. Numerous ligatures applied at different places were deprecated as an operation for varix.—The President, at the conclusion of the address, called on Mr. Anderson to propose a vote of thanks to Mr. Bennett for his most admirable address, and this was seconded by Dr. Handford, and carried with much enthusiasm.

Clinical Society of Manchester.—At the annual meeting of the Society held on October 4th the following were elected office-bearers for the session 1898-99:—*President:* A. Hill Griffith, M.D. *Vice-Presidents:* E. S. Reynolds, M.D., E. Roberts. *Treasurer:* C. H. Braddon, M.D. *Secretary:* T. A. Helme, M.D. *Librarian:* J. W. Smith, M.B. *Auditors:* C. F. H. Kitchen, T. Porter, M.B. *Committee:* Alfred Brown, M.D., R. Crean, M.D., J. Daniel, M.D., J. W. Hamill, M.D., T. Harris, M.D., J. Holmes, M.D., T. N. Kelynack, M.D., M. P. Ledward, M.D., H. Lund, M.B., C. T. B. Maisey, E. T. Milner, M.B., R. T. Parkinson, M.D., J. E. Platt, M.S., F. H. Westmacott.

Glasgow Medico-Chirurgical Society.—This Society met for the first time this session on October 7th, when the President, Dr. G. S. Middleton, gave a demonstration of cases. He showed (1) a case of Paralysis Illustrating the Difficulty of Diagnosis Between Functional and Organic Disease; (2) a Slightly Marked case of Myxœdema, in which the Diagnosis had at First been Missed, the Patient having been Treated for Bright's Disease; (3) a case of Progressive Muscular Atrophy Accompanied with Bulbar Paralysis; (4) a case of Paralysis Agitans Affecting Chiefly the Left Side and Sparing the Head; (5) a case of Disseminated Sclerosis in an Early Stage; (6) a Well-marked Instance of Dermography.

Glasgow Southern Medical Society.—The following have been elected officers of this Society for the ensuing year:—*Honorary President:* Sir William T. Gairdner, K.C.B. *President:* A. H. Parry, L.R.C.S.Edin. *Vice-Presidents:* Thos. W. Jenkins, M.D., Hugh Kelly, M.D. *Treasurer:* William McMillan, M.B., C.M. *Secretary:* William Watson, M.D. (Gartmore, Langside). *Editorial Secretary:* Henry L. G. Leask, M.D. *Seal Keeper:* J. Grant Andrew, M.B., C.M. *Representative to Board of the Victoria Infirmary:* Charles E. Robertson, M.D. *Court Medical:* Thos. Richmond, L.R.C.S. Edin., D. MacGilvray, M.B., G. W. Thomson, M.D., Edward McMillan, L.R.C.S.Edin. *Extra Members of Council:* John Stewart, M.D., Robt. Pollock, M.B., A. C. McArthur, M.B.

An Anticigarette Regulation in New York.—A Bill has been introduced in the New York City Legislature, providing that "any person or persons who sell or cause to be sold or given away tobacco or cigarettes, whether composed of tobacco or any other substance, to any child or minor under the age of 18 years, within the limits of the territory embraced in the City of New York, as now constituted, shall be guilty of a misdemeanour, and upon conviction thereof shall be punished by a fine of $10 or ten days' imprisonment, or both, within the discretion of the magistrate trying such offence." There is already in existence a State ordinance making it a misdemeanour for anyone to sell or give tobacco or cigarettes to a person under the age of 16 years.

REVIEWS.

William Stokes: his Life and Work (1804-1878). By his Son, William Stokes. Masters of Medicine Series. London: T. Fisher Unwin. 1898. (Cr. 8vo, pp. 256. 3s. 6d.)

"Stokes of Dublin" was a master of medicine of whom his country may well be proud, and the work which he did for the advancement of the science to which he devoted his life gives him a title to the everlasting gratitude of mankind. Sir William Stokes has performed a delicate and difficult task in a manner worthy of the highest praise. He has told the story of his illustrious father's life with excellent taste and no mean literary skill. His filial piety adds a special charm to the book, which, while showing the famous physician as the great and good man he was, is entirely free from any trace of the *lues Boswelliana*.

Stokes came of a family which for two hundred years has been prominent in various spheres of intellectual activity; the family, indeed, is a striking illustration of the heredity of genius. He was the son of Whitley Stokes, Regius Professor of Medicine in the University of Dublin, and was born in 1804. As a boy he was dreamy and indolent, but the latent energy of his nature was roused by the sight of the distress which his idleness caused his mother, and he became an eager student. His father had strong views as to the advantages of a home education, and Stokes consequently was not subjected to the discipline of either school or college. He was, however, carefully taught by competent tutors, and then his home surroundings were in themselves a liberal education.

He began the study of medicine under the eye of his father, subsequently pursuing it at Edinburgh, where he took his degree in 1825. While still a student he published a little book on the use of the stethoscope, the great future of which as a means of diagnosis he was one of the first in this country to foresee. After graduating he returned to Dublin, and soon succeeded his father as Physician to Meath Hospital, where he had as a colleague another Master of Medicine, Robert Graves. In conjunction with him Stokes at once set himself to reform the system of clinical teaching, or rather to create one, for till then students were left to gather up any stray crumbs of knowledge which they found in their path in "walking the hospitals." Stokes was not only one of the founders of clinical medicine, but a pioneer in clinical teaching.

In 1835 Stokes began the composition of the great work on *Diagnosis and Treatment of Diseases of the Chest*, which appeared in 1837. He had already contributed some important papers to the *Cyclopædia of Practical Medicine*, one of which on Peritonitis from Perforation of the Serous Membrane marked the beginning of a new era in the treatment of that disease. Stokes's *Diseases of the Chest*, which is one of the classics of medicine, and which must ever retain its value as a gallery of life-like pictures of disease, at once placed the author in the front rank of his profession. It was recognised in England and on the Continent as the most important book on medicine which had appeared since Laennec's great work.

In 1838 the Pathological Society of Dublin, the first of the kind in the United Kingdom, was founded, and Stokes was one of its first secretaries. In 1845 he succeeded his father in the Chair of Medicine in the University of Dublin. In 1855 appeared a second great work, *The Diseases of the Heart and Aorta*, in which may be found enunciated the principles of what is now known as the Schott method of treatment. Stokes gives the following advice for the management of a case of incipient fatty disease:

> We must train the patient gradually but steadily to the giving up of luxurious habits. He must adopt early hours, and pursue a system of graduated muscular exercise, and it will often happen that, after perseverance in this system, the patient will be able to take an amount of exercise with pleasure and advantage, which at first was totally impossible, owing to the difficulty of breathing which followed exertion. This treatment by muscular exercise is obviously more proper in younger persons than those advanced in life. The symptoms of a debility of the heart are often removable by a regulated course of gymnastics or by pedestrian exercise, even in mountainous countries, such as Switzerland or the Highlands of Scotland or of Ireland. We may often observe in such persons the occurrence of what is commonly known as "getting the second wind," that is to say, during the first period of the day the patient suffers from dyspnœa and palpitation to an extreme degree, but by persevering, without over-exertion, or after a short rest, he can finish his day's work, and even ascend high mountains with facility. In those

advanced in life, however, as has been remarked, the frequent complications with atheromatous disease of the aorta and affections of the liver and lungs must make us more cautious in recommending the course now specified.

All Stokes's literary work is marked by clinical sagacity as well as by vigorous scientific method. His writings are not mere collections of facts, but organic products of thought acting on carefully-selected material, well digested and well expressed.

The duties of his chair and of his large practice did not exhaust his intellectual sympathies. He was greatly interested in the improvement of the position of the medical profession; he held strongly that what was above all things needful for the true physician was the philosophic mind which a large and liberal education is best fitted to produce. He projected a work on medical ethics which, unfortunately, was never completed. He was also active in all matters affecting the public health, and it was chiefly at his instigation that the University of Dublin established in 1871 a diploma in State Medicine. Another outcome of his efforts in the promotion of that study was the establishment of the Dublin Sanitary Association. In 1865 he delivered the Address in Medicine at the annual meeting of the British Medical Association held in Leamington, taking for his subject, "Change of Type in Disease." He had been thirty years in practice, and had witnessed this change in the character or type of fever in Ireland from 1820 to 1830, and from that to 1860. In 1867, when the British Medical Association held its annual meeting in Dublin Stokes was President, and delivered a remarkable address in which he predicted that the visit of the Association to Ireland would "hasten the time when the crown of our loved sovereign will surround and embrace in its golden circle a united and happy people." In the following year Stokes was again a prominent figure, when the Association held its annual meeting at Oxford. In 1874 he was elected President of the Royal Irish Academy, a position for which he was pre-eminently fitted by his breadth of culture and his sympathetic interest in every form of intellectual achievement, literary and artistic as well as scientific.

William Stokes realised the ideal of a physician as nearly as the limitations of human nature will allow. His profession, his country, and indeed the whole human race owe him a deep debt of gratitude. That Sir William Stokes has succeeded in conveying within so short a compass a vivid impression of what his father did and what he was is a proof that he has done his work with a skilful as well as with a loving hand.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R.C.P., Emeritus Professor of Obstetric Medicine in King's College, etc. In two vols. Ninth Edition. London: Smith Elder and Co. 1898. (Royal 8vo, pp. 934. 28s.)

It is not necessary to say much about so well-known a book as Dr. Playfair's treatise on midwifery. We have to congratulate the author upon his literary offspring's attainment of its majority. A noticeable feature of the present edition is that the chapter on conception and generation has been rewritten by Dr. T. W. Eden, an observer whose admirable original work upon placental anatomy and pathology well fitted him for the task, and who has enriched the book by one of the clearest descriptions of the early development of the embryo with which we are acquainted. Dr. Eden's account is not only up to date, but has the special merit of clearly distinguishing what has been actually observed in the human species, from what is inferred to take place, because it has been observed in animals.

Although the work has been revised throughout, the chapter we have referred to is the most considerable alteration. In treating the subject of *post-partum* hæmorrhage, the author does not mention bimanual compression of the uterus, although a page is given to compression of the aorta. Surely pressure on the bleeding area is better than pressure on the aorta. When the next edition appears, we would desire more detail as to the methods of pelvimetry. The author still describes transfusion of blood; and retains the account of laparo-elytrotomy, an operation which he says is now "obsolete." The great popularity which the work has enjoyed makes us think these little points worth mentioning.

Operative Gynecology. By Howard A. Kelly, A.B., M.D., Professor of Gynecology and Obstetrics in the Johns Hopkins University, and Gynecologist and Obstetrician to the Johns Hopkins Hospital, Baltimore, etc. London: Henry Kimpton. 1898. (Vol. i, with 24 plates and 550 illustrations, Roy. 8vo, pp. 563. Vol. ii, with 24 plates and 590 illustrations, pp. 557. £3 3s. net.)

The avowed aim of the author of this work is to place in the hands of those who have visited him and followed his work a convenient summary of the various operations which he is accustomed to undertake in his own gynæcological practice. We may add that it will be very useful to those who have not enjoyed the advantage of seeing the author operate. Recently English works of the kind have been remarkable for good diagrams and fine chromolithographs, but the illustrations to Dr. Kelly's work can defy all rivals.

The illustrations are indeed the great feature in Dr. Kelly's book. Let us note how neat and instructive is Fig. 81, representing the four cardinal projections of the abdomen and pelvis reduced on the same scale. Let us note how three of the projections are printed on sectional paper, so that they may easily be copied and allow of precise determination of every point in the abdomen. Above all they are original, so that certain errors copied repeatedly in well-known works are avoided. Thus the relations of the uterus and bladder are given correctly, and, what is even rarer in such diagrams, the anterior abdominal parietes are not represented at too great a distance in front of the spine. This relation is correctly maintained in less diagrammatic drawings throughout the volume. Some of the plates are excellent, for instance, the half-coloured photogravure of the vascular trunks of the lower abdomen at p. 57. Very beautiful, original, and instructive is Fig. 34, representing the fundus uteri and bladder seen from above. The peritoneal investment of the bladder has been dissected off laterally and antero-posteriorly, so as to display the vascular supply of the fundus of the bladder. Still more striking are the drawings explaining Dr. Howard Kelly's well-known operation for uniting a divided ureter. In these days of panhysterectomy, it is advisable to know something about "uretero-ureteral anastomosis." Even the illustrations of ruptured perineum and the operation for its repair are far more successful than most similar drawings. The pathological coloured drawings are good, but in this respect British and European books are not behindhand. Some of the illustrations demonstrating clinical exploration of the pelvis may be objected to as superfluous, if not for other reasons; but the teacher and obstetrician will commend the two highly-finished drawings explaining the external direct method of measuring the conjugata vera.

The text of the first volume includes sepsis, bacteriology, topographical anatomy, instruments and examination, anæsthesia, plastic operations, and surgical procedures in the neighbourhood of the vulva, vagina, cervix and bladder, and vaginal hysterectomy. The type and paper leave nothing to be desired.

Dr. Kelly's views are already known far and wide, and he knows how to convey his ideas to others. In giving full praise to the substance of most of his chapters, the British operator may, nevertheless, pause at the end of the paragraphs on antisepsis and asepsis in hospitals and in private practice, and ask himself whether the great school of Baltimore have not made antiseptic precautions dangerously intricate. They are carried out admirably at the Johns Hopkins Hospital and at other institutions; but of what avail to the generality of charities are arrangements and instruments which are extremely costly, and which can only be worked by a large and unusually intelligent staff of assistants and nurses? The chief condemnation of the system are its avowed disadvantages in private practice. "The surgeon," says Dr. Kelly, "is sometimes compelled to entrust these matters to unskilled assistants, or, in an emergency, even to family servants. Another reason why work in private houses is less satisfactory must not be overlooked: it is the embarrassment of the new surroundings to the surgeon himself." The surgeon, however, must ever be ready to put up with unskilled assistants, and he must never be embarrassed by new surroundings. A system which involves "embarassment," and,

by excess of apparatus discourages resource, is far from perfect.

The second volume is of special interest to the operator; it treats of hysterectomy, ovariotomy, Cæsarean section, removal of the vermiform appendix, and kindred well-known surgical procedures. The illustrations are, as in the first volume, of the highest excellence. We will place first in true merit the six drawings explaining the operation for appendicitis. They are models of clearness, truly suitable for the enlightenment of the beginner; the same cannot be said of the text in the chapters on ovariotomy and hysterectomy, but some of the illustrations of ovarian cysts and allied morbid growths, such as Figs. 425, 426, and 432 are models of artistic elegance and accuracy. Turning to purely diagrammatic work, we must admit that the sketches at p. 250 illustrate well the difference between true and false capsules, and Dr. Kelly has rightly awarded to Pawlik the merit of being the first to explain the distinction.

The text on ovariotomy, etc., is full of suggestive matter for the experienced. The passages on ligature of the pedicle at pages 24 and 298 are perhaps too short to be instructive. Dr. Kelly objects to transfixion and tying in two directions as dangerous, and on the same grounds distrusts the Staffordshire knot. "The best and safest way to tie the top of the broad ligament is," he says, "to tie the ovarian and uterine vessels separately, leaving the membranous interval free and without attempting to draw them together." Unfortunately, others have found that even this method is not always safe.

Dr. Kelly treats the subject of uterine fibroids temperately. He urgently warns us against accepting the simple fact of the presence of a tumour as a sufficient indication for operation. He insists that myomectomy without sacrifice of the uterus or the appendages is the ideal operation, though he admits that it is a difficult procedure liable to be followed by hæmorrhage or sepsis should the surgeon be inexpert. Even the uterine arteries sometimes require ligature in order to control the bleeding. He does not, like many writers, treat "castration" lightly. His observations on the subject deserve very deep consideration. We need not discuss closely the description of his own method for performing hysterectomy, as it is well known on this side of the Atlantic. The beauty of the drawings illustrating "Kelly's method" and also total hysterectomy for cancer are in keeping with the illustrations which adorn the rest of this remarkable work.

The Principles of Surgery and Surgical Pathology. By Dr. Hermann Tillmanns, Professor in the University of Leipzig. Translated from the third German edition by John Rogers, M.D., and Benjamin Tilton, M.D., New York. London: Henry Kimpton. 1895. (Roy. 8vo, pp. 800, 441 illustrations. 21s.)

A Textbook of Surgery. By Dr. Hermann Tillmanns. Translated from the fourth German edition by Benjamin Tilton, M.D. Edited by Lewis A. Stimson, M.D., Professor of Surgery in the University of the City of New York. Vols. ii and iii. London: Henry Kimpton. 1898. (Roy. 8vo, pp. 1,782, 937 illustrations. 21s. each vol.)

These three volumes, the first of which was published three years ago, are the results of a commendable attempt to supply to those to whom German literature is more or less inaccessible, a good and useful translation of Tillmanns's *Lehrbuch der allgemeinen und speciellen Chirurgie*. Of the many textbooks of surgery written by German professors this is probably the best known, and both in Germany, where it has rapidly passed through several editions, and also in other countries, it has long been regarded as a valuable source of instruction on the scientific and practical details of modern surgery. It is very comprehensive and thorough in its teaching and, as might be expected, presents a review of surgical work in its most advanced and progressive forms. In his selection of a foreign work on surgery for translation Dr. Stimson could not have done better, although he will probably find that the proportions of Tillmanns's work will handicap it very much in any rivalry with the smaller and more concise textbooks which for general instruction, as well as for casual reference, are most favoured by English-speaking surgeons.

The last two volumes of this translation are devoted to special or regional surgery, the second dealing mainly with the head and chest, and the more recent one with the abdomen and the extremities. In these—as in the previous volume on the principles of surgery and surgical pathology—Tillmanns's work has been well rendered in an English form, being closely and clearly translated and printed in good type. In all three volumes the translators have thought it well—wisely we think—to make no comments upon or additions to the text, but to present it exactly in the form and order observed by its distinguished author. The illustrations—nearly 1,400 in number in the three volumes—have for the most part been taken from German sources, and will be fresh to the majority of the readers for whom this edition is intended.

We notice with much satisfaction that the editor has made up for some delay in the past by the publication of the second and third volumes in the course of the present year. We congratulate both Dr. Stimson and Dr. Tilton on their promptness and energy in this respect, and of their recognition of the facts that modern surgery is a very progressive science, and that Tillmanns's textbook has in its German form gone through four editions in the course of the past five years.

Die Störungen des Kreislaufs und ihre Behandlung mit Bädern und Gymnastik (Nauheimer Methode). [The Disturbances of the Circulation and their Treatment with Baths and Exercises—the Nauheim Method.] Von Dr. S. Ch. Gräupner, Nauheim. Berlin: S. Karger. 1898. (Demy 8vo. Pp. 158. 3s.)

Whatever may be the verdict of posterity as to the therapeutic value of the Nauheim method of treating heart failure, there can be no doubt that its introduction has given a great impetus to the study of cardiac pathology. Pathologists and clinicians alike have begun to look beyond the obvious mechanical causes of disturbed function or actual disease of the heart. In the work before us the author has set himself to prove that the prime cause of change of shape in the disordered heart is disorder of the vagus nerve, or rather of both vagi. Physiologists have shown that the vagi are the nerves of inhibition, while containing some accelerator fibres, and that they influence nutrition. Section of the vagi has been found to cause degenerative changes in the nerve ganglia of the heart and subsequent pigmentation. This degeneration, although it accompanies degenerative changes in the heart muscle, is not always in proportion to such changes. Starting with these facts, Dr. Gräupner shows how, from his point of view, the heart's action is affected in conditions of health and disease of the nerve centres, and how the arterial tension and the tendency to cardiac hypertrophy is influenced by variations in degree of nervous control. To follow him through the maze of argument which he has woven around these most difficult, and for the most part speculative, questions would occupy many pages; and it can only be said that while some of his theories rest upon plausible evidence, there is a good deal on the other hand which stands upon a basis of imaginative pathology.

Much stress is laid upon the increase in the rate of pulsation together with fall of general arterial pressure and decrease in the force of the heart's beat, on change of position from recumbent to erect, and these changes are said not to be noticeable under certain conditions of cardiac insufficiency. Upon the alleged absence of these symptoms he builds ingenious conclusions as to the action of the vagi, but we much doubt if the premiss would be accepted by the average clinical observer.

In a second section of the work the physiological aspect of "cardiac gymnastics" is considered at some length, and the views of Oertel, Schott, and others are severely dissected, the author endeavouring to prove that the prescribed exercises have only a general value in maintaining good nutrition, and that the baths alone can be held to have any direct influence on cardiac nutrition, by their action in stimulating nerve impulses and lessening mechanical resistance. The last part of the book is devoted to consideration of the administration of the baths and their therapeutic effect under different conditions, a few illustrative cases being given. That an immense amount of thought has been bestowed by the

author upon his subject is evident, albeit the thought would command more attention if conveyed in simpler terms. The subject must of necessity be to a great extent speculative, and as such it has been treated in a full and exhaustive manner.

Die Bedeutung der Reize für Pathologie und Therapie im Lichte der Neuronlehre. [The Importance of Stimuli in Pathology and Treatment in the Light of the Doctrine of the Neuron.] Von Dr. A. Goldscheider. Leipzig: J. A. Barth. 1898. (Demy 8vo, pp. 88; 2 figures. M.2.40.)

This paper is an application of the more recent discoveries in the constitution of the nervous system to pathology and therapeutics. Beginning with the fact that the nervous system is composed of isolated units or neurons, each consisting of a nerve cell, a long axis cylinder process, and several short processes all terminating in minute end bulbs, and with the inference that the nerve energy passes from one neuron to any adjacent one through an intermediate conducting substance, the author supposes this energy to be in the form of a wave, subject to fluctuations below and above the normal. He considers that there is an equilibrium of nerve excitability the resultant of impulses coming, on the one hand, from the skin, and on the other from the higher centres, and that pathological alterations in this produce reinforcement or inhibition of motion, sensation, reflex action, or secretion, which alterations may be due to toxic, nutritional, inflammatory, degenerative, or traumatic causes.

In therapeutics he would seek to affect the abnormal neuron wave through afferent impulses generated by heat and cold, by passive movements, massage, electricity, gymnastics, baths, blisters, or cautery, so as to affect, for example, the motor neuron in paralysis or spasm, and the sensory in anæsthesia or hyperæsthesia, either by way of reinforcement or of inhibition; the effect in each case being increased if the patient's attention be concentrated on the movement or sensation whereby the neuron wave is influenced simultaneously from the periphery and centre.

The paper is, in fact, neither more nor less than a skilful adaptation of the newer physiology to the old idea of "sympathy" as expounded by John Hunter, together with some suggestions for applying it in the treatment of disease.

A Handbook for Volunteer Medical Officers. Compiled by Surgeon-Major V. Matthews and Surgeon-Captain J. Harper. London: Allman and Son, Limited. 1898. (16mo, pp. 103. 3s. 6d.)

This compilation will be found very helpful to volunteer surgeons preparing for the "P" examination; and, indeed, as a book of reference every volunteer medical officer would find it useful. In the first part are detailed the duties of a military medical officer in the time of peace, and there are doubtless many who will be glad to find in so compact a form an account of what they have to do when on duty with their own battalion in camp or at Aldershot, or with their brigade when mobilised.

The second part is headed "War," and explains the medical arrangements officially authorised, and the duties of all medical officers from the Director-General downwards. Several pages are devoted to tabular statements, and the requirements of dressing stations and field hospitals are fully detailed. The different methods of transport are also described, as well as the mode of employment and position of ambulance wagons in the field. Parts 3 and 4 are devoted to a description of camps and rations, and many useful matters are here alluded to, some of which might easily escape the attention of one suddenly called upon to perform active military duty. The method of obtaining and testing water and purifying it by filtering and other means, the chief impurities and adulterations of ordinary articles of diet, as well as the various ways of improvising kitchens and cooking apparatus are all detailed. The remaining parts describe the duties of the medical officer on the march, the principal points to be attended to in the examination of recruits for enlistment and soldiers for invaliding, and the requirements as to the physical examination of a volunteer.

CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The annual Calendar has just been published by the Council of the College. It shows that there are 1,195 Fellows on the roll of the College—as compared with 1,191 last year—of whom 1,047 obtained the Fellowship by examination, 17 were elected as Members of twenty years' standing under Section 5 of Cap. 15 Vict., 129 are Fellows by election, and 2 are *ad eundem* Fellows. There are 17,199 Members—as compared with last year's total of 17,333, and 574 Licentiates in Midwifery (the Examination for this Licence having been discontinued since 1876). The Licentiates in Dental Surgery are stated to number 1,283—or an increase of 97 over last year—and the Diplomates in Public Health to number 306.

During the past Collegiate year 3 candidates presented themselves in Elementary Physiology, all of whom passed; 415 candidates presented themselves in Elementary Biology, of whom 282 passed and 133 were referred. Of 435 candidates who presented themselves in Chemistry, 236 passed and 172 were referred; in Materia Medica, of 81 candidates 44 passed and 37 were referred; in Practical Pharmacy, of 281 candidates, 207 passed and 74 were referred. The proportion of the fees paid by candidates for these examinations receivable by the College amounted to £1,882 13s., the Examiners elected by the College receiving £210. The Examiners in Elementary Biology are appointed by the Council of the College, those in Elementary Physiology in conjunction with the Royal College of Physicians of London, and those in Chemistry, Materia Medica and Practical Pharmacy, by the Royal College of Physicians of London, under the scheme for an Examining Board in England.

The Examiners in Anatomy and Physiology for the Second Examination are appointed in conjunction with the Royal College of Physicians of London; they have conducted the Primary Examination under the old regulations, as well as the Second Examination of the Examining Board; 639 candidates presented themselves for examination in Anatomy, of whom 345 passed and 294 were referred; 638 presented themselves in Physiology, 341 of whom passed and 297 were referred. The proportion of fees paid by candidates to the College for these examinations amounted to £2,889 1s. 6d., of which the Examiners received £1,046 14s. 8d.

The Board of Examiners in Anatomy and Physiology for the Diploma of Fellow, elected annually by the Council of the College, held two meetings for the examination of 181 candidates, of whom 65 passed, whilst 116 were referred. The fees paid by candidates amounted to £1,181 5s., of which the Board received £724.

The Court of Examiners, ten in number, are elected by the Council from the Fellows of the College only for a period of five years. They conduct the Third or Final Examination in Surgery of the Examining Board in England as well as the Second or Final Examination for the Diploma of Member under the old regulations, and the Pass or Final Examination for the Diploma of Fellow. During the past Collegiate year the Court held two examinations for the Fellowship and four for the Membership. At the former there were 81 candidates, 42 of whom passed, 28 were referred for six months and 11 for one year. For the Membership 781 candidates presented themselves in Surgery, of whom 403 passed and 318 were referred. The fees paid by candidates for these Examinations amounted to £9,325 14s. 6d., and the fees paid to the Court of Examiners and the Examiners in Midwifery amounted to £4,980 10s. The Examiners in Medicine under the Scheme for an Examining Board in England are elected by the Royal College of Physicians. Of 709 candidates who presented themselves 464 passed and 245 were referred. The Examiners in Midwifery are appointed in conjunction with the Royal College of Physicians of London and have examined 893 candidates, of whom 547 passed and 346 were referred.

The Board of Examiners in Dental Surgery, under the old regulations, have held two meetings for the examination of 142 candidates, 100 of whom received the Licence and 42 were referred. The fees received from candidates amounted to £1,050, of which the examiners received £596 8s. Under the new regulations, in Preliminary Science, one examination has been held, at which 2 candidates presented themselves, of whom 1 passed and 1 was referred. (This examination is

identical with Part I. of the First Examination of the Examining Board in England, and is conducted by the Chemistry Examiners appointed under that Board.) The fees received for the examination amounted to £6 6s., of which the Examiners received £1 10s.

The Examiners in Public Health appointed in conjunction with the Royal College of Physicians of London examined 39 candidates in Part I, 26 of whom passed and 13 were referred; in Part II out of 37 candidates 28 received their Diploma and 9 were referred. The fees received by the College for both parts of the examination amounted to £180 18s. 6d., and the amount paid to the Examiners to £114.

With regard to the finances of the College, it appears that the income from all sources amounted to £26,613 12s. 5d., the largest item being derived from the fees paid by candidates for the diplomas of the Colleges, namely, £16,515 1s. 6d., the next largest being from dividends on the Erasmus Wilson bequest, £4,915 2s. 8d. Rent from chambers adjoining the College produced £50; investments, £836 16s. 10d. Hire of rooms, sale of questions, etc., at the Examination Hall, £683 18s. 2d., incidental receipts at College £38 18s. 9d., receipts from trust funds £290 14s. 5d., dividends from sinking-fund for Savoy Estate £8 2s. 2d., fees retained for candidates £488 5s., expenses repayable by Metropolitan Asylums Board £295 17s. 10d.; balance at Midsummer Day, 1897 (including half balance of Goldsmiths' Company Research Grants) £1,790 15s. 1d.

The expenses for the year amounted to £25,406 7s. 9d., leaving a balance at the bankers and in hand at Midsummer Day, 1898, of £1,207 4s. 8d., the largest item being (as in the receipts) in connection with the examinations, namely, Examiners' fees £7,673 2s. 8d, half expenses of Examination Hall for the purposes of the examinations £4,029 3s. 8d. (this amount includes rent, rates, taxes, and insurance, which absorb the no small amount of £2,097 9s. 8d.), expenses of Fellowship and Dental Examinations £400 18s. 1d., expenses of Public Health Examination £36 4s., half expenses of the Scientific Research Laboratories on the Victoria Embankment amount to £728 19s. 5d. (this amount does not include any part of the rent, rates, taxes, insurance, fuel, or light). At the College rates, taxes, and insurance stand at £1,300 6s. 8d.; extraordinary expenses, that is, reconstructing lift to museum, workrooms, College dinner, restoration of pictures, etc., £451 16s. 11d.; repairs to Museum, Conservator's house, etc., £928 8s. 7d.; fees to members of Council £269 17s.; stationery, printing, postage, etc., £380 11s. 4d.; law expenses, £393 2s. 11d,; salaries, wages, pensions in the three departments, Museum, Library, and College, £4,604 19s. 11d.; lectures, catalogues, specimens, etc., for Museum, £431 10s. 2d.; purchase and binding of books, etc., for Library, £791 17s. 2d.; trust funds £208 3s. 8d., purchase of stock £1,293 5s. 5d., fees returned to candidates £294, Metropolitan Asylums Board, repayable, £240 0s. 2d.; disbursement of Goldsmiths' Research Grant £78 8s., half balance of grant retained at Examination Hall £145 6s. 5d.; printing *Calendar*, fuel, light, and miscellaneous items, £726 5s. 7d.

The Secretary's report contains an abstract of the work done by the Council and Committees, the Committee of Management of the two Royal Colleges, the Research Laboratories on Victoria Embankment: also reports of meetings of Fellows and Members, elections, etc. From the annual report of the Finance Committee we find that the gross income of the College for the past year is £1,601 less than the gross income of the previous year. As in the previous year, the decrease is due to a falling off in the receipts from examinations of the Conjoint Examining Board. Under this head there is a decrease of £50 on the First Examination (Elementary Biology), of £312 on the Second Examination (Anatomy and Physiology), of £502 on the Third Examination (Surgery and Midwifery), and of £433 on the diploma fees paid by University candidates, making altogether a total decrease on these examinations of £1,297. The amount of the receipts from examinations must not, however, be taken as an index to the number of candidates examined. There have been 65 fewer admissions to the examinations in Anatomy, 61 fewer to the examinations in Physiology, and 42 fewer to the examination in Midwifery; but there have been 24 more admissions to the examination in Elementary Biology, while the number of admissions to the examinations in Surgery is exactly the same each year. It will be seen that while the receipts on the First Examination are less, the number of admissions to that examination has actually been greater. The receipts from the Fellowship Examinations are £141 less, and those from the Dental £27 more than in the previous year. The expenditure of the College for the past year is £266 less than the previous year. The amount expended in fees to the Examiners under the Combined Examining Board is only £125 less than in the previous year. As the Examiners are paid a capitation fee for the number of candidates examined, the small difference in the expenditure under this head for the two years shows that the large decrease in the receipts has arisen, not so much from a corresponding decrease in the number of candidates, as from the fact that the fees paid by them are not distributed over each year proportionately to the number of examinations for which they enter; for example, a candidate may in one year pay the whole fee for Medicine, Surgery, and Midwifery, being only examined in one subject in that year, and may consequently in the next year be examined in the other two subjects without paying any fee. As regards the expenditure at the Examination Hall and at the Laboratories, that at the former is slightly less and that at the latter slightly greater than in the previous year. At the College in Lincoln's Inn Fields there is a decrease of £45 in the special expenses in the Museum, and of £69 in the special expenses of the Library. The expenditure on books is larger than it has been for some years, but this is more than counterbalanced by the reduction under salaries and wages. In the case of the general expenses, several causes have contributed to make the total under this head an exceptionally high one. In the first place, the petition of the College for exemption from payment of corporation duty has been accountable for an increase of some £360 in the law expenses of the College. Secondly, a sum of £200 has been expended upon the redecoration of the Conservator's House, an outlay not likely to occur more than once in seven years. Thirdly, there has been an expenditure of £364 upon structural repairs of an extensive character to the part of the Museum building abutting upon Portugal Street. In addition to these exceptional expenses, the lift to the Museum workrooms has during the year been reconstructed, and connected with the mains of the London Hydraulic Power Company at a cost of £260.

The balance on the "Income and Expenditure" account amounts this year to £683, and has not been so small for some years past. It will, however, be seen that the exceptional expenses mentioned by the Committee amount to £1,114, and when this is borne in mind the nett result of the year can hardly be considered other than satisfactory.

From the report of Dr. G. Sims Woodhead, the Director of the Research Laboratories of the two Royal Colleges, it appears that on June 3rd, 1898, the number of those working or having received permission to work in the Laboratories during the past year was 18, against 14 in the previous year.

The preparation of antitoxic serum for the treatment of cases of diphtheria in the hospitals of the Metropolitan Asylums Board has been carried out during the year, and arrangements have been made whereby the Director has been relieved of much of the routine work, and much better accommodation has been obtained for the horses under treatment; so successful has the new method of preparation been that at the present time the average strength of the serum (that is a mixture of the horses now in use) is 375 antitoxic units per c.cm.

The grant entrusted to the Committee by the Goldsmiths' Company is still being administered for the furtherance of the antitoxic treatment of diphtheria. Special apparatus for use by Drs. Brodie, Cartwright Wood, and the Director has been purchased, and several important results have been obtained therewith. During the year special attention has been paid to the question of standardisation of antitoxin. As a result of a careful study of the various methods that have from time to time been recommended, first in connection with a Special Committee, the work of which was carried out in the laboratories, and then in connection with Professor Ehrlich at the Government testing stations in Steglitz, Berlin, the Director decided to use only Ehrlich's new method, a report of which has already appeared.

In order to facilitate the testing of antidiphtherial serum in this country, the Laboratories Committee authorised the

Director to make arrangements for the testing of any serum sent for examination. It is satisfactory to note that two firms have availed themselves of this privilege, and that all the samples of serum sent for examination have proved to be of excellent strength and quality. In fulfilment of one of the conditions of the grant from the Goldsmiths' Company that diphtherial antitoxin should, if possible, be available for use among the poorer classes of the community, antitoxic serum has been supplied to various general and children's hospitals in London during the past year, as well as to certain medical practitioners for cases fulfilling the necessary conditions. In this way 2,003 doses containing 4,267,000 units have been distributed.

EXTENSION OF THE FEVER HOSPITAL AT LEEDS.

Opening Ceremony.

The Lord Mayor of Leeds opened the new pavilions erected as an extension of the present fever hospital on the Manston Hall estate (purchased for the purpose some six years ago) on October 1st.

Alderman Loe, M.R.C.S., Chairman of the Hospitals Committee, stated that Leeds had been in possession of some sort of hospital accommodation for infectious diseases from an early period in the century, a charitable hospital having existed about 1802 in what is now the very centre of the town—Vicar Lane. The "House of Recovery," as it was called, was removed from Vicar Lane in 1844 to what was then an outer district, Beckett Street, and was acquired from the trustees by the Corporation in 1885 and considerably altered. The Hospital Committee had, however, felt from the first that it was not large enough, and, the situation being unsuitable for further extension, they had, after visiting many sites, selected the present estate of nearly 100 acres, which was purchased by the Corporation in July, 1892. Having obtained an estate, the Committee visited many other large towns throughout the country; and their report, drawn up by the medical officer of health, was issued to the Corporation in 1893. The temporary hospital for small-pox at Stoney Rock being overcrowded, a more suitable but still temporary wooden building was erected upon a portion of the new estate in 1893, and subsequently, but at some little distance away, the Corporation resolved to build pavilions for ordinary infectious cases. Some delay occurred in getting the plans approved by the Local Government Board, and after the contracts were let the building strike further delayed the carrying out of the amended scheme for a whole year. The accommodation now provided, with what is already available at Beckett Street, brings the total number of beds, including the small-pox accommodation, up to 194, still some 200 less than the accommodation which ought to be provided for a town so large as Leeds.

The visitors, who included members of the Council, magistrates of the city, chairmen and clerks of some of the neighbouring sanitary authorities, ladies and others then visited the pavilions, and, about an hour later, met in one of the wards, where the Lord Mayor, after a graceful speech in which he alluded to the fact that infectious diseases were most prevalent where fresh air failed to penetrate, and to the advantage the patients would be likely to derive from the purer air of the beautiful site on which they were met, declared the hospital open.

A vote of thanks was moved to the Lord Mayor by Mr. Councillor Womersley, the Chairman of the Sanitary Committee, and seconded by Mr. T. R. Jessop, F.R.C.S., who said he thought that exanthematous diseases ought to be known and spoken of as "poisonous diseases," and, while welcoming the opening of the new wards as a step in the right direction, pointed out that the needs of Leeds demanded a much larger infectious hospital than had ever yet been provided.

The Lord Mayor afterwards presented, on behalf of the hospital staff, a handsome silver cup to Alderman Loe, and the Lady Mayoress was presented with a handsome basket of flowers by Mrs. Doran, the matron, on behalf of the nursing staff.

Description of the New Buildings.

The Manston Hall estate comprises some 98 acres, and is situated close to the borough boundary, and about three miles from the centre of Leeds. The greatest length from east to west is nearly 1,000 yards, and the ground is roughly divided into three. On the easternmost part are the small-pox pavilions—a wooden block of 28 beds, with discharging rooms and a wooden administration. To these have now been added two brick buildings—a pavilion with 38 beds and a permanent administration. These, with washhouses, are fenced off from the rest of the estate. A quarter of a mile away from these buildings four new pavilions have been erected. These pavilions are arranged as it were at the four points of a lozenge, and there is a distance of 124 clear feet between the east and west pavilions, 230 between those north and south. Of these four pavilions one—that nearest the Hall—is dedicated in the meantime to the use of the nursing staff. It is externally like the other three, but is divided into small rooms with about 2,000 cubic feet of space each.

The Hall itself has been enlarged by the addition of new kitchens and a dining room for the domestic staff, and contains the apartments of the resident superintendent, the matron, the servants, and the ward maids. Close to it, but detached, is a waiting room for the friends of patients and an office for a clerk. To the west of the pavilions already mentioned is a small isolation block for six beds—the two ends entered from different sides and each end containing a nurse's room and two wards for one and two patients respectively. To the west of this, again, are the disinfecting station and washhouses. The latter are in two parts—one for the hospital, the other for the staff, and both large enough for future extensions of the hospital. The disinfecting station is provided with waiting-rooms for those who are being discharged and, separately, for persons who may have come from infected houses in the town. There are two sets of waiting-rooms and baths for men and women, and another set of waiting-rooms on the disinfected side, the only direct communication between the two sides being through the baths themselves.

A footpath and a double fence runs between this part of the hospital site and the part furthest west. The latter, which is nearest the town, contains 16 cottages and a caretaker's house with washhouse. These provide for the isolation of families from infected houses, the idea of the Corporation being that when a family is taken to the shelter while disinfection is being carried on at home, they should not be compelled to mix with persons from other houses.

It is intended in the meantime to use the three new pavilions for cases of scarlet fever. Each contains two wards of ten beds, off each of which is a small private ward for one bed. A small annexe leads from the covered way to the pavilion. In this there is a receiving room with a bed in which the patient can be examined before being admitted within the four walls of the pavilion itself. Opposite this is a waiting-room for persons accompanying a patient. The remainder of the annexe is given up to storage. The annexe is connected by a passage, open at both sides, with the pavilion which contains, in addition to the two wards mentioned, a large lobby and service room. At the end of each ward are two annexes, one containing closets and the wardmaid's sink, the other a bath-room. The wards are each warmed by two end and one central fireplace, and fresh air enters under each window, in winter through a hot-water radiator. Each bed has 13 linear, 162⅔ square, and 2,280 cubic feet allowed.

The sewage from the new wards is conveyed in the meantime to four Dibdin's tanks and the effluent is distributed upon the low-lying ground of the estate. The rain water is separately collected and dealt with.

A pretty full account of the hospital has been issued, containing portraits of the Lord Mayor, of the Chairman of the Hospitals Committee, and of the Chairman and Deputy Chairman of the Sanitary Committee, views of the pavilions, inside and out, plans of the wards, and a bird's-eye view of the estate.

Future Needs.

The existing hospital at Beckett Street often receives as many as eighty patients. In a report on the subject of notification and hospital accommodation, issued in 1890 and noticed by us at the time, Dr. Spottiswoode Cameron, Medical Officer of Health for Leeds, stated it as his opinion that this hospital had only cubic space for sixty-four adult patients and in the

same report he showed how notification had for the time increased the demands upon the hospital accommodation already existing in nearly every town where it had been adopted. While therefore he urged that the Act should be adopted, he counselled that the Corporation should at the same time extend their accommodation and provide at least 400 beds for infectious diseases. Since Leeds adopted notification in 1894 the demands upon the available space have become much greater, and large numbers of patients whose friends have urgently demanded their admission to hospital have had to be left at home for want of room. Recently the Board of the General Infirmary approached the City Council, asking them to provide accommodation in their new hospital for cases of diphtheria, and Dr. Barrs personally addressed a forcible letter on the same subject to the local press. Leeds seems on the whole inclined to move in this desirable direction and to accept the new pavilions rather as an instalment of what is needed than as a completed scheme.

SANITATION IN INDIA.

Statistical Areas.

The Report of the Sanitary Commissioner with the Government of India for the Year 1896 has been drawn up on the lines of previous reports, and includes a careful and well-ordered summary of all statistical and sanitary information, relating to the population of the Indian Empire at large, and to special communities (troops and prisoners), which has been recorded during the period, now a somewhat remote one, to which it refers. Following the custom of its recent predecessors, interesting *précis* are given of work done in India and elsewhere with a view to the clearing up of the causation of malarial fevers, dysentery, enteric fever, kala-azar, cholera, Malta fever, and plague. These notes, the sources of which are indicated by accurate references, are not limited to the period under report, but reach the date of compilation, are judiciously and critically drawn up, and constitute a useful element in a publication which is throughout characterised by ability of a high order. The present report more than maintains the excellence and value of a series in which is chronicled the sanitary history of British India. One important alteration has been made in this report, namely, the reconstruction of those geographical groups of districts and places which were originally defined by the late Dr. J. L. Bryden with a view to a more rational display of vital statistics in accordance with the natural—physical and climatic—resemblances of the areas furnishing them. The boundaries of these areas have been, in consultation with the Meteorological Department, readjusted so that, without disturbing the primary object of their specification, they should coincide as far as possible with the boundary lines of districts and provinces, thus homologating scientific and administrative geographical divisions. A new map has been constructed in accordance with these principles. It is to be hoped that this rearrangement of statistical areas will be final, for a frequent remodelling of the fields from which figures are drawn cannot be otherwise than destructive of the value of comparisons between different years.

Drought and Famine.

The year 1896 was meteorologically abnormal. It was an unusually hot and dry year. The monsoon rains commenced late, were deficient in amount, and ended early. This caused failure of crops over a large extent of Northern and Central India, and gave rise to widespread scarcity and high price of food, and in many places to positive famine. Though, owing to the efforts of Government, the mortality directly due to these conditions was trifling, the resisting power of the people was gravely impaired, and conditions habitually making for death in India, though less virulent in themselves, found easier victims and levied a heavier tribute.

Diminished birth-rates and increased death-rates attest the truth of this statement, more especially in the Central Provinces, Berar, North-Western Provinces, and Bengal. Fevers were in excess; but this excess occurred in the earlier rather than the later months of the year, when such excess is usual. Cholera and small-pox were extensively prevalent and caused greatly increased mortality, and bowel complaints, though on the whole less fatal than usual, were disastrous in the famine tracts. Influenza was very prevalent during the earlier months of the year, and deaths due to it went probably to raise the aggregate of fever mortality. Plague made its appearance in Bombay in August, and spread over Western India before the close of the year. The circumstances which pressed so unfavourably upon the native population were, however, conducive to the health of communities under protection and well fed.

Health of British Troops.

The admission and death-rates of British troops were 1,387 and 14.84 per 1,000, against 1,457 and 15.16 in the preceding quinquennium. The constant sick and invaliding rates were somewhat higher—94 and 28 against 83 and 24. Venereal diseases, unaffected by climatic variations, continue unabated. They account for an admission-rate of 511.6 and a constant sick-rate of 45 per 1,000, and contribute 37 per cent. of total sickness. These figures show little abatement, and no mention is made of repressive measures. Ague and bowel complaints gave reduced figures, as might be expected; but there was a larger prevalence of cholera and small-pox, the former accounting for 70 admissions and 63 deaths and the latter for 122 and 10.

Influenza caused 808 admissions and 8 deaths. This disease, which entered India in 1890, has apparently gained a permanent footing there, for in no year has it been absent. With the exception of 1890 and 1892, the year under report shows the highest rate of admissions of the seven. Information regarding the prevalence of influenza among the general population is wanting—probably unattainable, but both in the native army and in prisons the disease has prevailed annually, its incidence being much higher in the latter than among the troops. March and April have been in each section the months of maximum intensity.

Enteric fever continues to constitute the principal factor of mortality in the British army, causing 43 per cent. of total deaths. The admission rate was 25.5 and the death-rate 6.31 in 1896, against 26.3 and 6.72 in 1895. Among officers the rates were 31.0 and 6.5; among women, 8.3 and 3.38; among children, 6.4 and 0.86; among native troops, 0.1 and 0.04; and among prisoners, 0.2 and 0.06. No more important problem exists in Indian sanitation than the prevention of enteric fever, and the subject occupies a very prominent place in the report. Unfortunately the outcome of the labour devoted to it is very meagre and unsatisfactory. A very general and apparently earnest and thorough effort was made during the year to reduce the incidence of the disease by attention to the water supply, under the idea that this element constitutes the main medium of infection. The sources and quality and means of distribution of drinking and cooking water were rigorously examined and improved, and special measures such as boiling, treating with potassium permanganate, and cultivation of microbes inimical to Eberth's bacillus were adopted. A large mass of evidence is adduced regarding the effect of these proceedings, but it is contradictory and inconclusive, and the impression remains that other means of access of the enteric contagium must exist, and that other means of exclusion or reduced susceptibility remain to be discovered and practised. The admission of Malta fever into Indian nosology is an interesting feature of this report. Hepatitis was more prevalent in the British army in 1896, but the mortality caused by hepatic abscess somewhat smaller than in recent years. The relation of this condition to dysentery and enteric fever is instructively discussed. The mortality caused by phthisis was somewhat higher—0.64 per 1,000 against 0.65 in the native army and 3.07 among prisoners. Respiratory diseases caused less sickness but greater mortality, the death-rate being 0.77 against 3.72 in the native army and 5.29 among prisoners. The chief causes of invaliding were syphilis and gonorrhœa, debility, phthisis, malarial fevers, dysentery, and valvular disease of the heart. The death-rate of officers was 14.18 in the British and 10.76 in the Indian army; of women 18.44, and of children 45.60.

Health of the Native Army.

The health of the native army was good, the admission rate being 763, constantly sick rate 29, and death-rate 12.57, against 976, 34, and 16.72 in the decennium 1886-95. Ague accounted for 36 per cent. of the total admissions; pneumonia for 31 per cent., and remittent fever for 10 per cent. of the total deaths.

Cholera, small-pox, and influenza gave increased admissions, and fevers, chest diseases, and bowel complaints fewer. The incidence of small-pox was curiously exactly the same in the three groups, but its mortality higher among prisoners. Scurvy was rather more prevalent than in the preceding year, giving an admission rate of 4.1. Regiments on the frontier, where vegetables are scarce and dear, suffered exceptionally. The disease is more common than the figures, which take note only of severer cases, indicate. The admission rate in prison was 1 per 1,000. In the decennium 1886-95 native troops and prisoners furnished rates of 2.8 and 2.7, while the rate in European troops was only 0.7 per 1,000. The admission rate from guinea-worm was 4.2 in native troops, representing 534 cases, which occurred principally in South-Eastern Rajputana, Central India, and Gujrat. There were only 4 cases in the European army, and 439 among prisoners. In the Madras command 81 cases of beri-beri occurred; there was no case in the European army, and only 24 in gaols. One hundred and forty-one cases of ankylostomiasis were entered in gaols, and none in the other two sections. The inhabitants of prisons, destitute of the saving influences of age and selection, participate more than do soldiers in the pathogenetic factors potent in unhealthy years and seasons, and in addition suffer from the disadvantages and depression of confinement and crowding. It is therefore satisfactory and creditable to find that the statistics of 1896 compare favourably with those of previous years, and that the figures indicating losses through cholera, remittent fever, dysentery, diarrhœa, anæmia, and debility are decidedly less than those of the decennium 1882-91. Ague and bowel complaints are the chief cause of sickness, and dysentery, pneumonia and phthisis of mortality in the gaols of India. A mortality of 15.64 in the Punjab gaols is a fact of very high value. The prisons of the famine districts give indication of the general insalubrity, the Central Provinces exhibiting a death-rate of 72.36, mostly from scorbutic dysentery, and Bombay of 33.56. The Assam gaols gave a rate of 56.56, although the province was exempt from scarcity. The rate for India was 27.69, against 29.77 and 34.11 for the two preceding quinquennia.

VACCINATION AND SMALL-POX.

The year was unfavourable for vaccination on account of the unrest caused by famine and the employment of vaccinators on famine and plague duty; still, 8,019,836 operations were performed, against 7,912,086 in the preceding year. Infant vaccination is still backward in many provinces. The use of animal lymph is rapidly growing, both in pure form and in combination with glycerine, vaseline, and lanolin. The fact that 141,443 persons died of small-pox in British India in 1896 ought to stimulate the department to strenuous and sustained effort. The death-rates of protected communities were about one-fifth less than of the population at large, and very much smaller than of some sections of the population where the disease was rampant. Detailed information regarding sanitary works in military cantonments, and in cities, towns, stations, and districts, is systematically and minutely recorded. Notwithstanding the impediment caused by extensive failure of crops and scarcity of food, the works undertaken to promote the three cardinal sanitary desiderata of improved water supply, drainage, and conservancy, proceeded, and local bodies spent a satisfactory proportion of their revenues on sanitary establishments and operations. Mention of these proceedings is made in the notices published from time to time in the BRITISH MEDICAL JOURNAL of provincial reports. Endeavours are being made in some provinces to strengthen the Sanitary Boards and to invest them with more substantial authority and control with respect to sanitary undertakings demanding skilled criticism and professional direction.

THE PREVENTION OF TUBERCULOSIS.

AT the tenth annual meeting of the South Durham and North Yorkshire Veterinary Association held at Darlington on October 7th Mr. C. G. HILL, the President-elect, delivered an inaugural address in which he prophesied that town and rural authorities would awaken to the fact that it was to the interest of the public to adopt abattoirs and appoint veterinary surgeons as meat inspectors, who should combine the office of dairy inspector and devote the whole of their time to the duties of that position. This could be done only by showing to the public that they were what they claimed to be, scientific men able to keep pace with collateral branches of science with which their profession was so closely connected.

Dr. MANSON read a paper on Human and Bovine Tuberculosis; their Interdependence and Prevention. On this subject, he said, the attitude of the medical and veterinary profession was that of allied armies against a common foe, which every year slew 150,000 people. After referring to the great diminution in the mortality from consumption which had occurred in the last thirty or forty years, he expressed a hope that, on the present lines of advance, in a few years more they would be within calculable distance of being able to stamp it out of the land as effectually as the leprosy of the Middle Ages had been got rid of. In pathology, in its mode of attack, in its endemic character, and in the fact that it was uninfluenced by climate and temperature, leprosy was akin to tuberculosis. After referring to the Association formed recently with the object of disseminating knowledge as to the modes in which tuberculosis was acquired and of enlisting public interest in the adoption of measures of prevention and the establishment of sanatoria, he went on to deal with the subject of infection. He suggested that bovine infection might be caused by the disease germ being conveyed to pastures by manures charged with the bacillus-laden sputum, fæces, and urine of persons and animals suffering from phthisis. The tubercle bacillus resisted considerable extremes of temperature, of dryness, and of moisture. The storing of hay in a badly-ventilated cow byre might also be a source of contagion. The inhalation of bacillus infected in this way was another means of conveying tuberculous disease, and in this connection the habit of spitting about streets could not be too emphatically condemned. In other countries such offenders against public health and decency were fined, and such countries were wise in their generation. The dust collected from our streets thus became bacillus laden, and instead of using it as manure he would burn every atom of it. He hoped that when the electric installation at Darlington was complete, a public destructor would be established as part of the plant, and that the engines or the dynamo would be driven by steam from boilers whose fuel was the dirty dust and refuse of the town. As regards prevention, Dr. Manson said the most effective means in regard to the human species was by ventilation or the swilling and flushing of our houses with fresh air. A valuable means of checking the disease would be its compulsory notification, thus enabling the sanitary authority to exercise supervision over the house in which the disease occurred, and in case of death to employ methods of thorough disinfection. The argument that such a procedure would create a scare was inimical to the best interests of the country. He thought notification of bovine tuberculosis should also be made compulsory, although the object might be attained by the adoption of Professor Delépine's suggestion that each sanitary authority should employ a veterinary surgeon to examine all animals brought into its area of control, and that all cattle in each area should be registered and marked. He further urged that persons suffering from tuberculosis should be isolated; indeed the true policy would be isolation by legislative enactment. Diseased animals should not merely be separated from the healthy, but should be slaughtered and subsequently cremated. Dr. Manson demurred to the recommendation of the Royal Commission on Tuberculosis that as regarded the meat of tuberculous animals, the carcass should be condemned only when the disease was generalised. The term "generalised" was too vague, and no animal suffering from tuberculosis was fit for food. He summed up the points on which imperial or local legislation was required for the effective prevention of tuberculosis as follows:

1. Compulsory notification of the disease in man and beast. 2. Compulsory destruction of tuberculous animals, the owners to be recompensed by the State. 3. Compulsory periodical examination of all bovine animals, and the application of the tuberculin test by skilled Government or County Council officials. 4. Skilled inspection of all meat offered for sale as food. 5. Prevention of the importation of foreign milk, butter, or cheese, unless after competent inspection. 6. Co-operation between adjacent sanitary authorities with regard to inspection of cows, cow byres, and milk. 7. Closing insanitary property. 8. Destruction by fire of all town dust and ashpit refuse. 9. Prohibition of public expectoration.

INTRODUCTORY ADDRESSES

AT

THE OPENING OF THE MEDICAL SCHOOLS.

MEATH HOSPITAL, DUBLIN.

By L. Hepenstal Ormsby, M.D., F.R.C.S.,
One of the Surgeons of the Institution.

A CENTURY'S PROGRESS IN SURGERY.

[Abstract.]

The institution in which we are now assembled has been the nursery of many zealous pioneers in medicine and surgery, and when we look back to the year 1798, a remarkable year no doubt in the history of Ireland, we find the Hospital was situated in the Coombe, in the very spot on which the Coombe Lying-in Hospital now stands, and it was not till the year 1822 the present building was opened for the reception of patients. In the year 1798 the Physicians of the Hospital were Daniel Bryan, M.D., and Thomas Bell, M.D.; the Surgeons being George O'Brien, Patrick Cusack Rooney, Benjamin Wilson, Solomon Richards, William Dease, Richard Dease. William Dease died in June, 1798, and on September, 1798, he was succeeded by Philip Crampton (afterwards Sir Philip Crampton, Bart.), who was unanimous elected.

Even a century ago one sees that in those days we had very distinguished men, and men who by their genius and untiring zeal, with few of the advantages and scientific aids we now enjoy, left behind them an ineffaceable mark in the surgical history of their country. These men were giants in the early days of the century; but I feel sure if a well-educated surgeon of the present day could but visit a ward or operating theatre of 1798, he would behold an immense difference of procedure and practice, and wonder how it was that such good results were ever attained.

Even in our own day, not many years ago, recollect the old black coats we used to operate in, covered over with the gore and *débris* of many a sanguinary operation. Now we appear clothed in snowy white operating coats, carefully washed and sterilised, before undertaking any fresh operation: our hands sterilised, as well as those of all our assistants and nurses, all marine sponges discarded and banished for ever, to be replaced by sterilised boracic wool sponges, and sterilised butter muslin pads, as carried on in our new theatre upstairs.

If I were asked what has brought about the remarkable change and progress in surgery in the present century, as compared with the last, I would say that, in the first place, old customs and modes of practice have been either given up, or so much modified that their original character could hardly be recognised. For instance:

1. In the reduction of dislocations gentle manipulation has taken the place of force and pulleys.

2. The wholesale bleeding of patients for every complaint has been, I may say, altogether given up.

3. The complete abandonment of excessive doses of mercury to patients, who could be met with in every ward, in bygone days, leaning over the sides of their beds, and pints of saliva running from their mouths, their teeth loose, and a fœtid odour exhaled from their breaths.

4. The uncleanly and fœtid ointments and irritating lotions giving place to light, cleanly, and simple dressings and lotions in the treatment of wounds and ulcers.

5. Rough and rapid manipulation in the treatment of all fractures has given place to the most exquisite gentleness and manipulative dexterity; all force and mechanical violence entirely done away with.

All these circumstances, in their chronological order, assisted and conferred an incalculable boon on sick and suffering thousands, among which may be mentioned the various aids to diagnosis by the invention of the many instruments and 'scopes for exploring the various mucous canals and other parts of the body. Then again must be enumerated:

(*a*) The greater facilities afforded for procuring dead bodies for dissections in our medical schools.

(*b*) The establishment of pathological and surgical museums, together with physiological, biological, chemical, and bacteriological laboratories.

(*c*) The universal adoption of bedside or clinical teaching (first introduced in Ireland in this hospital in the year 1822 by Dr. Robert Graves).

(*d*) The performance of the various surgical operations on the dead subject before performing same on the living.

(*e*) The practical teaching of pathology to students.

(*f*) The introduction and universal adoption of anæsthetics in the practice of operative surgery.

(*g*) The introduction of the conservative method of operating, or the principle of "least sacrifice of parts" in the removal of limbs.

(*h*) The bloodless method of amputating and excising limbs, as carried out by Esmarch's elastic bandage.

(*i*) The introduction and universal adoption of the antiseptic treatment of wounds, as introduced by Lister.

(*j*) The great impetus given to the advancement of abdominal surgery by the invention and introduction of the spring clip forceps, invented by Péan, Koeberlé, Spencer Wells, Tait, and others. This little forceps—simple as it may appear—has gone a great way to advance and revolutionise operative surgery in every direction.

(*k*) The improved teaching and systematic training of nurses, both for private and hospital work.

(*l*) The introduction and various uses to which electricity has been applied in surgery, such as Roentgen *x* rays, the electric drill, electric light, and cautery.

(*m*) The growth and spread of specialism in surgery—that is, such as ophthalmology, otology, laryngology, gynæcology, obstetrics, rhinology, pediatrics, and dentistry.

(*n*) The improved system of building hospitals, and the better system of isolation of patients by pavilion wings and corridor wards.

(*o*) The construction of new and improved operating theatres, replete with all aseptic instruments and appliances, with sterilising room attached, and whose walls and floors are washable, permitting wholesale flushing of the entire theatre after each operation.

And if I were asked what I consider has done most to advance operative surgery in the last fifty years, I would certainly and unhesitatingly say:

1. The introduction and general use of anæsthetics.

2. The introduction and universal adoption of the antiseptic treatment of wounds, as introduced by Lister.

The Introduction of Anæsthetics.

One who has witnessed a capital operation performed without an anæsthetic can never efface the picture from his memory. It has been my lot to witness one. An aged woman, owing to extensive disease of the knee-joint, had to undergo amputation of the thigh. She was carried into the theatre by the nurses, and placed on the operating table. She viewed with dismay and anguish all the preparations and laying out of instruments, to be shortly used in removal of her wasted limb. The preparations made, the surgeon took the amputating knife, and, in one sweep, severed the skin and quivering muscles down to the bone. The patient all the time was screaming and writhing on the table, in the powerful grasp of the assistants. The mental and bodily torture, for the time, must have been excruciating. The bone was then sawn across, all vessels secured, and the patient was carried out of the theatre, shrieking and groaning, collapse and sickness following, which lasted for several hours, brought on by the agony she had been forced to endure.

After describing an operation conducted under anæsthesia, and giving a short sketch of the history of the introduction of anæsthetics, the lecturer said: From time immemorial anæsthesia in surgery has been attempted by various agents, drugs, and appliances, and preparatory treatments, which all failed more or less in their effects. Many substances have been suggested, but the following are most frequently used in the present day, after having been thoroughly and practically tested as being the best and most efficacious, given singly or in combination:

1. Nitrous oxide gas, employed most extensively in dental surgery and short operations since it was reintroduced some years ago by Dr. Evans, of Paris, but originally suggested by Sir Humphry Davy in 1800, and practically and successfully employed by Dr. Horace Wells in Hartford in 1844.

2. Sulphuric ether, first suggested by Dr. Jackson, a

chemist of Boston, and used successfully in the Massachusetts Hospital on October 16th, 1846, by a dentist named W. J. G. Morton: and in London, December 21st, 1846.

3. Chloroform as an anæsthetic agent, discovered and suggested by Sir James Simpson, of Edinburgh, in 1847.

4. The A.C.E. mixture, which consists of 1 part of alcohol, 2 parts of chloroform, and 3 parts of ether. This combination is sometimes used.

When chloroform was introduced, it for a long time replaced ether as an anæsthetic agent; but, owing to the many deaths and numerous warnings, mostly English, many Irish, surgeons have returned to ether as the ordinary anæsthetic, or a combination of gas and ether. All anæsthetics, in the hands of rash and careless administrators, are dangerous; and, even with every possible care, it appears certain that the inhalation of chloroform in some cases almost inevitably proves fatal. If statistics are of any service, ether has been proved by them to be eight times safer in its effects than chloroform. I have been a strong believer in ether as an anæsthetic, and feel sure I will continue in the same belief, having studied the subject carefully for over twenty years.

The benefits of local anæsthesia should not be omitted. The first form of this that was used was the application of ice to the part to be followed by the ether spray, which was introduced by the late Sir B. W. Richardson in 1865. This form of local anæsthesia was found most useful to allay pain in opening small abscesses, incisions, and the removal of small tumours, where general anæsthesia was not permitted or required. The chloride of ethyl spray—a much more recent introduction—is also used very extensively by dentists and others for the same purpose, and is found most convenient in many cases. Of recent times, by far the most important and valuable local anæsthetic has to be mentioned, which is cocaine, not employed till 1884, when it was introduced by Köller, of Vienna, although discovered in 1859. It is readily absorbed when applied to mucous surfaces, and if applied in sufficient quantity and strength very quickly produces complete local anæsthetic effects. It is not absorbed when applied to the unbroken skin so readily, although it is to a certain extent. There is just some care necessary, for occasionally its application brings on unconsciousness and a peculiar train of nervous symptoms, at times very alarming. In many operations on the eye cocaine has completely replaced general anæsthetics. Hydrochlorate of eucain has recently been used as a local anæsthetic in place of cocaine.

THE ANTISEPTIC THEORY.

After a brief sketch of various attempts to prevent suppuration in wounds, the lecturer observed that Lister, having accepted the germ theory of putrefaction, applied himself to discover the best way of preventing these organisms from reaching the wound from the moment it was made until it was healed. He had to deal with a plant, and he desired to interfere with its growth. This endeavoured to do in one of two ways: (1) Either by destroying or paralysing the plant itself before it entered the wound, or after it had entered it; (2) or by an interference with the soil in which it grew; for example, by facilitating the removal of the discharges and preventing their accumulation in the wound cavity, and by doing everything to prevent depression of the wounded tissues, because healthy structures are the best of germicides. Several substances were then known possessing properties antagonistic to sepsis or putrefaction, and hence called antiseptic. Acting on a suggestion of Lemaire's, Lister chose for his first experiments carbolic acid, at first in an impure and crude form, which, of course, as he gained experience, he modified as regards strength, form, dressing, and manner of application. A carbolic spray was introduced, but now hardly ever used.

The progress which has taken place in operative surgery during the last hundred years has been most remarkable, and must include the whole of the civilised world, particularly Europe and America.

The methods of removing limbs by amputation have undergone considerable modification. In the early days of the present century circular amputation was the plan generally adopted; the flap method then came into use, to be followed by the modified circular or mixed method, as performed by Liston in 1839.

After the introduction of anæsthetics, when time was not of such paramount importance in performing operations, Teale, of Leeds, in 1853 suggested and performed the rectangular flap amputation. In special amputations, Syme's amputation of the ankle joint is one which is very extensively performed; Pirogoff's modification of this was not a success, and is now seldom performed.

Amputation through or above the condyles of the femur was suggested by Syme and first performed in 1845. He suggested a long posterior flap and a very short anterior one. It was modified by Carden, of Worcester, in 1864, who suggested a long anterior flap and no posterior flap. Gritti, of Milan, in 1857 recommended the retention of the patella after removal of the articular surface, and in 1870 the operation was further modified by Sir Wm. Stokes, of Dublin.

Amputation at the hip-joint, at one time a most fatal operation, is now very much more successful, owing to the diminution of shock and the adoption of strict antiseptic precautions. In the treatment and arrest of hæmorrhage a very great change for the better had taken place. In the early days of the century hempen ligature, the tourniquet, tenaculum, and artery forceps were the means generally adopted for arresting bleeding from cut vessels. Torsion then came into practice, and has held its place in suitable cases more or less ever since. Then silk ligature, catgut, kangaroo, gut, silkworm gut, silver wire, horsehair treated in various way, are the means principally used in the present day for ligatures and sutures. The catgut ligatures are cut off short, and are allowed to remain in the wound and are absorbed, or if not their presence is found to do no harm. The spring-catch forceps invented by Péan and Sir Spencer Wells, and modified by Koeberlé, Tait, and others, are now the means chiefly used for compressing arteries prior to the application of ligature or torsion. Deligation of arteries received much attention during the present century. Some of the most skilful operations of this kind have been performed by many well-known surgeons still amongst us.

THE BANISHMENT OF BLOOD-LETTING.

Long ago every surgeon carried a lancet in his pocket, and used it daily. An old surgeon, since deceased, told me that when he went round the hospital, as resident pupil, with the surgeon on duty, his prescription book, instead of being filled with prescriptions of drugs, was filled with directions to bleed, from the arm, the different patients examined—varying from 25 ounces of blood to 1 quart, and even more, in special cases.

Whether this wholesale bleeding was right or judicious is very doubtful. I believe, in certain cases, it was of service, and should be sometimes resorted to even in the present day. As far as I can learn, about the year 1832 the practice in Dublin was gradually falling into disfavour. In that year a gentleman of considerable eminence was bled, and not to a very great extent; however, two days afterwards he died, and his death was attributed to the bleeding, and, therefore, caused great sensation in the city, and, I think, gave a greater check to the general use of the lancet than any other consideration.

The temporary arrest of bleeding during amputations and excisions is now carried out by the elastic tube and bandage acting as a tourniquet, introduced by Esmarch, of Kiel, in 1870, and used ever since with very great advantage.

In the treatment by compression for the cure of aneurysm to Dublin and Irish surgeons credit is undoubtedly due, for "the Dublin method," which consists in applying compression to the vessel above the seat of disease. The secret, however, of the Dublin method was to apply elastic or graduated compression to the vessel above the seat of disease at two points continuously during the day, and to take off all pressure during the night so as to allow the patient to get a good night's rest, and thus enable him the better to endure the continuous pressure the next day, or until a cure was effected. The names of Todd, Hutton, Bellingham, Carte, and Tufnel will be remembered in connection with this excellent and successful mode of treatment.

IMPROVEMENTS IN OPERATIVE SURGERY.

Mr. Hepenstal Ormsby then sketched the improvements which had taken place in various departments in surgery,

referring especially to the greater boldness now justifiable in operating within the abdomen.

The Royal Army Medical Corps.

Gentlemen, in every introductory address I have given in this place for the last twenty years I have descanted in no uncertain way concerning the position and prospects of the army doctor. I warned you not to enter the service until those grievances were removed. Twelve years ago I said: "Another scandal, which should not continue one day longer is the meagre and miserable name by which the Army Medical Service is known, namely, 'Medical Staff'—a meaningless term. It might just as well be civil as military. I know when the Army Medical Service was made a departmental system in 1873 every army surgeon was sure it would be raised to a 'Royal Corps.' We have Royal Engineers, a corps more like the Army Medical Service than any other in work and division of labour. Then there is the Royal Artillery, Royal Marines, and many other regiments termed Royal; but the moment it is proposed to confer the prefix on doctors, prejudice and class feeling intervene to stand between the Queen's wishes and her faithful servants in the Medical Service, for it is known that Her Majesty wished to do it, but the Duke of Cambridge barred the way. In 1883 Lord Morley's Committee recommended that the Medical Service should be made a Royal Corps, but again it was refused. The doctor class has apparently to work hard, but never to think of being honoured or rewarded. I do not like to prophesy, but I am inclined to think that before long you will see the service termed, as it in all justice ought to be, Royal Medical Staff; and by making the service Royal its *esprit de corps* would be increased, and better officers would join it, and so its efficiency and social position would be improved. Until the civil profession pronounce an emphatic opinion against this injustice, and realise that any honour given to the army surgeon is honour given to themselves, and that any slight to one body is a slight to all, no great progress can be made, and it will be in the power of prejudiced opponents to refuse well-earned honours. Let the army surgeon have patience, for his civil brethren will continue to agitate, because their cause is a good one, being just and reasonable."

I am rejoiced to say my prophecy has come out true, and nearly all the improvements and changes in the Army Medical Service we contended for have been granted to us. Owing to the great wisdom and kindness of the present Secretary of State for War, Lord Lansdowne—an Irishman, be it noted—and with the strong concurrence of the present Director-General, Surgeon-General Jameson, C.B., Her Majesty the Queen was graciously pleased to authorise the issue of a new Warrant, which was dated July 1st, 1898, changing the name of the service, and raising it to a Royal Corps, under the name of the Royal Army Medical Corps, with simple military titles for its officers. The status and position of the army surgeon is now defined, and it is a military service in which any gentleman should be proud to serve. I, therefore, have no hesitation in advising all those having a taste for military life to enter the R.A.M.C. It is now certainly a splendid service, and offers great advantages to the young doctor of culture and social position joining its ranks. The service also affords the medical officer an opportunity of seeing life and the world in some of their best aspects, and foreign service has many and varied attractions in our widely-extended empire, and at the same time confers on the recipient a social status not easily attained so soon in civil life.

ST. VINCENT'S HOSPITAL, DUBLIN.

By J. S. McArdle, F.R.C.S.I.,
Surgeon and Lecturer on Surgery to the Hospital.

DISPENSARY MEDICAL SERVICE.

[Abstract.]

Mr. McArdle devoted his address to considering the position of Poor-law medical officers.

Remuneration.

He said that the emoluments of office are not in most cases the wages of a first-class artisan, and out of this pittance the doctor is obliged to provide himself with a conveyance to distant parts of his district that he may be able to carry out his duty properly. He referred to a recent case at Drogheda where an attempt was made to reduce the salaries paid to the dispensary medical officers on the ground that they amounted to as much as £300 a year. It was shown that the exceptional payments made in a single year were due to the prevalence of small-pox which led to a great extension of vaccination. This gave the medical officers a great deal of hard work, as might be judged from the fact that the increase in the salaries paid upon which the proposal to reduce the salaries was founded was entirely composed of shilling fees for vaccination.

Promotion.

The question of promotion was one of great moment and one well worthy of consideration. What stimulus had a man (who at 25 accepted a salary of £120) when he knew that the most unceasing effort on his part would not influence the amount or ensure for him a better post? He had seen the most efficient members of the Poor-law Service passed over for men worn out in the service of co-operative societies in England, and had known men to make noble sacrifice of their time and talents on behalf of the poor of their districts, and those men he had seen give place to men who had never been one hour in the service.

Superannuation.

Mr. McArdle said that while retiring pensions were assured to all other Civil servants the Poor-law medical officer was left to the tender mercy of those who might on non-professional grounds be hostile to him. The Act left with the District Councils the giving or withholding a retiring allowance. He believed that the new Boards would sweep away many of the abuses of the present system and that the rule would be to justly requite the medical officers.

Red Tickets.

Mr. McArdle said that if the poor required meat, or drink, or clothing they appealed to the relieving officer, an official accountable to the Board, while to obtain medical services, which were of much more value, even those who were not merely poor could go to the nearest shopkeeper and obtain a ticket entitling them to medical relief. In many instances these were given without any inquiry. A check should be placed on the indiscriminate distribution of the power of issuing tickets for medical services. There was not a district in Ireland in which abuse of this power could not be proved.

Leave of Absence.

Mr. McArdle said that the existing arrangements as to leave of absence were extremely unsatisfactory. A recent advertisement for a medical officer for one of the Belmullet dispensaries required among other things that he should undertake to pay his substitute in case of absence from any other cause than illness. This was most improper. The British Medical Association had done and was doing much to uphold the dignity of the profession, but it could not well intervene in Irish local affairs, and McArdle suggested that a committee consisting of representative members of the Irish Medical Association belonging to the Poor-law service and the Medical Inspectors of Local Government Board, should meet under the chairmanship of the Commissioner of the Local Government Board. Such a body could in a very short time settle every question in dispute.

NATIONAL DEPOSIT FRIENDLY SOCIETY.

It was considered some time ago that the opinion of the profession should be obtained in connection with the working of the above-named Society. The following questions were submitted to many medical gentlemen in different parts of the country, and their replies have been analysed:

1. Have you treated patients who were members of this Society?
2. Do its rates of payment afford fair remuneration?
3. Is it abused by persons who can afford to pay ordinary fees for medical attendance?
4. It is objected to the Society that it has no wage limit, and it is understood that a medical practitioner must accept the scale of fees offered by the Society. It has been suggested that if in future the Society, in the case of a member drawing the higher rates of sick pay, paid its cheque for medical attendance to the patient instead of to the doctor, leaving the patient free to select whatever doctor he liked, and to apply the money

received from the Society towards the payment of the doctor's bill, this would render it unnecessary to insist on a wage limit. What is your opinion on this suggestion?

5. Can you make any practical suggestions for improving the condition of medical work and pay in connection with this Society?

It would appear from the replies received that in many parts of the country the Society is not known. Interesting letters were received from seven gentlemen who had had personal experience of the working of the Society, having treated patients under its regulations. One of these correspondents considers the Society dangerous to practitioners, and abused by private patients who could pay higher fees. He adds that he has seen only a few members. The remaining six of these correspondents with practical experience of the Society's working speak of it in more or less favourable terms.

Thus, one correspondent considers that the rates of payment are fair, that the Society is not often abused, that the payment is safer and more assured, and that the Society is ready and willing to accept suggestions as to improved fees from practitioners.

Another correspondent expresses the opinion that the payments are "on the whole fair and much better than clubs," that the Society is not abused in his experience, and that it has other advantages over clubs. He considers the fees for distances over a mile should be increased.

Another considers that the rates of payment are fair, and he knows no case in which the medical department is abused. He disapproves of the suggestion to pay the cheque for medical attendance to the patient, as it would open the door to dishonesty.

Another correspondent considers that the rates are as good as can generally be obtained from the poor. He knows of no abuse of the Society. He considers that the sliding scale of fees and the freedom to medical men to make their own terms with better class members obviates the need for a wage limit. He considers it a great security to the doctor that the Society pays the cheque to him instead of to the patient. He considers the 1s. fee for intermediate visits very inadequate. He always asks and receives 2s. 6d. for such visits. On the whole, he thinks the Society acts more fairly by its medical officers than most friendly societies do.

Yet another considers that the payments are fair and that the Society is not abused. He emphasises the freedom of practitioners to make their own terms with the members. He thinks that intermediate visits should be charged 2s. 6d. He considers the Society one of the best he knows, and his opinion is shared, he thinks, by all the practitioners in the town in which he resides.

A correspondent who knew the Society twenty-five years ago thinks the Society paid better and was more satisfactory than other clubs. He has had no experience of it recently.

On the general question, it may be pointed out that the distinctive features of this Friendly Society are:

1. That there is complete freedom of contract between medical practitioners and the members of this Society, the former being at liberty to make any charges they please for their attendance.

2. That no compulsion is placed on medical men to accept the terms of the Society. The members may pay any additional fee they can afford, the Society only engaging itself to pay promptly for the attendance on its members at the fixed scale of charges.

3. That the Society shows itself willing, and indeed anxious, to meet the views and wishes of medical men as far as possible.

4. That the necessity for a wage limit seems certainly less imperative than in the case of ordinary clubs, seeing that the members must subscribe for small funeral and sick-pay benefits which would be useless to better class people—a provision which must act as a practical bar against abuse of the medical department.

A meeting for the promotion of a scheme for founding a Yorkshire convalescent home for consumptives will be held at the Mansion House, York, on October 27th under the presidency of the Lord Mayor of York. The Marchioness of Zetland will speak. The Marquis of Zetland and Mr. W. H. A. Wharton have each promised £1,000 towards the scheme.

THE WATER ENTERPRISE OF SOME OF OUR LARGE TOWNS.

I.—BIRMINGHAM.

Anticipated Inadequacy of the Water Supply.

Amongst the great cities of the empire, Birmingham has long been noted for the municipal enterprise of its citizens. The narrow lanes, off which opened high buildings with tier upon tier of small, close, dark, and unhealthy workshops, have long since given place to wider streets and healthier factories. But it is not only in dealing with unhealthy areas that the Warwickshire town has been in the van of progress. Controlling her water supply, her gasworks, her tramway lines, Birmingham has endeavoured to give her citizens the full advantages of municipal enterprise. As the town grew, the City Fathers, looking well ahead, saw that the supply of water, ample as it was for the then requirements of the borough, would ere long prove inadequate for the large district to which it had to be supplied, if the prosperity of the town and neighbourhood continued to increase as hitherto.

So far back as 1888, Mr. Thomas Barclay, an active member of the Corporation, showed in some notes which he issued on the water supply of Birmingham what the resources of the Corporation were at that time. From wells some nine million gallons a day were procurable, from impounded streams some seven and a-half more. The same gentleman, a few years later, but prior to the passing of the Corporation Water Act in 1892, extended these notes, showed clearly the limits of the supply from existing works, and advocated—and in this, apparently, he gave expression to the opinion of the majority of the Council—that a supply should be sought at least adequate for the needs of such a population as there was a reasonable probability would be resident within the parliamentary area of water supply fifty years thereafter. These figures and arguments Mr. Barclay has opportunely reprinted in their original form, and has added to them some very useful information as to the procedure before Parliament, the nature of the opposition encountered, the progress of the works, the construction of filter beds and service reservoirs, and so on. The final chapter of his excellently-printed and beautifully illustrated book is devoted to some account of the great Manchester and Liverpool water undertakings.[1]

Decision to Obtain Water from Wales.

After therefore considering carefully many years ago the possible extensions by well boring or by further impounding streams in the near neighbourhood, Birmingham resolved to go further afield, and seek for a large supply of soft and pure water amongst the mountains of Wales.

The wisdom of this decision to take time by the forelock has been proved by the consequences of the uncommon drought of this autumn. Indeed, the demonstration has been disconcerting in its completeness, for it appears that, of the two storage reservoirs, the smaller—that at Whitacre—is empty. This is of comparatively small consequence, for its capacity of about twenty million gallons is only sufficient to supply water for one day, the consumption in dwelling houses, factories, etc., being estimated to amount to nineteen and a-half millions daily. The large reservoir at Shustoke has a storage capacity of four hundred million gallons, but more than half this quantity has been drawn off, for during the past hot and dry months the daily consumption of water in Birmingham has risen from a daily average of 23.7 gallons a head last year to 27 gallons a head at the present time. The water now actually stored is only sufficient to supply the city at the present rate of consumption for about ten days, and an appeal has been made to the public to economise water as much as possible, while the use of water for municipal purposes is being curtailed. An early winter with severe frost might therefore cause serious embarrassment.

General Features of the New Scheme.

Amongst the very large English towns, Birmingham enjoys a sort of pre-eminence as to altitude. The service reservoir at

[1] *The Future Water Supply of Birmingham, with references to Liverpool, Manchester, London, etc.: being a Contribution to the Question of the Water Supply of Large Towns.* By Thomas Barclay. Third edition; 240 8vo pages, with coloured map, charts, and numerous illustrations. Birmingham: Cornish Brothers. London: Simpkin, Marshall and Co.

Monument Lane is 531 feet above Ordnance datum, and there are parts of Edgbaston, Harborne, Moseley, and Handsworth which are 150 feet higher. It is estimated that as a set-off against the expense of conveying the new supply so great a distance as eighty miles, a yearly saving of some £20,000 in the present cost of pumping may be counted upon. The present somewhat modest rate of consumption is 24 gallons per head, including water used for manufacturing purposes. The new works, which it is hoped to complete in about four years' time, will, it is expected, provide sixty millions of gallons a day, sufficient at the present rate of consumption for the estimated population of the water district some fifty years hence.

Possible Action of the New Water on Lead Pipes.

From a medical point of view, one or two points are perhaps worthy of notice. Soft, moorland waters, it is well known, are specially prone to act on lead pipes. The waters of the Elan and Claerwen are no exception to this rule; but it is considered that on its way to Birmingham this Rhayader water—coming as it will through some 36 miles of concreted conduit, some 9 miles of tunnel through Silurian rock and millstone grit, not to mention 34 miles of iron piping—will lose its deleteriously solvent action upon lead. In the work referred to some figures are given to show the changes which take place in the lead-dissolving qualities of this and the Vyrnwy, Thirlemere, and Loch Katrine waters in transit; but, as the figures are given not in grains per gallon but in percentages of what a "distinguished expert" regards as a reasonable amount of dissolved lead to take as a beverage, they have little or no scientific value, the more especially as we are nowhere told how much lead this distinguished gentleman likes to have in his water supply, nor even who he is.

It is said that a very able physicist not long ago told a Committee of Parliament that all that was necessary to prevent water from acting upon lead was to filter it. This, though it may be true of some waters and some filters, is certainly not true of all. It seems, therefore, probable that a watch may require to be kept upon this question of lead. It is not altogether unlikely that when the soft water has been running for some years through the Portland cement conduits one of two things may have happened. On the one hand, it may have dissolved out all the available lime within a short distance of the surface; or, on the other, it may have deposited a slimy layer upon the concrete which would prevent any further action. It will, at any rate, be desirable to re-investigate the behaviour of the water to lead after the works have been some years in operation.

Control of the Catchment Area.

Important as is the question of its action on lead, the organic purity of the water is not less so. By going well up into the Welsh Highlands for a supply, the chances of its contamination by human pollution are greatly lessened. The Corporation, going even a step further than this, are not contenting themselves with seeking a source at present approximately free from dangerous contamination, but, determined to keep it so, they have obtained powers to acquire owners' rights in the catchment area. In these days, when American millionaires are allowed to turn large tracts of thinly-populated land into deer forests, it is surely not much to ask that in the interests of large communities certain definite and limited upland areas, selected as water catchments, should be restrained from further urban development. The removal of even a small village population from the haunts of their ancestors is not a matter to be treated lightly, but such limiting of its growth and such interference with its practices as will prevent the development of new sources of river pollution, and provide means for abating those already in existence, is surely within the province of practical politics. It is only as ground landlord that a water authority can in most cases secure the purity of upland waters where sheep and cattle are kept or ploughed land manured. The bucolic mind is sublimely indifferent to the danger of polluting a public water supply, and the community who drink the water should certainly have the right to keep it pure. This—like Glasgow, Manchester, and Liverpool—Birmingham proposes to do by purchasing the gathering ground.

Settling and Filtration.

Apart from any influence it may have on the action of water on lead, it is certainly desirable that all surface supplies should not only be settled in appropriate reservoirs, but also filtered before use, and this is to be done at Birmingham. The cost of this enormous undertaking will, of course, be considerable. At present there are only estimates to go upon, and these have in some cases been already exceeded. Those who want this information, who would like to know more of the engineering difficulties and successes, who care to read about the "wind-jammer," and the social and sanitary arrangements of the navvies' camp, or to examine the sections of the reservoirs and the maps of the catching area and the eighty-mile conduit, with its siphons and tunnels, may be referred to Mr. Barclay's valuable memoir, or to the well received and interesting paper read by Mr. Mansergh before the Engineering Section at the recent Congress of the Sanitary Institute.

THE ITALIAN MEDICAL CONGRESS IN TURIN.

[From our Special Correspondent.]

The Italian Congress of Internal Medicine terminated its labours on Friday, October 7th, after a meeting lasting five days, and characterised by close attention to business.

In his closing address the President said, referring to the fact that the place of meeting had been changed from Rome to Turin in recognition of the part played just fifty years ago by Turin in the resurrection of Italy: We are the friends of all mankind, of the weak and of the poor; let it be through us that the *Risorgimento* is fulfilled. To one who has watched the work of the Italian medical schools during the past few years, who has watched the rapid absorption of German exact methods by Italian native genius, and who has seen the new teaching bear fruit in the rapid springing up of modern hospitals, modern laboratories, modern schools, and modern methods, the fervent aspiration expressed by Signor Baccelli is no chimera. An English physician who takes a sincere interest in Italy's welfare recently gave utterance to an analogous expression of opinion—that the revival or resurrection of Italian vigour will take place through the influence exercised by the medical schools. In Italy the medical schools are all under Government control; their constitution is throughout the same; their professors are promoted from one university to another, and the resulting consolidation enables the medical profession to carry weight, and make its influence felt far beyond the academical precincts. As an instance of this, the illustrious President of the Italian Association of Medicine, who has done, and is doing, good clinical work as Director of the Clinic in Rome, is at the same time Minister of Public Instruction, and is engaged in promoting a Bill to introduce technical education in elementary schools. Who can know better than he the requirements of the people and the remedies for existing defects? The members of the Association are chiefly connected with the universities and medical schools as directors, professors, *Privat-docenten*, or assistants, and the isolated general practitioner is in the minority. There are representative men from nearly all the Italian universities, and many of them of world-wide fame, young men most of them, few much beyond the fifties, for scientific medicine is scarcely a generation old in Italy. The novel facts or theories in the papers brought to the Congress were generally preceded by a review of the history of the question in point, coupled with the names of authorities from all corners of the world. If it were a question of interest, a number of champions sprang to their feet to claim *la parola*. The chairman indicated the speaker, and the verdict was universally accepted. The discussions

were conducted with the greatest courtesy and good temper, with an occasional wrangle as to priority of experiment and publication.

The papers were of three kinds, namely, *relazioni*, or theses generally read by seniors; *communicazioni*, or contributions of experimental work on some special point, generally read by assistants; and *conferenze*, or lectures. Of the latter there were two only, delivered in the evening, the first on the History of Medicine, and the second on the Desirability of Teaching the Critical History of Medicine in our Universities.

The most interesting discussions were (1) On Blood-letting, in which no mention of the most important alterative treatment by the nitrites seemed to be made; (2) On Organotherapy; (3) On Serumtherapy, with special reference to Professor Pane's antipneumococcal serum.

One leaves the Ninth Congress of the Italian Medical Society with the conviction that good work is being done in Italy, and when time has sifted out the chaff from the wheat, there will doubtless be a good measure to the credit of Italian workers in the domain of experimental medicine, during the last decade of the nineteenth century.

Organotherapy.

The morning meeting on October 4th was devoted to organotherapy. The subject was introduced by Professors Bozzolo and Rummo, who both read complete and masterly reviews of the history of the study of the ductless glands and of the effects produced by the injection of their extracts in health and disease, and of the symptoms and results of their partial or total destruction by disease or experimentally.

Neurology.

The afternoon meeting was arranged to begin at 3 P.M., but the proceedings did not commence till 3.20. It was devoted entirely to neurology. There was a list of 42 names to read communications, and as each one was allowed ten minutes the meeting promised to be somewhat prolonged, at least to the uninitiated.

In the absence of the President, Professor Bizzozero (President of Council) took the chair, and commenced calling over the names on the list of communications. No one responded until he came to the ninth name, and eventually of the forty-two names on the list seven presented themselves to read papers.

The first communication was by Drs. Silvestrini and Daddi of the Florence University, and consisted of an elaborate study of the histology of a case of chorea in which no definite characteristic lesion was found.

The second communication was read by Dr. Perrero on a case of Cortical Hemianæsthesia.

The third, by Dr. Murri, the distinguished alienist, was on the Successful Treatment of cases of Insanity combined with Muscular Spasms by means of Irrigation of the Stomach with Salicylic Acid.

Dr. Gheffrè read a communication on Avenesia Algera, apparently a "professional disease" characterised by pain instead of cramp.

Dr. G. Marenghi read a communication on the After-results of Section and Excision of the Vagi, a consideration of which must be reserved till the publication of the *Transactions*.

Dr. L. Bordoni read communications on Hemicranial Equivalents: Segmentary Atrophy of the Face; Apnœic Sleep; and Rhythmic Spasm of the Uvula.

Dr. C. Calliano read a paper on the Advantages of Pressure on the Cœliac Axis as a Preventive of Sea Sickness.

Blood-letting.

Professor Maragliano opened a discussion on this subject in a thesis which reviewed the history of the practice of blood-letting, discussed the results obtained by experiments on animals, and enumerated some conditions in which blood-letting might be practised with advantage clinically. Chief among such conditions he mentioned venous engorgement and cases of toxæmia, whether of microbic or of autogenetic origin. In the latter cases good might be derived by the removal of a certain amount of poison in the blood and by the increase in number of leucocytes. He concluded by enforcing the doctrine that there was no disease for which venesection was a specific, but that it might be useful in certain morbid conditions.

The next speaker recorded experiments on animals injected with pneumococci, in which the results of blood-letting were unfavourable unless preceded by intravenous injections of normal saline solution. He drew attention to the importance of relief to the coronary circulation which would result from blood-letting in cases of venous engorgement and over-distended heart.

The third speaker, Dr. Costabile, after enumerating the class of cases in which blood-letting might be salutary, went on to say that the struggle witnessed in recent years was not directed against blood-letting, but against the abuse of blood-letting, as formerly universally practised in such cases as typhoid fever.

Attention was called also to good results obtained by phlebotomy in four cases of hysteria; and Dr. Corofressi referred to its beneficial effects in certain cases of pulmonary hæmorrhage in phthisis.

Professor De Renzi said that he who withdrew blood from the organism withdrew an integral part of the organism. He had made experiments of blood-letting in cases of artificially-infected animals, and his results were not encouraging.

Professor Bozzolo, who claimed to be one of the first to suggest the intravenous injection of saline solution, suggested its use in uræmia after venesection. He thought saline injections were more valuable than venesection in infectious pneumonia.

Dr. Dal Fabbro, from the Veneto, said that he practised in the mountains, and that his *clientèle* held strong views as to the propriety of various forms of treatment, so much so that he was often compelled to be guided by their views rather than by his own. In order to meet this state of affairs he suggested that some recognised authority, such as those who had spoken, should draw up a list of indications and contraindications for blood-letting, and publish it in the lay press. This suggestion was delivered with much vigour and was loudly and apparently sympathetically applauded.

Professor Queirolo, of Pisa, concluded that the good effects obtained from blood-letting in uræmia were due to diminished blood pressure, and not to the removal of a certain amount of poison from the circulation.

Dr. Gay quoted cases contraindicating the practice of blood-letting by means of leeches in typhoid fever. He preferred alcohol.

Professor Maragliano's reply was deferred till the afternoon meeting.

Suprarenal Extract.

Professor Carlo Forlanini said that at the Roman Congress in 1896 he contributed some observations showing that in some infectious diseases, especially in typhoid fever and in pneumonia, in addition to the myocarditis described by Hayem and lately by Romberg, and in addition to the paresis of the peripheral arteries described by Riegel, Romberg, Rakzinski, and others there existed a true toxic paresis of the myocardium, and that the myocardium thus affected was impotent to respond to the action of cardiokinetics (excitants). Last year Püssler confirmed this fact by means of experiments on animals. Professor Forlanini now referred to further experiments showing that not only digitalis and strophanthus, but ether, alcohol, musk, ergotine, strychnine, and camphor could not modify arterial pressure lowered by angiomyocardiac paresis. He experimented with glycerine and aqueous extract of suprarenals, and Merck's hæmostatic suprarenal extract. Oliver and Schäfer, Cybulski and Szymonowicz, had shown in 1894-95 the high and rapid power of raising arterial tension possessed by suprarenal extract, which strengthened the systole, and produced constriction of the peripheral arterioles. Hypodermic injection of the extract was well borne, but determined a large patch of local ischæmia, which persisted from two to four hours, though without injurious consequences. The increase of arterial pressure which followed the injection in healthy subjects was remarkable, and was far greater than that obtainable by digitalis or strophanthus. With injections of 5.7 c.cm. of the extract an increase of 50 to 60 mm. at the radial pulse was

obtained, while with the maximum dose of digitalis that could be tolerated, only 20 to 25 mm. was obtained. The pressure increased a very few minutes after the injection (five to ten), and a supranormal tension was maintained for seven to ten hours, according to the magnitude of the dose. Injections might be repeated several times the same day. In cases of typhoid fever, when all other angiocardiokinetics failed, suprarenal extract would increase arterial pressure by 10 to 20 mm. Hg., and for a shorter time than in the healthy. In the post-typhoidal condition, however, when definite lesions of typhoid myocarditis had supervened, suprarenal extract must be administered with the greatest caution in consequence of the functional incongruities of heart and arteries. Increase of pressure in this condition might lead to grave perturbations of heart and pulse. All the above observations were recorded by means of Dr. Riva-Rocci's sphygmomanometer. He considered it to be the most potent available remedy for raising blood pressure in cases of cardiac failure, such as those produced in chloroform poisoning and by specific toxins, as in typhoid fever. In large doses (22 c.cm.) it produced in one case an extrordinary rise of blood pressure with intermission of the pulse for several beats at a time. In cases of cardiac failure the injection should be repeated several times daily, so as to give an average of 20 c.cm. of the extract in the twenty-four hours. The immediate local effect of an injection of supra-renal extract was to produce a large patch of local ischæmia which lasted for several hours. Professor Forlanini discussed the various theories as to the mode in which the effects of the injection of suprarenal extract were produced, but as a clinician he did not think it necessary to decide whether it acted on the medulla, on the ganglia, or on the muscular walls of the heart and arteries, but left this question for the practical physiologist, while content merely to record the clinical facts. Professor Forlanini said various preparations were injected subcutaneously, others intravenously. The most potent preparation of the gland (sphigmogenia) must be used intravenously, as it underwent immediate oxidation on introduction into the subcutaneous tissues.

Hepatic Cirrhosis.

Professor Rovighi read a communication on hepatic cirrhosis from autoinfection not alcoholic. He had made experiments on animals by injecting carbonate of ammonia into the circulation. He found after the lapse of a few weeks that the organs generally were undergoing slight fibrotic changes, which commenced in the small vessels. The liver was chiefly affected, and became pale, hard, and small. The microscopic changes showed a proliferation of cells affecting chiefly the small vessels, and spreading thence into the parenchyma. He quoted Budd as having been the first to record cases of non-alcoholic cirrhosis (1856).

Iron and Arsenic in Anæmia.

Dr. Aporti of Pavia read an interesting communication on the effects of iron and arsenic in anæmia. The method of experiment was to bleed a dog repeatedly so as to render him anæmic, and then to give him intravenous injections of arsenic for a week or so, and immediately afterwards intravenous injections of iron. The results obtained were fairly constant. After the injections of arsenic the corpuscles augmented in number, and after the injections of iron the hæmoglobin equivalent was raised. The author mentioned several clinical cases which appeared to verify these results.

Antipneumococcal Serum.

Professor R. Massalongo and Dr. C. Franchini made a communication on the therapeutic action of Professor N. Pane's antipneumococcal serum. The authors, after referring to the serotherapeutic method of treatment in acute pneumonia and expounding the recent researches of Professor Pane, of Naples, gave the results obtained by themselves in 10 cases of pneumonia, especially selected on account of their gravity. The disease was advanced in all the cases, and the patients were old in years, and through poverty, fatigue, and vicious habits were nearly all chronic alcoholics with weak hearts, nephritis, and arteriosclerosis. Having drawn a parallel by means of mortality statistics with a series of cases treated by ordinary methods, the authors stated the conclusions to which they had arrived as to the value of Professor Pane's serum as follows: 1. The results obtained with the use of Professor Pane's serum in such broken-down cases as were selected, were better than the results obtained with ordinary methods of treatment. 2. Professor Pane's serum (in contrast with ordinary methods hitherto practised) appeared to have a direct action on the evolution of the pneumococcal process, hindering its diffusion and aiding the process of resolution. In the discussion which followed, Professor Bozzolo uttered a word of warning as to the use of antitoxins late in the disease. He thought that unless they could be used early, they were of little avail.

Professor De Renzi of Naples, on the other hand, pointed out that Professor Pane's laboratory experiments on guinea-pigs showed the high value of the serum in highly sensitive animals, even when used 24 hours after injection of the toxin, and that such laboratory experience was fully confirmed by clinicians such as Professors Murri of Bologna, Queirolo of Pisa, Maragliano of Genoa, Massalongo of Pavia, and himself. The treatment was often unavoidably delayed till the fourth or fifth day, but even then, if the serum were used in adequate doses, and by the intravenous method, good results might safely be predicted.

Intravenous Medication.

During the discussion, the President, His Excellency Professor Baccelli, who had been slightly indisposed, came in to close the Congress. In spite of his evident indisposition, he assented to a request made by Professor Queirolo on behalf of the meeting, to relate some of his own clinical experiences. He then quoted cases of medication by the intravenous injection of various antiseptics and specifics; among others, cases of pernicious anæmia treated by injections of quinine, cases of puerperal fever treated by injections of corrosive sublimate, and of 52 cases of traumatic tetanus treated by injections of carbolic acid, of which only 2 died. In conclusion, he bid the meeting farewell, and having embraced the President of the Executive Committee, Professor Bozzolo, he said that in doing so he embraced each individual member of the Society, and with that the Congress broke up, to meet next year in the Eternal City.

Thyroid Serumtherapy.

Professor Carlo Forlanini also referred to a case of myxœdema which improved under treatment by thyroid extract, but succumbed with graver symptoms of permanent arterial hypertension which supervened in the course of the disease. He considered this hypertension to be a form *per se*, independent of venal influences, and maintained by an arterial constriction due to excess of muscular tone in the peripheral arteries. Arterial tone was maintained by the internal secretion of certain glands, the action of which was to increase tension—glands such as the suprarenals, the thyroid, and others. He expressed the suspicion, based on various considerations, that in the case in question the fatal hypertension was the effect of overtoning with thyroid extract. He referred in support of this opinion to another case of myxœdema in which treatment by thyroid extract, together with improvement of all the symptoms, determined a notable increase of arterial tension, which previously had been low.

The Pathogenesis of Icterus.

The questions on which Professor Queirolo, of Pisa, endeavoured to throw more light were the following: (1) Whether in obstruction of the common bile duct the bile entered the circulation by the capillary vessels or by the lymphatics. His method of experiment was, after ligature of the common bile duct, to ligature or excise portions of the thoracic duct, and in control experiments to leave the thoracic duct unligatured. In both cases icterus supervened in from twenty-four to thirty hours. (2) Whether icterus was produced by lowered tension in the portal vein. In this set of experiments his method was to ligature the greater part of the tributaries of the portal vein, and only leave a small branch, the pancreatic, in connection with the liver. With the portal circulation thus reduced no icterus ensued.

Social Entertainment.

The only conviviality was a subscription dinner held at the

Russian Restaurant in the Exhibition grounds. The Society was well represented, and about 130 guests sat down to dinner.

In the absence of His Excellency Professor Guido Baccelli (Minister of Public Education) Professor Bozzolo took the chair. He was supported by Professors Senise and De Renzi of Naples, next to whom sat Maragliano of Genoa and Queirolo of Pisa respectively. Amongst others present were Professors Foà, Cozzolino, Negro, Vizioli, Pagliano, Deigrazie, Surgeon-Major Mangianti, and Professor Rovighi. The speeches were of the usual eulogistic varieties, with the exception of one piece of rare oratory uttered with an eloquence, precision, and vigour which it is rarely one's fortune to hear. It was delivered by Professor Foà, Director of the School of Histological Pathology of the Turin University. In response to repeated calls he rose to his feet, and commenced by saying that during the last few days his hearers had been regaled with all kinds of oratorical music, some resembling the tones of the violin, some that of the trombone, some of the cornet, and some of the double bass; his would resemble the light notes of the clarionet, or perhaps the flute. He then proceeded to say that he would like to see Baccelli's Bill with regard to technical education passed on certain conditions. He did not revere Baccelli on account of his new law, but he did revere him for his ardent wish to see the people educated in a way to fit them to become good citizens. Baccelli wanted to teach them to make use of their hands. Speculative philosophy and scholastic disputations were well enough, but what was needed was a training of the senses to vitalise and render concrete the teaching of the schools. Those who soared in the higher atmosphere of intellectual life should have some regard for those who occupied the lower strata, but whose work was indispensable to the daily life of all. The speech, of which the above sketch gives a very inadequate idea, was warmly applauded.

THE PLAGUE IN THE EAST.

Calcutta.—The welcome news from Calcutta that on October 10th the city was officially declared free from plague will be appreciated everywhere. The fact that for ten consecutive days no case of plague had occurred in Calcutta fully justifies the announcement, and with the departure of the last case from the Plague Hospital the present outbreak of plague may be said to be finished. Sir John Woodburn, the Lieutenant Governor, while expressing satisfaction with this declaration, wisely conveys a warning that, though the town is at present free from plague, it should not be assumed that the danger is wholly past, and that it is of the utmost importance there should be no relaxation in the precautions,

Bombay.—The decline in the death-rate from plague which we were able to chronicle last week has not been maintained, and from both the city and the Presidency of Bombay the plague returns for the week ending October 8th show almost the same figures as those of last week.

Mysore.—In Bangalore alone is there anything like a severe epidemic, but for weeks now this city has been severely afflicted, 371 cases having occurred since the end of September.

Madras.—In this Presidency isolated cases of plague continue to occur, but the total number over this large area does not number more than 16 in all.

Plague and Pulmonary Diseases.—The returns of the Health Department of Bombay for some time past show a marked coincidence between the rise and fall of the death-rates from plague and from lung affections. The deaths from respiratory diseases are a long way above the average in Bombay at present, and the daily returns show that decline or rise in numbers varies according to the mortality from plague. It is possible that in some cases well-pronounced plague, for several reasons, is being described under the heading of respiratory ailments, as it is well known that pneumonia in some form is a frequent concomitant of plague.

Yellow Fever in America.—A Reuter's telegram from Memphis states that the outbreak of yellow fever in the State of Mississippi is extremely grave, and that the whole State is now practically included in the area of infection. Two thousand refugees have gone north to await the frosts.

THE ROYAL ARMY MEDICAL CORPS.

The Secretary of State for War has, in the exercise of the power specially reserved to him, recently requested certain medical bodies to nominate persons for admission to the Royal Army Medical Corps without examination. The following medical bodies were each asked to nominate two candidates: St. Thomas's Hospital, St. Bartholomew's Hospital, Guy's Hospital, Owens College, Manchester; Glasgow University, Edinburgh University, Trinity College, Dublin; and the Royal College of Surgeons in Ireland. We understand that the nominations of the body last named have not yet been formally received, and that St. Thomas's Hospital and Edinburgh University have only nominated one candidate each. Aberdeen University was invited to supply one of these deficiencies, but has not found it possible to do so in the limited time which alone was available, for it is desired that all the gentlemen nominated should join the class now being held at the Army Medical School at Netley. Some, indeed, have already done so. These gentlemen will rank after the candidates successful at the examination in August, and their places, when they receive their commissions next February, will be determined by the results of the examination in special subjects held at Netley at the conclusion of the present course. We may congratulate these gentlemen on entering at a happy moment a service so distinguished as the Royal Army Medical Corps, which opens to them an honourable career in which they may win much distinction. We may add that the full complement of the corps is not yet made up, and that a considerable number of commissions will, it is understood, be offered at the competition for admission to Netley next February.

St. Catherine's Home, Bradford.—About five years ago a home for patients in the last stages of cancer and other incurable diseases was started in Bradford, and has since been carried on in a building rented for the purpose. Mr. Joseph Cawthra has now defrayed the cost of a suitable building, which was formally opened by Lady Frederick Cavendish, and dedicated by the Bishop of Ripon. The building and site have cost £10,000, the whole of which has been defrayed by Mr. Cawthra, while other donors have provided the furniture. The building contains beds for 26 patients arranged in five wards. There is also a dayroom and accommodation for the matron and the nursing and domestic staffs, and a room for the medical staff. The building is provided with a passenger lift, is lighted by electricity, heated with hot water, and warmed also by Teale grates. Great attention has been given to ventilation and to all the sanitary arrangements. A mortuary has also been provided. The home is carried on by voluntary contributions, but we are informed that at present the amount raised is not sufficient to allow all the beds to be utilised.

Charing Cross Hospital Students' Club.—On October 12th the new Recreation Ground at Eltham, which has been generously provided by Mr. E. J. Churchill, of Agar Street, for the use of the students of the Charing Cross Medical School, was formally opened. An inaugural football match was arranged between the school team and a scratch team of past and present students. Mr. Churchill undertook the kick-off, and eventually the scratch team won, securing the only goal made. The ground, which is admirably adapted for football, was in very good order, and both players and spectators thoroughly enjoyed themselves. A pavilion has been erected as a memorial to the late Mr. A. T. Collum, Assistant-Surgeon to the hospital and an old student, and active steps are being taken to prepare the ground for cricket and lawn tennis next summer.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 15TH, 1898.

UNIVERSITY COLLEGE, LIVERPOOL.

Those who were privileged to take part in the interesting ceremonies connected with the opening of the Thompson-Yates Laboratories of Physiology and Pathology at University College, Liverpool, could not fail to be deeply impressed by all the circumstances. Looking at the great assembly in St. George's Hall which had come together to witness the presentation of the honorary degree of D.Sc. to Lord Lister, and listening to the enthusiastic applause which greeted the references made by the Chancellor (Earl Spencer) and Lord Lister to the work of University College in various departments, it was difficult to realise that it is less than twenty years since that College began its career in the modest rooms of the old lunatic asylum which formerly appertained to the Royal Infirmary.

That the progress of the University College of Liverpool has been so great is due to the public spirit and the generosity of the citizens, for the help which it receives from the State provides but a small part of its funds. It is a matter of legitimate pride to the medical profession that the inception of an institution which now touches social life and industrial activity at so many points was due to the action of the lecturers in the old school of medicine of the Royal Infirmary and it is a pleasure to know that many of the pioneers in this work, such as Dr. A. T. H. Waters, Mr. Reginald Harrison, Dr. Davidson, Dr. J. Campbell Browne, Dr. Caton, and Mr. Mitchell Banks are still living and active, and have seen the good work which they inaugurated reach a development of which they can hardly have dared to dream. It would, however, have been impossible to carry out their project without the generous aid of wealthy and public-spirited men such as the late Mr. George Holt, the late Lord Derby, Mr. Henry Tate, the Rev. A. S. Thompson-Yates, and many others who have poured in their gifts without stint, first for one object and then for another, until one by one professorial chairs, theatres, and libraries have been created and united together to form the great fabric of University College. Nor was the interest in the good work confined to the few, but the whole people of Liverpool have become proud of their College, and have given help and encouragement to the undertaking.

As we ventured to observe last week in writing of Professor Michael Foster's address at Mason University College, Birmingham, those who are active in the promotion and extension of universities and university colleges in industrial centres recognise fully that the function of a university is to advance knowledge in all departments, and to train men for action rather than contemplation. The true aim of the university training of a student is to make him better fitted for the work of life. As was then pointed out, this was recognised by the mediæval university to be one of its main functions. The fact that the university concerned itself only with training those who desired to become members of the three learned professions, as they were called, was not due to any implied inferiority in other vocations, but arose from the circumstance that at that time university training did not seem to be obviously necessary save to those who were about to adopt the profession of divinity, law, or medicine.

Now, however, there are few avocations which call for the exercise of even moderate intelligence in which a long and careful training is not essential to success, and in most cases the needful instruction and appliances can only be found or can best be found within the walls of a well-endowed university or college. To found chairs of Engineering, of Architecture, of Commerce, and of Political Economy in a university college is thus no new idea. It is, on the contrary, the adaptation of the original principle to the conditions of modern civilised life.

It is manifest that if a university training is a necessary or even a desirable qualification for many occupations, university centres must be greatly multiplied; for if the advantages of such training are to be enjoyed by the great middle class all over the country, the university must be brought nearer to their doors. The means to establish and maintain universities and colleges in all the great cities of the empire may not be found at once, but the public spirit of the citizens of the great communities of Lancashire, Yorkshire, and the Midlands seems to be in a fair way towards meeting the demand in these centres of population.

The existence of universities and colleges in the midst of communities which have helped to build them up cannot fail to exert in return a great and increasing influence on those communities themselves. Not only will they awaken the desire for knowledge and promote the pursuit of healthy intellectual occupations, but by disseminating a knowledge of the newest results of experimental science, more especially of applied science, they will be of incalculable benefit to commerce and industry, and will have an important influence in improving the conditions under which the mass of the people live. For many years to come the propagation of sound views regarding all which makes for the health of the people will be a task worthy of the efforts of university teachers, but this knowledge must be conceived in no narrow sense. Physics, geology, meteorology, even mathematics, and possibly music, have their bearings on the health of mankind, and it is surely not too much to hope that the community which keeps to the forefront in all the arts and sciences, including medicine, will likewise be in the front as regards the health and longevity of its members. The ways in which the wider pursuit of the arts and sciences must tend to enoble and sweeten life need not be enumerated, for they are a part of the current ideas of

university. We prefer to dwell on the visible and practical results which are likely to follow the great movement in favour of higher education which is taking place in the large commercial cities of England and Wales.

The founders and supporters of institutions for higher education throughout the land are engaged in a great and beneficent work, of which the magnitude and scope cannot yet be fully estimated, but will probably in the not distant future far transcend their present hopes and anticipations.

LORD LISTER'S ADDRESS.

Lord Lister's address at Liverpool was in every sentence worthy of him and of his work. His theme was the unity of science and practice, the levelling up of our daily method to the full height of that accuracy and finality which are in the mind of science; and so his references to the advantages which it might be confidently expected would flow from the provision of large and well-appointed laboratories of physiology and pathology illustrated in a striking manner the three functions of a university—its educational function, its obligation to bring to the service of practical life the results of recent discoveries in science, and its duty to extend the field of science by encouraging research. He dwelt on the important services which the Thompson-Yates laboratories would render to the student by enabling him actually to see and observe physiological and pathological processes, and to practitioners of the surrounding districts who could refer to the pathological laboratory for the authoritative determination of doubtful specimens of diseased materials. Then he passed on to speak of the opportunities which the laboratories will afford for research, and observed that every step in advance opened up wider fields for exploring the infinite resources of Nature. Thus he was led to speak of the necessity of experiments on animals; it had to be done, and it could not possibly have been done better, or with more wisdom, gentleness, and authority. We are certain that his words will be welcome to everybody who wishes to know the truth about experiments on animals in this country.

As might have been expected, Lord Lister's vindication of the experimental method in medicine has drawn forth some protests from the small but aggressive band of anti-vivisectors, some of whose letters have already appeared in the daily papers. In a large community there must always be a few faddists who have some favourite hobby which they will continue to ride in opposition to the common sense of the great bulk of mankind. So long as their arguments are not allowed to pass unchallenged, they do not do much harm, but as the majority of men are content to do the work that comes to their hands, and not talk about it, there is danger that the much speaking of the faddist on one side may gain the ear of the man in the street, and lead him to think there "must be something in it."

The fact that Lord Lister, whose whole personality, character, and life-work stamp him not only as a pioneer of science, but also as one of the greatest benefactors of humanity that this or any other age has produced, should express himself so unreservedly, will have great weight with thinking men. Still more his logical exposition of the true ethical position of vivisection, and of the aims of experimental physiologists, ought to convince all whose view is not hopelessly warped.

Lord Lister's address may raise a crop of angry letters in the newspapers, and stir into fresh activity an agitation that was quiet for a time. But though it may do this, yet he has done good service to all men who want to be reassured as to the character and purpose of experimental work in this country. And if they want exact knowledge of the facts they should send to the Government printers, Messrs. Eyre and Spottiswoode, East Harding Street, E.C., for a copy of this year's report by the Government Inspector appointed under the Act. For a few pence they will obtain a precise unbiassed account of the whole year's work.

It is a pity that no short manual, giving an account of the discoveries made by experiments on animals from the time of Harvey to the present day, has yet been published. Such a book was, we understand, planned some years ago, and the first part of it, written by many hands, is finished; but it became so elaborate that it is useless for general reading. Medical men in active practice have not time to follow all the phases of the controversy; they cannot always give chapter and verse, they cannot stand up on platforms and answer the paid lecturers who come down from London with magic lantern slides and all the old stories and fallacies learned by heart—Mantegazza, and the Sir Charles Bell story, and what Claude Bernard once said. A short manual of the chief facts of the case would be very useful; it should include some account of Pasteur's work, the thyroid treatment of myxœdema, the antitoxins, and cerebral surgery, together with reprints of the Inspector's annual reports, and an account of the restrictions set upon experiments, and a reprint of the Act.

MILK AND MEAT IN LONDON.

The London County Council had before it at its meeting on October 11th a report of the Public Health Committee on two very important subjects affecting the food supply of the metropolis. One of these questions was the matter of meat inspection and the desirability of suppressing private slaughterhouses; the other was the measures which should be taken to ensure the purity of the milk supply with special reference to the suppression of the dissemination of tuberculosis by milk. The two questions are intimately connected, and the report of the Public Health Committee was founded largely upon the report of the last Royal Commission on Tuberculosis. It will be a matter of great satisfaction to the medical profession, who are so well acquainted with the fearful ravages produced by tuberculous disease in man, that the Committee have recommended the Council to intimate to the Local Government Board that the London County Council is prepared to accept such responsibilities as may be necessary to give effect in London to the recommendations of the Royal Commission on Tuberculosis.

One of these recommendations was that provision should be made in London for providing public slaughterhouses in substitution for private slaughterhouses. This matter has had the attention of the medical officer to the County Council, who, after visiting various cities on the Continent and some of the chief cities in Great Britain,

presented a report showing the inadequacy of the inspection of meat as at present carried on in London. This inadequacy is in large measure due to the fact that though the greater number of animals are killed in the slaughterhouses of the City of London at Deptford and Islington, there are some 450 private slaughterhouses where every week from 800 to 900 beasts, from 7,000 to 11,000 sheep and from 500 to 900 pigs are killed weekly. The private slaughterhouses, with the exception of a few in the City, are now annually licensed by the London County Council, and the Public Health Committee recommend the Council to establish some half-dozen slaughterhouses in localities which would be available for the various areas of London. The proposal, it would appear, is objected to by certain of the owners of private slaughterhouses, who will no doubt bring pressure to bear upon the Council, although we believe that where butchers have once learnt by experience the advantage of well-appointed public slaughterhouses provided with cooling rooms, they have always found them to be of great advantage to them in their trade. However this may be, the matter is one of too much importance to be decided upon grounds of private interests. The medical profession throughout London number over 6,000, and we make bold to say that, if they could be polled, their opinion would be strongly in favour of the enforcement of skilled examination of meat before its sale. If all animals killed in London were slaughtered in public slaughterhouses, the carcasses could be thoroughly inspected, and it would then be reasonable to establish stations for the examination of meat killed in other parts of the country if unprovided with a certificate of inspection in a public slaughterhouse, and of all foreign dead meat.

Great as is the importance of the question of meat, that of the protection of our milk supplies is even greater. The fact that milk is one of the most frequent methods by which tuberculosis is disseminated has become one of the commonplaces of pathology and hygiene. It is desirable in the first place that notification of every disease in the udder of a milch cow should be made compulsory, but further powers will be required by urban authorities for dealing with milk brought into their districts from the country. Urban authorities, as the Royal Commission recommended, ought to have power to examine cows, the milk of which is sold within their boundaries, wherever those cows may be, and should have the right to prohibit the sale of milk from any cow which is suffering from tuberculosis or any disease which might render the use of such milk dangerous or injurious to health. The great prevalence of tuberculosis in infants and young children is well known. It is the direct cause of a very large mortality, and is responsible for a great deal of ill-health, and is thus indirectly the cause of very many deaths from acute infectious diseases, such as measles and whooping-cough, from which recovery might otherwise have taken place. The annual mortality per million from tuberculosis in England and Wales in the decennium 1881-90 was for ages under five years 4,499, whereas in the next five years of life was only 844. There can be no reasonable doubt that a very large part of this fearful mortality in childhood is to be attributed to the consumption of milk containing the infective principle of tuberculosis. Careful scientific examination by Professor Sheridan Delépine of milk brought into Manchester and Liverpool has shown that over one-sixth of all the country supplies were thus infected. The need, therefore, of skilled supervision of the milk supply is now well recognised by medical opinion. But the case does not rest on the distribution of tuberculosis alone. It has been abundantly shown that certain other diseases, especially typhoid fever, may be distributed in this way, and urban authorities ought to have the right to take samples and make analyses from time to time of the milk produced or sold in their districts, and should have the power to require milk vendors to supply sufficient information as to the sources from which their milk is derived.

The proposals contained in the report of the Public Health Committee are moderate, and are in full accord with the best medical opinion in this country, on the Continent, and in America. We venture to express the hope that in the interests of all classes, but especially of the children and of the poor of the metropolis, they will be adopted.

COLLECTIVE SUICIDE.

Conspiracies of suicide are phenomena which rarely appear outside the limits of the Russian Empire; within it they are by no means rare and often take the most horrible forms that fanaticism can devise. M. Sapojnikow's well-known work records many cases of self-immolation by fire, not only in distant times, but even during the present century. A more recent epidemic has been studied by Professor Sikorski of Kieff.[1] In this instance no fewer than twenty-five persons terminated their existence by allowing themselves to be buried alive. The psychological aspects of the matter are well put, interest being mainly centred in Professor Sikorski's interrogation and examination of one Feodor Kovalev, the sole survivor of the tragedy. In his study of motives and in the adjudication of the true measure of guilt, the author may perhaps have been led to attach rather too much weight to the self-exculpatory statements of Kovalev, which happened to fit in very well with his own theory of the affair; it is curious to read how the horror with which he at first regarded the miscreant changed after a while into an opposite sentiment. Still Kovalev's circumstantial description of the tragedy and the events which led up to it is probably in the main correct and certainly affords the material for a most interesting exercise in mental pathology.

The little community which effaced itself in the manner about to be related belonged to the old Russian faith and lived in a sort of convent at Ternovo. Its head was Kovalev's aged mother, a woman of amiable disposition and excellent business ability, but morally feeble and intellectually narrow. She appears to have been a helpless tool in the determined hands of one Vitalie, a single woman of 35, who is described as the leading spirit of the whole affair, a bigoted fanatic of imperfect education. She in her turn was much influenced by the views of a considerably more intellectual female known as Pauline the younger; the other actors in the tragedy played the part of chorus.

The trouble commenced in the autumn of 1896 when Vitalie and Pauline began to suffer from delusions of persecution. They recounted with horror imaginary stories

[1] In a paper which is analysed in the *Revue Scientifique* of September 3rd.

of how devotees of their sect had been sent to Siberia or thrown into prison. During September and October the members of the little community were in a perpetual state of dread, passing their evenings and nights in perturbed deliberations, as the result of which they decided to lay in a stock of warm clothing in case of deportation and to starve themselves to death if imprisoned. At the same time the idea of voluntary entombment appears to have been entertained. Matters were brought to a climax by the census of the end of 1898. The fanatics regarded its inquiries as a preliminary to their imprisonment or execution, and refused to afford any information in a letter strikingly similar to those written by the members of the same sect who buried themselves alive in 1723 and 1756. Vitalie and Pauline now began to contemplate suicide, and to recommend that all should starve themselves to death; the alteration to entombment arose out of some chance words of Kovalev's wife. By this time the little community was worked up into a terrible state of emotional excitement. Vitalie went about accusing anyone who opposed her ideas of conniving at the loss of a soul. She assured all the others that Antichrist had descended, and the end of the world was at hand, so that whoever sought death now gained a heavenly crown, and lost only two or three days of earthly life. On December 23rd, 1896, the first nine were buried; among them were Kovalev's wife and two children, Pauline's father, and Vitalie's sister. The victims entered the tomb, which all had helped to dig, in a frantic condition of religious exaltation. Kovalev states that Vitalie would not allow him to share the fate of his wife and children. Four days later Vitalie persuaded six more of the sect to allow themselves to be buried; these seem to have been ignorant of the fate of their predecessors. She herself does not at the time appear to have desired death; she acted under the impression that she was carrying out the Divine will, and that every time she persuaded a fellow-creature to die in this way she was accomplishing a step towards her own salvation. At the beginning of February she and six of the others were arrested; in prison they refused food, and after five days of this they were allowed to return home, the convent being guarded. A short time later Kovalev buried alive four women, one of whom was his own sister, in a field a kilometre from the convent. Finally, determined in the last instance by a putatively-inspired utterance of a half-witted brother of Kovalev's, the remainder of the fanatics, including Vitalie, Pauline, and Kovalev's mother, sought a similar death.

Such is the history of this strange series of crimes, as related in cold blood by their principal instrument. Professor Sikorski devotes much space to analysing the character of this heartless coward, and eventually persuades himself that he was more sinned against than sinning; the picture of his remorse quite touches the psycho-pathologist, and would appear to have induced him to intercede for him and save his skin. But for the ordinary student of humanity interest must focus in the utter blindness of religious mania which led these poor wretches through a life of terror to an agonising death.

The late Mrs. Elizabeth Amy Furniss of London has bequeathed £300 to the Cancer Hospital at Brompton.

DARENTH ASYLUM.

The want of a definite policy in the management of this large asylum for the idiots and imbeciles of the metropolis has for some time past been conspicuous, and the shifts and provisional arrangements to which the governing body has been compelled to resort cannot fail to have had a detrimental effect upon discipline. The asylum really consists of two large institutions, each containing about 1,000 inmates, the one for adult imbeciles and "harmless lunatics," the other called a school for imbecile children. Both institutions are on the same estate, with their respective buildings closely adjacent to each other, but hitherto each has had a separate medical superintendent. The recent resignation of Dr. Walmsley, for several years superintendent of the schools, gives an opportunity for unification of administration, and provisionally Dr. Taylor, the recently-appointed superintendent of the adult asylum, has until Christmas been placed in charge of the schools also. To have two asylum staffs under independent control in adjacent premises which have grounds in common cannot but lead to occasional complications. On the other hand, the charge of 1,000 adult imbeciles seems sufficient responsibility for one superintendent without loading him with the charge of the arrangements for the education and training—a different matter from mere care—of (reputedly) 1,000 imbecile children. It is not exact, however, to speak of the education and training of 1,000 children, for as years have gone on the proportion of ineducable to educable inmates has steadily increased, and it is admitted that the latter class are now in a minority. The demand for accommodation for cases requiring care only also steadily increases. It cannot be good for impressionable and imitative children of weak mind, but yet capable of improvement, to be in the midst of those much worse than themselves. The proper policy would seem to be to withdraw from this melancholy mass of idiocy the imbeciles of higher grade, and deal with them in an entirely separate establishment organised on educational lines. The residue in the so-called Darenth Schools would then properly fall into line with the inmates of the adult asylum, and there would be no difficulty in the supervision of the whole establishment by a single medical superintendent.

MISLEADING MEDICAL CERTIFICATES.

In the course of a communication which we print on another page, "A Preparatory Schoolmaster" crystallises in cogent terms a kind of experience which too often vexes the souls of school authorities, who are indeed familiar with the fact that there is "a deal of human nature in the man" as well as in the boy. The gist of our correspondent's recital lies in a certain sequence of events. The parents of his pupils were required to sign a certificate to the effect that their son had neither suffered from any infectious malady during the holidays, nor been, to the best of their knowledge, "exposed to any danger of infection" during the three weeks preceding his return to school. Infectious diseases, "which could all be traced unmistakably to the holidays," were nevertheless introduced into the school. This is no exceptional experience with any school, though it is possible materially to strengthen the form of safeguard employed in this instance in two ways, first, by insisting that if the pupil contracts any illness during the holidays, immediate notice thereof be sent to the school authorities or to the school doctor, who will thereupon communicate with the parents; and, secondly, by inserting in the certificate to be signed by the parent on the day before the pupil's return to school after the words "or has been exposed to any infection" a list of the infectious diseases common to childhood. The parent is much more impressed, and much more likely to be careful both in recollection and in statement, if his attention be directed to specific details than

if he be called upon to make a merely general declaration. In practice the difference corresponds to that between an examination and a cross-examination—the "never" and "not often" of a witness. Yet another safeguard, one which is of considerable value and which has been adopted by many schools, consists in a notice appended to the above form of certificate calling the attention of the parents to the fact that any wilful misstatement made in respect of this certificate is liable to be regarded as a breach of the terms upon which the pupil remains at the school. Certificates of this kind, in accordance with the formula long since recommended by the Medical Officers of Schools Association in their *Code of Rules*, have been adopted by the principal schools in this country, and they appear to secure the end aimed at within reasonable expectation. The second clause of our correspondent's indictment is more serious and, we hope, more exceptional. Dissatisfied with the results previously attained, our correspondent adopted "a still more stringent precaution," requiring a certificate, dated not earlier than the day previous to the pupil's return to school, signed by a medical man, in these terms, "I certify that I have this day carefully examined..... and that there are no signs of any infectious complaint about him." He states that in relation to thirty-two boys returning at the end of the holidays only seven out of twenty-three different medical men had made any but the most cursory examination of the children submitted to them for that purpose before signing the "explicit" form of certificate just quoted. The weak point in this charge lies in the fact that the conclusions come to as to the kind or lack of examination made in each case appear to be based on the assertions of the pupils themselves, of whom one at least seems to have been distinctly inaccurate in his statements on these points. But with every allowance for errors of this nature the indictment is one which deserves attention. Everyone knows that the cynic who said that most people sign certificates as recklessly as they give testimonials had some warrant for that gibe. Inquiry assures us that our correspondent's complaint in this respect is, unfortunately, not unique. Yet, if any man should be punctilious in such matters, it is the doctor. On every ground he can least afford to make it seem that his diagnosis is a mere matter of opinion—not to say of guesswork—devoid of all foundation in real and painstaking observation. No form of certificate, however carefully worded and however rigidly fulfilled, and no personal examination, however thorough and minute, will detect every illness in its latent stage; and no system based on such precautions will absolutely safeguard any school against the introduction of disease. These are axioms patent to every educated mind. But no more in this connection than in regard to other problems of his life's duties can the medical man ever afford to ignore the warning once uttered by the late Sir William Gull, "We make mistakes not because we do not know, but because we do not examine."

THE CHARGES AGAINST THE MEDICAL DEPARTMENT OF THE AMERICAN ARMY.

The United States Commission appointed by the President of the United States to investigate the conduct of the War Department, especially in regard to the alleged unnecessary suffering and loss of life among the soldiers at Santiago and in camp at home, began its regular sittings on September 24th. Many of the men selected to serve upon it have declined, but those who have undertaken the work are the following: Major-General Grenville M. Dodge of New York; Colonel J. A. Sexton of Illinois; Captain E. P. Howell of Georgia; Major-General J. M. Wilson, Chief of Engineers of the United States Army; Charles Denby of Indiana, former Minister to China, former Governor of Vermont; James A. Beaver, former Governor of Pennsylvania; Major-General Alexander McD. McCook, U.S.A., retired; and Dr. Phineas D. Connor of Cincinnati, Ohio. Dr. Keen of Philadelphia, who was first nominated to be the medical member of the Commission, was unable to serve. The Commission made its first inquiries in the Secretary's office, the Adjutant-General's office, and the office of the Major-General commanding the army, taking cognisance of the orders which were issued for the conduct of the war, and the instructions given to the army. In the same manner the offices of the Surgeon-General, Quartermaster-General, and Commissary-General will be examined into to ascertain the character of the orders issued, and whether they were carried out. It is not known whether the Commission will visit the camps, but it is thought probable that such journeys will be made. The Commission has no authority to compel the attendance of witnesses, or to make those testify who have responded to the invitation to be present.

FIFTY YEARS OF "BARTS."

Sir Thomas Smith delivered an address at the opening of the session of the Abernethian Society of St. Bartholomew's Hospital on October 6th. He described his earliest impressions received when he entered the hospital some fifty years ago, and traced the progress which has taken place in its practice, teaching, and administration, and in the manners and morals of its students. He said that the first impression conveyed to him as a student was that the good old days had passed away, and that he had fallen on evil times. This spirit overshadowed the whole hospital, and continued down to the time of Humphry, who also was sometimes heard to exclaim, "Where are the giants of the past?" Too much stress was laid upon the dicta of the great men who had passed away—an attitude of mind in which the study and practice of surgery ought not to be approached, for neither the student nor the practitioner ought to be governed by the authority of the past. Sir Thomas Smith then turned to the great changes which had taken place in the curriculum and examinations required of students. In his day as a student two and a half years was sufficient, whereas now the minimum for any diploma was five years. One result of the emancipation of women upon which all might be congratulated was that the nursing of the sick was now done by educated and refined women, while the introduction of chloroform and of antiseptic methods had robbed surgery of most of its terrors. At the conclusion of the address Sir Dyce Duckworth proposed a vote of thanks to Sir Thomas Smith. This was seconded by Mr. Bowlby, and most cordially responded to by a large audience, which numbered over 500.

THE INEBRIATES ACT, 1898.

The Government, among other proofs of their activity, desiring to secure a trial under favourable conditions of the Inebriates Act, which is to come into operation on January 1st, 1899, have appointed a Departmental Committee to advise the Home Secretary on the Regulations for State and Certified Inebriate Reformatories, to be established under the Act. The members of the Committee are Mr. P. W. Byrne, who was formerly Private Secretary to Sir Matthew Ridley; Dr. Donkin, a Commissioner of Prisons; and Dr. Brayn, Medical Superintendent of Broadmoor Criminal Asylum. The Secretary is Mr. G. A. Aitken, of the Home Office. It is to be hoped that the borough and county councils will be up and doing in the exercise of their powers, singly or in combination, to establish and maintain certified inebriate reformatories, in order that judges and juries may be able to have reformatories to which to send habitual drunkards who, in terms of the Act, may be remitted on a fourth conviction for petty offences complicated with drunkenness. Philanthropy, it s also hoped, will come to the aid of the certified in-

ebriates reformatories, which can be founded partly from public moneys and partly from voluntary effort. To the British Medical Association is due, in considerable degree, the enactment of the Act, and credit belongs to the Government for introducing and carrying the measure. Failure to provide ample reformatory accommodation would be a national disgrace. The eighteenth report of the Inspector of Retreats is of special interest at the present moment. Dr. Hoffman reports only one death during the year 1897. The number of patients had gradually increased from 130 in 1895 to 166 in 1896, and to 183 in 1897. The inspector cites extracts from reports by the licensees of the Dalymple Home, Street Court, Tower House, Royal Victoria Home, Kingswood Park, and St. Veronica retreats, all of whom strongly express an opinion in favour of the power of compulsory reception and curative detention. A regular annual citation of similar recommendations by those officials who have had considerable experience in directing retreats must increase the volume of public opinion in favour of compulsion. There can be no doubt that in substitution of the attestation of a voluntary request for reception and detention in a retreat by one justice only, an amendment to take effect next New Year's Day, will, with other amendments, greatly increase the value of the original Inebriates Act of 1879.

THE INDIAN MEDICAL SERVICE.

THE "levelling up" of the Indian Medical Service to the Royal Army Medical Corps in the matter of military titles has evoked certain ill-advised communications to the Indian press from the section of the former who desire to be considered a purely "civil" department. It has long been recognised that the Indian Medical Service is sharply divided into two sections—one with military, and another with civil, proclivities. The former, like the Royal Army Medical Corps, have always aimed at a footing of military equality with their comrades in regimental employment, the latter, having an eye chiefly to the civil loaves and fishes, want neither military distinctions nor employment. We cannot but deprecate certain letters on this subject which have lately appeared in the *Pioneer* under the heading, "The New Warrant." They are not only ill advised and ill timed, but show plainly that the men who write them should never have accepted military commissions at all; they should have remained civilians. The feeling displayed cannot fail to raise the old question whether it would not be a good and proper policy to divide the Indian Medical Service into two portions—the civil and military. The old argument against this, based on considerations of policy, probably no longer holds good. It was declared that the homogeneity of the medical service in India was politic, because as the country was held by the sword all medical officers should be available for military service in time of emergency. That was probably a sound contention when the medical officers were all Europeans, and India was separated by a six months' voyage from this country, with no telegraphic communication. But circumstances are completely altered. India is now as near to England as Gibraltar was in former days, and is not likely to be involved suddenly in a life-and-death struggle on its own resources; help from home is now a question of days; there will hardly be any necessity for drawing upon civil reserves within the country itself. Besides, these reserves are now very mixed, and no longer wholly European; in fact, they are often recruited from most unwarlike sources. It is, therefore, a question of expediency whether the Indian Medical Service might not safely and advantageously be separated into civil and military branches, the former to be mixed native and European, the latter to be wholly European. The civil branch, offering, as it does, great opportunities for professional distinction, and commanding good emoluments, would always attract able men who otherwise have no military proclivities, whether European, halfcaste, or native. The military branch would attract those who value that life, with its status and titles, and who desire service with native troops. In this way the square men would not be found in the round holes, which seems at present to happen sometimes in the Indian Medical Service, and the destructive and regrettable antagonism between two sections, both having and resting upon a military status, would be avoided. The problem of racial intermixture in the Indian Medical Service would also be easily solved; the native element would find ample scope in civil duties, for the medical officer of a native regiment should always be a European. Of course there is another solution—that the military medical service of India, as in the rest of the Empire, should devolve entirely upon the Royal Army Medical Corps. But we confess we should not like to see the Indian Medical Service a purely civil one.

"ELECTROCUTION."

THE use of electricity in the execution of criminals was introduced in the United States as a more humane as well as a more expeditious method than hanging, strangulation, or decapitation. In one or two of the cases in which it was first employed it was reported that the procedure was not altogether satisfactory, but it was understood that with further experience the method was found to work well. A painful doubt on the subject has, however, recently been suggested by Dr. Joseph Alan O'Neill, of New York, in an article in the *Atlantic Medical Weekly* of September 17th, bearing the unpleasantly suggestive title Who's the Executioner? Dr. O'Neill was present at the execution of Martin Thorn in Sing Sing Prison on August 1st. After the convict had been secured in the chair with straps the warden made a sign and the electrician closed a switch. There was a lightning-like tetanic contraction of every muscle of the man's body. At the end of a minute the current was turned off, and the body sank limp in the chair as far as the straps would permit. Dr. O'Neill goes on to say: "There was a blowing sound like the neigh of a horse; saliva came from the now open mouth, and the carotid artery began to pulsate. Again the current was applied, and again the body became rigid. For 30 seconds this second current was maintained; then I was allowed to make an examination. The law does not permit any attempt at resuscitation, but the warden said I might make any reasonable tests to make sure that Thorn was really dead." The phonendoscope revealed neither respiration nor heart beat, but in the carotid artery Dr. O'Neill could feel a distinct thrill, which he thinks was probably caused by the gravitation of blood from the head to the trunk. There was a slight contraction of the left pupil on touching the cornea, and the cremasteric reflex remained active for half an hour. *Post-mortem* lividity appeared very soon in the dependent parts of the body. The man was apparently dead, but putrefaction was absent; yet a necropsy was at once made. Dr. O'Neill concludes his article as follows: "The law requires the *post-mortem* mutilation. It is, in fact, a part of the penalty; for as it reveals no cause of death and teaches nothing of interest to science, it is evident that its purpose is to complete the killing. If this is true, then that section of the law relating to the necropsy should be repealed at once. If the convict is dead he will stay dead, without the necropsy. If he is alive, then the necropsy is a crime that outrages all decency, a crime a thousand times more horrible than the homicide for which the convict forfeits his life. Humane motives undoubtedly prompted the enactment of the existing law, but as long as the clause requiring a necropsy before there are positive signs of death continues a part of the penalty, humanity will receive a shock from each succeeding execution. To be hanged, drawn, and quartered was the sentence of the Middle Ages. To be rendered helpless by an electric shock

and then disembowelled by doctors before the body is cold, is the decree of our twentieth-century court. The physician is not expected to pass upon the merits of capital punishment, but the profession at large should protest vigorously against performing the legitimate functions of a hangman." The death sentence in this country used to run: "to be hanged by the neck till you are dead, and *after death* to be anatomised." The last part of the sentence, though nominally for the benefit of science, was really intended to make punishment more degrading. At the present day the prison surgeon, we believe, makes a *post-mortem* examination in order to satisfy the jury that death was instantaneous. This doubtless is the object of the necropsy on the "electrocuted" criminals. But if it is made, as Dr. O'Neill asserts, before the victim of the law is cold, it certainly looks as if those charged with the infliction of the death penalty were anxious to "mak sikkar."

A VACCINATION RECORD.

Sir John Simon, amongst the vast mass of evidence on the subject of vaccination which he submitted to the Royal Commission, included the case of the Royal Military School at Chelsea, quoted from a report by Dr. Balfour, in which during a period of forty-eight years, out of some 6,000 boys who passed through the school in that period, 39 were attacked with small-pox, of whom 4 died, these 4 not having been vaccinated on admission, as nearly all of the others were, because they were believed to have had small-pox. But this record is eclipsed by that of Christ's Hospital, in which it appears, from an official statement of the authorities, that during the thirty years, 1868-97, the total number of boys who passed through the school was 5,435, only one of whom was attacked with small-pox. This is the more noteworthy, for, as is well known, the boys are allowed out on half-holidays and leap-days, when they are exposed to infection of various kinds. They are, of course, all required to be vaccinated before admission to the school. It will be seen that the period referred to includes the great epidemic of 1872-73, when small-pox was so prevalent in London that the boys could have hardly failed to come into frequent contact with it.

THE INCREASING EMPLOYMENT OF CIVIL ASSISTANT SURGEONS IN INDIA.

The marked success of the now long-established medical colleges in India and the steadily increasing number of qualified medical men that they are yearly turning out has led the Government to reconsider the question of their being more largely employed in responsible official posts. A very important step in this direction has been sanctioned in a recent Government resolution, which, in addition to minor improvements in the pay and prospects of the civil assistant surgeons, also increases the number of permanent civil surgeoncies that will in future be held by them from 5 to 19, and further intimates a hope that it will shortly be found possible to raise this figure to 28. The pay in these very responsible posts, which will consist of medical charge of districts the population of which not infrequently amounts to upwards of a million, will vary from Rs.350, when in temporary charge, to a consolidated pay of Rs.500 in permanent charge, the latter figure being only Rs. 50 less than that of a commissioned officer of the Indian Medical Service of under twelve years' service who is in permanent civil employment. The greatly improved prospects of this deserving class of indigenous practitioners is the logical outcome of the excellent work of the medical schools of India, and will doubtless greatly stimulate the entrance of a better class of natives for study at the medical colleges—an object which it has long been the wish of the Government to attain. On the other hand, the effect of this measure in decreasing to a considerable extent the number of civil posts hitherto reserved for the officers of the Indian Medical Service must not be overlooked. For some years past both the number of civil posts which are open to the service, as well as their emoluments, have steadily been decreasing, and the service has been becoming more and more a military one very similar to the Royal Army Medical Corps, but with the disadvantage of continuous service in India. This new measure will greatly intensify the difficulty of obtaining civil employment, with a view to which it is safe to say at least three-quarters of those who compete for the service enter, though only about half of them are able to obtain it permanently. In such a case as this the interests of the service must necessarily give way to that of the public welfare, but we fear that this measure will be very far from helping to restore the steadily decreasing popularity of the Indian Medical Service.

CHARING CROSS HOSPITAL ANNUAL DINNER.

The annual dinner of the past and present students of Charing Cross Hospital Medical School took place at the Holborn Restaurant on Thursday, October 6th. Dr. William Carter, of Liverpool, presided, and Professor Virchow was present as a guest. The company numbered nearly 250. After the customary loyal toasts "The Health of Professor Virchow" was proposed by the Dean of the School, Dr. Montague Murray, who said that when Professor Virchow's name was first mentioned in connection with the Huxley Lecture many asked how he was related to the great pathologist whose name pervades the textbooks, and were greatly surprised to learn that it was the same man. If men's lives were measured by their achievements, said Dr. Murray, Professor Virchow was older than Methusaleh. In reply, Professor Virchow, who spoke with evident emotion, said that though young in heart, he felt in other respects the touch of age. He was still, however, a student, and was glad to see so many students, young and old, around him. His century was nearing its close; the coming century was theirs, and he hoped they would make it glorious with their work and their lives. The toast of "The Staff of Charing Cross Hospital," proposed by the Chairman, was responded to by Dr. Green, who recalled the fact that he had been a pupil of Professor Virchow, and was one of the first to teach his doctrines in this country. Mr. Cantlie proposed "The Past and Present Students"; and the toast was suitably acknowledged by Mr. Gibbs on behalf of the past, and by Mr. Double in the name of the present, students. Songs by Dr. Mott, Dr. Halley, Mr. Cantlie, and others contributed to the success of a very pleasant evening.

A MEAT EXTRACT.

On October 6th, at the Southwark Police Court, a summons arising out of the seizure of unsound food was heard, which from the very loathsomeness of the facts disclosed has excited more than the usual amount of public interest. Forty-four barrels of decomposing livers were seized by the Bermondsey Vestry officials upon premises devoted to the manufacture of all kinds of "table delicacies" and a pure meat extract. The details of the case, having in view the ultimate destination of the material seized, are so disgusting that those who possess a sensitive stomach will do well to eschew them. All the livers were decomposed, although the manager is reported to have expressed the opinion that they were "all right." They consisted for the most part of pigs' livers which had been exported from Ireland to Hamburg for the manufacture of that "unknown quantity" the German sausage, and so much of the supply as was in excess of the demand was sent over to England, to be used for "experiment," although, as the magistrate observed, fifty barrels, the amount of the original consignment, appeared to be a large quantity for such a purpose. Happily we have been spared the *experimentum in vivo*

upon the effect which the toxins elaborated in large quantities by the bacteria of putrefaction would have produced upon those healthy adults who partook of such a "table delicacy," and we do not care to think upon the consequences of the use of "the pure extract" in the sick room. It is satisfactory to know that the defendant was fined as heavily as the law permits, that is to say, to the extent of £50, and the magistrate (Mr. Fordham) imposed a further £50 for costs. But what is not satisfactory to know is the fact that many of such happy discoveries are made more by accident than by design. Few more important duties devolve upon a sanitary authority than that of guarding the public from the ill consequences of unsound food, and there is no gainsaying the fact that the provisions made for frequent and systematic inspection of premises where food is dealt with are not always as complete as they might be. In some London parishes and large towns a satisfactory provision to this end would entail a further addition to the staff, but we do not believe that ratepayers would object to the small outlay if it would serve as a guarantee that the food they bought was wholesome.

CONSCIENTIOUS OBJECTION: A LEGAL POINT.

A LEGAL correspondent writes: Among the many questions which have arisen upon the "conscience clause," that which came before the Petty Sessions at Daventry on October 5th is of more than usual interest. A fortnight previously a batch of applicants had been refused certificates by a majority of the Bench, while in the week before, the magistrates being equally divided, it was decided to adjourn all the cases. Upon this occasion an applicant urged that it was not necessary to satisfy all or even a majority of the Bench, the words of the clause being, "two justices or a stipendiary or metropolitan police magistrate in petty sessions." Thereupon Lord Henley, who was in the chair, announced that if any other magistrate was willing to declare himself satisfied he would grant the certificate. Mr. Hibbert, another magistrate, then pointed out that it was necessary to satisfy the majority. After further discussion no fewer than eleven certificates were signed and granted by two magistrates without the matter apparently having been put to the vote. The same course seems to have been adopted at Highgate on October 10th. It is submitted that the Bench is not justified in granting certificates under the above circumstances. Where magistrates are called upon by the Legislature to exercise a judicial discretion it is necessary for the opinion of the majority to be taken and acted upon. A distinction must always be observed between "ministerial" and "judicial" duties. Signing a rate or backing a warrant under 24 Geo. II. c. LV, s. 1, are ministerial acts, the performance of which may be enforced by mandamus, whereas in appointing overseers and in the performance of numerous other functions a judicial discretion is exercised. No magistrate can be compelled to exercise this discretion in any particular way; but it might here be observed that he can probably be compelled to hear an application for exemption. In many Acts of Parliament powers are given to two justices "or" a stipendiary magistrate—that is to say, the stipendiary is, from a judicial point of view, equal to two ordinary justices. Having regard to this, it is submitted that the words "two justices" in the Act must be taken to mean "a minimum of two." The whole Bench must therefore discuss the question whether the applicant is speaking with *bonâ-fide* conviction. If, upon hearing all that he has to say, there is a majority of at least two in his favour, then and then only can he take his certificate. There is no lack of authority for saying that, where a judicial duty is imposed upon two magistrates, they must meet together and deliberate upon it. In one case, Mr. Justice Ashurst said: "The justices in appointing overseers do not act ministerially; it is a matter of discretion, and being such, they should confer together for the purpose of a communication on the subject matter on which they are to determine." Furthermore, an order made by justices is always deemed to be the result of a conference amongst them all. In a word, just as the stipendiary or metropolitan police magistrate must carefully consider any statements made to him by an objector, so the Bench, consisting of at least two magistrates, must express its opinion after due deliberation. In spite of the above remarks, the action of a Bench of magistrates, where their duty is judicial, cannot in the absence of fraud be questioned by a higher court. A singular case arose upon this point some years ago. Seven borough magistrates, including the mayor, assembled to appoint overseers. The mayor, upon entering the court, drew from his pocket two blank forms with three seals attached. He then filled them up with the names of two persons of his own political party, and after these being signed by the two magistrates sitting next them, he despatched them to be served, in spite of the protestations of the four magistrates who were not consulted. In a subsequent action in the High Court this matter was discussed. It was held that in the absence of fraud—and a jury decided that there was no fraud!—the appointment was valid, being a judicial act done at a meeting competent to perform it, and being verified by a sufficiency of signatures. It would seem, therefore, that the High Court is unwilling to question or make any inquiry into the deliberations of magistrates performing discretionary duties; but, inasmuch as a mandamus can be obtained to compel the hearing of an application, it is to be hoped that the matter will again come before the High Court in the ensuing session, in order that the point may be finally decided.

HOGARTH'S PAINTINGS AT ST. BARTHOLOMEW'S HOSPITAL.

THE paintings by Hogarth, to which a brief reference was made in the BRITISH MEDICAL JOURNAL of October 8th, ornament two of the walls of the grand staircase which leads to the Great Hall in the north wing of the hospital. The subjects are "The Good Samaritan" and "The Pool of Bethesda." They were painted gratuitously in 1736 by Hogarth, who was thereupon elected a life-governor of the charity. The pictures are well worthy of the careful treatment to which they have lately been subjected, for the painter in his autobiographical sketch says that they were his first efforts in the grand style. "Before I had done anything of much consequence in this walk," he says (that is, the painting and engraving of modern moral subjects) "I entertained some hopes of succeeding in what the puffers in books call 'the great literary style of history painting,' so that without having done a stroke of this grand business before I quitted small portraits and familiar conversations, and with a smile at my own temerity commenced history painter, and on a great staircase at St. Bartholomew's Hospital painted two Scripture stories, 'The Pool of Bethesda' and 'The Good Samaritan,' with figures 7 feet high." Both paintings were engraved in 1772, and impressions of the plates appear in Boydell's edition of Hogarth's works.

LIVERPOOL MEDICAL INSTITUTION.

THE inaugural meeting of the fifty-ninth session of the Liverpool Medical Institution was held on October 7th, when an address was delivered by the President, Dr. W. Macfie Campbell, who took for his subject Some Old Medical Authors and their Works. The address, which dealt for the most part with writers whose works are among the treasures of the library of the Institution, was copiously illustrated by beautiful lantern views copied from the plates, and was followed with great interest by the members present. The meeting was the largest the Society has ever held, 210 members and visitors being present. Among the latter were Sir James Russel

(Edinburgh), Dr. Pavy, Professor Rutherford, Professor Chiene, Dr. Monckton Copeman, Professor D. J. Hamilton (Aberdeen), Professor Lloyd Morgan, and Mr. Berry, President of the Lancashire and Cheshire Branch of the British Medical Association. Those present were afterwards entertained at supper by the President in the adjoining room of Hope Hall. After supper a varied programme of music was rendered by some of the members and visitors, Professor Rutherford contributing a song. A fine collection of plants was lent by the late President, Dr. Caton. The gathering was a most successful beginning to the session.

FAITH-HEALING.

An inquest held at Camberley on Saturday last brought to light an astounding and melancholy instance of credulity among people who from their position and education ought to have known better. Major Cecil Lester, aged 38, Instructor of Military Topography at Sandhurst, was the patient and victim. It appears that he was suffering from tuberculous peritonitis, and was being attended by Lieutenant-Colonels Clarke and Gillespie, R.A.M.C., up to September 5th. On that date they were told their services would no longer be required, as a "Christian Scientist" had been sent for. Mrs. Esther Grant, living at Albert Gate Mansions, was called as a witness, and deposed that:

On September 5th she received a telegram to attend the deceased to give Christian Scientist treatment. She commenced her treatment at once before she saw the patient.

The Coroner: Before you saw him?

Witness: Yes, directly I got the wire.

The Coroner: I should like to know how you treated him.

Witness: By what we should call taking up the right thought of the omnipotence and love of God. The witness, proceeding, said she had no experience in the treatment of peritonitis, from which the patient's sister told her he was suffering .....They made a charge of a guinea a-week for the treatment. No drugs of any kind were administered to the deceased..... She continued the treatment while she was away in London.....Nothing beyond Christian Science treatment was done to relieve the sufferer.

The only consolation one can derive from this depressing exhibition of folly and cruelty is that it gave the jury an opportunity of expressing "their strong sense of abhorrence of the so-called treatment of the deceased by Mrs. Grant, as representing the Christian Scientist Society, in not taking any material means for alleviating the sufferings of the patient." To attempt to reason with such crass superstition would be waste of time. We can only hope that the law, which has been many times brought to bear upon the poor uneducated and obviously sincere "Peculiar People" will not look on with indifference at similar practices amongst the well-to-do and well-educated.

THE CONVERSION OF LORD GRIMTHORPE.

Lord Grimthorpe has joined the antivaccinists. So we learn from a somewhat ostentatious proclamation of the fact in a letter from his lordship to Mr. A. R. Wallace in an evening paper. The new set of combatants with whom he has thus in his latter days allied himself are, as might be expected, making quite a splutter of delight at their unexpected conquest. It would appear from his own account that his conversion at the age of 85 has been as sudden as those which are so frequently effected by General Booth and his officers. To make use of a phrase made classical by Parliamentary use, his lordship intimates that he "found salvation" in the perusal of the chapter on vaccination in Mr. Wallace's *Wonderful Century* and in some letters in the *Times* from the honorary secretary of the Jenner Society. There is no accounting for the vagaries of the human mind, and as Lord Grimthorpe is pleased to give us this explanation of the genesis of his convictions, we must in common politeness accept it. At the same time there are certain admissions in his letter which would seem to indicate that the mustard seed of quickening grace thus implanted in it must have fallen on soil that had been well fertilised for its reception. Lord Grimthorpe disclaims any right to be considered an expert in this matter, and acknowledges that he has not thought it even worth while to "wander through the thickets of the Commissioners' contradictory reports." He has, apparently, turned the searchlight of his extensive forensic experience in a casual sort of a way on the vaccination question, and having suddenly encountered Mr. Wallace's "wonderful" diagrams and his equally remarkable letter to the *Times*, he has formed an opinion on the subject with as much celerity as he used to display when turning the tables on an awkward witness before a Parliamentary Committee. It is very characteristic of the sometimes inconvenient frankness with which his lordship is wont to treat those with whom he has from time to time thus incontinently allied himself, that in the conclusion of his letter he administers an awkward dig in the ribs to his fellow eccentric, whom he has thus been moved to address. By way, we must suppose, of cautioning Mr. Wallace against undue elation at his conquest and supposing that because his lordship has thus stamped with his imprimatur the chapter in the *Wonderful Century* on vaccination he intends to stand sponsor for all the other fancies of its fertile author, he intimates that he looks upon the socialistic theories propounded in it as even worse than the small-pox. Unfortunately Lord Grimthorpe has, by his new profession of faith, cut himself off from all possibility of vaccinating or even inoculating Mr. Wallace with any of the orthodox lymph of his own dogmatic opinions on this subject. So these two *ductores dubitantium* must be allowed to go each his own way, to the no small amusement of their scientific and legal brethren. It is certainly curious to see two such brilliant heavenly bodies approaching and coquetting and colliding with one another in orbits which it would puzzle the most expert calculator to forecast. We can only look on in pious wonder and be thankful that the world still continues to exist, and that, as after the terrible curse fulminated on the Jackdaw of Rheims, no one is, apparently, a penny the worse.

MEDICAL PRACTITIONERS AND UNQUALIFIED DENTISTS.

At the meeting of the Council of the British Medical Association on October 12th a resolution from the Dundee Branch with regard to the administration of anæsthetics by registered medical practitioners for dental operations performed by persons not registered under the Dental Acts was considered. The resolution embodied a copy of a resolution adopted by the Dental Committee of the General Medical Council, which had been transmitted to the Dundee Branch by the Registrar of that Council. The resolution was as follows:

That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible, and recommend that if a charge of "covering" in connection with such administration of anæsthetics were brought before the General Medical Council it should be entertained and investigated.

The Council of the Association endorsed the action of the Branch, and fully agreed with the opinion expressed by Executive Committee of the General Medical Council that the practice referred to is reprehensible. As we are informed that certain members of the Association have felt doubt as to the proper course to be taken in this matter, we think it well to draw attention prominently to the opinion of the General Medical Council and of the Council of the British Medical Association.

THE CHADWICK LECTURES.

The trustees of the late Sir Edwin Chadwick have founded in memory of the great sanitarian a course of lectures and demonstrations in municipal hygiene at University College, London, and have devoted a sum of £700 a year to the endowment of a chair of municipal engineering and a lectureship of municipal hygiene. They have given the

further sum of £1,000 for the purpose of instruments and appliances, and for the amplification of existing laboratories. On October 12th Professor Osbert Chadwick, M.Inst.C.E., son of Sir Edwin Chadwick, delivered an inaugural address opening the first course. After giving a sketch of the history of the foundation, he observed that relatively little practical instruction could be obtained from lectures alone, and that their utility was greatly increased by a course of practical work. The drawing office was an essential adjunct to academic instruction; engineering was a high art, the art of applying the great sources of power in Nature to the use of man, and it was only to be acquired by experience, practice, and observation. While in a well-equipped mechanical laboratory the student could be taught to produce the parts or the whole of a machine, the construction of bridges, roads, and the like, obviously could not be attempted. The student could, however, be prepared for his practical work by being taught the essential scientific bases of engineering, and by being taught how to learn the profession of civil engineer. Mr. Chadwick added that the course of municipal engineering would comprise lectures by Mr. R. Middleton, on water works, sewage works, and the like. The student who diligently followed the course would be of value in the office of a civil engineer, and the time that must elapse before he could take a responsible position would thus be diminished. The lectures on municipal hygiene would give elementary instruction as to the cause of disease, methods of disinfection and bacteriology, and other matters which strictly belonged to medicine, but as to which the engineer ought to have information in order that he might be able to design municipal works with intelligence. The Chadwick Laboratory would afford opportunities to the students for practical work in the analysis of air, gas, water, and in other branches of practical chemistry. The trustees had also founded a Chadwick Scholarship, under which the sum of £100 would be paid as an honorarium to a practising engineer taking the student as pupil, or as an alternative the sum would be paid to the student to augment the small salary he might receive as an improver. The first lecture of the course of municipal hygiene will be given by Professor Corfield, on October 18th.

THE COUNTESS OF DUFFERIN'S FUND.

The thirteenth report of the National Association for Supplying Female Medical Aid to the Women of India indicates good work and steady progress; 1,377,894 patients were treated in hospitals and dispensaries connected with the fund, an increase of 50,707 on the previous year. This is a most satisfactory statement in view of the disturbing influence which the famine and plague exercised in many places on the work. "There are at present," to quote the Jubilee address presented to Her Majesty, "163 hospitals and dispensaries, valued at 20 lakhs of rupees, which are officered by women. The number of lady doctors of different grades is 168, and there are 240 women studying medicine in the medical colleges of India." In several directions and ways evidence is forthcoming of the vitality and development of this admirable scheme to succour the sick women of India by the agency of members of their own sex, who obtain easier access to them than male practitioners. Many institutions formerly helped by the fund are now quite independent of its existence; the class and grade of practitioners employed are being raised; some progress has been made in inducing Hindu and Mohammedan girls of respectable position to study medicine; the services of lady doctors have been largely utilised, and with good effect, for plague duties; and notwithstanding the demands made upon the generosity of the public in connection with the famine, the finances of the Association are in a very satisfactory position. Over 14 lakhs of rupees have been invested by provincial branches, yielding an income of Rs.66,362, and Rs.31,834 were received by donations and subscriptions in 1897. Local branches have, in addition, invested nearly 7 lakhs. The education of doctors and midwives in India is being pushed and improved, but difficulty is still experienced in getting the right stamp of women. Progress has also been made in rendering medical aid to *purdah* women. The report is very elaborate, covering 410 quarto pages. The Madras branch has issued a separate report, in which very satisfactory results are chronicled as regards education, relief, and finance.

THE BACTERIOLOGICAL DIAGNOSIS OF TUBERCLE.

So much reliance is commonly placed on the ordinary methods of staining tubercle bacilli—for example, those of Gabbett or Ziehl-Neelson—that it is well to be reminded often occasionally of an error which may occur, more perhaps, than is supposed, in connection with these processes. Last month Pappenheim recorded[1] a case of bronchietasis, with broncho-pneumonia and gangrenous lung abscesses, in which a mistaken diagnosis of tuberculosis was arrived at, owing to the fact that the bacilli found in the sputum were indistinguishable, when stained by Gabbett's method, from those of that disease. They proved to be smegma bacilli. Commenting on this case, Fraenkel states[2] that he has had several cases of gangrene of the lung, in which he made a similar mistake. He says that in ordinary muco-purulent sputum these bacilli do not resist decolorisation, but that in all cases of decomposing sputum, rich in fatty acids and myelin, the ordinary methods are unreliable. Honsell stains with hot carbol-fuchsin[3], and then places the preparation in a 3 per cent. solution of hydrochloric acid in absolute alcohol for not less than ten minutes, counterstaining with a solution of methylene blue in 50 per cent. alcohol. Fraenkel recommends this method. Pappenheim uses a solution of corallin in absolute alcohol. For details we must, however, refer the reader to Pappenheim's paper and to the references appended to it.

The annual public night of the Medical Society of University College, London, will be held at the College on Wednesday, October 19th, at 8 P.M. An address will be delivered by Professor F. T. Roberts on the Personal Factor, and Professor Ramsay will give a demonstration on the Newly-discovered Gases. There will also be an exhibition of medical and surgical appliances. We are requested to state that admission is free.

Surgeon-General W. Taylor, M.D., A.M.S., who was Principal Medical Officer of the Khartoum Expedition, is about to proceed to India, having been selected to succeed Surgeon-General A. A. Gore, M.D., as Principal Medical Officer of the British Forces at Army Headquarters. Surgeon-General Robert Harvey has been formally confirmed in the appointment of Director-General of the Indian Medical Service at Headquarters, Simla, in succession to Surgeon-General Cleghorn, retired.

Dr. M. Armand Ruffer, President of the Conseil Sanitaire Maritime et Quarantenaire of Egypt, gives notice that a medical post for the superintendence and disinfecting service at Suez and Moses Wells is vacant. The salary begins at £316 10s. a year and a house, and rises progressively to £474 15s. Applications, which must be addressed to Dr. Ruffer, Alexandria, Egypt, should be made on or before January 6th, 1899. Preference will be given to candidates having a theoretical and practical acquaintance with bacteriology and epidemiology.

[1] *Berl. klin. Woch.*, September 12th, 1898.
[2] *Arbeiten aus d. path. Inst. zu Tübingen*, B. II, p. 317.
[3] *Ibid.*, October 3rd.

LIVERPOOL UNIVERSITY COLLEGE.

Opening of the Thompson-Yates Laboratories.

The formal opening of the Thompson-Yates Laboratories of Liverpool University College, by Lord Lister, took place on Saturday, October 8th. The ceremony was preceded by a meeting of the Caput of the Victoria University in St. George's Hall, convened for the purpose of conferring the honorary degree of Doctor of Science on Lord Lister.

Admission of Lord Lister as D.Sc. (Hon. Causâ).

The great hall, which is capable of holding nearly 4,000 persons, was densely crowded by a distinguished audience, the University graduates present wearing full academical dress. The members of the Senatus Academicus and others officially associated with the University, and the invited guests, formed a procession which marched up the hall to the orchestra platform, where those compos ng it, to the number of 300, took their seats. The following was the order of the procession:

The Lord Mayor of Liverpool.
The Town Clerk.
The President of the College (the Earl of Derby).
The Vice-Presidents.
The Registrar.
The College Council.
The Chairman of the School of Commerce.
The Chairman of the School of Architecture.
The Chairman of the Board of Legal Studies.
Honorary Members of the Staff.
Emeritus Professors.
Guests of the College.
Members of the College Teaching Staff.
Graduates of Victoria University.
Members of Convocation.
Lecturers.
Professors.
Members of University Court.
Chairman and Clerk of Convocation.
Chairman of Board of Studies.
Principal Glazebrook and Principal Bodington.
Lord Lister, P.R.S.
Earl Spencer, the Chancellor of the University.
The Registrar.

Much regret was felt at the unavoidable absence of the donor of the laboratories, the Rev. S. A. Thompson-Yates, who in a letter dated from Dijon apologised for his inability to attend the ceremony in consequence of indisposition.

The members of the procession, who were with very few exceptions attired in full academic dress, made a brilliant assemblage, the various robes of the different universities of the United Kingdom and of the Continent forming a spectacle as interesting as it is rare, and presenting a gorgeous show of colour. Dr. Pierce, Mus.D., the organist to the corporation, presided at the organ, which is one of the finest in England, and played the March from *Scipio* during the entrance of the procession, and the March of the Priests from *Athalie* when it withdrew.

Earl Spencer, Chancellor of Victoria University, after taking his seat, rose and said: My Lords, Ladies, and Gentlemen, — I rise to address this splendid assembly which I see before me, and in a few words to open the interesting and important ceremony for which we are met here to-day. You are most of you aware of what has been taking place of late years in Liverpool at the University College. You know what munificence has been shown by citizens of this great city towards this place of education. You know that Mr. Holt and the late Earl of Derby have endowed chairs of learning for this University. We acknowledge and thank those who in the past have been so munificent, and now added to this munificence as a further sign of the generosity of Liverpool men, Mr. Thompson-Yates has in a magnificent manner put as it were the crown to these proceedings of other Liverpool men, and has enabled you to establish in your college laboratories for the professors to carry out their work efficiently. You are met, therefore, under the leadership of one of the most distinguished men of science who has come here to-day to open these laboratories. Victoria University has conferred on Lord Lister a degree, and as Chancellor I have the high honour and privilege to admit him to this degree. It would not be becoming in me in opening these proceedings to enlarge at any length on the career of this great man. I leave that in the able hands of the learned professor who will presently introduce Lord Lister for the purpose of receiving the degree; but I may be allowed to say a few words with regard to him. I should be sorry in opening these proceedings if I were altogether silent as to the views which I hold upon Lord Lister's career. Lord Lister has had a most remarkable career. He has introduced scientific reforms in surgery, his own branch of the profession. His name is well known all over the world, and in conferring a degree on Lord Lister we feel that we are conferring and reflecting an honour on the University itself. Not only did Lord Lister by his skilful research, his patient following out of principles, make a revolution in surgery, but he has also been a most distinguished surgeon. His researches and his discoveries have opened wide fields to surgery in every part of the globe. Without his discoveries surgical practice could not have advanced as it has advanced. In this way he has been a benefactor to suffering humanity in all the world. We of the Victoria University greet him to-day. We feel that we are only giving him his due by paying a tribute in his honour, and I am sure you will all receive him with acclamation when he comes forward presently for this ceremony. Let me conclude in the words of a most distinguished man, one of the most distinguished men of science in the world—Professor Virchow. I will conclude the few words that I use in opening this ceremony with what he said recently in London: "We salute Lord Lister with enthusiasm as one whose conspicuous career is one of glory here and all over the world."

Dr. Caton, Emeritus Professor of Physiology, and Chairman of the Faculty of Medicine, then presented Lord Lister to the Chancellor in the following words: My Lord Chancellor,—Of the various duties devolving upon the authorities of a university there is none so pleasurably undertaken as that of doing honour to those who have advanced human knowledge or benefited mankind. While it is the primary function of a teaching university like our own to diffuse the higher branches of learning and to test by examinations the proficiency of those who acquire it, not less is it incumbent on such a university to distinguish by its honorary degrees those who have been the pioneers of that knowledge. We are honoured to-day by the visit to our city of one whose services to mankind have been so great, whose life has been so singularly devoted to the task of finding out truth and applying that truth to the welfare of his race, one whose work is so widely known and appreciated, that it seems almost an impertinence even briefly to recount it. Possessing a mind and heart full of sympathy, benevolence, and humanity, our visitor of to-day from an early period of his career as a surgeon witnessed with pain and sorrow the mortality and suffering which then, as in all ages, attended surgical injury and surgical disease in man and the lower animals. He devoted his life to an inquiry into the causes of this suffering and mortality, bringing to the task scientific ability and knowledge of the highest order, and in particular a profound acquaintance with the work of the great French chemist Pasteur. After long years of labour, patience, and conflict with difficulties, he was privileged to discover not only the cause of all this suffering, but also the remedy. To-day there is not a hospital in the civilised world which has not been transformed through Lord Lister's teaching, and in which death and suffering have not been to a great extent banished. To-day there is not a case of serious surgical disease or surgical operation in man or woman in any rank of life, or even among the lower animals, in which Lord Lister's work has not diminished the liability to suffering and death. The work of Lord Lister is of extraordinary value in time of war. The field and base hospitals for the wounded were in former times a scene of mortality and septic fever far greater than that occurring in the field. Commonly one-fourth, one-third, even one-half of the wounded succumbed to this dread disease. But how is it now? The Medical Director-General of the British Army tells us that during and after the recent war in the North-West Provinces of India not one single case of septic fever occurred. Moreover, the benefit of this great immunity from evil will extend to all time. Lord Lister has doubled the utility of the work of the surgeon, and ligl tened the burden of pain and death which rested on

the shoulders of mankind to a degree rarely if ever achieved by any man before. Work of this order is far above recompense or reward; the nobility of such a life is for us to seek to imitate rather than to praise; but still the Court and Council of our University desire to confer on Lord Lister the degree of Doctor of Science in recognition of the fact that never has science been more nobly enlisted in the cause of humanity and of human progress than in the work of his life.

Dr. Caton then stepped forward, and taking Lord Lister by the hand presented him to the Chancellor, who conferred on him the honorary degree in these words: "In virtue of the power invested in me as Chancellor I admit you to the degree of Doctor of Science of Victoria University."

Dr. Caton's presentation oration, which was heard all over the hall, was received with great applause, and when Lord Lister advanced to receive the degree the vast audience rose to their feet and greeted him with rounds of tumultuous applause.

Lord Lister signed the roll, and delivered the following address:

Lord Lister's Address.

Lord Lister, who was received with hearty cheers, said: My Lord Chancellor, my Lord Mayor, my Lords, Ladies, and Gentlemen.—When I was honoured by the authorities of the Liverpool College with the request that I would open the Thompson-Yates Laboratories I little imagined that I was asked to take part in so imposing a ceremonial as the present. That it should have assumed such a character, that it should have attracted so large and brilliant a company, including not only many men from various and often distant parts of the country distinguished in medicine and other branches of science, but also noblemen, Church dignitaries, and persons eminent in literature, and in politics, seems to me a matter of great importance, full of good augury for the future of the scientific practice of the healing art—in other words, treatment based on real knowledge as contrasted with the blind gropings of empiricism. We seem to have before us to-day clear evidence that the more cultured sections of the British public are becoming alive to the necessity of providing adequate means for the practical study of the sciences which are of the very essence of the knowledge that confers the power to recognise and treat disease. If an engineer is to qualify himself for detecting and correcting anything wrong in a machine of human construction no verbal description or drawings will give him the requisite information; he must see and handle the details of the mechanism and watch them at work. And it might seem the veriest common sense that the more practically familiar a man is with the structure and working of that marvellously complicated mechanism, the human body, the better fitted will he be to deal with its disorders. Yet, obvious as such a consideration may seem, it is only in comparatively recent periods that its truth has been generally recognised. I am old enough to remember the years before the passing of the Anatomy Act, and I recollect being told as a child of the fiendish deeds of Burke and Hare, horrors which it would appear were needed to arouse a prejudiced and apathetic public to the imperious necessity of making it legally permissible for the intending surgeon to become acquainted in the only possible way, by dissection, with the sacred structures which he would be called upon to invade with his knife in the living body. A dissecting room well provided with the needful material for study has since been an essential equipment of every medical school, and a thorough course of dissection is demanded of every medical student. Meanwhile another kind of anatomy than that which the scalpel displays has come into being—the anatomy which the microscope has revealed and is constantly further revealing. This microscopic anatomy both of healthy and of diseased structures has assumed the greatest importance, and like naked-eye anatomy it requires special provision for its successful study. The materials to be studied cannot well be obtained by the student in his lodgings, and the processes employed for the elucidation of their minute structure are often of a complicated character which he cannot learn unaided, and require costly apparatus which he cannot provide. The requisite facilities for this work will be amply supplied by the laboratories which are to be opened to-day. The necessity for special pathological institutions has long been recognised on the Continent, and nowhere has such an establishment been conducted with more signal success than in the Pathologisches Institut of Berlin, presided over for many long years by the illustrious man whom Liverpool is, I am sure, as glad to welcome with reverence as London has been. Many present to-day have sat at the feet of Professor Virchow, but we may fairly anticipate that Liverpool students at all events will for the future be able to dispense with these pilgrimages to Germany. While the minute anatomy of normal and morbid structures will be thus effectively taught in the new laboratories, much may also be done in them to demonstrate and explain the actions of the living organism. I well remember the effect produced upon me as a member of Dr. Sharpey's class in London, by the repetition before us of Bernard's great experiment on the local circulation, and the converse experiment of Waller. The sympathetic nerve in the neck of an animal being divided, the ear of that side instantly became red and hot, and the blood vessels turgid; while on the application of galvanism to the severed nerve the opposite effect immediately followed, the ear becoming white and cool, and the vessels less conspicuous than those of the other side. Thus was impressed upon us as mere oral teaching could hardly have done, the immensely important fact that the contractions of the arteries are as much under the control of the nervous system as are those of the muscles of a limb. I need, perhaps, hardly add that the animal being completely under an anæsthetic during such a demonstration no pain whatever is inflicted. In the study of the new science of bacteriology the pathological laboratory will render most important service. The student will see with his own eyes by aid of the microscope the minute living beings which we now know to constitute the essential cause of many infectious diseases, and he will be put through a course of the cultivation of these microbes, which, while it will impress upon him the reality of their existence, and the characters by which the various species may be recognised, will be invaluable as an exercise of the habits of accurate observation and manipulative skill. The new laboratories will also serve as a centre to which practitioners of a wide surrounding district may refer for the authoritative determination of the nature of doubtful specimens of diseased material, which they have neither the needful equipment, time, nor special knowledge to decide for themselves. As important as the services which the laboratories will render to education and medical practice will be the opportunities which they will afford for research. I had occasion, in the address which I gave two years ago in this city, to refer to some of the benefits which have been secured to mankind by recent biological investigation, and I need not say more on the subject at present: but I would remark that every step in advance in science only opens up wider fields for exploring the infinite resources of Nature; and these laboratories will afford ample means for the further prosecution of such beneficent inquiries. Some, perhaps, may be disposed to object to such researches because they involve the sacrifice of animal life. This, however, I need hardly remark, is as nothing compared to what occurs for the supply of food to man. Of animal suffering I need hardly speak, because, in truth, the actual pain involved in these investigations is commonly of the most trifling description. Anæsthesia has come to the aid of experiment on animals, as the electric telegraph did for railways. Anæsthesia enables needful operations to be done without disturbance from the struggles of the animal, while it affords to the operator the unspeakable comfort of knowing that he inflicts no pain. I am bound to add that antiseptic treatment of the wounds has had a similar doubly beneficial influence. By preventing inflammation it renders healing painless, while it leaves the parts uncomplicated by inflammatory changes, and allows the results of operative procedure to be rightly estimated. I greatly surprised a former Chancellor of the Exchequer when, on a deputation to him on this subject, I explained to him that operations for the removal of parts of the brain of monkeys, which he had imagined to be attended with horrible

torture, had, thanks to anæsthetics and antiseptics, been probably from first to last unattended with a twinge of pain. Such operations thus painlessly conducted have, by indicating the precise functions of different parts of the organ, and thus guiding the surgeon in his operations, already led to the saving of many human lives. While I deeply respect the humane feelings of those who object to this class of inquiry, I would assure them that, if they knew the truth, they would commend and not condemn them. The laboratories, though they will be formally opened to-day, have for some time past been in practical operation; with the result that the Biological and Pathological School of Liverpool is already ranking very high among similar institutions in other parts of the world. As an illustration I may mention the fact that a committee of the Royal Society, with the approval of the Secretary of State for the Colonies, has lately selected a pupil of this school as one of two men specially qualified to undertake investigations in Africa on the deadly malaria of those regions. I cannot conclude these remarks without congratulating the Liverpool College on the mighty addition which these laboratories afford to their powers for usefulness. I believe they may be pronounced, both in structure and equipment, equal to any in existence. I must also congratulate you on having so nobly generous a benefactor as Mr. Thompson-Yates. I trust he will be rewarded by the deep satisfaction of knowing that he is doing incalculable good to mankind. If I may make one more observation it is that while the laboratories have been so nobly constructed and equipped, there is yet much to be desired as regards the means for maintaining them in efficiency; and if any wealthy inhabitant of Liverpool is anxious to bestow his wealth in some manner calculated to do good to his fellow-men, he could hardly do better than by devoting a portion of his resources to the permanent maintenance of these fine institutions.

The Lord Mayor of Liverpool said that in the absence of Lord Derby, who was not performing public functions at present owing to the death which had taken place in his family, the duty devolved upon him to propose a hearty vote of thanks to Lord Lister for the magnificent address which he had given, also for the honour he had conferred upon Liverpool in accepting the honorary degree in their great building, St. George's Hall, and in coming to open the Thompson-Yates Laboratories.

Mr. William Rathbone, who is an honorary Doctor of Science of Victoria University, in seconding the vote of thanks, said that the stimulus of Lord Lister's presence at that ceremony would induce those present, by energetic and continued efforts to increase the facilities of the College for study and research in medical and other sciences.

Lord Lister, in reply, said: I need hardly express thanks for thanks. It seems, perhaps, superfluous; yet I can hardly avoid expressing the deep sense of gratitude that I feel to this great company for the most kind manner in which they have received my address.

The procession then reformed and withdrew, and the proceedings terminated.

The Opening Ceremony.

Of the vast crowd which filled St. George's Hall only a portion could obtain admission at one time to the laboratories, and only a few actually witnessed the formal opening ceremony, which was of a very simple character.

Lord Lister, who was accompanied by Earl Spencer and Lord Kelvin, having taken his stand at the entrance to the new Laboratory,

Mr. Edward Lawrence, one of the Vice-Presidents of the University, in the absence of the Earl of Derby, took the chair, and at once addressing Lord Lister, said: Lord Lister, in the name of the University College of Liverpool I have the honour to present to you a key of the laboratories which have been built by the munificence and generosity of our friend Mr. Thompson-Yates. I present to you now the key, asking you to perform the ceremony of opening the laboratories, which I trust may be of great benefit to the community of this city.

Lord Lister, amid renewed applause, then unlocked the door and declared the laboratories open.

The Chairman, at the conclusion of the proceedings, added: There is another key intended to be presented to Mr. Thompson-Yates; but, as he is abroad at the present time, we shall have to retain it and present it to him on his return.

The new buildings were then thrown open for the inspection of visitors, of whom a large number had by this time arrived. Light refreshments were afterwards served in the College.

Banquet by the Lord Mayor.

On the same evening the Lord Mayor of Liverpool (Alderman Holding) entertained a number of those who had taken part in the ceremony of the afternoon at a banquet in the Council Chamber. Among those present were—in addition to Lord Lister—Earl Spencer, Lord Kelvin, the Bishop of Carlisle, Mr. Justice Kennedy, Professor Virchow, Sir Samuel Wilks, President of the Royal College of Physicians of London, Sir J. Batty Tuke, President of the Royal College of Physicians of Edinburgh, Professor Chiene, President of the Royal College of Surgeons of Edinburgh, Sir William Turner, President of the General Medical Council, Sir William Gairdner, K.C.B., Sir R. Thorne, C.B., Sir Archibald Geikie, Sir Thomas Hughes, and Sir E. R. Russel.

After the usual loyal toasts, the Lord Mayor briefly proposed "The Health of Our Guest, Lord Lister," and, in doing so, referred to the great services which Lord Lister by his researches had rendered to humanity.

The toast, which was very warmly received, was briefly acknowledged by Lord Lister, who said that he had been overwhelmed by the warmth and unanimity of the welcome which he had received in Liverpool that day at the great meeting in St. George's Hall.

The toast of "The Victoria University" was given in a thoughtful speech by Mr. R. B. Haldane, Q.C., M.P. He said that it was of good augury that this toast should be proposed under the auspices of the Lord Mayor of a great commercial city. In days not far distant the contemplations that were academic had been wholly divorced from those that were civic. The conception of culture given by Lucretius in a memorable passage, in which he described the man of learning as sitting apart in the serene temples of wisdom and despising the struggle for existence of his fellow men, was not the conception of the culture of the modern university. Such a university as Victoria sought to be the keystone in the arch of education, to fulfil a function as a part of the general social organism, and to be in intimate relations with the industrial life of the country. Its conception of culture was not less lofty because it recognised that science and learning played a part which was becoming the leading one in the business of life. The victory in the Soudan had been prepared in the laboratory of the man of science. To science English commerce had to turn to learn how to hold its own in the new rivalry of other nations. Lancashire, to paraphrase a great saying of Mr. Pitt, was saving herself by her energy and might save England by her example. In the great provincial cities there was an advantage over the metropolis. The patriotism of their public men did not flow so much into parliamentary channels as into local idealism, as was embodied in this University. He could not but see that the Victoria University would in time become insufficient for the wants of Liverpool, Manchester, and Leeds, over whom she now watched. He believed that in a city like Liverpool, with a population within measurable distance of reaching a million, the Victoria University would yet be the parent of a University of Liverpool, the child of the marriage of science and industry.

Earl Spencer, in responding, said that it had given him great pleasure to take part in the proceedings of the day, and to join with the University in doing honour to Lord Lister. He referred to the statement made a few days earlier by the Medical Director-General of the Army to the effect that not a single case of septic infection had occurred among the troops during the North-West Frontier campaign as a striking proof of the beneficence of Lord Lister's work. Referring to Mr. Haldane's remarks as to the need for local universities, he said that while not prepared to go so far as Mr. Haldane, he considered that the issues raised were of great importance.

Mr. Edward Lawrence then gave the toast of "Our Visitors," and expressed the pleasure which the citizens of

Liverpool felt in welcoming so many distinguished guests, and especially Professor Virchow.

The toast was acknowledged by Professor VIRCHOW, who said that it had given him great pleasure to visit Liverpool and to inspect the fine laboratories which had been opened that day.

Sir WILLIAM TURNER also responded, and in the course of his speech said that in congratulating Liverpool University College on the possession of such splendid laboratories the early work of those who had laid the foundations of the College, the work of Waters, Davidson, Caton, and Mitchell Banks must be gratefully recollected.

Professor MICHAEL FOSTER then in a humorous speech gave the last toast of the evening, "University College and the Thompson-Yates Laboratories." He congratulated the College upon having secured Dr. Glazebrook as the successor of Principal Rendall, and referred to the excellent work done by the new Principal while resident in Cambridge. He observed that the value of such institutions as University College could not be over-estimated, and he recalled that both Lord Lister and himself had been students of another University College—that of London. Turning to the second part of his toast, he said that the new laboratories had produced on him two physiological effects—they had taken his breath away and had made his mouth water. He was glad to know that these new laboratories were to be under such competent direction as that of Professor Boyce and of Professor Sherrington, who, he was proud to say, had been a pupil of his own.

The toast was acknowledged by Principal GLAZEBROOK and Professor SHERRINGTON.

VISIT TO THE ROYAL INFIRMARY.

On Saturday morning, before the opening of the new laboratories, Professor Virchow, who was accompanied by Mr. Robert A. Bickersteth, Senior Assistant-Surgeon, paid a visit to the Royal Infirmary, where he was received by the chairman (Mr. Ralph Brocklebank), and the secretary (Mr. Moore), and found assembled many members of the medical staff, including Dr. Davidson, Professor Rushton Parker, Professor F. T. Paul, Dr. Barr, Dr. Bradshaw, and Dr. Abram. Professor Virchow visited various wards, and was accompanied in his round by, among others, Sir Samuel Wilks, Professor D. J. Hamilton, and Dr. Lauder Brunton. Professor Virchow expressed himself as much pleased with the excellence of all the arrangements, and was especially struck by the cleanliness and sweetness of the *post-mortem* room. He inquired as to the antiseptic used, and expressed his surprise to learn that nothing but water was employed. As is well known, the Royal Infirmary of Liverpool is one of the finest hospitals in the United Kingdom, or indeed elsewhere, and has even been compared, not to its disadvantage, by those who know both institutions, with the great hospital at Baltimore. A feature which particularly interested many of the visitors was the circular wards. These contained 18 beds, the largest number for which they are found to be well adapted, and when of suitable size for this number they give, as compared with the other wards in the infirmary for 18 beds, about 100 cubic feet more air space per bed. Another advantage claimed is that they are worked with less fatigue to the nurse, the distances to be travelled by her being on the whole less. Lord Lister and Sir Douglas Galton, who were the guests of Mr. E. R. Bickersteth, were present at Divine Service in the chapel of the Royal Infirmary on Sunday, together with their host, and afterwards visited the wards.

LONDON REHOUSING SCHEMES.—Application is to be made to Parliament next year by the London County Council for power to make a new street from Holborn to the Strand. The Council is also engaged in a rehousing scheme for the Clare Market district. Both schemes render necessary the provision of a large amount of accommodation for the working classes. The report recently presented by the Housing of the Working Classes and the Improvements Committees of the London County Council recommend the purchase of three sites from the Duke of Bedford, which will be sufficient for the erection of buildings to accommodate 1,000 persons. The price mentioned for the sites is £118,740. It is further stated that the total number of persons to be displaced by the new street is 3,030.

ASSOCIATION INTELLIGENCE.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on the first Friday of November, at 4 P.M. —A. R. URQUHART, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.—The first meeting of the Session will be held at the Town Hall, Hackney, on Thursday, October 20th, at 8.30 P.M. The chair will be taken by Dr. Shadwell, Vice-President of the District. Dr. Sims Woodhead will read a paper on Our Health Armour. Visitors will be cordially welcomed —C. J. MORTON, 56, Orford Road, Walthamstow, Honorary Secretary.

WEST SOMERSET AND DORSET AND WEST HANTS BRANCHES.—A combined meeting of these Branches will be held at the Victoria Hall, Yeovil on Tuesday, October 18th. The business meeting of the Dorset and West Hants Branch will be held at 3.15 P.M. Agenda: Election of new members of the Branch. Election of officers for 1899. Place of the May meeting. Dr. Lush will move, "That a donation of 10 guineas be granted to the British Medical Benevolent Fund." The combined meeting will be held at 4 P.M. Chairman, Mr. R. H. F. Routh, President of the West Somerset Branch. Discussion: The Present Position of the Question of Vaccination; to be opened by Dr. McLean, President of the Dorset and West Hants Branch. Dr. Arthur Ransome, F.R.S., will call attention to the national movement for the prevention of tuberculosis. Communications: Mr. Penrose Williams: Notes on a case of Splenic Leukæmia. Dr. Rutherford: Notes of six cases of Appendicitis. Mr. Mark Taylor: Case of a self-inflicted Skin Affection in a hysterical patient. Dr. Lawrie: Notes and Specimens from (1) A case of Abdominal Subperitoneal Hysterectomy for Uterine Fibroid complicated by Ovarian Cystoma; (2) a case of Large Right Broad Ligament Cyst, Left Ovarian Tumour, Subperitoneal Uterine Fibroid, and Ventrifixation of the Uterus; (3) a case of Myomectomy; (4) a case of Double Broad Ligament Cysts. Mr. Graham: A case of Salivary Calculus. Mr. Marsh: A point of interest in connection with an Ovariotomy. Mr. Flower: A preparation of Endosteal Sarcoma of the Femur. Mr. Wyke Smith: A complication in connection with the operation for the relief of Strangulated Inguinal Hernia. Dinner at the Choughs Hotel at 5.45 P.M.; charge 5s. each, without wine. Members intending to be present are requested to inform Mr. Marsh, Pen Hill, Yeovil. The members of the Branch resident in Yeovil will be pleased to see any members and friends at luncheon at the Choughs Hotel from 1 to 2.30 P.M. —R. LIDDON MEADE KING, M.D., Taunton, WILLIAM VAWDREY LUSH, M.D., Weymouth, C. H. WATTS PARKINSON, Wimborne, Honorary Secretaries.

STAFFORDSHIRE BRANCH.—The twenty-fifth annual general meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Tuesday, November 1st, at 4 P.M. Business: Introduction of new President (Dr. McAldowie): Address by the President; Report of Council and Ethical Committee; Financial Statement; to decide place of holding next Annual Meeting; Election of Officers and Council for the ensuing year. Dinner at 6 o'clock, charge 5s. Members desiring to read papers are requested to communicate the titles to F. MILNES BLUMER, Stafford, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The next meeting will be held at the Radcliffe Infirmary on Friday, October 28th, at 3 P.M. Agenda: (1) Confirmation of minutes. (2) Election of candidates. (3) Short papers and notes of cases: (*a*) Mr. Innes Griffin: Severe Brain Injury; (*b*) Dr. Batt: A Case for Diagnosis; (*c*) Dr. Proudfoot: A Case Simulating Perforation of Gastric Ulcer; (*d*) Dr. Collier: An Unusual Case of Diabetes; (*e*) Mr. M. Style: Sudden Death of a Young Child; (*f*) Communications; (*g*) Propositions. Members wishing to read papers, etc., are asked to communicate at once with the Secretary, WILLIAM COLLIER, M.D., St. Mary's Entry, Oxford.

SHROPSHIRE AND MID WALES BRANCH.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish

to bring forward any business, to read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretary.—H. Willoughby Gardner, M.D., Swan Hill, Shrewsbury, Honorary Secretary.

LANCASHIRE AND CHESHIRE AND NORTH WALES BRANCHES.

A joint meeting of these Branches was held at Chester on September 28th, Dr. Berry (Wigan), President of the Lancashire and Cheshire Branch, being in the chair, supported by Dr. H. V. Palm (Wrexham), President of the North Wales Branch. Upwards of eighty members were present, and letters of apology from a large number of the members of both Branches were received.

Proposal as to Annual Subscription.—In the absence of Dr. Brassey Brierley, Dr. Colin Campbell moved:

That this meeting of the Lancashire and Cheshire and North Wales Branches recommends the Council of the Association to raise the annual subscription to £1 4s. 6d., in order to more efficiently carry out the objects of the Association as defined in the third paragraph of the Memorandum of Association. That such subscription shall include the subscriptions to the Branches, and shall entitle each member to the privileges of membership of the Branch within the area of which he resides;

but, as there was no seconder, it was not put to the meeting.

The Climatology of the Coast of North Wales, and the Open Air Treatment of Phthisis.—Papers on this subject were read by Drs. J. Lloyd Roberts (Denbigh), and Professor D. J. Leech (Manchester). The former took a portion of the coast with which he was connected as medical officer of health, and amplifying his paper with statistics of rates of mortality, rainfall, wind direction, and other most important data to be considered in the choice of a health resort.—Dr. Leech took a more comprehensive view. Having lately travelled through all the places of interest and resort on the northern coast, he had been supplied with the health figures of each neighbourhood, and gave interesting facts in connection with each. Both papers, which were brimful of information which should be considered in selecting a place of winter residence for pulmonary complaints, pointed out the advantages that many towns and districts in North Wales possessed, some of which had been known to and recommended by the profession for many years, while Professor Leech spoke highly of other less known places, which in an eminent degree possessed many of the advantages that were a *sine quâ non* of the open air treatment of pulmonary troubles.—An interesting discussion followed, the vital statistics being supplemented by Dr. Richard Jones, D.P.H., Medical Officer of Health for Merionethshire, and Dr. Grey-Edwards (Beaumaris), while the advantages and benefits of the coast were borne witness to by Drs. Barr, Davidson, and Wm. Carter (Liverpool), and Mr. Lawson Tait (Birmingham).—Dr. Lloyd (Barmouth) gave some interesting facts regarding that popular resort.

Communications.—Dr. Eugene S. Yonge read a paper on the More Recent Methods of Relieving Painful Deglutition in Laryngeal Affections.—Dr. Hill Abram exhibited a Tumour of the Œsophagus, and read the notes of the case, which succumbed to pneumonia as a secondary affection.—Mr. Damer Harrisson read notes of: (1) Case of Rouge's Operation for Necrosis of Nose and Upper Jaw. (2) Case of Removal of Tongue and Floor of Mouth by Syme's Operation; and (3) Technique of Resection of Skull with a new instrument.—Mr. Lawson Tait read notes of a case of Ruptured Tubal Pregnancy.—Mr. Thomas H. Bickerton read the notes of a case of Enucleation of the Eyeball with Insertion of Glass Sphere into the Tenonian Cavity.—Dr. Mules also addressed the meeting more especially with regard to the operation which bears his name.—Mr. Rushton Parker read a paper on the Excision of Carbuncles, in which he advocated this treatment for some cases, and giving an account of some of them. A discussion, in which Drs. Lambert, Barr, and Rayner took part, followed.—Dr. J. Elliott (Chester) read notes of a case of Parasite found in the Urine, and afterwards exhibited on a screen in an adjoining room some microphotographs of the abnormality.

Dinner.—Subsequently a dinner was held, at which thirty-two members sat down, the toasts being limited to "The Queen," "The Earl of Chester," "The British Medical Association," and "The Lancashire and Cheshire and North Wales Branches."

It is many years since a joint meeting has been held, and it was felt by all present of both Branches that such meetings are very beneficial in cultivating that harmony and fraternal goodwill that should characterise all members of the profession.

SOUTH MIDLAND BRANCH.

The autumnal meeting of this Branch was held at Wellingborough on October 6th, under the Presidency of Mr. Horace Swordер. Thirty-one members and visitors sat down to luncheon at the Hind Hotel previous to the meeting.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Members.—The following gentlemen were elected new members: Mr. George Butters (Kempston, Beds), of the Association and Branch; Mr. Chas. J. Hill Aitken (Bedford), of the Branch only.

Communications.—Dr. Maguire made some explanatory remarks on his case of Phenomenal Gestation read at a previous meeting. Observations were made on the case by Drs. Goldsmith, Clark, Hollis, Hemming, and others.—Mr. W. Gifford Nash read three series of cases due to Sewer-gas Poisoning. An interesting discussion ensued, in which Drs. Colman, Jones, Hemming, and the President joined. The Chairman made a proposal that the series of cases should be published in the British Medical Journal, which the meeting cordially seconded.—Mr. Nash also showed a beautiful specimen of Cystic Disease of the Kidneys from a young child. They were larger than the adult organs, and only a small portion near the hilum showed anything of natural structure, and appeared probably capable of carrying on the proper function.—Dr. W. S. Colman (National Hospital for the Paralysed and Epileptic) read a paper on the Palliative Treatment of Locomotor Ataxy, and demonstrated to the meeting on a patient with a simple apparatus Frenkel's method of re-education exercises. Remarks were made by many of the members present, and a special vote of thanks was accorded to Dr. Colman for his interesting and instructive demonstration.—Dr. F. G. Crookshank read a paper on Hysteria and Epilepsy, giving details of three cases, and pointing out the association between the two diseases. He urged the point that hysteria was not pure shamming, but a definite disease, and was influenced by the epileptic tendency. Remarks were made by Drs. Colman and Jones, and the Chairman; and Dr. Crookshank replied.—Dr. Hollis introduced a discussion on the Treatment of Chronic Dilatation of the Stomach, bringing under notice its treatment by lavage, drugs, and suitable diet. Drs. Crookshank, Jones, Hemming, and others joined in the discussion. Though various methods of treatment were advocated by the different speakers, they were mostly agreed as to the intractable nature of the malady.—Dr. W. Newman exhibited an interesting selection of X-Ray Pictures, illustrative of disease and injuries, which attracted much attention from the members present.

Vote of Thanks.—The meeting closed with a special vote of thanks to the readers of papers, and to the President for his conduct in the chair.

NORTH OF ENGLAND BRANCH.

The autumn meeting of this Branch was held in the County Hospital, Durham, on October 6th, twenty-five members being present. The President (Dr. Robinson) occupied the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

The Prevention of Consumption.—The President reported that a Committee of medical and lay members had been formed for "the prevention and cure of consumption in the county of Durham," as the outcome of the resolution passed at the annual meeting of the Branch.

New Members.—The following gentlemen were elected members of the Branch: R. C. De Lacey, M.B., Newcastle, and G. V. Miller, M.B., Stockton-on-Tees.

Communications.—The President introduced a case of Exophthalmic Goitre in a boy aged 15 years. The condition had been first noticed seven months previously, but was now well advanced. The patient exhibited all the classical signs, as well as glycosuria, which was frequent in the later stages. In addition to general treatment he had been given thyroid

extract.—Dr. WARDLE and Dr. BEATTIE, regarding the disease as being a thyroid toxæmia due to hypersecretion, considered the treatment of such cases by thyroid extract harmful.—Dr. PLUMMER, contrary to the teaching of modern pathology, had found such treatment beneficial.—Dr. DE LACEY discussed the subject of anæsthetics in these cases.—Mr. MARTIN said that the surgical removal of one lobe of the thyroid was the rational treatment, but that, in his experience, the administration of a general anæsthetic was so dangerous as to hardly justify the proceeding.—The PRESIDENT also showed a patient, aged 52, suffering from cranial nerve paralysis following injury. Eight weeks previously he had received a severe blow in the right temporal region from a falling chisel. He was slightly stunned, but continued his work for a week, felt a little sick, and once vomited. A few days later diplopia and ptosis ensued, followed gradually by present symptoms. He now exhibited complete motor and sensory paralysis of the right fifth nerve with neuro-keratitis, paresis also of third and to a less extent of fourth and sixth. Beyond this his sole complaint was severe pain in the right temporal region.—Dr. MARK WARDLE exhibited a Child cured of Tuberculous Peritonitis by Laparotomy, and thought the case disproved Mr. Morison's assertion that cure was brought about by "suggestion." He considered that such cases were cured by the introduction of light.—Mr. MORISON supported his previous contention that, even in young children, the operation was curative only by the mental effect produced stimulating nutrition and improving resistance.—Dr. MURPHY believed that cure was brought about by the setting up of adhesions and encapsulation.—Mr. RUTHERFORD MORISON showed (1) a Patient after Gastrostomy for Malignant Disease of the Œsophagus performed a fortnight previously, and exhibited the method of feeding. Of four other malignant cases in which he had performed the operation, one had lived 404½ days. His results, he thought, justified him in differing entirely from the opinions expressed by Mr. Treves in his *System of Surgery*, vol. ii, p. 577. (2) A Patient after Pylorectomy for Carcinoma, and stated that his experience of this operation also compelled him to differ from Mr. Treves.—Dr. MURPHY agreed with Mr. Morison's remarks as to the success of both operations, and quoted his own case of gastrostomy for malignant œsophagus, which had lived 403 days after operation.—Dr. MARK WARDLE showed a specimen of Deciduoma Malignum, and described the operation he had performed for the removal of the uterus. The diagnosis had been confirmed by microscopic examination.

Demonstration in the Wards.—Dr. PLUMMER conducted the members through the wards of the County Hospital, and exhibited several interesting cases.

Dinner.—The dinner after the meeting took place at the County Hotel, twenty members being present.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

A CLINICAL meeting was held on September 29th, at the Cardiff Infirmary, Dr. T. WALLACE, President, in the chair.

Cases and Specimens.—Mr. J. LYNN THOMAS showed: (1) Tumor Cerebri: Removal: Recovery. A man, aged 29, was shown from whom a tumour—fibro-caseous, either a gumma or tubercle—was removed on July 1st, 1898, from the right frontal lobe. At the time of operation the patient had incontinence of urine and fæces, pulse 48, and was in a state of stupor. Pulse-rate immediately improved; stupor and incontinence disappeared from the date of operation. (2) Intracranial Neurectomy of the Right Second and Third Divisions of the Fifth Nerve for Neuralgia. A man, aged 52, was shown upon whom the above operation was performed five weeks before. The bone flap was replaced and recovery was easy, and the relief to pain complete. The areas of anæsthesia did not entirely coincide with any diagrams or photographs consulted. The posterior half of the soft palate was not anæsthetic, and the sense of taste was unimpaired. (3) Urethrectomy. Nearly half an inch of the urethra, containing an annular traumatic stricture in the penile portion was removed about two months previously, and the two ends were sewn together by catgut. The wound was quite firm at the end of three weeks. No drain of wound nor of bladder was used, and the result so far was perfect. (4) Skiagraphs showing Mal-union of Tibiæ corrected by Lane's screws.—Mr. E. T. COLLINS showed (1) a Myomatous Uterus removed by panhysterectomy. The myoma was first noticed after parturition, but disappeared during involution, to become again manifest at the next confinement. Subsequently miscarriage took place, but the myoma continued to increase in size, and reached midway between the ensiform cartilage and the umbilicus. The uterus was removed by panhysterectomy on November 7th, 1897. The patient is now quite well and rides a bicycle. (2) Myoma Uteri: Panhysterectomy. The growth reached to the ensiform cartilage and filled the abdomen. Removed by abdominal panhysterectomy on March 20th, 1898. The weight of the tumour was 14 lbs. Perfect recovery. (3) Myoma Uteri: Myomectomy. A nodular myoma of the fundus, the size of a cocoa-nut, was removed by incision of the capsule and by enucleation. On the eighth day after removal of the abdominal stitches the patient sat up during the absence of the nurse and burst open the wound. The intestines and omentum protruded. These were washed in warm boric acid lotion and returned, the wound being restitched. No interruption to her convalescence resulted, the pulse and temperature next day being normal. (4) Ruptured Ovarian Cyst. The cyst ruptured about three hours before operation; after removal, the escaped fluid in the peritoneal cavity was carefully mopped up and the abdomen closed without drainage. She made an excellent and rapid recovery.—Dr. A. SHEEN showed (1) a large Gouty Concretion, the size of an orange, removed from the hand of a man, aged 63. (2) Specimen of Epithelioma confined to the prepuce in patient, aged 65, removed by amputation of penis. (3) Specimens and photograph of a large Sarcoma Testis removed from a patient, aged 30. Secondary growths rapidly developed in the abdomen, and he died in great pain seven weeks after the operation. (4) Case of Double Spina Bifida high up in dorsal region. (5) A coal trimmer, aged 50, six weeks after Adams's operation for Dupuytren's Contraction, in which the hand had entirely recovered its former usefulness.—Dr. A. WILLIAM SHEEN showed (1) two specimens of Cysts removed from the thyroid, the first from a male, aged 42, with a history of fourteen weeks' duration. The cyst, which was the size of a small orange, was found embedded in the under-surface of the right lobe of the thyroid, and shelled out without difficulty. The second specimen was from a female, aged 22, and consisted of a Cystic Transformation of the Right Lobe of the Thyroid, the wall of the cyst being lined with calcareous material. In its removal the superior and inferior thyroid arteries were tied. Both cases recovered and left the hospital within a fortnight. The difference in origin between the two cysts was discussed, it being pointed out that in the first case the thyroid gland was practically untouched, whereas in the second half the gland was removed and both thyroid arteries had to be tied in removing the cyst. The origin of the first cyst was possibly from an accessory thyroid body. (2) A specimen of a Hydatid Cyst about 5 inches in diameter, which was floating free in the abdominal cavity of a boy, aged 5, and after opening the abdomen was tapped and removed. The clinical characters of the tumour resembled those described for mesenteric cysts.—Mr. TATHAM THOMPSON showed a case of Double Partial Ectopia Lentis in a boy, aged 10. The condition was congenital, both crystalline lenses being displaced outwards to such an extent that the edge of the lens occupied the centre of the pupil. Vision was very imperfect, but a narrow iridectomy outward in the left eye had given very considerable improvement.

Papers.—Dr. PATERSON read a paper on the Supratonsillar Fossa as the Seat of Entry of General Infections. By means of the lantern he demonstrated the relations of this space to the connective tissue planes of the neck and to the tonsil itself, and showed how affections of the fossa would spread to those structures, and offered a starting-place for infection. He pointed out how tubercle, scarlet fever, acute rheumatism, and septic infections might secure an entrance in this way.—Mr. BROOKS read an account and showed the specimen of a case of Aortic Aneurysm in a man aged 39. The patient had for two years suffered from all the objective symptoms of renal calculus, together with swelling of the testicle and deep-seated tenderness in the loin, for which a blank nephrotomy was performed. About a month before death a pulsating swelling (without a *bruit*) appeared just to the left of the spine over the last three ribs. The aneurysm corresponded to the four lower dorsal vertebræ, which were ex-

tensively eroded. Absence of earlier detectable pulsation was due to the position of the aneurysm, which was held back by the left crus of the diaphragm. The whole circumference of the aorta was involved, the sac having given way to the left and behind. Retroperitoneal dissection had occurred in this direction, at first apparently limited, but latterly extending behind the kidney and upwards between chest wall and pleura, and finally causing death by rupturing into that cavity. The eleventh and twelfth ribs were bared and eroded; the last, having been separated from the spinal attachments, was lying loose in the false cavity, attached only by its distal extremity.

SPECIAL CORRESPONDENCE.

PARIS.

Sanatoria for Tuberculous Patients.—Escape of Lunatics from Asylums.—Medical Reform.

M. Le Gendre pleads in favour of a number of small sanatoria for tuberculous patients. He wishes to see an entire series of these establishments organised, in order that patients should be classed according to the stage of their affection and other concomitant conditions. He says a number of sanatoria are necessary to meet the countless exigencies and difficulties which occur in treating these patients. The number of patients should never exceed twenty, and generally should be less.

Dr. E. Toulouse admits that a large number of lunatics escape from asylums, but he does not recommend that a stricter discipline should be adopted on that account. He asserts that the patients who escape are not of the dangerous class. Statistics of the number of the runaways which are found are not kept, but most of them regret their folly, and go to the police stations to be taken back to the asylum. According to Dr. Toulouse, it is only from the bad asylums, where a necessary amount of liberty is not accorded them, that patients do not escape. If the patients were sufficiently well looked after they might be left entirely free from restrictions. This for harmless patients is the desideratum to be attained.

The Bordeaux syndicate of medical men proposes the following reforms: A medical college should be organised in every department. Each college should elect a medical chamber; the latter body will draw up an annual list of the members of the college; this list is to be sent into the Prefecture in the month of December, and published by the administration. The medical chamber is to be called upon to decide on the registering the members of the college to watch over the honour of the profession, and to maintain the observance of the principles of honesty and uprightness which form the basis of the professional code of honour; furthermore, to foresee and prevent disputes among medical men, and effect reconciliation; to observe the same line of conduct when complaints are made by third parties against medical men; to express an opinion concerning the legal responsibilities which may be incurred by medical men in practice. Difficulties arising concerning fees are to be referred to the *Chambre Médicale*. The *Chambre Médicale* is to be the representative in law courts of the entire college. Punishments will be inflicted by the college according to the gravity of the offence. The decisions of the *Chambre Médicale* may be appealed against. The *Conseil d'Appel* will give the final verdict.

BIRMINGHAM.

Opening of the Winter Session.—Distribution of Clinical Prizes.—Jubilee Dinner of the Midland Medical Society.

The winter session of the Queen's Faculty of Medicine at Mason University College was inaugurated on Monday, October 3rd, by a reception held by the Chairman and Council of the College. This reception was extremely well attended by large numbers of the medical and scientific men of Birmingham and the surrounding districts and by old and present students of medicine. The guest of the evening was Professor Michael Foster, F.R.S., who gave the address published in the Journal last week in the Medical Lecture Theatre of the College. The chair was taken by Professor Windle (Dean of Queen's Faculty of Medicine); he was supported by the Lord Mayor of the city (Mr. C. G. Beale), Dr. Heath (Principal of the College), Alderman Clayton (Chairman of the Council), the members of the Council of the College, and almost the whole of the professorial staff, besides a number of other distinguished visitors. At the close of Professor Foster's valuable, eloquent, and scholarly address a hearty vote of thanks was proposed to him by Professor Barling, and seconded by Professor Allen, and carried with acclamation. The rest of the evening was devoted to an inspection of various demonstrations and exhibitions given by different gentlemen.

The prizes given annually the Clinical Board for successes in Clinical Medicine and Surgery were this year distributed by Sir William Mac Cormac, Bart., in the Lecture Theatre of the General Hospital on Thursday, October 6th. Some 250 gentlemen accepted the invitation of Mr. Thos. F. Chavasse, President of the Clinical Board, to the distribution. The prizes were awarded as follows:—Senior Medical Prize: Mr. J. Bradley. Junior Surgical Prize: Mr. Billington. Junior Medical Prize: Mr. A. S. Barnes. Gynæcological Prize: Mr. J. Bradley. Sir William MacCormac delivered a brief address on the Value of Clinical Observation, in which he laid stress on the great importance of cultivating the faculty of observation. He also congratulated the staff and hospital authorities on the excellence of their arrangements for clinical study.

On Thursday evening, October 6th, the Midland Medical Society celebrated the jubilee of its foundation by a banquet at the Grand Hotel. Mr. J. W. Taylor, F.R.C.S., its President, was in the chair, and was supported by Sir William Mac Cormac, the members of the Council of the Society, and upwards of 200 members of the Society, and their friends. After the usual loyal toasts had been drunk, Sir William MacCormac proposed "The Health of the Society," and alluded to the long list of distinguished men who had been Presidents or given inaugural addresses since its foundation in 1848, and to the good work it had done. Mr. J. W. Taylor responded. The other toasts were "The City of Birmingham," proposed by Dr. A. H. Carter and responded to by Sir J. B. Stone, and "The Visitors," proposed by Dr. W. G. Lowe, President-elect of the Society, and responded to by the Bishop of Coventry. A most pleasant evening was spent, and the Society may be congratulated on a most successful function.

BRISTOL.

The Laundry of the Children's Hospital.—The St. John Ambulance Association.

The Children's Hospital has recently rebuilt its laundry, which is now in working order. The building consists of two parts connected by a glass-covered space. The larger part is for the washing of the linen, etc., of the general wards and nursing staff, the smaller for the goods from the infectious wards. The large washing room is provided with two large coppers, one for the patients, the other for the nurses' linen, and a small copper for starch. The washing tubs are of stone ware, with wooden scrubbing-boards, and are well supplied with hot and cold water; and a hand-washer, known as "the domestic washer," with a Bradford wringer, is also provided. There are also two large iron double tanks, with wringers. The room, though well arranged, appears to be rather crowded, and would have been better served if a third copper for babies' soiled linen had been provided. As it is, the dirty napkins will have to be washed in the copper used for the rest of the linen. The drying chamber is of the usual pattern, consisting of long iron racks running on wheels, and placed in the ironing room. The ironing benches are fixed against the wall, but some of its surface is rendered nearly useless by a wide shelf which projects above it. A good old-fashioned mangle stands in one corner, and a large sorting table in the centre of the room. The smaller wash-house is arranged much on the same plan as the large one. Hot water is supplied from the same boiler, and for conveying it to the "domestic washer" rubber pipes are employed. It remains to be seen how long they will stand the heat. The pitch of the floor appears to be sufficient. The arrangements, on the

whole, appear to be satisfactory, but might have been better if the medical staff had been consulted.

The annual meeting of the Bristol Branch of the St. John Ambulance Association was held at University College on October 6th. During the year 21 first aid classes were held and 199 certificates obtained by those attending. Five nursing classes were held and 36 certificates awarded. In all about 550 persons attended the classes, to which must be added 690 persons attending the Evening Continuation Classes of the School Board. The financial state of the Branch was announced to be in a very satisfactory state, the balance in hand being over £45. During the year £149 was paid to lecturers. As the payment of the medical men for their services was one of the most important points over which some friction arose between the lay members of the Committee and the medical representatives, and resulted in the laymen retiring in a body and the medical men taking over the whole management, it is highly satisfactory to find such a substantial sum being paid for what is really hard and irksome work. It is more by £100 than has ever been paid before. For the ensuing year the Duke of Beaufort was elected President, the Dean of Bristol Chairman, and Dr. W. Gubbin Clerk. The post of Treasurer being left vacant for a time. A donation of £5 was made to the local division of the Brigade. Dr. J. O. Symes in retiring was given a vote of thanks for the able and energetic manner he had conducted the duties of Clerk. This office he had undertaken when the Branch was in such a position that any want of energy might have meant the extinction of ambulance teaching in Bristol at least for a time. By his efforts what might have proved a failure was turned into a brilliant success.

CORRESPONDENCE.

MEDICINE AT OXFORD.

SIR,—It is not so long since we were told by the Vice-Chancellor of the University of Cambridge that Oxford had all the buildings and appliances for medical education but no students. That remark was allowed to pass unnoticed, for vice-chancellors are privileged persons, and if such a statement, incorrect though it was, was likely to help Cambridge to obtain the money she desired for the extension of her laboratories, we here could look on with complacency. But it is an entirely different matter when a gentleman in Dr. Saundby's position takes upon himself the duty of instructing the lay mind on the subject of university education. In an address delivered at the opening of the session at the Medical School, University College, Cardiff, Dr. Saundby is reported to have said,[1] "Oxford still misapplies its medical endowments and declines to reorganise its medical faculty." Now, such a statement made on such an occasion is likely to be extensively quoted and considered an authoritative pronouncement. Under these circumstances it is impossible, in justice to the authorities of this University, to allow it to pass without comment. Either Dr. Saundby has been misinformed or he is sadly ignorant of the changes that have taken place with regard to the attitude of the University towards medicine during the last twelve years. So far from professional studies being despised, thanks to the efforts of the late Master of Balliol and Dean Liddell, they have been generously supported and encouraged, and it is in face of facts like these that such loose and irresponsible statements must be corrected.

One really does not know what Dr. Saundby means by the reorganisation of the medical faculty. I am not aware that a faculty which includes among its members individual professors or lecturers actively engaged in teaching anatomy, physiology, physiological chemistry, histology, organic chemistry for medical students, pathology, and pharmacology requires much reorganisation.

We are not much given to self-advertisement; but for some years past, under the able leadership of Sir Henry Acland, and more recently Professor Burdon Sanderson, we have been endeavouring to develop a School of Medical Science. Our standard is a high one and our numbers must necessarily be limited, but we are not dissatisfied with the results.

Dr. Saundby evidently does not love the older universities; perhaps he knows little of them, and, though justly entitled to hold his own opinion thereon, he is bound in all fairness to them to be accurate in regard to his facts. A curious comment on the position taken up by Dr. Saundby is the circumstance that a considerable percentage of our students here are sons of medical men.—I am, etc.,

Department of Human Anatomy, Oxford, Oct. 11th. ARTHUR THOMSON.

[1] BRITISH MEDICAL JOURNAL, October 8th, 1898.

ADDRESSES TO MEDICAL STUDENTS.

SIR,—How long will some men in high academic places persist in deluding medical students? Year after year, on the occasions of the opening of medical schools, we read in the journals that the same delusive goddesses are held up in the addresses, and it is only now and again that we are treated to the sedative truth, and this from the truly great.

Worldly success is indicated as a possible goal that each and everyone may arrive at; but, as the end is delusive, it need not be wondered at that the means are delusive also. Thus false medicine, quackery, or "the doctrine of ill-doing," is liable to creep into the profession instead of being expunged.

By the power of truth only can we do good work. Therefore we must seek truth. Good work is priceless, and is never done for a selfish end, nor even for a reason.

When the student's mind's eye catches a glimpse of the portrayed success, his imagination, running riot, destroys the understanding by which he is intended to grasp the true ethics of the profession. So long as the principles of the profession are based on truth, then its work will be good; and if good, why put a price on it? But if the principles be founded on calculations that tend to evanescent gain and honour, then they are founded on quackery and deceit, and would enable the man with the greatest scoundrelism to attain the chiefest ends. For example, if a patient imagine a healthy tooth to be the cause of pain he is deluded; and if a doctor extract that tooth, although he knows it to be sound, he is deluded also—by the imagined power of the fee.

Looking backwards into the history of the past, we pity the ancients for fostering in their centres of learning the delusions that arose through Venus and Mars. But our pity is ill-bestowed, and might with a more admirable show of wisdom be reserved for ourselves; as is evidenced by the greater delusions in the form of the imagination—towers of Babel, morality, designing agnosticism, and other trash which is manufactured to a no little extent in our present-day centres of learning. Idolatry is the attraction of an imagined power, and is therefore a delusion. Preach to a man morality, and when he is 60 he will regret that he had not done more mischief; but though he live to the age of Methuselah he will never regret having been virtuous for virtue's sake.—I am, etc.,

Wolverhampton, Oct. 11th. T. DOBSON POOLE, M.D.

SIR,—In his opening address at Cardiff Dr. Saundby says: "I can assure you that there is no profession in which success more certainly attends attention to business, or in which so good an income can be as readily secured." This opinion ought not, I think, to pass unchallenged. Dr. Saundby doubtless speaks from experience. I, too, a fellow student with Dr. Saundby, who claim no less love of my profession and have worked no less hard in it probably, can speak from experience as a general practitioner to whom the lines have not fallen so pleasantly, and were I called upon to advise medical aspirants on the subject, should say: Unless you have capital enough, not only to carry you through your five years' curriculum, but to support you for five years after it, be prepared for a hard struggle and possibly "the millstone of poverty" around your neck for life. Personally I, and doubtless many others, would be grateful to Dr. Saundby for the secret of "readily securing a good income" without the capital necessary either to buy a good practice, or to live while waiting for one, or possibly to be under the necessity of doing the latter after having done the former. I have had unfortunate experience of these methods through too limited capital, and many could tell of good men who have had the same. I will not go into details, but such experiences suggest the question: How far is the sale of practices consistent with a high standard of medical ethics? I am, etc., IN OBSCURITATE.

THE TREATMENT OF PAUPER IMBECILES AND EPILEPTICS.

Sir,—On returning to London after some weeks' absence I notice in the British Medical Journal of October 1st a report under the above heading of a paper read by Dr. J. M. Rhodes, of Manchester, at the North-Western Poor-law Conference. The object of Dr. Rhodes's paper was to advocate combination amongst Poor-law unions for the purpose of establishing institutions on the colony system for epileptics and imbeciles; and in his endeavour, as I understand from the report, to show that institutions established by public authorities have the advantage in point of economy over those which owe their origin to voluntary charity, he referred to the establishment for epileptics, etc., at Wuhlgarten, near Berlin, as a model to be imitated, and contrasted with it the Chalfont Colony established by the National Society for Employment of Epileptics, the buildings of which he characterised in somewhat strong terms as unnecessarily expensive.

On referring to the figures given by Dr. Rhodes himself in a recently-published report of a visit to the German epileptic colonies, I find it stated that the Wuhlgarten institution has accommodation for 1,100 patients, and that its buildings, including land, cost 5,290,000 marks. This is equivalent to £235 per patient, and is almost double the amount of the cost per patient of land and buildings at the Chalfont Colony. If, therefore, any inference can be drawn from this comparison between the State institution of Wuhlgarten and the voluntary establishment of Chalfont, the inference is hardly one that will assist Dr. Rhodes's contention.—I am, etc.,

G. Penn Gaskell,
Secretary of the National Society for Employment of Epileptics.
12, Buckingham Street, Strand, Oct. 12th.

ASEPTIC MIDWIFERY.

Sir,—The correspondence which has been going on for some time in the British Medical Journal, accentuates the remark made by an examiner in midwifery of some standing, namely, that the ignorance of "scientific midwifery displayed by the average English practitioner is appalling." Can one wonder at this, on considering that men are admitted to examination who have had no real training in midwifery? Any man can dub up enough midwifery to pass the ordinary examination who has never attended a case. It is not to be wondered at that douching, scrubbing, and all this sort of thing are taken up by men whose ideas are taken from text-books, not Nature. Teachers must impress the fact that parturition is a natural act, and that it must be treated as such. That great sanitary code, embodied in "the law of Moses," points out a number of precautions, but scrubbing, shaving, and douching are not among the list, though we may infer that gonorrhœa was not unknown even then.

No doubt at one time midwifery was left too much to Nature, and in cases of difficulty the woman went to the wall. Nowadays the pendulum has swung as far the other way, and the woman goes to the wall. The present mortality may be small, but the number of women whose lives are made miserable by uterine and ovarian troubles arising from *post-partum* attention (?) is enormous and increasing. Keep your patient clean, keep the windows open, keep yourself clean, do not dress with *post-partum* examination. Make your patient assume an upright position when answering the calls of nature, and see that she is not given improper feeding while her milk is coming, and keep the bowels in a natural state. And if she has had the necessary assistance (if required) during labour there is not much fear of complications.—I am, etc.

Erdington, Oct. 9th. William Donovan, M.D.

Sir,—I should be glad if you will allow me some space wherein to reply somewhat generally on the above question so far as it has been discussed in the British Medical Journal up till now. No one will dispute the fact, I think, after these letters that a very general opinion among practitioners is that the practice at the Glasgow Maternity Hospital is elaborate and unnecessary in general practice.

Dr. McLennan writes as if I had attacked this practice as harmful. All I did was not to show it was unnecessary as proved by my record of cases. Had Dr. Jardine been content to address his paper to his fellow-schoolmen and teachers in the British Medical Association, I would never have written a word; but when he says, "In conclusion, I wish strongly to commend this subject to general practitioners, it entails a certain amount of work, but the good results which follow are more than ample compensation for the trouble taken," I, as a general practitioner, with results as good as his, have a perfect right to state this system is unnecessary and over-elaborate.

Dr. Jardine complains that in the quotations in my letter I omitted eight consecutive sentences, and labelled the result nonsense. I can only explain that these sentences did not seem to me to modify the opinions set forth in the quotations I made, and regard for the space at the disposal of the Journal made me refrain. I am much obliged to him for his congratulations on my success. In reciprocation I now inform him my practice is in the centre of a rural English district. The cases of midwifery are the usual ones of general practice. We do not have many cases of deformity, nor of vaginal specific infection.

Still, there are the ordinary difficult and serious cases, which most general practitioners meet now and again. These have to be undertaken, and conducted often single-handed, as in a wide country district it is not always possible to call in help. By reason of this a practitioner with a large number of successful midwifery cases is surely as good an authority on the safe management of labour as is the doctor attached to a lying-in hospital. And in the light of my cases it ought to be conceded that my method is, at least, not conducive to mortality, nor (with all respect to Dr. McLennan) to morbidity.

As a busy man, professionally and otherwise, I cannot devote much time to correspondence in the press. In my former letter I spoke of "the usual precautions" without detail to economise time and space. Since one or two correspondents have invited me to say what these are, I herewith comply, only expressing the hope that the real issue may not be lost in the criticism which they may call forth. For what to one man is the usual precautions, to another may appear as elaborate, and to another slovenly. My "usual precautions" does not include *ante-partum* washing; but it does *post-partum* washing night and morning by the nurse. The douche I would never use unless the lochia became offensive. I have little experience of this; but I believe the routine practice of douching is very apt to carry infection up into the far reaches of the parturient canal, which might otherwise have escaped from the vagina. I always wash my hands thoroughly in warm water and soap, then dip in a solution of carbolic acid (1 in 40), and dry them. When making an examination I smear the examining finger and whole right hand with antiseptic vaseline (1 in 1,000 perchloride of mercury). In parenthesis I should like here to say, though I have named my antiseptics, that I object to one man lauding lysol, and another creolin, and another mercuric perchloride. There is no need for this: every practitioner knows and relies on what he has found safe and efficient. I hope your pages will not be flooded with objections to this method as slovenly. However, there are my "usual precautions" in short; and I can only say to objectors it has been as successful in my practice as the method of Dr. Jardine, which I hold is unnecessary and unusual.

Bacteriology is a new science since my student days. I am glad and acknowledge the good it has already done in improving our knowledge of diseases and diseased processes. But it seems to me that sometimes bacteriologists allow themselves to be unnecessarily scared by the microbe bogey. Is the theory of phagocytosis only a dream, or has its lessons no effect on their minds? Strange that Dr. Jardine and others should take such elaborate precautions to prevent the microbes from the vaginal canal, when he himself says the vagina is possessed of a tremendous cleansing or antiseptic power. Cannot he recognise that so long as the vagina retains this property he is only a meddler with Nature's antiseptic treatment with the scrubbing and washing method? Those gentlemen who were fellow-students with me at Glasgow University during the late Seventies will remember how we came away from the Western Infirmary every morning half-poisoned with carbolic acid spray which Sir George Macleod used to orate to us was an absolutely necessary procedure? Who of that number does not remember the clouds of steam and spray and the hissing of the machines while "dressing the cases"?

Sir George lived long enough to see the steam spray turned out of the infirmary; but had anyone in those days dared to suggest it was an unnecessary article of hospital equipment, I can well imagine the righteous indignation of the Professor would have well-nigh annihilated him. I only contend that we should allow experience and common sense as much share in the forming of our opinions on the proper care of a midwifery case as theoretical deductions. I would commend to Dr. Jardine and all other teachers, who by reason of their position are apt to give their statements on the fashion of "I have spoken," a poem by Rudyard Kipling wherein it is stated:

There are nine and sixty ways of constructing tribal lays
And every single one of them is right.

—I am, etc.,

Tarporley, Cheshire, Oct. 11th. ALLEN MCCULLOCH.

DEATHS IN CHILDBIRTH.

SIR,—As there is a tendency to blame the general practitioner for the high mortality in childbirth, the following statistics from private practice may be worthy of publication. Out of 850 consecutive cases there were 4 deaths, 1 from uræmia, 1 from pulmonary embolism, 1 from double pneumonia (which brought on labour prematurely), und 1 from septicæmia. This patient was suffering from acute gonorrhœa at the time; the labour was perfectly normal. So far the mortality is not excessive, but what of subsequent cases? These have a mortality of 25 per cent. There were 8 cases with 2 deaths, neither of which were due either to septicæmia or to the inexperience of the attendant.—I am, etc.,

October 8th. G. P.

INFECTIOUS DISEASES AND PREPARATORY SCHOOLS.

SIR,—Will you be good enough to give publicity to the following facts, which I think should be widely known in the interests of parents and schools? I have a preparatory school for boys, and for some years I made use of the following certificate, which I asked parents to fill up before the beginning of each term, and this was regularly done;

CERTIFICATE.

I certify that ..... is quite fit to return to school, that he has not had any infectious illness during the holidays, neither has he, to the best of my knowledge, been exposed to any danger of infection during the three weeks preceding his return to school.

During these years measles (twice), chicken-pox, and whooping-cough were introduced into the school, and could all be traced unmistakeably to the holidays, in spite of this certificate, and, as a climax, a boy returned with scarlatina in its very mildest form, but with throat slightly ulcerated and a faint rash. The consequences were disastrous to me, resulting in no fewer than 15 cases, and involving me in a pecuniary loss of over £500, besides all the inconvenience and loss to parents caused by the illness and breaking-up of the school. I have now obtained the almost unanimous consent of the parents to a still more stringent precaution. I require a medical examination and certificate dating not earlier than the day previous to the boy's return to school. The certificate appended to the one quoted above reads thus:

..... that I have this day carefully examined ..... to school to-morrow, and that there are no signs of any infectious complaint about him.

(Signature of medical man)

In addition to this I get my own school doctor to see all the boys immediately on their arrival at school. On Friday my boys came back to school, 21 of us travelling together in a saloon from London. On our arrival my doctor found that one boy admitted having some spots on his body; he examined him and found well-developed chicken-pox, some of the spots being obviously about a week old. The boy knew he had been having "heat spots" for some time. The doctor at home saw him on the Thursday, after which he was poorly, and his temperature rose to 100.1°; so the doctor was sent for to see him again the same evening and again on Friday to satisfy the mother that he was fit for school. I hold the doctor's certificate worded exactly as above. Chicken-pox being what it is and the boy having been for over an hour in the train with so many others, I fully expect that every boy in the school who has not previously had the illness will have it now, and all their parents and the school must suffer accordingly.

But this is not all. Finding that this particular boy said the doctor had not examined his body on the Thursday, I pushed my inquiry further with the following results:—Out of 32 boys, whose certificates I hold, only 14 had been examined on their chest, 17 in the throat, several had simply been told to put their tongues out, and 5 had not been examined at all either as to tongue, throat, or chest, and none at all were examined on the head. The net result is that out of the 23 medical men from various parts of England and Scotland only 7, including 2 distinguished London doctors, made a thorough examination before signing this explicit declaration—"I have carefully examined."

Such a cursory examination as satisfied most of these gentlemen would have failed to discover the case of scarlatina referred to above quite as surely as it failed to discover the chicken-pox on the present occasion.

My object in writing to you, Sir, is to ask your assistance in bringing this matter before the medical profession, who are in many ways the best friends of schoolmasters, whose sympathetic help is so necessary to us, and with whom we wish to work in complete harmony. But my recent experience seems to show that many of them scarcely quite realise yet the importance of safeguarding schools from epidemics, or the ease with which the first symptoms of infection may escape even the professional eye. For obvious reasons I can only sign myself

September 28th. A PREPARATORY SCHOOLMASTER.

P.S.—It is only fair to the doctor mentioned above to say that just before posting this I have received a letter from him saying that he examined the boy's lungs both back and front on the Thursday, and there were no chicken-pox marks upon him then. He intimates that the spots were only "a pustular eruption."

MEDICAL MAGISTRATES AND THE CONSCIENTIOUS OBJECTOR.

SIR,—The extraordinary legislation of the past session in the matter of vaccination, which has made us the laughing stock of all other civilised nations in consequence of the surrender by Parliament of scientific truth to the prejudices of the ignorant, has compelled me to be a "conscientious objector" in the opposite sense to the one created by the recent Act of Parliament. I have the honour to be a magistrate as well as a physician, and I have after very careful consideration determined that, knowing what I do, I cannot conscientiously sign a certificate of exemption from compulsory vaccination except in a case of proved bad health. I have therefore determined to retire from the Bench whenever an application comes before me for such a certificate. I venture to hope that my medical brethren who are magistrates will see their way to pursue the same line of action.—I am, etc.,

THOS. W. THURSFIELD, M.D., F.R.C.P.Lond.,

Leamington, Oct. 8th. J.P. for the County of Warwick.

OYSTERS AND DISEASE.

SIR,—On September 17th my partner, Dr. G. P. Chappel, and I ate between us at home about twenty "deep sea" oysters bought in Southend. Result: violent diarrhœa in my case for a fortnight, in his case for only a week, but since the 7th inst. he has developed enteric fever. The same day a patient of mine ate some "deep sea" oysters at Southend and was violently sick in the train. On the 8th inst. a man and his wife ate oysters at Southend and both have had diarrhœa ever since, the lady having great retching also and some suspicion of enteric fever, and being utterly prostrated.

Another case, the uncle of my cook, went to Southend recently, ate oysters, and "his life was despaired of." Thus in my small circle are 6 cases due to oyster poisoning at Southend, and 1 of them genuine enteric fever. These "deep sea" oysters are said to have been dredged up "far out in the German Ocean." They looked and tasted excellently well. Please note that other oysters caused poisoning in 3 cases. I am told that the explanation is this: The oysters are well enough when brought ashore, but those for which there is no immediate market are kept in boxes sunk "near the sewer mouths."

It would be interesting and probably instructive to obtain from other of your readers confirmatory reports of cases. It

cannot be that my six represent all the cases. The economic matter of importance is this: that it is useless to ensure purity of water in the native beds of the oysters if they are to be rendered poisonous and their reputation ruined by being kept in foul places.—I am, etc.,

Tottenham, Oct. 12th. A. Ogier Ward, M.D.

MEDICAL CHARITIES.

Sir,—May I draw the attention of members of the British Medical Association to the series of lectures referred to in the enclosed prospectus? They touch on many questions in regard to which the public, and especially those engaged in charitable work, are in need of fuller knowledge.

The lectures are given on Fridays at 4.30 P.M., at the Portman Rooms, Baker Street, beginning on October 21st. Mrs. Hill, the Honorary Secretary, 19, Park Mansions, Battersea Park, S.W., will gladly give information to all inquirers about them. Sir William Broadbent presides at the first. The subjects and lecturers are as follows:

The Growth of Medical Charities, October 21st, Mr. C. S. Loch.
The Dispensary, October 28th, Dr. L. A. Hawkes.
The Hospital, November 4th, Mr. Clinton Dent.
The Poor-law Infirmary, November 11th, Dr. T. P. Savill
The Lunatic Asylum, November 18th, Dr. Rayner.
District Nursing, November 25th, Miss Amy Hughes.
Sick Insurance, December 2nd, Mr. F. G. P. Neison.
The Provident Dispensary and District Nursing, December 9th Dr. J. B. Hurry.

I am, etc.,

C. S. Loch,

Secretary, Charity Organisation Society,
15, Buckingham Street, Strand, W.C., Oct. 12th, 1898.

THE MAINTENANCE AND DIFFUSION OF LEPROSY.

Sir,—The notice of *A History of Leprosy in Australia* which appeared in your issue of July 2nd misrepresented my work in several important respects; hence I am compelled to ask for space to correct its general tenour.

I have never argued that leprosy was incommunicable from the sick. I have pointed out that a broad survey of its epidemiology does not yield the evidence which might reasonably be expected if the hypothesis of maintenance and diffusion by direct or indirect communication with lepers were well founded and sufficient. I have shown, further, that when outbreaks and some other occurrences which have been recorded by myself and others with approximate accuracy come to be examined they furnish evidence which appears to weigh against that hypothesis. I have suggested reasons for doubting whether natural resistance as commonly understood is adequate to explain those observed discrepancies between the hypothesis and the facts. Lastly, I have noted that whether the bacillus is an obligatory or a facultative parasite remains undemonstrated.

All pathological analogies suggest that leprosy probably is maintained by communication with lepers, and therefore those who (like myself) are obliged to take some immediate action are wise if they guide themselves accordingly. If they were content to own this motive, all might be well. But the most part desire to show that they are right as well as prudent, and with this object they often adduce "evidence" which is no better than that disparaged by Simpson more than fifty years ago. I think this course likely to delay discovery, and therefore deprecate it.

The recorded epidemiology of leprosy is largely made up of assertions which have the slenderest foundation in fact, but the reader who has no occasion to study it seriously does not perceive this. For a striking, though trivial, example it is unnecessary to go beyond the column which has given occasion for this letter. The following sentence appears in it: "In the Pacific Ocean there are three centres of leprosy: New Caledonia, where it is rare; Fiji, where it is very rare; and Hawaii, where it attains a virulence more intense than in Kwang-tung." Of these four statements three are indefensible and the fourth inept. Island groups which are positively known to be endemic seats of leprosy are New Zealand, Fiji, New Caledonia, the Friendly Islands, the Society Islands, the Marquesas, the Philippines, Hawaii—a list which I do not profess complete and to which I have reason for saying the New Hebrides and the Navigators should be added; further, the use of the word "centres" conveys, I think, a quite erroneous idea, for I should be glad to learn on credible information that any part of Oceana was free from leprosy. Secondly, New Caledonia, "where it is rare," is now at the acme (it is to be hoped) of an outburst which began to force itself on attention about the year 1883, and which in extent and in its incidence on whites as well as *kanakas* is the same as the Hawaiian outbreak was, which began to attract notice in a similar way between 1855 and 1860. Thirdly, so far is leprosy from being "very rare" in Fiji that the Hon. B. Glanvill Corney, Principal Medical Officer, resident in the group for 25 years past, estimates the proportion of lepers per 10,000 natives at 100; but, as in New Guinea and (probably) the Navigators, frustrate or at least exceedingly mild forms difficult for the unpractised to identify predominate at present. Fourthly, it is certainly the case that leprosy had a prevalence—not a virulence according to Arning, and as I think—in Hawaii far in excess of anything recorded of Kwang-tung or, for that matter, of Fûh-kien; but the bearing of the comparison is obscure.

At the risk of becoming tedious, I will mention another example, chosen from quite a different category. Hansen has made the momentous assertion that a number of new cases annually discovered in certain districts of Norway was proportionate to the number of lepers left at large in them. The Norwegian outbreak is the best-observed of all; the casual reader who accepts the statement on such authority without question cannot be blamed. But all readers are not of that fortunate class; and in the course of routine verifying of references and checking of figures it appeared to me that the Norwegian statistics, when compared in series, contradicted it. But then, if there were no good statistical evidence that lepers at large were "so many centres of contagion," as Hansen declares, how could isolation account for the decline of the outbreak? It seemed necessary to examine the beginning of it; whence it appeared that the decade 1830-40, which is the starting-point for many who write about leprosy in Norway, was no true starting-point at all, but merely marked that season at which leprosy, present from time immemorial, once more began to make itself seriously felt in the outburst which slowly declined again rather more than three decades later. After achieving this point of view, it is easy to descry a parallel in the course taken by leprosy in Great Britain, where, however, other causes may probably have occurred with the natural fluctuations of an endemic disease (as with malaria) to extinguish it. It is not difficult to trace another instance in the course of leprosy in Hawaii; and I see every reason to expect that another may be found in New Caledonia, though for the present there are but two formal accounts of the beginning of the outbreak there (Forné, 1888; Legrand, 1891), which do not agree, and which must be read together. And consequently, though not on these considerations alone, the great outbursts which for many are signal examples of contagion, for me are possible instances of recrudescent activity in a localised virus.

Such evidence as has just been indicated cannot decide the open question of the mode in which leprosy is maintained and diffused, though it may serve to set the pathologist on a track hitherto unexplored. I am not displeased, therefore, to find that my humble contributions have disagreeably stirred the contagionist-by-tradition.—I am, etc.,

Sydney, Aug. 15th. J. Ashburton Thompson.

BLACKWATER FEVER.

Sir,—I should like to support in the most emphatic way Dr. Moffat's letter in the British Medical Journal of September 24th, with reference to the etiology and consequent treatment of "blackwater fever." My experience of blackwater fever has chiefly been in my own person, and though I took careful notes of my fevers, I was obviously handicapped in the carrying out of elaborate examinations of the urine or blood.

I regard the statement that quinine is the cause of the melanuria, in the absence of any scientific proof of this theory, as a simple superstition akin to the innumerable popular fallacies with reference to disease which are more common in tropical even than in temperate climes, a large number of which centre round the use of quinine. There is not a doubt in my own mind that blackwater fever is simply malaria with the complication of melanuria, which is sometimes a pure hæmoglobinuria, but in other cases associated with the pre-

sence of blood corpuscles in the urine, which, in my opinion, is secondary to the hæmoglobinuria.

In Dr. Clifford Allbutt's *System of Medicine*, Dr. Copeman has made frequent reference to my M.D. thesis on the subject of West African Fever, and containing special reference to blackwater fever, but he has not given my views as to the treatment of this affection.

I believe with Dr. Moffat and most other African practitioners that our sheet anchor is quinine, and that "to withhold quinine is culpable."—I am, etc.,

CHARLES F. HARFORD-BATTERSBY, M.D.,
Forest Gate, E., Sept. 28th. Principal of Livingstone College.

QUININE AS A PROPHYLACTIC IN MALARIA.

SIR,—Dr. Crosse's paper before the Pupils' Physical Society at Guy's Hospital, on the treatment of malarial fever and blackwater fever, has a special interest at the present moment, when for various reasons there is a growing fashion—it is the only word one can apply to such a curious form of unreason—to decry and be dissatisfied with quinine as a remedy in malaria. Hitherto this dissatisfaction has been principally confined to the public, who are in some measure amenable to the counsel of their medical advisers; but it threatens to assume dangerous proportions when fortified with such a weighty utterance as that of Koch's on the tendency of quinine to produce blackwater fever. The evidence against this alleged pernicious action of quinine, both as adduced by Dr. Crosse and in my own experience, is overwhelming.

The greatest evil—only too likely I fear to be enhanced by Professor Koch—which the prejudice against quinine is responsible for—is to my mind the difficulty which it creates against inducing travellers and inhabitants of malarial districts to take quinine as a preventive. It is as a prophylactic agent that quinine exhibits its highest value, and it is as a prophylactic agent that it unfortunately has relatively the smallest use. The result is that men scorning mere drugs—relying on their constitution and a certain light-hearted fortitude—expose themselves freely to the malarial poison, and then, with their temperature at 105°, resort to the doctor and the inevitable quinine, which at this, the eleventh hour, is taken, and abused because it does not immediately restore the patient to his original robust health. The testimony of Dr. Cargill, who, while in Nigeria for two years, took 5 gr. daily of quinine with the result that he never had a day's illness, and the similar experiences of Zambesi hunters and others which have come under my notice, all point to the same conclusion. Quinine is the antidote provided by Nature against the malarial parasite, and for it to have its maximum value it is necessary that it should be present in the blood at the moment of the introduction of that parasite.—I am, etc.,

ALFRED P. HILLIER, B.A., M.D.
Wimpole Street, W., Oct. 8th.

ETHER PNEUMONIA.

SIR,—I have long doubted whether ether deserves the evil reputation which surgeons have given it for frequently causing unpleasant complications or even death after surgical operations. Dr. Drummond has made the most of his case in his paper published in the BRITISH MEDICAL JOURNAL of October 1st, p. 937, but I do not think that he has proved his thesis. The majority of surgeons have always regarded ether with suspicion and prejudice. I very well remember some years ago being asked to see a case of ether pneumonia by an eminent London surgeon, who knew that I took an interest in the subject. In that case I was easily able to prove the ether entirely guiltless, because I had given nothing but chloroform throughout the operation. It is not, however, always so easy to exonerate the ether as it was in this case; the drug has a bad name, and any pneumonia, bronchitis, or nephritis which occurs after a surgical operation for which it has been given is almost sure to be placed to the discredit of the ether without further question or inquiry.

It must not be forgotten that the moist sounds and crepitations so frequently heard in the chests of patients suffering from diseases or injuries of the abdomen or diseases and injuries in any way involving the respiratory mechanism are not always due to the increased secretion of fluid and mucus in the lungs and tubes; but to the great difficulty these patients have in coughing up the normal secretions which have accumulated in the lungs. It is no uncommon thing to hear patients with appendicitis or pelvic trouble complaining of "bronchitis" when there is no suspicion of any general septic trouble. We all know, too, how difficult it is for old people, who have lost their vigour, to cough up their accumulations of mucus. These patients are then said to have bronchitis, and if ether has been administered they are said to have ether bronchitis. This is the reason that most of the reported cases of ether bronchitis and pneumonia have been cases of strangulated hernia and other abdominal maladies.

Again, during surgical operations, especially severe operations, patients are exposed to the very conditions which are said, under other circumstances, to cause, and which undoubtedly do predispose to, pneumonia and bronchitis. The patient is placed on a table with a large area of skin bare and wet with lotion, rapidly radiating and losing heat, not only from the naked parts but from the whole surface of the body, which is usually wet with sweat, and often lying in a puddle of blood and lotion. I am well aware that these conditions are in these aseptic days to a large extent both unavoidable and necessary. It is, however, very unfair to lay the blame for maladies arising in this fashion at the door of the anæsthetic.

As Dr. Drummond points out, probably very few cases arise through direct infection from the mouthpiece or instrument used for the administration of the ether; but, of course, absolute cleanliness is essential not only for the patient's comfort, but also to secure his safety.

On two occasions I have given ether to patients suffering from acute pneumonia; in both the pericardium was opened for purulent pericarditis; both were much benefited by the operation, and in neither did the pneumonia seem to be in any way aggravated by the anæsthetic.—I am, etc.,

Chiswick Lane, W., Oct. 8th. G. P. SHUTER.

SIR,—Dr. Drummond, in his article on the above, has done well in bringing this matter to the notice of the profession. That bronchitis and pneumonia occasionally follow the administration of ether, especially after abdominal operations, there can, I think, be no doubt, having met with several such cases in my own surgical practice, two of which proved fatal from this cause. Formerly I looked upon this complication as due simply to bronchial inflammation from the ether vapour, and the pneumonia when present to the spreading of the same to the alveoli; latterly, however, I have quite altered my opinion and resulting treatment, and look upon the so-called bronchitis as a physiological hypersecretion of mucus acting in a purely mechanical manner, and so causing catarrhal pneumonia from plugging of the bronchi.

Acting upon the suggestion of a writer on this subject in the BRITISH MEDICAL JOURNAL, and looking upon the hypersecretion of mucus as the primary cause of the trouble, I have for some time past treated such cases with belladonna by reason of its well-known action on secretion, and with very satisfactory results. I need hardly point out that these cases are doubly serious when following abdominal operations owing to the want of expelling power from inhibition of the abdominal muscles.—I am, etc.,

Derby, Oct. 4th. T. HENDERSON POUNDS, F.R.C.S.

WHAT IS "FIRST AID?"

SIR,—To prevent the remedial assistance of "first aid" passing beyond its bounds and encroaching upon remedial treatment, I have found it desirable, as well as necessary, to define what "first aid" really consists of.

As this definition might be of use to many of your readers, I herewith enclose the same:

"First aid" consists in the immediate relief of suffering, and the temporary dressing of all injuries sufficient to enable the sufferer to proceed to where authoritative advice can be obtained from some qualified medical man, or to remain on the spot, when removal is unjustifiable, until that advice can be obtained.

Under this comprehensive definition the arrest of hæmorrhage, the temporary application of splints to fractures, the first dressing of burns, and the application of antiseptic dressing to wounds would take first place.

Immediate assistance would include the resuscitation of the

apparently dead, and the first succour requisite in cases of poisoning or fits.

The immediate relief of suffering would include the giving of one dose of medicine for diarrhœa, colic, or other severe pain, as well as for shock, collapse, or temporary failure of the heart's action.

No redressing of wounds or injuries, nor operative interference of any kind is here included; in fact, the surgical aid is limited to what would be done by bearers at the front on a battlefield before the injured are sent to the base or station hospital for final redressing and surgically approved treatment. I am, etc.,

SAMUEL OSBORN.

Devonshire Street, Portland Place, W., Oct. 11th.

OBITUARY.

K. N. BAHADURJEE, M.D.,

Bombay.

THE Parsee community of Bombay has lost by the death of Dr. Bahadurjee a man of exceptional abilities and zeal which marked him out for a position of influence among his countrymen.

Dr. Bahadurjee was born in his ancestral house in Umra Village in the Surat Zillah in November, 1860, so that he had not yet completed his thirty-eighth year. Having received the rudiments of knowledge in Gujerati, and English in the Proprietary High School in Bombay, he entered St. Xavier's College to study under the Jesuit Fathers. He passed the Matriculation Examination of the Bombay University in 1878, and at the examination held in the Elphinstone College for the Gilchrist Scholarship in January, 1882, he stood first among the candidates who had come from all parts of India. He proceeded to England in 1882, and entered University College, London.

He took the M.B. degree of the London University with first-class honours. After working for a time at Berlin under Professor Koch he took the M.D.London, being the first native of the Bombay Presidency to obtain that degree. He found a sympathetic and appreciative patron in Lord Reay, then Governor of Bombay, and he was placed in charge of the Framjee Dinshaw Petit Laboratory with a view to his engaging in original research. Lord Reay also nominated Dr. Bahadurjee a Fellow of the Bombay University, and appointed him an extra Professor of Clinical Medicine and Pharmacology in the Grant Medical College. In 1892, Dr. Bahadurjee attended the Congress of Hygiene and Demography held in London as a delegate of the Millowners' Association, and represented that the alterations contemplated in the Indian Factory Act would operate harshly on Indian cotton manufactories. The Millowners' Association and other bodies acknowledged publicly the debt of gratitude they owed Dr. Bahadurjee for his advocacy of their cause.

Dr. Bahadurjee did a great deal in drawing the attention of the authorities to the grievances of native medical graduates. He conducted an agitation on the subject when in England in 1896, and gave evidence before the Welby Commission, to which he was sent as a delegate by the native medical profession of Bombay and other chief towns to represent the present unsatisfactory state of the profession. On his return a banquet was given in his honour at the Ripon Club. He was elected the President of the Medical Union of Bombay and also of the Medical and Physical Society for two years. He also filled for the same period the chair of Clinical Medicine in the Bombay University. In recognition of Dr. Bahadurjee's services to his co-religionists as Honorary Physician of the Parsee Fever Hospital during the prevalence of the plague epidemic, a large silver vase with a suitable inscription and a silver tea set were presented to him last year by Sir Jamsetjee Jejeebhoy in the name of the Parsee community of Bombay.

DAVID EDGAR JONES, M.D.(DUNELM.), F.R.C.S.EDIN.

DR. D. EDGAR JONES, who for a third of a century has filled an important place in Cardiff, died recently from diabetes, and was laid to rest on September 14th in the presence of a large concourse of people. He was born in Cardiganshire in 1843, and had the usual struggle of a Welsh lad at that date to obtain a good education. He received his medical training in Glasgow and at University College, London, and became a Licentiate of the Colleges of Physicians and Surgeons of Edinburgh in 1867. He obtained the Fellowship of the Royal College of Surgeons of Edinburgh in 1879, and the degree of M.D. from the University of Durham in 1887. He settled in Cardiff, and not only conducted a large practice, but participated to the full in the municipal, educational, religious, and philanthropic life of the town. He was elected to the Town Council in 1875, served as Mayor in 1885-86, and was also appointed Alderman and J.P. of the borough of Cardiff. He was a member of various Committees of the Corporation, and as Chairman of the Property and Markets Committee was indefatigable in endeavouring to effect improvements in the baths, market buildings, and slaughter-houses. The present excellence of these buildings is largely due to his efforts. He was last year Chairman of the General Committee of the County Lunatic Asylum, Bridgend, an institution in which he had long taken great interest as a visitor. He was a governor of University College and of the Intermediate School and a member of the Technical Instruction Committee. He was a member of the British Medical Association, and was President of the Cardiff Medical Society for the year 1895-96. He was Government Medical Inspector of Emigrants and Consulting Surgeon to the *Hamadryad* Hospital Ship for Seamen, an institution which claimed his earliest sympathy.

WE have to record the death on October 10th of Dr. WILLIAM GARDINER, of Ashton, from the consequences of a paralytic stroke. Dr. Gardiner, who graduated M.D. Glasgow in 1852, practised first at the Slaithwaite, but settled in Ashton forty-five years ago. He was in his seventieth year at the time of his death, and was believed to be the oldest medical practitioner in Ashton. He enjoyed a large practice in Ashton, and his skill as a surgeon caused him to be frequently consulted in difficult cases. Dr. Gardiner was unmarried, and leaves no near relatives.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON MATTHEW F. RYAN has been placed on the retired list at his own request, October 7th. His commissions are thus dated: Surgeon, January 14th, 1868; Staff-Surgeon, April 1st, 1881; Fleet-Surgeon, November 14th, 1888.

The following appointments have been made at the Admiralty: JAMES L. SMITH, M.B., Staff-Surgeon, to the *Rodney*, September 25th; WILLIAM TAIT, M.B., Staff-Surgeon, to the *Mars*, October 6th; WILLIAM SPRY, Staff-Surgeon, to the *Impregnable*, October 8th; JOHN W. SLAUGHTER, B.A., M.B., Staff-Surgeon, to the *Cleopatra*, October 8th; ALFRED H. L. COX, Surgeon, to the *Cambridge*, October 10th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL ALEXANDER ANDERSON is placed on retired pay. He entered the service as Assistant-Surgeon, October 1st, 1867; became Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1879; was granted the rank of Lieutenant-Colonel, October 1st, 1887; and made Brigade-Surgeon-Lieutenant-Colonel, April 14th, 1894. Brigade-Surgeon-Lieutenant-Colonel A. Anderson served with an Expeditionary Field Force under Colonel J. R. Mackenzie in Arabia from October 27th to December 20th, 1873, including the investment, surrender, occupation, and destruction of the forts at Al-Hota, and subsequent march to Zaida in pursuit of Ally Bin Mana, the chief of Houshabi. He was also in the Afghan war in 1878-79 (medal).

The Christian names of Lieutenant DOBBIN are EDWARD JOHN, and not as stated in the *Gazette* of August 9th.

Surgeon-Major ROBERT THOMAS BUCKLE, M.D., died on September 7th. He was appointed Assistant-Surgeon, October 14th, 1851; Surgeon, October 31st, 1858; and Surgeon-Major, October 14th, 1871. He retired from the service, December 23rd, 1871. He served with the 64th Regiment in the Persian campaign of 1856, and was at the storm and capture of Reshire and the surrender of Bushire (medal with clasp).

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN EDWARD W. ST.V. RYAN is promoted to be Surgeon-Major, October 12th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. YOUNG, Bengal Establishment, has been appointed Principal Medical Officer Malakand Field Force, *vice* Lieutenant-Colonel W. J. Charlton, Royal Army Medical Corps.

Lieutenant-Colonel C. W. CARR-CALTHROP, M.D., Bengal Establishment, is granted the rank of Colonel from August 15th, while officiating as Principal Medical Officer and Sanitary Commissioner, Assam.

Colonel RANDOLPH CALDECOTT, Bombay Establishment, died at Devonshire Street, London, on September 29th. He joined the department as Assistant-Surgeon, October 1st, 1869; and was made Surgeon-Colonel, September 15th, 1897. His death was caused by leaping from a third-floor window, concerning which he said in reply to a question, "I threw myself out; I do not know why I did so."

The Secretary of State has approved a recommendation of the Government of India that officers of the Indian Medical Service holding appointments outside the cadre of that service shall be seconded when such employment is retained for a period exceeding twelve months.

THE VOLUNTEERS.

MR. THOMAS CAMERON, M.B., is appointed Surgeon-Lieutenant, in the 2nd East Riding of Yorkshire Artillery (Western Division Royal Artillery) October 12th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Colonel W. D. Wilson, M.B.	Headquarters	Devonport.
Lieut.-Colonel E. H. Fenn	Bombay ...	Punjab.
,, W. H. Allen	Madras... ...	Parkhurst.
,, J. L. Peyton, M.B. ...	Holywood ...	Limerick.
,, W. T. Johnston, M.D. ...	Birr	Bengal.
,, W. Keays	Limerick ...	Punjab.
Major A. E. J. Croly	—	Bombay.
,, B. T. M'Creery, M.B.	Newry	Holywood.
,, C. R. Woods, M.D.	Egypt	Home District.
,, J. O. G. Sandiford, M.D.	Madras... ...	Buttevant.
,, M. O'C. Drury	Bombay ...	Netley.
,, A. P. Hart, M.B....	Birmingham...	Chester.
,, L. W. Swabey	Malta	Crete.
,, J. R. Yourdi, M.B.	Portsmouth ...	Madras.
,, J. C. Culling	Bombay ...	Dover.
,, G. H. Younge	Tower of London	Chatham.
,, F. P. Nichols, M.B.	Chester ...	Madras.
,, L. Haywood, M.B.	—	Mullingar.
,, T. W. O'H. Hamilton, M.B.	Fort George ...	Portsmouth.
,, G. E. Duncan	Malta	Crete.
,, J. M. F. Shine, M.D.	Crete	Cork.
,, A. Hosie, M.D.	—	Portsmouth.
Captain L. Way	Lydd	Woolwich.
Lieutenant A. W. M. Bowen	Woolwich ...	Bengal
,, E. A. Bourke	Curragh ...	,,
,, G. B. Carter, M.B.	Egypt	Curragh.
,, C. J. O'Gorman	Aldershot ...	Egypt.
Quartermaster A. Freshwater	Cork	London.
,, P. Macintosh	—	Cork.

Lieutenant-Colonel C. Healy, retired pay, has relinquished the medical charge of troops at Cardiff, and Lieutenant-Colonel A. Kirwan has assumed duty at Leicester.

THE MILITIA MEDICAL STAFF CORPS.

Two officers of the Militia Medical Staff Corps having been recently seconded for service under the Foreign Office in the Niger Protectorates, there are now vacant commissions.

THE ARMY MEDICAL RESERVE.

THE following conditions as affecting the Army Medical Reserve officers and civilian practitioners is worthy of the attention of the profession: Owing to the dearth of officers of the Royal Army Medical Corps the War Office is employing general practitioners at a rate of £270 per annum each to do duty with troops. Officers of the Army Medical Reserve employed on exactly similar duties receive only contract rates laid down in the Pay Warrant (Article 375), amounting to about twopence per man per week, which includes the supply of medicines and surgical appliances, etc. What benefits, it may fairly be asked, do medical men joining the Army Medical Reserve thus obtain? for they are in a position pecuniarily inferior to the private practitioner, as the Army Medical Reserve officers may be called on at any time by the War Office to give their services to troops at the station where the Army Medical Reserve officers may be. It is generally admitted by those best in a position to give an opinion on the subject that the employment of general practitioners cannot be satisfactory from a military point of view. There is not a single district or command that is not largely under its strength of Royal Army Medical Corps officers and men also.

FOREIGN ORDERS FOR MEDICAL MEN.

THE *London Gazette* of October 7th contains the announcement that the Queen has been pleased to give and grant the royal licence of authority to accept and wear the insignia of the foreign order conferred by His Highness the Khedive of Egypt, authorised by His Imperial Majesty the Sultan of Turkey on Surgeon-Captain Richard Hugh Penton, D.S.O., A.M.S., the 4th Class of the Ottoman Medjidie, and on Surgeon-Captain Phillip Henry Whiston, A.M.S., the 4th Class of the Medjidie.

It is curious that these officers' names should appear in the *Gazette* with the old compound titles, which no longer appear in the monthly *Army List* for August (at page [illegible] Special List of Officers Attached to the Egyptian Army) as "Captains, Royal Army Medical Corps."

Captain Penton joined the Egyptian army on February 12th, 1892, while his seniority in the army dates February 5th, 1887.

Captain Whiston joined the Egyptian army on December 31st, 1891, while his seniority in the army dates July 29th, 1890.

TITLES OF VOLUNTEER MEDICAL OFFICERS.

A CORRESPONDENT, writing as a volunteer, states that it has been officially intimated that the Royal Army Medical Corps does not include officers of the Army Medical Reserve, or of the Volunteers; and therefore the new titles do not extend to them. They are thus left in an anomalous position.

MILITARY TITLES.

A CORRESPONDENT "B" thinks the suggestion is just that the new simple military titles should be permitted to all retired medical officers, whether liable to recall or not, who on retirement bore the late compound titles. This, he reiterates, would redress the decided anomaly which confers these titles on retired medical officers, through the accident of present or prospective employment. The public, he declares, cannot discriminate; they wonder why one set of retired men have one title, and then something different, while all seem in the same boat.

THE INDIAN MEDICAL SERVICE.

SCOTUS writes: Now that your efforts on behalf of the Army Medical Staff have come to such a successful issue, will you kindly bring to notice some of the grievances of the Indian service? There can be no doubt that service is not now regarded as highly as it was twenty-five years ago. This is largely on account of so-called economies, among which may be enumerated: Excessive reduction of administration and other lucrative appointments; the difficulty of getting leave or furlough except on medical certificate; the cutting down of allowances to the lowest scale, as witnessed in the last campaign; incessant transfers and removals; delay in carrying promotions on vacancies. I consider that there is a want of *esprit de corps* in the Indian service which prevents united effort as in the Army Medical Service. The competition for the Indian Medical Service is gradually falling off, because the conditions of service are not good enough. The remedies may be briefly summarised as follows:

1. The Surgeon-General with the Government of India should be Secretary to Government in the Medical Department.
2. Inspector-generals of civil hospitals should be secretaries in the medical department to their respective local governments.
3. The strength of the service should be materially increased.
4. Officers in civil employ should draw their full pay, instead of having allowances docked under the idea they can be recouped by private fees.
5. Transfers should be much reduced.
6. Officers under the rank of major should draw horse allowance.
7. A general increase of pay should be made.

There are other reforms that might be suggested; but it is a notable fact that during the past twenty years the officers who have found advancement have been those who have advised the cutting down of appointments and allowances!

*** Our correspondent's grievances seem to hinge upon two points, which may account for a waning popularity:

1. Indian medical appointments are no longer sufficiently numerous or lucrative.
2. The establishment is decidedly undermanned.

THE VICTORIA CROSS.

FAIR PLAY AND NO FAVOUR writes: If it be true that Lord Wolseley thinks mere medical bravery should not be rewarded by the Victoria Cross as heretofore, it shows that, in his Lordship's estimation, bravery alone is not the only qualification for that distinction. What would he say if medical officers, therefore, refrained from incurring the risks of battle? Why should Surgeon Maillard, R.N., have displayed such conspicuous bravery in the late disturbances in Candia? Why should Lieutenant Clarke, R.A.M.C., run the following risks on the same occasion? A soldier was wounded about 120 yards from the military hospital, and lay exposed to murder and mutilation; Clarke and a small party went to his rescue under a hot fire at close range. Clarke and two of his men were wounded, and the wounded man was hit again; two men who opened the hospital gate to allow the party bearing their wounded comrade on a stretcher to enter were shot dead. Clarke himself, although wounded, covered the retreat with his revolver and shot a Bashi-Bazouk who attacked them.

*** We cannot believe Lord Wolseley ever said or thought that medical valour was unworthy of the Victoria Cross. If it were possible to make that splendid distinction one of mere caste, the public would demand its abolition.

MEDICO-LEGAL.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

G.—Two such appointments as referee under the Compensation Act and surgeon to a large works, if held by the same person, may easily put him in a position of difficulty. Those who have to make the appointments may very likely wish to give them to different men, but in some localities there is no great choice. The law has not declared that a medical referee must hold no other appointment. Gentlemen who accept the office will, of course, discharge their duties under it im-

partially. Dividing appointments between partners would be no improvement. The suspicion of bias would be as strong as if both duties were discharged by the same man.

THE LOCAL GOVERNMENT (IRELAND) ACT, 1898, AND "EXISTING OFFICERS."

MR. C. O'BRIEN (Devon House, Whitehall, Bristol) writes: Having seen in the BRITISH MEDICAL JOURNAL of October 1st, p. 1,016, that a medical officer who spends more than ten years in the service is entitled to ten-sixtieths of his annual salary and emoluments, what I want to know is this: Is it compulsory on the guardians to pay it? I spent more than ten years as dispensary medical officer in Ireland.

*** We have been careful to point out in a previous answer that "a medical officer to whom the Medical Officers' Superannuation Act (Ireland), 1869, applies" is one "who," in the words of Section 1 of the Union Officers' Superannuation Act, 1865, "shall become incapable of discharging the duties of his office with efficiency, by reason of permanent infirmity of mind or body, or of old age, upon his resigning or otherwise ceasing to hold his office."

We are glad to think that such is not the case with our correspondent. Both the Union Officers' Superannuation Act, 1865 (28 Vic., cap. 26), and the Medical Officers' Superannuation (Ireland) Act, 1869 (32 and 33 Vic., cap. 50), apply to Poor-law and dispensary medical officers, "who become disabled by infirmity or age to discharge the duties of their offices," and to such ill-fated officers alone.

UNIVERSITIES AND COLLEGES.

ROYAL UNIVERSITY OF IRELAND.

FIRST EXAMINATION IN MEDICINE.—The following candidates have passed this examination:

A. P. Barry, University College, Dublin; C. Baylor, Queen's College, Cork; W. H. N. Bright, Queen's College, Galway; S. Broderick, University College, Dublin; W. F. Christian, University College, Dublin; W. H. Davis, Queen's College, Belfast; A. Dick, Queen's College, Belfast; P. Dwyer, University College, Dublin; S. J. Killen, Queen's College, Belfast; J. W. McFarland, University College, Dublin; P. J. Murray, University College, Dublin; C. E. Suffern, Queen's College, Belfast; T. H. Suffern, Queen's College, Belfast; C. B. T. Tivy, Queen's College, Cork; Margaret Touer, Queen's College, Belfast; J. W. A. Wilson, Queen's College, Belfast.

SECOND EXAMINATION IN MEDICINE.—The following candidates have passed the examination:

Upper Pass.—*J. Armstrong, Queen's College, Belfast; *A. L. Black, Queen's College, Belfast; *J. Carroll, Catholic University School of Medicine; *P. Doherty, Catholic University School of Medicine; G. Ebrill, Catholic University School of Medicine; T. J. Hartigan, Catholic University School of Medicine; *S. R. Hunter, Queen's College, Belfast; A. McCloy, Queen's College, Belfast; *S. McClure, Queen's College, Belfast; *H. M. McCrea, Queen's College, Belfast; W. A. Sandys, Queen's College, Galway; *C. F. White, Catholic University School of Medicine; J. A. Williams, Queen's College, Cork.

Those marked with an asterisk may present themselves for the further examination for Honours.

Pass.—H. M. Agnew, Queen's College, Belfast; D. R. Campbell, Queen's College, Belfast; J. Clements, Queen's College, Galway; Adeline English, Catholic University School of Medicine; W. J. B. Fergus, Queen's College, Belfast; J. H. Ferris, Queen's College, Belfast; R. W. Fisher, Queen's College, Belfast; J. H. Gill, Queen's College, Belfast; J. Gillespie, Queen's College, Belfast; J. J. Jaffé, Queen's College, Cork; J. Knox, Queen's College, Belfast; M. J. Landy, Catholic University School of Medicine; M. M. Lee, B.A., Catholic University School of Medicine; G. F. Luke, Queen's College, Belfast; R. McCandless, Queen's College, Belfast; F. H. McCaughey, Queen's College, Belfast; F. E. McCune, Queen's College, Belfast; E. J. McKenna, Queen's College, Cork; J. McMurray, Queen's College, Belfast; F. C. Manor, Queen's College, Belfast; J. F. G. Martin, Queen's College, Belfast; J. J. O'Hare, Catholic University School of Medicine; D. S. A. O'Keefe, Queen's College, Cork; H. E. Richards, Queen's College, Galway; W. Rodgers, M.A., Queen's College, Belfast; W. B. Sampson, Catholic University School of Medicine; E. F. Scott, Queen's College, Galway; M. A. Shinkurn, Queen's College, Cork; R. A. Stewart, Queen's College, Belfast.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At a meeting of the College on Friday, October 7th, William John Thompson, M.D., was admitted as Member.

CONJOINT BOARD IN IRELAND.

PRELIMINARY EXAMINATION.—Candidates have passed this examination as undernoted:

Honours (in order of merit).—R. J. B. Buchanan, A. H. Marks, P. J. Owens, D. C. V. FitzGerald, T. Fitzgerald, H. R. C. Rutherford, R. G. Griffin, M. Denny, G. G. Tabuteau.

Pass (alphabetically).—P. O'B. Butler, E. C. Byrne, T. Cashin, S. Clare, J. S. Dunne, P. Graham, S. B. Hanbury, J. W. Jackson, D. Lawson, A. S. L. Maydwell, J. M. Moriarty, T. F. Murphy, N. V. McDowell, J. R. H. MacManus, V. H. McSwiney, J. Norman, W. Ormsby, J. Owens, H. F. Phillipson, J. W. Rutherford, J. Sullivan, M. D. Sweetnam.

Forty-two candidates were rejected.

A supplemental examination will be held on November 1st and 2nd; regulations unchanged.

FIRST PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted

Completed the Examination.—T. M. Allen, J. E. Brereton, A. H. R. Duncan, J. B. Logan, Miss M. E. M. Logan, J. J. Moore, J. Murphy, F. G. McCaughey.

In Anatomy.—W. Cremins, J. Gulavan, E. C. Jennings, J. Onraet, A. M. Sayers.

In Biology.—W. Cremins, J. F. Farrell, A. M. Sayers, P. M. Sheridan.

In Pharmacy.—W. Cremins, G. F. H. Davison, E. C. Jennings.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1898.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE vital statistics of the thirty-three large English towns dealt with by the Registrar-General in his weekly returns are summarised in the accompanying table. During the three months ending September last 84,891 births were registered in these thirty-three towns, equal to an annual rate of 30.4 per 1,000 of their aggregate population, estimated at 11,218,378 persons in the middle of this year. In the corresponding periods of the three preceding years the birth-rates in these towns were 31.1, 30.1, and 31.1 per 1,000 respectively. In London the birth-rate last quarter was 29.5 per 1,000, while it averaged 30.9 in the thirty-two provincial towns, among which it ranged from 22.6 in Huddersfield, 22.9 in Halifax, 24.3 in Bradford, and 25.1 in Brighton, to 34.3 in Liverpool, 34.4 in Salford, 35.5 in Sunderland, 36.6 in Gateshead, and 37.0 in Wolverhampton.

During the quarter under notice 56,894 deaths were registered in the thirty-three towns, corresponding to an annual rate of 20.3 per 1,000, against 20.2, 19.1, and 21.2 in the third quarters of the three preceding years. In London the rate of mortality was 19.4 per 1,000, while it averaged 21.0 in the thirty-two large provincial towns, among which it ranged from 15.6 in Huddersfield, 15.9 in Cardiff, 16.0 in Swansea, 16.1 in Oldham, and 16.2 in Croydon, to 24.1 in Manchester, 25.1 in Wolverhampton, 26.3 in Liverpool, 27.5 in Sunderland, and 28.7 in Salford. The 56,894 deaths registered in the thirty-three towns last quarter included 13,834 which were referred to the principal zymotic diseases, equal to an annual rate of 4.94 per 1,000, against 4.97, 4.19, and 5.73 in the corresponding periods of the three preceding years. In London the zymotic death-rate last quarter was equal to 4.32 per 1,000, while it averaged 5.36 in the thirty-two provincial towns, among which it ranged from 2.48 in Halifax, 2.79 in Oldham, 3.06 in Huddersfield, 3.39 in Swansea, and 3.44 in Cardiff, to 7.37 in Sheffield, 7.44 in Preston, 7.61 in Wolverhampton, 7.86 in Sunderland, and 8.10 in Salford. The 13,834 deaths referred to the principal zymotic diseases in the thirty-three towns during the quarter under notice included 10,763 which resulted from diarrhœa, 986 from whooping-cough, 681 from diphtheria, 662 from measles, 428 from "fever" (principally enteric), 312 from scarlet fever, and 2 from small-pox. The 10,763 fatal cases of diarrhœa were equal to an annual rate of 3.84 per 1,000, which, with one exception, exceeded that recorded in the corresponding quarter of any of the ten preceding years. In London the diarrhœa death-rate was equal to 3.20 per 1,000, while it averaged 4.29 in the thirty-two provincial towns, among which this disease showed the highest proportional fatality in Wolverhampton, Salford, Preston, Sheffield, Hull, and Sunderland. The deaths referred to whooping-cough, which had been 1,596 and 1,454 in the two preceding quarters, further declined to 986 during the three months under notice, and were equal to an annual rate of 0.35 per 1,000; in London the death-rate was 0.38 per 1,000, while it averaged 0.33 in the thirty-two provincial towns, among which whooping-cough was proportionally most fatal in Swansea, Salford, Preston, Halifax, Sheffield, Sunderland, and Newcastle-upon-Tyne. The fatal cases of diphtheria, which had declined from 1,097 to 680 in the three preceding quarters, were 681 during the three months ending September last, and were equal to an annual rate of 0.24 per 1,000; in London the diphtheria death-rate was equal to 0.32 per 1,000, while it averaged 0.19 in the thirty-two provincial towns, among which this disease caused the highest proportional fatality in West Ham, Cardiff, Swansea, Wolverhampton, Birkenhead, and Leeds. The deaths from measles, which had been 2,196, 2,749, and 1,920 in the three preceding quarters, further declined to 662 during the three months under notice, and were equal to an annual rate of 0.24 per 1,000; in London the death-rate from this disease was equal to 0.21 per 1,000, while it averaged 0.25 in the thirty-two provincial towns, among which measles showed the highest proportional fatality in Portsmouth, Plymouth, Norwich, Liverpool, Manchester, Gateshead, and Newcastle-upon-Tyne. The deaths referred to different forms of "fever" (including typhus, enteric, and simple and ill-defined forms of fever), which had declined from 772 to 305 in the three preceding quarters, rose again to 428 during the three months ending September last, and were equal to an annual rate of 0.15 per 1,000; in London the "fever" death-rate was equal to 0.11 per 1,000, while it averaged 0.18 in the thirty-two large provincial towns, among which the highest rates were recorded in Norwich, Birkenhead, Salford, Sunderland, and Newcastle-upon-Tyne. The fatal cases of scarlet fever, which had declined from 599 to 374 in the three preceding quarters, further fell to 312 during the three months under notice, and was equal to an annual rate of 0.11 per 1,000; in London the scarlet fever death-rate was 0.10 per 1,000, while it averaged 0.12 in the thirty-two provincial towns, among which this disease was proportionally most fatal in Wolverhampton, Norwich, Salford, Leeds, Sunderland, and Gateshead. Of the 2 deaths from small-pox registered last quarter in the thirty-three towns, 1 was recorded in Liverpool and 1 in Gateshead.

Infant mortality in the thirty-three towns, measured by the proportion of deaths under one year of age to registered births, was equal to 275 per 1,000 during the three months ending September last, against 252, 232, and 278 in the corresponding quarters of the three preceding years. In London the rate of infant mortality was equal to 261 per 1,000, while it averaged 284 in the thirty-two provincial towns, among which it ranged from 103 in Oldham, 204 in Huddersfield and in Halifax, 207 in Swansea, and 227 in Bristol, to 315 in Norwich, 318 in Sheffield, 324 in Blackburn, 336 in Sunderland and in Wolverhampton, 343 in Preston, and 382 in Salford.

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Third Quarter of 1898.

Towns.	Estimated Population middle of 1898.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhœa.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
33 Towns	11,218,378	84,891	56,894	30.4	20.3	4.94	13,834	2	662	312	681	986	428	10,763	275	1.0
32 Provincial Towns	6,713,612	51,721	35,133	30.9	21.0	5.36	8,988	2	426	204	321	556	306	7,173	284	1.3
London	4,504,766	33,170	21,761	29.5	19.4	4.32	4,846	—	236	108	360	430	122	3,590	261	0.5
West Ham	286,654	2,153	1,250	30.1	17.5	4.57	327	—	21	14	36	36	17	213	275	1.4
Croydon	124,421	782	504	25.2	16.2	4.07	145	—	6	—	4	10	—	125	298	—
Brighton	122,310	765	549	25.1	18.0	4.20	128	—	—	2	4	5	4	113	256	1.1
Portsmouth	136,618	1,232	803	26.5	17.3	4.14	193	—	29	4	9	3	10	138	240	1.2
Plymouth	99,136	736	499	29.8	20.2	5.25	130	—	42	3	2	8	2	73	238	0.2
Bristol	316,900	2,271	1,313	28.7	16.6	3.96	313	—	10	4	10	27	5	257	227	0.5
Cardiff	177,770	1,385	703	31.2	15.9	3.44	152	—	3	—	17	10	7	115	237	0.3
Swansea	102,001	725	407	28.5	16.0	3.39	86	—	—	3	32	13	6	32	207	2.0
Wolverhampton	88,051	813	551	37.0	25.1	7.61	167	—	5	5	8	5	4	140	336	1.1
Birmingham	510,343	4,341	2,690	34.1	21.1	5.15	656	—	24	9	27	42	18	536	276	2.5
Norwich	111,699	783	567	28.1	20.4	6.35	177	—	32	7	—	5	9	124	313	0.4
Leicester	208,662	1,516	970	29.1	18.6	5.85	305	—	1	8	8	3	7	278	305	2.3
Nottingham	230,137	1,707	1,032	29.0	17.5	4.20	247	—	10	7	3	4	10	213	247	0.5
Derby	104,834	742	468	28.4	17.9	3.67	96	—	4	5	—	6	5	76	233	—
Birkenhead	113,189	877	579	31.1	20.5	5.21	147	—	—	6	12	2	13	114	310	1.0
Liverpool	633,645	5,416	4,156	34.3	26.3	6.19	978	1	61	25	32	59	42	758	285	3.0
Bolton	172,495	957	676	31.3	22.1	6.09	186	—	1	6	1	10	7	161	275	0.3
Manchester	539,079	4,301	3,242	32.0	24.1	6.32	849	—	48	15	15	36	12	723	302	0.9
Salford	215,702	1,851	1,545	34.4	28.7	8.10	435	—	16	17	3	35	16	348	382	0.5
Oldham	148,288	964	596	26.1	16.1	2.79	103	—	5	7	4	13	1	73	193	0.2
Burnley	109,546	710	473	26.0	17.3	3.95	108	—	1	2	2	—	8	95	286	2.3
Blackburn	133,228	895	646	26.9	19.4	5.15	171	—	1	5	7	1	1	156	324	4.2
Preston	116,356	983	648	33.9	22.3	7.44	216	—	—	1	1	20	8	186	343	2.5
Huddersfield	102,454	578	398	22.6	15.6	3.06	78	—	—	2	2	2	4	68	204	1.8
Halifax	96,729	553	400	22.9	16.6	2.48	60	—	2	1	2	13	—	42	204	2.0
Bradford	233,737	1,417	1,054	24.3	18.1	4.26	248	—	18	5	8	16	7	194	268	0.4
Leeds	416,618	3,269	2,139	31.5	20.6	5.43	564	—	26	25	59	21	12	421	284	0.4
Sheffield	356,478	3,041	2,114	34.2	23.8	7.37	654	—	14	6	5	49	20	560	318	1.8
Hull	229,887	1,941	1,243	33.9	21.7	6.48	372	—	6	2	2	14	13	335	310	0.9
Sunderland	143,849	1,272	988	35.5	27.5	7.86	282	—	8	9	1	32	19	213	336	0.7
Gateshead	103,775	948	602	36.6	23.3	5.84	151	1	10	6	—	13	2	119	300	0.2
Newcastle-on-Tyne	223,021	1,797	1,328	32.3	23.9	4.75	264	—	22	13	5	43	17	174	278	0.5

The causes of 577, or 1.0 per cent., of the deaths in the thirty-three towns during the three months ending September last were not certified, either by a registered medical practitioner or by a coroner. The proportion of uncertified deaths in London was only 0.5 per cent., while it averaged 1.3 in the thirty-two provincial towns. The causes of all the deaths during the quarter were duly certified in Croydon and in Derby, and only one death was uncertified in Plymouth, in Oldham, and in Gateshead; while the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, Burnley, Blackburn, and Preston.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,532 births and 4,408 deaths were registered during the week ending Saturday last, October 8th. The annual rate of mortality in these towns, which had declined from 24.6 to 21.8 per 1,000 in the four preceding weeks, further fell to 20.5 last week. The rates in the several towns ranged from 12.2 in Croydon, 12.6 in Cardiff, 14.9 in Brighton, and 15.6 in Portsmouth, to 27.5 in Norwich, 27.6 in Salford, 29.0 in Liverpool, and 30.4 in Sunderland. In the thirty-two provincial towns the mean death-rate was 21.7 per 1,000, and exceeded by 2.0 the rate recorded in London, which was 18.8 per 1,000. The zymotic death-rate in the thirty-three towns averaged 3.6 per 1,000; in London the rate was equal to 2.4 per 1,000, while it averaged 4.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 7.2 in Swansea, 7.5 in Gateshead, 8.0 in Sunderland, and 9.8 in Norwich. Measles caused a death-rate of 1.0 in Gateshead and 2.8 in ... fever of 1.6 in Newcastle-upon-Tyne and 2.5 in Sunderland; ... of 4.7 in Blackburn, 4.8 in Salford and in Hull, 5.1 in ... in Gateshead, and 7.1 in Burnley. The mortality last ... from whooping-cough showed no marked ex- ... The 70 deaths from diphtheria in the thirty-three towns included 24 in London, 5 in West Ham, 5 in Swansea, 4 in Leeds, 4 in Sheffield, 3 in Portsmouth, 3 in Birmingham, and 3 in Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in ... The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had ... at the end of the six preceding weeks, had ... October 8th; 268 new cases were admitted during last week, against 242, 288, and 300 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 8th, 996 births and 621 ... were registered in the eight principal Scotch towns. The annual ... of mortality in these towns was 19.8, and 19.1 per 1,000 in ... preceding weeks, rose again to 20.1 last week, and almost corresponded with the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the rates ranged from 18.7 in Perth and 19.6 in Aberdeen and in Greenock, to 22.7 in Paisley and 24.3 in Dundee. The zymotic death-rate in these towns averaged 4.1 per 1,000, the highest rates being recorded in Dundee and Paisley. The 281 deaths registered in Glasgow included 4 from measles, 0 from scarlet fever, 4 from diphtheria, 10 from whooping-cough, 10 from "fever," and 22 from diarrhœa. Six fatal cases of whooping-cough and 9 of diarrhœa were recorded in Edinburgh: 16 deaths from diarrhœa and 2 from scarlet fever occurred in Dundee.

EXTRA DUTY FOR A WORKHOUSE MEDICAL OFFICER.

M.D.LOND., who has been for eighteen years medical officer of a medium-sized workhouse, says that when appointed he signed no contract, but was then informed by the Clerk that he would be expected to visit the workhouse every day, and also when sent for; this he has always done. He has just been requested by a Committee of the Guardians (which request took the form of a command) to visit the house every night as well on the ground that some of the patients may then require treatment for the relief of pain. Our correspondent considers these evening visits unnecessary, and to be a most severe tax upon him, as he lives almost a mile off. He asks whether the Guardians have any right to force this extra duty upon him, and this without any increased remuneration.

*** No Committee of Guardians has the right to issue any orders to the medical officer of a workhouse, and if the Board have any instructions to give, this should be done by resolution properly passed, and should be communicated to the medical officer in writing. We question whether any Board of Guardians has the power to order their medical officer to pay extra night visits such as those described.

THE PREVENTION OF TUBERCULOSIS IN GERMANY.—At the meeting of the German Association of Naturalists and Physicians, recently held at Düsseldorf, it was decided that a congress should be held at Berlin in the spring of 1899 for the discussion of all questions relative to sanatoria for consumptives. A permanent Committee was appointed at Düsseldorf for the organisation of the Congress. This Committee consists of Professor Hueppe (President), Professors Gerhardt, von Leyden, and Friedberg of Berlin, Martius of Rostock, von Leube of Würzburg, and Finkler of Bonn, and Dr. Blasius of Brunswick, Blumenthal of Wiesbaden, Engelmann of Berlin, Gebhard of Lübeck, Meissen of Hohenhemmef, Pannwitz of Berlin, Liebe of Loslau, and Krüger of Barmen.

MEDICAL NEWS.

Sir Douglas Galton, K.C.B., will on Monday, October 17th, at 8 P.M. give an address introductory to the twenty-sixth course of lectures and practical demonstrations in sanitary science arranged by the Sanitary Institute for sanitary officers and students at the Parkes Museum.

Lectures at the Hospital for Consumption, Brompton.—The winter session of lectures at the Hospital for Consumption and Diseases of the Chest, Brompton, will commence on Wednesday next, October 19th, when at 4 P.M. Dr. J. Mitchell Bruce will give a lecture on Aneurysm of the Aorta, illustrated by cases. Subsequent lectures will be given on succeeding Wednesdays during October, November, and December, ending on December 14th. The lectures are free to qualified medical practitioners and to students attending the practice of the hospital.

Reading Pathological Society.—The fifty-seventh annual meeting of the Reading Pathological Society was held at the Royal Berkshire Hospital on October 6th, the President, Dr. H. H. Phillips-Conn, in the chair. Several guests, including Dr. J. F. Payne (President of the Pathological Society of London), Dr. P. J. Freyer, Mr. H. S. Collier, and Mr. R. Swinhoe honoured the Society by their company. The annual oration was delivered by Mr. Malcolm Morris, who selected as his subject, The Use and Abuse of Internal Remedies in the Treatment of Skin Diseases, which is published at p. 1113. The cordial thanks of the Society were accorded to Mr. Malcolm Morris, on the proposition of the President, seconded by Mr. H. R. Hayes. The members of the Society and their guests then adjourned to the Queen's Hotel, where was held the annual dinner. This was followed by the usual toasts, special reference being made to the absence, through illness, of Mr. T. L. Walford, one of the founders of the Society, and of Mr. O. C. Maurice, who recently held the office of President.

Tuberculosis and Pseudo-Tuberculosis.—Bacteriology makes yearly advances on so large a scale that the clinician, surgeon, and practitioner must rely more and more on those who make a speciality of the science, for even the professional pathologist is becoming handicapped. For several years physicians have talked glibly of the bacillus tuberculosis, and apparently on safe grounds, for it seemed as though that microbe had been proved to be a "good species," as zoologists would say, as definite as felis leo or ilex aquifolia, and with as definite specific habits and properties. Dr. Flexner, of Baltimore, has recently detected an organism in tuberculous deposits from a man who died with extensive consolidation in both lungs, the symptoms being precisely those characteristic of pulmonary tuberculosis. This germ is figured and described in the July number of the New York *Journal of Experimental Medicine*. It is not simply another species of the genus bacillus, to which B. tuberculosis belongs; on the contrary, it is included in a totally different class of micro-organisms, the streptothrices as defined by Kruse. The genus streptothrix includes S. actinomyces, associated with a well-known disease, and S. Maduræ, found in Madura foot. After a careful description of the micro-organism, which he terms S. pseudo-tuberculosa, and a full account of the histological changes with which he found it associated, Dr. Flexner concludes that this species is the cause of the pathological process which he detected, and that, especially in peritoneal deposits, the pathological picture of this disease, which he terms "pseudo-tuberculosis hominis streptothricia," resembles so nearly tuberculosis in human beings that the two diseases can be separated only by the demonstration of the causative micro-organism in each case; yet Dr. Flexner thinks that possibly at some future time a clinical picture differing from that of true tuberculosis may come to be established for this disease.

MEDICAL VACANCIES.

The following vacancies are announced:

AYR COUNTY HOSPITAL.—House-Surgeon. Appointment for one year. Salary, £50 per annum, with residence, board, and washing. Applications to the Secretary by October 22nd.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund Street, Birmingham.—House-Surgeon. Appointment for six months. Honorarium, £21 on completion of appointment, with board, lodging, and washing. Applications to the Honorary Secretary of the Medical Committee by October 18th.

BETHLEM HOSPITAL.—Two Resident House-Physicians. Appointments for six months. Apartments, complete board and washing provided. Applications, endorsed "House-Physicians," to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., by October 17th.

BURY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary, £300 per annum, with actual disbursements. Applications, endorsed "Medical Officer of Health," to John Haslam, Town Clerk, by October 19th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary, £50 per annum, with board and lodging. Applications to the Secretary by October 22nd.

CITY OF LONDON UNION INFIRMARY.—Assistant Medical Officer for the Infirmary, Bow Road; unmarried or widower without children; between 25 and 35 years of age. Salary, £150 per annum, with furnished apartments, rations, and washing. Applications, on forms provided, to F. W. Crane, Clerk to the Guardians, 61, Bartholomew Close, E.C., by October 24th.

CROYDON BOROUGH.—Resident Medical Officer at the Croydon Borough Hospital for Infectious Diseases. Salary £120 per annum, rising to £140 at the end of six months, with board and residence. Applications, endorsed "Resident Medical Officer," to Dr. Wilde, Town Hall, Croydon, by October 20th.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department. Appointment for six months (renewable). Salary at the rate of £100 per annum. Applications to the Secretary by October 22nd.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 21st.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Gratuity £10, with residence, board, and laundry. Applications to the Secretary by October 25th.

HERTFORDSHIRE COUNTY ASYLUM, Hill End, near St. Albans.—Medical Superintendent. Salary to commence £500 per annum, and, after completion of asylum, furnished residence, light, vegetables, fuel, washing, milk and butter. Applications to C. E. Longmore, Clerk of the Hertfordshire County Asylum, Clerk of the Peace Office, Hertford, by October 24th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Resident Medical Superintendent. Salary, £105 per annum, with board and residence. Applications (on forms provided) to the Secretary by October 18th.

HOSPITAL FOR WOMEN, Soho Square, W.—House Physician. Appointment for six months. Salary, £30 for that period. Applications to the Secretary by October 19th.

LEICESTER INFIRMARY.—House Surgeon. Tenure of office not exceeding three years. Salary, £120 for the first year, rising at the rate of £10 per annum until the the third year, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by October 24th.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Appointment for one year or more. Salary, 100 guineas per annum, with board, lodging, and washing. Applications to the Secretary by October 21st.

LONDON THROAT HOSPITAL, 240, Great Portland Street.—Non-resident House-Surgeon. Appointment for six months. Salary at the rate of £25 per annum. Applications to the Honorary Secretary of the Medical Committee by October 25th.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland Street, W.—Anæsthetist. Applications to the Secretary by October 26th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Resident Medical Officer and Assistant Resident Medical Officer. Appointments for six months. Salary of £50 per annum attached to the senior post. Personal application on November 1st, at 5 P.M.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford Street, and 15, Hanover Square, W.—House-Surgeon and Anæsthetist, unmarried. Salary, £100 per annum, with residence and partial board. Applications to the Secretary by October 29th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £100 per annum, with furnished apartments, board, and washing. Applications to the Secretary by October 25th.

ROTHERHAM HOSPITAL AND DISPENSARY.—House-Surgeon. Salary, £105 per annum, with board and washing. Applications, endorsed "Staff," to the Secretary.

SOUTHSEA: ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Board and residence provided and honorarium of £15 15s. Applications to the Secretary by October 27th.

TOWER HAMLETS DISPENSARY.—Physician. Applications to the Secretary, White Horse Street, E., before November.

WEST AFRICA, GOVERNMENT RAILWAY IN.—Medical Officer to accompany staff of surveyors. Salary, £30 per month, travelling allowance, and first-class passage out and home. Engagement about eight months. Applications, marked "Medical Officer," to W. Shelford, 35a, Great George Street, Westminster, S.W.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Physician. Applicants to attend the House Committee on Tuesday, October 18th, at 10 A.M.

WEST LONDON SCHOOL DISTRICT.—Dentist for the District School at Ashford, near Staines. Remuneration, £60 per annum, including travelling expenses. Applications to C. D. Hume, Clerk to the Managers, Ashford, Middlesex, by October 19th.

MEDICAL APPOINTMENTS.

Barry, Dr. James, appointed Medical Officer to the Rathcormac Dispensary District, *vice* James Ahern, L.R.C.P., L.R.C.S.Irel.

Blumfeld, J., M.D., B.C.Cantab., appointed Surgeon to Women and Children at the Chelsea, Brompton, and Belgrave Dispensary.

Crowley, Ralph H., M.D., appointed Honorary Physician to the Bradford Royal Infirmary.

Edwards, S. Watkin, M.B., appointed Medical Officer to the Middlesbrough District of the Middlesbrough Union.

Fairweather, W. E., L.R.C.P.Lond., M.R.C.S., appointed Resident Medical Officer to the Guest Hospital, Dudley.

Genge, G. Gilbert, M.D., B.S.Lond., D.P.H.Camb., M.R.C.S., L.R.C.P., appointed Resident Medical Officer at the Croydon General Hospital, *vice* G. G. Bothwell, M.B., C.M.Aberd., resigned.

Hedley, A. S., M.B., B.S.Durh., appointed Medical Officer for the Workhouse and the Rothbury East District of the Rothbury Union.

Hick, Henry, L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer of Health for the Borough of New Romney.

Howarth, William J., M.D., D.P.H.Vict., appointed Medical Officer of Health for the County Borough of Derby, *vice* Dr. Hille, deceased.

Law, Dr., appointed Medical Officer of Health to the Macduff Town Council, *vice* A. B. Lyon, M.B., C.M.Aberd., resigned.

Marston, F. E., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Weishpool District of the Forden Union.

Miller, G. Victor, M.B., C.M.Edin., appointed Ophthalmic and Aural Surgeon to the North Riding Infirmary, Middlesbrough.

Orme, W. Bryce, M.R.C.S.Eng., L.R.C.P.Lond., appointed Principal Medical Officer to the Port Said Government Hospital.

Pogson, Buckley, M.D., appointed Visiting Medical Officer to the Protestant Dissenting Charity Schools, Birmingham.

Roberts, Kilham, M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer of Health to the Ampthill Rural District Council.

Simpson, G. A. Garry, M.R.C.S.Eng., L.S.A., reappointed Medical Officer of Health for the Acton Urban District Council.

TAYLOR, F. A., M.R.C.S.Eng., eappointed Medical Officer for the Second and Fifth Districts of the Romsey Union.

WALTER, R. H., M.B., C.M.Edin., appointed Medical Officer for the Sixth District of the Yeovil Union.

WHITAKER, E. T., M.B., Ch.M., B.Sc.Edin., D.P.H.Camb. F.C.S., appointed Medical Officer of Health to the Kilsmere Urban and Rural District Councils, *vice* C. J. Glasson, L.R.C.P.Lond., M.R.C.S.Eng., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

London Post-Graduate Course, London Throat Hospital, 8 P.M. — Dr. Herbert Tilley: Demonstration of Selected Cases (Ear, Throat, and Nose).

TUESDAY.

Pathological Society of London, 8.30 P.M.—Dr. F. W. Andrewes: Follicular Enteritis due to Streptococci and Bacillus Enteritidis Sporogenes. Mr. S. G. Shattock: Acromegalic Skull. Dr. W. S. Lazarus-Barlow: Carcinoma arising in an Accessory Thyroid Gland (?) Mr. H. B. Robinson: Butter Cyst of the Breast. Dr. H. Walsham: On the Occurrence of Bony and Cartilaginous Nodules in the Tonsil. Mr. P. de Santi: Case of Multiple Primary Sarcomata of the Scalp of Nineteen Years' Duration; Removal; Recurrence in the Lungs.

Chelsea Clinical Society, Holy Trinity Parish Hall, Pavilion Road, Sloane Square, 8.30 P.M.—Address by the President (Dr. Foster Palmer) on Certain Undefined Factors in the Spread of Disease.

Royal College of Physicians, 4 P.M. Sir Dyce Duckworth: The Harveian Oration.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Buzzard: Peripheral Neuritis.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Melancholia and Hypochondriasis. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Pityriasis Rosea and Tinea Versicolor.

West End Hospital for Diseases of the Nervous System, Welbeck Street, W., 4 P.M.—Dr. Harry Campbell: On the Motor Tract, with cases of the Different Types of Paralysis.

WEDNESDAY.

North-West London Clinical Society, North-West London Hospital, 8.30 P.M.—Monthly Demonstration of Clinical Cases.

Royal Microscopical Society, 20, Hanover Square, W., 8 P.M.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Construction of Dwelling Houses, etc.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy of the Upper Extremity.

Hospital for Consumption, Brompton, 4 P.M.—Dr. J. Mitchell Bruce: Aneurysm of the Aorta (illustrated by cases).

THURSDAY.

Harveian Society of London, 8.30 P.M.—Clinical Meeting. Dr. A. P. Luff: A Case of Great Enlargement of the Spleen. Mr. Stansfield Collier: (1) Congenital Dislocation of Patella: (2) A Case for Diagnosis. Mr. Jackson Clarke: Cases of Spinal Caries. Dr. Leonard Guthrie: Left Hemiplegia associated with Atrophy of Right Optic Nerve. Dr. James Taylor: A Case of Paralysis.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Mr. Waterhouse: Demonstration of Surgical Cases.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical Demonstration to Senior Students.

Ophthalmological Society of the United Kingdom, 8.30 P.M.—Cases and Card Specimens at 8 P.M. Papers: Messrs. J. F. Bullar and C. D. Marshall: Tumours of the Optic Nerve. Captain Herbert, I.M.S.: The Tension of the Eye in Iridocyclitis.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Dr. Frederick Taylor: Clinical Lecture.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Batten: Demonstration of Selected Cases.

FRIDAY.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M.—Professor Crookshank: Examination of Air, Soil, and Water, etc.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. Seymour Taylor: Surface Anatomy of the Lower Extremity.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M. Mr. C. S. Loch: Growth of Medical Charities.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

HUGHES.—On August 30th, at Salt Lake City, Utah, U.S.A., the wife of S. Hughes, M.B., M.R.C.S., of a son.

MARRIAGES.

BRUCE—HUTCHISON.—At the Cathedral Church of S. Mary, Edinburgh, on October 11th, [illegible] D.D., Professor of Ecclesiastical History in the University of Edinburgh, assisted by the Very Rev. [illegible] Dean of the Chapel Royal, Stirling Castle, Edinburgh, and the Rev. [illegible] Lauriston, Edinburgh, Alexander Bruce, M.D., to Helen, younger daughter of the late [illegible] Edinburgh.

LUMSDEN—HENRY.—At Loch Park House, Denny, Stirlingshire, on the 6th inst., by the Rev. [illegible] Chaplain of the Presbyterian Church, Malta, assisted by the Rev. A. Oram [illegible] Denny, John Bruce Lumsden, M.B., C.M.Aber., to Isabella Charlotte, [illegible] Medical Officer, Malta, M.D.Edin., M.R.C.S.E. No cards. At home [illegible].

MACMILLAN—THOMAS.—On October 6th, at St. James's, Piccadilly, by the Rev. E. Parnell, LL.B., Rector of Ruardean, Glos., James Neil Macmillan, L.R.C.P. & S.E., L.F.P.S.G., of Dunbeath, Glos., eldest son of Thomas Macmillan, Esq., of Bushmills, co. Antrim, to Fanny Maude, eldest daughter of Richard Thomas, Esq., of Penarth.

MCCOLL—[illegible].—At Tynemouth Parish Church, on September 28th, by the Rev. [illegible], L.R.C.P., L.R.C.S.Edin., third son of the late [illegible], Northumberland, to Lucy, daughter of [illegible].

PATTERSON—MCCOLL.—At Ovingham Parish Church, on October 4th, by the Rev. C. E. Bennett, M.A., Francis Patterson, M.B., C.M., of Blackburn, second son of John Patterson, M.D., [illegible], to Mary, second daughter of the late George McColl, M.R.C.S. Eng. of Ovingham, Northumberland.

TURNER—BARRY.—On the 13th inst., at St. Stephen's, South Dulwich, by the Rev. R. C. Joynt, M.A., assisted by the Rev. P. E. White, M.A., Vicar of the parish, John Sidney Turner, M.R.C.S., F.L.S., of Stanton, Ancrley, S.E., to Emily Jane, only daughter of Mrs. Barry, of Dilkhoosh, Sydenham Hill, S.E., and of the late Dr. John Boyle Barry, of Calcutta.

DEATHS.

LEWIS.—On October 2nd, at Henfield, Sussex, Charles Francis Lewis, M.R.C.S.Eng., L.R.C.P.Edin., aged [illegible].

MOSS.—On October 4th, at 44, King Street, Great Yarmouth, suddenly, Thomas Henry Moss, M.R.C.S., L.S.A., aged 65 years.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 3. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 3; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Tu., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W., F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 3; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT. We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

E. M. C. would be glad if any member would give him some information upon the climate of Fort Salisbury, South Africa. A patient of his has had an offer of a good appointment there. He is a man in good health, aged 40. He is subject to violent spasmodic asthma when living under certain conditions. A thickly wooded country, and especially one with a damp climate, is particularly bad for him. Norfolk and Suffolk and the East Coast he cannot live in. He is entirely free from the complaint in a large city and at sea. If the climate of Fort Salisbury is like that of the Veldt country it would probably suit. The inquirer would also like some information upon the rainfall and duration of the rainy season.

TREATMENT OF GLYCOSURIA.

B. A. writes: A patient passed one quart of urine daily, specific gravity 1030, with sugar. After taking 5 gr. three times daily of Treboni's phenol bismuth the specific gravity fell to 1023, but some sugar was still present. On leaving off the medicine the specific gravity rose to 1033. Is this a recognised treatment, and can I hope that it will prove useful?

TREATMENT OF LABYRINTHINE VERTIGO.

LANCASTRIAN asks to be recommended a means of relieving the distressing dizziness and nausea caused by labyrinthine disease. Some sufferers from this condition only have attacks or a series of attacks at long intervals, and such people may be perfectly well in and between. Long courses of treatment are unnecessary for these cases, and they will not submit to them, but an effective palliative is urgently needed.

EXAMINATION FOR F.R.C.S.EDIN.

CUMBERLAND asks what are the books absolutely necessary to read for the F.R.C.S.Edinburgh.

*** We are informed that the well-known works by the following authors are likely to be found useful: On Surgery, Treves or Erichsen; on Operative Surgery, Jacobson; on Surgical Anatomy, Treves, Marmaduke Sheild, or McLauchlan. A special and recent work on the optional subject selected should be read. It is added that the examination is now a very severe one.

CLEANLINESS DURING THE MONTHLY PERIOD.

DR. RALPH STONEY (Gloucester Terrace, W.) writes: I was asked the other day by an educated lady if it was very dangerous to wash the hands in very cold water during a period. I think I am correct in saying that the large majority of Englishwomen fight shy of water at this time. At the commencement of the illness a diaper is applied and changed frequently during the day if the flow is excessive and the wearer of a cleanly disposition. But is it right to say that nothing more is done during the flow and that even after the flow has ceased the parts are not washed for some days, the danger of catching cold being so dreaded? Can any lady doctor inform me what reasonable objections there can be to the following: 1. A tepid bath for the whole body during the unwell time. 2. Sponging the external genitals with tepid sterilised water each time the diaper is changed. 3. Vaginal douching with tepid sterilised water during the unwell time?

ETHNOLOGY IN DISEASE.

. P. writes: I should be obliged for any information on these two points: (1) Is there any known infections or bacterial disorder which has originated in the New World and has been communicated to the inhabitants of the Old Hemisphere and their descendants? There are numbers which originated in the Old World since the separation of the American and Australasian races, and have spread to them only since the era of Columbus and renewed intercourse. None seem to have pursued the contrary course, except possibly yellow fever. Syphilis is almost certainly a disease of Old World origin. I should be glad of any evidence, if possible, as to streptococcal and pneumococcal diseases, whether their flora played a pathological part in the New World before the arrival of Europeans. (2) It has been suggested that phthisis and other forms of tuberculous disease are quite unknown in unclothed races, except for a few town dwellers whose lives are spent indoors in dark, unventilated houses, such as the *chawls* of Bombay. There is, of course, an increase of disease when a tribe takes to clothes, but is the above law a true one?

VASELINE *v.* LYSOL IN MIDWIFERY.

R. HENRY LISTON (Sunderland) writes: Dr. Jardine objects to vaseline as it is greasy. This is just what it is not. Paraffinum molle, known under various fancy and trade names as vaseline, etc., is free from acids and alkalies, and is bland, inodorous, and tasteless, unirritating to the skin and mucous membranes. It cannot oxidise or become rancid, or be saponified, and thus set up irritation. Alkalies have no action on it. It is not absorbed by the skin or mucous membranes, and thus acts as an excellent lubricant on the vagina, and replaces mucus removed by the fingers. Squire's *Companion* gives the following test: If 5 g. be digested for half an hour with 5 g. of soda and 25 g. of water, the aqueous layer separated and supersaturated with diluted sulphuric acid. No oily substance should separate (absence of fixed oils or fats of vegetable or animal origin). On the other hand, Westcott and Martindale give an account of lysol as a German speciality—a dark-coloured alkaline liquid obtained by the saponification of cresols. Now, which is the best, a bland and unirritating preparation or a soapy one?

INOCULATION FOR PLAGUE.

G. B. writes: I have a friend about to proceed to India, and as he must land, even for a short time, at some one of the ports where plague is present, can I recommend him to be inoculated there before proceeding up country by rail, or will it be unnecessary for him to be inoculated, as he will be for so short a time exposed to the infection? In the event of being inoculated how long would he be detained before he could resume his journey?

*** We have referred this letter to Mr. James Cantlie, who writes: I would recommend the person referred to in this letter to get inoculated as soon as India is reached. Bombay is the port where this can be most readily done. Inoculation will not involve a delay of more than three days, although no delay is absolutely necessary. It is well to put off journeying by train for three days after being inoculated. If a journey is to be made by sea after inoculation no delay is necessary.

THE MICROPARASITES OF CANCER.

DR. R. B. TAYLOR (Santander, Spain) writes: I shall be greatly obliged if you will kindly insert replies to the following questions: (1) What is the real name of the microzoon found a few years ago in cancer, and who was the discoverer? (2) Besides this microzoon, have any other micro-organisms been discovered in cancer? (3) Besides cancer, are there any more non-contagious diseases in which micro-organisms exist?

*** The inquiries may be best answered, perhaps, by the following statement. With the exception of the body designated by Korotneff rhopalocephalus, no name has been given to the microzoon present in cancer; and on the principle that he alone discovers who proves, no one can be named as its discoverer, since none has yet definitively proved the parasitic nature of the anomalous bodies in dispute. It is further to be noted that the different bodies are by no means identical, and that many statements must be altogether rejected as arising out of misinterpretations of histological appearances otherwise explicable. Shattock and Ballance (1887) disproved the statement of Scheurlen that a specific bacillus could be cultivated from cancer, and suggested the possibility of a protozoic contagium. The first to describe microzoa in carcinomata was Thoma (1889), though in the same year Malassez and Albarran had recognised bodies which they had regarded as coccidia in a carcinoma of the jaw. Nils Sjöbring in 1890 described appearances which he viewed as due to the sporulation of protozoa in cancerous tumours; in 1890 also Russell drew attention to what he simply termed "fuchsin bodies" in carcinomata, though, whilst giving them no definite name, he viewed them as belonging to the class of budding fungi or yeasts, a view lately revived and extended by certain Italian observers. The anomalous bodies were elaborately described and figured by Soudakewitch (1892) the hypothesis of their protozoic nature receiving the approval of Metchnikoff; and very shortly afterwards the subject was critically investigated by Ruffer. The number of writers about this date and a few years onwards increased to an extent warranted by the importance of the subject, but a list of them is not necessary for the answer of the inquirer's questions.

ANSWERS.

TYRO.—Since our correspondent holds degrees and diplomas in medicine and surgery, there does not appear to be any reason why he should not call himself physician and surgeon if he wishes to do so.

D. W. T.—The French law absolutely forbids the practice of medicine within the territory of the French Republic by anyone not possessing the diploma of Doctor of Medicine granted by a French Faculty.

BARRISTER.—(1) Holden's *Anatomy*; (2) Kirkes's *Physiology* would probably supply all our correspondent would need to know; it would not be necessary to obtain the latest edition. Galabin's *Midwifery* might also be consulted.

L. T. M.—(1) The *Calendar of the Royal College of Surgeons of England* for 1898 will supply the information (see "Court of Examiners"). (2) We advise our correspondent to consult a tutor at a medical school.

R. B.—*Forensic Medicine and Toxicology*, by Dixon Mann (Second edition, 1898) is the most recent work, but *Taylor's Principles and Practice of Medical Jurisprudence* (Fourth edition), by Stevenson, is by no means out of date, and would always prove a valuable work of reference.

G. P.—Dr. A. seems to have done right. He attended the case of confinement for his friend, and when asked by the patient to continue his attendance he immediately communicated this fact to his friend. No other course appears to have been open to Dr. A. than the one he adopted.

MEDICAL GUIDE FOR EMIGRANTS.

J. R. P.—Probably the most useful book for the purpose will be a *Manual of Family Medicine and Hygiene for India*, by the late Sir William Moore, of which a new edition has recently been published by Messrs. J. and A. Churchill (12s.). Although primarily intended for use by residents in India, its remarks on the treatment of disease are of general applicability.

GOVERNMENT INSPECTORSHIPS.

H. M. J.—As we have recently stated the appointments of inspectors under the Local Government Board are, we believe, within the gift of the President, to whom all applications should be addressed. The salary of a medical inspector is £500, with rises to £800, and other offices are open to the staff, the principal medical officership, for example.

KAVA-KAVA.

DR. JOHN SPURWAY (Merston, Tring) writes: Dr. Dixon will find a good deal of information in *Cook's Voyages* (Edit. 1825, p. 404, etc.) He says; "The kava is a species of pepper which they cultivate for this purpose"—namely, for preparing the liquor—"and esteem it a valuable article. It seldom grows to more than a man's height; it branches considerably.

with heart-shaped leaves, and jointed stalks. The root is the only part that is used. They break it in pieces, scrape the dirt off with a shell, and then each begins and chews his portion, which he spits into a plantain leaf. The person who is to prepare the liquor collects all these mouthfuls, and puts them into a large dish or bowl, adding as much water as will make it of proper strength. It is then well mixed up with the hands, and some loose stuff, of which mats are made, is thrown upon the surface. The immediate effect of this beverage is not perceptible on these people, who use it so frequently; but on some of ours, who ventured to try it, though so nastily prepared, it had the same power as spirits have in intoxicating them; or rather, it produced that kind of stupefaction which is the consequence of using opium," etc.

This account refers to the Friendly Islands, but Captain Cook constantly refers to the use of kava, or ava as he also calls it, in other parts of the Polynesian Archipelago. It is curious to note that in one place Captain Cook mentions that he saw a man "of a leprous whiteness," and that he attributes it to an excessive use of kava.

Darwin (*Journal of a Voyage Round the World*, chap. xviii) mentions the use of ava, as he calls it (it seems to have been called ava in the Society Islands), and says that its use was prohibited in 1833, two years before he visited the island. In Henfrey's *Botany* (4th edit., p. 318) one reads: "Macropiper methysticum (N. O. Piperaceæ), the ava, or kava, of the South Sea Islands has powerful narcotic properties."

ARSENICAL WALL PAPER.

J. H. S.—In the United Kingdom there is no law prohibiting the use of arsenical pigments in the manufacture of wall papers. The subject of arsenical pigments in wall paper is dealt with, from the point of view of the interest of the workpeople, in the First Report of the Dangerous Trades Committee of the Home Office. In Germany it is regarded as a criminal offence to introduce arsenic into the colours for wall papers, but in Britain our legislation has not yet reached that length.

EDUCATION OF DEAF-MUTES.

P.—The Training College for Teachers of the Deaf, Ealing, W., has schools for both better-class and pauper children attached to it. Information may be obtained from the Superintendent, Mr. Kinsey. Pupils are taken by day, and also boarded out, by the Association for the Oral Instruction of the Deaf, 11, Fitzroy Square, W. (Mr. Van Praagh, Director). There are also institutions at Birmingham, Liverpool, Manchester, and Doncaster, where oral teaching is practised. For better-class pupils there is a high school at Wickham House, East Park Parade, Northampton. The Principal is Mr. H. N. Dixon, M.A.

UNSUSPECTED PREGNANCY IN A YOUNG GIRL.

M.D. wishes light on the following case: While doing a minor operation on a girl slightly over 14 years of age, in her mother's presence, he remarked to the mother that the child's abdomen was enlarged. He found the girl to be about five months pregnant. He simply took notes of the case. Should he inform the legal authorities? He thinks he should not; lawyers, however, differ as to the medical attendant's duty in such a case.

*** It is not M.D.'s business to inform the legal authorities. The parents are the girl's guardians, and it is for them to act. In the case of a girl so young, M.D. would, we think, be justified in informing the mother.

PRINCIPAL AND LOCUM TENENS.

FIAT JUSTITIA.—We have received statements from both the parties to this dispute, which do not agree in all their details, but from which we have to the best of our ability drawn the following conclusions:

It is to be regretted (1) that A. did not engage B. for a definite period; and (2) that he did not take care to give B. longer notice of the date of his return, as he might have done, by telegraph. In the absence of such conditions it is, in our opinion, unreasonable to expect that B. should forego another engagement, and the arrangements made by him do not seem to have been such as he ought not to have made. Further, A. has no right to decline to pay, on the ground that he is dissatisfied with the manner in which B. performed his work for the reasons he gives, as only the grossest misconduct would justify his refusal to pay. Under these circumstances A. should pay B. the five and a-half days' salary which is due to him.

May we suggest that principals would do well to engage their substitutes for a definite period, and to get them to sign a written engagement for the time required, in order to avoid the recurrence of such misunderstandings as this?

NOTES, LETTERS, ETC.

MODERN UNIVERSITIES: ERRATA.

DR. RAUNDRY has requested us to state that the number of university students in Germany (page 1036) should be 30,000 not 300,000; and (page 1037) instead of "expenditure on sites of buildings," it should be "expenditure on sites and buildings."

A CORRECTION.

IN the report of the discussion on the Therapeutic Value of Recent Synthetic Analgesics which appeared in the BRITISH MEDICAL JOURNAL of October 8th, the remarks attributed to Mr. W. S. Frew, Medical Officer of Dartmouth Prison (p. 1056), were made by Dr. W. Frew, Physician, to the Kilmarnock Infirmary.

SCARLATINA: DESQUAMATION.

DR. VICTOR G. L. FIELDEN (Belfast) writes: In the BRITISH MEDICAL JOURNAL of September 10th, Mr. A. W. Senior writes concerning desquamation of scarlatina. Might I ask if sequelæ—especially scarlatinal nephritis—cease to threaten with the completion of desquamation, even should it be in the fourth week?

"A NEW AND ORIGINAL METHOD OF MAKING CASTS."

DR. WALTER J. SYERS (Croydon) writes: I can fully corroborate the statements made by Mr. Lawson Tait in his letter which appeared in the BRITISH MEDICAL JOURNAL of September 10th. During the year 1868 casts of many objects were made by him in my surgery at Wakefield, including a head and bust of myself, which is still in my possession. The method employed was the simple one described in the letter, and the work was quite equal to that depicted in Fig. 5 of Professor Peters's paper.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Dr. J. Althaus, London; Dr. W. C. Allardice, Newcastle, Staffs; Mr. F. Ashe, Netley. Mr. T. W. Aird, Wallington; Mr. C. E. Ady, London; Dr. J. Arnott, Edinburgh. **B** H. S. Ballantyne, M.B., Eskbank; Dr. W. G. Bacot, Bournemouth; Mr. F. B. J. Baldwin, Rotherham; Mr. H. H. Beale, Reading; Dr. T. Beattie, Newcastle-on-Tyne; Mr. C. J. Barry, London; Mr. L. A. Bidwell, London; F. M. Blumer, M.B., Stafford; Mr. J. A. Byerley, Southsea. **C** Dr. S. Charnley, Shrewsbury; Mr. F. W. Collingwood, Brighton; Dr. A. Cordes, Geneva; Mr. M. A. Carline, Weston-super-Mare; Dr. E. H. Cartwright, London; Dr. J. Calvert, London; Dr. R. H. Crowley, London; Colonial Surgeon; The Hon. Mrs. Stephen Coleridge, London; E. E. Cass, M.B., Carnforth. **D** Dr. A. Duke, Cheltenham; Dr. W. Donovan, Birmingham; Mr. A. T. Diver, Croydon; W. Dudley, M.B., Kidderminster; Dr. J. T. H. Davies, Leicester; Messrs. W. Dresser and Sons, Darlington. **E** Mr. E. Elwin, Dover; Mr. C. J. Evans, Northampton. **F** Mr. W. E. Fairweather, Dudley; Dr. A. F. Fergus, Glasgow; Dr. W. S. Fenwick, London; A. H. Frere, M.B., Stradbroke. **G** Dr. J. E. Gould, Bolton; G. P.; Dr. J. Geraghty, Glasgow; Mr. H. R. Greene, Belvedere; G. G. Genge, M.B., Waddon; G. P.; Dr. L. G. Guthrie, London; Dr. J. T. Grant, Edinburgh; Mr. J. A. Gibbs, Clifton; Mr. W. Gosse, Sittingbourne. **H** R. C. Highet, M.B., Stirling; Mr. S. Haynes, Malvern; Mr. J. E. Hereford, Hereford; Dr. W. A. Hollis, Brighton; Mr. R. G. Hebb, London; Dr. W. Hind, Stoke-on-Trent; Dr. J. B. Hurry, Reading; Mr. G. S. Haynes, Maidstone; Mr. W. Harvey, Newton Abbot; Dr. A. P. Hillier, London; W. Hardman, M.B., Blackpool; Dr. W. J. Howarth, Bury; Mr. W. Hicks, London; Mr. H. D. Hey, Faringdon; Dr. S. H. Habershon, London; R. Howden, M.B., Newcastle-on-Tyne; **I** In Obscuritate. **J** Dr. E. L. Jones, Cambridge; L. L. Jenner, M.B., London; J. J. D.; Dr. W. R. Jack, Glasgow. **L** Dr. A. Lowther, Alexander, Manitoba; Mr. C. S. Loch, London; G. R. Leighton, M.B., Pontrilas; Dr. H. L. Lack, London; W. T. Lister, M.B., London; Dr. W. G. V. Lush, Weymouth; Dr. H. L. G. Leask, Glasgow; Mr. E. L. Lackman, Altrincham; Mr. F. E. Layton, Walsall; Mr. R. A. Lewty, Leeds; Mr. A. J. Lancaster, Canterbury; Mr. R. Lake, London. **M** Member B.M.A.: Mr. R. W. Murray, Liverpool; Mr. J. H. Murray-Aynsley, Ekctahuna, N.Z.; S. K. Mullick, M.B., London; M.D. M.D. Lond.; Dr. C. J. Morton, Walthamstow; Member; Dr. Annie McCall, London; J. R. McCrindle, M.B., Middlesbrough; Dr. J. Metcalfe, Bradford; Mr. C. L. Martin, Umtali; Mr. A. Maude, Westerham; Dr. H. C. Major, Bradford; Mr. W. J. Morris, Portmadoc; G. V. Miller, M.B., Stockton-on-Tees; Mr. J. McMillan, Glasgow; Dr. W. Milligan, Manchester; Municeps; Mr. F. H. Madden, London; Mr. G. McCoull, Stocksfield. **N** J. H. Nicoll, M.B., Glasgow; Nottingham Medico-Chirurgical Society, Secretary of, Nottingham; Dr. W. N. Nevill, Bristol. **O** Mr. E. Owen, London; Mr. C. O'Brien, Bristol; Omega; Obstetrical Society of London, Secretary of, London; Dr. L. H. Ormsby, Dublin; Dr. J. B. Oliver, Liverpool; Mr. S. Osborn, London; Dr. H. O'Neill, Belfast; Dr. I. Owen, London. **P** Mr. J. R. Polson, Worcester; Mr. W. F. Pike, London; Dr. J. E. Platt, Manchester; Dr. J. Pringle, Manchester; Dr. J. W. B. Pogson, Birmingham; Dr. E. F. Potter, London; Dr. T. D. Poole, Wolverhampton; Mr. F. E. Pirkis, Nuttfield. **R** Retired; Mr. D. S. Redmond, London; Dr. H. B. Robinson, London; Retired; Dr. G. H. D. Robinson, London; R. B.; Dr. L. Roberts, Liverpool. **S** Seaside; Mr. H. B. T. Symons, Cheltenham; Mr. C. W. Smeeton, Hovingham; Sanitas; Mr. R. Stoney, London; Mr. G. A. G. Simpson, London; Mr. J. G. C. Sekar, Triplicane; Dr. R. Sevestre, Leicester; Dr. J. F. Sutherland, Edinburgh; Mr. T. Stevens, Cardiff; G. P. Shuter, M.B., London; Mr. A. J. Slade, Shimouth; Messrs. Sumner and Co., Liverpool; Dr. T. D. Savill, London; Dr. E. M. Skerritt, Bristol; Mr. F. C. Simpson, Great Berkhamsted. **T** Dr. J. Taylor, Birsay; Dr. T. Telford-Smith, Lancaster; Dr. T. W. Thursfield, Leamington; Mr. F. Treves, London; J. H. L. Tylecote, M.B., Pwllheli; A. Thomson, M.B., Oxford. **U** Dr. A. R. Urquhart, Perth; Ubique. **W** Mr. A. W. Wiglesworth, Liverpool; Dr. D. Walsh, London; L. L. B. Williams, M.B., London; Mr. W. R. Williams, Bristol; Dr. F. Willcocks, London; Mr. W. E. J. Wallis, London; Mr. E. W. Wallis, London; Mr. C. C. Weeks, Spalding; Dr. J. R. Wallace, Calcutta; Mr. H. Waite, Armley; Dr. C. T. Williams, London; Dr. F. J. A. Waring, Brighton; W. F.; Messrs. Williams and Norgate, London; etc.

BOOKS, ETC., RECEIVED.

A Manual of Physiology. By G. N. Stewart, M.A., D.Sc., M.D., D.P.H. Third Edition. London: Bailliere, Tindall, and Cox. 1898. 15s.

Gesichtsstörungen und Uterinleiden. Von Dr. A. Mooren. Zwelfte Auflage. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. 2s.

Ergebnisse der allgemeinen Pathologie und pathologischen Anatomie der Menschen und die Tiere. Jahrgang: 1895. Herausgegeben von O. Lubarsch und K. Ostertag. Zweite Hälfte. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. 25s. 6d.

Tafeln zur Diagnose der Farbenblindheit. Von W. A. Nagel. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. 1s. 6d.

Emin Pasha: His Life and Work. Compiled by Georg Schweitzer. 2 Vols. London: A. Constable and Co. 1898. 32s.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. London: Henry Kimpton. 1898. 10s. 6d.

Commercial Organic Analysis. By A. H. Allen, F.I.C., F.C.S. Second Edition. Vol. iv. London: J. and A. Churchill. 1898.

*** In forwarding books the publishers are requested to state the selling price.

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THE HARVEIAN ORATION

ON

THE INFLUENCE OF CHARACTER AND RIGHT JUDGMENT IN MEDICINE.

Delivered before the Royal College of Physicians, October 18th, 1898.

By Sir DYCE DUCKWORTH, M.D., LL.D.,

Fellow and Treasurer of the College; Honorary Fellow of the Royal College of Physicians of Ireland; Physician and Lecturer on Medicine, St. Bartholomew's Hospital; Honorary Physician to His Royal Highness the Prince of Wales.

The honourable task which is imposed upon me to-day carries with it year by year a heavier burden and an increased responsibility.

I suppose that not fewer than 180 Harveian Orators have taken their places in this venerable College to carry out the project of that great man whose character and work we so appropriately commemorate on this festival of "the beloved physician."

When we reflect that the Orators have in nearly every instance come fresh to the task, have brought all their learning and literary skill to bear upon it, have, not seldom, in the past, clothed it in the purest Latin or the most classical English, and have no less enriched both the science and art of medicine by many of these efforts, the latest of that band may well invoke to-day some of the divine *ἐνθουσιασμός* to descend upon him as he sets out to follow the well-worn road which lies before him.

For myself, I may say that I yield to none in the interest which this duty has for me. As physician to the great hospital which Harvey served,[1] as his successor in this College, *longo intervallo*, in the capacities of its Treasurer[2] and Lumleian Lecturer,[3] and as one of the eight Fellows, of whom only three now survive, who on this day fifteen years ago had the privilege of bearing his body, "lapt in lead," to its final resting place on the occasion of the translation of his remains at Hemel Hempstead, I find myself in particular sympathy with the object and circumstance of our meeting to-day.

Inasmuch as Harvey himself conceived the idea of this Oration,[4] and definitely laid down the specific objects of it, I take it to be the plain duty of the Orator to obey his directions as loyally as possible, and in doing so I hope to find suggestive lines of thought for interesting and fruitful comment.

It is therefore my duty, first, to commemorate some of the greatest benefactors of this College; secondly, to incite our Fellows and Members to search out and study the secrets of Nature; and, thirdly, to urge a spirit of gracious courtesy and kindliness amongst ourselves.

Harvey's primary consideration in this matter was, without doubt, to maintain the position and dignity of his beloved College, to foster its usefulness, and to keep it well abreast of the knowledge and learning of the day, so that by its influence it might impart a high and beneficial tone to the whole commonwealth of medicine in England. It was a high ideal but not too high for the best spirits in this College; and that, Sir, and no less, I will venture to say, is our ideal of its position to-day, a day in which we bear witness to many and radical changes of circumstances indeed, but in which, notwithstanding, we are still full of energy and good purpose, full of strong will and intention to hold that position, and, if possible, to add to it.

When Harvey enjoined upon the Orator the duty of commemorating the chief benefactors of the College the task was comparatively simple, but happily for us, thanks to the many benefits our Fellows have conferred upon our commonalty, it would now be little less than wearisome to enumerate them, and allude even briefly to their varied benefactions. Few will demur to the statement that Harvey himself has been our greatest benefactor, whether by reason of the immortal lustre he shed upon us by his epoch-making discovery and teaching, or in respect of his substantial gifts and the bequest to us of his patrimonial estate. And no less, I would add, has been the boon he conferred upon this College for all time by the legacy of his personal character and qualities, qualities which none of his successors here can afford to forget or neglect.

Some of our greatest benefactors have not been, so far as I can learn, recently commemorated by our Orators. I will, therefore, claim your indulgence while I praise some of the good men to whom we are indebted for many of our privileges and opportunities of usefulness.

Foremost I place Thomas Linacre, our founder and first President in 1518. Let it be remembered that he designed this Corporation as well for the benefit of the public as of the profession. His wisdom, scholarship, and moral excellence rendered him, as has been said, "the ornament of his age." The College meetings were held in his private house,[5] which he made over to the Physicians, and this was our first building, subsequently enlarged and used till 1614. The Lumleian Lectures were first delivered there.

As our learned Orator two years ago showed, Linacre may be regarded as "the intellectual grandfather of Harvey, and, in virtue of his translations of Aristotle and Galen, Dr. Payne placed him in the front rank of the medical humanists, pointing out, further, as we well remember, how out of these scholarly efforts grew the scientific movement which led to a truly fertile study of biology.

John Caius, nine times elected President, must ever be revered here for his beneficent efforts. He erected a monument in St. Paul's Cathedral to Linacre, whom he is held to have taken as his model in life. Caius began our volumes of Annals, and thus set an example to all succeeding Registrars, which has certainly been well followed to the present time. He instituted those "ensigns of honour" by which our President is distinguished amongst us. He was the first to introduce and teach practical anatomy in England. His scholarship and literary works, his method and precision, rendered him one of the most noteworthy men our profession has ever had in any country. We recall his efforts and munificence in refounding Gonville Hall at Cambridge, a College which has sent to us here, and still continues to send, some of our most distinguished Fellows and Members. Harvey's lines of thought and study were probably, as Dr. Payne suggests, much projected under the posthumous influence of the second founder of his College.

I merely mention the names of Caldwell and Lord Lumley, the founders in 1581 of our Lumleian Lectures, which Harvey held for forty-one years, and in which he expounded his original investigations on the circulation of the blood, and refer next to William Gilbert, sometime Treasurer, and President in 1600. Gilbert was the father of experimental philosophy in England. His famous work *De Magnete* first directed the mind of Galileo towards this and kindred subjects. He bequeathed to the College his library, globes, and instruments, most of which perished in the great fire of 1666, only one hundred and forty volumes of his books being rescued.

We commemorate Theodore Goulston as the founder, in 1632, of the Lectures bearing his name, which he designed to be delivered in each year by one of the four youngest Doctors of the College. He was excellent both as a physician and a scholar, and published translations from Aristotle and Galen.

Baldwin Hamey, jun., ranks with Harvey amongst our greatest benefactors. He redeemed at his own cost the first College building in Amen Corner from a possible confiscation to the spoliators of Church property in 1651, contributed largely to the fund for rebuilding the College after the Great Fire, and wainscoted the Cœnaculum with Spanish oak, some of which now lines the walls of the Censors' room. In 1672 he made over for ever his Essex property of Ashlyns, an estate of four hundred acres, for its immediate benefit, including, by the way, an equivalent sum to that appointed by Harvey as honorarium of the Harveian Orator. Hamey's bust, executed in 1684, and his portrait, both look down upon us to-day from these walls.

The agricultural depresssion of recent years has unfortu-

[1] 1608-? 1633
[2] 1628-1629.
[3] 1615-1656
[4] 1656.
[5] The stone House, No. 5, Knightrider Street.

nately affected the property so nobly bequeathed to us, but we still count it among our best certain sources of income.

We honour the memory of Francis Glisson, sometime President.[6] Working on the lines of research laid down by Harvey, Glisson enlarged the knowledge of anatomy and pathology, and of the fruits of his studies we avail ourselves in daily practice. In thus wresting veritable secrets from Nature,[7] he was truly a benefactor to this College, and in respect of his work on the subject of rickets, still known as the English disease, a benefactor to his countrymen.

We may not omit to recall to memory the benefactions of the Marquess of Dorchester. A diligent and widely read student in the learning of his day, he was urged by Harvey and others to join this College in 1656. Two years later he was admitted to the Fellowship. Sympathising with the College in the loss of its library, and to show his respect for the profession, he bequeathed a collection of books of the value of £4,000, and contributed £100 towards the library. What a splendid example was this, and how little has it been followed in the last two centuries!

It is a fact to note here and now, for while we have had in recent times some noble instances of beneficence for the institution of lectureships and prizes, we have had hardly any gifts or bequests in the form of endowments for the College itself, endowments which I, as your Treasurer, can well certify are, more than is commonly believed, necessary to enable us to maintain our position, our fabric, and our library. Those of us who are engaged in teaching in this metropolis have to acknowledge that in these days the vital interests of higher learning make little appeal to the sentiments or generosity either of wealthy peers or commoners whose interests lie largely in London; while we take note of the fact that learned institutions in the provincial cities, void as yet of traditions, have no difficulty in arousing and stimulating such qualities in the hearts of their citizens, and enlisting from them noble gifts and benefactions.

This is a royal, but unendowed, College, yet it is constantly appealed to for advice by the several offices of the State, which thus receive gratuitous assistance for the benefit of the public.

I venture to think that a corporation such as this well commends itself to the consideration and substantial liberality of persons of wealth and patriotic intelligence resident in London. We might at least look for one such donor as Lord Dorchester in each century, and the College will welcome such benefactors, and not fail to commemorate their good deeds in the days to come, thus securing for them an enviable immortality.

Let us praise William Croone, Fellow of Emmanuel College, Cambridge, a Censor of this College in 1679, and founder of the lectureship which bears his name. With his memory we associate that of his widow, Lady Sadlier, who loyally carried out his wishes in providing a fund for the endowment of the lectures.

I turn now to hold up in honour some others of our distinguished Fellows, who by their attainments and splendid personal characters have conferred undying benefits upon our College, and through it upon the profession of physic.

We are perhaps too much disposed to commemorate the scientific achievements of our great men, but let us not be unmindful of their characters. We know that genius is not always coincident with the highest moral or spiritual perfection, but when both these qualities are graciously combined in anyone, we feel that we are in the presence of a truly great man, of one who becomes a personage and a power for good in his day and generation. In such a profession as ours we can never afford to lose sight of the preponderating influence of character in all who join our ranks, and have to minister to every grade of our common humanity.

The training which enabled Harvey to be the man we know him to have been, the scholarly, wise, even-minded, and unworldly man, was that which best begets men of his mould. No mere technical or narrow training could by itself have produced him. His mind was expanded by wide reading, by travel, by knowledge of men and manners, by contact with the best spirits of his age, and by honest service to both rich and poor. His character, too, was formed by deep religious sentiment, by a pure faith, and by gentle sympathy with his fellow men. He probably owed much, as many great men do, to the influence of his mother, for we know that she "was reverensed of her children."

In Harvey we have indeed a splendid model of the ideal physician, for not only have we to cultivate wide learning for its own sake, and its unquestionable influence upon us, but we have to see to it, if anything more assiduously, that we be men of the highest character. If the factor of high character was a great one in Harvey, and a gracious achievement in the seventeenth century, can it be doubted that it is a less imperative quality for us in the declining years of the nineteenth? I almost fear that in this restless age, so prolific in novel developments, there have opened out before us, more than is easy to steer clear of, many new channels wherein our moral integrity may be severely tried; and we may not seldom be tempted by a thoughtless and credulous public to deviate into courses which a strictly disciplined and finely tempered nature must ever recoil from. Yes, character must always be the mainstay and regulator of our conduct both amongst ourselves and towards the public whose servants we are. This requirement should receive emphatic recognition in every commemoration of Harvey,

We may well learn from the examples of Harvey, and from others which I shall venture to present to you, what manner of men physicians should strive to be.

If time permitted me, I might say much in praise of Arbuthnot, and Mead, of Hale, who left us five hundred pounds for our library, and of Freind; but I pause to commemorate William Heberden, author of the famous *Commentaries*,[8] who by his learning, wisdom, and high character, left us a legacy of which the College may be proud. We may understand what manner of man he was if we realise what Dr. Macmichael wrote of him: "From his early youth he had entertained a deep sense of religion, a consummate love of virtue, an ardent thirst for knowledge, and an earnest desire to promote the happiness and welfare of all mankind. By these qualities, accompanied with great sweetness of manners, he acquired the love and esteem of all good men in a degree which perhaps very few have experienced."

Sir George Baker, President for ten years, was pre-eminent as a scholar and practical physician. His method of research on the nature of Devonshire colic has truly been pronounced to be a model for the conduct of scientific medical work.

Greatly appreciated and honoured in his time, his memory remains with us as a precious heirloom.

I speak next of Matthew Baillie, who delivered the Harveian oration exactly a century ago, but, so far as is known, did not publish it. Baillie was at that time 37 years of age, and engaged in teaching anatomy. We may perhaps assume that some anatomical exposition formed the subject of his oration, for, though he had then been in practice for twelve years, he did not begin to record his clinical experiences for twenty-one years afterwards, hoping to secure the leisure, which he never did, to elaborate this work. We may greatly regret this inability, for his clinical records were admirable, and in advance of their time. Baillie's energies were therefore devoted to his patients when his powers and intellect were at their best, and, as is not seldom the case when physicians of eminence are eagerly sought for by numerous patients, but little time and strength were left to pursue fresh study, or publish newly-acquired experience. Of such men little remains to tell of their special skill, or of the qualities they exhibited in practice. Baillie worked seventeen hours a day. His benefactions to this College were great. He gave in his lifetime his private collection of morbid specimens, now in our museum. He bequeathed at his death, in 1823, a legacy of £300, with all his medical books, and the copper plates of his work on *Morbid Anatomy*. This book was the product of his industry in his uncle William Hunter's museum, and is of especial value, because in his later editions of it he described the clinical features of the cases which furnished the morbid

[7] I am glad to be able to-day for the second time to credit the English nation with the service of having made the first attempts to define the character of life. It was Francis Glisson who, following expressly in the footsteps of Paracelsus, investigated the *principium vitæ*. If he could not elucidate the nature of life, he at least recognised its main characteristic. This is what he was the first to describe as "irritability," the property on which the energy of living matter depends.—Professor Virchow. Huxley Lecture, delivered in London, 1898.

[8] *Commentarii de Morborum Historia et Curatione*—a posthumous work. 1802.

specimens. He was thus one of the pioneers of the modern school of physicians, trained on the lines laid down by Harvey to prosecute research by observation and experiment. I conceive that Baillie may be regarded as the English Morgagni of his time, but he was even more lucid and precise than his great predecessor.[9]

He left on record a very pregnant sentence, which we shall do well to remember, for we need its wisdom now as much as in the days when it was written.[10] "I am persuaded," he remarks, "that the most successful treatment of patients will depend upon the exertion of sagacity,[11] or good common sense,[12] guided by a competent professional knowledge; and not by following strictly the rules of practice laid down in books even by men of the greatest talents and experience." Baillie acknowledged that he owed a good deal to Dr. David Pitcairn, of St. Bartholomew's Hospital, who was his firm friend. He learned from him that rheumatism was frequently the cause of disease of the heart, a fact that had not been previously recognised; also that ague was often not amenable to the influence of bark unless a course of calomel preceded it. An example of Baillie's sagacity is furnished by his conjecture that hydatids were animals, an opinion not held at that time.

To tell only of Baillie's scientific work, however, is to disclose but a part of his illustrious career. As Sir Henry Halford said of him in announcing his bequests to the College, "justice cannot be done to his medical character unless that important feature in it which appeared in every part of his conduct and demeanour—his religious principle—be distinctly stated and recognised." As in Harvey so in Baillie: "ample converse with one of the most wonderful works of the Creator—the formation of man—inspired in him an admiration of the Supreme Being which nothing could exceed." He had indeed "looked through Nature up to Nature's God." His moral loftiness and his splendid character secured for him the deepest regard and affection of his professional brethren. We cannot neglect to commemorate and praise the man of whom so much could be said by a contemporary who knew him well. May Baillie's spirit and influence ever prevail in this College!

It would be a pleasant task to illustrate further the value and charm of high character when blended with learning and skill in our profession, by the splendid examples of Henry Halford, Peter Mere Latham, Thomas Watson, and George Burrows, who have lived and laboured in our own day, shed lustre on this College, and earned places amongst our worthiest benefactors. But I must desist. By Harvey's direction I exhort you, and I exhort myself, to imitate such men as we have praised and commemorated; and in striving to this end we shall find help and inspiration if we look back and discover what manner of man the English physician was in the early part of this century. He was then regarded as combining in his person —"not only the qualifications necessary for the successful practice of physic, but those which give dignity to his professional and respectability to his private character. He was distinguished by large attainments as a scholar; by sound religious principles as a Christian; by practical worth and virtue as a good member of society, and by polished manners as a well-bred gentleman."[13] I trust that I may be pardoned for dwelling at some length on this part of Harvey's charge, since, to the best of my belief, it has not received prominent notice from my predecessors during the last 30 years.

I have next to repeat to you to-day our great master's injunction to "search and study out the secrets of Nature by way of experiment." It may truly be said that there is no lack of research in our time into the secrets of Nature. On the contrary, we are presented with a plethora of products emanating from our laboratories as the result of original inquiries; and our difficulty now is to discover their true value, and to find a fitting employment for the knowledge thus brought to light. The younger men amongst us are naturally attracted both to fresh research and the application of its fruits in clinical work. The elders, by their longer experience of humanity, both in its well-being and its woes, are less eager to engage in experimental methods, and prefer to practise the hard-earned principles which have gradually commended themselves to them.[14] Do what we will, however, truths either new or in fresh aspects move steadily onwards, and come in the fulness of time to occupy the field.

For our purposes as physicians the secrets of Nature disclosed in the laboratory require to be brought to the touchstone of clinical experiment and observation. If they be veritable facts they serve at once to advance our art by enlarging our powers to cope with diseased conditions; while, if the results of laboratory experiments have been incompletely wrested from Nature they will fail to aid us, though, perchance, they may prove suggestive. Of some, I think, it may be said that they fail *primo visu* to commend themselves to our common sense.

I will support this assertion by a reference to some recent laboratory researches undertaken in America. With a view to determine the influence of alcohol in morbid conditions, certain rabbits were inoculated with streptococci and other microbes, and then kept daily in a state of acute intoxication by alcohol. These animals showed the effects of the inoculation earlier and more severely than rabbits that were similarly infected, but not alcoholised. It has been proved that alcohol in poisonous doses exerts a negative chemiotaxis in the tissues, and it is also well known that a prolonged abuse of it by man causes widespread degenerations.

On the strength of these and similar phenomena, we are gravely warned from the laboratory that it must be disastrous to employ even moderate doses of alcohol in inflammatory conditions of disease in the human subject. I trust that we may keep our minds clear on this matter, and pray daily for a right judgment in all things. The laboratory operator may tell us that alcoholic stimulants are bad for this or that disease, but we shall maintain that they are sometimes very good for the patient. The practitioner who could allow the teaching of such experiments as I have quoted to influence his bedside treatment of patients suffering from acute diseases would, in my opinion, possess neither clinical instinct nor knowledge.

Yes, clinical instinct or intuition, for I maintain that none can be skilful in medicine without it. Call it sagacity, common sense, or what you will, the physician must possess it, and it must direct his methods whether they proceed from the laboratory or elsewhere.

The present danger in this matter, and it is a real one, is that the modern spirit of research tends in some degree to withdraw our attention from facts and principles which have been well established for us by the clinical acumen of past masters of our art, and which, in the best interests of our patients, we can ill afford to lose. New methods thus come to displace old ones, and not always with benefit. While keeping open minds, we must not dispense with the caution that the new is not necessarily the true. I have ventured to utter this note of warning, but I would not for one moment be regarded as indifferent to the unquestioned triumphs of modern laboratory research in all directions. While Harvey clearly intended the Orator of each year to be in the first part of his discourse *laudator temporis acti*, he was the last man to plant himself down immovably, and rest content as though the goal of research had been reached. Knowing too well in his own day the evil and tyrrany of stereotyped traditions and beliefs,[15] and shrewdly foreseeing the necessity of

[9] Morgagni was born twenty-five years after Harvey's death; Baillie was born seventy-nine years after Morgagni.

[10] *Lectures and Observations drawn from My Own Experience upon a Considerable Number of Diseases*, London, 1825. (A posthumous work, of which only 150 copies were printed for private circulation in accordance with the directions in Dr. Baillie's will.)

[11] ἀγχίνοια (Aristotle).

[12] "Common sense (a faculty of more use to the practical physician than all the science of a Newton)—and approved by the experience of every age." "A proper decision as to treatment requires experience, tact, and long-headedness."—John Goodsir, *Anatomical Memoirs*. W. Turner, M.B., with Biography by H. Lonsdale, M.D., p. 77. Edinburgh: 1868.

[13] Obituary notice of George Williams, M.D., Vice-President of Corpus Christi College, Oxford, and Professor of Botany; Fellow of this College. —*Gentleman's Magazine*, March, 1834.

[14] "No man who had attained to the age of 40 years was found to adopt Harvey's doctrine of the circulation; it had to win its way under the safeguard . . . . of the youthful and unprejudiced spirits of the age."—*Life of Harvey*, p. xlvii. R. Willis.

[15] "The facts cognizable by the senses wait upon no opinions. The works of Nature bow to no antiquity; for indeed there is nothing either more ancient or of higher authority than Nature." "We are to strive after personal experience, not to rely on the experience of others. ..... Nature is herself to be addressed, the paths she shows are to be boldly trodden, for thus, and whilst we consult our proper senses, from inferior advancing to superior levels shall we penetrate at length into the heart of her mystery." "True philosophers, who are only eager for truth and

perpetual progress in medicine, he definitely charged us to encourage fresh research: and therefore I will express my entire agreement with the words used by one of my esteemed predecessors and former colleagues eight years ago in his oration. "it will be an evil day for medicine and physiology, if ever the results of laboratory work are held to have no bearing upon medical practice."[16] So long as we prudently avail ourselves of these results we shall not fail to add to the credit and beneficence of our art.

The so-called "practical" man is the one likely to avail himself of immature laboratory researches. As Professor Kanthack remarks: "Paracelsus is not yet dead. He snatches incomplete researches out of the laboratories and applies them in the treatment of diseases, the pathology of which he does not understand, and his influence makes itself felt in laboratories to the discredit of medicine."[17]

What we greatly need now in England are research laboratories attached to our hospital wards and *post-mortem* theatres; and, no less, a select staff of fully trained investigators available for service throughout the empire. It is surely humiliating that we permit researches to be made for our benefit in various parts of our dominions by foreigners, while many of our countrymen and countrywomen, owing to ignorance and mawkish sentimentality, are doing their best to debar the training of such men in England.

The day in which it has been affirmed that there is a gulf fixed between physical and spiritual science is, I think and hope, fast drawing to its close. The temper of mind which leads, however honestly, to such a belief was not that of Harvey, nor indeed has it been that of the majority of the physicians of this college, whom we reckon amongst the most exemplary men of the past. I will venture to say, further, that it is not the aspect in which such matters are viewed here and now. As Willis observes, Harvey "seized every opportunity of giving utterance to his sense of the immediate agency of the Divine in Nature."[18] He had no fear either of the processes or the results of research. We can imagine his approval of the following sentences in the *Religio Medici*, which he must have read: "There is no danger to profound these mysteries, no *sanctum sanctorum* in philosophy. The world was made to be inhabited by beasts, but studied and contemplated by man: 'tis the debt of our reason we owe unto God, and the homage we pay for not being beasts..... Those highly magnify Him, whose judicious inquiry into His acts, and deliberate research into His creatures, return the duty of a devout and learned admiration. Therefore:

> Search while thou wilt; and let thy reason go,
> To ransom truth, e'en to the abyss below;
> Rally the scattered causes: and that line
> Which Nature twists be able to untwine.
> It is thy Maker's will: for unto none
> But unto reason can he e'er be known. . . .

I will now refer to some researches which are of especial interest to us at the present time. They relate to bacteriology.

Starting with the conception of bacillary invasion of the body,[19] and the mischief thereby engendered, we naturally seek to destroy the germs themselves, and to undo their evil effects. Preventive medicine has for its aim the provision for us of an environment destitute of noxious germs, and is now achieving brilliant success in its progress: but in practical medicine the physician has, as yet, to be satisfied with the endeavour to combat the ill-effects of such germs as have gained entry to the body, by restoring to the natural standard that impaired vitality of the system which has enabled the bacteria to gain the upper hand. In the gravest cases, where bacillary invasion is widespread and rampant, as in the exanthemata, continued fevers, or pyæmia, we are in the presence of a dosage of toxins so overwhelming that it cannot be met by any adequate systemic resistance. We have, as yet, but few antitoxins available in practice, though we look with confidence in the future to the fruitful labours of our laboratories for more of such agents.

Our present inability, then, leads us to consider the solitary factor on which we have to depend, and which is in each case to determine the issue. We term it the bodily, or tissue, resistance. What is the full significance of it? The varying vulnerability of the individual is the factor before us in each patient, and we have to gauge this as nicely as we can. A toxic dosage which is certainly lethal for some is not so for others. The soil, so to say, is, or has somehow become, favourable for the full development of the toxin in the one case, while in the other a degree of immunity exists which proves adequate to overcome the noxious dose, the soil being unfavourable for its full development. This is a matter of the constitution, a personal peculiarity or proclivity, either inherited or acquired. We call it the personal factor in each case, and therefore a physician never speaks of treating diseases, but of treating patients.[20] Our knowledge of these personal factors is not large and, as yet, not very accurate.

Theoretically, we might conceive that the highest condition of health, with full integrity of the vital organs, should provide the full integrity of the vital organs, should provide the fullest measure of immunity against all forms of bacillary toxin, whereas in practice we know that in the case of many of them, as in that of small-pox, cholera, or diphtheria, such immunity is of little or no avail, and that death may result from an overpowering multiplication of the specific peccant matter. Happily, we can now control the invasion of small-pox, and are able materially to counteract the diphtherial virus by an antitoxin. And so with some other diseases.

Let us take the case of persons of that habit of body in which tuberculosis is apt to occur. We must regard them as presenting in some of their textures an appropriate nidus for the cultivation of the specific bacilli. Could we shield them from all possible contact with these germs, we might fairly anticipate for them an average longevity; though, as I shall presently show, their textures constitute a bad soil for the inroad of most diseases. We know that under certain depressing conditions whether of climatic or other environment, the tissues even of fairly healthy bodies lose their resistance and become a prey to the activity of various bacillary parasites, affording examples of sundry specific disorders. The problem before us in all such cases is to determine, if we can, the ratio of the force of resistance to that of the infection. Too often we have but to study the course of the disease in order to decide this point, and while treating the patient as we watch the contest,[21] we sometimes discover evidence of inhibiting

knowledge, never regard themselves as already so thoroughly informed, but that they welcome further information from whomsoever and whencesoever it may come; nor are they so narrow-minded as to imagine any of the arts and sciences transmitted to us by the ancients, in such a state of forwardness and completeness, that nothing is left for the ingenuity and industry of others."—(Letter to Doctor Argent and the Fellows of the College.) "Nature—the word that stands for the baffling mysteries of the universe. Steadily, unflinchingly, we strive to pierce the inmost heart of Nature . . . truer what she has been, and to prophesy what she shall be. Veil after veil we have lifted, and her face grows more beautiful, august, and wonderful with every barrier that is withdrawn."—Presidential Address, Brit. Assoc. Meeting, Bristol, 1898, Sir William Crookes. "Nature is the art of God."—Sir Thomas Browne, 1635. Dr. James Andrew.

[17] "The Science and Art of Medicine." Address to the Abernethian Society of St. Bartholomew's Hospital. *St. Barth. Hosp. Journal*, August, [illegible]

[illegible] Creatorem omnium atque omnipotentem, In cunctis [illegible] ntem esse, et in operibus [illegible] Exerc. liv. "Harvey's [illegible] reverential: he was by [illegible] neither superstitious [illegible] Nature."—*Harveian Oration*. [illegible] and spiritual science seem to the world [illegible] we shall one day see Him will show [illegible] eternally the same."—Charles Kingsley. "Science [illegible] not the greatest. She is an instrument and not a [illegible] or deadly, according as she is wielded by the hand of [illegible] and her lawful mistress, the only one she can grow and prosper, and prove her divine descent, [illegible] likeness of Almighty God."—*Roman and Teuton* (Charles Kingsley), [illegible]

[16] Athanasius Kircher, a Jesuit, wrote in 1659, two years after Harvey's death, that "the propagators of the Plague are little worms, so small, fine, and delicate that they cannot be recognised by the senses." It was left for a Japanese bacteriologist, Kitasato, to discover in 1893 the bacillus specific to plague.

[20] This is no new idea, although it is necessary even now to emphasise it. It was clearly in the mind of Aristotle, as may be gathered from the following passage: Φαίνεται μὲν γὰρ οὐδὲ τὴν ὑγίειαν οὕτως ἐπισκοπεῖν ὁ ἰατρός, ἀλλὰ τὴν ἀνθρώπου, μᾶλλον δ' ἴσως τὴν τοῦδε· καθ' ἕκαστον γὰρ ἰατρεύει.—*Nicomachean Ethics*, I. 6, xvi.

[21] A passage in Harvey's *Anatomical Exercise* (lvii) *On the Generation of Animals*, affords a remarkable prevision on his part respecting the reaction of the bodily tissues to the intrusion of irritants. Referring to the effect of spider poison when introduced by a prick under the skin, he wrote:—"Erat lumen in cute quod discerneret, quippe eodem loco, ubi venenata punctio contigerat, subito sese in tuberculum contraxit, indultoque mox ruborem, calorem, atque inflammationem, tanquam ad pugnam et noxii mali expugnationem se roboraret et accingeret." What have we here but a forecast of the modern researches of Metchnikoff and others upon the action of phagocytes in inflammatory foci? The idea of a contest in the

factors which prove adequate to check the mischief arising from parasitic invasion. We have an example of this in the case of a proclivity to gout which tends markedly to check tuberculous invasion, and when this occurs to protract its course.[22] There is reason to believe that some constitutions are practically invulnerable against the infections of tuberculosis, rheumatism, marsh poison, and others. We need to study carefully the causes of such immunity, since, as Harvey urged, many problems are to be solved by the investigations of exceptional cases.[23]

The subject of scrofula is just now engaging the attention of some pathologists, and I propose to consider briefly some facts in relation to this condition. Koch's great discovery is supposed by many to have explained its pathogeny, and to have laid to rest the old disputes respecting the connection of struma and tuberculosis. In my opinion, this matter is by no means disposed of solely on a bacteriological basis. The presence of a few tubercle bacilli in the lympharia may be a factor in a given case, but their presence does not explain all that we recognise as constituting the obvious condition of struma. Our predecessors took a wider view of the matter, and we must still hold by some of their conceptions. The old belief was that scrofula—that is, an obvious manifestation of tuberculous disease—was a condition capable of transmission from parent to child. The indications of this state were then rightly determined, though we now interpret them differently, and were recognised by the ill-developed alar thorax, long, clumsy limbs, downy forehead and back, precocious intellect, and various other characteristics. But in 1846, Dr. Robert M. Glover pointed out that a careful distinction should be made between the predisposing constitution and the actual processes of strumous disease, between the *ens in potentiâ* and the *ens in actu*, and that thus such subjects widely diverged from health before tuberculous deposits took place.[24] This brings us to our view of the matter to-day, since we now believe that the heredity of scrofula means no more, but no less, than an inherited feebleness of bodily textures in which tuberculous bacilli are apt to thrive if they gain entrance at any point; a vulnerability of tissues affording little or no resistance to such an invasion. This diathetic condition, or tissue-proclivity, is what is transmitted, and it may be the outcome of long antecedent inheritance from an ancestry in which tuberculosis has from time to time manifested itself. We know that direct transmission of bacillary tuberculosis is possible, but that it is of the extremest rarity; also that direct transmission of tubercle from patient to patient is possible, but very difficult of absolute proof. There is reason, too, for the belief that infection may occasionally spread from the impregnated air of certain dwelling houses, leading to repeated cases amongst the occupants, provided they present the necessary degree of susceptibility.[25]

Our present point of view could never have been reached till we were made familiar with the infecting parasite which, as we believe, alone brings us in face of the *ens in actu*. Eighty-eight years ago Matthew Baillie, by naked-eye observation alone, fully recognised the fact that the caseous matter in the lympharia and in the lung was identical, and now we have the explanation of it. It has been suggested that the condition of struma is dependent on a latent state of tuberculosis. This idea must be discarded if we regard all tuberculous activity as due to bacillary influence. Yet another theory, recently advanced, deserves consideration, as it opens up a large question in bacteriology. It is urged that the condition of struma may be due to the presence in the body of tubercle bacilli in some early or pre-existing stage of development, which lead to other manifestations than those recognisable as tuberculosis. It is true that we have as yet but little knowledge respecting the exact biological position of the bacillus as commonly met with. In this condition it may possibly, as Woodhead and others suggest, merely represent one phase in the life-history of a higher fungus, allied to the actinomyces, which in certain stages of its existence leads a saprophytic life, its parasitic and pathogenetic phases being merely temporary. Without following up this suggestive hypothesis, some support is added to the idea of latency, or of an unrecognised, spore-like (resting stage) condition of the tubercle bacillus, by the fact that cases of tuberculous outbreak sometimes supervene when caseous structures, or their vicinity, suffer from injury and a consequent lowered vitality. This occurrence points to the general dissemination of microbes from some distant focus of long past or forgotten disease, a development and migration, dependent possibly on some law of which we are at present ignorant. We have instances illustrating it in tuberculous meningitis following injuries to the head, in acute pulmonary tuberculosis following injuries to the testis, or to joints once the site of tuberculosis, or supervening on operations for tuberculous anal fistula, while in cases of Addison's disease—adrenal tuberculosis—injuries to the spinal column are sometimes suspected as the primary exciting cause.[26]

In many of the enlarged lympharia of strumous persons neither tubercle bacilli nor caseous matter can be detected. This fact suggests that the tendency to react vigorously to irritants other than tuberculous is a specific factor and quality of the lymphatic system in strumous individuals. These swollen lympharia doubtless present a good soil wherein tubercle bacilli may lodge and induce caseation, should they gain entry. This peculiarity of the lymphatic system in the strumous subject justifies us, in my opinion, in retaining in the old sense the term strumous inflammation without affixing to it, as we are now prone to do, the modern idea of tuberculosis. A strumous habit of body has doubtless a marked influence in modifying other morbid conditions which may occur in earlier or later life. The specific reaction to simple irritants, giving rise to strumous inflammation of lymphatic glands, which is common in youth, may sometimes remain in the adult and extend into advanced life; and the consequences of infections, as by scarlatina, or syphilis, or of irritation by gout, may be, and probably are, greatly modified by this tendency, giving rise to varieties in varieties in the several manifestations of these diseases. Thus, gout appears to have a tendency to linger in strumous subjects, and in its articular form to be attended with greater effusion than is commonly witnessed, while chronic tubal nephritis in such subjects is apt to be more than usually grave and uninfluenced by treatment. In short, the strumous diathesis is a bad one for the incidence of most morbid conditions.

Guided by our present knowledge of this condition, and of its relation to tuberculosis, we have at once suggested to us the supreme value of preventive methods in the management of strumous persons, and a *methodus medendi* for those of them who may become tainted with tuberculosis—to wit, an aseptic environment, good food, tonic remedies, and the free removal by the surgeon of disordered lymphatic glands. The beneficial influence of sea air has long been recognised in these cases, and it led over a century ago to the institution of an admirable hospital which, though its need and usefulness are as great as formerly, has somehow been suffered to languish for want of public appreciation and support. There is still a great need for small seaside hospitals to supply the requirements of poor patients, whether scrofulous or not.

involved textures was, I think, singularly prophetic of the histological discoveries to be made some 230 years later, and displays the intuition of Harvey in his study and interpretation of the secrets of Nature, without any other aid than his simple vision.

[22] That this is not due to the fact that tuberculosis is a disease mainly of youth, while gout occurs chiefly in middle or later life, as has been alleged, is, I think, proved by the practical immunity of the children of gouty inheritance from strumous manifestations and tuberculosis. Senile struma is certainly recognised, and blended conditions of gout and struma may be met with in advanced life.

[23] He wrote to Vlackveld of Haarlem, within a few weeks of his death: "There is no better way to advance the proper practice of medicine than to give our minds to the discovery of the usual law of Nature by the careful investigation of rarer forms of disease."

[24] Fothergillian Prize Essay, p. 141. London, 1846.

[25] Harvey regarded phthisis as a contagious disease, and placed it with leprosy, lues venerea, and plague as "creeping through the ranks of mortal men, and by mere extrinsic contact exciting disease similar to itself in other bodies." He did not believe that actual contact was necessary, since a mere halitus or miasm sufficed to cause an "univocal" like itself.—"*De Gen. Animalium*," Exerc. xlix, Art. "Tuberculosis." *Quart. Med. Journ.*, April, 1896. By Dr. Norman Moore. (Address delivered before the Medical Society of Lincoln, 1895.) It has been surmised by Mr. Archdall Reid (quoted in Dr. Arthur Ransome's Essay, awarded the Parkes-Weber gold medal of this College in 1897), that in countries where tuberculosis has existed for many generations, a certain tolerance has been secured whereby resistance to the microbe has been acquired, and that the inhabitants escape the full influence of the disease. Native races of other countries have possibly, he thinks, not yet acquired this degree of immunity.

[26] Dr. Parkes Weber has recently directed attention to some cases of this kind.

from this metropolis, and a grand sphere of beneficence in this direction lies open to wealthy persons who will found and endow such institutions.

Amongst the secrets wrested from Nature in recent times is the discovery of the Roentgen rays, which have already proved of great practical use to surgeons for the detection in certain parts of foreign bodies, and the exact determination of injuries to the skeleton. To the physician these scrutinising rays have, as yet, yielded little new information. Some varieties of renal calculi may sometimes be detected by them, but they afford no evidence of biliary concretions. We may, however, obtain indications of solid tumours and aneurysms, and of enlargement of certain viscera.

The therapeutic influence of these rays, if any exists, is, as yet, not determined. According to Rieder, of Munich, rays emitted from "hard," that is, high vacuum, tubes, kill bacteria. Such rays have the highest penetrating power. With the assistance of my colleague, Dr. Lewis Jones, I have examined radioscopically the lungs of several patients with tuberculous disease in various stages. The physical signs were well marked and readily detectible by ordinary methods of examination. The consolidated portions of the lungs gave no further evidence of their condition than a somewhat dark opacity, in mottled tracts, as compared with the luminous clearness of the unaffected parts.

Pleural effusions and pneumothorax are detectable, also pneumonic consolidations, and even early and limited areas of tuberculous deposit. In a recent report on this subject, MM. Bouchard and Claude, of Paris,[27] declare that cavities can readily be discovered, and even enlargements of bronchial lymph glands.[28].

The free movements of the diaphragm are well displayed, and are worthy of study, since it is found that this structure is lowered on the affected side in cases of consolidation of the apex of the lung, and rendered dense and immovable in diaphragmatic pleurisy. The most startling revelation by means of the *x*-rays is that of M. Kelsch, who declares that he discovered the existence of pulmonary tuberculosis in 51 out of 124 military patients who presented none of the ordinary signs of the malady. With respect to these observations, I will only say that I desire more detailed evidence, and, with it, confirmation.

It may be affirmed that radioscopy and skiagraphs tell but little to the physician that could not be ascertained by other methods of physical examination, but they certainly afford additional means for accurate clinical determination. Thus, in a case of mitral valvular disease with great cardiac hypertrophy, which I examined, the melon-shaped outline of the heart could be seen to bulk more largely in the thorax than the physical signs alone led one to believe. With improved apparatus we may come to better results than any yet attained, and, indeed, there may be other secrets in the domain of electrical science awaiting diligent research, of which perchance some may serve to revolutionise our present methods of clinical investigation.[29]

Recent researches have been fruitful in respect of improved methods of vaccination, and of securing the absolute purity of vaccine lymph. Our Milroy lecturer of this year,[30] to whom is due the credit of the work, has made us fully aware of the steps by which the bacteriology of both human and calf lymph has been studied. The result has been the introduction of glycerinated calf vaccine lymph which now meets every requirement, whether demanded by the scientific bacteriologist, the medical practitioner, or the reasonable portion of the public. The discovery appears to me to open up new fields of study. The influence of glycerine in destroying some of the most noxious microbes which may gain access to ordinary vaccine lymph in various ways, is very noteworthy and important, and I cannot but imagine that this agent may yet be found of more extended usefulness as a bactericide. It is surely significant that some of the most virulent germs, including those productive of tuberculosis and suppuration, should they contaminate vaccine lymph, can be completely disposed of by this simple medium within three or four weeks.

We might have anticipated that such a discovery would have promptly disposed of most of the objections raised against the universal and compulsory practice of vaccination in England, did we not know that ignorance and prejudice, fostered by misrepresentation, and stimulated by paid agitation, require a strong hand for their repression. I speak advisedly of repression in a matter so vital as this, for there are varieties of ignorance and prejudice, some of which may safely be left for time and education to disperse. But here we are in face of a terrible danger, with accredited succour at hand, and the *mens medica* has no hesitation as to the course to follow.

And, Sir, what I am now about to say I venture to say in my private capacity, not committing the College to the opinion, although I know that it is shared by the majority of those whom I have the honour of addressing. I refer to the recent Parliamentary treatment of the Vaccination Bill, and I make bold to stigmatise it as a piece of panic legislation, a lamentable concession to ignorance, fraught with serious peril to the whole community, and unworthy of the duty and dignity of any British Government. By many of us, the Report of the Royal Commission on Vaccination was considered by no means too strong, but, alas, it has been left to the countrymen of Edward Jenner, by sanction of what has well been termed "a tremendous experiment," to place England, hitherto foremost in State medicine, in a humiliating position before the world. Let us try and imagine to-day the contempt our Harvey would have felt for the men who so treated the revelations of truth sought out from Nature.

Of Harvey's skill as a practical physician we have little actual knowledge. This is mainly owing to the loss, by robbery and destruction, of his papers, including, what must undoubtedly have been a storehouse of wisdom, his *Medical Observations* to which he occasionally makes allusion in various treatises. Our art is, not improbably, the poorer to-day for this untoward circumstance.

We know that his "therapeutique way" did not commend itself to the practitioners of his time, but we may fairly believe that his natural powers of insight, quickened by constant and accurate biological studies, suggested to him methods of treatment which his contemporaries, still held in the bondage of dogma and routine, failed to comprehend.

We may, however, form an opinion as to his clinical sagacity from the following sentence taken from his second Disquisition on the Circulation of the Blood, written to Jean Riolan: "How speedily is pain relieved or removed by the detraction of blood, the application of cupping-glasses, or the compression of the artery which leads to a part? It sometimes vanishes as if by magic." And then he proceeds: "But these are topics that I must refer to my *Medical Observations*, where they will be found exposed at length and explained." These facts are assuredly as true to day as they were two hundred and fifty years ago, but I will venture to say that they are not adequately recognised in practice at the present time, and that, in consequence, some of our patients do not receive the prompt measures of relief which are available for them. The fierce controversies that have raged in this century on the subject of blood-letting have had for their result a serious neglect of its appropriate application. Guided by modern physiology with its teaching in regard to the physics of the circulation, no less than by our larger knowledge of morbid conditions, we have now a full warrant for the judicious employment of a practice which has always commanded the assent of the best clinical observers.

I have barely alluded to the scientific achievements of Harvey's long life. The full scope of his original discoveries is possibly even now imperfectly realised by those who connect his name merely with the doctrine of the circulation of the blood. Yet this discovery was but the final exposition of a fact, only disclosed to him after assiduous anatomical labour, directed and pondered over by his surpassing intellect. The steps which led to it slowly elicited not only the mechanism of the circular course of the blood, but the important fact, previously unknown, that this fluid was uniformly diffused and

[27] Congress for the Study of Tuberculosis. Paris. July, 1898.

[28] These observations have been quite lately confirmed by Dr. Hugh Walsham at St. Bartholomew's Hospital.

[29] "Nor do I doubt but that many things still lie hidden in Democritus's well, that are destined to be drawn up into day by the ceaseless industry of coming ages." – *Letter to John Daniel Horst, Principal Physician of Hesse-Darmstadt.* – Harvey, 1654.

[30] Dr. Sydney Monckton Copeman, a Member of this College.

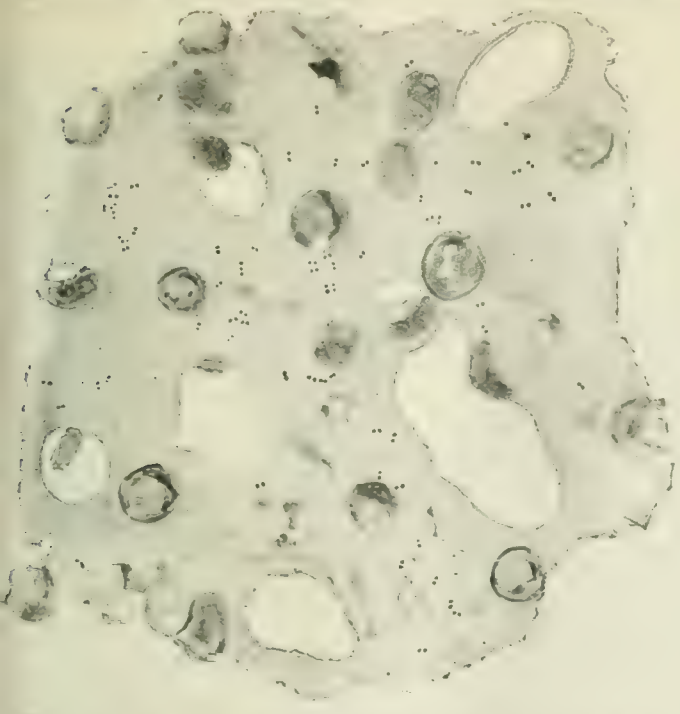


Fig. 4.—From section of liver, stained by carbol thionin, of rabbit dying 16 hours after intravenous inoculation of 0.5 c.cm. of a 48 hour broth culture of bacillus gained from spleen of case of progressive portal cirrhosis. Drawing made by Zeiss's camera lucida, $\frac{1}{12}$ in. immersion lens (Winkel), Oc. 4. Sections from liver of rabbit inoculated intravenously with like dose of B. coli showed identical appearance.

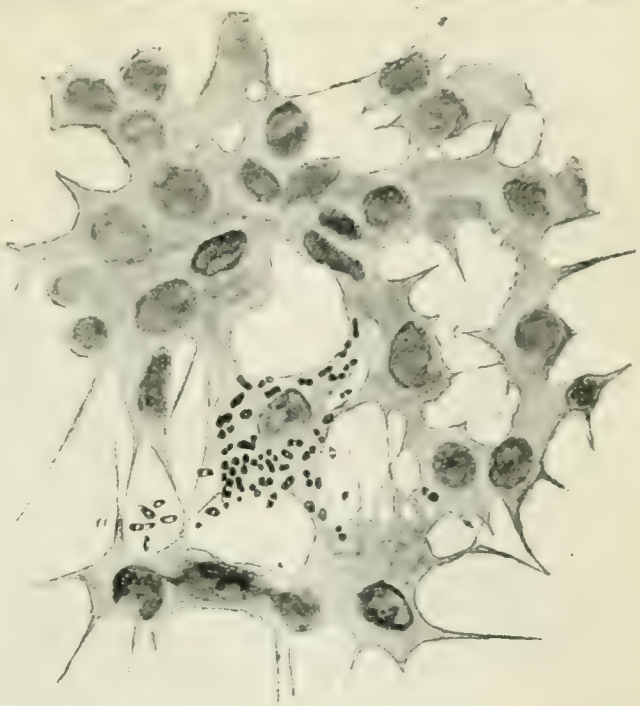


Fig. 5.—From section of mesenteric gland from case of portal cirrhosis. Stained carbol thionin, drawn under camera lucida. $\frac{1}{12}$ immersion lens (Reichert), Oc. 4. The section shows portion of a lymph sinus with colon bacilli which have apparently undergone proliferation *post mortem* in one of the large lymph cells. At *a* either the staining is partial or the bacilli already show signs of degeneration.

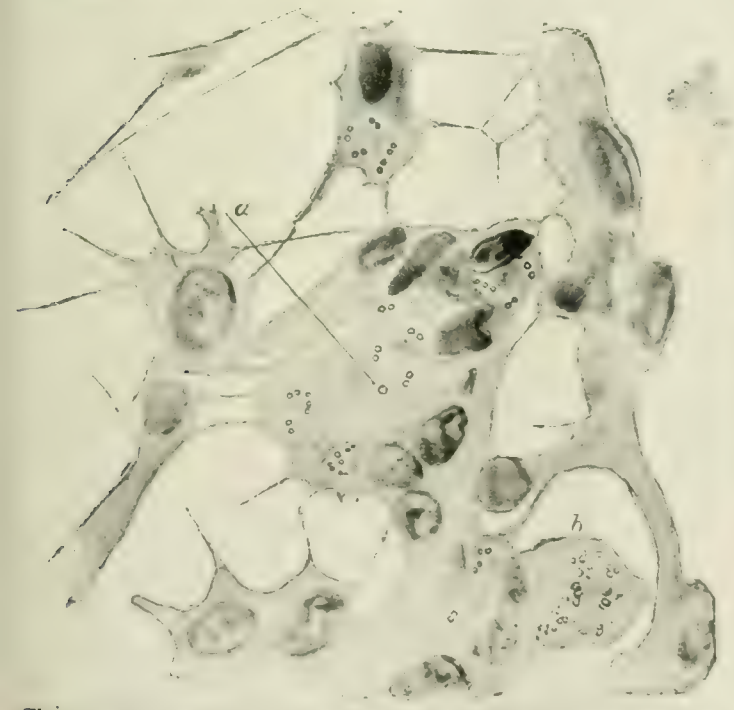


Fig. 6.—Another portion of the same section, drawn under the same magnification. Here in a lymph sinus some of the cells show in their protoplasm small clear spaces containing two, or more rarely three or four, fine deep brown spherules—shadows of colon bacilli. At *a* is shown the shadow (unstained) of some other form. At *b* is a large cell filled with fine pigment particles unsurrounded by halos. Elsewhere in the section were large accumulations of amorphous brown pigment.

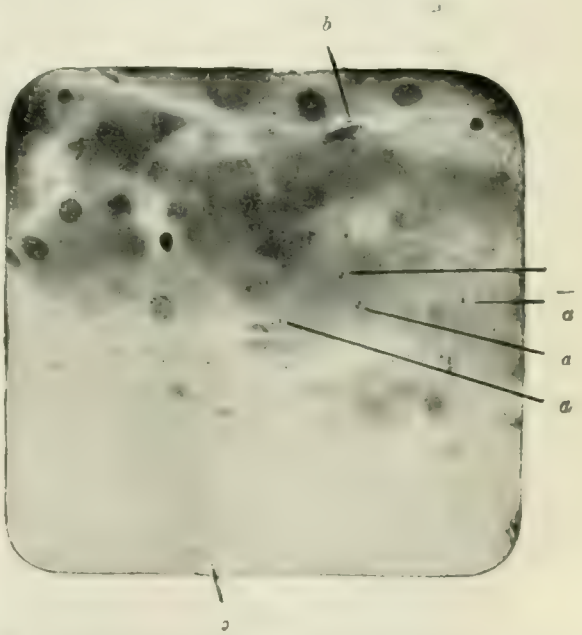


Fig. 2.—Progressive cirrhosis in man. Section from liver of case of advanced portal or atrophic cirrhosis received from Professor Hektoen, of Chicago. Stained 50 per cent. carbol fuchsin two hours, bleached in sun 2 days. Photographed by transmission as before. *a*, *a*. Diplococcus forms with clear halo within the liver cells. *b*. Diplococcus form in connective tissue band within lobule. *c*. Ovoid bacterial form (imperfect focus) in extralobular connective tissue.

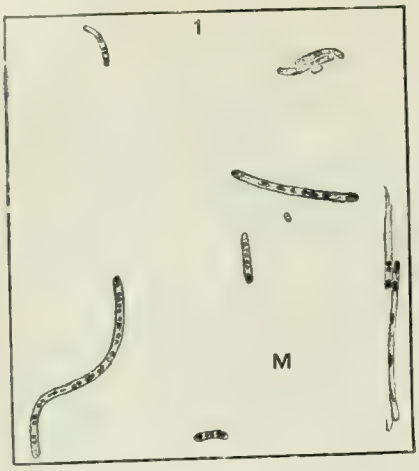




Fig. 3.—Microbe isolated from a case of progressive cirrhosis in man. To show extreme polymorphism. 1. From agar plate colony, plate made from isolated colony on glycerinated agar inoculated from spleen juice. Agar plate 5 days old. Shows long filaments composed of series of diplococci imbedded in sheath. 2. From broth culture 8 hours old, inoculated from colony on agar plate supplying the filamentous form.

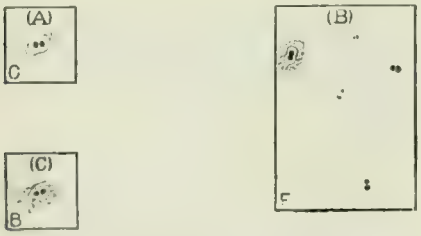


Fig. 8.—From slide preparations from agar (glycerinated) cultures made direct from pipettes taken at necropsy in case of atrophic cirrhosis. Drawn with Zeiss's camera lucida. Reichert $\frac{1}{18}$ immersion. Stained carbol fuchsin. A, from kidney juice pipette; B, from mesenteric gland pipette; C, from ascitic fluid; all 24 hours growth.



Fig. 1.—Microbe of Pictou cattle disease from 24 hours old agar culture. Stained carbol fuchsin. Reichert $\frac{1}{18}$ immersion. Zeiss's camera lucida.

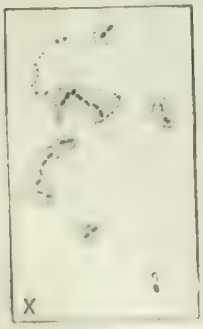


Fig. 7.

Fig. 7.—Microbe isolated from a case of progressive cirrhosis in man. Growth in broth direct from kidney juice 24 hours old. Stained carbol fuchsin, heated, washed in water only and not fully decolorised, so that some forms appear as ovoid bacteria. Note a tendency to form irregular chains.

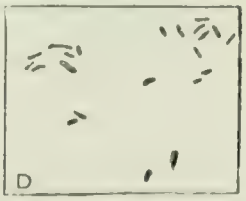


Fig. 10.

Fig. 10.—Microbe isolated [illegible] progressive cirrhosis in man. Slide preparations from [illegible] ated) growth 3 days old from kidney juice, $\frac{1}{18}$ im[illegible]era lucida. To show bacillary form after several days growth on agar. Note variation in length and to some extent in thickness.

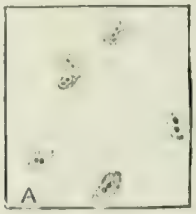


Fig. 9.

Fig. 9.—Microbe isolated from a case of progressive cirrhosis in man. Broth culture from pipette of heart blood 24 hours old. Stained carbol fuchsin, $\frac{1}{18}$ immersion, and camera lucida. Growth feeble and specimen over decolorised, so that diplococcus forms appear smaller than normal.



Fig. 11.

Fig. 11. Microbe isolated from progressive cirrhosis in man; 14 hour broth culture from agar growth from kidney. Stained Nicolle-Morax method. Reichert $\frac{1}{18}$ immersion lens. Drawn under Zeiss's camera lucida. To show flagella.

common to all the blood vessels of the body.[31] Harvey, moreover, was the first to interpret correctly the physiology of the heart. His great work on *Animal Generation*, of which he was so diffident, and which was, as it were, dragged from him by his admiring friend, Sir George Ent, for the purpose of publication, would by itself have raised him to the first rank of biologists, although, as Willis remarks, to complete and perfect such a task as this was impossible, even for Harvey, with the means at his disposal in the seventeenth century.

His minor treatises show, equally with his greater ones, the same originality and intellectual power.

But I will not dilate on these topics. They have been often discussed before us here. I have preferred on this occasion rather to present to you the pre-eminent qualities of the mind and character of Harvey, and to indicate the wholesome lessons which they afford for us. Harvey, himself, best summed up his great characteristic and guiding principle in a concise sentence that might even now be fitly inscribed on his sarcophagus, and it is this: "I avow myself the partisan of truth alone." That was the great moral of his life—truth eternal, ever to be sought for, to be held, and to be passed on. Let us ask ourselves if the orator of 1998 will be able to say that such was our ideal in this College at the close of the preceding century? We may fairly hope that he will not hesitate so to speak of us.

In my belief nothing will better tend to foster and maintain such a standard amongst us than the disclosure year by year in this place of the character and works of our immortal Harvey.

To have had him, to be summoned regularly to peer into his great mind, to learn his methods, to be counselled by his wisdom, and to participate in the benefactions he so affectionately designed for us, constitutes indeed a high responsibility of which we must ever feel sensible in this his beloved College.

I have now, lastly, in accordance with Harvey's direction "to exhort the Fellows and Members for the honour of the profession to continue in mutual love and affection among themselves, without which neither the dignity of the College can be maintained, nor yet particular men receive that benefit by their admission into the College which they might expect, ever remembering that "*concordia res parvae crescunt, discordia magnae dilabuntur.*"

According to Willis, "every act of Harvey's public life that has come down to us is marked not merely by propriety, but by grace." I venture to think that we in this College are well knit together in mutual regard and sympathy, and thus maintain in these respects what Harvey desired should ever exist here. The concord we enjoy truly preserves our dignity, for it adds weight to our deliberations and our efforts. It is a good deal the fashion in these days to deride dignity and its symbols, but wise men in all times have realised the risk which the loss of them entails, and have had cause to learn that when the symbol is dropped the reality also is only too apt to disappear.

But our life-work as the physicians of England is not done here. Our duties take us to serious and responsible ministrations to all classes of our countrymen. Our various positions demand that, with perfect freedom and independence, we bring our best knowledge and influence to bear on all human interests.

May we indeed be careful to carry with us in all the relations of life, professional and otherwise, the tone and bearing which are demanded of all who belong to this College!

May we strive to be like-minded with those whose memory we have just praised, and, not least, with the simple, unselfish, Christian gentleman before whose life-work and beautiful character we have once more bent to-day in solemn admiration!

[31] "The old humoral pathology has lost its roots since Harvey showed that the blood is a circulating fluid, and not a parenchymatous juice."—Professor Virchow. (Address delivered at the Tercentenary Festival of the University of Edinburgh.) 1884. I remember that my esteemed teacher, Professor Goodsir, of Edinburgh, was wont to describe the blood as an organ. His successor, Sir William Turner, has confirmed my recollection, and writes to me as follows:—"Goodsir regarded the blood as an organ, and the blood corpuscles as the tissues of the organ. His mind was so full of the importance of the cell as a force in nutrition that to him the collective cells of the blood represented an organ, although they were not fixed in their place, but moved with the blood stream. His conception was, I believe, a true one."

ON THE BACTERICIDAL FUNCTIONS OF THE LIVER AND THE ETIOLOGY OF PROGRESSIVE HEPATIC CIRRHOSIS.

[With double-page Plate.]

By J. GEORGE ADAMI, M.A., M.D.,
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Since writing the paper upon Progressive Hepatic Cirrhosis which Professor Osler was good enough to read on my behalf at the Edinburgh meeting of the Association I have been employed without intermission continuing the series of studies therein indicated. My further observations have so expanded and modified the statements already made that I am pleased that what as regards this Journal was the premature publication of my paper elsewhere permits me now to take up the subject in these columns in the light of further researches and further experience.

To recapitulate briefly my Edinburgh paper. I therein pointed out that investigations conducted in Nova Scotia upon a curiously localised enzoötic known as the Pictou cattle disease showed me that in this disease (the most characteristic lesion of which was a peculiar extensive cirrhosis of the liver) there was to be gained from the liver, lymph glands, bile, and occasionally other organs and fluids of the body, a characteristic polymorphous bacillus, which in the earlier stages of its growth outside the body resemble a diplococcus (*vide* Fig. 1) in the later stages became more bacillary, and again when seen in the tissues was present as a diplococcus surrounded by a faint halo. These forms, I may say, are especially abundant in the liver and the abdominal lymph glands, and in general a large proportion of them do not take the stain. These non-staining forms are to be recognised as well-defined shadows having a characteristic brownish colour. In the liver the microbes are present, stained and unstained within the liver cells and to a less extent in the newly formed connective tissue. The germ is pathogenic for rabbits, guinea-pigs, and mice; and in these animals, while death occurs before cirrhosis has had time for adequate development, the microbes are abundant within the liver cells.

Struck by many resemblances between this disease and the ordinary cirrhosis in man, I have examined sections from a series of twenty cirrhotic livers, and in them have found constantly an almost identical form present also in the main within the liver cells. These show themselves as minute diplococcus-like bodies surrounded by a faint halo; they are so small as best to be studied under the one-eighteenth or one-twentieth immersion lens, although they can be made out, yet with some difficulty, under the one-twelfth immersion (*vide* Fig. 2). The method of staining found by me to demonstrate them most surely was by carbolised fuchsin followed by bleaching in the bright sunlight for several days.

As an appendix to my paper, I described a case of cirrhosis which had within the last few days come to the *post-mortem* table at the Royal Victoria Hospital. From the liver and other organs of this case I gained a polymorphous bacillus appearing in early cultures as a diplococcus, and later assuming a bacillary or diplobacillary form (*vide* Fig. 3). I pointed out that while in certain respects it resembled the colon bacillus, I must provisionally assume that it was a distinct species. More especially was I led to this conclusion from the fact that upon lactose and glucose broth there was no fermentation of sugar, while preparations made to demonstrate the presence of flagella showed one, or at most a pair, of these, appearing to be terminal and not lateral.

Such, in brief, were the main facts gained by me up to the middle of July. Since then the subject has widened greatly, and I can here give but an epitome of my later researches, the full details of which will be published elsewhere.

Further study of the form isolated by me from the case of human cirrhosis and of cultures from a second case (for the material for which I am indebted to my friend, Professor Wyatt Johnston) have conclusively proved to me that this form must be regarded as at most a variety of the colon bacil-

lus. The colonies upon agar plates and tubes made during the first days of growth were much smaller than those obtained ordinarily from the colon bacillus. A growth on fresh acid potato, while visible, was less abundant than that formed by the stock bacillus, and was of a very pale fawn colour rather than brown, and, as already stated, sugars were not fermented, and lateral flagella appeared to be absent.

But now, with frequent transfers upon slightly acid glycerinated agar, the colonies have become larger, and after passage through the rabbit they are scarce distinguishable from those of the ordinary colon bacillus. Glucose and lactose broths are now fermented with a development of the proper proportion of gas (one-half the closed limb of a Smith's fermentation tube), films made from young cultures in broth and glycerinated agar, show abundant lateral flagella. No distinction can be made out in the behaviour in milk, litmus milk, and on fresh acid potato.

As with the colon bacillus, mice seem to be relatively unaffected by intraperitoneal or subcutaneous injections of the organism in question; rabbits are affected. In short, so far as I have studied the two forms, the only well-marked remaining difference between them is, that while the colon bacillus causes broth reacting 1.5° acid to phenolphthalein[1] to become generally turbid in from 24 to 48 hours, with the development of relatively little sediment, the forms isolated from the liver, spleen, and kidney of my case of cirrhosis induce so little turbidity of the medium that at the end of 48 hours it is still possible to read print through the test tubes: again the sediment is relatively abundant. Two series of cultures alone, one from the heart blood, the other from the kidney of my case of cirrhosis, still retain some of their original characters; they show feeble growth, imperfect fermentation, and marked liability to present the diplococcus form; but they also with frequent transfer appear to be approximating towards the ordinary colon type.

These facts, with other considerations to be mentioned later, lead me to the present conclusion that the micro-organism in question must be regarded as one of the very numerous varieties of the colon bacillus. A study of Dr. Wyatt Johnston's case has shown me that, along with similar atypical forms, the typical colon bacillus can be obtained directly from the liver in cases of cirrhosis. Again, looking up my previous *post-mortem* records, and Professor Flexner's note upon the bacteriology of the cases of cirrhosis, material from which he courteously sent me, I find that both of us have frequently obtained the colon bacillus from cases of this disease. So also Professor Kanthack concluded that the cultures which I sent to him two years ago from two cases of cirrhosis were those of the colon bacillus, although when first isolated these had certainly been atypical.

It is very possible that under this term "colon bacillus" we include numerous forms which the imperfections of our methods prevent us from properly distinguishing. But balancing all the facts of the case, I cannot lay down that there are adequate grounds for separating this one form from the main group. The only safe conclusion that I can come to is that the cultures of the colon bacillus isolated from the liver of cases of cirrhosis within a few hours after death may be found markedly attenuated or modified, only gaining typical characters after repeated subculture outside the body.

Making a parallel series of inoculations into rabbits with the cirrhosis form and our stock laboratory culture of the colon bacillus, the results tallied very closely. I will here, however, only mention one—but that one all-important for the full comprehension of the subject. If 0.5 c.cm. of a 48-hour broth culture of either form be inoculated into the marginal vein of the rabbit's ear, within twenty-four hours the liver cells are crowded with forms which are in the main diplococci. Occasional streaks of three dots or of four can be made out; but whereas the individuals in the 48-hour growth prior to inoculation were present in the main as stumpy bacilli and diplobacilli, now in the liver these were present in a diplococcus form. (*Vide* Fig. 4).

As to the exact method of the passage of these bacilli into the liver cells, I am not fully prepared to make a statement. Dr. Maude Abbott is at present making a series of studies upon the subject. I can only here point out that (1) it is an observation frequently repeated that the endothelium of the hepatic capillaries possesses pronounced phagocytic properties; (2) that Chiari has recorded similar results following the intravenous inoculation of a closely allied form (the typhoid bacillus); and (3) that the remarkable appearances presented can be easily reproduced, cautious staining with carbol-thionin giving excellent results.

It is clear from this one series of observations that the colon bacilli injected into the blood stream find their way into the liver cells, and, what is more, they are present in these in greater numbers than in the spleen, kidneys, or other organs; but what is equally remarkable is that at the end of sixteen to twenty-four hours in rabbits so inoculated, while the liver is so crowded with the bacteria, if streak cultures be made from the various organs, abundant colonies may be obtained from the spleen, the heart blood, and also, but to a less extent, from the kidney; but taking a considerable amount of liver juice, this provides relatively few colonies. So far, in these early cases, the bile has been found by us to be sterile. It would seem clear, therefore, that the liver cells do not act as excretory agents for the bacilli, but have pronounced bactericidal functions. Save for Chiari's observations upon the similar destruction of the typhoid bacilli, this remarkable and important function of the liver cells has so far, I believe, escaped general recognition.

As I shall proceed to point out, when we consider that the colon bacillus is the commonest form within the intestinal canal, and is present there in enormous numbers, the full significance of these observations becomes evident. The bacilli or diplococci thus seen in the liver within twenty-four hours after inoculation, are clearly in the main, if not dead, at least incapable of proliferating outside the body. That they are in the process of degeneration is shown, I am inclined to think, by their form and by the fact that they easily give up their stain, and again, it seems to me, by the fact that when decolorised they have a peculiar brown tinge.

That the colon bacillus should thus appear within the tissues as a coccus or diplococcus form rather than a bacillus is somewhat difficult to realise. Certainly one's experience in the bacteriological examination of sections of the appendix removed for appendicitis—an experience which here in Montreal is extensive, and in which again the colon bacillus is the form most commonly to be recognised—had not prepared me to recognise that in these diplococci often surrounded by a faint halo I was dealing with the colon bacillus or some variety of the same. Nevertheless, my observations have made this absolutely certain, that not only in the liver, but in the lymphatic glands, and, indeed, in the kidney and spleen the colon bacillus is liable to assume the above form. I have now been able to recognise in the tissues a series of forms from the easily distinguishable and typical bacillus through the diplobacillus, formed of two stumpy members, to a stumpy bacillus, either alone or still as one member of a pair, in which the main body is unstained and so appears as a halo, while along the main axis are to be recognised two fine spherical bodies giving the appearance, as above mentioned, of a diplococcus. I begin now to understand the very frequent diplococci seen in the routine examination of sections of *post-mortem* material, when cultures have revealed not a single diplococcus lanceolatus or other coccus form.

What is more, I have been able to reproduce a like series of appearances outside the body. It is interesting to note that in the early stages of rapid growth in nutrient broth the bacillus is frequently represented by diplococci of fair size, and where the short stumpy bacterium form predominates, proper staining with fuchsin, and decolorisation, gives the appearance of more intense polar staining with a clearer central space. Again, in older growths the long bacillary forms when stained to the proper extent, and when examined under a high power, appear to be composed of an obscure string of spherical bodies united by a common investing substance.

I find, however, that when the bacillus has been grown in broth or upon agar, close to the upper temperature limit of growth and under certain other conditions unfavourable to active proliferation, then these anterior bodies, whatever be their nature, are most easily demonstrable, so that a long bacillary form is seen to be composed of an investing relatively colourless ground substance in which are disposed either a row of deeply-stained spherules; or again, each of such spherules, which at first appears to be somewhat oval,

can be resolved into a pair of gonococcus-like bodies, the division between which is roughly at right angles to the long axis of the bacillus.

I will not here pretend to lay down what is the nature of these bodies; to call them nuclei or pronuclei would, in the present state of our knowledge, be if not absurd at least indefensible. Their arrangement is, however, very remarkable, and appears to be ultimately related to the vital functions of the bacillus. Here, again, abundant work is necessary before their full meaning is elicited.

Another series of observations begun by me is an examination of sections from some 200 portions of liver preserved from the necropsies at the Royal Victoria Hospital during the last three years. These I have selected from cases in which examination with ordinary stains has shown the absence of anything that could be spoken of as cirrhosis. So far I have already examined only 40 of these, but in this series of sections, to my surprise and, I must acknowledge, temporary confusion, I have found with scarce an exception indications of the presence of these shadows of the colon or allied bacilli. I stained these sections by carbolised fuchsin and bleached them in the sunlight, and while I have found in them very rare deeply-staining diplococcus forms and still rarer typical colon-like bacilli, it is the minute brown shadows, namely, the unstaining diplococcus-like bodies tending to be surrounded by a halo that I have almost constantly come across. So common is the appearance, that in the three cases in which I have failed to recognise it I am inclined to ascribe my failure to insufficient study. In other words, not a little of the fine brown pigmentation recognisable in the liver cells apparently healthy (but not all) is an indication that colon—and presumably other—bacilli have been taken up by the liver cells and have there been destroyed. This statement I know will be doubted, but I make it with a full sense of responsibility. I have experimentally and in the organs, more especially in cases of cirrhosis, observed the successive stages, and I have no longer any doubt about the absolute correctness of the statement.

From this it follows, we must assume (1) that the colon bacilli in small numbers are, in the healthy individual, constantly finding their way into the finer branches of the portal circulation; and (2) that one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation, and to destroy them through the agency of the specific cells of the organ.

I have not as yet been able to make a parallel series of examinations of the mesenteric glands; I can only point out that in cases of hobnailed liver the appearance of sections of these glands when properly stained by carbol-fuchsin or carbol-thionin is remarkable. (*Vide* Figs. 5 and 6).

It is scarcely necessary for me to point out the steps by which the bacilli pass from the lumen of the intestine into the tissues, and so into the lymph and blood capillaries. Observations of Heidenhain, Ruffer, and others have demonstrated with the greatest clearness that leucocytes are continually passing out on to the free surface of the intestinal mucosa, and that a large number of these, laden with fatty particles, bacteria, and other matters, find their way back into the submucous layer.

These observations at first sight would appear to wholly controvert the view that there is any necessary connection between the presence of more or less modified colon bacilli, or varieties of the same, in the liver and the development of ordinary progressive cirrhosis. It may be argued that inasmuch as such forms are constantly to be found in the liver, it is clear that the bacillus can have no power to induce excessive connective tissue formation, for otherwise every living being should suffer from cirrhosis. But there is this to be noticed: in the ordinary liver in which cirrhosis is absent, the forms visible are almost all corpses, and even long action of strong carbolised fuchsin will not lead them to become stained. In cirrhosis, on the other hand, while there are many of these non-staining forms, areas can be made out in which diplococcus-like bodies stain deeply. Either they have only recently entered the organ and are just killed, or they are still alive though in a form so attenuated, that it is only with difficulty that cultures can be gained from the organ. I still cannot but consider that the very great number of these forms found in well-marked advancing cases of cirrhosis is ample evidence that there is a direct connection between these and the process. So, also, in those advancing cases of cirrhosis my observations show me that the mesenteric glands are crowded with a diplococcus form of the bacillus, just as I found them crowded in cases of Pictou cattle disease.

In favour of my contention that there is a relationship between the presence of these diplococcus forms and the development of ordinary cirrhosis, the following considerations appear to of weight:

1. The very great number of these forms found in the liver in well-marked progressive cases of ordinary hepatic cirrhosis.

2. The coincident great number of the same recognisable in the mesenteric lymphatic glands, there being in this a close parallelism to what is seen in the Pictou cattle disease.

3. The parallelism in general between the bacteriology of these cases and that of Pictou cattle disease. Up to the present time my investigations upon the micro-organism of this disease show that it, while very closely allied in form and characters to the colon bacillus, is and remains a distinct species. Repeated subculture during the last three years has not brought it nearer to type, if I may so express it. The agar colonies of the bacillus are much smaller than those of the ordinary colon bacillus; it does not ferment lactose or glucose, and does not yield the indol reaction, while upon acid potato the superficial growth is so slight as to be almost invisible, and I have found inoculations fatal to mice—animals not killed by the colon bacillus.

The constant discovery of this form in animals afflicted with the Pictou cattle disease renders it a most reasonable supposition that there is a direct relationship between its presence and the development of the disease. At the same time it is to be borne in mind that, so far, by simple inoculation, although rabbits, guinea-pigs, and mice are killed—and that on the average after relatively long periods (fifteen to thirty days in the two former animals)—I have been unable to reproduce the cirrhotic change in the livers of the same. It may be that the time elapsing between inoculation and death is too short to permit extensive fibrosis to develop, but it may well be that some additional factor is necessary to cause the cirrhosis in the cattle as in the inoculated animals, some prior or contemporaneous action upon the liver cells favouring the multiplication of the bacteria, or aiding the pathogenic action of their toxins upon the hepatic tissues.

Had further work upon human cirrhosis confirmed my first impression that the form isolated possessed individual features, and had further study revealed the repeated presence of such specific microbe in cases of the disease, it would also have been reasonable to assume cirrhosis to be due to the action of such a germ. But further study has shown that while one germ is to be detected in the livers of advancing cases of cirrhosis that germ is evidently the colon bacillus, more or less attenuated, it is true, but still a common form, and one which is habitually to be detected in livers presenting not a sign of cirrhotic change. If, therefore, there is any relationship between the presence of such a form and the development of the disease, clearly some other factor or factors must be at work. But beyond the point that there is this remarkable abundance of modified colon bacilli in the liver and in the mesenteric glands in cases of ordinary cirrhosis, I can at the present moment bring no further facts forward. To state positively what is the additional factor or factors requires experiments which necessitate months to bring to a definite issue. One may undoubtedly hazard a very shrewd guess as to what they must be. If the bacilli gain entry into the system through the intermediation of leucocytes, then a subacute enteritis or gastro-enteritis appears to afford the necessary localised determination of leucocytes, and such subacute or chronic gastro-enteritis is a very familiar feature in the clinical history of cirrhosis in man. If some depression of the functions of the hepatic cells be requisite, then we know that alcohol, the main predisposing cause of ordinary cirrhosis, has a direct action upon the hepatic parenchyma. Indeed Ramond[3] would seem already to have had a slight measure of success by giving to animals by the mouth alternating doses of alcohol and bacterial toxins over long periods. It is along somewhat similar lines that I am at present working, employing not toxins but cultures of the colon bacillus alternated with alcohol. The

result will show whether this will give to us the solution of the cirrhosis problem.

I am the more inclined to be cautious, in that the conclusions reached in the appendix to my Edinburgh paper, although stated to be provisional, may naturally have raised expectations as to the specific nature of ordinary cirrhosis which this further contribution to the study must overthrow. It is so novel and unexpected a discovery that in the tissues the colon bacillus may be represented by a minute diplococcus-like body that I cannot but feel that for the statements contained in my Edinburgh paper no apology is needed.[3] The recognition of this diplococcus-like modification in itself modifies and expands the subject to such an extent as to open up a very wide field. For the present I shall be amply satisfied if I have adduced evidence favouring the view that after all what—in the absence of adequate classification—I prefer to call "progressive hepatic cirrhosis," is but one of the results of the entry of the colon bacillus and its products into the system.

The specimen utilised for my *camera lucida* drawings appeared so definite that I forwarded it to Edinburgh, there to be demonstrated. Later specimens stained for flagella by the same method show most clearly the lateral arrangement and abundant flagella. Either the earlier attenuated forms were provided with few flagella, and those close to the ends, or the early preparations were defective. I am ignorant of any observations supporting the former view, and must therefore accept the latter as the probable explanation. It is, however, interesting to note that the earlier observers upon the colon bacillus made a like mistake and accorded to it terminal flagella.

In conclusion, let me state again that I do not for a moment assume that all extensive fibrosis or cirrhosis of the liver belongs to the same category. I fully admit that syphilis, tuberculosis, typhoid, and perchance some of the exanthemata, may be followed by extensive laying down of new connective tissue in the liver. But in none of these conditions, with the possible exception of syphilis, does the cirrhotic change assume the peculiarly progressive and extensive type even in the hobnailed liver and the varieties of the same. And, as to Hanot's cirrhosis, never having studied a case possessing the classical symptomatology of this disease I cannot make any statement.

References and Note.

[1] Procedures recommended for the Study of Bacteria, *Journal of Amer. Public Health Association*, 1898, p. 75; reprint, p. 38. [2] *La Presse Médicale*, April 21st, 1897. [3] Of my previous observations, but one, I believe, has not been confirmed in my further studies. I refer to the observation that in the microbes isolated from a case of cirrhosis the flagella were terminal. In the earlier specimens, made by the Nicolle-Morax modification of Loeffler's method, I looked most carefully for lateral flagella and found none.

TWO CASES OF MALIGNANT DISEASE OF THE VOCAL CORDS: THYROCHONDROTOMY: NON-RECURRENCE IN ONE CASE AFTER TWO YEARS.

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There are few more interesting pages in the literature of laryngology than those which deal with the history of the operative treatment of malignant disease of the larynx. Formerly, surgical interference in these cases was a serious undertaking and very liable to be followed by septic pneumonia—a risk which was felt to be so great that patients were often left to the ravages of the disease until tracheotomy became imperative to obviate asphyxia, whilst at the same time it conferred the doubtful benefit of prolonging for a short while a life of pain and abject misery.

To-day there is probably no operation undertaken for the relief of malignant disease in any part of the body which can show better results than that of thyrochondrotomy or laryngofissure for early cases of epithelioma of the vocal cords or the structures in their immediate vicinity. It is to this form of malignant disease that these remarks apply.

By careful attention to operative detail and technique, accompanied, of course, by strict asepsis, the dreaded complication of septic pneumonia can be almost certainly avoided, and it is astounding when the importance of the structures interfered with is remembered, how rapidly patients attain convalescence, and for what a length of time they enjoy freedom from recurrence in those cases where the disease has been attacked early in its history and whilst limited in extent.

It need scarcely be said that cases of malignant disease of the larynx are not common, and when they do occur their presence is often manifested by such trivial symptoms that little notice is taken of them (*vide infra*). Consequently, they too often drift on until it is too late to undertake any radical treatment with even a fair prospect of success.

It may be hoped, therefore, that the publication of the notes of these two cases may assist in bringing forward again the salient features of the symptoms, early diagnosis, and treatment of this form of malignant disease.

Mr. J. S., aged 65, a fine, healthy-looking man, consulted me on September 2nd, 1896, for "hoarseness" of 12 to 14 months' duration.

History.—He complained of no pain or difficulty on swallowing, and no perceptible loss of flesh, simply and solely "hoarseness." So impressed was he with the triviality of his condition that he expressed himself as "ashamed to consult anyone for such a small matter," and it was only to appease the anxieties of his friends that he presented himself. He had been treated with gargles, pastilles, etc., but without any relief to his symptoms, and no laryngoscopic examination had been made. On examining the larynx I found the right vocal cord thickened, ulcerated, and congested, the upper edge of the ulcer being thickened. The cord was immobile on phonation. There were no enlarged glands in the neck. The left vocal cord and both vocal processes were normal. These appearances led me to diagnose epithelioma of the right vocal cord, an opinion which was confirmed by Sir Felix Semon, who afterwards saw the case with me.

Operation.—We persuaded the patient to adopt the only course which offered him any hope of permanent relief, and on September 15th, with the able assistance of Mr. Ewen Stabb, I performed the following operation, which embodies most of the suggestions which had previously been made and practised by Hahn, Butlin, Semon, and others. The patient being anæsthetised (chloroform) I made a vertical incision in the median line of the neck, from a finger's breadth above the thyroid notch to the upper end of the sternum. The trachea was exposed, and in order to do as low a tracheotomy as possible I divided the thyroid isthmus. Hooking up the trachea the lower of the rings exposed in the wound were divided and a Hahn's aseptic sponge cannula inserted and a smaller marine sponge on the top of this. The former was left for ten minutes to expand and occlude the trachea, and meanwhile the thyroid cartilage was divided in the midline by means of a nasal saw, the latter or some similar instrument being necessary, as the calcification of the cartilage rendered it too resisting even for a strong pair of scissors. The upper three rings of the trachea were also divided, thus leaving two complete rings between the lower end of the upper and the upper end of the lower tracheal incision. My object in leaving these intervening rings entire was to give the tissues in the middle line more support, and also to make it easier to find the trachea in case a future operation became necessary on account of recurrence. On drawing asunder the halves of the thyroid cartilage the diseased cord was seen, and, as one generally expects in these cases, the affected area was greater than that revealed by the laryngoscope. A dossil of wool soaked in 10 per cent. cocaine solution was applied to the diseased area in order to render it as anæmic as possible. A captive marine sponge was now passed up into the pharynx through the wound in order to prevent any mucus coming down on the larynx during the operation, and ten minutes or so having elapsed since the cannula was inserted, I seized the diseased cord in a small pair of vulsellum forceps, and with a scalpel made a semilunar incision into the healthy tissues surrounding the growth, including the right vocal process; and, as the disease approached very closely to the right arytenoid cartilage, I included that as well. The parts were detached mainly by a periosteal elevator and partly with a pair of blunt-pointed scissors. The former answered its purpose very well, for the inside of the right cartilage was perfectly denuded of its coverings, and resembled in appearance a pearl button. The hæmorrhage was very slight, and only one vessel in the posterior part of the wound had to be controlled with forceps. The interior of the larynx was now painted with Whitehead's varnish (benzoin 4 parts, storax 3 parts, balsam of tolu 1 part, ether pur. 40 parts, iodoform 4 parts), an excellent styptic and antiseptic, dusted with iodoform, the pharyngeal sponge removed through the mouth with a quantity of mucus, and the halves of the thyroid cartilage drawn together and kept in apposition by a fine silk suture, which did not enter the lumen of the larynx; a similar stitch was inserted into the upper rings of the trachea, the cannula removed, and the whole wound thoroughly cleansed with 1 in 2,000 perchloride of mercury solution, and stitched up with the exception of a small portion at its lower end, through which for four hours I inserted a small rubber tube into the trachea, thinking it might expedite the expectoration of blood-tinged mucus from the lungs which he coughed up, more especially whilst recovering from the anæsthetic.

After-History.—Warm sponges were kept constantly applied to the lower end of the wound during the next eighteen hours, and the patient kept on his right side. A light cyanide gauze dressing was placed next the wound. The temperature varied for the next four days from 99° to 100°, after which it was normal. On the evening following the operation he had a nutrient enema.

September 16th. The patient complained bitterly of thirst, so he was allowed a sip of water, which he swallowed without difficulty; he then drank half a tumbler of egg and milk mixture. On September 17th he ate bread and butter and easily swallowed fluid and on September 19th milk pudding, boiled sole, and mashed potato.

During the day or two following the operation there was a quantity of blood-tinged expectoration which gradually became less. The wound healed by first intention (except its lower end where the tube was inserted), and seventeen days after the operation he wrote to me from Bournemouth to say that his appetite was returning fast, and that he was nearly feeling himself again.

I have seen him on three or four occasions since, and notice a small papillomatous-like mass in the anterior commissure about the size of a pea, which was present six weeks after the operation, and is still present (August, 1898) and not increased in size. The larynx is still free from recurrence, the patient is 17 lbs. heavier than before the operation, and is in all respects well and apparently cured.

Microscopical Examination.—The growth showed it to be a typical squamous epithelioma of the vocal cord. As regards the quality of the voice in this patient after the operation, it is best described as "gruff."

Case II. W. C., aged 49, applied to my clinic at the London Throat Hospital, Great Portland Street, February 13th, 1898.

History.—He complained only of "hoarseness" of two months' duration. Laryngoscopic examination revealed a whitish-grey nodular thickening occupying the anterior fourth of the left vocal cord. At its junction with the cord posteriorly the latter was distinctly congested, in marked contrast to the colour of the corresponding part of the right vocal cord. On inserting the finger into the larynx the growth was felt to be distinctly hard and immobile. On phonation the cord was almost completely immobile. The microscopical examination of a small portion of the growth, which I removed by intralaryngeal forceps, also suggested its epitheliomatous nature. The diagnosis of malignant disease was therefore made and confirmed by many members of the London Laryngological Society who saw the patient next day.

Operation.—It is unnecessary to describe in detail the operation which I performed on the 21st inst., in all essential details it was the same as that described in Case I. I did not, however, remove the arytenoid cartilage in this case as the disease was not so extensive as in Case I. The anterior end of the right vocal cord was whitish in colour, due possibly to attrition of phonation by the growth on the opposite cord. I therefore removed a small portion of it, but the microscope revealed no diseased condition. As in Case I I took away a considerable portion of the left vocal process in order to get as wide of the growth as possible, and having checked the slight hæmorrhage, the two halves of the thyroid cartilage were brought into apposition by means of a fine silk stitch, and the whole wound sewn up except just at the lower end.

After-History.—Next day the patient drank fluids without any trouble, and made a rapid recovery, leaving the hospital on March 3rd, that is, about eleven days after the operation. I think it only fair to say that his rapid convalescence was largely due to the painstaking care and attention of the hospital matron, Miss Robinson. I have seen him quite recently, and excepting for a small granuloma in the anterior commissure, which has been there since the operation (similar appearance in Case I) the larynx looks like a normal one, for a sort of false cord has formed in place of the one removed, and the man has an excellent voice.

The diseased structure was examined microscopically by the pathologist to the hospital, Mr. E. B. Waggett (who kindly assisted me at the operation): he reported it to be a typical squamous epithelioma. Sections were also exhibited at a meeting of the Laryngological Society.

The one lesson of vital importance which such cases teach us is that a middle-aged man, even in apparently perfect health but suffering from "hoarseness" of more than temporary duration, or even marked alteration of the voice, should not be allowed to rest until his larynx has been carefully examined by some one skilled in the use of the laryngoscope. It will be noticed that in both my cases "hoarseness" was the one and only symptom which led the patient to seek advice, and Case I practically apologised for troubling me about such a simple matter. It is by the general practitioner that this point should be borne in mind, for as a rule it is he who is first consulted in the matter, and if he prescribes gargles, pastilles, etc., waiting to make his diagnosis from pain "shooting from the throat to the ear," pain or difficulty of swallowing, etc.—symptoms which only as a rule occur late in the disease—he will probably rob his patient of his only chance of cure. I use the term "cure" because I think that a study of statistics[1] of early cases operated upon entitle us to use the word in its full meaning.

An interesting and very important feature in the history of Case I is that the hoarseness, and therefore we may take it the disease, had existed for twelve to fourteen months before I saw him, and yet there were no secondarily infected glands in the neck or elsewhere, and the after-history seems to show that the disease was strictly confined to the larynx. This tendency to remain localised for a considerable length of time seems to be a peculiar characteristic of epithelioma of the larynx, and has been explained as due to the fact that the lymphatics of the larynx have not that free anastomosis with those of surrounding structures which is found in other organs. Such a fact, whatever may be its explanation, is of great importance, for it teaches us that, provided the disease is fairly localised, operative interference may be undertaken with good prospects of prolonged, if not permanent, relief, even though the disease has been present for such a length of time that secondary deposits might reasonably (judging from epithelioma in other regions) be supposed to have occurred. Furthermore, we are warranted in holding out good hopes of permanent relief to patients whose decision to undergo operation depends on the answer we can honestly give to the question "What hope is there of a real cure?"

It will be noted that in each of these cases laryngoscopic examination revealed a localised thickening of the cord, with impaired mobility on phonation. Such appearances are very strongly suggestive of malignant disease, but are not quite so pathognomonic as is often supposed. It is only a short while since I showed a case at the London Laryngological Society of a man complaining of hoarseness, with a thickened and immobile cord; the almost unanimous opinion was that it was a case of epithelioma of the vocal cord. However, I shortly had an opportunity of making a *post-mortem* examination (the patient died of tuberculous meningitis), and found tuberculous infiltration of the affected region with extension into the crico-arytenoid joint, thus accounting for its immobility. Since then I have seen two other cases in which, had not the lungs been affected with tubercle, I think it would have been impossible to say from the mere laryngoscopic appearances whether the disease was tuberculous or malignant. In Case II the milky whiteness of the growth was very suggestive of its malignant nature.

In such cases it is always wise to remove a small portion of the growth with endolaryngeal forceps, and subject it to the microscope for any additional light which may be thrown upon it. Much information, too, can also be obtained (as has been insisted on by my colleague, Dr. J. W. Bond) by passing the index finger quickly into the larynx and noting the presence or absence of that hardness and fixity of tissue so characteristic of epithelioma. It is not, however, always possible to reach the larynx in this way: but the writer can fully endorse the value of the method where it is practicable.

The appearance of a small granuloma-like mass within a few weeks of the operation does not necessarily mean recurrence of the disease; but unless their tendency to appear is borne in mind they may (as in Case I) cause the surgeon some anxiety. In that patient I had reason to think that possibly the small granulation was produced by the irritation of a stitch, part of which appeared in the larynx, but the appearance now is exactly the same as a few weeks after the operation, and so another explanation, possibly the puckering or undue prominence of the edges of the intralaryngeal wound, may produce the condition.

In both cases the external wound has been sewn up (excepting at just its lower end) at the end of the operation. I do not think this has usually been done by other operators, but it seems to me to be very advantageous; the scar left is almost unnoticeable, and with due attention to cleanliness septic troubles may usually be averted. If, however, the latter should arise, the wound can be at once opened, and the risk of septic inflammation spreading into the connective tissue planes of the neck avoided.

In Case I no difficulty in swallowing arose from removal of the arytenoid cartilage and the contiguous mucous membrane.

In Case II the excellence of the voice six months after operation is somewhat remarkable considering the whole vocal cord and a large portion of its corresponding vocal process was removed.

Even more surprising is the appearance of the larynx as seen in the laryngoscope, for a a kind of pseudo-cord of cicatricial tissue has taken the place of the diseased one, and by the approximation of the normal cord to this an almost perfect glottis is produced. I think I may go so far as to say that if an expert laryngologist examined the patient's larynx without knowing anything of the history of the case, the only abnormality he would notice would be some impairment of mobility in the left pseudo-cord.

In adding this small contribution to the records of surgical interference for malignant disease of the larynx, I trust it may illustrate the importance of not neglecting to examine carefully the condition of a patient's larynx when symptoms of disease are present, even though they may be *apparently* of a trivial nature.

REFERENCE.

1 Semon, *Lancet*, 1894, pp. 1476, 1477; Butlin (paper by De Santi), British Medical Journal, 1895, pp. 1025–1028.

SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF LARYNGOLOGY AND OTOLOGY.

PETER MCBRIDE, M.D., President.

THE MUTUAL RELATIONSHIP AND RELATIVE VALUE OF EXPERIMENTAL RESEARCH AND CLINICAL EXPERIENCE IN LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

I.—LARYNGOLOGY.

By Sir FELIX SEMON, M.D., F.R.C.P.,

IF a circular were at this moment sent to every laryngologist in the world, asking him to give his, what the public are pleased to call, "candid opinion" on the question of the mutual relationship and relative value of experimental research and of clinical experience in laryngology, and if everybody thus addressed would comply with this request not merely in the letter, but also in the spirit of the invitation, the result, I fancy, of such a collective investigation would make very curious reading. For I am convinced that in this whole question not merely no approach to unanimity exists amongst laryngologists, but that it is even impossible to speak of a consensus of opinion. Between the uncompromising defenders of the claims of experimental research and their equally determined clinical opponents, practically all possible shades of opinion are represented; and I do not think that anybody could at this moment venture to say which of the various fractions counts the greatest number of adherents. Thus we have—going in Parliamentary language from right to left—first what I may call the "stern unbending Tories"—namely, those purely clinical laryngologists who look askance at experimental evidence, and who, even if they do not care to proclaim their opinions in the market place, are convinced that the physical differences between animal and man are so great that no reliable conclusions can be drawn from experiments performed on the former as to the actual conditions obtaining in the latter. At the same time, they are wont to point out the differences of results existing amongst experimentators themselves; and they demand, not without a show of reason, that the adherents of the experimental method should settle their differences amongst themselves before they could claim to lay down the law to clinical laryngology.

The next group is composed by other clinical observers, who, without going so far as their neighbours on the right, yet in their heart of hearts dislike experimental research of which they have no experience of their own, and who, even when accepting its teachings, do so reluctantly and, as it were, under compulsion. Further to the left we come to what I apprehend is a comparatively large number of laryngologists who have simply formed no opinion of their own on the question. They are subdivided into two groups, which embrace, as it were, the "centre party." The right wing of this group is, with regard to the whole question, quite content to trust to the opinions of a few leaders whom it knows to have personally worked in this field. The "centre" itself is formed by the unfortunately but too small number of laryngologists who possess both clinical and experimental experience of their own, and who have in consequence arrived at the conclusion that both methods properly applied are extremely valuable, that neither of them is infallible, and that in each individual question which appears to come under the sway of both of them it must be left to individual judgment to determine the comparative value of each.

Approaching now the left wing of the "indifferent" party, we see before us a large number of laryngologists who possibly never have witnessed an experiment on animals themselves, but who from their reading and from the positiveness with which they find the results of experimental research recorded have formed a sort of dim idea that experiments on animals can be conducted with the same certainty with which a mathematical calculation is made, and that their results were as unassailable as a chemical formula constructed upon most unimpeachable principles.

Still one step further, and we come to those who simply stand in a sort of holy awe as soon as the word "experiment" is mentioned, and who are perfectly ready to subordinate their own clinical experience to the dictum of an experimental dictator. And, finally, there are these dictators themselves—the "stalwarts" of experiment, as I may call them—men to whom experiment is law, clinical experience, mere lumber, and who lay down the law to clinical laryngology with an assurance which to the thoughtful reader who has not yet quite renounced the right to form an opinion of his own is simply astounding, but which, it must be confessed, unfortunately does not fail to make impression upon the mass of those who do not dare to form an opinion of their own.

I need hardly say that no attempt has been made to assign a position in this sketch to those pure physiologists who occasionally work on some physiological question pertaining to laryngology without pretending to pronounce on its practical bearings on laryngeal pathology. My object has merely been to illustrate the great and regrettable diversity of opinions existing amongst laryngologists themselves with regard to the mutual relationship and comparative value of experimental research and clinical experience in laryngology.

In the general interest it is certainly most desirable that a greater consensus of opinion should prevail amongst us concerning those points, but it will not be easy I am afraid to bring it about. Those holding extreme views on either side are not likely to be convinced by their antagonists or to convince them, whilst he who attempts to steer a middle course is likely to be accused by the Hotspurs of either faction that he held lukewarm views and was not thoroughgoing enough. Indeed such a moderate attitude has already been sarcastically characterised as admitting such experiments which suited one's own contentions, whilst rejecting those which did not. Nevertheless, I have no hesitation in stating that I take my place in the centre party, which maintains that neither the clinical nor the experimental method can boast of infallibility, and that both of them, whilst fully recognising their achievements, can be shown to be imperfect in many questions relating to laryngeal pathology.

The best justification of such an equally moderate and independent attitude will be found, I think, in an impartial survey of the achievements, the failures, the applicability, and the sources of error of each method. Needless to say, such a survey within the limited time of a paper which is to serve as an introduction to a discussion can only be of a very cursory kind, but as I have the advantage of speaking before an audience of experts, a good deal of what I have to say fortunately only need be of the nature of a reminder, and your own experience will easily complete the illustrations, a rapid outline of which can only be given by me.

Let us then first consider the position and value of clinical laryngology. It is not of the nature of self-laudation, I hope, but merely a statement of facts if I say that clinical laryngology is amongst the most advanced branches of modern medicine, both with regard to diagnosis and to treatment. In both respects we have the inestimable advantages over other branches of internal medicine that the objects with which we have to deal are accessible to our eye as well as to our hands. The result of this has been that since the introduction of the laryngoscope, and with the help of ever-increasing clinical experience we have been enabled not merely to diagnose with considerable certainty most of the purely local diseases of the larynx, but even to take the cue from an inspection of the larynx as to the existence of grave general affections in other parts. Need I remind you that in many cases one glance at

the laryngeal mirror enables us definitely to diagnose the existence of such constitutional disorders as tuberculosis or syphilis? Need I point out that the discovery of a laryngeal paralysis often enough is the first cue towards the diagnosis of such serious diseases as tabes dorsalis, as aneurysm of the aorta, as cancer of the œsophagus? Instances of this kind could be easily multiplied, but those I have given will suffice to show the value of clinical observation in laryngology for the discovery of general disease.

But whilst we may be justly proud of such achievements, I need not tell this meeting of experts that our clinical method has not yet attained absolute perfection, and that it cannot always be relied upon with equal certainty for diagnostic purposes. It suffices to remind you of those cases in which even long-continued observation leaves it often enough doubtful for a long time whether we have to do with a tuberculous, a malignant, or a syphilitic infiltration; of those in which the nature of a perichondritis may remain obscure for many months; of the cases, not very frequent it is true yet not excessively rare, in which laryngoscopic examination gives no clue whatever as to the cause of a persistent slight huskiness; of the instances in which we remain doubtful for years, whether the fixation of a vocal cord is due to a neuropathic or a mechanical cause; of the serious difficulties so often met with in differential diagnosis between a benign and a malignant new growth in the larynx.

True, in many such cases greater clinical experience will give its possessor a decided advantage over the beginner, but this is by no means a rule without exception, and, indeed, in not a few instances, practically the reverse may be witnessed, inasmuch as the more experienced observer sees cause for doubt and hesitation where the tiro is not embarrassed by the experience of former similarly ambiguous cases. No better testimony could be invoked as to the uncertainty of clinical diagnosis in but too many laryngeal cases than the perusal of the *Proceedings* of our London Laryngological Society, in which so often the greatest discrepancy of opinion becomes apparent about one and the same case amongst very competent observers.

And even if the laryngoscope should at once show the true nature of a disease, it does not always explain the mode of its causation. It reveals to us a unilateral or bilateral abductor paralysis in cases of progressive organic disease of the laryngeal motor nerves, but it never has as yet answered the question, nor is it, in my opinion at least, ever likely to answer it, why, under such circumstances, the abductor filaments of the recurrent laryngeal nerves and the posterior crico-arytenoid muscles suffer first or even exclusively.

When we readily admit such shortcomings of our clinical work, we may at the same time claim for clinical laryngology that it has never shut its eyes to its own deficiencies, and has, on the contrary, always been most anxious to look out for help, where its own more immediate powers failed, to other scientific methods which promised to be useful to it. Whenever an advance has been made in other branches of medicine or in collateral sciences which was likely to be serviceable to laryngology the latter has at once pressed it into its service, and it suffices to remind you of its association with microscopy, with electricity as a motor, heat and light spending power, with bacteriology, with photography, with stroboscopy, and with the utilisation of the Roentgen rays, to show that this is not an idle boast. Who would miss nowadays, to give but a few examples, the microscopic examination of an intralaryngeally removed fragment whenever possible for the differential diagnosis between a benign and malignant neoplasm in a doubtful case; who bacteriological investigation of the sputum in a case of doubtful tuberculosis or diphtheria; who the employment of the Roentgen rays when there is a question of the impaction of a metallic foreign body in the air passages?

But whilst we readily and gratefully acknowledge all these and similar advantages, yet we do not conceal before ourselves that all these auxiliary methods, valuable though they be, are subject to the same errors and fallacies of human observation and interpretation as clinical laryngology itself. How often do—to give but two examples—the opinions of microscopical experts differ on the nature of one and the same fragment of a laryngeal growth which has been submitted to their opinion, and how little can, in view of the fact that an association of laryngeal cancer with pulmonary tuberculosis has more than once been observed, the presence of tubercle bacilli in the sputum give an unerring guide as to the nature of a doubtful tumefaction or infiltration in the larynx of an elderly person? Thus, here again, will in most cases independent sound judgment on the part of the clinical observer be required who avails himself of any of those apparently accurate methods, and in very few instances only—for example, when the microscopist in the fragment submitted to him finds the unmistakable evidence of the existence of squamous-celled carcinoma—will they be able to dictate to clinical experience.

Endeavouring, then, to take a large view of the mutual relationship and respective value of clinical experience and of any of the auxiliary methods so far named, I think it may be stated as a general principle—though I particularly and repeatedly wish to emphasise that it admits of exceptions—that clinical experience in laryngology, whilst gladly availing itself of, and fully appreciating, the usefulness of any of those methods, ought to keep the leadership to itself in all questions in which the ultimate responsibility rests with the clinical observer.

Whilst this proposition, I think, fairly represents the present bent of public opinion, the question now arises, Does it hold good also with respect to the relationship of clinical experience and experimental research, or does the last-named method, in virtue of its accuracy and precision, occupy a position different from, and more exalted than, the other auxiliary methods so far named? The answer to this question is a very difficult one, and in my opinion not to be given by a single Yes or No. An opinion on the question will be best arrived at, I think, by dispassionately investigating, as we did in the case of clinical experience, the applicability, the successes, the failures, and the sources of error in experimental research in laryngology. Let me only premise that "experimental research" in laryngology practically means "experiment on animals," inasmuch as with the exception of a few experiments performed on dead or artificial larynges, and of a few purely physiological investigations which could be carried out in the living human subject, practically all experiments intended to solve laryngological problems have been conducted on living animals.

Now, first, with regard to the applicability of experimental research. It will not be denied, I think, even by the most enthusiastic advocates of experimental research, that the applicability of this method in laryngology is much more limited (at least, so far as we know at present) than that of clinical investigation. Practically it has hitherto been restricted to the examination of purely physiological questions, such as the indispensability or otherwise of the larynx for the continued existence of the individual; the functions of the organ in its totality and of its constituent parts, particularly of its nerves and muscles; the question of its central innervation, and of similar points of interest in which clinical investigation either failed, or altogether could not be made use of.

Pathologically, the area of experimental research in laryngology has been even more circumscribed. It is true that from incidental observations in the course of experiments interesting sidelights have been thrown upon the nature of pathological processes in man. Thus the observation that on powerful or long-continued excitation of the cortical laryngeal area true epilepsy of the vocal cords supervened, gradually spreading to the neighbouring muscles of the face, neck, head, etc., induced Mr. Horsley and myself to suggest that the epileptic cry was not, as has been so long believed, the result of a discharge primarily from the medulla oblongata, but rather represented a stage in the cortical excitement popularly termed an epileptic fit. Again, the fact that through unilateral irritation of this area bilateral complete adduction of the vocal cords, amounting to spasm of the glottis, could be produced led us to suggest that possibly certain forms of laryngeal neuroses such as laryngismus stridulus, spastic aphonia, and allied affections might be, under certain circumstances, the result of a unilateral cortical irritation.

But these instances of experimental research influencing pathological thought occurred, I repeat, only incidentally, and could, from the nature of the observation, only be of

the character of suggestions not of the nature of positive doctrines.

So far as real pathological experiment is concerned, that is, imitation of pathological processes observed in man by their artificial reproduction in animals, two important attempts only, so far as I know, have been recorded, namely, first, Professor Krause's attempt to imitate the effects of the pressure of a tumour upon a vagus or recurrent laryngeal nerve by attaching a hard foreign body to one of these nerves, previously carefully isolated, in an animal; and, secondly, Dr. Klemperer's endeavour to study the influence of the disablement of the cortical laryngeal area upon the movements of the vocal cords by inoculating into this area cultures of pathogenic micro-organisms, such as tubercle or typhoid bacilli.

Nobody will, of course, contend that with the physiological, pathological, and incidental results so far obtained, the applicability of experimental research in laryngology had come to an end. On the contrary, much more may justly be expected of that method. But the fact remains that up to the present day it has only been applied to a very limited range of subjects.

Now, in itself this certainly would be neither a reproach to the method nor a reason to assign to it a more subordinate position, provided that the results obtained by its use in however limited a sphere were of an absolutely trustworthy, not to say infallible, nature. But is that so? In that question lies the *crux* of our discussion of to-day. Let us therefore briefly see what experimental research has actually obtained for laryngology of an absolutely indisputable character.

Physiologically, first and foremost the great merit must be put down to the credit of experimental research that it has brought home the fact to the profession that the larynx is not indispensable to the continuation of the individual's existence. I express myself thus guardedly because I am not unmindful of the fact that years before experimental research on that question was instituted at the late Professor Billroth's instigation by his then assistant, Dr. Czerny, a Scotch surgeon, Dr. Patrick Heron Watson had had the courage of attacking the question in the human subject, and had in 1866, in this very town of Edinburgh in which I have the honour of addressing you to-day, removed the entire larynx from a syphilitic patient. But it is a matter of history that the fact of such an operation having been performed only became known to the profession in 1881 through a paper, read by the late Dr. Foulis, in the Subsection for Diseases of the Throat of the Seventh International Medical Congress, whilst the mind of the profession had undoubtedly become impressed with the feasibility of the operation fully eleven years previously by Czerny's extirpation of the larynx in dogs. This then certainly is a great and most important achievement of experimental research in laryngology.

A further equally incontestable gain our knowledge has derived from experimental research is the establishment of the fact that the larynx has an area of special representation in the cerebral cortex. Whilst previous clinical observation had been of an altogether unsatisfactory and confusing character concerning this question, experimental research has clearly established the existence of such an area in each cerebral hemisphere. This fact, at any rate, has been secured by the labours of the various experimental investigators in this field, though candour compels me to add that unanimity amongst them does not go further than just to this point. Here, indeed, we meet the first drawback of experimental research when its results are to be utilised for the explanation of clinical observations. Whilst all other experimentators—Krause, Horsley, and myself, Klemperer, Onodi, Brockaert, etc.—are agreed that unilateral stimulation of the cortical area in question always produces bilateral effect, Masini, it is well known, maintains that he has been able to produce a unilateral effect on the opposite side when stimulating with very weak currents. None of those who have performed control experiments have been able to corroborate his statements; nevertheless, they have been and are still used as a physiological warranty by those clinicists who believe in the possibility of a unilateral laryngeal paralysis being produced by a lesion of the opposite hemisphere.

Another point in which, although the suggestion undoubtedly came from the clinical side, the establishment of the fact is due to experimental research—this time by way of exception, first undertaken in man—is the existence of the reflex tonus of the dilator muscles of the glottis during quiet respiration—a point of much interest and importance in connection, not merely with the physiology, but also with the nervous pathology of the larynx.

A fourth question, in which our knowledge is certainly this time exclusively due to experimental research, is the discovery made by the late Franklin Hooper and corroborated and explained by Mr. Horsley and myself of the fact that ether has apparently a peripheral and differential action upon the laryngeal muscles—a discovery which could only have been made by means of the experimental method, and in which clinical experience has not had the least share.

The above examples will suffice to show, I trust, that we are indebted to experimental research for various important advances in our knowledge of the *rôle* and the functions of the larynx, and nothing could be further from me than to minimise their importance. At the same time, however, it must be admitted that several of these advances are as yet incomplete, that in others the very discoveries have given rise not to clearing up of differences, but to their augmentation and intensification, and finally that even in this physiological part, that is, on the natural ground of experimental research, this method has curiously failed in more than one of the most fundamental questions of laryngology and given rise to confusion in others.

Take, for instance, the question of the ultimate origin of the recurrent laryngeal nerve. That surely is a question in which one almost seems to have a right to demand the ultimate solution from experimental research. Yet to-day, at the end of the century, the opinions as to whether the recurrent is derived from the vagus or from the spinal accessory are, in spite of numberless experiments which have been performed in order to decide this point in the course of the last sixty years, just as much divided as ever they were in the Thirties and Forties. Take another example even more striking than the foregoing one, because the technical difficulties which no doubt have had a good deal to do with the differences of opinion about the origin of the recurrent would not seem to be present in it, namely, the question as to whether that nerve also contains centripetal fibres. Here again we find the greatest diversity of opinions amongst experimentators, and even the latest investigator in this field, Rethi, only claims to have elucidated a part of the contradictions in the statement of his predecessors by his own researches, according to which the recurrent of the dog in a part of its course contains centripetal fibres added to it by the communicant branch from the superior laryngeal nerve, whilst in the greater part of its course it is purely motor. A very important fact in connection with this question, and already stated by previous observers, is again corroborated by Rethi, namely, that the conditions of the recurrent are different in dogs and in rabbits, inasmuch as in the latter species centripetal fibres exist throughout the entire length of the recurrent laryngeal nerve. Thus here we have a question in which the sceptical clinicist would certainly be entitled to ask on what authority he was expected to accept conclusions drawn from animals as to the corresponding conditions in man, whilst the conditions in various species of animals themselves varied with regard to the very kernel of the question.

It must be admitted then, I think, that even on its own natural ground experimental research cannot claim to be an infallible guide in laryngology, much as we have reason to be grateful to it for most important help and even direct guidance in a few more specially suitable instances.

Pathologically matters are even less satisfactory. Ingenious as the two attempts hitherto made to imitate experimentally pathological processes undoubtedly have been, they have produced, I am afraid, more confusion than shed real light upon the nature of the affections they were intended to elucidate.

Professor Krause, as mentioned before, attempted to imitate the pressure of a tumour on the motor nerves of the larynx by fixing a piece of cork to the previously isolated recurrent laryngeal nerve which was then replaced *in situ*. He obtained some transitory phenomena which certainly had a superficial likeness to what is seen in the human subject when a tumour is pressing upon the recurrent nerve, and hence con-

cluded that the experimental and pathological processes were identical in nature, and that the latter must be looked upon as an irritative phenomenon, namely, a primary contracture of all the muscles supplied by the recurrent with preponderance of the adductors. The fallacy of this conclusion I have tried to show consisted in the disregard of the fact that the slow and gradual destruction of a nerve cannot be identified with the sudden and intense irritation produced by Krause's experimental method, and I think that my objection is now generally admitted to have been justified. The subject is much too large and complex to be discussed here at full length, nor is this necessary, as I think that all the adherents of Krause's interpretation, including himself, have now given up his original explanation. In our present discussion, however, it is necessary to remind you that this attempt at explaining the nature of an almost always chronic pathological process in man by an experiment producing acute symptoms in animals for years split up the laryngological world into two hostile camps.

The second endeavour of a similar nature has not, I think, been more fortunate. Dr. Klemperer injected, as stated before, pathogenic micro-organisms into the laryngeal areas of the cortex of animals, and concluded from the fact that no demonstrable respiratory or phonatory symptoms followed this ingenious experiment—although the *post-mortem* examination showed that the laryngeal areas in question had been in their entirety implicated in the destructive lesions produced by the inoculation—that the so-called motor laryngeal centres did not possess any pathological significance whatever.

To this I have objected, first, that it was almost inconceivable that no pathological equivalent should exist for the powerful influence exercised by electric stimulation of these areas upon the movements of the vocal cords, an influence admitted by Klemperer himself; secondly, that one of his own experiments plainly seemed to point in the direction of my objection; thirdly, that it seemed hardly admissible to draw conclusions from the negative results of experiments in animals as to the higher psychical functions in man, several of the laryngeal affections which Mr. Horsley and I had suggested to depend upon cortical disturbances belonging to the psychical domain. No refutation of this objection has so far been forthcoming, and the matter, to say the least, is still entirely *sub judice*.

The foregoing illustrations, which do not at all claim to give a complete summary of the question, suffice, I trust, at any rate to show that experimental research, no less than clinical experience in laryngology, has to register failures as well as successes, and can certainly not be regarded as infallible. Nor are the reasons of its failures far to seek. Already in the short descriptions of the experiments hitherto mentioned some of these causes have been alluded to. In the question of the origin of the recurrent laryngeal nerve it is probably the technical difficulty of the experiment; in the question of the composition of the same nerve, possibly anatomical differences in various species of animals; in the imitation of the pressure exercised by tumours upon the nerve, the violence and suddenness of the experimental interference; in the question of the influence of the cortex upon the larynx, the grave doubt whether one can directly conclude from experiments on animals as to psychical functions in man, which have caused either the failure or the uncertainty of the results of the experiment. But whilst the sources of error so far mentioned are more or less peculiar and limited to the individual experiment in which they were observed, there is quite a host of others more or less common to experiments on animals undertaken for the solution of laryngological problems.

As far back as 1888, Mr. Horsley and myself have from personal experience collected the following series of fallacies surrounding such investigations:[1]

1. That there are important generic differences in the conditions of the laryngeal innervation of various species of animals, the abductor apparatus in cats being decidedly more developed, both centrally and peripherally, in those animals than in monkeys and rabbits.

2. That apart from generic differences there are not rarely individual peculiarities in the same class of animals.

3. That age also seems to play an important *rôle* in determining the proportion of strength of the two antagonistic movements of adduction and abduction of the vocal cords, the latter almost always prevailing in puppies, that is, animals from 2 to 3 months old.

4. That prolongation of an experiment frequently introduces complications by reason of damage to the nerve exposed.

5. That frequently it is very difficult to classify the position of the vocal cord on electric stimulation of the recurrent as one of abduction or adduction.

6. That unless great care be taken, a spread of current from the stimulated nerve to neighbouring centripetal nerves of the neck could easily produce misleading results.

7. That the strength of the current, according to Donaldson's investigations, plays a very important element in determining the results of electric stimulation, and

8. That the depth of the narcosis influences in an absolutely decisive fashion the results of electric stimulation.

To these sources of error I would add:

9. The mode of fixation of the animal, inasmuch as violent pulling forward of the tongue and of the epiglottis exercises, as I have repeatedly convinced myself, very considerable influence upon the aspect and the freedom of the movements of the whole larynx.

10. The obscuration of the purely neuropathic effects of section of the recurrent laryngeal nerves by increased negative pulmonary pressure leading to sucking together of the vocal cords, if both recurrents are practically simultaneously cut without tracheotomy having been performed in animals with small larynges.

Needless to say this list does not claim to have exhausted the number of possible fallacies, many others having already been mentioned by older observers; but even if there were no others, it would be a truly formidable one, inasmuch as one and each of these fallacies suffices to entirely spoil the result and reliability of an otherwise carefully conducted experiment, whilst unfortunately but too often several of them occur together at one and the same experiment.

And this brings me to the practical lesson to be learnt I think from such a survey as I have endeavoured to lay before you. I am a steadfast adherent and admirer of experimental research, to which personally I am indebted for not a little of whatever success I may have had in my own scientific career. At the same time prolonged personal experience, in which I have enjoyed the inestimable advantage of the co-operation of one of the first living experimentators, has convinced me that experimental research, in order to prove a really valuable ally, requires constant exercise of one's own judgment, and is all the better for criticism supplied by one's clinical experience. No hard and fast rule can, I think, be laid down as to the exact proportion of the value of each of these methods in laryngology: this will and ought to vary in accordance with the individual question which is to be elucidated. I believe, however, that there are four general principles which ought always to be remembered when experimental research is employed for the solution of laryngological problems, namely:

1. What is the question to be solved?

2. What is the method of the experiment undertaken for its solution?

3. What are its possible or probable sources of error in the individual case?

4. Who is the experimentator?

The necessity of such a scrutiny before implicitly adopting the teaching of experimental research, more particularly when the latter presumes to decide pathological questions in man, seems to be obvious. It is self-evident, in the first place, that not all questions in which the help of experimental research is invoked are equivalent and equally suitable for experimental investigation. Thus, to give but one example, there is surely a great difference between investigating the distribution of a certain nerve to a group of muscles and between concluding from the negative results of an experiment performed on the cortex of animals which have no articulate speech, that these areas in man possess no pathological influence whatever over the function of articulation. Again, with regard to the second point there is surely an enormous difference between merely applying an electric current to the peripheral end of a divided motor nerve and observing which muscles contract, and between attempting to imitate the slowly and insidiously increasing pressure of a

new growth upon a nerve by suddenly attaching a hard foreign body to that nerve, and thereby producing an acute and violent irritation. With regard to the third point, it will often be difficult, I admit, for a reader not familiar from personal experience with the methods of experimental research to detect fallacies in the experiments submitted to his judgment, but I trust that the list of the sources of error given above will assist him in that task. Knowing, for instance, that ether has a differential effect upon the antagonistic muscles of the larynx he will be enabled to judge for himself whether it is permissible to simply identify the quiescent position of the vocal cords of deeply-etherised animals with the position of ordinary respiration in man. And, finally, he must also take into consideration, particularly when comparing absolutely irreconcilable statements concerning the effects of one and the same experiment, the qualifications, which the various experimentators bring to their task. This point is a very delicate one, but it is of such importance in the question under discussion that it cannot be altogether shunted. The combination of qualities required to make a first-rate experimentator is a very rare one. He must be equipped with a complete knowledge of the anatomy of the animal experimented on, with an absolute mastery of surgical handicraft, and with an inventive capacity of no mean order, to appropriately arrange and judiciously vary the conditions of his experiments; he must thoroughly know the literature of his subject, and the sources of error encountered by his predecessors, in order to avoid their repetition, and finally, and perhaps above all, he must approach his task with an absolutely unbiassed mind. I frankly confess that I always entertain some suspicion when I read that some experimentator has obtained the "desired" result, or when I hear another, before coming to the description of his methods and of the results he obtained thereby, asking the question whether we should not "expect" to obtain such-and-such results. Not of course that I doubt the good faith of such observers—far be that from me; but knowing that the wish is often father to the thought, I cannot help suspecting that the interpretation of the phenomena may have been sometimes perfectly unconsciously construed in accordance with such an observer's preconceived ideas. If, on the other hand, the safeguards here indicated be strictly observed, there can be no doubt I think that experimental research is one of the most important and the most powerful allies of clinical investigation; but in order to be a really reliable ally there seems to me equally little doubt that it must be kept under control. Its relative importance ought always to depend upon the particular question under consideration. No doubt in a few such questions experimental research will be decisive; in others, and more frequently so, clinical experience. On the whole, however, I venture to believe that the opinion on the mutual relationship and relative value of the two methods, which I expressed in the *Virchow Festschrift* in 1890 still so much fits the question that I may be allowed to bring my remarks to a close by quoting the following conclusion I then arrived at:

"Many years' clinical and experimental investigation leaves no doubt in my mind that in these questions experiment cannot lay down the law to clinical observation nor clinical observation to experiment. I feel equally certain there is no incompatibility between them, that the one completes the other, and that whenever a contradiction seems to arise the conflict is only apparent. With sufficient patience and care it can always be traced to defective clinical or pathological anatomical observation, to faults in the experimental method, or to an incorrect way of stating the problem."

Note.

1 On an Apparently Peripheral and Differential Action of Ether upon the Laryngeal Muscles, British Medical Journal, 1886.

II. RHINOLOGY.

By Greville MacDonald, M.D.,

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For a discussion of the sort which we have before us I cannot help feeling that no region in the body could afford us better grounds for statements of the two sides of the proposition; and especially for this reason, that long before any experimental investigation had been made concerning the functions of the nose, it was generally admitted—on theoretical grounds, perhaps, rather than from actual observation—that the function of the Schneiderian membrane was to warm, moisten, and filter the inspired current of air.

It is only within the last few years that the nose has been studied, even clinically, and I suspect the immediate consequence of inquiry into the etiology and pathology of nose disease, and more especially into the bearing of the latter upon affections of the throat, immediately indicated the desirability, if not the necessity, of some more accurate information as to precise physiology. We had observed how frequently chronic pharyngitis and laryngitis were associated with nasal stenosis, and had suspected that this was primarily due to the fact that these regions were compelled, from the enforced mouth breathing, to warm and moisten the inspired air, although all unfitted for such duties, and to capture irritant particles from which they should have been protected. We had, moreover, observed how, in dry conditions of the nasal mucous membrane, we often found a tendency to that partial inspissation of the laryngeal and tracheal secretion which is one of the most troublesome conditions which we are called upon to treat.

So far our surmises were perfectly correct; but until accurate experiment had been made we had not the faintest conception of the vast importance which we are now compelled to ascribe to the nasal function. Physiological text-books, for instance, still instruct the unsuspicious student as to the enormous quantity of aqueous vapour exhaled by the lungs; but we now know that the inspired current of air, even when artificially dried beforehand, is entirely saturated with moisture before reaching the pharynx. Physiologists also tell us of the difference in temperature in the inspired and expired air, generally without being aware that almost the whole of that heat, not forgetting the enormous amount rendered latent by the vapour absorbed, is yielded by the nasal mucosa.

It is altogether unnecessary to enlarge upon these points before a meeting composed of such distinguished gentlemen as I have the honour to meet on this occasion. We are all familiar with the experiments of Aschenbrandt, Keyser, and Bloch. These are familiar to us all. To quote precisely from my own investigations, it was found that at −7° C. the temperature was raised to 28.8° C.; at 1.7° C. to 35° C.; at 12° C. to 35.6° C.; and at 45° C. it was reduced to 33.6° C.; and that, as far as the humidity of the air is concerned, in every instance, although experimenting with air artificially and absolutely dried, it was shown that, whatever the external temperature, in each case the saturation with aqueous vapour was complete. It was concluded that the amount of moisture taken up by the inspired air varied *(a)* with the rapidity of the inspiratory act, *(b)* with the degree of patency of the nasal passages, and *(c)*, let us note most emphatically, with the degree of turgescence of the erectile tissue. I lay stress upon this last point, and consider myself justified in referring to my own small contributions to physiology, partly because of the importance of the fact in relation to pathological conditions of the erectile tissue, and still more by reason of the reckless manner in which the inferior turbinated bodies are condemned by certain rhinologists to the most ruthless eradication.

If we will only remember that when the erectile tissue is collapsed less than one-half the usual amount of aqueous vapour is given off from the nose, it will surely appear that by the operation of turbinectomy the nose is being deprived of one of its most important structures from the functional point of view.

So far, I maintain, that clinical observation actually forestalled experimental discoveries, the special merit of the laboratory investigations lying in their confirmation of conclusions drawn from the study of morbid conditions. Of course, experimental observation has gone further, has shown for instance, how a mucous membrane over which air passes shares to a considerable extent in the lung functions themselves; but with this clinical observation has little interest.

It has further been shown by St Clair Thomson and others to what an extraordinary degree the filtering functions of the nose are carried, facts which coincide entirely with Lister's

bservations as to the destructive action of mucous membranes on micro-organisms, as well as with the clinical fact f the remarkable tolerance the nose exhibits of abuse on the art of septic instruments and atmospheres teeming with biogical venom.

We are next inevitably compelled to pass in review many urious physiological phenomena observed as the consequence f, or at any rate in company with, certain forms of nasal disase. I refer, of course, to the so-called reflexes. These reflex henomena are scarcely susceptible of physiological demontration or verification, and hence the study of their physilogy from a clinical standpoint becomes doubly interesting. o far as I am aware, Shurley of Detroit is the only investiator who has sought to establish in the laboratory the relaion subsisting between nasal irritation and bronchial spasm; nd, perhaps, his failure to do so is sufficient to compel our sking the question whether the association of asthma with ertain morbid conditions of the nasal mucosa can be justly ttributed to reflex action?

My own clinical experience steadily inclines me more urely to the conclusion that the asthma must either be rearded as due to direct attack of hyperæsthetic bronchial ubes by irritant particles gaining access to the lower respiraory passages as a consequence of nasal obstruction, or that both ose and bronchial tubes are equally concerned in an inflamatory process involving the whole of the respiratory tract. o put the point more concretely, my experience is that hyperophied inferior turbinated bodies, spurs on the septum, and denoids induce asthma in those especially predisposed by xposing the bronchial tubes to direct irritation; whereas the requent association of nasal polypus with chronic bronchitis nd asthma must be considered, judging from the frequent ailure to remedy materially the bronchial symptoms by reoval of the polypi, as due to an inflammatory condition ommon to nose and bronchial tubes. Probably somewhat imilar arguments explain some other phenomena, such as aryngismus stridulus, disappearing immediately on the reoval of adenoids; while more remote nervous phenomena uch as chorea, epilepsy, etc., can probably be accounted for y the often serious interference with easy respiration. Such onsiderations should convince us of the risks we run in seekng too zealously for physiological facts as the result of ur clinical investigations. Physiological experiment may elp us much in our clinical work; but clinical observaon will help us even more, I fancy, in our practical ork if we do not allow it to misguide us into physiological onclusions.

III. OTOLOGY.

By W. Milligan, M.D.,

onorary Surgeon Manchester Ear Hospital; Lecturer upon Diseases of the Ear, Owens College, Manchester.

we study the evolution of otology from its earliest days, e must all, I take it, be struck by the marked advances hich have been made in this department of the healing art, pecially during recent years. Not so very long ago the actice of diseases of the ear and the practice of charlatanism ere almost synonymous terms, but, thanks to the painsking researches of many workers in various parts of the abitable globe, otology now occupies an important and a ominent place as a branch of the great science and art of edicine. The reason of this rapid advance is, after all, not ery far to seek, and it is my duty to-day to try to show how ur knowledge of diseases of the ear has been gradually volved as the result of careful experimental research and refully collated clinical experience.

No subject has, I think, derived more benefit from research ork than has otology, and the practical deductions which ve been arrived at have proved, and are proving, of lasting nefit to the human race. As a striking, and withal a simple, ustration of what I have just said, let me mention the ffects of experimental research work upon the etiology and eatment of auditory furunculosis. Many years ago Löwenrg[1] showed that the exciting factor in the production of a runcle was the presence of the staphylococcus pyogenes bus; that its penetration under the epidermal cells was a cessary part of this phenomenon, and that when once so ated it was able to set up such an amount of irritation as lead to the production of a small focus of suppuration. He further showed that furunculosis could be experimentally produced in animals by introducing staphylococci under the epidermal cells, and as a deduction he came to the conclusion that the affection was in reality of microbic origin, and that it was auto-infective. What has been the result so far as the treatment of to-day is concerned?

Do we not attack the disease by means of antiseptic agencies? Do we not warn the patient of the possibility of one furuncle following in the train of another, and do we not at as early a date as possible lay bare the infected area so as to allow our remedies the chance of acting locally upon the nest of germs, if I may be allowed the expression?

The relation of germ life to diseases of the ear, especially to diseases of the middle ear, is a study of the utmost practical importance and of fascinating interest. Attempts have been made to found a classification of suppurative disease of the middle ear according to the predominating organism or organisms present in the discharge, and although perhaps the time has not yet arrived when this can be done with any degree of accuracy, yet bacteriological researches have afforded much information which is of the greatest practical and clinical importance.

Although organisms are found in great numbers and in considerable varieties in cases of suppurative disease of the middle ear, it must also be noted that they are at times found in cases of exudation into the tympanum without any marked reactionary symptoms. That they are the actual exciting factors in the production of middle-ear suppuration cannot at the present time be definitely admitted. Hence any bacteriological classification would be premature.

The cavity of the middle ear affords an almost perfect incubating chamber for germ life, shut off, as it is, from the access of light, kept at an almost uniform temperature and in direct relation by way of the Eustachian tube with the cavity of the naso-pharynx, whose masses of lymphoid tissue afford an excellent nidus for the harbouring of germs derived from inspired air. No doubt it is possible for germs to reach the cavity of the middle ear by way of the circulatory system, but clinical facts and clinical experience go to show that the Eustachian tube and the external meatus are the more usual portals through which they enter.

The germs with which we have most to do in suppurative diseases of the middle ear are the staphylococcus albus and aureus, the streptococcus pyogenes, the pneumococcus of Fraenkel, and the pneumobacillus of Friedlaender.

Any or all of these germs may be present, and are capable of giving rise to the most varied and serious complications. In cases of acute otitis media pure cultures of the diplococcus pneumoniæ are rarely to be obtained. In chronic cases one organism may succeed another, a suitable soil having been prepared for their development, and such a succession is believed by many to be the main cause of the chronicity of certain cases.

The organism, perhaps, to be specially dreaded is the streptococcus, for it has been proved by careful bacteriological investigation that it is of all the above-named germs the one most frequently met with in cases of septic thrombosis, intracranial abscesses, and septic affections of the pia arachnoid.

Since the days of the discovery of those pathogenic organisms and their relation to the intracranial complications of middle-ear disease, the study and the practice of aural surgery has received an impetus which some years ago was undreamt of. No longer can the scientific physician of to-day ignore the importance of middle-ear suppuration. Its existence and its consequences place it upon a platform of importance which cannot now be denied it.

While germ life plays an all-important *rôle* in the production of acute suppurative attacks, clinical experience has long ago proved that the risks of secondary pathogenic infections are much more to be dreaded in cases which have passed from an acute to a chronic condition—a condition in which the muco-periosteum becomes eroded, the venous and lymphatic radicals become opened up, and a pathway thus afforded for the rapid dissemination to more deeply-seated structures of these deadly foes.

Lermoyez[2] regards the invasion of staphylococci from without as the invariable cause of chronic suppurative middle-ear

disease. Whether this be so or not, there is much to be said for Pes and Gradenigo's[3] aseptic method of treatment, which consists of sterilisation of the auricle and meatus, the introduction of iodoform gauze into the auditory canal, and the application of a sterilised pad over the external ear, in other words, an attempt to prevent the entrance into the middle ear of germ life from without. This method has the additional advantage of keeping the parts fairly dry. The abstraction of fluid is undoubtedly prejudicial to the activity of germ life.

In a recent and valuable paper by Dr. R. H. Woods,[4] a large number of elaborate clinical observations are brought together to show that the effused fluid in cases of acute middle-ear catarrh should not be regarded as purulent *ab initio*. So long as the membrane remains intact so long are the bacteria restrained from active multiplication. The moment, however, that either the membrane ruptures or is punctured that moment contamination from without is courted, and an enormous impetus given to the rapid multiplication of the various pathogenic organisms existing in the middle ear.

Now, what does all this bacteriological and clinical work teach us? Does it not point to the conclusion that so far as is possible an attempt should be made by means of local depletion, mild and sedative applications and suitable hygienic surroundings, to favour the absorption of the effused products of inflammation within the tympanic cavity before rupture of the membrane and consequent aërial contamination have taken place; also that if the membrane ruptures or has to be incised, the strictest antiseptic precautions should be undertaken, and a vigorous attempt made to arrest the disease before secondary ulcerative changes have taken place in the mucosa and underlying bone, and before these pathogenic germs have a chance of disseminating their baneful influences?

Where incision is necessary in cases of acute or subacute otitis media, I cannot too strongly urge the importance of free incision, for it is by securing efficient drainage that we are most likely to prevent extension to the mastoid cells—an ideal situation for an almost limitless manufactory of germ life—and to the interior of the cranium.

The importance of the streptococcus as an active agent in the production of these many and varied intracranial complications naturally makes us ask ourselves the question, Has research work, by the discovery of an antistreptococcic serum given us an agent of real practical value, capable of arresting or retarding the development of this deadly organism?

At the outset we are met by the question, Is there one streptococcus or are there several which are pathogenic to man? and the corollary, Will an antistreptococcic serum protect against one streptococcus or against all?

In 1892 Behring[5] reported that time and patient research would doubtless procure a serum which would antagonise human streptococcal infections. Shortly afterwards Marmorek[6] published a series of observations detailing the immunising effects of a serum he had prepared. Other observers, however, notably Petruschky,[7] failed to obtain results which at all tallied with Marmorek's statements, while Aronson[8] found the serum to be practically worthless. Schenk,[9] however, by careful and laborious work, obtained a serum capable of protecting animals against the streptococcus used in the production of the serum.

The question still remains, however, Has this serum the property of protecting against streptococci pathogenic to man? The weight of experimental evidence conclusively goes to show that the antistreptococcic serum is incapable of doing so.

To turn for a moment to the practical side of the question, What are the results when the serum has been used as a remedial agent? Does it or does it not arrest or modify acute streptococcal affections in man?

Cases have been recorded by numerous observers—Low,[10] Pringle,[11] Raw,[12] where good results have been claimed from its employment. Other observers, however, report an exactly opposite state of affairs, having found the serum of practically no use whatever.

My own experience gleaned, certainly, from a comparatively small number of cases where I have used it is that the serum exerts very slight, if any, influence upon the course of acute human streptococcal infections. It is true that an antistreptococcic serum has been produced, but not a streptococcic antitoxin, for although the animals used in the production of the serum have been immunised against the streptococcus germ they have not been immunised against the toxin produced by the streptococcus. I fully believe, however, that a time will come when the labours of the many painstaking scientists who are working at this subject will be crowned with success, and that they will put into the hands of the profession (1) the knowledge as to whether there is one or whether there are many streptococci pathogenic to man, and (2) a serum or a series of serums which will possess an action antagonistic to the development of the one pathogenic streptococcus or to the many, as the case may be.

Tuberculous affections of the middle ear and its adnexa form an important and a not uncommon class of ear disease, and here again we have to thank the results of experimental work for much which is of use to us both in the way of diagnosis and of treatment. Thanks to Koch's brilliant discovery we are now able to determine, from the presence or absence of the tubercle bacillus, whether a given case is or is not tuberculous. Workers in this field will, I think, agree with me when I say that the detection of bacilli in discharge from the ear is a matter of great difficulty, and is frequently not possible. Nor is the difficulty much lessened when we come to make cover-glass preparations of small tufts of granulation tissue removed from the deeper areas of disease. But in properly conducted inoculation experiments we have a test which may, I think, be regarded as infallible. If a small portion of diseased bone from the advancing fringe of disease be taken and introduced with proper precautions under the subcutaneous tissues of a guinea-pig's leg, and if a few weeks' time be allowed, not only will the neighbouring glands be found to be the seat of tuberculosis, but bacilli can be found in sections taken from these glands.[13] I regard this experimental proof as a matter of the first importance, because not only has the treatment to be somewhat different to that followed in a non-tuberculous case, but the prognosis is naturally of much greater gravity. It is true that in the clinical history of such cases we have certain facts which lend colour to the idea that the case is of a tuberculous nature—namely, the pale, sodden appearance of the membrane, its perforation without the ordinary symptoms of pain, etc., the early occurrence of facial paralysis or paresis, and the early appearance of enlarged cervical glands. At the same time, I hold that for scientific accuracy we are called upon to demonstrate the actual tuberculous nature of the affection just as much as the physician in a suspected case of pulmonary tuberculosis is called upon to demonstrate the presence of the bacillus in the expectoration.

I would desire to lay special stress upon this because experience has taught me that cases of tuberculous disease of the middle ear are by no means uncommon, and that in such cases we cannot be too guarded in our prognosis, nor too thorough in our methods of treatment. What is the exact etiology of these tuberculous cases, and how does the bacillus find its way to this part of the body? Is it by aërial conduction by way of the Eustachian tube, or is it conveyed by vascular or lymphatic channels?

The importance of masses of naso-pharyngeal adenoid vegetations as an etiological factor in the production of middle-ear disease is too well known to require any comment, but is it possible that these masses are more frequently tuberculous than is at present generally supposed, and is it also possible that these tuberculous vegetations may be the direct means of infecting the middle ear? Of late a considerable amount of time and labour has been spent in investigating the tuberculous or non-tuberculous nature of these adenoid masses. In 1894 Lermoyez[14] published the history of two cases of adenoid hypertrophy, consisting almost entirely of tuberculous tissue and tubercle bacilli. In 1895 Dieulafoy published the results of an investigation upon latent tuberculosis of the three tonsils. His method of research was to inoculate guinea-pigs with portions of adenoid tissue, and in a series of 35 cases he found that 7, or 20 per cent., of the guinea-pigs became tuberculous. In 1896 Brindel[15] found out of 64 cases, 8, or 12.5 per cent., showing microscopic evidence of latent tubercle. G. Gottstein[17] found also in 33 pharyngeal tonsils, 4, or 12 per cent., showing evidence of a tuberculous origin.

Pluder and Fischer[19] examined 32 cases of adenoid hyp

trophy, and found microscopic evidence of tubercle in 5, or 15.6 per cent.

In a recent and very comprehensive paper upon naso-pharyngeal adenoids by our President, Dr. McBride, and our Secretary, Dr. Logan Turner, you state as the result of your experience that 3 per cent. of the adenoid masses examined were tuberculous, but say at the same time that this percentage and the other percentages which I have mentioned are probably all too low, and that with a more complete and more thorough examination the percentage might be found to be considerably higher. The tuberculous nodules are more or less isolated; they may occur in outlying lobules, and they may not extend though the whole depth of the tissue, hence a very complete series of serial-sections is required in each and every case before the existence of tubercle can be definitely excluded. In a series of experiments which I have myself carried out—the inoculation of guinea-pigs with portions of adenoid masses—I have found 16.4 per cent. of the vegetations tuberculous. It appears to me that in the hypertrophied adenoid tissue of the naso-pharynx we have an excellent nidus for bacilli, and that very probably in the future research will show that many cases of tuberculous middle-ear disease owe their origin to tuberculous disease of adenoid vegetations.

On the other hand, however, negative results have been obtained by other observers. Goure[20] examined 201 cases microscopically, bacteriologically, and by inoculation, but could not find a single giant cell or a single bacillus, while all his inoculation experiments proved negative.

Walsham[21] also, in a series of microscopic examinations of portions of adenoid vegetations removed from living subjects, was unable to find any evidence of tuberculosis.

The preceding remarks will have shown, to some extent at least, the interdependence between research work and our present knowledge of diseases of the middle ear. While much which is of the greatest practical and clinical value has been accomplished, much still remains to be done. How unsatisfactory our knowledge and our methods of treatment of certain forms of dry middle-ear catarrh are is too well appreciated by all aural surgeons to require any comment. Is it not possible, however, that careful research, experimental or otherwise, and the results of clinical experience, may some day in the near future reveal what are the actual factors which underly the production of this form of disease, both in its hypertrophic, its atrophic, and its so-called sclerotic varieties? Is sclerosis really an affection of the mucosa at all, or is it, as Politzer[22] has affirmed, a primary affection of the bony capsule of the labyrinth?

Again, do we take sufficient cognisance of the frequent association of deaf-mutism with naso-pharyngeal adenoid vegetations? Its frequency surely suggests something more than a casual relationship. During an examination of a large number of deaf-mutes Frankenberger[23] found adenoids present in 59.49 per cent., Lemcke[24] in 58 per cent., Wroblewski[25] in 57 per cent., and Aldrich in 73 per cent.

The great and important advances which have been made in the treatment of suppurative affections in and around the middle ear and its adnexa are due to two main causes, (1) the knowledge of the part played by micro-organisms in the production of these affections and (2) the knowledge of the value of strict antisepsis in subsequent treatment. In the department of aural surgery, as in fact in every other department of surgery, both general and special, we have to acknowledge with an everlasting debt of gratitude our obligations to the brilliant research work carried on within these walls by one of the most distinguished of the many distinguished alumni of this ancient and renowned University, the present Lord Lister. The principles which he laid down, the combined result of patient research and laborious clinical investigation, have revolutionised the science and art of surgery, and in our department have transformed the mastoid operation from a *noli me tangere* to an everyday proceeding, and have enabled us to follow up the paths along which septic organisms have travelled from foci of suppuration within and around the middle ear to the interior of the cranium with a degree of safety which a few years ago was undreamt of.

Our knowledge of diseases of the internal ear has been somewhat retarded from two causes: (1) The paucity of material for *post-mortem* examination and (2) the great practical difficulty of examining such material even when it is in our possession. This dearth of pathological material has seriously interfered with an accurate appreciation of the clinical features of many affections of the internal ear. Yet at the same time experimental research has come to the rescue and has helped to fill in the gap.

The functions of the various portions of the internal ear, the semicircular canals and the cochlea have been largely determined from experimental work. Many years ago Goltz,[26] Breuer,[27] and Mach[28] decided that the labyrinth contained a special anatomical apparatus which by reflex action served to maintain the equilibrium of the body, during motion (the canals) the dynamic organs of sense and during rest (the utricle and sacculus) the static organs of sense.

Flourens,[29] in a series of experiments upon pigeons and rabbits, found after division of the semicircular canals such marked motor disturbances as to convince him that these canals were the central organs for co-ordinated movements. In 1875 Crum Brown advanced the kinetic theory in which he assumes that the canals are paired organs, and that each pair has a function to perform in connection with rotation or movements of the head in particular directions. On the other hand, Böttcher and Baginsky[31] affirm that all motor disturbances which ensue as the result of injury to the semicircular canals proceed from a simultaneous injury to the cerebellum, and this view is supported by Steiner's[30] experiments upon the dog-fish, where, after removal of all the semicircular canals, no motor disturbances were observed, and also by Politzer's[32] observations in cases of ossification of the canals, when again no motor disturbances were noted.

Ménière[33] was the first to adduce clinical proof that disturbances of equilibrium might be due to disease of the labyrinth, and we are all familiar with what has been designated Ménière's disease, in which sudden loss of hearing—partial or complete—is associated with vertigo, inco-ordinate movements, sickness, and tinnitus, while clinical facts and *post-mortem* observations have taught us that affections of the utricle and sacculus are associated with static disturbances, affections of the ampullary system with dynamic disturbances.

Our ideas upon the functions of the cochlea are more or less hypothetical. Experimentally it has been shown by Corradi[34] that complete deafness follows destruction of the cochlea in dogs. Helmholtz's theory that only certain cords of the membrana basilaris vibrate for certain tones is supported by Baginsky's[35] experiments upon dogs. By destroying the lower coils of the cochlea he produced deafness for high tones and deafness for low tones by destroying the upper coils.

Stepanow's[36] experiments upon animals are not in harmony with those just mentioned. After destruction of the upper portions of the cochlea he found no interference with audition; and again, in a case of a patient who suffered from chronic suppurative otitis media with subsequent exfoliation of the upper turn and a half of the left cochlea, no defect in hearing for either high or low tones could be detected. These observations have been severely criticised by Moos and Steinbrügge.

Facts gleaned from numerous pathological observations support experimental research in assigning to the left superior temporo-sphenoidal convolution the important *rôle* of being the cortical centre for audition, whilst clinical observations point to the existence of a definite connection between the cortical centre of the one side and the auditory organ of the other. Ferrier,[37] whose experimental work upon the nervous system is so well known, found in two cases in which the temporal lobe was destroyed upon one side only impairment or total abolition of reaction to sound when the ear upon the same side was plugged, and in two cases where the destruction was bilateral no sign of hearing could be elicited, although the animals in all other respects were fully on the alert. As a converse to this, he found that when every part of the temporo-sphenoidal lobe was destroyed except the superior lobe, no sign of any impairment in hearing could be detected. Clinical evidence also supports these facts, derived as they have been from experimental research, as is shown by the well-known case recorded by Shaw,[38] where a female, aged 34, after an apoplectic seizure, lost the power of speech and became deaf, and who about a year afterwards died of pneumonia. Upon *post-mortem* examination, complete atrophy of the angular gyrus and superior temporo-sphenoidal convo-

lutions of both sides was found. Similar cases have also been described by Wernicke and Friedlander.[39] Balzer,[40] Amidon,[41] Alt,[42] etc.

Disease of this convolution upon one side interferes with the functional activity of the opposite auditory nerve, but not permanently, as perfect compensation is possible apparently by means of the corresponding centre of the opposite side. From various observations Gowers[43] infers that ordinarily only the opposite cortical centre is functionally in active operation, but that under certain exceptional circumstances the cortical centre of the same side takes on a compensatory action and does double duty. If the disease, however, be left-sided persistent inability to understand the meaning of words usually remains, although they are still heard as sounds. Numerous instances of this condition of sensory aphasia have been noted in cases of temporo-sphenoidal abscess secondary to suppurative otitis media, tumours, etc. Localisation is also aided by the coexistence of agraphia, alexia, and paraphasia.

On the other hand, it is only fair to state that the cortical centre for audition has been referred to other areas in the brain. Thus Ling in a case of bilateral suppurative otitis media in which the auditory nerves were greatly atrophied, found a simultaneous and marked atrophy of the cuneus and the adjoining occipital convolutions of both sides and of the precuneus of the right side, and locates the centre accordingly.

Strumpel also, on the strength of a *post-mortem* examination, places the centre in the parietal lobe.

The actual paths of communication between the cortical centres and the roots of the auditory nerves are imperfectly understood. According to Gowers, the path is by way of the posterior part of the internal capsule and through the most superfical part of the tegmentum of the crus. That the fibres decussate in their course to the cerebrum has been established both by anatomical and by clinical research.

The many serious and dangerous intracranial complications which may ensue as the result of old-standing suppurative middle-ear disease necessitate an accurate knowledge on the part of the clinician of all that has been gleaned from experimental work upon cerebral localisation. In this field many able scientists—Ferrier, Horsley, Goltz, Gowers, Hughlings Jackson, Bennett, and others—have been at work, and by mapping out topographically the functions of various portions of the cortex, have put into our hands a key by means of which we can read the clinical course of a given case with a very fair degree of accuracy. In this connection I need only mention the occurrence of sensory aphasia as a symptom in cases in which a pathological lesion is situated in the superior temporo-sphenoidal convolution, of motor aphasia when the lesion is in the third left frontal convolution, or when pressure, say from an adjoining temporo-sphenoidal abscess, is exerted upon this centre (Kuhn's case[44]) of twitching, paresis, or paralysis of various muscles or groups of muscles when the cortical centre which controls these muscles is interfered with either as the result of an irritative and spreading meningitis, or as the result of the pressure of a gradually increasing focus of suppuration.

Unfortunately, in cases of intracranial abscess definite focal symptoms are frequently wanting, for the reason that those parts in which abscesses are usually found (temporo-sphenoidal lobe, cerebellar lobes, and frontal lobes) do not as a rule give rise to any definite focal symptoms for any form of lesion. Occasionally hemiplegia may be found if the abscess be very large or if it encroaches upon the internal capsule (Ballance,[45] Emmet Holt [46]), etc. In 6 per cent. of the cases tabulated by Körner[47] hemiplegia or hemiparesis existed. Implication of various cranial nerves has valuable diagnostic significance. Thus in temporo-sphenoidal abscess the third nerve is at times involved, in other cases the sixth; again in cerebellar abscesses, optic neuritis, followed by atrophy, is at times observed.

Even if clinical evidence points to the probability of a localised intracranial collection of pus existing, it is frequently exceedingly difficult to say whether it exists in the cerebrum or the cerebellum.

The compilation, however, of the main symptoms of a large number of cases of intracranial lesions secondary to suppurative middle-ear disease has enabled the clinician to associate with a given group of symptoms a definite lesion and sequence of pathological events.

Thus the clinical picture of an uncomplicated case of meningitis, of sinus thrombosis or of intracranial abscess, is fairly well understood. It is when one lesion is complicated or masked by another that we encounter our greatest difficulties in accurate diagnosis. For example, a meningitis may complicate a case of sinus thrombosis, a sinus thrombosis may complicate an intracranial abscess, and so on. From the prognostic point of view, an accurate diagnosis is of the utmost importance, as will be readily appreciated. Should extensive meningitis coexist with thrombosis, the chances of recovery, even were the sinus successfully opened and cleared out, would necessarily be diminished. In like manner, should meningitis coexist with abscess, the most exact localising of the purulent collection and the most brilliant tapping and drainage would almost certainly end in disappointment.

Macewen[48] has pointed out that the symptoms of extra-dural abscess or sigmoid sinus thrombosis always dominate and mask those of brain abscess when they occur together, and that it is not until the condition has been relieved that reliable evidence of the presence of an abscess can be obtained.

The question thus naturally arises, Have we any means at our command of diagnosing the exact nature of cases of mixed intracranial complications? Can we say of one case that it is complicated with meningitis, and of another that it is not? Some years ago Ziemssen and Quincke[49] urged the value of paracentesis of the spinal theca, not only as a therapeutic measure in cases of hydrocephalus, cerebral tumour and spinal meningitis, but also as an aid to the differential diagnosis of certain intracranial lesions and of certain effusions, serous, purulent, tuberculous, etc.

Whatever may be said of the therapeutic value of the procedure, there can be no question as to its diagnostic utility. Normal cerebro-spinal fluid is perfectly clear, colourless, faintly alkaline, of a specific gravity of 1010 or less, free from histological elements, containing either no albumen or only mere traces, but containing a substance—pyrocatechin—which, although not a sugar, is capable of reducing Fehling's solution. Any departure from this normal standard may have considerable diagnostic value. Thus, in cases of cerebral abscess or tumour the quantity of albumen is slightly increased, in meningitis it is markedly so, so much so that more than 1 per cent. of albumen indicates the existence of meningitis. Pus, if found, will naturally indicate the presence of purulent meningitis, whilst the presence of tubercle bacilli would indicate the existence of tuberculous meningitis.

Grunert[50] speaks very highly of the value of lumbar puncture in the diagnosis of the intracranial complications of middle-ear disease, especially as regards the determination of the existence of a lepto-meningitis in connection with purulent otitis media, whilst Körner[51] remarks that in cases of otitic brain abscess in which a complicating lepto-meningitis is suspected absence of polynuclear leucocytes would indicate absence of any inflammatory condition of the lepto-meninges.

Stadelmann[52] in 7 cases of meningitis purulenta found the escaping fluid to be cloudy, and to contain pus and many bacteria (meningococci, streptococci, pneumococci, etc.), whilst the amount of albumen in the fluid was always increased.

The observation is, however, of value only when the nature of the meningitis can be determined by ascertaining the microbe setting it up.

The actual value of lumbar puncture in the diagnosis of brain abscess is doubtful. In one case Stadelmann found the fluid to be under high pressure, in another the fluid was cloudy and purulent, and in a third it was at first purulent and then clear. So far also, by means of lumbar puncture, it is not possible to make a differential diagnosis between brain abscess and sinus thrombosis.

We have then at our command, in addition to various well-known clinical signs and symptoms, a means of diagnosing, with a very fair degree of accuracy, the all-important question as to the existence or non-existence of an accompanying meningitis in these cases of mixed intracranial infections by an accurate chemical, microscopical, and bacteriological examination of the spinal fluid, remembering always that positive results are alone of value.

In these somewhat discursive remarks, I have endeavoured to show how wrapped up our clinical knowledge

is with facts gleaned from experimental research. That much has been done in the past by means of experimental investigation to advance our knowledge of the etiology and treatment of diseases of the ear will, I think, be granted by all students of the subject: that much still remains to be worked out will probably be just as readily admitted.

Our knowledge of the central acoustic tract, although much advanced of late years by the methods of research associated with the names of Golgi, Weigert, and Pal, by examination in the developmental stages as suggested by Bechterew, and by Gudden's method is still far from perfect, as also is our knowledge of the central course of the vestibular nerve.

Although our methods of diagnosing the existence or otherwise of the presence of an intracranial abscess have advanced by leaps and bounds, we have yet to learn a means of exact differential diagnosis between a cerebral and a cerebellar abscess. The question as to the advisability or otherwise of ligation of the jugular vein in sinus thrombosis is still a disputed point and one worthy of serious consideration. Again, the exact *rôle* played by the ossicles in the transmission of sound has naturally an important bearing upon such operative measures as ossiculectomy in cases of suppurative and non-suppurative middle-ear disease. While clinical experience will naturally materially assist in the elucidation of many of these problems, the value of experimental research must not be lost sight of.

Knowledge which is built up upon accurate experimental, clinical, and pathological data is sure and lasting. The brilliant work which has been done in the department of aural surgery during the past few years should stimulate us all to greater achievements in the future, recognising as we must that every fresh fact and every accurate deduction contributes in the long run to our knowledge of how to relieve the pangs of human suffering.

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Discussion.

Dr. Dundas Grant (London) remarked that there was obviously a general unanimity with regard to the opinions uttered by the introducers of the discussion. In point of fact there could be little doubt that the conclusions which had been arrived at were those which they had already arrived at, or would wish to arrive at, whether by personal experience or by the study of the experimental work of Sir Felix Semon and the other collaborators, to whom he was sure the last-named possibility of fallacy did not apply. He would like to recall a remark which, although uttered *ex cathedrâ*, was intended to be an *obiter dictum*. The late Professor Laycock, in discussing the results of some therapeutical investigations, and finding that he could not agree with the results of others obtained by investigations on the lower animals, wound up by saying, "Now, gentlemen, none of my patients is a frog." Though not intended to be pushed to its logical conclusion, this contained a factor of importance to which value had been given by Sir Felix Semon. They had from circumstances been content to improve their own personal knowledge by utilising the work of such investigators as Sir F. Semon and Dr. Milligan, to whom all honour was due for having devoted themselves to such laborious investigations. Dr. Grant then referred to the clinical work of Dr. Ziem, of Dantzig, which had been of so much value in increasing their knowledge of the accessory sinuses of the nose, a work which he considered was truly monumental. This worker had performed some experiments on rabbits no doubt familiar to his hearers, namely, stopping up the nose of young rabbits and observing the deformities following this obstruction, including a want of development and atrophy of the face on the same side. In a case of congenital obstruction of one nostril shown by Mr. Cresswell Baber before the Laryngological Society of London, there was a perceptible want of development of one side of the face, but, unfortunately for the result of the experiment, it was the opposite one. Deductions from experiments had to be checked by clinical observation.

Dr. StClair Thomson (London) said that criticism was necessarily limited, since all must agree with the very philosophic spirit which the readers of these papers had shown. He associated himself with Sir Felix Semon's conclusion—that clinical observation should take the precedence of laboratory results, which should be accepted with the greatest diffidence so long as they did not coincide with clinical facts. He pointed out two examples of deductions drawn from experimental research, one as showing the unwarranted conclusions which were sometimes arrived at, and the other an instance of the true spirit in which laboratory work should be regarded. The first was to be found in the *Transactions of the Association of American Physicians* of their Tenth Congress in 1895. It is there recorded that Dr. Abbot subjected rabbits and guinea-pigs to an atmosphere of sewer gas for several days, and at the end of that time he found that they were apparently none the worse for it, and showed no greater susceptibility to inoculated disease than did the control animals which had been kept in a pure atmosphere. This might very well be so, but what Dr. Thomson objected to was Dr. Abbot's conclusion in which he formulated the opinion that the individual who respired sewer gas was none the worse for it, a conclusion which was contradicted by every-day clinical observation, and which Dr. Abbot's own experiments did not justify. The second example, which contrasted with the above, was to be found in the *Transactions of the Pathological Society of London* in a paper in which Mr. Shattock described how he exposed cultures of the less virulent diphtheria bacilli to sewer gas, and found that their virulence was not augmented by it. But Mr. Shattock was content with stating his results, and judiciously refrained from drawing sweeping clinical deductions. Another example of the deplorable haste with which laboratory work was sometimes accepted was recently shown in the adoption of diphtheria antitoxin in the treatment of ozæna. Simply because an organism, resembling in some respects the Klebs-Loeffler bacillus, had been found in the nose in fœtid atrophic rhinitis, numbers of unfortunate patients had been subjected to large injections of serum, although not a single clinical fact was forthcoming to support the suggestion of any connection between diphtheria and ozæna. Dr. StClair Thomson would like to hear from Dr. Milligan if the animal inoculation experiment was an infallible test for tuberculosis, as he had heard some doubts thrown on it by skilled bacteriologists. With regard to middle-ear suppuration the researches of Lannois of Lyons were interesting and instructive. He had shown that in the large majority of cases the effusion into the middle ear—while the drum was intact—was quite sterile. Suppuration was therefore undoubtedly chiefly due to inoculation from the external meatus, and this laboratory research confirmed clinical observation and was a guide to treatment. Laboratory work was of the greatest importance, but all results must be

taken tentatively until they "squared" with the observations of practice.

Dr. BARR (Glasgow), on rising to continue the discussion, said he could only congratulate the eminent gentlemen who introduced the discussion on the singularly able way in which they had performed their work. He had been very much interested as well as instructed; the effect had been stimulating: one of the great objects of such a discussion. Unfortunately he was not entitled to speak on this subject on the ground of having personally engaged to any extent in experimental research, but he had been conscious of utilising in his practical work the results of others who had distinguished themselves in experimental research. Especially had this been the case in connection with the treatment of the purulent affections of the ear. Ever since hearing Dr. Milligan, three years ago in London, read his paper on inoculation experiments on guinea-pigs with inflammatory products from the middle ear, he had been specially interested in the class of cases referred to by Dr. Milligan, namely, certain forms of purulent ear disease in infants, the tuberculous nature of many of which Dr. Milligan's experiments seemed to have demonstrated. Dr. Barr's subsequent observations had convinced him of the soundness of this conclusion. In connection with this subject, Dr. Barr recalled a conversation with Professor Macewen in which the latter mentioned that while he was considering the advisability of operating for otitic intracranial abscesses many years ago, a case occurred in which he diagnosed temporo-sphenoidal abscess, and proposed to operate, but could not get the sanction of the friends. After death, however, he got permission to operate, and on trephining was able at once to tap the abscess, and to demonstrate the practicability of the operation. This was followed by fruitful results. The papers and discussion they had heard would no doubt tend to give an impetus to this most important department of work.

Mr. CRESSWELL BABER (Brighton) said that the interesting papers they had listened to seemed to show that the main point was to maintain a proper balance between clinical investigation and experimental research. There was one good example of these two factors which came under the notice of the laryngologist, but which had not been referred to, namely, in regard to the functions and diseases of the thyroid gland. When he first made his observations on the minute anatomy of the thyroid gland over twenty years ago, nothing was known of its functions. One could only surmise as to these from the anatomical data. All were acquainted with the later discovery of cachexia strumipriva and myxœdema, and their treatment by thyroid extract; this was an example of the extremely valuable results from combining clinical research with experimental investigation. He asked Dr. Milligan if he had observed any special characteristic in tuberculous adenoid tissue; whether it was soft or hard, or had a tendency to recur after removal, and on the question of enlarged cervical glands in this connection.

Professor URBAN PRITCHARD (London) said he had very little to remark, as the subject under discussion was one in which the introducers had practically all the say. He would like, however, to express the hope that all those present belonged to the political centre of his friend, Sir Felix Semon; that none were either rushing to one extreme or the other. He thought there were not so many people who would not believe in any experiment at all, but that the tendency was rather to believe too much in the conclusions of the experimenter. As so very much depended upon the character and mind of the investigator, he always tried to find out about the kind of man who made an extraordinary statement or had done something extraordinary. If he found that he had a well-balanced mind he was inclined to believe in him. He thought that in the future they would depend more and more upon experiment, but they ought never to lose sight of the immense value of clinical observation. As to the hypothetical experimenter, who believed in nothing but experiment, and who was apt to think of the human body as a machine, and forget its complicated nature, his experiments would reveal but little. It was therefore extremely unwise to depend on the deductions from these experiments.

Dr. WARDEN (Birmingham) said he did not feel competent to make observations on these admirable papers. He had listened to them with the greatest pleasure. He must congratulate the authors upon the very exhaustive and complete character of their contributions. Very little remained to be said on the subject, but when they remembered that there were people foolish enough to oppose anything like research on living animals it behoved them to get up support of these experiments at every opportunity. The supply of foolish people was inexhaustible, and there were still those who would oppose this research. Of course all knew that their opposition became less and less as they learned wisdom, and in all probability in course of time no more would be heard of them. He himself had made no experiments except about 40 years ago, when he assisted at the Westminster Hospital in making some experiments on living animals under chloroform to ascertain the action of the heart. Previous theories had been completely proved by these experiments, and that was only a beginning. It was opposed in every way possible, but perseverance had gained the day, and now in every direction research was going on. He was perfectly satisfied that experiment was the only means of thoroughly getting at the root of disease, and of special value were the experiments on the nervous system.

Dr. HERBERT TILLEY (London) had no intention of making any remarks on the excellent addresses, because they had so fully covered the ground that the silence which followed their rendering was their most fitting compliment. He trusted that the addresses would be fully reported, so that those who had not had the advantage of hearing them would be able to gather the present trend of opinion, which was that experimental details were valuable, but should be subservient to clinical facts, and that as far as possible they should bear each other out. Experimenters should be more careful how they reported their observations, because there were many who only valued an experiment as far as it bore out their favourite ideas. He instanced a case where recently he had discussed the question of nasal obstruction with one who held strong opinions of its importance in connection with almost all forms of disease, and to prove his point quoted Ziem's experiment in blocking the nostrils of puppies, and observing the curious results which followed, utterly oblivious of the different conditions found in the human body. He pleaded for a more general adoption of a middle course in these matters. As regards the word "experiment," they ought to define it more accurately. Some experiments—for example, chemical experiments—were mathematical certainties, whereas clinicians often used the term as the lay public understood it, in the sense of an attempt to produce a desired result which was often by no means attained.

Dr. LOVE (Glasgow) thanked the readers for the interesting papers. He would place himself alongside what had been described as the "moderates" in this discussion: but he thought there had been a want of reference to the great need for further pathological observation: he referred chiefly to diseases of the internal ear. There was little evidence in support of the Helmholtzian theory of the function of the cochlea from the clinical side. Bezold of Munich examined the deaf-mute children at the institution there, and his results were of great interest. He found that many children had islands of hearing in the ocean of sound-hearing, say, for a few notes or a whole octave, and deafness above and below this island. This was the most important clinical observation in the function of the cochlea with which he was acquainted, and it supported Helmholtz's theory. Now, a careful examination after death of the ears of deaf people ought to bring out corresponding facts—an intact piece of cochlea surrounded by a diseased area. Such examinations were very difficult, but very important, opening a large field for workers. Dr. Milligan had pointed out that experiments on animals with the object of defining the function of the parts of the cochlea were very contradictory. Whilst recognising the value of experiments on animals, he wished to emphasise the need for more careful clinical and pathological observation.

Dr. MCBRIDE (President of the Section) concluded the discussion by saying that it was very difficult to discuss what one did not intend to controvert. The only point which had struck him as perhaps not having had sufficient stress laid upon it was the question of tuberculosis, which applied both to the throat and to the ear. There was a form of tuberculosis in the throat, as all knew, which most of them were inclined to call lupus. This was comparatively more frequent in Scotland.

It was a tuberculosis with nodular infiltration, practically pathognomonic, but a sceptic would say, Why is it tuberculous? One could only apply the inoculation test. As Dr. Milligan mentioned before at some length, tuberculous disease of the ear could only be diagnosed by inoculation, because in both of these cases one very rarely got the bacillus, and he was not at all prepared to say that the giant cell infiltration by itself was sufficient. This brought one next to the question of tuberculosis in adenoid vegetation; he had to say that both Dr. Logan Turner and himself had been interested in these investigations where bacilli had been found in most of the sections; they, however, had never found any bacilli, and the same applied to other observers, but he supposed that where bacilli had been found serial sections had been made. The importance of this had opened a new indication for the adenoid operation; he thought that one should always operate when there were adenoids in a patient who had cervical glands. The relationship between these two conditions he himself had only recognised within the last two or three years.

Replies.

Sir Felix Semon, in reply, said he was greatly pleased with the perfect unanimity which had prevailed in the discussion with regard to the mutual position of the experimental and of the clinical method. Truth to say, he was not surprised at this unanimity, because the really dangerous excrescences of experimentation—if he might so call them—had hardly been at all in evidence in this country, and had so far made their appearance almost exclusively on the Continent. There, however, they had been a very grim reality, and if some of the speakers had thought that the position he had taken up in his introductory remarks had been so incontrovertible as to hardly necessitate discussion, he thought this a mistake. The medical profession had in recent years more than once had cause to regret that they had at first underrated their opponents, in witness whereof it was only necessary to quote the antivivisection and the antivaccination movements; seeing the far-reaching conclusions which had been drawn from faulty experiments in recent years in laryngology, he certainly thought that an expression of unanimity, such as had been elicited in this discussion, with regard to the correct position of the experimental method, was most valuable and most timely. With regard to the President's observations on the omission of more detailed references to tuberculosis he must plead guilty; but the subject confided to him had been so vast that he had had the greatest difficulty in evolving some general principles within the limited time at his disposal, and hence he had been unable to refer more specially to the question of tuberculosis, and another in which he took a very special interest—namely, the identity or non-identity of various acute infectious inflammations of the upper air passages, both of which otherwise might have well found place in his remarks. In conclusion, with regard to similar observations by Mr. Cresswell Baber on the subject of the pathology of the thyroid gland, and to the remarks which other speakers had made in the discussion, to the effect that certain facts were really "self-understood," he had been forcibly reminded of the changes in medical thought evolved sometimes within an almost incredibly short time. Nowadays everybody was agreed as to the importance of thyroid gland in the metabolism of animal tissues and the therapeutical application of this fact was certainly amongst the most brilliant medical achievments of recent years. He, however, well remembered that when, hardly fifteen years ago, he had argued for the existence of a common cause—namely, the loss of the function of the thyroid gland for the occurrence of myxœdema, cachexia strumipriva, and cretinism before the Clinical Society of London, he had been simply laughed at, and a distinguished surgeon had written him a letter to the effect that his hypothesis no doubt was very interesting, but that it was much too simple to be true. Such facts he thought conveyed a valuable lesson with regard to the whole question which had just been discussed.

Dr. Milligan in reply thanked the President and members of the Section for the kind way in which his paper had been received. He considered the subject chosen for discussion a most interesting one, and only regretted that the various demands upon him prevented his being able to devote more time to experimental work. It always appeared to him that experimental work in its relation to clinical works was a most fascinating and absorbing study. Dr. StClair Thomson had made some reference to the reliability or otherwise of inoculation experiments. If such inoculation experiments were conducted with all due precautions and according to the methods laid down by Professor Delépine, his (the speaker's) experience was that they could be absolutely relied upon. In reply to Mr. Baber's question, the only special characteristic he had noticed in cases of adenoid vegetations, which ultimately proved to be tuberculous, was an excessive amount of secretion. Dr. Kerr Love's remarks upon Helmholtz's theory and the existence of islands of hearing in deaf-mutes were particularly interesting from the clinical point of view. One great difficulty he always felt in investigating such questions was the infrequency with which pathological material could be secured of which the previous clinical history was accurately known. He considered that too little pathological work had been done by aural surgeons, and would strongly urge the value of accurate pathological examinations as the foundation of clinical work. In reply to the President's question, he considered that it was most important that where enlarged cervical glands existed a thorough examination of the fauces and the postnasal space should be made, as he had no doubt at all in his own mind that the paths of infection were frequently from the presence either of enlarged tonsils or of naso-pharyngeal adenoids; consequently he considered the presence of enlarged cervical glands as an undoubted indication for the necessity of the removal of these morbid products.

THE TREATMENT OF SINGERS' LARYNGITIS.

By Holbrook Curtis, Ph.B., M.D.,
New York.

The affections of singers are so different from the laryngeal inflammations for which we are called upon in general to prescribe, that we must understand what is meant by singers' laryngitis before discussing the subject. Singers' laryngitis we construe to mean any inflammatory condition of the larynx which temporarily prevents the satisfactory use of the voice. A brief consideration of the etiology of singers' laryngitis will facilitate the understanding of the subject and the modes of treatment which will be advanced.

It is important to ascertain whether conditions presented arise from dynamic or constitutional causes. Dynamic or mechanical causes may be illustrated by bad method in singing, vomiting, spasm of the glottis, cough, or strangulation. We must differentiate between an extravasation and a severe congestion. A hæmorrhage taking place beneath the mucous membrane covering the cord may give a rose-madder colour to that cord. This condition is always the result of a mechanical interference. I have known a singer to vomit previous to or during a performance, and at once become aphonic as the result of such an extravasation of blood within the cord. It has once occurred in my office as a result of spasm of the glottis following a spray application inadvertently inhaled, and once as the result of a violent fit of coughing.

Cough, we are well aware, causes congestion and dysphonia by forcibly injecting the capillaries of the mucous membrane, but occasionally we may encounter a hæmorrhagic infarction from this cause. The conjestion due to descent in course of a coryza, or pharyngitis becoming laryngeal, presents a different aspect. Here also the cords may be red, but they never partake of the dark venous hue of an extravasation. As in the latter condition they may be quite homogeneous as regards shape. The dark red discoloration of hæmorrhagic infarction usually affects but one cord. Aphonia or dysphonia due to hæmorrhage is unaccompanied by pain and there is no lack of motility of the cords which is often seen in acute laryngitis. Laryngitis from attrition does not present the general inflammation of the surrounding tissues found in ordinary laryngitis. It is caused by vocal strain or misuse, which causes the opposite bellies of the vibrating segments to touch each other during the initial attack, a proposition verified most beautifully by the laryngo-stroboscope of the late Professor Oertel of Munich, as also Koschlakoff and Simanowski. The attack known as the stroke of the glottis, or *coup de glotte*, is responsible for many cases classified under this category. The sudden

laryngitis of cold, *extinction de voix*, is often attended by a motor incapacity of the transverse and lateral crico-arytenoid muscles, evidenced by the inverted Y-shaped or elliptical glottis.

The condition of chronic inflammation caused by bad method in singing may go on to produce soda water bottle cords due to interstitial changes and possibly to nodules of attrition. Fatigue of the voice may produce a congestion by reason of mal-co-ordination of the intrinsic muscles or perverted inhibitory function.

Vocal fatigue may occur, however, from physical or psychical causes in which no congestion is apparent. These cases are frequently referred to us for local treatment, and should have the serious consideration of the laryngologist in order to successfully manage them. Although they come without the precinct of our present communication, we may in passing allude to such interesting conditions as amusia, ataxia of musical expression, and the impairment of function caused by a disorder of the kinæsthetic sense. We may also mention an emotional laryngitis caused by shock or grief. It may confidently be said that singers' laryngitis, if not caused by cold, is, in seven cases of ten, due to faulty production.

I have observed a case in which a change of language, from French to German, caused a laryngitis with interstitial changes to appear after a single operatic representation. We are all familiar with the laryngitis which comes on very suddenly as the result of hot vitiated air in a dressing room, and the dysphonia following an afternoon reception, but these conditions do not demand a specific mode of treatment.

The special mode of treatment for the commonest disorder we encounter, namely, inability to sing, is the subject I wish primarily to submit for the consideration of this body. For several years I have advocated the employment of tone exercises in the treatment of nodules. This was the subject of my communication last year to the American Laryngological, Rhinological, and Otological Society. The very general acceptance of my theory by singers, and the flattering remarks made as to the efficacy of my methods in his recent address by the President of the British Laryngological, Rhinological, and Otological Association gives me courage to present before you a brief outline of my treatment. What I have written as to the dissipation of nodules equally applies to the treatment of the commencing stage of this troublesome condition, a stage which may be described as singers' laryngitis. The facility with which a worn-out or husky voice may be brought back by these simple exercises is my excuse for a reiteration of their efficacy.

In the first place, the exercises I have developed must be undertaken by a person whose musical ear is perfectly able to determine whether the vocal poise is absolutely correct, for if these exercises are attempted with an improper emission or focus they are worse than useless. I have treated of this subject so fully in a book, recently published, that I merely wish at this time to make a practical demonstration to the members of this Association of the method employed, and ask them by their own experience in the use of these exercises to substantiate the results which have been alleged for them.

The object, primarily, is to make the cords adopt a new method of vibration in respect to their segmentation, and this is accomplished by changing the colour or overtone effects. To do this we must cover the tone and make the initial sounds seem to arise from the resonators of the face. The sound made with the mouth closed, and commonly written "humph" illustrates this as well as it can be described in print. Now, in the place which we call the focus of this sound we should start the purest and most musical note we are able, imitating the sound of a distant steam whistle, preferably on C'' of the staff for a soprano and C' for a tenor. This having been accomplished, we strive by a mental effort to bring this tone to the lips, the mental tone picture being transformed into the word "ma," as in "mah" or "maw," and with this labial tone thought dominant the lips should be separated by dropping the lower jaw, the lips not sharing in the least in the muscular effort. If this tone has also taken possession of the buccal cavity—in other words, if the mouth is made a resonator and the tone is sufficiently far forward—the musical note or hum will be greatly accentuated by opening the mouth in this manner, and the sound will appear to have its origin upon the lips.

There is a very good test which may be applied to find out if this tone made, as I have explained, is correctly poised. This is ascertained before opening the mouth by simply plucking the lower lip with the finger, and if the vocal poise is correct the mouth will give an answering tone even louder than the initial hum, which is all the while going on in the nasal resonators. This nasal hum must be found persistent and without alteration in *timbre*, when the jaw and mouth are again closed. This represents the correct focus of tone, or a tone fullest in its complement of harmonics or overtones, and consequently richest in musical quality.

Another test, and one I have recently devised for ascertaining the correct focus of any tone sung, is this: In singing any note in a song where our ear tells us the tone has gone backward from the lips and has lost its full resonance, simply place the forefinger between the lips, touching the angles of the mouth, and rapidly move the same up and down. If the tone is correctly produced the labial vibrations will correspond to the impinging of the finger on the lips respectively, but if the tone is too far back there will be no breaking of the tone by the finger into labial impulses or beats. By these simple means, which are verified by Koenig's apparatus for tone analysis, in that the tones produced by the correct poise are found richer in overtones or harmonics, we are instantly able to tell our patients whether they are singing in a manner to injure their cords or otherwise.

These exercises represent the most natural and free light gymnastics for the cords, and every tone sung in the manner above described becomes an exercise for the intrinsic muscles of the larynx under least possible tension. They seem to act as massage does on an injured and inflamed extremity. Tones sung in this manner, which illustrates forward production so called, have the greatest possible number of overtones, and hence are more sympathetic in quality and have greater carrying power. The employment of these exercises, aside from restoring injured conditions due to overstrain, leads the patient unconsciously into a method which, while strengthening the power, will enormously improve the flexibility and charm of the voice.

I have ceased long ago to employ strong astringent applications to the cords of singers. In cases of painful laryngitis I am using an extract of the suprarenal capsule which, applied to the mucous membrane of the larynx, is very soothing in effect. In the nose, a ten-minute application causes a marked blanching, much more pronounced than the pallor of cocaine. This extract was originally brought to my attention by Dr. Wagner, of San Francisco, who reports many almost bloodless operations following its use. I have employed it frequently in mild laryngitis with, I think, marked benefit. While I do not desire to underestimate the value of drugs and hydrotherapy in laryngeal inflammations of singers, I beg to offer an original plan of dealing with the subject, and simply cite a few interesting cases to show the manner in which I utilise my method.

DISCUSSION.

Dr. DUNDAS GRANT (London) fully corroborated what Dr. Curtis had said, and had found his exercises of the greatest value. His explanation of their effect was that they made the patient utter sounds in the thin or head register. During the use of this register it was known to be a fact, as shown by transillumination, that a thinning of the cords took place, and it was natural to suppose that this would be accompanied by an extrusion of the blood from the vessels of the cords—a mechanical anæmia. In this way the congestion would be diminished. He had used the method in a number of cases, and had found it most efficacious. When an immediate restoration of voice was absolutely called for in order to enable the performer to "pull through" for the occasion, the larynx might be cautiously sprayed with a few drops of a 5 per cent. solution of cocaine, followed after five minutes by a spray of antipyrin, 4 per cent. This must not be entrusted to the patient, and was to be employed with discretion as a temporary expedient only.

Reply.

Dr. Curtis, in reply, remarked that he would not allow cocaine to be used at all, as he had seen such disastrous results follow its employment, especially in Paris, where the physicians seemed to treat all their singers with a cocaine spray. He thought it was used a great deal too much on the Continent, and it was dreadful that patients were allowed to employ it themselves. It had been the absolute ruin of a most beautiful contralto voice. A 2-per cent. spray had been recommended to her in Paris, to which she had become addicted; she gradually increased it to 4 per cent., then to 10 per cent.; this produced complete hypertrophy of the nasal mucosa. In addition, patients might begin to drink, and fall into other evil habits. Of course, as a natural consequence, the temporary stimulation must be followed by an equal and opposite reaction, causing vasomotor paresis and resulting hypertrophy. The turbinated bodies lost their contractility, and as a result one became conscious of the possession of a nose. Menthol was almost as bad as cocaine. Similar effects followed the taking of an enema for two months, it being very difficult to give up. Those specialists who had advocated its constant use received a good deal of deserved censure from the general practitioner. They had gone too far, he thought with the oleaginous sprays, but sometimes they were rather beneficial. He thought that it was a subject which deserved the serious consideration of every laryngologist. Cocaine should very rarely be used in the larynx of a singer; it was very dangerous, although applied by the doctor himself. The practitioner did not know the great sense of relief it gave the patient, who might get it and ruin himself as a result.

At this point Dr. Warden asked if he had had any experience of eucaine? In reply, Dr. Curtis said he had not, but thought highly of orthoform.

With regard to costal respiration, he would only state that it was treated of exhaustively in his book. The inferior costal, with combined high chest respiration, was very beneficial to singers as well as to clergymen and lecturers. The constant use of the exercises just demonstrated involuntarily impressed themselves on the subject, who invariably adopted them in his work.

NOTES OF A CASE OF EPITHELIOMA OF THE PHARYNX, WITH MICROSCOPIC SPECIMEN.

By Cecil E. Shaw, M.A., M.D.,

Assistant Surgeon to Belfast Ophthalmic Hospital and Ear and Throat Institution, etc.

[Abstract.]

Mrs. P. was sent to me in May, 1897, on account of difficulty in swallowing, and feeling of a lump in the throat. She was a fairly healthy-looking woman of about 36, married four years, had had two children, and was now more than six months pregnant. Family history good. Personal history good, except for some suspicions of specific disease. Lately had some disease of the bone in her hand, and ulcers on her legs, and about a year ago her hair and eyebrows fell out, but no history of any rash or eruption in her or her children could be got.

Ten weeks before I saw her the throat began to feel sore, and three weeks before her voice got hoarse, and swallowing became difficult. At no time was there any pain—merely an uncomfortable feeling of something in the throat. She had not lost flesh.

On examination the pharynx was seen to be dry and dirty, and with the laryngeal mirror a swelling about the size of a nut was seen in the posterior wall of the pharynx, directly behind the epiglottis, which it touched, and where it touched the top of the swelling was ulcerated. Nothing could be felt outside. I ordered a spray to cleanse the parts, and at the next visit, after brushing with cocaine solution, I nipped off a small piece of the edge of the ulcer with Schrötter's forceps, and examined it at the Pathological Laboratory, Queen's College. It proved to be a typical specimen of a reticular epithelioma.

Five days later she had free hæmorrhage from the throat, which recurred several times in a few days. She then went to the country, and I did not see her again, but was informed that on July 2nd she was delivered of a child, which lived three days, and on July 9th she became comatose and died in a few hours.

I have not been able to find any record of an epithelioma in this position. McBride[1] records a case of epithelioma of the posterior pillar of the fauces in a woman aged 63, and Hill[2] reports a similar growth in the right glosso-epiglottic fold in a man aged 44. Tilley[3] has recorded a tumour in a similar position to the one I have described, but there was a clear specific history, and the tumour disappeared in a fortnight under specific treatment. The absence of pain is an interesting point in this case, of which I can offer no explanation. Operative interference was from the first entirely out of the question.

References.

[1] *Diseases of the Throat*, p. 68. [2] *Journal of Laryngology*, 1895, p. 502. [3] *Ibid.*, 1896, p. 240.

Discussion.

Dr. McBride (President of the Section) said that the condition was of great importance, especially in the earlier stages. He remembered a very interesting case of a man who had been to one or more well-known consultants complaining of pain in the throat. On examining him, an inequality of the anterior pillar of the fauces was seen, and by palpation a mass larger than appeared was found, which turned out to be undoubtedly epithelioma. Mr. Cotterill removed the disease, but the patient unfortunately died of septic pneumonia four days later.

Sir Felix Semon said that the question of the presence of pain in these cases was a very interesting and important one. From personal experience, he could say that in some cases pain was entirely absent till the very end, whilst in others it was a prominent, sometimes the earliest, symptom. He had seen even within the last few days examples illustrating both of these possibilities. The cause of the difference, he thought, must consist in the question of implication or non-implication of sensory nerves within the pathological process. It would, however, he thought, be worth studying this question from the anatomical point of view—that is, by careful dissection of specimens of malignant disease of the part.

Mr. Fallows (London), in the absence of Dr. StClair Thomson, referred to a case in which the disease was very advanced; it occurred in the Royal Ear Hospital. He thought it was an adenoid growth, and examined by palpation, but when removed with Gottstein's knife it had a peculiar colour. Next day he removed a remaining large mass. The case was lost sight of altogether; it was evidently a malignant growth. He would like to know if Coley's fluid had been tried in operable malignant disease, and with what result. The President had touched on a very important point—namely, the value of digital palpation.

Dr. Dundas Grant (London) said that where the indication of the laryngoscope was quite undecided, touch would often reveal the nature of the disease. In very sensitive cases it would be necessary to give an anæsthetic, and nitrous oxide was often quite sufficient.

Professor Urban Pritchard (London) said he would like to emphasise the case before them. It was important to make an early diagnosis, and get a chance of a favourable operation. He remembered a patient coming to him four years ago for deafness. He looked up the case, having seen it twelve months before, and found a diagnosis of deafness, but nothing else. On attempting to pass a Eustachian catheter he failed. He then proceeded to make a digital examination, and in doing so was shocked to find a small mass in the naso-pharynx, with little mobility, and evidently malignant. Fortunately this early examination was made, and thus the growth was able to be satisfactorily removed, the patient living for two years afterwards. There was no pain, which recalled the interesting fact that there was an extraordinary absence of pain when one operated antiseptically. Professor Cheyne took two hours and a-half to remove the mass, and the patient had practically no pain afterwards.

Dr. Milligan (Manchester) said that he had seen a case of pharyngeal epithelioma in a female, which had been characterised by an almost entire absence of pain. In this particular case operative interference was out of the question, and he had consequently decided to try the effects of Coley's fluid, which unfortunately, however, did not seem to him to have had the

least effect in staying the progress of the disease. He would like to ask any members present what their experience of the use of this fluid had been.

AN OPERATION TO REMOVE THE DEFORMITY FROM A FRACTURE AND DISPLACEMENT OF THE TRIANGULAR CARTILAGE OF THE NOSE.

By HEMINGTON PEGLER, M.D., M.R.C.S.,
Surgeon, Metropolitan Ear, Nose, and Throat Hospital, London.

THE patient was a man, aged 27, who received a blow from a cricket ball in July, 1897, the ball striking the nose from below. The accident caused much swelling of the part, and very soon after, a discharge from the nostrils. The swelling subsided in due course, but the discharge continued, and he therefore sought admission to a provincial hospital. From the patient's description the ridge of the nose appears to have been at this time œdematous, and red: an operation, the details of which I am unacquainted with, was performed, and an india-rubber splint was introduced into the nose on either side.

When the patient consulted me on June 10th, 1898, the site of the first operation was marked by a scar running down the ridge of the nose nearly to the tip. The contour of the nose was disfigured by a deep depression of the dorsal surface below the bridge, which latter, still maintaining the prominent position of an originally well-shaped nasal organ, exaggerated the deformity of the cartilaginous portion. The disfigurement was so considerable that it interfered seriously with the patient's prospects in business, and he was willing to undergo any operation that might be devised for his relief. Examination of the nose with the finger detected a feeling as of splitting of the anterior margin of the triangular cartilage into two lateral portions, which could be squeezed together by the two index fingers, but only to separate again when the pressure was taken off. The explanation of this feeling, and indeed the precise nature of the original injury, is not clear, but I came to the conclusion that the triangular cartilage had been shattered in some way by the ball, and that the upper lateral cartilages were probably damaged or dislocated too. This opinion was supported by the fact that in the left nasal cavity anteriorly and on a level with the upper margin of the inferior turbinal a cartilaginous acuminated spur of traumatic origin projected from the septum.

The patient was exhibited at the last meeting of the Laryngological Society (June, 1898), when opinions were divided upon the case, but some valuable suggestions were made as to the best way of dealing with it. The spur alluded to caused a great deal of obstruction to breathing, and was removed with a knife under cocaine, as a preliminary proceeding.

On June 17th Mr. Walsham was good enough to see the case with me, and in consequence the operation about to be described was performed on June 22nd. Here I wish to state that although the steps of the operation were the result of our conjoint deliberations, and were guided by what we found, incorporating some of the valuable suggestions made to me by members of the Laryngological Society, it is nevertheless owing to the kindly assistance of Mr. Walsham, who brought his great experience and ingenuity to bear, that the success which attended the operation is largely due.

Chloroform having been administered, an incision was made along the middle line of the nose, following the scar already there. The integuments were dissected back from the underlying cicatricial tissue, and held aside by retractors. The first step consisted in passing a rather stout silver wire through the sunken cartilaginous ridge from side to side (incorporating the two surfaces that appeared as if separated), and taking care that the needle did not encroach upon the mucous interior, by feeling with the tip of the finger that this depth was avoided. This portion was now threaded and under control, and capable of some elevation by traction upon the wire. The second step consisted in first sawing into the projecting angle of the nasal bones from above obliquely downwards and forwards until the osseo-cartilaginous juncture was reached. At this point the sawn fragments (for there were two, a larger semicartilaginous on the right side and a smaller bony spicule on the left) were turned down, and made to assist in filling up in an inverted position the hollow below. A hole was next drilled with a centre bit through the bones about 2 cm. above the sawn surface, and one end of the wire that had perforated the cartilages was carried up through it. In this manner gentle traction was exerted upon the depressed portion so as to elevate it in some degree to its proper position. Finally, the end of the same wire was brought down over the fragments of bone, and made to lie flat and keep them *in situ*. The wires were then trimmed, the wound thoroughly washed with antiseptic solution, its edges brought together by five or six catgut sutures, and covered over with a layer of gauze sealed down with collodion.

The operation, though shortly described, occupied about an hour and a half, the chief delay being caused by a difficulty in getting a needle threaded with wire (sufficiently stout not to cut its way out) through the hole in the bone and through the cartilages, carrying the wire with it.

The patient kept his bed, and the dressings were not removed for a week. His temperature rose on the second day to 101.5°, and there was at this time a little œdema on either side of the nose. This subsided under icebags kept constantly applied. Some blood and sanious discharge afterwards escaped from the nasal cavities, creating some obstruction; syringing with weak Dobell solution greatly relieved this. When the dressings were removed it was found that the upper and lower ends of the wound had healed by first intention, but the middle stitch had given way, and some pus escaped through the gap. A dressing of red lotion soon caused the hollow to fill up with granulations, and the patient was given a clip to wear, which helped to exert slight pressure in the required direction. At the moment of writing a small central granulation is all that remains, and the shape and contour of the nose is much improved. The elevation of the tip of the nose was rather exaggerated at first but has since subsided.

NOTES ON EXTRADURAL SUPPURATION IN THE SIGMOID FOSSA DUE TO EAR DISEASE.

By THOMAS BARR, M.D.,
Lecturer on Diseases of the Ear, University of Glasgow

[ABSTRACT.]

THESE notes are based chiefly upon three cases of extradural suppuration possessing some points of practical interest. Two of them ended in recovery after operation, while one, which was not operated upon, had a fatal termination. In each case there was a firm wall of bone between the middle-ear cavities and the extradural abscess cavity. In all of them the disease had been preceded by purulent middle-ear inflammation of many years' duration. A special feature of each of the cases was the occurrence of frequent and severe rigors with high temperature, although no evidence of sigmoid sinus thrombosis existed. There was neither pain, swelling, nor cording of the internal jugular vein, neither was there, on exposure of the sinus, so far as inspection and palpation went, any evidence of plugging; nor, in the third case, was there any purulent formation in the sinus found after death; neither were there pulmonary or other symptoms pointing to metastatic processes; while finally, and very important, complete recovery took place in the first two cases without interference with the sinus or internal jugular vein. In the third case, where death ensued, the condition found was very favourable for operation. According to the recent trend of opinion the occurrence of symptoms, such as were observed in these cases, calls for the opening up of the sinus with extrusion of its contents, or ligature of the internal jugular, or both. An important lesson to be obtained from the study of the two cases is that rigors and high temperature may exist along with notable inflammatory changes in the outer wall of the sinus, and yet complete recovery take place without opening the sinus or ligaturing the internal jugular. Apparently by removing the purulent matter covering the sinus and dura mater, and thus averting further septic absorption from without, there is a fair chance that the infective

elements already in the circulation may be got rid of by the phagocytic action of the leucocytes before other important organs become involved. From these cases we are, I think, justified, even in the presence of shiverings and high temperature, in delaying the opening of the sinus and internal jugular until we first see the effect of simply removing the extradural collection, and antiseptically treating the dura mater and outer wall of the sinus. We learn from these cases also the importance of exposing the sinus and dura mater without delay, when rigors and pyæmic temperature exist in these chronic purulent cases. We may, I think, assume that delay would have eventuated either in multiple metastatic abscesses or in the production of deeper intradural changes, such as leptomeningitis or brain abscess, or death might have taken place from mere pressure, as in the third case.

We should aim not only at removing the extradural collection of pus but at the entire removal of the old septic disease from the middle ear, and I would suggest that a specialist should in such cases carefully examine and report upon the interior of the ear before the patient is allowed to pass finally out of the surgeon's hands. A permanent non-purulent dry condition of the ear is in such cases a consummation much to be desired.

A CASE OF DOUBLE ACUTE MASTOID EMPYEMA, WITH EXPOSURE OF DURA MATER ON ONE SIDE: OPERATION IN BOTH.

By Thomas Barr, M.D.Glasg.,
Lecturer on Diseases of the Ear, Glasgow University.

[Abstract.]

The patient was a man, 46 years of age, who had normal ears previous to this affection. The illness began in August, 1897, with severe pain, first in the right ear and then in the left. On each side the tympanic membrane was excised, which was followed in both ears by profuse discharge. The right mastoid was opened six weeks after the onset of the disease, and a large cavity was entered full of pus, with granulation tissue and cario-necrotic *débris*, while the sigmoid sinus and neighbouring dura mater were found exposed on the back wall of the cavity. The left mastoid was opened three weeks later, when a similar condition was found, with the exception that there was no exposure of the sinus or dura mater. Four months elapsed before complete cicatrisation took place. There were neither rigors nor high temperature throughout the whole course of the disease. There was but little pain on either side, only firm pressure over the back part of the mastoid excited slight pain. The purulent discharge from the ear in each case ceased almost immediately after operation, and the patient has made an excellent recovery. The hearing power, which was for many weeks extremely defective, has now almost entirely recovered.

A CASE OF FOREIGN BODY REMOVED FROM THE NASO-PHARYNX.

By H. S. Birkett, M.D.,
Montreal.

[Abstract.]

Dr. Birkett said that the tailor's thimble he showed was removed from the naso-pharynx of a woman, aged 35, who came to him complaining of a profuse offensive discharge, and marked nasal intonation, of nineteen years' duration. There was no doubt as to the disagreeable character of the discharge; she used several handkerchiefs a day. On examining the naso-pharynx with the rhinoscopic mirror, he found it occupied by a dark gritty mass. On being questioned, she said she remembered when a child putting a thimble in her mouth, and while it was there she was seized with a violent fit of coughing, during which she thought she swallowed it.

Nothing happened for years afterwards. On examining the naso-pharynx with the finger he found a foreign body impacted there, which he told her was undoubtedly the thimble. She was put under an anæsthetic, this being necessary owing to the firm manner in which the body was fixed, and by means of forceps guided along his finger into one of the openings of the thimble, he extracted it. The thimble had been in the naso-pharynx so long that the markings were hidden by a deposit of gritty calcareous salts, which gave the surface a dark brown colour. The other effects that had been produced by its presence were deafness and a marked nasal intonation due to paralysis of the palatal muscles.

After removal, and the use of cleansing solutions and Politzer's bag, marked improvement in the hearing took place, and the nasal intonation passed off together with the catarrhal condition of the nose.

SOME UNMANAGEABLE COMPLICATIONS OF SUPPURATIVE MIDDLE-EAR DISEASE.

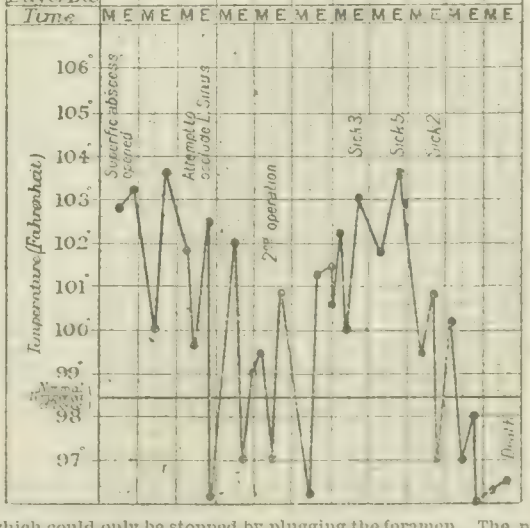
By Hugh Edward Jones, M.R.C.S.,
Honorary Assistant Surgeon, Liverpool Eye and Ear Infirmary. Ophthalmic and Aural Surgeon, Wigan Infirmary.

The term "unmanageable" is used here in its relative sense only, and is not intended to deny that a successful result might have been obtained in some of the cases recorded in certain contingencies. The publication of successful operations to the exclusion of fatal cases, while so encouraging to the special surgeon, blunts the perception of the general body of the profession to the extreme gravity of suppuration in the middle ear. Though no new facts are needed to prove the existence of danger in this affection, the danger cannot be too often insisted upon, nor the means of avoiding and combating it discussed. These are the reasons which have led me to bring together the notes of 7 fatal cases.

Case I.—A girl, M. C., aged 6 years, had otorrhœa for nine months. Fourteen days before admission had vomiting, rigors, stiffness and swelling of neck and over mastoid. Was admitted into hospital on the day on which she was first seen, and the mastoid antrum and tympanum were thoroughly cleared out. On the third day the lateral sinus was exposed and septic clot removed, and at the same operation the internal jugular vein was tied. Marked improvement, lasting four days, followed; then the symptoms recurred, and the patient died on the seventh day.

Post-mortem Examination.—We found patches of ulceration in the opposite lateral sinus. This patient would probably have been saved if she had been seen and operated on a week earlier. The case was reported at the Newcastle meeting.

Case II. June 19th, 1897.—Boy, J. T., aged 7 years. Otorrhœa followed scarlatina within a few months, and post-auricular abscess formed seven weeks before admission. This abscess had been incised 1½ inch behind the auricle, and a small discharging sinus existed at that point. When admitted, our then senior house-surgeon, Dr. Milroy, at once opened up the abscess freely. Alarming hæmorrhage occurred from the mastoid

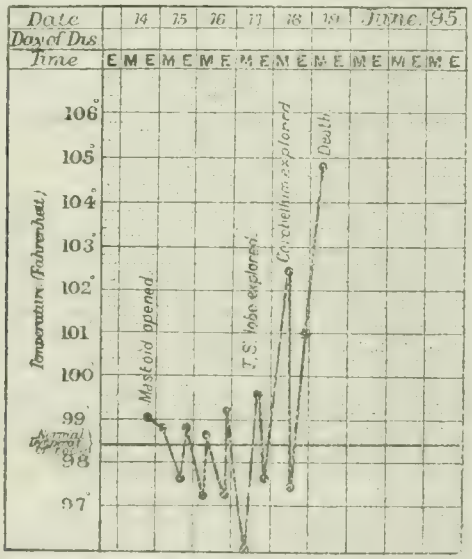


vein, which could only be stopped by plugging the foramen. The patient had the characteristic oscillating temperature of septic thrombosis, but rigors and vomiting were conspicuous by their absence until the last three days, when vomiting was frequent. Third day in hospital: Mastoid and lateral sinus opened up, the latter full of suppurating broken-down clot. The bleeding from the sinus and from a bunch of veins over the mastoid was so great that the wound had to be plugged up before the sinus could be thoroughly cleaned out. Fifth day a second attempt was made to clear out the sinus. This time I tried to control the hæmorrhage by trephining over the sinus near the torcular, and pushing in the wall with gauze pledgets. Patient died on tenth day.

Post-mortem Examination.—Both lateral sinuses were full of suppurating broken down clot, through which the fluid blood permeated. About 1 inch from the torcular on the side away from the original lesion the dura was in a sloughing condition, and in contact with this was one end of a large abscess, which extended through the occipital lobe to the anterior end of the temporo-sphenoidal lobe.

It is possible that if this case had been seen five or six weeks earlier the sinus mischief would not have occurred. When seen, the clot had broken down and allowed blood to pass through it.

CASE III. June 14th, 1895.—R. G., aged 17 years. Otorrhœa off and on twelve months. Patient was confined to bed at home for two weeks with symptoms of inflammation of the brain. A slight improvement allowed his medical man (Dr. Parker, of Ince), to send him to the hospital to have his ear examined. The symptoms present were slow pulse (64), low temperature (97.6°) retracted abdomen, severe pain in ear and forehead, and giddiness without staggering. Right external meatus was full of granulations. No external sign of mastoid disease. First operation (day of admission): antrum and tympanum laid open. The cavities were full of offensive cheesy material. Inner wall rough, tegmen carious and easily broken away, posterior wall and floor smooth and apparently healthy. During next three days there was no marked change. No localising



symptoms appeared. Intellect clear and quick. Exploration of temporo sphenoidal lobe through roof of antrum gave a negative result. On the sixth day, in hospital, the following symptoms appeared. Temperature rose to 102°, pulse 120, left ptosis, conjugate deviation of eyes to left side, nystagmus; while lying on right side on right arm the patient swings his left arm over constantly striking the bedside and locker with his closed fist. If anything, the grip of the right hand is stronger than the left, but both are good; the pain in the head and shouting had increased day by day. He had only been sick twice; urine was passed naturally; bowels had acted once; optic neuritis, and slowness of cerebration were absent. Third operation (sixth day). The dura was first exposed through the posterior wall of the cavity in the mastoid, and a probe passed between the dura and bone in the direction of the internal auditory meatus, but no pus was found there. A disc of bone was then removed from the occipital bone, just behind the posterior border of the mastoid, and on a level with its lower half. A fair-sized hydrocele trocar was used for exploring, and this was introduced four times without pus being found. Death occurred next day.

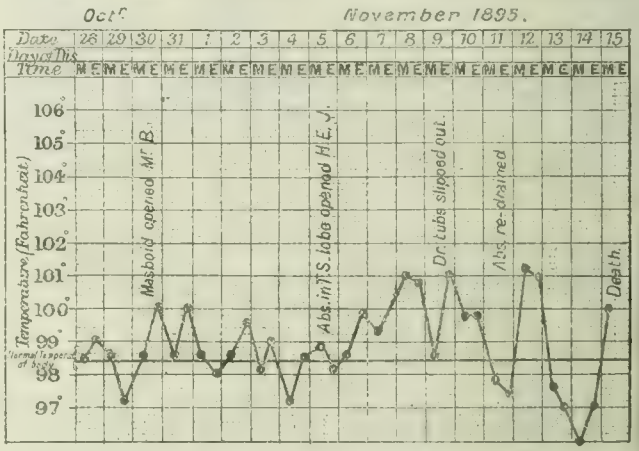
Post-mortem Examination.—We found that an abscess which had embraced the middle peduncle of the cerebellum had burst on its median aspect, bathing the pons in pus. The inner wall of the cavity, towards the pons, was not more than one sixteenth of an inch in thickness. The parts involved were the flocculus, the amygdala and parts of the quadrate and biventral lobes. The outer half of the affected area was still in a semi-solid condition. Into this solid portion we could follow the track of the trocar. We were unable to demonstrate any direct connection of the abscess with mastoid or internal ear. There was no evidence of any other intracranial mischief.

It is not an easy matter in this case to determine the date of the formation of the abscess. Dr. Parker recognised the illness as a cerebral one a fortnight before he was able to transfer the patient to the hospital. On the other hand, the localising symptoms of cerebellar abscess did not appear until the day before his death. The abscess seems to have started near the median surface, and to have extended backwards and outwards. Did the abscess burst spontaneously, or did the thin inner wall give way when the trocar entered the semisolid outer part of the abscess? With regard to the way of getting at the abscess, I feel sure now that the anterior part of the cerebellum can be best reached through petro-mastoid bone and not through the occipital. The opening of the former proved to be at least an inch nearer the abscess than the trephine hole in the latter.

CASE IV. October-November, 1895.—W. S., aged 23 years, had discharge from ears many years ago, but none lately till second week of present illness. He was ill in bed at home three weeks and in the hospital one week before he came under the writer's care on November 5th. A large superficial mastoid abscess (right), and some of the outer cells of the mastoid had been opened.

Symptoms.—Double optic neuritis. Pupils dilated, vision good, no squint, marked "slowness of cerebration"; occasional delirium, severe pain. Pulse-rate had gradually risen from 70 to 90 and 100, and temperature from 97° to 100°.

Operation.—After opening the antrum and removing the carious tegmen, the dura over it was found to be sloughing, and a probe passed readily

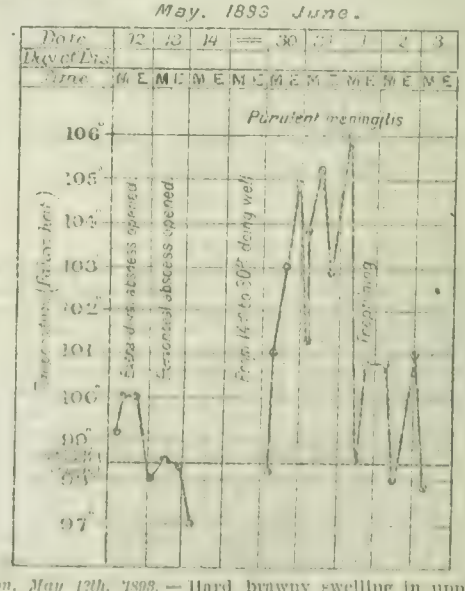


through it into a large abscess in the temporo-sphenoidal lobe. The opening was enlarged and the cavity gently washed out with boric acid solution. The probe could be passed directly upwards 2½ inches without meeting any resistance. The patient died ten days after the brain abscess was opened.

Post-mortem Examination.—The abscess cavity was found to be without definite lining, and the brain around it was much softened.

The slight relief given by the operation, and the comparatively high pulse and temperature, had led us to fear that we had to deal with some associated meningitis or a rapid extension of the inflammation. The delay of three or four weeks between the onset and opening of the abscess was undoubtedly one cause of failure.

CASE V.—R. H., aged 22 years. Influenza three months before admission, followed by acute suppurative otitis of left ear. Three weeks before admission there was pain and swelling behind the left ear, and a fortnight later a rigor and vomiting.



Admission, May 12th, 1893.—Hard brawny swelling in upper part of posterior triangle of neck; temperature 100.2°; pulse 120; pupils dilated; no optic neuritis; membrana tympani hidden by swelling of posterior wall of meatus. Diagnosis? Bezold's disease. Operation on day of admis

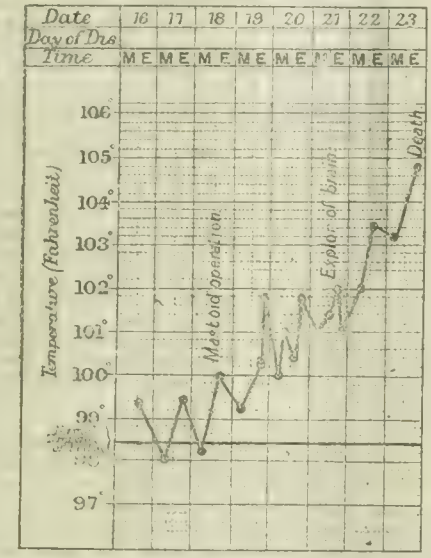
sion. Mastoid opened, sinus traced from cells into posterior fossa of skull. Extradural abscess evacuated. Large subperiosteal abscess in posterior triangle of neck opened. These abscesses communicated in some way not discovered at that period. Lotion passed from one to the other. Case did well from May 13th to 30th, and patient began to get up; then suddenly severe facial neuralgia was followed by general symptoms of suppurative meningitis. Trephining and opening the dura in middle and posterior fossa failed to give relief.

Post-mortem Examination, June 3rd, 1898.—Purulent meningitis over parietal and frontal lobes and into Sylvian fissure and front part of base. Temporo-sphenoidal lobes free. T-shaped gutter formed by caries in posterior wall of petrous bone; one end of the crosspiece communicated with the mastoid cells, the other with the internal ear by way of the vestibular vein. The vertical portion passed down through the petro-occipital fissure beneath the sigmoid sinus into the periosteal abscess on the under surface of the occipital bone. From this a sinus burrowed amongst the deep cervical muscles to the front of the spine. The whole of the left parietal lobe of brain breaking down.

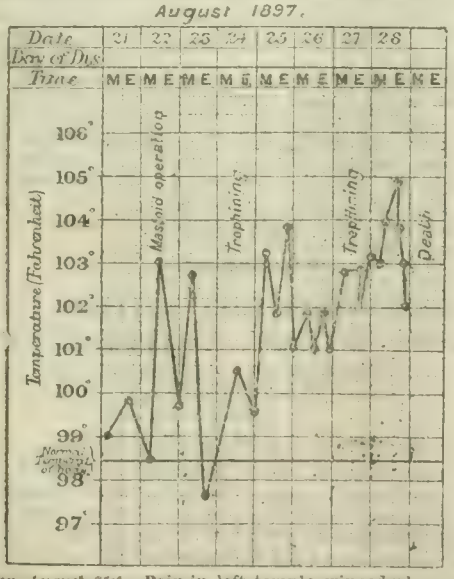
Case VI.—J. R., aged 54 years. Pain and deafness left ear five weeks, purulent discharge ten days; staggered and was giddy eight days ago, rambling in speech four days.

Admission June 16th, 1897.—Mastoid opened, 1 drachm of pus escaped, whole mastoid found to be excavated; symptoms of acute suppurative meningitis. Trephining failed to give relief, and patient died June 23rd.

Post-mortem Examination.—Purulent meningitis of base.



Case VII. August 21st, 1897.—J. K., aged 40 years. Ten days before admission shivering and tightness in chest, three days later pain in and behind left ear, which got worse and continued three days.



Admission August 31st.—Pain in left temple, winced when pressure applied over mastoid and below its apex. Pulse 78, respirations 44, temperature 98.4°. August 22nd. Mastoid opened, full of granulations and small quantities of pus; considerable relief. August 24th. Pulse 62, temperature 97.8°, optic neuritis, cerebration perfect, dura explored, no extradural abscess found. August 25th. More dull in intellect, walked without staggering. August 27th. Will not speak, but understands what is said; cerebellum explored, large quantities of pus flowed from beneath dura (meningeal). August 28th. Paralysis of right arm and leg. August 30th. Died.

Post-mortem Examination.—Purulent meningitis, no brain abscess.

Conclusions.—Causes of Failure.

1. None of these cases had received treatment by a specialist for the ear affection.

2. In most of the cases serious delays occurred before surgical treatment was sought. The first thrombosis case had an unopened mastoid abscess for two weeks before admission. The second one had an abscess seven weeks before admission. The temporo-sphenoidal case had been seriously ill for four weeks before he was seen by the writer. The caries of petrous case had swelling over mastoid and in neck three weeks before it was sent for operation. The suppurative meningitis cases were sent in as soon as the complication manifested itself, but evidence of very serious ear mischief had been present for some weeks, and I am bound to say that I think the mastoid complication could have been detected by a specialist.

3. *Extension of the Suppuration beyond the Limits of Successful Operative Treatment.*—Whether this was due to the rapidity of the process or to avoidable delays in applying proper treatment, it was the cause of failure in the thrombosis cases in the temporo-sphenoidal case and in the cases of purulent meningitis.

4. *Inaccessibility of the Fatal Lesion.*—This caused death in the cerebellar case either by actually bursting the abscess without providing an exit for the pus or by spontaneous bursting of the abscess after the operation. I venture to affirm that the only way in which the abscess could have been successfully opened was by operation along the posterior wall of the petrous bone. The occurrence of meningitis in the caries of petrous case would possibly have been prevented by a more extensive and thorough exposure of the diseased area. Once a general suppurative meningitis has been set up all operations fail.

The moral seems to me to be that the most important study of all in connection with this subject is the early detection of suppuration in the attic and antrum or internal ear whether in chronic or acute suppurative otitis, and more especially in the latter in which the mischief spreads with much greater rapidity.

Discussion.

Dr. Urban Pritchard (London) said they all knew that from time to time the general surgeon had attacked the aurists for not taking sufficient precautions to prevent intracranial suppuration. Surgeons had told them that they ought to cure the suppurative cases beforehand, but he might make the countercharge that even now with all the experience they had, there still were surgeons who in these cases of cerebral or cerebellar abscess would trephine and make for the abscess without taking care to open up the mastoid antrum and cells, and thereby left the source untouched. As a result, fresh infection took place.

Dr. Dundas Grant (London) said he recently had a case parallel to that of Dr. Barr's in which acute middle-ear disease was followed by mastoid symptoms. On opening the mastoid as Dr. Barr had described, he was surprised to find to what an extent the lateral sinus was exposed in the large cavity in view of the very short duration of the disease. The probability was that there had been a natural dehiscence; but in any case the cortical cells were of the very thin, anæmic type which, according to Bezold, favoured acute inflammation much more than that in which the cortical cells were small or cancellous. He was quite gratified to think that he had not injured the lateral sinus by an incautious movement of the gouge, although that might very easily have taken place. In acute suppuration of the middle ear it came to be a question what time one should allow to elapse before opening the mastoid. His experience would lead one to reduce the interval to within a few days after paracentesis. If the symptoms recurred or there was the slightest evidence of acute inflammation of the mastoid, one should open at once as the results

were so satisfactory when the operation was performed at that stage.

Dr. Macfie (Glasgow) said he would in a word emphasise what had been said. He had felt more and more that they could often learn more from their failures than from successful cases. The cases just reported were very instructive in various ways; one or two of them might be put under the class of incomplete operations, operations that had not gone far enough, and in which the result might have been somewhat different. That only gave the greater scope for either going on or for limiting the extent of the operation.

The President said he was sure that their sentiments as to the operative measures to be adopted were quite in agreement with those of the gentlemen who had read the papers. Of course, a simple relation of cases, when each was reported in the most perfect manner possible, did not lend itself readily to criticism.

CATHETERISATION OF THE EUSTACHIAN TUBES.

By T. Mark Hovell, F.R.C.S.Edin.,
Consulting Surgeon, Hospital for Diseases of the Throat, London.

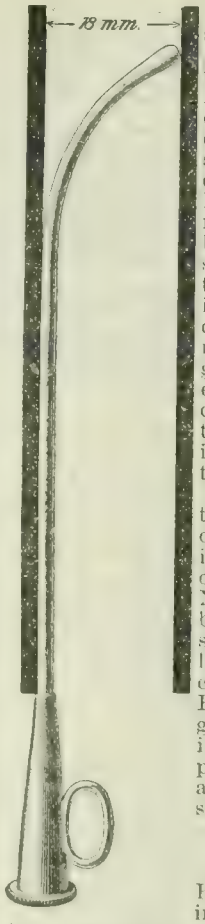
Although the Eustachian catheter is not a modern instrument, and it is daily in use because there are many cases of ear disease which cannot be treated without its employment, nevertheless there is not a nomenclature by which any particular instrument can be described in such a manner that its precise dimensions can be known. At the present time, Eustachian catheters are described by numbers such as 1, 2, 3, etc., which indicate a gauge, and in some cases also a length of curve; but even these numbers do not represent any particular standard, for the several surgical instrument makers keep different patterns, and even each set of instruments that bears the name of an aural surgeon differs both in gauge and curve from another set that bears the name of another aural surgeon, and yet all the sets are numbered 1, 2, 3, etc. But not only is there an absence of uniformity with regard to gauge and length of curve as represented by a particular number, but the length of the stem varies, also, very considerably. An instrument 11½ centimetres in length, measured by a straight line drawn from its larger extremity along the stem to a transverse line at a right angle with it, which touches the furthest point of the curve of the smaller end, is very convenient to use; for, when in position, the anterior portion of its stem does not project more than an inch and an eighth beyond the floor of the nostril, and consequently the nozzle of the air bag can be easily and firmly held in contact with the catheter by the thumb and forefinger of the left hand whilst air is being injected from the air bag. For the introduction of this short pattern of catheter the profession is indebted to the late Mr. G. F. Hodgson of Brighton. Catheters of a foreign pattern more than 16 centimetres in length are still to be seen in some instrument makers' shops, but when an instrument of this description is in position it projects so far from the nostril that it is impossible, whilst the hand is steadied as it should be on the patient's face, to reach its end with the thumb and forefinger of the left hand in order to hold the nozzle of the air bag in contact with it.

As the dimensions of the inferior meatus vary according to the size of the superior maxillary bones, the presence or absence of spurs, deviations of the septum, etc., it is necessary for aural treatment to be provided with catheters which differ respectively in the gauge of their stem and in the length of their curve. At the present time, as I have before mentioned, there is not a nomenclature which enables one practitioner to tell another the precise gauge and curve of a catheter required for the treatment of a particular case, and in order to overcome this serious inconvenience I propose as follows:

1. That the gauge of Eustachian catheters shall be that of the French catheter gauge, which is well known and graduated on a definite scale.

2. That the length of curve shall be expressed in millimetres, the number indicating the distance which the curve separates two parallel straight lines.

Thus, when a catheter is placed so that the outer part of the stem touches the one line and the tip of its beak the other line, the distance between the lines shall indicate the curve in millimetres thus:



As the beak of a catheter is usually slightly larger than the stem the actual gauge of the latter will be a trifle less than the number specified. The passage of a Eustachian catheter should be almost if not entirely painless, and when otherwise the cause is usually the employment of an instrument of too large a gauge or too long a curve. An Eustachian catheter, No. 9 French catheter gauge, with a curve of 18 millimetres between parallel lines is suitable for most adult male cases, but it is sometimes found that this curve is too long to allow the catheter to be turned outwards in the naso-pharynx. When this occurs a curve of 16 millimetres can usually be passed readily into position. I consider that No. 9 gauge is the largest which need be used. I employ usually either 9 or 7 gauge with a curve of 18 or 16 millimetres. In exceptional cases a curve of 14 or 20 millimetres is required. The meatus is rarely so small that a No. 5 gauge is necessary.

A general practitioner who does not wish to carry a large number of Eustachian catheters can do good work with the following three: No. 9 gauge, 18 millimetres curve; No. 7 gauge, 16 millimetres curve; No. 7 gauge, 14 millimetres curve. As may be inferred I have found two millimetres sufficient to constitute a size as regards length of curve, and an alternate gauge convenient for the dimensions of the stem. By such a nomenclature as above suggested a standard can be formed which is intelligible to all, and it will enable one practitioner to accurately describe to another practitioner the size of the catheter suitable for the patient under treatment.

Discussion.

Dr. Herbert Tilley (London) asked Mr. Hovell whether the bore was to be the same in the differently curved catheters, because there were some instruments which would not allow the passage of a bougie. It seemed to him to be a great advantage and to be very necessary to have a uniform standard.

Dr. Walker Downie (Glasgow) thought that the object aimed at by Mr. Mark Hovell was an extremely laudable one, but that it had not been fully attained by the method described. The sketch given to them did not indicate in any way the character of the curve. The curve in the diagram formed perhaps one-fifth or one-sixth of a circle, but frequently one having a much sharper curve, equal to one-fourth of a much smaller circle than that here indicated, was required, so that two additional lines drawn at right angles to those on the diagram were necessary to describe the exact form and length of the curved portion of the catheter.

Dr. McBride (President of the Section) said it seemed to him that the proposal was a very good one, but there must be a second line drawn.

MECHANICAL VIBRATION APPLIED TO THE SPINE IN THE TREATMENT OF SCLEROSIS OF THE MIDDLE EAR.

By Dundas Grant, M.D., F.R.C.S.,
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In a number of cases of chronic catarrh of the middle ear of the class known as the sclerotic, I have made use of mechanical vibration applied to the spine as a method of treatment. I was led to try this method on the suggestion of my wife, who had observed that certain of her friends who were affected with deafness and who heard better in the

midst of a noise, heard also better when riding on bicycles. Under these circumstances the improvement was attributable to mechanical and not to acoustic vibration, and the method I am about to describe is a means of supplying vibration of the former kind. I have already given the details of the process in my communications before the British Laryngological and the French and German Otological Associations, and I shall therefore confine myself to the merest outlines, which I will gladly amplify in answer to inquiries during or after the meeting.

At first I made use of Gilles de la Tourette's vibratory helmet, which I placed in contact with the patient's spine, the result being an amount of benefit for which I was quite unprepared. For greater convenience I then procured a small motor, on the axle of which was fixed a disc of brass in an eccentric position. On one side of the motor was attached a flattened curved band of metal, similar to a hand blotter, and on the other a handle like that of a teapot. The instrument is set in action by means of an electric current, and is then applied to the patient's spine, between the shoulders, for about five minutes at a sitting. It should be felt in the head and ears, but should be held as low down as compatible with this effect, so that the acoustic stimulation may be as slight as possible.

The patient can usually realise after one application whether benefit has accrued or not. As a rule I apply it daily for a week, and then diminish the frequency to the minimum necessary to maintain the effect.

Before describing the cases I may state that they were characterised by tuning-fork evidence of catarrh of the middle ear, were usually gradual in onset, free from any considerable narrowing of the Eustachian tube, and unbenefited to any marked degree by inflation and other tubal treatment.

The first case was that of the daughter of a medical friend. She was 25 years of age. Her deafness was of eleven years' duration, and had developed very insidiously. In both ears Rinne's test was negative; bone conduction was neither increased nor diminished, and she heard much better in a noise or on a vibrating bicycle. Her previous treatment was quite ineffectual. Her hearing power on the right side was for the watch $\frac{2}{60}$, for whispered speech 6 feet; on the left $\frac{2}{60}$ and 3 feet. The vibrating helmet was applied to the spine twice in the day, and greater ease in hearing was experienced not merely during but after the vibration. It was repeated once or twice daily for three weeks, and at the end of the time she heard the watch at the distance of 12 inches on each side, and whispered speech at 10 feet on the right and 5 feet on the left. The young lady could now take part in conversation, instead of burying herself in her own thoughts.

In a second case, Mrs. M., aged 47, had been deaf for twenty years, with all the signs of sclerosis, but with very doubtful improvement in the midst of noise. A slight improvement took place, so that instead of being able to hear only loudly-shouted words she could hear ordinary loud conversation.

In another, Miss D., aged 32, the hearing was at first for the watch 6 inches on the right and 1 inch on the left; for whispered speech, 12 feet and 4 feet. After a month's treatment it became 9 inches and $\frac{3}{4}$ inch for the watch, and 15 feet and 9 feet for whispered speech. The patient's tinnitus aurium was much relieved, and she was able to carry on her work as a teacher of music with much greater comfort.

Miss M., aged 28, who could only hear loud shouting, ultimately heard a whisper at 4 inches. Her tinnitus became much less, and she could hear a piano, which she had not done for months.

Miss P., aged 49, an extreme case, received scarcely any benefit.

Miss G., aged 35, had sclerosis with diminished bone conduction, and very doubtful improvement in a noise; was thought by her friends to hear better after dorsal vibration. She had diminution of her tinnitus, but I could detect very little change.

Miss B., aged 49, improved for whisper from 5 feet right and 5 inches left to 10 feet and 6 inches respectively.

Mrs. C., aged 37, with sclerosis starting with pregnancy, and worse after each childbirth, improved from $\frac{1}{2}$ inch and "contact" for the watch to $3\frac{1}{2}$ inches and 1 inch, while for whispered speech from 7 inches and 3 inches to 6 feet and 3 feet. This is an exceptionally striking case, typical in its etiology and its symptoms, as well as in its absolutely negative response to Eustachian treatment.

Miss C., aged 41, whose deafness had resisted all other treatment, improved after one application so as to hear whispered words at 5 feet and 8 feet instead of 2 feet and 4 feet.

Miss H., aged 40, could only hear conversation shouted through a flexible speaking-tube, and had considerable diminution of bone conduction, could afterwards hear loud vowels at 2 inches on each side. Her mother observed some improvement, which to me was scarcely perceptible.

These cases in chronological sequence show varying results, but when we remember the hopeless prognosis in the disease of which I consider them to be typical instances the effect of the treatment seems to me to amply justify its further employment. It is possible that it may be beneficial in post-suppurative fixation of the stapes, but I have not yet tried it in such cases.

How much of the effect is due to an indirect massage of the stapedio-vestibular joint I am unable to state, but I believe this is its true mode of action. The remarkable sense of well-being which patients experience after its use would suggest that it may also have some effect as a nerve tonic. In any event the enormous improvement produced in three and the more moderate improvement in other three of the ten hopeless cases above described must commend the treatment to all those who have been baffled by such cases; in fact, to all aurists of any considerable experience.

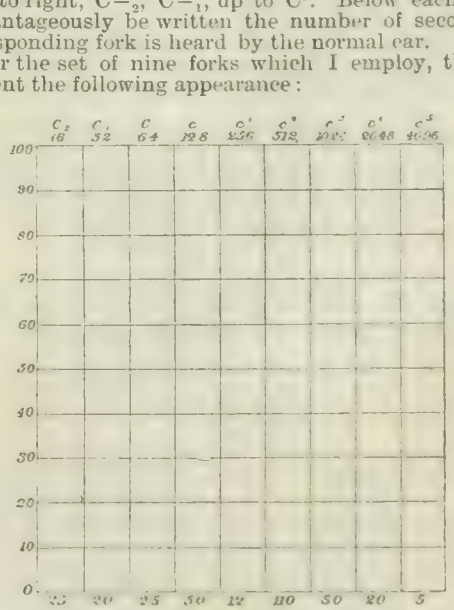
DEMONSTRATION OF A SHORT PROCESS FOR MAKING CHARTS OF HEARING POWER FOR VARIOUS TUNING-FORKS, ACCORDING TO HARTMANN'S METHOD.

By Dundas Grant, M.A., M.D., F.R.C.S.
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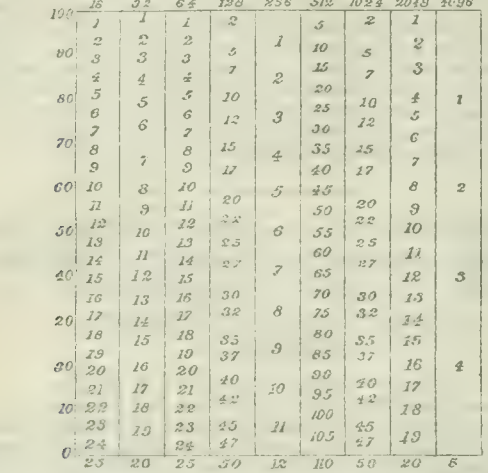
The following directions for making charts of hearing power according to Hartmann's method will render the process much shorter than it hitherto has been. In the first place, the normal number of seconds for which each fork is heard by the normal ear after the strongest blow has to be found out by actual experiment. The constancy of the results is of course only relative, but more absolute than would naturally be expected.

To prepare the chart, a square or oblong figure must be ruled, having as many vertical columns as there are tuning-forks to be employed, making a column for each, the one on the left for the lowest and the one on the right for the highest pitched fork. The square must then be divided into ten parts by horizontal lines at equal distances from each other. The upper boundary line of the square is to be numbered 100, and the lowest one 0, the intermediate ones from below upwards, 10, 20, 30, etc. On the top of each vertical column is written the pitch of the fork corresponding to it, namely, from left to right, $C-_2$, $C-_1$, up to C^5. Below each column may advantageously be written the number of seconds that the corresponding fork is heard by the normal ear.

Thus for the set of nine forks which I employ, the chart will present the following appearance:



Each vertical column is to be divided into as many equal parts as the number of seconds that the fork is normally heard, and these parts are to be numbered from above downwards, 1, 2, 3, 4, etc. When the number is a large one the divisions may be numbered off in suitable parts, as will be seen in the columns for C and C^3 (50 seconds each) and for c^2 (110 seconds). This has to be done for each fork. For my series of forks, the chart thus numbered would present the following appearance:



For clinical purposes the chart may measure about 3 inches square. When in use a sheet of tracing paper is placed over the chart and fixed so as not to slip. The boundary lines are then traced out. The various lines and figures in the interior of the chart are readily seen through the tracing paper.

To make a chart of the hearing power in any given case, the following are the directions: Strike the lowest tuning-fork and hold it opposite the ear which is to be tested, instructing the patient to say when it "stops," then commence to count seconds, or what is better, set a stop watch going and hold the tuning-fork opposite your own or some other normal ear. As soon as it ceases to be heard, note the number of seconds you have counted, or stop the watch. Having thus noted the number, draw a horizontal line across the column corresponding to the fork through the figure corresponding to the number obtained. Repeat this for each tuning-fork in turn. When all is finished there is formed a sort of curve, the abscissa indicating pitch, the ordinate percentage of hearing power according to Hartmann's method.

This method has deservedly been in considerable vogue, and is unquestionably of practical diagnostic value. It must, however, be remembered that what it tells us is simply the percentage duration of hearing for a dying-out tuning-fork, and not the degree of intensity of tone, or in other words, the hearing power of the individual.

WOUNDS OF THE FACIAL NERVE DURING OPERATION ON THE MASTOID.

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[ABSTRACT.]

A CASE recently came under my care of a little girl, aged 12, who five years ago fell from a swing and injured her left ear. When first seen there was a considerable thickening of the osseous portion of the posterior meatal wall, the lumen being so narrowed that only a fine probe could be passed, and through this channel a foul discharge was oozing. Under an anæsthetic the meatal thickening was gradually cut back. The mastoid cells were found to be completely sclerosed, the bony tissue being of ivory-like consistency. Of the antrum only a very small space existed; this and the tympanic cavity were filled with foul pus and granulation tissue, the internal wall being much necrosed. Although using the greatest care in removing the diseased tissue, the facial nerve was injured and paralysis ensued. The question is, What ought we to do under these circumstances? Ought we to leave the necrosed portions and granulation tissue *in situ*, and run the very grave risk of intracranial infection? Or, ought we to try the removal of the parts, and risk the damage to the facial nerve? In my opinion the latter is the course to be pursued, the intracranial danger being so much greater than that to the facial. However, these wounds of the facial nerve involve such widespread consequences to the eyesight, taste, smell, etc., that I should like to hear from those here to-day what course they take under similar conditions.

A CASE OF SARCOMA OF THE MIDDLE EAR.

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IN the number of the BRITISH MEDICAL JOURNAL published on October 16th, 1897, Dr. Barr and Mr. James H. Nicoll reported a case of Malignant Tumour of the Brain originating in the Middle Ear. This case, in its history and *post-mortem* appearances, bears a striking resemblance to the following; in fact, Dr. Barr's account of the character of the tumour's growth will apply equally well to my case.

A female child, aged 2½ years, was admitted into West London Hospital on May 4th, 1896. A large, diffuse, fluctuating, red, hot and painful swelling occupied a position behind the pinna on the left side; an elliptical, tough, pedunculated polypus filled the external auditory meatus. As there was a history of a discharge from the ears for some months past, the whole condition appeared to be the result of an infective inflammation beginning in the middle ear and spreading from there to surrounding parts. Upon opening the post-aural swelling by making the usual curved incision, this view of the case was not altered, for nothing was observed that could not have been caused by an infective inflammatory process, namely, pus, granulation tissue, and ulceration of bone; the last was represented by a communication about the size of a threepenny bit between the abscess cavity and the mastoid antrum. Upon inserting a sharp spoon into this sinus, the polypus was forced out of the meatus as if it had been previously separated from its attachments. After enlarging the sinus leading to the antrum and clearing the resulting cavity, it was lightly packed with a strip of cyanide gauze soaked in a mixture of iodoform and 1 in 2,000 solution of perchloride of mercury. I regret to say sections were not made of the polypus. The local conditions were so much improved by this subsequent treatment that the child left the hospital for the seaside on July 16th.

Dr. Pardoe, who was house-surgeon, saw the case at the hospital again on August 17th, and admitted it as an undoubted sarcoma. When I saw the case the child had facial paralysis of the left side, and behind the auricle a sessile, red, offensive, and fungating mass, about the size of a small orange, was pushing it outwards and forwards. The tumour passed subcutaneously downwards into the upper regions of the neck. Optic neuritis was present.

Further operative interference was impossible, as the disease was too extensive, so the parts were kept as pure as possible by careful dressing. The external and visible parts of the tumour grew rapidly, and the child died on October 19th.

At the *post-mortem* examination, which was made by myself with the kind permission of Dr. Aldren Turner, the tumour was nearly as big as the child's head, and involved the uppermost of the deep glands of the neck, which pushed outwards the overlying structures, and in parts actually involving them in the malignant growth. Through an opening in the temporal bone that involved the mastoid lower squamous regions and the roof of the middle ear the growth appeared and occupied the middle fossa of the skull as a rounded, lobulated mass about the size of three chestnuts pressed closely together. Over the intracranial surface of the growth the dura mater was lost, the overlying temporo-sphenoidal lobe was much indented, but did not form any part of the malignant growth. The lateral sinus and other structures were normal. A microscopical section of the tumour proved it to be a sarcoma, chiefly consisting of small spindle cells.

The references to recorded cases will be found carefully noted at the end of the report of Dr. Barr and Mr. Nicoll, to which allusion has already been made. The age of the patient precluded the possibility of attaining any data with regard to the hearing or tuning-fork.

SOME OBSERVATIONS UPON ANTRECTOMY AS A MEANS OF TREATMENT IN SUPPURATIVE MIDDLE-EAR DISEASE.

By W. Milligan, M.D.,

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[Abstract.]

The surgical treatment of suppurative middle-ear disease, especially when complicated with suppurative disease within the mastoid process, has of late aroused much interest among both general and aural surgeons. So much has been written both for and against the various methods of treatment now in ordinary use, that I feel an apology is necessary for introducing this subject once more to your notice. My main object in doing so, however, is to plead for an earlier and for a more frequent resort to antrectomy, especially in those cases of chronic suppurative middle-ear disease which have run a long and tedious course.

Before, however, discussing this question in its relation to the treatment of chronic suppurative catarrh, I desire to say a few words upon the advisability of opening the mastoid antrum and the mastoid cells in cases of acute and subacute suppurative disease. In those cases in which the mucous membrane lining the mastoid antrum and the mastoid cells is in an acute suppurative condition, and where there is high fever, rapid pulse, local and generalised pain, and all the symptoms indicative of tension, few will, I think, hesitate to advise early opening and drainage, and no one will, I think, deny the almost invariably successful issue of such cases not only as regards the life of the individual, but also as regards the preservation of the special function of hearing.

In the treatment of many surgical conditions an expectant and a conservative line of treatment is no doubt admissible and advisable, but the attitude of timidity and procrastination, which has so frequently in the past restrained the surgeon from adopting the only truly scientific line of treatment in such cases, namely, the opening of the mastoid process, is I think, to be condemned. It must be remembered that pus may exist, and exist in very considerable quantities, within the mastoid cells, especially when situated deeply, without there being any external evidence of its presence, neither swelling nor œdema of the retro-auricular tissues. In addition to such general symptoms as high temperature, rapid pulse, headache, etc., we have a most important indication in the presence of local pain over the process, frequently most exquisite, and in the presence of an œdematous swelling of the posterior superior meatal wall—"the dip"—close to its attachment to the membrana tympani. The persistence of such general symptoms, in conjunction with severe local pain, dipping of the posterior superior meatal wall, and the presence of a discharge whether copious or not should, I take it, at once determine operative procedure.

There are, however, certain cases met with which for practical and for clinical purposes may fairly be called subacute, which have run a course of perhaps a few months, in which the discharge is fairly free, and in which the sense of hearing is distinctly and progressively becoming more and more impaired, but in which, owing to the absence of all tension, pain is conspicuous by its absence. It becomes a nice question in these cases as to what is the proper course of treatment to pursue, the more so if we know that careful and rational local treatment has already been conscientiously carried out. My experience is that *cæteris paribus* the longer a suppurative process lasts in and around the middle ear the greater is the resulting damage to its delicate structures, and the greater is the ultimate damage to the ear as an organ of special sense. We are also all aware that the longer suppuration lasts the greater are the risks of secondary bone disease, and of the many and serious complications which may result from its presence.

If these premisses be true, are we justified in continuing a purely local line of treatment? Are we not called upon to interfere in some more radical fashion? In cases such as I have described there is, however, a tendency, owing to the absence of pain, to discountenance any idea of operation and to continue local treatment for almost indefinite periods. If we regard the presence of pain as a *sine quâ non* to the performance of a mastoid operation, we, I think, do our patients an injustice, as, despite the continuance of local treatment, suppuration continues and more and more disorganisation of the middle ear results, with all its attendant risks.

The question naturally arises in such cases. Are we sure that there is a diseased condition of the mucous membrane lining the mastoid antrum or the mastoid cells? Is it not possible that the flow of pus is coming merely from the cavity of the middle ear and not from its adnexa? This question is certainly at times difficult to answer; but experience has taught me that if the middle ear be cleansed, first by syringing and secondly by free inflation with Politzer's bag, and if pus still reappears almost immediately after drying and redrying of the part, we have to deal with a reservoir of secretion, not simply in the middle ear itself but in the cavity of the mastoid antrum or mastoid cells, and my experience from operative work fully endorses this statement.

To establish a definite diagnosis of the presence of pus Ferreri suggested exploratory puncture, Eulenstein advocated percussion of the process, Caldwell transillumination of the cells, while Okouneff suggested that, in the case of a mastoid abscess being present, there would be a marked diminution of the bony conduction of sound in the region occupied by the purulent collection.

A point of some diagnostic value, to which I venture to draw attention—and a point which has, I think, some practical value in the determination or otherwise of the presence of pus within the mastoid—is the surface temperature of the skin over the posterior meatal wall, close to its attachment to the membrane, in contrast to the surface temperature taken over a similar area upon the anterior meatal wall. In cases where pus is present in the mastoid cells, or where the mucous membrane lining these cells is in a hyperæmic condition, the surface temperature of the posterior wall will be found slightly higher than the surface temperature of the anterior wall. This fact, taken in conjunction with the presence of a profuse purulent discharge, and with possibly a slight prolapse of the posterior superior wall, close to its attachment to the membrane, should, I think, greatly influence us in coming to the conclusion that the tissues within the mastoid are in an unhealthy condition and require free exposure. In such cases my experience of antrectomy has been most happy, and the results following operation have been good, both as regards the early cessation of discharge and the preservation of the function of the organ.

In careful hands I believe that the modern mastoid operation is a safe procedure. If the general surgeon does not hesitate to open the abdomen for purely exploratory and diagnostic purposes, why should the aural surgeon hesitate to explore the mastoid process for similar reasons? I thoroughly believe that in doubtful cases the safest thing for the patient is to have an exploratory mastoid operation performed; and were this done more frequently and at an earlier date than is at present the custom, our out-patient departments would not be so overcrowded as they are with cases of genuinely chronic middle-ear suppuration—cases which consume a large share of the surgeon's time owing to the technical and laborious methods of treatment, which are and have to be employed, to say nothing of the destruction which long-continued suppuration produces, and of the disappointing results so frequently obtained as regards the ultimate hearing power of the individual.

I am quite alive to the fact that it is difficult to assign a definite time limit for such cases—to say exactly when local treatment should cease and operative treatment should begin, and I am also quite willing to admit that in private practice a longer time limit for local treatment may safely be allowed than in hospital practice, where, from the nature of the patient's calling, frequent visits to the hospital are not always possible, and where the many details of treatment are frequently but imperfectly performed.

My experience of this class of case—subacute suppurative catarrh—has, however, taught me that where suppuration has lasted for a period of two months without showing real signs of abatement, and where the ordinary methods of examination go to prove that the main lesion is within the mastoid cells or antrum, an exploratory mastoid operation is

advisable. Should pus be found, as it almost invariably will be found, the resulting free drainage will expedite the cure of the disease in a most remarkable fashion, and will be the first really valuable step in tending to restore the organ to its normal function. Should pus, however, not be found, it merely remains to immediately close the external wound, and to allow healing by first intention to take place.

In cases of chronic suppuration—I mean cases which have run a course of perhaps a few years—we have as a rule some bone lesion superadded. This implication of the temporal bone may be easy of recognition and of investigation by means of inspection, palpation with the probe, etc., but it may be so situated in the depths of the mastoid antrum or mastoid cells as to make it impossible to gauge its actual extent, although it is capable of keeping up an almost persistent purulency.

Frequent or persistent sanious discharge in the absence of granulation tissue or polypi lends colour to the idea that diseased bone is present, as also does a persistent offensive discharge even after careful antiseptic cleansings, as also does the constant reappearance of granulation tissue after frequent removal. The occasional presence of bony spiculæ may also at times be seen and felt in the discharge from the ear. In such cases we have a marked absence of pain, except upon the supervention of some acute attack grafted upon a chronic base, while we have persistent discharge, occasional hæmorrhage from the ear, the presence of masses of granulation tissue, progressive impairment of hearing, impaired general health, and depressed vitality.

Cases such as I have pictured are particularly common, and by their chronicity and intractability to local treatment are prone to weary both patient and surgeon. Recent bacteriological discoveries have, moreover, shown that such cases possess an inherent element of danger, and that serious intracranial trouble—meningitis, thrombosis, abscess, etc.—may suddenly supervene, owing to the passage of septic organisms from the middle ear to these intracranial structures.

With such knowledge at our command, are we justified in countenancing methods of purely local treatment for indefinite periods? Is it not the duty of the aural surgeon to step in, and by a suitably planned and properly executed operation to clear out the existing focus of sepsis, whether in the middle ear or adjoining mastoid cells? The absence of pain in these cases has, I think, largely determined a non-operative course of treatment, and radical measures have frequently been delayed until the supervention of pain has only been the immediate precursor of a fatal meningitis, etc.

Now, sir, my contention is that in cases where suppuration has persisted for twelve months, and where for at least three months careful and rational local treatment has been tried but without avail, the mastoid antrum and contiguous mastoid cells should be opened and cleared out, the precise form of the operation, whether a Schwartze, a Stacke, or a modified Stacke being determined by the peculiarity of each individual case. With proper precautions and with suitable instruments and means of illumination the mastoid operation, as at present performed, is, I believe, a safe procedure, and its results in the great majority of cases eminently satisfactory.

In cases proved to be of tuberculous origin, cases which have run an asthenic and almost chronic course from the commencement—early opening and drainage should, I believe, at once be resorted to without attempting any prolonged course of local treatment, for even if it has the effect of temporarily arresting purulency an early recurrence may safely be predicted.

When cholesteatomatous masses occupy the attic and antrum I am strongly in favour of early and radical operation, as I the maintenance of a permanent mastoid fistula. Even should the mastoid operation not have the effect of producing a permanently dry and cicatricial lining to the newly-formed antro-tympanic cavity, I believe that the patient is in a very much safer condition than before operation, owing to the fact that all loculi and foci in which germ-teeming pus may collect are done away with, and parts which previously were concealed and difficult of access are now thoroughly exposed and capable of being accurately treated by local applications.

To illustrate the above remarks I have carefully analysed the notes of 150 of my mastoid operations, and have divided the cases into three classes—acute, subacute, and chronic—according to the previous duration of disease and intensity of symptoms.

Of the 150 cases, 10, or 6⅔ per cent., were acute, and presented the ordinary symptoms of a rapid course—high fever, quick pulse, severe mastoid pain, and the ordinary objective evidences of an acute suppurative middle-ear catarrh. In all—after a short preliminary trial of local treatment—local depletion, enlargement of the existing perforation, etc., the mastoid antrum was opened and drained, any adjacent mastoid cells which were implicated being freely opened up and cleansed.

The result in all was eminently satisfactory, rapid healing taking place, with recovery of hearing power.

Of the 150 cases, 10, or 6⅔ per cent., were subacute, had lasted for periods varying from two to three months, and were characterised by a copious discharge, progressive loss of hearing power, but by an absence of any degree of local pain, and had been subjected to the ordinary methods of local treatment from an early stage of the disease.

After free opening of the antrum and contiguous mastoid cells, 9 entirely recovered, the hearing power returning to practically the normal amount, and 1 was lost sight of.

Of the 150 cases, 102, or 68 per cent., were genuinely chronic, and had lasted for very varying periods.

In all (except the tuberculous cases and cases with cholesteatomata) persistent and careful local treatment had been tried for periods varying from twelve to twenty-four months, but without avail.

In 78, Stacke's modified mastoid operation was performed with the following results:

In 65 a complete recovery took place, by which I mean that all suppuration completely ceased, and the newly-formed antro-tympanic cavity became nicely papered with an epidermal covering. One died and 12 were lost sight of or are still under treatment.

In 72 the ordinary Schwartze operation was performed. Of these, 47 recovered, 8 died, and 17 were either lost sight of or are still under treatment.

Of the 150 cases, 18, or 12 per cent., were of tuberculous origin, and were submitted at once to operation. Nine of the cases recovered and 6 died, the cause of death in 3 cases being meningitis, in 1 tuberculous enteritis, and in 2 general marasmus. In 3 cases the subsequent history is unknown.

Of the 150 cases, 10, or 6⅔ per cent., were implicated with the presence of cholesteatomatous masses, and were submitted to early and radical operation. Of these 10 cases, 10 recovered, in 5 a permanent mastoid fistula being established, in 1 the cavity being allowed to granulate from the bottom, while in 4 Stacke's operation was performed.

With regard to the subsequent hearing power of those patients who had been operated on for chronic mastoid disease, I have no very accurate notes. My general impression is, however, that in the majority of cases the hearing power was after operation very much what it was before operation, in a few it was made worse, and in a small number of the cases the hearing power *for conversation* was somewhat improved.

Discussion.

Dr. Barr (Glasgow) expressed regret that this most important paper had come at the fag end of a sitting instead of at the beginning. The importance of the subject was so great that it would be well if it were made a leading subject of discussion at the International Otological Congress next year. The operative treatment of the painless purulent diseases of the middle ear would be more and more practised as time went on. If by ordinary rational measures, sufficiently long-continued, the purulent process was not brought to an end, Stacke's or some other form of operation should be carried out. Although in such cases it was rare that one was justified in operating at once before ordinary measures had been tried, no doubt cases of this kind occasionally came before them. Dr. Milligan's statements and statistics would be well worthy of careful perusal.

Dr. McKenzie Johnston (Edinburgh) thought it a great pity that such a valuable paper, containing so many interesting cases, should have come on so late. He was hardly prepared to adopt the proposal to open the mastoid early in order to cure a discharge which resisted ordinary treatment. It

was true that the operation itself was not dangerous, but they had also to remember that in a proportion of cases the discharge was not finally cured by the operation. Further, he did not think their patients would readily submit to operation without the pressure of pain or other evidence of acute mischief. No doubt, could they foretell what cases would require operation, then the earlier they proceeded to this step the better, and the better would be their results.

Dr. McBride (President of the Section) said he was sure they were all obliged to Dr. Milligan for his most valuable paper, and regretted that they had no more time to discuss it.

THREE CASES OF FOREIGN BODY IN THE THROAT IN WHICH THE POSITION OF THE BODY WAS DETERMINED BY THE ROENTGEN RAYS.

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The employment of the *x*-rays in the detection and localisation of foreign bodies is now a matter of almost everyday practice, alike in private and hospital work. Though we are thus all familiar with the skiagraph as a diagnostic agent in many departments of surgery, I venture briefly to describe three cases illustrated by photographic slides, in two of which this method of demonstrating the presence of a body was of paramount importance. These two cases are of special interest to members of this Section. In one of these a pin was lodged for a lengthened period within the larynx, while in the other a pin was lodged close to the posterior border of the thyroid cartilage outside the larynx. Each pin occupied such a position and was so embedded in the soft tissues and so protected by the cartilaginous framework of the larynx, that it could neither be seen by the laryngoscope nor felt on palpation. In the third case a coin was impacted in the gullet.

Case I.—D. G., aged 19, placed a pin in his mouth while asleep during the night of June 29th, 1896. On the following morning the first mouthful of breakfast, when being swallowed, caused a sharp, tearing sensation in the throat, followed by a sharp pain on the right side of the neck close to the thyroid cartilage. Three days later he was sent to my department at the Western Infirmary, where on examination the pharynx was seen to be inflamed, the right ventricular band was injected and œdematous, and from its increased size it obscured the greater part of the right vocal cord, which latter was also swollen and red. The structures on the left side of the larynx were unaffected. No foreign body could be seen or felt, but the opinion then given was that the localised inflammatory œdema coupled with the history and symptoms, pointed to the presence of a sharp body. The application of the *x*-rays for the detection of foreign bodies, etc., was then in the experimental stage, and it was not until August 21st that a satisfactory skiagraph giving a lateral view of the parts (shown) was obtained.

Amongst the structures depicted on the plate are portions of the upper and lower jaws, with some of the molar teeth, the fangs of which are clearly shown. To the left are several of the cervical vertebræ, and in front, under cover of the lower jaw, is the hyoid bone below which a light perpendicular band indicates the position of the larynx and trachea, structures which are particularly translucent. Crossing this light area, at the level of the lower border of the body of the fourth vertebra is the pin with the head anteriorly and corresponding to the outline of the thyroid cartilage, and with its point embedded in the cartilaginous disc between the fourth and fifth cervical vertebræ. The pin appears to be at least a quarter of an inch longer than the antero-posterior diameter of the larynx, and it is bent near the middle, with the convexity directed upwards. The level occupied by the pin and the direction in which it lay having been thus determined, its position relatively to the middle line was then made out by an antero-posterior skiagraph. In this the head was close to the middle line, from which point the body of the pin, foreshortened, was directed upwards and backwards. The pin was thus clearly shown to be within the larynx, and I determined to remove it by laryngofissure. Four days later (August 25th) the patient was put under chloroform and the thyroid cartilage laid bare in the middle line. In cutting through the perichondrium the point of the knife touched something metallic, which on examination proved to be the head of the pin, which had ulcerated its way through the cartilage. The head so presenting was grasped with forceps and the pin readily extracted. The pin, which had been in the larynx for five months and two days, is fully an inch and a-half in length, and bent near the middle. The wound healed quickly and satisfactorily, and the patient was dismissed on the seventh day after operation.

Case II.—M. Y., aged 18, while at work on Monday morning, February 21st, 1898, placed a pin in her mouth, catching it between her incisor teeth. When so placed she suddenly coughed, and the pin "went down her throat." There was no pain, and she supposed the pin had been swallowed. She continued at her work and free from pain until Friday, the 25th, when shortly after dinner she felt sick and vomited, and while vomiting she experienced a sharp pain on the right side of the throat, close to the thyroid cartilage. She was then sent to the Western Infirmary, where I saw her later on the same evening. Her fauces, pharynx, and larynx appeared normal, with the exception of a slight fulness in the right hyoid fossa, and no foreign body could be seen or felt. The skiagraph now presented was then taken. It shows the pin to be a straight one, and lying in a line with the posterior border of the right wing of the thyroid cartilage. The patient was given a large dose of bromide and sent to bed. Next morning the parts were anæsthetised with cocaine; curved forceps were passed through the mouth and the points pressed deeply and firmly into the right hyoid fossa. There the head of the pin was touched, then grasped, and the pin withdrawn. Pain entirely disappeared on the removal of the foreign body, and the patient returned home in the afternoon.

Case III.—L. C., aged 11, at about 3.30 P.M. on Sunday, September 19th, 1897, took a penny from her sister with whom she was playing, and attempted to conceal it by placing it in her mouth. It, however, suddenly "went over." She at once complained of severe pain on the right side of the neck, which was increased by attempts at swallowing. She was taken to the Western Infirmary, where I saw her on the same evening. Severe pain at the level of the second tracheal ring and inability to swallow were noted, but no change in the fauces, pharynx, or larynx could be observed. Before attempting its removal a skiagraph, which very clearly indicates the position of the coin, was taken, and the penny was immediately thereafter removed by means of the coin catcher (7.15 P.M.). Although the penny had been retained in the œsophagus for somewhat less than four hours, and from which it was removed easily at the first attempt, yet she had pain and some difficulty in deglutition for close on three weeks. This, however, slowly and completely passed away.

Dr. Herbert Tilley (London) asked if in the first place the thyroid cartilage had been split.

Dr. Downie replied in the negative.

A PLEA FOR A MORE THOROUGH STERILISATION OF NOSE AND THROAT INSTRUMENTS.

By Adolph Bronner, M.D.,
Senior Surgeon to Bradford Eye and Ear Hospital; Laryngologist to Bradford Royal Infirmary.

Laryngology has in late years made marked progress; it has at last been officially recognised as an independent and useful branch of surgery, and it is no longer looked upon by surgeons as a kind of illegitimate and disreputable offspring. In one direction, however, we have distinctly lagged behind, that is, in our ideas of aseptic surgery. Our instruments are just as septic as they were fifty years ago. We still go on using the same instrument day after day, and month after month, without ever thinking of sterilising it. It is difficult to quite understand why this should be the case. Is it not chiefly indifference and carelessness? Some think that, as it is impossible to make the nose and throat aseptic, we need not trouble to sterilise our instruments. Or it has been argued that no fatal results due to aseptic instruments have been recorded, and that it does not much matter even if we do get slight localised inflammation. Others say that it would necessitate a great deal of trouble and labour to sterilise all the instruments we use, and that we should require an enormous number of instruments for our daily work, which would be very costly and extravagant; or it has been said that some instruments, such as laryngeal mirrors, galvano-cautery points, cannot be sterilised.

If we, however, seriously consider these various objections, we must acknowledge that they are absolutely fallacious and weak.

It is true that we cannot make the nose and throat perfectly aseptic, but surely this is no reason why we should not try to make those parts in which we wish to operate as aseptic as possible? I generally apply a 1 in 1,000 solution of perchloride of mercury in glycerine to the parts, and use a spray of the same strength.

It is not true that no cases of serious, or even fatal, inflammation due to septic wounds have been recorded. Several have been published and many more have certainly occurred. And how about syphilis? Specific disease of the nose and throat is very common. Many surgeons argue that they use special instruments for syphilitic cases. But how about the doubtful cases, or those which have not been recognised as syphilis, or which have been thought to be syphilitic and were not? It is not always easy or possible at once to diagnose these cases. If we ourselves do not see many cases of syphilis acquired through the use of our own instruments, it is because these cases do not return to us but consult another surgeon, who does not, or perhaps cannot, examine the nose and throat. And how about our tuberculous cases?

There is only one way of thoroughly sterilising instruments, and that is to boil them in water or 1 per cent. solu-

tion of bicarbonate of soda for at least five minutes. No instrument should be used for more than one patient without having been previously sterilised. There are, of course, innumerable kinds of sterilisers. I prefer one which is vertical (made by Down Bros.), and into which the instruments are dipped in a wire cylinder. After five minutes the cylinder is removed, and the instruments are left to dry for a few minutes; they are then rubbed with a clean, soft towel. As soon as I have used a certain number of instruments, I pass them on to an attendant, who sterilises them in an adjoining room, and returns them in a short time, when they can be used again. In the same way the same instrument can be sterilised and used several times in the day, and we do not require such a large number as we should do if we only boiled them once a day. In hospital practice we should have a steriliser with boiling water on the table, and throw the instruments in as soon as they have been used. The same method should be adopted with ear instruments, especially with Eustachian catheters. The amount of dirt and filth which accumulates in a catheter which is not regularly sterilised is remarkable, and this filth is naturally often blown straight up into the middle ear. Vulcanite catheters are an abomination, and should never be used.

The cheap laryngeal mirrors do not stand frequent sterilisation. Messrs. Hirschman, and also Dorfell, of Berlin, make a special kind, which have an additional coat of copper under the mirror, and which last for months. The galvano-cautery points generally used can certainly not be sterilised. I have had some made with strong copper sides, which do not easily bend, and in which the insulating silk only comes halfway up. The end is brushed after use, and left in a 1 in 500 perchloride of mercury solution for at least an hour. In Fraenkel's cautery the whole is encased in a metal sheath, so that it can be boiled. It is, however, rather large, and easily gets out of order.

DISCUSSION.

Mr. GEORGE JACKSON (Plymouth) hoped that Dr. Bronner did not mean to say that little or no sterilisation was done; as for himself, he used strict asepsis.

Dr. MILLIGAN (Manchester) said there was no doubt as to the value of the remarks that had been made. He had been in the habit of using a horizontal steriliser with a rack. When the instruments were sterilised the rack was pulled out, and the instruments were hung on little pins. It was a mere matter of detail as to the form of apparatus one used; the important fact was the sterilisation. He had never seen a case in which it could be said that specific infection had been communicated, although he recognised such a possibility. He thought it was the duty of every laryngological surgeon to make use of some apparatus.

Dr. MCKENZIE JOHNSTON (Edinburgh) thought this an extremely convenient form of steriliser. The use of sterilisers had emphasised the importance of absolute cleanliness in all apparatus used. Still, he was not prepared to discard the vulcanite Eustachian catheter because it could not be boiled. He thought that probably they all, by other means, were careful to make the use of this instrument perfectly safe. Dr. Bronner's apparatus, he thought, would be specially useful for the tonsillotome, an instrument easily cleaned on the surface, but often containing *débris* and secretion in its grooves difficult to dislodge.

REPLY.

Dr. BRONNER, in reply, stated that he was extremely pleased with the remarks that had been made. He had no desire to bring forward anything original, but just to impress the principle stated in his paper.

A CASE OF SEPTIC THROMBOSIS OF THE LATERAL SINUS.

By HAMILTON A. BALLANCE, M.S.Lond., F.R.C.S.Eng.,
Assistant Surgeon, Norfolk and Norwich Hospital.

[ABSTRACT.]

THE patient was a woman, admitted into the Norfolk and Norwich Hospital in November, 1897, aged 24, pregnant five months, and, although disease had been in progress in the left tympanum and mastoid for many months, there had been no discharge from the ear until one week before admission. The patient had had repeated rigors, sickness, and headache, and double optic neuritis was present. The complete mastoid operation was done, an extradural abscess opened, and a slough removed from the inside of the sinus. The internal jugular vein was divided between two ligatures in the neck. The patient miscarried two days after operation, and subsequently secondary abscesses formed in the arm, leg, and kidney. Suppurative tonsillitis, jaundice, and two attacks of erysipelas also occurred, but eventually the patient completely recovered. Pure cultivations of the streptococcus pyogenes were obtained from the various secondary foci, and the use of streptococcus antitoxin was attended with benefit.

DISCUSSION.

Dr. MILLIGAN (Manchester) said that Mr. Ballance was to be heartily congratulated on the care and attention given to his patient, and on the successful issue of the case, notwithstanding the many serious and dangerous complications. He regarded the occurrence of a rigor, or series of rigors, as a point of much importance. He had found that they rarely occurred in uncomplicated middle-ear suppuration, and looked upon their advent as probably an indication of the existence of a purulent focus in the depths of the mastoid, or as an indication of an extension of the existing disease. With regard to Mr. Ballance's remarks upon the effects of the cocaine spray in this particular case, he thought that the phenomena might be explained by the greater toxic effects of cocaine upon a system weakened by long-continued and serious septic disease. His experience with antistreptococcic serum did not tally with Mr. Ballance's, and he felt doubtful if the remedy should be used at all at present except in the laboratory, considering how little was really known as to whether there was one or whether there were many streptococci pathogenic to a case.

Dr. BARR (Glasgow) said there were many points of interest and importance brought up in connection with this single case. First, with regard to the question of such serious conditions following the acute middle-ear affections, he would be rather unwilling to accept the view that such a case arose from so acute and recent middle-ear conditions without very careful examination beforehand as to the state of the ear. They should not always accept the patient's statement as to the duration of a discharge, because very often they found that instead of a week's duration, as given by a patient, conditions were present which made it perfectly certain that a purulent condition had existed for years; therefore this point of acute origin should be carefully investigated before coming to a decision. As to the mode of systemic infection, it was generally accepted that so long as the sinus obstruction was of the nature of a solid plug, as in this case, systemic infection was not likely to occur. Mr. Ballance mentioned that the circulation through the jugulars seemed to be entirely stopped. It was somewhat remarkable that so extensive systemic infection had taken place without disintegration of the thrombus. With respect to the most interesting point as to whether the jugular should be ligatured in such conditions, he himself (Dr. Barr) had brought before them two cases yesterday in which it was proved that even in the presence of very notable rigors repeated five, six, and seven times with very high temperature, recovery might take place without such serious operative procedures as ligature of the jugular by simply removing the pus and granulation tissue surrounding the sinus, and by thus treating the external wall of the sinus one might be able to bring about complete recovery without further operation. It was important to remember that even in cases where rigors and high temperature occurred they might, by clearing away all the inflammatory material from the sinus, be justified at any rate in waiting a short time before proceeding to the more serious operations of ligaturing the jugular and opening the sinus.

Dr. JOWSON HORNE (London) considered that debilitated health was a factor in the development of toxic symptoms under cocaine; and that in some cases eucaine, as less likely to produce toxic symptoms, would be found an efficient substitute. He referred to the investigations into the use of eucaine conducted by his colleague Mr. Yearsley and him-

self, the results of which were contributed to the Montreal meeting. He further considered that in using cocaine or eucaine it was as well to avoid the spray, and to apply the drug as far as possible by means of cotton wool, or in the case of the ear by instillation.

Reply.

Mr. Ballance, in reply, said that he quite agreed with Dr. Milligan in the great significance that should be attached to the repeated rigors in this case, they being without doubt the most important points in the history obtained. A certain number of rigors, however, might be met with in extradural suppuration without definite involvement of the sinus. The jaundice here he looked upon as a toxæmic blood jaundice due to the sepsis, and probably of a hæmolytic character. The strength of the cocaine solution used was 10 per cent., which was certainly much too strong, and there was no doubt that the patient received an overdose. Mr. Ballance had not used antistreptococcic serum in other cases of sinus thrombosis, but he had employed it in some acute spreading inflammations, and believed that it had done much good. It might be that the varieties of streptococci might each need a particular antitoxic serum, but at present they only possessed one serum for all cases of streptococcal infection. In answer to Dr. Barr he thought that the short history of the discharge was quite genuine, though there must have been long-standing disease but without evident external sign. As regards the appearance of secondary foci some considerable time after ligation of the jugular, possibly the infection spread by the posterior condylar vein or else by means of some small unnamed venous radicle. With reference to the ligature of the vein, it was really not a serious complication to the mastoid operation as had been stated, it is very easily exposed in the neck and the procedure only lasted a few minutes. Although it was unnecessary to ligate the vein in all cases of extradural suppuration secondary to mastoid disease, yet the rule that had been formulated of tying the vein in all cases when in doubt as to the condition of the sinus, was the best one to follow.

THE PATHOGENESIS AND EARLIER CLINICAL EVIDENCES OF LARYNGEAL TUBERCULOSIS.

By Jobson Horne, M.A., M.B.Camb., M.R.C.P.Lond.,
Casualty Physician, St. Bartholomew's Hospital; Physician-in-Charge of Throat, Nose, and Ear Department Farringdon General Dispensary and Lying-in Charity.

[Abstract.]

The idea is still widely held and continues to be instilled into the mind of youth by the textbooks—those great storehouses for stereotyped medical fallacies—that laryngeal tuberculosis, or "laryngeal phthisis" as it is more commonly and unfortunately termed, may be summed up as a tuberculous process of infiltration and ulceration occurring towards the end of advanced cases of phthisis, for which there is but little treatment which is palliative and still less which is remedial. To restrict our views of laryngeal tuberculosis in this way is, as a clinical fact, equivalent to taking up the study of "consumption" from the time when cavities have already formed. The term "laryngeal phthisis" is unfortunate: it helps to foster the idea that the disease is a separate entity, and it will presently be shown that laryngeal apart from pulmonary tuberculosis can hardly exist.

To combat this idea Dr. Horne set himself. He said it would be difficult, owing to the pressure of time, to give an abstract, that would in any way be complete, of a clinical and pathological research involving much detail and extending over some years. He would confine himself to the threshold of the disease, the early pathological changes and their clinical counterparts, which he had learnt to regard as the earliest signs and symptoms not only of laryngeal but also of pulmonary tuberculosis.

The first part of the paper concerned itself with the pathogenesis of the disease; the portal of infection, the beginning and path of tuberculous destruction, the origin and formation of the giant cell. A lantern demonstration was given of photographs of microscopic sections on which the conclusions were based, and some of the more important sections were shown under microscopes. The pathogenesis of the disease had been studied in larynges which *post mortem* presented to the naked eye none of the usual signs of laryngeal tuberculosis, but which had been removed from bodies in which there had been undoubted tuberculosis in other organs. Attention was drawn to the interarytenoid space and the ventricles together with the under surface of the ventricular band as regions entitled to further consideration than they had received in the study of laryngeal tuberculosis. The method often adopted in the *post-mortem* room of opening a larynx by an incision through the middle of the interarytenoid space and of exposing the interior by placing the thumbs on the two arytenoids was held responsible for many interesting microscopic changes in this region being lost sight of. Dr. Horne dwelt upon the importance of the ventricle as a harbour for tubercle bacilli. In the examination of larynges films were first prepared from the contents of the ventricles and stained for tubercle bacilli, and the larynx was afterwards microscopically examined throughout.

The earliest changes noted in the lymphatics were a proliferation of the parenchyma of the acini and efferent ducts and the formation of masses of small round cells distending and choking the ducts and obliterating the glands, the adjacent and superficial structures remaining intact. These changes had been noted in the lymphatics situated in the walls of the ventricles when a careful microscopic examination of the entire larynx had failed to reveal changes in the lymphatics in other parts. The nature of this cell proliferation was next considered. Was it to be regarded as nothing more than an outcome of a traumatism or of some simple catarrhal process perhaps peculiar to tuberculous subjects; or was it to be attributed to one specific cause—namely, the presence of the tubercle bacillus? Dr. Horne said that although he was not prepared altogether to accept or reject the theory that these lymphoid masses were due to a simple catarrhal process, he was now able to demonstrate the tubercle bacilli in the midst of some of them, and was of the opinion that once having gained an entry into the lymphatic ducts they acted as an irritant and caused a cell proliferation.

The *fons et origo* of the giant cell in tuberculosis next came under consideration, and its development from the wall of a lymph space was demonstrated. The series showed first the tubercle bacilli lying amongst the endothelial cells forming the wall of the lymph space; secondly, the fusion of the adjacent and divided cells; and, thirdly, the separation off of this plasmodial mass as a giant cell. Reference was made to the researches on lepra laryngis by Dr. Paul Bergengrün, of Riga, in which he had shown that the so-called "globi" were bacillary thrombi lying in dilated lymphatics, and that the lepra giant cell developed from the lymphatic endothelium.

If, then, as would appear to be the case from the foregoing, the tuberculous process commences in the lymphatics, it would be natural to suppose that those parts which are rich in lymphatics would be the more common sites for infiltration and ulceration, while such parts as are without glands would escape ulceration except by continuity. This was clinically verified. The interarytenoid region, the posterior third of the cord, the ventricular band, and the epiglottis, especially the petiolus, are the parts more richly endowed with glands, and these are the parts more commonly ulcerated in laryngeal tuberculosis. The cord, the functionally more important part of the cord—namely, that part lying between the two small cartilaginous bodies—being free from glands, escapes ulceration excepting superficial erosion and by continuity. A proliferation of the subepithelial bloodvessels was described as taking place side by side with this cell proliferation.

With regard to the muscles, changes were described as occurring at an early stage in the fibres, and as being clinically brought into evidence by an early functional failure which was mainly myopathic.

The earlier clinical evidence of laryngeal tuberculosis, the clinical counterparts of these early pathological changes, were next described. Whilst clinically investigating these it was necessary, inasmuch as only slight departures from the normal were being looked for, to retain a control mental image of a normal larynx. This was done by constantly examining a large number—some hundreds in all were examined—of larynges in healthy subjects, or at least presumably free from

tuberculosis. And it was whilst in search of normal larynges that some important aids to the present research were stumbled upon. The larynx had been examined in 359 consecutive cases of pulmonary tuberculosis or cases in which there were reasons for suspecting the disease. The points to which attention was mainly directed were the following:

(1) Disturbances of sensation, hypoæsthesia, hyperæsthesia, paræsthesia.

(2) Colour changes, anæmia, hyperæmia.

(3) Functional disturbances.

(4) Impaired movements of vocal cords apart from paralysis.

(5) Changes in the contour of the larynx due to slight œdema.

Inasmuch as disturbances of sensation are subjective, too much significance could readily be attached to them if taken alone as a clue to pulmonary tuberculosis, but in regarding them only as evidence of "hysteria" one is apt to miss important clues to pulmonary tuberculosis.

Hyperæsthesia was not infrequently associated with anæmia of the soft palate, and it might be stated that unless the subject is wilfully hostile to laryngoscopy, the more pallid the soft palate the greater the tolerance to laryngoscopy. And when in the course of the pulmonary condition the anæmia passed off the tolerance often went with it.

Anæmia of the laryngeal mucosa was noted as present in varying degrees in 157 out of 359 cases. At times it was universal; when patchy it was confined to points where the mucosa was more easily exposed to tension, occasioned by a slight œdema in association with the proliferation of subepithelial vessels. It was as frequently met with in men as in women.

Hyperæmia was noted in 117 out of 359 cases, and rather more frequently in males. This hyperæmia must be regarded as a feature distinct from, and not amounting to, acute laryngitis. Acute laryngitis did not occur so frequently as one might previously have anticipated. The hyperæmia was often transient, within a few days giving way to pallor; but at times it was most persistent. These phenomena were also attributed to the proliferation of subepithelial vessels.

Disturbances in the vocal function were most frequently met with, often transient, not amounting to more than a weakness of voice or loss of tone. The production of voice called for a greater effort, there was a forgetfulness of office, a sluggishness of one or both cords to act, so that there was phonatory waste before voice was produced, and in connection with this required effort might be mentioned that in early tuberculosis when the speaking voice is weak the singing voice may be quite clear. Then the singing voice might suddenly go; this causes the patient to seek advice, and the possibility of commencing tuberculosis should not be forgotten.

Transient dysphonia was more commonly met with amongst women, and especially young married women, during pregnancy. Not infrequently in cases of so-called "hysterical aphonia" thoracic signs of pulmonary tuberculosis had been subsequently made out, and it was as well to bear in mind the possibility of diagnosing "hysterical aphonia" in the presence of pulmonary tuberculosis.

Impaired movement of the vocal cords apart from paralysis was described, and considered to be myopathic in origin, and due to changes noted in the muscular fibres. With regard to transient œdema of the laryngeal mucosa, the contour in a large number of larynges in early pulmonary tuberculosis when compared with that existing in a normal larynx was found to be partially lost, more particularly in the interarytenoid and arytenoid regions along the ventricular bands, and at the base of the epiglottis. A fine crenating or fringing occurs upon the folds of mucous membrane in the interarytenoid space, not sufficient to be called an excrescence, but met with sufficiently often in pulmonary tuberculosis as to be deserving of attention. An early but transient loss of symmetry in the outline of the arytenoid eminences occurred. The ventricles became less patent, and this loss of patency was commonly associated with some œdema of the inner wall of the ventricular band, which was ascertained clinically in endeavouring to pass a curved platinum hoop into the ventricle in search of tubercle bacilli. A slight œdema of this part of the ventricular band, together with an enfeebled action of the compressor sacculi laryngis must effectually retain sputum laden with tubercle bacilli within the ventricle when once it had been lodged there in the act of coughing. Moreover, it was pointed out that the choking by a cell proliferation of the ducts of the muciparous glands opening into the ventricle, the closure of the ventricle by the œdema secondary to the proliferation of vessels, and the failure of the compressor sacculi laryngis through changes in the muscle fibres to discharge its contents, all combine to deprive the cords of the mucus necessary for their lubrication. The cords lose the semitranslucent mother-o'-pearl sheen, and present an opaque pallor more approaching to dead ivy-white. With insufficient lubrication superficial erosions occurred; this did not amount to ulceration as met with elsewhere in the larynx inasmuch as the essential element was absent—namely, the lymphatics.

DISCUSSION.

Dr. HERBERT TILLEY (London) after congratulating Dr. Horne on the excellence of his specimens, and the many sidelights which his investigations threw on laryngeal tuberculosis, said that he felt bound to take exception to one of the author's statements—namely, that a swelling or tumefaction of the mucous membrane in the interarytenoid space was pathognomonic of tubercle, or a pretuberculous phase of tuberculous laryngitis. The speaker had on one or two occasions shown cases at the Laryngological Society of London, in which this condition had existed for five or six years as a complication or form of chronic laryngitis in typically robust individuals. In such cases as these, when the patient phonated, this interarytenoid swelling might prevent the vocal cords approximating, and so hoarseness might be a symptom. On the other hand, a tendency to be constantly "hemming" or "hawking" was sometimes an annoying symptom of the chronic inflammatory condition. Stoerk had shown that a vertical fissure often existed in the mass, and was then accompanied by pain on coughing or swallowing. Such cases were often designated as interarytenoid pachydermia; the swelling was tough and difficult to remove with forceps, or, indeed, by any other means, whereas the true tuberculous interarytenoid swelling was soft and friable, and could easily be removed by means of a curette, being, in fact, a large soft granulation. The pachydermatous condition was most often found in the "Schnapps" drinkers abroad, but it was also due to other conditions which produced chronic laryngitis, as in the cases the speaker had exhibited from time to time. From a personal experience he knew the tendency of mucus to form on the tumefaction, necessitating a constant clearing of the throat; this was especially the case after a hearty meal following a too prolonged abstinence from food, which was so often unavoidable in their profession.

Dr. STCLAIR THOMSON (London) said he should like to join in thanking Dr. Horne for his valuable contribution. One point bore out what he had for some time considered as clinically possible—namely, pretuberculous laryngitis—which he had suspected in patients who had no symptoms of phthisis. Of course, there were practically no objective symptoms except a little catarrh of the larynx. One might find the anæmic condition associated with it in the epiglottis, soft and hard palate; but he had seen it in patients not at all anæmic. He had had the opportunity of watching such cases for several months without ever finding anything in the chest; but gradually, if they did not take care of themselves (and many professional voice-users were very neglectful of their health), they developed temperature, night sweats, etc., and in six or twelve months true tuberculosis. Disease in the ventricle of Morgagni was practically invisible during life, but from Dr. Horne's work one could see that what he regarded as pretuberculous laryngitis was a pathological possibility.

Dr. MILLIGAN (Manchester) said that he did not by any means regard an interarytenoid thickening or tumefaction as characteristic of tubercle. He had seen it in cases of pachydermia, in chronic catarrhal laryngitis, and in laryngeal syphilis. Dr. Horne's remarks upon the development of tubercle right up in the recesses of the ventricle were most important and instructive, and emphasised the necessity for the greatest care in not coming too readily to the decision that because nothing very distinctive of tubercle could be seen in a particular case that therefore the laryngeal affection was

non-tuberculous. Dr. Horne had shown some beautiful sections which proved that the disease might exist unseen within the ventricle. Great care and great caution were undoubtedly necessary in those cases of laryngeal catarrh in which one might reasonably suspect the possibility of a tuberculous basis.

Reply.

Dr. Jobson Horne, in reply, said that he agreed with Dr. Tilley that an excrescence in the interarytenoid region was not always tuberculous in origin. He recognised the interarytenoid region as one of the typical sites for pachydermia laryngis, and pachydermia he regarded as a manifestation of some local irritant such as tubercle. The condition to which he wished to draw attention was less circumscribed, and did not necessarily develop into a nodular excrescence such as had been described by some observers in laryngeal tuberculosis; it was a very fine crenating or fringing of the mucous membrane stretching across the interarytenoid folds. Tubercle bacilli and giant cells he had met with beneath this finely-crenated surface, and the condition was doubtless to be attributed to irritation. Clinically it was sufficiently constant in the larynges of persons suffering from tuberculosis as to be almost pathognomonic, and was often to be detected upon careful laryngoscopy at a time when the lung yielded no morbid signs. For these reasons he considered it to be deserving of further attention. He regretted that time had not permitted him to enter into greater detail of the clinical counterpart of the pathological changes he had demonstrated.

NASAL HYDRORRHŒA.

By StClair Thomson, M.D., M.R.C.P.Lond., F.R.C.S.Eng.,

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In his well-known treatise, published in 1889, Bosworth[1] devoted a chapter to nasal hydrorrhœa, which he apparently regards as a distinct affection. He uses the term to designate "a curious form of disease which is frequently met with affecting the nasal passages, in which the prominent symptom consists of a profuse watery discharge from the nose, and which, while presenting many symptoms of an ordinary attack of hay fever, occurs at all seasons of the year." He further says: "There is, however, a certain amount of periodicity about it, in that, while occurring every day, it comes on in many instances only at certain definite times each day, while in other instances it seems to persist during the whole of the twenty-four hours. The disease is an exceedingly rare one." He divides the cases into two categories—those in which the nasal flow is passive and painless, and those in which it is accompanied by symptoms of irritation of the Schneiderian membrane, such as occur in hay fever. Bosworth has collected and published 18 cases, of which he considered the details were sufficiently clear to warrant their being embraced under the heading of nasal hydrorrhœa.

The high authority of our American colleague has evidently conduced to his views being generally accepted, and to his 18 cases being widely quoted as instances of true nasal hydrorrhœa. Yet a critical examination of these 18 cases has forced me to the conclusion that 6 of them were undoubtedly instances of other morbid affections, and that nine were most probably dependent on pathological conditions quite unconnected with the nasal mucosa, so that of the 18 cases only 3 really justify their association under the title of "nasal hydrorrhœa." I have been led to this view by the investigation of a case which I showed before the Laryngological Society of London,[2] where in an otherwise perfectly healthy subject, cerebro-spinal fluid with rare intermissions escapes day and night from one side of the nose. This case, together with the records by other observers of 8 undoubtedly similar cases and 12 cases which were most probably identical, will be found fully recorded in vol. lxxxii of the *Medico-Chirurgical Transactions*, 1898. It is certainly surprising that in forming a clinical picture of nasal hydrorrhœa Bosworth should have included two cases in which a watery liquid escaping from the nose was undoubtedly cerebro-spinal fluid due to a compound fracture of the base of the skull. In both cases the character of the fluid was shown by analysis, and in 1 case confirmed by the necropsy. In 2 other cases the analysis of the fluid, made by competent observers, showed that the liquid undoubtedly came from the subarachnoid space. In 9 more of his cases, although the evidence is not so positive, it appears to me to point more conclusively to the cerebral origin than to its source in the nasal mucous membrane. Space prevents me here from dealing individually with these 13 cases, which Bosworth includes under the heading of "nasal hydrorrhœa" and which I would suggest should be transferred to the heading of "cerebro-spinal rhinorrhœa." In my communication in the *Medico-Chirurgical Transactions* each of these 13 cases is considered separately. I will, later on, indicate the general points of differentiation. Another case quoted by Bosworth (No. 4) is undoubtedly an instance of antral empyema. The discharge, which at first poured both into the mouth and into the nose, ceased through the former opening, but continued into the nose as a profuse, thin, yellow, acrid fluid. In still another case which he quotes[3] the nasal discharge was acrid and should not be regarded in any way as a primary nasal affection, since it was associated with other symptoms of the eye and skin, and was undoubtedly a vasomotor affection due to neuritis of the trifacial. We thus see that Bosworth's 18 cases may be reduced to 3; 1 of these is reported by Forster[4] and the other 2 were observed by himself.

In the ten years which have elapsed since Bosworth focussed the attention of the profession on this condition, other cases have been contributed by various observers. Fink[5] has published 3; Chappell[6] has recorded 4 where he considered that the attacks were consequent on malaria and were cured by quinine. Penyközy[7] and Jenkelevitch[8] supported the view that the affection may be a consequence of malarial intoxication. Lichtwitz published a case under this heading which he considered to be a vasomotor rhinitis, excited by chronic catarrh of the frontal sinus. In my paper already referred to I have claimed his case as probably one of cerebro-spinal rhinorrhœa. Several other observers have published cases in which they considered that the rhinorrhœa was due to the retention and intermittent discharge of secretion from the accessory sinuses of the nose. There is a very strong *a priori* argument against the possibility of the mucous lining of the maxillary or frontal sinus being able to secrete mucus or watery fluid to any great extent. The membrane with which they are lined is scantily supplied with mucous glands, and it has no vascular arrangements like the erectile tissue in the nose, or the vascular fringes of the choroid plexus, for the secretion of a watery fluid. Giraldès[9] states that he is not aware of a single necropsy where the liquid has been found free in the sinus, or offered an analogy to the "dropsy," described by some authors. Indeed he challenges the production of a single necropsy demonstrating the presence in the cavity of the sinus of this so-called dropsy. Still, slight affections of the accessory sinuses might by direct or reflex irritation give rise to a profuse watery secretion by the nasal mucosa.

In several cases recorded by some authors as instances of nasal hydrorrhœa, the nasal flow was evidently simply the result of the irritation of turbinal hypertrophy, or of mucous polypi. Bosworth states that nasal polypi may result from the long-continued soaking of the mucous membrane in watery discharge; though in another part he suggests that the polypi were the cause of the flow. It is possible that they might be the result in one instance and the cause in another. Excluding, therefore, all cases in which the discharge simply traversed the nose on its way from other cavities, and all those in which it was due to direct or reflex irritation, we find that what has been regarded as a distinct morbid entity is but a symptom of various affections. But I think that the term "nasal hydrorrhœa" may still be preserved if we limit it by defining the affection as one in which there is a profuse watery discharge secreted by the nasal mucosa, and not depending on any visible intranasal or neighbouring source of irritation. The amount of the fluid may vary from what the patient would only term a slight running, up to as much as a pint in the twenty-four hours. I submitted some of the liquid from one of my cases to Professor Halliburton, who most kindly furnished me with the following exhaustive report:

Fluid is thick and viscid and slightly opalescent. On microscopic ex

amination it showed the usual appearances presented by mucus, namely, amorphous matter with mucus corpuscles.

It gives with acetic acid, and also with alcohol, a stringy precipitate like that given by mucin. On boiling this precipitate with dilute sulphuric acid, a reducing sugar-like material is formed; this also is characteristic of mucin.

The fluid contains a small amount of proteid coagulable by heat; it does not reduce Fehling's solution. Proteoses and peptone are absent. The alcohol extract of the fluid contains no reducing substance.

Analysis gives the following results:

Water	98.792	per 100
Total solids	1.208	
Proteids (including the mucin)	0.260	
Other organic substances	0.163	
Inorganic substances	0.785	

The presence of mucin and absence of reducing substance, as well as the percentage of proteid and solids, are quite sufficient to distinguish this fluid from normal cerebro-spinal fluid.

(Signed) W. D. HALLIBURTON.

King's College, London, October 17th, 1897.

In the above case only a few ounces were secreted in the day. In cases where the discharge amounts to a pint or more the fluid is less viscid, and much weaker in mucin. In order to assist other observers in the differential diagnosis of watery discharge from the nose, I have drawn up, after considerable work with Professor Halliburton, the following table of chemical tests for the detection of cerebro-spinal rhinorrhœa.

1. The fluid is perfectly transparent like water, and contains no sediment.
2. It is faintly alkaline in reaction, and either tasteless or slightly salt.
3. The specific gravity is between 1005 and 1010.
4. It is not viscous, and gives no precipitate (mucin) on adding acetic acid.
5. On boiling there is not more than a trace of coagulum of serum globulin and serum albumin.
6. Cold nitric acid gives a precipitate, which disappears on heating, and separates again on cooling.
7. Saturation with magnesium sulphate should give a precipitate. Saturation with sodium chloride should also produce a precipitate. Ammonium sulphate should be tried if the above salts fail.
8. The liquid should give a pink or rose-red colour with a trace of copper sulphate and excess of caustic potash.
9. When boiled with Fehling's solution there should be a reduction of the copper (due to pyrocatechin, or some similar body).
10. The reducing substance may be obtained by evaporating to dryness an alcoholic extract of the fluid. It is then found in the form of needle-like crystals.
11. The aqueous solution of this residue does not ferment with yeast.

If applied to suspected cases, these tests will in future avoid any question as to the true nature of cerebro-spinal fluid when it escapes from the nose.

The clinical picture of nasal hydrorrhœa shades off in one direction into cases of what are generally called hay fever, with symptoms of intense local irritation, while in the other direction they may consist of a passive and almost painless watery discharge from the nose. It appears to be an affection of adult life affecting males and females indifferently. Although it may be more marked on one side than on the other, the flow usually takes place from both nostrils. When handkerchiefs are soaked with it they generally dry stiff. In cerebro-spinal rhinorrhœa, on the other hand, the discharge is so watery that handkerchiefs dry quite soft, and can be used again without washing; and in this affection the discharge is limited entirely to one nostril, unless there happens to be some obstruction on the affected side, when it may make its way round to the opposite nasal fossa. When the fluid is of arachnoid origin there is frequently headache or other mental symptoms, which are relieved by the discharge. It is not accompanied with lachrymation or suffusion of the conjunctiva, and photophobia; and although it may occasionally give rise to a little sneezing especially in the morning, or on rising this is a rare and infrequent accompaniment.

In nasal hydrorrhœa, feelings of *malaise* set in with the discharge and only disappear with its cessation. It is frequently ushered in with sneezing, photophobia, lachrymation. It rarely continues in sleep, while cerebro-spinal rhinorrhœa continues day and night. It is very erratic in its onset and in its intermission, and it is very dependent on external influences and on conditions of health. Moritz Schmidt states that some cases have been observed which were dependent on ulcer of the stomach or biliary lithiasis; and while using the term which forms the title to this paper, he defines the disease as a vasomotor rhinitis. McBride[10] recognises the diversity of the conditions of which nasal hydrorrhœa may be but a symptom.

I would suggest that when we have to do with a case of profuse watery discharge from the nose, we should not employ the term nasal hydrorrhœa if we find that the profuse secretion is dependent on any intranasal pathological changes (hypertrophies, polypi, septal spurs, new growths, etc.), or when the fluid is cerebro-spinal, or originating in the accessory sinuses, or part of some general nervous affection such as trigeminal neuritis. When the flow is moderate in quantity and accompanied with sneezing, photophobia, etc., and paroxysmal in character, I think we should describe it as a form of the affection known under the various names of hay fever, vasomotor rhinitis, nervous coryza, etc.

I think that nasal hydrorrhœa might still be reserved for those cases in which the secretion appears to be poured out from the nasal mucous membrane, but without visible pathological changes, without evident causes of irritation and where the secretion is considerable and corresponds chemically with the analysis I have given. I am inclined to think as our knowledge increases we shall find that, after all, nasal hydrorrhœa will disappear entirely from our list of diseases, and only remain as indicating a symptom.

My contribution to the subject can only claim to have advanced the matter one step by distinctly differentiating those cases where the nasal watery flow is really an escape of cerebro-spinal fluid. The importance of making this differential diagnosis is obvious: and I fancy that in future, cases of cerebro-spinal rhinorrhœa will be found to be less common than has been thought.

Turning finally to the treatment, I would point out the importance of avoiding interference from the risk of septic infection, whenever the fluid is found, or even suspected, to be of cerebral origin. When the cases present the conditions to which I have proposed the limitation of the term nasal hydrorrhœa, the treatment can be only such as we have all tried in cases of hay fever. That is to say, quite empiric, with occasional brilliant results and frequent failures. I would only enter one plea, and that is for moderation in the energy with which so many practitioners use the galvano-cautery. Mucous membrane is easily destroyed, and while the formation of scar tissue may give a sense of immediate relief, the after-results may be worse than the original disease. Careful general treatment, hygienic, dietetic, and climatic, with possibly a visit to a suitable spa, will frequently secure very satisfactory results.

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DISCUSSION.

Mr. CRESSWELL BABER (Brighton) said that this was a very interesting paper. He quite agreed that of a large number of cases which came under this term, some had no right whatever to it. If it were still to be retained, it should be applied to cases in which there was a great quantity of watery secretion from the nose, and which were not complicated with sneezing, photophobia, etc. It was most important to recognise where the discharge came from. Sometimes there was profuse discharge from the nasal passages themselves. He would quote one case, which he had brought before the Laryngological Society of London, of a lady, aged 42, who had a one-sided nasal discharge. Nothing was to be made out by examination. The discharge, which was clear and watery, went on profusely day and night; he collected 70 minims in five minutes. The interesting point was that after trying various kinds of treatment he applied the continuous current externally to the two sides of the nose: the first application arrested the discharge for a quarter of an hour, then the

patient applied it herself, and the discharge gradually ceased. Three months afterwards there was no return. He had used nothing else but a menthol spray, which he did not think had anything to do with the result. In that case he thought there was no doubt that the discharge came from the nasal mucous membrane.

Dr. Middlemass Hunt (Liverpool) said he had met with only one case which corresponded to Dr. Thomson's definition of rhinorrhœa. The patient was a girl employed as a seamstress in a Liverpool workshop. For many months she had suffered from attacks of sneezing with profuse running from the nose. The sneezing was very slight, occurring only once or twice when she awoke, or at long intervals throughout the day, but the watery discharge was profuse and went on for many hours. These attacks came on about once a week, and were so severe that the patient was unable to go to work, and had to sit at home with a towel at her nose to catch the discharge. As the day went on she became very exhausted and unfit for any exertion. Next day she would get up feeling quite well, and able to return to work as usual. The patient was very anæmic, but had no complaint beyond the very distressing nasal trouble. On examining the nasal passages there was practically nothing abnormal, although the mucous membrane had that very pale and sodden appearance sometimes met with in cases of paroxysmal sneezing. Treatment in the form of slight superficial cauterisations and general tonics had no effect. As the patient told him that she had been quite well when kept at home for two months, owing to her mother being ill, he advised her to give up her occupation. She did so, and after a few weeks all her nasal symptoms disappeared. On inquiry he found that the room she had worked in was large and well ventilated, and not specially dusty, so that it was probably through lowering her general health, and not from any local irritation, that her occupation was injurious.

Dr. Herbert Tilley (London) said he would like to draw attention to a specimen of Sir James Paget's in the Royal College of Surgeons Museum in London. It was from an old lady who had complained of running of clear fluid from the nose. Within the antrum of the affected side two polypi were found at the *post-mortem* examination; the cavity contained clear fluid.

Dr. McKenzie Johnston (Edinburgh) desired to refer only to one point in this interesting paper, namely, the bearing of the general health upon the milder forms of nasal hydrorrhœa. No doubt had the paper been read in full this would have been touched upon. In a very large number of cases in his experience, where there was no distinct local condition, the watery discharge seemed to be Nature's endeavour to throw off something from the system when the excretory organs were defective in their action. In these cases he relied more upon general treatment than upon the cautery.

Reply.

Dr. StClair Thomson replied by saying that he was very gratified with the reception his paper had received. Dr. Tilley had referred to Sir James Paget's case, which Bosworth classed as a case of nasal hydrorrhœa; but in Dr. Thomson's longer paper referred to, he had critically examined the case in full, and classed it as a cerebro-spinal case. The high authority of Sir James Paget had in this case led many subsequent observers astray. The flow was only from one side; the discharge stopped suddenly in a few weeks; afterwards the patient died of meningitis, and the case was ascribed to polypi in the antrum which were found at the *post-mortem* examination. No connection could be seen between the polypi in the maxillary sinus and the condition. They merely coincided. Dr. McKenzie Johnston's remarks he thoroughly endorsed. He deplored any active local treatment, even in the cases of ordinary nasal hydrorrhœa, especially the uncalled-for employment of the galvano-cautery, which was so much abused in laryngology.

Bacterial Ice Creams.—An Italian summoned by the St. Olave Board of Works was, on October 12th, fined by the magistrate of Southwark £10, with £5 5s. costs, for selling ice creams containing, according to Dr. Stevenson's report, 15,000,000 microbes in a cubic inch.

ON THE RELATION OF FIBRINOUS RHINITIS TO DIPHTHERIA.

By John Middlemass Hunt, M.B.,
Laryngologist, Liverpool Royal Infirmary.

[Abstract.]

Fibrinous rhinitis may be defined as an acute inflammation of the nasal mucous membrane, which is characterised by the presence of false membrane and the absence of constitutional disturbance, glandular enlargement, albuminuria, or paralysis. Four such cases have come under my notice:—

1. A lady, who for three weeks had right-sided nasal obstruction and profuse watery discharge, with membrane lining the nasal cavity. No constitutional symptoms, albuminuria, or paralysis, and no evident association with diphtheria. No bacteriological ex[illegible]

2. A medical man, who for two weeks had suffered [illegible] rhinitis affecting both nasal passages, and unaccompa[illegible] tutional symptoms, developed pharyngeal diphther[illegible], followed by paralysis, in the third week of the nasal trouble.

3. A little girl, with membrane in both nasal passages, but otherwise in good health, was found to have had pharyngeal diphtheria, with paralysis, six weeks before. Streptococci and staphylococci were found in the membrane, but no Loeffler bacilli.

4. A girl, aged 10, had left-sided nasal obstruction, due to the presence of false membrane, and lasting for eight weeks. During that time she was not ill in herself, and had no albuminuria, no enlarged glands, no sore throat, and no paralysis, but a servant in the same house [illegible] attack of "tonsillitis," followed by paralysis of the palate, and a baby died of croup.

Thus in 4 cases bearing the clinical characters of fibrinous rhinitis, 3 were directly associated with diphtheria. In one case diphtheria began in the third week of the nasal trouble; in another the rhinitis occurred some weeks after convalescence from an attack of diphtheria, and in a third it was followed within a few weeks by 2 cases of true diphtheria in the same family.

Is it possible to distinguish fibrinous rhinitis clinically from mild nasal diphtheria? The former is said to be characterised by "the absence of constitutional symptoms, of glandular enlargement, of albumen in the urine, and of paralytic sequelæ." But in the above cases all those symptoms were absent, as in many others in which the presence of Loeffler bacillus could be demonstrated. Clinical characters are, therefore, not to be relied on, and our diagnosis must rest on microscopic and bacteriological examination. The result of such examination has been to demonstrate the presence of Loeffler's bacillus in an ever-increasing proportion of cases of so-called fibrinous rhinitis. Clinically, such cases are not diphtheria, but pathologically and bacteriologically they are so.

To summarise our present position in regard to fibrinous rhinitis:

1. While admitting that other bacteria besides the Loeffler bacillus may give rise to membranous exudation in the nasal passages, the vast majority of cases of fibrinous rhinitis are due to the Loeffler bacillus.

2. It is impossible on clinical grounds alone to distinguish fibrinous rhinitis from mild nasal diphtheria.

3. All cases of fibrinous rhinitis should be regarded as diphtheria until the contrary has been proved by reliable bacteriological investigation.

ON THE VALUE OF CURETTING THE MIDDLE EAR IN CASES OF SUPPURATION.

By G. Jackson, F.R.C.S.Eng.,
Honorary Surgeon, Devon and Cornwall Ear and Throat Hospital, Plymouth.

[Abstract.]

The case was one in which suppurative mischief was set up by a local irritant, lime and mortar getting into the external meatus, and not being properly removed. After the first curetting, the meatus and tympanic cavity being filled with growth, it redeveloped, and a superficial abscess formed over the mastoid. The growths returned in about a month, and were again curetted, as well as a sinus which had formed behind the ear. This appeared to be successful, and in three months the disease had completely stopped, and the sinus healed up. However, it redeveloped, and the question as to malignancy was discussed. Sir Wm. Dalby, who saw the case, thought it was probably malignant; a portion of the growth was removed, examined microscopically, and was pronounced to be granulation tissue, probably tuberculous. In May, 1896,

a third operation was performed, the middle ear and meatus curetted, an opening was made through the sinus into the meatus, and a drainage tube was introduced, which was brought out through the external meatus, thus establishing thorough drainage; a portion of the growth removed at this time was stated to contain elements of malignancy. The discharge entirely stopped in about a month, and the patient was now quite well. The case showed the advantage of curetting even in unfavourable circumstances. Out of 65 cases recently curetted at the Devon and Cornwall Ear and Throat Hospital, all had done well, except a few who have neglected the after-treatment.

THE TREATMENT OF DYSPHAGIA IN LARYNGEAL TUBERCULOSIS.

By EUGENE S. YONGE, M.D.,
Assistant Medical Officer, Manchester Hospital for Consumption and Diseases of the Throat.

[ABSTRACT.]

THE pain in deglutition occurring in laryngeal tuberculosis is a modification of the act arising from the squeezing together of the swollen and ulcerated tissues, especially about the orifice of the larynx, and from the pressure of solid or fluid nourishment on these structures.

If ulceration is absent and discomfort is felt only at meals, a spray of cocaine (5 or 10 per cent.) or a pastille of morphine and cocaine administered before nourishment is taken may prove successful.

If ulceration has occurred the dysphagia will of course be more or less exigent according as the loss of substance is relatively extrinsic or intrinsic to the larynx, and more or less exposed to the pressure of food. In mild cases injections of menthol and guaiacol have both a soothing and a specific curative effect on tuberculous ulcers. Donelan advocates the submucous injection of guaiacol into the floor of the ulcer, combined with sprays of that drug, as the quickest means of relieving the dysphagia in both mild and severe cases. Ransome has found a spray of nitrate of silver very soothing after the first irritation has passed off, a film being formed which protects the loss of tissue from further injury. Antipyrin is said to last longer than cocaine, but in the author's experience it acts best mixed with cocaine, when he has observed fairly complete anæsthesia to result, lasting in some cases up to five hours. It is well known that food in a semisolid condition is swallowed with greater facility when there is dysphagia than either liquids or solids.

In more distressing conditions of suffering consuming the food in the position recommended by Wolfenden may be of value; it also tends to prevent coughing on the ingestion of nourishment. A 5 or 10 per cent. solution of cocaine may here again be useful; but sometimes the application itself causes distress, in which case a sticky mixture of hydrochlorate of morphine, mucilage of tragacanth, glycerine and water taken in sips before meals, has, in the author's practice, proved extremely soothing. Iodoform and morphine are very old remedies, but still found in certain cases to be of value.

The comparatively recently introduced local anæsthetics which the author has had the opportunity of testing are holocain, aneson, parachlorphenol, and orthoform. Holocain does not contract the blood vessels nor produce cerebral excitation, the taste is less unpleasant than that of cocaine, and given in moderate doses it has not produced any toxic symptoms; its anæsthetic qualities are well marked. Aneson the author has found of very little value. Parachlorphenol causes intense pain at the time of application to the ulcer, but the subsequent anæsthesia is prolonged. Orthoform appears, up to the present, to be the most valuable remedy for the dysphagia of laryngeal tuberculosis. It is strongly anæsthetic, is non-toxic, its effects are lasting, and it is appreciably antiseptic.

Arytenoidectomy and epiglottidectomy have been proposed for the relief of dysphagia when the pain and difficulty in swallowing are such as to bring the patient to the brink of starvation; in such cases the author would prefer to use the œsophageal tube or feed by the rectum.

THE THYROID TREATMENT OF MIDDLE-EAR DISEASE.

By MACLEOD YEARSLEY, F.R.C.S.Eng.,
Assistant Surgeon to the Royal Ear Hospital, etc.

[ABSTRACT.]

MR. YEARSLEY, having first alluded to the sources of fallacy met with in the clinical investigation of the action of drugs, and the necessity of great care, and a large series of cases in carrying out such investigations, referred to the work already published by Vulpius, Brühl, Eitelburg, and Morpurgo. He pointed out that Vulpius thought thyroid was useful when there was limitation of ossicular mobility, and that Brühl had suggested that it was conceivable that the thyroid gland preparations influence adhesions in the middle ear by the resorbent power of the iodine contained in them upon pathological connective tissue. He had, in making trial of thyroid in middle-ear disease, endeavoured to test its powers in this direction. The number of cases dealt with was 21, of which 4 were males, 17 females. The ages were from 19 to 62, the duration of disease 1 to 30 years; 15 were cases of sclerosis, 3 of non-suppurative middle-ear catarrh with ossicular ankylosis, and 3 were of ossicular ankylosis due to middle-ear suppuration. Nearly all cases had been first tried with other treatment. The system of thyroid treatment carried out was that recommended by Brühl. Eighteen cases were under treatment for from 6 to 8 weeks, the remaining 3 refused to continue it after 3 weeks or 1 month.

In no single case did any benefit ensue from the treatment. Some, on the contrary, retrogressed, and of the 3 cases of ossicular ankylosis following on middle-ear suppuration, two were subsequently improved by ossiculectomy.

Of the cases of sclerosis, one, a female aged 44, had already been under treatment by thyroid for myxœdema, without any benefit to the ear condition.

In conclusion, Mr. Yearsley apologised for offering to the meeting a paper which treated of an investigation the results of which had been absolutely negative, but he thought that, with every new treatment suggested, the bad results should be placed on record equally with the good. He did not wish his paper to be looked upon as a final condemnation of the treatment; he merely wished to record the fact that he had tried thyroid as recommended by certain otologists, and had found it wanting.

CASES OF LARYNGEAL AND NASAL DISEASES.

THE following cases were shown by Dr. MCBRIDE (President of the Section):

1. A young woman with double abductor paralysis and slight paresis of the palate. This patient had been under observation for a number of years, and the condition had been stationary. There was no disease detectable in the chest or elsewhere.

2. A young man, aged 17, who complained of nasal obstruction of nine months' standing. The cause was found to be a tumour presenting in the naso-pharynx, of a pale-red colour. Digital examination indicated a somewhat firm consistence, and no fluctuation was noticed. It was attached partly to the vault and partly to the septum. On removing a portion with Kuhn's forceps a cavity was found to exist, and the finger when introduced came upon the osseous septum apparently denuded of periosteum. The cyst had not yet been histologically examined.

3. A case of nasal and laryngeal disease probably due to tuberculosis, with a superadded hereditary specific taint.

4. Two cases of ozæna apparently cured by cupric electrolysis:

(1) A girl, aged 17, who in 1897 had suffered from crusting, atrophy, and bad smell from the nose. Examination then showed a typical ozæna. She had three applications of cupric electrolysis (10 minutes up to 8 milliampères). When shown, she had not syringed for three months. There was an absence of all odour, but of course the parts were still atrophic, and there was a slight tendency to inspissation of secretion.

(2) A woman, aged 30; typical ozæna. Two applications of cupric electrolysis in 1897. When shown had not syringed for more than a fortnight. No odour. Parts still atrophic, but secretion had little tendency to crust.

These were among the most favourable results observed from this treatment, which had been employed in a considerable number of cases. Without in any way advising it as a universal panacea, Dr. McBride judged from his experience that cupric electrolysis in certain cases gave better results than any previous treatment.

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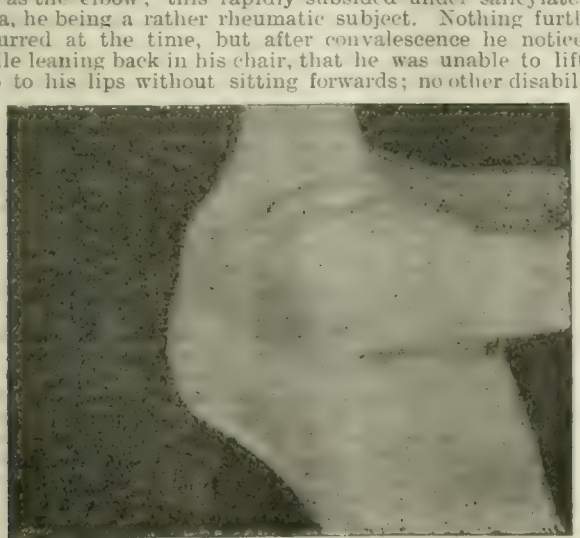
MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF WINGED SCAPULA.

The accompanying photographs well illustrate the rare condition known as "dislocation of the scapula," formerly attributed to slipping of the latissimus dorsi muscle from the angle of the scapula, but now shown to be due in most cases to a paralysis of the rhomboid and serratus magnus muscles from a peripheral neuritis. Briefly, the history of the present case is as follows:



The patient, a clergyman, was under my care for appendicitis last Easter, and then had an intercurrent attack of severe pain in the right shoulder, the back, and the arm as low as the elbow; this rapidly subsided under salicylate of soda, he being a rather rheumatic subject. Nothing further occurred at the time, but after convalescence he noticed, while leaning back in his chair, that he was unable to lift a cup to his lips without sitting forwards; no other disability



was then apparent, but at the end of August his wife noticed that his right shoulder projected somewhat posteriorly, and this led him to again consult me. The deformity was most apparent on extending the arms forward at right angles to the trunk in the position indicated in the photographs, when the scapula projected in an alar manner. The forward reach of the right arm was less than that of the left. There was not much reaction of the serratus magnus to the interrupted current, however applied; the right side of the chest appeared rather flatter than the left, and the skin over it was supersensitive.

I sent the patient on to Mr. Rose, of King's College Hospital, who expressed his interest in the case, and concurred with me both as to its origin in peripheral neuritis, terminating in a paralysis of the muscles, and as to treatment. We decided on the internal administration of small doses of iodide of potassium and strychnine, with the local application twice daily of weak faradic currents to the nerve and muscles. As many works on surgery do not even mention this affection, and none that I am acquainted with illustrate it, while it is so rare that many surgeons do not see a case in a lifetime, I thought this one of sufficient importance to bring under the notice of the profession, especially as I have been fortunately able to adequately illustrate it with photographs.

Fulham. W. J. T. Barker,
M.R.C.S.Eng., L.R.C.P.Lond L.S.A.Lond., D.P.H.Camb.,
formerly Physicians' Assistant, Bristol General Hospital.

MORPHINE POISONING IN AN INFANT.

On the evening of August 24th a woman sent to a druggist for a pennyworth of fluid magnesia. A teaspoonful of the liquid which was supplied was given on the following morning to her baby 3 months old. About ten minutes afterwards the child was suddenly seized with convulsions. A neighbour put the child into a hot bath. As there was no sign of recovery the doctor was sent for. When seen about an hour after the administration of the drug, the child was suffering from violent tetanic convulsions with periods of cessation of breathing. As the pupils had the characteristic pin-point contraction of opium poisoning, it was suspected that liquor morphinæ had been given instead of, or along with, fluid magnesia. What was left in the bottle, too, had an acetous smell and the taste of morphine. As the child was comatose the administration of an emetic was impossible, and the convulsions made the use of the stomach pump equally so. Artificial respiration was instantly resorted to; and here I may say that this had to be done constantly for three, and occasionally for the succeeding six or seven, hours. On several occasions I had to say to the anxious parents that I feared the child was gone, but on listening the heart sounds could be heard faintly as the artificial respiration was continued. At first the pulse was unnaturally strong.

Within an hour after the child was seen $\frac{1}{30}$ grain of atropine was injected subcutaneously, and as there was no impression on the pupil in half an hour $\frac{1}{15}$ grain was used. The pupils then lost some of their contraction and the spasms were less intense. Twice afterwards $\frac{1}{60}$ grain was administered. About an ounce of a strong decoction of coffee was given by the rectum, at first every half hour and latterly, alternately with the same quantity of peptonised milk, every hour. The child had been stripped from the first, and the fomentations were applied over the epigastrium. The face, upper part of chest, and any other available part were slapped with a cold wet towel. It was twenty-four hours before the child could be got to open its eyes, and even then in a very languid manner. By that time we got it to swallow a little, but it was well on to forty-eight hours before it would suckle from the mother.

The temperature then began to rise. This was ascribed to reaction from the shock, but later on a cough led to the chest being examined, and evidence of right broncho-pneumonia was found. The temperature reached 104° F. At the end of ten days the child was quite well, and now, three weeks after, with the frayed cuticle, the result of the slapping, all away, it would be difficult to find a more healthy-looking baby.

The remainder of the so-called fluid magnesia had been secured, and I sent some of it to Duncan, Flockhart, and Co. for analysis. The report was that it was "a solution of hydrochlorate of morphine, evidently *B.P.*" On measuring the spoon which had been used it was found to contain 75 minims. Allowing for a little being lost during administration the child would have one fluid drachm of liquor

morphinæ *B.P.* I am wondering if there is any other case on record of a young baby surviving such a dose.

Motherwell. J. FOTHERINGHAM, M.B.

GREEN STOOLS IN ENTERIC FEVER.

HAVING failed to find in the accredited English textbooks of medicine any mention of the occurrence of "green stools" in enteric fever, I venture to think that the following case is worthy of record.

Private ——, aged 24, was admitted to hospital in Mhow, Central India, on August 15th, 1895.

History.—He had been feeling ill since August 9th, but had remained at duty, hoping to shake off his illness.

Condition on Admission.—He looked very ill, his face was pale, the expression anxious, the pulse 140, temperature 102°, tongue moist and fairly clean. There was slight abdominal pain and tenderness, but very acute pain in the "small of his back," which distressed him greatly, and was indeed his chief cause for complaint.

Progress of Case.—On August 16th superadded to the acute back pain there was frequent vomiting of bright green fluid looking like bile and two copious motions of the same greenish liquid. Pulse 148, respirations 36, temperature 103°, no spots. On August 17th the motions became very frequent and consisted of a bright green fluid mixed with curdled milk and slime. Pulse 124; respirations 48, temperature 103.6°. Acute back pain still continued, but there was no abdominal pain to speak of. On August 18th he was manifestly sinking, the motions now being loose and brown. Death followed on same evening, the acute back pain being to the last his main cause of complaint.

Post-mortem Examination.—A very fine muscular man, no wasting. The spleen greatly enlarged, weighed 3 lbs. The solitary glands of the large intestine generally enlarged, especially in the ascending colon, where they had the appearance of a number of small red peas. The cæcum was the seat of much ulceration, one of the sloughs was very large and of a bright ochre colour. Throughout the ileum and jejunum the solitary glands were congested and very prominent. Peyer's patches were very extensively affected; twenty-two enlarged and prominent patches were counted in the ileum and jejunum, varying in length in their long axis from ¼ inch to 1 inch. The smallest patches were those nearest to the cæcum; only a few of the lower patches were ulcerated, the large majority being remarkably elevated above the intestinal mucous membrane, having the appearance of islands, so distinctly were they mapped out. One or two of the lower patches had the "shaven-beard" appearance very well marked. Nothing else abnormal was found.

I am not prepared to explain why the green stools present in this case should have substituted themselves for the usual pea-soup motion; nor can I offer any explanation for the acute and persistent back pain, which caused intense agony during the few days the patient was under observation in hospital.

Chatham. RICHARD H. QUILL, M.D., Lieutenant-Colonel R.A.M.C.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

KING'S COLLEGE HOSPITAL.

A CASE OF ANEURYSM OF THE AORTA: OPERATION: CEREBRAL EMBOLISM: DEATH.

(By P. C. E. TRIBE, M.B.Lond., Medical Registrar.)

History.—H. P., male, aged 42, was admitted on May 30th, 1898, under the care of Dr. Burney Yeo. The patient was a married man, and his occupation that of a steam crane driver. He had contracted syphilis twenty years earlier. He had been attending the out-patient department for six weeks previous to admission for cough and pain in the chest. He stated that about a week before admission he had noticed a swelling in the upper part of the chest, and had experienced a good deal of pain there. For the last few weeks he had had shortness of breath on exertion.

Condition on Admission.—The patient looked a healthy man; the tongue was clean, the skin cool and dry, and the pupils equal. A rounded pulsating swelling was noticed at the region of the sternal end of the left clavicle, which appeared somewhat dislocated forward. There was slight redness over the tumour. The swelling was soft on palpation and the pulsation of an expansile character; the pulsation could be felt in the suprasternal notch. No vessel could be made out coming from the tumour. The radial pulses were apparently equal, and the rate 100 per minute. The left external jugular vein was noticed to be more prominent than the right. While at rest in bed there was no dyspnœa, and swallowing was performed without difficulty. The voice was unaffected. On auscultation no *bruit* was audible over the tumour and no alteration in the breath sounds was discernible; if anything, they were rather feeble on both sides. Slight "tracheal tugging" was obtained. The temperature was normal, as was the urine. The abdominal organs appeared to be normal, and there was no œdema of legs or arms.

Treatment.—He was put on potassium iodide, gr. x, three times a day, which he took for a fortnight. After having been in hospital for ten days he complained of more pain in the swelling, which was evidently increasing in size. The radial pulses and pupils continued equal, and there was no cough.

Operation.—Mr. Watson Cheyne was asked to see the patient and on June 15th ligatured the left common carotid artery. After the operation the left pupil became smaller than the right and there was also slight conjunctivitis of the left eye. On June 21st the stitches were removed from the operation wound, which had run a normal course, the temperature never having risen above the normal.

After-History.—Two days after the pupils were again equal and the conjunctivitis much better. On June 25th the temperature rose to 100° and there was a good deal of irritating cough. The breath sounds were greatly diminished on the left side and there was tubular breathing and dulness about the left scapular angle. The cough was hard and brassy. The voice had become weaker. The aneurysm was decidedly larger and the pulsation was more marked in the suprasternal notch; there was still no audible *bruit* over it. During the next week the condition of the patient generally was somewhat better, the cough was easier and the temperature only once reached 100°. But the aneurysm was evidently increasing markedly in size and extent. On July 2nd at 3 P.M. the patient was suddenly seized with hemiplegia. There was absolute loss of power in the left arm and partial loss in the left leg with conjugate deviation of the head and eyes to the right. The man was drowsy and became afterwards comatose. The temperature rose soon after this to 100° and the next day reached 103°. The coma continued and he died at 9.45 A.M. on July 4th without recovering consciousness.

Post-mortem Examination.—The examination was made thirty hours after death. The pericardium was normal, and the heart also, except for hypertrophy of the right ventricle. An aneurysm was found springing from the end of the ascending part of the aortic arch. The opening of the innominate artery was situated within the sac, in its left wall, and close beside it, and also within the sac was the orifice of the left common carotid. The origin of the left subclavian was just beyond the sac. The opening of the sac was about the size of a hen's egg, and for a short distance within the opening the aortic wall, with its smooth lining, could be made out. Further on the wall was rough, and covered by laminated clot. The sac was elongated, and extended from right to left (in front of the arteries) and upwards, reaching about as high as the third tracheal ring. The trachea was compressed, but showed no signs of ulceration. The left common carotid had been effectively ligatured; there was practically no thrombus on either side of the ligature. The aorta was generally atheromatous. There was some bronchitis, and recent pneumonia of the left lower lobe. The abdominal organs were normal. In the right hemisphere of the brain there was a large area of softening, which had destroyed nearly all the corpus striatum. Higher up, and just beneath the cortical grey matter, there were several areas of softening, particularly under the arm area. The softened areas were more or less pyramidal in shape, and in colour were mottled red and white.

REMARKS.—This case, besides furnishing an example of the importance of syphilis and laborious occupations in the etiology of aneurysm—especially the aortic variety—illustrates the difficulty of accurately estimating the dimensions and relations to vessels of aneurysms of the aortic arch. In this case the sac of the aneurysm, extending as it did across the origins of the great vessels springing from the transverse arch, rendered it especially difficult to say which of them was chiefly involved, and to what extent. The rapid increase in the size of the aneurysm and the absence throughout of a *bruit* over it are also special features in this case. The ligature of the carotid may have precipitated matters by increasing

the tension and systolic shock within the sac, and thereby loosening fragments of clot which were carried into the right cerebral hemisphere.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

F. J. Payne, M.D., President, in the Chair.

Tuesday, October 18th, 1898.

Compensatory Hypertrophy of the Lung.

Dr. Norman Dalton exhibited an advanced stage of this condition. The case concerned a man, aged 45 years, who was admitted to King's College Hospital under Dr. Curnow, suffering from pneumonia of the lower lobe on the right side. After death the right lung was found to cover the whole of the front of the chest, reaching into the left side, so as to form a left apex; it occupied all the precordial space. The left lung was small and shrunken. The hypertrophy involved the upper and middle lobes of the right organ. More careful examination showed a high degree of narrowing of the left bronchus, and around this, between it and the aortic arch, were a few moderately-enlarged lymphatic glands. The author's view was that the collapse of the left lung had occurred in childhood, and was due to compression of the bronchus by enlarged glands which had subsequently diminished in size. There were no signs of tubercle; no foreign body was discovered in the bronchus.

Dr. Curnow remarked that the diagnosis was that of emphysema (which the lung in part showed) and dilated right side of the heart, accompanied with pneumonia of the right base. The man was addicted to alcohol, and the pneumonia proved rapidly fatal.

Follicular Enteritis due to Streptococci and Bacillus Enteritidis Sporogenes.

Dr. Andrewes showed specimens from a case of fatal summer diarrhœa with unusually acute enteritis, apparently due to secondary streptococcus infection of the bowel. A girl of 19, in previous good health, was attacked in August, 1898, with diarrhœa, at first mild, but rapidly increasing in severity till on the evening of the second day she was admitted to St. Bartholomew's Hospital in a state of profound collapse, from which she never rallied, death ensuing about fifty-six hours from the onset. The stools were colourless and resembled rice water, scanty in volume, but frequently passed. At the *post-mortem* examination the only lesion found was an intense enteritis; the mucous membrane of the jejunum and ileum was of a brilliant crimson colour, and the solitary follicles stood out conspicuously; there was no ulceration. The specimen shown had been prepared with formalin. It was not often that so intense an enteritis accompanied fatal cholera nostras: commonly there was little evidence of inflammatory change found in the bowel after death. The causation of summer diarrhœa was as yet uncertain, though it was usually admitted to have a microbic origin. Dr. Klein's researches had recently given considerable ground for associating his bacillis enteritidis sporogenes with the disease. Whether this were correct or not there was, in this particular case, evidence of a streptococcus infection of the bowel, which was probably superimposed upon the primary cause of the diarrhœa. Bacteriological examination of the intestine and its contents gave the following results: The spirillum of Asiatic cholera was absent; bacillus enteritidis sporogenes was present in very virulent form; a guinea-pig subcutaneously injected with a pure milk culture died in 32 hours. The chief organism present in the stools was, however, a streptococcus, and this was obtained in pure culture, and was probably not identical with the ordinary streptococcus pyogenes. Sections of the intestinal wall stained by Gram's method showed in the necrotic mucosa small numbers of streptococci and of bacillus enteritidis sporogenes. Microscopic specimens of the stools and of the intestinal wall were shown.

Acromegalic Skull.

Mr. S. G. Shattock exhibited a skull from the collection of modern Italian crania purchased by the Royal College of Surgeons in 1870 from Dr. Nicolucci. Though placed by Sir William Flower amongst the normal crania, it was noted at the time as being massive and rugged. There was no difficulty in recognising it now as one of the acromegalic type. The changes in the bones were associated with very considerable enlargement of the pituitary fossa, proving the existence of a pituitary goitre. The parietals, where thickest, measured four-fifths of an inch (2 cm.). In some examples of acromegaly the thickening had been classed as hypertrophic, but in the present case all distinction between tables and diploë was lost, and the change could not be so classed in the strict or academic sense; its texture was indistinguishable from that of a calvaria thickened and sclerosed in the later stages of osteitis deformans. One of the most characteristic features was the lengthening of the face, due especially to the enlargement of the lower jaw and notable prominence of the chin. About 40 per cent. of giants were stated (Maximilian Sternberg) to be acromegalic. Certain writers had alleged that gigantic stature was in all cases associated with or due to pituitary disease arising during growth—that is, that all giants were acromegalic. This was untrue. There were normal and pathological giants, as there were normal and pathological dwarfs. Besides the dwarfing of cretinism due to disease of the thyroid, there were short-limbed dwarfs who were not cretinous, and dwarfs, thirdly, who were proportionately diminutive throughout. In the College Museum there were the skeletons of two giants. One, 6ft. 9in. ("Freeman the American"), presented obvious prognathism, but the bones of the skull were in no degree thickened, and the pituitary fossa was not in the least enlarged, its antero-posterior character being only $\frac{5}{8}$ inch (1.4 c.cm.). But the Irish giant (Charles Byrne, or "O'Brian," 7 feet 7 inches), the speaker viewed, with Dr. D. J. Cunningham, as acromegalic. The lower jaw was massive, and the chin particularly prominent, the glabella very projecting, and the cranial bones dense and thickened: the pituitary fossa was slightly enlarged, measuring over 2 c.cm. antero-posteriorly. The capacity of this skull was 1,520 cm.; that of the acromegalic Roman skull was 1,500; whilst that of the normal giant was, by contrast, 1,630. This Irish giant was not to be confused with that in the museum of Trinity College, Dublin (Cornelius Magrath), which Dr. Cunningham in 1891 showed to be acromegalic. The Irish giant referred to in Sternberg's monograph was that in Dublin, not that in London.

Dr. Curnow referred to some extremely heavy skulls in King's College, which had been stated to be Australian aboriginals, but of the normal condition of which he had doubts which he hoped to clear; the skulls might turn out to be acromegalic.

Accessory Parathyroid in the Human Subject.

Mr. S. G. Shattock also exhibited complete microscopic sections of a body about the size of a small pea which he had found loosely hanging from the lower margin of the thyroid isthmus in a young man. Histologically it was a most perfect example of parathyroid tissue, and consisted of columns of cells ramifying in a close capillary mesh, and showing nowhere any trace of lumen or of colloid. Such accessory bodies were to be distinguished from accessory thyroids; they were accessory parathyroids. He was induced to show it in consequence of the importance the subject of parathyroid tissue had attained. In the thyroid of the adult he had seen small flattened islands lying at the surface, and altogether removed from the situation of the parathyroids described in man by Sandström, and especially more recently by Welsh, the latter glands being two on either side at the lower part of the lateral lobes about the site of the inferior thyroid artery. The subject was complicated by the fact that at times in lower animals, and not rarely in man, it had been found that the parathyroids contained also thyroid tissue. But so exactly like parathyroids were the islands he had seen, for example, on the anterior surface of the lateral lobe, that he could not help suspecting that parathyroid tissue in man was more extensive than that comprised in the parathyroids alone.

Substernal Carcinoma.

Dr. Lazarus-Barlow recorded a specimen of squamous-celled carcinoma surrounded by lymphatic tissue, the whole forming a globular mass about the size of an orange lying

behind the manubrium. Death was due to dyspnœa. There was no primary carcinoma discoverable in the tongue, pharynx, tonsil, œsophagus, and the author thought it therefore most probably arose in the remains of a branchial cleft.

Mr. S. G. Shattock observed that though somewhat low down, assuming the growth to be primary, it probably arose in connection with the fourth branchial cleft, the external and deep or pharyngeal portions of which did not normally communicate. He asked whether the epithelium was furnished with a stratum granulosum, the presence of which would indicate the origin of the tumour from the external epidermal portion of the "cleft," whilst its absence would go to show its origin from the pharyngeal mucosa.

Dr. H. D. Rolleston suggested the possibility of an origin in the thymus diverticulum, as the tumour lay in the midline. He had come across a specimen presenting much the same difficulties. That the primary carcinoma might be very small, or might not be detectable, appeared from those cases of chimney sweepers' cancer in the inguinal glands, where no cutaneous carcinoma was discoverable.

Dr. Lazarus-Barlow replied that the tumour was not strictly mesial, and that it was not completely below the manubrium.

"Butter-Cyst" of the Breast.

Mr. H. B. Robinson stated that this specimen was removed from the breast of a married woman, aged 25, with the following history:—Fifteen months before, three weeks after her first confinement, she suffered from an abscess of the right breast in almost the same situation as the present swelling. The breast became large, painful, and tender, especially at the upper and outer part. The inflammatory mass was punctured twice, not incised, and a considerable quantity of pus (?) was drawn off. Soon after the abscess had apparently healed she began to notice a small lump about the centre of the right breast. This quickly reached its present size—about that of a Tangerine orange, and had remained so since, having shown no signs of enlargement. There had been very rarely any pain in connection with it and no discharge from the nipple. On admission, the lump, which was circular in outline and about 2 inches in diameter, was situated above the nipple, and showed at its inner part the scars of the two punctures. It was very elastic and moved with the breast over the subjacent pectoral. The swelling, with a margin of healthy gland structure round, was removed, as well as an enlarged lympathic gland. The swelling proved to be a cyst with smooth walls, filled with a yellowish-brown, semi-solid substance of the consistence of butter. On histological examination of the cyst wall, there were gland lobules to be seen embedded in some excess of fibrous tissue; the lining membrane was epithelial, flattened, chiefly in a single layer, and not granulation tissue. The cyst contents hardened on exposure to the air. With ether the main part—fat—was soluble; the undissolved part showed microscopically protoplasmic masses, fatty epithelial cells, without leucocytes, and with this could be seen sheaves of acicular crystals, probably stearine. The cyst, which came after acute inflammation of a physiologically active gland, was evidently due to one of two causes—a chronic abscess or the retention of secretion. The microscopical appearance of the cyst wall and the analysis of the contained fluid quite disposed of the former view. The cyst was a galactocele, but modified to this extent that the watery constituents had become absorbed, leaving only the more solid parts behind. Modifications of galactoceles, although rare, had been duly recorded. Velpeau[1] had stated that their contents might be partially coagulated, the watery part being absorbed, giving rise to a cream-like fluid. Billroth spoke of changes in the contents, like those shown, under the names of oily, buttery, or cheesy cysts. Such retained products might become quite hard, dry, and friable, resembling old cheese; a specimen of this kind was shown by Mr. Watkins-Pitchford, and recorded in vol. xlvii, p. 250, of the Society's *Transactions*.

Bony and Cartilaginous Nodules in the Tonsil.

Dr. H. Walsham cited the case of a man, aged 50, scattered through the base of whose tonsil were solid nodules of bone; and the case of a lad, 17 years of age, in whom nodules of cartilage were similarly distributed. His opinion was that they arose in the line of one of the branchial arches. He had found records of three similar cases.

Mr. J. H. Targett referred to osteomata of the skin about the sweat glands, and Dr. StClair Thomson gave a case in which the ends of a pair of unusually long styloid processes projected into the tonsils.

Sarcoma of the Scalp of Nineteen Years' Duration.

Mr. P. de Santi gave details of the case of a girl, aged 24, in whom tumours of the scalp had been noticed since the age of 1 year. No spontaneous disappearance occurred. One of the growths excised proved to be a sarcoma. Subsequently the whole were freely excised, iodide of potassium having proved useless. Death ensued six months later from recurrence in the lungs.

Actinomycosis of the Tongue.

Dr. R. Hebb showed a specimen of this rare condition in the human subject. The patient, a man, aged 60, had noticed a swelling in the tongue for some time, and then a small fissure. He was a great smoker, and was in the habit of biting straws and the stalks of flowers. There was no history of syphilis. The swelling was the size of an almond, and lay in the substance of the tongue. There was no gandular enlargement. Successful excision was practised, and it was after this that the diagnosis was made.

Card Specimen.

Mr. S. G. Shattock: A Series of Bacteriological Cultures made Permanent by means of Formalin Vapour.

[1] Now Byd. Soc., p. 241.

CLINICAL SOCIETY OF LONDON.

Friday, October 14th, 1898.

John Langton, F.R.C.S., President, in the Chair.

Presidential Address.

Mr. Langton thanked the members for having elected him to a second term of office, and congratulated them on the sound financial position of the Society, which now numbered 588 members. Of the 129 original members, only 40 remained; during the last year two had died—Sir R. Quain and Dr. Ramskill. He presented the new volume of *Transactions*, which contained, among other matters of interest, the report of the Antitoxin Committee. An excellent index of the first thirty volumes of *Transactions* had been edited by Dr. Archibald Garrod. The clinical evenings had proved highly instructive, and would be continued. A valuable paper read last session by Messrs. R. Jones and Tubby on the Immediate Rectification of the Deformity of the Spine in Angular Curvature appeared to him to throw down a direct challenge to Nature to disclose her secrets as to the probability of awakening a recrudescence of an old tuberculous disease. In Dr. Calot's experience she seemed to have answered the challenge in the negative. In respect of the accurate and concise recording of facts, he thought that observation and deduction demanded a higher quality for the marshalling of the facts so as to lead to a correct interpretation of them. The history of themselves and of their disease given by patients and their friends required criticism and scepticism, especially in regard to surgical diseases, in which there was a marked tendency to ignore the possibility of inherited or acquired constitutional taint. In large hernia, for example, patients would state that the protrusions had only existed a few days or weeks, and were the outcome of a strain or injury received shortly before, and this without any desire not to state the truth. John Hunter's dictum, "Don't think, try," was balanced by his other emphatic statement that "theory should supplement observation." Medicine and surgery were not two sciences, although formerly regarded as such; but by their union some of the greatest achievements of our art had been accomplished, especially in the domain of abdominal diseases, acute or chronic. By operations recently devised, and done as soon as gastric perforation was recognised, a satisfactory record of successful cases had been obtained. Usually the perforation was at once apparent to the operator, being located generally in the front wall of the stomach. Mr. Pearce Gould's

remark should be borne in mind that "too much attention was given to the closure of the perforation, too little to ridding the peritoneal cavity of the extruded gastric or intestinal contents." He (the speaker) advised their removal by careful sponging out and subsequent flushing of the peritoneal cavity with sterilised water. A pregnant suggestion had been thrown out by Billroth and other distinguished surgeons as to the advisability of dealing surgically with gastric ulcers by excision and suturing, or suturing alone before perforation took place. This opened up a wide field of speculation, but such an operation would doubtless lead to the saving of life. The subject, in connection with recorded cases, might profitably be discussed at a meeting of the Society. In conclusion, he confidently hoped that the coming session might be a record one in the number and value of its contributions and its discussions.

Myositis Ossificans.

Dr. W. P. Herringham narrated a case, and exhibited skiagraphs of the patient, a girl, now aged 8, who was shown as a living specimen to the Society three years ago by Mr. Owen Paget.[1] Rigidity was first noticed about the shoulders at 2 years of age. At 5 years, swellings appeared in the back for which she saw Mr. Paget. The swellings were large at first, but disappeared under treatment. They were attached to the ribs and were probably fibrous in character. The shoulders were then rigid owing to ossification of the pectorals and latissimus dorsi, the head was fixed from rigidity of the sterno-mastoids, which were swollen. Microdactyly of the big toes was also noticed. Now the back had become more rigid, so that the whole spinal column moved like a rod; a considerable bony prominence was found behind the left mastoid process; there were bony nodules springing from the ulna on both sides, which on the right arm limited supination; the thumb was small and imperfectly abducted; there was an exostosis on the first phalanx of the right middle finger. A pencil of bone was found in the right abdominal muscles running from the anterior superior spine of the ilium to the ninth costal cartilage, and another was in the sheath of the right rectus abdominis. There had been pain lately about the right hip, and its movements were not quite so free as those on the left side. The right biceps femoris tended to contract, but could be extended by force. Skiagraphs showed the right shoulder-joint to be natural, the bony deposit being in the muscles alone. The deformity of the great toe was complex. The epiphysis of the first phalanx was thicker on the inner side; the first phalanx, somewhat tilted by this to the outer side, was itself thickened; the unequal phalanx was apparently joined to its head by synostosis, and was set on obliquely, pointing again outwards. The nail was perfect. The lesions of the disease were confined to the somato-pleural layer of the mesoblast, and in this to the bones, periosteum, and connective tissue only. The muscle was affected by secondary atrophy. Its pathology was uncertain. It was congenital, and not hereditary. Of exciting causes injury alone had been sufficiently proved, and this in rare cases only. Males suffered more than females. There was no adequate evidence of any connection with rheumatism or rheumatoid arthritis. The view of Pincus that it was a form of new growth appeared the most reasonable, and parallels might be drawn between this disease and multiple fibroma. It was not impossible that this anomalous disease might throw light on the pathology of tumour formation. The name was unfortunate, but was come to stay until the pathology was more certain.

Mr. Campbell Williams referred to a case recorded in Australia in which the cause was evidently rheumatic and the disease came on in adult life.

The President inquired if rest alone had resulted in improvement.

Mr. W. G. Spencer said this was a congenital affection, as was shown by the constant deformity of the toes, and by the irregularities of the epiphysial lines, leading to exostoses. It probably commenced even before the birth of the child.

Dr. Herringham, in reply, said the swelling became less under rest. Mr. Spencer had taken the line which he wished pathologists to follow. The bony growths did not always spring from bone, as they sometimes lay between muscles where no bone normally existed. The deposit took place in the fibrous tissues. Even if the disease was congenital there must yet be a cause for it; and that might be cold or injury. There was, however, no definite connection between this disease and rheumatism.

[1] *Transactions*, vol xxix, p. 221.

Cases illustrating the Association of Congenital Heart Disease with the Mongolian Type of Idiocy.

Dr. Archibald Garrod briefly described 5 cases in which congenital cardiac lesions were met with in idiots of the Mongolian type. Although malformations of other kinds were not uncommon in cases of congenital heart disease, he believed that there was a specially close association between these two varieties of congenital defect. In a recent paper on the types of idiocy, Dr. John Thomson mentioned that he had met with congenital heart lesions in three Mongolian idiots, but inquiries of physicians with very large experience of idiot children showed that the association was not a familiar one in asylums. This was probably due to the non-survival of the patients to the age of admission to such institutions. All the patients referred to, both by Dr. John Thomson and the author, were under five years of age, and several had already died. The association appeared to be much commoner in girls than in boys. Congenital cardiac lesions were occasionally met with in idiots of other kinds, but, in the author's experience, much less frequently than in "Mongols."

Dr. A. M. Gossage had seen such a case; first when the child was eight months old, and had cyanosis and a systolic murmur over the sternum; more recently when the child was 2½ years old, and had all the characteristics of Mongolian idiocy, and looked like a child of 13 months. He said that Dr. Coutts had seen similar cases at Shadwell Hospital.

Dr. Guthrie had seen 2 cases. One was an 8-months child, and when 7 months old was a Mongolian idiot. It also had spina bifida occulta, became dropsical and died. He exhibited the heart; both the right auricle and ventricle were as thick-walled as the left cavities; the interventricular septum was imperfect, and the foramen ovale still patent. The second case he first saw in June last; it was typically Mongolian. There was a loud systolic murmur during life; and after death both sides of the heart were hypertrophied and of equal thickness. A cribriform opening was found at the top of the interventricular septum, which was the cause of the murmur. These children did not usually live long enough to be admitted to asylums.

Dr. Herringham asked why the eyes went in the direction which they took; were the orbits themselves altered in shape?

Dr. Garrod, in reply, said he knew of no mechanical reason for the direction assumed by the eyes.

Erythema Enematogenes (Enema Rash) in Children.

Dr. Still read this paper. He said that very few cases of enema rash in childhood had been recorded; and, although this variety of erythema was of little significance *per se*, it became of considerable importance in children, inasmuch as it was very easily mistaken for some of the specific fevers to which childhood was particularly exposed. The rash had a characteristic appearance and course, as was apparent from a study of twenty-six cases which had occurred at the Hospital for Sick Children, Great Ormond Street. There seemed to be no reason to doubt the causal relation of the enema to the rash. In some children repetition of the enema had been followed by repetition of the rash. Usually a bright red patchy erythema appeared, especially on the front of the knees, the backs of the elbows, the buttocks, and the face; in some cases, however, the rash was scarlatiniform, or the two forms might be combined. It appeared most often twelve to twenty-four hours after the enema, and lasted usually twenty-four to forty-eight hours; there was very rarely, if ever, any constitutional disturbance; the amount and time and retention of the enema, and the duration of the preceding constipation did not seem to affect its occurrence. The rash occurred most often after a first enema. Children over 6 years seemed more liable to it than younger children, but it occurred in one case at 2 years and 3 months. Scarlet fever, rötheln, and measles were the exanthems for which an enema

rash was most likely to be mistaken. The absence of constitutional symptoms, of sore throat, coryza, and pyrexia, and often slight differences in the character and distribution of the rash, together with the occurrence just after an enema, might serve to differentiate the enema rash. There was some evidence that desquamation might occasionally follow an enema rash, making the diagnosis of scarlet fever still more difficult. It seemed highly probable that a certain number of the cases of so-called "surgical scarlet fever" were the result of enema given before operation. The erythema must be regarded as the result of a vasomotor dilatation, but how this was produced was uncertain. Three possible explanations suggested themselves: (1) Absorption of some toxic substance from the soap of the enema, possibly from the fats or the resins used; (2) absorption of some fæcal toxin, thrown into solution by the enema; (3) a reflex effect on the vasomotor centres. Arguments might be advanced in favour of each theory, but on the whole it was perhaps most reasonable to regard the rash as due to a vasomotor change produced by absorption from the intestine of some constituent of the enema or of the fæces. Further observations were necessary before it could be decided from which of these sources the toxin was absorbed.

VERMIFORM APPENDIX OCCUPYING A HERNIAL SAC FOUND PERFORATED BY A PIN.

Mr. CHARTERS SYMONDS described this case. The patient, a girl, aged 18, having previously noticed a swelling in the groin occasionally was seized with sudden pain while straining at stool, and immediately noticed the swelling in the groin. This was tender, painful, and resembled at first an enlarged gland, there being no symptoms of strangulation. When admitted to Guy's Hospital the swelling was thought to be a piece of inflamed omentum. On incising it a peritoneal sac was opened containing the appendix, from which a pin projected. The appendix, which was otherwise healthy, was removed. The author referred to the occurrence of the appendix in a hernial sac, mentioning one in which the process was gangrenous, and another in which part of the appendicular abscess occupied the sac. He next referred to the occurrence of true foreign bodies in the appendix, as distinguished from the ordinary concretion. Mr. Symonds mentioned two other instances where a pin had been found.

The PRESIDENT remarked that a vermiform appendix was not infrequently found in a hernial sac. He had even seen it in one hernia on the left side. Omentum had a greater tendency to protrude in a left hernia. In early life inguinal hernia most often existed on the right side; in after-life they occurred most often on the left side. He had seen two cases of foreign bodies in the appendix, one being a pin about two inches long. This was removed and the patient recovered. In another case the appendix was opened. The child was brought two months subsequently and again operated upon, when a needle was found which had escaped detection at the former operation, but the child died. Foreign bodies in the appendix were much more common in early life than in later years.

BRITISH GYNÆCOLOGICAL SOCIETY.

Thursday, October 13th, 1898.

F. BOWREMAN JESSETT, F.R.C.S., Vice-President, in the Chair.

SPECIMENS.

Mr. CHRISTOPHER MARTIN (Birmingham) showed; (1) Bifid Uterus with Retention of the Menses; (2) Myoma of the Round Ligament. The following specimens of Myoma were exhibited: Fibro-cystic Disease of the Uterus, by Mr. R. H. HODGSON; Large Cervical Myoma, weighing 7 lbs., in the broad ligament, by Dr. ARTHUR GILES; Uterine Fibroid complicated by Ovarian Cystoma, and Fibroids removed by Myomectomy, by Dr. J. MACPHERSON LAURIE (Weymouth). Dr. FRED EDGE (Wolverhampton) showed a Carcinoma Uteri, removed by Vaginal Hysterectomy; and Mr. F. BOWREMAN JESSETT showed two specimens of this kind, one of which was complicated by Fibroids; as well as a Cyst removed from the Transverse Mesocolon.

THE AFTER-TREATMENT OF ABDOMINAL SECTION.

Mr. CHRISTOPHER MARTIN read a paper entitled Some Moot Points in the After-Treatment of Cases of Abdominal Section. He laid stress on the importance of preventing complications by care in the preparation of the patient, in the performance of the operation, and in the attainment of perfect asepsis. It was unnecessary to keep the patient rigidly on her back for forty-eight hours. The dressings should be simple, dry and absorbent, and aseptic. Wet dressings favoured suppuration, and powders formed unpleasant crusts. For closing the abdominal wall, he used interrupted sutures of silkworm gut passed through the whole abdominal wall. He disliked buried sutures. The sutures should not be removed till the tenth or twelfth day. He only drained in septic cases or where there was much oozing. A little clean blood did no harm. He advocated iodoform gauze as a drain in preference to glass or rubber tubes. It was better to drain through the posterior fornix than through the abdominal wall. A hypodermic injection of morphine was advisable immediately after the operation. It also did good in cases of great prostration and restlessness. He strongly recommended the purgative treatment of peritonitis—preferably calomel and salines—and discussed the mechanism of their beneficial action. He advised the early administration of bland fluids after the operation; it was cruel and harmful to withhold fluids for forty-eight hours. In vaginal sections he said the vagina should be packed with iodoform gauze, and this should be left in till the seventh day. It was unwise to douche for at least a week after the gauze had been removed for fear of forcing the vaginal discharges into the peritoneum. Lastly an abdominal belt should be worn for at least two years after every abdominal section.

The discussion was adjourned to the next meeting.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

Monday, October 10th, 1898.

W. J. FLEMING, M.D., in the Chair.

RECOVERY FROM SUPPOSED TUBERCULOUS MENINGITIS.

Dr. NAPIER showed a case of recovery from supposed tuberculous meningitis in a child. The child had been admitted to the Victoria Infirmary in a comatose condition. She had had no decided convulsion. The temperature was high, also the pulse; *tache cérébrale* was well marked. Pressure symptoms developed very prominently, and the child apparently was about to die. An attempt to draw off cerebro-spinal fluid in the lumbar region for diagnostic purposes failed. However, improvement set in after free mercurial inunction and the administration of potassium iodide with bromide. The patient appeared to be well now, practically the only symptom remaining being an alteration in her speech. Dr. Napier based his diagnosis partly on the clinical picture and partly on a very marked history of tuberculosis in different forms in the family.

A discussion followed, which centred mainly round the question of diagnosis, and was taken part in by Drs. ALEX. ROBERTSON, FINLAYSON, KERR LOVE, MIDDLETON, WORKMAN, MONRO, and LINDSAY STEVEN. The question whether the case might have been one of enteric fever was mooted, but this diagnosis was not generally accepted, the temperature chart not being suggestive, though several speakers insisted on the similarity which enteric fever often bears to tuberculous meningitis. The suggestion that the case might have been one of sporadic cerebro-spinal meningitis received more favour, and this was pointed to as the explanation of recovery in some cases of supposed tuberculous meningitis. However, though the diagnosis of the present case was generally regarded as questionable, several of the speakers expressed their belief that rare cases had occurred of recovery from tuberculous meningitis.

POISONING BY GASEOUS AMMONIA.

Dr. T. K. MONRO gave the clinical history of two fatal cases of poisoning by gaseous ammonia, and Dr. WORKMAN showed preparations of the lungs and air passages. Two men had been exposed to the fumes of ammonia gas through the burst-

ing of an iron pipe of an ammonia refrigerator, and died within two or three days. They had much swelling of the mouth and fauces, and suffered great pain in swallowing. Dyspnœa was great, and was relieved by inhalation of oxygen. Clinically the cases corresponded with capillary bronchitis, and death was from asphyxia. *Post mortem* there was found marked congestion of the respiratory passages, with the development of a false membrane very like that of diphtheria, but extending down to the smallest bronchioles. Probably the ammonia passing into the respiratory passages as a gas was dissolved in the mucous secretions, and produced its caustic effects all through the lungs.

Card Specimens.

Dr. Sutherland and Dr. Edington showed as card specimens a number of specimens illustrative of Congenital Affections of the Urinary Apparatus.

LIVERPOOL MEDICAL INSTITUTION.

Friday, October 7th, 1898.

W. Macfie Campbell, M.D., President, in the Chair.

Presidential Address.

The President took for the subject of his address Some Old Authors and their Books. In introducing the subject, which was illustrated by about seventy lantern slides, Dr. Campbell remarked that he was in this way reminding the members of the treasures in the Institution Library, many of which he hoped would be of equal novelty and interest to them as they had been to him. His first portrait was that of Sylvius, from the Leyden edition of his works dated 1563, of whom a short biographical sketch was given. The next was that of his distinguished pupil Vesalius, painted by De Calcar about the year 1543; the title page of his great work *De Humani Corporis Fabricâ*, containing his portrait, was also shown. Sylvius had said that progress beyond the limits which Galen had established was impossible, to which Vesalius boldly retorted that Galen had never dissected a human body. He was the founder of scientific anatomy. Some curious drawings were then shown from the works of Stephanus (1545) chiefly to illustrate the artistic backgrounds so common in the anatomical plates of the time. The next author was Jacobus Rueff, *De Conceptu et Generatione Hominis* (1554), whose plates of an obstetrical chair and of the terrible uterine specula of the time were shown, also a prescription for sterility, consisting of thirty-five ingredients. The lecturer then entered at some length into the life of Ambroise Paré, and showed some photographs of instruments from his works, including the "gryffon's talons" for extracting the mola or afterbirth, and lead nipple shields of a very modern appearance. A series of plates from the *Surgical Pentateuch* of Fabricius ab Aquapendente (1647) were then exhibited, chiefly of obstetrical instruments. The uterine speculum with wheel and rachet is identical with that possessed by the German Museum at Nürnberg. The history of the Chamberlen family was then given, and a portrait of Peter Chamberlen the third was shown on the screen. This portrait labelled "Paul" was painted in 1658, and depicts a man of advanced middle life, whereas Paul was born in 1635; it is therefore generally accepted as that of Peter, brother, according to Aveling, of the inventor of the forceps. Hugh the first, the translator of Mauriceau's *Midwifery*, was the son of Peter the third. He held a Court appointment, and was sent for at the birth of the Pretender (James III); he arrived late, however, but was able to certify that the Prince was not a "warming pan" child. His translation of Mauriceau was exhibited, with some plates of instruments. He had rather a hazy idea of what we would now call professional ethics, as he says in his preface that he cannot disclose the secret of his instruments "to bring a living child," as his father and brothers are still alive; adding, however, that they are willing to be sent for by anyone throughout the country. The other Chamberlens were not distinguished except the second Hugh, who was a Fellow and Censor of the College of Physicians. A photograph of Chamberlen's original forceps, discovered in 1818 and presented to the Royal Medical and Chirurgical Society by Mr. Carwardine, surgeon, was shown, and the three first models described, with other plates from the translation of Mauriceau. The next author was William Smellie, born 1697, who was destined to improve the forceps and to invent the modern lock. He was a country surgeon, born at Lanark, where he practised not very successfully. He, however, had the spirit to travel, and as he found "there was nothing to be learned in London" he settled there as a midwifery teacher, soon rising to great fame as a lecturer and practitioner. He taught clinically, and it is told of him that on one occasion, having 20 students with him at an arm case, he was compelled to deliver at once, the crowd in the street becoming so threatening. He was accused of teaching midwifery cheaply, his enemy, Dr. W. Douglas, saying he had a red lamp with "Midwifery taught for 5s." on it, whereas his fees were high —9 guineas for a two months' course, and 5s. for each case. He improved, almost invented, the "phantom" for demonstration, and designed other obstetrical instruments, amongst which were wooden forceps, as lighter and quieter to use. Some photographs were shown as specimens of his great work. *The Anatomical Tables and Practice of Midwifery* (1716). The forceps blades were covered with leather, and the points when closed were almost in contact. Smellie was described as in appearence awkward and unprepossessing, with large hands, but his portrait, painted by himself, is that of a man not uncomely. A portrait of Thomas Denman (born 1733) Smellie's most distinguished pupil, was shown, and an example of the illustrations of his *Introduction to the Practice of Midwifery*, and a short history of his life given. Leaving the obstetricians, the portrait of Leewenhoek, the first of scientific microscopists, with his own drawing of his instruments, was shown. One curious plate was figured—that of the spermatozoa, in which he has given the animalculæ (his term) human lineaments. He did not say distinctly that he had seen this. His words were: "Presently I persuaded myself that I discovered distinct members in these animalcules, but as I did not see them everywhere, I shall say nothing further concerning them." This was in a communication to the Royal Society in 1678. He demonstrated the circulation of the blood in the tails of tadpoles, and traced the blood from the arteries into the veins, and this with a simple microscope of $\frac{1}{4}$ in. focus, the lens ground by himself. The next portrait was that of Peter Low, and some examples from his works were shown. The *Armamentarium Chirurgicum* of Scultetus, with an extraordinary plate of two figures to illustrate surgical disease was rapidly described, followed by a series of obstetrical and other instruments from the *Medicine and Surgery* of Fabricius Hildanus. Examples of very beautiful art from Bidloo's *Human Anatomy* (Amsterdam, 1685) were compared with the more modern work of Marcus Antonius and Caldani (Venice, 1801), not altogether to the disadvantage of the older. The next shown was the frontispiece of Muys's *Rational Practice of Chirurgery*, with its quaint legend:

> The spirit Divine is an Alkaly stout.
> Which conquers the D[illegible] the world throughout.

Muys enunciated an alkaline theory of therapeutics which it is difficult to understand. His phraseology is very curious, as in this quotation from his preface:

> Whatsoever thou wou[illegible] sick do firs[illegible] himself, and in thy medicine separate the pure from the impure, by which means thou art made a fit agent for the administration of the peculiar gifts and endowments of healing granted only to them that are [illegible] to the fear of God.

The next portrait was that of William Cheselden, and illustrations from his *Human Anatomy* (1713) and his *Osteology* were shown. Cheselden's work in the introduction of the high operation for stone was described, and his skill in the lateral operation, which he performed in fifty-four seconds. A complimentary poem written by a patient, aged 13, was quoted

> The work was in a moment done,
> If possible without a groan:
> So swift thy hand, I could not feel
> The progress of the cutting steel.
> * * * * *
> And I beheld with ravished eyes
> The cause of all my agonies:
> And above all the race of men,
> I'll bless my God for Cheselden.

Cheselden's ophthalmological work, his appointments, and

his unromantic end (he died of a surfeit of ale and hot buns in 1752) were briefly alluded to. The other authors, whose portraits were shown and sketches of their life-works given, were Marcus Antonius Severinus, Thos. Willis, Malpighi, John Freind, and Boerhaave. The President finally apologised for the discursive nature of his paper. His difficulty was to make selections, some of the biographies being so interesting and so full, such, for instance, as those of Vesalius and Ambroise Paré, to whose lives it was impossible in the time available to do justice. The connecting link throughout was the obstetrical illustrations of the various authors.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At a meeting on October 14th, the PRESIDENT (Dr. E. Gwynne) delivered an address on the Medical Officer of Health as a Public Teacher. After some introductory remarks, he said the medical officer of health whose appointment was made compulsory on every local authority had vast opportunities for educating the people in the laws of public and private health; but able as a large proportion of these officers were, the multifarious nature of the routine duties imposed on them left them no leisure for other work, and tended to give them too much the character of permanent officials of the Board. England, which twenty or thirty years ago took the lead among the nations in sanitary progress, had not kept pace with the advance of the science, and in many departments had already been left behind by her neighbours, especially the Germans. He need only refer to the promotion of bacteriological research and other scientific work, which, in the absence of State aid, developed wholly on private generosity; the "tremendous experiment," as Lord Lister had called it, of the practical abolition of compulsion in respect of even primary vaccination, at a time when other countries were one by one following the example of Germany, rightly expecting the same success; the ignorance of the elementary laws of ventilation shown in the stifling air of churches, theatres, law courts, schools, and even bedrooms; and the smoke-polluted atmosphere of our towns, the cause of a high mortality from respiratory diseases; and the indifference of the public to the dangers arising from the consumption of tuberculous milk and meat, a London magistrate preferring the opinion of a common butcher to that of a pathologist. Then there were the questions of the housing of the working classes, not only in the slums of the older quarters of London and in tenement dwellings, but in the "jerry-built" houses springing up by thousands on the outskirts of the metropolis, destined in a few years to fall into decay, a result of the vicious system of short ground leases, and the effects of these insanitary conditions seen in the miserable physique of the masses, their dirt and immorality, and the appalling sacrifice of infant life. On all these and many other subjects the medical officer of health should be the teacher, adviser, and leader of the community; but to enable him to fulfil this his mission he should enjoy more leisure, a better salary and social position, such as to attract the ablest men in the medical profession. Meanwhile he urged his fellow medical officers of health to take a large and catholic view of their work as embracing the welfare of the entire community, and to adopt as their motto, "*Homo sum: humani nihil a me alienum puto.*"

ASSOCIATION OF REGISTERED MEDICAL WOMEN.—At a meeting on October 11th, Miss COCK, M.D. (President), in the chair, after the election of new members, Mrs. FLEMMING, M.D., read a paper giving an analysis of 75 curettings from the uterus which had been examined microscopically. The specimens were classified as follows: (1) Endometritis, 43 cases; (2) malignant disease, 19 cases; (3) placental tissue, 13 cases. The series of specimens of endometritis showed variations in (*a*) size and shape of glands, (*b*) number of glands, (*c*) interglandular tissue. The cases of malignant disease included 1 case of deciduoma malignum, 1 case of sarcoma, and 17 cases of carcinoma, of which 13 were of the cervix, and 4 of the body of the uterus. The difficulties in diagnosis from microscopic examination of curettings was pointed out, and special reference was made by Mrs. SCHARLIEB, M.D., M.S., to a case under her care, in which an examination of the scrapings revealed carcinoma of the body of the uterus, where clinically the only suspicious symptom was a slight discharge of blood-stained serum, in a woman past the climacteric. The patient was apparently in perfect health, and showed locally no other sign whatever of malignancy. A considerable cancerous growth was found in the fundus of the uterus after its removal.—Miss HELEN BOYLE, M.D. (Brighton), read notes of several cases of Quinsy, and based upon them the following conclusions: (1) That in quinsy the staphylococci and streptococci penetrate through the previously injured or inflamed mucous membrane of the tonsil, and are, as a rule, taken by the lymphatics to the nearest lymphatic gland, situated on the outer side of and close to the tonsil; (2) that in a number of cases the quinsy or abscess occurs in the lymphatic gland and not in the tonsil itself, just as in stomatitis an abscess forms under the chin, and, in a wound of the foot, in the groin; (3) that the admitted connection between rheumatism and quinsy probably means that the rheumatic inflammation injures the mucous membrane in such a way as to allow the pus germs to enter, for rheumatism itself does not lead directly to suppurative lesions; (4) that these views are supported by the fact that when quinsies burst the opening is frequently situated at the lower end of the anterior pillar of the fauces, or a little outside this.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The first meeting of the 43rd session was held on October 14th at the Royal Kent Dispensary, Greenwich Road, S.E., Dr. E. H. EZARD (Vice-President) in the chair.—The Treasurer's balance-sheet and the annual report having been adopted, the following gentlemen were elected as officers for the ensuing year:—*President:* Morgan Dockrell, M.A., M.D. *Vice-Presidents:* Edward H. Ezard, M.D., D.Sc., C.M., Charles J. Parke, M.R.C.S., L.S.A. *Council:* George Herschell, M.D., M.R.C.S., Arthur E. Joscelyne, M.R.C.S., L.R.C.P., John Mackern, B.A., M.D., F.R.C.S., Thomas C. Megginson, M.D., C.M., Robert E. Scholefield, M.A., M.B., B.Ch., Patrick C. Scott, B.A., M.B., M.R.C.S., Septimus Sunderland, M.D., M.R.C.S., L.R.C.P. *Treasurer:* John P. Purvis, M.R.C.S., L.S.A. *Secretary:* John P. Henry, B.A., M.D., B.Ch. *Librarian:* H. Bowen Williams, M.D., M.R.C.S., L.R.C.P.—Several new members having been elected, Mr. ERNEST CLARKE read notes of cases of Foreign Bodies in the Orbit, in which there was no external wound visible. Drs. TOOGOOD, HARTH, and JOSCELYNE discussed the paper.—Dr. GEORGE HERSCHELL then gave a demonstration of Intragastric Instruments, including Turck's gyromele and the intragastric needle douche.—Dr. DOCKRELL showed cases of Urticaria Pigmentosa and Syphilis.—Dr. TOOGOOD showed a case of Tuberculous Arthritis in a child, which was gradually improving.

FORFARSHIRE MEDICAL ASSOCIATION.—At a meeting in the University College, Dundee, on October 7th, Dr. J. MACKIE WHYTE (Vice-President) in the chair, Dr. MCGILLIVRAY showed a case of Paralysis of the Right Cervical Sympathetic with well-marked symptoms of unilateral anidrosis, myosis, ptosis, enophthalmos, and heterochromia. No direct cause could be ascertained except the vague history of an injury to the cervical vertebræ, which probably also accounted for the pain on deep pressure over the spinous processes of the third and fourth cervical vertebræ. Dr. McGillivray also discussed certain points in connection with the treatment of Corneal Ulceration, such as the relief of photophobia and blepharospasm for the purpose of restoring the normal processes of nictitation and lachrymation, and also the normal corneal temperature, etc.—Professor STALKER read notes of three cases of Needle Swallowing, and discussed the treatment.—Mr. GREIG read a paper on the Infectivity of Venereal Warts, in which he contended that a fourth venereal disease should be recognised. Out of 330 venereal cases of his own taken at random, 14 had venereal papillomata, 9 of which had absolutely no evidence nor history of any other venereal trouble nor any signs of balanitis, etc. Dr. Greig gave an example of a husband having infected the wife with venereal warts, and also an example where husband infected wife and wife infected her child. He did not think that it would be put down to the discharge, as one often found the discharge present without any warts. The incubation period he thought was about four weeks. Dr. WHYTE spoke of cases he had seen

in the Parochial Hospital treated successfully with salicylic and collodion.—Dr. Whyte read notes of a case of Tricuspid Stenosis in a woman, aged 37, whose trouble had commenced with an attack of endocarditis at the age of 10. Mitral and aortic stenosis developed, and this was evidently followed by tricuspid, as was shown by the condition of the valves at the *post-mortem* examination. The right auricle of the heart (which was shown at the meeting) was greatly enlarged and hypertrophied; the right ventricle had thinner walls than normal; the left auricle was somewhat hypertrophied, and the left ventricle showed thickening of the wall ($\frac{3}{8}$ inch) but no dilatation. Dr. Whyte also spoke of a case he had had several years ago of pure Tricuspid Stenosis.

Newport Medical Society.—The annual meeting of this Society was held on October 5th, Mr. O. E. B. Marsh, the retiring President, in the chair. The Honorary Secretary read his report on the work of the Society during the past year, and this was discussed and approved.—The following gentlemen were elected officers for the ensuing session:—*President:* Mr. H. E. Williams. *Vice-President:* Mr. C. Brooke Gratte. *Honorary Secretary:* Mr. W. Basset (re-elected). Messrs. H. B. Seddon and B. W. Gowring were elected to the two vacancies on the Committee.—The retiring President then vacated the chair in favour of the new President, who, after returning thanks for his election, commented upon the satisfactory position of the Society and of the usefulness of the same.—A case of Molluscum Contagiosum was shown by Dr. T. Morrell Thomas; and Mr. Marsh showed a specimen of small Ovarian Cyst removed by him, with notes of operation, etc.

Bristol Medico-Chirurgical Society.—The annual meeting was held on October 12th, in the Medical Library of University College, Bristol; Dr. J. E. Shaw, and afterwards Dr. R. Roxburgh, in the chair. Dr. Roxburgh, in his presidential address, referred to a number of fascinating topics which at the present moment faced the pathologist, and some of which seemed on the verge of complete elucidation. He proceeded to deal with the disillusions and disabilities of private practice; he compared the ideals of the young and enthusiastic medical graduate with the difficulties that met him in maintaining these, and in preserving a high scientific and ethical standard where his object was primarily to earn a livelihood. He pointed out that it was from the "commercial" side of practice that temptations arose to unprofessional acts, and he appealed to the teachers of the Bristol Medical School to set a high ethical ideal before their students.—Mr. Paul Bush (Honorary Secretary) read his annual report, which showed a balance in hand of £47 on the ordinary account, and of £103 on the Journal account. He referred to the loss which the Society had suffered by the death of Dr. H. Marshall and Mr. Augustin Prichard.—Dr. B. Rogers (Editorial Secretary) read his report, which showed a deficit of £5 on the Journal for the year.—Mr. L. M. Griffiths (Honorary Librarian) read his report, which showed a balance in hand of £50; he mentioned that there were now 7,180 books belonging to the Society, and that the Bristol Medical Library now contained nearly 19,000 volumes, and was in receipt of 204 current periodicals. He made a long and clear statement as to the present condition of the library, and intimated that after this year he would be unable to continue to be Honorary Librarian.—Dr. J. G. Swayne proposed, and Mr. Handcocke Wathen seconded, and it was carried:

That Mr. L. M. Griffiths be thanked for his long services, and that the report be adopted.

Dr. J. E. Shaw, the retiring President, in supporting this motion, said it was the wish of all the members that Mr. Griffiths should continue in office, a post he had so long held with such great benefit to the Society, and to the users of the library. He further mentioned that the excellent condition of the library was largely due to the energy and knowledge displayed by Mr. Griffiths.—Mr. W. H. Harsant was elected President-elect, Mr. Paul Bush was re-elected Honorary Secretary, Mr. L. M. Griffiths was re-elected Honorary Librarian. The following were elected to serve on the Committee: Dr. Michell Clarke, Mr. J. Dacre, Dr. D. S. Davies, Dr. B. Rogers, Mr. Munro Smith, Dr. H. Waldo. Mr. L. M. Griffiths, Dr. G. Parker, and Mr. J. Taylor were elected to serve on the Library Committee. Mr. W. Roger Williams was elected a member of the Society.

West Penrith Medical Society.—This Society, composed of medical men practising in the Land's End district, which has been formed as a result of the holding of the annual meeting of the South Western Branch of the British Medical Association at Penzance this year, elected as its officers at the first meeting at the West Cornwall Infirmary:—*President:* Dr. J. B. Montgomery. *Vice-President:* Mr. W. S. Bennett. *Secretary:* Mr. A. R. F. Evershed. *Committee:* Mr. J. Symons and Dr. Hugh M. Montgomerie.—After the election Dr. H. M. Montgomerie read a short paper on Infective Endocarditis, illustrating his remarks with the notes and heart from a case which had recently been in the infirmary.

Pathological Society of Manchester.—At a meeting on October 12th, 1898, C. E. Richmond, F.R.C.S. (President) in the chair, the annual reports of the Treasurer and Committee were received, and the following office-bearers elected for the session 1898-9:—*President:* R. B. Wild, M.D. *Vice-Presidents:* J. Collier, F.R.C.S., E. S. Reynolds, M.D. *Treasurer:* T. A. Helme, M.D. *Secretary:* T. N. Kelynack, M.D. *Committee:* A. Brown, M.D., W. E. Fothergill, M.D., J. E. Platt, M.S., W. Milligan, M.D., F. C. Moore, M.D., W. A. Renshaw, J. W. Smith, F.R.C.S., W. P. Stocks, F.R.C.S. *Auditors:* W. A. Hooton, L.D.S., E. J. Sidebotham, M.B.

Birkenhead Medical Society.—The inaugural meeting of the Society for the session 1898-99 was held on October 14th. Dr. Francis Johnston having resigned the office of President, Dr. H. Nazeby Harrington was unanimously elected to the position, and Dr. Joseph Blood to that of Vice-President. The new President delivered an inaugural address on the Association of Medicine with Literature in England, pointing out some of the facts connected with the lives of members of the medical profession who had become prominent in the world of letters, from the time of Thomas Linacre down to that of Conan Doyle, special attention being drawn to the medical part of their lives and the influence that their medical training had upon their literary work. Whilst most of the medical *littérateurs* were touched upon, the following were spoken of at greater length: Linacre, Sir Thomas Browne, Sir Samuel Garth, Sir Richard Blackmore, Smollett, Akenside, Goldsmith, Crabbe, and Keats. A hearty vote of thanks, proposed by Dr. Sydney Marsden, seconded by Dr. Harris, and supported by Drs. Vacher, Shears, Temple, and Laird Pearson, was given to the President for his able address.—Dr. Harrington replied.

Northumberland and Durham Medical Society.—The first meeting of the session was held in the Royal Infirmary, Newcastle-upon-Tyne, on October 13th, Dr. Hind (President) in the chair. The following office-bearers were elected for the ensuing session:—*President:* Dr. Limont. *Vice-Presidents:* Dr. Hind, Mr. Rutherford Morison, Dr. G. R. Murray, and Dr. R. S. Peart. *Honorary Secretaries:* Dr. T. Beattie and Mr. A. M. Martin.—Mr. Williamson introduced a patient recovering from Orbital Thrombosis. Proptosis had remained limited to the right eye, which was "spoilt." No septic focus could be discovered. He also recited a series of 5 cases of orbital thrombosis arising from trivial face injuries.—Dr. Beattie recounted a case of Cavernous Sinus Thrombosis following facial erysipelas from a scratch on the nose, and two others due to middle-ear disease, confirmed on necropsy. Dr. Hind commented on the rarity of this condition as a sequela to the very frequent septic conditions of nose. Mr. Morison brought forward a case of orbital sarcoma for comparison with Mr. Williamson's case.—Dr. G. R. Murray introduced (1) a case of Thoracic Aneurysm showing dilatation of superficial arteries in the thoracic walls; a deep impulse was felt posteriorly to left of spine; a loud systolic *bruit* was heard over a wide area, and especially intense over upper part of spine. A marked peculiarity of the case was that pulsation in the abdominal aorta and in the femoral arteries was felt with the extremest difficulty. (2) Thoracic Aneurysm pointing in third and fourth intercostal spaces immediately to left of sternum. (3) A

patient with Aneurysms of the Innominate Arteries and also of the Abdominal Aorta. Dr. Drummond referred to the difficulties of the first case and expressed his opinion that it was one of fusiform dilatation of the thoracic aorta with formation of laminated clot, which had been displaced and partially occluded the descending aorta. The second case, he thought, sprang from the descending aorta.—Dr. Murphy showed: (1) child, aged 10 months, from whom he had removed a large Cranial Meningocele. The child was now developing hydrocephalus. (2) A boy, aged 6, very Anæmic, with a Large Spleen and some Enlargement of the Liver. He asked for a diagnosis and suggestion for treatment. Dr. Beattie examined the blood and reported that there was no leucocytosis, the case was therefore not one of leukæmia, but rather of so-called "splenic anæmia," and therefore surgical treatment was not to be advised. Drs. Drummond, Plummer, and Oliver also took part in the discussion.—Professor Oliver showed a patient recovering from "Caisson Disease." The man had worked at the construction of the piers of the bridge at the depth of 75 feet below the high-water level of the River Tyne, and at an atmospheric pressure of 35 lbs. to the square inch. He had suffered from epistaxis, followed by severe cramping muscular pains with paresis of arms and legs, and a tendency to syncopal attacks. Dr. Hind asked whether hæmaturia or emphysema of the lungs had occurred in this case, and was answered in the negative.—The following specimens were exhibited: (1) Dr. Murphy: Appendix removed seven hours after onset of symptoms, uninterrupted recovery of patient. (2) Mr. Williamson: Liver and Duodenum showing large communication between fundus of gall bladder and duodenum with a large facetted gall stone *in situ*. Another large gall stone had been removed by operation from small intestine, where it had caused acute intestinal obstruction. (3) Dr. Drummond: Specimens of Congenital Cystic Kidneys removed from a woman aged 45 years, being the third member of the same family who had died in adult life from this disease, as he had confirmed by necropsy. He stated he had at present under observation two members of another family suffering from this condition.

REVIEWS.

A Treatise on Aphasia and other Speech Defects. By H. Charlton Bastian, M.A., M.D., F.R.S., Consulting Physician to University College Hospital; Physician to the National Hospital for the Paralysed and Epileptic; etc. London: H. K. Lewis. 1898. (Demy 8vo, pp. 374. 15s.)

The appearance of Dr. Bastian's work on aphasia has been awaited with considerable interest, and it may at once be said that it fully justifies the high expectations formed concerning it. The author's position with regard to his subject is in some respects unique. Thirty years ago, within a decade of Broca's first memoirs on aphasia, and several years before any definite knowledge regarding cerebral topography was available, Dr. Bastian published a series of papers on the nature of speech defects which have become historical. Since the days of these early utterances—aptly described by Dr. Joseph Collins as "astoundingly unerring"—he has worked patiently and persistently in this difficult field, every corner of which he can now claim to have conscientiously explored. The present book summarises the results of these explorations, and discusses the problems which have been unearthed during their progress. About one-third of the book has appeared before, namely, in the form of the Lumleian Lectures for 1897, in connection with which we had occasion to refer[1] to the independent view which Dr. Bastian takes of the functions of the cerebral cortex. The reasons which led him to believe that the centres which are commonly regarded as sensori-motor are really sensory only are again clearly stated in his book, and call for no further comment here.

The first chapter of the work is introductory and treats of the physiological and psychological data upon which the study of aphasia is based. As might have been expected from his previous writings, the author is here at his best in philosophical cast of mind blends happily with directness both of thought and diction to produce a clear presentation of the mental processes subserving normal speech and writing.

The relations between thought and language are further discussed in the second chapter, wherein the writer criticises the views of Broadbent, Kussmaul, and Lichtheim as to the existence of a "centre for concepts." He was originally led to deny this on psychological grounds and his opinion is confirmed by the want of unquestionable clinical data pointing to the presence of this centre; he prefers to believe that concepts are revived in outlying parts or "annexes" of the individual perceptive centres. This view is obviously the simpler: Dr. Bastian prefers to explain the facts by rigid analysis, however laborious, rather than by convenient but perhaps misleading speculation, and it is to be noted that the general tendency of the latest writers is to support him.

The succeeding chapter gives a brief but sufficient classification of speech defects, and here the writer's method again contrasts favourably with that of previous authors. These have mostly started from theoretical grounds, built up a vast number of types of aphasia and fitted as many of them as possible with actual cases, leaving a residuum of hypothetical aphasias to be concretely discovered, one supposes, in the same way as the missing chemical elements in Mendeléeff's table. Dr. Bastian does no such thing; instead of an artificial scheme, which can only be partially filled up with actually observed varieties, he presents one based upon the portions of the brain known to be damaged in recorded cases. He himself describes it as merely the outline of a classification, but the accuracy of the anatomical method renders it the most satisfactory basis for the study of speech defects which follows. This is thorough and elaborate, but its difficulty is lightened, first, by the systematic and orderly way in which it is mapped out; and, secondly, by the wealth of illustrative cases by which it is accompanied. These number considerably more than 100, many being original; the manner in which the latter are recorded is a model of clinical accuracy and the same high critical standard is applied to the work of others, so that the reader is able to appreciate at a glance the exact value of the evidence laid before him. In the midst of these anatomical studies is a chapter on functional disabilities in the glosso-kinæsthetic (Broca's) centre, which is interesting from the original conclusion that hysterical mutism and hysterical aphonia are different degrees of the same disability existing bilaterally in the centre.

Dr. Bastian's views as to the nature of aphasia are based on the relations of his four well-known centres and their commissures. His diagrams illustrating this are familiar, but the work under notice contains a more minute analysis, particularly of the amnesic forms, than has has hitherto been attempted.

In the chapter on the modes of recovery from aphasia the manner in which new channels can be opened up to and form the intact centres is discussed in a most interesting manner and with, in some instances, novel results. The chapter on diagnosis will no doubt be widely read, even by those who have not the leisure to study the whole book. It is a succinct and admirable summary of what has gone before, and is illustrated by an excellent diagnostic table of the ten common forms of speech defect; the variations produced by the different degrees of development of the auditory and visual faculties in different individuals are well brought out. The chapters on etiology, prognosis, and treatment are thoroughly sound; education is the main help to recovery, and the limits of its power are carefully laid down.

Dr. Bastian's really remarkable book represents a large part of the life-work of one who was a pioneer in the field, and whose authority on the subject is universally acknowledged. Many of his views were at first rejected, but have subsequently gained acceptance; for some of his most noteworthy discoveries—such as that of word-deafness and word-blindness—he has hitherto received little or no credit. But the present work shows the hand of the master throughout. It can fairly be described as the most scientific and dispassionate work on aphasia that has hitherto appeared, and in the literature of the subject it is bound at once to assume the position of a classic.

[1] British Medical Journal, 1897, i, p. 1108.

Renal Growths: their Pathology, Diagnosis, and Treatment. By T. N. Kelynack, M.D., M.R.C.P. London and Edinburgh: Young J. Pentland. 1898. (Roy. 8vo, pp. 286, 96 illustrations.)

Times have greatly changed since the late Sir William Lawrence said to the students at St. Bartholomew's Hospital: "The kidney, gentlemen, is fortunately beyond the reach of the surgeon;" but in spite of all the advance that has been made in renal surgery, no systematic treatise devoted solely to the growths of the kidney has yet appeared in this country, and certainly no apology is needed for the present volume, which collects and arranges in a scientific and critical manner the large amount of information on this subject that is scattered through literature.

While fully recognising the difficulty of obtaining a perfectly satisfactory classification of renal tumours, Dr. Kelynack rightly considers a grouping based on pathological histology as being both the most scientific and most serviceable. The difficulty of referring some renal growths to a cut-and-dried category is shown in the chapter on the relationship of renal growths, where examples of growths appearing to be mixtures of sarcoma and carcinoma are quoted.

In the interesting section on the etiology of renal tumours, a large number of statistics are given, and special attention is devoted to the bearing of embryonic defects on this question. The author's own statistics seem to show that in early life the female sex is more liable to renal growths; this observation favours the view that they may arise in the remains of the Wolffian body, since that structure is said to be less used up or to persist longer in the female. From a critical survey it appears that neither traumatism nor renal calculus play any part of importance in the development of neoplasms in the kidney. An analysis of 142 cases showed that 70 occurred in males, and 72 in females, a result which is at variance with the generally-received view that the incidence is greater in the male sex. The period of adolescence is almost exempt from renal growths, while infancy and childhood are chiefly affected, as shown by the fact that out of 160 cases, 74 occurred under 5 years, and 84 under 10 years, of age. There does not appear to be any difference as to the liability of the two kidneys to malignant disease.

The importance of a statistical study such as this, and its bearing on operative treatment, is well shown in the section on the methods of extension of new growth. The author is led to believe that in a great majority of cases the growth remains practically local for some time after a tumour has been first observed, and that even in fatal cases the number and extent of secondary growths is often small. After describing the benign tumours of the kidney, Dr. Kelynack successfully enters on the consideration of renal sarcomata, and treats them from three points of view: according to the period of life at which they develop; according to the part of the kidney from which they arise; capsular, parenchymatous, and hilum growths; and lastly, according to their histological structure. The chapters on adenomatous growths, on renal neoplasms derived from adrenal inclusions, and on adrenal tumours, are most valuable and critical summaries of our knowledge.

Under carcinoma of the kidney are included the growths springing from the surface epithelium of the pelvis or epitheliomata, and the ordinary carcinomata arising from the parenchyma of the kidney. This chapter, like the other, contains numerous references to literature, and is admirably illustrated by figures. The sections on the symptoms and diagnosis of renal growths are excellent summaries, and are followed by a consideration of the operative treatment.

Written by an experienced pathologist and physician, this work will be of very great use to the operating surgeon, and will serve as an invaluable source of reference to those interested in the pathology and bibliography of the subject.

Diseases of the Stomach: A Textbook for Practitioners and Students. By Max Einhorn, M.D. Second revised edition. London: Baillière, Tindall, and Cox. 1898. (Demy 8vo, pp. 502. 12s. 6d.)

On the Continent the careful study of diseases of the stomach has of late years led to a more minute diagnosis by means of testing the chemical composition of the gastric contents, and in consequence better treatment. Numerous works have appeared describing the modern methods employed for making a correct diagnosis. In the English language up to the present books have not kept pace in this branch of medicine with modern improvements, and the books so far published on diseases of the stomach lay comparatively little weight on the chemical and mechanical methods of diagnosis. The appearance of Max Einhorn's work is therefore most acceptable to the English-reading public.

After a brief description of the anatomy and physiology of the stomach, an excellent chapter is given on the methods of examination which are now employed in trying to come to a correct diagnosis in dyspepsia. The chapter dealing with diseases of the stomach is very carefully compiled, and although we may differ on some minor points, the general subdivisions and descriptions are excellent. In describing the symptoms of each separate condition due weight is given to the results of chemical analysis, and illustrative cases are quoted to serve as guides to others in making a diagnosis.

As regards treatment the more modern methods are described, such as lavage, the gastric spray, and the internal electrisation of the stomach. Treatment by dietetics is not neglected, and the diet tables are compiled on the more scientific methods of calories which renders them up to date. In fact, the work of Dr. Einhorn plainly shows how science can help in treatment.

The book is one that can be strongly recommended to all practitioners of medicine who wish to know how stomach diseases are now diagnosed and treated. It is a brief summary, and, at the same time, contains the principal matter necessary to the physician, and is well worth reading, even by experienced medical men.

Zur acuten Ueberanstrengung des Herzens und deren Behandlung nebst einen Anhange über Beobachtungen mit Roentgenstrahlen. [On Acute Heart-strain and its Treatment, with an Appendix on Observations with Roentgen Rays.] Von Dr. Th. Schott of Nauheim. Third edition. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. (Demy 8vo, pp. 42. 1s. 9d.)

The widespread interest that has been aroused by the previous work of Dr. Schott and his brother has led to much criticism of their views and especially in relation to the changes which they allege to take place in the heart's shape as a result of the treatment which they have advocated. In the present short but practical paper Dr. Th. Schott attacks the subject of changes in the heart's shape and other phenomena as induced by forced exertion in the healthy subject. In addition to the ordinary clinical methods he has employed the Roentgen rays and has succeeded by their means in giving ocular demonstration of the points which he desires to prove. Making use of wrestling as a form of violent exertion he gives the results of careful examination of the circulatory apparatus in healthy subjects before and after prolonged wrestling bouts, and also demonstrates the effects produced by the wearing of tight belts, compressing the abdomen. He records a very remarkable displacement of the position of the apex beat to the left, together with marked increase of cardiac dulness to the right, which bears definite relation to the amount of exertion and is increased by the use of abdominal compression. The only difference noticed in the quality of the cardiac sound was an occasional muffling of the first sound. The pulse and respiration were increased and sphygmographic tracings showed a very considerable alteration in arterial pressure. These various phenomena were found to be only temporary and the hearts returned to their normal condition after a period of rest.

Having thus shown how the healthy heart may be affected by over-straining, he turns to the effect of over-strain upon the abnormal heart, whether disturbed by valvular insufficiency, muscular degeneration or defective innervation, and shows by a series of interesting cases how far exertion may be carried in certain different types. The latter part of the paper is devoted to an account of the results obtained by the use of the Roentgen rays. These are somewhat limited, but they are suggestive of future possibilities, and so far as they go they appear to tend to confirm the accuracy of observations hitherto dependent on the ordinary methods of clinical examination.

LA DIPHTÉRIE: NOUVELLES RECHERCHES BACTÉRIOLOGIQUES ET CLINIQUES, PROPHYLAXIE ET TRAITEMENT. [Some New Bacteriological and Clinical Investigations in Diphtheria, with its Prophylaxis and Treatment.] Par H. BARBIER and G. ULMANN. Paris: J. B. Baillière et Fils. 1898. (Crown 8vo, pp. 92. Fr. 1.50.)

THIS small book deals only with certain points in the bacteriology, clinical aspects, and treatment of diphtheria during its acute stage; but some of the points raised are important, notably those relating to the diffusion of the bacillus through the body, the significance of its varieties, and the influence of the microbes associated with it. The authors are evidently inclined to make many exceptions to the commonly held view that the bacillus is confined to the local lesions, and that constitutional symptoms are the effects of the diffused toxins. Curiously enough, they succeeded in cultivating the bacillus from the medulla oblongata and pons more frequently than from any other organ except the lungs. This fact, they think, throws light on the pathology of diphtherial paralysis and the "bulbar accidents" so frequently met with. We confess we should like to have these observations confirmed, and to know that sections of the medulla showing the bacilli *in situ* had been studied by other pathologists.

About the significance of the varieties of the bacillus we suppose there will be much difference for some time to come. The authors distrust all except the long variety, the original Klebs-Loeffler organism. We cannot, however, follow them with respect to their estimate of the part played by the associated microbes. It is probable that the influence of these organisms in diphtheria is much exaggerated, and that no greater proof of this exaggeration is wanted than the marvellous results of the antitoxin treatment, which has been frequently found to cure cases such as are described in this book as typical of "associated diphtheria," and supposed, therefore, not to be very amenable to the specific treatment.

The book, though small, is very suggestive, and we wish that the authors, who possess wide clinical experience, had favoured us with more of their knowledge.

THE ATTENDANT'S COMPANION: A Manual of the Duties of Attendants in Lunatic Asylums. By CHARLES MERCIER, M.B. Second Edition. London: J. and A. Churchill. 1898. (Cr. 8vo, pp. 134. 2s.)

THIS may distinctly be called a handy book, and it is one well fitted for the purpose it is intended. Dr. MERCIER has already written on sanity and insanity and on asylum management, and now he comes down to the daily routine duties of the attendants. Of late years much care has been devoted to the better training of the nurses who have to look after the insane, but until recent years the class of private attendant on the insane included many degenerate and worthless members, and these were most of them members who had been in asylums for some years, though they could not be called trained.

This book is not intended to teach the elements of science, but to warn the asylum nurse of dangers, and to assist her in doing her duties. It is well written and clearly expressed, so that there can be no doubt about the instructions given. There is a pleasant humour about part of it which will make it none the less popular. It contains nine chapters, and begins with the essentials required for the care of the safety of the patients. Violence, accident, and emergencies are discussed, and one very striking feature of the book is the "horrid examples" which are reproduced. There are some who object to their accidents being referred to, but seeing that Dr. Mercier takes these from what are really public records, we think he is justified in making the best use he can of the experience gleaned from many sources. The instruction given in reference to suicidal patients, and also about the administration of baths is excellent. Nothing is too small to be noticed if it is for the good of the patient, and we can recommend to others than asylum managers and attendants the hints on cleanliness, cleaning paint, etc. The kindly humane treatment, which depends so much on individual care, is insisted on, and no one can read this little book without wishing that it may fall into the hands of every worker among the insane.

NOTES ON BOOKS.

Le Pain de Froment [Wheaten Bread]. Par M. LE DOCTEUR TISON. (Paris: A. Maloine. 1898. Demy 8vo, pp. 26. Fr. 0.75.)—In this small pamphlet the author deals with the whole question of bread making. He starts from the axiom that "the best bread is that which contains the whole of the nutritive parts of the wheat grain," and then he proceeds to show of what these consist and by what methods they may best be recovered. The author, who writes in a popular style, concludes that the husks of the grain, which alone ought to constitute the bran, form barely 15 per cent. of the entire wheat grain, but with the methods of grinding which are at present practised at least a quarter of the nutritive elements (and these the richest in nitrogenous matter, fat, and minerals) is rejected in the bran. The pericarp and the teguments of the seed are not digested by us, although they are adapted to the requirements of animals whose digestive juices differ from our own, and whole bread is condemned on the score both of hygiene and of economy. What is required is the adoption of a system of grinding which will separate as bran only that which is outside of the albumen of the grain, so that the whole of the remaining substance of the seed is available for bread making. To this end the author advocates steel grinders.

Die typischen Operationen und ihre Uebung an der Leiche. [The Typical Operations and their Performance on the Dead Body]. Von Dr. EMIL ROTTER. 5 Auflage. (München: J. F. Lehmann. 1898. Demy 8vo, pp. 392, 115 illustrations. M. 8.)—The scope of this book is scarcely indicated in its title, since in addition to giving an account of the method of performing the various surgical operations upon the dead body, in many instances detailed after-treatment is given, and also statistics of the results of some of the more severe operations. The plan of the book is similar to that adopted in most of the English textbooks on the same subject. The first section deals with the blood vessels, the second with amputations and incisions, and then follow the chapters on tendons and muscles, nerves, skin, head, neck, thorax, and finally abdominal procedures. Before giving the description of an operation, a paragraph is devoted to the anatomy of the region upon which the operation is about to be performed. This is an advantage, and will be appreciated by most students who use the book. The illustrations are in many instances not good, and several of them are very inconveniently placed at the end of the book, where are eighteen full-page plates of instruments. Many of these are obsolete, and ought to be replaced by modern ones if the list, which is of doubtful value, is to be retained.

REPORTS AND TRANSACTIONS.

The *Transactions* of the third International Congress of Dermatology, which was held in London in August, 1896, were published this summer (London: Waterlow and Sons, 1898. Roy. 8vo, pp. 982, 30s.). The fact that the preparation has occupied a period of two years will give some idea of the labour which must have been involved in editing a volume the contributors to which are distributed over the continents of Europe and America. The excellent condition in which the book has at last appeared will be satisfactory to all the members of the Congress, and particularly gratifying to the editor, whose name will be honourably associated with the *Transactions*, which will be a work of reference for dermatologists and pathologists for many years to come. In the discussions on papers reported in this book there are represented the views of the most prominent dermatologists in the world on many important questions. The subjects discussed were Prurigo, Etiology and Varieties of Keratosis, the Connection of Tuberculosis with Diseases of the Skin other than Lupus Vulgaris, Ringworm and the Trichophytons, the Nature and Relations of the Erythema Multiforme Group, Syphilitic Infection, and the Duration of the Period of Contagion of Syphilis and Malignant Syphilis. These affections were treated at great length by competent authorities, and the discussions are fully reported in the languages of the respective authors. English, German, and French, being the official languages of

the Congress, were equally admissible. The members of the Congress are to be congratulated on the completeness with which their work has been put on record.

THE WATER ENTERPRISE OF SOME OF OUR LARGE TOWNS.

II.—BRADFORD.

The Gathering Grounds in Upper Nidderdale.

The visitor to the wooded reaches above Bolton Abbey will notice, some miles or so above the "Stride," a new bridge stretching across the mossy waters of the Wharfe, perhaps half a mile below the older bridge adjoining the picturesque ruin of Barden Tower, and known by its name. On inquiring the object of the new erection, he will be told that it supports a portion of the aqueduct which is to conduct water from the higher gathering grounds of the river Nidd, and that these waters are to be brought by tunnel and by pipe course across the watershed which separates the Valley of the Nidd from that of the Wharfe, right across the Wharfe Valley itself, then over or through the watershed between the Wharfe and the Aire, and across the valley of the last-named river to the city of Bradford. This prosperous and growing manufacturing town, not content with appropriating springs and streams in its own near neighbourhood, has already possessed itself of large gathering grounds on the hills between the Aire and the Calder, of extensive tracts of moor on the hills between the former river and the Wharfe, and is now tapping the water basin of Upper Nidderdale.

Earlier Scheme.

So far back as 1842 we learn[1] that an Act of Parliament authorised a joint stock company to supply Bradford with water. The company collected the water from the Hevenden Valley, conducted it to two storage reservoirs at Chellow Dean, and distributed it from a service reservoir at Whetley Hill. These places are all to the west of Bradford itself, and the intercepted water was derived from a tributary running northwards to the Aire. Three years later the Corporation obtained power to buy out the company, and complete in their stead a further scheme for taking water from tributaries of the Wharfe as well as of the Aire. The works already erected were purchased from the Company for £215,000. The Act of 1845 enabled the Corporation to construct the Brayshaw reservoir, nearly 1,000 feet above the sea, and authorised the Doe Park Compensation reservoir 850 feet above ordnance datum. From time to time Bradford thus extended her water catchments, first to the hills south of the Aire, then going further and further north. In addition to the old works (the upper and lower reservoirs at Chellow Dean and the service reservoirs at Whetley Hill) Bradford at present possesses high-level reservoirs at Thornton Moor (1,241 feet) and Stubden (1,028 feet), at Horton Bank (910 feet), the Bradshaw reservoir already mentioned (975 feet), all south-west of the town proper, and on the slopes lying to the south of the Aire. Further afield, but on the same south side of the river, the upper waters of the Denholme and the Worth are laid under contribution but without special storage reservoirs, some considerable portion of the winter flow being thus lost. North of the town, on high ground still south of the Aire, is the Idle Hill reservoir (750 feet). There is also a smaller reservoir, Daisy Hill (788 feet). The importance of this high level service will be appreciated when it is understood that while much of the town lies along the Bradford Beck as it runs down to the Aire, there are included, within the city itself, and within the 28 neighbouring places actually supplied by the corporation, places as high as 1,200 feet (Queensbury) above the sea. At Apperley Bridge the altitude is only 200 feet. All places within the area supplied, whose height is less than 475 feet, are provided for from the low level service, and most of this supply comes from the hills on the right or southern bank of the Wharfe. The Upper Barden reservoir is 1,170 feet above the sea, the lower one 697. From the Chelker reservoir, and those at Barden the water is brought across the watershed between the Wharfe and the Aire, and along the hillsides north of the latter river to the service reservoir at Heaton, which has a height of 523 feet. There are, of course, various compensation reservoirs, principally at low levels, to provide the water which must be sent periodically down the stream. There are five such.

[1] *The Surveyor, and Municipal and County Engineer*, June 10th, 1898.

Character of the Water.

The average daily consumption, we are informed by Mr. James Watson, who has given us every information sought for, is 40 gallons per head, of which about half is used for trade purposes, the other half for domestic and sanitary needs. The water is soft, pure, and carefully filtered. The low-level supply from Barden has 3 to 3½ degrees of hardness, and does not act inconveniently on lead. The Thornton Moor water, however, supplied to the higher levels has a hardness of only 1.7 to 2.0 degrees. Our readers will remember that some years ago Bradford, like several other northern towns using moorland water, suffered from the not infrequent occurrence of cases of lead poisoning. These were almost confined to persons drinking the softer moorland high-level water. Mr. Watson, the able engineer who succeeded his countryman Mr. (now Sir) Alexander Binnie at the Bradford Waterworks, designed an apparatus which adds, continuously and automatically night and day, 2 to 3 grains of calcium carbonate to each gallon of this high-level supply. No new case of water-caused lead poisoning is known to have occurred after these roller mills had been three months at work. This, then, is the present state and condition of the Bradford water supply. But even the generous storage provided by the corporation at a cost of some £2,330,000 for nearly half a million of people, this year came perilously near proving insufficient.

The New Scheme.

In Bradford, as in Birmingham the increased consumption of water during the long drought of the present year has compelled the Council to warn the users against waste, and even to threaten to cut off the supply for some hours during the night. It is obvious, therefore, that the Waterworks Committee were wise in getting, as they did in 1891-2, extended powers for obtaining the further supply from the Nidd already spoken of. The cost of the new works, which are well advanced, is estimated at a million and a half, making the cost of the complete Bradford scheme up to something like four millions of money. It will have been gathered that the additional supply from the Nidd is obtained rather by a new than an extension of existing schemes. This new scheme utilises the splendid gathering ground on to the south-east slope of the Little Whernside. There will be three storage reservoirs, extending for about four miles above Middlesmoor. They are the Angram reservoir, 1,187.5 feet above ordnance datum, with a capacity of 810 million gallons; the Lodge reservoir, 1,098 feet above the sea and a capacity of 1,088 million gallons; and High Woodale reservoir, which has an altitude of 994 feet, and holds 698 million gallons, making a total storage capacity in the three reservoirs of 2,596 million gallons. The area draining to these water stores is 6,800 acres, but the drainage of 11,400 acres more is intercepted by the main aqueduct. This main aqueduct is 32 miles long. Eleven and a-half miles of it is a cut and cover concrete channel, 5½ feet wide by 6¼ feet high. Six miles and a furlong is tunnel lined with concrete, and of the same sectional area. Fourteen and three-quarter miles are cast iron or steel pipes. There are also branch aqueducts together some six miles in length. The water is conducted to two service reservoirs at Chellow Heights, 845 feet high, and with capacity for 64 million gallons. To each service reservoir are attached five filter beds. There are many other points, such as bridges, dams, compensation reservoirs, and so on, but of less interest to medical readers than to engineers. In comparing the Bradford scheme with the huge undertaking of Birmingham, it will be noted that while the latter exceeds the former in magnitude, and while the actual height at which the Nidd water has to be kept is less than the altitude of the Monument service reservoir in Birmingham, yet that Bradford has already provided, almost entirely by gravitation, for the supply of districts three and four hundred feet higher than the highest Birmingham will have to pump to. Both cities show what municipal enterprise is capable of doing in the way of providing, for the large and growing popu-

lations within and adjoining their boundaries, pure water, collected far above the haunts of man, stored, settled, filtered and delivered in constant and abundant supply.

THE ITALIAN MEDICAL CONGRESS IN TURIN.

[FROM OUR SPECIAL CORRESPONDENT.]

As a type of the number of works based on Pliny's *Natural History* is a compilation by Apulejus Platonicus, which sets forth the virtues of a number of medicinal plants, together with a mass of superstitions and errors. Of Pliny's works there is a most valuable *Codex*, beautifully illustrated by the school of Montegna. The figures, buildings, and rocks are most highly finished. The University of Messina sends a treatise in Greek by Galen, the famous physician of the second century. A *Codex* of Isidore of Seville (A.D. 900) illustrates the dark and superstitious spirit of the early Middle Ages. The chapter on medicine consists chiefly in definitions. Another *Codex* of the fifteenth century gives an illustration of a herbalist bent down in the act of collecting simples. An example of the primitive form of the celebrated Salernitan collection of aphorisms on hygiene and practical medicine written in verse is contained in *Codex No. 13*, and is attributed to Arnold, of Villanova, an early worker by rational methods. The surgery of the Salernitan school is represented by (1) a treatise of Rolando Capelluti in 13th century writing; the illustrations of separate operations are clear, and give a good idea of contemporary surgery; (2) a treatise by Theodoric Borgognomi on the surgery of the horse; (3) and another by William of Salicet, the famous master of Lanfranc who afterwards flourished in Paris.

THE ITALIAN REVIVAL.

This period (14th and 15th centuries) is characterised by a change from the old method of research in the writings of early authorities to that of research by direct observation. An interesting document sent from the Archives of State at Bologna contains a report of criminal proceedings dated 1319 against students accused of having snatched a body for anatomical purposes.

In 1316 Raymond dei Liuzzi, surnamed "Mondino," wrote his celebrated work on human anatomy, which long remained the textbook most in use at the schools. His treatise in manuscript is contained in one of the miscellaneous *Codices* on exhibit, and among the printed books are two editions of his works, one very rare, printed in Turin 1501, and a second with fine woodcuts published in Venice 1522.

After the time of Mondino anatomical progress made rapid strides, but the works of the great authors of this period are not on view, as most of the chief libraries contain copies of them. There is, however, a collection of manuscripts arranged in chronological order, bearing the names of many illustrious workers in the field of anatomy, and in many cases autograph letters.

Among the most interesting exhibits of this period are the anatomical studies by Leonardo da Vinci, mostly covered with autograph notes by the artist. Whether the drawings were made with a view to compiling a work on anatomy or a treatise on mechanical physiology is a matter of doubt. The copious notes written all over the drawings suggest the latter purpose.

The doctors of this period initiated the system of collecting cases of the most interesting maladies, and meeting together to discuss their origin, course, and treatment. Of this school of revival the exhibition contains several treatises, that is, by Gentile of Foligno (1230-1310), of the 14th century by William of Marignona, Marsilio di Santa Sofia, and Albert of Salsomaggiore, a fervent disciple of Galen.

In Piedmont, medical investigations were somewhat belated on account of the disturbed condition of the country. The University, which had its first seat at Vercelli, was afterwards transferred to Turin. The following are some of the earliest works of this school, printed in the fifteenth century, and now in the exhibition: The *Lumen Apothecarium*, of Cirineo de Augustis of Tortona; and the *Summa Lacticiniorum*, by Pantaleone of Confienza. Of popular treatises treating of the virtues of herbs, stones, amulets, and all forms of contemporary superstitions are the following: *Lilium Medicinæ*, by Bernard Gordon; *Thesaurus Pauperum*, in the margin of which the Cross of Savoy figures prominently.

Ophthalmology is represented by the celebrated Benvenuto Grafeo of the Salernitan school, whose treatise is illustrated with drawings of surgical instruments.

Balneology was greatly cultivated by the Italian faculty of that period. One *Codex* contains a description of the baths of Pozzuoli, attributed both to Alcadino da Girgenti and to Pietro d'Eboli. Each bath is described in verse, and opposite is a miniature representing the locality and accessories.

Michael Savonarola, grandfather of the celebrated Friar, described all the baths of Italy (*Codex 67*), a book which was largely reproduced in print. He also wrote a curious book in Italian entitled *Things which are commonly Eaten and Drunk in Italy, with Rules for Preserving the Health of the Body.*

Of manuscripts of the sixteenth and seventeenth centuries the following are interesting: *De Consolatione*, by the celebrated Milanese physician and mathematician Girolamo Cardano; and a treatise by Antonio Brassavola of Ferrara, to whom the King of France gave the title of Muse. He was an epidemiologist, and made important studies on the actions of poisons. *Codex No. 75* is by Hieronymus Mercurialis, the learned restorer of the ancient text of Hippocrates; *Codex No. 74* is by Francesco Buonafede, who established at Padua the first botanical garden in Italy.

Italian medicine reached the period of its greatest renown in the sixteenth and seventeenth centuries, when students from all countries flocked to its schools. Anatomy and physiology were pursuing their studies hand in hand. To this period belonged Colombo, Cesalpino, Santorio Santorini, Borelli, Falloppius, Eustachius, Redi, and many others, of whom the exhibition contains autograph records. Greatest of all was Marcellus Malpighi (1628-1694), the indefatigable worker, and the first to apply the microscope to the investigation of life. His writings were published by the Royal Society (London) during his lifetime, but much remains that has never yet seen the light. All his manuscript writings lent by the University Library of Bologna are on exhibit. The collection includes private documents, his birth certificate, the last lines written by him the day he was struck down by apoplexy, and the account of the *post-mortem* examination on his body made by Lancisi, and a collection of anatomical drawings of silkworms sent to him by Hans Swammerdam by the hand of Nicholas Steno (1675). There is also a collection of medals struck in honour of Malpighi and photographs of his simple country house sent by the Municipality of Corvalenore, his native place.

Of Lancisi himself, who was a celebrated physician of Rome and made special study of heart disease and malaria, there is a manuscript (No. 88). Of this period also there is an interesting manuscript by the celebrated Calabrian anatomist, Marcus Aurelius Severinus, 1580-1656, entitled, *Physiognominia Medica*, in which he takes as examples some faces painted by Albert Durer.

Of the early workers in zoology, comparative anatomy, and embryology, the celebrated naturalist Ulysses Aldrovandi is represented by a manuscript entitled *Methodus Fossilium*, and by a fine work with drawings of animals, plants, flowers, and fruits which are supposed to have been executed in the school of Coraeci.

Of distinguished physicians of the eighteenth and beginning of nineteenth centuries there are numerous autograph contributions, notably of Valsalva, the master of Vallisnieri and the predecessor of Morgagni, of Scarpa, Battista Bianchi. There is an autograph letter by Lazzaro Spallanzani, who may be justly called the predecessor of Pasteur.

Of the more recent objects of interest are the microscope and object glasses of Amici, who first introduced immersion lenses.

In conclusion, it should be mentioned that the appreciation of this most comprehensive exhibition, which may be said to include the whole history of the evolution of modern medical science, was greatly facilitated by the excellent descriptive catalogue issued by the Bros. Bocca of Turin.

THE Middlesex Hospital has received a contribution of £100, being the first yearly instalment of a donation of £500 from the Worshipful Company of Skinners.

PESTILENCE AND FAMINE IN INDIA.

Bombay Sanitary Report for 1897.

The year 1897 entailed upon the Presidency of Bombay an unfortunate conjunction of famine and plague, which rendered its sanitary history peculiarly gloomy and its sanitary administration painfully anxious. The events of the year are fully and faithfully chronicled by Lieutenant-Colonel Clarkson, the sanitary commissioner, and briefly commented on by the Government in the report under notice. The rains of 1896 had been deficient, and the crops over a large extent of the presidency a failure. Happily the monsoon of 1897 was generous, and the outturn of agriculture abundant; still, pending the gathering in of the crops in October, a period of famine had to be faced, and by means of relief works, relief camps and hospitals, the starving and sickly population had to be kept alive. The Government spared neither effort nor money to secure this purpose, and the number of deaths attributed to actual want of food is stated to have been but 31. Sickness and mortality were, however, greatly enhanced by the prevailing scarcity of food, and consequent impairment of vital power and resistance. In India the birth-rate is a good index of depressed vitality due to scarcity or pestilence. The birth-rate for the presidency was 33.46 per 1,000, against 36.76 in 1896, and 36.53 for the preceding decennium. In the districts where famine and plague pressed most heavily the rates were specially depressed. The birth-rate of the city of Bombay was only 11.19, and of Poona 14.00. Bombay is still remarkable for the number of stillbirths, which amounted to about 15 per cent. of all births. The presidential death-rate was 39.84, against 31.69 in 1896, and 29.56 in the preceding decennium. In districts where famine and plague prevailed very high rates were reached. The death-rate of the city of Bombay was 58.88, of Poona 56.95.

In 12 collectorates (out of 24) the death-rate exceeded the birth-rate. There was an increase of mortality from cholera, fevers, bowel complaints, and "other causes," as compared with the preceding year and decennium, and a decrease from small-pox. August was the most fatal month of the year. Cholera and plague broke out in some of the famine camps, and had to be smartly dealt with. The number of deaths registered under the name of plague was 46,944. The disease visited every collectorate, with two exceptions, and prevailed severely in 13 out of the 24. Its severity increased from January to March. There was a slight depression in April, followed by a decided fall in May to a minimum in June. The number rose to a maximum in November, the aggregate for December being somewhat lower. Bowel complaints were specially severe and fatal in the famine districts. Dr. Clarkson gives a useful summary of information regarding the prevalence of plague and the measures adopted for its repression. As the literature of the subject has become very voluminous, this part of the report is very welcome. He holds that human intercourse is the great factor in the spread of the disease, which may also be carried about by rats. He writes hopefully of Professor Haffkine's protective inoculation. The inspection of all outward and inward bound ships threw upon the health officer of the Port of Bombay immense labour, for the sedulous and efficient performance of which the Government accords its thanks to Lieutenant-Colonel MacCartie, C.I.E., and Major Crimmin, V.C. Seventy-two thousand eight hundred and eight vessels were inspected, against 570 in 1896. The special anxieties and occupations of the year no doubt interfered in some measure with attention to general sanitation. It is all the more satisfactory to learn that, of an expenditure of Rs. 2,860,607, the municipalities devoted 52 per cent. to conservancy, 32 per cent. to improvement of water supply, 5 per cent. to improvement of town sites, and about 10 per cent. to other sanitary objects. This report has been considerably reduced in size as compared with previous reports by the omission of much uninteresting and useless detail.

Punjab Sanitary Report for 1897.

The province of the Punjab suffered to a very limited extent from the scarcity of food and prevalence of plague and cholera which proved so disastrous in the adjoining presidency of Bombay. The birth-rate 42.6 per 1,000 was higher than that of the preceding year, and exceeded that of any other province of India. The death-rate was 31.05. In the district of Hissar, where it rose to 45, the excess was due to scarcity. In the review of the report by the local Government figures are given which indicate that a healthy year is followed by a high birth-rate. The Bombay report furnishes evidence that the converse is true. Plague appeared in the Nawashahr Tahsil of the Jullundur district in February, and spread to the Gurhshankar Tahsil of the Hoshiarpur district, affecting four villages in one and one village in the other, and causing 302 seizures and 175 deaths. Its spread was slow and effected by communication. The evacuation of villages and destruction or disinfection of houses, together with segregation of the sick and suspects, were followed by beneficial results. Cholera caused 622 deaths in thirty-one villages, mostly belonging to the Hissar district. The details of the outbreak point to human agency as the instrument of dissemination, and contaminated water as the vehicle of infection. Small-pox caused 16,077 deaths against 45,084 in 1896; over one-half of the deaths occurred among children under 12 years of age; pointing, as the local Government remarks, to the need of efficient infant vaccination. The mortality caused by fever was somewhat higher than in 1896. There was also an increase in bowel complaints, most conspicuous in the famine districts. The report gives evidence of progress in sanitary work. Some figures are given indicating that towns in which reforms in water supply and drainage have been executed have derived sanitary benefit therefrom. The provincial sanitary Board held only one meeting, the proceedings of which appear to have been meagre and perfunctory.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly Council was held on October 13th, 1898; Sir William Mac Cormac, Bart., K.C.V.O., President, in the chair. The minutes of the preceding meeting were read and confirmed.

Bust of Sir Richard Owen.—After careful consideration it was determined to place the bronze bust of Sir Richard Owen (by Alfred Gilbert, R.A.) in the entrance hall of the Museum.

Committee of Management.—Subject to the confirmation of the Royal College of Physicians, the following recommendations of the Committee were adopted:

1. That Hymers College, Hull, be added to the list of institutions recognised for instruction in chemistry, physics, practical chemistry, and biology; and that Reading School be added to the list for instruction in chemistry, physics, and practical chemistry.
2. That the University of Yale and the University of Malta be added to the list of institutions recognised by the Board at which the whole curriculum of professional study may be completed, and whose graduates in medicine are admissible to the Final Examination.

The Committee also reported that they had granted permission for the meeting of the International Otological Congress to be held at the Examination Hall in August, 1899. Sir William Mac Cormac, Bart., K.C.V.O., was re-elected a member of the Committee.

Laboratories.—The Laboratories Committee reported that since June 3rd 7,050 doses of antitoxin, each containing 2,000 units, and 2,325 doses, each containing 4,000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board, had been supplied and all the demands fully met. During this period 23,400,000 units had been supplied. Taking the quarter from June 3rd to September 1st the figures were: 6,300 doses of 2,000 units and 600 of 4,000 units, or 15,000,000 units in all, against 12,000,000 for the previous quarter. During this period the average strength of the antitoxin had been still further raised, so that it had been possible to send out 2,000 units in quantities of from 4.25 to 5 c.cm. The report gave a statement also to the effect that as regards researches in connection with the grant from the Goldsmiths' Company, Dr. T. G. Brodie and Dr. Cartwright Wood had continued their investigations, and had planned out further series of experiments for the coming winter. The Committee awarded to each a further sum of £50 from the research grant, as a recognition of their valuable work. The report included a statement that the demand for antitoxin supplies to general and children's hospitals in London, in accordance with the conditions of the grant from the Goldsmiths' Company for use among the poorer classes of the community, was steadily increasing; 730 doses, containing in all over one and a-half million of units, had been applied for and sent out during the preceding four months. The report ended with a list of those engaged on work at the laboratories; and was duly

adopted by the Council. Mr. H. G. Howse was re-elected upon the Committee.

Jenks's Scholarship.—William Harley Fleetwood, lately of Epsom College, now of the London Hospital, was nominated as the sixth Jenks's scholar.

Annual Report.—Mr. MORRIS, Chairman of the Annual Report Committee, submitted for the consideration of the Council a draft copy of the report to be presented to the Fellows and Members at the annual meeting to be held on November 17th, 1898. This was adopted.

Discipline Committee.—The attention of the Council having been called by a local branch of the Incorporated Medical Practitioners' Association to the connection of a Member of the College with a friendly society, it was determined to inform the branch that the Council express their disapproval of canvassing for patients, and of the employment of professional advertisements addressed directly to the lay public. It was also determined to inform the branch that as it did not appear to the Council that the society in question differed in any essential particulars from other registered friendly societies, the Council could not take any action in this case.

Portrait of Sir Erasmus Wilson.—The SECRETARY reported that he had received the copy by Mr. John L. Reilly of the portrait by Mr. Stephen Pearce of Sir Erasmus Wilson, which was offered to the Council at the beginning of this year, and that the donor was Mr. Arthur H. Heywood, of Elleray, Windermere. The thanks of the Council was given to the donor.

Bradshaw Lecture.—The PRESIDENT stated that this lecture would be delivered by Mr. T. Pickering Pick on December 7th at 5 P.M., and that the subject of the lecture would be The Union of Wounds.

Members' Gown.—A letter of August 10th from Mr. T. M. Hocker, M.R.C.S., of Dunedin, New Zealand, asking the Council to consider the advisability of instituting a gown for the Members of the College, was referred to a Committee.

INDIA AND THE COLONIES.

INDIA.

HOSPITALS, ASYLUMS, AND DISPENSARIES.

The Lunatic Asylums of the Punjab.—There are two lunatic asylums in the Punjab Province, one at Lahore containing 257, and the other at Delhi accommodating 128 lunatics. Female lunatics constitute about one-third of the population, and criminal lunatics about one-fourth. The recovery rates on average strength were in 1897 11.64 and 17.16, and the death-rates 8.15 and 8.58. Surgeon-Colonel D. O'Connell Raye submits a careful report of the events of the year, with the usual statistical tables appended. It is stated that some of the Punjab criminals feign insanity in order to be sent to the asylum, whence many of them contrive to escape. A new asylum for the whole province is to be built at Lahore. Industries and amusements constitute a conspicuous element in the management of these institutions. The annual cost of maintaining each lunatic was at Lahore Rs.138, and at Delhi Rs.93. The expenditure was higher than usual on account of the enhanced price of provisions caused by the famine.

Lunatic Asylums of the Bombay Presidency.—There are six lunatic asylums in the Bombay Presidency, containing 765 inmates. Of these, 617 are males, and 148 females. Twenty-nine European lunatics were accommodated in the Colaba Asylum; the rest were natives. The number of criminal lunatics in all the asylums was 44. The rate of recoveries on daily average strength was 10.6, and of deaths also 10.6 per cent. The recoveries bore to admission a ratio of 27.6 per cent. The cost of each lunatic was Rs.173 for the year, a higher figure than usual on account of the famine. The number of insane patients employed in various industries was 367, which yielded a profit of Rs.1,418. Surgeon-General G. Bainbridge's report gives full details of the working of these institutions, and supplies some interesting information regarding fatal cases.

Civil Hospitals and Dispensaries in the Hyderabad Assigned Districts.—Brigade-Surgeon-Lieutenant-Colonel C. C. Little, M.D., in presenting the statistics of these institutions for the year 1897 submits a brief report showing that this number was increased by 1. There are 47 hospitals and dispensaries now open in these 6 districts, which contain a population of nearly three millions. The number of patients treated indoor was 6,789, and outdoor 325,766. The former showed an increase and the latter a decrease as compared with the previous year. This result is attributed to the famine. The relief work, it is stated, diverted the ambulatory sick, and those who were more seriously ill flocked to the hospitals. The death-rate among the latter was 13.6 per cent. of treated. In the Amraoti Dispensary 113 deaths occurred among 654 famine-stricken patients. There was an increase of cases of cholera, dysentery, diarrhœa, and dyspepsia, as might be expected to result from deficient and coarse food. There was a slight decline in the number of surgical operations performed. The financial condition of these dispensaries is satisfactory. About 1,000 rupees were realised by the sale of packets of quinine through the agency of the post-office.

Dispensaries in the Province of Assam.—There were 101 hospitals and dispensaries open in 1897 as reported by Surgeon-Colonel A. Stephen, M.B. The severe earthquake which occurred on June 12th wrecked the hospitals at Kilong, Cherrapunji, Sylhet, and Gauhati, and damaged many others. The Chief Commissioner assigned from provincial revenues grants to rebuild these institutions, and local funds were forthcoming to repair damages. Thirteen of the dispensaries are supported by the State, 87 by local funds, and 1 by private liberality; 609,490 patients were treated, and 13,335 operations performed. The death-rate among indoor patients, 20.94 per cent., was high owing to the influx of destitute coolies from tea gardens and railway works, many of whom were admitted in a moribund state. The year was an unhealthy one, and malarial fever more than usually prevalent and fatal; 8,459 cases of kala-azar were treated. The proportion of women treated was 23.40, which is in advance of previous years. The total cost of these dispensaries was Rs. 237,172, of which sum 34 per cent. was derived from provincial revenues and the remainder from local sources.

VACCINATION IN THE PROVINCE OF BENGAL.—The report for the year 1896-97 submitted by Surgeon-Major H. J. Dyson, Sanitary Commissioner, indicates decided progress. In spite of famine and scarcity, the total number of vaccinations rose from 2,277,081 to 2,293,655. These successful operations have a proportion to the population of the province of 29.62 per 1,000, which is considerably below the estimated birth-rate; and it is calculated that not much above 20 per cent. of infants under 1 year were protected. The percentage of success in primary vaccination is returned as 98.5, but there is reason to believe that this high figure is the result of doctoring. The inspection of work by the higher officials of the department was less than usual owing to employment on plague duty. Animal lymph is increasingly used both direct and in combination with lanolin, and there is reason to believe that it will in time supplement human lymph.

SANITARY ADMINISTRATION OF THE HYDERBAD ASSIGNED DISTRICT.—The report for the year 1897 is submitted by Brigade-Surgeon-Lieutenant-Colonel C. C. Little, M.D., who has held the office of Sanitary Commissioner of this province for a period of twenty years. The resident at Hyderabad, in reviewing the report, accords to Dr. Little on the occasion of his retirement high and well-deserved praise for the industry, zeal, and success with which he has performed the duties of his important appointment. The birth-rate of the year was 38.3, and the death-rate 52.7 per 1,000. The serious death-rate was due to the scarcity and high price of food caused by famine. Fever and bowel complaints were the principal causes of mortality. The number of deaths from actual starvation was 377, but the vital resistance of the poorer classes was seriously impaired by the prevailing destitution, and they succumbed in aggravated proportion to the influences and diseases which ordinarily affect health, and to special conditions, such as general debility and emaciation, anæmia, scurvy, dropsy, and ulceration, which were the more directs products of destitution. Cholera and small-pox did not prevail to any unusual extent, and no case of plague occurred. Relief works were opened, and the gratuitous distribution of food largely resorted to. Special medical arrangements were made to treat the sick, increased attention is being paid to supervising registration, and active interest taken in promoting sanitary improvements through the agency of the municipalities.

CAPE OF GOOD HOPE.

REPORT OF THE COLONIAL VETERINARY SURGEON.

Rinderpest.—The report of the Colonial Veterinary Surgeon for the year 1897 bears fresh testimony to the sterling value of the new serum treatment against rinderpest, as introduced by Turner and Koller. The report, which occupies 137 pages of closely printed matter, is almost entirely devoted to an account of the struggle between rinderpest on the one hand and various preventive measures on the other. Beginning with the crude stamping-out system, and running through the whole series of bile inoculations as introduced by Koch, the struggle has been waged with increasing energy, but with varying success, for over five years. At last what may be called a rational method has been elaborated, and with this new weapon of defence, much has been and remains to be done. The serum treatment, writes Mr. Hutchens, is "ideally perfect." An account of this method has already appeared in these pages; the following observations from the present report may prove of interest. It is found that although the cattle in a herd are given the disease in a more or less modified form by the proper application of the serum treatment, it is a fact that infection is rarely carried from such a herd. Serum inoculation has not been general or systematic, but individual herds have been inoculated in many different localities, yet the disease has not been spread by these means; on the contrary, by the aid of serum inoculation the disease has practically died out in the Cape and Talbagh districts. "It is too early to generalise on this subject, but I entertain hopes that by means of serum inoculation, systematically applied, the disease may be eradicated from the country."

Biliary Fever.—A very severe form of jaundice or biliary fever has been observed to follow inoculation with defibrinated blood serum or virulent blood, and bile inoculation followed by blood. This disease, while not a new one, has acquired increased importance, since it is shown to be capable of being communicated by blood inoculation. As to the pathology of this affection very little is known.

GIBRALTAR.

THE PUBLIC HEALTH IN 1897.—The civil population of Gibraltar numbered 19,100 exclusive of non-residents and of persons entering on daily permit. The birth-rate of the population in 1897 was 31.34, and death-rate 23.56. Small-pox and measles prevailed epidemically, and there were 65 cases of diphtheria with 18 deaths. The use of antitoxic serum is said to have given satisfactory results in this complaint. Diarrhœa accounted for 1.62 deaths per 1,000, and tubercle for 3.08. Respiratory diseases, largely consequent on measles, gave a high rate—namely, 5.19. The sanitation of the Rock is evidently made the subject of anxious thought and earnest effort. Surgeon-Major Elkington, the health officer, details measures designed to relieve overcrowding, to improve the water supply, and to facilitate the disposal of sewage. A bacteriological laboratory has been started, and is reported to have given useful aid in water analyses, serum diagnosis, etc. Six cases of enteric and 22 of Mediterranean fever were identified by Vidal's test. Loeffler's bacilli were found in 47 out of 61 cases of reported diphtheria. The notification of infectious diseases has given useful information to the health authorities.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 22ND, 1898.

THE LEAGUE AND THE LAW.

The action of some magistrates under Clause 2 of the new Vaccination Act, in their endeavour to satisfy themselves as to the reality of objection, has incidentally caused the President of the Antivaccination League to present himself before the public in an attitude which many people would hardly have expected of him. Antivaccination in the past has prided itself on its defiance of the law, and imprisonment has been looked on as bringing with it all the glories of martyrdom. Now, however, that the law is altered and that some magistrates are unable to see eye-to-eye with Major-General Phelps in his interpretation of Clause 2, that warrior's attack on the said magistrates as law breakers lacks nothing in the way of vigour, though it seems to indicate some want of humour. He complains in a letter to the newspapers that many magistrates "refuse to carry out the law," and, indeed, that they "behave as anarchists on the Bench, and, setting themselves above the law, go outside the simple provisions of the conscience clause." "Such defiance of law and justice" he declares to be "intolerable," and he asks whether magistrates imagine they will be able to fine "the victims of their lawlessness owing to their want of certificates." Satan reproving sin cannot hold a candle to the President of the Antivaccination League when he gives himself rein in the way of objurgation and denunciation. If antivaccination disapproves of a law, it is among the highest of human duties to defy that law, but if any law, or an particular clause of a law, or any particular interpretation of any clause, recommends itself to antivaccination as embodied in the President of the League, that law, or clause, or interpretation must forthwith be accepted and adhered to by all magistrates everywhere, under the penalty of drawing down on their devoted heads the wrath of Major-General Phelps. No doubt the crime is a terrible one, and no doubt also, in Gilbertian phrase, the punishment suits the crime.

So far the President of the League. He writes, as we have above quoted, to the public prints and to the man in the street; and he writes, as we have seen, in objurgation, almost in imprecation, of law-breakers. But there is another audience besides the man in the street. There is the antivaccinationist, the reader of the *Vaccination Inquirer*. What advice does he get regarding obedience to the new law? Is he told that a man who tries to set aside the Act is an anarchist, and that such lawlessness is intolerable? Let us see. In the October issue of the recognised organ of the League which has Major-General Phelps for its President there is an article entitled "Our Policy." Here is a quotation from it: "Places where we have already secured the election of good men and true, who will not consent to prosecute in any case, are places where *the new law must be simply disregarded* even as was the old. And this *disregard of the law must be our goal for every place.*" The italics are ours. The article proceeds thus: "The political position is clear—the enemy have no more right to make us ask their leave to keep our children unvaccinated than we have to make them ask our leave to vaccinate their own children." The President spoke of the new law as the work of "The Legislature," but the editor of the *Inquirer* says nothing of "The Legislature." He is talking to his fellows, and his phrase is "the enemy."

The President's vituperation of the magistrates refers especially to Clause 2, which deals with the granting of certificates to conscientious objectors. What says the editor to his audience of conscientious objectors? "For the citizens of such a town as Leicester, for instance, to appear in the courts to get certificates of exemption would, in our judgment, be a most foolish waste of the fruits of victory." The advice deliberately given to conscientious objectors by the official *Journal* of the League is that they should not obey the new law, but that "disregard for the law" should be their "goal for every place," and at the same time the official head of the League writes to the newspapers which are widely read by the public at large, declaiming against magistrates for their alleged "refusal to obey a law which is distasteful to them."

We commend these things to Mr. Chaplin and his colleagues in the Government as a study preparatory to their drafting of the Revaccination Bill, which they have practically promised for the coming session. They ought frankly to recognise the professional antivaccinationist as an irreconcilable, and their sole object should be to take, altogether independently of any hope of propitiating him, such steps as are best calculated, in the circumstances and under the political constitution of the kingdom, to promote the practice of vaccination and revaccination throughout the realm.

THE FIGHT AGAINST TUBERCULOSIS.

We called attention last week to the report of the Public Health Committee of the London County Council recommending the Council to take steps for safeguarding the meat and milk supply of the metropolis, and to accept the responsibilities which would fall upon it in carrying out the recommendations of the Royal Commission on Tuberculosis. We are now able to announce that the city of Manchester has already resolved to take action in this matter, and has instructed the Town Clerk to apply to Parliament for powers for dealing with the milk supply similar to those obtained by Glasgow as long ago as 1890. The legislation sought includes power to enter cowsheds, whether within the city or elsewhere, which furnish milk for sale within the city, and to examine any cow in order to determine whether it suffers from any diseases which render the milk dangerous or injurious to health. It would further be enacted that every dairyman or keeper of a cow-

shed whose milk is sold within the city, who, after official intimation to him that any cow in his possession kept for the supply of milk for human consumption suffers from tuberculosis or any disease which might render the use of such milk dangerous or injurious to the health, shall retain such cow in his possession, shall, unless the contrary be proved, be presumed to have sold the milk produced by such cow for human consumption, and shall be liable to a penalty not exceeding £5. A penalty not exceeding £10 would be incurred by any person who sold, or suffered to be sold, or suffered to be used for human consumption, the milk of any cow suffering from tuberculosis or any disease which might render the milk dangerous or injurious to health. This action has been taken as the result of an investigation into the infectiveness of milk brought into the city of Manchester. In consequence of recent increase of knowledge with regard to the dissemination of tuberculosis by milk, and in particular of a report made by Professor E. W. Hope, Medical Officer of Health for Liverpool, who by a special inquiry had ascertained that 2.8 per cent. of samples of milk from cow-sheds in Liverpool, and 29.1 per cent. of samples taken at railway stations contained the infection of tubercle, Dr. Niven took steps to put the matter to the test with regard to milk sold in Manchester. The experimental inquiry was undertaken by Professor Delépine, who gave some of its results in his address at Sudbury, which was reported in the British Medical Journal of September 24th. Out of 93 samples of milk taken at random at the railway stations in Manchester, no fewer than 17, or over 18 per cent., proved to be tuberculous. The Sanitary Committee, in consultation with the medical officer of health, then instructed Mr. King, the chief veterinary surgeon of the Manchester Corporation, to investigate the condition of the cows at the farms from which the infectious milk came. His report confirmed Professor Delépine's results in a remarkable manner. He was able to make investigations at sixteen of the seventeen farms, and on fourteen one or more cows were found to have udders which were indurated, and therefore presumably tuberculous. With regard to the other two farms, it cannot be assumed that the cows were free from tuberculosis, for, as Dr. Niven pointed out in his report to the Committee, an udder may be tuberculous and yet give no palpable indications of disease: thus in one case in which a cow was subjected to the tuberculin test, the udder, which had not previously been found to be tuberculous, gave a marked local reaction.

There can be no doubt that the example set by Glasgow, now followed by Manchester, and, it is to be hoped, about to be followed by London also, will not only have an important effect in diminishing the prevalence of tuberculosis in these cities, but will also have a great influence upon public opinion and upon the Legislature. The subject is discussed from the point of view of the veterinary surgeon in the current number of the *Journal of Comparative Pathology and Therapeutics*. Here, while the importance of milk as an agent for disseminating tuberculosis to man is not lost sight of, stress is laid upon the fact that the disease in cattle is a contagious malady which is detracting from the legitimate profits of agriculture, and to that extent interfering with national prosperity. At the same time the opinion is expressed that there is on the part of farmers and cattle owners no very ardent desire that the Board of Agriculture or local authorities should put in force the measures necessary to eradicate the disease. Farmers and butchers express great dissatisfaction with the present state of affairs; but the only remedy which they suggest is compensation for losses incurred through the condemnation of tuberculous carcasses. Short of State intervention, however, our contemporary supports the opinion which we have ventured to express on previous occasions that much is to be expected from a more enlightened opinion among the owners of dairy herds. If, our contemporary writes, "the owner of a tuberculous herd suffers losses so slight that he feels it would not be worth while to buy tuberculin and employ his own veterinary surgeon in order to put a stop to them, the case is hardly one demanding State assistance. On the other hand, if anyone is now experiencing serious loss from tuberculosis among his cattle, it may fairly be said that the fault is his own."

If Manchester has been wise enough to place itself in the van of reform of the struggle against tuberculosis in one direction, there seems to be reason to hope that Liverpool will in another part of the field of battle shortly set an example which it is to be hoped will be followed by other communities. Our Liverpool correspondent gives this week some particulars of the scheme which is now under the consideration of the guardians of the West Derby Union, who are responsible for the care of the sick poor of a very large district at Liverpool. Dr. Nathan Raw, Medical Superintendent of the great Millroad Infirmary, Liverpool, which is maintained by this Board of Guardians, recently called the attention of his Board to the very large number of cases of tuberculosis which have to be dealt with every year, and to the disappointing results of treatment in a general infirmary. He pointed out that the only hope of recovery to poor persons suffering from pulmonary tuberculosis was their removal from city dwellings where the conditions favourable to recovery cannot exist, into a purer and healthier atmosphere, and therefore urged the establishment of a sanatorium in some suitable locality in the country, where facilities could be afforded for carrying out the open-air treatment of cases in the earlier stages, when there is a reasonable hope of permanent recovery.

Experience has shown that patients suffering from tuberculosis of the lungs as a rule readily submit themselves to the discipline necessary in such a sanatorium, and that they quickly appreciate that the precautions enforced are beneficial to themselves as well as advantageous to others.

Dr. Raw rightly laid stress on the fact that by withdrawing the sufferers from their homes a source of danger to others would be removed, and as a necessary corollary he advised that patients chargeable to the guardians and suffering from the disease in an advanced stage should be removed to a properly-conducted sanatorium where the risk of infection of others would be minimised if not entirely obviated, and where perchance some of the unfortunate sufferers themselves might ultimately recover. Very much is to be expected from a well-organised attempt to deal with consumption in the poorer classes on

these lines, and there seems no legal reason why the guardians should not take this step. In the interest of the country at large, as well as of the poor at Liverpool, it is sincerely to be hoped that Liverpool will set an example in this matter, for its action will have a great influence on the future developments of our efforts to combat tuberculosis in all its forms.

ORGANOTHERAPY IN DIABETES.

With the discovery of the value of the thyroid treatment in cases of suppression of the functional activity of the thyroid gland, a new hope arose that some other grave and hitherto intractable diseases might be favourably influenced by treatment based on similar lines. Diabetes was one of the diseases to which early attention was given in this regard. Experiment has distinctly proved that extirpation of the pancreas in certain animals will surely produce diabetes, and morbid anatomy has equally demonstrated that in at least one class of cases of human diabetes a total disorganisation of the pancreas has sometimes been found; thus it appeared that diabetes might be due to the suppression of some function of this organ, and this apart from the mere secretion of pancreatic juice. It was therefore hoped that pancreatic feeding might supply the deficiency in the same way as thyroid feeding had so distinctly supplemented the functions of the thyroid body. These expectations have not, however, been realised, and with few exceptions the treatment of diabetes proved to be of the pancreatic variety by feeding with pancreas has ended in disappointment.

Dr. Ferdinand Blumenthal[1] has recently endeavoured to throw light on the causes of the failure of this treatment of diabetes, and to indicate the lines of investigation to be pursued in the future. The gist of the whole question obviously lies in the discovery of the active principle of the pancreas, the absence of which is believed to lead to the development of the pancreatic form of diabetes. Experiment renders it probable that this active principle is a glycolytic ferment distinct, as the researches of Blumenthal himself as well as others show, from the oxidative ferment. On this supposition, a rational treatment of diabetes would consist in supplying this ferment in cases in which it was absent through disease of the pancreas. This ferment may be destroyed by various secretions, such as those of the stomach, or it may be insufficiently absorbed from the bowel. In such cases the use of pancreatic gland tissue containing active glycolytic ferment would be rendered nugatory. Or, again, glycerine or saline solution may fail to extract the glycolytic ferment from the pancreas, with the consequence that sometimes an inefficient preparation may have been used in treating diabetes by the subcutaneous method.

It is not assumed that this glycolytic ferment is exclusively manufactured in the pancreas, and hence the treatment would apply to cases of diabetes not necessarily of pancreatic origin. Professor v. Leyden saw a case of diabetes markedly improved by the use of the juice expressed out of the pancreas, and Blumenthal, availing himself of Leyden's suggestion, has been able to prepare the glycolytic ferment in considerable quantities. Thus under a pressure of 70 to 100 atmospheres he was able to obtain from 500 g. of pancreas 100 to 250 c.cm. of fluid rich in ferment. This fluid can be kept under ice for more than ten weeks without the addition of any antiseptic. The sugar solutions used for testing this ferment must, of course, be sterile. Blumenthal mentions that alcohol does not destroy the ferment if left in contact with it for only a few hours, and that hence the ferment may be obtained in a dry form. A difficulty, however, lies in the administration of the glycolytic ferment, since it is extremely poisonous when given subcutaneously to rabbits, and dilution does not overcome these deleterious properties. The author says that the task of finding an efficient and harmless glycolytic ferment prepared either from the substance of organs or from plants must remain a problem of the future.

These researches will be watched with interest, but it must not be forgotten that Minkowski failed to benefit depancreatised dogs by the hypodermic injection of pancreatic emulsion, and it has yet to be shown that Blumenthal's juice, although active *in vitro*, possesses therapeutic properties even in animals.

[1] *Zeitschr. f. diaetetische und physikalische Therapie*, Bd. i, Hft. 3.

SICKNESS IN THE KHARTOUM FORCE.

In the early part of the month, the whole number of sick in the Citadel Hospital, Cairo, was 700, being all the sick out of a force of 12,000, with the exception of the last convoy of 50 men which arrived in Cairo on October 5th. The proportion is 6 per cent. Reports in private correspondence state that the sickness has been "fearful," although the papers, save the *Chronicle*, say little or nothing about it. The Cairo Hospital was so full about October 4th that most of the sick had to be put under canvas. The type of enteric fever was very severe, death occurring in some cases within three days of admission, and the bowels were found "riddled with ulcers." The dysenteric cases were also severe; and at Atbara, it is said, the Highlanders used to come into hospital "with the blood running down their legs under their kilts;" all this coming on very quickly—it is said within one day. The men of the Royal Army Medical Corps suffered much at Atbara from both enteric fever and dysentery, and the mortality was high. The mortality during the campaign from enteric fever (which is said to be following the troops to Crete) will probably be found, when full reports are received, to be excessive. Respecting the extensive diseased conditions found in cases of enteric fever of apparently short duration, the fact is well known in India. One example will suffice. The 2nd Queen's on first arrival—about 1878—in India from Malta, at a comparatively speaking healthy station (Bareilly), contributed some enteric cases to hospital which died in two, three, or four days after admission; occasionally three men died in twenty-four hours. On *post-mortem* examination an almost gangrenous condition of the bowel was discovered in these cases.

THE ANTIVACCINATION AGITATION IN GLOUCESTER.

For some years Leicester enjoyed the reputation of being the Mecca of the antivaccination movement, and the late Mr. P. A. Taylor was its prophet. But of late the antivaccinators of Gloucester, incited, apparently, by the ambiguous notoriety conferred upon the city by the epidemic of two years ago, have been seeking to drag it still more prominently into the fierce light of public criticism. We have before us a copy of the last issue of the *Gloucester Journal*, which contains some suggestive reading to those

who are interested in studying what may be called the pathology of the vaccination question. From its columns we learn, in the first place, that at the approaching municipal elections in Gloucester the local antivaccinators intend to renew the efforts they have made at the two previous elections to capture the City Council. Dr. Hadwen, whose name is identified with the most thoroughgoing advocacy of the antivaccination cause, not merely in Gloucester but in other parts of the country, is to contest the Barton district, the largest of the city wards, as an "independent;" whilst Mr. S. Bland, for many years the president of the local antivaccination society, and who has publicly intimated recently that his vaccination during the epidemic was not to be taken as an indication of his conversion to a healthier frame of mind, is also announced as a candidate for election in the same ward. The City Council already contains some six or seven pronounced antivaccinators, to whom the balance of the two ordinary political parties in it at the present time gives a weight which they would not otherwise possess. We shall look, therefore, with some interest to see the result of this effort to assure the public that Gloucester has learned nothing from her terrible experience two years ago, and that a considerable number of her citizens are even more determined than they were before it to show to the world their contempt for the teachings of one of Gloucestershire's most illustrious sons. From another column of the *Gloucester Journal*, we learn that at a recent meeting of the antivaccinators of the city, held under the chairmanship of Dr. Hadwen, it was unanimously resolved not to avail themselves of the relief provided by the recent Act "whilst the magistrates (of Gloucester) maintain their present attitude." This "attitude" appears, from some very judicious editorial remarks in another part of the paper, to consist in a decision to require the personal attendance of the father, and not, as the Keighley Bench have decided, the mother, to claim the certificate of exemption; to require a certificate of the child's birth; that the simple declaration of belief shall, if made on oath or by affirmation, be held as "satisfactory"; and that the fee charged shall be 2s. It is unnecessary to discuss the merits of these decisions; it is sufficient to recognise that they represent a middle course between extremes which have been adopted in other parts of the country, and that they may well be defended on the score of moderation. Certainly no parent has a reasonable right to complain if required to obtain, by so small a personal sacrifice as these regulations entail, exemption from an obligation which Parliament has almost unanimously affirmed as generally expedient. In adopting this course the Gloucester antivaccinators have decided, as the editor of the *Gloucester Journal* points out, "to entirely ignore an Act which was passed by a large majority of the House of Commons, and, what is more important, against the conscience clause of which no word of protest was heard from any representative antivaccinator when it was finally before the House of Commons." The results of this policy will be, as our contemporary indicates, that on January 1st next "the Gloucester Board of Guardians will be confronted with as large a body of uncertificated defaulters as ever." If the guardians then fail to carry out their duties the *venue* of the case will be transferred to Whitehall. It will be well, therefore, for Mr. Chaplin to consider beforehand what course he will take when faced by this dilemma. The contention of the Gloucester antivaccinators that the Gloucester magistrates have imposed conditions upon conscientious objectors contrary to the provisions of the Vaccination Act is clearly not justifiable. The statement made by the chairman at the meeting in question that "they were not going to rest until the Vaccination Act was swept entirely off the British Statute Book" is a sufficient indication of the attitude of the leaders by whom the movement is dominated.

THE ANTIVIVISECTIONIST PROPAGANDA.

THE methods of the opponents of vivisection are well exemplified in the following letter, which has been circulated amongst various holders of licences under 39 and 40 Vict., c. 77:

Harewood House, Keyhaven, Milford-on-Sea, Hampshire, Oct. 17, 1898.

SIR,—The Home Secretary informs me that having, in the course of your work last year, applied for and obtained a certificate authorising experiments on dogs, etc., *without anæsthetics*, on the express ground that the experiments in question could only be so performed, you then, notwithstanding the certificate, performed them *under anæsthetics*, thereby plainly showing the incorrectness of the ground on which your application was based.

Please observe that the statement is Sir Matthew White Ridley's, not mine. And as it certainly appears to cast a serious slur either upon your good faith or your professional competence, I think it only right, before making use of it, to ask whether you admit its accuracy. If you do so, pray do not trouble to write. Silence will be taken as assent.

Your obedient servant,
The Editor *Verulam Review*.

The statements contained in this letter may be classed as inaccurate, misleading, and threatening. To drag the name of the Home Secretary into such a circular is misleading, for the facts are obtained from a printed paper to be purchased by anyone who is interested in the matter. The serious part of the letter is the absolute incorrectness of the implied charge of obtaining a licence to perform experiments without anæsthetics, and then violating the terms of the permit by administering an anæsthetic. The particular certificate to which allusion is made seems to be EE, which is issued with the following provision, that the experimenter "is duly authorised to perform on living animals certain experiments .... such animals being, during the whole of the initial operation .... under the influence of some anæsthetic of sufficient power to prevent their feeling pain," though it dispenses with the statutory obligation to kill the animal on which the experiment is performed before it recovers from the influence of the anæsthetic. It is clear, therefore, that every holder of this certificate is bound to perform the whole of the actual operation whilst the animal is anæsthetised, and if his experiment is to be successful he must see that the healing of the wound is aseptic. But it may be some time before the object of the experiment is attained, and it would be impossible to keep the animal in a condition of narcosis during the whole of this time. The irresponsible editor of the periodical in question, either ignorant of the terms of the licence, or too careless to ascertain them, impugns the good faith of the members of the medical profession who choose to devote themselves to advance their art by experimental methods. The minatory clause is too feeble to be worth notice.

THE TRAFFIC IN ABORTIFACIENTS.

A SINGULAR nemesis has overtaken a number of unfortunate women who have been duped into correspondence with an advertising vendor of so-called "female medicines." It appears that a man signing himself "Charles J. Mitchell" had obtained access to the list of customers of a person who some two years ago dealt in the "Lady Montrose Miraculous Female Tabules," advertised as a certain remedy for all female obstructions, etc. By the post of Saturday week typewritten letters were issued broadcast to women in all parts of the country who had had dealings with Montrose, purporting to be of an "official character," and announcing that legal proceedings had been commenced against them for committing, or attempting to commit, "the fearful crime of preventing, or attempting to prevent, birth." The letter went on to threaten arrest in each case unless on or before the following Tuesday postal orders to the amount of two guineas were received by Mitchell to cover legal costs, with "a promise in writing on oath as before God" never to repeat the offence! Fortunately some of the women addressed had the strength of mind to put the matter into the hands

of the police, and warrants were issued for the apprehension of Mitchell. No fewer than 600 letters from panic-stricken victims, each containing two guineas were in the course of two days intercepted at the office in Trafalgar Buildings, taken by Mitchell, who has himself disappeared. This nefarious attempt at blackmailing draws attention to the scandal of the publication by journals, professing to be respectable, of advertisements in which so-called remedies of an abortifacient character are offered for sale. A provincial contemporary remarks: "It is remarkable that certain well-known religious journals are the greatest offenders in this respect, and several of the intended victims of 'Charles J. Mitchell' admit having written for a medicine which they say was advertised in a religious print." It is true that the advertisements are sometimes couched in language of an ambiguous or a pseudo-medical character, but the suggestions which they imply are perfectly obvious, and ought to be brought within the purview of the criminal law. How far they may fall under the provisions of the Indecent Advertisements Act is a matter for the police authorities; but considering the damage to health, as well as to morals, that may occur to ignorant women duped by these advertisements, the question whether representations might usefully be made to the Home Secretary on the subject is worthy of consideration. The machinery of the Apothecaries' Act might perhaps be put in motion against the quacks who profess to give advice and supply medicines of the objectionable character advertised. An appeal to the good sense of newspaper proprietors ought, however, to suffice to suppress such advertisements, and has already been successful in more than one instance.

SPAIN AND THE MEDICAL STUDENTS OF HAVANA IN 1871.

Doctor Antonio Gonzalo Perez, Doctor of Laws of the Havana University, in relating some episodes of the ten years' war (1868-78) in Cuba, which indirectly led to the outbreak of the war in 1895, alludes to the painful circumstances attending the shooting of some medical students in Havana city on November 27th, 1871. He states that of all the crimes committed by Spaniards in Cuba, this was perhaps the most conspicuously infamous, on account of the circumstances attending it. It had, it is alleged, its origin in the cupidity of the Governor, Lopez Roberts, who accused the students of having desecrated the tomb of a Spaniard, Gonzalo de Castañon, and of breaking the marble slab covering the place where his remains reposed. The accusation, according to Dr. Pérez, was a fabrication of the Spanish Governor's, for the purpose of obtaining money from the parents in order to secure the acquittal of the accused. But although large sums were afterwards offered, in order to save the lives of the victims, unforeseen events prevented the Governor from accepting them. The Governor had made a pretended investigation, which proved nothing. Notwithstanding this, forty-five students of the School of Medicine of San Dionisio, were ordered to be imprisoned. General Crespo, although aware of the innocence of the prisoners, but, acceding to the petition of a band of miscreants (the Army of Volunteers) ordered a court-martial, which acquitted the students. General Crespo, with reprehensible weakness, consented to allay the Volunteer agitation by ordering yet a new Court to assemble, which was partly packed by some six of the agitating Volunteers. This time no one could be found to defend the students, but neither could this Court agree as to the sentence to be passed. Eight students were shot, the youngest of them a boy of 16 years of age—while thirty-five were condemned to imprisonment in a penal settlement, and compelled to work with convicts, weighted with heavy chains. They were cruelly beaten and insulted by prison officials, by escorting soldiers, and by Spanish convicts deputed to supervise their allotted tasks. The lengthy account of the whole of this business, with much else besides, tends to prove that treachery and brutality marked some of the dealings of the Spaniards with the Cubans. Those who desire to read more of the details of this painful affair are referred to the current number of the *United Service Magazine*, to which Dr. Gonzalo Pérez is contributing a series of papers.

LONDON SMOKE.

During the past few months the London County Council has been actively engaged in dealing with the smoke nuisance in London. In a recent report of the Public Control Committee will be found an account of the particular measures employed. Information of an offending chimney having been brought to the Council, either by the police or by one of their own officers, the sanitary authority of the district is at once communicated with. If it can succeed in bringing sufficient pressure to bear to abate the nuisance, well and good; if not, a summons is taken out. Unfortunately the latter resource has fallen into disrepute among sanitary authorities, for the magistrates have in many cases shown themselves unwilling to convict, and prone to make excuses for the defendants. In a few cases the Council has been obliged to declare the sanitary authorities in default, and to initiate proceedings in accordance with the Act, a method which seems to have been very efficacious, for the report adds that in no case was it necessary actually to issue a summons, as the nuisance was abated. We share the regrets expressed by the Committee as to the inactivity af the magistrates, for it is with these officers that the clearing of London's atmosphere rests. The whole question of smoke abatement is one of expense, and consequent reduction of profits. If a manufacturer is willing to pay a sufficient number of stokers smoke is abolished, for smoke means hurried and inefficient stoking. In only few cases it is not possible to control the smoke from factory shafts by care in putting the fuel to the fire. Where a range of boilers is left to one man it is impossible for him to put on the coal in small quantities and at frequent intervals, which is the secret of smoke prevention, he must perforce put all he can on to each furnace in turn, with the result that much smoke is produced.

UNIVERSITY COLLEGE MEDICAL SOCIETY.

The Medical Society of University College, London, held its annual public night on October 19th. The meeting took place in one of the College lecture rooms, and after the President (Dr. H. Batty Shaw) and the Secretary (Mr. Bryan Reynolds) had formally disposed of the business, Professor F. T. Roberts addressed the meeting. Dr. Roberts possesses the power of teaching the most serious lessons in the most charming manner, and his whole address was colloquial and informal. At times it was difficult to follow him, for the frequent and prolonged laughter together with much cheering and clapping of hands interfered not a little with hearing. Taking for his subject the Personal Factor, he said that too little attention was paid to it in medical matters, although its importance could not be overestimated. In deciding to enter the profession the personal predilection was too often neglected, and a man found himself studying subjects for which he had no aptitude. Even when the student's career was ended and the student became a fully-qualified practitioner, it often turned out that, although a brilliant examination had been passed and the highest honours obtained, a man found himself set to do work for which he had no real inclination. Success in the medical profession could only be obtained by those who really worked for the sake of their liking for the work itself, and was not to be won by those who entered the profession on account of any facilities it offered for making an income. There was another class of men who having been successful in one branch of practice thought that they could be

equally so in any other branch, or who, having succeeded in one place considered themselves able to succeed in another under quite different conditions. It was not infrequent to find men leaving good country practices to come to London, fondly imagining they would carry all before them, and only finding out to their bitter cost that their individual personal factor, which was of service in the country, was of no use in the metropolis. Again, in the practical teaching of medical students, their individuality was too often not considered. They were not infants to have their food ready prepared and poured into them. At the present day there was far too much teaching on this system. Even in post-graduate teaching the fact was lost sight of that a medical graduate was an individual and not merely a recipient for previously digested facts. Dr. Roberts's description of the various types of medical practitioners was realistically put before his audience, the gist of his remarks being that over-estimation led to advertisement, whether in what might be called a professional or a non-professional manner. A common class of man was the theorist, who often in consequence called himself a pathologist. There was the writer of books and pamphlets, the dogmatic type, the egotistical type, and that most dangerous of all—the silent type of practitioner. Continuing in this strain, Dr. Roberts kept his audience in perfect, if noisy, good humour for considerably over an hour, when, changing his tone, he very seriously drew the moral of his address, and spoke very impressively of many of the present abuses of professional life, matters which had been already laughingly alluded to in his address. After the address there was an exhibition of medical and surgical instruments. Professor Ramsay also demonstrated the spectra of the gases most recently discovered by him.

THE GUILD OF ST. LUKE.

The thirty-fourth annual medical service of St. Luke took place at St. Paul's Cathedral on Wednesday evening. Over 1,000 medical men were present, and a large number of ladies also attended. Dr. E. Symes Thompson, Provost of the Guild, Mr. C. D. Marshall, and Dr. S. Russell Wells, Registrar, represented the Executive Committee. The passage up the centre of the nave was lined on each side by Volunteers from the London Companies of the Volunteer Medical Staff Corps, under Captain Rawnsley. The musical portion of the service was rendered by the London Gregorian Choral Association, under the direction of Dr. Warwick Jordan, honorary organist to the Association; and the organ was in parts supplemented by silver trumpets. Service began by a long procession of medical men, mostly in their Doctors' robes, and a few medical ladies, from the west end of the nave to their seats under the dome; then followed choristers, clerical associates of the Guild, the clergy of St. Paul's, and the Bishop of London, preceded by the episcopal staff. The hymn "Christ is made the sure Foundation," from the Salisbury Hymnal, was sung as the procession advanced. Several members of the Court of Common Council, and representatives of the Apothecaries' and other City Companies were seated in the choir. The service was conducted by the Rev. C. Kelly, Minor Canon. The Psalms and Lessons were those appointed for evening prayer of St. Luke's Day. "O Christ, Thou Lord of the worlds!" was rendered as the office hymn; and Luther's "Now thank we all our God" was sung before the sermon, which was preached by the Bishop of London from the text (Epistle to the Philippians, iii, 21), Who shall change our vile body that it may be fashioned like unto His glorious body." Dr. Creighton said that there were two conceptions of the body, the one that of the man who simply served it; the other the right one, that of the man who regarded it as the body of our humiliation, but capable of change to a higher condition. The Revised Version used the phrase "the body of our humiliation," and the form "vile body" used in the Authorised Version was a proof of the way in which the true view of the body was overlooked for so many ages. In their desire to rise above the difficulties under which they felt life was lived, men had despised the body because they were ignorant of its powers, functions, and connections with their inner selves. As anatomy and biology had succeeded in revealing the true functions of the body, mankind had got back again in some degree to the true, profound, and noble view of the body and its place which was expressed in St. Paul's words. They who were concerned with the human frame knew well both its limitations, failures, and frailties, and its inherent dignity, nobility, beautiful adaptation to purpose, and splendid capacities. Man at his worst they saw often, but it was given them also to see man at his best. Their ideal was not to be found here and now, but in the body of His glory. There was a time when science mocked at the possibility of this, but that was changed now, and a great biologist had said that if there was a resurrection it must be a resurrection of the body. Body and spirit were so intimately connected that the one could not be conceived as existing in a perfect state without the other. Law was constantly broken by man's perversity, and man had to be taught the law, written in his members, of what he might do and what he might not do. The indomitable soul through affliction could rise to the highest flight of heroic self-abnegation. They must always endeavour to inculcate self-control, and thus raise men from their original low state. The Bishop ended by an appeal on behalf of the Medical Missionary Fund of the Guild, which he said would prove of incalculable good in the field of mission work. The medical missionaries would teach men by their example and precept that the body was capable of being raised to a high point of glory. Whilst the offertory was being taken, the hymn "Light's abode, celestial Salem" was sung, and after the blessing by the Bishop the recessionals "O what their joy and their glory must be" and "To the name of our Salvation," brought the service to a close.

EXERCISE AND OVER-EXERCISE.

Dr. Lauder Brunton opened the session of the York Medical Society last week by an address on Exercise and Over-exercise, in which, as was to be expected, he said a great many wise things with which every physician will agree. He said, for instance, that exercise which put into action every muscle of the body, but did not put any one into action for too great a length of time at once, or in too violent a manner, was exceedingly beneficial, but in applying this excellent principle he had the temerity to compare unfavourably with lawn tennis the three most popular physical recreations of the day—cricket, golf, and cycling. Moreover, he classed together croquet, cricket, and golf—rather a curious collocation—on the ground that in playing them there was not the same general movement of the whole body that was necessary in lawn tennis or polo. As to croquet all will probably be ready to agree, but as to cricket and golf, it is not likely that their devotees will be disposed to accept Dr. Brunton's rather sweeping assertion. What muscles of the body are brought into play in lawn tennis which are not brought into play by, say, a fast bowler, we should be rather curious to know and as to golf, the distribution of the stiffness after a day's play in a man out of condition and practice leads at least to the suspicion that very few muscles in the body have not been called into action. As to cycling, Dr. Lauder Brunton said that it tended to narrow the chest and to cause more or less a permanent stoop. He added that, as it had become so very general an amusement, its effects on the body as compared with those of other physical exercises must be very carefully watched. Like most of us, Dr. Brunton has been struck by the fact that the girl of the period tends to be most divinely

tall, and he seems disposed to put this down to the great popularity of lawn tennis a few years ago. It is certainly a pity that this very excellent game appears to be going out of fashion owing to the great popularity of cycling, which we should be disposed to agree with Dr. Brunton is not an exercise so well calculated to produce an all-round development of the muscular system. Although he spoke in faint praise of cricket and golf, he admitted that they shared with tennis one essential feature of a good game—intermittent action of many groups of muscles. Passing on to speak of over-exercise, he observed that what was sufficient exercise for the muscles might be over-exercise for the heart, so that schoolboys ran a risk of injury if their athletic power were judged from their apparent size and strength and not according to the strength of the heart. Dr. Brunton then pointed out that a continuous strain upon one set of muscles was not only painful and exhausting but injurious, and illustrated this point very happily by referring to the fatigue experienced by men and women employed in shops who were compelled by custom to stand for many hours a day. He showed a rest by means of which a shopwoman could sit down and take the weight of the body off the legs, whilst movements behind the counter were hardly interfered with. The cause of the quickened breathing associated with muscular exertion was really the poisonous products formed by muscular action, and the shortness of breath was due to heart disturbance. Thus, in the case of growing boys, football or paper-chases might lead to distinct heart strain. Another factor which Dr. Brunton said must be regarded in exercises for boys and young men was that mental fatigue caused bodily exhaustion. If boys were pushed both at lessons and at exercises they were much more likely to break down than if they were pushed at one or the other alone. In adolescence the heart, like other muscles, though it was more easily strained, recovered more readily, and with moderate care would recover completely. In conclusion, Dr. Brunton dwelt on the important point that, while in middle life the heart was less liable to strain, yet as age advanced, and especially if the arteries became atheromatous, the heart was not only more easily affected by strain, but had less power of recovery—a fact which has its obvious bearing on the kind and amount of exercise which should be taken as age advances.

PRACTICE AS AN APOTHECARY.

The proposition of the judge of the Greenwich County Court, laid down in the course of the hearing of a prosecution instituted by the Medical Defence Union, a report of which is published in another column, is, if we may assume the accuracy of the report of his remarks, one which appears to require some qualification. He is reported to have said that "an unqualified person can open a chemist's shop and sell medicines and be well within the law, provided no poisons are sold or treatment of patients undertaken." Now, in the first place, an unqualified person could not call himself a chemist; and, secondly, if a person not a chemist, and not otherwise qualified, sells medicines without a stamp, it is not improbable that the Inland Revenue authorities would have something to say in the matter. The question before the Court however, it seems to us, had nothing to do with the Pharmacy Acts or Patent Medicine Acts, but had reference solely to the fact whether there had been any infringement of the Apothecaries Act. The practice of an apothecary has been defined over and over again by eminent judges of the High Court. If an unqualified person prescribes for another person requiring medical treatment, and makes up and supplies the medicine, there is very little room to doubt that such unqualified person is acting contrary to the provisions of the Apothecaries Acts. According to the report the defendant had no qualification, and the evidence of Mr. T. W. Tyrrell (unshaken on the point in cross-examination) went to prove that he had been treated for a cold and supplied with medicine for it. The report of the case does not contain the judge's summing up, nor probably all the facts, but, having regard to this evidence as reported, we venture to express the opinion that it would have been more satisfactory if the request for leave to appeal had been complied with.

EPSOM COLLEGE.

The appeal from the Council of the Royal Medical Benevolent College, Epsom, which is published in another column, sets forth the objects of that excellent institution in a manner in which they have never before been presented to the profession. An unfortunate misconception prevails, even in quarters where a better knowledge of the facts might be looked for, that Epsom College is mainly a charity school, the benefits of which are confined to the families of members of the medical profession. It is well, therefore, that it should be made plain that Epsom College is a public school conducted on the lines of Winchester, Charterhouse, or Rugby, and, like them, giving a liberal education of the highest standard not only to the sons of medical men but to boys of all classes. The training, which is of the broadest kind, is intended to fit the pupils for the acquisition of the technical knowledge necessary for whatever profession they may choose as their business in life. The soundness of the education given at Epsom is sufficiently shown by the success of its pupils in competitions for open scholarships in classics and mathematics as well as in science at Oxford and Cambridge, and by the high position taken by many of them in after-life. No fewer than nine old Epsomians are at present teachers in metropolitan hospitals, and several more are teachers in provincial schools. The success of the school is further shown by its rapid growth in recent years, a growth which has made it necessary to build a junior school. But increase in size brings with it increase in requirements, and, besides, there is a "benevolent" part of the institution which has to be provided for. Like Eton, Winchester, and Charterhouse, Epsom has foundation scholars, but, unlike those historic schools, it has no permanent endowment. Hence arises the necessity of the appeal to the profession which we publish to-day. The foundation scholarships of Epsom, fifty in number, are reserved for sons of medical men. There is another charitable element in the institution which has a special interest for the medical profession. Pensions are provided for fifty aged medical men or widows of medical practitioners who are in need of such assistance. For these two classes of beneficiaries a sum of £6,000 has to be found each year. Of this sum not more than one-half is at present contributed by the medical profession. We are convinced that this can only be due to an imperfect appreciation on the part of medical men of the objects of Epsom College and of the precarious nature of the funds which the Council has at its disposal for the carrying out of these objects. The appeal has our hearty sympathy, and we hope that it may meet with a thoroughly satisfactory response.

SEPARATED CONDENSED MILK.

In recent years the sale of condensed whole milk has suffered somewhat from the appearance on the market of "condensed skimmed milk" and condensed "separated milk." Whereas the former contains as a rule about 1 per cent. of fat, the latter has been robbed of practically the whole of its fat, so that commonly not more than 0.2 or 0.3 per cent. remains. The words "separated" and "skimmed" are frequently only to be discovered on the tins after a careful and painstaking search, and the consequence is that parents often purchase a product in the belief that it is condensed whole milk, which as a food for infants has

been robbed of a most valuable constituent. The Vestry of Camberwell has recently resolved to adopt the following recommendations of its Sanitary Committee, in order to check the purchase by ignorant parents of separated milk for infant feeding: (1) That the Government be asked to at once introduce a short Bill to deal with this serious danger, requiring that persons manufacturing or importing condensed milk should state in plain language on the outside of each tin, what quantity of the milk contained in the tin it would be necessary to use to obtain the full benefits derivable from a pint of new English milk. (2) That posters and bills be printed and circulated throughout the parish, and that the registrars of births be asked to hand to each person on registering a birth a handbill containing the above information.

THE ROYAL COLLEGES OF PHYSICIANS.

IN accordance with custom the Harveian Oration was delivered on St. Luke's Day (Tuesday last) at the Royal College of Physicians of London by Sir Dyce Duckworth. The President, Sir Samuel Wilks, occupied the chair, and the officers and Fellows of the College, and the guests (amongst whom were Sir W. Mac Cormac and Canon Duckworth) made a large audience. The bust of Harvey was placed to the right of the Orator, whilst the splendid portrait of Harvey, which the College also possesses, was hanging in its usual position behind the President's chair. The oration, which is published in another column, was listened to with much attention and frequently applauded. On the same day Dr. John William Moore was elected President of the Royal College of Physicians of Ireland, an appointment upon which both Dr. Moore and the College are to be congratulated. Among the guests entertained by Dr. Moore and the Fellows at the annual banquet on the same evening were Mr. Horace Plunkett, M.P., Mr. J. H. Campbell, M.P., and the President of the Royal College of Surgeons in Ireland.

PROFESSOR VIRCHOW AT CLAYBURY.

OF the many things which Professor Virchow saw while he was in England, there was none, as we have reason to know, that interested him more than the pathological laboratory established by the London County Council in connection with the great asylum at Claybury. This laboratory, which was opened about two years and a half ago, was the first of its kind, and till the establishment of a similar one at Edinburgh for the Scottish asylums it was the only one in existence. Professor Virchow having expressed a wish to visit the laboratory, Dr. Mott, whose excellent work there has already more than justified its establishment, placed himself at his disposal for the purpose. On October 6th Professor Virchow, under the guidance of Dr. Mott and Dr. Forman, J.P., Chairman of the Pathological Subcommittee of the County Council, visited Claybury, and inspected not only the laboratory but the asylum. He was greatly struck by the liberality of the County Council in establishing so fine and so fully equipped a laboratory. He was particularly interested in the "cold chamber" for the preservation of pathological material, introduced by Dr. Mott, and adopted in the new laboratories at Liverpool. Professor Golgi, who visited the laboratory not long ago, also expressed his approval of the "cold chamber." Professor Virchow showed a keen interest in the researches now in progress in the laboratory, particularly those on the degeneration of the neuron after ligature of vessels, and on the large part played by syphilis in the pathogeny of general paralysis. The only fault which he had to find with the laboratory was its out-of-the-way situation, which made it less useful than it would be if it were in a central position. Professor Virchow expressed his admiration of the magnificent recreation hall of the asylum and of the park around the building. It may not be out of place to recall the fact that the distinguished pathologist is an expert on the structure and management of lunatic asylums, a subject to which he gave much attention during his active career as a member of the Berlin Municipality. He was evidently greatly impressed with the public spirit and enlightened liberality of the County Councillors who give their services without remuneration, and show so just an appreciation of the value of pathological work. On leaving, Professor Virchow signed his name in a book recently provided as a record of the visits of distinguished persons. It is a good omen for the laboratory that the first signature should be that of the Father of Modern Pathology, who added the words *Gut' Heil!* (good luck) to his name.

A SPECIAL PLAGUE COMMISSION IN INDIA.

IT has been determined to appoint a Special Commission, to consist of five members, to conduct investigations regarding plague in India. The specific duty of the Commission will be to inquire into the origin of the various outbreaks of plague, and the manner in which the disease is spread. An official statement also is required as to the efficacy of the serum treatment and the prevention of plague by means of inoculation. So far as the nominations to serve on this Commission have been made public two Indian civilians, Messrs. J. R. Sewwett and A. Cumine, have already been appointed, but it is understood that three other members will be nominated by the Secretary of State for India to proceed from this country, of whom one will act as chairman while two will be experts. We congratulate the Indian Government upon the step they have taken, and hope that neither pecuniary considerations nor official prerogative will hamper the authorities in obtaining men of ability to take up the work. There is plenty of work for the Commission to do. Plague, as Dr. Simpson in his address at Edinburgh stated, has demonstrated the absolute necessity for a trained sanitary service for India, and although the intended Commission may work out the scientific bearings of the epidemic of plague, it must be remembered that plague is but one of the epidemics which ever threaten India. Plague is but an expression of the general insanitary state; and any Governmental inquiry which does not deal with the general relief of the insanitation of India will but touch the fringe of the evil. A Sanitary Service, complete in all its branches, administrative, investigative, and scientific, is required in India. The Commission about to take up its work may fulfil in some measure one of these—the investigative; but mere investigation, without a staff of local health officers, medical inspectors, and a full staff of "subordinates," can show but little practical results. If the Government of India have merely appointed this Commission to make inquiries into the question, we are afraid much valuable time is being wasted. In India at the present moment two or three dozen medical men are employed specially by the Government for plague work. We would recommend that these medical men, who have by this time become acquainted with what insanitation in India means, be enrolled as health officers, to carry out immediately the suggestions that may be made by the members of the Plague Commission. In this way a nucleus, at any rate, of a sanitary service for India would be formed and the recommendations of the Commissioners put into execution without delay.

FIRST AID BY RAILWAY MEN.

THE St. John Ambulance Association has been gradually spreading its influence in many directions, and it is the exception not to find one or more railway men at the stations and depôts of the United Kingdom wearing the medallion of the Association, which shows that they are competent to render first aid. From a paragraph which

recently appeared in a North of England daily newspaper, there seems to have been great activity in this direction among the men employed by the North-Eastern Railway, for at the West Hartlepool and Newcastle centres alone there were respectively 53 and 45 successful candidates at a recent examination, and there are nearly 4,000 men qualified to render first aid distributed throughout the system, and no fewer than 168 properly-equipped ambulance stations. That there is some use in it is shown by the fact that aid was rendered in some 2,451 cases in 1897, and 2,605 in the first half of the present year. Provided that those who are rendering first aid remember that they are not qualified medical men, and that they do not take unnecessary responsibility upon themselves in the way of treatment beyond the necessary first aid, the boon to the unfortunate individual who meets with an accident is very great. Timely aid intelligently given will often prevent a simple injury becoming a very serious one before the services of a medical man can be obtained.

THE ROYAL HOSPITAL, BELFAST.

The winter session began on Tuesday, October 18th, when the inaugural address was delivered by Dr. W. Calwell, Assistant Physician to the hospital. After heartily welcoming both old and new students, he observed that in the early stages of their curriculum the dissecting-room and the physiological laboratory should chiefly engage their attention, but as time went on the circle of their studies would enlarge. Evolutional biology would give a greater breadth of view in their estimation of mankind, and would show them that man was but a link in the great chain of life, having affinities to the plant and the invertebate, as well as to the higher forms. Each species had an average standard to which the individual tended to conform, and for everyone who rose above that standard there was someone who fell below it. Quick reformation, either among races or individuals, was usually unsuccessful, and involved the risk of checking growth and dwarfing the characteristics of the individual. It was clear that the elements of the savage were still strong, though latent, in the breast of civilised man, and were in many cases kept within bounds only by education and the firm administration of the law. The ordinary moral law received the strongest support from evolution. On this theory there was hope that the higher moral qualities—such as justice, honour, mercy, charity, toleration, and religion—were the latest manifestations of the evolutionary process, and hence capable of the greatest development. He concluded by some points of practical advice, and urged his hearers to be earnest in their work, to recollect the limitations of their period of study, to bear in mind that learning came by repetition, that the great secret of clinical proficiency was repeated careful examination. He quoted with approval two sayings—one by a former and the second by a present physician of that institution: "Examine, examine, examine," and "Never lose an opportunity of becoming a wiser man."

MEDICAL REGISTRATION IN CANADA.

A brief reference was made in a report of the meeting of the Canadian Medical Association, published in the British Medical Journal of September 15th, 1898, to a report of a committee on medical registration in the Dominion of Canada. It will be remembered that Dr. Roddick, in his address as President of the annual meeting of the British Medical Association at Montreal last year, called attention to the anomalous position in which medical registration was in Canada. When the British American provinces became federated in 1867 the control of educational affairs was taken away from the federal authorities and handed over to the provinces, each of which has legislated on the subject. In consequence there is practically no uniformity in regard to the standard of study or qualification for practice. Each province has its own medical Board or medical council, which has the power to grant licences, either after examination or simply on presentation of the diploma of certain recognised universities. An examination is exacted in Ontario and British Columbia only. In this way not only are the provinces cut off from the rest of the empire, but they are also entirely separated from each other in this matter. One effect has been to prevent the recognition by the General Medical Council in this country of Canadian medical degrees, which cannot be registered upon the *Colonial Register*. The proposal now adopted by the Canadian Medical Association is the establishment of a Dominion Board to grant diplomas which shall be accepted throughout the whole of Canada after a uniform curriculum and identical examinations. A preliminary or matriculation examination, with a uniform standard should, it is suggested, be conducted by the various councils of the Education Department of each province, and should include English grammar, arithmetic, algebra, Latin, elementary mechanics, Canadian and British history, and either Greek, French, or German. Candidates producing evidence of having passed a satisfactory examination in these subjects would be excused the examination. It is further proposed that professional education should begin only after registration as a medical student, and should comprise a graded course of four years, consisting of four sessions of not less than eight months in each year, the subjects to be the ordinary subjects of medical education. It would also be required that the student should attend hospital practice for at least twenty-four months out of the period of four years. It is further proposed that the various provinces should at once proceed to enforce these regulations and to require all candidates to undergo examination before examiners to be appointed in each of the provinces by the respective medical councils. The various councils of the provinces of the Dominion are invited to secure legislation under which candidates passing the examination of their Provincial Board should be entitled to registration in the several provinces of the Dominion, and eventually to seek the establishment of a central qualification which shall place the profession of Canada upon an equal footing with that of Great Britain. Dr. Roddick has undertaken to bring the matter under the notice of the Dominion Parliament, and the Canadian Medical Association has appointed a committee to assist him in influencing the provincial councils and the Dominion Parliament to give facilities for the desired legislation. There can be, we presume, judging from the influential position which Dr. Roddick holds in the Canadian polities, little doubt that his efforts will be successful if they receive, as now appears probable, the support both of the medical councils of the provinces and of the medical profession throughout the Dominion.

CYSTS OF THE URACHUS.

The literary history of diseases supposed to be rare is very instructive. A paper is read before a Society, or published in a medical periodical; it treats of some disorder, say, a tumour, hitherto but little known. Attention being turned to the subject, a number of such tumours are soon reported, and later on some observer finds that many of these later reports are untrustworthy. Then, again, some genuine samples turn up. Thus some twenty years since several instances of large cyst of the urachus were reported in Germany, but a few years later Wutz wrote to show that there was no evidence that any of these large cysts were urachal. Valuable reports on the same kind of tumour were published shortly afterwards by Mr. Lawson Tait, and important work in the same field was undertaken by certain American observers. Two cases of large urachal cyst underwent operation in 1897; the one formed the sub-

ject of a memoir read at a meeting of the Royal Medical and Chirurgical Society in May by Mr. Doran; the other was reported at the annual meeting of the American Association of Obstetricians and Gynecologists, the operator being Dr. Douglas, of Nashville. The tenth volume of the *Transactions* of that Association, recently issued, contains an interesting discussion on Dr. Douglas's paper, tending to show that urachal cyst is not very rare, and that its surgical treatment demands some consideration. There is nearly always a train of nervous symptoms, with a feeling of discomfort in the lower part of the abdomen not observed in ovarian tumour. As to operating, the surgeon must feel sure that there is no open channel of communication between the cyst and the bladder. Dr. Ill, of Newark, once came across a case of this kind, and treated the open channel, which was, of course, part of the urachal canal, as though it were a vermiform appendix, the duct being cut very short, and the edges of its sheath closed by suture. This method is preferable to simple ligature, for experience shows that a thread may cut its way through the canal instead of bringing about its obliteration. The patient then suffers the misery of an abdominal urinary fistula. The great difficulty in respect to the actual removal of a urachal cyst is what to do with the peritoneum which invests its posterior aspect. In Douglas's case the cyst was enucleable, but the detached peritoneum sloughed. Dr. Vander Veer, of Albany, advocates the stitching of the omentum to the detached flaps to ensure its vitality. Dr. C. Reed, of Cincinnati, believes that the surgeon need not scruple to remove the flap if there be any trouble about it. When this is done, he facilitates the approximation of the cut edges of peritoneum by separating the serous membrane for about 2 inches behind and beyond the limits of the wound; then the edges will glide forwards and can be united with catgut, the endothelial surfaces being brought together. Altogether, however, opinion seemed to be in favour of the view that incision and gauze drainage is the best treatment for urachal cyst. Dr. Cushing was of that opinion, and Dr. Ill insisted that the surgeon should at least never attempt to remove an inflamed cyst. The adhesions between the inflamed tissue and the peritoneum are so intimate that separation is impossible, and when the cyst is inflamed the material is highly septic, and the patient's life will be endangered by such a manipulation. Free incision answers very well. The best results, we may add, followed incision in Doran's case as well as in one of Ill's which was reported in 1892. Lastly, if it be true, as Reed, of Cincinnati, asserted, that urachal cyst is not rare but includes, as far as operative surgery is concerned, all the cysts that are encountered in the abdominal wall, it follows that the disease must have been largely overlooked, and should, for reasons above explained, receive the serious attention of clinical observers and surgeons.

SIR JOHN BANKS, K.C.B.

Sir John Banks, K.C.B., Regius Professor of Medicine in the University of Dublin, has resigned that position, which he has held for many years with great distinction. The Board has accepted his resignation with an expression of deep regret. Sir Francis Cruise and Dr. J. M. Finny (King's Professor of Medicine in the Medical School) are mentioned as candidates for the office.

OUT-PATIENTS IN BIRMINGHAM.

Since the new buildings of the General Hospital, Birmingham, have been opened, the number of out-patients has, we are informed, increased so greatly as to become almost unmanageable, and to be a serious drain on the resources of the institution. The Committee of the hospital have, therefore, appointed an officer to investigate the circumstances of each new out-patient, and to keep a record of such investigation. This system is to be carried on for a period of four months, and the results thus obtained will then be taken into consideration as a guide to future arrangements.

Dr. Joseph Priestley, medical officer of health for Lambeth, has been appointed Teacher of Hygiene in the British Institute of Preventive Medicine.

We are asked to state that after paying all expenses connected with the complimentary dinner to Professor Virchow the secretaries have a balance in hand of between £7 and £8. This they propose to hand over to the British Medical Benevolent Fund, of which Sir William Broadbent is the treasurer.

The trooper of the 21st Lancers (Private Pedder), who was instrumental in saving the life of Major Pinches, R.A.M.C., it is reported, is recommended for the Victoria Cross. Major Pinches had one horse shot under him and another wounded. Private Pedder displayed great bravery in catching two stray horses amidst the dervishes in order that Major Pinches might escape.

A Reuter's telegram dated Vienna, October 19th, states that a man employed in the General Hospital in Vienna died on October 18th in Professor Nothnagel's private hospital from bubonic plague. It is believed that the man became infected by handling cultures of the plague bacillus. The diagnosis in this case was established by the results of an examination of the sputum, which revealed the presence of the plague bacillus.

Dr. T. Gilbart Smith has been elected Chairman of Council of the Irish Medical Schools and Graduates' Association in succession to Dr. Phineas Abraham, whose three years' tenure of office terminated at the end of this month. Sir William MacCormac, Bart., K.C.V.O., will be the guest of the Association at the autumn banquet of the Association, which will take place on November 23rd at the Café Monico, when the chair will be taken by the President, Dr. E. D. Mapother.

Mr. Frederick Treves has resigned the office of Surgeon to the London Hospital, which he has held for the past fourteen years, having previously served for five years as Assistant Surgeon. The retirement of Mr. Treves six years before the expiration of his term of office will be a loss to the hospital and medical school in connection with which his early reputation was made; but we understand that he has found the claims of private practice incompatible with the exacting duties of surgeon to a large hospital.

German papers note with evident satisfaction the enthusiastic reception accorded to Professor Virchow in England, and the *National Zeitung*, one of the leading Berlin dailies, quotes part of the British Medical Journal's article on the Huxley Lecture. The medical papers express the gratification felt by the profession of Germany at the enthusiastic welcome given to the "Altmeister" in this country. The Lecture was published in full in the *Berliner klinische Wochenschrift* of October 10th.

ENTRIES AT THE MEDICAL SCHOOLS AND COLLEGES IN ENGLAND.

We are enabled by the courtesy of the deans, wardens, or other officers of the various schools mentioned below to publish the following particulars with regard to the number of students who have entered in England this session for the whole curriculum, and of those who have joined for the various special courses.

Under the agreement whereby joint cards are issued to the clinical instruction of the following hospitals and schools of medicine—Charing Cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College, and Westminster—42 qualified men have entered since May 1st of this year, namely, 15 from the United Kingdom, 12 from the colonies, and 15 from foreign countries. In the return from St. George's Hospital the entries for instruction in tropical medicine are not included.

The number of students who have joined for the full curriculum is shown in the first column, A.

	A.	B.	C.	D.
St. Bartholomew's Hospital	100	75	1	13
Charing Cross Hospital	24	30	24	6
St. George's Hospital	50	4	—	—
Guy's Hospital	81	21	53	19
King's College	28	190	—	12
London Hospital	60	47	—	11
St. Mary's Hospital	64	112	—	5
Middlesex Hospital	20	29	14	—
St. Thomas's Hospital	62	15	—	8
University College	34	45	—	51
Westminster Hospital	12	31	1	3
London School of Medicine for Women	46	2	—	—
Cambridge University	127	—	—	—
Oxford University	—	—	—	—
University of Durham College of Medicine	30	31	2	—
Bristol University College	12	1	6	4
Owens College, Manchester	66	62	18	71
University College, Liverpool	49	8	18	25
Yorkshire College, Leeds	24	9	0	19
Mason College, Birmingham	—	—	—	—
University College, Sheffield	9	—	—	4
University College of South Wales, Cardiff	—	—	—	—
London School of Dental Surgery	—	—	39	—
National Dental Hospital	—	—	12	—

A. Number of students who have joined for the full curriculum.
B. Number of students who have joined for special courses.
C. Number of dental students.
D. Number of students who have joined classes for preliminary instruction.

The total number of students newly entered for the full curriculum at medical schools in the metropolis (excluding London School of Medicine for Women) is thus 535 as compared with 502 in 1897, and 478 in 1896.

THE PLAGUE IN THE EAST.

India.

The mortality returns for the week ending October 17th show the number of deaths from plague to be 200, as against 210 during the previous week. For some weeks now the average number has been about 200 a week, and it is to be hoped that this indicates a halt in the increasing rate.

It is now three months since the present recrudescence began in Bombay, and judging from previous experience it may be hoped that the disease is abating in its virulence with each recurrence. This hope will soon be put to the test, for if there is truth in the notion that the cooler weather favours plague, a few weeks will decide the question as to whether the present epidemic is a mere continuance, or the initial stage of a severe recurrence. In some other parts of the Presidency the epidemic is extending, the deaths reported for the week being 4,300, as against 4,000 in the previous week, and 3,000 in the week before.

The general trend of plague at the present moment seems to be southward from Bombay. Northern India and Karachi seem to be free of plague for the moment, but in the Mysore States, more especially at Bangalore, the disease is increasing. At the City and Civil Station of Bangalore, 274 deaths occurred from plague during the week ending October 17th. In the Hyderabad State, and in various districts of the Madras Presidency a few cases have occurred, but there is no sign of the disease being virulent in either of these districts.

LITERARY NOTES.

In a recently published biographical sketch of Dr. Sternberg, Surgeon-General of the United States Army, it is stated that he is the author of no fewer than 122 contributions to journals in English and Spanish and 29 single works. This list does not include his many letters to lay and medical journals in reply to criticisms of the army medical department written during the past three months.

Messrs. Smith, Elder, and Co. will publish immediately a work upon *Albuminuria and Bright's Disease*, by Dr. Tirard. The author, who assisted the late Sir G. Johnson in his later publications on kidney disease, has treated the subject from the clinical rather than from the pathological standpoint. The book will be illustrated with fifteen original plates, four of which, representing retinal changes in kidney disease, will be in colours.

Lieferung 40 of the great *Deutsche Chirurgie*, the publication of which was begun under the editorship of Billroth and Luecke, and is continued under that of Professors Ernst von Bergmann and P. von Bruns, has just appeared. It forms a volume of 564 pages, and deals with Injuries of the Vertebral Column and Spinal Cord, the writers being Professor W. Wagner and Dr. P. Stolper. Sixty-nine *Lieferungen* of this work have now appeared, all of which are in the Library of the British Medical Association.

In the *Zeitschrift für Ethnologie*, 1898, Heft 2, Dr. Karl E. Ranke has an article on the colour of the South American Indians. His observations lead him to the following conclusions: 1. The darker coloration of portions of the body is due to exposure to sun and air, resembling in this the white race. 2. Judging from the colour of the protected portions of the skin, the South American Indian approximates more closely to the yellow race than to the white or a red race.

The new books and new editions to be published by Messrs. J. and A. Churchill during the autumn include: *A Manual of Ophthalmic Surgery and Medicine*, by Mr. Walter H. H. Jessop, Ophthalmic Surgeon to St. Bartholomew's Hospital. The illustrations are over 100 in number, as well as 5 coloured plates and test types. A second revised and enlarged edition of Morris's *Anatomy*, with 800 illustrations, of which 200 are new or altered. The fifth edition of a *Manual of the Practice of Medicine*, by Dr. Frederick Taylor. The sixth edition of the *Diseases of Children*, by Dr. Goodhart. A *Synopsis of Surgery*, by Mr. R. F. Tobin, Surgeon to St. Vincent's Hospital, Dublin. A new work on *Diet and Food considered in Relation to Strength and Power of Endurance, Training and Athletics*, by Dr. Alexander Haig, Physician to the Metropolitan Hospital. The fifth edition of *Clinical Lectures on Mental Diseases*, by Dr. Clouston, Lecturer on Mental Diseases in the University of Edinburgh. *A Textbook of Histology, including the Microscopic Technic*, by Dr. Philipp Stöhr, Professor of Anatomy in the University of Würzburg, and edited by Dr. Alfred Schaper, Demonstrator of Histology at the Harvard Medical School. *Vitality: an Appeal, an Apology, and a Challenge*, by Dr. Lionel Beale, Emeritus Professor of Medicine in King's College. Volume IV, and reprints of Vols. I, II, and III, Part 1, of *Commercial Organic Analysis*, by Mr. A. H. Allen, Public Analyst for the West Riding of Yorkshire.

We have received a circular announcing the projected publication by Messrs. William Green and Co. (St. Giles Street, Edinburgh) of an *Encyclopædia Medica*, "by the most distinguished specialists." The work, which is to be in twelve volumes, will, it is stated, "be in effect a complete and authoritative medical library in itself, covering the entire field of medicine, midwifery, and surgery." The following are the particulars in which, according to the circular, the new *Encyclopædia* is to differ from all others:

1. The work will be no mere collection of essays, but will be designed in a thoroughly practical way to meet the needs of the general practitioner, and to include for the first time in one work of reference every subject likely to be of use to medical men.

2. All its articles will be written by specialists in their respective branches of science, and no expense or trouble will be spared in the endeavour to secure the highest authorities in the country. The editors will have the benefit of the advice, in cases of difficulty or doubt, in the selection of authors and in other matters, of a small consultative committee, whose *personnel* will command the entire confidence of the profession.

3. The various topics will be treated with much greater fulness than in any existing dictionary of medicine or surgery, and to admit of this the work

will extend to twelve volumes of 500 royal 8vo pages each. Illustrations and plates will be given where they will be distinctly useful.

4. The arrangement will be alphabetical, as undoubtedly the best for ready reference, but, in order to save repetition, the more important subjects will be grouped under main headings as far as possible, and a careful system of cross references to these will be introduced. Special attention will be paid to bibliographical references, and a complete and exhaustive index will be given.

5. A special feature will be the manner in which its contents will be kept up to date after it is completed at a very small cost to its possessors—a most important consideration at the present time, when advances in the knowledge and treatment of disease follow each other with such rapidity. Reference to a supplemental volume is troublesome without an indication on the original articles that later information has been given, and by a simple and original device reference to the supplemental volume will be made by marginal notes opposite the articles affected.

It is estimated that the production of the work will involve an expenditure of £10,000.

ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF THE COUNCIL.

AT a meeting of the Council held in the Council Room of the Association, 429, Strand, London, W.C., on Wednesday, October 12th, 1898,

Present:

Dr. ROBERT SAUNDBY, President of Council, in the chair.

Dr. JOHN WARD COUSINS, President-elect.

Dr. CHARLES PARSONS, Treasurer.

Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. JAMES BRASSEY BRIERLEY, Old Trafford.
Mr. LANGLEY BROWNE, West Bromwich.
Mr. HENRY T. BUTLIN, London.
Dr. ALFRED H. CARTER, Birmingham.
Mr. ANDREW CLARK, London.
Dr. W. F. CLEVELAND, London.
Professor HENRY CORBY, Cork.
Dr. JAMES CRAIG, Dublin.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Dr. MAURY DEAS, Exeter.
Dr. E. H. DICKINSON, Liverpool.
Dr. T. M. DOLAN, Halifax.
Brig.-Surg.-Lieut.-Col. E. F. DRAKE-BROCKMAN, London.
Dr. W. DYSON, Sheffield.
Mr. GEORGE EASTES, M.B., London.
Dr. W. A. ELLISTON, Ipswich.
Dr. FREELAND FERGUS, Glasgow.
Professor DAVID W. FINLAY, Aberdeen.
Mr. R. S. FOWLER, Bath.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. ALFRED GODSON, Cheadle.
Dr. C. G. GOODING, London.
Dr. OGILVIE GRANT, Inverness.
Dr. J. GROVES, Carisbrooke, Isle of Wight.
Mr. JOHN D. HARRIES, Shrewsbury.
Mr. J. HUGHES HEMMING, Kimbolton.
Dr. HOLMAN, London.
Mr. T. VINCENT JACKSON, Wolverhampton.
Mr. T. R. JESSOP, Leeds.
Mr. EVAN JONES, Aberdare.
Dr. P. SYDNEY JONES, London.
Mr. JORDAN LLOYD, Birmingham.
Mr. N. C. MACNAMARA, London.
Dr. J. C. McVAIL, Glasgow.
Dr. J. W. MILLER, Dundee.
Dr. JOHN WILLIAM MOORE, Dublin.
Dr. C. G. DRUMMOND MORRIER, Glasgow.
Mr. W. JONES MORRIS, Portmadoc.
Mr. R. H. B. NICHOLSON, Hull.
Surg.-Gen. T. F. O'DWYER, Aldershot.
Dr. ISAMBARD OWEN, London.
Mr. C. H. W. PARKINSON, Wimborne Minster.
Dr. H. H. PHILLIPS-CONN, Reading.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNOR, Stockport.
Dr. H. B. ROBINSON, London.
Dr. JOHN ROLSTON, Stoke, Devonport.
Dr. WILLIAM RUSSELL, Edinburgh.
Dr. ALFRED SHEEN, Cardiff.
Dr. G. E. SHUTTLEWORTH, Richmond.
Dr. E. MARKHAM SKERRITT, Clifton.
Dr. R. SOMERVILLE, Galashiels.
Mr. HENRY STEAR, Saffron Walden.
Dr. W. J. TYSON, Folkestone.
Dr. A. R. URQUHART, Perth.
Mr. T. JENNER VERRALL, Brighton.
Mr. C. G. WHEELHOUSE, Filey.
Mr. JOSEPH WHITE, London.
Dr. S. WOODCOCK, Old Trafford.

The minutes of the last three meetings, held in Edinburgh, having been printed in accordance with signed rough minutes and circulated, were taken as read and signed as correct.

Read letters of apology for non-attendance from Sir Walter Foster, M.P., Dr. Bridgwater, Dr. G. Hare Philipson, Dr. Henry Barnes, Dr. Batten, Dr. John Campbell, Dr. Bruce Goff, Dr. James Lindsay, Mr. Manning, Dr. Philip, and Mr. Williamson.

Read correspondence from Dr. Bezly Thorne complaining of his paper being crowded out of the Medicine Section at the annual meeting in Edinburgh and report from the officers of the Section on the subject.

Resolved: That a letter be written to Dr. Bezly Thorne expressing the regret of the Council that the arrangements of the Medicine Section did not permit of Dr. Schott's paper being read, and enclosing copy of a letter of explanation received from the president and secretaries of the Medicine Section together with a copy of the instructions to the secretaries of sections.

Read letter from the Earl of Aberdeen:

Government House, Ottawa,
September 1st, 1898.

SIR,—I beg to acknowledge the receipt of your letter of August 20th, informing me that at the recent annual meeting of the British Medical Association I was elected an honorary member.

I desire to express my sincere thanks and appreciation of the honour and compliment thus bestowed upon myself.

I remain,
Very faithfully yours,
ABERDEEN.

The General Secretary,
British Medical Association.

Read letter from Professor Durante, of which the following is a copy:

August 30th, 1898.

SIR,—I have the honour to acknowledge receipt of your esteemed of August 20th, 1898, in which you communicate me my election as an honorary member of the British Medical Association on July 26th last.

I thank you very much for the communication of this proof of esteem conferred on me by the honourable members of the British Medical Association, which I consider the highest honour than can be desired by a man of science.

I am very sorry that unpleasant circumstances hindered me to assist this year at the annual general meeting of your Association, but I will certainly assist in the coming year.

I have the honour to be, Sir,
Your most obedient servant,
FRANCESCO DURANTE.

Read reply of the Home Secretary to the Memorial of the Association respecting fees to medical witnesses, stating that, being away from home, he is unable to receive a deputation, but that the subject should have careful consideration.

Read communication to the Marquess of Salisbury with following resolution passed in the Tropical Diseases Section at Edinburgh on Blackwater Fever:

"The Section recognising the wide distribution and appalling mortality from blackwater fever in Tropical Africa, would appeal to the Council to urge on the Government the desirability of sending properly-qualified men to investigate the nature and cause of this disease, with the view of devising effective measures for its prevention and treatment." The motion was unanimously carried at the annual general meeting upon being reported,

and the following reply from the Foreign Office:

Foreign Office,
August 31st, 1898.

Sir,—Mr. Balfour has received your letter of the 26th instant, forwarding a copy of a resolution adopted by the British Medical Association recommending the appointment of a Commission to investigate the nature and cause of blackwater fever, and he directs me to thank you for this communication.

I am, Sir,
Your most obedient, humble servant,
FRANCIS BERTIE.

The Secretary
To the British Medical Association
429, Strand, W.C.

The question of the Ernest Hart Memorial Scholarship was then considered.

Resolved: That a Committee be appointed to draw up regulations for all the Association Scholarships, consisting of the President of Council, the Treasurer, Dr. Holman, and Mr. Macnamara.

Read resolution passed in the State Medicine Section of the Annual Meeting:

Vaccination Bill.—That in the opinion of this Section the Vaccination Bill at present before Parliament should be withdrawn in order that the Government may have the opportunity of fully considering the views and facts which have emerged in the discussion of the Bill on the part of the profession and the public, and that a new Bill should be introduced next session.

Read resolution passed in the State Medicine Section of the Annual Meeting:

Pollution of Rivers.—That in the opinion of this meeting: (1) Further legislation for prevention of rivers pollution is urgently required.

lengthened experience having shown that the Act of 1876 is in many respects deficient; (2) that the Bill at present before Parliament is insufficient and unsatisfactory; (3) that the Parliamentary Bills Committee of the British Medical Association should take action in the matter.

Resolved: That the resolution of the annual meeting respecting the pollution of rivers be referred to the Parliamentary Bills Committee.

Read resolution passed in the State Medicine Section of the annual meeting:

Quality of Milk.—That, in the opinion of this meeting, there should be a legal standard of fat required in milk sold to the public.

Resolved: That the resolution of the annual meeting on the quality of milk be referred to the Parliamentary Bills Committee.

Read resolution passed in the State Medicine Section of the annual meeting:

Separate Section of Public Health.—That it is recommended to the Council of the British Medical Association that in future annual meetings of the Association there be a separate Section for Public Health.

Resolved: That the name of the Section "Public Medicine" be changed into "State Medicine."

Read resolution passed in the Section of Psychology of the annual meeting:

Legislation for Inebriates.—That the Psychology Section at its annual meeting desires to press on the Council of the Association the urgent need of further legislation for the cure and treatment of habitual inebriates, and its unanimous opinion that no such legislation will be satisfactory or effectual until (1) it provides for the compulsory care of habitual inebriates of all classes of society; or (2) prohibits the sale of intoxicants to known and certified inebriates. The Psychology Section urges the Council of the Association to use its powerful influence to obtain this much-needed reform.

Resolved: That the resolution passed in the Psychological Section of the annual meeting be referred to the Inebriates Legislation Committee.

Read resolution passed in the Surgery Section of the annual meeting:

Anæsthetics.—That this Section memorialises the Government of India to publish in its yearly hospital returns the total number of administrations of anæsthetics and of fatal cases arising therefrom.

Resolved: That the resolution passed in the Surgery Section at the annual meeting be referred to the Anæsthetics Committee.

Resolved: That a small Committee be appointed to consider the question of fees paid to Poor-law medical officers, consisting of Mr. Jones Morris, Dr. Ward Cousins, Mr. Jordan Lloyd, Dr. Woodcock, Dr. Dolan, Mr. Langley Browne, Dr. Sheen, and Mr. Vincent Jackson.

Read resolutions passed at a representative meeting of medical officers of health held in Birmingham:

Birmingham, October 5th, 1898.

That the time has arrived when in the interests both of the sanitary service and of the public superannuation for medical officers of health should be established. It was further resolved:

That a copy of the above resolution be forwarded to the Incorporated Society of Medical Officers of Health, the British Medical Association, and the Sanitary Institute, and that they be requested to consider the best means of furthering this.—A. Bostock Hill.

Resolved: That the resolutions from the Birmingham medical officers of health be referred to the Parliamentary Bills Committee.

Communication from the Victorian Branch respecting homœopaths:

Re Unattached Members.

Dear Sir,—The Council of the Victorian Branch desire to bring under your notice the fact that an unattached member, E. A. Cooke, Coltun Street, is practising as a homœopath, and is on the staff of the Homœopathic Hospital. We desire that his name be removed from the list of members, and we would again point out the evils and inconveniences of unattached members.

Yours faithfully,
W. Kent Hughes.

Resolved: That the usual reply, together with a copy of the report containing the various resolutions on the retention and exclusion of homœopaths, be forwarded to the Secretary of the Victorian Branch.

Resolved: That the minutes of the Arrangement Committee of the 11th instant be received and approved, and the recommendations contained therein carried into effect.

The minutes of the Arrangement Committee contain a recommendation that there be two addresses at the annual meeting to be held at Portsmouth, namely, Medicine and Surgery, and that Sir Douglas Powell, Bart., be asked to give the Address in Medicine, and Professor Ogston to give the Address in Surgery. Also that the business of the meeting be carried on in twelve Sections, namely: Medicine, Surgery, Obstetrics and Gynecology, State Medicine, Psychology, Anatomy and Physiology, Pathology, Ophthalmology, Diseases of Children, Pharmacology and Therapeutics, Laryngology and Otology, and Tropical Diseases.

Resolved: That the annual meeting be held on August 1st, 2nd, 3rd, and 4th, 1899.

Read resolution from the Dundee Branch, of which the following is a copy:

I am instructed to send you the accompanying copy of a resolution received from the Registrar of the General Medical Council, relative to the administration of anæsthetics by registered medical practitioners for dental operations performed by persons not registered under the Dental Acts, to which the Council of the Branch asked me to draw attention: "That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible, and recommend that if a charge of 'covering' in connection with such administration of anæsthetics were brought before the General Council it should be entertained and investigated."

R. C. Buist, M.D.

Resolved: That the Council entirely endorses the view expressed by the Dundee Branch.

Resolved: That the General Secretary be requested to inquire and obtain all information possible upon the question of lists of general practitioners in the various colonies in India.

Read abstract of letter from the Burmah Branch, of which the following is a copy:

"With reference to No. 5 of the Schedule of medical practitioners eligible for election we have some little difficulty, as there is no Medical Act in India or Burmah. Should we elect any person who has a diploma from one of the Indian Universities qualifying him to practise?"

Schedule 5 referred to:

5. British subjects residing in our Colonies who are duly qualified medical practitioners in accordance with the Colonial law.

The President of Council reported the receipt of letter from the Jamaica Branch of the Association respecting the Infectious Diseases Notification Act, 1898. The local legislature has passed a law which compels medical practitioners to notify infectious diseases under penalty of a 40s. fine, but provides no payment for the duty thus imposed. The President of Council also reported that he had communicated with Mr. Chamberlain at the Colonial Office, and that the following was the reply:

Downing Street.
2nd September, 1898.

Sir,—I am directed by the Secretary of State for the Colonies to acknowledge the receipt of your letter of the 28th ultimo, and to inform you that the Jamaica Law, No. 22, of 1898, "To provide for the Notification of Infectious Diseases," is now under consideration, and that the subject of your letter will receive careful attention.

I am, Sir, your obedient servant,
C. P. Lucas.

Robert Saundby, Esq., M.D., LL.D., F.R.C.P.,
President of the Council,
British Medical Association.

Read letter from Surgeon-Colonel Evatt, of Hong Kong, to the President of Council, on the subject of the organisation of the Association.

The President of Council reported that he had been in correspondence with Dr. Hamill, of Drogheda, in accordance with minute of Council 4111-4112.

Resolved: That Messrs. Price, Waterhouse and Co. be reappointed Public Auditors for the ensuing year, in accordance with By-law 26.

Resolved: That the 116 candidates whose names appear on the circular convening the meeting (38 of whom were provisionally elected at Edinburgh) be and they are hereby elected Members of the British Medical Association.

Resolved: That the minutes of the Journal and Finance Committee of to-day's date be received and approved, and the recommendations contained therein carried into effect.

The minutes of the Journal and Finance Committee contain the accounts for the quarter, amounting to £10,846 13s. 9d., the adoption of the same, and the auditors' report.

The minutes of the General Practitioners and Ethical Committee were then considered.

Resolved: That the minutes of the General Practitioners and Ethical Committee of the 11th inst. be received and approved, and the recommendations contained therein carried into effect.

The minutes of the General Practitioners and Ethical Committee contain an acknowledgment from Dr. Pickup to the resolutions passed at the annual meeting held in Edinburgh respecting the Coventry Provident Dispensary, and various ethical resolutions and matters.

Resolved: That the minutes of the Premises and Library Committee of the 11th inst. be received and approved, and the recommendations contained therein carried into effect.

The minutes of the Premises and Library Committee contain a report to the effect that the redemption of the land tax has been paid to the Registrar of the Land Tax, Somerset House, to the amount of £380, the accounts for the quarter amounting to £19 11s. 2d.; report of Librarian, and resolutions recommending certain books to be obtained, together with extra shelving accommodation for the books in the Library.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on the first Friday of November, at 4 P.M. —A. R. URQUHART, Honorary Secretary.

STAFFORDSHIRE BRANCH.—The twenty-fifth annual general meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Tuesday, November 1st, at 4 P.M. Business: Introduction of new President (Dr. McAldowie); Address by the President; Report of Council and Ethical Committee; Financial Statement; to decide place of holding next Annual Meeting; Election of Officers and Council for the ensuing year. Dinner at 6 o'clock, charge 5s. Members desiring to read papers are requested to communicate the titles to F. MILNES BLUMER, Stafford, Honorary Secretary.

OXFORD AND DISTRICT BRANCH.—The next meeting will be held at the Radcliffe Infirmary on Friday, October 28th, at 3 P.M. Agenda: (1) Confirmation of minutes. (2) Election of candidates. (3) Short papers and notes of cases: (*a*) Mr. Innes Griffin: Severe Brain Injury; (*b*) Dr. Batt: A Case for Diagnosis; (*c*) Dr. Proudfoot: A Case Simulating Perforation of Gastric Ulcer; (*d*) Dr. Collier: An Unusual Case of Diabetes; (*e*) Mr. M. Style: Sudden Death of a Young Child; (*f*) Communications; (*g*) Propositions. Members wishing to read papers, etc., are asked to communicate at once with the Secretary, WILLIAM COLLIER, M.D., St. Mary's Entry, Oxford.

SHROPSHIRE AND MID-WALES BRANCH.—The annual general meeting will be held at the Salop Infirmary on Tuesday, October 25th, at 3 o'clock; Mr. T. Law Webb, the President, will take the chair. Members who wish to bring forward any business, to read papers, or show cases or specimens or to propose new members, are requested to communicate with the Honorary Secretary.—H. WILLOUGHBY GARDNER, M.D., Honorary Secretary, Swan Hill, Shrewsbury.

NORTH OF IRELAND BRANCH.—The autumn meeting of this Branch will be held in Belfast, on Thursday, October 27th.—J. CAMPBELL, M.D., Honorary Secretary, 21, Great Queen Victoria Street, Belfast.

[illegible] BRANCH: WEST SUSSEX DISTRICT.—A meeting of this [illegible] on Thursday, October 27th, at the King's Head [illegible] P.M. Mr. Bostock will preside. Dinner at 6 P.M. [illegible] will read a paper on Diphtheritic Paralysis. Members [illegible] matters to the meeting are requested to inform [illegible] as possible.—FRANK HINDS, Honorary Secretary, 14, Th[illegible], Worthing.

SOUTH EASTERN BRANCH: WEST KENT DISTRICT.—A meeting of this District [illegible] held at the Hospital, Gravesend, on Friday, November 18th, at 4 P.M., Dr. Charles Firth in the chair. Members wishing to read papers are requested to communicate at once with Mr. LUDFORD COOPER, Honorary Secretary, St. Bartholomew's Hospital, Chatham.

SOUTH-EASTERN BRANCH: WEST SURREY DISTRICT.—The next meeting of [illegible] will be held at the Royal County Hospital, Guildford, on [illegible] October 27th, at 4 P.M.; Dr. Morshead will preside. Dinner at [illegible] Hotel at 6.15 P.M. Charge 6s., exclusive of wine. All [illegible] Branch are entitled to attend, and introduce [illegible] Agenda: To decide where the next meeting shall be held, and to nominate a member of the Branch to take the chair thereat. Papers, etc.: Dr. Nicolson, C.B.: Some Notes on Criminal Lunacy. Mr. J. Griffith: Some Common Injuries to the Eyeball, their Immediate and Remote Complications, and their Treatment. The Hon. Secretary will show a case of Optic Neuritis. The Hon. Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the dinner. Members desirous of exhibiting specimens or reading notes of cases, are invited to communicate with the Hon. Secretary at once.—ALEX. HOPE WALKER, Honorary Secretary, The Common, Cranleigh.

BORDER COUNTIES BRANCH.—The autumn meeting will be held in the County Building, Dumfries, on Friday, October 28th, at 2.45 P.M. A meeting of the Council will be held at 2.30 P.M. Order of business: (1) Election of representative on the General Council of the Association, in place of the late Dr. T. F. I'Anson, Whitehaven. (2) To receive the report of the Subcommittee appointed to consider the question of the representation of the Branch on the Committee of the Cumberland Nursing Association; also to consider a request from the above Association that this Branch should appoint additional representatives on the Committee. Papers, etc.:—(1) Dr. Bird (Carlisle): The Necessity of Hospitals and Sanatoria for the Treatment of Pulmonary Phthisis. (2) Dr. Duncan (Carlisle): Notes of a Case of Procidentia Uteri in a Girl, aged 16; Cœliohysteropexy; Recovery. (3) Dr. Maxwell Ross (Dumfries): The Medical Officer of Health and his Relations to the General Practitioner. (4) Dr. S. McDonald (Carlisle) will describe a Pocket Incubator for Bacteria, with Exhibition of Cultures of Pathogenic Forms, and Demonstrations of Widal's Typhoid Reaction. (5) The President will introduce a Discussion on the Position of Medical Men with regard to Unregistered Dentists who have a Registered Dentist as Partner. Dinner will be served at the Station Hotel, Dumfries, at 5.30 P.M. Price of dinner ticket 5s., exclusive of wine. Members intending to be present at the dinner will greatly facilitate arrangements if they will kindly notify Dr. Maxwell Ross, Dumfries, of their intention by October 27th at latest.—W. F. FARQUHARSON, Honorary Secretary, Garlands, Carlisle.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.

A MEETING of this district was held on October 6th at the East Sussex Hospital, Hastings. The chair was taken by Dr. BAGSHAWE, J.P., Mayor of Hastings.

Specimens.—Dr. BAGSHAWE showed a *post-mortem* specimen from a case of Hydropericardium.—Mr. BATTERHAM (for Mr. TICEHURST) showed a Uterine Myoma, weighing 7 pounds, removed by abdominal section from a patient aged 34.

Papers.—Mr. A. PEARCE GOULD read a paper embodying his experience of 43 cases of Trendelenburg's operation for varicose veins of the leg, recommending its adoption in all cases where the filling of the varices could be controlled by pressure on the internal saphena vein. His results had been most satisfactory.—Dr. HEWLAND read notes of 6 cases of "Hay Fever" presenting "sensitive areas" of the nasal mucous membrane, which had been successfully treated by electrocauterisation of these areas. He explained the usual position of these areas by diagrams of the distribution of the sensory nerves of the nasal fossæ.

Twenty-eight members and friends were present at the meeting, 14 of whom afterwards dined together at the Grand Hotel.

SPECIAL CORRESPONDENCE.

PARIS.

The Abuse of Hospitals in Paris.—The Gynæcological Congress at Marseilles. Army Medical Service Manœuvres.—General News.

DR. VARIOT, Physician to the Trousseau Hospital, is one of the medical men who are anxious to prevent well-to-do patients from being treated at hospitals. Two well-dressed women lately took a well-dressed child to his out-patient department. Dr. Variot asked them if they were in necessitous circumstances, and they answered in the negative. Dr. Variot then told them if they gave 15s. to the fund devoted to help his poor patients, he would give them advice about their child. They were very abusive, and lodged a complaint against him at the Assistance Publique. Dr. Napias, the Director, sent one of his inspectors to ask for an explanation. Dr. Variot writes to the *Temps* that he has adopted the custom of not treating gratuitously at the hospital any but sick poor; the patients in easy circumstances who appear there he invariably calls upon to pay a small fee, or else he sends them away without treatment. The sums thus obtained are taken charge of by the house-surgeon, who expends them in the purchase of comforts for the convalescent children in Dr. Variot's wards. The *Temps* admits that the seeking of medical advice at hospitals by any but those unable to pay

fees is an evil, but fears that no remedy can be found. In many cases decent clothes are indispensable in order to get a bare livelihood, yet the wearers suffer great privations, and cannot pay fees for medical advice. The clothes test, which is the only one, may not always be a just one. Dr. Peyron, when Director of the Assistance Publique, suggested that out-patient departments should be entirely suppressed. Formerly they were necessary, but not now when there are so many District Bureaux de Bienfaisance and dispensaries. The medicine prescribed at the Bureaux de Bienfaisance and dispensary consultations are provided by the administration. After the first consultation an inquiry is made which would make a second visit difficult for the pretended poor, who, moreover, being known in their district, would probably be recognised by the other patients. A physician of the Paris Bureaux de Bienfaisance urges that the hospital out-patient department should be done away with, and that cases of the kind there attended to should be dealt with at the Bureaux de Bienfaisance and dispensaries for the benefit of the poor and the instruction of the medical students.

The Gynæcological Congress held this year at Marseilles has just been brought to a close. More than 300 attended. M. Pozzi was President of the Gynæcological, M. Pinard of the Obstetrical Section, and M. Broca of the Section of Pædiatrics. The discussions were very animated; by some they are described as stormy, and the hot sun of Provence is invoked as the cause. The third session will be held at Nancy.

The manœuvres of the Army Medical Service are just completed. Lectures were given in the docks of the Health Service and in the Belle-Chasse barracks. When the troops abandoned a position, they left behind them men supposed to have been wounded; each soldier was ticketed with the wound he was supposed to have received. The nurses and bearers appeared and treated each soldier according to his supposed condition. The *personnel* of the sanitary department consisted of 200 male nurses, 93 subordinates, 3 velocipedists, 91 horses, and 33 mules. The wounded were removed from the temporary field hospital to another, both by water on the Ourcq Canal and on land by railway. Ambulances and invalid carriages were the means of transport. A critical and analytical summary of all the proceedings was afterwards made in the form of a lecture.

Captain Gouraud, who took Samory prisoner, is the son of Dr. Gouraud, physician attached to the Tenon Hospital. Dr. Gouraud is the President of the Œuvre de Protection de l'Enfance.

M. Ruel, Municipal Councillor of Paris, has given a fine property which he owns at Cannes to be converted into a sanatorium for poor girls, from 15 to 22, suffering from anæmia. M. Ruel provides funds for the journey backwards and forwards, and also to defray the expenses of boarding the inmates, who stay six months during the winter. A medical man examines applicants every day at the Rue des Archives.

BERLIN.

Medical Reform.—Instruction in Mental Diseases.—Female Municipal School Teachers.—Hygiene of German Health Resorts.—Diphtheria Antitoxin.—Granular Ophthalmia in West Prussia.

The long-promised and often-discussed reforms in matters of State medicine and public hygiene are slow in coming. There is no sign yet of the human epidemic law, which Virchow some time ago in a Parliamentary speech pronounced to be an urgent necessity. The proposed medical courts of honour have furnished material for endless talk and debate without coming any nearer to realisation; and as to the burning question of district medical officers, their multifarious duties, and ridiculous salaries, it seems to be as far as ever from a satisfactory settlement. Not that the general interest in these reforms has gone to sleep. On the contrary, the discussion on them is to be resumed with fresh vigour this autumn. The Central Committee of the Prussian Aerztekammern (representative body of medical men) will devote a special meeting to the proposed measures of reform. In the order of the day for the next meeting of the Berlin (Brandenburg) Aerztekammer, these same "reforms" take up the chief place, and the Official Committee for matters of Public Health will be occupied by them at their forthcoming meeting.

On the proposal of the Prussian Cultus-Minister, Dr. Bosse, fortnightly courses in mental diseases were held last year for the benefit of Government medical officers in five different hospitals, namely, the new Charité in Berlin, the two municipal lunatic asylums near Berlin (Dalldorf and Herzberge), the new provincial asylum at Göttingen, and medical clinic at Halle. Five Government medical counsellors and fifty-two district medical officers attended in all. Similar courses are to be held this October in Bonn, Marburg, Göttingen, Breslau, Halle, and Berlin.

The Society of Berlin Female Municipal School Teachers some time ago addressed a petition to the Berlin magistrates, asking that the regulation medical examinations should be carried out by female doctors, and were answered to the effect that as the qualification to practise as a doctor was not yet obtainable by women in Germany the request of the petitioners could not be granted. Thereupon the Society have now addressed themselves to the Prussian Cultus-Minister, laying their grievance before him and praying him to use his influence to the end that women be admitted to an examination qualifying them as medical practitioners.

As far back as 1895, the German balneologists assembled in Congress addressed themselves in writing to the Imperial Chancellor, Prince Hohenlohe, complaining of the hygienic condition of many of the German watering places, and asking that steps should be taken to ensure the necessary improvements. They demanded for all German watering places and health resorts: (1) a sufficient supply of pure water, (2) up-to-date drainage, (3) a building for the isolation of visitors attacked with infectious disease, (4) a "morgue," (5) by-laws for house building on the basis of modern hygienic theories, and (6) the establishment of local hygienic committees for supervision of the sanitary arrangements and of the hotels and lodging houses. But time passed, and no effect was given to these demands, and therefore, when the balneologists assembled again this year in Vienna, they decided to address a second letter to the Chancellor on the subject. This time Prince Hohenlohe has replied that steps have already been taken in the desired direction. He says that he has made known the balneologists' wishes to the different federal governments of Germany, and that in Prussia the Cultus-Minister, has already directed the provincial governors "to carry out, as far as possible, the demands of the Balneologists' Congress." That this answer indicates anything like speedy and energetic action cannot be said. The question of funds is not touched on, and of course it is impossible to carry out measures like those proposed without grants of money.

A Ministerial rescript has been issued on the subject of the new solid diphtheria antitoxin, the tests exacted, and the conditions of sale in Prussia. The official examination is to be carried out in the Royal Institute for serum examination and research at Steglitz (near Berlin), as in the case of the liquid antitoxin. Each gramme of the solid must possess at least 5,000 immunising units; it must be in the shape either of yellow transparent leaflets, or of a whitish or white powder, which, dissolved in 10 parts of water, must give a liquid exactly similar in appearance to the liquid antitoxin, and it must be absolutely free from germs, and must not contain any antiseptic admixture. The rescript gives minute directions as to the bottling and sealing of the serum, which may only be sold by pharmacists on production of a written and dated doctor's prescription. Where other directions are not given in the receipt, the serum is to be dispensed in solution, which solution is to be freshly made each time with a cubic centimetre of distilled and sterilised water to 250 immunising units. The price has been limited to M. 2 (2s.) for a dose of 250 immunising units; and M. 8 (8s.) for one of a thousand.

Professor Greeff, director of the eye department of the Charité Hospital, has been deputed to give a four weeks' course on the treatment of granular ophthalmia to the doctors of the Thorn district in West Prussia, medical examination having revealed great prevalence of the disease among the school children, in Thorn itself and its neighbourhood.

CHICAGO.

The Opening of the Medical Schools.—Outbreak of Typhoid Fever.—The Mortality of Soldiers after the War.

THE opening of the medical schools of the city shows a considerable increase in the number of students. This increase was predicted by many owing to a number of circumstances, two of which are particularly important and influential. In the first place the cessation of hostilities between Spain and the United States will increase medical classes because many undergraduate students had entered the service, principally joining the hospital corps, and, as most of these will be released, they will at once, it is expected, return to their regular medical course. Then again, many in the hospital corps, who had not previously studied medicine, will have become interested, and sooner or later take up the study with a serious and definite aim. The generally improved commercial condition permits many who were holding back to advance into a college course of instruction. In a comparatively new country like the great north-western portion of the United States there has not been time for the creation of considerable family estates and the entailing thereof, so that means are ready at hand for the education of sons, nephews, and grandsons; indeed, the son, nephew, or grandson must, in probably nine cases of ten, himself labour for all, or part of, the means to defray the cost of a college course, and when times are hard this is difficult or impossible. Thus it is that the ambitious student of medicine in this region is more or less controlled by commercial circumstances.

Chicago has for the past few months been again suffering a scourge of typhoid fever. The last serious outbreak occurred in 1892, continuing for a year or two. The present epidemic is, it seems, not of a particularly severe type, but there are many cases. There can be no question whatever that the pollution of the water supply is the cause of the existence and continuance of the disease. While this is universally known among the people, and they have time and again, through the public press, been warned against drinking the city water, unless after it had been thoroughly boiled, they still persist in disobedience of the injunction, and the consequences of sickness follow. Aside from this typhoid outbreak the city has been especially free from contagious diseases.

Dr. Nicholas Senn, the eminent surgeon, who left his private interests to serve in the war, and who has been chief of the operating staff in the field, has written home and has strongly emphasised what all military history abundantly shows touching mortality in an army. Dr. Senn says that the Cuban and Porto Rican expeditions have again exemplified that the greatest horrors of war are caused by disease and its consequences rather than by arms of destruction. This observer also maintains that home-sickness is a most pronounced element in the onset of sickness in a camp, and a decided factor in the prognosis, once the soldier becomes ill. Comparing and giving some figures, Dr. Senn writes:

> In summing up the casualties of the war just ended, it is safe to make the statement that the number of killed, and the number of deaths resulting from the immediate effects of wounds, will not exceed 280. The number of wounded will in all probability reach 1,425. The number of deaths from malaria, dysentery, yellow fever, and typhoid cannot be estimated at this time, as these diseases are still prevailing, and will claim many victims before the troops are recalled. The loss of life and the suffering, as well as disability as a claim for pension, caused by disease and the effects of climate, will exceed by far those caused by Spanish bullets.

EDINBURGH.

Opening of the Medical Schools: Sir T. Grainger Stewart on the Prevention of Tuberculosis: Professor Rutherford on Hypnotism.

THE medical classes in the University and in the Edinburgh Extra-Academical School were opened for the winter session on Tuesday last, October 18th. In most cases the serious work of the session was at once begun, but in some cases more or less formal introductory lectures or "outlooks" on the subject of the class were given.

Thus Sir Thomas Grainger Stewart reverted to one of the subjects of his presidential address at the recent meeting of the British Medical Association in Edinburgh, and also discussed the present position of what has come to be called "The Campaign against Consumption." He referred to the mortality caused by that disease, and in particular the mortality in the City of Edinburgh during three periods of seven years each, from 1877 to 1897, comparing that mortality with the mortality from the so-called zymotic diseases during the same periods. He was glad to see that the City Corporation of Edinburgh was fully alive to the urgent importance of these figures, and the history which surrounded them, and had already given indication that they were ready to face and grapple with the question in the interests of the public health. The position of New York in relation to tuberculosis and its notification as an infectious and contagious disease was also spoken of. The lecture was closed by some practical suggestions, the last being that there should be compulsory powers to remove dangerous cases—that is, cases nearing a fatal termination, in untoward surroundings, and which could not be fully isolated to a place of safety.

Professor Rutherford, in the class of physiology, took hypnotism for the subject of his opening lecture. He traced the history of the subject, and referred to its practical aspects. The scientific explanation of its phenomena seemed yet impossible.

GLASGOW.

Opening of the Medical Schools.—Memorials to the late Principal Caird.—Dr. J. B. Russell.—Proposed Reconstruction of the Royal Infirmary.—Dispensary Department of the Western Infirmary.

THE different medical schools of Glasgow have resumed work this week (Thursday, October 20th) for the winter session, with as usual but little ceremony. There are few changes in the medical teaching staffs, but at the University the session has been opened by an inaugural address by the new principal, the Rev. Dr. Story, who has already been installed and has assumed the responsibilities of his office.

The opening of another session recalls the severe loss the city and the University sustained by the death of the late Principal Caird, and it will interest many to hear that a number of his impressive University addresses have been prepared for the press by his brother, the Master of Balliol, and have just been published, while a volume of his University sermons is to follow shortly. Since Dr. Caird's death two memorial schemes have been promoted, and will, it is hoped, soon be successfully completed. The object of the one was to supply a fund the income from which would be applied to some educational purpose connected with his name in the University, and for this over £6,500 has been subscribed. The other scheme, the subscriptions to which are limited to one guinea, appeals more to the students and former students, and aims at putting a stained glass window to his memory in the Bute Hall.

The promotion of Dr. J. B. Russell to the Local Government Board for Scotland, and his consequent transference to Edinburgh, will be a loss to many of the medical institutions of the city, besides depriving it of its distinguished Medical Officer of Health. He has been an active manager in particular of the Western Infirmary, of the Royal Hospital for Sick Children, and of the Central Dispensary, and his counsels will be much missed at the Boards of these institutions. At the meeting of the Glasgow Town Council held on October 17th Bailie Dick spoke with regret of the resignation of Dr. Russell. He said that in 1865, when Dr. Russell joined the corporation employment, they had 1,177 deaths from typhus, while last year there were 53 cases of typhus altogether, and only 5 deaths. In 1865, when the population was something like 428,000, there was a death roll of 13,914, while in 1894, with a population of 686,820, the total deaths were 13,674.

In this connection it may interest many to hear that progress is being made in the carrying out of the two large schemes which the Royal and the Western Infirmaries have at present on hand. The proposed plans for the reconstruction of the Royal Infirmary (Diamond Jubilee scheme) are still under the consideration of the Subscribers' Committee and the medical staff, though it is hoped that details will soon be settled, and a start made with the erection of temporary wards.

The Western Infirmary managers still require about £8,000

to complete and equip their new Dispensary buildings. But, in the meantime, their architect has produced plans, which have recently been under the consideration of the staff, and have met with very general approval. These plans, besides giving suitable waiting hall and rooms for all the different departments of medical work, provide for two small wards and some nurses' and other accommodation, which should help to relieve the infirmary wards. When completed, this department of the Western Infirmary will, without doubt, be one of the best in the kingdom.

LIVERPOOL.

Proposed Union Sanatorium for Tuberculosis.—Donations towards Further Extension of the Buildings of the Medical School.—Meeting of the Governors of University College: the Treasurer's Annual Statement.—New Out-Patient Rooms for the Stanley Hospital.—The Crowding of St. George's Hall.—The Magistrates and the Conscientious Objectors.

Dr. Nathan Raw, the Medical Superintendent of the West Derby Union Infirmary, has laid before the Board of Guardians a scheme for dealing with tuberculous cases occurring among the poor, of which a good deal will probably be heard in the near future. Having regard to the great number of cases of tuberculosis occurring within the area of the West Derby Union, which is the largest Union in the kingdom, and to the great number of acute cases which are annually admitted to the wards of the hospital, Dr. Raw suggests the advisability of attempting to treat the earlier cases in such a way as would be most likely to promote their recovery, and to isolate those cases which, while they are hopeless as regards recovery, are yet a source of danger to others. His proposition is to erect a sanatorium in some suitable locality in the country near Liverpool, where there would be every possible facility for carrying out the open-air treatment of the earlier cases, with a view to their ultimate recovery. He further advocates the erection of a suitable building for the reception and isolation of the incurable cases, where the patients would have the benefit of decent surroundings and skilled nursing, and would be no longer a source of infection to their friends and families. A sanatorium with 40 beds would probably be found sufficient at first. The guardians have given the matter their careful and favourable consideration, and, judging from their enlightened policy as exemplified in their past actions, it is considered probable that it will not be long before they take steps to carry out the proposals of Dr. Raw. This is the first time that a Board of Guardians has approached this question at all, and it is not too much to hope that the West Derby Board will be the inaugurators of a system of dealing with tuberculosis which will be universally adopted, and will lead, in conjunction with other measures, if not to the total extinction of tuberculosis, at least to its restriction within narrow limits.

The authorities of University College have promptly followed up the inauguration of the new laboratories for physiology and pathology by making an appeal for funds to complete the medical school by the provision of new anatomical rooms and improved premises for the professorial teaching of medicine, surgery, therapeutics, and the other subjects in the medical curriculum which are taught in a school. The total cost of these buildings is estimated at £20,000, of which sum the Earl of Derby has already promised a fourth, and Mr. Ralph Brocklebank, the Chairman of the Royal Infirmary, has given £2,000. It may be confidently anticipated that the next few weeks will see the remaining £13,000 subscribed or promised, and that the construction of the new buildings will be proceeded with at an early date.

The annual report of the Council of University College, presented at a meeting of the governors which was held on October 15th, contains much matter for congratulation. Among the distinctions gained by former students of the College, it cites the nomination by the Royal Society of Mr. S. R. Christophers, M.B.Viet., as one of the investigators who are to be appointed by the Government to report on the occurrence of malaria in British colonies and dependencies. The appointment of Dr. Kanthack, a former student of the Liverpool School, to the chair of Pathology in the University of Cambridge is also noticed, and it is stated that the Scholarship in Medicine in Victoria University has been won by Mr. J. C. Mann, who is the first Liverpool student who has gained the distinction. The Treasurer's report is also highly satisfactory; it shows a balance of £748 to the credit of the College, instead of the deficit which has existed at the close of every previous financial year, and it notices the fact that the total assets of the College, including lands, buildings, and endowments, amount to £400,000.

The recent action of the Committee of the Stanley Hospital in opening two additional wards is to be followed by the erection of new premises for the out-patient department. This hospital, which was opened on a very modest scale in 1867, was the first in Liverpool to open an out-patient department for supplying advice and medicine to the poor. Previously the work was carried out for the most part by the Liverpool dispensaries alone. During the last few years the Royal Infirmary has developed a large out-patient department, but it supplies medicines only to certain selected cases and under certain restrictions, the great bulk of the out-patients who are unable to buy their medicines being still treated at the dispensaries. The Stanley Hospital is in a part of the city far away from the dispensaries, and has excellent special departments for diseases of the eye and the throat. It is resorted to largely by the class of patients who in other localities would make use of the dispensaries; consequently, the number of out-patients at the Stanley Hospital is greater than that at any other hospital in Liverpool, and continues to grow with the increase of the population in the north end of the city. The number of attendances of out-patients was 10,000 in 1867, and in 1897 reached a total of 53,534. In the latter year the number of fresh cases was 17,949, which is the largest number of fresh cases seen at any hospital in Liverpool. The new buildings will cost £2,500, which sum will be granted by the Trustee of the Lyon Jones Fund. The foundation stone was laid on October 13th by the Lord Mayor of Liverpool (Alderman John Houlding) in the presence of a large gathering of members of the Committee, the medical staff, and the supporters of the hospital.

The large number of complaints which have been made by persons who were first invited to be present at the ceremony of conferring the degree of D.Sc. on Lord Lister in St. George's Hall, and who were afterwards unable to obtain as many tickets as they required, has called forth a letter of explanation and apology from Principal Glazebrook. It appears that the Committee was led to believe that it would be impossible to fill the hall, and it therefore issued invitations widely, promising reserved seats to all who accepted. In this expectation they were wrong, and they found that they had promised more than they were able to perform, as a very large proportion of those who were invited accepted. The Committee were overwhelmed by the success of their undertaking, and whatever disappointment may have resulted was not due to any intentional want of courtesy on their part.

Much unwillingness is apparent on the part of magistrates to grant certificates of exemption from vaccination to objectors who fail to show that their opposition to having their children vaccinated arises from genuine conscientious scruples. On a recent occasion the presiding magistrate at Llandaff, addressing an applicant for exemption, declared his intention of refusing to adjudicate on vaccination cases, as he declined to make himself responsible for the scourge which would ultimately overtake the country if the Act remained in force. His colleague on the Bench endorsed his remarks, and the application was refused. Two similar applications at the Colwyn Bay police court were also refused. In this connection the following case, reported by one of the officials of the West Derby Board of Guardians, and referred to at their last meeting, is worth quoting. It appears that on October 5th a man delivered to the official a certificate of conscientious objection respecting one of his children whose vaccination had previously been postponed to October 6th by a medical certificate. In the course of conversation he admitted that he had no strong feelings on the matter, and was only actuated by what he had read. He practically admitted that he went to the magistrate because he did not wish to have the trouble of furnishing the official with medical certificates of unfitness, and said the child would probably be vaccinated when older

and stronger. When told that he would be sent another medical certificate to replace the one which had expired, he raised no objection, "As long as I am not bothered in the meantime."

CORRESPONDENCE.

ROYAL MEDICAL BENEVOLENT COLLEGE.

SIR,—May I ask you to insert the enclosed appeal, a copy of which has been sent to every medical man on the *Register*. The frequent bourne of circulars unread is a matter of common knowledge. In the hope of reaching those who may have consigned our appeal for help to the wastepaper basket, I now ask your aid by giving us space in the BRITISH MEDICAL JOURNAL.—I am, etc.,

C. HOLMAN,
Treasurer.

October 18th.

Royal Medical Benevolent College,
Office: 37, Soho Square, London, W., October, 1898.

DEAR SIR,—The growth of Epsom College within the last decade has surpassed the most sanguine hopes of those interested in its prosperity, and it has now taken its place amongst the most successful public schools of the country. The distinctions won by pupils of the College at the universities and medical schools, and the success achieved by them in various walks of life, afford convincing evidence of the excellence of the education given within its walls. The large share of academic honours that has fallen to the Foundation Scholars is a gratifying proof of the efficiency with which the College fulfils one of the chief purposes of its founder. The steadily increasing progress of the College is, however, in danger of receiving a check from insufficiency of funds. Besides providing a first-class education, practically free of cost, for fifty sons of medical men, and exhibitions for several others, the institution gives pensions to fifty aged medical men, or the widows of medical men. Moreover, in connection with the College there are other annuities, some of which are for the aged daughters of medical men; and there are also nine presentations to St. Anne's Schools for their orphan daughters.

We who, with our colleagues of the Governing Body, take a deep interest in the welfare of this most necessary and useful institution, therefore earnestly appeal to every member of the medical profession to contribute to its support. When we state that a sum of more than £6,000 is expended each year, barely one half of which is at present contributed by the medical profession, it will be granted that the profession does not do all that might reasonably be expected of it for the maintenance of what may justly be called its most important charity. We are confident that these facts only need to be mentioned to ensure a satisfactory response to our appeal. Proverbially charitable to all mankind, members of the profession are not likely to be indifferent to the necessities of their own brethren.

It may be well here to correct an impression which appears to exist in many quarters that the College is solely a charitable establishment intended for the sons of medical men, and giving only a narrow scientific training. The school consists for the most part of paying pupils, and these and the Foundationers are on a footing of absolute equality, both in the class rooms and in the playing fields. The education is of the most liberal character, and is directed not so much to the preparation of the boys for any particular profession as to the development of their intellectual powers in a way that will enable them, when the time comes, to apply them readily and successfully to the acquisition of special knowledge of any kind. The soundness of the literary training is shown by the fact that in recent years several classical scholarships have been won at the universities by Epsom boys.

We wish it, however, to be clearly understood that the funds for which we are appealing will not be applied in aid of those of the scholars who are paying pupils. That large section of the school is self-supporting, and here we would only point out to the profession that the numbers of our scholars have been steadily increasing, that more accommodation has been recently provided, and that by sending their sons to the college they will not only secure them a sound first-class education, at a moderate cost, but will indirectly assist in the education and maintenance of those who are less fortunate—namely, the Foundation Scholars and the Pensioners.

Like other great schools of England, Epsom has its "Foundation," but, unfortunately, instead of being like these older schools, secure in the possession of a sufficient endowment, Epsom has mainly to depend for the purposes of its Foundation on a precarious annual income.

It is for the charitable side of the institution (the Foundation Scholars and the Pensioners) that we appeal to the *esprit de corps* of the medical profession, and to the generosity of the public, which is under a debt of obligation to that profession. Unless a larger measure of public support can be secured than can be counted upon at present, the Council will be compelled to make a considerable reduction in their expenditure for charitable purposes. This course, entailing, as it necessarily would, much privation on many deserving persons, they are most anxious to avoid. It is not much they ask for: an annual subscription of one guinea entitles to the privileges of a governor; but smaller subscriptions or donations will be gratefully received. If each member of the profession would give 10s., or even 5s., a year for a very few years, the position of the Pensioners and Foundation Scholars would be placed on a secure financial basis, and the Council would be able to improve the school and extend its usefulness still more.

We are fully aware that during the last year or two the calls upon every class of the community for contributions to charitable objects of all kinds have been unusually numerous, but we venture to think that it would be difficult to find an institution which, having regard either to the value of the work which it is doing, or to the merits of the persons for whom it is done, has stronger claims on the profession and on the public than the Royal Medical Benevolent College, Epsom.

Subscriptions may be sent to our Honorary Local Secretaries: to the Bankers, Messrs. Barclay and Co., 19, Fleet Street, E.C.; to Dr. Holman, the Treasurer, 26, Gloucester Place, Portman Square, W.; or to the Secretary, at the office, 37 Soho Square, W.

We are, dear Sir,
Your faithful servants,
J. FAYRER, Chairman of the Council.
C. HOLMAN, Treasurer.
J. BERNARD LAMB, Secretary.

ASEPTIC MIDWIFERY.

SIR,—Having attended some 3,000 cases of midwifery without a death from septicæmia or from any puerperal disease, I think I may claim to speak on this important subject.

When Dr. Jardine asserts that puerperal septicæmia is a preventable disease, he practically infers that it is preventable by the medical practitioner, and I at once join issue with him on this point. Puerperal septicæmia arises both *ab interno* and *ab externo*. The cause in the first instance is almost entirely due to putrefactive changes in retained blood clots or a portion of membrane. How do the pathogenic bacteria obtain entrance thereto, and so set up sepsis? Dr. Jardine suggests that it is by means of the practitioner's fingers passing over the anus soiled by fæces, or through a microbic colony whose habitat is in the external genitals, aided and abetted by the use of "some lard, fresh butter, castor-oil, vaseline, or any dirty grease."

I leave out the "dirty grease," having no knowledge of this product in the matter, but I have used the other four as occasion demanded, and puerperal sepsis has not arisen; and I have yet to learn these substances are the chosen grounds for pathogenic microbes to increase and multiply thereon. Nay, further, I consider fresh lard one of the most valuable lubricants we possess obstetrically, and have saved many rigid perineums from rupture by introducing it into the vagina in small pellets during the recession of the fœtal head, and by frequent inunction of the perineum outside.

How the putrefactive changes are set up in the retained blood clot, etc., is just as great a mystery as the changes that take place in, say, a labial abscess, which gives rise to the most stinking putrefactive pus imaginable, for there has been no possibility of the entrance of pathogenic microbes from without into this closed cavity, and to assert that their entrance into the vaginal canal, retention during labour, and subsequent multiplication is due to the fingers of the medical attendant is an assumption without proof, and one that will not be readily accepted by general practitioners. The other causes of puerperal sepsis—the *ab externo*—are manifold, though not so frequent as the *ab interno*. Defective drain pipes, allowing the entrance of pathogenic microbes into the house, open middens, the emptying of ash pits full of putrefactive germs in the vicinity of the lying-in house; unclean clothing, deleterious food, and infection brought in by visitors, are all, more or less, sources from which puerperal septicæmia takes its origin, finding an entrance into the patient chiefly by inhalation.

The differential diagnosis between these two classes is to be found—in the first, by the putrefactive changes in the lochia, by uterine tenderness and inflammatory action, whilst in the second, the lochia retain their normal character, and there is an absence of all local inflammatory symptoms, the general symptoms of septicæmia, however, remaining the same in both cases. Are all these cases of puerperal septicæmia pre-

ventable? I again assert that I do not believe that puerperal sepsis arises, as a rule, through the action of the medical attendant; therefore, they are not preventable in that sense. Moreover, in the vast majority of cases, it is quite impossible to ascertain whether there is a retained blood clot or portion of membrane; and to commence to douche the uterine cavity twice a day upon this possibility will not commend itself either to patient or doctor. And with regard to the preventability of cases arising *ab externo*, this could only be accomplished by a sanitary inspection of the house and district wherein the patient resided, with a personal superintendence of every domestic incident—a course which is absolutely impossible. Therefore, again, they are not preventable in a Jardinian sense. Puerperal septicæmia is, in my experience, often very insidious in its approach, but may frequently be detected before the supervention of either rigors or fever. If I might coin a phrase, there is a "facies puerperalis septicæmica" which has in more than one instance aroused my suspicions that there was evil impending, notwithstanding that both patient and nurse declared all was well, but the use of the thermometer has proved the truth of my suspicions. This is difficult to describe in words. There is, however, an anxious cast of countenance, a wearied aspect of face, a heaviness about the eyes, and an absence of that cheerfulness which is usual when all is going on satisfactorily; but, apart from this, a diurnal use of the thermometer, especially between the second and fourth day, will at once indicate approaching mischief. I attribute my success in puerperal septicæmia, which is far more frequent in large cities than in country residences, to the following: I personally cleanse the external genitals immediately after labour is completed; I superintend the removal of all soiled personal apparel and bedclothes; after severe or instrumental labour, or manual extraction of placenta, I administer carbolic acid so as far as possible to render the patient aseptic. On the first appearance of symptoms indicating the approach of septicæmia and before it can be differentiated, I syringe out the uterine cavity with an antiseptic in case it should be of *ab interno* origin, and increase my dose of carbolic acid to 5-7 grains every two hours. I believe this is all that is necessary to ensure perfect success, and though a firm believer in antiseptic precautions and treatment in all puerperal cases, I am quite in accord with Dr. McCulloch's protest against what might be termed "asepsis run mad." If there are a few practitioners who, with fingers soiled by fæces, etc., examine the patients *per vaginam* or who leave them lying in blood-soiled and wet clothing, I do not think that all obstetricians are to be taken to task on that account, and cases of puerperal sepsis put down to their want of due care in the treatment of the patient.

There is always a tendency on the part of the public to attribute blame to the medical attendant if septicæmia arises; therefore it is not only undesirable, but absolutely wrong, that it should go forth that all these cases are preventable by the doctor if due care is exercised by him, without absolute and ample proof—proof, however, which Dr. Jardine's lecture lamentably fails in demonstrating.

Finally, I also protest against (what I consider to be) any unnecessary exposure of the patient as advocated by Drs. Jardine and Maclennan. Every exposure that by any means can be dispensed with is, in my opinion, an outrage on feminine delicacy, and I am surprised that the latter gentleman should sneer at those obstetricians who, from this cause, pass a catheter without visual aid. My experience is that whilst women will not object to exposure where instrumental interference renders it absolutely necessary, or a difficult passage of the head demands it, they at once resent the least exposure when a binder, etc., is applied, and to infer that those who so object are not right-minded women is to cast a great slur upon that innate natural modesty which is a characteristic of the female sex.—I am, etc.,

Liverpool, Oct. 4th. ARTHUR WIGLESWORTH.

SIR,—With the general tenour of Dr. Jardine's remarks on this subject few will disagree; but when he says that supervision "as efficient" as that in maternity hospitals can be taken in private practice, I must decidedly take exception. It is all very well where everything in connection with the case can be perfect. But when this is not so, and the nurse but imperfectly trained, if at all, and the doctor is called in after labour has been in progress for some hours, how can there be efficient supervision?

Possibly, too, examinations have been made with septic hands, and the mucous membrane of the vagina scratched. At any rate, there has been no attempt at asepsis as to person or surroundings.

Again, inasmuch as it is not possible to get these cases surgically "aseptic" one cannot agree that the man who does not render them so is criminally responsible. He should, however, employ every means to prevent septic invasion.

Nor can one agree that all infection comes from without, and that the vagina is already aseptic. All sorts of micro-organisms frequent that canal, and multiply amongst its folds, and in its intercepted and decomposing discharges. These are often profuse, and altered in character, and have not the power to render the microbes inert. So long as there is no raw surface they do no harm beyond setting up local irritation, but as soon as an open surface is presented they may obtain access to the blood and produce their dire effects. It is much more important to give an antiseptic douche at the beginning than at the end of labour. If we clear out these organisms then we may keep them out afterwards.

If all means are taken to guard against septic invasion, medical men should not be held responsible for deaths that occur, as some will, from septic causes. The rural districts afford the largest number of these, and they ought not to occur.

But the medical man is often called in to find that labour has been in progress for hours; that both external and internal parts are in anything but an aseptic condition. The mucous membrane is torn, the perineum perhaps lacerated, the os uteri possibly also, and the microbes during the protracted labour have probably already gained access to the tissues while the vital powers have been so reduced as to render assistance to them *nil*.

Certainly the external parts should be thoroughly cleansed, an antiseptic douche should be given early in labour, and at its conclusion the lower part of the vagina should be again gently douched, the external parts cleansed, and aseptic dressings applied. By these means the septic mortality will be kept at a minimum, but until the conditions are changed, until parturient women obtain early and efficient aid in their trouble, a certain number of cases of sepsis will occur, and a certain number of deaths therefrom. It is not, however, in the death-rate alone that the tale of septic mischief is told, but in the consulting room of the gynæcologist and the out-patient department of our special hospitals.—I am, etc.,

Lowndes Street, S.W., Oct. 18th. DAVID THOMSON.

SIR,—The following is the result of five years' work in the Female Hospital, Aldershot, up to the end of last month.

There were 763 confinements without a maternal death. The routine treatment is as follows:

1. Bowels and bladder attended to if required.
2. Vulva and external parts cleansed with soap and water by nurse. Scrubbing brush not used.
3. Douche of hot solution of Condy's fluid. (This was so often required that it has now become "the usual treatment.")
4. After confinement the parts are cleansed with solution of the perchloride of mercury 1 in 2,000, and a hot (110° F.) vaginal douche of the same administered.
5. A perchloride douche, 1 in 4,000, is continued twice daily for six days.

The hands of all attendants are of course thoroughly cleansed with soap, water, and a nail brush, and prior to an examination the fingers and hand are smeared with carbolic lard 1 in 20.

Up to July last the hospital was in wooden huts; now we have moved into the new Louise Margaret Hospital.

The above results are, I think, highly satisfactory; they are not due particularly to any one medical officer, as, during the period quoted, several doctors had charge. There is a relatively larger proportion of gonorrhœal infection in the army than in rural districts or most towns, and it is chiefly on this account that the Condy's fluid injection was established as a routine *ante-partum* practice.—I am, etc.,

W. WATSON PIKE, F.R.C.S.I.,
Major R.A.M.C., Medical Officer in charge.

Louise Margaret Hospital, Aldershot, Oct. 16th.

TUBERCULOUS SPUTUM.

SIR,—Now that an "Association for the Prevention of Consumption and other forms of Tuberculosis" has been formed we may expect that, among other hygienic means for lessening the ravages of phthisis, it will undertake the systematic instruction of the public regarding the infective properties of the sputa of consumptives, and the great risk to the well-being of the community incurred by the careless habits of many patients who expectorate indiscriminately on roads, pavements, floors of railway carriages, omnibuses, and elsewhere, regardless of the fact that from the dried sputum immense numbers of virulent bacilli are borne by the air and inhaled by those in the vicinity. Of these any happening to possess insufficient power of resistance fall a prey to consumption. This, the first lesson to be taught, is easy to be understood.

The second, which has to do with the proper disposal of phthisical sputa, is unfortunately not free from some practical difficulty. At present the highest level of instruction reached is that the consumptive patient is advised to use a spittoon or portable flask containing some more or less efficient germicide or disinfectant, and that the contents should be emptied into the drains. But what happens if, as in country districts, there are no drains? Probably the roadside, ash heap, or garden. These form the substitute, and though some disinfectant may have been used, there can be no security that the germs are really killed and not merely scotched. Even where a system of drainage exists, the effect of cultivation of the tubercle bacillus in sewage or its vitality under such conditions are too little understood to inspire us with any confidence in disposing of the sputa by means of house drains.

It is tolerably clear that there is one means, and only one, that gives us the assurance of absolute safety, and that is destruction by fire. Here the drawback to the present practice is seen. It is impossible to incinerate the highly fluid contents of a spittoon, which may reach half a pint, in any ordinary fire, and therefore I propose that a portable receptacle should be constructed to contain some more or less absorbent substance, which, when saturated with sputum, would form a soft solid, such as even a cottager's fire could easily consume. The new Society might institute some experiments to discover what would be the simplest, cheapest, and most efficient agent for this purpose. Among the substances that might be used are: (1) dry earth; (2) sawdust; (3) sand; (4) coarsely-powdered peat; (5) lime; (6) soot. No germicide would be necessary, but a little turpentine would aid combustion. The great importance of this subject must be my excuse for bringing it before the profession.—I am, etc.

Duchess Street, W., Oct. 17th. W. T. LAW.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—Your editorial (p. 1173) on the above Society is of especial interest to me from the fact that I am the Secretary of a Committee appointed by the Medical Guild to keep in touch with this subject.

You state that a series of questions had been submitted to "many" medical gentlemen, and their replies had been analysed. Unfortunately the analyses had not been published. Special reference is, however, made to the "interesting letters" of seven gentlemen who have had personal experience of this Society.

Of these, one considers it "dangerous to practitioners" and "abused by private patients." Another considers the fees for distances over a mile "should be increased." A third thinks the 1s. fee for intermediate visits "very inadequate," and still another thinks that intermediate visits "should be charged 2s. 6d." Thus out of the seven with special experience, one condemns it altogether, and three others make suggestions which, if carried out, would practically create a new Society.

With regard to the correspondent who considers the payment "on the whole fair and much better than clubs," I should much like to have the figures in reference to ordinary clubs upon which he bases his comparison. My own experience of clubs is small, but such as it is the payment for work done is better than that of the National Deposit Friendly Society, and this at the small sum of 3s. per member per annum, which has, however, recently been increased to 4s.

With regard to the questions whether the terms of this Society are better than an ordinary club at 4s. per member per annum, I showed in the BRITISH MEDICAL JOURNAL for June 4th that at the latter rate the profession would have received £1,647 10s. 4d. more during the year 1896 than it did actually receive from this Society.

At the end of the editorial the "distinctive features" of the Society are stated to be "complete freedom of contract between practitioners and members," and "no compulsion to accept the terms of the Society." If this is so all I can say is that the rules of the Society must have been entirely revised since 1897, or words have completely lost their meaning. In proof of this I quote Rule 48 (*e*), page 23, "Members are at liberty to send for any duly qualified medical practitioner who is willing to attend them on the terms of the Society," etc. Even if special arrangements for payment were made with each member of the Society when one's services were called upon, it would necessitate two different bills of charges—one for the Society at its rate, and one for the patient at the ordinary or special rate agreed upon.

There are many other points which the profession would do well to seriously ponder before accepting the terms of this Society. For example:

Attendance at surgery and medicine for two days	1s. 6d.
Fresh supply of medicine for two days	1s. 0d.

What is meant by "medicine"? The other day I had to supply a private patient with ℥ x of lotion, ℥ j of ointment, a piece of lint and gutta-percha tissue, a gauze bandage, a draught, and six antifebrin powders. Would this little shipping order be expected by a member of this Society along with a consultation for 1s. 6d.?

My own opinion is that the best thing for the profession to do is to improve the status of club practice on the old lines by restricting the medical benefits by a wage limit, by charging a fee for examination for membership, and by raising the annual fee per member to a minimum of 4s., varying in different districts according to the distances to be travelled.—I am, etc.,

Salford, Oct. 15th. R. HANSON WOLSTENHOLME.

THE TREATMENT OF CHRONIC DYSENTERY.

SIR,—Referring to papers on the treatment of dysentery, it would be a serious misfortune if young men going to tropical climates started with a disbelief in the value of ipecacuanha. The discussion at the Edinburgh meeting and recent correspondence must have convinced people that though other methods of treatment are sometimes preferable, ipecacuanha is still our best remedy for acute dysentery.

Much depends on the circumstances of each case. In those cases resembling dysentery, and which if improperly treated may become severe dysentery, but which are really due to irritation associated with fæcal accumulation, ipecacuanha by its purgative action will ultimately cure, but purges and enemata are more rapidly effectual. Other cases complicated with diarrhœa from the small intestines are difficult of diagnosis and treatment. Their dysenteric nature is masked by profuse fæculent evacuations, but on careful decantation mucus, small blood clots, and exudation matter, apparently from superficial follicular ulcers are found. Ipecacuanha may be useful, but often other remedies are required, and I found cinchona powder valuable.

The symptoms of true dysentery vary according to the part of the large intestine chiefly involved. In cases affecting the cæcum and ascending colon there may be infrequent calls to stool and no tenesmus, but when the sigmoid flexure and rectum are chiefly affected there is intense tenesmus and calls to stool are constant. In all cases of true dysentery, ipecacuanha is our best remedy. It is in those cases mostly localised in the lower part of the colon that enemata are also useful, and I can speak as favourably of the modern treatment by small, warm, boracic acid enemata as of the older treatment by enemata of ipecacuanha and opium.

A good alternative treatment of dysentery is by frequent small doses of liq. hydrarg. perchlor., a method brought to my notice by Major Rowney, R.A.M.C. I tested it carefully at St. George's Hospital, Bombay, and found it efficient. When ipecacuanha fails, as it occasionally does, and when dysentery is complicated by other diseases, other lines of treatment have to be adopted.

Besides saline purges I have found saline diaphoretics and diuretics sometimes beneficial. The treatment by saline purges is an old one, and as described by Trousseau, was introduced by Bretonneau, who adopted it from Stoll, Zimmerman, and Pringle.—I am, etc.,

Edinburgh, Sept. 30th. JAMES ARNOTT.

A VISIT TO THE HOSPITAL OF SAN GIOVANNI AT TURIN.

SIR,—During the session of the Ninth Congress of the Italian Society of Internal Medicine Professor Carlo Forlanini kindly offered me the opportunity of visiting his clinic. It was small, having only twenty-five beds, but was adapted in every way to the requirements of modern methods of diagnosis and treatment. What I wish most especially to record, however, was the discovery there, worked out in the concrete form of mechanical and physical contrivances, of two methods of treatment which I had hitherto believed were especially my own.

On entering the laboratory I saw an apparatus for the preparation of some gas, and on asking the professor its use, he said, "It is for the evolution of nitrogen to inject into the pleural cavity, and compress the pulmonary parenchyma in unilateral tubercle of the lung." "What results have you?" I asked. "*Guariscono tutti*" (They all get well), he replied. "And supposing they are cases of pure tuberculous infection?" I asked. "*Guariscono tutti.*" I then asked the professor if he knew that his method was being practised in America. "No," he replied. "I have practised it for ten years, and they must have got it from me." The professor told me further that when the diseased portion of lung had healed, the healthy portion expanded and reoccupied the space from which the nitrogen gradually disappeared.[1]

The second discovery I wish to record was a couch with straps, which enclosed the abdomen or lower part of thorax, and which were tightened and loosened by means of a lever synchronously with expiration and inspiration respectively. Professor Forlanini told me that cases of the most severe asthma were rapidly relieved by the increased expiratory force afforded by this method of artificial compression. As I had carried out the same principle of treatment myself by means of manual compression with most satisfactory results, I could quite realise the great advantage of Professor Forlanini's mechanical contrivance. He told me, moreover, that it was of great use in obstinate constipation and in all forms of venous stasis.

STUART TIDEY, M.D.Lond., M.R.C.P.Lond.

Florence, Oct. 7th.

BLACKWATER FEVER AND QUININE.

SIR,—With your permission I am desirous of supporting Mr. Crosse and others in their opinion of the high value of the quinine salts in the treatment of malarial fevers. My experience extends over a period of two years and of the varieties of fever met with on the West African coast. In the treatment of fever quinine was our "sheet anchor," and whatever drug might be subsequently tried (and seldom was it necessary to have resort to any other) it had the first place. After having treated a great number of cases successfully with quinine, Koch's statement comes as a rude shock to the feelings of an ex-coaster, and I can well understand Mr. Crosse's plain speaking at Guy's Hospital recently, he having but recently returned from Nigeria, with his triumphs over many an awkward case fresh in his mind.

In my opinion quinine has little or no effect on the red blood corpuscle, what damage is done being caused by the disease and not by the drug. That the corpuscle is disintegrated we know, and that if a patient has never had quinine at all. In the mildest cases, treated only with small doses, we notice an icteric tinge (non-hepatogenous), supposed by Quincke and others to be due to changes) in the skin, of the hæmoglobin derived from the blood plasma, where it is in solution, the connective tissues converting it into icteric pigment.

Again, in the most severe cases of blackwater fever I have seen patients get well who have been heroically dosed. I have myself on more than one occasion administered 60 grains as a single dose with advantage. If slight cases and cases not treated at all show changes in the blood and at the same time hæmaturic cases are found by clinical experience to be improved by quinine, and that in big doses, I do not see any reason why practitioners need be afraid of using it. Given that the symptoms of malarial fevers are due to the presence of the plasmodium malariæ in the blood, what other drug will prevent the segmentation of the hæmatozoon or cause its disappearance? When the tropical physician has a better remedy supplied him no doubt he will relinquish his old favourite, but assuredly not till then.—I am, etc.,

Aston, Birmingham, Oct. 17th. ALFRED W. ROBSON, M.D.

[1] See Mechanical Support of Lung in Phthisis, by Stuart Tidey, BRITISH MEDICAL JOURNAL, March 21st, 1896.

CANCER OF THE LIP IN EARLY LIFE.

SIR,—Several cases of so-called "cancer" of the lip, arising at much earlier ages than Dr. Johnston's,[1] have been recorded. Among these I have notes of a case by Krasnobaeff of "epithelioma" of the upper lip and right ala nasi in a girl only 8 years old. The only clinical sign of malignancy was moderate enlargement of the adjacent lymph glands. Batashoff has reported a similar instance, affecting the lower lip in a girl of 13 years. The tumour was the size of a pea, and situated a little to the left of the middle line. It was of a month's duration. There was slight enlargement of the submaxillary glands on both sides. The patient was free from recurrence when last seen, seven months after excision of the primary disease.

Yet another example is by Gangolphe, a boy 15 years old being affected with "epithelioma" of the upper lip. The disease presented as an indurated ulcer of 8 months' duration. The adjacent lymph glands were slightly enlarged. The ulcer was excised, but the glands were not touched. When last heard of, 1 year after excision of the primary disease, he was free from recurrence.

In all the foregoing cases the disease was "histologically verified," and of the epidermoidal variety. Clinical signs of malignancy were, however, conspicuous by their absence. Whether, in cases of this sort, a diagnosis based solely on histological analysis can be implicitly trusted is a question I should be inclined to answer in the negative. We know that in this part congenital blemishes (nævi, moles, lymphangiomata, epidermoidal rests, etc.) are very prone to occur, in association with which histological appearances may be met with (ingrowths, pearls, etc.) similar to those seen in epidermoidal cancers; and in some chronic ulcerative processes, due to tubercle and syphilis, somewhat similar appearances may be met with. It appears to me not unlikely that Dr. Johnston's case may belong to the order of eroded congenital blemishes, rather than to cancer; at any rate, there is nothing in the published report to contradict such an inference.—I am, etc.,

Clifton, October 9th. W. ROGER WILLIAMS

THE SIGNIFICANCE AND CONSEQUENCES OF DIFFERENT STATES OF VASCULAR PRESSURE, WITH THEIR GENERAL MANAGEMENT.

SIR,—On page 937 in the BRITISH MEDICAL JOURNAL of October 1st, in publishing Sir William Broadbent's reply to the discussion on his most instructive paper, Dr. Handford's name is printed in mistake for mine. It was my preceding remarks, reported on the same page, urging that in the early stages of acute and chronic nephritis high vascular tension may be actually beneficial and defensive, which Sir William stated he quite agreed with, adding that he (Sir William) went so far as to state that the early development of high tension in renal disease is a favourable prognostic indication, and that the worst cases are those in which the vascular pressure remains low. From this it follows that, in such conditions, to artificially reduce arterial tension may be disastrous to the patient.

Having, on many previous occasions,[2] urged this view, I was naturally glad to hear my remarks on this point endorsed by Sir William Broadbent, but it is because acceptance of these views on increased arterial tension has a very direct bearing on the treatment of renal disease, and also because I think Dr. Handford may not desire to have such opinions

[1] BRITISH MEDICAL JOURNAL, October 8th, 1898, p. 1062.

[2] For example, in my article on Arterial Tension in Angina Pectoris and its Therapeutical Indications, *Practitioner*, 1893.

attributed to him that I venture to draw attention to this otherwise unimportant error.—I am, etc.,

Patrick Watson Williams, M.D.Lond.

Clifton, Bristol, Oct. 2nd.

"AN ANTIVIVISECTIONIST FIASCO."

Sir,—A copy of the British Medical Journal for October 8th, containing a paragraph headed An Antivivisectionist Fiasco has just reached me. It contains so many inaccuracies that I hope you will afford me space for a few comments. First, the Church Antivivisection Society does not keep a van. The van in question has been sent out this year by the London Antivivisection Society, with which the Church Antivivisection League has no connection. The leaflets distributed from this van were an address read by Dr. Bell Taylor before a medical conference in Nottingham, a pamphlet by Dr. Stephen Smith, and a paper which specially raised the ire of our opponents and was designated by them to consist of a set of "vile lies, which had been more carefully drawn up," and contained statements drawn from your own columns and from other sources, for the accuracy of which extracts those who compiled the paper can vouch, together with a few other papers. I utterly deny that my speech at Bradford consisted of blunderings and false statements; my opponents frequently put into my mouth statements I had not made. I was careful to say that my chief objection to vivisection was based on moral grounds, that in my opinion we were not justified in inflicting pain on animals even if the most beneficial results to humanity ensued. I said I was not prepared to say that some such benefits might not hereafter result from the experiments in question, but that, according to Lawson Tait and Bell Taylor, and others, no beneficial results had as yet been obtained, while, on the other hand, the results of vivisectional experiments had been in many cases misleading.

You say the medical profession in Bradford was not responsible for the conduct of the meeting. This may be true of the medical men as a whole, but those who were present were distinctly responsible for the rowdy character of the proceedings. Dr. Septimus Gibbon, before I had spoken 25 minutes, interrupted me, though I was occupying the chair; said that I was not fit to occupy it, since I was showing myself partial; and from this point we were met with a series of interruptions. I believe the constitution of the meeting cannot have been understood. It was organised by the Church Antivivisection League, the room was paid for by this League and tickets of invitation were issued giving admission to it. Surely under those circumstances the executive had the right to invite anyone they pleased to occupy the chair, and it is the universal custom to invite those in sympathy with the cause which the society advocates, and I have never heard a chairman found fault with for speaking in favour of the cause of the society organising the meeting. Certain speakers had been invited to address the meeting and their names announced on the cards, but Dr. Hime and his friends refused to wait until these had spoken before speaking themselves. Rather than allow the medical men to say they had been unfairly dealt with I permitted them to speak first, but their manner was most violent and insulting, and during the course of some of their speeches they admitted that unlicensed vivisection was practised in Bradford.

As to your concluding remarks that the supporters of the antivivisection cause have not only been defeated but covered with ridicule, I can only say there is another side to the question, and that is that many impartial persons have expressed the opinion that the medical men at Bradford must have had a very poor case, otherwise they would not have resorted to the violent and disorderly means they adopted to defend it.—I am, etc.,

Thomas Perkins, M.A., F.R.A.S.,
Chairman of the Church Antivivisection meeting at
October [illegible]

P.S.—I enclose the paper denounced by our opponents as a set of vile lies.

*** We publish Mr. Perkins's letter with the omission of six words which contain an offensive imputation. It casts a curious light both upon the methods and the attitude of mind of the antivivisection agitators. The only point of importance in the letter is the statement that the leaflet enclosed "had been more (*sic*) carefully drawn up, and contained statements drawn from your own columns and from other sources, for the accuracy of which extracts those who compiled the paper can vouch." The reference is given in some of the cases to our own columns, but in those which we have been able to verify we assert that the alleged quotations—which in several instances are not quotations but paraphrases—are, where not inaccurate, misleading. The Rev. Thomas Perkins has made himself responsible for these statements by distributing them, and we invite him either to verify their accuracy or to apologise for his part in circulating them. If he does not do either the one or the other he cannot complain if he is accused of disseminating falsehoods.

INFECTIOUS DISEASES AND PREPARATORY SCHOOLS.

Sir,—One cannot but feel sorry for the unfortunate experience of a preparatory schoolmaster; but I think it questionable whether his required certificates will ever safeguard him as he anticipates.

I have been physician to Rugby School for close upon eight-and-twenty years, and during that time we have had no official certificate of any kind on the return of boys to school. But parents are every term requested to inform us of any exposure to an infectious illness during the vacation. We are so scrupulously careful ourselves in safeguarding the home when we have had any infectious illness at school that parents are equally conscientious in informing us. Many years ago we had cause to regret the absence of such a certificate, and the offender was a medical man, I am sorry to say.

For many years I asked for such a certificate, but of recent years I have been dumb, for the late headmaster, when I pressed him, gave me this clinching reply: "If you can once bring a case before me that has been caused by the carelessness or concealment of a parent or guardian, I will certainly establish what you desire." I have never since been able to do so.

We have had infectious illness brought to school over and over again, and, after the most searching inquiry, I have had to admit that there was no known infectious illness in the home or the neighbourhood. On calculating the period of incubation it has tallied with the date of leaving home, and I have little doubt was caught in the public conveyances during the transit from home to school. This arises because the public are so unscrupulous in allowing children to travel in an infectious state; and I regret to say that no class of the public are so great offenders as teachers themselves, who often seem literally devoid of all conscience in the matter when the end of an illness, or of the term, arrives, and they want to get rid of their pupils. Then children are despatched to their homes, or to the sea, in anything but a non-infectious condition. It does not seem to be realised that such an act is a breach of integrity, else the fault could rarely be committed by anyone; and the law calls it a criminal act.—I am, etc.,

Rugby, Oct. 18th. Clement Dukes, M.D.Lond.

Sir,—I am the doctor referred to in the letter appearing in the letter appearing in the British Medical Journal, October 15th, signed by "A Preparatory Schoolmaster," and would like to correct some details. I saw the boy on Thursday, September 15th and "carefully" examined him, this examination including neck and chest, though I did not examine the head. History: He had been to the "Zoo" on the day previous and had eaten seven buns! Condition: Felt sick and general *malaise* with cough. Temperature 100°. I had his shirt and jersey off and examined his chest back and front. Result *nil*. There were no spots. On the next day, Friday, September 16th, I saw him. Temperature normal; boy bright and feeling quite well. Returned to school.

The day after the boy's arrival at school his mother received a letter from the authorities (before me now) saying that the boy did not seem very well. The doctor had seen him and was calling on the following day, when he would decide what was wrong. How does this confirm the statement "some of the spots being obviously a week old?" "A Preparatory Schoolmaster" states in his letter to your Journal that he made inquiries, and found that "Out of twenty-three medi-

cal men from various parts of England and Scotland only seven made a thorough examination" before signing the certificates. I presume this inquiry was made from the small preparatory schoolboys themselves, and therefore, as you suggest, quite unreliable—at any rate, in my case absolutely false, and I write this letter in defence of those medical men who examined the other boys before their return to school, feeling sure that they took all the care I did in my examination.

Your correspondent says in his P.S. (referring to myself): "..... he examined the boy's lungs both back and front on the Thursday, and there were no chicken-pox marks on him then. He intimates that the spots were only a 'pustular eruption.'"

This is hardly fair of "A Preparatory Schoolmaster," for it implies that I saw a pustular eruption, and we all know that the eruption of chicken-pox becomes pustular. What I did was to ask him to tell his doctor that each year the boy in the summer suffered from a pustular eruption, as this might assist him in his diagnosis.

Now comes the other side of the question. "A Preparatory Schoolmaster" had a case of chicken-pox in his school before my young patient returned home, but he did not inform his parents of this fact. I pointed this out to him in a recent letter, saying in effect that I thought schoolmasters had a duty to perform to parents as well as parents to schoolmasters.

I quote now from his letter in reply: "On the last evening, one boy, who was in rude health otherwise, was noticed to have spots on his chest. The idea flashed across my mind that it might be chicken-pox, so the spots were examined by three people of experience, and, as they did not present the characteristics of chicken-pox, we were quite satisfied, and thought no more about it in the bustle of entertaining sixteen old boys and twenty others. The doctor lives two miles away, and was just going for his holiday, so we did not send for him." Give and take, I say. "A Preparatory Schoolmaster" requires a medical certificate from parents, but in sending the boys home he does not trouble to seek medical advice when he sees spots on a boy's chest, but is satisfied with the opinion of "three people of experience" (whatever this may imply), whose experience led them into a wrong diagnosis.

I write this letter, sir, solely in defence of those of us who so often give certificates. I took the necessary precautions; and, doubtless, if the sixteen doctors who gave certificates were asked, we would find most of them did likewise.—I am, etc.,

G. Hay Reynolds, M.D.

Hampstead, N.W., Oct. 19th.

OBITUARY.

Lieutenant-Colonel James Ring, M.D., Royal Army Medical Corps, whose death is reported by telegram from India as having taken place on October 16th from illness contracted during the Tirah campaign, served in the Zulu war (medal), also during the Boer war of 1881, and was three times mentioned in despatches for his services to the wounded at the battle of Lang's Neck, the affair at the Ingogo river, and the Majuba Hill. He was twice mentioned in despatches recently for his services during the Mohmand and Tirah expeditions by Sir William Lockhart and Sir Bindon Blood.

ROYAL NAVY AND ARMY MEDICAL SERVICES

THE BLANE MEDAL.

A Blane gold medal has recently been awarded to Surgeon Francis H. A. Clayton, M.B., R.N., H.M.S. *Thrush*, and to Staff-Surgeon Percy W. Bassett-Smith, R.N., H.M.S. *Magdala*. The award of these medals, founded for medical officers of the Royal Navy, has been made by the Presidents of the Royal Colleges of Physicians and Surgeons and by the Director-General of the Medical Department of the Royal Navy.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon H. Foott, M.D., has been appointed to the *Howe*, temporarily, October 14th.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant W. Fletcher, M.B., is seconded for service on the West Coast of Africa, September 24th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel C. L. Swaine, M.D., Madras Establishment, is continued in the appointment of Principal Medical Officer Hyderabad Contingent from June 7th, *vice* Lieutenant-Colonel C. Little, M.D., transferred permanently to the Madras Command.

THE VOLUNTEERS.

The unde... the corps ... Durham ... Wood. ... Engineers.

... S. J. J. Kirby, 2nd Volunteer Battalion the Suffolk Regiment, is promoted ... Honorary Assistant ... the Essex Regiment ... land) Volunteer Battalion ... their commissions, October 19th.

Surgeon-Captain J. M. Harper, 1st Volunteer Battalion the Prince Albert's ...shire Light Infantry is promoted to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Western Counties Brigade Volunteer Infantry, October 19th.

THE R. A. M. CORPS.

A new mess has just been opened at Aldershot for the sergeants of the corps. It is the first brick building allotted for the non-commissioned officers of the Royal Army Medical Corps. Several portraits ... walls, among them one of the late Sir William Muir, a former ... General of the A.M.S. Lieutenant-Colonel Allin, the commanding officer of the Depôt and Training School R.A.M.C., has presented a picture of Her Majesty. The Iron Duke, revisiting Waterloo and passing for the last time under the Horse Guards arch, is also represented. Other pictures of a military character supplement those mentioned. Silver trophies are also to be seen. The mess is situated in Hope Grants Road, facing the open square near the R.A.M.C. guard room. A large company witnessed the opening ceremony.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should ... order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Field Medical Officer, under orders for India (Madras) is desirous of exchanging, to remain at home for another year or longer. Address No. 3,612, British Medical Journal Office, 429, Strand, London, W.C.

MEDICO-LEGAL.

LUNATIC ASYLUM OFFICERS IN IRELAND.

M. D. asks: (1) Does Subsection III of Section LXXXIV of the ... ment (Ireland) Act 1898 make the Pauper Lunatic A... Superannuation Act 1890 compulsory as regards all ex... medical and other officers of the Irish district asyl... section V of Section LXXXIV of the ... that the Pauper Lunatic Asylums ... not to be applied compulsorily or ... (3) Does S... 1898 me... district... matter of right, and, if so, under what Act and on what scale?

*** (1) Subsection III of Section LXXXIV of the Local Government (Ireland) Act 1898, specifically provides that "The Pauper Lunatic Asylums (Ireland) Superannuation Act 1890, shall apply to every officer of a lunatic asylum." Future, as well as present or "existing" officers, are clearly intended, for otherwise the word "existing" would have been inserted before "officer." Besides, unless this were so, there would be no meaning in the subsequent portion of the Subsection, namely, "Save that all reference to that Act to the approval of inspectors of lunatics or of the Lord Lieutenant shall be repealed."

2. Subsection V of Section LXXXIV of the Local Government Act simply secures to "existing officers" of lunatic asylums the privileges conferred by Section CXVIII.

3 and 4. In attempting to answer these queries it will be well, in the first instance, to quote the Pauper Lunatic Asylums (Ireland) Superannuation Act, 1890. Section III of that Act provides (*inter alia*) "In case any officer or servant of any district lunatic asylum ... whose whole time has been devoted to the service ... becomes, from confirmed sickness, age, or infirmity, incapable ... the office in person, or has been an officer or servant in the ... not less than fifteen years, or be not less than 50 years of ... be lawful for the Board of Governors of such asylum ... discretion they think fit so to do, but not otherwise ... the inspectors of lunatics, or one of them)" (these words are re

pealed by the Local Government (Ireland) Act) "to grant to such officer or servant (whether incapable from sickness, age, or infirmity, or having been an officer or servant in the asylum for not less than fifteen years, and being not less than 50 years of age) such annuity in the way of superannuation as they think proportionate to the merits and time of service of such officer or servant. Provided always that the annual amount paid in the way of superannuation to any retired officer or servant of any such asylum shall not exceed the sum of two-thirds of the annual salary and two-thirds of the annual value of the lodgings, rations, and other allowances payable to or enjoyed by the person superannuated at the time of his or her retirement."

Reading the foregoing section, together with Sections LXXXIV and CXVIII of the Local Government (Ireland) Act, we are of opinion that, while any "existing officer" of a lunatic asylum is entitled, under Section CXVIII, to receive a superannuation allowance, he must be content with one calculated on the Civil Service scale. For, it will be observed, the grant and amount of a superannuation allowance was left discretionary with the Board of Guardians of a lunatic asylum. If the grant is compulsory, the amount will assuredly not exceed that provided by the Civil Service scale.

PROSECUTION UNDER THE APOTHECARIES' ACT.

AT the Greenwich County Court on October 7th, before His Honour Judge Addison, Q.C., an action was heard against Mrs. Patricia Hobbs of 81, High Road, Lee, for having acted as an apothecary without a licence from the Society of Apothecaries. Mr. Turner, instructed by the solicitors to the Medical Defence Union, appeared for the plaintiffs, and Mr. Schultess Young appeared for the defendant.

From the report of the case which appeared in the *Lewisham Independent* of October 13th, His Honour asked Counsel to define what an apothecary was, and Counsel replied that an apothecary was one who treated people by judging from external symptoms.

His Honour: One unqualified can open a shop and sell medicines, but is well within the law provided no poisons are sold or treatment of patients undertaken.

Mr. T. W. Tyrrell gave evidence that on two occasions he called on Mrs. Hobbs and was treated for a cold.

The other witnesses, a Miss Cohen and Mrs. Agnes Reader, gave similar evidence, but all but the first witness admitted, in cross-examination by Mr. Schultess Young, that they suggested the medicine required—a tonic advertised.

Mrs. Hobbs having given evidence, and Counsel on both sides having addressed the jury, His Honour commented upon the facts of the case, and the jury retired to consider their verdict, and after a short deliberation returned with a verdict that Mrs. Hobbs had not acted as an apothecary.

Judgment was then given for defendant, His Honour refusing leave to appeal.

UNQUALIFIED MEDICAL PRACTICE.

THE following is a cutting from the *Cornishman* of last week, and is presumably an advertisement:

PENZANCE HOMŒOPATHIC DISPENSARY.
Was opened on 29th ult., at 26, Clarence Street.
Hours:—Tuesdays and Thursdays, 3 to 5.
Attending Physician:—MARY J. HALL WILLIAMS, M.D.(Boston).
Women, 1s.; Children, 6d.

The name of Mary J. Hall Williams does not appear in the *Medical Register*, and presumedly she is not legally qualified to practise medicine in this country. It is essential in the public interest that medical dispensaries should not be established and conducted by persons who do not possess a qualification to practise in this country, and we would commend the matter to the attention of the authorities empowered to deal with such cases.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

ENTRY OF MEDICAL STUDENTS.—From returns kindly made by the College tutors, it appears that 127 of the freshmen entered this term have elected to become medical students.

APPOINTMENTS.—Dr. Donald MacAlister has been appointed to act for Professor Allbutt during his absence this term in reference to medical degrees. Dr. Bradbury has been reappointed Assessor for the M.D. Acts.

HISTORY OF PHYSIOLOGY.—Professor Foster announces a course of lectures on Some Points in the History of Physiology. The first lecture on October 24th will be on Claude Bernard.

MUSEUM OF ANATOMY.—A fine collection of Egyptian skulls and bones from Hierakonopolis has been presented to Professor Macalister's Museum by Professor Flinders Petrie. The University collections representative of Egyptian anthropology are probably now the largest in Europe. They include specimens illustrative of all periods from the prehistoric ages to that of Tel el Kebir.

AFFILIATION OF SYDNEY UNIVERSITY.—The University of Sydney is about to become affiliated to Cambridge. The privileges will be open to Sydney students in Arts or Science who have passed the first and second year examinations in the Colonial University.

UNIVERSITY OF LONDON.

MEETING OF CONVOCATION.—At the meeting of Convocation to be held on Tuesday, October 25th, the business to be transacted is limited to two resolutions which Mr. R. W. Hinton will propose: (1) "That the new Regulations for the Matriculation Examination tend to discourage the study of modern languages in schools, by making them entirely optional and alternative to science; and (2) that the obligatory examination in elementary practical science should be restricted to the first part of the subject, and comprised in one paper; the second part to be made optional with the other sciences, and modern languages to form a separate and obligatory section taking its place."

UNIVERSITY OF GLASGOW.

THE following have passed the First Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., botany; Z., zoology; P, physics; C., chemistry):

J. R. S. Anderson (P.), W. K. Anderson (B., P.), T. Ballantyne (B., Z., P.), A. G. Banks (B., P.), A. F. Bell (B., P.), T. F. Bowie (P.), J. C. Bringan (B., Z., C.), R. Bruce (B.), R. H. Campbell (B., P.), D. L. Carmichael (C.), A. A. Carruthers (P., C.), H. W. Crawford (B., Z., P., C.), J. Cross (P.), A. Dick (B., P.), H. M'M. Donaldson (C., A. R. Dow (P., C.), W. Dow (B., C.), W. Elder (C.), J. Ferguson, M.A. (P., C.), T. Forsyth (Z., C.), J. R. Gilmour (P., C.), W. M. Gilmour (B., P.), J. M. Gordon (C.), W. Harvey (B., P.), R. D. Hodge (B., P.), J. G. Hume (P.), J. B. D. Hunter (B., P.), N. M'C. Hutchison (B., P., C.), E. D. Jackson (B., Z., P., C., W. F. Kay (B., P., C.), J. T. Kelly (Z.), A. D. Kennedy (B., P., C.), A. M. Kerr (B., P.), D. R. Kerr (P.), R. Lauder (B., C.), R. Laurie (Z., P.), R. W. Leckie (B., P.), A. Leitch (B., P.), S. E. Lewis (C.), T. W. Love (B., Z., P.), T. Lovett (B., Z.), J. P. Lusk (B., C.), R. Makins (Z., C.), R. H. Manson (P., C.), H. S. Martyn, M.A. (B., Z., P., C.), W. A. Milne (B., C.), A. J. Mitchell (B.), S. Mort (B., P.), J. B. M'Cabe (B., Z.), J. D. M'Culloch (B., P.), C. Macdonald (C.), D. D. M'Dougall, M.A. (Z., P., C.), A. A. Macfarlane (B., P., G. MacGregor (B., Z.), A. Macintyre (B., P.), J. M. M'Kellar (B., Z.), I. M'Kenzie, M.A. (B., Z.), J. C. M'Kenzie (B., Z., P.), T. M'Laren (P., C.), J. M'Lean (C.), D. H. Macphail (B.), J. R. M'Vail (Z.), A. A. M'Whan (P., C.), J. S. Nicolson (B., P.), D. Penman (Z., C.), T. Rankine (B., P., C.), A. Reid (B., P.), J. M. Reid (B., P.), T. Richmond (B.), D. Riddell (B., Z., P., C.), P. H. Robertson (B., P.), R. T. C. Robertson (B., P.), C. J. Ross (B.), J. Russell (B., C.), L. D. Shaw (B., Z., P., C.), J. J. Sinclair (P., C.), J. W. Smith (B., Z., P., C.), R. C. Smith (Z., P.), J. Stevenson (P., C.), W. D. H. Stevenson (B.), A. W. Sutherland (B., C.), P. L. Sutherland (B., P.), J. A. Thom (P.), J. R. Thomas (B., Z., P., C.), W. W. Turner (B., P.), J. Unsworth (B.), J. Walker (B., C.), G. Wallace (B., Z.), H. F. Warwick (B., C.), W. N. W. Watson (B., P.), A. B. Watt (Z.), J. Wilson (B., P.).

Women.—J. Auld (B., Z.), A. W. Cameron (Z.), J. Campbell (Z.), E. L. Chapman (B., Z.), E. M. Lochhead (B., Z.), J. S. M'Lauchlan (B. Z., P., C.), E. J. M. Pryce (B., Z.), M. H. Smart (Z., C.), E. T. Talbert (Z.), J. G. Waddell (Z., P.).

The following have passed the Second Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics):

M. Aikman, M.A. (A., P., M.), J. Anderson (P.), G. Arthur (M.), G. Barbour (P., M.), J. O. Barclay (M.), T. T. Bathgate (M.), A. Binning (M.), A. Birch (P., M.), H. E. Brown (M.), W. H. Brown (M.), J. D. Brownlie (M.), G. F. Buchan (P., M.), P. T. Cairns (M.), E. P. Cathcart (M.), J. T. Clark (P., M.), R. Clark (M.), J. Craig (P.), C. P. G. Crichton (P.), C. C. Cuthbert, M.A. (M.), G. H. G. Davie (P.), J. Dick, M.A. (P., M.), A. Doig (A., P.), J. Downie, (A., P., M.), J. P. Duncan, B.Sc. (M.), G. B. Eadie (A., P., M.), L. Findlay (M.), J. Forrest (M.), A. Fraser, M.A. (M.), M. W. Fraser (P., M.), G. Garrey (P., M.), D. G. S. Gartshore (P., M.), J. Gemmell (A.), E. Gillespie (M.), W. Girvan (M.), H. Goodman, M.A. (A.), C. A. Gourlay, M.A. (A., P., M.), J. D. Gourlay (A., P.), J. Gracie (P.), C. H. Gunson (A., P., M.), G. P. Harlan (M.), J. M. Henry (M.), C. M. Hope (A., P.), T. H. Jack (M.), J. Kennedy (M.), W. B. Kerr (M.), A. King (A.), J. D. Laidlaw (A., P.), J. F. Lambie (M.), A. Leitch (A., P.), N. M. Leys (P., M.), J. D. Lickley (M.), D. M'F. Livingston (M.), J. Lockhart (A., P., M.), A. Logan (M.), D. D. Logan (A., P.), D. Longwill (A., P.), J. Mains (M.), A. Mair (M.), R. MacN. Marshall (M.), A. Martin, M.A. (M.), J. Millar, M.A. (A., P., M.), P. Moir (M.), A. Munro (A., P., M.), J. W. M'Dougall (A., P.), W. J. M'Feat (A., P.), G. S. M'Kinnon (A., M.), J. Mackinnon (M.), B. M'Phee (A., P.), J. M'Pherson, M.A. (A. P.), D. M. MacRae, M.A. (A., P., M.), J. Patrick (A., P., M.), P. M. Reid (P., M.), J. D. Richmond (M.), D. Russell (M.), D. Shannon (P., M.), A. Stewart (M.), J. Strathearn (A., P., M.), R. B. Thom (P.), J. C. Turnbull (M.), A. E. Wainwright (M.), W. D. Walker (A., P.), G. White (A., P., M.), G. H. Wildish (P.), T. W. Wilson (M.), W. W. W. Wilson (A.), H. P. Wright (P., M.), J. Young (M.).

Women.—A. Boyes (A.), G. J. Campbell (M.), H. M. Gordon (P.), L. S. Greig (M.), C. S. Howden (A. P.), M. A. T. Ritchings (P.), A. B. Sinclair (P., M.), E. H. Smith (A. P.), M. Talbot (M.).

The following have passed the Third Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subject or subjects indicated (P., pathology; M., medical jurisprudence and public health):

J. F. Bennett (M.), A. Brownlie (P., M.), T. B. Calland (P.), J. R. Chalmers (M.), D. M. Cowan (P., M.), J. Craig (P., M.), G. M. Crawford P., M.), W. Crerar (M.), J. A. Dickie (P., M.), J. Drummond (M.), H. C. Ferguson (M.), G. Gardner (P., M.), J. Gardner (P., M.), W. Gibson (M.), N. Jamieson (P., M.), A. Kerr (M.), A. Love (P., M.), R. Millar (M.), H. Miller (M.), E. W. Milne (M.), E. Mitchell, M.A. (P., M.), J. H. MacDonald (M.), P. M'Fadyen (M.), J. McGilchrist (M.), A. G. M'Kendrick (P.), C. F. Maclean (M.), G. T. Maclean, M.A. (P., M.), N. F. Macleod (M.), W. J. Maclure (P., M.), T. S. Picken (P., M.), R. Rennie (P., M.), W. A. Riddell (M.), A. Robin (M.), D. Ap Simon (M.), D. J. Smith (M.), J. S. Smith (P., M.), W. S. Stalker (P., M.), P. A. Stephen (M.), A. G. Stewart (M.), E. R. Stewart, M.A. (P., M.), C. P. Thomson (M.), W. B. Thomson (M.), T. B. Tierney (P., M.), A. L. Watson, M.A. (M.), A. S. Wells, M.A. (M.), R. O. Whyte, M.A. (M.), A. Wilson (P.), W. Wright (M.).

Women.—S. Davidson (P., M.), M. Spencer (P., M.), E. M. S. Walker (P., M.).

Mr. Stewart Dunbar has passed the third professional examination (regional anatomy and materia medica and pharmacy) for the degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.).

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following gentlemen having previously passed the necessary examinations, and having now attained the legal age of 25 years, have been admitted "Fellows" of the College:

W. A. Nuthall, L.R.C.P.Lond., Mason University College, Queen's, and General Hospitals, Birmingham, and St. Bartholomew's Hospital; J. D. Russell, M.D.Lond., L.R.C.P.Lond., University College Hospital.

The following gentlemen having previously passed the necessary examinations, and having now conformed to the by-laws and regulations, have been admitted "Members" of the College:

R. Pestonjee, L.M.&S.Ceylon, Exams. for L.R.C.P.Lond., of Ceylon Medical College and University College Hospital; J. B. Wood, M.B. & C.M.Edin., Exams. for L.R.C.P.Lond., of Edinburgh University.

CONJOINT BOARD IN ENGLAND.

The following gentlemen have passed the Second Examination of the Board in the subjects indicated:

Anatomy and Physiology.—T. Hutchinson, Mason University College, Birmingham; J. K. Lund, Mason University College, Birmingham, and Owens College, Manchester; W. S. Gibson, Owens College, Manchester; C. Monks, L.R.C.S.Irel. (Surgeon-Lieutenant-Colonel, I.M.S.), Ledwich School of Medicine, Dublin; A. L. B. Green, St. Bartholomew's Hospital and Aberdeen University; B. Capon, University College, Liverpool; J. Ward, Firth College, Sheffield; P. S. Stokes, Firth College, Sheffield, and Mr. Cooke's School of Anatomy and Physiology; E. P. G. Causton, Cambridge University; E. D. Townroe, St. George's Hospital; H. A. Ehrlich and C. B. Penny, Guy's Hospital; D. W. Smith, Edinburgh University and Guy's Hospital; G. Maw, University College, London; B. I. Rahim, King's College, London; R. Cope, St. Bartholomew's Hospital, and H. E. Flint, St. Bartholomew's Hospital and Mr. Cooke's School of Anatomy and Physiology; C. Dix, T. M. Body, H. H. Raw, H. Whitwell, E. W. Price, W. P. Miles, L. M. Morris, and W. G. G. Johnson, St. Bartholomew's Hospital; F. Morgan, Westminster Hospital; A. R. Schofield, R. C. Pitt, W. McD. MacDowell, A. N. Symons, London Hospital; D. M. Jones, St. Mungo's and Anderson College, Glasgow, and London Hospital; T. H. F. Roberts and W. O. Roberts, Guy's Hospital; B. Hood, Charing Cross Hospital; A. Blanc, King's College, London; B. M. Sampson and W. T. Harris, St. Thomas's Hospital; W. J. D. Inness, St. Mary's Hospital; A. W. Levy, Cambridge University and St. Mary's Hospital; S. de Carteret, C. L. C. Owen, J. A. West, E. E. Young, N. Leonard, and H. H. Butcher, St. Bartholomew's Hospital; H. F. Bodvet-Roberts, Cambridge University and St. Bartholomew's Hospital; C. D. A. Dowman, St. Bartholomew's Hospital and Mr. Cooke's School of Anatomy and Physiology; J. Lakeman, C. H. Allen, London Hospital and Mr. Cooke's School of Anatomy and Physiology; C. T. Holford, St. Thomas's Hospital; L. J. Hughes and W. H. Bowen, Guy's Hospital; W. W. Campbell, King's College, London; H. F. Bellamy, Charing Cross Hospital; J. E. Skey and F. D. Martyn, Westminster Hospital; W. W. Browne, R. E. Lloyd, and A. N. Stevens, University College, London.

Anatomy only.—R. McK. Skinner, Edinburgh University; G. H. L. Wright, University College, Bristol; J. W. Bennett, Owens College, Manchester, and Mr. Cooke's School of Anatomy and Physiology; D. T. Jones, Middlesex Hospital and Mr. Cooke's School of Anatomy and Physiology; W. G. D. Miller, Cambridge University and University College, London, and C. T. Fox, University College, London.

Physiology only.—J. E. Jones, University College, Bristol.

Forty-seven gentlemen were referred in both subjects, and 2 in physiology only.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the annual stated meeting of the Royal College of Physicians in Ireland, held on St. Luke's Day, 1898, the following officers were elected for the ensuing year:

President.—John William Moore, M.D., F.R.C.P.I.

Vice-President.—W. J. Smyly, M.D., F.R.C.P.I.

Censors.—W. J. Smyly, M.D., F.R.C.P.I., H. C. Drury, M.D., F.R.C.P.I., J. Murphy, F.R.C.P.I., A. K. F. McCutcheon, M.D., F.R.C.P.I.

Examiners for the Licence in Midwifery.—A. J. Horne, F.R.C.P.I., E. H. Tweedy, F.R.C.P.I.

Additional Examiners (to take the place of an absent Censor).—Medicine: W. Langford Symes, F.R.C.P.I. Medical Jurisprudence and Hygiene: A. N. Montgomery, F.R.C.P.I. Midwifery: F. H. Wilson, F.R.C.P.I. Additional Examiners under the Conjoint Examination Scheme:—Biology: E. McDowel Cosgrave, M.D., F.R.C.P.I. Chemistry and Physics: H. T. Bewley, M.D., F.R.C.P.I., and Edwin Lapper, F.R.C.P.I. Materia Medica and Pharmacy: F. J. B. Quinlan, M.D., F.R.C.P.I., and Ninian Falkiner, F.R.C.P.I. Physiology: J. Malet Purser, M.D., F.R.C.P.I. Pathology: Wallace Beatty, M.D., F.R.C.P.I. Medicine: H. C. Tweedy, M.D., F.R.C.P.I., and E. Lennon, F.R.C.P.I. Hygiene and Forensic Medicine: S. T. Gordon, F.R.C.P.I.

College Examiners for the Conjoint Diploma in Public Health.—Meteorology: Ninian Falkiner, F.R.C.P.I. Hygiene: F. J. B. Quinlan, M.D., F.R.C.P.I. Chemistry: Edwin Lapper, F.R.C.P.I.

Examiners in Preliminary Education.—Languages: William Kennedy, B.A., Sch.T.C.D. Sciences: C. Joly, F.T.C.D.

Representative on the General Medical Council.—Lombe Atthill, M.D., F.R.C.P.I.

Representatives on the Committee of Management under the Conjoint Examination Scheme.—John Magee Finny, M.D., F.R.C.P.I., Sir Christopher J. Nixon, M.D., F.R.C.P.I., James Craig, M.D., F.R.C.P.I.

Treasurer.—Lombe Atthill, M.D., F.R.C.P.I.

Registrar.—James Craig, M.D., F.R.C.P.I.

In the evening the annual banquet of the President and Fellows was held in the College Hall.

SOCIETY OF APOTHECARIES OF LONDON.

Primary Examination, Part I.—The following candidates passed in:

Biology.—F. W. March, Durham; Z. Rowlands, Royal Free Hospital.

Chemistry.—W. P. Allen, Birmingham: E. M. Forsyth, Royal Free Hospital; F. P. Joscelyne, Leeds; J. S. Ward, Sheffield.

Materia Medica and Pharmacy.—G. M. Crockett, Royal Free Hospital; H. C. Jones, St. Mary's Hospital; M. E. Martin, Royal Free Hospital; L. G. Simpson, Royal Free Hospital; J. S. Ward, Sheffield; A. F. Weston, St. George's Hospital.

Primary Examination, Part II.—The following candidates passed in:

Anatomy.—A. O. Ashe, King's College Hospital; J. B. Bradley, Birmingham; J. Brownrigg, Liverpool; E. J. Crew, Guy's Hospital; B. M. Dunstan, St. Thomas's Hospital; C. A. W. Egan, Dublin; L. C. Ferguson, St. Bartholomew's Hospital; V. J. Glover, Liverpool; K. Heanley, Royal Free Hospital; B. I. Rahim, King's College Hospital; J. E. Skey, Westminster Hospital; L. K. Tickner, Durham; E. D. Townroe, St. George's Hospital; J. Waters, Middlesex Hospital; J. H. Williams, London Hospital; H. F. Willington, Manchester; E. Yoxall, Birmingham.

Physiology.—A. O. Ashe, King's College Hospital; J. C. Baggs, St. Thomas's Hospital; J. Brownrigg, Liverpool; L. C. Ferguson, St. Bartholomew's Hospital; V. J. Glover, Liverpool; D. R. T. Griffiths, Guy's Hospital; K. Heanley, Royal Free Hospital; W. J. H. Hepworth, Edinburgh and St. Mary's Hospital: G. J. W. Keigwin, London Hospital; D. A. H. Moses, St. Bartholomew's Hospital; B. I. Rahim, King's College Hospital; H. H. Serpell, St. Bartholomew's Hospital; J. E. Skey, Westminster Hospital; H. O. Sutcliffe, Cambridge; E. D. Townroe, St. George's Hospital; J. Waters, Middlesex Hospital; H. F. Willington, Manchester; E. Yoxall, Birmingham.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,442 births and 4,091 deaths were registered during the week ending Saturday last, October 15th. The annual rate of mortality in these towns, which had declined from 24.6 to 20.5 per 1,000 in the five preceding weeks, further fell to 19.0 last week. The rates in the several towns ranged from 10.2 in Brighton, 11.7 in Croydon, 13.1 in Portsmouth, and 13.2 in Cardiff, to 25.1 in Manchester, 25.6 in Salford, 25.7 in Sunderland, and 28.5 in Norwich. In the thirty-two provincial towns the mean death-rate was 19.4, and was 0.9 above the rate recorded in London, which was 18.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.9 per 1,000; in London the rate was equal to 2.2 per 1,000, while it averaged 3.3 in the thirty-two provincial towns, among which the highest death-rates were 5.4 in Hull, 6.0 in Salford, 7.2 in Sunderland, and 11.2 in Norwich. Measles caused a death-rate of 1.1 in Sunderland and 4.2 in Norwich; scarlet fever of 1.0 in Derby; whooping-cough of 1.1 in Halifax; "fever" of 1.1 in Sunderland and 1.2 in Salford; and diarrhœa of 3.6 in Manchester, 4.3 in Sunderland, 5.2 in Hull, and 6.1 in Norwich. The 74 deaths from diphtheria in the thirty-three towns included 41 in London, 8 in Leeds, and 3 each in West Ham, Cardiff, Swansea, Birmingham, and Sheffield. One fatal case of small-pox was registered in London, but not one in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 2,606 at the end of the seven preceding weeks, had further risen to 2,728 on Saturday last, October 15th; 357 new cases were admitted during last week, against 288, 300, and 358 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 15th, 954 births and 625 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 10.1 and 20.6 per 1,000 in the two preceding weeks, further rose to 20.7 last week, and was 1.7 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the rates ranged from 12.6 in Aberdeen and 18.6 in Dundee to 22.6 in Glasgow and 28.1 in Greenock. The zymotic death-rate in these towns averaged 3.5 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 315 deaths registered in Glasgow included 4 from scarlet fever, 3 from diphtheria, 12 from whooping-cough, 9 from "fever," and 27 from diarrhœa. Fourteen fatal cases of diarrhœa and 3 of measles were recorded in Edinburgh; and 3 deaths from diphtheria occurred in Dundee.

VACCINATION IN ONE PLACE.

Some delay has arisen in the appointment of Dr. J. C. Potter as Public Vaccinator for the Tudhoe District. Dr. St. George Mivart, Medical Inspector for the Local Government Board, recently reported as follows:

"In the course of my inspection of the Whitworth District of Auckland, Public Vaccinator Anderson complained to me of the conduct of Dr. J. C. Potter, of Tudhoe Grange, in the Durham Union. Dr. Potter is the Public Vaccinator-elect for Tudhoe District (his contract not being executed yet),

in place of Dr. Stritch, resigned. Tudhoe Grange and Spennymoor are practically one place, and form long lines of small houses. Dr. Anderson has a weekly vaccination station at his residence in Spennymoor on Tuesday afternoons. Dr. Potter, at his Spennymoor surgery, situated close to Dr. Anderson's house, exhibits a conspicuous notice, stating that vaccination is performed by him every Tuesday, at 2 P.M., namely, the same day and the same hour as fixed by Public Vaccinator Anderson's contract. Dr. Anderson further complains that for the vaccination thus privately performed, Dr. Potter made only the very small charge of 1s. 6d. or 1s., and that he made only one insertion of lymph. By thus exhibiting a misleading notice, and charging a trivial fee for an insufficient vaccination, Dr. Potter was able, he (Dr. Anderson) believed, to entice a large number of patients away from the vaccination station, where four insertions of lymph were invariably made by him."

Dr. Potter replied in the following terms to the clerk to the guardians who had communicated with him on the subject: "Since I have been public vaccinator I have always put four marks on each child, according to the Local Government Board regulations, and also when I acted in the capacity of deputy vaccinator. As to the Board requiring a written assurance that their instructions shall be carried out, I take this opportunity of stating that I will always act up to the requirements of the Local Government Board, and perform all vaccinations according to their rules. In regard to vaccination at Spennymoor, I myself personally have never vaccinated there, but there are a certain number of patients who object to go to a public vaccinator, and thus they used to come at all times to have their children privately vaccinated. This being a great inconvenience, my partner, Dr. McCulloch, arranged to do all those wishing to be done privately on a certain day and hour. The fee for such vaccination varies according to the circumstances of the people, and also whether the child was done from another child or from calf lymph."

Nothing would be more likely to bring both vaccination and vaccinators into contempt than any appearance of playing fast and loose with the question of efficiency and sufficiency of operative procedure. We cannot doubt that in future neither Dr. Potter nor his partner will be responsible for private vaccinations consisting of any less number or area of marks than is required for public vaccinations. If a parent objects to four marks, he can appeal to the Petty Sessions for relief under Clause 2 of the new Act.

RECOGNITION FOR AN IRISH POOR-LAW MEDICAL OFFICER.

THE Loughrea Board of Guardians have unanimously approved the recommendation of the Woodford Dispensary Committee, recommending an increase of salary of their medical officer, Dr. P. Raymond Keary. This increase of salary, it is stated, has been rendered just by the large increase in the number of "red tickets" given in the district, but it is also intended to be a recognition of the heroism displayed by Dr. Keary during a recent outbreak of typhus fever. He carried the fever-stricken patients on his back from the mountain side to the road below, and placed them safely in the ambulance, which he accompanied to the hospital, a distance of some 20 miles. As the *Freeman's Journal* points out, this act, apart from the devotion displayed, which must appeal to everyone who knows what typhus fever is, actually saved the pockets of the ratepayers a large sum of money, since it rendered it possible to stamp out the fever.

BOLTON EXTENSION ACT: COMPENSATION TO MEDICAL OFFICERS.

BY a recent Act the boundaries of the Borough of Bolton have been extended so as to include a population of 160,000, the former population having been 118,000, and among the officials displaced by the Act are Dr. James Barr, Medical Officer of Health to the County Council, and Physician to the County Hospital, and Dr. Robert Settle, Medical Officer of Health to the Astley Bridge Local Board, the salary of the former having been £200, and that of the latter £20 per annum.

At the last meeting of the Town Council Dr. Barr was awarded £1,000, and Dr. Settle £150, as compensation for the loss of their respective offices. At the same meeting the salary of Dr. Gould, Medical Officer of Health for the borough, was increased from £400 to £600 per annum; the appointment of Public Analyst, previously held by him at a salary of £50 a year, being taken from him, with his sanction, and made a separate appointment.

SUPERANNUATION UNDER THE LOCAL GOVERNMENT (IRELAND) ACT.

DISPENSARY asks whether superannuation to Poor-law medical officers has been made compulsory, or whether it is still optional with the Boards of Guardians to grant it.

*** We have been at some pains to point out on several occasions that Section CXVIII of the Local Government (Ireland) Act 1898, entitles a Poor-law medical officer of a certain age and standing, and whose record is favourable, "to receive a superannuation allowance on the scale and according to the Acts and rules relating to Her Majesty's Civil Service." With this exception, the Local Government Act seems to leave the question of superannuation pretty much where it was before the passing of the Act.

SERVICE RECKONED FOR SUPERANNUATION UNDER ACT, 1896.

RETIRED writes to say that the reply given at p. 1110 of the BRITISH MEDICAL JOURNAL, October 8th, 1898, in answer to a question put by "Incertus" appears to him to be incorrect, as he was informed on his own retirement at the age of 62, after having served in three different unions, that dual appointments could not be recognised.

*** Notwithstanding the decision given to "Retired" in reference to his own case, we do not hesitate to say that our reply to "Incertus" was correct. "Retired," as we understand him, had served in one union only for thirty years immediately previous to his retirement. He of course could have no claim on any union in which he served before that, though in reference to duration of service, even that time could be, and no doubt was, reckoned. "Incertus," on the other hand, held two appointments up to the time of his resignation, which gives him a claim against both unions. "Retired" says he got nearly £60 on resignation. Does he mean this sum only, or £60 a year? We hope the latter.

COMPENSATION FOR LOSS OF APPOINTMENT.

SANITAS was appointed medical officer of health to a rural sanitary authority in 1891, at a salary of £80. His district included four parishes in a Welsh county. In 1894 these four parishes were made into a rural district, and our correspondent became their medical officer of health at £8 4s., receiving £71 16s. from the remaining portion of the original district. The smaller district has since, by a county council order of August, 1896, confirmed by Local Government Board in December, 1897, been added to another and different rural district, and new officers appointed. His old appointment was an annual one, and he asks if he has any claim to compensation.

*** We think that, unless "Sanitas" has declined service when offered, he has a claim under Section LXXXI of the Local Government Act, 1894, which incorporates *mutatis mutandis* Section CXX of the Local Government Act, 1888. He should make out a full statement of his claim, showing amount received and expended by himself or predecessors in office for previous five years, distinguishing the offices for which same has been received, stating time he has held appointment, and accompanying the application by a statutory declaration as to accuracy. This should be sent to the district council to whom the parishes have been transferred. If the council refuse, he can appeal to the Commissioners of the Treasury. The weak points in our correspondent's case are: (1) the temporary nature of the appointment (see, however, R. *v.* Norwich, Mayor, etc., of, 8 A. and E., 633); and (2) the short time he had held it. He could only hope to receive a part of the £8 4s.

MEDICAL NEWS.

DR. GRAY, of West Hartlepool, was recently presented with a marble clock and bronzes by the members of his ambulance class.

SUCCESSFUL VACCINATION.—Dr. Henry Caudwell, public vaccinator for Nos. 1 and 2 Districts of the Woodstock Union, has for the third time been awarded the Government grant for efficient vaccination.

AMONG the latest additions to the Prince of Wales's Hospital Fund is the sum of £212 12s. 1d. contributed during the present year by the Post Office staff in London and in the Surveyor's Department on the invitation of the Postmaster General.

VENTILATION OF WAR SHIPS.—With a view to improve the ventilation of lower deck spaces of modern vessels, the Admiralty have decided on a programme of experiments with electric fans at Devonport dockyard. The experiments will be attended by a large number of officials representing the engineering and constructive branches at the Admiralty and the other dockyards.

THE HEALTH OF THE ITALIAN NAVY.—The report of the public health department of the Italian navy contains a series of diagrams, tables, and graphic charts of disease as it manifested itself in the Italian navy during the years 1895 and 1896. Venereal disease stands on a bad eminence all its own, it being far and away the most frequent. For many years venereal disease and syphilis seem to have been in inverse ratio to each other as regards frequency, but for the last three or four years the curve of their relative frequency appears to have progressed concurrently. In 1896 venereal disease was about 9 per cent., and syphilitic 3 per cent.

PRESENTATION.—Dr. Francis J. Waring, of Hove, Honorary Physician to the Police Seaside Home, Hove, has been presented with a black marble timepiece from many of the convalescents at the Home. The clock bears the following inscription: "Presented to Francis J. Waring, Esq., M.D., M.R.C.S., by many of the visitors to the Convalescent Police Seaside Home, Hove, in recognition of his unwearied and voluntary services to them and their comrades for nearly nine years. September, 1898."

MEDICAL MEN AND MUNICIPAL WORK.—We learn that Dr. John Horton Davies is contesting one of the wards at the coming municipal election at Leicester. Dr. Davies refers

pointedly to sanitary questions in his address, and especially to the danger of introducing water from a goitrous district of Derbyshire as a supplement to the present Leicester supply. Medical men may often do good service in town councils by emphasising and supporting from their special knowledge the recommendations of the responsible health officers, which too often fall on unwilling ears.

King's College, London, Medical School.—The following scholarships in the Medical School have been awarded:—Medical Entrance (Universities) Exhibitions: 70 guineas, Charles Harrison Barber; 60 guineas, Herbert S. Flook. Warneford Entrance Scholarships (Arts): £25 a year for two years, Thomas Henry Jones; £25 a year for two years, John James and Eardley Lancelot Holland (equal). Sambrook Medical Exhibitions (Science): £60, Albert Angelo Myers; £40, Harold Benjamin Day. Rabbeth Medical Scholarship (Science): £20, Harold Benjamin Day and Albert Angelo Myers (equal). The Clothworkers' Science Exhibition (open to all Faculties of the College): £30 a year for two years, Arthur Wright; £20 a year for two years, William Marden.

The Society for the Relief of Widows and Orphans of Medical Men.—At the usual quarterly court of directors of this Society held on October 12th, the chair was occupied by Dr. Pollock. Two new members were elected and applications for relief were read from forty-nine widows, eleven orphans, and six recipients from the Copeland Fund. It was resolved that the sum of £1,197 11s. should be distributed amongst them at the next court. There were no fresh applications for grants, and it was reported that one orphan had through age become ineligible for further assistance. The audited accounts for the last half year were read, and it was resolved to apply the surplus to making a Christmas present of £10 to each of forty-nine widows, £3 to each of twelve orphans, and £5 each to five persons receiving assistance from the Copeland Fund; in all £551.

The Howard Association.—The Howard Association adverts in its report (issued October, 1898) to the passing of the Inebriates Act as a practical recognition of the essential element of time in the successful treatment of habitual drunkards. It comments at some length upon the "Hooligan" upheaval which has of late disturbed the social order of so many of our large centres of population. From replies received to a circular of inquiry addressed to magistrates and other persons in authority, the Association notes a consensus of opinion that the existing powers of the magistracy and of School Boards may, if fully exercised, materially repress juvenile and other ruffianism. It is incidentally stated that, in spite of the compulsory education law, about one-eighth of the child population of the country do not attend school, and in London at least much of this irregularity is due (according to Dr. Macnamara) to the excessive laxity and delay of the magistrates with regard to Board summonses. The training of prison officers, the sacrifice of infant life in order to obtain insurance money, and the abolition of the death penalty for infanticide, are some of the other topics discussed.

The Kashmir Medical Mission.—The operations of this mission have always been characterised by ability and success, under a succession of enthusiastic and skilful men—Drs. Elmslie and Downes and the brothers Neve. The report for 1897 gives evidence of increasing activity and enterprise. The Kashmir State is undergoing a rapid change for the better in matters political, economical, intellectual, moral, and sanitary, and this institution, though it does not obtain much help from the State, has benefited by the improved conditions of government and life prevailing in the happy valley. Thirty-six thousand four hundred and thirty-three out-patients attended, 1,365 were taken into the hospital as in-patients, 44,324 free meals were supplied, and 3,567 surgical operations performed; the latter included 88 cataract cases, of which 81 were successful, 28 amputations with 1 death, 67 operations for epithelioma, 55 nerve stretchings, 15 operations for the cure of hernia without a death, and 25 for calculi, also without a fatality. The State Leper Hospital constitutes a part of the charge of the mission. It accommodates 45 patients, and is supported by the State. Admission is voluntary, and patients come from places beyond the valley. Sixty-six lepers had between them 616 relatives, and of this number only 2 were said to be lepers. The mission is supported by contributions in India and in England. As a mission of medicine it is well worthy of encouragement. The report under notice gives evidence of religious and moral benefit attained through the ministrations of those in charge, and apart from the question of the propriety of making medicine a handmaiden of religion, there can be no doubt that this mission exercises a humanising and elevating influence in Kashmir.

Maidstone Volunteer Medical Staff Corps.—It will be remembered that at the time of the Maidstone typhoid fever epidemic, great service was rendered in undertaking night nursing by the Volunteer Medical Staff Corps in Maidstone. The corps consisted of some sixty members, and their services during the epidemic were fittingly recognised on October 12th, when they were presented with medals at the Town Hall, Maidstone. The medals, which were presented by the Corporation, were inscribed with the motto, "With gratitude for loving services, 1897." The corps is under the command of Surgeon-Captain C. Pye Oliver. At the same ceremony those members of the corps who did service in London on Jubilee Day were presented with the Queen's Jubilee Medal.

Hospital Abuse at Coventry.—The Coventry *Daily Telegraph* of October 13th reports a meeting of the General Committee of the Coventry Hospital, in which this subject came under discussion. A subcommittee had been appointed to consider this question, and had reported on May 2nd last; but the report had been referred back, with the object of enabling the subcommittee to bring forward some scheme which would be really efficacious in restraining hospital abuse. The subcommittee reported that they had carefully considered the matter, and had put various questions to the working men's committee, which had been satisfactorily answered. A number of cases had been further investigated by the latter committee, but out of these only two in the opinion of the latter were improperly in receipt of hospital relief. The subcommittee, however, did not consider the report of the working men's committee conclusive in this matter, for they were convinced that in many cases the patients were in receipt of wages sufficient to enable them to pay to a dispensary, a medical service, or a club. The subcommittee also thought that the ticket system should be strictly adhered to, and that all applicants, as far as possible, should be required to obtain a ticket before getting relief. They had revised the existing ticket, and recommended that the tickets as revised should be brought into use. They believed the strict enforcement of the ticket system would be productive of great good to the hospital by causing its benefits to be more confined to deserving cases. The chairman, the Rev. G. Sedgwick, in moving the adoption of the report, said that as long as dishonesty existed hospital abuse would exist. He could not but think that anyone who came to the hospital, when he was able to pay to a medical service, a dispensary, or a sick club, was guilty of something like dishonesty. After a considerable amount of discussion the report was adopted.

Bolton and District Medico-Ethical Society.—At the annual meeting of this Society, held at the Infirmary on October 13th, Dr. Kershaw (the President) in the chair, a vote of condolence with the widow of Mr. Ernest Hart was passed. The Secretary (Dr. Beesley), in presenting his report, congratulated the Society upon a successful session, and the Treasurer (Dr. Mothersole) upon its financial condition. On the motion of Dr. Macfie, seconded by Dr. Johnstone, a vote of thanks was accorded to the President and to the Committee for their services during the past year. The following officers were elected for the ensuing year:—*President:* Dr. Kershaw. *Vice-Presidents:* Dr. Robinson and Dr. F. B. Mallett. *Secretary:* Dr. Beesley. *Treasurer:* Dr. Mothersole. *Librarian:* Dr. Thompson. *Committee:* Drs. Brazil Jefferies, Bryce, Laslett, R. Patrick and Panton. *Special Consultative Subcommittee:* Drs. Robinson, Macfie, Mothersole, and F. B. Mallett. *Auditors:* Drs. Mawson and Patchett. The annual dinner is arranged for November 3rd, when Professor Tom Jones of Manchester and Dr. Berry (President of the Wigan Medical Society) will be the guests of the Society.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The first meeting of the session will be held at 20, Hanover Square, W., on Monday, October 31st, at 9 P.M. Dr. William Vicary Snow (Bournemouth), the retiring President, will vacate the chair, which will be taken by the President-elect, Dr. Fortescue Fox (Strathpeffer Spa), who will deliver an address on the Province of the Spa Physician. Medical men interested in balneology and climatology are invited to attend this meeting.

MEDICAL VACANCIES.

The following vacancies are announced :

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer, unmarried. Salary, £100 per annum, with board and apartments. Applications to the Secretary by October 31st.

BIRMINGHAM CITY ASYLUM.—Resident Clinical Assistant. Board and residence provided, but no salary. Apply to the Medical Superintendent.

BIRMINGHAM GENERAL DISPENSARY. — Resident Surgeon. Salary, £150 per annum (with an allowance of £30 for cab hire), with rooms, fire, light, and attendance. Applications to the Secretary by November 14th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CANCER HOSPITAL (FREE), Fulham Road, S.W.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by October 31st.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Appointment for twelve months. Salary, £100 per annum, with furnished apartments, board, attendance, fire, gas, and washing. Applications to the Secretary by November 1st.

CHATTERIS URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £20 per annum. Applications to the Clerk to the Council by November 5th.

CITY OF LONDON UNION INFIRMARY.—Assistant Medical Officer for the Infirmary, Bow Road; unmarried or widower without children; between 25 and 35 years of age. Salary, £150 per annum, with furnished apartments, rations, and washing. Applications, on forms provided, to F. W. Crane, Clerk to the Guardians, 61, Bartholomew Close, E.C., by October 24th.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 21st.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Appointment for six months, but renewable. Gratuity £10, with residence, board, and laundry. Applications to the Secretary by October 25th.

HERTFORDSHIRE COUNTY ASYLUM, Hill End, near St. Albans.—Medical Superintendent. Salary to commence £500 per annum, and, after completion of asylum, furnished residence, light, vegetables, fuel, washing, milk and butter. Applications to C. E. Longmore, Clerk of the Hertfordshire County Asylum, Clerk of the Peace Office, Hertford, by October 24th.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Resident Medical Officer. Salary, £50 per annum, with board, residence and washing. Applications to the Secretary-Superintendent by November 5th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—House-Surgeon, and a House-Physician, unmarried. Appointment for six months. Salary, in each case, £20, with board and residence. Applications (on forms provided) to the Secretary by November 15th.

LEICESTER INFIRMARY.—House Surgeon. Tenure of office not exceeding three years. Salary, £120 for the first year, rising at the rate of £10 per annum until the the third year, with board, apartments, and washing. Applications to the Secretary, 24, Friar Lane, Leicester, by October 24th.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—Surgeon to out-patients. Must be F.R.C.S.Eng. Applications to the Secretary, at Harrow Road, W.

LONDON SCHOOL BOARD.—Medical Practitioners to give Lectures on First Aid, etc., to evening classes. Fee, 3 guineas for course of six lectures. Applications, on forms provided, to the Clerk of Subcommittee on Evening Continuation Schools, School Board for London, Victoria Embankment, W.C.

LONDON THROAT HOSPITAL, 240, Great Portland Street.—Non-resident House-Surgeon. Appointment for six months. Salary at the rate of £25 per annum. Applications to the Honorary Secretary of the Medical Committee by October 25th.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland Street, W.—Anæsthetist. Applications to the Secretary by October 26th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Resident Medical Officer and Assistant Resident Medical Officer. Appointments for six months. Salary of £50 per annum attached to the senior post. Personal application on November 1st, at 5 P.M.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Hon. Secretary by November 1st.

PORTSMOUTH: ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL. Assistant House-Surgeon. Appointment for six months, but renewable. Board and residence provided and honorarium of £15 15s. Applications to the Secretary by October 27th.

RICHMOND BOROUGH AND HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the Mogden Isolation Hospital. Salary, £100 per annum, with furnished apartments, rations, and washing. Not less than 25, or more than 40, years of age, unmarried. Applications (on forms provided) to P. C. Groville Smith, Clerk to the Joint Committee, [illegible], Hounslow, by November 7th.

ROTHERHAM HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum, with board and washing. Applications, endorsed "Staff," to the Secretary

ROYAL FREE HOPITAL, Gray's Inn Road, W.C.—House-Surgeon. Appointment for six months. Not salary, but board will be provided. Applications to the Secretary by October 31st

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge Road, S.E. Resident Medical Officer. Salary, £70 a year, with board, lodging, and washing. [illegible]

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £100 per annum, with furnished apartments, board and washing. Applications to the Secretary by October 25th.

ROYAL OPHTHALMIC HOSPITAL, 16, Oxford Street, and 15, Hanover Square, W.—House Surgeon and Ward Assistant, unmarried. Salary, £80 per annum, with residence and partial board. [illegible] Secretary by October 29th.

ST. PANCRAS AND NORTHERN DISPENSARY, 120, Euston Road. Honorary Physician. Applications to the Hon. Secretary, 23, Gordon Street, W.C., by October 31st.

ST. THOMAS'S HOSPITAL. Assistant Physician. Applications to the Treasurer's Clerk by October 25th.

TORQUAY, TORBAY HOSPITAL PROVIDENT DISPENSARY AND EYE HOSPITAL. —House Surgeon, not less than 25 years of age. Salary, £90 per annum, with board, lodging, washing, and attendance Applications to the Secretary by November 1st.

YORK DISPENSARY. Resident Medical Officer, unmarried. Salary, £130 per annum, with furnished apartments, coals, and gas. Applications to W. Draper, Esq., De Grey House, York, by November 1st

MEDICAL APPOINTMENTS.

BENNETTS, A. J., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Medical Officer to the Lambeth Infirmary.

COLES, Alfred C., M.D., B.Sc. Public Health (Edin.), appointed Medical Officer of Health to the Urban District Council, Winton, Bournemouth.

CUFFEY, Edward, M.B., B.U.I., appointed Surgeon to the Lady Strangford Hospital, Port Said.

DAVIS, Arthur N., L.R.C.P., L.R.C.S.Edin., appointed Medical Superintendent to the Devonshire County Asylum, Exminster.

ESERIGGE, R. B., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer of Health to the Royston Urban District Council.

EYRE, John, M.S., M.D.Durh., M.R.C.S., L.R.C.P., appointed Honorary Ophthalmic Surgeon to St. Mary's Children's Hospital, Plaistow.

GOODBODY, E. C., M.B.Dub., appointed District Medical Officer to the Dunmow Union.

JONES, Dr. T., appointed Medical Officer for the Amlwch District of the Anglesey Union.

JONES, Dr. Thomas O., appointed Medical Officer of Health to the Ruthin Rural District Council.

SCOTT, Joseph, M.B., C.M., appointed Medical Officer to the Indo-European Telegraph Company.

WELLS, T. P. G., L.R.C.P., L.R.C.S.Edin, appointed District Medical Officer to the St. Alban's Union.

WILSON, A. T., L.F.P.S.Glasg., appointed District Medical Officer to the Alcester Union.

WINDLE, J. Davenport, M.B., Ch.B.Vict., M.R.C.S.Eng., reappointed Medical Officer of Health for the Southall Norwood Urban Sanitary District.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8.30 P.M. Mr. Sheild: Four cases of Abdominal Section for Severe Injuries, without External Wound. Dr. F. L. Benham: On the Advantage of Venesection in Acute Pneumonia, with cases in illustration.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Dr. George Stoker: Chronic Glandular Disease of the Nose and Naso-pharynx.

TUESDAY.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Ferrier, F.R.S.: Hemiplegia.

Royal Medical and Chirurgical Society, 8.30 P.M.—Dr. H. Lambert Lack: Fibrinous or Membranous Rhinitis and its Relation to Diphtheria (communicated by Dr. Allan Macfadyen). Dr. Edmund Cautley: Congenital Hypertrophic Stenosis of the Pylorus.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Katatonia, Dementia, and Senile Insanity. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Psoriasis.

West End Hospital for Diseases of the Nervous System, Welbeck Street, W., 4 P.M.—Dr. T. D. Savill: Cases illustrating the Different Forms of Hysterical Attack, their Pathology and Treatment.

WEDNESDAY.

Hospital for Consumption, Brompton, 4 P.M.—Dr. Habershon: Bronchiectasis.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Bidwell: The Application of Plaster-of-Paris and other Splints.

Dermatological Society of Great Britain and Ireland, 20, Hanover Square, W., 5 P.M.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: House Drainage, etc.

Hunterian Society, 8.30 P.M.—Clinical Evening. Cases will be shown by Dr. F. J. Smith, Dr. Chaplin, Dr. J. H. Sequeira, Mr. Tubby, and other Fellows of the Society.

THURSDAY.

Neurological Society of London, 11, Chandos Street, W., 8.30 P.M.—Cases will be shown by Dr. Ormerod, Dr. Barlow, Dr. Beevor, Dr. Mott, Mr. Lake, Mr. Ballance, Dr. James Taylor, and Dr. Lamb.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Dr. Mitchell Bruce: Clinical Lecture.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Dr. Galloway: Dermatological Demonstration.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture or Demonstration of Recent Specimens.

FRIDAY.

Clinical Society of London, 8.30 P.M. Clinical Evening. Patients in attendance at 8 P.M. The following cases will be shown: Dr. W. S. Colman: Syringomyelia. Mr. Jackson Clarke: Rachitis Adolescentium. Dr. Norman Dalton: Double Athetosis in a Boy. Mr. Watson Cheyne: Repair of the Bridge of the Nose by Rabbit Bone: Dr. Sidney Phillips: A case of Chyluria. Mr. Page: Ankylosis of Lower Jaw Treated by Removal of a Wedge from the Neck. And other cases.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Cheatle: The Application of Splints to the Lower Extremity.

British Laryngological, Rhinological, and Otological Association, 11, Chandos Street, Cavendish Square, 8 P.M. —Inaugural Address by the President, Dr. Middlemass Hunt. Cases will be shown by Dr Dundas Grant, Dr. Milligan, Dr. Lambe, Mr. Lennox Browne, Mr. Wyatt Wingrave, Dr. Furniss Potter, and others.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M. Professor Crookshank: Anthrax and Malignant Œdema.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M.—Dr. L. A. Hawkes: The Dispensary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

CHEYNE.—On October 12th, at 75, Harley Street, W., the wife of W. Watson Cheyne, F.R.C.S., F.R.S., of a son.

GULLAND.—On the 14th inst., at 6, Alva Street, Edinburgh, the wife of G. Lovell Gulland, M.D., F.R.C.P.E., of a son.

STANFORD.—On October 13th, at Islington Infirmary, St. John's Road, the wife of W. Bedell Stanford, M.R.C.S. L.R.C.P., of a son.

MARRIAGES.

BREWIS—STEEL.—On the 12th inst., at Christ Church, Gateshead, Edward J. Brewis, M.D., to Laura, only daughter of the late James Murdo Steel.

BROWN—MAGUIRE.—On October 13th, at the Parish Church, Castleknock, by the Rev. Canon Hogan, assisted by the Rev. R. Benson Redding, George Brown, L.R.C.S.I., L.R.C.P.I., Woodlands, Denby Dale, Yorkshire, to Frances Marian, eldest daughter of the late Dr. Ross Perrier Maguire, Mount Hybla, Castleknock, Ireland.

CORNER—DRAKE.—On October 18th, at Trinity Church, Walthamstow, Albert Corner, of Forest Gate, M.R.C.S., L.R.C.P., son of F. M. Corner, M.R.C.S., L.C.A., to Nellie, second daughter of W. J. S. Drake, of Forest Gate.

FRANCIS—O'BRIEN.—On the 6th July, at St. John's Pro-cathedral, Brisbane, by the Venerable the Archdeacon of Brisbane, Thomas William Francis, L.R.C.P.Lond., M.R.C.S.Eng., of Bundaburg, Queensland, to Mary (Mollie), second daughter of the late Michael O'Brien, of Rockavange, Castletownroche, Ireland.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

Cancer, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

Central London Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily.

Central London Throat, Nose, and Ear.—*Attendances.*—M. W. Th. S., 3; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

Charing Cross. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3

Chelsea Hospital for Women. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

City Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

East London Hospital for Children. *Operations.*—M. W. Th. F., 2.

Great Northern Central. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

Guy's. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

Hospital for Women, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

King's College. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

London. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

London Temperance. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

London Throat, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

Metropolitan. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

Middlesex. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

National Orthopædic. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

New Hospital for Women. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

North-West London. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

Royal Eye, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

Royal Free. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

Royal London Ophthalmic. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

Royal Orthopædic. *Attendances.*—Daily, 2. *Operations.*—M., 2.

Royal Westminster Ophthalmic. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

St. Bartholomew's. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

St. George's. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

St. Mark's. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

St. Mary's. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Tu., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

St. Peter's. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

St. Thomas's. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 9.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

Samaritan Free for Women and Children. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

Throat, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

University College. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

West London. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

Westminster. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

Communications for the Current Week's Journal should reach the Office not later than Midday Post on Wednesday. Telegrams can be Received on Thursday Morning.

Communications respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the Journal etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate beforehand with the Manager, 429, Strand, W.C.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look to the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any circumstances be returned.

In order to avoid delay, it is particularly requested that all letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not to his private house.

Public Health Department.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are directed will be found under their respective headings.*

QUERIES.

J.S.B. desires to hear of a home where a young woman, aged 23, paralysed (eight years) in the lower limbs, can be accommodated. She is able to pay only 12s. 6d. a week.

P.J.C.S. asks for information as to the value of citrate of ergotinum in *post-partum* hæmorrhage, and as to the dose to be used hypodermically.

M.B. asks for suggestions in the treatment by internal medicines, not by hypodermic injection, of a case of excessive nocturnal perspiration in a boy, aged 8 years, with no lung mischief.

West African Malaria.

W.F., being about to return to West Africa, would like information as to the value of pambotano (calliandra houstonii) as a substitute for quinine

Post-Mortem Bleeding

Dr. R. P. Lawson (Openshaw, Manchester) writes: On September 20th I was called to see a young man, aged 22, who was complaining of pain in the abdomen. The case turned out to be one of typhoid fever, which ended fatally on the eighth day. The temperature was never higher than 101.6°, but the pulse reached 164 two hours before death. One hour after death took place blood commenced to flow from the right ear, the nostrils, and the mouth, and continued for more than forty-eight hours, until the coffin was sealed up. The blood was not dark and frothy like ordinary *post-mortem* oozing, but was quite fresh, bright-red, arterial blood, and more than a cupful in quantity. The consultant who saw the case with me can offer no satisfactory explanation. I should like to ask if any of your readers can state a parallel case, or could give me any explanation of the bleeding?

ANSWERS.

Colonial Surgeon is requested to communicate his address in this country to the Editor.

C.A.—There is no reason to suppose that white woollen knitted night-socks would be in any way injurious to a person of a delicate constitution.

S. W. A.—So far as we are aware, the Royal Colleges of Physicians and Surgeons in England, Scotland, and Ireland have no by-laws forbidding their Fellows to act as surgeons to clubs, benefit or trade societies, although they have on various occasions expressed the opinion that such appointments should not be held except under suitable conditions. We may refer our correspondent to the report of the meeting in the British Medical Journal of October 22nd, p. 1265, of the Council of the Royal College of Surgeons.

Practical Instruction in the Use of Forceps.

Iodoform writes in reply to "Forceps": I would state that many years ago, when a qualified assistant, I had great fear of the forceps operation. Having a fortnight's holiday I consulted the house-surgeon of a maternity hospital, and expressed a desire to pay the fees of the hospital if he would let me put on the forceps should a chance occur. The house-surgeon said that he wanted all the forceps cases, therefore I paid no fees. I went to a bookshop and bought Leishman's *Midwifery.* After reading the article on the forceps in that book, I shortly afterwards used them in the high operation without bungling. In the same book the directions how to pass a female catheter will be found very plain to the beginner.

Lady Dispensers.

Municeps.—It is possible for ladies to earn a living by acting as dispensers to medical men, hospitals, etc. The demand for their services at hospitals is not great. To become a qualified pharmacist, it is necessary to pass the Minor Examination of the Pharmaceutical Society. To do this a preliminary examination must be passed, a three years' apprenticeship served, and further study in some school of pharmacy is always required. The Apothecaries' Society, Blackfriars, grant certificates for competency in dispensing upon passing their examination in Chemistry, Materia Medica, Pharmacy, and Dispensing. This certificate has no legal value, but it suffices for some hospital dispenserships. Instruction in the subjects of the Apothecaries' Hall examination can be obtained at the various schools of pharmacy in London and also in the country. The advertisements of these schools can be seen in the *Pharmaceutical Journal.*

Rheumatism.

We have received the following further answers to "Member," who asked a question on this subject in the British Medical Journal of September 24th:

"B.A." writes: 1. Promote perspiration by the Turkish bath, etc. 2. Diuretics—whey made by adding citric acid to warm milk is useful. 3. Antiseptics—guaiacol carbonate is one of the best. 4. Electric baths, a continuous current battery placed at the head of the bath, the positive pole in the water behind the patient's neck. The negative pole may be held in the hand under water, or if necessary applied to the feet by an attendant. This bath is not as frequently used as it should be. Lastly, do not trifle with rheumatic arthritis with the hope that it will cure itself.

"G. C." (London) writes: It is absolutely necessary that he spend at least three weeks at some inland watering place, such as Buxton; but if his home be in the north or in some colder part then Bath, or Cheltenham, or Leamington (perhaps). The stiffness and the pain are increased during the first week of treatment, but the third week makes up for it in the suppleness and unwonted ease. He may have to repeat this prescription in ten to fifteen months. Meanwhile I would suggest

quinine with meals, and a tiny dose of potassium iodide and sodium bicarbonate at bedtime, dry cupping in extreme pain in sciatica or lumbago. Of course, care in minor matters is presumed, such as having bedclothes and underwear well aired, that is, dried and warmed. After three or four weeks of hydrotherapeutics, "Member's" instincts will lead him to golf or cycling and to a square meal.

DR. B. ADDY (Birkdale) writes: I suffered for years in a similar way. In my opinion the muscles become stiff and painful from their quiescent state during the night. For medicinal treatment I found potassium iodide with ammoniated tincture of guaiacum 5ss taken regularly most efficacious. I order guaiacum very freely, and rarely find it fail to give relief in rheumatic and gouty affections. My sciatica was benefited by the hot douches at Bath whilst immersed in the bath applied for 15 minutes along the sciatic nerve. As to diet, avoid animal food as much as possible; in fact, Dr. Haig's views on diet meet with my strongest personal approval, and I have largely followed them.

CIVIL OR MILITARY?

NAVY.—In answer to our correspondent, who wants advice as to whether he should enter one of the public services for a limited time before beginning private practice, we reply: He is not too old at 24 to enter, although he would have had a better start at 22, if making it a life career; but we have grave doubts if, as he proposes, twelve years' service in the navy or army, and retirement by gratuity, is likely to prove a good introduction to private practice. He would be close on 40 before he could begin, and at that age a practitioner who begins early has either made or marred his civil career. We would rather advise him to choose quickly and definitively, as a life career, either one of the public services or civil practice. The system which he proposes was tried in the army about twenty years ago, among the so-called "thousand pounders," and did not prove a success.

NOTES, LETTERS, Etc.

FIRST AID LECTURES: MEDICAL SWEATING.

THE editor of *First Aid* writes: I observe in the advertisement columns of the BRITISH MEDICAL JOURNAL a notice by the London School Board asking for medical men to give courses of six lectures on First Aid and Nursing at £3 3s. a course. Hitherto the recognised fee for these lectures has been £1 1s. a lecture. Of course there have been many instances in which the medical man has had to lecture for a merely nominal fee or none at all, but those have been owing to purely local circumstances, such as the social condition of the class with its consequent inability to raise the orthodox amount.

Poverty cannot be the reason assigned by the London School Board for attempting to bring down the price of these lectures. It is medical sweating, pure and simple, and of a gross form, and I sincerely hope that no one who has been accustomed to lecture will condescend to work for the London School Board for the fee advertised.

RHEUMATIC HEART DISEASE IN CHILDREN: A CORRECTION.

DR. F. JOHN POYNTON, (St. Mary's Hospital) writes: I should like to correct a slight misstatement in the report of the discussion on Rheumatic Heart Disease in Children, introduced by Dr. Lees at the Association meeting in the BRITISH MEDICAL JOURNAL of October 15th. I have apparently commented upon the discovery of an aërobic bacillus in rheumatic fever by Dr. Pierre Achalene. It should be an anaërobic bacillus, and the name Achalme.

A CORRECTION.

DR. H. GEARY DYER, of Ringwood, Hants, to whom some remarks were attributed in the discussion on the Treatment of Spinal Curvature in the Section of Diseases of Children, published in the BRITISH MEDICAL JOURNAL of October 15th, page 1129, writes to say that "greatly to his disappointment he was not within 500 miles of Edinburgh town" at the time of the annual meeting. We take this opportunity of pointing out that mistakes of this kind, and a great deal of inconvenience to all concerned, would be prevented if the speakers in discussions at the annual meetings would sign their names in full to their notes of their remarks.

SAWDUST AS A SURGICAL DRESSING.

MR. ERNEST A. T. STEELE, M.R.C.S. (Southend-on-Sea) writes: In the BRITISH MEDICAL JOURNAL of September 24th, Dr. Neve, of the Mission Hospital, Kashmir, describes a method of using sawdust as a surgical dressing. This method is not new, for I saw it used by Mr. Rushton Parker at the Royal Infirmary, Liverpool, at least ten or eleven years ago, and I have since frequently used sawdust prepared in the way described by Dr. Neve as a cheap absorbent dressing in advanced malignant disease and septic suppurating wounds among the poor.

[illegible] THE MONTHLY PERIOD."

MR. W. CECIL [illegible] (Matlock) writes: Although not a lady doctor, I [illegible] as to the harmlessness of ordinary ablutions and local cleanliness during the time of menstruation. It has been my routine practice for some time to prescribe [illegible] hip baths of a few minutes' duration at a temperature of 85° to 95° F. night and morning daily during the period, the heat of the bath to be gradually reduced to [illegible] as soon as the flow has ceased. Many ladies [illegible] discomfort experienced by [illegible] general bath may be permitted [illegible] hours be advised [illegible] bear them well as a rule. [illegible] be taken without ill effect during [illegible] not to be recommended. The [illegible] not of dysmenorrhœa [illegible] testimony to its value in numerous cases. Vaginal douches may be used instead, but are not so generally efficacious. Repeat vaginal douches are harmless, though perhaps superfluous if the sponge bath is used.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. W. J. Addison, Glasgow; Association of Registered Medical Women, Secretary of, London; Dr. F. H. Alderson, London; Dr. R. J. Anderson, Newry; Antihumbug. **B** Berkshire; British Gynæcological Society, Secretary of, London; Mr. E. Berdoe, London; Mr. W. Bryce, Edinburgh; Mr. S. H. Berry, London; Dr. J. O. W. Barratt, London; Dr. L. A. Bidwell, London; Mr. J. P. Bush, Clifton; Mr. J. B. Blackett, London; Mr. W. Basset, Newport, Mon.; Mr. F. B. J. Baldwin, Rotherham; Dr. B. Bramwell, Edinburgh; J. W. Batterham, M.B., St. Leonards; Messrs. Burroughs, Wellcome, and Co., London; Mr. A. S. Barling, Lancaster; Mr. H. S. Basden, Stanford-le-Hope. **C** Mr. B. Clarke, Bournemouth; Cymro; Mr. H. Caudwell, Woodstock; F. P. S. Cresswell, M.B., Cardiff; Mr. F. H. Cooke, Birch; C. A.; Dr. A. C. Coles, Bournemouth Mr. J. W. Clark, Cambridge; Civil Surgeon, not a General Practitioner. **D** C. W. Daniels, M.B., Georgetown; Mr. F. W. Dingle, Bath; Mr. A. R. Douglas, Portland; Sir Dyce Duckworth, London; H. Distin, M.B., Enfield; Dr. A. Duke, Cheltenham; Messrs. Dawbarn and Ward, London; J. Duncan, M.B., Ashton-under-Lyne; Dr. A. T. Davies, London; Mr. E. Darke, London; W. Duncan, M.B., Aberdeen; Dr. C. Dukes, Rugby; Dr. C. C. Douglas, Glasgow; Dr. H. G. Dyer, Ringwood. **E** Mr. A. R. F. Evershed, Penzance. **F** Mr. W. T. Freeman, Reading; F. P.; Mr. T. E. Flitcroft, Bolton; W. S. Frew, M.B., Princetown; W. F. Farquharson, M.B., Carlisle. **G** Dr. E. Gwynn, London; Mr. J. G. Gabe, Morriston; Mr. F. G. Gardner, Warwick; Dr. F. W. Grant, Elgin; Miss C. L. Gott, Paris; Mr. W. S. Granger, Weymouth; Dr. G. L. Gulland, Edinburgh. **H** Dr. F. Hinds, Worthing; G. Halley, M.B., Dundee; Mr. M. J. Haughton, London; Mr. B. Hartzhorne, London; Dr. L. Henry, Melbourne; Mr. A. Hunter, Port Said; Dr. J. P. Henry, London; Mr. J. T. Hereford, Kingston-on-Thames; Mr. F. H. Hudson, London. **I** Iodoform. **J** W. D. Johns, M.B., Bournemouth; Dr. F. W. Jordan, Stockport; Dr. J. Johnston, Bolton; J. S. B.; J. H. K.; Dr. R. Jardine, Glasgow; Dr. R. Jones, Woodford Bridge; Dr. R. Jones, Blaenau-Festiniog. **K** G. E. Keith, M.B., London. **L** Mr. R. P. Lawson, Manchester; Mr. C. S. Loch, London; Dr. E. Leward, Zastron; Dr. J. F. Little, London; Lint; W. Leask, M.B., Birkenhead; Mr. C. E. Lay, Peasenhall; Mr. C. E. Lister, London; Dr. W. T. Law, London; Mr. H. J. Lloyd, Barmouth. **M** A. McCulloch, M.B., Tarporley; Mr. M. P. Macnaughton, London; Messrs. S. J. Moreland and Sons, Gloucester; Mr. R. MacGregor, Dumfries; Mr. V. Matthews, London; M.B.; Miss G. L. Mallet, London; Dr. E. E. Moore, Letterkenny; A. M. Martin, M.B., Newcastle-on-Tyne; Mr. F. H. Madden, London; Member; Dr. R. F. McCraith, Liverpool; Mr. G. B. Mathieson, Doune; Mr. H. C. Martin, Wroughton. **P** Dr. J. Pringle, Manchester; Messrs. Parke, Davis, and Co., London; Dr. C. Porter, Stockport; Mr. T. Perkins, Bradford; Perplexed Medico; H. R. Phillips, M.B., Penzance; Mr. W. W. Pike, Aldershot; Mr. A. Pain, London; J. C. Potter, M.B., Spennymoor; Dr. F. J. Poynton, London; Dr. A. M. Paterson, Liverpool; Practitioner. **Q** Quo Fata Vocant. **R** Mr. J. D. Rhodes, Plumstead; Red Cross Society, Secretary of, London; Dr. W. F. Robertson, Edinburgh Mr. D. Rockwood, London; G. A. Robinson, M.B., Holmwood; Dr. W. R. Rice, Coventry; Dr. J. S. R. Russell, London; R. M.; Mr. G. Rendle, London; Dr. A. W. Robson, Birmingham; Dr. J. M. Rhodes, Manchester; Ro [illegible]; Medical and Chirurgical Society, Secretary of, London. **S** S. W. A.; Mr. W. P. Stocks, Salford; Dr. W. H. Sturge, Florence; Dr. A. C. Sym, Edinburgh; A. J. B. Squire, M.B., London; W. C. Sharpe, M.B., Darley Dale; Messrs. Smith, Elder and Co., London; Mr. J. Stewart, Clifton; Dr. A. Shean, Cardiff; Dr. T. S. Short, Birmingham; Mr. P. S. Spokes, London; Dr. T. D. Savill, London Surgeon-Major Retired H.P.; Dr. R. P. Simpson, Weymouth; "School World," Editor of the, London. **T** Dr. H. Tilley, London; Mr. G. Thomas, Prestatyn; Mr. S. Thistlethwaite, Ashton-on-Mersey; Dr. W. Thorburn, Manchester; Messrs. R. Tuck and Sons, London; Miss L. Thornton, Swansea; Dr. J. C. Thresh, Chelmsford; Mr. W. T. Thomas, Liverpool; Dr. D. Thomson, London; T. P. **W** Dr. A. O. Ward, London; Mr. W. StC. Wilson, Glasgow; Mr. W. S. Willmore, Netley; Mr. R. L. Williams, London; Dr. F. Willcocks, London; Dr. F. P. Weaver, London; Mr. R. H. Woistenholme, Salford; Mr. G. S. Walton, Sutton; Dr. S. R. Wells, London; Mr. L. K. G. Wilson, London; Miss Woodward, Leeds; Mr. J. D. Windle, Southall; Mr. A. H. Walker, Cranleigh; Dr. R. Wilkinson, London. **Y** Mr. M. T. Yarr, London; Dr. P. A. Young, Edinburgh; etc.

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SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

John Duncan, F.R.C.S.Edin., LL.D., President.

ON THYROIDECTOMY IN EXOPHTHALMIC GOITRE.

By Sir William Stokes, M.D., F.R.C.S.I.,
Surgeon in Ordinary to Her Majesty the Queen in Ireland.

The great amount of obscurity that still surrounds the etiology and pathology of Graves's disease and the unsettled state of opinion that exists in reference to its therapeutics are topics that still so largely exercise those who have an opportunity of dealing with such cases that any contribution that may directly or indirectly throw light on these questions is deserving of consideration. I deem the following case of importance, as the evidence it supplies is certainly in the direction of verifying one at all events of the many theories that have been held as to the causation of that strange, complicated, and, up to this, unexplained condition, and to which has been appropriately attached the name of Robert Graves, who gave the first clinical description of the malady.

For the notes of the following case (both before and after operative treatment) I am indebted to Mr. F. C. Heffernan, late Clinical Clerk in the Meath Hospital.

G. D., aged 32, by occupation a farmer, was admitted into the Meath Hospital, under the care of my colleague, Dr. Craig, for the first time in October, 1894, and again on May 29th, 1896. He stated that about seven years previously he got a fright from seeing a friend of his killed by a threshing machine. About three weeks subsequently he noticed a slight swelling in his neck, but at the time did not pay much attention to it. The enlargement, however, continued to increase in size, and he felt weak and suffered from attacks of palpitation. A short time after this he remarked that his eyes were becoming very prominent and "bloodshot," and the palpitation increased in a marked degree. This was greatly intensified on attempting to do any work requiring physical effort. Any slight exertion was also followed by other characteristic symptoms, such as flushes of heat, particularly about the head and face, profuse sweating, which also took place irrespective of any exertion, especially if the patient got excited. He soon became very languid and weak, and constantly complained of great weariness.

He suffered from a more or less constant headache, and became very irritable and depressed. The appetite was very irregular, as he sometimes had an extreme longing for food a very short time after meals, while at other times he suffered from anorexia and thirst. The bowels were also very irregular, but more frequently constipated than otherwise. Occasionally, too, he suffered from fits of trembling, and as a rule slept badly. Several local physicians were consulted, but little benefit was derived from any line of medical treatment that was recommended. He was advised to come up to Dublin, which he did, and was admitted into the Meath Hospital. He was then given ergotin and belladonna, and subsequently thyroid extract. While in hospital his general health became much improved, the tumour in the neck decreased in size, the eyes became less prominent, and the tremors subsided. This improvement, however, was only temporary. After about a year the symptoms recurred, and were more marked than before. He accordingly returned to hospital in May, 1896.

On admission the patient was anæmic, the thyroid was enlarged, particularly the central lobe, which was about the size of a large Tangerine orange; the lateral lobes were also somewhat enlarged. The circumference of the neck at the most prominent part of the enlargement was 18 inches. There was a systolic murmur heard over one gland, and a *bruit* in the vessels of the neck. The heart's action was very irregular, but not very fast, and there was a slight trace of a systolic murmur in the mitral area. This was probably hæmic in character, as it was not constant, and disappeared on excitement. The eyes were prominent, the palpebral orifice enlarged, and there was well-marked nystagmus. Von Graefe's sign was not well marked, or Stellwag's. There were tremors, but no skin pigmentations; the urine was acid in reaction, free from albumen or sugar, and specific gravity 1020. There was no evidence of any local or general œdema. On his admission he was given thyroid extract, and a mixture containing ext. cascara sagrada, nux vomica, and glycerine.

The case was then transferred to me, and after consultation with Dr. Craig, deeming that it was a suitable one for surgical interference, I operated and removed the large central tumour. During the operation the patient got three attacks of very alarming dyspnœa. Otherwise the operation was in no respects eventful, the removal of the enlargement being unaccompanied by any special difficulty. A smaller growth, about the size of a pigeon's egg, was found lying to the right, but on a posterior plane to the larger growth. This was also removed, and with it a portion of the right lobe of the thyroid. The larger tumour was heavy, elastic, and somewhat larger than a tennis ball. Owing to some hæmorrhagic oozing from the cut surface of the gland the wound was packed with boracic gauze, and sutures inserted, but not drawn together except at each end of the wound.

During the afternoon the patient had several attacks of syncope, one of which was somewhat alarming, as he completely lost consciousness, and the face became deadly white. These attacks were followed by profuse sweating. These symptoms were treated by the exhibition of diffusible stimulants in small quantities every hour.

During the patient's convalescence nothing very special was to be noted except, perhaps, the occurrence on the fourth and fifth days of alternate attacks of extreme heat and cold. On the fourth day the temperature rose to 103°, but after that it fell and remained from that time on practically normal. Three weeks after the operation the patient was sent to the Convalescent Home in Bray. Many of his symptoms have already shown signs of abatement.

The result in this case naturally suggests consideration of some of the views held and promulgated in reference to the symptomatology, etiology, and therapeusis of Graves's disease. In many respects the first of these is well illustrated in the case I have detailed, although several well known ones were wanting. For example, von Graefe's and Stellwag's signs were not well marked, namely, a want of synergic action in the lid and brow when the globe was turned downwards, and incomplete closure of the palpebral fissures; also the condition of osteomalacia noted by Revilliod,[1] consisting of exaggerated flexibility of the finger and wrist joints, brittleness of the bones, and loss of weight; again, the occurrence of tetanic spasms of the upper extremities, and dyspnœa from mechanical pressure, a condition not often found in the ordinary forms of bronchocele, as noticed by Steinlechner.[2] It was this latter condition that chiefly induced Lord Lister to operate on the case he published in 1877, when life was threatened by suffocation. The result obtained in this case was very encouraging, for in a few weeks after the operation there was a marked alleviation of all the symptoms, and the patient ultimately recovered—lastly, the symptoms noted by Gerhardt,[3] namely, splenic pulsation, a condition previously noted by him in connection with aortic incompetence.

The principal theories that have been held in regard to the etiology of this disease appear to be three in number. First, that the heart affection (Trousseau) is primary, and is caused through disturbance of the sympathetic nervous system; secondly, that the primary lesion is a central one; and thirdly, that it is caused by the secretion of the thyroid gland of a toxic substance.

Grube[4] strongly supports the view that the disease is distinctly infectious. This is based on the observation that it may supervene in cases of endemic or hereditary goître, and be accompanied by enlargement of the lymphatic glands. He holds that the infective agent may act in three ways; first, on the thyroid gland, causing a perversion of its functions, the nervous system being affected secondarily; secondly, on the thyroid gland and nervous system, and, thirdly, on the nervous system directly. The hereditary character of Graves's disease has also been recognised. The causes which are usually assigned as factors in inducing the malady, such as shock, excitement, over-exertion, etc., can hardly be considered as of first moment, except as possibly rendering the system less liable to resist infection.

The neuropathic theory appears to have but few adherents,[5] notwithstanding the experimental inquiries of Filehne and Durduf, who, by division of the restiform bodies in rabbits, succeeded it is said in producing exophthalmos, enlargement of the thyroid, and tachycardia. I have not however learned that similar results have been obtained by other observers. The view that the disease is due to toxic substances secreted by the thyroid appears to find favour. We find this held notably by Lemke of Hamburg, Grube, Brissaud, Moebius, and Allen Starr. Prebram[6] gives but a partial adherence to the theory of the toxic basis of exophthalmic goître, maintaining that it is not established in cases where one or other of the symptoms is unilateral or "when the signs suddenly supervene upon a mental or physical shock."

In reference to the therapeusis of the malady we find as great diversity of opinion as we meet with in regard to its etiology. Professor Bruns[7] holds that it is quite exceptional for the goître to diminish under the administration of thyroid preparations, and that under their influence the cardiac and nervous symptoms as a rule get worse. In other cases of bronchocele exclusive of the cystic form the benefit he found

in a large number of cases, 350, excluding the forms above mentioned; the simpler hyperplasic form of goître appears to be the one that is specially amenable to thyroid treatment.

As regards the thymus gland treatment of Graves's disease there seems to be a practical unanimity of opinion among physicians as to its uselessness. "The conclusion I have arrived at," observes Dr. Hector Mackenzie, "is that the thymus gland possesses no specific action in Graves's disease. I have found it in most cases to have no effect either on the heart, on the goître, or on the exophthalmos." Again, Drs. Ord and Mackenzie, speaking of the value of thymus-gland preparations, observe that "no appreciable effect followed their administration, although in a few cases the patients felt better while taking them."[8]

The results obtained by operative treatment point, I think distinctly, to the thyroid being the seat of the primary lesion. For example, Lemke of Hamburg, who is a strong opponent of the neuropathic nature of Graves's disease, believing that the symptoms are due to toxic agencies originating in the gland, strongly advocates surgical treatment.

Allen Starr[9] has published a statistical record of 190 cases, a large proportion of which were permanently benefited by operation; 74 are reported as cured, 45 improved, and 3 not benefited. He states that 23 of the cases died immediately after the operation, which could not be attributed to either hæmorrhage or sepsis. He attributes the calamity to a poisoning of the entire system by absorption of thyroid juice during the operation. This, he thinks, may result from an excessive handling of the tumour during operation, to "absorption of torn vessels or hypersecretion due to the employment of ether as an anæsthetic." He suggests, therefore, that some other anæsthetic should preferably be employed, and mentions cocaine as recommended by Kocher. The symptoms preceding death were those of collapse and cardiac failure. Among other methods of operative treatment adopted in these cases mention should be made of Trousseau's suggestion of local depletion; also the operation to which the term exothyropaxy has been given, and which consists in stripping the capsule from the gland and fixing the latter in the superficial wound, so as to produce shrinking from exposure to air, and from thrombosis of the venous sinuses; also division of the cervical sympathetic has also been suggested, and ligation of the thyroid arteries.

Osler makes the safe and not easily contradicted statement, that it is "difficult on any theory" to explain the symptoms of this disease. He inclines, however, rather to the neuropathic view, holding that many features are explicable on the view that it is primarily an affection of the medulla oblongata. He mentions that hæmorrhage on the floor of the fourth ventricle has been noted by Hall White. The sequence of symptoms according to Osler is:

1. Cardiac and vascular symptoms (tachycardia and vascular dilatation).
2. Exophthalmos.
3. Thyroid enlargement (usually synchronous with exophthalmos).
4. Anæmia, emaciation, and slight fever.
5. Skin symptoms, urticaria, pigmentation patches.

He does not deal with the toxic theory at all, and as regards treatment makes no mention of excision of the thyroid, but he correctly observes that all medicinal measures are "notoriously uncertain."

The researches and records of cases of Graves's disease made by various observers may, I think, justify us in holding:

1. That in a large proportion of cases shock is apparently the starting-point of the disease.
2. That in one type or form of the disease the first tangible pathological deviation is enlargement of the thyroid.
3. That in such cases tachycardia, palpitation, and exophthalmos usually follow in that succession.
4. That two distinct forms of the disease may be recognised, as pointed out by Charcot and Marie, namely, the complete and incomplete forms, and that for the purposes of prognosis and guide to treatment, a distinction should be made between the cases commencing with tachycardia and those in which the thyroid enlargement precedes the palpitation.
5. That only a very temporary benefit is, as a rule, derived from internal medication.
6. That partial removal of the enlarged gland when it is primarily affected is likely to be followed by distinct improvement, and at times perfect recovery. This fact seems to strengthen the view of Kocher that in the majority of cases, irrespective of Graves's disease, requiring thyroidectomy, total extirpation is not indicated. He has stated that in a very large proportion of his cases total removal was abandoned, and only the partial operation performed.[10]
7. That in the case I have detailed at the commencement of this communication, as nearly two years have elapsed since the operation without any recurrence of the symptoms, the treatment adopted may be considered as successful.

NOTE ON THE PATHOLOGY OF THE TUMOUR BY PROFESSOR A. SCOTT.

I examined both portions of the thyroid removed by you from a case of Graves's disease. The smaller portion was evidently not immediately attached to the larger mass, and microscopically was not distinguishable from a normal thyroid. The larger portion was apparently complete, being covered with a fibrinous covering or capsule. I made microscopical sections of this part also. The greater part appeared to be normal, like the small separate part above alluded to. In some parts, however, the epithelial spaces appeared collapsed, and were quite devoid of the usual colloid material. The epithelial lining, however, showed no signs of proliferatior as has been described in some cases of this disease. These changes were only found in a small part of the section. Similar changes could be seen in other thyroids which were not associated with the symptoms of Graves's disease, so that I think it would not be possible to draw any decided conclusion from the microscopical examination of the tumour.

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Professor Dr. KOCHER (University of Bern) congratulated Sir William Stokes on his brilliant success. It confirmed his own observations that by operations on the thyroid gland we were really able to cure a good many patients affected with Graves's disease. He had had news a few days before the meeting of one of his worst cases (a medical man), who was almost unable to do any work because of the great tremor, weakness, and all the other characteristics of the disease, and who had been operated on some years ago by excision of the thyroid gland. He was now again carrying on his large practice in midwifery and gynæcology. Such a perfect result was not always got by operation; it might be that in most of these cases not enough of the thyroid gland had been removed, or caused to atrophy by ligature, as they must never take away the whole gland because of the danger of myxedoma; but it might be also that the real cause of the disease was localised behind the thyroid gland, that was to say, in the central nervous system. That must be decided by further following the cases operated upon, and he was just now gathering his results in the 50 or more cases where he had operated. As to the question of the President, Mr. Duncan, as to the danger of anæsthesia in these cases, he thought that they ought never to give either chloroform or ether in cases of Graves's disease. That was a very great danger, and he was sure that some of his cases had died only from the effect, immediately or later, of the anæsthetic. The operation could very well be done—as he did, as a rule, even for ordinary goître excision—by cocaine alone.

INTESTINAL OBSTRUCTION.

By Professor Dr. KOCHER,
University of Bern.

WHEN I received the kind invitation of your committee to read a paper at this meeting I chose the subject of intestinal obstruction, being quite aware that it had been the subject of important discussion amongst British surgeons of late years; but as a mother likes the child best who gives her the most trouble, I thought you would not object to hear a few more words about this favourite chapter of surgery. Besides, it is my conviction that we can never too often bring before the

profession in general our claim that the surgeon should be called for at the very onset of symptoms, if we are really to make great progress in our results in dealing with this affection. In Switzerland, at any rate, patients and their families as well as medical practitioners still keep up that anachronism—to try every internal means first before the surgeon is even allowed to see the patient.

Excluding all cases where symptoms of intestinal obstruction resulted from hernia or from affections of the rectum, I have had under my treatment 77 cases of internal obstruction; 26 of the cases were carcinoma of the intestines or exceptionally sarcoma; of these 24 have undergone operations, for the most part (15) extensive resection of the bowel; of these 20 have recovered, and some are still living and in good health; 4 have died.

A second form of intestinal obstruction, which seemed more common with us than elsewhere, is local tuberculosis with the formation of tumours and narrow strictures, giving rise sometimes to secondary invagination. Of this very interesting form I have seen 19 cases and have operated in 18. The operation is often a difficult one because of the very extensive adhesions with the other organs. I have always performed resection of the diseased part to get a radical cure; 16 of these cases were cured and 2 died.

In the third category, intussusception, 6 of these were operated upon, and in 5 of them by resection of the whole part. All these recovered, and only 1 case—where an artificial fistula was made because of already existing peritonitis—died.

If we take out of these three categories the worst cases, where more or less extensive resection of the intestine had to be performed, we see that in 38 of them we only have a mortality of 18.4 per cent. So we cannot accept at all the statistics which tell us that 0.3 of all cases of intestinal obstruction are cured by physicians with internal treatment, with the addition that surgeons have no better results.

Now, with regard to the much simpler operation we have to perform for other cases of intestinal obstruction—I mean when we have only to take out, perhaps, an ovarian tumour pressing on the intestine, or to cut through a peritoneal band strangulating a portion of the bowel, or to unravel the intestine in case of volvulus, we are aware that the results are far less favourable than in my most complicated resections of intestine. In 15 cases where the ileus was only a symptomatic one—that is to say, caused by disease of the other organs than the intestine, I have operated 6 times with 3 deaths. In 16 cases where there existed a strangulation by peritoneal adhesions I have operated 15 times, with 7 deaths and 8 recoveries. Of 7 cases of acute volvulus, 6 were operated on and 5 died. Out of 4 cases where there was either no diagnosis or probably only fæcal obstruction, 2 were operated on and both recovered. So with the much more simple operations I have had, in 29 cases a mortality of 59.2 per cent., against the mortality of 18.4 per cent. in resection cases.

The conclusion we draw from these statistics is that it is not the operation itself which explains the great mortality in some forms of intestinal obstruction, but that there is another reason to account for it. It is well known that in cases of strangulation of a part of the bowel gangrene and ulceration may result from outside pressure at the seat of the obstruction, as is illustrated by cases of incarcerated hernia. In cases of strangulation every medical man admits that it is only by operation performed as early as possible that we can hope to save the patient's life; but it is much more important that every medical man should know that the majority of our patients with intestinal obstruction do not die by such strangulation with local gangrene and ulceration, but that the common cause of death in all forms of obstruction by strangulation as well as by stricture (what Germans call "Obturation"), whether chronic or acute, is a different one.

In the majority of my *post-mortem* examinations I found very important lesions in the wall of the intestine above the seat of obstruction. These changes are well illustrated by some exact drawings, where patients with ileus by stricture have died in consequence of these lesions. As you see, they consist in the formation of circumscribed necrosis of the mucous membrane going on to sharply circumscribed ulcerations through the whole thickness of the wall, and giving rise eventually to perforation. The cause of these ulcerations is not, as has been stated, due to the pressure of hard fæcal masses pressing for some time on the same spot. You may find the same ulceration in the ileum and jejunum to a very great extent where the bowel is filled with liquid contents. The cause is the same as that which acts in cases of incarcerated hernia (as I have shown long ago) above the seat of incarceration, and the same you can produce artificially by overdistension of a part of the bowel by injection of gas or fluid. You will see that without the slightest interference with the mesenterial circulation the bowel gets quite blue by venous stasis. As a consequence of this ecchymoses may form in the mucous membrane, the nutrition is altered, and the protective influence of the epithelium, which has been proved to be of such importance, is destroyed, and the mischief is done. Absorption of bacteria and of the the toxic products of fæcal contents begin from that very moment, and if you do not step in in time, your patient will die either from general intoxication, with symptoms of weakness of the heart and collapse, or he will die from local intoxication with necrosis of the mucous membrane (first at the places of the above-mentioned ecchymosis), going on to ulceration and perforation.

There is no peritonitis without micro-organisms (as Silberschmid has clearly proved by a series of experiments), and micro-organisms only go through the intestinal walls when there is interference with circulation and nutrition.

If you have to deal with a patient with a strangulation of a part of the intestine by internal hernia, peritoneal band, or volvulus, certainly you have at once to free the compressed intestine and mesentery. But what is of the same importance in all other forms of intestinal obstruction, that is to say the great majority of cases, is to get rid of the overdistension of the intestine above the seat of the obstruction as quickly as possible. You must empty the bowel at all costs above the occluded part.

If you have to deal with a patient in good condition, that is to say, still with a strong heart, when there is no general intoxication and no peritonitis, you should open at once the abdomen in all cases, when you may hope to get rid of the cause of the obstruction. Let the distended bowel protrude through a large opening, protect it with warm towels, but open it at once by one or two incisions; wash it out if necessary in order to empty it thoroughly. You are able to detect by that way already existing or threatening perforations, but if you do the same with already weak heart you will see that there is no better stimulant for the heart than to get rid of toxic influences from the bowel as quickly as possible.

If you are not sure that you can remove the cause of the obstruction, or if you cannot risk a very serious operation with resection of intestine, especially in cases of long-standing tumour or stenosis, begin to empty the intestine by washing out the stomach, which gives such wonderful relief, and if this relief is not permanent, perform an enterostomy, using a small incision only with cocaine, and a very small opening in the intestine to allow gas to escape. If you have opened the abdomen or thorax, seeing the possibility of taking away the diseased part, make an entero-anastomosis to enable the patient to stand later a radical operation.

If surgeons even sometimes hesitate to undertake early operations for intestinal obstruction, I think the reason is this, that we often think too exclusively of the necessity to perform a radical cure at once. Certainly this is the best way when it can be safely done, but in many cases the best thing for the patient, to prevent serious complications, is emptying his bowel, by simple enterostomy, of its septic contents. Why do we shrink from performing an operation in an early moment of internal obstruction, when we know by the experience of our best surgeons that even in diffuse peritonitis we may have recovered by thoroughly washing out the peritoneal cavity with a good drainage afterwards, and by emptying the bowel by free incision of the large quantities of accumulated fœtid contents?

My contention is this: that we must never cease to preach that every case of intestinal obstruction has to be submitted to the surgeon at once, and before any drug has been administered, so that he may decide whether any and what operation is to be done. But to come to a decision which gives the greatest guarantee possible to our patient, let us neglect no means whatever to come to an accurate diagnosis, and let us

not forget that one of the best methods to arrive at that is to call in a good physician for a consultation.

PARTIAL HEPATECTOMY FOR PRIMARY CANCER OF LIVER,

WITH A REPORT OF THREE CASES.

By A. W. MAYO ROBSON, F.R.C.S.,
Senior Surgeon Leeds General Infirmary, Professor of Surgery in the Yorkshire College.

OUT of nearly 300 operations on the liver and bile ducts I find that I have operated in one way or another on 35 cases of malignant disease involving the liver and biliary passages. Out of this number I have only met 3 cases in which it appeared feasible to attempt complete removal of the disease; of these 3, 1 proved much more extensive than it promised at the beginning of the operation, and the patient only survived a few hours, the other 2 patients recovered from the operation to die within a few months of recurrence of cancer.

Out of the 35 cases taken together, 27 patients recovered from the operation; these included cases of cholecystotomy or cholecystenterostomy for relief of the jaundice; cholecystectomy with partial hepatectomy for removal of the disease and simple exploratory procedures.

In some few cases the relief given was most marked, the jaundice disappearing, and health and weight being gained for longer or shorter periods. In 2 cases—one of apparent cancer of the gall bladder, in which nothing more than an exploratory operation was done, the other one of apparent cancer of the common duct with infective cholangitis, in which cholecystotomy was performed—complete and permanent recovery followed operation, and the patients are now well. If they were what they appeared to be on handling at the time of operation, the cases are remarkable, and would come under the class of "cures by operation *per se*." I suspect, however, that in both instances the tumour, apparently malignant, must have been inflammatory.

The reason of my present paper is to present notes of my cases of partial hepatectomy, and to raise, among others, the question as to whether that operation is worth repeating in cases of cancer.

CASE I.—Mrs. W., aged 54, the wife of a publican, was sent to me by her medical attendant on account of a tumour in the right of the abdomen which was accompanied by acute and distressing symptoms. The patient, a spare woman, was slightly jaundiced and looked pinched and extremely ill when I saw her on November 21st, 1895. She gave me the history of having noticed a movable swelling on the right side of the abdomen for twelve years, which was diagnosed as a floating kidney and which she was informed needed no treatment. As it produced no symptoms and did not interfere in any way with her duties, for several years she ignored it, and sought no advice until three years before I saw her, when she began to have occasional attacks of pain over the liver, followed by vomiting and slight yellowness of the skin, though she said that this never amounted to true jaundice. Her health began to fail and she began to lose flesh four months before she saw me, but the tumour did not appear to alter materially until six weeks before I saw her, when whilst in the act of stooping to pick up a bottle she was suddenly seized with an acute pain in the tumour, which straightway began to increase and to be painful and tender. From this time her illness had been continuous and she had been confined to bed or the couch.

When she saw me the right lobe of the liver reached to the level of the umbilicus and from its lower border a firm rounded tumour passed down as far as the right groin. The tumour was dull on percussion and did not fluctuate, though a thrill on succussion showed the contents to be fluid or semifluid. The left lobe of the liver was not enlarged materially and no nodules could be felt. A diagnosis of enlarged gall bladder due to impaction of gall stones in the cystic duct was made and the presence of secondary malignant disease was suspected. Operation was advised and patient was admitted to a surgical home, the following operation being performed November 23rd:

The abdomen was opened by an incision in the right linea semilunaris, when the gall bladder was found to be adherent to the parietal peritoneum, as well as to the liver, stomach, omentum, colon, and small intestines.

Aspiration removed about 2 ounces of muddy-looking fluid, but the greater part of the contents of the gall bladder was of putty-like consistence, and had to be removed by a lithotomy scoop. One gall stone, the size of a chestnut, was found in the interior of the gall bladder, the walls of which were thickened and contracted. The adherent omentum was ligatured off, and other adhesions separated, when it was found that the entrance to the cystic duct was almost occluded by a growth the size of a walnut, and beyond this could be felt a rounded gall stone the size and shape of a thrush's egg. In consequence of this discovery, I decided to perform cholecystectomy, and proceeded to detach the gall bladder from the liver, when I discovered a whitish nodule on the under surface of the right lobe of the liver, clearly an extension from the growth in the cystic duct.

It now became manifest that it would be useless to remove the one without the other; I therefore at once decided to attempt the removal of the affected portion of the liver, and to this end I had two knitting needles boiled, and selected a piece of non-fenestrated drainage tube to act as a tourniquet.

I prolonged the incision quite up to the costal margin, had the right lobe of the liver and remains of the gall bladder dragged forward through the wound, and encircled the protruding part with the rubber tube, which, after encircling it twice, was tied and the ends cut off. The tourniquet passed beneath the gall stone, and, therefore, well beyond the growth in the cystic duct as well as the nodule in the liver. In order to prevent the improvised tourniquet from slipping, I pushed the knitting needles through the liver and cystic duct transversely just above the elastic, leaving the ends resting on the skin on either side of the stump; there was then no difficulty in tucking down the parietal peritoneum and suturing it to the visceral peritoneum on the under surface of the liver and duct below the level of the tube. Sponge pressure, aided by a few catgut ligatures, soon arrested the bleeding from the torn adhesions, and, after wiping out the abdomen, the wound was closed layer by layer, leaving the disease external at the upper part of the incision. The projecting lobe of liver, together with the remains of the gall bladder and cystic duct, were then cut away half an inch above the needles, there being absolutely no bleeding and apparently very little tension. The stump was dusted with boracic powder, and was dressed daily in order to keep it as dry as possible.

The wound beyond the stump healed by first intention, and the stitches were removed at the week end. The first needle came away at the end of a fortnight, the second a week later, and the stump beyond the ligature, together with the ligature itself, was removed within the month. After the separation of the slough the granulations exuded a little bile for about ten days. The patient was on the sofa at the month-end, and returned home six weeks after operation, looking and expressing herself as quite well. She had lost her anxious look and had gained flesh. Her appetite was good and her digestion seemed perfect.

Recovery was absolutely uneventful; the pulse never exceeded 90, the temperature was never below 98° or above 99.2°, and the patient did not vomit even once; in fact, recovery was as smooth as after an ordinary ovariotomy. There was absolutely no shock. The operation occupied about an hour and a quarter. The tumour after removal weighed ½ lb., after the moisture had drained away, and this did not include either the pultaceous material removed from the gall bladder or the walls of the gall bladder, except that portion attached to the liver itself. Mr. T. H. Haigh reported the growth to be epithelioma.

In March, 1896, I had the opportunity of seeing the patient, and of carefully examining the region of operation. So far as I could say, there was no sign of recurrence of disease, the patient being of a good colour, and the remains of the liver, so far as could be ascertained by palpation and percussion, remaining normal in size, and being free from tenderness. I was asked to see her on account of a small swelling situated in the abdominal wall, just above the inner end of the right Poupart's ligament, which was thought to be increasing in size, and which was causing uneasiness from the fear that it might be a secondary growth, though situated so far from the original site of the disease. I thought it better to remove it, and on incision I found the tumour to consist of an encapsuled swelling in the abdominal wall, between the skin and the aponeurosis of the external oblique, resembling a sebaceous cyst, in that the cyst wall was quite distinct, and the contents were of putty-like consistence. Under the circumstances, I removed the tissues immediately surrounding the capsule, as well as the tumour itself. The wound healed by first intention, and the patient was up on the third day.

Mr. Stott, pathological curator at the Leeds Infirmary, informed me, after having examined the parts removed, that he could find no sign of morbid growth, and that in structure it resembled a sebaceous cyst. Later, however, she began to waste, and in July, 1896, she succumbed to a recurrence of disease in the liver.

CASE II.—On November 23rd, 1897, I was asked by Dr. Ruxton, of Blackpool, to see Mrs. H., aged 52, who gave the history of having suffered from attacks of pain in the upper right abdominal region for twelve months. At times the attacks had been followed by jaundice, but no concretions had ever been discovered in the motions. On further inquiry I found that she had had attacks of "spasms" for some time before the acute seizures of the past year. A month before I saw her, a swelling was noticed on the right side of the abdomen beneath the ribs, and at the time of my visit it was quite easy to make out an enlargement of the right lobe of the liver, with a distended gall bladder on its inner side. The patient had been losing weight and strength for some months, and she was suffering from slight jaundice, which became intensified after each attack of pain, the seizures being followed by a feeling of chill with fever. A diagnosis of cholelithiasis was made and the possibility of malignant disease suggested.

Operation was advised. On November 27th I opened the abdomen in the right semilunar line, and found an enormously distended gall bladder, which I attempted to aspirate, but found it only to contain putty-like material, which I had to remove by means of a lithotomy scoop. The gall bladder also contained four gall stones. After detaching numerous adhesions there was felt to be an enlargement of the cystic duct, and below this swelling a gall stone was impacted. Closely adjoining the gall bladder a nodule of cancer was seen in the liver, which was also infiltrated opposite the growth in the cystic duct. The right border of the liver, which projected well below the ribs, with the gall bladder and cystic duct, were now dragged forward, and a knitting needle was thrust through the liver and through the cystic duct below the disease, the whole being then encircled by an elastic tourniquet, which was tied and cut off short. The abdomen was then wiped dry, and the rest of the wound closed. The portion of liver, gall bladder, and cystic duct beyond the ligature were then cut away, and apparently the whole of the disease was removed, as no nodules could be seen on any other part of the liver. The patient made a somewhat tardy recovery from the persistence of the ague-like attacks, which had been associated with the infective cholangitis present before operation. Thanks to Dr. Ruxton's great care the wound progressed satisfactorily, and the needle and tourniquet separated in a fortnight, after which there was free discharge of bile, for a time giving great relief, and from that time the ague-like seizures ceased. The patient regained her flesh and strength, and had a period of good health until March, 1898,

when a small nodule was noticed in the skin below the umbilicus, together with some swelling in the inguinal glands. I was asked to see her in April, when there was a little ascites, and from this time her health rapidly failed, and she died from exhaustion in May, 1898. The portion of liver removed weighed seven ounces, and then did not include the large amount of soft material removed from the gall bladder. Under the microscope the growth proved to be carcinoma.

Case III.—In February, 1898, I was asked by my colleague, Dr. Churton, to see Mrs. B., aged 52. She had been suffering from slight attacks of pain since September, 1897, but the pain had been especially severe in December. When she was admitted to the Leeds Infirmary she was extremely ill and slightly jaundiced, and had lost flesh rapidly. There was a large, irregular, hard, and fixed tumour beneath the right costal margin manifest to sight, and tender on pressure. At the operation on February 17th, 1898, I found the gall bladder and cystic duct filled with pus, epithelial *débris*, and gall stones, of which I removed 230. The walls of the gall bladder were infiltrated with growth which extended into the adjoining part of the liver. The omentum, pylorus, hepatic flexure of the colon and duodenum were all adherent, and I have no doubt were infiltrated with cancer, but when they had been separated the operation had proceeded too far to enable me to stop, and I thought it better to complete it as in the former cases by means of the elastic ligature and external treatment of the pedicle. The whole of the disease in the gall bladder and liver was removed, and on examination after death no other nodules were discovered. The patient was put back to bed in good condition, and seemed as if she would do well, but in the night she rapidly lost strength, and, despite transfusion, injections of strychnine, and other means she died from shock.

Remarks.

It will be noticed that in the 3 cases I have mentioned there was a marked history of gall stones, though the profound deterioration of health and rapid loss of flesh combined with the great enlargement of the gall bladder raised the suspicion of malignant disease. In such cases the question of operation will usually be raised, since the possibility of the trouble being dependent on inflammation the result of gall stone irritation and not on new growth cannot always be predetermined, and it has fallen to my lot not infrequently to perform an exploratory operation under such circumstances and to find a gall bladder containing pus and gall stones in the centre of a mass of omentum and adherent viscera, and with the removal of the disease and drainage of the inflamed gall bladder the whole of the trouble has subsided and a cure has been effected.

The point I would now raise for discussion is, supposing on exploration, as in the foregoing cases, apparently localised nodules of cancer be discovered in the liver, is it worth while to proceed with operation or should the surgeon at once close the abdomen?

That the operation of partial hepatectomy with cholecystectomy is feasible in cancer is proved not only by my cases, but by cases reported by other surgeons; but the question is, is it worth the anxiety and danger? I feel that further experience is required before the answer can be finally given, and my paper is only a contribution to the subject.

In 2 cases similar to the ones mentioned of localised cancer of the gall bladder and liver, where I did not perform the complete operation, but contented myself with a simple exploratory procedure in one, and with the removal of the gall stones and cholecystotomy in the other, with the idea of giving relief to pain, the course of events was not nearly so satisfactory as in the 2 cases of partial hepatectomy that recovered, for the disease steadily progressed to a fatal termination, and the patients had not even the satisfaction of a respite or the hope of recovery engendered by the knowledge that all the malignant disease had been removed. It is almost needless to say that my remarks only apply to strictly-localised cancer of the liver arising from extension from the gall bladder, and not to the diffused form of disease, which is quite beyond the pale of surgery, for I suppose all surgeons will agree that it is better to leave alone these cases of general enlargement of the liver with palpable nodules and rapid deterioration of health without material pain.

Though solid tumours of the gall bladder are rare, I think the fact of my having met with so many cases shows that the disease is one that merits consideration from a clinical and not merely pathological point of view. In by far the greater number of cases the disease is a sequence of gall stones. Zenke found gall stones present in 85 per cent. of cases of cancer of the gall bladder; and Musser, in an analysis of 100 cases, gives the proportion as 69 per cent.

Courvoisier found gall stones present in 74 out of 84 cases of primary cancer of the gall bladder. Brodowski in 100 per cent., Jayle in 23 out of 30, Bertrand in 14 out of 15, and Siegert in 95 per cent. of primary but only in 15 or 16 per cent. of secondary carcinoma of the gall bladder.

Mr. Beadles stated that out of 100 necropsies at the Cancer Hospital 4 were cases of primary carcinoma of the liver, and all had calculi in the gall bladder; 36 had secondary carcinomatous growths in the liver, but there were no gall stones present in any of them. Of 9 cases of primary carcinoma of the liver at Colney Hatch, gall stones were present in 7.

These facts, to my mind, support so strongly the theory of gall-stone irritation producing primary cancer of the gall bladder and liver, that I think it ought to have great weight with us in advising on the surgical treatment of cholelithiasis. The result of removing a portion of the liver for tumour has been remarkably good so far as immediate mortality is concerned, and where the disease has been of a simple character, subsequent good health has been re-established, as in Keen's and other cases. One case of my own has not yet been reported. In Bardeleben's case of removal of sarcoma, there was no recurrence two years after operation, and in a case recently reported by Hochenegg, of Vienna, a patient died three years after removal of the gall bladder and adjoining part of the liver for cancer, without any enlargement of the liver.

A study of the cases makes it clear that no single method can always be employed. If pedunculated, as in some cases of adenoma, the ligature will be available; if too large for this, the formation of flaps and the closure of the incision by numerous sutures may be employed, or tamponnage with iodoform gauze. Höllander has arrested hæmorrhage from the liver by the use of compressed air heated to a temperature of from 300° to 400° C., and heated steam has been mentioned as available. Where the parts can be brought to the surface, as in primary cancer of the right lobe through direct invasion from the gall bladder, the elastic ligature, as employed in my cases, would seem to me the easiest and safest method of treatment, since not only can the operation be performed quickly but without any loss of blood.

Conclusions.

In conclusion I should like to express the following opinions:

1. Seeing that statistics from various countries, and by many observers agree in showing the frequent association of gall stones and primary cancer of the gall bladder and liver, it is desirable that cases of cholelithiasis should be submitted to surgical treatment at an earlier stage than has hitherto been the custom.

2. In all cases of tumour of the gall bladder, even if unaccompanied by symptoms, an operation should be advised, and the obstruction, usually a calculus, should be removed.

3. If these rules were followed, primary cancer of the gall bladder and liver would probably be less frequent.

4. If early operation in cases of tumour of the gall bladder were followed out, even if primary cancer had commenced, it could be caught in an incipient stage, when a complete cure by partial hepatectomy might be reasonably hoped for.

5. An exploratory operation, even in a patient seriously ill, with a localised tumour in the gall bladder region, is worth advocating, though malignant disease be feared, in the hope that the disease may be inflammatory, and so capable of relief.

6. If there are any secondary nodules in the liver, or if adjoining viscera are invaded, the operation had better be terminated as a simple exploratory one.

Discussion.

In reply to a question by Professor Roberts (Philadelphia), as to the need for drainage in such cases, Mr. Robson said that the question of drainage was rather a large one; but in these three cases he did not drain, as the parts appeared to be dry when he closed the abdomen. Had there been any oozing of blood or soiling of peritoneum, he should have applied a gauze drain through a large rubber tube to drain the right kidney pouch. In operations in the centre of the abdomen, if he required to drain, he usually employed a glass tube in Douglas's pouch.

Mr. Robson also stated, in reply, to a question by Mr. Morton as to the possibility of excluding the presence of other nodules of growth on the liver, that he could palpate the whole surface of the liver through the operation wound.

A DISCUSSION ON THE ORIGIN, EFFECTS, AND TREATMENT OF SEPTIC INFECTION OF THE URINARY TRACT.

I.—DAVID NEWMAN, M.D., F.F.P.S.G.,
Surgeon to the Glasgow Royal Infirmary.

IT is my first and pleasant duty to thank you for the honour you have done me in asking me to introduce this discussion. The obligation which I have accepted presents many difficulties, but I feel sure that you will grant me your indulgence in my attempt to focus sufficient information into the small compass of these introductory remarks to form a basis for the debate.

Septic infection of the urinary tract is full of interest and importance to every practical surgeon. The malady frequently develops during the course of other serious diseases, and thereby adds enormously to the gravity of the patient's condition. To have a fuller understanding of the causes which produce, and a knowledge of the means we possess of preventing, these diseases, will be an advantage to his patients as well as to the practitioner himself. Doubtless this is one of the reasons why the Committee of this Section have selected septic diseases of the urinary tract as the subject for discussion to-day.

Up to the present time much has been done in the way of investigating the life-history of these diseases. The morbid changes have been carefully studied, and we have discovered some of the conditions which produce the maladies, but still there is much that is unknown.

To the septic lesions of the lower urinary tract reference will not be made further than is absolutely necessary, and our attention will be limited chiefly to the consideration of the origin and local effects of septic lesions as found in the kidney.

With respect to this particular department of the subject, the discussion, from what appears in the title, has to do with the mode of infection, the changes in the kidney produced by the septic virus, and the treatment of suppurative diseases, the questions of diagnosis and of prognosis being very properly left out of consideration.

To be of practical value, and not simply an academic polemic, this discussion must be kept within certain limits. I may be pardoned, therefore, if I take the liberty of indicating what should be included and what should be left out of this discussion.

There are certain renal lesions which predispose to, and most frequently culminate in, suppuration. They are not essentially septic, but simply tend to induce the septic condition. Amongst such diseases may be mentioned tuberculous disease, hydronephrosis, or the presence of foreign bodies or of renal calculi; such conditions may very properly be excluded, in order that our attention may be concentrated upon the truly septic lesions.

In a discussion such as this it is very necessary to have an exact and uniform nomenclature. May I suggest the following classifications of septic renal diseases with their definitions?

1. *Purulent Embolic Nephritis.*—A descending septic and suppurative lesion of the kidney, without pre-existing disease of the conducting and collecting portions of the urinary tract, the septic virus being conveyed to the kidney by the blood.

2. *Purulent Insterstitial Nephritis.*—An ascending interstitial nephritis, infection being by the lymphatics, from a primary septic focus in the lower urinary passages.

3. *Acute Septic Nephritis without Suppuration.*—An ascending septic lesion of the kidney without suppuration, the virus being carried from the lower urinary tract to the kidney (most commonly to the cortex) by the lymphatics.

4. *Pylonephritis.* Suppurative nephritis with antecedent septic disease of the pelvis, the secondary foci in the parenchyma of the kidney being mostly due to direct contamination of the lymphatics.

5. *Pyelitis.*—Suppurative disease of the mucous membrane of the pelvis, without distension of that cavity.

6. *Pyonephrosis.* Accumulation of pus or of purulent urine in the pelvis of the kidney, the accumulation being a result of mechanical obstruction, with atrophy of the renal tissue; but without secondary independent foci or independent accumulations of pus in the parenchyma of the organ.

With these preliminary remarks we may now devote ourselves to the consideration of the causes of septic kidney, and in doing so we must for the moment depart from the immediate sphere of the surgeon, and intrude upon that of the morbid anatomist and bacteriologist. I do this with some fear, knowing that amongst my audience are several distinguished experts who are thoroughly acquainted with the bacteriological department of the subject. Even at the risk, however, of anticipating to a small extent what others may have to say, I must at least sketch roughly the bacteriology of the subject, as it is upon this foundation that the whole structure of our discussion rests. I shall discuss the general questions only, and not enter into consideration of the action of special microbes; these details I will leave to those who are to follow.

We all agree that renal suppuration is directly caused by the invasion of microbes from some source or other, or by the action of their toxins. Observations, clinical and experimental, show that microbes play a most important *rôle*, but while this is so there are certain conditions necessary prior to the micro-organisms establishing their footing in the organ. With increased knowledge of the life-history, and of the conditions necessary to the propagation of bacteria, the infection by microbes becomes to our minds an increasingly complex phenomenon. At one time it was considered that all that was necessary to induce an invasion of microbes was the introduction of pathogenic organisms into the system, but it is now known that many modifications and circumstances require to be attended to, both in the cultivation of germs outside of the body, and in the inoculation experiments upon animals, otherwise the parasites fail to propagate. In cultivation experiments, for example, the circumstances affecting their growth are numerous; the nature of the soil, the pabulum upon which one organism thrives, may prove quite unsuitable for another; or, again, the medium may be appropriate, but the vigorous growth of the microbe may be retarded by such influences as electricity, light, temperature, the presence or absence of certain gases, etc. Then, in the successful inoculation of animals there is the whole question of susceptibility and immunity, natural or acquired; phagocytosis, and the bactericidal influence of the body fluids. These all play important parts, so much so that we do not know altogether what forms an open door in one case and an effectual barrier in others; but we do know that the readiness with which pus is formed depends upon conditions belonging to the host as well as upon the characters of the parasite.

In the healthy individual there are natural barriers to the invasion of microbes to which we must call attention, and in doing so we shall refer to the mucous surfaces only—the air passages, the alimentary canal, and the lower urinary tract. These are the natural portals of infection. Take first the air passages. The circumstance that the air occupying the smaller air passages is free from septic germs was first pointed out by Lister. This fact he explained by the theory that one of the functions of the air passages was to filter the dust and germs. It is also known that hæmorrhagic infarctions of the lung may remain sterile for long periods. The subject of the resistance of the air passages to the invasion of microbes has been worked out carefully by Gunning, Strauss and Dubreuil, StClair Thomson and R. T. Hewlett, Würtz and Lermoyez, and others. Those who have inquired into the matter believe that in a healthy animal the mucus and the air contained in the trachea are free from septic micro-organisms, and some observers hold that the nasal mucus itself exerts a bactericidal influence. It must be remembered, however, that true blood parasites, such as those of anthrax, chicken cholera, the spirilla of relaping fever, and the plasmodium of malaria, may infect the host through the lungs. Take now the alimentary canal. The experiments of Strauss and Würtz, and many others, show that strong germicidal power is possessed by the healthy gastric juice, especially when it contains free hydrochloric acid. It quickly destroys most germs, amongst which may be mentioned the cholera spirillum and the typhoid bacillus, as well as the bacillus pyocyaneus, while the pus cocci show greater resisting power. The spores of most organisms resist the action of the gastric juice, or are

more difficult to destroy than the organisms themselves. Pasteur and Toussaint showed that even in anthrax the healthy mucous membrane of the stomach and intestinal tract offered effective resistance, but that when the mucous membrane was injured, invasion was almost certain to occur. Similarly, Orloff proved the protective power of the mucous membrane against staphylococcus pyogenes aureus. He fed animals for three months upon infected food, and failed to produce any evil results so long as the mucous membrane of the alimentary tract was intact, but when the mucous membrane was injured artificially, the organisms present in the alimentary canal became absorbed, and formed infective emboli in distant parts.

This leads us to the consideration of the conditions of the resisting power of the mucous membrane of the bladder. Guyon, in 1888, proved that pure cultures of various pathogenic micro-organisms might be introduced into the healthy bladder without inducing a cystitis, and since then other observers have carried out extensive researches to show that the presence of pathogenic bacteria in the healthy bladder does not necessarily induce cystitis, but that when the resisting power of the mucous membrane is diminished, by the presence of a foreign body, by reason of injury, or as a result of the presence of residual urine, then infection is liable to take place. When retention of urine is produced artificially, and ammoniacal fermentation is permitted to occur, if introduced into the bladder under these circumstances, pyogenic micro-organisms rapidly produce suppurative and infective inflammation.

Another point of importance is one which must be recognised by every clinical observer, namely, that without the introduction of micro-organisms, retention of urine does not of itself give rise to inflammation. According to the observations of Aschoff, Schmidt, and Schnitzler, the bacillus coli communis is most commonly present in the urine in cases of cystitis, also the proteus vulgaris, and not infrequently pure cultures of these organisms may be obtained from the urine. The etiological relationship between the organisms and the inflammatory changes has been clearly demonstrated, but more information is required respecting the precise conditions which regulate the virulence of septic attacks, especially those resulting from lymphatic invasion.

An important observation bearing upon the etiology of sepsis of the bladder is that, in the large majority of cases, the viscus had been examined either by the finger or by instruments prior to the onset of cystitis.

As the result of experimental inquiry, it may be asserted—

1. That simple retention of the urine does not give rise to septic inflammation.

2. That small cultures of pyogenic micro-organisms, such as staphylococcus pyogenes aureus, staphylococcus pyogenes albus, or bacillus coli communis, when introduced into a healthy bladder fail to produce sepsis.

3. That if the mucous membrane of the bladder be injured or diseased prior to the introduction of micro-organisms, sepsis immediately occurs.

4. That if artificial retention of urine is induced from six to twenty hours after the introduction of the septic organisms into the bladder, suppurative inflammation of the mucous membrane follows.

The bearing of these observations does not require to be pointed out at present.

We may now inquire into the conditions which tend to prevent, and those which facilitate, septic inflammation of the kidneys.

While the suppurative diseases of the kidney form a goodly proportion of the cases which come under the care of the surgeon, if looked upon from a wider standpoint, the observer is at once struck with the comparative rareness of suppurative lesions, as contrasted with the non-suppurative maladies of the kidney, and also with the fact that lesions of that organ characterised by considerable accumulations of organic fluid, or by the presence of masses of foreign matter, may remain sterile for long periods.

The anatomical situation of the kidney protects it to a considerable extent both from injury and from infection; its deep situation in the lumbar region, far away from air contamination; its independent lymphatic supply, which does not communicate, except in the most restricted way, with the surrounding tissues, but only with that of the urinary tract, also tends to isolate the kidney and protect it. It is also shut off from the abdominal cavity, and is surrounded by a firm fibrous capsule through which very few blood vessels, and hardly any lymphatics, pass. In this way it is protected from invasion by microbes except by certain channels which will be referred to presently. Over and above these conditions, we have the power of the bladder to resist, within certain limits, the propagation of micro-organisms and intercept their access to the kidneys. We have also the important physiological action of the ureters, by which the escape of urine is intermittent, and not continuous, and, at the same time, urine is permitted to pass in a downward direction, while an efficient barrier is provided to prevent a backward flow. The power of the bladder to completely empty itself at regular intervals, and so wash away any contamination, is also an important safeguard. These may be regarded as the physiological protectors of the kidney, which must be overcome, in one way or another, before septic inflammation can be induced.

The factors which facilitate an invasion of microbes are any circumstances interfering with these physiological conditions.

Certain injuries and diseases of the general nervous system at once decrease the natural resisting power of the bladder. Even although no instruments have been used, septic contamination may rapidly occur when the control of the nerve centres is cut off or impaired.

Again, the influence of the local nervous system upon inflammatory processes, either by impairing the nutritive activity of the part, or by diminishing phagocytosis, is most important, and it is difficult to say how far instrumentation of the urethra or the bladder acts by reflex irritation through the nervous system. The presence of an impacted stone in the urethra may lead to inflammation of the testicle, or the passage of a sterilised bougie may be followed by complete suppression of urine, succeeded by renal hæmaturia for some days. The suppression, probably, is due to a reflex spasm of the renal arterioles. To cause complete suppression of urine, the spasm of the arterioles must be very great, and must involve the majority of the smaller vessels. The extent and gravity of the disturbance of the circulation is clearly indicated by the abnormal constituents in the urine when the attack has passed. In such cases the circulation in the bladder is also interfered with, and should any contamination have been introduced, the danger of very acute sepsis—acute septic nephritis—of the whole urinary tract is great.

When the urinary organs are reasonably healthy throughout, and the bladder can completely empty itself, even unclean instruments introduced occasionally during long periods of time do not necessarily lead to a septic condition of the urine. I have known a carter carry a catheter in his pocket, and an engineer who extemporised a bougie from 18 inches of telegraph wire, and these instruments were used for years, when required by the individuals, without doing any perceptible harm. But, if the bladder fails to empty itself completely—as from urethral stricture, from local or general paralysis, or enlargement of the prostate, vesical calculus, tumours, or any other cause—then the danger of sepsis being induced by the most minute particle of infected matter cannot be exaggerated. The mucous membrane loses its resisting power, and the retained contents of the bladder become contaminated by even the smallest inoculation of infected material introduced from without. With the conditions mentioned, when once introduced, the organisms multiply and rapidly spread, causing chemical decomposition of the urine, and structural alterations of the mucous membrane and walls of the bladder.

What is true of the conditions which induce sepsis of the bladder also applies to the predisposing causes of septic invasion of the kidney.

Let us now consider the modes of attack, or the channels along which the invasion of the kidney by microbes may occur; also, very briefly, the histological changes produced in the kidneys.

Septic lesions of the kidney may be induced by:

1. Infarctions arising from infective emboli conveyed through the blood stream from tissues or organs foreign to the urinary apparatus.

2. Invasion along the lymphatics of the urinary system.
3. Contagion along the lumina of the excretory ducts.
4. Septic contamination by contiguity with abdominal organs.
5. Wounds.

It may be here remarked that, while primarily the infection is conveyed to the kidney by one of these channels, as the disease advances the infective process becomes more complicated, and is a combination of some of the causes already mentioned.

1. *Invasion by the Blood.*—In purulent embolic nephritis the virus is conveyed by the blood stream from a primary septic or otherwise infected focus in tissues or organs foreign to the urinary apparatus, and corresponds to what has been described as descending infective nephritis. The primary lesion may be erysipelas, pyæmia, osteomyelitis, one of the eruptive fevers, malignant endocarditis, suppurative diseases of the skin, the lungs, or the alimentary tract, or of the serous surfaces; but, whatever may be the original infective disease, the secondary foci in the kidney breed true. In pyæmia and in erysipelas the streptococcus has been found, and likewise in osteomyelitis the staphylococcus has been demonstrated as the exciting cause of the renal abscesses. But whatever may be the precise nature of the microbes, the course of events and the histological changes in the kidney are much the same. The lesion in the kidney is embolic, but there is more than simple obstruction to the circulation, the infection being derived from a part where putrefactive, inflammatory, or other changes due to the presence of microbes are going on. The embolus possesses infective properties, so that, in addition to plugging of the renal arterioles, it sets up inflammatory processes, both in the vessels within which it has become impacted and in the surrounding tissues. The process goes on to suppuration and destruction of the infected area. Both kidneys are generally affected, the abscesses are usually small and multiple, and, on account of the arrangement of the blood vessels, the suppurating areas are more abundant in the cortex than elsewhere. There they are rounded, or in the form of cones with the bases towards the capsule. In the medulla they are more elongated, and follow the distribution of the vessels.

Infection by means of the blood stream is not limited to the method just described. We also meet with instances of auto-infection of the kidney, or examples of the blood vessels carrying infective material from one portion of the urinary tract to another. The earlier formed foci in the kidney may be due to an ascending infection from the lower urinary tract, while the later lesions are the result of minute infective infarctions. Septic kidney, following any of the acute diseases mentioned, may become chronic by the abscess rupturing into the pelvis, but this only occurs when the infective infarctions are few in number. How frequently we find cases of pyuria, which we may attribute to pyelitis, dated back by the patient to the time when recovery was taking place from an attack of fever, of erysipelas, or some puerperal complication. In many such cases the sepsis in the kidney is embolic in origin. When the emboli are numerous the patient succumbs before the abscesses attain considerable size.

2. *Invasion by the Lymphatics.*—In order that you may appreciate the pathology of this mode of invasion, it may be necessary to make a few remarks respecting the lymphatic supply of the bladder, ureters, and kidneys. When an injection mass is forced into the ureter, the mucous membrane having been previously lacerated, the fluid proceeds directly into the lymphatic vessels surrounding the ureter, and passes downwards towards the bladder, and upwards towards the kidneys. In this way it may be shown that the course which the lymphatics pursue from the bladder is one of direct distribution along the submucous connective tissue surrounding the ureters, to the capsule of the kidney. They then penetrate the renal substance, and lie in spaces between the uriniferous tubules, so that when, in a kidney thus injected, a section is made of the cortex, the lymphatic vessels can be easily seen extending in thin streaks from the extreme cortex towards the medulla. These channels form a most intimate ramification in the parenchyma of the kidney, much more minute, indeed, than the vascular capillaries, as these vessels, as well as the uriniferous tubes, are closely surrounded by lymphatic spaces.

In acute septic nephritis, without suppuration, the virus is conveyed from the lower urinary tract to the cortex of the kidney by the lymphatic channels. We meet with certain instances of very acute septic absorption resulting from injuries of the lower urinary tract, but especially of the upper portion of the urethra and the neck of the bladder, where a violent septic poisoning is induced without the mucous membrane of the ureters or the renal pelves being involved, or only implicated in the inflammatory process to a slight degree. In the most of these very acute cases the patient has suffered previously from chronic albuminuria and cystitis. Suddenly, soon after an operation upon the urethra or the bladder, he has a violent rigor and suppression of urine, which may continue, or be followed by a more or less profuse renal hæmaturia. The further development of the case is practically that of acute septic poisoning, with profound collapse, which may terminate fatally within forty-eight hours. It is, indeed, a form of so-called "acute urinary fever."

On examination of the kidneys, the pelves and the ureters are found to be deeply injected, but free from erosion or ulceration, the mucous surface being intact. The kidneys are enlarged, flabby, dark chocolate-coloured, and when the capsule is cut the cortex protrudes almost like splenic tissue. When cut into, the cortex and medulla are found to be deeply injected, and the line of demarcation is indistinct; no suppurating points may be seen, but on microscopic examination the whole of the kidney is found to be completely permeated, and the walls of the bladder and the ureters are likewise infiltrated with septic micro-organisms, which may give a perfectly pure culture on bacteriological examination.

We have here represented the most acute form of septic absorption. The invasion by microbes through the lymphatics is so sudden, and sometimes so overwhelming, that the patient succumbs before even minute abscesses have time to form.

In many instances, however, the infection is not so violent. The line of invasion can be more easily and clearly traced, and the time which elapses is sufficient for the formation of small suppurative foci. Here we have a form of purulent interstitial nephritis. The primary septic focus is generally in the bladder, and on laying open the ureter its walls are found to be thickened and infiltrated; but there may be no erosion of the mucous membrane, either of the pelvis or of the ureter, as the presence or absence of ulceration depends upon the acuteness of the affection. The kidney is slightly enlarged, soft, pale in colour, the surface is smooth, the capsule is easily separated, and immediately under it a number of small pale bodies are seen, the majority of which are not larger than mustard seeds. On section the cortex and the medulla are seen to retain their normal proportions, and the line of separation is tolerably distinct. On microscopic examination the mucous membrane of the bladder presents the characteristic appearances of septic cystitis. The serous surface does not exhibit anything worthy of note; but on the mucous surfaces there are distinct areas of acute inflammation, the inflammatory products containing large numbers of micro-organisms. A section of the ureter shows the mucous membrane to be normal, or little altered in appearance; but the deeper structures are infiltrated with round cells containing micro-organisms. On examination of the kidney the small pale bodies are found to be minute abscesses, evidently of very recent origin; they do not follow the direction of the blood vessels, but they are most abundant underneath the capsule, although some of them are found in the cortex close to the medulla, in this region they are less abundant. These abscesses are seldom found in the pyramidal region.

In such cases the line of transmission is not along the mucous surface, but in the deep structures of the ureter, through the course of the lymphatics, which carry the infective matter to the subcapsular lymphatic spaces, and from there the bacteria have easy access to the perivascular and peritubular lymphatics; hence the abscesses are more abundant on the surface and in the cortex than in the deeper areas.

3. *Septic infection along the lumina of the excretory ducts* is the most common cause of pyelitis, pyonephrosis, and

pyelonephritis; but while the infective material is generally conveyed along the lumina of the ureter, pelvis, and uriniferous tubules in the first instance, in almost all cases the later lesions are produced by an auto-inoculation along the lymphatics or the blood vessels. Suppurative disease of the kidney may be looked upon in many cases as the natural termination of such conditions as stricture of the urethra, diseases involving enlargement of the prostate, cystitis, vesical calculus, loss of expulsive power of the bladder through atony, either as a consequence of grave nervous lesions or from local disease. These are, however, but the remote causes. Then again, undoubtedly although not commonly, pyelitis, pyonephrosis, or pyelonephritis may be secondary to a limited purulent interstitial nephritis; and the renal suppuration may continue long after the primary disease has been recovered from.

When the flow from the ureters into the bladder is free, and the muscular action of the ureters is normal, inflammatory changes generally remain limited to the bladder, or only extend upwards by the lymphatics; but if the ureters are dilated, and the fluid columns between the bladder and the renal pelves are thereby rendered continuous, the bacterial invasion of the kidneys may take place through the columns of urine, the alkaline reaction of which greatly facilitates bacterial proliferation. In many cases the whole route of invasion may be easily traced by the morbid changes in the walls of the bladder, ureters, and pelves, right into the uriniferous tubules. It is not necessary to describe the details of this process, as they are to be found in any book on pathology. The important distinction between this mode of invasion and that by means of the lymphatics is that, while in the latter the abscesses are principally found in the cortex of the kidney, in the former it is the tubules of the pyramids which are the centres of infection. On microscopic examination of a case of pyelonephritis, the tubules of the pyramids will be found to be blocked by elongated colonies of septic organisms, around which there is more or less intense inflammation, sometimes amounting only to a slight infiltration of leucocytes between the tubules, while in other areas the inflammatory changes are so advanced as to have caused complete disintegration of the renal tissue, which has come to be occupied by purulent cavities. Another point worthy of note is that in such cases micro-organisms are not, in the early stage of the disease at least, to be found in the blood vessels, although, later on, septic thrombosis may occur. The microbes travel along the surface and interstices of the mucous membrane of the ureter till they reach the pelvis of the kidney; they then gain access to the uriniferous tubules, and in their lumina spread and multiply vigorously, and give rise to multiple abscesses. This is not due necessarily to any obstruction to the escape of urine *per se*, but rather to the opportunity of infection by a septic focus in the bladder, or elsewhere. When the pathogenic micro-organisms enter the uriniferous tubules from the pelvis, they form colonies and obstruct the lumina of the tubules, impair the vitality of the epithelium and basement membrane, which ultimately ruptures, and allows the inflammatory products to pass into the intertubular lymphatic spaces, where they rapidly excite diffuse inflammation.

4. *Septic contamination by contiguity* is not common on account of the isolated position of the kidneys, but under this heading we may place some of the abscesses of the kidney secondary to perinephric abscess, to psoas abscess, to abscesses of the liver or spleen, or to tuberculous vertebræ. Again, in those instances where abscess of the kidney follows contusions, falls, or rupture of the kidney without a wound, may not the juxtaposition of the injured part to the colon facilitate contamination with the bacillus coli communis? Where severe injury is inflicted upon the organs situated in the lumbar region, the colon, and the kidneys together, one can easily understand how infection may take place, even although there is no direct communication between the bowel and the injured tissues outside of it. The circumstance that rupture of the kidney is frequently followed by the formation of large abscesses, without any infection through the lower urinary tract or by means of the blood stream, proves almost conclusively that contamination by contiguity may occur. Experiments have demonstrated (Posner and Lewin) that the bacillus coli may easily pass through the intestinal wall when intestinal obstruction is induced, and these organisms may be found in the blood and even in the urine. In cases of acute intestinal obstruction in man I have found it in the urine along with blood, and when the obstruction was relieved the organism disappeared from the urine. I have also observed one or two cases where an old hydronephrosis has become infected from the colon without any direct communication.

Reblaub also has recorded instances where pyelonephritis has been induced during the course of pregnancy, and the explanation he gives is probably correct—namely, that the pressure of the uterus caused a slight transitory hydronephrosis. Then some intestinal trouble intervening enabled the bacillus coli to enter the circulation, and, flowing through the kidney, to find a suitable nidus in the pent-up urine. It is believed by some observers that residual urine in the bladder may be contaminated from the rectum.

5. *Wounds* of the kidney need only be mentioned as a cause of septic trouble.

In these remarks I have asked your attention mainly to the causes and the immediate local effects of septic infection of the kidney; the ultimate condition depends upon many circumstances, which cannot be considered now, nor can I ask you to follow me into a discussion of the question of treatment. This must be left to those who follow. It is hardly necessary to say that the whole study of the question of sepsis of the urinary tract points to the absolute necessity of careful prophylaxis. Sepsis conveyed by the blood vessels we cannot control, but, by remembering that all vesical instruments are septic until they are sterilised, and that after being sterilised they may be easily rendered septic again before they reach the bladder, we can prevent the flame from being kindled, even although all the other conditions are present for a conflagration. And even when pathogenic organisms have been introduced into the bladder, much may be done to limit their action.

II.—Thorkild Rovsing, M.D.,

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In my book, *Clinical and Experimental Studies of the Infectious Diseases of the Urinary Tract* (Copenhagen, 1897, and Berlin, 1898), I have, on the basis of 126 cases which were bacteriologically examined, stated and given reasons for the results to which my experience in the questions here brought forward for discussion, have led me. I therefore refer you to that work for all fuller details and will only give here a short account of the results and opinions which I have arrived at from a personal treatment and bacteriological examination of about 200 cases.

A. Origin.

There are, as we know, a great number of microbes which have been by degrees discovered to be the cause of infectious diseases of the urinary tract, indeed every microbe which is pathogenic for man might occasionally be found causing disease in the urinary tract; but taken from a general point of view there are two groups of bacteria which govern the urinary region, namely, (1) those which decompose the urea (staphylococcus aureus, albus and pyogenes, proteus Hauser, various diplococci and staff bacteria, which are both pyogenic and non-pyogenic), and (2) those bacteria which are known under the name of coli bacilli. The reason why these two groups predominate is of course that the two principal sources of infection of the urinary organs are the urethra and the intestines. Under normal conditions the urethra contains microbes which decompose the urea, and when an inflammation of that organ sets in their number increases enormously. In the intestines there is always a swarm of the so-called coli bacilli. Coli bacilli may occasionally enter the urinary tract through the urethra, and urea-decomposing bacteria may enter through the intestines, but the rule is, as above mentioned, that these two groups have these two very different starting points.

Infection from the urethra was that which was first observed, and the theory that the infection of the urinary tract always started from the urethra and was ascending, was the predominating, until I proved in my treatise in 1889 that the infection may also be descending, I having had 5 cases of ammoniacal cystitis which had been secondary to nephritis. The investigations which I have made in the last eight or nine

years convince me more and more that infection is conveyed through the blood much more frequently than was supposed, especially from the intestines; infection from the urethra most frequently takes place by the introduction of instruments, which convey the germs from the urethra into the bladder. When antiseptic treatment was in its commencement it was generally supposed that infection was due to the non-disinfected instruments, and great was the surprise on finding that the number of cases of catherisation cystitis was but slightly reduced in spite of the most careful sterilisation of the instruments. The discovery that the normal urethra swarms with cystitis microbes (Rovsing, Petit, Wassermann, and others) has been of great importance in explaining why antiseptic treatment of the instruments does not prevent infection.

Infection may be conveyed from the urethra to the vesica by other means than instruments. This happens (1) when there is a posterior urethritis with a collection of pus behind a stricture, which renders the evacuation of urine difficult and causes a regurgitation of urine, conveying the pus from the posterior part of the urethra into the bladder. It is more rare for the infection to spread *per continuitatem* from the urethra to the mucous membrane of the bladder in cases of severe inflammation; (2) the urinary organs may be infected from the urethra, even when it is not the seat of inflammation, namely, in cases of incontinence of the urine, when the sphincter no longer forms a barrier, and the constantly-oozing urine forms a road of communication between the interior of the bladder and the outer world, in particular the external genitalia and the anal region, both of which are so full of microbes. Here exceptionally is a chance for the invasion through the ureter of bacteria coli, which are able to work their way against the current of the urine on account of their peculiar motility. I have observed several cases of bacteriuria which had arisen in this way.

Next in frequency to infection *per urethram* comes infection through the blood. In the majority of the numerous cases of septic infection of the urinary passages, where no instruments have been introduced into the vesica, and where none of the above-mentioned causes of urethral infection are present, I am of opinion that the infection is hæmatogenous, caused by microbes which have forced their way into the blood from some focus in the body. Two questions now arise: (1) Whence does the infection as a rule arise, and (2) in what part of the urinary tract does the passage of the infection from the blood take place? It is evident, as far as the first question is concerned, that inflammation in any organ may give rise to a metastasis to the urinary tract, but I have no doubt that the intestines are so frequently the source of infection that this may be considered the rule. This supposition I found upon the following facts: (1) that it is just in such cases of cryptogenic infection that coli bacilli or coli bacilli plus other microbes are, as a rule, the cause of infection; (2) that such spontaneous infection often appears in patients who show symptoms of acute or chronic enteritis, especially colitis with chronic constipation. In my last treatise I gave a number of instances of this. It is true that in many cases the urinary tract becomes infected with microbes from the intestines, although there are no symptoms of trouble in the bowels: nevertheless, a slight local lesion may exist in some part of the long canal through which the microbes may find a passage into the blood. It seems very probable that microbes from the intestines now and then circulate in the blood of nearly everyone. (3) Finally, Posner and Lewin by experiment upon animals support this theory. They found that on ligation of the intestines of animals, microbes from the intestines passed into the urine.

The second question; namely, in what part of the urinary tract the passage of the microbes from the blood takes place, may be answered, I think, as follows: The invasion may take place in any part of the mucous membrane of the urinary tract by means of capillary emboli, or hæmaturia, but, as a rule, the passage of the microbes into the urine takes place in the kidneys. The arguments in favour of this supposition are: (1) That the kidney is one of the organs in which the blood most frequently deposits micro-organisms; (2) that many of these cases commence with the appearance of an acute, but slight and short nephritis; (3) that when inflammation sets in, this in the majority of cases is confined to the pelvis.

Besides these, the two most frequent roads of infection, the urethra and the blood, there is a third, which is not so often met with. This is the direct conveyance of inflammation from an adjacent organ by perforation from abscesses in the peritoneal cavity, the ovaries, the prostate, the walls of the intestines, etc., also by diffuse inflammatory infiltrations which spread from an adjacent diseased organ (uterus, rectum) through the different layers of the urinary bladder.

B. Effects.

It will be known to you all that the Guyon school, which has done such eminent work, with Guyon, Albarran, and Hallé at its head, is of opinion that not only are almost all infectious diseases of the urinary tract due to bacterium coli, but that the most dangerous and serious cases, the severest forms of cystitis, the fatal ascending nephritis with and without abscesses, and finally the violent cases of urine-infection resembling septicæmia, are also the result of that microbe, whilst they consider the urea-decomposing microbes to be of secondary importance.

My observations, both clinical and experimental, have led me to a quite different result. I believe the coli bacteria to be much less injurious than the urea-decomposing microbes.

I will state shortly my opinions of the different effects of infection upon the urinary tract.

1. *Non-suppurative Effects (Bacteriuria, Epithelial Cystitis).*—In these cases the power, or the want of power, of the microbes to decompose the urea forms an important difference in the clinical picture presented.

The non-decomposing microbes, which are principally represented by forms of bacterium coli, give a pure and typical picture of the bacteriuria, in which the only difference from the normal state of things is that the urine is diffusely turbid, the result of the invasion of bacteria, and sometimes also has a peculiar odour. The patient presents no other symptoms of disease of the urinary tract, no tumours, no frequency of micturition, and the urine contains no other abnormality except the bacteria. Cystoscopic examination shows the mucous membrane of the bladder to be perfectly normal. When we, however, come to urea-decomposing non-pyogenic microbes, of which there are a number (staphylococci, diplococci, staff bacteria) you will find that form of cystitis which I, in 1889, described as catarrhal cystitis: ammoniacal, turbid urine with a pus-like deposit, which contains crystals of triple phosphates, epithelial cells, some white and red blood corpuscles, and numerous microbes; simultaneously there will be cystitis-like symptoms, frequent and painful tenesmus. By cystoscopic examination of the bladder you will find the mucous membrane red and swollen.

The existence of this form of cystitis was for some time disputed; it is now admitted (Hallé, Hogge, Melchior, Mansell Moullin), but these authors consider the term catarrhal cystitis objectionable because there is no suppuration, and consider that bacteriuria would be better. I admit willingly that the term catarrhal cystitis is not exactly what I could wish; perhaps cystitis desquamativa or epithelialis would be more to the point, but I must strongly protest against this disease being confounded with simple bacteriuria, from which it differs greatly, inasmuch as the mucous membrane is attacked, and consequently symptoms of cystitis result, which is not the case in simple bacteriuria.

This difference is, in fact, of the greatest importance, as it is the proof that the microbes alone, from their power of decomposing the urea, are capable of irritating the mucous membrane, an irritation which renders this latter susceptible to secondary infection from suppurative microbes.

2. *Suppurative Effects (Cystitis, Ureteritis, Pyelitis, Nephritis).*—Every pyogenic microbe can cause suppurative inflammation of the urinary tract when it is inoculated directly into the mucous membrane, either through a *solutio continui* or when it is deposited from the blood, but it is quite different if we speak of the power of the microbe to attack the intact mucous membrane through the urine. Here again the power, or want of power, to decompose the urea, forms the barrier between the coli group and the ordinary suppuration microbes, whose principal representatives (staphylococcus pyogenes aureus, albus, and citreus) have, as I pointed out in 1889, an enormous power to decompose the urea. Bacterium coli cannot, even if it is decidedly pyogenic, attack the intact mucous membrane of the bladder, whilst pyogenic urea decomposing microbes are

sure to produce a suppurative inflammation, if they, for a time only, are able to render the urine ammoniacal.

The best proofs of this are the cases of primary pyelitis. Formerly they were generally considered to be cases of cysto-pyelitis, when the urine was purulent, the micturition frequent and painful, and, indeed, even when these symptoms were absent. Cystoscopic examinations have taught me, and doubtless all other surgeons with experience, that this is a mistake. There is no cystitis in the majority of cases of primary pyelitis, even when accompanied by frequent and painful micturition, and even when the bladder has for many years been a reservoir and channel for extremely purulent pyelitic urine. I am glad that my experienced English colleague, Dr. Mansell Moullin, in his work on *Cystitis and Urinary Fever* (1898), points out that he has observed this in a surprising number of cases. Had he gone further, and inquired by what infection these cases—and also the more rare cases in which the bladder is also affected—were caused, he would doubtless have come to the same conclusion as I have come to from the observations of forty cases of pyelitis, namely, that when the bladder is healthy, we have to do with bacteria coli; when the bladder is also affected, we have almost always to do with urea-decomposing pyogenic microbes—staphylococcus aureus and albus, proteus Hauser and others.

I have twenty-nine cases of coli pyelitis, all carefully examined both cystoscopically and bacterioscopically, in which the bladder was quite normal, although it for years (even for fifteen or twenty years) had been the reservoir of extremely purulent urine swarming with myriads of coli bacilli. In one case there was prostatic hypertrophy accompanied by complete retention of the urine, and yet the mucous membrane of the bladder was found free from inflammation, also on *post-mortem* examination.

It has been suggested that the cystoscopic examination may have been defective and the mucous membrane have been inflamed, although it appeared normal. My answer is, that it is strange that the mucous membrane of the bladder should always appear normal in coli cystitis; but I have other decisive proofs that the bladder in those cases has been intact, in particular the results of operation. In nine cases, in which I removed the kidney because it was destroyed, the symptoms of cystitis ceased immediately after operation, and the urine became perfectly normal, without pus or albumen. Everyone must admit that this does away with the possibility of the existence of a chronic suppurative cystitis. In cases where pyelitis was a complication of nephrolithiasis or floating kidney, the effect of nephrolithomy or nephropexy was the same. Against these cases were eleven cases of primary pyelonephritis with ammoniacal urine. None of them were accompanied by retention of the urine, and yet in each there was diffuse cystitis, which never disappeared spontaneously as a result of the removal of the primary disease by nephrectomy or nephrotomy, but only after local treatment of the bladder.

If you take cases of prostatic hypertrophy accompanied by partial or complete retention of the urine, you will find the same thing; if the urine is infected (without lesion of the bladder) by bacteria coli, a bacteriuria will be the result; if it is infected with urea-decomposing microbes, cystitis will be rapidly developed; patients with total retention begin suddenly to pass their water spontaneously, and patients with partial retention have frequent and painful micturition.

Should the mucous membrane of the bladder, however, become injured by an instrument, cystitis may set in, whichever of the two microbes is present, if only it is pyogenic.

The only explanation I can find for the very different effects of the two groups of microbes is by supposing that it is the decomposition of the urea which is decisive. Both groups are pyogenic, but the urea-decomposing microbes change the urine into an ammoniacal irritating liquid which destroys the epithelium and renders the mucous membrane susceptible to the invasion of pyogenic microbes.

The circumstance that the urine, in cases of cystitis caused by urea-decomposing microbes, has been found to be acid is of no importance, for the question is only what was the state of the urine at the time the cystitis commenced? Later on, when micturition becomes so frequent that the urine cannot possibly have time to become decomposed in the bladder, it may, of course, be acid when passed.

In cases of unilateral pyelitis, caused by urea-decomposing microbes, it is also natural that complications with cystitis do not set in, or only set in very late, in particular as long as the urine from the healthy kidney neutralises that coming from the diseased kidney. There are, of course, also microbes, whose decomposing qualities are so slight that their importance is but slight or *nil*. Whilst I find the majority of cases of primary pyelitis to be due to bacteria coli, the opposite is the case with cases of primary cystitis; in these the majority are caused by urea-decomposing microbes, which agrees with the circumstance that the greatest number of cases of pyelitis are caused by infection from the urethra.

Of 120 cases of cystitis, I found urea-decomposing microbes in 94 (80 times alone, and 14 times accompanied by bacteria coli). In 7 cases I found bacterium coli alone, and in 14 other cases microbes (streptococcus pyogenes, gonococcus Neisser, tubercle bacilli).

When in cases of cystitis you meet with bacteria coli in company with urea-decomposing microbes, you may, as a rule, consider the latter to be the cause of the disease, the former as a comparatively innocent accompaniment. A proof of this is that the cystitis and the urea-decomposing microbes disappear under treatment with nitrate of silver, the bacteria coli remain.

I believe, then, that bacteria coli, even when pyogenic, cannot attack the healthy and intact mucous membrane of the urinary tract, and that their presence in urine is innocuous to the mucous membranes, as long as the latter are without any *solutio continui*.

But you will perhaps ask, How all the numerous cases of coli pyelitis arise? Whence can *solutiones continui* come, where no instrument is introduced which could injure the mucous membrane of the pelvis?

My cases provide me with a distinct answer. In almost all cases of coli pyelitis, there have been previously pathological conditions which involve injury to the mucous membrane. In the great majority of cases there is a lithiasis renalis, a calculus (of which there previously has been no symptoms) behind the coli pyelitis, and I do not hesitate to say, that this is so frequently the case, that in all cases of coli pyelitis of doubtful origin, you should suspect calculus. In a number of cases, in which I have removed calculus by nephrotomy, the coli pyelitis was the only symptom which betrayed the presence of a nephrolithiasis. The pyogenic bacteria coli, introduced through the blood, have found a footing in the *solutiones continui* caused by the stone or gravel.

After calculus in frequency comes floating kidney with tendency to incarceration or sudden swelling resulting from torsion or bending of the ureter; this may also be accompanied by slight bleeding and lesions of the mucous membrane which render the latter a ready prey to pyogenic coli bacilli.

Tumours are more seldom the occasion.

It is characteristic for these cases that the pyelitis ceases and makes room for a simple bacteriuria, as soon as the calculus is removed or the floating kidney fixed in its normal position.

Whilst we are engaged with calculous pyelitis, I will draw your attention to another important difference in the effects of bacteria coli and urea-decomposing microbes. The latter cause the concretions to increase with great—indeed, often enormous—rapidity by depositing phosphates, while the former not only do not have this effect, but these saprophytic microbes often actually destroy the concretion, the microbes growing into the organic substratum and eating it, so that the stone by degrees crumbles away. To demonstrate this, I will show you, side by side, two stones taken from the kidneys; the one having, under the influence of ureade-composing microbes, grown to an enormous size in the course of a few months, and the other almost crumbling to pieces from the action of coli bacilli. Coli bacilli may, then, occasionally have a favourable litholytic influence upon calculi.

We will now consider the greater or less malignity of the various forms of urinary infection on the whole. My investigations have here also brought me to a different result than that arrived at by the Guyon school. I believe, namely, that infection with pyogenic coli bacilli is benign as compared with infection with pyogenic urea-decomposing microbes, par-

ticularly staphylococcus pyogenes aureus and albus, proteus Hauser and streptococcus ureæ.

This depends first of all upon the different effects these microbes have upon the kidneys, upon the condition, integrity or destruction, of which organs the patient's life or death depends. My experience is that bacterium coli has a very slight power to attack the kidney through the urine and to cause a diffuse or suppurative nephritis, whilst the other pyogenic microbes are extremely dangerous in this respect. My proofs of this assertion are partly clinical, partly experimental.

1. *The Patient's General Condition.*—In cases of pyelitis calculosa with coli infection, the patient can enjoy good health for years—even for 15 or 20 years—have a good appetite, and no fever; it is only by severe attacks of colic that such cases show themselves for a time. In corresponding cases, where the infection is caused by staphylococci, streptococci, or proteus Hauser, the patient presents quite a different appearance; he is sallow, emaciated, has nausea, want of appetite, frequent vomitings, frequent rigors, with corresponding rise of temperature.

2. *Examination of the Urine.*—In cases of coli pyelitis we find small quantities of albumen corresponding to the quantity of the pus, never or very rarely cylinders, no renal epithelial cells; in cases of ammoniacal pyelitis great quantity of albumen, numerous renal epithelial cells, and almost constantly epithelial and granular cylinders.

3. *Changes found on Operation.*—In cases of coli infection, the tissue of the kidney is found as a rule on macroscopic examination to be normal, even if the considerable dilatation of the pelvis and calices shows that the purulent urine has been under high pressure. The lumen of the tubules is often found on microscopic examination to be full of bacilli, but no signs are found of interstitial or parenchymatous inflammation, and no abcesses in the renal tissue. Only in cases of many years' standing have I found round cell infiltration and microbes in the interstitial tissue. In cases of infection with the other microbes, I have found both microscopic and macroscopic signs of ascending nephritis, yellow striping of the pyramids, frequent small abcesses here or in the corticalis; microscopically round cells, and infiltration around the tubules.

4. *The effect of nephrotomy* is perhaps the most striking proof. I have in over 20 cases of suppurative coli pyelitis made a large incision in the kidney, after which the purulent urine, with its myriads of coli bacilli, has streamed through the wound. After removing the calculi, or in cases of floating kidney, after simple syringing of the pelvis with sterilised water, I have united the wound with sutures, replaced and eventually fixed the kidney. I have always obtained primary healing of the renal wound without secondary nephritis. In some cases the temperature has risen to 100-102 degrees the first few days subsequent to the operation, and it seems to have always been caused by a slight infection of the external wound; but, as a rule, this has also healed *per primam* without suppuration.

I have twice tried the same mode of proceeding in cases of infection where the other suppuration microbes were present, but shall never dare to do it again. In the first case, although only a small incision was made for the removal of a stone of the size of a hazel-nut, diffuse nephritis set in with septicæmia, and death resulted under symptoms of uræmia. In the second case, the patient was only saved by secondary nephrectomy. Even when you place a drainage tube in the pelvis, cases of ammoniacal pyelitis are almost always dangerous. In two of my cases the patient developed pneumonia; in the majority of cases there was a considerable rise in the temperature of long duration, and, as a rule, there was phlegmonous inflammation of the lumbar wound.

5. *Experiments on Animals.*—Nothing can better illustrate the difference between infection with bacteria coli on the one hand, and urea-decomposing microbes on the other, than the following experiment: Tie one of the ureters of two rabbits and inject above the ligature bacteria coli into the ureter of the one rabbit, and staphylococcus aureus or proteus Hauser into the ureter of the other. After a day or two, the second rabbit will be dead; you will find enormous changes in the kidney, which will be the seat of diffuse suppurative nephritis with pus stripes in the pyramids and numerous abcesses in the corticalis, and, as a rule, abscesses in the other kidney and other organs. The rabbit which has been infected with bacteria coli will be alive. If you kill it after two, three, or even eight days, you will find the kidney and pelvis much swollen on account of the ligation; the urine will swarm with coli bacilli, but there will be no suppuration of the kidney.

The reasons why the importance and frequency of bacteria coli has been so much overestimated are the following:

1. Because such an enormous number are found in the human body during life (in the intestines and the anus), and they consequently easily pass into the urine.

2. Bacteria coli, on account of their remarkably rapid growth, hide and choke the real pathogenic microbes, so that these latter are hardly to be discovered with our present means of investigation.

3. Bacteria coli, a few hours after death, can completely inundate the urinary tract and disguise the infection which was during life the real cause of disease.

Numerous authors have, without taking these important facts into consideration, taken the discovery of the presence of bacteria coli to be the same as the discovery of the cause of disease; and even when they, like Albarran and Hallé, have found these bacteria in a number of cases together with staphylococci and streptococci, they have been deceived by the overpowering number of bacteria coli into supposing them to be the cause of disease, and have neglected the pyogenic cocci, the malignity of which, as cause of suppuration and septicæmia in other organs, we know so well from experience.

C. TREATMENT.

Prophylaxis.—The very greatest number of the urinary infections originating from the urethra are caused by surgical interference, examination by cystoscope, introduction of bougies, catheterisation and litholapaxy. It seems, therefore, to me to be the urgent duty of us surgeons to consider carefully by what means we can avoid the infection of our patients, as the consequences of this are so incalculable.

Considerations of this kind have also, since the introduction of antiseptic surgery, occupied the minds of surgeons up to the present moment; the only safe method has not, however, received the general attention it deserves.

At first the general opinion was that infection was only caused by an introduction of unclean instruments, and that infection of the urinary tract might be prevented by using disinfected instruments and by washing the external orifice of the urethra. The desired result was however not forthcoming; in the majority of hospitals catheterisation cystitis, etc., appeared and appears still with almost the same frequency as before, although the instruments are disinfected most carefully.

In 1889 I proved in my treatise that the reason of this was that the urethra normally contains cystitis microbes. I furthermore proved that these are always present in great number in patients with strictures and chronic inflammatory processes of the urethra and the prostate, and I hardly think it exaggerated to say that the majority of these patients, in whom the introduction of instruments is necessary, suffer from inflammation of the urethra or the prostate, or from its sequelæ. Numerous experiments made by me, Petit, and Wassermann, and others, have, however, proved that it is practically impossible to disinfect the urethra. We can, therefore, never be certain that we do not introduce pathogenic microbes into the bladder with our instruments.

What can we do, then, in this case?

Above all, the surgeon should take care that the microbes introduced can easily escape again with the urine or the solution used for washing out the bladder. Vaseline or fat ought, therefore, never to be used for inunction of the instruments. These preparations, especially vaseline, adhere to the walls of the bladder, do not escape again, and they keep the microbes, affixed to them, in the bladder.

When I am able to tell you that I have found, by a *post-mortem* examination of a patient dead from typhoid fever, the urinary bladder half filled with vaseline, collected there by daily catheterisation for two months, I think it will be sufficient to make you leave off the use of this preparation, which is, unfortunately generally employed for purposes of inunction.

Use always sterilised olive-oil or glycerine (for cysto-

scopy); you are certain then that the preparation is washed out. Oil is the best, for it flows out with the first drops of the urine.

This is, however, not sufficient. If you want to be on the safe side, you must kill the microbes you have introduced. This is of special importance in examinations or operations which last for some time, because these produce smaller or greater vulnerations of the mucous membrane (examinations with sounds, cystoscopy, litholapaxy).

The only thoroughly reliable method of obtaining this aim has been indicated and recommended by me in 1889. I proved then by a large series of experiments that the only preparation which kills the forms of microbes which are of importance in urinary infection with certainty and instantaneously, is nitrate of silver, in a solution of 2 per cent. For nearly ten years I have used the following method: in all cases of a single introduction of an instrument under circumstances where infection is to be feared, I inject 40 to 50 c.cm. of the solution after the conclusion of the operation. After three to four minutes the solution is evacuated from the vesica, which is then washed out with sterile water.

In cases of daily catheterisation in prostatic hypertrophy, I generally wash the bladder with a 1 per cent. solution of phenosalyl; but when the urine shows the slightest sign of turbulence or infection, I apply nitrate of silver, and the urine clears up at once.

If you would make a rule of this prophylactic treatment, you will never have the pain of seeing infection arise as a consequence of your interference. I can, anyhow, declare that this method has never failed the hundreds of times I have applied it.

That this method has not hitherto found general acceptance is doubtless owing to the fear that the patients should have pains after the injection. Even if the patient should have pains for half an hour, is this to be compared with his risk if he gets infected and acquires a cystitis? The prophylactic injection of nitrate of silver does not, however, as a rule, give any pain, because the bladder is normal in these cases. The normal bladder tolerates nitrate of silver much better than the urethra—which only few seem to know—into which specialists inject 2 to 5 per cent. solutions daily. It is, therefore, important to prevent the nitrate of silver from touching the urethra; this is done by closing the aperture of the catheter during its removal. If pains should appear, a suppository of opium or morphine quickly gives relief.

I wish, therefore, to warmly recommend my prophylactic method to you for trial. You will not regret it, and will save your patients the risk of serious infection.

Therapy.—The first condition for an effective therapeusis is an exact diagnosis of the seat of the disease, and, if possible, of its cause and complications.

The seat of the disease can be ascertained by means of the cytoscope and ureter catheterisation, and only by the use of these valuable aids, for which we owe such thanks to Nitze, Casper, Kelly, and Albarran. I have often had patients sent to me with all the known symptoms of cystitis, who have for a long time been treated by their medical attendant with local application of nitrate of silver in the bladder without effect, although this treatment is otherwise so successful. I have, on cystoscopic examination, found that these cases were not cases of cystitis at all, but of unilateral pyelitis or pyelocystitis. In such cases it is, of course, utterly useless to destroy the germs of infection in the bladder, when fresh supplies are constantly streaming in through the ureter.

It is also important to ascertain whether there does not exist some calculus, tumour, or other pathological condition, which keeps up the inflammation and infection; for unless this calculus, tumour, or other cause is removed, it is impossible to cure the infection definitely.

Complications in the bladder are easily discovered, thanks to the cystoscope. Complications in the kidney and the pelvis are not so easily found out. Suspicion of calculus may be aroused by the history of the case, and palpation can often prove the existence of floating kidney or enlargement of that organ, but, as a rule, it is the pyuria which is the first and only indication of the existence of stone or floating kidney, and the diagnosis must then be formed *ex juvantibus*.

When pyelitis does not yield to the usual methods of treatment for simple pyelitis, we may feel sure that there are complications and an explorative lumbar incision is indicated.

Should our investigations lead us to the conclusion that we have to deal with an inflammation confined to the bladder, or with bacteruria, the only rational therapy, in my opinion, is local treatment, by which the germs of infection in the bladder are destroyed. All the various antiseptic preparations used in surgery have been tried for this purpose; solutions of carbolic acid, of sublimate, of phenosalyl, etc., but none of them can be compared to nitrate of silver in a 1 to 2 per cent. solution. In my first work, in 1889, I showed the cause of this superiority, namely, (1) its eminent and certain bacteria-destroying effect; (2) its penetrating power, which enables this antiseptic to reach the microbes which have made their way into the mucous membrane.

The effects of nitrate of silver are as surprisingly rapid and striking in cystitis as in ophthalmo-blennorrhœa. Obstinate cases of cystitis, which have defied every other treatment, are often seen to disappear after one or two energetic local applications of nitrate of silver. The method of treatment which I have finally adopted is as follows: A sterile catheter is introduced, the bladder emptied, washed out with sterile water until the water returns almost clear; 50 c.cm. of a 2 per cent. solution of nitrate of silver are then injected. I allow this to act for two minutes, after which I inject 50 c.cm. of sterile water and remove the catheter, thus leaving 100 c.cm. of a 1 per cent. solution of nitrate to remain in the bladder to be passed later on by the patient. According to my experience, this treatment is so infallible in cases of simple cystitis, that medical men who do not use the cystoscope may consider its defective action as an indication of pyelitis, or pyelocystitis. If the treatment has no effect, and if the possibility of stone, or tumour of the bladder can be excluded, we have probably to do with a pyelitis and not a cystitis at all. If the treatment causes a transitory improvement in the pains, tenesmus, and the appearance of the urine, we have probably a case of pyelo-cystitis, the cystitis being temporarily cured, and recommencing when the bladder is again infected from above.

In cases of pyelitis, or bacteriuria, arising in the kidney or pelvis, I do not, as a rule, institute a local antibacterial treatment as Casper and Kelly do, by introducing a catheter through the ureter into the pelvis and washing out with boric water or solutions of nitrate of silver. Daily ureter catheterisations are troublesome to the patient, and are not without danger, and I believe that the results aimed at by Kelly are sooner and more certainly attained by my simple and harmless method of treatment, which consists in giving the patient 2 litres of distilled water to drink daily, and prescribing 3 to 4 grs. of salol. In this way the urinary tract is constantly washed from above downwards with a great quantity of a slightly antiseptic fluid. The urine becomes exceedingly diluted, which circumstance diminishes its nutritive value for microbes, whilst the salol renders it still more adverse to bacteria.

In obstinate cases, I put the patient to bed and introduce a Pezzer's catheter *à demeure*. In this way the urine is not allowed to stagnate in the bladder in the time which elapses between two micturitions, and a continuous washing is thus established.

The effects of this treatment are surprising, rapid, and complete, but should be controlled by bacteriological examination of the urine, and the treatment continued until the urine is sterile. Should the case defy treatment, or the disease reappear time after time after apparent cure, we may be tolerably sure that there are complications—frequently stone, floating kidney, or obstacles in the ureter—and it is then advisable to seek for these factors, which keep up the disease, by explorative renal operation.

III.—C. Mansell Moullin, M.D., F.R.C.S.,

Surgeon, London Hospital.

Septic Infection of Urinary Tract.

Mr. Mansell Moullin said: I cannot help thinking that a great deal of the obscurity and confusion that exist in connection with diseases of the urinary organs arise from the fact that they have been to a great extent separated from general surgery

and considered as a subject more or less apart. Inflammation of the urethra, strictures, the operations required for it, and the many and striking complications that not infrequently follow are looked upon as something peculiar that has no parallel elsewhere. So, though perhaps to a less extent, with diseases of the bladder and kidneys; and as a consequence the septic origin of cystitis and of inflammation of the other urinary organs have been to a great extent overlooked, and various more or less fantastical explanations have been suggested for the rigors and other symptoms that so frequently occurred. As a matter of fact the urinary organs are liable to the attacks of septic organisms in the same way as all the other structures in the body perhaps to an even greater degree, and making allowances for certain peculiarities of structure and function the consequences are essentially the same.

So long as they are healthy the kidneys are free from organisms: it is even probable that they possess a germicidal power in greater degree than most other organs; they are engaged in separating off an aseptic fluid, the urine, from the blood which is itself aseptic, and the urine passes down the ducts and collects in the reservoir, the walls of which are absolutely devoid of germs. The aseptic character of the urine was first demonstrated by Pasteur years ago, then by Lister and many others, and anyone who chooses to take the trouble to draw the urine off, with sufficient precautions (and the trouble is a very great one) can prove it for himself. So long as the organs and the urine are free from micro-organisms any operation can be performed upon them without causing any other ill result than that which is due to shock, namely, either retention or suppression of urine.

Unfortunately the urinary organs are particularly liable to be attacked. The germs may reach them in various ways. They may come through the blood stream, infective emboli becoming caught in the vessels of the glomeruli, the walls of which give way and discharge their contents into the urinary passages. They may come from neighbouring organs through the lymph stream. This has been proved, so far as the rectum is concerned, in the case of animals. Many of the cases of unilateral pyelitis occurring during pregnancy are caused in this way. The ureter is obstructed; some transient intestinal disturbance enables the bacillus coli to penetrate the wall of the bowel, and it enters directly into the pelvis. The same thing is often met with in cases of salpingitis and endometritis, the germs passing directly through the walls of the neighbouring organs, and at last infecting the urine. But undoubtedly the chief mode of infection is directly from without, through the urethra. In men this is difficult apart from instrumentation, for anatomical reasons. In women it is very easy—so easy that cystitis often arises, merely from the recumbent position necessary after severe operation preventing the bladder being emptied. But there are corresponding disadvantages. It may be difficult for the germs to get in, in the case of men; it is equally difficult for them to get out, especially if there is any residual urine; while with women nothing can be easier.

There are therefore two modes of infection—one through the tissues, the other through the urine. In the former case of course the urine becomes infected at once. In the latter the tissues may not become infected at all, and then what is known as bacteriuria is established. This merges by indefinite steps into slight suppurative cystitis. If the germs acquire greater virulence, or the wall of the bladder is injured in any way, inflammation sets in at once; so that naturally there can be no line drawn between bacteriuria and suppurative cystitis. These cases are sometimes spoken of as catarrhal cystitis, but the term is misleading, and should be dropped.

I agree with Guyon's school that the colon bacillus is the organism most frequently present in septic diseases of the urinary organs; and I am glad to hear that Professor Rovsing has found it in a large proportion of his later cases. Of course, the fact that the organism is the most frequently present is no proof that it is the cause to the exclusion of others, and it is highly probable that cases in which there is mixed infection are the worst. But there can be no doubt that the colon bacillus is capable, under special circumstances, of acquiring a virulence that is amply sufficient. Its frequency is to be accounted for by the ease with which (when there is any intestinal disturbance) it can traverse the wall of the intestine and infect the urinary organs either through the blood stream or the lymphatic system; and also by the ease with which it can be carried in through the urethra. The rigors that are met with after internal urethrotomy are due to the toxins produced by these organisms being rapidly driven into the circulation, and are exactly comparable to those that are caused by the hypodermic injection of half a minim of Coley's fluid. The deaths from so-called exhaustion with typhoid symptoms that sometimes occur at the beginning of catheter life are due to slow septic poisoning, to the bladder being left half full instead of being emptied thoroughly and kept empty; and the symptoms they present are identical with those that occur in old men when operation wounds become septic. All the complications of urinary surgery, in short, with the exception of retention and suppression of urine, are forms of septic poisoning in one shape or other. The general principles of treatment therefore are easily laid down. The details would take too long to enumerate, much less describe.

IV.—MAX MELCHIOR, M.D.,

Copenhagen.

I SHALL limit my statement to a short account of 52 cases examined bacteriologically, which is the sum total of infectious diseases of the urinary organs investigated by me since the appearance of my work *On Cystitis and Infection of the Urine* (Copenhagen, 1893, Paris, 1895). These cases are mostly derived from the Royal Frederik's Hospital (Copenhagen), Surgical Department D, some also from my private practice. The investigated matter may be naturally divided into three groups: 1. Pure bacteriuria: 2. Cases where the principal seat of the infection is in the bladder or has originally proceeded from it, namely, cystitis and cysto-pyelo-nephritis; and finally, 3. Cases where the seat or origin of the infection must be sought in the upper part of the urinary tract, in the kidneys, or the pelvis.

1. The bacteriuria form a small group of four cases: three in women with a pure culture of bacterium coli, one in a man with diplococci. All the patients had acid urine, with the diffuse opaque appearance peculiar to bacteriuria. The bad smell was not always strongly pronounced. Seen under the microscope enormous numbers of bacteria were observed. Together with them epithelial cells appeared, only in very small numbers; crystals of uric acid and oxalates occurred occasionally, as well as (quite exceptionally) a few leucocytes. None of the patients showed symptoms of a general constitutional effect of the organism, but now and then slight local derangements were noticed.

As for the three cases of coli "bacteriuria," two of them were undoubtedly of renal origin, one of them in a young girl with symptoms of nephrolithiasis and chronic diarrhœa, the second in a baby of 10 months, directly after scarlatinal nephritis. The third bacteriuria occurred in a woman of 28, who was suffering from chronic endometritis during an attack of influenza. In this case the bacteriuria was evidently vesical, and was cured in the course of a week by injections into the bladder of a solution of nitrate of silver 1 in 500. The fourth bacteriuria, which was also vesical, occurred in a young man with chronic urethritis and prostatitis. After sexual excesses there appeared, rather suddenly, a bacteriuria which proved to be due to diplococcus ureæ liquefaciens, therefore to urine-decomposing microbes, but which, nevertheless, revealed acid urine. The same microbe appeared, though in a slight quantity, in the expressed prostatic secretion. In this circumstance we must seek the reason why, though purely vesical and easy to cure, the bacteriuria kept recurring till the prostatitis had subsided. So the bacteriuria had in this case probably arisen through infection from the prostate, which for the lower urinary tract seems to play a similar part as a reservoir to the microbes as the pelvis with regard to the upper urinary tract. Hogge and Schliffka, however, have already mentioned similar cases, and called attention to this circumstance.

2. The second group, which is the largest, contains 30 cases of cystitis and 7 of cysto-pyelo-nephritis. In all 37 cases the bladder was the principal seat or starting point of the infection. Of these cases 12 occurred in women, 25 in men.

The bacteria found are divided as follows:

Bacterium coli, 16 times. 14 times in pure culture.
Diplococcus urea liquefaciens, 10 times, 8 times in pure culture.
Proteus Hauser, 6 times, 3 times in pure culture.
Staphylococcus pyogenes aureus, 3 times, twice in pure culture.

Besides, specimens of rare species were found on a few occasions.

Thus it will be seen that the bacterium coli was by far the most frequent cystitis microbe, appearing in nearly half the number of cases. In the 7 cases where the infection had extended upwards to the kidney, bacterium coli occurred twice; in the remaining 5 cases urea-decomposing microbes were found exclusively.

As for the manner in which the infectious matter had entered into the bladder, in most cases a general urethral mode of infection could be proved (introduction of an instrument, urethritis, stricture, while the bladder had been made susceptible to infection by diseases from which it did already suffer), for example, cancer, calculus, retention, trauma, etc.

In 5 cases only the cystitis appeared to have arisen spontaneously, without any ascertainable cause. These 5 cases form a peculiar little group; in all of them the urine was acid, and they were all due to the bacterium coli, which occurred in pure culture at the first appearance of the cystitis.

That these were indeed cases of cystitis, and not, for example, of pyelitis, appears, not only from the strong cystitic symptoms, with considerable soreness above the symphysis, but also (in two cases) by dried cystoscopic examination. Besides, neither the antecedents of the patient nor the objective examination, no more than repeated investigations of the urine, proved the slightest signs of disease in the kidneys or pelves, consequently a renal infection is most improbable. An important point, however, is given in the circumstance that all five cases of cystitis occurred in women, nor have I ever noticed similar cases in men. This decidedly leads us to seek the explanation in the anatomical conditions, and points at once to an autoinfection through the urethra. Besides, the female urethra offers particularly favourable conditions for infection on account of its shortness, its width, and the weakness of its closing apparatus. Moreover, the supposition that such autoinfection takes place is strongly supported by the fact that bacterium coli is found very abundantly in the vulva and the vagina of healthy women; it may even appear in the normal urethra. In 1893 I ascertained this circumstance for the first time; later on it has been confirmed by several other investigators, and the bacterium coli in particular seems to occur frequently in the female urethra (Savor, Gawronsky, Finkelstein). Finkelstein has recently communicated a series of interesting cases of spontaneously originated cystitis exclusively in little girls, and he equally arrives at the result that the infection had not taken place through the kidneys, but by invasion through the urethra. A great number of other authors have observed similar cases, and expressed quite the same views, especially Guyon and his school.

Among the 37 cystitis 16 were ammoniacal, and the majority, 21 in number, had an acid reaction. In the latter case the bacterium coli was found 15 times (14 times in pure culture, 1 was due to the gonococcus), and in the remaining 5 cases urea-decomposing microbes were found exclusively. In these cases, nevertheless, the reaction of the urine was acid the whole time. An acid cystitis may consequently be due to a urea-decomposing microbe, which entirely agrees with my previous observations. In such cases we see the microbe is capable of producing cystitis without availing itself of its power to render urine ammoniacal.

I must further mention a case of acid cystitis in a woman which revealed, on the first investigation, a pure culture of the bacterium coli, but on repetition of the research a week later the bacterium coli had entirely disappeared, and a pure culture of urea-decomposing diplococci was found; nevertheless the cystitis had not clinically altered its character. Meanwhile instruments had repeatedly been introduced into the bladder, so the bacterium coli must have evidently been superseded by the new species. I mention this fact because the capacity of the colon bacillus to supersede other species has recently been particularly accentuated.

3. We now arrive at the third group, where the kidney forms the principal seat, or, at any rate, the starting point. This group only embraces 11 cases, among which were 4 of tuberculosis in the urinary tract. In one of these cases I did not succeed, in spite of repeated investigations, in finding the tubercle bacilli; nevertheless, the diagnosis could be made at a very early stage of the illness, as the urine, which was acid and contained a great quantity of pus, remained sterile on being spread on the usual substrata of nutrition. Later on the clinical observation confirmed the result of the bacteriological research. Subtracting the 4 cases of tuberculosis, this group embraces 7 cases which consist of 3 coli pyelitis complicated with secondary cystitis, and 1 coli cystitis with renal infection. The 3 remaining cases are due to urea-decomposing microbes. So in these cases, too, we meet bacterium coli with striking frequency, so that it is not only the microbe most commonly found in cystitis, but also in pyelitis and suppurative nephritis. No wonder that the same microbes appear as well here as there, for it must be borne in mind that the various infectious diseases of the urinary organs—cystitis, pyelitis, and suppurative nephritis—are by no means, as some people seem inclined to think, sharply-distinct entities, but frequently the phenomenal outcome of the very same infection, in fact, different stages of the disease. Nobody will doubt that there is a close connection between tracheitis, bronchitis, and broncho-pneumonia, but it must equally be remembered that the mucous membrane of the urinary organs continues uninterruptedly from the orifice of the urethra up to the most delicate ducts of the kidneys. The clinical examination shows us the connection between the three anatomically-distinct diseases (cystitis, pyelitis, pyelo-nephritis), and the unity is furthermore confirmed etiologically.

There seems not to be any doubt as to the way by which in these cases the bacterium coli has entered the urinary tract. In pathological circumstances, as, for instance, diarrhœa, persistent constipation, etc., the colon bacillus may mainly leave its proper home, the alimentary tract, enter the blood, and subsequently be evacuated through the kidneys, when these organs are the seat of some morbid process (derangement of nutrition, inflammation, retention, trauma, etc.). In such conditions the urine of the kidneys will carry the infectious matter into the urinary organs, possibly produce inflammation in the pelvis and in the bladder, if this tissue possess the required susceptibility. Thus we get a new form of spontaneous inflammation arising from genuine hæmatogenous autoinfection proceeding from the intestinal canal In my book I have reported such cases, and then, in 1893, I suggested the theory of the origin of certain cystitis from hæmatogenous intestinal infection, as well as the conditions accompanying. This theory has been since adopte by several authors, who have called attention to the frequent coincidence of intestinal complaints and infectious diseases of the urinary organs, and this theory has found considerable support in the experimental works of Posner and Lewin.

In the four cases of coli infection the above-described condition thus appeared. In two of the cases there were probably calculi in the pelvis, and in the afore-mentioned case of coli cystitis the patient had been suffering for a considerable time from a chronic granular nephritis; in several of the cases the infection of the urinary tract had been preceded by intestinal complaints.

I further wish to point out that in the three cases of coli pyelitis a complication of cystitis appeared, the inflammation having descended from the kidney to the bladder. In one case the whole mucous membrane of the bladder was red and swollen, showing dark, very hyperæmic spots; in the other case, too, the cytoscope brought to light an extensive cystitis, especially indeed in the surroundings of the orifice of the diseased ureter; and in the third case only the circumference of the diseased ureter was red and swollen, which shows that it was from the latter that the inflammation had passed on to the bladder. This fact disagrees with Dr. Rovsing's experiments, as among 21 cases of coli pyelitis he never found cystitis, and very positively maintains that the bacterium coli in such circumstances does not attack the mucous membrane of the bladder. The remaining 3 cases were due to urea-decomposing microbes. One of them was a suppurative pyelo-nephritis, in which the inflammation had evidently arisen from calculi in the pelvis, thence passing into the kidneys through the urinary ducts. After as well as before the death of the patient, only a pure culture of urea-decomposing, non-liquefying staphylococci could be proved;

nevertheless the urine continued acid the whole time, and, as was manifested by cystoscopic examination as well as by section, no cystitis appeared. I make a point of accentuating the circumstance, because it most clearly disproves the assertion that the pyelitis due to urea-decomposing microbes is always accompanied by cystitis, while this is never the case with coli pyelitis.

The two last cases present spontaneously arising cystitis in men: there were no indications of urethral infection, and the investigation rather pointed towards the kidneys, yet without offering any strong evidence, not even by means of the cystoscope, which was made use of in one case and revealed a diffuse cystitis. In one case staphylococcus pyogenes aureus was found, in the other diplococcus ureæ liquefaciens; but though both these microbes are urine decomposing, in these cases also the reaction of the urine remained constantly acid.

CONCLUSIONS.

The conclusions which are to be drawn from the above-quoted cases may be summed up in the following propositions:

1. Bacterium coli is the most frequent cause of "bacteriuria," and always produces acid urine.
2. Besides being produced by bacterium coli, "bacteriuria" may, for example, be caused by urea-decomposing microbes, which may even show acid urine.
3. The "bacteriuria" may be renal or vesical; in the latter case the prostate sometimes plays an important part as the focus of the infectious substance.
4. Bacterium coli is the microbe most frequently found in cystitis, pyelitis, and suppurative pyelo-nephritis.
5. In a large proportion of cases cystitis is combined with acid urine.
6. Even urea-decomposing microbes may produce cystitis with acid urine.
7. In women spontaneous coli cystitis arising from urethral autoinfection is not seldom found.
8. In cystitis bacterium coli may be superseded by other urine-decomposing species.
9. Bacterium coli may produce apparently spontaneous cystitis and pyelitis arising from hæmatogenous infection from the alimentary tract.
10. Pyelitis produced by bacterium coli is not seldom complicated with descending secondary cystitis.
11. Urea-decomposing microbes may sometimes produce pyelo-nephritis without any complication of cystitis, and with acid urine.

V.—W. BRUCE CLARKE, F.R.C.S.,

Assistant-Surgeon and Lecturer on Anatomy, St. Bartholomew's Hospital.

MR. BRUCE CLARKE said: I need not waste the time of the meeting in endeavouring to prove that these troubles of the urinary tract which we are considering are really septic in origin; nor need I refer to those cases in which gross lesions occur and abscesses burst into the urinary tract. I have personally examined and had examined for me a considerable number of cases of cystitis, and my observations corroborate to a certain extent the observations of Professor Rovsing, namely, that streptococci and staphylococci are a frequent cause of urinary infection. I think also I can offer an explanation of the fact that some observers find bacillus coli increase, whilst others assert that cocci are the source of the trouble. If one observes a case of chronic cystitis for a period of two or three months, and cultures are taken of the urine, say once a week, it will often be found that a urine in which at first staphylococci were abundantly present, presents later on only bacillus coli in the cultures which are taken from it. At first I was inclined to regard this as due to accidental infection, but it occurred so frequently that it was evident this explanation was not an adequate one. Under these circumstances I talked over the facts with my old friend and colleague Dr. Klein, and he at once made a suggestion which is probably the true explanation of these facts. He related to me several cases in which he had produced peritonitis in a guinea-pig by the injection of bacillus prodigiosus. If a second guinea-pig was inoculated from this peritoneal fluid the peritonitis produced in it was not a pure culture, but contained bacillus coli as well, and if a third guinea-pig was inoculated from the peritoneal fluid of the second the bacillus coli was still more abundant and bacillus prodigioseus less so. At each subsequent injection the bacillus coli predominated more and more, until at length a pure culture was the result and bacillus prodigiosus disappeared. In other words, the strong bacillus had turned out the weak one. Clinical experience helps us still further to explain this. We have but to examine abscesses which are close to the intestinal tract and we shall find a somewhat similar course of events. I do not for one moment wish to assert that bacillus coli does not get in through the urethra, but in many cases I am sure the explanation I suggest is the correct one. Another organism which gives rise to much trouble and causes a very serious variety of cystitis is streptococcus. It is associated with those cases in which the bladder is contracted when enlarged prostate occurs, and in which it may hold as little as three or four ounces. Such cases are always difficult to deal with, and recently I have been in the habit of advising cystotomy in all such cases; by this means the bladder can be kept permanently empty and the cystitis arrested. I had intended to refer to the methods by which catheters are rendered aseptic, but Professor Rovsing has already alluded to that subject at some length. Thus much however I should like to say, that if we are to have a plan of making catheters aseptic which our patients will use, it must be very simple and easy to employ, otherwise it will not be carried out.

VI.—W. H. BATTLE, F.R.C.S.,

Assistant Surgeon, St. Thomas's Hospital.

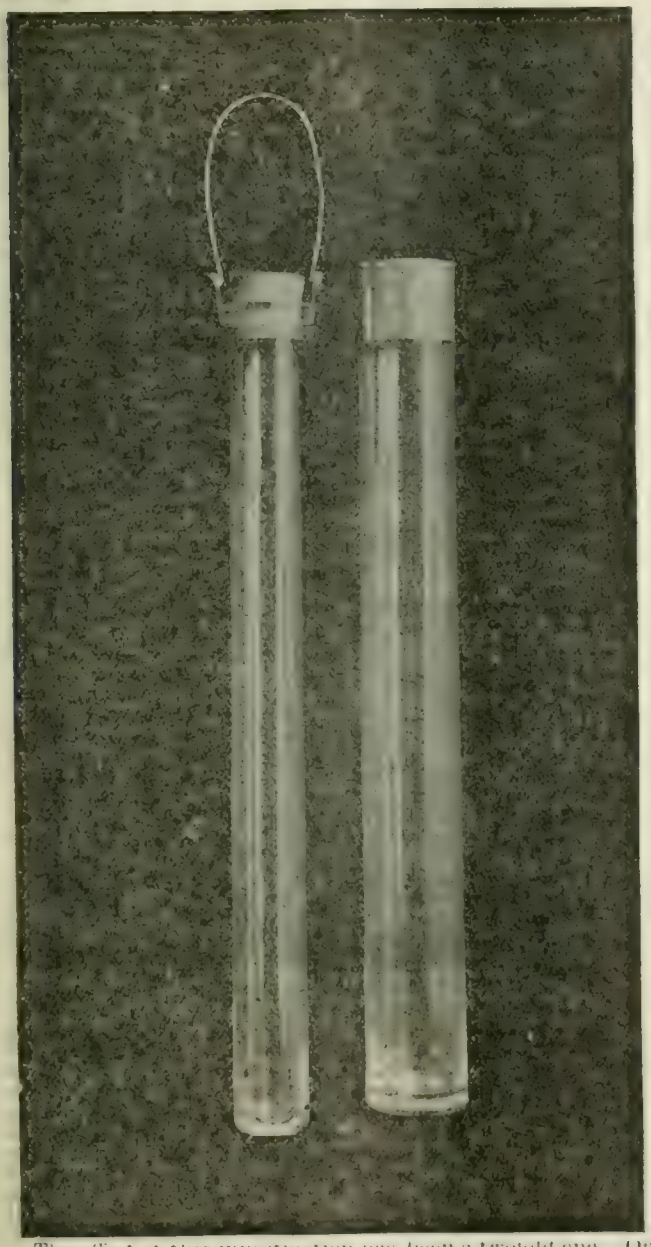
MR. BATTLE said that he did not think it advisable to attempt to add to the discussion of the causes of the conditions of sepsis which had already received full attention. He would, however, like to give a few notes of one or two cases which had been under his observation, which illustrated the rarer effects of sepsis, especially as regarded the kidneys. It was rare to find a renal enlargement in this group which subsided without some operative treatment, and therefore he ventured to bring these cases forward. The first was that of a boy, aged 6, who had suffered from double pyelitis with considerable enlargement of both kidneys and tenderness over these organs, which followed removal of a calculus from the urethra. There was much pus in the urine and severe hectic, which ultimately subsided after lateral cystotomy, aided by baths and position, and the boy made a very satisfactory recovery. The second was that of a man, aged 36, who had been admitted for retention of urine due to organic stricture. This was treated by suprapubic puncture and the bladder drained; perineal abscess developed, and afterwards a fistula behind and a larger one in the front part of the urethra. Perineal section and division of the stricture had been performed, when he came under his care some four months afterwards for cure of the penile fistula. For this it was proposed to do a plastic operation, but examination of the kidneys showed the right one to be enlarged, and the patient had a hectic temperature. This was not, however, very high, not more than 102°. The right kidney was very much enlarged and tender. The urine was offensive and contained pus, but not very much; it was alkaline. Under the employment of hot fomentations and washing out the bladder with antiseptics this subsided in about three weeks, and a successful operation was performed on the urethra. He left hospital some nine months after admission quite well. The exact nature of the kidney swelling in this case could not be ascertained. A similar enlargement in a child, who died from cardiac thrombosis after examination of a kidney which presented similar signs, showed a general uniform vascular enlargement without hæmorrhage or purulent infection, but in this case there was complete atrophy with calculous pyelitis on the other side.

VII.—JAMES H. NICOLL, M.B., C.M.,

Assistant Surgeon, Western Infirmary Glasgow.

MR. NICOLL said: The common mode of septic infection of the urinary tract is obviously by way of the urethra, often in consequence of the passage of instruments. In view of the very contradictory statements made by various investigators I decided some years ago to attempt to learn for myself something of the conditions under which infection may occur, and in this attempt I secured the co-operation of several skilled

bacteriologists. The details of the investigation have been so far embodied in the first of two projected papers, the proofs of which I have here, and which is at present in press for the coming first volume of the *Glasgow Hospital Reports*.



The effect of this investigation has been a twofold one. On the one hand, while I am not certain that the results of the experiments detailed in the paper alluded to are such as to warrant finality of opinion on many of the points investigated, there are certain conclusions which appear unavoidable. On the other hand, the process of carrying out these experiments has made clear so many sources of fallacy that one main result of the investigation has been to establish in the minds of myself and my fellow workers a fixed scepticism in respect of much that has been published in the matter.

The difficulties of such an investigation are enormous. Let me instance several which have met me in the work:

(*a*) I have found that before pronouncing a urethra sterile it is necessary to make culture experiments with acid, with alkaline, and with neutral media. To make inoculations on acid or alkaline or neutral media alone may lead to an entirely erroneous conclusion. In illustration of this I may briefly quote the two following cases, selected from a large number, from these press proofs:

Case I.—T. K., aged 2 years, operated on by me at the Children's Hospital for tuberculous metatarsus. While under chloroform the meatus was cleansed and inoculations made from the urethra on acid agar and on alkaline agar. The alkaline tube yielded a luxuriant growth of a large diplococcus, while the acid tube remained sterile. Secondary inoculations were made from the growth in the alkaline tube into (*a*) the original acid tube, (*b*) a fresh acid tube, (*c*) a fresh alkaline tube. Tube *c* yielded a vigorous growth of the same diplococcus, while *a* and *b* remained sterile.

Case II.—M. A., aged 37, operated on by me for varicocele. While under chloroform the meatus was cleansed and inoculations made in neutral glycerine agar, which yielded a mixed growth of a diplococcus and a large coccus. Attempts to produce secondary cultures on neutral glycerine agar failed, but both grew well on alkaline agar.

(*b*) I have found that in certain cases of normal urethræ (that is without discharge) the attempt to obtain cultures by the mere passage into the urethra of a sterilised probe or wire may yield a negative result, while gentle curetting of the urethra will give an inoculation which proves fertile.

(*c*) I have convinced myself, upon grounds detailed in the paper above quoted, that it is by no means clear that there is any known method of distinguishing the so-called gonococcus from other forms of diplococci. This may appear to some to be "going a very long way," but I believe the results of my investigation, so far as it has yet gone, warrant the statement.

There are other sources of fallacy which need not be detailed here.

At the present time, Dr. A. R. Ferguson (Assistant Pathologist, Western Infirmary, Glasgow) and Dr. Leslie Buchanan (Pathologist, Glasgow Eye Infirmary) are further investigating the matter with me, and accumulating stained specimens and microphotographs which, with the records of the cases, we hope may enable us to draw some definite conclusions in connection with the subject.

With reference to the practical question of treatment, prophylaxis is of primary importance. In the matter of sterilisation of both urethra and instruments I have made somewhat extensive practical tests. Concerning the urethra I have convinced myself that sterilisation is impracticable. No known process of efficient disinfection can be applied to the urethra without serious damage to the mucous membrane, and subsequent urethritis. Concerning the sterilising of urethral instruments I have detailed in the paper alluded to certain series of tests carried out with different processes.

It has always appeared to me that too little attention is given to the keeping of catheters clean after the process of cleaning has been accomplished. As a simple means of doing this, I have for the past ten years been employing these glass tubes, made at my request by Hilliard and Sons, of Glasgow. They are furnished with either metal or rubber stoppers. One is for storing and carrying bougies and catheters. The other, modified on the suggestion of my old teacher, Mr. Mansell Moullin, is for the use of patients habitually employing catheters.

D. MacEwan, M.D.,

Surgeon, Dundee Royal Infirmary; Professor of Surgery, University College, Dundee.

Dr. MacEwan said: Our bacteriological knowledge places upon us the duty of carefully guarding the avenues of infection in the treatment of diseases of the urinary organs. Of the four ways by which organisms may gain access to the bladder, namely, by the urethra, by the ureter, by the circulation, and by extension from contiguous parts or organs, the urethral route is the one over which we have most control. Careless catheterism is responsible for many cases of cystitis. In the female the old practice of passing the catheter without exposing the parts and disinfecting the urethra is to be condemned because of the danger of conveying infection into the bladder from the vulvo-vaginal fluids. In the male, in addition to disinfection of the urethral orifice, the canal should be irrigated by a mild antiseptic fluid before the sterilised catheter is passed by the surgeon. The prevention of infection from within is more difficult and uncertain, but previous to operations some good may be done by attending to the state of the intestinal canal and by giving antiseptics internally. The predisposing conditions are as important as septic infection in the causation of cystitis, hence

it is as necessary as ever to endeavour to prevent or remove those causes that lead to irritation and congestion with consequent diminution of the natural vitality of the bladder tissues. In the treatment of cystitis, boracic acid, the benzoates, and salol are the best internal antiseptics. Methylene blue in doses of gr. 2, three times a day, has a good effect in removing the offensiveness of the urine and diminishing the amount of pus. A dilute solution of nitrate of silver and instillation of perchloride of mercury are the best local antiseptics. In persistent cases, when drainage becomes necessary, a suprapubic is, as a rule, preferable to a perineal opening.

Professor Dr. Kocher,
University of Bern.

Professor Kocher wished to support Professor Rovsing's remarks in regard to the better prognosis of cases of affection where coli bacilli were found, against others with staphylococci or streptococci. He had seen several cases of peritonitis, even diffuse, where incisions very quickly stopped the bad symptoms and produced a cure. He thought, therefore, that the presence of coli bacilli in certain forms of peritonitis as a pure culture might partly explain the relatively good results some operators had had in the surgical treatment of apparently very severe cases of peritonitis. Rapid development of coli bacilli might, as it really did in culture media, kill in the human body other more dangerous micro-organisms, and so accounted for the better prognosis.

THE TREATMENT OF CHRONIC ENLARGEMENT OF THE PROSTATE.

By James H. Nicoll, M.B.,
Assistant Surgeo , Western Infirmary, Glasgow; etc.

However widely individual opinions may vary with reference to the period when it is to be undertaken, there can be little doubt as to the practical unanimity of surgeons on the necessity for operative interference in a considerable proportion of cases of prostatic hypertrophy.

Operative treatment takes the form either of palliative measures (drainage, temporary or permanent), or of radical measures (prostatectomy and castration).

It may probably be taken as proved, that for a certain number of cases palliative measures (drainage, by one or other method) constitute a serviceable form of treatment, removing or ameliorating the various effects of prostatic trouble by giving rest to the harassed and exhausted vesical tissue and providing exit for septic urine. Further, it may be granted that, in a few cases, drainage, though undertaken as palliative, proves a radical form of treatment.

For the larger number of cases requiring operative interference, however, experience has proved that something more radical than drainage is necessary.

In 1894, after a not inconsiderable experience of the results of prostatectomy, in my own hands and those of others, I published[1] the first account of the method of prostatectomy I had devised, and, after trial, adopted as in my opinion the best. This was reproduced and quoted in various periodicals, including the British Medical Journal, the *New York Medical Journal*, the *Journal of Cutaneous and Genito-urinary Diseases*, etc., and is now being incorporated in various recently-published books: Macdonald's *Surgical Diagnosis and Treatment*, Moullin's *Enlargement of the Prostate*, and others.

Briefly stated, the operation consists in the enucleation of the prostate through the perineum, aided by the pressure of the fingers introduced into the bladder through a suprapubic cystotomy wound, the operation being performed without opening the base of the bladder or the urethra, these being defined, and thus protected from injury, by the fingers in the bladder and a bougie in the urethra.

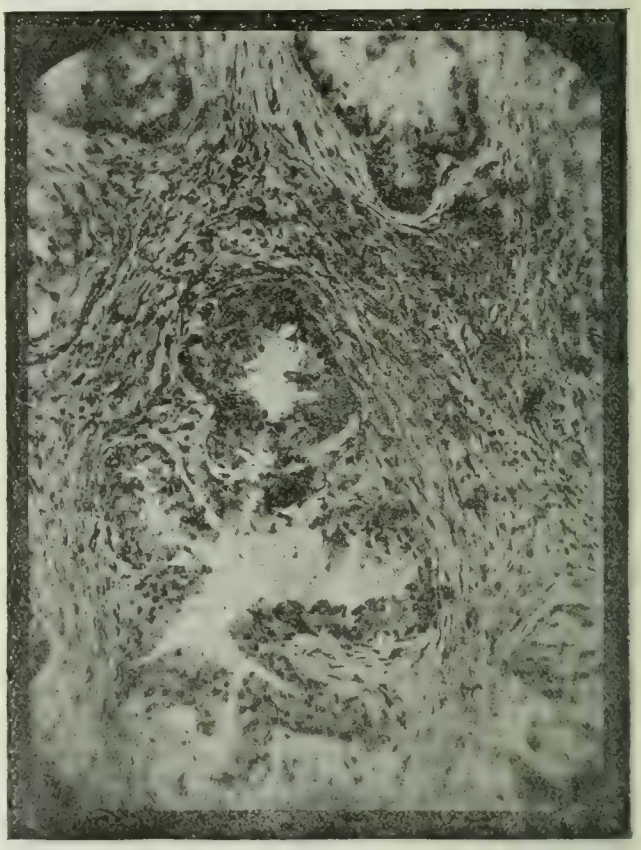


Fig. 2.—Section of prostate shown in Fig. 1.

The accompanying plates represent (Fig. 1) the prostate, weighing 1¾ ounce, removed five years ago from a patient in the M'Alpin Nursing Home, and (Fig. 2) a section of that prostate showing the structural characters of the tissue. The case is selected from a number for illustration as being an average one. In some cases the glandular elements bulk more largely, in others the fibromyomatous elements are relatively more prominent. In most of the cases in which I have performed prostatectomy I have been able, as in this case, after opening the prostatic capsule, to "shell out" the masses of prostatic tissue by the finger, aided by some such instrument as a periosteal rugine and an occasional snip with scissors. In one or two instances, however, the prostatic tissue has been too tough and firmly adherent to bladder and urethra to be thus enucleated without risk of tearing the bladder. For these cases I have had made gouge-cutting forceps, which, however, vary so little from other forms of such forceps that it is perhaps unnecessary to figure them here.

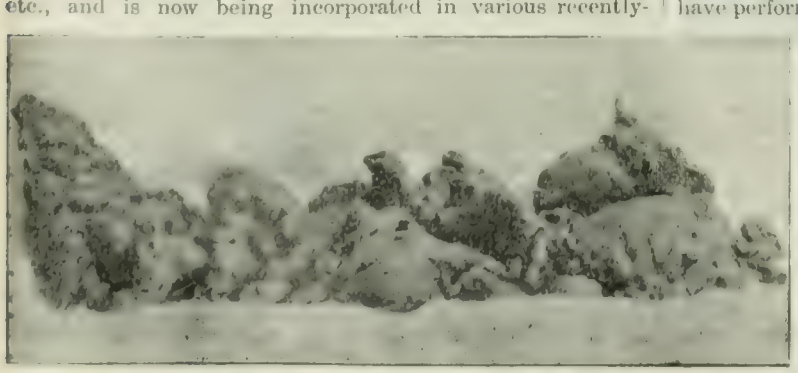


Fig. 1.—Prostate removed from patient.

The advantages which this method of prostatectomy appears to possess over others are:

1. Avoidance of infiltration by septic or putrescible urine of the cavity left by a thorough enucleation of the prostate. The cavity is a considerable one, and is, in the recumbent position,

not well situated for drainage. By preserving intact the base of the bladder and the urethra, no urine enters it.

2. Adequate removal of the prostatic tissue. With a bougie in the urethra, and two fingers in the bladder pressing the prostate down into the perineal wound, the parts can be defined and the removal effected in a systematic manner.

3. Less hæmorrhage. The amount is usually inconsiderable, and is readily controlled by packing the cavity left.

4. Avoidance of the risk of tearing out portions of the neck of the bladder or of the urethra, with the subsequent risk of either incontinence or stricture on the one hand, or of urinary fistula on the other.

At the May meeting, 1894, of the American Genito-Urinary Association, Alexander, of New York, published an account of a method of prostatectomy in every respect identical with mine except in one particular or detail. This particular is, that Dr. Alexander appears to drain the bladder through the perineum in all cases, whereas I drain it by that route in a small proportion only of the cases, and in no case until several days or longer after the prostatectomy, by which time opening the base of the bladder for drainage is a comparatively safe procedure, since the cavity left by the enucleation of the prostate has become protected by granulations. The few cases which I do drain through the perineum are:

(*a*) Cases in which a pedunculated median lobe has to be removed—and this is done, as stated, at a period subsequent to the enucleation of the bulk of the prostate.

(*b*) Cases in which cystitis persists in spite of draining and douching by the suprapubic wound.

A year later, during 1895, castration (or vasectomy), as a practical form of treatment, was brought before the profession. It appeared to me that, if efficacious in causing atrophy of the hypertrophied prostate, it offered a mode of treatment simpler and probably safer than prostatectomy. I therefore decided to try it. My mind was then open on the matter, and is still open. I have castrated or performed vasectomy on a certain number of patients. The results have been various. Some of the patients have been benefited, some apparently cured; some have died, and some are—as yet at least—no better than they were previous to operation. My experience would appear to be similar to that of not a few surgeons who have published their opinions, and whose position seems to be that of Mr. Mayo Robson, who, in publishing[2] the further history of a successful case of prostatectomy, says: "The fashion has for a time turned from prostatectomy to castration in the operative treatment of enlarged prostate, but I am by no means converted."

It may seem a simple course to publish here a list of cases in which I have performed prostatectomy, contrasted with a list of cases in which I have performed castration (or vasectomy). To follow this course at present, however, would be to defeat the object of this paper, which is to enter at one and the same time a plea for further observation before coming to a decision, and a mild protest against the character of some of the clinical evidence being offered in favour of castration.

If anything were wanting to convince me of the wisdom of, in the meantime, holding one's hand in the way of recording cases recently operated on and drawing conclusions from the results, it would be found in reading the published statements of enthusiastic advocates of either castration or prostatectomy in the light of the histories of cases which might have been subjected to operation.

The following are the briefest notes of a few cases which were not operated on, picked almost haphazard from my notes of a number, and no surgeon seeing many cases of prostatic trouble would have any difficulty in adding to the list:

A. M., aged 62, patient of Dr. Smith, of Lenzie. First seen by me in March, 1892, with frequency of a year's duration. Intermittent hæmorrhage, and 2 to 3 ounces of habitual residual. Given a catheter to use at night, and put on strychnine. In less than a fortnight residual was reduced to less than 2 drachms, and he shortly thereafter discontinued use of catheter. In March, 1893, saw him with Dr. Smith. Had had frequency to the extent of three to four times a night for a month, pain and straining, and had had serious attack of giddiness while straining. Residual 4 ounces. Prostate *per rectum* considerably enlarged, and No. 8 *coudé* passed with some difficulty. Put on laxatives and boracic acid, and given catheter to be used night and morning. In a few days the pain and straining had ceased, and in less than a month he had discontinued the use of his catheter. In May, 1896, I examined him, and noted: "Residual 2 drachms; no pain or straining; since the summer of 1893 has not once passed a catheter; with the exception of having for a few weeks in the autumn of 1895 a return of frequency, has not had any symptoms referable to his urinary organs since 1893. Prostate *per rectum* presents but a moderate degree of enlargement."

Mr. A., aged 68, sent to me by Dr. M'Nicol, then of Dalry, on July 7th, 1897. "Frequency to the extent of nearly every hour, accompanied by straining. Residual, 6 ounces 3 drachms. Urine mucopurulent. *Per rectum*, prostate much enlarged and hard. Symptoms of three years' duration, during which time the frequency had been gradually becoming more troublesome, and the straining more severe and accompanied by pain in the anus (due to piles, which are present?). Declined castration, which I proposed. Put on salol and strychnine, and given a catheter to use twice in twenty-four hours."

Returned June 2nd, 1898, to report. "Has used no catheter since August, 1897. Has taken the medicines from time to time. Has no frequency, and sleeps throughout the night undisturbed. Residual about 3 drachms. Urine clear. Prostate *per rectum* soft but moderately enlarged."

J. C., aged 61, consulted me in September, 1896. "Frequency (to extent of several times each night), pain, and straining, gradually increasing for two years. Has twice during that period had attacks of acute retention, which had to be relieved by catheter. For several months has been passing a gum-elastic catheter from time to time. Residual, 3½ ounces; urine ammoniacal and purulent; prostate *per rectum* very large and hard; declined castration. Put on strychnine and salol, and given a catheter to employ at night. Returned twice a week for bladder douche of weak nitrate of silver solution."

November 10th, 1896. "Urine clear; no residual; prostate *per rectum* considerably smaller and markedly softer. Has not used catheter for two months."

June 3rd, 1898. "Continues well and free from all urinary symptoms; residual about 1 drachm."

J. D., aged 70, had had more or less frequency, pain, and residual for several years, and had been seen, once at least, by Dr. Hector Cameron. On the night of April 15th, 1894, he was seized with absolute retention, and in the early morning of the 16th sent for Dr. Cameron, who happened to be from home. In the forenoon I saw him on behalf of Dr. Cameron, and the following are my notes:—"Absolute retention for twenty-four hours; bladder much distended; prostate *per rectum* great enlarged; no instrument got in; aspiration over pubes. Saw patient again in evening with Dr. Cameron; chloroform; no instrument could be passed; aspirated again. Next morning saw him again and failed to pass instrument, and again aspirated. The following morning he began to micturate spontaneously."

His son, whom I interviewed on May 17th, 1897, gave me the information that for nearly two years he had no urinary trouble whatever. He then had another attack of retention, from the effects of which he died.

Dr. —— consulted me in February, 1897, with the following symptoms: "Frequency, gradually increasing for four years. Latterly has been accompanied by great irritation, straining, and pain, with occasional hæmorrhage and prolapsus ani. Has used rubber catheter irregularly for years, and for more than a fortnight has not been able to pass any urine except by its help. Urine purulent and highly offensive; several œdematous and painful piles; prostate *per rectum* of very large dimensions. No. 6 Jaques catheter passed readily, and withdrew 7½ ounces of urine." I proposed castration, which was declined. Two days later I removed the piles, and at the same time washed out the bladder with nitrate of silver solution, and tied in a soft rubber catheter. The further notes are as follows:

"February 18th. Catheter withdrawn at noon. Returned in evening to pass it, and was informed by patient that during afternoon he had twice spontaneously passed urine, and that, therefore, he thought catheterisation unnecessary.

"May 10th, 1897. Patient in full professional duty and in good health. Has not again used a catheter; has no pain, straining, or bleeding; urine absolutely clear; occasionally urinates once during night, otherwise has no frequency; declines to have a catheter passed to test residual.

"May 22nd, 1898. Patient states that he 'never felt better in his life,' and that beyond occasionally having to urinate once during night, and that not oftener than once in several weeks, he is absolutely free from all urinary symptoms."

Remarks.

It is unnecessary to multiply reports. I might have adduced several instances of "spontaneous cure"—permanent (apparently), or, at least, of considerable duration—from my records of cases at the Western Infirmary and Central Dispensary, in certain respects more impressive. Hospital cases, however, are frequently not easy to trace, whereas private patients are readily kept in view, and, for the sake of future observation and reference, I have given cases from private practice.

When one studies these records of cases which might have been subjected to castration, one becomes not a little diffident as to accepting as proofs of the efficacy of castration or vasectomy not a few of the cases which have been published as such, or as to founding on the present healthy condition of some of the cases one has oneself castrated.

The same doubt may arise with reference to the part played in the process by the operation in the case of patients apparently cured by prostatectomy. Here, however, the conditions are different. When one has a patient formerly subjected to prostatectomy come to report himself, and one has so many drachms or ounces of that patient's prostate in a bottle, one

feels that, whatever the patient's condition, there is here a tangible something which cannot be mere matter for speculation.

When one finds enthusiastic advocates of castration (and vasectomy) recording case after case as triumphs of the operation, and one knows from intimate experience that there are such cases as those detailed above, which, without any operation, present conditions in no way less strikingly favourable than are those of the cases subjected to operation, one feels that, unless caution be observed, we may come to an entirely erroneous conclusion. And further, when one finds Dr. Cabot,[3] in reviewing the whole question in a paper of the highest interest, boldly concluding that "the reduction in the size of the prostate after castration is largely due to a diminution of congestion.....Castration is of but little use in myomatous and fibrous prostates," one cannot escape an uneasy feeling that, in informing patients that the proposed operation of castration produces atrophy or absorption of the prostate one has been going a little too fast.

As stated above, I have under observation by myself and others at present cases which have been subjected to castration or vasectomy. Certain of these are, in the meantime at least, either benefited or apparently cured; others are, as yet, not improved by the operation.

My present object is a twofold one, namely, in the first place, to show cause for more lengthy observation of cases before publication, and, in the next, to draw attention to what I believe to be the best form of prostatectomy for those cases for which prostatectomy is advisable, and which, whatever the ultimate decision is to be, at present include at least those cases in which the patient declines castration and those in which castration has been performed and has failed to give relief.

References.
[1] *Lancet*, April 14th, 1894. [2] British Medical Journal, February 28th, 1897. [3] *Annals of Surgery*, September, 1896.

CASES ILLUSTRATING SOME POINTS OF INTEREST IN THE ETIOLOGY AND TREATMENT OF RENAL HÆMATURIA.

By David Newman, M.D., F.F.P.S.G.,
Surgeon to the Glasgow Royal Infirmary.

[Abstract.]

In a paper published on Hæmaturia as a Symptom,[1] I classified the diseases of the kidney commonly associated with hæmaturia under the following heads: (1) Traumatic lesions; (2) passive hyperæmia; (3) inflammatory hyperæmia; (4) tumours.

Under the second class I included passive hyperæmia arising (*a*) from pressure on the renal veins, (*b*) from torsion of the renal veins, and (*c*) from reflex spasm of the arterioles. It is to cases coming under the two last-mentioned divisions that I now desire to direct attention.

When the kidney becomes displaced in certain directions, the vessels, the ureters, and the nerves may become coiled round each other, so that the circulation of the blood is for a time seriously interfered with. This produces marked, although transitory, hyperæmia of the kidney, which is revealed clinically by the presence of blood in the urine, and by a diminution in the amount of the excretion. In cases of less complete obstruction the urine may be albuminous only.

It is manifest that in such displacements of the kidney as those described, we have to deal with a passive hyperæmia of the kidney due to a local cause. In some instances the obstruction may be entirely venous, in others the arterial circulation may also be interfered with, either as a consequence of direct pressure, or from spasm of the vessel's wall. It has been proved by experiments upon animals that when the venous flow is impeded, the quantity of blood flowing through the kidney is diminished, and, as a consequence, the amount of urine excreted immediately decreases. Coincident with the diminution in quantity of the excretion, there is a concentration of the urine, which soon becomes albuminous also, and should the hyperæmia be intense, blood corpuscles, tube casts, or even blood casts, may appear in the urine.

When the efferent resistance is increased by any cause, the veins and the venous radicles surrounding the uriniferous tubules will become distended: this increased resistance to the flow of blood will lead to an augmentation of the blood pressure within the glomeruli, but at the same time, by diminishing the total quantity of blood flowing through the organ, the venous obstruction will cause retardation to the excretion of urine.

The absolute pressure of the blood in the glomeruli is only one factor in determining the quantity of urine excreted; the rapidity of the flow is even of greater importance, and the kidney, being provided with a rigid capsule, the engorgement of the veins must produce considerable pressure upon the uriniferous tubules, and so augment the pressure of the fluid in Bowman's capsules. This compensates to some extent for the increased tension of the blood in the Malpighian tufts.

Not only does venous obstruction produce those changes in the urine, but compression of the renal artery may also be followed by suppression of the excretion. Herman and Overbeck demonstrated that even slight disturbance of the renal circulation causes suppression, which may last for a longer or shorter period, according to the sensitiveness of the individual, and that albumen and blood may appear in the urine for hours or days thereafter. We also know that arterial obstruction is an important cause of venous hyperæmia, and with the possibility of having venous pressure combined with arterial disturbance of the circulation, we have in movable kidney a most productive cause of suppression of urine, followed by hæmaturia and albuminuria.

Torsion of the renal vessels occurs in cases of movable kidney, and the symptoms may be such as to lead to the suspicion of renal calculus, such symptoms as severe paroxysmal renal pain, sickness and vomiting; emaciation; hæmaturia; and occasional suppression of urine. But on physical examination a movable kidney is discovered, and if the patient is kept in bed the symptoms are temporarily relieved, and when the kidney is fixed by an operation the patient is cured. I have recorded examples in the *Transactions* of the Clinical Society of London, vol. xxx, p. 65.

Reflex spasm of the renal arteries may be followed by marked hyperæmia, shown first by suppression of urine and later on by hæmaturia. Examples of reflex inhibition of the functions of the kidney are numerous. For instance, I have seen complete suppression of urine following the passage of a catheter, and succeeded by hæmaturia for some days.

Then, again, we have cases of unilateral obstruction, such as is produced by the presence of a calculus in one ureter, causing complete anuria, which may last for a considerable time. Also, in cases of transitory hydronephrosis from angular insertion of the ureter, or from movable kidney, when the obstruction on one side reaches a certain point, the kidney on the opposite side fails to act, even although the hydronephrosis continues to increase in size. In all cases it is very difficult to assert whether the reflex inhibition of the function of the kidney is due to reflex spasm of the walls of the ureters, or to contraction of the small renal arteries; but the circumstance that the anuria is in many instances followed by the excretion of albuminous and bloody urine indicates that in these cases, at least, there has been a serious disturbance of the renal circulation.

To cause complete suppression of urine, the spasm of the arterioles must be very great, and must involve the majority of the smaller vessels. The extent and gravity of the disturbance of the circulation is clearly indicated by the abnormal constituents in the urine when the attack has passed.

The treatment of hæmaturia, from torsion of the renal vessels, in movable kidney is clearly indicated, namely, fixation of the kidney by operation. When the hæmorrhage is due to spasm of the renal arterioles alone, probably the treatment which gives most rapid relief is wet cupping in the lumbar region.

Reference.
[1] *Lancet*, vol. ii, 1898, p. 14, *et seq.*

Presentation.—Dr. W. E. St. L. Finny, who is about to be married, was on St. Luke's Day presented by the Mayor, Corporation, and officials of Kingston-upon-Thames with an electric pedestal lamp. Dr. Finny was on the same day chosen as Mayor-elect of Kingston for the coming year.

A DISCUSSION ON INJURIES OF THE ELBOW-JOINT.

I.—Edward H. Bennett, M.D.,

Professor of Surgery in the University of Dublin; President of the Royal Academy of Medicine in Ireland, etc.

I FEEL very deeply the compliment that has been paid to me in asking me to open this discussion on injuries of the elbow-joint before such an audience as I see assembled in this Surgical Section of the British Medical Association and in the face of the great School of Surgery of Edinburgh. I know that no easy task lies before me in the attempt to handle so vast a subject with any success within any moderate space of time which necessarily is all that can be granted to me. Someone will say that at this period in the history of surgery there can be but little left to discuss in this subject that is not already threshed out, and that I should be forced merely to condense and tabulate the long list of fractures and dislocations which result from injuries of the elbow which we find in every textbook of general surgery and in a great series of special monographs. That there is something still wanting in this subject, something calling for discussion, is clear, else we should not have it placed in the forefront of the business for this Section by those in the Edinburgh School who appreciate the want.

I believe that the defect we have to deal with lies in the surgery of the most common injuries of the elbow; our museums of surgical pathology and the personal experience of any surgeon conversant with injuries alike attest that errors of diagnosis are most frequently committed in dealing with fractures of the lower end of the humerus, including epiphysary separation and dislocations of both bones of the forearm backwards.

Many causes conduce to these errors. The uncertainty of the terms used to describe the lower end of the humerus is the first cause to be looked to. Next the rapidity with which the swelling of the soft parts sets in after injury of the elbow which prevents the recognition even by the most expert surgeon of the exact relation of the osseous projections around the joint. Thirdly, the failure of many modern surgical authors to include the incomplete dislocation of both bones of the forearm backwards in discussing the symptoms of dislocation. Lastly, the incompleteness of our knowledge of the epiphysary separation of the lower end of the humerus.

I will say a very few words on each of these four subjects. First, the confusion of terms. In the earlier years of this century the great surgical writers Cooper, Boyer, Desault, Dupuytren, Malgaigne, Smith, were content to use the terms "tuberosities or condyles of the humerus." Chaussier in 1820, unfortunately I think, adopted the terms epicondyle and epitrochlea to describe the projections seen and tangible beneath the skin on the outer and inner sides of the joint respectively. He wrote with a view of teaching surface anatomy for artists, and applied the term condyle only to the capitellum: we find these now named external and internal supracondyloid eminences (Quain). In a single sentence of a leading authority (Stimson) we find the terms capitellum, epicondyle, external condyle, and in the next sentence "the condyle of the humerus," all implying the same part of the bone; again as synonyms internal epicondyle and epitrochlea. A most modern writer (Reittel) says in opening this subject, "it is essential if we would avoid confusion to define exactly, because the language of surgeons differs a little from that of anatomists. In surgery one divides the antibrachial extremity of the humerus into two lateral halves or condyles. The external condyle is formed by the epicondyle and the little head of the humerus (or humeral condyle of the anatomists). The internal condyle comprises the epitrochlea and trochlea." Is it any wonder that the study of this subject is rendered wearisome and difficult by this constant jangle of terms?

The second difficulty that I have noticed is the rapid onset of swelling and tension which is unavoidable, and needs only to be mentioned now that I may preach the doctrine of charity and be slow to condemn the errors of diagnosis which so often occur with those who see these injuries only after their details are almost hopelessly masked.

The third point I have raised is the absence of any reference in many modern textbooks to the incomplete dislocations of the bones of the forearm backwards. See how backward dislocation is described in one of the books I refer to:

"This injury is readily recognised by the projection backwards of the olecranon carrying with it the tendon of the triceps" (Erichsen).

Again, "This dislocation is strongly marked by the great change which is produced in the form of the joint" (Cooper).

"The olecranon," says Boyer, "is in this dislocation placed higher than the external condyle, instead of being on a level with it as it naturally is."

"The olecranon process is noticed to project prominently far behind the elbow-joint" (Pick).

"The inner condyle of the humerus and olecranon process being far apart" (Bryant).

All these descriptions apply to the complete dislocation only.

Now if a surgeon but little conversant with injuries of the elbow falls back on one of these textbooks to help him in dealing with an incomplete dislocation these signs will fail him, and he will miss the diagnosis, leaving the dislocation unreduced. See how Littré deals with this matter: "The incomplete dislocation is the only one in which the olecranon does not appear sensibly to change its place."

Again, Denucé says, "The forearm being in the third degree of flexion, the projection of the olecranon is on a plane sensibly inferior to the projection of the epitrochlea, whilst in the complete dislocation the olecranon is placed on a plane sensibly superior." Is this distinction worth making? Is the incomplete dislocation a curiosity in the living? It is at least as frequent of occurrence as the complete, and in museums it appears to be the more common. I exhibit from the museum of Trinity College, Dublin, 9 specimens of uncomplicated dislocations backward, of which 5 are incomplete and 4 are complete.

Lastly, with reference to the separation of the inferior epiphysis, I would briefly refer to the difficulty in determining the meanings of authors in the details of their descriptions, because their language is, as I have said, uncertain; for example, "the epicondyle preserves its normal relation to the olecranon." Which epicondyle? For the writer has started with the statement that there are two (Hutchinson, jun.). In none of the descriptions based on Professor Smith's writing, except those that quote *verbatim* his account, is there any mention of the peculiar deformity of the posterior aspect of the joint, the two tumours formed the one of the olecranon, the second by the displaced capitellum with the scale of cartilage which separates from the external condyle.

In discussing the subject of compound separation of the epiphysis with Professor Smith, he put this question to me: How comes it that when the separation of the epiphysis is compound the elbow-joint escapes without suppuration? This question was put to me in 1869 before the days of antiseptic surgery, and is an expression of Professor Smith's experience. He told me as an anatomist to find the explanation, for he confessed that he could give none.

The opinion expressed by Mr. Jonathan Hutchinson on this subject is very clear when he describes the excision of the end of the diaphysis as the proper treatment of "a compound fracture at the line of the epiphysis necessarily a compound fracture into the joint" (1866).

Again, in the admirable analysis of the cases recorded up to 1893 we find his son expressing the same opinion: "The epiphysis increasing so slowly in depth comes to lie more and more in the elbow-joint, and as a rule its detachment means a wound of, and more or less hæmorrhage into, this joint."

This view of the subject leads of necessity to the adoption of some such active surgical practice as complete or incomplete excision, and is directly opposed to the experience of Smith that the compound separation does not implicate the joint. I here present the cast of a limb which was injured in this way, the diaphysis being thrust through the skin and protruded some 2 inches, stripped of its periosteum. The artery of the limb was torn through and the wound suppurated freely, but the elbow-joint remained intact and preserved its movements almost without limitation.

I think the explanation lies in this fact, that when the diaphysis is thrust out through the skin, it is displaced out of its sheath of periosteum which intervenes between it and

the synovial membrane and cavity. In the separation of epiphyses generally, both at the elbow and elsewhere, the lesion takes place between the cartilage of the epiphysial line and the diaphysis, and into this line the periosteum is directly inserted. In fact, the proper title would be dislocation of the diaphysis out of its periosteal investment. There may be exceptions to this rule, and such I have seen in experiment on the cadaver; but all experience goes to prove that the rule of the site of the lesion is very constant, and should certainly lead us to hold our hands from unnecessary resection of the diaphysis, for even under the least aseptic conditions the elbow-joint does not suppurate in the compound displacement.

I now exhibit a diagram which is an enlargement from the model of the frozen section of the joint; I show also the dissection of the same section to establish the point I make that the synovial membrane is separated from the bone of the diaphysis by the periosteum; and again I show in the experimental production of the injury in the child that the diaphysis escapes out of the periosteum naked, and that the elbow-joint is unopened.

II.—John B. Roberts, M.D.,

Professor of Surgery, Philadelphia Polyclinic.

Subcutaneous Nailing, Exploratory Incision, and the Extended Elbow in Condyloid Fractures of the Humerus.

[Abstract.]

1. Ankylosis of the elbow-joint after condyloid fractures is usually due to imperfect reduction of fragments or incomplete restitution of structural relations. 2. Conservation of the normal angle between the axes of the humerus and ulna is desirable. 3. Fixation is satisfactorily obtained by nailing the fragments together with long nails driven through the skin; but the method is only required in especially troublesome cases. 4. Previous skiagraphs may be needed to aid in determining the point at which the nails should be introduced, and the direction in which they are to be driven. 5. Obscure or severe fractures may demand exploratory incision for replacement of fragments and prevention of ankylosis; such incisions are not employed as often as they should be. 6. The best route for this exploratory investigation is through the groove between the biceps and long supinator. 7. The extended position of the elbow is less likely than right-angled flexion of the joint to be followed by impairment of the normal humero-ulnar angle, which gives the "carrying function" to the upper extremity, and is therefore the preferable posture in condyloid fractures of ordinary severity. 8. Good results as to anatomical conformation and as to mobility can usually be obtained by the adoption of the measures suggested. 9. Osteotomy, with or without nailing, may be judicious treatment in fractures of the condyles united with deformity or followed by ankylosis.

III.—John Chiene, M.D., F.R.C.S.,

Professor of Surgery, University of Edinburgh.

Professor Chiene recommended the extended position for severe injuries requiring the recumbent posture, and for fractures of the olecranon with displacement; the rectangular position for fractures without displacement; and the fully-flexed position for all other fractures.

IV.—Thomas Bryant, F.R.S.,

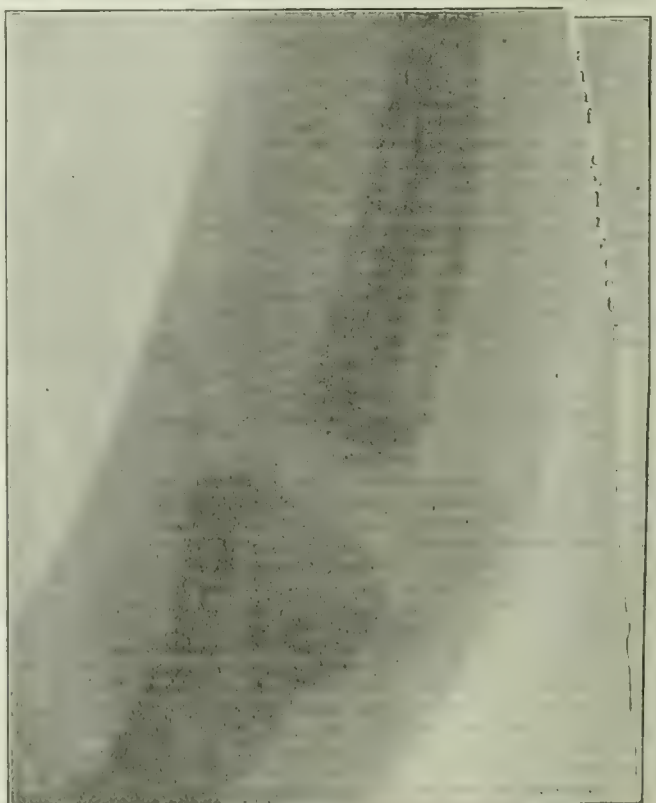
Late President, Royal College of Surgeons of England; Consulting Surgeon, Guy's Hospital.

Mr. Bryant said that he had but two observations to make upon the subject before them. The first had reference to the excellent paper of Professor Bennett, in which it had been clearly demonstrated that in cases of displacement of the humeral diaphysis the bone escaped through a rupture of its periosteal covering, and that under such circumstances it was probable that the elbow-joint was not opened. That this was true was well supported by the fact that in such injuries there was a very extensive thickening of the displaced bone, as brought about by the organisation of the new material, which was subsequently poured out by the torn periosteum. He felt very strongly that it could only be in very exceptional cases of displacement of the diaphysis that amputation of the projecting portion of displaced bone was called for. The second observation he had to make had reference to the diagnosis of cases of injured elbow, and to the facilities offered to the surgeon by making his examination of an injured elbow with the arm extended, such a position enabling him, on comparing the injured with the sound joint, to make out more readily than with the arm flexed the altered position of the parts; with the thumbs of the surgeon in front of the joint and the fingers behind, any altered position of the many prominent points which might exist in the injured joint itself were readily made out. He would also say that in a large number of the cases of fractured condyles of the humerus it would be found that the broken fragments of bones were kept in position more readily with the arm partially extended than in the more common position of flexion. He did not wish to assert that this position was the best under all circumstances, but he was sure that in a very large number it was the one to be preferred.

V.—T. Kennedy Dalziel, M.B., C.M.Edin.,

Dean and Professor of Surgery, Anderson's College, Glasgow.

Mr. Kennedy Dalziel discussed the advisability of immediate operative interference in certain cases of fracture involving the joint. Especially important was it to do an immediate suture in fracture of the external condyle when the capitellum was also carried away. The skiagraph shown gave a good idea of the utter hopelessness of securing a satisfactory result without operation. In it the displacement was seen to be a rotatory displacement of the fragment in the long axis, so that the fractured surface of it lay just under the skin. No manipulation could restore the position of the bone, and it was evident that unless accurate restoration could be obtained, the function of the joint must be seriously interfered with. Many joints now with the characteristically-limited movement were probably due to this fracture. The result of ordinary expectant treatment was either non-union with sub-



sequent laxity and want of power in the joint, generally accompanied with much pain and deformity of the limb from

the arrest in the development of the outer part of the epiphysis, or the bone healed with the fragment in its abnormal relation, and the integrity of the complicated articular surface of the humerus was lost, with subsequent stiffness and limitation of movement.

This particular fracture occurred in young people up to the age of puberty, and was much more frequent than generally supposed. It usually resulted from a fall on the pronated hand as in Colles's fracture and was another alternative to that or dislocation of the elbow or shoulder. The force was no doubt transmitted through the radius, allowed to glide upwards from the laxity of the radio-ulnar ligaments, and thus to force from the humerus the capitellum and the adjoining external condyle. Rotation of the fragment appeared to be associated with the extreme pronation. The injury was clearly one of early life. The diagnosis of the condition was not an easy matter in some cases. When the rotation of the fragment was complete the pressure of the sharp-fractured surface under the skin was in itself diagnostic alike of the nature of the injury and of the absolute necessity for immediate operation. In other cases careful manipulation, especially with complete fixation of both humerus and bones of the forearm, would render the diagnosis possible. Six cases had been operated on by Mr. Dalziel, four being recent, and of the other two one had been fractured seven years, and the other two years before. Of the four recent cases, three had the fragment completely rotated, the other only partially so. All were operated on as soon as possible, two being wired and two fixed with temporary steel pins, the result in each case being perfect. The cases of old injury presented many difficulties. Both had non-union of the fragment, and unnatural mobility of the joint seriously interfering with the usefulness of the limb, and on slight exertion much pain was complained of. One, a young lady, found it quite impossible to play the piano, and and after seven years growth of the inner part of the epiphysis suffered from the deformity of the forearm springing, as it were, from the outer side of the lower end of the humerus. Growth of the separated fragment had, however, continued, presenting a mass of bone the size of a walnut, which glided freely on the outer surface of the humerus. The want of power, the pain and deformity, called for operation. The parts were freely exposed, the surfaces rawed and nailed in position. It was a matter of difficulty to secure accurate approximation, especially to restore the configuration of the articular surface. The nail was left in for five weeks, and thereafter plaster-of-paris applied for a month. Dr. McLachlan of Lockerbie now reports that the fragment has remained fixed; the limb is much stronger and there is now no pain. The other case of old injury was a child of 5 injured by falling off a chair two years previously. The fragment was freely movable, and the unnatural mobility and pain called for interference. In this case the fragment was wired, and though improvement resulted, it was found after some months there was still mobility of the fragment, though apparently limited by the wire, which was giving rise to no disturbance whatever. Probably in this case the fact that the fragment was almost entirely unossified had to do with the want of union.

VI.—Jordan Lloyd, F.R.C.S.Eng.,
Surgeon, Queen's Hospital Birmingham.

Mr. Lloyd considered that oblique fracture of the lower end of the humerus was by far the most common of the injuries met with in the elbow-joint of young people, and believed that the fracture in many of these cases was due to the splitting up of the lower end of the humerus from within the joint by the cleaving influence of the wedge-like olecranon in falls on to the bent elbow. A similar fall in the adult fractured the olecranon, as was well known, but in children fracture of this process was very rarely seen. This variety of fracture was commonly looked upon as a dislocation—one of the rarest possible accidents in the young elbow, and its diagnosis could only be made as a rule under anæsthesia, which should be given at once and not at the end of a few days when "swelling has subsided." A careful general comparison of the two limbs in the extended position enabled one to recognise this injury more readily than could be done by the scholastic comparison of the common bony prominences. He did not consider that all such cases should be dealt with by operation, as considerable permanent displacement of fragments was seen commonly enough in limbs after this injury which were perfectly strong, and useful. He thought the right-angled position was best suited for the majority, but that a certain number gave better results when extended. He was strongly opposed to early passive movement except of the most gentle and painless kind, and thought that in many cases stiffness depended more on the surgeon's interference than in displaced fragments or internal adhesions.

VII.—Jonathan Hutchinson, Jun., F.R.C.S.,
Surgeon to the London Hospital.

Mr. Hutchinson hoped that one outcome of the discussion would be a more general adoption of the fully-flexed position in the treatment of fractures, etc., involving the region of the elbow-joint. Passive motion was best deferred until consolidation was secured, and within two or three weeks of the date of injury was rarely of such value as to compensate for the pain caused by it. In some cases, owing to the complexity of the injury, it was still impossible to make an accurate immediate diagnosis, and Mr. Hutchinson illustrated this by a case where three distinct lesions occurred (1) separation of the lower epiphysis with inward displacement of it: (2) fracture of the capitellar region, and (3) complete outward dislocation of radius and ulna. Free incision into the joint at the end of a few weeks with removal of some bone enabled reduction to be effected, and complete recovery with a very movable joint followed. In such cases the speaker thought a formal incision would not give such good results as free arthrotomy.

THREE CASES OF ŒSOPHAGOTOMY FOR FOREIGN BODIES.

By W. Thelwall Thomas, F.R.C.S.,
Honorary Assistant Surgeon, Royal Infirmary: Assistant Lecturer on Surgery, University College, Liverpool.

The necessity for œsophagotomy does not often arise, yet the impaction of an irregular foreign body in the gullet demands the operation. I bring forward three cases, with the object of urging the proceeding as soon as it is discovered that the foreign body (generally a tooth plate) is *firmly* fixed. The operation in itself is, I am sure, far less serious than repeated attempts to drag the foreign body out. Cases have been recorded where the tooth plates have been extracted, with great force, from the œsophagus by forceps or coin catchers, after which the patients have succumbed from cardiac failure or œdema of the glottis.

Brute force will cause extensive laceration of mucous membrane, and even of the muscular tissue, of the larynx as well as of the œsophagus in these attempts, and when chloroform is given no idea can be formed of the damage done. It is more to the patient's advantage to submit early to a clean cutting operation.

The first case of my series succumbed to a serious laryngitis and tracheitis, with heart failure, brought about by attempts made, under an anæsthetic, by strong hands and many forceps, to extract a very large tooth plate. The operation of œsophagotomy was simple and rapid; there was no subsequent leakage or cellulitis, yet the patient died from cardiac failure following respiratory trouble.

The second and third cases were sent for operation as soon as the medical attendants had satisfied themselves, by simple attempts, that the plates were impacted. Their recovery from the operation was so rapid and uneventful that one feels tempted to suggest, as a rule for guidance in these cases, that when a foreign body is found on simple trial with forceps, coin catcher, or horsehair probang to be impacted, it is advisable to perform œsophagotomy as soon as possible, before any ulceration or inflammation has set in.

Case I.—T. N., aged 21. On January 2nd, 1897, at 2 A.M., swallowed a large tooth plate carrying two teeth. He suffered severe pain. An attempt was made to extract it; this not being successful, he was placed under an anæsthetic, and two or three gentlemen had several trials to dislodge it, still without success. Next day, when I saw him, the teeth were sounded 2½ inches from his gums, and they were very firmly impacted. He was somewhat distressed in his breathing, had a rapid pulse, and complained of a choking feeling. Œsophagotomy was performed in the usual manner, and the hook of the swallowed plate was almost through the œsophagus. An incision sufficiently long to extract it easily was

made, and the plate withdrawn. The mucous membrane was sutured with a continuous silk suture, and the muscular tissue brought together by a continuous "Lembert" of silk. A glass drainage tube was employed from the skin to the œsophagus, to drain the operation area, and the skin edges sutured together, leaving of course room for the glass tube to protrude. Cyanide dressings were used. The same evening, the patient's temperature being normal, he suffered from serious respiratory trouble, had a very weak and rapid pulse, and although every attention was paid to him he died of cardiac failure on the second day. The plate measured 1½ inch by 1 inch, had one broken edge and a sharp curved hook projecting; carried teeth, and was made of vulcanite.

CASE II.—J. T., aged 28, sent by Dr. F. Knowles, of St. Helens. On January 7th, 1898, the man, quite sober, fell asleep late at night in a chair with his head thrown well back. In half an hour he awoke, feeling great pain in the throat, and missing his tooth plate, which carried four teeth. He drank some salt and water, experienced great pain in swallowing, vomited, but did not bring the plate up. Dr. Knowles probed for the foreign body and found it firmly impacted. He sent him at once to the infirmary. Probing with a metal-ended probe the plate was struck 8½ inches from his gums. Chloroform was administered and a forceps passed down, when the teeth were found firmly fixed. His head was quickly thrown back over a pillow placed beneath his shoulders, and œsophagotomy performed. The plate could be readily felt, and the œsophagus was incised sufficiently freely to allow of its extraction. Detail of wound treatment as in Case I. The glass tube was removed on the fourth day, and a small tail of cyanide gauze allowed to rest in the track of the tube. This was removed on the eighth day, and on the fourteenth day he was discharged cured. He was allowed fluid food from the first. His temperature never rose to 100°. The tooth plate, vulcanite, measured 1¼ by 1¼ inch; one edge was broken, and a curved metal hook projected from one side; it carried four teeth.

CASE III.—C. W., aged 28, swallowed a metal tooth plate late on April 14th, 1898. Dr. O. H. Edwards, of Widnes, probed and found the plate fixed, and sent him next morning, early, to the infirmary. He was in great pain, aggravated by swallowing. The plate was situated 11 inches from his gums, and was readily sounded with metal probang. An œsophageal forceps could only just grasp it but failed to move it. He was anæsthetised and œsophagotomy performed. The plate was with difficulty removed on account of its depth behind the top of the sternum, and it was extremely difficult to suture the œsophagus. Still this was performed as in the other cases, and the wound treated in the same way. Owing to the great depth and the laceration of the mucous membrane which was noticed, caused by the sharp, irregular, broken edges of the metal plate, it was thought advisable to pass an œsophageal tube and leave it in, with the end protruding from the mouth for feeding, through which he was fed for three days, when it was withdrawn. Afterwards liquid diet was allowed, 1 drachm of boracic acid lotion being given with each meal. The glass drainage tube was removed on the fourth day, and he was discharged cured on the thirteenth. The metal plate was very irregular, had been broken, was without hooks, measured 1¼ by 1 inch, and carried one tooth, another tooth having broken off some time previous to swallowing.

REMARKS.

1. A metal-ended probang ought always to be used for sounding; gum-elastic bougies will pass a tooth-plate sometimes without producing any satisfactory "clicking" sound.
2. Prolonged attempts at extraction by forceps, etc., ought not to be made; operation is safer.
3. Operate early, before ulceration sets in.
4. Make a clean cut into the œsophagus, sufficiently large to extract the foreign body without lacerating the edges of the mucous membrane.
5. Careful suturing of the œsophagus, as suggested—a method admirably adapted to the bladder after suprapubic lithotomy.
6. The draining of the neck by a *glass* drainage tube, otherwise the anterior margin of the sterno-mastoid covers the deeper parts of the wound and prevents the escape of serum.
7. Using an œsophageal feeding tube if the mucous membrane has been lacerated.
8. Lastly, urging all people with tooth plates to have them immediately repaired when broken—the 3 cases above recorded having been wearing broken plates—and always emphasising the necessity for the removal of all dentures when intending to sleep.

TWO CASES OF STRANGULATED HERNIA: ENTERECTOMY: MURPHY'S BUTTON: RECOVERY.

By HENRY G. RAWDON, F.R.C.S.Edin.,
Senior Surgeon Liverpool Royal Southern Hospital.

THE following cases appear to me to be worthy of record:

CASE I is that of J. P., aged 35, a butcher by trade. On September 2nd, 1897, at 4 P.M., when lifting a weight, he suddenly slipped but recovered himself, continuing his work for some time. Later he experienced pain in the groin, and noticed a distinct swelling in that part; in a few hours it became much larger and the pain very severe; he vomited repeatedly during the night. Next day, September 24th, he was seen by Dr. Holland, and by his direction removed to the Royal Southern Hospital.

On admission, the hernia was found to be extremely tense and tender to the touch; it was the size of a man's fist; it occupied the inguinal region, lying more above than below Poupart's ligament, and did not pass into the scrotum at all. Soon after admission I operated. Taxis had not been attempted. There was a considerable quantity of bloody serum in the sac, which contained a large loop of highly-congested gut but no omentum, the entire surface bleeding freely, when touched, from the peritoneal capillaries. Having freely divided the constricting band, which was at the deep or external ring, I easily returned two-thirds of the strangulated bowel but failed to reduce the rest, notwithstanding that the sac was kept well on the stretch; but unexpectedly the bowel gave way—burst, in fact. Clearly under these circumstances the best plan to adopt was excision of the strangulated intestine. The mesenteric attachment having been carefully ligatured with fine silk the bowel was resected, the division being made at a safe distance, about ½ inch from the points of constriction. Murphy's button was used. Unfortunately, the only one in the hospital at the time was too large but still I managed to use it. There was throughout a very unusual amount of blood from the general peritoneal surface, and as some had escaped into the abdominal cavity, that cavity was well washed and flushed out, and a glass drainage tube introduced into the pelvis. The peritoneum was secured round the tube, and the canal and ring were closed with silkworm sutures to effect a radical cure if possible. The stitches were made to include the skin to facilitate their ultimate removal. It is important to record that, as the testis which was in the hernial sac was ill-developed, only half the natural size, and was arrested in the canal, I excised it. It lay under the hernia, and probably was the real cause of the difficulty experienced in the reduction of the rupture. After the operation the patient had no recurrence of vomiting and was free from pain. During the first few hours a considerable quantity of bloody serum was sucked up through the drainage tube, which could not be removed before the evening of the third day. He slept well, and each day expressed himself as feeling well. His tongue was clean and his pulse good, and he had a nearly normal temperature. For the first day or two he was only allowed a little water and a few teaspoonfuls of milk every two hours, the quantities being gradually increased. He seemed to be doing very satisfactorily, when suddenly, without the slightest warning, on the fourth night he got out of bed and walked about the ward—possibly due to the temporary insanity of starvation. A little stimulant and a little more food soon put him all right, and from that time he steadily improved. He is now quite well and following his usual occupation. After the first few days his bowels acted regularly and comfortably; but, as far as could be ascertained, he never passed the button, although it was well looked for.

CASE II.—J. B., aged 39, a dock labourer, was admitted into the Liverpool Royal Southern Hospital on the evening of February 4th, 1898, suffering from strangulated inguinal hernia on the right side. He had worn a "truss" for some years. It was understood that taxis had been attempted before his admission. He had had but little vomiting, and altogether the symptoms were certainly not urgent. During the night he only vomited once and that before midnight. I operated early the next morning, February 5th. The integuments over the rupture were discoloured and ecchymosed to some extent. On opening the sac I found a large loop of bowel, no omentum, badly strangulated and in a very far gone condition, blackish and deep purple in colour, although not gangrenous. Nevertheless, I thought it extremely doubtful if the gut, which consisted of some 12 inches of small intestine, would recover itself if returned. I decided, therefore, to excise it, and ligatured its mesentery with silk and again resorted to "Murphy's button," using a small one exceedingly suitable for the case. This was easily and expeditiously done, but before I could return the button within the abdomen I had to enlarge my incision in an upward direction.

There was no need to flush out the abdomen, but as a precautionary measure the glass drainage tube was employed. The canal and ring were well closed by silkworm sutures. The tube was removed the following day, only a drachm or two of blood-stained fluid being withdrawn. The patient progressed most satisfactorily; he slept well, was cheerful and most contented under the enforced starvation adopted for prudence sake. He had one twinge of pain in the right iliac region which was permanently relieved by a single hypodermic injection of one-eighth of a grain of morphine. The bowels operated spontaneously on the third day and he passed the "button" on the twenty-first day. He is now quite well, following his usual occupation, but wears a light "truss" as a precaution.

REMARKS.

I could not fail to notice in both cases the remarkable absence of anything approaching to shock. It may be that the entire removal of intestines injured by strangulation may prove a safer procedure in severe cases than returning it. "Murphy's button" answered well, but a yet more simple way of approximating the divided ends of the bowel may ultimately be hit upon.

PELLAGRA IN AUSTRIA. The first asylum for sufferers from pellagra in Austria was opened recently at Rovereto, in Tyrol. It can accommodate twenty patients, and is intended for the reception of patients in the early stage of the disease when there is still a good prospect of cure. The course of treatment lasts three months, so that during the year eighty patients will pass through the asylum. In addition to these, arrangements have been made for the reception of a few cases in the civil hospital of the University of Innsbruck, where they will serve for purposes of clinical study and demonstration.

ON October 16th a memorial bust of Professor Ernst von Fleischl-Marxow, the distinguished physiologist, who died on October 22nd, 1891, was unveiled in the arcade of the University of Vienna.

A CONTRIBUTION TO THE TREATMENT OF EMPYEMA.

By W. Menzies Hutton, M.D., F.R.C.S.Edin.,
Edinburgh.

The treatment of empyema is a chapter in surgery which must advance with the rest. I do not see that we can be satisfied with the present results. In children these are fairly good, but how often in adults do we see cases running on for months, many dying from hectic waxy disease or phthisis. Even in cases described as cured we find certainly the discharge stopped, but how seldom do we find complete restoration of function. I have examined many of these cases up to nine years after the date of supposed cure, and hardly in one has the cure been complete. Nearly always is there more or less incomplete expansion on the affected side. The longer a case takes to heal, the more incomplete will be the cure, as the pleural membrane will be the thicker and the falling in of the chest wall the greater. Our treatment therefore must be less expectant and more active in bringing about rapid healing by getting the lung to expand quickly. The methods of treatment in common use are aspiration and incision with drainage. Aspiration alone is of use in some cases, for example, repeated tappings in children may effect a cure; in adults it rarely if ever cures, but is specially useful as a preliminary step done two days before operation in cases where the dyspnœa is great and the patient is using his voluntary respiratory muscles. In such a case if chloroform be given we stop those voluntary muscles, respiration ceases, and it is almost impossible to restore it with one side of the chest full of pus. I have seen at least one case die on the table from this cause.

Incision and drainage is certainly the best method of treatment. The best place for the opening I believe to be over the sixth rib in the mid-axillary line. My reasons are: 1. It is the part to which the lung last expands. If the opening be at the angle of the scapula for dependent drainage, or if anteriorly through Marshall's area (the space between the external oblique, serratus magnus, and pectoralis major), where it tends to burst externally, then the lung if it expands will block the opening, and an undrained cavity will be left toward the axilla. 2. This site will also be comfortable to the patient, as he lies on his back the tube will not be pressed on.

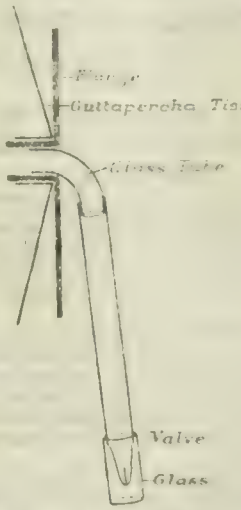
To understand the treatment by drainage we must know how the lung expands. It does so by the various expiratory acts—for example, coughing. When an opening exists through the chest wall the respiratory acts are reversed—that is, with inspiration the lung collapses still more, with expiration it expands. During inspiration the healthy lung expands, and draws air in by the mouth and also out of the collapsed lung; with expiration, especially coughing, the healthy lung drives air into the collapsed lung and expands it. This is easily seen after opening the pleural cavity, when, if the patient coughs, the pus is violently ejected, while with inspiration the flow may stop.

In treatment we must provide for exit of the pus, and at the same time aid the expansion of the lung. The method of incision and drainage now usually adopted provides for the exit of pus, but only accidentally aids the expansion of the lung, in so far that when the dressing becomes soaked it will, with inspiration, be sucked against the opening, and to some extent prevent the ingress of air into the pleural cavity. This is sometimes seen in acute cases—for example, after pneumonia, in which rapid expansion may occur. Here we are in the habit of removing about an inch of rib to allow more room for the tube, should healing be delayed. If we can aid the expansion of the lung this step will not be necessary, and will thus materially shorten an operation which is always an anxious one.

I have been working at this subject for five years, and have succeeded in getting a method which allows the pus to escape and at the same time assists the lung to expand. This result is got by the use of a duckbill valve.

The apparatus is shown in the illustration. It consists of a large-sized drainage tube with a flange of rubber 5 inches long by 4 broad; next there is a piece of tubing to which the valve is attached. The valve consists of a guttapercha nipple slit at the end, and is enclosed by a piece of glass tubing to protect it from pressure. The tube with the valve is attached to the flange tube by a right-angled piece of glass. The apparatus is used thus: After the chest is opened the flange tube is cut just long enough to go through the chest wall only, a piece of guttapercha tissue being interposed between the skin and the flange, this when wet adheres to the flange and skin, thus preventing air getting in by the side of the tube.

Some wool is next applied over the flange, which is fixed to the chest by a domette bandage. The tube with the valve lies across the abdomen, the valve surrounded with wool and fixed by a binder. If all is rightly applied it will be seen that when the patient coughs air is expelled with the pus, and when inspiration occurs the lips of the valve close tightly and prevent the ingress of air. No air or discharge should escape by the side of the flange, if so the bandage must be tightened, or a turn or two of elastic webbing bandage applied.



The advantages I would claim for this method are:

1. That it hastens materially the expansion of the lung, which I have shown to be of great importance.

2. That it is simple, inexpensive, and comfortable.

3. That by hastening the expansion of the lung it will obviate in many cases the necessity of Estlander's operation, which means the deprivation of the use of one lung.

4. It is devoid of risk, as it only aids Nature and allows the lung to keep the advantage it has gained by each expiratory effort. I have noticed that after the tube has been in for a few hours the patient experiences much relief. The breathing becomes much easier and slower; the cough less worrying and more efficient in expelling the secretion. I have seen the respirations fall from 33 per minute to 16 in three days' time; the reason of this is obvious, namely, that by keeping air out of the chest it allows the healthy lung free play, and also the expansion of the lung on the affected side is a gain for respiratory purposes. In most cases the pus secretion becomes much less and more serous in character. Another great advantage is that by not admitting air into the chest there is much less danger of septic infection, which by ordinary drainage and dressing often occurs, and either prolongs the case or ends by hectic and death. The dressing can be done by anyone, as it only involves undoing the binder and changing the wool next the valve. The dressing holding the flange against the chest may not require to be touched for a week. I think the average duration for expansion to occur should be about 8 days. In 3 days a marked improvement usually has taken place. In one case especially—a phthisical one—complete expansion occurred in 5 days, and the patient remained well and was gaining weight 6 months after, when I last heard of him.

Time is saved in dressing cases, and with less fatigue to the patient, as no movement on his part is required. It is impossible to say in chronic cases after what length of time the lung will be incapable of expansion. A rough guide is got by noting if air is expelled through the sinus in the chest wall

when the patient coughs; if so, expansion more or less complete can occur. I have seen expansion occur in a case that had lasted for 8 months. Here after the use of the valve tube for a week considerable improvement had taken place. Shede, of Hamburg, by means of his siphon drainage, got expansion after the empyema had lasted about 16 months. Very good results have been got occasionally by siphon methods of drainage; these, however, are more difficult to work than the valve, often cause a considerable amount of pain, and are not altogether devoid of risk. The only cases unsuitable for the valve method are where an opening into the lung exists, in which case ordinary drainage may be employed till this closes, which it usually does in a short time, and then the valve may be used.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

J. O. AFFLECK, M.D., President.

A DISCUSSION ON THE TREATMENT OF DISEASES OF THE STOMACH.

I.—GEORGE HERSCHELL, M.D.,

Senior Physician, Hospital for Diseases of the Heart, Soho Square.

THE treatment of diseases of the stomach covers such an immense field that to discuss the subject in anything approaching an exhaustive manner would occupy, not one morning, but many days.

The object of a discussion such as we are now commencing is to attempt to elicit some grains of truth which may advance, be it ever so little, the progress of medical science.

That such may be the result, and that the best use may be made of the limited time at our disposal we should confine our discussion to the consideration of points about which there is a divergence of opinion.

It has been arranged that the subject shall be considered under the following heads: (*a*) General Treatment and Diet; (*b*) the Influence of Drugs upon Gastric Chemical Processes; (*c*) the Influence of the Treatment of coexisting Maladies upon Diseases of the Stomach; (*d*) the Indications for Surgical Treatment.

I propose to take these in order, and point out a few of the problems which are of special interest to us as practitioners, as they have a direct bearing upon the means which we shall adopt in the treatment of affections of the stomach, according as we accept the one or the other of the conflicting views upon the subject:

A.—GENERAL TREATMENT AND DIET.

The agents which are generally useful in the treatment of diseases of the stomach are: Electricity in its different forms; massage and mechanical therapeutics, such as movements, vibration; hydrotherapeutics, both as a means of improving the general health, and as a local treatment to the stomach in the form of lavage, spray, or douche; local treatment to the stomach by the gyromele of Turck. To these, I think, we must add drugs when used not for their influence upon the chemical processes of the stomach, which we are set down to study under the next heading, but when administered for their tonic action on the muscular or nervous tissues of the body respectively.

First of all as regards electricity: I take this first because it is a particularly happy example of a method of treatment with respect to which there is a difference of opinion. On the one hand, we have the evidence of many medical men of the greatest reliability who habitually use it in the treatment of atony of the stomach and allied conditions; and, on the other hand, we have a number of records of experiments made in the physiological laboratory where the operator could not succeed in producing contraction of the muscular substance of the stomach, whether the electricity was applied by the use of external electrodes or directly to the mucous membrane of the stomach. Hemmeter alone has apparently succeeded in demonstrating by his intragastric bag, fitted with double electrodes, that contraction of the stomach could be produced with electricity, but only with such a strong current that it would probably prove hurtful to the individual.

We have also on this side of the question a statement of Professor Clifford Allbutt,[1] who says: "Electricity may be found useful some day in atonic cases, but as yet I have seen no definite good from its use, whether internal or external; other physicians seem to have been more fortunate." A statement like this in a book which claims to be an authoritative exposition of current medical views is much to be deplored; it must infallibly prevent many men from paying that attention to this valuable agent which it deserves. It also shows us how very important to the progress of medical science are exchanges of individual experience such as we hope to listen to this morning. Anyone who will study the current literature of the treatment of diseases of the digestive organs must, I venture to think, come to the conclusion that the clinical evidence in favour of the beneficial effects of electricity in atonic conditions of the gastro-intestinal tract is overwhelming.

But all the laboratory experiments quoted must not be taken as conclusive. Many of the earlier ones were performed by medical men without that special experience of vivisection and the methods of the biological laboratory which alone can ensure the absence of fallacies. And in this respect they unfortunately resemble a good deal of the so-called research work of the present day, which floods our journals with a host of crude theories and ill-digested facts. Personally, I believe that it is possible to reconcile this conflicting evidence if we assume that galvanism probably produces its undoubted good effects by acting not directly upon the muscular substance but upon the nerve supply of the stomach and intestines.

Having held this view for many years I have been in the habit of treating cases of atony of the stomach mainly by the application of the continuous current to the solar plexus and to the ganglia of the sympathetic and vagi in the neck. The application is made in the following manner:

The patient is placed upon his back upon a couch, and the negative electrode applied to the nape of the neck, the anode being placed upon the epigastric region. Both electrodes are flat flannel-covered plates, having each an area of 12 square inches, and remaining stationary during the application, which consists of from 3 to 15 m.a. passed for from five to ten minute. The electrode is then removed from the nape of the neck, the rheophore attached to a 3-inch disc electrode, the epigastric plate remaining in position. The current is then reversed, and the disc applied for one or two minutes in succession to each of the ganglia of the sympathetic in the neck, a current strength of 1 or 2 m.a. only being employed.

This is a part of my routine method of treating atony of the stomach, and I certainly have had no reason to complain of its want of efficacy. I very rarely use the intragastric application of electricity, convinced as I am that it is not the application of galvanism to the ends of the nerves in the stomach that helps the patient, but the galvanisation of the ganglia from which these nerves proceed.

I will take this opportunity of drawing your attention to a special form of electric application which I have recently found to be very useful in the treatment of atony of the bowel and constipation. It is a primary coil, such as is constructed for giving faradic baths, and not only is wound with very thick wire, but is capable of giving very slow interruptions. It appears to me to really set up peristaltic action in the intestines. I have on several occasions seen its application cause an immediate stool. It also acts quite as efficiently as massage and muscular exercises in restoring tone to the abdominal muscles. In using it I place an indifferent electrode on the buttocks, and apply the other pole with a roller electrode over the abdominal muscles and over the intestine following the curve of the colon, and using interruptions of from 120 to 200 per minute. It has also given good results in cases of atony of the stomach.

The next agent which comes before our notice is massage and its congeners, gymnastic and other mechanical means.

Massage of the stomach is a mode of treatment which has its advocates and its opponents. Against it we have von Ziemssen and Rosenheim, whilst in its favour are, among

[1] *System of Medicine*, vol. iii, p. 515.

others, Professors Ewald, Boas, Riegel, Zabludowsky, and Sceri. According to Hemmeter, it may be used:

1. On an empty stomach before breakfast to strengthen the muscular power of the stomach.
2. Three or four hours after a meal to assist in the expulsion of chyme, or to mechanically mix its contents.

According to the same author, it may be usefully employed:

1. In disturbance of the motor function depending on atony of the walls.
2. In stenosis of moderate degree.
3. In chronic gastritis with reduced secretion.
4. In gastroptosis.
5. And in certain cases of nervous inhibition of the peristaltic movements.

Vibration of the stomach is a mode of treatment to which I have paid a good deal of attention, and which I shall have the honour to describe in detail in a paper which I hope to have an opportunity of reading presently. Gymnastic exercises for strengthening the abdominal muscles are chiefly useful in the treatment of gastroptosis. It will be profitable to obtain the consensus of the present meeting for or against the use of the abdominal bandage in the treatment of this condition.

In the treatment of atony of the stomach, I have on many occasions seen much benefit derived from douching the stomach alternately with hot and cold water. Although this can be done with the ordinary stomach tube and funnel, it is much more convenient to make use of an apparatus which provides for the return of the liquid introduced into the stomach, and allows the lavage to be a continuous process. The best arrangement for this purpose is undoubtedly Turck's double current stomach tube, but an efficient substitute can be made by cementing together side by side two ordinary red rubber stomach tubes, one to conduct the fluid into the stomach, and the other to take it out again. It is a very important point to bear in mind that the afferent tube must be of smaller calibre than the efferent one, otherwise the risk is run of over-distending the stomach. In my own practice I connect the afferent tube with two separate reservoirs containing respectively water at 100° F., and cold water, by means of the two-way tap used by hairdressers for shampooing. By this means one can effect the gradual change of the hot to the cold douche, and *vice versâ*. You have doubtless all experienced this when shampooed. I usually give a *séance* of 10 minutes' duration, changing the temperature of the water every 60 seconds.

Professor Turck, of Chicago, has devised a very valuable improvement in the apparatus, by providing the end of the afferent tube with a bulbous extremity perforated with minute holes. By this means an introgastric spray is produced. Of the use of the gyromele I have had no practical experience, but I hope that we shall hear from the mouth of Professor Turck, the inventor, what it can do in the treatment of the class of diseases we are considering.

Under the head of dietetics we have several clinical problems of great interest. The first of these is the proper diet to be given to cases where the secretion of hydrochloric acid is in excess. We are here confronted with the following dilemma: A diet of proteids would theoretically appear to be indicated, since:

1. Meat and other albuminous substances are readily dissolved by the hydrochloric acid.
2. These articles of diet will combine to a greater extent with, and hold in combination more of, the free hydrochloric acid, thus diminishing gastric pain and irritation.
3. The diastatic action of the saliva will be inhibited almost as soon as starchy food reaches the stomach, instead of continuing for half an hour or so as in the normal stomach, and experiments have shown that this cannot again be perfectly revived in the alkaline duodenum. Therefore starchy food must be almost useless to the organism.

Yet, if we put a patient on such a diet of proteids, although we bind a large quantity of free acid, yet we may possibly encourage its hypersecretion by the law that Nature when able responds to the demands made upon her. The continued call for hydrochloric acid to combine with and deal with the albuminous material upon which we are feeding the patient will certainly tend to hypertrophy the glandular elements of the gastric mucosa, and the last state of the stomach will be worse than the first. It is, therefore, more than probable theoretically that hyperchylia will be perpetuated by a proteid diet. The alternative will consist in the administration of a carbohydrate diet partially dextrinised, at the same time neutralising the greater part of the hyperacidity of the stomach by large doses of alkalies.

The second great problem in practical dietetics is the subject of the administration of predigested foods, and with it may be profitably discussed the use of pepsin, pancreatin, and other digestive ferments. According to present ideas, it is quite superfluous to give peptonised albumins as long as the motor power of the stomach is normal, and as long as we are certain that duodenal digestion is unimpaired. Even when the power of the stomach of emptying itself into the duodenum has been lost, as in cases of pyloric stenosis, we shall probably be wasting our time in converting the food into peptone since the investigations of Cahn have demonstrated that in these cases no peptone is absorbed from the stomach. In my own practice I agree with Hemmeter in confining the use of peptone and albumose to cases where the ordinary diet is found to be insufficient to preserve the nitrogenous equilibrium of the body.

I do not think that pepsin by the mouth is ever indicated, nor can I conceive of any circumstance where it can do good, except as a local application to the gastric mucous membrane. In nearly all cases where pepsinogen is really absent there is also such a deficiency of hydrochloric acid that a sufficient quantity of the latter could not be given by the mouth to digest even a small meat meal when conjoined with the pepsin administered.

Pancreatin can only be given with advantage in the exceedingly rare cases where there is a complete absence of hydrochloric acid in the stomach, as it is completely destroyed by normal gastric juice. But in these cases it is probably a doubtful benefit, since in order that the pancreatic digestion may take place in the stomach, we must provide an alkali such as bicarbonate of soda; and as the acidity of the gastric juice is undoubtedly one of the chief stimulants to the pancreatic and duodenal secretions, we may be very seriously affecting the digestion in the small intestine.

It is a great pity that these elementary facts about the digestive ferments are not more generally borne in mind, and that medical men still continue to prescribe proprietary mixtures of the digestive ferments at the instance of their manufacturers.

An important exception is to be found, however, in the taka diastase. Professor Ewald has pointed out to us that deficiency in the amount of salivary ferments is a matter of extreme rarity, but circumstances not infrequently combine to prevent it from carrying out its work. It may be that by imperfect mastication, or owing to defective teeth, the flow of a proper amount of saliva is not excited, but by far the most frequent obstacle is the presence of an abnormal amount of hydrochloric acid in the stomach such as we get in ulcer, hyperchlorhydria, and some other conditions. This, as we have already pointed out, inhibits the action of the salivary ferment, and consequently in these cases there will be indigestion of the starchy part of the food. By the administration of taka diastase and alkalies we are enabled to give these patients a diet containing a large proportion of carbohydrates if we wish to do so.

B.—The Influence of Drugs upon Gastric Chemical Processes.

Under this heading we have to discuss three main points:

1. The action of drugs in diminishing the secretion of hydrochloric acid.
2. In promoting the secretion of gastric juice.
3. In arresting fermentation in the stomach.

Since the discovery of hyperchlorhydria it has been one of the most difficult problems to find some drug which would diminish the secretion of hydrochloric acid in the stomach. In some cases, which we now know depend upon absolute increase in the amount of secreting glandular tissue, this must be obviously impossible, and we must rely upon a bland unirritating diet. In the neurotic group of cases, however, it theoretically should be possible to effect something, and one naturally thinks of belladonna. This drug, and its alkaloid

atropine, have been extensively tried by many workers in this field of medicine, but with very varying result. I have notes of several cases of my own in which they appeared to diminish the acidity of the stomach contents, but with the drawback that the unpleasant specific effects of atropine were experienced by the patient. I have also tried chloral and morphine without success. Latterly I have been administering preparations of tannin with hopeful results, and I hear that quite recently good results are being obtained by lavage of the stomach. The lavage is carried out with a solution of carbonate of sodium, then with a 1 per cent. suspension of magnesia usta, and finally with a-half per cent. solution of tannin. Hemmeter, who has made an extensive trial of this method, uses sometimes, instead of the tannin, a suspension of bismuth subnitrate.

In the opposite conditions of hypochlorhydria and achylia we have to try and increase the amount of hydrochloric acid secreted by the stomach walls, and curiously enough, the agent which appears to give the best result is this acid itself, and it may be safely given in far larger doses than are usually prescribed. When one bears in mind that the quantity of acid contained in the gastric juice during the height of digestion is 0.2 per cent., it will be apparent that a drachm or so of the dilute acid administered by the mouth will be quite harmless. I should like to point out that the absence of free acid in the stomach contents does not invariably prove that the hydrochloric acid is in defect. The free acid which is present in the stomach is merely the surplus remaining after all the albuminoid articles of diet have satisfied themselves, and it is quite possible, where the demand and supply are pretty evenly balanced, for digestion to be proceeding tolerably well in the stomach without there being any free acid discoverable by Congo red or other tests. One is therefore not justified in diagnosing absence of hydrochloric acid unless the combined acids have also been estimated. This, as you are all aware, can be easily done by subtracting the acidity found by alizarin from that demonstrated by phenolphthallin. The former is the total acidity with the exception of the combined acid, and the latter the total acidity. The amount of free hydrochloric acid is, as you know, easily estimated by dymethyl-amido-azo-benzol.

The other agents which appear to have a distinct action upon the secretion of gastric juice are strychnine, the vegetable bitters, and the salts of orexin, but it is impossible to say at present how much of their effects is due to their local action on the mucous membrane of the stomach, and how much to a stimulation of a hypothetical hunger centre in the medulla.

The old idea that the secretion of acid gastric juice could be increased by the administration of an alkali before a meal, we may take it, I think, as an exploded superstition.

Of course in cases where the defect of the gastric secretion is due to an inflammatory disease of the stomach, we must cure this before we can hope to restore it; and we shall probably meet with a measure of success unless the gastritis is of so long standing that the majority of the gastric glands have undergone obliteration.

The search for an antiseptic agent which will prevent abnormal fermentations in the stomach is futile, as in most cases we can produce better results by removing the conditions which render it possible.

The germicide provided by Nature is the hydrochloric acid of the gastric juice, and although it will not destroy all bacteria in the stomach, will sufficiently inhibit their action to allow the digestive processes to proceed in a normal manner.

A further safeguard against fermentation in the stomach is the fact that bacteria require a certain time in which to act, and that before this has arrived the stomach usually empties itself into the duodenum. The causes, then, of gastric fermentation are (1) deficiency of hydrochloric acid; (2) defect in the motor power or peristalsis of the stomach.

The rule of practice which I adopt myself is: Whenever by the exhibition of hydrochloric acid and regulation of the diet I am unable to control abnormal fermentation in the stomach, I wash it out sufficiently often to keep the patient in comfort. I am convinced that we cannot administer sufficient quantities of any known antiseptic to render the stomach sterile without injury to the patient.

C.—THE INFLUENCE OF THE TREATMENT OF COEXISTING MALADIES UPON DISEASES OF THE STOMACH.

This has been placed upon the agenda as one of the points which we have to discuss, and I am almost afraid to deal with it, as it opens up such vast possibilities and problems of such magnitude.

To take one of them only—that of neurasthenia and its relation to auto-intoxication from the gastro-intestinal tract. In a case of atonic dyspepsia associated with neurasthenia, is it possible for the neurasthenic symptoms to depend upon the absorption of toxins from the atonic and dilated stomach, and thus the local stomach condition to antedate the general nervous derangement, or, as Glatz asserts, is this never the case, but does the neurasthenia precede and cause the gastric condition? Can we cure the neurasthenia by local treatment to the stomach, or shall we be unable to restore tone to the muscular walls of the stomach until we have first restored the nervous system of the patient? Is there or is there not a local atony of the stomach which is independent of a previous neurasthenic condition, or is there a neurasthenia which is not caused by nerve exhaustion but by chronic toxic absorption? This, gentlemen, is a problem which is crying out for solution. Upon it depends the comfort of about one quarter of all the patients subject to indigestion who come to consult you.

I could mention the association of gastric hyperæsthesia and ulcer with anæmia, gastritis with renal disease, and many other points of interest. The subject of the indications for surgical treatment I shall leave in the hands of the surgeons present.

These are a few only of the many problems which this interesting subject offers for solution, but, I venture to think, will be amply sufficient to provide us with material for discussion this morning.

II.—C. A. EWALD, M.D.,

Extraordinary Professor of Medicine, University of Berlin; Medical Director of the Kaiserin Augusta Hospital, Berlin; Editor of the *Berliner klinische Wochenschrift.*

MR. PRESIDENT AND GENTLEMEN,—Permit me first of all to thank you sincerely for the honour you have conferred upon me in inviting me to the present meeting, and for your permission to bring my mite to the discussion of the treatment of diseases of the stomach. It is with these diseases that, as most of you know, I have been mainly, but not exclusively, occupied for years.

As in everything else, so in the treatment of gastric diseases, a rational and successful therapy is impossible without an exact diagnosis. It is therefore absolutely necessary that I should premise a few observations on the present position of the diagnosis of diseases of the stomach.

It is well known that the advance which has come in our knowledge of gastric diseases during the last ten to fifteen years is due in no small degree to the serious study of the chemism of the stomach—that is, of the secretory functions of the gastric mucous membrane and their relations to the various changes in gastric activity. It is even, perhaps, not too much to say that in this matter here and there the pendulum has swung a little too far, and practical medicine has been lost sight of in the midst of useless details and petty, though perhaps scientific, trifling.

As a matter of fact, when we look to see what of the almost unbroken series of diagnostic methods for stomach diseases that have been published in recent years are practical enough to retain a place in clinical work, we find that their number is limited to a few chemical reactions and mechanical methods which serve to tell us the condition of the stomach at the moment of the examination. What we find by such an examination, however, is never in any sense pathognomonic, and quite as much as ever the decisive factor for the diagnosis consists in properly weighing and combining all the elements which the clinical course of the disease furnishes. So long ago as 1883 I expressly insisted on this.

We must not exaggerate the importance of our modern methods of examination, but we must also be careful not to undervalue them. Just in so far as we have a clearer insight into diseases of the stomach now than twenty years ago, we owe it to the newer methods of investigation. May I claim for myself the modest merit of having by the introduction of

the soft stomach tube made the wider application of this clinical work possible?

Our diagnostic methods are limited at present to the following procedures, which are the simplest and most practically useful, and which are usually carried out with the test breakfast suggested by me some years ago: The qualitative test for the presence of free HCl by means of Günzburg's reagent or Congo paper, also for combined HCl (Sjöquist) and for lactic acid, as also the fatty acids (Uffelmann). Then the quantitative determination of these substances by titration, especially of the total amount of free and combined HCl present (Töpfer's method with dimethylamidoazobenzol and alizarin—alizarin monosulphonate of sodium), and for a deficiency of HCl (Mintz). Next, the microscopic examination of the stomach contents, of the blood, etc., and the institution of a fermentation test. Hayem's procedure has proved too difficult and too liable to error in practice, and so has not been available for practical diagnosis. Attempts by means of radioscopy or the gastroscope to obtain a view of the inside of the stomach, have led to no useful results. I know of a number of instances on the contrary in which Roentgen photographs have led to absolutely false diagnoses.

On the other hand, the transillumination of the stomach by means of the gastrodiaphane may, under certain circumstances, be of distinct value. It may, however, be replaced nearly always by simple distension of the stomach with gas. Not to be neglected, finally, are the old long-tried methods of physical examination, palpation, percussion, auscultation, and inspection of the stomach and its neighbourhood. How, by means of the results thus obtained and their combination with the data furnished by the patient's history, we are able to differentiate the various types of stomach disease, and so to arrive at the diagnosis of catarrh or ulcer, or cancer or a neurosis, or their consequences, or conclude as to the existence of dilatation of the stomach, of excessive gastric secretion, or of malposition of the stomach, we cannot go into here.

Of special importance is the fact that in pathological processes that are in their etiology and nosology quite distinct, the chemical reactions may be identical, so that it is impossible to give a specific or pathognomonic significance to them. Total absence of HCl, for instance, may be found in catarrh of the stomach in carcinoma, or in certain gastric neuroses.

The question, then, arises shall we, under such circumstances, take the indications thus given by the chemical investigation of the stomach, as the guide for our treatment, considering them as the expression of functional disorders, or shall we, in good old-fashioned clinical wise, base our treatment on the whole condition of the affection?

Seemingly, nothing is easier, or more convenient, or better founded, than to do the first. When HCl is diminished we supply it; when it is increased we neutralise the excessive acidity by alkalies, or excite increased salivary secretion by giving the patient something to chew on. Pathological fermentations—for example, the lactic acid fermentation—may be stopped by antiseptics, or the culture medium in which they take place removed by lavage of the stomach. The same thing is true for pathological secretion of mucus and other catarrhal products. We remove them partly by draughts of alkaline or salt water, or by directly washing out or douching the stomach, and so on. In a word, we may say that a complete symptomatic treatment may be employed, which is founded practically on the results of the chemical investigation of the stomach.

As a matter of fact, the therapeutics of stomach diseases were mainly carried out from this point of view for a long time, and it cannot be denied that under favourable conditions good results may be achieved thereby. One may invert the well-known phrase, "*Ablatâ causâ cessat effectus*," and say, "*Ablato effectu cessat causa*," inasmuch as under careful treatment of the stomach, that removes all abuses of function, the causal factors which set up the disturbance of gastric chemism, and through this led to progressive deterioration of the pathological conditions already present, would gradually involute and disappear.

It was soon evident, however, that these measures were not sufficient, and that there was another important factor at work—motor insufficiency, the loss of the motor function of the stomach.

The fact that the intestine is able to act vicariously for the defective gastric functions has long been known. Long ago Ogata showed in Ludwig's laboratory that the stomach could be completely switched off from the digestive tract, and yet the animals on whom the operation had been done could be kept in a good state of nutrition. I called attention myself later to the fact that patients in whom there was no demonstrable trace of gastric secretion might still show no signs of disturbances of nutrition and lose nothing in weight. Such patients can for a long time remain perfectly healthy, and keep up their nitrogenous equilibrium perfectly. Under these circumstances the digestion and assimilation of foodstuffs must take place exclusively in the intestine.

What holds for these extreme cases must also be true for slighter disturbances of gastric digestion, so long as the motor power of the stomach is sufficient to lead to a prompt delivery of the stomach contents to the intestine. Everything depends on the fact, then, that gastric peristalsis is present in sufficient amount. If this is the case, then the severest organic affections of the stomach may run their course for a long time absolutely without symptoms. A cancer, for instance, of the greater curvature may reach considerable size, and the process be entirely latent. Should atony of the gastric muscularis supervene, however, which may from slight beginning go on to complete relaxation of the stomach wall, then the compensation we have spoken of becomes impossible. It is besides clear that when the atony occurs as a primary condition then all those mechanical and chemical symptoms will be noted which the too long retention of food in the stomach inevitably brings with it. The recognition of this fact must necessarily lead to a greater consideration of the motility of the stomach as opposed to a one-sided supervaluation of gastric chemism.

As to the process of the emptying of the stomach and gastric peristalsis, the experiments of von Mering, of Schüle, Moritz, Einhorn, and Meltzer have been very instructive. For the diagnosis of stomach atony we make use of examination by means of the stomach tube and Ewald's salol test. The dilatation or displacement of the stomach that usually goes hand in hand with the atony we can diagnose best by distension of the stomach with gas, by the outline of dulness after successive small swallows of water, or by the gastrodiaphane. This last serves especially for the differential diagnosis between dilatation of the stomach and gastroptosis. In the first case, the picture of the stomach so projected on to the abdominal wall moves synchronously with the diaphragm during respiration, as the fundus is immediately under the diaphragm. In gastroptosis the projected stomach picture remains immovable, since the diaphragm and stomach are no longer in contact.

The only internal remedy for motor conditions at our command is strychnine. We can do something mechanically for the food stagnation in the stomach and for the muscular atony by lavage, stomach douches, and massage vibration and electricity. Where these remedies fail, nothing is left but gastro-enterostomy, switching, so to say, the stomach out of the digestive tract to a great extent. I should especially warn you in these circumstances against the too long continuance and too frequent employment of washing out of the stomach. Where lavage does good, it does so very soon; where it does no good, patients easily suffer in their general nutrition, and this may go on to symptoms of inanition, from the continued removal of a certain amount of material intended for nutrition.

A last point that we have to consider are the neuroses of the stomach, those dyspeptic colic-like symptoms in the region of the stomach which are caused by a disturbance of the nervous apparatus of either local or central character, and only secondarily proceed from an affection of the glandular or muscle mechanism; this last being often of so slight a character that it completely escapes our diagnostic methods. Here may be classed nervous dyspepsia, nervous hyperæmia of the stomach, the anomalies of secretion that rest on a nervous basis (hyperchlorhydria and hypochlorhydria), nervous vomiting and nervous crises (*crises gastriques*). The last, however, are mostly, though not always, caused by an affection of the central nervous system tubes.

In these cases the treatment of the gastric condition, in so far as it is not purely symptomatic, consists in the treatment of the central nervous system. In neurotic cases the affection of the nervous system must be treated by general tonic and constitutional treatment. Only after this comes the question of treating the dyspeptic symptoms, though they seem to stand out so prominently. Here, indeed, it is often necessary after you have convinced yourself of the good condition of gastric functions, to prescribe a comparatively hearty and plenteous diet, despite the patient's objections to it. An example of this method of treatment is the "rest cure," as introduced by Weir Mitchell. It is, however, not sufficient in many cases. I have often had patients in whom I succeeded in a short time in bringing about a considerable addition to their weight, but the dyspeptic symptoms remained unchanged. In such cases the gain in weight is not due to increase of muscle substance, but to a deposit of fat and to retention of water in the tissues. Only after such patients have had a thorough course of roborant treatment in the mountains or on the seacoast, or in a well-situated sanatorium for dietetic and hydrotherapeutic treatment, did real improvement set in.

So much on the general principles that must be borne in mind in the treatment of stomach diseases. Permit me then, since it would be impossible to properly treat this subject fully, to at least select certain special features of the treatment of such conditions.

One of the most satisfactory affections to treat is ulcer of the stomach, provided, of course, that it be not too old, and that the ulcerative process has not already given rise to cicatricial contractions and adhesions. Way back in the Thirties, the treatment of ulcer of the stomach recommended by certain English authorities was the withdrawal, as far as possible, of all food by the mouth. Recently this so-called rest cure has become identified with the name of v. Leube. Since we have found that the nutrition of the organism, even though only for a limited time, may be carried out by nutritive enemata, we have been able to go a step farther with this treatment. I treat patients in whom I suspect or feel sure that an ulcer of the stomach exists as follows:

The patient is confined absolutely to bed, and for the first five or six days receives as nourishment only nutritive enemata, which are given in the usual way three to four times a day. The thirst is combated by small ice pellets, the feeling of hunger by a few drops of a cocaine solution. It is remarkable, however, how slight these sensations are as rule.

If the pains continue at the beginning, a small morphine injection in the stomach region gives the best results. As a rule this not necessary, as the pains cease spontaneously as soon as the mechanical irritation of the ulcer stops. This point constitutes an excellent differential diagnostic symptom for nervous cardialgia and biliary colic, which often are deceitfully like ulcer of the stomach in their symptoms. Nervous gastric pains will by the withdrawal of food be not at all, or only for the moment, influenced—that is, so long as the suggestive effect of the novelty of the treatment continues.

After no food has been given by the stomach for three to five days, according to the subjective symptoms of the patient and the general condition, then a few test spoonfuls of some easily-absorbable material are given. The simplest is a thin milk gruel of some meal or other, wheat, or oats, or mandamin, or one of the many artificial preparations—Kemmerich's peptone, or somatose, or nutrose, or eukasin. If this causes no pain, the next day more is given. After three or four days other easily-digestible substances are added, but at first in a more or less liquid form. Then the consistency of the food stuffs is increased and the nutritive enemata become fewer in number.

After the first trial, however, should pain occur, then exclusive feeding by the rectum must be resumed, and I have in some cases kept it up for ten to fourteen days. You cannot hope in such cases, however, to retain your patients in nutritional equilibrium for so long a time. A considerable loss of weight ensues, and I have found by careful observations of organic metabolism that the body loses a considerable amount of nitrogen. This loss is, however, of little importance and is soon made up for, and the original body weight far outstripped when the patient is able to eat plentifully without pain.

This method of treatment should be carried out wherever it is possible. It gives such excellent and sure results that one can say that where it fails there must be complications present—old cicatrices, especially at the pylorus, perigastric adhesions—or else that some other affection, whose seat is perhaps not in the stomach at all, must be the cause of the pains.

Of the other methods of treatment—bismuth, argentum nitricum, iodine and KI, orthoform, and so on—I shall say nothing.

The good results of the method described above occur, it is true, only in recent cases; older cases, with deeply burrowing ulcers, with prominent thickening of their edges, with stenosis of the pylorus, or other contractions, the hourglass form and the like, can only be permanently relieved by operative measures, though the setting the stomach at rest causes passing relief from pain. I have just had a patient who presented the symptoms of a recent ulcer. After five days of exclusive rectal feeding he was absolutely free from pain. The night after he died suddenly with all the symptoms of perforation. The necropsy disclosed an ulceration of the pylorus, one part of which had eaten a deep hole into the liver substance, while another part had caused a perforation of the diameter of a cherry in the peritoneal cavity.

As to what we may look for from surgical measures I will speak later. It is of course understood that the conditions must be favourable—that is, that the ulcer must be situated where the surgeon can get at it and treat any sequelæ that may result from its excision.

As to the indications for surgical interference, they were discussed at the last Surgical Congress in Berlin. My own experience justifies me in accepting Leube's indications in this matter: they are as follows:

1. In gastric hæmorrhage, if the bleeding continues or occurs repeatedly and resists treatment.
2. When internal medication fails to relieve severe pain, and persistent vomiting and inanition is setting in.
3. In perigastritis and abscess in the neighbourhood of the stomach (subphrenic abscess).
4. In perforation into the abdominal cavity as soon as the patient is able to stand the operation. There are a series of successful operations for perforated gastric ulcers in the literature. Out of 6 cases of gastroenterostomy operated on by my advice for ulcer of the stomach and its consequences (stenosis of the pylorus, hourglass stomach, perigastritis), only 1 died, a mortality of 16.6 per cent; in cases of gastrectomy for ulcer also, but 1 death, a mortality of 14.3 per cent. Meanwhile, it must not be forgotten that any operation upon the stomach is a serious one, and that a number of favourable circumstances must combine in order to assure successful results. Especially in bleeding from the stomach is the question of operative interference hard to decide, and the selection of the time for it difficult. On the one hand, even severe hæmorrhage may cease suddenly; on the other, the finding of the bleeding vessel in the stomach is often extremely difficult and requires specially favourable conditions. In desperate cases of gastric hæmorrhage in which ordinary internal remedies such as ergot, morphine, and chloride of iron, etc., do no good, I have often seen prompt cessation of the bleeding after lavage of the stomach with ice water. This not only removes the decomposing irritant blood clots that have gathered, but has a direct contractile effect upon the blood vessels and favours thrombus formation. It is best to carry out the lavage after previous cocainisation or after a small injection of morphine, so as to forestall tendencies to vomit.

Out of the large chapter of neuroses of the stomach I select but one group—nervous gastrosuccorrhœa, nervous gastric hypersecretion. It has nothing to do with the hyperchlorhydria of gastric ulcer, or with the stagnation of superacid stomach contents in atonic processes or in stenosis of the pylorus, though it is often confused with these. There is question in it of a stomach not increased in size, at a time when digestion is not in progress, especially during the night, secreting an excessive amount of gastric juice. This gastric juice may be normal, or contain too much HCl, but it is always, and this is what is characteristic for it, free from

stagnation products, that is from remains less or more of preceding meals. There is found in such cases in the stomachs of fasting patients a clear or but slightly cloudy fluid, of considerable amount, which has all the properties of normal gastric juice. This fluid irritates the gastric mucous membrane and causes severe pain, which at times wakes the patients from sleep. These pains diminish or disappear if the patient takes food, and so neutralises the acidity of the secretion. After awhile these pains recur, and so have a certain similarity with the pains in ulcer of the stomach, from which, however, they may be differentiated by the fact that they occur at a time when the stomach is normally empty. Patients get the idea that the affection may be cured by a rigid dietary, they eat little, they sleep badly, other nervous symptoms set in, and they run down in health. Should the diagnosis of ulcer of the stomach be made the treatment I have described above will of course be unsuccessful. The diagnosis can be made with assurance from the finding of a large amount of normal gastric juice in a fasting stomach, when, at the same time, all symptoms that point to stenosis or dilatation of the stomach or to gastric ulcer are absent.

The treatment of this condition is, like that of all neuroses, twofold: First, tonic and hygienic regulations for the general condition, hydrotherapy and climatotherapy; I shall not speak of these at length; secondly, symptomatic treatment of the stomach. The ordinary so-called sedatives—the bromides, zinc, belladonna, codeine, morphine, hyoscyamus—are all of no use, and I say it from a vast personal experience. My best results have come from regular evacuation of the fasting stomach, and a spraying immediately afterwards of the gastric mucous membrane with a half per cent. solution of $AgNO_3$. Whether you accomplish this spraying by simply allowing the solution to flow in, or by means of the stomach douche or Einhorn's stomach spray, is a matter of indifference. During the day, then, I give the patient every two hours a teaspoonful of a 5 per cent. solution of KI and bicarbonate of soda, and allow only rectal alimentation, in order to avoid all irritation of the gastric mucous membrane. Even this method is not always successful, and does not guarantee against relapses, but it is the most efficient in my experience.

One of the most serious neuroses is hysterical vomiting. Cases occur in which for weeks every attempt to nourish the patient fails. Every bit of solid or liquid food will be immediately vomited, and rectal enemata, despite the addition of opium, will be at once ejected, or if retained do not serve in the least to make the stomach more tolerant of food. The patients get worse and worse; they emaciate to skeletons, and are unable to hold themselves upright. The condition seems to depend on a cramp of the pylorus, and nothing remains but to do a gastro-enterostomy. I have had the operation done in one case recently. The stomach seemed to external appearances perfectly normal. The success of the operation was excellent; vomiting ceased immediately after the operation, and the patient, a woman of 23, gained 5 lbs. in weight in the three weeks after.

But the diagnosis is not always so easy, nor the success so assured, as in this case. In a similar case of vomiting and pain in the practice of a colleague, the diagnosis, because of a falsely-construed Roentgen photograph, was set down as cancer. I disagreed with this opinion. There was no tumour palpable, no cancer cachexia, no glandular enlargements, to be found, while there was an excess of free HCl. I preferred to think that the 40 years' old female patient was suffering from an old ulcer, with adhesions. As the pain was severe, and strength rapidly being exhausted, the patient begged to be operated upon. The laparotomy showed nothing abnormal in the stomach, and the organ was not opened; there were no pathological changes around it. After the operation the patient was for a time free from all symptoms, but after a while they recurred, and permitted us now to make with assurance the diagnosis of a neurosis, especially as in the meantime certain unmistakable hysterical stigmata had developed.

In conclusion, allow me to say a word as regards the success of surgery of the stomach in the matter of malignant disease of the organ.

The surgery of the stomach was taken up very hopefully, because of the confidence inspired by the improvement in surgical technique. It was hoped that if the operation were undertaken early the chances of success would be greatly increased, and so great stress was laid on such diagnostic methods as it was thought would make very early operation possible. It seemed for a time, according to Boas's investigations, that the presence of lactic acid would furnish the desired criterion, but the hopes thus raised were rudely shattered. Lactic acid is as little specifically characteristic of cancer as the absence of HCl. That in many cases of gastric cancer lactic acid was to be found in the contents of the stomach was known to myself and others long before Boas's publication, but we were more prudent in drawing our conclusions. Nevertheless, Boas has the merit of having been the first to lay emphasis upon this fact. In fact, the formation of lactic acid is a chemical process that takes place whenever defective HCl secretion and stagnation of the stomach contents occur. This is frequently the case in gastric cancer, but may occur in other affections. Lactic acid only occurs in cases of cancer of the stomach after serious alterations of digestion have set in, and usually a palpable tumour is present.

At present, then, quite as much as ever before, the demonstration of a tumour of the stomach, its position, its size, and its movability are the indications for operation. If we operate more and earlier now than before, it is, as I showed last year at the International Medical Congress in Moscow, not so well because our methods of diagnosis are more refined and allow of earlier diagnosis, but because of confidence in our technique we make up our minds for operation much earlier than before.

At Moscow I gave the statistics of cases operated on in my hospital from 1894 to 1897—2½ years. There were 25 gastro-enterostomies with 16 deaths (64 per cent.); 12 resections with 9 deaths (75 per cent.); 22 gastrostomies with 12 deaths (54.5 per cent.). In the last year there have been 20 more cases—11 gastroenterostomies, 5 resections, and 4 gastrostomies. Mortality respectively 64.7 per cent., 62 per cent., and 50 per cent.

In 6 cases after the opening of the abdomen the operation was abandoned because of extensive cancerous degeneration of the stomach and its neighbourhood, although only such cases are referred to the surgeon as after careful investigation promise to give favourable conditions and results.

On the whole the results were better in women than in men, and cancers that had developed from ulcers were found more favourable for operation than others. One reason for this, certainly with us in Germany at least, is that among women there is very seldom an abuse of spirituous liquors; and a second reason is that cancer developed on the basis of an ulcer does not give rise so soon to the cancer cachexia as idiopathic carcinomata. In other words, there is a possibility of radical cure in about 25 to at most 30 per cent., of palliative successful measures in about 50 per cent. of the cases that after careful investigation the doctor considers suitable for operation. This not very encouraging state of affairs is due to the nature of the affection, and cannot be laid at the surgeon's door.

In my opinion, surgical technique has at present practically reached its limit, and its marvellous success in the treatment of non-malignant neoplasms is the best proof of this. If we have no better results to report, then it is due to the nature of things. The impossibility of diagnosing cancer early enough, its tendency at times to diffuse involvement of a large amount of tissue, the insidious toxic effects of its metabolism upon the organism by which the patient's resistant vitality for operative procedures is notably lessened all these combine to set limits to the supremest surgical skill.

In spite of all this we can find just cause for congratulation in the progress that has been made in this last few years in the treatment of stomach diseases. In the achievement of this progress all nations have laboured, and the success of physicians has proved a great boon to mankind everywhere without regard to race or nation. England has ever been known for what she has done in the region of practical therapeutics—one has but to recall the names of Jenner and Lister to be reminded of her success in this matter. I am cordially thankful for and sincerely pleased at your kindly invitation to take part in this discussion of the therapeutics of stomach diseases, which, I feel sure, will not be without a lasting effect upon our practical knowledge of the subject.

III.—Robert Saundby, M.D., F.R.C.P., LL.D.,

Professor of Medicine, Mason College, Birmingham: President of the Council of the British Medical Association.

Professor Saundby did not think that either the profession or the public quite appreciated the value of rest in the treatment of diseases of the stomach. Rest in bed and massage frequently afforded the best means of cure in such cases. Patients with slight gastric ailments were often ordered to take whisky with their meals. Whisky, however, was an irritant, and therefore should be avoided. The diagnosis of gastric ulcer from anæmic gastralgia was often exceedingly difficult: indeed, it was almost impossible in many instances unless accompanied with hæmatemesis. Anæmic gastralgic patients and those with gastric ulcer rapidly recovered if kept in bed. It was often difficult to say which was which: but the treatment was the same for both. As to diet, nutritive enemata were necessary only where there was hæmatemesis; in other cases food might always be given by the mouth, beginning with milk and barley water, 1 ounce every hour, and gradually increasing the diet by the addition of bread, minced meat, etc., up to ordinary food, which could be reached in about three weeks. Medicinally the sulphates of iron and magnesium, sulphuric acid, and peppermint water, *secundum artem*, were beneficial as a tonic aperient. Of the many cases of gastric ulcer treated by him, only one or at most two had ended fatally; the result in the others had been most satisfactory and successful.

IV.—Lauder Brunton, M.D., LL.D.,

Lecturer on Pharmacology and Therapeutics at, and Physician to, St. Bartholomew's Hospital.

Dr. Lauder Brunton had gained light on a subject which long had exercised his mind. He referred to the doubt he long had been troubled with—when to give the infusion of gentian and when to give that of calumba. Professor Ewald had solved the riddle by his explanation as to the action of tannin on the gastric processes. Henceforward he would prefer the tannin-containing infusion of gentian.

V. Fenton B. Turck, M.D.,

Professor of Gastro-enterology in the Post-Graduate Medical School, Chicago.

Pneumatic Gymnastics—A New Method of Treatment of Gastric Myasthenia.

Notwithstanding some recent surgical achievements that might be interpreted as indicating the contrary, the stomach is still to be considered as one of the most important of all the viscera. Its function, however, is largely a mechanical one; it is a temporary receptacle for the ingested food; in it, together with a certain amount of chemical digestion, the latter is subjected to the churning and mincing process that prepares it for its further treatment and absorption in the intestine. It is this motor function of the stomach that gives it its chief importance, and when it is deranged, when we have a condition of gastric weakness or myasthenia, we have commonly as attendants or results an extensive series of disturbances of other organs, and in short the whole complex phenomena of dyspepsia and its concomitant disorders. The treatment of this gastric myasthenia has so far been more palliative than directly curative; the distressing symptoms have been relieved so far as possible, and the organ put into a condition more to allow Nature to do its work of restoration than to actively assist in the process. When matters are not so bad that this *via medicatrix Naturæ* is not seriously embarrassed or even altogether obstructed this plan is effective in the course of a period of time, long enough at the very least, and often altogether too long for the comfort, economy, and even the best welfare of the patient.

Taking them in the order in which they naturally suggest themselves, these methods of treatment are:

1. Diet, which may be palliative but is not in itself a curative measure. As affording Nature a chance, as well as relieving some of the more distressing symptoms it may be a relative success, but it does not meet the requirements of the actual remedy.

2. Lavage. This is often palliative and may even have a slight curative action in mild cases, but in many others it only increases the muscular asthenia and leads to more rapid emaciation.

3. Baths.

4. General gymnastics cannot directly act on the stomach, and their effectiveness is only in their general action on the system. They are, therefore, only auxiliaries of uncertain value, aids to Nature it may be in her efforts to throw off disease, but requiring careful oversight and good judgment in their management in any particular case. They are not essentially, but only incidentally or accidentally, remedial and may be under certain conditions even damaging.

5. Electricity[1] has been very strongly advocated in quite recent publications as a remedy for gastric dilatation and myasthenia, and would appear at first sight to be a rational one. Its disadvantages are the difficulty of its uniform and equable application. The electrode, whether applied externally or internally, can only direct the current in a haphazard manner as regards the musculature, and besides this we have as the results of careful experimentation,[2] a serious doubt as to the efficacy of the current in provoking muscular contractions through the gastric mucosa at all. Taking both of these facts together, the difficulty of systematic electrisation, and the serious doubt as to the real efficacy of this method, it is left in a rather unsatisfactory position, and cannot in any event be admitted as completely meeting the indications of a satisfactory treatment. In any event the cases reported by its advocates should have a more careful analysis than has yet been given them before the question of their claims can be fully admitted. Mere statement of the disappearance of symptoms for an unstated period is not adequate evidence for the decision of a question such as the effectiveness of this or that remedial method or agency.

6. Drugs. These are the common resource, and are used often without any discrimination or even any recognition of the real state of affairs. While they can be rationally used sometimes for the palliation of distressing symptoms, the fact probably is that in the aggregate they do as much harm as good. There may also be a certain amount of reasonableness in giving tonics for the muscular weakness, but the remedial action must be slight at least.

7. Surgical measures, such as Bercher's operation, are, of course, only a last resort, and the most they can effect is the mechanical relief of the dilatation, not the cure of the myasthenia. They can therefore be left unconsidered here.

Since all the hitherto available methods thus seemed to have their drawbacks, I have endeavoured to find one that would be at least rational in its conception and that could be practically applied without danger or serious inconvenience to the subject. General abdominal gymnastics, while they may be of use, cannot be directly localised on the gastric muscle, which is the part directly desired to be affected. The internal situation of the organ and the extent of its muscular walls are such that it can only be uniformly exercised by one method—that of expansion and contraction. For this purpose I have devised a method of what I may call pneumatic gymnastics, which consists in alternating distension and contraction of the stomach by means of regulated air pressure, and which may, if desirable, be combined with other therapeutic measures, such as the introduction of medicated air or the introduction of hot or cold air or vapours suited for gastric treatment. The apparatus is simple, and consists of two parallel attached rubber tubes of unequal calibre, practically the same as those described by me before[3] in connection with my method of atomising the stomach. The smaller and shorter tube when introduced reaches to just through the cardiac orifice, while the larger and longer reaches the greater curvature. The air tank or bulb is attached to one tube, and to the other a manometer for regulating the pressure; either tube may be used as the inlet according to the conditions of the gastric muscle, but in most cases it is found most convenient and perfectly safe to use the larger tube for this purpose and to use the smaller one only in cases of very profound myasthenia when a very free outlet is advisable. The double tube is, if anything, more readily introduced than the ordinary stomach tube, its flattened shape favouring its passage,

[1] Einhorn, *Medical News*, June 18th, 1898.

[2] Goldschmidt, *Arch. f. klin. Med.*, xv, p. 295; Meltzer, *New York Med. Journ.*, June 15th, 1895.

[3] *Jour. Amer. Med. Assn.*, July, 1895.

and while flexible it is not so readily collapsed as would be a single tube of equal thickness of wall.

The writer has devised a method of using dry and moist heat (vapour) in connection with pneumatic gymnastics of the stomach. The forced air passes through a heated coil controlled by a thermometer and connected with the double tube within the stomach. By this method the entire stomach is affected by the thermal agent, instead of only a portion as in lavage. The dry and moist heat are of great therapeutic value used by this way under full control of the operator.

In certain cases, as where the cardiac orifice or the gullet does not close together around the tube, or when the pylorus remains patent, it is necessary to use a modification of the apparatus, consisting in a light, readily inflatable, rubber bag opening into both tubes, which will confine the air that would otherwise escape around the tube or pass into the intestines. Another utility of the bag is in cases where it may be desirable to protect the walls of the stomach from the air introduced, which might, under certain conditions, act as an irritant, which may be thus employed at varying temperatures without fear of injury. The distended rubber bag moulds itself to the shape of the stomach, and the amount of pressure is revealed by the manometer, and is perfectly under the control of the operator. When it is relieved the air is rapidly forced out by the elasticity and contractility of the stomach walls aided by the pressure of the gastric and abdominal muscles. In this way one can produce an alternating expansion and contraction of the muscular walls, a sort of gastric passive exercise or massage, that when properly administered has the same effect upon the muscular coats as do similar manipulations on the external muscles of the body in so far as stimulating function and nutrition are concerned. Under ordinary conditions both the pyloric and cardiac orifices contract as soon as moderate pressure is applied, and are relaxed as it is withdrawn, and the open outlet tube gives the air free exit. The mechanism is, therefore, practically the same as that of the normal contraction and dilatation of the stomach, and this forms a natural mechanical aid in the treatment of gastric myasthenia and atony.

The action of this method of pneumatic gymnastics is, however, not limited to its simple mechanical exercising of the gastric muscle. Both local and general effects on circulation and secretion are produced, and these must have direct or indirect influence on the nutrition and functions of the organ. While chronic atony and distension of the stomach walls can have no possible beneficial effect, alternating or temporary stretching of the stomach, as of other organs, acts as an excitant to the circulation. According to Bensley,[4] "distension seems to favour circulation, because the blood vessels are more easily injected in a moderately distended stomach than in an empty stomach. The rich venous plexus of veins within the submucosa is sufficiently large to hold a considerable quantity of blood. This must be the case when the valves within the veins coming from the stomach are temporarily closed. When the valves are closed a contraction of the circular muscle is sufficient to drive all the blood from the underlying veins. It is, therefore, possible that a rhythmic contraction of any part of the stomach may force the circulation through its walls. The arrangement of the lymphatics is much the same as that of the veins, and the above consideration applies equally well to them. When we consider the resistance to be overcome while the lymph passes through so many networks before the cistern chyli is reached, it makes it plausible to state that the circulation is favoured by muscular contraction."

It will be readily seen from the above how the alternating extension and contraction of the gastric walls may favour local circulation. The action may be slight at first, but each application increases the nutrition of the parts, and consequently the vigor and force of the muscular tissues. Secretion of the gastric glands must also be at least incidentally affected, if not stimulated, with the better and more regulated blood supply, thus also favouring a restoration to its normal state of the atonic organ.

The action of this method on the circulation is not altogether local, as is easily shown by the following considerations. The splanchnic area is the largest blood reservoir in the body, and sudden disturbances in the afflux or efflux of blood therefrom have most decided effects on the regulating mechanisms of the heart and the circulation of the brain. This is shown by the well-known phenomenon of syncope, and even the sudden emptying of a distended bladder, or sudden withdrawal of ascitic fluid, has been known to produce this by the derangement of the abdominal blood supply thus induced.[5] After section of the splanchnic nerves in the rabbit, the placing of the animal upon its feet may cause instant death from the afflux of blood to the abdominal organs, and consequent cerebral anæmia.[6] Langley and Mill have studied the splanchnic circulation, and a chronically dilated stomach, with consequent passive venous hyperæmia from obstructive stasis, is a very seriously disturbing factor in the organism; and whatever can relieve it acts not only locally upon the organ itself, but on the system generally, relieving a vast number of perhaps only vaguely felt, but very real and important, symptoms.

I may summarise the action of pneumatic gymnastics as follows:

1. Distension (partial) of the stomach with air stretches its walls, and this is opposed by the gastric muscles themselves, those of the abdomen and the diaphragm, and by the intra-abdominal pressure.

2. The succeeding contraction is produced through the muscular apparatus above noted, and by the intra-abdominal pressure.

3. The expansion and retraction of the gastric walls acts as a stimulant and exercise to the gastric musculature and circulation by (1) causing venous outflow and filling of veins from the capillaries; (2) by the mechanical muscular contraction acting as an arterial stimulant. Secretion is also directly and incidentally modified in a normal direction.

4. Distension of the stomach with air increases the pressure within the whole abdominal cavity, causing (*a*) a pressure that forces the blood out of the veins and through the portal circulation. Increase of work is thus thrown upon the heart, calling for more vigorous systolic impulse. More blood is thus forced into the portal circulation, and more blood passes through the right heart.

5. Contraction of the stomach by its own muscles and those of the diaphragm forces out the air and relieves intra-abdominal pressure. This (*a*) causes the blood to flow rapidly into the splanchnic area, increasing the capillary flow. It may do this also by causing a slight negative pressure in the abdominal cavity.

6. The principle of alternately increasing and decreasing the intra-abdominal pressure by regulated gastric pneumogymnastics in the manner described tends also to act as an exercise for the vascular system, and to increase the tone of the splanchnic circulation.

I have repeatedly demonstrated on dogs the gastric circulatory changes above described as the effect of pneumatic gymnastics of the stomach. In every case the bluish venous congestion that pre-existed was changed to a bright arterial one by the operation, and the general circulatory and respiratory disturbances were often rapidly suppressed and made way for more normal conditions.

Experiment I.—Dog, 10 kilog., medium size. With assistance of Drs. Green and Montezuma, abdomen opened and viscera exposed under chloroform. Vessels markedly engorged; stomach and intestines congested; respiration rapid, pulse weak, surface of body cold. Abdomen covered with tight bandage, and double tube with bag introduced air, and in three minutes breathing and pulse improved. In five minutes viscera were examined, and in place of bluish venous congestion there was a brighter arterial congestion, in some places pink to light crimson. Stomach then allowed to distend under observation, and it was seen that the veins swelled and became markedly tortuous, and upon contraction they immediately disappeared. In ten minutes respiration was steady and normal and pulse regained tone, wound closed, animal recovered.

Experiment II.—Dog (small), weight not over 5 kilog. Chloroformed. Small incision in anterior abdominal wall, stomach exposed and lighted by reflection. Large piece of ice placed within cavity and another laid upon abdomen until marked congestion was evident. In 20 minutes the colour became purplish, veins in sight engorged. Pneumatic gymnastics began, moderate distension in five minutes. Change in circulation at once visible. Extreme distension seemed to interfere with respiration; moderate distension did not. In ten minutes no congestive sign visible except hyperæmia of exposed viscera.

Experiment III.—Dog, white Scotch collie. Introduction of tubes before operation. In ten minutes extreme distension alternating with contraction; small opening made under anæsthetic when organ was fully distended. Veins very tortuous and swollen, but emptied themselves at

[4] Histology and Physiology of the Gastric Glands: *Proc. Canadian Institute*, 1896. Quoted by Hemmeter.

[5] Brunton, *Pharm. and Therap.*, p. 244.

[6] Wertheimer, p. 297.

once on withdrawal of air. Improvement most marked in circulation when alternations were slow, ten or fifteen per minute.

The therapeutic action of pneumatic massage is first to improve the motor power of the gastric musculature, as is shown by the improved condition of the gastric contents when examined, and also by the lessened time occupied by gastric digestion. It also has for a second effect a marked though seldom complete retraction of the dilatation, reducing its diamater as much as 4 inches in some cases. Thirdly, there is with the increased power a compensatory hypertrophy of the gastric walls, and this was well shown by a case described by Felischer and quoted by Hemmeter.[7] A girl had indulged in the habit of inflating her stomach for her own amusement, with the result, determined by careful palpation, of causing marked compensatory hypertrophy of the stomach walls, instead of dilatation. The case, though it has not heretofore been interpreted as such, is really a clinical demonstration of the value of pneumatic gymnastics in gastric therapy.

A last and very important value of the method here described is the general improvement in the circulation and nutrition of the patient that follows the use of pneumatic gymnastics. With the rapid disappearance of the uncomfortable symptoms there is a marked gain in weight, in some cases amounting to 10 or 12 lbs. in a month. The following cases taken from my records as characteristic, not selected as especially favouring the views here emitted, but as having been long enough under observation to permit of the deducing of conclusions, will illustrate these therapeutic points.

VI.—J. Crawford Renton, M.D.Edin.,

Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow; Examiner in Surgery at the University of Edinburgh.

The Indications for Surgical Treatment in Diseases of the Stomach.

1. In all cases of doubt as to tumours or hardness suspected to be in or near the stomach; or in any case where from tension of the recti muscles a satisfactory examination cannot be obtained, let the patient get chloroform or ether, and the condition be thoroughly investigated. It will be a satisfaction in some cases to find no tumour, and in others points will be determined with a view to operative procedure or not.

2. Where improvement under dietetic and medicinal treatment is delayed and doubt remains in the mind of the physician or physician and surgeon after an examination under chloroform, the surgeon should be asked to make an exploratory incision to determine, if possible, the nature of the growth and the farther operation required, being prepared to do whatever operation is necessary at the same time. Exploratory incision is a serious operation, and, although it is most exceptional for anything to go wrong, still it should not be undertaken as if it were nothing; and while I object to unnecessary explorations, I cordially agree with Mr. Treves's remarks in a recent most able paper on the value of such. In many cases, apart from anything tuberculous, the value of a simple exploratory incision into the abdomen is very great.

To illustrate what I say, I may refer to the case of Mrs. A., aged 57, published in the British Medical Journal several years ago. She suffered from the symptoms of pyloric obstruction with gradually increasing tumour in the epigastrium, loss of weight, and no improvement from any dietetic or medicinal treatment, and in these circumstances Dr. Sinclair asked me to see her with a view to doing some operation for her relief.

I explored the abdomen by vertical incision, and found a tumour so extensive, so irregular, so hard, and so adherent that I decided that nothing farther could be done, and we were all agreed that we had a malignant tumour to deal with. The patient never vomited again, the tumour entirely disappeared, and she is now, five years since the operation, continuing quite well.

A lady brought to me by Dr. Campbell after six years of persistent dyspepsia, having the pain worst at one fixed point an inch below the lower end of the sternum, was completely relieved by an exploratory incision and the removal of an unobliterated umbilical vein attached by adhesions to the stomach.

A third case sent by Dr. Orr McNiven, a man, aged 35, had recurrent attacks of obstruction, due apparently to a tumour in the region of the stomach. On exploration the tumour could not be removed, but has since disappeared and the patient is well.

In addition to doing a great deal of good in inflammatory and tuberculous cases, it is sometimes useful in staying the progress of malignant growths. No one has yet explained why simple incision does so much good, but there is no doubt a change of government takes place somewhere.

3. Cases in which the physician has no doubt as to what is wrong, but is anxious to delay surgical interference. The simplest of these are cases of dilatation of the stomach from fermentative dyspepsia. If washing out the stomach with antiseptic fluids and using massage is not sufficient, then gastro-enterostomy ought to be performed, or the operation of Professor Porter, of Boston, by which he puts a tuck in the stomach. When the dilatation is due to simple tumour of the pylorus, it may be either removed or gastro-enterostomy performed; if caused by cicatricial contraction at the pylorus, then splitting the pylorus vertically and uniting it transversely is followed by great success. Patients on whom I have operated continue well after five and seven years, which is long enough to test the value of operations. I would strongly urge the need of not delaying until patients are too weak to enjoy the benefits of operation. I was glad to hear Dr. Lauder Brunton strongly recommending gastro-enterostomy in cases of dilated stomach.

4. Possibly in no other disease have such strides been made medically and surgically as in gastric ulcer. Some have been cut out previous to rupture, and soon, I hope we may be able to diagnose them absolutely when the gastroscope is improved. When a gastric ulcer ruptures, the sooner it is operated on the better for the patient. The symptoms are so distinct that no delay should take place on the physician and surgeon being associated so that operation may be performed, and already a large number of cases have been operated on with gradually increasing success. The extravasation of much fluid into the abdomen so pinches the patient's vitality that, even with operation, until some modification takes place the mortality must be high.

5. In malignant disease at the cardiac end of the stomach with narrowing of the entrance we can often give great relief by using Simon's tubes or by a gastrostomy; and this should not be too long delayed, for it rests the diseased part and prolongs life. There is no use waiting until the patient is visibly dying, for that only brings discredit on the operation—or rather, perhaps, on the delay. When the pylorus is affected with malignant disease, either the tumour may be removed or gastro-enterostomy performed, according to the state of the patient and the size of the tumour. The relief afforded in these cases is often very great.

I might have referred to many other points and given details of cases, but I hope that the result of this discussion may be that cases of doubt may be earlier considered by the physician and surgeon with a view to operation.

[7] *Diseases of the Stomach*, 1898.

VII.—William Calwell, M.A., M.D.,

Assistant Physician, Belfast Royal Hospital; Physician to the Throne Consumption Hospital; Consultant Physician to the Ulster Hospital for Children, etc.

There are a few clinical points in regard to treatment of two forms of dyspepsia that, although mentioned, are not sufficiently insisted on. First, as regards rest in the dyspepsia of the overworked. As physician to a large nurses' home and training school with about 100 inmates I had particularly good opportunities of observing this phenomenon. A form of painful dyspepsia, due to the usual combination of gastric insufficiency and gastric irritation, was fairly common. Formerly I treated this with change of diet—the cooked milk diet and some gastric sedatives and alkalies, but I allowed the patient to continue duty. The results were unsatisfactory. The pathology of such cases is simple although far reaching. A person is overworked; there is more or less nervous exhaustion; and owing to the habit of eating too quickly, to the prevalence of bad teeth, to rushing back to work without the requisite rest, and to the rather frequent exhibition of the great digestion delayer, tea, the stomach generally feels this exhaustion earliest. If this be the correct pathology the treatment is clear. We must give general rest for the whole system, allowing an accumulation of nervous energy in particular, but also in the various organs of the body, and at the same time local rest for the stomach. Owing to the means at my disposal and the careful watch that could be kept over the patients, I was able to follow the effect of absolute rest with general treatment with a precision one could not secure in private practice or among the out-patients in hospital; such cases refuse to go to bed or to come into hospital. The treatment can be summed up in a few sentences. Absolute rest of body and mind in bed for from two to ten days; a carefully regulated diet, beginning with a small teacupful of

cooked diluted milk every two hours, gradually increasing to a fairly full diet; and, lastly, some mild alkaline sedative before food. The above form of dyspepsia is exceedingly common both in private practice and amongst the out-patients of our hospitals. My desire is to emphasise the necessity of absolute rest, thus treating the incipient state of bankruptcy of the general strength, more especially of the nervous system. The results are convincing.

I now come to the second form of dyspepsia. Suppose such a condition as the above is allowed to linger on; suppose one is content to prescribe prescriptions and modify diets, but without a cure as not infrequently happens. The condition becomes one of irritation due to organic acids, fermentation, with, as before, insufficiency. In very advanced and chronic forms, where the affection has gone so far as to lead to dilatation from weakening of the coats of the organ, lavage is the remedy that appeals to our ideas of the pathology. But what about the milder forms—the intermediate stages where a diagnosis of dilatation, of chronic ulcer, of chronic catarrh, is made by each succeeding medical man in turn, as he is consulted? The treatment of such a condition in the early stages is as follows: Rest is important, but the absolute rest demanded in the former instance is not so here: on the other hand, it must be of much longer duration and carried out under the hygienic conditions of rest in the open air, at the seaside or in the country, not in bed. Secondly, carefully regulated diet under the usual principles. And lastly, modified lavage, as follows: Thrice daily from one to two hours after meals, according to the onset of the pain, swelling, and general uneasy symptoms, a warm alkaline draught; this neutralises the organic acids, it stimulates the stomach to contract, and as it dilutes the contents they are passed with greater ease into the intestine; we endeavour to stop further work on the part of the stomach as regards that meal, and so give it rest; and we send the food where it should go, into the intestine to complete its digestion. It is a mistake to try and force the weakened stomach to go on digesting with pepsin; give it rest, as you would a joint, still swollen, painful, and stiff from inflammation. The form of warm alkaline draught employed is one of bismuth, soda, and heavy magnesia. The two points I urge in connection with many forms of dyspepsia are: (1) The necessity of absolute bodily and mental rest. (2) The necessity of not trying to force the stomach to continue digestion when it is repeatedly telling us that it cannot; but to devise means of removing the contents after a certain period without actually passing the tube.

VIII.—A. Lockhart Gillespie, M.D., F.R.C.P.E., F.R.S.E.,

Lecturer on Materia Medica and Therapeutics, Medical Registrar, Edinburgh Royal Infirmary.

Dr. Lockhart Gillespie commented on the frequency with which he had lately seen patients sent to him for gastric troubles who were in reality suffering primarily from intestinal indigestion, and who could rapidly be relieved of the gastric symptoms after treatment of the disordered condition of the bowel. In the majority of such cases he thought that the increased fermentation in the gut was due to a predominance in its contents of the bacteria which do not produce acid fermentation, and prefer alkaline or neutral soil, along with an insufficient number of those organisms which affect acid media, and form organic acids whereby they normally keep intestinal fermentation within proper limits. Intestinal antiseptics, mineral acids, milk, proteids, and cheese were of value in this condition. He drew attention to the harm frequently occasioned by the advocation of strict diet lists for indefinite periods, whereby the patient, sick to death of his permitted regimen, from which he sees no hope of ever escaping, suffers in time from the worst enemy of dyspeptics, depression of spirits. It was better to allow the patient some part to play, and some discretion as to the addition of articles of food which on trial he found to agree with him.

IX.—A. Symons Eccles, M.B.,

London.

The Treatment of Gastroptosis.

Mr. Symons Eccles's remarks, offered as a contribution to the work of the Section had to be very brief, for although the conditions to which he specially wished to allude were of great importance, still, in a discussion embracing such a wide field as that occupied by the treatment of gastric disorders, dilatation of the stomach, and gastroptosis might perhaps be considered as relatively a small part of the almost too great subjects engaging their attention.

In regard to megastria it appeared to him that certainly in the less serious form of ectasia, due to atony and atrophy not going on to degeneration of the mucous membrane, nor ending in general fibrosis, the condition was greatly on the increase, or at any rate he had seen a greater number of cases in the last three years than in the same length of time beforehand. He did not propose to burden them with statistics which were not sufficiently large to establish facts.

In over 500 cases with marked dyspeptic symptoms occurring in the past ten years in his practice there had been 128 cases of dilatation of the stomach, of which 42 had been treated in the last three years. The majority of cases were spoken of as "chronic dyspepsia" or "atonic dyspepsia"; and alkalies, acids, bitters, tonics of all kinds and the inevitable change of air, had been often prescribed with the want of success such proceedings usually entail. He thought that the sufferers from this comparatively mild form of stomach enlargement drifted on without improvement as a rule for months, or even for years, until their symptoms, becoming somewhat conspicuous, attracted attention, when sometimes success followed appropriate treatment.

Examination of the stomach contents after a test breakfast revealed deficiency of free hydrochloric acid, and the salol test was greatly delayed. Still some power of contraction continued to exist, and the patient appeared to suffer rather from general disturbance of nutrition than from the more severe local effects of true megastria when associated with malignant or non-malignant pyloric obstruction, fibroid degeneration, or adhesions. It was a great pity that so many sufferers from chronic or repeated attacks of gastritis drifted from bad to worse, until widespread destruction of the mucous coat left little hope of recovery by any means. When, however, atony had not developed into atrophy, the disease could be arrested by a plan of treatment which was pre-eminently rational and successful. The patients should be rested in bed, fed at first on pulped proteid foods and milk; the abdominal walls should be manipulated three or four times in the twenty-four hours, and the contents of the stomach should if possible be mechanically expelled into the duodenum three-quarters of an hour after the principal meals of the day. The patients should be encouraged to assume a tilted-up position, with the buttocks on a higher level than the shoulders, as often as they could do so without undue fatigue.

In more than 100 cases this method, employed for periods varying from three to ten weeks had proved successful in decreasing the size of the stomach, greatly improving the powers of assimilation, and increasing bodily weight and bulk. In this atonic dilatation of the stomach he had frequently been able to add an average of 5 lbs. a week to the weight of the patient under his care, without the use of the stomach tube save only in the first few days to prepare the organ for more rapid absorption and evacuation of its contents. A similar plan of treatment had also been adopted in some 40 cases of gastroptosis, of which 27 uncomplicated by other forms of enteroptosis had already been published[1] in the *West London Medical Journal* for July.

For conditions of true ectasia ventriculi complicated by destructive processes of the stomach wall and obstruction of a character irremovable save by surgical means, it was worth while to see how far improvement could be obtained by lavage, massage, dieting, and rest before surgical procedures were initiated, for at any rate unless the patient was in a very parlous state he might be rendered more fit to sustain the shock of abdominal section, even when gastro-enterostomy apparently afforded the only prospect of relief.

In two cases he had been able to maintain a measure of active health in subjects of fibrosis for 2 and 6 years respectively. The patients were ill-nourished, but massage, including vibration of the stomach, kept them free from the necessity of using the tube and had hitherto postponed the under-rated risks of operation.

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[1] *The Diagnosis of Gastroptosis*, by A. Symons Eccles, M.B., vol. iii, No. 3, July, 1898.

Further Remarks by Professor Ewald.

Professor Ewald made a few remarks with especial reference to Professor Saundby's statements. He quite agreed with the efficacy of rest and bed treatment as recommended by Professor Saundby. But he went a step further, and believed that for many stomach diseases, especially those of nervous origin, the best way to treat them was to send them to a suitable sanatorium and take them away from home. As Professor Saundby pointed to the difficulty of making a differential diagnosis between pains of neurotic origin and those caused by ulcers, in his opinion there were two symptoms which differentiated between them: First, hyperchlorhydria, which was present in most cases of ulcer and failed in most of the cases of neurotic pain in the stomach. Secondly, the disappearance of the pain caused by an ulcer after the patient had been exclusively nourished for some days *per rectum*. Neurotic pains, on the other hand, soon disappeared or only persisted for a short time.

THE VALUE OF BACTERIOLOGICAL EXAMINATION BEFORE, DURING, AND AFTER SURGICAL OPERATIONS.*

By W. S. MELSOME, M.A., M.D., B.C.Cantab., F.R.C.S.Eng.,
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When we consider the valuable information which may be gained by a search for micro-organisms by the aid of the microscope, it is somewhat surprising that it is so little used for this purpose by surgeons in hospitals and in private practice. I am not urging that it is necessary for the surgeon to discriminate between different kinds of micro-organisms, but I wish to point out the advantage he derives from being able to decide whether or not micro-organisms are present in the structures with which he is about to deal. The answering of this question by coverslip preparations is a very simple matter, requiring no special knowledge and very little time. If by these means we may obtain information of such value as, at one time, to leave no doubt in our minds as to the necessity of immediate operation, and, at another time, the absolute necessity of postponing it, surely we cannot ignore it.

I do not hesitate to say that operations undertaken without any attempt to obtain this easily accessible information beforehand have resulted in the loss of many lives; yet, go where you will, into metropolitan or provincial hospitals, how rarely will you see it made use of by surgeons for this purpose—still more rarely will you see it used in private surgical practice. The object of this short paper is to demonstrate as far as I can the value of the microscope to the surgeon—before, during, and after operation.

The Value of Microscopic Examinations Before Operations.

Case I.—A woman was admitted into a hospital with severe bladder trouble. She made water frequently by night and day, and during its passage and for a short time afterwards she suffered severe pain. The resident medical officer centrifugalised the urine, made coverglass preparations, stained by Gram and other methods, and satisfied himself that she had gonorrhœa. A few days after admission she complained of pain and swelling in the right knee. The swelling was due chiefly to fluid in the joint. On the following day some of the fluid was drawn off and sown on Loeffler's serum, ordinary serum, agar agar, and other media; and also examined immediately with the microscope. The tubes remained sterile and the microscope showed complete absence of micro-organisms. It was decided, therefore, that there was no necessity to open the joint. The day following the examination, however, the condition of the joint was still worse. Two experienced surgeons were invited to give their opinion, and they, without hesitation, said: "The joint must be opened at once, or she will be obliged to have her leg off." The microscopical evidence and sterile tubes had no weight whatever with them. More opinions were invited, and altogether ten surgeons and physicians viewed that joint, amongst whom the resident medical officer found two supporters. The joint was not opened and the knee got perfectly well.

Case II.—A boy was admitted into a hospital two days after receiving a punctured wound near the knee-joint. The wound was foul, and the joint distended with fluid. It was doubtful whether the wound actually communicated with the joint or whether the effusion in the latter was due to irritation of the synovial membrane, caused by diffusion of organisms or their products from the wound. The house-surgeon was ordered to aspirate the joint to ascertain whether it contained pus, and if so, to freely open and drain it. The fluid obtained was opalescent and full of cells. So far, there was no indication for or against opening the joint. Joints containing opalescent fluid full of cells often get well if left alone; joints, however, containing opalescent fluid full of cells and micro-organisms, if left alone, may give rise to very serious consequences. Yet it never occurred to anyone present to stain a coverslip preparation and examine for cocci, though this would have given the necessary information in a few minutes.

Case III.—An elderly woman was admitted with a foul-smelling blood-stained discharge from the uterus. A microscopical examination revealed an abundance of streptococci, which, growing under such conditions, were likely to possess a high degree of virulence. The house-surgeon was requested to dilate the cervix with tents, in order that the body of the uterus might be examined next day. Two sea-tangle tents were introduced at 11 P.M. and removed in the morning. The intrauterine examination took place at 3 P.M., and at 11 P.M. the temperature was 104°, and ranged between 102° and 104°, till death on the fifth day. On the fourth day some blood was drawn from one of the veins of the forearm, and sown on serum, agar-agar, etc. All the tubes showed colonies of streptococci. At the *post-mortem* examination streptococci were found in the blood of the heart and in all the metastatic abscesses which were examined.

Again, in dealing with the urinary organs, a search for micro-organisms repays us perhaps as much as in any branch of surgery. It is well known that the so-called urinary or catheter fever is due to micro-organisms which invade the tissues from unhealthy urine. The importance, therefore, of examining for micro-organisms before any operative procedure on the urethra or bladder should be more generally recognised than it is. In this way information would be gained which might lead one to defer an operation, or, if an immediate operation were necessary, to adopt such procedures as would minimise its risks.

We must not imagine that because the urine is acid, contains no albumen and has no offensive smell, it is therefore free from micro-organisms. I know of several persons whose urine is crowded with them, and yet it is acid and contains no albumen; moreover, these persons suffer no inconvenience except at certain seasons of the year, when the water has a somewhat unpleasant smell. That such micro-organisms may be a source of danger to those about to undergo an operation in the neighbourhood of the urinary organs, the following case would seem to indicate:

Case IV.—A man was admitted into a hospital to be operated on for varicocele. I happened to be present when one of the house-surgeons was examining his urine. The man made no complaint about his water, and the house-surgeon contented himself with the usual chemical tests for albumen and sugar, both of which were absent. We noticed, however, that it had a peculiar smell, and I said I would take away a specimen and examine it with the microscope at my leisure. This I did in the evening, after the operation was over. It was full of micro-organisms, chiefly streptococci. The next day other specimens were examined with the same result. The dressings became accidentally contaminated with the urine, erysipelas developed in the wound, and in a few days the man was dead.

The Value of Microscopic Examination During Operations.

I may state at once that although the information is interesting from a pathological point of view, it is not of the same practical importance as information obtained by examination before or after operations.

To-day the tendency is to remove chronic abscesses which we imagine to be the product of the tubercle bacillus by dissection, and, when this is impossible, to evacuate the contents, to remove as much as possible of the limiting membrane, and completely suture the skin wound with the view of obtaining primary union, and of minimising the risk of a mixed infection.

This attempt at primary union is often unsuccessful, and I think that the failures are mostly due to the fact that we have not yet learnt to discriminate between different kinds of chronic abscesses. We are too apt to think that because an abscess is chronic it is therefore necessarily tuberculous. If this were true, the failures I have just mentioned would not be so frequent.

If the contents of a number of chronic abscesses, which clinically are considered to be tuberculous, be examined microscopically, it will be found that many contain the ordinary organisms of suppuration.

Perhaps I go a little too far in saying that surgeons consider such abscesses to be tuberculous, but I have often seen them open chronic abscesses connected with glands in the neck, scrape the limiting membrane and completely unite the skin, which to my mind is a passive admission that they at the time considered them to be tuberculous, and I have frequently examined the pus from these abscesses at the time of opera-

* Read before the Bath and Bristol Branch of the British Medical Association.

tion, and having found pus cocci present, have been able to predict that suppuration would continue, and that some of the stitches would shortly have to be removed, and this is what usually followed.

Abscesses then, which are viewed clinically as "chronic," are not always free from the presence of ordinary pyococci. If the pathology of inflammation be considered for a moment, it will be seen that there is nothing surprising in this statement. If healthy tissues are subjected to chronic irritation of whatever kind, they come to be in a state of chronic inflammation, and when they have been thus inflamed for some days they offer greater resistance to microbic invasion. If we inoculate these tissues with certain kinds of living organisms the results are less severe than those produced by similar inoculations into the sound tissues of the same body. This I think is the reason why pus cocci are so apt to give rise to chronic instead of to acute abscesses in the glands of the neck in children. These glands, being so frequently irritated by septic products from the tonsils, scalp, ears, etc., are rendered more resistant than usual.

In 1894 (*Journal of Bacteriology and Pathology*) Mr. Cobbett and I showed that the peritoneum after recovering from an inflammatory attack offers greater resistance to subsequent infection than the normal peritoneum, and clinical experience, as Mr. Treves[1] has pointed out, teaches us that it may, in these circumstances, be operated on with greater safety than if it had not been previously inflamed.

The capacity of the tissue then to resist microbic invasion is probably an important factor in determining the kind of abscess which will result. Again, if the whole body be partially immunised against a particular organism towards which it is susceptible, the result of inoculation of these organism is greatly modified: for example, if a horse be partially immunised against diphtheria, subcutaneous inoculations of living diphtheria bacilli will produce a cold abscess, from which a pure cultivation of these bacilli may be obtained several days afterwards. This fact was pointed out to me some years ago in Cambridge by Mr. Cobbett.

Again, in pneumonia, when due to pneumococci, an empyema containing living pneumococci unmixed with other organisms may exist for a considerable time, and produce remarkably little disturbance. This again is at a time when a marked general immunity has become established against this micro-organism. Now, these facts which have been proved to be true for the above organisms could probably be shown to be true of others.

Thus, then, in certain circumstances it is possible to meet with chronic abscesses due to organisms other than the tubercle bacillus, but it is often impossible to distinguish them without the microscope. If on microscopical examination no organisms are found in the pus, it is justifiable to scrape the limiting membrane and unite the skin wound. If, however, pus cocci are found, both of these procedures will be unscientific, but as I have already stated, it is not of much practical importance; suppuration will continue, and stitches will require to be removed, but grave consequences will rarely ensue.

The sac of a strangulated femoral hernia sometimes contains a blood-stained fluid, in which the microscope often reveals the presence of the bacterium coli commune. This is a sign that the wall of the strangulated piece of intestine has to a great extent lost its vitality. In these circumstances the sac should be carefully cleansed and dried before the abdomen is opened to prevent inoculation of that cavity; the abdominal viscera in the neighbourhood should be disturbed as little as possible in the process of reduction, and the strangulated piece of intestine left just within the ring, supported by a gauze plug, which also serves for a drain.

Perhaps we may conclude that although the microscope in the operating theatre may not be a matter of life and death, it may at times be valuable in cases in which doubt arises as to what line of treatment should be adopted.

Value of the Microscope after Operations.

A few weeks ago a man was brought to our hospital with three extensive wounds in the left upper limb, each involving the elbow joint. There was a compound comminuted fracture of the lower end of the humerus, the bone being split through the external condyle into the joint. The superficial flexor group of muscles of the forearm was completely severed and protruding from the wound. Arrangements were made to obtain primary union. Twenty-four hours later the temperature was 102° F. and the pulse 120. Now in circumstances such as these, it is of no use speculating as to the incubation period of streptococci, or the highest temperature and pulse-rate consistent with the mere absorption of disintegrated blood products, or again, the lowest temperature and pulse-rate consistent with sepsis. What we really want to know is, whether micro-organisms are or are not multiplying in the wounds: and in order to answer this question I passed a sterilised probe into the deeper parts of each one of them after carefully sterilising the skin along the lines of suture. I then made coverglass preparations, and examined with the microscope. No organisms were discovered. On the following day, the temperature being 101.5°, another examination was made, and again on the fifth day—each time with a negative result. The temperature remained about the same till the seventh day. The wounds, however, healed well, and the man could move his elbow-joint from start to finish.

The use of the microscope in such cases is obvious, for if the wounds become septic, you will discover the fact earlier by this than by any other means: and you are able at the earliest possible moment to open up all the wounds, and resort to continuous irrigation, or to any other line of treatment which may be thought advisable to avert a catastrophe. On the other hand, negative results allay anxiety, and prevent restless nights.

I am aware that micrococci have frequently been found by cultivation methods in many wounds which run an aseptic course, but I believe that in these circumstances they are not sufficiently numerous to be readily detected by direct microscopical examination: and I know, from a considerable number of personal observations, that within twenty-four hours after an operation they may readily be detected by this method in wounds which become septic; and if I had found a considerable number of cocci in the case I have just mentioned, I think I should have been justified in opening up the wound and taking such steps as would be calculated to check further infection.

With regard to after-examination of this kind, we may say, *Ex uno, disce omnes:* and I will not, therefore, burden you with any more.

References.

1 British Medical Journal, 1893, p. 632.

TWO CASES OF INTESTINAL OBSTRUCTION: LAPAROTOMY: RECOVERY.*

By W. M. Barclay, F.R.C.S.,

Surgeon to the Bristol General Hospital.

Cases of successful laparotomy for intestinal obstruction are unhappily not so numerous as to be commonplaces of surgical practice, and I venture to think that the two cases I am going briefly to relate have other points of interest besides their successful issue.

Case 1.—A man, aged 61, was admitted under my care at the Bristol General Hospital on November 15th, 1896. Four days previously, after a heartier supper than usual, he went to bed and awoke in a few hours with pain across the abdomen. The pain increased through the night, and the next morning he was sick. Dr. Perry was called in, and attended him till his admission into the hospital, and kindly furnished me with the details of his illness. The sickness persisted, and was bilious in appearance till the day of admission; the bowels, which had acted as usual on the morning of the seizure, were not moved afterwards, nor was flatus passed. A dose of castor oil on the fourth day produced no effect. On the afternoon of the 15th—the fifth day—the vomit was like dark liquid faeces, and Dr. Perry had him removed to the hospital at once. When I saw him at night he was placid and free from pain, and had nothing of the drawn and anxious appearance of many cases of acute obstruction; the tongue was clean and moist, and the pulse 90, regular, and of good force. The abdomen was considerably distended, but, though large coils were visible, especially at the sides, they exhibited the slightest, if any, peristaltic movement. Palpation could be expected to reveal nothing under such circumstances. The rectum was empty. The patient's history was excellent: he had been accustomed to have a daily action of the bowels, and he had had no illness that he could remember. The only thing amiss before the actual seizure was a little griping pain for a few days. Laparotomy was performed at once. A small median incision was made, and opposite to it the finger came upon a hard mass about as large as a bean; it lay deeply against the spine, and could

* Read at a meeting of the Bath and Bristol Branch of the British Medical Association.

not be moved into the wound, so I enlarged this to get a view of it. It looked dense and puckered, and, on pulling out a coil or two of intestine, was found to lie in the mesentery; it felt densely fibrous as well as somewhat chalky, and there was a movable gland close beside it. I did not at this stage discover what connection this mass had with the obstruction, nor any cause for it, and believing I felt a distended cæcum I made a fresh incision over this, intending to drain the bowel here. I found the cæcum empty. With fingers in each wound I was now able to follow the ileum from the cæcum, and soon reached the point of obstruction. One of the lowermost coils of the ileum, empty, was drawn up and fixed against the spine by fibrous puckerings and adhesions of its mesentery, and bound by bands and adhesions to the adjacent coil, which was full of fluid, and, with its proximal neighbour, had been partially twisted on a vertical axis. At the root of this mesentery was the cicatricial mass first discovered. These three coils then seem to have taken part in causing the obstruction. It is probable that during a rather sudden or excessive alimentary transit the two proximal coils were quickly distended, but, owing to the mechanical confinement of the distal one against the spine, could not at once pass on their load, fell into the pelvis, and, being as it were partly drawn up and fixed at their points of flexure (by the cicatrix in the mesentery and by adhesions), were kinked, and rotated from left to right on their mesenteric axis. The adhesions, which were numerous, dense, and evidently very old, were separated or cut, and finally the bound-down coil was so completely loosened that there was no further tendency to kinking. In spite of this the distended portion showed no sign of passing on its contents, and I was afraid to leave the adjustment to Nature, lest on the first passage of fluid into it the liberated coil should fall into the pelvis, and offer the serious obstacle of an inert and overloaded tube to any further progress. To prevent this, and to start natural peristalsis by relieving the over-distension, I mechanically squeezed the fluid contents of the distended coils through the empty ileum into the cæcum, repeating the manœuvre some half-dozen times till the cæcum was moderately full, and the ileum uniformly occupied with the fæcal fluid. Both wounds were then sutured, and the patient returned to bed in very good condition. The subsequent progress was satisfactory and uneventful, the bowels relieving themselves the next day. The patient was sent home, with strict injunctions as to care and moderation in diet. I was anxious on this head because, though the operation was so successful in its immediate result, it was impossible to overlook the danger of fresh adhesions forming, and leading to a renewal of the old mechanical difficulties. On the other hand, if, as seemed not unlikely, the contractions and adhesions were due to a localised peritonitis excited around tuberculous deposits in the mesentery long years ago, there might be more hope that such fresh adhesions as occurred would not be so crippling as the older ones had proved. Unfortunately we had a proof of the justness of these fears, for in September last, ten months after the operation, the patient developed another attack of obstruction, with fæcal vomiting, for which he was again admitted into the hospital. I was away, and my colleague Dr. Firth kindly took charge of him. The attack, however, was comparatively mild; and the obstruction, I am told, yielded in a day or two to enemata, and the patient again went home well. I have seen him to-day (January 26th, 1898), and he tells me he has had no trouble with his bowels since last September, and has, moreover, passed safely through a long attack of pleurisy.

Contractions and adhesions are among the less common causes of intestinal obstruction, and when present generally lead to a long train of chronic bowel trouble, with the usual accompaniment of recurring attacks of partial obstruction, ending at last in a subacute attack of complete stoppage. Some very interesting cases of this kind were recorded by the late Dr. Hilton Fagge in the *Guy's Hospital Reports* for 1868.[1] I can find no instance recorded parallel with mine where such a condition as there existed gave apparently no evidence of its presence till a typically acute attack of obstruction laid the patient at death's door. With regard to treatment, most surgeons are satisfied that the existence of acute or prolonged obstruction negatives a severe operation, but when convalescence is established more radical measures may be adopted. In this case the ideal operation would have been resection of the affected coils of ileum; a less severe but probably quite effectual one, an ileo-colic anastomosis. Considering the amount of risk inseparable from either of these operations, the age of the patient, and his present satisfactory condition, I should hesitate much before suggesting either step, even if there was any likelihood of the patient's consenting. If the worst come to the worst, we know the nature of the lesion, and its seat, and could adopt severer measures if they became unavoidable.

CASE II.—A woman, aged 51, whom I saw in consultation with Mr. Webb, for some time had developed symptoms suggestive of a chronic obstruction, and these culminated in the attack for which I saw her. Sickness and distension appeared, and on the third day after their onset I saw the patient. The distension was peculiar, in that it was almost confined to the lower half of the abdomen, the epigastrium notably escaping. There was some dulness in the flanks. Severe attacks of colic were frequent, during which a large coil became prominent in the right iliac fossa and extended across the abdomen below the navel, but did not reach the left iliac fossa. The rectum was empty. We considered the case probably one of sigmoid cancer, and she was sent into the hospital the next day, when laparotomy was performed. Through a 3-inch median incision I passed a finger and felt a hard mass in the sigmoid flexure. Rapidly exposing this by a fresh incision, a typical annular carcinoma of the upper end of the sigmoid was hooked up. The parietal peritoneum was attached to the skin all round[2]; a loop of sigmoid, with the growth, was brought out and secured in the wound by an Allingham's stitch through its mesocolon, and a few stitches uniting the ends of the bowel to the skin, the two ends being approximated as closely as possible. The bowel and wound were dusted with iodoform, and the edges smeared with vaseline, and then the bowel was opened as far above the growth as possible, and drained through a piece of rubber tubing. On the seventh day, when the abdomen was flat, and all effects of the obstruction had disappeared, the cancerous mass was completely cut away under an anæsthetic. There was considerable bleeding from the mesocolic axis between the two ends of the intestinal loop. The two mouths of bowel thus produced were secured to each other and to the edge of the wound by a few extra stitches, but this was probably unnecessary. The sections through the bowel were quite free of the carcinomatous mass, and some enlarged glands in the mesocolon were removed at the same time. She left the hospital, passing solid, natural motions, without any skin irritation. The possibility of closing the artificial anus was discussed, but she is so comfortable that she prefers to let well alone.

Enterectomy in stages seems to me to have an overwhelming superiority over every other method, and it is probably practicable in the large majority of cases where the growth or other lesion is limited and free from adhesions. I do not know whether the method originated with Mr. Greig Smith, but in the sixth edition of his *Abdominal Surgery*[3] he recorded 4 successful cases of the completed operation—in the sigmoid, descending and transverse colon, and the ileum—the artificial anus, that is to say, having been in each case closed by his ingenious extraperitoneal operation. This latter device, if successfully achieved, robs the final stage of its dangers, and removes the chief objection that might be raised to an enterectomy in successive stages. Even without this final step, provided the artificial anus be in the large bowel—at any rate, in the descending colon or sigmoid—the patient's condition is one of very little discomfort; and he has at least a chance of immunity from a mortal disease. Whether my patient has been rid of her cancer it is of course too early to speculate; the glandular infection is against such a happy chance; but, on the other hand, carcinoma of the alimentary canal seems to remain longer limited to the part first attacked than is the case with many other forms of cancer, and provided there has been no deeper glandular infection than that seen and removed, she may yet prove to be a brand plucked from the burning. This patient, too, I have seen to-day, and except from some contraction of the upper orifice from neglecting to wear a plug, as she was directed to do, she is in a highly satisfactory condition.

In conclusion, I should like to acknowledge the debt these patients owe to their medical attendants, for I have no doubt that it was largely owing to my seeing them at an early stage of their attacks that the results have been so satisfactory. It is early recognition and early operation that we most want.

NOTES AND REFERENCES.

1 Vol. xiv, p. 323, *et seq.* 2 Following Mr. Greig Smith's advice, I should not do this in future, but appose the bowel to the raw surface of the wound instead. 3 1897, vol. ii, p. 636. Mr. Barling has published a case in which he performed this operation (BRITISH MEDICAL JOURNAL, 1898, i, p. 374.

A CASE OF ŒSOPHAGOTOMY FOR IMPACTED ARTIFICIAL TEETH.

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CASES of impaction of foreign bodies in the upper part of the alimentary canal are not infrequently met with in hospital practice, but the greater proportion are cases in which the foreign body is lodged in the pharynx, and can generally be dealt with from the mouth. But when they have passed from the comparatively wide pharyngeal chamber into the narrow passage below the cricoid, for example, into the œsophagus, the condition is a much graver one, not only on account of the greater probability of their becoming impacted and therefore presenting greater difficulties in their extraction, but also, should this be impossible, on account of the far greater dangers attending operative measures. Of these cases a certain number of the foreign bodies, for example, coins, are doubtless often dislodged by the passage of a probang or bougie, and passed on into the stomach and intestine, from whence they are later on evacuated, probably without further harm to the patient. But as regards artificial teeth the condition is different, probably owing to the fact that those which get into the œsophagus are either tooth plates which have been broken and present sharp corners, or consist simply

of a few teeth, which are connected with their neighbours by sharp points or hooks. In the case I record below the patient had been for many years in the habit of wearing three artificial incisors attached to a plate which had been broken some months previously, and which from motives of economy she had neglected to get repaired.

History.—E. R., aged 33, who was not in the habit of removing her teeth at night, woke up early in the morning of October 30th, 1897, with a very sore throat, and found that she had lost her teeth. As she was subject to occasional epileptic attacks she concluded, "as she felt so bad," that she had had one during the night and had swallowed her teeth. She sent for her doctor, who advised her to take nothing but gruel, but she found that swallowing was so painful that she took "hardly anything." Thirty-six hours afterwards her breath began to get short, and this gradually increased for the next twenty-four hours, when she applied at the hospital for admission.

State on Admission.—The patient was a healthy looking woman with a distinctly anxious expression accompanied by slight cyanosis. There was marked stridor, respirations 28, pulse 110, no cough. Laryngoscopic examination showed nothing abnormal. There was distinct diminution of resonance at both pulmonary bases for about three finger-breadths and the breath sounds over this area were very feeble. Elevation of the ribs was fair, but there was little expansion. On examining her throat externally she complained of marked tenderness, much increased by pressure, about one inch below and to the left of the cricoid, at which point there was a distinct fulness to be felt on deep pressure. A bougie passed 7½ inches when it was distinctly stopped. The veins of the neck were abnormally full.

Operation.—As there seemed but little doubt that her teeth were firmly impacted in the œsophagus, and were causing laryngeal obstruction, she was advised that an œsophagotomy was necessary and to this she readily consented. She was accordingly put under chloroform, and I proceeded, assisted by Dr. Holman Weekes, to make an incision about 3½ inches in length, along the anterior border of the left sterno-mastoid muscle, commencing about half inch above the upper border of the thyroid cartilage. The common carotid sheath was then gradually exposed. The sterno-mastoid muscles having been drawn outwards together with the large vessels, and the omohyoid muscle hooked down, the trachea and œsophagus were defined and the former having been pulled over to the right and all venous oozing, which on account of the interference with respiration was of a rather free character, stopped, the foreign body could be easily felt about three-quarters of an inch below the cricoid, bulging towards the posterior surface. A sharp point which had almost penetrated the œsophageal wall could be detected and a vertical incision of about an inch having been made over it, the plate was easily extracted. At the moment of extraction the venous bleeding was well marked, but firm pressure being applied for a few minutes it gradually, as respiration became freer, ceased. The point had almost ulcerated through the œsophageal wall, which was quite rotten, and about a teaspoonful of pus escaped when it was incised, and therefore no attempt at stitching up the gullet wall was made. A drainage tube was inserted from the opening in the œsophagus to the lower end of the wound, what was then stitched up.

After-History.—The patient soon recovered from the shock of the operation and expressed herself very grateful for the relief she experienced. She was encouraged to sit up in bed as much as possible, but no attempt at fixing her head was made. She was fed entirely by means of suppositories and nutrient enemata, and she seemed to be doing so well and suffered so little from thirst that no attempt at feeding her by the mouth was made until the sixth day, when she was given a little milk, the greater part of which, however, ran through the tube in her neck. During the first few days the discharge was of a rather free character, but after the fifth day it gradually decreased, and the tube, which from this time was shortened every other day, was eventually removed on the fourteenth day. The wound above the tube healed by first intention, the stitches, twelve in number, being removed on the ninth day. The patient seemed so comfortable and her strength was so well maintained that no further attempt to feed her by the mouth was made until the seventeenth day, when she was found to swallow fluids comfortably, and she has experienced no difficulty or discomfort during deglutition from that time. The wound was soundly healed on the twenty-third day, and she was discharged from hospital four days later.

Description of Plate.—The plate was of an irregular quadrilateral shape and measured 1¼ inch from before backwards and about ¾ inch from side to side. It carried three incisors, and attached to the inner of these was a sharp gold spike by which it was connected to the neighbouring tooth. It was obviously this spike which, by penetrating the œsophageal wall, had prevented its further passage to the stomach.

PRIMARY TUMOUR OF RIGHT AURICLE OF HEART, RUPTURE OF INFERIOR VENA CAVA.

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Primary tumours are exceedingly rare in the heart. According to Berthensen the structure in 30 published cases of primary tumours of the heart was as follows: Sarcoma 9 (pure sarcoma 5, fibrosarcoma 3, myxosarcoma 1), myxoma 7 (pure myxoma 4, fibromyxoma 3), fibroma 6, syphilitic tumours 2, cancer 3, lipoma 2, cyst 1. Pawlowski only succeeded in collecting 3 cases of fibroma of the heart. The patient from whom this interesting tumour was taken was a charwoman, aged 43, admitted under my care into the Mill Road Infirmary on January 11th, 1898.

History.

She first complained of pain in the chest, with dyspnœa on exertion, and had to sit up in bed at night 3½ years before admission. This continued without intermission, although she was able to do a little work until 2 months before admission, when she was seized suddenly with great pain in the right chest, which prevented her breathing for a time. She has been addicted to alcohol for some years. There was no history of syphilis.

Condition on Admission.

She was a stout, muscular, well-nourished woman, although she said she had lost flesh lately. She had an anxious expression, could not lie down in bed, and had great dyspnœa of a spasmodic character. There was moderate ascites and œdema of the lower extremities; the most notable feature was the enormous enlargement of the superficial veins of the thighs, abdomen, and thorax, which formed two columns on either side of the middle line of the abdomen. They were very tortuous, but the current of blood in them was towards the heart. This condition of veins at once suggested the probability of the inferior vena cava being occluded at some part of its course near the heart with anastomoses between the superficial epigastric and long thoracic and internal mammary and intercostal veins. The right side of the chest was almost immobile and completely dull to percussion both back and front, with absence of breath sounds, and all the symptoms of effusion. The left lung was normal. The heart was displaced outwards considerably. Its action was quite regular, and there was a soft blowing systolic murmur heard at the base and conducted up the sternum for 2 inches and outwards into the axilla and back. The liver was pushed downwards, forming a rounded prominent tumour in the epigastrium, the lower edge was rough and nodular, and extended to within 1 inch of the umbilicus; the abdominal cavity contained a fair quantity of fluid.

After-History.

The right pleural cavity was aspirated and 61 oz. of what appeared to be pure blood withdrawn. This gave the patient considerable relief and her dyspnœa subsided, allowing her to lie down in bed. There was a slight attempt at expansion of the lung and the dulness disappeared to some extent, but it soon became absolute again, and as we evidently had a hæmothorax to deal with I did not think it desirable to aspirate again. The temperature ranged between 99° and 101°. The pulse was 100 and the respirations 24.

The chief points of clinical interest in this case then were: The great dyspnœa and inability to lie down in bed, much more pronounced during the night; the complete filling of the right pleural cavity with blood, the enormous distension of the superficial veins of the abdomen, thorax, and lower extremities, the general œdema with ascites, and the displacement of the heart and liver, which was enlarged and nodular. The kidneys were apparently healthy, as the urine was normal. The diagnosis was difficult, but after a careful consideration of the points mentioned I was of opinion that she had a new growth in the lung or mediastinum with probably secondary deposits in the liver, and that the growth in the chest was pressing on the inferior vena cava before or at its entrance into the auricle. The diagnosis however in many points proved to be wrong. The progress of the case was short and uneventful. There was latterly great pain on pressure over the precordia, the dyspnœa increased, and she died on February 16th from syncope.

Necropsy.—At the necropsy, twelve hours after death, the body was enormously distended with gas, the parts chiefly affected being the neck, the upper part of chest, the stomach, and the liver. The extremities did not contain gas; when liberated it was not offensive. The blood was carefully examined and stained, when enormous numbers of the bacillus aërogenes capsulatus were found, thus accounting for the rapid gas formation after death. The bacilli were in larger numbers in the blood from the liver, but could be obtained from the blood of any part. On opening the chest the right pleural cavity was found to be quite full and distended with dark-coloured fluid blood, with here and there a few clots, the amount being between 6 and 7 pints. The heart was displaced outwards. The right lung was collapsed, and pressed against the vertebral column towards the apex of the cavity.

The left lung was enlarged and emphysematous in front, deeply congested at the base. The abdominal cavity contained 2 pints of blood-stained serum; the liver was much enlarged, and extended nearly down to the umbilicus. It was nodular, and presented the typical appearances of cirrhosis. On palpating the liver it was found soft and yielding, and distended with gas; a cross-section showed numerous distended veins. The kidneys, spleen, and brain were normal. A point of great interest was the great enlargement of the lumbar veins, while the inferior vena cava was almost empty in the greater part of its course, and contained a large organised thrombus in its upper third, almost completely occluding its lumen.

After removal of the blood from the right pleural cavity, the heart was examined before removal from the chest, and a distinct rent was seen in the inferior vena cava just before its entrance into the auricle and above the diaphragm. The heart, liver, and lungs were removed together. A large, hard tumour, measuring 3½ inches in its longitudinal and 3 inches in its transverse diameter, occupied the right auricle and distended it greatly. It was firmly adherent to the wall of the auricle at its upper half and free below. At the inner side of the tumour was a thin calcareous plate. The growth directly extended down the course of the inferior vena cava as a dense hard mass 1½ inch thick, quite nodular, and terminating on the under surface of the liver as distinct and separate hard nodular masses as large as walnuts. These separate growths had no direct connection with the primary growth in the auricle. The tumour was hard and difficult to cut, and quite solid. Histologically it was a section composed almost entirely of fibrous tissue, the cells of which were very unevenly distributed. The cells were elongated or spindle-shaped throughout the section, but in places, especially near the margins of the growth, there were numerous clusters of round cells. The general appearance of the sections was that of pure fibroma, but the macroscopic characters suggested a distinct metastasis in the form of separate growths on the surface of the liver. This, together with the rich distribution of small round cells, as seen in the sections, suggested a fibro-sarcoma.

The sections of the secondary growths showed precisely the same appearances as the primary tumour. The wall of the auricle was stretched to such an extent in places as to be only the thickness of paper, and was with difficulty stripped from the growth. The whole of the body was carefully searched, but no other evidence of new growth could be found.

Peter Neu, in a dissertation to the University of Bonn on sarcomata of the heart, has collected 14 cases, 5 of which were primary and 9 secondary. Of the primary cases 3 were in the right auricle, the other 2 being in the septum ventriculorum.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

CASE OF EXCISION OF A LARGE TUBERCULOUS MESENTERIC ABSCESS.

ON August 12th of this year, C. M., a boy aged 4 years, was brought to me by his mother, at the request of Dr. Montgomery, because of an abdominal tumour. The history given was that until two years ago he was quite healthy, and throve well. At that time he suffered from an attack of jaundice. This passed off, but he remained very weak in the limbs, and heartless. Last summer, however, he improved very much in health, and was now stronger and better than he had been for some time. A week before coming to see me there was noticed for the first time a "hard lump in the belly." It apparently gave the boy no inconvenience, and was quite painless. His appetite was good, his bowels were regular, and he slept well. The family history was satisfactory.

The patient was a pale but well-nourished boy, and his general appearance was healthy. The chest and heart sounds were normal, and the urine was free from urine and sugar. On examination of the abdomen it appeared unduly prominent towards its lower part, the prominence being best seen when the patient was standing erect. On palpation a smooth, globular, elastic swelling could be felt lying in the middle line in the umbilical region. It felt about the size of a cocoa nut, and occupied an area immediately below the umbilicus. It was anchored down at its deepest part, but could be moved from side to side. A catheter passed into the bladder made no alteration in the size of the tumour.

I advised an exploratory laparotomy, which was done on August 20th. The abdomen was opened in the middle line below the umbilicus. On cutting through the peritoneum the tumour appeared as a smooth, glistening, bluish grey structure, with numerous small vessels ramifying over its surface. The abdominal incision was then extended upwards and downwards (to 4 inches in length). While proceeding to separate some adherent omentum from the surface of the "tumour," a gush of pus took place from it. The rent from which the pus was escaping was grasped with forceps, and as it was evidently a tuberculous abscess that had to be dealt with, I decided to remove the abscess wall entire. This I accomplished after considerable difficulty, owing to adhesions between it and the neighbouring coils of intestine. It had apparently originated in one of the mesenteric glands, and in this region I had to use scissors freely to get it clipped away. Some neighbouring mesenteric glands were found enlarged, but were not further dealt with. The abdominal cavity having been carefully cleansed, the wound was closed without any drain.

There was considerable shock after the operation, but this soon passed off. The wound healed by first intention, and the boy is now (September 23rd) well and running about. It will be interesting to watch the future progress of the case as regards the effect of the abdominal section on the remaining enlarged glands.

Glasgow. GEORGE THOMAS BEATSON, M.D.

PERINEPHRIC ABSCESS, WITH COMA.

MRS. M., a well-developed and well-nourished woman, married but no children, consulted me on September 3rd, 1897, complaining of a dull aching pain in the right lumbar region of two days' duration, which she described as due to rheumatism. There was elevation of temperature (101.2°), and a pulse of 110. From this time the pain continued, and the temperature, which gradually rose, fluctuated between 102° and 104°. The patient had an enlarged spleen, and twelve months previously had passed a large quantity of blood *per rectum*. She had had not felt pain in the lower part of the abdomen or in the region of Poupart's ligament. There was no history of injury and no urinary symptoms. Examination over the seat of pain revealed the absence of œdema, tumour, and redness, and there was no flexion of thigh at the hip-joint.

Two days after I was called in the patient gradually became comatose, and remained so for five days, when she appeared to be sinking. There were no optic changes.

On the sixth day, after seeing her, when she was in a very low way, with a feeble flickering pulse which could not be counted, and a temperature of 104.2°, I decided to operate, and made an incision over the outer border of the right quadratus lumbar muscle, and then, passing a large aspirating trocar deeply, I discovered pus. On enlarging my incision I evacuated two pints of stinking green pus, which, on microscopic examination, was not found to contain any bony detritus.

I drained the abscess cavity, and in the course of the next two days quite 2 pints of similar pus were evacuated. From this time the temperature slowly fell, but fluctuated between 100° and 102° until the 10th, when it became normal and

remained so. After the evacuation of pus consciousness slowly returned, and in a few weeks the patient was perfectly well. Up till the present time (September 25th, 1898) she has had no return of the symptoms.

Remarks.—The case is interesting chiefly on account of the indefinite character of the symptoms. There was nothing in her condition at all characteristic of a psoas abscess, Pott's spine, appendicitis, or perinephric abscess, and to my mind the coma was difficult to explain, particularly as there was no clue either from the condition of the urine or from the presence of lumbar tumour, flexed thigh, etc. That the abscess was perinephric I have no doubt, although the stinking pus was suggestive of bowel connection.

Newcastle-on-Tyne. JOSEPH WILLIAM LEECH, M.D.

CASE OF PUERPERAL ECLAMPSIA.

I was asked to attend a healthy-looking primipara, aged 21, in the middle of November. On October 6th she was in the best of health and had a supper of pork. On the morning of October 7th she got up complaining of a severe headache. She was listless and heavy. About noon she was seized with severe abdominal spasms, and I was sent for immediately. On my arrival I found her in a convulsion, her tongue was half bitten through, temperature 104°. I found a breech presentation, and delivered immediately. She was soon seized again, and I administered chloroform for the next eight hours, but the convulsions still occurred every hour. I then gave her 40 grs. each of chloral and bromide by the rectum. The temperature fell at 10 P.M. to 99°, but the convulsions commenced again about 3 A.M., when the dose was repeated. At 10 A.M. the next day the temperature was 105°, and the convulsions recurred every half hour. On the third day she was in a typhoidal condition, but with the jaws clenched. On the fourth day she vomited coffee grounds continually, and died in a state of exhaustion, but not comatose. *Post-mortem* rigidity set in a few minutes after death. The urine passed immediately before the first convulsion contained a trace of albumen.

Eastfield, Faringdon H. DARWIN HEY.

A CASE OF SULPHONAL POISONING.

I WAS called at 1.40 P.M. on July 28th to see a middle-aged woman who was said to have taken "something," which turned out to be two drachms of sulphonal, about one hour previously. The following notes were taken at the time: Patient unconscious; eyes fixed; pupils dilated; conjunctival reflex gone; breath sounds inaudible even with stethoscope: heart sounds very faint, but still audible, slow, 47 to 50 per minute; pulse at wrist gone; extremities cold and livid: lips blue, as if she were suffocating, though no other symptom of such; general surface of the body cold and clammy.

I ordered hot bottles and hot blankets to the feet and legs, and gave, first, one-sixtieth of a grain strychnine hypodermically, which had no effect. Three minutes after I gave another one-sixtieth of a grain of strychnine, combined with one-tenth of a grain apomorphine. In about 40 seconds twitching of the lips and face set in; then twitching of the arms and legs. The heart sounds got stronger and quicker, and in two minutes vomiting set in. After this she was kept awake and given stimulants freely, and in about six hours the whole effects had passed off.

Rochdale. D. RICHMOND, M.B.

CASE OF LANDRY'S PARALYSIS IN A GIRL.

H. M., aged 16, had menstruated once, and on September 9th, being the day on which the catamenia were again due, she experienced tingling pains in the arms and legs. She had been in the same situation for 18 months, and was brought home on September 13th. I saw her on the following day for the first time. She was then unable to stand; the patellar reflexes were absent, and she spoke with difficulty, twisting her mouth very much when trying to articulate, the voice being guttural; there was weakness of the upper extremities, the pulse was 120, and the temperature 98°, on September 15th the pulse was 150, and the temperature 98.8°. The weakness increased and she fainted occasionally, otherwise she was quite conscious to the end. She was cheerful throughout, smiling at her ineffectual attempts to make any pressure on my hand when I saw her on the morning of September 19th, and dying a few hours after.

Southam, Warwickshire. WALTER LATTEY, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHELTENHAM GENERAL HOSPITAL.

A CASE OF SO-CALLED IDIOPATHIC TETANUS: ANTITETANUS SERUM: DEATH.

(By EDGAR TREVITHICK, M.D., Physician to the Hospital.)

THE patient, a girl 8 years old, was admitted under my care on September 22nd. On the morning of September 20th the child seems to have made some rather indefinite complaints of pain on one side of the jaw, but she attended school as usual on that day. On September 21st she complained of pain on swallowing, and was seen by a doctor, who wondered if it might not be a case of diphtheria. On that evening the practitioner who had been first called in saw her in consultation. The rigidity about the neck had somewhat increased then, and the case was thought to be perhaps one of meningitis. On the morning of September 22nd she was seen by another doctor, who sent her into hospital as a case of probable meningitis. On admission, both masseters and sternomastoids were very tense, and the flexors of the arms, extensors of the back, and upper facial muscles showed themselves ready to go into temporary contractions on very slight provocation.

On attempting to give the child some chloral by the mouth a very serious general spasm ensued, with arching of back and spasm of diaphragm, during which death nearly resulted. Chloroform was thereupon administered, and the patient was kept under its influence until her death twenty-four hours afterwards.

During this time it was noticeable that as soon as ever the narcosis was allowed to become slight, the muscles immediately showed signs of returning spasm. In addition to nasal feeding with milk, meat extract, brandy, and digitalis, three injections of antitetanus serum, 30 c.cm. in all, were given.

This remedy, however, did not come into our hands until late on the evening of September 22nd, and thus was not administered until some sixty hours after the earliest signs of the disease. Death appeared to result from heart failure. The temperature chart showed very irregular fluctuations between a maximum of 105° and a minimum of 98°. The pupils from the time of admission were very small and fixed, and remained so until the death.

Some hours before the end internal strabismus developed, probably, I thought, from over-action of internal recti rather than from any palsy of the others. Rigor mortis set in immediately after death. The body was examined six hours after death; rigor mortis was still well marked. After the most careful search I was unable to discover any superficial wound or abrasion. There had been pediculosis capitis, but the scalp showed no sores. In front of the right ankle was a small scar, but this—whatever the date of its origin—was entirely healed up and sound. No sore place was discoverable in the nose or mouth. There were no carious teeth. The tonsils and larynx were normal. A careful examination of the brain and meninges resulted in the discovery of nothing abnormal except very marked hyperæmia. The internal ears and cerebral sinus showed no signs of disease. The other organs of the body were normal.

In spite of the absence of any obvious point of entry there can be no doubt as to the nature of this case, and I say this after carefully considering the only other alternative, that of poisoning by strychnine.

A Chair of Dentistry has been established in the University of Munich, to which Dr. P. J. Berten, Extraordinary Professor in the Munich Medical Faculty, has been appointed.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Thomas Bryant, F.R.C.S., President, in the Chair.

Tuesday, October 25th, 1898.

Fibrinous or Membranous Rhinitis and its Relation to Diphtheria.

A paper on this subject by Dr. H. Lambert Lack was communicated by Dr. Allan Macfadyen. Fibrinous rhinitis, first described by Schuller in 1871, was defined as a subacute or chronic affection of the nose, characterised by a fibrinous or membranous exudation on the nasal mucous membrane. The great interest of the affection lay in its connection with diphtheria, the older observers considering the diseases quite distinct, while the more recent observers, relying on the results of bacteriological examination, claimed that fibrinous rhinitis was merely a mild manifestation of diphtheria. Cases of the disease were shown to be very common, forming no less than 2½ per cent. of all the children attending the author's hospital practice. A brief analysis was given of the symptoms presented by 36 cases of the affection. The disease was shown to be essentially one of children, and to occur most frequently in the autumn months. The chief symptoms were purely local, such as nasal obstruction and discharge, excoriation of the nostrils and upper lip, occasional epistaxis, etc.; sometimes sore throat was seen, presenting peculiar characteristics, which were described. The affection was very chronic, lasting on an average six to eight weeks or more. General symptoms were very mild, sometimes altogether absent. Many cases were not seen until very late in the disease, others probably were often overlooked even by competent observers, and some probably were never seen at all; the children not being in any way ill continued to attend school, etc., as usual. There was complete absence of all paralytic sequelæ. A brief sketch was given of nasal diphtheria, special attention being drawn to cases in which a purulent nasal discharge persisted often for many weeks after an attack of true faucial diphtheria. The symptoms of the two diseases, fibrinous rhinitis and true nasal diphtheria, were briefly contrasted. The results of bacteriological examination carried out in 33 cases were reported. The true Klebs-Loeffler bacillus was constantly present, generally in pure culture, sometimes mixed with pyogenic cocci, sarcinæ, etc. It was usually of the large variety, and its identity was proved by its morphology, by its growth on various culture media, etc. It was further shown to be of full virulence on animals, to produce virulent toxins, and to be neutralised by antitoxins. Further, it was shown to be capable of living for several months on culture media, and by its vigorous growth to crowd out other organisms if present. Finally, the surroundings of the patients were examined, all sources of diphtheria sought for, and, as far as possible, all persons with whom the patients came into contact seen and examined both clinically and bacteriologically. A previous history of diphtheria was found in connection with one case only. The disease was found to be very infectious, however; often it gave rise to itself (9 cases occurred in four families), and often to mild sore throat, twenty-five instances of which occurred in eleven families. The Klebs-Loeffler bacillus was also found in healthy throats in association with these cases. A comparative investigation showing the frequency with which the bacilli were found in healthy noses was described, and statistics of similar investigations on both healthy noses and throats and on cases of non-diphtheritic sore throat were quoted. The conclusion was arrived at that fibrinous rhinitis was a mild variety of diphtheria, the difference in the clinical manifestations apparently depending on some differences in the organisms associated with the Klebs-Loeffler bacillus. The diagnostic value of the presence of the bacillus in sore throats which did not clinically appear to be diphtheria was also discussed, and was considered to be very slight.

Dr. Allan Macfadyen complimented the author on having collected a record number of cases and on the thoroughness of his bacteriological research, which fully proved that the diphtheria bacilli were present. The presence of the Klebs-Loeffler bacillus in two diseases so distinct as membranous rhinitis and diphtheria was remarkable. It was evident that to explain this other factors must be reckoned with; these might be (1) varying virulence of the Klebs-Loeffler bacillus; (2) the resistance and condition of the tissues at the point of infection; (3) the presence of other micro-organisms. In diphtherial throats Klebs-Loeffler bacilli of very different degrees of virulence could often be obtained. Latency of the disease was a point that might require consideration, and the occurrence of catarrh might induce the local development of the disease. The coexistence of virulent streptococci might well favour the activity of the Klebs-Loeffler bacilli, especially in the throat and mouth. He referred to Dr. T. R. Hewlett's experiments showing that during convalescence true diphtheria bacilli might become transformed into pseudo-diphtheria bacilli.

Dr. T. D. Lister had examined bacteriologically the nasal cavities of 125 children at the Shadwell Children's Hospital; 69 of them had nasal discharges. The discharges were watery, purulent, and hæmorrhagic. The latter were five in number, and all showed a pure culture of Klebs-Loeffler bacilli. Of the whole number, 39 showed Klebs-Loeffler bacilli; of the 39 there were 23 with a nasal discharge. Of 19 children of about 2 years of age who had the Klebs-Loeffler bacilli 9 had a nasal discharge. Of 13 children of age of 5 years with Klebs-Loeffler bacilli 9 had a nasal discharge. He thought the presence of Klebs-Loeffler bacilli in the nose indicated that the patient had recovered from a condition in which morbid lesions had existed. Experience at Shadwell showed that the spread of a nasal discharge associated with the presence of the Klebs-Loeffler bacilli to other patients was rapid.

Dr. E. W. Goodall, after complimenting the author on his valuable paper, said that the experience of the fever hospitals of the Asylums Board showed that the Klebs-Loeffler bacilli might be present in various morbid conditions, and indeed in cases that were free from any characteristic lesion. Still he thought that the association between the Klebs-Loeffler bacillus and diphtheria was too strong to be questioned. The Klebs-Loeffler bacilli might, as the last speaker had shown, be present in cases of nasal discharge. Dr. Todd had examined 51 cases of a nasal discharge which excoriated the skin but was not associated with the presence of membrane, occurring in and after the fourth week of scarlet fever, and found the Klebs-Loeffler bacillus in all. These cases did not give rise to the spread of diphtheria; but there were other examples of the curious manner in which diphtheria might fail to infect presumably susceptible patients exposed to its influence. Diphtheria strictly limited to the nose was a mild disease, combined nasal and faucial diphtheria a severe affection. Laryngeal diphtheria alone was chiefly dangerous from obstruction, while the combined faucial and laryngeal disease was accompanied by grave constitutional symptoms. Possibly the explanation was that toxins were with difficulty absorbed either from the nose or larynx. Cases of nasal discharge after scarlet fever and associated with the presence of the Klebs-Loeffler bacillus were with difficulty cured by local applications but readily by antitoxin.

Mr. C. R. C. Lyster referred to a case of a boy sent home from school because diphtheria had broken out there, who, only having a nasal discharge, was the apparent means of infecting members of his family with fatal diphtheria.

Dr. Lack, in reply, did not entirely agree with Dr. Goodall in thinking that the absence of constitutional symptoms was due to the nose being an unfavourable site for the absorption of toxins, for in some of the cases the throat was also sore. Possibly Dr. Lister's 5 cases of hæmorrhagic discharge were really cases of membranous rhinitis, for, unless the nasal mucosa was carefully examined with a mirror, that disease could hardly be eliminated, since the membrane did not extend into the vestibule of the nose.

The Inebriates Act, 1898.—If the experience of Mr. Cluer at Worship Street Court may be taken as typical of that of other metropolitan stipendiaries, the Home Secretary will have a long return of habitual drunkards who will probably be committed to the certified inebriate reformatories to be established under the new Act. On one day Mr. Cluer informed two female and one male police-court "repeater" that if they came before him after January 1st, 1899, when the Act will come into operation, he would send them all to a reformatory for three years.

MEDICAL SOCIETY OF LONDON.

J. Kingston Fowler, M.D., Vice-President, in the Chair.

Monday, October 24th, 1898.

Four Cases of Abdominal Section for Severe Injuries without External Wound.

Mr. Marmaduke Sheild discussed the treatment of abdominal injuries not associated with external wound. He pointed out that the rules of practice were still far from clearly defined, though there were probably few modern surgeons who would now treat a severe abdominal injury on the so-called expectant plan. At the same time it was necessary to be very cautious in order to avoid running into the opposite extreme, and doing needless operations. The cases in question were, he said, sufficiently common, and the subject was of special interest to those practising in remote districts. The symptoms of ruptured viscera as the result of severe crushing violence were usually clear enough, especially when of the bladder or kidneys. There remained injuries of the stomach, intestine, liver, spleen, pancreas, mesentery, and great nerves, in which the greatest difficulty often arose in diagnosis and treatment. He regarded the persistence of collapse as a grave sign of internal injury especially if associated with vomiting and rigidity with subsequent distension of the belly and increasing quickness of the pulse, while localised pain and tenderness must not be ignored. He thought that a small median opening into the abdomen, if quickly done, was very free from risk, and when the condition of affairs had thus been ascertained, the wound could be enlarged and the conditions dealt with. Case I: A boy, aged 11, was run over by a cab. On admission, he was much collapsed, and complained of severe abdominal pain. Mr. Sheild opened the abdomen and found it distended with blood flowing from a large tear of the mesentery near its root. The rent was sewn up, and the boy made a good recovery. Case II: A boy, aged 14, had been run over three hours previously. The right thigh was fractured, but the pelvis seemed intact. The urine was clear. He had vomited, and the belly was rigid and very tender. After a few hours his condition improved, and the abdomen was opened. It was full of blood, and a large tear was found in the mesentery, severing some large vessels, which were secured. The jejunum opposite the mesenteric injury was torn right across, and the ends were trimmed and joined by a double row of silk sutures. The boy rallied somewhat, but died eight hours later. *Post mortem* a second rupture of intestine was found near the transverse duodenum. Case III. A boy, aged 16, was admitted, having been run over, with all the signs of very grave abdominal injury. He was intensely collapsed, but rallied under treatment. The relatives refused the proposal to open the abdomen on the following day, but consented that evening, when the abdomen was found full of blood coming from a large rent on the convex surface of the liver. This was stuffed with a sponge wrung out of turpentine, and the bleeding was arrested. It was obvious from the first that the case was hopeless, and he died eight hours after the operation. Case IV. A woman, aged 61, was run over, and was admitted in a state of collapse, with the signs of grave abdominal injury. The urine drawn off by catheter was slightly tinged with blood, but the bladder did not appear to be injured. The author explored the abdomen, and found an ecchymosis on the posterior surface of the bladder and nothing else. The case, however, did not do well; the abdomen became distended, vomiting was urgent, and febrile symptoms supervened. On the third day she became violently maniacal and tore out some sutures. She died on the fourth day, and *post mortem* a quantity of extravasated faecal matter was found behind the caecum with diffuse suppuration. The rent in the caecum was small and covered with lymph. In conclusion, it was pointed out that the mortality in this class of cases must always be high by reason of the gravity of the lesions for which the operation is undertaken. Such operations must be looked upon as merely failures to save life, and not as fatal in themselves. This high mortality ought not to deter them from performing them, as occasionally they might enable life to be saved otherwise doomed to speedy and certain destruction.

Mr. G. R. Turner related cases of the kind on which he had operated. The first was in 1892, that of a boy aged 12 who had been injured by a fall. Twenty-four hours later he opened the abdomen and found a very extensive twist of the ileum, in fact a traumatic volvulus which he reduced and the boy recovered. Since then he had opened the abdomen in four other cases of abdominal injury without external wound. One was rupture of the liver which he plugged, but the patient was much collapsed and died. Another case was that of a man who sustained rupture of small intestine. He stitched up the lacerations and at the same time did a radical cure for an existing hernia and the man made a perfect recovery. In a third case the collapse was such as to prevent immediate operation. When he opened the abdomen he found bleeding from a small rent on the under surface of the liver which was in process of cure. There was however an enormous extravasation of blood in the retroperitoneal space which he attributed to rupture of the kidney, but with which he did not deem it advisable to interfere. He rallied well from the operation and lived for eight days. *Post mortem* nothing could be found to account for death except the retroperitoneal extravasation in the midst of which the kidney, crushed almost beyond recognition, was found. The following week another almost identical case presented itself, but the colon was also torn across. He stitched the ends together and removed the damaged kidney and the patient made a good recovery. He admitted that in these cases it was very difficult for the surgeon to know when to hold his hand, and he admitted that some of these cases recovered under the expectant treatment in spite of formidable injuries.

Dr. Lucas Benham related a case of probable rupture of internal viscera in the neighbourhood of the caecum which recovered under appropriate medical treatment.

Mr. Wallis expressed surprise that in the case of extensive laceration of the mesentery no gangrene of the gut had resulted. He had had occasion to look up the literature of the subject and he had found that a large proportion of the cases recovered without operation. Some of them however became septic and died, and *post-mortem* examination showed that they might have been saved by operation. He recalled a case reported from Germany soon after the assassination of President Carnot in which a man was stabbed in the liver and recovered after the wound had been dealt with.

Mr. Battle discussed the conditions in which surgical intervention was advisable, but admitted that these cases were often the source of the greatest anxiety to surgeons. He had had to operate in three cases of ruptured intestine. In the first case the symptoms were very clear. In the second case peritonitis had already set in three or four days after the injury, but the general condition was good. The third patient, who was drunk, had been sent away from another hospital, no injury having been detected. He operated, but the man died a month later from subdiaphragmatic abscess. He recalled the saying of French surgeons that if not operated within fifteen hours a fatal result was inevitable. He insisted on the variable nature of the element shock, which might be well marked in comparatively trivial cases, and be almost absent in very grave injuries. One never knew in abdominal cases how soon unfavourable symptoms might appear. He asked what was the condition in the author's cases in respect of dulness on palpation.

The President asked whether in cases of lacerated intestine there was disappearance of the liver dulness as after perforation of an ulcer. He related a case in which a man with a history of chronic gastric ulcer developed this symptom, but refused operation and recovered *pari passu* with the gradual reappearance of the liver dulness.

Mr. Sheild, in reply, protested against the idea that an operation was imperative in all cases of abdominal injury. It was only when the collapse did not pass off, the belly becoming rigid and distended, that an exploratory operation was justifiable. He suggested that Dr. Benham's case was possibly one of appendicitis from injury. He urged that cases of slight abdominal injury should be put on the same footing as slight injuries of the head. He had had great difficulty in satisfying himself of the existence of dulness on percussion, and the disappearance of the liver dulness was a sign that should be regarded with great caution, for it was often simulated very closely by distended intestine.

The Advantages of Venesection in Acute Pneumonia.

Dr. Lucas Benham read notes of 19 cases of severe acute

pneumonia in which he had employed venesection with advantage. He referred to the beneficial effect of leeches in the pneumonia of young children. He also referred to other cases in which he thought the fatal result might have been averted by timely recourse to venesection. It was especially in the severe cases that venesection was of benefit, and it often converted what appeared to be a severe case into a mild one. The principal indication was the severity of the initial rigor, rapidly-increasing frequency of the pulse, and nervous disturbances. He urged that the measure should be resorted to early in the course of the disease, for it was likely to prove useless if too long delayed.

The PRESIDENT did not think that this old-established practice had been abandoned without good reason, but he admitted that in certain conditions it had a sound physiological basis, and it was probably more often resorted to now than it was twenty years ago. He thought it might be employed with advantage in cases of chronic bronchitis with emphysema associated with a dilated right heart, and he related cases in which it had appeared to afford great relief. He also alluded to the effect of repeated small bleedings in relieving the pain of aneurysm.

Dr. JOLL agreed that venesection often afforded great relief in cases of pneumonia, and said that personally he was in favour of the practice.

Dr. BENHAM, in reply, agreed that distension of the right heart was also an indication for venesection, but in bronchitis the relief was often not such as one had hoped owing to the presence of capillary bronchitis. He asserted that those who had once had recourse to venesection in the treatment of pneumonia would certainly be won over to the practice.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

H. R. SWANZY, F.R.C.S.I., President, in the Chair.

Thursday, October 20th, 1898.

GLIOMA OF THE OPTIC NERVE.

THIS paper was read by Messrs. J. F. BULLAR and C. DEVEREUX MARSHALL. The case upon which it was based was that of a woman, aged 37 years, who noticed nothing wrong until 1889, when the left eye became more prominent than natural. It continued to become more and more pushed forwards until 1895, when Mr. Bullar operated, and removed the tumour with the eyeball attached. Immediately behind the globe the optic nerve was of normal size for a distance of 15 mm. It there formed a pear-shaped swelling 50 mm. long and 20 mm. wide. A cyst-like cavity was found inside this, which contained straw-coloured fluid. On opening the interior was found to be rough and vascular, and had a fatty appearance. The tumour was encapsuled. The optic nerve was completely lost as soon as it entered the tumour, and it was not again seen at the posterior part, as the growth extended at least as far as the optic foramen, and was cut across behind. The patient did quite well, and had since got married, and was in good health. The tumour was proved by microscopic examination to have originated in the neuroglia, the authors have therefore termed it a glioma of the nerve. The eye was normal. In the literature on the subject 130 cases of growths of the optic nerve were recorded, and the results of these showed that these tumours were of slow growth, but should be classed as malignant, as they were liable to extend into the brain, although metastases had not been found in any case. The question of growths of all sorts found in the optic nerve was discussed, and although the different terms applied to them were legion, yet the authors were strongly of opinion that the majority of them would fall into three groups: (1) Those originating in the neuroglia, which should be termed "gliomata"; (2) those originating in the dural sheath, "sarcomata"; and (3) those originating in the pial sheath, "endotheliomata." Mr. Bullar added that there had been no difficulty in removing the tumour. As soon as the conjunctival sac was opened the finger passed easily into the orbit, and the tumour was easily defined; it was not necessary to clear out the orbit. The posterior section of the growth was made as close to the apex of the orbit as possible, but the tumour was cut through, so that some portion of it must have been left behind. It would have been quite easy to remove the whole of it, leaving the eye behind; but in the stretched condition of all the parts he had not thought this advisable.

The PRESIDENT remarked on the rarity of tumours of the optic nerve. He only remembered seeing one case.

Mr. TREACHER COLLINS commented on the great variety of names which had been given to this form of tumour. He thought the best classification was the anatomical one—those originating in the sheaths of the nerve and those starting in the nerve itself. The optic nerve was a band of prolongation of the brain substance, and gliomata of the optic nerve resembled those of the brain in structure rather than those of the retina.

THE TENSION OF THE EYE IN IRIDO-CYCLITIS.

This communication, which was presented by Captain H. HERBERT, I.M.S., was based on observation of 144 eyes affected with irido-cyclitis. In the majority of attacks, more especially in the milder attacks, the tension was, as in simple hyperæmia of the iris and ciliary body, reduced: the reduction lasting, as far as the evidence went, at least as long as any ciliary injection remained. In other cases a period of high tension of very variable duration came on. The high tension appeared to be due to blockage of the normal outlets from the anterior chamber, and the eyes chiefly affected were (1) those very severely attacked, with copious exudation, and (2) eyes perhaps lightly attacked but predisposed to glaucoma, as shown by shallow anterior chamber in the sound fellow eye and by more or less advanced age of the patient. In these high tension cases the anterior chamber was deepened and the pupil slightly dilated. In the most intense inflammations the plus tension rapidly gave way to a softening, which might be permanent and which indicated atrophy of the ciliary body. The mild attacks, which were little removed from primary subacute glaucoma, were of interest because of difficulties in diagnosis and in treatment. There were no grounds for attributing high tension to cyclitis as distinguished from iritis.

Mr. PRIESTLEY SMITH said that the principles enunciated by Captain Herbert were now generally accepted. There were two processes, mutually antagonistic, concerned in the regulation of tension in irido-cyclitis; one was the suppression of secretion, reducing the tension, the other was the formation of an albuminous exudation hindering filtration and raising the tension. He had been glad to hear in this paper of the value of the tonometer he had introduced; after longer experience he thought it very valuable if its limitations were recognised. He had made some experiments on tension some years ago, in which a perfectly limpid albuminous fluid obtained from a serous cavity had been injected into one eye of a cadaver and normal saline solution into the other. In the former the tension was raised, in the latter it was not raised, showing that albuminous fluids will not filter through animal membranes.

CARD SPECIMENS.

The following card specimens were shown: Mr. R. M. GUNN: Case of Retinal Disease; Mr. R. D. BATTEN: Superficial Central Choroiditis.

CLINICAL SOCIETY OF MANCHESTER.

A. HILL GRIFFITH, M.D., President, in the Chair.

Tuesday, October 18th, 1898.

THE TREATMENT OF SUMMER DIARRHŒA IN CHILDREN.

DR. ASHBY opened a debate upon this subject by saying that the annual epidemic of summer diarrhœa, with its death-roll of infant life which had been exceptionally heavy this year reminded them how ineffectual were their means for preventing as well as of curing this disease. Year after year with the advent of hot weather came a visitation of acute gastro-intestinal disease, which gave rise to a high mortality among infants during the acute stage, and left many others in a permanently damaged condition. It was the universal experience that a close, hot atmosphere maintained during the whole twenty-four hours for days together was the indirect cause of the epidemic. It was well known that the heat wave supplied favourable conditions for the increased growth and virulence of various organisms, especially those liable to find their way into commercial cow's milk. It was tolerably certain that not one special bacillus but many were capable by their growth of forming toxins of a highly dele-

terious character. Having found entrance into the alimentary canal by means of milk or other food, the formation of toxins or toxalbumins quickly followed, and these, being absorbed into the blood, gave rise to fever, depression of the heart, suppression of urine, and drowsiness, and affected all the tissues of the body. Moreover, the bacteria in the alimentary canal might penetrate into the blood vessels and give rise to inflammations in other organs, such as the lungs and meninges of the brain. Locally the toxalbumins were apt to give rise to an enteritis chiefly affecting the large bowel and lower end of the ileum, the reason doubtless being that in these parts the toxalbumins were longer in contact with the lining membrane of the bowel than they were in the upper part of the alimentary tract. Among the most important means for preventing these epidemics was an improved condition of things as regards our milk supply. A greater care of the health and cleanliness of the cows and byres, a rapid cooling of the milk to a temperature of 40° F., and maintenance of this temperature during the conveyance of the milk from the cow to the consumer were amongst the most important measures of prophylaxis. The first indication for treatment was the evacuation of the contents of the stomach and alimentary canal. The vomiting which usually occurred was doubtless salutary, and might be assisted by means of warm water if the child would take it, or, still better, the stomach might be washed out. Stomach washing was urgently called for in cases where there was no vomiting and much collapse. Calomel was the best evacuant drug; if there was no vomiting it should be given in ½-grain or 1-grain doses, and repeated once. If the vomiting was troublesome doses of one-fifth to one-tenth of a grain should be given half-hourly. All milk must be stopped, and barley water, white of egg in sugar water, chicken tea, or whey given in small quantities at a time. Diluted brandy should be given if there was any appearance of heart failure. Very many drugs had been used, and recently drugs that were supposed to disinfect the alimentary canal had been much in vogue. That they were disappointing most would admit. Bismuth nitrate in large doses—5 to 15 grains every two or three hours—was as useful as any. Opium had fallen to some extent into disrepute in the treatment of infantile diarrhœa, and undeservedly so. The griping and colic caused by the enteritis could certainly be soothed by small doses of opiates, and the excessive drain on the system checked. Enemas of starch and opium or ½-grain of Dover's powder repeated every hour or two might safely be given within forty-eight hours of the onset of the attack to infants of six months or a year old, provided there was no marked drowsiness or contraction of the pupils. Washing out the large bowel by enemas of starch and boracic acid by means of a soft rubber catheter attached to a ball syringe or funnel was certainly useful; 20 to 30 ozs. might be injected and allowed to escape by the side of the catheter. In this way the fæcal matters and toxins might be removed and the irritable bowel soothed.

Dr. W. E. Fothergill stated that in hospital practice he had found all varieties of feeding bottles unsatisfactory, and had therefore discarded them entirely in favour of spoon feeding.

Dr. J. Westmorland, who had resided for two years in Southern California, referred to the fact that diarrhœa was not so rife in that country as it was here, although the temperature was much higher. He attributed this to the milk and fresh meat being cooled at once on ice, and afterwards being constantly kept at a low temperature until required for use.

Dr. P. R. Cooper alluded to some bacteriological observations which he had made on summer diarrhœa in rabbits, which disease he had noticed was coincident with an enormous increase in the number of "resident" bacteria in the intestines. He suggested that the summer diarrhœa of children was accompanied by an increased proliferation of the normally resident microbes, which at the same time became pathologically virulent. This would explain the occasional occurrence of this disease in breast-fed children, although admittedly the majority of cases were caused by fresh invasions of organisms introduced with fermenting and unsuitable food. He was opposed to the use of feeding bottles. He had tried most of the so-called intestinal antiseptics with disappointing results, but had had better success with turpentine enemas in certain cases.

Dr. J. Price Williams thought that little could be done to reduce the mortality from infantile diarrhœa, unless the health authorities would issue, early in the summer, instructions to the public as to the precautions to be taken against the disease and the importance of obtaining medical advice at the very onset of the attack.

Dr. Wilkinson (Oldham) considered that the temperature of the soil had much more to do with this disease than the temperature of the air. He preferred the boat-shaped bottle to spoon feeding, and thought that sterilisation of the milk was the best preventive. He recommended that in the very early stage of the disease nothing should be given for a few hours except sips of tepid water, and that milk should be altogether avoided.

Dr. Arnold Lea had adopted in some cases of collapse subcutaneous injection of saline fluid under the skin of the abdomen or back. This had always caused marked improvement, and had been the means of saving some cases which would otherwise prove fatal, but, unfortunately, the good effects were in many cases only temporary.

Dr. Dulberg, in certain advanced cases, had had very good results from the use of small doses of opium in a little Parrish's food, and from feeding with Mellin's food in very small quantities at a time.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Vincent Jackson, F.R.C.S.Edin., President, in the Chair.

Thursday, October 13th, 1898.

Cyst of Parovarium.

Mr. Lawson Tait showed a cyst of the parovarium which he had removed from a patient two days before. The specimen was in itself common enough to deserve but little notice, as it was the ordinary cyst which could be easily enucleated from its nest between the folds of the broad ligament. In fact, it would always be possible to remove such cysts without opening the peritoneum at all. The present specimen illustrated, however, the occasional exception to Mr. Tait's teaching on the subject, that in the removal of such tumours the ovary and tube should be left. He had recently said that such a sound principle of truly conservative surgery had not a constant success, and the present was an instance. The exclusion of the ovary from the ligature at the time of the operation was perfectly easy, but the tube was found to have been stretched over the tumour to such an extent as to increase its length to nearly 9 inches, and its lumen so that it admitted a No. 12 catheter. To have preserved the tube under these circumstances would have materially complicated the operation, and have left a long raw edge with a proclivity towards forming adhesions which might have been most dangerous—had it, for instance, coiled round, or even partially round, a piece of small intestine. The subsequent contraction would have involved inevitably strangulation of the gut. Even had flaps of peritoneum been cut off with it and united round the tube, the return of a 9-inch cord of this kind amongst the intestines could not be regarded as a wise proceeding. The ovary had been preserved without the tube, a useless gland without its duct, and the principle of conservative surgery as here applied to the uterine appendages had been defeated. The alternative would have been radically bad surgery, one of the points which would be discussed in a paper to be submitted to the Branch later on in the session.

Carcinoma of Splenic Flexure of Colon.

Mr. Jordan Lloyd showed a specimen of carcinoma involving the splenic flexure and part of the transverse and descending colons successfully removed by operation from a man aged 45, the corresponding portion of the great omentum being taken away with the growth. End-to-end anastomosis by suture was secured without the aid of buttons of any kind. The patient made a satisfactory recovery. Symptoms of diarrhœa, paroxysmal crampy pains, flesh loss, and increasing anæmia had been present for more than a year. Since the operation the bowels had acted normally, and the general health had improved.

Intussusception occurring Twice in the same Patient.

Mr. Haslam showed a child, aged 6 years, on whom he had

operated on two different occasions for intussusception. She was admitted in March, 1897, with symptoms of this condition, and on opening the abdomen twenty hours after their onset a well-marked intussusception of the ileo-cæcal variety was found and reduced. In July, 1898, she was again attacked with abdominal pain, tenderness, and vomiting, and though the symptoms were not so urgent or so clearly indicative of the condition as on the previous occasion, the presence of an elongated swelling, detected by deep pressure on the right side of the abdomen, made the diagnosis clear. On opening the abdomen through the old cicatrix an intussusception of the enteric variety, about 5 inches in length, was found and reduced without much difficulty. In the interval between the operations the patient had several attacks of abdominal pain, sometimes associated with vomiting, probably due to irregular peristaltic action of the bowels.

PAPERS.

The following papers were also read: Dr. CARTER: On the Investigation and Management of Chronic Disease.—Dr. SHORT: On the Treatment of Arthritis by Means of Hot-air Baths.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

GEORGE S. MIDDLETON, M.D., President, in the Chair.

Friday, October 21st, 1898.

CASES OF NERVOUS DISEASE.

DR. W. K. HUNTER demonstrated two cases: (1) A young patient with Hemiplegia associated with Diphtherial Paralysis. The child had had diphtheria, had developed some peripheral neuritis, and then suddenly hemiplegia supervened, involving the face as well as arms and legs. There was no cardiac disease. Dr. Hunter regarded the hemiplegia as of central origin, and probably hæmorrhagic. (2) A boy, aged 14, suffering from *Maladie des Tics*. The patient after a fright developed the typical jerky movements of this affection, movements which were seen to affect the facial muscles, even the eyeballs and tongue, also the muscles of the neck, shoulder, and arms, and were sometimes communicated to the trunk. Voice spasm was present. There were no motor or sensory disturbances, and the reflexes were normal. The mental condition of the patient was good. The family history was bad.

Dr. JACK spoke of the differential diagnosis between such a case as this and habit spasm.

The PRESIDENT spoke of the first of these cases as quite unusual, and regarded the facial paralysis, which involved only the lower segment, as a very important point in the diagnosis, with which he was disposed to agree.

ERYTHROMELALGIA.

Dr. CARSLAW showed a case of erythromelalgia. The patient was a young woman of 24, who had been admitted to hospital suffering from anæmia and dyspepsia, and when convalescent had begun to complain of burning pains in her legs. This pain was worse when patient was on her feet, was most marked just above the ankles, was associated with increase of the surface temperature, with dusky redness, and with a thickening of the tissues of the leg which did not pit on pressure. In the lower limbs the affection had extended to about the middle of the thighs, and latterly the patient had had the same feeling in the hands and forearms. The patient had no disturbance of motor or sensory functions. The reflexes were normal, and there was no ataxia. There were no trophic changes, and there had been no definite hysterical manifestations.

Dr. LOVE agreed with the diagnosis, and spoke of the pathology of the disease as suggested by Weir-Mitchell and others. He mentioned that he had seen the same condition present in locomotor ataxia and in disseminated sclerosis, and was inclined to regard the condition as of spinal origin.

PECULIAR INFECTIOUS DISEASE IN LASCARS.

Dr. R. S. THOMSON gave an account of an infectious disease which had been observed in Lascars, having relations to variola and varicella, but differing from both in certain points. A number of Lascars, in all sixteen, had been admitted to the Glasgow Small-pox Hospital, but it was feared that while their illness simulated small-pox there were some remarkable distinctions, especially in regard to the nature of the eruption, the distribution of the eruption, and the course of the fever. Moreover, it was found that all these patients were successfully revaccinated during the attack or during convalescence, except two or three who had had small-pox before. The disease also presented some striking points of difference from chicken-pox, and was regarded by Dr. Thomson as a distinct disease, and probably its presence in India explained the apparent failure of vaccination in certain cases there and the occurrence of successful vaccination after a supposed attack of small-pox.

Dr. BROWNLIE corroborated Dr. Thomson's account of this epidemic, and referred to the occurrence of a disease amongst the Kaffirs which had a close connection with both small-pox and chicken-pox, but which might be distinct from both.

LIVERPOOL MEDICAL INSTITUTION.

W. MACFIE CAMPBELL, M.D., President, in the Chair.

Thursday, October 20th, 1898.

CASE.

DR. CATON showed a patient, a young man, who had not been abroad, suffering from advanced elephantiasis of both legs and feet.

AN ADVERTISING PAMPHLET.

Dr. ABRAM drew attention to an advertisement pamphlet issued broadcast by the patentees of a new antiseptic. The pamphlet purported to be a reprint of a paper written by Drs. Abram and Hill, and published in the BRITISH MEDICAL JOURNAL. It had been reprinted without their permission. Portions, however, had been excised and other material added in such a way as to appear as a continuation of the paper.

XERODERMIA PIGMENTOSA.

Dr. BARENDT read notes of a case of xerodermia pigmentosa, the first recorded in Liverpool. A. B., male, born March 10th, 1896, was seen on July 11th of this year. The skin of the face, nape, sides of neck, back of hands and wrists, and of both forearms presented a wrinkled, pergamentous furfuraceous appearance, studded with muddy brown spots looking like freckles. The naso-labial folds showed three pigmented nodules, like small shot, on the left, and one on the right side, and in addition one on the right half of the nose. The derma was freely movable, and in no way impeded facial expression; diffuse redness was present. The skin elsewhere was healthy, a striking contrast to the affected regions. There was no history of parental syphilis, two elder children being quite healthy. The disease began in the summer of 1897, the skin being quite healthy at birth. Applications of burnt amber (℥ij to ℥j adipis benzoati) for the past two months had no influence over the disease. The author reviewed the knowledge and literature of the disease. He proposed exposing one forearm to the influence of *x*-rays, and noting the result. There was etiological evidence that the sun's rays were connected with the evolution of this rare disease.

DRS. LESLIE ROBERTS and G. STOPFORD TAYLOR made remarks.

LUPUS TREATED BY *x* RAYS.

Dr. C. THURSTAN HOLLAND showed a case of lupus affecting the left side of the face in a boy 16 years of age treated by the *x* rays. Eighteen exposures each of 15 minutes extending over a period of two months were given. The result was that the lupus, an ulcerated patch of five years' duration and of large area, entirely healed. It had previously been subjected to scraping and other treatments. At the present time, three months after the cessation of the treatment, the scar was perfectly healthy.

Dr. LESLIE ROBERTS was much impressed by the change which had occurred under the influence of the Roentgen rays. There were not a few observations on record to show that lupus and other forms of cutaneous tuberculosis were favourably influenced by the active solar rays, and it was conceivable that the *x* rays acted in a similar manner. He would, however, urge caution in the treatment, since acute ulcerative dermatitis had been caused by the rays.

Dr. STOPFORD TAYLOR had tried *x* rays in 2 cases of deeply-infiltrated lupus of the whole of the face without any benefit, and in another case of lupus of the right cheek and nose, in which there was a corneal ulcer, much inflammation of the eye was set up after one exposure. He thought lupus ulcers

were the most suitable cases for this method of treatment. Certainly the result in the case shown was most excellent, but much local treatment by excision and caustics had previously been employed.

Drs. Carter, Barendt, Given, and the President having spoken, Dr. Holland in reply said he thought the fear of dermatitis being caused was much exaggerated. He had personally used the *x* rays for different purposes, and with varying exposures from a few seconds to an hour, in 700 cases, and had not seen any bad results.

Immunity after Excision of Malignant Disease.

Mr. F. T. Paul read notes of 2 cases. In 1893 a case of extensive epithelioma of the tongue, floor of mouth, right fauces and glands on both sides was operated upon. The lower jaw was split and the entire tongue was removed down to the hyoid bone, with the whole of the floor of the mouth, the submaxillary glands, the hyoid muscles, and the extension on the right tonsil. The patient made a rapid recovery. Six weeks later the infected carotid glands were removed. From that time until recently he had been hard at work for his family and his circumstances had never been too flourishing. Hard work and hard fare offered, in Mr. Paul's opinion, the best, probably the only, chance of long life after operation. Recently he had an extension of the disease in the tissues that formed the floor of the mouth. This again infected glands on both sides of the neck. These were recently removed. The patient was shown. The second case of a woman, aged 50, had her breast and axillary glands removed for cancer in 1886. She was now quite well.

Mr. Mitchell Banks observed that since no successful treatment of cancer had as yet been found, they were bound to go on improving the operative proceedings intended for its removal until a happier time should come. Meanwhile the great point was that surgeons should exercise a sound judgment upon the cases to be subjected to operation, for after all operations for cancer, *quâ* operations, were simply pieces of cutting and tying and cutting and tying for as long as the patient's strength would hold out. After some practice anybody could do these things. If there was a fair prospect of an apparently complete removal of a cancer with a zone of apparently sound tissue along with it, he had no hesitation in pushing an operation for this purpose to its fullest length. But when severe operations could obviously end only in an incomplete removal of the disease, he thought this was discrediting surgery. He could not, for instance, approve of such an operation as amputation at the shoulder-joint for cancer of the breast. He believed that such proceedings prejudiced useful operations in the eyes of the public. The knowledge of such predestined failures deterred many from coming for surgical aid in the early stages of malignant disease, when surgery had almost its only chance of permanent cure.

Dr. Imlach said it had taken three years to find an answer to Dr. Davies's paper against cancer surgery. These two cases, although only one of them was now free from recurrence, were still living, and this was encouraging. But great surgeons, as Sir Benjamin Brodie and Sir James Paget, after a lifelong experience of cancer surgery, always recanted their early belief in it at the end of their career.

Dr. Alexander and Mr. Rushton Parker spoke.

Traumatic Epilepsy Treated by Trephining.

Dr. Nathan Raw showed a man, aged 32, whom he had trephined, removing nearly the whole of the right frontal bone for traumatic epilepsy, which had passed into the condition of status epilepticus. The man fell ten months ago on his head, and after a long illness recovered and returned to his work. Seven weeks ago he developed epileptic fits, and when admitted to Mill Road Infirmary was unconscious. He had twenty-one fits in one day, and then became comatose. The scalp was reflected downwards, and an extensive depressed fracture of the frontal bone with firmly adherent dura mater found. He made an uninterrupted recovery, and was discharged six weeks after operation, having had no more fits.

Pneumonia.

Dr. Abram read notes of three cases of pneumonia. In the first case a young athletic man, aged 26, had gangrene of the lung. The case ended in recovery. The second patient, a man aged 51, maniacal delirium was present. The administration of a drachm of tincture of digitalis, followed six hours later by 2 drachms, checked the delirium, and he recovered. The third case ran a long course, a feature due to extension of the inflammation to the upper lobe, followed by a pure pneumococcal empyema. Recovery took place after opening the chest, a practice Dr. Abram held to be best in pneumococcal cases, as it promoted the disappearance of the fibrinous masses met with in such cases.

Treatment of Intussusception in Young Children.

Mr. R. W. Murray read a note upon this subject. He mentioned the high mortality in this affection, and after drawing attention to the uncertainty and dangers of rectal injections, strongly advocated primary laparotomy. Several cases which had been under his care were referred to, by way of illustration.

Mr. Hawkins-Ambler had no idea the results of primary laparotomy were so favourable as described. The chief dangers arose from delay in recommending operation, and from surgeons attempting too much. He mentioned a case where an enterotomy was performed with the ensheathing gut, and the gangrenous intussusceptum removed.

Mr. Puzey observed that there were cases in which hydraulic pressure was obviously called for, and instanced a case where, in a child aged 5 years, he successfully reduced a large intussusceptum, which protruded out by the anus. The child was under chloroform an hour and a half. For several days afterwards small doses of morphine were administered, and the child kept practically without food. The child recovered and was seen a year afterwards fat and well.

Dr. A. C. E. Harris strongly advocated operation, and believed success in these cases was in direct proportion to the time occupied in the operation. Early and rapid operation made for success.

The President, Drs. Imlach, Barr, Rushton Parker, and Armstrong spoke.

HARVEIAN SOCIETY OF LONDON.

Friday, October 21st, 1898.

James F. Goodhart, M.D., President, in the Chair.

Pulmonary Osteo-arthropathy.

Dr. Robert Maguire showed two cases of pulmonary osteo-arthropathy from the Brompton Hospital, one under the care of Dr. Kingston Fowler, the other under himself. In each there was great clubbing of the fingers and toes, and some cyanosis of the nails. The wrist, knee, and ankle joints were swollen, and the ends of the bones constituting them enlarged, while in one case there was considerable recent effusion into the knee and wrist joints. The swelling of the joints was subject to variations, acute exacerbations, being accompanied by pain and fever. There was no enlargement of the cranial bones. Dr. Maguire commented upon the views which had been put forward to explain this condition: (1) That the joint affection was tuberculous, but while one of his patients had tuberculosis of the lungs, the other had only bronchiectasis; (2) that it was syphilitic, but neither of his patients gave a history of syphilis; (3) that it was due to absorption of septic matter from the lungs, but one of his patients had no septic discharge from the lungs; (4) that it had no connection with the lung trouble, but in one of his patients the access of joint trouble always went *pari passu* with extension of the lung condition. Dr. Maguire thought that some of these explanations were satisfactory, and that it was useless to attempt to formulate any theory of the disease until we knew more of the facts of its pathology. It would be better for the present to group it with the arthropathies of locomotor ataxy and of uterine disorder (Dr. Ord's dystrophies), and also with a similar affection occurring in psoriasis, observed by Mr. Malcolm Morris.

The President alluded to the acute arthritis which sometimes complicated phthisis and was usually regarded as rheumatic. He asked whether the joint conditions in pulmonary osteo-arthropathy might not be due to similar but chronic forms of arthritis. He drew attention to the analogy between acromegaly and pulmonary osteo-arthropathy, and asked whether changes in the pituitary body had been found in the latter affection.

Dr. Gow expressed surprise at the statement that the disease was so rare. He inquired whether the unilateral clubbing observed in cases of one-sided chest lesions, such as collapse of the lung from old empyema, was of the same nature as the cases exhibited.

CONGENITAL HEART DISEASE.

Dr. MAGUIRE showed a case of congenital heart disease, and made remarks on the varieties of such malformations.

Dr. LESLIE THORNE THORNE asked if Dr. Maguire would kindly explain his reasons for diagnosing previous intra-uterine inflammation in cases where the systolic murmur was conducted along a line extending from the second left costal cartilage upwards and outwards towards the left clavicular region, and congenital malformation where the murmur was not so conducted.

Dr. MAGUIRE replied.

MYOPATHY.

Dr. LEONARD GUTHRIE showed (for Dr. JAMES TAYLOR) a boy aged 7½, suffering from the congenital form of this disease. His parents were healthy. The patient was the youngest of four, of whom the eldest only was alive, aged 12½. The others died shortly after birth. The patient was a full term child. He could not walk until he was 5, and could never walk more than a few steps. His legs had not become thinner lately, but his arms had wasted. He could never use a knife and fork. He was mentally bright. There was no facial affection. Special senses and sensation, heart, lungs, and sphincters were normal. Movements of head and neck were normal. There was no local enlargement of the arm muscles, but all were small. The middle and lower parts of the trapezii were wasted, the upper parts normal. The supraspinous and infraspinous fossæ were flattened on both sides. There was complete atrophy of both pectorales majores, except a few of the lowest fibres on the left side. The serrati magni were small on both sides; the latissimi seemed absent on both sides, the diaphragm and intercostals seemed normal, the abdominal muscles fair, and the spinal muscles weak. The legs were very weak. The patient could carry out all movements as he lay in bed, but very feebly. He could walk only a few steps; the leg muscles were all very small; the knee-jerks were absent.

ENLARGEMENT OF SPLEEN.

Dr. A. P. LUFF showed a case of great enlargement of the spleen, due to hyperplasia and fibrosis. The patient, a woman aged 53, was first admitted into St. Mary's Hospital in June, 1896, when the spleen reached on the left side to the left anterior superior spine of the ilium, and on the right side 1 inch to the right of the umbilicus. Since then it had gradually enlarged until at the present time it reached from 2 to 3 inches to the right of the umbilicus, and downwards to the brim of the pelvis. For the past two and a-half years the red blood corpuscles had averaged from 2,700,000 to 3,540,000 per hæmic unit, while the proportion of white corpuscles to red had throughout been normal. There was no history of ague, malaria, or syphilis. The liver and lymphatic glands generally were normal.

MALIGNANT DISEASE OF THE ORBIT.

Mr. STANSFIELD COLLIER showed a man, aged 73, who, after recovering from prostatectomy, was suddenly seized with pain in the left eye accompanied by proptosis. The symptoms subsided but again recurred, and at the present time there was considerable protrusion of the left eyeball, together with the presence of a firm tender swelling in the left temporal region. The fundus oculi was normal. His mental condition had recently deteriorated, but otherwise there were no definite cerebral symptoms. Mr. Collier believed that the swelling in the temporal region was malignant, and that the sudden onset of symptoms was occasioned by hæmorrhage into a new growth.

The PRESIDENT agreed that a new growth probably existed in Mr. Collier's patient. He alluded to the case of a public speaker who was suddenly attacked by pain in the head, with marked proptosis, whilst in the act of addressing a meeting. A loud *bruit* was audible all over the skull, and he (the President) believed that an arterio-venous aneurysm had formed in the neighbourhood of the cavernous sinus.

CONGENITAL DISLOCATION OF PATELLA.

Mr. COLLIER showed a young girl suffering from congenital dislocation of the patella.

Mr. JACKSON CLARKE discussed the case, and Mr. COLLIER replied.

SOCIETY OF ANÆSTHETISTS.—The sixth annual meeting of this Society was held at the Society's rooms, Hanover Square, W., on October 20th. The chair was taken by the President, Dr. DUDLEY W. BUXTON. The reports of the Council and of the Treasurer, which showed the Society to be flourishing, with an increase of members and a good financial position, were read and received. The following were elected officers and Council for the ensuing year upon the nomination of the outgoing Council:—*President:* Dr. Dudley W. Buxton. *Treasurer:* Mr. George Eastes. *Elected Members of Council:* Mr. Edgar Willett, Mr. Edwin F. White, Mr. Sydney Rumboll (Leeds). *Secretaries:* Mr. R. Turle Bakewell, Mr. E. H. G. Morris. *Auditors:* Dr. R. J. Probyn-Williams, Mr. William J. McCardie (Birmingham). Votes of thanks to the late officers and members of Council, especially to Mr. Joseph White (late Treasurer) and Mr. E. A. Starling, M.B. (late Senior Hon. Secretary), were very cordially voted. The annual dinner subsequently took place at Limmer's Hotel, and Dr. Dudley Buxton presided, being supported by Dr. B. Howard, Professor Schäfer, F.R.S., Dr. A. Waller, F.R.S., Mr. Morton Smale, Mr. P. S. Spokes, Mr. Howard Marsh, Mr. Pearce Gould, Mrs. Garrett Anderson and many other medical ladies, Dr. Krakowsky (Johannesburg), Lieutenant-Colonel Keith, and about 60 members and their friends. The CHAIRMAN, in proposing the toast of "The Queen," alluded to the introduction of ether and chloroform during Her Majesty's reign. Mr. HOWARD MARSH, who proposed "The Society of Anæsthetists," said that a good anæsthetist, though a specialist in one sense must be a good physiologist and pathologist, and must have a good knowledge of clinical medicine. Several anæsthetists, too, were admirable surgeons, and many a good practical suggestion in the treatment of a case had come from them.—Dr. BUXTON, in reply, said that two anæsthetists were unnecessary at a single operation, so that anæsthetists rarely saw one another at work, whereas at the meetings of their Society they could impart their "tips" and discuss their failures. He hoped they would be able to carry on a yearly volume of *Transactions* similar to that just started, as these volumes would focus a large amount of information not to be found elsewhere.—Mr. EASTES proposed "The Visitors," whom he welcomed. He alluded to the paper on Dosage in Anæsthetics by Dr. A. Waller, and the speech made by Professor Schäfer at one of the ordinary meetings of last session as specimens of the good work done by the Society, and those gentlemen were amongst their visitors that night.—Professor SCHÄFER, in returning thanks for the visitors, said that all anæsthetists must be physiologists but that all physiologists were not anæsthetists. An ideal Society was one that dined whenever it met and had no "*Transactions*."—Dr. SILK proposed the toast of "The Chairman," which was drunk with musical honours.—Dr. BUXTON, in reply, said that he believed the work of the Society would be productive of much benefit beyond these islands. Just recently an American journalist had advocated the formation of a special band of anæsthetists in the United States.—During the evening a selection of songs was rendered by Mr. H. Schartau and Miss K. Cherry, and Mr. Walter Churcher gave some humorous sketches, which met with great approval.

CHELSEA CLINICAL SOCIETY.—At a meeting on October 18th, Mr. J. FOSTER PALMER, President, in the chair, the PRESIDENT delivered an inaugural address on Certain Undefined Factors in the Spread of Disease. The factors referred to were (1) pathogenetic evolution, (2) abnormal objective receptivity, and (3) retrograde metamorphosis. Each of these factors of disease was dealt with separately in its relation (1) to the history of former epidemics, (2) to clinical experience and (3) to bacteriological research. The conclusions arrived at were: (1) That, however tempting evolution may be as a pathological theory, there is not, in the present state of our knowledge, any trustworthy evidence to show that it is in

any sense a general law of Nature among the pathogenic micro-organisms. (2) That receptivity is essentially an abnormal condition, brought about either by some external insanitary influence, or by some personal defect, either hereditary or acquired; and that an ideally healthy person is proof against the toxic effects of pathogenic microbes. (3) That decomposing animal and vegetable matter forms the best possible nidus for the growth and cultivation of the pathogenic bacteria, and that it is only the presence in the air of the products of retrograde metamorphosis which makes infection possible. Drs. Morris, Ball, Gibbes, Nitch-Smith, Penny, and Vinrace also spoke, and a vote of thanks was passed to the President for his address.—On behalf of Dr. Marsh, who was absent, the President, seconded by Dr. Penny, moved that a letter of condolence be sent to the family of Dr. Fallows, a member of the Society, who was lost on the Atlantic liner *Mohegan*. The motion was carried.—A resolution was also passed in reference to Dr. Cooper, the Secretary, to whom the Society owed so much, and who was then absent on his wedding tour.

Sheffield Medico-Chirurgical Society.—The opening meeting of the session was held on Thursday, October 13th, when the President, Dr. Alfred Robinson (Rotherham), delivered an address on the Vaccination Bill. Having referred to the figures presented by the Royal Commission to Parliament, which compelled the Government to take action, he said three out of four of its recommendations were embodied in the Bill, the only one omitted being the State payment of private practitioners for successful vaccination. The gains of the Bill were stated to be (1) age limit, extended from three to six months; (2) operation to be performed by the public vaccinator at the child's house if required; (3) the use of glycerinated calf-lymph encouraged; (4) the conscientious objector allowed his liberty; (5) an objector cannot be convicted more than twice; (6) recalcitrants to be treated as first-class misdemeanants. Going on to the omissions of the Bill, Dr. Robinson pointed out that no lists were prepared for the public vaccinator after the age of 4 years; it laid no duty on School Boards in connection with children entering a school life. Finally, when children reached the age of 12 years, at which time revaccination ought to be performed, when their parents were still less likely to object, the Bill made no provision for any action being taken as regards either vaccination or penalty, or declaration of conscientious objection. The President regretted the indefiniteness of the term "conscientious objection," and expressed the hope that in any future Bill sanitary authorities would have charge of vaccinal administration; also that prosecutions should be conducted by public prosecutors. In conclusion he pointed out that the Bill was an admitted compromise, though on the right lines. It had done something on the one hand to remove legitimate grievances and plausible objections raised to the practice of vaccination; whilst, on the other hand, it sought to provide facilities of vaccination which had never been enjoyed before. The line taken with regard to compulsion was again that of least resistance. At present about one-third of the children in England and Wales escaped vaccination, but with an amended Act in which the gravest objections were removed much of the opposition might die out. The Act was of a temporary character, it being understood that in its present form it was to remain law for five years only. Dr. Robinson's opinion was that the medical profession would not rest satisfied with the law as it stood; professional ethical traditions had always been to protect every life against even the life's own ignorance or self-will; it disavowed the selfish maxim, "Am I my brother's keeper?"

Oxford Medical Society.—The first meeting of the session was held on October 21st in the Radcliffe Infirmary, Mr. H. P. Symonds, President, in the chair. The minutes and financial report were read by the Secretary, Dr. Duigan, and approved. The following list of the officers elected at the annual meeting in June was read out: *President:* H. P. Symonds. *Vice-Presidents:* Professor Gotch, Dr. Brooks. *Secretary and Treasurer:* Dr. Duigan. *Council:* Dr. Collier, Dr. Ritchie, Dr. Farmer, Dr. Ramsden, Dr. Elsmore, Surgeon-General Bradshaw, C.B.—Mr. Sankey read notes of a case of apparent Rupture of an Ovarian Cyst, and showed the patient, a nurse, aged 65, single. She first noticed swelling of the abdomen in June, 1897. In September, 1898, she had a fall, and had severe pain in the abdomen after; and coming now under observation, she was found to have an enormous distension of the abdomen (50 inches in circumference); there was dulness on percussion in front, with fluctuation resonance in the flanks. Ovarian cyst was diagnosed, but there was evidence rather of bruising than of rupture of the cyst wall. Operation was determined upon, but four days after the accident the abdomen began to diminish in size, and there was a large quantity of urine passed. The circumference was now only 36 inches. A discussion followed, in which other cases of rupture of thin-walled parovarian cysts were mentioned, where absorption of the fluid by the peritoneum had occurred without exciting inflammation. One of these cases of rupture was associated with the passing of large quantities of urine.—Dr. Collier showed a case of Sarcoma involving the sternum and ribs. Heart and lungs were healthy. The treatment by the method of injection was discussed.—Dr. Rose exhibited a case presenting some features of Insular Sclerosis. A porter, aged 33, first noticed weakness of the legs and difficulty in walking eight years ago. Five years ago there was noticed loss of vision in the centre of both visual fields. He was a fairly heavy smoker. No history of syphilis or alcohol. The knee-jerks were exaggerated and there was ankle clonus. No loss of sensation. Gait at times ataxic. Man very loquacious, but speech normal. Slight tremor of the lips on bringing the facial muscles into play. No delusions. Mr. Doyne, who had examined the eyes, said there was a central scotoma of both retinæ, but no peripheral scotomata and no peripheral loss of colour vision. It differed from tobacco amblyopia. Pupils reacted to light and accommodation. He regarded it as a case of insular sclerosis, such cases being sometimes indistinguishable from commencing general paralysis. Dr. Elsmore suggested that the general symptoms were more in accordance with ataxic paraplegia.—The President showed (1) a Case of Bronchocele, where tracheotomy had to be performed for alarming dyspnœa during the removal of the gland; (2) a Case of Congenital Dislocation of both Hip-joints, contrasting it with a case of extreme rachitic deformity of the femora.

REVIEWS.

Textbook of Physiology. Edited by E. A. Schäfer, LL.D., F.R.S. Vol. I. Edinburgh and London: Young J. Pentland. 1898. (Roy. 8vo, pp. 1056, 92 figures and 3 coloured plates. 31s. 6d.)

The appearance of this work marks an important step in the history of physiological teaching in this country. Teachers of physiology have long felt the need of a work to which they could refer advanced students for a fuller account of any particular branch of the subject than is to be obtained in the ordinary manuals. This book aims at supplying that need, and takes the form of a series of articles, each written by an author who has made the subject dealt with a particular object of study, and has been engaged in original work upon it. Throughout the work references are given, so that the reader not only has the advantage of the matured opinion of an expert, but also the opportunity of verifying the grounds for his conclusions by reference to the original articles quoted, if he so desire. For this reason, the book will be of great value to practitioners of medicine who desire information as to the most recent results and opinions upon any point in physiology which may arise in practice. The want of such a book as this has distinctly stood in the way of the advance of scientific medicine in this country. The physician or surgeon who aspires to be anything more than an empiric knows very well that his art must rest on a correct physiology as the only sure basis. But he is often deterred from appealing to the writings of physiologists by two things. The first is that the labour of searching for the most recent facts through scattered periodicals and transactions is very considerable, and makes serious calls on the leisure of busy men, who are seldom free at the

hours when libraries are open. The second is that when a paper on the desired subject is found, he may well feel hesitation in arriving at the conclusion that the views expressed therein have stood the test of criticism by expert physiologists. The work which Professor SCHÄFER is now editing will go a long way to meet his needs, by presenting him with what is the view generally accepted by physiologists at the present day at least. So far as we have been able to test the several articles, they do not, as a rule, assume in the reader an acquaintance with modern physiology greater than that which every practitioner ought to have, and nobody need be deterred from reading it or from keeping it as a work of reference, by the fear that the writers treat their subjects in too technical a manner.

In this first volume there are sixteen articles dealing with the more chemical side of physiology. The first two sections upon the chemical constituents of the body and food, and the chemistry of the tissues and organs, respectively, are written by Professor W. D. Halliburton, and give a full though condensed account of all the most recent work upon this subject. They give an adequate impression of the present state of our knowledge in this branch of work, and of the lines upon which it is being extended.

These two articles are followed by one upon the blood by Professor Schäfer which gives a most interesting and comprehensive account of the subject in the relatively short space of 44 pages. This is followed by one upon hæmoglobin and its compounds by Dr. Arthur Gamgee, which is a complete and most interesting article. Among the points which especially characterise it are a good account of the spectrophotometer and its uses, and secondly, an account of the absorption spectra in the ultra violet rays of the spectrum. Professor Gamgee proposes to term the band given by hæmoglobin in the extreme violet, from the name of its discoverer, the band of Soret. On the whole, this is one of the most valuable articles in the book. Next follows a general account of the processes of diffusion, osmosis, and filtration, written by Professor E. Waymouth Reid. It is necessarily short, but still gives all the important points in this branch of physico-chemical work, much of which, first originated by physiologists, is rapidly becoming of greater and greater importance to the general biologist in the study of life processes. The article upon the production and absorption of lymph is by Dr. E. H. Starling, and in it an excellent account of all the work bearing upon the subject is given. By an analysis of that work the author shows that Ludwig's view that lymph production may be explained by the simple processes of filtration and diffusion is probably the correct one.

The chemistry of the digestive processes is dealt with in a lengthy article by Mr. B. Moore, and is followed by one upon the salivary glands by Mr. J. N. Langley, in which the whole subject of salivary secretion is exhaustively examined. The remaining part of the physiology of the alimentary tract is treated of by Dr. J. S. Edkins, so far as the mechanism of secretion of gastric, pancreatic, and intestinal juices is concerned, and by Dr. D. Noel Paton on the mechanism of bile secretion.

The excretory work of the kidney is described in two articles. The first, by Dr. F. Gowland Hopkins, is upon the chemistry of urine, and the second, by Dr. E. H. Starling, treats of the mechanism of the secretion of urine. These two articles form one of the best accounts of the urine and its secretion which we possess. The mechanism of the secretion of milk is described in a short article by Professor Schäfer, and the secretion and absorption by the skin by Professor E. Waymouth Reid.

The chemistry of respiration is treated by Dr. Pembrey, who has evidently not spared care and labour, though it must be said that the article is, by comparison with others in the volume, almost too full. The enormous number of references and of tables makes it a difficult article to read. It is followed by one upon animal heat, also by Dr. Pembrey, which gives a very good account of the subject. The two remaining articles are by the Editor, the first being upon metabolism, and the second on the influence of the ductless glands upon metabolism.

Considering the book as a whole, uniformity of treatment of the different subjects is as a rule well maintained. So far as we could test it, nothing of importance has been omitted. The value of the book is considerably increased by two full indexes, one of subjects and the other of authors.

The volume before us is worthy of the highest praise. It will undoubtedly exert a considerable influence upon the teaching of physiology in this country, forming, as it does, by far the most ambitious attempt at a full treatment of the subject that has appeared in the English language since Todd's *Cyclopædia of Anatomy and Physiology*.

ELEMENTS OF PHARMACY, MATERIA MEDICA, AND THERAPEUTICS. By WILLIAM WHITLA, M.A., M.D. Seventh Edition. London: Henry Renshaw. 1898. (Crown 8vo, pp. 644. 10s. 6d.)

THE issue of a new edition of the *British Pharmacopœia* has necessitated the revision of Dr. WHITLA's popular work. In carrying this out the author has adhered practically without alteration to the original plan of his book, but has nevertheless introduced a very large number of minor changes and improvements in the text. Some of these have necessarily followed on the official changes, while others have been the result of his own experience. In both cases great accuracy and care have been exercised, so that the present volume lays before us very succinctly and completely the present condition of our official Materia Medica. In addition, many more or less important non-official remedies are briefly described in a short compendium of 126 pages. This part, although necessarily condensed, has all along been a particularly useful and practical feature of the book. There is also a short section devoted to the treatment of cases of poisoning.

One feature of the volume, as compared with other students' manuals, is the prominence given to pharmacy and dispensing, and the writing of prescriptions. With no desire to find fault with what is an exceedingly clear and useful exposition, we might suggest that some parts of this are rather too detailed for the purposes of the medical student. As an example, we find that four pages of text and six drawings are devoted to the description of how powders should be folded up, while the making of pills is also rather elaborately considered, more especially in connection with excipients and individual drugs. We might also suggest that space might be saved by substituting terser descriptions of such universally known processes as crystallisation, evaporation, filtration, etc. As the metric system of weights and measures has now been used along with the imperial in the *British Pharmacopœia*, detailed tables showing their relationship have been introduced, and these should prove convenient for reference. The portion of the book called Chemical Reactions of the Official Remedies (17 pages) we should strongly advise Dr. Whitla to suppress altogether, or at least to relegate it to a very unobtrusive appendix. In the first place, the title is misleading, the chemical reactions given in the form of equations not being those of the official remedies themselves, but the reactions which occur during their manufacture; while in the second place, such information cannot be said to be of value to the medical practitioner, and is simply a relic of the old-fashioned, but unhappily not yet quite extinct, conceptions of teaching materia medica and therapeutics.

As in previous editions, the Materia Medica of the *British Pharmacopœia*, and the description of official drugs and preparations, leave nothing to be desired for succinctness, accuracy, and completeness. The portion devoted specially to "therapeutics" comprises 184 pages, and in this space each pharmacopœial remedy is considered shortly and practically, with reference to its clinical usefulness and applications, the author's own wide experience lending value and weight to the opinions and methods which he advocates.

The volume is dedicated to the memory of the late Professor Matthew Charteris, of Glasgow University.

TRAITÉ DE DIAGNOSTIC MÉDICAL ET DE SÉMÉIOLOGIE. [Treatise on Medical Diagnosis and Symptomatology.] Par le Dr. F. O. MAYET. Part II. Paris: J. B. Baillière et Fils. 1898. (Demy 8vo, pp. 392; 23 figures. Fr. 24.)

THE second instalment of this general treatise on the symptoms of disease contains the remaining portion of Volume I and the commencement of Volume II bound up together. The

work is advertised as consisting of two volumes, but they are issued in three parts, an arrangement likely to lead to some confusion and to not a little inconvenience to the reader.

The present pages, which are devoted almost entirely to the nervous system, open with a summary of the physiology of sensation and then deal with the manifestations of disordered sensation, anæsthesia, and pain of various kinds and sources. The next theme is a full and sufficient account of motor disturbances, such as convulsions, contractions, athetosis, and so forth. The pages dealing with *grande hystérie*, or hystero-epilepsy, are well illustrated by simple plates after Richer. Tremor is lucidly discussed and is divided into (1) physiological; (2) infective in origin, such as may occur in typhoid fever; (3) toxic, due to alcohol, mercury, and more rarely lead, tea, and coffee; (4) tremor due to central lesions of the nervous system, a good example being general paralysis of the insane; and lastly (5) tremors due to neurosis. After the contractions have been dealt with a description is given of the conditions, normal and abnormal, of the reflexes. Much attention is devoted to the disturbances of muscular co-ordination and an account of astasia abasia and allied conditions is given. Muscular atrophy is classified according to its causes into six subdivisions, the salient features and distinctive points being then indicated.

After a systematic account of the eye symptoms met with in nervous and in general diseases there is an exhaustive article on the interesting subject of the tropho-neuroses. This brings the section on the nervous system to an end, and the vascular apparatus is next discussed. Only a few pages, however, on this important system are contained in this instalment, and for further information the reader will have to await the issue of the concluding part. Interesting and full of information as this treatise is, it is adapted not so much for the medical student as for the qualified man or teacher, inasmuch as it demands a considerable amount of groundwork and deals more with generalisations than with the crystallisation of rigid types of disease.

Gehirn-durchschnitte sur Erläuterung des Faserverlaufes. [Sections through the Brain for the Purpose of Elucidating the Course of Fibres within it.] Von Dr. Eberhard Nebelthau. Wiesbaden: J. F. Bergmann. 1898. (Roy. 4to; 33 chromolithographs, with letterpress; pp. 86. M. 54).

These are full-sized figures of sections made from human brains hardened in Müller's fluid, embedded in colloidin, cut with a large Schanze microtome, and the sections stained by the Weigert-Pal method. Their chief value is topographical. For they are very accurate representations, and the sections are obviously as perfect specimens of their kind as it is possible to produce. Moreover, they are taken in three directions, horizontally, frontally (or nearly so), and a certain number in sagittal planes, and as each figure is accompanied by a very full explanatory sketch, the student or practitioner will by the aid of these plates be able to find his way without much difficulty about a section through any part of the brain, provided it is taken in a plane corresponding to one or other of those represented.

The title of the monograph is misleading. It is not possible in Weigert-Pal preparations (or only possible in the rarest cases, as in the instance of the fibres of the cingulum, the course of which was traced in such preparations from the marmoset monkey by Beevor) to follow with any certainty the course of fibres or of tracts of fibres which are at all obscure; this can only be done by employing the method of Flechsig or that of Marchi. And to illustrate this statement it may be pointed out that the author describes his preparations as showing the tract of Gowers entering the cerebellum by way of the restiform body, whereas they certainly show no such thing, and indeed it has long since been shown (by the work of Löwenthal, of Mott, and of Tooth), and is familiar to every student in this country, that the tract in question enters the cerebellum not by the restiform body but by hooking back along the superior cerebellar peduncle. As is the case, however, with so many of the younger German histologists, the author appears to be almost completely ignorant of work published in other countries, and especially in England and America; thus, in the bibliography given and referred to in the text, not a single English publication is mentioned. Nevertheless, as the value of the work is not in its title to originality, but in the assistance which the excellence of its figures will give to the student who is in danger of losing himself in the mazy topography of the human brain, we may welcome it on this account, and "be to its faults," which are not numerous, "a little blind."

A Textbook of Diseases of Women. By Charles B. Penrose, M.D., Ph.D., Professor of Gynecology in the University of Pennsylvania, etc. Second Edition. London: The Rebman Publishing Co. 1898. (Demy 8vo, pp. 529. 20s.)

This work is accurately described by its title. It is a clear, readable, systematic, and fairly complete account of the diseases of the female sexual organs. It contains no discussions of controverted points. The author frankly states his own views, and leaves the reader to accept them or not, simply on the authority of the writer. It is not possible for anyone to write a book on a progressive science which shall command assent from everybody. It would be easy to pick out points of pathology and of practice upon which some gynæcologists would disagree with Dr. Penrose: but to do so is unnecessary and ungracious. The work has already gone through one edition, which shows that some people have found it helpful, and we hope that many more may do so. We must add that the book is adorned with many well-designed, clearly-executed illustrations.

The general tenour of its teaching is what is known as "advanced," or that which consists in surgical activity. It enters more fully into surgical technique than into questions of pathology, etiology, and the medical treatment of female diseases. On the whole, we have much pleasure in commending the book.

The Cold-Bath Treatment of Typhoid Fever. By F. E. Hare, M.D., late Resident Medical Officer, Brisbane (General) Hospital, Queensland. London: Macmillan and Co. 1898. (Demy 8vo, pp. 208. 7 illustrations. 6s.)

There can be no doubt that the systematic treatment of enteric fever by cold baths has met with scant favour in this country, though for some time past it has been adopted, apparently with success, in many parts of the Continent, the United States, Canada, and Australia. The objections raised by patients and their friends, the additional labour entailed in its practice, a distrust of the statistical arguments advanced on its behalf, and a fear of untoward events (especially collapse) in individual cases, are the chief causes of this unfavourable reception. Of these objections the first and last are the most important. That they are real is admitted by most advocates of the treatment; but in the work before us Dr. Hare declares them to be groundless.

When we look for the cause of this discrepancy of opinion we find it in the fact that at the Brisbane Hospital an important modification was made in the method as advocated by Brand. Brand used water at a temperature of 65° to 70° F.; but in the warmer climate of Brisbane it was difficult to keep the baths below 70°, and they were often 75° to 80°. This difference of temperature allowed the omission of another necessary part of Brand's treatment, namely, the rubbing of the patient's body and limbs during the bath, and it also permitted the duration of the bath to be considerably extended. Of the treatment thus modified Dr. Hare has made a most careful and conscientious study. His material was ample, consisting of two series of consecutive cases. The first series comprised 1,828 cases, treated from May 1882 to December 1886, in the ordinary expectant manner, and the second 1,902 cases, treated from January 1887 to December 1896 by the bath method. A large number of both series were under his personal observation. His experience led him to the following conclusions: The death-rate was lowered from 14.8 to 7.5 per cent. The saving of life was chiefly effected in that class of case in which death is the result of exhaustion from the severity of the disease, but there was also an improvement in the mortality from pulmonary and cerebral complications. The treatment had no effect on the occurrence of perforation,

hæmorrhage, and relapses. With respect however to perforation, the author believes that its diagnosis is rendered easier; consequently there is greater hope for success in surgical treatment. Though the duration of the fever was not shortened, convalescence was hastened; hence the patients' stay in hospital was curtailed.

The effect of the treatment on the various organs, the influence of sex, age, and time of commencement, and the aid to be derived from drugs are concisely but sufficiently discussed. The author agrees with previous writers in emphasizing the necessity of employing the baths as early as possible in the disease. Of cardiac stimulants, so necessary in many cases of enteric fever, the most valuable in his opinion are alcohol, quinine, and strychnine. Two chapters are devoted to a consideration of the contra-indications, few in number, and of the prognosis.

From the foregoing observations it will be gathered that the modified method employed at Brisbane has yielded almost the same results as the stricter method of Brand. This fact will, we hope, induce the British practitioner to give it a trial. At any rate we gladly recommend Dr. Hare's book to his notice, not only for the detailed description it gives of the technique of the treatment, but also on account of the clear and unbiassed manner in which the whole question is put before the reader.

A Simple Method of Water Analysis. By J. C. Thresh, M.D., D.Sc., D.P.H. 2nd Edition. 1898. London: J. and A. Churchill. (Fcap. 8vo, pp. 56. 2s. 6d.)

This is a small manual of under 60 pages. It is written expressly for medical officers of health for rural districts, and explains a handy method of chemical analysis which Dr. Thresh has ingeniously devised with the aid of four small cylinders, a small nickel evaporating dish, a stoppered bottle, a spirit-lamp, and nine reagents, the reagents being either compressed soloids or capsules; the chlorides, nitrites, nitrates, ammonia, metals, and organic matter, are detected, and in most cases estimated, in water. The whole of the appliances are portable and inexpensive.

There can be little doubt that a trained chemist would be able to make a very fair analysis by following the directions given by Dr. Thresh, and even medical men who have received no prolonged training in a Public Health Laboratory will be able to pronounce a judgment from the data obtained on most water supplies. It seems, however, that in cases of doubtful waters neither very good nor very bad, the health officer, who is not an expert chemist, will do well to have his results checked by a more elaborate investigation, and, at all events, supplement the analysis by a painstaking microscopical examination of the deposit from a considerable quantity of the water.

The processes devised reflect credit on the author; the directions are clear and concise, and the little work, we doubt not, will be found an assistance to those for whom it is designed.

Handbuch der Ernährungstherapie und Diätetik. [Handbook of Treatment by Feeding and Dietetics.] Herausgegeben von E. von Leyden. Band. ii. Abtheilung 1. Leipzig: G. Thieme. 1898. (Imp. 8vo, pp. 390. M.10.)

The first part of the second volume of this important work deals with the more special portion of dietetic treatment as applied to the various diseases of organs.

Dr. Dettweiler discusses in full the nutrition and feeding of patients with pulmonary diseases, and especially phthisis. The remarks of Dr. Felix Klemperer on diseases of the throat are distinctly helpful, especially in laryngeal phthisis. The late Professor Oertel and Dr. Beck include in their section on heart disease the various exercise treatments, and especially that devised by Oertel. Under the nervous system Professor Jolly chiefly deals with functional diseases, the Weir-Mitchell treatment naturally receiving much attention. Diseases of the alimentary canal are divided between Professor Riegel, who takes diseases of the œsophagus and stomach, Professor Ewald, diseases of the intestine, and Dr. Boas, functional gastro-intestinal disease. The subject is treated at great length, all the measures which can assist in the dietetic treatment being considered. Drs. Mosler and Peiper deal with parasitic diseases, including the prophylaxis, and Dr. Stadelmann concludes with the important subjects of hepatic and pancreatic diseases.

It is hardly necessary to add that in this work there is much more than a mere recounting of methods of dietetics, as there is included a wide discussion of the facts of nutrition and the measures by which this nutrition can be increased to its maximum.

Parasitologie. Von Dr. A. Weichselbaum. Jena: G. Fischer. 1898. (Royal 8vo, pp. 273. M. 6.)

The present volume is but one part of Weyl's comprehensive *Handbuch* (Part 2 of Vol. ix). It deals with parasites, vegetable and animal, from the hygienic standpoint. In consequence, we are informed in the preface that only those bacteria that are pathogenic in the case of man, or which being pathogenic in animals, are thus an indirect menace to human beings, will be considered, and also that all those properties of bacteria which do not directly relate to their pathogenic action will be shortly dismissed.

The book is divided into two sections—the first dealing with vegetable parasites including bacteria, yeasts and moulds, the second with the animal parasites. In the first part, occupying 210 pages, the bacteria receive the lion's share, no fewer than 198 pages being allotted to them, 40 of which are devoted to general questions, the remainder to descriptions of special forms. The general part is admirably arranged, concise and lucid, and contains an estimate of our most recently acquired knowledge on the most important problems of bacteriology. Each section is evidently the work of a master, and all appear equally good; but among the most interesting, perhaps, is that treating of the "variability of certain morphological and biological properties of bacteria," which is prefaced by a general statement to the effect that whilst bacteria are liable to be influenced morphologically and biologically by external conditions, still their characteristics are never lost, and the mutation of one species into another never occurs.

After dealing with change in form, size, capsules, cilia, as well as asporogenous races and involution forms, the author concludes this section with a concise account of variations in pathogenicity, and suggests the possibility of the creation of varieties and of the possible common origin of many bacteria, which, by the features they have in common, may be regarded as forming natural families. In the special part there is the same conciseness and accuracy of description, and in many instances instructive figures are added. Among the descriptions we note those of the B. endocarditidis griseus, B. pseudo-diphthericus, and B. enteritidis, which are specially interesting.

The author finishes his description of the typhoid bacillus with a general summary of the agglomerating action of typhoid serums, mentioning the various parts taken by Pfeiffer, Grünbaum, Widal, Kolle, Gruber, and Durham, in the application of a scientific discovery to the use of practical medicine. Each section is rendered more complete by a list of literature of the last ten years, including only the more important works.

The animal parasites are very briefly treated, only about fifty pages being devoted to their consideration; but the information is well selected, and, on the whole, carefully brought up to date. There are, however, one or two curious omissions, such as the discovery of Thomas and Leuckart that the early stage of the liver fluke inhabits the small pond snail (Limnæa truncatula). We may also call attention to the fact that the generic name (Pyrosoma) proposed by Smith for the pathogenic organism of Texan fever cannot stand, as it was appropriated so long ago as 1804 to another group of animals, and has been in constant use ever since—a fact which might have been ascertained by a glance at any ordinary textbook of zoology. We have here a striking instance of the way in which confusion is introduced into zoological nomenclature by authors, who do not take even the most rudimentary and obvious precautions in order to ascertain that the names they propose are valid.

PARLIAMENTARY BILLS COMMITTEE.

A meeting of the Parliamentary Bills Committee was held at the office of the Association, 429, Strand, W.C., on Wednesday, October 12th, 1898.

Present:

Dr. R. Farquharson, M.P., in the Chair.

Dr. R. Saundby, President of Council.

Mr. S. H. Agar (Henley-in-Arden)
Dr. R. L. Bowles (London)
Dr. T. R. Bradshaw (Liverpool)
Mr. Geo. Brown (London)
Mr. J. Cantlie (London)
Dr. W. A. Carline (Lincoln)
Dr. W. F. Cleveland (London)
Professor Henry Corby (Cork)
Dr. G. W. Crowe (Worcester)
Dr. P. Maury Deas (Exeter)
Dr. W. Douglas (London)
Brig.-Surg.-Lieut.-Col. Drake-Brockman (London)
Mr. George Eastes (London)
Dr. R. Esler (London)
Dr. A. Godson (Cheadle)
Dr. Ogilvie Grant (Inverness)
Dr. J. Groves (Carisbrooke)
Mr. J. D. Harries (Shrewsbury)
Mr. J. H. Hemming (Kimbolton)
Dr. Holman (London)
Mr. Evan Jones (Aberdare)
Dr. J. C. McVail (Glasgow)
Dr. W. J. Mickle (London)
Dr. J. W. Miller (Dundee)
Dr. J. W. Moore (Dublin)
Mr. W. Jones Morris (Portmadoc)
Surg.-Maj.-Gen. T. F. O'Dwyer (Aldershot)
Mr. C. H. W. Parkinson (Wimborne)
Dr. J. Rolston (Stoke, Devonport)
Dr. G. E. Shuttleworth (Richmond)
Dr. R. Somerville (Galashiels)
Mr. C. R. Straton (Wilton)
Insp.-Gen. A. Turnbull, Emsworth
Dr. A. R. Urquhart (Perth)
Dr. Dawson Williams (London)
Dr. S. Woodcock (Old Trafford).

Appointment of Chairman.

On the motion of Mr. George Eastes, seconded by Dr. Saundby, President of Council, Dr. R. Farquharson, M.P., was reappointed Chairman of the Committee for the ensuing year.

Prevention of Tuberculosis.

The following resolution passed in the Section of Medicine at the annual meeting of the Association in Carlisle, 1896, which had already been referred to the Committee, but upon which no action had been taken, was by a resolution of the Council again referred to the Committee and considered:

That this Section is of opinion that the Council of the Association should take an early opportunity of impressing upon the Government and public authorities that, having regard to the facts now fully established and recognised by the medical profession that tuberculosis is an infectious disease and capable of being controlled by special measures, and that in order to produce any beneficial results on an appreciable scale it is necessary (1) That provision should be made at the public expense for bacteriological laboratories by all sanitary authorities, where the sputum of patients suspected to be suffering from tuberculous disease may be examined and reported upon; and (2) that on the discovery of pulmonary phthisis in any individual of the poorer classes, public provision should be made for the treatment of such case in a public institution provided for the purpose at the public expense and by voluntary contributions.

Dr. J. W. Moore said that it was in consequence of a discussion which took place in the Section of Medicine at the meeting at Carlisle in 1896 that the resolution was adopted unanimously. The most practical way of dealing with the matter now was to move that the resolution be referred to a subcommittee for the purpose of studying the question and reporting to them at a subsequent meeting. Dr. Moore moved a resolution to this effect and suggested certain gentlemen to serve on the subcommittee.

After some discussion in which Dr. Urquhart, Dr. Douglas, Mr. C. H. W. Parkinson, Dr. McVail, Dr. Dawson Williams, and others took part, the resolution was amended and, on the proposition of Dr. J. W. Moore, seconded by Dr. Douglas, finally passed as follows:

That in view of the resolution on the prevention of tuberculosis adopted at the annual meeting of the British Medical Association at Carlisle in July, 1896, the following be appointed a Committee to consider what steps should be taken to prevent the spread of tuberculosis in animals and man and to report to this Committee at its next meeting, namely, Dr. Grimshaw, C.B., Registrar-General for Ireland, Dr. Spottiswoode Cameron, Dr. R. W. Philip, Dr. John C. Thresh, Dr. Theodore Williams, Dr. Arthur Ransome, F.R.S., Dr. McVail, Dr. Dawson Williams, and Dr. J. W. Moore.

Horse Allowance for Army Medical Officers in India.

A letter was read from a member of the Association calling attention to an "urgent grievance" in the denial of horse allowance to army medical officers under the rank of field officer.

The Chairman said that it was an undoubted grievance which ought to be remedied. He would undertake to frame and ask a question on the subject in the House of Commons at an early date next session.

Scottish Poor-law Medical Officers.

The following letter from the Scottish Poor-law Medical Officers' Association was read:

19, Wistercraigs, Dennistoun, Glasgow, September 13th, 1898.

Dear Sir,—At a meeting of the Scottish Poor-law Medical Officers' Association, held in Glasgow on the 10th inst., I was instructed to write and thank the British Medical Association for the interest which they have shown in our work, and for the facilities which they have afforded us for the holding of a meeting in Edinburgh [illegible]

I was also instructed to ask if the Parliamentary Bills Committee could not be persuaded to take charge of the passage through Parliament of a Bill to give Scottish Poor-law medical officers more secure tenure of office through an appeal to the Local Government Board.

Our Executive Council feel that there would be a much greater chance of success in the passing of such a measure by the hands of such an influential body as the Parliamentary Bills Committee of the British Medical Association; and they would be prepared gladly to render them all the assistance in their power.

Trusting that the Parliamentary Bills Committee may see their way thus to assist a very large proportion of the medical practitioners of Scotland, and members of the British Medical Association, to a greater security of tenure of office, and so put an end to the present grievances, and even scandals, at present so rampant, more particularly in the highlands, I am, yours faithfully,

Francis Fowke, Esq., Secretary, British Medical Association.

William Findlay, M.D., Secretary (*pro tem.*)

The Chairman said that the best course would probably be to ask the General Secretary to have a Bill drafted which could be brought up at the next meeting, and then if it were approved to take steps to induce some member of Parliament to introduce it into the House of Commons.

Dr. Ogilvie Grant suggested that they should ask the Scottish Poor-law Medical Officers' Association to prepare a Bill. That Society had taken the matter up, and it was a matter entirely referring to Scotland. The Bill, if prepared by the Society, might be submitted to the Parliamentary Bills Committee, which, if it approved of the draft, might then use its influence to obtain its introduction.

The Chairman said that the Duke of Argyll had taken a great interest in the matter, and he thought that he would probably be very glad to introduce a Bill in the House of Lords.

It was proposed by Dr. Ogilvie Grant, seconded by Dr. Maury Deas, and resolved:

That the Scottish Poor-law Medical Officers' Association be asked to prepare a draft Bill anent the more secure tenure of office of their members and submit same to the next meeting of the Committee.

Reappointment of Committees.

On the motion of Dr. Woodcock, seconded by Mr. Jones Morris, the Medical Acts Amendment Subcommittee and Midwifery Nurses Bill Subcommittee, consisting of Dr. A. G. Bateman, Mr. George Brown, Mr. Victor Horsley, F.R.S.; Dr. C. H. Milburn, Dr. A. Brown Ritchie, and Dr. S. Woodcock, were reappointed.

The following gentlemen were, on the proposition of Dr. Douglas, seconded by Dr. Shuttleworth, reappointed the Subcommittee on Incipient Insanity to act in conjunction with the representatives of the Medico-Psychological Association: Dr. W. F. Cleveland, Dr. W. Douglas, Mr. George Eastes, Dr. W. J. Mickle, Dr. G. E. Shuttleworth, and Dr. A. R. Urquhart.

On the proposition of Dr. McVail, the following members were reappointed as the Vaccination Subcommittee: Dr. Batten, Mr. George Brown, Dr. Groves, Dr. McVail, Mr. Jones Morris, and Dr. Thresh.

Resolutions of the Section of State Medicine.

The General Secretary reported that the following resolutions passed in the Section of State Medicine at the annual meeting in Edinburgh had been referred by the Council at its meeting held that day to the Parliamentary Bills Committee:

[illegible] That in the opinion of this meeting: (1) [illegible] legislation for prevention of rivers pollution is urgently required, lengthened experience having shown that the [illegible] (2) that the Bill at present before Parliament is insufficient and unsatisfactory; (3) that the Parliamentary Bills Committee of the British Medical Association should take action in the matter.

The CHAIRMAN suggested that it would be advisable to arrange a conference with Sir Francis Powell, who, he was sure, would be glad to meet the Committee and talk the matter over.

Quality of Milk.—That in the opinion of this meeting there should be a legal standard of fat required in milk sold to the public.

This matter was allowed to stand over till the next meeting.

SUPERANNUATION OF MEDICAL OFFICERS OF HEALTH.

The following resolution, passed by a representative meeting, held in Birmingham, of medical officers of health and forwarded to the Council by Dr. Bostock Hill, had also been referred by the Council to the Parliamentary Bills Committee:

That the time has arrived when in the interests both of the Sanitary Service and of the public superannuation for medical officers of health should be established.

That a copy of the above resolution be forwarded to the Incorporated Society of Medical Officers of Health, the British Medical Association, and the Sanitary Institute, and that they be requested to consider the best means of furthering this.

It was proposed by Dr. WOODCOCK, seconded by Mr. JONES MORRIS, and resolved:

That the consideration of the resolution forwarded by Dr. Bostock Hill be deferred until the next meeting of the Committee.

Mr. GEORGE BROWN gave notice that at the next meeting of the Committee he would move that a subcommittee be appointed to watch any legislation with regard to the adulteration of food and drugs.

[These proceedings have not yet been submitted for the approval of the Council.]

THE DANGEROUS TRADES COMMITTEE.*

NEW LEGISLATION NECESSARY.

THE third interim report of this Committee, which appears as a Blue Book, is even more interesting and instructive than its predecessors, for it deals with industrial problems of a contentious character, some of which can only be solved by legislation. Since the publication of its last report the Committee has sat on thirty-four days, and has visited eighty-one workshops and factories in connection with the specified trades. Many of the recommendations that are made will have to be embodied in the next Factory Bill, for although the Home Secretary has power to frame "special rules" for certain trades, and can even schedule these as dangerous, the enforcement of the rules is often a matter of difficulty and expense, since employers have the right to submit them to arbitration. Thus it not infrequently happens that rules have to be whittled down to suit employers, and a compromise is effected. It is not only to avoid the repetition of this and the waste of time and money, but on account of the peculiar tenancy conditions under which file-cutting shops for, example, are held, that the Committee has suggested to the Home Secretary the advisability of dealing with this matter by legislation.

FILE CUTTING.

File cutting is now for the first time dealt with as a dangerous trade, especially when done by hand. It is carried on in several towns, particularly in Sheffield and Rainhill. Although long known to be a harmful occupation, no organised attempt has ever been made until now to grapple with the evils of an industry that is badly paid, sedentary in its nature, and too frequently carried on under bad hygienic conditions. The dangers of the operations are fully set forth in the report. A good deal of the harm is attributed to the worker licking his fingers to get a better grip of the chisel, and as the file is struck by hammer and chisel on a lead cushion, thereby creating a certain amount of fine dust, the poisonous material gains an entrance into the system either through the perspiring hand or the saliva. Carried on as this trade is in small buildings in back yards, where the air is motionless for the most part, in buildings that are ill ventilated with no fireplaces and no washing appliances, and in the workshops occupied by a number of people far in excess of the cubic air space, it is no wonder that file cutters should be below the average in physique and short-lived. Their mortality is largely due, as in chronic plumbism, to diseases of the kidney and nervous system. It is estimated that the combined mortality under these two headings is 316 against 123 for occupied males in general. Since file cutting is a dusty occupation, the Committee insists in its recommendations upon the importance of personal cleanliness and of washing before taking food. It would doubtless strike at the root of the evil in this trade, and be a real remedy could some substitute be found for the lead cushion upon which the file is cut. To this subject the Committee has given attention, but as the result of the evidence tendered by witnesses, men of practical experience, it is stated that until now, at any rate, no satisfactory substitute has been found. It would appear that much of the difficulty which the Committee has had in drawing out its recommendations has arisen from the peculiar conditions under which, especially in Sheffield, these workshops are leased to file cutters. Several file cutters rent a shop between them; each one is a master working for himself, or a workman rents a shop and sublets portions of it to others. The difficulty, therefore, has been to fix the responsibility of the occupier, and to assign to him and to the landlord their respective duties, for in many instances the occupiers are weekly tenants. Only an inspector of factories or a medical officer of health can appreciate these difficulties. From the manner in which this particular part of the subject has been dealt with it is clear that in framing its recommendations the Committee has been specially aided by Commander Hamilton Smith, whose experience of the tenement workshops of Sheffield must have been in this instance especially valuable. The Committee acknowledges its indebtedness to the assistance rendered by Drs. Sinclair White and Porter, of Sheffield, and to Dr. H. H. Littlejohn, of Edinburgh, formerly Medical Officer of Health, Sheffield.

"GALVANISING" IRON.

The galvanising of iron is dealt with, but the Committee does not regard this as a dangerous trade. The teeth of the men become eroded and black as the result of the hydrochloric acid fumes arising from the "pickle" in which the iron sheets are dipped before being plunged into the molten zinc. From the molten zinc beyond the irritating respiratory effect of ammonia vapour due to the surface of the metal having been sprinkled with ammonium chloride the Committee found nothing harmful in the trade. Professor Thorpe's analysis of the fumes is published in the appendix to the report, and will be found valuable and interesting.

GLASS POLISHING.

Glass polishing, on the contrary, is shown to be a very dangerous occupation, owing to the large amount of white lead present in the putty powder used for smoothing the surface of the glass. It is stated as the result of experiments performed upon animals by Dr. Oliver, one of the members of the Committee, that putty powder is almost as destructive to life as white lead itself. There is a considerable amount of ill-health among glass polishers. Colic, paralysis, and epilepsy are frequently observed. In glass polishers, as in white lead workers, the kidneys tend to become affected. One of the best recommendations which the Committee makes is that some inducement should be held out to chemists and manufacturers to place upon the market a good putty powder free from lead, for thus not only would glass polishing cease to be a dangerous trade, but it would be exempted from certain Governmental restrictions, which after all cannot but to some extent hamper the industry.

GRINDSTONE ACCIDENTS.

The dangers attendant upon the use of converters in steel works is dealt with at considerable length and certain recommendations are made. So, too, is the question of the manufacture and use of grindstones. Those of us who do not reside in an iron or steel-making locality can hardly realise the importance of bringing the use of grindstones under the heading of dangerous trades. In Sheffield, where on account of

* *Third Interim Report of the Departmental Committee appointed to Inquire into and Report upon Certain Miscellaneous Dangerous Trades.* Messrs. Eyre and Spottiswoode, London, price

its cutlery manufacture more grindstones are run than in any other town in the United Kingdom, they are annually the cause of several fatal accidents. All sorts of stones are used, large and small, and these are run at varying speeds. Accidents are due to the breaking of these stones as they are revolving at a rapid rate. Splinters fly about in all directions in the working room, dealing injury or death to those upon whom they fall. Faulty making, overspeeding, carelessness in using, storage, and hanging of the stones are the causes of their breaking.

Doubtless some of the stones are faulty at the time they leave the quarry, and it is a question whether it is always possible to detect a flaw that is hidden in a stone. The sending out of a stone known by the manufacturer to be faulty should be a punishable offence, for the stone is sure to go further wrong, and may unexpectedly cause the death of several workpeople. In many instances, no doubt, the stones are run at too great a speed, or a careless workman leaves the lower part of his grindstone imbedded in the subjacent trough of water overnight, causing it to be waterlogged, too heavy on one side, and therefore inclined to run unequally, or a stone is hung after it has been exposed for a lengthened period to rain or snow, and before it has run more than a few minutes it breaks up.

The Dangerous Trades Committee has done its work in a painstaking manner, and has issued a carefully prepared report. The present publication not only supplies some very useful and much needed information to the public generally, but gives to the Home Secretary that special information which ought to be of some assistance to him in future legislation. That is one of the objects for which the Dangerous Trades Committee was appointed. Its Chairman (Mr. H. J. Tennant, M.P.), has been ably assisted by the other members of the Committee—namely, Mrs. H. J. Tennant, formerly Her Majesty's Superintendent-Inspector of Factories; Dr. Thomas Oliver, of Newcastle-upon-Tyne; and Commander Hamilton Smith, R.N., Sheffield, Her Majesty's Inspector of Factories.

THE WATER ENTERPRISE OF SOME OF OUR LARGE TOWNS.

III.—BRISTOL.

The Water Company and the Corporation.

Strictly speaking, the excellent water supply of Bristol is not due to municipal enterprise. It is perhaps, however, convenient to consider the supply of the great western seaport along with the strictly municipal undertakings of some other large cities. Though the supply remains at present in the hands of the water company, the relations between the directors of the company and the officials of the Corporation are of the most cordial kind. By the courtesy of the company every facility is offered to the medical officer of health for inspecting at all times the company's works, and we understand that Dr. D. S. Davies frequently avails himself of this permission to keep himself acquainted not only with the state of existing reservoirs and sources of supply, but to watch the progress and condition of the very extensive additions to their plant the company are at present engaged upon. Since the formation of the water company in 1846, no outbreak of disease has occurred which could be attributed to default on the part of the company, and the water is so carefully guarded that the health officer considers any risks of this kind are reduced to a minimum. The supply is constant, and averages 22 gallons daily a head of the population. Notwithstanding the continued drought, it is expected that this amount can without difficulty be continued throughout the present year.

Sources of the Supply.

In his annual report for 1897 Dr. Davies reminds the corporation that the company obtains its supply by gravitation from springs in the triassic conglomerates and the mountain limestone on the sides of the Mendips at distances of from five to sixteen miles from the city. The water from the Sherborne and Coldbath Springs is conveyed without further exposure to light or air directly to the town. That from the other springs passes to storage reservoirs at Barrow Gurney, 310 feet above the sea. These reservoirs have a capacity of 750 million gallons. The water collected in them is filtered before joining the mains. At Redcliffe the two supplies are combined and thence piped, serving the lower parts of the town *en route*, to a reservoir 200 feet above ordnance datum at Oakfield Road. From this reservoir water is pumped 120 feet higher to the tank at Durdham Down, from which Clifton and the higher parts of the city are supplied by gravitation. An additional supply is obtained from deep wells in the new red sandstone at Chelvey, eight miles away. Such then are the present sources. Ten years ago the company got power to obtain water from the Rickford Spring, near Blagden, and from another spring at Langford, and a year later to construct a reservoir in the course of the Yeo, to impound water from that river and the above-mentioned springs. The character of these new supplies is very similar to that of the older sources, and the water will be pumped from the new reservoir, which is intended to hold 1,700 million gallons, to the tanks at Barrow Gurney.

Characters of the Water.

As might be expected, from its source, the Bristol supply is considerably harder than any of the mountain waters impounded by Bradford. An analysis of the Barrow water before filtration, by Mr. Stoddart, the city analyst, showed 16° of total hardness, of which $3\frac{1}{2}$° were permanent. The Coldbath spring and the deep well at Chelvey had 20.5° and 20°, with $4\frac{1}{2}$° and 5° of it permanent. The sulphates, counted as sulphuric anhydride, gave 86, 98, and 83 grains to the 100 gallons. Nitrates were found as 9, 12, and 17 grains in the same quantities, but there were no nitrites. While a water so hard as this would be unsuitable for the commercial purposes of a town like Bradford, Bristol is to be congratulated in having so good and so accessible a supply of wholesome water. We regret to add that, like Maidstone, Bristol has a dangerous number of hand-flushed closets. We trust that when the larger supplies are available, the corporation will insist upon a proper flush to every closet, even if the sanitary authority has itself to purchase the water from the company.

THE VACCINATION ACT, 1898.

New Order of the Local Government Board, England.

The Local Government Board, England, has issued a Circular to guardians calling attention to the Vaccination Act, 1898. The Circular, which is dated October 21st, points out that except as regards the provisions of Section 11, which are already in force, the Act will come into operation on January 1st next, and will remain in force until January 1st, 1904.

It is further pointed out that the Act makes important alterations in the law as regards the vaccination of children by the public vaccinator, and as regards the liability of the parent or other person having the custody of the child to penalties for failure to have the child vaccinated. These alterations render it necessary to revise many of the provisions in the existing orders under the Vaccination Acts. Further, the Board is empowered by Section VI of the new Act to make rules and regulations with respect to the duties and remuneration of public vaccinators, whether under contracts made before or after the passing of the Act. The Board have in consequence issued the new Order, dated October 18th, 1898, which rescinds all the Orders under the Vaccination Acts now in force, and makes fresh regulations so far as necessary.

The Order will come into operation on January 1st next, but the Board desires to bring to the notice of the guardians certain matters which it is important that the guardians should deal with before January 1st, 1899, although the arrangements made will only come into effect after that date. The text of the paragraphs of the Circular dealing with these points is given below in small type and we append to each of the heads of the circular some explanatory remarks.

Public Vaccinators.

As the Board pointed out in their circular letter of September 16th last, public vaccination at prescribed stations will be discontinued at the end of this year, except in those cases where, under Section 7 of the recent Act, the Board deem it expedient by reason of serious risk of outbreak of small-pox or other exceptional circumstances to require the guardians to provide vaccination stations. A system of domiciliary vaccination will, save in the exceptional instances above referred to, take the place of sta-

tional vaccination. The duties of the public vaccinators will, therefore, be considerably altered by the Act and the new Order, and it has become necessary to make fresh provision as to their remuneration.

As regards the existing public vaccinators, it will not be requisite that fresh contracts should be entered into with them in consequence of the Act of 1898 or of the new Order. The contracts which are in force on January 1st may be determined in the same way as heretofore: but until this is done or new contracts are entered into, they will be continued in force by Article 5 of the Order. Any such contract, however, is from the 1st of January next, except in the case of a contract made with the medical officer of a workhouse for the vaccination of the persons resident therein, to be deemed, as regards the duties of the public vaccinator, to require him, in lieu of the provisions contained in the contract, to perform the duties prescribed by the Order, and specified in the form of contract in the first schedule to the Order. The contract is also to be deemed, as regards the remuneration of the public vaccinator, in lieu of the payments mentioned in it, to provide for such payments being made to him by the guardians as are prescribed by Article 3 (1), *(a)*, *(b)*, and *(c)* of the Order. It will be seen that by this Article the minimum amount only of each of the payments to be made is fixed. Subject to this minimum, the precise sums to be paid are to be settled by agreement between the guardians and the public vaccinator, and to be approved by the Board; but, if not thus settled before the 1st of January next, the sums are to be determined by the Board. It is very desirable that the guardians and the public vaccinators should agree as to the sums to be paid, and attention should be given to the matter at once. As soon as the guardians and the public vaccinator have agreed the amounts should be reported to the Board for approval.

It will be understood that the payments specified in the present contracts will cease as from January 1st next. Where in any instance the Board require the guardians to provide vaccination stations under the exceptional circumstances provided for by Section VII of the Act, a further Order will be issued, which will deal with the question of the remuneration to be paid to the public vaccinator for vaccinations performed at these stations.

Any contract made under the Vaccination Act of 1867 with the medical officer of a workhouse for the vaccination of the persons resident in it, which is in force on January 1st next, will be deemed, as regards his duties and remuneration as public vaccinator, in lieu of the provisions contained in the contract, to contain the provisions set out in the form of contract in the second schedule of the Order. Subject to the conditions mentioned in the form of contract, the medical officer will in these cases be entitled to receive a sum of not less than half-a-crown for every successful primary vaccination or revaccination performed by him on persons resident in the workhouse. The actual amount to be paid should be agreed between the guardians and the medical officer, and must be approved by the Board. If an agreement is not arrived at before January 1st next, the amount will be settled by the Board.

It would obviously be unfair to the public vaccinators if the terms to which they are to become subject under the new Order were less advantageous than those of their present contracts. While, therefore, the new Order imposes additional duties upon them, it apparently increases their remuneration materially. Contracts entered into by them with Boards of Guardians have hitherto been determinable by either party giving to the other a twenty-eight day notice of his intention to put an end to the same, and a clause to this effect must be inserted in any contract signed after January 1st, 1899. The qualifications of the public vaccinator appear to be the same as they were before the passing of the Act. He must be a registered medical practitioner, qualified in medicine and surgery, and possessing a special certificate of proficiency in vaccination from one of the examiners authorised to grant such certificates for the purpose of the Order of December 1st, 1859; but this certificate becomes unnecessary where the certificate, or some other to the like effect, has been among the certificates or testimonials necessary for obtaining any diploma, licence, or degree which the candidate possesses.

The terms of the contract which must in future regulate the appointment and duties of the public vaccinator are set out in the first schedule to the Order. The material clauses of this contract, embodying the duties of the vaccinator, and the method by which his salary is estimated are shortly as follows: The vaccinator undertakes, either by himself or else by a qualified deputy, to perform the following duties:

1. In the case of every child resident in the district, on the request of the parent or other person having the custody of the child, to visit the home of the child and vaccinate it.

2. In the case of every child resident in the district who has reached the age of 4 months, and as to whom he has received the requisite notice from the vaccination officer to visit and offer to vaccinate the child at its home with glycerinated calf-lymph, or such other lymph as may be issued by the Local Government Board. The notice here referred to is that which the vaccination officer must transmit where he finds children over four months old unvaccinated and without any certificate of exemption. According to Article 7 of the Order, the visit must be made between 9 A.M. and 4 P.M., unless otherwise arranged, and it should take place within a fortnight of the request of the parent, or the receipt of a notice from the vaccination officer. In every case a twenty-four hour notice must be given to the parent or other guardian of the child.

3. In the case of any person not less than ten years old, and who shall not have been vaccinated within a preceding period of ten years, to visit the home of such person and there vaccinate him, or at some other place which may be arranged.

4. To do everything which shall seem to him necessary for the purpose of causing the vaccination to be successfully terminated.

5. To call not less than a week after each operation and inspect the result.

6. At the request and with the consent of the parent to attend any vaccinated child which may require medical treatment in consequence of vaccination.

7. To keep the vaccinator's register, and make entries therein of every vaccination and inspection of the results of vaccination, and submit this book to the guardians in every quarter of the year, and also at such other times which may be required by the guardians or for purposes of audit.

This register he was required to keep under the older Acts.

The public vaccinator is to be paid by the guardians according to the following scale:

(*a*) A minimum of 1s. in respect of every child whose birth has been registered in the district after August 31st, 1898, and all children resident in the district, but whose births have been registered in some other district, or whose births have not been registered at all. This number is, however, subject to the following exceptions: (1) Children who have died or have been removed from the district within 4 months of birth; (2) children certified to have been otherwise successfully vaccinated, or to be insusceptible, or to have had small-pox, or whose parents have obtained a certificate of conscientious objection.

(*b*) A payment of not less than 5s. in respect of every successful primary vaccination or revaccination performed by him at the home of the person vaccinated.

(*c*) A payment of not less than 2s. 6d. in respect of every successful vaccination of any person other than a child, or of any successful revaccination where the operation is performed at his surgery or elsewhere than at the home of the person vaccinated, but no payment is to be made in respect of the revaccination of any person less than 10 years old.

It is for the purpose of allowing agreements of this kind to be framed that the general Order has been issued so early. Under the former Acts the public vaccinator was awarded not less than 1s. for every operation at a station within one mile of his residence, 2s. where the distance was above one mile and not more than two miles, and for distances over two miles not less than 3s.

It will be seen therefore that his position is so far improved by the new order of things that in respect of any vaccination performed in the home he cannot receive less than 6s. If, however, the public vaccinator happens to be stationed in a district where conscientious objectors are numerous, he may have some difficulty in earning many fees, for he does not even receive the shilling provided for in paragraph (*a*) *supra* where the parents have obtained a certificate of this kind. Under the Act of 1867 provision was made for the award by the Lords of the Privy Council of certain extra sums to public vaccinators; but as the powers of the Privy Council have since been vested in the Local Government Board, unless an order authorising extra payments is made by that body, the public vaccinator may in some instances fare badly.

A form of vaccination contract with the medical officer of a workhouse is set out in the second schedule to the General Order. The following duties (*inter alia*) are imposed upon the medical officer of the workhouse by this contract:

1. To vaccinate every child resident in the workhouse upon

the request of its parent or other person having custody of the child.

2. Where any child resident in the workhouse has reached the age of two months without having been vaccinated, he must offer to vaccinate it with glycerinated calf lymph or other lymph issued by the Local Government Board.

3. To vaccinate or revaccinate any other person resident in the workhouse who shall apply to him, provided that he shall not revaccinate any person under 10 years of age, or who has been vaccinated within the preceding ten years.

4. To inspect the result of vaccination not earlier than the fifth, or later than the tenth day, after the operation.

5. To keep a register similar to that which must be kept by the public vaccinator.

For every successful vaccination or revaccination the medical officer is to receive a sum of not less than 2s. 6d.

Vaccination Officers.

Under the Order additional duties will devolve on the vaccination officers, and new provisions have been made as to the mode of remunerating them. As regards any vaccination officer in office on January 1st next his appointment and tenure of office will not be affected by the rescission of the Order under which he was appointed, but, as from that date, he will be required to perform the duties prescribed by the new Order, and he will be remunerated in the manner specified in that Order.

It will be seen that under Article 20 (1.) the remuneration of the vaccination officer will consist of the three payments referred to therein, but that only the minimum sum to be paid in respect of each of these payments is prescribed. Subject to this minimum, the amount of each of the payments will be such as the Board may approve or direct. The guardians should at once take into consideration the amount of the payments to be made to each vaccination officer in accordance with the Article as from January 1st next, and forward their proposals to the Board for approval.

As regards any costs and expenses incurred by the vaccination officer, the Board may draw attention to the provisions of Article 29 of the Order.

The rules and regulations which have hitherto applied to the appointment and duties of vaccination officers were contained in a General Order of the Local Government Board, dated October 31st, 1874. The power of electing such officers was given to the guardians, who were enabled in the event of an outbreak of small-pox to provide assistants. The appointment was for life, but the officer could be dismissed by the guardians with the consent of the Local Government Board or by the Local Government Board itself. The vaccination officer's salary was paid quarterly after he had submitted his books for the inspection of the guardians. Under the new Order by Art. 11 (1) no appointment of a vaccination officer can be made except with the approval of the Local Government Board.

The duties of the vaccination officer are enumerated in the fourth schedule to the Order. In general his duty is to see that all children entered on the birth lists of his district are either duly vaccinated or otherwise properly accounted for in accordance with the law. As soon as a child is 17 weeks old, if the vaccination officer shall not have received a certificate of its successful vaccination, or insusceptibility, or of a conscientious objection, he must make personal inquiries with a view to obtaining the requisite certificate. If upon making these inquiries he is unable to ascertain that the child has been vaccinated, he must send in the child's name to the public vaccinator, so as to reach him within three weeks of the child having attained the age of 4 months. In the event of his receiving a certificate of postponement he must, on the expiration of the certificate, deal with the case in the above manner, unless a new certificate shall have been taken out.

Where he has not received a certificate of the conscientious objection within four months of birth and at the end of seven days after the child has reached the age of six months, a certificate of its insusceptibility, or of its already having had the small-pox, he must give notice to the parent in a prescribed form to have the child vaccinated within fourteen days, and if that notice is not complied with he must take proceedings for the enforcement of the law.

The provisions as to his tenure of office are the same as under the former Acts, but his remuneration appears to be provided for upon an entirely new basis. Article 20 (1) provides that the remuneration of every vaccination officer whether appointed before or after the commencement of the Order shall consist of:

(*a*) A payment of not less than 3d. for each child entered on the birth lists sent to him after December 31st, 1898.

(*b*) A payment of not less than 9d. in respect of the registration by him of the successful vaccination of any child born in his district.

(*c*) A payment of not less than 9d. for every certificate of the successful vaccination of any child not born in his district which may be sent by him to the vaccination officer of the district in which the child was born. Subject to the above provisions as to the minimum, payments may be increased or reduced according to circumstances. In the event of "extraordinary services" or "other unforeseen circumstances," additional payments may be made as the Local Government Board may approve or direct. The payment of 3d. in respect of every child whose birth shall be registered in the district will relieve the vaccination officer from the anxiety which he might otherwise feel if the "conscientious objectors" were numerous in his neighbourhood, and in this respect he seems to fare better than the public vaccinator.

The 29th article of the Order provides for the expense of proceedings undertaken by the vaccination officer for enforcing the provisions of the Vaccination Acts 1867 to 1898. The guardians are authorised to pay all costs of this kind, including the reasonable costs of obtaining any necessary legal assistance in connection with the institution and conduct of any such proceedings. Penalties recovered are to be paid to the treasurer of the guardians.

Proceedings to Enforce the Vaccination Acts.

Having regard to the decision of the Queen's Bench Division in the case of Bramble *v.* Lowe (1897), 1 Q. B. 283; 66 *L. J.* Q. B. 243, and to the opinions given by the law officers of the Crown, the Board have not inserted any provision in the Order imposing any duty either on the guardians or on the vaccination officer as regards the institution and conduct of proceedings. The power and the duty of taking such proceedings are vested in the vaccination officer under the Vaccination Acts passed prior to the Act of last session, without any Order of the Board or direction from the guardians. The Board have, however, provided by Article 28 of the new Order, that the guardians shall require the due performance of the various duties imposed upon the vaccination officer by the Vaccination Acts, 1867 to 1898, and that in case of any continued neglect upon his part they shall report the same to the Board.

In connection with the question of proceedings for the enforcement of vaccination, the Board may refer to Sections III and IV of the Act of 1898 which enact that an Order under Section XXXI of the Act of 1867, directing a child to be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child, and that no proceedings under Section XXX shall be taken against any parent or person who has been convicted under Section XXIX on account of the same child, until it has reached the age of four years.

The Board request that you will be good enough to give a copy of the Order and of this letter to each of the public vaccinators and vaccination officers in the Poor-law Union. If further copies are required for this purpose, they will be supplied on application to the Board.

With regard to the conduct of proceedings by the vaccination officer, the following article was inserted in the Order of October 31st, 1874:

"The guardians shall in all cases in which the provisions of the Vaccination Acts ..... have been neglected cause proceedings to be taken against persons in default, and for this purpose shall give directions authorising the vaccination officer to institute such proceedings."

The officer was also compelled to take such proceedings as might be necessary upon the order of the Local Government Board.

The case of Bramble *v.* Lowe is mentioned in order to remove a doubt which seems to have arisen as to whether the guardians can, by a general resolution, invest the vaccination officer with power to institute and conduct any legal proceedings which may seem to him to be expedient. In the above case the party in default—who had been convicted of some offence against the Vaccination Acts—contended that the officer must have an authority of the Board of Guardians authorising him to prosecute in a particular case. Mr. Justice Wright, however, said that the officer had power to proceed without any express instructions, while Mr. Justice

Bruce added that by the fact of his appointment he was entitled to institute any proceedings he might think proper.

The guardians are empowered by Article 28 to ascertain whether the vaccination officer is performing the duty of enforcing the provisions of the Acts, and to require his due performance of those duties. In cases of continued neglect he may be reported to the Local Government Board. As was pointed out in the BRITISH MEDICAL JOURNAL of September 3rd, 1898, page 638, two convictions completely absolve parents who refuse to allow their child to be vaccinated from any liability to further prosecutions.

The fifth schedule to the Order contains no fewer than sixteen forms of notices and registers for the guidance and assistance of the vaccination officers and public vaccinators in the performance of their duties.

THE USE AND ABUSE OF MEDICAL CHARITIES.

UNDER this title a series of articles is being published in the *Bristol Times and Mirror* by Dr. J. Garrett Horder. Probably few have studied this question more carefully, and the tabulation of statistics relating to this question in these articles is in itself a monument of industry and patience.

Dr. Garrett Horder quotes at some length from Dr. Isambard Owen's speech at the hospital reform meeting held in London in 1897, emphasising the harm frequently done by the out-patient department of our hospitals, and showing that there the abuse consisted in a large proportion of the work being such as ought to be done by the Poor-law administration, while another large section sought to be provided for by the thrift of the patients themselves.

Looking at some of his figures it may well be asked why the proportion of out-patients to population in London, Dublin, and Edinburgh should be respectively 371, 371, and 421 per 1,000, while in Portsmouth, Oldham, and Sunderland it is no more than, 42, 33, and 31.

The writer's final recommendations are well worthy of consideration:

a. The desirability of abolishing subscribers' letters.
b. The desirability of dispensing with patients' payments.
c. The desirability of restricting treatment in the out-patient department to persons who really stand in need of hospital treatment.
d. The desirability of forming an inquiry agency for the purpose of getting reliable evidence as to the means of persons who seek hospital treatment.
e. The desirability of converting the free dispensaries into provident institutions.
f. The desirability of forming a central council, under the auspices of the mayor and town council.

CONTRACT MEDICAL PRACTICE.

TERMINATION OF CONTRACTS WITH CLUBS.

A DECISION of considerable importance to the medical officers of friendly societies has just been given by Judge Ingham at the Evesham County Court.

According to the rules of most Foresters' courts the surgeon only holds office during the pleasure of the court, or, in other words, is subject to summary dismissal. On the other hand, it has been contended that the surgeon cannot terminate his engagement without giving a reasonable notice. The injustice of such a relationship is plain, and grave doubt has frequently arisen as to its validity at law. Some years ago, we believe at Tunbridge, in consequence of a dispute between the surgeon and a local Foresters' court, the former, acting on the principle of what was sauce for the goose applied equally to the gander, summarily terminated his contract. The matter, however, has not been before a court of law till the recent action at Evesham between Messrs. Martin and Slater, surgeons, and the Trustees of Court Vale of Evesham (No. 4,648), of the Ancient Order of Foresters.

According to the report in the *Evesham Journal* in this action, the plaintiffs sued the defendants for fees due to them for services rendered up to the date of the resignation of their office. For the defence the liability was admitted, but a set-off was claimed of a certain sum paid for medical attendance by a member of the court, who was compelled to call in another doctor in consequence of the plaintiffs refusing to attend him, the application of the said member for attendance being after the resignation of plaintiffs.

The history of the dispute was briefly as follows: The plaintiffs had been for many years surgeons to the court, at a remuneration of 5s. per member per annum, and recently by a resolution of the court it was determined that the remuneration should be reduced to 4s. per member. The plaintiffs intimated that if the resolution were adhered to, they would at once resign; and on the court persisting, this resignation was promptly given, and all further professional attendance on members of the court refused from that date.

For the defendants it was argued that, although they might summarily dismiss their surgeons, the latter were bound to give them reasonable notice to enable them to find others to take their place, and that as they omitted to give any notice, they became liable to a deduction from their fees under one of the Society's rules, to pay for the services of a doctor called in to one of their members on account of the plaintiff's refusal to attend.

After various arguments on both sides his Honour decided that the contract was mutual; as the rules allowed the court to terminate summarily their contract with the doctor, he concluded the doctor had a similar right of determining his office. He accordingly gave the plaintiffs judgment for the full amount claimed.

The common sense of this decision is obvious. If it is hard on sick members for the doctor to abruptly terminate his engagement, the same hardship must always be incurred where the court summarily dismisses him. In both cases the members can easily procure other professional services: their grievance probably is that under such circumstances they have to pay a little more for them.

THE Princess Louise, Marchioness of Lorne, has promised to open, on December 7th, at 3 P.M., two of the three wards of the West London Hospital which were built in 1896. The two wards will contain fifty-two beds, all of which have been presented completely equipped by various friends of the institution, including the Earl of Ilchester, who has presented ten.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The annual dinner of the Society was held in the St. Enoch Station Hotel on October 20th, Mr. R. H. Parry, the President, occupying the chair. Sir William T. Gairdner, K.C.B., was the guest of the evening as the Society's first Honorary President. Professor Gairdner, in the course of his speech, gave some interesting professional reminiscences. Fifty years ago typhus fever was rampant to a degree hardly credible to the younger medical generation. Mr. Parry wished to see a research laboratory established under the fostering care of the Society in the premises of the newly established Southern Medical Club. Dr. Watson, the Secretary, intimated that Mr. Parry had given a handsome contribution towards such a laboratory. Professor Macewen urged the members of the Society to influence public opinion towards the removal of the great obstacle to original research in this country—the Vivisection Act as at present administered. This country was falling far behind Continental nations in this very important matter of original research. Even in Russia they were very far ahead. In America individuals vied with each other in their generosity in this direction. Professor Glaister, Dr. James Finlayson, and Dr. E. McMillan also spoke. The musical part of the programme was ably sustained by Drs. Fraser Orr, Wm. M'Millan, Watson, Davidson, A. B. Kelly, Roxburgh, and Messrs. Lennox and Wilson.

THE NURSES' HOSTEL. The first report of the directors of the Nurses' Hostel Company, which was presented to a meeting of shareholders on October 18th, deals with fourteen months of work. It states that the success of the hostel, which is established at 25 and 26, Francis Street, has exceeded the expectation of its promoters. Since the building was handed over to the company in August, 1897, 1,808 visits have been paid by 575 nurses, and new clients are seeking to avail themselves of its benefits every week. Among its visitors have been nurses from Africa, India, and South America. During the full months the pressure on the accommodation it affords was so great that strangers had to be refused, as it was felt that nurses who made regular use of the hostel has the first claim on it. The whole of the share capital has not yet been allotted. When this is effected the financial position of the company will be strengthened.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches are requested to forward their remittances to the General Secretary, 429, Strand, London. Post-Office Orders should be made payable at the General Post Office, London.

British Medical Journal.

SATURDAY, OCTOBER 29TH, 1898.

THE NEW VACCINATION ORDER.

The Local Government Board have now issued a General Order framed under the provisions of the new Vaccination Act. The Order is accompanied by a circular letter, which is printed elsewhere in our present issue. Both documents are of much interest to the profession, and should also be of interest to the public. Two matters suggest themselves for special reference here.

It will be recollected that when the Bill was before Parliament Mr. Chaplin made a statement regarding the relation of the Local Government Board to the work of the vaccination officers, and especially to the carrying out of prosecutions by such officers independently of Boards of Guardians. Notwithstanding the indignation expressed in some quarters at the mere suggestion of such a procedure, Mr. Chaplin has here at least had the courage of his opinions. Basing his determination on the decision of the Queen's Bench decision in the case of Bramble *v.* Lowe (1897), and on opinions given by the law officers of the Crown, he says: "The Board have not inserted any provision in the Order imposing any duty either on the guardians or on the vaccination officer as regards the institution and conduct of proceedings" because "the power and the duty of taking such proceedings are vested in the vaccination officer under the Vaccination Acts passed prior to the Act of last session, without any order of the Board or direction from the guardians." This seems plain enough, but to make his intention doubly clear, Mr. Chaplin does refer to the matter in his Order, though the phraseology is such as to justify the statement which we have just quoted from the circular that "the Board have not inserted any provision in the Order" imposing the duty in question. As the paragraph is of importance, we quote it in full, italicising the essential part: "If the vaccination officer has not received in respect of any child a certificate under Section 2 of the Vaccination Act, 1898, within the time limited by that section, and at the end of seven days after the expiration of six calendar months from the birth of the child, has not received any other of the certificates mentioned in subdivision (*a*) of this paragraph, the vaccination officer shall forthwith give a notice in the Form K. set out in the fifth schedule to this Order or to the like effect to the parent or other person having the custody of the child by delivering the same by post or otherwise at the last known residence of such parent or person. *If that notice is not duly complied with within the time specified therein, it will become the duty of the vaccination officer under the Vaccination Act, 1871, to take proceedings for the enforcement of the law.*"

This unequivocal declaration will no doubt provide matter for discussion by the Antivaccination League. Last week we pointed out that while Major-General Phelps was engaged in fulminating against (alleged) magisterial lawlessness, the organ of the League was equally busy in advocating the practice of antivaccination lawlessness. "Places where we have already secured the election of good men and true, who will not consent to prosecute in any case, are places where the new law must be simply disregarded, even as was the old." But how will this characteristic policy work out in presence of the fact that it will be the duty of the vaccination officer to prosecute without the consent of his Board of Guardians? Is this checkmate to the League's move? Whether or no, the contest will be an interesting one from the point of view of the spectator who has taken the precaution to have himself vaccinated and revaccinated, so as to be able to watch the struggle between law and anarchy (to borrow from the vocabulary of Major-General Phelps) without having any personal concern in the result.

The other point to which we wish to call attention is the proposed scale of payment to public vaccinators. The principle adopted by the Local Government Board appears to us a sound one so far as it goes. For every child aged 4 months living in any district the public vaccinator will receive a minimum fee of 1s., unless the child shall have been certified to have been privately vaccinated or to be insusceptible, or have been the subject of a certificate of conscientious objection. These payments will apply even if the domiciliary visit does not result in vaccination. In addition there will be a minimum fee of 5s. for every successful primary vaccination or revaccination done at the house of the vaccinee, and a minimum fee of half a crown for every successful primary vaccination or revaccination done at the vaccinator's surgery or elsewhere. The principle here is that there shall be a fee for domiciliary visits and an additional fee for the operator, so that the minimum payment in respect of a child successfully vaccinated at its home will be 6s. But it is to be noted that this sum covers more than the operation. The vaccinator must make a second visit to the home between six and fourteen days afterwards, and if in his opinion the child should require medical treatment in consequence of its vaccination, he must, with the consent of the parent, attend and prescribe. Further, the form of contract as given in the first schedule of the Order makes no provision for payment for domiciliary visits and vaccinations according to their distance from the vaccinator's residence. In each individual district the fee for every domiciliary vaccination will be the same. It seems obvious, therefore, that in rural districts, with long journeys, a higher scale of fees should be insisted on than in urban localities, so that the average fee may include payment for an average journey, or, as an alternative, that there should be a mileage rate fixed. This should apply not only to the vaccination fees, but also to the fees paid in respect of children whose parents refuse to submit them to the operation when the public vaccinator calls. No doubt many Boards of Guardians will attempt to adopt the

minimum scale even where a much higher standard should prevail, and no doubt there will be the usual temptation to downward competition, especially in these times when the profession is so seriously overcrowded.

We shall be glad to learn the views of public vaccinators on the Board's scheme from the standpoint of their experience of vaccination work and of Boards of Guardians.

PLAGUE IN VIENNA.

The lamentable and untoward outbreak of plague in Vienna has already been followed by the death of the patient infected, by the spread of the disease to at least two nurses attending (one of whom has died), and by the death of Dr. Müller, the young physician who went out to India with the Austrian Commission for the purpose of studying epidemic plague on the spot. In his attempt to prove that plague is the result of the action in the body of a specific bacillus, Dr. Müller has been only too successful, and this before those engaged in investigating the matter have succeeded in discovering any remedy for this terrible disease. It would appear that a number of experiments on the production of the disease, and on a preventive method of inoculation, have been carried on for some time past, and that Barisch, the attendant at the Pathological Institute attached to the General Hospital, had under his charge a number of animals which were being kept under observation after inoculation.

In regard to one of the most important factors in this case there appears to be a considerable discrepancy of testimony. On the one hand, it is stated by the *Times* correspondent that Barisch, who was entrusted with the cleaning and feeding of the animals kept for the bacteriological study of the plague, was considered exceptionally intelligent and fully conscious of the dangerous nature of his work; on the other hand, Professor Paltauf states that Barisch, though a good attendant, was often under the influence of liquor, and the Professor considers it very probable that the man whilst in this condition would not be very careful as to the place in which he laid down his pipe or as to the condition of his hands when he removed and replaced it whilst handling and littering the infected animals, and cleaning out the cages. This of course is a serious assertion to make, but it is further reported that Barisch's wife made a statement when she first heard of his illness, that "it was most likely due to his having caught a severe cold, as he had recently on two occasions stayed out until an early hour in the morning, returning home with the signs of having had too much to drink."

On Saturday, October 15th, Barisch was suddenly taken ill, and it was supposed that he was suffering from influenza or acute pneumonia. Dr. Müller, however, had his suspicions that it was not a case of influenza but one of plague, and a bacteriological examination confirmed this diagnosis. From the very commencement it was evident that there was little hope of the recovery of the patient. The disease was from the first of the pneumonic type, a form that proves very fatal in India.

As all those who have come in direct contact with any of the patients have been carefully isolated, and as before he was taken ill Dr. Müller, with a devotion which probably cost him his life, worked night and day until not a trace of infective material was left in the laboratories and animal houses, we may hope with the experts on the spot that the outbreak has been scotched. There will no doubt be a great outcry from those who take every opportunity of assailing medical men in regard to their inquiries after knowledge in connection with disease, and a determined and persistent attempt will be made to prejudice the public mind against experimental work of all kinds; appeals will be made which, though they may sound reasonable enough when superficially examined, have little to support them. It must be remembered that experiments identical with or similar to those that are being carried on in the Vienna laboratories have for the last quarter of a century been carried on in various laboratories in many parts of the civilised world, and that although a few accidents have occurred the sufferers in most cases have been the experimenters themselves. Experiments of this kind, however, are carried on with such care, and the precautions taken for keeping the bacilli and their products well under control are so near perfection, that it may safely be said that more cases of infection occur amongst young medical men attending fever cases (whether in private practice or hospital wards) in a single month than have occurred in the whole of the laboratories of the world since they were established.

As already pointed out, this accident affords only too positive proof of the definite causal relation that exists between the "bacillus pestis" and bubonic plague. It is scarcely likely that any further doubt will ever be expressed on this point, and it must be borne in mind that with the exception of the final proof which has been obtained in this case, but which, fortunately, is obtained extremely seldom in connection with any disease, equally strong proof has been brought forward as to the relation between certain other bacilli and the specific infective diseases in which they occur.

One of the most important lessons to be drawn whilst public attention is still occupied by this sad event is that we have equally sad and equally preventable cases of disease always with us, and if carelessness or neglect is to be mentioned in connection with this case, equally culpable carelessness must be admitted in connection with instances of the spread of infective disease continually going on in our very midst in every part of the kingdom, amongst children, and adults. Because these cases are so numerous, and because we have become so accustomed to the conditions under which they occur, the medical officer of health is set down as a faddist and the experts who advise him as dreamers when it is suggested that isolation hospitals should be built; that water gathering grounds should be protected and inspected; that drains should be made as perfect as possible, regardless of cost; that children suffering or convalescent from diphtheria should be kept apart; that phthisis should be looked upon as a communicable disease; that efforts should be made to find out whether cattle from which milk is being supplied are suffering from any tuberculous disease which might through the milk from these cattle be conveyed to the consumers (especially those of tender years). This list of diseases might be extended still further were we to include all those in which there is reasonable

proof that bacilli are the causal agents. Here, however, it is only necessary to draw attention to what may be called the wholesale slaughter of the innocents constantly going on in our midst and to point out that because this slaughter is carried on under good old-fashioned conditions, and because it is impossible to alarm people by anything that is not new and striking, it is allowed to go on unchecked and often aided by gross negligence and carelessness. Speaking from Dr. Müller's point of view, reading his character by the light of what truly may be spoken of as his heroic, almost superhuman, efforts, made on behalf of those who were suffering through little fault of his, though because of the work that he had been carrying on, we believe that he would even have welcomed his own untimely fate could he have been assured that the lesson taught by this incident would be applied to the thousands of cases of infective disease which daily terminate fatally, and which are as preventable as, and certainly far more blameworthy, than that which has excited such widespread consternation and called forth such heartfelt sympathy.

THE BACTERIOLOGICAL DIAGNOSIS OF INFECTIOUS DISEASE.

It would be difficult to overestimate the importance of an early diagnosis of infectious disease, whether the matter be viewed from the standpoint of the individual or of the community; and since it is generally recognised that bacteriology can afford valuable assistance in the diagnosis of certain diseases, it is fitting that those whose duty it is to guard the public health should offer all possible facilities for the adoption of this important aid.

Great credit is therefore due to those local authorities which, acting on the advice of their medical officers of health, have already adopted the practice of sending to each practitioner within their sanitary area a "diagnosis outfit," which provides the means of collecting, under suitable precautions, the material necessary for a bacteriological diagnosis of diphtheria and enteric fever. Such authorities have hitherto experienced no difficulty in procuring a prompt bacteriological examination, and in forwarding a report which generally reaches the practitioner within forty-eight hours. The work has been undertaken at a very small fee by the British Institute of Preventive Medicine, the Clinical Research Society, and the bacteriological departments of several of the medical schools of the metropolis.

There is no doubt, however, that in the near future many other local authorities in and around the metropolis will avail themselves of this valuable means towards checking the spread of infection. Perhaps the surest guarantee of this is the fact that the expense is only trifling (the outfit costs but a few pence, and the diagnosis is generally made for half a crown). Even this small outlay is more than set off by those instances in which suspicious cases, some of which would otherwise be notified, are proved to be non-infectious, and the expense and trouble of disinfection are thus saved. If, then, as seems probable, the whole of the authorities in and around London are likely within, at most, a few years to furnish such outfits to practitioners, it becomes a question whether the existing provision for their prompt examination will prove sufficient. If not, then one of two alternatives suggest themselves: either sanitary authorities must provide their medical officers of health with a laboratory suitably equipped for this work, or some large central laboratory will have to be provided by the London County Council. The objections to the first-mentioned provision are not far to seek. Medical officers of health do not all possess the experience of such work necessary to ensure that the maximum benefit will accrue, and, on the other hand, even in one of the larger parishes, intervals of several days elapse during which no outfits are returned, and in the smaller parishes several weeks may thus pass by. Those acquainted with the details of bacteriological methods will at once appreciate how difficult it would be to carry on such work with promptness and certainty under these circumstances.

The London County Council has recently addressed a communication to each of the local authorities in the county of London, asking whether they would be in favour of the Council applying for parliamentary powers to establish a bacteriological laboratory at the expense of the county, and the scheme is receiving their consideration at the present time.

There are certain advantages—more especially in respect of uniformity and of economy—in centralising such work, and the suggestion is sure to meet with a large measure of encouragement. Acting on the advice of their health officers, the London vestries and Boards of Works would probably be unanimous in support of the proposal, if a guarantee were given that the work would be restricted to bacteriological diagnosis by a staff of experts; but some hold the opinion that it is not desirable that the laboratory should develop into a teaching institution and put itself in competition in this respect with existing laboratories.

The London County Council at its last meeting agreed to a motion to refer the consideration of the desirability or otherwise of the Board establishing a bacteriological laboratory for London to its General Purposes Committee.

SICKNESS IN THE KHARTOUM FORCE.

Later accounts from private sources fully confirm the report as to the amount of sickness in the Khartoum force which we published last week. One correspondent says: "There are about four deaths in the hospital (Cairo) every day from enteric. Numbers have the disease, both officers and men." Since the return of the 1st Battalion Grenadier Guards to Wellington Barracks from the Soudan the cases of enteric fever have been numerous. Recently three deaths occurred at the Station Hospital, Rochester Row, where the beds are all occupied; hence some cases have been sent to other hospitals. It is stated that 160 men are in hospital, of whom 120 are in the Guards' Hospital, and the remaining 40 at Netley, Gibraltar, and Cairo. About 30 of the cases at Rochester Row are, reports state, well-marked cases of enteric, and the majority of the remainder are diseases of the digestive organs, though with no typical symptom of enteric. The cases of enteric fever are of a serious character, giving rise to anxiety. The total number of deaths in the battalion since it left England in 1897 is 24. Coming down the Nile the Guards lost by death 13 men. The younger and short-service soldiers, it has been noticed, have shown the least resistance to disease.

EPSOM COLLEGE.

IN a letter published in this number of the BRITISH MEDICAL JOURNAL "An Old Epsomian" raises a point which appears to us to be of considerable importance in regard to the name of this excellent institution. There can, we take it, be no doubt that the word "Benevolent," which forms part of the official style and title of Epsom College, is largely responsible for the mistaken notion that it is a charity school. We understand that for many years it has been the desire of the Council of Epsom College to omit the word "Benevolent" from its title. In the last Act of Parliament obtained a few years since power was taken to alter the name as soon as circumstances permitted. It has not been deemed advisable to make this change up to the present in consequence of the inadequate support given by the profession and the public to what is an important, though by no means the sole, object of the institution, namely, the maintenance of the aged pensioners and the education of the Foundation scholars. This policy of the Council has frequently been referred to at the annual meetings and at the festivals of the College. It is perfectly well known that in a very limited number of cases the name has prevented parents sending boys to the College; but till it is in a less precarious financial condition than it is now, the Council doubtless feel it their duty not to keep the "benevolent" feature in the institution out of sight. It is satisfactory to find from the published reports that in spite of the misconception which has been referred to the number of pupils is steadily increasing. This is the surest proof of the success of the school, which only needs a larger measure of support from the profession and the public to grow into one of the leading schools in the country.

SURGERY IN THE RECENT WAR.

AT a general meeting of the New York Academy of Medicine on October 6th, Major W. Duffield Bell, Surgeon of the 71st New York Volunteers, gave an account of his experiences in the recent war. He stated that in Cuba the transport of the wounded was a source of anxiety to the surgeons; men with desperate wounds had to walk or crawl distances of from one mile to several miles over a wild and rugged country. Men who had been shot through the abdomen by the Mauser bullets were known to have walked for three or four miles, and to arrive at the hospital in excellent condition, recovering eventually without operation. Dr. Bell said that within his personal knowledge men had been wounded in the liver and kidney without serious consequences. At a range of over 200 yards the Mauser bullet makes a small wound of entrance, and only a slightly larger one of exit. If the bone was shot through at a shorter range there was always some comminution. In several instances the Mauser bullet passed through the skull without causing any apparent injury to the brain, and the men returned to duty in two or three days. In regard to injury to the soft parts, he stated that in eight instances wounds had been inflicted over the femoral artery in such a situation that it would seem as if the bullet must have gone through the vessel; although the fact appears almost incredible, it appeared that the artery had receded from the bullet. In some of the cases all that could be detected was an aneurysmal varix. In nearly every case the soft parts had healed very quickly in three or four days. Dr. Bell insisted that in spite of the denials that have been published the Spaniards used "explosive" bullets, consisting of a brass coat containing soft lead; on impact this bullet "exploded" and produced a ghastly wound. It was used, he said, by the Spanish volunteers, who fired it from the old Springfield rifle. The simplest antiseptics answered best in the field. Iodoform was found to produce such irritation of the skin in a tropical climate that it had to be abandoned. Laparotomy was performed in several cases, almost invariably with a fatal result. On the American side 280 were killed and 400 wounded in the campaign. Only 65 of the wounded died of their injuries, and but a small number had required additional care since their return to the United States. The Krag-Jorgensen bullet at short range was found to be explosive, like the Mauser bullet, but the range of the former was shorter by 300 or 400 yards. On the visit of the British Consul to the American lines during the cessation of hostilities, he was asked to notify the Spaniards that if they did not stop using "explosive" bullets the Americans would retaliate in kind. To this the Spaniards replied that the Americans were also using them, and upon investigation it was discovered that the Krag-Jorgensen bullet acted in this manner. In the 1,415 cases treated at Siboney there were only 4 deaths up to July 7th. Traumatic fever was almost unknown in the camp. It was quite different with the Spanish soldiers. Those who received wounds in the naval battle did badly. There were no clean wounds here, so that amputations instead of resections were required. Dr. Bell was struck by the fact that all the wounded Spanish soldiers coming under his observation had been injured by more than one American bullet. He did not see a single case of tetanus.

FASHION AND MEDICINE.

SINCE Dr. J. W. Carr's address on this subject it has been freely discussed of late, especially in papers which circulate chiefly amongst women. It is pointed out that only a few seasons ago there was a perfect mania for taking strychnine in the form of tablets or pellets under the mistaken impression that periodical pick-me-ups were necessary in order to get through the daily round of amusements. Then came a reaction, and women were constantly dosing themselves with bromide of potassium on the plea that it was "soothing." A few months later arsenic was the fashionable drug and Society papers teemed with advertisements of arsenical granules which were warranted to improve the complexion and do many other things besides. Coca wines, kola, antipyrin, ammoniated tincture of quinine, caffeine, and many other drugs have been "boomed" in a similar manner and each still has its own special advocates. These popular nervine stimulants, many of them by no means destitute of poisonous properties, seem to have replaced as domestic remedial agents the comparatively innocuous sal volatile and essence of ginger of twenty years ago. It is surprising that the ignorance and recklessness of fashionable ladies do not swell the death-rate even more than is the case. Strychnine and arsenic are not drugs that can be played with without serious risk.

BABY FARMERS AND THE NEW INFANT LIFE PROTECTION ACT.

IT is satisfactory to note that the London County Council is keeping a close watch upon the trade of baby farming in the metropolis. Fortified, in some measure, by the Infant Life Protection Act of 1897, the inspectors of the Council are now better able to control the practices of the baby farmers than was formerly the case. As showing the vigilance at present being exercised in this regard, it may be pointed out that last week two women were summoned for a contravention of the new Act. The first clause in the Act in question lays down that every person receiving for hire or reward more than one infant under the age of 5 years for the purpose of maintaining such infants apart from their parents for a longer period than forty-eight hours must give notice thereof to the local authority. In the case of one woman, living at East Dulwich, the offence was that she had taken in charge two infants, and had failed to notify to the Council that she had the children under her care. There was no evidence to show that the children were otherwise than well cared for, nor did the

prosecution allege that she had wilfully neglected to comply with the law. The defence was ignorance of the requirements of the new Act, and this was taken into consideration by the magistrate, who imposed a fine of 12s., including costs. The second case was a more serious one. In brief the facts, as reported in the *Times*, are as follows: A woman, residing in Fulham, inserted an advertisement in a newspaper, as the result of which a servant girl confided to her care an infant child for the sum of £10. The inspector of the Council having seen the advertisement paid a visit to the house, and found that the infant had been the second which the woman had received, the first one having died a short time before while under her care. With regard to the dead infant the evidence showed that a lump sum had also been paid down for its maintenance. The woman, having been warned by the inspector to comply with the new Act, failed to do so, and after hearing the evidence the magistrate convicted and sentenced her to two months' imprisonment without hard labour. Both these cases are important as showing that the Council are determined to enforce the Act when the opportunity offers. But while the "local authority" in London are doing their duty in this regard, what is being done in the provinces to control the practices of baby farmers? The Infant Life Protection Act of 1872 was proved by the evidence before the House of Lords' Committee in May, 1896, to have been a "dead letter" everywhere in England, save in London, and it is therefore earnestly to be hoped that the various local authorities outside the metropolis have not neglected their duty in regard to the enforcement of the new Act.

AMERICAN CONSUMPTION HOSPITALS.

Our Chicago correspondent writes:—The new county hospital for consumptives was opened to the inspection of the medical profession of Chicago on October 8th. This is said to be the first charity hospital of its kind in this country. We of course have many private hospitals for consumptives, and many wards in county hospitals and large infirmaries for this class of patients. But it is held that there is no other large, especially-constructed retreat of this kind. Among the poor charges at Dunning, just outside the corporate limits of Chicago, there are some 250 consumptives who heretofore have not been well isolated, and have only had such general attention as could best be given under the circumstances. Now, however, it is designed that special modes of treatment shall be carried out, and isolation from the non-tuberculous will be rigidly enforced. The hospital is a handsome red brick building, shaped like a T. The main entrance faces south, and the stem of the T extends therefrom 200 ft. north, where the two wings branch out. The wings measure 300 ft. in length. In this building, designed so that the sun shall have full play on one side throughout the day, provision is made for the treatment of 142 female and 196 male patients without crowding. A thick brick wall runs down through the centre of the building, separating the men's from the women's department. The structure is three storeys high, with an attic used as a steam distributor. On the three floors are wards of the following size: *For women*, one ward for 56 patients, one ward for 23 patients, five wards holding 160 patients; total capacity of seven wards, 239. *For men*, one ward hold 56 patients, one ward holding 52 patients, six wards holding 100 patients; total capacity of eight wards, 208. Every appliance known to the medical profession in the treatment of tuberculosis is to be found in the hospital. The third floor has a number of wards into which compressed air from a specially designed plant is introduced. The worst cases will be cared for in this department, the patient to receive the air while lying in bed. The operating room is off the office on the ground floor. Near it is the sterilising room, where the most modern machinery for that purpose is to be seen. The floors in all the wards are compactly laid and curved up along the edges, so that dust cannot stick. They are built tight enough to be flooded whenever necessary. The hospital, as a whole, is remarkably sunny and cheerful. It is finished in white enamel paint and marble. The plumbing is as perfect as can be. There is one ward in the rear with a private staircase to it, where the insane patients who have consumption may be treated apart from the others. The serving rooms—the food is to be cooked in the poorhouse kitchens—are fitted with heating ovens and other conveniences.—We learn from an American contemporary that the Massachusetts Hospital for Consumptives, situated in Rutland, Mass., twelve miles from Worcester, at an elevation of about 1,200 feet above sea level, was opened for the reception of patients on October 1st. It is built on the pavilion plan, and will accommodate 200 patients. Only such patients will be admitted as are not too far advanced to admit of reasonable hope of radical improvement. The charges for patients will be uniform, the rate being 50 cents per day.

WANTED: BRAINS.

Dr. Burt G. Wilder, Professor of Physiology on the Cornell Staff of Instruction at Ithaca, has recently issued a circular asking prominent men in the United States to bequeath their brains to the university. He says that while it is easy to procure the brains of criminals and of insane or ignorant persons, it has hitherto been extremely difficult to obtain those of persons in whom the cerebral development is beyond the average. He adds that it is highly desirable for the advancement of science that a considerable number of brains of this character should be secured. This request, which has been circulated principally among the students and graduates of Cornell, is accompanied by a blank form of bequest, which, however, contains a clause by which the legacy becomes void if serious objection is made by the relatives of the deceased.

CORONER AND DOCTOR.

A coroner is sometimes rather an autocratic person, and in the exercise of his powers he occasionally appears to bear somewhat heavily upon persons who happen to be mixed up with the cases which come before him. Members of the medical profession necessarily are liable through their practice to be referred to in coroners' courts, and there are few if any of us who have not at times been a little startled, sometimes amused, but not seldom annoyed at the use made of our names in the proceedings of a court which attain considerable publicity through the press, without an opportunity being given us of explaining or contradicting the statements which have been made. These remarks are suggested by the report of an inquest in Aberystwith upon an old woman who died from severe burns, the result of falling upon the fire. Dr. Beddoes, who was called in to attend the patient, did what he could to persuade her to go to the infirmary, but she refused. The next day, however, she was taken to the infirmary and died there. At the inquest the coroner asked one of the witnesses what dressings had been applied to the patient, and the nurse who received the patient at the infirmary was asked what dressings she found upon the burns, the suggestion apparently being that the patient had not been properly treated. It is true that the first witness said that the doctor dressed the burns, but that his mother was so restless that she got the bandages off, and that the house-surgeon admitted that the case was hopeless from the first, and that the coroner finally stated that there was no reflection whatever upon the doctor; yet it would have been only fair if he had given the doctor the opportunity he asked to tender his evidence upon oath so as to rebut these insinuations, which were circulated in such a way as to endanger his professional reputation. The excuse made by the

coroner that it would have involved the payment of a fee, which he considered unnecessary, was hardly valid, as the doctor was quite willing to give his evidence without payment.

OPENING OF THE WINTER SESSION AT ABERDEEN.

THE University classes reopened on Wednesday, October 19th. The students of physics were addressed in their new department at Marischal College by Professor Niven, in accordance with whose plans the fittings and arrangements of the new premises have been carried out. Special importance has been attached to affording facilities for experimental work and for research. Professor Niven reminded his audience that it was Clerk Maxwell who last held the Chair when the lectures on natural philosophy were delivered at Marischal College. Professor Hamilton, in his introductory address, drew special attention to the extraordinary increase which has occurred of late years in the number and efficiency of medical schools throughout the country. Taking Liverpool as an example, he said that he was much impressed with the modern advance in the matter of clinical instruction. Though the material in Aberdeen was relatively small as compared with centres containing a larger poor population, he considered that much might be done in improving the facilities for the students in clinical work. He deplored the existence of the dispensary as depriving the out-patient department of the infirmary of patients. That department was the life of a medical school, and it was in its development that effort at reform could be made. Professor Hamilton dealt with extreme regret on the resignation of Professor Ogston from the acting staff of the infirmary, and spoke of the renown which his name had shed on the institution. A gynæcological department has been added at the Royal Infirmary, under the charge of Professor Stephenson. Wards have been allotted and hours for the instruction of students are being arranged.

THE PHYSIQUE OF THE PUBLIC SCHOOL BOY.

AN interesting letter which recently appeared in the *Times* affords an illustration of the many-sided and practical results which attend "research" undertaken primarily for its own sake. The writer, who signs himself "M.D.," has carried out a careful and thorough physical examination of every new boy admitted at the beginning of each term to one of our great schools. He gives a tabular analysis of his results as shown in the case of the first 100 boys thus examined, and his statistics are, at first sight, sufficiently startling. That out of 100 boys examined at the beginning of their public school career no fewer than 63 should be the subjects of deformities—lateral curvature, pigeon-breast, bow-leg, flat-foot, and the like—and 20 be suffering from some form or another of defective eyesight, will doubtless come as a surprise to those who are not familiar with the outcome of similar investigations. The observations emphasise the fact that such disabilities of early life originate, and are too commonly overlooked or neglected, during the years spent in the nursery and the preparatory school. The fact that 22 per cent. were found to be suffering from albuminuria is significant of the unstable condition of the nervous centres in youth, for in the case of young and growing lads the excitement of journeying by rail into a new social world, sometimes reinforced by extra indulgence at home just beforehand, not infrequently induces this symptom even more readily than the strain of preparation for an arduous examination or the shock of the morning cold bath in older adolescents. The large proportion of those who fell below the average for their age in height (39 per cent.) and in chest girth (63 per cent.) includes all who did so, however slightly. And if the writer continues his investigations into the physical development of these lads term by term, he will be pleased to find how very large a number (supposing them to be subjected to appropriate training) come to surpass the standard; at least this has been the experience of those schools in which these conditions obtain. "M.D." considers that his statistics afford a striking commentary upon all the affectionate care and thought which are lavished upon the embryo public school boy during his earlier years at home. They clearly point a moral, and suggest the need for more discriminating care and supervision during those earlier years of life when the kind of body and constitution which the adult shall ultimately possess is to a large extent determined. It must not, however, be forgotten that so much has the standard of bodily care been raised in all our large schools during the past few decades that boys are now sent by the hundred to a public school who would, a generation or so since, have been deemed quite unfitted to withstand the more rigorous environment of that time. The great justification of the greater and more enlightened consideration now devoted to such matters by school authorities at large is found in the high average of good physical results which are every year evolved from an increasing proportion of relatively unpromising material. It is to be regretted that "M.D." has not recorded any details as to defective teeth in the boys whom he examined. This is a most important matter, not the less potent because insidious. In itself so often a cause of defective health in childhood, its results not seldom bar the way to more than one professional career; and many parents would ultimately be almost as grateful as their sons were the extreme value of early and continuous care in this matter more emphatically insisted upon. It is probably no exaggeration to say that, as matters stand to-day, the *personnel* of every great school affords almost continuous occupation to the dental, and next to him to the ophthalmic, surgeon. But beyond the importance which such facts as are here revealed have for the parent primarily, they cannot but be of the very greatest assistance to the school authorities themselves. They indicate at once what are the weak and what are the strong points in each of the individuals whom it is the business of the schoolmaster quite as often to reform as to educate. They help to advise him, and that from the very beginning, as to what he may expect; they serve to forewarn him of weakness and to show where strength is needed, and how aid may best be rendered; when supplemented, as they should be and as they fortunately are in many of our best schools, by regular periodical tests of the progress of physical development, they furnish one of the best as well as one of the most graphic evidences as to the success of the educational means employed, encouraging perseverance, warning as to relative failure, and suggesting timely modifications of the methods previously used. To the school doctor they are obviously invaluable, while adding a special interest to work which is always as interesting as it is useful.

THE NEW BELGRAVE HOSPITAL FOR CHILDREN.

IT will doubtless be remembered that a meeting of local practitioners held at Kennington some months since appointed a Committee to watch the progress of the new hospital scheme in the interest of the general practitioner, and we are informed that though the profession has not heard much about the matter lately, the Committee has not been idle. The consultation scheme, as described in Mr. Clinton Dent's paper read before the Council of the Charity Organisation Society in June has been agreed to by the Committee, and the chief points outstanding for discussion are the requests of the local practitioners: (1) For a place or places on the Executive Committee of the hospital; (2) for a post on the medical staff, so that they can take part in the working of the medical or surgical practice of the hospital; and (3) a satisfactory arrangement as to the appointment of an inquiry officer,

and the application of a wage limit, to include all the family earnings. Supposing that both parties are willing to give and take a little, we see no reason why an agreement should not be come to on these points between the Committee and the originators of the scheme, whose desire Mr. Dent has stated to be to work with, and not in antagonism to, the general practitioner. Probably the request for a place on the staff is that which would provoke most opposition, but if the hospital authorities by appointing one or two local practitioners as clinical assistants, with a prospect, when a vacancy occurred, of a full appointment to the staff if found suitable, could secure the support of the neighbouring medical men for their new venture, they would do much to assure its success. A little sweet reasonableness on both sides seems to be all that is required to make the new Belgrave Hospital popular with the profession.

A MEMORIAL TO WILHELM MEYER.

On October 25th an international monument in honour of Dr. Hans Wilhelm Meyer, the discoverer of adenoid growths, was unveiled in Copenhagen. The memorial, which is a bronze bust of more than life size resting upon a granite base, stands in the Gefion Square in East Copenhagen. It is the work of the Danish artists, Bissen and Runeberg. The Mayor of Copenhagen, several high officers of State, and a number of professors of the medical faculty, of medical men, and of the general public, were present at the ceremony. The memorial was formally handed over to the Municipality of Copenhagen by Sir Felix Semon, who delivered an address in which he pointed out the importance of Meyer's discovery, which had already saved thousands of people from life-long deafness and the lasting results of obstructed nasal respiration, and in future times would be similarly beneficial to hundreds of thousands and even to millions. He described Wilhelm Meyer as one of the greatest benefactors to mankind that the profession of medicine had ever known. After the monument was unveiled, M. Ollgaard accepted it on behalf of the City of Copenhagen. We hope to publish a full account of the proceedings, with the text of Sir Felix Semon's address and an engraving of the monument, in our next issue.

THE FIGHT AGAINST TUBERCULOSIS.

Sir William Broadbent on October 22nd opened a new sanatorium for infectious cases erected by the Huddersfield Corporation, and subsequently gave an address to the Technical College on The Prevention of Consumption and other forms of Tuberculosis. He said that medical men had learnt how the ravages of tuberculosis might be stayed, but knowledge percolated slowly, and while it was being brought home to the general public, many hundreds of valuable lives might be sacrificed. The realisation of this fact had led to the formation of the National Society for the Prevention of Consumption and other Forms of Tuberculosis. As an illustration of the serious loss of life which the disease produced, he quoted from the report of the Medical Officer of Health for Huddersfield for 1897. The total number of deaths in the borough in 1897 was 1,666, and of those 222, or 1 in 7.5, were due to the various forms of tuberculous disease. Consumption was not an inevitable disaster inflicted by a mysterious fate; it was, on the contrary, one of the products of men's ignorance and carelessness. He then referred to the dissemination of tuberculosis by means of the sputa of patients suffering from consumption, and to the necessity for guarding the milk supply of large towns from tuberculous contamination. It was now possible to obtain sterilised milk on a large scale from many dairies by which it could be supplied in any quantity. He observed, in passing, that railway companies ought to insist on sterilised milk being kept at their refreshment rooms, instead of the tumblers of milk which were to be seen exposed on the counters, and which might have been standing for half a day absorbing bacteria and filthy emanations of various sorts. But though the bacilli of milk might be killed by boiling and sterilisation, the public had a right to ask that milk should be supplied which did not contain them. This could be obtained by the due application of the tuberculin test to milch cows, though he feared that the extinction of tuberculosis in cattle must be a gradual process, since the immediate slaughter of animals without compensation would be ruinous to farmers, while compensation involved a demand which no Chancellor of the Exchequer would face. With regard to the prevention of the dissemination of tuberculosis from patients suffering from the disease he strongly urged that the rooms occupied by consumptives should, immediately after death, be disinfected under the supervision of the medical officer of health. The most effectual preventive measure was to live as far as possible in fresh air, day and night, summer and winter. Closely-fitting windows were a delusion and a snare. Every person ought to sleep with the bedroom window open. This would not only reduce the mortality from consumption to probably one-half, but would have the further effect that there would be fewer coughs and colds. For those suffering from consumption, the curative was not any particular air but fresh air. Sanatoria, he thought, ought to be erected on a dry soil and southern exposure, within reach of all large towns. They should be protected from the east and north, have absolute freedom from dust, and if possible be free from fog. We learn that the Birmingham Health Committee has decided to print for distribution a leaflet containing information for the public with regard to the prevention of consumption. Strict injunctions will be given as to the precautions to be adopted by the patients themselves and by their friends to prevent the spread of the disease. It is intended to ask ministers of religion and working men's societies to co-operate in spreading knowledge on the subject.

YELLOW FEVER IN THE UNITED STATES.

According to the American medical journals, the reports from the Mississippi and Louisiana States show a continued spread of yellow fever. On October 10th it was reported that seventeen countries and twenty towns in Mississippi were infected. An extensive migration has taken place from the infected districts, 25,000 people being reported to have taken flight to northern and western cities or to the woods. Great hardship has been caused to all classes by the total suspension of business in the infected districts. The panic is all the more deplorable as the character of the cases has been uniformly mild, the death-rate being reported to be about 10 per cent., though larger among the whites than the coloured population. The character of the disease is so mild, in fact, that the State Board of Health of Louisiana, in a recent proclamation, characterised it by the barbarous term "yellowoid fever," and have relaxed the quarantine regulations to the extent of allowing all persons from non-quarantined to enter quarantined localities, from which, however, they cannot return. Ten counties out of sixty-nine in Louisiana have already removed quarantine restrictions. On October 9th Surgeon-General Wyman issued the following statement for publication regarding the epidemic: "The disease is confined to Mississippi and Louisiana, and is a recrudescence of the fever from last year. In my opinion it did not come from Cuba, and was not admitted by any quarantine. The hospital service has a large corps of officers throughout the infected territory. All trains leaving infected districts are manned by inspectors of the Marine Hospital Service, and through trains are supplied with guards as well. Freight trains are obliged to change their crews, so that the same crews may not go from one infected district to another infected district. The disease

has appeared so late that it is extremely improbable that it will assume the extent of a great epidemic. After November 1st there may be some new cases, but there will be no new foci." Public schools, colleges, and seminaries have generally been closed throughout Mississippi, and all courts, included the State Supreme Court, have been suspended.

EFFECTS OF THE LEE-METFORD RIFLE.

A RECENT number of the *African Review* contains a report —which from "information received" (as the police say) we have reason to believe accurate—of an extraordinary occurrence that not long ago caused considerable excitement at Maritzburg. While a number of coloured worshippers were gathered together in the Congregational church of that town their devotions were interrupted by the smashing of a window, followed by the fall of a man on the opposite side of the church. It was found that he had been shot, the bullet having penetrated the left side of the chest and lodged in the heart. Dr. Charles Ward, the district surgeon, made a *post-mortem* examination, and found the bullet, a Lee-Metford one, impacted in the aorta at its point of passage through the diaphragm. The bullet had travelled from some hills outside the city, a distance of between three and four miles, as estimated by an officer of the garrison, and was so nearly spent that after passing through the window of the church, a waistcoat and shirt, rib, and pericardium, it penetrated the descending arch of the aorta. It had not momentum enough, however, to go right through the vessel, but dropped down inside it. The case strikingly illustrates the long range at which the Lee-Metford rifle is effective.

THE JURISPRUDENCE OF INTOXICATION.

DR. J. F. SUTHERLAND, of the Scotch Lunacy Board, in a recent article in the *Juridical Review*, urges that drunkenness and habitual drunkenness should be considered offences against the law, but suggests that the fact that the intoxicated person is *non compos mentis* should have weight in criminal as it has in civil law. These views are by no means novel, but the recent advance in inebriate legislation renders them worthy of consideration at the present time. The legal view, expressed by Coke, that the drunkard who is voluntarily insane *(voluntarius dæmon)* enhances his criminality *(omne crimen ebrietas et incendit et detergit)* is certainly not in accord with modern ideas. Eminent legal opinions and decisions of recent date are quoted by Dr. Sutherland in which drunkenness was held in some measure to reduce the responsibility—for example, from murder to homicide. Whether this is based on the assumption that the drunkenness was involuntary does not appear. The civil law holds the drunkard to be irresponsible for his own acts —such as testamentary dispositions and contracts made while in a state of intoxication. The Inebriates Act of the present year provides, first, for the punishment of the criminal habitual drunkard by imprisonment, and, secondly, for treatment by detention in an inebriate reformatory. These legal methods of dealing with drunkards are so contradictory that they must necessarily be based on uncertain or erroneous views, which demand consideration and if possible amendment. Intoxication, as even Coke admits, is an insane state, and the consequent irresponsibility which is recognised in civil law, if extended to the criminal, would leave only the voluntariness of the drinking as a basis for punishment. The moment at which drinking or the habit of drinking becomes involuntary in many cases is impossible to determine. The Inebriates Act assumes that drunkards can only be punished satisfactorily by admitting a partial responsibility and a partial involuntariness demanding treatment. It would appear that the law now admits that the element of disease in drunkenness, that is of defective self-control, ought to be taken into account. An assault by a sober man, for example, which might properly be punished by a week's imprisonment, when committed by a drunkard might demand treatment in an institution for three years. If this becomes generally known, it is probable that treatment will become much more deterrent to those who are still susceptible to it than punishment has hitherto been. Instead, therefore, of insisting on the criminality of drunkenness, we should insist on the view that it is an abnormal condition requiring, in every case coming before the courts, very full investigation in regard to the extent to which the diseased habit has extended. The popular view of drinking would probably be more influenced by the notion that drunkenness is a disease than that it is a crime. The average man prefers rather to be thought a little bad than a little mad.

"THE ANTIVIVISECTIONIST FIASCO."

WE have received a letter from Miss A. L. Woodward, Honorary Assistant Secretary of the Church Antivivisectio League, with regard to the antivivisection meeting at Bradford. The letter does not add anything to that of the Rev. Thomas Perkins beyond the statement that "Dr. Kerr, though publicly challenged to do so, has failed to point out a single inaccuracy in the pamphlet which seemed to rouse its special ire." This is an ingenious attempt to shift the onus of proof from those who have made statements to those who assert that these statements are misleading or inaccurate. It is the duty of the persons engaged in the antivivisection propaganda to substantiate the statements which they have made. As we said last week, the leaflet referred to contains references to our own columns for some of the assertions; but in those which we have been able to verify we repeat that the alleged quotations—which in several instances are not quotations but paraphrases—are, where not inaccurate, misleading. It is now the duty of the antivivisectionists either to verify the accuracy of their quotations or to withdraw them from circulation with a suitable apology. If they do neither, public opinion will know how to decide on which side truth rests. We have also received a letter from Dr. Hime, who took a prominent part in the meeting at Bradford. Dr. Hime states that Mr. Perkins's suggestion that the disorder at this meeting was due to the medical men present at it is entirely contrary to the fact. He states that the meeting was a public one, summoned by public advertisement and circulars sent broadcast. It was not, he adds, as Mr. Perkins's letter might suggest, a meeting limited to members of the Church Antivivisection Society, which medical men invaded. "While I was trying to speak," he continues, "I was several times most irregularly interrupted by the Rev. Mr. Ring, who at one time persisted in trying to talk me down without any interference by the chairman, till I appealed to the meeting to note the way in which the few minutes allotted to me were being interrupted." He says also that two ladies addressed the meeting during his speech. Dr. Hime also traverses Mr. Perkins's statement that Dr. Hime and his friends refused to wait until those who had been invited to address the meeting had spoken. We have also received a further letter from the Rev. Thomas Perkins, who desires to point out that the words in his letter published in the BRITISH MEDICAL JOURNAL of October 22nd, "more carefully" were a misprint for "most carefully." The word "more," however, was so distinctly written in the manuscript that we did not feel justified in altering it. Mr. Perkins also desires to state that the six words which we omitted as containing an offensive imputation were not his own, but a quotation from the speech of one of his opponents. With regard to the leaflet distributed, Mr. Perkins says that he did not compile the paper himself, but was assured by the gentleman who did that he

had taken the greatest care in drawing it up, and could verify every statement made. Mr. Perkins adds that this gentleman has asked him to challenge us to point out any inaccuracy. We think, however, that we may now fairly call upon this gentleman to come forward and substantiate the statements and quotations which he has had the temerity to make. We must further point out to Mr. Perkins that he cannot in this manner shuffle off the responsibility which he has assumed by distributing the leaflet in question without being at the pains to verify the statements which it contained.

THE NEW COMMISSIONER IN LUNACY.

Dr. Sidney Coupland has been offered and has accepted the office of Commissioner in Lunacy, rendered vacant by the resignation of Dr. Reginald Southey. The appointment of a general physician to succeed Dr. Southey, who at the time of his appointment was Physician to St. Bartholomew's Hospital, is in accordance with precedent, and those who know Dr. Sidney Coupland will feel that no better selection could have been made. His wide experience in medicine, gained during twenty-five years' service at the Middlesex Hospital, will combine with a sympathetic nature and a judicial habit of mind to render him an extremely valuable addition to the Board of Commissioners in Lunacy.

THE ENTRIES AT THE MEDICAL SCHOOLS.

According to the corrected returns which we have received from the officers of the medical schools and colleges in London, it appears that the total number of students newly entered for the full curriculum at the medical schools in the metropolis, excluding the London School of Medicine for Women, is 536. This compares with a corresponding entry in 1897 of 502 and in 1896 of 478. The average for the previous five years 1891-95 was 598, and for the five years 1886-90 it was 646. The number of new students this year at the London School of Medicine for Women is 46, as compared with 28 last year and 49 in 1896. The following corrections and additions should be made to the list published last week. At St. Mary's Hospital, London, the number of new full students is 65, and the number entered for special courses is 47. At Mason College, Birmingham, the number of students who have entered for the full curriculum is 23, the number who have joined for special courses is 12, the number of dental students is 15, and the number who have joined classes for preliminary scientific instruction is 11. At the University College of South Wales and Monmouthshire, 13 new students have joined for preliminary scientific instruction, 16 for instruction in the subjects of the Second Examination of the Conjoint Board and of the Intermediate Examination in Medicine of the University of London, and 4 for special classes.

THE IRISH DISPENSARY DOCTOR.

Once again interest has been aroused in the grievances of the Irish dispensary doctor, whose hard lot we have on so many occasions made the subject of observation in these columns. Those who look back to the second volume of the British Medical Journal for 1891 will find an exhaustive statement of the case based upon the evidence which we then gathered from the medical officers themselves. "An English Medical Tourist" has recently addressed a letter to an Irish paper on the subject, and he points out that in the dispensary district of Spiddal, near Galway, the doctor receives £100 a year for attendance upon 5,900 poor persons, scattered over a district of many miles. But the same, or a worse, story may be repeated regarding the whole of the western coast. The areas are large, in many parts difficult to traverse, the dispensary committees niggardly, the income from a life of unceasing toil not better than a skilled mechanic could earn. Yet for such a position medical men can be had; and while it is possible to fill vacancies it will be very difficult, if not impossible, to procure any amelioration of the conditions. The Local Government Board has notoriously been unsympathetic and hostile. Chief Secretaries, one after the other, have refused to do anything, and they have, of course, had their inspiration from the Custom House; and the same thing goes on year after year, perhaps in the hope that stolid resistance will wear down importunity. But it should be remembered that even the War Office, backed by all the influences of caste, has been obliged to yield to just demands. If the authorities resolutely shut their eyes to what is fair, there is only one way of reaching their intelligence, and that is by the abstention of candidates until reasonable recompense is provided everywhere, and the position is made worthy of an educated gentleman.

THE RETIREMENT OF SURGEON-GENERAL HAMILTON.

Surgeon-General John Butler Hamilton, late Principal Medical Officer of the Western District, who retired on October 3rd after completing nearly thirty-nine years of service, has been so prominent a figure in the Army Medical Department that a brief account of his career will doubtless be interesting. He comes of a military stock, five generations of which have served the Crown. He was educated at Trinity College, Dublin, where he graduated in Arts in October, 1859, and in Medicine in November of the same year, taking the first place among the successful candidates for the M.B. degree. Entering the Medical Service of the Army in January, 1860, he was soon ordered out to the Bahamas, and while there was in charge of an expedition sent after a pirate slaver to the coast of Cuba. Subsequently he served in Barbadoes, Jamaica, and British Honduras. In 1864 he was gazetted to the Royal Artillery, and joined the 16th Brigade in India, serving with it till April, 1873, when, on the introduction of the unification system, he was placed on the staff and came home. On being promoted to be Surgeon-Major twenty months later, he returned to India, where he served for nearly seven years, during two of which he was on the staff of the Surgeon-General of Her Majesty's Forces as Statistical Secretary. Returning home in 1882, he served in Ireland till 1885, when he took part in the Suakin Expedition. He was Senior Medical Officer with the Brigade of Guards which was sent out in relief on the day of McNeil's zareba fight, and was present at several engagements in that campaign. For his services he received the medal and clasp with the bronze star. Almost immediately after his return home he was sent out to India on promotion to Brigade-Surgeon, and was appointed to the medical charge of the large Station Hospital at Lucknow. During the six years that he held that appointment he had a very large experience of enteric fever. This he embodied in a monograph which was very favourably noticed in the British Medical Journal. In August, 1886, he was selected to organise a hospital ship for the Burmese campaign, and under his superintendence the *Tenasserim* was in eight days transformed into a well-fitted hospital ship, which did good service for several months. For this he received the high commendation of the Surgeon-General and the thanks of the Government of India. He was subsequently appointed Honorary Surgeon to the Viceroy, Lord Lansdowne, in recognition of his services during epidemics of typhoid fever and cholera at Lucknow. He returned home on promotion in November, 1891, being first appointed to the Western District and subsequently transferred to London. In 1894 he was sent to South Africa as Principal Medical Officer, and on promotion to Surgeon-Major-General in October, 1895, he was again appointed to the Western District, where he served till his retirement. In 1897 Her Majesty conferred on him the Jubilee Medal. Surgeon-General Hamilton did duty during no fewer than nine epi-

demics of cholera, and twice suffered from the disease himself. Few men have done more to raise the status of his branch of the service than Surgeon-General Hamilton, and his strenuous and persistent efforts contributed in no small degree to bring about the transformation of the Medical Department into a Royal Corps with clearly defined rank and military titles. Surgeon-General Hamilton, who is famous as a sportsman, was one of the best shots in the service; on several occasions he assisted the Irish Eight to win the Elcho Shield and was three times champion of India. He has an almost unique selection of trophies won by his skill with the rifle. Surgeon-General Hamilton is followed into his well-earned retirement by the respect of the whole service and by the goodwill of troops of friends.

THE SANITATION OF INDIAN STATIONS.

A committee, composed of Lieutenant-Colonel W. J. Fawcett, R.A.M.C., as President, and Major J. F. Jenkin and Captain C. V. Morgan, both also of the R.A.M.C., with the Executive Engineer Military Works, Poona District, is sitting at Poona to inquire into and report fully on the origin and cause of the prevalence of enteric fever in Poona and Kirkee. Major A. M. Davies, R.A.M.C., who, it will be remembered, was some time ago appointed Bacteriological Examiner under the Principal Medical Officer H.M.S. forces in India, has been deputed to Quetta, and also to Wanowrie, Poona, to inquire into the sanitary condition of those cantonments. It is known that there has been an abnormal amount of enteric at Quetta, and much sickness at Poona.

THE CRAIG COLONY FOR EPILEPTICS.

In the *Philadelphia Medical Journal* of October 8th Dr. Frederick Peterson, President of the Board of Managers of the Craig Colony for Epileptics, gives an interesting account of that colony. The colony, which is at Sonyea, Livingstone County, New York, was informally opened for patients on February 1st, 1896. Dr. Peterson thinks it fortunate that it was possible to begin this scheme on a scale proportionate to the large epileptic population of New York State, which is estimated at 12,000. He says there is probably no charitable institution of any kind in the world with landed possessions so magnificent. The Craig Colony had in fact already been a colony for fifty years or more, for the Shakers had selected nearly 1,900 acres in the garden-valley of the State—the Genesee Valley—and made it a remunerative property, with well-cultivated fields, fine orchards and pastures, and productive market-gardens. They constructed thirty or more substantial buildings, residences, barns, and shops, for they were not only thrifty agriculturists, but did a good business in broom-making, canning fruits and vegetables, and other industries. The estate comprises good quarries of building stone, fine deposits of brick clay, and acres of good timber, from which they obtained material for their houses. Two streams pass through it; one of them, which rushes swiftly through a picturesque gorge and divides the property into two nearly equal parts, ran the colony's saw-mill and flour-mill. But the Shakers, being celibates, gradually diminished in numbers, and in 1892, at the time that the State was seeking a site for a colony for epileptics, the ten or twelve old Shakers left upon the place offered the entire tract, with all its buildings for the purpose, for the sum of £27,500, about equal to the value of the improvements alone. The State purchased the property. It took two or three years more to carry out the idea of arranging it on the village plan, but the main features, such as the village green, streets, lanes, paths, sites for shops, residences, chapel, dairy, and farm buildings, schools, and the like, have been designed upon the best principles. The details are to be worked out, under proper guidance, by the patients themselves. It has been the aim of the management to provide outdoor employment as far as possible for both men and women. Agriculture, horticulture, floriculture, and market-gardening form a large proportion of the labour of the inhabitants for at least six months of the year. The women are employed in growing small fruits, flowers, and vegetables. The deposits of excellent clay are now being utilised by the patients for making bricks to be used in the construction of new cottages and of the walks throughout the village lanes. Eight male patients are at work in the brickyard, and the capacity of the brickmaking plant is about 1,000,000 bricks per year. Almost everything in the way of food stuffs required by a large population can be produced from the land itself by the labour of the colonists. Reference to the last two annual reports of Craig Colony shows that over 50 per cent. of their maintenance has been earned by the labour of the patients themselves, who now number 260.

CONSTRUCTIVE MURDER.

Now that the Whitmarsh trial is over, and the prisoner convicted of wilful murder, people are without doubt wondering in what respect the case differs from a recent *cause célèbre* where the doctrine of constructive murder was expounded to the jury by no less an authority than the Attorney General, on lines very different from the interpretation usually accepted, and as his views were tacitly accepted by the presiding judge, a verdict of manslaughter was returned. We must confess to feeling a difficulty in recognising any material difference between the crime of which Collins was convicted and that for which Whitmarsh now has to pay the penalty. The counsel for the prosecution threw out a suggestion to the jury that, following a recent precedent, they might find the prisoner guilty of manslaughter, but the judge declined to follow him on such delicate ground, and laid down the law in its usual acceptation. He gave the jury one very small loophole for reducing the crime to manslaughter, and one only, when he told them—and he reiterated it when they came back to ask a question—that if they as reasonable men believed that when Whitmarsh performed the operation there was not present to his mind the faintest conception of danger to the woman's life, they would be entitled to bring in a verdict of manslaughter. But the jury, being unable to credit him with such ignorance, gave the verdict of wilful murder, coupling with it the strongest possible recommendation to mercy, a rider which we may reasonably assume the Home Secretary will allow to have its fullest effect. A legal contemporary on the occasion of the case alluded to above spoke of constructive murder as "a vanished conceit," and suggested that "a felonious act happening to result in death to somebody does not of itself constitute the guilt of murder," but it is clear that some judges at any rate will insist on taking into consideration the nature of the felonious act before subscribing to this new doctrine.

With regard to the statement made by Dr. Abram at the meeting of the Liverpool Medical Institution on October 20th, and reported in our columns this week at page 1342, we may mention that the solicitors to the British Medical Association have been instructed in reference to the pamphlet referred to.

A case of typhus fever was notified from Guy's Hospital on October 19th. The patient was a male, aged 19, who had previously resided at 2, Walker Street, Tabard Street, St. George's Southwark.

Mr. Alex. R. Walters, M.R.C.S., L.R.C.P.Lond., of Reigate, and Mr. E. Bromet, M.A.Cantab., M.R.C.S., L.R.C.P. Lond., of Redhill, have been appointed to the medical staff of the Reigate and Redhill Cottage Hospital.

MEDICAL RELIEF.

Mr. C. S. Loch, Secretary of the Charity Organisation Society, gave on October 21st the first of a course of lectures on medical relief, arranged by that Society.

Sir William Broadbent on Defects of the Hospital System.

Sir William Broadbent, who took the chair at the opening of the meeting, said that nothing but good could come from discussion and inquiry into all branches of the subject of medical relief. Much energy and much money ran to waste through misdirection, and money misspent was not only so much subtracted from the available resources of charity, but might have an injurious effect. The weakest point in the hospital system was the out-patient department where unquestionable abuses had prevailed. People had been in the habit of obtaining relief who were perfectly able to pay their own medical men, and it was unjust that conscientious men should deny themselves in order to devote money to charitable objects, some of which money might go to men even better off than themselves. This was quite independent of the injustice done to medical men, who saw patients able to pay going off to hospitals. Further, there was the general demoralisation attaching to such relief, the loss of independence and of that wholesome feeling which kept many of the worthy poor outside of pauperism. Precautions were being taken at the out-patient departments to prevent persons who were able to pay for medical relief from going to them, but the investigations ought to take place at the homes of the people. If all the out-patients were really fit subjects for medical relief he believed that the hospital staffs would always be ready to do them very fair justice. He did not think that hospitals should be reserved entirely for very serious and acute cases. A chronic case might be as fit a subject for charitable relief as a case in which life was in imminent danger. Again, what was a trivial case one week might be a serious case the next. It must not be forgotten that at the hospitals they had to teach medical students, and that if they never saw a chronic or a trivial case, or did not see them in large numbers, the most important part of their education would be wanting, because such cases would furnish a large proportion of their patients in after-life. Moreover, it was most important that medical students should learn how to obviate suffering as well as how to save life. At present an examination of any district in London would show hospitals, provident associations, and clubs working independently. They all drained the local resources, competing with each other, often at cross purposes, and thus led to the cheapening of the article not in a pecuniary sense, but in the estimation of the patients, who had less respect for medical relief because they could go from one institution to another at a moment's notice. If a census were taken of the various institutions, it would be found that a certain number might be squeezed out of existence with advantage to the public. The co-ordination of all the institutions engaged in a common work was needful. There ought to be an organic connection between hospitals and provident dispensaries, and he would give a distinct preference to the patients of provident institutions over all others because they had shown a desire to help themselves. This ought to facilitate the reform of hospital relief. The same rule might apply to clubs if organised on a satisfactory basis, for some organic connection between clubs and hospitals would be attended with advantages of many kinds. Holding these opinions, he had supported the proposal for a Central Hospital Board, not an authority imposed on hospitals from outside, but a Board consisting of representatives of hospitals of every kind. He believed that the first thing such a Board would do would be to establish local committees, and get out a census of the kind he had indicated.

The Growth of Medical Charities.

Mr. Loch then delivered his address, and commenced by observing that no method of charity or relief which tended to increase the number of the poor or to make the poor poorer was right. A good method of charity would limit and neutralise the forces that tended to degradation among the people. It would also avoid any general departure from the recognised conditions and obligations of economic exchange. It would not introduce, for instance, a system of charity payments, injurious as they had been proved to be to all the parties concerned. It would also fulfil such conditions as inquiry, thoroughness of relief, co-operation with relations, etc., which were indispensable in effectual charitable work. Mr. Loch referred to the extraordinary growth of the friendly societies and the increasing stability of their organisation. He pointed out that probably one in three of the working classes above the age of 16 were members of affiliated societies. He urged that there was here a real social force which systems of medical relief should do nothing to limit or weaken. By sick insurance the members of friendly societies were practically obtaining a considerable addition to their available resources. Passing to the hospitals, he pointed out that the older hospitals were in the first instance municipal in their character; but after the wars the private benefactor became prominent, and at length obtained a greater influence in these institutions than the corporation of the City. At the end of the seventeenth century and the earlier part of the eighteenth the better provision of medical relief attracted great attention. This was shown by the large number of hospitals rebuilt or established at that time. The hospitals from municipal institutions had become voluntary bodies, forming a group of public institutions standing apart from the municipality on the one hand, and from the general administration of either charitable or Poor-law relief on the other.

Mr. Loch further referred to the practice of the older hospitals in regard to almoners' work, pointing out that that system, which might have been developed with great advantage, had been practically ignored and set aside. The growth of the free dispensary system was then sketched; the establishment of these dispensaries at the end of the seventeenth century; their increase during the eighteenth century and the causes of the general interest which they excited. It was pointed out that they formed so complete a network of medical institutions with definite areas and connected with a system of home visiting, that it was stated at the end of the last century that they formed a system of medical relief for the poor unknown in any other part of the globe. The movement which led to the establishment of the lying-in and lock hospitals between 1746 and 1765 was then dealt with; the growth of the more recent special hospitals; the establishment of "houses of recovery" and the fever hospital at Islington: and the subsequent assumption by the community of the duty of making provision for the treatment of fever cases. The introduction of the self-supporting or provident dispensary about 1830 was next noted, and the recent development of convalescent homes and central hospital funds, and, finally, the transformation that had taken place since 1870 by which the sick wards of workhouses had become the modern infirmaries and sick asylums of the Poor Law.

The Magnitude of the Existing Out-patient Department.

Figures in regard to the number of patients in London—in-patients, out-patients, and casualties—were then given. At the voluntary hospitals and dispensaries it appeared that these were returned as numbering over 2,000,000. At the Poor-law infirmaries and sick asylums there was a daily average of over 12,000 patients. Besides these in connection with Poor-law dispensaries nearly 115,000 orders a year were given out. Making every allowance for duplicate numbers and for non-Londoners treated in London institutions, in the out-patient and casualty departments, it seemed proved that at least 2,000,000 persons a year received medical relief from medical charities and from the Poor Law.

So large a number affected many interests, all of which asserted themselves more or less actively from the very commencement of the modern movement for the institution of hospitals. Some of these various interests Mr. Loch then considered in detail. He pointed out that while the crowd of patients at a hospital supplied practically endless cases to the medical staff, many difficulties occurred in consequence. It was hardly possible for a hospital physician or surgeon to give to all the cases such treatment as a practitioner would give to a private patient. Cases had thus to be considered hurriedly, and complaint was made that they could not be properly utilised for teaching. Hospital tramps were en-

couraged; the province of the Poor Law in public relief was ignored, and the functions of the almoner and of general charity overlooked. Indeed, only too often the medical staff were really ignorant of the principles and methods of charity.

GENERAL PRACTITIONERS AND THE OUT-PATIENT SYSTEM.

The general practitioners, who formed the great body of the actual profession, were to a large extent dependent on the comparatively small fees of the many. Free medical relief to all comers was a serious competitor. A million out-patients, a large proportion of whom were suffering from comparatively trivial complaints, meant a large potential income divisible amongst general practitioners. This the hospitals did not take directly, except in part where they adopted the payment system; but, so far as patients could pay either fees or contributions to a medical club or provident dispensary, they might be said to annihilate this income and to put a stop to the economic exchange which would produce it. However estimated, it represented so much earning power and paying power lost to the community.

Hence, if the general practitioner was to be fairly treated, he should be a chief party to the sending of cases to hospitals, and patients should not go to hospitals who could pay him or join a provident dispensary guarded by a proper wage limit, or become members of friendly societies. Again, those should not go to hospitals who, being destitute not of medical relief only but of food and clothing, or of food and clothing and shelter, were rather claimants for Poor-law relief. Those who should go to hospitals were those for whose cases consultations were required, or those whose cases on grounds of medical education were suitable for instruction or research, or those who, requiring relief in sickness and distress, were too poor to pay at all.

The interest of the lay manager in the hospital was next discussed, and it was pointed out how, generally speaking, the view he took of the hospital as a factor in the administration of charitable relief was limited and insufficient. Lastly, the business of the almoner as the representative of general charity or a link with it was noted.

CONCLUSIONS AND SUGGESTIONS.

Summing up his conclusions, Mr. Loch urged that by some means the flood of cases at the hospitals should be stopped, if injury to the poor was to be avoided and effectual charity accomplished. After making suggestions on this point, he referred to the necessity there was for the hospitals to be associated in some manner as a group of institutions whose object it was to serve the community in a large department of work. Association, he urged, would put bounds to hospital competition, amalgamate interests, and promote general supervision. Accepting the principle of association, he discussed three methods of giving it effect. Municipalisation, the advantages and disadvantages of which he weighed. Setting this method aside, he raised again the question of a Central Hospital Board, established on representative lines. A third method of association—and that now in force in some measure in connection with existing central funds—he described as unsatisfactory, except as a step towards a completer system.

In conclusion, he said that the hospitals had rendered many services to the country, but as the system had been developed new factors had constantly been introduced of which our present hospital organisation took no count, and accordingly it was working lumberingly and injuriously. The Friendly Society movement had extended itself, hence the less need of monster out-patient departments; it might be extended very much further. The Poor-law infirmary and the medical relief system had been very greatly improved, hence there was no reason why the hospitals should take any but exceptional Poor-law cases. The level of general charitable work had been raised; that was now within its reach which a few years ago was beyond it; hence there was no reason why hospitals should ignore all general and local charity. This disproportionate growth of out-patient departments was pressing more and more hardly on the income and livelihood of the great bulk of medical practitioners.

These and other factors, new and old, must be taken into account if medical charity was not to continue to make the poor *poorer*, and, socially speaking, less competent; and probably the most hopeful sign that this process was not to be allowed to continue indefinitely was the fact that some of the ablest and most earnest of the profession were courageous enough to admit that the evil existed, and to stir up their medical brethren to remove it, and to introduce a more beneficent organisation of medical charity.

THE PLAGUE IN THE EAST.

THE plague returns for the week ending October 22nd show a marked decline in the city of Bombay, the deaths reported as due to plague being 116, as compared with 200 in the preceding week. As this is now the fourth consecutive week during which a decline in plague mortality has been recorded, it is perhaps not unjustifiable to take a hopeful view of the situation. The epidemic has existed in an epidemic form, during the present recrudescence, since July of this year, and the advent of cooler weather, which it is now the custom to associate with a reappearance of virulence, has not been attended by an increase, but by an actual decrease, in the number of plague deaths.

In the outlying cities and provinces of the Bombay Presidency the reports are less favourable. Instead of a decrease, it would appear that there is a tendency to spread and an increase in cases as compared with the previous week. This gradual increase has been maintained for some six weeks past, and there is no evidence that the maximum of virulence has been reached. The chief centres of plague are at Dharwar, Belgaum, and Satara, towns situated on the main line of railway stretching southward from the city of Bombay. The actual number of deaths from plague reported in the Bombay Presidency, outside the city, is 4,700, as compared with 4,300 in the preceding week.

In the Mysore State, and especially in the city of Bangalore, plague is steadily increasing. It must be remembered that the Mysore State borders upon the Bombay Presidency, and that the town of Dharwar, close to the border, is at present swept by plague. As the railway leads from Dharwar through Mysore to Bangalore, it would appear that all the towns situated on the main line from Bombay to Bangalore are affected by plague. This would show that the disease follows the lines of communication, and that human intercourse is the means whereby the disease is communicated. Outside this tract of India and its immediate neighbourhood plague is not at present anywhere rife in India. The Hyderabad State adjoining the tract mentioned, as well as some of the neighbouring districts of the Madras Presidency, are also affected, but in none of these has plague assumed a virulent form.

Northwards from Bombay there is wellnigh a complete absence of plague. The Punjab is free, and only from Karachi is there a report of one case of plague during the past fourteen days.

Calcutta is still free from plague; no case has occurred there for nineteen days.

OUTBREAK IN ASIATIC RUSSIA.

Telegrams to the *Times* states that the Governor-General of Russian Turkestan officially reported on October 22nd the outbreak of an epidemic believed to be plague, at a village in Samarkand. The village, named Anzoff, is in a mountainous region separated from neighbouring settlements by passes from 13,000 to 14,000 feet high. The epidemic appears to have originated at the burial of a native woman in a neighbouring village. It was attended by a woman who lived at Anzoff; she died soon after her return home, and most of her relatives and those who were at her funeral also died, and the disease then began to spread rapidly. The village has been isolated, the linen of those who have died burnt, and the village disinfected. Experienced physicians and bacteriologists who studied the plague in India last year have already been despatched to the spot, and Prince Alexander Oldenburg, the patron of the Institute of Experimental Medicine in St. Petersburg, is about, by order of the Czar, to start for Samarkand to superintend measures for the localisation of the epidemic.

THE next meeting of the French Congress of Gynæcology will be held in 1901 at Nantes, not at Nancy as erroneously announced in the French medical journals.

LITERARY NOTES.

We mentioned last week that Messrs. William Green and Sons propose to publish an *Encyclopædia Medica* in twelve volumes. We understand that should the scheme be proceeded with Dr. D. Chalmers Watson, of Edinburgh, will undertake the duties of Editor. We are informed that among those who have already promised to contribute to the work are Sir J. Batty Tuke, Sir Felix Semon, Professors T. R. Fraser, Annandale, Chiene, Ball, Bennett, Dreschfeld, Leech, and Drs. J. W. Moore, William Ewart, Samuel West, Burney Yeo, Radcliffe Crocker, Hawkins, Cullingworth, Herman, Ashby, Milligan, Graham Steell, Oliver, Southam, and Saundby, and Messrs. Malcolm Morris, Juler, Marcus Gunn, Walsham, Bland Sutton, Watson Cheyne, Mayo Robson, Thorburn, Mitchell Banks, and Jordan Lloyd.

A new novel, entitled *Doctor Therne*, by Mr. Rider Haggard will be published by Messrs. Longmans and Co. in November. The story, which is told by the principal actor, Dr. Therne, after the final catastrophe, deals with the results of the Conscientious Objector Clause, under which the safety of many thousand children, and, through them, of the community, is practically left in the hands of the antivaccinationist party.

ASSOCIATION INTELLIGENCE.

BRANCH MEETINGS TO BE HELD.

Perthshire Branch.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on the first Friday of November, at 4 P.M. —A. R. Urquhart, Honorary Secretary.

Metropolitan Counties Branch: North London District.—A meeting of the members of this District will be held at St. Monica's Home, Brondesbury Park, on Wednesday, November 9th, at 4.30 P.M. Dr. Morton will preside. Dr. Soltau Fenwick will read a paper on the Early Diagnosis of Cancer of the Stomach. Cases of interest will be shown by Dr. Winslow Hall, Dr. Sutherland, and other members of the staff. St. Monica's Home is near Kilburn-Brondesbury Station (Metropolitan Railway), and Brondesbury Station (North London Railway).—H. J. Macevoy, Brondesbury, N.W., Honorary Secretary.

South-Eastern Branch: East Sussex District.—The next meeting of this District will be held at the Queen's Hotel, Eastbourne, on Thursday, December 1st, at 4.45 P.M., Dr. Hayman in the chair. Dinner (at table d'hôte) 7 P.M. Members are requested to send notice of communications, motions, etc., to the Hon. District Secretary, if possible before November 15th.—J. W. Batterham, M.B., Grand Parade, St. Leonards, Hon. District Secretary.

South-Eastern Branch: West Kent District.—A meeting of this District will be held at the Hospital, Gravesend, on Friday, November 18th, at 4.15 P.M., Dr. Charles Firth in the chair. Agenda: Minutes of last meeting. Place, date, and chairman of next meeting. Mr. F. Jaffrey (London): The Treatment of Recent Fractures by Wiring and Massage. Dr. J. A. Coutts (London): On Belladonna in the Treatment of Broncho-pneumonia. Dr. J. V. Bell: Idiosyncrasy in Relation to Food and Drugs. Tea and coffee will be provided at the close of the meeting. All members of the South-Eastern Branch are entitled to attend this meeting and to introduce professional friends.—Ludford Cooper, St. Bartholomew's Hospital, Rochester, Honorary Secretary.

Staffordshire Branch.—The twenty-fifth annual general meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Tuesday, November 1st, at 4 P.M. Business: Introduction of new President (Dr. McAldowie); Address by the President; Report of Council and Ethical Committee; Financial Statement; to decide place of holding next Annual Meeting; Election of Officers and Council for the ensuing year. Dinner at 6 o'clock, charge 5s. Members desiring to read papers are requested to communicate the titles to F. Milnes Blumer, Stafford, Honorary Secretary.

Stirling, Kinross, and Clackmannan Branch.—A meeting of this Branch will be held on Thursday, November 10th, at 4 P.M. at the Station Hotel, Larbert. Members who wish to bring forward any business, read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretaries at once, R. D. Clarkson and Alfred Griffiths, Falkirk.

ABERDEEN, BANFF, AND KINCARDINE BRANCH.

The annual general meeting of this Branch was held in Marischal College, Aberdeen, on October 15th, Professor Ogston in the chair. Apologies for absence were intimated from Dr. Farquharson, M.P. (Finzean), Dr. Clement Godson (London), Professor Finlay, Professor Cash, and Dr. M'Kerron.

Annual Report and Balance Sheet.—The Council's annual report and the Treasurer's annual balance sheet were read and approved.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*President:* J. Osbert Wilson, M.D. (Huntly). *Vice-Presidents:* Professor Finlay and Dr. Trail (Strichen). *President-Elect:* Dr. Farquharson, M.P. (Finzean). *Treasurer:* Dr. Dalgarno. *Secretaries:* Dr. J. Scott Riddell and Dr. H. M. W. Gray. *Council—Town:* Dr. Edmond, Dr. Thomas Milne, Dr. J. C. Ogilvie Will; *Country:* Dr. Barclay (Banff); Dr. Cran (Banchory); Dr. Mitchell (Old Rain).

Demonstrations.—Previous to the meeting Professor Ogston gave a demonstration in the surgery class-room of (1) M'Kenzie Davidson's method of localising metal fragments in the body; (2) the effect of modern bullets on the human body; (3) the modern means of detecting foreign bodies by the telephone.

Annual Dinner.—The annual dinner was held in the Palace Hotel in the afternoon, Dr. J. O. Wilson presiding and Brigade-Surgeon-Lieutenant-Colonel Maconachie, I.M.S., being croupier.

WEST SOMERSET AND DORSET AND WEST HANTS BRANCHES.

A combined meeting of these Branches was held at the Victoria Hall, Yeovil, on October 18th under the presidency of Mr. R. H. F. Routh and Dr. Allan McLean. Forty-six members and visitors were present.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*President:* Mr. George William Graham (Wimborne). *Vice-Presidents:* Dr. Edward Hyla Greves (Bournemouth), and Mr. Arthur Ferdinand Van (Cranbourne). *Honorary Secretaries and Treasurers:* Dr. William Vawdrey Lush (Weymouth) and Mr. Charles Henry Watts Parkinson (Wimborne).

New Members.—The following were elected members of the Dorset and West Hants Branch: Mr. Toft Barker (Corfe Castle), Mr. William George Brett (Parkstone), Mr. Jeffery Gott (Ringwood), Mr. Charles Beyer Humphreys (Blandford), and Mr. Geoffrey Hungerford (Dorset County Asylum).

Next Meeting.—It was resolved to hold the May meeting at Blandford.

Grant.—A donation of £10 10s. was voted to the Bristol Medical Benevolent Fund.

The Vaccination Act, 1898.—A discussion on "The Present Position of the Question of Vaccination" was opened by Dr. McLean, and taken part in by Dr. Lush, Mr. Parkinson, Dr. Snow, Dr. Masters, Dr. MacDonald, Mr. Kingston, Mr. Curme, Mr. Wyke Smith, and Dr. Lawson.

The following resolution was adopted:

The West Somerset and Dorset and West Hants Branches of the British Medical Association, numbering upwards of 200 members of the medical profession, regard with great alarm the Vaccination Act of the present year, believing that the granting of certificates of exemption to the so called conscientious objector will increase the frequency and severity of that highly infectious, loathsome, and deadly disease, small-pox. In order to give Parliament an opportunity of expressing its opinion upon and of amending an Act fraught with such disastrous consequences, they respectfully urge all county and borough magistrates in Somerset, Dorset, and Hants the adjournment of their decision in all applications under this Act for six calendar months.

It was resolved that copies of this resolution should be sent to all the county and borough magistrates and the parliamentary representatives of the three counties, and to Lord Lister, Sir William Priestley, Sir Walter Foster, and others.

Communications.—From Dr. Arthur Ransome, F.R.S., calling attention to the national movement for the prevention of tuberculosis. From Mr. Snook: Skiagraph of Hand, showing Fractured Metacarpal Bone. Dr. Rutherford: Notes on Six Cases of Appendicitis. Mr. Mark Taylor: Case of Supposed Self-inflicted Skin Affection in a Hysterical Patient. Mr. Graham: A Case of Salivary Calculus. Mr. Marsh: A Point of Interest in Connection with an Ovariotomy.

Dinner.—The members and visitors, who had been previously hospitably entertained to luncheon by medical men in Yeovil, dined together at Clough's Hotel.

SOUTH-WESTERN BRANCH.

An intermediate meeting of this Branch was held at the Devon and Exeter Hospital, Exeter, on October 21st, the President, Dr. Hugh Montgomerie, being in the chair. About fifty members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Dr. Harper, of Barnstaple. — The recommendation of the Branch Council (a meeting of which had been held just before)—

That the Branch sympathise deeply with Dr. Harper, of Barnstaple, on the occasion of the death of his wife, and that the Honorary Secretary be instructed to forward a letter of condolence,

was carried unanimously.

Elections.—The Council's recommendation

That Dr. Henry Davy, of Exeter, be elected a Vice-President of the Branch, and that Dr. Gordon, of Exeter, be elected a permanent member of the Branch Council,

was carried unanimously.

Communications.—Mr. P. H. Stirk for Mr. J. Delpratt Harris showed a case of Diffuse Molluscum Fibrosum, and read notes of the case.—Dr. Montgomerie read notes of a case of Malignant Endocarditis (with specimen).—Mr. Woolcombe for Mr. Paul Swain read notes of two cases of Tumour of the Bladder removed by suprapubic incision.—Dr. Russell Coombe read: (1) Notes of a case of Sarcoma of the Inferior Maxilla; (2) notes of a case of Oxalate of Lime Vesical Calculus: attempted lithotrity: extraction by lithotomy.—Dr. Pollard read notes of some cases illustrative of the Open-air Treatment of Consumption at Torquay, and showed charts.—Mr. P. H. Stirk for Mr. Delpratt Harris showed some Skiagraphs of the cases of Healthy and Diseased Tissues.—Dr. Montgomerie showed a series of sections of the Temporal Bone, illustrating the structure of the tympanic cavity, mastoid antrum, etc.—Mr. Lucy showed specimens of: (1) Meckel's Diverticulum causing Intestinal Obstruction; (2) Tubal Abortion.—Dr. Bushnell showed specimens from the South Devon Hospital prepared by the Kaiserling-Jores method: (1) Epithelioma of Tongue; (2) Tuberculous Kidney; (3) Cystic Bronchocele.

Annual Dinner.—Tea and coffee were served before the meeting, and at 6.30 the annual Exeter and South-Western medical dinner was held at Pope's New London Hotel, Exeter. Cards of invitation had previously been issued by the Dinner Committee to the members of the Branch. About forty sat down to dinner under the presidency of Dr. A. D. Hunt, and a most enjoyable evening was spent.

SPECIAL CORRESPONDENCE.

PARIS.

Professor Pinard on "Puericulture." Action against a Lyons Surgeon.—Revaccination of French Medical Students. General News.

Professor Pinard, in his address at the Gynæcological Congress held at Marseilles, stated that no city except Paris is so well provided with hospitals. He referred to a new science termed "puericulture," which, he says has been called into existence, and is worthy of the greatest attention from public authorities. Poor women about to become mothers should be protected from privations and suffering in order that they may bring forth strong babies and avoitl premature births. This "child culture," Professor Pinard considers, should be a matter of study for both parents before the mother becomes pregnant. All medical men are, according to Dr. Pinard, "defenders of the human race." To prevent hereditary influence, treatment of the parents may be necessary before marriage. It is the duty of medical men to pay attention to this question. M. Pozzi, who was President of the Gynæcological Section, urged that gynæcological chairs should be created. Abroad they were already in existence. France was the only country where this want had not been supplied.

A gentleman recently sued a well-known Lyons surgeon for damages laid at £400 for the death of his wife, who had been operated on. The decision was to the following effect: "The patient appears to have died from septic troubles connected with metritis determining pulmonary congestion following the operation. But the operator cannot be held responsible for complications which cannot be foreseen and which rarely occur. If such responsibilities were admitted the practice of medicine in many cases would be rendered impossible."

According to the Ministerial decree issued January 8th, 1891, medical students cannot be registered in the French medical faculties without furnishing a certificate testifying that they have been revaccinated under the superintendence of one of the said faculties. The Council of the Paris Medical Faculty indicates the localities where the revaccination of medical students takes place.

Dr. Boisleux, who was convicted with Dr. de la Jarrige for the crime of abortion, has, it is stated, twice attempted suicide in his prison cell. There is a rumour that he will shortly be released.

M. Bron Félix has bequeathed to the Rhone Medical Association a part of his fortune for the purpose of organising a "retreat" for the aged and infirm medical men of the Rhone and Isère Departments, an institution where children of medical men who are old or needy are to be brought up, and an orphanage for the children of medical men.

BERLIN.

A New Red Cross Decoration.—Supervision of Lunatics at large.—The University Extension Movement in Germany.—A Serum for the Cure of Foot-and-Mouth Disease.—Professor von Esmarch's Jubilee.

A new decoration, "The Red Cross Medal," has been founded by the German Emperor at the suggestion of the Empress Victoria Augusta, Lady Patroness of the German Red Cross societies. The medal, of which there are to be three classes—bronze, silver, and gold—is to be bestowed on persons of both sexes, without distinction of rank or position in life, for special services rendered to the Red Cross cause.

New regulations have been issued aiming at a regular official supervision of all persons afflicted with mental disease who are not kept in asylums. In every parish or district lists are to be made of all such persons, each name to be accompanied by a medical opinion on the nature and probable duration of the disease, on the possible danger to others, and on the home conditions of the patient. These lists are to be given in to the proper authorities once a year. Wherever it seems advisable the Government can then order an examination by the Government district medical officer and further measures as required.

The university extension movement is beginning to gain ground in Germany, though there has been no lack of opposition. This winter, for the first time, public courses of evening lectures, at nominal prices and open to both sexes, are to be given by eminent university professors. Professor Waldeyer, Rector of the Berlin University for the present year, heads the list with a course on human osteology.

The Höchst Works, the manufacturers of Behring's diphtheria antitoxin, have begun to produce a new serum for the cure of foot and mouth disease. This serum, which is the result of researches made by Professor Loeffler of Greifswald, is obtained from the pustules caused by the inoculation of foot and mouth disease on pigs and, so Professor Loeffler asserts, renders animals immune against the disease for a full year. It must not be forgotten that the bacillus of foot and mouth disease is as yet undiscovered.

On the occasion of the fiftieth anniversary of his doctor's degree Professor von Esmarch in Kiel received a congratulatory telegram from the German Emperor, expressing his grateful appreciation of the eminent services rendered by v. Esmarch during his long career to his students, to the German army, and to humanity in general.

GLASGOW.

Opening of the Winter Session of St. Mungo's College.—The Prevention of Tuberculosis.—The Medico-Chirurgical Society.

The winter session of St. Mungo's College, Glasgow, was opened on October 20th, when Dr. A. Maitland Ramsay, Professor of Ophthalmology, delivered an address. His subject was the Study of Medicine, and after referring to the qualities that were needed for the successful practice of medicine, he emphasised the importance of the studies of the early part of the medical course, showing how the basis of all true medical and surgical knowledge rested on these. He referred to the value of original research in the different branches of medicine, and pleaded for the better equipment of laboratories, and the endowment of research scholarships to enable young graduates to remain at their medical school and carry on special work.

The Prevention of Tuberculosis from the Point of View of the Veterinary Surgeon and the Medical Man was the subject of an address given by Dr. J. Lindsay Steven at the opening of the Glasgow Veterinary College on October 21st. After sketching the history of our knowledge of tuberculosis and insisting on the infectious character of the disease, he considered the various means of prevention. From the veterinary surgeon's point of view the first step in prevention was the widespread use of Koch's tuberculin as a means of diagnosing the disease in its early stages, so that tuberculous meat and milk from tuberculous cattle might be removed from the market. Another important point was to provide healthy byres and cowsheds. From the medical point of view the first means of prevention to consider was the notification of tuberculosis as an infectious disease with consequent isolation, but these methods could not be made compulsory, and hospital treatment of tuberculosis would resolve itself into the caring for the advanced cases. More practicable was the provision of sanatoria in the country where persons in the early stages of the disease could be treated; and in addition to this there was the instruction of the population by the sanitary authority in regard to the nature of the disease, and the precautions that ought to be taken in every case. It was by the united action of the veterinary and the medical professions that this disease would be stamped out.

LIVERPOOL.

Annual Review of the Work of the Health Committee.—Meeting of the Antivivisection Society.—The Closing of the Necropolis.—Dr. Glynn on the Affinity of the Clerical and Medical Professions.—The Demand for a New Physics Laboratory at University College.

The last meeting of the Health Committee of the Liverpool City Council for the present municipal year took place on October 20th, when the Chairman (Alderman E. H. Cookson, reviewed the work of the Committee during the past twelve months. He pointed out that much benefit has already resulted from improved scavenging and the more liberal use of water for sanitary purposes, but that what has been done merely points the direction for further development. During the year important Parliamentary powers had been obtained, which strengthened the hands of the Committee in several ways. Certain articles of food exposed for sale could be dealt with more stringently, and there was the power to close unhealthy burial grounds. Referring to the Vaccination Act the Chairman said it could not be regarded without dismay by every sanitary authority throughout the country. Liverpool was, or had been, one of the best, if not the best, vaccinated communities in the country, a result attained only after infinite pains by vaccination officers, guardians, and others. The consequence of this was that Liverpool had for many years been practically free from those serious outbreaks of small-pox which attacked it periodically, before vaccination was so thoroughly carried out. Exposed as Liverpool was to the importation of small-pox from almost every corner of the globe in which it might be prevalent, those responsible for the health of the city could not but view with the greatest concern the Act which already, in its brief existence, had had the pernicious effect of raising the proportion of children who remained unvaccinated something like 50 per cent., and had added most materially to the difficulty of those responsible for vaccination. A word of praise was due to the magistrates for the pains they had taken in endeavouring to explain the points of the Act to the "conscientious objector," who, himself protected from small-pox, seeks to deny that protection to his offspring. After referring with satisfaction to the permanent appointment of Professor Boyce as Bacteriologist to the city, and pointing out that the poverty and other conditions of life which were inevitable in parts of a great city like Liverpool, must tend to produce a higher death-rate than occurs in semi-rural communities, Mr. Cookson said it could not be doubted that the sanitary work undertaken by the City Council during the decade ending 1891 was less extensive than it would have been had not the extraordinary errors in the Registrar-General's estimate of the population of the city misled the Council. Returns involving an error of more than 20 per cent. were officially published by the Registrar-General during a great part of those ten years, and this had the effect of obscuring the necessity for sanitary work. It was only at the census of the present decade that the fallacy was exposed, and that the real need for more adequate sanitary measures became manifest. The Committee were now on their guard in this matter, and had taken pains to satisfy themselves that such returns as are published showed against them rather than in their favour, and that no false sense of security should lessen the activity of sanitation. The fact that the cases of infectious sickness had decreased this year by nearly one-third was sufficient to encourage the Committee to persevere on the identical lines which had brought about such good results.

The Liverpool Antivivisection Society held a meeting lately in Hope Hall. The Chairman, the Rev. E. N. Hoare, in the course of a speech marked on the whole by moderation, said that the Society was concerned only with those experiments, one tenth of the whole number, which were performed without anæsthesia. The Hon. Stephen Coleridge said that the members of Parliament to whom he had written declared that it would be impossible to prohibit vivisection under anæsthesia: "If we allow a slaughterman to kill an animal without anæsthesia," they said, "how can we prevent a vivisector killing an animal with anæsthesia?" The Rev. Dr. Porter maintained that there was no such thing as a painless experiment, because even when anæsthetics were administered the animal suffered horrible sensations when going under the influence of the drug and when regaining consciousness. As regards the trifling nature of inoculation experiments he said that mothers who had had a baby vaccinated would know whether they were trifling or not. He further said that he had not got to the length of believing in the craze of evolution yet, an expression for which he was sharply called to order by one of his audience. He then proceeded to argue that it was impossible that men were shut up to one way of reaching knowledge, and that through the medium of animal suffering. There must be other ways, and if so, vivisection was a criminal wrong. The effect on the vivisectors had to be considered, and there was no doubt that they became hardened and morally deteriorated and degraded. Mr. Edward Berdoe, L.R.C.P., M.R.C.S., expressed his well-known views; and Mr. Peter Stuart, L.R.C.P., L.R.C.S., Honorary Physician Hahnemann Hospital, said that twenty years of medical experience had convinced him that vivisection was practically useless. A correspondent in one of the local papers invites the Antivivisection Society to state its position as regards the larger question whether man is justified in inflicting pain on animals for any reason whatever. Pain is inflicted in the gelding of young animals, in the employments of beasts of burden, and more especially in the use of horses in war time, to say nothing of the suffering arising from all kinds of field sports. If it is justifiable to inflict pain for economical, social, and political reasons, surely it is justifiable to do so for scientific and humanitarian reasons.

The owners of graves in the Necropolis, the large intramural burial ground which has been lately closed on the ground that it was injurious to health, are taking steps to obtain compensation for the loss of their proprietary rights in the graves. A committee has been appointed to draw up a petition to the Lord Mayor, and to take other necessary steps to obtain reparation. It is not clear that the grave owners can obtain any redress unless by a special Act of Parliament,

as the Act which empowers the Corporation to close burial grounds contains a clause releasing it from liability to indemnify grave owners.

Dr. Glynn, Senior Physician to the Royal Infirmary, performed the opening ceremony at a large missionary loan exhibition in St. George's Hall on St. Luke's Day, and delivered a highly interesting address dealing for the most part with the affinity of the clerical and medical professions. The duty of the minister and of the doctor, he said, often led them to the same bedside; they did not work simply for pecuniary rewards, but ministered both to poor and to rich alike. It was the duty of every man to concern himself in the welfare of his fellows, but that duty was especially imposed on the members of the medical profession. Both professions were equally interested in all problems relating to education, temperance, sanitation, and morality. They knew from experience how intimately ignorance, filth, and vice were associated together, and how all were related to disease. It was the special function of the doctor to treat disease and relieve pain. A large part of disease was induced by the vice of mankind. It was comparatively easy to attack the microbe; it was much more difficult to attack the other sources of disease. In the campaign against vice the minister and the doctor ought to be associated together. He could imagine a time in the distant future when the maladies caused by microbes would be well-nigh exterminated, when the terrible hosts of fevers and infectious diseases would almost have ceased to exist. But he could hardly imagine a time when those disorders which were the result of man's nature and his failings and his passions should be lessened in a similar degree. Unfortunately the affections which individuals acquired through their vices were very frequently transmitted to their offspring, the sins of the fathers being visited upon their children. The missionary knew how the introduction of spirits by the trader into certain districts had led to the extinction of whole nations. In England, with its crowded and shifting population, it was more difficult to trace the effect of certain pernicious agencies. There was, however, ample evidence that the intemperate man was likely to transmit the same vice to his children, or to beget children who would be epileptic or prove especially prone to crime or liable to other nervous disorders, or who would readily fall victims to consumption. He would give them the abstract of the history of a certain family given by a well-known Continental physician as demonstrating the progress of unchecked degradation as it occurred amongst its members: First generation, immorality and alcoholic excess; second, hereditary drunkenness, brutal degradation, and maniacal attacks; third, a pathetic attempt at sobriety by one of its members, but in the others hypochondriasis, mania, and homicidal tendencies; fourth, feeble intelligence, complete idiocy, extinction of the family. He might say that the doctor, judging from the penalties induced, saw no reason to divide vices into great and small, for conduct that seemed but slightly wrong was often followed by disastrous consequences.

For close upon eighteen years Professor Oliver Lodge, who indisputably ranks among the first physicists of our time, has carried on his investigations and his teaching under circumstances which would have damped the spirit of many less ardent investigators. It has often been humorously observed that the nursery of the Liverpool University College was a lunatic asylum, such, as is well known, having been the purpose to which the building in which the college began its career was originally designed. One by one the different chairs and classes have found homes in newer buildings, but the chair of physics still remains in its old quarters. It is quite obvious that physics is a subject which requires more than an ordinary amount of space and apparatus, and Professor Lodge's work must be greatly hampered by the want of suitable accommodation. The question of issuing an appeal to the public to provide funds for a new physics laboratory has already been mooted by the authorities at the College; but Professor Lodge, recognising the urgent needs of the medical school, has generously withheld his appeal until the funds necessary for completing the medical school have been provided. It is understood that Lord Kelvin, who was the guest of Professor Lodge during Lord Lister's recent visit to Liverpool, said that it would give him the greatest possible pleasure on some future occasion to come again to perform the ceremony of opening a new physics laboratory. We hope that the next few years will witness his offer realised, and that it will not be long before the citizens of Liverpool erect a physics laboratory worthy of themselves and of the distinguished physicist who is working in their midst.

CORRESPONDENCE.

THE NEW VACCINATION ORDER.

Sir,—There are one or two matters arising out of the recently-issued Vaccination Order which are of so much importance as to claim a little space in the British Medical Journal.

First under this Order all stations are abolished, and it can only be by subsequent special order "by reason of serious risk of outbreak of small-pox or other exceptional circumstances," that in any particular case they can be re-established. But what are "exceptional circumstances?" On this very important point the Order is silent. It was hoped that a wide interpretation would have been put upon the words. The fact of the Act being experimental might well be considered so exceptional a circumstance as to leave the matter of stational or domiciliary vaccination optional for twelve months. In many unions stational vaccination has worked so well that naturally the guardians feel the two systems should have worked side by side for a time.

It was at least believed that in urban, and especially in metropolitan, districts the "serious risk of outbreak of small-pox" might justify the Local Government Board in retaining stations, considering the inflammable epidemic fuel of our common lodging-houses, shelters, refuges, and immigrant population. The Order is silent, however, and it behoves every public vaccinator to consider the advisability of stirring up his Board of Guardians to appeal to the Local Government Board if he thinks there are any circumstances which could be interpreted as exceptional in his district. Secondly, the public vaccinator is placed in a very difficult position by the Act, and the Order with respect to the private practitioner and the guardians. The danger of friction has been contemplated throughout should domiciliary vaccination be introduced. The only way of avoiding such friction is for the private practitioner to get those under his influence vaccinated or otherwise accounted for as completely as possible before the age of 4 months.

Again, the public vaccinator is left in exactly the same predicament as heretofore, liable to twenty-eight days' notice of termination of contract at the will of the guardians. Subsequent legislation will be needed to correct this anomalous position. The public vaccinator will need to approach his guardians forthwith to arrange terms, especially as there is no provision for mileage in the Order. The question of what antiseptic precautions are to be taken is wisely left an open one. The vaccination officer has his duties largely increased, and as the strain may be too great the Order provides strangely enough for his removal in case of insanity.

What is the line to be taken in the future? The answer is: (1) Educate; (2) Co-operate.

1. The antivaccinists have too long had their own way in misrepresentation, half truth and invective. It is for the medical profession as a whole to answer them by an appeal to facts. Reason is often at a discount with those opposed to vaccination, and now that they have the opportunity of invoking conscience it is only by close, persistent marshalling of facts in the way the Jenner Society has been working and by individual effort that we can hope for much improvement. There must be education of the profession itself and education of the public. The latter is to be done by the medical officer of health, by the private practitioner in getting infants vaccinated before the age of 4 months, and by the public vaccinator when they come into his domain.

2. There must be co-operation between all those working for the suppression of small-pox, just as all seem to be uniting for the suppression of tuberculosis. The Vaccination Officers' Association has for many years been working hard in the face of much difficulty and discouragement, in the interests of efficient vaccination and nearly all the good points of the Act

and Orders have been pressed on the attention of the Local Government Board over and over again by them.

The younger Public Vaccinators' Association has yet much work before it.

But let public vaccinators and vaccination officers co-operate to make the best of this "tremendous experiment"; let it be given a fair trial. However convinced we may be that it will break down in practice, let no one be able to say that it was the fault of the agents employed. Let there be the same cordial co-operation between public vaccinators, medical officers of health, and private practitioners. If we can spend the five years in a policy as a profession of education in vaccination matters and co-operation in effort to stamp out small-pox, the time will not be lost.—I am, etc.,

October 25th. PUBLIC VACCINATOR.

SIR,—By the new Vaccination Act I see that the remuneration of public vaccinators is left, subject to the minimum of 5s. per successful case, for arrangement between boards of guardians and the public vaccinators. I feel strongly that some steps should immediately be taken to ensure something like uniformity in the arrangements. If nothing is done by the profession in the way of looking after its interests the guardians for the most part will endeavour to compel their officers (public vaccinators) to accept the minimum amount of remuneration and will not give reasonable consideration to the almost certainly large number of useless (that is, unremunerated) visits that a public vaccinator will be called upon to make, or to the mileage in country districts with an outlying and sparsely scattered population.—I am, etc.,

Stourport, Oct. 25th. W. MOORE.

MEDICAL MAGISTRATES AND THE CONSCIENTIOUS OBJECTOR.

SIR,—In reference to Dr. Thursfield's expressed determination to retire from the Bench whenever an application comes before him for a certificate of exemption from vaccination, I venture to express the opinion that this determination is not wise.

A magistrate, be he a medical man or not, has to consider the question judicially, whether or not the objector is speaking the truth when he says that he believes vaccination would be prejudicial to the health of his child. He may try to convince the objector that his arguments against vaccination are unsound; but if, notwithstanding this, the objector holds to his belief, it seems to me that the magistrate should certify, as he has to be satisfied, not that the belief is a rational one, but that it is truly the creed of the objector.

The responsibility for exemption from vaccination, through a belief which may not be rational, rests with the Legislature, not with the magistrate. So I think that a medical magistrate, fully persuaded of the value of vaccination, may properly perform his judicial functions in the case of the conscientious objector as well as in any other case.—I am, etc.,

FREDERICK P. WEAVER, M.D., M.R.C.P.,

Hampstead, Oct. 15th. J.P. for the County of London.

EPSOM COLLEGE.

SIR,—The appeal recently made on behalf of the above institution will, I trust, meet the liberal response it deserves, especially from those amongst us who have hitherto omitted giving their support.

Feeling as I do that every member of the profession should, if possible, give something, I would suggest that a simultaneous collection by means of a subscription and donation card be made every year on a date to be agreed upon, and that local secretaries be appointed for the purpose. The day might be known as Epsom College Day.

I would further suggest that charitably-disposed patients might have the card placed before them so as to enlist their sympathy and support. The large sum collected for Guy's Hospital by Guy's men from their patients shows the practicability of the scheme.—I am, etc.,

Weymouth Street, W., Oct. 24th. CHAS W. CHAPMAN.

SIR,—Under the above heading, in the BRITISH MEDICAL JOURNAL of October 22nd, appears the following: "An unfortunate misconception prevails, even in quarters where a better knowledge of the facts might be looked for, that Epsom College is mainly a charity school, the benefits of which are confined to the families of members of the medical profession."

Is it not manifest that the title "Royal Medical Benevolent College," by which the Council delights to describe this excellent institution, is chiefly to blame for the misconception to which you allude, and which I have reason to know does exist? The general public regard Epsom College as a charitable institution, and look upon those who have received their education there as, *ipso facto*, objects of charity. Now it is a serious social disadvantage to be described as a late member of a charity school, and perhaps this is more keenly felt when such a designation is an improper one. As you further point out, other great public schools, for example, Eton, Winchester, and Charterhouse, have similar foundation scholars, yet these institutions do not label themselves "benevolent." Is it likely that those who have experienced the disadvantage to which I allude will send those in whom they may be interested to enjoy (*sic*) the same disadvantage? Surely the time has now come when Epsom College should be known as Epsom College, and then one would feel it a distinction to have been a member of such a school, instead of as now; for I regret to think that I have, on occasion, found it more to my interests to lose sight of that fact than to remember it, and I know other past members of the school whose experience is the same as mine.—I am, etc.,

October 23rd. AN OLD EPSOMIAN.

ASEPTIC MIDWIFERY.

SIR,—I trust you will allow me space to reply to some of my recent critics. I shall confine myself to what I consider the most important points.

In the first place, allow me to remind some of the writers that misrepresentation is not criticism. It reminds one of the advice, "No case; abuse the plaintiff's attorney." I cannot take up all the misstatements which have been made, but there is one glaring one I cannot pass by. The word "scrubbing" has been introduced into the discussion, and one man goes as far as to say, "Suppose the scrubbing brush has been used, as in Glasgow." I absolutely deny that I made use of any such expression in reference to the patient. The only scrubbing I ever do is of my own hands.

Again, I am taken to task about objecting to the use of antiseptic vaseline. In my paper I do not object to it provided it is antiseptic; but I do most strongly object to the usual open pots of so-called antiseptic vaseline carried from patient to patient. A solution of lysol I find answers the purpose admirably, and does away with the necessity of anything else being carried.

The *ante-partum* cleansing of the external genitals seems to be objected to by most of the writers. In my last letter I dealt with this point. I wish to reiterate that after considerable experience in this practice I can say I have never known a woman object. I may add that inquiries among medical men who have adopted this method have elicited a similar reply. We speak from experience, while the objectors merely theorise. Why should there be any more objections raised to its being done then than after the third stage is completed?

Some admit that *ante-partum* cleansing is right, but maintain that it should be done by an obstetric nurse. When a properly trained nurse is present it may safely be left to her; in fact, she should know how to do it without being told; but the majority of working-class women have no nurse, and I hold that it is the medical man's or woman's duty to do it, to secure it being properly done. If the usual handy woman is told to do it, she will not cleanse her own hands properly, and she will probably use a septic sponge or piece of flannel. If she is told to do the cleaning after the third stage is over, it will be done in the same way. May I point out to Dr. Freeman that I do not believe or contend that the parts can be rendered absolutely aseptic, but that is no reason why one should not try to get them as clean as possible. He thinks cleansing may do some good, and says: "I would try to do this myself, and would give definite instructions to the nurse to do likewise." Why is it "a step from the sublime to the ridiculous" that I should instruct my nurses and students to do the same? He also trots out the scrubbing myth. If he will take the trouble to read over the list of contents of an

aseptic midwifery bag, he will find that a razor is not included. Sneers are cheap, but not very convincing.

My psychological friend misses the point entirely. It is not the part of a wise man to lock the stable door after the steed has been stolen.

As regards "G. P.," he may be conversant with "a back kitchen on a washing day," but certainly is not with the lying-in ward of a maternity hospital. Our patients do not lie shivering "upon mackintosh sheeting in a state of partial nudity, smothered in soapsuds and running with outlandish liquids." The "futile and ridiculous ritual" to which he refers exists only in his overheated imagination. I am glad to say gentleness and asepsis are not incompatible.

Dr. Crawford Aitken is mistaken in supposing that in my cases quoted *ante-partum* douching was done. It was done only in the induction case at the time the bougie was passed. About a dozen of the operation cases were douched immediately after delivery and only one once during the puerperium. Routine *ante-partum* douching I think unnecessary. His statement that "It is often the simplest cases that go septic, the cases in which everything outside is scrupulously clean, and in which no vaginal examination has been made," I cannot accept.

Dr. Newell refers to my "paper on puerperal sepsis." When I write a paper on that subject I shall be glad to deal with the points he raises, but I cannot do so in the space at my disposal. He will probably change some of his views, especially those in regard to the prognosis of puerperal septicæmia.

Dr. McIlwaine objects to the word "aseptic" being used in reference to midwifery. "Asepsis is for the surgeon," therefore we obstetric surgeons claim that we have as much right as any other surgeon to strive to attain the wished-for goal. I can assure him that it is quite possible to keep the parts sufficiently aseptic during labour and the puerperium to allow of the patient making a good recovery without any rise of temperature, and I have described how this can be accomplished. A "scrubbing brush" is not required. His remarks about hospital work betray the fact that he is unacquainted with the risks puerperal patients run when collected together in a hospital.

Dr. Donovan's letter is quite beyond my comprehension. I was not aware that the Mosaic law was still looked upon as a safe guide in the conducting of midwifery work. The two famous midwives of those days, Shiproh and Preah, probably found it sufficient, combined with their obstetric "stools," but it will hardly do in our day.

Dr. Wiglesworth treats us to a lengthy dissertation on puerperal septicæmia, but space will not allow me to take up in detail the various points raised. I need hardly say I disagree with a great many of his statements, especially those connected with the internal origin of puerperal septicæmia. He adopts Dr. McCulloch's protest against "asepsis run mad." What about administering carbolic acid to all operative cases? It seems to me to be carbolic-acid treatment "run mad" with a vengeance.

Dr. Thomson quotes a statement which I cannot find in my paper. I would certainly never hold a man responsible if he were called in after a patient had been interfered with or after the labour was over. I cannot agree with him that an antiseptic douche should be used before labour in all cases.

Major W. Watson Pike's letter is very interesting. The results are certainly good. I think the douching twice daily for six days is not necessary. In private work it could not be carried out except where a properly trained nurse was in charge.

Exceptions have been taken to the statement that the vagina is as a rule aseptic before labour. I cannot enter fully into this matter, but if you will allow me space I would like to quote from a paper by Dr. J. Whitridge Williams read before the American Gynæcological Society in May last. He bases his conclusions on the results of the examination of the vaginal secretions of 92 pregnant women. The paper will be found in the *American Journal of Obstetrics* for October. The following are his conclusions:

1. We agree with Krönig that the vaginal secretion of pregnant women does not contain the usual pyogenic cocci, having found the staphylococcus epidermidis albus only twice in 92 cases, but never the staphylococcus aureus or albus.

2. The discrepancy in the results of the various investigators is due to the technique by which the secretion is obtained.

3. As the vagina does not contain pyogenic cocci, autoinfection with them is impossible, and when they are found in the puerperal uterus they have been introduced from without.

4. The gonococcus is occasionally found in the vaginal secretion, and during the puerperium may extend from the cervix into the uterus and tubes.

5. It is possible, but not yet demonstrated, in very rare instances that the vagina may contain bacteria, which may give rise to sapræmia and putrefactive endometritis by autoinfection.

6. Death from puerperal infection is always due to infection from without, and is usually due to neglect of aseptic precautions on the part of the physician and nurse.

7. Puerperal infection is to be avoided by limiting vaginal examinations as much as possible, and cultivating external palpation. When vaginal examinations are to be made, the external genitalia should be cleansed and disinfected, and the hands rendered as aseptic as if for a laparotomy. Vaginal douches are not necessary, and are probably harmful.

A large experience in practical midwifery, and a thorough appreciation of the value of observations similar to those made by Dr. Williams have led me to adopt the aseptic system. The results have, to my mind at least, proved the correctness of the theory. I thoroughly believe in it; therefore "I have spoken." If I have spoken nonsense, why have the leaders in obstetrics remained silent? Notwithstanding Dr. McCulloch's protest, I once more commend the subject to general practitioners. Some of the details may be objected to, but I am confident that the general principles are correct.

Glasgow, Oct. 24th. ROBERT JARDINE.

*** We think that this correspondence may now cease.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—In answer to Mr. R. H. Wolstenholme, I should like to say a few words in support of the National Deposit Friendly Society as opposed to clubs. Mr. Wolstenholme would have us believe that a club at 4s. per member per annum pays better than the National Deposit Friendly Society.

I can speak from experience of both classes of work. At the beginning of this year I purchased a partnership in a practice which includes a medical aid society at 4s. a year per member, and we also see a fair number under the National Deposit Friendly Society's rules. These are the facts: During the first quarter of this year my partner and I paid 550 visits to members of this Society, and saw at our consulting rooms 540 members. For this work we received £16 16s. 3d. I call it £17 for simplicity. This works out at a fraction over 3¾d. per patient seen and supplied with medicine. I will suppose that all these patients were honest and really needed a doctor. Had they been attended under the National Deposit Friendly Society's rules we should have received at least £74 15s., or four times as much as under club rules.

The reason why a doctor does not receive so much money from National Deposit Friendly Society work is not far to seek. The ordinary club patient paying 1d. a week does not miss that small amount, and, knowing that he has his club doctor at his beck and call, he generally takes good care to tax that long-suffering doctor's energies as much as possible. Every club doctor knows only too well that a very large number of his club patients send for him for the most trivial complaints. Many club patients seem to me to nearly live on medicine. Many club patients, too (especially those often sick) belong to two or more sick benefit societies, and can and do draw as much or more sick pay than ordinary wages. Under the National Deposit Friendly Society's rules a patient knows that a proportion of his doctor's bill and sick pay are taken from his own deposit, and he is therefore more careful, and does not send for the doctor for nothing. A doctor under club rules may do ten times the amount of work he would do under National Deposit Friendly Society rules, but in the first case he does a large amount of paltry work for very bad pay, in the second case he does a small amount of good work for fair remuneration. Under club rules the doctor is not a

free agent; under the National Deposit Friendly Society he is free to visit a patient or not as he likes.

One great feature of the National Deposit Friendly Society is, I think, its payment for surgical cases. Many of us would do a considerable amount of minor surgery in our neighbourhood and among our club patients if we were sure of fair fees instead of sending them off to the nearest hospital. Most places seem blessed with district nurses, who are, as a rule, only too glad to attend patients after operation, and the Society pays for the doctors' visits 10s. 6d. for a minor operation without anæsthetic, £1 1s. with anæsthetic, £3 for a fractured leg, 5s. for passing catheter at patient's house, 2s. 6d. at surgery; £1 for consultation fee, and so forth; these are items unknown to the ordinary club doctor.

As to Mr. Wolstenholme's "little shipping order" I do not think any National Deposit Friendly Society patient would grumble at supplying his own lint, bandage, and gutta percha tissue.

Club practice will always be a thorn in our sides until the profession unites and refuses to be sweated at 4s. per annum per member. We must take a leaf from the working man's book and strike for fair wages. We are the workers, and should have an equal voice with those who receive the benefits of our labours in deciding our rate of pay. An unskilled labourer who justly strikes for fair pay is supported by his fellow workers until his demand is granted, but a skilled doctor who strikes for adequate remuneration is immediately undersold by a professional brother, who undertakes the same work for less pay.

As long as there is so much petty jealousy and so much underselling in the profession the status of club practice will never be raised, but rather go from bad to worse. If only the profession would unite, we should be masters of the situation to-morrow, and could dictate our own terms—and they would not be hard ones—instead of being the humble slaves of any public-house slate club or any temperance society which decides to form a sick benefit branch. The system of underselling each other so rampant in the profession is the secret of all club practice abuses, and as long as that goes on, as long as men work only for money's sake and without any regard for the dignity of their profession, so long will clubs and all their evils exist. We shall continue to take all the risks and the clubs reap all the advantages.—I am, etc.,

Merton Park, S.W., Oct. 25th. F. Deas.

UNRELIABLE MEDICAL CERTIFICATES.

Sir,—I regret to say I can confirm the statements of "A Preparatory Schoolmaster" regarding some medical certificates being unsatisfactory.

I am medical officer to a large school, and, if there is any doubt concerning the propriety of pupils returning thereto through illness, the various cases are referred to me for decision.

It has been with much concern I have found, on many occasions, that the medical certificates have not been granted in accordance with the well-known rules that govern infectious cases, and I have, in consequence, been reluctantly obliged to refuse them. There are now before me several medical certificates stating that the pupils mentioned therein were free from infective influences, and could return to school without danger to others. One states "that as the pupils themselves had already had measles, they could come to school," although measles were in evidence in the house. A second that "..... are quite well, and free from infection, and may return to school." Yet in three days one of these was attacked with measles. A third that "the children are now free from infection, and may return to school." In five days one was down with measles. Another: "The bearer is free from infecting influences," and yet this pupil was attacked almost immediately afterwards. Again: "..... has not been in contact with infectious disease to prevent a return to school"—a case of mumps was in the house at the time.

I refused a certificate granted immediately a case of mumps had recovered. The parents indignantly appealed to the governing body; and, whilst the correspondence was in progress, another member of the family was attacked, and after that a third. Needless to say, my decision had been upheld, and the sequel proved its wisdom.

One child was sent to school early after a recovery from a slight attack of scarlet fever, but whilst the mother was lying ill with the same malady.

I could go on multiplying instances similar in character.

Now I think it will be conceded that if these pupils had been allowed to return to school under their respective certificates, and of necessity to mix with other pupils in their classes, an epidemic could hardly have been averted; but in consequence of this supervision the work of the school has never been interfered with, whilst neighbouring schools have suffered severely in prevailing epidemics. I believe that if the period of "incubation" had been taken into account before granting these certificates they would never have been issued, and it is owing to the neglect of this precaution that they have not been accepted.

In writing certificates of immunity from infectious diseases a doctor has a double duty to perform, one to the parents and also, of more importance, one to the school authorities, for the free intercourse of an infected pupil in a school may result in disastrous consequences.

Undoubtedly it is very annoying to a medical practitioner to have his certificate of exemption ignored, as it not only tends to lower his status in the eyes of his patients, but it also offends his *amour propre*. This, however, might easily be avoided if he would give his attention to the "infective periods" of the various zymotic diseases, and frame his certificates accordingly; and all unpleasantness of this nature could also be prevented if the heads of schools, both public and private, would, on their part, notify to parents and doctors that no pupil would be allowed to return to school until the infective period had fully passed away, the rules concerning which are now well ascertained and laid down, for many children are presented to medical men apparently in perfect health who, nevertheless, have an infective disease lurking within them, which he of necessity is unable to detect. Like "A Preparatory Schoolmaster," for obvious reasons I withhold my name.—I am, etc.,

October 24th. Physician.

TENDON GRAFTING.

Sir,—I have read in the British Medical Journal of October 15th the interesting article on tendon grafting by Mr. Frederick Eve.

Although Mr. Eve seems to have searched medical literature in order to credit certain distinguished foreign surgeons with having performed the operation, he has evidently not referred to the Clinical Society's *Transactions* for 1889, as, had he done so, he would have found the account of a case of mine which at the time I thought, and which I still believe, to be the first case of tendon grafting on record, since Nicoladoni's operation was not one of tendon grafting, but of the transference of an active peroneus tendon to the tendon of the paralysed calf muscles, the proximal attachments of the tendon to its muscle being still retained.

In my case, 4½ inches of flexor tendon was used as a graft to make an extensor indicis, in which it succeeded admirably, the patient regaining the full use of his hand subsequently. I have heard since that he is still following his occupation as a weaver.

Since that time I have had other equally successful cases, proving that tendon, like nerve and bone, may be successfully grafted.

I feel sure Mr. Eve will pardon me for pointing out this, for when he makes the following statement—

> The idea of reinforcing paralysed or paretic muscles by attaching or grafting on to them the tendon of a neighbouring healthy muscle undoubtedly originated with Nicoladoni as long ago as 1882. In a case of paralytic talipes calcaneus he attached both peronei to the tendo Achillis with a good result. No further development took place till 1892, when Parrish of the United States and Drobnik in Posen applied the same method to other forms of paralytic club-foot.

—he entirely ignores my work on the same lines in 1888.

Although Mr. Eve's paper is on Tendon Grafting, or Function Transference in the Treatment of Infantile Paralysis, he makes such a point of the history of the operation, that I feel it would neither be doing justice to myself nor to English surgery were I to allow the matter to pass unnoticed.

—I am, etc.,

Leeds, Oct. 19th. A. W. Mayo Robson.

OYSTERS AND DISEASE.

SIR,—In a letter under the above heading by Dr. A. Ogier Ward, published in the BRITISH MEDICAL JOURNAL of October 15th, wherein reference is made to alleged oyster poisoning at Southend, Dr. Ward states that he is told that "the oysters are well enough when brought ashore, but those for which there is no immediate market are kept in boxes sunk near the sewer mouths." This statement is so mischievously inaccurate that I deem it my duty as medical officer of health for Southend to at once state that for the past three years no storage of oysters has been allowed on the Southend foreshore, all the storage boxes having been removed. Moreover, owing to the improved sewerage system carried out by the corporation at a very large expenditure (upwards of £50,000), upon the advice and under the supervision of Mr. James Mansergh, the eminent engineer, any discharge of sewage on to the foreshore has been discontinued.

As further evidence of the activity displayed by the Southend Corporation in improving the sanitary condition of the borough, and with the object of placing it beyond suspicion, a house-to-house inspection of all drains is now being completed. This special inspection has entailed considerable expense upon the local authority by the employment of temporary additional inspectors, and the inspection has been, and is being, carried out in a rigorous manner, all drains being subject to the water test, and great care is taken that all defects discovered are remedied without delay.

In conclusion, I would like to express my opinion that few local authorities have during recent years shown such zeal for the welfare of the public health as has been exhibited by the Southend-on-Sea Corporation.—I am, etc.,

A. CLOUGH WATERS, M.B., B.S.,
Medical Officer of Health for the Borough of Southend-on-Sea.

October 25th.

COCAINE IN RIGID OS.

SIR,—The report of Dr. Farrar's remarks at Edinburgh[1] challenges confirmation or disproof as to the action of cocaine on the os uteri during parturition. I can only say that I have observed the same marvellous results. I read Dr. Farrar's paper in the *Proceedings* of the Obstetrical Society while I was Resident Obstetric at Guy's Hospital. I used cocaine on several occasions then, and have repeated the practice since—always with the same effect. I have applied the 10 per cent. solution to the os by means of a pledget of aseptic wool, and almost before there has been time to put away the materials again a previously rigid narrow os has dilated to full size, and from one to three hours have been saved. There has never been any suspicion of ill effects. It would be interesting to know if eucaine has the same action.—I am, etc.,

Hampstead, Oct. 25th. E. CLAUDE TAYLOR, M.S., M.D.

THE TREATMENT OF PAUPER IMBECILES AND EPILEPTICS.

SIR,—I shall be much obliged if you will allow me to ask Mr. Penn Gaskell to furnish the cost and the number accommodated in each building at Chalfont, and if he will state how many patients are housed, or at any rate have their meals, in tin tabernacles and not in permanent brick buildings. In the cost of the Berlin Institutions is included:

1. A recreation hall, equal to many a town hall, and which Mr. Alderman McDougall and myself both thought too elaborate.
2. A kitchen capable of cooking for more than 1,000 patients, and fitted in first class style.
3. A laundry equally well fitted.
4. A beautiful church provided with "fit rooms."
5. A first class mortuary, mortuary chapel, and *post-mortem* rooms and pathological laboratory.

In fact, it is hardly fair to compare Berlin and Chalfont; you can only contrast them. I hope before many years are over we shall be able to show both a first class epileptic and a first class imbecile colony in Lancashire.—I am, etc.,

Didsbury, Oct. 19th. JOHN MILSON RHODES, M.D.

[1] BRITISH MEDICAL JOURNAL, September 17th, 1898, p. 790.

ETHER PNEUMONIA.

SIR,—I confess that until I read Dr. Drummond's paper I was ignorant of the fact that the so-called ether pneumonia was not a well-known condition. This was doubtless due to my having been a student and house-surgeon at the Leeds Infirmary. Capillary bronchitis and catarrhal pneumonia certainly do occur occasionally after ether anæsthesia, but it is not quite fair to blame the ether itself and ignore altogether the mode of administration. I have seen a good many of these cases, but almost all of them have followed etherisation by beginners. It is not an easy anæsthetic to give. One can no more expect to give ether well without being taught and without practice than one can hope to remove an impacted gall stone by one's own mother wit. The great secret is to give as little as possible. By the use of Clover's inhaler—which is much more accurate and convenient than Ormsby's—the strength of the vapour can be regulated with the greatest nicety. If it is not sufficiently diluted mucus is very apt to be secreted in large quantities. So much as regards the administration.

Now a word as to the selection of suitable cases. Do not try to give ether to fat, flabby, wheezy, alcoholic subjects over 40 years of age or thereabouts. If these precautions are taken, the likelihood of the supervention of lung mischief need not trouble either the operator or anæsthetist. The frequency of these sequelæ has, I consider, been exaggerated. I have no statistics dealing with large figures at hand—they could easily be obtained in Leeds—but in over 2,000 consecutive administrations I have had no case of pneumonia. The last one that I saw was about a year ago in a patient on whom I had operated for a large irreducible umbilical hernia. Here certainly the drug itself was not to blame. As to treatment, I know of nothing better than morphine and atropine.—I am, etc.,

Lancaster, Oct. 19th. A. STANLEY BARLING.

FAITH HEALING.

SIR,—In your comments on the case of Major Lester in last week's BRITISH MEDICAL JOURNAL it seems to me that you have omitted to lay stress upon the lesson which it teaches and upon the requirements necessary to lessen the possibility of such a mishap in the future. The lesson is this, and it is one I have laid stress on before, that a short Act of Parliament should be passed making it a penal offence for anyone to practise any part of our profession for gain unless he or she is a registered medical practitioner. This is the only way of putting a stop to the practice of faith healers, Christian scientists, and all others of the same kidney.—I am, etc.,

Cardiff, October 17th. A. SHEEN.

ADDRESSES TO MEDICAL STUDENTS.

SIR,—The letters published in the BRITISH MEDICAL JOURNAL of October 15th from Dr. Poole and "In Obscuritate" respectively on a remark of Dr. Saundby's are to my mind very interesting. They represent the two sides of the question very fairly, which, I take it, is your reason for publishing them. The one is the philosophical, the other the grimly practical aspect, and among your readers you must have had scores who sympathise with the one and hundreds who feel with the other, possibly a few who see good in both. I have no doubt that "In Obscuritate" is quite at one with Dr. Poole on one point, namely that "by the power of truth only can we do good work," but he will think Dr. Poole rather harsh when he goes on to ask "If good, why put a price on it?" And so do I.

Why, if it is good, that surely is the best of all reasons why it should be appreciated and paid for. Where can you get anything good without paying for it? Not in this part of the world, as I know to my cost.

Again, it is useless preaching philosophy to the starving. A friend of mine tried it once, and the answer he got (from an Irishman dying of phthisis) was "Eh, doctor, you should no talk religion to an empty stomach." "Virtue for its own sake" is a specious cry, and I fail to see the fine distinction which Dr. Poole draws between that and "morality."

I venture to think that Dr. Poole will not have to live to be as old as Methuselah ere he finds the sentiments contained in his letter regarded as rather archaic. I only mean, of course,

those to which I have just referred. There are signs that the old era of the profession as a guild for aristocrats and men with capital only, is passing away, and another "delusive goddess" will come to the ground. We shall hear more about truth and good solid cash principles, and less about virtue for its own sake.—I am, etc.,

Sutton, Oct. 17th. G. S. Walton, M.B., C.M.

THE ANTIVIVISECTIONIST PROPAGANDA.

Sir,—When in the British Medical Journal of October 22nd you assert that I have made misleading statements by dragging the name of the Home Secretary into a letter, the facts of which have been obtained from a printed paper, you make a deliberate and gross imputation upon my good faith and truthfulness. Your assertion is false. Be good enough to inform me upon whose authority you venture to make it. Your statement as to my "implied charge of obtaining a licence, etc.," is also false. There is no implied charge in my letter at all. The plainly expressed charge, if charge you think well to call it, is made not by me but by Dr. Poore and Sir M. W. Ridley.

It is also false that the editor of the *Verulam Review* is in any way more "irresponsible" than the editor of the British Medical Journal or any other. Whilst as to my being "either ignorant of the terms of the licence or too careless to ascertain them," no one knows or ought to know better than yourself, first, that the licence is not in question; secondly, that all information both as to it and as to certificates, except that given in the report itself, is jealously withheld, and, thirdly, that so far from "impugning the good faith" of members of the profession, the very letter of mine which you have printed and commented upon, without apparently taking the trouble first to read it, is on the face of it written with the sole object of enabling me to deal with the Home Secretary's statement without risk of so doing.

Finally you inform your readers that when the inspector in his report states, as he does on 190 separate occasions (pp. 6—38), with regard to the experiments referred to in Sir M. W. Ridley's letter, that a certificate has been granted "permitting experiments without anæsthetics" he means a certificate expressly enjoining the use of anæsthetics. Means, that is to say, precisely the reverse of what he says.

Are we to understand you as suggesting that this method of interpretation must be applied to all Dr. Poore's statements?—I am, etc.,

The Editor "Verulam Review."

Milford-on-Sea, October 24th.

*** The following copy of a letter received from the Permanent Under-Secretary of State, Home Office, by one of the persons to whom the Editor of the *Verulam Review* addressed the lithographed letter which we published last week, is a sufficient answer to the first part of the letter printed above:

The Under-Secretary of State, Home Office, London, S.W.,
Whitehall, October 25th, 1898.

Sir,—With reference to your letter of the 18th instant, I am directed by the Secretary of State to acquaint you that it is not the fact, as alleged by the Editor of the *Verulam Review*, that he has ever stated that you have performed experiments on animals under anæsthetics, which under the certificates held by you in respect of such experiments you were authorised to perform without anæsthetics.

I am, Sir, your obedient servant,

Kenelm E. Digby.

With regard to the second part, the fact appears to be, as we pointed out last week, that the letter of the Editor of the *Verulam Review* is founded upon a blunder due to his want of acquaintance with the terms of the Act, and of the licences and certificates granted under it.

It is stated that the female students of medicine in St. Petersburg are in future to wear a distinctive dress, of which the colour and the cut are prescribed. The ordinance is said to emanate not from the Ministry of Public Instruction but from the police.

Miss Agnes M. Claypole has been appointed Assistant in Microscopy, Histology, and Embryology in the Cornell University Medical College. Miss Claypole is the third woman appointed to a teaching position in Cornell University, but the first one in the Medical Department.

OBITUARY.

WILLIAM RUTHERFORD ANCRUM, M.D., F.R.C.S., M.R.C.P.,

St. Leonard's Court, near Gloucester.

Dr. Ancrum, whose funeral took place a few days ago in the little churchyard near his home on the slopes of the Cotswold Hills, was for thirty years one of the strongest and ablest administrators of the county of Gloucester.

Born at Weston, near Bath, in the year 1816, he was at 15 years of age apprenticed to Mr. Griffiths, a medical practitioner in Wrexham, and had for a fellow pupil the lad who was afterwards to be so well known as Sir William Bowman.

At the expiration of three years he went to London, entering as a student at University College Hospital. There his student career was brilliant; and on taking the Membership of the College of Surgeons he was appointed House-Surgeon at the Hospital. What he was at this time is best shown by the fact that on the termination of his House-Surgeoncy Mr. Liston asked him to become his assistant, a post of honour which he held for three years. It is needless to point out what an inspiration this daily life and work with the great surgeon must have been to the earnest student: it made him a keen and skilful surgeon, and filled him with an enthusiasm for that branch of his profession which he carried with him when in 1843 he left England and settled in Mexico. Five years later he was appointed Surgeon to the Naval Hospital at Valparaiso, and in that city he soon acquired a very large practice. Eleven years later his active professional life was at an end; he returned to England, and in 1863 settled down in his home in Gloucestershire.

One who knew him well writes:

His great ability and earnestness of purpose were soon recognised in Gloucestershire. Twenty-seven years ago he became Chairman of the County Infirmary, accepting that post at a time when the memories of the Crimean winter and of the Indian Mutiny were still sufficiently fresh in English minds and hearts to enforce the infinite needs of human suffering; and accepting it, too, at a time when there was opening out to his profession a prospect such as none had even imagined. Into the management of that institution he brought method and order and financial soundness; and, ever working loyally and in full harmony and sympathy with its staff, he gave to the hospital all that was best in the profession to which he belonged, and from which he never disassociated himself, and all that was wisest and most helpful in its sister calling of nursing.

For many years, too, he was Chairman of the great asylums near Gloucester; and many a medical officer would gladly add his testimony to the value of his friendship with one on whose time, and power, and judgment he could ever rely, and from whom he was at all times certain to receive ready and sympathetic help.

Public work claimed his interest in other directions also, and he took always a prominent place; thus he was a member of many important Committees of the Court of Quarter Sessions, and later of the County Council, of which he was an Alderman.

Three years ago there came the warnings telling that the life-work was drawing to a close. Everything had to be laid aside, and the earnest public life to be exchanged for the quiet of the home. Into that home life we have no right to enter, but those who were privileged to share in it could tell of a character of genuine simplicity, and of almost womanly tenderness and power of sympathy. To the world around the heart was not thus openly worn, but in many a home in his own neighbourhood there are those to remember and to miss the daily acts of thoughtful kindness.

Into his public life he threw without stint or thought of self his great powers, his intense and unwearying energy, his strong hatred of everything that was untrue, unreal, or mean; his full and open sympathy with all that he held to be true and right. Long, indeed, will it be before the memory of such a life fades from the minds of those who shared his work and enjoyed and valued his friendship.

LIEUTENANT-COLONEL JAMES RING, R.A.M.C.

A CORRESPONDENT writes: The death of Lieutenant-Colonel James Ring, M.D., M.Ch., of the Royal Army Medical Corps, shortly referred to in the BRITISH MEDICAL JOURNAL of October 22nd, deserves more than passing notice. The Medical Service has sustained, in this officer's death, a great loss. He was the soul of industry and devotion to duty, and displayed energy in the performance of responsible professional work, but these qualifications were not sufficient to obtain the recognition they so well deserved. Lieutenant-Colonel Ring was mentioned no fewer than five times in despatches, and yet never received a Distinguished Service Order, while, it may fairly be said, many a sabaltern has obtained the D.S.O. for being mentioned perhaps only once. Truly has it been stated that zeal and self-sacrifice in the Medical Service of the army are not suffieient for recognition or advancement, without influence at one's back. Lieutenant-Colonel Ring got a chill during the Tirah Expedition, and the kidneys became affected, death being caused by cardiac failure. This officer had only about a year to complete his Indian service. He entered the Royal Army Medical Corps on September 30th, 1873, and became Brigade-Surgeon on January 27th, 1897. His war services were alluded to in the JOURNAL of October 22nd. Those associated with Lieutenant-Colonel Ring on duty knew him to be thoroughly conscientious in his work.

THOMAS HENRY MOXON, M.R.C.S., L.S.A.

MR. THOMAS HENRY MOXON was at the time of his sudden death on Sunday, October 9th, the senior practitioner in Great Yarmouth. He was born at Hull in 1831, and in that town commenced his medical studies at the now extinct Hull and Yorkshire School of Medicine; he was also apprenticed to his brother Mr. James Burdett Moxon, who then practised as a surgeon at Brigg, in Lincolnshire, and who still survives him. In 1853 Mr. Moxon took the diplomas of M.R.C.S.Eng. and L.S.A. He first commenced practice at Kirton in Lindsey, Lincs, but after a few years disposed of his practice there and came to Great Yarmouth in 1865-66, when he entered into partnership with his brother-in-law, the late Mr. Charles Palmer, and on the death of that gentleman in 1884 he succeeded to the entire practice. Throughout the whole of his professional life in Great Yarmouth, he was looked upon by his brother practitioners as the soul of honour. He devoted himself with untiring zeal and energy to his profession, and his genial, kindly, sympathetic manner made all classes of his patients look upon him as a true friend as well as medical adviser. The honour and dignity of the profession were ever matters of the highest concern to him both in his relations to the public and to his medical brethren.

He was a staunch son of the English church, and for several years he served as a member of the Great Yarmouth School Board. He always took an active part in church affairs, and for many years was churchwarden to St. Andrew's Church. He was connected with the volunteers for a long period, and retired last year with the rank of Surgeon-Lieutenant-Colonel to the 1st Norfolk Artillery Volunteers (E.D.R.A.) He obtained the long-service medal for thirty years' service in 1897, and only this summer was presented by his brother officers in the brigade with a handsome testimonial. He was a member of the British Medical Association. In 1896 he became the first President of a District Branch of the Incorporated Medical Practitioners' Association, and on his retirement at the commencement of the third year the members presented him with a handsome piece of plate. Mr. Moxon was also a member of the Great Yarmouth Clinical Society, and a regular attendant at its meetings.

He was buried in the Great Yarmouth Cemetery on October 21st; the funeral was attended by nearly every medical man in the town, a detachment of officers and men of the 1st Norfolk Royal Artillery Volunteers marched behind the hearse, a large number of the shops in the town were shaded out of respect to his memory, and the church and the graveyard were thronged by his fellow townspeople of all classes and both sexes.

He leaves behind him two sons and six daughters, who deeply mourn the loss of a good man and a good father.

WE regret to record the death of Dr. BYWATER WARD, which took place at his residence, at Oxford, on October 3rd, at the comparatively early age of 54. Dr. Ward was born in Leeds, and received his early education at the Grammar School of that city. He then became a student at the Leeds Medical School, after which he went to Caius College, Cambridge, where he obtained the degrees of M.A. and M.D. He was appointed a house-surgeon at the Sheffield Infirmary, and on the completion of his term of office there he accepted a clinical clerkship at the West Riding Asylum, under Dr. (now Sir) James Crichton Browne. He then went to the Warwick County Asylum as Assistant Medical Officer under the late Dr. Parsey, from which post he came to the Warneford Asylum, Oxford, as Medical Superintendent twenty-five years ago. In spite of much suffering and difficulty from chronic ill-health, Dr. Ward discharged the responsible duties of this office with ability and success, and on his retirement on a pension just a year ago, the Governors of the Asylum passed a minute recording their appreciation of his valuable services. Dr. Ward's health, never strong, had for some time been becoming gradually worse. The cause of death was abscess of the kidney, for which an operation was performed thirty-six hours before death. It is a matter of unfeigned regret to Dr. Ward's many friends that he has lived so short a time to enjoy his well-earned retirement. Dr. Ward leaves a widow and children.

WE regret to announce the death of Professor AZZIO CASELLI, of Genoa, one of the leading surgeons of Italy. Born at Reggio, in Emilia, in 1847, he took his degree at the age of 22, and was almost immediately appointed Surgeon to the hospital of his native town. He came prominently before the surgical world in 1880 in consequence of a bold and successful operation which he performed for extirpation of the larynx. In 1882 he was appointed to the Chair of Clinical Surgery in the University of Genoa. He was preparing a great work, *Trattato Italiano di Chirurgia*, at the time of his death.

WE regret to have to record the death of Mr. EDWARD BARBER, which occurred at his residence in Glossop Road, Sheffield, on October 16th. He was born 60 years ago at Church Fenton, near York, but when quite young his parents removed to Sheffield. He studied at the Sheffield Medical School and at St. Mary's Hospital, London, and qualified as L.S.A. in 1874 and as L.R.C.P.Edin. in 1877. The early part of his career he spent as assistant to Mr. Redall, of Sheffield, and commenced practice for himself some twenty-five years ago. The deceased was a member of the Council of the Sheffield Medico-Chirurgical Society. Mr. Barber had a large practice, and had been recently overworking himself. His death was due to pneumonia. He leaves a widow, two sons, and two daughters.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently passed away are Professor Heydenreich, Dean of the Medical Faculty of Nancy, aged 49; Professor Bouchacourt, of Lyons; Dr. Horacio A. Jimenez, Professor of Clinical Medicine in the Medical Faculty of Cadiz; Dr. Theodore Gsell-Fels, of Munich, Doctor of Divinity and Doctor of Philosophy as well as of Medicine, author of *The Baths and Climatic Health Resorts of Switzerland* and other works on climatological subjects, aged 80; Dr. Heinrich Spöndli, some time Professor of Midwifery in the University of Zurich; Dr. Claudius H. Mastin, a former President of the American Surgical Association of Genito-Urinary Surgeons, and first Vice-President of the Congress of American Physicians and Surgeons, aged 72; and Dr. Ewald Albert Geissler, of Dresden, author (in conjunction with Professor Möller) of the great *Real Encyclopædie der Pharmacie*, aged 49.

BISMARCK'S BRAIN.—According to a German anthropologist, Bismarck's brain was probably the heaviest on record. From measurements made on Schilffer's bust, he judges that the brain of the Iron Chancellor must have weighed 1,867 grammes (over 58 ounces). Cuvier's brain, which is usually cited as the heaviest, weighed 1,830 grammes. The estimation of the weight of the brain from measurements made on a bust strikes us as being about as scientific as it would be to gauge a man's vital capacity by measuring his waistcoat.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Edgar F. Mortimer, Surgeon, to the Royal Marine Depôt, Walmer, October 10th; Christian B. Fairbank, Surgeon, to the *Racer*, October 19th; Horatio W. A. Cowan, M.B., Surgeon, to the *Hearty*, October 19th; Archibald W. Campbell, M.B., Surgeon, to the *Melampus*, temporary, November 3rd; Robley H. J. Browne, Surgeon, to the *Edgar*, for the voyage out, November 1st, and afterwards to the *Alacrity*, undated; Charles R. Sheward, M.B., Surgeon, to the *Edgar*, for the voyage out, November 1st, and afterwards to the *Redpole*, undated; Frank H. Nimmo, Surgeon, to the *Edgar*, for the voyage out, November 1st, and afterwards to the *Pigmy*, undated; William Jackson, M.B., Surgeon, to the *Plover*, November 1st; Montague L. B. Rodd, Frederick J. A. Dalton, and Frederick D. Lumley, Surgeons, to the *Edgar*, undated.

ARMY MEDICAL STAFF.

Surgeon-General John B. Hamilton, M.D., has been placed on retired pay, October 3rd. He entered the service as Assistant-Surgeon, January 18th, 1860; became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1875; Brigade-Surgeon, March 27th, 1886; Surgeon-Colonel, November 30th, 1891; and Surgeon-Major-General, October 3rd, 1895. During the campaign in the Soudan he was Field Director of the Lines of Communication under Brigadier-General Ewart, and was present at the destruction of Temai, receiving a medal with clasp and the Khedive's bronze star. During the expedition to Burma in 1886 he had medical charge of the hospital ship *Tenasserim*.

Colonel William D. Wilson, M.B., the Royal Army Medical Corps, is promoted to be Surgeon-General, *vice* J. B. Hamilton, M.D., October 3rd. His previous commissions are thus dated: Assistant-Surgeon, October 1st, 1867; Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1878; Brigade-Surgeon, October 28th, 1889; and Surgeon-Colonel, July 18th, 1894. He served in the Afghan war in 1878-80 (medal); and in the Soudan Expedition in 1884 as Principal Medical Officer of the Infantry Brigade, and was present in the engagements at El Teb and Temai (mentioned in despatches, promoted to be Surgeon-Major, with the relative rank of Lieutenant-Colonel, medal with two clasps, and Khedive's bronze star).

ARMY MEDICAL RESERVE.

Surgeon-Captain Augustus Kinsey-Morgan, M.D., 1st Dorsetshire Volunteer Artillery, is promoted to be Surgeon-Major, October 26th.

The following is substituted for the announcement in the *Gazette* of October 11th: Surgeon-Lieutenant E. W. St. V. Ryan is promoted to be Surgeon-Captain, October 12th.

VOLUNTEER MEDICAL STAFF CORPS.

Surgeon-Captain C. T. D. Urquhart, M.B., from the Aberdeen Company, to be Surgeon-Captain in the London Companies, October 26th.

KILLED AND WOUNDED IN THE SPANISH-AMERICAN WAR.

According to the *Philadelphia Medical Journal*, official reports received by the War Department from time to time giving the number of men and officers who have been killed and wounded, and who have died from disease in the American army, from the beginning of the war up to August 31st, show the following figures, which are accurate as far as reports have been received, and will be used by the Military Investigation Commission:

	Officers.	Men.
In Porto Rico, killed	0	3
,, ,, wounded	4	35
In Manilla, killed	0	15
,, ,, wounded	10	83
In Cuba, killed	23	237
,, ,, wounded	99	1,332
Died from wounds received	9	82
,, ,, accidents	0	30
,, ,, diseases, etc.	75	2,150

These figures, which may be changed slightly by later official reports, show the total number of deaths in the army of 265,000 to have been 2,624, or a little less than 1 per cent.

VOLUNTEER MEDICAL ASSOCIATION.

Both the course of lectures and the correspondence class for the Proficiency Examination, January, 1899, will commence early in November. The lectures are free to all members of the Volunteer Medical Association, while a charge of 5s. is made for the Correspondence Class. All information can be obtained from Surgeon-Captain Harper, V.M.S.C., 25, Rosary Gardens, South Kensington, S.W., to whom application should be made as soon as possible.

THE ROYAL NAVAL HOSPITAL, STONEHOUSE.

The Lords of the Admiralty have accepted the tender of a Plymouth firm for erecting a new steam laundry, and additions, at the Royal Naval Hospital, Stonehouse, at a cost of £4,200, and the work is to be completed in eight months. It is stated that the wards of this hospital are crowded, to the exclusion of minor cases, which are to be treated in ships.

LIMITATION OF THE NEW TITLES.

We are informed that the India Office has ruled that no change has been made in the designation of officers of the Indian Medical Service who retired before the date of the Royal Warrant of August 10th, 1898; and further that liability to recall to duty applies only to those officers of the Indian Medical Service who entered it on or after September 11th, 1890.

MILITARY TITLES AND RETIRED OFFICERS.

A correspondent writes to endorse the suggestion that retired medical officers should be authorised to use the military portion of their titles only. This could be effected by a memorandum from the War Office, as as to include those who retired before the compound titles were invented. He thinks the Director-General, with the tact and ability of which he has given such ample proof, could negotiate this with the authorities.

THE SECRETARY TO P.M.O. BOMBAY.

In consequence of a protest the decision to abolish the post of Secretary to the Principal Medical Officer in the Bombay Command is being reconsidered.

THE INDIAN MEDICAL SERVICE (CIVIL AND MILITARY).

Replying to the Bombay Presidency Association, the Secretary of State writes that he does not feel justified in entertaining their proposal in regard to the separation of the Civil from the Military Branch of the Indian Medical Service; but the Government of India is confident that its own proposals on the subject (now before him) will meet the case.

THE ARMY MEDICAL RESERVE.

A Civil Surgeon not a General Practitioner takes exception to the remarks in "The Army Medical Reserve" in the British Medical Journal of October 15th, and states that the definition of "general practitioner" is incorrect as applied to the class of civil medical men employed with troops on £270 a year. He reminds us at the same time that last April the Secretary of State for War nominated, through the deans of their respective schools, a number of young medical men for service with the (then) Army Medical Department, who gave their whole time to departmental work. The fact is indisputable; but our correspondent does not seem to be aware that "gentlemen in civil practice" have been employed at some of the large military stations in the United Kingdom at the rate of £270 a year, and even more, to fill up the gaps caused by army surgeons being sent abroad and to manœuvres, owing to the cutting down in recent years of the army medical establishment. The civil surgeons nominated, through the deans of schools, by the War Office were appointed under circumstances in which general practitioners could not be obtained to perform the varied duties of army medical officers, these "civil surgeons" being employed on very much better terms than any medical reserve officers could obtain for performing similar duties at stations in the vicinity of their residence. One fact must not be forgotten—that these young medical men (civil surgeons), some of whom have had little or no experience of private practice, and none at all o military routine, have been promised employment for definite periods by the War Office (in any part of the United Kingdom to which they may be sent on the duties of lieutenants Royal Army Medical Corps), and dislodge the army medical reserve officers who, though not liable to be removed from their stations, still have to give the same services, including attendance at musketry orderly duty, barrack inspections, recruiting, and, in fact, every other duty performed by the army medical officer, at the absurdly unremunerative rate of 8s. per head per annum payable only for the period the War Office chooses to retain the services of the army medical reserve officers. Can our correspondent not see why the resignations of the army medical reserve officers, repeatedly announced in the *Gazettes*, are taking place? Articles 050 and 375 of the Royal Warrant will explain much. Our correspondent has apparently mistaken the aim and object of the comments to which he refers.

MEDICO-LEGAL.

CHARGE OF PROCURING ABORTION: CONVICTION FOR MURDER.

After a trial a month ago, which ended in the disagreement of the jury, John Lloyd Whitmarsh, a medical practitioner of over thirty years' standing, was convicted at the Central Criminal Court on October 26th for the wilful murder of Alice Bayly by procuring criminal abortion. The facts proved at this and the former trial leave no room for any doubt as to the prisoner's guilt.

The deceased, an unmarried girl aged 26, according to the statement she made to Inspector Drew, and repeated in her dying declaration, went to Whitmarsh on June 18th for the purpose of having abortion procured. He passed an instrument, and then injected some fluid; when she had recovered from the shock of this, she returned to her lodgings, where abortion took place within four hours of the "operation." Symptoms of mercurial poisoning soon appeared, and, after remaining at her mother's for a few days (she having gone to her home the day after the abortion), she was admitted into Charing Cross Hospital on June 24th. At this time she still presented some signs of mercurial poisoning, and she died on July 10th from exhaustion consequent on extensive inflammation of the uterus and vagina, and on repeated haemorrhages from the former. The *post-mortem* examination was made by Mr. Bond on July 12th, when the whole of the mucous membrane of the vagina and uterus was found to be in a sloughing condition; the uterus was enlarged to a size consistent with the period of gestation supposed to have been reached at the date of the alleged abortion; the breasts were found to contain a little milk; the lower gum was found to have sloughed, and the alveolus of the lower jaw was bare. Portions of the liver were analysed by Dr. Stevenson, and the presence of mercury was proved.

But little attempt was made by the defending Counsel to upset the medical part of the case. The medical man who was present at the *post-mortem* examination on behalf of the prisoner was not called as a witness either before the coroner, the magistrate, or at the Central Criminal Court, an omission which amounts to a tacit admission of the correctness of the medical evidence as to the *post-mortem* appearances.

The evidence thus far would not have sufficed to connect the prisoner with the case, but when the deceased confided to her relatives what was the matter with her a married sister went to the prisoner and prevailed upon him, not without some difficulty, to come and see the patient, which he seems to have done twice, and each time the deceased accused him of having done something that would kill her. Whitmarsh, by the advice of his counsel, availed

himself of the new law which enables a prisoner to give evidence on oath, and gave his version of the nature of his professional services to the deceased, but the story as he told it was not by any means convincing; and in all probability the jury were more firmly persuaded of his guilt when he left the witness-box than when he entered it. In the end the jury found the prisoner guilty of wilful murder, but with the strongest possible recommendation to mercy.

Mr. Justice Bigham, having assumed the black cap, said that the jury as reasonable and honest men could not arrive at any other conclusion than that conveyed in their verdict. He suspected that the prisoner had been carrying on a business in practices of the kind by which he had been brought into his present position. If his example would act as a warning to other people who might now be following the same dreadful business, perhaps the trial would be to the public benefit. The judge said that it was his duty to pass upon the prisoner the only sentence of the law for the crime of which he had been found guilty, but he would take care to forward the recommendation of the jury to the proper quarter, and everything that could properly be said in support of the recommendation by him would be said. His lordship then passed sentence of death.

THE PECULIAR PEOPLE.

JAMES COOK AND GRACE COOK, husband and wife, were at the Central Criminal Court on October 16th indicted for, and charged on the coroner's inquisition with, the manslaughter of their child, a girl aged 20 months. She was taken ill with whooping-cough, but no medical man was called in. An elder of the sect of the Peculiar People was called in to pray over the child and to anoint it with oil. The child died. Medical evidence was to the effect that if the child had received medical attention its life would have been prolonged, and it would in all probability have lived. The prosecution contended that in consequence of the neglect of the parents' duty to call in a medical man to attend the child its death was accelerated, and that they were therefore guilty of manslaughter. The defendants were tried upon the charge at the last session, but the jury were unable to agree. The male defendant gave evidence, saying that he and his wife trusted in the Lord, and was proceeding to give a religious address when he was stopped by the judge.

The judge having summed up, the jury eventually found both defendants guilty.

The judge, addressing the defendants, impressed upon them their duty to reconsider carefully whether they were following a right course in neglecting those worldly means which God had provided. They should remember that He intended man to use the assistance which science and skill undoubtedly afforded. Taking into consideration his belief that they thought they were acting rightly, though in reality they were acting wrongly, breaking the law, and neglecting the common dictates of human nature, the Judge said that he would discharge them upon their own recognisances to come up for judgment at some future time if called upon to do so.

The prosecuting Counsel, Mr. Guy Stephenson, said that the child of a witness named Gentry, one of the Peculiar People, who had given evidence, was now suffering from diphtheria, and Mr. Justice Bigham observed that he wished it to be understood that from the lenient course he had taken in this case no one was to suppose that he was at all likely in future to escape proper punishment for an offence such as this.

INQUESTS.

M.D. (Weymouth) asks the following questions:

1. Is the coroner bound to hold an inquest on the ground that the deceased person—a sailor—died in a public institution away from his friends?

2. Is the coroner precluded by law from paying a fee to the medical officer of such public institution—an isolation hospital—for giving evidence concerning the death of any patient dying there, it being his duty to attend the deceased as medical officer of such institution?

*** To the first question the reply is No, unless the death occurred from other than natural causes, or allegations were made which required investigation.

To the second question the answer is Yes; and this is regulated by the Coroners Act, 1887, Section XXII, Clause 2, which enacts as follows, after providing for ordinary payment of medical witnesses: "Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution, or in a building or place belonging thereto, or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid shall not be entitled to such fee or remuneration."

UNDESIRABLE PAMPHLETS.

A CORRESPONDENT has forwarded to us a pamphlet of the usual type on "Nervousness and its Particular Causes," which he informs us has been distributed broadcast in his district, and he inquires if the General Medical Council has no control over such cases.

A special feature in reference to the pamphlet in question is that its author is described as "M.D., a Licentiate in Medicine, Surgery, and Midwifery; thirty-six years in practice. Diploma 1859." The name of the author in question was erased from the *Medical Register* in 1881, and it may be that the words to which we have referred would be held in a court of law (were proceedings taken under the Medical Act, 1858) to imply that the author was a duly registered practitioner. We think it would be desirable for our correspondent to send a copy of the pamphlet to the Registrar of the General Medical Council with a letter drawing attention to the facts. It is incumbent in the public interest to do everything that is possible to stamp out the circulation of literature of this kind.

THE GENERAL MEDICAL COUNCIL AND UNQUALIFIED ASSISTANTS.

PERPLEXED MEDICO.—The newspaper cutting enclosed by our correspondent has been received, and we note his remarks. We think it will be a sufficient reply to our correspondent's observations to draw attention to the marked distinction which exists between the employment by a medical practitioner (for the purposes of his practice) of an unqualified assistant and the employment of a medical student in the exercise of his duties in connection with the ordinary routine cases of hospital practice.

H. W.—While commenting on this subject we acknowledge the receipt of a cutting from "H. W." taken from a local newspaper, containing an advertisement by an "Eclectic Practitioner" for an assistant (unregistered). Our correspondent, "H. W.", inquires if it does not come within the province of the General Medical Council to attend to this kind of advertisement and practice.

The regulations prescribed by the General Medical Council in reference to the employment of unqualified assistants had reference solely to their employment by qualified medical practitioners. The advertisement in question purposely, no doubt, invites applications from unregistered men, as it would not be open to a qualified man to accept such an appointment.

PRINCIPAL AND ASSISTANT: A QUESTION OF CONTRACT.

WE have read the statements submitted to us as to the questions which have arisen between our correspondents, "B" and "A." It seems that the parties are at issue on several points, and certainly on the fundamental one of whether or not the assistant was to be at liberty to sever the engagement at any moment without notice. This being so, we cannot offer any definite opinion as to the legal right of the parties. There is nothing, of course, to prevent the assistant taking legal proceedings to recover the amount alleged to be due if he so desires, but he could not be recommended to take this course except under the advice of a solicitor with all the facts and documents (if any) before him.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

EXAMINATION IN SANITARY SCIENCE.—The following candidates have satisfied the Examiners in both parts of the examination:

L. P. Black, T. Carr, J. I. Cook, M. L. Dhingra, A. Duncan, H. E. Goulden, J. Knight, C. S. Marshall, J. E. O'Connor, P. W. O'Gorman, A. G. Penny, J. A. K. Renshaw, J. J. Taylor, and J. H. Whitaker.

EXAMINATION FOR MEDICAL DEGREES.—The following have been appointed for the current academical year: Physics: Mr. Wilberforce, Mr. Capstick. Chemistry: Mr. Sell, Mr. Adie. Biology: Mr. Bateson, Mr. Seward. Pharmaceutical Chemistry: Mr. Ivatt, Mr. Easterfield. Anatomy: Dr. Barclay-Smith, Professor D. J. Cunningham. Physiology: Dr. Anderson, Dr. Starling.

MATRICULATION.—On October 21st freshmen were matriculated to the number of 897, including 19 advanced students who have graduated in other universities. This brings the total for the year 1898 up to 944, the largest number since 1890.

COUNCIL OF THE SENATE.—On October 22nd Dr. Langley, F.R.S., was elected without opposition to the vacancy on the Council caused by the resignation of Mr. Glazebrook.

UNIVERSITY OF EDINBURGH.

FINAL EXAMINATION.—The following candidates have passed the Final Examination for Degrees in Medicine under the Old Regulations:

F. T. H. Adamson, A. L. Anderson, E. B. Anderson, F. Beecroft, A. L. J. Branday, H. M. Bundey, D. A. Cameron, R. Craven, J. G. Forsyth, J. V. Fox, A. G. Hayden, Edith Isabella Hudson, F. J. Jude, D. J. C. Oliver, D. J. Peirson, Dorothy Helen Pratt, T. Pretsell, F. W. Price, F. S. Rose, A. H. Rutherford, C. R. Scott, G. H. Wilson, J. B. Wilson.

New Regulations.—D. V. M. Adams, A. S. Allum, E. G. Ffrench, E. R. Gray, B.A.; A. A. Gunn, A. G. Hamilton, J. Haworth, J. Hunter, B. S. Hyslop, G. Hendrik, W. de Labat, D. V. M'Intyre, M.A.; A. M'Kaig, W. W. Maxwell, P. E. Millard, W. J. Nutter, H. K. Paxton, E. C. Peake, A. de St. L. F. Perigal, G. H. Stewart, A. H. Thompson, P. G. L. du Toit, A. G. Worrall.

CONJOINT BOARD IN IRELAND.

SECOND PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

Completed the Examination.—C. H. Cormac, W. Davis, D. A. Faris, J. F. Fitzgerald, E. Glenny, E. Goldfoot, R. Hughes, J. Hutch, M. J. Johnston, T. F. Kennedy, C. C. Meeke, S. R. McCausland, R. F. MacMahon, A. E. O'Reilly, A. B. Stephenson, F. R. Thorn.

In Anatomy.—C. H. Browne, F. H. Cooke, H. T. Cookman, R. Donnellon, M. T. Donovan, Miss Driver, T. Farrell, R. R. Faussett, M. E. Lynch, R. P. McDonnell, C. J. O'Connell, C. R. M. Pattison, J. C. Ryan, J. H. White, R. O. White.

In Physiology.—H. L. Barry, J. J. S. Casbery, J. J. Harty, R. W. Hillis, M. E. Lynch, A. A. W. Merrick, T. J. Nicholl, C. J. O'Connell, J. H. White, T. J. Wright.

In Histology.—F. W. Brunker, M. T. Donovan, W. N. Eustace, R. W. Hillis, M. J. Loughrey, M. E. Lynch, T. J. Nicholl, D. J. O'Reilly, J. C. Ryan.

In Materia Medica.—P. Donnellon, A. A. W. Ganderton, J. J. Harty, M. J. Loughrey, A. A. W. Merrick, J. C. Ryan, F. G. Sharpe, J. P. Ryan, R. O. White.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, October, 1898. The following candidates passed in

Surgery.—F. Edc, Royal Free Hospital; I. Liebster, Vienna; W. M.

McLoughlin, University College Hospital; A. H. Priestley, Manchester; W. R. Wilson, Dublin and Belfast.

Medicine.—C. G. Catterall (Section II), Leeds and Westminster Hospital; H. Clough, Leeds; H. H. Cotman (Section II), Aberdeen and London Hospital; H. L. Hands, Madras and Charing Cross Hospital; A. H. Priestley, Manchester; S. Sugden, Manchester; A. F. Weston (Section I), St. George's Hospital; R. Le G. Worsley (Section II), St. George's Hospital.

Forensic Medicine.—G. F. M. Clarke, Charing Cross Hospital; H. Clough, Leeds; P. T. Goodman, St. Thomas's Hospital; H. L. Hands, Madras and Charing Cross Hospital; P. A. Pierre, Westminster Hospital; A. H. Priestley, Manchester; A. F. Weston, St. George's Hospital.

Midwifery.—A. G. C. Davies, Guy's Hospital; G. W. H. Edgelow, London Hospital; F. Golding-Bird, Guy's Hospital; F. S. Leech, University College Hospital; D. V. Lowndes, Westminster Hospital; R. R. Mowll, King's College Hospital; H. J. Pickering, St. Bartholomew's Hospital; P. A. Pierre, Westminster Hospital; A. H. Priestley, Manchester.

The diploma of the Society was granted to the following candidates: G. F. M. Clarke, F. Ede, A. H. Priestley, and W. R. Wilson.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF LONDON SANITARY DISTRICTS DURING THE THIRD QUARTER OF 1898.

[SPECIALLY REPORTED TO THE BRITISH MEDICAL JOURNAL.]

In the accompanying table will be found summarised the vital statistics of the forty-three sanitary areas of the metropolis, based upon the Registrar-General's returns for the third or summer quarter of this year. The mortality figures in the table relate to the deaths of persons actually belonging to the various sanitary areas, and are the result of a complete system of distribution of deaths occurring in the institutions of London among the various sanitary areas in which the patients had previously resided.

The 33,170 births registered in London during the three months ending September last were equal to an annual rate of 29.5 per 1,000 of the population, estimated at 4,504,766 persons in the middle of this year: this rate was 0.9 per 1,000 below the mean rate in the corresponding quarters of the ten preceding years, 1888-97. The birth-rate [illegible] under notice in the various sanitary areas showed, as [illegible], owing principally to the differences in the sex an[illegible] population. In Kensington, St. George Hanover [illegible], St. James Westminster, Hampstead, St. Martin-in-the-Fields, [illegible] City the birth-rates were considerably below the average; while they showed the largest excess in Fulham, St. Luke, Whitechapel, St. George-in-the-East, Mile End Old Town, and Bermondsey.

The 21,277 deaths of persons belonging to London registered during the three months ending September last were equal to an annual rate of 18.9 per 1,000, against 18.2, 18.4, and 18.9 in the corresponding periods of the three preceding years; with the exception of the third qua[illegible], when the rate was also 18.9 per 1,000, the rate last quarter was higher than in the corresponding period of any of the ten preceding years, [illegible] which the rate averaged 17.8 per 1,000. The lowest death-rates in the various sanitary areas were 10.6 in Hampstead, 11.8 in St. George Hanover Square, 14.7 in Stoke Newington and in Wandsworth, 14.8 in London City, and 15.5 in Paddington, in St. Martin's-in-the-Fields, and in Lee; the highest rates were 23.5 in Holborn, 24.1 in St. Luke, 24.7 in St. Saviour Southwark, 25.2 in Shoreditch, 26.6 in Limehouse, 26.8 in St. George-in-the-East, and 27.1 in St. George Southwark. During the quarter under notice 4,816 deaths resulted from the principal zymotic diseases in London; of these, 3,570 resulted from diarrhœa, 430 from whooping-cough, 356 from diphtheria, 236 from measles, 113 from enteric fever, 108 from scarlet

Analysis of the Vital and Mortal Statistics of the Sanitary Districts of the Metropolis, after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1898.

Sanitary Areas.	Estimated Population middle of 1898.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Zymotic Diseases.	Deaths from Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Undefined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
LONDON	4,504,766	33,170	21,277	29.5	18.9	4.29	4,816	—	236	108	356	430	—	113	3	3,570	1,692	259
West Districts.																		
Paddington	127,480	727	494	22.9	15.5	3.27	104	—	7	2	16	6	—	1	—	72	35	257
Kensington	172,174	934	673	21.8	15.7	2.77	119	—	4	4	2	17	—	1	—	91	48	270
Hammersmith	107,370	761	525	28.4	19.6	4.97	133	—	5	5	8	8	—	2	—	105	42	293
Fulham	125,275	1,150	646	36.8	20.7	5.99	187	—	3	3	12	7	—	3	1	158	43	278
Chelsea	96,713	573	422	23.8	17.5	3.57	86	—	—	4	9	9	—	4	—	60	35	290
St. George Hanover Sq.	80,608	345	238	17.2	11.8	1.49	30	—	1	1	2	2	—	2	—	22	25	145
Westminster	52,574	286	256	21.8	19.5	2.67	35	—	—	—	4	6	—	1	—	24	31	238
St. James Westminster	22,200	113	98	20.4	17.7	1.98	11	—	1	2	1	1	—	—	—	6	11	186
North Districts.																		
Marylebone	140,483	1,014	554	29.0	15.8	2.34	82	—	6	4	8	7	—	3	—	54	43	176
Hampstead	78,755	380	208	19.4	10.6	1.32	26	—	1	—	5	—	—	1	1	18	16	184
St. Pancras	243,416	1,681	1,239	27.7	20.4	4.06	247	—	10	15	12	27	—	8	—	175	111	295
Islington	344,616	2,466	1,441	28.7	16.8	3.79	325	—	28	5	12	26	—	11	—	243	107	225
Stoke Newington ...	34,660	213	127	24.6	14.7	2.78	24	—	—	—	—	—	—	1	—	23	10	164
Hackney	219,630	1,632	953	29.8	17.4	3.84	211	—	10	4	16	11	—	10	—	160	65	247
Central Districts.																		
St. Giles	37,519	266	185	28.4	19.8	2.78	26	—	—	1	2	3	—	—	—	20	21	211
St. Martin-in-the-Fields	12,424	42	48	13.6	15.5	1.61	5	—	—	—	1	1	—	—	—	3	5	262
Strand	23,284	135	124	23.3	21.4	2.06	12	—	—	1	1	1	—	—	—	9	18	259
Holborn	30,056	158	176	21.1	23.5	4.00	30	—	1	1	8	3	—	—	—	17	22	342
Clerkenwell	66,120	523	386	31.7	23.4	6.31	104	—	9	2	13	5	—	3	—	72	33	300
St. Luke	41,076	476	247	46.5	24.1	6.35	65	—	2	—	8	5	—	—	—	50	21	206
London City	29,088	119	107	16.4	14.8	1.25	9	—	1	1	1	—	—	1	—	5	8	143
East Districts.																		
Shoreditch	121,485	1,040	764	34.3	25.2	6.48	196	—	12	2	10	4	—	5	—	163	49	341
Bethnal Green	129,027	1,150	687	35.7	21.4	4.52	146	—	13	1	4	4	—	2	—	112	75	247
Whitechapel	80,559	745	435	37.1	21.7	3.34	67	—	10	2	4	1	—	4	—	46	40	240
St. George-in-the-East	48,241	523	322	43.5	26.8	4.40	53	—	4	1	3	4	—	2	—	39	34	268
Limehouse	58,661	474	389	32.4	26.6	6.84	100	—	8	1	4	13	—	2	—	72	30	335
Mile End Old Town ...	112,528	1,038	597	37.0	21.3	5.74	161	—	11	—	21	8	—	3	—	121	31	253
Poplar	170,220	1,408	964	33.2	22.7	6.03	256	—	17	3	25	11	—	5	—	195	64	313
South Districts.																		
St. Saviour Southwark	24,562	185	151	30.2	24.7	4.89	30	—	—	1	1	3	—	1	—	24	18	330
St. George Southwark	60,461	520	400	34.5	27.1	7.57	114	—	3	8	6	12	—	2	—	83	47	331
Newington	123,183	992	667	32.3	21.7	6.44	198	—	5	8	21	19	—	3	—	142	62	274
St. Olave Southwark ...	11,288	84	52	29.9	18.5	2.85	8	—	—	—	1	2	—	—	—	5	8	119
Bermondsey	85,738	770	447	36.0	20.9	4.99	107	—	8	8	11	15	—	3	—	62	34	205
Rotherhithe	40,849	316	193	31.0	19.0	2.26	23	—	3	1	1	2	—	—	—	16	16	256
Lambeth	304,073	2,361	1,460	31.1	19.3	4.43	336	—	12	1	34	53	—	5	1	230	108	248
Battersea	171,921	1,239	782	28.9	18.2	4.22	181	—	1	1	21	20	—	2	—	136	64	270
Wandsworth	202,526	1,358	743	26.9	14.7	3.84	194	—	13	2	13	27	—	4	—	135	49	222
Camberwell	261,189	1,893	1,110	29.1	17.2	4.07	266	—	4	4	14	32	—	4	—	208	85	257
Greenwich	180,441	1,396	932	31.1	20.7	5.51	248	—	5	4	12	28	—	9	—	190	59	304
Lee	39,717	224	153	22.6	15.5	3.72	37	—	3	1	2	3	—	3	—	25	8	250
Lewisham	88,562	640	400	29.0	18.1	4.80	106	—	9	1	6	10	—	—	—	87	22	277
Woolwich	41,478	328	202	31.7	19.5	5.52	57	—	—	1	1	10	—	2	—	43	20	256
Plumstead	67,531	492	262	31.6	16.8	3.91	61	—	3	2	—	7	—	—	—	49	19	226

fever, and 3 from ill-defined forms of continued fever. These 4,816 deaths were equal to an annual rate of 4.29 per 1,000, against an average rate of 3.63 in the corresponding quarters of the ten preceding years, 1888-97. In the third quarter of the three preceding years the zymotic death-rate was 4.28, 4.20, and 4.49 per 1,000 respectively. In the various sanitary areas the lowest zymotic death-rates last quarter were 1.25 in London City, 1.32 in Hampstead, 1.49 in St. George Hanover Square, 1.61 in St. Martin-in-the-Fields, 1.08 in St. James Westminster, and 2.26 in Rotherhithe; and the highest rates were 6.31 in Clerkenwell, 6.35 in St. Luke, 6.44 in Newington, 6.48 in Shoreditch, 6.84 in Limehouse, and 7.57 in St. George Southwark. The high rates in these last-mentioned sanitary areas were due to the excessive fatality of summer diarrhœa.

No fatal case of small-pox was registered in London during the three months ending September last, and no death from this disease has been recorded in the metropolis since August, 1897. Measles showed the highest proportional fatality in Clerkenwell, Shoreditch, Bethnal Green, Whitechapel, Limehouse, Mile End Old Town, Poplar and Bermondsey; scarlet fever in St. James Westminster, St. Pancras, St. George Southwark, Newington, and Bermondsey; diphtheria in Paddington, Holborn, Clerkenwell, St. Luke, Mile End Old Town, Poplar, Newington, Bermondsey, and Battersea: whooping-cough in Lewisham, St. George Southwark, Newington, St. Olave Southwark, Bermondsey, Lambeth, and Woolwich; enteric fever in Hackney, Clerkenwell, Whitechapel, Greenwich, Lee, and Woolwich; and diarrhœa in Fulham, Clerkenwell, St. Luke Shoreditch, Limehouse, Mile End Old Town, Poplar, St. George Southwark, and Newington.

During the three months ending September last, 1,692 deaths from phthisis were registered in London, equal to an annual rate of 1.51 per 1,000, against 1.58 and 1.60 in the corresponding periods of the two preceding years. Among the various sanitary areas the lowest phthisis death-rates were recorded in Paddington, Hampstead, London City, Mile End Old Town, Wandsworth, Lee, and Lewisham; and the highest rates in Strand, Holborn, St. George-in-the-East, St. Saviour Southwark, St. George Southwark, and St. Olave Southwark.

Infant mortality, measured by the proportion of deaths under 1 year of age to registered births, was equal to 259 per 1,000 last quarter, and considerably exceeded the rate recorded in the corresponding period of any of the ten preceding years, during which the rate averaged 196 per 1,000. Among the various sanitary areas the rates of infant mortality were lowest in St. George Hanover Square, St. James Westminster, Marylebone, Hampstead, London City, and St. Olave Southwark; while they showed the largest excess in Holborn, Shoreditch, Limehouse, Poplar, St. Saviour Southwark, and St. George Southwark.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,217 births and 4,043 deaths were registered during the week ending Saturday last, October 22nd. The annual rate of mortality in these towns, which had declined from 24.6 to 19.0 per 1,000 in the six preceding weeks, further fell to 18.8 last week. The rates in the several towns ranged from 11.4 in Cardiff, 11.7 in Huddersfield, 12.5 in Blackburn, and 12.8 in Bristol, to 24.4 in Liverpool, 25.7 in Sunderland, 26.4 in Newcastle-upon-Tyne, and 30.2 in Salford. In the thirty-two provincial towns the mean death-rate was 19.8 per 1,000, and was 2.5 above the rate recorded in London, which was 17.3 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.5 per 1,000; in London the rate was equal to 1.6 per 1,000, while it averaged 3.1 in the thirty-two provincial towns, among which the highest zymotic death-rates were 4.7 in Norwich, 5.1 in Sunderland, 6.1 in Hull, and 7.0 in Salford. Measles caused a death-rate of 1.0 in Gateshead, 1.4 in Norwich, and 1.6 in Plymouth; "fever" of 1.1 in Halifax and in Leeds, 1.2 in Salford, 1.3 in Nottingham, 1.4 in Hull, and 2.2 in Sunderland; and diarrhœa of 3.1 in West Ham, 3.6 in Hull, and 4.1 in Salford. The mortality from scarlet fever and from whooping-cough showed no marked excess in any of the large towns. The 72 deaths from diphtheria in the thirty-three towns included 30 in London, 6 in Swansea, 6 in Sheffield, 5 in Portsmouth, 5 in Liverpool, and 4 in Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 2,728 at the end of the eight preceding weeks, had further increased to 2,915 on Saturday last, October 22nd; 381 new cases were admitted during the week, against 300, 358, and 357 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 22nd, 951 births and 572 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 19.1 to 20.7 per 1,000 in the three preceding weeks, declined to 19.9 last week, but was slightly above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.0 in Leith and 13.7 in Aberdeen to 22.1 in Perth and 23.8 in Greenock. The zymotic death-rate in these towns averaged 2.9 per 1,000, the highest rates being recorded in Dundee and Greenock. The 283 deaths registered in Glasgow included 3 from scarlet fever, 2 from diphtheria, 11 from whooping cough, 5 from "fever," and 18 from diarrhœa. Five fatal cases of measles, 3 of scarlet fever, and 2 of diphtheria were recorded in Edinburgh: and 4 deaths were referred to "fever" in Greenock.

IRREGULAR APPOINTMENT OF A DISTRICT MEDICAL OFFICER.

We learn from the *Bristol Times* that at a meeting of the Warmley Board of Guardians held on the 19th inst., a letter was read from the Local Government Board, pointing out to the guardians that the recent appointment by them of Dr. C. J. Perrott as Medical Officer of the Oldland District for a period of three years did not appear to be in accordance with regulations, as Dr. Perrott was fully qualified and resided in the district for which they proposed to appoint him temporarily, and that unless some satisfactory explanation could be given for this apparent irregularity, a fresh election would have to take place. We are sorry to find that Dr. Perrott after having been once elected by the guardians should be put to any trouble by having to face a fresh election, but notwithstanding this, it is very satisfactory to note that the Local Government Board will not allow guardians to make temporary medical appointments when by regulations these should be for life. We hope to hear shortly that Dr. Perrott has been permanently appointed to the office.

SMALL-POX AT STOCKTON.

In connection with the recent prevalence of small-pox at Stockton, the Urban Council, on the motion of the Mayor, have passed a resolution of thanks to Alderman Hind and Councillor Dr. Hughes for their services as an emergency committee. On the motion of Dr. Hughes the thanks of the Council were also recorded to the medical officer of health, Dr. J. Horne, and his staff for their work during the epidemic. In addition, a money bonus was unanimously voted to the medical officer of health, the assistant surveyor, and the inspector of nuisances.

VACCINATION ADMINISTRATION AT KINGSTON-ON-THAMES.

A MEMORIAL signed by the Mayor of Kingston and a number of influential gentlemen, including Dr. H. Beale Collins, the Medical Officer of Health, and several other medical men, has been presented to the Kingston Board of Guardians regarding the administration of the new Vaccination Act. The memorial suggests: (1) That the Board should request the public vaccinators of the district to meet and prepare a set of regulations for the performance of vaccination under antiseptic conditions, and for the prevention of subsequent contamination of the vaccine vesicle; and (2) that as under the new law, with public stations abolished, the time occupied in vaccination will be greatly increased, this fact should be considered in arranging the future remuneration of the officers. At the meeting of the guardians it was ordered that the memorial lie on the table, on the ground apparently that it was not an official document.

ELIGIBILITY OF JUNIOR PARTNER TO OFFICE VACATED BY SENIOR.

SENEX writes that he has held the appointment of medical officer to a union over forty years, and is now inclined to accept the superannuation allowance. His partner has been associated in the work four or five years, and is willing to take the appointment. Is he eligible, as being partner of the recipient of superannuation?

*** As medical partnerships are not recognised in the Poor-law Medical Service, the junior partner would be eligible for the vacancy created by the retirement of "Senex."

THE EFFECT OF THE NEW VACCINATION ACT.

R. writes: It would be interesting to know whether the experience of other public vaccinators as to the result of the new law corresponds with my own. The outcome of my autumn attendance at my only station is the vaccination of two. The numbers for the previous nine years have varied from 6 to 16, the average being 11.5. I know of no other cause than the change in the law for this marked falling off.

*** It is too soon yet to judge of the result, and discussion at present would therefore be premature.

MEDICAL NEWS.

SUCCESSFUL VACCINATION.—Dr. Robertson, Public Vaccinator for the Bloxham District of the Banbury Union, has for the second time in succession been awarded the Government grant for efficient vaccination.

SIR RICHARD THORNE, K.C.B., will give the Harben Lectures for 1898 of the Royal Institute of Public Health on Wednesday, November 2nd, 9th, and 16th at 5 P.M. at the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The subject of the course will be the Administrative Control of Tuberculosis.

RELIGIOUS VERSUS LAY NURSES.—The General Council of the Bouches-du-Rhône Department recently passed a resolution that the nursing of the hospitals of Marseilles should be taken out of the hands of the Sisters of Charity and entrusted to lay nurses. The Medico-Chirurgical Society of the Hospitals of Marseilles has addressed a strong and unanimous protest against the proposed change to the President of the Council of Ministers, to the Prefect of the Bouches-du-Rhône Department, to the Mayor of Marseilles, and to the Hospital Administrative Council.

NATIONAL AID SOCIETY.—Colonel Young, Commissioner of the National Society for Aid to the Sick and Wounded in War (British Red Cross Society), with the sanction of the Council of the Society, recently placed in the hands of the Sirdar the sum of £300, to be applied directly for the benefit of the Egyptian soldiers who have suffered in the recent campaign, and the sum of £200 for the purchase and immediate dispatch to Omdurman of articles urgently needed for the Dervish wounded who are being treated by the Egyptian medical

staff. We are informed that the supplemental aid rendered in the Soudan campaign by the Society has made a very favourable impression in Egypt and the Soudan, and has been most highly appreciated by the sick and wounded.

Hydrophobia in the Philippine Islands.—According to a local scientific journal (*Cronica de Sciencias de Filipinas*) rabies, when it attacks the human subject in the Philippines, is popularly believed to occur under two distinct forms, to wit, hydrophobia properly so-called, and aërophobia, the malady in the first form being characterised by an intense horror of all lustrous objects, including water, while in the second form the spasms are excited by air currents however slight. A further subdivision into furious madness, when hyperexcitement of the nervous centres prevails, and dumb madness, when the chief symptoms are paralytic, is also generally recognised by observers. The following treatment is customarily adopted: 1. Cauterisation of the wound with a live ember, or by means of the actual cautery. 2. Washing the part with a concentrated decoction of a plant known locally as "macabuhay" (Menispermum crispum). 3. The administration in copious draughts of a warm infusion of canella (Laurus cinnamomum) until the effects show themselves in exaltation of the nervous system. The canella, which should be persevered with for a fortnight, is said to cause profuse perspiration lasting four or five hours, the patient meanwhile being kept closely enveloped in thick blankets in order to encourage the action of the skin. In the opinion of the heaven-born physicians who chiefly represent the medical faculty the foregoing treatment is nothing less than infallible provided it be commenced early enough, but unfortunately trustworthy statistics are lacking.

MEDICAL VACANCIES.

The following vacancies are announced:

ALEXANDRA ORPHANAGE, Hornsey Rise, N.—Medical Officer; non-resident. Applications to A. C. P. Coote, M.A., Secretary, 73, Cheapside, E.C.

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer, unmarried. Salary, £100 per annum, with board and apartments. Applications to the Secretary by October 31st.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £150 per annum (with an allowance of £30 for cab hire), with rooms, fire, light, and attendance. Applications to the Secretary by November 14th.

BIRMINGHAM PARISH.—Resident Assistant Medical Officer for the Workhouse Infirmary. Salary, £100 per annum, with furnished apartments, rations, coals, gas, washing, and attendance. Applications, on forms provided, to the Clerk to the Guardians by November 5th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CANCER HOSPITAL (FREE), Fulham Road, S.W.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and residence. Applications to the Secretary by October 31st.

CARDIFF INFIRMARY.—Honorary Gynæcologist. Applications endorsed "Gynæcologist" to the Secretary by November 7th.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Appointment for twelve months. Salary, £100 per annum, with furnished apartments, board, attendance, fire, gas, and washing. Applications to the Secretary by November 1st.

CHARING CROSS HOSPITAL.—Assistant Obstetric Physician. Applications to the Chairman of the Council by November 5th.

CHATTERIS URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £20 per annum. Applications to the Clerk to the Council by November 5th.

EVELINA HOSPITAL FOR SICK CHILDEN, Southwark, S.E.—Clincal Clerkships (unqualified), tenable for three months. Applications to the Registrar.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 21st.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Resident Medical Officer. Salary, £50 per annum, with board, residence and washing. Applications to the Secretary-Superintendent by November 5th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—House-Surgeon, and a House Physician, unmarried. Appointment for six months. Salary, in each case, £20, with board and residence. Applications (on forms provided) to the Secretary by November 15th.

HULL: VICTORIA CHILDREN'S HOSPITAL.—Lady Assistant House-Surgeon. Salary, £40 a year, with board, lodging, and laundry. Applications to the Honorary Secretaries by November 2nd.

LEEDS: GENERAL INFIRMARY.—Resident Casualty Officer. Salary, £100, with board, lodging, and washing. Applications to the Secretary to the Faculty by November 8th.

LIVERPOOL DISPENSARIES.—Assistant Surgeon; unmarried. Salary, £80 for the first year, £90 per annum afterwards, with apartments, board, and attendance. Applications to the Secretary, 34, Moorfields, Liverpool, by November 2nd.

LONDON HOSPITAL, Whitechapel, E.—Surgeon. Election on November 7th.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—Surgeon to out-patients. Must be F.R.C.S.Eng. Applications to the Secretary, at Harrow Road, W.

MANCHESTER: HULME DISPENSARY.—Honorary Surgeon. Applications to the Hon. Secretary by November 7th.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer; unmarried, and not more than 30 years of age. Salary £125 per annum, rising to £155, with board, lodging, and washing. Applications to the Medical Superintendent by November 14th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, 27, Clement's Lane, Lombard Street, E.C., by November 28th.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road, N.W.—Resident Medical Officer and Assistant Resident Medical Officer. Appointments for six months. Salary of £50 per annum attached to the senior post. Personal application on November 1st, at 5 P.M.

OLDHAM INFIRMARY.—Junior House-Surgeon. Salary, £70 per annum, with board and residence. Applications to the Hon. Secretary by November 1st.

PRESTWICH: MANCHESTER COUNTY ASULUM.—Pathologist. Salary £200 per annum with furnished apartments, board, attendance, and washing. Applications to the Superintendent.

RICHMOND BOROUGH AND HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the Mogden Isolation Hospital. Salary, £100 per annum, with furnished apartments, rations, and washing. Not less than 25, or more than 40, years of age, unmarried. Applications (on forms provided) to F. C. Greville Smith, Clerk to the Joint Committee, 172, High Street, Hounslow, by November 7th.

ROYAL EAR HOSPITAL, Frith Street, Soho, W.—House-Surgeon, non-resident, for six months. Honorarium 12 guineas. Applications to the Hon. Secretary before November 12th.

ROYAL FREE HOPITAL, Gray's Inn Road, W.C.—House-Surgeon. Appointment for six months. No salary, but board will be provided. Applications to the Secretary by October 31st.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City Road, E.C.—Honorary Surgeon; and Honorary Assistant Surgeon. Applications to the Secretary by November 18th.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston Road.—Honorary Physician. Applications to the Hon. Secretary, 23, Gordon Street, W.C., by October 31st.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser; unmarried. Salary, £105 per annum, with lodgings, attendance, fire, and lights. Applications to the Hon. Secretary by November 16th.

TORQUAY, TORBAY HOSPITAL PROVIDENT DISPENSARY AND EYE HOSPITAL.—House-Surgeon, not less than 25 years of age. Salary, £80 per annum, with board, lodging, washing, and attendance. Applications to the Secretary by November 1st.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary, £150 per annum, with furnished apartments, coals, and gas. Applications to Mr. W. Draper, De Grey House, York, by November 1st.

MEDICAL APPOINTMENTS.

ALFORD, Henry James, M.D.Lond., M.R.C.S.Eng., reappointed Medical Officer of Health to the Taunton Town Council.

BARBOUR, A. H. F., M.D., F.R.C.P.Edin., appointed Assistant Physician to the Edinburgh Royal Maternity and Simpson Memorial Hospital, *vice* R. Milne Murray, M.B., C.M., F.R.C.P.Edin.

BEATTIE, J. M., M.B., C.M.Edin., appointed Assistant Professor of Pathology at the University of Edinburgh.

BLAMEY, J., M.R.C.S.Eng., L.S.A., appointed Medical Officer for the Mylor District of the Falmouth Union, *vice* E. Head Moore, L.R.C.S.Edin., L.S.A.

BRETTINGHAM, C. E. S., L.F.P.S.Glasg., L.A.H.D. & D.P.H.R.C.S.I., appointed Medical Officer for the Third District of the Yeovil Union.

BRIDGES, Ernest Chittenden, M.B., B.S.Durh., appointed Physician-in-Ordinary to the Infirmary for Consumption, Margaret Street, Cavendish Square, W.

BURGESS, A. H., M.B., B.Ch.Vict., appointed Second Assistant Medical Officer to the Crumpsall Workhouse, Manchester, *vice* J. A. MacLaren, M.B.

DE JERSEY, Walter B., M.B., B.C., L.R.C.P.Lond., appointed Honorary Assistant Medical Officer to the Surrey County Hospital.

DOWN, A. R., L.R.C.P.Lond., L.S.A., appointed Medical Officer for the Rampton District of the Tiverton Union, *vice* G. de V. Belson, M.A.Oxon, M.R.C.S., L.R.C.P.

EVISON, Mr. A. F., appointed Medical Officer for the Second District of the North Witchford Union, *vice* F. O'Connor, L.R.C.P., L.R.C.S.I.

FENWICK, S. C. Collingwood, M.R.C.S. L.R.C.P., appointed Medical Officer for the No. 10 District of the Lambeth Union.

GOODBODY, E. E., M.B.Dub., appointed Medical Officer for the Great Bardsfield District of the Dunmow Union, *vice* R. Richmond, M.D.Edin.

GRAHAM, P. M., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Fifth District of the Drayton Union, *vice* A. C. Harkness, L.R.C.P., L.R.C.S.Edin.

JOLLEY, Dr., appointed Medical Officer for the No. 6 District of the Bridgwater Union, *vice* G. Forden, M.R.C.S.Eng., resigned.

KITCHIN, Dr., appointed Medical Officer for the Box District of the Chippenham Union, *vice* C. H. Hill, M.D Brux., M.R.C.S.Eng.

LOCKING, Dr. B., appointed to the Honorary Medical Staff of the Napier Hospital, Hawke's Bay, New Zealand.

MACKIE, F. Percival, M.R.C.S.Eng., L.R.C.P.Lond., appointed Junior Assistant Medical Officer to Salop and Montgomery Asylum, near Shrewsbury.

MACLAREN, J. A., M.B., appointed Senior Assistant Medical Officer to the Crumpsall Workhouse, Manchester, *vice* Dr. T. Gregory, resigned.

MORGAN, Albert Thomas, M.D.Brux., L.S.A., appointed Medical Officer for the No. 4 District of the Bristol Union.

MUIR, David C., M.D.Glasg., appointed Medical Officer of Health to the Abertillery Urban District Council, *vice* W. E. Williams, F.R.C.S.Edin., resigned.

MULLIGAN, J. W., M.D.R.U.I., M.Ch., appointed Medical Officer for the Abersychan Central District of the Pontypool Union, *vice* A. R. Verity, M.R.C.S.Eng.

PARSONS, Allan C., M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Victoria Hospital for Children, Chelsea.

SHARMAN, Mark, M.B., M.S.Glasg., M.R.C.S.Eng., D.P.H.Scot., appointed Medical Officer of Health to the Rickmansworth Urban District Council.

SHEARER, Alfred, M.B., C.M., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

SIMPSON, A. R., M.D., F.R.C.P.Edin., appointed Physician to the Edinburgh Royal Maternity and Simpson Memorial Hospital, *vice* Halliday Croom, M.D., F.R.C.S.Edin.

STANDSTRIN, Alfred Charles, M.B., Ch.B., appointed House-Surgeon to the Edinburgh Royal Maternity and Simpson Memorial Hospital.

STAPLE, James Dibble, M.R.C.S.Eng., appointed Medical Officer for the No. 3 District of the Bristol Union.

TAYLOR, F. A., M.R.C.S.Eng., appointed Medical Officer for the Third District of the Romsey Union, *vice* E. N. K. Wells, M.B., C.M.Edin.

THOMAS, J. Lynn, F.R.C.S.Eng., appointed Honorary Surgeon to the Hamadryad Hospital, Cardiff, *vice* Alderman Edgar Jones, M.D., deceased.

WADIA, D. R., L.R.C.P.Edin., M.R.C.S.Eng., C.M. & S.Bombay, appointed Honorary Physician to the Parsee Fever Hospital, Bombay, *vice* K. N. Bahadurjee, M.D.Lond., deceased.

WILSON, Dr. A. T., appointed Medical Officer for the Inkberrow District of the Alcester Union, *vice* Dr. W. Jones.

WILSON, W., M.D., appointed Medical Officer for the Abersychan Northern District of the Pontypool Union, *vice* A. R. Verity, M.R.C.S.Eng.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made for the the six months beginning October 1st, 1898:

Resident Physicians.—G. F. Barbour Simpson, M.B., Ch.B., appointed to Professor Sir T. Grainger Stewart; J. D. Slight, M.A., M.B., Ch.B., to Professor T. R. Fraser; Duncan Forbes, M.B., C.M., to Professor Greenfield; David W. Maclagan, M.B., C.M., to Dr. J. O. Affleck; Charles W. F. Melville, M.B., Ch.B., to Dr. Smart; G. W. Miller, M.B., C.M., to Dr. Byrom Bramwell.

Resident Surgeons.—Charles John Caddick, M.B., C.M., to Professor Annandale; C. M. Cooper, M.B., Ch.B., to Professor Chiene; James Graham, M.B., C.M., to Dr. P. H. Maclaren; Edgar Sommerville, M.B., Ch.B., to Dr. C. W. MacGillivray; W. W. Wood, M.B., C.M., to Mr. Cotterill.

Clinical Assistants.—J. Taylor Grant, M.D., B.Sc., to Dr. Alexander Russ[illegible] H. J. F. Simpson, M.B., C.M., to Dr. Murdoch Brown; John M'Gibbon, M.B., L.R.C.P. & S.E., to Dr. William Russell; G. W. Sinnia Patterson, M.B., C.M., to Dr. [illegible] Lovell Gulland; John Malcolm, M.B., C.M., to Dr. R. F. C. Leith; J. D. Lithgow, M.B., C.M., to Dr. P. H. Maclaren; James V. Paterson, F.R.C.S.Edin., to Dr. George Mackay; William Finlay, M.B., C.M., to Dr. P. M'Bride; H. E. Gibbs, M.B., Ch.B., to Professor Greenfield; L. J. Montagu Deas, M.B., Ch.B., to Dr. MacGillivray.

Non-Resident House-Physicians and Surgeons.—John Henry Rhodes, M.B., Ch.B., to Professor Simpson; W. Macrae Taylor, M.B., C.M., to Dr. J. Halliday Croom; F. J.

Harvey Bateman, B.A., M.B., C.M., to Dr. George A. Gibson: Thomas Paul Gray, M.D., to Dr. W. Allan Jamieson; W. Hope Fowler, M.B., Ch.B., to Dr. P. M'Bride: John Stevenson, M.D., to Mr. Berry; E. M. Lithgow, M.B., Ch.B., to Dr. George Mackay; John M. Bowie, M.B., Ch.B., to Mr. Cathcart; R. J. Johnston, M.B., C.M., to Mr. Caird.

Resident Medical Officer, Convalescent House.—T. Munro Hector, M.D.

The following gentlemen were appointed Clinical Tutors for the ensuing winter and summer session:—Drs. Harry Rainy, Cattanach, and Elder, in the University Medical Wards; Dr. Perdyce, in the Gynæcological Department; Dr. J. S. Fowler, to Extra-mural Medical Wards; Dr. Lackie, in the Gynæcological Department: Dr. J. Wheeler Dowden, in the University Surgical Wards; Drs. Scot Skirving, David Waterston, and Robert Purvis, to the Extra-mural Surgical Wards.

ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.—The following appointments have just been made:—

George Harry Melville Dunlop, M.D., F.R.C.P.E., to be one of the ordinary Physicians in the room of Dr. James Carmichael, whose term of office has come to an end; and James Crauford Dunlop, M.D., F.R.C.P.E., to be one of the extra Physicians, *vice* Melville Dunlop, promoted.

DIARY FOR NEXT WEEK.

MONDAY.

British Balneological and Climatological Society, 20, Hanover Square, W., 9 P.M.—Dr. Fortescue Fox: Presidential Address on the Province of the Spa Physician.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Mr. Griffith C. Wilkin: Anatomy of Ear, illustrated with Lantern.

TUESDAY.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Tooth: Spinal Cord Localisation: Lantern Demonstration.

West End Hospital for Diseases of the Nervous System, Welbeck Street, W., 4 P.M.—Dr. Harry Campbell: Cases of Hypochondriasis and Allied Affections.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Delusional Insanity: Paranoia. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Ringworm and Favus.

Pathological Society of London, 8.30 P.M.—Dr. T. Churton: Thrombosis of Hepatic Veins. Dr. W. S. Lazarus Barlow: Thrombosis of Hepatic Vein in Cirrhosis (? Syphilitic) in a boy aged 13. Dr. H. Morley Fletcher: Viscera from a case of Congenital Syphilis. Professor Curnow: Acromegalic (?) Skull. Dr. H. Walsham: Epithelial Pearls in the Tonsil. Dr. A. C. Latham: Multiple Abdominal Dermoids. Dr. H. D. Rolleston: Idiopathic Hypertrophy of the Œsophagus. Card Specimens will be shown by Dr. N. Dalton, Dr. H. Morley Fletcher, and Dr. T. Churton.

WEDNESDAY.

Hospital for Consumption, Brompton, 4 P.M.—Dr. Maguire: Anæmic Murmurs.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Sources of Water, etc.

Obstetrical Society of London, 8 P.M.—Specimens will be shown by Mr. Doran, Mr. Butler-Smythe, and others.

Papers: Mr. Bland Sutton: (1) On a Case of Tubo-abdominal Pregnancy, in which a Living Fœtus was Extracted by Coeliotomy after Term, and the Mother's Life preserved; (2) on some Cases of Tubal Pregnancy.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Bidwell: The Application of Splints to the Upper Extremity.

THURSDAY.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Mr. Stanley Boyd: Demonstration of Surgical Cases.

London Post-Graduate Course, Central London Sick Asylum, 3.30 P.M.—Dr. Patrick Manson: Clinical Lecture.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

Harveian Society of London, 8.30 P.M.—Dr. Sidney Phillips: The Treatment of Typhoid Fever. Mr. W. H. Battle: Cases of Intestinal Obstruction.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Mr. Gunn: Demonstration of Ophthalmic Cases.

FRIDAY.

West London Medico-Chirurgical Society, West London Hospital, 8.30 P.M.—Dr. P. J. McCann: Cases illustrating the Difficulties in the Diagnosis of Early Tubal Pregnancy. Dr. A. N. Addinsell: Paralysis following Ovariotomy. Mr. R. Lake: The Treatment of Laryngeal Tumours.

Laryngological Society of London, 20, Hanover Square, W., 5 P.M.—Cases and Specimens will be shown by Professor Massei, Dr. Dundas Grant, St. Clair Thomson, Barclay Baron, Pegler, Watson Williams, Bond, and Waggett, and Messrs. Lake, Charters Symonds, De Santi, and Agar.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M.—Professor Crookshank: Tuberculosis and Leprosy, etc.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M. Mr. Clinton Dent: The Hospital.

West Kent Medico-Chirurgical Society, Royal Kent Dispensary, Greenwich Road, 8.30 P.M.—Dr. George Herschell: Constipation and its Modern Treatment.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Cheatle: The Application of Splints to the Lower Extremity.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

GIFFORD.—On October 21st, at "Aviadale," Brierley Hill, Staffs, the wife of G. Keith Gifford, M.B.Aberd., of a son.

MARRIAGES.

GOBLET—[illegible]—On October 22nd, at St. Helen's Church, Tarporley, Cheshire, by the Rev. [illegible], Rector of Blymhill, assisted by the Rev. W. O. Hughes, Rector of [illegible], Staffs, [illegible] M.B., Ch.B.Vict., of Kirby Muxloe, near Leicester, to Thomas Forester [illegible], of Shaw House, Tarporley.

RATCLIFFE—WARD.—On October 18th, at Moseley Parish Church, by the Rev. W. H. Colmore, Vicar, and the Rev. J. Seddon, Vicar of Ettingshale, cousin of the bride, Joseph Riley Ratcliffe, M.B., of Wednesbury, to Florence Amy, second daughter of Mr. J. W. Ward, Alexander Ward Cottage, Moseley.

THOMAS—WILLIS—At [illegible], Baillieston, on October 19th, by the Rev. John Grey, M.A., Parish Minister, assisted by the Rev. David Thomas, U.P. Church, Lockerbie, David Thomas, M.A., M.D., Tollcross, to Jane Catherine, second daughter of the late Dr. George Willis, Baillieston. At home, Mansfield, Carmyle Avenue, Tollcross, Thursdays in January. No cards.

DEATHS.

BARBER.—October 16th, at 250, Glossop Road, Sheffield, Edward Barber, surgeon, aged 60 years.

[illegible]—On October 19th at Weir Hill College, Wimbledon, Rosetta Goodworth, aged [illegible] Wm. Hy. Goodworth, surgeon of Hatfield, Doncaster. Interred at Hatfield Church.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 3; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th., 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 3; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are directed will be found under their respective headings.*

QUERIES.

Practitioner asks for advice in the treatment of the following defects in a lady patient: Superfluous hair on lips, chin, face, and arms, freckles on exposed surfaces of skin, and pigmented patches on skin due either to local congestions or sunburn. The freckles disappear in cold weather but become very prominent in hot weather quite apart from sun exposure. Glycerine compounds only whiten hair and soften skin, but increase hair growth.

Fee for Fracture of Femur.

Cymro asks: Is £3 3s. an excessive charge for reducing and attendance until well upon a case of fracture of femur in a boy 5 years of age? The people are well to do.

*** We are advised that it would be a most reasonable charge. Even the Poor-law Board pays this amount to its medical officers.

Value of Book Debts.

Inquirer bought a death vacancy and commenced work three months after the death of the previous incumbent. During this period the practice was in charge of a *locum tenens* and the book debts for these three months amounted to £57, entirely working class. He asks what would be a fair price to pay to the trustees.

*** We are advised that £40 would be a fairly safe and liberal offer to make.

Certificates under the Workmen's Compensation Act.

R. M. O. asks for information respecting the granting of medical certificates to workmen in connection with the new Compensation Act. He writes: We are not bound to give such certificates. Are we entitled to charge a fee? Can you let me know what other hospitals are doing in the matter?

*** We are informed that in London the subject is under the consideration of a Central Board. The practice at different hospitals differs, though it is guided by the usual custom in regard to other certificates—that "where reports are required for the furtherance of pecuniary interests, such as claims for money, legal proceedings, and the like," the medical officer may demand a fee not exceeding a guinea.

Statistics of Fever Hospitals.

T. P. writes: Is there any fixed time of residence in a contagious diseases hospital before a death can be counted against a hospital? For example, a child is brought in comatose from scarlatina maligna and dies in an hour, another dies in about twelve hours; are these deaths to be counted against the hospital?

*** There is no such fixed time as is suggested by T. P. In the statistics of fever hospitals all deaths occurring within the hospital, no matter how soon after admission, are included. They are also included in the figures given under the heading of "Deaths in Public Institutions" in the Registrar-General's Annual Summary and Report. Occasionally a note is to be found in reports of fever hospitals in which is stated the number of cases admitted in a moribund condition. If there are many such cases it is well to add such a note, with a view to drawing attention to the nature of the cases admitted.

ANSWERS.

R. N. has failed to verify his communication by his name.

Cymro.—The books for the A. B. C. system of medical book-keeping are published by Mr. B. Allsop, editor of the *Shipley Times*, Saltaire, Yorks.

R. N.—Malcolm Morris's *Diseases of the Skin*, a new enlarged edition of which has just been published by Messrs. Cassell and Co., would probably meet our correspondent's requirements.

J. H. K.—Our correspondent might do well not to resign his public vaccinatorship until he has studied the new Order of the Local Government Board, an analysis of which is published at page 1351.

Cloth.—Information of the kind required can be obtained from the *Colonial Office List*. Particulars as to prevalent diseases will be found in Davidson's *Geographical Pathology*. Some general information as to Sierra Leone, Gambia, Gold Coast, and Lagos will be found in the volume reviewed in the British Medical Journal of September 24th, page 900, *Imperial Africa* (London: The Imperial Press. 12s. 6d.).

A. B. C.—According to the French law an English medical man cannot practise his profession at a French watering place unless he possesses the degree of Doctor of Medicine obtained from a French faculty in the ordinary way. Our correspondent might, however, apply to the French Minister of Public Instruction, who has the power to dispense with some part of the examination.

Training of Midwives.

Quo Fata Vocant is informed that there are several institutions where midwives are trained in London. He might apply to Queen Charlotte's Lying-in Hospital, Marylebone Road, London, N.W., which will supply him with all particulars as to the length of instruction, etc.

Admission to the Bar.

Inquirens.—To become a barrister it is necessary to become a member of one of the Inns of Court. They are four in number—Lincoln's Inn, Middle Temple, Inner Temple, and Gray's Inn—and the fees payable at each are about the same, except that Lincoln's Inn is slightly more expensive, and Gray's Inn a little cheaper than the others. When the Inn has been decided upon the candidate must get a form of recommendation signed by two barristers of the Inn, and he must himself sign a statutory declaration that he labours under none of the disabilities there scheduled; he must also pay entrance fees to the amount of about £40, and deposit either £100 as a security for commons, etc., which will be returned to him on his "call," or, if a university man, he may furnish a security to this amount, in the shape of a bond given by any respectable householder. After completing these preliminaries the candidate becomes a member of his Inn. He must now before being "called" keep twelve terms, and as there are only four terms in the year, three years must elapse from the time of his entering the Inn before he can be "called." To keep a term it is necessary to dine six times in the common hall of the Inn during that term, but if a university man the candidate need dine only three times. Two professional examinations must also be passed: one in Roman law and the other in the various branches of English law, namely, Equity, Common Law, the Law of Personalty and Realty, and the Principles of Evidence; there is also an examination in Constitutional English History. After passing these examinations, and keeping twelve terms, the candidate is entitled to his "call," but it is necessary to get a Bencher of the Inn to formally propose it. The fees payable on being "called" amount to nearly £100.

"Masters of Medicine."

Dr. G. Rigden (Canterbury) asks whether a life of Jenner is to be included in the series called "Masters of Medicine," now in course of publication by Mr. Fisher Unwin; and if so whether it is likely to be published shortly?

*** We are informed that a life of the discoverer of vaccination is not included among the forthcoming volumes of the series in question.

Sanatoria for the Open-air Treatment of Phthisis

We have received recently several further inquiries with regard to homes and sanatoria in this country for the open-air treatment of phthisis. We may direct the attention of our correspondents to a reply published in the British Medical Journal of September 3rd, page 607, where certain particulars are given with regard to the National Sanatorium at Bournemouth, and as to the institutions promoted by Dr. Burton-Fanning and by Miss Jane H. Walker, M.D., in Norfolk. The following additional information may be of use:

Dr. W. Denton Johns has an establishment for the open-air treatment of consumption at Sunny Mount, Meyrick Park, Bournemouth. This has now been at work for over eighteen months, and is designed for paying patients of the upper middle classes. The treatment is on the same lines, it is stated, as that practised at Nordrach—namely, open air and over-feeding. The house stands high on the borders of a pine wood. The terms are not stated.

Dr. Francis Potts, Poole Road, Bournemouth, has a similar institution under the charge of a matron, Miss Harrison. The daily life of each patient is carefully regulated, and great importance is attached to repose in the open air. At this institution patients suffering from tuberculosis of bone, joints, or glands, as well as those suffering from pulmonary tuberculosis, are received. The terms are £5 5s. a week, payable to the matron, together with a weekly professional fee of £2 2s. for medical attendance.

Dr. Annie McCall, 165, Clapham Road, London, is, we are informed, opening a small sanatorium for the open-air treatment of phthisis at Rudgwick, Sussex, thirty-eight miles from London, for 6 patients. The terms are from £2 2s. weekly.

Dr. A. Maude, Westerham, writes: A case of phthisis, if not too advanced, could be well treated by open-air treatment at the Charing Cross Hospital Convalescent Home, Limpsfield. The patient would have to have a separate bedroom at £2 2s. or £2 12s. 6d. a week for board and lodging, not including medical attendance. The house stands 530 feet above the sea on lower greensand gravel, and is sheltered from east and north. The position is extremely sunny, with terraces of masonry and gravel in front of the house. Further information can be obtained on application to the matron of the home, The High Chart, Limpsfield, Surrey, or to Dr. Maude, Westerham, who is the medical officer to the home.

NOTES, LETTERS, Etc.

An Appeal on Behalf of the Widow and Children of the late Mr. James McGregor Laing.

Dr. J. Pickett (26, Colville Square, W.), and Dr. Reginald Hartley (68, Porchester Terrace, W.) write: The following subscriptions have been received in addition to those already acknowledged in the British Medical Journal:

	£	s.	d.		£	s.	d.
Dr. Herbert L. Spencer ...	2	2	0	Dr. J. Power, Nailsworth ...	1	1	0
A Poor Medico, Edinburgh	0	5	0	Mr. Edmund Owen	2	2	0
Professor Findlay, Aberdeen	1	1	0	Dr. George Hunter, Edinburgh	1	1	0
A Mite	0	5	0	Dr. Duka	1	1	0
Mr. Edward Bartlet ...	1	1	0	Mr. T. Corbett, Droitwich ...	1	0	0
Dr. E. P. Scott, Brussels...	1	0	0	Dr. G. F. Grant, Mortlhari, India	1	0	0
Postal Order, Maxwell ...	0	2	6				
Mr. G. J. Gannon, Board of Trade	2	2	0				

We wish to say that, in spite of many attempts to find an established business, or a suitable place to begin a shop, we have hitherto not been successful, and we have, in consequence, been obliged to give Mrs. Laing, to enable her to live, some £15 out of the money so kindly subscribed. Any further sums will be gratefully acknowledged.

Scissor Forceps.

Dr. F. W. Jordan (Stockport) writes: With reference to the scissor forceps described as a new invention in the British Medical Journal of September 3rd, I beg to say that a similar instrument was used by the late Mr. Lund, of Manchester, and I believe invented by him about the year 1870, for the purpose of furthering Listerism in his operations and dressings, and to render it more efficient in this respect it was nickel-

plated. This process was applied also to the dressing forceps, fitted with a scraper, which was used, and the teeth of which, owing to their peculiar construction, were easily cleaned.

MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS.

MR. DAVID PAULIN (Manager of the Scottish Life Assurance Company, Limited, 19, St. Andrew Square, Edinburgh) writes: You are no doubt aware that it is the general practice of life insurance offices to pay a fee of £1 1s. for the medical examination of proposers for insurance, but that when the sum assured is small only half that fee is allowed, the reason being that the smallness of the premium will not admit of the payment of the full fee. It may interest you to learn that, as the result of the discussions in the Section for Medicine in Relation to Life Assurance at the recent meeting of the British Medical Association, the directors of this office have decided to double the fee when the sum assured is £2,000 and upwards, thus allowing £2 2s. for the medical examination in these cases.

CLEANLINESS DURING THE MONTHLY PERIOD.

MR. RALPH STOREY, L.R.C.P., etc. (Gloucester Terrace, S.W.) writes: In reply to my note under the above heading, published in the BRITISH MEDICAL JOURNAL of October 15th, Mr. W. Cecil Sharpe states that he orders hip baths night and morning daily at a temperature of 85° to 95°, with sponging of the genitalia. He says that tepid vaginal douches are harmless, though perhaps superfluous if the sponge bath is used. I would like him to banish from his mind the idea that a vaginal douche is perhaps superfluous if the sponge bath is used; for in my opinion anything that is harmless and most comforting to a patient can hardly be called superfluous. I use the words "most comforting," for this is the reply I get from most women to whom I put the question as to how they like the douching.

Dr. Lombe Atthill, ex-Master of the Rotunda Hospital, Dublin, writes to me, with leave to publish his letter, as follows:

"I am not a 'lady doctor,' but I have for very nearly fifty years been engaged in the treatment of those diseases which are peculiar to women, and at an early period of my professional career set myself to observe the effects of medicines, of exercise, and the use of vaginal douches on the menstrual period, and I speedily came to the conclusion that not one of the foregoing have any effect on menstruation in a healthy female; and for many years past I have been in the habit of directing my patients not to omit any medicines they may have been order to take, such as iron, arsenic, the mineral acids, quinine, etc., during the monthly period, and in not one instance have I known it to influence the flow. I have repeatedly ordered patients to use a douche during the continuance of the flow when such was needful, with similar results. I should add that a vaginal douche should never at any time be used cold. I have known patients who bathed during the flow, and though I do not think this wise, believe that if the water be not so cold as to produce a chill, and that the stay in the water be brief, even bathing would be safe. It is understood that I speak of healthy women. In many cases, such as in some forms of dysmenorrhœa, cold to the surface of the body would most probably be very injurious; and indeed in all women exposure to cold is to be avoided during menstruation; but washing in cold water, or even sponging the genitals rapidly with cold water, would, in my opinion, be harmless, and with warm water perfectly safe and even useful."

DR. FRANCIS WM. GRANT (Elgin, N.B.) writes: Dr. Storey's letter on the above subject in the BRITISH MEDICAL JOURNAL of October 15th seems to me of great interest, and one not sufficiently recognised by women during the menstrual period. It is quite a common experience for medical men to be told by lady patients that water must be cautiously used during the catamenia. Although there is undoubtedly danger in the application of cold water, no one can but admit that ablution with warm (100° F.) sterilised water is more imperatively called for at this time than at any other. I consider that if women in whom the menstrual flux is offensive used a weak solution of creolin (2 or 3 drachms to the gallon) as a douche, besides bathing the external genitals with the same on changing a diaper, there would be less discomfort and less ill-health caused than by neglecting this simple measure.

FEMININA, M.D., writes: A great boon would be conferred upon womankind if the superstitions respecting the monthly period could be swept away. For more than a year I have taken my daily cold bath summer and winter with no interruption for menstruation, and no effect, beyond the usual one of exhilaration, has been produced. Of course, a large number of people find cold water depressing at all times, and others who feel *malaise* at the period would not like it; but for those in whom the function is purely physiological, as it should be, there is surely no need to interfere with the ordinary daily round of a healthy life. Greater cleanliness rather than less should be the rule at such a time.

MEDICAL OFFICERSHIPS IN THE HIGHLANDS AND ISLANDS.

DR. JOHN TAYLOR (Orkney) writes to point out that a number of medical officerships in the Highlands and Islands of Scotland are vacant at the present time. He thinks that applicants ought to be warned not to be misled by flowery statements made by the persons who advertise these appointments, but should communicate with the retiring medical officer as to the terms likely to be meted out to them. He especially mentions the appointments in Skye, Stronsay, Ronsay, and Evie.

*** We may refer intending candidates to the paragraph which was published in the BRITISH MEDICAL JOURNAL of March 12th, 1898, p. 709.

CONDENSED MILK AND TUBERCULOSIS.

DR. EDWARD [illegible] Wellington [illegible] Professor Delepine's address on the Prevention of Tuberculosis in Children, Crewe, and Congress reported in the BRITISH MEDICAL JOURNAL of September 24th, contained no reference to condensed milk. One firm of manufacturers of condensed milk state in your advertising columns that they condense the milk of 40,000 cows daily. It needs no statement of this kind, however, to prove that enormous quantities of condensed milk are consumed. Has condensed milk been subjected to the same systematic examination as that which the fresh milk underwent, and if so with what result?

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Dr. B. Anningson, Cambridge; Ajax; Mr. T. R. Atkinson, London; Mr. R. K. Archer, West Worthing; Messrs. Arnold and Sons, London; A. B. C.; A. E. M. **B** Mr. R. A. Bayliss, Bath; Mr. C. Brooks, Gerrard's Cross; Mr. W. M. Beaumont, Bath; Messrs. C. Barker and Sons, London; F. E. Batten, M.B., London; B. M. Bone, M.B., Towyn; J. W. Batterham, M.B., St. Leonards-on-Sea; Mr. W. H. Barker, Calcutta; Mr. T. Blair, Leeds; Dr. L. A. Bidwell, London; Mr. C. W. Buck, Settle. **C** Mr. G. T. Coleman, Cardiff; Mr. D. Cotes-Preedy, Cambridge; Dr. J. Calvert, London; Dr. C. A. Coleman, London; Mr. T. S. Chapman, London; Dr. C. W. Chapman, London. **D** Mr. W. Durrant, London; Dr. A. Duke, Cheltenham; Mr. R. T. E. Davies, New Tredegar; W. Duigan, M.B., Oxford; Mr. A. S. Duke, Haslemere; Mr. F. Deas, London. **E** Edinburgh; Mr. E. W. Emtage, Holworthy; W. McA. Eccles, M.B., London; Enquirer; J. Edgar, M.B., Glasgow; Enquirens. **F** F. L.; Mr. L. A. Francis, Uxbridge; W. E. St. L. Finny, M.B., Kingston Hill. **G** G. E. D.; Dr. A. L. Gillespie, Edinburgh; Mr. R. P. Goodworth, Winterton; Dr. L. G. Guthrie, London; Mr. H. R. Green, Belvedere; J. F. Gemmell, M.B., Lancaster; Miss C. L. Gott, Paris; Mr. C. C. Garfit, London; G. P.; Mr. G. Gravells, Birmingham. Mr. H. C. Howard, London; **H** Mr. T. O. Halliwell, Dewsbury; Mr. J. M. Henderson, London; Mr. B. F. Hartzhorne, London; Mr. C. P. Hooker, Cirencester; Mr. W. F. Haslam, Birmingham; Mr. A. Harwood, London; W. Hardman, M.B., Blackpool; Dr. R. Hartley, London; Dr. R. L. Heard, Monkstown; Dr. T. W. Hime, Bradford; Dr. J. P. Henry, London; Mr. R. Hatch, Dublin; Dr. F. de H. Hall, London. **I** Inquirens; Irish Member; Mr. R. L. Impey, Birmingham. **J** Dr. T. Johnstone, Ilkley; Dr. J. Johnstone, Bolton; Dr. R. Jardine, Glasgow; Dr. W. R. Jack, Glasgow; Mr. W. H. Johnson, London. **K** Miss E. C. Kenyon, London; Mr. A. Kennedy, London; Mr. T. G. Kerr, London; Mr. F. E. Kinneir, Horsham; Dr. R. Kirk, Glasgow; Dr. H. W. King, Chester; Mr. E. P. King, Chepstow. **L** Dr. H. L. G. Leask, Glasgow; Mr. C. S. Loch, London; D. Lloyd, M.B., Denbigh. **M** Mrs. M. Marshall, London; Messrs. Maw, Son, and Thompson, London; Mr. G. E. Macleod, Devonport; Mr. C. Mulholland, Belfast; Mr. F. H. Madden, London; Mr. A. H. Martin, Evesham; Marshburgh; Dr. H. J. Macevoy, London; W. MacLenna, M.B., Glasgow; Mr. A. Miller, Weymouth; Mr. C. McCarthy, Skibbereen; Mr. F. P. Mackie, Shrewsbury; Mr. C. Morris, Wallington; Dr. J. B. Muirhead, London; M.D. Feminina; Mr. R. Moreton, Hartford; Dr. W. J. K. Millard, Cheltenham; Dr. E. E. Moore, Letterkenny; Dr. G. S. Mill, Ossett; Mr. W. Moore, Stourport. **N** Mr. P. T. Naden, Birmingham; Non est; Messrs. Nicolay and Co., London. **O** Old Epsomian; D. Orr, M.B., Edinburgh; Dr. J. E. S. Old, Huddersfield; Mr. D. Owen, Manchester. **P** Practitioner; Public Vaccinator; Dr. F. J. Poynton, London; Mr. J. F. Palmer, London; Dr. S. A. Pisani, Valletta; Dr. J. E. Platt, Manchester; Physician; Dr. A. M. Paterson, Liverpool. **R** Dr. G. H. Reynolds, London; J. O. Reddie, M.B., Colorado Springs, U.S.A.; J. D. Robson, M.B., Maxwelltown; Mr. W. A. S. Royds, St. Mary Bourne; Mr. G. Rigden, Canterbury; R. N.; Dr. R. M. Ross, St. Louis; Dr. A. Routh, London; Retired; Mr. J. D. Russell, Plymouth; Mr. J. L. Robertson, Adderbury; Mr. W. H. Radford, Manchester. **S** T. R. S. Sibbald, M.B., Thornhill; Dr. J. L. Smith, Belfast; Messrs. Street Bros., London; Mr. J. Stewart, Clifton; Mr. W. Sharp, Edinburgh; Dr. H. S. Sandifer, London; Mr. F. C. Simpson, Great Berkhamsted; "Scientific Press," London; Senex; Dr. J. Steed, Hereford; Dr. T. D. Savill, London; Mr. G. Smith, London; Dr. M. C. Staunton, Dublin; Mr. E. O. Sachs, London; Mr. R. Stoney, London; Dr. H. Snow, London; M. Sharman, M.B., Rickmansworth; Dr. G. W. Steeves, Liverpool; Mr. W. St. A. St. John, Derby; Sheffield Medico-Chirurgical Society, Secretary of, Sheffield; Mr. C. S. Standring, Broadway; Dr. C. E. Shelly, Hertford; Scotus. **T** Mr. S. Thistlethwaite, Manchester; Mr. W. B. Thomas, Edinburgh; Dr. J. Taylor, Birsay; G. C. Thomas, M.B., Bath; Mr. J. L. Thomas, Cardiff; D. J. Taylor, London; Mr. W. T. Thomas, Liverpool; Mr. W. D. Threaker, Hull; Mr. P. Treves, London; Dr. E. C. Taylor, London; Mr. J. Tunley, Burton-on-Trent. **V** "Veralam Review," Editor of the, Milford-on-Sea. **W** A. C. Watson, Southend-on-Sea; Dr. W. Whitelaw, Kirkintilloch; Dr. T. Wallace, Cardiff; Dr. A. D. Ward, London; Miss A. L. Woodward, London; Dr. F. Willcocks, London; D. C. Watson, M.B., Edinburgh; Mr. D. R. Wadia, Paret, India; Dr. H. W. Webber, Plymouth; Dr. J. W. Washbourne, London. **Y** W. S. Young, M.B., Garliestown; Dr. M. Young, Crewe.

BOOKS, ETC., RECEIVED.

Verhandlungen des Congresses für innere Medicin. Herausgegeben von Dr. E. von Leyden und Dr. F. Pfeiffer. Sechszehnter Congress. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. 12s.

Affections Chirurgicales du Tronc. Statistique et Observations. Par Dr. Polaillon. Tome I. Paris: O. Doin. 1898.

Klinik der Krankheiten der Mundhöhle, Kiefer und Nase. Von Dr. L. Brandt. Heft 2. Berlin: A. Hirschwald. 1898. M.1.20.

Atlas der Syphilis und syphilisähnlichen Hautkrankheiten. Von Dr. M. Chotzen. Heft XI and XII. Hamburg und Leipzig: Leopold Voss. 1898.

An Elementary Textbook of Botany. By S. H. Vines, M.A., D.Sc., F.R.S. London: Swan Sonnenschein and Co. 1898. 9s.

The Lettsomian Lectures on the Affections of the Urinary Apparatus in Children. By J. H. Morgan, M.A., F.R.C.S. London: Harrison and Sons.

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AN ADDRESS
ON
SOME RUDIMENTS OF INTESTINAL SURGERY.

Delivered before the Midland Medical Society at Birmingham.

By FREDERICK TREVES, F.R.C.S.,
Surgeon-in-Ordinary to H.R.H. the Duke of York; Surgeon to the London Hospital.

Signs of Degeneracy in the Human Alimentary System.

Anyone who still persists, on such an occasion as the present, in giving exclusive prominence to abdominal surgery cannot but be reminded of the fable of Æsop which relates to the "Belly and the Members." It will be recollected that in that parable the members complained that their interests were not duly recognised, and that the pompous and overbearing attitude assumed by the belly was inconsistent with its intrinsic importance and with the rights and privileges which the members claimed as portions of the body politic. So far as the corporation of medicine is concerned it may be argued that enough for the present has been said about the abdomen and its concerns, and that it is time that we returned to the needs of the extremities.

In begging, however, that you will allow me to limit my remarks this evening to that perhaps over-exalted subject, abdominal surgery, I may urge that the extravisceral parts of the body have had an almost exclusive monopoly of surgical attention for many centuries, and that Æsop, who was ignorant of even the fashionable exploratory incision, decided his fictitious quarrel in favour of the belly. I would wish to deal solely with so much of this great subject as concerns the intestines and with such details in that department as may be of some present interest.

As a preliminary and introductory matter I may assume that all surgeons who have concerned themselves with intestinal surgery must be growing sceptical in regard to the alimentary canal of man and its fitness for its reputed functions, and must be in doubt if it deserves the encomiums which have been lavished upon it as an efficient work of Nature.

The actual body of man seems to have changed but little since his first appearance on the earth, but the environment of the man has changed in the meantime to an extent beyond all reasonable conception. Now it is a question if the alimentary canal has adapted itself to this latter change. It is a question if the human digestive organs have progressed with the times, and have advanced with that progress of events which has raised man from a clever brute to a cultured Epicurean. It is a question, indeed, if our stomach and intestines are—to use a common expression—quite up to date, or are quite adapted to the enlightened individual they serve. The naked cave man scrambled out his life some thousands of years ago, and was contemporary with the long extinct cave bear and cave hyæna, yet his skeleton differs in no essential from the skeleton of the modern dandy who, arrayed as Solomon in all his glory, suns himself to-day in Rotten Row. A nineteenth century public dinner would probably have confined the cave man to his cave for many sorrowful and painful days, and if the modern alderman had to dine on badly cooked hyæna meat torn from the bone by his own incisor teeth, he would possibly find himself in a few days upon the operating table. Yet the same alimentary canal has had to do duty for the two specimens of humanity and for the two types of feast. It is no matter of wonder that it has failed somewhat in the Herculean effort of adaptation.

That it has not wholly succeeded is evident by many signs. If the cave man could return to earth, and could travel by rail from London to Birmingham, he would notice that almost every field by the way had erected in it an isolated wooden hoarding on which was painted a conspicuous inscription. From a certain repetition of these inscriptions he might gather that the painted words were incentives to religious fervour, or that they were patriotic expressions calling the traveller to deeds of heroism and virtue. He would be pained to learn that they were merely advertisements of aperient pills. It would appear, indeed, that these common objects by the traveller's way show that the cry of the people is not so much for light and leading as for laxatives. It is a curious comment upon the unfitness of the alimentary canal for its simplest duties, that the animal, the vegetable, and the mineral kingdoms have been ransacked to provide incentives to peristaltic movement. The discovery of a new laxative would excite more public interest than the discovery of a new planet, and the habit of aperient drinking must rank in the annals of intemperance as but little less enthralling than the vice of the tippler.

A further suggestion that the present type of alimentary canal is becoming obsolete is provided by the fact that in the literature of medicine a singularly prominent place is given to diseases of the stomach and intestines. The number of these maladies is legion, and in certain sections of the community dyspepsia can hardly be regarded as an abnormal condition. It is safe to say that among the so-called cultured classes one man in ten is "on a diet" and one woman in ten is "living on aperients."

As for the liver, it retains a place in our economy as a thing compounded of mystery, meddlesomeness, and inefficiency. While some patients speak of their livers with a certain amount of awe, others refer to that organ with a degree of familiarity which is almost irreverent. With many the liver is a kind of fetish which has to be humoured and appeased, and no appeal to a doctor is more earnest than the prayer for "something to touch the liver." By others the liver is spoken of as if it were a piece of defective machinery, and is alluded to in terms which would be suitably applied to a motor car or a cheap watch. It is complained that the organ is always "out of order," that it "will not act," that it is perpetually in need of something to make it act, that it is "sluggish," that it is easily "upset." While the laity talk of their livers with an exactness which is based apparently upon most familiar acquaintance, the physician has not yet acquired a sufficient knowledge of that organ to enable him to define precisely even what is meant by "biliousness," or to give any reasonable scientific account of a "bilious attack." Time will probably show that the liver has played the part of a pampered charlatan, and that its reputed powers are to no little extent based upon a great physiological fraud. Wherever the truth might lie, it would appear evident that this much-physicked organ is not competent to deal with the requirements of the alimentary canal of modern man, or at least that it performs its duties in the halting manner of a worn-out machine.

The Alimentary System of the Future.

How things will fare with us in the future it is hard to say, but some hope of amendment is held out by the knowledge that Nature appears to be both ready and ingenious in modifying structure to meet individual requirements. One notices, for example, amongst mammals what extraordinary and probably satisfactory experiments have been tried with the cæcum. The ornithorhynchus has a mere apology for a cæcum, the ursidæ have no cæcum at all, while many of the herbivora have cæca of immense proportions, which apparently play an essential part in digestion. The two-toed ant-eater seems to have been in doubt as to whether it should accept the mammalian cæcum or content itself with the double cæcal appendages of certain birds, and to prevent any inconvenience from its indecision it has provided itself with three cæca, one of the mammalian form and two of the type met with in certain birds. The vulpine phalanger has been very decided in its appreciation of the cæcum, and has possessed itself of an appendage which is twice the length of its own body.

In the matter of the stomach Nature has proved to be most accommodating. The blood-sucking bat, or desmodus, living as it does on a highly-digestible food which requires little more than storage, has almost solved the problem of how to live without either stomach or intestine. The fruit-eating bat, the pteropus, has turned its stomach upside down so that it might digest its food in comfort while hanging head downwards. The kangaroo has a stomach precisely like our large intestine, that is, arranged in sacculi so that its food may be packed away in small parcels, and thus not incommode the animal when taking its prodigious leaps. The ruminant stomach appears to have been the outcome of an unattractive and bulky diet on the one hand, and on the other hand of

that passion for leisure and for reflection after meals which is so well-marked in the common cow.

Without multiplying examples of apparent experiment and adaptation, one might be permitted to speculate as to the future form of the digestive canal of man. The human being is becoming toothless, and when it is recognised that a conspicuous function of the teeth is merely to provide material for the undoubted ingenuity of the dentist they will probably be allowed to go. Even now there are many people who appear to show no great anxiety to retain them. Recent operations in which the entire stomach has been excised without any very gross inconvenience to the patient would seem to suggest that one might possibly dispense with our present type of stomach. Our intestine is probably unnecessarily long, and the removal of considerable portions of it has done no more than add to the comfort of those individuals who have recovered from the operation. One patient of mine, who was the subject of congenital stenosis of the lower bowel, has been entirely relieved by the removal of the anus, rectum, sigmoid flexure, and descending colon. The child's large intestine is in this case represented by the ascending and transverse colon only, very much to the convenience of the patient. The frequency with which the sigmoid flexure is involved in mechanical difficulties and the common occurrence of cancer in the rectum would suggest that the terminal part of the bowel is becoming effete, and may be regarded as degenerate by any pathological Max Nordau.

As a matter of simple speculation, it may be surmised that the coming man will be quite edentulous, that he will have a less enigmatical liver and no gall bladder, and that his intestine will be considerably shortened and, it is to be hoped, considerably simplified. Extreme refinement in the selection of food materials and an exquisite cultivation of what is termed a "palate" may lead to an elongation of the œsophagus and to the development of taste organs along its entire length. In the place of the present stomach it is probable that the edentulous man will develop a gizzard. A gizzard would appear to be a labour-saving organ which is to be depended upon, and which is little liable to get out of order. A gizzard would probably be a great comfort to the overworked man of business and to the seeker after pleasure who spends much of his life in Continental hotels. The ruminant stomach has many attractions. Its size would make it popular with the operating surgeon, and its leisurely method of disposing of its contents suggest intervals of calm in the rush of modern existence. A ruminant stomach in a human being would, however, be inconsistent with the exclusively human habit of after-dinner speaking, and the actual act of rumination would no doubt be inconsistent with the amenities of the modern drawing room.

Intestinal Obstruction.

To leave these matters of speculation and to enter upon subjects of present interest, I would venture, in the first place, to allude to certain features connected with intestinal obstruction. The morbid anatomy of this affection has been very elaborately treated by many writers, and it is probably safe to assume that our knowledge of the mechanism of obstruction of the bowel is, in its main particulars, practically complete. From a clinical point of view, a proper appreciation of this common trouble is a little obscured by the prominence given to the actual item of the obstruction. In a fatal case of acute intestinal obstruction, the undoubted occlusion of the bowel is by no means either the most serious or the most essential element in the progress of events. In a really acute case death will take place within seven days, and it may almost be said that the fatal issue is in small part due to the fact that the lumen of the bowel is occluded. Obstruction of the bowel *per se* is not an acutely serious thing. The intestine may be blocked for a week, or for two weeks, or even for three weeks, and yet no very distressing or very alarming symptoms may attend this circumstance.

In a fatal case of acute intestinal obstruction it can hardly be said that death is due directly to the obstruction. The complete closure of the bowels for a period of say seven days is not in itself an accident to cause death. Moreover, the clinical manifestations in a case of acute intestinal occlusion are in large part due to conditions other than those directly arising from the obstruction in the lumen of the gut. Finally, there is a period in the progress of such a case as we are considering in which the relief of the obstruction will not save the patient's life. Those who like to speak in paradox are almost justified in saying that in fatal cases of intestinal obstruction the patients do not die of intestinal obstruction. The interest of this matter extends, however, beyond a mere play upon words, and it can be shown that an undue prominence given to the mere fact of the obstruction is apt to distort both the clinical conception of the disease and the proper view of its treatment.

In the course of a case of acute intestinal obstruction it is possible to recognise three stages. In the first stage—or that of the onset of the trouble—the symptoms are those of intense abdominal pain, collapse, and vomiting. We will assume that the lesion is represented by the snaring of a loop of ileum by a peritoneal band. The symptoms in question however, are in no way due to the fact that the bowel has be, come abruptly blocked. They depend upon the circumstance that a sudden and intense impression has been made upon exquisitely sensitive abdominal nerves. The symptoms must be classed as purely nervous. The vomiting, for example, is reflex, and has no connection whatever with the accidental fact that the bowel has become occluded. The symptoms which mark the onset of a case of acute intestinal obstruction have little or no diagnostic character. They are the symptoms which attend all sudden and intense painful impressions upon important visceral nerves, and have been collectively described under the title of "peritonism." They are symptoms common to a series of intra-abdominal accidents. In the absence of any determining feature in the patient's history these clinical phenomena may equally well mark the passage of a gall stone, the torsion of an ovarian tumour, the perforation of an ulcer of the stomach, or the rupture of a pericæcal abscess. They are nervous symptoms produced by a common nerve lesion, and their interpretation can proceed no further than this—there has been an abrupt and intense impression made upon some part of the abdominal nerve plexuses. We have all seen cases in which perforation of the stomach or the appendix has been mistaken for intestinal obstruction and *vice versâ*, and cases in which the lesion found in an early operation has had no kind of relation to the trouble suspected or assumed.

In what may be termed the second stage in a case of acute obstruction the symptoms attain more individuality, and depend without doubt mainly upon the mechanical obstacle in the bowel. The pain is to a large extent due to disordered and futile peristaltic movements, the absolute constipation depends upon the blocking of the intestine, and the persistent vomiting is in the main due to the same cause. The character of the vomit, however, shows that another factor is being introduced into the circumstances of the case in the form of rapid decomposition of the intestinal contents. This depends, of course, upon the unnatural retention of those contents in the bowel, and probably in a still larger degree upon vascular and other changes in the intestinal wall. The vomited matter becomes offensive, and acquires an odour which, for want of a standard of offensiveness, may be called stercoraceous. Faculent or fæcal vomiting—by which I assume is meant the ejection of fæces—I have not met with in acute obstruction. Finally, there is an increasing distension of the abdomen. This is largely due to mere accumulation, to mere inability of the contents to escape. The meteorism in intestinal obstruction is, however, in great part due to vascular changes in the bowel wall. This fact has been fully demonstrated by experiments upon animals and by pathological experiments in man. It is well illustrated by the distension of the twisted loop in volvulus of the sigmoid flexure. The most severe case indeed of meteorism of the small intestine which has come under my notice was associated with no mechanical obstruction in the gut, but to thrombosis of the superior mesenteric vein.

Last of all, in the third or final stage of acute obstruction, the symptoms have little to do with the actual obstruction as such. They are the symptoms of poisoning, and the patient who dies unrelieved dies poisoned. The septic matter which leads to his death is derived from his own intestine. It is the rapid onset of septicæmia which makes the operative treatment of acute intestinal obstruction so futile in the

majority of cases. In many an instance an accurate diagnosis has been made, an early incision has been carried out, and the cause of the obstruction has been readily discovered and removed. The abdomen is closed and the patient dies. I remember one very painful example of this sequence of events. The patient was a gentleman of middle age; the operation was performed forty-eight hours after the onset of the attack. A strangulating band presented itself the moment the abdomen was opened. It was divided without difficulty and the parietal wound was closed. A more favourable case could hardly have been conceived, yet the patient died with septic manifestations, and the necropsy revealed no breach in the bowel and no gross peritonitis.

Those who wish to advance the therapeutics of intestinal obstruction must first of all grapple with this terrible element of intestinal septicæmia. Surgery wants a Lister who will teach us how to overcome the process of decomposition in the bowel. The lesion to the bowel need be by no means grave; the operation of dividing an easily discovered band cannot be considered to be severe, and yet the patient dies. I am quite aware that in a large proportion of these cases there is infection of the peritoneum to a degree which may lead to death and yet produce few of the naked-eye manifestations of peritonitis; but the infection starts from the bowel, and in the bowel the process of antisepsis must start. The intestine has some power of acquiring immunity against this septicæmia, as is made evident in cases of chronic obstruction of the bowel, and one meets with slighter grades of this self-poisoning from which the patient makes an easy recovery. Such milder forms are often seen in instances of fæcal accumulation. As soon as the fæcal mass has been removed there is often some fever, with a mild degree of collapse and possibly nausea or even vomiting. As a rule such manifestations vanish in a day or so. The stomach seems not to lend itself to this form of blood poisoning, and extensive accumulations may take place in that organ and lead to no septic effects. The colon, too, would appear to possess a natural immunity up to a certain point, but in the lesser bowel the process is uncontrolled, desperate, rapid, and almost hopeless.

From a practical point of view the treatment of acute intestinal obstruction appears to me to demand two things of the surgeon: (1) An early operation, and (2) the evacuation of the bowel after the strangulation has been relieved. The first of these two measures will, I imagine, be allowed by all to be commendable. I do not urge that the opening of the abdomen in these particular cases is a trifling measure, but it is infinitely trifling when compared to the mere standing by with folded hands to await the remote possibility of spontaneous cure. The so-called medical treatment of these cases is a relic of the Dark Ages, and must rank with the "faith cure" and the medical treatment of a dislocated hip.

With regard to the second proposition, it appears to me that, in a certain sense, the real danger to life lies rather with the poisonous material in the intestine than with the actual obstructing cause beyond its walls. As I have already said, the patient is dying not because his bowel is occluded, but because the distended gut above the obstruction is producing a poison which is sapping his strength. It has, unfortunately, been too many times demonstrated that the successful relief of the obstruction will often fail to save life, and, indeed, it is of more moment to relieve the patient of the trouble within his bowel than of that which is without it. I have in all cases of acute intestinal obstruction with which I have had to deal in recent years not considered the operation complete until I had, as a matter of routine, emptied the bowel. This is conveniently done by bringing the most distended coil to the parietal incision, and evacuating it by means of a small glass tube, which is inserted into the gut, and secured to the bowel wall by a single encircling thread. I have had no difficulty in closing the small artificial anus by a subsequent operation, carried out some weeks after the original proceeding. I can certainly state that this measure has had the effect, in my own practice at least, in reducing the mortality of this formidable measure to one-half of its original rate.

Some time ago, when collecting records of cases of acute intestinal obstruction treated by operation, I was struck by the fact that by far the best results attended the instances in which the surgeon had simply performed enterostomy, that is to say, in which he had made a small abdominal incision, had drawn out the first distended coil which presented itself, and had opened it and fixed it in position. In this remarkable series of cases the obstruction had been ignored and had not even been sought after, and evidence was lacking to show what had happened to the snared bowel after the operation. I am quite aware that among these cases there are probably some in which there had been an error in diagnosis, but the number of examples in the series is too extensive to allow this possibility to disturb the conclusion which is forced upon those who will critically examine the evidence. In my opinion, the operation for really acute intestinal obstruction is not completed until the bowel has been evacuated of its contents. This measure of treatment is by no means new. It was most vigorously advanced by Travers in his remarkable work on the intestine, which was published over eighty years ago. Travers supported his views by experiments upon animals, and by the observation of many cases in the human subject, and elaborated his proposition by arguments which have not been affected by the scientific advances of a century.

Intestinal Septicæmia and the Colon Bacillus.

To appreciate and deal with septic processes within the bowel must be one of the very first rudiments of intestinal surgery. The teachings of Lister have led to a revolution in the surgeon's art which is still a matter of amazement. Antiseptic surgery, however, as we employ the term, concerns itself mainly with the prevention of forms of infection in which the septic germ is introduced into the body from without. Antiseptic surgery has practically left untouched those forms of infection in which the septic element is in a certain sense introduced into the system from within. I allude specifically to those grave and often fatal conditions of septicæmia in which the patient is poisoned by the products of decomposition in his own intestine. I have just alluded to such infection in connection with acute intestinal obstruction, and without going fully into the matter, I might add that in the majority of the examples of non-traumatic peritonitis—excluding the puerpeal and tuberculous forms—the infection comes from the patient's own bowel. And with regard to that infection the remarkable fact is this, that the bacillus which appears to be most concerned in the production of this septicæmia is not a bacillus introduced accidentally into the bowel from without, but a bacillus which exists normally in the bowel in a condition of health. I allude of course to the bacterium coli commune. It is probable that the micro-organisms described under this name do not belong to one particular definite species, and that the term bacterium coli commune may be taken as a collective name for a group of bacteria which will probably be in time resolved into several different species. Anyhow, this widely-diffused bacillus exists normally in the intestine of healthy man, and appears in the bowel a few hours after birth. It is found in all parts of the intestinal canal and at all periods of life. It is scarcely reasonable to assume that this invariable occupant of the healthy intestine is a mere noxious or useless parasite. It is more than probable that it is concerned in some direct or indirect way with the process of digestion. It would be indeed interesting to know how the phenomena of digestion would proceed in a sterile bowel.

The bacterium coli may remain a perfectly harmless saprophyte; on the other hand, it may rapidly alter its character, and become possessed of intense pathogenic activity. It has been shown that in the majority of cases of perityphlitis the local inflammation is due to the bacterium coli commune which has escaped from the lumen of a diseased vermiform appendix. That extensive variety of peritonitis which takes its origin from the intestine, as illustrated by the peritoneal infection attending strangulation of the bowel would appear to be, in nearly every instance, due to the micro-organism now under discussion.

The virulence of the bacillus coli is subject to a quite extraordinary variability. An exaltation of its virulence may be due to an association with other organisms, pathogenic or non-pathogenic; but in most instances its morbid activity is excited by some change in the condition of the bowel itself. Diarrhœa, enteritis, cholera, and typhoid fever are all capable of rendering this organism virulent, and the same may be said of the conditions attending fæcal accumulation.

Experiments upon animals make it probable that in man a moderate infection of the peritoneum with the colon bacillus from a healthy bowel would be harmless, while an infection by equal dose from a bowel rendered in any way unhealthy would induce peritonitis. Surgical experience would certainly support the suggestion. Klecki[1] has shown that the bacterium coli from the ileum is the most virulent, that from the jejunum ranks next, while that from the colon is the least potent for harm. There is no doubt that so long as the bowel wall remains intact, especially as regards its epithelium, little or no opportunity is afforded to the bacterium to escape from the gut. Artificial compression of a loop of bowel by an india-rubber ring (without or without ligature of the mesenteric vessels) will cause acute general peritonitis in dogs, as Klecki has demonstrated. The animals die in 24 to 48 hours. The epithelium rapidly desquamates, the vessels dilate, and there is an abundant infiltration of the whole wall of the ligatured knuckle. The virulence of the colon bacillus within the loop is infinitely greater than that of the same micro-organism from an undisturbed part of the same intestine.

These facts suggest by the way that the handling of the bowel during an operation should be of the gentlest, and that the evacuation of an obstructed loop is very desirable. On the other hand, there is no doubt but that the normal peritoneum has considerable powers of resisting an invasion of this particular bacterium. This protective power, however, would appear to be very soon lost if the delicate surface of the serous membrane be damaged. There is no doubt but that the washing, and scrubbing, and rubbing to which the peritoneum was exposed while surgeons were under the influence of that fatal expression "the toilet of the peritoneum," led to many deaths.

The peritoneum has remarkable powers of protecting itself if only the surgeon will permit it to exercise them. Save in a few exceptional instances, the serous membrane is better able to deal with a moderate effusion than are the over-ready sponge and the futile and often fatal drainage tube.

I have noticed, moreover, that the peritoneum, which has been subjected to repeated infections, becomes in time almost immune. The operations which can be carried out with success in patients who have had repeated attacks of peritoneal inflammation are often almost beyond credence.

Need for Further Bacteriological Inquiries.

It will be evident from these few observations that the foundation of a rational intestinal surgery must be based upon a fuller knowledge of bacterial processes within the bowel. We need to know the function and purpose of the great bacterial horde which normally occupies the intestine, the circumstances which modify the virulence of these bacilli, and the conditions needed to apply the principles of antisepsis to the lumen of the bowel. One can, for example, imagine it possible that the introduction of some non-pathogenic bacterium into the intestine may beneficially influence by its growth the powers of micro-organisms which are already rampant in the bowel and uncontrolled. The impossibility of employing potent drugs, or what may be termed the usual antiseptics, to arrest certain decompositions within the bowel suggests the searching for such a measure as has just been mentioned.

We want further information as to the conditions which increase and which diminish the power of the peritoneum to protect itself from invasion. I can imagine that in the future we may be able by artificial means to secure an immune peritoneum, and that this desirable condition may possibly be brought about by certain preliminary injections into the serous cavity itself.

Among the minor advantages which would arise from a fuller knowledge of the common changes within the bowel, I can imagine the discovery of an aperient which might be administered hypodermically. The need of a hypodermic aperient must have been apparent to all of us. It will probably not take the form of a drug, but rather of some product of bacterial change. Numerous experiments have been made upon animals with the colon bacillus and with its products, and especial interest attaches to those experiments in which the inoculations have been made hypodermically. It is evident that at present our knowledge of the subject is very crude, and that our control of the bacillus coli is singularly imperfect. These injections in animals have led to very widespread and disastrous symptoms, but among them I notice the frequent mention of diarrhœa, and it seems quite possible that further investigations may enable the bacteriologist to evolve a substance which will produce a diarrhœa without the grave symptoms which so far seem to be a feature in these hypodermic administrations.

Inguinal Colotomy.

We might now pass on to the consideration of certain points in connection with the surgical handling of the intestine.

In the first place it may be said that the common and useful operation of colotomy has been greatly improved within the last few years, and has been rid of most of the after-discomforts which made it at one time a measure to be greatly dreaded. The operation in the iliac region has entirely supplanted the colotomy in the loin, and the latter procedure has indeed become one of the rarest of abdominal operations.

In inguinal colotomy pains have to be taken to select a proper spot for the opening in the sigmoid flexure, the bowel must be carefully fixed, and, in my experience, the best results have attended the immediate opening of the gut, the contents being evacuated through a glass tube. Little or nothing is now seen in practice of two after-troubles which were at one time the bugbears of colotomy, namely, the contraction of the orifice on the one hand, and the prolapse of the exposed bowel on the other.

The average colotomy gives the patient but a minimum amount of trouble. In a large proportion of cases it is possible to secure a good action of the bowels every forty-eight hours, the artificial opening causing the patient but little or no inconvenience in the interval. If there be a degree of colitis present at the time of the operation, it is true that the new opening may be the seat of a not inconsiderable distress. But in the average case the administration of a dose of mistura alba very early in the morning on alternate days will secure an ample evacuation of the bowel followed by a period of immunity from disturbance. This much-to-be-desired result is rendered possible by very careful feeding, and above all by the utmost attention to the wound. There is no doubt but that the troubles attending colotomy, as performed some years ago, were in large measure due to neglect of the wound. A pad of septic tow and a dab of vaseline were placed over the bowel, and the requirements of surgery were considered to have thereby fully met. The gross neglect of the part was excused on the ground that the operation area was already septic. As a matter of fact, few complicated wounds respond more readily to careful treatment and assiduous attention than does the colotomy incision, and the benefit to the patient from such care can hardly be overestimated. I am convinced that the troublesome catarrh of the colon which was not uncommon after colotomy was very often due to the filthy condition into which the wound was allowed to pass, and that difficulty with the bowel in the form of prolapse was often dependent upon the same cause.

Resection of the Bowel.

It is satisfactory, however, to note that the necessity for colotomy is rendered less frequent by the numerous opportunities for performing resection of the bowel, especially for cancer, and by the excellent results which have followed upon the operation of lateral anastomosis or short-circuiting. The excision of a portion of the colon for malignant disease must rank as a most satisfactory procedure. The best results are obtained when the growth is situated in the sigmoid flexure, or in such other part of the large intestine as may be provided with a free mesocolon. The least satisfactory cases are those in which the growth has involved a part of the bowel which is unassociated with a mesocolon and has a portion of its surface denuded of peritoneum. It is essential for success that the growth should be dealt with early, and that the excision of the gut and of the associated mesocolon should be as liberal as possible. Indeed, it appears to me that among all the operations for the treatment of cancer by excision the removal of a portion of the sigmoid flexure for early epithelioma must rank as one of the most successful.

In those instances in which the malignant growth, by reason of its position or extent, cannot be excised, there are, happily, a fair proportion of cases in which a lateral ana-

stomosis can be carried out, and the patient be thus spared the inconvenience of a colotomy. Experience has shown that a considerable portion of the intestine can be thrown out of the circuit without apparent inconvenience to the patient.

The Intestinal Suture.

Time will not permit of a discussion of the various methods whereby the bowel may be sutured, excised, or short-circuited. The number of intestinal sutures is legion. Indeed, the passion to invent a suture for the bowel seems to be almost as uncontrolled as the frenzy to invent midwifery forceps, pessaries, and needle-holders which has so long afflicted the medical profession.

Many of the intestinal sutures are hopelessly bad, because the thread passes through all the coats of the bowel and acts as a vehicle for conveying septic germs from the lumen of the gut to the peritoneum. Others are hopelessly complex, and of interest only to those who find delight in ingenious puzzles. Not a few are the subject of periodical invention, whereby the forgotten Jones-Robinson suture of 1806 becomes the quite original Smith-Johnson suture of 1898. To my thinking, the best stitch is still the ancient one, which includes a fine continuous suture of the mucous membrane and points of Lembert suture, which involve the other coats of the viscus. Certainly in the stomach no form of stitching is more convenient than this. Moreover, among the horde of intestinal needles, the best is the milliner's needle which comes from the draper's shop.

Of the methods of uniting divided bowel, either after excision or in the performance of a lateral anastomosis, the best theoretically is, without doubt, the method of simple suturing. In practice, however, this can seldom be advantageously employed. The simple suture involves a great expenditure of time; the differences in the segment of gut above the stricture and that below it render straightforward suturing almost impracticable, and the bowel at the suture line is very apt to kink. To cope with these difficulties there has arisen that remarkable host of plates, discs, tubes, cylinders, buttons, and bobbins which has so disturbed the peace of the surgeon who hungers after the "last new thing." Not a few of these appliances alternate between oblivion and rediscovery, to the great hindrance of progress. For example, in 1882[2] I described a method of suturing bowel over a collapsible india-rubber bag which was sausage-shaped, and was introduced into the ends of the gut to be united. It could be blown out into the form of a firm cushion, and, before the last stitches were introduced, could be emptied and withdrawn. A little experience showed me that my bag was useless, and I promptly discarded it. Now after a period of sixteen years an American surgeon, Dr. W. S. Halsted,[3] rediscovers my useless bag, and reproduces it with singular exactness. He believes this old-new procedure to be "better than any method hitherto devised," and so we step back sixteen years. Dr. Halsted also, by the way, expresses his conviction "that there should be a law compelling all surgeons to practise on animals the operations for circular suture of the intestine and for intestinal anastomosis." I hope this view will not commend itself to the legislators of this country. Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man I found I was much hampered by my new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine.

Murphy's Button.

Of the various appliances in vogue for the uniting of divided bowel I think the best is Murphy's button. It is very far from being a perfect instrument, but it compares at least very favourably with the other forms of apparatus which compete with it. The idea underlying the button appears to have originated sixty-two years ago in the brain of one Denans.[4] "He introduced into the upper and lower end of the (divided) gut a silver or zinc ring, thrusting it inwards about two lines from each end; he then brought the two ends together over a third ring, of which the two springs retain the external rings. The included ends of the intestine mortify, and the rings thereby, becoming unfastened, are discharged by stool after they have united the serous surfaces in contact" (Chelius).

I have employed Murphy's button in considerably over 50 cases with results which are certainly satisfactory. The button requires no elaborate preparation, it is always ready, its introduction is exceedingly simple, and is effected in a few minutes. The two parts of the instrument may certainly jam, but I think that that accident is the result of careless handling. I have never known it to induce a gangrene which has extended beyond the limit of the button. The two definite and undoubted objections to the button are these. It may be indefinitely retained, and its separation may be followed by contraction of the artificial opening. These two undesirable results are often in close relation to one another as cause and effect.

In the cases of cholecystenterostomy in which I have used the button I have never known it to be retained; and, so far as I am aware, the opening made has not undergone inconvenient contraction. In cases in which the button has been employed in the colon only I have never had it retained, but in some instances, a very small minority, there has been contraction of the new passage.

In examples of gastro-enterostomy performed by means of this apparatus, retention of the button for considerable periods, or its absolute failure to appear at all, seems to me to be the rule rather than the exception. In not a few instances there has been undoubted contraction of the artificial opening. In only two examples of gastro-enterostomy in which the button was retained has that instrument caused any trouble. In the first of the two cases I performed gastro-enterostomy upon a gentleman aged 39 for pyloric obstruction, due apparently to non-malignant disease. He had been ill a year at the time of the operation, which was performed on March 27th, 1897. He was at that time greatly emaciated, and the stomach was very much dilated. He made a perfect recovery, and subsequently gained 3 st. in weight. He had no further gastric symptoms of any kind. The button was never known to have passed. On March 14th, 1898, he was seized with severe epigastric pain after bicycling. In due course a fœtid abscess formed under the old scar. This was opened on March 28th, and rapidly healed. A skiagraph showed very distinctly that the button was still in the stomach. On April 16th I opened the stomach and removed the button, which was quite loose. It was black and rough, but still in working order. The patient's recovery was complete, and he left the surgical home in three weeks in excellent condition, and free of all gastric symptoms.

In the second case the patient was a man, aged 36, with non-malignant obstruction of the pylorus and great dilatation of the stomach. Gastro-enterostomy was performed in June, 1897, followed by a speedy recovery. He kept in excellent health until March, 1898, when, after a few days of abdominal pain, an abscess containing fæces burst through the parietal wound. A fæcal fistula has since remained. In this case the button appears to have lodged in the lower ileum, and, owing to peculiar complications which I need not deal with, it has not yet been removed.

As an example of contraction of the colon after the use of the button, I may mention the following case: A gentleman, aged 61, who had had symptoms of chronic intestinal obstruction for some months, was seized with symptoms of acute occlusion of the bowel, attended by immense distension of the abdomen and stercoraceous vomiting. Laparotomy, performed in January, 1897, revealed an epithelioma in the centre of the sigmoid flexure. The urgency of the case and the great distension forbade any attempt at excision. I therefore effected an anastomosis between the two extreme ends of the sigmoid flexure by means of a Murphy's button of the largest size. The diameter of the button was 1¼ inch. Fluid fæces were passed before the patient left the table, and he was at once relieved. The button, which had already been used in two previous cases, was passed on the twenty-second day. The patient was walking out-of-doors at the end of the fourth week. In March, 1897, he had regained his original weight, and his bowels were acting well with aperients. I then performed a second laparotomy to remove the sigmoid flexure. Although only thirty-eight days had elapsed since the passing of the button, I found the artificial opening I had made so contracted that it would do no more than admit my

little finger. I removed the whole sigmoid flexure and united the descending colon to the rectum by means of the same button. This button was passed on the sixteenth day. The patient recovered rapidly, and remains in sound and vigorous health. The specimen is in the museum of the Royal College of Surgeons.

The explanation of these cases of contraction, whether in the stomach or in the colon, is not far to seek. The button effects an opening between the two viscera by means of pressure gangrene. I have noticed that after-contraction has only occurred in cases in which the upper viscus was much dilated at the time of the operation. It is needless to say that in gastro-enterostomy for pyloric obstruction a dilated stomach is met with, and in intestinal anastomosis for stricture the upper segment of the gut is apt to be enormously distended. After the operation the dilated organ contracts and consequently the newly made hole contracts. I can easily imagine that a hole in a dilated stomach made by pressure gangrene and the size of half-a-crown may readily become an aperture the size of a fourpenny piece when the distended viscus had gradually contracted. It is therefore very desirable to have the viscera to be dealt with as empty as possible before the button is introduced. This end is very difficult to secure even to a partial degree. The stomach, for example, in old pyloric obstruction, even when kept washed out for many days, is slow to contract; and if at the time of the operation the viscus be still much dilated, retention of the button and possible inconvenient contraction of the new opening may be regarded as possible.

This association between previous distension of a viscus and the subsequent contraction of the aperture made in it is of course by no means limited to Murphy's button. It applies to nearly every method in vogue for carrying out the operations now under discussion.

Still, it spite of many drawbacks and many failures, intestinal surgery has made within the last few years decided and substantial advances; but it will fall short of perfection until antiseptic surgery, which has so far penetrated only to the serous covering of the gut, has reached the mysterious and septic lumen which lies within the bowel wall.

References.

[1] *Ann. de l'Inst. Pasteur*, 1895, ix, p. 710. [2] *Med.-Chir. Trans.*, vol. xlviii, p. 55. [3] *Philadelphia Med. Jour.*, January 8th, 1898. [4] *Recueil de la Soc. Royale de Méd. de Marseille*, No. 1, 1826.

AXIS TRACTION WITH ORDINARY FORCEPS.

By T. ARCHIBALD DUKES, M.B., B.Sc.Lond.,
District Medical Officer, Croydon Union.

The recent discussion on the use of midwifery forceps at Edinburgh shows that the simplest, easiest, and most powerful method of applying axis traction with ordinary forceps is not generally known.

The patient being in the ordinary left lateral position, insert the blades so that the lock falls together; let the handles assume their natural position, close to the symphysis pubis pointing forwards. Allow them to remain during the whole process of extraction in this, the position which they naturally assume, pointing more and more forward as the head descends. To extract, grasp the forceps at or above the lock with the left hand, and place the hollow of the right hand on the posterior surface of the extremities of the handles, so as to be able to push with the right hand and pull with the left, by an action somewhat similar to that used in making a stroke with a paddle. Then, keeping both arms the whole time rigid and extended, place your own chest, facing the patient, in the desired line of traction which with head at brim is a straight line passing from the patient's umbilicus through her coccyx and pull with your back from the coccyx.

By this means the whole force exerted is expended on urging the child's head towards the coccyx; none is expended on stretching the vulva in pulling the forceps out of their natural position, or in pressure on the pubes or other bony parts. No compression need be used unless the forceps are beginning to slip. Every motion of the head is readily felt, and can be allowed to occur naturally, or can be helped. The occasional difficulty of firmly grasping the forceps above the lock with the left hand is easily met by looping a fillet or handkerchief over the lock and round the wrist. The accompanying diagram may make the description plain:



I can hardly suppose this method is new; for given the forceps in their natural position, and a knowledge of the direction in which a child's head is to be moved, and then any intelligent man would use the instruments in the above way, unless he were told to act otherwise. There is an old illustration in a well-known textbook, which apparently represents one hand pulling at a crotchet hooked on to the symphysis pubis; but it has a legend written underneath: "Forceps in position, traction in the axis of the brim." With one hand!

Though I think his directions are incomplete, Galabin's method is of course mechanically correct if the traction is performed entirely with the arms. But fancy pulling an oar or anything else without using the back! When I formerly used Galabin's method my arms would ache for days after a difficult case. And to get any considerable power it is necessary to very much stretch the vaginal orifice by drawing back the handles.

Both Galabin's method and also Tarnier's tractors need this retraction of the perineum to perform axis traction; but with a rigid perineum this is not always easy or possible. And when this can be done, the tension of the perineum alters the direction of the resulting force acting on the child's head.

By the method I have described there is no tension of the perineum to disturb the direction of the force applied. One's whole strength can, when necessary, be exerted in urging the child's head in any desired direction, counter traction being made by the nurse to keep the patient on the bed. Whatever the theory, in practice delivery by this method is in most cases extremely easy.

The Flannel Shirt Club. The excellent object of the Flannel Shirt Club, to which we drew attention last year, is to give flannel shirts to necessitous working men who require warm clothing on returning to work after serious illness, when they have to exchange the shelter and comfort of the hospital for exposure to inclement weather and other hardships. The club was started last year; it has 183 members, and has already distributed flannel shirts to patients discharged from general hospitals in the metropolis. The Secretary is Miss Lamport, 52, St. John's Wood Road, London, N.W., and subscriptions will be received by the Honorary Treasurer, Mrs. Clutton, 2, Portland Place, London, W.

SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

JOHN DUNCAN, F.R.C.S.Edin., LL.D., President.

THE OPERATIVE TREATMENT OF CLEFT PALATE.

By EDMUND OWEN, F.R.C.S.,

Surgeon to St. Mary's Hospital, and to the Hospital for Sick Children, Great Ormond Street, London.

THE observations which I am about to make in connection with the operative treatment of cleft palate arrange themselves under three headings: (1) Before the operation; (2) the operation, and (3) after the operation.

1. *Before the Operation.*—The operation not being one of immediate urgency the surgeon can choose his time for it, making such preparations as will, if efficiently carried out, add greatly to the prospects of securing a completely successful result.

Thus, if the child is brought looking ill or poor; if it is found on inquiry to be liable to severe attacks of diarrhœa, or to cough or vomiting, the operation must be put off and attention be directed towards procuring the general and particular improvement of the child. If the tongue be foul and coated, a change of air and of diet should be ordered, and the child put upon a course of rhubarb and soda mixture, which, in my experience, has a most beneficial effect in the treatment of chronic dyspepsia in children. Particular attention should always be paid to the condition of the teeth. Every carious tooth should be extracted, or cleaned and filled, and to diminish to the utmost the risk of the line of suture in the palate becoming infected from pathogenic micro-organisms the mouth and gums should be for some days washed over with a saturated lotion of boracic acid with glycerine.

No one would propose the performance of a plastic operation upon the hand, for instance, until the area of operation and its neighbourhood had been rendered aseptic, and although it is not practicable to effect as much in regard to the mouth, still the surgeon should do his utmost in that direction. I usually find that there is something for the dental surgeon to do before the mouth is in a condition to invite the performance of a staphylorrhaphy.

With regard to the important matter of the presence of pharyngeal adenoids and of enlarged tonsils, I have seen it advised that the operation upon the palate should precede that upon the tonsils and adenoids, but I do not regard such advice as sound. The child has hitherto been in the habit of breathing through a wide palatine cleft, and if this is suddenly closed by operation provision should surely have been made for securing a passage for the air as free as possible; and we know how seriously the airway may be blocked by tonsillar and adenoid disease. I think that the surgeon should amputate enlarged tonsils at least ten days before dealing with the palate, and if, on doing so, he cuts across a septic or tuberculous focus, as often happens, he had better wait a little longer still before dealing with the palate, and when adenoids are conspicuous through the cleft, it is surely better that they should be scraped away before operating on the palate.

Just before the operation on the palate the nurse should give a beef-tea enema with a little brandy.

2. *The Operation.*—In the first place I show some specimens of modified Smith's gags. The modification consists in substituting for the roughened plates which took their bearings from the teeth bars studded with two short spikes, which fit into the crevices between the teeth, or embed themselves harmlessly in the gums. The gag thus remains firm throughout the operation, and spares the surgeon the annoyance caused by the slipping of the gag. The gags are made by Messrs. Weiss, of Oxford Street. I have them in three



different sizes, and I find that the slight modification effected in them adds greatly to their adaptability and usefulness.

The anæsthetic which I have always used is chloroform, administered partly by a mask and partly by a Junker's apparatus, but it is not my desire that the child should be too deeply under the anæsthetic. It surely must be an anxious time for the anæsthetist when the operator keeps on insisting that the child is not sufficiently comatose. For my own part, I had much rather that the child should now and then show signs of "coming round" than that it should be over-narcotised.

When the child is fairly under the anæsthetic I pass a strong suture through the tip of the tongue and pull the tongue out before introducing the gag; in this way it can best be kept from rolling back against the soft palate when the hindermost part of the cleft is being dealt with.

The child is then brought up to the end of the table and its head is allowed to hang back so that the blood may have but slight chance of finding its way into the larynx. I am quite satisfied that this is the best position for the operation, and I say so after having had ample experience of the old plan of letting the head lie flat or slightly raised.

As soon as the edges of the cleft have been denuded, an incision is made along the inner side of the alveolar process, and as this is apt to be followed by a good deal of bleeding, I usually pause here for a few moments and make firm pressure with a sponge so as to keep the bleeding under control. Then the raspatory is introduced, and the muco-periosteal flaps are raised. But, as a rule, they cannot be shifted towards the middle line, and be sutured there without tension until the alveolar incisions have been prolonged backwards into the soft palate. These incisions, which should be quite free, traverse the attachments of the levator and tensor palati, as well as that of the palato-pharyngeus. Then the attachment of the aponeurosis of the velum to the posterior border of the hard palate is divided with the curved scissors and the sutures are inserted. For the sutures I use almost entirely silver wire, supplemented in some cases with horsehair. The wire sutures are inserted by a modification of Smith's needle, which is also made by Weiss. In the case of a complete cleft I insert about ten or a dozen sutures.

A point of great practical importance is to have the lateral incisions made very freely. Indeed, I make them so free that, as the palate is being sutured, I use them for the introduction of small pieces of sponge for removing blood from the front of the naso-pharynx, and after the operation they together seem to be as wide as was the original cleft; insomuch that onlookers have sometimes asked if I have no fear of the flaps sloughing, or of the incisions failing to be obliterated. In neither of these respects, however, have I ever had any trouble.

The operation as thus described is extremely simple. It demands the use of no rectangular knives for the separation of the muco-periosteum, and the expansions of the muscles into the soft palate are divided by a simple, straight incision. One great point in the operation is to have the edges of the palatine flaps adjusted without any tension whatever. The effect of tension after any surgical operation is apt to be disastrous.

3. *After the Operation.*—Probably the child will vomit when he is "coming round," and if he does this just before he is

moved from the table, so much the better. The act of vomiting does not in the least interfere with the line of suturing, as I have often assured myself, though, of course, if vomiting persists it may be prejudicial. The nurse must be told not to be surprised if the fluid ejected from the stomach is blackened by blood which has been swallowed. When the child is put back to bed his head should be slightly raised on a pillow, with the face turned down so that the blood-stained saliva may escape from the mouth and fall into some absorbent material.

As regards feeding, I think the best thing is home-made beef jelly; milk is, practically, a solid food, and it is more likely to cause difficulty in swallowing, or to set up vomiting. With the various meat extracts and essences of the shops I will have nothing to do. Home-made beef jelly slips down easily; it is of high nutritive value, and it is readily absorbed by the stomach. As soon as possible after the operation I have the child out of bed, and, if practicable, out of the house. Being in the fresh air is an excellent tonic, and it helps him to forget that somebody has, apparently, been very unkind to him.

I do not hold a strong opinion with regard to the use of a boracic spray for the mouth. If the child does not mind it being used I advise it, but if he objects I do not insist. I have not found that it makes much difference either way. But whether the mouth spray is used or not, a case every now and then goes wrong after operation. The child looks ill; his temperature runs up a degree or two; his tongue is coated; his breath is foul; the line of the palatine suture becomes swollen and unhealthy, and a thick, stringy, muco-purulent discharge collects about the roof of the mouth. The appearances are ominous and unmistakable. What has happened is, that staphylococci have taken possession of the damaged tissues and, undergoing cultivation, are spoiling or completely wrecking the surgeon's handiwork. He, poor man, is helpless in the matter; if he is emotional he may sit down and cry. I have at the present time an operation case of this sort in the Hospital for Sick Children. It was in a girl, with a complete cleft (and rather a wide one) of the soft, and of the whole of the hard, palate. Mr. Templeton took a thrust cultivation from it on the seventh day, and found the gelatine completely liquefied by vigorous staphylococci in less than thirty-six hours.

To say that I allowed the infective disease to run its course feebly expresses the truth; I could not stop it. But a fortnight after the original operation, when the sundered and swollen edges of the cleft began to look bright and clean, I had the child again under chloroform, and, having freshened up the marginal granulations, I brought the edges of the flaps together once more, and secured them by wire sutures, which I inserted quite wide of the cleft. To get the edges together without tension I introduced the raspatory once more by the lateral incisions, and again freely raised the muco-periosteal flaps. The case has done extremely well, and it seems to promise as good a result as if the edges had adhered by primary union. This, indeed, is the chief point of my paper, and I regard it as one of great practical importance.

I would like to ask if other operators have had their work break down under the growth of a swarm of staphylococci, and, if so, if they have sent away the child to convalesce for a second operation after a lapse of several weeks or months, or if they have stuck to the case and dealt with it in the way I have described. And if so, I would like to hear of the ultimate result. I have acted on this plan on several occasions, and with excellent results.

My opinion is that there is no factor so prejudicial to prompt union after staphylorrhaphy as septic infection, but after a child has undergone this infection we should probably be right in concluding that he could not undergo a second attack; that he has acquired by it a complete immunity. Certainly I have not seen an invasion by staphylococci following the supplementary operation.

MEDICAL WOMEN IN THE UNITED STATES.—According to official statistics the number of medical women in the United States, which was 527 in 1870, had in 1890 increased to 4,555. Since that time the number has been steadily growing, and in 1897 there were 6,882 women engaged in the practice of medicine in the States of the Union.

THE TREATMENT OF SPINA BIFIDA BY "OPEN OPERATION," FOLLOWED BY CLOSURE OF THE SPINAL CANAL.

With Photographs of a Successful Case.

By Professor C. YELVERTON PEARSON, F.R.C.S.,
Surgeon, Cork Northern Infirmary; Professor of Materia Medica, and Lecturer on Medical Jurisprudence, Queen's College, Cork.

MR. PRESIDENT AND GENTLEMEN,—I think it will be acknowledged by anyone of a reflective mind that in the light of modern advances in other departments of surgery the usual methods of dealing with cases of spina bifida must be regarded as of an unsatisfactory nature.

Practically the only methods of treatment usually adopted by the profession resolve themselves into affording protection to the tumour on the one hand, or resorting to injections of Morton's iodo-glycerine on the other. A considerable amount of success has attended the use of this latter remedy, and several so-called cures have been reported. The Committee of the Clinical Society, after a most careful inquiry, reported in favour of injection of the sac. The committee collected 71 cases treated by this method, of which 35 recovered, 27 died, 5 were unrelieved, and 4 were improved. Morton himself reported more favourable results, but personally I am not prepared to admit, on the one hand, that the mere shrinkage of the tumour, following upon such injections, can be regarded as a cure in the true sense of the word, while on the other I am satisfied that if we had a full report of all the cases so treated the number of failures or fatalities would probably be in a majority. Several of such have come within my own knowledge, though they have not been under my personal charge. I think the time has arrived when we may fairly advocate bolder and more complete methods, and the singular success which has attended operation by the open method, with closure of the spinal canal in the case which I have the honour of submitting to you, is, I think, sufficient apology for bringing the matter prominently before the members of this great Association.

In a very recent work on surgery, by Rose and Carless, we find the following: "The majority of these cases are best left alone, the tumour being perhaps guarded from injury by the application of a suitable cap."

The treatment by repeated acupunture and injection is then referred to, and the next paragraph begins: "Of late years treatment by operation has been coming more and more into vogue, thanks largely to the able advocacy of Mr. Mayo Robson, of Leeds. Naturally, it is chiefly applicable in the meningocele type, and infants, or those suffering from trophic phenomena do not stand it well." Mr. Mayo Robson's method of operating is then described, and they conclude by saying, "The results obtained by this means have been encouraging, and in suitable cases operation may be recommended with some prospect of success."

I am quite aware that other surgeons have had success in some cases where removal of the sac has been performed, and notably Mr. Mayo Robson; but so far as the details of the operation I am about to describe are concerned, though they may resemble those of other operators, they were planned and deliberately carried out by me in quite an original manner. The first was performed over nine years ago on a very young child, and would, I believe, have proved a success but for some defect in asepsis. The child progressed very favourably at first, but died 15 days after the operation from arachnitis, which I now attribute to some form of septic contamination. I did not meet with a suitable case again until the past year; the particulars of which I shall now relate.

P. B., boy, aged 6 years, the child of healthy parents, first came under my observation on July 31st, 1897. He was an intelligent child, fairly healthy in other respects, but of very shy disposition, who carefully avoided playing with or enjoying the companionship of other children, and was singularly sensitive of his own condition. When standing he assumed a peculiar position, with the trunk inclined forwards and upwards from the lower dorsal region, lordosis being well marked, and usually supported himself by resting the hands on some fixed object. He was incapable of standing erect, and walked with a shuffling gait. There was some weakness of the lower extremities; the knees were somewhat flexed, and could not be fully extended owing to some contraction and rigidity of the hamstrings. There was also defective control of the vesical and rectal sphincters, the urine being voided involuntarily at night. He usually slept on his face, with the thighs and legs curled up. The tumour, which was of the nature of a meningo-myelocele, occupied the lumbo-sacral

region, and was about the size of an ordinary orange, covered with fairly healthy skin; presented a characteristic dimple on the posterior surface, and was surrounded at the margins, especially on the left side, with a growth of long hair. When examined by transmitted light, it was fairly translucent, but an opacity extending along its posterior portion indicated that the cord or some of its connections were attached to the back portion of the sac. At the time I merely ordered the skin to be washed daily with spirit and dusted with an astringent powder, and a protective shield to be worn, and recommended that he should be brought at a convenient time for operation, as I was then about leaving home for my annual holiday. The patient was admitted to the County and City of Cork Hospital for Women and Children on October 9th, 1897.



Fig. 1.

Operation.—This was performed on October 13th as follows: The patient was placed on his left side, with the head low, and anæsthetised with chloroform, as shown in Fig. 1. The skin, which had been previously disinfected, was again carefully washed and the hair removed by shaving. A longitudinal incision was made along the lateral aspect of the tumour on the right side—or what in the patient's position was the upper surface—at such a distance from the margin as to leave sufficient integument to meet a corresponding flap on the opposite side. This incision extended down to the lining of the sac, but not through it. All bleeding points were secured to prevent blood entering the cavity; the sac was then laid open, and the margins held up by means of compression forceps so as to retain as much fluid as possible. The whole contents of the sac were then completely displayed, the connections of cord and the numerous nerves passing from it being clearly visible *in situ* as they lay in a bath of perfectly clear cerebro-spinal fluid. The separation of the cord and its membranes from the skin was then commenced, and carefully carried out in as bloodless a manner as possible from above downwards, and restored to the spinal canal—a soft piece of aseptic sponge being temporarily placed in the upper opening of the canal to prevent the entrance of blood or the leakage of cerebro-spinal fluid; needless to say, during the dissection the fluid in the sac became bloodstained, and some of it escaped. This difficulty was easily overcome by keeping up frequent irrigation with warm saline solution. An incision similar to the first, and meeting it at the upper and lower extremities, was now made, and the intervening elliptical portion of integuments and sac removed: two lateral flaps of the dura mater were now separated from the surrounding tissues and brought closely in apposition by the application of a continuous suture of fine silk, the piece of sponge previously referred to being removed at the last moment before drawing the suture tight and fastening it. The periosteum was now raised from the inner aspect of the neural arches by raspatory, with the object of providing periosteal flaps, but these were of little avail, as the arches were so very defective; the rounded margins of the large elliptical aponeurotic opening were pared so as to provide freshly-cut surfaces. The skin and subcutaneous tissues having been undermined and retracted, two large deep lateral incisions were then made through the aponeuroses of the multifidus and erector spinæ muscles parallel to the spine and at a distance of about an inch from their free margins. The aponeuroses were then brought closely in contact by means of buried sutures of strong silk, thus providing a complete covering to the spinal canal; at the lower angle a small drainage tube was inserted. The skin flaps were now united by interrupted sutures and dressings applied. Throughout the operation I had the valuable assistance of my colleagues Drs. Ashley Cummins and Lee, the anæsthetic being administered by Dr. N. Henry Hobart.

The subsequent progress of the case was highly satisfactory; the wound healed without difficulty, and the drainage tube was removed on the third day. For the first few days the patient was rather lethargic, but then brightened up and asked for solid food. For the first four or five days the bladder and rectum were paralysed, but soon the functions of both were completely restored, and the nocturnal incontinence disappeared and has not since returned. As soon as his general condition would permit of it, an attempt was made to improve the condition of the lower extremities, back splints being applied to remove the contraction of the hamstrings, while massage and passive motion were employed daily. These efforts proved very successful, as the limbs got almost perfectly straight. Then the patient was got out of bed and educated in walking and standing erect, which he soon accomplished in a very satisfactory manner. He was exhibited at a meeting of the Cork Medical and Surgical Society on November 10th, 28 days after the operation, and was discharged from hospital on November 20th.

Since then the boy has remained in excellent health, and was brought to town on July 15th, 1898, when the photographs I now show you were taken. Fig. 2 shows the present condition of the back, exhibiting the scar and surrounding growth of hair. With one exception, his condition remains perfectly satisfactory, namely, the knees are slightly flexed and cannot be perfectly extended, though the boy is able to walk remarkably well, including going up and down stairs. The [illegible] condition of the knees I attribute solely to want of attention [illegible] with a little care might be easily corrected. The patient [illegible] and the covering of the spinal canal is of a highly satisfactory and unyielding nature; no special protection is used, and the boy is able to sleep on his back as well as in other postures. These are the results that have been attained, and I think—although the case is an isolated one—I may say without fear of contradiction that they are such as any surgeon may feel justly proud of.

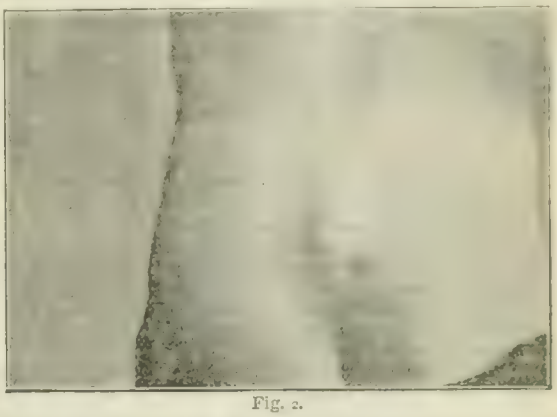


Fig. 2.

Remarks.

So far as the operation itself is concerned, I wish to lay stress on the following points: (1) The position of the patient should be such as I have indicated, and as shown in the photograph—lying on the side with the head low. (2) I think the first incision should in all cases be a lateral one, so as to avoid the possibility of wounding the cord or nerves. Moreover, this lateral incision, made on what is the uppermost aspect of the tumour in the posture recommended, gives a complete view of the interior of the sac. I believe that Mr. Mayo Robson uses a median incision in cases of simple meningocele, but I should not be disposed to adopt it, as many authorities state that it is often impossible to say whether the cord is present or absent; and in any case, as the central portion of the skin and sac will have to be removed, I cannot see the object of a median incision. (3) I think it is a distinct advantage to retain the fluid in the sac, or replace it by irrigation during the separation of the cord, etc., from the skin. If I understand correctly, Mr. Robson advocates that in cases where this separation is difficult, a portion of the skin should be left attached to the cord and placed with it in the spinal canal. This to me seems an objectional proceeding, if it can possibly be avoided, as I think covering up such epidermic structures is likely to give rise to after-trouble, such as the growth of hair or the formation of sebaceous tumours. (4) The insertion of the sponge to prevent leakage from the canal during operation. (5) The liberating lateral incisions I have used enable the aponeurotic coverings to be glided into a position of complete approximation over the canal, and to be retained there by sutures without the tension which would otherwise exist. (6) The operation I have described is applicable to cases of meningo-myelocele—by far the most common form met with in practice, and which has usually been regarded as a form on which it was unjustifiable to operate. (7) I think the use of a small drainage tube for a few days between the dura mater and aponeurotic covering is advisable in case leakage of cerebro-spinal fluid occurred.

All authorities lay down that the existence of paralysis below the tumour is a contraindication to any form of operation. With this I cannot altogether agree, though I must admit it is a very unfavourable condition, because in the first case I operated on, the infant was never observed to move the lower limb previous to operation; they were moved freely the day after and for several days subsequently, until the inflammatory symptoms set in. Again, in the case I have related, the improvement in the condition of the vesical centre was a very marked feature. And I am not without hope that in at least some cases the paralysis may not necessarily be of a permanent nature, but the result of the pressure of the fluid in the sac. I think the existence of paralysis would be an

indication for earlier interference if operation were entertained at all, or for a preliminary treatment by tapping or acupuncture.

It is not my desire by any means to advocate the general adoption of an operation such as I have described, but I am satisfied that when it can be successfully carried out the results will be far beyond those obtainable by the usual methods.

It is right for me to state here that I had not the advantage of reading the report of Mr. Mayo Robson's cases when I undertook my operation.

In conclusion, I trust that the case I have had the honour of bringing before you may awaken a useful discussion and encourage others to attempt to achieve even more brilliant results.

REMARKS ON COXA VARA.

By E. MUIRHEAD LITTLE, F.R.C.S.Eng.,
Surgeon to the National Orthopædic Hospital, London.

SINCE Ernst Müller[1] of Tübingen published a paper in 1889 on A New Disease, to which he gave the title of coxa vara, this deformity has attracted but little attention in this country, but in Germany a great deal has been written about it and a large number of cases have been recorded. In France also the subject has attracted a good deal of attention.

Müller describes these cases as occurring in young people from 14 to 18 years old, without special cause, or nominally as the result of injury, pain, lameness, and fatigue without due cause being the symptoms principally complained of. On examination the trochanter major is found to be situated 2 to 5 cm. or more above Nélaton's line, and the affected limb is shortened to a corresponding extent. There is no swelling, but later on wasting of the muscles occurs. The limb is rotated out and adducted, the hip is extended or slightly flexed. Movements except in the direction of abduction and rotation are free, but these latter are distinctly limited. There is no dislocation, no loosening in the epiphysial line, and the trochanter moves in its normal arc.

Such briefly is Müller's description of the deformity. Later observers have described more severe cases, in which the displacement of the trochanter above Nélaton's line has amounted to as much as 9 cm. (3½ inches), and abduction and rotation inwards impossible. Some cases have been recorded in which there was abduction of the limb.

Following on Müller's paper C. Lauenstein[2] described the deformities found *post mortem* in a very rickety child of 6. The neck of the femur formed a little less than a right angle with the shaft, instead of the normal one of about 125°. The deformity was unnoticed in life.

Lauenstein considered this case as the early stage of the deformity described by Müller as coxa vara, and appealed for observations to England, where rickets is so common.

Lauenstein's case, and those of Müller, are representative of the two broad classes into which cases of coxa vara may be grouped. The symptoms and pathological appearances are very different in these two classes. In the first I would place those cases occurring together with the usual symptoms of general rickets in children, such as curvatures of the long bones and deformities of the chest and head, and enlargement of epiphyses. It has, I think, long been known in this country that in rickety children the angle between the neck and shaft of the femur may be diminished, so that the tip of the great trochanter comes to lie above Nélaton's line, and the numerous specimens in our museums have familiarised us with the appearance of the affected bones. The angle between the head and neck of the femur may be reduced to a right one, and marked curvatures of the shaft generally exist; but even in the most severe cases, in which the extreme results of rickets are seen in other parts of the skeleton, the form of the head and neck of the femur is not very much altered, at any rate nothing at all approaching the deformity described in adolescent coxa vara is to be found. Time and opportunity have failed me in an attempt to examine all the specimens of rachitic thighbones in the London museums; but I have been able to examine all those in the Royal College of Surgeons and some other museums, amounting to 29 specimens in all; 20 of these were pairs, so that portions of 19 skeletons were examined.

I have not found it possible to measure the angle with strict accuracy, owing to the difficulty of defining the axis of the neck, but an estimate very near the truth is easily made with a goniometer. Of these 29 bones, in none were the neck and shaft at less than a right angle; in 4 the angle was 90°, in 7 95°, in 3 100°, in 5 105°, in three 110°, in 3 115°, in 1 120°, and in 1 130°. This last is an adult specimen in the Royal College of Surgeons Museum, in which there is great deformity of the shaft and lower end and fungoid outgrowth of bone in front and behind the condyles. In another specimen (No. 482 in the museum of the Middlesex Hospital) of spine, pelvis, and femora of an adult, the femora cross one another at their lower thirds as the preparation hangs, but without any noticeable adduction of the bones at the upper end. The crossing is due to an outward convex curve of the uppermost fourth of each bone.

In some of these specimens the deformities of the long bones, pelvis, ribs, skull, etc., were extreme, yet there was not a proportionate deformity of the head and neck of the femur; certainly nothing approaching to the condition found in adolescent coxa vera. Indeed, the manner in which the head and neck of the femur escape in these cases while the remainder of the bone is much distorted is very striking.

Many of these nineteen cases were adult, and most of them were of an age to walk, and it may fairly be presumed that some at least assumed the erect position and walked during the active stage of the disease, while the bones were soft and yielding, yet only in a few cases was the angle reduced to 90°, and, as before mentioned in some otherwise severe cases, it was little reduced. These deformities seem to represent the effect of muscular action as much or more than that of gravity.

In the second class are included those occurring (like Müller's and Kocher's, for instance) in adolescents, usually without evident bone disease in other parts of the body. In well-marked cases, not only is the head of the femur depressed and the angle between neck and shaft reduced to an acute one, but the neck is also much bent in a horizontal plane, usually convex forwards, occasionally backwards. The head and neck are so distorted as to be scarcely recognisable.

An inspection of the published representations of some of the specimens, suggests that the bone has been in an almost plastic condition, and that under the weight of the body and the strain of muscular action it has become twisted and stretched in some parts, and squeezed up and thickened in others, as though it had been altogether wanting in rigidity.

The cause of the first class of cases is clearly rickets. As to the second class, Müller assigned late rickets as a cause, although he confessed that the bone showed no alteration in structure or composition which could be taken to prove the existence of that disease, but he says that such alterations may be entirely transitory, and although rickets cannot be directly proved to be the cause, it seems to be the most plausible explanation, and not in contradiction of any known fact. Kocher, who described the deformity as an occupation disease, and found it among workers in cheese factories, while admitting that late rickets may be the cause, yet lays stress on the possibility of osteomalacia being the condition that originated the deformity. Both these authors cite the analogy of genu valgum adolescentium which Mikulicz attributed to late rickets.

It seems probable that any disease that causes softening of the neck of the femur may result in coxa vara; and it is therefore not surprising that a variety of symptoms are described, and that the deformity may be caused by rickets, osteitis, various forms of arthritis and osteomalacia.

None of the symptoms of the deformity are pathognomonic, but any or all of them may exist in other conditions, and it is therefore not surprising that mistakes in diagnosis are common even now that attention has been so much drawn to the subject.

In both Müller's and Kocher's first cases the actual nature of the deformity was not suspected until the head and neck of the bone were resected, while Lauenstein's specimens were obtained in the course of a necropsy performed with other objects in view.

Cases which have presented the symptoms of arthritis have

been diagnosed as such, yet proved by operation to be cases of coxa vara; while, on the other hand, cases have been diagnosed as coxa vara and found to be arthritis. Congenital dislocation of the hip and coxa vara may be mistaken for one another, especially cases occurring in children. The photographs shown are those of cases in point.

Dr. Royal Whitman[3] has demonstrated that greenstick fracture of the thighbone occurs in children, and may cause bending of the neck, and consequently some of the symptoms of coxa vara. Dr. Emmanuel Charpentier[4] has shown that bending also occurs in tuberculous arthritis. This author has published a most instructive paper on coxa vara, to which I am indebted for much information.

Roentgen's rays are an indispensable means of diagnosis, and their use has often confuted an erroneous diagnosis, and should never be neglected. Thus Kirmisson[5] published a skiagraph of a case of supposed coxa vara in a child which proved the condition to be due entirely to rachitic curves in the upper part of the femurs. Hofmeister also found by the same means that his diagnosis of coxa vara was erroneous in four out of seven cases which proved to be cases of coxalgia. It is surely a most remarkable fact that while in Germany over forty cases have been recorded within ten years, as yet no cases of coxa vara in adolescents or adults, as far as I am aware, have been published in this country as such, and very few cases in children are recorded; but leaving on one side those cases of rickets where the trochanter is slightly above Nélaton's line, but in which there are no other marked symptoms, I have provisionally diagnosed coxa vara in three cases. In two of these, skiagraphs have proved them to be dislocations; in the third case I have as yet been unable to obtain a skiagraph, but I have grave misgivings as to the correctness of my diagnosis, which, however, was confirmed by a colleague of very considerable special as well as general experience.* Another surgeon of equal experience confirmed my diagnosis in the case of M. J., of which this is a skiagraph, which plainly shows that the case is one of dislocation of both hips. The acetabula are indicated by the lighter space in the photographic print caused by the Y-shaped cartilage.

The following are brief notes of the case:



Case of M. J., diagnosed as coxa vara; dislocation of both hips.

M. J., aged 8 years. Walked at 12 months. The parents noticed a waddling in her gait when she was 2 years old. The child is small and rachitic. She walks with the knees wide apart. When extended, the knees cannot be brought together—genu extrorsum. The right trochanter major is half an inch above Nélaton's line. The left trochanter major is about half an inch below the line. The right limb measures from anterior superior spine of the ilium to internal malleolus 20¾ inches, the left measures 21½ inches. There is no telescopic movement. Seen in consultation, and coxa vara diagnosed. Genu extrorsum treated by splints.

I also for purposes of comparison show a skiagraph of a case of dislocation of one hip, the other being normal. It has been stated in books and elsewhere that a great difference between dislocation of the hip and coxa vara, and perhaps some other conditions lies in the possibility of what is called telescopic movement in the former case which is of course absent in the latter.

By telescopic movement is meant movement in the direction of the long axis of the thigh due to the head of the bone slipping up and down on the ilium. I believe this to be a fallacious sign. It is indeed present in some cases of dislocation, but in other undoubted cases it is absent and it was certainly absent in the 3 cases to which I have referred. In fat well-developed children it is also very difficult or impossible to make out the head of the bone as it lies on the ilium. It is well known that in congenital dislocation the head of the bone is generally ill developed and this increases the difficulty.

I shall venture to sum up as follows:

1. Coxa vara in adolescents may be produced by the action of gravity on bones softened by any disease.
2. In children it is due when present to rickets.
3. Some cases of apparent coxa vara are cases of curvature of the upper part of the diaphysis of the femur.
4. Others are cases of dislocation of the hip.
5. Others of greenstick fracture of the cervix femoris.
6. Roentgen's rays afford the surest means of diagnosis that we at present possess and should always be employed.
7. Subtrochanteric osteotomy is the best treatment to adopt in true coxa vara or in curvature of the shaft simulating this condition. If however the case be seen before the bones have hardened weight extension should be used.

In conclusion, while apologising for the want of cases of true coxa vara, I would appeal to others to record their experiences on this subject.

References.

[1] *Beitrage z. klinische Chirurgie*, Bd. iv, 1889. [2] *Langenbeck's Archiv*, vol. xl. p. 244. 1890. [3] *Annals of Surgery*, vol. xxv, p. 673. [4] *Revue d'Orthopédie*, Paris, May and July, 1898. [5] *Ibid.*, 1897.

Discussion.

Mr. Noble Smith (London) referred to a skiagraph which he had exhibited in the Pathological Museum of a case of coxa vara. It was in a girl, aged 13, who had been seen by many Continental surgeons, all of whom had mistaken it for a case of congenital dislocation of the hips. The symptoms certainly simulated the latter condition. There was the displacement of the trochanters upwards, the lordosis, and the waddling gait, but there was less mobility (in a telescopic sense) of the hip-joint. A skiagraph disclosed the nature of the case. As to treatment, Mr. Noble Smith had divided the adductors, which were much contracted, and he proposed to operate upon the femur close up to the neck and abduct the limbs, and obtain union in that position. Such operation would restore the conformity of the bones.

THE PATHOLOGY AND TREATMENT OF GENU VALGUM.

By Charles A. Morton, F.R.C.S.,

Professor of Surgery in University College, Bristol, and Surgeon to the Bristol General Hospital.

I published a paper in the British Medical Journal a short time ago in which I described the changes in the form of the bones in genu valgum, and suggested that osteotomy of the leg bones should be performed in cases in which operation was necessary rather than supracondyloid osteotomy of the femur. In this paper I stated that in six consecutive cases skiagraphs had shown that there was no curve in the lower end of the femur, and no elongation of the internal condyle, but that in every one of the six cases the abnormal condition consisted in curvature of the tibia outwards, just below the head and in a general curve of the fibula in the same direction. I have now had these lantern slides prepared from eleven consecutive cases, and they all show that the essential condition in the production of genu valgum is a curve outwards in the bones of the leg, and in only one of them is there a slight curve outwards in the lower end of the femur, and in no case is the genu valgum caused by elongation of the internal condyle. In one case the curve in the tibia is in an uncommon position—the lower half of the bone. I have found since I published the paper to which I have referred, that in some cases it is unnecessary to divide the fibula at all in order to correct the deformity, for the division of the

* This case has since proved to be one of dislocation, October, 1898.

tibia alone will suffice. In a very marked case, in which as much as nine inches intervened between the internal malleoli when the bones were together, it was necessary to remove a wedge from the upper end of the tibia, and to divide the fibula in the lower third, and fracture it also higher up, before the position of the limb could be rectified. The result (as shown by the lantern slides) of operating on the leg bones rather than on the lower end of the femur—a method which I advocate for all cases of genu valgum requiring osteotomy—will, I think, be considered satisfactory.

OPERATIVE REDUCTION OF CONGENITAL DISLOCATION OF THE HIP.

By E. DOYEN, M.D.,
Paris.

THE new method of reducing congenital dislocation of the hip by operation, which I now have the honour of describing, gives good results up to the age of 18 to 20 years. The operative technique requires the use of special instruments, and may be described in the following steps:

1. The liberation of the head of the femur.
2. Reconstruction of the cotyloid cavity.
3. Reduction of the head of the femur.
4. Closure of the wound and application of fixed apparatus.

1. The head of the femur may be freed in a few minutes by means of a curved incision along the inner border of the tensor fasciæ femoris, extending outwards and backwards below the anterior superior spine of the ilium. The pseudo-capsule is incised and resected and the head and neck of the femur freed from any connection that might interfere with the reduction.

2. The acetabulum, obliterated by new-formed osseo-cartilaginous tissue, is recognised with the index finger, and to its centre and in the required direction I apply my circular chisel with cutting, curved teeth, and bore a hemispherical cavity. As the tube turns it works its way into the spongy bone, gradually cutting away the latter in thin shavings. The shavings of bone pile themselves up in the interior of the tube. The completion of the formation of the acetabulum is recognised by the resistance of the hard inner surface of the iliac bone. The instrument leaves no osseous *débris* in the wound, and by turning the tube round in the opposite way, the cotyloid cavity may be smoothed and polished.

3. In young children the reduction is effected without much effort. In youths, on the contrary, the strongest efforts may be ineffective. In such a case I place the child on a perforated plane, with the pelvis fixed laterally by four to six wooden bolts. The pubes lies against a vertical stem, which is placed between the child's legs, and which turns on its own axis. Above this stem a transverse metallic arm fits into a cylindrical opening fitted with a lateral cotter. This arm moves from right to left without being able to turn upon its own axis. Above it there fits into an antero-posterior opening an adjusting screw fitted behind with a bolt, and in front with a vertical opening in which a cylindrical stem ends in the form of a spoon. This spoon is attached to the head of the femur or the great trochanter, and the axis of the instrument, which has its leverage from the pubes, is turned to such an extent that the head is turned directly towards the new cotyloid cavity. The latter is drawn down by turning the screw. As soon as the head reaches the level of the cotyloid cavity, a slight rotation inwards of the spoon turns it at once into the hollow that has been made.

4. The wound is stitched and drained. We have now to apply the dressing and the plaster apparatus. To facilitate this step I have had a special support made formed by two steel stems which fit into the four oval openings in this metallic rectangle in such a way that the acute angle they make together may be considerably modified. These stems are joined at each end by a transverse bar fitted with pressure screws. At the lower end, towards the child's feet, are two supports. The apparatus is arranged according to the child's height and the amount of abduction it is desired to produce. The screws are tightened, and the apparatus becomes really a metal couch or table of great solidity. The child is placed on this couch in such a way that the ends alone of the stems rest on one side on the operating table, and on some mechanical support upon the other. The plaster bandage is then applied with ease and freedom, and without any danger of displacing the head of the femur. When the plaster has hardened the two terminal bars are removed, and then in succession the two stems, etc., behind the metallic rectangular frame.

This simple apparatus is of great value whenever it is required to apply a plaster jacket round the trunk or the limbs. With a little modification it may also be used in the forcible straightening of the spine.

[Dr. Doyen gave a demonstration on the use of his instruments and apparatus.]

Mr. NOBLE SMITH thought that Dr. Doyen's apparatus for dealing with congenital dislocation of the hips was very ingenious, but as regarded the operation of making a new socket for the femur he was not yet convinced that it was an operation to be followed. He described the advantages of preventing lordosis and of dividing the adductors and tensor vaginæ femoris, of prolonged extension, and other operative methods, and described a case of single dislocation where there had been 2¼ inches shortening, in which, three years after treatment had ceased, the patient was found to have retained the advantages of the treatment, there being only ¼ inch shortening, and no difficulty whatever in locomotion.

ON EXCISION OF THE GASSERIAN GANGLION FOR TRIGEMINAL NEURALGIA.

By J. HUTCHINSON, Jun., F.R.C.S.,
Surgeon to the London Hospital.

THE patient in the first case I operated on was a temperate man, with nothing in his previous history to account in any way for the neuralgia. The onset of this was in 1882, when he was 42 years of age. The pain was felt along the lower jaw on the left side, and for a long time the attacks were short in comparison with the intervals of freedom from the pain; in fact, up to 1884 these intervals would amount to two to three months, but still the neuralgia was so severe that he sought treatment for it at the hospitals, and commenced to undergo a series of operative measures.

1. The teeth were removed from the left side of the lower jaw without any benefit.

2. He was under treatment in University College Hospital for six weeks.

3. He went into St. Thomas's Hospital in 1884 at the end of the year, when Mr. Pitts stretched the inferior dental nerve. This was followed by marked relief for sixteen months, but in May, 1886, the pain returned as badly as ever.

4. He was then again in St. Thomas's Hospital several times, and had the nerve repeatedly stretched, on one occasion it is said twice in forty-eight hours. The pain still continuing he went to Charing Cross Hospital, where neurectomy was done from inside the mouth.

5. The pain only left him for a month, and subsequently spread to the region of the superior maxillary nerve, and ultimately to the back of the head; its severity increased and the intervals became shorter, and after eight years' endurance of the suffering he sought further relief from operation.

6. In March, 1895, Mr. Treves removed Meckel's ganglion and the infraorbital nerve by opening up and following the roof of the antrum of Highmore. He was then relatively free from pain for four months, but in the autumn of 1895 he was compelled to take morphine in considerable doses to get any relief. From January, 1896, to September of the next year he was a complete wreck from attacks of pain and spasm, and to a lesser extent from the narcotic and sedative drugs that were given to him.

7. On October 1st, 1897, the final operation, removal of the Gasserian ganglion, was performed. Before alluding to this operation, we must note some further details as to the neuralgia. The spasms of pain were accompanied by convulsive movements of the depressors of the lower jaw, and of the facial muscles on the left side. These attacks of spasmodic pain ultimately came on with great regularity, the intervals being sometimes only half a minute or a minute.

Although he thought the pain worse in damp weather, no

other condition could be noticed to have any effect in producing or intensifying the pain; for instance, neither taking alcohol, nor smoking, neither exposure to the heat of a fire nor to the cold of a dry frost had any special effect. The attacks of pain came on as often when he was resting in bed as when he was up, but they completely incapacitated him from work. His memory for all recent events was very defective, and, of course, from pain and sleeplessness he became in a miserably depressed condition. He was for some time of marked suicidal tendency.



Fig. 1.—From photograph taken during a severe and typical attack of trigeminal neuralgia. The left fifth nerve was concerned, but it will be noticed there is convulsive spasm of the facial muscles on the right side as well as of the depressors of the lower jaw. The temporal artery becomes prominent during an attack. The expression of agony is fairly well conveyed in the reproduction.

The onset of each attack was most sudden; his head would be turned to the left, his mouth widely opened, and his left hand pressed to the cheek in a vain effort to get some relief to the pain. There was no true superficial tenderness, and the only patch of anæsthesia extended from just below the V-shaped scar on the front of the cheek, made in the removal of Meckel's ganglion, down to the red margin of the upper lip. Inside the mouth the pain was felt as badly as ever along the lower jaw, in spite of the repeated operations on the inferior dental nerve, and the left lower lip and the left side of the tongue (except at the top) were involved. It is unnecessary to say that all the known sedatives had been tried, but, with the exception of morphine, none were of any material use, and the large doses of this drug required caused delusions, and much depressed him. For some time the advisability of removing the Gasserian ganglion had been discussed, but, owing to the man's weak condition, and the belief that considerable risk to life was attached to the operation, it had been deferred.

In October, 1897, on the strong advice of my friend and colleague, Dr. Henry Head, I performed the operation of excision of the ganglion after the method of Hartley and Krause.

A flap being turned down from the temporal fossa, with its base at the zygoma, and the temporal vessels being secured, the greater part of the squamous portion of the bone was removed by trephine and cutting forceps, without injuring the dura mater or the branches of the middle meningeal artery.

The temporo-sphenoidal lobe with the dura mater was then gradually lifted up from the middle fossa, until the foramen spinosum was reached. The only difficulty so far had been venous oozing from numerous minute vessels in dura mater and bone. An aneurysm needle was passed round the middle meningeal artery, and considerable trouble was experienced in effecting the double ligature and division of this vessel, owing to the depth of the foramen spinosum from the surface (a little over 2 inches). The venous oozing was so troublesome that it was considered impossible to expose the ganglion on that day, and the second part of the operation was therefore deferred for a week. It may be noted that Professor Krause strongly recommends that the operation should be carried out with the patient sitting upright, although the administration of the anæsthetic may be more difficult and somewhat more risky with the patient in this position: the advantage of overcoming venous oozing can hardly be reckoned too highly, since it is absolutely necessary that the ganglion should be clearly seen in order to effect its removal. On the second occasion the flap of skin and muscle, which had been sewn in place, was readily detached from the dura mater, and after again raising the temporo-sphenoidal lobe with a specially-designed broad retractor, the foramina ovale and rotundum were exposed, and the superior and inferior maxillary division of the fifth nerve completely divided. Prior to this the dura covering over the Gasserian ganglion was lifted up from it until the upper border of the ganglion and the trunk nerve were reached.

The ganglion was removed in one piece. It was thought at the time that the ophthalmic division, which is of course much the smallest of the three, had been divided and removed with the ganglion, but the result showed that this could not have been the case, since the patient retained sensation in the supraorbital and nasal nerves. However, the escape of the ophthalmic nerve, which was due to one's anxiety not to injure the cavernous sinus or the oculo-motor nerves (an accident which has occurred in some of the recorded cases) had no bad effect upon the after-result. From the date of the operation up till now (a period of thirteen months) the patient has had no return of pain. He has got back to constant work, having been incapacitated for some years. Occasionally there is slight twitching of some of the left facial muscles, but this is painless and is hardly an inconvenience. The anæsthesia in the distribution of the superior and inferior maxillary nerves only gives him trouble when particles of food get down between the tongue and the jaw, or the jaw and the cheek. It is of interest to note that the sense of taste as regards quinine, salt, etc., is lost on the left side of the tongue (dorsum), as also that of sensation to heat and cold and tactile impressions. It is needless to say that his left temporal, masseter, and pterygoid muscles are paralysed and have become atrophic, but he seems to be singularly little inconvenienced by this, and never complains of any difficulty in mastication. It may be noted that he had, like so many of the cases of trigeminal neuralgia, lost the teeth on the affected side long prior to the operation. The aperture in the bone forming the temporal fossa has been almost entirely closed up, so that pulsation cannot be felt and the scar has to be sought for.

The foregoing account has been largely based on Dr. Head's admirable notes of the case.

Microscopic examination of the ganglion and the nerve trunks leading from it did not reveal any marked abnormality in the ganglion cells or the nerve fibres, but there appeared to be great overgrowth of fibrous tissue throughout the ganglion, the arterioles in the latter, though imbedded in this dense fibrous tissue, presented no signs of disease of their walls.

Intracranial resection of the fifth nerve has already an extensive literature; probably the best accounts are to be found in Professor Krause's monograph on the subject and M. Chipault's work on the *Operative Surgery of the Nervous System*. At the end of the latter will be found details of 50 cases.

The writings of Professor Rose and Mr. Victor Horsley on the subject are well known. Mr. Horsley, who has had the largest experience in this country of the intracranial removal of the ganglion, has kindly provided me with some valuable conclusions drawn from his observations on the 10 cases which he has up to the present treated. It will be understood that these 10 cases were operated on by the extradural (Krause-Hartley) method and not by that at first described and performed by Mr. Horsley, involving free division of the dura mater and lifting up of the exposed temporo-sphenoidal lobe. This latter method, which is still referred to as Horsley's, was followed by a fatal result in the 1 case recorded and is adapted for division of the trunk rather than removal of the ganglion, and whilst serving as a pioneer to the present method is very unlikely to be again performed in its place. There are at present practically only two methods of approaching the ganglion, one from below, that is through the base of the skull, after resec-

tion of the zygoma and some part of the lower jaw (Kocher, Rose, etc.) which may be termed the pterygoid route; the other from the outer side through the temporal fossa by raising the dura mater from the middle fossa (the temporal route). Between these two methods the time has surely come for a definite decision to be made.

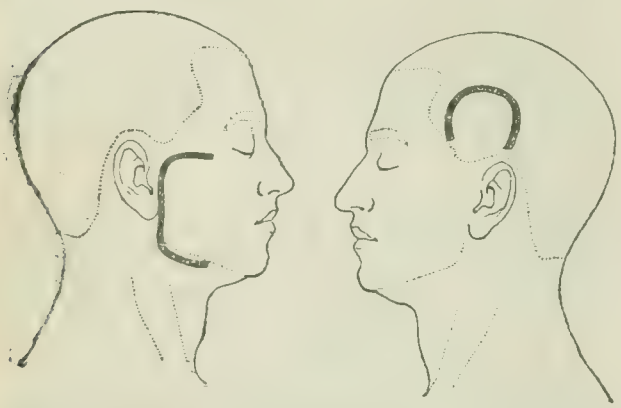


Fig. 2.—Diagram showing the two incisions used in approaching the Gasserian ganglion. The upper dotted line marks the edge of the hairy scalp. It will be seen that the incision for the pterygoid operation lies wholly on the side of the face (left hand figure), whilst that for the temporal operation is not only shorter, but will be concealed by the scalp.

The temporal route possesses the following amongst other advantages:

1. A short skin incision and comparatively small division of muscles; the cicatrix will probably be so hidden by the scalp as to be found with difficulty (see Fig. 2). Beyond some slight flattening from wasting of the temporal and masseter muscles there is no disfigurement whatever resulting in the face.

2. The ganglion can be clearly exposed with but slight risk of opening the subarachnoid space.

3. The only part of the skull divided is the squamous portion of the temporal bone.

4. There is no risk whatever of making the wound communicate with the Eustachian tube and pharynx.

On the other hand, against the first method may be urged the following considerations:

1. A wound involving the whole side of the face, and necessarily leaving a disfiguring scar.

2. Division of the zygoma, with the chance of its necrosis and loss of the coronoid process.

3. Severe bleeding from the pterygoid plexus of veins and perhaps from the internal maxillary artery.

4. Difficulty in finding the foramen ovale—the sphenomaxillary fissure was mistaken for it in Rose's third case—which may be completely hidden by a ridge of bone on the side of the sphenoid bone (the pterygo-spinous ridge).

5. The trephine may readily open the Eustachian tube, and thus render septic infection from the pharynx more likely to occur. In 2 out of 6 of Rose's cases this happened, and in 1 the patient died of septic meningitis.

6. The dura mater may readily be opened—in view of No. 5 a serious complication. The internal carotid artery is also in danger.

7. The ganglion cannot possibly be clearly exposed and removed by this method, and in many cases fragments only have been got away by the unsurgical procedure of scraping the nerve with a scoop.

"Necrosis of the zygoma has followed in some cases,"[1] and for this reason it would seem inadvisable to add to the temporal method a modification proposed by MM. Quenu and Hartmann—namely, division of the zygoma at both ends and removal of the greater wing of the sphenoid, as far inwards as the foramen ovale. This very extensive removal of the whole floor of the middle fossa seems to offer no compensating advantage.

After cutting through the squamous portion as low as the floor of the fossa—that is, the upper border of the zygoma—the surgeon may perhaps encroach a little upon the actual base of the skull, but it is quite unnecessary to give a separate name to such a slight modification.

Needless complexity has been introduced by attaching a long string of surgeons' names to trifling varieties of skin incisions or division of additional portion of bone. Having indicated our belief that the subdural method through the temporal fossa is the only satisfactory way of removing the Gasserian ganglion, some special points of that method deserve notice. It is undoubtedly a difficult and long operation, the difficulty depending on the depth of the ganglion from the surface (at least 2 inches), the venous oozing, and the degree of firmness of adhesion between the ganglion and the dura mater forming the so-called cavum Meckelii. Mr. Horsley tells me that in his last case the adhesions were so firm, that over an hour and a half were occupied in the operation. The venous oozing was the main obstacle in my first case as in so many others, and demands skilled assistance to check it. Krause strongly advocates the sitting posture of the patient, but there are obvious drawbacks to this from the point of view of the anæsthetist, etc. In a second case I lately operated on the patient's head was kept in a more upright position, and the venous hæmorrhage was less troublesome. The case so far has been a complete success, but is of too recent date to justify further notice. The exact shape of the skin incision is a matter of little importance, a flap having the form of an omega, with its base of about 1 inch extending from above the condyle of the jaw forwards, along the zygoma, and its apex 1½ inch about this process will suffice. Should the bone be then chiselled and broken through, so that it can be replaced with the flap of soft tissues, or is it better to trephine and enlarge the opening with bone-cutting forceps? If all goes well, the gap left by the latter method is filled up quite satisfactorily in a few months, and it probably matters little which method is employed, except that to turn down a flap of bone is a difficult procedure, and may cause trouble from tearing branches of the middle meningeal.

How should the surgeon deal with the latter artery? Krause and others have regarded its ligature as absolutely necessary and as forming a distinct stage in the operation. It is far from easy to pass a double ligature round the meningeal just after its emergence from the foramen spinosum, since it immediately enters the dura mater. Hence the trunk of the vessel cannot be well seen, and if two ligatures are passed round it, and the artery divided between them, one of the ligatures is extremely apt to slip off. Mr. Horsley finds that it is quite possible to excise the ganglion without dividing the meningeal artery, and this is a real advance in the technique of the operation. Should, however, it be accidentally wounded and cause troublesome arterial bleeding, the best plan would be to plug the foramen spinosum with a little wedge of bone. As regards the removal of the ganglion itself there must be no random cutting, the superior and inferior maxillary division must be thoroughly exposed and divided just above the foramina rotundum and ovale, then the root trunk must be made out and severed. Drawing the ganglion outwards then will enable the surgeon to deal with the ophthalmic branch without damage to the cavernous sinus, the carotid, or the oculo-motor nerves. It is of interest to note that in several of the recorded cases the ophthalmic branch, as in my first case, escaped division, yet complete relief to the neuralgia has followed in every one, and of course the nutrition of the eye had not then been endangered. It seems quite impossible to avoid dividing the motor root of the ganglion, and hence the masticatory muscles on that side must atrophy. The resulting inconvenience is less than would be expected.

What is the prognosis or hope of a permanent cure after excision of the Gasserian ganglion? Seeing the disappointing results of neurectomy, removal of Meckel's ganglion, and other operations on branches of the fifth nerve, it is easy to suggest that merely temporary relief will be afforded by the major operation. But at present the testimony is unanimous that where the Gasserian ganglion has been efficiently dealt with the neuralgia does not return. Krause has one case operated on five years ago, Horsley one over four years, both free from any recurrence.

It is obvious that this question largely depends on the site

[1] Rose, *Surgical Treatment of Neuralgia*, p. 65

of the pathological change which leads to the neuralgia. If the cause is in the Gasserian ganglion it is useless to operate on its distal branches. Evidence is at present doubtful on this matter. That the ganglion cells appear to be normal is borne out by the present case as in those of Mr. Horsley's that have been examined. Arterio-sclerosis and overgrowth of fibrous tissue which apparently compresses the nerve fibres have been frequently found, and the latter change was present in the case now brought forward. It is of interest to note that in R. W. Smith's monograph on Neuroma (New Sydenham Society) an illustration will be found showing a large fibrous tumour growing in the Gasserian ganglion and associated during life with severe trigeminal neuralgia.

The chief object of this paper has been to urge that the temporal (Krause-Hartley) method of excision of the Gasserian ganglion is the most surgical and by far the best, and that whilst it is admittedly one of the most difficult of operations, it holds out a promise of complete relief to those miserable victims of trigeminal neuralgia, a relief purchased at no great risk and with no resulting deformity. When once this is generally recognised cases will be operated on before their mental and moral nature are debased by years of suffering, by chronic poisoning from narcotic and other drugs, and by the distress caused by the repeated failure of operations on the distal branches of the fifth nerve.

It may with some confidence be predicted that in future intractable cases of trigeminal neuralgia will be submitted to the operation of excision of the Gasserian ganglion at an earlier period of their disease than at present, and before their suffering and the remedies used have completely wrecked their health, and that the operation in competent hands will come to be recognised as one of the most successful in surgery.

Secondly, all the various methods of attacking the ganglion through the base of the skull (the so-called pterygoid route) will be abandoned, on account of their risk and inadequacy, in favour of the temporal method.

Thirdly, ligature of the carotid artery will no longer be regarded as a justifiable operation for trigeminal neuralgia, and most of the operations for removing extracranial segments of the fifth nerve (such as Meckel's ganglion) will also be given up in favour of the more radical measure which deals with the trunk ganglion.

Fourthly, it will be found that removal of the Gasserian ganglion is but rarely followed by serious damage to the eye on that side, provided that irritating antiseptics are not used to the conjunctiva and cornea.

Discussion.

Mr. Mayo Robson (Leeds) congratulated Mr. Hutchinson on so clearly demonstrating the advantage of the temporal route in attacking the Gasserian ganglion. He had himself attempted to remove the ganglion on three occasions by the pterygoid route, and had on every occasion felt the operation to be incomplete and unsatisfactory, so that he had come to the conclusion not to attempt it again by that method. In two cases, by means of strong traction on the inferior division of the fifth nerve close to the foramen ovale, Mr. Robson had produced an effect on the Gasserian ganglion which he thought had not been mentioned previously—that is, complete paralysis of all three divisions of the nerve, so that anæsthesia of the corresponding side of the face was complete, and in these cases the relief to the neuralgia, for which the operation had been undertaken, had been satisfactory and long continued.

CASES OF TRAUMATIC MUSCULO-SPIRAL PARALYSIS, WITH RESTORATION OF FUNCTION AFTER SECONDARY OPERATION.

By Robert Kennedy, M.A., B.Sc., M.D.,
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The musculo-spiral nerve from its close proximity to the bone is one which is peculiarly liable to injury, and its laceration is therefore a not infrequent complication in fractures of the shaft of the humerus. This being the commonest cause of injury to the nerve, it is less surprising that the nerve injury is frequently overlooked at the time of the accident, and the fractured limb once having been set satisfactorily in splints, the signs of the injury to the nerve are not noticed till the fracture is united and the splints removed, when the results of the injury to the nerve soon become matter for consideration. Thus it is that an opportunity is not often afforded of treating division of this nerve by primary suture, but that the cases are usually seen some considerable time after the accident, when the results of division of the nerve are well marked, and the treatment of the damaged nerve calls for a secondary operation.

The following are 4 cases in which I have operated during the last eighteen months:

Case I.—W. B., aged 48, a ship plater, was admitted to the Western Infirmary Dispensary on March 11th, 1897. Eleven weeks previously he was run over by a cab, the wheel passing over his right arm. He sustained a comminuted fracture at the middle of the humerus. After removal of the splints at the end of five weeks he had no power to extend the hand at the wrist and the condition underwent no improvement. When first seen there was wrist-drop and loss of voluntary supination, and the extensor muscles in the forearm and the supinator longus were atrophied. The fingers could be feebly extended at the phalangeal articulations, while there was no power to extend at the metacarpo-phalangeal, and none to extend the hand at the wrist. Sensation in the hand was normal, except over the back of the thumb and forefinger and over the outer quarter of the dorsum of the hand, in which regions while sensation was present it was dulled. Thus, a pin could be thrust into this region without causing other than the slightest degree of pain, while sensation of touch was very obscure. He had pains shooting down the forearm into the thumb and forefinger, which at nights were frequently so severe as to prevent sleep. At the middle of the humerus was felt a bulky mass of callus.

He was admitted to Dr. Patterson's wards in the Western Infirmary, where on March 23rd, twelve weeks and a half from the date of accident, I exposed the musculo-spiral nerve over the seat of the old fracture. The nerve was found bound down to the seat of reunion of the fracture by firm bands of cicatricial tissue, but its continuity was not interrupted. The adhesions were divided and the nerve liberated, after which the wound was sutured.

On the following day sensation had returned perfectly in the affected parts.

On the ninth day the wound was soundly healed and the stitches were removed, and it was then found on testing the affected muscles that they gave good contractions with the galvanic current, but only feeble contractions with the faradic.

On the thirteenth day he could extend the hand at the wrist against gravity.

At the eleventh week the improvement was considerable, the patient being able to extend the hand at the wrist with some degree of power. He was still unable to undertake his usual work on account of weakness of the muscles. Sensation was still perfect and atrophy was much diminished.

From this date the patient underwent gradual improvement, and he is now back at his old work, which requires constant use of the hand, and states that he now has regained full use of the hand (Fig. 1).



Fig. 1. Case I.—Operation twelve weeks and a half after accident. Shows degree of extension at wrist fifteen months and a half after operation.

Case II.—T. S., aged 41, a railway goods guard, on January 27th, 1897, was crushed between wagons. He sustained a compound comminuted fracture at the middle of the right humerus, and was admitted to Dr. Patterson's wards in the Western Infirmary. On removal of the splints in five weeks the joints were stiff. This in time improved, but loss of power of the extensors in the forearm with wrist-drop remained. His condition three months subsequent to the accident was the following. There was wrist-drop as far as the stiffness of the wrist would allow, and there was total inability to extend the hand at the wrist, or the fingers at the metacarpo-phalangeal articulations. The forearm was greatly wasted, and was held prone, with loss of voluntary supination. Feeble extension of the fingers only at the phalangeal articulations was possible. Sensation over the dorsum of the thumb and [illegible] was dull, but slight pain was felt when the skin was deeply pricked. The same condition was found on the outer sixth of the dorsum of the hand,

and over a considerable area on the dorsal aspect of the forearm. At the middle of the humerus scars were visible, and a bulky mass of callus was to be felt (Fig. 2).

On May 14th, fully fifteen weeks subsequent to the accident, I exposed the nerve at the seat of injury. The nerve was bound down to the bone by cicatricial bands, on cutting which and liberating the nerve it was found that a length of about half an inch was represented merely by a fine thread. This portion and the ends of the nerve united by it were excised, and the ends of the nerve sutured with chromicised catgut.

On the following day the sensation in the parts was as follows. There was hyperæsthesia over the dorsal aspect of the thumb and forefinger, and sense of pain much better defined in the remaining affected parts.

On the third day the hyperæsthesia had disappeared, and there was marked improvement in sensation, and localisation was good.

On the seventeenth day the wound was found soundly healed, and the stitches were removed.

At five weeks there was evident improvement in the extensor muscles, as he could now voluntarily extend the hand at the wrist to a slight degree; and faradic irritability of the muscles, lost before the operation, had been regained.



Fig. 2. Case II.—Operation fifteen weeks after accident. Wrist-drop before operation.



Fig. 3. Case II.—Operation fifteen weeks after accident. Shows degree of extension at wrist thirteen months and a half after operation.

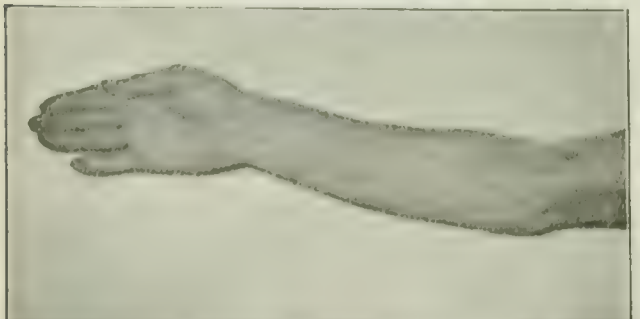


Fig. 4. Case II.—Shows degree of supination of forearm thirteen months and a half after operation.

During the next six months the condition of the muscles gradually but slowly improved, and during the six months following, the improvement more rapidly advanced, and when last seen on July 3rd, 1898, 13½ months from the date of operation, restoration of function was very complete. He had recovered power of supination, could extend the hand at the wrist

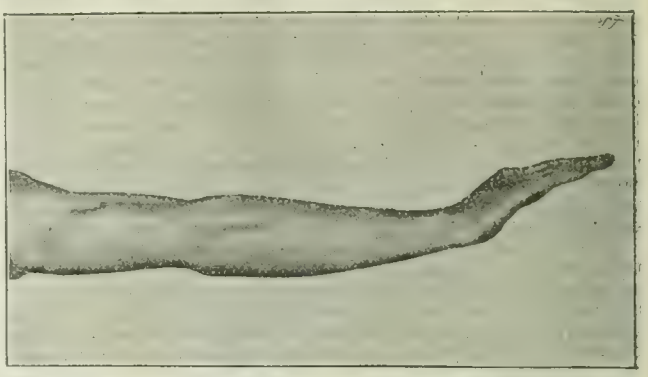


Fig. 5. Case II.—Shows degree of extension at wrist thirteen months and a half after operation.

to the same degree as on the sound side, and fully extend all the digits at the metacarpo-phalangeal joints, except the first and second digits, which could only be feebly extended at this joint. There was still some atrophy of the extensor muscles. The patient was able to use the hand in every way, but had not quite recovered his normal strength, which is accounted for by the fact that since his dismissal from hospital, he has not exercised the hand, as his duties as goods guard are considered too responsible to allow him to return to his old work with a weak hand, and he is therefore still kept at work which does not require the use of the hand. (Figs. 3, 4, and 5.)

CASE III.—J. B., aged 32, was admitted to the Western Infirmary Dispensary on December 6th, 1897. On January 15th, 1897, he was run over by a van, the wheel passing over his right arm, resulting in a fracture at the lower end of the humerus. The splints were worn for four weeks, and when removed, and time for the stiffness incidental to immobilisation had been allowed for, it was found that he had lost the power to extend at the wrist. The condition underwent no improvement, and he was therefore admitted to Dr. Patterson's wards in the Western Infirmary on December 18th, 1897. He then had marked wrist-drop and loss of voluntary supination, some power of extension of the two distal phalanges of the fingers, but none at the metacarpo-phalangeal articulations nor at the wrist. There was marked atrophy of the dorsal aspect of the forearm. Sensation in the hand was everywhere normal, and the patient stated that at no time had he perceived any loss of sensation. There was a bulky mass of callus at the lower end of the shaft of the humerus.

On December 24th, eleven months subsequent to the accident, I exposed the musculo-spiral nerve, and found it adherent to the callus for about 3 inches of its length. About three-quarters of an inch of the nerve was represented merely by a thin membranous band, the nerve having evidently been torn across at the time of the accident. This was excised, and the ends of the nerve sutured with chromicised catgut. Shortly after the operation sensation was examined and found to be the same as before the operation, that is, normal. On the twelfth day the wound was found soundly healed, and the stitches were removed. Tested by the galvanic and faradic currents, no reactions could be perceived in the extensor muscles.

The patient was last seen on June 29th, 1898, and he then had no recovery of function in the muscles of extension and supination. Wrist-drop still remained, there was no extension at the metacarpo-phalangeal articulations, and no electrical responses could be detected in the affected muscles; but his use of the hand had considerably improved, and this was brought about by the greatly-improved power of extension of the two distal phalanges of the fingers.

CASE IV.—P. M., aged 7, admitted to the Western Infirmary Dispensary on January 7th, 1898. On October 15th, 1897, the patient fell and fractured his left arm at the elbow-joint. When at the end of four weeks the splints were removed, and when the stiffness of the joints due to the fixation had passed off, it was found that he had little use of his arm, there being marked wrist-drop. It was denied that at any time he had loss of sensation in any part of the hand.

When seen for the first time at the dispensary, sensation in the hand was perfect, while there was very marked wrist-drop without any power to produce extension of the hand at the wrist. The first phalanges could not be extended, and were held semiflexed, but the two distal phalanges could be feebly extended. The forearm was held prone, and supination was voluntarily impossible.

There was no trophic alteration in the hand, but the extensor surface of the forearm and the supinator longus were markedly atrophied, the circumferential measurement 1 inch below the flexure of the elbow being 5⅞ inches, as compared with 6¾ inches in the right forearm, and at the middle of the forearm 4⅜ inches as compared with 5⅝ inches in the right forearm. At the seat of reunion of the fracture there was antero-posterior thickening at the lower end of the humerus, with undue prominence of the olecranon to the inner side, making the internal condyle less prominent than normally.

The patient was admitted to Dr. Patterson's wards, where, on January 13th, three months subsequent to the accident, I cut down on the musculo-spiral nerve at the level of the elbow-joint. The nerve was found bound down by cicatricial connective tissue, and passed in this condition to the head of the radius, at which point the nerve became slightly bulbous, and was continued as a fine strand of tissue about three-quarters of an inch in length, which connected the central with the peripheral end. This was excised, and the nerve elsewhere freed from adhesions, and the

ends brought together with a suture of chromicised catgut. The nerve was exposed freely above and below the point at which the radial nerve usually originates, without showing any trace of that nerve. Shortly after the operation the condition of sensation in the hand was examined, and it was found to be the same as before the operation—that is, normal.

On the seventh day the wound was found healed, and the stitches were removed.

On the thirteenth day the electrical reactions were ascertained. Faradic irritability of the extensor muscles was lost, but the galvanic current of 4 ma. gave sluggish contractions, and ACC=KCC. As yet there was no improvement in voluntary motion.

At twelve weeks voluntary extension of the hand at the wrist was beginning to return, but the movement could be executed only to the slightest degree.

At the seventeenth week return of voluntary motion began to develop more markedly, and at the twenty-third week, the last occasion on which the patient was seen, there was complete restoration of voluntary movements. The hand could be extended at the wrist to the same extent as the right hand, and evidently with the same degree of strength, and extension of the fingers at the metacarpo-phalangeal joints had also been completely regained. Supination was also quite restored. The atrophy of the forearm had almost entirely disappeared, as shown from the following measurements. Circumference 1 inch below flexure of elbow, right, 6⅝ inches; left, 6½ inches. Circumference at middle of forearm, right, 5⅝ inches; left, 5¼ inches (Fig. 6).



Fig. 6.—Case IV. Operation three months after accident. Recovered power of extension at wrist twenty-three weeks after operation.

Remarks.

In all the cases the nerve injury was a complication of fracture of the humerus, and in three the fracture was the result of direct violence of a kind likely to produce comminution, with considerable damage to the soft parts. It is in such cases that damage to the nerve is most frequently seen.

The nature of the injury to the nerve was not the same in all the cases. In the first case the nerve was found at the operation with its continuity intact, and the loss of conductivity was the result of pressure from firm cicatrical adhesions, and the nerve presented no evidence of having been lacerated. In the second case the nerve was similarly bound down to the bone by cicatrical bands, but in addition it had been torn across for about two-thirds of its thickness, while in the last two cases the nerve had evidently been torn across completely, as the two ends were united merely by thin bands of tissue, having no naked-eye resemblance to nerve tissue. It is not possible to decide from clinical evidence in which of these conditions a nerve, which has lost its conductivity, may be found; for the nerve, which is merely under compression if this is of sufficient degree, is as little capable of conducting impulses as the nerve which is completely severed.

Motor paralysis in all the cases was the most pronounced feature, and for the muscles affected the paralysis was complete. All presented wrist-drop, with total inability to extend the hand at the wrist, and supination was voluntarily impossible. Extension of the fingers was, however, effected to a slight and feeble degree: but this was evidently the result of the action of the interossei and lumbricales, as the extension was limited to the two distal phalanges.

The condition of sensation in the region regarded as the radial presented marked differences. In 2 of the cases at no part of the hand could the slightest difference be found in the sensitiveness to touch, pain, or thermic difference; while in the remaining 2 there was dulled sensation over the dorsum of the thumb, forefinger, and outer portion of the dorsum of the hand, the sense of touch being obscure, and the sense of pain only elicited by deeply pricking the skin, and then not sufficiently marked to induce the patient to withdraw the hand.

Anomalies in distribution of sensation are now well known, and various views have been put forward to explain them. In the two cases in which sensation remained normal, two explanations are possible. It may be supposed first that the normal radial distribution was supplied by the median or ulnar nerves or by both, and that if any nerve fibres reached this region of the skin from the musculo-spiral they were so insignificant that their division diminished the sensation inappreciably. In favour of this view is the absence of any history of loss of sensation, although the statement of the patient in this respect cannot be taken as decisive. What is more important is the fact that in the fourth case at the operation the point from which the radial nerve usually originates was freely exposed, and no trace of that nerve was to be found, and the musculo-spiral seemed to be entirely continued into the posterior interosseus. The fact also that at the operation the nerve in both of these cases was found to have been completely severed, and that after the excision of the tissue between the ends and suture, the condition of sensation as tested a few hours after was found to be unaffected, shows that it was not through the musculo-spiral that the sensory impulses were transmitted. A case in which I have recently operated supports the view of the occasional complete supply of the radial region from the median nerve. In that case there was dulled sensation in the median and radial distributions, and a history of a fracture near the wrist six months previously. I cut down on the median nerve, and liberated it from firm adhesions, but did not interfere with the radial nerve. On the following day sensation was perfect not only in the median, but also in every part of the radial distribution. These 2 cases might be explained differently by supposing that there had been loss of sensation after the nerve injury, but forgotten by the patient, and that the normal sensation found at the examination was due to supplementary sensation developed by the ingrowth into the insensitive region of fibres from neighbouring sound nerves, a view upheld by Tillmanns,[1] or that fine anastomoses with other nerves incapable normally of supplying function adequately had become developed after the accident from having to transmit the whole of the impulses from the radial distribution, a view supported by Remak.[2]

In the other two cases in which a dulled sensation was found in the radial distribution, the view may be taken that the imperfect degree of sensation was due to impulses conducted through the damaged nerve, or that it was due to the existence of fibres derived from other nerves supplying the affected region, but not in a degree to adequately conduct impulses. This view would accord with the observations of Arloing and Tripier,[3] who described a fine anastomosis in the skin of all the nerves entering the dog's paw. The cases might again be explained on the views of Tillmanns or Remak mentioned above.

The return of function observed in three of the cases conformed to the usual type of return of function after operations for nerve injuries. Sensation returned in the two cases in which it was imperfect very early, while return of motion was much later. Thus the earliest return of motion observed was at thirteen days, and in this case the continuity of the nerve had not been interrupted. In the other two cases in which return of function took place, the earliest improvement observed was at five weeks and twelve weeks respectively. At these dates the muscles were showing improvement for the first time, and further improvement was very gradual. Thus in the fourth case, after the earliest sign of returning function at twelve weeks, it was the seventeenth week before marked improvement became evident to the patient's friends, after which the advance was more rapid, until when seen at the twenty-third week the recovery was perfect.

It is this late recovery of motion which is quoted in favour

of the view of regeneration of nerves which is held by Ranvier,[4] the early return of sensation being explained as due to anastomosis or to a vicarious nerve supply. But when it is found that within a day or two after the operation on the nerve, sensation returns in a part which for months has been devoid of sensation or has been imperfectly sensitive, such return of sensation can scarcely be regarded as suddenly developed from neighbouring nerves. I have elsewhere [5] expressed the opinion that the nerve recovers its conductivity at the date of return of sensation, and that the cause of the delay in return of motion resides in the muscle itself and not in the nerve. The rapidity with which muscular tissue degenerates when deprived of its nerve supply is well known, and it cannot, therefore, be a matter of surprise that recovery of function of such partially degenerated muscles should be a long process. The recovery of the muscle, at first a slow process, becomes progressively more rapid, and when once the patient regains sufficient power to enable him to make use of the hand, the regular exercise of the muscle resulting hastens the reparative process in a marked degree.

The interval between the injury to the nerve and the operation undertaken for repair in the 3 cases which had a successful result was from twelve and a-half to fifteen weeks, while in the remaining case eleven months elapsed. In the latter case no improvement whatever resulted from the operation, although, as far as the operative procedure was concerned, the case had the same course as the others—that is, the ends of the nerve were brought into apposition, and the wound healed by first intention. The explanation is that the muscles were totally degenerated, and improvement could not, therefore, result. Sensation in this case was perfect before the operation, and, therefore, proof of return of conductivity of the nerve could not be obtained. Some improvement in the extension of the fingers, it is true, did result in this case; but this is to be regarded as substituted function from hypertrophy of the lumbricales and interossei, as extension was effected only at the phalangeal articulations, and not at the metacarpo-phalangeal nor at the wrist.

Nothing, therefore, can be of more importance in giving a prognosis than the length of interval between the accident and operation, and if this interval is within three or four months recovery may be expected, but if it extends to almost a year recovery of the muscle is unlikely; although where loss of sensation also exists, the recollection of such cases as that reported by Jessop[6]—in which recovery of sensation took place after an operation performed nine years subsequent to the accident—would lead us to expect recovery of this function at periods very remote from the time of injury.

Any case in which irritability is found in the affected muscles, although only to the continuous current, may be treated with hope of a successful issue; but I believe that for the restoration by operation of the conductivity of the nerve, the essential condition is successful asepsis. If suppuration results in the wound, the resulting cicatricial tissue, developing simultaneously with the young nerve fibres at the seat of suture of the nerve, results in compression of the nerve which prevents conductivity and leaves the condition unrelieved. This, no doubt, is the explanation of many failures, especially in experimental work in animals, in which it is not so easy to attain and maintain asepsis.

References.

[1] *Archiv f. klin. Chirurg.*, v. Langenbeck, 1882, Bd. xxvii, s. 1. [2] *Virchow-Hirsch Jahres-Bericht*, 1874, Bd. ii, s. 111. [3] *Compt. Rend. de l'Acad.*, Tome lxvii, 1868, p. 1058; tome lxviii, p. 547. [4] *Ibid.*, 1873, p. 401. [5] *Phil. Trans.*, Ser. B., vol. clxxxviii, p. 257. [6] British Medical Journal, 1871, vol. ii, p. 640.

Discussion.

Mr. Mayo Robson (Leeds) would not like it to be understood that no good could be done by operating on paralysed nerves a few months after injury, as his own experience proved absolutely that after paralysis of many months repair of nerves by grafting or by suture resulted in speedy return of sensation, and ultimately in recovery of muscular power.

Dr. Kennedy's Reply.

Dr. Kennedy, in reply, said: Although I have not met with a case of restoration of motion from nerve suture performed as long as a year after the accident, I would certainly recommend the operation of suture no matter how long is the interval since the accident; for by an operation, although motion may not be regained, yet sensation is regained, and the trophic influence of the nerve throughout its distribution also is regained.

THE SURGICAL TREATMENT OF SCIATICA.

By J. Crawford Renton, M.D., F.F.P.S.G.,

Surgeon to and Lecturer on Clinical Surgery, Western Infirmary, Glasgow; Examiner in Surgery, University of Edinburgh.

The following cases illustrate the surgical treatment of sciatica:

Case I.—W. M., aged 32, was sent to me by Dr. Douglas, with the history of severe sciatica for eight months, for which he had stretched the sciatic nerve and removed several adhesions from its surface, with partial relief to the pain. The pain continued in the ischial region and over the external popliteal nerve and in the middle of the popliteal space whenever the patient walked. I advised that the sciatic nerve be re-examined, and I promised the patient to examine also the external and internal popliteal nerves. Assisted by Dr. Douglas, I exposed the sciatic nerve below the gluteus maximus, and found it surrounded by adhesions extending upwards to the sciatic notch. Dr. Douglas drew my attention to one large one (1½ in. square), which extended from the nerve to the ischial region. These I removed. I also exposed the external and internal popliteal nerves on the inner side of the fibula and middle of the popliteal space, and removed a few adhesions from each. The patient made an excellent recovery, and is now—two years after the operation—perfectly well.

Case II.—R. W., aged 52, was sent to me by Dr. Grant, with the history that he had been suffering from sciatica which commenced after a wetting. When at rest the patient had no pain, but the least exercise induced suffering. Operation was performed and extensive adhesions separated. The patient has remained quite well for two years.

Case III.—A. B., aged 46, had exactly the same symptoms as the above cases; was operated on and remained free of pain for two years, when he died from another disease.

Case IV.—R. O., aged 54, seen with Dr. Holmes, of Paisley; was operated on on account of symptoms as above, and has been well for eighteen months.

Case V.—Mr. A., aged 37, from Newfoundland, was sent to me by Dr. Syme, of Kilmalcolm. He had suffered for seven years from severe pain, and had tried all forms of treatment. Walking was accomplished with difficulty, and he was an invalid. I advised operation, to which he agreed. I found the sciatic nerve surrounded by adhesions, which I removed, and eighteen months after his operation he writes me that he "never can be thankful enough that he went to the old country and got his nerve attended to."

Case VI.—A. W., aged 44, was sent to me by Dr. Beveridge, of Hurlford, with symptoms similar to the cases above. After operation patient was relieved, and gradually the pain disappeared. In some cases it is six weeks before the pain disappears, as the nerve must get out of the habit of having pain. The dragging by adhesions seems to induce a habit of pain.

Case VII.—J. D., aged 46, sent by Dr. Weir, had suffered severe pain for three years, and was quite unable to do his work of a clerk. He was so ill that he was only free from pain when lying or standing, and he took his food in the latter position. I operated in the usual way, and found large adhesions, especially one towards the ischium, similar to Case I. This patient has made an excellent recovery and is now able to work, although it was six weeks before he was free from pain.

Case VIII.—H. A., aged 39, sent to me by Dr. Maclean, of Kilmarnock, with similar symptoms to above, was operated on and the adhesions removed with satisfactory result.

Remarks.

These cases are sufficient in number to illustrate the great importance of examining the sciatic nerve for adhesions which no doubt are the result of a perineuritis due to some local cause, such as cold and exposure without proper attention at the beginning of the illness. Although gout and rheumatism are generally blamed for producing sciatica and causing neuritis which yields to medicinal treatment with baths, etc., still we must keep in remembrance that when a case of sciatica is persistent, and is not improved by medicinal treatment and a trip to one of the spas, such as Strathpeffer or Harrogate, and where there is no reason to suspect a tumour pressing on the nerve, and specially where the patient's symptoms show that he is free from pain when resting, then most certainly the nerve should be examined for adhesions. I am sure that small adhesions frequently disappear, but large ones similar to those I have described in the cases above detailed will not disappear. Mere stretching of the nerve is not of any service in cases with large adhesions; they must be removed. I can heartily commend the treatment I am advocating to a careful trial, and the fact that after three, four, and seven years of suffering it has been the means of returning the sufferers to comfort in life and ability to do their work is strong evidence in its favour.

CASES OF SPASMODIC TORTICOLLIS.

By R. H. Parry, F.F.P.S.G.,

Surgeon to the Victoria Infirmary, and to the Royal Hospital for Sick Children, Glasgow.

The following three cases of spasmodic torticollis have come under my notice during the past three years:

Case I.—J. McP., aged 37, was admitted into the Victoria Infirmary, Glasgow, on September 18th, 1895, suffering from spasmodic torticollis. His story is as follows: He was all right until three years previously, when he tripped and fell backwards over a block of wood, striking his neck. After this injury he felt a slight pain in the spine of the neck, which became worse, but was never very severe. He continued at his work as a rivetter in a shipbuilding yard, and one day his mates observed and told him that his head was constantly jerking, and was drawn to the left side—a position, however, which he assumed while at his work. Two months after the injury he consulted a doctor, who advised him to go to a hospital. He did not follow that advice till three months later, during which period the pain and spasms had increased, and the head was drawn over much more strongly, so that he could not straighten it except with the help of his hands. He had now to leave off work, as, instead of looking at his work his vision was directed along the side of the ship. He then entered the Glasgow Royal Infirmary, where he remained for about two months. He states that a nerve was divided on the right side of his neck, and this statement was corroborated later on by Dr. Barlow, who performed the resection of the right spinal accessory nerve. No improvement followed this operation.

Some months later he saw Professor Macewen, who suggested a further operation, which I am led to understand was excision of right sterno-mastoid muscle, but to this the patient objected. Fifteen months later he was admitted to the Royal Infirmary, Edinburgh, where he was first of all treated by medicines, and a subsequent proposal to open the head did not meet with his approval. He remained there fourteen weeks, and was dismissed in *statu quo*.

He was now examined by a well-known surgeon on behalf of the Boiler-makers' Society, and as his case was considered hopelessly incurable he received £120 in lieu of all further claims.

On admission into the Victoria Infirmary it was evident that we had to deal with a very severe case of spasmodic torticollis, the head being so drawn to the left that the face looked over the left shoulder. The chin could not be brought to the middle line without the aid of both hands, and no sooner was this movement successfully accomplished than the platysma, sterno-mastoid, trapezius, and splenius were seen to contract, and force the head back into its old position. The right sterno-mastoid remained relaxed, and therefore took no part in causing or maintaining the deformity. During sleep the jerking movements ceased, but the head remained in the twisted position. Pain was very severe while the spasms lasted.

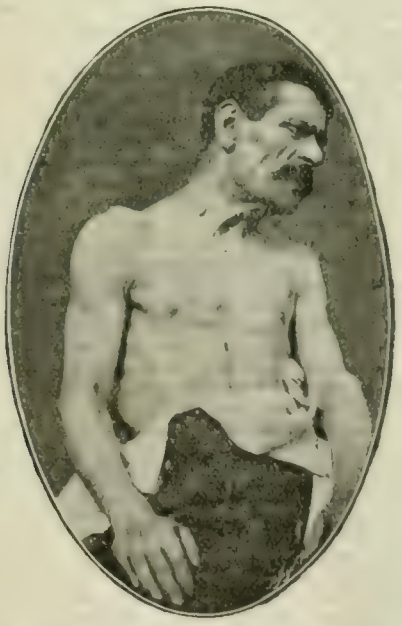


Fig. 1.—Case I.

The treatment was directed during the first few weeks to allaying the spasms of the muscles. Chloroform was given, and the muscles on the left side were thoroughly stretched. In anæsthesia the spasms ceased, and the head was easily rotated to the right side, showing that the muscles on the left side were not permanently contracted or shortened. On return of consciousness the spasms reappeared. Massage, stretching, and galvanism were then tried for many weeks, but unsuccessfully. I now concluded that the only hope left was to divide the nerves supplying the left group of occipital muscles, and, accordingly, I explained to the patient the serious character of the operation and the prospect it held out to him. He very readily consented to have it done, but at the same time warned me that if it were unsuccessful he would commit suicide, as his life was only a burden to him.

Operation.—An incision was made along posterior border of left sterno-mastoid, and all the structures divided down to the splenius—the latter muscle and the complexus were then divided in order to expose the sub-occipital triangle. The great occipital nerve was seized with pressure forceps, and was traced to the posterior division of the second nerve.



Fig. 2.—Case II.

The posterior division of the first nerve was then sought, where it lies between the posterior arch of the atlas and the vertebral artery. The posterior primary division of the third and fourth nerves were then divided, but these were very difficult to find by reason of the depth of the wound and the absence of any guide, such as was provided in the case of the second nerve.

During the operation the hæmorrhage was easily controlled, the occipital artery and some veins being ligatured. Owing to the size and depth of wound, and the difficulty of applying pressure by external dressing, the wound was packed with gauze for twenty-four hours. The after-treatment of wound was unimportant.

When seen the evening of operation the head was in a normal position, the spasms had ceased, and he had no difficulty in maintaining the chin in middle line. He continued in this state for about a fortnight, when it was noticed that there was a slight tendency for the head to turn to the left side again, but I expressed a very definite opinion to the effect that it was only temporary, and due to contraction of the wound. When the parts were quite healed the neck was thoroughly massaged, and in the course of a few months the patient was completely cured, and able to resume his usual employment as rivcter, after being nearly four years unable to work.

The second case resembled the first in several points. The occupation was the same: the history of injury the same—namely, a blow on the back of the head—and the deformity the same. He had likewise been under treatment in various hospitals before admission into the Victoria Infirmary.

It may be gathered that this condition was not very satisfactory from the fact that he was offered £80 by the Boiler-makers' Society instead of a weekly payment for an indefinite period. The treatment in this case consisted in resection of a portion of the right spinal accessory nerve, but this was followed by slight improvement. Attention was then directed to the muscles on the left side. These were thoroughly massaged, and in the course of a few months we were rewarded for our pains by the patient's complete recovery. He has now been working for over two years.

Case III.—A lady, aged 53, is at present under treatment. There is nothing special in the history of the case. She has been treated by several medical men during the past two years but with no relief of spasms or improvement in position of head, which has always been drawn to the left. The right spinal accessory nerve has been divided, and already patient feels much easier, and can bring the chin to the middle line and maintain it there for from ten to fifteen minutes. The muscles on the left side are being massaged, and this will be continued for some time yet.

Remarks.

These three cases prove, I think, very conclusively, that in spasmodic torticollis two sets of muscles demand treatment. On the one side the sterno-mastoid; on the other the occipital group.

It seems quite clear that medicinal treatment, which was in these cases carried on for many months, failed to relieve the spasms, or in any way to influence the disease.

If no improvement follows massage resection of part of spinal accessory nerve should be performed, but the patient should be warned that a cure will not result from that alone,

but that massage of the muscles on the opposite side must be practised for a considerable time, and that eventually it may be necessary to divide the nerves supplying these muscles.

Discussion.

Mr. Noble Smith (London) said he had now operated on 17 cases, and in all those in which the treatment had been carried out thoroughly the results had been perfectly satisfactory. Some years had elapsed since several of these cases had been operated on, and they remained well. In his first case action in the sterno-mastoid had returned after about two years (he was not then able to refer to the exact dates). In another a girl, aged 16, power had returned to the sterno-mastoid six months after operation. In no case had there been any serious loss of power in the neck. Mr. Noble Smith urged that this operation for spasmodic torticollis should now be considered as well established.

Professor Kocher (Bern) said he had not been very successful in his cases of division of the external branch of the accessory nerve only. His cases had had return of the disease after a certain time, so that they probably were more severe cases. In these he divided the muscles on both sides with a perfect result, which had lasted for long years since, without interfering with the nerves of the affected muscles.

A SERIES OF CASES OF CHOLEDOCHOTOMY, INCLUDING THREE OF DUODENO-CHOLEDOCHOTOMY.

By A. W. Mayo Robson, F.R.C.S.,

Senior Surgeon to the General Infirmary at Leeds; Professor of Surgery in the Yorkshire College.

When the surgery of gall stones was in its infancy the common duct was deemed beyond the reach of operation, until Mr. Lawson Tait proved that it was possible to crush calculi through the walls of the bile ducts; and although in 1884 Langenbach suggested the removal of stones by direct incision of the common duct, it was not till 1890 that the operation was first carried out successfully by Courvoisier. At the present time it may be confidently asserted that there is no portion of the gall bladder, cystic, common, or primary divisions of the hepatic ducts, which cannot, under ordinary circumstances, be reached for the removal of gall stones.

In operating on the gall bladder and bile ducts it is better to begin with an open mind, prepared for any of the various operations on the biliary passages, as it is as a rule quite impossible to say what will be required until the ducts have been explored by the fingers and the condition of the parts ascertained. Although Courvoisier states that gall stones are found in the common duct in 4 per cent. of all cases, "which possibly may be correct from a *post-mortem* point of view, or if all cases of cholelithiasis with only slight symptoms are taken into account;" from the surgeon's point of view, I think 20 per cent. will not be too high an estimate, and this is easily accounted for by the fact that it is only in the cases producing serious symptoms where the opinion of the surgeon is sought. Seeing, then, that one case in every five of gall stones may probably require some operation on the common duct, it is worth while considering what means are at our disposal.

1. In a few cases concretions may be manipulated backwards into the cystic duct, and thence extracted by scoop or forceps, but it is seldom practicable on account of the contraction of the gall bladder and cystic duct. I have adopted this method successfully on two occasions, but in both cases the cystic duct was also dilated and occupied by concretions.

2. Occasionally a small stone may be pressed into the duodenum, but this is exceptional and not generally to be recommended, as not infrequently it may be pushed into a dilated diverticulum of Vater, and so be missed, and the whole operation rendered futile.

3. Cholecystotomy, with subsequent treatment of the obstruction by solvent injections of olive oil or soap solution, is well worth bearing in mind on account of its simplicity and safety, together with the certainty of giving immediate relief with a modicum of risk, and putting the patient in better condition for subsequent treatment should such be necessary. It is of special value in patients too ill to bear a prolonged operation.

4. Cholelithotrity, or crushing the stones *in situ* where the concretions are sufficiently soft to yield to the pressure of the finger and thumb, is a method of treatment that I have followed on thirty occasions with marked success and without a death; it is especially applicable to cases where the common duct is difficult to reach, as in very stout subjects, or where it is desirable to avoid prolonging the operation. It is only available in the case of soft concretions, and may have to be supplemented by injecting the ducts with a solvent solution.

5. Needling concretions through the duct walls, recommended by certain operators, is not unattended by danger, as the damage to the walls of the ducts may lead to subsequent trouble. It is of no avail for soft stones, and uncertain in the case of hard concretions.

6. Cholecystenterostomy, or short-circuiting the obstruction, may be adopted where the patient is too ill to bear a prolonged operation, but it is by no means an ideal operation, as it leaves the obstruction untouched. Moreover, since in gall-stone obstruction the gall bladder is usually contracted, in the greater number of cases, cholecystenterostomy is not available. I have performed the operation thirteen times altogether, but only seven times for gall stones in the common duct. I lost one patient, who was at the time extremely ill with suppurative cholangitis and deep jaundice of long duration.

7. Choledochenterostomy, or uniting the dilated cystic or common duct to the duodenum, in case of largely dilated ducts with contraction of the gall bladder, may be called for on rare occasions. I have twice done it, and both patients recovered.

8. Choledochostomy, or attaching the dilated duct to the surface and draining it, is so frequently associated with infection of the ducts in the liver that in nearly all the cases reported a fatal result has followed. The operation is rarely called for. I have only done it once, and as there was no infective cholangitis the patient recovered and is now well.

9. Choledochotomy, or incising the duct and removing the calculi, is the operation *par excellence* for the treatment of gall stones impacted in the ducts and which cannot be removed by any simple means.

10. Duodeno-choledochotomy, or reaching the duct through the opened duodenum for stones impacted in the duodenal end of the duct, is a useful modification of the operation.

It will thus be seen that the surgeon has a great variety of operations to choose from; and he will act the wisest who, knowing all, is able on the spur of the moment to choose that peculiarly adapted to the case in hand.

The purpose of this paper is to record my experience of the operation of choledochotomy, which is the ideal operation for gall stones impacted in the common duct, and the following remarks, as well as the list of cases, refer to this operation and its modification, duodeno-choledochotomy. An oblique incision through the parietes, along the lower border of the right lobe of the liver, gives more room than the vertical, where the common duct has to be operated on, but if the vertical incision be employed, it must be made larger than the one for simple cholecystotomy.

A sandbag under the loin brings the duct several inches nearer the surface, and is therefore of great utility, and I always employ it. Two assistants are advantageous, one to retract the stomach and intestines on the left by means of a firm flat sponge and a wide retractor or his fingers, having his right hand free to sponge away the bile flowing from the incised duct, and another to retract the right side of the wound, the liver, and right costal margin. The operator then, after adhesions have been separated, grasps the common duct between his finger and thumb, and makes it prominent, when a vertical incision may be made over the stone, which can be gently squeezed out or removed by scoop or forceps.

It is of the utmost importance to clear the ducts or operation will be futile, as shown by Kehr, who left concretions behind in 16.6 per cent. of his cases, and by Riedel, Terrier, Fenger, Lauenstein, Küster, and others. Fenger has suggested a flexible metallic probe which, he says, will give a click when it touches a stone, or which will produce a grating sensation when it passes one. This I know by experience to be a fallacious guide, as after carefully probing, and even

Mr. Mayo Robson's cases of Choledochotomy. Six cases previously reported in the British Medical Journal, *Hunterian Lectures, 1897.*

No.	Date.	Initials.	Age and Sex.	Operation.	Description.	Result.	After-History.	With Whom Seen.
7	1897. March 15	L. G.	F., 38	Chole-dochotomy	Repeated attacks of abdominal pain, paroxysmal in character, accompanied by vomiting and rigors, and followed by deepening of jaundice. These attacks commenced fifteen years ago. No tumour. Fourteen stones removed from gall bladder by cholecystotomy and eight from duct through incision in duct which was closed by sutures.	R.	Well, 1898	Infirmary.
8	May 21	M. G.	F., 62	,,	Had for twenty years suffered from gall-stone colic, but for the last two months had been jaundiced, the jaundice being intensified with each attack of pain, which was accompanied by ague-like seizures. She had lost flesh considerably, and was in a weak condition at the time of operation. The gall bladder was shrunken. The common duct was dilated, and contained a floating gall stone as large as a cherry. It was too hard to crush, and was removed by choledochotomy, the duct being afterwards sutured. The gall bladder was not opened, and gauze drainage was applied at the point of suture.	D.	The patient progressed satisfactorily for a time, but died from exhaustion a month after operation. She was very feeble at the time of operation, and death was probably not materially hastened	Dr. Kershaw (Pudsey).
9	June 17	M. A. B.	F., 39	Duodeno-chole-dochotomy	First attack of pain with jaundice in February, 1897. Spasms for some time previously. Confined to bed five weeks. Second attack one month ago similar to first. Jaundice and pain continuing. No tumour to be felt. Gall bladder found much atrophied. No stone in either gall bladder or duct, but two small hard stones felt and removed from ampulla of Vater through incision in duodenum.	R.	Well, 1898	Infirmary.
10	July 28	A. A.	F., 42	Chole-dochotomy	Six years ago first attack of pain in right hypochondrium. Frequent attacks since, increasing in severity, with rigors, vomiting, and jaundice. No tumour. One large and several small stones removed through incision in duct, which was then sutured.	R.	Well when last heard of	Infirmary.
11	Aug. 5	M. R.	F., 51	,,	For many years suffered from spasms, but was entirely relieved of pain for three years. Christmas, 1896, began with severe pain in the right side of the abdomen, passing theough the back. From January attacks of pain followed by jaundice and accompanied by ague-like seizures. Great loss of flesh. *Operation, August 5th, 1897.*—Nine gall stones found in common duct, which were removed through an incision. Duct sutured. Gauze drainage applied.	R.	Well when last heard of	Dr. Jones (Hucknall Torkard).
12	Oct. 7	H. B.	F., 30	,,	Attacks of paroxysmal pain in gall-bladder region. First commenced five years ago, accompanied by rigors, vomiting, and nausea, and followed by jaundice. Since July, 1893, patient had always been jaundiced and unable to work. She had had amenorrhœa extending over long periods, lately metrorrhagia. No tumour. One stone weighing 3j found in common duct and removed by incision. Offensive pus aspirated from bladder, which was drained.	R.	——	Infirmary.
13	1898. March 3	E. H.	F., 57	Duodeno-chole-dochotomy	First attack of gall-stone colic twelve months ago, lasting several hours, and followed by jaundice. The attacks had recurred since at very short intervals. She had lost weight. Very extensive adhesions were met with and broken down. Gall bladder not to be found. Large gall stone found just above papilla of common duct, and removed through incision in duodenum.	R.	Quite well	Infirmary.
14	May 16	M. J.	F., 49	Chole-dochotomy	Spasms for six years, then an interval of six years without any symptoms. In July, 1897, began with paroxysms of pain over the liver, which continued till January, when jaundice supervened, and each attack of pain was accompanied by ague-like seizures, the jaundice in the interval diminishing. Great loss of flesh; some enlargement of the liver. No tumour of gall bladder; slight jaundice. Some dilatation of the stomach. Pylorus fixed to shrunken gall bladder, producing a kink. Adhesions detached. No gall stones in gall bladder or cystic duct. Several stones removed from the common duct by choledochotomy. Duct sutured. Gauze drainage.	R.	Good recovery. Well July, 1898.	Dr. Irving (Huddersfield).
15	May 17	J. T. G.	M., 39	Duodeno-chole-dochotomy	First attack six years and a-half ago. Pain more or less continuous since, and occasional severe paroxysmal attacks, lasting twelve to thirteen minutes. The attacks were accompanied by vomiting and rigors, and followed by jaundice. He had lost 2 stones in weight since the attacks first began. No tumour to be made out. Gall bladder atrophied, and could not be found. Large gall stone found impacted in third part of common duct. Duodenum incised and stone extracted; stone size of a filbert.	R.	Quite well July 26th, 1898	Infirmary.
16	July 7	M. D.	M., 46	Chole-dochotomy	Gall-stone attacks for two years. Loss of 12 lbs. in weight in six months. Tumour noticed for about one month. Slight jaundice. Gall bladder aspirated and 3iij of muco-purulent fluid removed. Four gall stones of moderate size impacted in lower end of cystic and beginning of common duct. They could not be crushed or pressed backward into the gall bladder. Choledochotomy was therefore performed and the stones removed through the incision in the duct, which was then closed by sutures. The gall bladder was drained.	R.	Good recovery	Dr. Smith (Doncaster).
17	July 21	P. W.	F., 34	,,	Four years since first attack of pain, accompanied by rigors and followed by jaundice. Jaundice ever since, slighter between seizures, but lately attacks so frequent that jaundice always deep. No tumour. Tenderness in epigastrium. Great loss of flesh. Vertical displacement of liver. Common bile duct difficult to get at, and placed opposite ensiform cartilage. Removal of several large gall stones and a quantity of *débris* through incision in duct. Large branch of pancreatico-duodenal artery wounded and ligatured. No gall bladder found. Duct sutured. Gauze drainage.	R.	July 26th doing well	Infirmary.

passing a scoop into both hepatic ducts and up and down the common duct without feeling a calculus, I have inserted my finger through the incision and felt a stone, which I have then been able to remove, but had I trusted to a probe I should inevitably have left it. The duct is usually dilated sufficiently to permit digital exploration, which under such circumstances I should always advise, reserving a bent probe, or, better still, a slender bent scoop for use where the duct is not capacious enough for the finger. The hepatic duct and its primary branches can be readily explored, and I have removed calculi from them through an incision in the common duct.

For applying sutures I either use a rectangular cleft palate needle or a simple round intestinal needle, usually discarding any needle holder. The first sutures of catgut bring together the edges of the muscular and fibrous coats, the final sutures of silk, the serous covering of the duct.

I usually insert a rubber tube and gauze drain, and leave it in for twenty-four hours or longer if needful, and generally at the same time drain the gall bladder as in an ordinary cholecystotomy. Where the concretions are impacted in the duodenal end of the duct, it is much easier and more effectual to get at than through the incised duodenum, which I have done on three occasions, all the patients being now well.

The operation of removing gall stones from the duodenal end of the common duct through an incision in the duct was I believe first performed by McBurney[1] then by Pozzi and Kocher,[2] and I think the first case of the kind in England was the one No. 182 on my list.

The operation is really less difficult than it would appear, and is much facilitated by placing a sandbag under the lower dorsal spine. In each case I have grasped the termination of the common duct, including the duodenum, between the left finger and thumb, and have then cut through the anterior wall of the gut, exposing the interior of the posterior wall of the intestine, with the termination of the common duct running in it. In two cases I laid open the duct from the papilla, and in another cut directly on the stone through the posterior wall of the duodenum. Bile flows freely as soon as the obstruction is removed, and it must be mopped away as it flows, by gauze pads, as it always contains pyogenic organisms, and is therefore infective. In none of my three cases has there been any trouble with bleeding, and no sutures have been placed in the incision in the posterior wall of the duodenum. The incision through which the duodenum has been opened—vertical in two cases and horizontal in one—is then sutured by a continuous catgut suture for the mucous membrane, and continuous silk suture for the peritoneum. No drainage is required.

As in all these cases of obstruction in the common duct, jaundice has been present over a longer or shorter period varying from months to years, and as in long-continued jaundice there is a tendency to bleeding, I am in the habit of giving all my cases, for a few days before operation, chloride of calcium in ½ drachm doses thrice daily, and of administering it in a nutrient enema in 1 drachm doses thrice daily for 24 or 48 hours after operation. Since adopting this method of treatment I have had little or no trouble from hæmorrhage, either at the time of operation or subsequently, and I can confidently recommend it as a useful measure.

The prognosis of choledochotomy will improve with experience, though it will probably always be more serious than simple cholecystotomy, not only on account of the various complications of jaundice and infective cholangitis, but because of the greater technical difficulties of the operation itself.

In 1886 Kehr collected from all sources 84 cases, with a mortality of 37.8 per cent., though his own mortality was only 6.6 per cent. The total number of operations is so few, and performed by so many different operators, that the conclusions to be derived from statistics are at present misleading. Moreover, another factor has to be taken into consideration in that in some of the simpler cases of gall stones in the common duct, cholelithotrity may be performed, whereas if these cases were all submitted to choledochotomy it would give the operation a much more favourable appearance. For instance, I have operated directly for gall stones in the common duct in 49 cases, with 3 deaths, equal to a mortality of 6.1 per cent. These deaths occured: 1 after cholecystenterostomy, and 2 after choledochotomy, and in all three the jaundice had been long continued and deep and associated with infective or suppurative cholangitis. Among the cholelithotrities there was no death, but among the 17 choledochotomies there were 2 deaths, equal to a mortality of 11.7 per cent. As experience increases, I believe and have hopes that the mortality will be reduced to 5 per cent., though even if the mortality remain higher it must be borne in mind that nearly every recovery is a life saved, for in the greater number of these cases of gall stones in the common duct death after prolonged suffering is the usual termination.

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RUPTURE OF GALL BLADDER: LAPAROTOMY: CURE.

By W. THELWALL THOMAS, F.R.C.S.,

Liverpool.

CASES of traumatic rupture of the gall bladder are sufficiently rare to merit publication when they occur. In abdominal injuries, to find only the gall bladder injured seems so unusual, that many of the surgical textbooks make no mention of it. Those that draw attention to this injury wish us to believe that the bile is non-irritating, and that recovery will take place in all probability, if left to Nature, assisted by occasional aspiration. Many of the cases recorded have occurred in adults suffering from gall stones, with altered walls of the gall bladder, and possible infection of its contents from intestinal bacteria. These cases most frequently terminated fatally, although some few have recovered after operation.

The case I wish to report occurred in a healthy boy, aged 14, who, when endeavouring to pass through a trapdoor at the top of a ladder 12 feet high, missed his hold and footing, and fell, as he distinctly remembers, flat on his belly on a stone floor. This occurred on June 17th of this year at 3 P.M. He had breakfasted at 9 A.M., so that for six hours he had been without food. He suffered agonising pain, became collapsed, breathing shallowly. He was hurried to the Royal Infirmary, howling with pain in the abdomen. His knees were drawn up, and the abdominal wall universally tender and rigidly contracted. His respiratory movements were shallow, and upper costal in type. His face was pinched, with anxious expression. Pulse 84, temperature 97.6°. Shortly after admission he passed urine normally. He complained of severe pain in the right shoulder, but there was no evidence of injury there. A quarter of a grain of morphine was injected subcutaneously, which gave relief; warm fomentations to the abdomen being applied. He was allowed sips of warm water, and he soon fell asleep. He, however, had a very restless night, tossing about in agony, and in the morning the pain was so severe that another ¼ gr. of morphine was administered. At 12 noon his temperature was a little over 99° F., pulse 100, his knees drawn up, and the abdominal wall rigidly contracted, and excessively tender on lightest palpation, and causing him to yell out from pain. The tongue was somewhat dry. He had not passed flatus. It was decided to wait until evening, and if the symptoms increased to explore the abdomen. The pulse was full, and his face flushed, there thus being no indication of internal hæmorrhage. In the evening, at Mr. Rushton Parker's request, I saw him; he was decidedly worse; pulse 138, pain worse, and he was continually crying out; the breathing 38 to the minute, and very shallow; the abdomen still rigid, and he complained of feeling very sick, but he did not vomit. The temperature was now 100° F. It was decided to operate, and after consultation with his parents this was undertaken at 11 P.M. on June 18th.

A small incision above the pubes into the peritoneal cavity liberated a large quantity of greenish-yellow bile, viscid in character. It was now clear that he had ruptured the gall bladder. The incision was rapidly enlarged upwards, passing to the right of the umbilicus until the liver could be readily palpated. The gall bladder was found hanging from the liver, having been torn away from its attachments. On its upper surface was a large irregularly T-shaped laceration, the longer tear going from fundus towards the base. The finger easily entered what little of the gall bladder still remained untorn. It was clearly impossible to satisfactorily suture the rent, so the torn margin by the fundus was brought to the surface of the abdomen, and anchored by silk sutures to the deeper layers of the abdominal wall, a glass tube being passed into the neck of the gall bladder, where it was held tightly, as a stopper in a bottle. The pelvis was full of bile, and all the small intestines in contact with this fluid were collapsed or contracted to the size of my little finger, but when lifted out and well washed with hot saline solution they at once recovered their normal size. The pelvis was well washed out and a glass tube placed there for drainage. The wound was sutured with silkworm gut. Cyanide gauze dressings under wood-wool tissue were applied. He had a restless night, and vomited frequently, or rather eructated mouthfuls of bile-stained fluid. He was allowed sips of warm water and brandy.

Next day at 11 A.M. he was still tossing about, complaining of abdominal pain and great thirst. The dressings were saturated with bile which had escaped from the gall-bladder tube; a little bile-stained serum was pumped from the pelvis. At 7 P.M. the abdomen seemed more distended. The glass tube was removed from the pelvis. A dose of calomel (gr. ij) was given, and an enema of soap and water with ʒij of turpentine administered, which was promptly rejected, but when repeated in an hour, brought

away a fair quantity of fæces and a large quantity of flatus. He was given a small dose of morphine (¼ gr.) after this, to soothe him.

June 20th. Abdomen flatter, not tender; passed flatus naturally; pulse 96, and during the dressing of the wound he elevated his body by fixing his heels on the bed. The further progress was rapidly towards convalescence; the tube was removed from the gall bladder on June 22nd (fourth day); the quantity of bile escaping now rapidly diminished, and by July 4th (sixteenth day) had entirely ceased. The sutures were removed on July 8th, and he was allowed up on the 12th, twenty-four days after operation. The temperature was only once above 99° (99.6°) in the fortnight after operation. His bowels were moved naturally and copiously on the fourth day after operation.



Rupture of gall bladder; laparotomy; cure. Photograph showing incision.

Remarks.

The points of interest in this case seem to be:

1. The nature of the accident—falling flat on the abdomen.
2. Time after meals—six hours.
3. The intense collapse, and the markedly irritating character of the bile, in an apparently healthy boy, and the rapidity of the pulse.
4. The fixity of the abdominal wall, the pinched, anxious expression, the drawn-up knees, the abdominal pain so often found in peritonitis were present, yet no inflammation of the peritoneum was found.
5. The collapsed condition of the intestine resting in the bile further demonstrated the intensity of the irritation.
6. The certainty we all felt, that, unless operation would save him, he would rapidly sink.

CASES OF PERFORATIVE GASTRIC ULCER TREATED BY OPERATION.

By J. Paul Bush, M.R.C.S.,
Surgeon, Bristol Royal Infirmary.

I have ventured to put down a few notes that I have made on my last two cases of gastric ulcer treated by operation. They have both occurred within the last few months, and concerning the operative portion of the treatment they were, in my humble opinion, a decided success.

Case I.—M. P., aged 26, an anæmic woman, who had a decided history of old gastric ulcer, some twenty-six hours after the supposed perforation of the stomach had taken place, and when all the symptoms and physical signs of that condition were present I operated in the usual way. I should like to remark that in this case there was no loss of the hepatic dulness. The anterior wall of the stomach was found thickly coated with lymph, and a large quantity of thick fluid welled up through the abdominal wound. I could find no ulcer on the anterior surface. I then turned up the stomach and transverse colon with its attached omentum, and tearing through the transverse mesocolon, and so getting into the lesser peritoneal cavity I found a large hole, into which I could get my finger, situated near the lesser curvature, and equidistant from the cardiac and pyloric ends of the stomach. After much trouble I was able to close the ulcer by means of three rows of sutures, and I satisfied myself it was watertight. I most carefully sponged out the lesser sac, but did not irrigate the general peritoneal cavity. A large tube was inserted leading down to the site of the ulcer. The patient was allowed nothing by the mouth for the first twenty-four hours; during the first thirty-six hours after operation she was in a very collapsed condition, the respiration falling to 8 a minute. She steadily improved after this day by day, and between three weeks and a month after the operation, when for some days she had been taking solid food with comfort, she rose suddenly from her bed in the morning, and died of collapse in a few moments.

We thought that either there had occurred a fresh perforation or that some severe internal hæmorrhage had taken place. This, however, was not the case, for at the *post-mortem* examination we found the ulcer completely healed, with only a slight puckering to show its position. There was no abscess or collection of pus anywhere; the lungs and pleura were normal. Was this, then, a case of septic poisoning? I daresay some of my friends will say Yes, and if you had irrigated the whole of the peritoneal cavity you would have succeeded in saving your patient. Be that as it may, I am inclined, however, to put it down entirely to heart syncope, as at the *post-mortem* examination we found the stomach completely healed, and nothing to account for death excepting a pale and somewhat flabby heart.

Case II.—M. D., a pale woman of 24, with an indistinct previous history of gastric ulcer. About eighteen hours after perforation had taken place I saw the patient. She then had all the signs and symptoms of gastric perforation, together with absence of hepatic dulness. I opened the abdomen in the usual way. A quantity of food and fluid at once came away. I could see nothing, but with my finger I could feel a large hard mass on the anterior surface of the stomach, near the lesser curvature and the cardiac end. The perforation was closed with much difficulty by means of four rows of sutures, the first set of sutures cutting out; the neighbouring portions of the peritoneal cavity were carefully sponged out, but no irrigation was used. Two drainage tubes were inserted. Nothing was given by the mouth for the first twenty-four hours, and then only water for the next twenty-four hours. She made an uninterrupted recovery, and is now quite well.

There are several points I should like to notice, but I want to elicit opinions as to irrigation; in both these cases I did not irrigate, and I do not regret it. We do not yet, I think, know how much injury we do our patients by energetic irrigation. May not some of this heroic treatment be the cause of the peritoneum being unable to perform a function that it undoubtedly has, of taking up septic matter? and do what you will, if you irrigate you cannot get rid of all septic matter. My own impression is, if extravasation has not taken place over the whole of the peritoneal cavity, then it is best to sponge carefully those parts affected only, and interfere as little as possible with the rest of the peritoneal sac.

I find there is a mortality of just under 50 per cent. in cases operated upon under twelve hours after the perforation has taken place, and that the mortality rises to nearly 90 per cent. in those cases treated after perforation has occurred for over twenty-four hours. If the cases came into our hands at an earlier period, these figures ought to be considerably altered. These two cases showed that in perforation of the posterior surface you may not get absence of liver dulness, but that in anterior perforation you get the liver dulness lost.

Discussion.

Mr. Wheeler (Dublin) said that several cases of gastric perforation had been brought before the Royal Academy of Medicine in Ireland. The consensus of opinion there was that flushing the peritoneum was to be preferred to sponging, and that the success of the operation depended largely upon the operation being performed soon after the perforation had occurred.

Mr. Thomas H. Morse (Norwich) wished to ask the length of time occupied in these operations, as he considered the success must greatly depend upon rapidity. As to wiping out as opposed to washing out of the peritoneum, he was much in favour of washing out, as thereby extravasated stomach contents were freely diluted and more easily and rapidly removed; at the same time less injury was done to the peritoneum. It had occurred to him to operate upon 4 of these cases, all of which were treated with irrigation; 3 recovered and 1 died.

Mr. Charles A. Morton (Bristol) advocated free flushing rather than sponging in these cases. He said that, remembering the complicated folds of bowel and the numerous recesses in the abdomen, it was impossible to believe that general sponging could cleanse the peritoneal cavity as thoroughly as irrigation, and he thought irrigation with boiled saline solution less likely to damage the peritoneum than the friction of sponging, though no doubt a strong antiseptic lotion might do harm to the delicate covering of the bowel. He thought that

if they took a sufficient number of cases treated by sponging and flushing out, the latter method would be found to give the greater number of successful results.

Dr. R. Maclaren (Carlisle) considered that the after-treatment was still in an experimental stage. While it might be easy to cleanse the retrogastric cavity where effusion was small and sponging might do, he thought it was very difficult to cleanse the whole abdomen when there was an anterior perforation. They must at present fall back on general principles and believe that the more thoroughly they cleansed the abdominal cavity, the better the chance of recovery. He had operated on 5 cases; 1 survived, 1 lived a month, 1 died on the table, 1 within a few hours. Absence of liver dulness he thought of no value as an evidence of perforation, for it was due to abdominal distension whatever were the cause, and not diagnostic of air in the peritoneal cavity.

A NEW METHOD OF RESECTION OF THE PYLORUS AND OF THE INTESTINE.

By E. Doyen, M.D.,
Paris.

The one thing needful in almost all operations on the stomach and the intestines is the protection of the field of operation from infection by their contents. We might add to this risk that of the duration of most of these operations.

In 1895, in my *Surgical Treatment of Diseases of the Stomach and of the Intestines*, I described a model of curved forceps with very elastic supple blades by means of which gastro-enterostomy or entero-anastomosis could be performed without risk of the escape of the contents of any viscus. The only change I have made in my method of intestinal anastomosis is that, in front of the opening, I make two instead of three lines of suture. Intestinal anastomosis thus occupies ten to twelve minutes, and may be performed with remarkable safety.

Yet operations of resection of the pylorus and of the intestine remain much less safe than simple lateral anastomosis. The necessity of making, previous to reunion, a transverse section of the intestinal canal and of disinfecting the mucous membrane, exposes us to the risk, especially in the case of the large intestine, of infection of the lines of the posterior suture. Such an accident is almost certain to be followed by perforation.

In September, 1897, I suggested the following change in the operative technique. I had to remove a cancer of the cæcum in a patient very much reduced in strength. Two strong pairs of forceps were placed, one above and one below the tumour. I first of all crushed the ileum with my clamp forceps, the peritoneum remaining intact. The intestine was ligatured *en masse* at the level of the depression thus formed and cut, between the forceps and the ligature, about 10 mm. from the latter. The stump, on the tumour side, is at once wrapped in a sterilised compress fixed round it with a curved pair of forceps. The smaller stump of the upper end is freed by scissors from the *débris* of superficial mucous membrane and cauterised with the thermo-cautery. All that is now needed to finally close the ileum is to invaginate the ligature *en masse* by a double suture like a string closing a purse. The ascending colon is similarly closed, the neoplasm is removed, and the ileum laterally attached with anastomosis to the ascending colon. None of the intestinal contents escape in the course of the operation. Since that date I have performed quite a number of similar operations.

By a slight modification of this procedure we may aseptically unite two ends of the intestine after crushing, ligaturing and cauterising the mucous membrane. To effect this object, the two first lines of suture are placed on the mesenteric half of the intestine, the deep layer is continued in front to within 10 mm. of the point of termination. The two ligatures which close the intestine whose calibre is obliterated not far from them by two clastic forceps, are drawn out and cut. The deep layer of stitches is then finished, the two loops of intestine united in perfectly free communication. The superficial layer is finally finished.

With little modification we may, by simply ligaturing the upper end and closing the lower end by the purse suture, implant the upper upon the lower laterally as the ileum enters the cæcum.

I have with similar success applied this method of closure of the intestine to resection of the pylorus with gastro-enterostomy, then to the method of gastro-enterostomy "*en Y*," and to removal of the appendix.

1. The technique is as follows:

In resection of the pylorus, I crush and ligature the duodenum; I place a pair of forceps beyond the tumour; I cut between the ligature and the forceps; I make the parts aseptic, and finally invaginate the stump of duodenum. The stomach, in its turn, is treated in the same way on the other side of the tumour. I have thus crushed with my clamp-forceps—above and below—many stomachs of a breadth of 12 and 14 cm., and then successfully closed with a single silk ligature and a double row of circular suture. This double suture, like the string of a purse, makes cicatrisation certain. The ligature *en masse* obliterates the coronary arteries. The resection of the pyloric tumour is finished in twenty to thirty minutes; the whole operation in an hour to an hour and a quarter.

2. To perform gastro-enterostomy "*en Y*" with direct flow of the bile, according to the proceeding of Roux, of Lausanne, who does it with a terminal implantation, I first do an ordinary gastro-enterostomy 25 to 30 cm. from the duodenum, and then intestinal anastomosis, assuring the direct flow of bile. The ascending loop is then crushed in two places, between the entero-anastomosis and the gastro-jejunal orifice. Two ligatures are placed in the two depressions, and the intestine divided between the two. The upper and lower ends are closed by a double pocket suture. The operation is much safer than the double terminal implantation.

3. Finally, in the resection of the appendix, I crush its base with a pair of strong ordinary forceps, I ligature, cut and cauterise the stump, and finally invaginate it by a double pocket suture.

THE RADICAL CURE OF HERNIA BY DISPLACEMENT.

By W. I. de C. Wheeler, M.D., F.R.C.S.,
Surgeon to the City of Dublin Hospital.

The great frequency and prevalence of hernia at all ages and in all ranks and conditions of life, together with the danger of its becoming strangulated, has endowed this affection with unusual interest and importance. From the earliest times operative attempts have been made either to cure hernia radically or to palliate the inconvenience by mechanical apparatus. It is, therefore, not necessary to descant upon the advantages of determining what methods or method afford the most effective and most permanent results. In no way can such conclusions be better arrived at than by the analysis of operations devised to effect this end. To obtain such information has exercised the surgical profession from ancient times; and long after the earliest operations for hernia cure had fallen into disuse, ligation and excision of the sac were again renewed after a lapse of 1,800 years.[1]

It is interesting to note the adverse opinions held by high[2] surgical authority to the operations for the radical cure of hernia; one writer stating that after a careful review of the various operations practised for the radical cure of hernia not one of them can be said to be satisfactory. Another states it may be said of all of them—even the most recently devised and most carefully thought over—that they usually fail in their object unless assisted by a truss. But time has in a great measure changed all this, for others, equally competent, hold and have expressed opinions directly opposite.

Dr. Bull, however, recently coincided with those who have not confidence in any operation for the radical cure of hernia, for he states in one of his earliest papers that all methods of radical cure will be found unsatisfactory. It must not, however, be forgotten that he operated by what he has called Socin's method—namely, ligature and excision of the sac; and again by what he calls Banks's method—ligation and excision of the sac and suturing of the external ring pillars. After these methods he ligated and excised the sac, also suturing the inguinal canal. Dr. Bull relates his large percentage of hernial recurrences, but none of the methods

employed by Dr. Bull are the most effectual for preventing the relapse of a hernia.

The operations practised and contrived for the cure of hernia are so numerous that, did the time at my disposal permit the attempt, even to allude to them would exceed the limits of this paper. Many of these operations have been advocated by those competent to form sound surgical opinions—some have been continued on account of their supposed worth, others have found favour on account of their origin. All have sought for the same result—the extinction of the neck of the sac and the approaching and joining of structures in the hernial regions.

Amongst some of the earliest revivers of the radical cure of hernia may be mentioned Gross, who performed the operation twice in 1858, using for suture silver wire. Both his patients were cured.

Czerny, of Heidelberg, in 1876, ligated the sac and sutured the conjoined tendons and external ring.

Reisel ligatured the sac, which he utilised to plug the hernial canal, and then sutured as recommended by Czerny.

Statistics, however, demonstrated that out of a very large number of cases operated on the hernia returned; then other operations were originated with the expectation of permanent results.

Dr. Macewen's idea was to utilise the sac, passing sutures through it several times transversely, thus throwing the sac into transverse folds; the hernial canal was narrowed, the conjoined tendons were sutured to Poupart's ligament and the pillars of the external ring together.

Drs. Bassini and Halsted originated the operations which bear their respective names. The technique of these operations is so well known that I need not allude to them further than to draw attention to the fact that Halsted removes nearly all the veins and superfluous tissues of the cord. He also places the cord anterior or superficial to the aponeurosis of the external oblique muscles. Bassini does not excise the veins or tissues of the cord, but he places the cord posterior to the aponeurosis, which lies upon a deeper line of sutures which close the existing inguinal canal. Bassini ligatures the neck of the sac; Halsted does not ligature the neck of the sac, but cuts it off and closes the wound.

Postempski, whose desire was to obliterate the inguinal canal, places the cord in front of the aponeurosis of the external oblique muscle and ligatures the sac at the internal ring.

An operation of Dr. George Fowler is published and described in the *Annals of Surgery* of 1897. By his operation the cord is displaced into the peritoneal cavity, and the internal ring and inguinal canal are obliterated.

I shall next refer to Professor Kocher's operation, in which the incision lies above and parallel to the inner two-thirds of Poupart's ligament. The fibres of the aponeurosis of the external oblique are exposed, and the hernial sac is completely isolated. A small opening is made in the strong portion of the external oblique above and external to the region of the internal abdominal ring. A special curved forceps is pushed through the aponeurosis of the external oblique and the muscular fibres of the internal oblique, along the inguinal canal in front of the spermatic cord, to emerge at the external ring, where it is made to seize the fundus of the isolated hernial sac, which is drawn from below upwards and outwards towards the anterior superior iliac spine; traction is made upon the sac in an outward and upward direction away from the cord, and the funnel-shaped opening at the neck of the sac is drawn well into the small opening in the abdominal wall. A portion of the sac thus brought through the opening is transfixed and stitched to the adjacent part of the abdominal wall, and more recently has been sutured to the aponeurosis of the external oblique muscle, in order that the peritoneum may be even still more stretched in an outward direction, and so make it impossible for a hernia to escape along the line of the spermatic cord. The superabundant portion of the sac is cut away and the operation is completed by passing sutures deeply through the internal ring close to and beneath the neck of the sac. Canal sutures are introduced to shorten and strengthen the anterior wall of the canal in the region of the cord. The sutures which fix the sac should take as deep a grip as possible of the upper and lower walls of the canal, and should pass immediately over the spermatic cord, which is kept pulled downwards by means of a finger introduced into the canal.

In his radical operation for femoral herniæ an incision is carried along the inner third of Poupart's ligament down through the skin and superficial fascia until the hernia is exposed. The sac is completely isolated with a blunt instrument up to the crural ring. A small opening is made above Poupart's ligament, through the tense outer pillars of the external abdominal ring, and a curved forceps is introduced through it downwards behind Poupart's ligament. The fundus of the sac is now seized and the sac drawn back through the strong aponeurosis of the external oblique. A suture is then introduced through the edges of the opening and the neck of the sac and firmly tied. The sac is fixed to the crural ring by passing sutures deeply through Poupart's ligament, the deep crural arch, the sac, and pectineal fascia. By means of two or three such sutures Poupart's ligament is made to act as a support and a continuation of Gimbernat's ligament on to the pectineal fascia as far as the femoral vein, beyond which the ring cannot be closed on account of the danger of setting up thrombosis. The superfluous part of the sac is cut off.

I have described this operation fully, for Professor Kocher previously practised another operation, in which he twisted the sac. He does not claim any originality for his former operation, for he states that he twisted the sac, as was done originally by Heliodorus. Mr. Treves likewise states that twisting was one of the earliest operations. Professor Kocher says he has now abandoned twisting the hernial sac—it was so often followed by necrosis. But more disastrous results have followed twisting the sac than necrosis. Within a measurable distance of time cases have been related to me on credible authority, and seen in London, where the sac was twisted and urinary fistulæ followed the operations. Evidently the bladder was twisted as well as the sac. I have known death to follow a promised radical cure from twisting a hernial sac. I have never twisted a hernial sac; it is not scientific surgery.

As before stated, in order to ascertain the superiority and value of a particular form of operation, it must be contrasted with other operations endeavouring to accomplish the same results. It appears to me that the operation which would obliterate the funnel-shaped process of peritoneum which some writers say offers particular inducement to rupture, would be that operation in which a recurrence of the hernia would be less likely to occur. Everyone who has studied the recurrences of hernia will agree with the writers who state that consequent upon ligation of the neck of a hernial sac a depression must exist, and this in time will most likely enlarge and become infundibuliform. Such would of necessity follow the operations of Czerny, Bassini, and Postempski. The pad formed in Macewen's operation by the folds of the sac is said to prevent the infundibulum.

Those who have practised Kocher's operation on the dead subject, and carefully examined the structures after the operation has been completed, cannot have any doubt that the direction in which the sac is drawn and stretched prevents the formation of this depression. If this depression can be prevented and the enlargement or infundibulum consequent upon it, the danger of relapse is minimised. I concur in a great measure with Dr. O'Connor, of the British Hospital, Buenos Ayres, that the operations of Bassini and Halsted do too much. He further states "that the canal has nothing more to do with this rupture than have the skin and subcutaneous tissues in an umbilical hernia." Although I cannot concur with this opinion, I am convinced that the operation for the radical cure of hernia which prevents the existence of the infundibulum is the operation which will be least likely to be followed by a relapse.

If Bassini and Halsted do too much, surely Dr. G. Fowler would also come under this category. There are some who have experienced untoward results after Halsted's operation, amongst the number Dr. O'Connor, who says that 80 per cent. of his cases thus treated got orchitis, and in 20 per cent. atrophy of the testicle supervened; and he adds that from what he has heard from Italian surgeons the same sequelæ are frequently observed after Bassini's operation; and he concludes that in our two most radical procedures a testicle is often sacrificed. I do not wish in any way to detract from the

operations of Drs. Bassini and Fowler displacing the cord from the canal; but these gentlemen must be aware that the operation of castration, in order to remove the cord from the canal, was performed in ancient times, and was ultimately prevented by the Roman Emperor Hadrian, who punished with death those who performed this operation.

From the foregoing it is evident that there are many advantages in Kocher's operation. This procedure prevents the peritoneal depression or pouch, and cannot create an infundibulum. The aponeurosis of the external oblique remains intact, thus there is no cicatrix that can yield or stretch. The sac is stretched in a direction opposite to the direction of the inguinal canal, and, as Dr. Fowler has written, "one of the strongest arguments in favour of Kocher's operation is the immunity from failure in the face of complicating septic conditions, from the fact that whatever happens the strong aponeurosis remains intact." I know of no simpler or more rapid method of performing the radical cure of hernia. Instead of displacing the cord the sac is displaced from the cord, and sutures are passed which deeply penetrate and completely close the internal ring.

I cannot agree with those writers who state the displacement operation is unsuitable in strangulated hernia, and when there is adherent intestine or omentum. True, Kocher's operation pure and simple cannot be performed in such cases, but this does not prevent the displacement of the sac, and the suturing of the same, and also of the ring and canal. It has, however, the similar disadvantage of all the operations where the anterior wall of the inguinal canal is incised, leaving a cicatrix which may weaken and stretch, but it has the advantage of preventing a pouch or infundibulum, which invariably leads to a recurrence of a hernia.

I have upon several occasions displaced the sac through an abdominal aperture, separating it from the cord at the same time as the operation for strangulated hernia; and also, in congenital hernia, isolating the sac and cutting it across, displacing the superior portion, and have sutured with sterilised silk, which I invariably use, the aponeurosis by what is known as the "cobbler's stitch." Such operations have been followed by most satisfactory and apparently permanent results.

In the BRITISH MEDICAL JOURNAL of 1884 I mentioned cases of hernia operated upon by ligation of the sac and canal suture. My statistics show a mortality of 8.5 per cent. in operations for strangulated hernia; some of these cases succumbing from collapse and pneumonia. My statistics for the radical cure of hernia by various methods show a mortality of 2.5 per cent., including those who had the radical operation performed at the same time as that for strangulation. My statistics for operations of the radical cure by various methods, as far as they can be traced over periods from nine to fifteen years, show relapses of 20 per cent. All the patients were much more comfortable after the relapse than before they had been operated on. For the radical cure by the displacement method I have had no mortality and one relapse, in which case the displacement operation was adopted, after an operation for strangulation this patient suffered from bronchitis and frequent fits of coughing. Some have been operated on too recently to record them as permanent results.

O. L., aged 38; right femoral hernia noticed for 5 years. Operation in Mespil Private Hospital, August, 1895. Professor Kocher's displacement operation; silk sutures and silkworm-gut. Seen in 1897; reported quite well in June, 1898.

S. M., male, 33 years; right oblique inguinal hernia, 15 months' duration. Operated, October, 1895. Professor Kocher's displacement method. Seen in December, 1897; well.

E. K., 41 years; right oblique inguinal hernia observed for several years, and treated by a truss. Operated as above, November, 1895. Well in July, 1898.

J. T., female; small inguinal hernia, left side, observed for about 2 years. Operated as above, February, 1896. Well in July, 1898.

T. S., male, aged 24; right oblique inguinal hernia. Operated as above, March, 1896. Seen in August, 1897; well.

L. W., male, 41 years. Right oblique inguinal hernia. Professor Kocher's displacement operation, May, 1896. Seen in January, 1898; well.

M. C., male, 15 years; right inguinal hernia. Professor Kocher's displacement operation, April, 1896. Seen well in May, 1898.

S. W., male, 27 years; small oblique left inguinal hernia. Professor Kocher's operation, October, 1897; well in July, 1898.

W. T., female; left femoral hernia of 3 years' standing. Professor Kocher's operation, November, 1895. Seen in 1897; well.

E. L., male, aged 27; left inguinal hernia. Professor Kocher's operation, February 17th, 1897. Seen May, 1898; well.

W. T., male, aged 11; right inguinal hernia. Professor Kocher's operation, October 7th, 1897. Seen July, 1898; well.

M. C., female; left femoral hernia. Professor Kocher's operation, September 9th, 1895. Seen, 1897; well.

E. N., male, 19 years; oblique left inguinal hernia. Professor Kocher's operation, 1896. Seen February, 1898; well.

Female, aged 18 years; femoral hernia. Professor Kocher's operation, February, 1897. Seen March, 1898; well.

Youth, 13 years; small left inguinal hernia. Professor Kocher's operation, November, 1897. Seen July, 1898; well.

K. S., male, 27 years; oblique left inguinal hernia. Professor Kocher's operation, December, 1897. Seen June, 1898; well.

Female, 17 years; right femoral hernia. Professor Kocher's operation, February, 1898. Seen July, 1898; well.

E. C., male, aged 29; right congenital inguinal hernia, strangulated; strangulation relieved; sac isolated from cord; displaced through abdominal aperture; superfluous portion of sac excised; anterior wall of inguinal canal opened; aponeurosis of the external oblique sutured; rings also sutured with sterilised silk. Operated, September, 1896; has followed his occupation as a gardener since. Shown at the Surgical Section of the Academy of Medicine, November, 1897, and in 1898 was quite well.

W. C., male, aged 63; right scrotal hernia, strangulated; strangulation relieved; displaced as preceding case. Operated, November 19th, 1897. Seen in July, 1898. Hernia present in groin. This patient suffered from bronchitis at time of operation and almost incessant cough.

Male; strangulated right scrotal hernia (acquired); strangulation relieved; displacement at same time, March, 1895. Seen in July, 1898; well.

Child; 5 years, male; irreducible right inguinal hernia (acquired); displacement operation, May, 1898. Seen July, 1898; well. Anterior wall of inguinal canal opened; aponeurosis sutured with sterilised silk.

There were three more cases, accurate notes of which I regret have not been kept.

One an inguinal hernia in an adult, reducible. Operated on by Professor Kocher's operation. Well seven months after.

Of the other two, one was a congenital scrotal hernia; the other an irreducible left inguinal. Both were operated on by the displacement method, and the anterior wall of the inguinal canal opened in both cases. The aponeurosis of the external oblique muscle was sutured by the "cobbler's stitch" with silk. Two months after operation they were both well.

The first of these cases recorded was operated on after Professor Kocher's method nearly 3 years ago, the latest within the last 5 months. The average period for the entire group in which no recurrence has taken place is 20 months.

Of the cases recorded after Professor Kocher's method ten are over 2 years operated on, one 2 years and 10 months, one 2 years and 8 months, one 2 years and 5 months, one 2 years and 1 month; three—1 year and 8 months, 1 year and 5 months, 1 year and 1 month. The remainder vary from 5 months to 9 months; all have been either recently seen or reported on, and are well. Other cases more recently operated on by this method I have not recorded.

One of the cases in which the displacement method was adopted after relief of strangulation is now nearly 2 years after operation. The others under this class were for strangulated scrotal irreducible inguinal and congenital herniæ. They are all without any sign of recurrence.

The operation I have practised in strangulated herniæ differs slightly from Professor Kocher, inasmuch as I have found it necessary, when employing the displacement method in strangulated herniæ, frequently to divide the aponeurosis of the external oblique.

I could have performed the displacement operation, in contradistinction to Professor Kocher's operation, more frequently within the limits of the period over which my experience of Professor Kocher's method ranges, but I did not at first feel justified to endeavour to cure radically by displacement strangulated, adherent, and such forms of herniæ.

I hesitated whether I should bring before this meeting such a limited number of cases treated by Professor Kocher's displacement operation, and by displacement not strictly after Professor Kocher's plan; but I was encouraged to do so by the fact that some writers upon operative surgery have not mentioned this operation at all, and others state that there has not been sufficient experience of it.

Under all the circumstances, I ventured to think that this communication would not be uninteresting to those who have been exercised about the best methods for radically curing hernia.

NOTES AND REFERENCES.

[1] Celsus is reputed to have excised the hernial sac. Guy de Chauliac in 1366 laid bare the sac and applied a ligature round it. Malgaigne estimated in France that one out of every thirteen males was ruptured. The ruptured in America have been estimated at about three millions. [2] Agnew; Holmes.

A CASE OF RETROPERITONEAL HERNIA, IN WHICH RECOVERY TOOK PLACE AFTER OPERATION.

By A. H. Tubby, M.S.Lond., F.R.C.S.Eng.,
Senior Assistant Surgeon to the Westminster Hospital; Surgeon to the National Orthopædic and Evelina Hospitals.

The varieties of retroperitoneal hernia have been described by Treitz, who classified them under three headings: those into the fossa duodeno-jejunalis, where a pouch of peritoneum is sometimes met with behind the inferior mesenteric artery as it curves towards the left side; into the fossa intersigmoidea; and into the fossa subcæcalis. More recently the subject has been amplified by Mr. C. B. Lockwood in his lectures on Hernia. A case of retroperitoneal hernia into a pouch behind the superior mesenteric artery is found described in vol. xviii of the *Transactions* of the Pathological Society.

The following case was one of hernia into the fossa duodeno-jejunalis behind the inferior mesenteric artery, and I am indebted to my friend Dr. Burrell of Kew, with whom I saw the case, for permission to record it.

On February 27th of this year I was called to see Mrs. W., aged 60. The details of her previous history are as follows: Eight years ago she had a definite attack of biliary colic, and she then passed several gall stones, which she now has in her possession. They are multi-facetted. A week before the operation she was doing a good deal of lifting. On February 23rd Dr. Burrell was called in to see her for what she described as an internal chill, and she complained of a dull, aching pain, with some shivering. The temperature was normal, the pulse 90, full and regular. The pain was specially referred to the gall bladder, and was of a dull, gnawing character. There was a slight trace of albumen in the urine, which might have been due to a chronic cystitis. On February 25th she was given pil. hydrarg. gr.4 and tincture of opium, mx, every four hours for the pain, and she felt better, but her bowels were not opened, so she was given half an ounce of castor oil, with no result. At 5 P.M. on February 26th she began to complain of violent pain, and the abdomen was noted to be very distended and hard, with distinctly increased dulness in the right hypogastric region. The pulse was very quick, and not of good quality. There was no sickness, but a feeling of nausea. Mrs. W. says that she had three attacks of pain previous to the last attack, but not so severe, and she was inclined to put it down to liver trouble. When I saw her, in consultation with Dr. Burrell, she complained of intense pain, especially in the right iliac fossa. There was great distension of the lower part of the abdomen, some dulness in the right flank, the legs were not drawn up, the pulse was 102, and regular, and the breathing was costal. She was seen again at 11 P.M. the same night. The abdominal distension had doubled, the pulse was thready and irregular, and the pain and tenderness were still more marked, and she had vomited. It was thought that the symptoms arose from impacted gall stones. So an operation was immediately performed. When the abdomen was opened numerous distended coils of intestines appeared, and there was a considerable amount of flaky fluid in the flanks. The whole length of the small intestine was carefully examined for impacted calculus, but none was found. In the course of the examination a retroperitoneal hernia into the fossa duodeno-jejunalis was discovered. There was a coil of small intestine firmly lodged in it, being derived from the lower part of the ileum within 1½ foot of the ileo-cæcal valve. The portion was withdrawn with very considerable difficulty, as the intestine was much distended and darkish in colour. The peritoneal fluid was sponged out, and the cavity rendered dry and the wound sewn up. The after-progress of the case was uninterruptedly good. On March 1st she had two evacuations, and the wound had almost closed by primary union. Her subsequent course was extremely good. It was noted at the time of operation that the gall bladder was small and hard, and appeared to contain many calculi; but her condition was such that it was not advisable to perform a cholecystotomy on account of the danger of collapse.

Remarks.

The points of interest in this case are the nature of the history and the rapid onset of the symptoms simulating an impacted gall stone. The fact that the retroperitoneal hernia involved the lower part of the small intestine accounted for the extremely rapid distension of the abdomen and the signs of absolute obstruction. Another point of interest was the great difficulty experienced in withdrawing the distended intestine from behind the inferior mesenteric artery, and great gentleness and patience had to be exercised in so doing. There can be no doubt that the promptness with which operation was consented to and was carried out was the important factor in saving the patient's life.

The Belfast Hospital for Sick Children.—As the result of Dr. J. J. Morrow's retirement from the staff of this institution, Mr. Robert Campbell, F.R.C.S., Assistant Surgeon, becomes full Surgeon. For the vacancy thus created in the assistant surgeonship several candidates presented themselves, and Dr. Andrew Fullerton was elected by a very large majority. Dr. Fullerton had a distinguished career at the Queen's College, and is a Gold Medallist of the Royal University.

THE RELATIVE VALUE OF THE CYSTOSCOPE AND OF URETER-CATHETERS AS AIDS IN THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEY.

By David Newman, M.D., F.F.P.S.G.,
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[Abstract.]

During the last sixteen years I have had occasion to use the electric cystoscope and ureter catheters in the diagnosis of renal affections. In this paper it is my purpose to give my general impressions of the relative value of these instruments, and to indicate the purposes for which they may be employed.

By a careful study of the symptoms, and an examination of the physical signs, in many cases of surgical disease of the kidney, a reliable diagnosis may be arrived at; but, in others, even a most critical inquiry into all the facts ascertainable by the ordinary methods of investigation may fail to throw sufficient light on the case to justify the surgeon either in refusing or in recommending an operation which may involve serious risk to the life of his patient. Therefore, any additional methods by which precise information may be obtained and difficult diagnostic problems solved are of the highest value to the clinical observer.

In some cases, certain facts can be ascertained regarding surgical renal lesions by an examination with the cystoscope alone; in others the ureter catheters should also be employed. For example, in many cases of renal hæmaturia, and in some cases of pyuria, the escape of blood, or of pus, from a urete can be readily seen by the cystoscope. When the amoun of blood present is small, but still sufficient to perceptibly stain the urine, the cystoscope is in the male more reliable than the ureter catheter, the introduction of which into an inflamed ureter may cause a little bleeding, and so vitiate the value of the observation. On the other hand, the cystoscope is unable to detect the presence of albumen, bacteria, or tube casts in the urine from one kidney only. For this purpose the ureter catheter must be used.

The cystoscope being the safer instrument to employ should be used first, and when further information may be looked for by the employment of the ureter catheters these instruments may be brought into requisition.

The cystoscope is most useful in enabling us to diagnose between vesical and renal lesions, which manifest themselves by the presence of pus or of blood in the urine. Not only, for example, may we see in a particular case, that there is no vesical disease present to account for the abnormal constituents in the urine, but with care and patience we may actually see that a clear excretion is flowing from one ureter, while perceptibly contaminated urine is escaping from the other.

Perhaps the simplest method of illustrating the relative value of the cystoscope and the ureter catheters in the diagnosis of renal disease is to take three selected cases and give a short epitome of each.

Case I. *Pain and Tenderness on Pressure in the Right Lumbar Region: Hæmaturia: Renal Swelling on the Left Side: Blood and Albumen from Right Kidney only: Calculus in Pelvis: Atrophy of Right Kidney.*—The patient, a young woman, aged 27, suffered from vague pains in the right renal region for many years—twelve years at least—and occasional hæmaturia, which was seldom present for more than a few days at a time. The examination of the right lumbar region with the hand failed to reveal the right kidney, but the patient complained of considerable pain and tenderness of the part on palpation. On the left side a distinct renal swelling could be made out. The urine contained a trace of albumen, but no tube casts. The questions naturally raised were: Is the albumen and blood from the enlarged left kidney? Are they from the painful right kidney, or are both organs diseased? Examination of the bladder with the cystoscope during a hæmaturia showed the mucous membrane and the orifices of the ureters to be healthy; but blood-stained urine was seen issuing from the right ureter, while the excretion from the left ureter was colourless. This observation cleared up the origin of the hæmaturia, but what about the albuminuria and the enlargement of the left kidney? Was the left kidney the seat of disease, or was the increase in bulk due to compensatory hypertrophy? The left ureter was catheterised, and the urine drawn off proved to be strictly normal. At the operation the right kidney was found to be greatly atrophied, and the pelvis was occupied by a uric acid calculus. Subsequently the urine was normal.

Case II. *Enlargement of Both Kidneys: Frequent Micturition with Pus, Albumen, Tubercle Bacilli, and Hyaline Tube Casts in the Urine; Spinal Curvature of Old Standing, with Recently-healed Sinuses in the Back.*—A man, aged 22, who had suffered since boyhood from disease of the mid-dorsal vertebræ, also complained of symptoms pointing to tuberculous disease of the urinary tract. The urine was abundant, of low specific gravity, and there was a moderate amount of pus in all the specimens—about 2½ per cent., as calculated from the deposit thrown down from 1,000 c.cm. of

urine allowed to stand for twenty-four hours. The quantity did not vary much in the different samples examined, and on several occasions tubercle bacilli were detected in the deposit. The quantity of albumen varied considerably, the amount present was not regulated by or in proportion to the deposit of pus, and hyaline and finely granular tube casts were always present. Pain more or less severe in the back and in the lumbar regions had been so long present that little importance could be attached to it as a factor in diagnosis, and frequent micturition had been complained of for many months prior to the appearance of pyuria. Occasionally there was pain in the bladder, but this was not a marked feature of the case, nor had blood at any time appeared in the urine. The symptoms, therefore, other than the abnormal conditions in the urine, did not clearly indicate the seat of the disease. Hyaline tube casts were present, the quantity of albumen was not fully accounted for by the pus, and tubercle bacilli were present. Was the increase in bulk of both kidneys due to the same cause—probably amyloid infiltration—or was one kidney tuberculous? Examination by the cystoscope showed the bladder to be little altered from normal, but there was distinct evidence of irritation of the orifice of the left ureter, while the other was healthy in appearance. The cystoscope failed to show any difference in the characters of the urine flowing from the two ureters. The right ureter was catheterised, and the urine from it contained albumen and hyaline tube casts only, while the urine from the left kidney in addition contained tubercle bacilli and pus, showing that, while both kidneys were amyloid, the left was the seat of a tuberculous lesion. No operation was performed, but the future history of the case confirmed the diagnosis.

CASE III. *Sudden Severe and Prolonged Attacks of Renal Colic: Suppression of Urine: Sudden Relief: Recurrence in Three Weeks: Microscopic Quantity of Blood in Urine.*—A woman, aged 26, was suddenly seized with a severe attack of renal colic on the right side, with suppression of urine for twenty-four hours. The pain suddenly subsided, and three hours afterwards the patient passed 5 ounces of concentrated urine, and the following day she was practically well. Three weeks after she had a second attack exactly the same as the first, and on examination no renal swelling could be made out, but the right kidney was extremely tender, and painful on pressure. No albumen or pus was found in the urine, but blood could be detected by the guaiacum test, and by microscopic examination of the deposit. The cystoscope revealed nothing abnormal in the bladder, but the orifice of the right ureter seemed to project unduly, and the mucous membrane surrounding it was deeply injected. No blood could be seen escaping from either ureter. On introducing the ureter catheter an obstruction was met with a third of an inch from the orifice, and on passing a probe, a calculus the size of a barleycorn was found in that situation, and was subsequently removed by operation.

These three cases illustrate some of the ordinary uses to which the instruments may be put, and the exact knowledge the surgeon is likely to derive from their use in his endeavour to clear up the more difficult point in diagnosis.

In cases of simple hæmaturia, if the patient is examined during an attack, and the quantity of blood is sufficient to be perceptible to the eye, the cystocope may be used with advantage. On the other hand, if the amount of blood is very small its diagnostic significance is not great if the ureter catheters are employed, because the use of these instruments may of itself cause bleeding from the mucous membrane of the ureters, which in many instances is inflamed or hyperæmic, and bleeds freely. In the female the procedure is easily carried out, and the results are more certain; but in the male the catheters are difficult to introduce, and small hæmorrhages are likely to vitiate the examination, which cannot therefore be relied upon when the quantity of blood is small.

In pyuria the results of examinations by the catheters are more satisfactory. In many of these cases the quantity of pus discharged from the kidney is so small, and its escape so irregular, that the cystocope fails to establish from which kidney the purulent urine flows. In these instances the ureter catheters should be employed, after an examination with the cystoscope has failed to furnish the required information.

A point of some importance in diagnosis is the appearance of the orifice of the ureter, as seen by the cystocope; when there is distinct evidence of irritation of the orifice of one ureter, while the other is normal in appearance, it may be safely inferred that the renal lesion is, if unilateral, on the side of the morbid ureter.

Objections have been raised against the use of the catheters on account of the alleged danger of introducing septic matter into the ureter, either from the bladder or by instruments which have not been properly sterilised.

In many cases the ureter is already septic before catheterisation is thought of. On the other hand, in cases of cystitis, where the kidney is supposed to be aseptic, unless in exceptional circumstances, the catheters should not be employed, as, even although they are carefully sterilised, and the bladder is as thoroughly cleansed as possible, there is danger of introducing septic matter into the ureter. Any injury of the ureter by the use of the catheter must add to this danger.

Both the ureter catheters and the cystoscope must be used with aseptic precautions. Not only should the instruments themselves be sterilised, but the meatus and surrounding parts should be carefully washed and rendered as free from contaminating particles as possible, and, after the examination has been made, the bladder should be carefully washed out with a fresh supply of suitable antiseptic solution.

It is in the detection of albumen, tube casts, and microorganisms in the urine from one kidney alone that the ureter catheters are most valuable, and it is just at this point that the cystoscope fails us. But all information that the use of the cystoscope can give us should be procured before the catheters are employed.

In cases of suspected Bright's disease, amyloid infiltration, or tuberculous lesions of the kidney, it may be necessary to make several examinations before a definite opinion can be expressed regarding the condition of each kidney. This repeated examination may be irksome to the patient, but when the importance of knowing the precise condition of both kidneys, prior to operation, is fully recognised, the trouble of catheterism will be readily submitted to. When the surgeon is certain that the second kidney is healthy, he can, for example, recommend nephrectomy as a life-preserving operation, whereas, if he has not ascertained the condition of the opposite organ, he may only remove the most diseased kidney, and lose his patient.

While I fully recognise the high value of catheterism of the ureters as an aid in diagnosis, I think it should not be resorted to unless other methods of inquiry have failed to elicit the required information. The cases in which the operation is justified are not very numerous, and, like all other new methods of clinical research and treatment, it is liable to suffer from the over-enthusiasm of its advocates. By some of those who use these instruments there has been considerable difference of opinion expressed as to the relative value of the cystoscope and the ureter catheters in the diagnosis of renal disease, each advocate being, I fear, too anxious to exalt his own methods by depreciating those of his opponent.

ON CATHETERISATION OF THE URETERS IN BOTH SEXES.

By LEOPOLD CASPER, M.D.,
Berlin.

ALLOW me to thank you for the great honour done me in being permitted, as a guest to read this paper before this learned society, and to express my satisfaction and pleasure that you have given me this opportunity in your country—where I had the advantage of making my first studies in my special line under the auspices of Sir Henry Thompson.

This is not the place to enter into the history of catheterisation of the ureters. This much, however may be said, that for decades the necessity was recognised of collecting the urine of each kidney separately. In the Seventies, Tuchmann, of the German Hospital in London, was busily engaged in solving this problem. Unluckily, neither he nor some of those who followed him succeeded. The first successful attempt was made by an American—Brown, of the Johns Hopkins Hospital in Baltimore.

Pawlick and Kelly, it is true, succeeded in catheterising the ureters in women, but their method was of no great value when applied in men. Brown's method did not find any advocates.

It is therefore with a great feeling of satisfaction that I can state that the procedure which originated with me, and which I had the honour of demonstrating in January, 1895, before the Medicinische Gesellschaft, in Berlin, has stood the test of time, and is warmly advocated by a great many authors.

I take it for granted that you all are familiar with my instrument here shown. Permit me, however, to remind you that two important points must be considered in the construction of the instrument. First, it is essential that the catheter should vary, or, in other words, that the latter should be bent more or less according to the course of the ureters. Further, this instrument must be so constructed that its metallic part can be removed while the catheter is left *in situ*. Incidentally I may mention that my ureter cystoscope in its modified form can be used as an ordinary cystoscope. As I stated before, the

instrument has been recognised as a very valuable aid in diagnosis by a great number of authors, who were convinced of its usefulness from practical clinical experience. The few who have spoken of the dangers connected with the catheterisation are those who have not become sufficiently familiar with the method to warrant an opinion.

Let us examine the statements made as to the danger of this procedure. Two things are to be considered—traumatism and infection. As to the former I can safely say that only a very awkward operator—and such a one ought not to be permitted to perform any work in the bladder—will produce it; *de facto*, neither I nor anybody else have ever observed any traumatism due to the catheterisation. Very slight bleeding may occasionally be observed, the same as in instrumentations of the urethra or of bladder, but they are of no practical importance, and can certainly not detract from the value of the method.

As to the second objection, it must be admitted that theoretically there is a possibility of infection taking place. We all know that in those cases where we employ the catheterisation the bladder is infected, and full of micro-organisms which the catheter used for the ureters must pass. A slight mechanical lesion can occasionally not be avoided. Luckily practical experience has disproved these theoretical doubts, and has taught us that there is no danger of an infection. I suppose I have catheterised the ureters over five hundred times, but I have never met with a single case where changes in the urine were found indicating an ascending infection.

Clinical experience teaches us that the number of cases of pyelitis is relatively small compared with the large number of cases of cystitis which we observe; and even of those cases of pyelitis only the smaller part is ascending. We know that the *vis medicatrix naturæ* plays an important part in preventing an ascending infection of the kidneys. I have shown that the urine which is voided into the bladder at regular intervals removes all germs of infection which may possibly have entered the ureters, thereby preventing their taking hold and doing any harm in the pelvis of the kidneys.

Nevertheless, I advocate the greatest possible precaution and care in practising this method, as in every case the possibility of an infection must be conceded. Only an experienced operator who has mastered the technique of the procedure should catheterise the ureters. Furthermore, all possible aseptic and antiseptic precautions should be employed. The ureters must be, as I have recommended, irrigated with a solution of nitrate of silver after the catheterisation, and only instruments should be used the curve of which can be regulated so that they enter the lumen of the ureter without piercing its walls.

Lastly, the method ought to be used only in those cases where there is a distinct indication—namely, when it is necessary for diagnostic or therapeutic purposes.

Whoever acts according to these principles and rules will experience the greatest satisfaction with the ease and correctness with which they are able to make a diagnosis in cases which were obscure and could not be diagnosticated by any other means, and in which the lives of their patients were endangered.

Allow me to tell you in a few words my experience in the catheterisation of the ureters during the four years and a-half I have employed it, without dwelling upon its use, perhaps, for therapeutic purposes, since the shortness of the time does not permit me to enter into the details of this point.

1. Catheterisation of the ureters may be of great value when there is a doubt whether there is an affection of the urinary apparatus or not, especially in large abdominal tumours where it is doubtful whence they originate. Such cases have been recorded in literature—two by Pawlik, two by Albarran. I have observed three such cases, of which I should like to report to you the following:

The patient had a large tumour on the right side extending from the margin of the liver down 2 inches below the arch of the ribs. General health good, no pain, no indication of any affection of the genito-urinary organs, clear normal urine. The diagnosis which was made by a prominent clinician was "Echinococcus of the liver." The family physician had the impression that the size of the tumour varied from time to time, and thinking he might have to do with an affection of the kidney brought the patient to me for examination. The catheter, which was introduced into the right ureter, encountered an obstacle at a short distance from the pelvis. After the obstacle was passed a large amount of cloudy purulent urine emptied itself out of the catheter, and the tumour became visibly smaller. On pressure on the tumour from the outside it could be clearly demonstrated that the urine ran out faster. There was no longer any doubt that we had to do with a sacculated pyonephrosis. The obstacle which I encountered from time to time in the ureter was due to a contortion of the ureter near the pelvis of the kidney.

2. In some doubtful cases of an affection of the urinary apparatus the catheterisation teaches us if the bladder or the kidney and ureter are the seat of the affection. It is true that in most of these cases the diagnosis can be arrived at by other means, especially by cystoscopy; but in cases where the contents of the bladder is cloudy, and where there is only a small focus of suppuration in the kidneys, it may happen that we are unable to determine if the urine which flows from the ureter is clear or cloudy. Clear liquid may impress us as cloudy, and *vice versâ*. But the urine, which we collect through the catheter, introduced into the ureter, can easily be examined macroscopically and microscopically. We are thus enabled to state with the utmost accuracy if there is any suppurative process or not. I have a record of three such cases. In one case, which I have published, a nephrotomy had been performed by a colleague because he had observed cloudy urine flowing from the ureters. At a cystoscopic examination I found the secretion of both kidneys clear and normal.

3. If a disease of the kidneys has been diagnosed the catheterisation of the ureters will always show us which kidney is the seat of the disease, and may enable us to state the nature of the malady.

This applies only to exceptional cases, for in the majority of cases we shall be able to say by other means in which side the malady is localised. But we know that pain is often deceptive as a diagnostic factor, the pain being localised in the healthy kidney, while the other one contains a calculus. On the other hand, we know from a number of cases that a healthy kidney may be larger through a compensatory hypertrophy, than the diseased one. If not for the catheterisation of the ureters, we might in these cases locate the seat of the affection on the side which is healthy.

A number of cases have shown that the catheterisation of the ureters enable us to recognise the nature of the disease. I impress upon you again, as I stated in the beginning, that the catheterisation was only employed and this ought to be done in all cases where the other diagnostic methods were used without result. As to stones in the pelvis, not much is to be expected. Albarran and myself have occasionally felt a stone in the pelvis with the metallic head of the ureteral sound. But on the other hand, the fact that we do not feel a stone by no means proves that there is none.

On the other hand, the catheterisation of ureter proves more satisfactory in stones being in the ureter, and here it renders services far better than any other method. The stones can be felt very plainly, but not only can their presence be diagnosticated, but, and this is of the utmost importance for treatment, also the part of the ureter in which they are located. I have had three cases of stones in the ureters where I could positively determine the seat of the stones by means of the catheter. In two of them there was absolute anuria.

An entirely new and remarkable observation is that of spasms of the ureter, which I could demonstrate in a case of hysterical oliguria by means of the ureteral catheter. I had previously reported occasionally spasms occurring in the ureter which may simulate a displacement of the ureter, at least to the unexperienced eye. In the cases of typical hysteria the spasm of the ureter was found at the same time when there was a period of oliguria.

No urine flowed spontaneously from the ureteral catheter after an injection of liquid into the contracted part of the ureter, however, secretion of the urine took place. These spasms must not be confounded with the formation of folds in the ureters, which may likewise be an obstacle to the ureteral catheter, but these valves can generally be passed if the catheter is skilfully introduced. To the same category belong the cases of real stricture of the ureter, or, what is the same thing, distortion, or of a bend of the ureter. They form an impediment to the secretion of urine, generally not to such an extent that the latter stops entirely; part of the urine flows, the other part being retained, in the pelvis. In other cases there is a decreased renal secretion of urine due to the change in the ureter.

These cases can easily be distinguished from spasms of the ureter, as in the latter not a drop of urine flows through the catheter. These obstructions are often the cause of

hydronephrosis and pyonephrosis where they are not due to gonorrhœal or tuberculous infection. In a case of a characteristic pyonephrosis I was able to demonstrate a distortion of the ureter, which could be passed only with great difficulty. All other etiological factors could be excluded, and the pyonephrosis was due to the distortion of the ureter. The positive diagnosis of pyelitis, pyelonephritis, and pyonephrosis by means of the catheterisation of the ureters can be made at the time when we cannot diagnose the disease by any other method. The urine thus obtained shows pus cells which in a healthy pelvis or in a healthy kidney are either not found at all, or only in exceedingly small number. The amount of albumen in the urine which was obtained through the catheter gives a clue as to the degree of change in the parenchyma of the kidney following a suppuration of the latter. It is needless to state that in deciding this question all other causes of albuminuria must be considered, and that repeated examinations must be made.

The manner in which the urine flows out and in which the liquid that is injected into the catheter flows in shows with absolute certainty if there is a sac or not. In the former case, the urine will flow continually—until the sac is empty—and in a greater amount, while in pyelitis the amount of urine and the way the latter flows out of the catheter will be found the same as in a normal kidney or pelvis. If the renal pelvis is not dilated the patient will feel pain as soon as a small amount of liquid—30 to 50 g.—is injected. If there be a sac, large amounts can be safely injected, according to the size of the pouch. I have in a similar case injected 300 g. of water without any inconvenience to the patient.

Catheterisation of the ureters is of no great diagnostic value in tuberculosis of the kidneys, since in this affection a diagnosis can be arrived at by other means; but I may mention the case which I have published, where tubercle bacilli were found in the "kidney urine"—an abbreviation which I adopt for the urine obtained through the ureteral catheter—after a careful and repeated examination failed to reveal them in the urine of the bladder. This can be easily explained, since bacilli originating from one kidney are present in a relatively larger number in the urine of this kidney than in the one of the bladder, which, containing the secretion of both kidneys, is naturally more diluted.

In fistulæ of the ureters the ureteral catheterisation enables us to diagnose which ureter is the injured one and where the lesion is situated. Some cases which I and others have published prove the value of the method for this purpose.

4. In conclusion, ureteral catheterisation is of great diagnostic value—and I am inclined to believe that herein lies its main usefulness—in determining the condition of the healthy kidney when the other one had been found diseased.

It is necessary to mention the cases where a nephrectomy has been done, although the patient only had one kidney, or those cases where this operation proved fatal because the other kidney was not in a condition to discharge the necessary functions of urinary secretion. Since the catheterisation of ureters enlightens us about the condition of the other kidney, it is obvious that the indications and contraindication for nephrectomy can be placed on a sounder basis than heretofore.

If a repeated examination shows that the urine of a kidney is clear, normal, free of albumen or of cylinders, and contains a normal amount of urea, the conclusion is warranted that this kidney does its work well and that it is capable of performing the function for the diseased one, after the removal of the latter. On the other hand, we know that a kidney, the urine of which contains a large amount of albumen or of pus, blood, or cylinders, and a smaller amount of urea will not be able to do the work for both, since the urinary secretion is impaired to such an extent that compensation cannot take place.

The conclusions which were arrived at after Ashard's and Cataigne's experiments, as to the passing of methylene blue through the kidney, are open to criticism. This will be a fruitful field for further researches. We shall, I believe, with our present knowledge of the condition of the urine, be able to reduce the mortality in cases of nephrectomy, since this operation is to be considered as contraindicated where we have cause to assume that the sister organ is not in a condition to do the work for both kidneys.

In conclusion, without being too sanguine or enthusiastic, I claim that the diagnosis of diseases of the kidneys has been rendered considerably more certain and exact through the catheterisation of the ureters.

SUCCESSFUL REMOVAL OF STONES OF UNUSUAL SIZE FROM BOTH KIDNEYS.

By W. F. Brook, F.R.C.S.,
Senior Surgeon Swansea Hospital.

The case is chiefly of interest from the size of the stones, and from the fact that the patient's general health appears as yet to have to have suffered no harm from their damaging effects on both kidneys.

W. S., a fireman, aged 22, was admitted into the Swansea Hospital in December, 1896, in an extremely emaciated condition, with a perinephric abscess on the left side. Five weeks previously he had noticed his urine getting thick, and three weeks later began to complain of dull pain and swelling in the side. Since then he rapidly lost flesh. At the age of 17 he had a similar illness, with pain and swelling in the same position. In the interval he had been quite well, but thinks the urine never quite cleared. Upon incision a pint of most offensive pus was evacuated. After some search the smaller stone (Fig. 1) was found presenting in the cavity by a

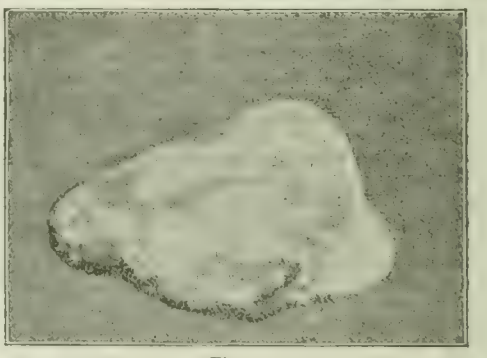


Fig. 1.

surface smaller than a threepenny bit. It was so firmly embedded that it could only be removed after a blunt-pointed bistoury had been passed on either side, and the tough, fibrous capsule that enveloped it incised.

The apex of the stone extended into the pelvis, which was distended



Fig. 2.

with pus. Both kidney and abscess cavity were drained. The patient made a rapid recovery and returned to work with a small sinus in the loin which closed in fourteen weeks. He remained in excellent health and full work until January, 1898, when he began to complain of pain in the right loin, worse on lying down, and at the same time noticed a lump on that side. The urine, which had never become quite clear, became thick again. He returned to hospital on February 2nd. On examination the right kidney was much enlarged and freely movable. The urine was alkaline, contained pus, phosphates, and casts. The kidney was exposed by an incision 6 inches in length. The pelvis was incised and the large stone (Fig. 2) removed in four pieces. One of these pieces was removed from a calyx through an incision in the cortex. The cortex was everywhere evenly stretched over that part of the stone that filled the calyces and appeared to be in good working condition. Where incised it measured ½ inch in thickness. The pelvis was drained and the wound in the flank closed by buried and superficial sutures. For the first four days the dressings were soaked with urine, after this none was passed through the wound. On the seventh day the tube was removed. He was up on the fourteenth day and the wound had healed completely by the end of the fourth week. The urine slowly became acid, but in hopes that rest might favour the disappearance of pus (a hope which has not yet been realised) he was not allowed to return to work until May 8th. The photograph (Fig. 3) shows his condition at the time this account was written, that is, after he had been at work for two months.



Fig. 3.

In spite of the extent of the incision and the free division of the edges of the erector and quadratus muscles he says he has no weakness in the back and wields a shovel 18 inches square "as well as any other man." Both stones are phosphatic. The smaller was not weighed immediately after removal, but dried weighs exactly ½ oz. and measures 1¾ inch in its long diameter. The larger, together with about 10 gr. of detritus, weighed after removal exactly ʒiv, but dried weighs little over ʒiij (3.1450). In its longest diameter it measures 3⅞ inches. On its anterior surface is a deep water channel.

Remarks.

Although at the first operation it was not possible to ascertain the condition of the left kidney, situated as it was at the bottom of a deep abscess cavity, bimanual palpation showed it to be atrophied, and inasmuch as little or no urine passed through the loin wound, its working capacity was presumably small. In other words, the right kidney was the one upon which the patient chiefly, if not entirely, depended. The healthy condition of the cortex of the right kidney and the large amount of urine passed into the dressings during the first four days after the second operation support this view. The remains of the left kidney probably were, and still are, responsible for the major part of the pus present in the urine. In spite of its size, the large stone gave rise to absolutely no symptoms until January last, and would probably still have been quiescent had not its weight dragged the kidney from its moorings. At the time of the first operation there was nothing to lead to suspicion of the right kidney, and owing to the patient's extreme emaciation, the enlarged organ could not have escaped notice had it not been fixed high up under the ribs. It will be noticed that in the case of both stones subjective urinary symptoms were remarkable by their absence.

[The specimens are now in the Museum of the Royal College of Surgeons.]

A CASE OF TRAUMATIC GLUTEAL ANEURYSM,

By William Henry Battle, F.R.C.S.,

Surgeon to the Royal Free Hospital, and Assistant Surgeon to St. Thomas's Hospital, London.

Gluteal Aneurysm: Recovery after Incision of the Sac with Ligation of the Ruptured Artery: Digital Compression of the Internal Iliac Artery through an Opening in the Peritoneum being Employed during the Operation.

Towards the end of May, 1898, a patient presented himself for treatment in my out-patient department at the Royal Free Hospital on account of a large swelling in the right buttock, which had commenced a fortnight previously. He refused to enter the hospital at that time, but did so on June 2nd, three weeks after the commencement of the gluteal swelling.

The history given by the man on admission was as follows: Three weeks before, being in good health at the time so far as he knew, he jumped on the back of one of the farm horses in order to ride him to grass. He trotted off quickly, but before reaching the field the horse suddenly stopped, and he was thrown into the hard road, turning a somersault and alighting on the right buttock. He got up and walked home, when he found the part injured to have become much swollen. He bathed it with lotion and rubbed it with oils, so that the pain diminished and the swelling appeared to get smaller. He remained at home for four days, after which he returned to work, though the swelling had not completely subsided. He had very little pain after the first few days. On May 29th he had a good deal of pain, and the swelling became larger again, so that he was obliged to give up work almost entirely, only doing two or three hours for two days. He is quite certain that there was nothing wrong with him before the accident.

He was a heavy, strong, healthy-looking man, aged 25, engaged in agricultural work some distance from London, had no history of syphilis, and had a very good family history.

The patient walked lamely into the ward. The right gluteal region presented a large globular swelling, which pulsated equally all over, the pulsation being apparently expansile. The skin over the swelling showed signs of bruising. It extended from the posterior margin of the great trochanter to within 1½ in. to the right of the middle line. The transverse and longitudinal measurements were generally about 2 in. more than on the left side. He complained of pain running down the back of the thigh and the leg. The swelling fluctuated, could be diminished in size on firm pressure, and returned rapidly to its former size with vigorous pulsation when pressure was removed. There was no marked tenderness, and the temperature was normal. No *bruit* could be heard over the swelling. After admission an icebag was applied to the buttock, but he did not sleep well on account of pain in the part affected. Examination of the rectum showed nothing abnormal. There was evidently an increase in the size of the swelling during the next few days, especially backwards towards the posterior inferior spine, and here the swelling was less firm than in other parts.

The diagnosis was aneurysm of the buttock caused by a rupture of the gluteal artery at the time of the accident. The frequency with which a pulsating sarcoma has been mistaken for an aneurysm in this region made a consideration of the case one of some anxiety, but the following facts weighed most in coming to the diagnosis of traumatic aneurysm. The man was young, healthy, and vigorous at the time of the accident, and besides his statement that there was nothing wrong with him before the fall from the horse, it is not likely that a man with pulsating sarcoma of the buttock would voluntarily jump on a horse with the intention of riding him barebacked to the field when he could easily have walked and led him there. Secondly, the rapid formation of the swelling pointed to ruptured artery and the rupture of a large artery such as the gluteal. Thirdly, the rapid extension of the swelling when in the hospital, and the greater softening of

the part which had so extended than was apparent in the parts which had been in longer existence. Fourthly, the absence of intrapelvic disease.

Against the diagnosis was urged the much greater frequency of the sarcomatous growth and the very marked pulsation. This was, however, correctly ascribed to the large size of the gluteal artery, which is of much larger calibre than is generally supposed.

The operation proposed was treating the swelling as a circumscribed traumatic aneurysm, to open it up very thoroughly, search for and secure the ends of the artery, or at all events close the opening in the vessel from which the blood came. The question whether this should be done without compression applied to the main vessel, or not, within the pelvis had to be considered; and my decision was in favour of compression of a temporary character (as opposed to ligature) of the internal iliac. The pulsation in the swelling was very marked, making it probable that the patient had ruptured the gluteal artery not far from the notch, where it is a vessel of considerable size; and any attempt to temporarily arrest the hæmorrhage by direct compression of the bleeding point with the finger when the sac was opened would, I thought, lead to much loss of blood, even though the injured artery was quickly located and secured. The very satisfactory results of the incision through the rectus sheath with displacement of the rectus muscle, which I have experienced in cases of operation for removal of the appendix in cases where the surgeon is able to select his line of incision, induced me to employ that method. The incision could be placed exactly over the artery, and was without danger of leaving any weakness of the abdominal wall. Through this incision carried into the peritoneal cavity, the finger of an assistant could be placed directly on the internal iliac with the most perfect precision, the flow of blood into the aneurysm would be controlled with certainty, and this great advantage gained without appreciable risk to the patient at the time or subsequently.

On June 14th ether was administered. An incision was made along the outer margin of the right rectus, below the level of the umbilicus, about an inch towards the middle of the muscle; this was then pulled inwards and the incision continued through the posterior layer of the sheath and remainder of the abdominal wall. A small, flat sponge was inserted after division of the peritoneum and the wound temporarily covered. The man was now placed on his left side and the right gluteal region thoroughly cleansed with antiseptic lotion and ether. An incision was then made extending from the great trochanter backwards to the posterior superior spine, and subsequently this was somewhat extended. The gluteus maximus was then rapidly cut through from end to end of the incision and a large blood-filled cavity opened. During this time and throughout the operation until the main artery had been secured the internal iliac artery was compressed by my colleague, Mr. Roughton, who stood opposite to me. A large quantity of blood and blood clot escaped when the cavity was opened. It was of very irregular outline, extending forwards to the anterior superior spine and backwards to beyond the sciatic notch. Some of the clot was firm and laminated, and with the compressed muscular tissue around formed a kind of irregular sac for the aneurysm. When pressure was relaxed on the internal iliac free hæmorrhage took place from the neighbourhood of the sciatic notch, and when the bottom of the sac had been cleared to give access to the bleeding point and pressure was again removed, large jets of blood escaped from the artery. This had been completely torn across near the notch and was secured with difficulty, as its walls were continuous with condensed tissue forming the limits of the sac. An aneurysm needle carrying a silk ligature was passed amongst condensed muscular tissue so as to encircle the vessel and this was tied. Another vessel running in the gluteus maximus also required ligature and was somewhat difficult to secure. Nothing could be seen of the distal end of the artery, but no prolonged search was made. The only vessels requiring the application of a ligature were those mentioned. The large wound was closed with fishgut stitches, after washing out with perchloride of mercury solution (1 in 2,000), with the exception of a part near its posterior limit into which a drainage tube was passed. Cyanide gauze dressing was applied, the man turned on his back, and the abdominal wound sutured in layers with silk. Similar dressing was then applied. The patient bore the operation well; at first when the large incision in the gluteal region was made his pulse became very feeble, but afterwards it improved again.

The effects of the operation were visible next day in a small rapid pulse of 130 and a low temperature, but there was no pain and he complained only of the constrained position, being compelled to lie on his left side only. Retention of urine requiring the use of a catheter followed for a few hours but did not recur. The wound was dressed and drainage tube removed in thirty-six hours, the stitches being removed on the eighth day, when the abdominal wound was also dressed and the stitches removed from it. Suppuration, chiefly limited to the anterior part of the buttock, ensued and delayed healing. It came on with little rise of temperature or local disturbance, and caused the patient to be detained in hospital until July 23rd last, although he had been permitted to get up for a week. The buttock looked rather larger than the left one but the condition did not prevent his walking, and there was no pulsation to be felt in that region. The scar of the gluteal wound measured over 8 inches in length.

The temporary compression of the internal iliac was a great help in the performance of the operation, and must have prevented considerable loss of blood; as it was there was marked effect of hæmorrhage produced, and manifested for a day or two by the patient's condition. I am not aware of any instance in which this method of temporary compression of the internal iliac has been employed through an opening in the peritoneum, but the ease with which it can be done will conduce to make me use it again in any suitable case. In the same way, of course, the other iliac arteries or even the aorta can be commanded, though there is less necessity in the case of the latter vessel. The advantage of making use of an incision which cannot be followed by hernia disturbs the parts very little and gives direct access to the vessel is evident.

The question whether this large swelling was an abscess or not was fully considered, but the absence of œdema over any part of it, its marked pulsation, the absence of abnormal temperature, and the history of sudden onset negative the suggestion.

I wish to thank my colleague, Mr. Roughton, for his help during the operation, Mr. Levick, the Senior Resident Medical Officer, for his skilful care of the patient afterwards as well as for his assistance at the operation, and also to acknowledge my indebtedness to Miss Paine and Miss Ivens, the dressers of the case.

CASTRATION IN ENLARGEMENT OF THE PROSTATE.

(WITH REPORT OF CASES).

By ROBERT JONES, F.R.C.S.Edin.,
Honorary Surgeon, Royal Southern Hospital, Liverpool.

IN January of 1896 I saw, in consultation with Dr. Bennett, of Liscard, an old gentleman, aged 67, who was very ill from troubles connected with micturition. For years he had been in difficulties, but twelve months before I saw him he had to retire from business owing to debility and worry from the frequent calls to urinate, which gave him no peace either day or night.

We found him with his bladder distended to above the umbilicus, although he gave a history, not of the usual overflow dribbling, but of having passed 2 or 3 ounces of urine several times a day, and of passing some almost half-hourly during the night. The urine was alkaline, fœtid, loaded with mucus, and contained pus. The passage of the catheter was not attended by any great difficulty, although clearly obstructed at the mouth of the bladder. His prostate was as large as a Newtown pippin, presenting a marked convex protrusion in the rectum, hard and unyielding, painful to the touch. His scrotum was covered with herpes. His mental condition showed signs of wear and tear, and he was restless, irritable, and morose. Alcohol invariably increased the severity of his troubles. We discussed the propriety of castration, but decided that means should first be taken to rid the scrotum of its herpes, and meanwhile, by rigidly antiseptic precautions, keep the bladder clean and empty.

I did not see the patient again until shortly before I operated in April. He was as bad as ever, in spite of every care. His urine was almost all residual, his nights constantly disturbed, his general condition pitiable. For six weeks retention had been complete. Under the care of Dr. Barendt and Dr. Bennett he had sufficiently recovered from his scrotal eruption to allow of operation.

There was nothing to relate of the operation except that both testes were removed. The patient made an uneventful recovery, in spite of a constant, restless interference with the dressings. In a fortnight's time the prostate had sensibly diminished in hardness, and he had less pain; his urine presented less fœtor and purulent deposit, and in a few weeks Dr. Bennett wrote me: "The residual urine has diminished in six weeks to one-fourth its usual amount, and since the early part of June—two months after the operation—he has felt comfortable, and able to dispense with the catheter." I saw him a few months after, when he walked briskly into my room, very grateful for the marked improvement which had followed the removal of his testes. His prostate was reduced in size by a good half. A short while ago he called and assured me that he felt uncommonly well. He could retain his urine for four hours. There was barely any residual collection. The bladder contractility had fully returned, and, as he put it, "I'm a young man, free from pain; strong and active."

This was the first of seven patients upon whom I have operated. In one other case I removed both testes; in another I divided the vas, turning the lower end into the wound; and in one case, sent me by Dr. Hugh Shaw, I removed one testicle for considerable enlargement of the prostate, more especially involving one side.

Time will not allow me to enter into the details of each case. Suffice it that a complete operation was performed upon a patient of 65, who had led the "catheter life" for five years; who frequently suffered retention, and at times decomposition of urine. He had full sexual power, but gladly submitted to operation. The case was complicated by double inguinal hernia. The prostate before operation was the size of a hen's egg, and three months later was reduced, as in the other case, to about half its previous dimensions. In a fortnight the bladder commenced to act, and in six weeks no further occasion for a catheter existed, except the patient's desire to use it from the effect of long habit.

I divided the vas in the case of an old chronic urinary case, 56 years of age, where symptoms of stone in prostate and bladder complicated the issue. Dr. Thompson and I, although we could note no difference in the size of the prostate, were convinced of considerable amelioration in symptoms, more especially in regard to the diminished residual pool. Later, by a suprapubic incision, we removed a large phosphatic calculus from the bladder, and another smaller one from the prostate, with considerable benefit.

In a fourth case certain points are worthy of note, in view of White's experiments pointing to unilateral atrophy of the prostate after single castration. Dr. Craig, my house-surgeon, supplies me with the following brief history:

Patient, aged 57, a musician, has always been a fairly heavy drinker. He has never suffered from any urinary trouble up to the beginning of the present illness. This commenced eighteen months ago, when he began to experience some difficulty in emptying his bladder. At this time his urine occasionally dribbled away, especially after a too free indulgence in alcohol. Since then his symptoms have undergone progressive aggravation. There is a history of pain and straining on urination, the pain being of a burning character, and referred to the point of the penis. During the last three months before admission micturition became very frequent, the patient having to get up ten or twelve times during the night, and the tenesmus was so severe that he feared to attempt the act of micturition except in the watercloset, as the tenesmus extended to the rectum. There had never been a complete stoppage of urine.

On admission, the prostate was felt *per rectum* to be enlarged to the size of a tangerine orange. This enlargement was asymmetrical, affecting principally the right lobe. The gland was very hard, and projected into the rectum. On passing a catheter no resistance was encountered until the prostate was reached. The passage of the instrument resulted in the withdrawal of about 20 ounces of blood-stained urine, even when patient had just micturated.

13th. Right testicle excised.

20th. Wound quite healed. Improvement already noticed in symptoms.

23rd. Patient passes urine much more freely, and with less pain and straining.

Interval much longer. Patient has passed urine only three times to-day—at 6 A.M., 10.30 A.M., and 8 P.M. The passage of the catheter evacuates only about 15 ounces of urine containing no blood.

The prostate is felt to be softer, flatter, and less prominent. The inequality of the two lobes is less marked, the right having undergone the more rapid atrophy.

In a fifth case castration was performed on a patient who presented the following symptoms. He was 73 years of age, and for 10 years had suffered from prostatic trouble, with intermittent attacks of retention. Micturition was often painful, and during the last two years he had led the "catheter life." On one occasion, lasting three weeks, he passed large quantities of pus, and straining had two or three times caused bleeding. The bladder had been carefully washed out from time to time by Dr Anderson, but in spite of every attention life had become unbearable and he gladly submitted to operation.

His prostate was very greatly enlarged, and the left lobe very hard. It was somewhat sensitive to pressure. Both testes were removed, and the wound had quite healed in ten days.

During the first fortnight there was considerable amelioration of the severer symptoms. The residual urine had diminished from 10 to 5 ounces. He could remain for longer during the night. In six weeks the residual urine had still further diminished, and the patient, instead of being constantly obliged to micturate, was able to retain urine for an hour, and to dispense with the catheter. On examining the prostate the hard nodule had disappeared, but I could not make out a difference in the size of the prostate. This patient continued to make good progress until he died five months later from pneumonia.

The sixth case was that of a boilermaker, aged 65, who had on several occasions consulted me regarding his prostate. For many years he had trouble pointing to the gland, and on two occasions he had been an inmate of one of the metropolitan hospitals, where on the last occasion the prostate had been tunnelled. He had not passed urine naturally for three months. He was admitted into hospital suffering greatly. There was bladder and rectal tenesmus. The urine was foul, very alkaline, containing blood, pus, and mucus. The catheter was introduced with great difficulty. The prostate was enormously enlarged.

Castration was performed, and although the operation only took a few minutes, the shock left him for twelve hours in a very grave condition. In twenty-four hours he voided a small quantity of urine an hour after the catheter was passed. During the first week the catheter was used only to start urination and to empty the residual pool, which had diminished in the first fortnight to half its quantity. In three weeks the patient required no aid, and said he had not felt so well for years. His prostate had very sensibly diminished and was much softer. This patient, who was operated upon now over twelve months ago, has, with one trivial exception, had no urinary trouble.

The seventh case was that of an old man about 70, who was in so feeble a condition that I hesitated as to the justifiability of operating. His urine was foul and loaded with pus, and constantly overflowing. His pulse was irregular and his tongue dry. His prostate was about the size of a hen's egg. Both testicles were removed, and although some weeks later he died, the urinary symptoms and his general condition had at one time sufficiently improved to hold out hopes of recovery. No difference could be noted in the size of the gland.

My experience, therefore, of castration in enlarged prostate, judged in the light and promise of seven cases, is distinctly a happy one, and should, I venture to think, encourage us in more frequent recourse to it. Although Ramm of Christiania was the first to perform this operation, the name of White of Philadelphia should always be associated with it.

While the theory obtained that the prostate was urinary and not sexual in function, the testes were not apportioned their influence over prostatic development, and it was not until after the admirable paper by White, in 1893, that surgeons turned their attention to the practical applications suggested by a study of the physiology of the gland. It has long been recognised that the removal of the testes in the young prevents the development of the prostate; that castration in an adult causes atrophy of the normal testes; and that, as pointed out by Mansell Moullin, in those animals in which the development of the sexual organs differs with the time of the year, the prostate presents differences corresponding to, and as marked as, those evinced by the testes. That effects similar in character would accrue in the case of hypertrophied as in the case of the normal gland had, however, to be proved by direct experiment and clinical observation. The analogy of the influence of the ovaries over fibroids of the uterus seemed to fill in the pathological breach, confirmed by the significant observations of the late Sir George Humphry: that of 72 persons between 80 and 90 years of age, only 17; and of 30 above 90, only 1 suffered from urinary troubles likely to be associated with hypertrophy of the prostate. Although there seems to be no developmental homology between the prostate and uterus, the analogy between the influence of ovaries over uterine fibroids, and the testes over enlarged prostate, is very complete, and the results of direct experiment, both on animals and human beings, clearly proved:

1. That the prostate is a sexual organ.

2. That castration in enlarged prostate is followed by atrophy of the prostate.

3. That unilateral castration is often followed by unilateral atrophy of the prostate.

4. That in nearly every case of ligature of the vas, slow atrophy of prostate begins.

5. That ligature of the cord causes atrophy of the prostate, but generally only after causing disorganisation of the testes.

Needless to say, castration should not be made a routine operation. It should follow less drastic and heroic measures. But even now it can present results more gratifying than prostatectomy, notwithstanding its great value; and in view of the recent researches of White, Griffiths, Desnos, Messer, Humphry, and others, no surgeon is wise in allowing a sentiment to stand between his patient and the prospect of recovery

EXCISION OF ONE OF THE VESICULÆ SEMINALES.

By C. Mansell Moullin, M.D.Oxon., F.R.C.S.,
Surgeon and Lecturer on Surgery to the London Hospital; Examiner in Surgery at the University of Oxford.

Removal of one of the vesiculæ seminales is an operation that is not often performed. It may be required for tuberculous disease, for cystic degeneration, or, as in the present instance, for persistent pain consequent upon long-standing gonorrhœal inflammation. It is an operation of some gravity, but, given good light and good assistance, it presents no unusual difficulty; and it might, in my opinion, with advantage be practised more frequently than it is, especially in those cases in which the tuberculous process has spread upwards from the epididymis, but has not yet extended into the substance of the prostate. The disease at this stage is still local, and this is the last point at which its course can be arrested. When once tubercle has extended into the prostate it is never long before the base of the bladder becomes affected.

The patient, a young man 24 years of age, was sent to me by Dr. Gresswell, of Louth. He was tall and muscular, but with a strong family history of tubercle. He had been in the Cape Mounted Rifles, and had spent a very fair portion of his life on horseback. There was a history of many attacks of gonorrhœa, one of which during the previous summer had ended in acute inflammation of the prostate, with retention of urine, so that he had to have a catheter passed two or three times a day for upwards of three weeks. There does not appear to have been any abscess in or around the prostate, but the gland, when he consulted me, was still much enlarged and painful, and the urine was full of shreds and filaments of pus. These symptoms improved under the ordinary treatment, with the exception of the pain, which was so severe as to render riding and driving out of the question. In the autumn the patient left for Canada, where he consulted Professor Peters, of Toronto, who has very kindly forwarded to me his notes of the case. While under his care the enlargement of the prostate continued to subside; but as it diminished a great deal of thickening became evident above it, around and between the vesiculæ seminales, both of which were exquisitely tender. Emissions were frequent, and very painful. Sitting was impossible, with any degree of comfort; and every morning he was awakened by pain in the pelvis and perineum, which lasted for some hours. Professor Peters treated the case by stripping the prostate and the vesiculæ with the finger in the rectum, twice a week for the first five weeks, and then once a week, squeezing out a few drops of pus each time. There was a considerable degree of improvement under this treatment, especially upon the left side. The thickening diminished, the number and the size of the prostatic threads became less, and the urine became almost clear. But the right vesicula remained hard and nodular, and the least pressure upon it caused intense pain. In March, the patient suffered from a fresh attack of inflammation, consequent upon some emissions. The frequency of micturition returned. There was severe cutting pain on micturition, felt at the neck of the bladder, and at the end of the penis. And the urine became cloudy again, and contained small quantities of blood.

In April, when the patient came to me again, I found the condition practically the same as that described by Professor Peters. The prostate was but slightly enlarged and not very tender. The right vesicula was hard and very painful. The left could scarcely be felt. The testes and the cords did not show anything abnormal. The urine contained a few purulent shreds, but no blood. Erections were exceedingly painful, and the patient was getting very despondent. I recommended that the right vesicula should be exposed and examined, and that if it was found extensively affected it should be removed. The left could be examined at the same time. To this the patient agreed after consultation.

The operation was performed through a modified Zuckerkandl's incision.[1] The patient was placed in the lithotomy position, and a sound with a long curve passed into the bladder. A horseshoe-shaped incision was made across the perineum just behind the centrum tendineum, about an inch and a half in front of the anus, and continued back to the ischio-rectal fossa on each side, but not sufficiently far to divide the hæmorrhoidal vessels and nerves. The perineal septum was cut across, the sphincter divided and turned down with the rectum, and then the pubic portion of the levator ani carefully cut through. After a little manipulation with the finger and a director, the base of the bladder and the vesiculæ seminales above the prostate were exposed in the wound, covered over by a layer of recto-vesical fascia. This was divided, and the right vesicula, which was very hard and adherent, carefully separated from the side of the ejaculatory duct and detached from the bladder. The side of the ejaculatory duct was torn while doing this, but the duct was not divided. The left vesicula appeared to be normal, and was not touched. I had anticipated profuse hæmorrhage from the prostatic plexus, but this gave little or no difficulty. The wound was packed with iodoform gauze. The sphincter ani was sutured with salmon gut to the centrum tendineum, and the superficial wound united except at one angle, out of which the gauze protruded. The vesicula was very hard and irregular. There was no evidence of tubercle; probably it had been infected by the gonococcus during the attack of prostatitis, and the inflammation had become chronic.

Convalescence was quite uneventful. The gauze was removed on the fourth day; there had been very little oozing. The temperature never rose above 100° F., and the patient's appetite after the first day was remarkably good. For the first week there was retention of urine, and for a few days there were traces of blood, but this was never in any quantity and it soon disappeared. A seminal emission that took place on the fourth day also contained blood, and was naturally very painful. The bowels gave no trouble, and there was no loss of power over the sphincter. The wound was quite healed at the end of three weeks.

I have heard from the patient since that the pain has quite disappeared, he can walk and sit without discomfort, and the seminal emissions which take place occasionally are natural and almost devoid of pain. But I have not yet allowed him to commence riding, and I have strictly cautioned him against alcohol and sexual intercourse.

References.
1 *Wiener med. Presse*, 1889, p. 856, and also Ullmann, *Centralbl. f. Chirurgie*, Feb. 22nd, 1890.

CHLOROFORM IN INDIA.

By Arthur Neve, F.R.C.S.Edin.,
Keslimir.

In this country year by year more and more deaths under chloroform are reported. Many authorities are found to assert that these deaths are always the result of improper administration, and that they should be made matters of judicial investigation.

The responsibility is placed on the profession to decide what the proper method should be, but there arises a mixed clamour of voices, in which nothing can be clearly discerned. Herein is truly grave cause of reproach. Is the drug itself more fatal than before, or is it that the methods are more dangerous? Are we to rely on experiments upon the lower animals, or upon clinical evidence? And upon which set of experiments, or upon whose evidence?

To many it appears that the most varied, most thorough, and most extensive series of experiments were those of the Hyderabad Commission, and that its main conclusions remain solid as yet in spite of assaults. Those results harmonised with the experience and teaching of the Edinburgh school; but we may confidently prophesy that for many years physiologists will continue experimenting without arriving at any conclusions which will materially affect the death-rate from anæsthetics. So it is surely advisable that those who are responsible for operating upon patients, and those who are engaged in administration of anæsthetics, should do more to utilise the vast amount of clinical material in various parts of the world to arrive at the truth about chloroform.

As an Indian surgeon, I wish to bring before you, very briefly, some very important facts which have not hitherto been duly collected or considered. Elaborate figures have been compiled in connection with most civilised countries, showing the mortality from anæsthetics, but to the Empire of India scanty reference has been made, and that almost entirely to the work of one man. To test the matter more thoroughly I addressed some inquiries to some of the principal medical officers of the different provinces of India, and I have

much pleasure in now acknowledging the courteous assistance rendered by many of them. I can only briefly summarise the information, but the original letters are at the disposal of anyone who applies to me.

The figures may be divided into three groups; those for last year (1897), those for longer periods, relating to the same hospitals, and those supplied by the personal experience of certain leading authorities.

1.—*Statistics for 1897.*

	Amritsar.	Bannu.	Bombay (J. J. Hosp.).	Calcutta (M. C. H.).	Ceylon.
Administrations	300	[illegible]	1,[illegible]	8,000	[illegible]
Deaths	[illegible]	[illegible]	[illegible]	[illegible]	1

	Hyderabad.	Kashmir.	Lahore.	Travancore.	Rajputana.
Administrations	2,621	71[illegible]	[illegible]	[illegible]	[illegible]
Deaths	0	[illegible]	[illegible]	1	[illegible]

Total administrations 15,843
Total deaths ... ... 2 = 1 in 8,000.

2.—*Statistics for Longer Periods.*

	Amritsar (5 years).	Bannu (7 years).	Calcutta (M. C. H.) (5 years).	Hyderabad (3 years).	Kashmir (2 years).	Lahore (15 years).
Administrations	1,[illegible]	[illegible]7	[illegible]	12,[illegible]	[illegible]	17,[illegible]
Deaths	0	1	0	[illegible]	1	1

Total administrations 78,407.
Total deaths ... ... 3. = 1 in 26,000

3.—*Individual Experience.*

Surgeon-Generals Harvey and Spencer and Surgeon-Colonels B. Brown, Crombie, Deane, and Lawrie, whose united period of Indian service would exceed 150 years, have been responsible for at least 100,000 administrations of chloroform, and without a single death in that large number.

N.B.—Surgeon-General Spencer's experience has been mainly in connection with British troops.

It may be stated that the open method by towel or lint mask is generally employed in India, but Junker's inhaler is used in some of the largest hospitals. The administrators are usually students or other unqualified assistants. Although the figures are by no means as detailed or extensive as we would wish, yet they sufficiently prove that chloroform anæsthesia in India is comparatively safe. The immunity might be accounted for in various ways.

1. There is difference of constitution.

But it must be remembered that the patients are of very many different races. Thousands of Europeans are annually anæsthetised. And among Indian nations—including the Mongols of the N.E., the Dravidians of the South, the Pathans of the N.W., and the Indo-Aryans of North India and Kashmir—there are more racial differences than amongst the nations of Europe. While the aboriginal hill tribes, or the Mongols, might be almost free from liability to shock, this is not the case with our Aryan brethren. One thing is however in their favour, that they have not been taught to fear chloroform as, alas, many of our fellow-countrymen have been.

2. Diet. The food of Indian races differs widely. Meat is far less consumed than in this country. This is a fact upon which Dr. Lauder Brunton has laid stress. But there are many classes, especially among the hill peoples, which eat as much meat as the inhabitants of South Europe do.

3. Stimulants are far less used than in North Europe. In Kashmir we have long observed the influence of alcoholic indulgence upon the action of chloroform. The great mass of the peasantry are Moslems and total abstainers. Any others, even if quite moderate drinkers, take more chloroform, and often struggle or shout. On account of their indulgence in chang (barley beer) the Thibetans do not take chloroform as well as the Baltis, who are of the same race, but Mohammedans.

4. Narcotics act similarly. Whether the drug used may be opium or Indian hemp more chloroform is required, and the stage of excitement is more marked.

5. The conditions of administration, which seem specially noteworthy, are two: (*a*) That the air of the operating rooms is always very fresh and no artificial light is needed, so there would be no noxious products from bad ventilation or from the combustion of chloroform vapour; (*b*) thermal conditions. These are exceedingly favourable in India as a whole. Many years ago our attention was drawn in Kashmir to the greater ease with which anæsthesia is produced there during the summer months—when the mean temperature exceeds 75° F.—than in the winter months, with a mean temperature below 40° F.; and it has appeared to us that in a cold operating room anæsthesia is better induced by warming the chloroform and the towel prior to administration. Nor is this observation without authoritative support. Sir B. Richardson wrote:

"I have found from experiment that chloroform acts *cito et tuto* in a temperature raised to summer heat, whilst in a cold air it is slow in action, and if moisture be also present is rendered unsafe even to the healthiest animals."

Clover stated that this tallied in every way with his long experience. I have ascertained from surgeons in South China that chloroform is safe there, and in the United States of America I believe that, while ether is in favour in the Northern States, chloroform is far more used in the Southern. I am not prepared with an explanation of the danger arising from moisture, but it is noteworthy that the only two recorded deaths in India last year both occurred in very damp climates, namely, Ceylon and Travancore, and the only two of which I have record this year both occurred in cold weather, namely, at Bannu in January, and Kashmir in April.

If the air be cold, and the chloroform cold, it will vaporise but slowly unless warmed by the breath of the patient, who will in this way inhale very varying strengths of vapour. In warm weather it is evenly vaporised and evenly eliminated.

So the practical outcome of India's contribution to the question of chloroform administration is to enforce the importance of even and regular inhalation. I avoid the word dosage because it is misleading. Dosage in an accurate manner could only be obtained by an apparatus fitting tightly to the face, and with a mixing chamber for the vapour, and valves of ingress and egress; in short, by one of those pseudo-scientific appliances which are so dangerous because they offend against the cardinal principles of safe chloroforming—namely, to maintain the respiratory channels free from all obstruction, and to give a plentiful supply of fresh air with the vapour.

Dosage is not secured by a Junker's inhaler or its recent modifications: as much of the vapour is blown away by the expiration, and much skill is needed to synchronise the action of the bellows and the respiration. I do not advocate random administration. In Kashmir we have long measured the amount used. We pour known quantities, averaging 30 minims, at fairly regular intervals upon the towel, closely watching the respiration and the pupils. The average total amount used is small. Last year 30 lbs. of chloroform were used in 700 administrations, which gives an average of 5½ drachms per case. In a series of nerve stretchings, published three years ago, I mentioned that the average amount of chloroform given was 2½ drachms. So I claim that the open method of administration is quite compatible with small and evenly given quantities. Surgeon-Colonel Lawrie uses chloroform more freely; that is to say, he dilutes it with more air. The average amount in his last 2,000 cases was 7 drachms.

In the above-mentioned series an average of 2½ drachms was expended in twenty minutes. If the whole were inhaled the proportion would be 2,625 c.cm. of chloroform vapour to about 120,000 c.cm. of inspired air, or 2.2 per cent. But in the absence of exact experiments we may assume that not more than half the chloroform poured upon the towel is inhaled; so the average strength of vapour would but slightly exceed 1 per cent.

Difficult cases are, of course, met with there as here. Of such I contributed some examples to the Calcutta Medical Congress in 1895. Some were referred to syncope preceding vomiting, as a large number of our cases are anæsthetised on a full stomach, others to the shock felt by patients insufficiently under. While agreeing that most fatal accidents are due to overdose, yet the evidence in favour of occasional

neuro-paralysis without overdose is too strong to be set on one side. And, considering the very debilitated state of thousands of Indian patients, it is surprising that more such deaths do not occur.

CONCLUSIONS.

1. There is considerable evidence that in India the mortality from chloroform does not exceed 1 in 8,000 cases, and in some of the largest institutions it is less than 1 in 20,000 cases.

2. This safety does not appear due to any special constitutional condition of Indian races, and but little to their habits.

3. It is probably due entirely to the warm atmosphere, which favours the rapid action of the drug and its rapid elimination.

4. To obtain similar safety in this country it would be advisable to assimilate the conditions of administration.

(*a*) To operate in well-ventilated rooms, in a temperature not below 70° F.

(*b*) To observe the cardinal rules so long taught (but often not observed) in Edinburgh, namely, to produce anæsthesia gradually; to dilute the chloroform with plenty of air; to watch the respiration closely, to test the corneal reflex, and observe the pupils and colour of the patient; to keep the respiratory channels free from all obstruction, and to keep the patient in a recumbent position. Never to "pile on" chloroform in cases of struggling, but to give more fresh air.

RESOLUTION.

In conclusion, Mr. NEVE proposed the following resolution:

That this Section memorialise the Government of India to publish in its yearly hospital returns the total number of administrations of anæsthetics, and of fatal cases arising therefrom.

This resolution was put to the members present and carried, and it was agreed that it should be forwarded to the Indian Government by Mr. Neve.

ON SPREADING TRAUMATIC GANGRENE,

WITH AN ACCOUNT OF A CASE TREATED SUCCESSFULLY.

BY

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and

W. SOUTHEY WRIGHT, M.R.C.S., L.R.C.P.

CASES of a comparatively rare disease, such as spreading traumatic gangrene, are worthy of record, whether successful or otherwise. The terrible nature of the affection and the appalling rapidity with which it runs its fell course can only be appreciated by those who have met instances of it. Fortunately, however, it is but seldom seen nowadays except in those who are debilitated from alcohol or other bad constitutional conditions, and we venture to think that the acquaintance of many surgeons with the disease is limited to descriptions in textbooks, such as may be found in the third edition of Holmes's *System of Surgery* or in the records of military surgery. The case about to be related was remarkable in that it occurred in a young healthy child, in whom prompt operation resulted in recovery although the tissues of the trunk had become affected.

On May 27th of this year Mr. Tubby was asked by Dr. W. Southey Wright to see a patient of his, a girl aged 10 years. On the afternoon of May 25th she fell from a swing in a disused fowl house, and sustained compound fractures of the right radius and ulna, about the middle of the forearm. The wounds bled very copiously. When Dr. Wright arrived—about twenty minutes after the accident—he found the upper ends of the fragments protruding. After carefully cleansing and antisepticising, he replaced them, and put the forearm up in antero-posterior splints. On the following day the child was restless and feverish, but had very little pain until the evening, when she complained of smarting and tingling in the forearm. Dr. Wright was sent for, and removed the splints and dressings, and found a little redness and swelling around the wound, which was discharging a thin ropy serum. The temperature was 103°. The dressings and splints had been applied from the first loosely, so that there was no possibility of the circulation having become obstructed by pressure, and at this time the hand was warm and of good colour. The dressings and splints were reapplied, but the child remained restless and in considerable pain all night. On Friday morning the hand was swollen and livid, and had lost sensation, and the child was delirious and muttering. At 3 P.M. on that day, when we saw her together, the hand and lower half of the forearm were much swollen, immobile, bluish-black, insensitive, and gas could be felt crepitating beneath the skin. Around the wounds for an oval space of about 3 and 4 inches the tissues presented a whitish appearance, and were hard, and gave us the impression of a recently frost-bitten part. From the wounds decomposed blood and gas escaped freely, and the stench was cadaveric. Sensation was lost to within 1 inch of the elbow, and the skin up to the shoulder was tense, hard, of a uniform coppery colour but not boggy. It still retained sensation. There was an ill-defined line of limitation just below the shoulder roughly corresponding with a section made through the shoulder-joint. On the trunk there was a dusky coppery patch of involved skin about 3 inches in circumference situated below the axilla and extending down towards the crest of the ilium. The pulse was 120, soft, and compressible, and the temperature was 100°.

The only course was immediate amputation. At first it seemed advisable to do it at the shoulder, but inasmuch as it was impossible to obtain flaps of healthy tissue at that spot, it was decided to perform a circular amputation through the middle of the arm, since it was thought that in the unlikely event of her recovery the stump so left would be more useful for fitting an artificial limb than the higher amputation could afford. As showing the rapidity with which the disease progressed, we observed that the discoloration advanced over the shoulder nearly 1 inch in half an hour.

During the operation in which Dr. Gripper assisted, it was noticed that the subcutaneous tissue was drab and semi-gelatinous, while it was sloughy and breaking down around the basilic vein. We believed that the cause of the whole thing was the entrance of the bacillus of malignant œdema, but not being able to obtain any antitoxin for this bacillus, we thought we might employ antistreptococcic serum on the possibility of a mixed infection being present. At 12.30 A.M. an injection of the serum was given into the shoulder just outside the line of infection which, it was observed, had advanced further. At 10 A.M. on the same day a second injection was given into the discoloured patch on the right flank, which had increased enormously in size, and extended as far down as the crest of the ilium. After the operation she had a good night and slept well, and the temperature had fallen to 99°. She passed some clay-like fæces and bile-stained urine, but she was perfectly conscious and rational. On May 31st the stump was rather bronzed and mottled, but the skin was perfectly elastic, and the discoloration in the flank was less. There was a little discharge from the wound of thick mucoid material, but no pus, and but little smell came from it. The mucoid-like discharge came from the neighbourhood of the basilic vein. The urine had become normal in colour again, and there was no bile nor albumen present, and indeed so far as we could tell there were no visceral complications. The child had five injections of antistreptococcic serum, and all were placed within the area of discoloured skin. On June 7th the stump was granulating up, and she was still taking nourishment and stimulants freely as she had done ever since the time of operation. The report of the Clinical Research Association after an examination of the discharge from the wound was that no malignant œdema bacilli were present, but many of the streptococcus longus.

REMARKS.

This case is absolutely typical of the results which follow the injection of the bacillus of malignant œdema into the tissues of a susceptible animal. The most striking points are the duration of incubation from twenty-four to thirty-six hours, the lightning-like rapidity with which it spreads, and the rapid and extensive development of the gases of decomposition in the tissues. The bacillus of malignant œdema is anaërobic, and is found in garden soil. It is also known that fowls are particularly susceptible to it, and the injury in the case above quoted occurred to the child in a disused fowl-house. The spores of the bacillus are particularly resistant to antiseptics, and retain their vitality when dried for an unknown period. The vitality of the spores would explain the fact that the ordinary methods of rendering a compound fracture aseptic failed in this particular case.

That the bacillus of malignant œdema was not actually discovered in the matter sent to the Clinical Research Association was due partly to the well-known difficulty of isolating it, since it is known that immediately after death of a part the blood or discharge is free from the bacilli, and perhaps partly due to the fact that we merely forwarded gauze soaked with the discharge for examination. It is also known that other organisms assist the spread of the disease, and the discovery of the streptococcus longus in the discharge confirms this; but we do not doubt that the main factor at work was the bacillus of malignant œdema. It is, however, difficult to explain the *modus operandi* of the action of the injections of antistreptococcic serum, except on the supposition that the presence of streptococci is essential for the rapid development of the bacillus of malignant œdema. We venture to think that few cases of acute spreading gangrene are recorded as successful when once the trunk has become implicated.

ELECTROLYTIC TREATMENT OF INOPERABLE MALIGNANT TUMOURS.

By MAX MELCHIOR, M.D.,

Copenhagen.

WHEN a surgeon finds himself face to face with such a desperate case as an inoperable cancer or sarcoma, it is both natural and justifiable that he should resort to any means by

which he may cure the patient. Among the exceedingly varied means which in such circumstances have been employed, there is also that of electrolysis, which, however, has received but a limited acceptance.

The reason of this is obvious, for although this mode of treatment has been used already for a long time, in spite of its having secured some very zealous advocates who in the electrolysis believed to have found a panacea for all possible surgical diseases, yet hitherto they have never brought forward conclusive evidence by which the malignity of the tumour was indisputably proved.

The first case of this latter description was communicated in 1869 by Neftel (New York), who thought he had cured an inoperable mammary carcinoma by electrolysis. The patient was a man, aged 56, from whose left mamma a cancer had been extirpated, and a year later a glandular residuum in the left axilla. The growth was microscopically examined, and proved to be a carcinoma. Shortly after the last operation there developed in the right breast a tumour, which in the course of a short time grew to the size of an orange; and as extirpation could not be performed on account of the man's exhausted condition, it was treated by electrolysis in three sittings, amounting in all to seventeen minutes. At the end of three months there remained no trace of the growth, and at the end of three years no recurrence had taken place. But since no microscopical examination of the tumour itself, treated with electrolysis, was undertaken, there is no certainty of the correctness of the diagnosis. Moreover, it is scarcely probable that a cancerous growth should disappear before an electric current of seventeen minutes' duration without leaving any trace.

Later, Neftel made a very thoroughgoing study of the question, and communicated several other cases of cancer as having been cured by means of electrolysis but none of these are more convincing.

Further, Esmarch, Herbert White, and Robert Newman have recorded cases of malignant tumours which are supposed to have disappeared under electrolytic treatment, but none of these seem to deserve any further notice.

The numerous other authors who have made use of electrolysis in cases of malignant growths have arrived at very different results. Some—for instance, Billroth, v. Winiwarter, Sédillot—condemn the method altogether, while v. Bruns, Groh, and von Mosengeil do not go so far, although, on the whole, they have obtained but moderately satisfactory results, not in any way better than by other methods, as, for instance, by common cauterisation.

Lastly, there is a large number of surgeons (Althaus, Parsons, John Duncan, etc.) who have obtained excellent effects by electrolysis, which more than any other remedy has the power to relieve pain and to stop hæmorrhage, as well as to affect favourably the general condition; but they all agree that electrolysis cannot cure the cancerous disease itself but has only the effect of a palliative.

While the older authors, however different their mode of procedure, always employed electrolysis in the form of puncture through the skin, Kaarsberg, a Danish surgeon, in 1894, made trial of an electrolytic treatment on a new, and, as it appears to me, a more rational principle. Kaarsberg always performs with the knife an extirpation of as much as possible of the tumour, and not till then applies electrolysis to the exposed remains of the growth. By this method he has treated 3 cases of inoperable cancer of the breast, in 2 of which he has procured for the patient an endurable existence and probably prolonged life, while in the third he has effected permanent cure. Kaarsberg, however, is prudent enough to acknowledge that the diagnosis in this case is not absolutely indisputable.

Seeing that as yet no case is in evidence of an inoperable, indubitably malignant tumour having been definitively cured by electrolysis, I believe that the following medical report from the surgical department of the Royal Fredericks Hospital (Copenhagen) may claim a certain amount of interest. This report is published at the suggestion of Dr. Wanscher, the head surgeon of the department.

The patient, a girl aged 16, came on September 9th, 1897, to the hospital, to be treated for a tumour in the nuchal region, which in the course of two months had grown to the size of an infant's head. The growth, which in the upward direction reached the roots of the hair, was covered by natural integuments, somewhat adherent at the lower part, and seemed to be infiltrated between the muscles of the neck.

On September 13th I performed extirpation of the tumour under narcosis. The operation was especially difficult, as the tumour was situated deep towards the vertebral column, and presented ramifications partly among the transverse processes, partly forwards in the direction of the great vessels. I succeeded [illegible] tumour from its surroundings, [illegible] extensive wound. When as much as possible had been removed by extirpation was stopped. The wound was dressed with a tampon and sterilised gauze, and bandaged in the ordinary way.

After the operation the patient was in a state of severe collapse from the enormous loss of blood. A saline injection was given *per rectum*, and as her condition was but slightly improved, infusion was made of sterilised 6 per mille salt water into the median vein: whereupon the patient recovered pretty quickly. The anæmia was overcome in a short time, and the further progress of the wound was marked by no dangerous incidents. By microscopical examination it was found that the tumour was an angiosarcoma. Six days after the operation electrolysis of the tumour tissue in the bottom of the wound was performed by Dr. Wanscher, both of the needle-shaped electrodes being introduced. The force of the current was 500 milliampères for 10 minutes. The electrolysis was repeated later on, and then there commenced, together with profuse suppuration, extrusion of large necrotic shreds and lumps approaching the size of a hen's egg, whereby the bottom of the wound was gradually cleansed and transferred to a fresh granulating surface.

On October 13th a recurrence was noticed, which was removed with the knife. The microscopic examination again showed sarcoma. Electrolysis was now repeated, seven times in all, whereupon necrotic masses again made their appearance. The wound refilled with fresh granulations, and was healed on November 1st, 79 days after the operation.

Up to date—that is, for three years and ten months—the patient has been free from recurrence. She is in excellent health, and has acquired a buxom appearance. The large cicatrix has the appearance of a closely connected tissue, and forms a deep depression.

I may add that this case has lately been published in Danish by Dr. Videbech, together with a similar case from the same surgical department. The patient, a man of 50, with a large periosteal sarcoma springing from the clavicle, was, after the electrolytic treatment free from recurrence for 1½ year, and died half a year later without having called in surgical help.

What is the reason of the favourable result in the case of the patient in question? I believe that the cause is exclusively to be sought for in the mode in which electrolysis was applied, on the principle first suggested by Kaarsberg in 1894. As this method, as far as I know, has not been practised outside Denmark, I shall give a description of it in detail.

The main difference between this and the earlier methods consists in electrolysis not being made use of instead of the knife, but merely as a subsidiary aid for the purpose of eradicating the remnants of growth which are beyond the reach of the knife. As a consequence, electrolysis is always brought directly to bear upon the exposed tumour tissue; besides, far stronger currents than formerly are made use of in order to effect a powerful and radical destruction. The consequence of this already is that the tumour is exposed to a far more radical influence than was formerly the case, when the electrodes were applied through the skin; and, besides, the method offers this great advantage—that the practitioner can see what he is doing, and let the electricity operate exactly on the spots where it is wanted. The destroyed necrotic particles can be easily extended, while at the same time a free outflow is secured for the suppuration, which is often profuse. Besides, particular attention must be called to the fact that recurrence is easily detected, and can be immediately dealt with.

Generally a current force of 500 milliampères operating for five minutes is employed. Narcosis is indispensable because currents of that strength are very painful. The electrodes are in the form of steel needles, which are isolated with the exception of the point: both are introduced into the tumour, larger blood vessels and nerves being carefully avoided. The sittings are usually repeated at intervals of a week.

These powerful currents operate in a very special manner, as necrosis is produced not only of the tissue in immediate contact with the poles and of the interpolar space itself, but also—and this is a matter of the greatest importance—to a considerable extent outside the poles, so that the effect is by no means confined to a strictly limited space. This far-reaching effect, which has repeatedly come under my observation, makes it possible to destroy diseased tissue in localities inaccessible by direct means.

What I desire to lay particular stress on is that, by the method in question, only necrosis of the diseased tissue is brought about, while the sound tissue is more proof against the effect of the strong currents: so that it seems as if electrolysis possessed the valuable property of completely eradicating the very substance of the growth, and in reality, in the case mentioned, it was directly observable how the ramifi-

cations of the tumour among the surrounding parts were gradually destroyed and were thrown off in lumps, frequently of considerable size.

The electrolysis affects the surrounding sound tissue by producing a very energetic reaction, which immediately after the operation manifests itself by redness and swelling in the periphery and slight pain. At a later stage a lively granular formation develops, which sets a demarcation to and limits the necrosis, and in general is accompanied by profuse suppuration. Then the wound heals in the usual way through filling up by granulation and contracting through a profuse formation of fibrous tissue, which assumes a visible expression by a firm deeply-depressed cicatrix.

In addition to what has been already advanced, I may still mention a number of experiments and experiences which seem to speak in favour of electrolysis being employed for the destruction of neoplasms. Already in 1873 Neftel reported that, by experiments carried out under the control of the microscope, he was able to observe how the galvanic current had a strong destructive action upon cancerous cells, while the cells of the normal tissue proved far more capable of resistance. These experiments were afterwards repeated by Newman, who electrolysed extirpated cancerous tumours by a current from thirty-six elements (strength and duration of current not stated), and found that the cancerous cells disappeared in this way. Particularly interesting in this respect are Kaarsberg's medical reports, showing that he has repeatedly succeeded in proving, by excision of the electrolised tumour substances, the great diminution or complete disappearance of the cancerous cells, accompanied by a very copious formation of fibrous tissue. On the whole, the powerful development of fibrous tissue provoked by electrolysis plays, no doubt, a very important part in confining and choking the cancerous cells.

I may further refer to the favourable results which have been obtained by the electrolytic treatment of, for example, naso-pharyngeal tumours (Nélaton, Fischer, Ciniselli, Gronbeck, Kuttner, Kaarsberg, Schmiegelow), struma (Althaus, Gherini, Choostek, Neftel), and in a multitude of other tumour formations, which would take too long to enter into here.

The method which I have described involves the application of currents of considerable strength, and so the important question arises, how far this may be associated with danger. In the case under discussion, no dangerous consequences whatever were observed, and Dr. Wanscher, who has often later resorted to this method, has never observed anything of the kind. Kaarsberg has even been able to bring the current up to 680 milliampères without any injurious consequences. Von Bruns recommends caution in the application of electric currents to the head and the neck on the ground that in other cases—especially when strong currents are suddenly cut off—headache, giddiness, etc., may result. Demarquay even mentions that a young lady who was treated with electricity for an affection of the ear and died some days afterwards with symptoms of shock.

Meanwhile it seems to be proved by the evidence of recent experiments (Blackwood, Brown, d'Arsonval, and Kaarsberg) that good-sized animals can easily bear very strong currents; and the current, to have a fatal effect, must be sent through the brain itself. Finally Groh makes the statement that he has applied very strong currents to malignant growths in the face without any accidents occurring to the brain, and Wanscher has also, without danger, used currents of 500 milliamperes in the superior maxilla and orbit. The danger of accidents to the brain does not, therefore, seem to be particularly great.

It seems to me that danger might rather be looked for in the purely local effect on large vessels and nerves, from which emboli and paralysis might possibly result. Billroth once, in introducing the needle into an angioma, perceived numerous air bubbles in the neighbouring venules of the skin, wherefore the operation was immediately stopped. The danger of embolism, however, is very slight in any case, seeing that now already electrolysis has in numerous cases with excellent result been employed against aneurysms without a single case having hitherto occurred in whom embolism ensued.

As for the nerves, I may state that once Kaarsberg observed radial paralysis on approaching this nerve with a needle too closely. Against these few unlucky incidents you may place the considerable number of clinical experiences, which chiefly indicate that the fear of the dangerous effects of the strong currents is somewhat unfounded. Nevertheless, the great vessels and nerves should be avoided, or, if this cannot be done, only the weaker currents must be employed. There also remains a possibility of the strong production of fibrous tissue provoked by electrolysis later on developing injurious consequences—as, for instance, by retraction or pressure upon important organs.

I think, therefore, that the right thing will be to represent the method to the patient as dangerous and uncertain—at any rate, until a more thorough knowledge of its consequences is obtained. The majority of these unfortunate patients will doubtless gladly embrace any, however slight, chance of cure even in the face of this reservation.

Of course I do not mean to say that electricity would be able to cure every case of inoperable cancer. Electricity obviously cannot be employed in cases where internal organs are affected by metastases; it may also be rendered impossible by the anatomical site of the recurrence, or, finally, by reason of the severely-affected general condition of the patient. There is, moreover, the possibility that certain malignant tumours are more successfully acted upon than others, a matter which the future must decide.

The object of this communication is only to call the attention of my colleagues to the treatment here described. The whole course of the case in question was so favourable as, in my opinion, to encourage further experiments.

DISCUSSION.

Mr. STANLEY BOYD (London) thought that unless, as hinted, electrolysis had a selective power, by which it ate out malignant and left normal tissues, its advantages as a means of treatment could hardly be greater than those of the cautery or caustic pastes.

ON INCURVATION OF THE NECK OF THE FEMUR (COXA VARA) WITH NOTES OF A CASE.

BY J. LACY FIRTH, M.S., F.R.C.S.,
Assistant-Surgeon to the Bristol General Hospital.

NORMALLY the neck of the femur in an adult forms an angle of about 128° with the shaft, and is directed inwards and slightly forwards. In earlier life this angle is more open. The late Professor Humphry, in an examination of numerous femora, found that in persons of the same age period there were considerable differences in the size of this angle. He found that the shorter the femur and the wider the pelvis, the more acute was the angle of the neck; that it became more acute during the period of growth, but not in later life; and that if, during growth, the limb were relieved of weight, as in persons bed-ridden or with an amputation stump, then a more open form of angle was retained.

These observations show, that the ultimate form of the angle of the femoral neck is a result of the action of more than one force. The forces are, that of growth or original developmental tendency, that of the body weight and that of muscular strain. The form of other parts of the skeleton is dependent upon similar forces.

The strain of the body weight tends to decrease the size of the angle of the femoral neck. If, during the period of growth, this strain be rendered more effective than usual, as by long standing, or be added to, by weight carrying, then the angle of the femoral neck will be proportionately the smaller. Similarly, if the force of growth be impaired from debility, the angle will be smaller.

The strain of the body weight and of muscular tension persists through life, tending to lessen the angle of the neck. In health, after the period of growth, the femoral neck is strong enough to effectually resist this strain. This is true even in old age. The angle does not diminish from old age, though it is said to do so in many of the older textbooks.

But at any period of life, if the femoral neck be softened by disease or injury, it may yield under the strain it bears and become more incurved than natural. The neck may be softened by rachitis, osteo-malacia, Paget's disease of bones, osteitis, and necrosis, by the imperfect formation and ossifica-

tion of callus after fracture, and in the growing period it may be weaker than natural because too slender. These diseased states of the neck of the femur are therefore the predisposing causes of incurvation. In some cases the incurvation produced in one of the above ways leads to serious disability. I give the notes of such a case below. The condition is not one frequently met with, and it is but recently, in 1889, that it received adequate recognition for the first time.

C. C., a male, aged 19, came to the Bristol General Hospital in March, 1897. He complained of pains and weakness in both hips, thighs, and left knee, and general weakness. The pains were of dull aching character. In the thighs they were in the upper and front parts only. He had a good deal of difficulty in walking and was easily fatigued. The pains were most severe when moving after a rest. He described walking as being a misery to him. He could only ascend stairs by using the hand-rail. He slept badly, being unable to place his lower limbs in a position which was easy for any length of time. These troubles had begun about eight months previously, two months after taking the situation which he then held, that of a billiard marker. Further questioning, however, elicited that in his previous situation as a stableman, he had frequently had a feeling of weakness and pain in the hips after riding, which would wear off in a few minutes. He had always, he said, turned his feet out in walking, more than most people, and his brother did so also. Lately, however, he had had to turn his feet out more than ever.

There was no history of recent illness nor of injury to the hips. For twelve months he had been growing rapidly. There were signs of rickets (adolescent). The radial and ulnar lower epiphyses were large and the malleoli, and there was distinctly a rickety rosary on the chest. He looked well nourished and muscular. The urine was normal. There was a tendency to flat foot on each side and to genu valgum of the left knee. His feet were much more turned out when standing, walking, or lying down than usual, and with the hips and knees extended he had much difficulty in bringing the feet together to touch along their inner borders. Both the femora were fixed in a rotated-out position, and could not be rotated in more than was sufficient to make the feet meet, as above described. From that position they could be rotated out, so that, with the hips and knees extended, the outer borders of the feet rested upon the couch: indeed, that was the position the limbs assumed when the patient lay at greatest ease. The patellæ looked outwards as well as forwards owing to the femoral rotation. He could voluntarily flex the femora at the hips nearly to the perpendicular (lying down), and passively they could be still further flexed to an angle a little less than a right angle. During flexion of the hips the rotation outwards of the femora, which increased, and the flexion of the knees together caused crossing of the legs in their upper thirds. This is well shown in Fig. 1, reproduced from a photograph, taken with the patient lying, and the hips voluntarily flexed as much as possible. Similarly, he had to cross the legs when sitting, and especially when he brought his legs beneath the chair, and when kneeling.

Abduction at the hip joints was remarkably limited. Standing erect, he could only separate the malleoli 7½ inches, and that required exertion. Fig. 2 is from a photograph of the patient with the lower limbs abducted and rotated in to the maximum degree possible. When lying the surgeon could further separate the malleoli, making the distance between them 11½ inches. Adduction of the hips was also limited; the knees could not be adducted beyond the middle line of the body.

With the hip-joint flexed abduction was more free and adduction more limited than with the joints extended. The patient could not, therefore, cross the knees either standing or sitting. In fact, in the latter position the knees could not be made to meet. In short, all movements at the hip-joint were limited except rotation outwards, which was excessive, and extension, the most striking limitations being of rotation in and of abduction.

On both sides the trochanters were prominent laterally and elevated. The prominence was seen better from behind. Perhaps the hollows in the gluteal region behind the trochanters were more marked than usual. The prominence is noticeable in Fig. 2. The highest points of the trochanters, their posterior and superior angles, were about an inch above Nélaton's line. The left limb measured from the anterior iliac spine to the malleolus was a quarter of an inch shorter than the right.

Lastly, the patient's gait was remarkable. He walked with a marked lateral oscillation of the shoulders and trunk, with the feet widely turned out, with short steps, and with rubbing together of the knees and malleoli. He said that when walking down hill he had difficulty in preventing himself from falling forward.

In July the patient was admitted to the hospital. He was kept in bed supine for eight weeks. For the first four weeks extension was applied to each leg, and daily attempts were made to abduct them, and they were maintained abducted to the extreme limit by heavy sandbags. During the next four weeks massage and forcible movements were practised. He was later sent to a convalescent home. On his discharge from the hospital he could separate the malleoli, when standing erect, two inches more than on admission, and there was much improvement in his gait, and an absence of all pain and increased strength.

Before discussing the diagnosis of this case I must acknowledge my indebtedness to a paper on the subject of Incurvation of the Neck of the Femur, by Royal Whitman, published in the *New York Medical Journal* of 1894. Four cases of the affection are there described which the writer had met with; previous records of similar cases are quoted, and the methods of diagnosis described.

It appears that in 1889 E. Müller reported four cases of incurvation affecting one side, from one of which a specimen was obtained with the neck at right angles to the shaft. Hoffa also obtained a specimen, in which the head of the femur was so depressed that it rested on the small trochanter. Before 1889 specimens had occasionally been found, but their significance had not been fully appreciated. Again, Whitman has seen incurvation in five cases of congenital dislocation of the hip that he has operated upon. The specimens described appear to have shown displacement of the head and neck in two directions, downwards and backwards.



Fig. 1.

The symptoms of my case, and those of Whitman and Müller, are very similar. If the existence of a double deformity be admitted, of an incurvation, and of a recurvation or rotation outwards of the femur in its vertical axis at its junction with the neck, then the most striking features of the deformity can be readily explained. The incurvation explains the raising of the level of the trochanter and the limitation of abduction, and the recurvation or outward twist of the shaft explains the limitation of rotation inwards. Normally abduction is limited by the tension of the lower part of the joint capsule, and the pressure upon it of the portion of the head which has rotated out of the acetabular socket, and by the approximation of the upper part of the neck and the trochanter to the rim of the acetabulum. In a case of incurvation, when the neck of the femur is in the position of maximum abduction, the shaft will not be abducted so far as normally, and may even be directed across the mid-line of the body, the direction depending upon the degree of incurvation.

The limitation of rotation inwards can be similarly explained by recurvation of the neck, or by rotation of the shaft on its vertical axis, at its junction with the neck. When the neck is rotated in to the maximum degree, it will still leave the shaft rotated out more than normal.

Following this line of reasoning further, one would expect to find in these cases that the femoral shafts could be placed by the patients in positions of greater adduction and greater rotation outwards than normal. When the neck is in the position of maximum adduction, one would expect to find the shaft more adducted than normal in proportion to the degree of incurvation, and, similarly with the neck rotated outward, the shaft should be excessively rotated outward in proportion to the recurvation. As a matter of fact, in my case the femur can be placed in a position of excessive outward rotation, but adduction is less than normal. I have not found any reference to this point in Whitman's paper, and these movements in his cases seem to have been normal. Perhaps adduction is limited by a shortening of the upper part of the capsule, for incurvation, when the limbs are kept parallel, approximates the upper margin of the acetabulum to the upper part of the root of the trochanter, which respectively give origin and insertion to that part of the capsule. My case differs from the others also, I believe, in that flexion of the hips decreases the adduction. The knees can be separated, in my case, two or three inches more when the hips are flexed

than when they are extended, and the power of adduction is less when that of abduction is thus increased.

The elevation of the trochanters above Nélaton's line, and their lateral prominence is obviously easily explained by the sinking of the femoral heads and necks.

Five possible causes of elevation of the trochanters may be enumerated: (1) From dislocations, either congenital, traumatic, or as a result of disease; (2) from fractures of the neck; (3) from upward enlargement of the acetabulum, "wandering of the acetabulum"; (4) from erosion and absorption of the upper part of the femoral head; (5) from bending of the neck.



FIG. 2.

In dislocations of all types the head can be felt by manipulation. In my case it cannot. There is no question of traumatism, and fracture of the neck may be therefore excluded. If erosion of the head or of the acetabulum were the cause, one would expect a history of prolonged pain, with spasm of muscles and distortion. If erosion occurs without such a history, then it is a type of erosion associated with symptoms hitherto undescribed. There is no thickening of the neck, tendency to suppuration, or pain and distortion like that of tuberculous disease. Rheumatoid arthritis of the hip is more painful, and leads to greater restriction of movement with wasting of muscles and grating on movement; and often other joints are affected. My patient has some signs—slight, it is true, of rickets, and it is known that rickets is one predisposing cause of incurvation. Lauenstein obtained both femora of a child which died shortly after osteotomies for rachitic deformities, and they showed incurvation. Probably, in the future, this deformity and the disability it produces will be more frequently recognised in rachitic children than at present.

To summarise, I base the diagnosis of incurvation in this case upon the following considerations:

1. It has been proved that incurvation does occur by the specimens of Müller, Hoffa, and others.
2. Incurvation and recurvation satisfactorily explain the symptoms.
3. The patient has slight rickets, and rickets can cause incurvation.
4. Other known diseases of the hip do not satisfactorily explain the symptoms.

And lastly, Roentgen ray photographs show the existence of incurvation. The femoral neck appears to be almost exactly at right angles to the shaft. Also in these photographs the trochanters show no projection above the upper borders of the femoral necks, and in both the upper borders of the femoral necks are not concave upwards as normally. On the left side this border is almost straight, on the right it is convex upwards. As to prognosis, one may say that probably there will be no further alteration of the degree of incurvation, but that most of the disability he now suffers will be permanent. In graver cases osteotomy below the trochanters is advocated. It is not required here. If treatment had not been adopted, adduction would, it is not unlikely, have advanced until cross-legged deformity had been produced.

Since writing the above account of my case I have read a paper on Coxa Vara by Professor Ogston in the *Practitioner* of 1896. The writer has noted in two cases "the displacement outwards of the range of rotation of the hip-joint" which I have described above. No allusion is made to a similar displacement inwards of the range of abduction, which one would expect to exist for analogous reasons. As I recorded above, there was no such displacement of abduction in my case, nor in Müller's nor Whitman's cases. Ogston emphasises the non-existence of flexion at the hip in these cases, an important point, because in tuberculous hip disease flexion practically always exists. In my case the range of extension at the hips is if anything excessive. Dr. James Swain has alluded to some cases of Coxa Vara he has met with in the *Bristol Medico-Chirurgical Journal* for 1896. The symptoms in his cases appear to resemble closely those recorded above.

I am much indebted to Mr. C. F. Druitt, M.R.C.S., for the photographs.

CASE OF EXCISION OF THE LEFT SCAPULA FOR SQUAMOUS EPITHELIOMA:

OPERATION PERFORMED WITH THE PATIENT IN THE PRONE POSITION.

By H. LITTLEWOOD, F.R.C.S.,
Surgeon to the Leeds General Infirmary.

For the following history of this case, with an account of the operation, etc., I have to thank my dresser, Mr. J. Williamson.

L. I., aged 52, suffering from a tumour of the left scapula, was sent to me by Dr. Kershaw, of Pudsey, on August 11th, 1897. I admitted him into the infirmary the same day.

He gave the following history: Twelve months ago he was working as a mechanic, and thinks he strained the shoulder whilst lifting. Soon after this he complained of pain in the shoulder-blade, and had to give up his work as a mechanic. Four months later he noticed the shoulder-blade was getting bigger, and the pain was increasing. Since that time it has slowly but gradually increased in size. He has continued to suffer a good deal from pain, and has lost two stones in weight.

Condition on Admission to the Infirmary.—On examining the patient from behind a prominence was seen over the body of the left scapula. It extended more outwards and round into the axilla than backwards, so that the greatest prominence corresponded to the axillary border of the scapula; the growth also extended into the supraspinous fossa, but did not involve the acromion. There was a tender part near the superior angle, and another at the axillary border near the

inferior angle. It did not appear to involve the shoulder-joint; the movements of the joint were limited, probably owing to some of the scapulo-humeral muscles being infiltrated with growth. The scapula was movable over the ribs, and the growth was not adherent to the skin. It felt rather uneven, being hard in some places and in others elastic.

Operation.—August 16th, 1897. The patient was placed in the prone position; the left side was close to the edge of the operating table, and an assistant supported the left arm. The



Fig. 1.

chest was raised, and resting on a pillow (see Fig. 1). Ether was administered. A curved incision was made (see Fig. 1, A B). Commencing about two inches above the superior angle of the scapula, curving outwards over the end of the acromion and downwards along a line about an inch from the prominent axillary border; the incision was then curved inwards, and terminated about two inches below the inferior angle. A large flap was turned inwards to within 1½ inch from the spine, exposing practically the whole of the scapula. Another incision, about 2½ inches long, was made over the back of the shoulder (See Fig. 1, C), and a flap turned down so as to fully expose the muscles attached to the axillary border. The attachments of the trapezius and deltoid to the spine were cut through, and the acromion process, not being involved in the growth, was divided with bone forceps near the spine, so as not to interfere with the acromio-clavicular articulation. The muscles attached to the vertebral and superior borders were then divided from below upwards with the exception of the serratus magnus. The scapula was now free, so that it could be lifted off the ribs and tilted outwards. This having been done, the supraspinatus and infraspinatus muscles were divided, the coraco-clavicular ligaments, capsule of the shoulder-joint and the long head of the biceps. Now grasping the scapula and rotating it outwards, the serratus muscle was divided near the axillary border, then all the muscles attached to the axillary border, and the scapula and growth removed. All bleeding having been arrested and the parts cleansed, the flaps were stitched up with silkworm-gut. Drainage was provided for with gauze. The patient was somewhat collapsed after the operation, but soon revived after some injections of hot brandy and water into the rectum.

Result.—The patient made a good recovery; there was, unfortunately, some suppuration, which delayed healing. He, however, left the infirmary on September 16th—a month after the operation—the wound having practically healed.

The notes of the case were read and the patient shown at the meeting of the Leeds and West Riding Medico Chirurgical Society on November 5th, 1897.

The accompanying photograph was taken at this time. The wound had then healed, and the patient had a fair range of movement. He could lift his hand up to his mouth, and place it on the opposite shoulder.

Report on Specimen.—The growth practically replaced the the whole of the body of the scapula—the acromion, coracoid, part of the neck, the middle portions of spine, and supraspinous fossa escaped. The supraspinatus and infraspinatus muscles were involved, as were also the subscapularis and serratus magnus. The lower portion of the growth had broken down, forming a cavity about the size of a walnut, containing soft caseous and semipurulent material. Microscopically the growth was composed of large masses of epithelial-like cells, in some of which were well-marked cell nests.



Fig. 2.

Remarks.

It is very difficult to explain the origin of a squamous epithelioma in this case, as, I take it, the growth must be a secondary deposit, but up the present time no primary squamous epithelioma has been found.

The scapula and microscopical specimens were shown at the meeting of the Pathological Society of London in February, 1898. On first examining the specimen I thought the tumour might be an endothelioma, and that the cell nests had been formed by some endothelial proliferation. I have abandoned the view, and believe the growth is a squamous epithelioma. Several members of the Pathological Society saw the specimens, and all expressed the opinion that the growth was a squamous epithelioma.

The patient was readmitted to the infirmary on December 13th, 1897, with a recurrent growth the size of half-a-crown in the middle of the flap. This was removed. Since then there has been no recurrence.

A case of squamous epithelioma of the scapula is, I venture to think, a sufficiently rare occurrence to be placed on record, especially as I have not yet been able to discover the primary seat of the disease. I am also anxious to advocate the prone position as the most convenient one for performing the operation of excision of the scapula.

October 23rd, 1898. I received a note from Dr. Kershaw telling me that the patient whose case is described above had died suddenly the night before. He had a violent attack of coughing, coughed up a large quantity of blood, and died almost immediately. During the last few weeks he had got thinner, and had been troubled with a cough, associated with a profuse, thick, and offensive expectoration. He had never had any difficulty in swallowing. It appears to me very probable that the primary growth may have started from a small portion of the œsophageal wall and not extended into the lumen to produce any difficulty, but infiltrated the lung.

A CASE OF CHRONIC MEMBRANOUS COLITIS OF OVER TEN YEARS' DURATION CURED BY RIGHT INGUINAL COLOTOMY AND SUBSEQUENT CLOSURE OF THE ARTIFICIAL ANUS.*

BY JAMES MACPHERSON LAWRIE, M.D.,
Physician to the Weymouth Sanatorium for Diseases of Women.

CASES in which membranous colitis has been treated by colotomy are sufficiently rare to induce me to record the following. It was only while looking up the literature of the subject for this purpose that I discovered I was not the first to carry out this treatment:

Mrs. B., aged 47, was sent to me on January 11th, 1897, by Dr. Edgeworth of Bristol. She stated that in November, 1885, hysterectomy was performed by the late Mr. Greig Smith. From this operation she made a good recovery, but some three months later she began to suffer from intestinal trouble, which took the form of frequent attacks of diarrhœa, with great pain in the large intestine and the passage of mucus. As time went on she became worse. Large mucous casts were passed, and pain became severe and almost constant, aggravated at times by distension of the abdomen. Troublesome constipation alternated with diarrhœa, which was excessive and of a most offensive character, whilst vomiting was frequent. She became a chronic invalid, and was generally in bed and constantly under medical treatment; but none of the many remedies tried had any permanent effect. Then the diarrhœa and sickness became more constant: no food of any kind could be retained, and she required to be fed by nutrient enemata, whilst the pain was so intense that nothing but injections of morphine gave her relief.

I may supplement this description with Dr. Edgeworth's notes: "Sometimes she would be constipated, with scybalous motions; then diarrhœa would come on—often very acute—with jelly-like motions, shreds and casts of the intestines. Under treatment and strict dieting she would get a little better, the improvement perhaps lasting for two or three months, after which the old symptoms would return. At last nothing seemed to control the mucous diarrhœa, and this was accompanied by severe vomiting, which was only relieved by hypodermic injections of morphine. She lost her appetite and rapidly wasted, becoming weak and anæmic." As will be gathered from the foregoing, her condition when she came under my care was deplorable, and the journey from Bristol was accomplished with the greatest difficulty, although she was accompanied by her medical man. She was much emaciated, and worn out with pain, sickness, and diarrhœa. Before leaving Bristol she had again to see Mr. Greig Smith, who advised right inguinal colotomy. I concurred in his opinion, and decided to carry out this procedure without delay.

Operation.—On January 17th, 1897, the abdomen was opened in the right inguinal region with the usual incision; the peritoneum was caught up and fixed with a few stitches to the edges of the skin. The cæcum was sought for, and after a little difficulty pulled up into the incision. The mesentery was perforated about half an inch from its attachment to the bowel and a glass rod passed through, long enough to rest on each side of the wound and support the intestine in the centre. By a few stitches which passed through only the peritoneal and muscular coats, the bowel was fixed to the skin and the extremities of the wound were brought together with silkworm gut sutures. The wound was dressed and the bowel protected by a high collar of iodoform gauze, which surrounded the bowel and carried off any pressure, a large pad of gauze was then placed over this circular dressing, and the whole retained by broad bands of plaster interlacing over it. The bowel was opened on the eighth day with Paquelin's thermo-cautery and its contents evacuated, a good spur was formed.

After-History.—The immediate results of the operation were very satisfactory. The pain all disappeared and the rectal discharges ceased, the bowels acting regularly through the artificial anus. The patient began to eat well, putting on flesh and gaining strength, and later on she had some natural evacuations by the rectum.

Closure of Artificial Anus.—Nearly seven months after the operation I closed the artificial anus in the following manner[1] August 8th, 1897. Two incisions were made in the parietes, with the fistula as a centre, down to the subperitoneal areolar tissue. Their direction was oblique in order to avoid division of the fibres of the external oblique muscle and aponeurosis. The incision came up to but did not pass through the fistula. The fistula with the cicatrical tissue surrounding it was bodily removed.

The parietal incision went down to the subperitoneal areolar and fatty tissue, but did not go through it. Then with finger and scissors the parietal peritoneum with its fat was detached from the muscle all round the fistula for a distance of about 2 inches. When the separation was completed the fistulous tract was removed down to the gut. The bowel remained attached to the parietal peritoneum by adhesions around the fistulous opening. The bowel with its attached peritoneum was now lifted out through the incision in the parietes. The opening in the gut was then closed by infolding of the rawed areolar surfaces around the fistula and sutured by Lembert's method. The line of closure was transverse in order to increase the calibre of the contracted gut. The sutured gut and peritoneum were now dropped inside and the parietal wound was closed over by silkworm-gut sutures in the ordinary way. A small drainage tube was inserted for a few days. The wound healed well, but owing to a severe attack of vomiting partially reopened. This necessitated a further operation, which was performed on November 7th, 1897.

Present Condition.—The final result was all that could be desired, union was complete, and the wound healed firmly. The present condition will be sufficiently gathered from the two following extracts:—

(*a*) Extract from a letter to me from the patient some time later: "I am now in good health, entirely free from pain, can eat and sleep well, and have a good natural action of the bowels daily without inconvenience of any kind, and am in every respect in better health than I have been at any time during the last fifteen years of bad suffering."

(*b*) Extract from a letter from Dr. Edgeworth to me, February 8th, 1898. "She appears now to be quite well, with regular motions, no pain, good appetite, and gaining flesh rapidly. I feel sure that if this operation had not been done she would have quickly succumbed."

REMARKS.

It might seem on first thoughts that colotomy was a somewhat heroic measure to adopt for the treatment of membranous colitis; but when we consider that a case may go on for many years with a gradual deterioration of health, and obstinately defy all medical measures, it will be realised that the condition is a serious one and justifies a serious procedure for its cure. Moreover, the treatment is in entire accord with the well-established surgical principle of physiological rest for diseased structures, and one is inclined rather to wonder that it has not been tried more frequently. It was under the influence of such considerations, with the sanction of so high an authority as the late Mr. Greig Smith that I was induced to try colotomy in this case.

Passing on to the consideration of other cases similarly treated, I may refer to a paper by Dr. Hale White and Mr. Golding Bird in the *Transactions of the Clinical Society*, vol. xxix, 1896, pp. 45-50. An abstract will be found in the BRITISH MEDICAL JOURNAL, 1895, ii, p. 1559. This case had a history of ten years' duration, in which all kinds of drugs had been tried in vain. Right colotomy was performed, and five weeks later, as all the original symptoms had disappeared, the colotomy wound was closed. The general health and strength improved and two and a half months after the operation she went into the country. She died two months later. In the discussion following the paper, Dr. Adeney, of Tunbridge Wells, completed the clinical history and said that her final illness presented the symptoms of acute suppurative general peritonitis, due apparently to the rupture of something in the pelvis, possibly a suppurating gland.

No *post-mortem* examination could be obtained, but it would appear that the cause of death was quite independent of the operation. In this same discussion Mr. Godlee and Dr. Turney each mentioned a case in which colotomy had been performed for dysentery, Mr. Ballance being the operator in the latter case. Mr. Goodlee's patient eventually died of a return of phlebitis, from which she had previously suffered, while Dr. Turney's case proved fatal from hypostatic pneumonia a week after the operation. These last two cases were operated upon on the same principle of securing rest for the diseased structures, but the condition was different from one of membranous colitis, so that the case of Dr. White and Mr. Golding-Bird remains the only one that I have been able to find a record of, besides my own case.

It will be observed that whilst Mr. Golding-Bird closed the colotomy wound five weeks after the first operation, the interval in my case was nearly seven months. I think the longer interval is desirable, in order to avoid any chance of recrudescence of the old trouble by the too early irritation of the colon by fæces and by distension of this part of the bowel by fæces or flatus. I cannot, of course, say whether to this longer interval is due the fortunate result in my case.

I need not enter into the pathology of membranous colitis, since the condition is a very obscure one. That it is associated in many cases with a pericolic abscess seems well established, and, as Dr. Herringham remarked, a German author had proposed to name the condition "pericolitis sinistra," asserting that it was as common as suppuration of the appendix. Membranous colitis must be distinguished from "mucous colitis," in which the mucous membrane remains unaffected and the casts are structureless and composed entirely of mucin; in these cases there is no hæmorrhage. But in membranous colitis the casts are mixed with pus, and contain a certain number of leucocytes; diarrhœa is a marked feature, and hæmorrhage often occurs when ulceration is present. Again, both these conditions must be distinguished from dysenteric casts, which are practically sloughs, and invariably accompanied by hæmorrhage.

NOTE.

[1] The description of this operation is taken almost word for word from Greig Smith's work on *Abdominal Surgery*, under "Operations for Artificial Anus"; this being the method that was closely followed.

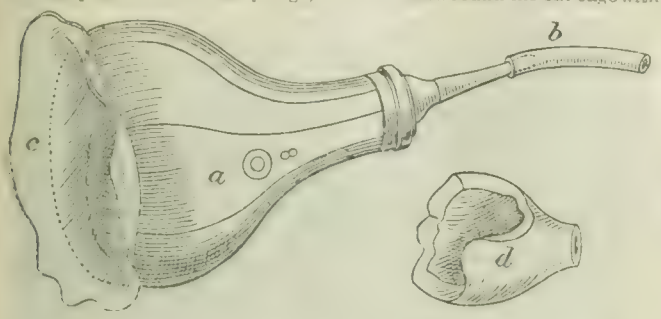
* Read before the Dorset and West Hants Branch.

ASPIRATION OF MAMMARY CANCER DURING REMOVAL.

By J. TREGELLES FOX, M.R.C.S.Eng., etc.

Some years ago[1] the idea occurred to me of endeavouring to drain the infective juices out of the surrounding tissues by aspiration of malignant tumours of the breast as an accessory to their removal. Through the courteous co-operation of Professor Ogston, of Aberdeen, I have had the opportunity of putting the plan in practice in the following case.

G. McK., 48, unmarried; sarcoma of left breast, fourteen months' growth; recently commenced to fungate and bleed, and grow rapidly. Tumour size of orange; a gland felt in axilla; none to be felt above clavicle. The operation was performed in the Royal Infirmary, Aberdeen, in the ordinary thorough method by Dr. Ogston, who removed the tumour and fat and glands from the axilla in one mass. Whilst being anæsthetised I fitted over the breast a suction apparatus, which was extemporised out of an eight-ounce I. R. enema bottle with the wide end cut off, supported internally by another I. R. cone cut out of the bulb of an ordinary seamless enema syringe, and furnished round the cut edge with



a, 8-ounce I. R. enema bottle, the fundus cut away; *b*, nozzle connected with vacuum bottle of aspirator by stout rubber tubing; *c*, thin para rubber band attached to lip by cement; *d*, portion of bulb of "seamless" syringe cut to fit the tumour and placed inside *a*.

a lip of thin pure rubber fixed on by bicycle cement. On connection with the vacuum bottle of an ordinary aspirator, this sucker adhered perfectly, the exhaustion being maintained by occasional pumping during the operation, which was completed, under complete antiseptic and aseptic precautions, in the usual way, the patient making an excellent recovery without a bad symptom. About an ounce of sanguineous fluid flowed into the bottle.

Theoretically, the idea of causing a backward current in the lymphatic spaces of a breast affected with malignant disease and its surroundings prior to and during removal, has much to recommend it. If we could produce a minus pressure here it should lessen the risk of "soiling the wound" with cancerous juices,[2] as Watson Cheyne expresses it, and might still further diminish the proportion of recurrences, already so much reduced by the "thorough" method of operating.

Practically, this case demonstrates that the method can be readily applied without in any way hindering the operation or adding to its gravity. I hope that others will try it till sufficient cases are on record to be able to judge whether it can increase the proportion of permanent cures.

In regard to the technique: in this case there was already a breach of surface, and all that was attempted was to aspirate through the bleeding fungous mass. In another case a number of short hollow trochars with numerous lateral perforations could be thrust into, but not quite through, the mass of the tumour before the rubber sucker was applied, by which means the exhaustion could be made to reach even the deep parts. A larger suction cone, closed near the mouth by a flexible perforated diaphragm, and supported within by sufficient septa to prevent collapse, might enable one to make the area submitted to surface suction coextensive with the portion of integument to be sacrificed.

In conclusion—whether or not this principle can ever be of service for inoperable cases, in conjunction with surrounding subcutaneous injections, for instance, of alcohol—it is now proposed as an adjunct to the thorough removal of these tumours. The histological considerations,[3] which suggested it to my mind emphasise equally the paramount duty of early operation.

References.

[2] See British Medical Journal, March, 1894, p. 403. [2] *Ibid.*, February, 1896, p. 387. [3] Stiles, *Ibid.*, September 24th, 1892, p. 673, etc.

BERI-BERI-STRICKEN CASES.

By E. C. MONTGOMERY SMITH, M.R.C.S.Eng., L.R.C.P.Lond.,
Health Officer, Eastern District, Bermuda.

In the Journal for December 19th, 1896, p. 1791, under the above heading there is a short account of the ship *Lodestar*, of London, arriving at Falmouth from Rangoon loaded with rice, after a long voyage with the whole crew down with beri-beri, three men having died at sea.

On June 16th, 1898, the German barque *Steinbek* arrived at Bermuda from Probolingo, Java, with a cargo of raw sugar, all the crew except one man and a boy down with beri-beri. The captain stated that this ship is the *Lodestar* of London, and that after the voyage mentioned above she was sold to her present owners. She took in provisions and a fresh crew at Amsterdam, and sailed to Java. Stores were taken on board to last the whole voyage out and back. None of the crew had been ill with beri-beri before; one man had been in a ship with the crew ill, but was not attacked himself. The ship left Probolingo on January 27th, 1898, after taking in a supply of water at Sarabaya, which water is brought from Pasaron, higher up the bay. Fresh provisions were used while in port, and some taken to last about a week on the voyage. All the crew were well on leaving Sarabaya.

In lat. 18.23 S., 5.37 W., near St. Helena, on April 29th, when about three months at sea, two men complained of swollen legs and weakness, two others complained on May 9th, and one or two others were attacked every four days until the ship's arrival here. The treatment adopted by the captain was for scurvy. Beri-beri was not mentioned in his instruction-book for medicine chest.

After arrival here six of the worst cases were landed at Nonsuch Station Hospital. They were the first that had been attacked. Fresh meat, vegetables, and milk were ordered. A mixture containing tincture of digitalin 15 m given every four hours, and whisky to the three worst cases, magnesium sulphate in doses of one drachm was given to all every evening; it caused a copious evacuation, which relieved the œdema without apparently weakening the patient, so that it was continued for seven days. All seemed to have the same symptoms—some being more pronounced in one than another. Dyspnœa, worse on exertion, sternal pain, pains over the heart area, œdema of legs and body, muscular weakness and wasting, constipation and absence of patellar reflex. All had ravenous appetites, but vomiting came on after food for the first few days. There were no mental symptoms and no rise of temperature above 99° F. About 2 A.M. on June 17th, one man died suddenly while drinking a cup of milk. Four others recovered very quickly and were able to walk about the grounds in five days. The fifth man had marked œdema of legs, arms, and abdomen, and a very loud *bruit* was heard—loudest over the mitral area. He had œdema of the lungs and very bad dyspnœa. The face was anæmic and an occasional flush was succeeded by a pale cyanotic tinge. The pulse was 140. The temperature did not in any case rise above 99° F. This case remained the same for about ten days, when the *bruit* suddenly disappeared and the other symptoms subsided, the patient recovered and was discharged in about one month. Of the men left on the ship all were stronger up to the time of the ship's departure. Those on board were using ship's stores and also provisions from town.

CARBUNCLE TREATED WITH ANTISTREPTOCOCCUS SERUM.

By E. OLIVER ASHE, M.D.Lond., F.R.C.S.Eng.,
Kimberley, South Africa.

I report the following case partly because I have not seen any published account of the treatment of a carbuncle with antistreptococcus serum, and partly because there may be a doubt whether such treatment is pathologically correct. Carbuncle is supposed to be caused by staphylococcus pyogenes aureus, and, therefore, it might be thought that antistreptococcus serum would be without effect.

There is, however, no contention that carbuncle contains the

staphylococcus alone, in fact it is probable that it contains a mixed assortment of micro-organisms, and the good result obtained may be owing to the action of the serum on some of these others, amongst which there were most likely streptococci.

The patient, a stout stongly-built man of 62, with a short thick neck, strong and active for his age, and of very temperate habits, was seen for the first time on July 1st, 1898, but he had been ill for about a week.

Condition When First Seen.—There was a brawny purplish swelling about three inches long by two wide at the back of the neck, and at the most prominent part of this, near the middle of the neck, but a little to the left, was a small irregular opening surrounded by dark-coloured mealy-looking granulations. A small amount of discharge was coming from the opening, but there was no slough to be seen. The swelling was very hard, but only slightly tender: the temperature was 100° F., and there was little constitutional disturbance. The urine contained no sugar or albumen.

Treatment.—The swelling and opening were well cleansed with 1 in 1,000 mercurial lotion and thick boracic fomentations applied. A mixture of quinine and magnesia sulphate with a liberal allowance of port wine was ordered.

On July 3rd the swelling was both larger and more intense. Chloroform was administered and five free incisions were made into the swelling parallel to the long axis of the neck, one passing through the centre of the opening already present; the mealy granulations were thoroughly scraped and rubbed away, and the opening scraped out and swabbed with mercurial lotion. Very little pus escaped from the cuts but they bled freely. There was some deep slough at the bottom of the opening, but as it was small in quantity and firmly adherent it was not disturbed. The fomentations were continued as before. On the following day the swelling was apparently subsiding, though there was little discharge; but on July 5th the swelling was again increasing, and on July 6th it was very much greater. The induration now extended from the occipital protuberance to the vertebra prominens, and at the sides reached forward to the anterior edge of the sterno-mastoid muscle on the left, but about an inch short of this on the right. There was some œdema of both shoulders, and there was a baggy œdematous swelling under the jaw on both sides. The swelling was purplish-blue in colour and very hard; a small amount of pus was coming from the cuts and opening, and small heads of pus could be squeezed from numerous pin-point holes round the opening. The patient's general condition was bad, the temperature was 101°, the pulse quick and feeble, the tongue foul, there was no appetite, and he was restless and unable to sleep.

Treatment with Antistreptococcus Serum.—On July 6th, at 3 P.M., I injected 1 g. of Burroughs and Wellcome's dry antistreptococcus serum, dissolved in 10 c.cm. of water, into the right flank. On July 7th, at 10 A.M., the general condition was slightly better. There was no apparent increase of swelling, and there was slightly more discharge. The dose of serum was repeated. On July 8th a very decided improvement was noted: the œdema was gone from the shoulders and jaws, and the induration receding from the sterno-mastoids. The dose of serum was repeated. Improvement was again marked on the following day. The induration was much less in area and intensity. The discharge was free both from the cuts and the before-mentioned small openings almost all over the affected skin. The temperature normal, tongue cleaning, the appetite better. I repeated the dose of serum. On July 10th improvement continued. There was no pain, the general condition was quite good, and I did not consider any further injection of serum necessary.

After-history.—From this time uninterrupted progress was made, the discharge became very free, and continued so for some time, and the sloughs, though rather slow in separating, came away after about three weeks, a very large one being removed on July 28th. The sloughs were all deep ones, no destruction of skin taking place except at the place which opened early. After the sloughs came away the discharge lessened, and all the openings closed up very rapidly. The treatment was not changed throughout. The patient was last seen on August 11th, and was then well.

I believe my patient may thank the serum for saving his life, as he got steadily worse up to the time it was used; was then in a very serious condition, and began to improve within twenty-four hours of the first dose.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

VERMIFORM APPENDIX RESEMBLING SUPERNUMERARY TESTICLE.

IN the BRITISH MEDICAL JOURNAL of October 15th Dr. J. K. Tomory relates a case of "apparent" supernumerary testicle. Two years ago I was doing a radical cure for a right hernia in a child aged 6 years, who presented the same signs and symptoms as Dr. Tomory's patient except that the body in the inguinal canal was not reducible. On cutting down on this "testicle" I found that it was the appendix which was coiled up at its free end like a crozier. It had adhesions to the tissues of the cord, and was therefore irreducible. At the meeting of the Clinical Society of London on October 14th the President stated that he had seen the appendix in the sac of a left inguinal hernia. The condition may be very rare, and yet occur twice in a generation.

Dublin. M. C. STAUNTON, M.D.

FRACTURED PATELLA.

H. L., aged 19 years, a muscular youth, whilst carrying a heavy weight on his back, missed his footing in coming up some steps, and in trying to recover himself something snapped. He was unable to straighten the leg. He was taken to the Altrincham Hospital, where it was found that the patella was fractured transversely, the fragments being 1½ inch apart. The limb was placed on a splint with inclined plane, a half-crescent pad of lint was placed above and another below the fragments, and firmly bound with a bandage figure-of-8. It was on the splint eight weeks, and for four weeks in plaster-of-paris: later Fisher's knee-cap. He now wears a leather knee-cap, is able to run and ride a bicycle well, feels little inconvenience.

Mr. Bushell-Gore kindly applied the Roentgen rays, with the result shown in the skiagraph. It will be seen there is



very little separation of the fragments, the light as well as the dark portion being patella bone. It is now four years since the accident.

E. L. LUCKMAN, M.R.C.S.,
Surgeon to the Altrincham Hospital.

MODE OF DELIVERY IN A CASE OF IMPACTED SHOULDER PRESENTATION.

THE following case I think of interest to those engaged in midwifery practice, as showing a possible way of delivering a fœtus, presenting by the shoulder, which has become tightly impacted, and where turning is impossible. If the method to be described had not succeeded, then the only thing left would have been to destroy the fœtus; an operation of such severity that one is glad to try simpler means first.

I was called in to see a patient who had been attended by some unqualified person, and from what I could make out the patient had been in labour about three days. The patient showed signs of great pain, and was in a very collapsed condition. Before making an examination I administered stimulants. On examining I found the following: Outside the vagina was a hand and forearm, quite cold, and very dark in colour, and evidently circulation had ceased in this limb for

some time. The labia majora were swollen, and there was a considerable amount of laceration of the external parts, showing that some violence had been used. The presenting arm was the right. On making a vaginal examination I came on the shoulder so tightly impacted that movement was impossible, and when tried caused great pain to the patient. With difficulty I managed to get my finger introduced still further, and then came on the neck, and could make out that the head was high up and flexed on the chest. The left arm was lying across the chest.

Without chloroform I found it was impossible to move the child, so my partner, Dr. A. R. McCullagh, administered the anæsthetic, and when the patient was deeply under I endeavoured to move the fœtus, but found this absolutely impossible. No doubt a considerable amount of traction had been made before I was called to the case; thus, turning being out of the question, I tried traction with my finger in the left armpit, but failed. I then thought that if I could get the left arm delivered, I might so change the position of the fœtus that delivery might be possible. After some time I managed to deliver the arm, and to my great surprise I was, with comparatively little trouble, able to effect delivery. The fœtus was born with the head flexed on the chest, the chin deeply planted in the sternum. I should think the child had been dead about twelve hours.

This case I think is interesting, showing as it does a kind of spontaneous expulsion after change of position by delivering the left arm. Although by bringing down the arm the diameter of the presenting part is not diminished but rather increased, yet probably the change in shape of the fœtus had to do with the easy delivery. Convalescence was somewhat slow, and during it there was nasty sloughing of the left labium majus, but in four weeks' time the patient was able to go about.

Spennymoor, Durham. JAMES C. POTTER, M.B., C.M.Edin.

A CASE OF QUADRUPLETS.

THE rarity of the occurrence of quadruplet births induces me to publish a case I have just attended.

On October 17th I was called to Mrs. O., primipara, married 13 months, and found her in the first stage of labour; the vertex was presenting, and the water oozing away, pains irregular and slight. In about eight hours afterwards I delivered her with forceps of a living child. On examining again I found a second child, breech presentation. I left her for an hour, and on my return ruptured the membranes and delivered her of a second child. Again examining, a third was felt, vertex presenting. The patient becoming exhausted I again ruptured the membranes and delivered with forceps. Again examining, a fourth child could be felt, and rupturing the membrane this also was delivered with forceps. The children were all females at about the seventh month, and alive. The presentations were: first vertex, second breech, and the last two vertices.

One child died twelve hours afterwards, the second forty-eight hours. The remaining two are still living. There were two placentæ: the first was expelled naturally, the second was completely adherent to the upper surface of the uterus; this I carefully detached, and though there was a good deal of hæmorrhage by applying extended external pressure the uterus contracted and caused no further trouble. The mother up to date is doing well.

The *Index Medicus* gives only two or three references in each year of its extensive bibliography.

Streatham Common, S.W. C. A. COLEMAN, B.A., M.D.

FATAL CASE OF WASP STING.

ABOUT two months ago I had an urgent summons to go and see Miss S., aged 24, who had been stung by a wasp in the throat. When I arrived she was just recovering from a fainting fit. Soon afterwards she was seized with pain in the stomach and violent vomiting. Under treatment, however, she soon recovered from this first attack.

A few days ago the same patient, whilst attending to some flowers, had the misfortune to be stung by a wasp a second time, on this occasion on the hand. I was again summoned by the father, who informed me that his daughter had been stung and was dying, which statement, unfortunately, turned out to be but too true, as she expired a few minutes after my arrival at the house. On making inquiries I elicited the following facts:

That a few minutes after being stung her mother noticed that her face was very red. She next complained of feeling numb all over, and losing her sight, after which she fainted away. These symptoms of numbness and blindness, I should have mentioned, also occurred in her first attack. Her face from red turned suddenly pallid, and she expired in about twenty-five minutes from the time she was stung. From all accounts she was a strong healthy girl, though of a neurotic temperament, and was perfectly well the same morning. As well-authenticated cases of death due to syncope from wasp sting, etc., I find are rare, I desire to place this case on record.

Birch, near Colchester. F. H. COOKE, M.R.C.S., L.R.C.P.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

A CASE OF PERFORATING DUODENAL ULCER: OPERATION: NECROPSY.

(Under the care of Mr. WHIPPLE.)

[Reported by J. DILL RUSSELL, B.Sc.Lond., F.R.C.S., House-Surgeon.]

A. P., aged 38, was admitted on May 3rd, 1898, with the following history.

History.—For the last three years he had suffered from violent pain in the pit of the stomach, coming on some three or four hours after taking food, and so severe as to cause him to abstain at times from taking food. With this pain, however, he never at any time vomited, though he usually had more or less nausea. The bowels were as a rule regular, and the motions always natural, as far as he could tell. There was no history of syphilis or other trouble. On April 30th, three days before admission, he was suddenly seized with such violent pain in the stomach that it quite doubled him up, and he became very faint and collapsed; from this he recovered somewhat, but then gradually became worse. There had been no vomiting except when being brought to the hospital, and his bowels had been confined for a week.

Condition on Admission.—On admission he was obviously very ill indeed, the temperature 100°, the pulse 99, and the repirations 30. His face was drawn and pinched, the abdomen greatly distended, tense and tender, and covered with a red blush from turpentine stupes. Dulness was present in the flanks and hypogastrium, but elsewhere there was tympanitic resonance, the liver dulness being absolutely unobtainable.

Operation.—He was at once transferred to the theatre. A.C.E. was given, and after a hurried preparation the abdomen was opened by Mr. Whipple in the middle line. Forthwith gas and large quantities of yellowish and greenish pus escaped, and thick lymph was seen everywhere covering, parietal and visceral peritoneum, and forming loculi containing the pus. After much difficult search from appendix down and up, a perforation, circular and the area of a split pea, was found in the first part of the duodenum, just beyond the pylorus, on the anterior surface of the gut and high up under the liver. In reaching it numerous adhesions were broken down. It was sewn up with a single layer of Lembert's sutures of fine silk, the abdomen thoroughly swabbed out, dried, and drained by a tube with gauze wick through each flank and gauze drains into the pelvis and down to the perforation. The operation lasted two and a-half hours, and during the latter part, as the pulse began to fail, 2 pints of saline (100° F.) with 3 ounces of brandy were injected into the basilic veins, with the result that the patient

left the table in better condition than when the operation was begun. He soon, however, began to flag, and died eight hours after operation. He regained consciousness only for a short time, and vomited slightly just before death.

Necropsy.—Adhesions had formed all over the abdomen, the cavity of which was quite dry except for a collection of about 6 ounces of green pus between the liver and the diaphragm which had reaccumulated. The wicks in the flanks, etc., had drained well. The perforation was soundly closed by the stitches and adhesions already formed, as proved by hydraulic pressure. The ulcer was situated on the anterior wall of the duodenum, just beyond the pylorus, and was about $\frac{1}{3}$ inch long and $\frac{1}{4}$ inch wide, its long axis being in the direction of the bowel, and had soft, undermined edges. There was no other ulcer either in the duodenum or the stomach.

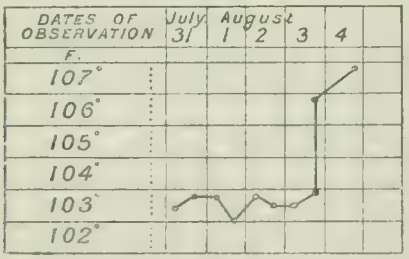
STATION HOSPITAL, BERMUDA.

CARBUNCULAR BOIL ON FACE: PERICARDITIS: DEATH.

(Under the care of Captain W. W. O. Beveridge, M.B., R.A.M.C.)

Private J. H., aged 25, was admitted on July 31st, 1898, having suffered for two days previously from a boil on the face. Boils are prevalent in Bermuda at this time of year. Up to this date he had been healthy, was a man of temperate habits, powerful in frame, and of good constitution. He stated: "The boil commenced in the ordinary manner, but had become inflamed on his picking off its head." The same day he was employed on coal fatigue, and in the evening felt sick, shivered, had lumbar pain, and was generally out of sorts.

On admission, he was found to have a painful boil, over the situation of the right facial artery, where it crosses the lower jaw, and another on the upper lip, below the ala of the nose; the surrounding tissues were purple in colour, swollen, tense, and glazed. Pus was evacuated by incision. His temperature was then 102° F., the tongue deeply furred, bowels constipated, and pulse full and bounding.



The following day, August 1st, his morning temperature was 103.4° F., and there was considerable swelling of the lips on the right side. His left arm around the elbow was red and swollen, but the axillary glands were neither enlarged nor painful. A red raised rash developed the same evening on the legs and thighs. He complained of great pain in the head and region of the heart. A pericardial rub was developed by nightfall.

On August 2nd his condition was manifestly serious, and there was pronounced pericarditis. Headache was intense, with injection of the conjunctivæ, and he showed great mental anxiety. The swelling of the face was less, but still hard and glazed in appearance, and the inside of the cheek and lips on the affected side was sodden and sloughing, suppuration having ceased.

On August 3rd his morning temperature reached 103.6° F., and he was very delirious, with full and frequent pulse, and effusion into the pericardium. The bowels were obstinately constipated, and the urine albuminous. The face had undergone a marked change. The eyes were protruding from their sockets and uncovered by the lids, while the tissues of the orbits around were tense and hard. The lips were greatly swollen, purple and shining, lined internally by an unhealthy blood-stained slough. The trunk and arms were now covered with a scarlet rash, raised above the surface in lines and wheals, which later on developed a petechial character. He remained violently delirious all day, and at 10 P.M. his temperature registered 106.6° F. This was reduced by the cold bath to 103.8° F., only to rise to 107.6° F. at 4 A.M. on August 4th. He died shortly afterwards.

His sufferings during the whole period of his short illness were intense, especially from headache and pain in the neighbourhood of the boils, but was relieved to some extent by treatment.

This carbuncular boil of the face, as described in *Quain's Dictionary of Medicine*, is luckily a rarity; its course is extremely rapid, and attended with fatal result. In the above case the duration of the disease was about five days, and it is questionable whether a commencing simple boil on the face may not have become converted into this intensely septic form from an external septic infection contracted when employed in loading coal.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

J. F. Payne, M.D., President, in the Chair.

Tuesday, November 1st, 1898.

THROMBOSIS OF THE HEPATIC VEINS.

Dr. T. Churton recounted the case of a man, aged 26, who came under notice with increasing ascites and enlargement of the superficial abdominal veins: some enlargement had been previously observed in the epigastric region, and apparently had followed a bruise of the side due to injury received from the fall of a machine. As tapping was unsuccessful an exploratory incision was made, when it was found that the fluid was confined between the liver and diaphragm. At the necropsy, the liver was found cirrhotic and the hepatic veins thrombosed; the thrombosis was limited to the hepatic system. There was no history of acquired syphilis, and the speaker suggested the congenital form as probably accounting for the cirrhosis.

THROMBOSIS OF HEPATIC VEIN IN CIRRHOSIS.

Dr. Lazarus-Barlow recorded a somewhat similar case to Dr. Churton's in a boy 13 years of age, whose abdomen had been noticed swollen for three months: there was hæmatemesis and slight jaundice: the abdominal veins were enlarged; tapping was performed on two occasions. After death the liver was found enlarged and presented posteriorly a large scar. The hepatic veins were completely thrombosed, the thrombus being in places partially organised. There was general hepatic fibrosis, which exhibited microscopically a combination of the multilobular and intercellular forms. The spleen contained a central fibrous mass. The history of congenital syphilis was presumptive. The author thought the multilobular cirrhosis to have supervened upon the other, as Dr. Rolleston had suggested, in consequence of the intercellular having reduced the resistance of the tissue and enabled other causes of irritation to take effect. There was nothing abnormal at the place of entry of the hepatic veins into the cava.

VISCERA FROM A CASE OF CONGENITAL SYPHILIS.

Dr. Morley Fletcher exhibited the liver of a female child 7 weeks old, who died with enlargement of the abdomen. No signs of syphilis were present, but there was a history of snuffles. No fluid was found in the abdomen at the necropsy, but the liver was enlarged and hard. There was no thrombosis. Histologically the organ showed an advanced pericellular cirrhosis; here and there the cells were grouped into what might be called miliary gummata. The adrenals were much enlarged. Although the history was not clear, the cause of the condition was probably syphilis. The organ macroscopically had much the appearance of diffuse sarcoma. The speaker referred also to a case of thrombosis of the hepatic veins described by Dr. Gee in a child of 17 weeks, in which the veins were occluded by a thin membrane, regarded by Dr. Gee as due to a congenital malformation or an extreme degree of cirrhosis.

Dr. Rolleston remarked that at least six causes might be cited as leading to thrombosis of the hepatic veins in different cases. In both the examples reported he considered it due to the cirrhosis, probably syphilitic, being accentuated about the veins, and in this way leading to obstruction. Sometimes

it arose from the softening of adenomatous nodules in a cirrhotic liver, and the escape of *débris* into the vessels. Hepati thrombosis, nevertheless, was a rare condition.

Thickened Skull.

Professor Curnow exhibited a skull reputed to be that of an Australian aboriginal: it was remarkably heavy (2 lbs. 10 ozs.), prognathous and dolichocephalic. He thought it probably African. The muscular impressions were very pronounced, the calvaria thickened. There was no enlargement of the pituitary fossa, and he did not therefore regard it as acromegalic.

Epithelial Pearls in the Tonsil.

Dr. H. Walsham exhibited microscopic preparations of the above. In a large number of examinations of tonsils he had found them in only a few cases. Some he regarded as arising in the retention of desquamating epithelium within tonsillar crypts, but others he thought were discontinuous with the surface, and due to fœtal inclusions. Calculi of the tonsil probably arose from the calcification of such pearls.

Idiopathic Hypertrophy of the Œsophagus.

Dr. H. D. Rolleston showed a specimen under the above title, from a man, aged 59. During life there had been no symptoms in any way referable to the gastro-intestinal tract; this was vouched for by the patient's daughter, who always had her meals in his company. There was no dilatation or narrowing of the lumen of the œsophagus, and no cause was found to account for the hypertrophy of the circular muscular coat, which began 3 inches from the cricoid cartilage and steadily increased towards the cardiac end. The mucosa was opaque, but showed no other morbid change; the longitudinal muscular coat was normal. There were numerous adhesions around the outside of the affected part of the œsophagus, but they were not dense or specially firm, and it did not appear likely that they had so inconvenienced the movements of the œsophagus as to lead to this hypertrophy. Microscopically there was no evidence of fibrosis in the hypertrophied muscular coat. The stomach was larger than natural, and the pyloric orifice small, but not thickened as to its walls. The kidneys were granular; the heart (14 ozs.) showed hypertrophy of the left ventricle. As no cause was manifestly forthcoming, he had called the hypertrophy "idiopathic." Spasm of the cardiac orifice naturally suggested itself as a cause, but there was no evidence of cardiospasm during life, and no proof that hypertrophy of the œsophagus occurred in cardiospasm. This hypertrophy of the circular muscular coat of part of the intestinal tract immediately proximal to a gastric orifice closely resembled congenital hypertrophy of the pylorus in infants, at least from the anatomical side.

Dr. Norman Dalton had seen an example of dilatation of the œsophagus without any discoverable intrinsic obstruction; but he questioned whether the diaphragm might not be the cause—that is, whether from smallness of the œsophageal aperture in it there might not result an obstruction which would lead to hypertrophy and dilatation.

The President referred to the condition known as "leather-bottle stomach," which presented a certain likeness to Dr. Rolleston's specimen, and in which he did not think a cause could always be assigned.

Mr. D'Arcy Power stated that there was a somewhat similar preparation at St. Bartholomew's, but without history.

Dr. Rolleston, in reply, observed that had there been obstruction at the diaphragm he should have expected dilatation of the œsophagus as well as the muscular hypertrophy.

Card Specimens.

Dr. Norman Dalton: Dextrocardia.—Dr. Morley Fletcher: Dilatation of the Left Auricle, due to fibroid change of its wall.—Mr. S. G. Shattock: Molluscum Contagiosum in various Birds.

During the year 1897 4,277 persons were killed by wild animals in India, and 20,959 by snakes. During the same period 19,745 wild animals were destroyed and 105,000 snakes.

CLINICAL SOCIETY OF LONDON.

Friday, October 28th, 1898.

Jon Langton, F.R.C.S., President, in the Chair.

Clinical Evening.

Syringomyelia.

Dr. W. S. Colman showed a woman, aged 28, suffering from syringomyelia. She had never been able to get about like other children, being apt to fall. When 7 years old she had painful whitlows, and when 10 years old her back was noticed to be curved. She used frequently to burn herself without experiencing any pain. At the present time she was rather stunted, and presented the following symptoms: Spastic paraplegia with increased reflexes, wasting of the muscles round the shoulder with diminished electric excitability, wasting of the intrinsic muscles of the right hand with claw-like contraction of the fingers. Sensation to touch was preserved everywhere, but there was loss of sensation to painful sensations over the head, arms, and trunk as low as the umbilicus, with the exception of the face. There was also marked lateral curvature of the spine, and vertical nystagmus on lateral deviation. Her general health was good.

Congenital Subacromial Dislocation of Shoulder.

Mr. J. Jackson Clarke showed a girl, aged 3, whose humerus was dislocated backwards on to the acromion. The right arm was pronated and movement was limited. There was a history of some difficulty during labour, but Mr. Clarke thought that the case was one of congenital dislocation, and not of traumatic dislocation during birth.

Chyluria in a Boy.

Dr. S. Phillips showed a boy, aged 16, suffering from chyluria, which had existed for three years. The urine passed after sleep was milky, whether he slept by day or by night. The ordinary urine was clear. The milky urine contained a large quantity of albumen, fat, and granules, which had been described as the molecular basis of chyle. It was acid, and its specific gravity 1030. The clear urine sometimes contained albumen, but at others was perfectly normal. He was unable to assign a cause. The blood had been examined repeatedly at night, but no filariæ had been discovered.

Repair of the Bridge of the Nose by Rabbit Bone.

Mr. Watson Cheyne showed a youth who, eight years ago, met with an accident through which he lost a large portion of his nasal bones. In January, 1898, Mr. Cheyne raised a flap of skin from the right side of the nose, exposing the periosteum. He then removed the femur from a rabbit, split it into five or six pieces, and simply laid these on the periosteum and replaced the flap. The wound healed without suppuration, though a small amount of serum was let out a few days after the operation, and the result, as shown to the Society, was excellent.

Double Athetosis.

Dr. Norman Dalton showed a boy, aged 15, suffering from double athetosis. He had had no kind of paralysis, no kind of illness, but there was a history that labour was difficult though not instrumental. He walked well until he was 3 years old, when the first symptoms appeared in his legs, and thence extended to his arms; his intellect was always perfect. He now presented restless movements of the face, shoulders, and back muscles, and there were the typical athetoid movements of the hands when held out. There was marked lordosis of the spine. There was rigidity of the lower limbs particularly marked in the adductors and in the calf muscles, giving rise to some talipes equino-varus. The symptoms were most marked on the right side. There was also some hypertrophy of the muscles of the hand and shoulder. There was nothing abnormal in the reflexes nor in the reaction to faradism. Cases of that kind were very rare; there was usually rigidity in the muscles of the lower extremities, movement in those of the upper.

Dr. Ormerod said he had exhibited a similar case at the Neurological Society last year, the symptoms having in that case arisen apparently after the boy had left school, and being more pronounced than in Dr. Dalton's case. The boy had since died, but a necropsy was not obtained.

Ankylosis of Lower Jaw treated by Removal of Wedge from the Lower Condyle.

Mr. Herbert Page showed a boy, aged 9, whose jaw was noticed in 1894 to be nearly ankylosed in consequence of an abscess near the joint, and in 1897 the ankylosis had become complete. He had therefore operated with a view of resecting the left joint, but finding that the ankylosis was dense and bony he resected instead a wedge-shaped piece of bone from the neck of the bone. Enough movement was thereby obtained to warrant the conclusion that an operation on the other side was not necessary. A week subsequently the mouth was forcibly opened under chloroform. The wound healed quickly; the boy could now open his mouth well, and there seemed to be no risk of return of the ankylosis.

Myxœdema in a Child.

Dr. Bertram Abrahams showed a case of myxœdema in a child, aged 7. She was unable to walk until five years of age. When 6½ years old she rapidly became fat, her tongue grew large, and in ten weeks she became helpless and unable to feed herself. She was put on treatment with thyroid extract, and within thirty days her weight fell from 44 lbs. to 33 lbs., and she became more active and was able to go to school. The treatment was left off by her parents and the symptoms returned. There was a curious induration of the muscles of the calf resembling that of muscular pseudo-hypertrophy, probably due to the deposition of mucin. The child began with cretinic symptoms, and then developed symptoms of myxœdema. Her pulse was at first only 66; after treatment with thyroid extract it rose to 108.

Lupus treated by Thyroid Colloid.

Mr. Pearce Gould showed a case of severe lupus in a woman, aged 47. She had suffered since childhood from glands in the neck, and in 1879 the glands broke down, and lupoid ulceration gradually extended over the face. Afterwards, tuberculous disease occurred in the foot, which was amputated, and she had abscesses in various parts. These had all healed before she came under treatment. She then had an ulcer extending right across the face, reaching from the eyelids to the mouth, and from one mastoid process to the other. His house-surgeon, Mr. Mannington, ordered tabloids of thyroid colloid which were begun on September, 1898, and in three weeks the face had entirely healed over. A single tabloid of the colloid was being still given daily, and the scar tissue had become more supple, and the ectropion much less marked; and the pain, which was very considerable, had disappeared. He had seen similar but less rapid improvement in other cases.

Dr. Pringle confirmed the value of thyroid treatment in such cases, but thought that thyroid colloid tabloids effected more improvement than anything else. Unfortunately the cases when reported as cured were apt to relapse, unless the treatment was afterwards continued indefinitely. The scar following lupus was not ordinary scar tissue, as remains of lupus tissue could always be found in it.

Dr. A. Whitfield thought the case was one of scrofuloderma rather than of lupus vulgaris; and remarked that thyroid treatment produced greater benefit in the ulcerative forms of tuberculous lesions than in the granular lupoid forms.

Gumma of the Tongue.

Mr. Charters Symonds showed a girl, aged 17, the subject of congenital syphilis, suffering from gumma of the tongue. She had previously had gummata in connection with the ulna and fibula, and had also had syphilitic eye manifestations. It was noteworthy that the gumma developed while the patient was having vigorous mercurial treatment.

Left Hemiplegia Associated with Atrophy of the Right Optic Nerve.

Dr. Leonard Guthrie showed a woman, aged 22, who nine days after the birth of a child was seized with convulsions of an ordinary type, which were followed by left hemiplegia. She had subsequently had several fits, but the paralysis had gradually improved. Three months after the hemiplegia she suddenly found herself unable to see with her right eye, and the disc was now in a condition of atrophy and its vessels were small. There was mobile spasm of the left arm and leg. The great toe was hyperextended, but the other toes were flexed so that she walked on the knuckles. He thought the hemiplegia was due to thrombosis of cortical branches of the right Sylvian artery, and that the optic atrophy might be the result of retro-ocular neuritis, both probably the result of syphilis. She now had no cerebral symptoms, headache, or vomiting.

Dr. R. D. Batten, who had examined the case, thought thrombosis or embolism of the central artery of the retina could be excluded; and that retro-ocular neuritis could not account for the white atrophy of the disc.

Bending of Neck of Femur, with Marked Eversion of Foot.

Mr. Cuthbert Wallace showed a case of bending of the neck of the femur in a child aged 4. The foot was markedly everted. Movements of flexion were free if the foot was everted, but very restricted if the foot was inverted.

Mr. F. C. Abbott showed a child, aged 5, suffering from an exactly similar condition. The child had been unable to walk until the year before, and had crawled about on the buttocks, which he suggested had caused the bending, which was in the antero-posterior direction, and was not merely a diminution in the obliquity of the neck. He was treating the case with splints, hoping that the obliquity would under their influence right itself. If that result was not achieved, he thought osteotomy of the neck of the femur at a later stage was indicated. He asked at what age would it best be done.

Mr. Jackson Clarke showed that the legs could be brought up against the body with the feet together, which was the natural position of repose, as in a case recently reported by Dr. Sutherland. That was the position, too, in which children with congenital dislocation of the hip were often born. Cases of coxa vara were often mistaken for cases of congenital dislocation of the hip; and for this reason statistics previous to the introduction of skiagraphy were absolutely vitiated. As to the treatment, no operative interference should be permitted until after the rickets had ceased to be active.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, October 21st, 1898.

Professor C. J. Wright, Vice-President, in the Chair.

Two Cases of Cæsarean Section.

Dr. Braithwaite read a paper on this subject. In both cases Cæsarean section was done at or about full term of pregnancy in consequence of the pelvis being blocked by ovarian tumours. In neither case could the tumour be got at for removal when the abdomen was opened. Case I.—The uterus, on exposure, was seen to be of an unusual dark-blue colour in consequence of the placenta being attached to its anterior wall. The placenta was divided at the same time as the incision was made through the anterior wall of the uterus. The child was rapidly removed, and the uterus wrapped up in a large hot sponge which was pressed firmly upon it, and, at the same time, it was lifted out through the abdominal wound. The placenta and membranes were removed immediately after the child. The mother did well and the child was still living, being now over a year old. Case II: This was almost precisely similar to Case I. The mother did well, but the child unfortunately died within twenty-four hours. The following, amongst other points, were noteworthy in these cases: First, in opening the uterus, especially if the placenta was attached anteriorly, rapidity was of vital importance. The incision should be begun with a scalpel, but was better finished by very strong, sharp scissors. Secondly, the edges of the incision must be seized and everted, and compressed where necessary by a second assistant, not by the one standing opposite to the operator. The hæmorrhage from the divided uterine wall was very easily arrested in this way, as it was entirely venous and at very low pressure. It, moreover, did not come from the whole surface of the wound, but only from two or three points. Thirdly, after the uterus has been emptied of the child, placenta, and membranes, and brought out of the abdominal wound and wrapped in and pressed by a large, flat, hot sponge, the first stitch should, as recommended by Dr. Mur-

doch Cameron, be put in the middle so as to produce accurate adaptation. Before the wound was finally closed by the last two stitches, which should be at the upper end of the wound, the nozzle of a syringe should be inserted into the uterus, and its cavity washed out by hot boracic lotion in order to ensure the absence of clot. Fourthly, as it was ultimately absorbed, the best material for the sutures in the uterine wall was green chromic catgut soaked for half an hour in perchloride solution, 1 in 1,000. In making the first half of each knot put the end through the loop twice instead of once. A knot so made in catgut would hold; otherwise it was not safe if any strain was put upon it, as by vomiting. The sutures should be put in two to the inch, and so deep as just to miss the inner surface of the uterus. If placed at longer intervals, as recommended by Saenger, the wound was not quite safely closed.

Dr. Bell, in an experience of 8,000 midwifery cases, had only met with one case requiring Cæsarean section, and this occurred lately in a dwarf 3 ft. 5 ins. high, whose pelvic antero-posterior diameter was only 1½ inch. The case occurred in a poorhouse, and a hurried operation was necessary without recourse to any thorough aseptic arrangements; nevertheless complete recovery took place both of mother and child.

Dr. Hellier deplored the frequency with which children were born with spastic paraplegia occurring immediately after, and attributed this to the child being dragged through the contracted pelvis by means of forceps. He advocated in these cases a more frequent adoption of symphysiotomy, which experience showed was a very safe operation.

The Chairman referred to three cases of Cæsarean section for deformed pelvis at which he had assisted some years ago, and contrasted the past with the present successful mode of operating, the respective merits of Porro's and the Cæsarean operation were also mentioned. The existence of ovarian growths in both of Dr. Braithwaite's cases emphasised the necessity for early removal where these were detected in all cases of pregnancy.

Hysterectomy for Sarcoma of Uterus.

Dr. E. O. Croft related a case of hysterectomy for sarcoma uteri following hydatidiform mole, and showed the uterus removed and microscopic sections of the growth. The patient, a 4-para, aged 32, had been ailing since the birth of her last child, two years previously. After suckling the child for eighteen months the menses returned once or twice, and there was then severe flooding. A large hydatidiform mole was removed. About six weeks afterwards, intermittent bleedings and offensive discharge with septicæmia having occurred, the uterus was explored and the presence of masses of malignant growth discovered. The septicæmia and general symptoms having been relieved, vaginal hysterectomy was performed. Meanwhile the growth had been examined and reported upon by Mr. Targett, of the Clinical Research Association. The tissue consisted of uterine muscle substance infiltrated with sarcoma. The cells were spindle-shaped, many of them very large like giant cells, but the characters did not resemble those of deciduoma malignum. The interest of the case turns on the clinical resemblance to this latter disease, and the fact of the malignant growth following a few weeks after the hydatidiform mole. The patient recovered, and is so far well, the operation having been performed three months ago.

Cases and Specimens.

Dr. Churton showed (1) a large Cirrhotic Liver, with thrombosis of the hepatic veins, from a man aged 26 years. He had been perfectly temperate, and no ordinary cause for the disease could be discovered; there was, however, much reason to regard it as a case of congenital syphilis with manifestations long deferred. Keratitis due to this taint was said to appear occasionally as late as the 30th or 40th year (see also p. 1424). (2) Cancer of Liver (with microscopic specimens).

Cases.

Mr. Littlewood showed the following: (1) A boy, aged 13, from whose Right Knee a Bullet had been Removed on September 28th. The bullet had lodged just beneath the articular cartilage of the inner condyle. Bullet and skiagraph shown. (2) A man, aged 23, who had an amputation through the left thigh, just below the lesser trochanter, for a huge breaking-down Sarcoma of the lower end of the Femur. The operation was performed twelve days previously under nitrous oxide and oxygen. The patient was very ill at the time, having a temperature of 103°. He suffered remarkably little from shock, and had made a very rapid recovery. (3) Solid Ovarian Tumour weighing 17 lbs., having many adhesions, removed from a girl, aged 15 years, on August 8th. Patient made a good recovery. (4) Double Pyosalpynx and Suppurating Ovarian Cyst (left) removed from an unmarried woman, aged 25, on October 10th. Each tube contained 6 ounces and the cyst 12 ounces. The patient was making a good recovery. (5) Hatpin measuring 4 inches removed from the Urethra of a man aged 54. (6) Hydatids involving a portion of rib, removed from a woman suffering from Hydatid Disease of the Thorax.—Dr. Wardrop Griffith showed (1) a case of Post-diphtherial Palsy in a lad aged 9. Symptoms came on about a week after a severe sore throat, the nature of which was not diagnosed. The patient was rapidly recovering, and at one stage his gait had strongly resembled the pseudo-hypertrophic palsy. (2) The Blood from two cases of Leucocythæmia of the spleno-medullary type. In one case the number of white cells was about equal to that of red, and the large eosinophile cells were very numerous.—The following were also shown: Dr. Allan: (1) Elephantiasis of Leg, (2) Syphilitic Liver.—Dr. Trevelyan showed Miliary Tuberculosis of the Spinal Meninges.—Mr. W. H. Brown: (1) Hand with Seven Fingers, (2) Sarcoma of Neck after injection with Coley's fluid, (3) Skin Grafting after severe Burns, (4) Malignant Disease of Prostate.—Mr. Lawford Knaggs: The parts removed in a Porro's operation.—Mr. E. Solly: Specimen of Complete Inversion of Uterus.—Dr. Hellier: Carcinoma Corporis Uteri removed by vaginal hysterectomy.—Mr. Secker Walker: Case of Complete Anterior Staphyloma affecting both eyes; iridectomy was performed in one eye with useful result.

Incorporated Society of Medical Officers of Health: Metropolitan Branch.—At a meeting on October 28th, Dr. J. F. J. Sykes delivered his Presidential address on Some Points in Public Health Administration. Referring to the "power of entry" possessed by sanitary authorities under the Public Health (London) Act, 1891, he regretted that none was given unless a nuisance was believed to exist; this was particularly to be regretted in the case of schools. With regard to "drainage regulations," he asked that pressure should be brought on the London County Council to issue their long-promised by-laws, and also for an interpretation of the words "making of a drain" and "new drain" as used in the Metropolis Local Management and other Acts. He went on to say that, under the provisions of Section xli (2) of the London Building Act, 1894, the open spaces to be provided to buildings might be entirely covered in, so far as buildings existing in London streets prior to 1895 were concerned. In consequence of this houses were being built so as not to leave even a shaft for the purpose of allowing the drainage to discharge into the open, so that the by-laws of the sanitary authority and the County Council, devised with a view to excluding drainage from buildings, especially domestic buildings, were rendered useless by the clause of the Building Act which permitted a building to embrace the whole of its drainage within its external walls. Some remedy was obviously necessary for this growing evil. With regard to public slaughterhouses he urged that butchers should be put on a competitive equality by a by-law being made to prohibit the walking of live cattle through the streets, because the private slaughterhouse owners urged the cost of cartage of dead meat as a reason why they should not use public slaughterhouses. But if they were compelled to cart live cattle as well this argument would be gone. He characterised the driving of live cattle through the streets as "a saving to the butchers at the public expense and convenience, and as a dangerous and inhuman practice." He further urged that provision should be made for taking samples of polluted or infected foods, and suggested the desirability of veterinarians being employed as food inspectors. Other points mentioned included overcrowding, for which Dr. Sykes said a definition was required; the notification by school teachers of absences caused by infectious diseases; and the desirability of making

vermin of the clothing, person, or place a nuisance under the Public Health Act. Dr. Sykes also referred to the proposed establishment of a pathological laboratory by the London County Council, and advocated that such an institution should be under the control of the body charged with the treatment of infectious disease in London.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At a meeting held on October 26th, Dr. RADCLIFFE CROCKER (President) in the chair, the following cases were shown:—The President: (1) A case of Tubercular Leprosy in a middle-aged Hindu, a barrister. The skin affection had existed for ten years. He had been totally blind since Christmas. (2) A case of Urticaria Pigmentosa in a boy.—Dr. T. D. SAVILL showed (1) Sclerodermia of the Extremities in a woman. (2) A case for Diagnosis.—Dr. ALFRED EDDOWES showed (1) Alopecia Areata with Leucodermia symmetrically situated on the inner aspect of both knees; patient a boy, of about 14 years. (2) A man; the patient was recovering from Hodgkin's Disease; there was extensive alopecia areata. Dr. Eddowes pointed out the marked anæmia of affected areas in this case and in his previous case; both patients wore wigs. (3) A man, Iodide Rash (?). (4) A woman with Chronic Symmetrical (Edematous Erythema of Face, with a Lichenous Eruption affecting both arms and the neck.—The cases were discussed by the PRESIDENT, Mr. BUXTON SHILLITOE, Dr. PHILLIPS-CONN, Dr. HALL, and Dr. EDDOWES.

BOURNEMOUTH MEDICAL SOCIETY.—The annual meeting was held on October 26th, Mr. T. FREDERICK GARDNER, the retiring Vice-President and President-elect, in the chair.—The Honorary Secretary read the minutes of the last annual meeting. The reports of the Committee and Honorary Librarian and the Treasurer's audited accounts having previously been circulated among the members of the Society were taken as read.—The following were elected officers for the ensuing year: *President:* Mr. T. Frederick Gardner. *Vice-President:* Mr. Bernard Scott. *Honorary Treasurer:* Mr. A. Heygate Vernon. *Honorary Librarian:* Mr. W. H. L. Marriner. *Committee:* Messrs. S. L. Clift, A. C. Coles, W. H. L. Marriner, W. Hooper Masters, F. Winson Ramsay. *Honorary Secretary:* D. M. Ross.—The members and some friends afterwards dined together.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At a meeting held on October 26th, the following office-bearers were appointed for session 1898-99:—*Hon. President:* Dr. James Stirton. *President:* Dr. Alex. Miller. *Sen. Vice-President:* Dr. Laurence Oliphant. *Jun. Vice-President:* Dr. J. K. Kelly. *Treasurer:* Dr. J. Lindsay. *Secretary:* Dr. R. Jardine. *Reporting Secretary:* Dr. Munro Kerr. *Pathologist:* Dr. Balfour Marshall. *Councillors:* Drs. And. Richmond, Edgar, G. W. Thomson, Pace, Marcus Gilchrist, E. A. Gibson.

REVIEWS.

THE ELEMENTS OF HISTOLOGY. By E. KLEIN, M.D., F.R.S., and J. S. EDKINS, M.A., M.B. New edition. London: Cassell and Co. 1898. (Fcap. 8vo, 500 pp. 7s. 6d.)

DR. KLEIN'S little book is too well known and too widely appreciated for any description of it to be required, but it will perhaps be useful to point out in what respects this new edition differs from its predecessors.

It is, in the first place, enlarged in size from 350 to 500 pages without any increase in price, although the number of illustrations is greatly augmented. But the most important difference is a personal one—namely, the association of Mr. EDKINS with the original author. Mr. Edkins has undertaken to re-edit, and has, in fact, rewritten the account of the structure of the central nervous system, our knowledge of which has of late years made so great a progress as to render an entirely new account necessary. This part is now mainly illustrated by microphotographs of Weigert-Pal preparations.

It is, indeed, an important feature in the new edition that the editors have introduced a very large number of microphotographs from their original preparations in place of the woodcuts or micrographs with which histological works have hitherto usually been illustrated. These photographs in some cases give a clear idea of the structure of an organ, and this is especially the case with some parts of the central nervous system. But in other cases they are not nearly so clear or so useful for the student—a fact which comes out very strikingly when we look through the illustrations of the glandular organs. A skilled histologist will at once recognise that the microphotographs which are shown are representations of good microscopic preparations. But a photograph—unless it be of a structure which is limited to one plane, and that an absolutely flat and horizontal one—can never be equally well focussed in all parts, and must necessarily include structures which might for the sake of clearness be advantageously omitted, and which are omitted in drawings, so that these show the structures which are required to be shown with far greater distinctness than any photograph ever does. In our opinion the proper use of photographs in textbook illustrations of histology is as a means of accurately obtaining the relative situations and proportions of parts; they may very well be used to draw from, but all the details are best filled in by ocular observation of the specimen. For in making such observations it is necessary, in order to get a correct idea of the structure of a part, to constantly have the fine adjustment in use, and this is entirely barred by the photographic method. In illustration of the justice of this criticism the reader may turn to such figures as that of the papilla foliata on p. 304, of the œsophagus on p. 309, and to the numerous photographs of sections of the intestine and pancreas in Chapters XXVII and XXVIII, and compare them with woodcuts of similar specimens both in this and in other books. It may, in fact, be doubted whether from most microphotographs a student would learn what the structure of a tissue really is; the utmost he would acquire would be an idea of the general effect of a microscopical specimen prepared in a particular way, which is an entirely different thing from the observation of its structure.

In the account of muscle the authors have adopted exclusively the views adopted by Rollett and Rutherford, and have not even mentioned the fact that any other view is taken by histologists. The account given by Schäfer, which was based upon the investigation of the large fibrillæ of the wing muscles of insects, and the correctness of whose statements was abundantly proved by highly magnified microphotographs of actual preparations, has been followed by most authors of histological textbooks in this country, and one might at least have expected a mention of it in this textbook. But the authors apparently have not in this instance verified the facts for themselves, with the result that an inadequate and impossible scheme of muscle structure is introduced, the complicated nomenclature of which would alone be sufficient to condemn it.

It was perhaps inevitable, in consequence of the rapid progress of histological investigation, that this edition should lack the originality which characterised the earlier issues, but the result is none the less to be deplored. Nearly every illustration in the first edition was original, and nearly every statement was based upon opinions formed, whether rightly or wrongly, as a result of the author's personal experience. This gave a distinctive character to the book which it no longer possesses, even although the information it affords is in some respects more complete now than it then was. It is somewhat surprising to find the statement perpetuated that the blood makes its appearance in the embryo as a colourless fluid, and that its white corpuscles are converted into red corpuscles. Nor does this stand alone as a specimen of dicta which are unsupported by sufficient evidence. In such cases either the evidence, if any, should be very clearly given, or it should be mentioned that the statements represent only the opinion of the authors.

It is questionable whether it is as yet altogether advisable to adopt in a textbook for students the term "neuron" to signify a nerve cell, for, in the first place, the term is unnecessary, "nerve cell" being both a short and convenient designation of the nerve unit, and, secondly, it is misleading, for it introduces an element of mystery which is on all accounts to be deprecated. It is, above all things, important that a student should understand that a nerve cell is a cell, and if another term is introduced the young student

will certainly come to a different conclusion. Moreover, the word "neuron" was introduced to express a theory which even if probable is by no means proved, and may turn out to be erroneous. The adoption of the term furnishes an illustration of the tendency on the part of many English and some American scientific writers to prefer words taken from other languages to simple and more expressive terms which are already in current use in their own language.

In pointing out what appear to us to be blemishes in the book we do not fail to recognise its general excellence, and we leave it in the hope that it may long keep up the character for accuracy and conciseness which has hitherto distinguished it.

Der Diabetes Mellitus. Von Dr. B. Naunyn, Professor der medicinische Klinik in Strassburg-i.-E. Wien: Alfred Hölder. 1898.

Professor Naunyn is so well known in England by his numerous valuable contributions to clinical medicine that any work by him is sure to be received with interest and read with the respectful attention due to his eminence as a teacher and investigator by the bedside and in the laboratory. It is therefore the highest praise to say that his monograph upon diabetes is worthy of his reputation, and among the many recent additions to the literature of that interesting disease takes rank with the highest. He has with admirable industry collected a vast mass of material, and has set this out with a clearness and perspicacity not to be surpassed, avoiding confusion by relating in orderly sequence the data under each head, and reserving his own opinions and deductions for a brief chapter on the theory of diabetes at the end of the volume.

Professor Naunyn is of those who regard diabetes mellitus as the consequence of diminished consumption of sugar in the body, a view which has its difficulties, but apparently in his opinion is more easily reconciled with the facts than the opposite opinion that there is increased formation of sugar. He believes that it is certain that the pancreas and the nervous system are at fault, but finds the participation of the liver, thyroid, and other organs not proved, although he admits the facts that tend to show that there are other diabetogenic organs besides the pancreas. He does not accept Lépine's conclusions respecting the glycolytic ferment of the blood.

The general account of the morbid anatomy, symptomatology, and complications of the disease is full and clear. He accepts entirely Stadelmann's acid theory of diabetic coma and regards as of the utmost importance for prognosis the presence of Gerhardt's reaction (the ferric chloride reaction) in the urine as an indication of the supervention of "acidosis," and combats it by the administration of large doses of alkalies (10 to 15 g. of sodium bicarbonate daily) and by modification in diet. He recognises for therapeutic purposes the division of cases into three groups: (1) Moderate, (2) severe, and (3) slight, and regulates his treatment accordingly. His diets are arranged on the basis of "calories," and he gives tables and calculations to enable others to be constructed upon this plan. He maintains that diabetic patients must live on a restricted diet, and that they may have too much food even when the quantity of carbohydrate is in nowise excessive. In fact he is a strong advocate of a weekly fast-day and gives cases to prove that only by this plan can the sugar be entirely removed by the urine. He lays great stress upon the value of fat in the form of oil, butter, and the fat of meat.

In order to estimate the gravity of a case he puts his patients upon a definite diet containing a certain amount of carbohydrate, and after three days he estimates the amount of sugar excreted. He compares this with the known quantity of carbohydrate ingested, and he judges the case in accordance with the proportion of carbohydrate which the patient has been able to retain. He attaches comparatively slight importance to the use of drugs.

The volume concludes with some interesting tables and charts, giving the results of 40 *post-mortem* examinations upon cases of diabetes, and of that of a case of spontaneous diabetes in a dog. The last showed marked pancreatic changes, although in 10 of the other 40 cases this organ was quite normal. The charts give the progress of the polyuria, glycosuria, and urinary constituents in certain cases, one large chart giving parallel curves for urine, sugar, body weight, sodium oxybutyrate, acetone, ammonia, and nitrogen. He also gives food tables showing the percentages of fat in various kinds of meat, in cheese, butter, milk, and commercial milk foods (condensed milk, koumiss, Gärtner's milk, etc.), the percentage of carbohydrates in bread, flour, and vegetables of different sorts, percentages of sugar and sugar-forming extractives (pectine) in fruit, in beer, chocolate, cocoa, coffee, tea, and in 40 kinds of wines and spirits. These add greatly to the utility of the book, and although they have been taken for the most part from König, practitioners will agree that Dr. Naunyn has been well advised to enrich his book by these means.

The Elements of Physical Education: a Teacher's Manual. By David Lennox, M.D., late R.N., Medical Director of Dundee Public Gymnasium, and Alexander Sturrock, Superintendent of Dundee Public Gymnasium, etc. With original musical accompaniments to the drill by H. E. Loseby. Edinburgh and London: William Blackwood and Sons. 1898. (Crown 8vo, pp. 250. 4s.)

This little book is intended for teachers, but it contains much that will interest medical men who regard physical culture as one of the most valuable aids to maintaining health, and in some cases, indeed, as a remedial measure. It is the joint production of a physician, a gymnast, and a musician. The physiology and psychology of muscular exercise is first considered, and Dr. Lennox indicates the relations of muscle and mind, arguing that properly-conducted physical exercise is not merely a means of "getting up" the muscles, but also may be a means of educating the higher faculties. A popular exposition of the anatomy of the osseous and muscular systems is given, and physiological considerations which enter into a rational system of drill are set forth. "The secret of how to get strong," it is said, "is to practise resisted movements with each group of muscles in the body for a short time every day," to avoid excess, and to be content with slow progress. Unlike Sandow, Dr. Lennox is an advocate of dieting in preparation for severe muscular effort, and upholds the Hippocratic maxim: "Of all beverages water is the best." The importance of amplifying chest capacity, not merely by arm movements but by hill-climbing and other exercises of the legs, also by voluntary forced inspirations (after the method of Dr. Otis), is judiciously noticed. In conclusion, Dr. Lennox insists that drill should provide—first of all and continuously—for the training and exercise of the fundamental muscular mechanisms (such as man shares with the lower animals) before taking in hand those more lately developed in the course of evolution. It seems indeed rational first to discipline the coarser movements before giving attention to the more refined and complex movements of the fingers, as has lately been recommended by certain specialists.

The second portion contains schemes of practical physical exercises (when necessary, illustrated) by Mr. Alexander Sturrock. Several varieties are given of free movements and of exercises with dumb-bells, wands, bar-bells, balls and clubs, also in marching and balancing. Seventeen original drill tunes complete the volume.

The book will no doubt prove of service not only to teachers, but to others responsible for the direction of physical exercise, such as superintendents of institutions for defective children, and governors and medical officers of of criminal establishments.

Income Tax: How to Get it Refunded. By Alfred Chapman. Fourteenth Edition. London: Effingham Wilson and Co. 1898. (Crown 8vo, pp. 60. 1s. 6d.)

The present edition of this useful little book is corrected in accordance with the two very important Acts of 1896 and 1898. It is so well known that an extended notice is not now required. Suffice it to say that it describes under the five Schedules A, B, C, D, and E the classification of incomes for the purposes of the tax. In regard to Schedule D it describes the making of the "three years' average," the "deductions from income" which are permitted, the method of making

appeal against assessments, and other points. In Part II the modes of claiming repayment of the tax are detailed, both for persons residing in and those residing out of the United Kingdom. Under this head we note with mixed feelings the remark that "Doctors, as a rule, are much over-taxed." That many other people also labour under such a grievance can easily be believed, seeing that the official circular with reference to deductions from the tax directs that "the Board do not consider it necessary to offer such deductions; it will be sufficient to allow them when claimed." A perusal of these pages has convinced us that there are, especially for persons with small incomes, many deductions permissible which are not obtained or even recognised as obtainable. But, armed with the thoroughly practical instructions here laid down for assessment, appeal, and return of income tax, no one need pay more than the law requires, or having paid it need remain ignorant of the routine to be employed for restitution of the over-payment.

ATLAS UND GRUNDRISS DER CHIRURGISCHEN OPERATIONSLEHRE [Atlas and Handbook of Surgical Operations]. Von Dr. OTTO ZUCKERKANDL, Privat-docent an der Universität Wien. München: J. F. Lehmann. 1897. (Demy 8vo, pp. 400, 24 coloured plates, 27 illustrations. M.10.)

FROM a student's point of view this volume is much below the standard of excellence of many other books in the same series. The author assumes that the reader has an extensive acquaintance with the different forms of surgical procedure, and that he is quite familiar with the anatomy of the parts under consideration. In a textbook this is very undesirable, since the student is dependent upon his teacher for an explanation of many of the operations which are being performed.

As regards the plan of the book, the operations are described under the different regions of the body after the method adopted in Mr. Jacobson's work. This classification has many advantages, but from the student's point of view the usual classification is probably better. The selection of operations is very unequal; thus, in the section which deals with the removal of a part or the whole of the tongue, excision through the mouth is merely mentioned, and not described; whilst descriptions of the more severe operations, such as splitting the cheek, the submental operations, and Kocher's method are given.

Many of the illustrations are faulty in detail; thus in Plate 1, which shows the method of intestinal suture after resection of a portion of the gut, the mesentery is depicted as being undisturbed; and in Plate 8 the anterior tibial artery is shown lying upon the anterior aspect of the fibula, in the middle third of the leg. The usefulness of the volume might have been improved by the addition of an index.

LEHRBUCH DER VERGLEICHENDEN PATHOLOGIE UND THERAPIE DES MENSCHEN UND DER HAUSTHIERE. [Handbook of Comparative Pathology and Treatment.] Von Professor Dr. SCHNEIDEMÜHL. 4te (Schluss) Lieferung. Leipzig: W. Engelmann. 1898. (Roy. 8vo, pp. 689 to 885).

THE final instalment of this work, of which the previous parts have already been reviewed in these columns, concludes the diseases of the nervous system, and also deals with diseases of the thyroid body and of the locomotor and genito-urinary systems. Such is the ever-changing character of our knowledge that the author has found it necessary to include here an addendum embodying researches carried out during the passage of his book through the press.

Among the diseases of the nervous system there is a very interesting supplementary chapter on cerebro-spinal meningitis, dealing chiefly with epidemics among horses. Quoting Johne's remarks, the author says that cerebro-spinal meningitis in these animals has an unmistakable clinical resemblance to the disease in man, but that the pathology is not the same. It is open to much doubt, however, whether this difference is not more apparent than real, for, as in the horses examined by Johne, very slight lesions have been exceptionally also found in man. Schultze of Heidelberg especially pointed this out in the *Berliner klinische Wochenschrift*, 1887. The bacteriology of cerebro-spinal meningitis is very fully discussed. The occurrence of these infective diseases in animals has much more than a mere theoretical interest, owing to their very possible transmission to man.

Under chorea, no mention is made of the fact that chorea in dogs is very probably quite a different disease from chorea in man. At any rate, a spinal cord lesion has occasionally been found in dogs. The probability that it is infective in nature is at least suggested by Allbrecht's experiments quoted here, in which a large coccus was found in the blood of a dog suffering from chorea. Three other dogs were inoculated, and one of them ultimately developed the disease. The prognosis of this disease is stated here more favourably than some would be inclined to admit.

Under diseases of the thyroid body, our recently much-increased knowledge is duly reflected. Animals appear to be very prone to renal diseases, which are chiefly discussed here under (1) acute inflammation, (2) chronic parenchymatous nephritis, (3) suppurative nephritis, (4) granular atrophy, (5) pyelitis, and (6) the amyloid kidney. Among the diseases of the reproductive system, abortion, toxic birth paralyses receive much attention. In the addendum, infective diseases are chiefly supplemented, and especially rinderpest, plague, yellow fever, foot-and-mouth disease, etc.

As has been mentioned before, the descriptions of diseases in man in this book are short, and only sufficient if they are solely used for purposes of comparison. Dr. SCHNEIDEMÜHL is to be congratulated on having completed a most interesting and useful work.

ATLAS DE LARYNGOLOGIE ET DE RHINOLOGIE. Par A. GOUGUENHEIM, Médecin de l'Hôpital Lariboisière, et J. GLOVER, ancien interne. [Atlas of Laryngology and Rhinology, by MM. GOUGUENHEIM and GLOVER.] Paris: G. Masson. 1894. (Avec 37 planches en noir et en couleurs, comprenant ensemble 246 figures et 47 figures dans le texte. Fr. 50.)

IT has been no lack of appreciation which has prevented us from giving an earlier notice of this valuable production from the well-known laryngological clinic at the Lariboisière Hospital. Indeed, it has been by a pure oversight that our review has not appeared more promptly in print. But if tardy, we are pleased to think that our notice is one of warm commendation.

We can well believe that three years were devoted to collecting the materials of this work.

The first merit that strikes us is that all the drawings have been made directly from Nature by one of the authors, who is at the same time both physician and artist. It contains no fewer than 246 figures, illustrating the normal and pathological anatomy of the nose and throat. We quite approve of the determination of the two authors to limit their drawings chiefly to lithography; for, indeed, the colouring of the appearances in the upper air passages is so variable and so dependent on the methods of observation, that it is much wiser to be satisfied with black and white. It is sufficient to say that these drawings have all the delicateness and finish of the French school.

The atlas is not limited only to anatomy and pathology, but it is also a most instructive handbook of operative procedures. The position of the hands and instruments is reproduced with remarkable fidelity, thanks to the authors' methods of photographing the various steps as performed upon the cadaver, and then faithfully drawing the different attitudes. The drawings are preceded by chapters on the topographical anatomy, the technique of examination, the pathological anatomy, and one on surgical measures. It is thus readily seen that the atlas of GOUGUENHEIM and GLOVER is a book of extreme value. We have only to add that the description which faces each plate is given in parallel columns in French and English. As no similar work exists in English we trust that the book will receive the attention which it merits. It is not only of value to the expert and teacher, but it will be found really helpful to the practitioner who is intending to "get up" this subject by himself. We congratulate the authors upon their production.

MR. VICTOR HORSLEY AND MEDICAL REFORM.

"Medical Politics."

The first annual dinner of the North-West London Clinical Society was held on October 27th at the Café Royal under the Presidency of Mr. Victor Horsley.

In replying to the toast of his health, Mr. Horsley said he was extremely obliged to them for the way in which they had received the toast, and especially to Mr. Battle for the very kind manner in which he proposed it. He did not see that he could acknowledge all that he had said with any show of decency or modesty or moderation on his (Mr. Horsley's) part, but he would like certainly to acknowledge the reference to the fact that he entered into a very strait gate a little time ago and found himself in an atmosphere to which he was not accustomed; though he was not altogether unprepared, he admitted, for the quality of his reception. He had had the extreme pleasure for some five years of working at medical politics in a quiet way. He said "extreme pleasure" because he was one of a certain number of men who formed a kind of social fellowship in political business that he would scarcely have thought it possible to attain to. He referred to the Council of the Medical Defence Union. He had sat at many committees in his life, but he had never sat at any board or meeting who worked in the same way as the members of that Council. He had learnt from them what politics might be; he learnt from them what the business of medical politics should be, and he also learnt what was going on in the General Medical Council. Therefore when any mention was made of his entry into medical politics he could not sufficiently express his indebtedness to the members of the Council of the Medical Defence Union.

Having thus expressed his obligations to those who had taught him, he would like to give those around him a little of his experiences. He was indebted also for his seat in the Council to their votes, and in that respect he was, as it were, called upon on a public occasion like the present to render some account of his stewardship to those who sent him to the Council. If they would bear with him, therefore, for a few minutes, he would like to attempt to put before them a little indication of how the land lay concerning a few of the questions which were exciting attention at the present time.

Medical Practice and Medical Titles.

In the first place he assumed that most of them believed that when they had passed certain examinations and had entered their names upon a roll which was called the *Medical Register*, that they were entitled to privileges which other ordinary members of the community were not entitled to. He had always held the opinion that they were entitled to privileges; that, in fact, the original Medical Act conferred very great privileges upon those persons who, by hard work and enterprise, found themselves on the *Medical Register*. Before he was on the General Medical Council he sustained this thesis in various public places and in various public journals; in so doing he brought upon himself the vituperation of his opponents and the severe criticism of his friends. He was quite ready to admit that the exuberance of his nature had laid him open to much very friendly and very useful criticism. The fact was, he suffered from one particular drawback in his life—and that was a sensitiveness—he quite believed it might be hypersensitiveness—to injustice, and it always seemed to him particularly galling if he saw a public injustice being committed with impunity.

However, if anyone would, in a perfectly candid spirit, read the Medical Act again and again, he believed he would come ultimately to the same views as he himself held respecting that valuable document. He believed that anybody who could understand the English language would find that not only the title of a medical man—the title of doctor, the title of surgeon—was retained to those who had done hard work and had had enterprise enough to obtain admission to the *Register*, but also the sole right to practise medicine—the sole right, as an American judge said recently, to apply the knowledge of science to the alleviation of disease. That was the position he hoped they were coming to now. Since he entered the General Medical Council he had actually seen the conversion of members of the Council to that principle. However unwillingly, the conversion was nevertheless proceeding and at as rapid a rate as he believed might be considered wholesome. But the question whether they as a class were entitled to demand from the State, as a matter of mere justice, the protection from external attack, had recently, in the Courts of Summary Jurisdiction, received most remarkable judgments. Most curious of all was one that occurred a short time ago in Norwich. There an unqualified person named Matthews was, and still is, by a certain class in Norwich, esteemed not only as a citizen, but also as a practitioner in medicine. He had never been qualified himself; his father, who was even a more "renowned medical practitioner" in Norwich, also was unqualified. Well, that person was prosecuted by the Medical Defence Union before a bench of magistrates who determined in their wisdom that it was exceedingly wrong of Mr. Matthews to "inadvertently," to use their expression, use the word 'surgeon' in one of his advertisements, but he was perfectly entitled to use the word 'doctor.'"

Well, he dared say the Appeal Courts would subsequently have this before them; they certainly would if he could get the General Medical Council to take it up, and although it was a tedious and small matter in one way, it was obviously the plain duty of the Council to see that even on such an elementary matter as their own medical titles they should receive the protection of the State.

This was only one case in point. He could run over to them in chronological order the judgments of the last four years on Clause XL of the Medical Act, 1858, from which they would see that one magistrate had given one decision and another magistrate had given another on precisely the same point. But if they went to a lawyer and said this is intolerable, or went to the Lord Chancellor himself and said it is intolerable that justice should be so unequally distributed over the kingdom, they would find that there was absolutely no redress, because the magistrate was a person who in the eyes of the law was called upon to determine a matter of fact, though he could not determine a question of opinion, which alone was reserved for the higher courts; so that if the magistrate happened to say, "I determined that on a point of fact," the upper courts would not interfere. But if, on the other hand, he was so unwise as to say "I expressed the opinion," the court above would probably deal with his decisions freely. And just to show them what a magistrate would say under these circumstances, he would quote to them what occurred in one of the leading London police-courts, where Mr. Sheil was sitting. The case was that of a person who retained a medical title, and called himself Dr. Collins. He was prosecuted unsuccessfully by the General Medical Council for employing that medical title as a means of obtaining medical practice. The case for the prosecution was conducted by Mr. Muir Mackenzie, who was a barrister of distinction, and therefore certainly entitled to courtesy. Mr. Muir Mackenzie reminded Mr. Sheil that a short time before, at the instance of the Defence Union, he had prosecuted before him an unqualified person, who used the title of "Doctor," "M.D.," and so forth, a man by the name of Ferdinand, who was subsequently sentenced to penal servitude for forging a diploma; and that though Mr. Sheil had resisted the issue of the summons for some time, he eventually gave way and convicted the man, inflicting the full penalty. You would expect from a person holding the position of judge, that he would say, "Well, yes; but there is a certain difference in that case, as compared with this which you now bring before me." Nothing of the sort. This is what Mr. Sheil said, as reported in the *Daily Graphic* and other newspapers, and therefore most probably correct, "Well, you got your case last time, and you have not got it this time." That was the way justice was spoken of by its administrator. Now, even that prosecution, he regretted to say, was undertaken late in the day by the General Medical Council. Well, there were reasons for that which he need not go into now, and which he had dwelt upon publicly before. But there were reasons also of this kind. The General Medical Council had only quite lately seen that it owed a duty to the profession. It had been taking the money of the profession for years and years, but, at the instigation of Mr. Carter and others, it had refused to recognise that it owed any duties towards that profession. On the con-

trary, it was always very ready to receive complaints against members of the medical profession for the enforcement of discipline in the profession itself, but it would not touch the question of protecting the profession whose discipline it was superintending in this very active way. That was another instance of inequality of justice from his point of view.

The One-Portal System.

But, just to return to the tardiness on the part of the Council to take up it duties, that tardiness had had a very curious result. From a period of sluggishness almost the Council seemed to have passed into a condition of feverish activity in a certain direction, with the result that at the next forthcoming session in November they would have before them a matter which from many points of view is most serious. He referred to the case of the General Medical Council prosecuting a registered general medical practitioner for calling himself a "physician and surgeon." Some of the details most pertinent to the matter were confidential until the session of the Council, and therefore he could not mention them. But it was public property that a gentleman named Hunter, who was a registered medical practitioner under the Act of 1886, was prosecuted by the General Medical Council for using the words "physician and surgeon." What were the facts? The fact was that they were all carrying on their work under the Act of 1886, and that Act said that they were qualified as physicians, and surgeons, and accoucheurs. How can e it, then, that a man should be prosecuted at all for exercising what was apparently a right conferred upon him by the State? Well, the explanation of this extraordinary action would soon be made public, but he would mention one aspect of the case, namely, that there was unquestionably a genuine feeling that men had no right to call themselves physicians unless they had the qualifications of a physician.

The word qualification popularly meant that a person was possessed of a kind of diploma or degree, and there were many of them who felt that a man should not publicly style himself a physician unless he held a doctorate of medicine. But they must understand that that was not the plain interpretation of the Act of 1886. No doubt it was quite correct to say that a man should not hold himself out to be a doctor of medicine, even by implication, by the use of the word physician if he were not truly a doctor of medicine. But that was a very different thing to saying a man should be prosecuted for calling himself a physician. This very grave matter, which would have to be threshed out to the very bottom next November, was a direct consequence, he ventured to say, of the tardiness of the Council in not before recognising its duty to the profession, and moreover was a very striking instance of the utter state of chaos in which the profession was at the present time in regard to diplomas and so-called qualifications, and above all in regard to their position on the *Medical Register*. To be on the *Register* ought to mean that the registered persons alone could practise; that should be the full meaning of the word registration—nobody to practise except those who were entitled thereto by virtue of their training. But getting on the *Register* could be achieved in many different ways at the present time, and because, for example, a man held a degree of London University he considered himself aggrieved when a man who had obtained a degree on easier terms settled down close to him and called himself by the same appellation.

The examinations were not on a par, they were not of the same strength nor of the same searching character for these two men, and the man who passed the severer test surely had a certain right to feel that he was not fairly treated. How was that difficulty to be got rid of? It was to be got rid of by a method which had been before the profession for a very long time, and which, if the General Medical Council had appreciated its duties towards the profession, it would have long since honestly carried out—namely, the one-portal system. The actual admission to the *Register*, which should be the sole condition required of a man carrying out his professional work, could be easily done on the one-portal system. It would mean, of course, that a great many of the corporations would find that the distribution of wealth—namely, the reception of fees for examination purposes—would, so far as economy went, be altered, but it would not be diminished. The same number of men would enter, and the same number of examiners would be required, and so forth. But no personal consideration ought to come in as an argument against the removal of the existing gross inequalities of determination of a man's position in his profession.

As admitting merely to practice and to the *Register* the one-portal system did not in the least degree interfere with the work of the universities. If they had the German style of the one-portal system they would have men hall-marked as regarded their efficiency towards the community for recognition by the State, and then, if a man wished to gain a particular appointment for which a particular degree might be required, he could go to the university and take it. The universities would then be stimulated to a large extent, and the result would be an improvement in education, and the final removal of these interminable quarrels which had led, as far as the surgical side of their work was concerned, to disputes between their colleagues in London and Dublin most especially—quarrels which were very bitter twenty years ago, but which were now fortunately diminishing.

The Rights of Members of the General Medical Council.

He had said that the atmosphere in which he found himself in the Council was a peculiar one; perhaps he used a stronger epithet; it was not unlikely, for it was very peculiar. For instance, for the purpose of bringing forward some of these matters before the Council, he required to consult a number of documents belonging to the Council. But he could not do it at all. It was not now a question of asking leave of the President; for a resolution, proposed by Dr. Glover and seconded by Dr. Bruce, was passed to the effect that if any member of the Council wished to see a document, he should conform to certain rules ingeniously devised to throw every obstruction in his way, and this motion was unfortunately made into a Standing Order by the Council at the end of its session, when one-third of its members had disappeared. The effect of this was to remove the question of the inspection of documents by a member of the Council from the pale of the law courts; it had, as he would soon show in a further report to his constituents, taken away from him the possibility of bringing the matter before the courts, for the present at any rate. In this question it was important to note the character of the voting, for that was most remarkable. When this motion was brought forward to be made a Standing Order its proposer never voted at all; he abstained from doing so, and its seconder walked out of the room before the voting came on. In spite of such tacit acknowledgment of the iniquity of the original resolution it was made into a Standing Order. What was the effect on his work in the Council? It was simply that if he wished to consult certain documents so as properly to prepare any matter he could not do it; he could not do it until the very day of the meeting of the Council. He must then move a resolution that leave be granted to him to see such and such papers, such, for instance, as the lawyer's bill of costs, and so on—innocent things in their way—and then, if that resolution were carried, he must manage to squeeze in somehow, during the following couple of days, his study of these documents; he must make a hurried inspection (and it would have to be hurried even if he sat up all night), and upon such hurried inspection he was expected to bring forward a serious resolution upon grave and serious subjects. That was the present state of affairs, and he did not believe there was any other Council in the kingdom the business of which was conducted on such lines. He had inquired of the Presidents of various learned Societies, municipal bodies, companies, and various directorates, but he had not found a single one in which the members of the governing body had to go to that governing body itself for permission to look at such things as a bill of costs or counsel's opinion. Therefore the circumstances in which they had got to do their work were very peculiar, and had been made more peculiar by the passing of that resolution into the form of a Standing Order. Had it not been for that act, he was advised, they could have been liberated by the High Court. Meantime they must wait and hope that a little light would presently shine in dark places, and that it might be given to

them, perhaps, to achieve their objects in a constitutional way.

He was afraid he had wandered a great deal from his original text, but he was extremely obliged to them for the kind way in which they had received the toast of his health.

PROFESSIONAL SECRECY AND CRIMINAL OFFENCES.

What is the duty of a medical attendant who in that capacity becomes aware that his patient has committed a crime? Ought he to give information to the police? It is generally said that he ought. Yet there are cases in which, in the words of an eminent judge, such action on the part of the medical attendant would be "a monstrous cruelty." Quite recently one of the London daily papers, commenting on the position taken up by a medical witness at an inquest, undertook to lay down the law on this very delicate and difficult question. In the case in question the medical attendant of the deceased had, in reply to the coroner, expressed an opinion (from which few, we think, will dissent) that "if the patient was in her proper senses he would hardly consider himself at liberty to disregard her strongly expressed wishes" not to communicate with her relatives.

The writer of the article approves of the "courage and straightforwardness" of this answer, adding, however, a proviso—"if and so far as the patient's confidences disclose or suggest no criminal or illegal act." And then he goes on: "His (the doctor's) first duty, of course, is to the law of his country, and if the facts revealed to him raise any suspicion of crime or foul play, he could not for one moment be justified in complying with her request for secrecy. To do so would be to make himself an accessory to a breach of the law."

On the other hand, a medical correspondent writes: "Not long ago I was called in to a young lady who, after a lover's quarrel, attempted suicide with chloroform, and nearly succeeded. This was a crime on her part; but surely I am not to lay information, and by not laying information I am not making myself an accessory to a breach of the law?"

Now, which of these two opposite views is the right one? Let us see how stands the letter of the law. Is it an offence cognisable by the law of England to hold one's tongue about a crime that one knows to have been committed? The answer is doubtful. There is an offence is known to the learned in the law as "misprision of felony," which is defined in *Russell on Crimes* as "a concealment of felony or a procuring the concealment thereof.....and silently to observe the commission of a felony without using any endeavour to apprehend the offender is a misprision; a man being bound to discover the crime of another to a magistrate with all possible expedition. If this offence were accompanied with some degree of maintenance given to the felon, the party committing it might be liable as an accessory after the fact." This definition may appear at first sight to answer our question in the affirmative, yet if closely looked at it may fairly be doubted whether it includes the case of a person merely discovering evidence that a crime has already been committed, he not having observed the actual commission of the crime, and having done nothing wilfully with intent to conceal it.

There is no doubt that the offence defined above is recognised by the law, but it is equally undoubted that the law has not been enforced for many years; and, except in some very glaring case, we may be sure it never would be enforced by legal penalties, even against a person who stood in no confidential relationship to the felon. In fact, the the offence of misprision is not even mentioned in so complete a work as Archbold's *Pleading and Evidence*, and its existence is probably unknown to ninety-nine out of every hundred lawyers.

As for making himself an accessory after the fact, mere knowledge of the fact without anything done to assist the felon to escape apprehension or trial would not make an accessory. There must be some act proved to have been done to assist the felon.

So far, therefore, as legal penalties are concerned, the ordinary citizen has little to fear for simply holding his tongue; and the medical attendant has even less to fear. For although the law of England, unlike that of most civilised countries, does not recognise the inviolability of professional confidences between patient and doctor, yet in practice the judges, with whom a discretionary power as to compelling disclosure rests, can and do take account of the circumstances.

We have stated the letter of the law as laid down by writers of the highest authority. Now let us see in what spirit the administrators of the law interpret it. What says Sir Henry Hawkins—no namby-pamby sentimentalist, but one of the sternest, as he is the most experienced, of the judges in all that pertains to crime and criminals? Our readers will recall his very remarkable *obiter dicta* in the case Kitson *v.* Playfair.

Sir John Williams, speaking as an expert witness with regard to the exceptions to the general rule of the inviolability of professional confidences, had just declared that, "with regard to a crime, a medical man is obliged to inform the Public Prosecutor of any crime which has been committed or is intended to be committed."

The Judge (Sir H. Hawkins): Suppose a medical man were called in to attend a woman, and, in the course of his professional attendance, he discovers that she has attempted to procure abortion. That being a crime under the law, would it be his duty to go and tell the Public Prosecutor?

Sir J. Williams: The answer of the College of Physicians to that very question was "Yes."

Sir H. Hawkins: Then all I can say is that it will make me very chary in the selection of my medical man.

Two days later, in his summing up, the judge deliberately returned to the same subject:

He could not altogether agree—we quote from the *Times* report—with what Sir John Williams and Sir William Broadbent had said as to exceptions to the rule imposing secresy. As to giving evidence in a court of justice, it all depended upon the judge. He might refuse to commit a medical man for declining to disclose confidences. Each case would be governed by the particular circumstances, and the ruling of the judge would be the test. Secondly, they said that if there were circumstances from which they supposed a crime was intended to be committed they would have to inform the Public Prosecutor. If the doctor were called in merely to attend a woman needing physical aid, his lordship doubted very much whether he would be justified in going to the police and saying: "I have been attending a poor woman who has been trying to procure abortion." That would be a monstrous cruelty. Therefore, to say there was a general rule was going too far. There were cases, no doubt, in which it was obvious that a medical man should inform. He only protested against that rule being said to be applicable in all cases.

It seems, therefore, that the judges do not uphold the doctrine that the medical attendant is bound under all circumstances to give information. The time may come when they will say he is never bound to do so—when they will recognise the right of the medical man to respect the confidence reposed in him, unless and until he is ordered by the court to violate it. Meantime, we can give no help for the solution of the many painful "cases of conscience" which medical men are confronted with beyond recommending them to "mark, learn, and inwardly digest" the words we have quoted from Sir Henry Hawkins.

We have been speaking throughout of crimes committed, not of crimes contemplated. The latter stand on a totally different footing, but we have not space to discuss them here.

THE NATIONAL AID SOCIETY IN THE SOUDAN.

We have received from Lord Wantage, Chairman of the Council of the National Society for Aid to the Sick and Wounded in War, the following copy of a letter addressed to him by Surgeon-General W. Taylor, Principal Medical Officer with the force in Egypt:

Cairo, October 16th, 1898.

Dear Lord Wantage,—Having come down in the *Mayflower* on her last trip from Assouan, I feel I cannot let a mail go out without writing to thank you, and through you the National Aid Society, for the great assistance given to the Army Medical Service for bringing back the sick and wounded from the Soudan. I have written an official expression of my opinion of the great benefit and comfort the poor fellows, officers and soldiers, obtained by being saved from the trying railway journey from Assouan to Cairo. I have not a doubt that several lives were saved by that, and I am quite sure the convalescence of many was hastened and made safe by the comfortable, pleasant river trip.

Colonel Young deserves all praise for the courteous and kind way in which he worked in harmony with the officers and men of the Royal Army Medical Corps. Personally I feel very deeply indebted to you for the invaluable help given to the medical service in the way I have mentioned, and I beg you to accept my sincere thanks for having enabled me to transport such a number of the sick and all the wounded in such comfort.—I am, yours very truly,

(Signed) W. Taylor.

Medical Magistrate.—Dr. Edward Barnard Fuller has been appointed a Justice of the Peace for the District of Cape, Cape Colony, South Africa.

THE MONUMENT TO WILHELM MEYER.

Address of Sir Felix Semon.

On October 25th, the birthday of the late Dr. Hans Wilhelm Meyer, the "discoverer of adenoid vegetations," the beautiful monument erected in his honour by international contributions was unveiled at Copenhagen. The monument, of which the illustration on page 1441 gives a very good idea, consists of the bronze bust (more than life-size) modelled by a personal friend of the Danish physician, the Finnish sculptor Runeberg. It stands on a tall oblong pedestal of polished red granite, which in front bears the inscription:

Laegen[1] Hans Wilhelm Meyer,
Fredericia 25 October, 1824.
Venezia 3 Juni, 1895.

and on the back:

Dette Mindesmaerke
Reisted i. Aaret 1898
ved Bidrag fra Danmark
og Udlandet.[2]

Below this inscription follow the names of the contributing countries:

Australia, Austria, Batavia, Belgia, Britannia,
Civitates Foederatae Americae Septentrionales,
Dania, Gallia, Germania, Helvetia, Hispania,
Hungaria, Italia, Norwegia, Polonia, Russia.

The pedestal in turn rests on a base of rough grey granite, which consists of a number of steps leading up to the bust. Whilst so far the monument follows generally accepted lines, a distinguishing and very poetic element is added to it by an extremely graceful female figure in bronze, more than life-size, representing the goddess Hygiea, who, mounting the steps and resting her left hand on the staff of Æsculapius, holds up in her right hand the palm of honour to the departed benefactor of mankind. The effect of this natural and original idea—which does the highest honour to the artist, Professor Bissen, a leading Danish sculptor—is at once solemn and pathetic.

The monument stands on the Gefion Plads, a square in the centre of one of the new boulevards which make Copenhagen one of the most beautiful of modern capitals, and the face of the bust looks very appropriately towards the institution for the deaf and dumb. In a few years, when the numerous new buildings in the immediate neighbourhood of the monument have been finished, and when the young trees around it throw their shadows over it, nothing more beautiful or more refined than this monument will be seen in a city distinguished by its fine examples of the sculptor's art.

The inaugural ceremony took place on Tuesday, October 25th, at 2 P.M. The Committee had invited Sir Felix Semon, of London—the initiator of the proposal to erect a monument to Meyer—to deliver an address on the occasion, and to hand over the memorial to the custody of the Municipality of Copenhagen, and Sir Felix complied with the request.

At the appointed time a very large and distinguished audience, which included the Mayor of Copenhagen, Mr. Ollgaard, representatives of the University, the family and friends of Dr. Meyer, Professor Bissen, the sculptor of the Hygiea, a large number of members of the medical profession and of the general public of Copenhagen, assembled. It had been the wish of the Committee to invite Her Royal Highness the Princess of Wales, who most graciously had accorded her patronage to the movement in Great Britain and Ireland, to grace the ceremony by her presence; but the recent lamented death of her august mother, the Queen of Denmark, of course made it impossible for her to carry out this intention, and equally prevented the attendance of other members of the Royal Family of Denmark.

The monument, which at the commencement of the ceremony was veiled from head to foot, was surrounded by a number of high flagstaffs, from the tops of which floated, together with the Danish flag, the flags of all nations which had contributed towards the memorial. In front of it a large stand was erected on which the widow and children of the deceased, the Mayor, and other specially-invited guests took their seats.

[1] Dr.

[2] This monument was erected in the year 1898 from contributions from Denmark and Abroad.

The ceremony commenced by the singing of a cantata specially composed for the occasion by Herr E. v. d. Recke. After this Sir Felix Semon ascended the tribune, and delivered (by request of the Committee, in English) the following address:

Mr. Mayor, Ladies and Gentlemen,—The Executive Committee of the Wilhelm Meyer Memorial have delegated to me the signal honour to hand over the monument, erected by international subscriptions in his honour, to the care of the Copenhagen municipality. In fulfilling this pleasing task I much regret my inability to address you in the Danish tongue, and for this reason alone I must not trespass long upon your patience. At the same time this occasion is such a very unusual one that I may be permitted to say a few words pointing out its meaning and importance.

We are assembled here to-day to unveil a monument erected in honour of the late Dr. Hans Wilhelm Meyer. A monument in honour of a physician—that in itself is a very uncommon thing. To be immortalised by the sculptor's art in bronze or marble in a public place, has usually been reserved, from times of old, to some few classes of the community only. Great rulers, benevolent or warrior princes, distinguished statesmen, victorious generals and admirals—these are the privileged mortals in honour of whom most frequently monuments have been erected; more rarely has such a reward fallen to the lot of great artists, poets, painters, musicians, sculptors; still less frequently have men of science, philosophers, law-givers, inventors, and other leaders of intellect thus been distinguished; few and far between are monuments erected in honour of members of the medical profession. Nor is the reason of this far to seek. Slowly and by labour of many is the edifice of scientific medicine being erected. The brain work of the lifetime of a physician usually means hardly a single brick in this ever-growing structure. Even if of uncommon importance, his achievements rarely pass outside a comparatively narrow circle within his own profession; not often is his fame of a really universal character amongst his own compeers; still less frequently does it appeal to the imagination, to the gratitude of the community at large. Thus the ordinary fate of the scientific physician, even if in his day he has been successful in promoting, by teaching and writing, the welfare of mankind, as a rule is not of a largely resplendent character. A few complimentary obituary notices, the grateful recollection of some friends and pupils, not as a rule lasting longer than into the immediately following generation, finally a resting place for his name in those corners of medical literature in the development of which he has been most active—this is the summary of the life-work of most leaders of the medical profession.

What, then, has been the conspicuous merit of Hans Wilhelm Meyer that he should have been singled out for so unusual an honour as the one which is going to be paid to his memory to-day? The answer is easily given. It is now just thirty-one years since he was one day consulted by a girl, aged 20, who suffered from deafness, whose voice was most peculiar, and the expression of whose face was almost idiotic. Treatment directed to the ears and to the throat failed, and it was not until the puzzled observer one day introduced his finger into the space between the nose and throat that an unexpected solution was met with. Instead of penetrating into an open cavity, the finger was arrested by a large, soft, easily bleeding mass, a condition the existence and nature of which in those days formed a *terra incognita*. Meyer succeeded in removing this mass by operation, with the result that the deafness was materially improved, the voice became natural, and the idiotic expression of the face disappeared.

Gratifying as this result was in itself, it was however only then that Meyer's real merit commenced. Schopenhauer has truly said that not he is finder of a thing who lifts it from the ground and drops it again, but he who, takes it up and recognising its value, keeps it. If Meyer had regarded his experience in the light of a mere pathological curiosity, again years and years might have passed before the importance of the subject was realised. But with the true instinct of the scientific observer who develops what is ultimately to become an important truth from small beginnings, Meyer did not drop the clue which a casual observation had placed in his hands. He began studying the

subject in all its bearings; he examined the masses he had removed with regard to their structure, and finding them to be glandular in character gave them the name of "adenoid vegetations"; he investigated the results which obstruction of the space between the nose and throat exercises upon respiration, hearing, articulation, facial expression, general, mental, and bodily development; he examined 2,000 Copenhagen school children with regard to the frequency of this affection; he made himself the apostle of his own teaching by proclaiming it not only in his own country, but also in scientific publications abroad. In one word, to such an extent did he realise the true significance of his discovery that he left to his successors merely the addition of more or less important details, whilst the foundation of the edifice erected by him has remained unchanged from the time of his own first publication on the subject.



Nevertheless it cannot be said that this teaching at first made very rapid headway. When in 1881 he introduced a discussion on the subject at the International Medical Congress of London it came almost—I well remember—as a novelty to many of his audience, although that was mainly composed of specialists, and it was only in the next decade that the true importance of the subject was realised throughout the world. It was at first not easy to convince the bulk of the medical profession, the parents of the mostly juvenile patients, and the schoolmasters that a discovery had been made which, like few others in medicine, was of the utmost practical importance concerning the development of a healthy mind in a healthy body of the rising generation, and it needed the irrefutable proof of the surprising improvement seen in the subjects of successful operations to make this conviction a universal one. But truth, though slowly, ever forces its onward way, and when Meyer three years ago closed his eyes he had the satisfaction of knowing that the value of his discovery had at last been universally recognised. Already then the number of those who through the timely removal of the obstructing glands had been saved from lifelong deafness or from the lasting results of obstructed nasal respiration amounted to many thousands, and the benefits achieved through Meyer's merits will continue to accrue in future times to hundreds of thousands and to millions.

The proposition made immediately after his death to erect a statue to him at Copenhagen under these circumstances met with the most sympathetic reception; committees were formed in almost every country in which scientific medicine is established; in Great Britain the movement was particularly favoured by the patronage which Her Royal Highness the Princess of Wales most graciously extended to it; physicians, surgeons, specialists, general practitioners, grateful parents, former patients showed themselves anxious to contribute their mite towards a truly international monument of gratitude of his contemporaries towards the deceased great benefactor of the human race, and the result we see to-day before us, in the shape of this beautiful and touching monument, which will carry the names of the artists, Messrs. Bissen and Runeberg, to every quarter of the globe.

It is true that in the general chorus of approbation a few dissentient voices have been heard. "What after all," it has been said, "has been Meyer's extraordinary merit? He put his finger up behind a patient's palate, and found an obstruction which he removed, and which turned out to occur more frequently than could at first have been supposed." Very true, but need I remind my audience that the same specious argument has been used against the claims of Christopher Columbus? America had been there all the time, only waiting, as it were, for the bold sailor who dared to go westwards until he struck a new continent. But Columbus did it! The naso-pharyngeal cavity had been there waiting for its explorer ever since man in his present shape has been in existence; pathological obstruction of this cavity has been as old as the records of the sculptor's art allow us to go back. In the last paper on the subject, which Meyer wrote a few months before his death, he showed that the facial expression of some Greek statues and busts which have come down to our times left no doubt that the originals had been suffering from "adenoid vegetations;" mediæval portraits of historical personages prove the same fact. Any physician might have conceived the idea of investigating the subject as Meyer did in 1868, but it was left to Meyer to do it, and having done so to realise the importance of his discovery, whereby he became, without exaggeration, a true benefactor of the human race. That is why we are assembled here to-day, that is why we do honour to his memory.

Gentlemen, the country of Denmark has been rich in producing men of eminence in almost all branches of human activity. If in many instances the nature of their distinction is better known to their own compatriots than to the world at large, this is but natural, and is an experience which is repeated in every country under the sun. There are some Danes, however, whose names are household words throughout the civilised world, whose reputation is not a local but a universal one, and who, whilst their countrymen may be justly proud of them, belong, as it were, to mankind at large. Need I mention the names of Tycho Brahe, of Bertel Thorwaldsen, of Hans Christian Oersted, of Hans Christian Andersen, of Niels Gade? To those great names I think may be reverently added the name of Hans Wilhelm Meyer, one of the greatest benefactors to mankind medicine has known.

Mr. Mayor, in the name of the subscribers to this monument, who have gladly contributed towards this external sign of gratitude erected in memory of your great compatriot, I have the honour to deliver the monument of Hans Wilhelm Meyer to the safe keeping of the municipality of Copenhagen.

When the speaker addressed his concluding words to the Mayor, a sign was given and the veil fell from the monument, revealing the well-known features of Dr. Meyer and the beautiful figure rendering him so touching a homage.

The Mayor then ascended the tribune, and in the name of the City of Copenhagen expressed his warmest thanks to Sir Felix Semon and the subscribers for their gift, which he promised the municipality would faithfully keep for all times. He endorsed all Sir Felix had said about Meyer's great merits, and expressed his conviction that whatever further strides otology might make, Meyer's name would for ever remain one of the most honoured ones on its records.

Dr. Ernst Schmiegelow, the President of the International Executive Committee, added his and the Committee's thanks to those just expressed by the Mayor. He more particularly wished to thank the foreign subscribers for the compliment which they had paid to Danish medical science, and, indeed, to the whole Danish nation, in the person of Hans Wilhelm Meyer.

The ceremony concluded with the singing of the second part of the cantata; but the guests lingered for some time gazing at the beautiful work of art on the pedestal, on which meanwhile a number of splendid wreaths had been deposited.

In the course of the day a number of congratulatory telegrams and letters reached Dr. Schmiegelow, notably from the Dutch Otolaryngological Society, from the Amsterdam Medical Society (sent by Professor Guye, Drs. Voute and Burger), from Professor Uchermann (Christiania), from Dr. Delie (Ypres), from Mr. Creswell Baber (Brighton), and from others. Professors B. Fraenkel (Berlin) and Guye (Amsterdam), the Presidents of the German and Dutch Committees, had intended to be present but were prevented at the last moment. Instead of the former, Dr. Edmund Meyer, of Berlin, the Treasurer of the German Committee, attended.

The festivities, which in every respect were most successful, were brought to a fitting conclusion by a dinner, given the same evening by Dr. Schmiegelow to the foreign representatives, the son of Dr. Meyer, the Mayor of Copenhagen, the sculptor, the members of the Committee, and a number of distinguished representatives of Danish Medical Science, amongst whom were Professors Gram, Hirschsprung, Salomonsen, Haslund, and many others.

It is an interesting circumstance, from an historical point of view, that almost immediately before the beginning of the ceremony, an opportunity had been given by Dr. Holger Mygind, the Treasurer of the Committee, to Sir Felix Semon to examine the very patient on whom Meyer, thirty-one years previously, had made his great discovery.

TYPHOID FEVER IN BELFAST.

DECLINE OF THE EPIDEMIC.

WE are pleased to note the steady, if somewhat slow, decline of the epidemic of typhoid fever in Belfast. The number of cases notified in the week preceding the last report was 125, the numbers in the previous six weeks was 149, 151, 172, 164, 247, and 270 respectively. The death-rate of the city at the last return had fallen to 24.6 per 1,000, which is about the normal rate in Belfast.

DEFECTIVE DRAINS.

The Public Health Committee has been showing considerable energy and taking steps which promise well for the future. That the practical difficulties to be encountered are somewhat formidable is shown by the following report presented to the Joint Improvement and Public Health Committee of the Corporation.

Gentlemen,—In accordance with your resolution of September 20th, 1898: That a systematic test of all the drains in the city be made and that the head officers of the Public Health and Improvement Committees report what additional officers are necessary for this purpose, and that such officers be appointed, and a weekly return of the drains so tested be made to the above Committees,

We beg to submit for your consideration the following report:

The enforcing of this resolution would effect one of the most sweeping changes ever proposed by any committee of the corporation. In our opinion this resolution practically amounts to the sanitary reconstruction of the drainage of the great majority of the houses within the city. At present houses are tested by permission of the owner or tenant, who supplies the necessary labour for opening and closing the ground, and provides for the removal of materials interfered with. It may be a legal question if the officers of the corporation can enter into private property without permission and test the drains, unless they have reason to believe there is a nuisance on the premises; in that case entry may be made under a magistrate's order. Each tester would require an assistant and workmen for opening, closing, and making good the ground, and renewing the material damaged. Assuming that Belfast contains at present about 70,000 houses, and that one inspector and an assistant can thoroughly test and report on the drainage of six houses per day, so as to be available for legal evidence, thirty-nine inspectors, with their assistants and workmen, would be required (exclusive of expenses involved in conveying testing apparatus, etc.) to do the work in a year. This staff would be solely employed at drain testing, and would not include the large number of officials and workmen that would be required to carry out the reconstruction of old drains. All inspectors required for this work should be trained practical men, placed under the personal superintendence of an efficient engineer trained in sanitary work.—We are, Gentlemen, your obedient servants,

J. C. BRETLAND, City Surveyor,
CONWAY SCOTT, Executive Sanitary Officer.

We trust this adverse report will not induce the Public Health and Improvement Committees to shrink from the task to which they have set themselves. To most impartial readers this report will afford the strongest proof that the resolution to test the drains of the city was a most necessary and salutary decision. The City Surveyor and the Executive Sanitary Officer do not venture to assert that this examination is unnecessary, but only that it would be laborious and expensive. They hint in no obscure terms that if such an examination be made, its logical outcome will be the reconstruction of a large proportion of the old drains of the city. What is this but to admit that the drainage of the city is seriously defective? No doubt the proposed examination will take much time and a very large expenditure of money; but Belfast is a wealthy city, and can well afford to spend a good many thousand pounds on measures which will bring its death-rate down to the average of other great cities, and remove the stigma which rests upon it of being an insanitary city. Nothing is, in the long run, so expensive as bad sanitation.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 5TH, 1898.

THE CONSCIENCE CLAUSE.

To revise at leisure after having legislated in haste seems likely to be the experience of the Government with regard to their last year's Vaccination Act. Lord Heneage has pointed out in a letter to the *Times* that in the House of Lords the Bill was never before the Standing Committee, and that it was not on the Orders of the day when the first decision of the Upper House was revoked. The wide diversity of interpretation that is being put upon the conscience clause is only what might be expected with regard to a provision which was passed through Parliament with so much haste and so little consideration of detail. Perhaps that diversity cannot be better illustrated than in the conclusions arrived at by different Boards of Guardians in different parts of the country. In Gloucester it has been decided that the statement of conscientious objection must be made on oath; that it must be made by the father if he is living and has the custody of the child; and that after December 12th a certificate of the birth of the child will be required. Similar conclusions have been arrived at by the Cheltenham magistrates. But at Keighley each of these decisions is reversed. Before opening the court there the magistrates (including Mr. John Briggs, M.P.) decided that an oath was not necessary, that the attendance of the father, where such attendance was possible, was not essential; and that the production of the child's birth certificate was not required. There can be no question that the Gloucester and Cheltenham conclusions are more in accordance with the spirit and intention of the Act than are those of the Keighley Bench.

Regarding the propriety of requiring evidence on oath, we cannot do better than quote from a letter in the *Times* of October 1st by Mr. W. P. Dickins. He says: "That facts which are required to be proved before justices in petty sessions are proved by evidence on oath is a matter of general knowledge, and must be taken to have been in the minds of the Legislature when they passed this section; and it must be inferred that when they selected a petty sessional court for the purpose of safeguarding the public against an indiscriminate issue of licences to keep unvaccinated children, they did so with confidence that the Court would determine the issue before them—the existence or non-existence of the alleged conscientious belief—in the way in which they determine all issues of fact, namely, according to evidence on oath." It is equally obvious that in order to prove that the application is being made within the age period required by the Act, a birth certificate will be necessary.

But the question whether or not the attendance of the father is required is of even greater practical importance. There has been any amount of academic discussion as to the definition of conscientious objection, and agreement seems as far off as ever. Speaking practically, it was manifestly the intention of the Legislature that by means of Section 11 of the Act it should be possible to draw a reasonably clear distinction between genuine opposition to vaccination on the one hand and mere indifference and laziness on the other. In order to effect this it is necessary that the custodian of the child shall be put to a certain amount of inconvenience—to such an amount, say, as would be more than equal to the trouble required in procuring the vaccination of the child and in attending to its arm during the week or two following on the operation. At the Southwark Police-court, for example, a certificate has been very properly refused to a parent whose declared purpose was to "save trouble and loss of rest." But the amount of trouble will vary greatly according to whether it is necessary for the father to leave his work for a few hours in order to present himself before the petty sessions, or whether it will be sufficient for his wife to go in his place, and, as at Keighley, nod her head and say "Yes" in reply to the question whether the applicant is imbued with a conscientious belief that vaccination would be prejudicial to the health of the child. We read in a Yorkshire newspaper that of 800 parents who presented themselves on one day at Keighley, 95 per cent. were women, and that as a result of the proceedings some 2,000 exemption certificates were granted. It is to be feared that if the father of the child is not himself to be required to attend the court, the procedure will become a farce. At Bury, the secretary to the local Antivaccination Society proposed to go even further than the Keighley magistrates in reducing the working of the Act to a practical joke. He made application for certificates of exemption for the whole membership of the Society, and urged that the very fact of membership ought to "satisfy" the magistrates as to the reality of the objection; the contention was not accepted, but the mere fact that any such plea could be put forward helps to indicate how loosely the clause has been drafted.

At Daventry, where there were five or six magistrates on the Bench, two of them held that what the Act required was the satisfying of any two magistrates, and that, therefore, a minority of two could sign the certificate in the face of an adverse majority, and this step was actually taken. A legal correspondent dealt with this point in the British Medical Journal of October 15th, and held that such proceedings were wrong. What we urge at present is that no dubiety should be possible on so simple a point. Similarly, there ought to be no question as to whether court fees can be charged for administration of the oath, and for certificates. That such fees should amount to anything approaching a fine would be contrary to the spirit and intention of the clause, but the payment of the very small sums required for certificates under the rules of local courts, and not imposed specially with regard to vaccination, ought *pro tanto* to add

to the value of the test as between the merely indifferent and the genuinely objecting parent.

Another Gloucester decision was that it would not be necessary for them to inquire into the grounds of conscientious belief, but merely to satisfy themselves of its existence. At Godalming, on the other hand, two applicants were told that, if they had not studied the Act, the granting of a certificate would be postponed until they had had an opportunity to do so. No doubt the magisterial intention here was praiseworthy, but postponement for such a purpose could hardly be made a routine practice.

SYPHILIS IN THE ARMY: 1812 AND 1896.

Readers of *Candide* will doubtless remember the description of the woful plight in which the learned Pangloss found himself as the result of the lessons in "experimental physics" which he had given the handmaiden of the Baroness von Thunder-ten-tronckh. He appeared before Candide "*tout couvert de pustules, les yeux morts, le bout du nez rongé, la bouche de travers, les dents noires, et parlant de la gorge, tourmenté d'une toux violente, et crachant une dent à chaque effort.*" The last touch in this vivid clinical picture suggests that the unfortunate philosopher was suffering from overdrugging as well as from disease. There can be no doubt that syphilis, as it is generally seen in Europe at the present day, is much milder both in its symptoms and its effects than it was even in the early years of the present century. This has sometimes been attributed to a natural attenuation of the poison, and a good deal has been written as to the influence of race and climate on the severity of its effects. Without denying that those factors may more or less modify the manifestations of the disease, we are inclined to think that Sir Gilbert Blane was right when he said as long ago as 1813 that "the mitigation of the venereal disease has arisen from superior habits of cleanliness and superior skill in the cure."

That unskilful treatment may have an enormous influence in increasing the ravages of the disease is well brought out by Dr. George Ogilvie in a most interesting and richly "documented" (if we may adopt a convenient French expression) paper, published not long ago in the *British Journal of Dermatology*.[1] He there tells a story which, though old in date, has still a moral for us, as it shows how medical error may cause to those within its sphere of influence woes as countless as those which the wrath of Achilles brought on the Greeks. The British troops in Portugal in 1812 suffered severely from syphilis. By way of treatment they were drenched with mercury "*intus et in cute, ab ovo usque ad mala* and afterwards as long as the patient remained above ground." How indiscriminate was the use of mercury may be gathered from the fact that "even warts on the genitals were pronounced to be a sure indication of syphilis, requiring a full course of mercury in a six weeks' salivation." But the disease, instead of being destroyed by the drug, appeared to wax stronger on it. William Fergusson has recorded that, among the soldiers under his care, not only had "venereal ulceration become more intractable to the operation of mercury than under similar circumstances at home," and probably "more men had sustained the most melancholy of all mutilations through this disease than the registers of all the hospitals in England could produce for the last half century," but that "the constitution while strongly under the influence of the remedy had become affected with the secondary symptoms in a proportion that could not have been expected." On the other hand, the Portuguese, to whom the mercury was not administered internally "till the disease shows itself in the last order of parts, its last citadel, the bones" suffered much less grievously than the mercurialised Britons. Fergusson was struck by the contrast, but "could not help acknowledging that the grave consequences he apprehended from their (the Portuguese) preposterous conduct did not follow, and that our soldiers who were mercurialised, I may say, to extremity, often suffered them in the most lamentable degree." He explained the facts, however, to his own satisfaction at the time by a comforting theory that syphilis was of milder nature among the Portuguese because the disease had become attenuated by a process of self-exhaustion from having been allowed to run its course unresisted by mercury. He held fast by the belief that for the English constitution "mercury offers the only chance of salvation." Nor was it only the diseased soldiers whose salvation lay in mercury. The mercurial treatment was enjoined by general order, and the use of any other method was forbidden under the penalties of the military law. It is not surprising to learn that the Portuguese looked upon the murderous practice of the English surgeons with "horror and astonishment." At a later period Fergusson was converted to more rational views by the teaching of Rose and Guthrie.

Since his day more scientific treatment has done much to mitigate the severity of syphilis in civil life, but it must be confessed that there has not been a corresponding improvement in military practice. As Dr. Ogilvie puts it: "There is one unimpeachable witness against attenuation of venereal diseases in the British army, and that is the British Army Report." He refers to the statements made in that report that not only had "the amount of syphilis among the European troops serving in India enormously increased," but the disease had assumed a most virulent and malignant form. The descriptions of the cases in Netley Hospital bear a striking resemblance to those given by Fergusson of the disease as he saw it among our troops in the Peninsula. It may be remembered that the question, Is syphilis efficiently treated in the Army? was discussed in the British Medical Journal not long ago.[2] In the light of the facts brought forward by Dr. Ogilvie, his conclusion that "an exhaustive inquiry into the details of the whole treatment and the hygienic conditions is necessary" appears to be fully justified.

[1] Syphilis among British Troops in Portugal, 1812, and in India, 1896.

THE SENSE OF SMELL.

It is not a little curious that the sense of smell, which has in a few of the higher animals become of great importance should among ourselves be little used, never trained, and even associated with some contempt or disgust. Men differ much in their power of smell; few appreciate the delicious scent of agrimony on the one hand, and many well-to-do houses convict their owners of a singular obtuseness to stinks. There is irregularity too even among the

[2] Vol. I, 1898, April 9th, p. 965.

gifted. Certain smells may be hardly perceived by a man who is acute for others, and one who is fastidious beyond the ordinary to detect the smell of putrefaction may be unable to recognise that of diabetes. The sense has also this mark of ancient descent, that it is the best remembered and the worst recalled. Nothing perhaps brings back the past so vividly as a scent; its impression is firmly retained and the connections which it forms last long, yet when we smell a rose it is difficult to compare it with another flower, because we cannot recall at will the earlier scent. This durability, together with its imperfect subjection to the will, marks a faculty acquired and developed at a time when will was yet in its early stages. It is not like the unconscious perfection of skilled habit, for that is the result of effort and is the product of the past exercise of a highly developed will.

Yet for all its antiquity and for all its delicacy smell is no longer a trusted guide. The perfecting of sight has reduced it to a lower post, and we use it now not to point the road we should take but only the lodgings we should avoid. But Professor Ayrton's suggestive address to the Section of Physics at the meeting of the British Association at Bristol last September shows that smell has begun to interest science, and that its laws, of which we know extremely little, may soon be observed. Professor Ayrton finds that in air the rate of diffusion varies much for different substances, but is slower than would be expected. The smell of camphor takes twenty minutes to permeate 7 inches of air in a glass tube. Smell is propagated more quickly upwards than downwards. *In vacuo* the rate of diffusion may be very greatly quickened, as in the case of camphor, whose smell traverses in one second a length of vacuum which, if filled with air, would have taken twenty minutes; but, on the other hand, the smell of some substances such as lavender can be propagated *in vacuo* with great slowness or not at all. The absorption of smell varies no less. For some smells lard, for others blotting-paper, for others wool is the best absorber. The clinging character of smell again varies independently of its intensity, and of its rate of diffusion. The elementary nature of the observations shows the novelty of the subject, and, as Professor Ayrton found in his own case, an initial difficulty consists in the imperfection of the human nose. He has been ousted by sight, and has become a *roi fainéant* to whom no serious business is entrusted.

Yet though incompetent as a ruler, how charming as a companion! There is nothing save music to be compared in ecstasy with the scent of some flowers. And how valuable also as a warning! How far the degeneration of the sense of smell is due to the great prevalence of evil odours in cities it would be difficult to say, or how far the mere disuse owing to the greater reliance man has come to place on the sense of sight. The degeneration, however, must probably have taken place at a very early epoch in the history of man, for where he develops high powers as a tracker he does not rely, like the dog, on the sense of smell but on that of sight. The Australian aborigines, whose achievements in following a spoor almost pass belief, depend entirely on minute visual observation. They see all kinds of small indications which escape the less acute vision and the less trained observation of civilised man.

How far, again, the habitual use of tobacco has blunted the sense of smell in the male civilised being is an interesting subject for speculation, perhaps for experiment. It is at any rate a matter of common observation that women have a more acute sense of smell than men. Many women can tell the clothes of one individual from another by the smell, while in men such a power must be extremely uncommon. Professor Ayrton in an early stage of his inquiry discovered that women were the best subjects for experiment, and most of his investigations were made with the assistance of ladies of his family. The physiological study of the sense of smell has been greatly neglected, and that of its pathological disorders is an almost unexplored field. Let us hope that Professor Ayrton's excursion will stimulate other explorers to follow in his footsteps.

SPECIAL PLAGUE COMMISSION IN INDIA.

We learn that the members of the Special Plague Commission who have been nominated in this country are Dr. T. R. Fraser, Professor of Materia Medica and Clinical Medicine, University of Edinburgh, who will act as President; Dr. M. A. Ruffer, President of the Sanitary Maritime and Quarantine Council, Alexandria; and Professor A. E. Wright, Professor of Pathology at the Army Medical School, Netley. Professor Fraser and Professor Wright will leave London for India on November 11th, and the Commission will be completed in India by the two Indian civilians already nominated, Messrs. J. R. Sewwett and A. Cumine. The instruction to the Commissioners is to inquire into the origin of the various outbreaks of plague, and the manner in which the disease is spread, but they will further be required to express an opinion as to the efficacy of the serum treatment and as to the possibility of the prevention of plague by means of inoculation. The valuable scientific work which both Professor Fraser and Professor Wright have done with regard to the production of immunity by the injection of serums renders the Commission particularly strong on this latter point, while Dr. Ruffer, who was formerly the director of the British Institute of Preventive Medicine in London, has since had extensive experience of the administrative measures which can be taken against epidemics as President of the Sanitary Maritime and Quarantine Council in Egypt.

THE PLAGUE IN VIENNA.

In the *Wiener klinische Wochenschrift* for October 27th there is a detailed and evidently authoritative account of the cases of plague in Vienna. There appears to be no doubt that the attendant Barisch contracted the disease by inhalation, but as to the exact mode of infection more than a conjectural opinion can never be possible. It is, however, now stated definitely that the unfortunate man went about his duties at the last in a state of indisposition induced by a debauch. On the morning of Saturday, October 15th, Dr. Ghon, the chief assistant in Professor Weichselbaum's institute, was informed that Barisch had suddenly been taken ill in the night and had gone home from his work. Dr. Ghon and Dr. Stejskal, of Professor Neusser's clinic, visited the patient, and the latter examined him. The symptoms were slight; definite evidence of pneumonia was not forthcoming, but a provisional diagnosis of pneumonia was made. Some fresh sputum was taken to the institute and examined for the influenza bacillus. On careful examination this was not detected, but Dr. Ghon found some pneumococci and also some plump, faintly-staining bacilli, showing transitional forms into large round bodies. It was the appearance of these organisms which raised in his mind the first suspicion of plague. He at once showed the preparations to his colleague, Dr. Albrecht, and both agreed that a

certain conclusion could not be arrived at except by making cultivations and experimental inoculations. In the meantime, the other assistant, Dr. Mueller, who had studied the disease clinically in Bombay, was apprised of the circumstances and sent to see Barisch. He reported that the most careful clinical investigation failed to reveal any evidence of plague. Nevertheless the wife of the patient was carefully instructed in the precautions to be taken, just as if the case had been diagnosed with certainty, and sublimate pastilles were given her wherewith to disinfect the sputum and other excreta. The same evening Dr. Ghon made cultivations of the sputum on agar and gelatine, and injected a small quantity into a rat, one of the animals most susceptible to plague. Early next morning the rat was quite well, there was no growth on the gelatine, and the agar showed only a few colonies of cocci and none of plague bacilli. Still as no growth of Friedlaender bacillus—the only one with which the suspicious forms could be confounded—was seen, the fear of plague again arose. At 8 A.M. Dr. Ghon visited Barisch; Dr. Mueller once more expressed his opinion that the case was not one of plague, but it was nevertheless transferred in the course of the day to the isolated room of Professor Nothnagel's clinic. The bedclothes were most thoroughly disinfected. On this morning (Sunday, October 16th) some more sputum was obtained, and cover-glass preparations and cultures made from it. Numerous bacilli were seen which resembled that of plague, but which at the same time were not absolutely distinguishable from Friedlaender's bacillus. A second rat was injected intraperitoneally with this sputum. Next (Monday) morning neither set of cultures showed typical colonies of plague bacilli. The first rat remained well, but the second died in the course of the morning; the necropsy showed acute septic poisoning, but not the appearances typical of plague infection. There was a hæmorrhagic exudation in the peritoneal cavity, which contained a few bacilli like those of plague; but no bacilli were obtained from the spleen. The absolute diagnosis was not made till typical colonies appeared in agar cultures from the heart's blood of this rat. This did not occur till early on the morning of Wednesday, October 19th, Barisch having died at 5 o'clock on the Tuesday afternoon. On Wednesday, also, some agar plates inoculated with sputum on Monday evening showed typical plague colonies; while on Wednesday evening—that is four days after infection—the first rat inoculated died of plague. The body of Barisch was at once enveloped in cloths soaked in sublimate solution, and all the funeral arrangements were conducted in such a way as to preclude any possibility of the spread of the disease. Dr. Mueller took part in these, and also assisted Drs. Ghon and Albrecht in the complete disinfection of the death chamber. As is well known, he fell ill with the disease on Friday, October 21st, and died the next night; while Nurse Pecha showed symptoms of plague on October 20th, and died on October 30th.

A SANATORIUM FOR CONSUMPTIVES IN YORKSHIRE.

On the invitation of the Lord Mayor of York a large and influential meeting was held in that city on October 27th, to hear an address from Sir William Broadbent, Chairman of the Executive Committee, and Mr. Malcolm Morris, Treasurer of the National Association for the Prevention of Consumption, and to take steps for the formation of a Yorkshire sanatorium for consumptives. The Lord Mayor, in opening the proceedings, said he hoped that this was only the first step towards founding a sanatorium or series of sanatoria which should be worthy of Yorkshire. Already several considerable contributions of money had been promised by the Marquess of Zetland, the Marquess of Ripon, Mr. W. H. A. Wharton, of Skelton Castle, and others. Sir William Broadbent said that the aim was not to provide shelter for consumptives for a certain period of illness, but to help them to get well, and that was now possible. It was not any particular air that was required for the cure of consumption; and there could be no doubt whatever that if in all parts of the country, in Yorkshire as elsewhere, these homes were managed on the principle of treatment by fresh air, the very best possible results would be obtained. He pointed out that at Edinburgh, which could not be said to have a better climate than Yorkshire, the open-air treatment had been carried out for years, and the results had much surpassed anything that could be obtained in the best consumptive hospitals not managed on this principle. It was desirable that near every important centre of population there should be an institution for the open-air treatment of phthisis. Sir William Broadbent concluded by setting forth the objects of the Association which he represented, one of the most important of which was to afford a means of co-ordinating the work of local societies having the same aims, such as the one which he hoped would be founded there that day. Mr. Malcolm Morris dealt chiefly with various objections which had been brought against the scheme. They did not, he said, wish to create a panic, but to teach people how to safeguard themselves and others against a disease which was not only curable but preventable. Their object was to institute a national crusade against a national scourge. As showing what could be done by the open-air treatment, he pointed to the results which had already been obtained by that system in Germany. The rich were capable of taking care of themselves, and the extremely poor would be looked after by the Poor-law authorities; it was the middle classes for whom mainly they wished to provide sanatoria. He suggested that these should be built of wood, so that alterations might easily be made and the expense of more solid structures avoided; they should be small buildings, accommodating not more than 40 or 50 patients, and should be made as bright and homelike as possible. They should be self-supporting, and they should be started by every town in the country in a small way in carefully-selected sites, the system being developed gradually as success was achieved. The Marchioness of Zetland moved a resolution to the effect that it was desirable to found a sanatorium for the cure of consumption in Yorkshire. This was seconded by Dr. Eddison (Leeds) and adopted. Dr. Ramsay moved the appointment of an influential committe for the purpose of formulating a practical scheme and carrying it into effect. This was seconded by Sir James Crichton Browne, who said there was reason to believe that the rate of diminution in the prevalence of consumption which had been observed in the past would not be continued in the future unless new agencies—such as those sketched out in the programme of the Association for the Prevention of Consumption—were brought into operation. The resolution was adopted, and it was agreed that a branch of the National Association for the Prevention of Consumption should be formed in York.

THE KHARTOUM EXPEDITION.

Upon the return to Cairo of the Nile Expeditionary Force, the following address was delivered by Sir Francis Grenfell, the General Officer Commanding Her Majesty's Forces in Egypt, at a general parade on October 8th: "Colonel Barrow, officers, non-commissioned officers, and men of the Royal Army Medical Corps,—I am glad of this opportunity of telling you of my high appreciation of the valuable services rendered by your corps during the late operations on the Nile. I regret that Surgeon-General Taylor and Colonel McNamara are not present that I could personally thank them for their valuable co-operation. I have lately visited the hospitals at Atbara and Abadia, and was much pleased and greatly struck with their efficiency, by the care and attention shown to the sick and wounded, and by their general appearance of comfort. I can assure you that all branches of the Service

have been loud in their praise of the way that the sick and wounded were looked after both in the hospitals and on the field, and I may tell you that I have not heard a single adverse criticism with regard to the working of the medical arrangements." The Director-General in a Special Order has recorded his extreme appreciation of the services rendered by the Corps which have earned this commendation. We may, perhaps, be permitted to add our congratulations to the Director-General, Surgeon-General Jameson, C.B., and the officers of his staff upon whom fell the duty of making the preliminary arrangements in this country.

THE INVENTION OF SPECTACLES.

Who first invented spectacles? These aids to vision appear to have come into use about the fourteenth century. The earliest reference to them is in the work of Bernard Gordon, Professor at Montpellier, who speaks of a collyrium devised by him which allowed a person to read without spectacles. In 1360 Guy de Chauliac in his treatise on surgery refers to the use of lenses. The invention of spectacles is sometimes attributed to Roger Bacon, who died in 1294. Further research, however, has shown that in 1285 Savino degli Armati, a Florentine, worked glass into the form of a lens as a help to vision. For him, therefore, may justly be claimed the honour of having invented spectacles. He died at Florence in 1317, and was buried in the Church of Santa Maria Maggiore. On his stone is the following inscription:

QUI GIACE
SAVINO DEGLI ARMATI
DI FIRENZE
INVENTORE DEGLI OCCHIALI
DIO GLI PERDONI LE PECCATA
ANNO D MCCCXVII.

(Here lies Savino degli Armati, of Florence, inventor of spectacles. May God forgive him his sins! A.D. 1317.)

HOW THE PLAGUE WAS FOUGHT IN AN ENGLISH VILLAGE IN THE SEVENTEENTH CENTURY.

Dr. Gordon Sharp, of Leeds, has sent us the following interesting account of the manner in which a Derbyshire clergyman fought the plague in the seventeenth century. The village of Eyam (pronounced Eem), sometimes called the "Plague Village," is situated in Derbyshire, six miles north of Bakewell, and twelve from both Sheffield and Buxton. In 1665–1666 it was visited by the plague, which swept away 259 of its 350 inhabitants. The disease appears to have been brought to the village by fomites. A tailor received from London on September 2nd or 3rd, 1665, a parcel of cloth patterns, together with some old clothes. The man who opened the parcel was soon seized with sickness, and died on the third day, with the well-known symptoms of bubonic plague. Up to the end of 1665 44 inhabitants of the village died of the disease, and during the first five months of 1666 there were 30 more deaths from the same cause. In June the epidemic began to rage more severely. The Vicar of Eyam, William Mompesson, bravely stuck to his post, visiting the sick and burying the dead. When the plague became worse his wife besought him to leave the place, but he refused to do so. Moreover, he induced a number of the villagers, who wished to leave, to abandon their intention, by pointing out to them that they would carry the disease with them, and be a danger wherever they went. At the same time he wrote to the Earl of Devonshire, stating that the people would stay in Eyam if they were supplied with the necessaries of life. Arrangements were made accordingly that supplies should be left at regular intervals at a certain spot, a signal being given when they were placed there. The Vicar, perceiving the danger of people collecting in church in warm weather, conducted the services outside, and preached from a limestone platform, which has ever since been known as Cucklett Church. The disease continued to rage through July and August, and in the latter month the Vicar's devoted wife fell a victim to the scourge. Mompesson tried all the cordials and antidotes recommended for the plague, but with no avail. He therefore told the people to burn all clothing, furniture, and everything else that might harbour the disease, and he set them the example by destroying his own effects. In October the disease began to subside, the last victim dying on October 11th, 1666. The survivors, however, were in such terror that they continued for some time to burn their things, leaving themselves scarcely enough to shelter them from from the winter. Though but 91 of the inhabitants of Eyam escaped with their lives, the Vicar's manful fight against the plague was successful, as he prevented it from spreading beyond the village. The story of his noble philanthropy is well told in Miss Charlotte M. Yonge's *Golden Deeds*, and in greater detail in William Wood's *History and Antiquities of Eyam*.

A MURDERER AND HIS MARKS.

The fate which he dreaded has already overtaken Luccheni. The criminal anthropologists have naturally marked the murderer of the Empress of Austria for their own as a subject of scientific study. The *corpus vile* of the criminal will doubtless be reserved for Professor Lombroso or some expert of equal rank, but in the meantime some eager investigators have been studying photographs of Luccheni. To the eye of the ordinary observer he looks a commonplace ruffian, but the criminal anthropologist, we are assured, at once sees even in a photograph complete asymmetry of the body. Amyotrophy of the face, neck, trunk, arm, and leg on the left side is very marked. These stigmata are the consequences of grave cerebro-spinal lesions occurring in infancy, and due to heredity, alcoholic atavism, *misère physiologique*, or some disease of infancy, perhaps an encephalomyelitis or lateral sclerosis, from which complete recovery never took place. Luccheni is pronounced to be a type of the *asymmétrique déséquilibré*. It would have been more satisfactory if the criminal anthropologists could have recognised all these evidences of criminality before Luccheni had perpetrated the crime which has given him the notoriety of infamy which he coveted.

WAR RISKS AND LIFE INSURANCE.

In these days of wars and rumours of wars the question of life insurance under the conditions of added risk to life entailed by service in the field forces itself unpleasantly on the attention of insurance companies and their clients actual and possible. A pamphlet on this subject just published in New York (Thrift Publishing Company) under the editorship of Mr. Edwin Bannell Phelps is therefore particularly fortunate in the opportuneness of its appearance. We are indebted for a knowledge of this publication to the *Medical Examiner* of New York, which gives a summary of its contents. From it we gather that a careful study of the earliest American insurance records seems to warrant the conclusion "that prudent folks of colonial times carefully abstained from the assumption of the unknown and unknowable war hazard;" and "that not a dollar's worth of loss on either life or property resulting from the war of 1812 was paid in the United States." It must be remembered that insurance was a business of very small proportions during the early history of the United States. But from 1843 onwards the business of life insurance made considerable strides, so that on the eve of the Civil War the question of the war risk assumed large proportions. It was found that "deaths from battles and from wounds incurred in the Mexican war were 2½ per cent. premium," while the death-rates from exposure, danger, and other similar causes had varied very greatly. Among officers

the rate was about 3½ per cent., and among privates very much larger. At a meeting of insurance companies held in April, 1861, the opinion was expressed that about 5 per cent. per annum upon all existing policies would be a reasonable rate to cover the risk arising from enlisting into the military and naval services of the United States, the said risk to be confined to a locality of 30 degrees of latitude, and an additional extra of 5 per cent. per annum for all risks incurred for localities south of that point. After a trial it was found that the writing of war risks on that basis might with safety be continued, as it was found that only nine losses up to about March, 1862, had been reported, aggregating 9,000 dollars. It is difficult to get at the exact losses sustained by insurance companies during the Rebellion. The New York Life Company granted 731 war permits upon insurance amounting to 1,151,950 dollars, and suffered 73 losses, amounting to 107,100 dollars; the United States Life Company had 9,000 dollars losses; the Pennsylvania Mutual Life Company three losses; and indefinite statements are made relative to many other companies. During the Spanish-American war various regulations regarding war risks were adopted by companies. In addition to the usual risk of war there was added the risk of a residence in tropical climates during the hottest time of the year. Some companies would not transact military business on any consideration. The number of deaths in battle has been small, but it is too early even to surmise what the total mortality of the war may be. It is probable, however, that it will be high; but no correct estimate of the proper rate of insurance can yet be drawn from the figures so far available.

THE NEW VACCINATION ORDER.

A CORRESPONDENT asks us to call attention to one point in the Order which he thinks requires to be emphasised. Though revaccinations and primary vaccinations may be done officially at the surgery of the public vaccinator, or elsewhere than at the house of the person to be vaccinated, any such primary vaccinations must be only of persons over 14 years old. In the case of revaccinations, the individual must be at least 10 years old, and his previous vaccination must also be at least 10 years old. The minimum fee for every vaccination done elsewhere than at the home will be two shillings and sixpence. Every primary vaccination of a child under 14 years old, if done by a public vaccinator, must be done at the child's own home, and the minimum fee for each case will be six shillings, which will include at least one further visit. The exact terms of the Order relating to these points are given in the BRITISH MEDICAL JOURNAL of October 29th, p. 1352. An inquiry received from another correspondent raises a question which will probably be of interest to many public vaccinators. Our correspondent has been offered the minimum fee for vaccination by his Board of Guardians. On an average for the past three years half the cases are in the town; the country district extends seven miles from the town. The question is whether the minimum is a reasonable one. We are certainly of opinion that the minimum fee is too small for the rural part of the district, but the form of contract does not provide for differentiation between one part of a public vaccinator's district and another. Our correspondent might well ask such an addition to the minimum as would make a fair average payment for the work per case. His own knowledge of the locality should guide him as to the exact amount. Something would depend, for example, on the distribution of the bulk of the rural population with reference to his own residence, and on the existence or absence of railway facilities or of other public means of conveyance. One course which suggests itself as a possible solution of the difficulty of having both a town and a rural population within the one district, would be to get the guardians, with the approval of the Local Government Board, to make two distinct districts, the one for the town and the other for the rural part, and to appoint the present holder of office to both, but with separate and different scales of fees. Of course in some cases there might be objections to this proposal, and we mention it only for our correspondent's consideration. We would almost assume that the Public Vaccinators' Society (of which Dr. Cope, 128, Vauxhall Bridge Road, S.W., is Secretary) is carefully considering the whole matter, with a view to something like uniformity of action.

A LAYMAN'S VIEW OF VACCINATION.

SPEAKING at the annual prize distribution at St. George's Hospital Medical School on October 29th, the Duke of Westminster said that it seemed incredible that at the end of the nineteenth century public opinion was not yet sufficiently alive to the virtue of the almost unfailing preventive power of vaccination, and that a malevolent and active propaganda existed which prevented whole classes of people from obtaining immunity from a most loathsome disease, for which vaccination was a specific. It might, he said, have been hoped that experience, too dearly bought in some localities, would have opened the eyes of even the most stupid to the danger of omitting recourse to the preventive means discovered and adopted with conspicuous success by Edward Jenner. In replying to a vote of thanks his Grace said that the Board now owned one half of the freehold of the hospital. He thought that they ought to possess the entire freehold, and if he could meet them in any way in that direction he should be glad to do so.

GUY'S HOSPITAL

THE following changes in the staff of Guy's Hospital have recently occurred:—Dr. F. J. Goodhart has, in consequence of the increasing demands upon his time made by private work, felt himself compelled to resign the post of Physician to the hospital, with which he has been connected as Assistant Physician and Physician for twenty-one years. He was appointed Assistant Physician in 1877, and Physician in 1886, on the death of Dr. Moxon. At a meeting of the Governors held on Wednesday last, Dr. Goodhart's resignation was accepted. At the same time, Dr. Newton Pitt was elected to the vacancy caused by Dr. Goodhart's resignation. The Governors have also passed a resolution that in future every assistant physician who has been in office seven years shall at the expiration of that time be styled physician to the hospital; and that in like manner every assistant surgeon shall at the end of seven years become surgeon to the hospital. As a result of this regulation, Drs. E. C. Perry, L. E. Shaw, and J. W. Washbourn are now Physicians, and Dr. Peter Horrocks is Obstetric Physician; whilst Messrs. W. H. A. Jacobson, Charles J. Symonds, and W. Arbuthnot Lane have become Surgeons, and Mr. W. A. Brailey has become Ophthalmic Surgeon to the hospital.

THE FUTURE OF THE FEEBLE-MINDED.

A MEETING for the formation of a North of England Society for Promoting the Welfare of the Feeble-minded was held last week at Manchester, under the presidency of Dean Maclure. The Dean observed that the School Board (of which he is the chairman) had discovered in Manchester a large number of children, not imbeciles or idiots, but still requiring, on account of their mental feebleness or dulness, a system of special instruction. The question naturally arose, what would become of such children after school age. He thought that for their protection, as well as for the protection of the community, homes would be also necessary. Miss Dendy set forth at some length her observations of the feeble-minded class in Manchester, and of the need of protection, such as the

proposed homes would afford, to prevent feeble-minded youths of both sexes from drifting into the ranks of the great army of crime and immorality, as well as from perpetuating their kind. Dr. Ashby confirmed Miss Dendy's views from the medical standpoint; and the Duchess of Sutherland, as the President of the National Association for the Promotion of the Welfare of the Feeble-minded, made an eloquent speech, in which she dwelt on the necessity of family—rather than institution—life for feeble-minded children, and for moral as well as mental development. She expressed a hope that the proposed Northern Society might be affiliated with the National Association, which had been working for several years with similar objects. The formation of the Society was determined on. This meeting is one more evidence of the widespread interest now taken in the feeble-minded class, and we are inclined to think that there is not now so much fear of the claims of the class being overlooked as of zeal occasionally outrunning knowledge. We are glad, therefore, to find the names of prominent medical men—such as Drs. Ashby and Woodcock—connected with the movement, and we have no doubt that the subject has been well studied from the scientific as well as the philanthropic aspect. Reference was made by Miss Dendy to the relation between the work of the proposed Society and that of the existing charitable institutions for idiots and imbeciles, and it seems important that there should be a proper delimitation of the respective spheres of influence, so as to avoid the suspicion of competition. Unfortunately the want of uniformity in the connotation of the term "feeble-minded" in America, where it includes all grades of mental defect, and in this country, where it is reserved specially to designate mental or moral deficiency of a mild type not certifiable as idiocy or imbecility, is apt to produce some confusion when new homes are advocated. The fact, however, remains that the whole of the ground has not been covered by the older institutions, excellent as their work has been.

THE PERMANENCY OF FORMALIN PREPARATIONS.

One of the striking features of a metropolitan medical school is its museum, and it may be doubted whether the study of morbid anatomy by such means is so widely and systematically carried out in any country as it is in this. In many of the London schools the annual additions made to the museum are exhibited at some period of the year before their final dispersion in the general collection; and an inspection of some of these again directs attention to the value of formalin as a preservative of colour. The striking results obtainable by this method are generally known, but the important question, Are they permanent? must be faced. The originator of the method was Tores,[1] and it was first adopted (with modifications) in London, at St. Bartholomew's Hospital whilst Professor Kanthack was curator. Further experience has shown that the strength of the formalin solution may be considerably reduced from that used later by Kaiserling and Kanthack (75 per cent.). A solution of the following percentage, for example, is at present in use at St. Bartholomew's, and answers equally well: 2,000 c.cm. of tap water, 400 c.cm. of formalin, 60 g. of potassium acetate, 30 g. of potassium nitrate. The subsequent immersion in 80 per cent. alcohol, as is sometimes done, is not necessary for the restoration of colours (which is temporarily obscured by the formalin), though advantageous, perhaps, in preventing rapid shrinkage. The restoration may be effected more rapidly by immediate immersion in undiluted methylated spirit, the immersion being prolonged until the acme of colour is reached, though if still further prolonged no ill-results, as a rule, ensue. A mixture of equal parts of glycerine and distilled water with 1 per cent. formalin retains its place as the best mounting fluid. An inspection of the original preparations put up three years ago shows that they have in no obvious degree deteriorated, notwithstanding that they have not been especially shielded from the light. At Charing Cross, again, where the method has been carried out with much success by Dr. William Hunter, there are preparations made two years ago which have equally well stood the test of time. The method does not, of course, restore colour to organs which have lost it, or which have become discoloured from *post-mortem* changes; it fixes what colour there is at the time of preservation. It may be concluded, therefore, that the high value of the method has been proved; but it is not to be expected that sunlight will altogether fail to bleach in this case seeing that it never fails in others, and it is only a reasonable prudence to protect such specimens from its influence, an object easily carried out by means, for example, of roller blinds, or when only a specimen here and there is concerned, by some opaque kind of cover. Nothing is to be gained by the exclusive adoption of the method. Where there is no colour to be kept, when mere form and relations are in question, or highly elaborate dissection, alcohol still has its advantages as a fixing agent and a mounting medium.

[1] An account of the method was given in the Epitome of the British Medical Journal, 1896, vol. i, par. 468.

A NEW DHOOLY.

The unadaptability of the Indian dhooly to mountain warfare has frequently been alluded to in these columns. A new dhooly for India, invented by Mr. Charles Powell, late of the Indian Civil Service, was exhibited at the India Office on October 31st. It is extremely light compared to the dhooly recently used in the Afridi campaign, and can be carried with a wounded man by two or four Kahars. It is constructed of bamboo, rattan cane, and Indian grasses—that is to say, of materials easily obtained locally. It is reported to be well covered and easy of carriage, and does away with the jolting of the one-poled dhooly; it is also 30 lbs. lighter than that unsatisfactory appliance. Of course such an invention would require a full trial on service before its advantages and adaptability can be established. We say this advisedly, for during the Afghan war of 1878-80 a number of dhoolies specially invented, each with its own advantages as to weight, etc., were tried. The late Sir Thomas Crawford, Director-General of the Army Medical Staff (then P.M.O. in India) in reporting on the various forms of dhoolies, etc., then used, summed up his view in the following terms: "None of them are fully adapted to the requirements of hill warfare, involving steep ascents and descents, often along rugged paths with projecting boulders." The Lushai dandy seems to be, at present, the best form of carriage for wounded or sick in hill warfare, as pointed out in the British Medical Journal of May 29th, 1897. The ordinary dhooly was found in the recent Tirah expedition to be a heavy and cumbersome mode of sick carriage.

EMBODIED VOLUNTEERS.

Our contemporary the *Westminster Gazette* declares that "among the lessons to be learnt from the recent war between Spain and the United States is the necessity for instructing volunteer officers in the ordinary routine and interior economy of battalions in the field and in quarters." It declares that the volunteer officers of the American army, hastily assembled in the field, did not know how to draw pay, food, or hospital supplies for their men; and avers that our own volunteer officers and non-commissioned officers may be in a similar plight if suddenly mobilised. There can be no doubt that our American cousins have had a rude experience owing to their military unpreparedness, and have found that the thousands, or even millions, of men they could draw upon are of little use unless previously organised in every detail; they, in short, have found that a

modern army cannot be improvised. Their hastily assembled volunteers had neither regimental commissioned officers who could command, nor non-commissioned officers who could drill them; the general and departmental staff were also inefficient. The accuracy of the statement that "there was plenty of food in adjoining stores, and anything required by the medical authorities was at hand if requisitioned for," but that such replies were useless because the officers were "ignorant of the manner in which requisitions should be prepared" seems doubtful. These allegations will no doubt be tested during the special inquiries now going on. Our contemporary nevertheless has done well to bring the matter forward, and point the moral as to our own possible shortcomings. We have little doubt that our own Volunteer officers and non-commissioned officers have much to learn in the details of interior economy which only a sufficiently prolonged embodiment in the field can teach. But that they are as "ignorant" of detail as it is alleged the Americans were, we do not for a moment believe. They have the advantage of instruction, both by precept and example, of the regular staff attached to Volunteer battalions, and no officers are placed in command without being thoroughly tested as to their military fitness. In like manner the Volunteer medical officers have to "pass" in the details of their duties before they can be classed as efficient. Moreover, our Volunteers are not suddenly thrown together in war time, but are welded together as efficient units in peace. They have also elaborately-thought-out regulations for their guidance; in which, as far as we can gather, the Americans were lamentably deficient. Altogether, therefore, while it is most proper and desirable that we should study the defects in the American mode of volunteering, and profit by the errors it revealed, we are certain that the officers and non-commissioned officers of our Volunteers are far better instructed than their American brethren were, both in military drill and in interior economy, and that the glaring mistakes of Tampa are not likely to be repeated in this country.

THE REFORM OF POOR-LAW ADMINISTRATION.

The meeting of the North Midland District Poor-law Conference provided an opportunity for the discussion of two most important branches of the work, namely, the treatment of imbeciles and epileptics and the boarding out of pauper children, both of which subjects were ably handled by experts. Sir Walter Foster, who presided, set the note of the meeting. It is most encouraging to those who have been working for years at this unpopular question to hear the Chairman say at the outset "that the work in which they were engaged was work of the highest value to the community, and was of itself a blessed work, because after all it was the organised help given by the strong and successful in the nation to those who were weak, or failing, or feeble in the battle of life. And he knew no work which should call forth greater earnestness and devotion on the part of those who engaged in it, and which should be more honoured in public esteem than the work of the Poor-law guardians." A review of the present condition of pauperism, especially as it is exhibited in the North Midland District, elicited some most interesting facts. One which we have often urged in these columns is the need of greater elasticity in the working of the central department. The cast-iron system of 1834, which aimed at the suppression of able-bodied pauperism by stern discipline, meagre fare, and penal restrictions, is not now in harmony with administrators, who find the work to which they have put their hands "one of the highest value to the community, and in itself a blessed work;" in other words, they desire to administer the Poor Law in accordance with the spirit of an age which seeks to cure rather than to conceal admitted evils, and in accordance with the altered conditions of the section of the community for which it is framed. The statistics, quoted very freely by the Chairman, showed that the work of two generations had not stayed the tide of pauperism, but it also showed that the increase had been principally among the vagrants whose discipline at the hands of the various Boards is as yet in the experimental stage, and among the infirmary patients, the improvement of whose condition has been the principal work of the last thirty years. Sir Walter Foster makes a point which is worthy of the consideration of our legislators—that while more elasticity is required in Poor-law administration by giving more latitude to the local bodies in matters concerning the public health in the rural districts, we need less local power and more central authority. The Chairman wound up his address with a counsel to the various delegates to co-operate in the administration of their unions, which would lead to improved classification and economy in the working expenses.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

On Tuesday, November 1st, Mr. R. L. Swan, President, distributed the prizes to the successful pupils at the Royal College of Surgeons, Dublin. He opened the session by delivering an address dealing with the future career of the students and gave a short sketch of the Royal Army Medical Corps and of the India Medical Service. He also discussed practice in England and the dispensary service in Ireland. Dealing particularly with the last subject, he strongly condemned it because of the many hardships pertaining to it, and supported the recommendation that admission should be secured by examination and should not be determined by the religious or political opinions of the candidates.

THE ROYAL COMMISSION ON SEWAGE.

Lord Iddesleigh's letter hinting that the Sewage Disposal Commission is unlikely to arrive at a conclusion within any short period, and expressing a hope that advantage will not be taken of the delay to postpone the carrying out of works for the purification of trade refuse and sewage, has called forth a somewhat energetic protest in the *Times* from "A. B." He contends that the true object of the Commission is not to embark in laboratory experiments in bacteriology and chemistry, "having at best but a dubious relation to practical needs," but "to collate, digest, and report upon the enormous mass of practical experience and knowledge obtained from the actual working of numerous sewage disposal systems, but never yet brought to a focus, or treated as a whole." He rather, perhaps, takes for granted that the Commissioners intend to lay down as the result of their inquiry some procrustean system of their own, to which all sanitary authorities must at their peril conform. It certainly is not so nominated in the bond. Is it not rather to be hoped that the bacteriological and chemical researches, without which any inquiry would surely be most incomplete, will, at least in the first instance, take the form of testing the purification effected under observed conditions at the various great sewage works, where the best-known processes are in action? The present position taken up by the Local Government Board is looked upon by many sanitary authorities as leading almost to an *impasse*. Where land is abundant and suitable, few will deny the advantage of some system of irrigation. But where a manufacturing town, large or small, is hemmed in by populous places on the only side suitable for irrigation, its town council will say that some other system must be adopted. Such towns hope for a not too long delayed (even if only a partial) report, which will enable the Local Government Board to relax their present stringent requirement as to land. The collating and digesting of existing reports will doubtless form a large part of the

work of the Commission, but, without original investigation by unbiassed experts, its work would be more or less of a farce and its results would command no confidence at all. Schemes fairly successful at certain places and under certain conditions are apt to prove failures when the conditions are altered; and we want to know authoritatively what these conditions are, and that we can only expect to do as the result of an inquiry conducted in a painstaking and scientific manner.

UNAUTHORISED "REPRINTS."

With reference to the matter referred to by Dr. Abram, of Liverpool, at the meeting of the Liverpool Medical Institution on October 20th—briefly reported in the British Medical Journal of October 29th, page 1342—we have received from Dr. Abram a copy of a letter addressed to him by the manager of the Chinosol Hygienic Company. The manager states that in reprinting the paper by Drs. Abram and Hill he had no intention whatever to commit an unjustifiable action. He goes on to say that he is sorry to appear to have to put Dr. Abram in a position which might be open to misconstruction, and tenders his sincere apology for using Dr. Abram's name without permission. He adds that in consequence of a letter addressed by Dr. Abram he has at once stopped the circulation of the circulars in which Dr. Abram's name appears. The manager concludes by saying that he never approached Dr. Abram nor had Dr. Abram approached him with regard to the paper in question. We think it desirable to state that papers published in the British Medical Journal are copyright, and the solicitors to the Association have received from the manager of the company an expression of his regret and an intimation that he has unreservedly withdrawn the pamphlet from circulation. We may add that in this case the circular purporting to be a reprint was not a complete reprint, certain paragraphs being omitted. In addition a series of paragraphs relating to certain other experiments not mentioned by Drs. Abram and Hill in their paper in the British Medical Journal were added in the circular. It is true that these were separated from the portion of the paper reprinted from the British Medical Journal by a cross line, but it is possible that this distinction may not have not been observed by some into whose hands the circular has fallen.

THE METEOROLOGY OF THE RECENT SUMMER.

The weather of the three months, July, August, and September, was in many respects very unusual. Mr. J. Glaisher reports that, whilst the temperature of July was somewhat below the average, in August and September the temperature exceeded the average considerably. From August 11th to the 23rd there was a remarkably hot period. The mean of the maxima of these thirteen days was 82.9°, both at the Royal Observatory and in Camden Square; and it was not exceeded at any of the other thirty meteorological stations in England. The highest recorded temperature was 90.0° at the Royal Observatory on August 22nd. In September the weather was remarkable for its small rainfall, unusual amount of sunshine, and an exceedingly hot period from the 2nd to the 17th, the excess above the average reaching 17.7° on the 8th, 16.8° on the 9th, and 17.5° on the 17th. The highest mean of the maxima of the sixteen days was that of the Royal Observatory, and it was 81.3°; the highest single maximum recorded was 92.1°, also at the Royal Observatory, on September 8th. On the whole the temperature of the air during the quarter was 62.7°, or 3.0° above the average. The duration of bright sunshine recorded at the Royal Observatory during the quarter was 619.1 hours. The duration was 12.0 per cent. above the average in July, 42.7 per cent. above in August, and as much as 82.5 per cent. above in September, in which month the duration registered was 213.5 hours, or 56.6 per cent. of the time during which the sun was above the horizon. The amount of rain measured in the three months at the Royal Observatory was only 2.51 inches, or 4.77 inches below the average for eighty-three years. The drought was greatest in the South-Eastern districts of England; in the North-Western parts of the country there was a much greater rainfall: thus at Llandudno 7.31 inches were measured during the quarter, 7.74 inches at Carlisle, and 10.0 inches at Stonyhurst. At the end of September the drought in the South-Eastern counties had lasted a whole year. The fall of rain at Greenwich, for example, in the twelve months ending with September was only 14.76 inches, which is less than the fall in any corresponding period as far back as the year 1815, and is less than three-fifths of the average fall during the last eighty-three years.

THE WATER SUPPLY OF LONDON.

At its meeting on November 1st the London County Council came to two momentous decisions with regard to the future water supply of London. In the first place, it was resolved to promote a Bill in the coming session of Parliament for the purchase by the Council of the undertakings of the eight metropolitan water companies by agreement, or, failing agreement, by compulsion. This was met by an amendment moved by Lord Onslow on behalf of a section of the Moderates which would have deferred further action until after a report from the Royal Commission. This amendment was persevered with in spite of an appeal by Sir Blundell Maple, and by Sir A. Arnold, who said that the Royal Commission was bound to report in time for legislation next session. The amendment was rejected by 101 votes to 15, the majority including 27 Moderates. The second decision which must be regarded as momentous is the resolve to promote legislation next session for the purpose of empowering the Council to bring an additional supply of water to London from the watersheds of the Wye and Towey, on the general lines of the report of the Water Committee approved by the Council, April 21st, 1898, in so far as it applies to the Wye section of the engineer's scheme.

A MUNIFICENT GIFT BY A MAN OF SCIENCE.

Dr. Calmette, Director of the Pasteur Institute of Lille, has given to that institution a donation of 250,000 francs (£10,000). According to the terms of the deed of gift, the money is to be applied provisionally to the defraying of building expenses till the municipal council is in a position to vote the sums required for that purpose. The money is then to be employed in the purchase of material for new researches, or for the maintenance of young men of science who wish to make original researches in the laboratory. Dr. Calmette states that the money which he has thus generously bestowed represents the profits accruing to him from the application of one of his discoveries in a large distillery at Seclin.

ANTIVACCINATORS IN SCOTLAND.

Our Glasgow Correspondent writes: Encouraged by the success of their tactics in England, especially in the matter of the recent Vaccination Bill, the antivaccinators are at present endeavouring to get up an agitation in Scotland, though they are likely to meet with little response. Meetings are being held in various centres, to which "medical men, parish councillors, and parents are specially invited," and at which noted champions of the cause give the usual misleading addresses. A new departure is the sending of literature to young mothers in the hope of inducing them to refuse to allow their infants to be vaccinated, literature which points to the practice of vaccination as neither more nor less than infanticide. Last

week a meeting was held at Glasgow at which, according to the placards, vaccination was to be condemned. There was not a very large attendance, and the principal speaker was Dr. Hadwen, of Gloucester, who dwelt on the evil results with which vaccination has been credited. He spoke of small-pox as a disease due to bad sanitation, and explained our immunity from small-pox by the improved sanitary conditions under which we live and not by vaccination. It seems strange to have this long-exploded theory served up again now, especially from Gloucester.

UNIVERSITY COLLEGE, LIVERPOOL.

At a meeting of the Council of the University College, Liverpool, on November 1st, donations were announced, amounting to £13,000, towards the erection of anatomical laboratories and the further extension of the medical school. Plans for the construction of the anatomical laboratories will be prepared forthwith. Dr. Henry E. Briggs, M.B.Edin., F.R.C.S.Eng., has been appointed Professor of Midwifery and Gynæcology in place of the late Dr. John Wallace. Dr. Briggs has had considerable experience as a teacher, having held the posts of Demonstrator of Anatomy, Demonstrator of Surgery, and Surgical Tutor in the medical school. He was for ten years Honorary Medical Officer to the Lying-in Hospital, and for the past eleven years has held the post of Gynæcological Surgeon to the Hospital for Women, Shaw Street.

THE ANTIVIVISECTIONIST PROPAGANDA.

We have received a further letter from the editor of the *Verulam Review* in which he requests us to publish a very voluminous correspondence with the Home Office. The correspondence, we may observe, consists of several long letters written by the editor to the Home Office, and of a single brief reply from the Home Office. Considerations of space render it quite impossible to comply with his request, more especially as all the letters are founded, as we have already pointed out, upon a misapprehension of the Act and of the report of the inspector.

WHITE BREAD OR BROWN BREAD?

Drs. Lauder Brunton and Tunnicliffe publish in the current volume of the *St. Bartholomew's Hospital Reports* an instructive communication on the relative digestibility of white and brown bread. On the strength of certain experiments, which they describe in full, they feel justified in concluding that the higher nutritive value which might on purely chemical grounds be ascribed to brown bread cannot be maintained from the physiological side. With regard to fats and mineral constituents on the other hand, distinctly less of the nutritive materials actually get into the blood in the case of brown than of white bread. White bread is, weight for weight, more nutritious than brown. It thus would appear that the preference given by operatives in large towns to white bread has, to a certain extent, a sound physiological basis. In the case of people with irritable intestines white bread is to be preferred to brown. In the case of people with sluggish bowels brown bread may be preferable to white, as it tends to maintain peristalsis and ensures regular evacuation of the bowels. If the proportion of mineral ingredients, and especially of lime salts, in other articles of food or drink be insufficient, brown bread is preferable to white. It is possible that in the case of operatives living chiefly upon bread and tea, the preference for white bread which prevails may be responsible, in part at least, for the early decay of the teeth. An abundant supply of mineral constituents is especially required in pregnant and suckling women and in growing children, in order to supply material for the nutrition of the fœtus, for the constituents of the milk and for the growth of the tissues, especially the bones. In such cases, if mineral salts, especially those of calcium, be supplied by other food stuffs, drinks, or medicines, brown bread is preferable to white. Lastly, Drs. Brunton and Tunnicliffe are of opinion that if the dietary be insufficient in fat, or if the patient be unable to digest fat readily in other forms, brown bread may possibly be preferable to white. The authors rightly dwell on the absurdity of taking the more chemical composition of a food stuff as an index of its nutritive value. "A stick of charcoal, the atmospheric air, a little water, and some sea salt, contain all the elements of a typical diet, and in ample quantity." Hence it is not always a question of what a food stuff contains, but how it contains it.

INDIAN DAIRIES.

On September 10th we published a short note on insanitary conditions at Ootacamund. The Sanitary Commissioner with the Madras Government has recently submitted a report to the Government showing the existence of the usual insanitary conditions of dairies, milk supply and water affecting servants and dependents, and through them the European community. The enteric fever prevalent in the early months of the year can be clearly traced to the negligence of servants in dealing with the water or milk provided for the families that suffered. The native dairies inspected were not maintained on sanitary principles. The Sanitary Commissioner exposes grave defects, and makes various recommendations to rectify conditions which, if not promptly remedied, will continue to be injurious to the health and well-being of the community in this popular hill resort in the Nilgiris.

THE ROUMANIAN SOLDIER AND THE SPIRIT RATION.

The Roumanian soldier receives for breakfast either spirits, coffee, or tea. Some military surgeons believe that spirits at this meal should be abolished. The drinking of spirits has reached such a height among the agricultural population of Roumania that medical and judicial warnings are frequent, and the time is believed to have come for an energetic crusade against this evil. In 1894 a circular was issued by the Minister of the Interior stating that the excessive use of spirituous beverage was steadily increasing, causing, in a certain proportion of the inhabitants, alcoholism, tending directly to sterility, mental disease, premature death, poverty, and crime. A high medical official reported for the year 1892-93 that the number of lunatic asylums was no longer sufficient for the patients, and that the prevalence of disease was due to two causes—excess in the use of spirits, producing alcoholism, and the consumption of unsound maize, producing pellagra. These and other facts render the abolition of the spirit issue for breakfast desirable. As a matter of fact many soldiers take coffee instead of spirits at breakfast, and on leaving the army carry this habit into their homes. There can be no doubt that an issue of spirit at breakfast is not only unnecessary but injurious, and presumably few, if any, military surgeons would recommend it for the soldier.

The Queen Regent of Spain has conferred the honour of knighthood of the Order of Isabella upon Mr. Charles Lane Sansom, F.R.C.S.Edin., of London.

Dr. William Murrell has been elected Physician to the Westminster Hospital in the vacancy caused by the resignation of Dr. H. B. Donkin.

Professor W. Ramsay, F.R.S., will give a lecture on The New Gases of the Atmosphere, illustrated by experiments, at the evening meeting of the Pharmaceutical Society of Great Britain on Tuesday next, November 8th.

The next dinner of the Aberdeen University Club, London, will be held at the Holborn Restaurant on Wednesday, November 16th, at 7 P.M. Lord Strathcona and Mount Royal will take the chair.



Fig. 1.—Birdseye View of New Sanatorium.

THE NEW BOROUGH ISOLATION HOSPITAL, BRIGHTON.

On October 27th the five buildings forming the first instalment of a new Brighton Borough "Sanatorium," as it is called, were opened by the Mayor, Sir John Blaker.

Site.

The land on which the sanatorium stands is ten acres in extent, 326 feet above the mean sea level, on the South Downs, sloping towards the road and southwards towards the sea. It was acquired by the Corporation in 1881 for the sum of £5,000, subject to certain restrictions, for the removal of which the sum of £1,000 was subsequently paid. Fig. 1 gives a bird's-eye view of the new buildings on this site, and of a laundry previously erected which formed the first instalment of a permanent hospital.

Prior to the erection of the present buildings over £11,000 had been spent upon three large pavilions, two of wood and one of corrugated iron lined by wood, and upon a wooden administrative block. Two of these have now been demolished, and the remaining two will probably be demolished within the next three or four years. Close upon 4,000 patients have been treated in the old buildings since their erection in 1881. The popularity of the hospital, even under the old conditions, is evidenced by the high proportion which the admissions have borne to total cases of infectious diseases that have been notified. Thus the scarlet fever admissions have borne the following proportions to the total cases of this disease: In 1891 (from March 1st), 70.0, 77.7 in 1892, 70.6 in 1893, 82.2 in 1894, 77.4 in 1895, 82.6 in 1896, and 81.6 per cent. in 1897. The necessity for further accommodation is shown by the increased proportion of cases that voluntarily seek admission to the sanatorium, and by the fact that cases of typhoid fever and diphtheria, which were formerly treated in the Sussex County Hospital and in the Children's Hospital, are now drafted into the sanatorium. Admission to the sanatorium has, on the recommendation of the medical officer of health, been free to all inhabitants of the borough since 1891, special charges being made only in the case of patients requiring special accommodation in private rooms. This class of persons is provided for to a still greater extent in the new buildings.

General Description of the New Buildings.

The buildings are built with red kiln facing bricks, relieved by Portland stone sills, lintels, copings, etc. The roofs of the entrance lodge, discharge block, and ward pavilions are covered with Broseley tiles; the roof of the administrative block is covered with Bangor slates. All the external walls are built hollow. The drainage of each building is entirely disconnected from the drainage of any other building. Each set of drains being also separately ventilated by its own special inlet and outlet ventilation services.

All the buildings are made as nearly fireproof as is practicable. Thus in all the buildings, except the ward pavilions, the floors consist of wood blocks laid on cement floors. In the ward pavilions the floors consist of terrazzo on the top of the concrete floor.

The buildings throughout are lit by electricity from the Corporation mains. All the buildings are connected with each other by a private telephone.

On the south side of the entrance is the porter's lodge, containing 1 living room, bedroom, scullery, and kitchen.

The discharge lodge is on the south side of the entrance. It contains undressing-room, bath-room, dressing-room, and waiting-room for friends. In this building patients take their final bath before joining their friends.

The isolation pavilion consists of 3 distinct, self-contained blocks. The arrangement of these is shown on the ground plan on p. 1454 (Fig. 2). Each block consists of 2 rooms for patients, with a nurse's duty room between them. The entrances to the two end blocks face westward, that to the middle block eastward. The two end wards have 2 beds in

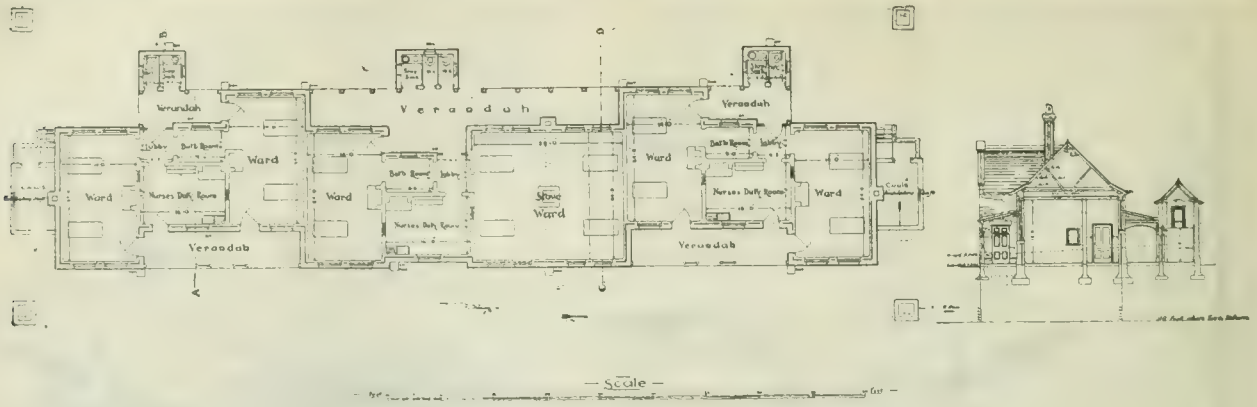


Fig. 2.—Ground Plan of Isolation Pavilion. Section of Ditto at A B.

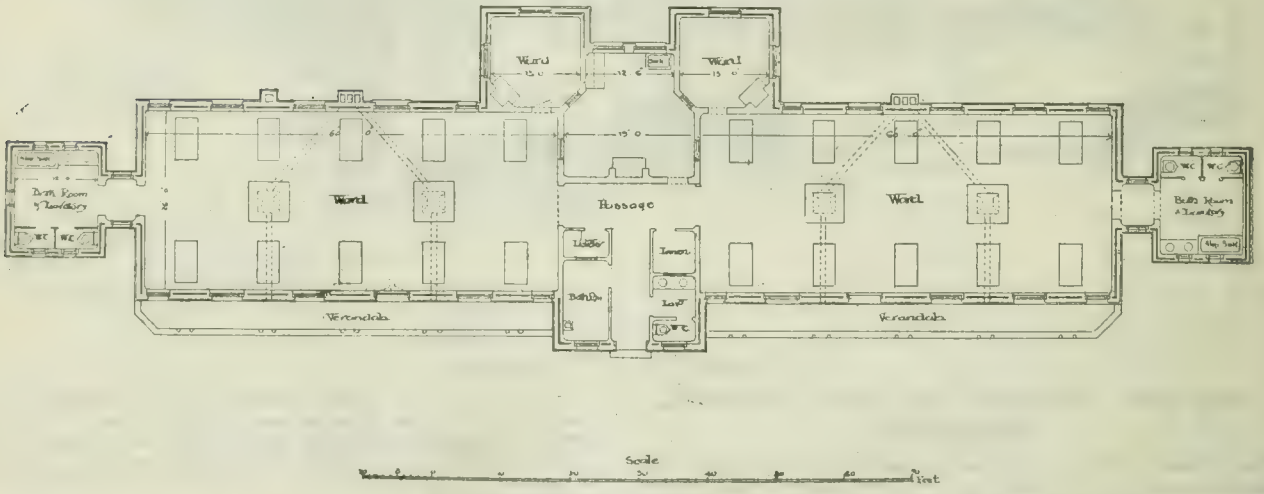


Fig. 3.—Ground Plan of Scarlet Fever Pavilion.

each, and are heated by open fireplaces with ventilating grates. The centre block contains 1 ward with 4 beds and 1 ward with two beds, the former being heated by a Shorland's Manchester stove.

The scarlet fever pavilion (Fig. 3) comprises two wards with 10 beds in each on either side of the nurses' duty room, which is in the centre of the building. Each ward has an off room attached to it, containing one bed for the treatment of special cases. Each ward is heated by two Shorland Manchester ventilating stoves, and each room by an open ventilating fireplace. The arrangement of lavatories, etc., is shown in the above plan. There is a separate lavatory and watercloset for nurses near the main entrance.

The floors in the above two pavilions are laid with terrazzo. The walls are lined with opalite to a height of 4 feet 6 inches above the floor line; above this the walls and ceiling are plastered in Keen's cement, painted, and finished flat.

The size of each scarlet fever ward is 60 by 26 feet; of each small room attached to it 13 feet long by 13 feet wide. The size of the large ward in the isolation pavilion is 28 by 24 feet, and of the five small wards each 24 by 14 feet.

The administrative building has a half basement containing six living and bedrooms for men servants, kitchen, scullery, and stores. This has a separate external entrance, and owing to the steep slope of the land is scarcely underground. The ground floor comprises visitors' waiting room, matron's sitting room, matron's office, nurses' dining room, nurses' sitting room, servants' room, doctors' sitting room, dispensary, bacteriological laboratory (with photographic room and lavatories attached), two linen stores, general store room, scullery. On the first floor are eighteen single bedrooms and two double bedrooms, with bathroom, lavatories, etc.

A disinfecting station has been erected, fitted with two steam disinfecting apparatus: one a Washington Lyons (superheated steam) apparatus, having been transferred from the old disinfecting chamber, and a new Defries equifex apparatus (saturated steam under pressure) having been added, as the whole of the disinfecting for the town is done here. The contract price of the new buildings was £19,775. It is proposed eventually to supplement the present new accommodation by three additional pavilions.

THE SWANSEA HOSPITAL.

Opening of New Operating Theatre.

On October 29th Sir William MacCormac, President of the Royal College of Surgeons of England, opened the new operating theatre which has been presented to the institution by Mr. Benjamin Evans.

Description of New Theatre.

The theatre is an annexe approached from the lower west corridor of the hospital. It is built of polled stone with dressings of Bath stone, and is in keeping with the rest of the hospital. The plan consists of two half circles with a radius of 11 feet, separated by an interval of 4 feet, thus measuring 26 feet by 22. It is lighted from a dome-shaped roof 20 feet high in the centre by two top lights, of which the larger and northern is continuous with the main side light.

A slab of plate glass 8 feet wide, extending to a level of 3 feet from the floor. The walls are lined throughout with Parian cement, glazed with Blundell's petrifying fluid. The floor is terrazzo, and on either side of the north side light is raised into two tiers of high steps, each step carrying an iron rail. Thus solid masonry takes the place of the wooden and iron stands usually provided for spectators. The theatre is heated by two sets of low pressure steam radiators standing in recesses, swinging on hinges, and situated in front of four air inlets. The latter are provided with closely fitting metal boxes, with fronts and backs of iron gauze enclosing cotton wool, which wool can easily be changed by a nurse. All air entering the theatre is cleaned of dust by filtering through the wool. In the wall, at a height of 14 feet, is an extracting fan driven by a jet of water one-tenth of an inch in diameter, capable of displacing 1,000 cubic feet of air per minute, and set in motion by turning a tap in one of the anæsthetising rooms. A shallow recess in the wall, with embedded glass shelves, closed in by glass and enamelled iron doors, forms the instrument cupboard. Immediately behind it is the flue of one of the anæsthetising rooms, the heat from which prevents condensation of moisture within the cupboard. Hot and cold sterilised water is supplied from a distilling plant in the neighbouring administration block; and by means of a horizontal pivoted and swinging arm, 6 feet 6 inches from the floor, can be delivered when required at any temperature immediately over the operating table. Distilled as well as ordinary hot and cold water is also supplied to the lavatory fittings. The theatre is entered through either of two anæsthetising rooms, each 12 feet by 10 feet, and floored and lined in a similar way. These admit of a more convenient use of two operating tables, which the increase of the surgical work of the hospital has necessitated. One of them is fitted up for *x*-ray work. The supply pipes run in a channel on the outer side of the wall encircling the building, and covered in with tiles, all branches entering the room penetrating the wall directly at the spot where required. The work was carried out by Messrs. Watson and Moxham from designs prepared by the surgeons of the hospital.

The Ceremony.

The Mayor of Swansea, and Mr. Howel Watkins on behalf of the Board of Management of the hospital, having welcomed Sir William Mac Cormac, Mrs. Benjamin Evans presented him with a gold key suitably inscribed with which to open the new theatre.

Sir William Mac Cormac, having expressed the pleasure with which he had taken part in the ceremony, observed that the hospital was greatly indebted to Mr. Benjamin Evans for his wise liberality, by which the capacity of the institution for doing good had been greatly increased. He believed that the theatre, the arrangement of which he greatly admired, was in some measure due to the helpfulness, energy, skill, and knowledge of his old friend and pupil, Mr. W. F. Brook, the Senior Surgeon to the hospital. A modern operating theatre was, in a way, an epitome of modern surgery, and reflected the great advances that had taken place during the two last decades. He remembered the time when operations were looked upon as more or less unmitigated evils, but that was because the means of dealing with wounds were not what they had since become. He observed that when a distinguished personage recently broke his knee-cap, it was suggested that the fractured bone should have been sutured. That operation was an example of the advance that had taken place in surgery. It had not been considered necessary, however, to perform the operation, and he was happy to say that in spite of all that foreign critics had said in regard to the treatment of that exalted person his recovery had been everything that it could be.

Sir John Llewelyn, M.P., then moved a cordial vote of thanks to Mr. and Mrs. Evans for their munificence, this was seconded by Dr. Ebenezer Davies and carried with enthusiasm. In acknowledging the vote Mr. Benjamin Evans, after thanking Sir William Mac Cormac, said that the idea of erecting a new operating theatre was the result of an accidental conversation in the old theatre with Mr. Brook, who had pointed out to him the great difficulties under which the surgical staff laboured by reason of the badly lighted, badly ventilated, and the otherwise insanitary condition of the old room, and had told him that the want of proper accommodation was frequently the cause of much unnecessary suffering, and it was to be feared had been in some cases responsible for fatal results.

Banquet of the Swansea Medical Society.

In the evening the annual banquet of the Swansea Medical Society took place under the Chairmanship of the President, Dr. T. D. Griffiths.

After the usual loyal toasts and that of the town and trade of Swansea had been duly honoured, the President proposed "The Health of Our Guest," who he said was known not only as a distinguished teacher in surgery, but an accomplished and forcible writer, and one of the first to prove the principle of antiseptic surgery involved in the genius of Lord Lister.

Sir William Mac Cormac, in the course of his reply, reminded the medical profession that he had begun life as a provincial surgeon, and that he therefore felt for them the greatest sympathy. Before resuming his seat, he proposed the toast of "The President of the Swansea Medical Society."

In the course of his acknowledgment of the toast Dr. Griffiths appealed for organisation among the medical profession, and expressed the opinion that it was a disgrace to the members of the profession that they did not combine together to oppose the conscience clause of the new Vaccination Act.

The toast of "The Hospital" was given by Sir John T. D. Llewelyn, M.P., who observed that it had been proved impossible to put into effect the cumulative penalties under the old Vaccination Acts. He hoped that by a trial of the new Act and by the use of their persuasive power among the people, the result would be that more children would be vaccinated in the future than in the past.

The toast was acknowledged by the Chairman of the Hospital Committee, who made a reference to the splendid generosity of Mr. Evans in giving the operating theatre.

THE PLAGUE IN THE EAST.

India.

Bombay.—The report from the city of Bombay for the week ending November 1st shows a still further decline in the plague mortality as compared with the previous week. During the week the mortality from plague has fallen below 100 for the first time since July of this year; the actual number of deaths was 96. It has come to be considered that when the total number of deaths from plague falls below 100 a week the disease can no longer be considered to be epidemic. The city of Bombay finds itself in this happy position, and that too when the south-west monsoon has given way to the north-east. The city authorities are to be congratulated upon this fortunate issue.

Upper India is also free from plague; and northward from the city plague may be said to have disappeared. Southwards from Bombay city, however, the news is less favourable, as within the Presidency 5,000 deaths have occurred from plague during the past week. This is an increase of 300 upon the preceding week, and 600 as compared with the record of two weeks previously.

It is in the Mysore State, however, that the greatest increase is noted, and in the city of Bangalore alone 400 deaths have occurred from plague during the past week. At present this part of India is by far the most seriously affected. A riot amongst the natives of Bangalore, which at one time threatened to be serious, subsided on the military being called out.

In the Madras Provinces generally a decline of the epidemic is reported, and nowhere in these provinces is the outbreak serious as yet.

Inoculation.

Amongst natives in India inoculation is daily growing more popular. A large meeting of Orthodox Brahmins, hitherto bigoted anti-inoculationists, was held in Bombay during the past week, at which it was decided "that this community should submit to M. Haffkine's system of inoculation." M. Haffkine was present at the meeting.

The Samarkand Outbreak of Plague.

News, evidently of a confirmatory character, has been received in St. Petersburg that plague has appeared in the Iskander region of the Samarkand district. Although it is declared by Reuter's telegrams "that the district has been declared to be suspected" merely, the Russian Government have already despatched 30 doctors and 10 lady doctors to the district. It is improbable that they would have sent so large a staff had the information been based on suspicion merely, and it may be almost taken for granted that plague is actually present there.

The Iskander district is some 300 miles northwards from the Hindu Kush Mountains, from which it is separated by Bokara and the lofty range of the Alai Tagh. It is difficult to conceive how the plague can have spread thence from the Indian centre; there is little communication between Samarkand and India. Moreover, we have had no information that plague has existed in the Russian province of Bokara, which intervenes between the infected region and the Indian frontier. The nearest point in India where plague has appeared is some 700 miles distant from Samarkand as the crow flies. Jullundur, in the Punjab, and the Hill States of Kumaon and Ghurwal, are the regions furthest north in India in which plague has been reported, and between these and the Samarkand district the Kashmir and the Chitral district. In neither of these has plague been met with recently, and it would seem improbable that plague reached Samarkand from India directly.

Plague Case reported in Warsaw.

From Warsaw there is a report to hand that a woman, aged 56, died in the Infant Jesus Hospital, and that medical opinion ascribes her death to plague. This may or may not be the case, but it is not essy to understand the meaning of the further announcement is that "the physicians have decided that it was a case of Siberian plague." This is the first statement we have heard that there is such a disease as "Siberian plague." We are acquainted with the disease "plague," and if it exists in Siberia in endemic form, it is not generally understood that such is the case.

The General Outlook.

The death of the nursing sister has, it may be hoped, closed the history of the plague outbreak in Vienna, but the outlook at the present moment in regard to this dread disease is not encouraging. At the present moment it is known to exist in an epidemic form in China, and in India, and at Samarkand cases have occurred; if, in addition to these, we have to add Warsaw to the list, it may be justly said that we are threatened with a widely diffused scourge which may possibly gain a footing in Eastern Europe.

ROYAL COLLEGE OF PHYSICIANS.

The ordinary quarterly comitia of the College was held on Thursday, October 27th, Sir S. Wilks, Bart., F.R.S., President, in the chair.

The President commenced by referring to some of the outside duties which fell to his lot in his official capacity, and of which the Fellows had little or no knowledge. Conjointly with the President of the College of Surgeons he had to award the Gilbert Blane medals open to naval surgeons for the best reports during the year, the reports including not only clinical cases, but a report on the state of the ship and also on the locality in which she had been stationed. Sir Gilbert Blane, who founded the medals, had been a former President of the College. In virtue of his office he was one of the trustees of the British Museum, founded by Sir Hans Sloane, a former President. He was likewise a trustee by the same right of the Tancred Scholarships, and he gave an interesting account of his visit to the home of Christopher Tancred in Yorkshire. The President also spoke of his visit to Liverpool to be present at the opening of the new laboratories; it was a public recognition, for the whole town took part in it, and marked the establishment of a new system in medicine in which the true positive scientific method had now been adopted. After a reference to the recent visit of Professor Virchow to London to deliver the Huxley Lecture, he announced that the Jenks Scholarship had been awarded to William Hardy Fleetwood, of Epsom College.

Messrs. R. H. Crowley, M.D., W. J. Fenton, M.B., and C. H. J. Lockyer, M.B., were admitted Members. The licence was granted to 120 gentlemen, of whom 67 came under the five years' curriculum, and only 1 under the old regulations before 1884.

A communication respecting the Chelsea Physic Garden was received from the Charity Commissioners, and a Committee consisting of Drs. Hensley, Brunton, and Allchin was appointed to consider the scheme of the Commissioners when received.

A communication was received from the London County Council respecting the notification of infectious puerperal diseases; this was referred to a Committee consisting of Dr. Payne, Sir J. Williams, Drs. Champneys, Cullingworth, and Tatham, and the President was authorised to communicate the report to the Council without waiting for a College meeting.

A communication was received from the Council of the Society of Arts respecting the next award of the Swiney Prize, which is given every five years for the best work on Jurisprudence and on Medical Jurisprudence alternately. The communication suggested that the question of whether this was a fair division of the subject should be reopened. The President, Senior Censor, Treasurer, Registrar, and Dr. Pavy were appointed a Committee to meet the Committee appointed by the Society of Arts to consider this matter and to make the award.

A communication from the Colonial Office respecting the communicability of leprosy was referred to a Committee consisting of Sir D. Duckworth, Drs. R. Liveing, Payne, Hebb, Heron, and J. Anderson, with power to confer with others not belonging to the College.

The audited accounts for the year and the quarterly report of the Finance Committee were received and adopted.

A report from the Bisset Hawkins Memorial Committee was received, submitting casts of the dies for the medal, and announcing that the first award would be made in July next; the report was adopted.

A report from the Committee of Management was received and adopted, and Dr. Frederick Taylor was elected a member in place of Dr. Ord, who did not wish to be re-elected.

The quarterly report of the Laboratories Committee was received and adopted, and Dr. Pye-Smith was re-elected a member of the Committee.

The quarterly report of the Examiners for the Licence was received and adopted, and votes of thanks were given to the donors of books during the past quarter.

AN OUTBREAK OF FOOD POISONING:

being a report on thirty-five cases of veal-pie poisoning occurring in Chadderton.

by

Paul Bowes, M.D., and Harold Ashton, L.R.C.P. & S.Ed., Medical Officer of Health for Chadderton.

On Thursday, July 28th, 1898, a confectioner made 268 pies, of which 160 were of veal and 108 of pork. The veal pies were sold on the Thursday night, Friday, and Saturday. Of those who partook of the veal pies, 35 were made ill, and 3 died. One of the sufferers ate a pie on Thursday, 5 on Friday, 28 on Saturday, and 1 on Sunday. All those who were seriously ill ate their pies on the Saturday or Sunday. Nearly all the patients were seriously ill. The cases bore a striking resemblance to one another, and from those reported in full an idea may be formed of all.

In addition to the 35 cases commented on here, 12 or more cases occurred in the neighbouring town of Oldham, causing 1 death, the same batch of pies being the cause.

The table on p. 1457 gives the cases in short. It will be noticed that the "incubation period" between eating the pies

Case.	Sex.	Age.	Amount of Pie Eaten.	Time and Date of Eating.	Onset of Symptoms.	Duration of Symptoms.	Temperature when first Seen.	Remarks.
1	F	50	Whole	10.0 P.M., July 29	9.0 A.M., July 30	5 days	Slight fever	Herpes; diarrhœa 6 days.
2	M	17	,,	8.0 P.M., ,, 30	11.0 A.M., ,, 30	11 ,,	,,	Case described in full.
3	M	48	,,	10.0 P.M., ,, 30	,, ,, ,,	5 ,,	103.6°	Herpes labialis; drowsiness very marked for 3 days; no vomiting; motions said to be like soapsuds, very frothy.
4	M	45	,,	11.0 P.M., ,, 30	6.30 A.M., ,, 31	48 hours (died)	101.0°	Described in full.
5	F	43	,,	,, ,, ,,	7.0 A.M., ,, 31	3 days	101.0°	Improved quickly; diarrhœa 7 days.
6	F	21	Whole	1.30 P.M., ,, 30	6.0 P.M., ,, 30	3 days (died)	102.0°	Described in full.
7	F	23	,,	,, ,, ,,	1.0 A.M., ,, 31	11 days	102.0°	Motions passed involuntarily.
8	F	16	,,	,, ,, ,,	1.0 P.M., ,, 31	2 ,,	—	Very mild.
9	F	14	,,	12.30 P.M., ,, 29	7.0 A.M., ,, 30	1 ,,	—	Very slight.
10	F	58	Half	10.30 P.M., ,, 30	5.0 A.M., ,, 31	5 ,,	100.0°	Herpes.
11	F	17	,,	,, ,, ,,	8.0 P.M., ,, 31	6 ,,	101.0°	Headache.
12	M	44	Whole	1.0 P.M., ,, 30	1.0 A.M., ,, 31	5 ,,	100.0°	
13	M	12	⅓	10.0 P.M., ,, 30	10.0 P.M., ,, 31	3 ,,	101.0°	No vomiting; mild case.
14	M	19	Half	,, ,, ,,	Noon ,, 31	7 ,,	Subnormal	First time purged 32 hours after taking pie; very drowsy; persistent vomiting.
15	M	50	½ large pie	10.30 P.M., ,, 30	11.0 A.M., ,, 31	4 ,,	100.0°	
16	F	24	,,	,, ,, ,,	5.0 A.M., ,, 31	4 ,, (died)	Subnormal 3rd day	Described in full.
17	M	34	Whole	Noon ,, 30	10.0 A.M., ,, 31	2 days	—	Mild case.
18	F	4	⅓	,, ,,	,, ,, ,,	4 ,,	—	,,
19	F	2	⅓	,, ,,	9.30 P.M., ,, 30	5 ,,	101.0°	Blood in motion.
20	F	61	Whole	,, ,,	1.0 A.M., ,, 31	9 ,,	Normal after 1st day	
21	F	45	⅓	10.0 P.M., ,, 29	3.0 A.M., ,, 31	5 ,,	—	Mild case.
22	F	32	Whole	11.0 P.M., ,, 30	5.0 A.M., ,, 31	7 ,,	—	Herpes.
23	M	31	,,	12.30 A.M., ,, 30	7.0 P.M., ,, 30	7 days ill; 3 days diarrhœa	101.0°	Pain very severe in abdomen and back; tender spot above umbilicus.
24	F	15	,,	8.30 P.M., ,, 31	5.0 A.M., Aug. 1	7 days	104.5°	Described in full.
25	F	44	A portion	10.30 A.M., ,, 30	Evening, July 30	3 ,,	102.0°	Was recovering from diarrhœa before she ate the pie.
26	F	37	Whole	9.0 P.M., ,, 30	2.0 A.M., ,, 31	6 ,,	103.0°	Described in full.
27	M	26	2 pies	10.0 A.M., ,, 30	5.0 P.M., ,, 30	5 ,,	103.5°	Very severe attack.
28	F	13	Half	Evening ,, 29	Morning, ,, 30	6 ,,	100.0°	A little herpes about lips.
29	F	44	,,	,, ,, 29	,, ,, ,,	,, ,,	—	Mother of Case 28; not so severe as Case 28.
30	M	Adult	,,	11.30 P.M., ,, 30	—	—	—	Only slightly indisposed.
31	M	30	Whole	10.0 A.M., ,, 30	1.30 A.M., ,, 31	—	—	Very ill.
32	F	Adult	Half	6.0 P.M., ,, 30	Morning, ,, ,,	—	—	Vomiting, purging, and great pain.
33	F	—	,,	,, ,, ,,	,, ,, ,,	—	—	Daughter of Case 32.
34	F	Adult	Portion	9.0 P.M., ,, 28	,, ,, 29	—	—	A mild case but vomiting and purging.
35	F	Girl	Half	,, ,, ,, 30	5.0 A.M., ,, 31	5 days	—	Herpes.

and the onset of the symptoms was fairly definite, from six to eight hours in most cases. In some cases the onset may have been delayed by sleep. The shortest "incubation period" was three hours (No. 21), and the longest twenty-nine hours (a mild case, No. 21).

The first of the series came under our notice on July 31st. Most of the cases considered they were suffering from ordinary diarrhœa at first, and did not send until Monday, August 1st. In these cases, as in subsequent ones, there were some well-marked symptoms, and some not so definite.

Gastro-intestinal.—In all cases observed diarrhœa was a prominent symptom; in some of the milder cases only a few motions (very loose) were passed in the course of the illness; in the other extreme there was almost a constant evacuation of the bowels, from the onset to the death or convalescence of the patient. Accompanying the diarrhœa there was considerable griping in the abdomen, but only in a very few of the cases was the pain said to be very severe. The fæces were as a rule watery. They were grass-green at the commencement, but soon became very dark-green. In most cases the evacuations were voluntary, but many of the worst cases lost entire control of the sphincters. In some exceptional cases blood was passed in small quantities or blood-stained slime. In one case the stools were said to have a frothy, soapsud-like appearance. There was no retraction or collapse of the abdominal walls. Vomiting occurred in all but two—at first yellowish-green, afterwards, if persistent, merely the contents of the stomach. Intense thirst was complained of. One patient, who had cholera nostras in America and Canada, said the most notable difference between his previous illnesses and this one was the intense thirst, which was not present in the cholera attack. The tongue was dry, dark-brown, thickly furred in the severe cases, furred but moist in the less severe. Herpes of the lips was fairly common, and in one or two a transient rash was present, with in some cases subsequent desquamation of the cuticle.

Temperature.—In all adult cases but one shivering was a most marked symptom, and whenever seen in the early stages the temperature was invariably raised. In some cases it bordered on hyperpyrexia; in most it ranged from 100° to 101°.

General Symptoms.—Exhaustion of the heart and general circulation was a most prominent feature. In the severe cases it was extreme, and lividity and coldness of extremities came on rapidly. In the mild cases even, for days afterwards, the patients felt tired and weary.

Nervous Symptoms.—Severe cramp was rare; some complained of pains and stiffness in the calves of the legs, as if they had had cramp. Some had twitching pains in the legs. Headache was not usual. Drowsiness was very marked in at least two cases, but many were restless from exhaustion.

Treatment practically resolved itself into the prevention of collapse. In the worst cases, medicines, effervescing or otherwise, were not retained. A mixture containing aq. sulph. dil., bismuth subnit., liq. morph. mur., and spir. chlorof. agreed well with the milder cases.

Cases.

No. 2.—A. L., aged 17 years, bought a pie on July 29th, and kept it until the morning of July 30th, and then ate it at breakfast (8 A.M.). About 11 A.M. abdominal griping. Purged about noon. Vomited in the evening, very chilly all day, drowsy, and heavy, no headache. When seen on July 31st he was in an apparently typhoid condition. Very sick and vomited everything he swallowed without retching, or heaving fluids when taken being no sooner swallowed than part returned; patient then rolled over, listless and helpless. Motions liquid, very frequent, and passed unconsciously. Though dull patient, when roused, could answer sensibly. Tongue very dry, dirty brown fur all over, very thick. Pulse very weak and irregular. Extremities gradually becoming colder and more congested about fourth day, tossing about though semiconscious, cheeks becoming livid, when pressed on vessels very slowly refilled. By free stimulation and keeping up bodily warmth slight improvement about sixth day. Vomiting ceased, but purging continued till the eighth day. Tongue then rapidly cleared, leaving surface clean, almost raw looking. Steady convalescence; out of bed on the eleventh day.

No. 4.—W. S., aged 45 years, ate a whole pie at 11 P.M. July 30th. He began to be ill as soon as he got up in the morning, 6.30 A.M. on July 31st. Vomiting and purging every few minutes; complained of having had great pain in the abdomen from the commencement. He had severe retching and leaving before being able to get any of the fluid vomited. Vomit clear and frothy, containing part of the veal of the pie eaten the night before, and this was said to taste very disagreeable on being vomited. Felt chilly and cold. Seen August 1st, 9 A.M. Temperature 101°. Pulse quick, and as the day

went on the pulse began to lose strength. Vomiting and purging unaffected by treatment. Extremities began to get cold, circulation feeble; exhaustion and fatal collapse within forty-eight hours of first symptoms.

No. 6.—L. T., aged 21 years, ate pie at 1 P.M. on July 30th. About 6 P.M. felt shivery. Vomiting commenced about 1 A.M. on July 31st, greenish-yellow in colour; purging severely; quite exhausted, and in considerable pain. Seen August 1st. Temperature over 101°; pulse quick, but fairly regular; tongue thick brown fur very dry. Vomited and purged just as she lay; no help for herself; quite conscious. On August 2nd had several attacks of very hurried breathing, extremities gradually becoming colder; patient exhausted and collapsed, and death took place in that condition.

No. 16.—L. McC., aged 24 years, ate half a pie at 10.30 P.M. on July 30th. Abdominal griping, sick, and purged at 5 A.M. on July 31st; very thirsty; shivering; twitchings in legs; motions bloodstained; pupils small; no headache. Seen August 2nd; quite exhausted; face dark and anxious-looking; tired expression. Complained greatly of heat and suffocation, although the room was cool; pulse weak and irregular; vomiting ceased; purging only slight. On August 3rd evidently becoming exhausted rapidly; free stimulation and artificial warmth applied, as temperature on August 2nd and 3rd was subnormal; temperature about 3 P.M. rose to 101°, and patient seemed to rally for a time, only to be followed by a more pronounced collapse, and death took place about 9 P.M. on August 3rd.

We are indebted to Dr. MacSherrie for the description of the following cases which he attended as *locum tenens* for Dr. Ashton:

No. 24.—L. H., age 15 years. Ate veal pie at 8.30 Sunday evening. At 5 o'clock Monday morning had diarrhœa and vomiting; went to the factory, where she was again sick and purged, and returned home again at 7 A.M. and went to bed. The first vomit contained some pie. First seen at 3 P.M. on Monday. She was extremely flushed. Temperature 104.5°; pulse weak, 130 per minute. Antifebrin with caffein given, also a sedative mixture. At 8.30 P.M. patient very delirious. Temperature 104°, prostrated, very feeble pulse, tongue covered with a thick black coating. A large dose of castor oil was now given with an antipyretic and free use of stimulants. Tuesday, August 2nd, 11 A.M.: Patient has been very delirious; temperature 103.2°; pulse extremely thready, rapid, and feeble. Continued vomiting and diarrhœa; vomit dark-green coloured; stools thin and greenish. 3 P.M. Patient in a low typhoid state with low muttering delirium; teeth covered with sordes. 9 P.M. Patient in state of complete collapse, pulse hardly perceptible, cold extremities, marked pallor. Immediate death was feared. Ether was injected hypodermically; hot-water bottles and hot fomentations, brandy and ammonia by the mouth, and brandy, milk, and beef-tea in enemata. During the night patient was unconscious. Wednesday, August 3rd. Patient slightly improved; conscious but delirious; very low typhoid condition, with much sordes and unpleasant odour from mouth. Temperature 100°. Nutrient enemata and stimulants continued, and salol with bismuth given; also powders of hydrarg. c. cret. and pulv. Doveri. Evening. A little better, but exhaustion still very great. Thursday, August 4th. Steady improvement, but still danger of collapse. Stimulants still very freely used. Still some diarrhœa. In evening a little Benger's food was retained in stomach. Temperature 100°. Friday, August 6th. Patient quite lucid, but still very weak. Tongue and teeth beginning to clear. Pulse much stronger and slower. Saturday, Sunday, and Monday, convalescent. September 5th. Patient still rather weak. The mother of the above had a somewhat similar attack but not so severe. During convalescence she showed signs of mental disturbance of a religious type (from which she soon recovered), and had a profuse rash with subsequent desquamation.

No. 26.—Mrs. M. T. ate a pie at about 9 or 10 o'clock on Saturday evening. On Sunday morning at 2 A.M. began with violent vomiting and diarrhœa. The first vomit contained remains of pie. First seen on Monday morning. She had intense diarrhœa, vomiting, and pain, with very great prostration. Temperature 103°. Tongue thickly furred and dark brown. Pulse rapid and thready. A large dose of castor oil was given, with stimulants, and afterwards an astringent mixture. Tuesday: Continued diarrhœa with great danger of collapse. Temperature 102°. During the next three days the diarrhœa began to abate, but vomiting still bad. On Friday the diarrhœa and vomiting had stopped and the temperature was subnormal, the patient being very prostrate. Monday, August 8th: Patient going on well.

Post-mortem Examination on Case No. 4.—The examination was conducted by Dr. John Hodgson, of Oldham, assisted by Dr. P. Bowes. The body was that of a well-nourished man. The brain contained a rather excessive amount of blood, but was otherwise healthy. The stomach contained green bile-stained fluid. There was no congestion of the lining membrane. The small intestine contained greenish yellowish fluid. There were patches of congestion of the mucous membrane at intervals, becoming more marked and frequent as he descended the intestines. The large intestine contained green fluid, the lining membrane throughout being highly congested. There were patches of decomposition on the outer wall of the large intestine. The lungs showed no disease, but abundant evidence of old pleurisy. The heart was large, fat, and flabby, the mitral valve was thickened and contracted. The liver was fatty. The other organs were healthy.

Report of an Investigation into the Cause of the Outbreak, by Dr. H. Ashton.

The articles used in the manufacture of the pies were: Veal, paste, jelly, seasoning.

1. The *veal* used was obtained from a butcher in Oldham. The baker stated that he paid 8d. per pound for the veal (boned), but produced no documentary evidence of this. Other parts of the same carcass sold on Friday and Saturday produced no sickness. The calf was killed on Tuesday night, July 26th. It was 11 weeks old.

2. The *paste* was made from flour, lard, and water. The same flour, lard, and seasoning were used for other articles and produced no sickness.

2. The *seasoning* was pepper and salt.

4. The *stock* for the jelly was made by boiling the veal bones, with pig's feet and water, and the same stock was used for the *pork* pies, which were eaten without harm.

The pies were cooked for twenty minutes at a heat of 400° to 500° F., as indicated by a pyrometer. Each pie contained about 1½ ounce of meat and a tablespoonful of jelly, which was poured in when the pies were taken from the oven. The stock was made whilst the pies were cooking. The pies were then placed in the shop.

The bakehouse was very clean and well arranged. There was a gully in the bakehouse, however, leading to a drain and untrapped.

The conclusions arrived at after investigation were as follows: The poison was contained in the veal and jelly only. The poison consisted partly of ptomaines and partly of bacteria; probably the greater part of the symptoms were due to ptomaines, as the period elapsing between the eating of the pie and the onset of symptoms was so short (five to eight hours). The stock for the jelly was right when placed in the pie, but was soon infected by the veal, which was probably the original source of the mischief. Whether the bacteria obtained admittance to the veal before or after cooking it is impossible to say, but in my opinion the temperature attained by the interior of the pies during the operation of cooking was not high enough to destroy bacteria. As veal yields gelatine, and gelatine was also added from the pigs' feet from which the jelly was made, it would be hard to find a better medium for the cultivation of bacteria when they had once been introduced.

As will be seen from the cases, the pies were most virulent on the second and third days after cooking. Those which were eaten on the same day and the first day after cooking seem to have caused little or no ill-effects.

It must be mentioned that practically no one complained of the taste or appearance of the pies, which had no smell whatever. The usual signs of a cold veal or pork pie being over-kept are: 1. The jelly liquefies and the bottom of the pie becomes soft. 2. The meat becomes detached and loose in the paste. 3. A whitish mould appears on the meat which, together with the gravy, may smell sour.

THE PREVENTION OF TUBERCULOSIS.

Sir Richard Thorne on the Control of Tuberculosis.

Sir Richard Thorne, K.C.B., delivered the first of the Harben Lectures for 1898 on November 2nd. The subject of the course is the Administrative Control of Tuberculosis, and he pointed out in the first place that a comparison of the statistics of the periods 1851-60 and 1891-95 showed that deaths from all forms of tuberculous disease had undergone a diminution amounting for all ages to over 36 per cent. The reduction of deaths for all ages from pulmonary consumption was over 45 per cent., and accounted for much of the general reduction, but the diminution in the mortality among infants and children had been far less. The deaths from tabes mesenterica showed a diminution of 8.1 per cent. for all ages, but in those of infants under 1 year of age there had been a large increase.

Among the administrative measures which had modified the death-rate from tuberculous disease he gave the first place to those which secured free movement of air and access of sunlight to dwellings. Sanitary works and the draining of the subsoil had also had an important effect. Infection took place in phthisis by means of the air, in tabes by the digestive tract. The conveyance of tuberculous infection in certain foods, meat and milk, would account for the fact that the diminution in tabes had not corresponded with that which had taken place in phthisis. The facts that the mortality from all forms of tuberculous disease had diminished at the periods of life when meat-eating was most consumed, and that phthisis which was most common in the meat-eating age had undergone a reduction, while the consumption of meat

had increased afforded evidence that infection by meat did not prevail to any large extent. Any danger which existed from this cause was to be avoided by abolishing private slaughterhouses, and adopting public abattoirs under the sanitary authorities. He then discussed the question of compensation to butchers for carcasses condemned, and set out the objection to that course.

The second lecture will be given at the Examination Hall of the Royal Colleges at 5 P.M. on Wednesday next, and will deal with the question of the relation of the milk supply to tuberculosis.

The London County Council.

We called attention in the British Medical Journal of October 15th to the important report presented that week to the London County Council by its Public Health Committee as to the means which should be taken by the Council to prevent the dissemination of tuberculosis by milk and to improve the conditions under which animals are slaughtered in London. Some opposition was threatened when the subject came before the Council on October 11th, apparently in the interests of those butchers and owners who employ private slaughterhouses. We observe, also, that at a meeting convened by the London Butchers' Trade Societies on October 28th, an opinion was expressed against the proposed abolition of private slaughterhouses. It was suggested as an alternative that there should be a great increase in the number of meat inspectors.

It was estimated that 40 additional inspectors would be required and that their united salaries would amount to £6,000 a year; it was further estimated that it would cost £1,000,000 to build the public abattoirs, which would mean the expenditure of £3,000 a year interest and £30,000 in maintenance. We are not aware upon what data these figures are founded, and are disposed to think that they may not be altogether impartial, because we go on to read that it was stated that the assertion that private slaughterhouses are a source of danger to the public health was "an absurd fallacy." The meeting determined to send a deputation to the Council.

On the other side we are glad to notice that the following letter has been addressed to the Chairman of the London County Council on behalf of the National Association for the Prevention of Consumption and other forms of Tuberculosis.

20, Hanover Square.
November 1st, 1898.

Sir,—The attention of the Organising Committee of the National Association for the Prevention of Tuberculosis has been directed to the recommendations of your Public Health Committee with regard to the institution in London of an administration for the prevention of disease conveyed by milk and meat.

Our Association is more particularly interested in the question of the prevention of tuberculosis, and we understand that your Committee recommends that the Council should be empowered to take the necessary steps for preventing the sale of tuberculous milk and meat. On behalf of our Association we beg to state that we are strongly of opinion that there is urgent necessity for such measures, and that if the Council takes steps to prevent the sale of tubercle-infected milk in London, and ensure the proper examination of meat by the substitution of public for private slaughterhouses, there is every prospect of reducing the present mortality from tuberculosis, especially among the poor who more particularly suffer from the effects of milk and meat of dangerous quality.

We regard it as fortunate that the recommendations of the Royal Commission on Tuberculosis are being so promptly considered by a body which has always manifested the greatest interest in the public health.

We are much impressed by the conviction that the action of the London County Council in this matter will set an example which is likely to be followed throughout the Kingdom.

We therefore respectfully urge upon your Council the eminent necessity of adopting the recommendations of your Public Health Committee.

We are, dear Sir,
Your obedient servants,
Samuel Wilks,
President of the Royal College of Physicians, London.
William Mac Cormac,
President of the Royal College of Surgeons, England.
W. H. Broadbent,
Chairman of the Organising Committee.

It is understood that the report of the Public Health Committee will come before the London County Council again at its meeting next Tuesday and we trust that the recommendations of the Committee may then be adopted. These recommendations, it may be as well to recall, are as follows:

1. That in the opinion of the Council it is desirable that, as a first step towards ensuring the proper inspection of meat, private slaughterhouses should cease to exist in London, and that butchers should in substitution be afforded such facilities as are necessary for the killing of animals in public slaughterhouses to be erected by the Council.

2. That a copy of this report and of the Council's resolutions thereon be sent to the Local Government Board, with an intimation that the Council is prepared to accept such responsibilities as may be necessary to give effect in London to the recommendations of the Royal Commission on Tuberculosis, and that the Board be asked whether they will include in any legislation introduced by them in connection with the Royal Commission's report which would be necessary for this purpose.

LITERARY NOTES.

A reprint of the German text of Professor Virchow's Huxley Lecture has been published by August Hirschwald, of Berlin.

Sir George Robertson, K.C.S.I., has written, under the title *Chitral: The Story of a Minor Siege*, an account of the famous siege of Chitral from the point of view of one who was besieged in the fort. Sir George, it will be remembered, was British Agent at Gilgit at the time. The book is published by Messrs. Methuen.

A work entitled *Under the African Sun*, by Dr. W. J. Ansorge, will shortly be published by Mr. Heinemann. Dr. Ansorge, who is the Government medical officer in Uganda, is a keen sportsman and naturalist. His book will describe and illustrate aspects of native life in Central Africa which are rapidly being swept away.

Mrs. Alec Tweedie has written a memoir of her father, Dr. Harley, under the title *George Harley, or the Life of a London Physician*. Dr. Harley's career is full of interest, for although he suffered far beyond the common lot of man from ill health, he achieved distinction in spite of disadvantages which would have crushed a weaker spirit. Nor was his life devoid of the element of adventure. In his youth he joined Omar Pasha's army, was arrested as a spy and condemned to death. He was in Paris soon after the *coup d'état*, and was present at the marriage of Napoleon the Third. The book will be published by The Scientific Press, Limited.

Messrs. George Newnes are issuing *Raiders and Rebels in South Africa*, by Elsa Goodwin Green, with illustrations by the author. Mrs. Goodwin Green arrived at Cape Town shortly before the news of the Jameson raid caused an inquiry for volunteer certificated nurses to give their assistance at the Krugersdorp Hospital. Her narrative deals with the wounded of Dr. Jameson's column. She subsequently followed the British troops to the seat of war in Mashonaland, and engaged again in hospital work.

A writer in *Lippincott's Magazine* tells a new anecdote of Dr. Shippen, whose name is well known in connection with the American Revolution. He left his house early one morning, and was hurrying down the street, when he noticed a singular and ferocious-looking man, whose gaze was fastened upon him. With instinctive politeness Dr. Shippen smiled, raised his hat, and passed on. Then a shot was heard. Turning quickly, Dr. Shippen found that the stranger had just left his home with the insane intention of killing the first man he met. Dr. Shippen was the first man; but his absolute fearlessness, and his courtesy, had put the man off his guard, and the next passer-by had caught the bullet intended for him. The smile and bow had saved his life.

The manufacture of cripples to be let out to tramps as decoys for the alms of the charitable is said to be a flourishing industry in some parts of the Pyrenees. It would appear that this is not one of the many inventions which make this "so-called nineteenth century" famous in the records of the ages. Fabricius Hildanus, in his chapter on Præternatural Tumours, relates the following story: "In the year 1593 there was seen in Paris a boy of 15 or 18 months, the skin of whose head was so much stretched that it greatly exceeded the size of a natural hydrocephalus. The father and mother of the child carried him about from place to place as a monster. As the concourse of people was great, the magistrate suspected that there was some fraud in the matter, and clapped the father and mother into prison. Being put to the question [a euphemism for the torture] they confessed their crime, to wit, that they had made on the top of the head right down to the muscles a small hole, through which having pushed a syringe they blew air between the skin and the muscles, in such fashion that little by little, and repeating the process every day, they had made the swelling. The syringe being taken out, they stopped the hole with wax or something of the kind."

ASSOCIATION INTELLIGENCE.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—A meeting of the members of this District will be held at St. Monica's Home, Brondesbury Park, on Wednesday, November 9th, at 4.30 P.M. Dr. Morton will preside. Dr. Soltau Fenwick will read a paper on the Early Diagnosis of Cancer of the Stomach. Cases of interest will be shown by Dr. Wiuslow Hall, Dr. Sutherland, and other members of the staff. St. Monica's Home is near Kilburn-Brondesbury Station (Metropolitan Railway), and Brondesbury Station (North London Railway).—H. J. MACEVOY, Brondesbury, N.W., Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Queen's Hotel, Eastbourne, on Thursday, December 1st, at 4.45 P.M., Dr. Hayman in the chair. Dinner (at table d'hôte) 7 P.M. Members are requested to send notice of communications, motions, etc., to the Hon. District Secretary, if possible before November 15th.—J. W. BATTERHAM, M.B., Grand Parade, St. Leonards, Hon. District Secretary.

SOUTH-EASTERN BRANCH: WEST KENT DISTRICT.—A meeting of this District will be held at the Hospital, Gravesend, on Friday, November 18th, at 4.15 P.M., Dr. Charles Firth in the chair. Agenda: Minutes of last meeting. Place, date, and chairman of next meeting. Mr. F. Jaffrey (London): The Treatment of Recent Fractures by Wiring or Massage. Dr. J. A. Coutts London): On Belladonna in the Treatment of Broncho-pneumonia. Dr. J. V. Bell: Idiosyncrasy in Relation to Food and Drugs. Tea and coffee will be provided at the close of the meeting. All members of the South-Eastern Branch are entitled to attend this meeting and to introduce professional friends.—LUDFORD COOPER, St. Bartholomew's Hospital, Rochester, Honorary Secretary.

SOUTHERN BRANCH: SOUTH-EAST HANTS DISTRICT.—The next half-yearly meeting will be held at the Medical Library, 5, Pembroke Road, Portsmouth, on Friday, November 11th, at 4 P.M. Gentlemen desiring to read communications, or to show patients or specimens, are requested to communicate with the Honorary Secretary, C. C. CLAREMONT, M.D., 57, Elm Grove, Southsea.

STIRLING, KINROSS, AND, CLACKMANNAN BRANCH.—A meeting of this Branch will be held on Thursday, November 10th, at 4 P.M. at the Station Hotel, Larbert. Members who wish to bring forward any business, read papers, or show cases or specimens, or to propose new members, are requested to communicate with the Honorary Secretaries at once, R. D. CLARKSON and ALFRED GRIFFITHS, Falkirk.

SOUTHERN BRANCH: ISLE OF WIGHT DISTRICT.

THE quarterly meeting of this District was held on October 21st, at Sandown, Isle of Wight, Dr. GROVES, President, in the chair.

The Rational Treatment of Pulmonary Consumption.—After ordinary business, Dr. J. G. SINCLAIR COGHILL gave an address entitled Suggestions as to the Rational Treatment of Pulmonary Consumption. A discussion followed, in which Drs. GROVES, THIRKETT, and COWPER took part, and Dr. COGHILL replied.

Maternal Impressions.—Dr. GODFREY read a paper on maternal impressions, accompanied with a report of ten authenticated cases. He said that at the outset there were two difficult questions to be answered: (1) How far are maternal impressions causative of fœtal defects? (2) How do such impressions act in order to produce these effects? There were those who disbelieved entirely in the influence of such impressions, their contention being that the deformities were due to errors in development. Dr. Godfrey, however, pointed out that this view did not set aside the opinion that the "error" in development might have been caused by the impression during the pregnant state. And what was still more to the point, it did not alter the fact that a large proportion of the defects occurred at a period when the development of the child was complete, taking the form of a mark or stain which could in no way be accepted as a developmental error. The results of maternal impressions might be divided into two classes—mental and bodily defects. Most probably the mind of the child would be chiefly affected during the later months of pregnancy because, according to Landois, the permanent cerebral convolutions were not formed until the seventh month. One of the most authentic records was contained in a paper read by Dr. Arthur Mitchell, Lunacy Commissioner for Scotland, in which he stated that out of 443 cases in which an endeavour was made to establish the cause of idiocy, 6 only were clearly traceable to maternal impressions. Instances of bodily defects due to maternal impressions were much more frequent. Of 90 cases classified 21 were instances of defects involving the lips and palate, and in all but two of these the impression was made during the first three months of pregnancy; in the two exceptions it occurred in the fourth month. Dareste, in his researches on the artificial production of monsters in the lower animals, seemed to prove that they had their origin in the early periods of embryonic life; and this coincided with the reported cases of maternal impressions, which all tended to show that defects of development occurred at an early period of pregnancy, while scars, marks, and mental defects occurred at a much later period. Dr. Godfrey read particulars of 10 cases, in each of which there was a striking resemblance between the impression and the defect. Sight was the most common channel by which the impression was conveyed, but there were 2 cases on record in which the impression appeared to be due to a dream. Dr. Godfrey arrived at the practical conclusion that defects traceable to maternal impression were sufficiently numerous and sufficiently serious in character to necessitate the avoidance by any pregnant woman of all violent emotional disturbances, especially those of an unpleasant character.—A general discussion followed.

The Diagnosis of Typhoid Fever.—Dr. BRERETON introduced a discussion on the Diagnosis of Typhoid Fever, in which he related some facts as to cases occurring in his practice, and sought for opinions from the members present as to what time could elapse from the commencement of an attack before it became impossible to diagnose with certainty that it had been typhoid.—On account of the lapse of time the continuation of the discussion was postponed until the next meeting.

Next Meeting.—The next meeting of the District was appointed to be held at the Pier Hotel, Sandown, in January, 1899, for which Drs. BANKS and COWPER promised cases for discussion.

BATH AND BRISTOL BRANCH.

THE first meeting of the session was held in Bristol on October 26th; Dr. SHINGLETON SMITH in the chair. Fifty members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Prevention of Tuberculosis.—It was announced that Dr. D. S. Davis, Medical Officer of Health for Bristol, would open a discussion on the Etiology and Prevention of Tuberculosis at the meeting in Bristol on January 25th, 1899.

Communications.—Dr. WALDO showed, and read a paper on, a Case of Diffuse Cirrhosis of the Lung, with charts of the temperature and a skiagraph showing the extreme displacement of the heart that had taken place. There were no tubercle bacilli in the sputum. He said this form of cirrhosis was unilateral, and attended with the formation of bronchiectatic cavities, and discussed the differential diagnosis from pulmonary tuberculosis with fibrosis. Dr. MICHELL CLARKE, in discussing the case, mentioned the occurrence of cases of pulmonary cirrhosis after certain forms of pneumonia in influenza, and the efficacy of treatment of fœtid sputum by intratracheal antiseptic injections. Dr. ROGERS also alluded to the occurrence of cases following

influenza, and gave an instance of fibrosis of the lung affecting the apex and non-tuberculous in nature. Dr. Shingleton Smith mentioned syphilis as a cause of pulmonary cirrhosis, and the extreme rarity of tuberculous disease limited to the lower lobe. He preferred inhalations to intratracheal injections.—Dr. Watson Williams showed the Suprarenal Capsules from a case of Addison's disease. The patient presented the typical symptoms of the disease, and died a few days after admission. A cancer of the breast had been removed two years before. Mr. Roger Williams suggested that the disease of the suprarenals might be cancerous. Dr. Edgeworth made remarks on the distribution of the pigmentation in this case, and on the absence of pigmentation in acute and rapidly fatal cases of the disease. Dr. Watson Williams replied.—Mr. C. H. Walker read a paper on his experience of Interstitial Keratitis in Bristol.—Mr. Carwardine remarked on the frequency of syphilis in Bristol.—Mr. C. A. Morton showed a number of excellent skiagraphs of Genu Valgum, demonstrating that the cause of the deformity lies in the curving of the tibia and fibula, and that there is no elongation of the internal condyle of the femur nor any obliquity of the knee-joint, as had formerly been taught. Mr. Carwardine, on the basis of clinical observation, thought that in most cases there was some elongation of the internal condyle. Mr. Morton, in reply, said that clinical symptoms were unreliable as to elongation of the internal condyle, and emphasised the fact that no such elongation was apparent in skiagraphs.—Dr. Michell Clarke showed a number of lantern slides illustrating the Changes in the Spinal Cord in two recent cases of Pernicious Anæmia.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

The autumn meeting of this Branch was held in the Northern Infirmary, Inverness, on October 27th, Dr. Munro Moir, President, in the chair. Ten other members were present.

Death of the President-elect.—The President paid a tribute to the memory of the late Dr. Finlayson of Munlochy, who was the President-elect, and a minute expressive of the loss sustained by his death was ordered to be engrossed.

New President-elect.—Dr. Murray was unanimously appointed President-elect in the room of Dr. Finlayson.

Unqualified Dentists and the Administration of Anæsthetics.—A discussion introduced by the President took place on the assistance given in the administration of anæsthetics to dentists having no qualification. The following resolution was agreed to:

That the practice of giving assistance to dentists having no qualification in the administration of anæsthetics is most reprehensible, and that this Branch recommends that if a charge of "covering" in connection with such administration were brought before the General Medical Council, it should be entertained and investigated.

Demonstration in the Infirmary.—The members present then accompanied Drs. Moir and Mackay, the Medical Officers of the Infirmary, through their wards, and were favoured with a demonstration of the most interesting cases then under their care.

Dinner.—The members afterwards dined together at the Palace Hotel.

SPECIAL CORRESPONDENCE.

BERLIN.

A New Municipal Hospital.—The River Water Supply of Berlin.—The Cologne Red Cross Society.

The new hospital which the municipality of Berlin has decided to erect, and which is to be finished by the spring of 1903, will be the largest in Germany and will accommodate 1,650 patients. Interesting details of the building plan were given at the last meeting of the German Society for Public Hygiene by its President, Geheimrath Spinola. It appears that the ground at disposal has an area of 47.7 hectares (that is, about 120 acres), of which the hospital buildings will occupy 27 hectares (about 67 acres). From one end of the buildings to the other the greatest length will be 600 metres (not very much less than half an English mile); their greatest breadth will be 500 metres. In view of these measurements a proposal which has been made to build an electric railway for the convenience of the doctors and other hospital officials seems by no means absurd. Some of the buildings are to be two storeys high, but in general the one storey barrack system has been decided on with double wards of twenty beds each. Between barrack and barrack there will be a space of 22 metres. Inside each patient will have an airspace of above 50 cubic metres. Baths of every description, Turkish baths, tar, mud, sulphur and sand baths, and every kind of douche will be provided, and there will be a special hall for gymnastics and medico-mechanical exercises. In the lying-in department arrangements are to be made which will permit the mothers to remain until the twentieth day after confinement. The water-supply is to be obtained by means of a special pumping work, but the hospital will be connected with the town waterworks in case of any emergency. The total cost has been calculated at about 13,000,000 marks, or £655,000, which comes to almost £400 per bed.

A special committee composed of members of the Hygienic Institute have been steaming up and down the rivers Spree and Havel (which flow through Berlin) engaged in their annual examination of the river water. Samples were taken at various points at all depths, and besides the water samples, specimens of the earth in the river beds and on their banks were collected. These have been brought to Berlin and will now be examined bacteriologically. The committee will shortly proceed to the rivers Oder and Elbe for the purpose of a similar examination.

A festival took place in Cologne last week to celebrate the tenth anniversary of the foundation of the Cologne Red Cross Society's branch, on which occasion the first ambulance station, arranged after the Berlin model, was opened.

PARIS.

Medical Assistance for the Poor in France.—The Treatment of Consumptives in Paris.—Medical Supervision of Theatres.

It is only quite recently that exact information has been obtained concerning the law on gratuitous medical help passed in 1893. This law was passed in a burst of humanitarian enthusiasm, without the principles on which it was based being thoroughly examined and sifted. The spirit which presided over the framing of the Bill is conveyed in Article 1, which runs as follows: "Any French person suffering from illness, who is without means, can receive gratuitous medical treatment at his own home, or in a hospital when this is impossible. Lying-in women are considered as patients." The departmental Budgets of 1895 furnish some important information concerning the financial aspects of this new law, which requires that in every commune a list be drawn up of the inhabitants entitled to gratuitous medical help. In 1895, in a population of 38,517,975 inhabitants, there were inscribed on the poor list 1,347,372; of these 374,460 were treated gratuitously. The expenditure amounted to nearly £90,000. Physicians and surgeons' fees were £70,842 15s., midwives' fees £6,994 10s., expenses for removing the sick poor to hospitals £2,097, hospital expenses £52,319, apparatus £182, medicines, etc., £64,360 3s. 2d. Before the new law was passed, it was calculated that the expenses of gratuitous medical help for the indigent sick would amount to £320,000.

Two services for consumptive patients were organised ten months ago in the Lariboisière and Boucicault hospitals. This choice appeared a strange one, the difference between the two hospitals being very marked. The Boucicault hospital is all freshness and seems eminently fitted to breathe hope into the hopeless, whereas the Lariboisière is an old building sombre enough to sadden even stout hearts. Except for this dissimilarity the organisation of the phthisical wards in these two hospitals was exactly the same—perfect sanitary arrangements. The doctors had *carte blanche* directions concerning the diet of their patients. The administration only asked to have the patients fattened and cured, irrespective of cost or trouble. The results of the Lariboisière service are not successful. The Boucicault service is not so great a failure. The wards are in the midst of trees, looking out on green lawns; air and light are abundant. This attempt appears to prove that the idea of treating tuberculous patients in Paris must be given up. At the recent Sanitary Congress it was

condemned. Special sanatoria at a distance from thickly populated houses are required for those who are incurable in order to prevent contagion; for those who may be saved large sanitoria out of Paris in any sunny localities.

The doctors appointed as medical officers to the Paris theatres went as a deputation to the Police Prefecture to urge that a medical man should be included among the members of the Theatres Committee. The absence of a precedent was stated to be a reason against this desirable innovation. It was further urged that as the sittings are paid for a medical member would increase the expenses of these sittings. Some believe that sanitary precautions rigorously observed in theatres would restrain epidemics, especially influenza.

LIVERPOOL.

Professor D. J. Hamilton's Remarks on the Liverpool Medical School.—Opening of a New Infirmary at Winsford: The Abuse of Hospitals.

The recent utterances of Professor D. J. Hamilton, of Aberdeen, on the excellent provisions made for medical education in Liverpool, have caused great satisfaction here. Professor Hamilton and his family have been more or less intimately connected with the professional life of the city for about a quarter of a century, and he has watched the growth of the medical school with sympathetic eyes. The great occasion of the opening of the Thompson-Yates Laboratories was the immediate subject which prompted his remarks, but the clinical teaching and the practice in the wards and the outpatient department of the Royal Infirmary received his unstinted praise.

A new hospital called the Albert Infirmary has lately been presented to Winsford, Cheshire, by Mr. W. H. Verdin, D.L., and was formally opened by the Duchess of Westminster. It is a stone-fronted building standing near the London and North-Western Railway Station. The Duke of Westminster, speaking at the opening ceremony, said that medical and surgical science had made very considerable strides in the direction of curing and preventing disease, of which a great deal had been heard lately in connection with vaccination. He would that public opinion might arrive at the conclusion that vaccination was after all a specific for one of the most loathsome diseases to which the human race is subject. The Bishop of Chester on this occasion, speaking of the medical profession, said that the public ought to be on their guard lest in their zeal for philanthropy they should be "sweating"—to use a famous phrase—their hospital surgeons and physicians. He did not like the idea of being benevolent to artisans and those who used the infirmaries at the expense of the medical officers. Was there not just a little tendency in some quarters to say that it was of such great value to physicians and surgeons to have the experience which they had in hospitals that there was really very little need to give them any remuneration? It was well for them sometimes to revise the system in that respect, and to ask themselves whether, in their zeal for the welfare of those who came into their infirmaries they were not perhaps a little inclined to overtax the good nature and benevolence of their medical men.

CORRESPONDENCE.

THE NEW VACCINATION ORDER.

Sir,—I write in response to your desire expressed at the end of your leader to learn the views of public vaccinators on the new Vaccination Order. As stated in your editorial on the scheme, public vaccinators will be placed in a much better position pecuniarily with the exceptions mentioned; but there are certain cases in which we public vaccinators, especially in rural districts, will be liable, as we always have been, to have a large amount of labour in the shape of long journeys without any remuneration, except the shilling for the birth. We are only paid for successful vaccination, but it not infrequently happens that the operation has to be repeated up to the third time; oftener, if the parents are willing; entered on the register three times, and a certificate of insusceptibility filled up and sent to the vaccination officer. Here we have at least four journeys, which in my district may mean a distance altogether of fifty-six miles, the patient's residence being seven miles from my own. The fourth journey is necessary for the inspection of the third operation. This in my case would be the utmost limit, though in more extensive districts the hardship would be greater. Again, for the same distance the five-shilling fee to be allowed under the new Order is quite insufficient remuneration for the two journeys in the case of a successful result, when a distance of twenty-eight miles would have been covered.

At times in stational vaccination (I have three distant stations) I have had two double journeys to stations four and five miles distant for one case, for which I received three shillings; and sometimes for no cases at all, the second journey being necessary to conform with the regulations. Here the keeper of the station received the rent for the two days as usual, while I got nothing for my attendance.

I think that some payment should be made for work in connection with cases of insusceptibility, and those in which it may be necessary for the public vaccinator to postpone the vaccination on account of illness.

Boards of Guardians, as a rule, I am afraid, will adhere to the minimum fees allowed by the Order, though in fairness to vaccinators who have wide and scattered districts, a mileage fee should be paid in addition. I would suggest that the minimum fee should cover a distance of three miles (far enough, in all conscience), and that so much per mile, or part of a mile, should be paid over that distance.

I think it a pity that this question of remuneration is left to be arranged between Boards of Guardians and public vaccinators, and agree with the suggestion of Dr. W. Moore in his letter to the British Medical Journal, that it would be well if some uniform arrangement could be made to apply in all cases.—I am, etc.,

John McPhail Dougall, M.D.,
Public Vaccinator to the Bulmer District of the Malton Union.

Oct. 31st.

Sir,—In answer to your invitation I beg to send you a few observations on this important Order.

1. *Article 3, Paragraph 6.*—It seems a pity that provision should not be made for the payment of vaccination of children at the surgery of the public vaccinator, because so many parents prefer to have the operation performed before their children reach the age of 4 months. It is evident, however, that the Board would not sanction the payment for any vaccination performed on persons under the age of 10 years.

Form of Vaccination Contract.—Paragraph 6 states:

If any child vaccinated by him shall, in his opinion, require medical treatment in consequence of the vaccination he will, if the parent or other person having the custody of the child consent, attend the child and prescribe such treatment as may be required.

I have looked through the whole of the General Order, but have failed to find any provision made in it for the payment of such medical services as are indicated. That such extra services are not often required may be perfectly true, but in a pretty long experience I have had occasion to treat a fair number of cases for considerable periods and have had to do so without any extra remuneration.

3. *Third Schedule, Paragraph 6.*—It is stated:

Vaccination should at every stage be carried out with aseptic precautions. These should include: first, the cleansing of the surface of the skin before vaccination; secondly, the use of sterilised instruments; and thirdly, the protection of the surface against extraneous infection, both on the performance of the operation and on inspection of the results.

I think, Sir, that the third precaution requires more elucidation. Is it meant that the arm should be covered with some protective and non-absorbent material? If the house and premises are in a proper sanitary condition, and if there is an absence of infectious disease, I for one am of opinion that the best plan is to leave the arm of the child vaccinated entirely uncovered. The danger arising from "shields" and "guards" can hardly be overrated.

Looking at the General Order from the point of view of a town public vaccinator, I am constrained to say that the terms offered are liberal, and will be the means of inducing us to take even a greater interest in public vaccination in the future than we have done in the past.—I am, etc.,

T. Garrett Horder.

Cardiff, Oct. 29th.

Sir,—Am I right in supposing that I shall have, in future, to vaccinate only in those houses to which I have been asked to go: (1) By the parent or person having the custody of the child; and (2) by the vaccination officer?

In the first case how am I to distinguish between those who wish to have their vaccination fees paid by the State, and those who are "private patients" of some other medical man or of my own? In the second case I shall, I suppose, be obliged to vaccinate the children of parents whose ordinary medical man will be thus deprived of a fee, and if necessary continue my attendance on the child.

I may add that in those scattered rural districts where vaccination work is hardest, and where Boards of Guardians are—well, what they are—the lowest possible fees will be paid. It is surely time, therefore, that the suggestion made by Dr. W. Moore in the British Medical Journal of October 29th should assume a practical shape.—I am, etc.,

Buckingham, Oct. 29th. George H. De'Ath.

OYSTERS AND DISEASE.

Sir,—In the British Medical Journal of October 15th you published a letter of mine setting forth five cases of gastro-enteritis and one of enteric fever, the result of eating oysters procured at Southend.

To this list I have now to add the following: A London practitioner writes that on September 17th (the day of my own visit to Southend) he went to Southend and bought a dozen "deep-sea" oysters and brought them home. He and his brother ate them, and "next day we were both ill—sickness, pain, diarrhœa. Utter derangement of stomach and violent diarrhœa continued, in my case for nearly a fortnight and in his over a week."

Dr. Hadley writes that he has "at the present time under treatment another victim, who went to Southend about six weeks ago, ate some oysters, and is now lying with typhoid in the London Hospital."

A friend writes that "about the third week of September the F. family went to Southend, and had oysters at dinner. The whole family were very ill. The youngest son directly after got ulcers in his stomach, and is still unwell." Thus, estimating "the whole family" as 4 cases, I have now adduced evidence of 13 cases of gastro-enteritis, or worse, as the direct result of eating oysters procured at Southend.

Dr. A. Clough Waters, Medical Officer of Health for Southend, writes in the Journal of October 29th, and speaks of cases of "*alleged* oyster poisoning at Southend." The italics are mine. Dr. Waters is perfectly fair to me, however, in recognising as a quotation on my part the statement that the oysters are sunk near the sewer mouths, but he brings no evidence forward to show that this is not the case. If this has been the case it easily explains the resulting disease; but if not, then an uncomfortable suspicion arises that there are unknown sources of pollution awaiting discovery at the hands of Dr. Waters, the medical officer of health. All Dr. Waters's emphasis on the active zeal of the Corporation in matters sanitary cannot do away with the simple fact that oysters supplied from at least three different shops, as I can prove, have given rise to disease.

No one can for a moment believe that "deep sea" oysters are polluted when first brought up, and I showed in my first letter that other oysters were responsible for some of the cases. There must be, or have been, something radically wrong somewhere.

Dr. Johnston-Lavis, of Beaulieu, Alpes Maritimes, has written a most lucid treatise on this subject, and he points out that "oyster cultivators have found that a diluted mixture of sewer effluent fattens oysters to perfection." He shows further that near Naples certain oysters when freshly dredged caused no ill effects; but that the same oysters, when left for a time in reserve stores of doubtful purity, became a potent means of causing disease.

He sums up the whole case thus: Oysters and other molluscs can convey disease germs in three ways:

(*a*) By the surface of the shell, and the consequent inoculation in the act of opening them.

(*b*) By the water retained in their pallial cavity.

(*c*) By their rectum.

And Dr. Johnston-Lavis points out the following sources of pollution:

(1) In the native beds.

(2) In artificial beds and stores.

(3) In packing and transit, whether by foul water or foul seaweeds.

(4) In shops and stalls by similar means.

If, therefore, Dr. Waters is able to refute the possibility of these Southend oysters being infected by means (1) and (2), I contend that it devolves upon him to make a searching inquiry into the remaining possible causes. And as evidence of the need of such inquiry I may adduce a letter from a firm of oyster merchants in Billingsgate, who write to me for further information, and state that the Southend Corporation are about to relet one of the shores for oyster layings.

I have before me the report of the medical officer of Truro for 1897. In it are mentioned 4 cases of gastro-enteritis and 2 of enteric fever due to oysters. The medical officer of health is unable to trace the source of contamination, but I doubt if he has happened to read Dr. Johnston-Lavis's treatise.

Let me say, in conclusion, that the occurrence of these serious cases will not deter me from sending patients and friends to Southend. I regard Southend as an admirable health resort for this reason among others: that there are capital easy paths on the side of the cliffs or banks sheltered from north and east and open to the sun, and instead of a dreary waste of waters to contemplate as at our south-coast resorts there is a constant traffic of vessels to and from the port of London to give interest to the scene.

But most assuredly until Dr. Waters can more completely reassure me as to the storage of the various molluscs so freely sold throughout the town I shall carefully warn all friends to abstain from Southend oysters.—I am, etc.,

Tottenham, November 1st. A. Ogier Ward, M.D.

EPSOM COLLEGE.

Sir,—As an old "O. E.," I have read with much interest the two letters in the British Medical Journal of October 29th under the above heading.

The idea of an Epsom College Day I think excellent, not altogether on the lines suggested, but as a means of reunion, when, if unfortunately one did not meet old chums, school kinship would render those who met friends. There must be many "O. E.'s" in and near London, and if such a meeting could be arranged it would, I think, assuredly assist the cause advocated.

For many years I have been resident in Surrey, and have several times passed through Epsom and had a look at the old school; on the last occasion I paused at the gate, and inquired after "Gough," "Spurrier," and others. All had changed; there was no inducement to pass in, as I should have liked to have done.

I trust that the appeal will be liberally responded to, and also that the letter of an "Old Epsomian" and your remarks will lead to the word "benevolent" being removed from the title of the old school.—I am, etc.,

November 2nd. Another "O. E."

NATIONAL DEPOSIT FRIENDLY SOCIETY.

Sir,—Dr. Deas appears to confuse an ordinary "club" with a medical aid society. If the figures he quotes refer to work in connection with such a society, the sooner he gives it up the better for himself and the profession. My comparison was instituted between "an ordinary club," by which I referred to any of the various sick and burial and other friendly societies and the National Deposit Friendly Society, which was under discussion.

My own experience of sick and burial societies is, as I stated, small, but not altogether unsatisfactory. Thus, in the five years ended 1897, I treated 329 cases of sickness in connection with such a society; I paid 143 visits, and supplied 587 mixtures, and received as payment £55 10s. This gives 2s. 6d. for each visit, and 1s. 3d. for each mixture.

A medical friend who has a much larger experience than mine, has given me the following particulars. During the six years ended 1897 he made 2,566 visits for the various "clubs" to which he is the surgeon, and received as payment £594. This compares very favourably with Dr. Deas's figures of 550 visits in one quarter of the year for £16 16s. 3d. My friend has kept no record of the number of mixtures which he supplied, but if we allow four mixtures for each visit, which is

about the ratio in the ordinary "clubs" for adult males (so I am informed), we get 2s. 6d. for each visit, and medicine for two days, and 1s. 7¾d. for each other mixture.

It may be of interest to put on record my friend's experience of a provident dispensary carried on the same district and among the same class of people. During the six years already referred to, he made 2,515 visits in connection with this dispensary, and received for his services £163 5s. 2d., as against 2,566 visits, and £594 in connection with the various sick and burial "clubs."

Dr. Deas, I believe, practises in London, and as he is evidently fond of figures he will fully appreciate the following:

NATIONAL DEPOSIT FRIENDLY SOCIETY.
LONDON DIVISION.
For the year 1896.

Number of members...	859
Number of weeks of sick pay	312
Medical remuneration	£56 11 6

If this number had been members of an ordinary sick and burial society at the rate of 4s. per member per annum, the doctors would have received £115 4s. 6d. more than they actually got.

It may, I think, be admitted that the National Deposit Friendly Society has justified its claim to be a "thrift" society from the fact that its members in 1896 got all the medical attendance and medicines they wanted for the sum of £2,392 9s. 8d. If the members had paid 4s. each per annum, the profession would have received £4,040.—I am, etc.,

R. HANSON WOLSTENHOLME, M.R.C.S., L.R.C.P.

Salford, Oct. 31st.

FIBRINOUS OR MEMBRANOUS RHINITIS AND ITS RELATION TO DIPHTHERIA.

SIR,—May I be allowed to correct the figures given in the BRITISH MEDICAL JOURNAL of my remarks in the discussion following Dr. Lack's very interesting paper on Membranous Rhinitis and its Relation to Diphtheria, read at the Royal Medical and Chirurgical Society on October 25th? Doubtless I failed to make them sufficiently clear, but as they may be published in another place, I would like to have an opportunity of preventing any apparent discrepancy between their final appearance and that which they present in your report.

I examined 125 children. Of these 69 had nasal discharges of varying quality, and 56 were free from discharge. Of the former 37, and of the latter 24, presented the Klebs-Loeffler bacillus; 5 cases in which the discharge was more or less bloodstained gave the bacillus in every case. None of the discharges were associated with constitutional symptoms not otherwise to be accounted for; all were of a markedly chronic character, and several of the children on the surgical side were apparently in good health, being admitted for accident or deformity.—I am, etc.,

THOS. D. LISTER,
Pathologist East London Hospital for Children.

Wimpole Street, W., Oct. 28th.

ADDRESSES TO MEDICAL STUDENTS.

SIR,—Will you kindly allow me a little space for an explanation? Dr. Walton has evidently misunderstood to a great extent my letter of October 15th. I would here say that the letter had no intentional reference to Dr. Saundby's address to the medical students at Cardiff, as I have not yet read Dr. Saundby's address.

Dr. Walton fails to see the fine line of distinction between virtue and morality; but there is a distinction nevertheless. There may be a fine line of demarcation between healthy and gangrenous tissues, but the difference between the two is obvious. There is a metallic ring about the voice of a man who thinks he speaks the truth for the sake of "morality." All the kingdoms of the world cannot buy a virtuous woman, but a "moral" woman is bought at her marketable value. What is good is priceless. Dr. Walton appears to think that because work is good there is all the more reason for putting a price on it. Does the practitioner sit up all night in a badly-furnished, ill-ventilated room for the sake of the fee which he may not receive? If the "price" is 15s. or less, comment on his affinity for money is unnecessary; but if £15, why will he take 15s.?

Does the soldier face the battlefield for 4d. a day? The soldier fights, but not for the 4d., and dare anyone fix a price on the soldier's life? The doctor is not slave, but servant, to the patient, and the fee is an honourable arrangement between the two. The doctor expects his fee as the soldier expects his 4d. a day; but it is insulting to say that the price of the work of either is the monetary value he receives.

The millionaire gives 2 guineas for his advice, and the railway navigator 2s. for the same. Is the doctor who occupies a higher place a greater rogue than he who occupies a lower? Let us hope not.—I am, etc.,

Wolverhampton, Oct. 31st. T. DOBSON POOLE, M.D.

OBITUARY.

J. M. VINCENT PRENDERGAST, M.D., M.R.C.P., Paris.

WE regret to record the death of Dr. J. M. Vincent Prendergast, of Paris, which occurred suddenly at his residence, 9, Rue Volney, on October 19th. He was born in co. Mayo, Ireland, in 1855. He went at an early age to Australia, where he was engaged in banking. On his return he matriculated at the Royal University, Ireland, and entered Guy's Hospital in October, 1877, and was Dresser to Mr. Howse, and Clinical Assistant to Dr. Goodhart. As a student he was generally looked upon as a very hard worker. He became M.R.C.S.Eng. and L.S.A.Lond. in 1881. He passed in the first division for the M.D.R.U.I. and M.Ch. in 1882, and took the M.A.O. in 1885, after working at the Rotunda. In 1886 he became M.R.C.P.Lond. He volunteered for the Egyptian campaign, and soon returned in charge of the invalided troops to Netley. He was for some time in the service of the P. and O. Company, and travelled nine times round the world. After this he travelled with a private patient, and visited China; during his stay there he had the almost unique experience of attending a mandarin's wife, who was suffering from gastric ulcer. He had a smart piece of medical diplomacy to perform, as wishing to prescribe milk for the patient—a diet which offended her scruples—he sent some daily in a bottle coloured as medicine. Under his treatment the lady made an excellent recovery; as a fee he received a couple of bags of silver.

In 1886 and 1887 he was House-Surgeon at the British Hertford Hospital, Paris, where he did excellent clinical work. In 1889 he took the M.D.Paris, the subject of his thesis being "Syphilis." At this time he started practice in Paris, and was a devoted pupil of Charcot, by whom he was strongly supported and befriended at the beginning of his independent career in Paris.

Dr. Prendergast enjoyed a wide reputation on the Continent for his untiring energy, tact, and ability. He was no faddist, and took the keenest interest in all his patients. During his ten years' practice in Paris his clients included some of the most distinguished members of European society. It will be remembered that he attended the late Lord Lytton, then British ambassador in Paris, during his last illness. He maintained the dignity of an English physician. The fees he at times received from rich patients were very large, and in addition he received most valuable presents. On several occasions he crossed to America with patients.

Dr. Prendergast had the keen sense of humour and ready wit characteristic of his countrymen, and few men could tell a story better than he. He was devoted to literature and music, and very fond of animals of all kinds.

When in the East he contracted malaria, which undermined his health. Three years ago he had a return of this complaint and was very ill for some time, but made a good recovery, though aged by the attack. On October 17th, while engaged in his work, he was seized with slight hæmatemesis, which subsided, and he considered himself well the next day. On October 19th the hæmorrhage returned in the afternoon, and he died from syncope in a couple of hours. He had telegraphed for his old friend, Dr. E. Semple, who was delayed by the gale in the Channel, and arrived two hours after Dr. Prendergast's death.

Cut off in the prime of life his death was tragic in its suddenness. He was to have been married shortly to the youngest daughter of the late Mr. S. W. Sibley, F.R.C.S., of Harley Street, and Whitehill, Bletchingley.

The funeral took place on Monday, October 24th, at Boulogne-sur-Seine, the service being conducted by Father Curtin. The first part of the service was held at the Madeleine, and was attended by a large number of friends and patients.

HERMANN FRANZ MUELLER, M.D.,
Vienna.

Dr. Mueller, whose heroic death in the discharge of his duty at Vienna has excited such universal admiration and sympathy, was born in Vienna in 1866, his father being the custodian of the Library of the University of Vienna. He studied at Graz, where he graduated in 1889, and where he published a remarkable essay on the blood, based on original research carried out in the Rollet Institute. Subsequently he worked in Vienna in the clinics of Professors Nothnagel and Meynert, and in 1892 he was appointed assistant in Professor von Ziemssen's clinic at Munich. In 1895 he returned to Vienna as assistant to Professor Nothnagel. His investigations had reference chiefly to the pathology of the blood and of nervous diseases. In 1896 he qualified as *Docent* in the University of Vienna. Last year he went to Bombay as chief of the expedition of investigation on the plague which was sent out at the expense of the Vienna Academy. He has left a work embodying the results of his researches ready for publication.

His funeral was attended by a large number of Professors of the Medical Faculty and other colleagues and friends. Professor Nothnagel, who could not trust himself to deliver the funeral oration by the open grave, deputed that duty to Professor Frank-Hochwart. Dr. Julius Mannaberg also spoke in the name of the assistants in Professor Nothnagel's clinic.

We regret to announce the sudden death of Miss Mabel E. Webb, M.B.Lond., on October 28th, 1898, at the early age of 31. Miss Webb had a distinguished career at the London School of Medicine for Women, where her singular personal charm made her one of the most popular and respected of its students. After graduating at the University of London she decided to devote herself to the study of pathology rather than to the active practice of her profession. She was appointed Curator of the Museum and Assistant Pathologist to the Royal Free Hospital, and her work in the discharge of the duties of these offices gained for her the sincere appreciation of the medical staff and hospital authorities. Her loss will be deeply felt by all who knew her and could value justly her conscientious and earnest devotion to duty, her fine character, and her high aims. Miss Webb had for many years suffered at intervals from gastric pain, but a rest of six months in the early part of this year had so much improved her health that the onset of grave symptoms was quite unexpected. The cause of death was septic peritonitis, following perforation of gastric ulcer. She was buried at Hendon Parish Church on November 2nd, the funeral being attended by representatives of the Board and medical staff of the Royal Free Hospital, and of the Council and students of the London School of Medicine for Women, as well as by many personal friends. Miss Webb has left a record which will not be forgotten by those who had the privilege of her friendship. Short as her career has been she did good service for her school, and the cause of medical women is the poorer for the loss of one who had already made her mark, and whose future seemed full of the promise of useful and distinguished work.

Deaths in the Profession Abroad.—Among the members of the medical profession who have recently died are Dr. Nathan Smith Lincoln, one of the oldest and most prominent physicians of Washington, Surgeon-in-Chief of the Military Hospital of Washington during the Civil War, and one of the Vice-Presidents of the ninth International Medical Congress, aged 70; Dr. Kostiurin, Professor of Pharmacology in the Military Medical Academy of St. Petersburg; Dr. Victor Andreievitch Subbotin, Professor of Hygiene in the University of Kieff; Dr. W. Kochs, *Privat-docent* of Physiology in the University of Bonn; and Dr. Guindey, Senator for the Department of the Eure.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon John L. Aherne, B.A., has been allowed to withdraw from the service with a gratuity. He was appointed Surgeon, August 25th, 1881, and Staff-Surgeon, August 25th, 1894.

The following appointments have been made at the Admiralty: William R. Treythall, Surgeon, to the *Daphne*, undated; Edward B. Pickthorn, Surgeon, to the *Centurion*, December 1st; Louis E. Dartnell, Surgeon, to the *Tamar*, December 1st; Charles S. Facey, M.B., Surgeon, to the *Wye*, November 10th; Christopher L. W. Bunton, M.B., to the *Pembroke*, November 10th; Francis Bolster, B.A., M.B., Surgeon, to the *Gleaner*, November 8th; Edward Cooper, Surgeon, to the *Buzzard*, November 29th; Edward D. J. O'Malley, Surgeon, to the *Jaseur*, November 29th; Jonathan Shand, M.B., Surgeon, to the *Brisk*, November 10th; D'Arcy Harvey, M.B., Surgeon, to the *Excellent*, November 10th; Jeremiah Sugrue, M.D., Staff-Surgeon, to the *Devastation*, November 8th; Herbert W. G. Doyne, Staff-Surgeon, to the *Collingwood*, November 1st.

THE ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert H. Robinson, F.R.C.S.I., is placed on retired pay, October 16th. He was appointed Assistant Surgeon, April 1st, 1871; Surgeon, March 1st, 1873; Surgeon-Major, July 2nd, 1883; granted the rank of Lieutenant-Colonel, July 2nd, 1891; and made Brigade-Surgeon-Lieutenant-Colonel, March 3rd, 1897.

Lieutenant-Colonel John Stevenson, M.B., F.R.C.S.Edin., and Alexander S. W. Young also retire on retired pay, November 2nd. Their commissions, which are contemporaneous, are as follow: Surgeon, August 4th, 1878; Surgeon-Major, August 4th, 1890; Lieutenant-Colonel, August 4th, 1898.

Lieutenant-Colonel A. L. Browne, M.D., who is serving in the Madras Command, is appointed to officiate as Principal Medical Officer Secunderabad and Belgaum districts.

Surgeon-General W. D. Wilson, M.B., has been appointed Principal Medical Officer at Devonport, *vice* Surgeon-General Hamilton, retired.

ARMY MEDICAL RESERVE.

Surgeon-Captain H. G. Thompson, M.D., F.R.C.S.I., is promoted to be Surgeon-Major, November 2nd.

Surgeon-Lieutenant Edmond U. F. MacW. Bourke, 18th Middlesex Volunteer Rifles, to be Surgeon-Lieutenant, November 2nd.

INDIAN MEDICAL SERVICE.

Surgeon-General R. Harvey, C.B., D.S.O., M.D., Bengal Establishment, has been appointed Director-General of the Indian Medical Service and Sanitary Commissioner with the Government of India, in succession to Surgeon-General J. Cleghorn, C.S.I., M.D., retired. Surgeon-General Harvey entered the service as Assistant Surgeon, March 31st, 1865, and became Surgeon-General, April 1st, 1895. He served with the Bhootan Expedition in 1865-66 (medal with clasp); with the Looshai Expedition in 1871-72 (clasp); with the Hazara Expedition in 1891 as Principal Medical Officer (clasp); with the Miranzai Expedition in 1891 under Sir William Lockhart as Principal Medical Officer (mentioned in despatches, D.S.O., and clasp); and with the Isazai Expedition in 1892 as Principal Medical Officer.

The retirement from the service of Surgeon-General James Cleghorn, M.D., C.S.I., Bengal Establishment, which also has been previously announced in the British Medical Journal, has received the Queen's sanction, October 25th.

The retirement from the service is also announced of Lieutenant-Colonel James J. Moran, M.D., Madras Establishment, to date from October 10th, 1891. (The *London Gazette* of the 1st inst. gives this date, but it is probably a misprint for 1898.)

Captain William C. Sprague, M.D., Bombay Establishment, has retired from the service, October 20th, 1898. He was appointed Surgeon-Lieutenant, January 30th, 1892, and Surgeon-Captain three years after.

The following promotions, which have been already announced in the British Medical Journal, have received the approval of the Queen: Brigade-Surgeon-Lieutenant-Colonel David Sinclair, Madras Establishment, to be Surgeon-Colonel, February 12th, 1896. Surgeon-Lieutenant-Colonels, Madras Establishment, to be Brigade-Surgeon-Lieutenant-Colonels: Henry Fitzl. P. F. E. White, October 31st, 1897; William R. Browne, M.D., March 1st, 1898; Arthur H. Leapingwell, March 1st, 1898; Hazlett Allison, M.D., June 30th, 1898; Thomas J. H. Wilkins, July 14th, 1898. Surgeon-Lieutenant-Colonel John P. Greany, M.D., Bombay Establishment, to be Brigade-Surgeon-Lieutenant-Colonel, June 9th, 1898.

The following promotions of Surgeon-Lieutenants to be Surgeon-Captains have also received Her Majesty's approval, dated July 29th, 1898: *Bengal.*—John Stephenson, Frank M. Windsor, Walter B. Turnbull, Ernest E. Waters, Asher Leventon, Philip F. Chapman. *Madras.*—Frederick L. Blenkinsop, Edmund M. Illington, Thomas E. Watson, Charles G. Webster. *Bombay.*—Alfred Hooton, Arthur F. W. King, Robert F. Standage, Andrew A. Gibbs, Henry A. F. Knapton.

THE VOLUNTEERS.

Surgeon-Lieutenant C. Godson, M.D., 18th Middlesex Rifles, is promoted to be Surgeon-Captain, November 2nd.

PLUCK OF A MEDICAL OFFICER IN CRETE.

During the recent disturbances in Crete, an attack was made on the hospital at Candia. We take the following account of the heroism of the medical officers in charge from the *Aldershot News*, which obtained the details from a military correspondent who was present:

"The attack began early in the afternoon, when two young medical officers who were on the rampart opposite the entrance gate of the hospital were fired at. They quickly got inside, shut the gate, and made preparations for defence. Happily, all the patients had their arms, and most

were able to use them. There was also a guard of six men, and, including the men of the Royal Army Medical Corps, the garrison numbered about fifty. The Bashi-Bazouks opened a heavy fire from all the houses round and above the hospital, and six separate parties attacked from the front. The main corridor of the building was soon the only part which was tenable. Two men in the wards were hit, and then a third man on the rampart about 120 yards away. Lieutenant Clarke, Royal Army Medical Corps, and nine men volunteered to rescue him from the enemy. The little party sallied out from the gate, put him on a stretcher, and carried him into shelter. As they issued from the gate they were greeted by a hail of bullets. Clarke and two of his party were hit, and as they returned the wounded man was hit a second time. Two men who opened the gate to admit them were shot—one through the head and the other through the chest. Clarke, though himself wounded, was the last man to pass the gate, covering the retreat with his revolver in his hand. He shot one Bashi-Bazouk at a distance of ten yards. A Union Jack which they carried had six bullets through it. The attack lasted all the afternoon, and at 7.30 P.M. the little garrison retired, taking all the sick, wounded, and dead with them. As the hospital was completely cut off from assistance the garrison had the whole fight to themselves, and they deserve very great credit for their brave defence." Special credit (the correspondent says) is due to Lieutenant Addams Williams, Royal Army Medical Corps, who was in command, and to Lieutenant Clarke and his brave band of rescuers."

THE MEDICAL ARRANGEMENTS OF THE TIRAH CAMPAIGN.

The *Civil and Military Gazette* of October 6th (issued in the Punjab), in an article headed "Medical and Supply Arrangements in Cuba and Tirah—A Contrast," commends the work of the medical service in the following terms:

"One of the very few departments which escaped much searching criticism during the campaign in Tirah was the Medical Department. It seems to have been generally admitted that the arrangements for the care and comfort of the sick and wounded were, as a rule, most complete and efficient, and that nothing was neglected that could relieve suffering or assist recovery. The credit for this must be shared between the Indian Government, which grudged no expense and stinted no supplies to enable the medical officers to carry on their merciful work of healing wounds, curing sickness and averting disease, and the medical officers themselves, for the excellence of their organisation, the carefulness of their arrangements, and the skill and devotion which characterised the performance of their duties. The practical result of all this was that the percentage of sick to the whole force was only about 4½ per cent., that the wounded were well and rapidly cared for, that but a small percentage of them died, and that no epidemic of any kind broke out among the troops engaged.

VACANT APPOINTMENTS.

Colonel Caldecott, I.M.S., vacates his appointment as Principal Medical Officer of the Sindh District. The office of Inspector-General of Civil Hospitals is vacant owing to the resignation of Colonel Stephen, I.M.S., who is returning home.

MEDICO-LEGAL.

MEAT EXTRACT.—FURTHER CONVICTIONS.

We recently drew attention to the conviction of a person who had in his possession a number of barrels of putrid livers, which were deposited for the purpose of being converted into human food, in the form of meat extract, soups, and "other table delicacies."

On October 20th the vendor of these livers was prosecuted, when Dr. Dixon, the medical officer of health, stated, according to the report in the *Daily Chronicle*, that he thought the livers had been in the barrels from three to six months, and that some of them "had altogether dissolved into a poisonous malodorous brown fluid."

Mr. Avory, who prosecuted on behalf of the Bermondsey Vestry, was disposed to doubt their value even for manurial purposes.

The magistrate decided that the defendant had failed to prove ignorance of the fact that the livers were unfit for food when he sold them, and he very properly stated that it was the duty of anyone dealing in goods of this kind to protect himself and the public by due precautions. He fined the defendant £25 and £5 5s. costs.

"Dr." Sureties, extract blender, was also summoned for having 34 barrels of similar goods, which were seized the same day as the barrels above referred to. It appeared from the evidence, as reported in the contemporary from which we have already quoted, that at the place where he had carried on the manufacture of meat extract such a nuisance had resulted as to evoke the complaints of the neighbours. One witness, a carman, said that he had conveyed ten cases of the defendant's extract, weighing half a ton, to the premises of Messrs. Valentine and Co., of Tooley Street, but in a letter to the *Times* of October 22nd that firm denies that the consignment was delivered by its orders, and points out that steps were at once taken which resulted in the removal of the cases. This defendant was fined £10 and £5 5s. costs.

We regret that the magistrate did not decide to inflict, in both cases, the maximum alternative penalty of three months' hard labour, which, in our opinion, is better calculated to deal effectively with such crimes than a pecuniary fine, though it be a severe one.

BORIC ACID IN MILK.

At the Marlborough Street Police-court, London, on October 26th, a dairyman was summoned for selling milk adulterated with boric acid equal to the extent of 32·8 grains to the gallon. The case for the prosecution was supported by Mr. Charles E. Cassal, Public Analyst to the Vestry of St. George Hanover Square, and Professor W. H. Corfield, who both said that the amount of boric acid present in the milk was sufficient to render it injurious especially to young persons. Mr. A. J. de Hailes, described as a public analyst, of Red Lion Square, said that, in his opinion, unless obtained direct from the cow milk would be improved and rendered more wholesome by the addition of a little boric acid. The magistrate held that the addition brought the defendant within the meaning of the Act, and ordered him to pay a fine of £2 2s. and £10 10s. costs

CHARGE OF PUBLISHING AND SELLING OBSCENE LITERATURE.

On May 31st George Bedborough, publisher, of John Street, Bedford Row, was charged at Bow Street on a warrant with publishing an obscene libel in a book entitled *Studies in the Psychology of Sex: Sexual Inversion*, with the intention of corrupting the morals of Her Majesty's subjects. The case was adjourned until June 7th, when Mr. Avory, who defended, stated that the defence would be upon the matter of principle that the book was not an obscene work, but a scientific publication. Eventually on June 21st the defendant was committed for trial. The case came on before the Recorder at the Central Criminal Court on October 31st. According to the *Times* report the defendant pleaded guilty to the first three counts of the indictment and he pleaded not guilty to other counts. Mr. Charles Matthews (who with Mr. Danckwerts appeared for the prosecution) having addressed the Court, the Recorder said the defendant had acted wisely in pleading guilty to the three counts. He was willing to believe that the defendant might at the first outset have been gulled into the belief that some one might say that this was a scientific work, but it was impossible for any one with a head on his shoulders not to see that that was a pretence and a sham merely set up for the purpose of selling it. It had been pointed out that the defendant had taken only a very small part in the matter. He was unwilling that the defendant should suffer while others who had taken a much bigger share went scot-free. That kind of thing could not be tolerated, and would be put down by the strong arm of the law. He bound the defendant over in his own recognizances in £100 to come up for judgment if called upon.

*** It is a little difficult to comment upon this case, because all the facts have not been brought out in evidence. Mr. Havelock Ellis, who is the author of the work mentioned in the police-court proceedings, is a member of the medical profession, and we have examined his book. It treats of a subject which is to most persons extremely disagreeable, but, so far as we have been able to judge, we cannot agree with the Recorder that the subject has not been dealt with in a scientific manner. Further, so far as we are aware, it is true that no attempt has been made to advertise the book in any general way or to expose it for sale otherwise than in a technical sense. There is certainly nothing about the book itself, either in its appearance or in the manner in which the subject is treated, to pander to the prurient mind, although the subject of the book is of course one which would lend itself to such treatment. The subject, as we have said, is extremely disagreeable, but is one of those unpleasant matters with which members of the medical profession should have some acquaintance. From correspondence submitted to us in print by Mr. Havelock Ellis, it would appear that the scientific character of the work in question is recognised by many eminent alienist physicians in this country. Dr. Conolly Norman sums up the true view with regard to a work of this kind in the following passage of a letter which we are informed he has addressed to the author:

"In its relation to insanity, to degeneration, and to the neurotic state, the subject of sexual inversion has much medical interest; in its relation to crime it has much medico-legal interest. It is, therefore, a matter which must be discussed and written about."

SUPERANNUATION UNDER THE LOCAL GOVERNMENT (IRELAND) ACT, 1898.

Resident Medical Superintendent asks what is meant by the expressions "qualified for a superannuation allowance" and "qualified as regards age and length of service" in Section cxviii of the Local Government (Ireland) Act, 1898.

*** So far as Poor-law medical officers are concerned, the qualification for superannuation as regards length of service is that such an officer shall have served ten years or upwards, a condition which implies that he shall be at least thirty-one (31) years of age, seeing he may not be appointed until he has attained the age of 21 years. The corresponding qualification in the case of medical officers of lunatic asylums is specified (as we have already shown) in Section iii of the Pauper Lunatic Asylums (Ireland) Superannuation Act, 1890. The officer must have served for not less than fifteen years, and he must be not less than 50 years of age. It appears, however, to be competent for medical officers of lunatic asylums, under Section cxviii of the Local Government (Ireland) Act, 1898, to claim compensation "on the scale and according to the Acts and rules relating to Her Majesty's Civil Service;" that is to say, they may elect to throw in their lot with Poor-law medical officers as above, and claim ten-sixtieths of the annual salary and emoluments of their office after ten years' service, and "in like manner a further addition to the annual allowance of one-sixtieth in respect of each additional year of such service, until the completion of a period of service of forty years, when the annual allowance of forty-sixtieths may be granted." This amount—two-thirds of the salary and emoluments—is the extreme limit, and may not be exceeded.

The fact is that Section cxviii of the Local Government (Ireland) Act simply gives certain existing officers, medical and otherwise, who are transferred by the Act to newly-created local authorities the rights to superannuation which are already enjoyed by Civil servants, and it is

for the interest of such officers to claim such rights, in so far as they are more advantageous to them than the conditions specified in such statutes as the Local Officers' Superannuation (Ireland) Act, 1869 (32 and 33 Vict., Chap. 79), the Medical Officers' Superannuation (Ireland) Act, 1869 (32 and 33 Vict., Chap. 50), the Union Officers' Superannuation (Ireland) Act, 1865 (21 Vict., Chap. 26), and the Pauper Lunatic Asylum (Ireland) Superannuation Act, 1890 (53 and 54 Vict.).

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

FELLOWSHIPS.—At Caius College, Mr. R. S. Morrell, First Class Natural Sciences Tripos 1888-1890, and Mr. J. S. Gardiner, First Class Natural Sciences Tripos, 1893-95, have been elected to Fellowships.

MEDICAL DEGREES.—Admitted on October 27th to the degrees of M.B. and B.C.: J. B. Hughes, B.A., Caius.

DIPLOMA IN PUBLIC HEALTH: CORRECTION.—In the list published in the BRITISH MEDICAL JOURNAL of October 29th for J. I. Cook read J. I. C. Cosh.

UNIVERSITY OF LONDON.

CONVOCATION.—A meeting was summoned to take place on Tuesday, October 25th. Forty-two members were present. The Chairman of Convocation and the Clerk attended at 5 o'clock, and remained until the expiration of one hour for the purpose of ascertaining, in compliance with Standing Order 12, whether a quorum was at any time present. The Assistant Registrar presented the minutes of the Senate since the last meeting of Convocation. At the expiration of one hour a quorum not having been present, the meeting stood adjourned, and the Chairman of Convocation fixed January 16th, 1899, as the date for the adjourned meeting.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONIAL.

A SPECIAL graduation ceremonial in connection with Edinburgh University took place in M'Ewan Hall on Saturday, October 29th. Principal Sir William Muir presided. Professor Fraser presented the following to receive degrees:

Bachelor of Medicine and Master in Surgery.—F. T. H. Adamson, A. L. Anderson, E. B. Anderton, F. Beecroft, A. L. J. Branday, H. M. Bundey, D. A. Cameron, R. Craven, J. G. Forsyth, J. V. Fox, A. G. Hayden, Edith I. Hudson, F. J. Jude, D. J. C. Oliver, D. J. Peirson, Dorothy E. Pratt, T. Pretsell, F. W. Price, F. S. Rose, A. H. Rutherford, C. R. Scott, G. H. Wilson, J. B. Wilson.

Bachelor of Medicine and Bachelor of Surgery.—D. V. M. Adams, A. S. Allum, E. G. French, E. R. Grey, B.A., A. A. Gunn, A. G. Hamilton, J. Haworth, J. Hunter, B. S. Hyslop, G. H. W. de Labat, W. Lockerbie, D. V. M'Intyre, M.A., A. M'Kaig, W. W. Maxwell, P. E. Millard, W. J. Nutter, H. K. Paxton, E. C. Peake, A. de St. L. F. Perigal, G. H. Stewart, A. H. Thompson, P. G. L. du Toit, A. G. Worrall.

Master of Arts.—D. L. Norrie (with second class honours in Classics), J. A. Aitchison, C. Anderson, A. T. Cowe, G. H. Donald, J. R. Hunter (*in absentiâ*), J. Millar, Janie M. Robertson.

Bachelor of Science.—A. W. C. Menzies, M.A.

Sir William Muir explained that this was a very informal occasion, the degrees having been ordinarily conferred in the examination room of the old University, but the Senatus had very properly acceded to the request of the students that the ceremony should take place in the M'Ewan Hall. On behalf of the Senatus and all connected with the University, he wished the graduates every success in their future life, and hoped they would carry with them a fine recollection of their old University.

Professor Taylor pronounced the benediction, and the ceremony closed.

UNIVERSITY OF ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE.

ON October 29th, at a meeting held under the presidency of Principal Donaldson, Vice-Chancellor of the University of St. Andrews, Professor Macewen was installed to the chair of Surgery, Professor Stalker to the chair of Medicine, Professor Muir to the chair of Pathology, and Professor J. A. C. Kynoch to the chair of Midwifery.

The report of the Council of University College, Dundee, gives an encouraging account of the progress of the College during the past year. After a reference to the union with St. Andrews University the Council states that during the session a scheme of apportionment of the University funds, applicable under the ordinance to purposes at Dundee, had been drawn up and adopted, and that in consequence the whole grant and all the arrears had now been paid over to the Court. The scheme, which had come into operation, provided for the carrying out to the full of the intentions of the ordinance, and the Council regarded the arrangement as satisfactory, and believed that the sums set apart for the purpose would be adequate to maintain in high efficiency the various chairs and lectureships belonging to the Conjoint School of Medicine. It was also reported that the buildings necessary for the school would be provided for out of the arrears of the University grant, and that plans for these were in preparation.

UNIVERSITY OF WALES.

THE annual collegiate meeting of the University Court of Wales was held on October 28th at Aberystwith College under the presidency of Dr. Isambard Owen, Deputy Chancellor. The Registrar reported that there had been 430 candidates for matriculation in this year, an increase of 60; while 422 sat in various degree examinations, an increase of 137. The Deputy Chancellor said that 38 candidates had passed the degrees examination, of whom 18 had obtained honours, six of them first-class honours. This was a very satisfactory result having regard to the fact that this was really the first degree list of the University. It was reported also that the Prince of Wales, Chancellor of the University, had nominated the Hon. T. Kenyon Junior Deputy Chancellor.

CONJOINT BOARD IN IRELAND.

THIRD PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

Completed the Examination.—Honours: W. McLorrinan. Pass: E. S. Barnard, R. J. Cane, Geo. Canot, G. W. T. Clarke, R. Crean, J. L. Jones, G. W. Little, J. A. Martin.

In Anatomy (Four Years' Scheme)—V. F. O'Connor.

In Medicine.—A. H. Jacob, J. Whelan.

In Surgery.—W. J. Auglim, W. C. Croly, A. H. Jacob, G. L. N. Miles.

In Pathology.—W. J. Auglim, W. A. Cooke, W. C. Croly, P. J. McGinn, J. Whelan.

In Therapeutics.—W. J. Auglim, J. H. O'Connell, J. Whelan.

In Forensic Medicine, etc.—W. J. Auglim, G. R. Barton, B. McM. Coffey, G. L. N. Miles, J. Whelan.

The name of Mr. F. J. Lennan was inadvertently omitted from the list of the Second Professional Examination as having passed in Physiology.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

ZYMOTIC MORTALITY IN LONDON.

THE accompanying diagram shows the prevalence of the principal zymotic diseases in London during the third or summer quarter of the current year. The fluctuations of each disease, and its fatal prevalence as compared with that recorded in the corresponding weeks of recent years, can thus be readily seen.

Small-pox.—Not one fatal case of small-pox was registered in London last quarter, the corrected average number in the corresponding periods of the ten preceding years being 14; and only 3 small-pox patients were under treatment in the Metropolitan Asylum Hospitals during the quarter.

Measles.—The deaths referred to measles, which had been 1,494 and 1,072 in the two preceding quarters, further declined to 236 during the three months ending September last, and were less than half the corrected average number. Among the various sanitary areas of the metropolis measles showed the highest proportional fatality in Clerkenwell, Shoreditch, Bethnal Green, Whitechapel, Limehouse, Mile End Old Town, Poplar, and Bermondsey.

Scarlet Fever.—The fatal cases of this disease, which had been 247, 182, and 154 in the three preceding quarters, further declined to 108 during the three months under notice, and were 158 below the corrected average number in the corresponding periods of the ten preceding years. Among the various sanitary areas this disease was proportionately most fatal in St. James Westminster, St. Pancras, St. George Southwark, Newington, and Bermondsey. The number of scarlet fever patients in the Metropolitan Asylum Hospitals, which had been 3,507, 2,377, and 2140 at the end of the three preceding quarters, had risen again to 2,425 at the end of September last. The number of new cases admitted into these hospitals, which had been 4,441, 2,823, and 2,802 in the three preceding quarters, rose again to 3,060 during the three months ending September last.

Diphtheria.—The deaths referred to diphtheria in London, which had been 704, 534, and 367 in the three preceding quarters, further declined to 360 during the three months under notice, and were 177 below the corrected average number. Among the various sanitary areas this disease showed the highest proportional fatality in Paddington, Holborn, Clerkenwell, St. Luke, Mile End Old Town, Poplar, Newington, Bermondsey, and Battersea. The number of diphtheria patients in the Metropolitan Asylum Hospitals at the end of September last was 1,024, against 1,000, 1,009, and 971 at the end of the three preceding quarters; 1,768 new cases were admitted during last quarter, against 1,995, 1,733, and 1,648 in the three preceding quarters.

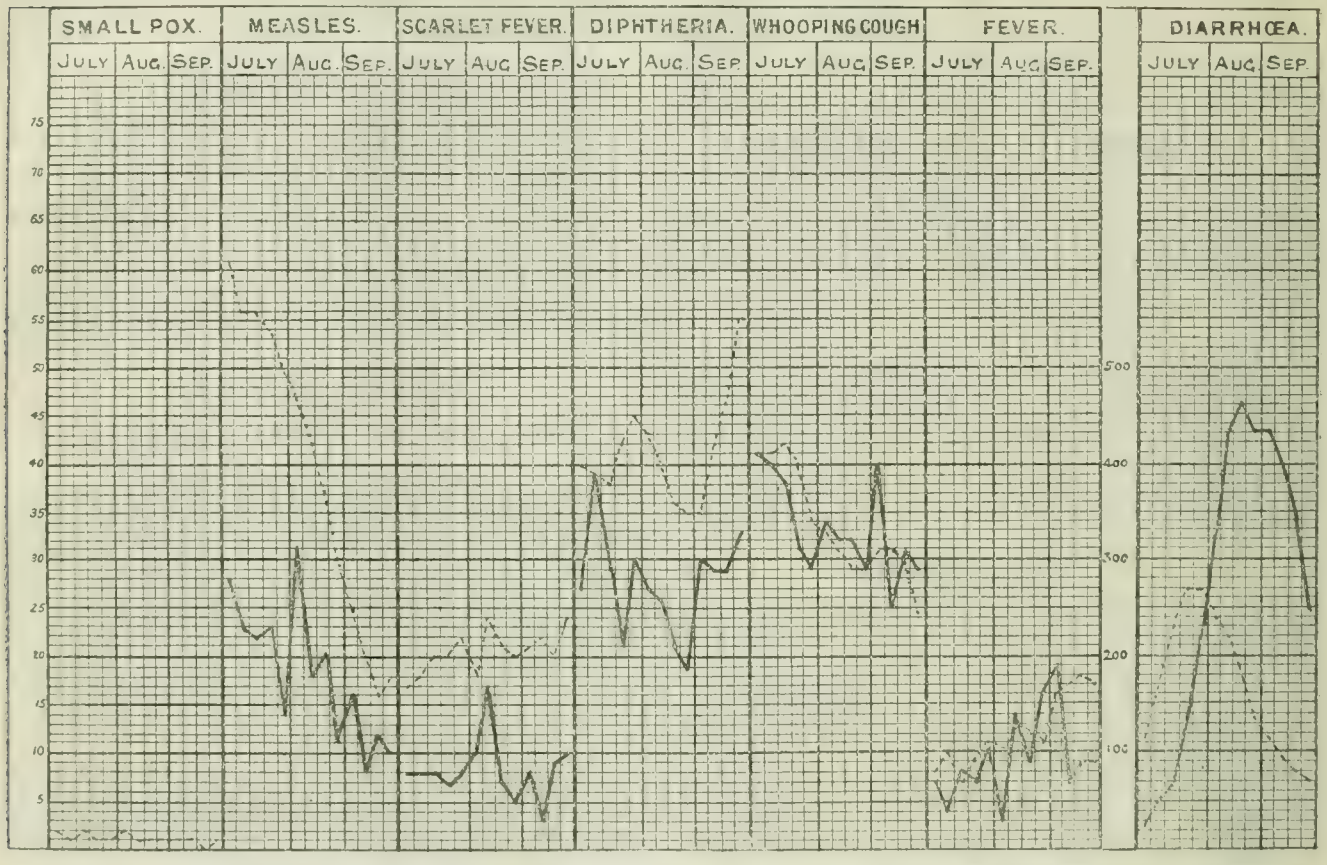
Whooping-cough.—The fatal cases of this disease, which had been 455, 816, and 673 in the three preceding quarters, further declined to 430 during the three months ending September last, and were within 4 of the corrected average number: among the various sanitary areas whooping-cough was proportionally most fatal in Limehouse, St. George Southwark, Newington, St. Olave Southwark, Bermondsey, Lambeth, and Woolwich.

Fever.—Under this heading are included deaths from typhus, enteric, and simple and ill-defined forms of continued fever. The deaths referred to these different forms of "fever," which had been 237, 107, and 73 in the three preceding quarters, rose again to 122 during the three months ending September last, but were 38 below the corrected average number. Of these 122 deaths, 119 were certified as enteric fever, and 3 as simple continued fever. Among the various sanitary areas the mortality from "fever" was highest in Hackney, Clerkenwell, Whitechapel, Greenwich, Lee, and Woolwich. The Metropolitan Asylum Hospitals contained 155 enteric fever patients at the end of September, against 116, 64, and 53 at the end of the three preceding quarters: 281 new cases were admitted during last quarter, against 281, 171, and 133 in the three preceding quarters.

Diarrhœa.—The 3,588 fatal cases of diarrhœa registered in London during the three months ending September last were as many as 1,388 above the corrected average number: this disease showed the highest proportional fatality in Fulham, Clerkenwell, St. Luke, Shoreditch, Limehouse, Mile End Old Town, Poplar, St. George Southwark, and Newington.

In conclusion, it may be stated that the 4,844 deaths referred to the principal zymotic diseases in London during the third quarter of this year were 720, or more than 17 per cent., above the average number in the corresponding periods of the ten preceding years 1888-97. This excess was entirely due to the great fatality of summer diarrhœa, the

DEATHS FROM ZYMOTIC DISEASES IN LONDON DURING THE THIRD QUARTER OF 1898.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the ten preceding years, 1888-97.

mortality from each of the other principal zymotic diseases being below the average. Among the various sanitary areas the lowest zymotic death-rates were recorded in St. George Hanover Square, St. James Westminster, Marylebone, Hampstead, St. Martin-in-the-Fields, London City, and Rotherhithe; and the highest rates in Fulham, Clerkenwell, St. Luke, Shoreditch, Limehouse, Poplar, St. George Southwark, and Newington.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,752 births and 3,844 deaths were registered during the week ending Saturday last, October 29th. The annual rate of mortality in these towns, which had declined from 24.6 to 18.8 per 1,000 in the seven preceding weeks, further fell to 17.9 last week. The rates in the several towns ranged from 9.6 in Croydon, 12.7 in Huddersfield, 12.9 in West Ham, and 13.5 in Halifax, to 23.5 in Manchester, 24.3 in Blackburn, 24.9 in Wolverhampton, and 26.6 in Liverpool. In the thirty-two provincial towns the mean death-rate was 18.9 per 1,000, and was 2.6 above the rate recorded in London, which was 16.3 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.1 per 1,000; in London the rate was equal to 1.7 per 1,000, while it averaged 2.4 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.4 in Salford, 3.5 in West Ham, 4.7 in Bolton, and 5.8 in Sunderland. Measles caused a death-rate of 1.0 in Liverpool, 1.1 in Sunderland, and 1.4 in Portsmouth; scarlet fever of 1.1 in Sunderland; whooping-cough of 1.1 in Plymouth; "fever" of 1.2 in Wolverhampton, 1.3 in Bolton, and 1.8 in Sunderland; and diarrhœa of 2.0 in Gateshead, 2.3 in Blackburn, and 2.6 in Bolton. The 82 deaths from diphtheria in the thirty-three towns included 46 in London, 9 in Leeds, 7 in West Ham, and 5 in Swansea. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 2,915 at the end of the nine preceding weeks, had further risen to 3,024 on Saturday last, October 29th; 335 new cases were admitted during the week, against 358, 357, and 381 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 29th, 1,076 births and 603 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 20.7 and 19.0 per 1,000 in the two preceding weeks, rose again to 20.0 last week, and was 2.1 per 1,000 above the mean rate during the same period in the thirty three large English towns. Among these Scotch towns the death-rates ranged from 15.7 in Leith and 18.5 in Edinburgh to 25.3 in Dundee and 27.2 in Perth. The zymotic death-rate in these towns averaged 2.4 per 1,000, the highest rates being recorded in Paisley and Aberdeen. The 264 deaths registered in Glasgow included 4 from scarlet fever, 2 from diphtheria, 10 from "fever," and 9 from diarrhœa. Two fatal cases of diphtheria were recorded in Dundee and 2 in Aberdeen; and 2 deaths were referred to "fever" in Aberdeen.

NOTIFICATION OF DOUBTFUL CASES OF TYPHOID FEVER.

SCOTLAND has under observation a case which may turn out to be one of typhoid fever. He has not yet reported it to the medical officer of health. Without communicating with our correspondent the latter called and, the patient's mother says, wished to examine the patient. The mother told him another medical man was attending. He has not yet communicated with "Scotland."

*** It is both right and usual when a health officer hears of an unreported case of fever for him to communicate directly with the practitioner in attendance. Should the patient be without medical attendance it would be equally proper for him, with the consent of those in charge, to examine the patient. It is of course quite possible that in this case the medical officer of health did not know till he visited the house that any medical man was attending. The fact that no notification had reached him might induce him to think so. He does not seem to have pressed for permission to examine when told someone was attending. He erred, we think, in not seeing or writing to "Scotland," but we think also the latter would have done wisely in advising his medical officer of health that he had an obscure case under observation. Had he done so, and counselled that no official visit should be paid, his advice would, we feel sure, have been acted upon. No medical man is bound by law to report a case till his diagnosis is complete, but sometimes the health of a community may require that certain precautions should be taken even while the exact nature of the ailment is uncertain. A private note to the medical officer of health will generally secure the maximum of safety with the minimum of annoyance to the relatives. A friendly interview would probably adjust this difference.

MEDICAL NEWS.

A COLLECTIVE investigation on the subject of hay fever in Switzerland is being carried out under the auspices of Dr. Adrien Wyss, *Privat-docent* in the University of Geneva.

THE first scientific meeting for the session 1898-99 of the Zoological Society of London will be held at its house, 3, Hanover Square, on Tuesday, November 15th, at 8 P.M., when papers will be read by Sir George Hampson, Bart., Mr. W. E. De Winton, Mr. Oldfield Thomas, and Mr. Boulenger.

A BALL will be held in aid of the funds of the Royal Ophthalmic Hospital, Moorfields, at the Empress Rooms, Royal Palace Hotel, Kensington, on Friday, December 9th. Further information can be obtained from the Secretary, Royal London Ophthalmic Hospital, Moorfields, E.C.

MR. G. BLACK, treasurer of the Lewis Carroll Fund, formally handed a cheque for £1,000 to Mr. John Murray, vice-chairman of the Hospital for Sick Children, Great Ormond Street, on October 28th. The money is used to endow a cot in memory of the author of *Alice in Wonderland*, and the cot has been placed in the Alice Ward.

THE annual dinner of the County and City of Cork Medical and Surgical Association will be held at the Imperial Hotel, Cork, on Saturday, November 12th, at 7 P.M. Members of the South of Ireland Branch of the British Medical Association are entitled to attend the dinner. The Honorary Secretary of the Dinner Committee is Dr. Philip G. Lee, 25, St. Patrick's Hill, Cork. The price of the dinner ticket, which can be obtained at the hotel, is 12s. 6d., including wine.

FARNBOROUGH DRAINAGE.—A scheme, which will cost some £20,000, for the drainage of Farnborough is to be discussed this week at a meeting of the Council. The main feature of the scheme is to conduct the sewage of the whole district to the present farm for treatment by the septic tank method and by filtration. The Local Government Board will have something to say to the scheme, for which they are reported not to have a liking. The present scheme is pronounced, on the whole, a workmanlike one, the only difficulty in regard to it being the experimental nature of the treatment.

AT the meeting of the Royal Medical and Chirurgical Society on Tuesday next Dr. StClair Thomson will read a paper on the Spontaneous Escape of Cerebro-spinal Fluid from the Nose, and will show a patient the subject of this condition who has been under his observation for some time. The thesis is supported by references to twenty other cases which the author claims to have found in literature, although described under various names and ascribed to entirely different conditions. Many of these agree in having exhibited cerebral symptoms, and many of them showed retinal changes.

INSANITARY HOUSES IN ST. PANCRAS.—Some time ago Dr. Sykes, medical officer of health for St. Pancras, reported that the parish compared unfavourably with other large districts in respect to the number of sanitary inspectors, and upon this report the Health Committee recommended the appointment of two additional inspectors. This was negatived by the vestry, but the medical department of the London County Council subsequently undertook to investigate the matter, and Dr. Hamer has reported that St. Pancras contains a larger number of persons living in tenements of one or two rooms than any other London sanitary district. He describes the position of St. Pancras with regard to dirty, dilapidated, and overcrowded houses as inferior to Mile End, Whitechapel, and Lambeth. He found that in St. Pancras, as elsewhere, dirty and dilapidated conditions and overcrowding occurred in groups, and were evidently associated with particular ownership. Dr. Hamer concluded by recommending the appointment of seven additional sanitary inspectors. His report has been forwarded by the London County Council to the Vestry.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—The annual general meeting took place in the Royal College of Surgeons on Friday, October 28th, the President, Dr. E. H. Bennett, in the chair. The following officers were elected for the session:—General Secretary: J. B. Story. Secretary for Foreign Correspondence: Sir William Stokes. Medical Section—President: J. W. Moore (President R.C.P.). Council: W. Beatty, M. A. Boyd, J. B. Coleman, James Craig, Sir George F. Duffey, R. A. Hayes, A. N. Montgomery, R. Travers Smith, W. G. Smith, and H. C. Tweedy. Surgical Section—President: R. L. Swan (President R.C.S.). Council: C. B. Ball, A. Chance, H. G. Croly, E. Hamilton, F. T. Heuston, John Lentaigne, R. G. Patteson, Sir W. Stokes, E. H. Taylor, and Sir William Thomson. Obstetrical Section—President: F. W. Kidd. Council: G. Cole-Baker, R. H. Fleming, R. A. Flynn, J. H. Glenn, A. J. Horne, J. L. Lane, T. More Madden, A. J. Smith, E. Hastings Tweedy, and J. H. Wilson. Pathological Section—President: J. M. Purser. Council: A. H. Benson, J. B. Coleman, W. R. Dawson, H. C. Drury, H. C. Earl, E. J. McWeeney, J. O'Carroll, A. C. O'Sullivan, A. R. Parsons, and J. A. Scott. Section of Anatomy and Physiology—President: D. J. Coffey. Council: J. Barton, A. Birmingham, D. J. Cunningham, A. Fraser, T. E. Gordon, and W. H. Thompson. Section of State Medicine—President: H. C. Tweedy. Council: J. Burgess, Sir C. Cameron, W. R. Dawson, N. Falkiner, T. Grimshaw, and J. M. Redmond.

MEAT POISONING.—An unfortunate occurrence took place recently at a tea party in connection with the Unitarian Church in Alterton, whereby several persons were rendered seriously ill. From a report in the *Manchester Evening News* we learn that a joint gathering of members of the Unitarian body in Atherton, Chowbent, Astley, and Leigh had been organised, and care appears to have been exercised that the food to be used on the occasion should be, both in quality and quantity, up to a high standard of excellence. To make matters more serious, the ladies' committee decided not to buy any tinned provisions, but to have the beef and tongues specially cured and provided by a butcher in the town. When the tongues were delivered it was noticed both by the minister and the Committee that one lot was not as it should be. The butcher was communicated with, and his wife attended. She, after inspecting the tongues and cutting off certain portions of them which appeared tainted, assured the ladies that the remainder was sound. On the strength of this assurance not only were the tongues consumed at the tea, but the remains of the food, in accordance with custom, were sold at a low price to the poor of the neighbourhood directly after the tea was over. About an hour or two afterwards those who had partaken of the particular lot of tongues were seized with symptoms of irritant poisoning. A few of the cases have been seriously ill, but are now progressing favourably. There seems to be no doubt that the suspected tongues were the cause of the irritant poisoning; and as instances of meat poisoning have been so frequent of late, it is to be hoped that the investigation into this case by the medical officer of health, Dr. Neech, will be successful in detecting the cause of the poisoning. It is clear that in these cases of meat poisoning the poisonous organic bodies are not confined to those portions of the meat which smell badly or which appear tainted, and all such food must be regarded as unfit for consumption.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £150 per annum (with an allowance of £30 for cab hire), with rooms, fire, light, and attendance. Applications to the Secretary by November 14th.

BRADFORD ROYAL INFIRMARY.—House-Physician, unmarried. Salary, £100 per annum, with board and residence. Applications, endorsed "House-Physician," to the Secretary by November 21st.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street, Brighton.—House-Surgeon. Honorarium, £20 for six months, with furnished apartments and attendance. Applications to the Secretary by November 17th.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Salary, £100 per annum. Applications to the Director, Grosvenor Road, Chelsea, S.W.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CARDIFF INFIRMARY.—Honorary Gynæcologist. Applications endorsed "Gynæcologist" to the Secretary by November 7th.

DERBY COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with board, lodging, and washing. Applications to Mr. S. Scott Cuney, St. Michael's Churchyard, Derby, by November 7th.

DUBLIN: STEWART INSTITUTION FOR IMBECILE CHILDREN AND HOSPITAL FOR MENTAL DISEASES, Palmerston.—Resident Medical Superintendent. Salary to commence at £350 per annum, with house, coal, gas, milk, and vegetables. Applications to the Secretary, Stewart Institution, 10, Molesworth Street, Dublin, by November 12th.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist. Salary, £250 per annum. Applications to the Clerk of the County Council by November 28th.

GODSTONE UNION.—Medical Officer for the Southern District. Salary, £63 per annum, with usual fees; will also have to act as Public Vaccinator. Applications to the Clerk, East Grinstead, by November 10th.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 21st.

HARTSHILL, STOKE-UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY EYE HOSPITAL.—Assistant House-Surgeon. Board, apartments, and washing provided. Applications to the Secretary by November 14th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Assistant-Surgeon, must be F.R.C.S.Eng. Also a House-Surgeon, and a House-Physician, unmarried. Appointment for six months. Salary, in each case, £20, with board and residence. Applications (on forms provided) to the Secretary by November 15th.

LEEDS: GENERAL INFIRMARY.—Resident Casualty Officer. Salary, £100, with board, lodging, and washing. Applications to the Secretary to the Faculty by November 8th.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum. Applications to the House-Governor by November 25th.

MANCHESTER: HULME DISPENSARY.—Honorary Surgeon. Applications to the Hon. Secretary by November 7th.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer of the Convalescent Hospital at Cheadle; not less than 25 years of age, unmarried. Salary, £150 per annum, with board and residence. Applications to the Chairman of the Board by November 19th.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the Western Fever Hospital, Fulham, unmarried, and not exceed 35 years of age. Salary, £160, increasing to £200 per annum, with board, lodging, attendance, and washing. Applications, on forms provided, to the Clerk of the Board, Norfolk House, Norfolk Street, Strand, W.C., by November 10th.

METROPOLITAN HOSPITAL, Kingsland Road.—Anæsthetist. Salary, 25 guineas per annum. Applications to the Secretary by November 14th.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer; unmarried, and not more than 30 years of age. Salary £125 per annum, rising to £155, with board, lodging, and washing. Applications to the Medical Superintendent by November 14th.

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants. Salary, £120, increasing to £150 per annum. Applications, on forms provided, to the Honorary Secretary, 13, Grey Street, Newcastle-on-Tyne, by November 19th.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, 27, Clement's Lane, Lombard Street, E.C., by November 28th.

PRESTWICH, MANCHESTER: COUNTY ASYLUM.—Pathologist. Salary, £200 per annum, with furnished apartments, board, attendance, and washing. Applications to the Superintendent.

RICHMOND BOROUGH AND HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the Mogden Isolation Hospital. Salary, £100 per annum, with furnished apartments, rations, and washing. Not less than 25, or more than 40, years of age, unmarried. Applications (on forms provided) to F. C. Greville Smith, Clerk to the Joint Committee, 172, High Street, Hounslow, by November 7th.

ROYAL EAR HOSPITAL, Frith Street, Soho, W.—House-Surgeon, non-resident, for six months. Honorarium 12 guineas. Applications to the Hon. Secretary before November 12th.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £100 per annum, with furnished apartments, board, and washing. Applications to the Secretary by November 15th.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM City Road, E.C.—Honorary Surgeon; and Honorary Assistant Surgeon. Applications to the Secretary by November 18th.

SCHOOL BOARD FOR LONDON.—Demonstration Lecturer to Teachers on Voice Production. Applications to the Clerk of the Board, Victoria Embankment, W.C.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), S.E.—House-Surgeon for the Branch Hospital, Royal Victoria and Albert Docks. Salary, £50 per annum, with board and residence. Applications to the Secretary by November 19th.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser; unmarried. Salary, £105 per annum, with lodgings, attendance, fire, and lights. Applications to the Hon. Secretary by November 16th.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary, £150 per annum, with furnished apartments, coal, and gas. Applications to W. Draper, De Grey House, York, by November 8th.

MEDICAL APPOINTMENTS.

ALLPRESS, Fred. H., B.A.Cantab, M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Physician to the Royal Free Hospital, Gray's Inn Road.

BAILY, Edwin, M.D., appointed Admiralty Surgeon and Agent at Oban.

BAUMANN, E. P., M.B., Ch.B.Edin., M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Glasgow Royal Infirmary.

BILL, John Francis, M.B.Lond., M.R.C.S., L.R.C.P., appointed Second Assistant Medical Officer to the Lewisham Union.

BOWES, W. H., M.D., B.S.Lond., F.R.C.S.Eng., appointed Medical Superintendent to the the Plymouth Borough Lunatic Asylum. *vice* A. N. Davis, L.R.C.P., L.R.C.S.Edin., resigned.

BROMET, E., M.A.Cantab, M.R.C.S., L.R.C.P., appointed Medical Officer to the Reigate and Red Hill Cottage Hospital.

CRAWFURD, Raymond H. P., M.A., M.D.Oxon, M.R.C.P.Lond., appointed Assistant Physician to King's College Hospital.

DAUNT, W., L.R.C.P., L.R.C.S., appointed Medical Officer for the No. 4 District of the Holborn Union.

FULLERTON, Andrew, M.D., B.Ch., appointed Honorary Assistant Surgeon to the Belfast Hospital for Sick Children, Queen Street.

HARRIS[illegible], M.B., C.M.Edin., appointed Junior House-Surgeon to the Birmingham and Midland Eye Hospital, Birmingham.

HEMMING, J. J., M.R.C.S.Eng., L.S.A.Lond., appointed Medical Officer to the Margate District of the Isle of Thanet Union.

HODGSON, John, M.B.Lond., M.R.C.S.Eng., appointed Honorary Surgeon to the Oldham Infirmary and Medical Officer to the Oldham School Board.

JUDD, George, M.B., C.M., appointed Medical Assistant to the Dundee Royal Lunatic Asylum.

LEG[illegible] M.B.Lond., F.R.C.S., appointed Senior Resident Medical Officer to the Royal Free Hospital, Gray's Inn Road.

MARS[illegible], M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Swansea Hospital.

MOOR[illegible] M.B., C.M., F.R.C.S.Edin., appointed Resident Surgical Officer to the Birmingham and Midland Eye Hospital, Birmingham.

NI[illegible], M.B., Ch.B., appointed a Clinical Assistant at the Chelsea Hospital for Women.

NICHOLS, W. R., M.D.Toronto, appointed Clinical Assistant at the Chelsea Hospital for Women.

NOBLE, H. P., M.B., B.S.Lond., M.R.C.S., L.R.C.P., appointed Honorary Anæsthetist to the National Dental Hospital.

PEGG, John H., B.A.Cantab, M.R.C.S.Eng., L.R.C.P.Lond., appointed Casualty House-Surgeon to the Royal Free Hospital.

POLLARD, Frederick, M.D.Lond., M.R.C.S., appointed Divisional Surgeon, Metropolitan Police, [illegible] Westbourne, M.R.C.S., deceased.

POWELL, J. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Workhouse and Fever Hospital, Eston, of the Middlesbrough Union.

PROCTER, O. L., M.B., C.M.Edin., appointed Medical Officer for the Dawley District of the Madeley Union.

SHOOLBRED, W. A., M.R.C.S.Eng., L.S.A., appointed Deputy Coroner for the Manor of Chepstow, *vice* Mr. E. Lawrence, resigned.

THOMPSON, Henry E., M.B.Lond., M.R.C.S.Eng., appointed Senior House-Surgeon to the Birmingham and Midland Eye Hospital, Birmingham.

WALTERS, A. R., M.R.C.S., L.R.C.P., L.S.A., appointed Medical Officer to the Reigate and Redhill Cottage Hospital.

WATSON, H. J., M.D.Toronto, appointed a Clinical Assistant at the Chelsea Hospital for Women.

WEARNE, Walter, M.R.C.S.Eng., L.S.A., reappointed Medical Officer of Health to the Helston Town Council.

WILLIAMS, Dr. R. J., appointed Medical Officer to the Cwmavon Steel and Iron Works, *vice* J. R. James, M.R.C.S.Eng., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Dr. Whistler: Syphilis as it Affects the Larynx.

Odontological Society of Great Britain, 40, Leicester Square, W.C., 8 P.M.—The President (Mr. John Fairbank) will deliver his introductory address, and a paper will be read by Mr. Storer Bennett on Ankylosis of Human Teeth to the Jaws.

TUESDAY.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Alcoholic Insanity, Insanity with Syphilis, Insanity with Organic Brain Disease. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Seborrhœa.

National Hopital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Ormerod: Muscular Atrophy.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. T. D. Savill: Cases of Muscular Tremor.

Royal Medical and Chirurgical Society, 8.30 P.M.—Dr. St Clair Thomson: Cerebro-spinal Fluid from the Nose escaping Spontaneously; full report of one case, and a consideration of twenty others occurring in literature, most of them with Cerebral Symptoms and some with Retinal Changes; a patient exhibiting this condition will be shown, and will be in the rooms of the Society from 8 P.M.

WEDNESDAY.

Hospital for Consumption, Brompton, 4 P.M.—Dr. Acland: Cases illustrating Types of Tuberculosis, with special reference to Diagnosis and Prognosis.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Sanitary Appliances, etc.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. A. Whitfield: Methods of Examining the Blood.

Hunterian Society, 8.30 P.M.—A discussion will be opened by Dr. Goodall and Dr. Washbourn, on the Antitoxin Treatment of Diphtheria.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 P.M.—Dr. Walter G. Smith (Dublin) on Pityriasis Rubra.

THURSDAY.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture or Demonstration of Recent Specimens.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Dr. Green: Cases in the Wards.

Royal College of Physicians of London, 5 P.M.—Dr. W. M. Ord: The Bradshaw Lecture on Myxœdema and Allied Conditions.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Mr. Golding-Bird: Clinical Lecture.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

British Gynæcological Society, 8.30 P.M.—Specimens by Mr. Tenison Collins, Dr. Macpherson Lawrie, Dr. Purcell, and Mr. C. Ryall. Adjourned discussion on Mr. Christopher Martin's paper on Some Moot Points in the After-treatment of Cases of Abdominal Section. Paper by Mr. Stanmore Bishop: Combined Abdominal and Vaginal Section in Cases of Pelvic Surgery.

Ophthalmological Society of the United Kingdom, 8.30 P.M.—Card Specimens at 8 P.M. Papers:—Mr. Priestley Smith: Suggested Explanation of Tscherning's Observations in accordance with the Accommodation Theory of Helmholtz. Mr. Arnold Lawson: Tumour of the Optic Nerve Sheath.

FRIDAY.

Clinical Society of London, 8.30 P.M. Mr. Howard Marsh: Sarcoma of the Synovial Membrane of the Knee-Joint. Dr. Newton Pitt: Hyperpyrexia in Cases of Pulmonary Disease. Mr. Clement Lucas: A Case in which twenty-seven and a-half inches of the Bowel were removed by Murphy's Button. Mr. Arbuthnot Lane: Two Cases of Deficiency of the Ulna treated Successfully by the Insertion of a Rabbit's Femur. Mr. Campbell Williams: Lingual Chancre from Indirect Contagion, which tends to show that Syphilitic Virus can remain Active in the Dried State for over Two Months.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M.—Professor Crookshank: Actinomycosis and Glanders, etc.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. A. Whitfield: Methods of Examining the Blood.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M.—Dr. T. D. Savill: The Poor-Law Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

FRANCIS.—On October 29th, at Arnold, Notts, the wife of Harvey Francis, M.B., M.R.C.S., of a son.

WINTER.—On October 25th, at Chartham, near Canterbury, the wife of Laurence A. Winter, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MARRIAGES.

BOWEN—PARRY.—On October 26th, at Llanwenarth Baptist Chapel, Govilon, by the Rev. John Davies, Cadle, Swansea, assisted by the Rev. T. H. Williams, Pastor, Elias Lawson Bowen, M.D., of Crickhowell, Breconshire, youngest son of Daniel Bowen, Esq., Ravenhill, Swansea, to Margaret Elizabeth, younger daughter of John Parry, Esq., Grey Hall, Llanwenarth and Cwmbrau, Monmouthshire.

HERBERT—SYKES.—On October 26th, at St. Stephen's and All Martyrs, Darcy, Lever, Bolton, by the Rev. H. J. Adams, M.A., Vicar, William Herbert, M.R.C.S., L.R.C.P., Richmond, Surrey, to Lucy Gertrude, daughter of Thomas Sykes, Esq., The Haulgh, Bolton, Lancs.

ROBERTSON—HUTCHISON.—At St. Stephen's Church, Maryborough, Queensland, on August 18th, by the Rev. Dr. Knipe, J. Crawford Robertson, M.D., C.M., to Wilhelmina, third daughter of W. F. Hutchison, 9, Princes Street, Pollokshields.

TERRY—HUNT.—On October 5th, 1898, at Holy Trinity Church, Wimbledon, by the Rev. W. E. Terry, M.A., Vicar of Ellistown, Leicestershire, brother of the bridegroom, John Terry, L.R.C.P.Lond., M.R.C.S.Eng., son of Wm. Terry, Esq., solicitor, of Northampton, to May, eldest daughter of Wm. Hunt, Esq., of Wimbledon.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 2.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Opthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W., S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Tu., 9; Dental, Tu., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Opthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Opthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 1.3; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 3; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.
ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynecological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynecological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 3; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 3; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 1.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

W. W. S., a medical man, wishes to know where he could go to break off the morphine habit acquired within the last two years.

J. H. G. desires to hear of someone who would take a gentleman addicted to drinking as a boarder. The friends can pay fairly well.

M. asks to be recommended a home for aged men in or near London. One of the better class is desired, and the patient's friends are prepared to pay about £50 per annum.

THE NEW VACCINATION ORDER.

DR. D. CAMPBELL (Calne) writes: At page 18 of the General Order, Clause 5, Instructions to Public Vaccinators, it is stated that "*Under no circumstances should the mouth* be applied to the tube to expel the lymph....An artificial blower may be used." Where can such a blower be had that will fit a capillary tube?

THE TRAINING OF MIDWIFERY NURSES IN THE PROVINCES.

IPECAC writes: I should be glad to learn whether any of the large provincial towns offer facilities for the training of certificated midwives and monthly nurses, also the length of period of training and probable cost. Could a person desiring such a training and certificate obtain it by attendance at the obstetric wards of any of the large workhouse infirmaries? I should also be pleased to hear of a textbook suitable for a woman commencing the study of midwifery who has no present knowledge of anatomy.

SANATORIA FOR THE OPEN-AIR TREATMENT OF PHTHISIS.

M. S. J. desires to hear of a sanatorium for the open-air treatment of phthisis which would take a working man whose friends could pay from 5s. to 8s. a week. Our correspondent also asks for the address of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

*** As to the first point we know of no place other than the National Sanatorium at Bournemouth. The address of the Association referred to is 20, Hanover Square, W., and the Honorary Secretary is Dr. StClair Thomson, who will supply all information.

TREATMENT OF ERYSIPELAS.

PERSIA would be glad of suggestions for the treatment of a case of erysipglas of the leg, which recurs every hot weather. Exposure to the sun's rays or to cold appear to be exciting causes, as also any trivial abrasion of the part, such as that caused by the bite of an insect. Sometimes several attacks occur in one season, but never in the cold weather. Considerable œdema of the foot results, lasting for several months. In severe attacks suppuration occurs. Advice is chiefly asked for as to any prophylactic measures for warding off an attack during the hot season of the year. The patient is a male Armenian, of about 50 years of age, and is an inhabitant of the Persian Gulf.

"THE LAWS OF HEALTH."

E. W. E. asks to be recommended a book suitable to read for a course of popular lectures (six in number) on the Laws of Health, to be given under the Technical Education Committee of the County Council.

*** Our correspondent might consult any of the following works: *Practical Domestic Hygiene*, by J. Lane Notter, M.A., M.D., and R. H. Firth, F.R.C.S. (London: Longmans, Green and Co. 1897. 2s. 6d.). *Elementary Textbook of Hygiene*, by H. R. Wakefield (London: Blackie and Son. 1892. 2s.). *The Laws of Health*, by W. H. Corfield, M.D. (London: H. K. Lewis. 1880. 1s. 6d.). *Home Hygiene*, by J. F. J. Sykes, D.Sc., M.D. (London: St. John Ambulance Association. 1s.).

THE RETAINER SYSTEM.

COLONIAL SURGEON.—We are asked by a colonial surgeon to say whether a junior medical officer would be justified in endeavouring to keep for himself the practice connected with certain mercantile firms who pay an annual retainer to his senior officer, which practice had been confided to his care during the absence of his senior officer at home on leave.

*** We are of opinion that it would be most improper conduct, and quite opposed to the ethical principles upon which medical practice is conducted. It is a recognised principle that whenever we do the work of a brother practitioner we are absolutely precluded from seeking to gain any personal advantage thereby.

CONSULTANT AND GENERAL PRACTITIONER.

G. P. asks (1) whether it is in accordance with ordinary medical usages for a consultant to compete with general practitioners in appointments to insurance companies and workhouses? and (2) whether general practitioners should support a consultant who does these things?

*** In reply we must say that it is quite usual for consultants to take insurance examinerships, but it is unusual for them to seek workhouse appointments except where, as in Birmingham for example, the appointments at the workhouse infirmary have been created for and given to practitioners of the consultant class.

The answer to the second question depends very much upon the view generally taken by the practitioners in the town. There can be no doubt that a friendly remonstrance from them would have the effect of checking any undesirable competition.

FATTY CASTS IN DIABETES.

DR. S. J. ROSS, of Bedford General Infirmary, writes to ask whether any of our readers have ever noticed the presence of fatty casts in the urine of diabetic patients appearing just before the onset of or during the stage of coma.

*** We believe it was Dr. Maguire who first drew attention to the presence of large numbers of hyaline and granular casts in the premonitory stage of diabetic coma. His observation has been recognised to be quite correct as a rule, but the appearance of the casts is not so constant or of such prognostic value as was at one time thought.

ANSWERS.

THE only suggestion we can make is that "Scotus" should communicate with a firm of surgical instrument makers who deal in second-hand instruments.

L.—We are informed that *Elementary Lessons in Physical Geography* by Professor Sir Archibald Geikie (London: Macmillan and Co. 1897. 4s. 6d.) will probably meet the requirements of a candidate for the Indian Medical Service.

FRECKLES AND SUPERFLUOUS HAIRS.

DERMA writes: "Practitioner" will find the following formulæ useful in preventing and curing freckles: (1) ℞ Pusol., 3ij; bismuthi oxychlor., 3ss; ichthyol, gr.xv; ung. zinci ox., 3j. M. ft. pasta. Apply at night. (2) ℞ Pulv. amyli, 3ss: pusol., 3ij. M. ft. pulv. For use by day. Gently rub into the face by means of chamois leather. If the skin gets too dry or chappy, substitute glycerine and rose water for a week. Superfluous hairs should be removed by electrolysis.

ST. JOHN AMBULANCE ASSOCIATION LECTURES.

AN IRISH MEMBER.—The usual fee for the five lectures on First Aid, according to the Syllabus of the St. John Ambulance Association is £5 5s., but it many instances the lectures are given gratuitously, and sometimes the lecturer will accept a smaller fee. The Association pay nothing; the money has to be obtained from the members of the class or from philanthropic persons interested in the movement. The only expenses, beyond remuneration of the lecturer, are the provision of a suitable room for the lectures, and the practical demonstrations which must be given in connection with the lectures, the provision of diagrams, etc., which can be hired for a moderate sum—perhaps £1 or 30s. from St. John's Gate—and the provision of bandages, splints, and textbooks. The St. John Ambulance Association receives £1 1s. for the examiner and his expenses, and also the value of the medallions if they are won.

NOTES, LETTERS, Etc.

ERRATUM.—In the report of the case of shark bite at Aden published in the BRITISH MEDICAL JOURNAL of September 24th, page 897, Captain J. Lloyd T. Jones, M.B., I.M.S., was incorrectly described as M.D. and as of the R.A.M.C.

BINIODIDE OF MERCURY.

DR. A. HANBURY FRERE (Stradbroke) writes: I am greatly obliged to Mr. F. R. Jones for his note on above (BRITISH MEDICAL JOURNAL, October 1st). But I think the problem may be more clearly stated by saying that a solution of $HgCl_2$, 1 in 1000, becomes approximately a solution of HgI_2, 1 in 600, on the addition of KI, so that six ounces of such a solution diluted to ten ounces would be 1 in 1,000, HgI_2.

I may say, however, that the solution of biniodide prepared as stated in my former note is not found to be too strong, and diluted with equal parts of water forms an excellent lotion for wounds. The same preparation may be given internally in the same doses as the *B. P.* solution of corrosive sublimate. This is but a point in favour of the biniodide as compared with the bichloride, because an actually stronger solution of the former may be employed without the dangers or drawbacks attaching to the latter.

ADDRESSES TO STUDENTS.

ANTIHUMBUG, in the course of a letter on this subject, writes: The universities of Oxford, Cambridge, and St. Andrews, the public schools of England, professors and students of medicine, and the British public itself, have all more or less reason to feel sore in consequence of the exhilarating exercise indulged in by Dr. Saundby, at Cardiff. To the students Dr. Saundby said: "But if I cannot promise that you will all become medical baronets, or even medical knights, I can assure you that there is no profession in which success more certainly attends attention to business, or in which so good an income can be as readily secured." Many of the students thus addressed by Dr. Saundby will find to their cost that to make a living as *bonâ fide* general practitioners is an absolute impossibility. In order to live they will require to adopt some of the miserable expedients now so common in the profession. They will become familiar with penny-a-week clubs, medical aid societies, and cheap dispensaries; and they may become adepts in the delicate art of advertising as now practised by men in all ranks of our overcrowded profession.

POISONING BY THE PRIMULA OBCONICA.

DR. CARSTAIRS DOUGLAS (Glasgow) writes: In the BRITISH MEDICAL JOURNAL for October 15th Dr. Leighton describes a case of this kind with recurrence of symptoms at intervals of eight and sixteen months, and asks how long a patient should be liable to these recurrent attacks. I have had several cases of poisoning by this plant under my care, but have never seen one where there was any recurrence in the absence of definite cause. Believing that the poison lay latent in the body for a period of nearly two years, it would be right to inquire very carefully whether or not the patient had had any opportunity of handling this plant again, and also whether the subsequent attack is not to be explained by the action of some totally different irritant producing symptoms very similar to those of this species of primula. The poison of this plant can certainly produce very marked toxic effects. The local condition may range from a mild erythema to a sharp dermatitis, while the constitutional disturbance may at once suggest septic poisoning. I have had cases both mild and severe, but have never seen a recurrence where the plants were not touched again; and I think Dr. Leighton may rest assured that his patient will not suffer in this way again if he keeps clear of this pretty but often harmful flower. In treatment I have found the local application of glycerine and belladonna, with the exhibition internally of a smart aperient and a febrifuge mixture, of much value in promoting a cure and very conducive to the comfort of the patient.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. C. E. Ady, London. **B** Beatle; Mr. H. S. Basden, Stanford-le-Hope; Mr. W. Barnes, Rhyl; E. G. Bull, M.B., Birmingham; Messrs. Bowen and McKechnie, London; Dr. W. H. Bowes, Ivybridge; Professor Buckheim, London; Dr. A. Bronner, Bradford; Mr. W. F. Brook, Swansea; Mr. L. A. Bidwell, London; Beechcroft; Messrs. Barber and Co., Derby; Dr. W. Broadbent, Brighton. **C** Mr. W. McE. Clendinnen, Croseley; Mr. R. A. Cane, Woodhall Spa; Mr. T. Cockram, Richmond; Miss G. E. Coxon, Surbiton; Dr. W. H. Crago, Sydney; Dr. D. Campbell, Calne; C. D.; Dr. J. M. Clarke, Clifton; Dr. G. W. O'F. Clark, Downpatrick; Dr. C. Claremont, Southsea. **D** Mr. B. Dellancy, Southend-on-Sea; Mr. G. W. Lawson, London; Mr. E. D. Dickson, Constantinople; Mr. G. H. De'Ath, Buckingham; Derma; Mr. H. D. Didama, Syracuse; Dr. J. McP. Dougall, York; Dr. A. T. Davies, London. **E** Mr. H. Ellis, Lelant; Mr. W. R. Edwards, London; E. W. **F** Dr. A. Fullerton, Belfast; Dr. P. J. Freyer, London; Mr. W. T. Freeman, Reading; W. H. Fowler, M.B., Edinburgh; E. B. Fuller, M.B., Cape Town Fairplay; Mr. H. Frowde, London. **G** A. Griffiths, M.B., Falkirk; Mr. F. R. Gregson, Kemnay; Mr. H. R. Greene, Belvedere; Dr. A. E. Giles, London; Mr. A. S. Ghosh, London; Dr. J. Galloway, London; Mr. A. S. Goff, Lynton. **H** Mr. F. Hobday, London Dr. C. F. Harford-Battersby, London; Mr. T. G. Horder, Cardiff; Mr. J. Hussey, Farnham; Mr. S. Harman, Maidstone; J. Hodgson, M.B., Oldham. **I** Ipecac.; Mr. R. W. Y. Ives, Portswood. **J** Dr. L. L. James, Rochfsrd; Mr. H. H. Jennings, London; Mr. F. H. Jacob, Westbury; Dr. J. J. Johnston, Bolton; Miss M. S. Jevons, London; J. H. G. **K** Mr. A. F. S. Kent, London; J. M. M. Kerr, M.B., Glasgow; Kismet; Mr. E. P. King, Chepstow; Mr. E. Kent, London; Dr. A. Kinsey-Morgan, Bournemouth; Mr. J. Keen, Waddesden. **L** Mr. C. W. Lawson, G island; Miss E. F. Lamport, London; Miss Lankester, London; Dr. T. D. Lister, London; Dr. A. G. Levy, London; Mr. H. Littlewood, Leeds; Mr. P. G. Lee, Cork: Dr. O. L. Levy, London; G. Lawrence, M.B., Dundee. **M** A. McCullock, M.B., Tarporley; C. G. MacVicker, M.B., Bridgwater; W. J. McCardie, M.B., Birmingham; M.; Dr. H. M. Montgomerie, Penzance; Mr. J. L. D. MacCormac, Leicester; Mr. L. C. Moore, London; Dr. R. B. McVittie, Dublin; E. C. Moore, M.B., Birmingham; Member: Dr. S. H. C. Martin, London; J. Malcolm, M.B., Edinburgh; Medicus; Dr. J. S. Mackay, Kirkcaldy; Mr. J. J. de Z. Marshall, Teddington. **N** Dr. J. Neil, Oxford; Mr. A. Neve, Edinburgh; Dr. A. Newsholme, Brighton; Mr. H. P. Noble, London. **O** Mr. A. J. Oldman, Llandudno. **P** Mr. D. Paulin, Edinburgh; Rev. T. Perkins, Blandford; Public Vaccinator; S. A. Powell, M.B., Kalain, India; Dr. F. Pollard, London; Dr. J. L. Paul, London; Dr. T. D. Pooole, Wolverhampton; Pioneer; W. H. Parry, M.B., Llanrwst. **R** W. Ramsden, M.B., Oxford; Red Cross Society, The Secretary of the, London; Dr. D. M. Ross, Bournemouth; Dr. W. R. Rice, Coventry; S. J. Ross, M.B., Bedford; Dr. J. Rorie, Dundee. **S** Dr. R. Sevestre, Leicester; Mr. F. C. Simpson, Great Berkhamsted; Mr. C. L. Sansom, London; Dr. W. K. Sibley, London; Mr. H. J. Sequeira, London; S.; Dr. T. D. Savill, London; Scotland; Dr. E. M. Shirtliff, Ryde; Dr. H. Schmitz, West Hartlepool: Student. **T** Mr. J. L. Thomas, Cardiff; Mr. S. Thistlethwaite, Manchester; Mr. J. Terry, Daventry; Mr. L. A. Tallerman, London. **V** "Verulam Review," The Editor of the, Milford-on-Sea. **W** Mr. W. E. Wyllys, Great Yarmouth; J. Waters, M.B., Reigate; Mr. H. S. Walker, Leeds; Dr. F. Willcocks, London; Mr. E. S. Wood, Cambridge; Mr. R. H. Wolstenholme, Salford; W. F.; Dr. A. O. Ward, London; Mr. A. P. Wells, Beckenham; Mr. A. W. Young, London etc.

BOOKS, ETC., RECEIVED.

La Chirurgie intramédiastinale postérieure. Par Dr. J. Potarca. Paris: J. Carre et C. Naud. 1898.

The Surgical Anatomy of the Glands. By C. H. Leaf, M.A., M.B., F.R.C.S. London: Archibald Constable and Co. 1898. 10s 6d.

Formes Cliniques et Traitement des Myelites syphilitiques. Par Gilles de la Tourette. Paris: J. B. Baillière et Fils. 1899. Fr.1.50.

Ueber fibrinöse Entzündung der serösen Häute. Von E. Ziegler. Jena: Gustav Fischer. 1898.

Domestic Hygiene. By A. W. Williams, M.B., C.M., D.P.H. London: George Bell and Sons. 1898. 1s. 6d.

Diseases of the Heart and Aorta. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Edinburgh and London: Young J. Pentland. 1898.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons Edinburgh. By C. W. Cathcart. Vol. II. Edinburgh: James Thin. 1898. 7s 6d.

Disinfection and Disinfectants. By S. Rideal, D.Sc. Second Edition. London: Sanitary Publishing Company. 1898.

A Directory for the Dissection of the Human Body. By J. Cleland, M.D., LL.D., F.R.S., and J. Y. Mackay, M.D. Fourth Edition. Glasgow: J. Maclehose and Sons. 1898.

Atlas of External Diseases of the Eye. By A. M. Ramsay, M.D. Glasgow: J. Maclehose and Sons. 1898.

Manual of Bacteriological Technique and Special Bacteriology. By T. Rowhill, F.R.C.V.S., F.R.C.S. Edinburgh: Oliver and Boyd. 1899. 218.

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The pathology of myxœdema, so far as it is at present known, will doubtless form a part of the lectures which Dr. George R. Murray, of Newcastle, will deliver before this College next year. In the present lecture I propose to devote my attention mainly to the clinical aspect of myxœdema, its recognition, its differential diagnosis, and its treatment.

Diagnosis.

The primary diagnosis of the disease is not always so easy as might be expected from the observation of well-pronounced or typical cases. This is true, indeed, of all kinds and manner of disease. Whatever be the disease, it is necessary, in the first place, whether we do it consciously or not, to construct a picture of such disease in its full development, including, first, the main and most important symptoms; then, next, the less frequent and less characteristic symptoms: thirdly, accessory symptoms of varying value in various cases. Such a picture cannot be constructed by making a mere list of symptoms. It is necessary, by careful comparison of a considerable number of cases, and also by bestowing careful regard on the relations of symptoms to etiology, to make the picture a carefully shaded one: to put into strong relief that which is most important, and that which is less and less important further and further in the background. The picture must, in a word, have its perspective and its coloring carefully drawn and filled in. Such a process, carried on in a more or less methodical manner, must be applied to the separation in our minds of diseases and of their subjects from one another before we are able to write down the primary naming of any disease, of which there may often be many forms.

As the knowledge of myxœdema grows, by the addition of new cases to our original list, it becomes evident that around our well-defined picture are to be found forms more or less obscure; in part because of incomplete development of the whole series of symptoms, in part also by reason of curious modifications of myxœdema constituting alliances with diseases to which the term "myxœdema" cannot with propriety be applied.

Classification of Symptoms.

Let us now endeavour to make a classified list of the signs and symptoms of myxœdema. The first lines which we draw in firmly in limning the disease are those connected with the external appearance of patients, such as the increase in the size and bulk of the whole body, due evidently in part to changes in the skin, in part to changes in the subcutaneous tissue. Next, the changes in the skin, affecting more or less the whole surface, and determining changes in the appendages of the skin, in the hairs, in the glands, and in the organs of touch. In correlation with the changes in the skin we have to take note also of altered states of mucous membranes resembling those observed in the skin, and leading again to destruction of appendages, such as the teeth and the glandular structures. It is here a point of much importance to remember that the swelling of the skin and mucous membrane is not an ordinary dropsical swelling, does not in any way gravitate from the upper parts of the body to the lower, and does not in any part pit on digital pressure, but is firm and resilient.

Next comes a group of symptoms indicating in various ways impairment of the functions of the nervous system, such as slowness in muscular movement and tardiness in response to impressions made upon the surface of the body, slowness in thought and action, weakening of memory, disturbance of the balance of muscular actions in the limbs. With these we must associate the quality of the speech and the sound of the voice perfectly typical of the disease, and dependent apparently on the combined effects of the swelling of the lips and fauces, of failure of the movements of the muscles within the swelling, and of default of nervous power in controlling the action of muscles. Further, beyond the above-mentioned signs of dilapidation we may find various degrees and kinds of mental aberration, and certain mental phenomena, which may be fairly called "peculiar" up to a certain point.

Symptoms of Second Degree.

The next in the rank of important signs may, I think, fairly be taken to be the lowering of the temperature of the body, rarely, if ever, absent when the disease is fully pronounced. A less common symptom than those already enumerated is the tendency to hæmorrhage following comparatively slight injury, the hæmorrhage being most commonly in the skin or mucous membrane, but sometimes in internal organs.

Partly with special regard to etiology, we have to consider the question of sex, noting that the affection is very predominantly one of the adult female. In all diagnoses, negatives have be marshalled among sources of help. We shall find that there is no affection of viscera which can be called characteristic of myxœdema, although in the course of the disease visceral affections may arise, chiefly from the operation of external and new causes, not wearing, so to speak, the uniform of the higher groups.

After passing in review the components of the several groups of symptoms and conditions above classified, the relations of the thyroid body assume great importance, seeing that certain changes in that body and its functions are in effect causative of myxœdema.

Another set of changes belong to other diseases which, in this aspect, have some sort of alliance with it and help us to its explanation.

We may now amplify the elements of each group of symptoms in succession.

Detail of Symptoms.

The often vast and quivering bulk of the body is, I have already said, partly brought about by alteration in the skin and partly by developments of fat beneath the skin. It is doubtless often also due in part to alterations in the muscles and viscera, all partaking of the nature of the change most readily noticeable in the skin. The skin is found to be everywhere dry, and often in many parts is clearly very much thickened in its epithelial layer as well as in the derm. It is exceedingly rough and harsh to the touch, so that, as a patient once remarked, you might almost strike a match upon it—an experiment which, I may say, I have never yet attempted. The varying connections of the skin with the deeper tissues involves considerable variety in the appearance of the swollen parts. For instance, the loss of natural expression is at once forced upon one's notice. The skin on the cheeks and forehead is very obviously translucent, dry and firm to the touch, but not nearly so harsh to the rubbing touch as elsewhere. Both upper and lower eyelids are much swollen, and the upper lids droop heavily over the eyeball. They are almost transparent, and look, at first sight, like the eyelids of persons suffering from acute renal disease, but they do not in the least present any pitting on pressure. As a result of the drooping of the upper eyelids, the eyebrows are mostly raised in various degrees, sometimes to a very considerable extent, by the effort to elevate the upper lids above the level of the pupils. The ake nasi are generally particularly thickened and translucent, giving rise to a broadening of the whole nose. The upper and lower lips alike are so swollen as to destroy the natural expression of the mouth, and to reduce it to ltttle more than a chasm between the inflexible margins. The ears are usually both very much enlarged and thickened. The total effect is that of a mask of sorrowful immobility. There is in this a remarkable resemblance of myxœdematous patients one to the other.

In examining the body, one, of course, generally takes note at once of the condition of the thyroid body, although this has no direct relation on the state of the skin. On each side of the neck above the clavicles we usually find large soft projections. Sometimes they are called "dough-like," but they are not plastic like dough, and convey to the touch the same kind of sensation that might be yielded

by a large ripe tomato embedded beneath the skin. These projections, as you know, are partly fat, partly changed connective tissue, and, possibly, in part veins. They are, as you know, also very characteristic of that modification of myxœdema which is observed in sporadic cretinism. The abdomen is usually particularly large and often pendulous. In the hands and feet, most noticeably in the former, the changes in the skin determine a great thickening and coarsening of these members. In the hand the digits while swollen are much flattened out, and, when the hand is extended, no spaces separate one finger from another. The resulting conformation of the hands has been aptly called by the late Sir William Gull "spade-like." The altered hands lose, like the face, what we may call the natural expression, and lose also their delicacy of movement.

Among the earliest manifestations of the disease is a change in the hair, which becomes rough, loses its natural lustre, and breaks very readily, becoming after a time very ragged and very intractable in the toilet. The hair thus altered speedily falls off, both from the head and from the eyebrows; not before, however, the latter, if well developed, have passed through a stage of raggedness which is brought into prominence by their raised position. The eyelashes undergo similar disfiguration, are always much broken, and often are lost altogether. The hair over the body also dwindles and falls off, and the nails, although they rarely go so far as to complete atrophy, are wasted and brittle. It is perhaps mostly in the hands and feet that the extreme roughness of the skin is most developed, the highest degree of this change occurring on the sole and the heel.

Mucous Membranes.

All visible mucous membranes exhibit alterations parallel with those of the skin. In the mouth it is evident that the swelling of the lips is very much compounded of mucous membrane. The cheeks project in between the teeth, are marked by them, and are very apt to be bitten. The tongue is very large and generally very anæmic. In the fauces we can see the changes of mucous membrane generally most pronounced. The uvula and soft palate press down upon the tongue as a somewhat firm, very translucent, and imperfectly movable mass. Similar changes may be seen in the vulva and vagina. The teeth almost invariably undergo impairment of nutrition, sometimes becoming brittle and falling to pieces, sometimes coming out whole without much obvious alteration in structure. The gums are usually greatly swollen, and yet recede from the teeth, tending to become ulcerated and to bleed on the very slightest provocation. The most obvious explanation of the decay of the hair and teeth, and of the dryness of the skin, is to be found in an extremely swollen change of the connective tissue in the skin and mucous membranes. The connective tissue becomes firm and resistent, ultimately encroaching on the pulp of the teeth, on the follicles of the hairs, and on the sebaceous and sudoriparous glands. Whether these changes in the connective tissue be in part of neurotrophic origin is a question to be considered, but at present not fully capable of answer. It is important, however, to know that under certain treatment, hereinafter to be set forth, the skin, losing its swollen character, resumes its functional activity, and the hair frequently returns, also in a healthy form, over what have appeared to be bald surfaces. The swelling of the body is, however, not always uniform or constant. It may, and usually does, appear most strongly in the face and supraclavicular regions. It may, however, be found in the limbs, or in the abdomen, before involving the face and neck. It may in early stages disappear altogether for a time, or it may be transferred from one region to another. The face is particularly subject to alterations in the amount of swelling, generally in association with changes in symptoms, more especially nervous symptoms, disappearance being followed by headache or neuralgia, recurrence by relief of these conditions.

Nervous and Muscular Changes.

Tactile sensation all over the body is in typical cases diminished. This can doubtless be explained in part by the alteration of the connective tissue in and around nerve endings, but it is also in some cases clearly traceable to defect in the central receiving nervous system. The defect of sensation is of course particularly noticeable in parts which depend for much of their usefulness upon very delicate and sensitive nerves. The fingers notably lose not only mobility, but also accurate sense of touch, which is very plainly demonstrated when a patient endeavours to fasten or unfasten a button or pick up a pin from the floor. There is also a tendency to drop things held in the hand. Not only, however, is the sense of touch blunted, but the recognition by the central perceptive organs of impressions made upon the periphery is distinctly retarded.

In certain circumstances the skin entirely loses sensibility in parts. A lady whom I have seen recently, and who presents fairly typical myxœdema, has from time to time sudden increase in the swelling of the feet and hands accompanied by a complete loss of sensation over restricted areas of no particular form. When, as happens from time to time, the swelling passes away, sensation is restored to the same condition as in the rest of the body. We may find, therefore, both bradæsthesia and anæsthesia in myxœdema.

The special senses are sometimes affected, particularly the sense of smell and the sense of taste, offensive odours being complained of where no signs of such odours appear to be present, and tastes of excessive sweetness, or acidity, or bitterness, most commonly the sweetness, being present in the mouth.

As regards the muscular system, there is in all cases a marked debility and tendency to ready exhaustion by exertion, sustained action of muscles evidently using up their power very rapidly. The complaint of excessive muscular weariness is one of the next that we have to listen to, and sometimes the failure of muscles leads to very distressing results. Patients sometimes are unable to keep the head erect. For the most part, both in the erect and sitting posture, the head falls forward with the chin on the upper part of the chest, and cannot be restored to its proper position without assistance from the hands, either of the patient or of a nurse. Sometimes the head when restored to its position, or a little beyond the proper position, falls backward with a rapid movement enough to cause anxiety as to the occurrence of injury consequent upon the jerk. Such loss of balance in the movements of the muscles supporting the head seems to exist throughout the whole system, and is readily noticed in the gait of well-marked cases. I have seen this most often of course in women, who are the most frequent victims of the disease. If asked to walk, they rise from the sitting to the erect posture with a somewhat tremulous effort; they sway somewhat in standing, and in walking present a quivering of all the muscles of the body, particularly of the legs with each step. Their movement in walking is such as might be expected to attend great nervous excitement with difficulty to restrain it, and is not altogether without a suggestion of stateliness, such as might be represented upon the stage. Not infrequently the want of co-ordination in flexors and extensors which leads to this quivering movement goes so far as to determine sudden falls, not caused by the feet coming in contact with obstacles, but by giving way of the knees. The patient falls suddenly into a kneeling position, and often experiences serious injury, sometimes even incurring fracture of the patella. This form of nerve weakness may persist even after the disappearance of the main symptoms already noted.

The speech of the myxœdematous patient is, so far as I know, unlike any other modification of speech in disease. There is an obvious difficulty, in the first place, in getting words out of the mouth. They seem to stick at the lips, and their ultimate pronunciation is accompanied by either a writhing of the upper lip, or by a puffing, explosive jerk of the word through the chasm between the comparatively immovable lips of the patient with advanced disease. The quality of the voice is nasal and leathery, the tone monotonous, and at the same time speech is frequently interrupted by little explosions through the nostrils. The words uttered, although somewhat blurred, are usually correctly framed, and, for the most part, accurately represent what is in the mind. Sometimes, however, patients will state that they have words in their mind which they are unable to put into speech. In spite of the slowness and painfulness of utterance the patients are disposed to talk at great length;

once started in conversation they tend to go on indefinitely. I have known a patient talk continuously for an hour, or even more, without interruption, save for drawing the breath at frequent intervals, and without taking apparent notice of a remark or question intended to break the prolonged monologue.

In connection with speech, it must be remarked that the patients in many cases write letters, also at great length, and that as a rule the handwriting is good and monotonously regular, the difficulties already mentioned in respect of the movements of the fingers not appearing to interfere with the use of pen or pencil.

The voice, which I have tried to describe, with its monotonous flow and leathery intonation, is, once heard, almost in itself a ground for diagnosis of the whole disease. It has occurred to me to hear a patient speak outside the door of my consulting-room and to recognise the disease before I had actually seen the subject. It has occurred also under my observation that patients in hospital under treatment for myxœdema would detect in the voice of a newcomer the existence of the malady and would say, "That's my disease." The imperfections in speech are not always so complete as in the typical cases which I have described. It sometimes happens that the elocution is only comparatively slow, and the existence of a difficulty is not fully understood until after treatment. Then it is frequently found that the patient naturally speaks very quickly and with excellent elocution, which has only been modified in a minor degree. It is, of course, obvious that not infrequently the loss of teeth complicates matters and increases the difficulty of articulation.

If the treatment of myxœdema in any case be successful, natural speech is gradually resumed, but while the mechanical obstacles appear to pass away completely, the tendency to garrulity for the most part persists; so that the physician has still to listen to a long setting forth of comparatively small matters recited volubly and with interminable iteration. That the state of the nervous system is much concerned in this alteration of speech is, I think, abundantly clear. It is perhaps only the first to attract our notice of many nervous symptoms. In some cases, to the difficulty of speaking a difficulty in swallowing is added. The swollen state of the fauces and of the mucous membrane beyond would make us ready to expect some difficulty, but at times dysphagia of considerable severity together with affection of inspiration, will lead to a suspicion of affection of the medulla oblongata.

Changes in the Mind.

It has been noted already, that the aspect of the patients is lethargic. A considerable number are actually lethargic and unnaturally placid, but it is very common to find, even early in the disease, indication of the disturbance of mental equilibrium. The most common of all is the gradual development of a suspicious frame of mind. This is not, as a rule, a suspicion of conspiracy or of intent to do harm on the part of the people around the patient, but a constant idea that all such people regard the patient unfavourably and are finding fault. This may be developed so far as to make the patient actually violent, and protest against the injustice of the supposed attitude of the persons around; and I have seen patients so terrified by the sensation of dread of some ill-defined malignant influence, that they have tried after getting out of bed to throw themselves from windows or downstairs.

It is also interesting to observe that some people who are not suspicious of others are suspicious of themselves, and spend their time in moaning over their sins and shortcomings, although these cannot be stated in any clear or definite form. Some years ago a patient under my care at St. Thomas's Hospital very well illustrated such conditions. She was a woman of more than middle height, was enormously swollen, and weighed over 20 stone. She was afflicted particularly with *cacoëthes loquendi*, and was full of suspicions about everybody who had to deal with her, as well as about the rest of the patients in the ward. They were all thinking evil of her, and no one expressed any sympathy for her sufferings. When I paid my visits to the ward, she often detained me for half an hour with the endless recapitulations of her sufferings, suspicions, and fears. One night, under the influence of great excitement, she actually fell out of bed, receiving, however, no obvious injury. One day, after I had been enduring her loquacity for some time, I was passing on to see another patient, when she sat up and reviled me and all present on account of the want of interest shown in her. It occurred then to one of my clinical clerks to take an opportunity of letting her talk herself out. He sat by her bed, and listened patiently to her as long as she was able to continue speaking. This lasted for more than an hour and a half. She immediately took a great fancy to him, and said that for the first time she had been properly understood. This was before the days of the use of the thyroid treatment, but the patient certainly improved during a long stay in hospital, and left weighing only 18 st. I attributed her improvement to prolonged rest in bed, the maintenance of warmth, and the use of jaborandi. A few months afterwards she appeared in the ward one afternoon during my visit. She was still further reduced in bulk, weighing then only about 15 stone, but, while she talked a great deal, her change of mental attitude was quite remarkable. She, indeed, came mainly to apologise to me and to the nursing staff for her rudeness during her stay in hospital. She had known all the time that she was rude and unreasonable, but she was quite unable to repress the feeling which prompted her to rudeness. The case was valuable as illustrating the licence in which persons of unsound mind will sometimes indulge, being fully aware at the time that their conduct is unjustifiable. She did not make her appearance again in the hospital, at least in my ward. Mental improvement following a distinct abatement of the signs of disease has been observed in this case as well as in some others. On the other hand, the suspicions and the garrulity often remain the last symptoms to be overcome. In fact, in some cases they are actually exaggerated in persons who have lost all the other characteristic signs of the malady.

In more than one case the mental disturbance has become so great as to require restraint.

Taken in conjunction with alterations in the thyroid gland, all the materials for a direct diagnosis of myxœdema are to be found among the foregoing symptoms: but there certainly are cases of myxœdema in which for one reason or another certain of the symptoms may be absent or modified. Thus, for instance, as Dr. George R. Murray has recently shown, instead of the marked swelling of the whole body, a relative tumefaction, accompanied by a yellowish tinge of the skin varying under treatment, would render the first-sight diagnosis a little obscure. The speech is often not characteristic, even when the other parts of the picture stand out well, and the hair and teeth may escape the ordinary degeneration. I have seen recently a lady whose hair at the age of 60 was almost, if not quite, natural, being abundant in quantity, not having fallen out and not being broken or ragged. The teeth, however, in this case had gone early.

There are, indeed, cases in which it must be admitted that diagnosis very difficult; cases in which, while the bulk of the body is very considerable and the face much swollen, the yellowish, transparent look of the skin is not present, the speech is but little impaired, and the hair and teeth have suffered only in a minor degree. Some of these cases are not easy to separate from cases of simple over-fatness of the body, and it is only by dint of repeated verification that the existence of symptoms belonging to myxœdema and not to simple fatness may be determined.

In the early identification of myxœdema its subjects have much the appearance of being really victims of a form of Bright's disease without albuminuria, and, indeed, after the early publication of observations on myxœdema, it was seriously contended by more than one accomplished physician that the disease really was Bright's disease associated with an unusual form of dropsy. The compass of this lecture will not allow of my entering into the details of the controversy, but I think that no one nowadays has any doubt of the absolute difference between Bright's disease and its dropsy and myxœdema and the swelling belonging to it.

Associated Symptoms.

We can now proceed to consider some of the associated symptoms of myxœdema, not of such primary importance as the preceding. First among these is the lowering of the temperature of the body. In the well established disease the temperature of the body is usually lowered by from 1° to 3° F. Such lowering of temperature, however, is not by any

means always present in the early stages. The heat of the body may be maintained at something like the average temperature or a little above it by the influence of intercurrent disease, particularly that of phthisis. Indeed, an average temperature say of 94° or 96° F. observed in a case of well developed myxœdema may be taken to be an indication of a sort of pyrexia calling for the most careful search for any local or general causes, such as in ordinary people raise the temperature to 100°, 101°, or more. It will be seen afterwards that one of the first effects of successful treatment of myxœdema is the raising of the temperature. Related no doubt with the lowering of the temperature, we find patients liable to great suffering and aggravation of their symptoms during the prevalence of cold weather. This is certainly the rule, and one may notice in hospital how our old patients come back to us with the frosts. They do not appear so much to feel the cold as to be conscious of the injurious effects of cold. One may see a patient sitting up in bed and complaining of feeling ill because of the cold weather, the hands and feet will often be found then extremely cold and blue, and yet it is far from uncommon to find the complaining person allowing her nightdress to be open so that the air directly impinges upon the skin, and careful questioning will elicit the fact that the patient is not conscious of such impact of cold air, the general numbing of sensation masking the effects of a prejudicial influence.

Independent of various modes of treatment, climate must be regarded as very strongly modifying the progress of the illness. The people who can have well warmed houses and keep out the cold of our English climate pass through the winter with much less suffering and danger than poorer people unprovided with such protection. Still more, if people can exchange our English climate for a warmer one during the winter season, the progress of the disease may be retarded and the sufferings greatly diminished.

Observations of temperature must be made by insertion of a thermometer into the mouth or into the rectum. Axillary determinations may be regarded as practically valueless.

Hæmorrhages.

Hæmorrhages from various parts are, as we have noted, not uncommon in myxœdema, though far less general in their occurrence than the alteration in temperature. They occur mostly in the fully established disease. Epistaxis and bleeding from the gums will often be noted. The extraction of a tooth, often called for, is always to be dreaded on account of the hæmorrhage which is apt to follow, lasting in some cases for three or four days in spite of plugging and the use of styptics, and involving a drain which the anæmic patient can with difficulty sustain. Hæmorrhages in the skin and from the bowels are less common, but uterine hæmorrhage is often a serious source of enfeeblement, becoming dangerous in association with parturition. *Post-partum* hæmorrhages are far from uncommon in even the early stages of the disease to an extent almost becoming a rule, when the relatively small number of myxœdematous patients who become pregnant is considered.

The most serious hæmorrhages are those into the brain. I have seen three cases of apoplexy, in two of which *post-mortem* examination showed bleeding into the brain in the usual position of cerebral hæmorrhage; in the third, in a curiously distributed form in the cortex of the brain. In the last-mentioned case I had the opportunity of watching the progress of the patient for a considerable time. He was a man 30 years of age, a waiter by occupation, and was admitted for the first time to St. Thomas's Hospital, under my care, on June 14th, 1892. It appeared that his illness commenced six years before his admission. He began at first to feel dull, heavy, and depressed, and became clumsy, especially with his hands. His friends complained of his dull and muffled voice. All exertion became a trouble, and he would occasionally fall. His abdomen and body generally began to swell and his face became round, puffy, and yellowish-brown with flushed cheeks, earning for him the nickname of "The Fat Boy in Pickwick," which replaced the nickname of "Skin and Buttons," which had before the illness been bestowed upon him on account of his pale and hollow-eyed countenance. The two photographs which I now indicate represent respectively the condition of the patient some years before his illness and not long after his admission to hospital. His hair had begun to fall out some time before admission, and his skin was always very dry. He stated that he was rather worse in the winter time than in summer, and had lost interest in the outside world. He was conscious of being very irritable. At the time of admission his skin was exceedingly harsh and dry, also much pigmented, his hair dry, scanty, and broken, particularly on the face and head. His features were heavy, his expression was somewhat fatuous, and there was a strong suggestion of his having undergone a sort of Mongolian change of physiognomy. He was very bulky; there was some fulness about the clavicles; the thyroid gland could be felt, but was evidently smaller and firmer than natural. All his movements were sluggish, and his hands were spade-like with impairment of the finer movements. There was no sign of visceral disease, and the urine was normal. Glycerine extract of thyroid, prepared after the admirable method of Dr. George R. Murray, of Newcastle, was injected hypodermically in doses of 15 minims on the following dates: July 12th, 16th, 19th, 22nd, and 30th. He improved considerably under this treatment, which was, however, discontinued on account of great swelling and distress following the injections, and was replaced by internal administration of the same preparation in the same doses daily. Under this improvement continued rapidly, his bulk diminished, his skin became moist, and at times he perspired very considerably. His hair grew again very quickly and in great thickness. The third photograph presents his condition after six weeks of treatment. This and the second photograph were kindly taken for me by an exceeding clever clinical clerk of mine, who wrote on the back of the one I am pointing out a very appropriate quotation from the *Ingoldsby Legends*:

> He grew sleek and fat;
> In addition to that,
> A new crop of feathers
> Came thick as a mat,

only we must pass over the fact that the patient did not, like the jackdaw, get fatter. The patient left the hospital on August 28th, 1892, but continued to attend as an out-patient for some months afterwards, taking the glycerine extract regularly, but only now about twice a week. The fourth photograph shows him in a later stage of improvement, almost, if not quite, amounting to cure. His attendance now became irregular. He appears to have taken up service as a waiter. I learned at the time that he was a very good waiter in a general way, but was somewhat expensive in consequence of a tendency to drop plates and dishes when he was handing them. It is certain, however, that at this time he began to indulge in alcoholic stimulants and to have neglected his thyroid treatment. The signs of myxœdema gradually returned, and at the beginning of July he had a fit in which he lost consciousness for some hours, and this was followed by a second and a third fit during that year. In the last of these the tongue was bitten.

He was again admitted in the St. Thomas's Hospital on November 13th, 1895. Much of the appearance presented at the time of his first admission had now returned, and his urine now was of a specific gravity 1026, with a trace of albumen. Shortly after his admission he was seized with convulsions, and was unconscious for one hour. On November 14th he had two fits, after which he became very violent, struggling and talking incoherently. He sweated profusely all the next day and was still very violent, requiring restraint by a male attendant. He then became comatose for some hours, and died on November 16th. The temperature, which had been 98.2° F. at the time of his admission rose on November 13th to 100.6°. At the *post-mortem* examination the thyroid gland was found to be very small and flabby, the isthmus being little more than a strand of connective tissue. It is important to state that the adrenals were diseased, the left being increased in size by enlargement of the central cavity, which contained several calcareous and caseous nodules, some surrounded by miliary tubercles. The right adrenal showed a similar change, but with all this the mass of glandular tissue was unaffected; there was now no pigmentation of the skin.

On examining the brain there could be seen through the arachnoid and pia mater innumerable minute hæmorrhages dusted, as it were, over both hemispheres, but more numerous on the left side. The cortical vessels were much distended,

and the brain throughout was hyperæmic, but there were no petechiæ below the surface. Otherwise, the brain appeared to be healthy. As regards the hæmorrhages noted on the surface of the brain, it must be remarked that in his convulsions and struggling he had evidently met with some injury of the scalp, but the distribution of the petechiæ and their superficial character were most probably either the result of his epileptic fits or the cause of them. It is well known that petechiæ occurring in the face of children are not infrequently found to be the result of convulsions, and that occasionally their existence may lead to the recognition of fits occurring during the night and not in the daytime.

Changes in the Thyroid Gland.

It is now generally admitted that myxœdema, in common with the sporadic cretinism of children and cachexia strumipriva, is dependent on a destruction or loss of the function of the thyroid gland, and that in many ways myxœdema is allied to cretinism, in which affections of the thyroid gland play an important part. It is commonly the case that in myxœdema diminution of the thyroid gland is recognised during life—not, however, always by reason of the difficulty of feeling the thyroid through the massive and unyielding cutaneous tissue. For the most part, the gland is found in a state of atrophy, having the secreting structure partially or completely destroyed by a fibrosis of connective tissue, there being also an associated loss of the colloid secretion. But it is not always a reduced thyroid that is found. In an enlarged gland the destruction of the tissue may be brought about by a new growth, and, furthermore, the history of a certain number of cases of myxœdema indicates that an enlargement of the gland has preceded its contraction and atrophy. To go further than this, it may be stated that in certain well-observed cases the symptoms presented before the establishment of myxœdema have been more or less the symptoms of exophthalmic goitre. It appears to me probable that we shall recognise in the near future more and more the occurrence of a stage of hypertrophy of the thyroid gland with or without the signs of Graves's disease as an antecedent of myxœdema.

I will venture to give here an abstract in as short a form as possible of a case, the notes of which have been kindly sent to me by Dr. Alexander Hope Walker, of Cranleigh, whom I beg now to thank for his kindness. It is, of course, helpful to me to have the opportunity of quoting the cases of other observers as well as my own. The patient is a girl, aged 23, living at Alfold, in Surrey, a place where, according to Dr. Walker, goitres are frequent. Being hitherto in the enjoyment of fairly good health, she noticed in July, 1890, that her neck was larger than usual, though neither pain nor inconvenience was experienced from the enlargement. In March, 1891, she began to present signs of exophthalmic goitre, and was subsequently admitted in June of that year to Charing Cross Hospital under the care of Dr. John Abercrombie. The diagnosis of exophthalmic goitre appears to have been formed and adopted at the hospital, where she was treated with iron, quinine, and digitalis, together with daily galvanisation of the thyroid. Under this treatment the swelling became reduced in a somewhat marked degree, and she left the hospital on August 1st, 1891, to all appearance cured. She then went into service at Burgess Hill and continued well until November, 1893, when she noticed her legs, arms, and hands to be swelling. She finally gave up her service and returned to Alfold, where she was seen by Dr. Walker on November 20th, 1894. At that time, to quote Dr. Walker's notes, "the face throughout was markedly swollen, the skin feeling thick, looking translucent and waxy, and the eyelids were particularly swollen. The nose was broad, the lips thickened and diverted, the face was devoid of all expression; the pink flush, so constantly present in these patients, was absent; the hands were spade-like, the skin was harsh, dry and pale, the hair was falling out, the speech was slow and monotonous, the temper sulky and uncertain, the movements of the body were all very slow and deliberate; the urine and the viscera appeared to be normal; the thyroid gland could just be felt." I think you will agree with me in accepting the first stage of this patient as one of exophthalmic goitre, the second as one of myxœdema. I may add that the treatment was mainly by the administration of thyroid in the form of tabloids. By the end of January, 1895, she appeared to be quite well, but being at home she neglected to send for her tabloids and drifted back into her myxœdematous condition. She was recovered from this once or twice by renewed treatment, but finally died rather suddenly of heart failure on June 6th, 1897, that is to say, seven years after the first appearance of symptoms connected with the thyroid. No necropsy was made so far as I am aware. It appears probable that the enlargement of the thyroid in such a case, as, indeed, in exophthalmic goitre generally, is due partly to hyperæmia and partly to changes in the gland, which are apt, in certain cases, to determine proliferation of the epithelium surrounding the cells, such proliferation ending in the replacement of the true glandular structure by fibrous material, and consequent destruction of the functions of the gland. The gland being thus destroyed, after a time undergoes a sort of cicatrical contraction, leading to atrophy comparable to that occurring in cirrhosis of the liver.

I am inclined to think that the succession of enlargement of the thyroid, with or without the typical signs of Graves's disease, is much more commonly an antecedent of myxœdema with contracted thyroid than is generally supposed.

In my own experience, and probably in that of many other physicians, young women brought for treatment on account of anæmia and various nerve disorders, are found much more commonly now than formerly to present some enlargement of the thyroid. Doubtless with the phenomena of myxœdema and exophthalmic goitre brought more and more prominently before our notice, we have come to take more careful note than formerly of the state of the thyroid gland. It is certainly common to find a definite increase in the size of the gland present where neither the parents of the patient nor the patient herself were conscious of anything of the kind. I do not mean to say that in all these cases the enlargement of the thyroid is followed by a trophic change, but the great frequency of the occurrence of enlargement in adult women justifies the hypothesis that in a much larger number of cases than we know of at present an enlargement of the thyroid has preceded the development of myxœdema. How this enlargement comes about is certainly not well understood as yet, but it must be remembered that, in the first place, myxœdema, like exophthalmic goitre, is a disease affecting women in an exceedingly larger proportion than men. In fact, the title to Sir William Gull's first paper brings this predominance into strong relief. The title of the paper was on a Cretinoid State supervening in Adult Life in Women. Temporary increases and diminutions of the size of the thyroid body are certainly not easy to recognise and determine, but certainly where a thyroid is once enlarged it is often found that there is increase of enlargement at the time of menstrual period. When, as in many women, conditions approaching the inflammatory occur in various parts of the body at the time of menstruation, it is no hasty induction if we suppose that a local exaggeration of such conditions may lead to a permanent enlargement, to be followed by simple subsidence or possibly, in some cases, by contraction. I know of no changes in the sexual organs of men in any way related with myxœdema, where it attacks them, and, *primâ facie*, I should not expect to find such a relation, there being in men no periodical disturbance comparable to those of menstruation. In sporadic cretinism, which is really only myxœdema occurring in childhood, the affection of the two sexes appears to be about equal, boys and girls alike in those cases being affected by developmental error. It is only after the full development of the sexual organs that the disproportionate implication of women becomes evident. So far as I know, the occurrence of sexual development in sporadic cretinism, for the most part very delayed, does not affect the further course of the disease in either. The boy and the girl suffering alike from their myxœdema, carry it on with them equally when they respectively become man and woman.

In relation to the points that have just come under discussion, I may draw attention to an exceedingly interesting paper read by Dr. George R. Murray at Edinburgh in July last on the Diagnosis of Early Thyroidal Fibrosis. The object of this paper is to draw more attention to a class of cases of early disease with partial disablement of the thyroid gland, which are more common than is generally supposed. Dr. Murray points out that the symptoms in

these cases are not yet sufficiently well recognised, and he regards the symptoms to be the result of a certain amount of atrophy of the glandular tissue of the thyroid with fibrosis, but he does not think it desirable to discuss the question as to the possibility of fibrosis being primary, and leading to atrophy of the secreting epithelium as a secondary result, or to fibrosis as a secondary condition following atrophy.

Treatment.

Under the head of treatment it must first be observed that until the introduction by Dr. Murray of the practice of making hypodermic injection of a glycerine extract of the thyroid gland, no remedies could be spoken of as effective. Arsenic and iron were suggested by the very obvious presence of anæmia; and each in its way often produced some improvement in the general health of the patients. The hypophosphites were used where the nervous weakness was particularly evident, and jaborandi or the salts of pilocarpin were used in order to favour the occurrence of perspiration. In addition to the use of drugs, the introduction of portions of thyroid gland into the tissues of the body has been used by several observers. Some found a resting place for the gland in the peritoneal cavity, others in the tissues beneath the skin. I may say that I myself have made use of the latter method in several cases, choosing a spot over the upper part of the pectoralis major muscle, where the portion of the thyroid gland could be deeply imbedded in subcutaneous tissue.

In all cases some improvement rapidly followed the operation; the skin began to be moist, the patient's face to fine down, and the hair recovered somewhat of its healthy character, but in no very long time it could be ascertained by the touch that the imbedded gland was diminishing in size, and at length it had disappeared. With its disappearance passed away all the signs of improvement. I suppose that it is just possible that by regular repetition of the process something like cure might have been effected, but I do not know that anyone has performed the operation more than once or twice, the difficulties of such a proceeding being very obvious. It must be stated that the imbedded glandular structure was taken from a goître just removed by operation.

As I have already observed, after Dr. Murray had made his important discovery, Dr. Hector Mackenzie found that the internal administration of the gland or its preparations brought about as marked an improvement and progress to cure as had been effected by the hypodermic injections, and I suppose that the internal administration of the thyroid gland in one way or another is the method of treatment now usually adopted. It appears to me that the administration of the thyroid gland itself, when it can be carefully and regularly maintained, is the most appropriate form of treatment. The gland may be finely minced and administered raw with sugar or salt, or may be lightly cooked. The size of the gland—mainly obtained from the sheep—varies a good deal, and such variation is to some extent a justification of the administration of an extract obtained from a number of glands so as to get something like an average. In one case still under my occasional notice an affectionate husband has been at the trouble to procure regularly thyroid glands from sheep and to prepare them in a raw state for administration to his wife. The original quantity administered was one gland a week; but, as the patient has improved, the frequency of administration has been diminished, but it still goes on as it has gone on for some years, and at the present moment the lady presents no signs whatever of the disease.

It is possible to give the thyroid gland too frequently. When the knowledge of its efficacy as administered internally first became known I gave to a patient, who was so ill as hardly to present any chance of maintaining life, one gland a day for four days in succession. At the end of that time she suffered from violent headache, vomiting, and pains in the limbs with rise of temperature amounting to 6° F. With such a lesson the gland was administered at longer intervals, namely, of a week to ten days, with ultimately the greatest benefit. But to procure fresh and healthy glands and to prepare them in the proper way involves a great deal of trouble and its use may be replaced by the administration of Dr. Murray's glycerine extract in doses varying from 10 to 30 drops a day or every second or third day, according to the effects produced and to the patient's power of bearing the influence of what we may call now the drug. Still more convenient and not ineffective are the preparations in the form of tabloids now in common use. Some of these contain the dried and crushed gland, others extracts of it, such as the excellent powders devised by Mr. Edmund White, the Therapeutist of St. Thomas's Hospital. On the whole, I prefer the extracts of the whole gland to any kind of principle derived from it by chemical processes. Perhaps the next best form is the dried and powdered gland of the *Pharmacopœia*.

A good deal of extremely interesting work relating to the preparation has been done by various observers, and I would draw your attention to *Observations on the Chemistry and Action of the Thyroid Gland*, by Dr. Hutchison, Demonstrator in Physiology, London Hospital Medical College.

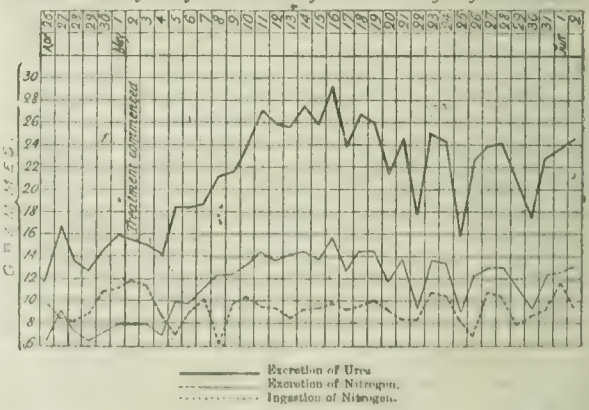
According to Dr. Hutchison and others, colloid matter prepared in various ways from thyroid gland is found to contain a definite quantity of iodine which appears to be present in the form of what has been called "iodothyrin" (Bergmann).

We may note in passing that, according to Dr. Hutchison, parathyroids when administered in myxœdema have no effect upon the disease, although in operations on dogs no myxœdema occurs if the parathyroids are not removed as well as the thyroid.

The Urine.

For the most part, the urine in myxœdema contains no albumen, certainly not as a rule until the disease has lasted a very long time, often not at all from beginning to end. Where albumen, however, is present regularly in the urine, together with casts and degenerated epithelium, we may regard it as an indication that the kidney has undergone an internal change comparable to that observed in the eyelids, where the glandular tissue is injured by the encroachments of swollen connective tissue. In *post-mortem* examination the kidneys are found somewhat enlarged and exceedingly tough, reminding one in their consistence very much of the kidney of advanced heart disease. This change in consistence is associated with excessive thickenings of the connective tissue around Malpighian bodies and between the tubes—changes at first sight very like those of the contracting granular kidney. In the case of the young man who died with cerebral hæmorrhage some increase of interstitial tissue in the kidneys with great degeneration of epithelium, especially that of the convoluted tubes, was noted.

Chart illustrating changes in excretion of urea and nitrogen after treatment.



Further, as regards the urine, three things have long been observed as occurring in the treatment of myxœdema by the administration of thyroid:

First, the urine, below the average quantity before the administration, was very largely increased in the first days of treatment.

Secondly, the quantity of urea present in the urine before treatment, long known to be very deficient, amounting often

to less than half of the proper excretion in that fluid, was found under the treatment to be very much increased in quantity, to a point even above the average.

Thirdly, the temperature of the body was found to rise with more or less rapidity from the subnormal range present in the disease in either the normal height or beyond it.

After selecting a well-marked case of myxœdema, I obtained the valuable assistance of Mr. White, the Therapeutist of St. Thomas's Hospital. The constituents of the patient's daily diet and of the urine were generally submitted to chemical examination a week before treatment. At the end of the week the administration of the thyroid in the form of the glycerine extract of the sheep's gland was begun.

Average Daily Excretion of Urine and its Constituents.		Before Treatment.	After Treatment.	Increase after Treatment.
Volume	c.c.	928	1127	199
Total solids	grms.	26.16	36.49	10.33
Ash	,,	7.37	8.84	1.47
Organic matter	,,	18.79	27.65	8.86
Urea	,,	14.21	22.36	8.15
Nitrogen	,,	7.39	12.08	4.69
Phosphoric acid	,,	2.78	3.33	0.55
Chlorine	,,	1.71	2.01	0.30
Average daily ingestion of nitrogen in food	grms.	9.46	9.30	—

It was found, then, that while the weight of the body diminished rapidly during the first week of treatment, the daily volume of urine passed rose from 928 c.cm. to 1,127 c.cm., being an increase of 190 g.; that the total solids increased from 26.16 g. to 36.49 g.; the organic matter from 18.79 g. to 27.65 g.; the urea from 14.21 g. to 22.36 g., and the total nitrogen from 7.39 g. to 12.08 g., there being also a distinct increase in the quantity of phosphoric acid and chlorine. It was clear, therefore, that the thyroid extract had:

1. A distinct diuretic action.
2. That the elimination of nitrogen was largely increased.
3. That the increased elimination of nitrogen was almost entirely in the form of urea.

These results appear to indicate that during the process of the melting of the myxœdematous deposit there occurs some important metabolism of a nitrogen-containing substance. These observations were brought before the Clinical Society of London some years ago.

In conclusion, I may be permitted to say that myxœdema presents for us great interest in the matter of its primary diagnosis; that it presents for our consideratfon many problems besides those connected with its own etiology and course and its relations with other diseases in which affection of the thyroid is present; and that in its pathology there are also many points to be investigated and explained. I have dealt only lightly with its pathology for the reason which I have already given—namely, that the setting forth of this before you will presently be found entrusted to more skilful hands.

A "Colony" Asylum for Imbeciles and Epileptics.—We learn that the Manchester and Chorlton Unions have made some progress in their scheme for jointly providing for the special treatment of their imbeciles and epileptics. They have secured for the colony a site of 237 acres near the Lancashire landmark called Rivington Pike, and closely adjacent to the Rivington Reservoir, one of the sources of the Liverpool water supply. The Liverpool Corporation, fearing the possible contamination of the reservoir by the drainage of an establishment planned for 600 patients beside staff, have opposed the scheme before the Local Government Board, and an inspectorial inquiry is now in progress. It will be remembered that a report in favour of the colony plan pursued at Alt-Scherbitz was drawn up some twelve months ago by Dr. Rhodes and Mr. Alderman Macdougall, and we congratulate these gentlemen on the practical results which have followed their recommendations. The establishment of a Poor-law colony for imbeciles and epileptics in a suitable locality will be watched with much interest by other local authorities; and we hear that the Leicester Board of Guardians is already moving in a similar direction.

SIXTY-SIXTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held at EDINBURGH July 26th, 27th, 28th, and 29th, 1898.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

John Duncan, F.R.C.S.Edin., LL.D., President.

RADICAL CURE OF HERNIA BY AN IMPROVED METHOD OF TORSION OF THE SAC.

By Charles B. Ball, Ch.M., F.R.C.S.I.,
Regius Professor of Surgery, Dublin University.

In 1884, at the meeting of the British Medical Association at Belfast, I described an operation for radical cure of hernia by torsion of the sac, and in 1887 made a further communication illustrated by 22 cases. Since then my personal cases have reached to over 150, and I know that the operation has been somewhat extensively performed by others both at home and abroad.

In common with all the early operations, the number of cases of recurrence was somewhat large, although I know of many that have remained perfectly sound for over ten years, never having worn a truss since the operation. Two important factors appear to be chiefly responsible for the early failures:

1. Suppuration of the wound. When the healing is by granulation the cicatrix is weak and after a time is sure to stretch. In the days when we believed that an infinitesimal application of carbolic lotion was sufficient to exorcise all bacteria, suppuration occurred not infrequently, whereas now, by improved methods of asepsis and the avoidance of buried sutures and drainage tubes, suppuration is in these cases almost unknown.

2. The second element of weakness was the leaving of a depression in the peritoneum opposite the inner opening of the inguinal canal into which the abdominal contents were forced, and gradually by wedge-like action dilated the depression into a second hernial sac. The great success which has attended Professor Macewen's method in his own hands is probably largely due to the obliteration of this depression.

In December, 1892, Professor Kocher published a method in which the twisted sac was brought out through an incision in the tendon of the external oblique muscle, laid down over the tendon and ring, and secured there by sutures. This method has undoubtedly the advantage of directing the peritoneal depression upwards against the abdominal wall, instead of leaving it at the inner opening of the inguinal canal. When the sac is bulky and thick, the incision in the tendon must be correspondingly large, and so a further element of weakness in the abdominal wall is produced; indeed, I know of a case in which a secondary hernia formed after Kocher's operation, not through the external abdominal ring, but through the opening made by the surgeon for the purpose of drawing out the sac. After trying Kocher's operation in a few cases, I came to the conclusion that all the advantages of it could be obtained in a more simple way and without any incision of the tendon, by passing a suture in such a way that when tightened it would draw up a loop of the twisted sac in the subperitoneal tissue behind the entire thickness of the abdominal muscles, and fix it there. I have followed this method exclusively for the past five years, and am fully satisfied with the results.

The details of the operation as applicable to a case of reducible inguinal hernia in the male are as follows. An incision is made about 1 inch long over the neck of the rupture and carried down until the sac is opened. A finger is introduced to carefully examine for adherent omentum or other more important structures. In this way I have determined the presence of the urinary bladder, the vermiform appendix,

and in a female an ovary adherent at the neck. Such cases must, of course, be carefully separated by tying off adhesions before proceeding further. The sac is now separated from its adhesions; this is much more easily done after it is opened as above described. If the hernia is of the congenital type the sac must be divided circumferentially, leaving the lower portion which covers the testis, but peeling the upper portion from the cord. When it has been cleared up the entire length of the inguinal canal it is caught in a T-shaped forceps and slowly twisted, the finger of the left hand freeing the peritoneum from around the internal ring at the same time. The twisting should be carried out until it is tolerably tight, but if undue force is used necrosis of the sac may follow. The finger is now passed up in the subperitoneal tissue for at least 1 inch, and a large curved needle threaded with a stout piece of silk passed beside the finger in the subperitoneal space, and then directly forwards through the musculature and skin of the abdominal wall; the other end of the

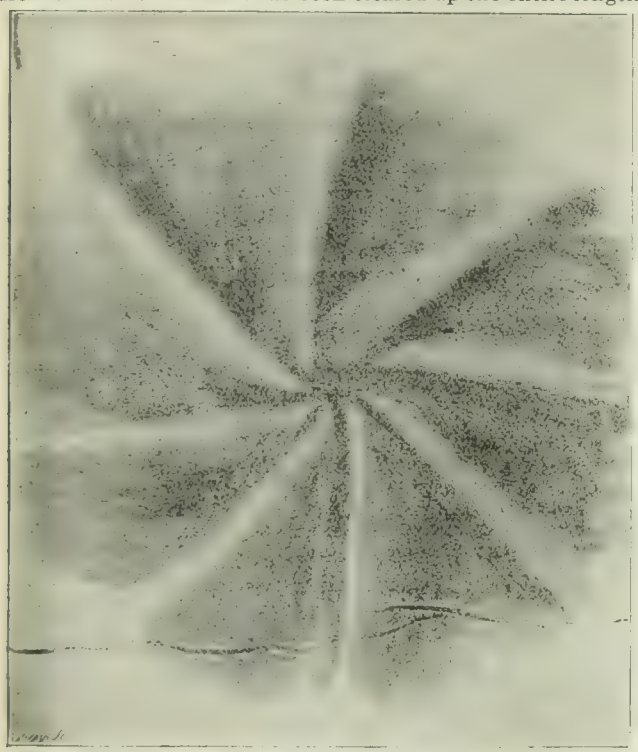


Fig. 1.—Diagram of peritoneal surface round opening after torsion of sac.

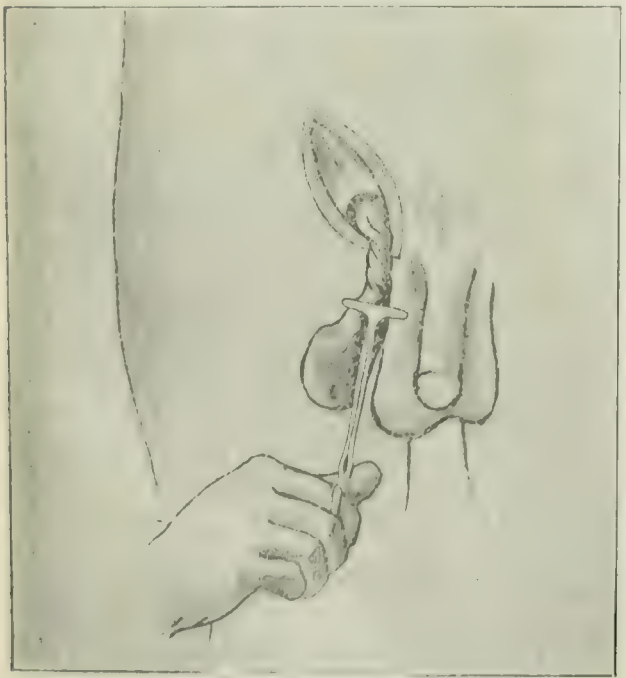


Fig. 2. Torsion of sac.

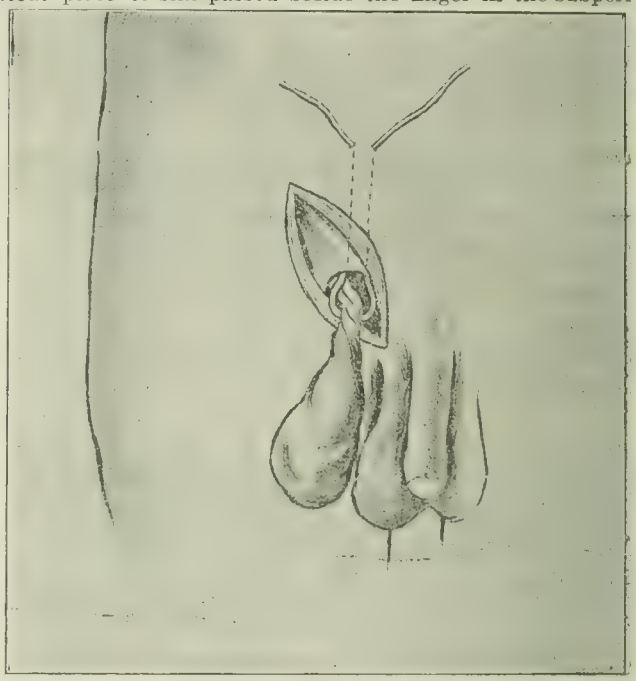


Fig. 3.—Restraining suture *in situ* round twisted neck, but not as yet drawn tight.

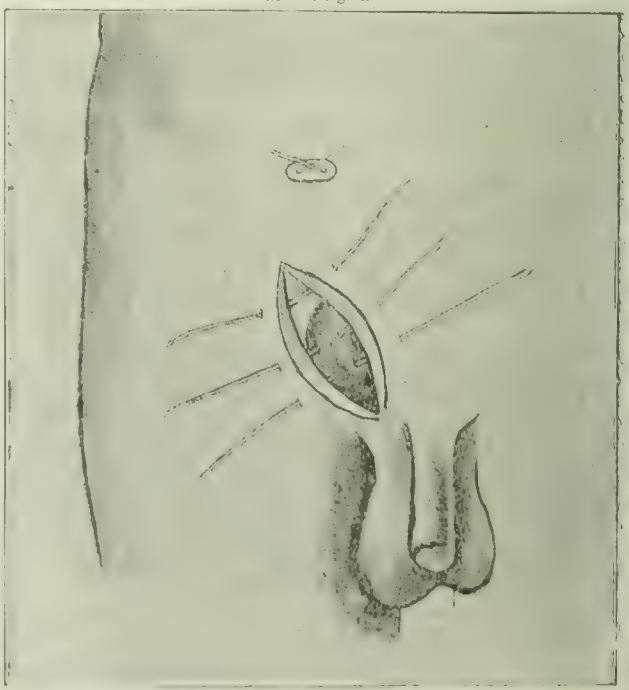


Fig. 4.—Restraining suture closed over lead plate. Deep sutures placed in position.

same piece of silk is now passed by a needle in the same way but at the other side of the twisted sac, and brought out through the abdominal wall at the same level and close to the first end. The effect now of drawing on these two ends is that the loop pulls up a knuckle, or, if we may use a nautical expression, the "bight" of the twisted sac in the subperitoneal tissue at the back of the strong muscular abdominal wall; it is now to be fixed there by tying the two ends lightly over a lead plate, being careful not to use too much force, or the sac may necrose. If the sac is of moderate size the fundus lies now in the inguinal canal, and together with the spermatic cord is pressed firmly with the finger backwards towards the abdominal cavity, while deep sutures are passed, taking good hold of the lateral structures of the canal, and also picking up the twisted sac as it lies on the cord. When these sutures are closed over lead plates they tend to keep up the displacement backwards of the cord and sac, while closing the inguinal canal effectually; if the sac is a very large one it will be found convenient to excise a portion of the fundus. The skin wound is closed by fine continuous suture. The deep sutures are to be left in for nine or ten days, when tied over lead plates they do not cut the skin; after their removal the patient is allowed up and about, no truss being worn. I am satisfied that the prolonged rest enjoined by some operators is unnecessary.

In the female radical cure of inguinal hernia is a much more simple matter owing to the absence of the spermatic cord.

For femoral hernia the method above detailed is admirably suited, the suture passing through the crural canal and out through the abdominal wall about one inch above Poupart's ligament, the knuckle of sac being thus fixed against the abdominal wall, the femoral ring being then as fully closed as possible by suture.

Umbilical hernia is usually unsuitable for this method, as the numerous diverticula of the sac generally present in these cases prevent satisfactory isolation. In one case, however, of simple uncomplicated sac this method answered extremely well, the suture being passed in such a way that when closed the orifice of the sac was held against the firm abdominal wall about 1 inch above the umbilical opening.

Complications.

When the hernia is double it is desirable to operate on both sides simultaneously; it is well, however, to separate both sacs before twisting either, as it is then easier to estimate the amount of torsion necessary. Of the cases in the present series, five were instances of double hernia operated on at the same time. When hydrocele coexists it is well to do the radical operation by excision at the time. Varicocele, if of large size, can also be dealt with by excision in conjunction with the operation for radical cure of hernia.

Where hernia coexists with only partially descended testicle it may be possible to suture the testicle in its normal position in the scrotum, but where it cannot be brought down or where it is rudimentary it is probably better to castrate and completely close the inguinal canal.

In two of my cases, upon opening the sac, the serous surface was found studded with tuberculous peritonitis; both were freely excised, and the neck only twisted, and no further development of tuberculosis became apparent. If the surgeon favours buried sutures, it is easy to draw up the skin wound so as to tie the retaining suture on the abdominal aponeurosis, and when the wound slips back this suture will be quite subcutaneous, and the canal can be closed by any of the numerous methods of buried sutures advocated; personally I do not consider buried sutures desirable, but they should be left *in situ* for at least nine days. That the knuckle of twisted sac remains in its new position is proved by the fact that months afterwards it can be felt as a ridge over the external abdominal ring.

It is usually considered desirable to wait until a child is at least 4 years old before performing radical cure, as in younger children the saturation of the dressings with urine is a frequent source of suppuration; if, however, the wound is covered with a layer of celloidin solution, and no other dressing applied, this difficulty is obviated, and the younger the child is, the more perfect and permanent the result will be. It is undoubtedly true that in private practice a perfect cure can be obtained in a number of children's herniæ by wearing a truss, but in hospital practice, at any rate in Dublin, this is well-nigh impossible, and I consider it desirable to operate at once.

Since 1893, all the cases of radical cure of hernia under my care have been treated in this way; they number 74. Of these 5 were femoral, 1 umbilical, and the rest inguinal. In 5 cases there were herniæ on both sides, which were operated on at the same time. One case proved fatal; it was a double hernia of very large size, in a man aged 57 years; both sacs contained bloody ascitic fluid, which suggested intra-abdominal cancer. The man died on the third day, but unfortunately no necropsy was obtained.

It is extremely difficult to follow the after-history of these cases, especially amongst hospital patients; but, so far, I have only known of two cases of slight recurrence; in one of these there was a large hydrocele, which was operated on at the same time: this became converted into a hæmatocele, which unfortunately suppurated; all the rest of the series healed without suppuration.

The operations of Bassini and Halsted necessitate a somewhat free division of the abdominal wall, which appears to me to be undesirable, as we know that even the most perfectly-healed aseptic wound of this region is apt sometimes to stretch after some months; moreover if, as I have indicated in the operation above described, the fundus of the sac, together with the spermatic cord, is firmly pressed back towards the abdominal cavity with the finger, while the sutures are being passed through the sides of the inguinal canal, a considerable displacement of the cord will be produced when the sutures are closed.

WOUND TREATMENT.

By Rutherford Morison, F.R.C.S.,
Surgeon, Royal Infirmary, Newcastle-on-Tyne.

The principles of wound treatment taught by Lord Lister have now met with universal acceptance and revolutionised surgery, but the details of wound treatment still differ in almost every surgeon's hands. Two chief methods in detail have been recognised, the antiseptic and the aseptic, the latter claiming that the comparatively simple methods of its predecessor are not equal to latter-day requirements. This opinion, I believe, to depend more upon deductions made from laboratory experiments than from clinical experience, and much as we all admire and depend upon laboratory work none of us are prepared to deny that the final test must be made at the bedside. It has been my privilege to watch the development of the antiseptic system in Lord Lister's hands and to see the results of his treatment. Visits to hospitals in Germany, France, Russia, and America have failed to persuade me that wound infection was less frequent with the distinguished surgeons in charge of them than in Lord Lister's cases. It is my belief that in this country at least, with the less complete control we have over our surgical work, the antiseptic system is simpler, safer, and leads to the most satisfactory results.

To state our own case, Newcastle-on-Tyne possesses the worst hospital in the British Islands.[1] It is old, overcrowded, noisy, and insalubrious, so that in two adjoining beds it is no uncommon event to see an ovariotomy and a filthy septic cellulitis. The surgical wards are always overflowing with serious surgical cases, for none but the urgent can be admitted when the supply of beds is so much smaller than the demands. All the long wards run in pairs, so that every surgeon shares his block with a colleague. One sister is in chief charge of the two wards, the result being that none of the surgeons has a staff nurse of his own. There is only one regular operating theatre, where all instruments are kept. These are common to all the surgeons, and are in the charge of a theatre nurse. Another room frequently used as an operating theatre has nothing special about it except the lighting arrangements, which have been added to make it serve the purpose. Each surgeon has for his own use only sponges, ligatures, sutures, and dressings. It has been for long and still is the custom that dressers should assist at operations. Each surgical dresser takes a turn of two months at preparing and handing instruments, threading needles, cutting ligatures, etc., during the operations. So far as possible this gentleman is enjoined to keep himself specially clean during his term of office, but

there usually is so much work to be done that he has to take his share in dressing out-patients, many of them, of course, being foully septic. The surgeons have so much operating work that they cannot choose certain days for aseptic and others for septic cases. Both have to be done on the same day at as convenient times as are possible to arrange. The operating theatres and wards are open to all students and practitioners, and no questions are asked as to possible pathological specimens on their clothes or person.

These are shortly the general conditions under which my public hospital work has been done, and the statistics given under this head refer to some of the work of my first year on the full surgical staff. The second set of statistics refer to work done during the same time in a private hospital, where with one assistant and nurses trained by ourselves everything is, as far as possible, under our own supervision and control. I should like to have added statistics of operations done in private with such temporised arrangements as are possible in ordinary dwellings, but I regret to find that my imperfect records of private cases do not enable me to do so. This much only I am safe in stating, namely, that the risk of operations is materially increased when they are done at home, even though the surroundings are apparently of the most favourable character.

The ideal constantly before us has been the subcutaneous wound, and our endeavour to secure such healing as occurs in that. The procedure that I recommend and the detail in technique that I adopt can be illustrated by taking as an example a case of hernia requiring radical cure. A general examination such as would be made of the candidate for life insurance is instituted before operation is decided upon; then the usual aperient is administered.

Twelve hours before the operation the part is prepared as follows: The skin surrounding and over the seat of operation is thoroughly scrubbed with spirit soap (made by mixing equal parts of soft soap and methylated spirit together) and hot water, the hairy part being shaved.

Then the area to be cleansed is rubbed with turpentine on clean lint or flannel. After this comes another washing with the spirit soap and hot water, which removes all the turpentine. Asepsis is further secured by covering the whole part with a towel wrung out of 1 in 1,000 corrosive lotion. This is maintained in position by a bandage until the operation is about to be commenced. A considerable area all round the wound is covered with towels, wrung out of 1 in 20 carbolic lotion. The wound is thus isolated in the centre of an antiseptic circle, and is to be so protected from contamination by blankets, clothing, etc., which are all covered with the antiseptic wrap. Instruments, too, can be laid on the towels without fear of being harmed. The operating dress I wear is a waterproof apron with elastic bands on the sleeves. It is cleaned by washing with antiseptics.

The hands of surgeon, assistants, and nurse are prepared by the same thorough washing as the patient's skin. The nails are carefully cleaned, preferably with a bone picker; then the hands are scrubbed with spirit soap and hot water, turpentine, and again with spirit soap and hot water. Finally, they are thoroughly brushed with a hard nailbrush for about two minutes in 1 in 1,000 corrosive lotion. No one unless cleansed as the operator must touch sponges, instruments, or the neighbourhood of the wound; and if the hands of the operator or those of his assistants have necessarily been brought in contact with anything not specially purified, they are thoroughly scrubbed in 1 in 1,000 before being used again. Immediately before commencing the operation the patient's skin is washed with 1 in 1,000 corrosive lotion, also all hands concerned in the operation, and this is washed off with 1 in 10,000 corrosive lotion. Sponges, which I always use, are also wrung out of 1 in 10,000 corrosive lotion. The instruments have been lying in a tray containing 1 in 20 carbolic lotion for an hour. The lotion in the tray is diluted with hot water to 1 in 60 immediately before commencing to use the instruments.

The incision is made over the inguinal canal away from the scrotum as Kocher directs, first, to avoid structures so difficult to make aseptic as the scrotal skin; and, secondly, to have a wound the surfaces of which may be readily apposed when the operation is completed. The superficial epigastric and superficial external pudic vessels are exposed and divided between two clip forceps; they are then secured by torsion.[2] The muscles and aponeurosis are sutured with thick catgut, and the skin is tacked down to the external oblique aponeurosis by thick catgut sutures passed into the subcutaneous fat on one side of the wound, into the aponeurosis in the middle, and out through the subcutaneous fat on the other side, at intervals of about half an inch. These sutures shut off the subcutaneous fat into a number of compartments, and prevent the formation of a large hæmatoma. The skin edges are accurately adjusted by the continuous subcuticular suture recommended by Dr. Marcy of Boston, but of catgut, and the whole wound is closed.

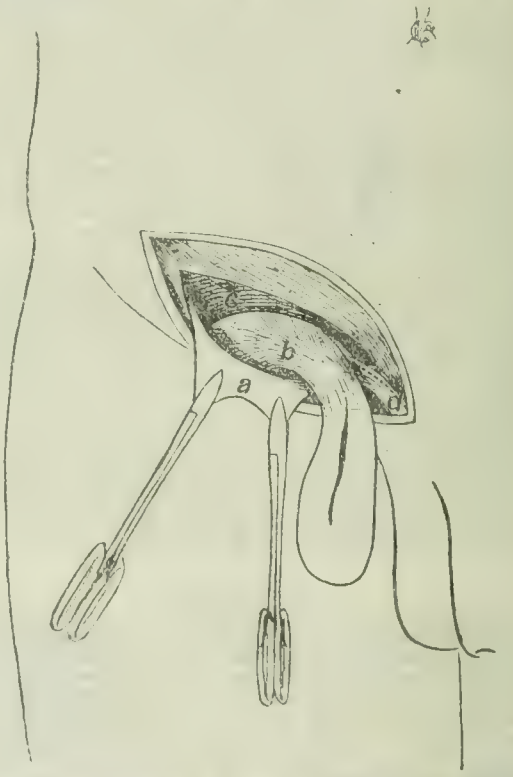


Fig. 1.—*a*, Divided aponeurosis of external oblique; *b*, sac; *c*, arched fibres of internal oblique and transversalis; *d*, spermatic cord.

Throughout the operation the vitality of the tissues is respected—rough handling, such as the so-called blunt dissection, antiseptic douching, sponge scrubbing, drainage, the inclusion of large portions of tissue in ligatures are all avoided as far as possible. The wound is dressed with a pad wrung out of 1 in 1,000 spirit gauze, and bandaged firmly with a domnet bandage in the form of a St. Andrew's cross over an abundant supply of corrosive wool. This dressing is not changed till the tenth day, when someone, not often the patient, is to blame if it is not healed and the catgut sutures absorbed. (Further details as to sponges, catgut, etc., I have left to be dealt with in an appendix.)

STATISTICS OF CASES OPERATED UPON IN THE ROYAL INFIRMARY, NEWCASTLE.

Excision of Breast. (Those in which ulcer or sinus existed are excluded).—11 cases. In 10 of the cases operation was done for cancer, in 1 for tubercle. The operation performed was similar to Halsted's. All the patients recovered. It was unnecessary to change the dressing till ten days had elapsed in any case. Nine cases healed by first intention, 2 cases suppurated slightly and superficially.

Amputation of Thigh. (Primary for obvious reasons are excluded).—6; 5 recovered, 1 died. Two were done for senile gangrene. Of these 1 healed by first intention, 1 died from causes unconnected with operation with a healthy stump. The remaining 4 healed by first intention.

Amputation of Leg.—8. All healed by first intention.

The dressings in all the amputations were strapped on, and left for a fortnight unchanged.

Excision of Elbow. (Cases without sinus).—5. Three were done for old injury, 2 for disease. In all the same operation was performed—namely, removal of the lower end of the humerus, a modification of Dr. Heron

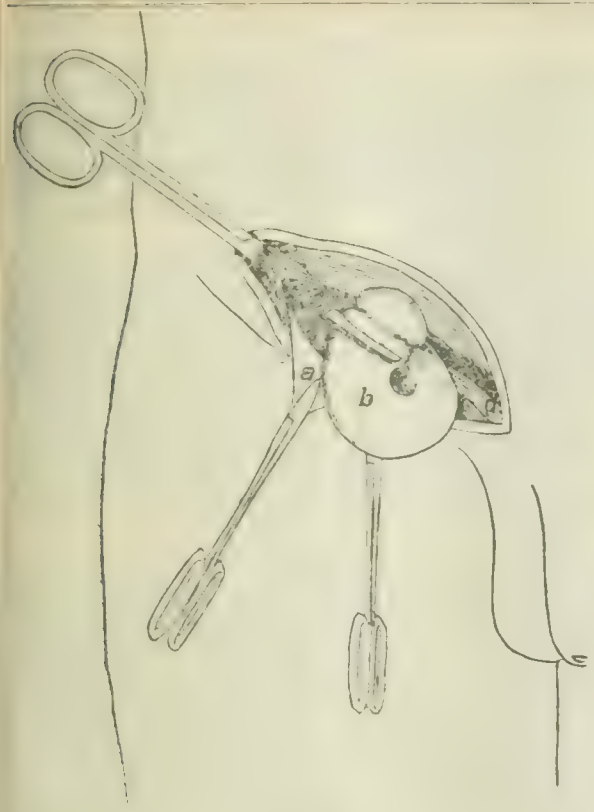


Fig. 2.



Fig. 4.

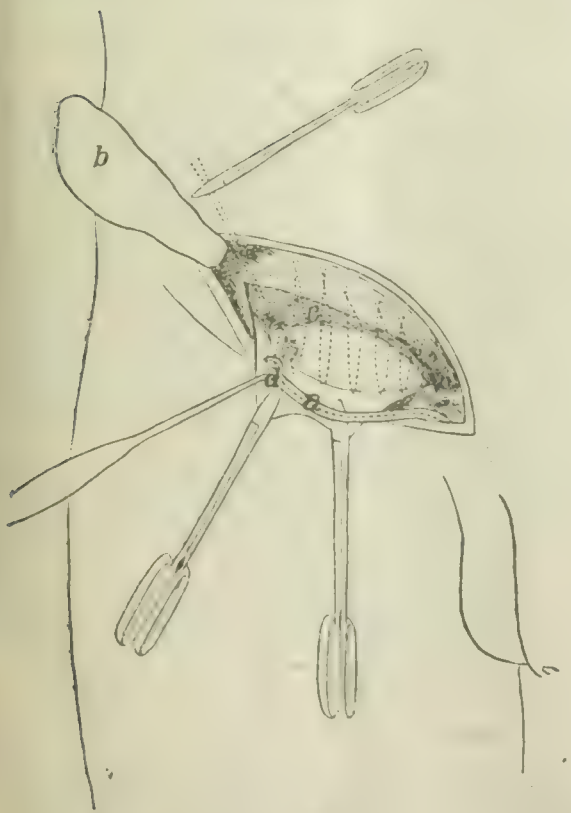


Fig. 3.

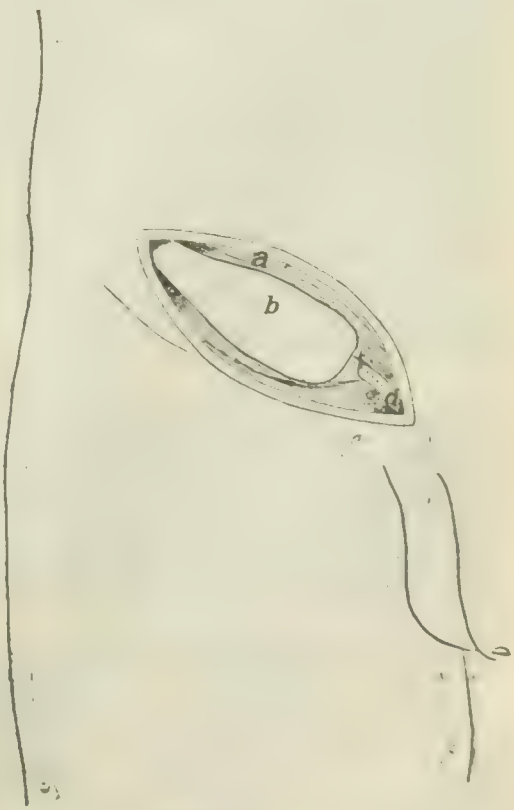


Fig. 5.

Watson's operation, but in disease the synovial membrane was excised in addition. Four of the cases healed *per primam* under a single dressing; 1 suppurated superficially.

Radical Cure of Hernia.—There were 70 cases, of which 55 were inguinal, 6 femoral, 5 umbilical, 4 ventral. Strangulated cases, except when the gut was resected are included. Of the 55 inguinal cases 5 were strangulated. A radical cure by a combination of the methods of Halsted, Bassini, Kocher, etc., was performed in all (see Figs.). Of the 5 strangulated cases all recovered: 1 suppurated deeply and the sac sloughed; one suppurated slightly and superficially: 3 healed *per primam*. Of the 50 cases admitted for radical cure all recovered; 3 suppurated deeply, and the sac sloughed. In 7 slight suppuration occurred; 40 healed *per primam*. Six femoral cases were submitted to radical cure. One was strangulated. All recovered. One, not strangulated, suppurated deeply, 5 healed *per primam*. Five umbilical: 2 were strangulated: 1 of the strangulated cases died on the eighth day after operation of septic peritonitis. *Post-mortem* examination showed ulceration and perforation of the damaged intestine. The second strangulated case suppurated and recovered. One of the 3 radical cures died from shock the day after operation. The hernia was very large and the patient fat and feeble. The remaining 2 radical cures healed *per primam*.

The Knee-joint was Opened 8 times.—Once for removal of a piece of steel; 5 for excision of loose cartilages; 2 for suture of recent fractured patella, (transverse incision, bone and aponeurosis sutured with catgut.) All recovered. All the 8 cases healed *per primam* under one dressing.

Excision of the Knee-joint (excluding sinus cases).—6. In all, the limb was put up in two lateral Gooch splints, and the dressings were left undisturbed for a fortnight. Five of them healed and were sent home during the third week in paroplastic and starch bandage. The sixth healed slowly without suppuration.

Abdominal Section.—(Pus cases, cases in which any part of the gastro-intestinal track or vagina was opened or such as were drained—for I usually drain through the vagina—are excluded.) There were in all 51 cases.

Ovariotomies.—16; all recovered. Pedicles were tied with catgut: 15 healed *per primam*, 1 suppurated superficially.

Ectopic Gestations.—4. All recovered, healed *per primam*.

Other Conditions.—19. Of these, 1 died after exploration for malignant growth occluding bile duct; 1 died after exploration for intestinal obstruction due to multiple malignant growths; 1 died after operation for intestinal obstruction due to a band; 1 died after the operation for the reduction of an intussusception. *Post-mortem* examination failed to reveal evidence of sepsis in any of these cases. One died after the operation for the removal of a large pedunculated sarcoma of the uterus adherent to intestines. This patient died from septic peritonitis. *Post-mortem* examination showed scattered nodules of growth in abdomen and some damaged but not leaking intestine. One died after an operation for the removal of adherent and inflamed tubes and ovaries from septic peritonitis. The patient had chronic puerperal salpingitis and ovaritis, but as no pus was found the abdomen was entirely closed. The case had been included, though it appears to me that the infection was brought about by the disturbance of the contents of the patient's own pelvis. The remaining 13 recovered. One coughed open his wound on the twelfth day after operation, when it appeared to be healed. His intestines were replaced. The wound suppurated superficially when closed on the second occasion. Twelve healed *per primam*.

Removal of Uterine Fibroids.—In 3 the tumour with fundus and appendages were removed, leaving the cervix as a stump. All recovered and healed *per primam*. In 1 myomectomy was performed. The patient died suddenly and unexpectedly the day following operation. Necropsy showed nothing wrong in the abdomen.[3]

Ventrifixation for Uterine Prolapse.—2. Both recovered and healed *per primam*.

Hydatid of Liver in child of 6 size of a football. All the tumour, except a portion of the fibrous capsule was removed. Abdominal wound entirely closed. Healed *per primam*.

Nephrectomy.—2. For malignant tumour. Both recovered; 1 healed per *primam*; 1 suppurated superficially.

Nephrolithotomy.—2. Both recovered; 1 suppurated; 1 healed without suppuration in 14 days.

Exploration of Kidney for Stone.—1. Died next day. *Post mortem*, no stone; advanced cirrhotic kidneys.

STATISTICS OF CASES IN PRIVATE HOSPITAL.

Excision of Breast.—10. All recovered. All healed by first intention.

Excision of Elbow (for Old Injury).—1. Healed by first intention.

Radical Cure of Hernia.—8; 5 inguinal; 3 ventral. Of the 5 inguinal 4 healed by first intention. One wound was opened partly to let out contents of a large hæmatoma. It was allowed to granulate, but it did not suppurate. Of the 3 ventral 1 healed by first intention. In 1 the superficial sutures gave way at lower end of wound on account of severe coughing; 1 died on the fourth day jaundiced, cirrhotic liver.

Excision of the Knee.—1. Healed by first intention.

Abdominal Section.—22; 21 recovered; 1 died.

Ovariotomy.—13; 12 healed by first intention; 1 suppurated superficially.

Hysterectomy.—3; 2 healed by first intention; 1 died on seventh day, very large fibroid. *Post mortem*: Nothing wrong in operation area; pus in one kidney and ureter.

OTHER CONDITIONS.

Ectopic Gestation.—1. Healed by first intention.

Intestinal Obstruction.—1. Healed by first intention.

Tumour of both Fallopian Tubes.—1. Healed by first intention.

Exploration.—3. Two healed by first intention; 1 suppurated.

It appears to me reasonable to suggest that the antiseptic might compare more favourably with the aseptic treatment, if wounds infected before or unavoidably infected by disturbed foci in the patient had been selected for statistical purposes, instead of those I have chosen, but the difficulties of doing so would be very much greater than the task I have undertaken.

SUMMARY.

The antiseptic method, if contact of strong antiseptics with raw surfaces be avoided, allows of ideal wound healing.

In an uninfected wound no drainage is necessary.

For the arrest of hæmorrhage torsion should replace the ligature in the great majority of cases.

Buried catgut sutures are the best for securing apposition of the deeper structures and the skin, for by their use dead spaces, stitch, abscesses, and the pain and trouble of removing sutures may be avoided.

All clean wounds should be left undisturbed for ten days, and should then be healed.

The special dressings described are those I have been using of late years, but it is of interest (to me at least) to recall that as early as 1878, in a paper read before the South Durham and Cleveland Medical Society; again in 1881 in the *Birmingham Quarterly Review*, and again at the February meeting of the Northumberland and Durham Medical Society, in 1886, I advocated the same principles, and reported results of many major operation cases healed under one dressing, and I then maintained that this should be the rule. So far as I can learn, no one else had suggested such possibilities in 1878 or for many years later. At the present time the majority of surgeons aim, with success, at getting wounds healed under one or two dressings.

APPENDIX.

Operating Table.—No special table is necessary. An ordinary strong deal table, not too broad, serves every purpose. For the Trendlenburg posture, I draw the patient down the table, till the knees are hanging over its lower end. By fixing each ankle of the patient to a leg of the table, raising the corresponding feet of the table on two chairs, this position is secured. The operator requires a small stool to stand upon.

Table for Instruments.—Metallic and glass implements are an unnecessary luxury; nothing beats a deal table, covered by a tablecloth wrung out of 1 in 20 carbolic lotion.

Operation Dishes are thoroughly cleaned in the ordinary way, and before use are washed inside and out with 1 in 1,000 corrosive lotion.

Nail Brushes are kept in lidded jars in 1 in 1,000 lotion. Cheap wooden ones with strong bristles are best, for there will be no hesitation in destroying them when not above suspicion.

Sponges may be a frequent cause of mischief, and require great care and attention. When new they are well shaken and beaten in a mortar if necessary, to remove as much of the calcareous matter, sand, etc., as possible; next they are soaked in acid water (strong enough to taste distinctly acid) for about four hours, or, at any rate, till all effervescence has ceased: then they are thoroughly kneaded in a solution of carbonate of soda (half a pound to 3 quarts) over and over again; after this they are thoroughly washed in clean water, and finally put in carbolic lotion (1 in 20), where they are kept. When required for use outside, they may be separately wrapped up in gauze wrung out of (1 in 20) carbolic lotion, and then can be conveniently carried in a clean waterproof sponge bag. When soiled they are frequently washed in warm water first, then steeped in carbonate of soda solution for twelve hours, again washed in warm water till quite clean, and finally put into a jar of (1 in 20) carbolic lotion.

Instruments are thoroughly washed with soft soap, hot water, and a nail brush; then they are immersed in 1 in 20 carbolic lotion for one hour before the operation. When dirtied they are washed and brushed whilst still moist, and then dried thoroughly before being put away. They are kept lying on glass shelves in a well-made case.

Ligatures and Sutures.—For nearly every purpose I use catgut, which is bought preferably old, well soaked in carbolic oil. It is transferred from this carbolic oil to ether, in which it is well shaken, and in which it is allowed to lie soaking for some hours (usually over night). From this it is transferred to corrosive sublimate and spirit 1 in 1000, where it is kept till required.

Towels are boiled for half an hour and steeped in 1 in 20 carbolic.

Dressings.—The gauze that I use is bought at a draper's, and boiled for an hour. It is then put into and kept in jars of corrosive sublimate and methylated spirit (1 in 1,000) till required. Before applying it to the sutured skin it should be

wrung out of the spirit corrosive fairly dry. Hartmann's corrosive wood-wool wadding forms the outer dressing. It is kept in well-fitting metal boxes. For the purpose of keeping dressings fixed, I employ fairly broad bands of adhesive strapping and elastic webbing bandages outside of the ordinary bandage, which must be firmly applied to keep the deep surfaces of the wound together and to limit exudation.

[The explanatory diagrams were made by Dr. W. G. Richardson.]

NOTES.

[1] There is now a good prospect of a new hospital. [2] Since I learnt from Mr. Arbuthnot Lane of London some years ago the value of torsion, I have never used a ligature except in special localities like neck or axilla, or for some particular purpose. [3] Without any explanation it would appear as if I had been unfortunate in my operations for uterine fibroids. The reverse is the case. I have operated upon 66 cases by abdominal hysterectomy or myomectomy, and the only death I have had, with the exception of the two recorded was a single one ten years ago, in which the stump was treated extraperitoneally.

THE TREATMENT OF TYPHOID FEVER.*

By SIDNEY PHILLIPS, M.D.Lond., F.R.C.P.,

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TYPHOID fever being an artificially produced disease, tends to vary with the conditions associated with its origin, and though such variations are slight individually and gradual in incidence, in their sum they suffice in time to produce a considerable variation in type from the original disease. Certainly there is considerable difference in the symptoms described fifty or even twenty-five years ago and those occurring to-day; the difference is marked in the lessened severity of the abdominal symptoms: the tongue is now often moist throughout the disease, instead of dry and baked; tympanites and diarrhœa are much less pronounced; probably also hæmorrhage and perforation are less common; tremors and dilatation of pupils are now uncommon; and instead of noisy, active delirium, the mind is often clear throughout even fatal cases. The typhoid state, with the patient sunk deep in bed, unable to move himself, and lying unconscious or semiconscious for days, is now quite exceptional. Nor is this a comparison merely between a grave and a slight case, for the mortality is not lessened. Nor is it the result of treatment, though this may produce some modifications. The difference is one of type, and is probably accounted for by the fact noted first by Vaillard[1] and since by myself,[2] Goodall,[3] Moore, and others—that of late it is not very infrequent to find at *post-mortem* examination of typhoid cases that there is little or no ulceration of intestines. Such cases escape some of the dangers of enteric fever, and those therefore met with on the *post-mortem* table must represent many others with little or no ulceration of intestines that recover. The diminution in severity of abdominal symptoms is not therefore inexplicable, but corresponds with a tendency to lessened ulceration of intestines. Relapses, too, appear much more frequent of late years; in 1862 Murchison computed they occurred in 3 per cent. of cases; in 1897 they occurred in 13 per cent. of Metropolitan Asylums Board cases.

If typhoid of twenty-five years ago so differed from typhoid to-day, it probably differed still more fifty years ago; and when conditions existed such as made typhus rife, the distinctive characters of typhoid may well have been affected by such influences in a manner to account for typhus and typhoid fever being regarded at the time as one and the same disease.

In the treatment of the disease Jenner in 1879 insisted it was necessary to be acquainted with the "epidemic constitution of the period," and it is not less necessary now to be acquainted with the prevailing type of the disease.

PREVENTIVE TREATMENT.

The proposals which have been made to produce immunity by inoculations of bacillus cultures have not yet, at any rate, come into general use, and at present the prevention of typhoid fever depends upon those sanitary measures by which the proportion of persons dying annually in London from typhoid has fallen from 377 per million persons living in 1869 to 129 per million in 1897.

* Read before the Harveian Society of London, November 3rd, 1898.

But the fatality of the disease once contracted has little altered. Murchison found that the mortality of patients in the London Fever Hospital during the ten years ending 1862 was 18.5 per cent.: the same figure was shown in the cases occurring in various large hospitals in Great Britain and abroad. All figures available at the present day show about the same mortality. Thus, the Registrar-General's annual returns since the Infectious Diseases Notification Act in 1889 show that from 1890 to 1897 the mortality still remained over 18 per cent. The chances of recovery, therefore, of a person contracting typhoid to-day are little or no better than they were fifty years ago, notwithstanding the advances in medical knowledge and improved nursing and hygienic conditions.

In the treatment of a disease it is important to know the relative frequency of the various dangers to life: *post-mortem* records and returns of complications during life do not make these known, but an approximate estimate of the frequency of deaths from causes in each of the following groups can be made.

I. Death from general causes: toxæmia, hyperpyrexia, pyrexia, heart failure, "asthenia."

II. Death from local lesions special to typhoid fever: perforation, hæmorrhage, etc.

III. Death from intercurrent affections, pneumonia, etc., due to the streptococcus and pneumococcus mainly.

Of the causes in Group II, perforation is most common: it has been variously estimated as causing 5.7 (Hoelscher[4]) to 20 per cent. of the deaths (Murchison, Hare[5]). (Other writers' estimates were given in the paper.) Certainly perforation will be over rather than under-estimated if credited with 20 of each 100 deaths.

Hæmorrhage may be taken as causing 10 of 100 deaths as an outside estimate. (The figures were given on which this estimate was based.)

Peritonitis, without perforation, accounts for 2.2 per cent. of deaths (Hoelscher). Other rare accidents such as rupture of mesenteric glands, of spleen, or gall bladder, can not together account for more than 2 per cent. of the deaths, and a liberal estimate cannot credit the causes in Group II with more than 35 of each 100 deaths.

The intercurrent affections in Group III are mainly pulmonary: pneumonia, bronchitis, etc. Nephritis, pericarditis, meningitis, are very rare causes, and this group is shown by statistics (which were given) not to account for more than 10 of each 100 deaths.

The causes grouped as II and III, therefore, do not together produce more than 45 of each 100 deaths, and if we allow for them, say, 50 per cent., there is ample margin for error. The remaining 50 of each 100 deaths must be due to causes falling in the first group, and these may be separately discussed here, though often associated in the disease itself.

First as to *toxæmia*. It is probably the more common cause of death, and the antiseptic treatment is based on the endeavour to lessen its dangers by destroying the toxins before absorption, and limiting the action of the micro-organisms in the alimentary canal.

The list of substances advocated for the antiseptic treatment is innumerable; for many the claim has been also made that they cut short the disease, but an "abortive" treatment of typhoid is not yet known. Many antiseptic substances have been experimentally proved to destroy the bacilli outside the body, for example, a 1 in 5,000 solution of corrosive sublimate, and the principle of the antiseptic treatment is no doubt correct. Jenner used to give charcoal long before the term "antiseptic treatment" was formulated, but it is bulky to take. Bichloride of mercury has been extensively used since it was advocated by Sir W. Broadbent[6] in 1894, and it appears to me to be the most useful antiseptic, often lessening the temperature and the toxic symptoms: it rarely causes diarrhœa, but is probably better abstained from if there be hæmorrhage.

It is of interest that Murchison condemned the use of mercury in typhoid as "always useless and injurious." This difference in experience is another evidence of the altered type of typhoid fever.

Salol is another antiseptic substance which is useful. I find it a useful practice to give a daily enema of disinfecting solution, especially when there is constipation.

Hyperpyrexia is very rare in typhoid fever. Of 200 con-

secutive cases at St. Mary's Hospital it occurred only twice; the same percentage was found by Bryant in 608 cases collected from *Guy's Hospital Reports*[7]; Ord,[8] Osler, Fagge, and the statistics of the Metropolitan Asylums Board all show the rarity of its occurrence. But rare as it is in typhoid fever, it is infinitely rarer as a complication in itself; it is nearly always due to some local affection. In one of my cases pneumonia, in two perforation and peritonitis, in one suppurative meningitis, and in one rupture of the gall bladder were found *post mortem*. It should, then, never be assumed that hyperpyrexia is a complication in itself without a thorough search for some local affection to account for it. This may be of import in treatment, as the cold bath, which is the sole efficient means of treating hyperpyrexia, might do harm if it were due to perforation or peritonitis; in such cases treatment must be directed to the local condition and the temperature meanwhile lowered by sponging, quinine, etc.

Pyrexia is not now regarded as one of the chief dangers of enteric fever, and too much importance is not to be attached to the mere temperature. A pyrexia of 103° for two or three weeks in a previously healthy young adult lying in bed and taking food well will not produce serious consequences. Even high temperatures are more often an indication of some intercurrent affection than a danger in themselves, and severe cases may not have a high temperature. Dreschfeld[9] and others record cases even fatal with no rise of temperature. The pyrexia usual in typhoid is for the most part effectively treated by tepid or cold sponging and quinine. When, however, the temperature is unusually high or unduly protracted, or with very irregular extensive rises and falls, or presents no remissions, other means must be adopted for its control, and of these there is none so effective as the cold bath. The claim made for it, that it reduces the mortality from 17 or 18 to 8 or 9 per cent. has not been disproved. It is recommended that whenever the temperature reaches 102.2° the cold bath shall be employed; practically, therefore, all patients have to be so treated, which means that the 82 who would recover even without the bath and the 9 who will die with or without the bath, that is, 91 of every 190 patients are subjected to repeated bathings unnecessarily, and that the 9 who die, have these repeated bathings added to their sufferings. Its infrequent use, therefore, in hospital, and still more in private, practice is due not so much to a doubt of its virtue as to its impracticability, and it is not likely to become of general utility unless some means can be found of selecting the cases which really require it. It is said that to obtain the advantages of the treatment it must be begun too early in the disease to predict if the case will prove a serious one. So far as hæmorrhage and perforation are concerned this is no doubt true, but these are accidents which are not rendered less frequent by the cold bath, and *quoad* the treatment, may be ignored.

The only causes of death which are reduced by the cold-bath treatment are those in Group 1, and it must be admitted that it is not always possible to tell early in the disease whether such dangers threaten, but if the temperature is not very high, is accompanied by remissions, is not very irregular in its rises and falls, if the pulse is not very rapid or feeble, and if the patient does not seem greatly affected by toxæmia, I think he might be spared the cold bath for a time at any rate. For it is not certain that the advantages of the bath are lost if deferred after the temperature touches 102.2°, Hare having obtained equally good results without following this rule.

Possibly, if a selection were thus made, the statistics of the cold-bath treatment would appear less favourable than when all the slight cases are submitted to the treatment, but I believe it would be more generally used, and more lives would be saved, than by adhering to a criterion of danger based on the discarded theory that pyrexia is the one danger of fevers.

Probably the temperature of the bath need not be so low as sometimes recommended; thus Hare's baths were usually at 75° or 80°, owing to that being the natural temperature of the water in Brisbane, and he obtained as good results as others have done, though it should be said in severe pyrexial cases he cooled the bath down by ice. In Dr. Barr's tank treatment[10] the temperature of the water is only 90 or 95°; this method, he finds, gives excellent results, but the special arrangements it requires are not to be obtained in a private dwelling. In patients not treated by baths it is generally agreed sponging with tepid or cold water, affusions, and wet packs are better than the use of drugs. The best of the drugs is quinine, but it is slow in acting; acetanilide, antipyrin, and phenacetin are depressants, and act on the red corpuscles; this is denied in the case of antifebrin.[11] I never use these drugs in typhoid, but I have seen them do much harm in cases of fever at all approaching a malignant type.

Cardiac Failure.—Changes in the myocardium resulting from pyrexia and from toxins are recognised causes of cardiac failure in typhoid; they are not, however, of great frequency in the disease. Hoelscher only found advanced parenchymatous change in 19 per cent. in 2,000 necropsies of typhoid cases; it is indicated during life by the feebleness of cardiac impulse and sounds, and of the pulse; death may occur suddenly or gradually.

Sudden death sometimes occurs in typhoid in which no cardiac changes are found in the heart *post mortem*. Many explanations of these cases have been offered. Dewèvre,[12] though taking for granted such cases do result from cardiac failure, shows that none of the suggested explanations are satisfactory. These deaths appear of the same nature as deaths from diphtheritic paralysis, probably from peripheral nerve changes which are known to occur in typhoid.

Blood Failure.—Another class of deaths due to failure of circulation merit attention. These are cases without any distinctive signs during the acute stage of the fever, though there is often a tendency to diarrhœa and sweating, and sometimes melæna. But when the end of the third week arrives, and convalescence is expected, the temperature though it falls to 100°, or thereabouts, keeps daily above the normal—100° to 101° or so; the pulse may get rapid, rising 140 to 160 a minute, and though the tongue is clean, food well taken, and the special signs of typhoid fever have passed off, the patient fails to gain ground; he gets daily weaker and more and more listless, though the mental state is usually clear; profuse sweats may occur, and the vessels are wanting in tone; later on much tremor occurs from debility, and the patient usually dies, sometimes quite suddenly, sometimes merely flickers out. In other cases he may perhaps recover. Several such cases have been under my care. The symptoms differ from those usually attributed to toxæmia; and they cannot be attributed to heart failure,

1. Because myocardial change to such a degree as to lead to complete cardiac failure and death does not occur after a moderate fever of two or three weeks' duration, even in rheumatic fever, in which myocardial changes are specially marked.

2. Because the symptoms differ from those of cardiac failure; a failing heart tends to become slower, but in these cases the pulse often gets more and more rapid; the heart sounds and impulse too are not greatly weakened, though as the debility of the patient increases their debility increases with it; the extreme listlessness and debility of the patient are quite out of proportion to the heart weakness.

It appears most probable that in these cases there is an actual want of blood in the body, arising from failure in the blood-making function, and that death occurs from mere bloodlessness; I do not use the term anæmia, which would be strictly applicable, because it has become customary to use that term as applying only to the corpuscles.

The proof that symptoms in typhoid are sometimes attributable to want of blood are:

1. If the artery of a patient dead of typhoid fever after these symptoms be opened it will be found singularly empty of blood. In one case (where no melæna had occurred) it was quite empty and the inner wall of the artery quite dry. In some necropsies of typhoid patients, too, even where no melæna has occurred, the intestines are markedly blanched and exsanguined and the solid viscera pale and dry, though in most cases they are, as usual in febrile conditions, dark and softened.

2. Examination of the blood itself. Much less attention has been devoted to changes in the plasma and volume of the blood than to the changes in the corpuscles. Observers agree that there is an enormous decrease in the number of red corpuscles and in hæmoglobin throughout the course of typhoid fever which should be gradually made good in convalescence. There is also a great decrease in leucocytes, and Coe has found that the fibrin of the blood is

diminished in typhoid fever, the exact contrary of what occurs in other fevers. Hayem, too, finds that in typhoid fever there are sudden rises in the number of corpuscles which he can only attribute to losses of fluid by sweating and diarrhœa. All these results go to show that grave deterioration in all the constituents and in the quantity of the blood occurs in typhoid fever. Further, Dr. Thayer and others describe cases of post-typhoid anæmia, sometimes fatal, coming on as the typhoid passes off; it is admissible to think that if such fatal anæmia can immediately follow convalescence, it may occur at a time when convalescence commences, and prevent its accomplishment.

3. The symptoms of rapid pulse, increasing listlessness and debility, with fever and perfectly clear mental condition, are just those which follow want of blood, and indeed they often come on after severe hæmorrhage in typhoid, and after hæmorrhages from other causes.

And if it be conceded, as I think it must, that many of the symptoms and dangers of typhoid are due to changes in the constitution and amount of blood in the body, there is no lack of causes in typhoid fever to produce blood deterioration. To the causes of blood deficiency, pyrexia, toxins in the blood, and cloudy swelling of the internal organs which are common to the fevers generally, there are added in typhoid a special affection of the great blood-making organ, the spleen, and very often, also, a drain of material from diarrhœa, hæmorrhage, or profuse sweats. In addition, the widespread affection of the mesenteric and retroperitoneal glands must offer an obstruction to the absorption of nutriment from the alimentary canal, however well it is taken and digested. And I think the conclusion is justified that a certain number of typhoid patients die from mere bloodlessness and failure to make good the loss of blood material which results from the disease.

Why some patients should pass into this state and others not appears to depend more on the individual incapacity to make good the depletion by a new formation of blood than on any special character of the typhoid poison. Doubtless this defect in blood formation is in some cases associated with real cardiac weakness, but the cardiac weakness in many such cases is a result of it and not the cause. And the importance of measures to keep up the blood supply cannot be overestimated.

Another condition also seems not uncommon in typhoid fever—namely, a tendency for the venous side of the circulation to be full of blood while the arteries are unduly empty; in opening veins for injection of salines I have often been struck with the free bleeding from both proximal and distal ends of the vein, and care must be taken, if it is wished to avoid this, to put a ligature round the vein before it is opened, tightening it round the vein and cannula after the latter is inserted. Hayem has found, in examining the blood of typhoid patients, that changes which he attributes to loss of fluid by sweats and diarrhœa, occur in it suddenly, "such as seen in the algide stage of cholera," in which disease there is a tendency to accumulation of blood in the veins; and I think the overloading of the venous side in some typhoid (and other fever cases) is worthy of note, and among other things may predispose to thrombosis.

As regards treatment, it will be convenient to speak of heart failure, asthenia, and blood failure together. For all of them one essential is to prevent waste of material by diarrhœa, or hæmorrhage, or profuse sweats, and to supply as much nourishment as can be digested and absorbed.

As regards food, Dr. Barrs[13] recommends the giving of solid food whenever the patient "likes it, wishes for it, and enjoys it." He argues that such food will not be likely to cause perforation, as it becomes softened before getting into the intestine, and that perforation only occurs in 2 or 3 per cent. of cases. I think cases do occur with little or no intestinal ulceration in which solid food might be given early without ill effect, but in the absence of certain means of distinguishing such cases, and remembering unfortunate results which have occurred in some patients who have surreptitiously followed Dr. Barrs's treatment, I think liquid food is the only justifiable mode of nourishment in the active stage of typhoid fever. And of all foods milk should be the staple diet, diluted with water, lime water, or barley water, according to the wish of the patient and the discretion of the medical attendant. Where milk so diluted fails it will be sometimes better taken peptonised; in some cases it is borne well when diluted with tea, and there seems no reason to deny a typhoid patient either tea or coffee. We give caffeine for the heart, tannin to check diarrhœa, and allow sugar and water to be taken; why should a mixture of these be disallowed?

In some cases of vomiting or diarrhœa beef-tea or meat extracts have to be substituted for milk. The quantity of milk given should be as much as the patient can digest without flatulence or colicky pain or curds in the stools. As a rule three pints is enough in the twenty-four hours, but I can see no reason why more should not be given if the patient can take it well; persons often take five or six pints of milk a day under the Weir-Mitchell treatment, and a patient wasting and losing blood rapidly, as in typhoid, will benefit by as much as he can take without digestive disturbance.

As regards stimulants, I have nothing to add to the rules usually followed; they are not necessary as a routine part of treatment.

An important point is to secure sleep, and opium is quite admissible. Sir W. Broadbent deprecates the use of chloral. In the treatment specially directed to cardiac weakness digitalis, strychnine, and caffeine are to be resorted to, but cardiac tonics receive little response from a heart with organically-weakened muscle tissue; caffeine and strychnine act well together, but strychnine here, as in other conditions, may easily be pushed so far as to make the patient wakeful. Ether, ammonia, and sumbul, and diffusible stimulants are often of use. Alcohol, no doubt, stimulates the heart, but if pressed too much has the contrary effect.

In all cases, and specially in some, endeavours should be made to keep up the volume and composition of the blood; sweats should be checked by belladonna or oxide of zinc or agaric acid, and diarrhœa by enemas. There is no reason why cold water should not be given freely, due regard being had to preventing abdominal distension. In many cases ice sponging or the cold bath contracts the vessels and lessens their relaxation for some time after its use, and possibly in the bath or the tank fluid is actually absorbed cutaneously. Raw meat juice and every form of nutriment possible must be given in cases of gradual weakness from blood deterioration, and I have sometimes given iron and malt extract. Oxygen inhalations are also of use. Solid food must be given as soon as it can be taken with safety; after three days without fever at any time in the twenty-four hours it may be given; it is best to intermit one day at first to ascertain if a rise of temperature is produced. In cases where it is deemed probable that little ulceration occurred I give solid food earlier than in other cases. When cases drag on with little rises above the normal, solid food must be tentatively and gradually tried. In convalescence patients are hungry and require feeding up, and it is often in cases where solid food is long delayed that thrombosed veins occur.

When there are evidences of profound bloodlessness and weakness, whether following hæmorrhage or not, saline injections may be of use. Personally I have found the subcutaneous injection of salines gives so much pain that I prefer injecting the saline fluid into the basilic vein. This flows in better with a simple cannula, drainage tube and funnel than pumped in by the double action syringe made for the purpose. I have injected two pints, usually at a temperature of from 100° to 115°. After it there is usually sweating and rise of temperature temporarily. I believe the fluid should not be injected at so high a temperature as 105° in typhoid fever. In 2 cases I think the patients' recovery was due to it. In one of them, in 1896, the patient was in an apparently hopeless state of collapse, but recovered after two saline injections. Probably blood transfusion would be better, for in most cases saline injections only give temporary benefit.

Perforation may be accompanied by its well-known symptoms, but in some cases of typhoid where nerve tone is already lost, and the tympanitic belly is soft and doughy, perforation and after-peritonitis may occur most insidiously, with little pain, collapse signs, or alterations in temperature.

Cases of recorded recovery from perforation based merely on evidence of symptoms cannot be taken as conclusive, for it may be simulated by rupture of peritoneum over a mesenteric gland and other causes; indeed the abdomen has been opened for perforation in several cases where it had not oc-

curred. In Herringham's[14] case nothing was found and the patient recovered; in Sheild's case[15] rupture of gall bladder. In a case, however, recorded by Murchison a perforation had all but healed when erysipelas carried off the patient, and in a case at St. Mary's Hospital in 1894 a *post-mortem* examination showed a perforation all but healed when the patient succumbed to septicæmia. Three cases of 22 recorded operations for perforated typhoid ulcers have recovered, and as operation affords a better chance of recovery than that offered by Nature, it appears to me indicated in all cases in which perforation can be diagnosed—the difficulty in the diagnosis, however, will prevent the operation being very often performed. The only other treatment affording a chance of recovery is opium.

Hæmorrhage.—Some have regarded hæmorrhage as a favourable occurrence in typhoid fever, and there is no amount of hæmorrhage that may not be recovered from; in 1882 I saw, with Dr. Wakefield, a patient who bled two chambers full, and recovered. But the more general opinion is that it is a bad omen, and that death follows 30 or 40 per cent. of cases of free hæmorrhage, though sometimes long after the bleeding has occurred. It is generally arterial, but in a case of mine in 1888 the necropsy showed that the dark blood had oozed away during life from a vein in the ileum, opened up by ulceration. In its treatment opium pressed freely, and turpentine, are useful, but often no drug is so efficacious as tincture of hamamelis; in one case at St. Mary's Hospital in 1892 (J. M., Case 1398) it checked the hæmorrhage after all other remedies had failed, and I believe it is more to be relied upon than anything else; in 5-minim doses in a little water every half-hour while the hæmorrhage lasts, with or without opium. The application of the icebag to the abdomen seems beneficial, but it is depressing if kept on long after the hæmorrhage has ceased and it freezes the abdominal wall into a leathery consistence, and probably interferes with the vitality of the subjacent intestine. I have repeatedly seen hæmorrhage occur while the icebag had been on for days. The necessity for absolute non-movement of the patient when hæmorrhage occurs is obvious.

Of peritonitis without perforation opium is indicated.

Diarrhœa.—Murchison in the edition of his work in 1862 wrote that diarrhœa occurred in 96 of 100 cases; in 1884 he found it reduced to 80 of 100 cases; since that time it is much less frequent. Of 200 consecutive cases at St. Mary's diarrhœa occurred in only 115; constipation in 48; and the diarrhœa was seldom very severe. In many cases it had been set up by a purge given before a diagnosis was made. Diarrhœa is found in a very large proportion of cases in whom hæmorrhage occurs, and in my opinion adds to the danger of typhoid fever by preventing absorption of nutriment and by draining the blood of fluid. I think purgative drugs should never be given and diarrhœa should be checked in every way possible by adapting the nature and quantity of food to the patient's powers, by giving all food warmed and by enemas of starch with or without opium rather than by drugs given by the mouth. Of the latter, salicylate of bismuth in doses of 20 or 30 gr. doses three or four times a day is very useful.

Constipation must be treated if obstinate; enemas are better than purgative drugs for this purpose, and should have some disinfectant added to them. It is very important to overcome constipation before solid food is given; if not, it often sends up the temperature and an immediate recurrence of symptoms. Some attribute relapses to the giving of solid food, others to constipation. Certainly the two combined will produce a rise of temperature and disturbance for a considerable time, though not, I think, a true relapse with fresh spots. *Tympanites* is commonest when there is much diarrhœa. That form in which the belly is soft and doughy as well as swelled is due to general loss of nerve tone and treatment affects it little. Diffusible stimulants, etc., may be tried. In the form of tympanites with tense abdomen hot fomentations are, I think, preferable to the icebag. Passage of a long tube into the rectum gives relief and often also sets up retention of urine.

In many cases swelling of abdomen is due not to true tympanites but to stomach distension, the result of liquid food and the recumbent position. Food must be given in small quantities only.

Retention of urine must be always remembered—it is often overlooked in the general distension of abdomen, or because "overflow" occurs from the full bladder. Long retention may add uræmic dangers in a typhoid patient very readily.

The question of moving a patient in cases where the sanitary conditions are bad has sometimes to be considered, for he will be likely if he remain where he is to take in fresh doses of the poison. On the other hand, as Sir W. Jenner pointed out, the cases that do worst owe it sometimes to having travelled when well on in the disease. If it is very early, careful removal will be best. If the patient is well on in the disease he had better remain where he is as the risk of moving is too great. I show the chart of a patient I saw in June with Dr. Pettifer who had repeated rigors and rise of temperature pointing to septic conditions. We moved him; only one more rigor occurred and he recovered.

In the third group the intercurrent affections of typhoid such as pneumonia are to be treated on ordinary principles; pneumonia is usually recovered from, and it is apt to begin or to end in the course of typhoid with abrupt rises of temperature or a critical fall, after which the typhoid temperature reasserts itself. Acute bronchitis in typhoid is, in my experience, more serious than pneumonia.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

NOTE UPON THE TREATMENT OF PNEUMONIA BY IRON PERCHLORIDE.

STEEL in the treatment of pneumonia has already many advocates, and I should like to add my testimony to its usefulness in certain forms of this rather common malady and under certain conditions. The following is an example of the kind of case in which it seems to be especially valuable: P. J. L., aged 34, came under treatment on October 18th, 1898. He was a fairly healthy looking man. He stated that he had been feeling very poorly for two or three weeks, and that on the day previous he had caught cold from getting wet while on a short railway journey. When seen on the afternoon of October 18th he complained of a tight feeling across the lower part of the chest, pain in the right side of his chest, back, and legs, and of a rather troublesome cough. There was found dulness above and below the right clavicle, bronchial breathing and bronchophony, and, in fact, the usual symptoms of apical pneumonia. Lower down there were crackling and subcrepitant *râles* to the sixth rib in front and moist sounds were also heard rather extensively posteriorly. The temperature was 102.2°, the pulse 118, and respirations 28. He was ordered carbonate of ammonia and citrate of potash in rather full doses every three hours, and hot applications occasionally to relieve pain over the right side. The following morning the temperature was 103.2°, pulse 124, and respirations 32. The tongue was still furred, the skin moist, pleuritic pains severe on moving or coughing. He had had very little sleep, and still felt very poorly. In the evening the temperature was 104.4°, pulse 126, and respirations 30; the moist sounds in the chest seemed to be extending; he felt, and evidently was, very seriously ill.

The question was whether to give a large dose of digitalis rather as a sedative than otherwise, as the first sound was still quite clear, or to give iron perchloride. I decided to give the latter, as I felt sure it would lessen secretion in the affected bronchioles, and act as a general tonic. The following mixture was prescribed: Tinct. ferri perchlor. ℥xx; liq. am. acet., ʒj; sp. ether chlor. ℥xx; aquam ad ʒj, to be taken every three hours.

On the following morning he said he felt much better; he had had two or three hours' sleep; his pulse was firmer, and

slower, 108 instead of 126, and his temperature had fallen to 102°, the respirations to 24. That night the temperature rose to 103°, it was 101.2° F. the following morning, and was 102.8° at night. He had been able to sleep much better, his tongue was getting less furred, although at first a little blackened by the medicine; this was given after the first day every four instead of every three hours. The crisis occurred during the night of the fifth day, and the temperature fell from 102.8° to 97.8°; the pulse and respirations also fell to 78 and 20 respectively.

On October 24th the patient's condition was entirely satisfactory. Moist sounds were, however, still to be heard over most of the lung, and the absolute consolidation of the apex was gradually undergoing resolution. The cough was easier and more efficient.

As I have stated, the alternative to the treatment of this case by steel would have been by large doses of digitalis, with the free exhibition of stimulants. The patient has had no stimulant. Had the latter line of treatment been adopted, I think he would not have done so well, and even if the immediate requirements of his system had been so easily satisfied, we must all admit that when we can do without digitalis it is always better, especially in apical pneumonia, where a slower convalescence means a greater danger of tuberculous infection of the damaged lung.

Henry W. King, M.D.,
Honorary Physician to the Chester General Infirmary.

ON THE PASSAGE OF THE UTERINE SOUND INTO A FALLOPIAN TUBE.

The following case will be of interest *apropos* of the discussion in the British Medical Journal on the question of the possibility of passing the uterine sound into a Fallopian tube. Some years ago I was asked to see a case with Dr. Allan of Longton with reference to the removal of a tumour which turned out to be a dermoid growth from the left ovary. When examining the case he told me that the sound passed for nearly 8 inches, and on introducing the instruments found that such was the case. On palpation of the abdomen the sound could be felt on the left side, apparently immediately underneath the abdominal wall. The passage was very easy and the sound turned somewhat to the left and gave no pain. When I was proceeding to operate for the removal of the tumour I was anxious to clear up the question of where the sound passed to, and inserted it before making my abdominal incision. On opening the abdomen I found that the sound had threaded the whole extent of the left Fallopian tube and was presenting at the orifice. This tube was removed with the ovary and growth, and the patient made a good recovery. It is satisfactory to be able to speak with absolute certainty in the matter, as the possibility of verifying the passage of a sound into a Fallopian tube by inspection must be rare.

Wheelton Hind, M.D., B.S., F.R.C.S.
Stoke-on-Trent.

PUERPERAL PYREXIA TREATED BY ANTISTREPTOCOCCUS SERUM.

The following cases, in which antistreptococcus serum was used, may be of interest to your readers:

Case I.—A. R., a primipara, aged 23 years, pregnant seven months, was taken in labour—breech presentation, heralded by slight hæmorrhage, ten days before. The placenta and membranes were so adherent as to be practically incorporated with the uterine wall, and were removed under ether. The temperature fluctuated for two days, and then after a rigor rose suddenly to 105.5°, falling again, however, after a uterine douche of 1 in 8,000 perchloride of mercury. Next day it rose again with rigor to 105°, and the douche failing to reduce it, the uterus was explored, a small portion of placenta removed, and the uterine wall curetted. Notwithstanding frequent uterine irrigation and the absence of offensive discharge, the temperature on the following morning reached 105°, fell during the day, but in the afternoon rose again to 104°; the pulse was 140. An injection of 10 c.cm. of antistreptococcus serum was made into the abdominal wall: in twenty minutes the temperature fell to 100.5°. The injections were continued at intervals of twelve hours for five days, and each injection was followed by a slight fall of temperature, which only once afterwards reached 102°. They were discontinued when the temperature had remained normal for twenty-four hours, and the patient made a good recovery.

Case II.—A. J., aged 21, a primipara, eight months pregnant, had lived in a farmhouse, with very insanitary surroundings, during the late hot weather. She had complained of shivering the day before I saw her. The temperature was 102° and the pulse 140. There was pain on pressure over the uterus and severe headache. Next day labour came on; the temperature was 100°. She was delivered eighteen hours later, placenta and membranes coming away naturally and easily. Twelve hours later her temperature was 104.5° and the pulse 150. I injected 20 c.cm. of antistreptococcus serum, and in fifteen minutes her temperature was 102°. During the following two days 10 c.cm. were injected four times, and after each injection there was a fall of temperature as below:

	Temperature at Time of Injection.	Temperature 15 Minutes Later.
1st injection, evening	104.5°	102.0°
2nd ,, morning	100.0°	99.0°
3rd ,, evening	99.5°	98.4°
4th ,, morning	101.0°	100.0°
5th ,, evening	100.0°	98.4°

After the fifth injection the temperature remained normal and she made an excellent recovery.

Arthur A. Pim, L.R.C.S.E., L.R.C.P., etc.
Beaminster, Dorset.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL INFIRMARY, DERBY.

A CASE OF INTESTINAL OBSTRUCTION, FROM THE IMPACTION OF A GALL STONE, RESULTING IN DEATH.

(Reported by Winstan St. A. St. John, M.R.C.S., L.R.C.P., Assistant House Surgeon.)

H. H., aged 54, was admitted for intestinal obstruction on Tuesday, August 23rd. He had been vomiting since the previous Friday, the vomit having become fæcal on the Monday.

His medical man had seen him on the Saturday night, when he complained of gastric pain and sickness, which seemed better on the Sunday, but there was no action of the bowels. On Monday he was worse, and in the evening, being in a state of collapse, was ordered to the infirmary.

On admission his abdomen was seen to move freely on respiration. No hernia could be found, nor was there any indication to assist in diagnosing the cause of obstruction. As he was an exceedingly stout man and in a state of extreme collapse, it was decided that it would be inadvisable to resort to operative measures. He died within three hours of admission.

There was a history of alcoholism. He said he had had "congestion of the liver" some months previously. His medical man does not support this statement, and also says that he had not had jaundice or any other symptoms pointing to presence of gall stones. He had been suffering from chronic constipation for some weeks, and had been treated with purgatives and enemata.

At the *post-mortem* examination there was discovered in the small intestine, about 6 inches above the ileo-cæcal valve, a round hard mass of fæces about the size of a walnut. This contained a gall stone an inch long in its longest diameter. In the jejunum, about a foot from the duodenum, there was another hard mass, but of fæces only. The duodenum was firmly fixed to the liver by a dense cicatricial mass. The duo-

denum on being opened was found to communicate with the gall bladder by an orifice which was large enough to admit the little finger. The mass of cicatricial tissue seemed to contain a cavity in which the gall stone had probably lain for some time. The genuineness of the gall stone was proved by subsequent analysis.

The case was under the care of Mr. C. H. Taylor, who has kindly allowed me to report it.

PRINCE ALFRED HOSPITAL, SYDNEY, N.S.W.

A FATAL CASE OF HYDATID OF THE LUNG.

(By H. CRITCHLEY HINDER, M.Ch., M.B., Honorary Assistant Surgeon to the Hospital.)

A GIRL, aged 8, had been ill for six weeks with cough, cold sweats, vomiting, and slight hæmoptysis. There was very little expectoration of any kind. She lived in the country, and had a phthisical family history.

Condition on Admission.—There was some bulging at the left apex in front, with dulness there, and in the axillary region down to the fourth rib. Expansion in the situation was almost *nil*. Vocal fremitus and breath sounds were very weak, with prolonged expiration. Below the area the breath sounds were harsh and loud. Posteriorly the dulness was not so marked. The apex beat was opposite the inner end of the seventh costal cartilage. The cardiac sounds were clear. The spleen and liver appeared to be normal. The radial carotids and pulses were equal. The tongue was coated. On admission the temperature was 102, respirations 24, pulse 128. In a few days the temperature remained at 98° and 99.5°. The urine was normal; specific gravity 1018, acid, with mucous deposit.

Operation.—The child was prepared, placed on the table, and anæsthetised with chloroform. About an inch of the second rib was excised directly over the dullest area. A needle was inserted and clear hydatid fluid withdrawn. An opening was then made with a knife directly into the cyst, passing through about half an inch of condensed lung tissue. The visceral and parietal pleuræ were adherent. Directly the knife was removed, I inserted my finger and stopped the flow of fluid. The patient at the time had been allowed to recover from the anæsthetic to the extent of having lively reflexes. The fluid was allowed to leak out slowly, and when about an ounce and a-half had escaped she coughed, and immediately bright scarlet, frothy blood issued from the mouth and nose, somewhat mixed with hydatid fluid. I slipped my finger out, hoping to save her from drowning, but immediately bright blood and fluid was shot out of the wound with a rush and in an astonishing quantity, so that I at once judged that a communication must exist, not only with the bronchus but also with a large vessel, and so great was the escape that I thought possibly the heart itself was perforated. The child was removed to an adjacent ward and was dead in a very short time.

Post-mortem Examination.—The left lung was adherent posteriorly and at the apex. The right lung was free. There was no fluid in the pleural sacs. In the upper lobe of the left lung was a large hydatid cyst 4 inches in diameter containing a collapsed endocyst. The ectocyst communicated directly with the left bronchus and pulmonary artery, each communication easily admitting a No. 12 catheter, and both together opening on the floor of a slight diverticulum upon the inner aspect of the ectocyst. The ectocyst was filled with recent dark clot. The trachea was filled with blood. There was a little bloodstained mucus in the stomach.

REMARKS.—No doubt directly slight relief was given to the tense endocyst the pulmonary artery and the bronchus were opened, and death quickly followed. It certainly seems odd that the tense endocyst should have so effectually closed the opening in the pulmonary artery, though examination showed that this condition of affairs undoubtedly existed. The record of such a catastrophe as this will no doubt induce surgeons to give a very guarded prognosis before operating for hydatid of the lung.

This case was kindly handed over to me by Dr. J. C. Cox, honorary physician. For the clinical and *post-mortem* notes I am indebted to Dr. McPherson, resident medical officer.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, November 8th, 1898.

T. BRYANT, M.Ch., F.R.C.S., President, in the Chair.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

DR. EDMUND CAUTLEY read this paper. The condition illustrated by the cases described was one in which the pylorus of the infant was found *post mortem* to be represented by a well defined, cylindrical, thick-walled tube, with its lumen exceedingly small or completely occluded. The affection was of importance in its immediate effect on the life of the infant, and probably also in its relationship when present in a modified form to the hypertrophic stenosis of the pylorus in adults. The first case of the kind was recorded in 1841, and a summary of the literature of the subject yielded, with those here reported, a total of twenty undoubted instances of the condition. Reference was also made to some less marked cases, some in patients examined *post mortem* and others in patients who presented characteristic symptoms and yet recovered. One of the cases under the writer's observation was that of a male infant who died in the fifteenth week of life from vomiting and marasmus. There was apparently no inherited taint and nothing in the condition of the child at birth to indicate disease. Constipation was present from birth and vomiting began at the age of three weeks and persisted. Other abnormalities were present. The second case was that a male infant who died in the eighth week of life "in a fit." Vomiting had commenced a few days after birth, and the child rapidly wasted. The characteristic features of the diseases were (1) vomiting, occurring without apparent cause and persisting in spite of treatment; (2) the absence of bile from the vomit; (3) obsinate constipation; (4) marasmus: (5) the presence of a tumour in the region of the pylorus; (6) the absence of abdominal distension, except dilatation of the stomach in some instances: (7) the absence of signs or symptoms of gastritis and of the more common forms of intestinal obstruction. The influence of inherited disease, family predisposition, and sex were apparently unimportant. The child had usually been noted "a fine baby born." Symptoms might occur within a few days of birth, or later in life, but almost invariably within the first month. The pathological changes were illustrated by specimens. In each case the pylorus was about an inch long, forming a firm, thick, elongated tumour, well defined at either end, and about the size of the last joint of the little finger. The thickening was clearly seen to be due to a relatively immense hypertrophy of the unstriped circular muscle fibres forming the middle coat of the pylorus. The other changes which might be present in the pylorus, stomach, and œsophagus were secondary to the stenosis produced by the contraction of this hypertrophied muscle. Thus the mucous membrane was thrown into longitudinal folds and appeared thickened, but microscopical examination showed there was no actual thickening of this layer. It was due to the contraction, and was an important factor in the production of the stenosis, blocking up the already narrowed lumen. The stomach and œsophagus might be dilated, and the former might present signs of secondary gastric catarrh. Diagnosis depended entirely on the characteristic symptoms arising during the first few weeks of life, and the presence of a tumour. The tumour had been noted in two cases during life. Treatment was merely palliative unless the tumour could be demonstrated. In such a case the writer suggested surgical measures as offering the best prospect of cure. No explanation was given of the cause of the condition, but it was suggested that it might result from a redundancy of fœtal growth, due to the anxiety of Nature to provide an efficient pyloric sphincter.

DR. NORMAN MOORE pointed out that this interesting condition was one of many pathological occurrences which would be enlightened by a more accurate knowledge of the development of the alimentary canal. He drew attention to the fact that carcinoma of the pylorus also almost always stopped short at the pylorus and did not extend into the duodenum. There was some doubt where the lowest level of the stomodæum should be placed. Possibly the sharp demarcation at the pylorus seen in congenital hypertrophic stenosis of the

pylorus and in malignant disease could be explained as an error of development, this point being perhaps the junction of two portions of the alimentary canal developed from different origins.

Dr. Rolleston referred to a similar case in a child, aged 2 months, published in connection with Dr. L. B. Hayne in April[1]; 17 cases were there referred to. Meltzer had also in August published a case and collected about 20 others, so this condition had attracted a good deal of notice this year. It had been objected by Meltzer that spasm could hardly be regarded as the cause of the hypertrophy, since pyloric spasm in adults did not have this effect. This writer thought there was an overgrowth of all the tissues of the pylorus. The speaker regarded the primary change as being in the circular muscular coat, any changes in the other coats being secondary. He was inclined to accept Dr. John Thomson's views. Pylorectomy appeared to be the form of surgical operation most likely to be successful.

OBSTETRICAL SOCIETY OF LONDON.

C. J. Cullingworth, M.D., President, in the Chair.

Wednesday, November 2nd, 1898.

Tubo-Abdominal Pregnancy.

Mr. Bland Sutton read a paper on a case of tubo-abdominal pregnancy, in which a woman, aged 24, conceived in the left Fallopian tube, and the pregnancy went to term. The fœtus escaped from the amnion, and at the operation was alive and disporting among the intestines, merely tethered by the umbilical cord. The placenta was removed without difficulty, and with a very trifling loss of blood. The mother recovered, but the child only survived extraction three hours.

Hæmorrhage from the Fallopian Tube without Evidence of Tubal Gestation.

Mr. Bland Sutton also read a paper based on a report of a specimen presented to the Society by Mr. Alban Doran, in May, 1898, purporting to be hæmorrhage from the Fallopian tube without evidence of tubal pregnancy. Mr. Sutton's object was to prove that the specimen was an excellent example of "complete tubal abortion." This contention was supported by a re-examination of the specimen, and illustrated by additional cases. Criticism was also extended to some other records recently published in the Society's *Transactions*.

Mr. Alban Doran wished it to be remembered that his communication was designedly entitled "Hæmorrhage from the Fallopian Tube *without evidence* of Tubal Gestation," and not "*independent* of tubal gestation." In his paper he further declared, "I am very suspicious of alleged cases of hæmorrhage from the tube into the peritoneum not due to tubal gestation." He would have been much interested to see a demonstration of chorionic villi found in the clot in his specimen, but Mr. Sutton and Mr. Shattock had failed to find any. Walther had also warned against taking almost structureless fibrinous deposits for villi. There was no reason why clots from the tube not associated with tubal gestation and abortion should not be smooth and elliptical. As chorionic villi had not been found, in his opinion the case remained not proven.

Dr. McCann said that the case which was the subject of discussion came under his care. The patient had suffered for some weeks from constant and copious discharge of bright red blood, which in his experience was quite exceptional. In another case the dilated tube contained an ovoid blood clot with a small central cavity. A careful examination of the clot and the tubal wall failed to detect chorionic villi. This case was probably one of hæmatosalpinx not caused by tubal pregnancy.

Dr. Eden said a good deal of care was necessary in examining masses of blood clot for chorionic villi. He had known fibrin rings and sections of the tubal plicæ exhibited as chorionic villi. If a careful search had been made, and no villi were found, he thought it pretty certain that it was not a mole.

Dr. Amand Routh said Mr. Bland Sutton's paper had brought out clearly the fact that after tubal rupture the Fallopian tube might recover itself and look normal in a few days, and after tubal abortion had been proved to have resumed its normal size and appearance even in a few hours.

The President was glad that Mr. Sutton had called attention to the question as to what happened in cases of pelvic hæmatocele from incomplete tubal abortion where the tubal mole remained in the tube after the hæmatocele had undergone absorption. It was a question on which more light was needed. He himself was disposed to agree with the author of the paper, that an unremoved or unexpelled tubal mole was apt to cause trouble, and was not sure that it was not a source of serious danger to the patient. He had seen a case in which the mole-containing tube had become twisted on its axis, with results similar to those which occur when the pedicle of a small ovarian cyst becomes twisted. He had also seen a case where there was reason to believe that the mole had become septic and set up peritonitis.

Mr. Bland Sutton, in reply, contended that it was idle to deny that the clot in question was the product of tubal pregnancy. A tubal mole with such definite characters indicated that it was the result of tubal pregnancy as clearly as a potato was known to be the product of Solanum tuberosum. The difficulty of discovering the villi was probably due to the fact that the mole had been extruded from the tube many weeks. In reply to Mr. Targett, he observed that in some cases of tubal abortion villi were demonstrable in the tube; in other cases the tubal mucous membrane was quite smooth.

Specimens.

The following specimens were exhibited:—Mr. Alban Doran: (1) Fibroma of Broad Ligament weighing 44 lbs. 8 oz. successfully removed from a woman aged 28; (2) Sarcoma of both Ovaries. Dr. Tate: Sloughing Fibromyoma of Uterus, occurring twenty years after the menopause. Mr. Butler-Smythe: A Microscopic Section of Chorionic Villi from case of tubal gestation. Dr. Amand Routh: Uterine Appendages showing Hæmatosalpinx. The President: Œdematous Sub-peritoneal Fibromyoma removed by hysterectomy.

HARVEIAN SOCIETY OF LONDON.

Thursday, November 3rd, 1898.

James F. Goodhart, M.D., President, in the Chair.

Malignant Disease of Large Bowel.

Mr. W. H. Battle read notes of three cases of malignant disease of the large bowel, in each of which he had been called upon to operate for intestinal obstruction. In two the growth was removed at a subsequent operation; in one it was excised at the time. They had been recently operated on at St. Thomas's Hospital, and one remained under treatment. The result in each had been very satisfactory. Case 1, a very rare one, was that of a man, aged 44, who had a history of stoppage of the bowels three years previously, but had apparently recovered from that attack, and was well until three weeks before admission, when he suddenly became bad again. Increasing distension of abdomen with pain, and the passage of a good deal of blood *per rectum* occurred, but no vomiting. The growth could be felt in the rectum. This proved to be an intussusception with the growth in the intussusceptum near the apex. Right iliac colotomy relieved. Some weeks later the apex of the intussusceptum and the growth were excised through the rectum. Finally the artificial anus was closed, and, although this was not completely successful, the man was rendered so much more comfortable that he refused further operation. Case 11 was that of a woman, aged 29, who had been seen by Dr. Goodhart the day before Mr. Battle operated for the first time. She had all the signs of intestinal obstruction of chronic character, and the diagnosis of malignant growth of the large intestine, either descending colon or sigmoid flexure, was made. Exploration was carried out, and showed a hard growth of moderate size in the splenic region. An artificial anus was made in the left linea semilunaris below the ribs, as it was hoped that at a subsequent operation, when the woman was in a better state, it might be possible to excise the growth and the artificial anus at the same time. The first operation was done on August 24th, and after admission to St. Thomas's the second operation was performed on September 23rd. The growth and artificial anus

[1] British Medical Journal, April 2nd, 1898, p. 1070.

were resected, the end of the bowel closed, and a lateral anastomosis by suturing effected with the best results. The patient was able to leave for her home about three weeks afterwards in a very satisfactory condition. Case III. The third case was that of a woman aged 45, who was admitted to St. Thomas's on August 4th, with intestinal obstruction of a fortnight's duration. She had had much vomiting, abdominal pain, and increasing distension of the abdomen. A median incision showed the cause of the obstruction to be a cancerous stricture of the sigmoid flexure. A second incision in the left iliac region was well over the seat of disease, and as the patient's condition was fair, and the growth could be brought up, it was excised after the method recommended by Paul, and a tube placed in each of the divided ends of the gut. The two ends and the mesentery were sutured together side by side, and brought outside with the tubes. A few stitches secured them to the abdominal wall. The obstruction was completely relieved, and the patient was now undergoing treatment for the re-establishment of the intestinal canal, the septum being divided gradually by the application of clamp forceps. Her general state of health has much improved. In none of these cases was there apparent glandular disease. Mr. Battle dwelt upon the advisability of treating similar cases before obstruction had set in, and the patient's condition rendered much more serious. He considered that the operation of colotomy should be rendered much less frequent by an early removal of the growth when diagnosis had been made. The advantages of short-circuiting and lateral anastomosis were pointed out, and he expressed himself as against the use of mechanical contrivances.

The President alluded to a case of chronic intestinal obstruction caused by a mass of new growth in the neighbourhood of the splenic flexure. The bowel was "short-circuited" by means of Murphy's tube. The symptoms were completely relieved by the operation, and the patient had remained well ever since. He thought that short-circuiting in this case had arrested progress of the disease.

The Treatment of Typhoid Fever.

Dr. Sidney Phillips read a paper on the Treatment of Typhoid Fever, which is published at p. 1485.

Dr. Hazel asked for further information as to the indications for the use of stimulants in typhoid fever.

Dr. Milson inquired as to the exact time after cessation of the fever when it might be considered safe to give solid food. He had known relapses to occur after the temperature had been normal for periods of one to three weeks.

Dr. John Broadbent expressed surprise that the statistics of the mortality in enteric fever showed no improvement during the last twenty years in spite of the improved methods of treatment by hydrotherapeutic measures and intestinal antiseptics. He thought that the cold-bath treatment ought to be more generally adopted in this country, as its routine employment in America and on the Continent had indisputably diminished the percentage of fatal cases. It was argued by some that intestinal antiseptics were of little value, as they could not destroy the typhoid bacilli, embedded as they were in the lymph glands. The seat of invasion of the bacilli and of their greatest activity was, however, at the surface of the lymph follicles of the intestine, and he believed that some of the so-called antiseptics did not give satisfactory results because their germicidal properties were neutralised before they reached the seat of infection in the intestine. This was not the case with mercurial salts, in which he had great faith, as he had seen very striking and rapid improvement follow the administration of calomel in small doses at frequent intervals. He thought that possibly mercurial salts not only acted as germicides and disinfectants, but in some way prevented the absorption of the ptomaines generated by the typhoid bacillus by combining with them, and causing their elimination as insoluble salts of mercury. Hydrotherapeutic measures, such as cold sponging, must be employed in conjunction with them. He was interested to hear of transfusion in severe cases which seemed a suitable method of replacing the fluid lost by severe diarrhœa, and which had given excellent results in cholera. He would be glad to know if it had answered Dr. Phillips's expectations in enteric fever.

Dr. H. A. Caley advocated increased attention to systematic hydro-therapeutic measures, adopted according to the nature and circumstances of individual cases, and confirmed what had been said as to the value of hamamelis in the treatment of intestinal hæmorrhage.

Mr. Eastes fully agreed with Dr. Phillips as to the uselessness of phenacetin, antipyrin, and similar drugs; any lowering of temperature which they produced passed quickly away, and was followed by increased general depression. He did not employ cold baths, but always ordered wet pack (with or without ice), which was almost equally efficacious as baths, and did not disturb the patient. It was generally sufficient to pack two limbs at a time, whenever the temperature rose to 103° or 102.5°; and it should be continued until the thermometer stood below 100°. In the hands of Dr. Wilks, of Ashford, acidum sulphurosum had much benefited most of the typhoid patients to whom he had administered it. Milk should be well diluted, especially with barley water, or should be peptonised, otherwise the curd, like other solid food, might prove prejudicial. Instead of an entire milk diet, he preferred to give a few meals daily of really liquid food, such as clear soup, or broth, or white-wine-whey strained from the curd. Much of the harm caused by retention of urine was probably due to the fact that the distended bladder lay across the rectum (the patient being on his back), and mechanically prevented the passage downwards of either fæces or flatus; at any rate, he had noticed that when vesical distension was relieved by catheterism the bowels, if previously confined, sometimes acted shortly afterwards, to the great relief of the patient.

Dr. Owen Fowler related his personal experience of the cold-bath treatment, and pointed out the comfort experienced after the bath—the change from restlessness and fever to calm and rest; he also pointed out the absolute necessity of having nurses skilled in lifting if baths were to be given without danger, and quite agreed with Dr. Phillips at to the wisdom of picking out appropriate cases for this treatment, and not using it in every case. Dr. Fowler asked if improved hygiene, although it had not yet blotted out typhoid altogether, might not claim to have reduced the virulence of the disease, which was not so marked now as it was twenty or thirty years ago.

Dr. Phillips replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

W. Craig, M.D., in the Chair.

Wednesday, November 2nd, 1898.

Resection of Pylorus.

Mr. Alexis Thomson showed a patient after resection of the pylorus. The operation was performed in July, 1898, for the removal of a large pyloric carcinoma, and the patient had improved largely in health, and had gained over 2 stones in weight.

Tylosis.

Dr. Allan Jamieson showed a case of tylosis.

Tonsillar Calculus.

Dr. Aitchison Robertson showed a large tonsillar calculus, larger than any of which he had obtained any record.

Tuberculous Neuritis.

Dr. James read a paper on this subject, which he treated from the clinical standpoint, and illustrated by several cases. The first case was one of neuritis occurring in an ordinary case of phthisis, showing the usual phenomena. The next was a case of multiple tuberculous lesions, followed by nervous symptoms, and showed the implication of sensory realms, and the tendency to appear and rapidly disappear, which was ascribed to the action of a tuberculous toxin on the nerve tracts and nerves. The others showed other implications of nerves, motor and sensory.

In the discussion which followed Dr. Graham Brown, Dr. Lundie, and Dr. Fleming spoke.

Acute Yellow Atrophy of Liver.

Dr. Dobie related an account of a case of acute yellow atrophy of the liver occurring in a man, and resulting in recovery. The chief features were pyrexia, an intense jaundice, enlargement of the liver dulness, followed by its entire disappearance, hæmorrhage from mouth and nose; and the only drug found to have a distinctly beneficial effect was turpentine.

Election of Officers.

The following gentlemen were elected to fill vacancies: *Vice-President:* Dr. Dunsmure. *Councillors:* Dr. George Mackay, Dr. Melville Dunlop, Dr. Gulland, Mr. Alexis Thomson. *Treasurer:* Dr. M'Kenzie Johnston. *Secretaries:* Dr. Graham Brown, Mr. Cotterill. *Editor of Transactions:* Dr. W. Craig.

LIVERPOOL MEDICAL INSTITUTION.

W. Macfie Campbell, M.D., President, in the Chair.

Thursday, November 3rd, 1898.

Unauthorised Reprints.

Dr. Abram sent a communication containing an apology from the proprietors of a patent antiseptic for publishing a paper by Drs. C. A. Hill and Abram without their permission.[1]

Gumma of Liver.

Mr. Rushton Parker read notes of a case of large gumma of the liver, which formed a prominent tumour. Exploration was undertaken, and the greater part removed. The patient was exhibited.

Mr. Paul spoke.

Lupus of Conjunctiva.

Mr. Richard Williams showed a patient from whom he had scraped a well-marked lupus from the palpebral conjunctiva of the upper eyelid.

Dr. Grossman alluded to the rarity of the affection. The diagnosis might be confounded with syphilis, trachoma, and in some countries with leprosy. Trachoma was, however, mostly bilateral, and there were no characteristic organisms present. He had recently examined about 100 cases of trachoma without finding any. He was in favour of treating lupus by scraping or galvano-puncture; possibly the *x*-rays might prove of service.

Mr. Thelwall Thomas mentioned a case of lupus of the conjunctiva of both upper eyelids in a young man he had seen a year ago. He had a small patch of lupus on the tip of the nose, and had probably inoculated himself in the eyelids. Scraping and the rubbing in of iodoform cured the case.

Mr. Rushton Parker and Mr. Shears made remarks.

Osteomalacia.

Mr. Robert Jones showed a case of osteomalacia in an unmarried girl of 20, one of four which he had seen. All the bones were softened, spontaneous fracture having occurred in the tibia. The bones of the left limb could be moved in any direction. The fingers were clubbed, the thickening being confined to the terminal phalangeal joints. The radiographs demonstrated immense thickening of the long bones, striation suggestive of the partial disappearance of lime salts, and crenated borders. Mr. Jones suggested preliminary feeding with bone marrow, and should this fail he would remove the ovaries.

Dr. T. R. Bradshaw was surprised to hear that Mr. Jones had met with so many cases; osteomalacia was a condition of extreme rarity, and the records contained cases of more than one pathological condition. Late rickets and cancerous infiltration had been included in the same category. Most important of all was the condition described as multiple myeloma, which was characterised by a lymphoid growth spreading from the marrow and causing absorption and softening of the bone. These cases were noticed to be associated with the presence of great quantities of a kind of albumose in the urine. Dr. Bradshaw maintained that it was impossible to be sure of the true nature of the case exhibited without a careful investigation of the urine.

Mr. Clemmey spoke.

Suppuration in the Tympanic Cavity.

Mr. Hugh E. Jones read a paper on the importance of the early detection and treatment of suppuration in the tympanic cavity and mastoid resulting from otitis media. The mortality in complicated chronic suppurative otitis was still high, in spite of the great progress made in operative treatment in recent years. The after-history of successful cases was not always quite satisfactory. The radical tympano-mastoid operation, though of immense value in cases of chronic suppuration, did not restore the ear to anything approaching its normal condition. With the exception of cases of primary tubercle, it might be affirmed that all cases of chronic disease were the result of neglected acute cases. It was practically impossible to treat the whole accumulated mass of chronic cases efficiently, and the best chance was to prevent the acute cases becoming chronic. The author reviewed the bacteriology of otitis media, referring to the frequency of sinus and meningeal complications, as well as extradural abscess and Bezold's disease during the acute stage, and suggesting that many of the brain abscesses, which became chronic encysted abscesses, were really developed in this stage. He described the course of acute otitis, and indicated the cases that required (1) paracentesis of the membrane, (2) exploration of the mastoid cells, (3) opening of the mastoid antrum. The operations required at this stage were simple, easy of performance, and, with ordinary skill, perfectly safe.

Dr. Permewan agreed as to the advisability of early operation in acute cases. The only real difficulty was in the diagnosis of mastoid complication. Cases of otitis externa and of tympanic inflammation alone sometimes closely simulated mastoid disease, but recovered without operation; still, the only way to prevent cases becoming chronic was to operate early.

Mr. Robert Jones related 4 cases where he opened up the lateral sinus and cleared the internal jugular vein; 2 recovered.

Mr. Mitchell Banks considered Mr. Jones's paper one of exceptional interest, both to surgeons and general practitioners, upon the latter of whom a great responsibility was placed in cases of middle-ear disease extending beyond the limits of the tympanum. It was manifest that, when the mastoid sinus was converted into an abscess, when the internal jugular vein was filled with an extending blood clot, and when suppuration had taken place beneath the dura mater, little could be hoped for from operation. His own few cases of this kind had all terminated fatally. Now and then, after a most formidable operation, an occasional patient escaped, but he was only the exception that proved the rule. The clear indication was to operate early, before this state of things came on. It seemed to him that they were going through a change with regard to operations on the antrum and mastoid cells similar to what they had gone through with regard to strangulated hernia. Fifty years ago, 80 to 90 per cent. of operations for strangulated hernia done in Paris died. When medical men learnt that the real danger was due to delay, causing destruction of the bowel, and when antiseptics made the actual operation one of perfect safety the whole of this dreadful mortality practically ceased, so that it might nowadays be almost termed a disgrace for a surgeon to lose a case of strangulated hernia reached in good time. The same rules would speedily apply to the question of middle-ear suppuration and its extensions. Better that an occasional case should be done when not really wanted than that many should prove fatal from over-delay. He remembered a case of a boy coming home from a public school with all the symptoms of otitis media, accompanied by distinct indications of cerebral mischief. Although no suppuration could be made in the middle ear, he opened the mastoid antrum. No pus was found here either, but the boy at once improved and lost his symptoms. It was true that this case might have recovered quite well without operation, but the operation not only did no harm, but apparently positive good—probably by relieving bone tension. With regard to operations on the mastoid generally they were both easy and safe, if the surgeon would only take pains with his landmarks, and then proceed to work with small chisels and bone "nibblers" with the greatest caution. Time and patience were all that was needed to open anything. At the same time he could hardly agree with the views of those gentlemen who considered that opening the lateral sinus was quite a trivial matter, for, although he had never done it himself, he knew of two fatal cases as a result of it.

Messrs. Paul, Parker, Shears, Richard Williams, and Alexander spoke.

[1] Attention was drawn to the matter in the British Medical Journal, November 5th, p. 1451.

Presentation.—The ambulance class at Lavender Hill has presented their lecturer, Dr. Brown, with a frosted silver cake basket bearing a suitable inscription.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

J. B. Berry, M.D., President, in the Chair.

Tuesday, October 25th, 1898.

President's Address.

The President took as the subject of his opening address the Life and Times of John Milligan, Surgeon, of Keighley, 1812-1876. Milligan was born at Crosshills in 1812, and was apprenticed to a Keighley surgeon. He subsequently entered as a student at University College and Middlesex Hospital, and obtained the licence of the Apothecaries' Society in 1834. He then returned to his native district, and commenced practice. He was extremely industrious, beginning work at 5 in the morning, and, doing much of his work on foot, he often walked fifteen to twenty miles a day. In 1838 he was appointed first medical officer of the Keighley Union, and public vaccinator. Mr. Milligan was an enthusiastic supporter of the Mechanics' Institute, and frequently lectured there. He read widely in preparation for these lectures, and paid much attention to works bearing on sociology and sanitation. Though he was much respected for his earnestness and enthusiasm for the public welfare in social and sanitary matters, he was hindered in his work by popular ignorance and prejudice. His denunciation of the overwork and underpay of the people, and of the miserable hovels in which they lived, doubtless often earned for him the dislike and opposition of employers and owners of property. In 1855 Mr. Milligan was appointed medical officer of health. By one who knew him intimately he was described as much in advance of his time in all sanitary matters. He contributed papers to the London and provincial press on The Prevention of Accidents in Mines, on Vagrancy and Crime, on Common Lodging Houses, and on Hospitals and Dispensaries. In 1849 he won the Fothergillian gold medal, with an essay on The Influence of Civilisation on Health and Disease. In 1857 Mr. Milligan read a paper before the British Association at Dublin on A New Method of Preserving Vaccine Lymph in Glycerine and on an Instrument Facilitating Vaccination. The method was to soak dried vaccine crusts in glycerine for six months, and he apparently obtained results identical with those of arm-to-arm vaccination. Milligan was dexterous and successful as an operating surgeon under very unfavourable conditions both as regards the patients' surroundings, and also the lack of skilled assistance. He introduced the use of chloroform into Keighley, having first tried the effect upon himself. Apart from his professional work he interested himself deeply in local politics, and tried to further the cause he thought worthy of support by both tongue and pen. He was devoted to the study of natural history in all its branches, and was an authority on the local fauna and flora. He retired from active practice in 1866, retaining only his public health appointment until his death ten years later at the age of 65. A point of considerable interest was brought out by the lecturer in connection with the attitude of the Keighley people to vaccination. Keighley now had one of the lowest vaccination rates in the country. In 1853 vaccination was made compulsory in England. Previously to this time Milligan was allowed to vaccinate at any time and on any day, at his surgery or at the patients' houses; but most of the vaccinations were, as a matter of fact, performed during the warmer months of the year. The people were so alive to the value of the protection which they gained from it that in outlying districts, where the doctor rarely went, old women often performed the operation with a needle. The only anxiety felt was as to the source of the lymph, and so long as people were allowed to select this they raised no objection to the operation. When vaccination became compulsory and it was necessary to bring children at certain hours to a particular place, then troubles commenced. Sometimes stations were a long way off, and to reach them involved exposure in all kinds of weather, and this was felt to be intolerable for both mother and child. When the people found that, by electing as guardians only such as would not enforce the compulsory clauses of the Act, they could escape with impunity; they were not slow to avail themselves of their privileges in this direction.

A vote of thanks to the President for his address was proposed by Dr. Evans, seconded by Dr. Rabagliati, and carried unanimously.

Strangulated Hernia.

Mr. Althorpe related two cases of strangulated hernia, exhibiting somewhat unusual features. (1) A woman, aged 66, who for many years had had double femoral hernia the left being irreducible for a considerable time. She was admitted to hospital with symptoms of obstruction, and the vomiting was stercoraceous. The hernial sac on the left side was exposed, and a pronounced gangrenous odour was at once perceived. On opening the sac it was found to contain a loop of large intestine about 8 inches long, which was quite gangrenous. There did not seem to be any light constriction at the femoral ring, and the gangrenous bowel extended rather above this point. The wound was enlarged upwards through the femoral opening, the gangrenous bowel cut away, and a large rubber tube fixed into each cut end, the wound being left open. No fæcal discharge occurred through either tube, and as the symptoms persisted the hernia on the right side was opened up after two days. A small piece of omentum, which was irreducible, was found in the sac, and was removed. The symptoms persisted, and the patient died two days after the second operation. A complete *post-mortem* examination was not allowed, but examination through the operation wound showed that there was a volvulus of the sigmoid flexure, which had descended into the hernial sac, and the descending colon was filled with hard fæces. (2) A man, aged 40, with a strangulated left inguinal hernia. Herniotomy was performed, and there were found two sacs, one within the other, the inner containing omentum and bowel. Mr. Althorpe described the condition as one of congenital inguinal hernia, with a patent funicular process.

Nervous Sequelæ of Influenza.

Dr. James Kerr showed two patients, mother and son, who each presented peculiar symptoms, apparently as sequelæ of influenza. The mother, aged 47, together with the rest of the family, suffered from a febrile illness seven years ago, from which all the members except the mother and son recovered completely. In the case of the woman recovery from the influenza was much delayed, and at the end of two years she noticed failure of vision, the left eye being affected first, and then the right. Three years ago the gait became weaker, unsteady, and reeling, and now the patient could not walk a few yards without great exhaustion. The affection of locomotion was ushered in with numbness of the feet and a sensation of walking on wool. There was no tremor of the hands, and no wasting. Mentally she was quite clear, but rather emotional (inclined to tears). Sight was very bad; fingers were counted at a yard. Faces were fairly well recognised, also colours. There was occasional (doubtful) nystagmus. The ocular movements were good; pupils reacted sluggishly. Optic nerve atrophy was present on both sides. Taste and smell and sensibility were natural. Hearing rather dull. The knee-jerks were exaggerated, and ankle clonus was present. She could not stand without assistance. The gait was spastic and inco-ordinate. There was incontinence of urine and cystitis. The son, aged 25, had good health till influenza seven years ago. As in the case of the mother, there was prolonged convalescence followed by failure of sight and power of walking. During the past year he had had difficulty in micturition. Present condition.—Mentally quite bright; inclined to be emotional. Sight bad; counts fingers at a yard; cannot distinguish faces; colours are recognised. Pupils are dilated and react slightly to light. There is slight nystagmus on moving the eyes. The arms are muscular and slightly inco-ordinate. The legs are inco-ordinate. Knee-jerks exaggerated, no ankle clonus. Sensibility natural. Dr. Kerr remarked that there was a disseminated lesion affecting the central nervous system probably toxic in origin; he stated that the commonest cause was syphilis, but that similar cases had been described as following the specific fevers. The fact that both mother and son were attacked showed a family susceptibility to this particular poison.

Astasia-Abasia.

Dr. Kerr also showed a girl, aged 10, who had suffered from the disease called by Charcot "astasia-abasia." The symptoms came on after influenza. There was at first some difficulty in

walking, which culminated in complete inability to either stand or walk. She was treated by suggestion and in three days could walk well. There had been slight return of the symptoms consequent on over-exertion.

Specimens.

Dr. Eurich gave a Microscopical Demonstration. Dr. Gladstone showed a number of Pathological Specimens, including the Œsophagus of a Child in which a halfpenny had been impacted for ten months. There had been a lateral pouch formed at the seat of obstruction.

MANCHESTER MEDICAL SOCIETY.

G. A. Wright, F.R.C.S., President, in the Chair.

Wednesday, November 2nd, 1898.

Amputation for Charcot's Joint Disease.

Mr. Southam made some remarks on amputation for Charcot's joint disease, and mentioned four cases where the leg had been removed below the knee for disease of the ankle or tarsal joints. In each instance the wound healed quickly without suppuration, a useful stump resulting. The patients, who were males between 40 and 50 years of age, presented other well-marked symptoms of locomotor ataxy.

The Dosage of Belladonna and Nux Vomica.

Dr. Leech gave an account of the investigations made by pharmacists subsequent to the publication of the 1885 *Pharmacopœia*, which had showed that accurate dosage with the official preparations of belladonna and nux vomica was impossible, since, however carefully such preparations were made, their strength might vary widely owing to the difference in the amount of alkaloid contained in the crude drugs themselves; hence the necessity for the changes made in the *Pharmacopœia* of 1898. He pointed out that the alkaloid contained in the maximum doses of the preparations of belladonna in the 1885 *B.P.* varied from $\frac{1}{500}$ to $\frac{1}{12}$ of a grain. In standardised preparation of the 1898 *B.P.* the width of limit had been greatly lessened. The largest dose of the new tincture (15 m) corresponded to $\frac{1}{150}$ grain of alkaloid. The largest dose of the alcoholic extract to $\frac{1}{150}$ grain, these amounts being equivalent to about two-thirds and 1 drop of liquor atropinæ sulphatis respectively. The tincture and extract of nux vomica had been rendered likewise much less variable in strength than formerly by standardising according to the amount of strychnine instead of according to the amount of total alkaloid contained.

Cerebral Tumour.

Dr. Ernest S. Reynolds made some remarks on the uncertainty of diagnosis of cerebral tumour, and gave illustrative cases.

Hunterian Society.—At a meeting on October 26th, 1898, Dr. F. J. Smith showed (1) an elderly man with supposed Bulbar Paralysis. He was admitted with inability to swallow, paralysis of tongue, no palate reflex and aphasia. The arteries were extremely hard. Dr. Hutchison thought that the absence of muscular wasting in tongue showed that the lesion was above the nuclei in the bulb, possibly in the lenticular nucleus or the inferior frontal convolution. Sir Hugh Beevor regarded it as more probably in the bulb. (2) A boy, aged 15, with Gangrene of the Left Foot and a Mitral Regurgitant *Bruit*.—Dr. Sequeira showed (1) a case of Raynaud's Disease affecting the nose, ears, and nails. There had been no hæmoglobinuria. Dr. Rawes thought that the feeble circulation in the hands might be attributed to masturbation. (2) A child with supposed Cerebellar Tumour. He had a well-marked ataxic gait, double optic neuritis, and enlargement of head. Mr. Targett referred to a case with similar symptoms and diagnosed as cerebellar tumour which proved to be chronic hydrocephalus.—Dr. Arnold Chaplin exhibited a man, aged 42, with a Thoracic Aneurysm. There was marked laryngeal stridor, and the right pulse was much weakened, though the signs of the swelling were chiefly in the left half of the chest. Dr. Smith thought it was due to atheroma of the aorta with dilatation and regurgitation. Dr. Davies thought it was a case of aneurysm, the sac originating from the concave side of the aortic arch.—Dr. Kelson showed a girl, aged 13, with Interstitial Keratitis and Progressive Deafness from Congenital Syphilis. Also a boy, aged 13, with Relapsing Glossitis, which was probably due to congenital syphilis.—Sir Hugh Beevor showed an elderly man with Arthritis Deformans affecting the hands.

British Balneological and Climatological Society.—At a general meeting held at 20, Hanover Square, on Monday, October 31st, the President, Dr. Wm. V. Snow (Bournemouth), referred to the loss sustained by the Society by the death of Dr. Henry Lewis (Folkestone), who was the first President of this Society. The Treasurer's report and balance sheet were adopted after discussion by Dr. Blaker (Brighton) and Dr. Hyde (Buxton).—Dr. Snow then introduced the new President, Dr. Fortescue Fox (Strathpeffer Spa).—A vote of thanks to the retiring President was proposed by Dr. Symes Thompson, seconded by Dr. Ivor Murray (Scarborough), and carried. Dr. Snow replied.—A vote of thanks to the Editor of the *Journal* was proposed by Dr. StClair Thomson, seconded by Dr. Gilbert (Tunbridge Wells), and carried. Dr. Hyde replied.—A vote of thanks to the Treasurer and Auditors was proposed by Dr. McClure (Cromer), seconded by Mr. Havell (Felixstowe), and carried.—Mr. Keetley, Dr. Ward Humphreys, and Dr. Leonard Williams replied.—A vote of thanks to the Council and Secretaries was proposed by Dr. Younger, seconded by Dr. Gage Brown, and carried. Dr. Ward Humphreys and Dr. Sunderland replied.—An ordinary meeting was then held, Dr. Fortescue Fox (President) in the chair.—The President delivered an address on The Province of the Spa Physician.—Dr. William Ewart proposed, and Dr. Bowen Davies seconded a vote of thanks to the President for his address, both speaking in eulogistic terms of its merit and value. Dr. Fortescue Fox replied.

Roentgen Society.—The first annual general meeting of this Society was held at the Medical Society's Rooms on November 1st. The report of Council pointing to a satisfactory roll of membership and record of good work done during the past year was unanimously adopted. The honorary treasurer was able to point to the satisfactory balance of £46. Mr. C. W. Mansell Moullin, was elected President for 1898-99. On taking the chair he delivered a short address, in which he dwelt on the immediate value and future possibilities of the new method. Hearty votes of thanks were accorded to the returning President, Professor Silvanus Thompson; the Honorary Treasurer, Mr. Thomas Moore, F.R.C.S., and others. It was announced that Mr. Wilson Noble had presented a 10-inch coil to the Society. The *conversazione*, which is by invitation of the new President, will be held on November 21st. The Honorary Secretary, is Dr. Walsh, 5, Pump Court, Temple, E.C.

Association of Registered Medical Women.—At a meeting held on November 1st, Miss Cock, M.D., President, in the chair, Miss Thorne, M.D., read a paper on 5 cases of Extrauterine Gestation which required operative treatment at the New Hospital for Women during 1897. She laid stress on the importance of the early recognition of this condition, and pointed out that even in those cases which were complicated by a coexisting uterine pregnancy, a sudden onset of pain had been observed with irregular vaginal loss, and that in every case a tumour was found in close connection with the uterus. Miss Thorne pointed out that a tubal abortion, whether complete or incomplete, frequently simulated a uterine abortion, and urged that clots or shreds passed should be examined microscopically in order that it might be seen whether they consisted of decidua only or whether chorionic villi were present; if the latter the case was one of uterine abortion.—Mrs. Stanley Boyd, M.D., drew attention to the diagnosis between (1) Hæmatoma of the Broad Ligament following the rupture of a gravid tube, and Cellulitis of the Broad Ligament surrounding a pyosalpinx following abortion; and (2) Retroflexion or Retroversion of a Gravid Uterus and Tubal Pregnancy. Mrs. Boyd showed that attention should be paid to the following points: (*a*) The continuity of the cervix with the mass in the pouch of Douglas and the direction of the cervical axis; (*b*) the contour of the tumour; (*c*) the

palpation of the adnexa; (*d*) the simple compression of the rectum or intimate adhesion of tumour with the rectal wall; (*e*) alteration in the size or consistency of the tumour. Mrs. GARRETT ANDERSON, M.D., Miss HELEN WEBB, M.B., and Miss ALDRICH-BLAKE, M.D., M.S., also took part in the discussion.—After the business meeting was concluded, the following resolution was proposed by the PRESIDENT, seconded by Mrs. GARRETT ANDERSON, and passed in silence, the members standing:

That the Association of Registered Medical Women desire to offer to Mrs. Webb their heartfelt condolence on the death of her daughter, Miss Mabel Webb, M.B. The Association also wishes to place on record their great appreciation of Miss Webb's fine character and of the influence for good she exercised at the school and hospital during the whole time she was connected with them.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 4th, Dr. S. D. CLIPPINGDALE, President, in the chair, Dr. F. J. MCCANN read a paper on Cases illustrating Difficulties in the Diagnosis of Early Tubal Pregnancy. Three cases were described in detail, and remarks made on the differential diagnosis of early tubal pregnancy. Case I. A lady, aged 27, married three years and sterile. Three weeks before she was seen she had an attack of pain in the left iliac region, accompanied by sickness and faintness. At that time she had missed her period for fourteen days. On bimanual examination an elongated fluctuating swelling was felt to the left of the uterus. As the contents of this swelling were evidently leaking into the abdominal cavity, an abdominal section was performed. The abdominal mass was proved to be a dilated tube containing an ovoid clot with a small central cavity. No evidence of chorionic villi could be found. The patient recovered. Case II. A married woman, aged 37, had had four children, the youngest 2 years old. After a period of three months' amenorrhœa she was suddenly attacked with pain in the right groin and thigh; the temperature varied between 101° and 104°. The patient was very blanched and collapsed. The abdomen was distended and very tender. An elongated swelling was felt in the right posterior quarter of the pelvis. Abdominal section was performed, and about a pint of blood clot was found in the abdominal cavity. The swelling was a well-marked example of a tubal mole. The patient recovered. Attention was directed to the difficulties in the diagnosis of early tubal pregnancy. Other cases were mentioned. The significance of elevated temperature, irregular uterine hæmorrhages, passage of decidual membranes, and amenorrhœa was discussed. The last case, described in detail, exhibited many of the signs and symptoms of tubal pregnancy. At the operation, however, a dermoid cyst with a twisted pedicle was removed. The paper was discussed by Drs. ALDERSON, ADDINSELL, CAMPBELL POPE, DRUMMOND, ROBINSON, and Messrs. ATKINSON and TWYNHAM; and Dr. MCCANN replied.—Dr. ADDINSELL read a paper on Ovariotomy followed by Parotitis. The patient was an unmarried lady, aged 35, from whom, in October, 1897, he removed a large multilocular ovarian cyst. There was a history of a severe sudden illness five months prior to the operation, and lasting six weeks. There was found to be a twisted pedicle, and the cyst was adherent to the bladder and uterus. The patient did perfectly well for seven days. On the morning of the eighth day there was swelling of the left parotid gland; the temperature was 103°; there was dryness of the mouth, and the submaxillary gland was involved. Suppuration did not occur, and the patient left the nursing home at the end of three weeks. The origin of parotitis following abdominal operations was discussed, and it was pointed out that the cases collected by Mr. Stephen Paget in 1886, if carefully examined, all pointed to a septic origin. Dr. Addinsell admitted the part played by the large network of sympathetic nerves in the abdominal and pelvic viscera, but he held that the lymphatic system must also take its share of responsibility. He thought that the cases relied on by Mr. Stephen Paget for establishing the theory of nervous origin were in reality cases of septic infection, and he considered that the whole weight of evidence was in favour of parotitis following operation being due to a mild form of sepsis. The paper was discussed by Drs. MCCANN, PERCY WHITE, and GIBBES, and by Messrs. STEPHEN PAGET, BIDWELL, and KEETLEY; and Dr. ADDINSELL replied.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meetin on October 27th, the President, Dr. ALFRED ROBINSO (Rotherham), in the chair, Mr. SIMEON SNELL introduced (1 Three Cases of Entropion, which had been treated by escha by caustic potash (Theobald's method). The result in eac case was excellent. (2) Three Cases of Ectropion: (*a*) Sever of upper eyelid treated by division of subcutaneous band and temporary union of eyelids, (*b*) of lower eyelid treated b raising a V-shaped flap and temporary union of eyelids, (c from granular lids treated by shortening the palpebral fissure and at the same time inverting the lower eyelid. Mr. Sne also related particulars of a case of Diphtherial Conjunctivit in a woman in which the bacillus diphtheriæ had been di covered and complete recovery had resulted. He referred als to a case in a baby treated by antitoxin and to anothe in an elderly woman with well-marked membrane; in th latter the bacillus was not to be found, in the former th result of the bacteriological examination was not recorde Mr. PYE-SMITH showed (1) a man on whom he performe Colotomy by the method recently described by Mr. F. Paul as based on the principle introduced by Hahn in the pe formance of gastrotomy. It was easy and rapid in perfor ance, and had given a very good result. The patient wa wearing a truss as recommended by Mr. Paul. (2) A gir aged 11, with Congenital Displacement of the Left Hi There were two inches of shortening which could be reduce by half by traction, but she could walk and run with a raise boot. A skiagraph showed that the head and neck of t femur were much abnormal as regards size and directio —Mr. ARCHIBALD CUFF showed and described a case Double Congenital Dislocation of the Hip.—Mr. PRIESTL showed a man with Leontiasis Ossea.—Mr. STOKES showed f Dr. PORTER: (1) A case of Insular Sclerosis; (2) a case Locomotor Ataxia in a woman; (3) ? a case of Incipient Pr gressive Muscular Atrophy.—Dr. WILKINSON showed a specime of Ruptured Tubal Mole obtained by operation from a woma aged 30. The patient had had three children; the last years ago. She missed two periods, and a week later bega "flooding." She had sudden severe pain in the low abdomen a week later. Since that time up to the day admission (four weeks) she suffered from intermittent hæmo rhage from the uterus, and abdominal pain. A tumour wa detected by vaginal examination to the left of the uteru feeling like a distended tube. The sound passed 3 inche The abdomen was opened, and many clots and blood-staine serum were found in the peritoneal cavity. The left uteri appendages were removed. They were found to consist of distended Fallopian tube, which had ruptured. Through t rent a mole protruded, which was still attached to t distended tube in the unruptured portion. The patient ma a good recovery. Dr. Wilkinson drew attention to the meth of incising the abdomen by "going round" the rectus, whic he thought was applicable to the inner as well as the out border of the muscle.—Dr. SIMON RYAN showed a very lar Gall Stone removed from a patient of his, a man 63 years age, by Dr. Sinclair White.—Dr. SINCLAIR WHITE exhibite and made remarks on: (1) Renal Calculi (three cases (2) Skiagraphs of Old Dislocation of the Shoulder and of Ren Calculus.—The PRESIDENT, Dr. ARTHUR HALL, Dr. GODFRE CARTER, Mr. PYE-SMITH, Dr. ARCHIBALD CUFF, Dr. SINCLA WHITE, Mr. RICHARD FAVELL, Dr. WILKINSON, Dr. ANDERSO and Dr. ADDISON made remarks on the specimens and cases.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meetin on November 2nd, Mr. T. DAVIES BRYCE, the President, w was in the chair, delivered an address on Limitations Medicine. He remarked that the limitations were many an met one in every field of medicine, arising as the result restricted mental capacity, for the accepted doctrine of to-da was often the demonstrated error of to-morrow; from an ove weening confidence in knowledge, causing men to accept few facts as the whole truth; and from a mental tendency t think in particular grooves. He said that often the brilliand of some new discovery blinded us to the darkness of o knowledge, and thus we thought the final goal had bee reached, while it merely marked a stage upon the road. Wha he asked, was known of the true nature of carcinoma, hysteria, and melancholia? The frequent failure of pa theories should ensure caution in accepting new views an

practices. The "classification" of disease was necessary, but was often a hindrance, and none of the groups should be looked upon as final. Phthisis and certain forms of pneumonia afforded examples of recent emancipation from old forms of classification, and were an instance of how a group of facts, if taken alone, might bear one interpretation, but which, if viewed by the light of recent discovery, must necessarily be looked upon from a new standpoint, and in consequence require a new interpretation. As an instance of how, by allowing our minds to think in a groove, we were apt to permit one important fact to obscure others of possibly equal value, the President alluded to the acceptance of the water-borne infection of typhoid, and showed that many other possible sources of infection were thus disregarded. The assumption of knowledge which they did not possess, and the habit of substituting mere words—such as diathesis, immunity, predisposition, and the like—for the definite explanation of observation all tended to confine and retard progress.—A hearty vote of thanks was accorded the President, on the proposition of Dr. CATTLE, seconded by Dr. POWELL.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The second meeting of the forty-third session of this Society was held at Royal Kent Dispensary, Greenwich Road, on November 4th, 1898; Dr. MORGAN DOCKRELL, President, in the chair. Resolutions were passed changing the hour of meeting to 8.45 (for 9) P.M., and allowing smoking after the reading of the first paper and exhibition of living cases. Eight new members were elected; and Dr. GEORGE HERSCHELL read a paper on Constipation and its Modern Treatment, in which he insisted on the fact that drugs were useless in the treatment of constipation, and advocated the use of large enemata, followed, if necessary, by electricity, massage, or vibration applied to the walls of the abdomen. The paper was discussed by Drs. DOCKRELL, PURVIS, EZARD, HENRY, HARTT, MEGGISON, and CLARKE; and Dr. HERSCHELL replied.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—At a meeting on October 28th, J. MIDDLEMASS HUNT, M.B., C.M., the President, who was in the chair, showed a case of Epithelioma of Larynx with microscopical specimen. The patient was a man aged 44, who had suffered from increasing hoarseness for six months, and was now quite aphonic. On examination the anterior commissure was seen to be occupied by a pedunculated growth. Microscopic examination of a portion removed by forceps showed it to be an epithelioma. Dr. Hunt proposed to perform thyrotomy, and remove the growth and surrounding parts. Mr. MAYO COLLIER advocated removal of half the larynx. Mr. BARK (Liverpool) spoke in favour of thyrotomy as preferable to removal of half the larynx in cases like the one under discussion; if, after splitting the thyroid, the growth was found to be more extensive than was apparent by laryngoscopic examination, half the larynx might then be removed. Dr. DUNDAS GRANT advocated exploratory thyrotomy. If more than this were required, entire removal would be necessary, as the growth affected both sides of the larynx. Mr. LENNOX BROWNE expressed his opinion in favour of thyrotomy.—Dr. DUNDAS GRANT showed a case of Bleeding Tumour of the Nasal Septum.—Dr. FURNISS POTTER showed (1) a case of Black Tongue in a man, aged 48. (2) A case of Loss of Abductor Movement in the Left Vocal Cord in a man, aged 33. The chest had been examined, but no sign indicating intrathoracic pressure had been discovered. There was complete absence of any sign or symptom to indicate the cause of loss of motor power. Dr. WHISTLER suggested that pressure on the recurrent might be caused by enlargement of one of the chain of laryngo-tracheal glands. He recalled a case of his own in which this diagnosis had been verified by *post-mortem* examination. Mr. MAYO COLLIER cited a case in which paralysis of a vocal cord was caused by an empyema situated over the apex of the lung, and in which motor power returned after surgical treatment of the empyema. Dr. MILLIGAN (Manchester) thought that a number of cases of paralysis of the left cord were due to the presence of enlarged intrathoracic glands, which could not be detected during life. Dr. DUNDAS GRANT referred to the more recently discovered causes, such as syringomyelia and alcoholic neuritis, but thought there would always remain a certain percentage of cases in which the cause was undiscoverable.—Mr. MAYO COLLIER showed a case of Deformity of the Palate, Teeth, and Face, due to Early Nasal Obstruction, in a lad, aged 18. He gave the following explanation of the mechanism involved in the production of the deformity. Chronic catarrh with engorgement of nasal mucosa obstructed nasal respiration and induced mouth breathing; as the result of mouth breathing air was abstracted from, and a condition of negative pressure in the nasal and post-nasal spaces was brought about. Consequent on this negative pressure there was pressure from without on all sides of the nasal box.—Dr. MILLIGAN read the notes of a case of Suppurative Catarrh of the Right Maxillary Antrum and Right Frontal Sinus, in which at the time of operation on the antrum, though a careful examination was made, frontal sinus suppuration was not diagnosed. Two months later the onset of neuralgic pain in the neighbourhood of the right frontal sinus made it probable that it was the site of suppuration. On opening the sinus from the outside it was found to be full of pus. Dr. Milligan was of opinion that the frontal sinus trouble had developed subsequently, and was due to infection from the antrum, possibly pus having been driven up during the manipulation necessary for cleansing the antrum.—The PRESIDENT delivered his inaugural address on An Appreciation of Three British Aurists—Wilde, Toynbee, and Hinton, dwelling strongly on the respect in which these workers were held by Continental authorities on aural surgery.—Dr. MILLIGAN described two cases of Extradural Abscess following Chronic Suppurative Middle-ear Disease.—Dr. DUNDAS GRANT showed a case in which he had removed an Epithelioma from the Auricle, and a photograph showing the growth prior to operation. There was no recurrence. He also described a case of acute Suppurative Middle-ear Disease with Cortical Mastoiditis.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 4th, Dr. NICOLL showed a case of Cerebellar Abscess successfully treated by operation.—Dr. BEATSON showed a Cystic Goître removed by operation, and also a large Fatty Tumour removed from the superior mediastinum; it lay beneath the deep cervical fascia, and simulated a cyst protruding above the manubrium sterni.—Dr. JAMES ADAMS and Dr. NICOLL each showed a specimen of large Meningo-encephalocele removed by operation; and Dr. Nicoll showed a Nævoid Tumour of the Intestine enclosed in a double intussusception, involving over 5 feet of bowel; it was successfully resected, having produced symptoms of acute intestinal obstruction.

REVIEWS.

LECTURES ON GIDDINESS AND ON HYSTERIA IN THE MALE. By Sir THOMAS GRAINGER STEWART, M.D., LL.D. Second Edition. Edinburgh and London: Young J. Pentland. 1898. (Cr. 8vo, pp. 89. 2s. 6d.)

THE first part of this little book is a reproduction of three lectures on Giddiness or Loss of Equilibrium. The author shows that the sense of equilibrium depends on sense impressions from various sources—sight, touch, muscular sense, possibly an articular and a visceral sense, and lastly from the semicircular canals. He gives the history of our knowledge of the functions of these last. He points out that usually the impressions from these sources harmonise, or, as we might perhaps put it, we usually receive from them the reports to which we are accustomed, and then we feel steady, but if one scout reports differently from the others we become confused and lose our balance. He gives a very interesting example of this in the giddiness experienced in the leaning tower of Pisa, and he thinks that felt on looking from a height to be another instance of the same law, the feet reporting firm ground close by while the sight sees it many fathoms below. The best cure is, as we all know, to keep the eyes fixed upon the path, and thus harmonise the accounts.

Sir GRAINGER STEWART gives an ingenious explanation of the curious condition called "agoraphobia." He supposes that the patient has become accustomed to rely upon the vertical lines given by near objects in regulating his own position,

and that when in a large open space these are not to hand' he cannot use the other impressions which suffice ordinary people. The very curious case of giddiness felt in a very lofty building certainly supports his view, but it will not probably be accepted by all. Other instances of giddiness from unusual sense reports are those of rapid rotation, of swinging, and of sea-sickness. In the first probably the eyes and the canals are chiefly affected. In the two last we all know that it is the descent of the swing, or the downward pitch of the vessel, which at first delight and afterwards distress us. Both feelings are due to the novelty of our sensations, and the author points out that this is partly owing to discrepancy between the eye, which tells us we are standing on the deck, and the feet, which as the vessel sinks lose the accustomed sense of pressure, and partly to the fact that in our rapid descent the viscera tend to press on unaccustomed parts so that we feel as if we had left our stomachs behind us. Perhaps the endolymph also lags against unusual parts of the membranous abyrinth.

After sections on ocular and aural vertigo, Sir Grainger Stewart passes to that associated with intracranial lesions which interfere with the conduction of impressions. There are interesting sections on the cerebellum and the crura cerebelli, in which the author agrees with Hughlings Jackson's views of the part played by this organ. Several clinical cases are quoted, among which we note two in a brother and sister closely resembling a condition of the cerebellar cortex which is not uncommon in kittens, and then often affects several members of a litter. By what we think must be a misprint, Professor Annandale's operation on a cerebellar tumour is said to have *caused* giddiness and staggering (p. 34, l. 10); we presume that it *cured* these symptoms.

The derangements of the functions of the pons, crura cerebri, and corpora quadrigemina are also treated. Gastric vertigo the author considers to be probably allied to toxic vertigo such as that produced by tobacco or alcohol, and he concludes a very interesting discussion by adding a few instances of vertigo from peripheral irritation.

The rest of the book is a close and detailed account of an important case of hysteria in the male with a peculiar gait, marked tremors, and a remarkable perversion of sensation. This should be read in full as Sir Grainger Stewart has related it. It is illustrated by a photograph of the marks made by the feet of the patient as he walked down the ward of the hospital, taken in the ingenious way which was described in the report of a case under the care of Sir Grainger Stewart, published in the JOURNAL of February 27th, 1897, p. 524. The whole makes a very attractive and suggestive little book.

APPLIED BACTERIOLOGY; AN INTRODUCTORY HANDBOOK FOR THE USE OF STUDENTS, MEDICAL OFFICERS OF HEALTH, ANALYSTS, AND SANITARIANS. By T. H. PEARMAIN and C. G. MOOR, M.A.Cantab. Second edition. London: Baillière, Tindall, and Cox. 1898. (Demy 8vo, pp. 480. 12s. 6d.)

WHEN the first edition of Messrs. PEARMAIN and MOOR'S *Applied Bacteriology* made its appearance, we predicted that it would have a ready sale among those interested in the practical application of bacteriology. In less than two years its authors have found it necessary to prepare a second edition. Although the time is short, they have wisely taken to heart certain of the criticisms made on the first edition, criticisms not directed against the value of the book as a whole but against certain small details. The result is that the second edition is in certain respects a very distinct advance on the first, although the main scheme has not been departed from at any important point.

Without subjecting this edition to detailed criticism, we may say that in its present form it is not only a readable, but also an accurate account of applied bacteriology. Without attempting in any way to be original the authors have collected a very large amount of valuable information, and have arranged it in such form that most of it is accessible even to a busy practising medical man, and the practical and theoretical are in most cases so judicially apportioned, that at no point can the charge be brought that the work is heavy, or that the details given have no bearing on the theory and practice of medicine. Perhaps the one criticism that might be applied is that the authors have a tendency unnecessarily to expand what ought to be comparatively simple descriptions; indeed, at one or two points their work is not entirely free from a suspicion of verbosity, and one cannot help comparing it in this respect with the crisp, clear-cut descriptions of French authors writing on the same subject.

The important new features are a revision of that portion of the work devoted to the description of immunity, and of the production and use of the various antitoxic and antimicrobic serums. In certain respects these are very considerably improved, but we should like to have seen a more marked distinction made between what is ordinarily known as immunity or insusceptibility in its active form, and the antitoxin-producing power, which according to the comparatively recent observations does not necessarily run exactly parallel to this ordinary active immunity. The other most important addition is that detailing the processes involved in the bacteriolysis of sewage. This part of the work is of special interest at the present juncture, and will be carefully read by those who are engaged in this important branch of public work. The authors are, however, a little prone to underrate bacteriolysis, and to exalt the chemical side of the process at its expense.

Additions have been made to that section of the work dealing with the isolation of bacillus coli communis and the typhoid bacillus, while a number of other additions have been made in various sections of the work, the most important of which are full references to the now bulky literature dealing with the subjects hereunder reviewed. This criticism of detail is not made with a view of detracting from the value of the book, which should be in the hands of all who take an interest in this branch of public health work. It is rather to indicate that good as the work undoubtedly is, there is still room for improvement. This we should not have taken the trouble to point out unless we had formed a high opinion of the first edition, an opinion confirmed by a perusal of the second. The work would be improved if it were made less bulky, either by using smaller type, less spacing, or thinner paper. It would be a handier book to read, and to set off against this there would be no real counterbalancing drawback.

UEBER MALARIA UND ANDERE BLUTPARASITEN NEBST ANHANG EINE WIRKSAME METHODE DER CHROMATIN-UND BLUTFÄRBUNG [On Malaria and other Blood Parasites, with a Reliable Method of Chromatin and Blood Staining]. Von Dr. HANS ZIEMANN. Marinestabsarzt. Mit 165 farbigen Abbildungen und Photogrammen auf 5 Tafeln und 10 Fieberkurven. Jena: Gustav Fischer. 1898. (Roy. 8vo, pp. 200, 165 illustrations. M.8.50.)

DR. ZIEMANN has produced a work which, within moderate compass, gives an excellent and very complete summary of all that is known regarding the parasite of malaria and its allied haematozoa. He brings to his task a large practical experience of the disease in various tropical countries, and has used his exceptional opportunities with much intelligence and with great industry.

Dr. Ziemann follows the Italian observers in considering the round bodies with diffused pigment to be sterile forms. His description of these bodies agrees with those of other observers. When a parasite becomes sterile the pigment assumes the form of brown rods and larger granules, and acquires an active or trembling movement. These appearances he observed both in the tertian and quartan parasites, and found it practically impossible to draw any distinction between them. The round form, which both the spheres and their fragments assume, he considers to be a sign of their dying, and he sees a further proof of it in the gradual destruction of the chromatin, which can be followed in successfully-stained preparations.

He found similar appearances in the haematozoa of the nightingale, sparrow, and lark. All transitions could be found between the fully grown parasite capable of further development and the sterile forms. He holds the same opinion regarding the much-discussed flagella. He cites the opinion of

Laveran that these flagella represent the highest developmental stage of the parasite, and constitute the transition step to a development outside the human body, and he remarks that Mannaberg, Dock, and Danilewsky express a similar view. His investigations in tertian, quartan, and summer-autumn fevers, as well as in the hæmatozoa of some birds, have led him to defend the opinion that they are similar to the free spherical bodies with motile pigment, and represent degenerating forms. Flagella were observed more rarely in the quartan parasite than in the tertian. Those of the tropical and Italian parasite were sometimes similar to those of the tertian parasite. He has not yet succeeded in establishing the specific nature of the flagella by his staining method. In stained preparations of blood, in which there were many flagella, he found in the spherical bodies feebly developed chromatin fibrillæ in a confused mass, some of which reached the periphery.

Diligent workers on the malarial parasite are aware that Romanowsky has described a staining method by a combination of methylene blue and eosin, from which a neutral staining mixture with a special affinity for the chromatin network is produced. It has been found extremely difficult to follow Romanowsky or to get his results. Dr. Ziemann considers that he has been able to place this method on a surer foundation, and gives a description of his newer procedure. For an explanation of this method, which is long and complicated, we must refer to the work itself. It has interest only for those workers who combine much technical knowledge of staining methods with ample time and facilities for laboratory work.

Dr. Ziemann had opportunities of observing the parasite of the pernicious fevers acquired in Africa after the patient returned to Europe, and found that no change could be observed in the size or morphology of the parasite in the colder climate.

The chapter on the blood parasites in birds well deserves study. In October and November, 1897, the author examined in Heligoland the blood of 53 birds which were migrating from the north to the south, and in all the cases had negative results. In March, April, and May, 1898, he examined the blood of 102 birds migrating from the south to the north, and in 20 per cent. he found parasites. He describes a new form of parasite in the owl, which is figured in an excellent coloured plate. In a separate plate coloured representations are given of the intracorpuscular parasite in the nightingale, sparrow, skylark, falcon, and cherry-finch. This plate will be found specially useful to workers in this field of investigation.

Dr. Ziemann's book will be found to be of great interest to those who occupy themselves specially with the parasite of malaria and with the attractive study of intracorpuscular hæmatozoa, while the representations of the different phases of the three varieties of the parasite of malaria, excellently executed in colours, will be found valuable both for study and reference.

Physiologie; Travaux du Laboratoire de M. Charles Richet. Tome quatrième. [Physiology; Researches in the Laboratory of M. C. Richet.] Paris: F. Alcan. 1898. (Royal 8vo, pp. 564. 57 Figures. Fr. 12.)

This forms the fourth volume of collected papers that has appeared from Professor Richet's laboratory. Much of the work is already known to physiologists, and all of it is full of interest.

The longest paper comes first, and relates to the functions of the suprarenal capsules. Its author is P. Langlois, who was one of the first to start the reinvestigation of the subject which has occupied so many physiologists during recent years. C. Beretta writes next of serumtherapy in neoplasms. The main conclusion is the negative one, that this form of treatment has no curative results in cancer.

A paper on muscular fatigue by J. Joteyko, and another by A. Broca and C. Richet on anaërobic muscular contraction will be interesting to those who study the complex questions of muscle-nerve physiology.

A. Chassevant writes on the action of metallic salts on lactic acid fermentation; J. Héricourt and C. Richet on immunity conferred by peritoneal transfusion; and also on a method of obtaining the serum of dog's blood. This serum is innocuous when injected into human beings. It is, however, stated to have some ameliorative effect in cases of tuberculosis.

Charles Richet next describes in detail the changes in the heart during asphyxia. J. Carvalho and V. Pachon treat of a subject which just now is interesting the surgical world. They show that the removal of the stomach in cats, though not altogether beneficial, is nevertheless not a fatal operation.

E. Barbier contributes two short papers—one on respiratory changes in fat animals during inanition, the other on a new form of cardiograph and cannula. J. Althanasiu and J. Carvalho in part agree with Delezenne that the effects of the injection of "peptone" are due to its action on the liver, but are of opinion that the principal action of the poison is on the leucocytes of the blood.

The volume concludes as it began—with a lengthy memoir. This is on the action of chloroform, and its author is E. Vidal. The questions discussed will not interest those who are debating how chloroform kills, but relate to the influence of the drug on the metabolic changes in animals which are kept alive while under the influence of chloroform inhalation.

Conservative Gynecology and Electro-Therapeutics: A Practical Treatise on the Diseases of Women and their Treatment by Electricity. By G. Betton Massey, M.D., Physician to the Gynecological Department of Howard Hospital, and late Electro-Therapeutist to the Infirmary for Nervous Diseases. Third Edition. 24 Plates and numerous Engravings. Philadelphia, New York, and Chicago: The F. A. Davis Company. 1898. (Royal 8vo, pp. 408. $3.50.)

This work is by a thorough-going believer in electro-therapeutics, who admits that its earliest issue was but a treatise on the use of electricity in uterine fibroids and a few other affections. Dr. Massey uses a fair argument in favour of its modification into a system of gynæcology based on electricity. Nearly all the modern treatises on gynæcology, he states, have been written from a purely surgical standpoint, leading often to a perspective view of these affections that unduly exaggerated the mechanical side of pelvic pathology. He does not expressly depreciate these treatises, but he urges that this volume covers ground of more value to the average physician and his patients than books devoted to the details of operations which are often only of service as last resorts, and are then incapable of application, except in hands that have had more than a book training.

These arguments, however, are double-bladed weapons, for if some authorities have written so as to give the impression that by gynæcology they mean surgery, Dr. Massey decidedly writes as though by gynæcology he means electro-therapeutics. He deprecates "a book-training" for operative treatment, but such a training in electro-therapeutics from his own printed directions might prove more than unsatisfactory. Much that is written about uterine disease is theoretical in this as in most other treatises, so that we cannot feel sure that electricity is suited for certain diseases, as Dr. Massey would have us believe, nor is it always evident when these maladies are cured under electrical treatment that their disappearance is due to the electricity. In gynæcology perhaps more than in any other branch of medicine cure under treatment is often confounded with cure by treatment.

It is useless to attempt to confute certain doctrines not more extravagant than many to be found in other treatises. In matters where the value of electricity seems reasonable and is generally recognised, the book may be consulted with interest, and the second part on the "Rudiments of Medical Electricity" has been prepared with care, and the rules for keeping the instruments in order are excellent. The original photogravures showing the application of different apparatus and the seat of motor points on the trunk and limbs are valuable.

Many gynæcologists will justly condemn the author's advocacy of electricity in the treatment of extrauterine pregnancy. According to the preface, this treatise is intended for the "average physician." If the "average

physician" takes to electricity as a remedy for ectopic gestation, he will certainly court disaster. Dr. Massey, in speaking of the natural prognosis of fibroid tumours without treatment, asserts that the life of the patient is never threatened but by some form of degeneration, and that it has only recently been appreciated by the profession that the deaths after efforts at removal by the knife represent almost the entire mortality of these growths. He is right in warning us against too great operative zeal, but he should have added that the discomfort from a large or heavy fibroid often becomes so great that the risk of operation is justified. His clinical reports on cases of fibroid under treatment are carefully written, and the diagrams which illustrate them are instructive. They will, however, fail to convince the opponents of electricity, and we may turn the author's attention to the observations of Dr. Lewis Jones and Dr. Horrocks at a meeting of the Obstetrical Society.[1] Lewis Jones gave reasons for believing that the destruction in specimens then shown was due to heat, not electricity. The drawing at page 156, showing the gradual diminution of a fibroid between 1891 and 1898, is highly interesting, but the patient was 45 when first seen, and several points in the clinical history indicate that pure electricity had little if anything to do with the result. This case was treated by "negative abdominal puncture." The author admits that this practice has the "one (?) disadvantage of being intraperitoneal," and refers to possible "intestines in the way." Very small fibroids seem in some cases to be favourably influenced by electricity, and Dr. Massey agrees that there are numerous contraindications.

The book is in fact a brief in favour of electro-therapeutics, and should be studied by the opponents as well as by the advocates of electricity. The technical directions are admirable, but we suspect that experience will demand an extension of the "limitations" included at page 29 within three short paragraphs.

ESSAYS ON MUSEUMS AND OTHER SUBJECTS CONNECTED WITH NATURAL HISTORY. By Sir WILLIAM HENRY FLOWER, K.C.B., D.C.L., etc. London: Macmillan and Co. 1898. (Demy 8vo, pp. 394; 35 illustrations. 12s.)

THE recent retirement of Sir WILLIAM FLOWER from the Curatorship of the Natural History Museum renders these *Essays* specially interesting. The instructive addresses and lectures of which they are made up were too good to be lost—for lost they practically would have been if they had been left uncollected and scattered amongst the archives of learned associations. They relate to museums, to biology including anthropology, and comprise biographical notices of such men as Rolleston, Owen, Huxley, and Darwin. As they were all personal friends of the author, these notes of their career are as interesting as Sir William Flower's competent criticism of their work and opinions. The notice of Professor Rolleston is specially pleasing.

The second part is purely scientific, and includes many well-known essays. The medical reader must simply bow to the author's opinion, learn from what he reads, and pass on to what more specially concerns him. One little matter, therefore, is worth dwelling on as concerning us specially. Generic and specific names must sometimes be used in medical literature, hence we must peruse with interest the remarks about zoological nomenclature on p. 169. The eccentricities of nomenclature, due chiefly to a laudable effort on the part of the British Association to bring about uniformity and to avoid giving the same name to different animals, are dwelt on, and it is pointed out that generic names cause the most trouble, as species are always species, whilst a genus is a matter of opinion. We should have liked to hear the author's views on bacteriological nomenclature. Linnæus and his followers took great pains to limit notation of a species to a single name. A variety could be named, but "var." should be prefixed: "Gonopteryx rhamni, var. Cleopatra," for example. Are the bacteriologists correct in using such names as staphylococcus pyogenes albus or bacillus coli communis? Again, medical writers often forget that a scientific name is a symbol of the species, not of the individual. It is not strictly correct to say that a fluid was found to contain bacilli unless two species of bacilli are meant. Even then "two species of bacillus" is the more accurate expression; but a single species should never be put in the plural. "Found to contain the bacillus anthracis" is correct. "Three cats" are not "three feles domesticæ," but "three specimens of felis domestica." Lastly we hope that the bacteriologists, gentlemen at whose mercy we lie to a great extent in these days, will not take to changing names. "Should the smallest British seal," says Sir W. Flower, "be called phoca hispida, fœtida or anellata?" We tremble to think of a bacterium undergoing such changes of name.

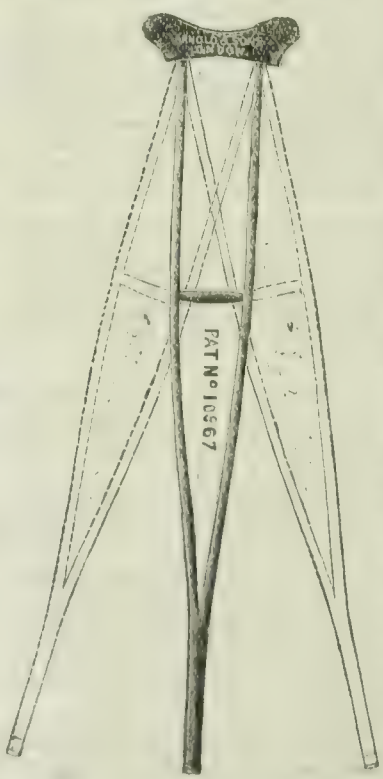
If the author's observations on nomenclature are suggestive, the first section of the *Essays*, which we notice last, is perhaps of more direct interest to the profession. Sir William Flower is a champion of the museum as a factor in scientific education. His right to express an opinion is well known, and the biological series at the museum of the Royal College of Surgeons is a noble monument to his competence as a conservator. His essays on museums, therefore, demand from us the most respectful attention. They suggest what some amongst our own ranks should do in the same direction. A good series of lectures on the anatomical and pathological museum in relation to the student, the teacher, and the practitioner is much to be desired. There are many quite competent to follow Sir William Flower's example, and to prepare such a series.

[1] BRITISH MEDICAL JOURNAL, vol. i., 1895, p. 588.

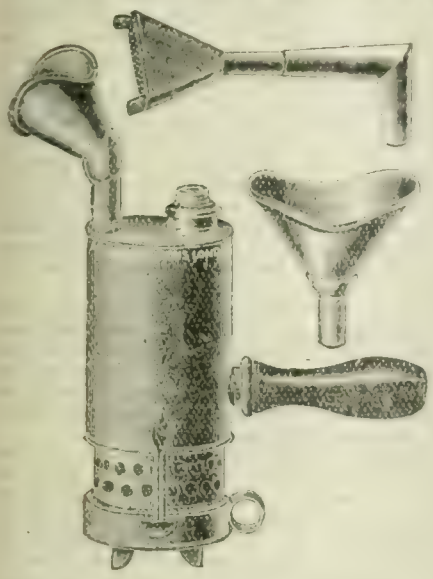
REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Improved Crutches.—The chief objects of the crutch are to overcome the friction caused by the see-saw movement of ordinary crutches, and to give an equal pressure under the arm. The crutch-head remains stationary under the arm, while the crutch has a free backward and forward movement, as shown in the woodcut. The advantages claimed are that (1) by stopping friction the body is not rubbed and made sore, and the clothes are not worn into holes; and (2) by distributing the weight equally when in use the arms are not strained. It is further claimed for the crutches that they possess a springiness and give, gratifying to users, that they are rigid in every movement, and that they are extremely simple in construction, without springs or mechanism likely to become disordered. We are informed that a pair of these crutches recently manufactured by Messrs. Arnold and Sons, of West Smithfield, have been tested by a cripple who is compelled through disease in both hips to use crutches for support, and who in one week walked 100 miles without causing soreness or strain, or otherwise distressing himself.



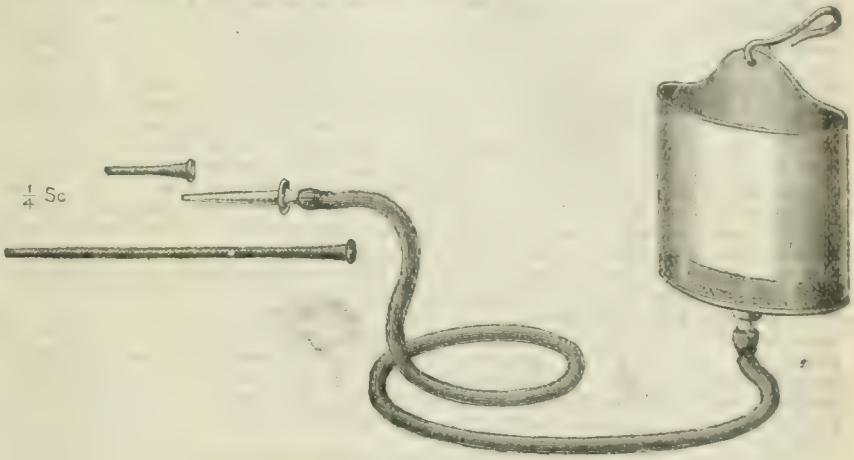
Warm Dry-air Inhaler.—Dr. A. Duke (Cheltenham), who believes that better results can be had (in some cases at least) of chronic or acute bronchitis by the use of hot-air inhalation than of steam inhalation, has suggested a form of portable inhaler which has been made by Messrs. Arnold and Sons, Smithfield. It can be held in the hand of the patient. One mouthpiece acts as a funnel for filling the receptacle with boiling water. The temperature is maintained by the spirit lamp underneath. There is also another mouthpiece, enclosing a piece of felt or spongio-piline, into which any medicament can be dropped and the hot air drawn through, thus medicating the air inhaler.



Portable Inhaler.

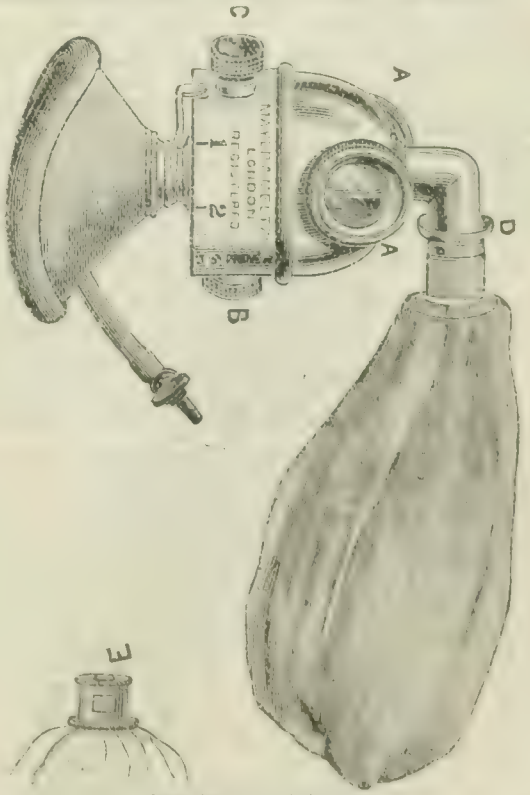
A Portable Reflector Safety Lamp.—Bruce's safety parabolic reflector lamp is made of brass, and is fitted with a silver-plated parabolic reflector, which is capable of adjustment round the light without being lifted off. The lamp is a most useful one for throwing a powerful and concentrated light upon any point under observation where the electric, incandescent gas, and other lights, from the nature of the fittings, etc., would be impracticable. If it could be further fitted with a cap to screw over the wick it might be carried in the bag for country operations. We are informed that it is already used by many country practitioners. The lamp is well made, and is moderate in cost. It is safe, since if knocked over the oil is not spilled. It is also useful for a variety of domestic purposes. It will form an effective and cheap lamp for the microscope.

Urethral Irrigator.—Mr. George Wilkinson, M.B., F.R.C.S., of Sheffield, has devised a portable urethral irrigator to replace the urethral syringe in cases of urethritis. It consists of a celluloid reservoir, a yard of rubber tubing, a glass nozzle, and two soft, gum elastic, urethral tubes. The reservoir is shaped like a pocket spirit flask, to fit the breast pocket, and being made of celluloid is extremely light. It is fitted with a sharp hook so that it can be hung to the coat or to the curtain, or by the addition of a curtain ring to a nail on the wall. The urethral tubes have a conical end, by means of which they can be attached to the glass nozzle. The shorter nozzle measures one inch in the cylindrical portion. The conical portion acts as a valve by plugging the meatus on the introduction of the tube, so that the urethra can be distended with the injection. The longer tube is six inches long in the cylindrical portion, and is designed for treating a deep-seated inflammation. It has the calibre of a No. 9 English catheter so as to stretch out the folds of the urethra. Both the tubes are freely open at the end. It is intended that the urethral tube should be first introduced and held in position by the fingers of one hand; the reservoir is then to be filled with the solution to be used, which is allowed to flush the urethra. There is no clip or stopcock, which would render the instrument difficult to manipulate with one hand. Mr. Wilkinson believes that irrigation is the most efficient method of treating urethritis, but he thinks that it should be performed frequently. The patient will be able to carry this instrument about with him, with a bottle of concentrated solution, and can perform the operation for himself with the aid of a jug of hot water. The apparatus has been made by Messrs. Down Bros., 21, St. Thomas's Street, London, S.E.



Portable Urethral Irrigator.

Modified Clover's Inhaler.—Dr. T. Wilson Smith (Bath) writes: Messrs. Mayer and Meltzer have constructed for me a Clover's small inhaler, with some modifications, shown in the illustration, which will, I think, be found very useful.



Modified Clover's Inhaler.

1. In the dome of the ether chambers, on either side, are two circular apertures, into which are screwed two watch glasses or "windows" (A A), allowing a view of the interior, so that the quantity of ether in the chamber can be easily seen at any time during an administration. These "windows" can be unscrewed, and the whole interior cleansed with ease

after each administration. To facilitate thorough cleansing, and to afford a good light in the ether chambers, the interior surface is plated and polished in the same manner as the exterior. The glass "windows" fit accurately, so as to prevent any leakage of ether in whatever position the inhaler be placed. Should the glass become foggy from condensation of the breath on its inner surface, it can be immediately rendered clear by turning the inhaler so that the ether passes over the glass for a moment. Anyone who has examined the interior of the ether chamber of the ordinary Clover's inhaler with a reflecting mirror, will have noticed that it is generally dirty, and often has a deposit of verdigris in it; nor can it be reached for cleansing purposes. This is obviated by the inhaler described. 2. The water jacket, instead of being closed entirely, has an aperture with a detachable screw stopper (B), so that it may be filled with warm water before the inhalation in cold weather; and the jacket may be quickly emptied and refilled if required during a long operation. 3. In the end of the bag is an aperture (E), covered by a metal cap, the rotation of which closes or opens a slot for admission of air into the bag. It will be found that by keeping the slot only slightly but continuously open (after anæsthesia has been induced) cyanosis is prevented, and quiet anæsthesia continues. In weakly people air may be continuously admitted from the first. By taking the cap off the bag can be cleansed out with a mop after administration. I have used the inhaler for some months, and find it very satisfactory in its working.

THE PREVENTION OF TUBERCULOSIS.

TUBERCULOSIS AND THE CONTROL OF OUR MILK SUPPLIES.

The second Harben Lecture on Tuberculosis was delivered at the Medical Examination Hall, Victoria Embankment, on Wednesday, November 9th, by Sir Richard Thorne, K.C.B., on the subject of the Administrative Control of our Milk Supplies in Relation to Tuberculosis in Man. He reverted to the fact that during the last half-century there had been an immense reduction in the death-rate from many forms of tuberculosis, notably phthisis, in connection with great sanitary improvements that had been effected; and he now pointed out that infants and children must, according to all experience, have benefited correspondingly. But when we came to examine the death-rates from tabes mesenterica, a form of tuberculosis in which the infection is received into the alimentary canal instead of the lungs, it was found not only that all the gain attained at other ages had been lost in the case of children and infants, but that in addition to this there had been a very heavy increase in deaths under 1 year of age from this cause. This increase had gone hand in hand with a steady increase in the consumption of cow's milk as a food in this country. English people were almost the only civilised nation in the world who habitually consumed uncooked milk.

He then showed from official returns how large was the amount of tuberculosis amongst milch cows, and quoting the report of the Royal Commission on which he had served, he explained that the artificial conditions under which milk was now produced in cowhouses, which the animals sometimes never left for a moment during a period at times reaching a whole year, were precisely those most certain to produce that increase of this disease in cows which had been going on. Fortunately the immediate danger to man was limited to the existence of tuberculosis in the cow's udder, but the early stages of this affection were most difficult to detect, and it was a form of tuberculosis which tended at times to spread with great rapidity. The danger to man, and especially to our infant population, was one of real gravity, and the loss of child life due to this disease in milch cows was appalling. He did not recommend, as some had done, the removal of every tuberculous cow from our dairies and cowsheds, for this at the lowest estimate would mean the removal at once of over half a million cows from our milk supply; but all cows with advanced tuberculosis in any part of the body, and all cows with suspicious udder disease should be at once seized and slaughtered.

Amongst the remedies was the provision of adequate cubic and floor space in cowsheds, so as to ensure proper ventilation. He showed that this was often more necessary in country than in town cowhouses, because the latter are often much more under control than the former. Both in Liverpool and Manchester the number of samples of milk containing tubercle bacilli was far greater in the case of country milk than in that obtained in these cities themselves. He further advocated frequent and systematic inspection of cowsheds and dairies by expert officials. As regards compensation for animals seized, his views were not the same as those which he had expressed against any such payment from public funds in the case of the seizure of tuberculous carcasses voluntarily put on sale by the butcher. In the case of the milch cow, the milk alone was placed on sale, and, whilst the use of the milk should be at once stopped, the cow might be perfectly good and of value for feeding purposes, to be sold as meat. Whatever value attached to a cow in this sense should be repaid if the animal was seized and slaughtered by the local authority.

He further maintained, as he did in the case of the meat supplies, that any stringency of control over home supplies should, as far as practicable, be also maintained over imported milk and milk products by appointing inspectors at British ports, and by chemical and bacteriological examinations of the materials imported, the whole expense to be borne by a small tax on all such articles as are imported.

Incidentally he referred to the success attained in the diminution of tuberculosis in cows in Denmark by the aid of the tuberculin test. And finally, he most strongly urged that English people should be educated to acquire the habit of cooking their milk before using it. He set aside the ordinary objections raised to this proposal, and he showed that if milk were boiled for a single instant the danger of tuberculosis would be gone, and a cause of thousands of deaths every year amongst children and young adults would be removed. The influence of the medical profession in effecting this education, and in thus reducing the present waste of human life, was great, and he appealed that it might be exerted.

MEAT INSPECTION IN AMERICAN CITIES.

[From a Correspondent.]

In view of the fact that the question of private slaughter-houses and their regulation is now under the consideration of the London County Council, the experiences of American cities may not be without interest.

The Federal Inspectors.

By far the largest part of systematic meat inspection in America is conducted by the National or Federal Government through a well-organised corps of trained veterinary inspectors, posted at all the large shipping centres and slaughtering depôts throughout the country. This inspection is confined to cattle and meat intended for export or inter-State trade. Owing, however, to existing commercial conditions it covers a considerable proportion of the meat used in American cities and towns, inasmuch as the principal butchers in most large cities and even in small towns of only 5,000 inhabitants buy the bulk, and in many cases the whole, of their meat ready slaughtered and dressed from the great "packing houses." There are scores of towns in Illinois, Iowa, and Missouri in the very centre of the beef-raising country which receive half their meat supply in the shape of dressed beef and mutton from Chicago, although often the cattle may have been reared and fattened within a few miles of their town hall. This curious custom grew up originally chiefly out of the wretchedly low prices paid by the local butchers, so that farmers got into the habit of fattening and selling in "carload lots" of twenty, and never offering in the local market anything except animals which were not young or prime enough to ship. It has the fortunate effect of causing a considerable share of the meat used in all cities and many towns to be inspected and stamped by the Government veterinarians.

Municipal Inspection: its Deficiencies.

In addition to this, nearly all the large cities have more or less stringent systems of municipal inspection. Among the most complete and effective of these is that of New Orleans, where every slaughterhouse is rigidly and constantly inspected, and no meat permitted to be exposed for sale which does not bear the stamp of the inspector. The rule also includes meat

brought in from the surrounding country. In Boston, indeed in the entire state of Massachusetts, every slaughterhouse is compelled to submit to rigid inspection. But in the majority of cities the examination is far from effective, since it consists chiefly in the inspection of meat upon the stalls instead of the carcasses at the slaughterhouses. This system is so full of loopholes that all American municipal sanitary officers are unanimous in condemning it. The cases of Philadelphia and Buffalo are typical. In the former there is a large, well-appointed, and inspected public abattoir, but there are also over 100 private slaughterhouses scattered all over the city. These are regularly visited by the city inspectors, but are so widely distributed, and so often in back alleys and secluded corners, that as slaughtering goes on in them at all hours of the day and night, it is practically impossible adequately to control them.

Impromptu visits of volunteer inspectors frequently discover diseased carcasses, and many more must escape entirely. Expert and intelligent lay opinion in Philadelphia is unanimously in favour of the centralisation or abolition of private slaughterhouses, and a strong movement in that direction is on foot.

In Buffalo the situation is more unfavourable. As it is a great shipping and packing centre, there is a corps of six to eight Federal inspectors constantly employed at the stock yards and packing houses near by. The municipal inspection, however, is practically confined to meat after its appearance upon the stalls, and there are scores of private slaughterhouses under no efficient supervision whatever. The natural result is that not only is the local inferior or diseased meat killed and dressed so as to pass muster on the stalls, but that animals shipped in from the West which are regarded as unlikely to pass the Federal examination, or have been injured in transit, are promptly converted into dressed meat at the private houses. Indeed, there are a cluster of small slaughterhouses around the stock yards, the chief trade of which is of this character. The well-known device of sending such meat but a few miles into the country, and having it brought in again by pedlars in the disguise of farmers, to be hawked in the poorer parts of the town, is also commonly practised. In short, the conclusion of American sanitary experts, from their own experience, is almost unanimous that no system of meat inspection which does not either abolish private slaughterhouses, or so concentrate them as to permit of their thorough inspection and control, can be really effective. Failing this, it often only changes the form of the evil it was designed to cure.

MEDICAL CHARITIES IN ISLINGTON.

In accordance with a resolution carried at a meeting of the Islington Rural-Decanal Conference on June 28th, 1897, a committee, called the Islington Medical Charities Committee, was appointed on November 23rd, 1897, to inquire into the working of the local medical charities within the area of the large parish of St. Mary, Islington.

This Committee has done good work, and a report recently issued gives evidence of great painstaking and industry. The report commences with a summary of the work done by the Poor-law institutions; it then deals with the Islington Dispensary, the Holloway and North Islington Dispensary, the Great Northern Central Hospital, the Memorial Hospital, Mildmay Park, the Islington Medical Mission, the Metropolitan Hospital Provident Department, and the Islington Branch of the Metropolitan Provident Medical Association.

A series of questions was sent to the local clergy and other influential people in the district as to the working of these institutions, and the answers received have been carefully tabulated. No systematic wage limit exists in the case of any of these institutions except the Great Northern Central Hospital and the Metropolitan Hospital Provident Department, although it would appear from the replies that the general opinion is that there is no large amount of abuse. In nearly all cases funds have fallen off, and various expedients have been adopted to raise money; as, for instance, by charging the patients small sums for registration for each attendance at the dispensary, and for every bottle of medicine dispensed.

Another fact, also, clearly comes out, namely, the inadequate remuneration of the medical officers, without whose services none of these institutions could exist. On the subject of justice to the doctor, the Honorary Secretary makes some very significant remarks:

> While the working man and his wants are studied, and sought to be provided for, but little thought seems to be given to the claims of the doctors for a fair remuneration. They have to do all the hard and anxious work both day and night, and receive fees that make it dubious if there is any profit at all. The statements of Dr. Rowntree and Dr. Wickham exhibit the feelings of a large majority of medical men, as regards the present mode of working provident dispensaries.

The first of these doctors had said to the Subcommittee, "I am of the opinion that the time has long since come for the abolition of much of the charitable medical system;" and the latter, after stating that "the attendances and visits bring the average payment to less than sixpence a visit or attendance," said, "I am still dubious as to there being any profit attached to my office."

The Committee finally suggests the formation of a Charity Board for Islington, and states that two rules for administration meet with general approval:

1. That the medical charities are intended to help and relieve the respectable and industrious poor who have not descended to the position of pauperism, and who are struggling to avoid doing so.

2. That no member of a family, the united earnings of which amount to 40s. or more a week, is admissible for charitable medical relief, except under special circumstances.

The Islington Medical Charities Committee is to be congratulated on having done useful public work, and its report may be studied with advantage by all interested in this important question. The example, too, of Islington might be profitably followed by other large metropolitan parishes.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on October 28th. There were present Dr. de Havilland Hall (in the chair), Dr. G. E. Herman, Dr. J. B. Ball, Dr. M. Greenwood, Dr. Walter Smith, Mr. J. Brindley James, Dr. W. Knowsley Sibley, and Dr. F. J. Allan.

A long list of current sickness claims was read and discussed. Of the total number of members in sickness benefit, nearly one-third are suffering from causes which leave little hope of complete recovery. Most of these "chronic" cases are quite hopeless, but in some of them the members from time to time regain enough of their powers to resume professional work. Some of the most interesting records of the Society are found in connection with these cases. In some instances the members after taking a long rest resume professional duty either completely cured or strengthened sufficiently to allow them to go on with their work for years, and the Committee have the gratification of knowing from the letters they receive that the help of the Society has been largely instrumental in restoring the members to health.

The ordinary claims (although, as is usual at this period of the year, somewhat numerous) were, for the most part, found to be of a not very serious character, and the total sickness experience is well under the amount expected and provided for in the table of the premiums. The Society is in its fifteenth year of working, and a large number of the members are now of an age at which the mortality-rate becomes high. The death claims are, therefore, becoming more and more numerous; but as some years ago the Society discontinued granting fresh life assurances, finding it could offer to the members better terms for this class of benefit through its agency of the Rock Life Office, the branch is fully secured and is gradually running off. This year being the last of the current quinquennium, the Committee have resolved that the business should be revalued as at December 31st, 1898, on the same basis of valuation as on the previous occasion.

Prospectuses and all information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

LITERARY NOTES.

The late Mr. Harold Frederic's view of medicine has been referred to in the course of the recent inquest. The following passage from his novel, *Illumination*, though put into the mouth of one of the characters, may perhaps be taken as expressing his own opinion on the subject. The Rev. Theron Ware, at his first interview with Dr. Ledsmar, is uncertain whether his interlocutor is a doctor of medicine or of one of the other faculties.

"Oh, yes, it is medicine," replied Ledsmar. "I am a doctor three or four times over so far as parchments can make one. In some other respects, though, I should think I am probably less of a doctor than anybody else now living. I haven't practised—that is regularly—for many years, and I take no interest whatever in keeping abreast of what the profession regards as its progress. I know nothing beyond what was being taught in the 'Sixties,' and that, I am glad to say, I have mostly forgotten."

"Dear me," said Theron. "I had always supposed that science was the most engrossing of pursuits—that once a man took it up he never left it."

"But that would imply a connection between science and medicine," commented the doctor. "My dear sir, they are not even on speaking terms."

In the *Phonographic Record* for October Sir William Gowers reports a case of lead poisoning, in which the usual "lead line" was absent, the only apparent darkening of the gum being upon the points which projected between the teeth, the rest of the gum being so closely approximated to the teeth as to prevent the accumulation of the albuminous material which yields the sulphur for the sulphide of lead, resulting in the lead line. This case, Sir William remarks, is another example of the important law—"that the absence of a symptom whose presence is characteristic may be entirely without diagnostic value." Other contributors to the number are Dr. Benson Cooke, Dr. Norman Porritt, Dr. F. H. Spooner, and Dr. G. F. Atchley. The last-named writer gives an extract from the *Royal Magazine* of 1760, concerning the *post-mortem* examination of King George II, from which it appears that His Majesty's sudden death was due to rupture of the right ventricle of the heart.

Dr. Edward Buchheim, Principal Physician of the Allgemeine Beamten-Verein, Vienna, has recently published (A. Hölder, Vienna) a work entitled *Aerztliche Versicherungs diagnostik der vollwertigen und der minderwertigen Leben*. Dr. Buchheim, who is well known in Austria and in Germany as an authority on life insurance from a medical point of view, some ten years ago published a treatise on this subject, and his present work is an improved and considerably enlarged edition of that book.

In a clinical lecture on diet recently delivered in St. Bartholomew's Hospital, and reported in the *Clinical Journal* of October 26th, Dr. Church refers to Dr. John Arbuthnot's treatise on *Diet* as the source from which Dr. Johnson took most of the explanations of medical terms which appear in his dictionary. "If any of you," said the lecturer, "ever have the curiosity to look out any words in Johnson's *Dictionary*, you will constantly find that in connection with words which were used in medicine there are passages from Arbuthnot in illustration of their meanings." We venture to say that Dr. Church's hearers will have no reason to regret the fact if their curiosity leads them to look into the famous dictionary. Macaulay said that the illustrative extracts from English writers were so well selected that they were in themselves delightful to read. Moreover, the definitions are so clear and not seldom so characteristic of the author that they are always instructive and often amusing. Théophile Gautier read dictionaries for pleasure, but then he was not as ordinary men are; Johnson's *Dictionary* may be read with pleasure by the average man.

In Bulletin 4 of the Free Museum of Science and Art of the Department of Archæology and Palæontology of the University of Pennsylvania, there is an interesting article on the Snuffing-tube by Dr. Max Uhle, from which it appears that the word "tobacco" is derived from the word *tabova*, of Tupi origin, signifying tubes. A number of South American Indian snuffing-tubes are pictured, and the custom of snuff-taking is traced to ancient Peru. Snuffing, therefore, preceded the smoking of tobacco, and the snuffing-tube may have been the forerunner of the pipe. Besides tobacco another powder called *niopo* or *curupa* was later used as a snuff by the South American Indians. The relation of all this to medicine appears in the fact that originally snuff and tobaccos were used as medicines among the ancient Peruvians. The medicine man of the Prurus tribes also produced ecstasy by snuffing tobacco, so that it had a religious as well as a purely physiologic use. The barbaric medicine man is thus once more the imitator of a world-wide custom.

Our German friends are naturally proud of their linguistic accomplishments, and they are not infrequently obliging enough to enlighten us as to the niceties of our own tongue. We need not wonder, therefore, at their disdaining the assistance of Englishmen in the composition of prospectuses. We give some extracts from a recent pamphlet in glorification of Carlsbad as examples of English "as she is wrote" by a German pen. We read that Carlsbad "has reached the highest pitch of blossom, of unexpected greatness. It is a bath of world renown, whose healing springs recover the health of thousands of suffering mankind." Moreover, "The damping, boiling bubble, the king of sources, is a wonder of creation." As if this were not enough, "The infinite blessings of the well of heal can never be praised enough." One is interested to learn that "by inscriptions on ways and rocks are the runes of thank," though some may be puzzled as to the exact meaning of the remark. But what does a trifle like that matter in a rhapsody on the charms of a place where "the multifariousness of changing images produced by a quick bath life banishes the nuisance of tediousness from everybody?" It appears to be felt, however, that prose is an inadequate vehicle for the praises of Carlsbad. Accordingly "Med. Dr. Forster," his eye (and his parts of speech) in a fine frenzy rolling, takes up the lyre, and warbleth to the following effect:

> Full of vigour from the rock,
> Merrily springs the gale.
> Restless spuming the well
> Rises its life-spending knock.
>
> Bubble mighty water ray,
> Breaking new life's fresh way;
> Joy for all and true glee
> Who thy meek spot do free.

Sir Isaac Pitman and Sons, Ltd., announce another language weekly, in addition to their already popular French and German weeklies. The title of the new publication will be *Pitman's Popular Spanish Instructor*, to be published weekly at 1½d. The idea is to popularise the study of the Spanish language by furnishing from week to week useful matter for both the beginner and the advanced student in the form of business interviews, correspondence, commercial terms, etc.

According to the report of the Honorary Librarian, Mr. L. M. Griffiths, the library of the Bristol Medico-Chirurgical Society now consists of 7,180 volumes, including duplicates. During the past year 1,360 volumes have been added, and 63 have been given to other libraries or sold. The library is in regular receipt of 170 periodicals. But the advantages of the library are greater than are represented in the ownership of the books actually belonging to the Society. By the constitution of the Bristol Medical Library, to which 2,088 volumes have been added during the year, members of the Bristol Medico-Chirurgical Society have the opportunity of consulting under one roof a collection of 18,750 volumes contributed by the libraries of the Faculty of Medicine, the Bristol Royal Infirmary, and the Bristol General Hospital, in addition to their own.

Election of Mayors.—In the list of mayors elected in the principal cities and towns on November 9th for the ensuing year occur the names of the following members of the medical profession:—*Carnarvon:* Dr. Robert Parry, re-elected. *Chester:* Dr. Henry Stolterforth. *Conway:* Dr. Morgan John Morgan. *Coventry:* Dr. Webb Fowler, re-elected. *Cowbridge:* Dr. R. M. Moynan. *Darwen:* Dr. J. T. Ballantyne. *Eccles:* Dr. William Moffett Hamilton. *Great Yarmouth:* Dr. J. Ryley. *Harrogate:* Dr. Ernest Solly. *Hedon:* Dr. J. Soutter, re-elected. *Henley-on-Thames:* Dr. James Lidderdale, re-elected. *Kingston-on-Thames:* Dr. W. E. St. Lawrence Finny. *Llandovery:* Dr. R. Jeffreys Owen. *Oswestry:* Dr. William Aylmer Lewis, re-elected. *Ruthin:* Dr. J. Medwyn Hughes, re-elected. *Saltash:* Dr. R. T. Meadows, re-elected. *Totnes:* Dr. G. J. Gibson. *Winchelsea:* Dr. Ernest W. Skinner. *Worthing:* Mr. Frank Parish.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 12TH, 1898.

ISOLATION HOSPITALS.

From time to time, for many years past, we have called attention to the indisputable fact that we must fail to reap the full advantages from our system of dealing with infectious diseases, elaborate as it is, so long as the provision of infectious hospitals for isolating patients suffering from infectious diseases continues to be inadequate in many districts and altogether absent in others. But small health authorities are slow to move, and difficult to convince that the truest economy is to make adequate provision for emergencies which are sure to arise sooner or later. They are like the foolish virgins in the Gospel, who had no oil for their lamps: "And the foolish said unto the wise, Give us of your oil, for our lamps are gone out. But the wise answered, saying, Not so: lest there be not enough for us and you; but go ye rather to them that sell, and buy for yourselves." When an epidemic breaks out in its district the plight of a local authority which has neglected to make provision in time is very much that of the foolish virgins. Neighbouring authorities, if they have hospitals, are not much disposed to take in its patients "lest there be not enough for us and for you," and it is told to go and buy of the makers of galvanised iron buildings.

The great value of infectious hospitals is particularly evident when the public health authority has to deal with a few scattered cases, the precursors of an epidemic. If these can be at once isolated the epidemic may be arrested, or, failing such complete success, its extent and duration may be greatly diminished. To improvise infectious hospitals after an epidemic has established itself is not only very extravagant, but commonly very ineffective also. A district without an isolation hospital is, moreover, a danger to its more prudent neighbours. Administrative areas in this country are unfortunately not mapped out with the mathematical regularity to be observed in the map of a new American territory. Boundaries wind about in the most curious and apparently absurd way, and the suburbs of a growing town are often under the jurisdiction of a small body.

It is desirable therefore not only to have adequate hospital accommodation provided, but that it should be provided in a systematic way, and to achieve this there must be some controlling and compelling authority. We are glad to see that the Staffordshire County Council has attacked the problem, and has adopted a very workmanlike scheme drawn up by Dr. George Reid, its medical officer. A county council is the administrative authority under the Isolation Hospitals Act, 1893, and under that Act it is empowered to provide, or "cause to be provided" hospitals for the isolation of infectious cases on application, by petition, being made to it to the effect that the necessity for such exists. A county council may act also upon the report of a county medical officer, provided he has been instructed by his council to inquire "as to the necessity of an isolation hospital being established for the use of the inhabitants of any particular district in the county." The Act lays down the manner in which a county council shall exercise its power. It can cause a local inquiry to be made by a committee of its own to ascertain whether an isolation hospital is required, and to consider the proper site for such hospital. If satisfied of the need it can constitute a hospital district, and direct an isolation hospital for such district to be established, if it be shown that the authority or authorities in question are unable or unwilling to provide suitable hospital accommodation. A hospital district may consist of one or more local areas, and a local area which already has hospital accommodation, even although, in the opinion of the county council, it is sufficient for the requirements of the district, may, with the assent of the local authority, be included in a hospital district under the Act. Any local authority may appeal to the Local Government Board against being included in a hospital district, and the decision of that Board is conclusive.

When a hospital district has been constituted, a committee of management is to be formed, which shall consist either wholly of members of the county council, or jointly of the county council and local authorities, or wholly of local authorites, provided that if the county council make no contribution to the funds of the hospital committee the committee shall consist wholly of local members unless the authorities interested desire otherwise. A further important provision of the Act empowers a county council, if it considers it expedient so to do, for the benefit of the county, to "contribute out of the county rate a capital or annual sum towards the structural and the establishment expenses of an isolation hospital, or to either class of such expenses."

If all sanitary authorities had to deal with a similar population, and if sanitary areas were based upon scientific principles, it might theoretically be best that each authority should have its own isolation hospital; but under existing conditions, as Dr. Reid pointed out in his report, there are many reasons for making the areas under each hospital committee as large as is compatible with the comfortable and convenient conveyance of patients. He points out that comfort and efficiency, which are essential to successful administration, and without which it will be impossible to gain another essential—the confidence of the public—can only be secured by providing each hospital with a competent staff of trained nurses. If the areas are too small the nurses will often be idle, since the local prevalence of infectious disease is variable. With larger areas the law of averages would probably bring it about that a certain number of beds would be occupied by patients from one or other of the contributory districts, and the staff, which, of course, *pro ratâ* would be smaller,

would be pretty steadily employed. He suggests, further, that on the occurrence of emergencies in other parts of the county, nurses and probationers might be drafted off from the hospitals of districts in which the epidemic did not prevail to those in other parts of the county where the epidemic had broken out, and that in this way the annual establishment charges would be reduced. There would be a further economy in the capital outlay, for not only would one site and one administrative block take the place of several, but the building-cost per bed, *pro ratâ* of population, would be smaller in the case of joint areas.

In order to overcome any reluctance which might be felt by some of the local authorities to unite for this purpose, it is proposed to make use of the provision already quoted, which authorises the county council to contribute to the expenses. Contributions, in the form of annual grants, if made conditional upon efficiency, both as regards buildings and appliances, and their maintenance, would give the county a powerful lever for maintaining a proper standard of administration. With regard to the capital outlay, the Act provides that hospital Boards formed under it shall borrow from the county at the rate of 4 per cent., and Dr. Reid suggests that the county council might very well refund a portion of the charge corresponding to the difference between the stated percentage and the percentage paid by the county in borrowing the money. With regard to the outlay involved, it appears that there are now 144 beds available, while the estimate of the number required to equip the county properly is 640. It is calculated that to provide additional beds, and to make necessary alterations in existing accommodation, will cost £116,000. It is further estimated that if the hospitals are made use of to their full capacity, the annual establishment and maintenance charges will be about £30 a bed. The annual expenditure, exclusive of interest on capital, is estimated at £16,800. It is believed that annual sums amounting to one-third the establishment and maintenance expenses (exclusive of interest on capital) would induce most of the authorities in the administrative county to fall in with the views of the Sanitary Committee and provide hospitals. If the whole administrative county came under such a scheme, this would probably involve an eventual annual expenditure on the part of the county council of £5,600.

THE PLEA OF INSANITY.

The trial of Dr. John A. Campbell at the Carlisle Assizes for improper intimacy with one of his female patients at the Carlisle Asylum, of which we publish to-day a full report, will excite the painful interest and sympathy of many members of the medical profession. He had been a medical officer of that institution for thirty-one years and its medical superintendent for over twenty-five years. He had managed the institution admirably, and had given satisfaction to his Committee, to the people of the two counties—Cumberland and Westmorland—for which it provided accommodation, as well as to the Commissioners in Lunacy. When the charge against him was first made public, the instinctive feeling among his medical brethren, and indeed throughout the district, was that the crime, if committed, must have been the result of insanity. At the trial this was proved to have been the case, and an intense feeling of relief in the profession and in the district was experienced when the jury brought in a verdict that he was not responsible for his actions at the time he committed the offence.

In the whole chequered history of the treatment of the insane no such charge had ever before been brought against a medical officer of an asylum. The offence was committed under circumstances that in themselves suggested mental aberration. It occurred in broad daylight, in a small room that could be looked into from the outside and the door of which was open, and into which he had openly taken the patient, an imbecile woman of about 30. The accused was no doubt at the time intoxicated, and it was the alcoholic element in the case which obscured the issue. The questions to be decided were: Was his mental aberration simple intoxication? or, Did insanity exist before he got drunk?

The evidence at the trial brought out the following sad sequence of events. Dr. Campbell, now 54 years of age, was a man of great energy and acuteness of mind, had an excitable brain and an egotistic disposition, but was till lately temperate, hard working, and always free from sexual vice. He was happily married, and had one child, of whom he was very fond. For two years or more he had shown slight signs of abnormal excitability, and a tendency to take alcoholic stimulants to excess. His friends noticed a change of disposition. He quarrelled with many of them, lost his affection for his wife and daughter, and showed marked eccentricities of conduct. Several of his friends then feared incipient general paralysis. He steadily became worse. This year he began to express at times grandiose delusions and insane suspicions. As his brain gave way his power of inhibition against alcohol became weaker, until in June and July he was at times manifestly insane, or, as Mr. Justice Phillimore said, "beside himself." One marked feature of the case, which deceived his Committee and sorely puzzled the judge and jury, was his power on certain occasions, notably Committee days, which were at fixed times, to pull himself together mentally, and to put his whole remaining professional powers into exercise, so that he spoke and acted for the time as a sane man. This point was the one that most needed explanation to the Court by the skilled medical experts, who fortunately were able to convince the jury that this was not an uncommon feature in certain forms of insanity, and especially in men of naturally tough brains and strong wills. Many of his friends and acquaintances had been so impressed with his mental state in July in Edinburgh, that they had discussed it among themselves. After their opinion had been confirmed in so dreadful a manner by his offence in August, they and others headed by Sir Thomas Grainger Stewart, made a joint representation to his Committee, suggesting that justice could not be done if his mental state were not inquired into by impartial medical men, and evidence on this all-important point produced to the Court. This common sense and reasonable procedure the Committee could not, unfortunately, for legal reasons, carry out themselves, because they were technically the prosecutors. In Scotland or any other country in Europe such an important inquiry and report on

any prisoner in respect to whom a *primâ facie* case for inquiry was made out would have been ordered by the prosecuting authority or the Court. At the trial the testimony of Drs. Hair and Ogilvy-Ramsay of Carlisle, of Dr. Conolly Norman of Dublin, Dr. Swanson of York, Drs. Macleod and MacPhail, old assistants of the accused; Sir John Batty Tuke and Dr. Clouston of Edinburgh, and Dr. Yellowlees of Glasgow was strong and positive that for several months the accused had suffered from insanity and insane delusions, that his self-control had been lost through disease, that his affective nature was perverted and that his appearance, manner, and conduct were those of an insane man. A mass of intelligent lay evidence, mostly given by persons whom he had casually met in July, backed up these conclusions. But there is little doubt that if so overwhelming a body of evidence had not been produced to the Court, and if the case had not been presented in its true light by Mr. Shee, the result of the trial might have been different. Our profession would thus have suffered disrepute, and all the old terrible prejudices in regard to the treatment of the insane would have been revived.

The judge summed up the case carefully and impartially, but did not venture to depart from the old and unscientific English precedent that knowledge of right and wrong is the test of legal responsibility. Philosophy and psychology have propounded that man's mind has the three great coequal faculties of feeling, knowing, and willing, and that the greatest of these is the will power. Modern physiology and pathology teach emphatically that brain disease may and does affect the affective, the controlling, and the inhibitory faculties of the mind as well as the cognitive. Yet science cries to deaf legal ears in England on this point. Germany, France, and America have reformed their laws on this point. England alone refuses to follow the lead of modern science. To attain a righteous decision in such cases as Dr. Campbell's, a change in judicial procedure is needed, so that opportunity may be afforded for scientific testing of responsibility, and for an exhaustive examination of the mental state of the accused and his recent mental history by impartial and skilled medical men, who could say definitely whether disease existed or not. Then proper arrangements should be made for the submission of their evidence to the courts.

THE ETIOLOGY OF MALARIA.

It is interesting to observe how the theory of the diffusion of malaria by mosquitos propounded by Dr. Manson, and practically established by the brilliant researches of Major Ronald Ross of the Indian Medical Service, is coming to be adopted by other investigators.

For some time past investigations have been made on the subject by Professors Bignami and Grassi in Italy. Experiments made by the former in 1896 led to no positive results. They were repeated this year in the month of August and in the first half of September, but equally without success, as it could not be ascertained which among the numerous species of mosquitos and allied insects had any particular association with malaria. Observations made by Professor Grassi during the past summer led him to believe that among all these insects only three species could be concerned in the production of the disease. In the *Rendiconti della R. Accademia dei Lincei*, vol. vii, 2° sem. serie 5a, fasc. 70, and in the *Policlinico*, vol. V-M. anno 1898, there appeared a paper by that distinguished naturalist on the Connection between Malaria and Special Insects. He there gives particulars as to the connection between malaria and the local distribution of mosquitos and certain allied insects in various parts of Italy. These investigations have led him to the conclusion that a causal connection exists between the insects and malaria, and by excluding from consideration the species which abound in non-malarial places and those which do not bite human beings, he has narrowed the number of suspected insects to the following:—Anopheles claviger (Fabr), Culex penicillaris (Rondani), and Culex hortensis (Ficalbi). His chief suspicions are fixed upon the first two and also upon a third found in places where the pernicious form of malaria prevails especially, and called by Grassi, who has not identified it, Culex malariæ.

Specimens of these insects collected at Maccarese (22 miles from Rome on the Cività Vecchia road), where a severe type of æstivo-autumnal fever prevails, were handed over by Grassi to Bignami to experiment with. Experiments were made, with the consent of the patients, in the Santo Spirito Hospital. Up to November 1st there was no result, but on that day one of the patients showed a rise of temperature at midday, and at 3 P.M. had a rigor. At 4 the temperature was 102° F.; it continued rising, and on November 3rd reached 105°. On the morning of that day the unpigmented amœba form of the æstivo-autumnal parasite was detected in the blood. In the evening the parasites were mostly unpigmented, but a few showed initial pigmentation, and brassy red corpuscles were seen. Quinine was administered at 5.15 P.M., and next morning (November 4th) at 4 A.M. the temperature was normal. The patient was an old soldier who had been in the Santo Spirito suffering from a nervous disorder for six years and during that time had never had fever. Bignami says the type of fever is the same as occurs at Maccarese, namely, continuous. We understand that Professor Bignami is continuing his researches, and will shortly publish his results.

A further discovery has been made by Dr. Dionisi, who has at last found in certain mammals (bats) a malarial infection due to parasites resembling those of human malaria. The amœbæ in these animals are present in great numbers; young annular forms are chiefly seen, but some pigmented forms are also present.

In connection with these investigations we cannot refrain from quoting from *La Tribuna* a somewhat amusing story about Professor Koch, who, as is well known, has been studying malaria in the hospitals of the Eternal City. In the Santo Spirito he came across a patient with pernicious malaria, admitted apparently in a dying state. He asked that "this body" might be kept for his examination. The next day he went intending to make the necropsy, and was amazed to find a living man sitting up in bed to all appearances cured. The "corpse" greeted the professor with a significant smile. The cure had been wrought by the intravenous injection of quinine, according to Professor Baccelli's method. The case is said to have made a deep impression on Professor Koch. We give this story, as the newspapers say, "with all reserve."

THE WATER SUPPLY OF LONDON.

As mentioned in the British Medical Journal of November 5th, the London County Council have determined once more to apply to Parliament for powers as a water authority. The dry season of the past autumn has provided such an object lesson in East London that the leaders in this matter in the Council are able to make out a strong case in favour of immediate action. A whole district of London thrown back, in the nineteenth century, upon the mediæval method of a restricted, uncertain, and intermittent supply; a water company lending out pots for householders to store their day's water in; the chairman of a company drawing large dividends from the sale of one of the necessaries of life lamenting that his customers in a great city, and one supposed to be a sanitary model to the world, have no water cisterns in their houses in which to store a day's supply amidst the effluvia of the domestic dwelling; a string of people waiting their turns to draw water at standcocks in the streets—these are surely matters which sharply emphasise the need of some change, and which stultify sufficiently the policy of procrastination.

The foes of progress will, of course, protest that nothing should be done till the present Commission has reported—a sufficiently plausible plea for postponing action for at least another year. The machinery of private legislation is, however, slow to move, and there is reasonable ground for believing that long before the proposed Bill—a Bill which is practically already drafted—can reach the Committee stage in either House, the report of the Commissioners will be in the hands of legislators. Far be it from us to counsel hasty legislation in a matter of such vast importance, but there is a limit to the period of inquiry, and a time to cease asking questions and to begin to do deeds. If that time has not already arrived, its advent, in the face of the calamity which befell East London this autumn, cannot with safety be very much longer delayed.

While the obstructive policy prevails other important places are casting their eyes to the mountains of Wales. Already Liverpool and Birmingham have appropriated large areas, and, if London does not soon make up its mind to secure a supply of pure water from the Welsh hills, some syndicate of cities in the Midlands will forestall it, and Sir Alexander Binnie's great scheme may never be realised.

It was calculated by Lord Balfour of Burleigh's Commission that by 1931 the population of the districts now provided for by the London companies would exceed 11 millions, and that, allowing the by no means excessive amount of 35 gallons daily per head—including, of course, water used for sanitary and trade purposes—nearly 415½ million gallons daily would be required to meet their wants. The present sources are quite unequal to this demand. The 300 millions expected from the Thames cannot be secured except at an enormous outlay on storage. That this is so will be readily understood when it is remembered that the flow of the river averaged only 278 million gallons last August, and only 200 in September, while, as Lord Farrer lately pointed out, it fell for a short period at Teddington Lock to 77 millions, and one day so low as 42½. The Lee this autumn, below the intake of the companies, was, he remarked, a "stagnant ditch." The Chairman of the Council's Water Committee declares that to bring 200 million gallons from Wales will cost some £16,500,000, to be expended in three instalments. The Council have therefore with practical unanimity resolved to try to get powers to purchase for the administrative county the rights of the present companies to effect this purchase six months after the Bill becomes law, and arrange the price afterwards by arbitration, to make such necessary connections between the mains of the existing companies as shall prevent an immediate repetition of a water famine amidst one quarter of the population of London such as happened this year, and to bring an additional supply of clean water from the upper reaches of the Towy and the Wye.

CHRISTIAN SCIENCE BEFORE THE LAW.

For the second time within a few weeks "Christian Science" has formed the subject of an inquiry in a coroner's court. In the case of Major Lester, a report of which was given in the British Medical Journal of October 15th, the jury contented themselves with returning a verdict in accordance with the medical evidence, and expressing their "strong sense of abhorrence of the so-called treatment of the deceased" by the Christian Scientist who was called in when the doctors were dismissed. In the case of Mr. Harold Frederic the jury returned a verdict of manslaughter not only against the Christian Scientist who "treated" him, but against the lady who is alleged to have used her influence to remove the patient from the care of legally qualified members of the medical profession, and to place him under that of the Christian Scientist. The case will in due course be tried before a higher court, and till the law has been defined by judicial authority, it would be improper on our part to make any comment on the matter from the legal point of view. It may not be out of place, however, to indicate the precise issue which has to be determined. This is not whether Christian Science is or is not a rational system of treating a disease—that is a question which neither judge nor jury will be called upon to decide. The point as to which an authoritative deliverance is required is how far it is lawful for those about a sick person, presumed to be incapable of forming an intelligent judgment for himself, to neglect ordinary medical treatment and rely solely on "faith healing." The law does not compel a man who is of sound mind to call in a doctor for himself, however ill he may be; but if he neglects to do this for his child he does so at his peril. It is true that, as things are, the "peril" is not very great, parents belonging to the persuasion of the Peculiar People generally incurring no penalty more severe than a homily from the coroner, with a recommendation "not to do it again." But this unsatisfactory state of things is due to the uncertainty of the law—an uncertainty which it is to be hoped will now be removed. Of "Christian Science" itself an account, in great part consisting of the very words of its inventor, is given elsewhere. It may seem strange that such impudent nonsense should take captive not merely the ignorant, but men of brilliant intellectual gifts. But there are many instances which prove that even a scientific training is not always a safeguard against the most abject credulity in the matter of signs and wonders. Indeed it is hardly too much to say that certain forms of mental eccentricity flourish most rankly in a soil of superficial knowledge and falsely so-called "culture."

IMPENITENT GLOUCESTER.

The citizens of Gloucester seem determined to make their city a byword throughout the world. Not satisfied with having, by their neglect of the teachings of Gloucester-

shire's distinguished son, brought upon themselves the penalty of the gravest epidemic of small-pox that any town of the same size has suffered from in modern times, they have delighted to honour those who lose no opportunity of expressing their contempt not only for his discovery but for his character. This is the conclusion which the public outside will draw from the results of the municipal elections which have just passed, following so nearly, as they have done, on the lines of the two preceding years. In the largest ward of the city the voters have placed at the head of the poll a member of the medical profession who is reported to have called Jenner "an impudent charlatan" and a "fraud." Next to him they have chosen the ex-President of the local antivaccination society, who, during the epidemic, testified to the "conscientious" nature of his opinions by "submitting himself," as he pathetically explained in the local paper which he conducts, "to the disease called vaccination." Well, if Gloucester chooses thus to flaunt its impenitence defiantly in the eyes of the world, its citizens cannot complain if they earn for themselves a reputation for stupidity which will entitle them to be called the Boeotians of Britain. Keighley, Leicester, and some other towns may for some time longer continue to defy Providence as they have done with more or less impunity for some years past; but they can at least urge in their defence that they have not been taught the lesson which Gloucester has had to learn at such a cost. We cannot believe that the more intelligent citizens of Gloucester are blind to the injury which such conduct will inflict on their city; but if they wish to show that they are not responsible for the folly of what we have reason to think is a very limited, though very active, section of their body, they will have to make themselves heard, and that without delay.

PROFESSIONAL SECRECY AND THE DISCLOSURE OF "INCIDENTAL DISCOVERIES."

A CASE which has recently been tried in America has a bearing on the difficult question of professional secrecy in regard to the obligations of medical practitioners in the witness box. A woman brought an action for damages against the authorities of a village. She claimed to have suffered an umbilical hernia, a prolapsus of the uterus, and several bruises by a fall due to a defective sidewalk. But the defendants attempted to show by her medical attendant that she had an umbilical hernia before the accident. The counsel for the village insisted that if the practitioner discovered the umbilical hernia while attending his patient at childbirth, but did not treat her for it, and the knowledge was not necessary for his guidance in assisting in the delivery of a child, he could disclose it; while the Court took the position that the very nature of his employment compelled the disclosure to him by the patient, and therefore it was privileged under the statute. The latter provides: "A person duly authorised to practise physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity." The case was taken to the Court of Appeals of New York, and this tribunal has affirmed the judgment of the Court below, holding that the evidence offered was clearly within the protection of the statute, because the witness acquired the information which the defendant desired to elicit from him while attending the patient in a professional capacity, and the discovery of an umbilical hernia was a necessary incident of the investigations made to enable him to act in that capacity.

A FRENCH VIEW OF THE VACCINATION ACT.

AT the close of the examinations for commissions in the Medical Service of the French Army, recently held at the Val-de-Grâce Medical School, Inspector-General Dujardin-Beaumetz delivered an address, in the course of which he referred to vaccination. He spoke of the antivaccinist agitation as "a campaign which has recently obtained in England the most deplorable and most dangerous success." He described the Act as a victory which, under the very unexpected pretext of liberty of conscience, the unintelligent egotism of heads of families has gained against the public health. "We persist," said Dr. Dujardin-Beaumetz, "in France, in Algeria, in Tunis, in Tonkin, in the Soudan, in Dahomey, and in Madagascar, where experience has been decisive, in holding that in ordering compulsory revaccination not only for the active army, but for the reserve and the territorial army, the Ministers of War who have taken or maintained this step have rendered to the nation and to humanity a service for which they should be grateful. If anyone is in a position to appreciate this benefit it assuredly is the medical officer of the army, since no one has contributed more than he has to generalise the method and to note its results. The Technical Committee of Health has decided upon and made compulsory the procedure which has seemed to it at once the most efficient and most harmless, and each year the eminent director of the Vaccine Service, Dr. Hervieux, at the Academy of Medicine, takes pleasure in doing justice to the devotion which the military medical officers bring to the development of that practice so eminently protective, and each year the Academy makes it a point of honour to reward their zeal. How far they are in England from the time when Jenner received the congratulations of all the learned bodies of Europe; when the Institute of France affiliated him to itself as a corresponding member; when the Empress Catherine II wrote to him an extremely flattering letter, which she accompanied by the gift of a diamond of great price; when the British Parliament granted him a reward of £10,000, with a vote of thanks for the signal benefit which he had rendered to humanity. Those great memories among our neighbours have perished in presence of the narrow conception of the rights of individual conscience, for which the public good is now but an empty word, when already serious epidemics have recently broken out in several towns of that same England. In the French army the disease is now represented each year only by a few units. We therefore persevere in the harmless and protective practice which has so justly placed Jenner in the number of benefactors of mankind." The clown in the play said that it was no great matter if Hamlet did not recover his wits in England, for his madness would not be seen in him there, where "the men are as mad as he." From the comments made in the foreign papers upon the recent action of our enlightened Legislature in regard to vaccination, it is clear that the clown's reflection upon our national sanity is believed to be still applicable.

VAGINAL BACTERIA IN PREGNANCY.

SINCE Döderlein published his monograph entitled *Das vaginal Secret* in 1892, this subject has appeared to be one of great fascination to large numbers of gynæcologists, both on the Continent and in the United States. Unfortunately the bacteriological equipment of many was deficient, and the startling results at which the earlier observers arrived have fortunately been proved by the recent careful work of Krönig in Leipzig and Whitridge Williams in Baltimore to be due largely to faulty technique. Several important facts seem at length to have been established. Döderlein was the first to isolate from the vaginal secretion of pregnant women a special organism which he named the vagina bacillus; this organism has now taken a definite place in the list of the bacterial flora of the human body, all observers being agreed upon its occurrence and its morphological characters. Döderlein further endeavours to establish its claim to be regarded as one of the chief defences of the genital tract against bacterial invasion from without. He attributed to it the normal acid reaction

of the vaginal secretion, and distinguished two kinds of secretion in pregnant women, the "normal" and the "abnormal." The former was acid in reaction, and contained vagina bacilli only; the latter was neutral or alkaline, and from it the vagina bacilli had disappeared, their place being taken by various organisms, some of which were pathogenic. He believed, further, that he had proved, by experiment, that upon certain pathogenic organisms, notably streptococci, the vagina bacillus exerted a powerful germicidal action; certainly he showed that the healthy vagina of a pregnant woman cannot be successfully inoculated with the common organisms of suppuration, but his efforts to show the antagonism of cultures were less successful. The well-known liability to infection after labour he attributed to the absence of the bacillus which is washed away by the liquor amnii, and which cannot long exist in an alkaline medium like the lochia. In cases in which the vaginal secretion was "abnormal," Döderlein urged the employment of antiseptic douches as a prophylactic measure, and was a strong advocate of the possibility of autoinfection in pregnant women. Fortunately for the peace of mind of the accoucheur, Krönig and Whitridge Williams have now independently proved that, with the exception of the gonococcus, pathogenic organisms do not occur in the vaginal secretion of pregnant women, no matter what may be its physical characters. Döderlein's results were due to faulty technique, that is, to insufficient care having been taken to avoid contamination from the vulva. Upon the bactericidal action of the vaginal secretion the later observers support Döderlein. Krönig has shown that cultures of streptococci introduced into the vagina of a pregnant woman are destroyed within six hours. These facts have an important practical bearing. If the vagina does not contain pathogenic organisms during pregnancy, autoinfection from the vagina must be impossible; and the occurrence of septic infection must imply that organisms have been introduced from without. The potent bactericidal action of the secretion renders douching during pregnancy not only superfluous but possibly harmful. Lastly, since the presence of streptococci in the lochia implies the occurrence of streptococcic infection, the discovery of this organism should be regarded as an important diagnostic point in relation to morbid conditions of the puerperium.

PORRO'S OPERATION AND OOPHORECTOMY ON DOMESTIC ANIMALS.

Some interesting observations on abdominal and uterine operations on the dog and cat have appeared in the *Journal of Comparative Pathology and Therapeutics*. Mr. Hobday, of the Royal Veterinary College, finds that hysterectomy during pregnancy is justifiable in some cases of dystocia, and in instances where a small female has had the misfortune to become pregnant by a sire of a large breed. If performed before the patient has become weak and in a state of collapse, the prospects are good, provided that aseptic precautions be rightly carried out. The chances of septic infection are very much less than in the case of Cæsarean section. The chief disadvantage is that afterwards the animal is useless for breeding purposes, and can only be kept as a pet. The patient is prepared by carefully shaving the hair from the abdominal wall for 2 or 3 inches around the median line between the umbilicus and the pelvic rim. A pad of aseptic wadding is then fixed by bandage over the shaven space so as to keep the parts clean. The instruments are boiled, an anæsthetic given, and the patient placed in the dorsal position with the legs well extended. On opening the peritoneal cavity, the forefinger is inserted and hooked round the uterus, which is brought to the surface and ligatured round the body just below the junction of the two horns, and also around each horn just above the ovaries. A proximal and a distal ligature is applied in each instance. The stumps being returned into the abdomen, the incision is closed, the wound after thorough drying being hermetically sealed by the application of orthoform and collodion. The operation, only performed in bad cases, is by no means without its own dangers. Out of 9 cases, 4 proved fatal, but 2 were much exhausted before operation; in 1 the catgut ligatures used for tying the cornua slipped off during the operation, and there was much hæmorrhage; the animal lived, however, five days. In the fourth fatal case death took place from septic peritonitis on the fifth day. In certain respects there is more risk in the case of animals than in our own species. Oöphorectomy or spaying is much less dangerous. Occasionally death occurs; thus a cat did very well till the third day, when she suddenly became very vicious, showing temper even when looked at. Paralysis attacked the hind quarters, and death soon followed. This complication might have been accidental, cerebro-spinal diseases in the cat being often of a singular type. Drs. Herringham and Andrewes noted two remarkable cases of cerebellar disease in kittens of the same litter born in a ward of St. Bartholomew's Hospital; their observations were published in vol. xxiv of the *St. Bartholomew's Hospital Reports*. Mr. Hobday states that cats and bitches do not invariably become fat and idle after the ovaries have been removed. Several animals under his observation for more than two years after removal of the ovaries show no such unfavourable changes. The bitches remain as valuable for pets or watch-dogs as before, whilst the taste and power of the cats for catching mice seem in no way impaired.

REPRESENTATION OF HOSPITAL STAFFS ON HOSPITAL BOARDS.

We learn that the Preston Royal Infirmary is one of those public hospitals, few we believe at the present day, upon the Board of Management of which the medical staff is not represented. It is one of the elementary principles of a good hospital constitution to provide for the due representation of the medical staff upon the executive body charged with the administration of the hospital. It is strange to find a proposition which to most minds expresses a self-evident truth disputed as it would appear to be at Preston. Hospitals such as the Preston Royal Infirmary exist for the care and treatment of the sick, and it is quite impossible that they should be managed in the best way if those who are charged with the duty of giving medical and surgical assistance to the inmates are not represented on the Board of Management. In some hospitals all the members of the visiting medical and surgical staff are *ex-officio* members of the Board of Management, in others some of the senior members of the medical and surgical staff, in others the medical and surgical staff elect representatives to serve on the Board. By one of these methods representation should always be given in a well-regulated hospital to those who give their professional skill to it, and whose opinion on many points which frequently arise is essential to the proper administration of the hospital. We shall hope shortly to hear that this very necessary reform has been carried out at the Preston Royal Infirmary.

A GERMAN OPINION OF THE VENTNOR SANATORIUM.

Of all English health resorts probably none is so well known on the Continent as Ventnor in the Isle of Wight. Recently Professor Ewald[1] of Berlin has added his testimony to that of the many who have appreciated its climatic advantages. After his recent visit to Scotland he expected to find the Undercliff hot and relaxing, but was agreeably surprised to find the summer temperature moderate and the air freshened by the moist south and south-west winds. He recapitulates the well-known advantages

[1] *Berliner klin. Wochenschr.*, 1898, No. 40.

of the Undercliff as a health resort for consumptive patients—the equable temperature and purity of the air, the wonderful situation of the place in a kind of amphitheatre, sheltered from cold winds by the Downs on the north, and exposed to the sun and beautiful sea on the south, the excellent water supply and good sanitary arrangements, and, finally, the delightful evidence of English comfort in the place. From the German point of view the Royal National Hospital for Consumption at Ventnor possesses features of extraordinary luxury, all duly appreciated by Professor Ewald, who alludes to the excellent medical management of the hospital and the active charity of the English public, by whose voluntary contributions so many benevolent institutions are supported. He draws attention, by the way, to the large orchestrion in the hospital dining hall, which, he says, was presented by a benefactor at a cost of 10,000 German marks. The hygienic arrangements of the hospital he holds to be amongst the best of modern times—kitchen in the upper storey, special ventilation apparatus, new handkerchiefs for the patients every day, and special instruction about the danger of infection by carelessness in regard to expectoration—but he is astonished to find that the linen (with the exception of the handkerchiefs) is sent to the town of Ventnor to be washed. "This we must allow," says he, "that in respect of climatic conditions, the English have a locality on the Isle of Wight whose climate is hardly inferior to that of the Riviera, and is certainly not equalled by any place in Germany." On the other hand he believes that the sanatoria for poor consumptives in Germany, although simpler and less costly than the Ventnor one, are yet in every way satisfactory. The patients when admitted to these sanatoria, are removed from the many injurious influences of their daily life, are placed under hygienic and healthy conditions and given good food. The splendid climate and relative luxury of the Ventnor sanatorium must not be regarded as absolutely necessary conditions for the sanatorium treatment of poor consumptives. With the same amount of charitable outlay it must be remembered that more patients can be treated in simpler sanatoria, like those of Germany, than that at Ventnor.

MAISTER PETER LOWE'S WILL.

In the *Glasgow Medical Journal* for October, Dr. James Finlayson makes an interesting addition to his *Account of the Life and Works of Maister Peter Lowe*, published at Glasgow in 1889. In that work Dr. Finlayson had to leave the date of Lowe's death uncertain. No trace of a will had then been discovered. About two years ago, however, Mr. A. W. Gray Buchanan, while searching the *Commissariat of Glasgow Testaments*, vol. vii, for another purpose, came upon a document with the heading, "The Testament Testamentar, latter will and Inventar of the guides and geir pertaining to umquhile Mr. Petir Low, doctour chyrurgin within the towne of Glasgow quha deceist upoun the fyfteen day of August, the zeir of God jm vjc and ten zeiris." This date (1610) seems at first sight difficult to reconcile with the date of the preface to the second edition of Lowe's *Chirurgerie*, which is given as from "my house in Glasgow the 20 day of December in the yeare of our Lord God, 1612," and is signed with his name. Dr. Finlayson thinks that in issuing the second edition, the publisher or his adviser put to the prefaces the date at which they were printed, regardless of the author's MS., and ignoring the fact of his death. As he says, "even modern publishers sometimes, by way of giving freshness to an edition, have been known to put in the new year some months before it arrived." Peter Lowe's will was executed on August 13th, 1610, two days before he died, but it had to be signed for him by a notary, "because he docht not wrytt himselff." The net value of his personal estate was £5,562 8s. 8d., Scots, equivalent to about £436 sterling. The value of this at the present day may be approximately arrived at by multiplying by 10. Besides this, Peter left some real estate. The will mentions "his foir tenement of land heich and laich with the haill zaird" which the testator estimated at 4,000 merks (a merk equals 1s. 1½d. sterling). Moreover, he had "twa back tenementis of land heich and laich in the clois," the value of which is not stated. It appears from this will that Peter Lowe's money was lent out to various well-known people—namely, to Alexander Colquhoune, of Lusse, £666 13s. 4d.; to Johnne Campbell, of Ardinkynlas, £333 6s. 8d.; to the late Robert, Lord Sempill, £1,000; to my Lord of Glasgow, £1,000; to Robert Hamiltone, of Goslingtowne, Knicht, £2,000; to James Crawford, of Fermis, £133 6s. 8d. (all these being pounds Scots. Among the moneys due to him is enumerated the sum of £26 13s. 4d. as "ane half-zeiris pentione quilk the defunct had of the toune of Glasgow." This payment by the town, however, does not, Dr. Finlayson says, appear in the published accounts of the town, the last entry in which respecting Peter Lowe is on May 26th, 1610, when mention is made of a fee of £40 paid to him for "bowelling" the Laird of Houston. Lowe left a son, John, a daughter, Christiane, and a widow who was his second wife.

INCREASE OF ENTERIC FEVER IN LONDON.

The prevalence of enteric fever in London has for some time past shown an increase, and, although the mortality from this disease usually rises during the later months of the year, the number of cases and of deaths has recently considerably exceeded the average. At the beginning of June last the number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals was only 44, but by the end of September it had gradually risen to 155; throughout October the number steadily increased, until there were 230 cases in these hospitals on November 5th. The weekly admissions of new cases during the past five weeks have averaged 40, against 27 in the five preceding weeks. The deaths referred to enteric fever in London were 29 last week, and exceeded the number recorded in any week since the end of 1896. The notifications of this disease in the metropolis, which had steadily increased from 60 to 148 in the six preceding weeks, further rose to 150 during the week ending November 5th. The increase in the prevalence of enteric fever last week in the metropolis was most marked in South London, where 49 new cases were notified, against 35 in the preceding week.

THE ROYAL ARMY MEDICAL CORPS.

At the examination to be held on February 3rd next and following days, twenty-four commissions in the Royal Army Medical Corps will be offered. Candidates should send in their applications to the Director-General, Army Medical Service, 18, Victoria Street, S.W., not later than January 23rd, 1899. We hope that as the Corps has been placed on a satisfactory footing by the recent Warrant, there will be an ample supply of candidates, who will be in every sense a credit both to the medical profession and to the Queen's army. The rates of pay, gratuity, and pension will be found set out in our advertising columns; but we may here point out that on leaving the Army Medical School at Netley the successful candidate receives a commission of Lieutenant, the pay of which rank is £200 a year. The next grade is Captain, and after five years' service the pay is £250 a year, rising to £273 15s. a year. After twelve years' full-pay service a Captain may be promoted to the rank of Major; in this rank the pay begins at £365 a year, and may rise to £410 12s. 6d. To qualify himself for this promotion a Captain must at some time after his seventh year of service pass an examination in surgery, medicine, hygiene, the duties of medical officers, hospital organisation, military law, and the administration of the Royal Army

Medical Corps. The higher ranks of the service are Lieutenant-Colonel (£456 to £601 15s. a year,) Colonel (£730 a year), Surgeon-General (£1,003 15s. a year). The pay is in all cases exclusive of quarters, fuel, servants, etc., or allowances in lieu thereof. It will be seen, therefore, that the rates of pay are not illiberal, and we are informed that they are sufficient for the reasonable maintenance of the individual officer, though if he have no private means early marriage may, as is the case with officers of all the public services, involve him in some embarrassments. The Corps offers an honourable career and opportunities for distinction, although it must be admitted that the prizes in the higher ranks of the service are few. On the other hand, an officer becomes entitled to certain gratuities or pensions, which, according to the length of his service, afford more or less complete provision for old age. Thus, after ten years' service, he receives on retirement a gratuity of £1,250, after fifteen years one of £1,800, and after eighteen years one of £2,500. After twenty years' service he is entitled on retirement to an annual pension of £365, after twenty-five years to one of from £410 to £500. Colonels after three years' service as such are entitled to a retiring pension of £640 a year, and Surgeon-Generals after three years' service as such to a retiring pension of £730 a year. It is an advantage to enter the service at as early an age as possible, as all officers under the rank of Colonel must retire at the age of 55, and above this rank at the age of 60, unless specially extended.

COMIC MEDICAL JOURNALISM "MADE IN GERMANY."

MEDICAL journals are not often comic—at any rate of malice aforethought. The grave and reverend seigniors of medicine as a rule "jock wi' deeficulty," at least in print. But *dulce est desipere in loco*, and even German professors sometimes stoop to folly, of course by strictly scientific methods. On October 29th the Medical Association of Munich celebrated its sixty-fifth birthday by a banquet, Professor Bollinger being in the chair. A leading feature in the entertainment was the recital by *Privat-docent* Salzer of a new version of *Faust* in which Mephistopheles delivers his views on men and things medical in characteristic fashion. Our excellent contemporary, the *Münchener medicinische Wochenschrift*, celebrated the occasion with a special "Scherznummer" in which the original articles, the reviews, the reports of societies, the therapeutic notes, the public health statistics, and the advertisements are in the nature of what our forefathers would have called "conceited and merrie jests." It is, on the whole, very good fooling, though there is something of over-elaboration about it that reminds one of Herr Stohwasser's "imbortant choke" on the Schleswig-Holstein question in *Vice-Versâ*. "Professor Spritmichel" records some experimental researches on asexual propagation of the human species; the method is intended to bring the teaching of Tolstoi's *Kreutzer Sonata* within the sphere of practical sociology. "Professor van der Kraft" describes a method of ensuring painless parturition by dilatation of the cervix with his "pneumotracheleurynter." "Professor Swindel, of Mississippi College," relates with justifiable exultation a "triumph of modern surgery," to wit, nothing less than the transplantation of a pig's stomach into the body of a German student who suffered from a burning thirst, which led him to swallow enormous quantities of fluid. Soon after his recovery from the operation the patient fractured his skull, and the enterprising surgeon being unable to find any brain to speak of in the cavity, conceived the brilliant idea of transplanting into it a calf's brain. This was done with perfect success, the only inconvenience observed being that the patient has an inordinate appetite for green food. Among the advertisements are a notification in large letters from "Dr. Trommler, of Wiesbaden," that he has not yet returned from his "*Consultationsreise*" to the Shah of Persia; announcements by "E. Mark, Darmstadt," of new medicinal substances—"haeringin," a remedy for hyperemesis matutina; "pulektanin," a new antiparasitic; and one of special interest to a very large portion of mankind, "argentaurin," said to be a specific for that painful and common affection, "impotentia solvendi." A whole-page advertisement relates to a "new" and "sensational" invention, "patented in all civilised countries," namely, "artificial assistants," made of glass and iron. The notice points out the many disadvantages attending the use of living assistants—their "excessive reflex irritability," their disposition to criticise their chiefs, their tendency to drop matches on the floor, and to leave gas burning, their want of polish, etc. Mechanical assistants of various qualities are offered at various prices. The invention recalls Jean Paul Richter's proposal for "a cast iron king," which made Teufelsdröckh laugh for the first and only time in his life. Perhaps the assistant difficulty might be solved in a less costly way. Huxley once told the famous Father Healy, of Bray, that a priest had been pressing him for an opinion on the question whether apes have souls. "Now," said the great biologist, "why, do you suppose, is he so anxious to know?" To which Father Healy replied, "Perhaps he wants a chape curate!" The moral of which story lies, as Jack Bunsby says, in the application of it.

THE AMERICAN TROOPS IN CUBA.

ACCORDING to Brigadier-General Lawton, who recently returned to the United States on the transport *Michigan*, the American troops, both regulars and volunteers, are very discontented in Cuba, and want to return home. In his opinion, the time will never come when the American soldier will serve in Cuba contentedly. He does not like the country, and he does not care much about the people. About 20 per cent. of the troops are ill, but this is not due to their not being acclimatised, for the same percentage of sickness prevails among the inhabitants. The immunes have not escaped, as was expected, for many of them are on the sick list.

THE MEDICAL DEPARTMENT OF THE UNITED STATES NAVY.

THE report of Dr. Van Reypen, Surgeon-General of the United States Navy, which has recently appeared, states that when the *Maine* was blown up immediate preparations were made for active service, the equipment of the hospitals was made complete in every respect, and a large amount of medical and surgical supplies provided for. As soon as war became inevitable all the vessels in active service were provided with a full outfit of medical supplies. No vessel during the war had to wait for her medical stores. In anticipation of the necessity for increasing the medical force, medical examining boards were sent out to the principal cities to examine applicants for appointment, with the result that at the outbreak of the war the medical department had a long list of well qualified men from which to select volunteer surgeons. Thirty-seven out of two thousand applicants were chosen. Of the work of these volunteers the Surgeon-General says: "They have rendered efficient service and have been a credit to the navy. Some have had unusual and trying experiences, but they have accommodated themselves to their environments and have justified their appointment." Only one medical officer was killed during the war. Assistant-Surgeon John Blair Gibbs, who fell at Guantanamo, serving with the marine battalion. The Surgeon-General goes on to say that "the medical department has long had under consideration the fitting out of a hospital ship, and the present war has demonstrated the usefulness of such a vessel. The steamer *Creole* was purchased and was converted into an ambulance ship

within sixteen days, fitted with every necessary surgical appliance, disinfecting apparatus, cold storage, laundry, and elevator. She was the first completely equipped hospital ship ever fitted out, and performed invaluable service in the care of the sick and wounded and the transportation of medical supplies." The Surgeon-General further says: "The medical officers of the *Solace* have the honour of inaugurating the first complete system of antiseptic surgery at sea. They have adapted means to ends, have improvised apparatus, have been fertile in expedients, and have the satisfaction of having demonstrated that with skill and intelligence the percentage of mortality among the patients on a well-equipped ambulance ship will be no greater than in the hospitals on shore."

MEDICINE IN THE NINETEENTH CENTURY.

WHILE all competent to judge of the matter are agreed that medicine in its scientific aspects has kept pace with the progress of knowledge in other directions, there are many who deny that the art of healing has advanced to a corresponding extent. It has been epigrammatically said that the only real advance that has been made in the practical part of medicine, as compared with our predecessors, is that though we do not cure more, we kill less. To which we may answer, in the words of Sir Thomas More, "Marry, this is somewhat!" But there is much more than this. To all who are sceptical as to the increased efficiency which our art has gained from the increase in scientific knowledge achieved by modern research, we commend the reading and inward digesting of a lecture delivered by Professor Clifford Allbutt at the opening of the Johns Hopkins Medical School, Baltimore, on October 17th. He deals with the whole question in a spirit of breezy hopefulness, tempered by the caution born of large knowledge and a judicial mind. He admits that it is possible that the invaluable work which a scientific scepticism has done, not in therapeutics only, has been attended by some destructive effects which are to be regretted. But the pruning and clarifying which our practice has undergone, far outweigh any such temporary disablements. The brilliant progress of modern surgery might be claimed as progress in therapeutics, the division between surgery and medicine being merely a division of convenience. Are we to admit (says Dr. Allbutt) that the prognosis of peritonitis, of obstruction of the bowels, of pleuritic effusions, of encephalic tumours, of perityphlitis, of pelvic disease, of ovarian ascites, etc.—a prognosis in troops of cases turned from sadness to hope—is not to be called progress in therapeutics, because not infrequently the method is carried out by the skill of another hand? It might as well be asserted that the modern plan of feeding in fevers, because it is carried out by trained nurses, is no therapeutical progress. Nor will Professor Clifford Allbutt allow that even in the sphere of drug therapeutics our progress is contemptible. When we regard (he says) the additions made to our hypnotics, the discovery of the value of the nitrites, of the bromides, of arsenic in pernicious anæmia, of the salicylates, of the antipyretic hypnotics and analgesic group, of the antiseptic treatment of the skin, of the antitoxic treatment of diphtheria, of the thyroid treatment of myxœdema; or when, again, we realise the greater precision of our use of the older empirical remedies, as of digitalis, in the preciser administration of remedies in syphilis in the injection of alcohol and ether, of apomorphine, of ergotine, of strychnine, of hyoscine, of cyanide of mercury; when, once again, we think how much more accurately we discriminate our means in the treatment of phthisis, of dyspepsia, of fevers, of palsies, central or peripheral—we may confidently take encouragement, and meet those adversaries in the gate who say that therapeutics has made no considerable progress. Once more, he goes on to say, when we are twitted with the discovery of manifold new diseases without the discovery of any means of dealing with them, we may reply that we are no longer satisfied to contemplate the wreckage of disease, but we are earnestly hunting out the processes in which such and such deviations from health took their being. The study of origins is leading to a revolution in our conception of therapeutics. This revolutionary conception is that death is not to be driven away by the apothecary nor by any cunning compilation of drugs, but is to be prevented by the subtler strategy which consists in knowing all the moves in the game. Few and simple are the diseases which can be expelled by leechcraft, as we expel a worm. The medicine of the future will consist in setting our wits to Nature, in recognising that when evils have befallen us there is no counsel, and that in the simple beginnings of things are the time and place to detect where stealthy Nature, atom by atom, builds and unbuilds, feeds us or poisons us. Much of curative medicine, in the vulgar sense, will thus be swallowed up in preventive medicine. The modern hospital must be the modern laboratory of medicine. As in the sixteenth century the great laboratories of anatomy sprang into existence, in the seventeenth the laboratories of physics, in the nineteenth the chemical (Liebig), the physiological (Ludwig), the chemico-physiological (Hoppe-Seyler), the pathological (Virchow), the hygienic (Pettenkofer), so the clinical laboratories initiated but the other day in Germany by v. Ziemssen, Curschmann, and in the United States by Pepper, are the factories out of which the new medicine is to come—the medicine which, penetrating into the intimate processes of Nature, learns to turn Nature to her own correction. The clinical laboratory is to be the scene of the study of the origins of disease. Professor Clifford Allbutt touched on many other questions in his address, which is full of matter and admirable in manner, but want of space prevents our referring to them here.

THE SERVANT AND MISTRESS QUESTION.

THE servant and mistress question possesses an interest so absorbing that we need make no apology for calling particular attention to an admirable little book by Mrs. Buckton,[1] full of information valuable to young housekeepers. Sandwiched between the two parts into which it is divided are half-a-dozen pages or so on the servant and mistress question, in which, while it is urged that every girl passing through the elementary schools ought to be taught the principles and, more important still, the practice of domestic economy, it is also shown that to be a good mistress requires not only a wide range of knowledge, but also a very considerable power of organisation. The main part of the book, however, is devoted to a description of the internal arrangements of a moderate-sized house, showing where they are likely to go wrong and how they are to be put right. It is not everyone who understands how the flues run at the back of a kitchen grate, or what are the principles on which "dampers" act, or where the soot is likely to accumulate and lead to conflagrations. No doubt in time, and by dint of grim and even grimy experience, a mistress gets to know; but there can be no doubt that many dinners would be improved and much temper saved if these things could be known from the beginning. They are all taught by Mrs. Buckton, who knows also how to arrange the cleaning of the different rooms, what mops to use, and how the work should be spread out over the different days, and divided among the servants. At first sight the book looks dull, but we have derived a considerable amount of amusement, as well as much instruction from its perusal, the amusement, it must be confessed, being chiefly derived from a mental comparison of the doings of our friends and neighbours with the very

[1] *Comfort and Cleanliness: The Servant and Mistress Question.* By Mrs. Catherine M. Buckton. London: Longmans, Green, and Co. 1898. (Crown 8vo, pp. 96. 2s.)

methodical habits inculcated in its pages. We always knew that it was a serious matter, from the masculine point of view, to go away for a holiday, but we little thought that it was so serious an affair from the domestic, and one to be undertaken with such deliberation as seems to be the case. We may not know it, but in a well regulated household, nearly eight weeks before the eventful moment when the overladen cab trundles off with our luggage to the station, the house-parlourmaid is at work preparing for the great event. At least it is all arranged for by Mrs. Buckton, and each day's work is given, so we suppose it must be so, but it is surprising how well the fact has been concealed till Mrs. Buckton revealed the truth.

SOLDIER COOKS IN INDIA.

The connection between the prevalence of enteric fever and the uncleanliness of cooks and their careless methods of dealing with food served out for the use of soldiers has received much attention, and it has in consequence been proposed that the British soldier should do his own cooking in India just as he does at home. Colonel Mathias, of the Gordon Highlanders, introduced the system into the battalion, now on its way home, and the effect this summer was most marked. There were, it is believed, no cases of enteric fever among the men, and the soldier cooks did their work in such a manner as to give full satisfaction to the company messes. The military authorities are aware of the good results obtained among the Gordons, and it is to be hoped that the Government of India will, through the military authorities, cause immediate action to be taken in this matter. If doubt exists about the need of such action, there is nothing to prevent the authorities selecting a dozen regiments in various parts of India, plains and hill stations alike, for experiment with soldier cooks only. Of the result we may be pretty sure. There is, in fact, no reason why soldiers should not cook their own food in India, and we understand that the Principal Medical Officer in India is in favour of this procedure, as is also the Director-General of the Indian Medical Service at Simla.

GUNSHOT WOUNDS OF THE PREGNANT UTERUS AND FŒTUS.

Cases of this class are of considerable interest. An example, in which Cæsarean section was performed promptly within four hours after the accident, was published last April by Rubetz in a Russian journal. In spite of all precautions death occurred from sepsis, due, in Rubetz's opinion, to germs introduced by the ball. Neugebauer, of Warsaw, in commenting upon the case, reasonably suspects that the vehicle was a particle of stuff from the patient's clothes, carried inwards by the ball. The patient was a nurse in the hospital at Kertch. She had been married ten months, and had reached the ninth month of pregnancy. Her predecessor in office shot at her with a revolver. The bullet entered two fingers' breadth above the navel and four fingers' breadth to the left of the middle line. The edges of the wound were contused and ecchymosed, and a yellow fluid escaped from it. Intense pain set in half an hour later, followed by vomiting. The fœtal heart sounds had ceased. The abdomen was opened, it was full of bloody serum, and the peritoneum was already infected, especially around the parietal wound; the omentum was much ecchymosed. The uterus was found to be perforated in front, close to the left cornu. The edge of the wound was much contused, and liquor amnii escaped from the uterine cavity. After the elastic ligature had been applied the uterine cavity was opened in the middle line, and the fœtus (dead), placenta, and membranes removed, with a few blood clots. The placenta was attached to the right side of the uterine cavity, which was carefully wiped with moist carbolic gauze. The contused edges of the wound were excised and sutured, and the uterine incision closed by two layers of interrupted suture. The elastic ligature was taken off: the uterus did not bleed but contracted well. The abdominal wound was closed after the aperture of entrance of the bullet had been excised and its freshened edges sutured. The uterus was plugged from the vagina. All went well for a day or two till septic peritonitis set in, and the patient died on the sixth day. The fœtus bore three wounds, the single bullet having entered to the left of the spine of the first lumbar vertebra, wounded the intestines, the diaphragm, the left lung and the heart, issued from the thorax near the left nipple, and once more entered the fœtus near the left ear. It was found lying in the brain. Considering the attitude of the fœtus in the uterus it is easy to understand how one shot may make two wounds, a fact not to be forgotten. It would, perhaps, be best to perform Porro's operation in a case of this kind. A uterus with a gunshot wound is an unsafe thing to leave in the abdomen, and in this instance its tissues were probably infected beyond the contused edges of the wound which were very properly excised. The great difficulty in these cases is to know where the ball lies. Until the fœtus had been examined after a judicial order, it did not seem certain that the bullet had really found its billet in the interior of that unborn being.

THE ANTIVIVISECTIONIST PROPAGANDA.

We have received a letter from a firm of solicitors acting for Mr. C. Adams, of Harewood, Keyhaven, the Editor of the *Verulam Review*, stating that their client has instructed them to take proceedings against the Editor of the British Medical Journal for libel, and the Solicitors of the Association have replied intimating that they will be prepared to accept service of process.

At the next meeting of the Epidemiological Society of London, which will be held at the house of the Medical Society of London on Friday, November 18th, at 8.30 P.M., Dr. Franklin Parsons will deliver the Presidential Address on Half a Century of Sanitary Progress and its Results.

At the general election of Deputies which took place throughout Prussia on November 3rd Professor Virchow was returned by the third electoral district of Berlin. The great pathologist, who, as is well known, is a Radical in politics, received 1,358 votes against 782 polled for a Conservative opponent. Professor Virchow this time received nearly 200 more votes than at the election of 1893.

The returns of the Metropolitan Asylums Board show that three cases of typhus fever were notified in the metropolis in the week ending November 5th: two from the parish of Kensington on October 30th and November 3rd respectively, and one from the parish of St. George Southwark, on October 30th. We understand that the symptoms in the case last mentioned were obscure and misleading, and that *post-mortem* examination showed that death was not due to typhus.

It is proposed to erect a monument to the memory of Dr. Franz Hermann Mueller, whose early death is felt to be a great loss to science as well as to mankind. A committee has been formed for the purpose at Vienna. The Dean of the Medical Faculty, Professor Puschmann, is the chairman of the Committee, which includes all the leading clinicians of Vienna. Subscriptions will be received only from members of the medical profession. We gave last week some account of Dr. Mueller's life, and of the devotion which he showed in taking measures to prevent the spread of plague from the laboratory of the Vienna Allgemeine Krankenhaus.

CHRISTIAN SCIENCE: WHAT IT IS.

The occurrence in quick succession of two inquests on persons who have died under the so-called "Christian Science" treatment, has probably made known to many people for the first time the existence in our midst of a system of quackery at once more foolish and more pernicious than any of the many follies and frauds which flourish in rank luxuriance on the "eternal gullible" in man. The Peculiar People we know; hypnotism and homœopathy have their prophets; Mattei and Dewey, the new autocrat of the breakfast table, have their devotees among us. But "Christian Science," if we mistake not, is a recent importation from that land of many inventions—the Great Republic of the West. As the doctrines of this latest addition to the long list of human delusions and impostures are probably known to our readers only from the reports of the proceedings in the coroners' courts which have appeared in the newspapers, an account of them, as far as they can be gathered from the book which may be called the bible of the sect, may serve a useful purpose.

The chief priestess of the cult from whose head the system appears to have come complete in its details as Minerva is fabled to have sprung full-armed from the head of Jove, is the Rev. Mary Baker G. Eddy, an American lady of Scottish origin. The reverend lady's gospel is contained in a work entitled *Science and Health, with the Key to the Scriptures* (Boston, 1898), which the title page announces to be in its 149th edition.

From the preface we gather that it was in the year 1866 that the great discovery now known as Christian Science was made. The first school of Christian Science Mind Healing was begun by the author in Lynn, Massachusetts, about the year 1867, with only one student.

In 1881 she opened the Massachusetts Metaphysical College in Boston. During seven years some 4,000 students were taught by her in this college, which, however, she closed "in the height of its prosperity with a deep-lying conviction that the next two years of her life should be given to the preparation of the revision in 1891 of science and health." It is stated that in the United States her adherents number some 200,000, and the number of believers in this country is said to be rapidly increasing. It should be explained that Christian Science is a system of healing, not for the body alone, but for the soul. Mrs. Eddy describes herself as having been "Pastor of the First Established Church of Christ, Scientist," and quite a large number of ladies—for the eternal feminine largely predominates in this youngest of the churches—preach the gospel according to Eddy.

Their London temple is in Bryanston Street, and an account of the mysteries, religious and medical, conducted there was given some time ago in the *Westminster Gazette*.[1] This establishment is not only a temple of prayer, but a shrine of healing, where the chief priestess is represented by a vicegerent, Mrs. Field King, disciples being sent to minister to patients who ask for their services.

The theological teaching of the Christian Scientists does not concern us. The following exposition of their methods of healing disease is given for the most part in Mrs. Eddy's own words.

The Great Discovery.

How the revelation came to her she relates as follows:

When apparently near the confines of mortal existence, standing already within the shadow of the death valley, I learned these truths in Divine Science: that all real Being is in the Divine Mind and idea; that Life, Truth, and Love are all-powerful and ever-present; that the opposite of Truth—called error, sin, sickness, disease, death—is the false testimony of false material sense; that this false sense evolves, in belief, a subjective state of mortal mind, which this same mind calls matter, thereby shutting out the true sense of Spirit.

She professes to have won her way to "absolute conclusions through divine revelation, reason, and experiment." However much revelation there may have been, we venture to say that there is little evidence of reason in the lady's utterances, while, as far as we can discover, the only experiments made by her have been on the credulity of a confiding public.

Disease a Delusion.

The fundamental dogma of "Christian Science" in regard to disease is that there is no such thing:

What is termed disease does not exist. It is not mind or matter. The belief of sin, which has grown terrible in strength and influence, is an unconscious error in the beginning, an embryotic thought without motive; but afterwards it governs the so-called man.

It appears to be doubtful even if there be such a thing as health, for we are told that

Health is not a condition of matter, nor can the material senses bear reliable testimony on this subject.

No Truth in Pain.

It may be comforting to believers to be assured that pain also is a delusion:

The metaphysics of Christian Science, like the rules of mathematics, prove the rule by inversion. For example: There is no pain in Truth, and no truth in pain; no nerve in Mind and no mind in nerve; no matter in Mind and no mind in matter; no matter in Life and no life in matter; no matter in Good and no good in matter.

Again,

A hypodermic injection of morphine is administered to a patient and in twenty minutes the sufferer is quietly asleep. To him there is no longer any pain. Yet any physician—allopathic, homœopathic, botanic, eclectic—will tell you that the troublesome material cause is unremoved and that in a few hours when the soporific influence of the opium is exhausted the patient will find himself in the same pain unless the belief which occasions the pain has meanwhile disappeared. Where is the pain while the patient sleeps?

This conundrum we must leave to the Christian Scientists.

There is no Death.

Not only is disease a delusion, and pain an untruth, but death itself is a vulgar error:

To material sense the severance of the jugular vein takes away life; but to spiritual sense and in Science life goes on unchanged, and Being is eternal. Temporal life is a false sense of existence.

Christian Science, we are told,

teaches that matter is the falsity not the fact of existence; that nerves, brain, stomach, lungs have—as matter—no intelligence, life, or sensation.

This irresistibly reminds one of the learned American lady in *Martin Chuzzlewit*, who discourses on her "feelings" as follows:

But why we call them so, or why impressed they are, or if impressed they are at all, or if at all we are, or if there really is, oh gasping one! a Pogram or a Hominy, or any active principle to which we give those titles, is a topic, Spirit searching, light abandoned, much too vast to enter on, at this unlooked-for crisis.

Treatment must be Mental.

If there be no disease, no pain, and no death—nothing, in the words of Hamlet, "bad but thinking makes it so," it follows that the treatment must be applied to the mind. Hence

The struggle for the recovery of invalids goes on, not between material methods, but between mortal minds and immortal Mind. The victory will be on the patient's side, only as immortal Mind through Christian Science, subdues the human belief in disease. Otherwise, it matters not what method one may adopt, whether it is faith in drugs, in hygiene, or in some other minor curative.

Not only functional but organic disease is cured by this method:

The author has cured what is termed organic disease, as readily as she has cured purely functional disease, and with no means but Mind.

And again:

Christian Science brings to the body the sunlight of Truth, which invigorates and purifies. It acts as an alterative, neutralising error with Truth. It changes the secretions, expels humours, dissolves tumours, relaxes rigid muscles, restores carious bones to soundness. The effects of this Science are to stir the human mind to a change of base whereon it may yield to the Divine Mind.

What is called the lost substance of lungs has been restored, and healthy organisations have been established, even where disease was organic instead of functional.

Disease an Invention of the Doctors.

We gather that it is the doctors who have brought disease and death into the world.

When there are fewer doctors, and less thought is given to sanitary subjects, there will be better constitutions and less disease. In old times whoever heard of dyspepsia, cerebro-spinal meningitis, hay fever, and rose cold?

Elsewhere we are told that

The hosts of Æsculapius are flooding the world with diseases because they are ignorant that the human mind and body are one.

Moreover,

Treatises on anatomy, physiology, and health, sustained by what is termed material law, are the promoters of sickness and disease. It is proverbial that as long as you read medical works you will be sick.

We may, perhaps, be allowed to find some consolation in the fact that the "doctors" quoted by Mr. Eddy as representatives of medical science are Cutter, Graham, and Jahr!

The Immorality of Medical Treatment.

Medical treatment is not merely useless but immoral.

Drugs, cataplasms, and whisky are stupid substitutes for the dignity and potency of Divine Mind and its power to heal. It is pitiful to lead men into temptation through the by-ways of physiology and materia

[1] The articles were republished in the *Westminster Budget* for Nov. 4th.

medica, to victimise the race with intoxicating prescriptions for the sick, until mortal mind acquires an educated appetite for strong drinks, and men and women are made loathsome sots.

But is not drunkenness, like disease, also an illusion?

THE UNGODLINESS OF CLEANLINESS.

Cleanliness is another medical error. Mrs. Eddy appears to look upon natural water much as the devil is said to regard holy water:

The daily ablutions of an infant are no more natural or necessary than would be the process of taking a fish out of water every day and covering it with dirt in order to make it thrive more vigorously thereafter in its native element. "Cleanliness is next to godliness," but washing should be only for the purpose of keeping the body clean, and this can be effected without scrubbing the whole surface daily. Water is not the natural habitat of humanity.

MIND YOUR ONLY PROPHYLACTIC.

Hygiene must also be mental. Thus:

If exposure to a draught of air while in a state of perspiration is followed by chills, dry cough, influenza, congestive symptoms in the lungs, or hints of inflammatory rheumatism, your Mind-remedy is safe and sure. If you are a Christian Scientist, such symptoms will not follow from the exposure; but if you believe in laws of matter, and their fatal effects when transgressed, you are not fit to conduct your case, or to destroy the bad effects of belief. When the fear subsides, and the conviction abides that you have broken no law, neither rheumatism, consumption, nor any other disease will ever result from exposure to the weather.

"Agree to disagree" with approaching symptoms of chronic or acute disease, whether cancer, consumption, or small-pox. Meet the incipient stages of disease with such powerful eloquence as a legislator would employ to defeat the passage of an inhuman law. Rise in the conscious strength of the spirit of Truth, to overthrow the plea of matter, or mortal mind, arrayed against the supremacy of Spirit.

THE TIME NOT YET RIPE FOR MENTAL SURGERY.

Christian Science, greatly daring as it is, rather fights shy of surgery. In this department of the healing art Mind doubtless finds Matter particularly refractory.

Until the advancing age admits the efficacy and supremacy of Mind, it is better to leave the adjustment of broken bones and dislocations to the fingers of a surgeon, while you confine yourself chiefly to mental reconstruction and the prevention of inflammation or protracted confinement. Christian Science is always the most skilful surgeon, but surgery is the branch of its healing which will be last demonstrated. However, it is but just to say that the author has already in her possession well-authenticated records of the cure, by herself and her students, through mental surgery alone, of dislocated joints and spinal vertebræ.

THE MODUS OPERANDI IN MENTAL TREATMENT.

The details of the method are not very lucidly described, but as far as we can make out they consist in inducing a state of mind in the patient like that of the poor little "Marchioness" in the *Old Curiosity Shop*, who, in regard to that seductive beverage—orange peel in cold water, confided to Mr. Swiveller that "if you make-believe very much it's uncommonly nice." The patient is to "make believe" that he is quite well, and Richard is forthwith himself again. 'Tis is easy as lying!

One point, however, puzzles us. We read:

If you mentally and silently call the disease by name, as you argue against it, as a general rule the body will respond more quickly.

How is the operator to "call the disease by name" unless the diagnosis is made by a doctor? Perhaps, as in the rite of exorcism a number of devils are called by name on the chance of the right one being hit upon, the Christian Scientist recites a list of diseases from which the patient's "mind" may take its choice.

But the patient must not know too much:

The sick know nothing of the mental process by which they are depleted, and next to nothing of the metaphysical method by which they can be healed. If they ask about their disease, tell them only what is best for them to know.

We have no difficulty in believing that it would be inconvenient in more ways than one if the patients were to know too much about "the mental process by which they are depleted."

CHRISTIAN SCIENCE NEITHER CHRISTIAN NOR SCIENTIFIC.

But little is required in the way of comment on the remarkable utterances which we have quoted. To argue seriously with the Christian Scientist would be fighting a shadow; as Falstaff says: She "presents no mark to the enemy; the foeman may with as great aim level at the edge of a penknife." We have purposely refrained from quoting many passages of the book in which profanity is added to absurdity. "Christian Science" is neither Christian nor scientific. We are willing to believe that Mrs. Eddy is honest in the conviction that she has been chosen by God as the medium of a revelation of infinite value to the human race, but this only makes her the more dangerous. But the fact that such a farrago of nonsense is taken seriously by people of education and intelligence almost makes us despair of human progress.

CONTRACT MEDICAL PRACTICE.

DERBYSHIRE.

THE evils of the club system appear to be very marked in this county. The terms upon which some club appointments at least are held in one district in Mid-Derbyshire are, if correctly stated, lower than any of which we have yet heard. The rates paid by members of friendly societies are often as low as 3s., and even 2s. per annum per member, with no wage limit; and in women's clubs, where 4s. per annum is paid, attendance on confinements is included. It is even stated that in one instance only 3s. per annum is paid, though attendance during the confinement is expected from the unfortunate club doctor. Still more unsatisfactory is it to learn that many of the doctors in this district have private clubs of their own in which the average payment is no more than 3s. per annum.

As the wages paid here are not less than in other parts of the country, there can be no reason for such a state of things, except, we fear, the supineness and want of union of the local profession.

EASTBOURNE.

Dr. ALEX. HARPER, Honorary Secretary of the Eastbourne Provident Medical Association, sends us the following statement of the present position of the Association, which was formed three years ago:

"The Association does not print an annual report, but this letter includes all the important features of the report read at the annual meeting recently held.

"The Association has completed the third year of its existence. Its membership now amounts to 5,338. This is an increase of 1,185 on last year's numbers. The population of Eastbourne is, roughly, 44,000. We have had our acting medical staff still further strengthened this year by the addition to it of three old-established practitioners, who hitherto have constituted the staff of the old Provident Dispensary. Between 700 and 800 members of that dispensary have followed their medical advisers and have become members of the Provident Medical Association.

"The income of the Association for the past year has been £877 3s. 3d., derived solely from members' payments and the payments for membership cards. On account of it having become necessary to employ a paid assistant secretary the working expenses have increased. The amount deducted for these expenses during the year has been 17½ per cent. of the income. The balance remaining goes directly to the medical staff.

"No complaints connected with the working of the Association have been brought to the Honorary Secretary's notice during the year.

"The most important event of the year has been the addition to our acting medical staff of the whole of the medical staff of the old Eastbourne Provident Dispensary, which came about thus.

"In March last these three gentlemen received letters from the Committee of the Provident Dispensary giving them notice that their appointments as medical officers to the dispensary would terminate at midsummer. The reason given them was that on account of the 'considerable and continued diminution of the number of members of the dispensary in recent years' the Committee considered a 'revision of the remuneration of the medical officers was advisable.' No opportunity was given to these gentlemen to continue as the dispensary medical officers, even under 'revised' salaries, although, in their report issued only a month previously, the Committee had offered 'their best thanks to the medical officers for their attention to the patients.' On the contrary, the Dispensary Committee approached other medical men in the town with a view to their appointment to the dispensary in succession to the late staff. In the meantime, the old staff of the dispensary applied for admission, and were unanimously elected, to the staff of the Provident Medical Association. During the month of June two medical men were found in Eastbourne who were willing to fill the vacancies caused

by the dismissal of the staff of the dispensary. One of these two was at the time on the staff of the Provident Association, but he, of course, resigned on accepting the dispensary appointment.

"Our Committee heard of this gentleman's action with the greatest regret and not a little surprise, for from the inception of the Association our Committee, while wishing to deal fairly with the Provident Dispensary, have always felt that it was conducted on lines which they could not approve. And yet these two gentlemen were willing to accept appointments under an institution worked on principles directly contrary to those which, after prolonged and careful consideration, the profession in Eastbourne had adopted as the only satisfactory lines upon which the medical treatment of the poor could be conducted.[1]

"The virtual dismissal of the Provident Dispensary staff forcibly illustrates the truth of the opinion of the Association that it should not be possible for medical practitioners to be suddenly severed from their patients—even from those of the humbler classes—at the will of a committee composed mainly, if not entirely, of laymen. The remedy lies in the adoption of the principles of our Association, and the best evidence of the soundness of these principles is the steady growth in the number of our members."

"I may, in closing, mention that our methods have been adopted in New South Wales, where The Sydney and Suburban Provident Medical Association has been started, and has, I am informed, attained, in spite of considerable difficulties, 'a creditable degree of efficiency.'"

Durham.

We are informed that in the county of Durham it is the custom of the medical practitioners of a district in which large bodies of workmen reside to accept a contract price, payable in fortnightly instalments, for attendance and medicine. For the last twenty or thirty years this contract price has usually been 6d. a fortnight. We understand that considerable dissatisfaction is felt by medical practitioners in the county at the maintenance of this rate in face of the fact that wages are much higher and work much brisker in all or almost all trades, and is likely so to continue. A further and stronger cause of dissatisfaction is that the expenses of medical practice have much increased, while the demands upon the practitioner, his strength, time, and pocket, are greater than ever before. It is admitted that the keen competition which so commonly exists among medical men is one cause of the increase in expenses. A general practitioner of much experience, who had had excellent opportunities of knowing the facts, stated recently that 99 out of 100 medical men in the county were barely able to live on their incomes during the first five years of practice.

The average wage of a man at a colliery in the county is 5s. 1d., or thereabout, for a six hours working day; Saturdays and Sundays are usually holidays. In addition he receives house, coal, rates, and often enough a garden, practically in addition to that sum. If he does not get a colliery house, he is, as a general rule, allowed about 4d. a day in place of it.

It is stated that the average payment by individual workmen to the medical man is less than the payment to any other person connected with a factory or colliery. For instance, a colliery "caller," that is, a person (often a woman) is retained by the men to "call" them by knocking at their doors at night, so that they can get to work at the proper time. This caller is paid as a rule 4d. a week by each man who requires this service. The "colliery doctor" receives as a rule 3d. a week, so that he is paid less than a "caller," who is perhaps otherwise the worst-paid person about a colliery district.

We are informed that a movement is now on foot to procure a revision of the rates of payment, and to this end a circular has been issued, or is in course of being issued, to each medical practitioner in the county of Durham by Messrs. Graham and Shepherd, solicitors, John Street, Sunderland, asking a reply to the following questions:

1. Are you in favour of supporting a movement to obtain an advance from contract patients from 6d. to 9d. per fortnight?
2. Is a general meeting of practitioners in the county concerning the above advisable?

[1] British Medical Journal, July 27th, 1895, p. 249.

It is sincerely to be hoped that all members of the profession in the county will co-operate in this movement, and it is equally desirable that medical men who have any future intention of practising in the county will assist this movement by giving it their moral support and by adopting its suggestions when they come to the county. The only way in which the matter can be brought to a successful issue is by such hearty co-operation of all medical practitioners. Any practitioner who from negligence or other cause omits to combine with the others will be a direct stumbling-block in the way of reform.

THE SEAMY SIDE OF WAR.

[From a Lay Correspondent.]

The Recent Soudan Expeditions.

Now that every eulogistic epithet has been exhausted in describing the brilliant achievements in the Soudan, it may interest some of the public to turn for a short space towards the seamy side of the campaign just completed.

The First Advance: Atbara.

After the battle of the Atbara last spring indignant protests were heard against the insufficient provision that had been made for sick and wounded. The British brigade of four battalions numbered over 3,000 men. For this force one principal medical officer, six surgeons, and about sixteen orderlies were considered adequate, whereas there should have been at least thirty of the former and 120 of the latter. Protests in the proper quarters were repeatedly made, but unheeded. Requisitions for further staff were not forwarded or recommended. The state of affairs, however, came to the knowledge of Sir Francis Grenfell in Cairo, who despatched additional detachments which would have reached the front in ample time for the battle; but at Assouan, the confines of the Sirdar's jurisdiction, these were met with the information that their services were not required and that permission to proceed would be withheld. This it would seem was done solely to save expense and to economise transport. The old foolish policy and a selfish one.

The British brigade at the Atbara suffered 120 casualties, many of them being extremely serious and ultimately fatal. One of the surgeons had been sent down a few days previously in charge of a sick convoy, leaving therefore only five with a handful of orderlies to be present at the battle. They worked all day like heroes, but it was unfair upon them to set them such a task manifestly beyond their powers to cope with properly. Like the rest of the force they had marched the eleven miles through the previous night, then came the fight at daybreak, and at 4 P.M., owing to military exigencies, the whole army had to march back the 11 miles, the more slightly wounded being carried in cacolets on camels, the remainder by native soldiers, who being wholly unaccustomed to such duties, and having to traverse very rough ground, let their burdens slip and fall, causing tortures to the sufferers. Some battalions volunteered to carry their own wounded, but were not allowed, though the services of company officers and men had been gratefully accepted, and indeed were indispensable in rendering such assistance as they could on the field, by carrying the wounded into shady spots, giving them beef-tea, etc., out of their private stores. This and similar necessary comforts were sadly deficient, even if there had been hands available to cook, but all were too well employed in dressing wounds, etc. This melancholy convoy did not cover the 11 miles till 2 A.M. on the following morning. The medical staff, by this time fairly exhausted, again attended as far as possible, to the more urgent cases, and the march was resumed on the same day and the next, till the 40 miles to the Atbara Camp Hospital were accomplished. Here, being so shorthanded, fatigue parties had to be told off for hospital work, washing the wounds, their officers themselves helping to do what they could, for the surgeons and orderlies were absolutely overworked and deadbeat. Let us imagine what would have happened if even one of the five medical officers had been wounded, for all took their chance in the fighting line; or had our casualties been greater. Had they been doubled, for instance, the lamentable consequences would have been appalling.

The Egyptian cases, which brought the total up to 500, were in yet worse plight, their very much smaller medical staff being absolutely unable to tackle the demands made upon them. They were natives, it is true, and accustomed to hardship; but a wounded man of whatever race deserves the relief to suffering which the skill of the surgeon and the attention of trained orderlies can alone afford. Moreover, the English officers of the Egyptian force are dependent upon the hospital arrangements of the Egyptian army. Authorities who have never had other than native troops under their command seem either to grow callous or undervalue human lives, and when they suddenly find themselves with British soldiers added to their force appear apt to ignore or forget the considerably higher value with which Tommy Atkins's life and usefulness are regarded.

The Second Advance; Omdurman.

When the above facts came to the knowledge of the Home Government it put its foot down and rightly insisted, regardless of all opposition and false economy, that steps should be taken to prevent the recurrence of such defects in the advance on Omdurman. Consequently over 80 surgeons and about 250 orderlies were ordered from England to supplement those already in Egypt. This, after amply supplying all the hospitals on the lines of communication, left 70 medical officers and about 200 men to accompany the British brigades at the front. This was a lavish allowance. September 2nd dawned, and found all ready in their places. There were three completely equipped hospital barges, with medical officers, orderlies, and every comfort on board. Let us try to judge of the consternation caused when it was discovered just before the battle began that these three barges with all their staffs had been ordered across the river for some inexplicable reason. There was no steamer available to bring them back. All preparations and forethought were thus completely thwarted. There was still the field hospital and one installed in a mud house in thorough working order; into these and under a large tree the wounded were promptly brought, receiving within ten minutes every possible care and attention, all wounds dressed, etc.

Then came an order that as the whole force had to advance at once to Omdurman, the hospital tents must be immediately struck, everything packed up and loaded on their camels, and the wounded cleared out within five minutes. Where were they to go? By a providential chance there happened to be moored to the bank a barge stacked with artillery ammunition. On to this our 145 wounded were hastily carried, and thus effectually separated from all medical comforts except a few tins of bovril, which could be brought on board. However, beyond spirit lamps there was no means of cooking, consequently the majority of cases, many requiring all the support they could obtain during their first hours, were obliged to go without till 10 the next morning. To add to their discomfort, Egyptian soldiers came to fetch ammunition, yelling to each other in the way all who have ever been in the East know too well. They stumbled over our men in their frantic haste; the boxes fell about, some opened, but of course this was war and not a quiet sick room. The wounded Lancers were now finding their way down to the barge, and by the end of the second fight not another man could have been squeezed on board. They were simply packed like sardines. The digging of the graves had to be abandoned for lack of time and hands, the dead had to be placed along with the living on the barge to prevent mutilation, and there they remained emitting sickening effluvia till the following day, when they were buried at Omdurman.

There was an extraordinary obliviousness in not appreciating the fact that the Dervishes were again coming on, and if they had at all succeeded, or had delayed their second attack until our force had advanced nearer to Omdurman, the whole of the hospital and baggage camels, left entirely unprotected, must have been sacrificed, as even the Reserve Brigade had followed with the rest, the gunboats were accompanying the army upstream, there was literally nothing to prevent a handful of Dervish riflemen despatching our wounded, even if, as was actually suggested in case of molestation, the barge might be poled off into mid-stream, and drift rudderless of course—northwards with a current going at the rate of 5 miles an hour. Northward they would have found no protecting gunboat or troops of any kind, and could perfectly easily have been "potted" from the bank by any stray enemy. As it was, numbers of Baggara horsemen actually came and watered within 400 yards of the barge, causing the greatest uneasiness to those in charge. Mercifully for us, the attack was delivered when it was, on the rear brigade, which fortunately happened to be General Macdonald's, and he was able to drive it off, defeating them. So the barge remained at least unmolested, and towards evening a tardy steamer towed it up first beyond Omdurman, then down again, eventually tying it up close to the town walls, inside of which the din and yells went on all night. Officers and men had of course only the deck to lie on till native beds were procured next day. There were only three or four surgeons with orderlies to attend to the 145 wounded. The operations had to be performed on irregular piles of ammunition boxes without any protection; the breeze blew away the chloroform as it was being administered, and the thin planks overhead, even if they had been joined together, would have afforded insufficient protection against the piercing rays of a burning sun, when the temperature registered 119° in the shade. The three equipped hospital barges never appeared till next day, when it was considered undesirable to move the worst cases again, so they were afterwards used for conveying the sick down the river. The officers unfortunately could not get their valises or clothes, though the barge did not leave camp till 6 A.M. on September 4th, and only had such change of garments as their friends were able to supply them out of their own scanty wardrobes.

The Egyptian Brigades of course fared worse. They had station and field hospitals, and at the front a principal medical officer, one senior medical officer, and four surgeons. There were also native surgeons, but British officers in the Egyptian Army naturally do not care about being treated by them for a serious injury. Their wounded were carried down and laid on the bank, and afterwards put on stray barges. With the best will in the world it was impossible to dress all their wounds, and they complained bitterly through the night of not having had any attention.

By Government agreement English officers serving in the Egyptian Army are not rationed, and this applies equally when they are in hospital. Consequently they had to provide their own beef tea, milk, etc., sharing their small stores as far as possible with their men. Later on in the day their barges were towed up and down the river to Omdurman. A week afterwards the surgeon in charge of a badly wounded officer absolutely declined the responsibility of allowing him to travel as ordered on a terribly dirty and overcrowded old Dervish steamer, where there was no shelter and not a square yard of space available, so he was brought down in comfort on another steamer.

The British officers cannot speak in high enough terms of the unflagging care and attention they and the men received from the surgeons on the voyage down and in the hospital at Abadia. They all agreed that nothing could have been kinder, and under all the circumstances no arrangements better for their comfort, everything being perfectly equipped and well ordered.

Those who on arrival at Assouan found the *Mayflower*, with its nurses and luxuries on board, provided by the National Aid Society were overflowing with its praises, whilst the men expressed their desire to continue voyaging up and down the river on it till perfectly cured, a request which obviously had to be refused, as the boat had to return at once from Cairo to fetch further convoys from the front.

THE PLAGUE IN THE EAST.

India.

The decline in the death-rate from plague in the city of Bombay continues, the mortality being 59 for the week ending November 7th, as compared with 96 for the previous week. The cold weather is now fairly set in, and the continued fall in the death-rate from plague is calculated to inspire hope that, for the moment at any rate, a cessation in the continuance of the epidemic may be looked for.

For the first time for many months we are able to record a decline in the number of deaths throughout the Bombay Presidency generally. Whereas last week 4,600 deaths occurred

from plague, we have for the week ending November 7th only 3,700.

In the Mysore State the disease is widespread, and in the city of Bangalore the enormous mortality continues. Throughout the Hyderabad State the plague continues to occur in a more or less sporadic manner. The only town or district north of Bombay whence any plague cases are reported is Karachi, where, after a considerable lull in the disease, three deaths have occurred during the past week.

The Samarkand Outbreak.

There is no further news of plague from Samarkand, but the Porte has detailed a considerable number of troops to watch the eastern frontier of the Turkish Empire.

The General Plague Hospital, Poona.

Captain J. Lloyd T. Jones, M.B., of the Indian Medical Service, has submitted a very interesting report of the transactions of this institution, of which he held supervisional charge from June 1st, 1897, to March 31st, 1898. This period included the second outbreak of bubonic plague in Poona and its neighbourhood. The previous outbreak had nearly died out, and at the beginning of July only 5 cases remained under treatment; but signs of revival soon became manifest, and patients were received in increasing numbers from Poona (city and cantonments), Kirkee, and the surrounding villages, until on November 15th about 500 were under treatment. From this time an abatement took place, and on March 31st only 33 remained under treatment. The total number treated during these 10 months was 4,179, of whom 1,743 were males, 1,719 females, and 717 children. The provision of accommodation for these people and their relatives and friends, and for suspects, the arrangements necessary for segregation, sanitation, disinfection, food, water, medicine and nursing, the entertainment and control of staff and establishment presented formidable difficulties, but they were energetically and successfully met. The report contains full information on all these matters of construction, administration, and management. The establishment at one time numbered 320. The services of the medical and nursing staff are mentioned in terms of high praise.

The Poona public gave liberal aid in the shape of money, comfort, and clothes. Among the 4,179 patients treated 2,836 died; of these, 489 were admitted in a moribund condition and died soon after reception. The death-rate was 68.4 per cent., or, excluding moribund, 56.6. Male deaths amounted to 59.7 per cent., females 57.7, and of children 46.3; 409 corpses were received of persons who had died on the way; of the total treated 3,152 were bubonic cases, and 1,027 non-bubonic. The death-rate among the former was 66.7, and among the latter 71.4. Femoral buboes were by far the most common and least fatal, the left side being more frequently affected than the right. Pneumonia was a frequent complication, and was met with as a primary and secondary event. The type of the former was lobular. Nursing, support, stimulation, and the hypodermic injection of strychnine were found to be the best means of treatment. Of the hospital establishment 26 contracted plague, of whom 14 died and 12 recovered. Among the victims were a lady nurse, Miss Florence Morgan, and Hospital-Assistant Krishnaswam Mudliar. Six hundred and fifty seizures occurred among 1,598 "operation cases" (suspects), and of these 62 died. The low mortality is not explained.

Reported Plague in Warsaw.

Dr. J. Polak, Sanitary Physician of the City of Warsaw and member of the Sanitary Institute of Great Britain, writes with reference to the statement reproduced in the British Medical Journal (November 5th, p. 1456) to the effect that a case of "Siberian plague" had occurred in Warsaw. Dr. Polak states that the Russian term "Siberian plague" (Russian is the official language in Poland) signifies anthrax. We expressed some doubt as to the meaning of the term last week, and this solution of our doubts is eminently satisfactory.

The Victoria Dufferin Hospital.—The charge of the new Victoria Dufferin Hospital in Calcutta has been given to Miss H. L. Church, M.B., who is expected to take up her appointment in December.

THE NEW VACCINATION ORDER.

Aseptic Vaccination.

Several correspondents raise questions as to how vaccination should be carried out with aseptic precaution. In the new Vaccination Order, Third Schedule, *Instructions to Vaccinators under Contract*, Paragraphs 5 and 6, read as follows:

(5) The public vaccinator must keep in good condition the lancets or other instruments which he uses for vaccinating, and he must not use them for any other purpose whatever. When he vaccinates he must cleanse and sterilise his instrument after one operation before proceeding to another, and must always, when vaccinating, have with him the means of doing this. When once he has unsealed a tube of lymph he must never attempt to keep any part of its contents for the purposes of vaccination on a future occasion. Under no circumstance should the mouth be applied directly to the tube in which the lymph is contained for the purpose of expelling the lymph. In the case of ordinary capillary tubes an artificial blower may properly be used for this purpose.

(6) Vaccination should at every stage be carried out with aseptic precautions. These should include (1) the cleansing of the surface of the skin before vaccination; (2) the use of sterilised instruments; and (3) the protection of the vaccinated surface against extraneous infection both on the performance of the operation and on inspection of the results.

Several articles published in the British Medical Journal at the end of last year and at the beginning of this described methods of dressing the vaccination wounds which have been found satisfactory. Dr. Ralph W. Leftwich[1] uses the following appliances: Discs of oiled silk kept in absolute alcohol, salicylic wool, mercury perchloride gauze, a reel of ½-in. strapping, a crepenette bandage (1½ inch) and germicidal soap solution. The arm is first washed and dried, and after the scarifications have been made the discs are taken out of the spirit with aseptic forceps and dried upon wool. The blood that has oozed out is wiped off, the lymph blown upon the lancet, spread on the scarifications, and a disc is laid over each. A layer of wool allowing a good margin is placed over the discs, a piece of gauze follows, secured by two transverse and one vertical strip of plaster, and the whole is covered with two or three turns of the bandage. At the end of a week the arm is examined, and if necessary the vesicles are pricked. The dressing is then renewed, minus the discs, and is directed to be left untouched for another week.

Dr. Sinclair White[2] first sterilises the child's arm for some distance around the vaccine site, and after introducing the lymph, covers the skin, over and around the parts, with hot boric gelatine, which rapidly sets into a transparent film, through which the progress of the vesicles can be observed. On the eighth day the film is quite easily peeled off; the vesicles are then dusted over with boric acid powder, after which another and thicker layer of the gelatine is applied, and while setting daubed with cotton wool. Occasionally the contents of the vesicles ooze through the film of gelatine, necessitating a second dusting of boric powder.

Dr. P. R. Cooper (in the same number of the Journal) states that he takes the following precautions: After cleansing the upper part of the arm with a weak antiseptic solution (1 in 2,000 mercury perchloride) and washing this away with pure boiled water, the arm is dried with sterilised wool. The lancet is then sterilised in boiling water or in a spirit flame and allowed to cool; a tube of calf lymph is unsealed and a sufficient quantity of the lymph blown on the end of the lancet. Four drops are then placed on the usual sites and the skin incised in four or five places through the lymph drops. The arm is allowed to dry in the air and the vaccinated area is then covered with a piece of sterilised gauze, a pad of antiseptic sublimate wool placed over this, and the whole secured by a strip of strapping encircling the arm obliquely, and finally by a few turns of calico bandage. The mother is directed to leave the dressing undisturbed, and to bring the child on the eighth day, or sooner if anything seems wrong. On the eighth day the dressing is removed, and a similar one reapplied.

[1] British Medical Journal, December 11th, 1897, p. 1718.
[2] *Ibid.*, January 1st, 1898, p. 18.

Dr. A. D. Griffiths (in the same number of the JOURNAL) states that after washing the arm with soap and water, and carbolising the area, he performs vaccination with an aseptic needle. After allowing time for drying, a circular piece of cyanide gauze of sufficient size to cover all the spots, and allow a suitable margin, is placed over the marks; over this a layer of absorbent antiseptic wool of the same size is placed, and above this three or four layers of gauze; then a single layer of gauze, large enough to overlap the other parts of the dressing for about a quarter of an inch all round, is placed in position and fixed at the margin with flexile collodion. He finds that the dressing may need to be reapplied after seven or eight days.

Mr. Martindale gives the following formula for boric gelatine:

℞ Gelatine, 2; water, 8. Soak 12 hours; then dissolve by aid of a water bath. Make up loss in weight with water. ℞ Boric acid (sifted), 1; glycerine, 6. Heat to dissolve, and add to the still hot gelatine solution strained through muslin. This forms a 1 in 17 mass. The strength may be varied according to requirements.

IN our last issue a correspondent inquired where a blower to fit a capillary tube to expel vaccine lymph could be obtained. We have received several replies to this question. The Secretary of the Association for the Supply of Pure Vaccine Lymph, 12, Pall Mall East, London, S.W., writes to say that that institution has for years supplied a vaccine ejector, which is sent post free for 1s. 3d. Messrs. Mayer and Meltzer, 77, Great Portland Street, state that they are now engaged in making up a case to meet the new Vaccination Order, and will be ready to give particulars to all applicants. The Jenner Institute for Calf Lymph write that they have sent an artificial blower to our correspondent, and will be ready to give one to any member of the profession who may care to send his address to the Institute at 73, Church Road, Battersea, S.W.

THE ASSOCIATION OF PUBLIC VACCINATORS.

SIR,—A general meeting of the Association of Public Vaccinators was held on Tuesday, November 1st, in the offices of the Medical Defence Union, 4, Trafalgar Square, Dr. Greenwood, Public Vaccinator for Marylebone and President of the Association, in the chair, for the consideration of the new Vaccination Order of the Local Government Board. The meeting, which was largely attended, included representatives from all parts of England and Wales.

The following recommendations have been communicated to all members of the Association:

1. That the fee to be applied for under Article 3, paragraph (*a*) of the Order should be half a crown. It was pointed out that this fee was in no real sense a fee on the birth-rate, since the number of births on which it is to be assessed is subject to such extensive deductions; and, again, that in every case in which the fee is payable at least one visit to the home of the child will be necessary.

2. That the fees provided for successful vaccination and revaccination at homes or elsewhere, by Article 3, paragraphs (*b*) and (*c*), be accepted as a minimum.

3. That mileage be allowed for at the rate of 1s. per mile or part of a mile one way for distances greater than two miles from the public vaccinator's residence for each statutory visit paid.

We trust that public vaccinators generally will take note of these suggestions in approaching their various Boards of Guardians.

Any public vaccinators who have not yet joined the Association may obtain particulars from either of us.—We are, etc.,

VICTOR A. JAYNES, 157, Jamaica Road, S.E.,
ALBERT E. COPE, 26, Bessborough Gardens, S.W.,
Honorary Secretaries of the Association of Public Vaccinators.

November 8th.

THE SCALE OF FEES.

SIR,—It is most imperative that public vaccinators should take steps to hold a meeting in their respective unions as a preliminary to a more general meeting of their own and neighbouring unions' public vaccinators, for discussion and systematic action in regard to the agreements with their respective Boards.

The new Act may be taken to be favourable in so far as public vaccinators in large towns are affected, though it is questionable whether the 1s. and 5s. will recompense them for the loss sustained by the conscientious objectors, who so easily obtain exemption. In the case of the rural vaccinator the case is very different, and from the many opinions I have received it is beyond doubt absolutely necessary that a mileage fee, for distances over two miles, should be included in the agreement about to be entered into. In trying to obtain reasonable terms it is well not to be too ambitious; therefore I would suggest that it be taken as granted that 1s. and 5s. is to include the filling in and signing of Forms E and I, but in respect to Forms B, C, D, F, P, some fee should be required. As to the unsuccessful cases of first inoculation, I may probably be told that every case should "take" at the first operation if carefully and thoroughly performed, so that it would be well not to insist upon remuneration for second and third inoculations. Now, as to the mileage fee, I would suggest that 6d. a mile would be acceptable to most rural vaccinators when the distance exceeds two miles, so that for each vaccination at a distance of five miles we should receive 1s. + 5s. + 2s. 6d. as a minimum; this should apply to Certificate Forms B, C, D, F, and would do away with unjustly unremunerative journeys and work. In case of visits within the two-mile limit, a fee of 1s. 6d. should be demanded for the work entailed in conforming to the aforementioned forms, and also for P, whether within or without the two-mile limit. It is only just that some arrangement should be made about the payment for services rendered in accordance with Par. 6 of the 1st Schedule. The amount for such services it is hard to fix or even suggest, and is one of the questions to debate at the meetings of public vaccinators.

There should be unanimity on the point I have alluded to, and it is only to be obtained by the local and general meetings which I have suggested. In those districts where Boards of Guardians are—well, what they are, difficulty may be experienced; but with uniformity of demands by public vaccinators backed up by the support of local medical men, reasonableness can be insisted upon. In this immediate district we have no fear of such necessity; though should it arise, and the public vaccinators resign, the Local Government Board would be bound to uphold us. We purpose holding a general meeting of public vaccinators at Malton, on or about November 23rd, for the North and East Ridings of Yorkshire, and I shall be glad to communicate with any public vaccinator who is willing to attend and has not already been notified. I have received many suggestions and queries, and am desirous of others. Most points brought to my notice have been embodied in a letter to the Local Government Board, and an answer has been requested, and will probably reach me before the meeting I allude to. Doubtless similar communications will have reached the Local Government Board, and it is to be hoped a supplemental order, explaining and settling many points, will be issued before the contracts are entered into. For this purpose I would urge public vaccinators to postpone agreement to contracts until the middle of December.—I am, etc.,

WM. SWANSON SPRENT,
Public Vaccinator, Hovingham District,
Slingsby, York, Nov. 8th. Malton Union.

P.S.—If a public vaccinator journeys several miles to vaccinate a child, and is met with a refusal by the parent or custodian of the child, he should be paid at least half the fee which may be agreed upon in the case of successful vaccinations—that is, a distance of five miles; under the proposed mileage, successful vaccination would be 8s. 6d, in case of refusal he should receive 4s. 6d.—little enough.

W. S. S.

SIR,—Drs. Dougall and Horder have very fairly stated the case of the public vaccinators under the new Act. I am quite in agreement with the former as to our financial position as a general rule, and his experience as to non-remunerative journeys tallies completely with my own, and, I am sure, many others. I certainly think some fee ought to be granted for such work.

Dr. Garrett Horder has done well in bringing forward the point under Paragraph *b* as to the treatment of cases of illness arising from vaccination. Surely, if at least vaccine supplied by the Local Government Board be used, the public vaccinator ought not to be called upon to do more than actual vaccination without a *quid pro quo*? As to the aseptic protection of the vaccinated surface, the Local Government Board, in past orders, have condemned the use of shields. What do they recommend to be used in lieu thereof? My experience teaches me that the less applied to a vaccinated surface the better.

Dr. De'Ath raises the question of distinguishing between "public" and "private" patients. The only suggestion I can offer with regard to that difficulty is to write to "the medical attendant of the family explaining the position of the public vaccinator," should such a case arise.

I think the "successful vaccination" grants ought to remain as before. Mileage (over three miles) ought to be granted in all cases.

On the whole I feel sure that the public vaccinators will be in a better financial position under the new Act than under the old.—I am, etc.,

ARTHUR J. CARY, L.K.Q.C.P.I.,
Public Vaccinator Fourth District, Uxbridge Union.

November 5th.

SIR,—Undoubtedly, as Dr. Garrett Horder remarks in his letter in the BRITISH MEDICAL JOURNAL of November 5th, the terms offered the public vaccinator in the large towns under the new Act are liberal; but unless a reasonable mileage scale be granted in the rural districts, the public vaccinator appointment will still remain the worst paid appointment that we hold—under the new Act. We shall be supplied with a monthly list of children to be vaccinated, and the first visit will have to be paid by special appointment within a fortnight.

The area of my district is about 25,000 acres, the average number of births per month is 5, and the probability of any two occurring within a distance of say two miles of one another is remote, so that a special journey will have to be made to each case, unless it happens that a visit has to be paid to another patient in the neighbourhood on the day appointed for the vaccination.

I shall have some journeys of seven miles to people living on the outskirts of my district; many houses are situated on drain banks, inaccessible to any vehicle, and others in fields a mile or more off the high road.

I keep one horse, which I find just sufficient for my ordinary work, but now I foresee the possibility of having to hire when pressed with work in the winter months, and if I do so, I shall be charged 1s. a mile for horse and trap.

I consider that the least fee we can reasonably expect in the country is 1s. a mile for each visit paid beyond one mile from home, in addition to 5s. for the operation of vaccination, keeping the register, filling up of certificates, and postage.—I am, etc.,

Boston, Lincs., Nov. 5th. M. C. MOXHAM,
Public Vaccinator for the Stickney and New Leake Districts of the Spilsby Union.

SIR.—The question that I cannot understand about this Act is: A public vaccinator to do a successful vaccination must make four distinct places on the arm and record the number that take in his register, but the private vaccinator can vaccinate in one or two places to curry favour with the people (and yet the Local Government Board accept his certificate for successful vaccination without inquiring anything about the matter), and can say, What? the public vaccinator do you in four places; come to me, pay your 1s., and I will do you in one place and that will be all right.—I am, etc.,

F. W. D. MCGACHEN,
Public Vaccinator, Brotton District, Guisboro' Union.

November 7th.

SIR,—In reading through the new order I was much impressed with Article 5 (1), which distinctly states that the question of revaccination is a matter of agreement between guardians and public vaccinators, and that if they are unable to agree the amount is settled by the Local Government Board. I think this is a very wise clause, and should enable public vaccinators who live in rural districts and have long distances to travel to obtain considerably more than the minimum remuneration.—I am, etc.,

Kinnerley, Oswestry, Nov. 7th. H. E. MORTIS.

SIR,—In the BRITISH MEDICAL JOURNAL of November 5th, Dr. Dougall very clearly points out that the minimum fees under the New Vaccinator Order, 1s. under Section *a*, Article 3, and 5s. under Section *b*, will not pay public vaccinators who have large country districts, and he adds: "Boards of Guardians, as a rule, I am afraid, will adhere to the minimum fees allowed by the Order." Doubtless, if public vaccinators are foolish enough to sign fresh contracts under those terms.

Public vaccination alone in a widely scattered country district would not be enough to tempt even a blackleg of the deepest dye to start a practice, therefore in most country districts the public vaccinator has only to hold out for fair terms to get them. The fees I would suggest as fair are:

Those cases where the patient lives:

1. Within one mile of public vaccinator's house, 1s. under Section *a* and 5s. under Section *b*.

2. Over one mile but under three miles, 2s. under Section *a* and 7s. 6d. under Section *b*.

3. Over three miles, 2s. 6d. under Section *a* and 10s. 6d. under Section *b*.

It is chiefly in large towns that the unscrupulous might be tempted to try underselling; but there, fortunately, the public vaccinator is protected by the Order; the guardians must pay him the minimum fees, and the cases being close together he can well afford to accept those fees.—I am, etc.,

GEO. F. WELSFORD, M.B., etc.,
Public Vaccinator to the Cruwys Morchard and Washfield Districts, Tiverton Union.

November 9th.

SIR,—As you have invited criticism on the above Act as to how it will affect public vaccinators, I think the following figures may be interesting.

Mine is a country district comprising five villages. The vaccinations are held in April and October at my surgery, and at a station in each of the other villages, the furthest station being four miles off. For the last ten years the annual average number of vaccinations at my surgery has been 10, and at all the other stations 22, which, allowing 3 visits to each station, has necessitated travelling 114 miles. Under the new Act, supposing the same number of persons were vaccinated in each village, it would necessitate travelling 300 miles, even if each case could be vaccinated and inspected with two visits only. I have calculated the distances from my house to that of the patient as being always similar to distance to respective stations, and the distance of those patients in this village at half a mile, which, considering the village extends for more than a mile and the parish is 3,000 acres, is a low estimate. The fees earned under the old Act on these averages is £3 18s., which works out to 8d. per mile: under the new Act for a similar number of successful vaccinations at 5s. per head, the fees would be £8, working out at 6¾d. per mile. In addition there will be all the visits in which postponement is necessary or when vaccination is refused, for which I cannot see any allowance will be made beyond the 1s. per head under Art. 3 *a*.

Mine, I imagine, is a typical country district, with no large centre of population, and the above figures show that the suggested minimum allowance is on a lower scale than that we have been working under.—I am, etc.,

H. HINE,
Public Vaccinator, Beverley Union, No. 4 District.

South Cave, Nov. 7th.

DR. SAMUEL ANDREWS, Public Vaccinator, Basingstoke, sends us a suggested scheme or basis for an arrangement with Boards of Guardians in settling fees to be paid to public vaccinators under the new Vaccination Order:

LIST OF FEES CHARGEABLE BY PUBLIC VACCINATORS (UNDER THE ACT OF 1898).

BY ARRANGEMENT WITH THE BOARD OF GUARDIANS AND WITH THE SANCTION OF THE LOCAL GOVERNMENT BOARD.

	£ s. d.
1.—All vaccinations, in accordance with Local Government Board rules, of children or of adults, whether belonging to the district or not, that are carried out at a public vaccinator's home surgery	0 2 6
2.—Vaccinations as above, but carried out at the vaccinee's home, temporary or permanent, if within one mile of the public vaccinator's home	0 5 0
3.—All vaccinations as above, but carried out beyond one mile from vaccinator's home, charged for, namely:	
Journey fee of 1s. a mile per case, with minimum of 0 2 6	
Vaccination fee—per case 0 2 6	
Certifying and reporting fee—per case 0 2 6	
	0 7 6
4.—Additional fee for all cases on Vaccination Officer's Report of Delinquents, or otherwise due under the Act	0 1 0

5.—The above journey fee, and certifying and reporting fees as earned, are charged for (1) all unsuccessful vaccinations (after two attempts), (2) all refusals to permit carrying out of vaccination officer's order, (3) all refusals on account of insanitary conditions.

GRANTS FOR EFFICIENT VACCINATION.

SIR,—The point of primary importance in the new Vaccination Order is that the administration of the Act is practically,

though perhaps not nominally, taken out of the hands of Boards of Guardians. This, in my opinion, is the most satisfactory outcome of recent legislation. If the enforcement of the law had been left in the hands of any popularly-elected body, I believe in many districts vaccination would have remained, as it does now, practically a dead letter. The remuneration of public vaccinators has been framed on fair—one can hardly say liberal—lines. Five shillings is reasonable remuneration for a vaccination performed and inspected with aseptic precautions within a short distance of the public vaccinator's residence, but what extra remuneration can be expected from an antivaccinationist Board of Guardians for perhaps fruitless domiciliary visits paid at a distance of four or five miles? The old contract rates allowed for this: 1s. 6d. if the station was less than a mile distant, 2s. if more than one mile and under two, 3s. if over two miles, and I am at a loss to understand why a similar scale should not have been established now.

Neither the Act nor the new Order says a word about grants for efficient vaccination, which is a point which will have to be taken into consideration in any arrangement made with Boards of Guardians.

Presuming that grants for efficiency will be given as at present, we can, I think, hardly ask less than 1s. per mile per case, seeing that the old stational arrangement allowed at least 6d. The third schedule, containing instructions to public vaccinators, is fairly explicit, though Section *b* might have gone a little more into detail.

I should very much like to know what would be the best and simplest method of protecting the vaccinated surface against extraneous infection, both on the performance of the operation and on inspection of the results. It appears to me that anything in the way of antiseptic pads and bandages, or indeed of any removable dressing, would be useless. Not one mother in ten could restrain her curiosity till the eighth day, and would be bound to remove the dressing just to see how the arm was getting on. Would painting the vaccinated surface with collodion, with some iodoform dissolved in it, constitute a sufficient protection against infection, or would it interfere with the due development of a normal vesicle?—I am, etc.,

November 7th. PUBLIC VACCINATOR II.

ASSOCIATION INTELLIGENCE.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

GLOUCESTERSHIRE BRANCH.—The next meeting of the Branch will be held at the General Infirmary, Gloucester, on Tuesday, November 15th, at 7 P.M., Dr. Soutar, the President, in the chair. Agenda:—1. The President's Address. Notes on Lunacy Practice. 2. Any other business. There will be supper afterwards at the New Inn Hotel.—S. T. PRICE, Honorary Secretary, Sherborne Lodge, Cheltenham.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.—A meeting of the District Committee will be held at 111, Sinclair Road, West Kensington Park, W., on Wednesday, November 16th, at 5 P.M., to arrange for the meetings of the ensuing session. Members desirous of reading papers or bringing any important medical subject before the District are requested to communicate with THOMAS DUTTON, M.D., Honorary Secretary, 13, Holland Park Avenue, W.

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.—The next meeting will be held at the Town Hall, Leyton, on Thursday, November 17th, at 8.30 P.M.: Dr. St. Clair B. Shadwell in the chair. Mr. Reginald Harrison will read a paper on Some Effects following Lesions of the Genital Apparatus relative to the Treatment of Prostatic Enlargement.—C. J. MORTON, Honorary Secretary, 56, Orford Road, Walthamstow.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—The next meeting will be held on Thursday, November 17th, at the Worcester Infirmary. Dr. Dixey will introduce a discussion on the Vaccination Act. Dr. Braine-Hartnell will read a paper on the Outdoor Treatment of Phthisis. Members having anything of interest to bring forward are requested to communicate with the Honorary Secretary, GEO. W. CROWE, Worcester.

SOUTH-EASTERN BRANCH: EAST KENT DISTRICT.—The next meeting of this District will be held at the Kent and Canterbury Hospital on Thursday, November 24th, at 3 P.M., Brigade-Surgeon-Lieutenant-Colonel Tomlinson, M.D., in the chair. Agenda:—Dr. Thomas Eastes: The Open-air Treatment of Consumption. Mr. W. Greenwood Sutcliffe: Surgery in the Matabele Rebellion. Cases from the wards will be shown by Dr. Gogarty and Dr. Whitehead Reid. The Chairman kindly invites members to luncheon at the Fountain Hotel at 1.30 P.M. Members intending to avail themselves of Dr. Tomlinson's hospitality are requested to send acceptances to Dr. Gogarty, Canterbury, by Monday, November 21st, or they will not be expected. All members of the South-Eastern Branch are entitled to attend these meetings, and to introduce professional friends.—THOS. F. RAVEN, Honorary District Secretary, Barfield House, Broadstairs.

SOUTH-EASTERN BRANCH: WEST KENT DISTRICT.—A meeting of this District will be held at the Hospital, Gravesend, on Friday, November 18th, at 4.15 P.M., Dr. Charles Firth in the chair. Agenda: Minutes of last meeting. Place, date, and chairman of next meeting. Mr. F. Jaffrey (London): The Treatment of Recent Fractures by Wiring or Massage. Dr. J. A. Coutts (London): On Belladonna in the Treatment of Broncho-pneumonia. Dr. J. V. Bell: Idiosyncrasy in Relation to Food and Drugs. Tea and coffee will be provided at the close of the meeting. All members of the South-Eastern Branch are entitled to attend this meeting and to introduce professional friends.—LUDFORD COOPER, St. Bartholomew's Hospital, Rochester, Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—The next meeting of this District will be held at the Queen's Hotel, Eastbourne, on Thursday, December 1st, at 4.45 P.M., Dr. Hayman in the chair. Dinner (at table d'hôte) 7 P.M. Members are requested to send notice of communications, motions, etc., to the Hon. District Secretary, if possible before November 15th.—J. W. BATTERHAM, M.B., Grand Parade, St. Leonards, Hon. District Secretary.

SOUTH-EASTERN BRANCH: WEST SUSSEX DISTRICT.

A MEETING of this District was held at Horsham on October 27th, Mr. BOSTOCK in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Next Meeting.—It was decided that the next meeting be held at Worthing, and that Dr. Harrison be asked to preside thereat.

Re-election of Honorary Secretary.—Dr. Hinds was re-elected Secretary of the District.

Diphtherial Paralysis.—Dr. PENROSE read a paper on this subject. He pointed out that in adults sensory disturbances were the first complained of, whereas in children it was always some motor derangement which brought them under observation. He dwelt on the necessity for extreme care in nursing, owing to the possibility of the subvention of paralysis of the heart or respiratory muscles, a cause of death in 15 per cent. of cases. The question of isolation of such cases was discussed, and an instance was cited in which diphtheria had broken out in a ward apparently from the introduction of a case of diphtherial paralysis. As regarded treatment he had seen best results from hypodermic injections of atropine and strychnine in full doses; he deprecated the use of electricity, holding that the fright which it occasioned children more than counterbalanced any possible good. As regarded pathological anatomy, he showed a photograph and microscopical preparation which had been sent him by a colleague at Great Ormond Street Hospital, in which the parenchymatous degeneration of a peripheral nerve were demonstrated.—In the discussion which followed, the question was raised whether the injection of antitoxin had been proved to have any injurious effects, and was answered in the negative; and to a further question as to the prophylactic value of antitoxin it was answered that it was still unknown.

Acute Peritonitis.—Dr. MORRIS read a paper on the etiology of certain cases of acute peritonitis. Assuming that all cases

of peritonitis were of septic origin, there was some difficulty in accounting for the idiopathic cases. He quoted five cases in which the first signs were tympanites and an immovable abdomen; in each case there was a clear history of a chill, and he believed that the peritonitis was due to temporary paralysis of the small intestine, allowing the bacillus coli communis to migrate through the gut, the paralysis being brought about by a depression of the solar and mesenteric plexures by means of the close connection between the cutaneous abdominal nerves and the sympathetic ganglia. The bacilli coli communis have a paralysing effect on muscular tissue, and that, probably in migrating through the gut they increased the intestinal paralysis. In speaking of the treatment, Dr. Morris emphasised the danger of giving opium in acute peritonitis due to infection from within the bowel. His plan had been to give calomel and belladonna internally, hypodermic injections of strychnine and very hot linseed poultices. In the five cases quoted, four recovered with this treatment, the only fatal case having been treated with opium on account of severe pain.

Myxœdema.—Mr. KINNEIR read notes of a case of myxœdema. A woman, aged 47, came under observation in July, 1897, presenting well marked symptoms of the disease, which was of 2½ years' duration. In July she commenced to take 5-gr. doses of thyroid extract prepared from the whole gland. This was followed by no unpleasant symptoms, and improvement commenced at once. In a month her weight had fallen from 13 st. to 11 st. 4 lbs., her mental condition had improved, and she was able to go out for a walk. The treatment was continued for five months, when she was considered well, her weight being 10 st. 8 lbs. Six months afterwards there was a return of symptoms, but these disappeared after treatment for a month with whole gland extract. Mr. Kinneir showed photographs of the patient before and after treatment, and stated that she was able to ride a bicycle, and that her mental condition was perfectly natural.

Sudden Death.—Dr. HINDS read a paper on cases of sudden death occurring in his practice during the last seven years. There were 31 cases, of which 13 had been the cause of a coroner's inquest. Comparing his experience with the teaching of the schools, that is, that sudden death was due to: (1) Rupture of a blood vessel, (2) fatty heart, or (3) aortic regurgitation, he found that 13 of his cases were due to effusion of blood, 7 to fatty heart, and 1 to aortic regurgitation occurring in a patient who had aneurysm of the aorta. In none of the cases of ruptured vessels were the subjects making any unusual exertion at the time of death, and in 7 of the number death took place early in the morning. In 6 cases the pericardium was full of blood from the rupture. In a case of rupture of the heart, six days elapsed between the earliest symptom, which was severe pain at the back of the elbows, and death. In a case where a carcinomatous mediastinal gland had ulcerated into the œsophagus and aorta, all the bleeding had taken place into the stomach. Of the remaining 10 cases, in 5 death was due to heart failure, including a case occurring in the course of diabetes, and a case of syncope in measles in a girl of 2 years of age; this was considered to be a case of the poison of measles affecting the nervous mechanism of the heart in a manner strictly analogous to that which occurs in diphtheria. Two were cases of pulmonary embolism occurring, in each case, several weeks after fracture of the leg. Two were cases of epilepsy: one from asphyxia due to position in which the patient fell, and one in the status epilepticus. One was a case of asphyxia from rupture of a pulmonary abscess into the bronchus in a child of 7 months.

PERTHSHIRE BRANCH.

THE winter meeting of the Branch was held in Perth on November 4th, Dr. PATON, President, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed.

Election of Officers.—A letter from Dr. Meikle regretting inability to serve as President on account of delicate health was read, and the Secretary was instructed to send a message of sympathy. Dr. Beatty (Pitlochry) was elected President, and Dr. W. Robertson (Perth) Vice-President. The Secretary and Treasurer were re-elected.

New Members.—The following were elected:—Branch and Association: Patrick Kinmont, M.B., C.M., Royal Infirmary, Perth. Branch: G. Fleming, M.B., C.M., Murray Asylum, Perth; J. Maclagan Reid, M.B., C.M., 588, Methuen Street, Perth.

Reports of Treasurer and of the Council.—Reports were read showing a balance of £4 7s. in the Treasurer's hands in favour of the Branch, by the Representative Member, and by the Council giving the numbers of members the same as last year.

Next Meeting.—The next special clinical meeting will be held in the end of January, 1899.

Dinner.—The members dined together in the Station Hotel after the meeting.

BORDER COUNTIES BRANCH.

THE autumn meeting of the Border Counties Branch was held at Dumfries, on October 28th. The PRESIDENT, Dr. Muriel (Whitehaven) occupied the chair, and twenty-three members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

The late Dr. I'Anson.—The PRESIDENT moved a vote of condolence with the relatives of the late Dr. T. F. I'Anson; this was seconded by Dr. FISHER, and supported by Dr. MAXWELL ROSS. The following resolution was then carried unanimously:

That the Border Counties Branch of the British Medical Association at this its first meeting since the death of the late Dr. T. F. I'Anson begs to tender its sincere sympathy and condolence with Mrs. I'Anson, Dr. Welby I'Anson, and the relatives of the late Dr. T. F. I'Anson, who was one of its first Presidents and oldest members, and to assure them that their loss is greatly shared in by this Branch, to which the late Dr. I'Anson was always a true friend, a worthy supporter, and a kind adviser.

New Members.—John Hume, L.R.C.S.E., Jedburgh, was elected a member of the Association and Border Counties Branch.

Representative on Association Council.—Dr. Maclaren (Carlisle) was appointed representative of the Branch on the Council of the Association, in place of the late Dr. T. F. I'Anson (Whitehaven).

Cumberland Nursing Association.—The report of the Subcommittee appointed to consider the question of the representation of the Branch on the Council of the Cumberland Nursing Association was read and adopted unanimously. The following additional representatives of the Branch on the Council of the Nursing Association were nominated: Drs. Muriel, Graham, and Ogilvy-Ramsay.

Medical Men and Unregistered Dentists.—The PRESIDENT introduced a discussion on The Position of Medical Men with regard to Unregistered Dentists who have a Registered Dentist as Partner, especially with regard to the Administration of Anæsthetics for either Partner—is it Covering? Drs. FISHER, CLARKE, HUSKIE, WILSON, RAMSAY, BIRD, and MAXWELL ROSS took part in the discussion. Eventually the following resolution was carried unanimously:

That the representatives of the Branch on the Council of the Association be requested to bring this point before the Council in order that it may take such steps as may seem to it proper to obtain a definite opinion from the General Medical Council.

Procidentia Uteri.—Dr. DUNCAN (Carlisle) read notes of a case of Procidentia Uteri in a girl 16 years of age; Cœliohysteropexy; Recovery. The paper was commented on by the PRESIDENT, and Drs. OGILVY-RAMSAY, ROBSON, BIRD, and GRAHAM.

Sanatoria for Consumption.—Dr. BIRD (Carlisle) read a paper on The Necessity of Hospitals and Sanatoria for the Treatment of Pulmonary Phthisis. He hoped that before long there would be in every county local branches of the National Association for the Prevention of Consumption and other forms of Tuberculosis. Tuberculosis was diminishing among the more prosperous classes. There was no reason why it should not also diminish amongst the poor if proper measures were taken: for example, provision of healthy milk, renovation of dwellings when consumptives have died, isolation of bad cases, and more particularly the establishment of sanatoria. The PRESIDENT, Dr. ROBSON, and Dr. FISHER spoke.

Medical Officers of Health and Practitioners.—Dr. MAXWELL ROSS (Dumfries) read a paper on the Relations of the Medical Officer of Health to the Medical Practitioner, in which he strongly supported the view that except in very unusual circumstances the medical officer should not exam ne cases

notified to him, pointing out that the Legislature in nearly all instances bracketed the certificate of the practitioner with that of the medical officer of health as being of equal validity. He also discussed the presence of puerperal fever in the Notification Act, and argued in favour of its removal from the list of notifiable diseases. The paper was discussed by Drs. FISHER, BIRD, RAMSAY, CLARKE, and MACDONALD (Dumfries).

Widal's Typhoid Reaction.—Dr. S. MCDONALD (Carlisle) described a Pocket Incubator for Bacteria devised by himself, and gave a demonstration of Widal's Typhoid Reaction. The PRESIDENT and Dr. CLARKE spoke.

Dinner.—After the meeting the members dined together in the Station Hotel, Dumfries.

STAFFORDSHIRE BRANCH.

THE twenty-fifth annual general meeting was held at Stoke-on-Trent on November 1st. Twenty-eight members were present.

Introduction of New President.—Mr. G. A. PHILLIPS, the retiring President, took the chair, and introduced his successor, Dr. A. MCALDOWIE, of Stoke, who then presided over the meeting.

Presidential Address.—The PRESIDENT delivered a thoughtful address on Periodic Respiration, for which he was accorded a hearty vote of thanks.

Reports and Financial Statement.—The reports of the Council and the Ethical Committee were adopted, as was also the financial statement, which showed a balance in hand of £22 8s. 2d.

Next Annual Meeting.—It was decided to hold the next annual meeting at Stafford.

Election of Officers.—President-Elect: Dr. J. B. Spence, Burntwood. *Vice-Presidents:* Dr. T. Ridley Bailey, Mr. G. A. Phillips. *General Secretary:* Mr. F. Milnes Blumer (Stafford). *Financial Secretary:* Dr. Chas. Reid (Stafford). *Auditor:* Mr. W. H. Folker (Hanley). *Council:* Dr. S. K. Alcock (Burslem), Dr. E. Deanesly (Wolverhampton), Mr. Hartley (Stone), Dr. Hatton (Newcastle), Dr. Hind (Stoke), Dr. W. G. Lowe (Burton), Mr. Parkes (Longton), Dr. Malet (Wolverhampton), Mr. H. M. Morgan (Lichfield), Dr. G. Reid (Stafford), Dr. Tylecote (Sandon), Mr. Wilmore (Walsall). *Representative in the Council of the Association:* Mr. T. Vincent Jackson (Wolverhampton). *Representative upon the Parliamentary Bills Committee of the Association:* Mr. W. D. Spanton (Hanley).

SYDNEY AND NEW SOUTH WALES BRANCH.

THE usual monthly meeting of this Branch was held at Sydney on August 26th; Dr. W. CHISHOLM in the chair. There were twenty-four members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The PRESIDENT announced the election of the following new members: Drs. Warren, Freyer, Farrell, and Pring.

Widal Serum Reaction.—Dr. JAMIESON read a paper on Widal's Serum Reaction: Its Value as a Test for Typhoid Fever. A number of cultures were also exhibited. A discussion ensued, in which Drs. QUAIFE, GOODE, and WILKINSON took part; Dr. JAMIESON replied.

The Prevention of Tuberculosis.—Dr. WILKINSON moved the following resolutions:

1. That it is the duty of the Branch to organise a deputation, including medical members of the Legislature, the President of the Board of Health, and representatives from the chief city hospitals, to wait upon the Premier, and urge upon him the immediate necessity for devising some practical scheme for preventing the spread of tuberculosis.

(2) That such a deputation should advise the erection of a hospital for the admission of advanced cases of consumption as a matter of the first importance and of great urgency.

Dr. SAWKINS seconded the resolutions, which, after discussion by Drs. THRING, CRAGG, QUAIFE, GOODE, CHISHOLM, JAMIESON, NEILL, and CLUBBE, were carried.

THE Morison Lectures of the Royal College of Physicians, Edinburgh, were delivered this year on November 7th, 9th, and 11th, by Dr. Alexander Morison. The subjects of the lectures were: (1) The Pathology of the Visceral Nervous System; (2) Disorders of Visceral Sensibility; (3) Disorders of Visceral Motion, and Body and Mind.

SPECIAL CORRESPONDENCE.

PARIS.

Reform of the Assistance Publique.—The Paris Anthropological Society.—The Supply of Provisions to the Paris Hospitals.

THE Municipal Council at its next sitting will be called upon to formulate a scheme for the reorganisation of the services and administrations grouped together under the name of the "Assistance Publique." The Council has made many efforts to introduce reforms in this complicated administration. These efforts have, however, been paralysed by the law passed in 1849. The slight modifications which have been effected are due to the intelligent initiative of its directors. M. Rebeillard, the municipal councillor who is the author of the plan laid before the Council, advises decentralisation. He proposes to establish in the *mairie* of each arrondissement an agency empowered to give succour in all cases deserving it from the Public Assistance. This assistance is to be given with the "minimum of administrative formalities." This important modification would avoid the transfer of *dossiers*, which involves a great waste of time, and, still worse, obliges the personal attendance of the poor and decrepit in order to observe some insignificant formalities.

M. Manouvrier, Professor of Anthropology, at a recent meeting of the Anthropological Society, exhibited to the members the skeleton of Eugène Véron, which had been exhumed and presented to the Society by his widow. The skeleton of M. Véron is the second which has been given to the Society. The first one was promised to M. Manouvrier during life. Dr. Adolphe Bertillon, Professor in the School of Anthropology, expressed his intention of bequeathing his skeleton to the Society. In accordance with the terms of his bequest his skeleton was exhumed eight years after his death, and it is now in the library of the School of Anthropology. The skeleton presented a few days ago is that of a scholar, who was the author of *Progrès Intellectuel dans l'Humanité* and other highly esteemed works. Eugène Véron was an avowed freethinker. M. Manouvrier had studied his brain; Madame Véron's offer of the skeleton enables him to complete his studies. The Administration, M. Manouvrier stated, forbids dissection before burial, except under special circumstances, but may permit exhumation. The dead bodies of unclaimed hospital patients can be dissected before burial, but a private person cannot bequeath his body for dissection.

To the Paris hospitals and asylums within the jurisdiction of the Public Assistance the following provisions are supplied: 305,000 kilogrammes of fresh vegetables, cabbage, etc.; 380,000 kilogrammes of carrots, onions, turnips, and leeks; 1,135,000 kilogrammes of potatoes; 100,000 of haricot beans, 100,000 kilogrammes of lentils, 100,000 of split peas, 24,000 of jam, 55,000 kilogramms of prunes, 36,000 of dried figs, 18,000 of raisins, 36,000 of salt.

CORRESPONDENCE.

BACTERIOLOGICAL LABORATORIES IN LONDON.

SIR,—In the BRITISH MEDICAL JOURNAL of November 5th appeared an abstract of my address at the meeting of the Metropolitan Branch of the Incorporated Society of Medical Officers of Health, and that I may be clearly understood permit me to express somewhat more fully some points bearing upon a momentous question.

The London County Council proposes to apply to Parliament for powers (1) to establish a bacteriological laboratory, and (2) to examine material from cases of suspected infectious disease for diagnostic purposes.

That the London County Council should be properly equipped with laboratories, including bacteriological, for purposes of examining sewage, water, food (especially milk and meat), animal and other diseases, cannot be gainsaid, whether they possess the power to establish them or not, but the Council also appear to propose to step in between the sanitary authorities and the Metropolitan Asylums Board, and this is a very serious proposition.

It is not necessary here to discuss the question of the desira-

bility of the Council taking over the entire work of the Asylums Board. Many reasons could be found in favour of this course and probably others could be raised against it, but it must be difficult to find adequate reasons for one authority undertaking the bacteriological diagnosis of the infectious diseases notified to and admitted into the hospitals of another authority, except that the Metropolitan Asylums Board has failed to make proper provision.

Into the hospitals of the Board last year were admitted as suffering from diphtheria no fewer than 643 cases that were found after admission not to be so suffering, and from enteric fever 293 cases not so suffering. The diagnosis of these cases is largely controllable by bacteriological examination, but this examination is made only after admission into the hospitals and no such examination is undertaken by the Board before admission, even when the medical certificate is noted with a doubt, nor is such a course adopted for excluding the numerous cases of tonsillitis admitted when by such exclusion in time of pressure the accommodation might thereby be rendered more sufficient and the danger of refusing admission to genuine cases of diphtheria be avoided. If the Metropolitan Asylums Board undertook the bacteriological examination in cases of dangerous infectious diseases they would be able to check the certificates of the dangerous infectious diseases received by them from medical officers of health and the applications made to them for the removal of cases to their hospitals. The medical officers of health at one end and the Asylums Board at the other would be guided in their actions by the results of the examinations and by a single expeditious process of communication, whereas a third body introduced into the procedure will duplicate the whole of the communications and correspondence whether that third be the laboratory of a private body or of the Council.

Therefore, regarding the question apart from party or political bias, and with the single-minded object of best securing the welfare of this vast population, there are strong reasons for urging the possession of laboratories both by the Metropolitan Asylums Board and by the London County Council, and London, which in magnitude resembles a kingdom rather than a town, will furnish ample material for many laboratories, public and private, to keep pace with the science of bacteriology in its ramifications and progress.—I am, etc.,

London, November 7th. JOHN F. J. SYKES.

COTTAGE HOSPITALS AND FEES AT INQUESTS.

SIR,—I am an honorary surgeon to a surgical cottage hospital, and have just received the following letter from the coroner:

> I regret to inform you that I have received notice from the North Riding County Council that in future they will not be able to repay me any fee which I may have paid to any medical officer of any public hospital or infirmary for attending any inquest I may have to hold in connection with such hospital or infirmary. This will of course prevent me paying you for attending any such inquest in future.
>
> ——— Coroner.

I may explain that we have no house-surgeon, and only accidents in connection with the works are admitted. The hospital is maintained by the men employed paying a penny a week. Is this in order? This I ask, as it will affect many medical men.—I am, etc.,

November 8th. HONORARY SURGEON.

*** We have received another letter from a correspondent in the same district on this matter. A question was raised in the Queen's Bench Division on April 21st, on appeal from the decision of the judge of the Brentford County Court, as to the right of a honorary medical officer of a cottage hospital to a fee for a *post-mortem* examination of a patient made by order of the coroner. The counsel for the plaintiff stated there were two questions: (1) Was the cottage hospital a public institution within Section XXII (Subsection II) of the Coroners Act? (2) Was the plaintiff a medical officer of the institution within the Section, he being a purely honorary officer? The Act of 1887 was a reproduction in substance of the Act 6 and 7 William IV, c. 89, and at that day cottage hospitals were not in existence. He argued that the hospital in question could not be called a public institution, and the plaintiff was not a medical officer within the Section. The Court (Mr. Justice Wills and Mr. Justice Kennedy), however, dismissed the appeal, holding that the institution was a public hospital, and the plaintiff was a medical officer of such institution, whose duty it was to attend on the deceased. Whether this case can be distinguished is a matter for consideration. The matter was under the consideration of the Parliamentary Bills Committee at its meeting last July, and was referred to a subcommittee. The Coroners Act, 1887, Section XXII, Clause 2, enacts as follows, after providing for ordinary payment of medical witnesses: "Where an inquest was held on the body of a person who had died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institutions, or in a building or place belonging thereto, or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid shall not be entitled to such fee or remuneration."

SYPHILIS IN THE ARMY.

SIR,—According to the last paragraph of your article on syphilis in the army, which appeared in the BRITISH MEDICAL JOURNAL of November 5th, it would appear that syphilis is more virulent and malignant in the army than in civil life, and that the reason of this lies in the treatment of the disease being more scientific in the latter than in the former.

May I venture to point out that the first conclusion is found on a fallacy, and that in consequence the second is also fallacious? Syphilis is not more virulent or malignant in the army than in civil life. At any rate, there is nothing to prove the contrary, either in army medical reports or elsewhere. The type in India is, it is true, more severe than the type at home stations; but to argue that because this is the case syphilis must therefore be more virulent amongst troops stationed at home than amongst the civil population is as fallacious as to conclude that because enteric fever amongst troops in India is more malignant than amongst troops at home, enteric fever must therefore be more malignant amongst the troops, say at Dublin, than amongst the civil inhabitants.

It seems scarcely worth while to pursue the argument further; but it may be useful to remind you that syphilis in the German and French armies is considered milder than the syphilis of civil life in England, and that, if we follow out your argument, then the French and German military medical officers must be treating syphilis more scientifically than the civil profession in this country. Now it so happens that they deal with the disease in exactly the same way as our own army medical officers do. I make this statement on the authority of German and French military medical officers, with whom I have recently been in communication on the subject, and the argument of the article must, in the light of this fact, carry it to a complete contradiction of its own conclusions.

The true facts regarding the increase in the extent and malignancy of syphilis in the army are that such increase has only been noticed in India and some stations abroad, and that it dates from the abolition of the Contagious Diseases Acts. The reason, therefore, why the Army Medical Report is "one unimpeachable witness against attenuation of venereal disease in the British army"—a statement, by the way, which I do not entirely agree with—lies not in any inadequacy of treatment on the part of the military medical officers, but in the inadequacy of civil legislation.—I am, etc.,

W. G. MACPHERSON,
London, Nov. 9th. Major, R.A.M.C.

TREATMENT OF PAUPER IMBECILES AND EPILEPTICS.

SIR,—It is not easy to follow the twists and turns of Dr. Rhodes's argument. In the first instance, after extolling the German epileptic colonies, especially that of Wuhlgarten, he contrasts with them our Chalfont Colony, the buildings of which he condemns as being of an unnecessarily expensive type. I inform him that the buildings of Wuhlgarten cost per patient almost twice as much as ours, whereupon Dr. Rhodes suggests that we house our patients in "tin tabernacles," and points with satisfaction to the splendour of the Wuhlgarten structures, the recreation hall, the beautiful church, and the laundry "with first-class fittings"!

I am not concerned to dispute with him on these points. I am well aware of the way in which public money has been lavished on Wuhlgarten. But why should Dr. Rhodes hold

up this—notoriously the most extravagant of the German epileptic colonies—as a model for English imitation, when but a few days previously he had denounced the Chalfont establishment as unnecessarily costly? If he will make up his mind whether our buildings are too magnificent or not magnificent enough I shall be happy to answer him on either point.

In the meantime, so far as consideration for your space will permit, I readily give the information which Dr. Rhodes asks for. None of the colonists at Chalfont are either housed or fed in "tin tabernacles," or in any other than the "expensive" brick buildings to which Dr. Rhodes, in the first instance, took so much exception. It is true we have an iron building, which, as a temporary arrangement, was used as a home, but it is so used no longer. I include the cost of this building in my calculation of the total cost of the establishment, but take no account of it in reckoning the number of patients for whom accommodation is provided.

We have at the Colony three homes in occupation, three others nearly completed, and, also approaching completion, a small home or hospital, for cases requiring special care and treatment. In these homes accommodation is provided for 148 patients.

We have, moreover, ample workshops, a recreation hall (which will suffice for the rapidly-growing Colony during many years to come), and a laundry capable of washing for 200 persons, and adapted for easy enlargement to meet future needs. There are also other buildings, which it is not necessary to particularise here.

The total cost of the establishment, including land, and including the prospective cost of the buildings referred to as incomplete, amounts to rather less than £18,000, or £122 per patient. In the future, as the Colony grows, the cost per head will undoubtedly diminish. One point, however, needs further explanation. At Wuhlgarten a distinction is drawn between the residential part of the estate and the farm, the latter, I believe, not being included in reckoning the cost of the establishment. Therefore, for fairness of comparison I have dealt with the matter in a similar way, including the cost of 20 acres, or exactly the same amount of land per patient as at Wuhlgarten. Even, however, if the cost of the whole farm of 135 acres were included, it would not materially affect the comparison of the relative cost of the two institutions.—I am, etc.,

G. Penn Gaskell,
Secretary of the National Society for Employment of Epileptics.

12, Buckingham Street, Strand, Nov. 9th.

PROFESSIONAL SECRECY AND CRIMINAL OFFENCES.

Sir,—The writer of the article under the above heading, like most if not all of those who have written on the subject, overlooks the most essential fact of all. When a medical man says that he knows criminal abortion has been performed on a patient of his, he is stating what may be not accurate; he does not "know" it in the eye of the law unless he is in a position to prove it, and this during the lifetime of the patient he cannot do without her voluntary aid. This is the crucial fact, and unless the medical man has told his patient the exact state of the case, and got her to make an affidavit on the subject, he had better hold his tongue about it, no matter how convincing from a medical point of view the facts he has observed may be. I think, further, that he should not be too officious in the matter of the affidavit, but should content himself with advising his patient to tell what she has told him to a magistrate, and if he thought his patient was dying he would urge more strongly upon her the duty of making a statement in due form.—I am, etc.,

November 8th. F.R.C.P.

OBITUARY.

We regret to have to record the sudden death of Mr. Sidney Woodhams, of Gravesend. He received his medical education at Guy's Hospital, and obtained the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond. in 1888. During his student days he was well known as an athlete, and was a member both of the Guy's cricket eleven and the Guy's Association football team. After leaving Guy's Hospital he was elected House-Surgeon to the Gravesend Hospital, a post which he retained for five years, winning golden opinions from the patients and from all connected with the institution. The cause of his sudden death was somewhat remarkable and of considerable clinical interest. We are informed that for the past seven or eight years at least he has complained of paroxysmal headache, and at one time had some ear trouble, which left a certain degree of deafness. Quite recently he had some slight epileptic attacks of the Jacksonian type. For two or three weeks before his death he complained of headache, and suffered from giddiness. Only five days before his death he consulted a neurologist of eminence, who failed to find signs of intracranial tumour, and rather inclined to the opinion that the symptoms were due to migraine. Early on the morning of November 3rd Mr. Woodhams went out to answer a professional call, and on returning home at 8 A.M. he complained of not feeling well and went to bed; shortly afterwards he became unconscious, and when his partner, Dr. Robbs, arrived he was dying, and, in fact, expired shortly after 9 A.M. His friend, Dr. R. J. Briden, informs us that a *post-mortem* examination was made by Dr. Robbs. A tumour, the size of a bantam's egg, was found in the longitudinal fissure between the anterior lobes of the cerebral hemispheres; its nature has not yet been determined. Mr. Woodhams, who was the son of Mr. W. Woodhams, of Rochester, was 34 years of age, and had only been married at the end of July last. His funeral, which took place on November 7th, was attended by a large number of persons, including the Mayor and Corporation of Gravesend, and most of the medical men in the neighbourhood.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE NEW VICEROY OF INDIA'S STAFF-SURGEON.

Lieutenant-Colonel E. Harold Fenn, C.I.E., of the Royal Army Medical Corps, who has been appointed Surgeon on the Staff of Lord Curzon of Kedleston is now serving in India on exchange, quite recently, from the Grenadier Guards into the Royal Army Medical Corps. Lieutenant-Colonel Fenn was also on the Staff of Lord Lansdowne, a former Governor-General of India. This officer has a little over twenty-three years' service and served in the Afghan War 1879-80, accompanying the column under the command of Lord Roberts in the celebrated march from Cabul to Kandahar. The Royal Army Medical Corps is to be congratulated on two of its officers having been selected for two important staff billets in India, those of Surgeon on the new Viceroy Staff and Surgeon on the staff of the new Commander-in-Chief.

THE PARKES MEMORIAL PRIZE.

The subject for the next Parkes Memorial Prize, which is open to medical officers of the Royal Navy, Army, and Indian Medical Services of executive rank on full pay (with the exception of the Assistant Professors of the Army Medical School during their term of office) is Venereal Diseases in the British and Indian Armies: Their Prevalence and Prevention. Essays, which must be illustrated as far as practicable from the personal experience of the writer, must be sent to the Secretary of the Parkes Memorial Fund, Royal Victoria Hospital, on or before December 31st, 1900. Each essay to have a motto, and to be accompanied by a sealed envelope bearing the same motto, and containing the name of the competitor.

THE ROYAL ARMY MEDICAL CORPS.

Memorial from the Royal College of Surgeons of Edinburgh as to Conditions of Admission and "Study Leave."

The following memorial was presented to the Secretary of State for War last July by the Royal College of Surgeons of Edinburgh:

Memorial of the Royal College of Surgeons of Edinburgh to the Right Honourable the Marquis of Lansdowne, K.G., Her Majesty's Secretary of State for War, regarding the Army Medical Service.

The Royal College of Surgeons of Edinburgh, wishing to encourage its Licentiates to regard the Army Medical Service more favourably than they have done in recent years, has had under consideration the regulations for admission to the Service, and after discussion at a meeting of

the Fellows of the College, has committed to us, its President and Council, the duty of respectfully bringing under your Lordship's notice its opinion in regard to certain changes which it deems necessary.

The College gratefully appreciates the interest your Lordship has shown in the well-being of the Army Medical Service, and, along with your Lordship, recognises the importance to the efficiency of the army of having a medical department highly educated, fully manned and equipped by the best men sent out from our colleges and universities.

With the view of obtaining such a class of candidates for the Army Medical Department, we beg most respectfully to submit:

First.—In regard to the conditions for admission to the Service. The present regulations for the competitive entrance examination do not appear to us well adapted to secure the best men; too much importance seems to be given to elementary subjects, and too little to the practical and clinical work which now occupy the latter years of professional study.

Since January 1st, 1892, by order of the General Medical Council, the course of professional education has been extended, in all cases, to five years, with the recommendation that the fifth year, thus added, should be devoted to clinical work. By the regulations of the various universities and other licensing bodies, the examinations in elementary subjects, including chemistry, pharmacy, anatomy, and physiology, take place at the end of the first, second, or third year of study, thus allowing the fourth and fifth years to be devoted to the branches of surgery and medicine and midwifery, and to clinical work in hospitals and dispensaries.

Intending candidates for the army competitive examination who have qualified themselves for the active duties of their profession, are thus deterred from entering the competition which either necessitates a return to elementary studies, or a recourse to a "crammer" in order to acquire such kind of knowledge as will gain marks at the competitive examination. By this system the best men will not be obtained for the service.

While we hold that a thorough knowledge of the fundamental subjects of anatomy and physiology is essential, it must be remembered that all candidates have already been tested in these subjects in a more practical manner than that employed at the army competitive examination, or than can be secured apart from dissecting rooms and college museums and laboratories. We would also observe that abundant opportunities occur in the course of an examination in surgery and medicine for testing the practical knowledge of anatomy and physiology. We would therefore venture to suggest that "chemistry and pharmacy and a practical knowledge of drugs," and "anatomy and physiology," be no longer retained as separate subjects in the army competitive examination.

The subject of pathology, including bacteriology, has of late years become one of great importance in surgical and medical study, as well as in that of hygiene, and might be made useful as a critical test of the acquirements of candidates. The importance of such knowledge, and of the accompanying familiarity with the use of the microscope, to the army medical officer is manifest. Of this there have recently been presented notable examples in the recognition of the causes of typhoid fever, cholera, the bubonic plague, etc., and in their prevention and treatment. It is disappointing and deterring to our best qualified men, who have devoted the latter part of their course to such studies in their clinical work, to find them not recognised in the army competitive examination.

We do not forget that the army surgeon on probation has to undergo a course of further instruction in such subjects at the Army Medical School, which cannot but be useful to him in the special application of such knowledge to the circumstances of military duty, but we submit that the previous more general study of these subjects should be recognised in the army competitive examination.

We are therefore of opinion that the compulsory part of the competitive examination should be limited to those subjects with which the student is mainly concerned in his last two years of study—namely, surgery and medicine—surgery to include operations on the dead body and the application of surgical apparatus; medicine and surgery to include pathology and hygiene, and the examination at the bedside of patients, medical and surgical.

We would further suggest that the number of marks obtainable in the practical subjects of surgery and medicine should be increased in proportion to those obtainable in the voluntary subjects of science and languages.

We desire to mention our cordial approval of the intimation to candidates for admission into the Army Medical Service that they may be rejected for bad spelling or composition. Among the large number of preliminary examinations in general education recognised by the General Medical Council, there is reason to believe that sufficient values are not always given to examination in English. It is not necessary to dwell on the injurious influence that such deficiencies in preliminary education must have on the social position of an army medical officer.

Second.—*The non-existence of a system of "study leave."* In the Army Medical Service this is a serious impediment to the efforts of the ordinary medical officer to keep abreast of the progress in medical science. Unless he happen to be stationed where there is a medical school, it is not possible for him to become practically familiar with the improvements in the ever-advancing science and art of surgery and medicine. Such opportunities are ever present at all medical schools, but, in addition, there are now at all the important medical schools courses of instruction, termed "post-graduate courses," to which practitioners in civil practice have recourse in order to learn what is new in surgery and medicine. Still more are such opportunities required for most of the medical officers of the army, cut off as they necessarily are for long periods from being in relation with medical educational centres. Such opportunities can rarely be attainable during foreign service, but on returning from such service, as well as after some years of ordinary home service, we regard it as essential that the army medical officer should have a period of leave afforded him for practical study, and that some advantages be accorded him in recognition of such further study, which may act as a stimulus to him to avail himself of it.

We would also venture to remind your Lordship that the promise made by a previous Secretary of State for War that the Examining Board for the Army Medical Department should include representatives from the medical schools of Scotland and Ireland, as well as from those of London has not been implemented to the extent we desire.

We beg most respectfully to submit to your Lordship our opinion that, if improvements on the lines indicated were introduced, the Army Medical Service would be better fitted to attract young medical men of talent, and to attain to that state of high efficiency which it is alike the duty and interest of the country to secure.

On behalf of the President and Council of the College.

(Signed) John Chiene,
President.

Royal College of Surgeons of Edinburgh,
July 11th, 1898.

The following is the text of the reply received by the President of the College:

[Copy]

War Office, London, S.W.,
October 7th, 1898.

Sir,—With reference to your letter of July 11th last, forwarding a memorial from the Royal College of Surgeons of Edinburgh in regard to the medical service of the army, I am directed by the Secretary of State for War to inform you that he has given his most careful attention to the representations therein set forth. In regard to the question dealt with in the first part of the memorial—namely, that of the subjects to be included in the competitive examination for entrance into the Royal Army Medical Corps—Lord Lansdowne admits that the argument adduced are not without force; but he has come to the conclusion that it is not at the present moment advisable to make any change in the subjects prescribed for the examination. With the opinions expressed in the second part of the memorial as to the desirability of a system of "study-leave," Lord Lansdowne fully sympathises, and he has already given his sanction to the grant of leave for this purpose; but, owing to the unusually severe demands which have been made upon the *personnel* of the Royal Army Medical Corps at a time when it was considerably below its normal establishment, it has not been found possible to give effect to this privilege to the extent to which he would desire to do so. It is hoped, however, that the grant of such leave on a more liberal scale may shortly become practicable. With reference to the last paragraph but one of the memorial, in which it is stated that the promise made by the previous Secretary of State for War, "that the Examining Board for the Army Medical Department should include representatives from the medical schools of Scotland and Ireland, as well as those of London," has not been adequately fulfilled, I am to call the attention of your College to the composition of the present Board of Examiners, two of whom (out of a total of four)—Professor M'Call Anderson, Scotland, and Professor Cunningham, Ireland—belong to the schools of those countries, and to state that such a composition, in the opinion of Lord Lansdowne, constitutes an adequate fulfilment of the promise referred to. I am to add that every attempt will be made to secure on all occasions a fair representation of the different schools, but the eminence of the examiners and the public confidence which they inspire must be the first consideration.—I have the honour to be, sir, your obedient servant,

(Signed) R. H. Knox.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: George E. Glynn, Surgeon, to the *Galatea*, November 1st; Francis F. Lobb, Surgeon, to the *Alexandra*, November 1st; Harold J. Chater, Surgeon, to the *Colossus*, November 1st; Herbert W. B. Shewell, Surgeon, to the *Rodney*, November 1st; George E. Macleod, Surgeon, to the *Benbow*, November 1st; Ernest S. Reid, Surgeon, to the *Collingwood*, November 1st; Harry E. Raper, Surgeon, to the *Trafalgar*, November 1st; Frederick C. B. Gettings, Surgeon, to the *Nile*, November 1st; Alan G. Eastment, Surgeon, to the *Howe*, November 1st.

ROYAL ARMY MEDICAL CORPS.

Major W. R. Crooke-Lawless, M.D., from Surgeon-Major Scots Guards, is appointed Surgeon-Major Coldstream Guards, *vice* Major W. C. Beevor, M.B., who exchanges, November 9th.

Major W. C. Beevor, M.B., from Surgeon-Major Coldstream Guards, is appointed Surgeon-Major Scots Guards, *vice* Major W. R. Crooke-Lawless, M.D., who exchanges, November 9th.

Lieutenant-Colonel J. Fraser M.D., is promoted to be Colonel, *vice* W. D. Wilson, M.D., promoted, October 3rd. Colonel Fraser entered the the service as Assistant Surgeon, March 31st, 1868; became Surgeon, March 1st, 1873; Surgeon-Major, March 31st, 1880; was granted the rank of Lieutenant-Colonel, March 31st, 1888; and was made Brigade-Surgeon-Lieutenant-Colonel, April 21st, 1894. He was in the Zulu war in 1879, and in the subsequent operations against the chief Sekukuni, including the capture of his stronghold (medal with clasp), and in the Boer war in 1881, when he had medical charge of the fort at Standerton during its investment, and was mentioned in despatches for his services.

Brigade-Surgeon Frederick Pennington died on November 4th at Lugano, at the age of 68 years. Entering the service as Assistant-Surgeon, April 22nd, 1858, he became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1873; and Honorary Brigade-Surgeon on retirement, September 10th, 1885. He was engaged in the operations against the rebels in Oude in 1858-9 (medal); in the Ashanti war in 1873-4 (medal); and in the Egyptian war in 1882 (medal and Khedive's bronze star).

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant David J. Lawson, M.D., 1st Dorsetshire Volunteer Artillery, to be Surgeon-Lieutenant, November 8th.

INDIAN MEDICAL SERVICE.

Major M. O'Dwyer, M.B., Bengal Establishment, retires from the service on November 30th. He was appointed Surgeon, September 30th, 1878, and Surgeon-Major twelve years later. He was in the Afghan war in 1879, receiving a medal.

Lieutenant-Colonel G. C. Hall, Bengal Establishment, is granted the temporary rank of Colonel from September 17th, while officiating as Inspector-General of Civil Hospitals, North-West Provinces and Oude.

MEDICO-LEGAL.

THE CHARGE AGAINST DR. J. A. CAMPBELL, CARLISLE.

VERDICT OF INSANITY.

On November 4th, at Carlisle Assizes, before Mr. Justice Phillimore, Dr. John Archibald Campbell surrendered to his bail to answer the charge, laid under the Lunacy Act, that, when Medical Superintendent of the Cumberland and Westmorland Asylum at Garlands, he misconducted himself with Janet Mooney, one of the patients at the asylum, on August 11th. The accused, upon being called upon to plead, said, "I have no recollection of my doings on that afternoon," which was taken as a plea of "Not Guilty."

Mr. Ernest Page, Q.C., and Mr. Sanderson appeared for the prosecution; and Mr. Shee, Q.C., and Mr. Granet were for the defence.

Mr. Page, in opening the case, said that at the time this offence was alleged to have been committed the accused had been for twenty-five years Medical Superintendent of Garlands Asylum. The evidence for the prosecution would show that about 5 o'clock on the afternoon of August 11th the accused went through the laundry, and down a passage into one of the female wards. There were laundry women in the laundry, and they saw Dr. Campbell leave the ward a few minutes afterwards, followed by the patient Mooney. The doctor went into a cupboard used for the purpose of storing coal, and was followed there by Mooney. One of the laundry maids went into the yard, and, on looking through a window into the cupboard, the door of which was opened, saw the accused in the act of committing the offence with which he was charged. She brought two other laundry maids to the window, and they also were witnesses of the offence. Dr. Campbell was undoubtedly intoxicated at the time, but intoxication was no defence to a charge such as this. The case was a sad one. Dr. Campbell had a long record of useful service to the two counties. He went to the asylum in 1886 as assistant to Dr. Clouston, and on Dr. Clouston's removal to Edinburgh, in 1873, Dr. Campbell was appointed to succeed him as superintendent, and there he remained for twenty-five years, trusted by his superiors, doing a good work to the patients committed to his charge. On June 27th last he resigned, and the Committee of Visitors not only recommended that a pension of £700 a year be granted him, but did him the high honour of appointing him honorary physician to the asylum. His resignation was to take effect on August 31st, but unfortunately, on August 11th, if the story of the prosecution was correct, he committed the offence with which he was charged.

Jane Ritchie, Jessie Little, and Margaret Jane Henderson, who are employed in the laundry at Garlands, were called, and gave evidence as to the alleged commission of the offence.

Dr. T. D. Bell, who was junior medical assistant at Garlands on August 11th, stated that he went to No. 4 female ward on the evening of that day in consequence of a statement made to him by Miss Robinson, the matron, and there found Dr. Campbell, who was intoxicated. The witness got him away, and he went to his own house. In cross-examination, the witness said he was assistant at Garlands for nine months. He had never noticed anything strange about Dr. Campbell mentally. Dr. Campbell's memory was excellent. He frequently repeated himself, and at times the repetition was so senseless as to attract attention. Previous to August 11th witness had never seen him so much the worse for drink as would have justified him in reporting him, had it been his duty to do so. He could always do his official work. It was possible that persons who saw a man at intervals would be better able to observe an alteration in his mental condition than those who saw him from day to day. Dr. Campbell had a high opinion of his position in the world, and sometimes made extravagant statements as to his patients and the fees he received. He had said he had been called in to consult with reference to a member of the Royal Family. The witness did not think he suffered from delusions.

In re-examination, the witness said he had seen Dr. Campbell intoxicated on many occasions. He was most boastful when he was intoxicated. The statement about the Royal Family was made when he was intoxicated. He was usually intoxicated in the afternoon and evening. The meetings of the Visiting Committee were held on fixed days, and he had never seen Dr. Campbell intoxicated on those days. The witness had a conversation with Dr. Campbell on August 12th with regard to this charge. The doctor said, "If the worst comes to the worst, a little laudanum would settle all matters." He also said, "You know I have not been in my right mind since I got that blow on my head." The witness had a conversation with the accused at the police court on August 18th; he was then quite rational, and seemed to take an intelligent interest in his case. On August 19th he said he had given up the idea of committing suicide, because he found some of his insurance policies would not be paid if he committed suicide. During the whole of the time witness had known him he had no reason to believe that he was insane. It was witness's view that the accused was not insane, but he did not pretend to be an expert.

Dr. [illegible] deposed that he was Assistant Medical Superintendent at Garlands for seven years, and on September 1st of this year became Medical [illegible] resident in succession to the accused. Dr. Bell made a statement to him on August 11th, and on the following day Miss Robinson made a statement to him with reference to this charge. The witness went to Carlisle to see the Chairman of the Lunacy Committee, and in the street met Dr. Campbell. The witness spoke to him about the charge, and the accused said he knew he had been drunk, and no doubt he had acted foolishly, but he denied anything else. The accused also said a charge of this nature was enough to make a man commit suicide. The witness saw the Chairman, and on his return to Garlands placed an attendant with Dr. Campbell night and day for five days. The accused permitted that. Of recent years Dr. Campbell had given way to habits of intoxication; from the latter part of 1897 they had been more marked. He was always able to do his morning's work very well, and in the opinion of witness he was a most capable superintendent. The accused had made exaggerated statements as to his patients, fees, etc. Those statements were undoubtedly made when he was under the influence of drink. Except when he was under the influence of drink he was perfectly rational and responsible. On July 27th the accused went to Edinburgh. There had been a meeting of the Committee on that day, and the accused gave the Committee most excellent advice as to witness's appointment as his successor. On his return on July 27th it was evident that he had been drinking heavily. After his resignation the accused became more unsettled, and took more drink than usual. In the first few days after the alleged offence was committed the accused seemed to desire that the plea of insanity should be set up. He appeared to realise the gravity of his position, and discussed the whole question of what the charge meant to him. He said he had means at hand of which the witness knew nothing by which he could do away with himself. In a few days, however, he said he had given up the idea of suicide because he had found out that several of his insurance policies would lapse in the event of his committing suicide. When he was sober the accused was perfectly rational and able to conduct his business properly. His memory was marvellous, and he thoroughly knew the difference between right and wrong.

In cross-examination, the witness said he had the accused watched night and day from August 12th to the 18th. His razors were removed. He had never noticed any signs of mental disease in the accused. The accused was a hard drinker for the past year, and for the last month or two he might be drunk nearly every afternoon. The witness warned the storekeeper against letting him have drink. He believed he took harmless tinctures for the spirit that was in them. Drink sometimes produced insanity, and there was a class of insanity known as alcoholic insanity. Sexual misconduct might in some cases be ascribed to insanity. In some cases a patient might know he was becoming insane. A blow on the head might aggravate mental disease. He believed that Dr. Campbell received a blow on the head from a patient's clog; that was in the early part of this year. The accused made exaggerated statements as to the amount of the fees he had received and his consultations, and as to the exalted personages he had seen. He said he had been called in to consult with reference to a member of the Royal Family. He knew the accused was going to Russia on a holiday tour, and his ticket had actually been bought.

In re-examination the witness said his opinion was that the accused was sane. If he had been insane he would have expected his insanity to be shown when he was sober as well as when he was under the influence of drink.

Thomas Grainger, head attendant at Garlands, said he took charge of Dr. Campbell from August 12th up to the time of his appearance in the police court. He did not notice that he had any delusions; he talked rationally, and in witness's opinion was sane.

Mr. Thomas Horrocks, of Eden Brows, the Chairman of the Visiting Committee of the Asylum, said Dr. Campbell's business capacity was of the first order, and his management of the asylum had been most admirable. The witness had never seen anything in his manner to lead him to believe that he was insane, but latterly the accused had once or twice remarked to him that it was time that he gave up his appointment, as he was commencing to suffer from his long intercourse with insane people. On July 25th of this year, when Dr. Campbell was informed that he had been appointed consulting physician, he returned thanks in a very admirable way.

In cross-examination, the witness said he had not heard of the accused's drinking habits, but he found that many people knew he had been drinking for some time past. He did not think there was a member of the Committee who knew. They would have taken very strong action if they had known.

Mr. George Pearson and Mr. F. W. Chance, members of the Lunacy Committee, and Mr. C. B. Hodgson, Clerk to the Peace for Cumberland, and up to recently Clerk to the Visiting Committee, also gave evidence to the effect that they had not seen any signs of mental aberration in the accused, and that he was always perfectly rational.

This closed the case for the Crown.

Mr. Shee, in his address to the jury, said the defence he set up on behalf of the unfortunate gentleman in the box was the defence that occurred to most people when they heard of the charge—that he was insane. If the jury came to the conclusion that they could safely act on the evidence of the women who stood by and permitted this atrocious indecency to go on, he thought he would satisfy them that Dr. Campbell was at the time of unsound mind. The point the jury had to decide was whether the accused laboured under such a mental disease that at the time he did not know the nature and quality of the act and did not know that it was wrong. Apparently nobody seemed to have noticed anything wrong with him in the asylum. Certainly no report was made about him, even about the drink, though the time must have approached when a report on that point would be made. But subordinates did not report upon their master, especially when he was going to retire. A person whose mind was beginning to go might still do his accustomed routine work as efficiently as before, and therefore it was possible that men in constant association with him might not notice the infirmity growing upon him, and that others who saw him only at intervals would have a better opportunity of observing the change. Insane people were very cunning in methods of deception, and it was therefore quite possible for the accused to pass muster before his committee at their regular meetings. He intended to show that at 3 o'clock on the afternoon of August 11th—the day of the commission of the alleged offence—the accused was of unsound mind, when there were no signs that he had been drinking; and he would call a number of gentlemen of experience in these matters who would tell them that he had delusions. Indeed, it was a matter of comment among his friends that his mind was failing. Theoretically it was possible for a man to be a monomaniac and still be held responsible in other matters, but if a person had delusions on some subjects it would be a strong thing to ask a jury to convict him because he had no delusions as to others. If there was a diseased mind resulting from habits of intoxication, and the act was committed in consequence of that, a man was not to be held responsible for his act.

The learned Judge said temporary mental disturbance caused by actual intoxication was no excuse for crime, but insanity brought about by habits of intoxication was sufficient.

Mr. Shee, in conclusion, said he was not asking much in asking the jury, if they found that the accused committed the act with which he was charged, to come to the conclusion that he was irresponsible at the time. Such a verdict would not mean that the accused would be allowed to go free. It would mean that he would be confined in a criminal lunatic asylum during Her Majesty's pleasure, and the only thing saved would be his reputation and his name.

Mr. G. A. Lightfoot, solicitor, Carlisle, who had volunteered his evidence from what he had heard in court that day, stated that at the Mayor's reception on July 29th the accused, who was sober, drew him aside and said to him, "You don't know who you have got living amongst you." He said he had received either 25 or 35 guineas that morning for consultations. He also said he had received a message from the Queen to go by special train to Windsor to examine a member of the Royal Family. The doctor subsequently discussed in a more rational way the facts of a prosecution at the last assizes in which the witness had been concerned on behalf of the Treasury, and in which the doctor had given evidence.

In cross-examination, witness said the prosecution was that of a man for murder, and Dr. Campbell was directed by the Treasury to examine the man as to his mental condition. On his evidence he was declared to be insane. The evidence of the accused was apparently rational.

Philip Hair, M.D., Carlisle, said that in the last few years he had noticed a change in the mental condition of the accused. His mind had been gradually becoming diseased. On the afternoon of the alleged offence, Dr. Campbell was in his house until 10 minutes to 3. He was perfectly sober; he was extremely excited, and said he had been travelling two nights and one day between Carlisle and Sheffield visiting a patient, from whom he had received a fee of 150 guineas. The accused said he would bid him good-bye, as he was going to Russia, and was to be there consulted about some member of the Royal Family. He also said he had taken a consulting room in London, and that he had been guaranteed a retainer of £300 a year by the University Clubs of Edinburgh and Glasgow. In his opinion the accused was labouring under delusions, and was not responsible for his actions on that day.

Maxwell Ogilvy-Ramsay, M.D., F.R.C.S.Edin., of Carlisle, said he had noticed that Dr. Campbell had got more dogmatic, opinionative, and egotistical of late. Witness had occasionally told Dr. Farquharson when out at Garlands that his superintendent seemed to be suffering from incipient general paralysis. Dr. Farquharson denied it promptly. At 3 o'clock on the day of the alleged offence, Dr. Campbell, about whom there were no signs of drink, was in witness's house, and told him he had been appointed Alienist Physician to the Conservative Club of Edinburgh, because he was the only distinguished Scotch alienist on this side of the Border, and that he was to receive a retaining fee of £300 a year. The accused said he had the statement in black and white, and offered to show it to him. His condition was such that if the accused had been a parish patient witness would have put the parish doctor on his track.

Mr. David Brown, banker, said that on July 30th he travelled from Lockerbie to Kirtlebridge in the same railway carriage as the accused. The accused, whom he did not than know, was very excited, and was boasting about his large fees, from which fact, witness added, amid much laughter, he gathered that he was a doctor. There was no appearance that he had had any drink, and it was quite evident his mind was upset in some way.

Conolly Norman, F.R.C.P.I., F.R.C.S.I., Resident Medical Superintendent of the Richmond Asylum, Dublin, and joint Editor of the *Journal of Mental Science*, said that last July he saw the accused for the first time for six or seven years. They met at the meeting of the Medico-Psychological Association at Edinburgh, and witness saw a great change in him. He had delusions. He said he had been sent for to Windsor to see a Royal personage, and the Queen had sent a special train to Carlisle for him. He added, "It's a grand thing to be travelling in a special train, and to have all the other traffic stopped for you." The accused said some associations had guaranteed him £300 a year when he went to London as a consultant. He talked repeatedly about his pension. He asked if witness did not think it was a great affair, and that the Committee had behaved handsomely to him. It was impossible to stop accused talking in this way, and he did not seem to mind whether one listened or not. He said that he had been offered a knighthood, and had refused it; that he had been offered a Commissionership in Lunacy, and had refused it; that he had been offered membership if the College of Physicians in Edinburgh "for nothing," and had refused it. The accused was not under the influence of drink when he spoke to him in this way. The witness formed the opinion that he was out of his mind, and said so freely. His condition was so remarkable that it was impossible to avoid noticing it, and talking about it amongst those who knew him. Witness thought there was something organically wrong with his brain. In cross-examination he said he also saw the accused under the influence of drink at Edinburgh.

George Isles Swanson, M.D., Medical Superintendent of Laurence House, York, also spoke to the accused's behaviour at Edinburgh in July, and to the statements he made about having been consulted by the Royal Family, and as to clubs in Aberdeen and Edinburgh having promised him a retaining fee when he set up in London as a consultant. One of his statements was that he was going to Russia to see a member of the Royal Family, for which he was to receive a fee of about 500 guineas. The accused repeatedly asked him his name when they were talking at Edinburgh, although a short time before he might have introduced him to some friend as "My friend, Dr. Swanson, of York." There were no signs of drink when the accused made the statements to which the witness had referred. The conclusion at which he arrived was that the accused's mind was disordered.

Murdoch Donald Macleod, M.D., Medical Superintendent of the East Riding of Yorkshire Asylum, Beverley, stated that he was formerly assistant to Dr. Campbell at Garlands. He saw the accused in Edinburgh last July, and was much struck with his changed appearance. He was a shrewd and capable man of remarkable qualities when witness first knew him, but in July last he was childish, boastful, talkative, and rambling, and uttered delusions of grandeur about himself, and of suspicion concerning friends whom he thought were wishing to deprive him of titles which should be his.

Samuel Rutherford Macphail, M.D., Medical Superintendent of Derby Borough Asylum, and formerly assistant to Dr. Campbell at Garlands, corroborated the evidence of Dr. Macleod.

In cross-examination the witness said Dr. Campbell spoke at meetings at Edinburgh and made a fool of himself. The same thing occurred at meetings in Sheffield in March, where the accused had to be pulled down by his friends. The witness did not ascribe that to his being drunk, but to his mind being disordered.

Henry Rayner, M.D., of 2, Harley Street, W., lecturer on Psychological Medicine at St. Thomas's Hospital, said that latterly he had noticed a steady mental deterioration in the accused. At the Sheffield meeting of the Psychological Association in March he stayed at the same hotel as Dr. Campbell, and then formed the opinion that his brain was deteriorating. Except that he was assured that he was resigning, he should certainly have taken steps to communicate with his friends.

In cross-examination the witness said that the deterioration of the brain might have been caused by too great licence in drinking.

Baillie Pollard, of Edinburgh, said he was present at the dinner given on July 25th by the President of the British Medical Association. Dr. Campbell was also present at the dinner, and was very restless, continually moving about the room and speaking to all he could get near. His conversation was most exaggerated. The witness observed to Dr. Sibbald, the Chief Commissioner in Lunacy for Scotland, who was sitting next to him, that the accused's condition was not due to over-indulgence, but to something worse. The witness at the time expressed the opinion that he would not be surprised if some day soon he was placed under restraint.

Mr. David Paulin, Manager of the Scottish Life Assurance Company said he sat next the accused at the dinner, and formed the opinion that he was most eccentric, indeed insane. The accused was certainly not the worse for drink.

Thomas Smith Clouston, M.D., F.R.C.P.Edin., Superintendent of the Royal Asylum, Morningside, Edinburgh, and Lecturer on Mental Diseases in the University of Edinburgh, stated that by marriage he was a connection of the accused. He was his predecessor at Garlands. Latterly the accused had taken to drink. His drinking habits had been increasing for the past two years, and for the three months prior to the alleged offence had been very bad. On July 20th he saw him in Edinburgh, and was shocked beyond measure by the change in his appearance since the last time he had seen him. He had changed in his bodily appearance, and in his mind. His whole conduct was entirely different. The expression of his eye was entirely different; it had assumed a furtive, insane look. He was extremely restless, and never sat still for a moment. His conversation was to some extent incoherent, and his ideas were wanting in sequence. He expressed extraordinary grandiose ideas regarding himself, and reiterated the same thing over and over again. It was not only what he said, but the manner in which he said it that impressed him. He had seen Dr. Campbell under the temporary madness of intoxication, but what he saw in Edinburgh was quite different to that. The accused had lost his sense of honour. He could not attribute all he saw in the accused's condition to drink. He attributed the worst of his symptoms to a change in his brain condition. At the end of the dinner in Edinburgh to which witnesses had referred the witness and three of his friends had an informal consultation as to the accused's condition. Two inclined to the opinion that he was suffering from incipient general paralysis and two that he was suffering from alcoholic insanity. The accused used to take extraordinary precautions to get himself into a fit state to meet his committee. He would go to bed the day before, and put his head under the tap. One of the most terrible features of the case was the change in his affective nature. The accused was extremely fond of his wife and only daughter, but his affection had now completely broken down. For a man in the position of the accused to commit the act with which he was charged in the way he did it was in itself almost a proof of insanity. There was peculiar loathsomeness in the idea of such an act to a medical superintendent who was accustomed to the idea of a paternal relation to his patients. The witness was quite sure that the accused was not responsible for his acts in August.

In cross-examination, the witness said the very fact that this act was committed in broad daylight, and in a thickly-populated ward, showed that the accused had no control over himself. He would be sorry for any patient under accused's treatment if he was in the condition in which he saw him at Edinburgh. Intoxication would not produce formulated insane delusions, repeated to many persons in succession at different times, such as he noticed in the accused, who had, in addition, quarrelled with and become insanely suspicious of his best friends. Since the offence, the accused had refused an attendant to look after him.

Sir John Batty Tuke, M.D., D.Sc., President of the Royal College of Physicians, Edinburgh, said he met Dr. Campbell at their club in London in October of last year. From his conduct on that occasion a very strong suspicion came over his mind that he was in the incipient stage of alcoholic paralysis. At the time he was quite unfit to be the superintendent of an asylum; and if his habits of intemperance continued his mental condition would grow worse.

David Yellowlees, M.D., LL.D., Physician Superintendent of the Royal Asylum, Glasgow, stated that habits of intemperance had been growing on Dr. Campbell during the last few years. The prisoner called at his house in the spring of last year, and then behaved as if his mind was unhinged, and two visitors had remarked this. He considered he was insane when he saw him at Sheffield in March and at Edinburgh in July of this year. His opinion was that the accused's insanity was not continuous, but that his brain was deteriorated by drink to such an extent that when any exciting cause occurred he became insane, and this cause might be excitement, or joy, or worry, or drink.

Mr. Bell, V.S., Carlisle, stated that from the accused's behaviour on July 20th he remarked to several of his friends that he thought he was going out of his mind. On that occasion he expressed a groundless suspicion with reference to a member of his committee.

Counsel having summed up,

The learned judge, in charging the jury, said the first question they had to consider was whether the accused actually committed the serious offence with which he was charged. If they arrived at the conclusion that he had, then they would have to consider whether he was mad at the time or not. The true test in these cases was, Was the prisoner sane enough to know the nature and quality of his act—was he sane enough to know that the thing he was doing was wrong? In this case, if he might say so, they had had almost a feast of intellect—great men who had come there to give very clearly and candidly their opinion on the most difficult of all questions. Those opinions differed, but if they came to think it over there were certainly things which were reasonably clear. It was, for instance, reasonably clear that on some days the prisoner was beside himself and was for some hours not responsible, but it was equally obvious that at many other times since the days to which the witnesses for the

defence spoke he was perfectly sane and sensible. One of his worst times was at Edinburgh on July 20th and following days, yet on the 25th he attended a meeting of his committee, and not only transacted the ordinary business rationally, but made a very excellent speech of thanks, always a very difficult thing to do. The jury had heard the evidence of Dr. Farquharson, who was constantly seeing him, that he was always sane, and his conduct on the days following the alleged assault, so far as they had heard, appeared to be rational. His lordship having commented on the fact that no one had been called by Mr. Shee to prove the state of the prisoner's mind since August, said the evidence of Dr. Hair and Dr. Ramsay as to the prisoner's condition on the afternoon of August 11th was of great importance. But while those doctors said he was perfectly sober when they saw him, they had evidence that at the asylum two hours later he was very drunk. It seemed obvious that the man's condition was getting worse and worse, and that if he went on drinking he would become hopelessly insane. The question was, whether he had reached that stage on August 11th. His lordship dwelt on the strange condition of things in the asylum. Here was a man who was said to have showed signs of madness months and years before, yet who was allowed to go on without report and without observation in his place as superintendent. It was almost grotesque to think that a doctor who was himself declared to be insane should come into that court at the last assizes and give evidence as to the sanity of a man who was on his trial for murder. It would certainly be strange if the prisoner had been insane over all the period to which the witnesses spoke. Was the truth not as stated by Dr. Yellowlees, that there were moments when he was insane, and that there were periods of time when there were lucid moments? If that view was correct, was the prisoner insane or in a lucid moment on August 11th?

The jury, after being absent from court for a quarter of an hour, returned a verdict of guilty, but insane.

The learned Judge ordered the prisoner to be detained during Her Majesty's pleasure.

The trial, which commenced at about 11 in the morning, did not terminate until 8.45 at night.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

COUNCIL ELECTION.—At the biennial election on November 7th, Dr. Donald MacAlister was elected at the head of the poll to serve on the Council as a member of the Senate for a fourth term of four years. Professor Ewing, F.R.S., and Professor Forsyth, F.R.S., were at the same time elected as representatives of the professoriate.

HONORARY DEGREE.—The degree of LL.D. *honoris causa* will be conferred upon Lord Kitchener of Khartoum on November 24th.

FELLOWSHIP ELECTION.—On November 7th Mr. V. H. Blackman, Botanical Assistant at the British Museum, was elected to a Fellowship in Natural Science at St. John's College.

UNIVERSITY OF EDINBURGH.

WITH reference to the notice of the appointment of Mr. J. M. Beattie, mentioned in the BRITISH MEDICAL JOURNAL of October 29th, it should have been stated that he was appointed Assistant to the Professor of Pathology in the University of Edinburgh, and not as printed.

UNIVERSITY OF GLASGOW.

THE usual winter graduation ceremony took place at Glasgow University on November 3rd, when Principal Story presided. Among the Degrees conferred were the following:

Doctors of Medicine (M.D.).—I. With Commendation: J. T. Biernacki, M.B., C.M.; H. H. Thomson, M.B., C.M.; A. Webster, M.B., C.M. II. Ordinary Degree: J. Lithgow, M.B., C.M.; W. Mason, M.B., C.M.; W. A. Mackay, M.B., C.M.; A. A. Warden, M.A., M.B., C.M.

Bachelors of Medicine (M.B.) and Masters in Surgery (C.M.).—J. Boyle, Martha Jane Gilmore Cox, W. M. Duff, Christina Fraser, T. A. S. Gibb, J. W. Johnstone, R. H. Meikle, G. Moreland, G. Murray, A. M'Glashan, May M'Mullen Pearson, R. Shanks, A. J. T. Swann.

Bachelors of Medicine (M.B.) and Bachelors of Surgery (Ch.B.).—I. With Commendation: J. Barrowman. II. Ordinary Degrees: W. Bennett, J. S. Beveridge, A. Clark, R. Crawford, B. Dunlop, H. S. Heap, J. Henderson, E. F. L. de Jersey, A. Jubb, Jane Lorimer, Annie Louise M'Ilroy, Margaret Wallace Howie M'Neil, J. M'Whir, Agnes Renton Robson, J. Shaw, M.A., J. L. Simpson, D. S. Sutherland.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE [illegible] the business of which notice has been given at the [illegible] of Fellows and Members of the Royal College of Surgeons [illegible] ember 17th, 1898, at 3 o'clock P.M.:

(1) The President to place before the meeting the report of the Council for the [illegible]

(2) To be moved by Mr. [illegible] Brown, and seconded by Dr. Danford Thomas: "That this meeting congratulates the Council on the successful [illegible] in the matter of the reform of the Army Medical Service, and trusts that it will now turn its attention towards [illegible] which exist in connection with civil medical practice [illegible] thereon.

(3) To be moved by Mr. [illegible] Smith, and seconded by Dr. Thomas Morton: "That it is the considered opinion of the Council that it represents the whole and [illegible] parts of the Corporation,' and in spite of the fact that [illegible] hitherto been possible to ascertain their sentiment both individually and at general meetings, the opinion of a large number of the Members is, and has been for many years past, that they should have some share in the election of the Governing Body, this meeting requests the Council to again consider whether some means cannot be found of fulfilling this desire." Proceedings thereon.

(4) To be moved by Mr. W. G. Dickinson and seconded by Dr. Herbert Snow: "That this meeting notes with satisfaction that the Council has at last definitely expressed its disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and this meeting further trusts that the Council will extend its disapproval to the acting by Fellows and Members of the College as paid officials of any Association which adopts these unprofessional practices." Proceedings thereon.

(5) To be moved by Mr. Brindley James and seconded by Dr. F. H. Alderson: "That this meeting approves of the proposal to institute a gown for the Members of the College, and trusts that the Council will see its way to carry this suggestion into effect." Proceedings thereon.

(6) To be moved by Mr. R. B. Anderson, F.R.C.S.: "That this meeting supports the Council in appealing from the judgment of the Court of Queen's Bench, which decides in the words of Mr. Justice Wright, 'that in so far as its real purpose of existence is the examination of candidates' 'for certificates of proficiency in surgery,' this College is not to be regarded 'as existing for a scientific purpose,' and in the words of Mr. Justice Channell, 'that as the part relating to examinations may be considered to be for the individual benefit of persons it follows that the Examination Halls cannot be exempt,' and thereupon adjudging tax to be paid upon them: and will support the Council in all constitutional measures to maintain inviolate the charters of the College, which declare, as the sole object of its constitution, that 'it is of great consequence to the commonweal of this kingdom that the Art and Science of Surgery should be promoted, and that the establishment of a College of Surgeons will be expedient for the due promotion and encouragement of the study and practice of the said Art and Science,' and which provide benefits to individuals including the Diploma, the rights of Members, and the fees of Examiners, for the sole object, on the principle affirmed, but not upheld, by Mr. Justice Channell, that 'speaking generally,' 'it is the best way to carry out a particular object to give individuals a special interest in having it carried out.'" Proceedings thereon.

(7) To be moved by Mr. R. B. Anderson, F.R.C.S.: "That this meeting urges the Council, by treating the chartered rights of Fellows and of Members as a trust for the promotion of science, and on that ground diligently maintaining, defending, and enhancing those rights on every occasion, in accordance with By-law XV, and by recognising the interest of Members in the benefits of the trust, the importance of their work in its execution, and their right to a voice in its administration, to act consistently upon the principle upon which it now depends for relief from injurious taxation and more injurious indignity, and for successful defence of the chartered status of the College, namely, that all benefits conferred through the College upon individuals are conferred by the Crown for, and as being essential to, 'the due promotion of the study and practice of the science and art of surgery' 'for the commonweal of this kingdom.'" Proceedings thereon.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen have passed the First Examination of the Board under the Five Years' Regulations in the subjects indicated:

Part I: Chemistry and Physics.—G. H. Adam, King's College and St. Bartholomew's Hospital; J. Avery, London Hospital; E. C. E. Barnes, University College Hospital; A. R. Bourgault, University College Hospital; G. M. Clowes, London Hospital; C. H. R. Coltart, Westminster Hospital; J. B. Copland, Guy's Hospital; H. B. Cunninghame, St. Thomas's Hospital; J. L. Goldstein, London Hospital; H. J. H. Graves, London Hospital; E. H. Griffin, Cambridge University and Guy's Hospital; R. G. E. Grote, Charing Cross Hospital; J. Howard, Owens College, Manchester; W. S. Hughes, Charing Cross Hospital; R. M. Im Thurn, Cambridge University and St. Bartholomew's Hospital; T. W. Jeffery, London Hospital; H. Johnson, Guy's Hospital; M. R. Johnson, London Hospital; J. D. S. Lloyd, Mason College, Birmingham; W. Lovell, St. Mary's Hospital; O. Marshall, University College Hospital; J. H. Porter, London Hospital; T. C. Power, London Hospital; H. A. Reatchlous, Birkbeck Institute; C. A. E. Ring, Guy's Hospital; F. E. Roberts, St. George's Hospital; W. Stansfield, Owens College, Manchester; J. L. Stephenson, University College, Glasgow; D. J. Thomas, University College, Cardiff; C. E. Waldron, London Hospital; A. S. Williams, St. Bartholomew's Hospital; R. W. S. Wood, Yorkshire College, Leeds.

Part II: Practical Pharmacy.—P. F. Alderson, Middlesex Hospital; A. H. Bateman, St. Bartholomew's Hospital; F. G. Bennett, Cambridge University and University College; A. E. Bird, Owens College, Manchester; A. C. Birt, St. Thomas's Hospital; H. Bond, St. Bartholomew's Hospital; D. Bridges, Charing Cross Hospital; J. W. A. Brookes, Mason College, Birmingham; C. E. Bulteel, King's College Hospital; H. B. Butler, St. Bartholomew's Hospital; H. N. R. Child, Dunedin and Middlesex Hospital; E. Claye, Owens College, Manchester; N. A. W. Conolly, St. Bartholomew's Hospital; R. T. Cooke, St. Bartholomew's Hospital; G. E. Cope, Westminster Hospital; F. W. Cotton, University College, Bristol; G. R. H. Crozier, St. Mary's Hospital; E. W. Dall, St. Bartholomew's Hospital; W. P. Dyer, St. Bartholomew's Hospital; E. F. Ellis, University College Hospital; T. S. D. Enderby, St. Thomas's Hospital; C. H. Farquharson, St. Mary's Hospital; G. W. Fletcher, University College, Bristol; A. H. Foster, St. Mary's Hospital; C. A. H. Gee, University College, Bristol; R. K. G. Graves, St. George's Hospital; R. L. Hagger, University College Hospital; L. E. Herisle, London Hospital; P. L. Hope, St. Thomas's Hospital; A. J. H. Hes, St. Thomas's Hospital; J. D. Keir, Glasgow University and St. Mary's Hospital; T. J. Latham, London Hospital; J. H. Lightfoot, St. Mary's Hospital; N. Lipscomb, St. Bartholomew's Hospital; D. G. Lloyd, London Hospital; G. C. Lowe, Guy's Hospital; J. A. McIlroy, Mason College, Birmingham; J. F. McQueen, University College, Bristol; F. M. Matheson, University College Hospital; G. C. B. Mieville, University College Hospital; E. R. Millar, University College Hospital; W. H. Noll, University College Hospital; W. C. Nimmo, Westminster Hospital; C. S. Parker, University College Hospital; A. S. Petrie, St. Bartholomew's Hospital; J. D. Reid, Owens College, Manchester; G. H. Richard, St. Mary's Hospital; E. F. Rose, St. Bartholomew's Hospital; T. Rose, Middlesex Hospital; E. R. Row, Guy's Hospital; H. E. Seconos, St.

Bartholomew's Hospital; M. Sheehan, Queen's College, Cork; S. Spencer, Owens College, Manchester; H. V. Swindale, Middlesex Hospital; H. S. Turner, Guy's Hospital; J. C. F. D. Vaughan, St. Thomas's Hospital; H. B. Walters, London Hospital; C. F. Watson, Guy's Hospital.

Part III: Elementary Biology.—T. H. Bishop, University College, Edinburgh; D. Le Bas, St. Mary's Hospital; J. L. Stephenson, University College, Glasgow.

The following gentlemen have passed the First Examination of the Board under the Four Years' Regulations in the subjects indicated:

Part II: Materia Medica.—P. S. Cooke, Charing Cross Hospital; J. M. Garman, London Hospital; T. F. W. Higgs, Mason College, Birmingham; T. A. King, Cambridge University and St. Thomas's Hospital; H. P. Shanks, University College Hospital; E. Whalley, Yorkshire College, Leeds.

Part III: Elementary Physiology.—R. Cope, St. Bartholomew's Hospital.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The following gentlemen, having passed the requisite Examinations, have been duly elected Fellows of the College:

J. A. Dickson, L.R.C.S.E. and M.D., M'Gill University; E. H. Fraser, M.B., C.M.Edin.; A. A. Martin, L.R.C.S.E.; E. C. Moore, M.B., C.M.Edin.; L. J. H. Oldmeadow, M.B., C.M.Edin.; W. Ranson, L.R.C.S.E.; C. A. J. Wright, L.R.C.S.E.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[Specially Reported for the British Medical Journal.]

The Registrar-General has just issued his return relating to the births and deaths registered in England and Wales during the third or summer quarter of this year, and to the marriages during the three months ending June last. The marriage-rate was equal to 17.9 per 1,000, and was higher than in the corresponding period of any year since 1874.

The births registered in England and Wales during the quarter ending September last numbered 234,665, and were equal to an annual rate of 29.7 per 1,000 of the population, estimated by the Registrar-General to be nearly thirty-one and a-half millions in the middle of this year. This rate was 0.5 per 1,000 below the mean rate in the corresponding periods of the ten preceding years. The birth-rates in the several counties ranged from 18.2 in Rutlandshire, 22.9 in Westmorland, 23.4 in Sussex, and 24.3 in Oxfordshire, to 33.5 in Monmouthshire, 33.8 in Northumberland, 35.4 in Staffordshire and 35.5 in Durham. In thirty-three of the largest English towns, including London, the birth-rate last quarter averaged 30.4 per 1,000, and exceeded by 0.7 the general English rate. In London the birth-rate was equal to 29.5 per 1,000, while it averaged 30.9 in the thirty-two provincial towns, among which it ranged from 22.6 in Huddersfield, 22.9 in Halifax, 24.3 in Bradford, and 25.1 in Brighton to 34.4 in Salford, 35.5 in Sunderland, 36.6 in Gateshead, and 37.0 in Wolverhampton.

The births registered in England and Wales during the three months ending September last exceeded the deaths by 93,125; this represents the natural increase of the population during that period. From returns issued by the Board of Trade, it appears that 66,898 emigrants embarked during last quarter, for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 66,898 emigrants, 31,058 were English, 5,652 Scotch, and 10,938 Irish, while 19,250 others were of foreign nationality. Compared with the averages in the corresponding quarters of recent years, the proportion of emigrants from each division of the United Kingdom showed a marked decline.

During the third quarter of this year the deaths of 141,540 persons were registered in England and Wales, equal to an annual rate of 17.9 per 1,000 of the estimated population, which was 1.3 per 1,000 above the mean rate in the corresponding periods of the ten preceding years. The lowest county death-rates last quarter were 11.8 in Westmorland, 12.1 in Oxfordshire, 12.6 in Wiltshire, and 12.7 in Dorsetshire; while the highest rates were 20.4 in Warwickshire, 20.8 in Lancashire, 21.7 in Northumberland, and 21.8 in Durham. In the urban population of England and Wales, estimated at nearly twenty-one and a-half millions of persons, the rate of mortality during the quarter under notice was 19.3 per 1,000; while in the remaining and chiefly rural population of nearly ten millions the rate was 14.9 per 1,000. These urban and rural rates were 1.5 and 0.7 per 1,000 above their respective averages in the corresponding quarters of the ten preceding years. Among thirty-three of the largest English towns the mean death-rate was 20.3 per 1,000, or 2.4 per 1,000 in excess of the general death-rate in England and Wales during the same period. In London the rate was 19.4 per 1,000, while it averaged 21.0 in the thirty-two large provincial towns, among which the rates ranged from 15.6 in Huddersfield, 15.9 in Cardiff, 16.0 in Swansea, and 16.1 in Oldham to 25.1 in Wolverhampton, 26.3 in Liverpool, 27.5 in Sunderland, and 28.7 in Salford. In sixty-seven other large towns, with an estimated aggregate population of nearly four millions, the mean death-rate was 18.2 per 1,000, or 2.1 per 1,000 below the rate in the thirty-three great towns.

The 141,540 deaths registered in England and Wales during the three months ending September last included 22,524 which were referred to diarrhœa, 2,248 to whooping-cough, 1,927 to measles, 1,556 to diphtheria, 1,261 to "fever" (including typhus, enteric, and ill-defined forms of continued fever), 694 to scarlet fever, and 8 to small-pox; in all, 30,218 deaths resulted from these principal zymotic diseases, equal to an annual rate of 3.82 per 1,000, which was 0.99 above the average rate in the corresponding quarters of the ten preceding years. The mortality from diarrhœa showed a marked excess, while that from each of the other principal zymotic diseases was below the average. Of the 8 deaths from small-pox registered in England and Wales during the quarter under notice, 2 occurred in Lancashire, 2 in Northumberland, and 1 each in Shropshire, the North Riding of Yorkshire, Durham, and Cumberland.

The rate of infant mortality in England and Wales last quarter, or the proportion of deaths under 1 year of age to registered births, was equal to 225 per 1,000, and exceeded that in the corresponding period of any year on record. In London the rate of infant mortality was 261 per 1,000, while it averaged 284 in the thirty-two provincial towns, among which it ranged from 103 in Oldham, 204 in Huddersfield and in Halifax, and 207 in Swansea to 320 in Sheffield, 324 in Blackburn, 336 in Wolverhampton and in Sunderland, 343 in Preston, and 382 in Salford. The mortality in England and Wales last quarter among persons aged between 1 and 60 years was equal to an annual rate of 8.0 per 1,000 of the estimated population at this group of ages, and was slightly below the mean rate in the ten preceding third quarters. In the thirty-three great towns the mortality at this age-group averaged 9.3 per 1,000, and ranged from 5.9 in Croydon, 6.8 in Cardiff and in Leicester, and 7.1 in Bristol to 11.9 in Newcastle-upon-Tyne, 12.0 in Salford and in Sunderland, and 13.9 in Liverpool. Among persons aged 60 years and upwards, the death-rate in England and Wales last quarter was equal to 54.1 per 1,000 of the estimated population at this age-group, against an average rate of 53.9 in the corresponding quarters of the ten preceding years. In the thirty-three great towns the rate was 58.5 per 1,000, ranging from 38.5 in Swansea, 44.4 in Plymouth, and 45.0 in West Ham to 76.2 in Newcastle-upon-Tyne, 76.8 in Salford, and 78.3 in Manchester.

The mean temperature of the air at the Royal Observatory, Greenwich, was 62.7°, and was 3.0° above the average in the corresponding quarters of 127 years; it was 0.2° below the average in July, but showed an excess of 3.7° in August, and of 5.5° in September. The rainfall during the quarter did not exceed 2.51 inches, and was no less than 4.77 inches below the average.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,695 births and 3,663 deaths were registered during the week ending Saturday last, November 5th. The annual rate of mortality in these towns, which had declined from 24.6 to 17.9 per 1,000 in the eight preceding weeks, further fell to 17.0 last week. The rates in the several towns ranged from 6.7 in Croydon, 10.4 in Derby, 12.2 in Huddersfield, and 13.0 in Bristol to 20.7 in Blackburn, 21.3 in Salford, 21.7 in Manchester, and 22.2 in Liverpool. In the thirty-two provincial towns the mean death-rate was 17.6 per 1,000, and was 1.5 above the rate recorded in London, which did not exceed 16.1 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.0 per 1,000; in London the rate was equal to 1.6 per 1,000, while it averaged 2.2 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.6 in Wolverhampton, 4.2 in Portsmouth, 4.6 in Swansea, and 5.1 in Norwich. Measles caused a death-rate of 1.1 in Plymouth, in Nottingham, and in Sunderland, 1.7 in Portsmouth, and 1.9 in Norwich; scarlet fever of 1.4 in Norwich; whooping-cough of 2.2 in Halifax; "fever" of 1.0 in Huddersfield and 1.2 in Sheffield; and diarrhœa of 1.5 in Leicester, 1.6 in Plymouth, 2.2 in Preston, and 2.4 in Wolverhampton. The 69 deaths from diphtheria in the thirty-three towns included 28 in London, 8 in West Ham, 7 in Swansea, 5 in Portsmouth, 5 in Liverpool, 4 in Leeds, 4 in Sheffield, and 3 in Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 3,032 at the end of the ten preceding weeks, had further risen to 3,092 on Saturday last, November 5th; 318 new cases were admitted during the week, against 357, 381, and 336 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 5th, 879 births and 571 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.0 and 20.0 per 1,000 in the two preceding weeks, declined to 18.9 last week, but was 1.9 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 17.4 in Dundee and 17.9 in Glasgow to 22.2 in Aberdeen and 28.9 in Perth. The zymotic death-rate in these towns averaged 2.7 per 1,000, the highest rates being recorded in Edinburgh and Leith. The 250 deaths registered in Glasgow included 3 from scarlet fever, 5 from diphtheria, 4 from whooping-cough, 11 from "fever," and 9 from diarrhœa. Two fatal cases of diphtheria, 2 from scarlet fever, and 10 of diarrhœa were recorded in Edinburgh; 2 deaths were referred to "fever" in Paisley and 2 in Greenock.

VACANT POOR-LAW MEDICAL APPOINTMENTS.

D. L. D. puts the following questions:

A. is a district medical officer and public vaccinator holding a life appointment. He takes a junior partner, B. Can A. retire and transfer the appointment to B.? Can the Guardians do this? C. is the only other resident in the district, and has been so for ten years. Has not C. a prior claim to the appointment, B. having been a resident only about a year? If B. is appointed by the Guardians, can C. report to the Local Government Board with any prospect of recovering the appointment?

"*" There can be no transfer of any Poor-law appointment from one person to another. If A. wishes to retire he must resign the district appointment he holds, and give twenty-eight days' notice to terminate his contract in reference to public vaccination. It will then be for the Guardians to take the necessary steps to fill the vacant office. This may be done either by advertising the vacancy or otherwise by proper notice. We cannot see that ten years' residence in the district in question would give any prior claim to the vacancy, and if B. should be elected by the Guardians the Local Government Board would in all probability confirm the appointment, notwithstanding any representations which C. might make to prevent this being done.

MEDICAL NEWS.

The Lord Mayor of Dublin has just opened a new disinfecting house and a mortuary, in which the bodies of persons who have died of an infectious disease may be kept for a night if for any cause they cannot be interred on the day of death. Superior ambulances have also been provided. The cost of the improvements is £2,000.

An examination of master and operative plumbers applying for registration under the National Registration of Plumbers Act was held on November 5th by the Worshipful Company of Plumbers at King's College, London. Twenty-one candidates presented themselves for examination from various parts of London, also from Cambridge, Carmarthen, Guildford, Maidstone, Ramsgate, Windsor, and Worthing. Nine succeeded in passing the examination in practical workmanship.

University College, London.—Mr. Swale Vincent, M.B. Lond., M.R.C.S., has been elected to the Sharpey Physiological Scholarship (£150 per annum), which carries with it the post of chief assistant in the Physiological Laboratory: and Mr. D. J. Armour, M.B., M.R.C.P., has been appointed to the vacant Demonstratorship in Anatomy.

Entrance Scholarships at St. George's Hospital.—The Entrance Scholarships in Arts have been awarded to William Roberts Harris (£150), Hugh Basil Drake (£50), and Sidney Horace Matson (£50); the Pauline Entrance Scholarship has been awarded to Reginald Winter Sprague; Entrance Scholarships in Science, of the value of £85 each, have been awarded to Arthur John Jex-Blake and George Frederick Darwall Smith, B.A., and a scholarship of £40 to Samuel Herbert Lee-Abbott.

An Accident with Liquefied Air.—While experimenting with liquefied air at the Brooklyn Polytechnic Institute recently, Professor Irving W. Fay, of the Chemical Department, was hurt about the face so seriously that he will probably lose the sight of one eye. He had mixed with the liquefied air some red phosphorus, and poured out the mass upon a piece of paper on the table, and he was watching the changes take place in the phosphorus. He then took up a glass rod and separated the particles, when the explosion occurred which produced the injury. The force of the explosion wrecked the table.

Emin Pasha's Medicine Chest.—We are informed by Messrs. Burroughs, Wellcome, and Co. that they have recently received from an officer of the Congo Free State, who recovered it from natives near Kenia in the Aruwhimi Dwarf Country, a tabloid medicine chest, which belonged to the last medical equipment of Emin Pasha, Governor of the Equatorial Soudan. It was supplied to him just before he started on his last expedition to Central Africa. The case accompanied him throughout his subsequent travels, and was taken by Arabs after his massacre at Kibungi in October, 1892. It was recaptured by Baron Dhanis, Commandant of the Congo Free State troops, after the battle of Kasongo, in which the Congo Arabs were defeated. Emin Pasha's journal and a quantity of his property were recovered at the same time, but the "tabloid" compressed drugs which had been in the chest were found to have been removed. The chest was subsequently stolen by natives, and before its final recovery was used as a village treasury chest.

Food Poisoning in the German Army.—The recently-published report of the Sanitary Department of the German Army contains accounts of outbreaks of food poisoning which have occurred from April 1st, 1894, to September 30th, 1896. The following is a brief summary of the cases: In 1894, between September 6th and 8th, 75 men of an infantry regiment taking part in the annual manœuvres near Königsberg were seized with diarrhœa so severe as to suggest cholera. They were isolated in the military hospital, and soon the clinical thermometer as well as the result of bacteriological research made it possible to eliminate cholera. It was found that all the men attacked had eaten food cooked in copper utensils, and that metal was found by chemical analysis both in the fragments left and in the dejecta. The symptoms were clearly those of metallic poisoning, with the peculiarity that in some cases there was a considerable rise of temperature at first, followed after a day or two in severe cases by hypothermia. At Strassburg in the same year, between October 28th and 30th, 72 men belonging to the same mess were attacked with acute gastric intestinal catarrh, which was traced to the eating of preserved beef. On December 15th and 16th, 1894, 50 men of a Westphalian Artillery Regiment were attacked by an illness presenting similar features, which was traced to the eating of smoked herring. On May 25th, 1896, at Longerich Fort, near Cologne, there occurred 43 cases of slight diarrhœa caused by a potato salad. At Horb, in September, 1896, 7 men were seriously ill with gastro-intestinal catarrh, after eating sausages in which bacteriological examination revealed the presence of bacilli belonging to the group of B. coli communis. Among the civil population of the town and neighbourhood more than 100 persons presented similar symptoms, and the same bacillus was found in almost pure cultures in the stools. All the patients recovered.

Bolton and District Medico-Ethical Society.—The annual dinner was held in the Conservative Club on November 3rd, when about forty members and guests assembled under the chairmanship of Dr. Kershaw (President). The usual loyal and patriotic toasts having been proposed from the chair and enthusiastically honoured, Dr. Mallett, J.P., proposed the toast of "The Guests," and, in responding, Mr. H. Shepherd-Cross, M.P., referred to the new Vaccination Act, justifying its passage upon the ground that it represented the views of the Royal Commission, and that whereas in 1883 the percentage of unvaccinated throughout the country was 4, in 1889 it was 9, in 1893 16, and now 33. He contended that the removal of objections to the lymph, the domiciliary visitation by public vaccinators, and the raising of the age of exemption would tend to popularise vaccination. Professor Thomas Jones, Honorary Surgeon to Manchester Infirmary, proposed the toast of the evening, and spoke very highly of the value of medical societies in promoting friendly interchange of ideas between medical men, and in smoothing away their mutual difficulties and differences. The President responded. Dr. Macfie, in proposing "The Mayor and Corporation of Bolton," referred to the fact that Bolton was the the first town to adopt the Compulsory Notification Act and one of the first to establish a fever hospital. Dr. Ponton gave the toast of "The President," who replied in a racy speech full of reminiscences of Bolton and its doctors of long ago. Songs were given by Drs. Gould (M.O.H.), Laslett, Challinor, and Johnston, the last-named contributing two amusing original compositions, entitled, "The Popular Doctor" and "The Scientific Doctor." Recitations were given by the Chairman and by Drs. Mothersole, Jefferies, and Macfie, and Mr. Lancaster, F.C.O., gave a charming selection from Chopin.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £150 per annum (with an allowance of £30 for cab hire), with rooms, fire, light, and attendance. Applications to the Secretary by November 14th.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. Residence, board and washing provided. Applications to the House Governor by November 26th.

BIRMINGHAM: MASON UNIVERSITY COLLEGE.—Lecturer on Osteology and Chief Demonstrator of Anatomy. Applications to the Secretary by December 3rd.

BRADFORD ROYAL INFIRMARY.—House-Physician, unmarried. Salary, £100 per annum, with board and residence. Applications, endorsed "House-Physician," to the Secretary by November 21st.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary, £100 per annum, with board and residence. Applications, endorsed "Dispensary Surgeon," to the Secretary by November 21st.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street, Brighton.—House-Surgeon. Honorarium, £20 for six months, with furnished apartments and attendance. Applications to the Secretary by November 17th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL. Resident House-Physician. Salary £35 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by December 2nd.

DARLINGTON HOSPITAL AND DISPENSARY. House-Surgeon, unmarried. Salary, £70 per annum, with lodging. Applications to the Secretaries, 59, Bondgate, Darlington, by November 17th.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary, £100 per annum, with board and lodging. Applications to the Secretary, Mr. R. C. Walker, 5, Whitehall Street, Dundee.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Physician. Applications to the Secretary by November 30th.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road, S.E.—Junior Resident Medical Officer and Registrar. Salary, £50, with board and washing. Applications to Committee of Management by November 25th.

FINSBURY DISPENSARY, Brewer Street, Goswell Road, E.C. Resident Medical Officer. Salary £80 per annum, with attendances, coals, and gas. Applications to the Secretary by November 14th.

GLAMORGAN COUNTY COUNCIL. Rating Officer. Salary, £250 per annum. Applications to the Clerk of the County Council by November 21st.

GREAT NORTHERN CENTRAL HOSPITAL. Assistant House Surgeon. Appointment for six months. Board, lodging, and washing provided. Applications to the Secretary by November 14th.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 23rd.

MARTSHILL, STOKE-UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY EYE HOSPITAL.—Assistant House Surgeon. Board, apartments, and washing provided. Applications to the Secretary by November 14th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, Bloomsbury.—Assistant Surgeon must be F.R.C.S.Eng. Also a House-Surgeon, and a House Physician, unmarried. Appointment for six months. Salary, in each case, £25 with board and residence. Applications on forms provided to the Secretary by November 14th.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £80, rising to £90 per annum, with board and residence. Applications to the Secretary by November 22nd.

LONDON HOSPITAL, Whitechapel, E. Medical Registrar. Salary, £100 per annum. Applications to the House-Governor by November 25th.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to the House-Governor by November 16th.

LONDON LOCK HOSPITAL, 91, Dean Street, W. House-Surgeon to the Male Hospital. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary at Harrow Road by November 26th.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer of the Convalescent Hospital at Cheadle; not less than 25 years of age, unmarried. Salary, £100 per annum, with board and residence. Applications to the Chairman of the Board by November 19th.

METROPOLITAN HOSPITAL, Kingsland Road.—Anæsthetist. Salary, 25 guineas per annum. Applications to the Secretary by November 14th.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM.—Assistant Medical Officer; unmarried, and not more than 30 years of age. Salary £125 per annum, rising to £155, with board, lodging, and washing. Applications to the Medical Superintendent by November 14th.

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants. Salary, £120, increasing to £150 per annum. Applications, on forms provided, to the Honorary Secretary, 18, Grey Street, Newcastle-on-Tyne, by November 16th.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Junior Assistant Medical Officer, unmarried, and under 30 years of age. Salary, £110 per annum, increasing to £130, with board, lodging, and washing. Applications to the Medical Superintendent.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and all washing. Applications to the Secretary, 27, Clement's Lane, Lombard Street, E.C., by November 28th.

PERTH: JOHN MURRAY'S ROYAL ASYLUM.—Assistant Medical Officer. Applications to Dr. Urquhart, Physician-Superintendent.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary, £40 per annum, with board, residence, and washing. Applications, endorsed "Staff," to the Secretary.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £100 per annum, with furnished apartments, board, and washing. Applications to the Secretary by November 15th.

ROYAL ORTHOPEDIC HOSPITAL, 297, Oxford Street, and 15, Hanover Square, W.—House-Surgeon and Anæsthetist, unmarried. Salary, £60 per annum, with residence and partial board. Appointment for six months, but eligible for re-election. Applications to the Secretary by November 26th.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Streeet, Strand, W.C.—Clinical Assistant. Applications to the Secretary by November 26th.

ST. GEORGE'S HOSPITAL, S.W.—Physician and Assistant Physician, must be F. or M.R.C.P.Lond. Applications to the Secretary by November 19th.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City Road, E.C.—Honorary Surgeon; and Honorary Assistant Surgeon. Applications to the Secretary by November 18th.

ST. PETER'S HOSPITAL, Henrietta Street, Covent Garden, W.C.—House-Surgeon. Appointment for six months, but eligible for re-election. Salary at the rate of £10 per year, with board, lodging, and washing. Applications to the Secretary by November 23rd.

ST. THOMAS'S HOSPITAL, S.E.—Assistant Physician, must be M.R.C.P.Lond. Applications to the Treasurer's Clerk by November 12th.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), S.E.—House-Surgeon for the Branch Hospital, Royal Victoria and Albert Docks. Salary, £50 per annum, with board and residence. Applications to the Secretary by November 16th.

SHEFFIELD ROYAL HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum, with board and washing. Applications to the Honorary Secretary of the Staff by November 21st.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser; unmarried. Salary, £105 per annum, with lodgings, attendance, fire, and lights. Applications to the Hon. Secretary by November 16th.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—Assistant Physician to out-patients. Applications to the Secretary by November 26th.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House-Surgeon. Appointment for six months. Gratuity, £20, with board, lodging, and washing. Applications to the Secretary.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician. Must be F. or M.R.C.P.Lond. Personal application to the House Committee on November 29th.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £120 per year, and £30 for dispensing, with furnished apartments and attendance. Applications to the Secretary by November 26th

MEDICAL APPOINTMENTS.

ADAM, R. J., M.B.Glasg., appointed Health Officer for the Borough of Daylesford, Victoria, *vice* Dr. E. B. Allan, resigned.

ATKINS, S. E., L.R.C.S.I., L.S.A., appointed Medical Officer for the Hatherleigh District of the Okehampton Union.

BENNETT, W. B., M.R.C.S., L.R.C.P.Lond., appointed Assistant Medical Officer to the Parish of Liverpool Workhouse.

BILL, G., M.B.Edin., appointed Public Vaccinator at Pyramid Hill, Victoria, and Health Officer for East Loddonshire, East Riding, Victoria, *vice* H. G. Kelly, deceased.

CHURCH, Anna L., M.D. (R.U.I.), appointed Medical Officer in charge of the Victoria Hospital, Calcutta.

COLE, John W. Edward, M.R.C.S.Eng., appointed Assistant Medical Officer at the Bow Infirmary of the City of London Union.

CROWE, G. E., B.A.Dub., M.D., appointed Medical Officer to the Cottage Homes of the Chorlton Union.

DAVIES, Thomas B. P., M.D., M.S.Lond., M.R.C.S., L.R.C.P., appointed Surgeon to the Criterion Gold Mining Company, Bulawayo.

DRUITT, C. F., M.R.C.S., L.R.C.P., appointed House-Surgeon to the Paddington Green Children's Hospital.

GREP, Maurice, L.R.C.P., L.R.C.S.Edin., D.P.H., reappointed Medical Officer of Health for the Borough of Shrewsbury.

GOLDES, H. E., M.R.C.S., L.R.C.P., D.P.H.Camb., appointed House-Physician to the Paddington Green Children's Hospital.

GREGG, James, M.B., B.S.Dub., appointed Public Vaccinator at Wedderburn, Victoria, *vice* Dr. R. A. A. Manly, resigned.

HERMON, J. M., M.B., C.M.Edin., appointed Medical Officer for the Crofton District of the [illegible]

HITCHON, H. H. Irving, L.R.C.P.Lond., M.R.C.S., [illegible] for the Borough of Heywood, *vice* H. Wisken, L.R.C.P.Edin., L.F.P.S.Glasg.

HUTTON, W. Menzies, M.D., F.R.C.S.Ed., appointed Surgical Registrar to the Royal Infirmary, Edinburgh.

JOHNSON, J. B., M.D., C.M.Montreal, L.S.A., [illegible] ham District of the Cosford Union, *vice* E. F. Smith, M.R.C.S., [illegible]

LOVEDAY, W. D., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Hendred District of the Wantage Union.

MCDONALD, Stuart, M.B., C.M., appointed Pathologist to the General Hospital, Birmingham.

MAJOR, Herbert C., M.D.Edin., appointed a Consulting Physician to the Bradford Royal Infirmary.

MARTIN, J., L.R.C.P., L.R.C.S.Edin., appointed Health Officer for the Broad Arrow, West Australia, *vice* Dr. Ewing, resigned.

MOORE, H. G., M.B. [illegible] Officer for the Southern Portion of Karkarooshare and Public Vaccinator for Bowman Vale [illegible]

SCHOLEFIELD, George E., M.D., D.P.H., appointed Medical Officer of Health for West Lancashire Rural District Council, *vice* Dr. H. Pe[illegible]

SELL, W. P., M.R.C.S., L.R.C.P.Lond., appointed Resident Medical Officer and Vaccinator for Coolgardie, Western Australia, *vice* Dr. A. M. [illegible]

SEQUEIRA, J. H., M.D.Lond., F.R.C.S.Eng., appointed Physician to the Out-Patient Dispensary, *vice* Dr. Donkin, resigned.

SMITH, Horace, M.A., M.B., B.C.Cantab., appointed Hon. Physician to the Boscombe Hospital, Bournemouth, *vice* W. Scott Tebb, M.D.Cantab., resigned.

WALDEN, F. James, M.B., C.M.Edin., L.M.Rotunda Hosp. Dub., appointed Medical Officer for the Sorell District, Tasmania.

DIARY FOR NEXT WEEK.

MONDAY.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Dr. Herbert Tilley: Demonstration of Selected Cases (Ear, Throat, and Nose).

Medical Society of London, 8.30 P.M.—Clinical Cases: The Presidency: A patient after Gastro-enterostomy performed for Pyloric Obstruction. Mr. Openshaw: Excision of the Larynx. Dr. Hector Mackenzie: Vascular Murmurs: [illegible] Origin and [illegible] Lung. Dr. [illegible] Dr. Hale [illegible] Hepatoptosis, (3) a [illegible] Patellæ.

TUESDAY.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: General Paralysis. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Scabies.

National Hopital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Sir W. Gowers: Degenerative Diseases of the Nervous System in relation to Causation.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Mr. James Cantlie: Cases Illustrating the Surgery of the Brain.

Pathological Society of London, [illegible] P.M.—Mr. J. [illegible] Dr. W. Hunter: [illegible] Dr. Hale White: Diseases of the Heart in Enteric Fever. [illegible] of the Commissioners in Lunacy: Pro[illegible] Dr. [illegible] Dr. [illegible] Dr. A. C. Latham: [illegible] specimens will be shown by Dr. W. Hunter and Dr. Rolleston.

WEDNESDAY.

London Post-Graduate Course, Hygiene at Parkes Museum, 4 P.M.—Professor Wyatt Blyth: Air Cubic Space, etc.

Hospital for Consumption, Brompton, 4 P.M.—Dr. Green: The Symptomatic Treatment of Pulmonary Tuberculosis.

Royal Meteorological Society, 25, Great George Street, Westminster, S.W., 7.30 P.M.

Royal Microscopical Society, 20, Hanover Square, W.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. W. A. Turner: The Methods of applying Electricity in Medicine.

North-West London Clinical Society, North-West London Hospital, Kentish Town Road, [illegible] Monthly Demonstration of Clinical Cases.

THURSDAY.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Dr. George Oliver: The Pulse.

Harveian Society of London, 8.30 P.M.—Dr. St Clair Thomson: Functional Dysphagia.

Royal College of Surgeons of England, 5 P.M.: Annual meeting of Fellows and Members.

Charing Cross Hospital, Post-Graduate Class, 4 P.M.—Dr. Amand Routh: On Puerperal Eclampsia.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.: Demonstration of Selected Cases.

Society of Anæsthetists, 20, Hanover Square, W., 8.30 P.M.—Professor Ramsay Paré [illegible]

London Temperance Hospital, [illegible] P.M.: Dr. S[illegible] and Physiology of [illegible] Senior Students.

FRIDAY.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M.—Professor Crookshank: Typhoid Fever and Diphtheria.

Epidemiological Society of London, 8.30 P.M.—Dr. Franklin Parsons: Presidential address on Half a Century of Sanitary Progress and its Results.

West London Post-Graduate Course, West London [illegible] W., 5 P.M.: Dr. W. A. Turner: [illegible] Methods of applying Electricity in Medicine. Lecture II.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M.—Dr. Rayner: The Lunatic Asylum.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

BRAND.—At Driffield, East Yorks, on the 3rd inst., the wife of Dr. [illegible]

WICKHAM.—On October 22nd, at Carbrooke House, Fleet, Hants, the [illegible] H. Wickham, M.B.Cantab., of a daughter.

DEATHS.

HACON.—On Tuesday, September 20th, at Christ Church, New Zealand, [illegible] dently from apoplexy, Walter Edward Rose Hacon, M.R.C.S., [illegible] and 47 years, only surviving son of Edward D. Hacon, [illegible] year.

REYNOLDS.—November 6th, of 9, Euston Grove, Camden Town, [illegible] Dr. J. W. Reynolds, late of the Army Medical Service, Bombay.

WOODHAMS.—On November 3rd, suddenly, at No. 1, Park Place, Gravesend, Sidney Woodhams, M.R.C.S., L.R.C.P.Lond., aged [illegible] fourth and dearly beloved son of W. Woodhams, The Limes, Rochester.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Th. S., 2; Tu. F., 5. *Operations*.—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 2.

CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances*.—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Th. F.

GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.

KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 11.30. *Operations*.—W. Th. F., 2.

LONDON. *Attendances*.—Medical, daily, i.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.

LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances*.—Daily, 2; Tu., F., 6. *Operations*.—Daily, 2.

METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances*—M. Tu. Th. F., 2. *Operations*.—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W. S., 9.30 *Operations*.—Tu. F., 9.

NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*.—Th., 2.30.

ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.

ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances*.—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0. Eye, Tu. F., 9. Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; Ophthalmic, F., 10.

ST. PETER'S. *Attendances*.—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.

ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th. 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynecological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynecological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Tu., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.

WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C.; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OR THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

A YOUNG MEDICAL PRACTITIONER last year threatened with phthisis, but apparently cured by spending the winter in Switzerland, would be glad to obtain information as to the possibility and means of obtaining practices in a suitable part of North America, Cape, or Australia, if not a practice, prospects of an assistancy. Information would be also acceptable giving particulars of medical appointments in these countries, nature of and how obtainable, or advice as to best means of finding out particulars of same.

NETTLE JUICE AS A UTERINE HÆMOSTATIC.

DR. R. E. LORD (Colwyn Bay) asks for information as to the composition of the expressed juice of the nettle, and its use as a uterine hæmostatic. A patient of his who has suffered for three years from menorrhagia during the menopause, has tried it during the last two periods with excellent effect. The only ill effect observable by her was constipation. She had previously tried various other drugs with only temporary benefit, and resorted to nettle juice after seeing it recommended in *Health Notes and Curiosities of Medical Science*, by T. L. Phipson.

INFECTIVE (?) DERMATITIS.

A. H. P. asks for suggestions as to the cause of the following affection: A patient of his, in the beginning of the summer of 1894, pricked himself in Perthshire while gathering flowers. The hand became inflamed and covered with red patches slightly umbilicated, which remained during the hot weather, and rapidly disappeared when winter set in. Each year since in May the same appearance manifests itself on the back of the hand, but never on exactly the same sites, and completely disappears in October. Cuttings have been examined microscopically by an expert, who failed to find any parasite.

WHAT IS BILIOUSNESS?

H. writes: "Mr. Treves, in his very interesting paper, remarks most truly: "The physician has not yet acquired a sufficient knowledge of that organ (the liver) to define precisely what is meant by 'biliousness,' or to give any reasonable scientific account of 'a bilious attack.'" Now, I would like to ask some other "physician" to give his idea of how to define "biliousness"—its etiology, symptoms, and treatment; and, most important of all, its pathology. Is it due to excessive or lessened secretion of bile, or is it due to derangement of the liver at all, or only catarrh of the duodenum or a subacute gastritis?

HOME FOR EPILEPTIC CHILD.

DR. E. A. STARLING (Tunbridge Wells) desires to hear of a home where an epileptic girl 2 years old could be received. She is unable to walk, feeds herself with her fingers, is not clean in her habits, and subject to screaming attacks. The friends are willing to pay about 10s. or 15s. a week. Either an institution or a private home in the south or south-eastern district would be preferred.

*** Our correspondent might obtain the regulations for admission to the Meath "Home of Comfort" (for epileptic women and children) at Godalming.

SPREADING TRAUMATIC GANGRENE.

DR. JAMES E. BLOMFIELD (Sevenoaks) writes: In the interesting account of a case of spreading traumatic gangrene published in the BRITISH MEDICAL JOURNAL of Nov. 5th by Messrs. A. H. Tubby and Southey Wright, there is an omission which detracts from its instructive value. No mention is made of the exact method and strength of solutions used for antisepticising the compound fracture. In the first portion of the article it is remarked that the disease is now very rare, due, I take it, to the existence of antiseptic surgery, and it would be distinctly instructive to know exactly what method of antisepsis failed in this particular instance. There is so much diversity of opinion as to the value of different antiseptics that records of the failure of a particular procedure are valuable, especially in a case where antistreptococcic serum did good.

DISEASES OF AUSTRALASIA.

SURGEON-MAJOR I.M.S. asks to be referred to works on diseases peculiar to Australasia, and on the modification of disease due to the climate.

*** We know of no book fulfilling our correspondent's requirements. There is a book, published in 1886, by Mr. James Bonwick, F.R.G.S., *Climate and Health in Australasia*, but it only deals with Queensland. Onchydatid disease, which is much more common in Australia than in any other country, our correspondent might consult *Hydatid Disease with special reference to its Prevalence in Australia*, by John Davies Thomas, M.D.; and also *Hydatid Disease*, by Dr. Graham, as well as the files of the *Australasian Medical Gazette*, and the *Transactions of the Australasian Medical Congress*. Further information might perhaps be obtained from Messrs. Baillière, Tindall, and Cox., 40, King William Street, Strand, W.C., who are the agents of Mr. L. Bruck, publisher, of Sydney.

CONSUMPTIVE HOMES IN SWITZERLAND.

DR. OSBORNE D'A MARRIOTT (Sevenoaks) asks for information as to any home or institution at Davos or elsewhere in Switzerland where a patient, a trained nurse, about 24, with early symptoms of tuberculosis, could be received for a small payment.

*** At Davos there is an excellent institution called the Davos Invalids' Home, where patients are admitted on payment of Fr. 5 (4s.) a day, which includes medical attendance, but not wine or medicines. Apply to the Secretary, Dr. Ewart, 33, Curzon Street, W., for full particulars. At St. Moritz there is the St. Moritz Aid Fund.

which holds a villa at St. Moritz, where patients are also admitted at Fr. 5 a day. Apply to the Hon. Treasurer, Mr. H. H. Nelson, Springfield House, South Godstone, Surrey, for full particulars. Rail fare (return), second class, to St. Moritz, about £12; ditto to Davos somewhat less.

HOME FOR CRIPPLE.

W.R.Y.I. desires to hear of a home for a cripple who could afford to pay a very small sum (6s. 6d. per week) towards his maintenance. Is there such an institution in the vicinity of Chester?

*** The Turner Memorial Home near Liverpool receives males who are incapacitated for work. The inmates pay 7s. 6d. per week. Full particulars can be obtained from the Matron, Turner Memorial, Home of Rest, The Dingle, Liverpool.

ANSWERS.

R. T. M.—We are informed that this matter is being considered by the Medical Defence Union with a view to prosecution.

BENCHCROFT.—An undescended testicle is not a bar to a youth being passed for the army unless it lies in the canal or is associated with any tendency to hernia. An operation would correct either of these conditions.

O.—We know of no such instrument, and imagine that our correspondent's patient must have made some mistake, like the patient who said that the thermometer in his mouth "did him a power of good."

GOLD CURE.—We have no knowledge of the composition of the injection, but various medical practitioners who claim to have had personal experience with other "gold cures" have, in American medical journals, stated that apomorphine was the drug employed.

NOTES, LETTERS, Etc.

"THE TREATMENT OF EMPYEMA."

DR. WILLIAM WILLIAMS, Physician to the Royal Southern Hospital, Liverpool, writes in connection with Dr. Hutton's paper on the Treatment of Empyema published in the BRITISH MEDICAL JOURNAL of October 29th, to call attention to a paper published by him in the BRITISH MEDICAL JOURNAL of May 18th, 1889, under the heading, "Treatment of Empyema by a Valvular Tube Hermetically Sealed to the Chest." This paper embodies an account of some cases and a description of the mechanism employed. Dr. Williams encloses a specimen of the appliance which he used, and which has been forwarded to Dr. Hutton according to his request.

MEDICAL OFFICERSHIPS IN THE HIGHLANDS AND ISLANDS.

MEDICO writes: The BRITISH MEDICAL JOURNAL of October 29th contains an advertisement for a medical officer for a northern parish, in which it is stated that the "private practice is worth about £100." On inquiry I find that the highest figure reached was £76 under very exceptional circumstances, and that the average lies between £50 and £60. Can the parish council be held responsible for the higher figure?

OVER-TAXATION OF MEDICAL MEN.

THE INCOME TAX REPAYMENT AGENCY (6, Chichester Road, Paddington, W.) write: In your appreciative notice of our Mr. Chapman's handbook on *Income Tax*, you call attention to his statement that "as a rule doctors are much over-assessed." This we have found to be so much the case that we have prepared special balance sheets to enable doctors to send in their returns to the surveyor of taxes. These balance sheets show in detail all permissible deductions. We may add that in every case hitherto where a doctor has applied to us for assistance we have obtained for him a reduction in assessment, and in most cases a refund of tax or an abatement he was not aware he was entitled to. The time has again come round to appeal against excessive assessment, and these appeals are more than ever necessary this year on account of the new scale of abatements. We are always glad to advise gratuitously as to validity of claims.

MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS.

A GENERAL PRACTITIONER writes: Referring to the letter of the Manager of the Scottish Life Assurance Company in the BRITISH MEDICAL JOURNAL of October 29th, I should like to remark that the proposed fee for the examination of candidates for sums of £2,000 will be of little benefit to members of the profession. What is wanted is a uniform fee of 1 guinea for all sums over £100. Many offices only pay half a guinea for sums up to £500. I know of only one office—the Clerical, Medical, and General—which pays a fee of a guinea for all sums from £100 and upwards. I was not aware that the subject of fees had been discussed in the Section at Edinburgh; in fact, I was informed by the Honorary Secretary that it would not be politic to introduce the question at all.

ASEPTIC MIDWIFERY: A CORRECTION.

DR. A. G. NEWELL (Gosport) writes: In reference to Dr. Jardine's reply, I think I should state that the word "on" is a printer's error, and that the statement should have read "in his letter *re* puerperal septicæmia." However, this should make no difference; and Dr. Jardine seems to have forgotten what he did say. To object to a few words in various letters is childish, and is not any defence. So far as I am aware, no correspondent objected to aseptic midwifery, but only to certain points in the method of carrying it out.

SAWDUST AS A SURGICAL DRESSING.

MR. A. NEVE, F.R.C.S.Edin. (Srinagar, Kashmir), writes: It would be foolish for any living person to claim priority in the use of sawdust as a surgical dressing. It was certainly used twenty years ago by Surgeon-Major Porter, and probably long before that by many others. But so far as Kashmir is concerned its introduction by me as an antiseptic dressing material was original, and dates back to 1884 or 1885, when I investigated several local products for this purpose. I learn for the first time from Mr. E. A. J. Steele that sawdust pads were prepared in this way by Mr. Rushton Parker, of Liverpool; and I trust that the application of this very handy, reliable, and economical method of dressing will not be confined to the cases of "septic suppurating wounds" described by Mr. Steele. In the Kashmir Mission Hospital for thirteen years we have found these dressings as applicable to cases of hernia or to abdominal sections as to amputations, etc. Of recent years the use of these cheap aseptic dressings has been extending in the dispensaries and hospitals of parts of India, etc., and I am convinced that in case of a great European war it would prove of special value in the base hospitals.

A "CONSCIENTIOUS OBJECTOR."

AT Blackburn recently a conscientious objector appeared in court and obtained the usual certificate of relief from the need to procure the vaccination of his child. His ignorance of his own family affairs was unparalleled, except, perhaps, among "antivacks." He knew neither the name of the child, nor the date of its birth, nor his own place of residence. His want of knowledge has had the effect of making a contributor to a local newspaper "drop into poetry" as follows:

I conscientiously objeck
To vaccinatin' of my kid;
In vaccination as a check
I don't berlieve, an' never did.
I do berlieve it's bin imposed
The workin' classes to annoy;
And that is why I ain't disposed
To try it on my girl or boy.

I says my boy or girl becos
I don't know if it's he or she,
But my old woman 'ere is pos
That it's a girl—so let it be.

But wot she's called I couldn't say;
I know my wife is called the same,
I think it's Rose, or Kate or May,
Or Poll, or Sue, or some such name.

I ain't quite certain w'ere we live,
W'en she was born I couldn't tell;
I didn't come up 'ere to give
'Er blooming pedigree as well.
If you want facks you'll 'ave ter go
And arst my missus, I expeck,
But for meself, I only know
I conscientiously objeck.

POISONING BY PRIMULA.

DR. ALLAN C. SYM (Edinburgh) writes to point out that primula obconica is not the only primula which sets up irritation, but that primula Sibbaldii certainly does so also; and I am informed by gardeners that there are other varieties of the primula which are noxious, but that primula obconica is the most virulent. I may add that, in my experience, nothing relieves the intense irritation of the skin so much as frequent bathing with a weak solution of creolin.

EARLY CANCEROUS DISEASE: MICROSCOPIC AND OTHER FALLACIES.

DR. HERBERT SNOW (Gloucester Place, W.) writes: A letter in the BRITISH MEDICAL JOURNAL of October 22nd draws attention to Dr. Johnston's case in the JOURNAL of October 8th, Epithelioma of the Lip in a Youth of 18, supporting it by other instances culled from foreign sources. It is difficult for several reasons to accept Dr. Johnston's diagnosis. There was no pain unless the sore was touched. Hardly any genuine lip epithelioma ever exists for six months without infecting the glands; yet these organs seem to have been unimplicated after fifteen months. The microscopic report is inconclusive. Cell nests are not of course pathognomonic of epithelioma. The condition of the individual cells, whether multinucleated or otherwise, is not stated. There is no record of leucocytic infiltration. Now the otherwise skilled pathologists of the present day are often sadly in error whenever the question is one of malignancy, for want of attention to these two most important points. In the first place they confine their attention solely to cut and specially prepared thin sections. Thus they can well distinguish the general relations of any cell mass. But the no less important features of the individual cells are disguised or obliterated. Secondly, it appears wholly lost sight of in modern medical teaching that a cancerous infiltration acts in many of its features as would a foreign body inserted into the tissues. An army of leucocytes invariably surrounds the advancing columns. Unless thus accompanied no amount of hypertrophy or of cell proliferation can be relied on as indicative of cancer. For want of caution on this head, I have known many uterine cervical "granular erosions," moreover growths of gland tissue, falsely regarded as malignant, with practical consequences better imagined than described. Examples of early cancer from the wilds of Russia or Poland cannot seriously enter into consideration. Lip epithelioma is, for tolerably evident reasons, peculiarly a disease of advanced life. I cannot recall any case under 40, but that is of course no reason why such should not have occurred to others. Every rule has its exceptions. What I do strenuously contend, however, is that when exceptionally early cases of cancer occur, whether here or elsewhere, they should be regarded with doubt until every possible precaution to certify their nature has been taken. Hardly any reliance can be placed on the statistics of malignancy at an early age in current textbooks. Their retention is prone to involve practical errors in diagnosis, and their number should not be incautiously increased.

ARMY HEALTH RETURNS.

MARSHBURGH writes: On p. 215 of Dr. Manson's new work on *Tropical Diseases*, the author casts an unmerited slur on the officers responsible for army returns. Writing of unclassed fevers, he says: "Another circumstance which has retarded progress in this matter is the unscientific classification of fevers adopted by our military medical authorities, and to which military medical officers have been obliged, or have elected, in great measure to conform. It would seem that every case of fever of short duration, as well as those cases which show an intermittent character, have to appear in the army returns as 'ague.' This misleading, slovenly, not to say dangerous, practice ....."

I do not know where Dr. Manson got his information, but he evidently did not take the trouble to verify it before making his condemnation. The official guide in making army returns is the *Nomenclature of Diseases*, issued by the College of Physician's Committee. Whether that book is not as it should be, I leave others to decide; but the Registrar-

General asks us all to adhere to it, and I presume that Dr. Manson, who is a Fellow of the august body responsible for its contents, and is also medical adviser to the Colonial Office, is aware that it is used in most of the Colonies and in India. Moreover, I assume that the author of *Tropical Diseases*, when he signs a death certificate, uses the terms found in the *Nomenclature*. The Registrar-General must bless him if he does not. One can imagine the despair of health officers, compilers of disease statistics, and the clerks who work up the Registrar-General's quarterly return if every medical man selected his own disease names. Anyway, unclassed fevers are not ordered to be returned under any particular heading by the army authorities, certainly not as "ague." "Simple continued fever" is, as a matter of fact, the principal refuge for the army doctor who treats an obscure fever. Dr. Manson can verify this by looking at a copy of that valuable publication, the Annual Report of the Army Medical Department.

THYROGLANDIN IT THE TREATMENT OF OBESITY AND MYXŒDEMA.

DR. WM. MACLENNAN (Glasgow) writes: My paper on the treatment of Obesity and Myxœdema by Thyroglandin which appeared in the BRITISH MEDICAL JOURNAL of July 9th, 1898, has caused so many practitioners to write to me asking where the preparation may be found, that I would be glad if you would insert this in the JOURNAL:

"Thyroglandin" may now be had from Messrs. Evans, Sons, and Company, Liverpool. Mr. Stanford writes to me saying "that he has selected Liverpool as the part where the largest number of sheep are annually killed, and because of the necessity of obtaining and using the glands when perfectly fresh. The well-known firm of Messrs. Evans, Sons, and Company, with their fine new pharmaceutical laboratories, are exceptionally well situated to prepare "thyroglandin" of uniform strength and purity.

THE OPEN-AIR TREATMENT OF CONSUMPTION.

FESTINA LENTE writes: The open-air treatment of tuberculosis at the present time is very rightly engrossing the thoughts of all classes, but unless weighty protests are made against the indiscriminate multiplication of sanatoria, I fear the treatment will soon fall into disrepute. Dr. Fanning has put on record his successful treatment of tuberculosis at Cromer, and his experience there gained should be an object-lesson to all hospital authorities and Boards of Guardians who have the care of the sick poor. It seems Blackpool and Folkestone are now contemplating the establishment of sanatoria; if such be intended for the poorer classes, who cannot afford a prolonged sojourn at our more favoured winter resorts, all well and good. For no doubt short of an ideal climate much can be done to ameliorate the existing state of things; but it is wrong to suppose that the whole and every part of the British Isles is equally suitable for the efficient carrying out of the open-air treatment, provided certain details are attended to.

POST-MORTEM BLEEDING.

DR. MEREDITH YOUNG (Medical Officer of Health for Crewe) writes: I was much interested to see the account given by your correspondent, Dr. R. P. Lawson, as to discharge of blood from mouth, nose, etc., after death. In a recent case of typhus fever here I observed the same thing—copious discharge of bright red blood from mouth and nose about three hours after death, and repeated, though in smaller quantity, about 14 hours after death. I have observed the same thing in hæmorrhagic small-pox some years ago, but only in the hæmorrhagic varieties of that disease. In the latter case the occurrence of bleeding is less puzzling than in the former, though in both cases it is difficult to understand, if the blood comes directly from the arterial vessels, as its appearance causes one to think it does, whence the pressure is derived which causes it to gush out in the manner it does. I trust some of your readers may be able to throw a little light on the question.

TREATMENT OF STREET DRUNKENNESS IN PARIS.

ACCORDING to the *Daily Telegraph* the *ange gardien* is a person of respectable antiquity, whose office it has been in France, sometimes employed by "the trade," sometimes remunerated by the friends of the inebriate himself, to look for and take to their homes persons overcome by drink after dark in the Parisian thoroughfares. But a recent order of the Prefect of Police bids fair to disestablish and disendow this useful person. By this order, stretchers for the intoxicated are to be located in every police station. Whether this official injunction is indicative of an increase of Parisian street drunkenness or of deficient zeal on the part of the "guardian angels," there can be no doubt of the humanity and common sense of the reported new Police Order.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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BOOKS, ETC., RECEIVED.

L'Occlusion Intestinale. Par D. Bauby. Paris: Masson et Cie. Fr.3.

Energétique Musculaire. Par F. Laulanié. Paris: Masson et Cie. Fr.3.

The Throat and Nose and their Diseases. By Lennox Browne, F.R.C.S.E. London: Bailliere, Tindall and Cox. 1899. 31s. 6d.

Chemistry in Daily Life. Dr. Lassar-Cohn. Translated by M. M. P. Muir, M.A. Second edition. London: H. Grevel and Co. 1899. 5s.

Diseases of the Skin. By Malcolm Morris. New edition. London: Cassell and Co. 1898. 10s. 6d.

Atlas der ausseren Erkrankungen des Auges nebst Grundriss ihrer Pathologie und Therapie. Von Dr. O. Haab. Munich: J. F. Lehmann. 1899. M. 10.

Home Hygiene. By J. F. J. Sykes, D.Sc., M.D. London: St. John Ambulance Association. 1s.

A Guide to the Examinations by the Conjoint Examining Board in England, and for the Diploma of Fellow of the Royal College of Surgeons of England. By F. J. Gant, F.R.C.S. Seventh Edition. London: Bailliere, Tindall and Cox. 1899. 5s.

Aids to Materia Medica. By W. Murrell, M.D., F.R.C.P. Part II. London: Bailliere, Tindall and Cox. 1899. 2s. 6d.

A Primer of Psychology and Mental Disease. By C. B. Burr, M.D. Second Edition. Philadelphia: F. A. Davis Co. 1898. 1 dol.

Practical Uranalysis and Urinary Diagnosis. By C. W. Purdy, M.D., LL.D. Fourth Edition. Philadelphia: F. A. Davis Co.; and London: Sampson Low, Marston and Co. 1898. 2.50 dols.

Cerebral and Mental Symptoms in Relation to Somatic Disease, Anæsthetics and Toxic Agents, Traumata and Surgical Procedures. By J. C. Simpson, M.D., C.M. London: John Bale, Sons, and Danielsson. 1898. 5s.

Researches on Leadless Glazes. By W. J. Furnival. Stone: Published by the Author. £5 5s.

On the Study of the Hand for Indications of Local and General Disease. By F. Blake, M.D. London: H. J. Glaister. 2s. 6d.

Nevroses et Idées Fixes. Par Professor F. Raymond et P. Janet. II. Paris: Félix Alcan. 1898. Fr.14.

Etude Chirurgicale Clinique sur un Nouveau Procédé Operatoire — Exploration concernant les Abcès du Foie. Par Dr. A. P. Petridis. Alexandria: L. Carriere. 1898.

A Handbook of Hygiene and Sanitary Science. By G. Wilson, M.A., M.D., etc. London: J. and A. Churchill. 1898. 12s. 6d.

Madeira and the Canary Islands. By A. S. Brown. Fifth edition. London: Sampson Low, Marston and Co. 1898. 2s. 6d.

The Housing of the Working Classes Act, 1890, and Amending Acts, Annotated and Explained. By C. E. Allan, M.A., LL.B., assisted by F. J. Allan, M.D., D.P.H. London: Butterworth and Co. 1898. 7s. 6d.

Some Health Aspects of Education. By Dr. P. Lewis. London: The Scientific Press. 1898. 1s.

Chirurgie de l'Uterus. Par H. Delagénière. Paris: Institut de Bibliographie Scientifique. 1898. Fr.10.

Medico-Legal Studies. By C. Bell. Vol. v. New York: "Medico-Legal Journal" Office. 1898.

Leçons de Clinique Chirurgicale faites a l'Hotel-Dieu (Août-Septembre, 1897). Par P. Delbet. Paris: G. Steinheil. 1898. Fr. 8.

Traité de l'Allaitement et de l'Alimentation des Enfants du premier age. Par Dr. A. B. Marfan. Paris: G. Steinheil. 1898. Fr. 10.

Physical Training: its Theory and Practice. By H. R. Seymour. Edinburgh: E. and S. Livingstone. 2s. 6d.

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Transactions of the Edinburgh Obstetrical Society. Vol. xxiii. Session 1897-98. Edinburgh: Oliver and Boyd. 1898.

*** In forwarding books the publishers are requested to state the selling price

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AN ADDRESS

ON

RECENT ADVANCES IN BRAIN SURGERY.

Delivered before the North of Ireland Branch of the British Medical Association on October 27th, 1898.

By HENRY O'NEILL, M.D., M.Ch.,
President of the Branch; Visiting Surgeon, Belfast Royal Hospital.

This department of surgery always demands our most earnest attention because of the serious consequences which may arise from apparently trifling injuries to the head. Head injuries are of special importance because they may not be limited to the outer soft parts and the bones, but may affect the brain and its membranes. The brain is well protected by a dense fibrous scalp and firm hard skull. Within the bony case lies the brain enveloped by its membranes, and protected by fluid outside the convolutions and within the ventricles. Inflammation of the brain and its membranes usually follows injuries of these structures; serum is exuded, which produces swelling and pressure, and can be relieved only by an operation such as trephining. Occasionally the intracranial pressure is relieved by the escape of the intracranial blood and cerebro-spinal fluid into the spinal canal. Should the pressure increase, the functions of the brain become interfered with, or they may be completely destroyed. This change or loss of function may affect the motor, sensory, or intellectual functions of the brain, and produce spasm or paralysis, hyperæsthesia or anæsthesia, mania or coma. At first the change or loss of function may be local, and cause paresis or paralysis of an arm or a leg, or half of the face, alteration or loss of speech. If the brain injury is severe, complete loss of function may occur and death supervene. Sometimes the alteration will be obscure, and is functional rather than organic, and will produce headache, epilepsy, or insanity without any apparent change in the substance of the brain. Epilepsy may be caused by the pressure from a blood clot following head injury with or without a fracture of the skull.

Localisation of Function in the Brain.

The localisation of function in various parts of the brain has been well recognised during the past twenty years. Cerebral surgery has become a most important branch of general surgery. Through the scientific labours of Horsley, Ferrier, and Macewen in Britain, Broca in France, Fritsch in Germany, marvellous results have been obtained in the surgical treatment of diseases and injuries of the brain. Until quite recently operations on the brain were seldom successful, the chief reasons being imperfect knowledge of the cerebral motor areas and want of aseptic precautions in the treatment of wounds.

Motor Areas.

The chief motor areas in the brain of the monkey, as demonstrated by Horsley and Schäfer, have been shown by physiological experiment and *post-mortem* examination to correspond closely to the same cortical centres in man.

The upper third of the convolutions in front of and behind the fissure of Rolando corresponds to the centre for the movements of the leg, the middle third corresponds to those for the arm—beginning at the upper end for the shoulder centre, the middle part for the elbow centre, and the lower for the hand centre.

In the lower third lie the face centre and the centre for the mouth and larynx. The centres for the head, leg, and trunk are situated chiefly on the median surface of the hemispheres as well as on their external surface. Broca's centre for speech lies just in front of the end of the fissure of Rolando, and in the angle formed by the main trunk and the anterior limb of the fissure of Sylvius. The centre for vision is situated in the cuneus, a lesion of which produces blindness of the corresponding (right or left) half of both retinæ. The supramarginal and angular gyri are also concerned to some extent in vision. These same convolutions—supramarginal and angular—are the seat of certain mental processes, the loss of which produces sensory aphasia, agraphia, etc. The centre

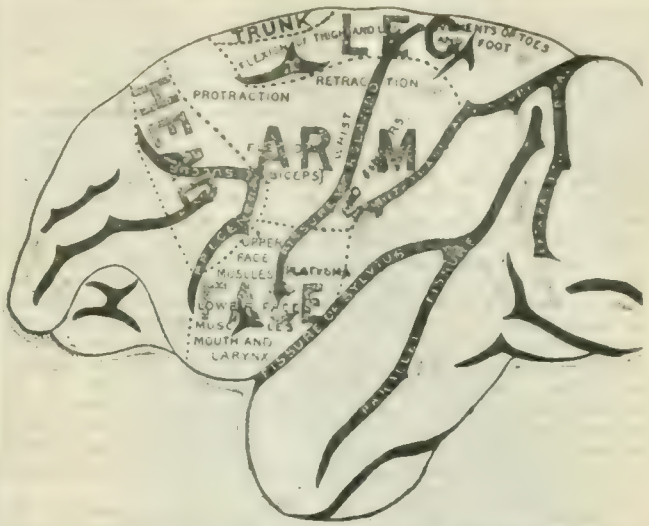


Fig. 1.—Motor areas on the outer surface of the brain (Horsley and Schäfer).

for hearing is probably situated in the middle and posterior parts of the first temporo-sphenoidal convolution. The centre for smell is probably situated in the uncus, near the lower part of the hippocampus major.

Mode of Ascertaining the Relations of the Cerebral Convolutions to the Scalp Surface.

The method of ascertaining the relations of the cerebral convolutions to the scalp surface which I consider best and simplest is that described by Professor J. Chiene, in the *Edinburgh Medical Journal*, 1893-94. In addition to the motor areas round the fissure of Rolando, we now as operating surgeons require to know the relations of the temporo-sphenoidal lobe in connection with ear disease, the supramarginal convolutions in puncture of the lateral ventricle, the angular convolutions in word blindness, the occipital lobe in lesions of sight. The relations of the whole brain, except the anterior extremities of the parietal lobes, have become a necessity for the operating surgeon. A simple, easily-remembered, and trustworthy method of localisation is all-



Fig. 2.—Diagram of cranial cerebral relations (as described below). (From Professor John Chiene).

important. One free from the necessity of remembering exact angles or exact measurements in inches will save a burden on the memory, altogether apart from the fact that angles

must vary in different shaped skulls (the fissure of Rolando varies from 65° to 72° in its relation to the sagittal suture), and from the fact that the measurement in inches will vary with the size of the cranium and the age of the patient.

The head being shaved, find in the mesial line of the skull, between glabella G and the external occipital protuberances O, the following points: (1) The mid-point M. (2) The ¾ point T. (3) The ¼ point S. Find also the external angular process E, and the root of they zygoma P, immediately above and in front of the external auditory meatus. Having found these five points, join EP, PS, and ET; bisect EP and PS at N and R, bisect also A B at C, and draw C D parallel to A M. The pentagon A C, B R, P N corresponds to the temporo-sphenoidal lobe, with the exception of its apex, which is a little in front of N. M D C A corresponds to the Rolandic area containing the fissure of Rolando, the ascending frontal and the ascending parietal convolutions. A is over the anterior branch of the middle meningeal artery, and the bifurcation of the Sylvian fissure. A C follows its horizontal limb. The lateral sinus at its highest point touches the line P S at R. M A = the precentral sulcus, and if it be trisected at K and L these points will correspond to the origin of the superior and inferior frontal sulci. The supramarginal convolution lies in the triangle H B C, the angular gyrus is at B.

Professor J. Symington, Belfast, has recently described a simple and accurate method, which he has found useful in localising the motor areas of the brain.

I hope the members of this Association will soon have an opportunity of judging of its undoubted value in surgical practice, when he gives us a demonstration similar to one he gave in Edinburgh before the members of the British Medical Association in July last, which so greatly interested all those who saw it.

The Aseptic Treatment of Cerebral Wounds in the Operation of Trephining.

The day before the operation, first, shave the scalp; secondly, wash the scalp thoroughly with soap and warm water, scrub well with a nailbrush. Particular stress must be put upon the scrubbing, which should be done vigorously and carefully, as mechanical friction is the most efficient means of removing the superficial layers of the epidermis, for it is in these layers chiefly that we find the impurities adhering which contain the infecting micro-organisms. Rinse with sterilised water and dry, next rub over with turpentine, afterwards with ether and alcohol, and lastly with a solution of perchloride of mercury (1 in 2,000) or carbolic lotion (1 in 40). Cover the scalp with eight layers of gauze sublimate dressing secured by a bandage, which should remain on the scalp until the time for operating.

The patient is placed on the operating table in a semi-recumbent position with the head raised, lying between sterilised linen sheets, so as to leave only the region to be operated on uncovered and freely accessible. All instruments and dressings must be cleaned and sterilised as well as the hands and finger nails and arms of the operator and his assistants. The operator and assistants should wear sterilised linen overalls.

Before commencing the operation the surgeon should map out the fissures and motor areas on the scalp by means of an aseptic aniline pencil. Chloroform or bichloride of methylene should be administered with a Junker's improved inhaler, and 2 minims of inject. morph. hypoderm. given immediately before the anæsthetic.

Technique of the Operation.

It is important to mark three points on the bone—first, the place where the centre pin of the trephine is to be applied; secondly, the upper end of the fissure of Rolando; and, thirdly, the lower end of the same at points just outside the flap in order that the fissure may be recognised after the flap has been raised; this may easily be done by using the centre pin of another trephine.

The Flap.

The flap to be raised should be horseshoe shaped, with a diameter of about 3 inches. The base of the flap should be below on account of the blood supply coming from that direction; the flap of periosteum should be raised with the scalp. The hæmorrhage can easily be arrested by grasping the bleeding points with torsion forceps. The trephine opening should be at least an inch and a half in diameter, and this can be enlarged by means of a rongeur forceps to the desired extent. Before enlarging it the dura mater should be separated from the bone by Horsley's dural separator, which can also be used for exploring the inner surface of the skull.

Resection of the Skull.

The scalp is freely incised down to the bone, the flap remaining attached to the latter. By mallet and chisel the bone is almost cut through at every point except its base, the separation being completed by an osteotome; it is then raised by an elevator, the base being fractured, forming a kind of window in the skull by turning back the flap. In this manner a large area of brain substance can be exposed. When the operation is completed the bone and flap are replaced, and the skin sutured; the base of the flap should be in that part of the tissues which has the largest blood supply. A surgical engine or an electro-motor with a saw may be used instead of the chisel. As a rule it is best to open the dura mater on a line parallel with the edge of the bone a quarter of an inch from the margin, care being exercised not to wound the large veins beneath the dura mater.

Hæmorrhage from the middle meningeal artery may be arrested by passing a curved needle through the dura mater under the vessel, and securing it by a fine catgut ligature. After opening the dura mater observe if there is any bulging of the brain substance into the trephine opening; if so, it may be caused by a tumour, an abscess or an internal hydrocephalus. Lividity or yellowish tinge will indicate a probable tumour in the cortex; absence of pulsation in the brain is evidence of a large tumour, abscess, or cyst. Should the brain substance be abnormal, the entire affected portion should be removed. It is better not to drain the wound after cerebral operations, where strict aseptic precautions have been observed. In gunshot wounds, abscesses, and hæmorrhages drainage is necessary.

In many cases the bone, or at least parts of it, can be replaced, and the flap of skin should be closed by interrupted silk worm gut sutures.

Dressings.—The wound should be dressed with sterilised gauze, kept in position by sterilised gauze bandages. The patient should be placed in bed in a cool, quiet, darkened room, with the head raised on a high pillow, and an icecap applied to the scalp. The dressings should not be removed for at least a week, unless discharges pass through them, or the temperature exceeds 100° F., or the patient complains of severe pain and restlessness. The food should consist chiefly of milk, with beef-tea and light soups. The bowels should be kept regular by means of a saline purge, and a catheter used to empty the bladder if necessary.

The following cases demonstrate the practical results of the treatment previously described, and show how successful the treatment of the most severe form of head injuries may be when strict aseptic precautions have been observed in the treatment of the wound, and the careful nursing of the patient has been secured:



Fig. 3.—Case 1, compound depressed fracture through left parietal bone. Fracture trephined, elevated, and fragments replaced in trephine wound.

Case II. *Compound Depressed Fracture through Left Parietal Bone.* — S. M'C., aged 45, labourer, was admitted to the Belfast Royal Hospital on September 22nd, 1890, soon after having fallen from a ladder a distance of about 12 feet. There was a slight scalp wound over the left parietal bone about 2 inches from the external angular process of the frontal bone. He showed no head symptoms for about two weeks, when he became demented, and could not be kept in bed. These symptoms increased, and although the wound had healed we considered there was some brain lesion as a cause of the dementia.



Fig. 3A.—Photo. taken of Fig. 3 five months after trephining of the skull.

On October 15th, 1890, we raised a semicircular skin flap, and found a linear fracture of the parietal bone about 2½ inches upwards and backwards towards the left parietal eminence. We trephined and elevated the skull over the anterior margin of the fracture. The dura mater was not torn. Fragments of bone were replaced and the wound sutured. In three or four days the brain symptoms subsided, and his mind became quite clear, and has remained so ever since. He left hospital on December 6th, 1890, and has been working as a labourer till the present time.



Fig. 4.—Case II, compound depressed fracture of left parietal bone. Photograph taken two years after trephining of the skull.

Case II. *Compound Depressed Fracture of the Left Parietal Bone.*—W. L. aged 27, rivetter, was admitted to Belfast Royal Hospital on June 17th, 1889, suffering from a compound depressed fracture of the left parietal bone, close above the parietal eminence, caused by the falling of an iron nut on his head at Queen's Island. Soon after admission he had twitching of the right hand and wrist. The skull was trephined, the fragments elevated, and part of the bone replaced in the wound, and the skin sutured. He made an uninterrupted recovery. He left hospital on July 22nd, 1889. After going back to his work on four occasions he was greatly excited, and soon after on each occasion suffered from a severe attack of epileptiform convulsions. By changing his occupation he has remained quite free from convulsion since September 19th, 1894, and is now working as a street sweeper.



Fig. 5.—Case III, compound depressed fracture of left parietal bone. Photograph taken two and a half months after trephining of the skull.

Case III. *Compound Depressed Fracture of Left Parietal Bone.*—W. M., aged 16, labourer, was admitted to Belfast Royal Hospital on April 30th, 1890, suffering from a compound depressed fracture of the skull over the left parietal bone close above the parietal eminence, caused by a stab with a penknife. The wound was ¾ in. long by ¼ in. wide, and penetrated to the brain. He suffered from motor paralysis of his right arm, and leg, right side of face, and tongue (aphasia). He was conscious. The symptoms of paralysis came on within half an hour after being stabbed. Two hours after admission to hospital the skull was trephined, the fragments elevated and removed. The dura mater, which was torn, was sutured with catgut. Fragments of bone were replaced and the wound sutured. In seven days a hernia cerebri formed, and 4 ounces of cerebral tissue were removed. The wound healed by granulation and cicatrisation. He left hospital on September 27th, 1890. He was able to walk, but with slight paralysis of his right arm and leg. He complains of occasional headache, and is still partially paralysed in right arm, leg, face, and tongue, but is able to follow the occupation of a dealer.

Case IV. *Compound Comminuted Depressed Fracture of Right Frontal Bone.*—D. B., sawyer, aged 20, was admitted to the Belfast Royal Hospital on October 11th, 1890, suffering from a compound comminuted depressed fracture of the right frontal bone, extending from the right orbit to the parietal bone, caused by being struck with a piece of timber while attending a steam saw. He was rendered unconscious by the blow. When admitted to hospital he had recovered consciousness. There were no symptoms of paralysis or spasm of the arm, leg, or face. Seven hours after admission the fracture was trephined and elevated, the dura mater sutured, and fragments of bone replaced. No evidence of cerebral disease occurred, and he made an uninterrupted recovery. He left hospital on December 6th, 1890, and returned to his work in about three months, and has remained in good health up to the present time. He works as a sawyer, is in good health, and does not complain of any head symptoms.

The treatment I adopted in the cases of fracture of the skull, already described, I consider was according to the most recent and best methods, and has been fully justified by the results obtained. In each case I trephined the skull at the seat of fracture and elevated the fragments, although in one of the patients, No. IV, there were no symptoms of pressure on the brain.

Some years ago leading surgeons taught that trephining should not be performed in patients suffering from depressed fracture,

where no symptoms of pressure were observed, such as paralysis, convulsions, or mental disturbance. In such cases head symptoms often developed after months or years, which rendered the patients liable to much suffering and early death. No advantage is likely to arise from operation when these urgent symptoms are the result of a general cerebral contusion. The elevation of depressed bone is a radical measure of relief, because with the removal of the cause of the symptoms the possibility of the continuance or recurrence is removed, and the removal of a clot from the surface of the dura mater is made effective by the ligation, if necessary, of the ruptured vessel. As a rule, it may be stated that operation in head injuries should generally be performed in depressed cranial fractures, uncomplicated epidural hæmorrhages, and seldom performed in subdural lesions, whether of brain or pio-arachnoid membrane.



Fig. 6.—Case IV, compound comminuted depressed fracture of right frontal bone after trephining of the skull.

If, in accordance with the older clinical rules, operation is seldom to be resorted to in the general class of intracranial injuries, it must not be overlooked that the decision to be inactive on the part of the surgeon carries with it a very grave responsibility, since an error in judgment may deprive the patient of a chance of life by increasing the danger of an already critical condition. This will, I think, be apparent from the comparative safety of exploratory puncture when conducted as I have described by modern methods.

The acceptance or rejection of an operation as a method of treatment when brain lesions are independent of accessible cranial fractures is to be decided in each instance upon clear and specific evidence. Intracranial exploration will be proper or improper as it is made with or without a sufficient reason, and not as it may conform to an opinion based upon a wide generalisation of results that it is a good or a bad procedure.

There are cases in which the remote results of intracranial injuries demand as careful treatment as those of recent origin. These include paralyses and convulsions which are often due to the imperfect absorption of surface hæmorrhages or superficial or ventricular effusion from the original contusion. An exploratory examination of the cranial contents is certainly justified when permanent functional derangements succeed the primary effects of intracranial injury. The risk of danger in performing cerebral operations should always be carefully considered by the surgeon. In the treatment of subdural lesions the operation is in itself a source of danger, and should be performed only when there is a fair hope of a favourable result. There can be no question that our duty is to elevate each depressed fracture, to remove foreign bodies from the brain or epidural clots from the cranial cavity, because less danger is incurred by the operation than is involved in the continuance of the morbid condition which it is sought to remedy.



Fig. 6A.—Photograph taken of Case IV two months after trephining of the skull.

In conclusion, I thank you for your kindly and thoughtful attention during the delivery of my address, which has encouraged me to hope that you will by your cordial co-operation with one another still further promote and extend the principles which have done so much to render possible recent advances in brain surgery. I acknowledge with pleasure my obligations to Lord Lister, Professor Victor Horsley, Professor J. Chiene, Professor W. Macewen, Professor P. Redfern, Professor J. Symington, Dr. J. Harold Stiles, Dr. W. W. Keen, Dr. J. William White, and others whose writings and teachings have contributed so much to the relief of human suffering and the advancement of the science and art of surgery.

[Patients 1, 2, 3, and 4 were shown to the members present at the meeting.]

THE PATHOLOGY OF DIPHTHERIAL PARALYSIS.*

A PAPER BASED ON THE EXAMINATION OF SIX CASES OF THAT DISEASE BY MARCHI'S METHOD.

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The pathology of diphtherial paralysis, although well established from experimental evidence, is from the side of human pathology yet deficient, and it has been shown that the methods applicable to tissue obtained from experimental sources, and which has been characterised as "the only method which is of value" when applied to normal tissue which has undergone *post-mortem* change, gives results exactly similar to those obtained by pathological changes, and is therefore unfortunately inapplicable for the purpose of de-

* Read in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, held in Edinburgh, July, 1898.

monstrating degeneration in nervous tissue obtained from the *post-mortem* room.[1]

The same objection might be raised to the use of Marchi's fluid; it has, however, been shown that the characteristic appearance of degeneration is not to be produced by simple *post-mortem* change.[2]

Comparatively few examinations have been made on cases of diphtherial paralysis by the Marchi method, and it was with this object in view that some eighteen months ago I started the investigation of the nervous system of such cases of diphtherial paralysis as I could obtain, and I would here acknowledge my indebtedness to those physicians under whose care the cases came, namely, Sir Dyce Duckworth, Sir William Gowers, Dr. Barlow, Dr. Lees, and Dr. Penrose, for their kind permission in allowing me to make use of the clinical notes of the cases—for, saving in two of the cases (No. 2 and 5), I did not see the patients before death, and the pathological examination was completed before the clinical notes were examined.

Method of Examination.—After removal from the body the brain, spinal cord, and nerves were hardened in Müller's fluid, small pieces being first removed from the cervical, dorsal, and lumbar region of the cord, and hardened in formalin for examination by Nissl's method. Some of the posterior root ganglia were also placed into the same solution for examination by the same method. After hardening in Müller's fluid for variable periods depending on the time at the author's disposal (never less than thirty days), small pieces were removed from various levels of the cord and medulla, and put into Marchi's fluid for five days, were washed in tap water, and after being treated in the usual manner were embedded and cut in celloidin.

The cranial nerves, the vagi, the phrenics, the spinal roots—anterior and posterior—the ganglia of the posterior roots, and the peripheral nerves, were treated in a similar manner and cut both in a longitudinal and transverse section.

Specimens were mounted in the usual manner in Canada balsam without further staining; others were stained by Pal's method.

Nature of Changes Found.

1. *Nissl's Method.*—The spinal cord in the cervical, dorsal, and lumbar region, and the posterior root ganglia were examined by the above method. No change could be demonstrated in the cells, either of the anterior horn or of the posterior root ganglia; the granules, and the prolongations of the cells of the anterior horn, appearing perfectly normal in size and distribution.

2. *Marchi's Method.*—The character of the changes found by this method were as follows:

(*a*) In the spinal cord the anterior root fibres, as they pass through the white matter, are seen to have undergone degeneration, as manifested by the number of black granules in their course. As they enter the grey matter these fibres are no longer collected in bundles; they become scattered, and pass in all directions between the cells of the anterior horn. In the posterior region of the cord the process is not nearly so easy to trace, owing to the interstitial fat that is normally present in this region. The number of degenerated fibres is, however, greater in the postero-external column than in the postero-internal. The vessels in the grey matter are engorged.

(*b*) The spinal roots.

(1) In the anterior roots the myelin sheath of the nerve can be seen broken up into granular masses composed of very fine globules of fat. Some of these are fused together, and form larger masses; this appearance seems to be similar to that found in a peripheral nerve after section.

(2) In the posterior roots exactly the same change is found, only usually less marked than in the anterior roots.

(*c*) The posterior root ganglia. As stated above no change could be found in the cells of these ganglia, but the fibres on both sides of the ganglion exhibit characteristic degeneration of the nerve fibres.

(*d*) The peripheral nerves. The changes found in the main trunks of the peripheral nerves, and in the fine branches, present the following characteristics: The nerve fibre is swollen up, and the myelin sheath appears to be filled up with fine fat globules. In certain spots these have fused together to form larger masses of fat; in the later stage the myelin seems to be broken up into oval masses, which contain globules of various sizes. The method employed is not one by which one can make certain that a fibre is affected in its whole length, but from examination of sections which have cut a single fibre parallel for a considerable distance, it would seem that the degeneration does not extend along the whole length of one fibre at the same time. The changes found are similar to those found after section of a nerve, and in the most marked case were less marked than in the nerve 14 days after section, and more marked than in the nerve of a dog 7 days after section.

Table of Cases.

Case 1.	Girl, aged 2⅔ years.	Diphtherial paralysis.	Duration 43 days.
Case 2.	Boy, aged 2½ years	,, ,,	,, uncertain.
Case 3.	Boy, aged 5 years.	Diphtheria.	,, 15 days.
Case 4.	Boy, aged 3 years.	Diphtherial paralysis	,, 60 days.
Case 5.	Girl, aged 4 years	,, ,,	,, 50 days.
Case 6.	Boy, aged 1¾ year	,, ,,	,, 100 days.

Methods of Examination.

1. Marchi's method.
2. Marchi-Pal method.
3. Nissl's method.

Parts examined:

1. Cranial nerves.
2. Spinal cord.
3. Anterior and posterior roots.
4. Posterior root ganglia.
5. Vagus.
6. Phrenic.
7. Nerves to the upper extremity.
8. Nerves to the lower extremity.

Case I.—L. W., girl, aged 2⅔ years, admitted to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Lees, on January 26th, with well marked diphtheria, having been taken ill two days previously; 2,000 units of antitoxin were given on the 26th, and 2,000 units on the 28th, the child being apparently well by February 11th. On March 2nd the knee jerks were absent, and the child died on March 9th, forty-three days after the onset of the disease. Necropsy twenty-four hours after death.

Pathological Examination.

1. Nissl's method:

The cells of the spinal cord and of the posterior root ganglia appear to be normal.

2. Marchi's method:

Cranial nerves.—Degeneration was found to a greater or less extent in the 3rd, 4th, 6th, 11th, 12th, and possibly very slight change in the 7th.

Spinal cord.—No change could be found in the spinal cord.

Spinal roots.—Degeneration was present in both the anterior and posterior roots of the 8th cervical.

Posterior root ganglia.—Degeneration was present on both sides of the posterior root ganglion to about an equal extent.

Peripheral nerves.—Degeneration was present in the brachial plexus, the phrenics, the anterior crural, and, to a less extent, in the vagi.

3. Pal's method:

By this method all the parts above examined appeared normal.

Case II.—J. K., boy, aged 2½ years, admitted to St. Bartholomew's Hospital, under the care of Sir Dyce Duckworth, with diphtherial paralysis. History of diphtheria uncertain; onset of weakness February 10th. February 14th, squint, loss of knee jerks, inco-ordination of the movements of the hands. The child died February 19th. Duration of disease uncertain. Necropsy 24 hours after death.

Pathological Examination.

1. Nissl's method:

The cells of the anterior horns examined by this method appear to be perfectly normal.

2. Marchi's method:

Cranial nerves.—Degeneration was present in the 3rd, 4th, and 11th nerves, and possibly also in the 7th.

Spinal cord.—Degeneration of the fibres within the spinal cord, both anteriorly and posteriorly, is fairly well marked at the level of the 6th cervical and 5th lumbar; at the level of the 6th dorsal the cord appears normal.

Spinal roots.—The spinal roots, both anterior and posterior, show degeneration both in the cervical, dorsal, and lumbar region; less marked in the lumbar and dorsal region than in the cervical, and less in the posterior roots than in the anterior.

Peripheral nerves.—Degeneration is present to a marked degree in the nerves of the brachial plexus, the anterior crural, and the phrenics; the vagus, however, presents but little change.

3. Pal's method:

The above parts examined by this method appeared to be normal.

Case III.—A. G., boy, aged 5 years, admitted with diphtheria to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Barlow. The child had been taken ill on July 12th; when seen on July 14th he had well-marked diphtheria; 2,000 units of antitoxin were given. The child improved till July the 26th, when the temperature began to rise, and he died July 29th without any definite sign of paralysis. Necropsy thirty-six hours after death.

Pathological Examination.

This was negative, both with regard to the cranial nerves and the spinal cord. Examination by Nissl's method was unfortunately omitted.

Case IV.—H. B., boy, aged 3 years, admitted to the National Hospital, Queen Square, under the care of Sir William Gowers, with diphtherial paralysis, having had a slight attack of diphtheria two months previously. He had had unsteadiness for two weeks, and on admission had a typical ataxic walk, nasal voice, regurgitation of fluid, loss of knee jerks, and soon after admission paralysis of the diaphragm. He died three days later. Duration sixty days. Necropsy three hours after death.

Pathological Examination.

1. Nissl's method:
Omitted.
2. Marchi's method:
Spinal cord.—The degeneration within the spinal cord is fairly well marked in the cervical and dorsal region, but most marked in the lumbar.
Spinal roots.—The anterior and posterior roots are affected to about an equal extent.
Posterior root ganglia.—The fibres on both sides of the ganglion are affected to a very marked degree.
Peripheral nerves.—The peripheral nerves show comparatively little change, the cauda equina and the right phrenic show some degenerated fibres, but the left phrenic, ulnar and anterior tibial, show no change.
3. Pal's method:
The above parts examined appear to be normal.

Case V.—G. B., girl, aged 4 years, was admitted to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Barlow, on March 1st with an indefinite history of diphtheria, in the middle of January, followed by an attack, on February 11th, of loss of power on the right side without loss of consciousness. On admission there was right hemiplegia without asphasia, nasal voice, articulation very defective, paralysis of the palate, loss of knee jerks and paralysis of the diaphragm. The child died on March 4th. Duration fifty days. Necropsy twenty-four hours after death. Softening was found in the left lenticular nucleus.

Pathological Examination.

1. Nissl's method:
Omitted.
2. Marchi's method:
Spinal cord.—No degeneration could be found in the spinal cord in the roots or in the pyramidal tracts.
Peripheral nerves.—The right and left vagus and the right and left phrenics appeared to be normal.
3 Pal's method:
The parts above examined appeared normal.

Case VI.—J. H., boy, aged 1¾ year, was admitted to the Hospital for Sick

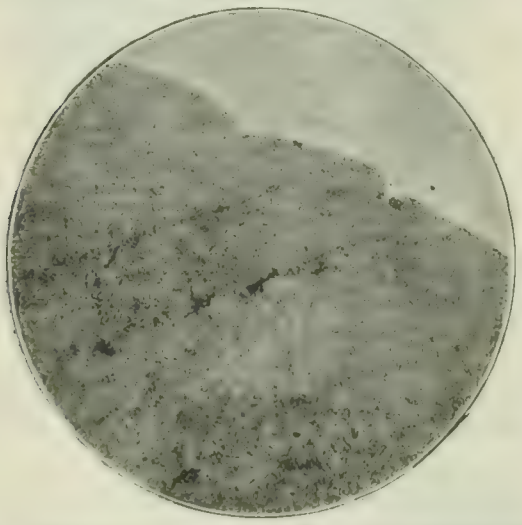


Fig. 3.—Anterior horn from a case of diphtherial paralysis, showing degeneration of the anterior roots as they pass through the white matter of the cord, the degeneration becoming scattered as the fibres enter the anterior horn. Marchi's method, magnified 26 diameters. Case VI.

Children, Great Ormond Street, under Dr. Penrose, with diphtherial paralysis, on January 5th, having suffered from diphtheria three months previously. Antitoxin had not been given. He had well-marked paralysis, and death took place on January 10th. Duration 100 days. Necropsy forty-eight hours after death.

Pathological Examination.

1. Nissl's method:
By this method the cells of the anterior horn appear to be normal in sections taken at the level of 5th cervical, 5th dorsal, and 5th lumbar.
2. Marchi's method:
Cranial nerves.—Of the cranial nerves examined the 6th, 9th, and 10th showed marked change.
Spinal cord.—There is very marked degeneration in the anterior roots as they pass through the white matter of the cord, the posterior roots seem to be even more extensively affected, and the degeneration can be traced into the postero-external columns of the cord where it becomes diffuse. The dorsal region of the cord appears to be normal, the lumbar cord at the level of the 2nd lumbar root shows increased vascularity, and some degenerated fibres in the grey matter.
Spinal roots.—At the level of the 2nd cervical the degeneration of the roots is very much less marked than at the level of the 5th cervical, at which level the degeneration is more marked in the posterior roots than in the anterior. At the level of the 2nd dorsal the roots appear normal, while at the level of the 2nd lumbar there is degeneration of the anterior roots. Comparing the anterior and posterior roots taken at the level of the 3rd cervical segment, one finds that the anterior root is more affected than the posterior, although both are fairly extensively involved.
Peripheral nerves.—Both vagi and both phrenics show marked degeneration, as well as the nerves of the brachial plexus.
3. Pal's method:
No change could be demonstrated in the cord, spinal roots, or peripheral nerves by this method.

Summary of Cases.

Six cases have been examined. All were children under the age of 6 years; 5 were cases of diphtherial paralysis, 1 was a case of death 15 days after diphtheria, without any sign of diphtheritic paralysis.
The duration of the longest case from the time of infection was 100 days, and the shortest 43 days (excluding the case of diphtheria, which only lasted 15 days).
Of the 6 cases, 4 gave a positive result—that is, Nos. 1, 2, 4, 6—and showed a parenchymatous degeneration of the nerves. Case III (death on the 15th day) gave a negative result, and also Case V—a case of diphtherial paralysis with hemiplegia, due to softening of the left lenticular nucleus, death having occurred on the fiftieth day after infection. This case would appear to be altogether anomalous, and it is difficult to understand why the nerves examined should show no change when, clinically, the case was so well marked; and also that in a case of hemiplegia existing for 21 days no descending degeneration could be demonstrated in the spinal cord by Marchi's method.
The changes were most marked in Case VI, a boy who died 100 days after infection.
Of the 4 cases in which changes in the nerves were found, one or more of the ocular nerves were affected in 3; in the fourth case no examination was made.
In 3 cases the spinal cord showed degeneration of some fibres in the grey matter, the cells of the anterior horns appearing to be normal by Nissl's method. In all 4 cases the anterior and the posterior roots were affected, and in the 2 cases in which examination was made degeneration was found on both sides of the posterior root ganglia, the cells of the posterior root ganglia appearing normal by Nissl's method.
The phrenic nerves were affected in all 4 cases, the vagi in 2. The other peripheral nerves were affected to a greater or less extent in all 4 cases.

The evidence obtained from the examination of the above cases points to a parenchymatous degeneration of the nerve. That the affection is primarily peripheral would seem probable from the fact that the fibres on both sides of the posterior root ganglia are involved, and the fact that by Nissl's method the cells of the anterior horn appear perfectly normal. It has, however, lately been shown by Mouravjeff that changes in the cells of the anterior horns occur during the first weeks after infection, whereas the parenchymatous change in the nerves was most marked—five to six weeks after infection—at which time the cells in the anterior horns had recovered or had undergone atrophy, so that in the present series of cases the normal appearance of the cell cannot be used as an argument against a primary cell infection.

Table of Cases.

	Case I. aged 2/3. Duration, 43 days.		Case II. aged 2½. Duration uncertain.		Case III. aged 5. Duration, 15 days.		Case IV. aged 3. Duration, 60 days.		Case V. aged 4. Duration, 50 days.		Case VI. aged 1¾. Duration, 100 days.	
	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
Cranial nerves 1st	o	o	o	—	o						—	
,, ,, 2nd	o	o	o	o	o						o	
,, ,, 3rd	×	×	o	×	o							
,, ,, 4th	××	—	×××	×××	o							
,, ,, 5th	o	o	o	o	o							
,, ,, 6th	×××	××	o	o	o						×××	
,, ,, 7th	×	o	o	×	o							
,, ,, 8th	o	o	o	o	o							
,, ,, 9th	o	o	o	o	o						×××	
,, ,, 10th	o	o	o	o	o						×××	
,, ,, 11th	×××	—	×	o	o						—	
,, ,, 12th	×××	×××		—	o						—	
Spinal cord, 5th cervical	o		××		o		××		o		×××	
,, 5th dorsal	o		o		o		×		o		o	
,, 5th lumbar	o		××		o		×××		o		××	
Anterior nerve roots	×××		×××				××				×××	
Posterior nerve roots	××		××				××				××	
Nerves in posterior root ganglia	××		—				×××				—	
Vagus	××	×	o						o	o	×××	×××
Phrenic	×	××	×××	×××			××	×	o	o	×××	×××
Nerves of upper extremity	×××	×××	×××	×××				×			×××	
Nerves of lower extremity		×××	×××	×××								

Explanation.—
× Slightly affected.
×× Moderately affected.
××× Markedly affected.
— Not examined.
o Not affected.

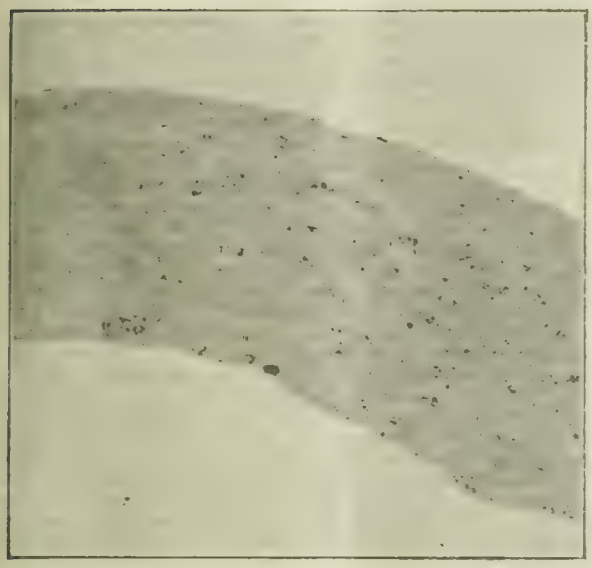


Fig. 1.—Longitudinal section through the 4th cranial nerve, showing degeneration, but to a lesser extent than in Fig. 2. Magnified 100 diameters. Case II.

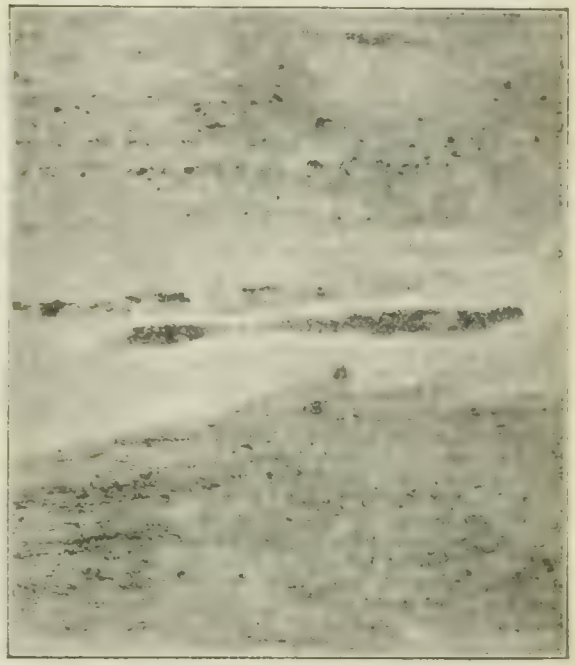


Fig. 2.—Longitudinal section through the right anterior crural nerve, showing degeneration of the nerve fibres. Magnified 100 diameters. Case II.

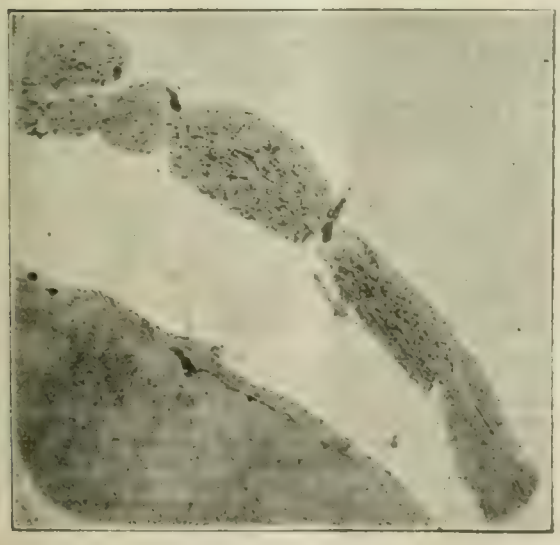


Fig. 4. Longitudinal section of the posterior root from the cervical region of the cord, showing marked degeneration as they pass towards the cord. Magnified 26 diameters. Case VI.

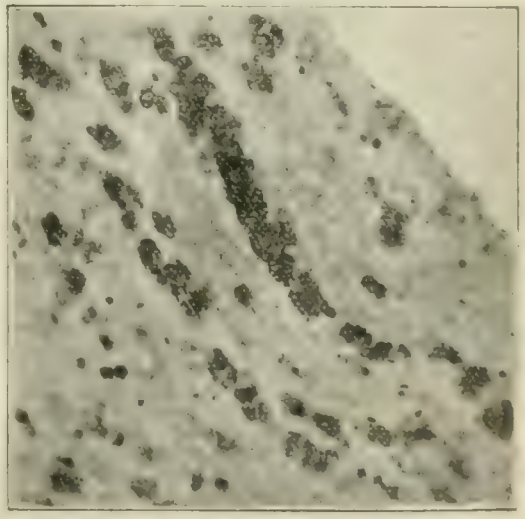


Fig. 5.—Part of the same root (Fig. 4) under higher magnification. The myelin sheath is swollen and filled with fine black granules. In the dark fibre to the left the degeneration is still more advanced. Magnified 410 diameters. Case VI.

Digest.

In 1862 Charcot and Vulpian demonstrated a fatty and granular degeneration of the nerves of the soft palate in a woman who died of diphtherial paralysis. In 1864 Weber published two cases of diphtherial paralysis, in which microscopical examination of the brain and spinal cord failed to reveal any lesion. In 1867 Bühl, in a similar case, found extravasations of blood into the brain, and also that the anterior and posterior horns were increased in size. In 1868 Clos described in a case of diphtherial paralysis changes in the nerves similar to those produced after section of the nerve. In 1869 Lorain and Lépine described a similar neuritis. In 1871 Oertel found in a case of diphtherial paralysis capillary hæmorrhages in the dura mater of the cranium and spinal cord, as well as in the sheath of the peripheral nerves, and also an inflammatory condition in the anterior horns. In 1872 Bailly asserted that the paralysis depended sometimes on a lesion of the peripheral nerves; sometimes, also, on an affection of the muscles. In 1872 Liouville described degeneration in the phrenic in a case of diphtherial paralysis of the diaphragm. In 1872 Leyden described an ascending neuritis (neuritis migrans) which may ascend to the nerve centres. In 1875 Roger and Damaschino described changes in the nerves and anterior roots in four cases of diphtherial paralysis. In 1876 Pierret described an exudation in all points like diphtherial membrane on the spinal meninges and on the perineurium of the neighbouring roots. In 1876 Vulpian denied this, and asserted that the only lesion he had seen in two cases was rarefaction of the connective tissue of the grey matter, and that the cells of the anterior horn became more globular in shape, their contents more homogeneous, and the nucleus could not be seen. In 1877 Sanné relates several cases in which no lesion has been found in the nervous system, and concludes that at present the changes are not constant enough to designate them as due to diphtheria. In 1878 Déjerine examined five cases. He noted two lesions, the one in the nerves, the other in the grey matter of the spinal cord.

With regard to the nerves the changes are such that they resemble those which occur after section of a nerve. The changes in the anterior horns are that the cells are globular, dull, deprived of their prolongations, the nucleus and nucleolus being very little apparent. There is an increase of the neuroglia, and the vessels are congested. The conclusions of the author are:

1. A lesion of the anterior roots similar to that observed after section of a nerve; this lesion being constant.
2. The alteration of the anterior roots has always been in correspondence with the paralysis observed during life.
3. The degree of alteration in the roots has always been in correspondence with the duration of the paralysis.
4. The posterior roots have never presented this lesion.
5. The alteration in the roots is secondary to the lesion in the spinal cord.
6. The lesion in the spinal cord is probably inflammatory in nature affecting the grey matter, and is both interstitial and parenchymatous.

In 1880 Quinquaud observed in two cases lesions similar to those described by Déjerine; he described an acute myelitis in the lumbar region, and noted that some of the cells were filled with yellow granules. In 1881 Meyer examined a case of diphtherial paralysis in a man aged 17, in whom infection had occurred 50 days previously, and marked paralysis had existed for 21 days.

The method used was to tease the nerve on osmic acid, 1 per cent., and counterstain with picrocarmine. By this method degeneration was shown in the phrenic, the nerves of the lower extremities—the nerves most affected being those of the diaphragm and the abdominal muscles. The skin nerves of the lower extremities were also affected, but less than the muscular branches: this might, however, depend on the greater thickness of the sheath of Schwann in these nerves. The motor oculi nerve and the sixth were affected. Strabismus was not present in the case, and degeneration of both may account for this. Some degeneration was found in the finer branches of the fifth nerve, in the seventh, in the ninth, and vagus, but less than in the phrenic and glossopharyngeal. The superior and recurrent laryngeal were also affected, as well as the spinal accessory and hypoglossal. No degeneration was found in the sympathetic.

The larger nerves were examined—the sciatic, the radial, ulnar, and median, but showed less degeneration than the finer branches. It was also noted that the finer nerve fibres were more affected than the larger. The spinal roots, both anterior and posterior, also showed a parenchymatous neuritis, and although the sheath of the nerve was destroyed, the axis cylinder often remained intact; the process being more marked in the lumbar and cervical region than in the dorsal. The spinal ganglia themselves appeared to be normal; the nerves to and from the ganglia however showed degeneration, though it could not be said that it was more marked on the one side than the other. No alteration could be found in the spinal cord; the vessels were dilated, but there was no sign of myelitis. A few cells were somewhat swollen and granular, and these were mostly in the anterior horn.

In 1881 Abercrombie examined two cases of diphtherial paralysis, and denied the alteration described by Déjerine. He noted only a slight diminution of the cells of the anterior horn. In 1881 Gaucher examined two cases; in the first the medulla, spinal cord, spinal roots, and median nerve, were found to be normal; in the second the anterior roots only of the lumbar region were affected. The nerves were teased in 1 per cent. osmic acid and counterstained with picrocarmine.

In 1883 Kidd described an increase in the connective tissue of the spinal cord and atrophy of the cells of the anterior horn most marked in the dorsal region, less in the cervical, and slight in the lumbar. In 1884 Sanné concluded that the primary cause of diphtherial paralysis was due to a central lesion. In 1885 Mendel found in a child who had died of diphtherial paralysis a congestion of the nerve centres and a Wallerian degeneration of the two oculo-motor nerves, the nerve cells themselves appearing normal. In a second case congestion and hæmorrhage into the spinal cord and an interstitial and parenchymatous neuritis of the peripheral nerves. In 1886 Pitres and Vaillard, in a case of diphtherial paralysis in a man aged 37, described and figured in the radial, median, and the anterior and posterior roots, a typical degeneration of the myelin sheath; the axis cylinder remaining in the earlier stages of the disease intact. The nerves were teased out in 1 per cent. osmic acid and stained with ammonium picrocarmine. In 1888 Bristowe described in a child who died of diphtherial paralysis, (1) normal condition of the nerve cells; (2) degeneration of the oculo-motor nerves; (3) hyperæmia and hæmorrhage into the interpeduncular space.

In 1890 Babinski expressed the opinion that diphtherial paralysis was due to neuritis affecting the nerve fibres around the axis cylinder, and that Wallerian degeneration was much more rare. In animals poisoned by diphtheria he was unable to demonstrate any lesion, although the paralysis had been very marked. In 1892 Martin investigated experimentally the effects of an albumose obtained from the spleen and blood of persons dead of diphtheria injected subcutaneously into rabbits. All parts of the nervous system were examined, "the only method which is of value in the study of peripheral nerve degeneration is staining the fresh nerve with osmic acid, and counterstaining with carmine to bring out the nuclei and axis cylinder."

The so-called "motor nerves," namely, those passing directly into a muscle were examined, and showed breaking up of the white substance of Schwann, which had become thin and but little stained by the osmic acid. At a lower point in the nerve the white substance had disappeared altogether, and still lower the white substance was granular and broken up. All parts near the origin of the nerve were quite normal. The primitive sheath was intact, the axis cylinders were often intact, even when the white substance had completely disappeared. There was no interstitial change, no increase of the nuclei; the process is one of degeneration of the nerve fibre. The sensory nerves, namely, the long saphenous, were also examined, and showed a similar change to that described in the motor nerve. The sympathetic nerve also showed a degeneration in the transverse direction above which the nerve was normal, below which the nerve was degenerated. The central nervous system examined by Marchi's, Weigert's, and Pal's methods showed no change in the nerves or cells. The nerve roots were examined, and degeneration was found only in one; namely, an anterior root in the dorsal region. The posterior roots were normal as well as the spinal ganglia.

The fact is clear, therefore, that the degeneration affects the terminals of the motor branches primarily, and not the main trunks. Martin also examined two cases.

1. A child, aged 5 years, who died on the 5th day of pharyngeal and laryngeal diphtheria; the right phrenic showing degeneration such as has been described in animals.

2. A male, aged 19, who died on the 27th day of the disease; the paralysis of the palate being noted on the 9th day. Degeneration was found in one phrenic; in the branches to the right and left vastus internus, and in the nerves to the right and left vastus externus, and in the nerves of the palate.

It is clear from the changes observed in the nerves as a sequence to the injection of diphtherial albumose, that the condition is one of simple degeneration, affecting first the white substance of Schwann, which breaks up and disappears, and later the axis cylinders, which become attenuated and finally ruptured, so that below the rupture the fibre undergoes Wallerian degeneration.

In 1892 Arnheim examined the nervous system of eight children who had died of diphtherial paralysis, and found that the alterations in the cord were slight, whilst the degeneration of the peripheral nerves was marked. In 1893 Stcherback observed in rabbits and guinea-pigs hæmorrhages into the membranes of the spinal cord, into the grey matter poliomyelitis, degenerative changes in the nerve roots, and neuritis of the peripheral nerves. In 1892 Hochhaus failed to find any alteration either of the central or peripheral nervous system. In 1894 Enriquez and Hallion, by experimental injection into animals, found hæmorrhage into the grey matter of the cord, foci of myelitis in the white matter, and destruction of the cells of the anterior horn. In 1894 Bikeles examined a case of diphtherial paralysis in a man, aged 40, by Marchi's method. The sciatic, brachial plexus, phrenic, and vagus, all appeared normal. In the spinal cord, however, in the region of the posterior roots, he found a mass of fat granules. He considers that this degeneration may account for the ataxia which is often present.

In 1895 Preiz examined three cases of diphtherial paralysis by Nissl's and other methods. He found atrophy of the cells of the anterior horn, hæmorrhage into the grey matter, and degeneration of the peripheral nerves and of the anterior and posterior roots. He describes peculiar "nerve buds" on some of the finer fibres. He believes that the central and peripheral portions of the nervous system are affected at the same time. In 1895 Hasche examined the case of a boy, 9 years old, who died 1½ month after the commencement of his illness. The tissues were examined by the following methods: carmine, nigrosine, hæmatoxylin, Weigert-Pal, and Nissl; the nerves being teased with 1 per cent. osmic acid. He failed to find any lesion.

In 1895 Crocq, experimenting on rabbits by injection of cultures of the diphtheria bacillus, and also of the toxin, showed that the cells of the anterior horns of the spinal cord became swollen, the staining irregular, and their nucleus and prolongations disappeared; the neuroglia and ependyma proliferate, the nerve cells atrophy, and their place is occupied by sclerotic tissue. The white substance is very rarely affected. In the nerves the poison produces a degeneration, irregularity of the contour of the nerves, segmentation of the myelin, multiplication of the nuclei, and often the axis cylinders become broken. In the later stages the myelin is reduced to fine drops of fat, the axis cylinders disappear, and the nuclei become more abundant. Lastly, the myelin is absorbed. This degeneration is more marked in the anterior roots than in the posterior. The cranial nerves are not affected. The changes noted in the early days are changes in the anterior horns, while the changes in the peripheral nerves are not marked till about the thirteenth day, and become progressively so till the thirty-ninth day. The diphtherial poison produces in the rabbit a primary myelitis and a secondary neuritis. In man diphtheria seems to produce two varieties of paralysis which differ considerably—the one remains localised to the mouth, nose, eyes, larynx and pharynx, the other is general, and may attack the whole body, and starts usually in the legs. One may suppose that the first is due to a primary peripheral neuritis, and the second, as in the rabbit, to a primary myelitis and a secondary neuritis.

In 1896 Courmont, Doyen, and Paviot examined the nervous system of the frog, dog, and horse poisoned by diphtheria, and found changes only in the peripheral nerves, the cells of the anterior horn proving normal. In 1896 Sano, in a case of diphtherial paralysis of two months' duration, found a neuritis which was segmentary and periaxillar in nature; some slight change was found in the cord, but the dominant lesion was the neuritis. In 1896 Ceni examined three cases of diphtheria, and only in one, which had lasted 11 days, was he able to demonstrate any lesion; the other two appeared normal. In animals the effects are best marked in those that die slowly after 12 to 14 days.

In 1897 Hensche described a disseminated sclerosis in a girl aged 14, who died 2½ months after infection. Degeneration of the nerves of the lower extremities was more marked than in the upper extremities. In 1897 Mouravjeff, experimenting with guinea-pigs and examining the nerves by teasing them in 1 per cent. osmic acid and by Marchi's method, and the cord by Nissl's method, found the first lesion which appeared was an alteration of the cells of the anterior horn. In the animals which lived for a period of five weeks and more, a marked degeneration of the nerves and the anterior and posterior roots occurs; the cells of the anterior at this period appeared almost normal.

In 1898 Thomas examined the pneumogastric nerve in 25 cases of diphtheria. He found degeneration in nearly every case, it being described as "marked" as early as the sixth day after infection. The examination was carried out by Marchi's method, by hæmatoxylin, and by methylene blue.

Summary.

Although various views have been held with regard to the pathology of diphtherial paralysis, it is at the present time generally recognised that the lesion most commonly found is a parenchymatous degeneration of the myelin sheath of the nerves, and Martin has shown that this condition affects primarily the finer nerve branches. More recently the work of Mouravjeff would tend to show that the primary alteration occurs in the cells of the anterior horn, and this was demonstrated by Nissl's method a method which Martin did not use. The same condition had been previously described by Crocq, though he describes the primary condition as a myelitis. In the experiments of Mouravjeff the animals which had been allowed to live for the longest time after infection showed well-marked changes in the peripheral nerves, although no change could be demonstrated in the granules of the nerve cells. Some of the cells may, however, have undergone atrophy. In the present series of cases the cells, not only of the anterior horn but also of the posterior root ganglia, appeared normal. It may, however, be that the cells in these cases had had time to recover.

With regard to the affection of the posterior roots, Meyer, in 1881, showed that they were degenerated, and also that this degeneration existed on both sides of the spinal ganglion. This has been noted again, more recently by Preiz, Crocq, and Mouravjeff, and among others by Bikeles, who describes the occurrence of masses of fat globules in the posterior root at its entrance into the spinal cord; this, however, is a normal condition certainly in children, and probably to a lesser extent in adults, and hence localised granules of fat in this region should not be regarded as evidence of degeneration.

The cranial nerves have been found affected by Meyers, Bristowe, and others; Crocq, however, failed experimentally to find any degeneration. The nerves described as being affected are the third, fourth, fifth, sixth, seventh, eight (Moos), ninth, tenth, eleventh, twelfth.

In conclusion, then, it is probable that the dominant lesion in diphtherial paralysis is a parenchymatous degeneration of the myelin sheath of the nerves, and that this degeneration affects both motor and sensory fibres alike.

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1 *Journal of Pathology and Bacteriology* of 1898, p. 482. 2 *Ibid.*, 1898.

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A NEW OPERATION FOR GASTROSTOMY AND ONE FOR CURETTEMENT OF CARCINOMA OF THE CARDIA.*

Demonstrated upon the Cadaver of Dogs.

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I.—Gastrostomy.

The operation of gastrostomy, when utilised for the relief of conditions in which, either through malignant disease or otherwise, it is impracticable to introduce food into the stomach by the natural route, requires for its success two essential conditions. First, that the operation shall be simple and safe; and, secondly, that after the operation there shall be no leakage of stomach contents through the external wall.

The operation itself under modern antiseptic methods is not a perilous one; thus the first essential is not a source of difficulty. The prevention of leakage of the stomach contents, however, with its consequent irritation and inconvenience, is quite another matter, and various devices have been adopted to meet this requirement. In all cases either the valve or the sphincter principle has been adopted in one form or another; either directly, by means of folds of the stomach wall, or indirectly, on the principle of the uretero-vesical valve by means of a long oblique passage from outside into the gastric cavity. This latter has met with most favour, and is carried out either by making a fold in the stomach wall, as in the method of Witzel, by carrying the fistula obliquely through the stomach wall, as in the methods of Andrews and Fischer, or by making a fold in the stomach wall and carrying it obliquely through the tissues so as to make a canal, as in the Ssabanejew-Franck operation. The direct method of using folds of the stomach to act as sphincters or valves, is, in its way, illustrated by Kader's operation, and by the one which I am here going to describe.

My method was devised by me in the year 1894, and experimentally demonstrated in my lectures before the Jefferson Medical College, February, 1896.[1] It consists essentially in the production of a valvular fold in the passage to the stomach by infolding the stomach wall. The steps after the preliminary incision and exposure of the external stomach wall, which can be done according to any approved antiseptic method suitable to the individual case, are: A fold of the anterior wall from above downward is made and secured for the distance of an inch or more by three stitches. A stitch is introduced through the stomach wall near the lower edge of this fold, and both ends of the thread pass through a perforated trocar which, with its cannula, is held transversely across the fold. The point in the stomach wall where the stitch is inserted is the point of selection for the entrance of the trocar, for which the thread is intended as a guide. The fold first made is now stitched over the cannula and another fold taken up from the bottom is stitched over this. The ring is next sutured to the peritoneum and posterior wall of the rectus fascia. This being done the trocar is pushed into the stomach cavity and withdrawn, leaving the cannula in place; the guiding thread is also withdrawn. The wound is closed, leaving the cannula *in situ*, and the operation is complete.

Taken in separate stages the operation may be analysed as follows:

1. Folding the anterior wall and securing it with stitches.
2. Bringing this fold together around the cannula and stitching it there.
3. Inserting guide thread at point of selection, and passing it through the trocar.
4. Bringing a fold up around the end of the trocar and stitching it over the ring.
5. Suturing the ring to the peritoneal wall and posterior wall of the rectus fascia, pushing the trocar through into the stomach cavity, and withdrawing guide thread and trocar, and closing wound, leaving cannula in position.

The advantages of this operation which I claim for it are that it is quickly performed, and occupies less space on the anterior wall of the stomach than some of the other operations, notably Franck's and Witzel's, and that it makes a perfect valve, preventing any possible leakage of stomach contents. I have demonstrated this repeatedly on the cadaver and on living dogs. I have filled the dog's stomach with air and with water, and in neither case was there any perceptible leakage even under pressure, while by the insertion of the cannula, which is done without any difficulty, the tension is at once completely relieved.

The plan of preventing leakage by means of a valve similar to those of the veins or the ileo-cæcal valve is claimed in only two or three of the methods that have been proposed. Fontan draws out with the forceps a cone-shaped section of the stomach, fixes it *en couronne*, pushes inwards a fold of this portion and sutures it at the sides, then opens the stomach wall at the point of attachment of the forceps, and inserts the cannula. "The cannula is thus sheathed in a mitre-shaped valve formed by the folds of the gastric tissues and the contacts (*adossements*) of the serous surfaces."[2] E. J. Senn[3] draws out a large cone-shaped section of the stomach and sutures it some distance below the apex with two purse-string sutures of strong catgut, enveloping these in a cuff formed from the omentum. After fixing the apex of the cone in the parietal wound an incision, one-half inch in length, is made in the centre of the exposed portion, and a rubber tube inserted. The edges of the incision are now inverted and fixed in that position by Lembert sutures, thus producing a valvular opening. This method is said to be effective, but takes time; in some cases it is made in two stages, and involves a large portion of the stomach wall. It appears to be disadvantageous as compared with the operation I have here described. As I have stated, my own device was originated as early as 1895, and used in two actual operations, and was roughly described by me in a lecture given before the Jefferson Medical College on February 10th, 1896, and published in the *Medical News* of April 4th of that year. Fontan reported his method at the French Congress of Surgery in October, 1896, and Senn's was published in November of the same year. As regards priority, therefore, of these methods, I maintain that my publication in April, 1896, though brief in its description, covers the principle of the production of a valvular opening "similar to the ileo-cæcal valve," as is indeed directly stated therein.

I have thus far applied the method on three occasions to the human subject, all of which, as far as the operation was concerned, were successful; though, unfortunately, in all three, the advanced stage of the malignant disease prevented their long survival. Two died within six weeks of metastasis to distant organs; the gastrostomy, however, functioning well. In none of the three cases was the operation in any way responsible for the fatal termination. I am in hopes before long of having some more promising cases for operation, and from results already obtained I believe that this method will take its place among the more approved operations for gastrostomy.

II. Curettement of Cancer of the Cardia.

Gastrostomy is at best a palliative, and alimentation by the natural route is preferable when it can be maintained, even in malignant disease. If we can relieve the cardiac stricture with gastrostomy, a desirable result is attained, and one which may add materially to the patient's enjoyment of life. Occasionally, therefore, it is advisable to attempt to reduce the size of obstructive growths at the cardiac orifice of the stomach after gastrostomy, and for this purpose I have devised an instrument which I may call an œsophageal or cardiac reamer or curette, and which I have utilised in at least one instance with some success. It consists of a narrow cylinder, or more correctly a truncated cone, on the sides of which are inserted narrow knife edges at an acute angle, and slightly oblique to the long axis of the cone. Its narrow end

* Read in the Section of Pharmacology and Therapeutics at the Annual Meeting of the British Medical Association, held in Edinburgh, July, 1898.

[1] Proc. Fr. Congress of Surgery, *Rev. de Chirurgie*, 1896, p. 867.

[2] *Ibid.*

[3] *Jour. Amer. Med. Assn.*, Nov. 28th, 1896.

is protected by an ivory bulb, and its broader extremity is inserted into a narrow socket and attached to the revolving stem that I use in my gyromele, which is protected by a flexible tube. This instrument can be inserted into the abdominal wound, and guided by external manipulation to the cardiac orifice, and there set in revolution. It can in this way remove tissue and enlarge the calibre of the œsophageal opening when occluded by morbid growths.

My first instrument of this kind was a roughly-improvised one, and yet with it I obtained results which were at least encouraging, if not completely satisfactory. I have since had such an instrument constructed upon my model which will be free from the unavoidable defects of the original, and which presumably will do more satisfactory work.

The use of this instrument is naturally indicated in cases where the obstruction is located near the cardia, and of sufficiently voluminous bulk to be safely bored out. The nature of the tumour, its rapidity of growth, etc., has also to be considered, but in a certain number of cases its utility will be, I think, established. It is easily introduced, easily guided by external manipulation to the point desired, and its ivory bulb-shaped extremity readily engages in what is left of the cardiac opening. With a correct diagnosis of the existing indication it can be used with safety; the knife edges are not sharp, its action is that of a dull rather than a sharp curette, and healthy tissue, being more resistant, is not liable to be removed. If by its aid we can restore the natural passage of the food for any length of time, we may accept it as a solid gain. I offer the instrument as an aid to an operation which in some cases may be an actual necessity, and which in all is a decided advantage if it can be performed with any prospect of success.

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ON OBSCURE HÆMORRHAGE FROM A SINGLE KIDNEY AND ITS CURE BY NEPHROTOMY.*

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At the end of the last and the beginning of the present century there was considerable talk of "hæmaturia *sine materiâ*" or "essential" genuine hæmaturia. Rayer[1] has, for instance, a whole chapter upon this subject. Later on, in the most flourishing period of etiological inquiry, little or nothing was heard about genuine hæmaturia, probably because new or hitherto little noticed causes of hæmorrhage of the kidneys were discovered. In short, in every case of severe bleeding a tumour, tuberculosis, or a hitherto symptomless stone was supposed to be the cause. Since in later years operations upon the kidneys have become more frequent, the question of genuine hæmaturia has once more most unexpectedly come to the front. This is due to the circumstance that surgeons, operating for the removal of stone, tumour, or tuberculous deposits, supposed to be the cause of the bleeding, found the kidney apparently healthy. In some cases the kidney has been removed, the bleeding has ceased, but the microscopical examination has shown no pathological changes. These observations have given a tremendous impulse to the discussion of "hæmaturia *sine materiâ*," and there have appeared in the last few years a series of reports of cases supposed to range under this heading. These are described sometimes as "renal hæmophilia" (Senator, Broca, Passet), sometimes as "hæmorrhage of anatomically unchanged kidneys" (Piqué and Reblaud, Grosglik), as "hæmaturic neuralgia" (Leguen) and by Klemperer even as "hæmaturia from a healthy kidney." These authors cannot explain the bleeding in other ways than by supposing the existence of a "local hæmophilia" or an "angioneurosis." This latter hypothesis (Leguen, Broca), that the bleeding should be caused by a nervous disposition in the patient, seems now, since Klemperer has adopted it, to be the predominating. Moreover, Klemperer has quite recently expressed the opinion that such forms of hæmaturia can be diagnosed and cured without surgical interference, and therefore that operations in such cases are not permissible.

We stand, then, face to face with an important question belonging to the borderland between medicine and surgery, and it seems to me that it is highly necessary, from the surgical side, to carefully weigh and examine Klemperer's opinion, which would cut away our hitherto settled indications for surgical interference.

I have during the last couple of years been forced to take up this matter, from having had under treatment a small series of cases of unilateral hæmaturia, which could not be explained by the usual or known causes, and I take the opportunity of submitting the results I have arrived at to your notice as a slight contribution towards the solving of this question.

A critical study of the cases reported in literature has shown me that the majority of them are most doubtful as cases of "hæmaturia from a healthy kidney." It is clear that before such a diagnosis can be pronounced every possible means ought to be taken to ascertain, first, whether the bleeding really comes from the kidney; and, secondly, whether the possibility of morbid changes of the kidney is absolutely excluded.

The cases reported in literature fall into two groups: (1) those which have been exclusively under medical treatment, and (2) those in which the kidney has been the object of palpation, incision, or removal through operation.

The cases in the first group are quite useless in deciding the question, because there is no cystoscopic examination and no necropsy of the kidney. It is, therefore, quite impossible to say whether the bleeding was due to the kidneys, the bladder, or some other part of the urinary tract, or whether the kidney really was healthy.

Therefore, we are restricted to the second group in searching for proofs of the existence of hæmaturia from "healthy kidneys." By critically examining the 12 reported cases of this kind, it will be found that very few—I think only 2 (Schede and Klemperer)—are in any way convincing. In the 2 cases named the hæmaturia ceased after removal of the kidney, the microscopical examination of which gave a negative result, and no other cause of the bleeding was discovered.

As to the other cases, it is true that the authors themselves state that they have been unable to find any actual cause for the hæmorrhage, whilst they see in the circumstance that the bleeding ceased after simple exploratory operation, a proof that the bleeding originated in the kidney and was only caused by a nervous disposition in the patient. But if you examine these cases, you will find that the patients never showed any symptoms of hysterical or other nervous disposition, while in each case mention is made of other pathological changes, which much more probably could be supposed to be the cause of the hæmorrhage. In the case observed by Senator and Israël, histological examination of the removed kidney showed "interstitial inflammatory areas"; in Lauenstein's case there was oxaluria and a distension of the pelvis, in which no blood was found (probably a stone was impacted in the ureter); in Sabatier's case there was chronic albuminuria, bacteriuria, and the microscopical

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association, held in Edinburgh July, 1898.

examination of the removed kidney showed "traces of interstitial inflammation and sclerosis"; in Anderson's there is notice of pus in the urine; in Broca's epithelial and granular cylinders and cells of renal epithelium—in short, nephritis; in the cases of Israël, Piqué and Reblaud it is distinctly stated that the kidney was both displaced downwards and movable.

In none of all these cases has a bacteriological examination of the urine taken place, and as it is now a well-known fact that urinary infection without suppuration is not rare, it must be admitted that the possibility of infection is not at all excluded, even in the cases where only blood without pus was found in the urine.

Finally, in the cases where the kidney was supposed to be normal, no notice is taken of the possibility that it may not be the kidney at all, but perhaps the pelvis or the ureter which has been the seat of the bleeding. Then the fact that the blood by cystoscopic examination is seen to come from the orifice of the ureter does not prove that the blood originates from the renal tissue.

The cases reported in literature cannot, then, convince us of the existence of bleedings from healthy kidneys on a nervous basis, and it seems to me to be an open question whether the real cause of the bleeding has not been overlooked in these cases, or in most of them: therefore, new and carefully-observed cases are necessary for the solution of the question, and I think the following four cases may be of some value in this respect.

Case I.—E. P., aged 21. No history of arthritic disease in the family. A sister died from hæmatemesis caused by ulcus ventriculi. The patient, always healthy as a child, has exhibited no signs of hæmophilia. From the age of 16 severe attacks of pain in the right side of the abdomen, treated as appendicitis; in the latter years she has twice had hæmaturia subsequent to such attacks of pain. Her medical attendant examined the urine carefully between these attacks of hæmaturia and found it quite normal. No gravel, calculus, or red sediment in the urine. She was brought into my clinic on October 6th, 1896. A fortnight before severe hæmaturia had again set in, which remained constant and considerable.

Objective Examination.—The patient is slightly built, of a nervous and lively disposition, very pale, languid and exhausted. No resistance or tenderness in the cæcal region; the right lobe of the liver is felt an inch and a-half under the curvature; on deep palpation, only the inferior pole of the kidney can be felt. The stethoscopical examination shows nothing abnormal. No petechiæ on the body.

Cystoscopic Examination.—The mucous membrane of the bladder normal. A strong blood-coloured stream comes from the right ureter; clear urine from the left. The urine, taken under aseptic precautions, is deeply blood-coloured; microscopical examination shows innumerable red blood corpuscles and a few white ones; no tuberculous bacilli or other micro-organisms. Spreading on agar-gelatine yields a negative result. Diagnosis uncertain, vacillating between calculus and tumour.

On October 9th, 1896, on the seventeenth day of hæmaturia, right lumbar incision is performed under chloroform. The kidney, which is situated high up behind the liver, is loosened with difficulty, as the superior third adheres firmly to the adjacent parts. Drawn out through the wound, the kidney is seen to be of peculiar shape, long and quite narrow and thin; pale in the lower two-thirds, whilst the upper third is deep bluish-red. Pelvis and ureter are not distended. No calculus is felt. The whole kidney is now divided from the convex margin into the pelvis; the mucous membrane of pelvis pale, quite normal; papillæ healthy; no tuberculous deposit or signs of tumour, but the tissue of the upper third of the kidney is bluish-red and remarkably brittle in comparison to the lower two-thirds, which are absolutely normal. After excision of a piece of tissue from the upper third of the kidney for microscopical examination the kidney was united with catgut sutures. The upper third was so brittle as to make it absolutely impossible to apply sutures in it; the surfaces of the wound here [illegible] to be kept together by sutures in the capsule alone. The kidney was then replaced in its normal position, and only fixed there with a plug of sterilised gauze, placed under the inferior pole, and passed through the posterior angle of the lumbar incision, which was joined with deep catgut and superficial fishgut sutures. On the next day the urine was but slightly mixed with blood; the third day it was quite clear. The fourth day the plug was removed, the wound healing *per primam*.

From the [illegible]th day the urine was quite free from blood and albumen, and has been so since. The patient was discharged perfectly cured on November 12th, 1896, and has in the eighteen months which have since elapsed been well, free from pain, and has passed quite normal urine.

The [illegible] by Professor Dahl of the piece of tissue [illegible] the veins and the capillary vessels [illegible] necrotic parts without cuneiform shape. In the [illegible] recta fresh thrombi were found, and in the capsules of Bowman [illegible] vasations of blood; in the convoluted tubules [illegible].

Remarks.—How [illegible] we explain the bleeding in this case, how the recovery after [illegible]n? The only way in which both things can be explained [illegible] flowing: the bleeding and the changes in the upper [illegible] to a compression of this part between the [illegible] by tight lacing; the operation [illegible] the adhesions and freed the kidney from compression.

Case II.—[illegible] admitted on May 17th, 1897. No [illegible] has been perfectly healthy until 1885. When one [illegible] was suffering, and after having lifted heavy [illegible], noticed blood in the urine for the first time. A similar second short hæmaturia two years ago; 16 days before admission the hæmaturia reappeared again after severe exertion. The urine resembled dark blood, without coagula, and remained the same up to date of admission. No gravel or other deposits in the urine. She has become very emaciated and anæmic during her present illness.

Objective Examination.—The patient is extremely pale and emaciated, of a dirty cachectic complexion. Stethoscopic examination gave normal results. On palpation of abdomen the left kidney could not be felt, but on the right side under the curvature a large hard tumour was felt, and supposed to be the greatly swollen right kidney. The cystoscope showed the mucous membrane of the bladder normal; a considerable stream of blood was seen coming from the right ureter, clear urine from the left. The urine, taken under aseptic precautions, was acid, without any smell. It was of a deep dark blood colour, and yielded a high, red deposit, which under the microscope showed numerous red, a few white, corpuscles, and many small mobile bacilli, found on cultivation to be bacterium coli.

The diagnosis was malign tumour of the right kidney.

On May 20th, 1897, right lumbar incision was performed under chloroform. I found the kidney displaced downwards in a remarkable oblique position, with its upper pole turned towards the vertebral column, the convex border turning forwards and upwards, so that the kidney seemed to have made half a turn upon the pedicle. The kidney was kept in this position by the very pronounced lacing liver, the furrow of which was exactly opposite to the upper edge of the kidney, whilst the kidney was behind and adherent to the posterior surface of the lobe of the liver, so adherent that it could not be detached without making a 2-inch split in the peritoneum. It was evident that the hard tumour I had felt was kidney *plus* liver, not the kidney alone. The kidney, which was certainly a little enlarged, being especially longer than is normal and bluish on the surface, was brought through the wound. I placed my forceps on the pedicle, and a complete division of the kidney from the convex border into the pelvis was then performed without any bleeding. The tissue was cyanotic, but otherwise normal in appearance; no calculus or tumour could be found. The pelvis perhaps a little dilated; its mucous membrane smooth and pale. After excision of a piece of tissue for microscopical examination, the kidney was united with catgut sutures and replaced in its normal position, where it was kept by a pad of sterile gauze placed beneath its inferior pole, after which the lumbar wound was closed.

The next day (May 21st) the urine was clear, not tinctured with blood. On June 1st the urine did not give chemical blood reaction, but a slight quantity of albumen. On June 7th the urine was without albumen, but there was still bacterium coli. After two months' treatment with salol and distilled water (1½ to 2 litres daily) the urine was quite sterile. During the year which has elapsed since operation the patient has been quite healthy, and the urine normal (last examination July, 1898).

The microscopical examination of the extirpated tissue showed stasis in the veins and the capillary vessels. No infiltration of round cells. In the tubuli recti a number of small staff bacteria.

Remarks.—I suppose that the bleeding was caused by the stasis in the veins produced by the torsion of the pedicle of the displaced kidney.

Case III.—C. J. K., aged 47, married farmer. Admitted on December 21st, 1897. No morbid disposition in the family. The patient has enjoyed good health, excepting during the last two years, during which he has suffered somewhat from bronchitis during the autumn. Three months before admission the hæmaturia began for which he came under my treatment. During these three months there has constantly been much blood in the urine (equal parts of urine and bright fresh blood). He has during this period had a dragging sensation in the left renal region, but no pain. The passing of the urine has not been painful or frequent. He has kept his bed a fortnight, but the hæmaturia remained unchanged. He has grown very thin and lost his strength, and has latterly been unable to work.

Objective Examination.—The patient is strongly built, but very pale. Stethoscopic examination shows slight emphysematous enlargement of the lungs; the heart sounds clear and regular. Palpation of the abdomen showed nothing abnormal; the left kidney could not be felt. In the left epididymis a flat, uneven infiltration is felt; the prostatic gland and the vesiculæ seminales are not infiltrated. The cystoscope shows the bladder normal. Clear urine comes from the right ureter, bloody urine from the left. The urine is acid, very bloody, contains numerous red and few white blood corpuscles. No tubercle bacilli or other microbes could be found; no crystals. The diagnosis is doubtful, inclining mostly to tumour or tuberculosis; the infiltration in the left epididymis being in favour of the latter, whilst the absence of bacilli in the urine is against it.

On December 29th right lumbar incision was performed under chloroform. The kidney was found lying high up under the diaphragm, apparently in its normal position; it was loosened and brought forward through the wound. It was apparently quite normal in size, shape, colour, and consistence; the pelvis not dilated; no tumour or calculus. A 3-inch long incision was made from the convex border into the pelvis, but the tissue was found quite normal; no tuberculous deposits could be discovered there or in the pelvis, the mucous membrane of which seemed to be healthy. The kidney was united and replaced, the lumbar wound closed. An exploratory incision on the right side showed the right kidney healthy.

The first two days after the operation there was still blood in the urine, but from the third day the urine became clear, with doubtful reaction of blood with guaiacum and turpentine. On January 5th the urine was clear, without blood or albumen. The wound healed *per primam intentionem*. The patient was dismissed in excellent health on February 1st. During the five months which have since elapsed the patient has been in perfect health and able to work, and the urine has been normal.

Remarks.—It must be admitted that here we have an absolutely obscure case, analogous to the observations of Schede and Klemperer. To interpret this case, like Klemperer, as bleeding resulting from nervous disposition, seems to me unsatisfactory, for the patient was a robust farmer in the prime of life, without the least nervous tendency. It seems to me preferable to suppose that a slight tuberculous or other affection has been overlooked, and that the incision has had a curative effect upon it, like that we see from laparotomy in cases of tuberculous peritonitis.

Case IV.—D. J., aged 28, married woman, admitted May 5th, 1898. No morbid disposition in the family. The patient never showed tendency to bleeding. During the last two to four years she has noticed pains in the left side and loin after physical exertion. The urine was formerly always clear. On November 25th, 1897, she was suddenly attacked by severe pains in the left side, radiating down towards the bladder, and she had frequent vesical tenesmus. After this attack had lasted two days, a violent hæmaturia set in, during which the urine was mixed with equal parts of blood. The hæmaturia lasted six days, but afterwards the urine did not become clear. She was sent to the Royal Frederick Hospital, where she remained three months, first in the medical department, where a renal calculus was supposed to be the cause of the symptoms, for which reason she was transferred to the surgical department for operation; but the chief surgeon refused to operate her, having no distinct diagnosis, and she was dismissed from the hospital in the same state as she entered it.

As the patient's condition grew steadily worse, and the violent pains became more and more frequent, she consulted me and was admitted into my clinic for examination. I found her pale and emaciated. On examining the abdomen, I found the left kidney enlarged and displaced, reaching from the curvature to the fossa iliaca.

Cystoscopic examination showed the mucous membrane of the bladder normal, but turbid urine flowed from the left ureter, clear from the right. The urine was acid, slightly bloody, diffusely turbid, with a loose, slightly red deposit half an inch high, which consisted of numerous red and white blood corpuscles, few epithelial cells, no cylinders but numerous moving bacilli; by spreading and cultivation only bacterium coli appeared. On May 12th an oblique left lumbar incision was made under chloroform. The kidney was found displaced downwards so much that its lower pole reached the entrances to the small pelvis, whilst the upper pole was just under the twelfth rib.

The pelvis was much dilated, of the size of a mandarin orange; about an inch up, on the exterior side of it, the ureter was seen to turn inwards with a sharp bend. The kidney itself seemed to be normal. The ureter was of normal calibre, and no calculus could be felt here or in the pelvis. The kidney was drawn forward through the wound, and after placing my pressure forceps on the pedicle, it was cutively divided from one pole to another into the pelvis, from which a great quantity of turbid, slightly bloody urine escaped. The mucous membrane of the pelvis was somewhat swollen and red, the two superior calyces enlarged to the size of hazelnuts. The tissue of the kidney was normal in colour and structure. A small piece of tissue was removed for microscopical examination. The ureter was permeable to bougie No. 12 (French) in its entire length. After lengthy syringing of the pelvis and ureter with boiled water, the divided kidney was united with catgut sutures, replaced in its normal position and fixed there by means of a strong silk suture through the lower pole of the kidney, which was tied over a gauze pad outwards at the height of the tenth rib. The lumbar wound was closed, and a Pezzer's catheter placed in the bladder.

The second day after operation the urine was clear. On the fourteenth day the sutures were removed. The wound healed *per primam*. After a month the silk suture through the kidney was removed. The patient was discharged in good health on July 3rd.

The extirpated tissue proved on microscopical examination to be quite normal, excepting that groups of bacteria were found in the tubuli recti.

In discussing the origin of the bleeding in these four cases, we must naturally consider Cases II and IV together, because they resemble each other, in both the kidney being displaced downwards, and the urine infected by bacterium coli. We have, then, two morbid factors, either of which might be supposed to play some part in the origin of the hæmorrhage; therefore, two possible explanations to discuss. It would be natural to turn first to the infection as the actual cause of the bleeding, as it is a well-known fact that infectious nephritis can cause even considerable hæmaturia. But I believe that such a hypothesis must be abandoned if we take into consideration (1) that the tissue of the kidneys showed no sign of nephritis either macroscopically or microscopically; (2) that the operations were followed by immediate and complete cure, whilst, in case of inflammation, it would be more probable that the extensive vulneration of the kidney would give rise to a new and severe inflammation.

If we now consider the other pathological condition, the displacement of the kidney, we shall at once find an argument in its favour in the excellent effect resulting from the operation. In both cases the kidney was replaced and fixed in its normal position, and the circumstance, that the bleeding ceased at once, directly after the kidney was replaced, is a clear proof, that it was in some way or other, due to displacement.

How can this be explained? I believe in two ways, each represented by my cases: (1) Torsion of the pedicle with its vessels may cause a venous stasis in the kidney and rupture of small veins; this, I feel assured, was the cause of the bleeding in Case II. (2) Bleeding from the walls of the pelvis by retention (intermittent acute hydronephrosis). It is a well-known fact that bleeding from the bladder may arise, if the bladder is suddenly emptied after retention, and many experiments made upon animals have proved to me that ligation of the ureter always results in rupture of vessels and formation of ecchymoses in the parts of the mucous membrane lying immediately above the ligature. Something similar can be imagined as taking place in cases of movable kidney, where a bend or twist of the ureter suddenly stops its passage, and where after retention and dilatation of the pelvis for hours or days, the pelvis is suddenly emptied. This is the explanation which seems to me most probable in Case IV.

Albarran, in 1891, reported some cases of hæmaturia, the pathogenesis of which was doubtless of this nature, and, as I have mentioned, a displaced kidney has been found in a number of the cases published as "neuralgic hæmaturia" or *hémophilie rénale*. I, therefore, believe, that the bleeding in these cases had the same origin as in my own.

Although there is, in my cases, no reason to ascribe any importance to the infection as a cause of hæmorrhage, still it is probable that a sudden invasion of the kidney by a great number of microbes may give rise to a passing hæmaturia without other effects. I have also in my last book described several cases of bacteriuria commencing with a single hæmaturia. At all events, before diagnosing "hæmaturic neuralgia," it would be well to exclude the possibility of infection by careful bacterioscopic examination.

My Case I seems to me to illustrate the risk of diagnosing angioneurotic bleeding after Klemperer's example. My patient quite answered to the description generally accepted as typical in cases of neuralgic hæmaturia: she was a slightly built, exceedingly nervous girl with a frequent change of colour and varying humour; she had during the last few years several times had attacks of bleeding, between which the urine was quite normal; but the operation, which was made necessary by the last serious bleeding, showed the real cause of the bleeding to be the traumatic effect of the stays, the superior pole of the kidney having been pressed between the liver and ribs.

As I have never seen this alteration of the kidney mentioned among the sequelæ of lacing, I will call call your attention to this fact as a hitherto neglected and perhaps frequent cause of renal hæmorrhage of apparently mysterious origin.

Case III has yet to be mentioned. Here I must admit that I have not been able to find the slightest cause for the bleeding, neither for the cure, which immediately followed the nephrotomy; but I can see no satisfaction in calling such hæmaturia "angioneurotic," still less in calling it "bleeding from a healthy kidney." First, it is not at all certain that the bleeding was from the kidney and not from a vessel in the pelvis or the ureter, and further it is possible that a small diseased part of the kidney might have been unobserved during the nephrotomy.

The diagnosis of these "neuralgic bleedings" should, according to Klemperer, be easily formed (1) by excluding the usual causes of hæmorrhage (stone, tumour, tuberculosis); (2) from the patient's nervous constitution; and (3) *ex juvantibus*, that is, if the bleeding ceases after hydrotherapeutic treatment. Klemperer therefore declares that exploratory or curative operations are not permissible in cases of this kind.

Against this opinion of Klemperer I must protest most strongly, because (1) if operation is not performed in such cases we never can exclude the most serious of the usual causes of hæmaturia, the presence of a malignant tumour in the kidney. It is by making an exploratory incision in all cases of obscure hæmaturia from one kidney that we have in latter years succeeded in making a number of cures by an early extirpation of malign renal tumour. (2) My cases prove that even if the usual causes of hæmorrhage can be excluded, another unexpected and more rare cause may in most cases be discovered and remedied by operation. It may be supposed that in a great number of apparently obscure bleedings, a displacement with torsion of the pedicle and bending of the ureter, or a traumatic injury of the kidney from the stays is the cause. (3) Exploratory lumbar incision is attended with so few dangers that it cannot be compared to the risk run by leaving the patient with the possibility of malignant tumour.

When we add to this the circumstance that exploratory incision, even when no disease can be found, causes the almost immediate and definitive cessation of the hæmaturia, which in many cases—three of mine—is extremely dangerous, it seems to me that in spite of Klemperer, we must consider it our ab-

solute duty to examine the kidney carefully by means of an operation in every case in which hæmorrhage from a single kidney has been proved without any cause being discovered which could indicate medical treatment.

REFERENCE.

[1] *Traité des Maladies des Reins.* Paris: t. iii, p. 357-434, 1841.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ACETANILIDE IN SUNSTROKE.

ON August 21st, during the period when in London the thermometer registered 128° in the sun, I was called to see a boy, aged 16, who presented typical symptoms of sunstroke. There was intense pyrexia, loss of power over the sphincter muscles, and difficulty in swallowing and in articulation. The temperature was 106.8° F., the pulse 130, of a jerky character, and the breathing hurried.

The usual treatment laid down in most of the textbooks was adopted, including the cold douche, ice to the head and spine at intervals. On account of the severe pains experienced in the head antipyrin was given, gr. xii, every four hours during the day, to reduce the high temperature, with the result that after three days the temperature was 105° F. During the use of the drug the cerebral pains were less acute; but when once or twice I ventured to give quinine gr. v, this trouble increased, and no marked diminution in the fever took place. Delirium of an active character having set in, I resolved to administer cautiously antifebrin, gr. v, in powder every six hours, guarding against the supervention of cyanosis by ordering 6 oz. of port wine in the twenty-four hours. Before the administration of the first powder at 11 A.M. the temperature stood at 105.4°, and on my evening visit, one hour after the second powder had been taken and 4 oz. of the wine, I found the temperature reduced to 98° F., or practically 0.4° below normal. No bad symptom appeared through the rapid decline of the pyrexia, and no inconvenience was experienced by the patient, with the exception that he felt the feet rather cold, a matter promptly corrected by a hot water with mustard foot-bath and wrapping the feet in flannel.

The recovery stage extended over six weeks, and whenever the temperature rose to 100° F. or over it was promptly reduced by administering from 2½ gr. to 5 gr. of antifebrin. The boy is now at the All Saints Convalescent Home, Eastbourne, greatly emaciated after his prolonged illness, but free from any sign of paralysis or mental aberration.

My object in writing these few notes is to bring forward the merits of a comparatively little-known drug in reducing temperature in a disease which usually claims its high mortality of 50 per cent., from the excessive pyrexia set up by some obscure form of vasomotor paralysis. Acetanilide (antifebrin), in my opinion, is a good and safe antipyretic when given in small doses with port wine or brandy.

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THE APPLICATION OF HYDROCHLORIC ACID IN SCIATICA, ETC.

THE following is an account of cases in which hydrochloric acid was applied over the course of the sciatic nerve or to the heels and feet, for the relief of pain in these parts.

The patients, 26 in number, were in hospital and under careful observation during the course of treatment. Sixteen were affected with sciatica, which in most instances had defied every other kind of treatment. Of these, 2 were completely cured, 11 were considerably relieved, and 3 were no better. The remaining 10 patients were suffering from intractable pain in the heels and plantar region, the sequelæ of acute rheumatism, often gonorrhœal. Of these, 4 were quite cured, 1 was very much relieved, and 5 were no better. The average number of applications was for all the cases 15, and for those cured 19. The duration of the treatment varied from one to five weeks.

The method of procedure is simple, bedtime being the most suitable for making the applications. The strong acid of the *British Pharmacopœia* is painted on the skin, by means of a glass brush, in a series of lines about 2 or 3 inches long over the tender spots in the thigh and calf. After being allowed to dry the limb is enveloped in cotton wool and loosely bandaged, and is then left in this condition till the morning, when the patient may be allowed to get up as usual. No vesication of the skin is produced, and the application is not attended with any pain.

The acid may be applied every night or every other night, according to the effect produced on the skin, but it should be discontinued directly there is any sign of redness or irritation of the parts.

It is extremely difficult to understand how it acts, and of course the number of complete cures in the above cases (23 per cent.) is not very large; but when it is taken into consideration that the patients selected were those that had previously been subjected to practically every known form of treatment and to no purpose, it seems to me that in hydrochloric acid we have a useful addition to our stock of remedies for the relief and cure of sciatica and other troublesome pains of a rheumatic character.

R. A. BAYLISS, M.R.C.S.Eng., L.R.C.P.Lond.,
Late Resident Medical Officer to the Royal Mineral Water Hospital, Bath.

INTESTINAL ANTISEPTICS IN DIABETES.

MORE than twenty years ago, while Surgeon to the Wallace, or Riverton, Hospital, N.Z., some cases caused me to reflect that if diabetes mellitus is curable it should not be by further impoverishing the system through withholding necessary carbohydrates, nor by destroying the assimilating processes with opium or codein, but rather by seeking means to check the fermentative changes into glucose or grape sugar. In furtherance of my idea I experimented with sulpho-carbolate of soda, and was so far successful that several patients were discharged apparently cured. At all events I never saw them again. I afterwards took charge of the hospital and clubs at Reefton, and found a middle-aged club member suffering so acutely from diabetes that he was emaciated, decrepit, dim-sighted, had ulcerations about the joints, and was losing ¾ lb. per diem. The specific gravity of the urine was 1048, and he had been reduced from over 13 st. to 8 st. 3lb. With the exception of forbidding oatmeal porridge, and asking him to do without sugar, I did not limit his diet, but persevered with the sulpho-carbolate in varying doses. When I left that district about eighteen months afterwards his weight was 12 stones and upwards. He was able to do half a day's work with the spade, and the specific gravity of the urine was 1030 with very little sugar. Under other treatment he declined, and died a few months afterwards.

I subsequently had several cases at and over middle age, and found they were equally benefited, but without absolutely losing the trace of sugar. It is now about fourteen years ago that my son, a lad of 12 years of age, suffered from diabetes mellitus, set up, I think, by mental anguish. He had all the pronounced symptoms, loss of weight, feebleness of sight, and ulcerations at the wrists. He passed large quantities of sugar in his urine. His loss of weight was from 3 lbs. to 4 lbs. in the week. The full details of his treatment were published in the *Australasian Medical Gazette*.

With this patient the sulpho-carbolate treatment had very little effect, and time being too valuable to waste I altered it to boracic acid (at that time not mentioned in the *Pharmacopœia*), modifying the doses to suit the symptoms. He was cured, and so completely that, although he has since spent an adventurous time in British New Guinea exploring, pearling, gold mining, and trading, as well as occupying active official positions, he has had no recurrence since boyhood.

I have since treated a single lady, aged 26, who was placed under my care after she had lost, through diabetes, 2 stone weight in six months. The sulpho-carbolate with her checked the loss of weight and diminished the urinary sugar, but failed to do more. She has since recovered completely from all trace of sugar, and has regained her normal weight under treatment by boracic acid. There was a peculiarity in the last case, inasmuch that inosite (muscle sugar), which was excreted at first after the grape sugar vanished, also showed

up afterwards whenever uric acid, or even excessive urates, were present. This was due, I think, to an hereditary gouty taint.

From the foregoing cases I believe my theory has been borne out, though the description of remedy for checking the fermentative change may have to be altered according to age, and probably much improved upon. I observe that Dr. West wrote to the British Medical Journal in issue of August 24th, 1895, mentioning a successful result with nitrate of uranium, which he imagined acted by interfering with unorganised ferments. If so, it supports my argument.

Francis A. Monckton, M.R.C.S.Eng.

Feilding, New Zealand.

FRACTURE OF THE ZYGOMA.

On June 18th a man while playing football here fell and struck the side of his face on the hard ground. I saw him shortly after, and found the zygoma fractured 1 inch in front of the ear. It was a complete simple fracture, and nothing of the zygoma could be felt in the depression. He says the ground when he fell was not raised, and there were no stones about. He could only separate his teeth slightly, and suffered pain. Next day the depression had filled up. I saw him again on September 7th, and he can open his mouth easily to its full extent. There is a dimple over the seat of fracture, and new bone can be felt. The only treatment was application of cold water.

Umtali, Rhodesia. C. L. Martin, L.R.C.P., M.R.C.S.

THE TREATMENT OF HÆMATURIA BY CANTHARIDES.

Having seen in the British Medical Journal of September 17th the interesting account by Dr. Beven of the treatment and cure of a case of hæmaturia by cantharides, I thought I would try it in a case which was then under my care, with the following gratifying result:

Mrs. C., aged 52, stated that she was passing a large quantity of blood in her water. I could find no pain, tenderness, or fulness in the loins. Her temperature was normal, her pulse 100, weak. There was no puffiness under the eyelids, etc. She said that she had felt perfectly well up to the day preceding, when she first noticed the blood in her urine. The urine, though rather less in quantity than usual, was not scanty. As the blood did not come before or after the water, but was mixed with it, I concluded it came from the kidney. I ordered her to stay in bed, regulated her diet, etc., and put her on a mixture of liquid extract of ergot and liquor strychninæ. This mixture was continued for close on a week without having any effect whatever on the bleeding. I then determined to try the cantharides. I gave her mv of the tincture three times a day in water, as recommended by Dr. Beven. To my astonishment in exactly twenty-four hours after she had taken four doses of the medicine the hæmaturia had completely disappeared. I then reduced it to one dose daily for two days, when I stopped it altogether, as there had not been the slightest return of the bleeding. It is now some weeks since her attack, and she is quite strong again.

Dundrum, co. Dublin. Arthur S. Goff.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

STATION HOSPITAL, DORCHESTER.

NOTES ON LIGATURE OF THE BRACHIAL ARTERY FOR WOUND.

(By Captain P. G. Ievers, R.A.M.C.)

On September 9th I was informed that a serious case of hæmorrhage had been brought to the hospital requiring immediate attention. I found that the patient (a boy, aged 3 years, son of a private) had bled profusely, but Private Wiltshire, R.A.M.C., controlled the hæmorrhage by pressure with two fingers of the right hand over a severe lacerated wound situated in the middle third and inner side of the right arm, whilst with the left hand pressure was applied along the course of the vessel higher up. The wound had been caused by falling on a glass bottle which the child was carrying under his arm. I may here mention that men of the corps are taught that the course of the brachial artery corresponds with the inner seam of the coat sleeve, a rough but useful guide. On seeing the nature of the case I proceeded to prepare the necessary instruments, ligatures, and dressings, and as the readiest means of finding and securing the wounded artery, directed the orderly to remove his fingers for an instant, whereupon the blood spurted into my face with the strength of a good-sized syringe. With an artery forceps I then seized and ligatured the wounded end of the artery next the heart, after which all hæmorrhage instantly ceased.

The wound was then rendered aseptic with boracic lotion, and was subsequently brushed over with compound tincture of benzoin, and effectually sealed; a graduated compress of lint, to which the same tincture was added, was then placed over the wound and a bandage carefully applied from the hand upwards, at the same time the forearm was flexed and the arm fixed to the side by a few rolls of bandage (an important point with a child).

The patient, very faint from previous loss of blood, was given some aromatic spirits of ammonia and placed in the open air. The hand and arm were examined at intervals to watch the effect on the circulation of the injured limb. Little, if any, swelling supervened however, and with the exception of a fall in the temperature of the part all progressed satisfactorily until the ninth day, when the dressing was removed and the ligature found to have come away, leaving a clean, healthy wound which is now healed.

The pulse, which at first could not be felt at the wrist on the injured side, has gradually become faintly perceptible, showing that the collateral circulation has been established. The case is of interest, as showing that it is not always necessary to tie both ends of a wounded brachial artery in its middle third—a point insisted on by Guthrie and most military surgeons since his time.

VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

OTITIS MEDIA FOLLOWED BY MASTOID ABSCESS IN AN INFANT AGED 5 WEEKS: OPERATION: RECOVERY.

(Under the care of Mr. D'Arcy Power.)

[From notes by Mr. J. A. Belcher, House-Surgeon.]

E. A., aged 5 weeks, was brought to the hospital on June 16th, 1898, with the history that she had been suffering from a purulent discharge from the left ear since she was 3 weeks old. A swelling was noticed behind the left ear two days before she was brought to the hospital. On admission there was a red, fluctuating, and tender swelling behind the left pinna just over the situation of the rudimentary mastoid process. There was no discharge from the ear. The temperature was 100° F.

Chloroform was administered, and a curved incision was carried down to the bone about half an inch behind the pinna. The soft tissues, including the pericranium, were turned forward and about a drachm of pus immediately escaped. On examining the exposed bone a small track was found running to the antrum. The sinus was enlarged, and a quantity of granulation tissue was scraped out with a sharp spoon, sufficient communication being established between the antrum and the external auditory meatus to allow of lotion being syringed freely through it.

The patient did well after the operation, the temperature falling at once to normal, and she left the hospital on August 5th in good condition and with the wound soundly healed.

Remarks by Mr. D'Arcy Power.—The case is interesting chiefly on account of the tender age of the child and the happy issue. At this early age the mastoid process hardly exists, and, as Toynbee pointed out, the only representative of the mastoid cells is the horizontal portion adjacent to the tympanic cavity. The squamous bone immediately above and behind the external auditory meatus thus becomes early affected by the inflammation, and the child may die of a

general cerebral irritation rather than of a cerebral abscess unless immediate steps are taken to set free any pus which has accumulated.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Friday, November 11th, 1898.

JOHN LANGTON, F.R.C.S., President, in the Chair.

SARCOMA OF SYNOVIAL MEMBRANE OF KNEE-JOINT.

MR. HOWARD MARSH described the case of a man, aged 21, who was in St. Bartholomew's Hospital in September, 1892, for a swelling of fourteen months' duration, situated over the inner condyle of the femur, close to its articular border. It was about the size of a small flattened tangerine orange, and was regarded as probably due to tuberculous periostitis, with thickening of the adjacent parts. When cut into, however, it proved to be a new growth situated in the subsynovial tissue. It was freely removed, together with a zone of surrounding synovial tissue. The wound healed without complication. The new growth was a mixed-spindle and round-celled sarcoma. In March, 1895, a mass as big as a marble was dissected out from the upper end of the original scar. This had the same structure as the original growth. In December, 1895, a nodule of the size of a small walnut was removed from the subsynovial tissue to the outer side of the joint. In August, 1896, two small nodules of sarcomatous growth were removed from the inner side of the joint; and in October, 1897, two small masses of a similar nature were detected and removed. In December, 1897, a mass could be felt at the posterior part of the joint, apparently as large as a walnut. This had displaced the popliteal artery, so that it could be felt close beneath the skin. The patient complained of severe pain down the back of the calf. There was no affection of the femoral glands. As the limb was now almost useless, and as the growth was extending, amputation was performed through the middle of the thigh. On examining the joint a growth as large as a bantam's egg was found springing from the synovial membrane at the back of the joint, and there was a second but smaller mass extending forwards into the joint between the condyles. These growths, like those previously removed, presented a microscopic structure of a spindle-celled sarcoma, with some small round cells here and there. Mr. Marsh remarked that the case was one of considerable rarity. He had not himself met with any other instance of primary sarcoma of a synovial membrane. The history of the case was remarkable; it extended in all over at least six years. The disease remained entirely local, and the various recurrences that took place involved different parts of the membrane, so that in turn the inner, an outer, and the posterior portions of the synovial membrane were involved. Up to the present time the patient had remained well.

MR. J. HUTCHINSON, jun., mentioned a somewhat similar case in a boy aged 10, who had a fibro-sarcoma, the size of a hen's egg, in the popliteal space, growing from the posterior ligament of the knee-joint. He removed it, with difficulty avoiding the popliteal vessels, but it recurred along the back of the femur. He eventually amputated at the hip-joint, with a fatal result. In another case of "regional" sarcoma nodules kept recurring in the abdominal wall for twenty years, and were as constantly removed, until the whole abdominal wall was covered with scars of the operations or degenerating tumours. There was no internal recurrence. Was the tumour in Mr. Marsh's case a sarcoma or fibro-sarcoma?

THE PRESIDENT said that Sir J. Paget in one case had operated upwards of twelve times for recurrent fibroid of the foot, with ultimate recovery.

MR. MARSH, in reply, said his case should be classed as a fibro-sarcoma, as it contained more spindle cells than would be found in a pure sarcoma. These growths recurred *in loco*, and not in other parts of the body. They should be removed immediately upon recurrence. He referred to the case of a man with a tough, firm tumour in the cheek, which had been removed three times; then, as it was spreading to the neck, no further operation could be advised.

A CASE OF HYPERPYREXIA IN A NEUROTIC WOMAN WITH BRONCHIECTASIS.

DR. NEWTON PITT brought before the Society the case of a young woman, aged 26, who had been troubled with chest mischief with abundant expectoration and hæmoptysis since the year 1891. Her condition was supposed to be due to phthisis until she came under the care of Dr. Boswell, at Faversham, when it was recognised that she had bronchiectasis. She then passed under the care of Dr. Anderson, who sent her up to Dr. Pitt in 1895. She had periodic attacks of severe dyspnœa, lasting for two or three days, preceded by a diminution in the expectoration; in these attacks the temperature was found almost always to be much higher in the left than in the right axilla, the difference amounting to two or four degrees. The difference on the two sides of the chest amounted to a degree or so, and at times on the left side the temperature ran up to 110°, occasionally to 114°, and once even higher. The dyspnœa was so intense that the temperature could rarely be taken in the mouth, but it was never excessive. The patient was so prostrate during the attacks that it was not possible to carry out extensive and systematic examination of any kind. The rectal temperature was not extreme. The temperature changed within an hour or so, and the patient was bathed in the most profuse perspiration, which was not limited to one portion of the body. It was noticed that at the acme of the attack the left palpebral fissure was smaller than the right. The appetite failed absolutely, and the urine was extremely concentrated during an attack. The pulse-rate ran up to 140 sometimes. During a period of seven weeks, while the patient was under observation, the amount of general bronchitis varied from time to time, but there were physical signs of a cavity at the angle of the left scapula. No tubercle bacilli were present in the sputum, but staphylococcus aureus, another coccus, and a sarcina were found, the latter especially abundant. As an example of the temperature, it was noted on one occasion that when the temperature in the right axilla was 102°, that in the left was 109.7°, and in the mouth 99.4°. Many textbooks referred to the albuminuria of fever; this was surely a misnomer, as when there was albumen in the urine it was, together with the fever, the result of a toxic process, and was not proportional to the severity of the fever, but to the intensity of the toxæmia. They ought to speak of toxic albuminuria. In this case there never was a trace of albumen in the urine, in spite of the temperature being so high. The patient when last heard of was still liable to these attacks, and remained in much the same condition. Dr. Pitt did not wish to offer any explanation of these extraordinary temperatures, but merely to put the case on record. He thought that the temperatures were trustworthy, and that with the temperature taken every four hours for many weeks by different people, the more or less persistent difference between the temperatures in the two axillæ must be accepted as a fact. The extreme prostration and dyspnœa of the patient prevented her from taking the slightest interest in her temperature. In similar cases it had been suggested that the patient had artificially raised the temperature of the thermometer by friction, etc.; but by any such means it was only possible to raise the temperature slightly, and it was quite impossible without detection when a patient was under careful observation. In a similar case mentioned in a debate at that Society by Dr. Mahomed in 1881, where a patient had temperatures over 114° on several occasions, and once up to 128°, he came to the conclusion that there must have been fraud, although he could not detect it; still it was by no means certain that this conclusion was justified, even in that case.

SIR DYCE DUCKWORTH remarked that such cases were very rare, and had all occurred in neurotic women. What was the meaning of these extraordinary phenomena, these localised hyperpyrexiæ? Nothing was really known about them pathologically or physiologically. In such a case in one of his wards the patient was detected by the nurse vigorously rubbing the thermometer, and thus sending up the mercury. Thereafter her high temperatures ceased. He had been led to a position of incredulity, and could not regard the cases as true manifestations of disease.

DR. BEZLY THORNE referred to a case of erratic temperature in a woman who was asthmatic, but the temperature never exceeded 104°. An asthmatic paroxysm came on suddenly,

so that one night he thought death was impending. There was great sweating, with scanty urine thick with urates. Next day he found the heart's apex beating beneath the right nipple; Sir William Jenner saw the patient, but found no pleuritic effusion to account for the condition, and considered it to be a case of transposition of viscera. The apex beat, however, in two days' time returned to its normal position beneath the left nipple, without the occurrence of anything to explain the nature of the case.

Mr. CLEMENT LUCAS said that Dr. Moxon had had a case in which the patient with a high temperature was detected plunging the thermometer into her poultice.

Dr. SIDNEY PHILLIPS said a sister had found another patient dipping her thermometer into her tea.

Dr. DOUGLAS DREW mentioned a case in a young lady who underwent an operation for necrosis of the frontal bone. She did well, but six weeks after the operation the temperature for some ten days ran up to 109°. No fraud could ever be detected in that case.

Dr. KINGSTON FOWLER said that in such cases as that described by the author a rise of temperature occurred with diminution or arrest of expectoration, though not to these extraordinary heights. He had never seen a case with such high temperature as that found by Dr. Pitt. Temperatures taken in the armpit were untrustworthy, also those taken in the mouth unless it was closed twenty minutes beforehand. The only trustworthy plan was to take it in the rectum.

Mr. HOWARD MARSH thought the subject might be referred to a committee for investigation.

Mr. EASTES recalled a case brought before the Society by Mr. J. W. Teale many years since, in which, after injury of the spine and of the cervical sympathetic, temperatures of 110° and upwards to 122° were maintained for many days, and the patient ultimately recovered. In that case the discussion followed the line of incredulity which had been taken with regard to Dr. Pitt's case.

The PRESIDENT thought no committee could usefully inquire into past cases, but any future cases might be examined by several physicians, and it might be useful to have a standing committee for such a purpose.

Dr. PITT, in reply, said his patient was so weak and prostrate that she could not be suspected of taking any active part in a trick. He called attention to a paper on Hyperpyrexia in the *Guy's Hospital Reports* of 1874 by Dr. J. H. Bryant.

Intestinal Resection.

Mr. R. CLEMENT LUCAS related the case of a boy, aged 5, from whom he had removed successfully 24½ inches of small intestine by the aid of a Murphy's button. The child had suffered every year from birth with bronchitis, and from the age of a fortnight it had been noticed that there was a swelling on the left side of his scrotum, which always remained irreducible. An operation on the hernia was attempted by a surgeon in the country on April 11th, 1897. Vomiting occurred on the following day, and the patient's condition growing rapidly worse he was sent up to Guy's Hospital to be under Mr. Lucas's care. The scrotum was inflamed and peristaltic action could be seen beneath the skin. The assistant surgeon on duty laid open the scrotum, and found fæcal extravasation and two wounds in the gut, which he attempted to close by suture, but did not reduce the bowel into the abdomen. The patient's condition remained critical, and on April 17th it was found that the sutures had given way, and that fæces were being discharged through the scrotum, causing ulceration of the surrounding skin. On April 25th the temperature rose to 104°, but no general abdominal tension or tenderness occurred. From April 27th to May 18th the temperature ranged between 99° and 100°, almost the whole of the contents of the bowels were discharged through the fistulæ in the scrotum. On May 18th, 1897, Mr. Lucas determined to perform resection of the bowel, with the object of restoring the continuity of the intestine, curing the fæcal fistula, and getting rid of the hernia. The bowels were cleared, and the fæcal fistulæ thoroughly washed out with an antiseptic lotion, then all the ulcerated parts were firmly bound up with aseptic pads. The skin of the abdomen being disinfected, a central laparotomy incision was made under A C E mixture. The bowel passing out and returning through the left inguinal canal was surrounded by sterilised pads. On the parietal side the two pieces of bowel were ligatured near the internal abdominal ring, and on the proximal side they were clamped. Having divided between the clamps and ligatures, Murphy's button was used to give end-to-end continuity to the bowel. Next the ligatured and distal ends were further secured by turning in the mucous membrane and sewing over them, the pads removed, and the abdominal wound sewn up. Attention was now turned to the scrotum, which was laid freely open, and the damaged and adherent bowel was separated by the fingers. The sealed ends within the abdomen were pulled through the inguinal canal. When detached and measured the bowel removed was found to be 27½ inches in length. The suppurating scrotum was thoroughly washed and packed with iodoform gauze. There was little to remark on the subsequent progress towards convalescence. The temperature, which was 100° at the time of operation, fell to normal the second day, and never again reached 100°. On the fourth day the laparotomy incision was found united primarily. Ten days after the operation the temperature became regular at 98.5°. As the button had not come away on the twenty-second day, a dose of castor oil was given, and it was passed on the twenty-third day after the operation. Mr. Lucas attributed the successful result in this case largely to the care that was taken to prevent any contamination of the laparotomy wound or peritoneum by the fæcal fistulæ, and to the method he adopted of closing the ends inside the abdomen before drawing the bowel out through the scrotum. The patient was shown at the meeting, eighteen months after the operation, in good health and free from hernia.

The PRESIDENT suggested that the report might be amended by describing the escape as one of intestinal contents rather than fæces, considering that it took place from the small intestine.

Mr. HOWARD MARSH described the case of a child, aged 5, with appendicitis leading to abscess, which was opened and did well for a month. A fæcal fistula then occurred. Mr. Marsh performed laparotomy, cut away the cæcum, and joined the ileum to the colon by end-to-end anastomosis. Murphy's button was not used; but the parts were simply sutured together, and the case recovered completely.

Mr. LUCAS thought it would be very difficult to employ Murphy's button for end-to-end union of small with large intestine, but it might be used for lateral anastomosis.

Restoration of the Shaft of the Ulna by the Insertion of the Femur of a Rabbit.

Mr. ARBUTHNOT LANE described two cases. One of the patients was a child, the subject of congenital abnormality of the shaft of the ulna. She had suffered from a progressive incapacity and deformity of the forearm and hand since birth. It hung in a position of considerable flexion and abduction when the child attempted to use it, which it did very imperfectly indeed. The ulna consisted of two separate parts, whose pointed extremities overlapped and whose axes varied considerably in direction. The lower end of the ulna was situated considerably above that of the radius. He exposed both fragments freely and separated them from the surrounding parts. Extension was made on the lower fragment till the hand assumed its normal position. The femur of a rabbit was split longitudinally, and its halves were wired securely to the fragments so as to bring their longitudinal axes into their normal relationship to one another, and to retain the lower fragment on a level with the lower end of the radius. The result of this operation was most satisfactory both as regarded the removal of deformity and the restoration of the normal functions to the part. The second case was that of a man, aged 19, who lost the shaft of the ulna in 1896. He was admitted into Guy's Hospital in September, 1898, when the radiograph showed that there extended from either extremity of the ulna a fine spicule of bone. An incision was made along the length of the ulna, and these spicules were exposed and freed from the soft parts in which they were embedded. A femur of a very large rabbit was then wired securely to the ends of the ulna, the spicules being included in the loops of wire. The results as shown by the skiagraph were most satisfactory, and Mr. Lane hoped at a later date to render the usefulness of the arm even more complete by removing some of the new bone that had been thrown out about the ex-

tremities of the ulna in consequence of the original inflammation.

Dr. BAXTER FORMAN suggested that Mr. Lane might exhibit the patients on one of the clinical evenings of the Society.

MEDICAL SOCIETY OF LONDON.

EDMUND OWEN, F.R.C.S., President, in the Chair.

Monday, November 14th, 1898.

CLINICAL EVENING.

GASTRO-ENTEROSTOMY FOR INOPERABLE DISEASE OF THE PYLORUS.

THE PRESIDENT showed a man, aged 31, who for twelve months had complained of discomfort over the pylorus, with vomiting after meals, anorexia, and inability to work or sleep. The patient was greatly emaciated, and the stomach was much dilated. He performed abdominal section on July 18th, when, finding the pylorus fixed by a hard mass and surrounded by enlarged lymphatic glands, he made a communication between the front of the stomach and the jejunum by means of a Murphy's button. The patient had since gained 20 lbs., and could eat and drink anything. Nothing had yet been seen of the button.

Mr. BATTLE asked what size of button was used; also the exact site of insertion into the stomach. He asked, further, how soon after operation food had been given by the mouth, and the duration of the illness. He inferred that the prognosis was unsatisfactory. He recalled a case of his own in a man, aged 28, which had run an acute course, in which the glands were extensively involved, and secondary growths were disseminated all over the peritoneum. He had performed a similar operation, but the patient died six weeks later from malignant disease of the pleura.

The PRESIDENT, in reply, said the lumen of the button stalk was the size of the top of the little finger. The illness had lasted about twelve months. The opening was on the anterior part of the stomach, low down. He agreed that the prognosis was decidedly bad.

VASCULAR MURMUR OF OBSCURE ORIGIN.

Dr. HECTOR MACKENZIE showed a man, aged 40, who had suffered from recurrent hæmoptysis for four years. In addition to the symptoms of pulmonary tuberculosis he had recently discovered at the base of the right lung a peculiar vascular murmur. It was loud and blowing, and occupied nearly the whole period of the cardiac cycle, closely resembling the murmur produced by a communication between an artery and a vein such as sometimes occurred in aneurysm. It increased in intensity with inspiration, but was not altered by holding the breath. There were no other abnormal physical signs at the base, and it had not changed since first observed. It might possibly be due to a vascular growth in the lung, but was probably not aneurysm.

Dr. MAGUIRE suggested that it might be due to angioma of the liver, which he thought from percussion had an irregular upper margin.

The PRESIDENT asked if there were any "mother's marks" suggestive of a nævoid growth.

Dr. MACKENZIE replied in the negative.

Dr. CALEY suggested that it might be due to relative stenosis of the inferior vena cava at its passage through the diaphragm.

ANEURYSM OF THE RIGHT CAROTID ARTERY.

Dr. SEYMOUR TAYLOR showed a man with an aneurysmal swelling the size of a duck's egg situated above the right clavicle. He had already undergone ligature of both superficial femoral arteries for popliteal aneurysm, by Mr. W. G. Spencer, who reported him to have been suffering from "syphilitic arteritis," though no definite history of infection could be obtained from the patient. He asked for suggestions as to treatment.

The PRESIDENT questioned the connection supposed to exist between syphilis and arteritis, and remarked that in India, where syphilis was very common, aneurysm was extremely rare. He observed that most surgeons would have hesitated to operate on two popliteal aneurysms simultaneously in presence of a swelling of the carotid. He suggested distal ligature with the injection of a coagulating substance into the sac.

DIABETES INSIPIDUS.

Dr. HADLEY showed a woman, aged 34, single, who for the last 2½ years had suffered from polyuria with intense thirst. She passed on an average 282 ounces of urine, specific gravity 1005 to 1015, although she only drank 216 ounces of fluid. The urine contained a faint trace of albumen, no sugar, and the urea, though relatively below normal, was really in excess.

Dr. S. TAYLOR called attention to the existence of symptoms pointing to myxœdema, and suggested that this disease was present in an incipient stage.

Dr. MAGUIRE called attention to the necessity for an apparatus which should register the arterial tension in a trustworthy manner, which, he said, would be of immense service in elucidating the etiology of such cases as these.

Mr. BATTLE mentioned a case of the kind in a man in whom *post mortem* they discovered a gumma on the floor of the fourth ventricle, and asked if there was any specific history.

Dr. HADLEY, in reply, said he had noticed the myxœdematous symptoms, which, however, he attributed to physical conditions induced by the disease. The arterial tension was medium. He admitted that it might possibly be an abnormal case of commencing granular kidney. There was no specific history.

A CASE OF SARCOMA TREATED BY COLEY'S FLUID.

Mr. BATTLE showed a man whom he had previously exhibited before the Society when under treatment by Coley's fluid. He then presented a large tumour under the clavicle extending down the chest, another extending above the clavicle in the posterior triangle, with secondary growths over the sternum and elsewhere, and a large number of diseased glands in the axilla. Half-minim doses of Coley's fluid were injected into the arm, gradually raised to 1 minim. The total quantity used did not exceed 24 minims. There had never been any rigors or other inconvenient symptoms. His progress had been very satisfactory, and, though the treatment had ceased in May, there was at present no trace of the tumours. Microscopical examination of portions of the tumour showed the growth to consist of spindle cells with some large cells.

The PRESIDENT said such cases were of great importance, but he declined to regard the sarcomatous nature of the growths in this instance as conclusively demonstrated. He added that the case would not be allowed to figure in the *Transactions* as one of sarcoma cured by Coley's fluid. He did not think that histological evidence was sufficient to establish the diagnosis.

Mr. MANSELL MOULLIN congratulated the author on having shown the first well authenticated case of the cure of sarcoma with Coley's fluid in this country. He himself had seen and examined this patient, and he could not conceive that the tumours were anything but sarcoma. He had had several cases of his own in which the tumours had subsided under this treatment, but his cases unfortunately were such that direct microscopical evidence was not procurable, and they were consequently open to the criticism that they were possibly after all not sarcomatous. He referred to Coley's own work, and urged that his results should not be disregarded simply because he was an American. Even if in some cases recurrence took place, that did not place the treatment in a more unfavourable position than surgical operation, which was also sometimes followed by recurrence.

Dr. MAGUIRE related a case in which Mr. Lane had amputated through the upper third of the femur for sarcoma, and the patient had come to him with symptoms of secondary growths in the lungs, etc. It was an absolutely hopeless case, but with the patient's consent he injected 3-minim and 5-minim doses directly into the veins of the arm without the slightest bad effect every alternate day for ten days, and with relief to some symptoms. The patient died, and *post mortem* the lungs, etc., were found to be riddled with sarcomatous growths.

The PRESIDENT protested against the idea that they viewed results with distrust merely because they were American. They did not doubt Coley's good faith in the least, nor did they reproach him with being too speculative. At the same time he should require much stronger proof of the nature of the growths before being convinced.

Mr. Waterhouse expressed himself as also quite sceptical with regard to these alleged cases of cure. His own experience was limited to five cases of inoperable sarcoma which he had treated by medium doses, 2 or 3 minims. In three there were severe rigors and two or three patients died of hyperpyrexia. He referred to a case in which two microscopists had certified to the growth being sarcoma, whereas it turned out to be inflammatory consequent upon necrosis of bone.

Mr. Battle in reply said the patient had been given iodide of potassium in increasing doses, reaching 25 grains thrice daily, without any appreciable effect on the tumours. Then he had fragments of the growths examined by Dr. Jenner and Mr. Shattock, with the result already stated. The tumours continued to increase in size, and it was then that he determined to try the effects of Coley's fluid, with the result which they could see in the patient before them. He himself entertained no doubt whatever as to the nature of the case and the validity of the result.

Miscellaneous Cases.

Mr. Battle also showed: (1) A woman who exhibited the phenomenon of Hepatoproptosis in a marked degree, the liver in the erect position descending into the iliac fossa; (2) a patient with Three Patellæ; and (3) a case of Leontiasis.

PATHOLOGICAL SOCIETY OF LONDON.

J. F. Payne, M.D., President, in the Chair.

Tuesday, November 15th, 1898.

Sarcoma of the Heart.

Dr. Thomas D. Lister recorded the case of a patient who died after an illness of about one month. A systolic *bruit* was present over the apex, and there was marked venous congestion. At the necropsy the right auricle was found to be the seat of a round-celled sarcoma, and there was a second growth in the kidney.

Spindle-celled Sarcoma of the Rectum.

Mr. T. Carwardine exhibited this specimen, which was removed in excision of the rectum by the posterior route, and with complete recovery. The patient was a man 41 years of age. The growth had apparently arisen from the submucous tissue.

Mr. A. E. Barker had performed colotomy upon a young man for a rectal growth which examination showed to be sarcomatous.

Mr. Stanley Boyd referred to a second case of Mr. Barker's in which he had found the tumour to be an alveolar sarcoma.

Mr. J. H. Targett observed that, if lymphadenomata were excluded, the usual form of sarcoma met with in the alimentary canal was of the spindle-celled class, and arose from tue submucous tissue.

Dr. H. D. Rolleston did not think that true round-celled sarcoma of the intestine and œsophagus was so very rare.

Dr. A. F. Voelcker had seen one case of spindle-celled sarcoma at the ileo-cæcal valve in a child, another of the rectum, and a melanotic sarcoma at the anus.

Thrombosis of the Heart in Typhoid Fever, with Embolism of Common Iliac Artery.

Dr. W. Hunter recounted a case of this nature. The cardiac thrombus was attached to the apex of the left ventricle; it was pale and hollow in the centre. In the right common iliac artery there was a pale embolus, and on the distal side of this extensive thrombosis had occurred. In addition the corresponding veins were filled with clot, and there was infarction of the spleen and kidneys. The right lower extremity underwent dry gangrene after becoming pale and cold. At the necropsy typhoid ulcers were found in the small intestine and cæcum. Embolism in typhoid was rare. Suppuration of splenic infarcts, leading to acute peritonitis, was commonly given amongst the possible consequences of typhoid, but he had been unable to discover upon what original authority. Dr. Norman Moore had found infarction of the kidney only once in 95 cases of typhoid. One example of infarction of the liver had been observed by Murchison, who had described, moreover, in a case of typhus results closely like those noticed by the speaker, with the exception of gangrene. The hemiplegia now and then occurring in typhoid was also probably of embolic source. Discussing the other view that the clotting in the arteries might be secondary to an arteritis, the author regarded the embolic view as the more probable.

Mr. Stanley Boyd had seen Dr. Hunter's case, and supposed that the embolism affected the femoral at the origin of the profunda, since the pain in the limb was first felt in the middle of the thigh; he thought, too, that if the embolus lay in the common iliac artery thrombosis would have extended on the proximal as well as on the distal side. He considered the concurrent thrombosis of the veins (which accounted for the notable swelling of the limb in life) as also pointing to arterial thrombosis arising independently of embolism.

Dr. Francis Hawkins remarked that in one case of occlusion of the middle cerebral artery (in typhoid) there was an associated thrombus in the left auricle: and he considered the hemiplegia that ensued as of embolic origin. In other cases of cerebral thrombosis, however, embolism had not been established.

The President commented on the difficulty, in cases where arterial thrombosis coexisted with cardiac, of determining the sequence of events, for the two conditions might have a common cause. He thought that if thrombosis was preceded by embolism in typhoid, that an increased coagulability of the blood must be assumed, since no similar extension of coagulation took place when an artery was occluded by ligation.

Dr. Hunter, in reply, thought that an extension of thrombosis on the proximal side of what he took to be an embolus in the common iliac artery was not to be expected, owing to proximity of the main vessel. He thought that the localised gangrene met with in typhoid and other fevers should be distinguished from that of a limb such as he had described, and which he thought embolic. His opinion on an increased coagulability of the blood coincided with that of the President.

Carcinoma of the Gall Bladder without Cholelithiasis.

Professor J. Rose Bradford exhibited a specimen of spheroidal-celled carcinoma affecting about two-thirds of the extent of the gall bladder, whence it extended along the cystic and common bile ducts, as well as a short distance into the hepatic ducts; the growth was extensive in area rather than anywhere particularly prominent. The hepatic duct was quite occluded. The chief point of interest was the absence of gall stones. Clinically the case was noteworthy for the sudden onset of persistent jaundice and pain in the right hypochondrium. The diagnosis was impacted calculus. Laparotomy was performed, but as a tumour of the pancreas was thought present the wound was closed. Death took place three days afterwards. The pancreas was indurated, but the only growth in it was quite small and was discontinuous with that of the gall bladder and ducts. In answer to the President, the speaker said there was no cirrhosis of the liver, though the biliary ducts generally were dilated behind the seat of obstruction.

Dr. A. F. Voelcker remarked in regard to the connection between cholelithiasis and carcinoma of the gall bladder, that in six cases of the latter which had come under his notice, five were associated with the presence of calculi: on the contrary, in cases of primary carcinoma of the liver, he had not found calculi present in the gall bladder. Gall stones occurred in 8.5 per cent. of all cases dying from any causes whatsoever; and yet carcinoma of the gall bladder was rare, hence he doubted whether any important causal relationship existed between the presence of calculi and carcinoma of the gall bladder. No similar association obtained in the urinary bladder, and it was very rare in the kidney.

Dr. W. Hunter remarked that in the two cases of primary carcinoma of the gall bladder which he had seen calculi were present.

Dr. H. D. Rolleston observed that statistics proved that in 95 per cent. of the cases of primary carcinoma of the gall bladder, calculi were present; whereas, by contrast, in 13 cases of secondary carcinoma of the gall bladder, calculi were present in two only. In seven examples of secondary carcinoma of this structure, which had come under the speaker's notice, no calculi were present.

The President pointed out that cancer of the digestive tract had been proved by statistics to be on the increase; this was especially true of the tongue and rectum; and he was of

opinion that carcinoma of the gall bladder was more common than it had been. He did not hold the argument from renal calculi to be strong, as renal carcinoma and renal calculus singly were rare compared with biliary calculus and carcinoma of the liver.

Professor BRADFORD referred to one case in which the bile ducts were the seats of carcinoma, and in which there were great numbers of small calculi in the gall bladder.

INTRATHORACIC CARCINOMA.

Dr. WILFRED HADLEY recorded a case of pleural carcinoma, in which there were other growths in the heart, kidney, and upper limb. Hæmoptysis had been present for six months: there was slight effusion into the pleura.

MULTIPLE ABDOMINAL DERMOID CYSTS.

Dr. A. C. LATHAM exhibited two specimens of dermoid cysts, one from the right ovary, the other connected with the stomach. They were removed from the body of a woman who had died from general peritonitis due to perforation of the suppurating ovarian dermoid. There were, in addition, numerous small dermoid cysts attached to the stomach, the descending colon, and the suprarenal capsule. Cases of a similar kind had been recorded by Mr. Hulke and by Continental observers. The speaker regarded the lesser cysts as arising from cell transplantations.

Mr. J. H. TARGETT recalled attention to the analogous dissemination of peritoneal papillomata after rupture of papilliferous ovarian cysts, and to the phenomena of transplantation cysts of the epidermis.

EMBOLISM OF BOTH MIDDLE CEREBRAL ARTERIES.

Dr. FREYBERGER recounted the case of a woman, 39 years of age, suffering from vomiting and pain in the abdomen; there was a swelling above the umbilicus, not in connection with the stomach. Two apoplectic fits occurred, the first being followed by hemiplegia, the second by death. At the necropsy some endocarditis of the mitral valve was found; there was a carcinoma of the pancreas and secondary growths in the liver. The thrombus dating fourteen days before death was dry and pale; that formed nine hours before death was succulent and non-adherent.

CARD SPECIMENS.

Dr. W. HUNTER: Carcinoma of the Gall Bladder associated with Calculus.—Dr. H. D. ROLLESTON: Hepatic and Portal Thrombosis.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

F. RICHARDSON CROSS, F.R.C.S., Vice-President, in the Chair.

Thursday, November 10th, 1898.

ACCOMMODATION THEORIES.

Mr. PRIESTLEY SMITH read a paper entitled the Accommodation Theories of Helmholtz and Tscherning: Suggested Explanation of their Discrepancy. He said Tscherning's theory was sharply opposed to the generally accepted explanation, but was based on very accurate observations. The question was whether the accommodation change in the lens depended on slackening of the zonula (Helmholtz) or on tightening (Tscherning). The anatomical arrangement of the parts concerned, and nearly all clinical and experimental facts, especially the observations of Hess, which showed that during strong accommodation the lens was often tremulous and displaced downwards by gravity, strongly favoured the former view. Tscherning, however, had proved that during accommodation the anterior lens surface changed from a globular to a hyperboloid curve—that is, tended to become conical—sharper at the centre of the pupil, flatter towards the margin; and this, he contended, could only be caused by tightening of the zonula supplemented by internal resistance at the pole of the lens. The author's object was to show that this change could be equally well explained by slackening of the zonula. Let the case of an elastic circular hoop of steel first be taken. Traction at the sides transformed it into an ellipse; the curve flattened at the poles and sharpened at the equator, and somewhere intermediate between these regions was a point where no change took place. The position of this point and the general contour assumed by the hoop were governed by the varying resistance which it offered at different points. By modifying the resistance the curve could be modified at pleasure. Let the resistance at the pole be increased and the conical form observed by Tscherning was obtained; let it be increased towards the equator and the opposite effect, namely, a flattening at the pole and a sharpening of the curve elsewhere, was obtained. Mr. Priestley Smith exhibited a model consisting of an elastic hoop of metal bent so that it assumed, in exaggerated form, the shape of the lens during accommodation, namely, conicity of the anterior surface. It was strengthened with supplementary elastic strips in such a way that its resistance or rigidity increased progressively from the pole towards the equator. Traction at the equator, representing tightening of the zonula, reduced the conical to a spherical form. In the latter condition it represented the lens when subjected to the influence of the zonula: in the conical state it represented the accommodative change which occurred when the zonula was slackened by contraction of the ciliary muscle. It would be easy to theorise as to the resistance proper to the crystalline lens, and to show reason for supposing that the arrangement of the fibres was such as to render the resistance progressively greater towards the equator, but Mr. Priestley Smith said he would not go beyond demonstrable facts. What he desired to show was that the changes which Tscherning had demonstrated with such admirable skill and ingenuity were not incompatible with the theory of Helmholtz. To his mind they were explained more satisfactorily by this theory than by any other.

Messrs. CROSS, LANG, ERNEST CLARKE, BASS, DOYNE, and HARTRIDGE made remarks.

MYXO-FIBROMA OF THE OPTIC NERVE SHEATH.

Mr. ARNOLD LAWSON reported a case. The patient was a well-nourished girl, aged 2. The sight of the left eye had been thought defective three months: it had been getting prominent a few weeks. The personal health and family history were both good; the left eye was slightly prominent, but its movements were good, and the pupil acted to light; the fundus was normal except that the veins were rather full. Five weeks later there was decided proptosis, the pupil was inactive, the optic nerve pale, and the eye was blind; the movements, however, were good. From this time the symptoms progressed rapidly till the time of operation, five months after the first visit; the disc was then chalky white, the eye was proptosed forwards and slightly downwards, and the movements were strictly limited. The eye and contents of the orbit were removed; the tumour, which was as large as a partridge's egg, nearly filled the orbit, and completely surrounded the optic nerve from the lamina cribrosa to the optic foramen. The child was now, six months after operation, in good health. The optic nerve was not involved in the tumour which arose from the outer dural sheath. Microscopically the growth was found to be a myxo fibroma. Mr. Lawson thought it inadvisable to attempt to save the eye in these cases; if the growth extended to the optic foramen, this latter should be scraped out. Myxo-fibromata were very rare; as a possible origin he suggested that a portion of the mesoderm intended to form the vitreous became included in the sheath of the optic nerve during its closure.

TOXIC AMBLYOPIA DUE TO LEAD.

Dr. HERBERT H. FOLKER (Stoke-on-Trent) reported five cases which occurred among employees in the pottery district. (1) F., aged 26, had worked in the dipping house two years; on four occasions she had had symptoms of lead poisoning—colic vomiting, and headache. Vision failed in the left eye and four days later in the right; the failure began with flashes of light and coloured vision, and rapidly proceeded to total blindness. The pupils were dilated and inactive, the optic discs pale and blurred, the retina œdematous, and there were several hæmorrhages in it. There was some albumen in the urine. (2) F., aged 20. Six weeks after beginning work as a lithographer she had headache and colic; after a year she had sudden total loss of colour vision, followed by sensations of light flashes. There was typical neuro-retinitis, with hæmorrhages. In this case vision improved. (3) M., aged 16. Employed in the dipping house. After two years he had diplopia with headache, colic, and vomiting; the vision

failed shortly after, and in six weeks he was totally blind. He also had coloured vision for a time and flashes of light. The optic discs were very white and the arteries reduced to white cords. He had a trace of albumen and a gum line. (4) F., aged 18. Employed in the dipping house. After three years she had headache and vomiting; the vision failed in one night; she had flashes of light of various colours. The optic discs were intensely white. (5) F., aged 18. Employed in the dipping house. For ten months she had several attacks of headache, colic, and vomiting; then the sight failed, and in two months she was blind. The optic discs were white and the vessels small. In this series of cases all other toxic agents were excluded. All the patients who had worked in the dipping houses did not respond to treatment, the other single case did; in the former the poison was introduced by absorption through the skin, in the latter by inhalation. With one exception all the cases experienced coloured vision. Treatment was by iodide of potassium, or strychnine by the mouth or hypodermically.

CARD SPECIMENS.

Major M. T. YARR, R.A.M.C.: Case with Fundus Changes and Fibrous Tissue Formation in Vitreous, (?) Congenital.—Mr. TREACHER COLLINS: Case of Monilethrix affecting Eyelashes and Eyebrows.—Mr. DOYNE: Case of Pigmentation of the Conjunctiva.

EDINBURGH OBSTETRICAL SOCIETY.

J. HALLIDAY CROOM, M.D., F.R.C.P.E., President, in the Chair.

Wednesday, November 9th, 1898.

PRESIDENTIAL ADDRESS.

DR. J. HALLIDAY CROOM took for the subject of his presidential address Surgical Interference in Gynæcology; but before entering on the subject proper he referred to the fact that this was the sixtieth session of the Society, that with Sir James Simpson it had originated, and with Simpson and with this Society the science of gynæcology, as far as Scotland was concerned, began. They could look back with satisfaction on the hard, steady work, enlightened here and there by no mean examples of genius, which had been done in that Society. With perfect deference it might be said that the Edinburgh School of Gynæcology had acquired an enviable prominence in the history of medicine. When the Society began obstetrics was a science and an art, while gynæcology was practically unknown. Since these days gynæcology had expanded into a science of its own, had been divorced from obstetrics, and had become a separate and distinct department. The gynæcologist was now *ipso facto* a surgeon. The development of abdominal surgery within the last thirty years had been so startling and phenomenal that it was no wonder that men had devoted their lives and their time to the perfection of this particular branch. The operation of ovariotomy was itself a striking example. With this generation the *rôle* of the ovariotomist pure and simple would no longer exist. That operation had, thanks to the obstetrician first and to the gynæcologist after him, become an operation as much in the province of the ordinary surgeon as a hernia or a gastrostomy. It must ever be, however, and would ever continue to be, a difficulty with the surgeon who was not accustomed to either obstetrical or gynæcological work, to make his diagnosis a certainty, and therein would always lie the crux with the surgeon when he took pelvi-abdominal work in hand. The divorce of diseases of women from obstetrics was not altogether without its disadvantages. The pendulum had swung, and swung very markedly, to surgery. That to surgery gynæcology owed its greatest victories there could be no question. One had only to think of the improvements in abdominal hysterectomy and its fullest development in panhysterectomy, with, on the other hand, the conservative operation of myomectomy. These were all recent triumphs of the surgeon's art. The last decade, too, had witnessed remarkable improvement in the treatment of diseases of the uterine appendages. Experience had now crystallised knowledge with regard to the pathological conditions for which these structures could be conscientiously removed. It was matter for congratulation that the tendency was now becoming more and more conservative, and that the perfected methods of antiseptic surgery enabled them to deal with even limited areas which were affected in ovaries and tubes not entirely diseased. The ease and safety with which complete salpingo-oöphorectomy could be performed must ever be a reason why this operation should be safeguarded as much as possible, and fortunately they were now in a position to realise that only in grave pathological lesions should these organs be entirely removed. Removal of the ovaries for merely inflammatory conditions was by no means a uniform relief to the symptoms, and often had grave and serious effects upon the patient otherwise. The treatment of extrauterine gestation had become, within the last fifteen years, one of the recognised triumphs of gynæcological surgery. Even after rupture had taken place, operation was often successful. The difficulty would always be one of diagnosis. Even here it was just possible that in dealing with extrauterine pregnancies, especially early ones, the resort to the knife had been overdone. Many early ectopic gestations, even after rupture, had absorbed and disappeared without the arbitrament of the knife. In pelvi-abdominal surgery by the vaginal route, the advances had been no less remarkable. The dealing with uterine cancer by the entire removal of the uterus *per vaginam* had developed enormously within the history of the Society. The operation could now be done in a few minutes. This indicated an enormous advance in technique. But the question was, Did the operation so shortened and simplified tend much to the prolongation of the life of the patient? Certainly it had made the removal of a cancerous uterus (even in moderately advanced cases) a simple and easy procedure. But Dr. Croom doubted if it had done much, if anything, to prolong the life of the patient, or to ameliorate her sufferings; and for this reason that the disease after hysterectomy proceeded rapidly to the peritoneum, where it produced for the patient sufferings and a death worse than if no operation had been done. True, a vaginal hysterectomy stopped hæmorrhages and fœtid discharge and relieved pain. But this was only a temporary improvement. Even a temporary alleviation of these symptoms in this dire disease would be an advantage were it not that with the recurrence of the disease the ultimate pain and suffering were far greater than if it had never been touched at all. Naturally if the gynæcologist were able to see the cancerous uterus at its initial stage and remove it, no doubt the best results ought to be anticipated. But such, unfortunately, was not the case. During an experience of twenty years, including twelve years in the Royal Infirmary, Dr. Croom had seen 260 cases of uterine cancer. It was thirteen years since he did his first vaginal hysterectomy for cancer. That operation lasted two hours and a half: the last one he did was performed in eighteen minutes. Such was the advance in technique. Of the 260 cases referred to, only 15 fulfilled all the conditions requisite to justify hysterectomy with expectation of success. They were all carefully operated on. They all made "absolutely uneventful recoveries." But every one of them died within the year, and, in Dr. Croom's opinion, with greater suffering than if they had been left alone. In several cases the disease was confined to the fundus, and there was no involvement of the broad ligament, these being the typically desirable cases on which to operate. Yet in all the disease recurred in the peritoneum, and the patient died in great distress within the year. Given that the diagnosis of cancer was made at its initial stage, with due care and attention a woman's expectation of life might be from two to two years and a-half. Had she a better prospect if the cancer were left alone or if it were interfered with by hysterectomy? Many forms of cancer were painless; most destroyed life by hæmorrhage, exhaustion, uræmic poisoning, etc. Dr. Croom did not think that surgical interference was the better course. He knew he should be confronted with the German statistics. He knew Leopold's statement—a statement which seemed to him the most startling statement in surgery—that out of 76 cases 72 were well and without recurrence after one to five and a half years. Cancer in Germany seemed to be one thing, and cancer in Great Britain another. Neither in this country nor in America were the results at all in comparison with those which the Germans claimed. It was very easy to mistake an advanced senile uterine catarrh of a pronounced type for a

fundal cancer. In Dr. Croom's cases the suspected tissue was microscopically examined and the diagnosis established. It was quite conceivable that with a cancer very early diagnosed and operated on the prolongation of life was possible, although unfortunately such had not been his experience. But after a cancer had developed beyond its most initial stage, the removal of the organ did not prolong life, and the subsequent death was infinitely more terrible. Why were the results so satisfactory in the mamma, and apparently so unsatisfactory in the uterus? It was a question of early recognition. Then the lymphatic connections in the breast could be dealt with, whether affected or not. Not so in the uterus. Perhaps then Howard Kelly might be right in giving up vaginal hysterectomy and dealing with the whole uterus and broad ligament from above. There was no more pressing subject in gynæcology than uterine cancer, but they seemed to have come against a dead wall. It had been suggested to remove the ovaries for mammary cancer. Might they hope that this offered a possibility of similarly treating uterine cancer? Or might they look for some animal extract, or an antitoxin, as the solution of their difficulties? While in the present day every surgical proceeding was accepted and adopted, it was striking to think how medical innovations were received with distrust. Even anæsthesia, that had revolutionised the whole field of medicine and surgery, was on its first introduction scorned and regarded in the light of charlatanism. Dr. Croom was disposed to think that the surgical method of dealing with uterine cancer had done little either to ameliorate suffering or to prolong life and that once a uterine cancer was recognised, palliative local measures and a happy euthanasia through morphine were the best solutions of the difficulty. Such a statement might have the very similitude of despair, but the day might yet soon dawn when they should have measures therapeutic or surgical for meeting the difficulty. That happy day had not yet dawned. Hysterectomy for prolapse, subinvolution, and inflammatory disease of the uterus and appendages required to be safeguarded. The operation was likely to be overdone. Some cases, such as small bleeding fibroids, and prolonged hæmorrhages from the uterus which had resisted all other means of treatment might be so treated. But such cases were comparatively rare. Removal of the ovaries for bleeding or rapidly growing fibroids was gradually being supplanted by abdominal hysterectomy, which was more certain in its results, though more dangerous at the moment. The improvements in the operation had, however, been remarkable. With all these Dr. Croom never advised the operation unless urgent symptoms, such as rapid growth, mechanical pressure, hæmorrhage, or malignant degeneration (itself a curiosity) presented themselves. Their work had for its sole aim and object the advancement of science, which, translated aright, meant the alleviation of human suffering.

On the motion of Professor A. R. Simpson, seconded by Dr. Charles E. Underhill, a vote of thanks was cordially given to the President for his address.

Notes of a Case bearing on the Latency of Gonorrhœal Infection.

Dr. R. Milne Murray, who read this paper, said that the father of the child, who was the central interest of the case, suffered from gonorrhœal infection three years before marriage and eight years before the birth of this his third child. The first two children were perfectly healthy. The father was supposed to have been "cured" at the time of the acute infection. The labour was short and easy; there had been no vaginal discharge at any time, and the child was born healthy. On the third day a severely purulent ophthalmia began in the left eye, which, despite vigorous treatment, became so bad as to cause great eversion of the eyelids and to threaten to destroy the eye. On the evening of the seventh day the right eye became affected and ran a similar though scarcely so virulent a course. Both eyes ultimately got well under a lotion of 1 in 4,000 corrosive sublimate and painting with nitrate of silver solution, first of 10 gr. to ℥j, and later 70 gr. to ℥j. The points of interest in the case were: (1) One attack of gonorrhœal infection in the father eight years before; (2) no symptoms of any kind or at any time in the mother; (3) there was on sufficient personal knowledge, no reason to doubt the veracity of the parents; (4) the escape of the first two children from infection; (5) the long period, eight years, between the two "events"—but this not longer than in the cases specified by Noeggerath and Tait; and (6) the apparently perfect health of the mother.

Election of Officers.

The following gentlemen have been elected office-bearers for the session 1898-99:—*President:* Dr. J. Halliday Croom. *Vice-Presidents: Senior,* Dr. N. T. Brewis; *Junior,* Dr. J. W. Ballantyne. *Treasurer:* Dr. Wm. Craig. *Secretaries:* Dr. J. Haig Ferguson; Dr. W. Fordyce. *Librarian*: Dr. R. Milne Murray. *Editor of "Transactions":* Dr. J. W. Ballantyne. *Members of Council:* Professor Simpson; Dr. Alexander Ballantyne: Dr. Melville Dunlop; Dr. F. W. N. Haultain; Dr. Owen Mackness (Broughty Ferry); Dr. Macvie (Chirnside); Dr. Berry Hart; and Dr. T. Brown Darling.

ULSTER MEDICAL SOCIETY.

Joseph Nelson, M.D., President, in the Chair.

Thursday, November 3rd, 1898.

Introduction of New President.

The out-going President, Dr. J. A. Lindsay, took the chair at the outset of the proceedings, and introduced his successor, Dr. Joseph Nelson.

Vote of Thanks to Outgoing President.

On the motion of Professor Whitla, seconded by Dr. O'Neill, a vote of thanks was passed to Dr. Lindsay for his services during the year.

Presidential Address.

The new President proceeded to deliver his inaugural address. He began by referring to ophthalmia neonatorum, and said that where Credé's prophylactic treatment had been adopted, the proportion of blindness had been reduced from 10 per cent. to 1 or even 0.5 per cent. As Fuchs had said, "The prophylaxis of ophthalmia neonatorum is more important outside lying-in hospitals than inside such establishments," inasmuch as the number of births inside was but a small fraction of the total outside, and that when the disease did occur in hospitals it would be well cared for there. He referred to the unsuccessful attempts made in 1884 and 1885 by the Ophthalmological Society to get the Government to instruct the Local Government medical officers that special steps should be taken to check the disease amongst the poor in dispensary and union practice. Since Dr. Arthur Downes—a Local Government Board inspector—issued an official letter in July, 1896, urging the employment of some form of preventive treatment to the eyes of the newly born, nearly all the metropolitan lying-in wards had adopted it. He believed that no official letter or suggestions of this kind had been issued to the Poor-law unions and dispensaries in Ireland. If general practitioners and others attending maternity cases would only adopt prophylaxis in the form of that simple, safe, and effective remedy—a 2 per cent. solution of nitrate of silver dropped into the eyes—he believed they would save thousands of little victims from perpetual darkness, maintain the happiness of many families, and render a great service to the State. The President, referring next to suppurative middle-ear disease, said that there was evidence that the profession generally was beginning to take a greater interest in this affection. He described the serious and sometimes fatal results which might arise from especially chronic cases of this kind—namely, brain abscess, extradural abscess, facial paralysis, tuberculous meningitis, septic inflammation of the intracranial sinuses, tubercle in the lungs, affections of stomach, liver, and other parts of the body. The majority of cases of suppurative ear disease were due to the exanthemata, especially scarlatina, and the middle ear was usually infected through the Eustachian tube. He suggested that physicians treating scarlatina should give more attention to the naso-pharynx. Antiseptic sprays and douches might do some good, but were rarely effectual. The only thorough and effective method was to swab the pharynx with a 2 per cent. solution of nitrate of silver with a properly-made brush of absorbent cotton wool tied on the end of a wire of the thickness of a laryngeal mirror. The wire should be bendable, so that it could be bent to suit the particular naso-pharynx. He believed that the success attending this method of treat-

ment would be similar to that of Credé's treatment in ophthalmia neonatorum, already referred to. He did not go so far as to introduce the nitrate of silver solution into the Eustachian tube and middle ear, but he thought that if there was good reason to suspect that infection had made its way there, such a procedure was worth consideration. In addition to preventing the onset of middle-ear disease, the nitrate of silver solution had a good effect in preventing the formation of adenoid growths and the increase of tonsillar tissue. The following case was interesting and instructive, and was, he believed, the first of its kind on record. On May 14th, 1883, he was called to see Mr. ——, aged 19. Ten years before the patient had had great pain in head, and suppuration from the left ear. These attacks of pain with offensive suppuration recurred about once a year. The present attack began about the middle of April, 1883. On May 14th the temperature was 101°, the patient restless with pain about the eyes, pain on pressure over the left mastoid, offensive purulent discharge from the auditory meatus, which was filled with granulations; discs normal. A quantity of the granulation tissue was removed, and the canal cleansed. Operation on the mastoid antrum was advised. Next day, May 15th, a consultation was held, and operation was again advised. On the following day the patient was more restless and the temperature higher. The friends still hesitated to assent to the operation. At 7.30 of the same evening the patient seemed moribund, with widely-dilated pupils and deepening coma. The mastoid antrum and cells were accordingly opened up, a quantity of gummous *débris* and some carious bone being removed. There was much venous hæmorrhage. In half an hour the patient had regained consciousness. On the following day (May 17th) the patient had a convulsion, and two hours later a second one. From the above date until May 28th the temperature varied from normal to 103°, pulse about 96, the patient restless, and showing amnesic aphasia. On the evening of the 28th a further operation was resolved on, and Dr. Nelson opened up the old wound, and raised a flap off the squamous portion of the temporal bone, Dr. Walton Browne, Dr. Charles Workman, and the late Dr. Ross assisting. About 1½ inch above, and a little posterior to the auditory meatus he chiselled down to the dura mater. When protecting the dura mater with a flat director inserted between the dura mater and the bone, a quantity of pus came away. A drainage tube was inserted between the dura mater and the skull in a posterior direction, 5½ inches of it being inside the cranium. Through this tube a large quantity of pus was removed by a suction syringe. The patient made steady progress towards complete recovery. For about six years there was a decreasing offensive discharge from a large perforation in the superior anterior quadrant of the membrane. With attention to the general health, and careful cleansing with intratympanic syringe and warm boric lotion, the discharge completely ceased, and all odour disappeared. The patient's life was insured in 1890; he had married and was in active business in Belfast. The President wished to put this case on record to show that an operation for the removal of a collection of pus from the intracranial cavity originating in purulent disease of the ear had been done as early as 1883, two years prior to the operation of Ichondorff, as stated by Barr in his *Manual of Diseases of the Ear*. He (Dr. Nelson) had given a verbal report of the case in the Section of Otology at the Liverpool meeting of the British Medical Association in 1883, but no permanent record of the case had hitherto appeared.

A vote of thanks to Dr. Nelson for his address was moved by Professor Symington, seconded by Dr. Mackenzie, and passed.

Report of Council.

The report of Council was received, and after a long discussion, amended and adopted. The annual dinner was arranged to be held on Thursday evening, November 24th, in the Prince's Restaurant, Belfast.

Election of Officers.

The following are the office-bearers for the current session: *President:* Dr. Joseph Nelson. *Ex-President:* Dr. J. A. Lindsay. *Vice-Presidents:* Dr. John Campbell and Dr. Haussen. *Council:* Professor Byers, Dr. Calwell, Dr. J. J. W. Browne, Dr. McKisack, Dr. Bigger, Dr. Mackenzie. *Honorary Treasurer:* Dr. John McCaw. *Pathological Secretaries:* Dr. J. Lorrain Smith and Dr. Lynass. *Honorary Librarian:* Dr. Cecil Shaw. *Honorary Secretary:* Dr. James Colville.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Edwin Lee, M.R.C.S., President, in the Chair.

Friday, November 4th, 1898.

Gastric Tetany.

Mr. Mayo Robson read a paper on tetany and tetanoid spasms associated with gastric dilatation, treated surgically. He related 3 cases, and referred to others in which he had seen these complications associated with simple pyloric stenosis. He thought the complications were much more common than was generally recognised, as attention had been drawn only to the more serious and almost universally fatal cases. In the cases he related operation had been undertaken successfully, and in all the cases intervals between the severe tetanoid attacks had been selected. He thought the disease might be looked on more hopefully if the cases were treated surgically at an earlier period, and before the extreme manifestations of tetany had supervened.

Dr. Trevelyan expressed a doubt whether Mr. Robson's cases could be classed as genuine gastric tetany. Even the case which resembled strychnine poisoning was anomalous. Gastric tetany was a very rare disease. In the severe and dangerous attacks such as he had seen he thought that no other treatment was admissible than emptying and washing out the stomach, stimulation, and supplying fluid to the body by means of saline rectal injections or subcutaneous infusion, etc. He drew special attention to the fact very generally noted that the attack of tetany followed upon prolonged vomiting in cases of gastric dilatation. It was important to treat this vomiting, and, if other means failed, operative treatment directed to the gastric dilatation might have to be considered. Dr. Trevelyan looked upon the intoxication theory of gastric tetany as the most satisfactory, but as yet it had not been definitely established.

Dr. Churton, while recognising the evidence of a connection between gastric dilatation and tetany, thought there must be some other factor necessary for the production of the disease, inasmuch as gastric tetany seemed to be extremely rare, although separately both gastric dilatation and tetany were common. Indeed, from cases related to him recently during a consultation upon a case of typical tetany in a woman aged 48, he inferred that this disease was of much more frequent occurrence in some districts than is usually supposed, and was sometimes rapidly fatal.

Dr. Cheetham bore testimony to the severity of one case of gastric tetany referred to by Dr. Trevelyan. There was no gastric dilatation, but the attacks always followed upon vomiting. The patient was now quite well.

Dr. Griffith and Mr. Littlewood agreed as to the rarity of the disease. Mr. Littlewood was under the impression that he had seen something of the kind in some cases after gastro-enterostomy.

Mr. Robson replied.

Enteric Fever complicated with Pregnancy.

Mr. A. E. Pearson described a case in a woman, aged 18, who was admitted into the Leeds Fever Hospital on September 8th, 1898. From the time of the cessation of the menstrual periods her health had been indifferent. She had suffered from morning sickness, which gradually became more frequent; there was also headache. On September 4th she took to her bed. On admission the temperature was 104° F. Signs of enteric fever, diarrhœa, meteorism, irregularly intermittent temperature, rapid pulse and vomiting, especially in the morning, marked the succeeding days. Subsequently the vomiting and diarrhœa declined considerably until the third week of her stay in hospital, when the vomiting became more frequent, the pulse, 140 to 160, was thready, and the meteorism rapidly increased. On several occasions she became so seriously collapsed that perforation was diagnosed, but under treatment the urgent symptoms subsided. In the fifth week marked jaundice supervened: there was considerable tenderness in the hepatic region, and the liver dulness

appeared to be increased. On October 12th, as suppuration was suspected, the liver was explored with a negative result. The patient aborted on the same evening. The fœtus measured about 4 inches long, and the placenta was adherent. The next day the patient was much easier. The vomiting ceased and the circulatory disturbance declined. The progress towards recovery was uninterrupted.

Mr. Littlewood, who explored the liver, spoke of the harmlessness of the procedure.

Dr. Trevelyan suggested that the jaundice was due to typhoidal cholecystitis.

Dr. Wright, Mr. Mayo, and the President also joined in the discussion.

Pemphigus Foliaceus.

Dr. Hellier read notes of a case of pemphigus foliaceus which attacked an apparently healthy female child on the ninth day after birth. The disease was virulent and rapidly fatal. On the tenth and eleventh days huge flaccid bullæ formed upon the trunk, face, and limbs, and when the child died early on the twelfth day the skin of about half the surface of the body was either covered by enormous serous blebs, or entirely denuded of its cuticle. The child looked as though it had been scalded with boiling water. The cause of the attack was not known. The mother was a healthy primipara, and the father a strong healthy man. No specific history in either parent. The child was born in a healthy middle-class house in a good neighbourhood, and was nursed with every care. There was no known source of navel infection. The mother made an excellent recovery from childbed. Dr. Hellier said the disease was rare, and very fatal. It was said to have occurred in epidemic form.

Dr. Liddell said pemphigus neonatorum was considered to be due to septic causes in connection with the surroundings of childbirth. Pemphigus foliaceus was a rare disease, usually running a chronic course, while Dr. Hillier's case was one of exceptional rapidity. Under the term "Dermatitis exfoliativa neonatorum" Ritter had described a class of cases in infants some of which bore a resemblance to pityriasis rubra, while others, presenting flaccid bullæ like pemphigus foliaceus, were regarded by some authorities as examples of that disease.

Dr. Churton referred to several cases of pemphigus, and discussed its treatment.

Mr. Knaggs mentioned a case in which continuous bath treatment was followed by recovery.

Mr. Mayo referred to a case, and Dr. Hellier replied.

Gangrene of Lung.

Dr. Wardrop Griffith showed a specimen of gangrene of the lung, produced by the breaking down of a caseating gland, which had caused a communication between the œsophagus and the right lung. The patient was fifteen months old, and was under treatment for cough. After death a widely distributed tuberculous lesion was found.

Cases, Pathological Specimens, etc.

Dr. Mantle: A case of Scleroderma, with rheumatic history. Mr. Mayo Robson: Extrauterine Gestation Sac at eleventh month, removed entire.—Dr. Hellier: (1) Uterus with Myomatous Tumour removed by abdominal hysterectomy; (2) Thirty Gall Stones removed by cholecystotomy.—Dr. Allan: (1) Senile Uterus showing ovarian cysts; (2) Liver showing malignant disease, etc.; (3) Kidneys from case of pernicious anæmia.—Dr. Chadwick: A case of Diphtheritic Peripheral Neuritis associated with Right Hemiplegia.—Mr. Lawford Knaggs: Fibro-cystic Tumour of Uterus. Dr. T. Wardrop Griffith: (1) Specimen showing one of the possible relations of Mitral to Aortic Disease; (2) Dissection of a Malformed Hand.—Mr. Littlewood: (1) Ovarian Cyst with twisted pedicle (specimen); (2) Vermiform Appendix with perforation (patient and specimen).—Dr. Bairs: A case of Spasmodic Torticollis.—Mr. Moynihan: (1) Congenital Absence of Femur; (2) Cyst of Kidney, partial nephrectomy.—Dr. Trevelyan: (1) A case of Rapid Recovery from a Paraplegia due to Spinal Caries; (2) Case of Relapsing Paralysis of one Leg of obscure causation.

Manchester Medical Society.—At a meeting of this Society on November 2nd, Mr. Stanmore Bishop read a paper entitled Dressings *versus* Immediate Sealing of Operative Wounds, especially about the Abdomen.

PATHOLOGICAL SOCIETY OF MANCHESTER.

R. B. Wild, M.D., President, in the Chair.

Wednesday, November 9th, 1898.

Aneurysm of Abdominal Aorta.

Professor Dixon Mann showed an aneurysm of the abdominal aorta in which rupture, accompanied by profound collapse, occurred three days before death. The patient recovered from the collapse, and although the radial pulse could be plainly felt, no pulsation of the tumour was perceptible. After death, which took place suddenly, it was found that subperitoneal hæmorrhage had taken place by which the pulsation of the aneurysm was masked, and which also to some extent impeded the communication between the sac and the aorta.

Poisoning by Water Gas.

Professor Dixon Mann also exhibited some blood from a case of acute fatal poisoning by water gas. The presence of carbon-monoxide hæmoglobin was made very evident by means of Kunkel's test (a 3 per cent. solution of tannic acid), and in order to afford a means of comparison a specimen of normal blood was treated in the same way. The blood which contained carbon monoxide hæmoglobin yielded a precipitate of a bright, whitish-pink colour, whilst that thrown down from the normal blood was the colour of *café au lait*.

A Contribution to the Pathology of Cancer.

Dr. W. H. B. Stoddart read a paper dealing with a case of cancer which had come under his observation at Prestwich Asylum. The patient (an alcoholic dement) suffered for some months with obstinate constipation, and died of perforative peritonitis. On *post-mortem* examination a growth was found extending along the whole length of the mesenteric border of the stomach, small and large intestines, to the anus. It was limited to the intestine, and microscopical examination showed it to be a sphenoidal-celled carcinoma. There were two possible hypotheses to explain the anomalous distribution of the growth. The first was that cancer began in the stomach, the rest of the intestinal tract being infected through the food stream, the infective particles being arrested at the junction of the intestinal and mesenteric lymphatics. The second was that the whole growth arose on account of rods of subnotochordal mesoblast with dormant hypoblastic characters assuming those characters in advanced life, and giving rise to an epithelial growth. The specimen was shown together with sections and microphotographs.

Unusual Case of Ovaritis.

Mr. E. Stanmore Bishop and Dr. Fothergill showed an ovary and tube, with microscopic sections and drawings. The specimen was removed by Mr. Bishop from a patient who had suffered for many months from pelvic mischief of infective origin following abortion. The symptoms and physical signs exactly simulated those of ectopic pregnancy. After an attempt to remove the mass by the vagina, during which a cyst containing blood was ruptured, the abdomen was opened and the ovary and tube were removed after separating dense adhesions. The pathological interest of the case lay in the connection which it illustrated between septic ovaritis and the origin of cystic disease of the oöphoron. The ovary was full of small cysts caused by the interrupted development of Graafian follicles, but closely resembling the early stages of ovarian cysts, which were, as a rule, examined only when they had attained larger dimensions.

MIDLAND MEDICAL SOCIETY.

W. G. Lowe, M.D., President, in the Chair.

Wednesday, November 2nd, 1898.

New Members.

The following gentlemen were elected members of the Society: Mr. H. D'A. Ellis, Mr. R. H. Gilpin, Mr. F. V. Milward, Mr. A. Croll, and Mr. J. F. V. Hall.

Ectopia Vesicæ.

Mr. Chavasse showed a case of ectopia vesicæ. The patient was a girl, aged 4 years. Various plastic and osteoplastic operations had been performed unsuccessfully. In December, 1897, Mr. Chavasse separated the ureters from the

bladder, and transplanted them into the vagina, and cut away the posterior wall of the bladder. The remaining cleft was closed at a later period by Thiersch's method. The urine passed into the vagina, and was caught in a urinal applied to the vulva.

Fracture of Inner Wall of Orbit into Anterior Ethmoidal Cell.

Mr. J. T. J. Morrison showed a man, aged 24, who, on October 4th, had been kicked on the upper and inner angle of the left orbit by a pony whilst he was stooping down behind the animal. The blow, which was not very forcible, appeared to have been struck by the inner calkin of the shoe on the near hind foot. Soon after the injury both the left eyelids began to swell, and some hours later the swelling greatly increased when the patient was blowing his nose, and a little blood-stained mucus came from the left nostril. When seen on October 7th there was considerable surgical emphysema of the left eyelids, and pressure on the upper and inner part of the orbit caused pain. The was also some proptosis (noted by Mr. Priestley Smith), but no diplopia. No sign of bruising could be seen. The history and appearances excluded injury of the frontal sinus, antrum, or nasal bone; the air must, therefore, have escaped from the anterior ethmoidal cells as a result of fracture of the posterior portion of the lachrymal bone or adjacent part of the os planum of the ethmoid, or both these bones. A pad of wool was applied to the lids and the nostril irrigated daily with izal lotion. In a week all traces of the injury had disappeared.

Fibromyoma of Penis.

Mr. Haslam showed a tumour, the size of a hen's egg, which he had removed from the penis of a man aged 43. Ever since the patient could remember, he had had a small lump on the right side of the penis, just in front of the scrotum. For some time this had been gradually increasing in size, and for the last two months its growth had been rapid. On admission the tumour was found to be attached by a broad base to the right corpus cavernosum on its lateral and ventral aspects, but it was not interfering in any way with the urethra, though at the operation it was found to be very close to this. On section, after removal, the tumour had all the appearances of a fibromyoma of the uterus, and its structure, as shown by the microscope, consisted of fibrous tissue with a very large proportion of involuntary muscular tissue.

The Diagnosis of Suppuration in the Accessory Cavities of the Nose.

Dr. Lamb read a paper on this subject. For diagnostic purposes he divided the cavities into an anterior group which drained through the hiatus semilunaris into the middle meatus, and a posterior group which drained into the olfactory fissure and naso-pharynx. He described the systematic examination of the various cavities, including transillumination, the manipulations necessary in catheterising them through the natural openings, and the operation of exploratory puncture in certain cases.

British Orthopædic Society.—At a meeting on October 21st at the National Orthopædic Hospital, Mr. A. H. Tubby in the chair, Mr. Luke Freer showed a Modification of Holland's Arch for Flat Foot containing a pad of porous rubber in place of steel, which he had found much more satisfactory.—Mr. Muirhead Little, Mr. Openshaw, and Mr. Tubby showed some interesting cases of Tendon Transplantation. In Mr. Little's cases the peroneus was inserted into the tendo Achillis; in one of these the wound suppurated freely, in spite of which there had been some improvement. Another, a little girl, operated on in a similar manner had so far been most successful. He thought the kangaroo tendon had been responsible for the suppuration. In Mr. Openshaw's cases one had been treated by exposing and dividing the peroneus longus and tibialis posticus; then passing the forceps through an incision in front of the tendo Achillis he drew the peroneus longus across the back of the leg and stitched it to the tibialis postieus, with the idea of correcting the valgus by diminishing the power of the peroneus and increasing the power of the tibialis posticus. The result had been fairly good and he anticipated further improvement as the peroneus was beginning to act. Another was a young man with calcaneus. He had spliced both peronei into the tendo Achillis. In this case he had used kangaroo tendon and suppuration resulted. He had in consequence made experiments with kangaroo tendon with the view of testing its asepticity, and although he had tried every method of sterilisation he had still been able to obtain a cultivation. In Mr. Tubby's cases one was for calcaneo-valgus in which he had used the peroneus longus to bring across the tendo Achillis. He generally made a big incision extending far up the leg. The great thing was to take a large thick piece of silk and pass it through the tendon anchoring the muscle. On admission the boy had no power in the calf muscles; he still had some valgus which was becoming corrected by galvanism and the use of an instrument. His other case was a boy with paralytic equino-valgus. He had split the tendo Achillis for a long distance and then stuck half the tendo Achillis into the peroneus and cut through the remaining half. Two months had elapsed and there was very little varus left.—Mr. Tubby showed a case of Congenital Hip Displacement treated by the open method. Mr. Robert Jones and he had done the case together at the Evelina Hospital. The girl was 12 years old and had 2½ inches shortening. He made an anterior incision. There was a rough bony prominence inside the acetabulum. They made a square surface on the head of the femur. They then cut two-thirds through the neck of the femur and gave it a twist to correct the inversion. Their object was not so much to make an acetabulum as to bring about fibrous union. By this method uprising was prevented, but there remained some shortening as the neck of the femur was horizontal. The case had been previously treated by Lorenz's operation. In the discussion which followed, Mr. Reeves mentioned a case of his own in which the patient was sent to Vienna to be operated upon; she was not at all benefited. As for Hoffa's operation it was simple madness. He contended that treatment by attempted reduction extension and the use of a splint was not Lorenz's method. He himself had treated numbers of cases by this method years before. Mr. Openshaw said he had performed six operations of the kind. Only two he considered were really successful. His own experience was that there was always an acetabulum. He concluded that the operation was best done by reducing the shortening before beginning to cut. These cases were often associated with genu recurvatum, and he thought it was the result of intrauterine injury. Mr. Eve had seen a number of cases in the *post-mortem* room, where the position could be seen better than in the course of an operation; he had never seen the acetabulum absent, though always small and triangular. After some remarks by Mr. Noble Smith, Mr. Muirhead Little said he had treated many of these cases both by the modified Buckminster-Brown method and by Lorenz's, but the results were scarcely satisfactory. Unless they could get the bone down before beginning the manipulation they were doomed to failure. Mr. Keetley had operated on two cases. Both had had a long spell of extension before he had divided anything, and it made very little difference. Then he had made an incision and divided everything that seemed to prevent the head of the bone coming down. He ultimately succeeded in getting the bone well down in each case. He thought the main point in the open operation was to make the acetabulum big enough. The first case was very promising: the 3 inches shortening had been reduced to one, and the limb could be flexed to an angle of 40°. Mr. Tubby, in reply, stated that the present method might succeed in some cases, but not when the child was over 8 or 9. One reason for this was that the head of the bone was out of shape and altogether too large; secondly, the capsule was too thick; thirdly, one might wriggle the head about, but one would never get it into the acetabulum, because the femur was out of all relation to it. Mr. Jones, in reply, said in little children it was well to try reduction, but with older children that was of little avail. They could get false ankylosis by pressure of bone alone. He recalled the case of a doctor's daughter with 4 or 5 inches shortening, in which by special training all defect of gait had been overcome. He thought it was necessary to have full extension before any operation was done. He had tried to produce some thickening just above the site of the acetabulum with a chisel to prevent the bone shifting up again, but the results had been very uncertain. Skiagraphs illustrative of these cases were shown.

Forfarshire Medical Association.—At a meeting held in University College, Dundee, on November 2nd, Dr. J. Mackie Whyte, Vice-President, who was in the chair, showed a Cirrhotic Liver and a Stomach with Cancer of the Cardiac End from a patient who had developed acute peritonitis, from which he died.—Mr. Greig showed (1) a cast of the Head of a Microcephalic Idiot whose age at death was 21; the measurement from glabella to inion was 12 inches. (2) a Cast of the Head of a Prognathous Idiot whose age at death was 25. (3) Cathcartine Cast of a Hypertrophied Prepuce following Phimosis. (4) A Cast of a Foot after Mikulicz's operation. (5) An Osteoclast for the treatment of genu valgum.—Dr. Rogers read a paper on Œdema Neonatorum, giving the notes of a case of a child born at the eighth month developing symptoms of this disease on the third day. The child was weak and never able to suck, œdema of the hands and feet coming on in four hours; temperature low, pulse weak; systolic murmur to left of sternum; distant breath sounds at base of lungs posteriorly; urine contained no albumen; spleen and liver enlarged. On the eighteenth day acute enteritis set in; after recovery from this the œdema disappeared, and the child was now well and putting on flesh. He gave the treatment he had adopted at each stage. He then dealt with the various causes of this disease, and gave it as his opinion that in this case at least it was due to atelectasis and a patent foramen ovale as against congenital heart disease, in which recovery would have been more tardy. Lastly, he discussed the points which distinguished it from sclerema. Dr. McVicar thought that atelectasis was the cause in most cases, considering that if there were a patent foramen ovale there would be marked lividity and signs of poisoning. The treatment should therefore be for stimulating respiration. Dr. Buist did not think that Dr. Rogers's case could be distinguished from one of sclerema, and said there was considerable evidence in favour of a nerve explanation of the disease. Professor Kynoch considered that œdema and sclerema were the early and later stages of the same disease. Dr. Foggie thought the cause of the œdema in Dr. Rogers's case was the weakness of the child and its premature birth causing inability to respond readily to the change of conditions. Dr. Rogers briefly replied that if it were due to atelectasis alone, improvement would have occurred at an earlier date than it had done in his case.—Dr. McVicar read notes of a case of Gastrostomy in a woman aged 53, which he had performed for cancer of the cardiac end of the stomach. An opening was made into the stomach by Frank's method. The patient had done well till three months after the operation, when pain immediately on taking food again troubled her. This, Dr. McVicar thought, was due to extension of the disease. He discussed the duration of life after such operations, and also the various methods which have been devised to prevent leakage. Mr. Greig and Professor Stalker made remarks; and Dr. McVicar briefly replied.—Dr. Buist read a paper on the Treatment of Ineradicable Cancer of the Uterus by interference with the blood supply, giving an account of a case in which he had ligatured the uterine arteries and removed the ovaries. This treatment caused a diminution in the discharge, but apparently very little alteration in the rate of growth of the disease. He showed the bladder, uterus, and rectum, which were all involved to some extent in the growth. Remarks were made by Professor Stalker, Mr. Greig, and Professor Kynoch; and Dr. Buist briefly replied.

Folkestone Medical Society.—At a meeting on November 2nd, Dr. Tyson read a paper on Clinical Notes from Practice. He referred in the first instance to the presence of sugar occurring in people over 50; in many instances it carried little clinical importance; constantly a strict antisaccharine diet did more harm than good; people were often made miserable by being told that they had a formidable disease; these people were, as a rule, better for doing their ordinary occupations. He next spoke on herpes zoster, and gave evidence to show that in some cases it seemed to occur epidemically and in some to be of an infectious origin. As regards liver abscess, he thought that this was more common than the textbooks led one to surmise, and quoted cases in support of this view. Several examples were given of a septic starting of disease, either from pent-up pus, or pus on a free surface. Dr. Tyson referred to the great difficulty which frequently occurred in deciding between the early stages of malignant disease of the stomach and chronic dyspepsia, a great many of the symptoms being common to both, and he thought that laparotomy might more frequently be done to settle the diagnosis. He lastly recorded cases of ptomaine poisoning closely resembling the early stages of typhoid fever. An interesting discussion followed.

Birkenhead Medical Society.—At a meeting on November 11th, Dr. H. Nazeby Harrington, President, in the chair, Dr. Ellis Pearson opened a discussion on the Practical Application of Antiseptics in General Midwifery Practice. He maintained the extreme desirability of midwifery nurses having a general training in surgical nursing before their special training, in order that they should become thoroughly imbued with antiseptic principles. As a lubricant for obstetric work carbolic acid with vaseline (1 in 20) was suggested as one against which the usual strong objections to most lubricants could hardly lie. Washing of the pudenda by the nurse before labour with some fairly powerful disinfectant was recommended as a procedure which, though at first sight it might seem fussy, would probably, in these days of spreading knowledge concerning germs, be accepted without demur by intelligent patients. Douching Dr. Pearson held was best limited in normal cases to one douche given immediately after labour by the practitioner himself; at the same time, he considered that, if only the nurse could be thoroughly trusted, regular douchings throughout the puerperium were desirable, because they prevented many of those evanescent appearances of slight pyrexia which caused the medical attendant so much anxiety. The discussion was continued by Drs. Marsden, Stansfield, Wilkinson, W. Floyd, Vacher, Brien, Laird, Pearson, and the President.

REVIEWS.

Ovariotomy and Abdominal Surgery. By Harrison Cripps, F.R.C.S. London: J. and A. Churchill. 1898. (Royal 8vo, pp. 624, 17 plates, 115 woodcuts. 25s.)

This treatise is far simpler and more practical than many of its kind with which we are already familiar. It is founded on the experience of three distinguished hospital surgeons, for the author has entrusted the chapters on the kidney and the radical cure of hernia to Mr. Bruce Clarke and Mr. Lockwood. None of these writers waste words in discussing the numerous varieties of standard operations practised by British and foreign authorities, or the very questionable special procedures described at length in many standard works. They write solely on those operations which they themselves are accustomed to perform, and are therefore best qualified to demonstrate.

The chief principle of the author and his two colleagues is to teach bold but not rash operating. A free abdominal incision should be made in hysterectomy. The kidney must be drawn well to the surface in nephrolithotomy. The surgeon undertaking the radical cure of hernia must know its layers, must recognise them when he exposes them, and must then make use of them in an intelligent manner for the closure of the orifice whence issued the hernia. On the other hand, feats like the total extirpation of sessile pancreatic cysts, where incision and drainage answer well, meet with no approval. Mr. Cripps does not encourage record-breaking statistics, but rather dwells on cases that go wrong. The cause of one death is much more important than the record of fifty recoveries from an operation long recognised as justifiable.

Mr. Cripps has collected into this volume his well-known treatises and papers on ovariotomy, hysterectomy, intestinal surgery, and the arrangement of the operating theatre, and has adorned his work with some fine illustrations. In respect to subperitoneal abdominal hysterectomy, the author states that in his more recent cases he makes use of the drainage tube if the broad ligaments have been widely opened, and if there has been much manipulation of the parts. The great differences of opinion amongst experienced operators, and Clark of Baltimore's remarkable experiments render this question of intraperitoneal drainage particularly important at pre-

sent. Perhaps the best feature in this work is the Appendix of 183 selected cases, a series of excellent clinical and surgical notes. The superior value of such reports in a treatise of this kind to descriptions of other surgeons' operations is evident.

The author lays great stress on after-treatment. Under Complications after Ovariotomy he rightly dwells on bronchitis, which is not rare, and is always grave. While admitting that it may be the result of prolonged exposure during a tedious operation, he also attributes it in many cases to ether, and adds an opinion worth considering: "I am not altogether satisfied," he observes, "that sometimes it may not be due to septic infection from the india-rubber ether bag." Mr. Cripps maintains his objection to morphine after any surgical operation, especially after ovariotomy, but he still recommends a quarter of a grain subcutaneously if the pain be very great during the first night.

The chapter on the surgery of the kidney by Mr. Bruce Clarke is in keeping with the rest of this work, the directions for operation being short and clear. The surgeon who is compelled to learn how to do his first nephrolithotomy from a book always wants to understand clearly how to cut upon the stone.

In some treatises the directions are given at too great length, so as to be confusing to the novice. Mr. Bruce Clarke, after reminding us that the kidney, being freed from its surroundings, can usually be drawn out of the wound and freely manipulated, adds that it may also be punctured if necessary, "so as to locate the stone, which should be removed if possible through the pelvis, as the bleeding is less in amount, making subsequent exploration easier. If the stone is fixed in any one part of the kidney substance, no attempt should be made to push it down into the kidney pelvis." These directions are as lucid as they are sound. The author rightly lays stress on the sounding of the ureter with a small gum-elastic bougie, so as to make certain that no obstruction exists. Like all other authorities, he is chary about aspiration, but admits that "there must always remain a certain residue of cases in which, on account of the patient's condition, no prolonged operation is admissible, and occasionally it may be useful from the point of view of diagnosis and as a preliminary to further operation." Thus he is not so averse to aspiration as are some other operators. He notes that it is usually performed for the relief of hydronephrosis, pyonephrosis, hydatids, or other large collections of fluid in and around the kidney, and is undoubtedly useful when the rupture of any collection of fluid appears to be imminent, or the patient's condition forbids further interference.

As to the vexed question of the relative advantages of lumbar or abdominal incision, surgeons are now well aware that the kidney can be drawn well out of a lumbar incision and carefully inspected with perfect safety; and Mr. Clarke is justified in arguing that "the chances of damaging the colon or producing a hernia are certainly not greater by the lumbar route than by the abdominal." Mr. Clarke has his own way of passing the sutures in nephrorrhaphy; he simply passes through the kidney substance two of the sutures which unite the edges of the wound. We question whether two are sufficient. He removes them in about ten days. He objects, with some reason, to buried sutures, as they sometimes become infected from the kidney, and give rise to a troublesome sinus.

Mr. Lockwood's opinions expressed in the chapter on the Radical Cure of Hernia deserve careful consideration; the large woodcuts demonstrate the steps of the operation very clearly. The repair of the parts concerned in inguinal hernia is a very familiar topic. About femoral hernia opinions are somewhat divided, many believing that no permanent radical cure is possible, others devising strange means to gain the desired end. Mr. Lockwood is in favour of a variety of this operation which ensures the thorough closure of the femoral ring. The stump of the sac is fixed by ligature within the abdominal cavity, the author differing in this respect from Mr. Treves, who twists the neck of the sac into a thin cord, and fixes it into a slit made in Poupart's ligament close to the pubic spine. The object of this manœuvre is to make a bar or pad which closes the femoral ring, but Mr. Lockwood trusts rather to firm and systematic closure of the layers around the ring.

In conclusion, it will be seen from what has been said that *Ovariotomy and Abdominal Surgery* is a most readable publication, and an important record of the experience of three operators of high repute.

A Manual of Bacteriology, Clinical and Applied. By R. T. Hewlett, M.D., M.R.C.P., D.P.H., Assistant in the Bacteriological Department, British Institute of Preventive Medicine. London: J. and A. Churchill. 1898. (Demy 8vo, pp. 448, illustrations 73. 10s. 6d.)

In this handy volume Dr. Hewlett has succeeded in supplying a work of considerable value, which not only places before the student the outlines of bacteriological procedure and knowledge, but also dips more deeply into the intricate chemistry and various applications of the science in its connections with allied processes. After a careful perusal of the book, we have come to the conclusion that due emphasis has been laid on the important facts from a clinical standpoint, and at the same time the work is not overburdened with details which lack a practical bearing on the subject in hand.

Opening with an interesting survey of general bacteriological processes, the author proceeds on the usual lines, taking the various pathogenic bacteria *seriatim*. At the close of the description of each organism is a very useful section with concise directions for the clinical diagnosis in suspected cases. Chapters on the blastomycetes, hyphomycetes, and protozoa are given, and a special chapter is devoted to the consideration of scarlatina and other diseases of uncertain origin.

The bacteriology and bacteriological examination of water, air, and soils receive notice. The bacteriology of water, considering its ever-increasing interest and importance, demands fuller treatment, and milk and foods are dismissed in a few short paragraphs. Then follows a chapter on antiseptics, etc., and four appendices, of which the most important is that on bacterial remedies, in which each antitoxin is considered in turn. There are several reproductions of microphotographs, but they are not very successful. In another edition the illustrations ought to be improved in quality and increased in number.

Septicæmia and pyæmia receive but scant notice, and the phenomenon of metachromatism deserves fuller mention. On the other hand, we welcome a full comparative description of the Klebs-Loeffler bacillus and the pseudo-diphtheria bacillus. The differences between these two organisms are tabulated and well enumerated, but in connection with the latter Hoffmann's name ought surely to have been mentioned. There is a good description of Widal's serum reaction, with a summary of the discussion on the subject at the American Congress of Physicians and Surgeons, 1897. Koch's new tuberculins receive due attention, and there is a fairly complete description of the results of the Royal Commission on Tuberculosis.

That the book has been brought well up to date is evidenced by references to such recent events as the Maidstone epidemic, and to the literature of the past year. A judicious selection of literature has been made, for most of the references are to important papers, incorporated with which in many cases is a complete bibliography. The book is very free from misprints, and may be safely recommended as an eminently practical volume of the highest value in the laboratory.

Physiology, Experimental and Descriptive. By Buel S. Colton. London: The Scientific Press. 1898. (Crown 8vo, pp. 423; 103 illustrations. 6s.)

This book is one of the most curious jumbles we have ever come across. It treats of cookery and household management, first aid to the injured, and toxicology, bacteriology, and hygiene. There is also some anatomy and physiology of a kind to be discovered in its pages. The book is written for use in schools; the science is of the most elementary kind and hidden away by excellent platitudes and rules for good conduct. The book is also written for use in American schools, and this perhaps explains why propaganda against the use of alcohol forms so large an element in its pages. We understand that the teetotallers are so powerful in the States that they are able to prevent the sale of any physiological textbooks for schools which do not contain a powerful indictment against the use of alcoholic liquors. Mr. Colton, however, does more than this; whenever he gets a

chance he inserts a few pages on the evils of the noxious poison. The chapter on food consists of twenty-six pages, and of these seventeen are devoted to alcohol and tobacco; we have another four pages of the same kind in the chapter on the brain, while in the chapter on the heart the author is more merciful, and lets us off with a single page on alcohol. We hope after efforts of this kind that the American authorities will consider the book safe to place in the hands of students.

The author has an irritating way of introducing pagefuls of quotations from other authors, with hardly anything in the form of connecting links between them. He does not mind very much from whom the quotation comes; thus we find Waller, Lusk, and other authorities on physiology sandwiched between Charles Kingsley and Captain Mayne Reid. Occasionally, too, for the sake of variety, Mr. Cotton drops into poetry.

The first sentence in his preface reads: "We have all laughed at the ridiculous answers given to examination questions in physiology." We confess we should like to see the answers given by pupils who have been brought up on this book. We quote a few of its paragraphs, some of which seem to have already the flavour of the child's essay about them: "The average pie needs some extra help for its digestion. Donoghue, formerly long-distance skater, when asked if he dieted in preparation for a race, said he avoided pastry." "It is sad enough that so magnificent a structure as the human body must perish and become part of the common clay; but it is infinitely more sad to think that it has not fulfilled its purpose when the end comes in what should be mid-career." "Cases have been reported of injury from excessive skipping the rope" (American newspapers report a number of curious things). "Nor is it advisable to keep cider about a house where there are children. 'It is perfectly sweet,' you say. Yes, but unless it is all soon consumed it will ferment. It is unwise, to say the least, to put temptation in the way of those whose habits are not formed." The moral is obvious—drink your cider up quickly. "Perhaps Robinson Crusoe might have been excused for using tobacco, having no one to save money for, no unfortunates to aid, no children to educate, no one to whom he might set a bad example, no one whose breath of air he could contaminate, no one to smell his breath, no one to see the offensive results." We calculate poor Friday, man and brother though he was, didn't count. "Not waiting for house-cleaning time (that reign of terror), rugs can be taken out, and the floors gone over with a moist cloth." "Anatomically there are two lungs, and the heart lies between them; physiologically the lungs form a single organ which is interposed between the two hearts." We should like to see what the average school child would twist this into when it is sprung upon him as here without any explanation; or of this: "Every time you breathe, you breathe two different breaths: you take in one, you give out another. The composition of these two breaths is different; their effects are different; the breath which has been breathed out must not be breathed in again."

Turning once more to the preface, we think we can discover one reason for the heterogeneous mixture the book consists of, for the author acknowledges his indebtedness to no fewer than twenty-two people who have been kind enough to read the proof and make helpful criticisms and suggestions. Mr. Colton is fond of proverbs; he has evidently not yet grasped the meaning of one which we do not find quoted, namely, that "Too many cooks spoil the broth." If in a future edition he is able to remove the twaddle with which the book is permeated, the residuum may form a passable work in elementary physiology; but without some drastic operation of this sort we fear that it will remain a book more for amusement than instruction.

Études sur la Tuberculose [Studies on Tuberculosis.] Par Dr. G. Arthaud. First series, 1890-1898. Paris: Bureaux du *Progrès Médical* and Félix Alcan. 1898. (Demy 8vo, pp. 164, 17 diagrams. Fr. 4.)

Tuberculosis has probably never before been so closely studied as at present. The medical journals of all countries are full of articles relating to phthisis. A considerable number of monographs on this subject have made their appearance during the course of the present year, not the least interesting of them being the present volume. Amongst the various questions discussed by Dr. Arthaud are the manner of onset of the disease, the early diagnosis, the frequency of the various modes of contagion, the significance of tachycardia, of dyspnœa, and of the various physical signs in the lungs, and treatment by tannin, etc.

In regard to early diagnosis, the author is disappointed with the results obtained by staining the sputum for tubercle bacilli. The bacilli, he thinks, are usually not to be found when the other signs are uncertain, and when the microbes are discovered the disease can generally be diagnosed by other methods. Dr. Arthaud is a great believer in the infectiousness of phthisis. He has collected 100 cases of phthisis in which there was no tuberculous history and in most of which the cause of the infection seemed to be tolerably clear; in eighty of them there was a history of the patients having lived for a considerable time in apartments in which previously a phthisical person either had been resident for a long time, or had actually died. Dr. Arthaud proceeds to narrate typical instances of this mode of infection, and quotes examples of what may be termed actual "epidemics" of pulmonary tuberculosis due to the almost complete neglect of sanitary precautions against the spread of the disease.

Many of the author's views are doubtless calculated to excite discussion and some difference of opinion, but nobody can read his book without deriving advantage from his valuable observations and suggestions.

Lehrbuch der Nervenkrankheiten für Aerzte und Studirende [Handbook of the Diseases of the Nervous System for Practitioners and Students.] Zweite Auflage. Von Professor Dr. H. Oppenheim. Berlin: S. Karger, and Glasgow: F. Bauermeister. 1898. (Roy. 8vo, pp. 985, 287 figures. M. 23.)

We heartily welcome the second edition of Professor Oppenheim's textbook on nervous disease. It contains 115 additional pages of text and 67 more figures than the first edition, which was noticed in our columns on September 21st, 1895.

The first part of the book, dealing with nervous disease in general, is well abreast of our present knowledge, and is in itself exceedingly well done. In it the methods of the physical examination of nervous disorders and their general symptomatology are described in a succinct yet adequate manner. The second or special part of the book, in addition to chapters on the well-known diseases of the brain, spinal cord, and peripheral nerves, has most valuable articles on the less well-known neuroses, the diseases of the sympathetic nervous system, the angioneuroses (including a description of the comparatively recently recognised condition known as erythromelalgia), the trophoneuroses, and the general intoxications. Worthy of particular mention are the chapters on the primary myopathies, of which pseudo-hypertrophic paralysis is an example, and the different subjects of hysteria, neurasthenia, and traumatic neurasthenia, of which railway spine may be taken as a type. The work, moreover, excels throughout in its discussion of the differential diagnosis of these complex diseased conditions. A particularly good feature of the book is the use of reproductions of photographs of actual patients in illustration of the diseases described in the text. There is a good index.

Looked at as a whole, it would be difficult to find another book on the same subject more concise or more full of sound knowledge, both new and old, and at the same time so clearly written and well illustrated.

Handbuch der Ernährungstherapie und Dietetik. [Handbook of Treatment by Feeding and Dietetics.] Herausgegeben von E. von Leyden. Bd. I, 2te Abtheilung. Leipzig: G. Thieme. 1898. (Royal 8vo, pp. 423 to 622.)

Some months ago we indicated the general scope of this work when reviewing the first instalment. The second part of the first volume opens with a section by Dr. Martin Mendelsohn, of Berlin, upon the technique of feeding the patient and looking after his general comfort. These points are of great importance in the treatment of all diseases, but perhaps especially so in chronic cases. The many illustrations of ingenious,

and at the same time useful, articles for the sick room, chiefly in relation to feeding, are given. The temperature, character, and quantity of the food are also discussed, as well as the most convenient ways of administering it. Artificial feeding (*a*) by means of the stomach tube, (*b*) by the rectum, and (*c*) by subcutaneous injection has been entrusted to Professor Leube, of Wurzburg, a well-known authority on the subject. The value of the various food stuffs in rectal feeding is carefully and clearly discussed. Subcutaneous feeding has certainly not gained much favour, and v. Leube states that protein-containing substances and carbohydrates either promise little or are not to be recommended, but that something may be expected of fats administered subcutaneously. He especially mentions oil, and thinks this method is thus far an extension of our resources. In the last section Professor A. Hoffmann, of Leipzig, ably discusses the various forms of dietetic treatment, including that by mixed diet, by diets containing an excess of one or other constituent, by overfeeding, by underfeeding, by vegetarianism, etc.

This work continues to answer the high expectations naturally formed of it from its distinguished authorship.

NOTES ON BOOKS.

Veale's System of Medical Bookkeeping.—Devised and arranged by H. de P. Veale, L.S.A., President Medical Officer Ida Convalescent Hospital, Cambridge, and Gerald C. Veale. Published by G. C. Veale, care of Theodore B. Jones and Co., chartered accountants, 48, Albion Street, Leeds. 1898.—This system is worked by means of two books, daybook and ledger, and of a cashbook where a collector is employed. The daybook consists of a strong permanent cover (price 5s. 6d.), into which fits a quarterly section, bound in leatherette (price 6s. each, or by annual subscription for four sections, post free, 24s.). The ledger, half-bound, is made in three sizes (price for one of 500 pages 21s., for 700 pages 25s. for 1,000 pages 30s., postage extra). The collector's cashbook is priced 10s. 6d. and upwards (postage extra), according to number of accounts and quality of binding. For most practices only the daybook and ledger are required, as the daybook combines the functions of ordinary day and cashbooks. Detailed directions are given for the use of the daybook, ledger, and large number of suggested abbreviations which are amongst the labour-saving devices employed. The annual income-tax return can be prepared from the day-book by following the instructions appended for the purpose. The daybook and ledger are both arranged alphabetically. Amongst the chief advantages claimed for the system are the following: Each patient's name, however often attended, has only to be written in the daybook once during each quarter. The quarterly section furnishes on one horizontal line a complete three months' record of work done for, and cash received from, each patient. The ledger has only to be posted up once every three months. Altogether the system appears to be capable of providing practitioners, whether or not they dispense their own medicines, with a method of bookkeeping easily acquired and calculated to reduce very greatly the mechanical drudgery of keeping daily accounts and of preparing bills.

Reports and Transactions.

The first volume of the *Transactions of the Society of Anæsthetists* (The Medical Publishing Company) has been published. It is gratifying to find this young and vigorous Society publishing a volume of *Transactions* and issuing it with commendable promptitude after the close of the session of which the volume contains the record. The volume before us, which contains 171 pages, is entirely composed of the papers read at the Society's meetings last winter and of the discussions originating therefrom. The Society has done well in starting such a volume, which it is to be hoped may become an annual "out-put," as the papers are worthy of preservation in such a form. The type is good and the volume well edited. May we venture to hint, however, that an index would add greatly to the usefulness of future volumes?

Dr. F. J. A. Waring was elected an Alderman at the first Council meeting under the new Charter of Incorporation of the town of Hove.

INSTRUCTION IN TROPICAL DISEASES.

The following circular letter, signed by the Permanent Under-Secretary of the Colonial Office, has been addressed to the medical schools:

Downing Street, November 9th, 1898.

Sir,

1. In the 5th paragraph of the letter from this Department of the 11th of March last it was stated that Mr. Secretary Chamberlain, with a view to supplementing the instruction afforded by the medical schools, was endeavouring to make arrangements for giving to Colonial medical officers special clinical instruction in tropical medicine, such as is given at Netley and Haslar in the case of medical officers of the Army, Navy, and Indian Medical Services, and which, from lack of the necessary material, cannot invariably be given at the medical schools.

2. These arrangements have now been made. The directors of the Seamen's Hospital at the Albert Docks, which offers exceptional opportunities for studying cases of tropical disease, are providing the necessary buildings and teachers for the accommodation and instruction of the medical officers who may hereafter be selected by the Foreign Office and the Colonial Office for appointments in the tropics. A substantial contribution towards the initial cost of the buildings is being made by the Government, and it is hoped that by the 1st of October, 1899, it will be possible to receive medical officers at the hospital for purposes of instruction.

3. It is proposed that, as is at present the case, candidates for medical appointments in the British Colonial Possessions shall be fully qualified before they can be put upon the Secretary of State's list, that from this list a certain number shall be selected annually to fill the vacancies which may occur in the Colonial Medical Service, that the selected candidates shall be trained for a period of at least two months at the Seamen's Hospital, and that they shall then be sent to the Colonies or Protectorates to which they have been alloted, where, when practicable, they will be attached, in the first instance, to the headquarters hospital for the purpose of gaining additional experience. In estimating the respective merits of candidates on the Secretary of State's list, regard will be had to the fact whether or not they have already received instruction in tropical medicine.

4. Judging from the replies which have been received from the General Medical Council and the medical schools, Mr. Chamberlain believes that the above arrangements will prove acceptable.

5. Although the school at the Seamen's Hospital is designed for the training of medical officers for the Government Service, doubtless there will be many other medical men, such as the medical officers of missionary societies and trading corporations, and private practitioners who propose to settle in tropical countries, who will be glad to avail themselves of the advantages which such a school can offer.

6. The Colonies are being asked to make pecuniary contributions, to collect pathological material for use in the school, and to support the scheme in every possible way. So far, then, as this Department is concerned, no effort is being spared to make the school a success, and Mr. Chamberlain feels confident that the medical schools of this country will also do what is in their power to assist the development of an institution which is likely to be of general service, and to benefit medical science not only by giving a stimulus to the investigation of tropical disease, but also by qualifying a body of men to become investigators.

7. Mr. Chamberlain is so impressed with the importance of this subject as affecting the administration and well-being of the tropical Colonies that, in addition to this scheme for providing a thoroughly efficient Colonial Medical Staff, he wishes to encourage by every means in his power scientific inquiry into the causes of tropical diseases. Accordingly, he has already, after correspondence with the Royal Society, instituted a Commission to study the subject of tropical malaria on the following lines:

8. The Royal Society has nominated two competent observers, who have already proceeded to Italy for a short preliminary study, and will afterwards go to some place in Africa, probably, in the first instance, to Blantyre, in the British Central Africa Protectorate, where it has been ascertained that there exist good opportunities for carrying out the purpose in view.

9. In addition the Secretary of State has nominated an experienced medical officer of the Colonial Service to aid in the investigation. This officer will, in the first place, proceed to India in order to study under Surgeon-Major Ronald Ross for about two months, so as to make himself acquainted with the result of that gentleman's researches. He will then join the other two observers in Africa, where they will together pursue their studies, which will probably occupy about two years, and report from time to time to a Committee in England, nominated jointly by the Royal Society and the Secretary of State.

10. Mr. Chamberlain has been glad to learn from the replies which have been sent to the letter referred to above that arrangements already exist, or are about to be made, for giving special instruction in tropical medicine in upwards of twelve British medical schools, and he trusts that these schools, some of which (such as that of University College, Liverpool, University College, Bristol, and the University of Durham College of Medicine at Newcastle-on-Tyne), being situated in large seaports, possess exceptional facilities for the study of tropical disease, will keep in correspondence with the School of Tropical Medicine at the Seamen's Hospital, with a view to mutual assistance and advice.

11. In conclusion, Mr. Chamberlain desires to express his thanks to the General Medical Council and the British medical schools for the warm interest which they have taken in this matter, and for the ready and cordial support which they have afforded him. He will welcome any suggestions which may be made in furtherance of the object in view.

I am, Sir, your obedient servant,

Edward Wingfield.

Medical Mayor.—Dr. John Farmer has been re-elected for the second time to the Mayoralty of the borough of Brackley.

THE PLAGUE IN THE EAST.

India.

In the city of Bombay the number of deaths have, according to telegraphic reports, somewhat increased. Last week the numbers had fallen as low as 59, and although the actual number for the present week is but slightly greater, it is calculated to depress the spirits of those Bombay residents who looked forward to a speedy termination of the scourge. Until we are informed, however, of the actual number of fresh cases of plague, it is impossible to form an opinion one way or the other, since at the termination of an epidemic the death-rate frequently increases relatively, whilst the actual mortality declines. In the Bombay Presidency the improvement, which we recorded last week for the first time during the current outbreak, has been maintained, and there is a more hopeful feeling as regards plague in the outlying districts. Only in the Dharwar district is there an increase. Dharwar is situated in well-nigh the most southerly point of the Bombay Presidency, and it would seem that the severity of plague is more marked in the south than in the north of India.

Throughout the four divisions of the Madras Presidency some 40 cases constitute the total of plague cases reported. From the city of Madras itself, however, comes the unwelcome announcement that 5 cases of imported plague have occurred there.

From the neighbouring state of Mysore a serious increase is reported, and the city of Bangalore is at present devastated by plague.

In the Central Provinces a few deaths have occurred from plague, but they are described as "imported" cases. We hope this is really the case, as up to the present moment that region of India has been free of the disease.

Northwards from Bombay we have the news that a few cases have occurred in Rajputana, and that at Karachi two deaths have taken place during the past week.

The present prevalence of plague in India may be summed up by saying that towards the south of India the disease tends to become epidemic, whilst in the districts to the north a few sporadic cases only indicate its presence.

Central Asia.

The suggestion that the despatch of a medical mission to the Samarkand district had more of a political than a medical purpose is negatived, partly by the fact that it included a number of lady doctors, but chiefly by the announcement that Prince Alexander of Oldenburg, President of the Imperial Russian Commission for the taking of measures againt plague, has gone to Central Asia with plenary powers to deal with the outbreak.

Action of Germicides on B. Pestis.

The germicidal action of certain substances with reference to the bacillus of plague forms the subject of a report by Mr. W. Watkins-Pitchford, M.B.Lond., who is now working on the subject at the Petit Laboratory in Bombay. The substances used were in general the commoner and less expensive disinfectants, upon most of which Mr. Hankin had already communicated his results in his report for 1897. The report before us is an extension of Mr. Hankin's work upon the same lines, and deals with the effect of watery solutions or suspensions of the substances upon watery emulsions of the bacillus obtained from agar cultures. In this sense, therefore, this is a preliminary report, further researches being in course of prosecution with regard to other conditions, such as admixture of the bacillus with solid media, etc.

The conclusions drawn from these experiments are that, of all the disinfectants used, mercuric perchloride is the most reliable, a strength of 1 in 5,000 proving germicidal within five minutes. Other valuable agents are potassium permanganate, chloride of lime, lysol, and other substances in less degree. Carbolic acid cannot be included in the list, as the strength of solutions required to be effective within five minutes must be 1 in 50.

These experiments corroborate the results already published in the *Cent. f. Bakt.* (April 24th, 1897) by Abel, who emphasises the value of mercuric perchloride, and notes the comparative inefficiency of carbolic acid. Mr. Watkins-Pitchford puts the thermal death-point at 127° F. (53° C.), though the length of exposure to that temperature necessary to kill the bacilli is not stated. Kolle placed the thermal death-point at 58° C. for cultures when exposed to that temperature for several hours.

Another observation which was verified in the course of the experiments is the difference in vitality of cultures of varying ages. Thus young cultures were found to be less resistant to germicides than old cultures. The explanation offered is that in the latter the surface of the bacilli has become denser and less permeable to the disinfectant.

The researches of Wilm and Abel on the behaviour of B. pestis in water showed that it could exist for long periods in that medium, as much as twenty days being given by one of these observers as the length of time the bacillus took to disappear. On the other hand, we have the published researches of Gaffky, who states that the bacilli only live three days in absolutely sterile water, while in ordinary tap water they cannot be recovered by cultural methods after the lapse of twenty-four hours. That the plague bacillus varies within wide limits in its vitality as well as in its virulence is now well established, even when considered apart from its environment, and the only means by which we can reconcile the different results of Gaffky on the one hand, and Abel and Wilm on the other, is to surmise that the experimenters used bacilli of varying vitality. Hence obviously the whole question of the disinfection of material infected with the bacillus of plague is one surrounded with many pitfalls to the experimenter, and more particularly will these varying factors come into play when the task of estimating the resistance to disinfectants of the bacillus in the soil is undertaken.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Meeting of Council.

An ordinary Council was held on November 10th, 1898; Sir William MacCormac, Bart., K.C.V.O., President, in the chair. The minutes of the preceding meeting were read and confirmed.

Diplomas of Membership.—One hundred and twenty diplomas were issued to candidates qualified for the Membership of the College.

Teaching Arrangements for Students of the First Year.—A letter dated October 28th was read from the Committee of the Medical School of St. Bartholomew's Hospital, calling attention to the serious dislocation of the teaching arrangements for students of the first year resulting from the altered regulations of the Combined Examining Board issued in July last in regard to Dissections, and strongly recommending the removal from the regulations of the following clause, namely: "This period of dissection must be subsequent to having received instruction in the subjects dealt with under Sub-paragraphs 2 (*a*) (Chemistry and Physics, and Practical Chemistry), and (*c*) (Elementary Biology)." The letter was referred to the Committee of Management.

The Annual Meeting of the Fellows and Members.

The annual meeting of the Fellows and Members of the Royal College of Surgeons of England was held on Thurday, November 17th.

The President, Sir William MacCormac, Bart. (the report having been taken as read), said there were one or two matters to which he would like to draw attention in the report. The first was with regard to the status of the medical officers of the army. There had been a correspondence between the Council and the Secretary of State for War, and as a result Her Majesty had been pleased to grant all the reforms that had been asked for by the Army Medical Department, and had herself graciously consented to the new corps being called the Royal Army Medical Corps. He considered that the College had been instrumental to a great extent in procuring these advantages. Another matter was the status of foreign practitioners in Italy. It had been suggested by a certain influential body of Italian practitioners that medical practitioners in Italy should be required, not merely to take an Italian degree, but to go through the whole curriculum as if they had been through an examination. This was brought to the attention of the Italian authorities, and a letter was subsequently received from Lord Salisbury stating that the Italian

Government did not contemplate making any change in the existing laws with respect to the status of foreign doctors in Italy. He thought they had to thank Lord Salisbury for his conduct in the matter. A very large claim had been made upon the College by the Board of Inland Revenue which had been contested. The matter had been before the Court, which decided in favour of the Board of Inland Revenue; the Council, however, after having given the matter their very careful consideration, and having consulted their legal advisers, in view of the great importance of the matter, both as regards the question of money and the status of the College, had decided to contest the matter in the Court of Appeal. The President then referred to the banquet given by the late Lord Mayor to members of the medical profession. That was the first time in the annals of the City of London that the profession of medicine had been selected for such an honour, and it was made memorable by the speech of the Secretary of State for War announcing the formation of the Royal Army Medical Corps. The President also referred to resolutions which had been adopted by the Council as to a distinctive gown. The research work carried on in the laboratories on the Embankment was of a manifold description, and many excellent results had been obtained and admirable work done. The antitoxic serum of standardised strength produced in the laboratory had been largely used. The cost of this work had been to a great extent defrayed by the generosity of the Goldsmiths' Company, who granted a large sum of money for the purpose.

Mr. George Brown called attention to the methods adopted by certain societies in great towns which exploited the profession. He thought it was incumbent upon the Council to maintain the honour and dignity of the profession, and the honour of the profession was being undermined by practices which now obtained. If members of the profession were to practise their profession in accordance with the necessities of the cases of sickness and injury which they were called upon to treat in the homes of the working classes, they must be paid on a remunerative scale. In his opinion it was disgraceful to the College of Surgeons that Members should degrade themselves and the profession by accepting appointments the remuneration of which was inadequate for the services rendered. Only such appointments should be accepted the remuneration of which made it possible to do their work in a way that would redound to the credit of the College. He also would like to call attention to the practice which had been started, under the cover of legitimate bodies now existing and holding charters, of granting diplomas in certain branches which might be called branches of surgery. One City Company had taken upon itself to grant diplomas to certain persons showing that the recipients were specialists in certain disorders of the eye. He was astonished to find that the examination of such persons was conducted by a Fellow of the Royal College of Surgeons. He then moved:

That this meeting congratulates the Council on the successful results of its representations in the matter of the reform of the Army Medical Service, and trusts that it will now turn its attention towards remedying the notorious abuses which exist in connection with civil medical practice.

Dr. Danford Thomas seconded the resolution which was carried unanimously.

Mr. Joseph Smith moved:

That in view of the expressed opinion of the Council that it "represents the whole and therefore all parts of the Corporation," and in view of the fact that, so far as it has hitherto been possible to ascertain their sentiments both individually and at general meetings, the opinion of a large number of the Members is, and has been for many years past, that they should have some share in the election of the Governing Body, this meeting requests the Council to again consider whether some means cannot be found of fulfilling this desire.

He said that the principles embodied in the resolution had been affirmed year after year, and he thought that some means should be devised whereby Members of the College should have an opportunity of being elected members of the Council. He thought that the Members of the College should have some voice in the management of its affairs and in the distribution of its funds.

Dr. Thomas Morton, in seconding the resolution, remarked that the gist of the resolution was that they wanted to take the Council at its word when it had said that it represented all parts of the College.

The resolution was carried.

Mr. W. G. Dickinson moved:

That this meeting notes with satisfaction that the Council has at last definitely expressed its disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and this meeting further trusts that the Council will extend its disapproval to the acting by Fellows and Members of the College as paid officials of any Association which adopts these unprofessional practices.

He said the object of the resolution was to prevent touting and canvassing by members of the profession, which was carried on to an alarming extent, and he thought the Council should do something to stop it. He asked the Council to say that it was not ethical for a Fellow or Member to sell himself to or be exploited by a trade society. He hoped the Council would not maintain that unwillingness or apparent indifference which it had hitherto shown towards the practice of canvassing, but would condemn it.

The resolution was seconded by Dr. Herbert Snow, and supported by Mr. Stocker, who said that it was distasteful to report instances of advertising, and he thought it was the duty of the Council as the governing authority to take the matter into its hands.

The President said, speaking on behalf of the Council, that there was no sort of hostile feeling to, and no want of sympathy with the resolution. They all felt it most intensely, and they were not persons to assume the indifference which had been suggested to the wants and wishes of the profession. At the same time their powers were limited. It was their duty to exercise the powers they had, and not to go beyond them. As far as its powers would permit it, the Council would do its best to carry out the resolution.

The resolution was carried.

Mr. Brindley James moved:

That this meeting approves of the proposal to institute a gown for the Members of the College, and trusts that the Council will see its way to carry this suggestion into effect.

He was deeply gratified to see by the report that the Council had consented to the Fellows of the College adopting an academical gown. The Members of the College passed examinations equal to those of similar institutions, and if an academical gown was to be granted to the Fellows of the College he did not see why an academical gown should not be granted to its Members.

Dr. F. H. Alderson seconded, and expressed the opinion that the privilege granted to the Fellows should be extended to the Members.

The President said the question was already under consideration, and had been referred to a Committee of the Council to report.

As Mr. Anderson was not present to move his resolutions the proceedings then terminated.

"Millerraining."—This term is applied to the process by which cloth, drill, etc., can be rendered waterproof, and be made to throw off moisture without the porosity of the texture being affected. As regards tents, it appears that "millerained" khaki drill is the best material that can be used, as the rain does not soak into it; whereas, with ordinary drill, a tent, if wetted by rain, becomes a heavy load for a transport animal in India. During the recent frontier operations, some "millerained" tents were used, and the reports regarding them, according to the *Pioneer*, were very satisfactory. General Sir Penn Seymour approved of one which he had; while Brigadier-General Ellis took two shelter tents with him in the Mohmand Expedition, one "millerained" and the other of ordinary drill. Regarding these he wrote, "The only time it rained I noticed that the rain simply ran off the 'millerained' tent, whilst the ordinary drill tent was quite wet through. Personally, I think the advantage of having a 'millerained' tent is enormous, and I should certainly take one again." The military authorities are now experimenting with the tents, and reports will be furnished upon which, doubtless, the Government of India will take action.

LITERARY NOTES.

THE number of periodicals now published in Paris is estimated at 2,587; of these, 187 made their first appearance last year. In this host of publications medicine bulks largest numerically, having no fewer than 206 representatives of one kind or another in the periodical press. Finance comes next with 795 journals, politics being a bad third with 144. How is it that medical journalism flourishes with such tropical luxuriance in the French capital? The answer is not difficult. Every Parisian physician who can afford such a luxury thinks it due to himself to have an "organ" of his own. How many of these journals serve a useful purpose as far as medical science and the medical profession are concerned? Probably not more than half a dozen; and even as regards this minute proportion a cynic might be disposed to say in the words of St. Augustine (speaking of the small number of people likely to be saved), *Quin et de his dubito!*

The climate of the Philippine Islands is now naturally attracting a good deal of attention among enterprising citizens of the United States. The matter is fully dealt with by Mr. F. F. Hilder in an article published in the *Forum* for July, to which we may refer any of our readers who happen to be interested in the subject. Meanwhile we may quote the following summary account of the seasons at Manila as embodying the experience of the Spanish colonists:

Seis meses de lodo,
Seis meses de polvo,
Seis meses de todo.

(Six months of mud, six months of dust, six months of everything.)

Dr. Theodor Gsell-Fels, of Munich, who died recently at the age of 80, was a man of what Dominie Sampson would have admitted to be prodigious erudition. He was a doctor in three faculties—Medicine, Philosophy, and Theology. He was the author of numerous works on climatology and health resorts, including those of Switzerland, the Riviera, the South of France, Corsica, Algiers, and Tunis. The late Edward Augustus Freeman described Gsell-Fels as "the prince of guidebook makers"—a judgment which, coming from an authority so competent and so difficult to please as the historian of the Norman Conquest may well be regarded as the very highest praise.

Lord Brougham is said to have disseminated a report of his own death in order that he might have an opportunity of reading his obituary. Professor Nothnagel has recently had this privilege without taking the trouble of misleading the press. The *Progrès Médical* a week or two ago, with all the gravity appropriate to the supposed melancholy occasion, published an obituary of the distinguished clinician of Vienna. On the strength of this, Professor Nothnagel's demise has been duly mourned by some other French medical journals, and last week our Portuguese contemporary, *A Medicina Contemporanea*, joined its voice in lamentation for the loss which medical science has suffered. Professor Nothnagel doubtless appreciates these—fortunately premature—tributes.

The funeral orations delivered by the grave of Professor Tarnier by Professor Pinard in the name of the Medical Faculty of Paris, and by Professor Hergott in that of the friends, have been reprinted in pamphlet form in an *édition de luxe*. It contains portraits of Professor Tarnier at different periods of his life, a list of instruments (with illustrations) with which his name is associated, and a bibliography of his writings. The pamphlet, which has been printed at the expense of Professor Pinard, gives, in a short compass and in a graphic form, an account of the famous French obstetrician's career and work.

The doctrine of "Christian Science" that "sin is the foundation of sickness," with its corollary "The same power which heals sin heals also sickness," has not the originality claimed for it by the Rev. Mrs. Eddy. The same view appears to have been expressed by Origen (A.D. 185-254) and others among the early Christian writers. At the beginning of the present century the celebrated Count de Maistre wrote as follows in the *Soirées de Saint Pétersbourg*:

I cannot refuse my assent to a recent defender of religion who has maintained that all diseases have their origin in some vice proscribed by the Gospel, that this sacred law contains the true medicine of the body as well as of the soul, so that in a society of righteous men, who should obey that law, death would no longer be anything but the inevitable end of a healthy and robust old age.

It is almost needless to say that de Maistre, who was a man of powerful mind, though inclining rather much to paradox, did not suggest that disease should be dealt with after the methods of "Christian Science." His views on the relation between breaches of the moral law and disorders of the physical health, when read in the light of the doctrine of heredity, would in fact be accepted to a certain extent by many at the present day. Thus speaking of the physical effect of sin he says:

What deceives us on this point is that when the effect is not immediate we no longer perceive it; but it is none the less real. Diseases once established cross and amalgamate with each other by a fatal affinity: so that we may bear to-day the physical penalty of an excess committed more than a century ago. Nevertheless, in spite of the confusion which results from these frightful mixtures, an analogy between sins and diseases is visible to every attentive observer. As is the case in regard to sins, there are diseases *actual* and *original*, *accidental*, *habitual*, *mortal*, and *venial*. There are diseases that spring from idleness, from anger, from gluttony, from incontinence, etc. Note further, that there are crimes which have distinctive characters, and consequently distinctive names in all languages, such as murder, sacrilege, incest, etc., and others which cannot be designated except by general terms such as fraud, injustice, violence, malversations, etc. Similarly, there are diseases of definite character such as dropsy, phthisis, apoplexy, etc., and others which can be designated only by such general terms as *malaise*, infirmity, pain, unnamed fevers, etc. The more virtuous a man is, the more safe he is from diseases which have names.

Doubtless a man will find virtue a safeguard against some diseases. But however virtuous he may be, if his fathers have eaten a sour grape his teeth will be set on edge. And for that form of odontalgia "mind healing" will be of no avail.

In the current number of *Macmillan's Magazine* Dr. Eugene S. Yonge, of Manchester, discusses the Insanity of the Criminal. He says that a study of the question of heredity reveals a number of facts which indicate that instinctive criminals and lunatics are frequently branches of a common genealogical tree. The abnormality of some immediate ancestor is reproduced in his descendants; and the inherent brain weakness which made the father an incurable drunkard may produce an offspring who is either an instinctive lawbreaker or insane. If we understand Dr. Yonge aright the criminal *non nascitur sed fit*: "he enters life a peculiarly fit subject for the contagion of vice and crime to which he is too frequently exposed." In respect of attempts at reformation the criminal is best dealt with by treating him, as is successfully done in many parts of America, by regarding him as a moral idiot. Dr. Yonge says:

His length of sentence depends largely upon himself, but cannot exceed a certain limit. His bodily functions are first rehabilitated; he is taught school work and a trade; lastly, he enters the class of practical morality, where he is taught to appreciate the good in life, and to despise and avoid the evil. He is treated on similar lines to the mental idiot. The result of this is that bodily, mental, and moral improvement follow quickly on each other's heels; and as a practical proof of the value of treating the instinctive criminal for his mental deficiency, or disease, rather than merely punishing him, it may be noted that of 2,300 convicts who have been let loose on the world from the Elmira Reformatory, only 15.2 per cent. have returned to criminal practices.

The Rev. Dr. Patrick, who was Rector of St. Paul's, Covent Garden, during the Great Plague of London, gives some interesting glimpses of that terrible time in letters written to a lady friend whom he had advised to fly from the pestilence. He himself remained, trusting to treacle as a prophylactic; on this he boasts that he grew fat while many of his clerical brethren were dying round about him. The following is a picture of a street scene:

I saw last Tuesday about thirty people in the Strand with white sticks in their hands, and the doctor of the pest house in his gown walking before them. The first woman rid on an horse, and had a paper flag on the top of her stick with LAUS DEO written on it. They were going to the justice's, being poor people sent thither and recovered by him ("the doctor") of the plague. He seemed to take no small content in his stately march before them.

When the plague showed distinct signs of abatement Dr. Patrick wrote to his fair correspondent as follows:

In a month's time, I believe, the town will fill, and then, if the sickness do not increase, you may venture not long after that to come to your habitation. Yet, if you consult your brother he will tell you the physician's rule is composed in three words when they advise what to do in the plague, which in English are, Quickly, far off, slowly—that is, fly soon and far enough, and return late. To his counsel and opinion I refer you. Set a watch at your door, and let it be known that you admit no visits, not even mine.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 19TH, 1898.

THE VACCINATION SERVICE.

The Cardiff Board of Guardians has recently had before it a report from its Vaccination Committee, recommending that the contracts with the three public vaccinators now employed—who are general practitioners in the town—should be terminated at the end of the present year, and a single medical man appointed to act as public vaccinator for the whole town and to give the whole of his time to the duties. The matter has been pushed through with what will seem to many somewhat undue haste. It would appear that it was only on November 7th that the Vaccination Committee made its report in favour of these drastic changes. On November 12th the Board of Guardians decided by 27 votes to 26 to carry out the plan recommended by the Committee.

From several points of view the question is an important one, and we could wish that it had been more fully discussed before a decision was come to, the more especially as we note that the Cardiff Medical Society—which has, of course, exceptional opportunities of arriving at a just conclusion with a knowledge of all local circumstances—has through its honorary secretaries addressed a letter to the Board of Guardians, stating that, after due consideration of the Vaccination Committee's report, it had come to the opinion that it would be unwise to disturb the existing vaccination appointments. The question must arise also whether in a large union such as Cardiff, with 173,000 inhabitants, it will be practicable for one man to pay all the visits and do all the work devolving on a public vaccinator under the new Act and the new Order.

The vaccinal operation is in one sense so easy that it can be properly performed by any medical man. Yet the fact that awards for special success have been granted in the past, and we understand will be continued in future, to various public vaccinators, shows that it is possible to acquire special skill in even so simple a procedure. Here as in other mundane affairs the general law applies, that, other things being equal, dexterity and success are bred of care and experience, and that a man who devotes himself wholly to work of any particular kind is likely to become better at that work than other men who give to it only a fraction of their energies. Therefore public vaccinators, as a class, are pretty sure to attain to a somewhat greater degree of "insertion success" than are private practitioners, and among public vaccinators themselves the same law will apply as between those who have, or may in the future have, whole time appointments and those who are engaged in other work. It was owing to this likelihood of difference in "insertion success" that while we strongly advocated the proper recognition by Government of the work of private practitioners, we at the same time urged that payment for their work should be made only when it attained to the standard required of public vaccinators by the Local Government Board. In view of these considerations—and they apply not merely to insertion success, but to all the details of the vaccination procedure—we may safely assume that the medical man who will be appointed at Cardiff to give his whole time to the work will be selected from amongst skilled public vaccinators—most naturally from the present staff—and the fact that the Chairman of the Committee is himself a member of the profession but not a public vaccinator ought to be the best guarantee that the best man will be chosen.

There is an important consideration in favour of whole-time appointments which must not be overlooked, and that is, the avoidance of jealousies and the maintenance of proper professional relations between medical men. The difficulties which occasionally occur where medical officers of health are engaged in private practice, and where they have in the course of their official duty to visit among families belonging to the *clientèle* of their professional brethren, may be cited in illustration of our meaning. In the past, the work of public vaccinators has been done at public stations, but under the new system of domiciliary vaccination, friction will be much more likely to result. For this reason also, it is open to argue that public vaccinators should be debarred from practice.

These observations embody general principles, which would without question apply if public vaccinatorships were now for the first time being arranged in England. But we have to face the very important fact that there is already in existence an organised system of public vaccination, including some thousands of appointments already filled by men against whom can be alleged neither incompetence nor neglect of duty. It is true that these gentlemen have been working under contracts in theory terminable on twenty-eight days' notice from the Boards of Guardians, but in practice the contracts have always been treated, and were doubtless intended to be treated, as of a permanent character, terminable only under exceptional circumstances.

If, however, as will we are inclined to think be found to be the fact, these officers whose services will now be terminated by reason of circumstances attendant on the recent legislation, have no claim capable of being established in a court of law either for continuance in office or to a pension, or to compensation of any kind on its termination, a very serious hardship will be inflicted, which could not have been within the contemplation of the Legislature. In all fairness these gentlemen have a very strong claim, which cannot, and we would fain hope will not, be ignored. Much of their time, which could have been devoted to the cultivation of other practice, has been given up to vaccination work, and at Cardiff it is pointed out that one public vaccinator had

given up another office on condition that he should receive the appointment of which he is now deprived through no fault of his own. In recent years, with the spread of anti-vaccination delusions, many public vaccinators have suffered in pocket, and many have been subjected to infinite worry and annoyance by means of reckless and baseless charges laid at their door by mischievously active members of local leagues for the propagation of small-pox. Such things cannot be forgotten in the discussion of the arrangements for public vaccination now that under the new Order, at least a minimum of payment is ensured to every man engaged in the work.

It may be pointed out that all contracts made by Boards of Guardians with a public vaccinator must receive the sanction of the Local Government Board. We understand that the Association of Public Vaccinators is taking steps to invite the attention of the Local Government Board to the action which the Cardiff Board of Guardians has decided to take, and there is, therefore, every reason to hope that the interests of the present public vaccinators of the Cardiff Board will be properly secured. The clerk to the Cardiff guardians informed his Board that compensation could be legally given if the services of the present staff were dispensed with. On what he based his opinion we do not know, and we very much fear that he is mistaken, and that fresh legislation will be necessary. It is to be hoped that the Government will take the opportunity (say, in connection with the Revaccination Bill, the introduction of which they have pledged themselves to consider favourably) to obtain the powers by which an equitable reorganisation of the public vaccination service might become possible.

CRIMINAL ABORTION.

The uncertainty of the law has been illustrated in the recent sentences on persons who had criminally induced abortion. Collins was convicted of manslaughter, and got seven years' penal servitude. Whitmarsh was found guilty of murder, and the death sentence has been commuted to penal servitude for life. To the ordinary lay mind it is inexplicable why if Collins's offence was manslaughter, Whitmarsh's was not also. Collins's patient died because his antiseptic precautions were imperfect; Whitmarsh's apparently because he was over-zealous with them and poisoned his patient with mercury. The heavier sentence would seem due to the more sordid aspect of the Whitmarsh case. Collins's patient was brought to him by a former patient of his, and he seemed to possess the confidence of both ladies. Whitmarsh's conduct was that of a person who knew the risk he was running and was willing to incur it for a perfect stranger if he could screw a little extra money out of the poor patient.

No legal technicalities about "constructive murder" can blind us to the obvious fact that the real offence in these cases was the performance of an operation which, when done with a certain intent, is declared by statute to be a felony. The crime of procuring abortion, not the crime of murder, was that of which Whitmarsh, to the non-legal mind, was guilty. Though his offence was aggravated by the mistake which we must assume he made in preparing the solution of corrosive sublimate, so that the injection which was doubtless intended to be simply antiseptic was in fact poisonous, yet this did not alter its essential character, and could never, except by a legal fiction, bring it within the category of murder, wilful and of malice aforethought. As Mr. Pickersgill, M.P., has pointed out, this is in fact the view adopted by the penal codes of almost all countries except our own.

Under the Italian Code, the maximum punishment is seven years' imprisonment. The law of Massachusetts specially provides that the maximum punishment for procuring abortion, if the woman dies, shall be twenty years' imprisonment; if she does not die, seven years; while the Indian Penal Code lays it down that "Whoever with intent to cause the miscarriage of a woman with child does any act which causes the death of such woman shall be punished with imprisonment for a term which may extend to ten years." The death of the woman is not regarded as changing the whole character of the original crime, but simply as an aggravation of it, justifying some extension of the term of imprisonment, but not the infliction of a totally different kind of penalty.

We have already, in a previous issue, commented upon the startling inconsistency between the verdict in the Whitmarsh and the verdict in the Collins case. In all legal essentials the facts of the two cases were singularly alike, and the law applicable to them was one and the same law. In the Collins case the Attorney-General told the jury—and the presiding judge certainly did not contradict him—that if the act which caused the death, although felonious, was "not in itself necessarily dangerous to life," it was open to them to bring in a verdict of manslaughter. We were amongst those who hailed this pronouncement of the highest law officer of the Crown as a deathblow to the doctrine of constructive murder—although, as we pointed out, the Attorney-General had gone beyond the generally accepted view of the law. But the Whitmarsh case has unfortunately set the doctrine on its feet again. Mr. Justice Bigham, although invited we might say by the prosecution to adopt the Attorney-General's limitation of the doctrine, brushed it aside. "I tell you as a matter of law," said his lordship in his most impressive charge to the jury, "if you are of opinion that he did commit a felony, and that as a result she died, that is murder. It does not matter what his intention was; the law does not stop to ask. He is guilty of murder just as much as if he had taken a knife and stabbed her to the heart. . . . . I do not mean to say there may not be some cases where this rule may possibly be inapplicable—cases where the possibility of death resulting is so remote that no reasonable man, if he thought about it, could foresee it. It may be that in such a case it would not be murder." An act of which death is such a very remotely possible result is quite a different thing from Sir Richard Webster's act "not in itself of necessity dangerous to life."

No one who looks into the authorities can doubt that Mr. Justice Bigham has correctly stated the law as it is, much as we should prefer the "reasonable" limitation of it proposed by Sir James Stephen, and boldly adopted by Sir Richard Webster. But it is not likely now that anything short of an Act of Parliament will bring about the adoption of Sir James Stephen's suggestion. Sir Richard Webster is the man who should take the responsibility of asking Parliament to sanction his view. We have little

doubt that he would succeed, and thus link his name with another reform in a field where there is ample room for amelioration.

Since the Whitmarsh case we have another, that of a woman called Overshott, tried at Reading before Mr. Justice Ridley. She seems to have induced premature labour by putting a catheter into the uterus. The child died, but not the mother. The woman seemed to have been ignorant that the procuring abortion was a criminal offence, for she said in her own defence that she had mistaken the period of the pregnancy, and that if she had known the girl was so far gone she would not have done it. Apparently she supposed that putting a catheter into a uterus early in pregnancy was legitimate. It was also urged by her counsel that she did not use the catheter, but only taught the patient to use it. The Judge said that these practices were very rife just now, and he sentenced the prisoner to eight months' imprisonment with hard labour. The disparity between this sentence and that on Collins and Whitmarsh is great; obviously it is explained by the fact that Overshott's patient did not die. But the real offence was the same in all three cases. The two patients who died, did so from misadventure—from a certain degree of incompetence on the part of the operator.

Curiously enough, the trial of Whitmarsh was from another point of view a vindication of the wisdom of Sir Richard Webster and the other law reformers who last session passed the Criminal Evidence Act. In the Whitmarsh case for the first time in the history of English law, a prisoner charged with a capital offence was permitted to go into the witness-box, and, like any other witness, give evidence on oath and be cross-examined by counsel for the prosecution. The Criminal Evidence Act was not in operation when Whitmarsh was first tried a month earlier, on which occasion the jury disagreed. It will probably be admitted by everyone who heard both trials that the danger of a second disagreement was reduced to a minimum by the prisoner's own evidence and demeanour in the box. The inadequate and highly improbable "explanations" which he offered, and his wholesale denials of the well-corroborated testimony against him, coupled with some very damaging admissions, left on the mind the strong conviction that he was not an innocent man offering a truthful explanation of compromising circumstances. Before he went into the box there was very little room left for doubt as to his guilt; and whatever hesitation there may have been was prompted by the maxim, *Audi alteram partem.* The prisoner's version, having been heard, there was no longer room for doubt.

CANCER IN RELATION TO THE DWELLING.

"Cancer houses" have formed at intervals the subject of several contributions to the columns of the British Medical Journal, and much interesting evidence has been brought to light which appears to be difficult to explain except on the supposition that in certain houses cancer is more prone to occur than in others. The only other alternative would seem to be the assumption that the inhabitants of these houses have been particularly affected simply in virtue of a remarkable series of coincidences.

The latter hypothesis, although it appears at first sight highly improbable, is not to be hastily dismissed. Many years ago the late Professor de Morgan showed that if a sufficient number of persons were set to work at the tossing of pennies it would eventually occur that one of these would, if he continued the process a sufficiently long time, turn up "heads" for a thousand times in succession without a single interval of "tails." Numerous other instances of striking coincidences must occur to all. It is plain, therefore, that the fact that several successive families living in a house have each had members suffering in this house from malignant disease does not necessarily prove any causative relationship between the condition of the house or of the soil on which it is built and the origin of the disease.

Another point which is an essential part of the problem is the age of the persons living in the so-called "cancer houses." The tendency to cancer increases rapidly with advancing years. As at least 1 out of 21 men and 1 out of 12 women who reach the age of 35 years eventually die from cancer, it is not surprising that in residential towns and districts one frequently hears that in a certain house or in a certain street there has been a succession of deaths from cancer. It would be surprising if this were not so, and the fact itself proves nothing as to relationship between the house and cancer. This relationship can only be shown to exist by careful comparative observations on a sufficiently large scale to eliminate chance, and with careful correction for the varying distribution of the populations under comparison as to their age and sex.

So far as we know, the most careful and most complete attempt to grapple with this problem is embodied in a recent paper read by Dr. W. H. Symons, the Medical Officer of Health of Bath, before the Society of Medical Officers of Health. Dr. Symons has recognised the importance of the correction above indicated, and calculates the number of deaths occurring in Bath when the population is distributed as in a standard population. These should have been 42 per annum in 1881-90. The registered numbers were, 1881-90, mean 54; 1891-95, mean 57; 1896, mean 62. The above facts led Dr. Symons to make a careful investigation of the distribution of 1,350 deaths from malignant disease registered in Bath since 1866. On the basis of the well-known views of Mr. Haviland, it might have been expected that Bath would show a much greater incidence of deaths from cancer than other towns, for it is situated on the slope of a deep valley, through which runs a sluggish stream. It has also ground springs and open water courses. The corrected death-rates, however, show that at certain age periods the cancer death-rate is higher in some southern health resorts where there are no streams.

The 1,319 deaths from cancer in Bath, which Dr. Symons was able to locate, occurred in 1,204 houses, being thus fairly evenly distributed throughout the city. There were, however, great variations when different parishes and particular streets were taken. Here, however, the subdivision of the data led to an inevitable paucity of facts. When the conclusion is reached in one instance on the basis of 10 cancer deaths that the incidence of cancer on certain cottages was 1 death from cancer in 149 houses, as compared with 1 in 177 houses for the whole of Bath, we cannot do otherwise than agree with Dr. Symons that, as the

result of his careful and laborious examination of all the available statistics, no relation whatever has been shown to exist between the dwelling house and the prevalence of cancer.

It must not be supposed that investigations such as the above, issuing in a negative result, are valueless. They serve at least to clear the air, to show the rigid conditions that must be fulfilled in an investigation of this character, and to give a check to hasty generalisations based on scanty data without due regard to the age and sex constitution of the population.

THE ARMY MEDICAL EXAMINATION.

The terse and opportune memorial of the Royal College of Surgeons of Edinburgh to the Secretary of State for War,[1] again draws attention to the unsatisfactory character of the examination for admission into the Royal Army Medical Corps.

In June last, Mr. Edmund Owen, of St. Mary's Hospital, wrote a letter to the British Medical Journal, in which e criticised strongly the character of the examination, and, without endorsing all his views, we at that time expressed very considerable sympathy with his proposal that a radical change in the range and character of the entrance examination was desirable.

The question, wherein is the advantage of insisting so largely in such an examination on high marks in the more elementary subjects of a professional education goes to the root of the matter, and is as yet unanswered. The competitors are legally qualified and registered practitioners, who by sufficient legal tests have already been found to possess due knowledge of the fundamental subjects upon which the practice of every special department of medicine and surgery is based, why should they be treated as novices? It would, therefore, be much better, as the Royal College of Surgeons of Edinburgh suggests, to examine chiefly on those practical medical and surgical matters which occupy the student during the last two years of the five years' curriculum. Lord Lansdowne recognises the force of such arguments, but at present, it appears, does not see his way to make any change in the examination. This is to be regretted, for it is undeniable that the great stress now laid on the elementary subjects of anatomy, physiology, chemistry, and materia medica tends to deter many of the best men who have been engaged in practical clinical work for some years. They feel that the necessity of reverting to elementary studies and the resort to a "crammer" for this purpose with the object merely of gaining marks in a competition is a waste of energy and time. The fundamental training afforded by these subjects is by no means to be undervalued, for upon it all intelligent study of practical medicine must be based; but it is assuredly neither necessary nor possible that every minor fact in these fundamentals should be retained in the memory. The very fact that desirable men are repelled from the examination ought to lead to change in it; and as a matter of fact universities and conjoint boards find it necessary from time to time to revise the subjects of their examinations and the relative importance attached to each. Moreover, the falling back on nomination shows that the entrance examination may, under necessity, be altogether dispensed with; where, therefore, is the logic of refusing to modify it?

We entirely agree with the memorialists that great stress should be laid upon an adequate knowledge of English in army medical candidates; a liberal preliminary education is essential for success in the medical profession; this is particularly true of the medical officer, who has to take and maintain a social position among gentlemen of exceptional culture and accomplishments.

The fact that only twenty-four commissions are offered at the next examination in February may point to the intention to make free use of the right of nomination reserved to the Secretary of State. No objection need be taken to the course, provided that the nominations be made on the recommendation of competent and responsible public bodies. If nomination were administered otherwise it would simply mean a return to the system of patronage long since condemned.

[1] British Medical Journal, November 12th, page 1311.

ABORTION ADVERTISEMENTS.

There is evidently a strong feeling throughout the country that the custom of advertising medicines for the production of criminal abortion in the lay press should not be allowed to pass without emphatic protest. A very considerable number of country papers now refuse to accept these announcements on any terms, and others have expressed their intention to discontinue them as soon as their existing contracts have expired. This result has in many cases been brought about by the vigorous action of correspondents who have intimated plainly that they will no longer countenance publications which add to their gains by such reprehensible means. A temperately-worded letter addressed to the editor of any paper of good standing, especially if accompanied by documentary evidence, usually has the desired effect. A few years ago advertisements of massage establishments were freely inserted in the London daily papers, but they are now rarely seen, and their exclusion has undoubtedly had a beneficial influence in suppressing many haunts of immorality and vice.

ANTIVACCINATION PROPAGANDISM.

We are sometimes consulted by medical men as to whether or not they should attend antivaccination meetings and reply to the wild misstatements and misrepresentations of the representatives of the League. The question has most recently come before us in connection with a tour which Major-General Phelps has been making in Scotland, apparently with the view of rousing that country to demand the extension northwards of the operation of that conscience clause, against the use of which the organ of the League has been so strongly advising English antivaccinists. The answer to the question must to some extent depend on circumstances. Where antivaccination is already being treated with the contempt which is its rightful due, for medical men to condescend to enter into platform discussions with windy orators would often merely be to furnish the much-desired notoriety. In places where antivaccination has some hold, good may often be done by some practitioners of local repute taking up the cudgels in support of Jenner. For such work it is not enough that the medical man should himself know the value of vaccination. It is necessary also that he should make himself acquainted with those facts and arguments which can most effectively be brought before a popular audience, without confusing them with too much detail and too many decimals. For this purpose various publications are available, and we would specially call attention

to the tract entitled *Facts about Small-pox and Vaccination*, issued by the Council of the British Medical Association, and obtainable at the office of the British Medical Journal. It was regarding this tract that the editor of the *Vaccination Inquirer* wrote, naively if peevishly, that his followers for a reply might be referred to the nineteen volumes of the *Inquirer*. Those who care to go further into the matter will find many useful pamphlets in the list of the Jenner Society, obtainable from Dr. Bond of Gloucester.

THE PRINCIPAL MEDICAL OFFICER OF HER MAJESTY'S FORCES IN INDIA.

In the British Medical Journal of October 15th it was announced that Surgeon-General W. Taylor had been selected to succeed Surgeon-General A. A. Gore as Principal Medical Officer of the British Forces in India. The appointment is one which we have reason to know would be received with the highest satisfaction throughout the service. We understand, however, that it has not yet been definitely made, and a rumour has for some time been current in the Indian papers and in the service clubs that the authorities have some idea of going outside the home army for an official head of the medical service in India. We find it difficult to believe that there can be any foundation for this rumour. A step so manifestly unfair to the Royal Army Medical Corps would be ill-advised from every point of view. It would certainly not be for the good of the service, for no officer could be found more competent to fill the post than Surgeon-General Taylor. During the whole of his thirty-five years of service he has been in charge of British troops; he was Secretary to the Surgeon-General of Her Majesty's Forces in India for five years, and he has had considerable experience in the War Office; he was Military Medical Attaché with the Japanese army in the war between Japan and China; he was Principal Medical Officer in the Ashantee Expedition and in the Soudan; and his services in the last campaign have just been rewarded with a C.B. To pass over a man with such a record in favour of an officer, however distinguished, of another service would hardly be likely to encourage men to enter the medical service of the army.

MEDICAL OFFICERS OF HEALTH AND PRIVATE PRACTICE.

There appears to be, more especially in Scotland, a growing appreciation of the principle, that in populous districts, at any rate, the medical officer of health, if he is to act as the real head of the health department, and not merely as an ornamental figure-head, should give his whole time to the duties of the office, and should be debarred from private practice. Under the Public Health Act of 1897 the sphere of the medical officer of health in Scotland, more especially in the domain of infectious diseases, has been so enlarged as to render it well-nigh impossible for a man to continue for any length of time to serve as a public official and a private practitioner without clashing of duties, conflict of interests, and risk of collision with his brother practitioners. The medical officer is authorised, for instance, and the authorisation carries with it a certain responsibility, to enter any house in which he has reason to suspect the existence of infectious disease, and examine any person therein. His certificate alone is valid, under certain circumstances, with respect to disinfection. Upon his shoulders is being devolved the responsibility for preventing the return of children to school from infected houses, under circumstances involving risk to the community. In his hands are the powers of dealing with infective milk supplies; and the new statute has extended the operation of the Infectious Disease (Notification) Act to every part of Scotland. Under these circumstances it is natural that the question of whole-time service should now be raised, on each occasion upon which a vacancy occurs, in places where effect had not previously been given to the principle. Taking the eight principal towns of Scotland we find that in Edinburgh and Glasgow the appointment of whole-time officers has been in force for many years. Later followed the city of Aberdeen, and, as vacancies occurred, like appointments have been made in Dundee and Leith, with eminently satisfactory results. The question has arisen anew in connection with the vacancy in the medical officership of another of the principal towns of Scotland, the city of Perth, where the municipality in filling up the vacancy will have to take into consideration the trend and tendency of recent legislation, and to consider whether it may not be practicable, by the combination of offices, to obtain the services of an officer precluded from private practice.

THE ABERDEEN ROYAL INFIRMARY.

At the Royal Infirmary, Aberdeen, in consequence of the resignation of Professor Ayrton, Dr. Robert J. Gardner has been appointed Senior Surgeon; Dr. J. Mackenzie Booth is now second Surgeon, and Dr. J. Scott Riddell (formerly assistant in Dr. Ayrton's wards) third Surgeon. Dr. H. M. W. Gray, formerly assistant anæsthetist, becomes one of the Assistant Surgeons. Much regret is felt at the resignation by Dr. Williamson of his post as Dental Surgeon. Professor Stephenson, the recently appointed Gynæcologist at the infirmary, now gives clinical instruction in his subject, and has a share in the use of the smaller theatre for his operations. Space has been afforded by the directors in the infirmary for the establishment of a small laboratory, which is to be fitted up for the common use of the staff. This should be of service in facilitating clinical investigations, and will enable members of the staff to prosecute such chemical or pathological work as it would be unsuitable to carry on in the proximity of the wards, where the testrooms attached to each floor are situated. The facilities afforded by the laboratory are to be quite simple—any complicated research being, of course, as heretofore, taken to the University, where the professors are always most ready and willing to put laboratory accommodation at the service of workers.

INFECTIOUS DISEASES AND PREPARATORY SCHOOLS.

Elsewhere we publish a final contribution from "A Preparatory Schoolmaster" to the discussion which his letter anent misleading medical certificates originated in our columns. Upon the incidental issues which have been raised it is not necessary to enlarge. Our correspondent admits that he did himself make a mistake in just one of those cases in which mistakes may easily be made, and—with a logic more human than precise—is "glad now that" he acted as he did, despite his reputation for scrupulous precautions. Our readers may remember that a boy who was apparently suffering from an overlooked chicken-pox eruption travelled to the school in company with several of his fellow-pupils. "A Preparatory Schoolmaster" states nothing as to the advent of the epidemic which seemed under such circumstances practically inevitable, and which should have declared itself by this time, if at all. It is, perhaps, permissible therefore to hope that the disaster which was not unnaturally expected has after all not occurred. In that case it would not be unreasonable to suppose that the eruption was not that of varicella, but that it corresponded to the non-infectious pustular eruption to which the boy's own doctor stated that he was liable from time to time. Such an eruption sometimes appears very speedily in children during the hotter months, and it may at first sight present a very puzzling resemblance to one or other of the stages of the eruption of chicken-pox. Upon the question originally raised little further need be said. Doctors and schoolmasters may probably still learn something from each other in

these matters. The most carefully managed and self-contained preparatory school may furnish infection to the home, and that without sending its pupils to a public school for examination as an unintentional means to that end. Every such opportunity of contact with the world at large should, however, be recognised as being attended with its own special risks, and should call for a corresponding stringency of subsequent observation. Clearly each home may claim from the school authorities the exercise of precautions not less rigid than those which are demanded of the parents themselves, and of a notification as definite. It is also obviously incumbent on every medical man who certifies as to the results of a personal examination to be sure that this examination corresponds in completeness to his signed description of it. We may, perhaps, point out in conclusion that if notes, which may be of the briefest, be made by the examiner at the time, little or no possibility of doubt could afterwards arise as to the facts observed by him. *Litera scripta manet;* and, indeed, thus only can we avoid or check the influence of the personal equation which is so apt insensibly to tincture every man's subsequent rendering of details as reviewed by a belated recollection.

HOLIDAY CHILDREN AND INFECTIOUS DISEASE.

No one would wish to deprive the little waifs and strays of our great cities of the advantages of fresh air and country food provided for so many of them nowadays for a brief time in summer through the benevolent efforts of some of their well-wishers and the generous contributions of others. The inroad of a slum population, however, into rustic neighbourhoods is regarded by the residents in some of these country districts as not without danger. Complaints have occasionally been made of overcrowding, but the greatest dread is of the introduction of infectious disease. During the past summer several outbreaks of measles and even of scarlet fever have been attributed by the public, and in a few cases by the local medical officers of health, to contagion so carried. Owing to reports of this nature in Essex, where illness was said to have been introduced by children from the East End of London, Dr. Thresh made an extended inquiry in the county, and came to the conclusion that there was ground for thinking that disease had not infrequently been brought into his district in this way. Acting upon a suggestion from their medical officer, the Essex County Council decided to make a representation to the Local Government Board asking them to include in any future Public Health Bill clauses requiring notification to the local authority of the intention of anyone to send children to the country in this way, and making the parent or guardian of any child so sent and developing an infectious ailment responsible, unless he can show that he was not only not aware that the child was so suffering, but had taken reasonable means to ascertain that such was not the case. Some method of penalising culpable ignorance might be a useful addition to our public health legislation in more directions than one; we doubt, however, the advisability of making this the ground on which to ask for it. It seems to us that the present difficulty could be got over in a much simpler and more expeditious manner. Why, for instance, should not the Incorporated Society of Medical Officers of Health send out a circular letter to all associations sending children in this way to the country calling their attention to the dangers, and asking them to have in each case an examination made not only of the children, but also of the places from which they come? That this suggestion is not impracticable is shown by the fact that it is actually carried out in at least one large manufacturing town. In one such town the holiday funds are administered under the guidance of a Committee. The name and address of every child it is proposed to send are forwarded to the medical officer of health, whose staff report on the existence of any infectious disease in the neighbourhood. The children themselves are seen once or twice before they go by the promoters of the scheme, and at least once by the honorary medical officer to the fund, generally one of the junior staff of the local hospital. Members of the Committee, including several ladies, accompany the several batches of little ones to their temporary homes, and see them comfortably settled, and are responsible that there is no overcrowding. There is no reason to suppose that there is any dearth of this sort of human kindness in London any more than in the provinces. Probably all that is necessary is that the need of greater care should be known for it to be immediately forthcoming. While using all endeavours to protect the public against a considerable risk, we, as their medical advisers, should also show that we wish in no way to curtail the legitimate enjoyment by the little town children of the few days in the country provided for them by the generous liberality of the charitably inclined in London and other large towns.

LAUDANUM DRINKING.

An inquest was held a few days ago at Hanham in Gloucestershire on a child 9 months old who died from the effects of taking 5 drops of laudanum administered to her by her mother at the advice of a friend. Dr. E. M. Grace, the coroner, pointed out that the dangerous practice of taking opium was on the increase amongst adult members of the community, and that it was a far more pernicious habit than taking alcoholic stimulants. He added that despite its dangers there were people who habitually took opium before breakfast. With these remarks we entirely concur, and we have good reason to believe that in agricultural districts the custom of taking opium pills and laudanum in large quantities is enormously on the increase. The excuse commonly made is that it wards off ague and rheumatism. In old people its influence may not be so pernicious, but when so deadly a narcotic is administered to young children it undoubtedly acts most injuriously and increases infant mortality, for as Sir William Jenner used often to observe when he taught clinical medicine at University College Hospital, "infants bear opium badly." Five drops of laudanum for a child only 9 months old is not only a dangerous but a lethal dose, and the "friend" who gave such deadly advice, and other persons who are so ready to advise the use of soothing syrups, should take heed to the remarks of the coroner. Dr. Grace deserves well of the public for his outspoken utterances, and for having called attention to so pernicious a custom.

EDINBURGH ROYAL INFIRMARY.

A considerable amount of friction has arisen over the arrangements to be made for the care of the patients and the carrying on of clinical teaching in the wards under the charge of Professor T. R. Fraser during that gentleman's absence as President of the Indian Plague Commission. The Medical Faculty of the University suggested that Dr. John Wyllie, one of the consulting physicians, and also one of the medical managers, should be appointed by the Board of Managers to act. On this a protest was sent in by Dr. R. W. Philip, who is the acting Assistant Physician in association with Professor Fraser. A similar protest was sent in by the assistant physicians. The bringing in of a member of the consulting staff was considered to be a bad precedent, a slur on the competency of the acting staff, an interference with that "use and wont" which they stated had hitherto prevailed, whereby the assistant, in the absence of the chief, performed the duties and accepted the responsibilities. Instead of deciding at once, the managers at their meeting on November 7th referred the question to the Medical Committee. That Committee consists of Professor Crum Brown, Sir John Struthers, Sir J. A. Russell, Drs. John Duncan, Claud Muirhead,

John Wyllie, and P. A. Young. By a decisive majority (Dr. Wyllie being of course absent) the Medical Committee decided to recommend the managers to carry out the suggestion of the Medical Faculty and appoint Dr. Wyllie. Sundry other memorials were sent in to the managers, one from a large majority of the staff in favour of the precedent of appointing the Assistant Physician and against the bringing in of one who had already had his full term as a physician and was now on the consulting staff. The great majority of the students who are members of the University class of Clinical Medicine, as well as the majority of those who are now acting as clinical clerks in Professor Fraser's wards, requested the managers to appoint Dr. John Wyllie. The matter finally came before the Board on Monday last, November 14th, when, by a large majority, Dr. Wyllie was asked to occupy Professor Fraser's place. Professor Fraser's formal leave of absence is for four months, but it is believed that it will have to be extended to a much longer period.

AN IMPORTANT FEE QUESTION.

In the course of a trial before the Belfast Recorder last week, a question of importance to medical men came up for discussion. Dr. Graham, the superintendent of the District Asylum, had been called upon to make an affidavit regarding one of his patients, and had claimed three guineas as a fee. This seems to have disturbed the equanimity of the Recorder, who is reported to have said: "I have to inform you that you have no right to demand anything, and that it was your duty to make an affidavit stating the condition of the lunatic. It was also your duty to attend here. You are paid for that duty by the Government." Dr. Graham mildly retorted that the Prison Board, the army, and the postal authorities paid him sums varying from one to two guineas; but, apparently, he did not get his fee from the judge. The question raised in this case is a serious one. We believe that the decision was wrong, and that the witness was entitled to payment as a skilled witness. He is engaged to discharge certain duties as superintendent of an asylum, but we are not aware that the terms of his appointment cover any work to be done outside. Indeed, the fact that other public departments pay him as a matter of course is strong evidence for his claim. We have no doubt that the Commissioners of Lunacy in Ireland will see that justice is done to their officers. Doctors do so much for nothing that some people seem to think that they ought to extend their benevolence to the whole community.

MAGDALEN HOSPITAL, BATH.

In these days, when so much attention is being given to the training of mentally-deficient children, the remark is frequently made that the number of institutions is inadequate to the demands of certain localities. It is as well, therefore, that it should be known that the West of England has in addition to the Western Counties Asylum for Idiots at Starcross (now to a large extent, though not exclusively, an institution for paupers) another establishment for the care and training of idiot and imbecile children in the Magdalen Hospital, Bath. It seems that by an order of the Charity Commissioners, the school for imbecile children established in 1840 by the Misses White (the first in this country), and subsequently carried on successfully by Miss Heritage at Belvedere, Bath, has recently been amalgamated with the ancient foundation of Magdalen Hospital. Pending the erection of a special building, patients not more than 21 years of age are received in temporary premises upon Combe Down, one of the breezy heights above Bath, and are there instructed with the view of developing their mental faculties so far as is practicable. The work is carried on by a lady superintendent and a teacher. The ordinary charge is £50 per annum, exclusive of clothing, but the trustees have power to vary the terms when necessary. Full information may be obtained from the Clerk to the Trustees, Mr. E. Newton Fuller, LL.B., 5, Old King Street, Bath.

THE LIVERPOOL PATHOLOGICAL DIAGNOSIS SOCIETY.

The Liverpool Pathological Diagnosis Society, which came into existence two or three years ago under the auspices of University College, has entered on the possession of new premises in the Thompson-Yates Laboratory buildings, where it has been assigned a special room fully equipped with all needful appliances for research. The object of the Society is to supply practitioners in the neighbourhood with a complete report on the nature of morbid specimens which the majority of practitioners have neither the time nor the necessary appliances to investigate for themselves. There can be no doubt that it confers a great benefit on the practitioner and the public by bringing them into touch with the splendid resources of the Thompson-Yates Laboratories, which by this means will aid in the recognition and alleviation of disease throughout the district of which Liverpool is the centre. The work of the Society is carried on directly by Dr. B. W. Warrington, Demonstrator of Pathology and Bacteriology in the College, but is under the general supervision of Professor Rubert Boyce. The small subscription of half a guinea per annum is the only condition of membership, and entitles the member to receive a box of sterilised tubes and mops, and to send as many morbid specimens as he desires for report. During the last six months nearly 400 specimens have been received and reported on. The members of the Society were recently entertained at the laboratories by Professor Boyce and Dr. Warrington, who demonstrated some of the more interesting specimens which had been received, and conducted the members over the laboratories. It is hoped that before long this Society will become more widely known and appreciated, as it is felt that it supplies a want which is experienced by a large number of busy practitioners.

VICARIOUS PUNISHMENT.

The City of Sheffield has an infectious diseases hospital —rather it has two, one in Winter Street, the other at Lodge Moor. The latter site was originally selected as one for a small-pox hospital at the time of the great outbreak a few years ago. These two hospitals are built to accommodate 198 patients. On October 31st they were occupied by 261. "In spite of this serious overcrowding, however," says the *Sheffield Daily Telegraph*, "patients have to be turned away. At the present moment there is a considerable amount of diphtheria in the city. It cannot be dealt with in the city hospitals at all. Worse than that; if an epidemic of small-pox were to break out—and the likelihood of that is increased now that the vaccination law is less stringent—the city has no place in which it could isolate the sufferers, and so prevent the infection from spreading." The Hospital Committee of the Corporation are alive to the necessity of providing further accommodation, and have applied, it is said, to the Local Government Board for power to borrow money for the purpose. This power—the *Sheffield Daily Telegraph* is again our authority for the statement—has been refused on the somewhat singular ground that the Sheffield Corporation have not yet purchased (miles away from the site of the proposed new wards at Lodge Moor) a large amount of land to treat the effluent from their lime precipitation works at Wincobank. In looking for a reason for this alleged refusal, one is at first inclined to think that perhaps the Board has feared that the passage of the hospital sewage through these imperfect works might be dangerous to water drinkers lower down the Don. That explanation, however, even if there be any

drinkers of this dirty water, will not serve, for the discharges from these patients will travel to the same ultimate destination even if they be left at their own homes, with perhaps this difference, that in the latter case they will in many instances do so without the more thorough previous disinfection they would receive at the hands of the trained attendants in the hospital. If the facts be really as alleged, we fear we must give up the conundrum as beyond our powers, unless perchance the Board is experimenting in the matter of vicarious punishment, and has determined to penalise the medical for the sins of the engineering department in Sheffield.

PARADOXICAL PYREXIA.

Another extraordinary case of very high temperatures was related by Dr. Newton Pitt at the last meeting of the Clinical Society, a report of which is published on another page of this Journal. The temperature on many occasions exceeded 110° F.; but, notwithstanding that fact, the patient recovered. As with former cases of this kind, the speakers generally took the line that the high degrees of temperature were produced by friction of the bulb of the thermometer, or by dipping it into a poultice, a cup of warm tea or other liquid, or by some other device of a too fertile imagination. In spite of many cases, however, in which tricks of this kind have been detected, there are now several other cases with temperatures ranging up to 120° F., and even to 130° F., each of which is regarded by its own observer as absolutely genuine. It was suggested at the Clinical Society that a committee should be formed to examine the cases; and it certainly would be well that in future each patient should undergo such scrutiny at the hands of many skilled physicians that the facts may be established above suspicion by the evidence of several competent witnesses. Physiology still regards that subject from a critical and incredulous standpoint; and one professor has written that "life at 122° F." (that is, with a somatic temperature of 122° F.) "is a thing impossible," for various reasons which he specified. Certain facts—the occurrence of the phenomenon in females only, the capriciousness of the pyrexia both in regard to its area and duration, and the absence of the usual symptoms of pyrexia—seem to suggest that paradoxical pyrexia, if eventually proved to exist as a symptom of disease, may, as has often been surmised, prove to be a neurosis, a "functional disturbance of the thermotaxic mechanism," the patient having, in Dr. Savage's phrase, "a mad calorific area," as another patient with hysterical paralysis has "a mad motor area."

LUNACY IN COUNTRY DISTRICTS.

At the request of his Committee, Dr. J. Ireland Bowes, Medical Superintendent of the Wilts County Asylum, has prepared a most interesting report on the existing high rate of lunacy in that county. We hope that other medical officers may be induced to provide similar papers, which are most valuable contributions to our knowledge of the frequency and causation of this growing evil. This report is so full of interesting tables that it is only possible to indicate the lines on which it is arranged. The first question discussed is whether the apparent increase of insanity in England is real or only due to accumulation of the chronic insane and the removal of many quiet dements from their homes and asylums. Dr. Bowes agrees with the general impression that there is some increase, but not enough to create alarm. He points out that there is a much larger proportion of insane to sane among the agricultural labourers than among miners and city dwellers. He shows that for thirty years the agricultural counties have shown most pauperism and most insanity. He thinks that marrying in and the poorness of the living and generally depressing vital conditions account for this. All this is true, but we believe that it is true also that the more feeble are left in the country to breed degenerates and to live from hand to mouth. The morally weak, as well as the mentally feeble, tend to collect in out-of-the-way places. A larger proportion of insane are now treated in asylums in Wilts than formerly, but at the same time, more are kept in workhouses and at home than in the more active centres. Dr. Bowes gives most careful tables analysing the causes of insanity, and he shows that in such counties as Wilts heredity plays a very marked part.

SAWDUST LATRINES AND URINALS.

In another column we print a letter from Lieutenant-Colonel Mayne, I.M.S., expressing his satisfaction with sawdust, used as suggested by Dr. Vivian Poore, as a deodorising filter for urine. The opportunities afforded of testing an arrangement of this kind in an Indian military camp enables Colonel Mayne to speak with some authority. Excellent filters for the lines seem to have been made of half barrels. A paraffin tin was placed under each of these tubs, and the liquid which filtered through the sawdust in the barrel fell into the tin and was removed. It was odourless and inoffensive. The upper layer of sawdust is better removed from time to time. One great advantage of the sawdust conservancy system is the lessening of the fly nuisance. The working expense is also fortunately slight. In providing in this country for the large number of ladies brought together lately at a great musical festival lasting over several days, temporary conveniences were run up of an exceedingly simple character in an easily accessible, open, but walled-in, portion of the premises. A few wooden partitions were curtained off. In each cabinet an ordinary seat, similar to those of pedestal closets, rested on brackets, and beneath was placed a small portable pail filled with sawdust. These pails were changed as soon as the audience had quitted the building. During the whole time, notwithstanding the close, muggy weather which prevailed, every cabinet is said to have been perfectly sweet. Dr. Veeder[1] (Lyons, N.Y.) has recently drawn attention to matters of military hygiene. "The hospitals," he wrote a month ago, "remain full, and the soldiers are being mustered out of service hurriedly in a sort of panic, to get them away from the centres of infection. If the war were to continue it would not be possible to secure relief in this way except partially and incompletely by changing the location of encampments. . . Apparently it requires only a few weeks at most for a camp to become 'stale' and all water anywhere within reach unfit for use and then the location must be changed absolutely and entirely, according to current ideas of such matters." Dr. Veeder goes on to emphasise the importance of the fly as a carrier of infective matter, say from the latrine to the milk can. Perhaps by preventing the "staling" of the "location," and diminishing the number of flies, sawdust as a deodorising and, in one sense, disinfecting, agent has an important future before it in military hygiene.

THE JAPANESE AS SANITARY REFORMERS.

The Japanese Government is said to have ordered the complete abandonment of the city of Leek Cham, on the island of Formosa, which has frequently been subject to epidemics of such malignancy that thousands of lives were lost. While Formosa belonged to China, no effort was made to ascertain or remove the cause. The Japanese have been in possession of the island for about three years, and soon after it passed into their hands they set themselves to discover the cause of the unhealthiness of Leek Cham. A committee of expert sanitarians reported that the city was built on a swamp from which poisonous gases came to the surface, and that the city was so thoroughly permeated with disease germs that disinfection was impossible. The Government thereupon issued an order that a new and

[1] New York *Medical Record*.

healthy site should be selected as near to the old site as was prudent. Such a site was recommended and accepted, and was laid out by experts, with sewers, streets, pavements, waterworks, and all modern improvements, without any expense to the inhabitants of the old city. Every property holder in the old city, without expense to himself, was assigned the same area of ground in the new Leck Cham, and he was given twelve months in which to remove himself and belongings to his new abode. The result of this drastic experiment will be awaited with interest, though it can hardly be doubted that it will be highly successful if the thoroughness of the local authorities in the matter of scavenging in the future corresponds at all with that of the central authority.

THE HEALTH OF THE TROOPS IN EGYPT.

The number of soldiers in the military hospitals has decreased. The 21st Lancers, 1st Battalion Seaforths, and 1st Battalion Camerons, with other corps, have now only a limited number under treatment. The 2nd Battalion Rifle Brigade, which served at Omdurman and went to Crete, has suffered much from the effects of the Soudan service. A good many deaths from enteric fever and other causes have of late occurred. More recent reports show improvement in general health.

THE COST OF FRENCH COLONISATION.

We have during the past year twice commented on the startling facts as to the sickness and mortality of French soldiers in various so-called colonial expeditions during recent years contained in works by MM. Burot and Legrand. The statistics given by these officers, if only semi-official, were none the less reliable, and not long ago we compared a table, compiled from official sources, of British and French mortality in tropical and subtropical campaigns which gave startling results. Following the above-named authors, M. Noel has lately[1] taken up the subject. It affords us no satisfaction to dwell upon the faults and misfortunes of our French neighbours in these tropical enterprises, further than to abate our own unreasoning self-depreciation, and prove that at all events we do avoid mistakes into which the French seem constantly to fall. M. Noel declares the French statistics to be "sadly suggestive," and such they undoubtedly are. From them we gather that while the mortality of French officers in France was in 1895 5.07 per mille, in the colonies it was 39.8, nearly eight times as great. It was greatest among lieutenants, especially the unacclimatised, in detached posts, least among seniors less exposed. Among the troops the mortality per mille was as follows: France, 6.08; Algiers, 12.27; Tunis, 11.14; the Marine, 11.0; Colonial army, 42.95. Here the men in the colonies suffered just seven times as much as at home. In France the smallest mortality is among the *Sapeurs-pompiers*—2.36 per mille, and the highest among hospital attendants—9.64 per mille. It is stated that the less men are removed from their accustomed work before enrolment in the army, the smaller their mortality; the more exacting the military service required, the greater the mortality; the more men are "selected" the less their mortality in the army. We infer from this that there are a vast number in the French army who undergo a very superficial medical examination on conscription and are really unfit for active service, tropical or otherwise. Further, as we have before pointed out, mortality increased in proportion to the intensity of the military instruction; thus, in spite of more careful selection the artillery have a mortality of 6.50 per mille. The mortality in the Transport department (train) is 8.31, almost equal to that of the hospital attendants, who suffer especially from contagious diseases. The highest death-rate in France among soldiers is under 23 years of age; after this weeding mortality declines. In the various garrisons in France, the lowest mortality, 3.18 per mille, is at Lille; and the highest, 8.01, at Clermont; chiefly due, in 1895, to influenza, pulmonary diseases, and typhoid fever. In Algeria the death-rate is influenced essentially by typhoid fever. But these death-rates are nothing at all compared with 103.1 in Madagascar, and 107.1 in the Soudan. The causes of death are stated as follows: Endemo-epidemics, at home 474, in the colonies 825.2; ordinary deaths, 432 and 68.5; violent deaths 95 and 105.3. Typho-malarial diseases, and resulting cachexias account for the great mortality in such places as Madagascar and the Soudan. In the home army it is declared that the heaviest mortality is during the period of instruction—that is, vast numbers of weedy French conscripts succumb in training; in the colonies it is the duration of stay which kills. The experiences of the French army, although vastly more costly, are not essentially different from our own in tropical service. But it is pretty certain that our men have better initial stamina, owing largely to more careful selection, and that at every stage they are better cared for, and live under far superior hygienic and sanitary conditions than the French soldiers.

[1] *Revue Scientifique*, October, 1898.

THE FEET OF CHINESE WOMEN.

A French proverb says, *Il faut souffrir pour être belle*, and that women will suffer much for this purpose is shown by the fortitude worthy of a better cause with which they endure the torture of tight stays or of boots a size too small. But if beauty is to be measured by the degree of suffering required to produce it, European women must yield the palm to their Asiatic sisters. The ideal small foot is found only in China, and the pain involved in its manufacture can hardly be estimated. Dr. Matignon, Physician to the French Embassy at Pekin, who was recently called in to consult on the case of the Emperor of China, has had the opportunity of dissecting the foot of a Chinese girl, aged 20, who died of tuberculosis in the French Hospital of Pekin. As she belonged to the lower social strata, her feet were not so small as those of the typical Chinese lady; they measured 17 centimetres in length, whilst those of a fashionable lady do not exceed 13 to 14 centimetres. The outer surface of the foot had the form of a right-angled triangle, the upper border, slightly convex at the level of the scaphoid, being the hypothenuse. The internal surface was of much the same form, but the lower border was less sharply defined, and it had something of the shape of a wide circumflex accent, on the anterior part of which were seen the dorsa of the toes, folded upon themselves. The plantar surface, ellipsoid in shape, was broader at the back than in front; a groove one inch and a-quarter in depth divided the sole into two distinct regions—that of the heel, shaped like a horseshoe, that of the toes, more or less, triangular. The four last toes were bent completely under the sole, and touched the ground by their dorsal surfaces. The toes, besides being flexed, were rotated on their own axes, being bent from without inwards, and from behind forwards. The great toe was flattened and on perpendicular section appeared triangular. The nails were changed in appearance and atrophied. The toes themselves were small and thin, and had lost all independent mobility. The skin on the dorsum and the sides was normal, but abundantly wrinkled on the sole; it was covered with callosities over the heel and the great toe. The whole foot was greatly arched, the external malleolus being 7, the internal 8 centimetres from the ground. On dissection the plantar muscles were found extremely atrophied. The bones were in general of remarkable tenuity. The metatarsals were not deformed, but only small; the scaphoid was normal, the cuboid and cuneiform bones were atrophied and flattened from side to side. The calcaneum was the most deformed of all, though of normal size; it was bent on itself, and twisted into the shape of a

comma. The methods of checking the growth of the foot which is adopted in China have been fully studied by Dr. Morache, and are described in his work *Pékin et ses Habitants*. The result is to produce a forced flexion of the foot in the antero-posterior direction, with twisting of the toes around the first metatarsal. The whole weight of the body rests on the calcaneum, which forms an inadequate basis of support. Hence women as they get on in years have to use a stick; young women walk with their arms slightly spread out so as to balance themselves, the chest being thrown forward, the pelvis backwards; they seem, as Dr. Matignon expresses it, to run after their centre of gravity. When they stand with their heels close together, their equilibrium is very unstable. The origin of the custom is attributed by some historians to an Empress Ta-Ki (B.C. 1100) who, being herself club-footed, persuaded her husband to issue a decree making compression of the feet of little girls compulsory, so that her deformity might be considered the glass of fashion and the mould of form as far as the foot was concerned. Another tradition is that the Emperor Li-Yo (A.D. 916), who was clearly an artist of the decadent type, ordered the feet of one of his wives to be twisted, so that it might resemble a crescent moon. Naturally the courtiers followed his example. A less poetical explanation is that the Chinaman, being of a jealous temper, lames his womankind of malice aforethought to keep them from roaming. A curious circumstance connected with the custom is that Chinese women guard their deformed feet from the profanation of an illegitimate masculine eye as carefully as a European woman hides her bosom. Dr. Matignon further says that the small foot has a peculiarly exciting effect on susceptible Celestials.

ACCOMMODATION IN THE LOWER ANIMALS.

Dr. Theodore Beer has made an interesting contribution to the somewhat neglected department of comparative pathology, in a paper[1] on the act of accommodation of the eyes which he has studied in a vast number of lower animals. It occurs only in those which have eyes constructed on the principle of the camera obscura; in facetted eyes, on the other hand, thickness of retina in proportion to their total size is so great as to render accommodation unnecessary. Dr. Beer's methods were mainly three: ophthalmoscopic examination, measurement with the ophthalmometer, and electric stimulation of freshly excised eyes placed in normal saline solution at the body temperature. He finds that aquatic animals with highly developed eyes, such as cephalopods and bony fishes, have eyes which are normally adapted to near vision and which undergo active accommodation for distance, the round lens being brought nearer the retina without changing its shape. The mechanism by which this is effected is different in the two cases. In the former there is a circular muscle attached to the front of the bulb and to the equator of the lens, and an elastic portion of the eye wall which yields to the increased intra-ocular pressure when the muscle contracts; in the fishes there is a small muscle behind the lens (retractor lentis) which actually draws it towards the retina. The eyes of terrestrial vertebrates are normally adapted for distant vision, and an active process of accommodation is required in looking at near objects. This act of accommodation is effected in one of two ways: in amphibia and snakes the unaltered lens is carried away from the retina; in the rest there is a change in its curvature. In every class of animals, with the exception of cuttle fishes and birds, there are certain species whose eyes do not possess the power of accommodation. Some of these are nocturnal in their habits; when their eyes are exposed to light the pupils are contracted to a linear form, and a kind of accommodation is thus effected. To others, such as the rabbit, observation of movement is more important than that of form, and hence the rabbit's power of altering its lens curvature is on a par with a man's ability to move his ears. Moreover, cave-dwelling and subterranean animals have but limited visual power, and do not need the faculty of accommodation. No animal can see equally well in air and water without an act of accommodation; aquatic animals are extremely short-sighted when on land, terrestrial very far-sighted in the water. A very few amphibiotic animals, which hunt both in land and water, have such an extraordinary range of accommodation that they can see near objects clearly under water. Finally, Dr. Beer has shown that animals which accommodate by alterations in the distance of the lens from the retina have an advantage over those which accommodate by changing the shape of the lens in that age does not render them presbyopic.

[1] *Wien. Klin. Woch.*, October 20th, 1898.

TRAUMATIC APHASIA.

A case of unusual neurological interest, which has been under treatment for some time past in St. Vincent's Hospital, Boston, is recorded in the *Boston Medical and Surgical Journal* of October 6th. Dr. T. H. Curtin states that the patient, William Larsen, a Norwegian, was admitted on September 5th in a state of coma, a block from a derrick on one of the piers having fallen upon his head and crushed in the right side of the skull; the fracture was nearly 3 inches in diameter. The greater part of the third frontal convolution of the brain had been destroyed, and it was not expected that the man could survive more than a few hours; but two days after the fragments of bone had been removed, the edges trimmed, and all pressure removed from the brain, he recovered consciousness. The effect of the injury upon memory and speech was watched with special interest, and it was at first found that while he seemed to be rational and nearly normal in his understanding of what was said to him, all his answers to questions were given in an unintelligible gibberish. After a few days, however, his speech became entirely coherent; but the remarkable circumstance was noted that he could no longer speak in his mother tongue, but only in English. Another feature of the case was the development of great emotional sensitiveness, so that if anyone conversing with him smiled, he was moved to laughter, and if the person looked depressed he began to weep. He recognised his acquaintances immediately, and talked with interest of his plans for the future.

A case of typhus fever in a boy, aged 3 years, was notified in Islington on November 7th.

A convalescent home at Bognor for the use of the East London Hospital for Children, Shadwell, was opened on November 16th by Lady Maria Hood. The home, which contains 28 beds, is dedicated to the memory of the Duchess of Teck, and bears the name of the Princess Mary Convalescent Home.

It is satisfactory to learn that the Local Government Board have intimated to the Metropolitan Asylums Board that their assent to the two asylums at Darenth being placed under a single medical superintendent will be conditional upon the educable children being withdrawn from Darenth and sent to a separate institution.

The family of the late Dr. John Hopkinson, the well-known electrical engineer, who was killed in the Alps this autumn, have made a gift of £1,600 to the Owens College, Manchester, where Dr. Hopkinson was a student for three years, to cover the expense of building the dynamo-house connected with the new physical laboratory. This is in addition to the sum of £5,000 offered by the family to build a wing to the engineering laboratory at Cambridge, the wing to be called the Hopkinson Memorial Wing.

THE PREVENTION OF TUBERCULOSIS.

Tuberculosis and the Milk Supply.

At the recent annual meeting of the New York State Medical Association, as reported in the *Philadelphia Medical Journal*, of October 29th, Dr. Florence O. Donohue, of Syracuse, reviewed what had been done in the direction of State examination of milk for tuberculosis, more especially by New York State, which, he said, though the pioneer worker in this field, was to-day by no means in advance of other States. Tubercle bacilli can always be found in milk from a cow having a tuberculous udder, and they are sometimes detected in milk from animals whose udders are free from the disease. The statistics of the State Board of Health show that over 12,000 deaths in the State are caused annually by tuberculosis. Like other reforms, the first step was beset with difficulties, but the Tuberculosis Act, passed in 1892, gave the Board authority to inspect all cattle in the State, and destroy those found to be tuberculous. The interference with dairy interests, and the pecuniary loss suffered by the owners of condemned cattle, soon started an opposition, so that the work was brought to a standstill. The law is still operative in the New York State, and the commissioners are drawing their salaries, but the lack of adequate appropriations has kept the work practically at a standstill for the past two years. As soon as the Board became convinced of the diagnostic value and the harmlessness of the tuberculin test, it was made use of freely, and it has been abundantly proved a great advance on mere dependence on physical signs. In the course of a year and a half 22,000 head of cattle were inspected, and 700 destroyed. Most of this work was done in the Hudson River District. In most cases it was possible to trace the disease from herd to herd, and no breed of cattle appeared to be exempt from the ravages of tuberculosis.

In the course of the discussion Dr. Hiram A. Pooler, of New York, said that he had observed the difference between the milk of cows properly fed and that from those kept on brewers' feed, and he had also noted that tuberculosis was more prevalent in districts where cattle were given such unwholesome food. As a result of his arguments in this direction before the Legislature, a law was enacted in 1883 prohibiting the use of such unwholesome food for cattle.

Dr. H. O. Marcy, of Boston, spoke of the interesting experiments that had been recently conducted with a view to eliminating pathogenic bacteria from milk by a process known as refrigeration. The milk was agitated while it was freezing, and this process of ice-crystallisation was kept up for several hours. The product was almost free from objectionable bacteria, and as it contained only about 7 per cent. of water, it was a good deal thicker than cream. It was not at all improbable that in the near future it would be possible to so perfect this process, and carry it out on a commercial scale, that solidified milk would become an ordinary article of commerce, just like butter. From what was known of refrigerated milk, as at present prepared, its keeping qualities were excellent.

Meat Inspection in New South Wales.

A Bill has recently been introduced into the New South Wales Legislature to provide for the more efficient inspection of meat. This question has been engaging the attention of the health authorities for some time past. At the public abattoirs near Sydney the carcasses are carefully inspected by competent inspectors; but there are a large number of smaller slaughterhouses where there is no system of inspection, and meat killed there can be and is exposed for sale, however diseased it may be. So, too, in the country districts there is urgent need for competent inspection of the meat offered for sale. The police have the power to seize and destroy beasts notably diseased, but this is not sufficient protection against the sale of meat from beasts which, of course, may have suffered from tuberculosis and yet have shown no obvious signs of it during life. The experiments carried out during the last year or two, under the supervision of Dr. Ashburton Thompson, the President of the Board of Health at Sydney, have shown that tuberculin, when used with due care and in the hands of competent men, is a certain diagnostic test of tuberculosis in animals, and it is now being adopted voluntarily by several of the owners of dairy herds in Sydney and in the country, who find it of use in advertising their milk as coming from herds "proved free from tuberculosis by the tuberculin test." An article in the *Australasian Medical Gazette* for September suggests that, among other things, provision should be made in the Bill for the compulsory application of the tuberculin test to all cattle intended to be slaughtered for human consumption; that all meat should be slaughtered in abattoirs under efficient inspection and control by the Board of Health, or that at any rate all meat should be examined and stamped with an official inspector's stamp before being exposed for sale in butchers' shops. It is to be hoped that such a beneficial enactment will soon be placed on the statute book of the Colony.

Action by Public Health Authorities.

The action of Manchester and Liverpool, both of which cities have recently investigated the milk supplied to inhabitants by retail dealers, is about to be followed by Islington. Dr. A. E. Harris, Medical Officer of Health, has been instructed by the Public Health Committee of the Vestry to submit 200 samples of milk supplied to householders in the parish to bacteriological examination, with the view of ascertaining to what extent the ordinary milk supply contains the infection of tuberculosis. The annual number of deaths in Islington from tuberculous disease is 720, and of this number 207 are children under 5 years of age.

We referred a short time ago to the decision of the Birmingham Corporation to issue a leaflet pointing out the means which can be taken by householders to prevent tuberculosis. We are indebted to Dr. Alfred Hill, the Medical Officer of Health, for a copy of this leaflet, which he states is based on a similar one issued some time ago by the city of Glasgow. It runs as follows:

Advice on the Prevention of Consumption.

Consumption is not inherited; but, like many other well-known diseases, it is caught.

It is properly called a preventable ailment, and yet it is one of the most fatal diseases, causing one death in every ten in England.

It is almost always caught either from a person who is suffering from the disease or through infected air, milk, and possibly meat.

Some children are born with a constitution which strongly favours their catching consumption, although it is not born with them. Such persons ought to be very careful to avoid exposure to the disease.

Intemperance, overcrowding, bad air, darkness, dampness, colds, sore throats, and many other diseases make people liable to take consumption by weakening their constitutions.

Good health is the best protection against the disease.

Consumption is caused by a germ, which may also cause disease of other parts of the body besides the chest, such as the bowels, especially in children, who are often attacked if infected milk is used.

All milk should therefore be boiled, by which the germs are killed.

Every person suffering from consumption is likely to give the disease to other persons, chiefly by means of the spit, which contains the germs.

As long as the spit is moist it will not do much harm. It is very dangerous when it has dried, as the dust, with its germs, can get into the air breathed.

Consumptive persons should never spit upon the floor, nor into a handkerchief, which has to be put into the pocket or under the pillow. They should take care that no spit is smeared over their bedclothes or nightdresses, or on their beards or moustaches.

A case of consumption may be made almost harmless to other people by preventing the spit from drying and becoming dust.

The greatest care is necessary when indoors. A consumptive person should use a spit cup containing a little water or water and carbolic acid, or should spit into a rag or piece of paper, which can be burned at once.

When out-of-doors there is not so much danger, as the germs are killed by sunlight and fresh air. A special spit bottle, to be carried in the pocket, can be bought for a small sum; failing this, a consumptive person should spit over a street gulley or into the horse-road—never on the footpath, nor in a tramcar, omnibus, cab, or railway carriage. It is better to spit on the ground than into a handkerchief.

If a handkerchief or any article of clothing has been soiled with spit, it should be kept wet till it can be boiled and washed.

The contents of the spit cup or spit bottle should be emptied down a watercloset or drain, or on to a fire, and the bottle or cup should be be cleaned with boiling water, with or without a disinfectant.

No spoon, cup, or other article which has touched the mouth of a consumptive person should be used by anyone else until it has been carefully washed.

Food which has been left by a consumptive should not be eaten by a healthy person.

No one who is consumptive ought to kiss or be kissed except on the cheek or forehead.

No mother who is consumptive should suckle a baby.

All persons who are consumptive ought to have beds to themselves.

Sunlight and fresh air are the very best disinfectants; they should be used very freely.

In cleaning rooms damp dusters should be used, and wet tea leaves or sawdust should be put down before sweeping, so that the dust will be removed without being spread through the air. The dusters should be boiled, and the sawdust or tea leaves burned.

After the death of a consumptive person it is necessary that washing and disinfection should be thoroughly carried out. The disinfection o the room will be done by the health department, on notice being sent to the medical officer of health.

N.B.—Consumption cannot be caught from the breath or the skin. If the above precautions are taken there is no danger from living with, or being in the company of, persons who are suffering from it.

ALFRED HILL, M.D.,
Medical Officer of Health.

Health Department, Council House,
Birmingham, October, 1898.

THE COMPULSORY NOTIFICATION OF PHTHISIS.

The third and last Harben Lecture on Administrative Measures for the Control of Tuberculosis was delivered on November 16th, by Sir RICHARD THORNE, who pointed out that a certain number of sanitary authorities had applied to the Local Government Board for their statutory approval to the proposal to add phthisis to the list of the infectious diseases which were now included in the Infectious Diseases (Notification) Act, 1889, but that this approval had never yet been given. He agreed with the action of the central authority, and he pointed out that there was no such similarity between phthisis and the diseases now notifiable, namely, small-pox, scarlet fever, diphtheria, etc., as would in his opinion justify compliance with the demand made. The Notification Act was passed in order to enable authorities to control the movements of persons who for a few weeks only of their lives were in a state that constituted a danger to the public health, such persons being, by reason of a temporary and acute illness, unfit to follow their usual avocations, or to mingle with others. In the case of phthisis, however, any corresponding sanitary control would often have to be exercised for a series of years, during which time the phthisical persons were not only quite capable of continuing in their employment, but it was often absolutely essential that they should be able to maintain themselves, and at times a family as well. The Act was never passed to enable such a person to be subjected to restrictions in the manner intended to apply to the acute infectious fevers.

Sir Richard Thorne referred in some detail to the notification of phthisis in New York City, because it was often held out as an example to be followed: but he showed that the New York provision had hitherto been most partial in its application, that its operations were in the main limited to persons living in tenement and lodging houses, and that apart from this no sanitary control was exercised except with the actual or tacit consent of the medical practitioner in attendance on the patient. Even the statistical results which were quoted in favour of the New York practice showed that the diminution in the phthisis death-rate was in full operation for years before the notification system was established. This was doubtless to a large extent brought about by the same administrative measures which in this country had already led to a saving of no fewer than 60 lives out of every 100 which at many age-periods were formerly sacrificed to this disease. Instances were then given to show what would certainly follow if the stringency of our laws as to infectious disease was made applicable to this disease. The system of inspection by sanitary officials would lead to publicity and to loss of employment, with the consequent deprivation of food and comforts which were essential to the cure of the disease in its incipient stages; it would hinder people from seeking medical advice at a time when this was most useful, and thus it would defeat the main object in view. It was next pointed out that the same proposal had come before the Academy of Medicine in Paris, and that on a report from a committee of that body, the system of compulsory notification had been rejected on the ground that it was likely to do more harm than good. The conclusion at which the lecturer arrived did not, however, justify inaction as regards a disease which still caused some 40,000 deaths every year in England and Wales, and which was largely spread by means of highly infective sputa which, when dried, were carried about as dust. The duty of giving to individuals such advice as to dealing with these sputa as was likely to be followed, devolved, in his opinion, on the medical practitioners whose counsel and advice were voluntarily sought by the phthisical patients, and the lecturer appealed to all physicians, whether in hospital practice or in private, to give this advice in some such simple form as was to be found in the leaflets now distributed to patients visiting some of the chest hospitals of the Metropolis. Any action by way of notification should, for the present at least, be under a voluntary and not a compulsory system, and such action might well be supplemented by the construction out of public funds of sanatoria for the temporary isolation of persons suffering from this infectious disease, and who during their sojourn in these establishments would acquire habits of dealing with infectious materials which would largely tend to prevent that spread of infection which was now so largely due to the want of simple and inexpensive precautions.

In conclusion, it was pointed out that the success attained under our English system of public health was largely due to the fact that its leaders had been content to lead, and had avoided pressing so far ahead of public opinion as to alienate that support on which success was most dependent.

THE NEW VACCINATION ORDER.

RURAL DIFFICULTIES.

DR. W. LLOYD O. WILLIAMS, Public Vaccinator, Llanberis, sends us the following observations on certain points in the new Order.

House-to-House Vaccination.—Rural public vaccinators throughout the country are agreed that the Local Government Board has overlooked the difficulties of rural house-to-house vaccination in the new Order. The Board should therefore be petitioned without delay, and urged to amend the Order where public vaccinators consider amendment necessary for the efficient and harmonious working of the new Act. I would particularly call attention to two points urgently in need of amendment:

I. *Fees.*—The Board should be asked to arrange a reasonable minimum mileage scale. The public vaccinators of North Wales, at a meeting held in Bangor, agreed to accept the minimum fees for cases within a one-mile limit; and to ask for an increase of 1s. per mile or part of a mile beyond that limit, until a maximum fee of 5s. is reached. This would work in this way: A case 5 miles or further away from the surgery, if successful, would have a fee of 10s. attached to it: if unsuccessful, a fee of 5s. Arguments in support of some such arrangements have already appeared in the BRITISH MEDICAL JOURNAL, and it is not necessary to repeat them.

II. *Vaccination Officer's List.*—The Board should be requested to direct the vaccination officers to send their lists quarterly in rural districts, and not weekly or "monthly" as Dr. Moxham has it. I think the new Order requires a weekly list (see p. 21, paragraph 6, *a*). Dr. Moxham has pointed out how unnecessary these frequent lists are, and what an increase of work they will involve. A weekly list will contain but one name in a distant village, when, in all probability, a quarterly list would contain two or three names. Under the old Act, urban public vaccinators attended their stations weekly, whereas rural vaccinators attended quarterly or half-yearly according to the population of the districts. This proved amply sufficient and convenient to the inhabitants. If meetings of public vaccinators would pass resolutions embodying the suggestions I have made, and send them to the Local Government Board, the Board may reconsider these points and issue a supplementary order.

SCALE OF FEES.

We understand that the Finance Committees of the Boards of Guardians of Paddington, St. Marylebone, and Kensington have recommended that the payment in respect of every child whose birth in the parish shall be returned on his list by the vaccination officer to the public vaccinator shall be 2s. 6d. The Finance Committee of St. Marylebone have recommended that the fee paid for every primary vaccination or revaccination performed by the public vaccinator at the home of the person shall be 7s. 6d., while the Paddington Committee recommend the fee of 6s.

At a meeting of the public vaccinators of the Bridgwater Union held at Bridgwater on November 2nd, 1898, the following statement was signed by all the public vaccinators and directed to be forwarded to the Board of Guardians. This action we are informed was taken because the Board had caused it to be known that it was its intention to adopt the minimum scale of fees. The following is the text of the propositions made by the public vaccinators:

(a) Under Article 3 (b). page 5, Vaccination Order, 1898.
A payment of five shillings in respect of every primary vaccination or revaccination performed by him at the home of the person vaccinated.
And
A payment of one shilling per mile for every primary vaccination or revaccination beyond one mile from the public vaccinators' residence, parish church, or place hereafter to be agreed upon.

(c) Mileage at the rate of one shilling per mile in the event of a public vaccinator visiting a house after due notice has been given by him and the operation not carried out on the grounds of insanitary conditions of house, ill health of child, or objection of parents, or any other cause.

(3) Payment of postage of all notices of attendance to vaccinate.
Also
That in the event of lymph not being issued to the Public Vaccinators by the Local Government Board the cost of the lymph to be defrayed by the Board of Guardians.

The public vaccinators request the Board of Guardians' kind attention and consideration of the above because they consider that under the new Act their work will be very much increased, that the distances they will have to go will be much greater, that their time will be much more taken up, that there will be considerably more clerical work, and that according to the Vaccination Order, 1898, page 14, par. 6, the public vaccinator may be required to give medical advice and attendance to child vaccinated.

Dr. William Swanson Sprent, Public Vaccinator (Slingsby, Yorks), writes: From the numerous letters and suggestions I have received, representing the opinions of some 153 public vaccinators of Yorkshire, it appears that a scale of fees which would be generally acceptable is as follows: 2s. 6d., 7s. 6d., and 3s. 6d., instead of 1s., 5s., and 2s. 6d., the minimum of the "General Order," and a mileage rate of 1s. per mile over one mile; half fee for all visits duly notified beforehand, and which result in refusal or postponement, and the necessary notification thereof. If this rate were granted by the respective Boards the public vaccinator would be encouraged to take necessary precautions to prevent sequelæ, in the event of which he would make no further claim for attendance.

*** We shall be obliged to public vaccinators who have arranged contracts with Boards of Guardians or with Committees of Boards if they will be so good as to let us know the terms agreed upon.

Opinion of Local Government Board.

Dr. F. W. D. McGachen (Brotton, R.S.O., Yorks) informs us that he wrote recently to the Local Government Board calling attention to two points—the first as to the practice adopted, we regret to say, by certain members of the medical profession in this country of making only one or two insertions. The second point refers to a case in which a public vaccinator pays a first visit after sending notice, and found that the parents refused to have the child vaccinated. The following is the reply received from the Local Government Board:

Local Government Board, Whitehall, S.W.,
November 12th, 1898.

Sir,—I am directed by the Local Government Board to advert to your letter of the 25th ultimo, and to reference to the first point raised therein. I am to state that the Board are of opinion that the performance of vaccination in such a way as to only produce one or two vaccine vesicles is much to be deprecated, and that such vaccination affords less protection against small-pox than has been done in accordance with the [illegible] to the Board, however, that a person who has on him [illegible] vaccine vesicles must be deemed to have been successfully vaccinated.

As to your second point, I am to state that the public vaccinator will not be entitled to any special fee in the particular circumstances mentioned. In agreeing what fees are to be payable under Article 3 of the Vaccination Order, 1898, it will be for the guardians and public vaccinator to consider all the circumstances affecting the work which the public vaccinator will be called upon to perform, and it appears to the Board that the parties may properly consider such circumstances as those to which you refer.—I am, Sir, your obedient servant,

Alfred D. Adrian, Assistant Secretary.

Awards to Public Vaccinators.

Viator.—Awards to public vaccinators made under Section v of the Vaccination Act of 1867, which [illegible] repealed by the Act of 1898. Hence they will continue to [illegible] as heretofore.

Records of Unvaccinated Children.

Sequitur.—It will be the duty of vaccination officers under the recent Vaccination Order of the Local Government Board to register against the names of children the fact that certificates of conscientious objection have been secured by parents and others. As regards cases of small-pox, there is now a statutory requirement as to record being made of the condition as to vaccination of all such as shall be admitted to hospitals provided by sanitary authorities.

The Jenner Institute requests us to state that they have received so many applications for artificial blowers that there must be some delay in fulfilling all the requests.

ASSOCIATION INTELLIGENCE.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Border Counties Branch: Section for the Counties of Roxburgh, Berwick, Selkirk, and Peebles.—A meeting will be held in Station Hotel, Hawick, on Friday, November 25th, at 4.15 P.M., Dr. Blair (Jedburgh) in the chair. Trains from the North arrive at 4 P.M. and leave at 7 P.M. Dr. Haddon (Denholm) will introduce a discussion on Hypnotism. Dr. Bannerman (Hawick) will relate some cases of Colotomy. Members who have cases to show or papers to read are asked to communicate the same to the Secretary at once. Members are also requested to inform the Secretary if they intend to be present.—W. Hall Calvert, Honorary Secretary, The Laurels, Melrose, N.B.

South-Eastern Branch: East Sussex District.—The next meeting of this District will be held at the Queen's Hotel, Eastbourne, on Thursday, December 1st, at 4.45 P.M., Dr. Hayman in the chair. [illegible] table d'hôte) 7 P.M. The following papers have been promised Mr. [illegible] Thirty Cases of Radical Cure of Hernia, with Results and Mode of Operation. Dr. Mackey: Two Cases of Acute Ascending Paralysis (Landry). Members are requested to send notice of communications, motions, etc., to the Honorary District Secretary, J. W. Batterham, M.B., Bank House, Grand Parade, St. Leonards.

South-Eastern Branch: East Kent District.—The next meeting of this District will be held at the Kent and Canterbury Hospital on Thursday, November 24th, at 3 P.M., Brigade-Surgeon-Lieutenant-Colonel Tomlinson, M.D., in the chair. Agenda:—Dr. Thomas Eastes: The Open-air Treatment of Consumption. Mr. W. [illegible] Surgery in the Matabele Rebellion. Cases from the wards will be shown by Dr. Gogarty and Dr. Whitehead Reid. The Chairman kindly invites members to luncheon at the Fountain Hotel at 1.30 P.M. Members intending to avail themselves of Dr. Tomlinson's hospitality are requested to send acceptances to Dr. Gogarty, Canterbury, by Monday, November 21st, or they will not be expected. All members of the South-Eastern Branch are invited to attend these meetings, and to introduce professional friends.—Thos. F. Raven, Honorary District Secretary, Barfield House, [illegible]

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.

The first meeting of the session was held at St. Monica's Home, Brondesbury Park, on November 9th; Dr. Morton in the chair.

The Early Diagnosis of Cancer of Stomach.—Dr. Soltau Fenwick read a paper on this subject. After referring to the question of age and heredity in these cases, he spoke about the onset, which, though generally gradual, might be very sudden, as in a case he mentioned, which began with acute dyspepsia, and ended fatally in three months. Anæmia, progressive emaciation, and great loathing for food, with signs of subacute gastritis, were especially suggestive at an early period. In 100 cases of carcinoma of the stomach, 60 affected the pylorus, 30 the walls, 10 the cardiac end. Pain was present in 90 per cent. of cases: it was generally constant, scarcely relieved by vomiting, and very liable to severe exacerbations. Vomiting varied a good deal with the seat of the disease. Hæmatemesis was usually slight and repeated, melæna rare; constipation common in 95 per cent. of cases. In physical examination auscultatory percussion was especially emphasised; examination of the stomach when empty was a point of importance. Dr. Soltau Fenwick dwelt on the care to be taken in examining the contents of the stomach, and on the indications afforded by passage of the sound. Phloro-

glucin and vanillin and dimethylamidoazobenzol were the tests to be relied upon in the detection of free hydrochloric acid, and carbolo-chloride of iron for the detection of lactic acid. The diagnosis was considered under the headings of (1) cancer of the cardia and its differentiation from gastric ulcer and spasm; (2) cancer of the body and its differentiation from pernicious anæmia and chronic ulcer: the difficulty of distinguishing simple pernicious anæmia in some cases was referred to: and (3) cancer of the pylorus, with its differentiation from chronic gastritis, and simple pyloric stenosis. The paper was subsequently discussed, and Dr. Soltau Fenwick replied.

Cases.—Dr. Sutherland showed a case of Unusual Curving of the Neck of the Femur in a child, causing marked peculiarity in the gait and simulating congenital coxal dislocation; and an infant suffering from Intentional Tremors with General Weakness—apparently of congenital origin, and suggesting in some respects disseminated sclerosis and hereditary cerebellar ataxy.—Dr. Winslow Hall showed a case of Inherited Syphilis in a girl aged 11 years, with labyrinthine deafness, interstitial keratitis, etc. Injections of pilocarpin had been tried with little or no benefit for the deafness, in addition to antisyphilitic treatment.

Votes of Thanks.—Votes of thanks were passed to Dr. Soltau Fenwick for his interesting paper, and to the staff and authorities of St. Monica's Home for their kind hospitality.

NORTH OF IRELAND BRANCH.

The autumn meeting of this Branch was held in the Museum, College Square North, Belfast, on October 27th. Sixty-two members were present.

Confirmation of Minutes.—The minutes of the previous meeting and of the special meeting were read and confirmed.

Introduction of New President.—The retiring President (Dr. Gray) introduced his successor, Dr. Henry O'Neill.

Vote of Thanks to Retiring President.—On the motion of Dr. M'Caw, seconded by Dr. Gaussen, a vote of thanks to Dr. Gray for his conduct in the chair, and his devotion to the interests of the Branch during his year of office was passed, and conveyed to him by the President.

President's Address.—Dr. O'Neill delivered an address on Recent Advances in Brain Surgery, which is published at page 1537.—During the address Dr. Cecil Shaw showed a number of limelight views.—At the conclusion of the address it was moved by Professor Byers, seconded by Lieutenant-Colonel Moorhead, and passed unanimously, that the best thanks of the meeting be given to the President for his instructive address.

New Members.—Dr. Samuel English and Dr. T. Haydn Mulholland were elected members.

Communications.—Dr. W. J. Meharry read notes of a supposed case of Typhus Fever terminating fatally, and Drs. Bigger, Agnew, and Darling commented on the diagnostic aspects of the case.—Dr. Dempsey read notes of a case of Abdominal Aortic Aneurysm, and showed various organs from the patient. He pointed out that the aneurysm was situated near the bifurcation of the aorta, and that the liver and kidneys were cystic. Dr. Lorrain Smith and the President spoke as to the nature of the cysts.—Mr. Robert Campbell showed (1) the Appendix Vermiformis which he had removed from a young man who suffered from relapsing appendicitis, and (2) a large Lipoma which he had removed from the palm of the hand of a boy. He called attention to the fact that lipomata of the palm were rare.

SOUTHERN BRANCH: WINCHESTER DISTRICT.

The autumn meeting of this District was held at St. Patrick's Hall, Winchester, on November 3rd. Dr. Bevan, of Alton (President) took the chair, and there was a good attendance of members.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following gentlemen, who had been duly recommended in accordance with the rules of the Branch, were elected members: Dr. A. E. Price, Winchester; Dr. E. D. Ritchie, Chandler's Ford; and Lieutenant-Colonel Tidbury, Royal Army Medical Corps.

The Certification of the Insane.—A paper on this subject, contributed by Mr. J. F. Briscoe, of Westbrooke House, Alton (who was unfortunately unable to be present), was read by Dr. Fuller England. The author contrasted the differences in the view taken of insanity by society and lawyers with that taken by medical men. The two former only recognised it when it interfered with the laws of Society, while the medical man was concerned with any abnormal changes of self, distinguishing those less important aberrations where the timely administration of such remedies as castor oil and Epsom salts would bring about a balance of affairs from those more serious breakdowns dependent on changes in the nervous system. He considered in detail the plan of treatment to be adopted to effect a cure. He particularly dwelt on the necessity of more being done for the many insane drinkers who stood on the borderland of insanity. He expressed regret that there was no definite pathology of the nervous system to account for mental aberration. He directed the notice of members to the very interesting theories contained in a paper recently published in the October issue of the *Journal of Mental Science* by Dr. Van Giesen, of New York. He advised reference to *Archibald's Lunacy* for those who desired to know every detail in the certifying of the insane, and impressed on the general practitioner the necessity of great care in correctly ascertaining facts, and the importance of accuracy in recording these facts in their certifications. As a general rule he disapproved of the single care of lunatics, believing that they were better off in well-ordered asylums, and that when associated more patients recovered. Warm thanks were voted to Mr. Briscoe, and much regret was expressed at his absence.—A short discussion followed, and, on the motion of Mr. Langdon, the Committee was empowered to prepare and present a memorial to the proper authorities urging them to make arrangements to enable the Inebriate Act, 1898, to be carried out by magistrates.

Cases.—Dr. Bevan mentioned a case where persistent vomiting of two years' standing had been cured by stomach tube feeding. He also narrated two cases of colitis which had offered difficulties in diagnosis to himself and others, and inquired whether members had found that hæmorrhage was a frequent symptom in ulcerative colitis. A discussion followed.

Hypnotism.—Dr. Wingfield read extracts from a very able and interesting thesis on hypnotism. He had experimented on between four and five hundred subjects in this country, and had seen a larger number of experiments in France. The French were less interesting than the English cases, as they so readily passed into the deep stage. He was able to produce hypnosis in 79 per cent. of the persons he had experimented on. He described the method he employed to induce hypnosis and the phenomena exhibited during that state and the order in which they occurred. He mentioned examples of suggestions acted on. He stated that a suggestion not to do a thing or that the subject could not do something named was more readily acted on than a suggestion to perform some act. He mentioned how he had produced local anæsthesia, and also some rather startling effects produced by "passes."—A discussion followed, and it was asked whether hypnosis might not be applied to fraudulent purposes, and whether it was suitable to medical treatment. In reply Dr. Wingfield said it was not easy to get a suggestion acted on of which the subject did not approve. He did not encourage its use in medical treatment. He had cured a person of a very bad impediment of speech by suggesting that he should not stammer.

BRITISH GUIANA BRANCH.

The annual meeting of this Branch was held at the Public Hospital, Georgetown, on October 10th, Dr. Godfrey, President, in the chair, and eleven members attended.

Confirmation of Minutes. The minutes of last meeting were read and confirmed.

Accounts.—Drs. W. S. Barnes and E. M. Knott were appointed to audit the accounts. A statement of accounts was laid before the meeting, which showed a balance of 87 dollars 6 cents to the credit of the Branch.

Election of Officers.—The following were elected officers for the ensuing year: *President:* Dr. F. H. Edmonds. *Vice-Presidents:* Drs. L. J. Veendam and W. S. Barnes. *Members of Council:* Drs. Gewand, Ozzard, Gomes, and Kennedy. *Honorary Secretary and Treasurer:* J. F. S. Fowler.

Paper.—Dr. A. T. Ozzard then read a paper on Some of the Common Skin Affections of the Colony, which elicited discussion from most of the members present.

The Malaria Commission.—The President then referred to Dr. C. W. Daniels's appointment on the Commission for Malaria, congratulating the Branch on the fact that one of its members should have been selected, and wished him (Dr. Daniels) every success.

Dinner to Dr. Daniels.—In the evening the Branch entertained Dr. Daniels at dinner in the Mess-room of the Public Hospital, Georgetown, prior to his departure.

SPECIAL CORRESPONDENCE.

ROME.

The Health of the Pope.—Professor Koch and Malaria.—A Course of Hygiene for Engineers in Italy.

Notwithstanding the somewhat alarming rumours which appeared some time ago as to the health of Leo XIII, I am happy to be able to state on the authority of Professor Lapponi, the Pope's physician, that he enjoys excellent health at the present time. Professor Lapponi has told me that the only foundation for the rumours was a slight gastro-enteric catarrh from which the Pope suffered on one or two occasions during the heat of the summer months. On October 14th I was fortunate enough to be present at the solemn audience given by His Holiness to the English pilgrims, and as I had the honour of being presented to the Holy Father and of standing quite close to him for more than half an hour, I had an excellent opportunity of observing his physical condition. He was carried on a chair into the Sala Clementina, where the audience was held, and after having addressed the pilgrims for about twenty minutes in a loud and clear voice and with wonderful animation he received the pilgrims and others individually to the number of about 200 persons in all. The whole ceremony occupied about an hour, and the Pope did not exhibit the least signs of fatigue at the end. I was most struck by the clearness of the Pope's eyes and their wonderfully keen expression, which is extraordinary in a man of 89 years of age, and of such apparently feeble and emaciated physique. This condition is possibly accounted for by the absence of the arcus senilis. The Holy Father's face, which generally is almost waxen, had more colour in it and looked more healthy than I have ever seen it, that is during the last five years. Since the audience of the English pilgrims Leo XIII has been in splendid health, though he has been, if possible, more occupied than usual. In this connection perhaps a very brief account of the Pope's daily labours at the present time may not be uninteresting. It is a wonderful demonstration for physiologists and psychologists of the physical and mental capabilities of a man of 89 years of feeble but sound physical development. Directly he is dressed the Pope says mass in his private chapel. After having taken a very frugal breakfast, he receives the Cardinal Secretary of State for the transaction of ecclesiastical and political business; then he receives the Cardinal Vicar or the Prefect of one of the Roman congregations; later come the private audiences of the Ambassadors in connection with the Holy See, of prelates, bishops, and private individuals often lasting for several hours. Notwithstanding all this, the Pope finds time to take a walk or drive in the Vatican Gardens, and even to devote a portion of his very busy day—a day which often must be troubled with great cares—to the composition of Latin verses—his favourite relaxation—in which he has few if any equals among the scholars of this century.

A Rome correspondent of the *Corriere Sanitario* has sent the following statement to that journal in reference to Professor Koch's opinion as to the cause of malaria:

> According to the illustrious Berlin bacteriologist, the malarial agent is neither a bacillus nor a microbe, but a virus which mosquitos belonging to a particular species produce and inoculate. Such virus is for these mosquitos a natural and vital secretion, but is poisonous to the individuals inoculated with it. The insects which secrete the virus find the environment most favourable for them to live in, to develop, and to spread in those places that are called malarial, and in those telluric, climatic, atmospheric, etc., conditions which characterise the malarial centres. The air, then, in malaria, cannot have, so to speak, a greater or a more special effect than it has in many other diseases; and we must even change the name of the disease, which responds to an absolutely erroneous concept, and up till to-day universally accepted in the scientific world and in public opinion ... Professor Koch will continue his studies and experiments, which up to now have had such a happy result.

Now, I very much doubt whether Professor Koch has made such a statement, because when I asked him, just before he left Rome, if he would be kind enough to give me some information as to his studies in Rome he declined to do so, in a very gracious manner, on the ground that he was obliged to report the results of his own and his assistants' investigations first of all to the German Government, which had entrusted him with the duty, and because he told me that he thinks very highly of Surgeon-Major Ross's investigations in reference to Manson's mosquito theory.

A royal decree has lately been issued by the Minister of the Interior establishing a course of lectures in hygiene for engineering students in Italy. The lectures are to be given by the Professors of Hygiene in the Italian universities. The great importance of this decree becomes evident when it is remembered that the studies and the practice of an engineer in Italy include not only all those of an English engineer, but also those of an English architect.

PARIS.

A New Clinic in the Hôpital Saint Antoine.—Wine Drinking in La Vendée.—The Heating of Cabs.—General News.

M. Hayem's new clinic at the Hôpital Saint Antoine was opened on November 14th. M. Brouardel, Dean of the Paris Medical Faculty, and a number of distinguished medical men and professors were present. M. Hayem's wards are in a handsome pavilion. In one of the gardens surrounding this pavilion a building has been constructed annexed to the wards. This building contains a large lecture room, examination rooms, a chemical laboratory, and a laboratory for pathological anatomy and bacteriology. There is no luxury, but there is air and light everywhere, and scrupulous cleanliness. The lecture room communicates with the wards by means of galleries. When necessary the patients are moved into the lecture room. The lecture room can also be transformed into a *chambre noire*, where demonstrations can be given of microscopical preparations by the projection lantern; radiographic demonstrations of the viscera can also be given. M. Hayem himself supplied the plans for this clinic.

Dr. Terrien has recently stated that the inhabitants of La Vendée drink on an average four to eight litres of wine a day. They are rarely in a condition of alcoholism and quite exceptionally have delirium tremens. Dr. Terrien believes that this immunity is due to the fact that white wine made from the grape grown in the district is almost exclusively drunk in La Vendée. The few sufferers from delirium tremens whom he met with had been in the habit of drinking bad red wine.

M. Blanc, Police Prefect, has directed that all cabs and carriages for hire ticketed "chauffée" (warmed) are to be carefully overlooked. Policemen are instructed to visit the cabs on the ranks and ascertain that the heating apparatus satisfies the conditions exacted by the Police Regulation of 1897. Heated coal and bricks are prohibited unless the apparatus enclosing them are so constructed that all gas escaping from them is conveyed into the air.

The Turin University has invited the Paris Students' Association to send delegates to the university festivals. M. Paul Tissier, a hospital house surgeon and formerly President of the Association, and M. Marcombe, the present President, have been chosen to represent the Students' Association.

Drs. Boileux and La Jarrige, who were imprisoned some time ago for professional misconduct, have been set at liberty. Dr. La Jarrige suffers from heart disease and Dr. Boileux, who is also in bad health, is reported to have attempted suicide twice.

SYDNEY.

Proposed Medical Bill.—Midwifery Nurses Bill.—Dr. Rennie.—Epidemic Disease.

The Government has, through its representative in the Upper House, again introduced a Bill to Regulate the Practice of Medicine and Surgery, and other matters con-

nected therewith. It is a very short measure of 5 clauses with 3 subsections, the chief provisions being: (1) to make it a penal offence, punishable by either fine or imprisonment, for anyone falsely to assume the name of physician, doctor, or surgeon, and (2) to compel any person who advertises that he treats disease to state his full christian and surname in such advertisement, and also to place and maintain the said names on any house referred to in the said advertisement. No power is given to remove from the *Register* the names of those who have been struck off from the roll of their Colleges for unprofessional conduct; still, the power to prevent unqualified persons, who abound here, from styling themselves "doctors" will be a great gain, and the second provision will prevent advertising businesses from being carried on under fictitious names or in the names of those long since dead, for the Bill provides that "the burden of proving that he is the person whose name is stated in the advertisement or notification shall lie on the person charged." We are, however, so accustomed to an "annual" Medical Bill which never reaches maturity that we are by no means assured that this one will ever reach the statute book.

Dr. James Graham, M.L.A., has introduced into the Legislative Assembly, and passed through all its stages in that House, an Act to Promote the Better Training of Women as Midwifery Nurses, and for their Registration as Such. A similar Act was introduced two or three years ago, and afterwards dropped, chiefly on account of determined opposition on the part of the medical profession. Although a clause expressly states that women so registered as midwives under this Act shall not use any designation implying that they are recognised as licentiates or practitioners in medicine or surgery, or that they are qualified to grant medical certificates or certificates of death, still no penalty is imposed in the event of their infringing this clause, and it is felt by some that by conferring the Government stamp of registration on midwifery nurses an inferior class of practitioners will be brought into existence, to compete with an already overcrowded medical profession.

Dr. G. E. Rennie, late Honorary Secretary of the New South Wales Branch, has left Sydney for London, where he intends to reside for some years with the view of studying neurology. Dr. Rennie has practised in Sydney for about ten years, and during a considerable part of that time was Government pathologist. Lately he has held the positions of Deputy Coroner for Sydney, Honorary Physician and Pathologist to the Prince Alfred Hospital, Examiner in Pathology to the University of Sydney, Chairman of the Medical Section of the Royal Society of New South Wales, and Honorary Secretary of the New South Wales Branch of the British Medical Association. Dr. Rennie was, on the eve of his departure, presented with a substantial purse of sovereigns and an illuminated address by some of the members of the Branch and others, in recognition of his valuable services. The resident staffs of the Sydney and the Prince Alfred Hospitals (who are graduates of the Sydney University) and some of the fifth year's students in medicine also presented him with an address, in appreciation of his ability as a teacher. The New South Wales Branch has nominated him as one of its representatives on the General Council.

Widespread epidemics of measles, scarlet fever, and influenza have been raging in these Colonies for some months, which are now being followed by German measles and whooping-cough.

PHILADELPHIA.

Typhoid Fever and the Returning Soldiers.—The Medical, Dental, Veterinary, and Pharmaceutical Schools of Philadelphia.

At the present writing the feeling uppermost in the minds of our people is, that while the fighting end of the army acquitted itself nobly in the Cuban war, the housekeeping or business end of the army made a "bad list" of the work confided to it. The widespread outbreak of typhoid in the camps of instruction as well as at the front, and the bringing home of ship and train loads of fever-stricken soldiers just when the war was thought to be over, has moved our people deeply, and roused in them the spirit of investigation. They have tasted of the fruits of nepotistic government, and for the present they are railing against all management of the armies and camps, be that management good or bad. Improvement in the sanitary condition of the remaining camps, and of the soldiers who have been brought home to the large organised hospitals, has brought soberer minds, and a disposition to suspend judgment until all the facts are before them. Within the past fortnight the army hospital ship *Relief*, patterned after the *Solace* (the first ambulance ship ever put in commission), has brought to Philadelphia two loads of sick and wounded soldiers. Within the same period special trains have been sent to the camps by the different Philadelphia hospitals (two trains going over seven hundred miles to stricken camps) to bring back the sick. There are now about 1,150 in the hospitals. Most of the unfortunates were natives of this city, and naturally enough local sentiment was wrought to a high pitch, the more so as some pretty hard stories of starvation and medical neglect were told at first by some of the victims. Close questioning showed, however, that much of the high colour in these assertions was the product of fevered imaginations. The patients taken from the hospital ship and trains were distributed mainly to the Medico-Chirurgical, the University, the Jefferson, the Presbyterian, the Episcopalian, the Hahnemann, and the Polyclinic hospitals, and thus far the mortality has been very low. A careful statistical estimate up to September 1st furnished by the *Chicago Tribune* discovers that 350 men were killed in battle or died of wounds received, while at least 1,284 have died of disease, more than half of which deaths were due to typhoid. That a certain percentage of disease is the inevitable accompaniment of life in every large camp despite the most rigorous sanitation, is a pretty generally accepted fact; but so far does this—I had almost said normal—proportion seem to have been exceeded in the present war that the great mass of the plain American people are rising to ask why, in this day and generation, when we so boast our prowess against all germ diseases. So plainly has this been a movement of the whole people that Mr. McKinley finally announced the appointment of a commission made up of business, military, and medical men from all parts of the country, whose duty it shall be to weigh all the evidence, and place the blame where it belongs; albeit the conviction is daily growing that only a congressionally organised Committee will have power to compel all necessary testimony.

With the return of 4,223 students to their college work in medicine and the allied sciences, Philadelphia resumes her activity as a medical centre. Of this number, 2,404 are medical, 1,221 are dental, 550 are pharmaceutical, and 48 are veterinary students; 150 of the medical students are females and matriculates in the Woman's Medical College, which was founded in 1850, and was the first college established for the education of women in medicine. Another 150 of these medical students are registered at the Philadelphia Polyclinic and College for Graduates in Medicine founded in 1883, and drawing on the Philadelphia profession for its teaching corps of 58 professors, 42 instructors, and 60 clinical assistants. The rest of the 2,404 students are divided between the university, which proudly dates back to 1740 as a school and to 1701 as a medical university (and that's pretty old for this young country); the Jefferson Medical College, now 75 years of age, and cherishing the achievements of Gross, Pancoast, and Da Costa; the Hahnemann Medical College, now in its fifty-second year; and the Medico-Chirurgical College, which, though conceived in 1848 and organised in 1867, is in reality a product of the last two decades, and according to Dr. Henry in the *Standard History of Medicine*, "in the rapidity and vigour of its growth probably without a parallel in the history of medical schools." With the exception of the Hahnemann, all of these colleges are represented in the Association of American Medical Colleges—a society given up solely to the advancement and elevation of the standard of American medical education. Candidates for the doctorate in all of these schools must be 21 years of age and have attended four full courses of instruction in four separate years. However, to be entitled to practise medicine in the Commonwealth of Pennsylvania, the candidate must afterwards pass the State examination in medicine. According to a recent law of the State of Pennsylvania, all applicants ort his examination

must have passed a preliminary examination on arithmetic through cube root, grammar through analysis, orthography and English composition, geography (including the elements of physical geography), and American history, with especial attention to the history of Pennsylvania. The medical examination conducted by the State to prove the efficiency of candidates is open to the graduates of any and all reputable medical colleges. The above-mentioned 1,221 dental students are matriculates of the Pennsylvania Dental College, the Philadelphia Dental College, and the Dental Department of the University of Pennsylvania, all of which require three years of study. All of the 550 pharmaceutical students are included in the *Register* of the Philadelphia College of Pharmacy, an institution born in 1821 in Carpenter's Hall, within whose historic walls assembled the first Continental Congress. Since its inception this College has numbered among its faculty such men as George B. Wood, Franklin Bache, and John M. Maisch, all, at one time or another, editors of the *United States Dispensatory*, and Edward Parrish, author of the classic *Theory and Practice of Pharmacy*. The 48 veterinary students are all to be found at the Veterinary Department of the University of Pennsylvania, the only school of its kind in the metropolis. With our fast increasing population and our corresponding rapid multiplication and growth of medical colleges, there is crying need of a standardisation of medical requirements by a properly-constituted National Medical Council, the meeting of whose requirements will entitle the candidate to practise medicine in all the States and territories under the jurisdiction of the United States of America.

The late Mr. Maurice Beddington, J.P., has by his will bequeathed £500 to the London Hospital and £100 to the Croydon General Hospital.

Bicycling for Nurses.—At the recent annual meeting of the Doncaster Infirmary and Dispensary the question of encouraging the use of bicycles by nurses was considered in a very sympathetic spirit. Dr. Marshall Hill referred to the large use now made of bicycles by medical men, and said that he was convinced that one or two would be very useful to the nurses of the institution, not only for taking exercise, but for the district nurses going on their rounds. Mr. W. Clark, who warmly supported the suggestion, stated that the Lady Superintendent was in favour of cycling in moderation for the nurses. He suggested that a special fund should be started. This was immediately responded to by Dr. Marshall Hill, and Mr. Morris promised to present one bicycle at his own cost.

On November 9th the British Medical Temperance Association held a "breakfast meeting" at the Cannon Street Hotel, London, which was attended by seventy students from the various London hospitals. The President of the Association (Dr. Sims Woodhead) spoke of the important influence his hearers would be able to exert in their future practice if they were total abstainers. Many years ago it was the fashion to bleed and salivate, and when this was found to be injurious some of the older men said it was due to a change in the type of disease. He had no doubt that hereafter the same excuse would be made to account for the disuse of alcohol. Dr. Louise Appel urged those present to join the Association, no pledge being required nor subscription from students, but simply the practice of total abstinence. Eighteen students joined.

Nursing in Cottage Homes.—It was quite fitting that one of the subjects discussed by the National Union of Women Workers at Norwich should be the nursing of the villagers. The *Norfolk News* of October 29th has a good report of the conference, which was opened by a paper from Lady Laura Ridding. In considering the remarks made by the various speakers, we note that at present all schemes for cottage nursing seem to be defective in organisation; it is of first importance that the cottage nurse should reside in the sphere of her work, and that she should be part of a system of complete nursing. The cottage nurse is only to furnish elementary aid, and act as assistant to the skilled nurse when acute illness calls for such nursing in the village or district: hence, to make the scheme complete, the cottage nurse should be linked to a system which could furnish medical and nursing aid as required.

CORRESPONDENCE.

SYPHILIS IN THE ARMY.

Sir,—In my paper on Syphilis among British Troops, Portugal 1812, India 1896,[1] to which you refer in the British Medical Journal of November 5th, I have pointed out:

1. That Fergusson's statement of the gradual self-extinction of syphilis in the Peninsula—a statement to be found in every textbook of syphilis—is a fable, and that therefore all theories built upon it are worthless.

2. That there exists a striking resemblance between the state of affairs among British troops in Portugal (1812), as described by Fergusson, and the state of affairs among British troops in India (1896) as described by the official report (1897).

3. That Fergusson himself—a fact generally overlooked—detected later on the cause of his deplorable experience in Portugal, namely, injudicious treatment, and with commendable candour published this fact in 1843.

4. That a similar cause might be operative in India, the word "treatment" being taken in its widest sense, that is, including preventive and hygienic measures.

5. That an inquiry into the causation of "the scandalous state of affairs" (*vide* Report, p. 30) in India would have to pay due attention to this point.

I think Major Macpherson's comparison with enteric fever (in his letter to you, Sir, of November 12th) is to the point. Here too, probably, some hygienic cause is at work, difficult to discover, and, if discovered, perhaps still more difficult to overcome. It seems improbable, that for the present aspect of syphilis in India, the abolition of the Contagious Diseases Acts should *alone* be responsible. The abolition of these Acts may probably account for the numerical increase, the rapid diffusion of the disease, but I think it will hardly explain its extreme malignancy, the equal of which "cannot be found in the hospitals of all Europe." An "exhaustive inquiry into the details of the whole treatment and the hygienic conditions" has to precede and guide civil legislation. Thorough investigation is wanted. Therefore the announcement contained in the Journal of November 12th that the subject for the next Parkes Memorial Prize will be the Prevalence and Prevention of Venereal Diseases in the British and Indian Armies will be read with satisfaction, as indicating a step in the right direction. It is to be hoped that the question of treatment will receive the fullest consideration.—I am, etc.,

London, Nov. 15th. George Ogilvie.

Sir,—In the British Medical Journal of November 12th, Major Macpherson, R.A.M.C., has dealt with some points connected with syphilis in the army, but there is one aspect of the question, and that not the least important, to which he did not refer. When a soldier's system is saturated with syphilis, it is improbable that within a reasonable time, if ever again, he can be relied upon for military duty; therefore it devolves upon the medical service to effect his removal from the army as an invalid. While he remains in the service he eats Government rations, receives Government pay, and cannot perform the duties for which he enlisted. Is it fair, therefore, to the State to retain a man in this incurable condition under treatment in hospital or in and out of hospital for perhaps years?

Society may very naturally urge that it is not properly treated if this soldier is discharged in a state to propagate a virulent disease among the population. With that view I am in full sympathy, but what can be done? It does not, as I have pointed out, pay the State to retain the man, and even if it was decided to do so, it would be impossible, for the accommodation in military hospitals barely suffices for ordinary cases, and there is no room for incurables. Here, perhaps, would come in with advantage those sanatoria for soldiers to which reference has recently been made in the press and in Parliament, and in that direction much good could be effected by public and medical action, in which I would beg to suggest that the British Medical Association could with advantage take a part.—I am, etc.,

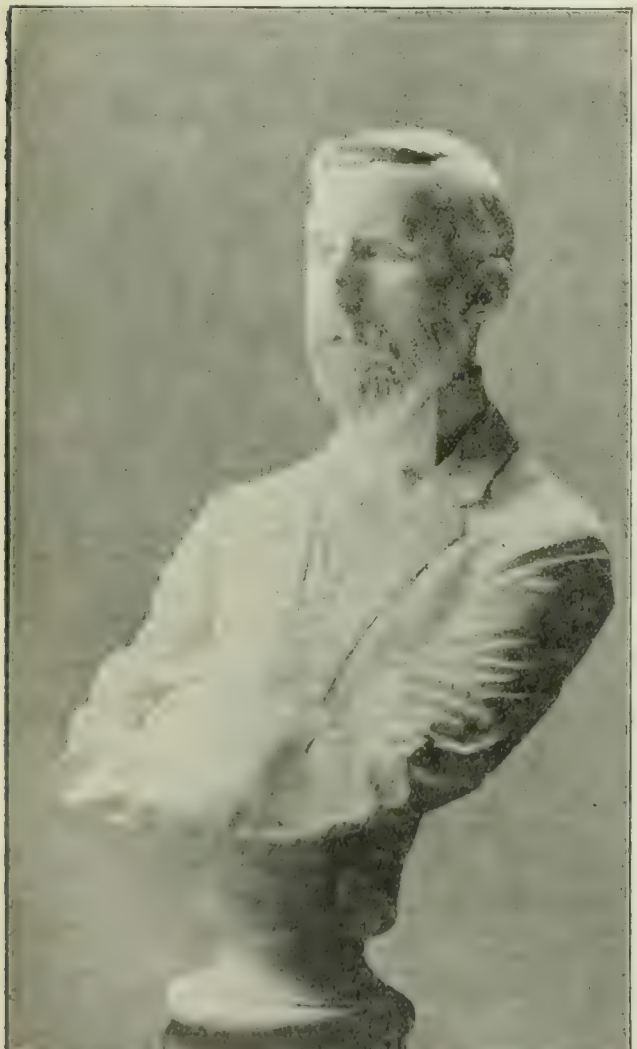
November 13th. An Army Medical Officer.

[1] Syphilis among British Troops, Portugal 1812, India 1896, the *British Journal of Dermatology*, July, 1898.

A NEW AND ORIGINAL METHOD OF MAKING CASTS.

SIR.—I have now received three copies of the BRITISH MEDICAL JOURNAL since the publication of my article on the above subject in the issue of September 3rd. Each of the first two contained a letter disputing the originality of my method of casting. As the third discloses no new claimant, I may perhaps fairly assume that no others propose to appear, and I accordingly proceed to make my defence.

On looking at these two letters, I find that both gentlemen have an entire misconception of what my claim is. Had Mr. Lawson Tait and Dr. Cosgrave honoured my paper with a more careful perusal, they would have seen that I claim novelty and originality not for the material used, but for the method of using it. If my claim to originality rested wholly upon a question of the material used, the original user of plaster-of-paris might almost equally well raise a cry of plagiarism, since I make use of that material as an adjuvant



to my process. May I again state explicitly that my claim rests upon the ground that I apply the melted wax by means of an apparatus which enables me to throw it upon the surface to be cast in the form of a spray? How any person after fairly viewing the matter can regard this process as identical with the application by means of a "flat camel's hair brush," or "a rough painter's brush, a sponge, and some iced water," as described by Mr. Tait, quite passes my comprehension. If he had ever seen the process at work, I am quite sure that one so appreciative of mechanical ingenuinity as Mr. Tait is known to be would not have failed to recognise the immense improvement which the use of the double spray of melted wax and iced water presents over the application with "a rough painter's brush, etc.," as in his method of 1864. In regard to this improvement, I know whereof I speak, for my first work in the use of the melted wax was done precisely as Mr. Tait describes, namely, with the brush, sponge, and iced water, though I never saw or heard of Mr. Tait's published description, and never knew that any casts had been made in this way before.

While cheerfully admitting, then, in the light of Mr. Tait's claim, that the use of the material—melted paraffin—is neither new nor original (which I never claimed), until some better-equipped claimant appears in the field, I shall stoutly maintain that the method of applying it by means of a spray apparatus is both new and original. That the spray is incomparably superior to the method of applying the melted paraffin with a brush cannot fail to be recognised by anyone who has seen the process in use or who will give the matter a moment's thought.

The principal advantages of the spray are:

1. The paraffin falls lightly upon the surface, producing no compression.
2. The object to be cast is not disturbed in the least.
3. The spray is continuous and the process very rapid.
4. It may be pointed in any direction, so that the under surface of an object may be coated just as easily as the upper.
5. The simultaneous application of the two sprays of melted paraffin and iced water produces a sufficiently firm cancellous structure with a rapidity that must be seen to be appreciated.
6. As the paraffin is cooled by passing through the air, much less discomfort is felt by the patient than when it is applied hot with the brush.

Mr. Tait says, "I did all that Professor Peters has done, and more. I took life-sized casts of the living head and bust." This sweeping statement thrusts upon me the unwelcome and humiliating conviction that Mr. Tait did not read my article at all, otherwise he could scarcely have failed to notice in it this sentence, "The living head, for instance, is cast in two sections, etc." Again, how can Mr. Tait possibly know all that I have done? I have seen Mr. Tait a few times, but I am quite certain that Mr. Tait has never seen me. He could not have been at the Edinburgh meeting, or he could scarcely have avoided knowing that during my demonstrations in Dr. Paton's laboratory before the members of the Association, I cast the "living" heads of four of their number. I also cast two other "living" heads in London, and at home in Toronto I have a collection of some eighteen or twenty "portrait busts" made by this process before the year 1892. In making these "portrait busts" I cast the head separately, afterwards "carving in" the eyes, which, of course, are closed during the process of casting. I then cast the clothing of the upper part of the body, and "fit" the two sections together.

I am in no sense a sculptor, and lay no claim to artistic merit, but those who have seen these busts and are capable of judging are good enough to say that in faithfulness to life, and as mere "likenesses," it would be difficult for any sculptor to equal them, though his productions might readily surpass them in artistic and idealistic qualities.

The time required to cast a "living" head by my process is from twenty to thirty minutes, and I surmise that one would require to be very expert indeed with the brush and sponge to do it in as short a time. During the process the subject sits upright in a chair.

In the figure of the portrait bust here shown, for instance, the head was cast separately, and I would draw attention to the fact that the hair, beard, and moustache are "cast" and not modelled. Afterwards the subject sat in a chair with folded arms while the "torso" was being cast. So faithful to detail is the process, that the flower in the button hole is truthfully reproduced, the texture of the cloth, and even the quality of the linen may be readily recognised.

I wish to point out in conclusion that I do not expect or wish that this process is in any degree likely to replace sculpture, but both Mr. Tait and Dr. Cosgrave laid so much stress upon the fact that they had cast "living heads and busts," that to show that I had done as much or "more" seemed

essential to the establishment of the adaptability of my "new and original" process to the casting of objects which I know from my own experience could not be cast by the aid of "a rough painter's brush, a sponge, and some iced water."

With Mr. Tait's statement that "a far better way of cutting the mould than by laying in threads is my plan of using a fine saw of watch-spring steel" I entirely disagree.—I am, etc.,

GEO. A. PETERS.

Toronto, Oct. 12th.

THE PLEA OF INSANITY.

SIR,—Will you allow me to point out that your leading article upon the trial of J. A. Campbell casts upon the administration of the criminal law in England a slur which is undeserved? Your conclusion is that "to attain a righteous decision in such cases as Dr. Campbell's, a change in judicial procedure is needed, so that opportunity may be afforded for scientific testing of responsibility, and for an exhaustive examination of the mental state of the accused and his recent mental history by impartial and skilled medical men, who could say definitely whether disease existed or not. Then proper arrangements should be made for the submission of their evidence to the courts." It appears from your report of the trial that this was what actually happened. Opportunity was afforded for all that you say should be done to be done. Proper arrangements were made for submission of their evidence to the court.

You find no fault with the verdict, but you say what is no doubt true, that if the evidence had not been so overwhelming, and if the defending counsel had been less skilful, the verdict might have been different. Was there ever a trial of which this could not be said?

Your suggestion is that the examination of the prisoner should be made and the evidence of his mental state given by experts chosen, not by the prisoner or his friends, but by the prosecutor or the court. Do you think that experts chosen by the prosecutor or the court would be more favourable to the prisoner than experts chosen by himself? Do you think they would be less open to suspicion of bias in favour of the prosecution? Do you think that any more eminent body of experts could be got together by the prosecutor or the court than Dr. Clouston, Sir John Batty Tuke, Dr. Yellowlees, and Dr. Conolly Norman?

No, Sir, *ne ultra crepidam*. Do not urge medical men to dabble their amateur hands in legal procedure. Let us content ourselves with watching with vigilance to see whether justice is done or no; and when, as in this case, we are satisfied that justice is done, let us not clamour for an alteration in legal procedure which, on our own showing, cannot mend matters, and which, for aught we know, may make them very much worse.—I am, etc.,

Catford, Nov. 12th. CHAS. MERCIER.

INFECTIOUS DISEASES AND PREPARATORY SCHOOLS.

SIR,—I have hesitated to trouble you any further now that the object of my letter has been attained, but Dr. Hay Reynolds's remarks require an answer. He says the boy had no spots on September 15th. I have three witnesses to prove that he owned at once to having had some spots for several days when he arrived here on the 16th. In consequence of this admission he was stripped and was found to have a number of chicken-pox spots, many of which were so far advanced that the heads had been rubbed off. This is undeniable, and I am sure Dr. Reynolds is mistaken on that point.

I have, perhaps, better reason to know the "small preparatory schoolboy," and I can assure Dr. Reynolds that the word of such a boy is not necessarily "quite unreliable." Moreover, it would be difficult for boys who had been made to undress for the doctor one day to forget the fact by the next, and they had no sort of motive for speaking anything but the truth when asked to describe what had passed when they saw their doctor.

Dr. Reynolds then makes a counter-charge against me, and he gives an inaccurate and incomplete quotation from my explanatory letter to him. I fully acknowledge that I made a mistake, but those who were concerned were fully satisfied with my explanation of the circumstances, acknowledging that no real blame attached to the school: and I am glad now that I acted as I did, for otherwise I should have caused all the parents a great deal of unnecessary inconvenience and anxiety about their holiday arrangements at the last moment. I had no reason whatever to suspect chicken-pox, as all the boys were perfectly well, and half the school had gone home; but this particular boy had returned a fortnight before from his examination at a public school, and must have contracted the illness in some public conveyance. He had no *malaise* or rise of temperature; he had been carefully stripped and overhauled by the doctor two days before, and he appeared to be in excellent health. His illness was not recognised as chicken-pox at home till more than a fortnight afterwards, when he was quite well again, and I did not hear till then what had been the matter. Those who know me will acknowledge that I am most scrupulous in the precautions I take to prevent any spread of infection to others from my boys at all times, for I feel strongly the truth of Dr. Dukes's words in his letter.—I am, etc.,

November 9th. A PREPARATORY SCHOOLMASTER.

IRISH DISPENSARY MEDICAL OFFICERS.

SIR,—I am glad to see by the BRITISH MEDICAL JOURNAL of October 29th that you are again drawing attention to the intolerable grievances of Irish dispensary doctors.

There is only one remedy for the present wretched condition of things, and that is a judicious boycott of Poor-law medical appointments until our grievances are removed. Much ink has been shed in writing letters to the Press; many statistical tables have been compiled to convince the indifferent or sometimes hostile public; great eloquence has been wasted in addresses to public bodies; many foot-tons of muscular energy have been expended by deputations waiting on Chief Secretaries; and with what result? The reissue of an antiquated circular which nobody minded by the Local Government Board. Was there ever such a ridiculous mouse born after such violent throes? Was there ever such a ludicrous ending to an earnest agitation?

The cause of this contemptuous treatment is not far to seek—in fact, it has been officially stated over and over again. It is that for every vacancy there are half a dozen candidates. I have known even a district watched and the committee rigged and nursed in favour of one candidate for years before the vacancy occurred. Pleasant for the poor incumbent in failing health!

The remedy, then, is plain and on the surface. Let us be united; let no young medical man, or old either, canvass for or accept any appointment to a district until the position all round is improved; a dozen or two derelict dispensary districts would be the only argument which would penetrate the mind of an indifferent public and a hostile, hide-bound bureaucracy. Let our teachers and leaders at the medical centres continue to point out (as I am happy to say some of them have been doing, witness the powerful addresses of Mr. McArdle and Mr. Schwan recently in Dublin) to their pupils the degradation of accepting appointments on the present conditions. If this be done I can safely prophesy that the grievances of dispensary doctors, like those of the Army Medical Service, will soon be things that have been.

I do not mean to enumerate our grievances, but as a dispensary doctor of ten years' standing in what is generally considered a good district, and as one who has had previous experience, I say that the life is a daily round of petty worries, that it means professional and intellectual suicide, that it is the grave of ambition, and all for a miserable pittance.

During the last twenty-five years even in this country great changes have taken place all round us; the status of the agricultural labourer even has been raised; our wants physically, intellectually, and socially have increased; still our pay and position have remained the same, or have even diminished with a disappearing population.

My final advice, then, to any would-be candidate for a dispensary appointment is—avoid it sternly until our grievances are redressed all round.—I am, etc.,

November 3rd. A VICTIM IN THE TOILS.

WHITE BREAD OR BROWN BREAD?

SIR,—I do not think it was made sufficiently clear in the article in the *St. Bartholomew's Hospital Reports* to which you draw attention in the BRITISH MEDICAL JOURNAL of November 5th, p. 1452, that the brown bread experimented upon was the ordinary article of commerce sold under that name, which should not be confounded with genuine whole wheat meal bread properly so called.

The ordinary brown bread is composed, as most people I suppose know, mainly of white dough, to which more or less rough and dark material has been added, not a desirable article of diet for most persons one would think, and as little likely to earn a good character in the human interior as in the laboratory.

On the other hand, whole wheat meal bread if it can be obtained is an entirely different thing, in the stomach of the consumer at all events, however it may behave in the hands of the analytical chemist. Unfortunately the fondness of the purveyor for the ordinary white dough, an affection founded on reasons perfectly intelligible from his point of view, is almost insuperable, and in very few places only can the genuine alternative be obtained. I have long been familiar with the loaf made from the whole of the grain, ground by means of steel machinery to the necessary degree of fineness, containing no rough particles, the crumbled morsel going readily through what is known as an eighteen mesh sieve. The presence of any spicula or portions which were unable to do this would at once convict the baker of dishonesty. I have subjected this kind of bread to severe practical tests as a sustaining agent in adults performing considerable muscular and athletic work in this country, as well as in climbers in Switzerland, and the results, when compared with other kinds of bread in common use, have been surprising. I have tested its value as a chief article of diet in promoting growth and nutrition in children in institutions as well as in private families with equal success. Not only has it seemed to be more easy of digestion in itself, but also a great promoter of assimilation all round. I am not able to claim for it, however, any influence as a laxative agent. Of course, it does not, like the over-fermented starch, act as so much glue or gum in the interior, but that is all, and I never find that it has any tendency to promote intestinal irritation, so often associated with the acrid productions of the white variety.

I have ascertained from my friend Dr. Lauder Brunton that the specimens employed in connection with the investigation referred to were what is known as ordinary brown bread, and I intend to suggest to him that when his experimental fancies again wander in this direction he shall be provided with genuine samples of the staff of life.—I am, etc.,

Weybridge, Nov. 15th. GEORGE J. SEALY.

THE ETIOLOGY OF ENDEMIC GOITRE.

SIR,—The question which has been raised in Leicester as to the possibility of the waters from the upper reaches of the Derwent, the proposed new source of supply, having the power of producing goitre will not have been raised in vain if it directs more attention to the elucidation of the etiology of this condition in our own country. My name having been brought forward in this connection, may I be allowed through the medium of the BRITISH MEDICAL JOURNAL to say that I came to the conclusion in 1893 that the mass of evidence pointed rather to a living (micro-organismal) causation than to a chemical one, and the chief grounds on which this conclusion was based are as follows:

1. Goitre is undoubtedly caused by a something introduced in the drinking water. This is a point on which all authorities are agreed.

2. It is reasonable to suppose, arguing on analogy, that this same constant effect (a change in the thyroid) is produced by the same constant cause.

3. On no other single hypothesis than the one I propound can the widespread distribution of goitre be accounted for, occurring as it does under such varying conditions of geological formation, temperature, altitude, atmosphere, condition of soil as to dampness, dryness, and so on.

4. The fact that boiling water known to be goitrigenous for drinking purposes has an effect, marked in some of my cases, in inhibiting the further increase in the size of the swelling. I have previously drawn attention to this interesting point.[1]

5. The method of water supply in many goitrous localities is by means of shallow wells, and these are notoriously suitable soils for the development of micro-organisms.

In addition to this exciting cause, there can be no doubt that in goitre, as in other infective diseases, predisposing conditions come in and play a by no means unimportant part. The chief conditions I have found predisposing to an attack of goitre in this country are: Heredity, occupation, certain debilitated conditions, and, to some extent, sex and age.

Since making these observations—which I embodied in a monograph written in 1895-96[2]—I have had the privilege of reading the paper of Lustig and Carle on the Etiology of Endemic Goitre, and it appears that they support the micro-organismal theory.

I have been informed that investigations, bacteriological and chemical, are being conducted with the object of proving whether or not the waters I have mentioned from a goitrous locality have the character of producing goitre. I am interested to know how this can be done when the actual cause is still a something unknown. Would it not be more logical to try to determine what this cause is before deciding as to its presence or absence in a given water?

In conclusion, I would like to say that it is wonderful with what regularity some of the older theories are brought up over and over again after they are supposed to have been satisfactorily disposed of, and in this connection I was interested to learn from a letter appearing in the lay press that the "oaten cake" theory put forward by Dr. Good in the early part of this century had again been resuscitated and enlarged upon, to bloom out once more with all the semblance of youth.—I am, etc.,

Cateliff, Bakewell, Nov. 12th. THOMAS FENTEM, M.D.

ADDRESSES TO MEDICAL STUDENTS.

SIR,—Dr. Poole's letter in reply to mine does not elucidate matters. He still holds by his contention that what is good is priceless, and I hold by mine, that "the good," like "the glory" that Tommy Atkins is represented as fighting for, is a philosophical abstraction. In spite of Dr. Poole's assertion, I think that Tommy does fight for 4d. a day, and that by holding "glory" or any other abstraction before his eyes, you cannot get him to fight for 3d. And although doctors do some disinterested work, they do not excel in that respect the ordinary educated civilian who is not a doctor. Why be constantly drawing a distinction between the medical and other professions? Is it not a false doctrine that would put our profession on the pinnacle of the human temple—with the lawyers, musicians, authors, etc., below?

Oh, but the doctor saves life. Granted; but so does the lawyer, and the musician, and the author; the chimney sweep too for the matter of that. No, I am not joking, only exploding a narrow, self-gratulatory philosophy. Ian Maclaren and others have done a lot of harm in praising one profession to the exclusion of others. If we really lived on "high ethics," we should not stand it. I am afraid we live much nearer the ground, only the eyes of most of us are blinded, so that we think we are more angelic than we are.—I am, etc.

Sutton, Nov. 5th. G. S. WALTON.

INDIAN PLAGUE COMMISSION.

SIR,—It is perhaps superfluous to remark that plague has never been known to originate in any locality where ordinary cleanliness has been observed, and overcrowding in human habitations prohibited.

With regard to preventive measures, past experience justifies the belief that plague in the future will be as little known as typhus at the present time, if similar sanitary precautions to those adopted by our Poor-law administration be carried out in reference to it. Typhus fever has been practically "stamped out" by hygiene and sanitary science, and the same happy results will follow in the case of plague by the strict application of similar principles.

Those of your readers interested in sanitation may remember

[1] BRITISH MEDICAL JOURNAL, 1897, vol. i, p. 945.
[2] Graduation Thesis, 1896, Edinburgh.

the struggle of the Indian Government to induce the Continental Powers to abolish quarantine, and the ultimate success of their efforts. What, in the circumstances, therefore, can be urged in their excuse, except panic, for their having had recourse to a system which stood condemned, and, as a matter of fact, was an utter impossibility to accomplish?

The result of the retrograde steps taken has, unfortunately, been the financial wrecking of the principal municipalities, which must prove a warning to all who put faith in quarantine. Had even a moiety of the funds squandered been properly laid out in the much-needed permanent sanitary improvements of the chief centres of population in the Bombay Presidency, it would be the safest and surest guarantee against epidemic disease in the future.

The Commission can hardly overlook the importance of the sanitary element in the subject, notwithstanding the absence of express reference to the point in their instructions. The sanitary reports in the Bombay Secretariat will clearly indicate the most insanitary localities throughout the Presidency, as well as the recommendations and suggestions made to improve them for several years.—I am, etc.,

Earl's Court Road, W., Nov. 5th. C. W. MacRury.

"THE FOSSA DUODENO JEJUNALIS."

Sir,—I have read in the British Medical Journal of November 5th a most interesting record of a case of recovery after operation for retroperitoneal hernia. Mr. Tubby some weeks ago kindly sent me the notes of the case.

In his description Mr. Tubby regards the case as one of hernia into the fossa duodeno-jejunalis of Treitz, and describes the inferior mesenteric artery as being in front of the sac. It is not the artery but a branch of it, the left colic artery, which, together with the inferior mesenteric vein, lies in the neck of the sac of a left duodenal hernia.

Treitz in his description of this fossa duodeno-jejunalis, as he calls it, is not strictly accurate. The fossa, as pictured and described by him, is in reality an amalgamation of two fossæ. One, best described as inferior duodenal, which, as a rule, does not extend so far outwards as the inferior mesenteric vein; and a second, the fossa of Landzert, or paraduodenal fossa, which is caused by the raising up of a fold as a sort of mesentery by the inferior mesenteric vein, and the left colic artery. In children these two fossæ, and the folds which determine them, are quite clearly and separately defined, but in adults owing to traction, the deposit of fat and other causes, the outlines of them may be rendered rather indistinct and blurred.

The term "duodeno-jejunalis" should not be applied to either of these fossæ separately or to the compound fossa formed by their blending. The jejunum is not in any proximate, or causal, relationship with either of them. There is a fossa above the duodeno-jejunal flexure in the transverse mesocolon to which the term does apply, and for that fossa it should, in future, be reserved.

In the neck of a sac of a left duodenal hernia can, almost invariably, be seen the inferior mesenteric vein, and the left colic artery. This relationship exists even in the very early stages. It is clear, then, that a hernia of this kind develops in a fossa normally bounded by a fold containing these vessels. That fossa is the fossa of Landzert. Into that, and that alone, does a duodenal hernia of this variety develop.

I purpose dealing exhaustively with the very interesting subject of retroperitoneal hernia in the "Arris and Gale" lectures for 1899.

It may be interesting to state that Mr. Tubby's case is the first successful case of left duodenal hernia treated by operation on record. One case of right duodenal hernia, where operation was followed by recovery, is related by Neumann, of Berlin.—I am, etc.,

Leeds, Nov. 5th. B. G. A. Moynihan.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

Sir,—In reply to Dr. Wolstenholme I should like to say that I do not for one moment hold that the N. D. F. S. is perfect in its dealings with medical men—far from it. What I do say is that it has many advantages over clubs (of any kind), and very few of their disadvantages. Amongst others I lay stress on the following:

1. The doctor is a free agent, which he is not under club rules.
2. The doctor is paid for work done only, and takes no risk. Suppose a club (at 4s. a year per member) of 200 members. That means £40 per year for the doctor. That equals 320 visits at 2s. 6d. Now, suppose an epidemic of influenza. The doctor would probably make more than double that number of visits, but only get his £40. Under N.D.F.S. rules he would get £80.
3. The doctor's risks do not increase with the addition of fresh members.
4. The class of work is better. Malingering is practically unknown. The doctor is not imposed on in any way.
5. Surgical work is paid for at a fair rate. Club doctors do a good deal of minor surgery amongst club patients now, but in the majority of cases make next to nothing or a bad debt.

With regard to Dr. Wolstenholme's figures for 1896, I would only point out that the rate of medical pay has been improved and many little extras added to it since then. London, too, is a bad district to take, as cheap club practice is simply appalling there.

In the latest returns of the N. D. F. S., for the past nine months of this year, I find the London district has paid £148 5s. for medical fees, as against £69 12s. 6d. last year. Taking the whole country, the Society has paid this year £3,090 9s., against £2,266 9s. last year. The amount so paid is nearly half as much as that paid to members as sick pay. How many clubs treat their doctors as well as that?

Again, with regard to the amount paid to doctors, I would point out that to my certain knowledge many men belong to one or two clubs as well as to the N.D.F.S., and while drawing sick pay from the Society, get their treatment from the club doctor. Of course, this is unfair to the doctors, but I am afraid the only way to stop it is either to sweep away clubs or make them all pay for work done only. As I say, the scale of payment to medical men under the N.D.F.S. has been improved of late, and there is no reason why it should not be further improved. I think if the Society was recommended more, by medical men, in preference to clubs, it would not be long before we got our 2s. 6d. for every visit, together with the present extras. I know a good many doctors round London who are advising their club patients to join the Society. They all speak highly of it. The Society has shown itself willing to meet the wishes of the profession in the past, as evidenced by the improvements from time to time, and there is every reason to hope for further benefits.

I hope now we shall get some expressions of opinion from others on this matter, and not allow it to begin and end with the personal experiences and feelings of two solitary individuals.—I am, etc.,

Merton Park, Nov. 9th. F. Deas.

WOUND TREATMENT.

Sir,—I have read Mr. Rutherford Morison's article on the above with great interest. For the last three years I have sterilised my instruments and dressings by simply boiling, and where irrigation was necessary have used boiled water. In no case have I applied an antiseptic to a wound which I hoped to unite by first intention. The results have been excellent. It is not always recognised that healing by first intention usually means that the infection of the wound has been so slight that the tissues of the patient have been able to deal successfully with the few bacteria introduced, and not that every bacterium has been excluded. In irrigating with such a solution as 1 in 2,000 hydrarg. perchlor. too much stress is laid upon the one part of antiseptic and too little on the 1,999 parts of water which act mechanically by washing out clots and bacteria *en masse*, a result which can be equally well obtained by the use of boiled water or (to be strictly physiological) normal saline solution.

The cut tissues being undamaged by antiseptics are left better fitted to deal with any stray bacteria lying among them. Halsted has shown that irrigation of fresh wounds with a corrosive sublimate solution as weak as 1 in 10,000 is followed by a distinct necrosis, demonstrable under the microscope. For want of a better method I still try to clean the skin of the patient and operator by removing the fat with ether, and by scrubbing with soap and water and then soaking the skin with an antiseptic. But even here I suspect that the ether and scrubbing are more effective than the antiseptic. The difficulty is to get at the deeper skin layers, as the incision includes the whole thickness of skin. The deeper layers of the surgeon's skin often do contain bacteria without infecting the wound. The test of cutting off a piece of the

surgeon's skin, thereby opening the deeper layers, is hardly a fair one. The surgeon does not usually incise his own skin in the course of an operation.

With Mr. Morison I strongly disbelieve in burying unabsorbable ligatures (euphemistically called permanent), such as silk. They have an unhappy knack of reappearing at intervals of months or years. One of the latest I have seen was a silk ligature from an ovariotomy pedicle, which, after an interval of four years, was working into the bladder. An unabsorbable ligature will keep a sinus discharging almost indefinitely, the sinus only closing with the removal or extrusion of the ligature. An absorbable ligature at the bottom of a sinus always has a chance of disintegrating and coming away with the pus. When it is remembered how, in a patient peppered with shot, the shot are constantly working to the surface, owing largely to the movements of the tissues among which they lie, it is not surprising that the same thing occurs in a patient whom the surgeon has peppered with silk.—I am, etc.,

Plymouth, Nov. 15th. C. HAMILTON WHITEFORD.

THE CLINICAL VALUE OF ENLARGEMENT OF THE SPLEEN.

SIR,—In connection with my short memorandum in the BRITISH MEDICAL JOURNAL of September 24th, on The Clinical Value of Enlargement of the Spleen, the following letter which I have received from Professor Osler, of Baltimore, will be of interest to your readers.—I am, etc.,

Eastwood, Notts, Nov. 14th. ROBERT TURNER, M.D.

[COPY.]

Baltimore, Md.,
October 31st, 1898.

DEAR DOCTOR,—Your memorandum upon The Clinical Value of Enlargement of the Spleen in the BRITISH MEDICAL JOURNAL for September 24th is interesting, particularly in connection with the sentence that "the most cautious decline to say that a spleen is enlarged till they actually feel it." I have for years paid much less attention to percussion than to palpation of the spleen, and the rule, I think, holds fairly well that a spleen, the edge of which you can feel beneath the left costal margin when the patient draws a deep breath, is enlarged.—Very truly yours,

WILLIAM OSLER.

THE CONSCIENTIOUS OBJECTOR.

SIR,—May I suggest that magistrates have some uniform tabulated lists of questions for the above, something like the following for instance:

1. How many, and which authorities, have you read on the subject?
2. How many cases of vaccination have you seen?
3. How many cases of small-pox have you seen?
4. On what ground have you formed your objections?
5. As you are such a conscientious man have you any regard for the feelings of your neighbours, who, on good ground, differ from you in opinion, and have equally strong conscientious objections to their children having small-pox?
6. Do you plead ignorance or obstinacy?

The magistrates may thus possibly be able to satisfy themselves as to the conscience of the objector.—I am, etc.,

W. WOODWARD, M.D.,
Late Public Vaccinator, Worcester District, etc.

Worcester, Nov. 11th.

EARLY FEEDING IN TYPHOID FEVER.

SIR,—There is one observation in Dr. Sidney Phillips's paper on the treatment of typhoid fever,[1] upon which I would ask your permission to say a few words. In speaking of the treatment of heart failure, asthenia, and blood failure, which are in his view, I am glad to observe, responsible for the greater part of the deaths in typhoid fever, Dr. Phillips says: "For all of them one essential is to prevent waste of material by diarrhœa or hæmorrhage or profuse sweats, and to supply as much nourishment as can be digested and absorbed." If Dr. Phillips had left this excellent and all-sufficient rule of treatment without limitation, I should have no criticism to make; but, after reference to my paper published in the BRITISH MEDICAL JOURNAL, January 16th, 1897, he goes on to say: "Remembering unfortunate results which have occurred in some patients who have surreptitiously followed Dr. Barrs's treatment, I think liquid food is the only justifiable mode of nourishment in the active stage of typhoid fever."

[1] BRITISH MEDICAL JOURNAL, November 12th, 1898, p. 1487.

May I point out that if Dr. Phillips had mentioned the results in the cases in which early feeding had been adopted under my own observation and published in my paper, the question would have been put more fairly before your readers?

I certainly do not claim to have invented any "treatment" of typhoid fever, but since Dr. Phillips speaks of "Dr. Barrs's treatment," I would venture to observe that my paper was published in January, 1897, and up to the present time I have not seen published or heard of any of the unfortunate results which Dr. Phillips says have followed its adoption. The results of the "surreptitious" adoption of my treatment neither Dr. Phillips nor myself ought to take any responsibility for. I am still pursuing the method of feeding which I then advocated, and I have reason to believe that others are doing the same; and I am still able to say, as I said in January, 1897, that I have lost no case of typhoid fever in which early feeding with solid food has been adopted.

Dr. Phillips does not say that he has made any trial of early feeding with solid food. I venture to think that the results published in my paper would have justified him in doing so before condemning the method, as he does by implication, as unjustifiable.—I am, etc.,

Leeds, Nov. 14th. ALFRED G. BARRS, M.D., F.R.C.P.

DRY URINALS.

SIR,—I feel under a deep debt of gratitude to you for having brought to my notice the "dry urinal" worked with sawdust. I have tried this sawdust in both public and private latrines of a native regiment, and in private bungalows, and have found it answer most admirably. As I look upon the adoption of the principle as a great boon to Indian sanitation, capable of conferring inestimable benefits, while in India I submitted a report on the subject. The fly nuisance, so great and disastrous in India, is very much less where the dry urinal is used. The urinal in no way attracts dipterous or other insects.

The conservancy arrangements made for natives are peculiar, and it is essential that a large supply of sawdust should be available. Where these urinals were used there were saw mills. It would indeed be a great thing if a substance could be discovered giving similar extraordinary results to sawdust which could be obtained in sufficient quantity.

We have in India the so-called "removal" system, which would work better if the liquid sewage were disinfected, as indicated by Dr. Poore.[1]—I am, etc.,

T. MAYNE,
Lieutenant-Colonel, Indian Medical Service.

Colombo, Sept. 28th, 1898.

[1] BRITISH MEDICAL JOURNAL, July 3rd, 1897, p. 54.

DR. R. J. RICHARDSON, the Chairman of the Liverpool Medical Club, gave an "at home" on November 9th in the new quarters of the Club, 64, Mount Pleasant. Since its formation three years ago the Club has prospered, and many interesting discussions have taken place upon ethical matters affecting the profession. During the present winter session other discussions will take place and several smoking concerts will be held.

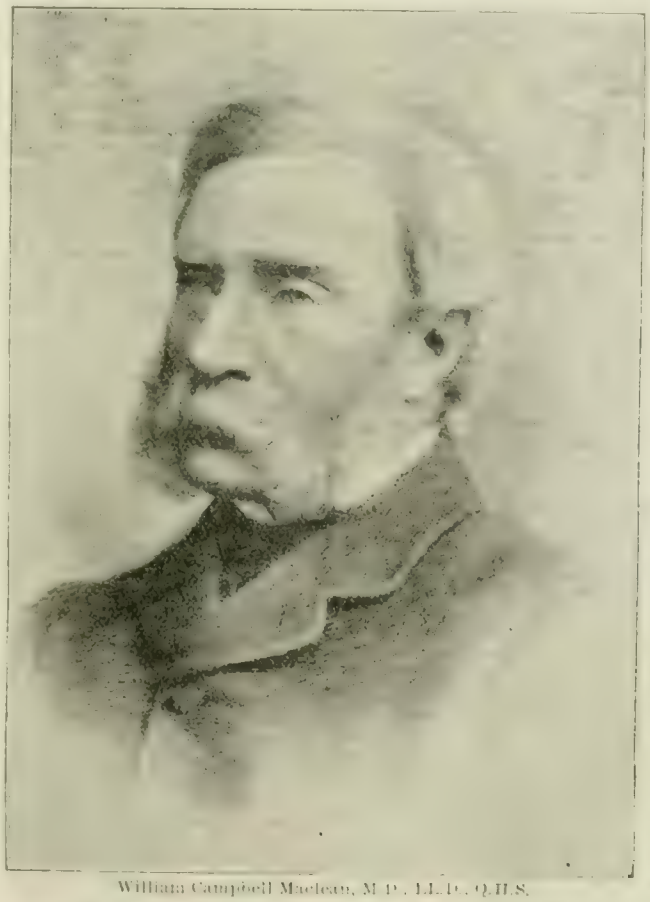
DUNFERMLINE COTTAGE HOSPITAL.—The Moray Wing, the cost of which has been defrayed by a bequest of £5,000 from the late Earl of Moray, was opened on November 9th by the Countess of Moray. The new wing contains four wards with 3 beds in each, various rooms, and a new operating theatre, which has been built and equipped in the most modern fashion, and contains basins with pedal taps, and sterilising apparatus for instruments, dressings, and water. There are now 30 beds in the hospital, but this number is already found to be inadequate. An isolation ward, separate from the main building, was opened on the same occasion. The hospital was only opened in September, 1894, but that the cases with which it has to deal are serious is shown by the fact that 41 major operations were performed last year. Mrs. Andrew Carnegie recently presented a Roentgen ray apparatus with a 10-inch spark to the hospital.

OBITUARY.

WILLIAM CAMPBELL MACLEAN, M.D., LL.D., C.B., Q.H.S.,

Surgeon-General, Indian Medical Service (Retired).

On November 10th, at Sidmouth, at the ripe age of 87, surrounded by a loving circle of devoted relations and friends, the life of a man, who by the charm of his disposition, the integrity of his character, the brightness and strength of his intellect, the enthusiasm and energy of his nature, and the merit of his service and work, had earned the affection and esteem of all who knew him, came to a close. In the year 1895 Dr. Maclean prepared and printed for private circulation, under the title of *Memories of a Long Life*, a sketch of his parentage and upbringing, and of the main incidents of his public and private life, from which a clear conception may be gained of the sort of man he was, and of the circumstances and surroundings which moulded and evolved activities, always inspired by good purposes and generous aims, and exercised with ardour and excellent effect.



William Campbell Maclean, M.D., LL.D., Q.H.S.

He came of a good Highland stock. On his father's side he was descended from the Macleans of Ardgour, and on his mother's from the MacLeods of Dunvegan. His father was the Laird of Boreray, a surf-girt isle of the Atlantic main; and his maternal grandfather Laird of Bernerna, an adjacent Hebrid isle. The latter was a very notable character, "who," to quote from an inscription in the Priory Church of Rodil, in Harris, "in vigour of body and mind, and firm adherence to the principles of his ancestors, resembled the men of former times. In his 75th year he married his third wife, by whom he had nine children, and died in his 90th year." Dr. Maclean's mother was one of these nine, twenty-one having been the fruit of the first marriage. He was the tenth of eleven children, and was born on November 29th, 1811. His early life was spent mostly in the Highlands and Islands. He was a delicate boy, and his education was mostly conducted by tutors at home. He was a pupil for short periods at the Dollar and Edinburgh Academies. Originally intended for the army, in which many of his ancestors and family had served with distinction, both on the Stuart and Hanoverian side, he was induced to study medicine as a means of enabling him to settle at home; but this finally resulted, nevertheless, in his joining the army, though in a different capacity from his two brothers, who served with distinction in India.

He entered the University of Edinburgh in 1829; obtained the Licence of the College of Surgeons in 1832, and the degree of M.D. in 1833. He was an ardent and diligent student. In his *Memories* he gave some interesting notes of persons and events of his student days, including the tragic Burke and Hare incident, which wrecked the career of the famous Knox. In 1834-36 he made two voyages to Bombay and Java, in medical charge of ships; and in 1836-37 spent some time in Paris, where he studied under Andral, Chomel, and other distinguished men.

He obtained a commission in the Madras Medical Service in 1838, and landed at Madras in August of that year. A voyage to and from Moulmein with native troops, in which he gained his first experience of cholera, was his earliest service, and he was then attached to the 55th Regiment, at Secunderabad, where he encountered an experience of dysentery, due to insanitary circumstances, which impressed him profoundly. He introduced the ipecacuanha treatment here, and found it immensely superior to the old heroic calomel dosing. The Chinese "opium war" broke out in 1840, and he promptly volunteered for it, and was sent in charge of artillery to Chusan. During the next two years he saw a great deal of active service, mostly with the 18th Royal Irish Fusiliers, and was present at the capture and recapture of Chusan, the capture of Canton, and many other operations under Sir Hugh Gough. He gives a most vivid description of men and events in his *Memories*, and does not conceal failings and errors which led to lamentable loss of life. His own work was admirable, and was warmly acknowledged: and as he passed the 18th Royal Irish on his return to Madras in 1842, "the men mounted the rigging and gave three such hearty cheers as to cause some stir in the fleet." On arrival at Madras he was posted to the 1st Madras Fusiliers at Arcot, and then ordered to join a native corps at Jubbulpore, in order to make room for a *protégé* of a member of the Governor's staff. This led him to Calcutta, where he made the acquaintance of Lord Ellenborough, on whose staff his brother was serving. He was offered, but declined, a civil post in the Mysore Commission, preferring to stick to the medical profession. In 1845 he received the appointment of Residency Surgeon at the Court of Hyderabad in the Deccan, "the best appointment a man of his rank could hold in his own department." He held this appointment with great satisfaction, approval, and usefulness from 1844 to 1855. He organised a medical school, which was the first of its kind in India where native youth were instructed in Western medical science in their own vernacular. He threw his heart into this enterprise, which was entirely successful. The school still flourishes under the able management of Lieutenant-Colonel Lawrie. It was at Hyderabad in the year 1845 that he married Miss Louisa Macpherson, niece of his brother-in-law, General Duncan Macpherson, who survives him. A happier union was never contracted than this. He vacated his appointment on promotion, spent two happy years at home on his first furlough, and shortly after his return to India was appointed to the third District of the Madras Presidency. It was while serving with great credit in this capacity that he was offered, and after some negotiations accepted, the post of Professor of Military Medicine in the newly-organised Army Medical School at Fort Pitt, Chatham. He entered on his duties in 1860, and continued then and subsequently at Netley to discharge the duties of his appointment with singular ability and success until the year 1886: when in full possession of mind and energy he voluntarily resigned his post, having in his own words "determined to retire while such powers of exposition

as he could ever boast of remained unimpaired, and before it could with truth be seriously said that 'Superfluous lags the veteran on the stage.'"

Such is a brief picture of Maclean's life-work, and now for a short presentation and estimate of the man. He had a handsome presence, good physique, military bearing, strong features, most kindly pleasant expression, and a keen sympathetic eye. His manners were courtly, and he was a charming companion and a staunch friend. He possessed the indescribable power of winning the affection of men. When he left Hyderabad the native students "literally fell upon his neck, clung to him weeping bitterly," until he was almost tempted to say with St. Paul at Cæsarea, "What mean ye to weep and break my heart?" Similar, but more restrained, were the feelings which generations of students at Netley entertained towards him. He was the very soul of truth and honour, high-minded, hospitable, generous, ever ready to uphold the dignity and status of his profession, service, and school, and jealous of any infringement or compromise. He was proud, as became his race and lineage—witness, for example, his refusal to "publish under a censorship, however mild, judicious, or even generous." There was likewise a curious survival of superstition—also inherited—in his nature, as evidenced by the instances of remarkable dreams and presentiments which he relates in his *Memories*; and, curiously enough, sometimes a strain of severity and pessimism in his judgments, which may have come from the high-and-dry atmosphere which he breathed in his youth.

Intellectually he was gifted. His mind was a very ready instrument: perception keen, memory vivid, assimilation active, retention strong, presentation striking. He was not original or inventive, and he does not leave behind him any discovery or invention or research of note; but he was a forceful teacher who made a deep impression on his pupils, and the articles on various tropical diseases, which he contributed to Reynolds's *System of Medicine* and to Quain's *Dictionary*, show his power of grasping a subject, and presenting in a clear and interesting manner all that was known about it at the time he wrote. Again, the abstracts of his lectures at Netley which he published in 1886 are still excellent and instructive reading.

To the BRITISH MEDICAL JOURNAL he was for many years a frequent contributor, and his judgment was always highly esteemed. As a writer his style was clear, crisp, graphic, and impetuous. He required, indeed, the stimulus of indignation to reach his best, and during the time that he contributed most largely to our columns this stimulus was seldom absent for long together. All through the earlier days of the long controversy for definite army rank for the officers of the medical services—a controversy which he was happily spared to see end victoriously—it was Maclean's judgment and Maclean who could be most thoroughly trusted to give the right advice at the right time. He combined, as seemed to those who knew his work at this time, something of the qualities of both Saxon and Celt, the shrewd and cautious judgment of the one holding in check the impetuous eloquence of the other. A correspondent who is well acquainted with the history of this controversy writes: "Maclean possessed all the high chivalry of a thorough Highland gentleman, and it was nowhere better evinced than in the manly, enthusiastic, and unselfish way he threw himself into the controversy for what he believed to be the just rights and aspirations of his medical brethren.

"His long career, first in India and then in Netley, admirably fitted him as a champion of their cause, while he could wield his powerful pen like a claymore in cutting down opposition to his views. The yeoman service he did, dating from more than thirty years back, in the army medical controversies of the day, was not fully known even to his intimate friends, for he was no boaster or egotist; but they deserve to be warmly held in remembrance by all who value the rights gained.

"Age and infirmity prevented him from doing much during the last ten years of the army controversy, but he in no way abated his interest therein, and every now and again sent sympathetic and approving messages to the younger men who had taken up the cudgels he had reluctantly laid down. He lived to see his heart's desire in the fully secured status and titles of army medical officers in a Royal Medical Corps."

But Maclean was in no sense an agitator. He continually advised his Netley class of young candidates to be loyal and true to the noble profession and service which they had entered, and by their own unimpeachable character and conduct to build up and strengthen its prestige and reputation. When an outcry was made after the battle of Tel-el-Kebir against the Medical Department, he defended it in the columns of the *Times*. Soon after this came the complete vindication of the work of the medical officers in Egypt by Sir William Mac Cormac, in which he proved incontestably that the medical work of the whole campaign was probably the most successful ever seen in any army in the field before, and the whole profession of medicine in London signified their approval of that work by inviting the medical officers who had taken part in it to a banquet in Willis's Rooms.

But anything that Maclean wrote or spoke in his endeavours to uphold the honour and dignity of the Army Medical Service was in no sense the work of an agitator, for he was too loyal-minded a man, and knew too well his position as an officer holding the Queen's commission to forget his duty in that respect.

It was a gratification to his friends and admirers when the dignity of Companionship of the Order of the Bath was conferred upon him. He was also made an LL.D. of Glasgow, and was gazetted to the distinction of Honorary Surgeon to the Queen. For his services during the China war of 1840 he received the medal and was mentioned in despatches.

He excelled as a teacher and lecturer. He was a fluent, rhetorical, and impressive speaker, never failed to arrest and maintain attention, and interspersed his discourses with a wealth of illustration and anecdote which rendered them entertaining. He was also a good clinician. He never failed to dilate on the abuses and errors of the past, and enforce the benefits attained by sanitary reform and medical progress. In his own person he was an illustration of the signal triumph of surgical skill in a very painful class of maladies. His father had been cut for stone without an anæsthetic by George Bell and Astley Cooper, but eventually died of that disease. Maclean inherited the same pathological proclivity, but was finally and fully relieved, painlessly and skilful, of the results of it by litholapaxy, repeatedly performed by Harrison and Freyer. In his *Memories*, lectures, and conversation he was in the habit of constantly exhibiting examples of those salutary changes in manners and opinions and practice which his prolonged life enabled him to observe and contrast.

Maclean's striking and attractive personality, bright gifts of heart and intellect, and valuable fruitful work will not readily be forgotten.

The funeral took place on Wednesday, November 16th, at Southampton. A service was held at St. Luke's Church, at 2.30 P.M. The church was filled with relatives and friends. Surgeon-General Nash, Principal Medical Officer, Netley, Colonels Notter, Stevenson, and Macleod Professors of Hygiene, Military Surgery, and Military Medicine in the Army Medical School, and a large contingent of the Netley staff attended, and many medical officers and friends who had been associated with the deceased officially and privately were also present. The service was choral, and at its close the vicar of the parish delivered an eloquent and impressive address. The coffin was then conveyed to the Southampton cemetery, where the remainder of the burial service was read. Appropriate hymns were sung by the choir both in the church and at the grave. There was a large concourse of spectators at the cemetery in addition to those who had followed the remains from the church. The proceedings were a fitting testimony to the great respect and regard in which the deceased officer was held by the community of Southampton and a touching tribute to the character and worth of the distinguished man who, as the vicar remarked, had by his life illustrated a very exalted type of humanity and added lustre to his profession and service.

DR. CONSTANTINE P. DELJIANNIS, Professor of Pathology in the University of Athens, died on October 27th, of blood poisoning contracted in the discharge of his duties. After studying at Vienna, Würzburg, Berlin, and afterwards in Paris under Pasteur, he returned to his native country, and was appointed Professor at Athens, where after a time he was

able to establish a pathological laboratory. In 1882 he traced the origin of an outbreak of typhoid fever in Athens to drinking water in which he showed the presence of the specific bacillus. Deljiannis took an active part in most of the medical congresses held in recent years in Germany, France, and Belgium. He was the author of numerous works on pathological subjects. In addition to his scientific works he played a prominent part in the public life of Greece. After the death of his brother, the President of the Areopagus, he became President of the Association of Friends of the People, and he rendered considerable service to the cause both of popular and of university education.

We regret to announce the death of Dr. Dunbar of Kensington, Liverpool, which took place on October 29th at the comparatively early age of 48. Dr. Dunbar was an Edinburgh student, graduated M.B. and C.M. of the University of Edinburgh in 1871, and proceeded to the degree of M.D. in 1874. On coming to Liverpool he received an appointment under the West Derby Board of Guardians, and started practice in Kensington. He acquired a considerable practice, and was greatly esteemed by his professional brethren in the neighbourhood. He was at one time a member of the Council of the Medical Institution, and was an enthusiastic Freemason.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE SOUDAN GAZETTE.

The *London Gazette* of November 15th contains a long list of honours granted for services during the recent Soudan campaign.

Surgeon-General William Taylor, M.D., Army Medical Staff, who receives the distinction of Companionship of the Order of the Bath, was the Principal Medical Officer with the Sirdar. He joined the army as Assistant Surgeon in September, 1864; was promoted Surgeon in March, 1873; Surgeon-Major in September, 1876: Brigade-Surgeon in February, 1890; Surgeon-Colonel in March, 1895: and Surgeon-Major-General in March, 1896. Surgeon-General Taylor served with the expedition to Ashanti in 1895 as Principal Medical Officer with the forces. For his services on this occasion he was promoted to be Surgeon-Major-General, and received the star.

The same honour has been conferred upon Colonel William Henry McNamara, M.D., R.A.M.C. Colonel McNamara was the Principal Medical Officer of the British Division in the recent expedition. He entered the army in October, 1867: was promoted Surgeon in March, 1873; Surgeon-Major in October, 1879; Lieutenant-Colonel in October, 1887; and Brigade-Surgeon-Lieutenant-Colonel in July, 1893. He served in the Egyptian war in 1882, being attached to the 1st Battalion of the Royal Irish Fusiliers. He was present at the battle of Tel-el-Kebir, and received the medal with the clasp and the Khedive's star.

The honour of Companionship of the Distinguished Service Order has been conferred upon the following officers:

Lieutenant-Colonel George Arthur Hughes, M.B., R.A.M.C., who entered the service on February, 1877, was promoted Surgeon-Major in 1889, and Surgeon-Lieutenant-Colonel in February, 1897. Lieutenant-Colonel Hughes served in the Afghan war of 1879-80, and took part in the march to Candahar with the force under Major-General Phayre, for which he received the medal. He served with the Bechuanaland expedition in 1884-85 under Sir Charles Warren, and with the Ashanti expedition under Sir Francis Scott in 1895, and received the star on the latter occasion. Lieutenant-Colonel Hughes was the Senior Medical Officer of the Second Brigade during the recent expedition.

Major Edmond Munkhouse Wilson, R.A.M.C., who entered the service in July, 1881, was promoted Surgeon-Major in July, 1893. He served during the Zulu war of 1879 as Civil Surgeon, and received the medal and clasp. He served with the Nile expedition of 1884-85, and received the medal and clasp and the Khedive's star, and also with the Egyptian Frontier Field Force in 1885-86. He served with the expedition to Ashanti in 1895, where he was in charge of the base hospital, and for his services on that occasion he received the Companionship of the Order of St. Michael and St. George, and the star. During the recent operations he acted as Secretary to the Principal Medical Officer, Surgeon-General Taylor.

Major Hugh Broderick Mathias, R.A.M.C., who entered the service in July, 1886, was promoted Major in July, 1898. During the recent operations he served with the Cameron Highlanders.

Captain Charles Stuart Spong, R.A.M.C., who entered the service in July, 1887, served with the Dongola Expeditionary Force under Sir Herbert Kitchener in 1896, including the engagement at Firket and the operations at Hafir. For his services on this occasion he was mentioned in despatches and received the Fourth Class of the Medjidie and the Khedive's medal with two clasps. He is at present employed with the Egyptian Army.

The following promotions in the Royal Army Medical Corps are contained in the same issue of the *Gazette*:

Lieutenant-Colonel T. J. Gallwey, M.D., C.B., Principal Medical Officer, Egyptian Army, to be Colonel.
Major G. W. Robinson to be Lieutenant-Colonel.
Captain R. H. Penton, D.S.O., employed with Egyptian Army, to be Major.
Captain H. E. H. Smith, employed with the Egyptian Army, to be Major.
Lieutenant E. W. Bliss to be Captain.

Lieutenant-Colonel A. T. Sloggett is granted the next higher rate of pay of his rank.

The medal for distinguished conduct in the field is granted to the following members of the Royal Army Medical Corps:

First-Class Staff-Sergeant Hoist. — Sergeant Serase.
Sergeant F. Crooke. — Lance-Sergeant A. P. Mears.
Sergeant G. A. Benson. — Private A. Davidson.

The same *Gazette* also states that the Decoration of the Royal Red Cross upon the undermentioned ladies in recognition of their services in tending the sick and wounded in Egypt, in connection with the recent operations in the Soudan:

Miss Sarah Emily Webb, Army Nursing Service.
Miss Amy Florence Grist, Army Nursing Service.
Miss Elizabeth Geddes, National Society for Aid to Sick and Wounded in War.

ROYAL NAVY MEDICAL SERVICE.

Surgeon John Boyan has been appointed to the *Victory*, November 8th.

ROYAL ARMY MEDICAL CORPS.

Captain Henry V. Dillon retires from the service, receiving a gratuity, November 16th. He was appointed Surgeon-Captain, August 1st, 1885, but, having been some time on half-pay, had not attained higher rank.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel Joshua Duke, Bengal Establishment, in medical charge of the Malwah Bheel Corps at Sirdarpore, Central India, and of the Bhopawur Political Agency, has been appointed Residency Surgeon at Cashmere, in succession to Lieutenant-Colonel A. Deane, M.D., Bengal Establishment.

THE VOLUNTEERS.

Mr. William Donald, M.D., is appointed Surgeon-Lieutenant in the 1st Banff Artillery, November 16th.

Surgeon-Captain J. Little, M.D., 1st Cumberland Artillery, is promoted to be Surgeon-Major, November 16th.

Surgeon-Lieutenant A. B. Lyon, from the 1st Banff Volunteer Artillery, is appointed Surgeon-Lieutenant in the 2nd Middlesex Artillery, November 16th.

The undermentioned officers have resigned their commissions from November 16th: Surgeon-Lieutenant H. H. Marsden, 3rd Volunteer Battalion the King's Liverpool Regiment; Surgeon-Lieutenant-Colonel J. Dunlop, M.D., 3rd Lanarkshire Volunteer Rifles, retaining his rank and uniform; Surgeon-Lieutenant W. Moir, M.B., 1st Volunteer Battalion the East Lancashire Regiment; Surgeon-Captain J. M. Whyte, M.B., 1st (City of Dundee) Volunteer Battalion the Royal Highlanders; Surgeon-Lieutenant-Colonel R. S. Turner, M.D., 6th Volunteer Battalion the Gordon [illegible]

The undermentioned Surgeon-Lieutenants are promoted to be Surgeon-Captains, November 16th: J. Robinson, 1st Volunteer Battalion the Worcestershire Regiment; E. Jones, 21st Mi[illegible] Volunteer Rifles; J. O. Wilson, M.D., 4th (Dec[illegible] Volunteer Battalion the Gordon Highlanders.

ARMY MEDICAL STAFF EXCHANGE.

The charge for [illegible] Department is [illegible] insertion in the current issue.

A Field Officer R.A.M. Corps, under orders for India (Bengal) in January, 1899, desires an exchange to remain another year at home.—Address with terms to F. O., care of British Medical Journal, 429, Strand, W.C.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Surgeon-General W. A. Catherwood, M.D.	Gibraltar	Bengal
Colonel W. H. McNamara, M.D.	Egypt	Gibraltar.
Lieut.-Colonel J. A. Clery, M.B.	..	Crete.
.. R. H. Robinson	Corte	Guernsey.
.. G. W. Robinson	Egypt	Portsmouth.
Major E. H. Myles, M.B.	..	Punjab.
.. H. L. E. White	Dover	..
.. D. Wardrop, M.B.	Egypt	Crete.
.. C. A. P. Mitchell, M.D.	Maryhill	Leith Fort
.. G. W. Brazier-Creagh	—	Home District.
.. F. T. Wilkinson	Egypt	Woolwich.
.. J. M. Irwin, M.B.	..	Crete.
.. T. W. O'H. Hamilton, M.B.	Fort George	Portsmouth.
.. J. R. Stuart, M.B.	Egypt	Bombay.
.. A. Dodd	..	Aldershot.
.. H. N. Thompson, M.B.	..	Woolwich.
.. G. E. Moffet, M.B.	..	Maryhill
.. R. I. Power	..	Cork.
.. S. G. Allen	..	Crete.
.. T. H. F. Clarkson	..	..
.. J. R. Burrows, M.D.	..	Madras.
.. D. M. O'Callaghan	..	Crete.
Captain G. F. Alexander, M.B.	..	..
.. H. S. Pecke	..	Portsmouth.
.. A. L. Borradaile, M.B.	..	Bengal.
.. T. Birt	..	Preston.
.. J. C. Connor, M.B.	Buttevant	Limerick.
.. J. T. Clapham	Egypt	Madras.
.. I. A. O. MacCarthy	..	Crete.
Lieutenant W. E. Hudleston	..	Punjab.
.. J. J. Cairns	..	Bengal.
.. E. W. Bliss	..	..
.. S. L. Cummins, M.B.	..	Punjab.
.. J. McArdle, M.B.	..	Crete.
.. C. H. Hopkins	..	Bengal.
.. P. McKessack, M.B.	..	Crete.
.. E. Brodribb	..	Aldershot.
.. H. G. F. Stallard	..	Punjab.
.. A. H. O. Young	Curragh	Bengal.
.. M. M. Lowsley	Egypt	Crete.
Quartermaster J. H. W. Beach	..	..
.. W. H. Barton	Aldershot	Netley.

MEDICAL DEPARTMENT, ROYAL NAVY.

THE undermentioned gentlemen, who competed on October 31st and following days at Examination Hall, Victoria Embankment, for appointment as Surgeon in the Royal Navy, have been granted commissions:

	Marks.		Marks.
J. Boyan	2,656	F. R. Mann	2,152
W. H. Daw	[illegible]	W. W. Keir, M.B.	2,101
C. Shepherd	[illegible]	E. C. Sawdy	2,096
H. L. Norris	[illegible]	P. H. Bannister, M.B.	2,054
A. A. Forrester, M.B.	[illegible]	R. S. Osborne	2,031
J. M. G. Swainson	[illegible]	M. W. Falkner	1,987
J. Stoddart, M.B.	[illegible]	E. O. B. Carberry, M.B.	1,962
J. A. Forrest, M.B.	[illegible]	J. K. Raymond, M.B.	1,948
W. G. Westcott	[illegible]	H. W. M. Rees	1,847
F. J. McKenna, M.B.	[illegible]	H. R. Gardner, M.B.	1,836

COURSES OF OPERATIVE SURGERY IN INDIA.

CAPTAINS of the Royal Army Medical Corps will in future be permitted, while serving in India, to attend a course of Operative Surgery at the Calcutta, Madras, and Bombay Medical Colleges—at Calcutta in February, in Madras in January, February, and March; and in Bombay in April and May. Certificates of a Course of Operative Surgery are needed for promotion examinations.

COMMEMORATION OF FRENCH MEDICAL OFFICERS.

THE medical officers of the French Army who have recently left the Val de-Grâce School have resolved to place in the cloister of the school a [illegible] with the following inscription:

A LA MEMOIRE DES OFFICIERS DE SANTE MILITAIRES
TUÉS A L'ENNEMI
OU MORTS AUX ARMÉES DES MALADIES CONTAGIEUSES
DE 1792 A 1815
ET DONT LES NOMS SONT RESTÉS INCONNUS

[illegible]

THE YEOMANRY, CAVALRY, AND VOLUNTEER RIFLES.

MR. JAMES A. MYRTLE is appointed Surgeon-Lieutenant to the Princess of Wales's Own Yorkshire Hussars, November 9th.

Mr. [illegible] M.D., is appointed Surgeon-Lieutenant in the [illegible] Division Royal Artillery, November 9th.

[illegible] Surgeon-Major [illegible] M.B. 1st Roxburgh and Selkirk (the Border) Rifles, is promoted to be Surgeon-Lieutenant-Colonel, November 9th.

Surgeon-Lieutenant E. MORTON, M.D., 3rd Volunteer Battalion the South Staffordshire Regiment, has resigned his commission, November 9th.

The Queen has been pleased to confer the Volunteer Officers' Decoration upon the undermentioned officers: Major MAYCOCK E. LEIGH, 1st Volunteer Battalion the South Staffordshire Regiment; Brigade Surgeon Lieutenant-Colonel WILLIAM H. BULL, 1st Brecon Volunteer Rifles; Surgeon Major FREDERICK E. MOORE, 3rd Volunteer Battalion the Kings Liverpool Regiment, retired; Surgeon Lieutenant-Colonel WILLIAM S. LIMRICK, 4th Volunteer Battalion the King's Liverpool Regiment; Brigade Surgeon-Lieutenant-Colonel GEORGE H. TURNBULL, M.D., 1st Roxburgh and Selkirk (the Border) Volunteer Rifles.

THE TREATMENT OF MEDICAL OFFICERS IN INDIA.

WE give the following extracts from a forcible letter in the *Pioneer* of September 22nd, on the treatment of officers of the Royal Army Medical Corps in India. The manner in which the Government of India has long treated these officers has been a public scandal. They—juniors especially—are the worst paid and hardest-worked officers in India. Can the statements in the following letter be gainsaid?

"That medical officers of the R. A. M. C. are treated on a totally different footing to all other officials in India, both civil and military, including their Indian brethren, will, I think, be admitted by any impartial judges on perusal of the following: (1) They are the only English officials who do not benefit pecuniarily when ordered out on duty to this country, where their pay was previously much less than, and latterly is barely equal to, their home pay. This should not be. (2) The principle of charge pay is recognised and acted on in every branch of the Government services in India, both chief and subordinate. The medical officer is appointed to the charge of a hospital or hospitals with from 100 to 300 beds, entailing double responsibility and treble genuine hard work. He himself gets not one anna extra pay, but sees his Eurasian subordinate granted substantial subcharge pay. This, again, should not be. On field service medical officers in charge of one, two, or three sections of a field hospital receive no extra pay.

"During the late campaigns many a medical officer was in charge of two sections of a field hospital, the heterogeneous establishment of which is composed of creatures from all parts of the country met together for the first time; his work consisting of feeding and loading mules with his own hand before the march in the morning, and performing the most skilled major surgical operations on the return of the foraging parties in the evening—yet he gets no extra or charge pay. I would fain avoid distinction, but the injustice of the following will justify its mention. Medical officers performing extra work as detailed above get nothing; while on the staff of the divisions of the T. E. Force were to be found—and this is a serious matter to bring to publicity, but it is unvarnished fact—Intelligence Officers (save the mark!) drawing Rs.420 per mensem extra pay, who could not answer 'yes' or 'no' in *Pushtu* to the inhabitants of the country from whom they were to glean intelligence—who had no language qualification whatever for the post. Refer again to the pamphlet circular issued from Simla in 1896 allotting the most liberal extra pay for duties performed in field service by the General or the private soldier. Take out of it an example. The subaltern who superintends the entraining of troops receives Rs.150 per mensem extra pay, while the sanitary officer whose extra duties are clearly defined is to perform his work "without extra pay." Again, the un-skilled work of the above subaltern, which anyone could perform who can count figures, is valued at Rs.150 per mensem, as against the lives of the officers of a division (including the General), the care of which is valued at Rs.100 per mensem, and which duty can only be performed by a skilled man and so on. The most important factor in all this is that when the combatant is given extra work a liberal money allowance is at the same time arranged for without asking, while the doctor is given plenty of extra work, and is left to ask for what he can get—nothing! What would the Secretary of State for War and the public think of the present state of affairs throughout the Punjab when medical officers, who are at home enlisted as mounted officers and receive horse allowance for every mile they travel beyond their residence, are compelled to travel from 50 to 80 miles per week on special sanitary duty without receiving one rupee horse allowance for same? Recently the 4s. per diem to cover extra expenses at mess when out at militia training at home has been granted to all attached medical officers. In India a medical officer is sent out of his district, whither he must return, on a two or three months' march with a regiment or battery. He, through the kindness and courtesy of the officers, lives, as far as my experience goes, very happily at the mess. But it is expensive, servants are hard to keep on the march, and as the medical officer is the sole honorary member of the mess, his mouth is closed, by politeness, against overcharges which inadvertently occur; and so, to meet this extra expense and at the same time recoup him somewhat for the rent, etc., paid for his house, which he must keep on in his cantonment while away, a moderate allowance of Rs. 3 per diem in addition to the horse allowance should be at once sanctioned for all medical officers when on the march or at camps of exercise. They may say the Government have no money. Why, the value of public property lost between the Arhunga Pass and Camp Maidan when the Queen's convoy allowed to pass through the enemy's country in pitch darkness without a single picquet thrown out for protection, was looted, would have satisfied all extra pay claims of medical officers of the R. A. M. C. in India for the next five years.

"To sum up—We want: (1) charge pay for station hospitals; (2) charge pay for sections of field hospitals; (3) charge Rs.4 per diem for captains or lieutenants when on the march, as also allowance for one horse when in cantonments (when no doctor can perform his work without at least one pony); (4) reasonable and fair treatment when other casual claims are submitted, and (5) the keeping of a fixed roster in each district where [illegible], under twenty years' service, would take their fair share of duty which is mostly at present performed by the underpaid juniors in India; there are at present more majors than captains and lieutenants together according to regulations. These five concessions would practically remove all the remaining grievances of officers of the R. A. M. C."

EXTENSION OF THE NEW TITLES.

FAIR PLAY writes: I thank you on behalf of the retired medical officer now not many—still left burdened with compound professional military titles, for noticing this matter. They think that it has only to be fairly put to the Director-General to ensure his factful influence in their behalf. The public fail to discern why one officer in retirement who chances not to be liable to recall, but is still eligible for employment, should be burdened with a mouth-filling title, while his neighbour [illegible]

hour has a simple military one. They naturally regard the status of the two as different, and that for some disparaging reason. The authorities, without a pin's detriment to anybody, could redress the anomaly by a stroke of the pen, namely, by granting permission to all retired medical officers bearing compound titles on June 23rd, 1898, and whether liable to recall or not, to assume the new simple military titles.

A HYPOTHETICAL CASE.

A CORRESPONDENT in India writes: The next senior officer to the General in command of an Indian station is a Lieutenant-Colonel R.A.M.C.; the third is a Major of an infantry regiment: all three are members of the Station Sanitary Board. Suppose, in the temporary absence of the General, the Major assumes command of the station, would he sit as President of the Board, although junior to the officer R.A.M.C.?

*** We do not pretend to decide *ex cathedrâ*, but we should say the officer commanding the station, whoever he is, would, *ex officio*, be President of the Sanitary Board.

MEDICO-LEGAL.

INHABITED HOUSE DUTY.

A MEDICAL CORRESPONDENT writes that he has been charged 9d. in the £ on £95, the annual rent of house, consulting rooms, stable, coachhouse, etc., in respect of inhabited house duty; and as places of business are, according to our correspondent, charged at a lower rate, he wishes to know whether he can successfully appeal against paying as for a private dwelling-house.

*** We are advised that our correspondent's case clearly does not come within the various classes of houses which, under 14 and 15 Vict., cap. 36, are charged at 6d. in the £, and which under Sec. xxv of 53 Vic., cap. 8, are now charged at a lower rate. We are advised further that our correspondent cannot claim exemption under Sec. xv (2) of the Customs and Inland Revenue Act, 1878, on the ground that his house is occupied solely for the purpose of his profession. Under these circumstances we fear that any appeal against paying as for a private dwelling house would be unsuccessful.

SUPERANNUATION UNDER THE LOCAL GOVERNMENT (IRELAND) ACT, 1898.

DR. JAMES HAMILTON (Medical Officer Rathdown Union Workhouse) writes: In the medico-legal columns of the BRITISH MEDICAL JOURNAL for November 5th I notice some remarks of yours as to the meaning of some words in Section XVIII of the Local Government (Ireland) Act, 1898, referring to pensions of Poor-law medical officers. If your interpretation is correct, it follows that all medical officers in the Poor-law service of Ireland who shall have completed ten years' service on "the appointed day," will be entitled to pensions on the Civil Service scale, on their subsequently at any time resigning, or ceasing to hold office from any cause except misconduct. Are you sure that the above is the correct interpretation? This matter seriously affects a very large number of us, and myself personally. I have nearly twenty years' service, but until I read your observations I was under the impression that I was "out of it," as I shall not be 60 years of age "on the appointed day." I hope you are right, and shall be glad to hear that my interpretation is incorrect.

*** Our correspondent's whole point turns on the question under what Acts must an applicant for superannuation "be qualified for a superannuation allowance," within the purview of Section CXVIII of the Local Government (Ireland) Act, 1898. We have seen a high legal opinion to the effect that existing officers who have not reached 60 years of age, and are not incapacitated from duty by permanent infirmity of mind or body, but who have served such period as would entitle them to a pension if they were Civil servants, are not entitled to the benefit of Section CXVIII, because if they were to retire on the appointed day they would not be qualified for a superannuation allowance by the existing law. As, however, the intention of the Section is clearly to extend to medical and other officers of local authorities in Ireland the privileges enjoyed by Civil servants as regards superannuation, we are not without hope that Section CXVIII will be interpretated in a liberal sense, and that medical officers will be regarded as qualified for superannuation in the same way as Civil servants are under Section II of the Superannuation Act, 1859 (22 Vict., Chap. 26). This Section we quoted in the BRITISH MEDICAL JOURNAL for October 1st, 1898, p. 1010.

LOCUM TENENS AND COVERING.

ANXIOUS writes as follows: A physician dies, and his son, a *bonâ fide* medical student going up for his final in six months, gets a qualified man to act as *locum tenens*. Naturally the son wishes to keep his name before the patients. Does the *locum tenens* transgress the law laid down by the General Medical Council as to covering by signing club certificates and school certificates, and adding the name of the son below his own? To what extent may the son, apart from surgery work, assist in the work of the practice, the *locum tenens* seeing every patient personally?

*** The notice given by the General Medical Council applies where a qualified practitioner knowingly enables an unqualified or unregistered person, whether described as an assistant or otherwise, to attend or treat any patient, or to procure or issue any medical certificate or certificate of death, or otherwise to engage in medical practice as if the said person were duly qualified and registered. Therefore the *locum tenens* should not give certificates in the manner suggested.

As to the second question, apart from assisting in the surgery, the son would not be entitled to assist in carrying on the practice by visiting patients.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE

APPOINTMENT.—Mr. F. G. Hopkins, M.B., B.Sc.Lond., late Demonstrator of Physiology at Guy's Hospital, has been appointed to the New University Lectureship in Chemical Physiology.

MEDICAL EXAMINATIONS.—The First and Second M.B. Examinations will begin on December 12th: the Third M.B. Examination on December 13th; and the Examination for M.C. on December 10th. The names of candidates are to be sent to the Registrary by November [illegible].

SANITARY SCIENCE.—During the past year 75 candidates have presented themselves for examination by the State Medicine Syndicate. Of these, 39 only were successful in obtaining the Diploma in Public Health.

MEDICAL DEGREE.—At the congregation on November 10th, P. J. A. Seecombe, M.A., of St. John's College, was admitted to the degree of Bachelor of Medicine.

SCIENCE SCHOLARSHIPS.—This year, Entrance Scholarships and Exhibitions in Natural Science, to the number of 18 in all, have been awarded at Trinity, St. John's, Clare, Pembroke, Caius, Jesus, Christ's, and Emmanuel Colleges.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have passed the examinations of the Board as undernoted:

First Examination, Four Years' Course.—W. C. N. Sloane, R. H. Winter, R. Beamish.

There were 4 candidates.

First Examination, Five Years' Course.—S. M'Carthy, T. W. M'Cubbin, J. B. G. Mulligan, Mary Lucinda Calderwood, H. C. E. Quin, J. Boyd, J. B. L. S. Scott, J. MacLean, R. P. Nash, W. J. Gray, J. P. Newton, J. L. Blackwood.

There were 33 candidates, of whom 3 passed in Physics, 2 in Biology, and 1 in Chemistry.

Second Examination, Four Years' Course.—H. G. Lewer, R. Holwell-Gray, A. Smyth, J. A. Maclardy, J. C. Hamilton, P. T. A. Vilian, G. M. Freke, J. Barkley, C. L. Mandl, C. G. Etches, J. W. Barber, D. F. Mangan.

There were 26 candidates, of whom 1 passed in Anatomy, 1 in Physiology, and 3 in Materia Medica.

Second Examination, Five Years' Course.—J. W. Dougall, J. B. Conner, J. Flanagan, H. C. E. Quin, K. J. O'Brien (with distinction), Maud Varley Everett, J. J. M'Nicholl, J. J. Lynch, A. A. Beeks, E. P. Haythornthwaite, F. W. M'Cay, A. D. Cameron, A. B. Timms, J. J. H. Rooney, J. Crawford, R. G. Campbell.

There were 30 candidates.

Third Examination, Five Years' Course.—J. A. Chisholm, T. M'Donagh, G. F. Stoney, A. E. Salkeld, H. M. Cockcroft, D. F. Kennard, W. H. A. Raffel, H. M. Newton, A. Gairn, C. L. Francia, W. J. Buckmaster, G. H. F. Graves, F. W. Harlin, W. H. Wharton, J. C. Douglas.

There were 24 candidates, of whom 2 passed in Anatomy only, and 3 in Materia Medica.

Final Examination.—C. H. Bennett, M. S. H. C. Boudou, A. Avent, A. Mackie, W. Seaton, A. C. Thornton, J. Sheppard, W. Hutton, D. Heron, J. Tobin, E. Grant, W. Ritchie, F. B. Reid, C. H. G. Lyall, A. E. B. Wood, Mathilda Hetty Grace Russell, L. Munn, F. A. Stephens, W. O'Farrell, J. T. Jones, A. B. S. Powell, T. Carlaw, R. F. Seervai, A. S. Trapaga, T. W. Mason, J. W. L. Spence, C. E. Trimble, B. R. Roberts, T. W. Colthurst, J. T. Park, P. Sheedy, J. N. Keith, E. Q. Ambrose, T. Neville, G. A. Rode, O. L. Appleton, G. C. Beamish, W. G. Fee, R. F. Huston, J. S. Hamilton, H. V. Craster, K. M'Gahey, D. F. Kennard, E. Regan, E. H. Harrison, W. E. Smith, C. E. Hibbard, D. S. Russell, E. L. Roberts.

There were 107 candidates, of whom 7 passed in Medicine and Therapeutics only, 2 in Surgery and Surgical Anatomy, 8 in Midwifery, and 11 in Medical Jurisprudence.

First Examination for the Diploma in Public Health.—J. R. Atkinson, W. H. Whitehouse, W. M'Lean.

Diploma in Public Health.—J. R. Atkinson, W. H. Whitehouse.

CONJOINT BOARD IN IRELAND.

SECOND PRELIMINARY EXAMINATION.—Candidates have passed this examination as undernoted:—

Honours.—T. Kelly, J. M. J. Carslan. *Pass.*—W. H. Bannister, J. Casey, C. J. R. Clarke, J. Clarke, M. A. Fielding, L. V. Hunt, S. A. Jaffé, S. Kelly, H. V. Kenny, J. J. Lawton, E. P. Macksey, P. Molony, D. M'Laughlin, J. P. McLoughlin, T. Nesbitt, A. L. O'Keeffe, E. O'Riordan, J. H. B. Peyton, R. Sheridan.

EXAMINATION FOR THE DIPLOMA IN STATE MEDICINE AND PUBLIC HEALTH.—Candidates have passed this examination as undernoted:

Honours.—W. M. H. Spiller, M.B., H. K. Abbott, M.D. *Pass.*—J. J. Brownlee, M.D., R. Cheyne, L.S.A., L.R.C.P.Edin., J. E. Dods, M.B., J. G. Shea, F.R.C.S.I.

FINAL EXAMINATION.—Candidates have passed this examination as undernoted:

Completed the Examination.—W. J. P. Adye-Curran, J. M. Ahern, J. C. Baskin, W. R. Blackwell, J. A. Byrne, E. P. Connolly, A. A. Cooper, T. J. O'C. Donelan, L. E. Fannin, J. Goode, W. E. Jolliffe, C. A. Kenny, J. W. Langstaff, C. A. A. Lever, W. Meagher, A. McMunn, P. A. E. Rooke, W. C. Ross, M. J. Russell, G. F. Street.

In Medicine.—J. Conway, R. M. Fisher, M. M. Maughan, C. J. Vahey.

In Surgery.—B. A. Craig, A. W. A. Irwin, J. W. Shortt, R. J. White.

In Midwifery.—W. Bennett, J. Conway, M. F. Hessian, A. W. A. Irwin, R. H. Moffit, C. J. Vahey, R. J. White.
In Mental Diseases.—J. Conway, M. F. Hessian, E. E. Roberts, R. J. White.
In Ophthalmology.—W. Bennett, R. H. Moffit, R. A. O'Donovan, E. E. Roberts, J. W. Shortt, C. J. Vahey, R. J. White, F. W. Woods.
In Hygiene, etc.—B. A. Craig, H. E. Howley.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the monthly business meeting of the College held on Friday, November 4th, H. Jellett, M.D., was admitted a Fellow.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

At a meeting of the President, Vice-President, and Council, held on November 11th, Mr. Fred. W. Kidd, M.D., L.R.C.S.I., Master Coombe Hospital, was elected Professor of Midwifery and Gynæcology.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,910 births and 3,706 deaths were registered during the week ending Saturday last, November 12th. The annual rate of mortality in these towns, which had declined from 24.6 to 17.0 per 1,000 in the nine preceding weeks, rose to 17.2 last week. The rates in the several towns ranged from 11.3 in Croydon, 11.6 in Sunderland, 11.9 in Derby, and 12.4 in Burnley to 21.5 in Norwich and in Manchester, 22.5 in Swansea and in Liverpool, 22.6 in Gateshead, and 23.3 in Preston. In the thirty-two provincial towns the mean death-rate was 17.9 per 1,000, and exceeded by 1.6 the rate recorded in London, which was 16.3 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.9 per 1,000; in London the rate was equal to 1.4 per 1,000, while it averaged 2.2 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.3 in Leeds and in Newcastle-on-Tyne, 3.4 in Sheffield, 3.8 in Nottingham, and 5.6 in Swansea. Measles caused a death-rate of 1.2 in Blackburn, 1.4 in Portsmouth, and 1.6 in Plymouth; scarlet fever of 1.0 in Derby; whooping-cough of 1.0 in Swansea, 1.1 in Halifax, and 1.8 in Preston; and "fever" of 1.1 in Leeds and in Hull, 1.4 in Norwich, 1.5 in Sheffield, and 1.6 in Blackburn. The 77 deaths from diphtheria in the thirty-three towns included 31 in London, 9 in Swansea, 8 in Leeds, 6 in Sheffield, 4 in West Ham, and 3 in Newcastle-on-Tyne. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 3,092 at the end of the eleven preceding weeks, had further risen to 3,188 on Saturday last, November 12th; 340 new cases were admitted during the week, against 381, 336 and 318 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 12th, 943 births and 584 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 20.0 and 18.0 per 1,000 in the two preceding weeks, rose again to 19.4 last week, and was 2.2 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 14.5 in Greenock and 15.3 in Perth to 19.9 in Glasgow and 23.7 in Dundee. The zymotic death-rate in these towns averaged 2.9 per 1,000, the highest rates being recorded in Paisley and Aberdeen. The 277 deaths registered in Glasgow included 4 from measles, 5 from scarlet fever, 3 from diphtheria, 7 from whooping-cough, 12 from "fever," and 16 from diarrhœa. Three fatal cases of measles and 2 of scarlet fever were recorded in Edinburgh; 5 deaths were referred to diphtheria in Aberdeen, and 4 to "fever" in Paisley.

A QUESTION UNDER THE NOTIFICATION ACT.

ENQUIRER writes: I am divisional surgeon for the district, and received an order from the station under the police regulations to visit the house of a constable whose children are reported as suffering from scarlet fever by the medical man attending them. I visited the house, and [illegible] opinion; at the same time I forwarded a notification to the medical officer of health under the Notification Act, being under the impression that I was bound under a penalty to notify all cases of infectious disease that came under my notice. I now receive a letter from the medical officer of health, stating that the cases had been already notified, and wanting to know why I notified cases under another medical man's care, without having taken over the treatment of them. The medical officer of health is aware of the circumstances under which I [illegible] the children. Was I right in notifying them, and can I claim notification fees?

"*" We are advised that the medical officer is right, and that our correspondent should not have notified, nor expect to be paid for doing so. His visit was made to satisfy the police authorities, and will be paid for by them in the usual manner, but we might refer "Enquirer" to a correspondence which took place in our columns in 1892, vol. ii, pages 714, 764, 823, and 871.

MEMBER (Scot.) is entitled to a fee for his precognition by the Procurator Fiscal, in addition to that paid for his report.

MEDICAL NEWS.

THE annual entertainment and ladies' night of the Volunteer Ambulance School of Instruction, will be held at St. Martin's Town Hall, Charing Cross Road, on Wednesday, December 14th, at 8.30 P.M.

DR. DAVID ARTHUR WELSH has been appointed one of the Pathologists to the Edinburgh Royal Infirmary, *vice* Dr. Robert Muir resigned; and Dr. Theodore Shennan has been appointed Pathologist to the Royal Edinburgh Hospital for Sick Children, *vice* Dr. Welsh resigned.

DR. WILLIAM MURRELL has been appointed Joint Lecturer on Medicine at the Westminster Hospital Medical School, and has in consequence resigned the Chair of Materia Medica, Pharmacology, and Therapeutics, which he has held for many years.

ROYAL HOSPITAL FOR SICK CHILDREN, GLASGOW.—Dr. George S. Middleton has been appointed one of the honorary visiting physicians of the Glasgow Sick Children's Hospital, in room of Dr. Finlayson, who has resigned. Dr. Finlayson has been a physician of this hospital from its foundation, and in recognition of his valued services has now been appointed an honorary consulting physician.

EXAMINATIONS for the certificate in Psychological Medicine of the Medico-Psychological Association of Great Britain and Ireland will be held in London, Edinburgh, Glasgow, Aberdeen, and Dublin, on Thursday, December 15th, 1898. Candidates intending to present themselves for examination should give fourteen days' notice to the Registrar (Dr. Spence, Burntwood Asylum, Lichfield), from whom any further information may be obtained.

THE annual dinner of the staff and past and present students of the Dental Hospital of London will be held at the Hôtel Métropole on Saturday, December 3rd. The chair will be taken by Mr. Storer Bennett. We are asked to state that any gentlemen now or formerly connected with the hospital or school who may not have received a special notice are requested to communicate with the Dean at the Dental Hospital, 40, Leicester Square.

At the quarterly meeting of the Board of Delegates of the Hospital Saturday Fund the following recommendation of the Distribution Committee was, after considerable discussion, carried by a large majority: "That, after fully considering the question of the charge of 3d. for medicines and surgical dressings of out-patients attending the London Hospital, they see no reason to further urge upon the authorities of that institution any relaxation of their rules in favour of patients presenting letters supplied by the Hospital Saturday Fund."

DIPHTHERIA IN LONDON.—Although the mortality from diphtheria last week in the metropolis only slightly exceeded that recorded in the preceding week, the prevalence of the disease, judged by the notifications of new cases, has shown a marked increase during the past fortnight; and in several widely separated sanitary areas there has recently been a serious increase in the spread of diphtheria, notably in Fulham, Hackney, Bethnal Green, Newington, and Greenwich. In Hackney no fewer than 27 new cases were notified during the week ending Saturday last, November 12th, and 17 in Bethnal Green; while in Newington the new cases numbered 24, against 7 in the previous week.

OUTBREAK OF TYPHUS FEVER IN EDINBURGH.—Edinburgh, which has for so many years enjoyed singular immunity from typhus fever—an immunity mainly due to the promptitude and energy of Sir Henry Littlejohn—has lately suffered from a visitation of the disease. Since the beginning of October last no fewer than 25 or 30 cases have been notified in and about the city of Edinburgh, and there is stated to be reason for believing that some other cases have been missed and reported as something else. The present generation does not know typhus, for very few practitioners have ever seen a case. All the cases that have now occurred have been of a moderately severe type, and there have been 2 deaths. Thus far the public health authorities have not been able to get at the origin of the outbreak, though they have got many links in the chain of evidence, which doubtless they will presently be able to complete.

The Master, Wardens, and Court of the Worshipful Company of Plumbers have issued invitations to dinner at the Salters' Hall, St. Swithin's Lane, E.C., on Wednesday, November 23rd, to meet the Right Honourable the Lord Mayor and the Sheriffs of the City of London.

The banquet of the fifty-ninth annual session of the County and City of Cork Medical and Surgical Association was held on November 12th, under the chairmanship of the President, Dr. E. Magner. After the usual loyal toast, the President proposed "The County and City of Cork Medical and Surgical Association," which was replied to by Professor S. O'Sullivan and Dr. J. Cotter. "The Cork School of Medicine" was proposed by Mr. Maurice Healy, M.P., and responded to by Professors Hartog and Bergin. "The President and Professors of Queen's College, Cork," was proposed by Dr. O. T. Woods, and responded to by Sir Rowland Blennerhassett and Professor Savage Armstrong. "Our Guests" was proposed by the President; and the Mayor, Professor Keane, and Mr. M. D. Daly replied on behalf of the guests. "The Navy and Army Medical Services" was proposed by Dr. N. J. Hobart, and responded to by Surgeon Power, R.N., and Colonel Riordan, P.M.O. "The President of the County and City of Cork Medical and Surgical Association" was given by the Mayor, and replied to by Dr. Magner. "The South of Ireland Branch, British Medical Association," proposed by Dr. T. B. Moriarty, was responded to by Dr. Giusani, President of the Branch, and Professor Corby. The President then proposed "The Health of Dr. N. J. Hobart," who having replied, a most enjoyable evening was brought to a close to the strains of "Auld Lang Syne."

Mason College, Birmingham.—The annual dinner of the past and present students of the Queen's Faculty of Medicine, Mason University College, Birmingham, was held at the Grand Hotel on Thursday, November 10th. Mr. Frank Marsh presided, and Mr. A. Lucas and Mr. C. Leedham-Green acted as Vice-Presidents. Many past students and members of the Hospital and College staff were present. After the toast of "The Queen" had been honoured, that of "The Students, Past and Present," was given by the Chairman, who referred to the many men of distinction who acknowleged the College as their Alma Mater. He spoke of the value of such meetings in promoting the good fellowship so essential in the medical profession, and referred to the important part which athletics played in a man's career, saying that a good athlete was a good student. Sir James Sawyer, who responded on behalf of the past students, urged all medical men to take up a hobby, so as to have some relief and change from professional duties. Mr. L. Satchwell Smith responded on behalf of the present students. Mr. Eales then proposed the toast of "The Medical School." He congratulated the students on the excellent opportunities afforded them, and expressed a hope that some day all the hospitals in Birmingham would be amalgamated for the purpose of clinical study. Mr. Haslam, Honorary Secretary of the Clinical Board, in responding, remarked that in his opinion the Birmingham school was second to none in the kingdom. Mr. C. Leedham-Green proposed the toast of "The Visitors," to which Mr. H. A. Pearson (Coroner for South Staffordshire) responded in a humorous speech. Mr. Jordan Lloyd proposed the toast of "The Officers of the Dinner," mentioning the cordial relations which existed between the teachers and the taught. Mr. A. Lucas and Mr. F. W. Bywater suitably responded. A short musical programme brought the function to a close.

MEDICAL VACANCIES.

The following vacancies are announced:

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. Residence, board and washing provided. Applications to the House Governor by November 26th.

BIRMINGHAM: MASON UNIVERSITY COLLEGE.—Lecturer on Osteology and Chief Demonstrator of Anatomy. Applications to the Secretary by December 3rd.

BRADFORD ROYAL INFIRMARY.—House-Physician, unmarried. Salary, £100 per annum. Dispensary Surgeon, unmarried. Salary, £100 per annum. Also Junior House-Surgeon. Salary, £50 per annum. Board and residence provided in each case. Applications, endorsed "House-Physician," "Dispensary Surgeon," and "Junior House-Surgeon" respectively, to the Secretary by November 21st.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN AND LYING-IN INSTITUTION.—Honorary Surgeon in Ordinary. Applications to the Secretary, 76, West Street, Brighton, by November 30th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £85 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—Assistant Surgeon. Applications to the Secretary by December 5th.

CHICHESTER INFIRMARY.—House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 26th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to be sent in by [illegible]

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon. Salary, £140 per annum, with lodging. Applications to the Secretaries, 2, Bondgate, Darlington, by November 24th.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, E.—Assistant Physician. Applications to the Secretary by November 26th.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road, S.E.—Junior Resident Medical Officer and Registrar. Salary, £50, with board and washing. Applications to Committee of Management by November 25th.

FINSBURY DISPENSARY, Brewer Street, Goswell Road, E.C.—Resident Medical Officer. Salary £100 per annum, with attendance, coals, and gas. Applications to the Secretary by November 30th.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist. Salary, £250 per annum. Applications to the Clerk of the County Council by November 28th.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum, with board, lodging, and washing. Applications to the Secretary by November 21st.

GLOUCESTER: GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Board, residence, and washing provided. No salary. Applications to the Secretary by November 30th.

HULME DISPENSARY, Manchester.—Honorary Surgeon. Also a House-Surgeon. Salary for the latter, £140 per annum, with apartments, attendance, and gas. Applications to the Honorary Secretary, Medical Committee, by November 21st.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £80, rising to £90 per annum, with board and residence. Applications to the Secretary by November 22nd.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum. Also Assistant Surgeon. Applications to the House-Governor by November 25th and December 16th respectively.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—House-Surgeon to the Male Hospital. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary at Harrow Road by November 26th.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board and washing. Applications to the Secretary, 27, Clement's Lane, Lombard Street, E.C., by November 28th.

PLYMOUTH BOROUGH ASYLUM, Blackadon, Ivybridge, Devon.—Assistant Medical Officer. Salary, £125 per annum, increasing to £150, with furnished apartments, board, and washing. Applications, endorsed "Assistant Medical Officer," to A. N. Davis, Esq., Medical Superintendent, by November 26th.

ROYAL ORTHOPEDIC HOSPITAL, 297, Oxford Street, and 15, Hanover Square, W.—House-Surgeon and Anæsthetist, unmarried. Salary, £100 per annum, with residence and partial board. Appointment for six months, but eligible for re-election. Applications to the Secretary by November 25th.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, Strand, W.C.—Clinical Assistant. Applications to the Secretary by November 26th.

ST. PETER'S HOSPITAL, Henrietta Street, Covent Garden, W.C.—House-Surgeon. Appointment for six months, but eligible for re-election. Salary at the rate of £100 a year, with board, lodging, and washing. Applications to the Secretary by November 23rd.

SHEFFIELD ROYAL HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum, with board and washing. Applications to the Honorary Secretary of the Staff by November 21st.

VICTORIA HOSPITAL FOR CHILDREN, Queen's Road, Chelsea, S.W.—Assistant Physician to out-patients. Applications to the Secretary by November 26th.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician. Must be F. or M.R.C.P.Lond. Personal application to the House Committee on November 29th.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £120 per year, and £30 for dispensing, with furnished apartments and attendance. Applications to the Secretary by November 26th.

MEDICAL APPOINTMENTS.

AGAR, Morley, F., M.R.C.S., L.R.C.P.Lond., appointed Assistant Surgeon to, and Surgeon to the Nose, Throat, and Ear Department of, the Hospital of St. Francis, New Kent Road, S.E.

BLAMEY, James, M.R.C.S.Eng., L.S.A., reappointed Medical Officer of Health to the Penryn Urban District Council.

BOYCOTT, Arthur Norman, M.D.Lond., appointed Medical Superintendent to the new Hertfordshire County Asylum, Hill End, St. Albans.

BRANWELL, Charles, M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Royal Cornwall Infirmary.

COLLINS, Dr. J. W., appointed Medical Officer for the Castor District of the Peterborough Union, *vice* Wm. Ensby, M.D.Brux., L.R.C.P.Lond., resigned.

COLTART, Wilfrid H., M.R.C.S., L.R.C.P., appointed House-Physician to the Queen's Hospital, Birmingham.

COWIE, Mr. G., appointed Assistant Medical Officer to the City Road Workhouse of the Holborn Union, *vice* E. E. Norton, M.R.C.S.Eng., L.R.C.P., resigned.

CROSSLEY, H. J., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Medical Officer at the Crumpsall Workhouse, Manchester, *vice* A. H. Burgess, M.B.

DENT, Howard H. C., M.B.Dunelm, M.R.C.S., L.R.C.P., appointed House-Surgeon to the Queen's Hospital, Birmingham.

DU CANE, Edgar, B.A., M.B., B.Ch., appointed Assistant Surgeon to the Great Western Railway Hospital and Works, New Swindon.

ELLERY, Mr., appointed Second Assistant Medical Officer to the Whitechapel Union Infirmary.

EVANS, H. M., M.D.Lond., M.R.C.S.Eng., appointed Assistant Surgeon to the Lowestoft Hospital.

FIELD, R. C., M.B.Lond., appointed Resident Obstetric Officer to the General Infirmary, Leeds.

GAIRDNER, J. Francis R., M.B., C.M.Glasg., M.R.C.S.Eng., L.R.C.P.Lond., appointed Resident Surgical Officer to the General Infirmary, Leeds.

HEPBURN, Malcolm L., M.D., B.S.Lond., F.R.C.S.Eng., appointed Assistant Surgeon to the Lowestoft Hospital.

JOLLY, J. H., L.S.A., appointed Medical Officer for the Sixth District of the Bridgwater Union, *vice* G. Forden, M.R.C.S.Eng., resigned.

LAMPLOUGH, Charles, M.D., M.R.C.S., L.R.C.P., appointed Medical Officer of Health to the Chatteris Urban District Council.

LAVER, Philip Guyon, M.R.C.S., L.R.C.P., appointed Medical Officer to the Colchester Union, *vice* Henry Laver, M.R.C.S.

LORD, C. Courtenay, M.A.Cantab., M.R.C.S., L.R.C.P., appointed Ophthalmic and Obstetric House-Surgeon to the Queen's Hospital, Birmingham.

MCKINLAY, J. R., L.S.A., appointed Assistant Medical Officer at the Gordon Road Workhouse and the Heaton Road Homes of the Parish of St. Giles, Camberwell, *vice* A. J. Bennetts, M.R.C.S.Eng., L.R.C.P.

MEAKIN, Miss E. B. M., appointed Assistant Medical Officer at the Infirmary of the Parish of St. Giles, Camberwell, *vice* Miss E. Vaughan, M.B., resigned.

OYSTON, W. F., M.B., Ch.B.Vict., appointed one of the House-Physicians to the General Infirmary, Leeds.

PALMER, Horace J., L.R.C.S., L.R.C.P.E., L.F.P.S.Glasg., appointed Certifying Factory Surgeon to the Civil Parish of Gamlingay in Caxton and Arrington Rural Sanitary District, the Civil Parishes of Potton, Cockayne-Hatley, Sutton, and Wrestlingworth in Biggleswade Rural Sanitary District.

ROBERTSON, William, M.D., D.P.H., appointed Factory Certifying Surgeon for the Perth District, *vice* Alexander Simpson, M.A., M.D., B.Sc.Pub.Health, deceased.

SPONG, A., M.B., Ch.B.Vict., appointed Resident Medical Officer at the Ida Hospital, General Infirmary, Leeds.

SKIPWORTH, H., L.R.C.P.I., M.R.C.S.Eng., appointed Medical Officer of Health to the Quorndon Urban District.

STANSFIELD, H., M.B., Ch.B.Vict., appointed one of the House-Physicians to the General Infirmary, Leeds.

TORRENS, J., M.D., appointed Medical Officer to the Scisdon Union Workhouse, *vice* Mr. J. Fraser, resigned.

TRETHEWY, A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., appointed Resident Medical Officer to Haileybury College.

TROTTER, E., M.B., Ch.B.Vict., appointed one of the House-Surgeons to the General Infirmary, Leeds.

TURTON, E., M.B., Ch.B.Vict., appointed one of the House-Surgeons to the General Infirmary, Leeds.

TYSON, Wilson, M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Surgeon to the Lowestoft Hospital.

WILLIAMS, Dr., appointed Medical Officer for the Cwmavon District of the Neath Union.

WYLDE, J. H., L.R.C.P.I., L.M., appointed Medical Officer for the Eighth District of the Ashton-under-Lyne Union, *vice* W. E. S. Burnett, L.R.C.P., L.R.C.S.Edin., resigned.

DIARY FOR NEXT WEEK.

MONDAY.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Griffith C. Wilkin, Esq.: Nasal Polypi.

TUESDAY.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Puerperal, Lactational, and Climacteric Insanities. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: Syphilides.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C. 3.30 P.M.—Dr. Taylor: Cerebral and Spinal Paralyses in Children.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. T. D. Savill: Cases of Hemiplegia and the Treatment of the Affection.

Royal Medical and Chirurgical Society, 8.30 P.M.—Mr. J. Lynn Thomas will show specimens. 8.30 P.M.—Papers: Mr. Edmund Owen: A distinct variety of Hip-joint Disease in Children and Young Persons. Mr. J. Hutchinson, jun., and Mr. H. L. Barnard: On an Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur.

WEDNESDAY.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Infectious Diseases, etc.

Dermatological Society of Great Britain and Ireland, 20, Hanover Square, 5 P.M.—Mr. Campbell Williams, F.R.C.S.: Congenital Syphilis: a New Theory. Dr. A. Hall Sheffield: (1) Note on Eczema produced by Phenyl Hydrazin Hydrochlorate; (2) Photographs of a case of Primary Syphilis with two hard sores on the hand. Exhibition of cases at 4.30 P.M.

Hospital for Consumption and Diseases of the Chest, Brompton, 4 P.M.—Dr. S. Martin: Asthma and its Treatment.

Hunterian Society, 8.30 P.M.—Dr. T. Glover Lyon: On an Inquiry into the Production of Blood Plasma, its Vital Properties and Mode of Nourishing the Tissues. Mr. T. H. Targett: On two cases of Cancer of the Uterus, with Pregnancy.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Dunn: Examination of the Eye.

THURSDAY.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Mr. John Croft: Clinical Lecture.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture on Demonstration of Recent Specimens.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Dr. Willcocks: Demonstration of Medical Cases.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

FRIDAY.

London Post-Graduate Course, Bacteriology at King's College, 3 to 5 P.M.—Professor Crookshank: Erysipelas and Suppuration, etc.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M.—Miss Amy Hughes: District Nursing.

Clinical Society of London, 8.30 P.M. Mr. W. G. Spencer: Gumma of the Liver; cases in which surgical measures were followed by relief. Dr. Morley Fletcher: Green Urine. Mr. F. C. Wallis: Two cases of the Effects of Gastric Ulcer treated by operation.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Mr. Dunn: Examination of the Eye.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

CLARKE.—On November 16th, at 3, Cavendish Square, W., the wife of Ernest Clarke, M.D., F.R.C.S., of a daughter.

MARRIAGES.

BONE—JENSEN.—On October 31st, at the Church of the Holy Trinity, St. Giles, London, by the Rev. T. L. Evans, Vicar, Bertram Mayhow Bone, M.B., C.M., son of the Rev. John Bone, St. Thomas's Vicarage, Lancaster, to Edith Mary Jonson, daughter of William Briggs, Esq., Beccles, Suffolk.

COLMAN—OATES.—On November 16th, at the Grafton Square Congregational Church, Clapham, Walter Stacey Colman, M.D., F.R.C.P., son of S. C. Colman, of Peterborough, to Dorothea Oates, M.D., second daughter of W. S. Oates, J.P., of North Side, Clapham Common.

LAMPLOUGH—GATES.—On November 9th, at St. Mary Abbott's, Kensington, Charles Lamplough, M.D., M.R.C.S., L.R.C.P., son of Robert Lamplough, of Leamington Spa, to Edith Mary, daughter of Allen Owen, of Avonmore Mansions, Kensington.

SCOTT—ROSE.—On November 9th, at the English Church, Funchal, Madeira, by the Rev. W. Graham, John Gerald Scott, M.R.C.S., L.R.C.P. Lond., M.R.C.S.Eng., of Funchal, only son of the late W. B. A. Scott, M.D., to Maud Beatrix Louise, only daughter of the late Chas. Rose, Esq., of West Australia and Mrs. Rose, of Funchal.

SMITH—RUSSELL.—On November 9th, at St. Mark's Church, Greenwich, Captain Henry [illegible], M.D., I.M.S., to Hester Dill Russell, M.D.B.U.I.

DEATHS.

BARRY.—On October 31st, at 10, Brompton Square, London, S.W., Julia, the dearly beloved wife of W. J. M. Barry, M.D., M.R.C.P., Requiescat in Pace.

MACLEAN.—On November 14th, at Oakleigh, Sidmouth, Devon, aged 85 years, Surgeon General William Campbell Maclean, C.B., LL.D., M.D., Honorary Surgeon to the Queen, sixth son of the late John Maclean, of Boreray and Drimnin, N.B.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—I.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Tu., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Tu., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Tu., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT. We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Alitalogy, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are directed will be found under their respective headings.*

QUERIES.

The Isle of Man.

H.J.M. wishes to know where he can find reliable information as to the climate of the Isle of Man, more especially as to dampness, freedom from fog, and suitability for patients suffering from phthisis and chronic muscular or articular rheumatism.

Institution for Diabetics.

Mr. Woodley Stocker asks whether there is any institution where diabetics are taken in, and the special diet that is required supplied?

**** Every general hospital in the country takes in cases of diabetes, and affords them all dietetic and other treatment that can be supplied, but we know of no special institution having this for its object. Physicians occasionally take diabetic patients into private nursing homes for a course of treatment, though this is more often done in Germany than in England.

ANSWERS.

H. R. B.—The name of Edwin William Alabone was erased from the *Medical Register* on November 16th, 1886, by order of the General Medical Council in consequence of his name having been removed from the list of Members of the Royal College of Surgeons of England.

Metropolitan.—In reply to our correspondent's questions, we are of opinion (1) that it is uncommon for a newcomer to call upon all the doctors in the Cavendish Square quarter. (2) That it is objectionable to advertise a medical publication as procurable at the author's address.

W. B.—There can be no question of a patient's right to be treated by any practitioner whom he may choose, but it is the honourable custom of members of the medical profession not to continue in attendance on a patient to whom they may be called in an emergency if the patient can be induced to place himself for further treatment under his usual medical attendant. It is well to ask the patient to write an explanatory letter, but it is not always easy to induce him to do so.

G.A.G.S.—A. would have acted more judiciously had he written to B., putting him in possession of all the facts, before he had finally accepted C. as his patient. C. has a right to his own selection, and there is no rule preventing A. from accepting the responsibility, but every medical man owes it to a brother practitioner not to replace him without laying before him a clear statement of the facts, so that each of them may act in support, though each placed, through the caprice of the patient, temporarily in a relation which is trying.

Liquor Ferri Perchloridi and Sodii Hyposulphis.

F.R.F.—Liq. ferri perchlor. and sodii hyposulph. are chemically incompatible. A solution of sodium hyposulphite (thiosulphate), added to liq. ferri perchlor., produces a purple-black colour, which gradually disappears as the ferric salt is reduced to ferrous chloride. The resultant solution after a time deposits sulphur.

Sanatoria for the Open-Air Treatment of Phthisis.

In further reply to various correspondents we may state that we are informed that a private home for the treatment of tuberculous phthisis on the open-air system has been opened at Holne Chase, Marine Mansions, Bexhill-on-Sea. Eight patients are received, and the terms are from six guineas a-week. Further particulars can be obtained from the Lady Superintendent, who is a trained nurse. Arrangements have been made for the supply of milk from cows ascertained to be free from tubercle by the tuberculin test carried out under veterinary supervision. The climate of Bexhill is described as mildly bracing, the place being somewhat colder than Hastings, but enjoying a large amount of sunshine.

Diseases in Australasia.

F. W. C. writes in reply to "Surgeon-Major I.M.S." as to diseases in New South Wales, that with the exception of hydatids a few cases of beri-beri, leprosy, and yaws from the South Sea Islands, the diseases are practically those seen in this country, for though the climate of New South Wales is an improved English climate, there is no material difference in this respect between the two countries.

NOTES, LETTERS, Etc.

Writing Pads and Handwriting.

The Leadenhall Press (50, Leadenhall Street, London, E.C.) has sent us some writing pads which embody several improvements. The paper is described as "hairless," and undoubtedly the pen travels over it smoothly and without picking up any hairs or fragments. The back, instead of being made of cardboard, consists of thick blotting paper, which is as firm as cardboard, and at the same time can be used for drying the sheets as written. Further, a wooden holder for the pads can be obtained, which will be found very convenient by those persons who indulge in the habit, whether bad or good we will not venture to say, of writing on the knee. The holder is so made that it not only gives firmness to the block but supports the wrist, though to be perfect it ought to be a little broader at the bottom. Using the holder the blotting-pad back of the block comes in very handily, since each sheet, as it is torn off, can be slipped under the pad, and is dried automatically. The manufacturers quote, from we know not what authority, the saying, "With bad paper one's best is impossible." We may add with some feeling that if this or any other kind of pad or kind of paper could be trusted to render handwriting more legible, the invention ought to be tried by members of the medical profession, for we must confess to a grounded belief that there is no other class of educated men whose handwriting is, as a rule, so bad and difficult to decipher. The loss of time which is daily inflicted by this careless habit is very serious both to those who have to read the communications and to the working printers who have to put them into type. Not infrequently we receive letters the authorship of which can only be established by consulting the local lists in the *Medical Directory*. The particular pads which have led to this digression cost 6d. each, or 5s. a dozen; the pad-holder 1s. The postage on pad and padholder is 3d.; on a dozen pads 9d.

The Writing of Prescriptions.

J. M. Y. writes: This week there has been reported a case of death from opium poisoning, caused by the nurse having mistaken the symbol ʒ for ʒ. I believe this is not the first case of misadventure from a similar cause. It occurs to me that medical men might prevent a recurrence of such a mishap by simply writing the quantities in their prescriptions in terms understood by all. There is not much more trouble in writing ½ drachm or ½ oz. instead of ʒss or ʒss, or 1 scruple instead of 9j. Surely at this time of day we can afford to dispense with these symbols considering the danger to human life which their use may involve.

Punctured Wound of Chest Produced by Fish.

Dr. S. Osborne Browne (Assistant Colonial Surgeon, Stann Creek, British Honduras) writes: The following account of how a fish killed a man may be of interest to you and merit a place in the British Medical Journal. Two Caribs and a boy went to fish at Cross Caye (island). The deceased was sitting in the bow of the boat when a fish called a "long-guard" hit him in the chest. From the evidence given at the inquest it appears that deceased shouted out, "a fish has killed me, lower the sail and drop the anchor." He then leaned forward on the seat in front of him, and breathed very quickly with a rattling noise. They shook and shouted to him, but he neither spoke nor moved. He died in 20 to 30 minutes, and they came ashore. The fish was found in the boat with its snout covered with blood and the water in the boat became quite red. On examining the body 5 hours later I found that *post-mortem* rigidity had begun. The mucous membranes of the mouth and eyelids were very pale, the face placid, the pupils equal and neither contracted nor dilated. The jersey and shirt were saturated with blood, which was not clotted. There was a punctured wound the size of the fish's snout through the first intercostal space immediately to the right of the sternum. The internal mammary artery was severed, the pleura pushed aside, but neither the lungs nor heart were injured. Death seemed to result more from shock than from hæmorrhage.

The fish is common about this place, and seems to belong to the Belone genus. The one in question weighed 1 lb. 9 oz., and measured 2 ft. 3 in., 3 in. of which were snout. They can rise out of the water and fly with great velocity for many yards. I have heard of them passing through a sail and the side of a boat, but it is now on record that they can take a man's life.

The New Autocrat of the Breakfast Table.

Dr. Rabagliati (Bradford) writes to complain of the reference made in the article entitled "Christian Science," which appeared in the British Medical Journal of November 12th. He says that we have by implication accused Dr. Dewey of being a "quack." If Dr. Rabagliati will read the sentence of which he complains more carefully he will see that we spoke of "follies" as well as "frauds." So far as Dr. Dewey teaches moderation in diet he teaches a part of that doctrine of "moderation in all things" which has been taught by physicians of every school since the days of Hippocrates. Directly we go beyond this, and seek to find out what it is that Dr. Dewey believes which distinguishes him from other writers, we meet with statements and opinions which we take the liberty of characterising as "foolish." It is of this only that we accuse him. We may add that we know nothing of Dr. Dewey except what may be gathered from a book now before us, the title-page of which runs as follows:

THE TRUE SCIENCE OF LIVING.

The New Gospel of Health.
Practical and Physiological.
Story of an Evolution of Natural Law in the Cure of Disease.
For Physicians and Laymen.
How the Sick Get Well: How the Well Get Sick.
Alcoholics freshly Considered.
By Edward Hooker Dewey, M.D.

In this work Dr. Dewey states that he received his medical degree from the College of Medicine and Surgery of the University of Michigan, and we have no reason whatever to doubt the truth of this statement. We certainly did not intend to imply that Dr. Dewey is not a qualified medical practitioner, nor did we wish to convey the impression that he is a "fraud." But his doctrine seems to us to be "folly," as it condemns "feeding as a disease-producing agency" in many conditions in which the withholding of nourishment is generally held to be dangerous. His system of treatment, as far as we are able to gather, is simple therapeutic nihilism, everything being in all cases left to "my sheet anchor, Nature." Dr. Dewey himself will, we imagine, bear with fortitude the opinion which we have expressed of his system; indeed, we are disposed to think that he rather glories in standing alone with the whole medical universe against him. (The words are his own.)

An Outfit for Klondyke.

As we have received several letters which appear to indicate that there are enterprising members of the profession who are looking to Klondyke as a possible sphere of practice, we think the following "Points for Prospectors" given by the *British Columbia Review* may be useful:

"The information which we append concerning outfits, etc., will be of much use to those who intend to explore the tributaries of the Yukon without being bound to keep in touch with some base of supplies. No one should go alone; by forming parties supplies can be bought cheaper. They will also need only one set of camp tools, can both make and break camp quicker, and also reduce the weight of each one's outfit materially. One point insisted on by old miners is that one

should take plenty. The body needs more food to sustain it in an extremely cold climate than in the lower latitudes, especially when continually employed in arduous outdoor work. To withstand the cold one needs a large amount of such food as beans, rice, meal and flour, and of fatty meats. The outfit should also include a box of candles, two dozen bars of soap, mustard, Jamaica ginger, and a half tin of matches. A small medicine case well stocked with standard preparations is necessary, and quinine and calomel should always form a part. Also acetic acid, one teaspoonful diluted in water, will make a glassful of ordinary vinegar, and citric acid will make lemonade and also prevent scurvy.

"In the way of groceries we suggest the following for one man for a year: 350 lbs. of flour, 150 lbs. of bacon, 100 lbs. of beans, 15 lbs. of tea, 25 lbs. of rice, 50 lbs. of dry salt pork, 100 lbs. of dried fruits, 50 lbs. of salt (for canning and cooking), 2 lbs. of evaporated vinegar, 20 lbs. of condensed milk, 50 lbs of corn meal, 50 lbs. of rolled oats, 30 lbs. of coffee, 100 lbs. of sugar, 25 lbs. of dried beef, 40 lbs. of evaporated potatoes, 15 lbs. of evaporated onions, 10 lbs. of baking powder, 12 lbs. of condensed soup. In addition, each man should have a gold pan, a pick, shovel, axe, and hatchet, a pocket compass, a stout clasp knife, a pair of snow glasses to save the eyes from the glare of sunlight on snow; a rifle or shot gun is also useful. As to clothing, a full equipment for each man should consist of the best quality woollens, both suits and undergarments, mocassins, high india-rubber boots; also furs are necessary. The prospector will also need a tent, stove, gold scales, tools, and implements, etc.

"The following suggestion will be found useful: For frozen fingers use cold water. Nowhere are mosquitos so numerous. There are two kinds of poisonous flies. The best protection is silk tissue, not gauze. Do not eat snow or ice; melt them. Use blankets in summer and avoid rheumatism."

ASEPTIC MIDWIFERY: A CORRECTION.

DR. JARDINE (Glasgow) writes: In reference to Dr. Newell's note, he is quite right. If it had been *re* instead of *on* it would not have made any difference. I regret exceedingly that space did not allow me to take up his letter paragraph by paragraph. To have done so would have given me great pleasure. My memory is fairly good, and besides, I had my article before me when I wrote, which I am inclined to think few of my critics seem to have had, judging from the number of misrepresentations indulged in. When he was at it he might also have corrected a mistake in one of his quotations. He is quite welcome to his opinion that my reply was childish, and for that matter so is any other man who thinks so. I have passed the stage of childhood in the profession, and am still a considerable distance from my dotage.

THE ROYAL ARMY MEDICAL CORPS.

ADVERTING to the short article in the BRITISH MEDICAL JOURNAL of November 12th, H. writes: It is important to would-be candidates for the next examination in February to know that there is now required from all candidates a definite standard in height, chest measurement, and weight. At the last examination several candidates were rejected on one or other, or all, of these grounds to whom it would have been a distinct advantage to have known before going through special instruction and preparation for the examination that they did not reach the required standard. Candidates for the R.A.M.C. have now, like all other candidates for the army, to satisfy the requirements alluded to.

THE GENTLE ART OF ADVERTISEMENT.

TO the philosophic student of the current literature of the present day nothing is more amusing, and in its way instructive, than the ingenuity with which the advertiser turns everything to favour—to his own favour, that is—if not always to prettiness. In connection with the recent visit of English pilgrims to Rome, it is stated that among the presents sent to the Pope was "a case of clinical thermometers of the pattern employed by Mr. Gladstone in his last illness, and adopted by Sir Morell Mackenzie for use in the case of the late Emperor Frederick." These interesting objects were presented by a London manufacturer who was doubtless actuated solely by the wish to show his respect for the Holy Father, who, being presumably a connoisseur in relics, may naturally be supposed likely to accept a new variety with enthusiasm. But persons of sordid mind will probably see in the gift a desire on the part of the eminent manufacturer to add the Pope to the list of august patients who have used his thermometers.

LARGE FOETUS.

DR. P. O'CONNELL (Stillorgan Castle, co. Dublin) writes: The note of Dr. Arthur Dobbing, in the BRITISH MEDICAL JOURNAL of September 17th, p. [illegible] recalls to me that I delivered a woman in her fourth labour, when the [illegible] were unusually large and broad shouldered. The child [illegible] that I weighed it. The weight was just 15 lbs. No trouble was [illegible] in the confinement. Two years later I again attended the [illegible] patient [illegible] gave birth to twins—a male and female—and each child weighed 11 lbs.

MEDICAL FEES FOR LIFE INSURANCE EXAMINATIONS.

REVIEWER writes: I reply to "General Practitioner" *re* above. I beg to state that the New York Mutual Insurance Company pay a fee of one guinea for medical examination for any sum assured up to £5,000, if above that sum [illegible] fee of £2 2s.

It is time we [illegible] on this insurance question. The low fees the Accidents [illegible] under the Workmen's Compensation Act [illegible] only paying [illegible] panies actually [illegible] from two to four [illegible] to a report for 2s. 6d. Medical men of good standing in [illegible] have accepted these terms.

LETTERS, COMMUNICATIONS, ETC. [illegible] received from

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AN ADDRESS
ON
COXA VARA.

Delivered before the Surgical Section of the Royal Academy of Medicine in Ireland, November 11th, 1898.

By Sir THORNLEY STOKER, F.R.C.S.I.,
Surgeon to the Richmond Hospital, Dublin.

As the condition of coxa vara is one so recently described and as yet so little studied that its name may convey no clear idea of its nature, I shall, perhaps, be excused for commencing by a definition of its circumstance, and for saying that the disease with which it has previously been confused, and from which it is most important to diagnose it, is morbus coxæ.

It is a bending downwards of the head of the femur, due to curvature of its neck, so that the head of the bone is nearly as low as, or even lower than, the top of the great trochanter. The bending of the neck is such that it is convex upwards and forwards. The deformity is usually due to rachitis, and is probably a common disorder, although it has but recently been described. Its discovery ranks in importance and novelty with that of post-nasal adenoids by Meyer, of Copenhagen, in 1868, and just as these vegetations are easily recognised and treated now that an original observer has taught us how to look for them, so we may see many examples of coxa vara now that we have been educated as to its existence. There is this difference between the two discoveries: that whereas Meyer gave us in the beginning comparatively full information of the nature and treatment of adenoids, and left but little room for further observers, the discovery of the diseased condition now under consideration, although followed by some information about its diagnosis and treatment, still leaves room for an increase of our knowledge concerning it.

Coxa vara was first discovered so late as 1889 by Ernst Müller, and was more fully investigated and described in 1894 by Hofmeister, of Tübingen, who gave it its name. So far as I know the condition was first introduced to the notice of British surgeons by Professor Ogston, of Aberdeen.[1] It is interesting to note that he says he "had previously for several years been collecting records and photographs of this condition under the designation of rachitic deformity of the head and neck of the thighbone," when he found that Hofmeister had also been at work, and had published his results. Professor Ogston's article, however, threw new and original light on the subject, and since the time of its appearance the diagnosis, previously difficult and largely conjectural, has by the introduction of the Roentgen rays been made quite exact.

Nature of the Deformity.

The angle of junction of the neck with the shaft of the normal femur varies with age, being more obtuse in early life and approaching more nearly to a right angle as age advances. Thus, in a young adult it is about 128°, in a child is much larger and more open, while in those of advanced years only does it ever approach a right angle.

As regards the deformity of coxa vara, it is a condition where the head of the femur may be so depressed that it is below the level of the top of the great trochanter, and that the neck may form an angle with the shaft of even less than 90°. In minor varieties of the deformity it may occupy any level between this and the normal elevation, which of course varies with age, the head being higher in proportion to the youth of the subject and the obtuseness of the angle of junction of the neck with the shaft. Also the neck is curved in such a way that its anterior convexity is much increased. To the first of these conditions is due the shortening of the limb, which is a characteristic sign; and to the second the eversion of the extremity, which is even more remarkable. The greater the depression of the head the more the shortening; the greater the anterior convexity of the neck the more the eversion. Coxa vara is generally unilateral, although cases have been seen where it has been present on both sides, as in the illustration here appended, which is taken from a rickety skeleton in the museum of the Royal College of Surgeons in Ireland. I am not aware that any record has as yet been made of the side on which it generally occurs, but mechanically judged it should appear more often on the left side than the right, as in the bulk of persons, who are right-handed, the chief weight is commonly thrown on the left hip.



Causes.

Of causes, the most usual is rickets in young children, and osteomalacia after puberty or in early adult life. Occupation is necessarily a factor of provocation, and that those employments which keep the sufferer on his feet are most injurious will be understood when we remember that, taking its mechanical position together with the superincumbent weight it has to bear into consideration, it is probable that the neck of the femur is proportionately more severely strained than any other bony point in the skeleton. Given, then, a femoral neck softened and made less resisting by disease, the mechanism of the deformity is readily explained. The convexity of the neck in an upward and forward direction is an example of the law usually observed in rickety bones that the bend is an exaggeration of the normal curvature governed by the line of greatest pressure.

Softening of the bone due to inflammation, tuberculous or simple, has also been assigned as a cause of this complaint, and it is particularly necessary to remember this in connection with the explanation of certain mixed cases I have observed, and in which it is not possible to eliminate altogether the existence of morbus coxæ.

Sex seems to be a factor in the production of coxa vara, as it is more usually seen in males. Having in view the greater obliquity of the shaft of the femur in the female as contrasted with the male, and the therefore more vertical direction of the axis of the neck in the former sex, and also having regard to

the comparative shortness of the neck in the female, this sexual proportion is what we should expect to find, as the neck in females, being shorter, is proportionately stronger, and being more vertical is more in the axis of pressure, and therefore for both reasons better able to sustain its burden without yielding.

Diagnosis.

The question of the symptoms and signs of coxa vara, and its diagnosis from conditions resembling it is an important one, and doubly interesting because it is only in process of elucidation. As it is not a condition dangerous in itself to life, and as the most common of those with which it may be confounded—namely, morbus coxæ—is highly dangerous, the diagnosis is of the more moment.

As usual, in the case of a newly-described complaint, some persons seem to exhaust themselves on classification, even before the diagnostic evidences are thoroughly laid down. I find the following four varieties mentioned: (1) Congenital: (2) infantile; (3) coxa vara adolescentium; (4) coxa vara of adults.

We need scarcely in the present stage of our knowledge trouble ourselves by attempts to separate these forms very exactly. They all present certain features more or less common, dependent on bony deformity, and their further differentiation lies in the recognition of the age at which they occur and the general circumstances of their causation. Thus the first and second are probably always due to rachitis, and the ordinary historic evidences of that disease are found. The third may be rachitic or due to inflammatory softening, tuberculous or simple; whilst the fourth is almost necessarily the result of osteomalacia.

Let us examine the evidences of disease common to all forms, whether of infancy, puberty, or adult life, and leave the separation into the divisions named to be effected by a consideration of the age at which a particular case occurs and the constitutional conditions present.

Suffice it to say in this context that what I may call "true" coxa vara is that dependent on rickets, and that it may be seen at any time between 3 and 18 years of age. It has been said that 13 to 18 is the limit, but I have seen one case at 3½ years of age, whilst the oldest I have noted was 17. That it is not noticed before 3 or 4 years of age is what might be expected, for it is about the period of infant life that extreme activity begins to develop.

The following are the signs and symptoms as yet recorded of this complaint:

1. The gradual onset of lameness between the ages mentioned.
2. Of pain referred to the knee.
3. Shortening varying from ¼ to 2½ inches.
4. Lessened range of motion of the hip particularly in the direction of abduction.
5. Eversion nearly always present.
6. Adduction, but usually no power to transadduct.
7. Trochanter moves in its normal arc.
8. Range of rotation of joint is lessened.
9. No visible swelling or marked wasting or obliteration of gluteal fold in the early stages of the disease (Ogston).
10. When the hip is flexed beyond the point where the foot touches the knee of the opposite side, rotation of the thigh outward takes place, so as to cross the extremity in "tailor's" fashion.[2]
11. Thomas's test if applied in a case of coxa vara will allow the popliteal surface to come into contact with the table.
12. The final and unanswerable test is the application of the Roentgen rays if a skiagraph can be successfully taken.

While it is to be remembered that few of these conditions are absolutely constant, and that, as Mr. Muirhead Little lately remarked, no symptoms are in themselves pathognomonic (from which statement we must, of course, except the evidence of the Roentgen rays); yet if these signs be contrasted with those of early morbus coxæ they will generally lead to a correct diagnosis when studied *in globo*. An analysis of the foregoing list of signs and symptoms, and a comparison of them with the conditions present in morbus coxæ, will show that the chief differences in the two complaints are as follows:

2. *Pain.*—This is referred to the knee, but I believe I have observed a difference which usually exists between the pain of morbus coxæ and that of coxa vara. While the former is referred to the back or inside of the knee, the latter is complained of in front of that joint. This is due to the fact that whereas the pain in morbus coxæ is carried by the genicular branch of the obturator which enters the knee from behind, that in coxa vara is conducted by the anterior crural, which, giving a filament from its deep division to the hip, afterwards supplies the front of the knee. It is probable that the increased anterior convexity of the neck in coxa vara exerts some pressure on, or irritation of, the anterior crural, and accounts for this variation.

3. *Shortening* is absent in the earliest stage of morbus coxæ when the difficulty of diagnosis is greatest. In the late stages of either disease no difficulty of forming an opinion should exist.

4. *Abduction* is a prominent sign in the early stage of morbus coxæ, and later on, when adduction takes place, it is accompanied by inversion.

5, 6. *Eversion* combined with adduction are never present in morbus coxæ in its early stage when the diagnostic difficulty arises (Hofmeister and Ogston). Transadduction is common in the late stage of morbus coxæ, is not present in coxa vara.

7. *The arc of movement of the trochanter* is diminished in morbus coxæ.

9. *Swelling of the joint*, with wasting of the muscles of the thigh, and obliteration of the gluteal fold, are evident in early morbus coxæ.

10. "*The tailor rotation*" is not found in morbus coxæ.

11. *Thomas's test*, if applied in morbus coxæ, will not allow the popliteal surface to rest on the table.

Table to Facilitate the Differential Diagnosis of Morbus Coxæ and Coxa Vara.

Symptoms and Signs of Coxa Vara.	Symptoms and Signs	Symptoms and Signs of Morbus Coxæ.
	Common to Both.	
Less marked	Lameness	More marked.
Referred to front of knee	Pain	Referred to back or inside of knee.
Present at first	Shortening	Not present at first.
With adduction	Eversion.	With early abduction only.
Lessened	Rotation.	Lessened.
	Not Common.	
No tenderness	—	Tenderness.
Adduction; no transadduction	—	Abduction in early stage.
No inversion		Inversion in late stage.
Trochanter moves in normal arc		Arc of movement lessened.
No swelling, wasting of thigh, or obliteration of gluteal fold in early stage	—	Swelling of hip, wasting of thigh, and obliteration of gluteal fold.
"Tailor's" rotation present	—	"Tailor" rotation absent.
Thomas's test negative	—	Thomas's test positive.
Skiagraph shows deformed neck	—	Skiagraph shows no deformity of neck.

It is not out of place to mention that of the three methods of measurement usually pursued: (1) From the anterior superior spine of ilium to patella; (2) the application of Nélaton's line; and (3) of Bryant's triangle, the latter is much the most exact and efficacious. It not only measures shortening better by its vertical side, but by its horizontal side gives an exact comparison of the degree of eversion as contrasted with the opposite limb.[3]

The various conditions which may be mistaken for coxa vara are as follows:

1. Morbus coxæ.
2. Congenital dislocation.
3. Other dislocations.
4. Fracture.
5. Upward enlargement of the acetabulum.
6. Rachitic curve of the upper end of the shaft of femur.

Of the first of these I have said enough, and with the rest it is not necessary specially to deal at present. The Roentgen rays will generally distinguish them from each other and from coxa vara, and if this method be not procurable, or should prove inefficient, an ordinary knowledge of surgical acts and principles will render diagnosis sufficiently easy.

Illustrative Cases.

Nothing can be more instructive as to the necessity for earning to see or more illustrative of how we may fail to perive plain things, than the late discovery which has taken lace of coxa vara. At the same time we are consoled for our ast blindness by the recollection of the unknown surgical ands which, inferentially, lie open to our exploration in uture. I have for many years been looking at cases of what I considered to be early morbus coxæ, in which recovery with a little shortening took place; it has even been possible to explain them to one's own satisfaction by speaking of "a resolution of inflammation" and "a quiet absorption of part of the femoral head" or of "an arrest of development" in the neck consequent on disease. These vague pathological phrases have a somewhat narcotic and comforting effect on our surgical anxieties, but they are empty sounds, and that they often signify nothing is amply shown by the history, or want of history, of the disease under consideration. We can now recognise most of these cases as ones of coxa vara, and think with wonder, and a little mortification, of our blindness.

Since April, 1896, I have identified at least eight cases of coxa vara, of which two were in girls, aged respectively 5 and 14 years, the rest were males. My youngest patient was a boy, aged 3½ years, the eldest a lad aged 17 years, the others being of various intermediate ages. The shortening in the youngest child was one-third of an inch, and in the eldest lad three-quarters of an inch.



The skiagraph here given which shows the disease in the right femur as seen from behind, is that of the latter case, and as the deformity is made so evident by comparison of the two sides, in spite of the moderate amount of shortening, it affords an excellent example of the value of this method of investigation. The greatest shortening I have seen was 1¼ inch. All these cases have so far done well, that is to say, the deforming process seems to have been stayed by treatment, and in two instances only have untoward circumstances shown themselves.

In one of these, that of the child aged 3½ years, periarticular suppuration followed an exacerbation of acute inflammation about the hip, and required incision, erasion, and free drainage. When I had cut down on the joint by an anterior incision, I had the opportunity of examining it with the finger, and finding, as I had anticipated from its relative freedom of movement, and from the knowledge gained in the earlier stage of the case by the use of the Roentgen rays, that the articulation itself was safe, and moved with smoothness and sufficient freedom. The child has since done well, is free from constitutional disturbance, and is able to get about very actively.

The second of the two cases is that of a female child who, having at the age of 4 years shown evidences of coxa vara, was seen by me in consultation with Mr. Coppinger. When 5 years of age she developed acute inflammation about the hip-joint, for which I again saw her. Had I not had a previous knowledge of the case and been fortified by the opinion of Mr. Coppinger, who agreed with me that it was coxa vara, I should have unhesitatingly set it down when in the acute condition as one of morbus coxæ. In result it suppurated some months after the acute symptoms had shown themselves, but the child is now in good general health and able to get about with the aid of Thomas's splint.

These two cases are of the variety I have referred to as "mixed" in character, and are examples of an inflammation, probably tuberculous, grafted on to coxa vara. When we have regard to the usual exciting causes of active tuberculous disease, nothing seems more reasonable than to suppose such an excitation might be afforded by ricketty disease of a neighbouring structure. It is cases of this mixed class that offer most difficulty of diagnosis, because in fact we have morbus coxæ of a kind grafted on to the original deformity, and it is in the examination of such instances that the skiagraph finds its best purpose, and shows at once whether rickety deformity lies behind the inflammatory condition.

As the use of the Roentgen rays has not yet attained its full development, we may expect even clearer results from this method after a time. In order to obtain a good picture the hip requires a long exposure, trying to young children. I cannot touch this part of my subject without making my warmest acknowledgment to Dr. Lane Joynt for the untiring and skilful help he has given me in procuring skiagraphs of some of these cases. He took one so far back as May, 1897. The glass picture often shows to a trained observer features not discernible in the paper print, and Dr. Joynt has therefore applied his training in strengthening by dotted outlines the features best seen on the glass, so as to make the print as instructive as possible. The skiagraphs have heretofore been done from a single Crookes's tube suspended in front of the pubes, and thus the illumination of each hip is obtained obliquely from before, backwards and outwards. This introduces an element of perspective which renders the skiagraph difficult to read, and which makes the comparison of the right and left joints less exact and striking. A method of taking the skiagraph of each joint in a direct antero-posterior line would be an advantage.

Treatment.

The treatment of rachitic coxa vara does not involve any problems except in its more grave varieties. When the deformity is but slight and the lameness incipient, attention must be given to the ordinary matters that govern our treatment of rickets. The exhibition of cod-liver oil or phosphorus, with lime salts and perhaps iron, are, together with suitable feeding, the principal means of general therapeusis. In order to prevent increase of the deformity it may be necessary to keep the patient from much walking or standing, taking care to draw the line at an amount of confinement which would impair the general health. In order to procure extension and rest a Thomas's splint may be applied: but, if it be used, its employment ought not to be pressed to such an extent that it may, by throwing too great a strain on the sound femur, induce a similar deformity in it.

It seems to me that, for such children as can have it, riding on a donkey or pony is the best form of exercise. It avoids much weight being thrown on the femur, and if long stirrups are used may even help, by the wide separation of the shafts of the femora, to lessen the deformity by bearing on and thus tending to increase the angle of junction of the neck of the bone. In cases of female children they must ride cross-saddle.

Where the deformity is extreme operation has been recommended. Kraske has proposed to expose the front of the neck at its junction with the shaft by an incision about 2 inches long, extending from above and inside the great trochanter downwards along the inside of the tensor vaginæ femoris. The anterior intertrochanteric line being thus brought into view, the periosteum and fibrous attachments are pushed off the outer extremity of the neck, and a wedge removed with the osteotome from its base, dividing the bone at this point. A linear osteotomy of the neck at the same point, without removal of any of its substance, has also been recommended, and seems a more simple and safer operation.

Subtrochanteric osteotomy of the shaft has also been proposed, and it is claimed for it[1] that it is an operation capable of also dealing with that curvature of the upper portion of the shaft which may be mistaken for coxa vara or associated with it. I have not as yet found a case of enough gravity to demand any form of osteotomy, nor do I think, from what I have seen that such instances are like to prove common. If osteotomy be called for and performed, the thigh must be forced into good position, and so retained until union has taken place.

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[1] *Practitioner*, April, 1896. [2] See Mr. Lacy Firth in BRITISH MEDICAL JOURNAL, November 5th, 1898. [3] Ogston, *loc. cit.* [4] Muirhead Little, BRITISH MEDICAL JOURNAL, November 5th, 1898.

ON THE EXCISION OF SOME CARBUNCLES.*

By RUSHTON PARKER, M.B., B.S., F.R.C.S.,

Professor of Surgery in University College, Surgeon to the Royal Infirmary, Liverpool.

IN the BRITISH MEDICAL JOURNAL for March 31st, 1888, and in the *Provincial Medical Journal* for April, 1893, I wrote in favour of the operative extirpation of carbuncle as a protection to life in severe cases, and as saving both pain and time in all. My own adoption of this practice was based upon the experiences of M. Lefort, of Paris, published, it is said, in 1881, but first brought to my notice somewhat later. One of my objects in bringing it forward to-day is to further its more extended employment.

In the papers above referred to I briefly related a dozen cases, and have since had five more. Some were mild, and could without doubt have got well without interference, though in every such case the patient was grateful for the speedy removal of the trouble: while in severer cases the benefit was such that several lives appear to have been certainly saved by this means.

There seems not yet to be any general advocacy of extirpation by surgical authors, though the practice is already employed by many surgeons, so that it may be fitting to dwell for a moment upon the alternative treatment, which resolves itself into (1) palliative expectation, and (2) free incision. These alternatives have been most completely and judicially discussed in Sir James Paget's *Clinical Lectures and Essays*, and the conclusion at which he arrives is that no advantage whatever can be shown to have resulted from the practice of mere incision. This conclusion I have accepted ever since the appearance of the first edition in 1875, and I am in favour of the more complete alternative of total extirpation, failing which, of palliative extirpation. The evils to be feared from carbuncle may be classed under two heads: (1) pain, and (2) septic poisoning; to the exhausting effects of one or other, or both, of which fatal cases are due. In the event of diabetes or albuminuria the inflammatory and gangrenous qualities of carbuncle are rendered more poisonous and dangerous.

In mild cases the pain may be quite trifling, or at worst patiently borne by hopeful subjects; while of septic poisoning there may be no trace. It is not from a study of mild cases alone that energetic curative methods arise, or carry conviction: for trivial carbuncles often get well of themselves, without interference and whatever be the treatment.

But in carbuncles that are already severe—and the severest carbuncles have always had a mild commencement, however short—it is of the utmost importance that the medical attendant should have a clear and early prospect of what are the resources of his art, and whether or no there be something curative that can be done, if thoroughly undertaken, and not too late.

It is not easy to comprehend what possible good can result from mere incision, in spite of the high authorities that have favoured it. The mere fact that carbuncles have done well after it is not enough, for as much can be said of even severe carbuncles when let alone and soothed by local palliatives and wise nursing, as is clearly shown in Sir James Paget's work above referred to. The incision does not relieve the pain, nor does it do anything to prevent or arrest septic poisoning. Moreover, it is a severe operation, requiring an anæsthetic, and liable itself to be followed by septic poisoning through newly-opened channels.

The case is quite different with extirpation, which, however extensive, is not a much more severe operation than incision. But what a contrast in the result! Ask a patient the day after extirpation what he thinks of it, and he replies, "I feel no pain whatever, only a little weak"; "I feel as if a load had been taken off me." The pain resided in the inflamed, stretched, and infiltrated integuments, which in thorough extirpation are all removed, leaving only a wound in healthy tissues. The same applies to septic poisoning, which at first is generally quite local and confined to the affected tissues. When these are removed the poisonous focus has gone.

The extirpation of carbuncle by excision and scraping, according to the texture of the affected tissues, is just as rational as the excision of tuberculous glands, the scraping of lupus, and the removal of sloughs, while experience amply proves its value. Among the 12 cases hitherto reported by me, 2 were in women, situated on the face; the rest were in men. In one or two cases the relief to pain was not complete, and this I attribute to insufficient thoroughness in the excision. If the carbuncle be very soft there may be a temptation to rely on thorough scraping alone, and so to leave some of the disease behind. It is advisable to remove all, and to thoroughly cut away with knife or scissors what cannot be scraped.

CASE XIII was quite trivial, situated near the anus in a woman aged 33, and scraped away during an operation for fistula in June, 1890.

CASE XVII was also not serious, in a man aged 52, situated on the cheek, and well scraped and cauterised without anæsthetic in July, 1898. Both of these healed speedily without pain, but I attach no importance to the extirpation beyond the saving of time and convenience to the patients, which, however, is something.

CASE XIV occurred in a man aged 74, between the shoulders, thoroughly scraped in its main part, and the firm edges dissected away, in December, 1896. He lost all pain, healed kindly, and was well in four weeks.

CASE XVI was a very large carbuncle occupying the whole of the back of the neck in a man aged 70, who came to the infirmary in June, 1898. He was in good health and not seriously inconvenienced by the carbuncle, which he had poulticed for the previous two or three weeks. I informed him that the disease might possibly wear itself out, but that it might easily wear him out in the process; that, under such circumstances a patient, especially at his age, was liable to "drift," and that a time might come when he could not stand an operation even if desired. I therefore advised him to let me cut it out at once, to which he consented, and I operated the same day. When all was done, I had removed the tissues of the back of his neck down to the muscles, leaving a gap the size of a saucer. In a day or two, seeing a couple of diseased spots in the wound, I applied pure carbolic acid, which killed the infection and acted as an anodyne at once. Bright granulations quickly covered the wound, which in a fortnight greatly diminished in size. Large skin grafts, from another patient, sliced off the thigh as in Thiersch's method, but laid direct on the granulations (method of Ollier), were now employed, and all took except at one corner. The patient's health continued well, without any rise of temperature or any inconvenience except some weakness for a day due to the operation. The grafts in this case served the purpose of a protection to the granulations, but did not prevent contraction of the sore, which, however, appears to have been compensated by sliding of the skin from surrounding parts without deformity.

I have one more case (No. XV) to mention, which, unfortunately, proved fatal.

A man, aged 60, had a large carbuncle behind the neck excised on December 9th, 1896. He did apparently well for several weeks without fever or other evident drawback, but I fear there was insufficiently close inspection of the sore, and during the Christmas holidays my attention was drawn to the fact that he was feverish, and that the healing process was not advancing. Under chloroform the diseased surfaces were well scraped on January 9th and again on the 24th. But meanwhile œdema of the eyelid and orbit of one side set in, suggesting that probably thrombosis of the cavernous sinus had occurred. The other side became similarly affected, and he died, exhausted, of pyæmia on January 30th, 1897. At the *post-mortem* examination thrombosis of both cavernous sinuses was found, and a similar condition in the veins leading thereto from the carbuncle.

All this was, in my opinion, preventable, and it was matter of great regret to me that I did not closely watch the progress of this sore during the early days while the patient's health was undisturbed. In some previous cases I had noted incomplete relief from pain owing to insufficiently free removal of diseased tissue, but no further harm had resulted.

The disaster in Case XV impresses forcibly the necessity not only of freely removing all recognisable disease at the operation, but of critically watching the sore to detect any reappearance of the carbuncular process. This was carefully and anxiously done in Case XVI with complete success.

* Read at a Joint meeting of the London [illegible] and North Wales Branches of the British Medical Association, on October 28th, 1898.

DR. CALMETTE, Director of the Lille Pasteur Institute, has been promoted to be an Officer of the Legion of Honour.

SUPPURATIVE PERICARDITIS TREATED BY CARTILAGE RESECTION, INCISION, AND DRAINAGE: BRONCHO-PNEUMONIA: DEATH.

By HENRY BETHAM ROBINSON, M.S.Lond., F.R.C.S.,
Assistant-Surgeon, the East London Hospital for Children; Assistant Surgeon and Surgeon for Diseases of the Throat, St. Thomas's Hospital.

The cases of suppurative pericarditis treated by incision and drainage are still, according to our medical records, very few and far between. This is no doubt due to the misfortune of only successful cases generally being published, and partly explains the favourable statistics to be drawn from them, as shown in my paper in the Clinical Society's *Transactions*, vol. xxx. The following case, although unsuccessful, is another contribution towards this very limited list:

J. W., aged 4, was admitted into the East London Hospital for Children, Shadwell, on January 13th, 1898, under the care of my colleague, Dr. Coutts.

He had been well up to three weeks before, when he took cold and complained of pain in his chest, particularly on the right side. He had a very bad cough, and there was considerable difficulty in expectorating. One week before admission he became much worse, his breathing being very rapid, with profuse sweating at night.

On admission, he was very anæmic and cyanotic at times: there was no vomiting, but constipation. The cardiac area was a little increased on percussion, and the heart sounds rather feeble. Pulse 124; temperature, 8 P.M., 101.6°. Lungs were normal on percussion anteriorly, but there was some dulness at the right base, over which there was a patch of tubular breathing; over both lungs mucous *râles* were heard. Respirations 44 per minute. Abdomen normal.

January 14th, 8 A.M.—Pulse 120; respirations 40. Local conditions about the same. 8 P.M.—Temperature 100.6°; pulse 180; respirations 160. Breathing more difficult, and heart sounds not so distinct.

January 15th, 8 A.M.—Temperature, 96.8°; pulse, 120; respirations, 48. Sick once. Heart sounds distant and feebly heard at apex; cardiac dulness increased. There is some extension of dulness at base of right lung, and tubular breathing especially heard about the angle of the right scapula. At 8 P.M. the temperature was 99°; pulse, 120; respirations, 52.

January 16th.—Temperature at midnight 97°, and at 2 A.M. 99.4°; at 8 A.M. 97.4°, with pulse 120, and respirations 48. Vomited once. At 8 P.M. the temperature was 98.8°.

January 17th.—Midnight temperature, 97°; at 2 A.M. 99.6°; at 8 A.M. 97.4°. Vomited twice. At 8 P.M. the temperature was 98°; pulse, 136; and respirations, 56.

January 18th.—Temperature at midnight 97°; at 8 A.M. 97.6; pulse, 112; respirations, 48. The cardiac dulness is now considerably increased, reaching lower border of first rib above, extending to the right three-quarters of an inch to right edge of sternum and to the left, one inch and a half outside the nipple line; the heart sounds are almost inaudible. Over the bases of both lungs there is dulness, with tubular breathing on the right side in patches, and harsh breathing on the left side.

As the conditions pointed without doubt to a purulent collection in the pericardium, I was requested to see the case, and operation was decided on and performed at 11.30 A.M.

An incision an inch and a half long was made parallel to and over the fifth left costal cartilage. On exposing the cartilage the perichondrium was incised and separated as well as possible. One inch of the freed cartilage was removed with cutting forceps, the outer end being divided first. The edge of the left pleura could be distinctly seen, and an incision through the pericardial sac was made just internal to the pleura. The fluid as it gushed out was almost clear at first, becoming turbid, with flakes of lymph in it, until from the deepest part of the sac and its posterior diverticula typical pus escaped; altogether 10 ounces were evacuated. The pericardial sac was not much thickened, but to the inner surface small fibrinous coagula were adherent. A gauze drain was inserted and the wound dressed. The cavity was not irrigated.

Just before the pericardium was opened the child stopped breathing. The radial pulse could not be felt; the pupils dilated, and the lips became purple; on the escape of the fluid there were one or two gasps, followed by immediate [illegible] ment. Strychnine and brandy were injected subcutaneously, and when the child left the theatre his pulse was better than before the operation.

The temperature, which after the operation was only 94° F., soon improved with hot bottles and brandy and hot water enema, rising within a half hour to 98° F.

In the evening the patient was sleeping calmly: pulse regular, but rapid, 160 per minute; temperature, 98.4° F.; respirations, 48. Food taken well, and no vomiting.

January 19th.—Wound dressed, and dressings soaked with pus. Drainage tube put in instead of gauze drain. Pulse still fairly good, though rapid; temperature, 99.2° F.; respirations, 48; alæ nasi not working, rather full, but no cyanosis. Wound dressed in evening. Temperature rose to 102.6° F. at 6 P.M., but normal later in evening; pulse 160; respirations, 50 per minute.

January 20th.—Another rise in temperature to 102.2° F. at 10 A.M.; with a very slight fall it further rose at 6 P.M. to 102.8° F. At 9 P.M., pulse very rapid, and also respirations, but no complaint of pain in chest. There was marked vertical nystagmus and internal squint in left eye, and altogether the child's condition was worse. At 10 P.M. there was noticed twitching of the right hand, which was followed about one minute after by a right-sided fit lasting about two minutes. Afterwards he was very collapsed, the pulse being only just felt. With ether and brandy hypodermically, and oxygen to inhale, he improved a little. Later, twitchings of all his limbs and face came on, with lateral and vertical nystagmus. There was now a very feeble, rapid pulse, and cyanosis. This condition lasted through the night, the boy getting gradually more collapsed until his death at 7 A.M. on the 21st.

There was no evidence of and no history to suggest that the whole condition was pyæmic.

Unfortunately no necropsy was permitted, so the pathological condition of the lungs and brain could not be ascertained. There was evidently a patchy broncho-pneumonia, and, from the head symptoms, presumably a rapidly developing meningitis. It would have been a matter of great interest to have corroborated the clinical evidence, for the pus from the pericardium gave, on cultivation, an almost pure growth of Friedlaender's pneumococcus.

EXCISION OF LARYNX AND PART OF THE ŒSOPHAGUS.

By THOMAS WALLACE, M.D.,
Surgeon to the Cardiff Infirmary.

L. M., aged 47, and married, was admitted to the Cardiff Infirmary on October 26th, 1897, when she complained of pain in her throat and hoarseness.

Previous History.—Her illness commenced six months before admission with pain in the throat: later hoarseness manifested itself, which increased, and a raw feeling was experienced. About four months later she commenced to cough large quantities of frothy mucus, which was sometimes streaked with blood. For the six weeks before entering the infirmary she had been unable to swallow solid food, and the pain and raw feeling had become much worse. The patient had also been troubled with a "nasty sensation" in her throat, and she had got very much thinner.

Family History.—She had had one living child and ten premature births—three at three months and seven between five and six months. For six weeks before coming into the infirmary the patient had been on specific treatment, but the results were entirely negative.

Condition on Admission.

She was a fairly healthy-looking woman, but complained of severe pain like a knife cutting across the throat. The pain shot up to the left ear, and was much worse when she swallowed. Owing to the pain she could not swallow solid

food, and she was also kept awake at night by it. She complained of difficulty of breathing, profuse expectoration, which was sometimes tinged with blood. She talked in a hoarse whisper.

Externally the larynx was extremely tender, especially on the left side. The pain radiated towards the left ear. The larynx seemed slightly enlarged, but no definite swelling could be made out, and no enlarged glands observable.

Laryngoscopic examination showed a growth on the left vocal cord. On October 30th a consultation was held, and the larynx was again examined, when the growth was seen extending across the arytenoids to the right side.

It was decided to excise the larynx. The patient was told of the extreme gravity of her condition, and of the serious nature of the operation which it was proposed to perform, but she at once decided that she would face any operation rather than go on as she had been.

OPERATION.

On November 1st the operation was performed. The anæsthetic employed was chloroform. When the patient was on the table, a consultation was held as to the advisability of doing the operation in two stages. I finally decided to do the whole operation at once.

Low tracheotomy was first done, and a Trendelenburg tube having been inserted into the trachea, the india-rubber bag blown up, chloroform was administered through the tube. A vertical incision was made in the middle line from the hyoid bone down to the tracheotomy wound. A transverse incision was made at the top of this, and the two flaps so formed were turned downwards and outwards, thus exposing the whole of the larynx. The sterno-hyoids and sterno-thyroids were next divided; the superior thyroid arteries, before being cut, were ligatured, the omo-hyoids and sterno-mastoids drawn out, and the upper end of the trachea thoroughly freed laterally. The thyro-hyoid membrane was next cut through, and the cartilage drawn forward, and its posterior connections separated downwards as much as possible, but it was found that the posterior wall of the larynx and the anterior wall of the œsophagus were both so infiltrated with the growth that it was impossible to separate them. The trachea was then cut through, and the two upper rings, together with the cricoid, were dissected upwards off the œsophagus, and the whole larynx was completely removed. It was then found that the pharynx and the anterior wall of the œsophagus as low as the cricoid cartilage, or rather lower, were infiltrated with disease. These were completely dissected off the front of the spine from immediately behind the hyoid to the cut end of the trachea, leaving the prevertebral muscles quite bare. These were healthy. The growth was completely removed, and no enlarged glands were seen or felt.

The upper end of the trachea was stitched to the skin wound, and so held open. The end of the œsophagus was, at a slightly higher level, similarly treated. The transverse incision was closed with stitches and sealed with celloidin. A large gap was left in the middle line, which was plugged with iodoform gauze. The epiglottis was not removed, as it was quite healthy. A rubber tracheotomy tube was fixed in the trachea. The patient stood the operation, which lasted altogether under two hours, very well.

AFTER-TREATMENT.

She was put into a tent with steam kettle, and the temperature was kept at 65°. She was fed every two hours through a tube introduced into the œsophagus with milk, egg, and brandy. She also had nutrient enemata.

November 2nd. The patient was fairly comfortable, and was fed every three hours by œsophagus alone. Her only complaint was a feeling of pain and tightness in her chest. The gauze plug was frequently changed as it became soaked with saliva. The mouth was washed out frequently.

November 3rd. The patient was doing well. She complained of pain in the chest, but slept at intervals for a short time. The end of the œsophagus was a little tender. The temperature and pulse were normal. The tracheotomy tube was kept in, although she could breathe quite as well without it, but it was found that the tube prevented saliva from running into the trachea. On this day she was fed every four hours.

November 4th. She was doing well, and the pain in her chest was less.

November 5th. She had a dose of calomel. The œsophageal opening had been gradually sliding down, and had now got slightly below the tracheal opening. She was propped up on the night of November 5th, and felt more comfortable.

November 6th. A little wheezing was heard in the morning on the right side, and also a slight pleuritic rub. The temperature was normal and the pulse good. The side was poulticed and an expectorant mixture prescribed.

November 8th. She had a fit of coughing, and expectorated a quantity of mucus slightly tinged with blood. This probably came from the granulations about the wound. She had some gruel and meat-juice.

November 9th. The patient felt much better, and was free from pain.

November 14th. The stitches were removed from the transverse wound, which was completely healed.

November 16th. The faucial opening was rapidly contracting.

November 19th. The steam kettle was stopped.

November 27th. The tent around the bed was removed, and the patient got up.

December 1st. A medium-sized Symonds œsophageal tube was passed through the mouth and wound into the œsophagus. The patient drank a glass of milk for the first time, a little escaping into the wound. The tube was left in for two hours, and the amount of saliva flowing into the wound was much less while the tube was in. The patient's condition was now very good, and she was up and going about the ward each day.

December 8th. She passed the tube into the œsophagus herself, and fed herself without any assistance from the nurse.

December 9th. The Symonds tube was again passed.

December 14th. She wore the Symonds tube on this day with comfort, and took her food through the mouth.

December 29th. The patient complained of pain under the angle of the jaw on the right side. At the outer angle of the wound on this side was a small tender hard swelling.

January 4th, 1898. She was chloroformed, and the swelling at the angle of the jaw was cut down on and removed, two glands from the sheath of the vessels being taken away. The glands were adherent to the carotid sheath. The wound was sewn up and sealed.

January 5th. She was quite comfortable and free from pain.

January 12th. For a few days previous to this she had great difficulty in getting the tube passed through the fauces, and she was at this time wearing the smaller Symonds tube permanently.

January 22nd. A larger-sized tube was put in; the sinus between the mouth and the œsophagus was now a deep groove almost covering the tube.

January 30th. She had a fainting attack and some abdominal pain.

February 1st. The temperature ran up to 103°, and she got an attack of erysipelas on the right side of face, which subsequently spread to the left.

February 14th. The erysipelas had entirely disappeared. From this date on there was great difficulty in changing the tracheotomy tube. She could only breathe comfortably when a very long tube was in or the trachea was held open by a dilating forceps.

February 15th. The dilating forceps had to be held in the wound nearly all night because of dyspnœa. In the morning a large Symonds œsophageal tube was passed down the trachea, after which she went to sleep.

March 1st. The large tube was worn out and a smaller one substituted. This was not large enough, and she had oxygen to inhale, as she had on previous occasions well-marked benefit from it.

March 2nd. A large rubber drainage tube was passed.

March 4th. The tube was taken out to be washed when she had a bad attack of dyspnœa. The tube could not be got in again. A No. 14 elastic catheter was passed, through which she breathed comfortably. There appeared to be some swelling on the left side of the neck. There had also been some bleeding from the trachea.

March 8th. After she had had a bad attack of dyspnœa on

this date, a full-sized silver tracheotomy tube was inserted, which allowed her to breathe with comfort. In passing the tube the difficulty consisted in the end of the tube catching on some projection from the left side. She swallowed easily through the tube in the mouth, which she could take out and put in herself.

March 9th. There was a tender red swelling in the scar on the right side of the neck, and on the next day the swelling burst and discharged pus.

March 16th. Pus still came from the abscess on the right side, and there was some swelling on the left side of the neck.

March 22nd. The swelling on the left side was increasing and was becoming painful. On this day a large-sized tracheotomy tube, an inch longer than ordinary, was inserted, and she breathed comfortably through it.

March 25th. The tracheal tube was changed daily without any difficulty, and there were no attacks of dyspnœa for some days. When the tube was out, she used to hold the trachea open with dilating forceps, and was more comfortable with these than with any tube.

March 28th. On the afternoon of this date, at 1 P.M., the tube was taken out to be cleaned, as she had some dyspnœa. The patient held the forceps in the trachea as usual, but suddenly she became cyanosed, and before any tube could be got in she was dead.

Post-mortem Examination.

Immediately behind the upper end of the trachea was a large recurrence of the growth with pouches into which the tubes must have been pushed on many occasions when difficulties had been experienced in passing them. At the upper end of the trachea was a flap of mucous membrane and growth, which probably got against the lower end of the tube and obstructed it. The recurrence had extended back from behind the trachea round both carotid sheaths, and had ulcerated almost through the right carotid artery.

To Mr. Frank S. Cresswell, Resident Medical Officer, as well as to his assistants, Messrs. Woods and Pratt, and to Sister Guthrie, my thanks are due for the able and efficient way in which they ministered to the wants and assisted in alleviating the sufferings of the patient.

CEREBRAL TUMOURS SUCCESSFULLY REMOVED BY OPERATION.

THOMAS OLIVER, M.A., M.D., F.R.C.P., Physician to the Royal Infirmary, Newcastle-upon-Tyne.

and

GEO. E. WILLIAMSON, M.A., F.R.C.S., Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

If there is one department of medicine which has benefited by the application of the knowledge obtained through experimental physiology, it is the diagnosis and treatment of cerebral tumours. Thanks to the labours of Hitzig and Ferrier, and more recently to those of Schäfer, Horsley, and Mott, we are becoming familiar with the function of various portions of the surface of the brain, and are able to delegate to these areas certain duties. Although cerebral physiology is still in its infancy and the newer histology of the brain, as demonstrated by the methods described by Golgi and Ramon y Cajal, has obliged us to modify many of our opinions, it is apparent that if physicians and surgeons would successfully cope with the effects of brain disease they must be conversant with cerebral physiology.

No branch of study is more difficult, and, although mistakes are still frequently made by the diagnostician in the localisation of brain lesions, it is encouraging when we are able to report cases where the seat of a tumour has been accurately defined and successfully removed by surgical operation. But for the assistance given by experimental physiology a fatal issue would in time have taken place in both patients whose notes are subjoined. Instead of this, life has been prolonged, suffering prevented, and, in one of the cases at least, the individual has again become the breadwinner of his family. The patients whose illness supplied the facts recorded below were admitted into the infirmary under the care of Dr. Oliver, who, diagnosing cerebral tumour, sought the assistance of his surgical colleague, Mr. Williamson.

To the first case, that of a male, attention is directed on the ground that what seemed to many who examined the patient rather misleading evidence as to the seat of the tumour—namely, the coexistence of anæsthesia with muscular spasm and paralysis—was to Dr. Oliver rather helpful than otherwise, and becomes a fact strongly corroborative of the view some time ago put forward by Bastian, and more recently elaborated by Mott—namely, that while the Rolandic area is usually spoken of as motor, it is not simply motor, but sensori-motor, so that when this area is destroyed by disease not only is voluntary motion lost, but sensation may be as well. It was this combination of symptoms that was of considerable help in the diagnosis.

Case 1 (male). *Morning Headache of Two Years' Duration: Vertigo. History of a Fall followed by Unconsciousness lasting for Three Days: Paralysis of Left Arm and Paresis of Left Leg: Disappearance and Reappearance, with subsequent persistence of the Paralysis: Operation followed [illegible] Recovery of the Loss of Power.*—R. R., aged 34, a boilermaker, was admitted on April 8th, 1897, complaining of headache of two years' duration, of loss of power in the left hand, and rigidity of the left leg of seven weeks' duration. Two years ago patient began to suffer from headache, worse especially on getting up in the morning. Since then he has frequently felt giddy. Eleven weeks ago, while coming down a ladder in the shipyard he had a giddy feeling, and fell forwards, striking his head against an angle iron. The scalp was not broken. He got up, and after walking a few yards, became faint and sat down. A little brandy revived him, but on again attempting, with assistance, to walk, the faintness returned; he was laid down, and shortly afterwards became unconscious. He was taken home, where for three days he remained unconscious. On regaining his senses he found that he could not move his left arm and hand, and that the left leg was rather powerless. In a few days the paralysis gradually disappeared, but four weeks after the accident vomiting came on, and with it the paralytic condition of the left arm and leg already referred to.

The patient tells us that for nearer three than two years he has experienced a peculiar prickling, "like pins and needles," in his left hand, which extended up the arm, and that the limb itself has been the seat of a sensation as of hot water running down it, and that it occasionally shook. There is a history of gonorrhœa, but none of syphilis. He is a well-nourished man, pale and of dark complexion, and very intelligent. Double optic neuritis is well marked, but the sight notwithstanding is good. There is decided weakness of the left hand and leg, and just the slightest paralysis in the lower half of the left side of the face. The knee-jerk is exaggerated, and there is well-marked ankle clonus in the left leg. Heart and lungs are healthy, so, too, are the abdominal organs. The urine is normal. On examining the scalp, two or three small superficial scars are seen, but they are the remains of injuries received in childhood. Patient was treated by means of potassium iodide and liq. hydrarg. bichlor., but without any benefit.

On the morning of April 20th he complained of feeling drowsy, and of having had severe pain in his head. Shortly afterwards he vomited. At noon he had a fit. During the convulsion the left arm and leg and the left side of the face were convulsed. He did not lose consciousness during the fit, which lasted about three minutes. Eight days after this it was apparent that the loss of power in the left arm and leg had become greater, and especially so was this the case in regard to the finer movements of the fingers. There was also well-marked analgesia and anæsthesia of the left hand and forearm, with a slighter loss of sensation in the leg. The muscles of the left arm and leg now began to show signs of atrophy, and the reflexes became even more exaggerated.

In the course of conversation, Dr. Oliver had directed the patient's attention to the advisability of submitting to surgical treatment. For a time this was resented. Painful cramp-like sensations kept recurring in the left hand and forearm, and while there had been no progressive motor paralysis, there was increasing anæsthesia. At no time, however, was any part of the cranium painful on percussion, although, when the left hand was the seat of painful spasm, patient experienced an uneasy sensation in the head just above the right ear. The patient was transferred to Mr. Williamson, who operated on May 14th.

Operation.

A large flap, convex upwards, and consisting of the whole thickness of the scalp, was made on the right side of the head. A small hole was then trephined through the skull over the Rolandic area, and this was rapidly enlarged with a special pair of bone-cutting forceps. When the dura mater was divided a tumour was at once seen on the surface of the brain. It was cut out with the handle of a scalpel, and it was rather bigger than the half of a tangerine orange. The cavity in the brain was lightly filled with gauze, and the scalp sutured without replacing any bone. The anæsthetic used was chloroform, and no morphine was given. The gauze was removed on the second day.

Microscopical Examination.—The tumour turned out to be a small round-celled sarcoma.

After-History.

When seen on the following day the patient expressed himself as feeling quite well. There had been no chloroform sickness. Shortly after recovering from the effects of the anæsthetic he could move his left arm and leg almost as well as ever he could, but it was not until six days after the operation that the paralysis disappeared from the left side of the face. Patient made an uninterrupted recovery. There has remained, as is usual in many of these cases, considerable bulging over the site trephined, but as the operation was never followed by the slightest rise of temperature, anything like a septic cause for this hernial protrusion can be eliminated, and as the swelling comes and goes to some extent [illegible] perfectly flat (February, 1898), fluid effusion is in all probability present in considerable quantity in the sac. The posterior border of the bone around the hernia is at one place thickened, and just internal to it there is increased

resistance. Only once since last May has the patient had a fit, and while we do not exclude the possibility of a recurrence of the cerebral growth which the solitary convulsive seizure and a slight feeling of numbness on two occasions experienced in the left hand rather suggest, the man, generally speaking, is in excellent health, has perfect use in his arm and leg, is quite free from all subjective sensations such as giddiness, and is at present following his occupation, and has done so for the last few months.

Note by Dr. Oliver.—November 5th, 1898.—Since the above was written (February, 1898) this patient has on the whole remained pretty well. The swelling on the side of the head where he was trephined is if anything larger; certainly it is harder than it was. At times there has been return of slight paresis of the left arm. The patient's general condition still remains good, but there is apparently local recurrence of the growth.

CASE II (female). *History of Headache, Vomiting, and of a Fit, followed by Paralysis of Right Arm and Paresis of Right Leg: Operation: Removal of an Angiomatous Growth, followed by Aphemia.*—E. S., single, aged 23 years, a domestic servant, admitted August 29th, 1894, under Dr. Oliver's care, suffering from partial paralysis of right leg and complete paralysis of right arm. At the end of March, 1894, the patient began to suffer from headache and vomiting. The sickness was pronounced in the morning before breakfast, and gradually disappeared during the day, although the headache persisted, and was generally located in the forehead. Headache and vomiting continued until May 12th, when she left service on account of the work being too heavy. On this date she felt her right arm and hand numb, and on the following morning but one, when attempting to get out of bed, she found that she had lost all power of movement in her right arm, and that the fingers were firmly flexed into the palm of the hand. She did not feel ill enough to stay in bed. One evening, about a fortnight after this, she had a fit. The convulsion was slight; she was unconscious for nearly an hour. On recovering consciousness she found that her right leg was now also paralysed and numb. Beyond having had scarlet fever the girl had been healthy until this illness. She began to menstruate at the age of 11, and was regular until February, 1894, when the menses ceased until May 21st, when they reappeared for once only.

Condition on Admission.—The patient is a well-nourished woman. There is a partial paralysis of the right upper arm, but the loss of power in the muscles of the forearm and fingers is complete. There is no impairment of sensation. In walking it is noticed that the right arm is carried in front of her semiflexed, and that the fingers are bent and pressed towards the palm of the hand. There is well marked wrist-jerk, especially when the tendons of the extensor communis digitorum are struck. There is no wasting of muscles except the thenar and hypothenar; those of the forearm feel flabby. The skin of the palm is cracked, and there is considerable perspiration of the hand and arm. There is no wasting of the muscles of the right leg, but she complains of the calf feeling numb, and it, too, is bedewed with perspiration. There is slight analgesia in the right leg; the knee-jerk is increased. In walking she drags the right foot as it is lifted heavily from the floor, when it is observed to be extremely tremulous. There is slight paralysis of the lower half of the right side of the face, and the tongue deviates rather to the right. Pupils are equal. Her expression is dull and heavy. She complains of pain in front of and above the left ear when the skull is tapped. There is double optic neuritis in the first stage. There are no retinal hæmorrhages but the vessels are tortuous. Pulse [illegible]; tongue moist and clean; heart, lungs, liver and spleen are healthy; the urine is normal. During the few weeks she remained under Dr. Oliver's observation patient never once vomited. She had one or two headaches but so slight as scarcely to call for comment. Her menses had not returned since May. As the physical signs suggested the probability of there being a tumour situated in the left motor areas of the brain low down, Mr. Williamson opened the cranium on November 14th, and the following is his note:

OPERATION.

The details of the operation were very nearly the same as those in the first case. A large flap of the scalp was raised, and the aperture made in the cranium was enlarged until the boundary of the tumour was seen. Although it reached to a considerable depth there was no difficulty in removing the growth, and with it a narrow margin of healthy-looking cerebrum was taken away. Chloroform was the anæsthetic, and gauze was lightly put into the cavity in the brain. It was removed on the second day, and healing proceeded perfectly.

AFTER-HISTORY.

On the morning after the operation the patient seemed very well. She subsequently slept for several hours, when on waking she appeared to be drowsy, and to have lost interest in all around her. To questions she returned the answer "Yes," even when a negative was required. She was quite conscious of the fact that at times she was using the wrong word, and was rather distressed by the circumstance. There still remained considerable paralysis of the right arm.

On November 21st she could open her mouth, but she seemed unable to protrude her tongue. Next day she took some beef-tea, and remarked, "It is nice."

On November 23rd she was able to move her right leg, and she lifted the right arm to the face, and on the following day there was slight movement in the right face.

On November 26th she still answers questions with the answer "Yes," but at times, when she means "No," she moves her head from side to side. She appreciates all that is said, but still cannot put out her tongue. She can flex her arm and forearm quickly, and make vigorous movements with her shoulder muscles, although unable to move her fingers. She can lift the leg up from the bed, but in doing so it is noticed that she always raises the forearm at the same time. Once she has made the movements it is a great effort to repeat them. Knee jerks are more exaggerated than they were, and ankle clonus is well marked.

November 28th. Tongue to day is protruded, and as the patient smiles there is observed greater symmetry in the two sides of the face. She lifts her right arm and leg better, but speech remains unaltered. Everything is understood by the patient that is said to her. She can pick out printed letters on a card and can reproduce them. There is no agraphia. In other words, there is neither word-deafness nor word-blindness.

January 12th, 1895. There is nothing in the notes of this case from last November until to-day worthy of being reported. Patient's condition remained pretty much the same as that detailed, particularly so as regards her inability to speak. To-day the Sister reported that when the other inmates of the ward were singing a hymn the patient joined in the singing, and that her voice was distinctly audible. Two of the verses of the hymn she subsequently hummed to herself.

January 21st. To-day she again sang, and later on, when the other patients were singing, she joined them. Her vocabulary is still limited.

On February 3rd she amused some of the patients near her by singing of her own accord a verse of "Maggie Murphy's Home." In conversing with her, Dr. Oliver at this stage could never get more than the word "Yes" from her, although she quite understood all that was said, and there were signs of improvement generally. All her writing had to be done with the left hand; this, however, was never in answer to questions, but simply in the reproduction of letters of the alphabet from memory or by copying.

The patient left the infirmary at this stage, and returned in the first week of May for examination. Unfortunately at this time Dr. Oliver had only the opportunity of seeing her in rather a casual manner, otherwise there would have been a more exhaustive and careful record of her condition at this period. He found her cheerful, and in excellent health and spirits. There was considerable range of movement in the right arm and leg, although still a degree of facial paralysis, yet it was less than when she left the infirmary. Her power of walking had considerably improved. There was still great loss of the power of speech, and a tendency for the word "Yes" to slip out when she meant "No," but her vocabulary had become enlarged, for she could now call her own sister Sally by name, and could also ask for the nurse of the ward when she wanted her. She could not repeat names, although she could print them on paper from memory or from copying. There was no loss of sensation in the limbs.

Note by Dr. Oliver.—November 8th, 1898.—To-day patient presented herself at the infirmary. She has now almost complete use of words, can name objects and people correctly, but her sister states that in course of conversation she has at times still a difficulty in finding the proper word. Eyesight is good; discs are paler than usual. There is slight flattening of the right side of face, with retraction of the left angle of the mouth. There is pretty complete power of the muscles of the right shoulder and upper arm, but the fingers are spasmodically flexed upon the palm, and do not relax readily. She can walk well, but in doing so the right foot is lifted heavily from the floor. The gait is that of an old hemiplegic. Knee-jerk is exaggerated. No ankle clonus. Over the left fronto-parietal region there is observed a deep depression in the calvarium, the posterior border of which is tender to the touch. At her menstrual periods she occasionally suffers from epileptiform seizures. The general health is good. There has been no return of the cerebral growth. The paralytic phenomena present are due to the motor fibres having been separated from the pyramidal cells in the Rolandic area and subsequent degeneration.

The points of interest in Case II are: (1) The unusual pathological nature of the brain tumour. It was an angioma, rather a rare form of cerebral growth, apart from sarcoma. Careful and repeated examination of microscopical preparations taken from various parts of the tumour failed to reveal anything but simple angioma. It is probably owing to this pathological fact, and to the absence of a limiting membrane around the growth, and to the necessity of cutting fairly wide into surrounding brain tissue that the recovery has not been so complete as in Case No. I. The second point of interest is the post-operation aphemia or loss of speech. Immediately after the operation the speech defect was very apparent, but there never was word-deafness nor word-blindness. The patient could, within limits, read and write. She understood all that was said to her. Either a part of the cortical centre itself had been removed, or the paths for the transmission of motor impulses from the third left frontal convolution to the articulation centre in the bulb had been divided by the incision, or these became functionally interfered with owing to the presence of degenerating nerve tissue in their immediate neighbourhood. A certain part of the cortical centre must still be present, and in favour of the view that some functional or inhibitory influence was at work is the fact that under emotional excitement the patient could, particularly when others were similarly engaged, join in singing a hymn or song, and once the articulation mechanism was set going there was no difficulty, for the song was sung correctly verse by verse until the end.

AN OPERATION FOR HÆMORRHOIDS,*

By W. THELWALL THOMAS, F.R.C.S.,

Hon. Assistant Surgeon, Royal Infirmary; Assistant Lecturer on Surgery and Surgical Pathology, University College, Liverpool.

WHEN internal piles are large enough to be extruded during defæcation, it is distinct evidence of definite pathological change in the mucous and submucous tissues, and it becomes necessary to consider the merits of the different methods of operation.

* Read before the Lancashire and Cheshire Branch of the British Medical Association.

We have first to realise that in these cases the cause is generally local, chronic constipation being the chief factor. A glance at the arrangements of the circulation of the blood in the lower end of the rectum emphasises this, and it is readily seen that constipation acts by directly obstructing the venous return, where the veins perforate the muscular wall of the gut. It also demonstrates how necessary it is to examine the rectum in every case of piles, for any disease of the walls, syphilitic or malignant, can readily obstruct the same veins. It ought to be a rule, without exception, to introduce the finger into the rectum before undertaking the treatment of piles, and thus avoid the blunder—which has happened more than once—of endeavouring to treat hæmorrhoids when some more serious disease exists an inch higher up.

Textbooks are responsible for blaming the liver for causing piles and the terms, 'sluggish liver," "biliousness," "congestion of the liver"—whatever they mean—have too often been mentioned as a causation. That serious organic disease of the liver may produce piles, goes without saying; but "derangement of the liver" is by no means a scientific deduction when a blue pill alleviates some of the symptoms of piles.

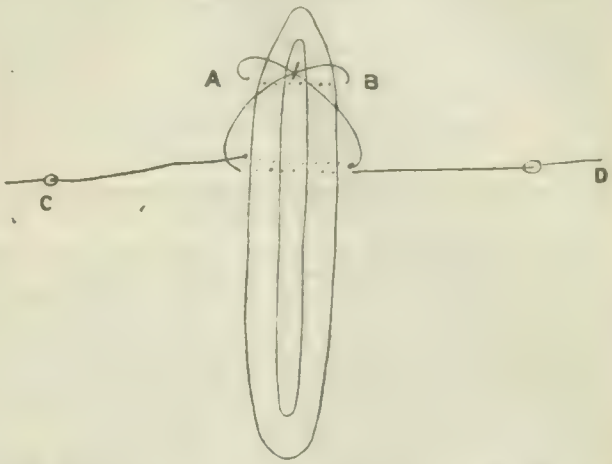
The following types of case always require operation:—

1. Where there is much thickening of the mucous membrane, with ulceration and occasional hæmorrhage.
2. Where extrusion takes place during defæcation, necessitating manipulation to return the mass.
3. Where there is a distinct prolapse of a ring of mucous membrane, bearing piles.

Modern pathology has enabled us to understand the conditions necessary for healing by first intention, and antiseptic and aseptic surgery have placed at our disposal the means to bring that about. The treatment of piles by (1) tying strings around them to separate by sloughing, leaving areas of mucous membrane to granulate or ulcerate; by (2) cauterising piles, with the subsequent separation of the eschar by ulceration (for this happens every time a red-hot iron is used), it does so elsewhere, when a cautery is applied to the same degree, and the mucous membrane of the rectum can be no exception, notwithstanding platitudes to the contrary, by advocates of this method; by (3) injecting irritants; or (4) painting with caustics, always strike me as contrary to the spirit of modern surgery. In years to come we shall wonder how their use continued so far into the nineteenth century. Who is there among us who would resort to such methods for the encouragement of healing or the control of hæmorrhage in any other part of the body? For several years I have operated on piles by a method designed to bring about healing by first intention, and at the same time to prevent either reactionary or secondary hæmorrhage, and the results have been so satisfactory that I have no hesitation in strongly recommending it to your notice. Strange as it may seem, it requires no special clamp; and the only assistants necessary are a Clover's crutch and an anæsthetist.

A purgative is administered the evening before the operation, and in the morning, after a good evacuation, an enema of soap and water is used to wash out the rectum. Under anæsthesia the patient is placed in the lithotomy position, being kept there by means of the "crutch." The sphincter is forcibly dilated by introducing the thumbs into the anus and placing the fingers on the buttocks, and forcibly separating the thumbs slowly. The sphincter yields; this is continued until the anus remains widely dilated, with no tendency to contract. The pile area is now exposed, and the piles tumble out to look for the operator. A large pile is seized by artery forceps, and its base clamped, the clamp being always put on in the long axis of the bowel. I have most frequently used Smith's clamp, but a dressing forceps with a catch will do quite as well.[1] The bulk of the pile is cut away, leaving a small stump standing off the clamp. The treatment of this is the essential feature of the operation.

A piece of catgut, not too fine, about a foot in length, with a domestic needle at each end, is used for a suture. Commencing at the top end of the stump one needle is passed through, and the catgut follows until there is one half the length of the suture on each side, with its own needle attached. A reef knot is tied on the stump, and the needle, which is on the right side, is brought over to the left and passed through the stump lower down and back again to the right. The needle which is on the left is taken over to the right and passed through the stump back to the left immediately adjoining the previous one. A reef knot is again made, and so on to the end of the stump (see diagram), making five or six crossings to the



inch. This method of suture brings the cut edges of the mucous membrane tightly together, and its advantage over a simple continuous suture is apparent, each cross and knot making each segment independent of the next. The clamp is slackened, and occasionally, though rarely, it may be necessary to tie a small vessel at the top end of the stump, particulariy if a cross-acting clamp is used. All the internal piles are thus treated.

For the external piles, which are always covered by a rugose fold of altered skin, they are snipped off by scissors, without clamping, pointing up the bowel. If a small vessel bleeds, it is tied. The cut edges of skin are sutured by a continuous, or button-hole, stitch of catgut. Too much of the anal skin must not be removed, and the skin must never be sutured in any other direction but that of a continuation of the long axis of the bowel, else cicatrisation, leading to anal contraction, will follow. It will now be seen that there is no raw surface left to be irritated or to granulate, and no tissue to separate by sloughing.

Two suppositories—one of 3 grs. of iodoform and one of ¼ gr. morphine—are inserted, completing the proceeding. A firm pad of cyanide gauze under a square of wood wool tissue and a T-bandage is now applied.

The diet for four days is kept low—beef-tea, broth, and a little milk—during which time no action of the bowels as a rule happens, although the patient can and does freely pass flatus. Should any action occur, a suppository of 3 grs. iodoform is introduced afterwards.

On the fifth day a drachm of compound liquorice powder is given, which generally produces an evacuation of the bowel contents, without pain or blood. On no account must an enema be introduced, lest the nozzle of the instrument tears up young union.

Diet is now increased by addition of bread and milk and milk puddings, fish, chicken, and then ordinary diet by the seventh or eighth day. On the seventh day the patient is allowed up, although most cases clamour for more food, and beg to be allowed out of bed several days earlier. Many hospital patients have gone home on the seventh, eighth, or ninth day perfectly well in every respect. In only two cases was there retention of urine requiring the use of the catheter once.

None of the patients complained of pain, and not one had any more morphine after the initial suppository. None had any hæmorrhage or inflammation, in fact the treatment is so satisfactory that I generally tell the medical attendant that they cannot bleed even if they try. In none has there been any subsequent contraction of the anus or rectum, nor has a single bougie been used in any case. Subsequently it is wise to recommend the regular taking of a laxative every alternate night for some weeks, to overcome the tendency to constipation, which originally caused the piles. It suits some pa-

tient's arrangements better to order the aperients to be taken in the morning.

For the third class of case (where there is a large prolapse of mucous membrane bearing piles) it becomes necessary to perform Whitehead's operation, of dissecting the relaxed mucous membrane away. In my opinion this proceeding is not often called for, but when it is the result is very good. If this operation is carried out as described by its author, I cannot understand the adverse criticism it has received in some quarters. The common error is to remove the external sphincter, wholly or in part, and then blame the operation for incontinence of fæces, instead of the operator who attempted it.

Bad results of any operation depend sometimes on the lack of judiciousness and technique of the operator, and not on the demerits of the operation.

In looking up the literature of piles I find that Folker of Hanley several years ago devised a special clamp, figured in *Arnold's Catalogue*, for suturing piles with a special needle and catgut.

There is a casual reference to suture of external piles in Bell's *Manual of Surgical Operations*, sixth edition, 1888. In describing the treatment of external piles he says, p. 317: "If the surgeon after excising a pile or piles will take the trouble to stitch up the wound with catgut, he will find the cure much more rapid and less painful than when this is omitted." In the treatment of internal piles, however, he advocates ligature.

Mr. Robert Jones of this city, in the *Provincial Medical Journal*, August 1st, 1893, advocates a method of clamp and suture on the same lines as I have described. These are the only references I have been able to find.

I have [April, 1898] performed the operation 33 times,[2] and the average length of time during which the patient was confined to house or hospital has been 10.3, reckoning two cases that were in bed for other reasons, for twenty-two days.

NOTES.

[1] Since writing the above I have found Doyen's broad ligament clamp (small size) infinitely superior to any pile forceps. [2] Forty-five times, September, 1898, with average in hospital or bed of 8.8 days.

ANTISTREPTOCOCCUS SERUM IN THE TREATMENT OF PRIMARY VENEREAL SORES AND THEIR COMPLICATIONS.

BY JAMES MOORE, F.R.C.S.EDIN.,
Belfast.

WHETHER the chancroid is an entity caused by the streptobacillus described by Ducrey, or an ordinary septic abrasion —the anatomical and physiological peculiarities of the genital organs accounting for the subsequent ulceration and complications—it certainly bears a very close relation to infection of a small wound by the streptococcus in any other region of the body. This analogy suggested to me that antistreptococcus serum might possibly have a curative effect on the chancroid, and prevent suppuration (or liquefaction) of the acute inflammatory bubo so often accompanying it.

CASE I.—S. Y. consulted me on March 7th about pains in both sides over Poupart's ligament. He had had connection on February 28th, and on March 3rd noticed a sore in the coronal sulcus to the left of the frænum. On examination, I found four typical chancroids, three having been produced by auto-inoculation, two glands in the left groin and one in the right considerably swollen and very painful; the outline of each gland could be easily felt, there being very little periadenitis. The patient informed me that the pain in the glands [illegible] about twenty-four hours before consulting me. I washed the glans penis in hot boric solution, dried with pledgets of cotton wool, and sprayed the sores for ten minutes with peroxide of hydrogen. I then injected 1 drop of pure liquid carbolic acid into the base of each ulcer by means of a fine hypodermic needle and ordinary hypodermic syringe, passing the needle about one-eighth of an inch into the tissues. The ulcers were then dressed with a powder, containing loretin and zinc oxide, equal parts. The skin over the lower part of the abdomen was disinfected in the usual manner, and 5 c.cm. of antistreptococcus serum injected about an inch above and an inch to the outer side of each bubo, after allowing the patient to rest for about twenty minutes. A pad of sterile wool was applied over each point of injection, and kept firmly in place by a double spica bandage. I ordered the patient to bathe the penis for half an hour in as hot water as could be borne, and subsequently dress the ulcers with the above powder twice daily.

On March 9th the ulcers had a healthy appearance, the pain and swelling in the bubos had diminished. The patient said that for twelve hours after injection the region around the point of injection was painful. A scarlatiniform eruption was present on the lower part of the abdomen and inner part of the thighs. I inject 5 c.cm. into each side as before, and continued the local treatment of the ulcers.

On March 12th three of the ulcers had healed, and only the parent ulcer remained, and healthy granulations covered the entire base. There was no pain in the bubos, and swelling was scarcely evident.

On March 19th the ulcer had healed, and there was no trace of bubo. I have seen the patient twice since, and he continues in health.

During the past eight months I have used this method of treatment in 48 cases of acute inflammatory bubo, and in only 7 cases did suppuration occur. In 3 of these the inflammation had been in existence at least four days. I have also used this serum in the following case of phagedænic chancre.

CASE II.—On July 6th I was called to see R.., who had been leading a very irregular life, in which alcohol played a very prominent part, for the past five years. He had a suspicious connection on June 4th, and on June 14th an ulcer appeared on the under surface of the glans penis implicating the frænum. From that time until my seeing him the ulcer had been practically neglected. I found the patient in a semi-comatose state, the skin dry and hot, the pulse 130, the temperature 104.3° F. On examination the under surface of the glans penis was entirely destroyed, and the urethra exposed. The discharge from the sore was offensive and sanious. The base was studded over with little patches of false membrane of a yellowish-green colour. On removing one of these a raw bleeding surface was exposed. The entire penis was swollen, of a dark-bluish colour, and presented numerous bullæ. The glands in the region of Poupart's ligament were not swollen. There was no rash on body or limbs. The fauces were congested. I ordered the penis to be immersed in a hot solution of mercury perchloride (1 in 5,000) for two hours, and twice daily; in the intervals iodoform was to be dusted on the ulcer, and the penis wrapped in gauze wet with the hot solution, and changed every twenty minutes. Into the right leg I injected with the usual precautions 10 c.cm. of antistreptococcus serum, and ordered him small doses of strychnine with tr. strophanthus, mv. every four hours.

On July 7th the temperature was 102°, and the pulse 120. The patient was brighter and answered questions more readily. There was no change in the ulcer. Some of the bullæ had disappeared from the penis. The right leg was red and swollen for about six inches above the point of injection. The inner side of the thigh showed a scarlatiniform eruption. The glands in Scarpa's triangle of the same side were enlarged. I ordered lead and opium lotion to be applied to the swollen part around the point of injection, and continued the baths, etc., and general treatment.

On July 8th the patient was much brighter, the pulse was 105, and the temperature 101.5° F. The swelling in the right leg and glands had diminished. The ulcer showed much less false membrane, and the discharge was less sanious. I continued the general treatment, and injected 10 c.cm. of serum into the left arm.

On July 10th the pulse was 98, the temperature 100° F., and the general condition was much improved. The discharge was purulent, with streaks of blood. The false membrane had almost entirely disappeared, and the bullæ entirely. The penis was less swollen, and had a healthy appearance.

I was now at a loss to know whether the hot antiseptic baths to the penis, with iodoform to the ulcer in the intervals, combined with the general tonic treatment, or the use of the antistreptococcus serum was responsible for this happy result. I saw the patient daily for six days; did not inject any serum, but continued local and general treatment as formerly.

On July 16th the pulse was 115, the temperature 103° F. The penis was swollen and painful. The discharge from the ulcer was sanious. The base of the ulcer on clearing away the discharge showed numerous cup-shaped depressions. There was no extension of false membrane. I injected 10 c.cm. of serum into the right arm.

On July 18th the pulse was 98, the temperature 100°. The swelling and pain in the penis had abated, and the ulcer looked healthier.

On July 19th 10 c.cm. of serum were injected, and I gave 10 c.cm. of serum every third day up to July 28th. On that date I noticed two undoubted mucous patches on the left tonsil, and a few small papular syphilides on the abdomen, chest, and face. The temperature was 99° F., the pulse 82. The ulcer was one-third of its original size, and healthy granulations covered the entire base.

On August 1st the patient was convalescent, and taking small doses of mercury and iron.

I have to thank Dr. Calwell for kindly advising me in reference to the condition of the patient's heart and lungs.

From my experience with antistreptococcus serum in venereal sores and their complications, I have arrived at the following conclusions:

1. While recognising the great importance of early local antiseptic treatment of the chancroid, I believe that if 5 c.cm. of the serum is injected subcutaneously into each inguinal region in cases in which inflammatory bubo is likely to develop, it will prove a good prophylactic measure, and assist in healing the chancroid.

2. If inflammatory bubo has already developed, and the acute inflammatory symptoms have not been present more than forty-eight hours, 10 c.cm. injected into the inguinal region corresponding to the inflamed gland will cause resolution in the majority of cases.

3. If there is evidence of pus formation the serum may possibly limit the extension of the suppuration, but in this class of case my results have been anything but satisfactory.

4. The serum should always be injected into the area

drained by the infected gland, preferably the right and left inguinal region. I have not seen good results by injecting it into remote areas.

5. In phagedænic ulceration complicating venereal sores this serum would appear not only to neutralise the toxins in the blood, but also to bring about a healthy condition of the ulcer.

A CASE OF SEPTICÆMIA TREATED WITH ANTISTREPTOCOCCUS SERUM: DEATH.

By E. A. LERMITTE, M.B., B.S., M.R.C.S., L.R.C.P.,
Stamford Hill.

The following case, when first seen, merely presented the features of acute lymphangitis, such a case as often gets rapidly well under the treatment adopted, and gave no warning of the terrible course it was doomed to run.

The drainage of the patient's house was in a decidedly defective condition, and had been condemned by the district sanitary inspector; this fact may have some bearing on the subsequent development of the case.

On July 18th W. H. consulted me, giving the following history: He was inspecting some tea chests which had been damaged by fire and water at the docks on July 13th, when in passing down a dark passage he struck his leg against a projecting chest and fell heavily forward. From that time to July 18th, when I saw him, he had had pain in the leg and sundry constitutional symptoms—headaches, etc.—which he ascribed to his liver; beyond this he did not complain of anything. He had gone about his business as usual, although not feeling quite well.

I found in the lower third of the right leg, over the prominent ridge of the tibia, an extensive ecchymosis with inflamed lymphatics extending thence to the groin; there were no enlarged glands in the groin. In the middle third of the shin, immediately above the bruise, there was an old wound, the result of an injury inflicted some twenty years earlier, which had never healed. The whole of the anterior aspect of the limb was swollen, hot, red, and tender; at one spot near the old wound doubtful fluctuation existed, and at that site I made a deep incision, but evacuated no pus. The wound was dressed antiseptically, the inflamed lymphatics painted with glycerinum belladonnæ (1 in 2), and the entire limb bandaged.

On the morning of July 19th there was less swelling and redness of the leg. The temperature was 103° F.; pulse 80, regular, and of good volume. At 8 P.M. the temperature had risen to 105.4°, and the patient became delirious. He was ordered phenacetin gr.iv, caffeine citrate gr.j, in a powder every four hours; at midnight the temperature was 104°, and the patient was much quieter.

On July 20th he was delirious all day, talking incessantly, but had occasional lucid intervals. The temperature rose again in the morning to 105°; he was then ordered cachets containing quinine sulph. gr.iv every four hours; by 10 P.M. the temperature had fallen to 103.6°.

On July 21st the general condition of the patient remained unchanged: free incisions were made in several places in the leg; a quantity of serosanious fluid was discharged through these incisions, but no pus found. His mental condition improved slightly, and the temperature fell to 99.8° at 10 P.M. During the two succeeding days the leg was dressed with boracic fomentation every four hours. Several more incisions were made in the leg, wherever fresh patches of redness appeared. The quinine treatment was continued throughout, and fluid nourishment (about 80 ounces and brandy 6 ounces administered in the twenty-four hours. The delirium continued unabated during these days. The temperature fluctuated between 102° and 97.4°.

On July 24th I obtained the consent, previously refused, of the patient's wife to treatment by injections of antistreptococcus serum. At 11.15 A.M. I injected 10 c.cm. of the serum with the strictest antiseptic precautions. The temperature at that time was 99.2°, and fell to 99° subsequently; pulse 10[illegible], respirations 20. No perceptible result followed this injection, and the same quantity of serum was again injected at 3.30 P.M., and again at 7.30. At 10 P.M. the temperature had risen to 101° F.; 10 c.cm. of serum were injected at 11.30 P.M., and during the night the temperature fell to 98.4° F.

On July 25th, at 11.30 A.M., I injected 10 c.cm. of serum, making the fifth dose, and exhausting all the serum I had been able to procure on the previous day (Sunday). The temperature rose again to 99.4° at 2 P.M., and the patient was steadily becoming weaker. The messenger sent for a further supply of serum returned with serum supplied in hermetically sealed tubes from the Institut Pasteur, which I found it impossible to open without destroying the serum. I then sent to Messrs. Allen and Hanburys, who at some inconvenience to themselves supplied me with 6 phials, but these arrived too late. During the afternoon the patient was seen by Mr Charles Ryall, and it was then found that gangrene had set in in the right foot. At 9 P.M. the patient became collapsed, and although strychnine was injected and everything done to restore him, he sank and died at 9.40 P.M.

I do not think it possible to emphasise too strongly the proposition already often enunciated, that if the serum treatment of these and similar cases is to be of any avail, that treatment must be commenced as soon as a reasonable diagnosis can be made. Delay reads disaster. Furthermore, the initial dose should be a large one, probably 20 c.cm.

May I be allowed to add that it is a pity that the Institut Pasteur does not issue simple directions in English as to the mode of opening its hermetically sealed glass tubes containing the dried serum, and the dissolving of the same, in place of the French literature in which the bottles are now wrapped? It is very annoying to find that you have to wade through a quantity of French literature of a technical character before discovering that the phial is to be "held in a flame" in order to open it, and when so "held in a flame" it is still more annoying to discover that you have ruined the serum by the application of heat sufficient to break the bottle.

NOTE ON THE TREATMENT OF ARTHRITIS BY MEANS OF HOT AIR BATHS.*

By T. SYDNEY SHORT, M.D.,
Visiting Physician to the Infirmary and Assistant Physician to the General Hospital, Birmingham.

Attention has lately been drawn to the treatment of chronic joint affections by means of hot air locally applied. That there is nothing new in the application of dry heat to such cases the old-fashioned method of easing pain by means of bran or salt bags heated in the oven and placed next to the affected part abundantly testifies. It has been maintained, however, that special benefit accrues from the application of superheated dry air by means of an apparatus especially contrived and patented. Some twelve months ago a case came under my care which seemed particularly suitable for such treatment. I determined to try the effect of hot air given without special apparatus beyond what may be possessed by any hospital, or could be procured for use in any house. This case was shown to the Pathological and Clinical Section of this Branch at the end of last session. The result was so satisfactory that during the last six months I have been making some observations on this method of treatment, and this short note is the result of my experiences up to the present time.

If the drug treatment of chronic joint cases were satisfactory there would not be a call for further methods, but I think all will admit that it leaves much to be desired. Acute rheumatism usually, if not always, succumbs to sodium salicylate. It is not so with subacute attacks. In fact I have come to the conclusion that in some forms of subacute rheumatism salicylate, if it does not make the patient worse does very little good.

We generally look upon acute rheumatic fever as a serious condition, and regard subacute "rheumatics" as an altogether lighter ailment. I am not sure, however, that we are justified in taking this view, when it is considered that an acute ailment once weathered without sequelæ is not so serious a matter as a chronic one continually recurring. It is true that a subacute case of rheumatism may never be actually so ill as an acute one at its height: but, on the other hand, it may never get really cured. If by the time the patient has reached middle life the hands or the feet are in any way crippled it is difficult for him to support a family or even to gain a livelihood. It was with a view to improve the condition of this class of case that the hot air bath was tried.

Description of the Apparatus and Method.

The apparatus employed is that in common use in hospitals for the administration of hot-air baths in cases where profuse diaphoresis is indicated. It is used in the following manner: The patient lies in bed between blankets. The tent which covers him is made of two large cradles, covered first with blankets, then with macintosh sheets, and then again with blankets. The coverings must be arranged at the top of the tent in such a manner that a small opening or chimney can be made to let out the hot air when it has become saturated with moisture. I have not found it necessary to make any counteropening, as the entering air finds plenty of inlet between the blankets and the chimney or flue of the heating apparatus. If the packing be too tight, it is obvious a counteropening of some kind must be made. There should be plenty of spare blankets near the head, in order that it may be wrapped in folds round the patient's neck and thus made as airtight as possible. The cradles that I use at the infirmary are made of wire netting on a metal frame; they are cheap and cannot take fire. The flue attached to

* Abstract of a paper read before the Birmingham and Midland Counties Branch of the British Medical Association, October 13th, 1898.

the lamp passes through an opening in the blankets at the foot of the tent, and may be covered with asbestos or simply a wet cloth to protect the blanket. It is important that the lamp should be made without solder, because the excessive heat is apt to damage the connections round the wick apertures and to allow of the escape of some of the spirit, which will speedily ignite. A very convenient method is to replace the spirit lamp by a ring bunsen burner attached to a gas bracket by means of a long rubber tubing. This is safer than a lamp, and raises the temperature inside the tent more rapidly. I always use the bunsen burner at the infirmary; but in places where no gas is available a lamp of some kind must be used. Many of the spirit lamps ordinarily employed with this apparatus do not give out sufficient heat, and are therefore useless if a higher temperature than 120° F. is required.

The blanket which has covered the body is removed the last thing to allow of free evaporation from the surface of the skin. The patient, therefore, lies quite nude inside the tent. A small towel can be placed across the hips if desired. The patient is wiped down after the bath, and wrapped in dry blankets for the rest of the day.

The estimation of the temperature inside the bath is not an easy matter. The air in the upper strata near the top of the tent is always much hotter than that of the lower strata in which the patient lies. There may be a difference of 10° F., or even more. It is clear, then, that if a long thermometer be inserted through a hole in the top of the tent its glass is subjected to the heated air of the upper strata as it passes out, and the reading is much higher than the actual temperature near the bulb, and therefore near the patient. The disadvantage of letting down a small thermometer by means of a string, and hauling it up again like a bucket from a well, is that the opening must be made each time, and consequently the temperature may never rise as high as is desired. Perhaps the best way is to insert a long thermometer through a small hole in the blanket near the side of the tent, midway between the head and the foot, so that the bulb is near the patient's body without actually touching it, otherwise the bulb will get wet. The index of the thermometer, being outside the tent, can be watched without displacing the coverings.

As a rule there will be no necessity for making any opening till the patient breaks out in a good perspiration or complains of feeling too hot. If the temperature of the air be taken at this stage it will be found to be from 120° to 130° F. The opening should now be made at the top of the tent. The feeling of excessive heat passes off rapidly, as the hot air saturated with moisture passes away. This is the important point in the treatment, because unless the moisture is got rid of, few patients can be found to stand a temperature beyond 130° F. On the other hand, if this is done periodically, the air in the tent is kept sufficiently dry to allow of the temperature being raised to 200° F. or higher. During the first bath I usually keep the temperature at about 130° F. for twenty minutes, and then take the patient out, subjecting him to a greater heat on the subsequent occasions.

SYNOPSIS OF CASES.

I have full notes of 9 cases treated by this method during the last six months. A brief description of them will be more in keeping with this short paper than a detailed account. Of the 9 cases, 3 were chronic rheumatism, 2 chronic gout, 2 subacute rheumatism, 1 chronic arthritis of a doubtful nature, probably due to an old injury, and 1 arthritis associated with osteitis.

The last case was not relieved by the baths. I thought that if anything he was made worse, and after a week's treatment they were discontinued. One case was slightly relieved. He left the hospital suddenly after nine baths. It was a case of chronic rheumatism of the hands. When he came in he could not button his trousers on account of the pain and stiffness in his hands. On leaving he was sufficiently improved to accomplish this.

Two cases were distinctly relieved. One of these is still under treatment and will, I think, derive considerable benefit eventually. The remaining five were greatly relieved.

INDICATIONS.

There appear to be four classes of cases to which this method seems especially suitable:

1. Subacute attacks of rheumatic arthritis.
2. Subacute arthritis following an acute attack of either rheumatism or gout, or consequent on a pyæmic condition such as gonorrhœal arthritis.
3. Cases of chronic thickening remaining as a consequence of gout, rheumatism, or rheumatoid arthritis, associated with pain and stiffness on movement, with continual aching pains in the neighbourhood of the joints.
4. Cases of impaired mobility following injuries to joints or to muscles in their neighbourhood; and cases of joint trouble from trophic causes or disuse.

There is no claim to anything new in the above method or in the apparatus by which it is carried out. It simply has this advantage that, by removing the excessive moisture from time to time in the manner indicated, a high temperature can be borne in an ordinary blanket tent. It can, therefore be given in any hospital or private house, and is applicable to any class of patient, whether bedridden or not.

NOTE ON MULTIPLE FAMILY CANCER.

By W. ROGER WILLIAMS, F.R.C.S.,
Clifton.

SUCH instances of multiple family cancer as that recorded by Mr. Power in this JOURNAL of July 16th, are of great interest in view of their bearing on the *quæstio vexata* of the hereditability of cancer. I know of many family histories quite as remarkable as Mr. Power's. I will briefly mention a few:—

1. I have seen a woman, aged 53, with uterine cancer, whose maternal grandmother, mother (aged 45), mother's sister, and the patient's two sisters (aged 32 and 36) had all died of cancer of the uterus. She was one of a family of eleven; of her other brothers and sisters, 3 died in infancy, and five were still alive and well.

2. Atthill mentions the case of a woman, aged 28, with uterine cancer, whose mother and two sisters died of cancer of the same organ.

3. In a family known to Sibley, the mother and her 5 daughters all died of cancer of the left breast.

4. Of the celebrated Bonaparte family, Napoleon I, his father, his brother Lucien, and two of his sisters (Pauline and Caroline) all died of cancer of the stomach.

5. It is very rare to find, in the same family, such a large number of members affected as in the following case mentioned by Broca:—

Madame Z. died of cancer of the breast, aged 60. Of her 4 daughters, 2 died of cancer of the breast and 2 of cancer of the liver.

The first daughter's offspring comprised 3 females, who were still alive and well, aged 68, 72 and 78 years.

The second daughter had 2 sons and 5 daughters. The eldest son died aged 28, not cancerous, and the youngest daughter died aged 60, not cancerous; all the rest died cancerous—the son died of cancer of the stomach, 3 of the daughters of cancer of the breast, and the other daughter of cancer of the liver.

The third daughter had 5 daughters and 2 sons; all the daughters died of cancer, 3 of the breast, 1 of the uterus, and 1 of the liver. Of the sons, 1 died in early manhood without issue, not cancerous, and the other was alive and well, aged 72.

The fourth daughter had only 1 son, who was alive and well, aged 70.

6. Otto cites an instance of 4 brothers and sisters who all died of malignant disease of the eye.

7. Silcock has reported the occurrence of melanotic sarcoma of the left eyeball in three generations of the same family.

8. Six cases of cancer in the same family were known to Catani; the parts affected being the rectum in 2, the lungs in 2, and the bladder and rectum.

9. Of a family of 7, under Roper's observation, 6 died of cancer; in the females the breast being the part affected.

10. Strümpell reports the death in early infancy of 2 brothers, each with sarcoma of the left kidney.

11. Manichow reports that 23 families known to him in "la Soissonnais" had between them 69 cancerous members, and of these the stomach was the part affected in no fewer than 57.

12. Some remarkable examples of the hereditary transmission of melanosis in horses are cited by Virchow. One of these a young white stallion, with melanosis of the anus, transmitted this disease to all its white descendants, whereas those of a darker colour escaped. From horses thus bred the disease became widely diffused throughout the neighbouring country.

Such instances as the foregoing seem to me to prove the hereditability of the disease. It is obviously impossible in most of them that the malady could have been acquired from a common source of infection, and no fortuitous circumstances will explain such concurrences.

A remarkable feature about many cases of inherited cancer is that like normal structure it is homotopic in its transmission; that is, it attacks the corresponding organ in each of the related individuals. This is especially noticeable in Sibley's case, where the mother and her 5 daughters all had cancer of the left breast.

Although this form of transmission often defaults, it is, nevertheless, noteworthy that on the average—taking all the seats of inherited cancer into consideration—homotopic transmission preponderates. Thus my analysis of the family history of 136 women with mammary cancer shows that of the 48 seats of inherited cancer the breast was the part affected in 19.

EXTRAUTERINE PREGNANCY: FIVE MONTHS FŒTUS: PLACENTA IMPLANTED ON ANTERIOR ABDOMINAL WALL: OPERATION: RECOVERY.

By JAMES OLIVER, M.D., F.R.S.Edin.,
Physician, Hospital for Women, Soho Square.

History.—A. K., aged 28, and married three years and a half, had had no child and no miscarriage. She began to menstruate at the age of 17, and the discharge thereafter recurred regularly until March, 1898, during which month and the four succeeding months (April, May, June, and July) it did not appear. A hæmorrhagic discharge from the vagina was observed on August 8th and 9th, from August 24th until August 31st, and again from September 5th until September 24th, when the fœtus and placenta were removed by abdominal section. Menstruation had always been accompanied by pain, and in March, when the menstrual discharge should have made its appearance, pain similar to that usually experienced during menstruation, but more severe, was then complained of. Little or no pain was complained of during April, May, June, July, or August. On September 2nd patient was suddenly seized with severe pain in the left iliac region, but she has been, comparatively speaking, free of pain since this date. Almost immediately after the menstrual period was missed in March patient began to be sick in the morning, and this symptom persisted until the end of April only. During March and April pain was experienced in the hypogastrium during micturition. The abdomen has increased in size since April.

Physical Signs.—The abdomen below the level of the umbilicus is prominent; the left half is markedly more prominent than the right. Palpation reveals the presence of a somewhat pyriform tumour, which extends from the left anterior superior spine of the ilium to within 2 inches of the same anatomical mark on the right side. The larger end of the tumour is located in the left abdomen, and its upper border here reaches to the level of the umbilicus, whilst the upper border on the right side falls short of this level by 2 inches. The left portion of the tumour is smooth and appears to be solid, whilst the right half is slightly irregular and appears to be cystic. No sounds are heard on auscultating the tumour. Colostrum is obtained readily from both breasts. The cervix uteri is located far back towards the hollow of the sacrum: it is not enlarged and the os is not open. The vaginal roof anteriorly and on the left side is pushed down by a swelling which is a portion of the abdominal tumour. The body of the uterus is incorporated with the abdomino-pelvic tumour posteriorly. The pulse is 72 a minute and the temperature normal.

Operation.—The abdominal wall was incised mesially from 1½ in. below the umbilicus to within 1 in. of the pubes. The upper portion of this incision opened the peritoneal cavity to the extent of about 1 in. The tumour was carefully incised below the peritoneal reflection. It was then observed that the placenta was implanted on the anterior abdominal wall and extended some inches to the right and left of the abdominal incision. I separated the placenta extensively from the abdominal wall, but as I failed to reach satisfactorily the free margin of the placenta and feared I might injure the bladder by persisting, I broke through the placenta at a spot opposite the abdominal incision and delivered the fœtus, head first, through this breach. The remaining portion of the placenta was thereafter separated and removed. The fœtus, 5 months old, which had probably been dead 6 or 7 weeks, had been lodged in the substance of the left broad ligament, and had separated the bladder from the uterus. The cavity in the broad ligament was plugged with cyanide gauze, which was removed twenty-four hours after the operation. Convalescence proceeded uninterruptedly.

Remarks.—It is highly probable that by rupture of the Fallopian tube the ovum escaped into the substance of the broad ligament during the fourth week after conception, or at least some days before the placenta had begun to be differentiated. No hæmorrhage from the uterus occurred until the fœtus was dead and no decidual shreds were ever observed. No spurious labour pains were experienced, and in none of the full-time extrauterine pregnancies which have come under my care have pains of a labour-like character been complained of.[1] Although the fœtus had been dead 6 or 7 weeks before it was removed there was no evidence of any constitutional disturbance, the pulse and temperature even were normal. Morning sickness was a troublesome symptom for about 7 weeks, and was noted first soon after the menstrual period was missed in March. The implantation of the placenta on the anterior abdominal wall centrally proved a troublesome complication at the time of operation.

Reference.
1 See A Study of Four Cases of Full-time Extrauterine Pregnancy. *Edin. Med. Journal*, August, 1898.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE TREATMENT OF ECZEMA.

From time to time one sees in the British Medical Journal and in other papers references to special treatment of eczema. In the Epitome of November 12th, for instance, occurs a paragraph on the treatment of chronic eczema by iodine. The time seems opportune for me to emphasise what is practically the essence of treatment for this disease.

Antiseptic Remedies.—Silver nitrate I discarded for iodine nearly ten years ago, but for the time I used it I must speak favourably of its efficacy. The solution of iodine which I adopted and have since used is one of 100 gr. of the metal dissolved in 1 fluid ounce of spirit, with potassium iodide and ether. This solution may be used in most stages of the disease, even when the skin is much fissured and inflamed, especially if its application is preceded by brushing the part to be treated with a solution of cocaine hydrochlorate (4 per cent.). Thickening of the skin I soften by strapping with "infirmary strapping" previous to applying the iodine, but this proceeding is not often necessary. More often I apply the iodine solution and over the painted part apply the strapping. By this means an iodine vapour bath is ensured. Copper sulphate is a good remedy when used over small areas, such as the fingers. After smoothing the fingers with soap and pumice-stone, I rub on the blue-stone. The immediate effect is painful, but the resulting cure is rapid. When eczema has almost recovered there are often foci of inflammation left, which seem to reinfect the recovering surface. These must be cauterised, and for that purpose I prefer strong carbolic acid lightly applied.

Exclusion of Air.—When the skin is healing is the time to dust over the surface with calomel or cover over with some air-excluding medium. For the horny eczema which occurs readily on the hands and forearm a frequent application of common paraffin oil is very useful. It is to be washed off by means of soap and warm water shortly after each application. On some large surfaces I have begun with a spray of ethyl chloride, followed by painting with collodion flexile. By excluding air some cases have recovered without further application.

Eczema of Scalp and Ears.—The most useful remedy is yellow oxide of mercury, eight grains to one ounce of vaseline. This ointment has excellent effects in many forms of eczema.

Eczema of the Legs Complicated by Varicose Veins.—The best method of treatment seems to be the application of infirmary strapping, excluding all air as much as possible. This may be left on for a considerable time, and after its removal further application of fresh strapping, or of collodion flexile, after washing off the remains of the plaster, may be made. Whatever remedies may be tried, exclusion of air is beneficial, and all successful remedies seem to be antiseptic.

Some cases are absolutely cured by simply washing the part affected in 20 per cent. carbolic soap. So-called baker's itch, grocer's itch, etc., may be cured occasionally by this means. Strapping, however, is often necessary as well, or a combination of strapping with application of iodine. Eczema recently produced by contact with various woolly plants and seeds may be voided in most cases by a carbolic-acid treatment.

The combinations of remedies for the treatment of eczema must be frequently changed, but my experience continually impressed on me the fact that antisepsis and exclusion of air from the part treated are the two most important factors in the cure of the disease.

L. D. L. ELLIS, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas.
Folkestone.

CYST OF THE MAXILLARY ANTRUM.

C. J., aged 32, came under my care in July, 1898, with a history of a swelling which had appeared four years before below the left eye, with frequent pain. It had remained in this condition until twelve months ago, when a fulness was felt in the mouth; latterly this had increased a good deal. Fluctuation was easily felt between the roof of the mouth and the front of the antrum.

Under an anæsthetic the swelling was opened in the canine fossa, and the front of the wall, which was very much thinned, removed. The cyst was found to contain a very large quantity of clear, glairy fluid, like white of egg, in which were white glistening crystals of cholesterin. The cavity was well washed out with an antiseptic solution, the walls scraped with a sharp spoon, a drainage tube inserted, and daily antiseptic washing employed. I saw the patient at the beginning of November, and he was then quite well.

REMARKS.—True cysts of the maxillary antrum are very rare, and before operating I concluded that this was a case of cyst of the upper jaw itself independent of the antrum. I am, however, led to believe that this cyst was in the latter cavity from the following facts: (1) There was easy communication between the nose and cyst; (2) the finger passed through the opening could thoroughly explore what seemed to be the cavity of the antrum; (3) the great extent of the swelling in the mouth; (4) the quantity of the fluid evacuated.

WM. R. H. STEWART,
Surgeon to the Ear, Throat, and Nose Department, Great Northern Central Hospital; Consulting Surgeon to the London Throat Hospital.

THE TREATMENT OF LEUCOCYTHÆMIA BY CARBONIC ACID GAS.

A FURTHER report is called for in connection with my previous remarks on the Treatment of Leucocythæmia in the BRITISH MEDICAL JOURNAL for July 23rd, 1898.

The two cases submitted to that treatment, although greatly benefited at first, both as regards the reduction in size of the spleen and the general condition, did not progress beyond a certain point, and both of them, being severe cases, ultimately died. In both instances the inhalation of CO_2 had been suspended for a considerable time prior to the fatal termination, after a long trial, but in neither of them on account of any detrimental action. No evil effects could be traced to the inhalations. In one of the patients the spleen, which had once more greatly increased in size during a four weeks' cessation of the treatment, rapidly diminished again after a few inhalations. In the other case, in which the disease was complicated by enormous lymphomatous swelling of the abdominal and intrathoracic glands, the spleen did not return to its original size after the cessation of the treatment. In two other cases of which I have had reports no impression seems to have been made upon the size of the spleen, which in both of them was of great size, and one of these patients is now dead.

The following provisional conclusions may be drawn from the limited experience gained so far:

1. In some cases of leucocythæmia, the systematic inhalation of carbonic acid gas, whilst failing to reduce the spleen to its normal proportions, leads to a considerable diminution in its size, and to a considerable improvement in the patient's general condition.

2. The treatment does not arrest the disease nor efficiently counteract its fatal tendency.

3. So far as my experience goes, it does not permanently check the excess of leucocytes in the blood.

4. No explanation can be offered for the different behaviour of cases, but since in those which I have personally observed a remarkable advantage was gained temporarily, the treatment might be worth trying in all cases.

Curzon Street, W. WM. EWART.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BRISTOL GENERAL HOSPITAL.

THREE CASES OF DOUBLE EMPYEMA.

(By MARTIN RANDALL, M.D., F.R.C.S., late House-Surgeon.)

THE following cases were admitted to the hospital under the care of Dr. A. J. Harrison, Dr. Michell Clarke, and Dr. H. C. Newnham respectively, by whose permission they are published.

CASE I.—S. G., male, aged 9 years, was admitted on July 29th, 1896, under the care of Dr. A. J. Harrison, suffering from double basal pneumonia. He was extremely ill on admission, with a temperature of 105°. Signs of fluid were detected at the right base on August 10th and the exploring syringe found pus. On the same day, under chloroform, a portion of the ninth rib, just external to the line of the angle of the scapula, was removed, and on opening the pleura 20 ounces of pus escaped and numerous large masses of lymph were extracted. There were no adhesions within reach, but the lung expanded well at once. Large masses of lymph came away at the dressings for the next four days, after which the discharge became serous.

The temperature however remained up, reaching 101° or 102° at night, with morning fall, and the boy continued wasted and pale. Signs of fluid were now developing at the left base, but exploration on August 19th failed to find pus. The tube was left out of the right side on this day.

On August 25th pus was found in the left axilla, and under chloroform a piece of the eighth rib in the posterior axillary line was removed. Adhesions found above, behind, and in front limited the cavity practically to the axillary region. Fourteen ounces of pus were evacuated, but the lung did not at once expand freely. A small piece of rib was removed from the right side, as it was evidently necrosed. On August 26th the left lung was found to have expanded well and the tube was left out on September 1st. At neither operation was there any serious shock.

Recovery was quite uneventful after this. The right side was soundly healed on September 13th, the boy running about the ward and playing as if nothing were the matter with him. He left the hospital a few days later with both wounds sound and air entering the lungs well.

CASE II.—J. T., aged 1 year 10 months, was admitted on May 3rd, 1897, under the care of Dr. Michell Clarke. The illness commenced on May 1st, and on admission double pneumonia was diagnosed. The temperature reached normal on the twelfth day, but began to rise again a day or two later, and assumed a hectic type. The patient became very restless, distressed in breathing, and of a peculiar ashy-grey

colour about the lips and face. On May 21st pus was found, and 5½ ounces removed by aspiration from the right side below the angle of the scapula. There was slight relief of symptoms. On May 28th 3½ ounces more were withdrawn from the same spot. The child was very livid, and not expected to live the night. After several unsuccessful attempts pus was found on June 2nd on the left side in the fourth space at the anterior axillary line. The aspirations on the right side having given little relief, it was decided to drain both sides, and on June 3rd the child was put under chloroform, an injection of strychnine and brandy having been first given under the skin. A piece of the right ninth rib was quickly resected just external to the line of the angle of the scapula, the child lying on its back, drawn over the edge of the table, and about 14 or 15 ounces of pus were removed. There was little or no shock, the lung expanded well, and the child's colour improved. The wound was covered with cyanide gauze and wool, and a similar operation immediately done on the left side in the mid-axillary region. About the same amount of pus was removed from this side. The child was suffering but little from the operation, and was put back to bed, with colour improved and breathing comparatively easily. Subsequent progress was slow but satisfactory, and the child was discharged well on July 19th, with both wounds soundly healed.

Case III.—A. H., female, aged 29, was admitted on July 30th, 1896, under the care of Dr. Newnham, and discharged well on November 20th, 1896. The patient had been confined five weeks earlier, and had been in bed since with severe febrile symptoms, but no definite history of rigors. When seen she was sitting up in bed, livid, sweating profusely, and breathing with the utmost difficulty. She was greatly emaciated. The temperature was 100.2°. Nothing was found on vaginal examination save a purulent discharge. The heart was not displaced, but there were the usual signs of fluid at each base, which was found on exploration to be pus. The same day under chloroform the right pleura was opened, a piece of the ninth rib just external to the line of the angle of the scapula being excised. A large cavity was found which contained 30 ounces of creamy pus. Twenty ounces of pus were removed at the same time by aspiration from the left side. The patient stood the operation well.

On August 5th, as there were still signs of fluid at the left base, chloroform was given, and a similar operation to that on the right side performed, 20 ounces of pus being removed. On August 14th the patient was ordered the Wolff's bottle, as recommended in Dr. Osler's *Medicine*, to try to aid the expansion of the lungs, as it was not quite satisfactory.

The tube was removed from right side on August 17th, and from left side on August 21st.

On August 24th the patient complained of pain in the right sacro-iliac region, which was swollen and tender. Fomentations were applied and improvement appeared to take place, but pain returned, and on September 8th fluctuation was distinct. On September 9th a large abscess was opened and scraped under chloroform, the sacro-iliac joint being involved. After this operation the patient was delirious for three days, constantly tossing about, moaning, and refusing food.

On September 13th she became quite rational again, and thereafter rapidly improved. On September 16th the left empyema wound was healed, and the right on September 21st.

She went home on November 20th, all wounds healed, but the left anterior superior iliac spine was displaced downwards nearly an inch, and forwards. She walked lame but without pain. Air entered the lungs well, and no dulness was left.

She was seen six months later, fat and well, and about four months pregnant.

In all the cases a short but wide soft rubber tube was used for drainage, the same tube being used till removal. Dressings of cyanide gauze and sublimated wood wool wadding were employed.

Remarks.

Cases of double empyema are recorded in considerable numbers, and the treatment adopted in Case I is that usually recommended. It is definitely established now that there is little extra danger in opening the second pleura after an interval of some days. Cases, however, in which both pleuræ have been successfully opened at the same time appear to be rare, and I have only found one recorded by Mr. Swain and Dr. E. L. Fox in the *Lancet*, ii, 1894, p. 384. The patient was a girl of 12; both pleuræ were aspirated, and as the child got worse, both were incised under chloroform, as well as an abscess on the buttock, six days later. There is no note given about adhesions. The child made an excellent recovery. Mr. Pollard has recorded in the *Lancet*, vol. i, 1894, a very interesting case of wound of the pleuræ occurring in a child as the result of a fall on to some area railings.

There was retraction of each lung, but Mr. Pollard sewed up each wound firmly, and the child did well. He explains the child's escape from immediate death thus: "The wounds were so free and of such a shape that the air escaped from the pleural cavities during expiration as readily as it entered during inspiration, and consequently the lungs, though retracted, were not compressed by the air in the pleural cavities, as they would have been if the wounds had been such as to favour the entry more than the exit of air."

No anæsthetic was used at the operation, which I saw. Mr. Pollard also says:

When in cases of double empyema incisions have been made into both collections, a fatal result always ensues, unless there are already adhesions to prevent collapse of the lungs.

In Case II, given above, it was not intended to open the second pleura unless the child stood the first operation well, and the lung also expanded well, as it is often felt to do, in operating on empyemata. These conditions were fulfilled, and the second operation done immediately, because the first lung was acting well, and opening the second pleura could have no influence on that. I felt no adhesions on the right side, that is, the first operated on, but exploration was hurried, as it was desired to keep the child on the table as short a time as possible. There were adhesions limiting the cavity on the left side. The characters of the wounds made in the operation for empyema are such as those in Mr. Pollard's case, to the nature of which he attributes his patient's recovery, and having seen his case was one reason why the second pleura was opened in this case of empyema. It was thought very desirable to do the operation at one time in my case if possible, as the child was so very bad. Cases of this kind may die very soon when left with pus in the chest.

In a similar case with similar conditions I would do the same again, but should be content with aspirating the second pleura if the patient were much affected by the first operation and the first lung did not expand well. In the conclusions given by Dr. Coupland and Mr. Gould, after consideration of a case of double empyema (*Trans. Clin. Soc.*, 1891) it is advised, if desired to open both pleuræ at once, to aspirate both a few hours before. Whether this advice has ever been acted upon I do not know.

The third case given above presents no special features on which to comment, but is interesting as occurring in a patient of 29 and in the completeness of the recovery.

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REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

T. Bryant, M.Ch., F.R.C.S., President, in the Chair.

Tuesday, November 22nd, 1898.

Exhibition of Specimens.

Mr. J. Lynn Thomas (Cardiff) exhibited two specimens: (1) Excision of a Traumatic Urethral Stricture; (2) Removal of a Goitre.

A Distinct Variety of Hip-joint Disease in Children and Young Persons.

Mr. Edmund Owen in this paper drew attention to a very important group of cases of acute suppurative disease of the hip-joint, which must be carefully separated from the much more common tuberculous disease of this joint. The disease was caused by the invasion by the micro-organisms of osteomyelitis of the very active tissue at the upper extremity of

the diaphysis of the femur. Reference was made to the fact that the hip-joint differed from all other joints, in that the end of a diaphysis entered into its formation, and that therefore, when this diaphysis was the seat of osteomyelitis, suppurative arthritis almost invariably resulted. The symptoms of this form of disease were especially characterised by sudden onset, acute course, and intense severity. There was often a history of injury or some lowering disease preceding the onset of the attack; and it was suggested that such conditions, by lowering the vitality of the growing tissue, rendered it more vulnerable to infective organisms. Death from septicæmia was liable to occur if the disease was not speedily recognised and adequately treated. The treatment advocated was the free opening of the joint, with removal of the epiphysis and the affected part of the diaphysis, and the thorough application of germicides to the interior of the joint, and this operation must be followed by drainage. In view of the urgency of these cases the author laid stress on the extreme importance of early correct diagnosis and immediate efficient treatment. The paper concluded with the report of four illustrative cases under the author's care. Reference was made to a paper on this disease by Dr. Bristowe, published in the Pathological Society's *Transactions* for 1862.

Mr. A. E. J. Barker said the value of the paper consisted not only in emphasising the difference between acute septic periostitis of the hip and acute tuberculous arthritis, but also in laying stress on the proper treatment. Some years ago he himself had read a paper urging closure of the wound and primary union after operation for tuberculous hip-joint disease, but this procedure should not be employed for the acute septic cases described by Mr. Owen. It was therefore very important to distinguish them from each other. In flushing out the joint, he thought sterilised water had advantages over strong solutions of germicides, inasmuch as it could be employed vigorously and to any extent.

Mr. W. G. Spencer, while agreeing that stress had rightly been laid by the author of the paper on the fact that the diaphysis was affected, thought that the importance of the diaphysis in the case of the hip-joint had been somewhat exaggerated. He referred to 3 cases where the joints—knee, elbow, hip—became very early affected from this disease starting on the diaphysis. If the cases were operated upon early enough, less radical treatment than that advocated by the author would suffice, and removal of bone was unnecessary. Thrombosis of the Haversian spaces could be successfully treated by drilling the bone. The nomenclature of the disease was multiple, and at present unsatisfactory. In washing out a joint he used strong carbolic (1 in 20) first, and then flushed out freely with water; he did not think carbolic acid could aggravate suppuration in the way that perchloride of mercury might.

Mr. J. Warrington Haward said the great value of the paper was that it urged and encouraged the surgeon to proceed without delay to radical measures, and to save life at the expense of some deformity of the limb.

Mr. F. C. Wallis had shown at the Clinical Society a child aged 1½ year, who after an injury to the left hip, rapidly developed a fluctuating tumour in the abdomen and swelling around the joint. The abdominal swelling was incised, with the result that three-quarters of a pint of pus came out, and that the head of the femur, which had worked its way through the acetabulum, was found in the abdomen. The child recovered.

Mr. C. Golding-Bird was not prepared to agree that in all cases presenting the clinical features described the neck of the bone should be sawn through and the bone removed. He quoted the case of a boy aged 8½ years, who, after an injury to the hip, rapidly developed the symptoms described. The joint was opened, pus let out, and the articular cavity washed out; the joint was closed, except for a small drain which was left in for a few days, and recovery followed. Such a case could not clinically be distinguished from the author's cases. It might possibly have been septic synovitis, but clinically it was exactly like the other class.

Dr. Stuart MacDonald described the case of a boy with this affection of the hip, at first regarded as rheumatic. It was operated upon and the pus found to contain staphylococci and some diplococci; as it was thought possible there was streptococcal infection, antistreptococcus serum was injected. The patient died fourteen hours after the operation with hyperpyrexia. At the necropsy there was pus in the hip-joint; the periosteum of the neck of the femur was thickened and dissected off, while that on the shaft was healthy; the epiphysial plate was normal. There was extensive staphylococcal infection in spleen, kidneys, and heart's blood.

The President regarded early diagnosis in these cases as most important. Years ago, in an essay on pyæmia, he had found that cases due to osteitis, whether of the shaft or of the epiphysis, were the most severe and most likely to have purulent pericarditis. Five years ago he had seen a case of acute osteitis of the head of the femur, in which he had successfully drilled the affected bone. He would not, therefore, be inclined to adopt the radical treatment proposed by the author in all cases.

Mr. E. Owen, in reply, said that though the term "acute osteitis" would fit the cases, some references to micro-organisms was desirable to draw attention to the peculiar lethal character of the affection. When bone could be recognised as being infected, drilling was not sufficient, it should be removed. He preferred germicides to boiled water in flushing out joints; as to iodoform, though it might be powerful against tubercle bacilli, it was not of any use against pyogenic micro-organisms. The term para-epiphysitis might be employed to designate this disease, which was not acute epiphysitis. Micro-organisms preferred the tissue at the end of the diaphysis to that of the epiphysis. He thought Mr. Golding-Bird's case was probably one of septic synovitis, but he did not know how to distinguish clinically between it and his own cases, and would have performed a more radical operation than that which proved sufficient.

HARVEIAN SOCIETY OF LONDON.

James F. Goodhart, M.D., F.R.C.P., President, in the Chair.

Thursday, November 17th, 1898.

Functional Dysphagia.

Dr. StClair Thomson read a paper in which, after sketching the physiology of deglutition, he described the two forms under which functional dysphagia might appear—namely, a paralytic and a spasmodic form. The etiology and symptoms of the affection were described and the differential points of diagnosis indicated. Stress was laid on the importance in every case of dysphagia of making a thorough inspection of the upper air passages, and of making a complete examination of the chest before passing an œsophageal bougie. The possible risks associated with the latter method of examination were referred to. Auscultation of the œsophagus was described. As regards treatment, the writer mentioned that the immediate effect of passing a bougie was generally satisfactory, but that if the further histories of these cases were obtained it was frequently discovered that relapses were not uncommon. It was, therefore, important to follow up the immediate relief by strongly suggestive treatment, by attention to anæmia, by the removal of any possible source of reflex irritation, and in short by the whole armamentarium against hysteria. In conclusion, he pointed out that, after all, the most common affection of the œsophagus was carcinoma; that when a case of dysphagia presented itself, malignant disease should be the first suggestion to be considered; and that the possibility of aneurysm and other forms of ulceration (traumatic, syphilitic, and tuberculous) should be excluded before the diagnosis of its being a functional disorder was decided upon. In a case of dysphagia the old advice was very applicable—namely, "to hope for the best and prepare for the worst."

Dr. C. S. Jaffe remarked that dysphagia of neurotic origin, and not associated with other symptoms of hysteria, was as common in men as in women.

Dr. Dundas Grant stated that in his cases of functional dysphagia paralysis of the œsophagus was relatively more frequent than it appeared to have been in Dr. Thomson's. He diagnosed it by the abnormal ease with which a very large india-rubber œsophageal tube could be passed. He referred also to cases of reflex spasm of the œsophagus simulating malignant disease, and arising either from malignant disease in the abdominal organs or from defective dentition. In reference to electricity, he had learnt from Dr.

de Watteville how to bring about forced movements of swallowing by the continuous current, the positive pole being placed on the nape of the neck, the negative one being drawn gently down the side of the neck between the sterno-mastoid muscle and the trachea. Before introducing the bougie he made it a rule to assure himself that the cardiac apex beat was in its normal position. In the passage of a bougie in the middle line the cricoid cartilage sometimes acted as an obstruction, and in such cases the instrument could often be passed with ease if introduced to one side or other of the middle line. This was more readily done with a round than with a flat bougie, and he found in some cases a large bougie with a radish-shaped end preferable to a flat one.

Dr. Clifford Beale referred to three cases of functional dysphagia where the patients appeared to be almost unable to swallow in the presence of an onlooker, but could take food without difficulty in solitude. The sensation of constriction of the gullet sometimes led to the suspicion and even to the diagnosis of cancer, but the passage of a large œsophageal bougie, by demonstrating the absence of any stoppage, not infrequently caused the disappearance of the sensation. A very small inflammation of a follicle in the pharynx might produce a very considerable dysphagia, and he suggested the possibility that some cases of transient dysphagia might be due to a similar cause situated in the œsophagus itself.

Dr. G. A. Sutherland thought the passage of an œsophageal bougie was of value in some cases of functional dysphagia. He recalled one case in which a patient was unable to swallow owing to the presence, as he believed, of a pin in his throat. The passage of a bougie was immediately followed by the disappearance of the dysphagia. He agreed with Dr. StClair Thomson in the importance of making a thorough examination of the nasopharynx and larynx both visually and digitally. In the case of a small foreign body, such as a fishbone, he had found by experience that after localising the part by the patient's sensations a careful examination of that region with a probe would probably reveal a point of extreme tenderness, where the foreign body would be found.

The President alluded to the not uncommon inability of children to swallow solids; sometimes this inability persisted up to the age of 2 or 3 years. In some cases it might be due to adenoids, but he believed that it was usually dependent on some functional neurosis. He mentioned a case in which dysphagia was caused by phlegmon of the œsophagus. He had met with an instance in which a gentleman had been unable for many years to swallow, except with great slowness and in small sips. Possibly congenital narrowing of the lower part of the œsophagus existed here, but he inclined to the view that the inability was functional. Functional dysphagia was occasionally mistaken for that caused by cancerous stricture, but the converse error had been known to occur. He regarded aneurysm as an extremely rare cause of dysphagia. He attached great value to auscultation as a means of diagnosing œsophageal stricture.

After some remarks by Dr. H. J. Macevoy,

Dr. StClair Thomson, in reply, said the debate had shown the protean features of hysteria. In his own experience the majority of patients had been females. A hollow bougie was doubtless much more comfortable for the patient and easier to pass; but the rigid tube for diagnostic purposes gave a good deal more information. If surrounded with every precaution doubtless the œsophageal bougie could be passed without danger; but there could be no doubt that dangerous accidents with it had happened in the hands of some of the most experienced and expert practitioners. The dysphagia associated with anæsthesia of the larynx, the pharyngismus associated with defective teeth, and the aphagia described by the President as occurring in infants and adenoid subjects, might, he thought, be classified under the heading of reflex dysphagia.

BRITISH GYNÆCOLOGICAL SOCIETY.

H. Macnaughton Jones, M.D., President, in the Chair.

Thursday, November 10th, 1898.

After-treatment of Cases of Abdominal Section.

The adjourned discussion on Mr. Christopher Martin's paper was resumed by

Dr. Herbert Snow, who held that after-treatment was of more importance than the actual operation; cleanliness and dryness were the cardinal points, and were more important than antiseptics. As regards the sutures, he thought it well to secure the peritoneum separately; but it was often a waste of time to suture the fascia and skin separately. He agreed with Mr. Martin that silk was not reliable, but might give rise to sinuses and sepsis. For purgation he preferred an enema at the end of forty-eight hours. After this morphine might be given if necessary, but he had a strong prejudice against it, especially as it increased the tendency to constipation.

Dr. C. H. F. Routh was an advocate of drainage in every case. He objected to iodoform for the wound, since it might give rise to poisoning by absorption. His plan was to dip cotton wool in iodine and apply it to the sides of the wound. He discountenanced morphine: and considered that far better drugs were trional and paraldehyde, which were sedatives without any injurious after-effect.

Dr. Bantock agreed with Mr. Martin on some points, such as the importance of dry dressings, and the value of silkworm gut as a suture material. But on other points he disagreed with him; for instance on the questions of posture and the administration of morphine. Why did Mr. Martin use iodoform and boracic acid in septic cases? For his part he endorsed the dictum of Knowsley Thornton that it was no use employing antiseptics when the patient was herself septic. In the case of a healthy young subject the abdominal wound could quite well be closed in one layer, but in thin emaciated women separate layers were necessary, requiring buried sutures. Stitch abscesses were caused simply by tying stitches too tight. His rule as to drainage was, When in doubt, drain. For, if unnecessary, it could do no harm; whereas, if not used when it ought to be, the patient's doom was sealed in forty-eight hours.

Mr. Bowreman Jessett agreed with Mr. Martin's views as to posture, but pointed out that moving must be carefully done, and not by the patient, but by a skilled nurse. When drainage was used, he thought the patient should be kept on her back. Formerly he sewed the wound in one layer with silkworm gut: and if all the tissues were included, it often answered all right; but there was a risk of drawing up the peritoneum between the muscular layers. He now generally sewed up in three layers. He had abandoned silk and silkworm gut for buried sutures, and used instead catgut prepared according to the directions of Martin, of Berlin. For the skin he used silk or horsehair. His rule of drainage was, when in doubt, drain. The administration of morphine must depend on the patient; it was generally indicated in neurotic cases. His practice in the matter of purgation was to get the bowels open on the second day.

Dr. Purcell remarked that the preparation of the patient had a great deal to do with the after-treatment. The opening of the peritoneum was an important point; it was better not to go through the linea alba, but through the rectus muscle. If a drain tube were used, a suture should be put in, and tied when the tube was removed, to secure against hernia. He generally purged early, giving calomel (5 grains) on the second day. He did not believe in morphine, as he once lost a patient through it.

Mr. C. Ryall asked Mr. Martin why he waited till the fourth day before purging the patient. He saw no reason why an aperient should not be given on the night after operation.

Dr. Travers thought the dressing was one of the most important things. He used a dusting powder of chinosol and boracic acid. Morphine should be given sparingly and in small doses—$\frac{1}{4}$ grain was usually sufficient. For purgation he relied largely on calomel, and did not give enemata if he could help it.

Dr. Heywood Smith was glad to hear favourable opinions about calomel. One of the most anxious symptoms after operation was flatulence, because the question always arose whether it was the precursor of peritonitis.

The President regarded the dorsal position after operations as most important, and as anatomically indicated. He always sutured the wound in three layers, using silk for the peritoneum and fascia, and silkworm gut for the skin. He thought Mr. Martin went too far when he said that stitch

abscesses should not occur in clean cases; but at the same time he did not agree with Dr. Bantock that they were due to sutures tied too tight. He would say, when in doubt, drain; for he thought that blood should not be left in the abdominal cavity, even clean blood. He never gave morphine. For purgation, he relied on sulphate of magnesia given on the second or third day in drachm doses every half-hour or hour till the effect was produced.

Mr. Christopher Martin briefly replied.

The Combined Method in Pelvic Surgery.

Mr. Stanmore Bishop (Manchester) read a paper on this subject the discussion on which was postponed.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Pathological and Clinical Section.

Jordan Lloyd, F.R.C.S., President, in the Chair.

Friday, October 28th, 1898.

Congenital Enlargement of the Forearm.

Mr. Gamgee showed a case in which the soft parts were mainly affected, the enlargement being apparently due to cavernous dilatation of lymphatic and blood vessels. A skiagraph showed that the heads of the first, second, and third metacarpal bones were enlarged slightly, and that there was an excess of lime salts in these bones. The patient, who was a girl of 5 years of age, had perfect use of the arm.

Anomalous Case of Progressive Muscular Atrophy.

Dr. Kauffmann showed an iron moulder, aged 41, suffering from progressive muscular atrophy which commenced with bulbar paralysis, this symptom still being the distinctive character of the case. The illness commenced insidiously about twelve months ago in consequence, as the patient believed, of grief and a severe shock of fear. The earliest complaint was a loss of the higher notes in singing and a difficulty of articulation, which led to his giving up his position in a church choir about Christmas, 1897. To steadily progressing weakness of articulation there had succeeded, in April, 1898, slowing increasing weakness of the left hand; and within the last month the patient had commenced to feel weakness in the right hand. His family history revealed no nervous disease of any kind. The sufferer's condition now was as follows: Fair general health. Great effort and slowness and imperfection of articulation—no aphasia and no aphonia—occasional difficulty of deglutition. No facial paralysis. Protrusion of the tongue imperfect and feeble, and the tongue itself tremulous and small. Slight tremor of lips on opening the mouth. No wasting of the muscles of the neck or face, and no nystagmus. Great weakness of grasp of the left hand, with distinct wasting of the dorsal interossei and of the hypothenar mass, and imperfect apposition of the thumb, a small degree of weakness of the right hand, and no visible wasting of its muscles. Some atrophy of the deltoids. Both these muscles and the pectorales presented marked fibrillary contractions, an occasional flicker also appearing in the triceps on each side. The legs presented no atrophy, and the trunk muscles had in no way suffered. The myotatic irritability was generally raised, both in legs, arms, and masseters, and slight ankle-clonus could be readily obtained. The sphincters were unaffected, and sensory disturbances were absent. The mental disposition was cheerful and contented, and though the patient was a little emotional, the invariable expression of excitement was laughter. The dysarthria was always greatest at the commencement of speech efforts, and diminished sensibly when these had been continued for a few minutes.

Ruptured Kidney.

Mr. Lerdham-Green read a note on a case of ruptured kidney with severe hæmorrhage in which the kidney was removed by operation. The patient recovered.

Carcinomatous Change Supervening on an Innocent Tumour of the Breast.

Mr. Barling showed this specimen, removed from a very stout lady of middle age. For some months two tumours had been noticed on the axillary margin of the right breast; over the smaller of these there was slight puckering of the skin which led to a diagnosis of heart carcinoma, but there was no puckering of the skin over the larger tumour, which gave the impression of elasticity or doubtful fluctuation. After removal it was found that there were two tumours separated by 2 inches of healthy breast tissue. The smaller tumour, the size of the tip of the middle finger, presented the characteristic appearance on section of hard carcinoma, whilst the larger tumour proved to be partly solid and partly cystic. There was a cavity 1½ inch in diameter, and connected with this cyst was a well-defined firm growth with a few small cysts scattered in its substance. On section the characteristic cupping of the surface noticed in the smaller growth was absent. Microscopic section showed the smaller tumour to be a scirrhous carcinoma, whilst the solid part of the larger tumour showed in parts the structure of a fibro-adenoma and in others carcinomatous areas of characteristic appearance. The axillary fat with its contained glands was dissected out in the usual manner but microscopical examination failed to detect any infection of the glands.

Mediastinal Tumour.

Dr. Douglas Stanley showed a specimen of mediastinal tumour in a man, aged 32, strongly built, and who was employed as a carriage and truck shunter on the railway. The chief symptoms were congestion of the face, loss of voice, and cough. A large area of dulness extended across the upper part of the chest, which was non-pulsatile; the cardiac sounds were very distant. The growth extended down, involving the pericardium.

T. Vincent Jackson, F.R.C.S.Edin., President, in the Chair

Thursday, November 10th, 1898.

Tooth Plate removed by Œsophagotomy.

Mr. Jordan Lloyd showed a patient about 30 years of age who sixteen days before had swallowed during the night a vulcanised tooth plate carrying the four upper incisor teeth. The hooks fastening the "piece" to the neighbouring canines had become faulty, and the patient had been indifferent; he had always been in the habit of wearing the artificial teeth during sleep, and had never before had any trouble in consequence. The man was admitted to Queen's Hospital shortly after the plate was missed, and attempts were made by the house-surgeon to extract it with probang and coin catchers. These failing, Mr. Lloyd had the man anæsthetised, and again attempted to remove the foreign body. The plate could be readily detected by instruments, but could not be "caught." It was situated about 11 inches from the incisor teeth. Œsophagotomy was at once performed, three hours after the swallowing had taken place; a clean-cut incision was made in the œsophagus about an inch below the level of the cricoid cartilage. A finger was passed beneath the substance, and as the plate could not be removed easily through the opening in the œsophagus it was manipulated upwards into the pharynx, from whence it was readily extracted. No vessels were ligatured. The wound in the œsophagus was sewn with a non-perforating continuous catgut suture and the skin edges with silkworm gut, a small rubber drainage tube inserted in deep part of wound. Patient was fed by enemata for four days; wound healed primarily, and he was now quite well.

Ovum from Case of Early Abortion.

Dr. Purslow showed an ovum from a case of abortion on the sixty-fifth day of pregnancy, the date of the fruitful coitus being exactly known. The embryo measured 1⅛ inch in a straight line from the cephalic to the caudal curve. Dr. Purslow pointed out that that this measurement was somewhat greater than that given in Galabin's *Midwifery*, which described the length of a fœtus at the eighth week as ¾ inch.

Appendix Vermiformis Strangulated in a Retro-peritoneal Fossa.

Mr. Heaton showed an appendix vermiformis which he had removed by abdominal section from a little girl, aged 9. The appendix was 5 inches long. At the operation there was no evidence of any peritonitis around the cæcum. The appendix was quite free and natural in appearance, except for its distal end. This was tightly strangulated in a peritoneal sac,

passing upwards behind the junction of the ileum with the cæcum. This "ileo-cæcal pouch" had a smooth rounded orifice, and was about the size of a walnut. The patient was under the case of Dr. Quirke, and had been ill for five days with acute abdominal symptoms marked by recurring attacks of severe colic and collapse, with vomiting. She was now convalescent.

GASTRO-JEJUNOSTOMY.

Mr. HASLAM showed a woman, aged 34, on whom he had performed gastro-jejunostomy for a fibrous stricture of the pylorus. The patient was admitted into the hospital under the care of Dr. Simon, in March, 1896, with an eighteen months' history of pain on taking food, vomiting, and loss of flesh. On examination a large hard mass could be felt in the neighbourhood of the pylorus and the stomach was dilated. A Murphy's button was used, and the patient was now quite well, and able to eat and digest anything, and has gained 4 st. in weight. The button had not yet been passed.

PAPERS.

Mr. BARLING read a paper on some cases of Gall Stones impacted in the Cystic Duct.—Dr. MCCARDIE read a paper on the Administration of a Mixture of Chloroform and Ether by means of a Clover's Inhaler without the Bag.

LIVERPOOL MEDICAL INSTITUTION.

PATHOLOGICAL AND MICROSCOPICAL SECTION.

F. T. PAUL, F.R.C.S., in the Chair.

Thursday, November 10th, 1898.

CLINICAL AND MICROSCOPICAL VARIETIES OF THE RINGWORM FUNGUS.

DR. J. C. M. GIVEN, Assistant Physician to the Skin and Cancer Hospital, read a paper on this subject. After a summary of the work done by others, he gave a detailed account of his own researches. This consisted of an investigation of 50 consecutive cases met with in the out-patient department of the hospital. His cases were arranged in three clinical groups: (1) Where the patches were rough and scaly and studded with broken stumps of hairs showing a white sheath; (2) patches smooth, with few stumps; (3) cases in which suppuration had occurred. His investigation was to ascertain: (1) If these clinical varieties were associated in any way constantly with either of the three main varieties of the ringworm fungus; and (2) whether the rapidity of cure was in any way related to the variety of fungus present. The microsporon Audouini was found in 39 cases, 85 per cent. Of these, 31 were scaly, 5 bald, and 3 suppurative. The megalosporon endothrix was present in 15 per cent. The megalosporon ectothrix was not found in any scalp case. In all cases of suppuration in the scalp the microsporon was found, including one well-marked case of kerion. When ringworm occurred in several members of the same family the parasite was always found to be the same variety. He found that the ease with which the cases yielded to treatment in no way depended upon the variety of organism present.

The paper was illustrated by numerous excellent microscopic preparations and by a series of microphotographic lantern transparencies.

Dr. G. G. STOPFORD TAYLOR said the cases came from his (Dr. Taylor's) clinic, and he could confirm clinically all the lecturer had said.

Dr. BARENDT alluded to the confusion that still prevailed both in this country and on the Continent as to what should be accepted as criteria in deciding upon the question of plurality of the ringworm fungus. For his own part he considered that he had evidence that the megalosporon might become microsporon under modifications of the culture media. He agreed that Dr. Given's three clinical types were in the main correct, and, like him, questioned whether a distinct variety of tricophyton always produced the same clinical results.

Drs. and Messrs. ABRAM, BUCHANAN, GRÜNBAUM, LOGAN, PAUL, and RAW also entered into the discussion; and Dr. GIVEN replied.

SPECIMENS.

Dr. ALEXANDER showed (1) the Cerebellum of a boy, aged 11, with an abscess occupying the greater part of the right hemisphere; basilar meningitis was also present. The boy was brought to the workhouse hospital by a drunken mother a few days before his death. Vomiting and retraction of the head were present, and later coma supervened. No history was given, and other circumstances precluded exploration being undertaken. It afterwards transpired that some weeks before the boy had been operated on for mastoid disease in another hospital, and had been "discharged well." (2) Three specimens of a rare variety of Sebaceous Tumour, probably adenoma. They were all removed from the same subject, and two of them were partially calcified. (3) Epithelioma of the Cheek and Ear. (4) Sarcomatous Epulis. (5) Papilloma of the Penis.—Mr. HAWKINS-AMBLER showed (1) 132 Gall Stones, which he had removed while exploring a carcinomatous gall bladder. (2) A specimen of Tubal Pregnancy removed by abdominal section.—Mr. W. T. ALLEN showed a large Aneurysm of the Innominate Artery, which caused death by rupturing into the pleura in a man, aged 43.—Mr. R. A. BICKERSTETH showed (1) an Intratesticular Hæmatocele. As the result of an inquiry, a large quantity of blood had been effused within the tunica albaginea, and the glandular substance of the organ was pressed aside. (2) A microscopic specimen of a Pedunculated Fibroma of the Tongue.—Dr. BUCHANAN showed (1) Spermatozoa from Stains in Rape Cases. In one case the stains were recent; in another they were 13 months old. From both excellent specimens of spermatozoa were obtained. (2) Microscopic Intestinal Fibroids of the Uterus.—Dr. E. T. DAVIES showed what was happily nowadays a rare pathological specimen: an enormous Ovarian Cyst, removed *post mortem* from a woman, aged 33. She had persistently and absolutely refused operation. The abdomen became enormous, the legs swollen and cracked, and discharged large quantities of serum; emaciation became extreme, and dyspnœa great. She died somewhat suddenly from rupture of the cyst. *Post mortem* the peritoneal cavity was full of ovarian fluid. The tumour was of the usual multilocular type, with one large and many small cysts. It could have been easily removed, there being no important adhesions.—Dr. T. B. GRIMSDALE showed a microscopic section of the Uterine Scar two months after Cæsarean section. The patient died of carcinoma of the rectum, for which colotomy had been done some months previously. *Post mortem* the silk sutures in the uterus were found to be surrounded by small whitish nodular growths, which were thought to be cancerous, but the microscope showed them to be fibrous. The question was raised whether silk was more likely to produce these irritating fibromas than catgut.—Mr. THELWALL THOMAS showed a Tuberculous Kidney removed by Nephrectomy. It contained several abscesses, and miliary tubercles were dotted all through it. A discussion followed, in which Drs. and Messrs. PAUL, ALEXANDER, WARRINGTON, E. T. DAVIES, A. E. DAVIES, CARTER, LARKIN, ARCHER, and BUCHANAN took part.

W. MACFIE CAMPBELL, M.D., President, in the Chair.

Thursday, November 17th, 1898.

A FOREIGN BODY IN THE LARYNX.

MR. MITCHELL BANKS read notes of a case of a piece of nutshell in the larynx, removed by tracheotomy from a girl, aged 7 years, sent as an in-patient from the throat department. Dr. Hunt made out that the vocal cords had been scratched, and that the foreign body was immediately below them. During the night the girl had a severe attack of dyspnœa, and next day the trachea was opened and the nutshell removed.

THE X RAYS AND THE DETECTION OF BULLETS.

Mr. BANKS also showed *x*-ray photographs of a bullet in the foot and a bullet in the lower end of the thigh (skiagraph by Dr. Holland).

RUPTURE OF URETHRA.

Dr. ALEXANDER described a case of complete rupture of the membranous urethra in a carter, aged 27, who was run over by a dray, and who suffered a compound fracture of the right femur in addition. A sac filled with blood and serum was found on perineal section in front of the bladder. This sac was at first mistaken for a ruptured bladder, and drained. Next day the bladder was drained, pushed far back in the pelvis, completely separated from the urethra, and was opened by Cock's method. The artificial sac in front was drained

by gauze, and the bladder by a perineal tube. The fractured thigh made after-treatment difficult, but now there is a catheter *per urethram*.

Messrs. BANKS and RUSHTON PARKER spoke.

SANATORIA FOR CONSUMPTIVES.

Dr. NATHAN RAW read a paper on the open-air treatment of tuberculosis in sanatoria. He alluded to the general prevalence and high mortality from tuberculous disease, which, although much diminished in recent years by improved sanitation and food inspection, still ranked very high. He mentioned the poor results of treatment in general hospitals, and considered it unfair to both the patient and the other inmates of a general ward that he should be treated therein. He combated the "inheritance" of phthisis, and insisted on the infectivity of the disease. He concluded by considering it the duty of the Legislature to deal thoroughly with the question of cure by sanatoria, and urged Boards of Guardians to establish sanatoria, and gave details of site and architecture of such buildings.

The PRESIDENT remarked that while, by the tables shown, the mortality from tuberculous disease in adults had enormously decreased, Sir Richard Thorne had pointed out that the mortality from this cause under 1 year of age had increased, due, he thought, to the greater use of cow's milk at that age. A pure milk supply became a necessity. Dr. Hope had shown that 13 per cent. of country milk brought into Liverpool was tuberculous, and only 4 per cent. from town dairies. It was interesting to note that heating the milk to 195° F. was sufficient to sterilise the milk.

Dr. BUCHANAN considered it necessary in the treatment of tubercle to remove the patient to an atmosphere from which the tubercle bacillus and other organisms were absent, and, if possible, to one in which they could not live; at the same to increase the resistance of the host. He advocated sanatoria for collective cases, but urged that every effort must be made to make a man's dwelling house his sanatorium. Fifty years ago Professor Virchow said, "It is the duty of mankind to overcome tuberculosis as scurvy has been overcome."

Dr. HOPE emphasised the close identity between measures which had been successful in the prevention of tuberculosis, and measures which promised to be successful in treatment. He did not consider that under existing circumstances any useful purpose would be served by scheduling tuberculosis as one of the notifiable infectious diseases, but there were no doubt cases in which the medical officer of health might with advantage supplement the advice and action of the medical adviser, and it was desirable that in every case thorough disinfection of the house, etc., should take place. The great decline in the mortality from tuberculous disease in Liverpool was in the main owing to sanitary measures, having, as one principal object, improvements in ventilation. These improvements, carefully thought out and slowly elaborated, had reduced the mortality per 100,000 from all forms of tuberculosis from 430 in 1866 to 292 in 1896; the rate above 5 years of age from phthisis having fallen from 363 to 233, and below 5 years of age from tabes mesenterica, etc., from 637 to 497 in the period alluded to. He remarked on the analogy furnished by tuberculosis in cows, those shippons which were ill-ventilated and insanitary being centres of infection, whilst in the well-ventilated ones the disease was rare. Four per cent. of the samples of milk taken from shippons in Liverpool were found to be tuberculous, but in samples of country milk more than three times that amount was found, namely, 13 per cent. This exemplified the much greater advance made in cities than in rural districts in these matters.

Dr. CATON, who had visited various foreign sanatoria, expressed regret that hitherto Great Britain should have lagged behind Continental nations in this matter. In proximity to every great centre of population sanatoria ought to be established by municipalities, county councils, or Boards of Guardians. The expenditure involved would in the end prove an economy as well as delivering the population from the scourge of tubercle. General hospitals ought not to admit cases of phthisis. Dr. Caton urged the desirability of making the infective nature of the disease widely known.

Dr. A. DAVIDSON pointed out that the principle of open-air treatment in phthisis was not new, and quoted from Dr. Hughes Bennett's book published in 1853, where it was considered of supreme importance and where he deprecated the sending of consumptives to warm climates abroad. Dr. Bennett expressed a hope that open sanatoria like the Crystal Palace might be established in this country. Dr. Davidson referred to the great success which, in his experience, attended the plan of sending children and young consumptives to winter on the North Coast of Wales.

Dr. GRÜNBAUM thought that desirable as sanatoria might be, too much must not be expected and promised in respect of results. The infectivity of phthisis was of a different order from that of typhus, small-pox, etc., probably also the morbific agent. The evidence showed that hygienic measures had not the same remarkable effects on tubercle, typhoid, and diphtheria as on scarlet fever, small-pox, and typhus.

Dr. T. R. BRADSHAW hoped the discussion would lead to some practical steps being taken in Liverpool. He thought a good deal was to be said for notification. It need not of necessity prevent a consumptive from following his occupation, as each case could be treated on its merits. He mentioned instances where permitting consumptives to follow their occupation indiscriminately, as at present, was not without danger to other persons. He thought the Medical Institution ought to endeavour to move the public on the matter.

Dr. ABRAM gave two instances of marked infectivity in pulmonary tuberculosis. He drew attention to what, in his opinion, was generally overlooked—namely, that the repute of the open-air treatment was in the main based upon the results obtained at the "high" sanatoria. He counselled moderation in urging the virtues of low-lying sanatoria, lest there should come a reaction in the public mind with regard to the provision of pure air for tuberculous patients.

Drs. CARTER, BARR, GLYNN, MACALISTER, STOOKES, and S. KELLETT SMITH also took part in the discussion.

CLINICAL SOCIETY OF MANCHESTER.

A. HILL GRIFFITH, M.D., President, in the Chair.

Tuesday, November 15th, 1898.

CASES OF NERVOUS DISEASE.

Dr. JUDSON BURY showed the following cases: (1) Hemiplegia from Embolism the result of aortic disease, (2) Hemiplegia the result of Syphilitic Endarteritis, (3) Syringomyelia, (4) Chronic Anterior Poliomyelitis affecting a limb already atrophied in consequence of infantile paralysis in early life. Dr. WAHLTUCH showed the following: (1) Paralysis of Median Nerve. A packer, aged 42, had come under his care at the Hulme Dispensary on October 27th. The man had been ill since May 23rd, when he awoke with pain in the neck and along the left arm, forearm, and palm of the hand. There was numbness in the second, third, and to some extent in the fourth fingers. Treatment by massage and electricity twice a week had been carried out during the preceding three weeks. The patient had felt better after each application, the pains were less frequent and less severe, and the numbness was almost gone. (2) Paralysis of Deltoid of Left Arm. A butler, aged 64, had had a fall in August last, and a fortnight later had felt weakness and pain in the left arm, especially in the deltoid. The muscle was wasted, and the patient could not lift up his arm. He had come as an out-patient to the Hulme Dispensary on October 1st. Treatment by massage and electricity had been carried out. Slight improvement had taken place at the end of four weeks.

CASE OF SUBACUTE RHEUMATISM UNDERGOING THE TALLERMAN TREATMENT.

Dr. DULBERG showed a case of subacute articular rheumatism undergoing the Tallerman treatment. The patient had benefited considerably, although he had only had three baths. The treatment was described, and the opinion was expressed that it deserved to be tried in suitable cases.

EXTRAUTERINE PREGNANCY OF TWELVE YEARS' DURATION.

Dr. T. ARTHUR HELME read notes of this case. The history pointed to the facts that the extrauterine pregnancy had existed for twelve years, that ten years ago the patient had given birth to a child *per vias naturales* whilst the ectopic pregnancy was still there, and that the latter had lain dormant until two years ago, when suppuration began and pus was discharged *per vaginam*. Dr. Hulme opened through the

posterior vaginal fornix, removing the fœtal skeleton and draining the sac through the vagina.

Treatment of Placenta Prævia.

Dr. Helme discussed the treatment of this condition, dealing especially with the central variety, and showing the correctness on anatomical grounds of Barnes's description of his method of "stripping the placenta" from that portion of the uterus below Barnes's boundary line, now known as Bandl's ring or the contraction or retraction ring.

Society of Anæsthetists.—A special meeting was held on November 17th, Dr. Dudley Buxton, President, in the chair. The day of meeting was altered from the third Thursday to the third Friday in the month from October to March. At the close of the special meeting the ordinary meeting of the Society took place, when the President in welcoming the members at the commencement of the session spoke of the importance of individual effort in the promotion of the interests of the Society.—Professor W. Ramsay, F.R.S., read a paper on Pure Anæsthetics, in which he drew attention to the deleterious effects which resulted from administering chloroform in the presence of lighted gas. The pungent odour affecting the eyes, nose, and throat was due to the formation of carbonyl chloride, a vapour which resulted from the burning of chloroform. This body was a gas at ordinary temperatures, but condensed under pressure to a colourless liquid. In the presence of moisture it split into carbonic acid and hydrochloric acid. Chloroform exposed to sunlight or diffused daylight in the presence of air decomposed and carbonyl chloride was formed. The formation of this deleterious substance could be avoided by the addition of a certain percentage of alcohol, provided the bottle containing the chloroform was kept in a dark place. By ordinary care in the process of manufacture other impurities were practically excluded. The best test of the presence of carbonyl chloride was smell. Agitation of chloroform suspected to contain carbonyl chloride with a small quantity of slaked lime would secure its removal if present. Professor Ramsay quoted statistics collected by Dr. Newman of Glasgow, which tended to prove that chloroform when thus treated was much less likely to produce bad effects both during and after operation. Professor Ramsay said that ether which had been confined to the action of light and air was apt to have a sticky residue, probably a peroxide of ethyl. The best method of removing this impurity was to shake the ether with metallic mercury. Mr. Smiles, under Professor Ramsay's direction, had investigated the A.C.E. mixture, and had found that while the presence of the alcohol was of no particular advantage the percentage of chloroform in the vapour rapidly increased till finally as much as 62 per cent. was present.—Mr. Willett thought that the smell test for phosgene gas was scarcely adequate. He considered that Professor Ramsay's method of estimating the evaporation of the constituents of A.C.E. mixture was so dissimilar to what occurred when the mixture was employed in practice as not to carry much weight.—Dr. Silk considered methylated ether was as good as pure ether, but believed most anæsthetists would be in favour of the use of pure chloroform.—Dr. Cook thought that when the A. C. E. mixture was given with a Rendle's mask its composition did not vary during the progress of the operation, as Professor Ramsay's experiments would suggest. He believed that carbonyl chloride might be formed without the presence of burning gas, possibly in the lungs.—Mr. McCardie had been informed that a certain quantity of naphtha was contained in methylated spirit, and suggested that this fact might perhaps account for some of the impurities of methylated ether; however that might be, his clinical experience led him to believe that methylated ether was as good as pure ether.—Mr. Carter Braine related two cases in his practice in which chloroform which had been exposed to the air for about a fortnight had produced cough and other disadvantageous consequences.—Dr. Probyn Williams had read of severe symptoms ultimately proving fatal which had followed the administration of chloroform during a long operation performed at night in a room lighted by candles. From his own experience he believed that methylated ether was perfectly satisfactory.—Mr. E. F. White agreed with this belief. He thought it important to determine whether the specific gravity of the varieties of ether affected their clinical action. Referring to Dr. Newman's statistics, he considered that the number of cases in which sickness occurred was a large one even with the purified chloroform, and higher than usual where chloroform was administered by the methods in vogue in England.—Dr. E. A. Starling thought that more unpleasant after-effects were produced by the use of methylated ether and chloroform than by pure anæsthetics. He did not consider that A.C.E. mixture was reliable, and his clinical experience bore out the results which Professor Ramsay had stated.—The President pointed out that impurities in ether and chloroform might be produced either in the process of manufacture, or might result from exposure of a sample which was pure when delivered by the manufacturer. The Pictet process though it gave an absolutely pure chloroform, yet was, after the crystallisation, largely diluted with alcohol to maintain its purity, and was, so far as its liability to decomposition went, on all-fours with the chloroform of other makers. This also applied to the modern methods of manufacture from the grey acetate of lime and the chloral process.—Professor Ramsay, in reply, believed that chloroform made by any of the good makers was pure and reliable when first prepared. No naphtha impurities occurred in anæsthetics made from methylated spirit. The Pictet method was inferior to those methods, as fractional distillation employed for purposes of purification was always superior to methods dependent upon crystallisation.

Epidemiological Society.—At a meeting on November 18th, Dr. H. F. Parsons, on assuming the presidential chair, delivered the inaugural address on Half a Century of Sanitary Progress and its Results. In 1838-42 the average death-rate was 21.1 per 1,000, of which 4 per cent. was due to fevers, and in 1847-50 it was 23.4, that from fevers being 5.3 per cent. On the other hand, in 1891-6 the death-rate was 18.1, and 1 per cent. only due to fevers. In London the mortality from fevers had sunk from 1.339 per 1,000 inhabitants in 1838-40 to 0.142 in 1891-6, or one-tenth of the former rate. Some of this improvement was doubtless due to the better social conditions of the people. The proportion of persons in receipt of Poor-law relief had been reduced from 57 per 1,000 in 1849-51 to 23.4 in 1892-6. It was impossible, too, to ignore the progress of medicine and surgery, especially the antiseptic treatment of wounds, which had greatly lessened the fatality of accidents incident to the extension of machinery into every industry. On the other hand, there were conditions tending in the contrary direction, as the aggregation of the population in towns. The proportion of persons resident in urban districts to 100 in rural, had risen from 100 in 1851 to 212 in 1881 and 258 in 1891. And at the last census the number of persons resident exceeded those born in London by 18 per cent., in Lancashire by 19, and in Glamorgan by 42; in purely rural districts the reverse proportion was met with, the persons throughout the country born in Huntingdonshire exceeding the population of that country by 38 per cent. This migration tended to a higher death-rate, the comparative mortality of the agricultural labourer being the lowest of all among the working classes, and the death-rate during the last ten years having been 19.5 in the towns as against 16.9 in the country districts, or, if corrected for age and sex, 22.32 and 16.95 respectively; while the density of population throughout the country had risen from 325 per square mile in 1851 to 527 in 1896, the increase being of course much greater in the towns and industrial districts. Dense population tended to raise the death-rate, especially from infectious diseases, the spread of which was also favoured since 1870 by compulsory school attendance. The first general Public Health Act was passed in 1848, the year following the earliest attempt at legislative control of water supplies. The General Board of Health, which was then created, did noble work, but being considered in advance of public opinion was abolished in 1854, its functions being relegated to the Privy Council and Home Office, until in 1871 they were transferred to the newly-constituted Local Government Board and the sanitary authorities. The latter underwent changes, not always for the better, through the Local Government Act of 1888, though the creation of the county councils, especially when they had appointed county medical officers

of health led to better control of the rural districts. The Sanitary Acts of 1855, 1866, 1872, and the Public Health Act of 1875—a codification of the preceding further amended and strengthened by the Public Health Amendment Act of 1890, the Infectious Diseases Acts of 1889 and 1890, and those for the Housing of the Working Classes of 1868 and 1875, amalgamated by that of 1890, and lastly the Public Health Act for London of 1891, had brought the sanitary administration of the country to its present state of efficiency. The Vaccination Act of the present year was, however, a retrograde step, and the default, which had risen from 4 or 5 per cent. of infants born twenty years ago to 20 per cent. in 1894, would probably soon amount to a majority. The average annual death-rate had sunk from 23.1 in 1847-61 to 18.1 in 1892-6, with a saving on the population at the last census of 145,000 lives per annum; in the rural districts it had fallen from 19.9 to 16.7, and in the urban from 24.7 to 18.8, that in the thirty-three largest towns being now 20, scarcely more than in the country districts from 1851-60. That this was really due to sanitary improvement was evident from the fact that it began with the passing of the Public Health Act of 1872, and had been greater in each successive quinquennium, though for the twenty years, 1851-71, it had been practically stationary. It was most marked in the zymotic class, the death-rate per 1,000,000 from continued fevers having fallen from 1,184 to 184, from scarlatina 1,001 (in 1862-6) to 118 (in 1892-6), etc. A comparison of successive life tables showed that while the mean duration of life was greater by 4 years for males and 6 for females, fewer persons reached extreme old age, though more survived to or beyond middle life, and consequently cancer, diabetes, and other diseases of advanced life appeared to be greatly on the increase. Enteric fever was most prevalent in the northern counties, where sanitation was less advanced, and the midden still held its ground. Epidemics from pollution of public water supplies occurred from time to time in various places. "Diarrhœa" was, in the form of infantile diarrhœa, prevalent in the autumn under certain meteorological conditions, a specific disease, and pre-eminently one of towns, the etiology of which deserved further study, as did the peculiar and changing distribution and prevalence of diphtheria. The remarkable reduction in the mortality from scarlatina was to be ascribed rather to the lesser fatality that had attended it of late, for it was still very prevalent, and in local outbreaks amid grossly insanitary conditions it exhibited all its former virulence. After the widespread epidemic of 1871-2 the practice of vaccination became general, and small-pox had in consequence almost disappeared as a cause of death, especially in those towns where the cases were removed to hospitals beyond their borders, but the outbreaks at Leicester, Sheffield, Gloucester, Middlesbrough, etc., afforded indications of what might be expected from the abandonment of general vaccination. Tuberculosis in all its forms, with one exception, had shown a marked reduction, the mortality in that of phthisis being now less than half what it was fifty years ago, a result attributable to the better drainage of land, the improved ventilation and sanitation of houses, factories and workshops, and the higher standard of living and comfort now enjoyed by the mass of the people. The one exception was the intestinal tuberculosis of infants, which was certainly to be attributed to the increasing use of the milk of cows, a large proportion of these animals suffering from tuberculosis. Such milk could be rendered innocuous by boiling or sterilisation. And it might be hoped that steps would be taken to reduce, if not stamp out, the disease in dairy farms. The discovery of the bacillus had fully explained the etiology of tuberculosis in every form, and could the public mind be brought to realise also the dangers arising from the diffusion of the dried sputa of phthisical persons, the prevalence of the disease might be reduced to a point hitherto deemed beyond the possibility of attainment.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At a meeting on November 11th, Dr. E. GWYNN, President, in the chair, Dr. W. H. SYMONS read a paper on Cancer in relation to the Dwellings, the substance of which was given in the BRITISH MEDICAL JOURNAL of November 19th. Dr. NEWSHOLME said he believed the increase of cancer to be apparent rather than real, due to better diagnosis and certification. This view was supported by the fact that in insurance offices whose members were of a class able to command skilled medical advice, no such increase had been observed, nor was it so marked among women in whom the organs mostly affected were palpable, the increase being mainly in the cancers of the stomach, liver, etc., especially among men, which were formerly registered as "internal disease" or by other vague designation. Strict distribution resolved itself into social differences, and these involved those of mean age and therefore of liability to cancer. In comparing towns the presence of large hospitals must be considered, and whether these were county hospitals or not, for the Registrar-General excluded the deaths of strangers in the case of the former only. The death-rate among persons over 35 years was dependent on the mean longevity of the classes to which they belonged; thus among farmers over that age it was 28 per 1,000, and among tailors 20 only, simply because fewer of the latter attained to the age at which cancer was most frequent.—Dr. HERBERT SNOW (present by invitation) maintained that all statistics dealing with cancer as one disease, instead of a group of diseases having little in common, were necessarily fallacious. There were in all predisposing and exciting causes. Thus epithelioma commonly followed the mechanical irritation of an unhealthy mucous surface; carcinoma, a glandular neoplasm, was, in the female organs, a deviation from the normal devolution or degeneration of the uterus or breast, when their functions ceased to be exercised, induced by previous excessive activity or other depressing influences. Heredity could be asserted of "blastomata" only, and sarcomata differed essentially from the rest of the so-called cancers. Cancer was a disease of civilised life, and was more frequent in domestic animals than among wild ones, and especially so in cows, whose lives were most removed from a state of Nature, and subject to debilitating influences and local irritation.—Dr. SYMONS, in replying, remarked that while the large number of retired officers and elderly ladies in Bath would tend to the greater prevalence of cancer, the excess of females over males, as 150 to 100, and in Bathwick as 200 to 100, being chiefly due to the number of domestic servants, would not do so, they being largely drawn from the country, whither they returned if ill.

SOUTH-WEST LONDON MEDICAL SOCIETY.—At a meeting on November 9th, at Wandsworth, Dr. J. J. MACWHIRTER DUNBAR, President, in the chair, Mr. MACLEOD YEARSLEY read a paper on Chronic Discharges from the Ear and their Treatment. He said the persistence of fetor usually pointed to the retention of pus in the antrum or the presence of caries of the ossicles or temporal bone. Discharge in both ears appearing without pain in a weakly child suggested tubercle. The plan and method of careful diagnosis were pointed out with reference to attention being paid to the following points: The presence of polypi or granulations, the locality and size of perforations in the membrana tympani, the condition of the rest of the membrane, the condition of the inner wall of the tympanum, and the condition of the external auditory meatus. Perforations of the superior posterior quadrant of the membrane were often associated with caries of the incus. This bone was the most usually carious on account, probably, of its blood supply being more easily cut off owing to inflammation of the reflected mucous membrane from which it got its supply. The principal complications of chronic middle-ear suppuration were granulations, polypi, disease of ossicles and temporal bone, mastoid involvement and cholesteatoma, and the sequelæ—meningitis, cerebral or cerebellar abscess, lateral sinus, thrombosis, and pyæmia. In regard to treatment, the removal of postnasal adenoid growths was often of more importance in adults than in children. The thorough cleansing of the tympanic cavity by removal of polypi or granulations, etc., that might block up the passage and retain pus, and the thorough antisepticising of the cavity by means of gentle syringing of the ear with hot antiseptic lotion, such as carbolic acid (1 in 40), lysol (1 to 2 per cent.), resorcin (2 to 3 per cent.), boric acid (ʒj to ℥), perchloride of mercury (1 in 3,000 to 4,000), or permanganate of potassium three or four times a day when the discharge was profuse, might be sufficient to cure simple uncomplicated cases. For other cases the use of hot instillations once or twice a day immediately after syringing of carbolic acid (1 to 15 parts of rectified spirit

and 15 parts of water), perchloride of mercury ($\frac{1}{5}$ part in 50 parts of water or in 25 parts each of water and rectified spirit), resorcin (4 per cent.), salicylic acid (1 in 200 of water or 2 to 5 per cent. of spirit)—but this drug might produce severe inflammatory reaction—boro-glyceride (10 to 50 per cent. solution), or a 6 per cent. solution of peroxide of hydrogen might be employed. The patient was laid upon the sound ear, the solution, comfortably warm, taken up in a dropper and a little poured into the diseased ear, retained for ten minutes, the vagus being pressed backwards and inwards to force the fluid through the perforation when this was small. The instillation of warm rectified spirit, diluted at first and increased in strength as it was borne, was valuable, especially where antiseptic instillations failed and in cases where no caries was present. Ossiculectomy was described and recommended for cases of persistence of discharge with perforation in Shrapnel's membrane, due to caries of the head of the malleus with disease of the incus or the anterior attic wall, before resorting to the mastoid operation.—A discussion followed, in which the PRESIDENT, Dr. DUKE, Dr. BARKWELL, Surgeon-Major MARK ROBINSON, and Mr. GAY took part. A fine collection of specimens illustrating the lecture was shown.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 9th, Dr. R. ROXBURGH in the chair, Mr. CARWARDINE showed a patient and specimens of Hydatid of the Liver.—Dr. STACK (for Dr. J. E. SHAW) showed some interesting specimens of Brain Tumour. Dr. MICHELL CLARKE and Mr. ROGER WILLIAMS spoke on the subject.—Mr. T. CARWARDINE showed a specimen of Double Hydrosalpinx.—Mr. PAUL BUSH showed a portion of a Large Tumour he had successfully removed from the axilla: he considered it to be tuberculous. Remarks were made by Mr. MORTON, Mr. F. LACE, and Mr. R. WILLIAMS.—Mr. PAUL BUSH showed a series of cases of enlarged Bursæ in "housemaid's knee." Mr. HARSANT, Mr. BARCLAY, and Dr. ROXBURGH spoke on the subject.—Dr. B. ROGERS showed microscopic specimens of blood from patient suffering from Leucocythæmia.—Dr. STACK showed a specimen of Aneurysm of the Vena Cava. Professor FAWCETT remarked on the specimen.—Dr. H. L. ORMEROD read a most instructive paper on a case of Ulcerative Endocarditis. Dr. SHINGLETON SMITH, Dr. WALDO, Dr. B. ROGERS, Dr. PARKER, Dr. SYMES, Dr. W. C. SWAYNE, Mr. R. WILLIAMS, and Dr. F. H. EDGEWORTH discussed the paper.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—At a meeting on November 10th, Dr. LIMONT, President, in the chair, Dr. R. A. BOLAM gave a valuable and interesting demonstration on the nutrient value of various Beef Extracts, etc.—Dr. BEATTIE, in the absence of Dr. DRUMMOND, showed (1) a child, aged 9, suffering from Congenital Heart Disease, in which the cyanosis and clubbing of fingers and toes were extreme, the murmurs present indicating pulmonary stenosis, tricuspid regurgitation, and patent foramen ovale. (2) A child, aged 15, with Congenital Heart, in which patent ductus arteriosus had been diagnosed. Over a limited area in the pulmonary region there was a continuous thrill and a continuous buzzing murmur having systolic and diastolic exacerbations, simulating the murmur of an anterior venous aneurysm. (3) A man with Aneurysm of the Ascending Aortic Arch, which had apparently ruptured into the superior vena cava, evidenced by sudden swelling of head, neck, arms, and upper part of thorax, intense cyanosis, marked pulsation of veins of neck, and continuous thrill and buzzing murmur heard with maximum intensity over first and second right interspaces close to the sternum. (4) A man with Aneurysm springing from the left side of arch, and presenting above the left clavicle, therefore simulating a subclavian aneurysm; the intrathoracic origin was proved by definite signs of pressure on left bronchus. (5) A case illustrating the Diagnosis of Adherent Pericardium. Dr. BEATTIE, for Dr. OLIVER, brought forward a man showing Pulsating Tumour in the Back, presenting opposite the fourth and fifth ribs to the left of the spine. The ribs were eroded, and although no *bruit* was audible the tumour was thought to be an aneurysm of the descending aorta.—Dr. HUME showed a miner, aged 20, in whom he had Resected a Foot of Small Intestine which had been torn from its mesentery as the result of a bicycle accident, the subsequent enterorrhaphy being effected by a Murphy's button.—Drs. HUME and H. BRAMWELL a patient after operation for Cerebral Abscess following a head injury. Previous to operation the man had been completely hemiplegic, and after evacuation of the pus from the substance of the hemisphere rapidly and completely recovered.—Mr. ALBERT MARTIN brought forward the following: (1) A boy, aged 9, with Bilateral Congenital Displacement of the Hip-joint, comparing the gait with that of a case of pseudo-hypertrophic paralysis. (2) A baby with Congenital Radial Deflection of the Terminal Phalanges of Both Thumbs, one of which had been cured by division of resisting structures. (3) An infant with Congenital Suppression of Growth of Left Forearm and Hand, with Webbing of the Fingers.—Mr. RUTHERFORD MORISON showed (1) a man after Pylorectomy for Glandular Carcinoma; he had made an uninterrupted recovery, and was now able to eat ordinary diet. (2) Another patient after Pylorectomy for Glandular Carcinoma, who could now eat anything, and had gained a stone in weight since operation. (3) A patient after removal of the Pyloric Half of the Stomach, with specimen. Mr. Morison described, by means of diagrams, the method of operation, and stated that now, one month after operation, the patient was able to eat anything.—Dr. LIMONT showed cases of (1) Lichen, (2) Seborrhœic Dermatitis, (3) two cases of Rodent Ulcer, (4) Pityriasis Rubra, (5) Pustular Syphilide.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 16th, Mr. T. D. PRYCE, President, in the chair, Dr. W. B. RANSOME read a paper on The *Vis Medicatrix Naturæ*. He pointed out the large range of conditions under which living beings could maintain health, and the great adaptability of animals and plants to variations in these conditions. Repair of injury and regeneration of lost parts were shown to be extensive in the highest as in the lowest forms of life, and the fact of a functional reserve of energy insisted on. The indirect influence of parts of the organism on the whole was illustrated, and finally the means by which the body resisted the attacks of microbes was discussed. The paper was discussed by the PRESIDENT and Dr. CATTLE.—Mr. R. C. CHICKEN showed Three Stones removed from a female urinary bladder by dilatation of the urethra. There were two smaller ones lying in the bladder itself, and one large one, which was contained in a sacculus. The latter measured 2½ inches by 1½ inch in diameter, and 6½ inches by 4½ inches in circumference, and it weighed 795 grains. He observed that, in all probability, the smaller stones were fragments broken off from the original one, and had since grown by accretion. As far as he could ascertain he said that the large stone was the largest which had ever been removed by dilatation of the urethra, and was much larger than the limit of size laid down by authorities as being sufficiently large for this method of removal to be practised without injury. Inasmuch as there were no injurious after-effects following the operation in his case, Mr. Chicken give it as his opinion that removal by this method ought to be adopted in every case of stone in the female bladder where the size did not exceed the dimension of the one he had removed.—Mr. ANDERSON showed: (1) Uterus removed by Abdominal Method for Fibroid Tumours. Patient's age, 48; tumour noticed three years; menopause began two years before operation. There had been no hæmorrhages other than the ordinary catamenial discharge. Rapidly growing since noticed; whole tumour weighed 11¼ lbs. It was a curious shape, there being a large growth almost at right angles to the summit of a fibroid uterus filling pelvis. It reached nearly to the liver and occupied the right loin. In parts it was calcified. (2) Two Stones removed from the pelvis of a kidney. Symptoms of stone had existed for twenty years, but during the whole of this time there had been no hæmaturia present. (3) Appendix Vermiformis containing a fæcal concretion removed at a period of quiescence; there had been three attacks of appendicitis; there was no perforation.

BOLTON AND DISTRICT MEDICO-ETHICAL SOCIETY.—At a meeting on November 17th, the PRESIDENT (Dr. Kershaw) in the chair, Dr. BRYCE showed: (1) A specimen of Alveolar Carcinoma of the Kidney removed *post mortem* from a gouty man who had suffered from repeated attacks of renal colic and intermittent hæmaturia. (2) A very perfect Anencephalic

Fœtus of seven months, in which there was entire absence of brain tissue, cranial vault, and orbital cavities.—Dr. JOHNSTON showed a photograph of an Exocephalic Fœtus at full term, in which there was also absence of the cranial vault, the entire brain being contained in a large meningocele projecting from the posterior aspect of the head.—The PRESIDENT delivered his inaugural address upon Scarlet Fever and its Isolation, treating the subject historically, detailing the Hendon epidemic, and combating the idea of the danger of scarlet fever to puerperal women. In his practice he had several times seen women confined in the same bed in which scarlet fever cases had been, and had never seen any untoward results. "Return cases" he attributed to incomplete desquamation, otorrhœa, rhinitis, adenitis, residual air, or slight unnoticed cases occurring in the same house. Since the opening of the Farnworth Fever Hospital he had seen 2 deaths in 147 cases. Dr. BRAZIL characterised the disinfection of rooms by sulphur fumigation as "a salve to our professional conscience." Dr. JEFFERIES considered that the "host" was of more importance than the germs or microbes, and that the existing system of isolation was neither thorough nor reliable. He preferred to trust to Nature's disinfectants—sunlight and fresh air—and referred to the illogical position of a medical man giving minute instructions for the isolation of a patient and afterwards visiting him in the ordinary course of his day's work among other patients. He questioned whether, as asked in the Bradshaw Lecture, the amount of, or the mortality from, infectious disease was much less now than it was fifty years ago. Dr. MOTHERSOLE thought it was largely a question of the dose of the poison and its concentration, and that our present system of isolation was better than none. The discussion was continued by Drs. BEESLEY, MACFIE, ROBINSON, FLITCROFT, BRYCE, and the PRESIDENT, who suitably replied.

CHELSEA CLINICAL SOCIETY.—At a meeting on November 15th, Dr. J. FOSTER PALMER, President, in the chair, Dr. J. B. BALL read a paper on the Indications for Operation in cases of Adenoid Vegetations of the Naso-pharynx. He recapitulated the main symptoms of the disease, laying stress on those which he considered to furnish indications for operative interference. He strongly disagreed with those who advised operation in every case of adenoids, regardless of whether symptoms were present or not, and deprecated the tendency which existed in many quarters to exaggerate the ill effects of those growths. At the same time he insisted on the importance of early operation in cases where operation was indicated. He finally enumerated the symptoms which he believed to indicate an operation.—A discussion followed, in which the PRESIDENT, Dr. GIBBES, Mr. MORRIS, Dr. DICKINSON, Dr. WHITE, and Dr. VINRACE took part, and Dr. BALL replied.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 18th, Dr. E. S. MIDDLETON in the chair, Dr. J. GALBRAITH CONNAL showed a woman, aged 47, suffering from Carcinoma of the Tonsil. The first thing that had attracted the patient's attention was swelling of the lymphatic glands about eight months before. Microscopic specimens were shown illustrating the typical structure of the growth. Dr. HINSHELWOOD showed a young woman suffering from Graves's Disease, in whom the eye symptoms were the first and most prominent manifestations of the disease.—Dr. WILLIAM F. SOMERVILLE read a short paper in which he advocated the use of Medical Gymnastics—massage—and the vibrator for the relief of indefinite pain in the back, pain that was distinctly not due to nephritis, spinal disease, or of pelvic origin. Dr. HINSHELWOOD read a paper entitled A further Contribution to the Study of Word Blindness, in which he narrated several curious cases of visual aphasia, the most prominent feature of which was the presence of letter blindness without word blindness.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—At a meeting of this Society, held on November 14th, Dr. T. K. DALZIEL showed: (1) A Tumour from a case of Multiple Uterine Myomata, in which necrosis from torsion of the pedicle had occurred. The patient was a middle-aged woman, and was suddenly attacked with severe illness. The tumour had been known to be present, but torsion of the pedicle had produced peritonitis, and removal of the tumour and of a diseased ovary was followed by good recovery. (2) A Parotid Ranula, a Submaxillary Ranula, a Dermoid Cyst from the Submaxillary Gland, and a Cyst from a case of Cystic Bronchocele.—Dr. MEIGHAN reported a case of Solitary Tubercle of the Eye from a young boy, who had also suffered from tuberculous cervical glands, and never been strong. The eye was enucleated because of the pain, and macroscopic and microscopic specimens were shown to illustrate the condition. —Dr. CARSLAW showed specimens illustrating Detachment of the Retina from a case of Chronic Nephritis. The patient suffered from retinitis albuminurica, and three weeks before death suddenly within a short time became practically blind in both eyes. This was explained by detachment of the retina of both eyes by serous exudation, the diseased retina and the hypertrophied left ventricle bringing about this condition.—Dr. EDINGTON showed Cyst of tubular form removed from the under surface of the penis.

NEWPORT MEDICAL SOCIETY.—At a meeting on November 2nd, Mr. H. E. WILLIAMS (President) in the chair-Dr. PATERSON (Cardiff) read an interesting paper on the Supra-tonsillar Fossa as a Starting Point of Infection (with lantern slides).—Mr. J. MCGINN read notes on and exhibited a remarkable case of Chronic Hydrocephalus.—Dr. A. G. THOMAS showed a case of Double Ankylosis of the Shoulder-Joint.—The meeting was well attended and the various subjects well discussed.

HULL MEDICAL SOCIETY.—The following have been elected office-bearers for this session: *President:* Alfred Parkin, M.D.Lond., F.R.C.S. *Vice-Presidents:* Edward D. Daly, M.D.Oxon., M.R.C.P.; A. Legge Roe, L.R.C.P.&S.I.; *Librarian:* James MacNidder, M.B.Edin. *Council:* T. Cameron, M.B.Glasg.; A. G. Francis, M.B.Cantab., F.R.C.S.; Robert Grieve, M.B.Edin.; E. M. Hainworth, M.D., B.Sc. Lond., F.R.C.S.; E. H. Howlett, F.R.C.S.; David Lowson, M.D.Aberd.; John Merson, M.D.Aberd.; H. W. Pigeon, M.A., M.B.Cantab., F.R.C.S. *Honorary Secretary:* James L. Waters, M.B.Edin.

MANCHESTER THERAPEUTICAL SOCIETY.—A meeting of this Society was held at the Owens College on November 1st, Dr. LEECH (President), in the chair.—Dr. R. B. WILD read a communication on the Toxic Effects of Boracic Acid, narrating two cases in which dermatitis and other disagreeable symptoms were produced by the continued administration of boracic acid in 10 to 15 grain doses, Dr. Wild also related experiments he had made in order to test the rate of elimination of boracic acid by the urine. He found that boracic acid was excreted partly as free boric acid, partly as borax. He considered that with diseased kidneys elimination might be very slow, and thus allow toxic symptoms to develop. He thought it wss not justifiable to add boracic acid as a preservative to foods in such large quantities as was done sometimes.—A discussion took place on the various forms of Extracts of Meat and similar preparations, of which a large number of samples were shown. The general opinion seemed to be that though some of these were readily taken, and might serve occasionally as usefully stimulants, the nutritive value was in most cases very small, and that probably the raw meat juice, freshly prepared, was more useful than the proprietary preparations.

REVIEWS.

ELECTRICITY IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE NOSE, THROAT, AND EAR. By W. SCHEPPEGRELL, A.M., M.D., New Orleans. London: G. P. Putnam's Sons. 1898. (Roy. 8vo, pp. 420; 161 illustrations.)

WE confess that we have always felt a certain amount of prejudice towards any book dealing solely with the application of electricity to one region of the body. Only too often are we accustomed to find that such works are but a blend of a technical description of electric processes, with an incomplete handbook of the speciality dealt with; and we are frequently forced regretfully to the conclusion that the author has become a one-

sided enthusiast, oblivious of everything beyond the area of his batteries, and thirsting to apply his electrical treatment in season and out of season. It is, therefore, all the greater commendation of Dr. Scheppegrell that, although we opened his work with this inevitable bias, we have closed it with the satisfactory feeling that he has produced an admirable book, in which enthusiasm is tempered with judgment. There is possibly no department of practice which already makes greater demands upon electricity than do the regions of the nose, throat, and ear. The electric light, although not entirely satisfactory, has become universal for use with the frontal mirror. Direct laryngoscopy can hardly be carried out without an electric forehead lamp. Trans-illumination from the mouth is a routine method of diagnosis in empyema of the antrum. The electro-cautery is, in spite of its too frequent abuse, of such value that no specialist can do without it. No throat clinic is complete without an electro-motor for working saws and burrs. Electrolysis finds frequent indications in laryngology. The interrupted current is most valuable in many cases of hysterical aphonia, while the continuous current is indicated in many other neuroses. Finally, the *x*-rays have nowhere been of greater service than in the detection and localisation of foreign bodies in the upper air and food passages. This enumeration shows at once that there is distinct scope for a book dealing with electricity in diseases of the nose, throat, and ear, and we have great pleasure in finding that Dr. Scheppegrell's book meets this want in a most satisfactory manner.

The introductory chapter on currents and coils is brief and sufficient. The description of the different forms of electricity, and of the various conditions in which they are indicated, is well written, and practically illustrated. The bibliography is placed at the end of the work: it is not overloaded; and it is given in the order in which the works are referred to in the text. It is followed by a valuable list of authors quoted, and an admirable general index.

Throughout the book the author does not hesitate to quote the opinions of writers who are dissatisfied with the results obtained by electric treatment. Naturally, in many conditions to which it is applicable, the question of electricity is still *sub judice;* but, so far as regards its use in laryngology and otology, we can confidently recommend this work as being a clear guide, a satisfactory handbook, and one containing much useful information.

The Surgical Anatomy of the Lymphatic Glands. By C. H. Leaf, M.A., M.B., F.R.C.S. London: Archibald Constable and Co. 1898. (Demy 8vo, pp. 72, 17 coloured plates. 10s. 6d.).

This small work hardly calls for more than a notice of its publication, for it consists simply of a description of the distribution of the lymphatic glands in the human subject, abundantly illustrated with coloured plates of a semi-diagrammatic character, and with abundant citations from the classical work of Mascagni, the main results of whose investigations are familiar to all students of standard works upon human anatomy. Those who have wavered in their faith as to the truthfulness of previous descriptions, the work will confirm, for the author's own observations have been conscientiously carried out, and are eminently trustworthy.

In a work on the surgical anatomy of the lymphatic glands one would naturally have expected a dissertation upon the lymph courses of the different groups described, seeing that the surgical interest of the subject centres almost entirely upon this. Given an infective disease or process in any particular region, what series of glands will be first involved? But such an expectation is doomed to disappointment, for the work is strictly limited to the glands, without any reference whatsoever to the areas which they drain.

Why the work is entitled *Surgical Anatomy* does not appear, seeing that the glands of the abdomen and thorax are considered as well as those of the head and neck and limbs. The illustrations are profuse, and the arteries, from the smallest up to the aorta, startling in roseate hue: whilst the several lymphatic glands are bedight with yellow, but whether icteric or as indicating fat left upon them in dissection is left to the reader to surmise.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D., D.P.H., Professor of Physiology in the Western Reserve University, Cleveland. Third edition. London: Baillière, Tindall, and Cox. 1899. (Demy 8vo, pp. 848. 300 figures and 5 coloured plates. 15s.)

The first edition of this work was published in 1895; a second edition which appeared shortly after this was merely a reprint of the first. The third edition, which is now before us, has been brought up to date. The somewhat extensive alterations and improvements which Professor Stewart has made are largely the outcome of the rapid progress physiology is making in all directions, and are in part due to the author's own enlarged experience both as a teacher and original worker. The book is one which aims at a high standard, and includes some subjects of a more abstruse nature than are to be found usually in students' textbooks. For this reason it will appeal more particularly to those who are preparing for the higher examinations.

Though we do not altogether admire the kind of illustrations adopted in the text (white lines on a black background), yet these are clear and are carefully selected; the coloured plates are excellent. The style of the book is, as a rule, attractive and lucid. To this, however, there are exceptions: some of the paragraphs on difficult topics, for example, on osmosis and on Talbot's law, are not so clear as they might be, and we fear that students will experience some difficulty in grasping their meaning.

If the work is chosen as a practical guide, the task of selection of what should be actually performed by the student will naturally be left to individual teachers. It would not be possible, seeing the limited amount of time that students as a rule can give to physiology, to follow out practically all the exercises given. It is, however, an error in the right direction to give too much rather than too little on what is now justly regarded as the most important method of modern physiological teaching.

We congratulate Professor Stewart on the success that has attended his efforts to produce a really first-class textbook.

Atlas und Grundriss der traumatischen Frakturen und Luxationen. [Atlas and Textbook of Traumatic Fractures and Dislocations.] Von Prof. Dr. H. Helferich, in Greifswald. Vierte Auflage. Munich: J. F. Lehmann. 1898. (Crown 8vo, pp. 312, 205 illustrations. M. 12.)

The arrangement of the subject matter of this book is somewhat different from that usually adopted in the English and American textbooks on the same subject. The first section comprises a general consideration of fractures and dislocations, their method of production, their symptoms, and the principles which ought to be recognised in their treatment. Then follows a detailed account of the traumatic fractures and dislocations, the order of description being the head, the spinal column, the thorax, the upper extremity, and the lower extremity. The dislocations are considered immediately after the sections which are devoted to the fractures. Thus when the clavicle is under consideration, the different forms of fracture, together with their symptoms, diagnosis, and treatment are dealt with, and then follows an account of the dislocations.

This method of dealing with the subject presents many advantages, particularly to the student, since it impresses upon the mind the various points in the differential diagnosis between fractures and dislocations.

Throughout the text an intimate knowledge of the anatomy of the part under consideration is assumed. If the reader is somewhat "rusty" on this part of the subject, he will find it necessary to refresh his memory from time to time by reference to a textbook on normal anatomy in order to follow the text readily.

The illustrations are for the most part good, and help materially in making a somewhat dry subject interesting. The volume can be safely recommended to "German-reading" students as a very useful manual of the subject with which it deals. The value of the book would have been improved by the addition of an index.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1898.

Tuesday, November 22nd.

Sir William Turner, President, in the Chair.

The sixty-sixth session of the General Medical Council commenced at the Council Chamber, Oxford Street, at 2 P.M., on November 22nd.

President's Address.

The President delivered the following address:

It is not my intention to trespass on your time and attention by the delivery of a lengthy address. It may, however, be useful to refer to some of the subjects to which the Council will require to give consideration during the present session.

In the first place, I may call to your recollection that during the session held in May, I, as your President, was asked to put myself in communication with some of the Government Departments regarding questions in which the Council and the medical profession are greatly interested.

Disciplinary Powers.

The disciplinary powers exercised by the Council and the licensing bodies have frequently been under the consideration of the Council and the Executive Committee, and at the May meeting of Council I was requested to communicate with the Lord President of the Privy Council as to the practicability of obtaining such an amendment of the law as would effectually prevent the holder of a medical diploma or degree from using the title thereof after his name had been erased from the *Medical Register*, under Section XXIX of the Medical Act, 1858, and for so long as the erasure continued in force. The Council will find in the Minutes of the Executive Committee, July 12th, 1898, a print of the letter which I wrote to the Lord President, and of his reply. Subsequent to this correspondence, I was requested by the Executive Committee to ask an interview with the Clerk of the Privy Council with reference to this matter. As I thought that it would facilitate the consideration of the subject if I could place in the hands of the Privy Council some definite proposal as to the direction which legislation should take, I requested Mr. Muir Mackenzie to draft clauses which might be embodied in a Bill. This was accordingly done, and at an interview with Mr. Almeric Fitzroy, who has succeeded Sir Charles Lennox Peel in the office of Clerk to the Privy Council, I explained the purport of these clauses, and left a copy with him. The subject will, I was assured, receive due consideration. I was given to understand that, as a preliminary step, it will be necessary to ascertain if the universities would offer no opposition to the Medical Act, 1858, being amended, so that if a graduate in medicine had his name erased from the *Medical Register*, under Section XXIX of this Act, his right to use the title or titles obtained from his university should be suspended so long as the erasure remained in force. At the meeting of the Executive Committee yesterday I was requested to continue in communication with the Privy Council, and also to ascertain the opinion of the medical licensing authorities on the question of suspension of the right to use a title or titles so long as the erasure of a name and title remains in force.

Death Certification.

The subject of death certification and the amendment of the law regarding it has frequently been before the Council and a strong opinion has been expressed that the law required alteration, so that the irregularities, which now only too frequently occur, should be in the future no longer possible. At the request of the Executive Committee I put myself into communication with the Home Department on this subject, and requested Dr. Church to accompany me to an interview with the Permanent Under-Secretary. The whole question was discussed at our meeting at considerable length, and the evils which exist were fully recognised by the Under-Secretary. We were assured that the matter had been for some time under consideration, with a view to an amendment of the law, and that a communication would be made by the Home Office to the Local Government Board on the subject.

The Companies Act.

In the month of May, the Council appointed a Committee, consisting of Mr. Tomes, Mr. Horsley, and myself, to take steps to induce the Government to insert a clause in the Companies Act Amendment Bill, with the object of preventing the registration of companies to carry on medical, surgical, and dental practices. A meeting of the Committee, at which Mr. Muir Mackenzie was present, was held early in October, when a discussion took place as to the best means to carry out the instruction of the Council. It was arranged that clauses should be drafted by Mr. Muir Mackenzie, and placed in the hands of the Lord Chancellor. This has accordingly been done. It is due to Mr. Tomes to state that he has taken an active and important part in bringing the whole of this question before the notice of the Lord Chancellor.

Precedence.

In connection with the resolution of the Council, which remitted to the Executive Committee to take steps to secure that the General Medical Council shall receive due recognition and representation in national functions and ceremonies, a Subcommittee consisting of Sir Dyce Duckworth, Mr. Carter, and myself, was appointed to obtain the necessary information. So far as our inquiries have gone we have not received much encouragement, and we have been told that as regards recognition and representation in national functions and ceremonies, no corporate body has any vested right of participation. In any public ceremony the director of the function considers applications to participate, and grants them as far as he is able, or he may issue invitations at his own discretion, but there are no rights or privileges in relation to the matter.

The Midwives Question.

At our meeting in May, a Committee, consisting of Sir Richard Thorne, Dr. Glover, Dr. MacAlister, and Sir Christopher Nixon, was appointed to confer with delegates from the Committee which had framed the Midwives Bill, and to report to the Council. The conference was held on June 25th, 1898, and the report of the proceedings has been circulated amongst the members of the Council. I thought it advisable to authorise its circulation, so that members should have ample time to read and consider what took place at the conference before the Council enters on the consideration of the report which our Committee is to present on the subject.

The "British Pharmacopœia."

The Council will, I am sure, hear with much satisfaction that of the first impression of 20,000 copies of the *British Pharmacopœia* issued in the spring of the year, all the copies have been sold. After consultation with Dr. Leech, Chairman of the Pharmacopœia Committee, in the month of October, 1,500 additional copies were ordered to be printed to meet immediate necessities, and of these 500 have been sold. Dr. Leech and his Committee will, I have no doubt, during the present session advise us as to the future.

Reciprocity with Foreign Countries.

The Executive Committee will submit for your consideration a revision of the Memorandum on Reciprocity of Medical Practice in Relation to Foreign Countries, so far as it affects the question of the conditions under which foreign medical practitioners are allowed to practise medicine in the United Kingdom.

Alteration of Premises.

The treasurers will present a report on the proposed alterations on our building, and another on a proposed sinking fund to meet the charge for the alterations to our property.

Inspection of Examinations.

You will also have to take into consideration, on a report from the Examination Committee, the inspector's reports on the examinations of the Apothecaries Hall of Dublin held during the spring and summer. In this connection I have to state that owing to Dr. Sidney Coupland having accepted the appointment of a Commissioner in Lunacy he has found it

ecessary to resign his position as our inspector. Whilst con-ratulating Dr. Coupland on his appointment to the responsible ffice for which he has been selected, the Council will, I am ure, join with me in expressing regret that we are no longer have the benefit of his valuable services.

Penal Cases.

In conclusion, I have to state that, under the instructions of ie Penal Cases Committee, several charges made against gistered practitioners will have to be investigated. The ouncil will, I feel sure, give to those cases the thoughtful re and attention which are essential when questions affect-g the character and conduct of members of our profession e being inquired into.

Dr. MacAlister moved, and Mr. Bryant seconded, a vote thanks to the President for his address, which was rried.

Results of Service Examinations.

Dr. Heron Watson moved that the table showing the sults of the competition held in August, 1898, for commis-ons in the Royal Army Medical Corps, and the table showing sults of the competition held in August, 1898, for the dian Medical Service, be entered on the minutes.

This was seconded by Sir Richard Thorne, and carried.

Dr. McVail said that these tables showed a very extra-dinary difference in the number of successful candidates for ie Conjoint Board in England as compared with the others. e thought the Conjoint Board in England stood out con-picuously successful, or that the others stood out as being nspicuously unsuccessful. Therefore he thought the xamination Committee should be asked to look at the figures ain.

Sir Dyce Duckworth said that for the last few years he id been chairman of that body which dealt with the Navy. ie examiners knew nothing of the candidates, and, therefore, was to be assumed that the work done was trustworthy and e examination was conducted without any bias. The marks ere given simply on the merits displayed by the various can-dates and that was done quite independently of any diplomas ndidates might hold. He thought, therefore, that the stem they adopted was the the best system.

Several members having spoken upon the matter the Presi-nt asked Dr. McVail if he would reduce his observations a motion.

Dr. McVail then moved:

That the statements supplied by the two departments, the Army and e Indian Medical Service and the Naval Department (when supplied to e Council) on this occasion and in each successive year be remitted to e Examination Committee for consideration and report.

The resolution was put to the meeting.

The President on taking a show of hands declared that voted in favour of the motion, 11 voted against, and that veral members did not vote.

Dr. McVail asked for the names and numbers.

The President observed that it put the Council in a difficult sition when members who were there did not vote, and he ould like the matter decided as to whether when a vote was ken by a show of hands, and certain members abstained om voting and the names were called over, those members the Council who had not put up their hands could then te. A long discussion ensued; and the President ruled, d expressed the opinion that his ruling was to be regarded guiding the Council in the future, that when the names re called persons who had not voted before might vote, and at persons who had voted might decline to vote.

The resolution was put to the meeting, and 13 voted against, for, and 5 did not vote. The motion was declared lost.

Unqualified Assistants.

Dr. MacAlister moved:

That the communications on unqualified assistants be, in accordance th the recommendations of the Executive Committee, referred for nsideration and report to a committee consisting of Sir Richard orne, Dr. MacAlister, Dr. Bruce, Mr. Brown, and Mr. Teale.

Mr. Bryant seconded the resolution, which was carried.

Inspection of Documents.

Mr. Victor Horsley asked the leave of the Council to consider next in order all notices of motion relating to the inspection of documents.

Mr. Brown seconded the motion.

Dr. MacAlister stated that it seemed to him that under the Standing Order which was passed last session, the notices were out of order.

Mr. Victor Horsley replied that he was advised by eminent counsel that the course which he was proposing to adopt was the correct one.

Dr. Heron Watson did not see why the ordinary business of the Council should be disarranged, and asked if there was any special reason why the course suggested by Mr. Victor Horsley should be adopted.

Mr. Victor Horsley stated that he wished to have access to the documents at the earliest possible moment in order that he might commence the study of them, and be able to deal with them at this session.

The resolution was carried.

The President pointed out that with regard to the first of these notices which related to Mr. H. Kingsley Hunter, that was already under appeal, and it was a question as to how far a case which was under appeal could be discussed by them.

Mr. Brown, in whose name this notice of motion stood, said that he did not propose to discuss the case: he only wished the documents to be produced to the members in a confidential way. He was a Licentiate of the Society of Apothecaries of London, and he thought it was his duty to protect, as far as he could, those who held similar qualifications to himself. He then moved:

That all minutes, papers, and documents relating to the recent prosecution of the late Mr. H. Kingsley Hunter, Licentiate of the Society of Apothecaries of London, be produced to the Council for inspection.

Mr. Victor Horsley seconded the motion. He said he himself had the intention of proposing a resolution in relation to this most important question, which resolution, if the Council acceded to it, would alter their position with regard to the appeal cases now pending.

After some discussion, the President declared the motion carried.

Mr. Victor Horsley moved:

That all documents in relation to the case of an unregistered person named Hamilton be produced for inspection by members of the Council.

It would be remembered, he said, that this prosecution was directed by order of the Council, and that it was carried out unsuccessfully. He intended to bring the matter before the Council at this session.

Sir Christopher Nixon seconded, and the resolution was carried.

Mr. Victor Horsley then moved:

That all documents in relation to the case of an unregistered person named Steel be produced for inspection by members of the Council.

The same remark, he said, applied to this resolution, except that Steel was successfully prosecuted by the Council; but he continued to practise. He said there were certain matters which he desired to bring before the notice of the Council in connection with this matter.

Mr. Brown seconded the resolution.

Dr. Church inquired whether it was Mr. Victor Horsley's intention to go back on what had happened, or whether he only wanted to take up the matter at the point at which the Council left it. He was not wishing to oppose, but this was a new departure on the part of the Council, and it would be necessary that the machinery should be used carefully for the inspection of these documents, and that a room should be set apart for the purpose; and he wished to know whether all the documents that the Council held were to be placed for the open inspection of the Council, or whether it would be sufficient that the member had access to the documents which related to what had passed and gone.

Mr. Victor Horsley replied that he wished to bring before the attention of the Council the conduct of this man since his conviction, and he thought the simplest way would be to have all the documents tied together and placed in a room, not only for his inspection, but for the inspection of any member of the Council who cared to look at them.

The resolution was carried.

Mr. Victor Horsley moved:

That all documents in relation to the case of an unregistered person named Allinson be produced for inspection by members of the Council.

He said the circumstances in this case were identical, and therefore he need not go through the same argument.

Sir Christopher Nixon, in seconding the resolution, said he wished to say that he should be prepared to second any motion moved by any member of the Council in similar terms. He had the strongest possible feeling that all the documents of the Council should be open to the access of the individual members, without going through complicated forms, which occupied so much of the time of the Council. It would be a great deal better if the Standing Order had not been passed. In a small body such as the Council, constituted by a special Act of Parliament, and having special duties delegated to them by different representative bodies, he thought that in order to perform their duties properly they should have all documents within access, so that they might be available for each individual member. He thought it would be a great deal better if the matter could be arranged in that way rather than that they should have to adopt the procedure which at present existed.

The resolution was carried.

The President remarked that it would obviously be most important when these documents were being inspected by members of the Council that they should be inspected under such conditions as would ensure their privacy to the members of the Council. Therefore he thought there should be some provision made for their inspection.

After some discussion, it was agreed that the documents should be placed in a particular room, that one of the clerks of the office should be in attendance, and that the exact time at which inspection should be given should be left to the convenience of members wishing to inspect the documents.

The Council then adjourned in order that the rest of the day might be given to Committee work.

Wednesday, November 23rd.

Sir William Turner, President, in the Chair.

The President stated that he noticed that since the previous day Mr. Victor Horsley had put on the programme of business a motion as regards other documents. There was no notice of motion by that gentleman asking for leave to bring forward that motion.

Mr. Victor Horsley said he sent in notice of his motion within the proper time, and he should be quite willing to ask for leave at this stage; but as long as he got his application heard that day, it did not make much difference to him when it was taken.

The President replied that as the parties to a penal case were ready to proceed, they had better postpone further discussion on the question.

Penal Case.

The Council then proceeded with the consideration of the case of Charles Alexander Ducket, of 74, Brooksby's Walk, Homerton, registered as Mem. R. Coll. Surg. Eng. 1888, Lic. R. Coll. Phys. Lond. 1888, Lic. Soc. Apoth. Lond. 1888, the charge as formulated being:

That he, being a registered medical practitioner, caused and permitted an unqualified person, named David Moses Roberts, to attend and administer medical treatment to patients who required his (Ducket's) services, as if he had been a duly qualified practitioner, and, in particular, that he (Ducket) caused and permitted the said unqualified person to attend and administer medical treatment to a woman named Louisa White and to an infant named Hilda Helen Bailey, in the circumstances stated in the evidence and in the verdicts of the coroners' juries, taken and given at inquests held on the deaths of the said deceased. The complaint against him (Ducket) was that in the said matter he had been guilty of infamous conduct in a professional respect. The information and evidence consisted of the depositions and verdicts given at the inquests.

Mr. Ducket appeared in person.

Mr. Muir Mackenzie said the case came before the Council upon the report of the Coroner of Hackney, and the principal evidence was the depositions that were taken at the inquests on the deaths of the two deceased persons. The learned counsel proceeded to refer to portions of the depositions.

Mr. Ducket said the explanation he had to give was that he was negligent. He admitted all that was printed in the depositions which had been read. He was a little pressed, as his employer, Mr. Evans, was away at the time, and, having two or three confinements on, he was out when the several messages arrived, and then Mr. Roberts, no doubt with the best intention, went and attended the cases. He knew perfectly well as a medical man of some years' standing, and as a medical assistant before, what the results of "covering" would be; but he would like to say that what was done was not done in any way at the instigation of his employer, Mr. Evans, with whom he had always worked well.

The President pointed out that the offence which he had committed, in the eyes of the jurymen, was that he had been negligent in the two cases, and that they censured him as well as Mr. Roberts. He understood that Mr. Ducket admitted the neglect, for he said he was not in at the time, and that in a sense was neglect.

Sir John Batty Tuke pointed out that that was not the charge against Mr. Ducket; all that he was charged with was that he "caused and permitted an unqualified person to attend."

Sir Richard Thorne thought they could not go beyond the actual charge which had been formulated.

Mr. Muir Mackenzie said that as long as his experience went back it had always been the practice to consider the neglect of patients, and neglect of patients came within Section xxix of the Act.

Dr. MacAlister expressed the opinion that negligence was the explanation offered by Mr. Ducket to the parent charge against him.

Sir Richard Thorne said as Mr. Ducket was undefended, he thought it was only fair that no charge should be brought against him which did not appear in the summons. The mere statement of the coroner that a jury had found Mr. Ducket "culpably negligent" had nothing to do with the Council.

Mr. Brown submitted that they could not go into one part of the case without taking the other, because the evidence was so interwoven. The jury, after having gone into the evidence, deliberately stated that Mr. Ducket was guilty of negligence, and therefore deserving of severe censure; and further, that he be reported to the Council.

After a short discussion, the President directed Mr. Ducket and the public to withdraw. Upon their readmission,

The President asked Mr. Ducket if he wished to add anything to what he had already said, or if he was going to offer any proofs.

Mr. Ducket replied that he did not wish to say anything more. In reply to Sir William Thomson Mr. Ducket said that when his employer (Mr. Evans) went away he acted as his substitute. He was in control of the whole establishment, but there was no difference in his pay. In the absence of Mr. Evans he represented Mr. Evans. He knew that Mr. Roberts was an unqualified assistant. Mr. Roberts was under his control. When Mr. Roberts paid these visits in the ordinary way, he (Mr. Roberts) would acquaint him. He knew as a matter of fact that Mr. Roberts had been paying these visits. He spoke to Mr. Roberts about it, but Mr. Roberts went on and paid another series of visits. He warned him on the first occasion that he (Mr. Roberts) was doing wrong, but in spite of that warning he attended the second case. Mr. Ducket, in answer to further questions, said that he had no interest in Mr. Evans's practice, and that Mr. Roberts was paid by Mr. Evans. He did not know whether the visits that Mr. Roberts paid to the patients were charged by Mr. Evans, but he thought not. Mr. Roberts was not in his (Mr. Ducket's) employment at all.

In answer to Sir Richard Thorne, Mr. Ducket said that in his opinion he was certainly not responsible for what Mr. Roberts did, as Mr. Roberts was in the employ of another person. He was discharged by Mr. Evans immediately, because of what had taken place. He had damaged Mr. Evans's practice and also damaged his own reputation.

Mr. Ducket and the public were then directed to retire. On reassembling,

The President, addressing Mr. Ducket, said that the Council had very carefully deliberated over his case, and he was instructed to state that the charge against him had not been proved to the satisfaction of the Council.

On the motion of Mr. Victor Horsley, seconded by Dr. Pettigrew, the Council considered *in camerâ* the report of the Executive Committee on the petitions for the restoration

of names to the *Medical Register* of medical practitioners whose names had been removed therefrom under Section XXIX of the Medical Act. Strangers were directed to withdraw. On being readmitted,

The PRESIDENT announced that with regard to William John Patterson the Council declined to restore his name to the *Register* at present. As regards Robert Ingram Robertson the Council resolved to call the attention of Mr. Robertson to his statement that though unregistered his occupation had been that of a medical practitioner, and refused his application. The applications of Robert Alexander Douglas Lithgow and Herbert Tibbits were refused. The case of Alfred Freeman was adjourned, and it was resolved that the documents before the Council be forwarded to the Royal College of Physicians of Edinburgh for its consideration.

INSPECTION OF DOCUMENTS.

On the ground of urgency, the Council resolved to consider next in order all notices of motion standing in Mr. Victor Horsley's name.

Mr. VICTOR HORSLEY, in moving "That all documents in relation to the case of Dr. Farrar be produced for inspection by members of the Council," said he wanted documents in relation to an extremely important point as to the way in which evidence was laid before the Council, in regard to which it was his intention to move a resolution at the proper time as to the procedure adopted in penal cases.

The PRESIDENT observed that this was a case where death had terminated, and he failed to see what object was to be gained by raising the question of how evidence had been rendered in the case of a person who was dead.

Mr. VICTOR HORSLEY said that he only asked for the documents because he knew, as a matter of fact, that certain evidence was laid before the Council in a certain way, and he desired to make a test case of it.

Sir RICHARD THORNE was of opinion that when a member of the Council asked for documents they ought to be given to him, and he hoped they would never again raise any opposition to it. He regretted having opposed when the matter was last before the Council.

Mr. BROWN seconded the resolution, which was carried.

Mr. VICTOR HORSLEY then moved, and Mr. BROWN seconded:

That the lawyer's bill of costs for 1897 be produced for inspection by members of the Council.

Dr. MACALISTER thought the resolution out of order; it had been held from the chair that this was not a document relating to a penal case.

Mr. VICTOR HORSLEY observed that was precisely why he had brought it before the Council. He said if he was to be cross-examined as to the reason why he required the bill, he would say at once it was in relation to a motion which he intended subsequently to bring forward relative to legal proceedings, and especially in regard to "covering" cases.

Dr. MACALISTER remarked that there were two classes of documents—one relating to penal cases and the other not; his bill belonged to the latter class.

Mr. VICTOR HORSLEY considered from the course Dr. MacAlister took on the question that he questioned his honour, as he had assured the Council that it did relate to a penal case.

Sir DYCE DUCKWORTH could see no objection to any member of the Council seeing any document in relation to its business; while Sir JOHN BATTY TUKE said that to refuse to do so gave the impression that there was something behind, which there was not.

The resolution was carried unanimously.

On the motion of Mr. HORSLEY, seconded by Mr. BROWN, it was resolved:

That all the documents relating to the penal cases reported by the Penal Cases Committee to the present session of the Council be produced for inspection by members of the Council.

On the motion of Dr. MACALISTER, seconded by Dr. BRUCE, the report from the Midwives Bills Conference Committee was received and entered on the minutes; and on the motion of Dr. MACALISTER, seconded by Sir DYCE DUCKWORTH, it was resolved that the communication for the Colonial Office in regard to the measures adopted by the Government for promoting special instruction in tropical diseases be received and entered on the minutes.

The Council then adjourned.

Thursday, November 24th.

Sir WILLIAM TURNER, President, in the Chair.

THE "PROGRAMME OF BUSINESS."

Mr. VICTOR HORSLEY wished to call the attention of the President to two matters before they proceeded to the consideration of the penal cases. The first was that a friend of his, a registered medical practitioner, attended a meeting of the Council, and upon his going into the public gallery at the proper time, and asking for a programme of the business to be conducted by the Council, this was refused him. He (Mr. Horsley) stated that he himself had been supplied with them on former occasions, and he wished to know why the usual practice was departed from.

The PRESIDENT replied that it never had been the practice to give their programmes to the public. The programmes were marked "Confidential."

Mr. VICTOR HORSLEY said no doubt they were so marked, but he thought they ought not to be so regarded.

The PRESIDENT remarked that the matter had been considered repeatedly, although he was not prepared to say it had been discussed by the Council.

INSPECTION OF DOCUMENTS.

Mr. VICTOR HORSLEY said the next matter he wished to refer to was in reference to the room set apart for the inspection of documents by members of the Council. After some discussion it was arranged that when the Committees were not sitting the inspection of documents might be conducted by the members in the Committee Rooms.

(*To be continued.*)

LITERARY NOTES.

THE issue of the *Progrès Médical* for November 5th is the educational number—"Numéro des Étudiants." It gives detailed information as to degrees, courses of instruction, as well as concerning libraries, museums, laboratories, and hospitals, in all the Medical Faculties and preparatory medical schools of France. It also gives information as to the School of Pharmacy, the Pasteur Institute, the Veterinary School, the Academies, and the various scientific societies. Finally, similar information, though more summary in character, is given as to the Universities of Belgium, Switzerland, Canada, and Turkey, in which the French is the official academic language.

The *Archiv für physikalisch-diätetische Therapie in der aerztlichen Praxis* is the title of a new monthly journal devoted to hydrotherapy, gymnastics, massage, and "diet cures," which is to appear in January, 1899. The Editor is Dr. Ziegelroth, of Berlin; the publisher, Herr Max Richter, of the same city.

In the *Journal of Anatomy and Physiology* for July there is a most interesting archæological note by Professor A. Macalister entitled, "The Oldest Anatomical Memoranda Extant." These are contained in a papyrus in the Leipzig Library which was brought from Egypt by the late Professor Ebers in 1872. A facsimile of this document was published in 1875 by Professor Ebers, and translations of it have been made by Professor Lieblein and Dr. Joachim. The papyrus was probably written sixteen centuries before the Christian era. In the most part the work consists of notes or memoranda copied by some ancient physician from still older medical writings. Dr. Macalister gives a translation made about ten years ago. The anatomical notes are of a highly fanciful character but are interesting on account of their antiquity. The title is as follows: *Beginning of the Book of the Mysteries of the Physician—The Knowledge of the Motions of the Heart—The Knowledge of the Heart.* The first sentence runs as follows:

There are vessels from it [the heart] to all the members. Each physician, master of healing, priest-exorcist, feels all these when he places his finger upon the head, upon the scalp (neck or occiput), upon the hands, upon the epigastrium, upon the arms or upon the legs. He traces all from the heart, because its vessels go into all his members, so he describes it (the heart) as the beginning of the vessels to all members.

The *Home University* (published at the Educational Museum, Haslemere) of September 15th contains an interesting article on the Black Death. The disease, which is believed to have been bubonic plague, broke out in 1348. "All," says the writer, "who wish to realise the havoc it caused should read Dr. Gasquet's book on the subject, remembering at the same

time that his conclusions were necessarily drawn from the diocesan lists of clergy, who suffered more than any other class owing to their hazardous duties, and the unhealthy situation of their houses near to the churchyards." It is said that it may be estimated "without fear of exaggerating" that the Black Death carried off one-half of the population of the country. At Yarmouth it is recorded that 7,000 died, and 200 are said to have died in London every day during the height of the disease. The political and social effects of the pestilence are briefly but clearly set forth.

We hear much in these days about environment and heredity, but the oracles of anthropology are by no means at one as to the relative influence of these factors. While Lombroso (in the *Revue Scientifique* for April, 1898) asserts that "the influence of environment is potent enough to annihilate all ethnic traits," another great authority, Professor Kollmann, of Basel, with the gentle self-confidence which sits so gracefully on the German professor, said at the meeting of the German Anthropological Society in August last that the definitive pronouncement of science on the point is that "the influence of heredity is far stronger than that of environment. The ethnic traits are immortal and persist, though the peoples who bear them may disappear from history." In view of this conflict of authority we can only say to those who pray for light on this subject, "Under which king, Bezonian?" We have brought forward both; let the reader pay homage to whichever he will.

Dr. Weir Mitchell, whose new romance, the *Adventures of François*, Messrs. Macmillan and Co. have just ready, is an instance of late literary development. In this respect he resembles Oliver Wendell Holmes, who was 50 when he began the "Breakfast Table" series, which made him famous. Dr. Weir Mitchell, as we learn from the *Century*, is twenty years older. His father was a Professor in the Jefferson Medical College and an ardent lover of letters. Dr. Weir Mitchell published his first contribution to medical literature at the age of 23; the list of his publications now includes 130 papers. He was past 50 when he began to cultivate the Muse. He has written verse—specimens of which have more than once been given in the BRITISH MEDICAL JOURNAL—dramas, long and short stories, and essays; but it was not until the appearance of *Hugh Wynne* that his name became generally known. That book had a great vogue in America, and has been fairly successful in England. His latest novel, the *Adventures of François*, attracted much attention on both sides of the Atlantic while running as a serial in the *Century*. The November number of that magazine contains a ballad from the pen of the veteran neurologist.

Dr. Giuseppe Marina, in a pamphlet entitled *Studii Antropologica sugli Adulti* (the contents of which are summarised by Professor D. G. Brinton in a recent number of *Science*), gives the results of his measurements of 22,755 adults—Italians, Slavs, and Germans. His investigations tend to discredit the forms of the skull as a criterion, and to throw doubt on the "criminal type." As regards the relation of the sexual characteristics in general to the pelvic diameters, Dr. Marina formulates the law that in proportion as the pelvic index in the one sex approaches that of the other, this similarity will be correlated to a cranial form and capacity, and to a number of traits, physical and mental, which belong to the other sex. Feminilism in the male, for example, is displayed by the length of the iliac crests, the shortness of the inferior extremities, a wider pubic angle, ampler cotyloid cavities, greater distance of the umbilicus from the pubes, development of the mammæ, etc. Dr. Marina points out that these traits are racial, sexual dimorphism being much more marked in some stocks than in others.

The Rev. Dr. Alexander Whyte, of Edinburgh, whose sermon in St. Giles's Cathedral at the opening of the annual meeting will be remembered by many of our readers, has formed a class for the study of Sir Thomas Browne's *Religio Medici*. We learn from the last issue of the *Student* that the class, which is held on Sunday evenings, "has attained enormous proportions, the whole area of the church being filled with some seven or eight hundred men, among whom are many medical students."

The opinions of the late Mr. Harold Frederic on doctors are of no particular importance in themselves, but as they are at present a good deal before the public, the following quotation from his posthumous novel *Gloria Mundi* may be interesting:

> He drifted into an attack upon doctors as a class. He denounced them root and branch, as impostors and parasites who darkened and embittered human life by fostering all the mean cowardices of small-brained people in order that they might secure a dishonest livelihood by pretending to dispel the horrors their own low tricks had conjured up.

This, even from a literary point of view, is hardly up to the level of the Rev. Mary Baker G. Eddy.

Dr. Andrew Balfour, who was awarded a gold medal for his thesis for the M.D. degree at the University of Edinburgh in July, has recently published a stirring romance entitled *To Arms, Being Some Passages from the Early Life of Allan Oliphant, Chirurgeon, Written by Himself*, which takes high rank in the class of fiction of which the foremost representatives at the present day are Mr. Stanley Weyman and Dr. Conan Doyle. Dr. Balfour had previously published a novel bearing the title *By Stroke of Sword*.

NATIONAL DENTAL HOSPITAL AND COLLEGE.—The annual dinner of the staff and past and present students was held on November 18th at the Holborn Restaurant, under the presidency of Professor Gotch, F.R.S., of Oxford. Amongst those present were Messrs. C. S. Tomes, F.R.S.; J. Smith Turner, Raymond Johnson, Dr. Pasteur, and Professors H. R. Spencer and J. Rose Bradford, F.R.S. The Chairman, in proposing the toast of "The Hospital and School," alluded to his former experience as Dean of the Medical School at Liverpool, when he first made the acquaintance of the dental student. He thought there was some ground for complaint that the dental student was required to do as much dissecting as the medical student. He would cut down the anatomy and physiology, and substitute pathology and bacteriology. Another grievance which the dental student had was that at present there was no opportunity for him to take a university degree in his own subject, and the speaker urged that steps should be taken to approach the Statutory Commission appointed for the new University of London. Mr. Tomes, F.R.S., in responding for the visitors, referred to the Chairman's criticism of the dental curriculum and examinations, and thought that the good results obtained from the existing state of things was evidenced by the excellent standard of practitioners turned out by the schools and colleges. An extensive programme of music, songs, and recitations enlivened the proceedings, and there was a large attendance of past and present students.

ELECTRIC TRACTION ON THE UNDERGROUND RAILWAY.—The designer of the Metropolitan Railway, Sir John Fowler, who died on Sunday last, lived to see far more traffic carried by its trains than the most sanguine of its supporters had expected. This very circumstance, however, necessitating extra trains and producing overcrowding of the passenger carriages, has emphasised the great defect that has attended the railway from the first—the want of sufficient ventilation. We were able to announce in the BRITISH MEDICAL JOURNAL of April 23rd last that a committee of experts had recommended that the impurity of the atmosphere on the railway caused by the use of steam engines should be ended by the employment of electric traction; and that there was every prospect of the attainment after a time of this desideratum, though the expense attending the change would be heavy, and would fall upon the Metropolitan and Metropolitan District Railway Companies. These bodies are about to make experiments, under the direction of Sir J. Wolfe Barry and Mr. W. H. Preece, on the section of line between Earl's Court and High Street, Kensington, on which there are some steep gradients. An electric installation is to be laid down adequate to the haulage of a train as heavy as those running at the busiest times of the day. The experiments will be in operation next summer, and will be continued for eight or ten months, to demonstrate the practicability of the principle, which, if successful, will thereafter be generally introduced on the lines of the joint companies. In the course of a few years, therefore, it may be expected that this much-needed reform will be completed and passengers conveyed on these underground lines without enduring the miseries of the present sulphurous atmosphere.

THE WATER ENTERPRISE OF SOME OF OUR LARGE TOWNS.

IV.—EDINBURGH.

Though the Edinburgh, Leith, and Portobello Water Trust has existed less than thirty years, there had been a public or quasi-public water authority from a somewhat ancient time. One of the sources of supply at present in actual use was tapped at Comiston so far back as 1681, and the water piped to the city. Further works in connection with these springs were executed in 1720, and the slightly more distant source at Swanston brought under contribution forty years later. In 1822 the springs at Crawley, about twice as far as the last-mentioned from the Castle rock, were annexed, and in the same year a large reservoir to hold 360 million gallons erected at Glencorse. On the authority of Sir James Russell we are able to state that the pipes by which the more ancient but still excellent supplies were brought consisted of the trunks of trees bored lengthwise, sharpened at the small end and bell-mouthed at the butt. The sharpened small end was inserted into the bell-mouthed butt. Though these primitive conduits have long since been replaced by modern pipes, portions of the older and simpler tubes are still occasionally dug up in the streets and are found to be very fresh.

The Municipalisation of the Supply.

In 1847, 1848, 1850, 1851, 1853, and 1859 springs were impounded or reservoirs of considerable capacity constructed by the water company at various stations on the Pentland Hills, and again so recently as 1868 at Crosswood. About this time, however, a movement was set on foot for municipalising the water supply, and in 1869 an Act was obtained and the whole undertaking transferred to a body of trustees elected by the Town Councils of Edinburgh, Leith, and Portobello, with the Lord Provost of the City chairman *ex officio*; the Provosts of Leith and Portobello were also *ex-officio* members of the Trust. The latter town now forms part of Edinburgh, but Leith retains its autonomy. In addition to the two provosts, twenty-three other members are elected every three years, nineteen by the Town Council of Edinburgh and four by that of Leith. As a rule, those elected are members of the respective councils they represent, though that is entirely at the discretion of the corporations sending them.

The company bought out received nominally £547,000; but, as £414,000 of this sum was in the form of 6 per cent. perpetual annuities and £133,000 as mortgage debt, the real present day value of the securities handed over is considerably greater than these nominal capital sums.

The Extent of the Supply Taken Over.

From an exceedingly lucid memorandum we have been favoured with by the treasurer of the Trust, we gather that at the date of transfer the company, except in very dry seasons, could supply something under 7 million gallons a day. The population in the area of distribution was estimated at the time at 254,000. The Scotch method of rating differs slightly from that in vogue in most English towns. The 8d. which the company charged was charged upon the full rent paid to the landlord. Manufacturers paid 9d. per 1,000 gallons.

New Municipal Works.

Having obtained control of the existing works, one of the first and most urgent duties of the trustees was to seek fresh fields and pastures new. The Pentlands had been pretty well exhausted, and after a somewhat warm controversy it was determined to secure a further supply from the Moorfoot Hills, about 16 miles to the south of Edinburgh. With the exception of an extension in 1890 of the Threipmuir reservoir on the Pentlands, the new works and the new reservoirs provided since 1869, and now in use, have all been erected in connection with the sources in the Moorfoot Hills. They all date from the period between 1876 and 1880. In addition to providing a new service reservoir of 4 million gallons, laying several filter beds, erecting aqueducts and such-like work, the Trust have added four new reservoirs; the largest of these covers some 400 acres, and stores 1,700 million gallons.

The daily average Moorfoot supply is 8 million gallons; but as the population to be supplied is now estimated at 406,000, and the average daily consumption is 38 gallons a head, it was evidently time for the water authority to consider the claims of the near future. Before, however, passing on to a description of the new undertaking, yet some three or four years off its completion, it may be worth while to consider for a moment what the Trust have done for their constituents.

On the new works at Moorfoot the trustees expended some £700,000. Notwithstanding this large outlay, and notwithstanding the heavy tax of their perpetual 6 per cents. and the mortgage interest, they were able to reduce the price of water to the inhabitants from 8d. to 5d. on the gross rental,[1] and to traders from 9d. to 6d. per 1,000 gallons. The 5d. charge, moreover, is inclusive. There is no additional charge for the first, or any subsequent, water-closet, nor for baths or other sanitary appliances. As might perhaps be expected, the cheap water has been freely used, and there has been so great an increase in the consumption that the trustees have been inclined to cry "halt," and, by use of Deacon meters and greater attention to fittings, to try to reduce the rather large amount used, or at least limit the excessive quantity pretty certainly wasted. Before these measures were taken the domestic consumption was 30 gallons a head; it has now been reduced to 25. The water drawn for trade purposes, which, as it is all paid for, is presumably not used too freely, works out at 13 gallons per head of the population, a total of 38 gallons. As 20 per cent. of the Edinburgh houses have each a bath, and all have waterclosets, 25 gallons a head for domestic purposes is scarcely excessive, and is not likely to lessen as time goes on.

A few years ago Messrs. Gale, Hill, and Mansergh were commissioned by the Trust to report upon the existing supply, the possibilities of its increase, what saving could be effected in the then consumption, and what amount of water it would be necessary to provide for the growing district. In May, 1891, they made a very full report, with voluminous appendices. They examined the gauge records on the hills, estimated what further supply might be secured by adding to the present storage, what amount of wasted water might be saved, and what the requirements of the future were likely to be. The general result of their inquiry was to the effect that a certain important saving might be effected in the consumption, as has since been done, but that even when this was accomplished the amount of water available would be little, if at all, in excess of the needs of the estimated population in 1893, 1894, 1895, and 1896, and short of the possible requirements in dry years after that. They accordingly recommended that a further supply should be looked for elsewhere.

The Tweed Scheme.

The new Edinburgh water scheme is known as the Tweed scheme. The reservoir now in course of construction is in the Talla Valley, which lends itself admirably to the purpose. The catchment area is wholly pastoral, its only human inhabitants being the shepherds themselves. The trustees have acquired the whole of the catchment area, embracing some 6,000 acres. They have thus, as owners, complete mastery, and can effectually prevent pollution. The supply expected from the Talla Valley is 10 million gallons a day, and the estimated cost of the undertaking £750,000. Although this, added to the £700,000 spent since they acquired the company's rights and the interest still payable on the original purchase, makes a heavy charge, yet the increase of population in the districts served is so steady, and the consumption of water for trade purposes so rapidly increasing, that the capable treasurer of the Trust anticipates that their revenues will be sufficient to meet the new charges without any increase of the rate, at least during the construction of the works now in progress.

Though the ten million gallons at present being provided for will satisfy the immediate requirements, the entire Tweed scheme, when completely developed, is intended to secure 50 millions, and tunnels are being constructed to carry 35 to 40 million gallons a day.

Edinburgh and the surrounding districts are clearly be to congratulated upon the enterprise of their citizens, as manifested by their elected representatives, in securing far ahead a good supply of pure water, soft, clear, and wholesome.

[1] There is also a public rate of 1d. per £ on full rental.

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THE TSETSE FLY COMMITTEE.—The *Standard* publishes a brief abstract of the report of the Committee, consisting of Professor Kanthack, Mr. H. E. Durham, and Mr. W. H. Blanford, which was appointed some time ago by the Royal Society to investigate the tsetse fly disease. The investigations have shown that the parasite, which has been carefully studied by Major Bruce, R.A.M.C., in Africa, is capable of infecting a larger variety of animals than was previously known; it was found that blood drawn from a living diseased animal lost its virulence within three or four days, while material from a dead animal lost its virulence after about twenty-four hours. That part of the inquiry which was directed towards discovering a method of prophylaxis, or cure, has not been successful.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, NOVEMBER 26TH, 1898.

THE GENERAL MEDICAL COUNCIL.

The proceedings of the Council opened, as is usual, with an address from the President, which, though commendably brief, was much to the point. It gave an outline of certain matters which had taken place since the last meeting of the Council, and then foreshadowed, as far as it is possible to predict the trend of the discussions, the nature of the more important business which would engage the attention of the Council.

In the matter of the use of medical titles by persons whose names have been removed from the *Medical Register*, and in that of the abuse of the acceptance by registrars of death certificates given by unregistered persons—both of which were left in the hands of the President—some progress appears to have been made in the way of clearing the ground for further action, and there seems to be a good prospect that reforms will ultimately be effected in these directions.

The Committee appointed to endeavour to find means to prevent companies from infringing the Medical and allied Acts has not yet reported to the Council; but, judging from the tone of the President's remarks, it would seem that the negotiations have reached an advanced stage, and that real progress has been made in this direction also. Upon other questions which are to come before Council we reserve comment until the discussions have taken place; but we note with satisfaction that the success of the new edition of the *Pharmacopœia* almost rivals that of a popular novel, for 20,500 copies have already been sold.

The first business was the reception of the reports furnished annually of the results of the examinations for admission into the Royal Army Medical Corps and the Indian Medical Service. These returns—a short analysis of which is published elsewhere—possess considerable interest, since they give the results of what may be styled a post-graduate examination, and so in some sense review the work of the various licensing bodies. Attention was drawn by Dr. McVail to the very large percentage of success amongst those who held the qualification of the English Conjoint Board, a percentage by no means attained by those whose qualifications were derived from other sources. Dr. McVail did not venture on any theory to explain this fact; but, judging from the remarks of a subsequent speaker, who assured the Council that as an examiner of long standing he could speak to the fact that the candidates were known to the examiners simply by their numbers, he succeeded in conveying an impression that there was an element of intercollegiate jealousy underlying his motion that the Examination Committee should take these reports under their consideration. Dr. McVail, however, though not, it would appear, owing to any undue brevity, failed to rivet the interest of the Council upon his proposition, and the result of the show of hands was a tie, a good many members refraining from voting at all.

This division led to the first "incident" of the session, for the President complained that so many members should have abstained from recording their opinions. A desultory discussion ensued upon the well known usage that a show of hands is only a brief and convenient way of making a preliminary test, and that it may always be overruled by a poll. When the names were taken down the motion was rejected, a good many still refraining from giving their votes. As the President had given out during the previous session that in cases of a tie he should make it his practice to give his casting vote against any motion which had failed to secure a majority, considering that in such a case the *status quo ante* should not be disturbed, it so happens that the net result was the same as that which would have been attained by adherence to the show of hands as final.

Another matter of general interest was a motion by Mr. Horsley that the order of the programme should be departed from and preference given, upon the plea of urgency, to certain motions for the production of the documents relating to some penal cases upon which he wished to inform himself in such time as to enable him to bring these matters up during the present session. A certain amount of opposition was raised to this very reasonable request, which, when put to the vote, was agreed to by an overwhelming majority. It will be remembered that at the close of last session new Standing Orders were passed, which forbade access on the part of members of the Council to documents relating to penal cases without the leave of the whole Council previously obtained, and in the case of other documents without the leave of the Council, of its Executive Committee, or, in the intervals of their meetings, of the President. It was predicted at the time that this rule would be productive of grave inconveniences, and would hamper members in the discharge of their legitimate duties. On this, the first occasion on which the Standing Orders in question were put to the test of practical application, the strong commonsense of the Council asserted itself, and the leave sought was granted in every instance either unanimously or by large majorities. It is difficult to conceive any circumstances under which the most complete sources of information could properly be denied to any member of the Council who desired to make himself in the fullest degree acquainted with the business which comes or has come before that body. The outcome of the new Standing Orders seems likely to be, as it was in this instance, the wasteful expenditure of valuable time. A short experience of their working in practice will probably show the expediency of modifying them, if not, indeed, of repealing them altogether, retaining only regulations of the kind suggested by Dr. Church to ensure safe custody.

This subject of documents cropped up again on the

second day of the meeting and met with similar treatment, and led to similar results, save that several influential members of the Council strongly deprecated any attempt to hinder inquiry.

A considerable part of the time of the Council, both on Wednesday and Thursday, was spent in deliberations *in camerâ* upon penal cases and upon applications for the restoration of names which had been struck off the *Register* for misconduct.

Upon the whole the Council seems to have made a good start, and the signs point to the accomplishment of a material amount of useful work during the present session.

THE RIGHT TO PRACTISE.

On another page we publish an able commentary by a legal correspondent upon certain provisions of the Medical Acts and their interpretation. The writer enters at some length upon the history of medical legislation; but it must not be thought that this is of interest merely from an archæological point of view, for it may easily be shown that a retrospect is absolutely indispensable for a proper understanding of the subject, and indeed that it would have been far better for the profession had those who took the foremost place in furthering the Act of 1858 been possessed of, or perhaps we should rather say, made more use of, such knowledge during the negotiations which preceded the passing of that Act.

Confusion, not to say muddle, has pervaded medical legislation from the very first. Act of Parliament after Act of Parliament has been passed, more or less trenching upon the ground of former Acts, but neither repealing them nor re-enacting such portions as may have been intended to stand. Hence enactments of ancient date linger still in the Statute Book, though in practice they have fallen into disuse.

The Act passed in the third year of the reign of Henry VIII (which still stands unrepealed, and of which an account will be found in the article referred to) is as far back as we need go; but there is evidence that even prior to that date the practice of medicine and surgery was not without some sort of regulation. Without going into minute detail, and setting aside legal technicalities, it is important to note that in this and indeed in all the early enactments it was the matter of actual practice which was dealt with. This is the case in the Charters of the Colleges of Surgeons and Physicians, as well as in the Apothecaries' Act of 1815, and the question of the assumption of titles comes upon the Statute Book for the first time in the Act of 1858, in which, as is well known, it is assigned a paramount position.

In the Act of 1858 the existing enactments which prohibited practice were none of them repealed, neither were they re-enacted, so that the question seems finally to have been shirked and a golden opportunity for codifying the law and clearing away the existing confusion was lost.

It will be worth while to sketch in outline the process by which the prohibition of practice became virtually superseded by the protection of title. About the year 1835 a Bill was introduced which provided for registration, but did not inflict any penalty for unqualified practice. No one, however, seems to have had any keen interest in it, and as it was opposed by the profession, it was withdrawn. This was followed by another Bill in 1841, which included provisions relating to the chemists and druggists, and which imposed a penalty of £20 upon unqualified persons practising medicine and surgery. This Bill appears to have been wrecked by the opposition of the chemists and druggists. Next came Sir James Graham's Bill, in which title alone was protected, but this did not satisfy the profession and failed to become law. Then followed other Bills, in which the prohibition of practice was left out; to some of these amendments were set down inserting such provisions, and inflated and nonsensical speeches were made by a few members of Parliament against these amendments. Apparently no one in the House of Commons was sufficiently well posted in the matter to point out that this was no new feature, but merely a reassertion of the principles of the existing law of the land. However, these Bills were referred to a Select Committee, the amendments were not embodied in their recommendations, and the Act of 1858 was the final outcome of all these attempts. Some further facts as to the history of the many abortive attempts at legislation will be found in a series of articles on the One-Portal System: a Historical Study, published in the first volume of the Journal for 1898, pages 570, 653, 720.

Much of the most effectual work in promoting the passage of a Bill through Parliament is done by conversation in the lobby, and the records of debate by no means tell the tale fully. It is therefore impossible after the lapse of forty years to form any just opinion upon the question whether insistence upon the retention of an explicit clause forbidding practice would have wrecked the whole Bill, which after all has been productive of great benefit to the profession.

The half measure of protecting title only was, however, a compromise, and one so illogical that it passed human ingenuity so to draft the Act that the principle of protecting practice should not crop up at various points. This has been ably pointed out by Mr. Horsley, and it may be added that Section XXXVI protects the inmates of public institutions, etc., absolutely against unqualified practice, whilst the concluding phrase of Section VI in the amending Act of 1859, which allows a practitioner qualified abroad to act as medical officer to hospitals for foreigners, though not registered here, runs thus, "Provided always that such person is engaged in no medical practice except as such resident physician or medical officer." Surely herein lies a direct implication that he ought not to be in practice, and the phrase is an interference with his freedom of action in regard to practice.

The difficulties which the profession had with regard to the legislation of 1858 may have arisen in part from the fact that the various enactments which enabled a penalty of £5 a month to be recovered from those who practised without being in possession of the licence of the College of Physicians, of the College of Surgeons, or of that conferred by the Bishops, were not at all times strictly enforced, although cases of the successful prosecution of unqualified persons occurred from time to time. One contumacious individual who persisted ultimately found himself in the Star Chamber, and lost his ears. But the College of Physicians seems to have concerned itself more with

quarrels with the surgeons, and with the endeavour to arrest the encroachment of the apothecaries upon the domain of prescribing, than with the putting down of quackery; indeed, it was seriously contended that a surgeon who prescribed any internal medicine was no better than a quack, and it may well be that the efficiency of the application of the laws was due to the divided jurisdiction of the Colleges and their intense hostility and jealousy, which lasted for centuries.

At all events the medical literature of the eighteenth century teems with lamentations over the prevalence of quackery. Thus Francis Guybon, M.D., writing in 1712, has left it on record that he believed there were more quacks than legitimate practitioners, and speaks of "the cobweb fences of Physick being every day invaded." Of the ecclesiastical licences he says: "They are nowadays so far from preventing, that they are the means of bringing those mischiefs and inconveniences upon us which the statute mentions, by admitting such shoals of unqualified persons to practise Physick. That the examination previous to admission was formerly strict and severe is as certain as that nowadays persons are admitted without any manner of examination at all. . . . . The College of Physicians, 'tis true, is vested with some measure of authority, but as their authority is confined to certain limits, so through want of an enlargement of their charter, it is not at present of that use as seems correspondent to the design of its Royal institution." Finally, he recommends "that the distinct spheres of Physicians, Surgeons, and Apothecaries be limited and specified; the Surgeons restrained to their proper business, the Apothecaries confined to their shops, and all illiterate and empirical pretenders in physick suppressed. And the want of such a regulation in physick is one of the greatest flaws in our constitution."

A similar complaint is made by an anonymous writer who published in 1776 *A Letter to the Masters, Wardens, and Court of Assistants of the Corporation of Surgeons on their permitting Aliens, Apothecaries, and Quacks to Encroach upon the Province of Surgeons.* The writer, who calls himself a "Member of the Corporation," remarks: "If the powers given you are not sufficient or plain enough to direct you in your conduct; if they are embarrassed with difficulties, or open to different interpretations of the law; there wants nothing but an application to Parliament to have those grievances redressed." And, further on: "The powers granted having been judged to be dubious as to the restraining persons from practice, and thereby deterred the Corporation from putting their by-laws into force, or commencing compulsive suits at law." This writer, however, appears to have despaired of completely suppressing quackery, for he goes on gravely to propose that all "empirics, quacks, and vendors of medicines for particular diseases should be made to pay a tax to the College." He was nevertheless a person of advanced ideas, for he proposes to institute an examination and a licence for midwives on the ground that "a great part of that business remains, and always will remain, in the hands of the women"; and also suggests that "oculists, aurists, and dentists should be subject to examination in their branches: so should all surgeons professing particular skill in any part of surgery, as bonesetters, rupture curers, and curers of distorted limbs or vertebræ." The letter also contains an interesting reference to the use of titles, some persons upon receipt of letters from the clerk of the Company having "taken down their title of surgeon to evade the law and avoid examination and fine, though they have afterwards practised surgery in as open a manner as any member of the Corporation."

A study of recorded cases and of the literature of the eighteenth century renders it plainly apparent that although laws against unqualified practice did exist, they had already fallen to a considerable extent into disuse; the Colleges had no available funds, and the prosecutions, having to be undertaken in the higher courts, were expensive. Moreover, there was no sort of common qualification for all legitimate practitioners, and prosecutions which might be attributed to the intense professional jealousies which raged, such as those against surgeons for practising physic, or against the apothecaries, could not fail to offend the common-sense of the community, and to create a prejudice against restrictive legislation from the consequences of which we suffer to-day.

In fine, the prohibition of practice was the old principle of English law, and England stands practically alone in having allowed it to be to a large extent dropped. Statutes embodying it remain yet unrepealed; it was reaffirmed in this century by the Apothecaries' Act, and traces of it are to be found even in the Medical Act of 1858. May we not hope, then, that a rational principle, indeed the only rational principle, which has never been contradicted by any Act of Parliament, but of which the application has to a great extent insensibly lapsed, may be resuscitated in a workable form? The task should be the more readily accomplished now since there is in the eye of the law only one class of medical man, while the abuses which led to the discredit of the principle are no longer possible.

HUMAN AND AVIAN TUBERCULOSIS.

Greatly as our knowledge regarding the bacteriology of common diseases has recently increased, a number of problems of much practical importance remain unsolved. Among these is the relation between human and avian tuberculosis. It is well known that the course of the disease in man and mammals generally is fairly uniform, while the tuberculosis of birds presents many points of dissimilarity. At least three important series of researches, of which those of Straus and Gamaleïa are best known, afforded evidence that the bacteria causing the two types of disease are themselves different both in cultural and experimental characteristics. In air the bacillus from birds will grow at a temperature of 43° C., which is fatal to that from the human disease, while the physical characters of the cultures are in many points dissimilar. Then, again, mammalian tuberculosis has not been communicated to birds by any method of inoculation: while, on the other hand, certain mammals, such as the dog, are refractory to avian tuberculosis. The guinea-pig is resistant as regards subcutaneous inoculation, and when it succumbs after intraperitoneal inoculation of avian tuberculosis, it presents lesions which differ in character from those provoked by the human bacillus.

It is obvious that from the hygienic point of view it is extremely desirable that the relations between these two forms should be made clear, and the discoveries of M.

Nocard, communicated to the recent Congress of Tuberculosis,[1] are consequently of no little importance. M. Nocard begins by insisting that the tuberculosis produced by the two kinds of cultures is identical, and he shows that certain animals, such as the rabbit and the horse, are as susceptible to avian as to human tuberculosis, and that after a certain number of transmissions the diseases produced are indistinguishable. There seems also to be some evidence that fowls which have been tended by tuberculous subjects or allowed to peck at the tuberculous offal of abattoirs may become infected. M. Nocard has sought to reproduce experimentally the natural conditions of contagion and claims to have succeeded in establishing the identity of the bacilli of mammalian and avian tuberculosis.

In order to effect this he made use of the ingenious device, which has received but little attention from English bacteriologists, employed by Metchnikoff, Roux, and Salimbeni, in their studies of cholera toxin. This consists in sealing the living cultures in little collodion capsules and in introducing them into the peritoneal cavities of experimental animals. The germs are thus able to grow without being subjected to the attacks of phagocytes and without escaping into the tissues of the host: the collodion however permits the absorption of the body fluids for the nutrition of the bacilli and at the same time allows their toxins to pass out. By growing human tubercle bacilli in the peritoneal cavity of fowls for some months in this manner M. Nocard was able to modify them in such a way that their cultural characteristics became those of avian tubercle germs. Furthermore, when inoculated beneath the skin of a guinea-pig no general infection resulted, but when injected into the peritoneal cavity tuberculous inflammation resulted with great enlargement of the spleen and usually death. This, and the results of intravenous inoculation in the rabbit resemble closely the effects of the bacillus of avian tuberculosis; the bacilli are still, however, not pathogenic for fowls. But if some are put into a second collodion capsule, and grown for some months in another host, and then the process repeated for a third time, he found eventually that the germs had acquired the power of inducing in birds a disease resembling the tuberculosis to which they are naturally subject. M. Nocard concludes that it is thus possible to give to the bacillus of human tuberculosis the biological characters and virulence characteristic of that of the disease in birds, and that in consequence these apparently different bacilli are only two varieties of the same species.

THE RECOVERY OF THE PRINCE OF WALES.

It is with much satisfaction we are enabled to inform our readers that H.R.H. the Prince of Wales has now made an excellent, and it may really be said complete, recovery from the severe accident he met with in July last. After the interval of more than four months which has elapsed the cure may reasonably be considered permanent. It will be remembered that while descending a spiral staircase the Prince missed his footing, and the violent effort he then made to recover his balance caused a rupture of the insertion of the left quadriceps extensor muscle, which tore away with it at the same time the upper portion of the patella. At present the nature of the union which has taken place leaves little or nothing to be desired. The fragments of bone were separated by a considerable interval, which gradually became reduced, and the gap is now completely filled by strong fibrous material, which shows no sign of stretching, and has throughout been carefully prevented from yielding. Massage of the limb and passive movement of the joint were begun at a very early stage, and have been followed by the happiest results. The knee readily bends to considerably more than a right angle, and the power of active extension at the joint is very good indeed. The Prince can readily go up and down stairs, and can walk with ease and comfort, and with a scarcely perceptible halt, which, moreover, is only due to the slight embarrassment to the joint movement caused by the light splint he is wearing, and will continue to wear for a few weeks longer as a matter of precaution. So far as the injured limb is concerned His Royal Highness will be able to use it for all his many occupations as well as he did before he met with an accident which, as is well known, is not infrequently followed by serious consequences to the usefulness of the extremity.

[1] See Abstract in the EPITOME, August 27th, Paragraph 158. The paper appears in full in the *Annales de l'Institut Pasteur*, September 25th, 1898.

MEDICAL PLAGUE APPOINTMENTS FOR INDIA.

A FURTHER batch of ten medical men is being sent out to India next week for plague duty in Southern India. Twenty-five have been sent to India within the last three months, and the present addition brings the complement up to 35. It is now some two years since the Indian Government began sending out specially engaged medical men for plague duty. Most of those previously engaged have returned from India, their engagement having terminated. A few are retained, and one or two have settled in private practice. The conditions of service are: A minimum stay of six months; the ordinary time for which they stipulate to serve is nine months, but this period may be extended according to circumstances; a first-class return passage is provided, and an allowance of £25 for outfit. On arrival the medical officers of the next batch are requested to report themselves to the Surgeon-General at Madras. The pay amounts to 500 rupees (about £33) a month and travelling allowances; those engaging for a second tour of duty receive 600 rupees a month. Since the outbreak of plague in India well nigh 100 medical men have been sent to India by the Secretary of State for India for plague duty.

THE INDIAN PLAGUE COMMISSION.

JUDGING from letters and comments which have appeared in some of the Indian newspapers, it would seem that there is a certain disposition to look upon the appointment of the Special Plague Commission, of which Professor Fraser of Edinburgh is chairman, with a somewhat jealous eye. To those, however, who look at the matter from the point of view afforded by residence west of the Canal, this sensitiveness appears to be unreasonable. It must be remembered that the position produced by the continued presence of plague in India is one which must very seriously interest all European countries. The outbreak of plague at Samarkand, which has occurred since the decision to appoint the Committee was made public, is distinctly disquieting, and confirms the opinion, which has been held all along by some epidemiologists, that the risk of the extension of plague to Europe is very considerable. Cholera has followed the Central Asian route on more than one occasion, and it is impossible not to recognise that there is at least a possibility of plague following the same road. The first duty of the Commission will be to inquire into the origin of the various outbreaks of plague in India and the manner in which the disease is spread. These are points upon which further information is needed, and the

nomination of Dr. Ruffer on the Commission is evidence that the special danger to Egypt is recognised by the Imperial Government. The members of the Commission will undoubtedly find that they have opportunity during their study of the means of prevention adopted at one time or another in India, of learning much, both as to what to do and what to avoid, and there can be no doubt that their report will be of value both to the Indian and to the Home Government. The second point upon which the Commissioners are instructed to report is as to the efficacy of the serum treatment and of preventive inoculation. Both Professor Fraser and Professor Wright are well known as investigators in this department of experimental medicine, while as they have not, so far as we are aware, published experiments on the use of serum or other immunising fluids in plague their report is likely to be received as both authoritative and impartial.

THE SCHOOL OF TROPICAL MEDICINE.

The arrangements for providing a school of tropical medicine at the branch hospital of the Seamen's Hospital Society, Victoria and Albert Dock, London, E., are, we understand, making satisfactory progress. A subcommittee, consisting of Mr. Nairne, Chairman; Sir C. Gage Brown, K.C.M.G.; Mr. Macnamara, Dr. Lauder Brunton, Dr. Stephen Mackenzie, Dr. Manson, Dr. James L. Maxwell, Mr. Johnson Smith, F.R.C.S.; Mr. William Turner, F.R.C.S.; and Mr. James Cantlie, F.R.C.S., is now engaged in drawing up a constitution for the school, and defining the curriculum. The new buildings will, it is expected, be completed by October 1st, 1899, and it is announced that Mr. Chamberlain intends to preside at a festival dinner to be held during the coming parliamentary session. A valuable collection of paintings of skin diseases and ulcers common in British Guiana has been presented to the school by Dr. D. Palmer Ross, C.M.G., Surgeon-General of that Colony. The paintings were executed between the years 1837 and 1842. In many instances they are remarkably accurate. We are glad to see such prompt and practical interest in this newly-founded school, and hope that Dr. Palmer Ross's example will be followed by others who may have the opportunity to contribute to the library or museum.

ABORTIFACIENT ADVERTISEMENTS IN NEWSPAPERS

A striking illustration of the nefarious schemes which may be rendered possible by the laxity with which certain newspapers admit advertisements obviously offering for sale drugs for the purpose of procuring abortion, is afforded by the case now proceeding at the Mansion House. Three men, named Chrimes, but bearing different aliases, were charged before Mr. Alderman Newton, on November 21st, with having, in October last, sent and uttered, and caused to be received, knowing the contents thereof, a letter accusing Kate Clifford of a certain crime punishable with penal servitude, with intent to extort money. Mr. R. D. Muir, who was instructed by the City Solicitor, appeared for the prosecution on the part of the Corporation of London. It appeared from the opening statement that it is charged that the prisoners advertised at one address "The Lady Montrose Miraculous Female Tabules," which were said to be "acknowledged by ladies throughout the world to be worth a guinea per tabule." The price of a box was 4s. 6d. The counsel stated that having obtained a long list of names of persons who applied for these tabules, one of the defendants, under the alias of Charles J. Mitchell, caused to be issued a large number of letters to the women who had applied for the tabules. The letters stated that he (Charles J. Mitchell), who called himself a "public official," had evidence that the woman had committed, or attempted "to commit, the fearful crime of abortion by preventing, or attempting to prevent," herself giving birth to a child. It was added that either of these constituted a criminal act punishable by penal servitude, that legal proceedings had already commenced, and that the woman would be arrested if the sum of two guineas was not sent before a certain day. Counsel, in commenting upon the advertisement in newspapers of "Lady Montrose Miraculous Female Tabules," is reported by the *Times* to have made the following observations: "It was surprising that any newspapers which claimed to be respectable should descend to publish palpable inducements to crime such as these. The police desired him to say that journals so acting brought themselves within the law if, after one warning, they continued to publish that class of advertisements, and they could be indicted as accessories before the fact, or for inciting to the commission of a serious crime. He hoped that warning would be taken to heart by journals which had up the present disgraced their pages and their profession in that way." After hearing evidence, the Alderman remanded the prisoners, refusing bail.

GLYCERINATED CALF LYMPH.

The President of the Local Government Board has made the following minute dated November 16th: "I desire to place on record an expression of the value which I attach to the labours and researches of Dr. Sidney Monckton Copeman in connection with the preparation, by the aid of an aqueous solution of glycerine, of a vaccine lymph which is free from harmful organisms. An indication of the value which is attached to Dr. Copeman's researches is to be found in the fact that Parliament has decided by statute that this form of lymph shall for the future be used in this country.—H. Chaplin." This is a just recognition of Dr. Monckton Copeman's valuable services and of the practical importance of the result of the prolonged researches which he conducted.

SOME ASPECTS OF SANITARY ADMINISTRATION IN LONDON.

We have before us a large number of annual reports of medical officers of health of districts within the City and County of London, and are much struck by the diversity of character which they present. Not only are they divergent in style—a matter which is not to be deplored, since individuality is generally essential to originality and freedom of treatment—but they differ also, greatly, in regard of the relative importance attached to one and another subject and to one and another problem in local sanitary administration. It would be invidious to distinguish by reference to localities, but one could wish that some of our London health officers were not contented with the actual statement in brief fashion of vital statistics and sanitary conditions, as though a dutiful regard to the strict letter of the requirements as to reporting were all that should be expected. Several reports, on the other hand, contain discussions of matters pertinent to London as a whole, which should be discussed by the central body. Among the varied and numerous phases of self-government depicted in the reports, we can find space for even brief comment on a few only. Thus, we find Dr. Paddock Bate, of Bethnal Green, reporting 6 per cent. of all notified infectious cases as certified in duplicate, and deploring the necessity of the waste of public funds thus entailed. But Dr. Bate has to chronicle other unfortunate experiences as to notification in the shape of erroneous diagnoses, persistent certification, under circumstances held to be suspicious of *mala fides*, failure to notify, and so on. We are glad to find, however, that in relation to notification the London School Board have, according to Dr. Harris, of Islington, now taken up an attitude towards health authorities that is certain to be helpful alike to education and public health. The obstructions heretofore placed in Dr. Harris's way in regard of measles (a disease not notifiable in the ordinary way in

London) when he desired to ascertain the state of health of individual components of the Islington board schools have been removed; and the information now given enables house-to-house visitation to be made of infected families, with a consequent reduced period of closure of schools, and an added safety in regard of scholars allowed to return. Turning now to the important subject of sanitary inspection, we find Dr. Yarrow, of St. Luke's, laying stress, as well he may, on the overburdening of the small staff at his command. With a population of over 41,000 in such a district there are but two sanitary inspectors, a sort of general assistant, and a clerk, the two inspectors being also required to put in two attendances at office daily. Having a multiplicity of duties to fulfil, and all too little time at their disposal, it is small wonder that the staff find themselves unable to devote the hours necessary to a systematic house-to-house inspection of the parish. Yet not in St. Luke's alone is such systematic visitation essential; and the whole question of the staffing of London vestries and Boards needs to be adjusted on some comprehensive basis. It is of vital importance that districts should be kept under continual inspection, not by visits paid merely when actual nuisance has already arisen, but with a view to the prevention of nuisances and the contravention of by-laws.

THE SMOKE NUISANCE.

The first London fog has come and brought its usual train of newspaper letters, leading articles, and suggestions for improvements. Very opportunely with it has come a conviction secured by the Hammersmith Vestry. On November 17th London was enveloped in a fog of peculiar interest. The familiar London fog appears to consist of river mist mixed with smoke, but on this occasion the sky was darkened rather by a smoke pall which hung over the city than by a saturation of the atmosphere with the misty, sooty, sulphurous mixture with which we are familiar. In a vigorous letter to the *Times*, Sir William Richmond bewails the laxity of the vestries in enforcing the existing law, and suggests the formation of a society whose business it shall be to note and report infringements of the Smoke Act to the vestries. One of the causes of the present laxity to which attention has been called by a recent report of the General Purposes Committee of the London County Council is that the process of serving a summons on a smoke offender has unfortunately fallen into disrepute owing to the unwillingness of the magistrates to convict. The means for dealing with the smoke nuisance provided by the law as it at present stands are of a most complex character, and owing to this and to a want of unanimity in interpretation of the enactments it is very difficult to secure a conviction. Whether this is more the fault of the magistrates or of the law is not quite clear.

THE ARMY ENTRANCE EXAMINATIONS.

The statistics presented to the General Medical Council by the Director-General of the Army Medical Service as to the examination for admission to the Royal Army Medical Corps held last August, tend, so far as they go, to confirm the opinion first expressed in the British Medical Journal by Mr. Edmund Owen last June, and since confirmed by many other correspondents, that the examination requires revision. At the examination in August, 26 candidates presented themselves, of whom 16 passed, 4 "did not obtain qualifying aggregate," and 6 were rejected. Of the 6 who failed, no fewer than 5 were found deficient in anatomy and physiology, and of these 1 was deficient also in chemistry and pharmacy, and 1 was deficient in surgery, as well as in anatomy and physiology; 1 unsuccessful candidate is returned as deficient in chemistry and pharmacy only. No fewer than 16 of the candidates held the diplomas of the Conjoint Board in England; of these, 11 passed, 2 did not obtain the "qualifying aggregate," and the 3 others who were rejected were all found deficient in anatomy and physiology. At the examination for admission to the Indian Medical Service held at the same time there were 28 candidates for 20 vacancies; 3 of the unsuccessful candidates were found qualified, 3 were rejected as "deficient in aggregate of compulsory subjects," 1 was rejected as deficient in anatomy and physiology, and 1 as deficient in medicine and in chemistry and pharmacy. If the candidates are classified according to the countries in which they obtained their diplomas, it appears that the 14 candidates holding English diplomas were all successful; of the 12 candidates who obtained their qualifications in Scotland, 6 were successful and 6 failed; while both the candidates whose qualifications were obtained in Ireland failed. At the examination for the Royal Army Medical Corps there were 17 candidates holding English diplomas of whom 11 were successful, 7 who held Irish diplomas of whom 5 were successful, and 2 who held Scottish diplomas neither of whom was successful. One of the successful candidates who held an Irish diploma was also a graduate in Medicine of a Scottish University.

THE PHYSIQUE OF BOYS AT PUBLIC SCHOOLS.

In the columns of the *Times* there recently appeared from the Headmaster of the Bristol Grammar School a pertinent contribution to the mass of correspondence initiated by the letter of "M.D.," on which we have already commented. Side issues of all kinds are wont to be introduced into every discussion of this nature; and Mr. Leighton points out that these should not be confused with the questions originally propounded. He justly observes that, while "M.D." related certain observations which tended to show that a very large proportion of the boys who enter public school life are, at that time, in a state of health far from satisfactory, he did not say anything to indicate whether such boys afterwards improve, or get worse, or remain stationary, and he maintains that the facts thus recorded do not reflect any blame on the management of public schools themselves. We have already indicated that there is abundant evidence of the distinct and continuous improvement which the great majority of the boys who exhibit the signs of ill-health described on entrance fortunately show under the healthy and health-giving conditions which nowadays obtain in English public schools. So far, therefore, as the masters of such schools are in any way "responsible," they are responsible for the bettering rather than for the deterioriation in health of the pupils under their *régime*. Mr. Leighton further practically paraphrases some of our previous remarks in his statement that the real blame for the state of things which "M.D." revealed lies at the door of the parent and of the preparatory schoolmaster, and in this he is supported by Mr. Cecil Hawkins of Haileybury, who, in a very able letter on the subject, quotes his own experience to show the marked improvement in physique which results from even three terms' submission to the care and training practised at a good public school. Mr. Hawkins has devoted a great deal of time and care to the collection and collation of statistics bearing on this subject, and his experience induces him to enter a caveat against the wholesale admission of all such data as they stand. In comparing the statistics furnished by different observers, it becomes impossible to ignore the influence exerted by the personal equation in the several cases; and it would seem that, in such apparently simple matters as chest and height measurements for instance, the errors thus introduced may, to a large extent, modify the numerical conclusions arrived at; so that the only strictly comparable results are those obtained by the same observer, whose researches have embraced a sufficiently extensive series of cases, and have been conducted by

himself with the same minute attention throughout. We can most of us endorse the apt comments made by both Mr. Leighton and Mr. Hawkins upon the great question of the feeding of schoolboys at school, on which most important matter more than one article has appeared in our own pages; though we would again add that in the feeding of the schoolboy at home—and that perhaps even more seriously before he attains the age and status of a schoolboy—is to be found the origin of most of the good, as of the ill, which declares itself in later years. Again, we would cordially echo Mr. Leighton's assertion that, *pace* Lord Kinnaird, "the great requisite in a house master—as in a head master—is not a smattering of medicine." No man can spend years in the successful "education"—in the keen appreciation, the continuous observation, and the wise training of all the many-sided variations of the young human mind and body, and fail to acquire a considerable knowledge of the shortcomings of both; just as his wisdom is largely shown in the successful correction of their failings and the strengthening of their weakness. But no man can successfully practise two arduous professions at one and the same time, if only because he cannot keep abreast of the constant advances made in each; and he will generally succeed best in his own, as he realises more clearly its true relations and interdependence with its congeners. And this the schoolmaster may well do in connection with medicine, without laying himself open to the sarcasm which a fashionable physician once evoked from a celebrated statesman. It is told that, in the course of a conversation at his club, Sir Henry Holland once delivered himself of the well-worn dictum that "every man by the time that he reaches the age of 40 is either a fool or a physician;" the statesman, looking up from the newspaper he was reading, quietly remarked: "Can't he be both, Doctor?" The difference is just that between a little knowledge and much wisdom.

THE ROENTGEN SOCIETY.

The annual *conversazione* of the Roentgen Society was given by the President and Mrs. Mansell Moullin at St. Martin's Town Hall on Monday, November 21st. An inspection of the exhibits ranged round the hall emphasised the fact—which many who commence working at the X rays very soon realise for themselves—that to make any advance in the knowledge of Roentgen radiations is by no means an easy matter. The present state of knowledge and practice is certainly represented by the Roentgen Society, and we may take it that the exhibits represented the utmost limits to which the process has been brought; yet, setting aside improvements in practical technique, the matter has not been pushed a step further than when Roentgen gave his remarkable discovery to the world. The fact is that Roentgen's discovery was made, as he acknowledges, by chance, and in a region of physics of which at present only the fringe has been touched. It must not, of course, be imagined that the matter has stood still for the last two years; the beauty of many of the exhibits bore testimony to this. Mr. Mackenzie Davidson showed his beautiful method of localisation of foreign bodies and some really practical applications of his stereoscopic radiographs. The same worker has also solved the difficulty of photographing stone in the kidney. This he does by the ingenious method of eliminating movements due to respiration by only exposing when a recording lever shows absolute rest of the abdominal parietes, the patient holding his breath the while. Professor Silvanus P. Thompson, F.R.S., demonstrated experiments with the Tesla oscillator, and Mr. Campbell Swinton showed a collection of tubes which he has used in his researches. There were many other exhibits too numerous to mention. The results which Mr. Wimshurst has obtained with his influence machine are extremely good; the steadiness of the shadows given on a screen by twelve 20-inch plates is remarkable.

SWEET SPIRIT OF NITRE.

Dr. Bernard Dyer, in his quarterly report as public analyst to the Leicestershire County Council, states that of the 107 samples which were analysed during the quarter, no fewer than 51 were samples of sweet spirit of nitre, purchased from as many different chemists and druggists within the county. The object in obtaining so many samples of this preparation appears mainly to have been to bring into notice the fact that, when sweet spirit of nitre is demanded, the spiritus ætheris nitrosi of the *British Pharmacopœia, 1898*, must be given, since sweet spirit of nitre is now the official synonym of that preparation. It may not be generally known that a very old variety of spirit of nitrous ether, or rather of "sweet spirit of nitre" (spiritus nitri dulcis, *Pharm. Lond.*, 1746), still sold in Great Britain, is made from rectified spirit and nitric acid, as ordered in the *London Pharmacopœias*, except that the distillation is continued until the product has a specific gravity of 0.850. It may contain little or no ethyl nitrite, but is popular as a stimulant. The public taste will now have to adapt itself to the requirements of the *British Pharmacopœia, 1898*, and become accustomed to this nineteenth-century sweet spirit of nitre. The results of the analysis made by Dr. Dyer speak well for the integrity and care of the chemists of Leicestershire as a body, for out of 51 samples purchased, only 7 were found to be of such a quality as to call for grave complaint. Sweet spirit of nitre is an alcoholic solution containing ethyl nitrite, aldehyde, and other substances. The great tendency of aldehyde to become converted into acetic acid, and the great volatility of ethyl nitrite renders sweet spirit of nitre very unstable, so that great care is required in its storage in order to maintain the pharmacopœial standard. It should be kept in small, well-stoppered bottles, and in a cool, dark place.

"DESCRIBED AS A SURGEON."

A curious instance of the way in which persons charged with offences are permitted to be described as members of the medical profession is afforded by the case of one Davies, who pleaded guilty this week to charges of forgery and fraud in connection with researches into the pedigree of Lieutenant-Colonel Shipway. The prisoner, who was sentenced to three years' penal servitude, was described in most of the morning papers as a surgeon, though some papers have the grace to put the word in inverted commas. According to the evidence of Inspector Brockwell, who was complimented by the Recorder on the way in which the case had been presented to the Court, the prisoner had been an assistant schoolmaster and teacher for the principal part of his life; he had described himself as a B.A. of Oxford, which he was not, and a diploma was found in his house which he said was conferred by the University of Heidelberg, but a communication sent to Heidelberg elicited an answer to the effect that the diploma was a forgery. Davies, in fact, appears to have had no sort of connection with the medical profession.

COUNTRY COWSHEDS.

From the *Salisbury Times* we learn that the Wiltshire County Council by a somewhat narrow majority resolved to appoint a medical officer at a salary of £500 a year. The carrying of so important a matter, even by the small majority of two votes, is at least a sign of sanitary progress. Five years ago a similar resolution was defeated. Mr. Story-Maskelyne, who moved the resolution, while enumerating the other well-known reasons for making such an appointment, said some wise words on the subject of milk. Speaking as a farmer, he said the towns were waking up to the importance of the dangers arising from their country milk supplies. He thought that before a heavy hand was laid upon them by the Legislature they ought to set their house in order. This they had not

done hitherto, for they did not know how. Proper advice in this subject could only come from a properly trained person. He believed great improvements in cowsheds and cowyards could be made without going to the great expense of the measures recommended by the Local Government Board. While he would have liked to have offered a larger salary, to make sure of a good man, he had no doubt that when they did get a good man, and paid him properly, his cost would be repaid in the improvement in the general health, wellbeing, and happiness of the county. There can be very little doubt that the trend of public opinion—at least, the opinion of the public who consume the milk—is increasingly in favour of a stronger control of the country cowshed. Excellent as are many of the district medical officers, they can ill afford the time, and they are seldom sufficiently backed by their local authorities, to secure the proper construction of, or maintain a proper supervision over, the cowsheds of their districts. A certain measure of uniformity of requirement might be hoped for if the care of these matters was thrown upon the counties. A milk dealer in a large town, if he finds the urban provisions irksome, has in some cases only to cross the borough boundary to enjoy the liberty of keeping his cattle as dirty as he pleases. When the counties of England generally follow the good example set, though perhaps somewhat tardily, by Wiltshire, we feel pretty confident that greater and more useful powers will be extended to them. Of such none is probably of more consequence to the general public, and indirectly by increasing confidence in the article sold to the local farmers, than a steady and uniform control of the dairy farm.

THE INVESTIGATION OF RINDERPEST IN NDIA

Mr. Lingard, Professor of Comparative Pathology and Bacteriology, Civil Veterinary Department of India, points out, in his annual report, that owing to the unfurnished state of his laboratory at the commencement of the year, it was impossible to commence on rinderpest, which at that time was so rife in certain parts of India. He therefore deemed it advisable to make investigations in the field, with the result that in one district in North East Bengal alone he found that 1,400 animals, bovines and buffaloes, had succumbed within a period of a few weeks. At a later date—that is, in May—Professors Koch, Gaffky, and Pfeiffer joined Mr. Lingard and Dr. J. W. W. Stephens, the assistant bacteriologist, and commenced an investigation that had for its object the determination whether or not it was possible to carry out in India the same protective methods that had been adopted, so far successfully, in South Africa. After making a careful examination of some 22 animals experimentally inoculated with rinderpest material brought from Tanda, Professor Koch gave it as his opinion that the pathological changes found in the intestines were identical with those found by him in animals dead of rinderpest in South Africa, proving that the Indian and South African diseases are identical. A number of experiments were then carried out with the object, if possible "(*a*) to reproduce the disease by inoculation of blood in order to obtain a supply at a later date for proving the immunising power of the bile; (*b*) to reproduce the disease with nasal discharge and dung; (*c*) to protect animals against rinderpest by the subcutaneous injection of bile, and other modified processes." Considerable difficulty was experienced in keeping the rinderpest blood sufficiently virulent. At first it produced death in the usual time after the disease had run its characteristic course, but on reinoculations into other animals this blood gradually lost its power of reproducing rinderpest, and finally became so attenuated that it almost failed to produce symptoms. Between June 15th and the end of October three lots of blood thus became non-virulent, so that on each occasion those carrying on these experiments were left without material with which to work. The remainder of the report is occupied with a short account of the difficulty with which the investigators have had to contend in their laboratories, and with a description of the improvements made; whilst in a series of appendixes we have first a Preliminary Note upon Seventy-one Cases of Filaria Oculi in Equines; secondly, an account of Extraocular Filariasis in Equines and Bovines; and, thirdly, a Short Note on a Case of Syngamus Laryngis, a disease corresponding to the "gapes" of birds.

THE MORISON LECTURES AT THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.

The Morison Lectures were again delivered this year at the Royal College of Physicians, Edinburgh, on November 7th, 9th, and 11th, by Dr. Alexander Morison, of London. The subject of the lectures was The Relation of the Nervous System to Disease and Disorder in the Viscera. The first lecture was devoted to a consideration of the still scanty pathology of the subject. In speaking of the condition of the nerves in hypertrophied organs, Dr. Morison took the pregnant uterus as the most pronounced type of physiological hypertrophy, and showed preparations which induced him to agree with John Hunter that there was no—or only an apparent—enlargement of the nerves in that condition. The capacity of the intrinsic nervous system to adapt itself to the greatly enlarged organ was shown to be dependent upon a well-marked tortuosity of the nerves, which diminished as the uterus enlarged. The second lecture was devoted to Disorders of Visceral Sensibility, and Dr. Morison, in contesting prevalent views of nerveless rhythmicality, showed specimens of ganglia in the cardiac apex and rich innervation of the pial vessels—structures hitherto supposed to be unendowed with nerves by many observers. The lecture concluded with a reference to the mental effects of visceral disease and disorder. The third lecture dealt with Disorders of Visceral Motion, the heart being taken as the type of viscero-motion, but other forms of motion, secretory, excretory and metabolic, were brought into line with the more obviously mobile organ. The latter portion of this lecture was devoted to a more particular consideration of the receptive, retentive, or connective, and projective "organules" of the brain, which led the lecturer into a consideration of some psychological problems, such as the nature of thought and consciousness, and the relation of body to mind.

ANNUAL DINNER OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The annual dinner of the Royal College of Surgeons took place in the Hall of the College on Friday, November 18th. Professor Chiene, the President, was in the chair, and there was an attendance of about 70 Fellows and guests. Among the guests were Lord Stormonth Darling, one of the Senators of the College of Justice; the Lyon King-of-Arms, Mr. J. Balfour Paul; the President of the Royal College of Physicians (Sir John Batty Tuke), Professor Simpson, Dr. Hector Cameron, the Very Reverend Dr. Scott, Fleet-Surgeon Corrie, Colonel Alexander, and the Senior President of the Royal Medical Society (Dr. MacNair Scott). A letter was read from Sir John Struthers, the Vice-President, regretting his inability to be present owing to feeble health. This is the second dinner under the present President, and it was an entire success. Dr. John Smith, the "Poet Laureate" of the College, sang one of his own songs, "The Clinical Examination," and the toasts were ably proposed and replied to by the various speakers.

THE INVENTION OF SPECTACLES.

A short time ago we mentioned that the invention of spectacles was attributed to a Florentine noble, Salvino (not Savino, as printed) degli Armati, who died in 1317. The question appears to excite considerable interest, for

we note that it is being discussed in some of the American medical journals. In a recent issue of the *New York Medical Journal* a statement made in the *South-Western Medical Record* was quoted to the effect that "It is to Charles II of England that the world owes the discovery of lenses as an aid to vision." Dr. Edmond E. Blaauw, of Buffalo, not unnaturally scandalised by this statement, writes, giving a reference to Dr. J. Stilling's *Grundzuge der Augenheilkunde* (Vienna and Leipzig, 1897), page 81, "where we find the following sentences: 'For the first time Konrad von Würzburg and Roger Bacon (and previously the Papist Amiss) refer to the use of magnifying glasses for reading and writing. The invention proper of convex glasses happened in the beginning of the fourteenth century, and it is ascribed to the Florentine Salvino d'Armati, as his well-conserved epitaph to-day shows. The invention was nothing else but two ordinary magnifying glasses connected with a joint and kept in the hand for reading, etc., and the concave glasses are first to be found in the middle of the sixteenth century.'" We should be glad to know something more of the ingenious "Papist Amiss" here referred to, who, as Count Smorltork would say, "surprise by himself." We hope we shall not be accused of flippancy if we suggest that there is something "amiss" in the name of this too previous "Papist." With regard to the use of glasses as aids to vision, we may mention that Pliny, in his *Historia Naturalis* (Lib. xxxvii, c. 5), states that concave emeralds were employed in antiquity to "concentrate the sight" (*colligere visum*). Through such a "glass" Nero used to watch the fights of gladiators. The value of concave emeralds for this purpose was so fully recognised that it was forbidden to cut the stones.

OLD-AGE PENSIONS.

The adoption of a system of old-age pensions in New Zealand has aroused fresh attention to the subject in England. The New Zealand Bill provides that every person of the age of 65 and upwards, of good moral character, whose yearly income does not exceeded £34, and who has resided for twenty-five years in the colony, shall be entitled to a pension of £18 per annum. On the other hand in England, the Committee on Old-age Pensions, under the chairmanship of Lord Rothschild, whose report was published this year, after carefully considering more than a hundred different schemes, came to the conclusion that none of the schemes submitted to them would accomplish the objects in view. The Committee expressed itself unable to devise any proposal free from grave inherent disadvantages. Mr. Chamberlain, according to his recent speech at Manchester, hopes that the present Parliament may be able to do something to assist and to stimulate provision for old age, and "to secure the veterans of industry from the worst consequences of failing power." He says he will not take any scheme for old-age pensions into consideration unless it fulfils three conditions. These are: (1) That no compulsory deduction from the wages of the working classes be made as it is made in the German system; (2) that the State alone shall not furnish, at the expense of the taxpayers, a pension to everybody who reaches the pension age of 65; (3) that the scheme shall encourage thrift in the classes to be relieved. Allusion was made to the scheme propounded by someone who thinks that the financial difficulty can be easily solved, and that the required 30 millions a year can be raised by a tax on bicycles. Sir H. C. Burdett's scheme, which was noticed in the British Medical Journal of March 13th, 1897, page 674, is really the application of the principles of the Royal National Pension Fund for Nurses, of which he was founder, to a national system for old-age pensions. In his recent paper before the Royal Statistical Society, Sir Henry Burdett asserted that the Poor-law system is already showing signs of breaking down, and he concludes that the mean annual expenditure on each individual pauper in the metropolis is at present fully equal to the sum required to maintain a respectable person after 60 years of age in independence and comfort in his own home. His scheme would reduce and supplement the present Poor-law system. From figures adduced he arrived at the conclusion that for half the expenditure on the Poor-law system in London, and for two-thirds of that in England and Wales generally, an adequate pension could be provided on the attainment of the age of 60. The poor would be divided into two classes: (1) respectable poor persons, and (2) the immoral and thriftless poor. For the relief of the latter class a separate system would have to be maintained. He estimates that under his scheme the sum to be provided from taxation or rates would be probably nothing, or at any rate relatively unimportant, whilst thrift would be encouraged by the provision afforded to deserving persons. He proposes that any Old Age Pension Act should confer powers upon any county, district, or parish council which chose to adopt it. It could likewise be made acceptable to friendly societies by incorporating certain portions of what are known as the Bristol scheme. Such an Act should also contain permissive powers enabling employers, at the request of their employees, to collect at the pay table each week the savings of the latter, and to hand them over to the pension authorities for proper investment. Such a scheme as Sir H. Burdett's has much to recommend it from many points of view. At any rate, it will be interesting to watch the result of the adoption of old-age pensions in New Zealand.

MEDICAL SCHOOLS IN NEW YORK.

The report of the Regents of the University of the State of New York for 1897 shows an increase since 1893 of more than 100 per cent. in the total property, and of nearly 100 per cent. in the annual receipts, of the medical schools of the State. Since that time even this great increase has grown still larger, especially in Greater New York. The University and Bellevue Hospital Medical College has a fine new building erected in 1897 by the Faculty of the Bellevue Hospital Medical College. The College of Physicians and Surgeons, with the Vanderbilt Clinic, doubled in size by the additional gift in 1895 of 350,000 dols., and the Sloan Maternity Hospital, greatly enlarged in 1897, now constitute the most complete plant in existence for scientific medical education. The Polhemus Memorial Clinic has been completed and thoroughly equipped since the date of the report, providing accommodation for the out-patient and medical school departments of the Long Island College Hospital. The intention of Mrs. Polhemus that everything pertaining to the construction and equipment of this building should be of the most approved type has been thoroughly carried out. The New York Medical College and Hospital for Women has just opened its handsome new building in West 101st Street. Last, but not least, 1,500,000 dols., the greatest amount ever devoted by one person at one time to purposes of medical instruction, has just been given to build, equip, and endow the new medical department of Cornell University in New York City. It is particularly gratifying to add that this splendid donation is said to have been given by Colonel O. A. Payne, from a sense of deep gratitude to medical science for his recovery from a long and dangerous illness.

MANNA.

A French investigator has recently published the results of research into the origin and composition of the manna of the Bible, which even to the present day the Arabs, when traversing the desert, rely on as a means of subsistence both for themselves and their camels. He maintains that it is a kind of mushroom, which under favourable conditions of soil attains a considerable size, many specimens weighing a pound or more. It has an

agreeable taste, and is slightly sweet. It contains 32 per cent. of starch, 14 per cent. of nitrogenous matter, 16 per cent. of water, together with salts and some other unimportant substances. When eaten freely, it is said to exert a laxative action. These statements certainly require confirmation, for it is usually supposed that the manna of Scripture answers in its description very closely to the tamarisk manna, the Persian *gaz-angubin*, which exudes in June and July from the slender branches of Tamarix gallica *var.* mannifera. In the valleys of the peninsula of Sinai, especially in the Wâdy-el-Sheikh, the manna is collected by the Arabs and sold to the monks of St. Catherine, who supply it to the pilgrims visiting the convent.

DR. J. B. RUSSELL.

DR. J. B. RUSSELL, who recently resigned the position of Senior Medical Officer of Health for Glasgow, upon his appointment as member ef the Local Government Board for Scotland, was entertained at dinner, on November 22nd, by the Managers and staff of the Western Infirmary, Glasgow. The chair was taken by ex-Bailie Dickson, the Chairman of the Western Infirmary, and the croupiers were Mr. James Boyd and Professor McCall Anderson. The Chairman, in giving the toast of the health of Dr. Russell, said that he had been an educator, not only of Glasgow but also of Scotland, and of the rest of the world. The death-rate of Glasgow, which had been 42 per mille, had fallen to 25, and was still going down. His services to the Western Infirmary, as a Manager, had been of the greatest value, and the Managers greatly regretted that they were to be deprived of his co-operation. Dr. Russell, in his reply, said that he had always felt that to give to the institutions of Glasgow, which helped to care for the great multitude of her stricken children, whatever special knowledge he possessed and time he could spare, was a legitimate part of his duty as medical officer of health. While expressing the opinion that infectious diseases should be treated in rate-supported hospitals, he defended the principle of the maintenance of general hospitals by voluntary effort. The system cultivated a habit of giving and strengthened an element of character which made the man a better citizen, and radiated its influence throughout his social relationships. It is announced that in recognition of the exceptional services rendered to Glasgow by Dr. Russell in various capacities, and for the last twenty-three years as Medical Officer of Health, the Corporation has resolved to pay to him a pension of £250 a year.

AN ANTIVACCINATION MISSION IN AMERICA.

WE learn from the New York *Medical News* of November 12th, that Mr. William Tebb, the Kensit of antivaccination, is now in the United States denouncing what the dissentients of the Royal Commission call the "rite" of vaccination. He is said to believe it to be his mission to start an agitation in that country against the regulations of health boards making it compulsory for children to be vaccinated before they are admitted to the public schools, and also against the Federal law which requires all immigrants to be vaccinated. He is also said to be arranging that the next International Antivaccination Congress shall be held in the States. Our contemporary reminds Mr. Tebb that deeply rooted in the minds of the American people is the conviction that "You can fool some of the people all the time, and all of the people some of the time, but you can't fool all the people all the time!" But Mr. Tebb may justifiably think he has an altogether exceptional skill in fooling.

MEDICAL LIBRARIES OF THE UNITED STATES.

IN the *Philadelphia Medical Journal* Dr. C. D. Spivak, of Denver, Colorado, states that the father of general public libraries in America, Benjamin Franklin, also laid the foundation of the first public medical library in the United States—namely, the Library of the Pennsylvania Hospital in Philadelphia, of which institution Franklin was secretary for many years. This library was established in 1760. To the College of Physicians of Philadelphia belongs the honour of having established the second medical library, in 1788. In the present century the number of libraries has steadily increased, till at the present time it is 120. It was not until 1863, when Dr. J. S. Billings became custodian of the library of the Surgeon-General's Office at Washington that that famous collection began to grow. Owing to the zeal of individual librarians medical departments have been organised in 45 public libraries. Dr. Spivak points out that the organisation and growth of medical libraries have been in inverse ratio to the population of cities. The three cities in the United States which have more than 1,000,000 of population have each a medical library; of 4 cities with a population of more than 400,000, 2 have medical libraries; of 12 with a population of over 100,000, 6 have libraries; of 6 with a population of over 70,000, 2 have medical libraries; of 11 with a population of over 50,000, 3 have medical libraries; of 30 with a population of over 30,000, only 3 have libraries. Massachusetts has one library to every 203 medical practitioners; New Hampshire, the District of Columbia, Rhode Island, Louisiana, New York, Colorado, Maryland, Illinois, Ohio, Oregon, Minnesota, Pennsylvania, and Michigan have each 1 library to less than 1,000 practitioners; while Iowa, Kentucky, Texas, Indiana, Missouri, and Connecticut have 1 library each to 3,000, 4,000, and 5,000 practitioners. Arkansas, Florida, Mississippi, Nebraska, North Carolina, Vermont, Wisconsin, Dakota, New Mexico, Oklahoma, and New Jersey have none. The aggregate number of volumes in all the libraries is 659,116. The Washington Library is the only one that has more than 100,000. Philadelphia and New York have probably by this time reached that number; Boston will soon have 80,000, thanks to the munificence of Dr. Nicholas Senn: Chicago has 50,000; Cincinnati has 30,000; Baltimore, Brooklyn, New Orleans, Buffalo, and Worcester have each more than 10,000. There are about 70 other cities each of which possesses more than 1,000 volumes. Dr. Spivak says that there are 165 medical colleges and 120 medical libraries in the United States. He thinks that the superfluity of professors is compensated for by the large number of medical libraries, which he considers to be a unique feature of the Great Republic.

THE DISEASES OF THE PINEAL GLAND.

WE are asked to state that the meeting of the Pathological Society on Tuesday, December 6th, will be devoted to the consideration and discussion of tumours and other morbid lesions of the pineal body. A certain number of exhibits have already been promised, but other specimens or communications bearing on the subject will be welcomed. Notice should be sent to the Junior Secretary, Pathological Society, 20, Hanover Square, W.

DR. HALE WHITE requests us to state that the rumour which has found its way into print to the effect that he is about to resign his appointments at Guy's Hospital is entirely without foundation.

THE monument to Professor Charcot, which is to stand in front of the Salpêtrière, will be unveiled on Sunday, December 4th, at 10 A.M. M. Leygues, Minister of Public Instruction, will preside at the ceremony.

THE Committee appointed under the University of London Act, 1898, has commenced its sittings. The Committee consists of Lord Davey (Chairman), the Bishop of London, Sir William Roberts, Professor Jebb, Professor Michael Foster, and Mr. E. H. Busk, with Mr. Bailey Saunders as Secretary. The office of the Commission is No. 32, Abingdon Street, Westminster, S.W.

THE MEDICAL ACTS AND THE MEDICAL PROFESSION.

[From a Legal Correspondent.]

Protection of Practice or Title?

As is well known, Mr. Victor Horsley has recently put forward an interpretation of certain provisions of the Medical Acts which differs in most important respects from that hitherto adopted and acted upon. His arguments will be found in an article published as a supplement to the *Clinical Journal* of February 9th, 1898, an analysis of which appeared in the British Medical Journal of February 19th, 1898, p. 520. And in the address to the North West London Clinical Society, which was published in the Journal of November 5th, 1898, Mr. Horsley contends that the existing Medical Acts (1858 and 1886) if properly interpreted, do, in fact, afford a far larger measure of protection against the quack or unregistered practitioner than has hitherto been assumed. It is very much to be wished that Mr. Horsley should turn out to be right.

Legislation in matters of this kind cannot be lightly undertaken, for the solution of the question, "How is this enactment to be enforced?" must always be considered. To confer rights on a particular class may be an easy matter, but to protect those rights, and prevent their invasion by unauthorised persons, may be next to impossible. There are some contracts, for instance, which are made void or illegal by statute. The Legislature, unable to prevent their being entered into, can only say, "These agreements shall not be enforced." And such, it is conceived, is the fundamental difficulty which besets the mind of the legislator who wishes to reform the Medical Acts, and to subject the "quack" to a stricter supervision. The advertisements of the quack may no doubt be suppressed, but nothing effective can be done to prevent him from secretly giving advice to or performing operations upon those members of the public who choose to visit his house.

Mr. Victor Horsley takes the view that the Medical Acts, if properly construed, afford sufficient protection to the profession and to the public against the unregistered practitioner. He presses the following arguments (*inter alia*) in support of his contention:

1. That the Medical Acts (1858-1886) do more than protect a mere title.

2. That an unregistered person cannot practise as a physician or surgeon.

3. That an unregistered person can be prosecuted for so practising.

If no unregistered person can lawfully practise, the quack has been quietly conducting his business for the last forty years, although exposed during the whole of that time to prosecution and penalties.

In the first place, therefore, the fact that unregistered practitioners are now in existence would militate against the view that practice of every kind except by registered practitioners was absolutely prohibited by the Act of 1858. This, however, is merely a negative argument, and, in order to discuss Mr. Horsley's contention, it becomes necessary to consider the position of the medical practitioner prior to 1858, after which the changes brought about by the Medical Acts can be more readily understood.

Old Rights of Physicians.

Dealing first with physicians, their rights were enunciated by the charter granted to the Royal College of Physicians of London in 1518. This charter incorporated the physicians of London as a perpetual college, gave them (*inter alia*) power to elect a president and to use a common seal, and to restrain all persons from exercising the faculty of medicine in the city of London, or within seven miles thereof, without the College licence under a penalty of £5. (*a*) No penalty attached to any person practising within the district for any period less than a month, and by a payment of £5 a month, the requirements of the statute would seem to have been satisfied (Bonham's Case, 4 Coke, 368).

By the statute 14 and 15 Hen. VIII, c. 5, which confirmed this charter, it was enacted in Section III that

> No person from henceforth be suffered to exercise or practise in Physick through England until such time as he be examined at London by the said President (that is the President of the College of Physicians) and three of the said elects; and to have from the said President and elects testimonials of their approving and examination, except he be a graduate of Oxford or Cambridge which hath accomplished all things for his form without any grace.

The "seven mile limit" might, therefore, seem to have been extended so as to bring persons unlawfully practising anywhere in England within reach of prosecution. No mention, however, is made of a fine in the above section, and it is probable that if the Legislature had intended to inflict a penalty, an express term to that effect would have been introduced, especially where the Act itself recites the charter which contains the "seven mile limit clause." This Act was itself confirmed by 1 Mary, sess. II, c. 9, after which the next important Act was that of 1858. A physician licensed by the Royal College of Physicians of London was therefore entitled, prior to 1858, to practise anywhere in the kingdom. He was nevertheless unable, according to the rules of common law, to sue for fees (Chorley *v.* Balcott, 4 *T. R.* 317) or even to recover out-of-pocket expenses incurred in the exercise of his profession, but he could always recover on an express contract to remunerate him for his attendance (Veitch *v.* Russell, 3 G. & D., 198). It will be seen that if unlicensed persons were prohibited by the charter from practising within seven miles of London, it was the licence alone that conferred the right of lawfully exercising the calling of a physician, just as the same right is granted, under the new order of things, by registration.

Old Rights of Surgeons.

Similarly a surgeon licensed by the Royal College of Surgeons of England, which was incorporated by certain statutes passed in the reigns of Henry VIII and George II, was entitled to practise anywhere in the United Kingdom, and any unlicensed person practising as a surgeon within seven miles of London was subject to penalties. A surgeon, however, could always sue for work done by him in that capacity (Little *v.* Oldacre, Car. & M., 370). The same distinction, therefore, seems to have been observed between licensed and unlicensed surgeons as between licensed and unlicensed physicians.

Before the Medical Acts, therefore, the possession of a licence signified a title to practise without restraint, and, in the case of a surgeon, a right to sue for fees at common law. The unlicensed practitioner, on the other hand, was subject to the following disabilities:

(*a*) He could not practise within seven miles of London.

(*b*) He could not recover his fees in a court of law. If a licensed physician was unable to sue *a fortiori*, the right could not have been extended to a mere quack.

The Act of 1858.

Before examining the text of the Act of 1858 it is useful to peruse the preamble, which throws light upon the objects for which the Act was passed, and serves as a guide to the interpretation of the various sections. It runs: "Whereas it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." From this it may be inferred:

(*a*) That prior to 1858 the medical profession, as a whole, required some system of registration.

(*b*) That unregistered practitioners were numerous, and were in the habit of practising as qualified physicians and surgeons.

(*c*) That the Act was passed rather for the benefit of the public than for the protection of the medical profession.

Only a few of the more important sections of the Medical Acts need be considered. Section VI of the Act of 1886, which replaces Section XXXI of the Act of 1858, provides:

> On and after the appointed day a registered practitioner shall . . . . . be entitled to practise medicine, surgery, and midwifery in the United Kingdom . . . . . and to recover in due course of law in respect of such practice any expenses, etc. . . . . to which he may be entitled . . . . . unless he is prohibited by any by-law.

By Section XXXII of the Act of 1858:

> After January 1st, 1859, no person shall be entitled to recover any charge for any medical or surgical advice, etc., unless he shall prove at the trial that he is registered under the Act.

And by Section XL:

> Any person wilfully and falsely pretending to be, or take or use the name or title of a physician, doctor of medicine . . . . . or any title implying that he is registered under this Act, or that he is recognised by law as a physician, or surgeon or licentiate in medicine, or a practitioner

in medicine . . . . . shall upon summary conviction for any such offence pay a sum not exceeding £20.

These sections confer upon the registered practitioner the right to practise medicine, surgery, and midwifery in the United Kingdom and elsewhere in Her Majesty's dominions, and the right to sue for fees (subject to by-laws), which right in the case of a physician did not exist before 1858. The unregistered practitioner, on the contrary, is reduced to the level of the unlicensed practitioner of former days, inasmuch as he cannot sue for fees and remains unqualified for any of the appointments which are open to those whose names appear on the *Register*. Further, he is liable for ignorant and improper treatment of a patient or for injuries caused by the use of improper medicines. Whether he is prevented from practising within seven miles of London is a difficult question which will be discussed later on.

The salient feature of these Acts is that the title to practise lawfully should depend upon registration and not merely upon the possession of a licence. Mr. Horsley is no doubt correct in saying that "Our title to our right to practise medicine, surgery, and midwifery is registration," but it is submitted, with great deference to him, that the true condition of affairs may be more accurately expressed by saying that the right to practise lawfully is conferred by registration, leaving untouched the right, if such it can be termed, to carry on a ready money business outside the pale of those laws which grant to registered practitioners the right to sue for fees and to claim the protection of the courts. The question seems to turn upon the meaning which should be given to the word "practise," of which no definition is to be found in the Act.

Judicial Interpretations.

Having now studied the preamble and the more important sections, we may turn to the law reports to find out in what manner the judges have dealt with the questions arising thereunder. No case seems to have occurred in which the Court was asked to adopt Mr. Horsley's view, and the complete absence of his contention both from the arguments of counsel and the dicta of the judges is striking. In one case, however, Pollock, C.B., said: "The Act was probably passed to prevent any person from practising without being registered" (Ellis *v.* Kelly [1860], 6 H. & N., p. 222). If such was the object of the Act we should expect to find some clause expressly imposing a penalty on anyone practising without having been duly registered. Such a clause is conspicuous by its absence. As to the application of the legal maxim "*Ubi jus ibi remedium*," it is submitted that the Legislature could not have contemplated the punishment of unregistered practitioners as a means of protecting those upon whom the right was conferred. It would be more reasonable to assume that the "remedy" which, according to the maxim, is inseparable from the "right" took the form of a statutory privilege to sue for fees—a privilege which was conferred upon surgeons only prior to the Act of 1858, in accordance with the principles of the common law.

With regard to the third point which Mr. Horsley raises in his able argument, there is no doubt whatever that an unregistered practitioner cannot "lawfully" practise; but how, it is asked, are the Medical Acts to be construed so as to impose a penalty upon anyone so practising, unless in doing so he holds himself out as "registered" or lawfully entitled to practise? Mr. Horsley's argument seems to come to this:

The Act gives the right to practise; therefore the right to practise cannot exist except under the conditions imposed by the Act.

If the judges could be persuaded to put a strict meaning on the word "practise," such, for instance, as the "sole right to apply the knowledge of science to the alleviation of disease," which Mr. Horsley refers to as the opinion of an American judge, the quack would soon be exterminated; but it is settled law that criminal enactments are not to be extended by construction, and the courts will always require to be satisfied not only that the legislative enactment has been violated, but that the language used by the Legislature includes the offence in question, and makes it penal.

To put the matter shortly, the authorities appear to go no further than to say that if an unregistered practitioner holds himself out to be what he really is—such, for instance, as M.D. of the Metropolitan College of New York—he cannot be properly convicted; whereas if he assume the title of "M.D." without further explanation, or any other title which would at once imply that his name was on the *Register*, he is liable to fine. How far this is a question of fact or a question of law appears to be doubtful.

While, therefore, both the profession and the public would gladly adopt Mr. Horsley's views, and would rejoice to see irregular practitioners subjected to a strict supervision, if not altogether exterminated, it is to be feared that the Medical Acts are inadequate for the purpose. In the absence, however, of any decision of the High Court upon the point, it might be advisable, before making any attempt to procure fresh legislation, to have the matter expressly raised in a case stated by a bench of magistrates.

Practice "for Gain."

Setting the Medical Acts aside, however, some assistance may possibly be derived from those ancient statutes to which reference was made in an earlier part of this article. Prior to the grant of a charter to the Royal College of Physicians, an Act was passed in the third year of the reign of Henry VIII, which, on account of the quaint language in which it is couched, is well worthy of perusal. It provides:

> That no person within the City of London nor within seven miles thereof exercise himself as a physician or surgeon.....except he be first examined or approved by the Bishop of London or the Dean of St. Paul's for the time being calling to him or them four doctors of physick and for surgery other expert persons in that faculty.....upon the pain of forfeiting for every month that they do occupy as physicians or surgeons not admitted.....after the tenor of this Act the sum of £5.

By Section 11 of the Act persons out of the City of London had first to be examined by the bishops of their respective dioceses before they could lawfully practise. By 34 and 35 Henry VIII, c. 8, however, all persons were allowed to administer medicines for outward sores or drinks for the stone, strangury, or ague, but it was held that this applied only to those who minister the same "of pity and charity," and did not give liberty to any person practising for lucre or profit. These ancient statutes, however, do not apply, or at any rate, need not be called into requisition at the present day, to the relief possibly of the medical profession, who, under their provisions would be subject to examination by the bishop or persons appointed by him. The charter of the Royal College of Physicians of London, and the statute of George II which incorporates the Royal College of Surgeons of England, are sufficient to enable either of those bodies to suppress illegitimate practice within seven miles of London. As far as can be ascertained, neither of these has been repealed. There are but few instances of the Act of 3 Henry VIII being applied in medico-legal proceedings. In the year 1856, however, where an unlicensed physician sued for work done as a surgeon, the statute was pleaded in bar to the action, on the ground that the Legislature intended to prohibit persons from so practising with a view to affording protection to the public. Mr. Justice Kerr, in his judgment in that case, said, "That statute is now repealed except in so far as it relates to the recovery of penalties."—(D'Allax *v.* Jones, 2 *Jurist*, N.S. 979). It is not known where he derived his authority for this statement, as there appears to be no mention of the Act, much less of its repeal, in any of the later statutes.

Surgeons have had rights dating from the reign of Henry VIII. By 32 Henry VIII, c. 42, the barbers and surgeons were incorporated as a College with a common seal, and upon them were conferred certain rights and privileges. By letters patent dated August 15th in the fifth year of the reign of Charles I, it was granted that no person whatsoever should use or exercise the said art or science of surgery within the said cities of London or Westminster, or within seven miles of London, unless he were examined and admitted as mentioned in the said letters patent subject to certain penalties. These rights were expressly continued by the statute 18, George II, c. 15, by which the Union of Barbers and Surgeons was dissolved, and the latter were incorporated as a College.

The Royal College of Physicians of London appears to have exercised the right of prosecution within seven miles of London from time to time, although at long intervals, down to 1828, when an unsuccessful attempt was made to prosecute a surgeon for practising within seven miles of London. Since that date no steps of this kind have been taken.

Obsolete Laws.

Instances are not wanting of penal statutes which, although they have not been put in force for many years, are still available for the suppression of the various crimes and misdemeanours in respect of which they were originally passed. Thus "eavesdroppers or such as listen under walls or windows or the eaves of a house to hearken to discourse, and thereupon to frame slanderous and mischievous tales," are liable to fine. It is still a capital offence to set fire to ships in the Thames. Many other curious examples could be given. Nevertheless non-user has much effect upon the interpretation of statutes, and the effect of an Act which has not been put in force for a great number of years may become greatly weakened, if not entirely nullified. Again, it is sometimes urged that charters granted in the time of the Tudors were often *ultra vires*, and are of no effect unless they have been since confirmed by Act of Parliament. Upon this ground the validity of the document which incorporated the Royal College of Physicians might be questioned, but inasmuch as it was granted by Henry VIII in the exercise of an ancient common law right, the task of upsetting it would be one of extreme difficulty. No such objection could be taken in the case of the Royal College of Surgeons, the charter of which was expressly confirmed in the reign of George II. It has come to the writer's knowledge that in a recent case before Mr. Haden Corser an attempt was made to recover the penalty of £5 mentioned above. It met, however, with scant success, the learned counsel who pressed the point being told that the statute which his industry had brought to light had long fallen into disuse. If the case were brought up to a higher tribunal this decision might possibly be reversed.

Whatever the result, an attempt to revive and exercise these ancient privileges would be of interest both to the medical and legal professions. If the issue were favourable a powerful weapon would be placed in the hands of the Colleges, while a refusal on the part of the executive to allow fines of £5 and other penalties to be inflicted upon quacks practising in and near London would furnish weighty evidence of the need for reform.

CONTRACT MEDICAL PRACTICE.

The Workmen's Compensation Act and Medical Clubs.

When the Legislature passed the Workmen's Compensation Act, it could hardly have contemplated putting on the doctors' shoulders a considerable portion of the burden which it has adjudged ought to be borne by the employers. Considering the smallness of the remuneration paid by clubs, nothing is more unreasonable than that attendance on accidents occurring in employments under the Act should be given by club doctors without extra payment. As all the present rates of club payments were originally calculated on the supposition that the cost would have to be defrayed by the club member, there is now no excuse for including attendance on such accidents among the club benefits. No doubt if the employer pays to the injured workman a lump sum to include all compensation, it will be to the advantage of the latter to appropriate the whole of it, and to claim his medical attendance, as of right, under the club contract. It rests with the profession to resist such injustice, and at least to insist that the club member's claim shall include no more than the ordinary sickness and accidents of everyday life; and that accidents occurring in factories and workshops under the Workmen's Compensation Act shall be altogether outside the club contract.

We are led to make these observations by a report in the *Wigan Observer* of November 12th of a meeting of representatives of the friendly societies of Wigan and district to further consider a circular issued by the Wigan and District Medical Guild.

It would appear that since the enactment of the recent Workmen's Compensation Act, the local profession has decided to decline attendance on club members in case of accidents of the kind for which compensation can be claimed under the Act, unless a higher rate of remuneration be paid by the members, and a circular to this effect has been issued to all the friendly societies of the district. A conference was called on October 10th, at which the representatives of the Medical Guild met a certain number of delegates from the friendly societies, but no agreement was arrived at.

At the meeting reported by our contemporary the delegates gave an account of the conference, and stated that the real grievance of the doctors was that the present rate of club payment was inadequate. Considerable discussion took place, and the attitude of the local profession was generally condemned. Finally, it was decided that unless this circular were withdrawn, the various friendly societies would combine and form a "medical hall" for themselves, and dispense with the services of their present doctors.

It is to be hoped the medical profession in Wigan will firmly maintain the attitude they have assumed. The club rate in this district appears to be lower even than in other places, and there is every reason for combination on their part to protect their interests.

Mid-Derbyshire.

Wingfield Manor writes: Having been for a prolonged period both *locum tenens* and assistant in the centre of Mid-Derbyshire, I can vouch for the absolute correctness of the statements made in the British Medical Journal of November 12th. Not only do the abuses mentioned in that recital exist and flourish, but what one must regard as a still graver abuse—the collection of penny-a-week subscriptions from door to door by touts euphemistically termed "agents," who take 25 per cent. of the sums collected by way of commission for their trouble—is a practice adopted by practitioners in the district.

Unfortunately no really friendly feeling exists between the members of our profession in the locality to which I allude, although one or two medical men with whom I am acquainted are ready and willing to start afresh, and, having wiped out old scores, to combine for the common interest.

The establishment of this *entente cordiale* would mean the speedy demise of those abuses of the existence of which your informant has so truly spoken, and I hope and trust that the ventilation of such a condition of things will call forth from professional brethren elsewhere some suggestions as to the speediest method of ending or mending it.

Accrington Medical Dispensary.

Some time ago we had occasion to notice in the British Medical Journal a dispute which had arisen among the members of the Accrington Medical Dispensary showing that the management of that institution was not all that could be desired. Since then the Registrar of Friendly Societies has been appealed to, and an inspector appointed by that official to investigate the matter. His report has now been made public in the report of the Chief Registrar of Friendly Societies. From this it appears that the former officers of the dispensary have been ordered to pay all the costs incidental to the inquiry, which revealed various irregularities. It is added that the result of the inspection has been the reconstitution of the Society under better management.

THE PREVENTION OF TUBERCULOSIS.

The National Association for the Prevention of Consumption.

A meeting of the medical profession in Carlisle was held on November 16th, to consider the desirability of forming a local branch of the National Association for the Prevention of Consumption and other forms of Tuberculosis. The chair was occupied by Dr. Lockie, and there were present Drs. Barnes, Maclaren, Macdonald, Murphy, Graham, Hair, Ogilvy, Ramsay, Burrows, Hall, Burns, Jones, Gilchrist, Gibson, Wade, Gibbons, and Bird. A letter was read from the Organising Committee of the Association in London, stating that a branch had already been formed at York: and that in Leicester, Ipswich, and Folkestone steps were being taken to form branches. On the motion of Dr. Barnes, seconded by Dr. Maclaren, it was unanimously resolved to form a branch for Carlisle and the district: and on the motion of Dr. Macdonald, seconded by Dr. Graham, those present, together with Dr. Lediard, were constituted a provisional Committee, with power to add to their number, for the purpose of carrying out the proposal. Dr. Bird was appointed Honorary Secretary, and Drs. Lockie, Barnes, Hair, Macdonald, and Bird were appointed a Subcommittee to approach the Mayor with a view to the summoning of a public meeting.

Proposed Sanatorium for the County of Durham.

A meeting was held in the Town Hall, Sunderland, on November 17th, for the purpose of forming a local branch of

the Society for the Prevention and Cure of Consumption in the county of Durham. The chief promoter of the meeting was Dr. Robinson, President of the Northumberland and Durham Medical Society. The Mayor (Alderman Bruce) who presided, in opening the proceedings, said it was their object to establish a sanatorium in the county, which should be in the hands of a central committee elected annually from the subscribers. He announced that already £423 8s. 3d. had been received in voluntary contributions in aid of the movement. Dr. Robinson then delivered a lecture on the prevention and cure of consumption. He stated that 2,404 persons were carried off by the disease last year in the county of Durham, being twice as many as from the infectious fevers put together, and 1 in 8 of the total deaths. After pointing out the chief sources of infection and the effect of improved sanitary conditions in reducing the mortality from consumption, Dr. Robinson referred to the open-air cure and the necessity for sanatoria for the treatment of consumptives. He mentioned what had been accomplished in other countries. Brehmer's statistics of over 5,000 cases in Silesia showed that 27.8 per cent. of those in the first stage were cured and 6.83 per cent. of those in the second stage. These results could be obtained in England. The conditions required were a warm, dry soil, pure fresh air free from dust and organic impurities, sufficient fine weather to allow of an outdoor life, and adequate protection from wind and rain. All these conditions might be had in the county of Durham. In Sunderland patients had been treated on this plan with most gratifying results. The treatment, however, could only be properly carried out in an institution specially provided for the purpose, under the immediate daily supervision of medical men, aided by well-trained nurses. At the close of the lecture Dr. Caverhill (Edinburgh) exhibited a series of lantern slides illustrating the Continental sanatoria. A resolution expressing approval of the objects of the Society for the Prevention and Cure of Consumption in the county of Durham was passed, and it was decided to form a branch for the Sunderland district. A committee was formed to give effect to the resolution.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

General Meeting.

THE autumnal general meeting of the Association was held at the Café Monico on November 23rd. A vote of thanks to Dr. P. S. Abraham, for services as Chairman of Council during the three years recently concluded was passed with applause. It was resolved to alter the rules to the effect that (1) a member whose name shall have been removed from the *Medical Register* shall, *per facto*, cease to be a member of the Association; (2) to add to the officers of the Association a vice-chairman of Council; and (3) that of the chairman and vice-chairman of Council one shall be a metropolitan, the other a provincial, member.

Dinner.

At the dinner which was afterwards held, about 161 members and guests were present. The chair was taken by Dr. E. D. MAPOTHER (President of the Association); the guest of the evening was Sir W. Mac Cormac, Bart., K.C.V.O. (President of the Royal College of Surgeons of England); there were also present Lady Mac Cormac, Sir W. Thomson (President-elect of the Association), Dr. MacDonnell, M.P., Sir Philip C. Smyly (ex-President Royal College of Surgeons of Ireland), Mr. R. L. Swan (President Royal College of Surgeons of Ireland), Mr. Edmund Owen (President Medical Society of London), Mr. R. T. O'Callaghan, Sir Thomas Moffett, Mr. Trimmer (Secretary, Royal College of Surgeons of England), Dr. Gilbart Smith (Chairman of Council), Dr. R. J. Swan (Honorary Treasurer), and Dr. J. Stewart and Mr. P. J. Freyer (Honorary Secretaries of the Association). One special feature of the evening was the large number of ladies who were present as members and guests.

The toast of "The Queen," given by the PRESIDENT, was followed by the singing of "God Save the Queen," in which the audience most heartily joined. The toast of "Our Defenders by Sea and by Land" was proposed by Mr. R. L. SWAN, who combated the motion that there was any feeling of disunion in Ireland; and said that the inhabitants of Ireland, equally with those of Great Britain, felt themselves to be subjects of the same great Queen. Colonel BOILEAU, R.E., and Dr. WARING, R.N., responded. The former said there was only one fault about the army: there was not enough of it. Dr. Waring knew no service in which the medical men got on better than in the navy.

The PRESIDENT proposed "Our Guests," and reviewed the chief incidents in the professional life of Sir William Mac Cormac; who, in replying, spoke of his experiences with MacMahon's army at Sedan, and remarked that at 2 A.M. on the day preceding the battle the Emperor of the French arrived by train in a kind of cattle truck with aides-de-camp, and had to wait fully three-quarters of an hour before the guard would open the gates of the town and grant him admission. He further described his own election to the staff of St. Thomas's Hospital, and concluding by returning thanks also for Lady Mac Cormac. Mr. EDMUND OWEN, in a humorous speech, also replied to the toast. He remarked that London without its Irish medical graduates would be like the country without its flowers and birds. Dr. P. S. ABRAHAM, in proposing "Our Lady Guests," remarked that this Association was the first medical body which admitted ladies as its members and guests. Now many other societies had happily followed the good example. Mr. T. STOKER, C.S.I., responded "with that bashfulness so characteristic of all Irishmen," and expressed the opinion that ladies should reply for themselves since they were present as members or guests, and not merely as spectators.

Sir THOMAS MOFFETT, ex-President of Queen's College, Galway, in a vigorous speech, proposed "Ourselves." He thought there was amongst physicians and surgeons a larger number of persons who had really benefited mankind than amongst any other class of the community. This last decade of a waning century was a time for intellectual stock-taking. In no branch of human knowledge had progress in the present century been more important than in that of operative surgery; so that the science of sixty years ago was the ignorance of to-day. Sir P. C. SMYLY and Dr. R. J. SWAN replied; the former mentioning by name several of the distinguished Irish graduates who had been members of the Association, and Dr. SWAN saying that the monetary resources of the Association were ample for its needs. Sir WILLIAM THOMSON gave the toast of "The President," which was acknowledged by Dr. MAPOTHER. Miss G. GROVE and Mrs. S. F. FRAYER contributed several songs, being accompanied on the piano by Miss M. Jaques.

THE NEW VACCINATION ORDER.

Failures with Calf Lymph.

S. WRITES: The Local Government Board have evaded the necessity of providing glycerinated calf lymph by saying in Article 3 of the Act "or such other lymph as may be issued by the Local Government Board." This will place vaccinators at a disadvantage with regard to the new scale of fees, because in my experience (I may say I have received the Government grant for successful vaccination) in about 1 in 4 infants vaccinated from Local Government points of calf lymph the vaccination fails, even though the vaccine be very thoroughly worked in. Should such failures occur when the child lives five or six miles from the public vaccinator's surgery it means a very great loss of time in extra journeys.

The Scale of Fees.

Dr. A. HANBURY FRERE, Public Vaccinator (Stradbroke, Suffolk) writes: In connection with the above I should like to point out that, at all events in rural districts, it is far better and simpler to compound than to charge for mileage.

At a meeting of public vaccinators of this, the Hoxne, Union, it was decided that the following scale of fees should be asked for under Article 3 (1) of the Vaccination Order, 1898:

1. Under Paragraph (A), in view of probable fruitless journeys, 2s per case.
2. Under Paragraph (B), in view of long distances and the time and trouble of notifying and the possible after-treatment of the child, 6s per case.
3. Under Paragraph (C), 2s. 6d. per case.
4. In case the Local Government Board be unable to supply cal

lymph, that the actual cost of the lymph required be paid by the guardians.

This scheme, signed by all public vaccinators in the union, has been adopted by the guardians.

At a meeting of the Cranbrook Board of Guardians communications were received from public vaccinators as to the fees for vaccination under the new order. The proposition submitted was a fee of 2s. 6d. on each child born in the district, 5s. for vaccination at the home of the child, and mileage at the rate of 1s. a mile for all cases beyond the two-mile radius. The public vaccinators pointed out that the minimum fees mentioned in the order seemed to be applicable only to populous towns. This view was supported by two of the guardians present, but in the end it was resolved to adhere to the minimum scale. Dr. Weld, of Sandhurst, in writing to the guardians, suggested that the working of the new Act should be tried for a time before entering upon any permanent contract, and it was understood that this course would be proposed to the other public vaccinators.

This means a payment per case of 7s. 6d. inside borough, and 9s. 6d. outside borough, for all cases under A and B.

The Northwich Board of Guardians, at their meeting on November 18th, resolved to give their public vaccinators the sum of one shilling for each child whose name appears on the list supplied to the public vaccinators by the vaccination officer, and 6s. 6d. for each successful vaccination.

Dr. Arnold Thomson (Maidenhead) writes: In accordance with the request you make that the public vaccinators should forward to you the terms arranged between themselves and their Boards of Guardians, I herewith append the various amounts which we, the public vaccinators of the Maidenhead Union, obtained after a somewhat severe skirmish with our enemies on the Board. I may say that we public vaccinators had definitely decided upon, after considerable discussion, the terms which would be accepted by us before the Board meeting, and we also unanimously agreed to refer the matter to the Local Government Board rather than accept anything less than our terms, so we made a bold and determined stand, and, refusing any compromise, we gained all we asked for, notwithstanding the blatant opposition of truculent antivaccinationists and other gallery orators on the Board. We refused to accept any resolution not in accordance with our minimum demand under each heading of payments. The amount of work imposed on public vaccinators by this Act will be great, and must be well paid for even by an unwilling public, and vaccinators should now or never insist upon having just and remunerative payment for the extra work. Public vaccinators did not want this Act, nor was their advice asked in regard to its details; but it is left to them to carry them out whether they like it or not. The terms granted us are as follows:

Article 3.

A.—1s. 6d. per case.
B.—6s. per case inside borough; and
" 8s. per case outside borough, irrespective of distance.
C.—2s. 6d. per case, with 2s. extra as mileage for all cases outside borough.

Dr. John T. Skrimshire, Public Vaccinator (Blakeney District, Walsingham Union) writes: Time is getting away, and meetings are taking place all the country over between guardians and public vaccinators. It is therefore urgently necessary, if possible, to arrive at some uniformity in our ideas as to the fees we should demand. In several unions, I hear, vaccinators are accepting without a struggle the minimum fees. If this goes on the whole case for reasonable remuneration will soon be lost. I strongly urge, therefore, that public vaccinators should gain time by making definite counter proposals in all cases where the minimum fees are being offered. I think it may interest your readers to know what we are doing in the union to which I am attached. We have this morning met a committee of our guardians, and they very courteously gave a hearing to our proposed terms. We showed them, from the example of my own district, that the fee equivalent to that which we had under the late Act (3s.) should be at least 20s. I have had to attend three stations twice in every year, involving in all 18 attendances, for about 60 cases. Sixty cases under the Act of 1898 will involve 120 attendances at least. The fee under the old Act was 3s.; therefore by simple proportion as

$$18 : 120 :: 3s. : x.$$

$$\text{Or } x = \frac{3 \times 120}{18} = 20$$

The mileage also is increased from 168 to 1,080 by the domiciliary vaccination. We then based our scale of fees upon the mileage principle of Acts 1867-71. Thus:

Act 1867-71.		Act 1898, Art. iii.		
		(a)	(b)	(c)
Under 1 mile	1s. 6d.	2s. 6d.	5s	5s.
Between 1 and 2 miles	2s. 0d.	3s. 6d.	10s	
Over 2 miles	3s. 0d.	5s. 0d.	15s	

—and submitted these terms for their further consideration. I feel strongly that mileage reckoned for every separate case would not be a feasible arrangement, from the difficulty of computing, and, still more, from the auditor's point of view, of checking, the distances charged. We have, however, the mileage principle of the late Acts upon which to found our charges; and I do think that principle the best basis for common action, and strongly recommend it to the attention of my brother vaccinators. The Local Government Order 38,831 strongly emphasises the minimum operation of the fees named when it says: "It will be seen by this article the minimum amount only of each of the payments to be made is fixed." This surely suggests greater work, larger fees. We shall therefore be very unwise to accept minimum fees except for minimum work, such, for instance, as obtains in urban districts or those in which distances are under one mile, and can be worked without horses and all their attendant expenditure.

Antiseptic Vaccination Case.

Messrs. Mayer and Meltzer (71, Great Portland Street, W.) have devised a case to meet the requirements of the new Vaccination Order as to antiseptic vaccination. The case measures 5 by 2½ by 1½ inches; the bottom forms a spirit lamp, and the cover a tray for sterilising the lancets by boiling. The lancets, of which three are contained in one partition, are of Weir's pattern, and are made of one piece of steel, with a scarifying blade at one end and four needle points at the other. There is another partition for the vaccine tubes, a third for wool or antiseptic capsules, and a fourth for a small blower or nipple for ejecting the lymph from the tube by the pressure of the finger.

The Association of Public Vaccinators.

Dr. E. Rice Morgan (Public Vaccinator Swansea Union, Morriston, R.S.O., Glamorganshire) writes: I venture to advise very strongly all public vaccinators to join the Association of Public Vaccinators. Very recently I had a conference with Dr. Jaynes, one of the honorary secretaries, and the many valuable suggestions he gave me were of great value to me when we discussed the question of fees before our guardians. There are many future questions, such as the permanency of our appointments, instead of as at present "terminable at twenty-eight days' notice," which our Association will agitate for.

*** The Honorary Secretaries of the Public Vaccinators' Association are Dr. V. A. Jaynes, 157, Jamaica Road, London, S.E.; and Dr. A. E. Cope, 26, Bessborough Gardens, Westminster, S.W.

Vaccination at Surgery by Public Vaccinator.

S.—The Order makes no provision for the public vaccination of infants elsewhere than at their houses, and if a public vaccinator operated on such cases at his own surgery, they would count simply as private vaccinations, for which he would receive no fee.

THE PLAGUE IN THE EAST.

India.

From the city of Bombay, and also from the outlying parts of the Presidency the mortality reports show a slight decrease as compared with the previous week. The actual number of deaths is not stated in the telegrams, so that it is impossible to say whether there is a fall in the death-rate from plague as compared with the previous week's returns (when there was a slight increase), or with that of a fortnight ago, when the deaths were fewer. It is satisfactory, however, to record that there is no sign of the increase in the Bombay Presidency which it was feared that the cold weather might bring.

From the south of India the news of the steady advance of plague is unfortunately attended by riots in one or two

places. In the city of Bangalore the epidemic is still severe, and throughout the Mysore State generally plague seems to be on the increase. At Seringapatam a riot occurred in which a determined attempt was made to rescue some prisoners from the gaol. These were prisoners seized in a previous plague riot, and although they were removed from the gaol to the fort for greater safety, the populace still persisted in their attempt and proceeded to storm the fort. Beaten back by the police once or twice, they still came on in increasing numbers, and it was only when a number of the rioters were killed by the fire of the police that quiet was restored. The Mysore authorities saved a serious situation by their prompt action, in which they were supported by the British resident in the Mysore State. Plague is also epidemic in the town of Chikballapore, so that the Mysore State is severely smitten by plague throughout its length and breadth.

In the Madras Presidency plague is increasing, and six districts are infected. The town of Namakal is most severely stricken. Hyderabad State and the Central Provinces are both infected, and plague seemed to be advancing south and eastward with alarming severity. It would appear that the Coromandel coast is seriously threatened.

Northwards from Bombay a few cases, some five in all, have occurred in Karachi, but nowhere in this region is plague prevalent.

The Samarkand Outbreak.

Russian Plague Precautions in Samarkand District.—Elaborate precautions are being taken by the Commissioner, Prince Oldenburg, against the spread of plague. The village of Anzob, in the province of Samarkand, is the chief centre of the disease, and, of the inhabitants, 233 have already died of plague. Three lines of cordons surround the infected area, and in the Amu Daria province, and at the six stations along the Transcaspian Railway observation posts have been established. The Russians have been watching the Persian border for some time past, and these posts have been reorganised and strengthened. In Bokhara, and in the mountain passes to the westward of Samarkand, several lines of movable medical posts have been established. The vessels on the Caspian Sea are subjected to strict inspection, and the arrivals at the mouth of the Volga are being watched. Dr. Livine, bacteriologist, who recently studied plague in India, has been sent to Anzob with a stock of Haffkine plague serum. It is apparent that plague is epidemic in this district of Asia, and that the Russian authorities may be relied upon to do their best to keep the plague out of Russia.

THE UNIVERSITY OF BIRMINGHAM.

A meeting of the Court of Governors of Mason University College was held on November 18th, under the presidency of Mr. Chamberlain, who said that the business to be done was to prepare a petition in the name of the College to be presented to the Queen asking for a grant of a Charter to a University in Birmingham, and to take steps to absorb and include Mason College in the new University. A scheme for the new University had been drawn up, and would, he hoped, in its general features meet with approval, though it was open to public criticism and to alteration of detail. It was essential to have a good ideal from the beginning, so that the foundations of the new University might be properly laid, although it would not be possible at once to attain to the ideal in its completeness. The ideal would be the creation in Birmingham of a great centre of universal learning, of an institution which would provide for intellectual cultivation in the broadest possible sense, and maintain for ever in the city the highest standard of intellectual eminence; it was desired that all acquired knowledge should be taught, and that knowledge should be advanced by original research. It had been sneeringly suggested that provincial universities would be mere "bread and butter schools," that is to say, institutions intended merely to enable their students to stand in rather better positions than they would do without these universities. While that was a mission not altogether to be despised, Birmingham did not intend to exclude the older branches of learning from the curriculum of the new University. It was desired to give to those who could not go to Oxford or Cambridge opportunities of acquiring a broad liberal education, even though that education might not be immediately remunerative, but it was not the intention merely to imitate in a small way the work of the Universities of Oxford and Cambridge. A provincial university ought to have a stamp of its own; it ought to be redolent of the soil, and inspired by the associations of the place in which it existed. Now, in the first place, Birmingham had always been the home of a medical school of very high reputation, but the School had suffered disadvantages which would disappear as soon as the University was created. It would be an act of ingratitude to those who had gone before not to take care that the Medical School at Birmingham should be in the future worthy in the highest degree of its old reputation. In the second place, the enormous development of science required an extended provision for its instruction, and there was a special reason why it should take a very prominent place in connection with a University in the centre of a manufacturing and commercial district. The highest importance, it was felt, should attach to this branch of the University's work, and that it should give to it a special position of its own. Thirdly, it was thought that the University should give special attention to the organisation of commercial education, a subject which had been curiously neglected in existing universities. Turning then to financial questions, Mr. Chamberlain said that he hoped to see in time a worthy home erected in Birmingham for what would be in the future the greatest of all its institutions, and he mentioned especially the provision of a university hall and library. The immediate need, however, was for a further endowment of from £200,000 to £250,000; as yet the subscriptions amounted to only about half that sum. The remainder must be obtained before the scheme could be begun, and he made a special appeal to the great limited companies which had to so large an extent taken the place of the private individual, to whom appeals could formerly be made with confidence whenever anything was in contemplation for the benefit of the city. The other step which the meeting was asked to take was to provide for the absorption of Mason College in the new University. Mr. Chamberlain concluded by moving a resolution approving a scheme to transfer all the endowments, buildings, equipments, and staff of the College, provided that the Governing Body of the University should include every member of the Court of Governors for the time being of Mason University College.

The resolution, which was seconded by the Lord Mayor, was carried after a short discussion.

On the motion of Mr. Chamberlain, seconded by Alderman Clayton, a resolution was adopted authorising the Council to obtain a Royal Charter for the establishment of a university, to bear the name of "The University of Birmingham."

The report of the Managing Committee recommended that after a charter had been obtained a public Bill should be promoted giving it the right to place its medical graduates upon the *Medical Register*. The transference of buildings and endowments of the College to the University would then be accomplished by a private Bill. It was recommended that the university thus constituted should, in the first instance, teach the subjoined subjects and possess the annexed staff:

Greek, one professor; Latin, one professor; Greek and Latin, one lecturer; English language and literature, one professor and one lecturer; French and Italian language and literature, one professor and one lecturer; German language and literature, one professor and one lecturer; mental and moral philosophy, one professor; history, one professor; political economy, one professor.

Mathematics, one professor and one lecturer; physics, one professor, one lecturer, and one demonstrator; chemistry, one professor, three lecturers, and one demonstrator; metallurgy, one lecturer; zoology, one professor and one lecturer; botany, one professor; geology and physiography (including mineralogy and political geography), one professor, one assistant professor, and one demonstrator; mining, one professor; civil and mechanical engineering, one professor, one lecturer, and one demonstrator; electrical engineering, one lecturer.

Anatomy, one professor and two lecturers; physiology, one professor and one lecturer; bacteriology and pathology, one professor, one lecturer, and one demonstrator; medicine, two professors and one assistant; surgery, two professors and one assistant; therapeutics, one professor; forensic medicine, one professor; lunacy, one professor; toxicology, one lecturer; public health, one professor; midwifery and gynecology, two professors and one assistant; operative surgery, one professor; ophthalmology, one professor; materia medica and pharmacy, one lecturer and one demonstrator; dental surgery, one lecturer and one demonstrator; dental anatomy, one lecturer and one demonstrator; dental mechanics, one lecturer; dental metallurgy, one lecturer; dental histology, one demonstrator.

Day-training department for Elementary Teachers (women), one head mistress and four assistant mistresses; day-training department for elementary teachers (men), one master of method and one junior ditto.

THE "BRITISH PHARMACOPŒIA."

We are requested to state that as the 20,000 copies of the *British Pharmacopœia* originally printed have already passed into circulation, a reprint has been ordered, and the opportunity has been taken of indicating a few manifest errors and misprints as follows:

CORRIGENDA.

Page 237, line 31, *for* 0·0285 *read* 0·0283.
,, 266, line 3, *omit* chlorides.
,, 462, fourth col., line 6, *for* 1 grm. *read* 0.5 grm.
,, 495, third col., line 12, *for* 5 to 10 m. *read* 2 to 8 m.
,, 511, first col., line 35, *insert* Compound *after* Tincture of.
,, 519, first col., line 26, *for* Spirit Compositus *read* — —Compositus (= Spiritus Etheris Compositus).

The slip containing these corrections may be obtained gratis from the publishers, Messrs. Spottiswoode and Co., Grace-church Street, E.C.

ASSOCIATION INTELLIGENCE.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Staffordshire Branch.—The first general meeting of the session will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, December 1st, 1898. The President, Dr. McAldowie, will take the chair at 7.30 P.M. Agenda: Minutes of the last general meeting. The following gentlemen will be balloted for as members: Robert Hughes, M.B.Lond., M.R.C.S., L.R.C.P., M.P.C., Fenton; proposed by Mr. Blumer, seconded by Dr. C. Reid. Bernard Robinson, M.R.C.S., L.R.C.P., Oakamoor; proposed by Dr. E. J. Leapingwell, seconded by Dr. W. H. Davis. Wm. Ernest Leethem Horner, M.B., B.S., M.R.C.S., L.R.C.P., North Stafford Infirmary, Stoke; proposed by Dr. Hind, seconded by Mr. W. H. Folker. Papers: Dr. C. Allan: Treatment of Exophthalmic Goitre by the Administration of Bile. Mr. H. H. Folker: Ophthalmia Neonatorum. Dr. Hatton: The Radical Cure of Inguinal Hernia. Exhibition of living cases, pathological specimens, etc. Dinner at 7.15; charge, 5s.—F. Milnes Blumer, Stafford, General Secretary.

Bath and Bristol Branch.—The second ordinary meeting of the session will be held at the Grand Pump Room Hotel, Bath, on Wednesday, November 30th, at 7.30 P.M., Dr. Lionel A. Weatherly, President, in the chair. The following communications are expected:—Dr. G. Parker: case of Cystic Kidney with Pityriasis Rubra. Mr. C. E. S. Flemming: chondroplasia. Dr. E. J. Cave: Specimen of Ulcerative Colitis. Dr. T. Wilson Smith and Mr. F. Lace: Two cases of Perforated Gastric Ulcer treated by Operation. Dr. J. Michell Clarke and Mr. W. M. Barclay: case of Perforated Pyloric Ulcer: Operation: Recovery. Dr. J. Michell Clarke: Treatment of Adhesions and of Pyloric Stenosis due to Gastric Ulcer. Mr. Greville will give a demonstration of his Electro-thermic Generator at 7 o'clock before the meeting.—W. M. Beaumont, Bath, and J. Michell Clarke, Bristol, Honorary Secretaries.

South-Eastern Branch: East Sussex District.—The next meeting of this District will be held at the Queen's Hotel, Eastbourne, on Thursday, December 1st, at 4.45 P.M., Dr. Hayman in the chair. Dinner (at table d'hôte) 7 P.M. The following papers have been promised:—Mr. Footner: Thirty Cases of Radical Cure of Hernia, with Results and Mode of Operation. Dr. Mackey: Two Cases of Acute Ascending Paralysis (Landry). Members are requested to send notice of communications, motions, etc., to the Honorary District Secretary, J. W. Batterham, M.B., Bank House, Grand Parade, St. Leonards.

METROPOLITAN COUNTIES BRANCH: SOUTH-EASTERN DISTRICT.

A meeting of the South-Eastern District of the Metropolitan Counties Branch was held at St. Thomas's Hospital on November 17th, Dr. R. Percy Smith, Vice-President of the District, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Demonstration of Cases.—The following cases were shown and demonstrated on by members of the staff.—By Dr. Box: (1) Cerebral Tumour in a child; (2) Locomotor Ataxy of very rapid development; (3) Aortic Aneurysm; and a case in which there was considerable difficulty in making a diagnosis between locomotor ataxy and peripheral neuritis.—By Dr. Turney: A case of Paralysis affecting the right arm in a girl.—By Mr. Robinson: A rare form of Syphilitic Eruption in a child aged 3 months.—By Mr. Wallace: (1) Cystic Fibroma of neck; (2) Deformity of Great Toe, due probably to earlier necrosis of metatarsal bone; (3) Semi-dislocation of the Sternal End of the Clavicle.

Vote of Thanks.—After a vote of thanks had been given to the gentlemen who had demonstrated on the cases, and to the Treasurer of the Hospital for the use of the rooms, the meeting adjourned.

SHROPSHIRE AND MID-WALES BRANCH.

The annual general meeting of this Branch was held at the Salop Infirmary on October 25th. Forty-two members were present.

Introduction of New President.—The retiring President (Dr. Charnley) introduced his successor, Mr. L. Law Webb.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Report and Financial Statement.—The report and financial statement was then read and adopted.

Election of Officers.—The following officers of the Branch were duly proposed, seconded, and unanimously elected:—*President-Elect:* Mr. Arthur Jackson. *Honorary Secretary and Treasurer:* Dr. Gardner. *Assistant Honorary Secretary:* Mr. Harold H. B. MacLeod. *Auditor:* Mr. R. W. D. Withers. *Branch Representative on the Council and Parliamentary Bills Representative:* Mr. J. D. Harries. The members of the Branch Council were all re-elected.

New Members.—The following new members were elected: Mr. A. J. Beesley (Baschurch, Salop), Mr. Maurice Gepp (Shrewsbury), Mr. J. R. Hatfield (Worthen, Salop), Mr. G. Jacobsen (Broseley, Salop).

The late Mr. John Gill.—A vote of condolence with the relatives of the late Mr. John Gill, of Welshpool, was proposed by Dr. S. T. Gwynn, seconded by the President, and carried unanimously.

Vote of Thanks to Retiring President.—A vote of thanks to the late President (Dr. Charnley) was proposed by Mr. Withers, seconded by Mr. Jackson, and carried by acclamation.—Dr. Charnley responded.

Local Medical Men as Officers of Health.—Dr. E. S. King (Ludlow) brought before the meeting the question as to whether local medical men should be appointed medical officers of health. He spoke strongly in opposition to such appointments, and moved a resolution to that effect.—Dr. Gwynn seconded the resolution.—A discussion followed, in which Mr. Withers, Mr. Harries, and the President took part, and ultimately Dr. King consented to withdraw his motion and bring it up again for discussion at the next ordinary general meeting of the Branch.

Medical Witnesses.—Dr. Cureton proposed:

That in the opinion of this meeting some special accommodation should be provided for medical witnesses in waiting before the grand jury and in courts of assize and quarter session upon the production by them of their subpœnas or other evidence of identity to those in authority; and that copies of this resolution be sent to the Chairman of Quarter Sessions, Chairman of the Grand Joint Committee of the County Councils and Clerks of the Peace and Chief Constables in the area of the Branch.

Mr. Harries seconded the resolution.—Dr. McCarthy, Mr. Cunningham, and the President spoke on the subject, and the resolution was carried unanimously.

Pathology in General Practice.—The President delivered his inaugural address. After expressing his sense of the honour done him by his election as President of the Branch, which he said was a credit not only to Shrewsbury, but also to the County and the Mid-Wales District, he went on to speak of what he considered to be a real danger threatening the busy practitioner in these days. This was the danger of neglecting pathology. By pathology he did not mean merely pathological anatomy, or even pathological histology and chemistry, but the whole department of the sciences concerned with the nature and processes of disease. To be able to cope with illness one must understand its nature; in other words, they must, every one of them, be pathologists. And this

knowledge of pathology was even more imperatively demanded of all who practised preventive medicine. Proceeding to consider the causes of the neglect of pathology, the President said that there were some who failed to see how pathological knowledge availed much in diagnosis, prognosis, and treatment; others, and he believed a larger class, took fright at the wide extent of the study, its formidable terminology, and the cost of the complicated apparatus used therein. Yet others (and this section was perhaps the largest of all) were those who had long forgotten the little pathology they once learned in the schools, and finding all such study a weariness to the flesh resolved to try to scrape along without it. They gave themselves over to therapeutics and the trial of every well-advertised new drug or system of treatment. These were they whose bible was the *Yearbook of Treatment*, and similar publications. He did not wish to depreciate these useful works, but he asked if there was not something unworthy and undignified in these attempts to take short cuts to success in treatment. If they were to remain one of the learned professions, they must endeavour to reach a high standard not only in ethics, but also in professional knowledge and skill. Not only had men in general practice done excellent work in morbid anatomy, histology, and bacteriology: they had also had among them observers of the first rank, who often with the most meagre appliances, and in the intervals of busy and distracting work had made discoveries of inestimable value. In illustration of this the President cited Edward Jenner; Robert Koch, who was in general practice when he discovered the bacillus of tubercle; and Laveran, who was on active service as an army surgeon in Algeria when he discovered the malaria parasite. Though they could not expect that many of them would be able to do pioneer work of this kind, they could, at any rate, occupy the country thus laboriously conquered for them. The rapid growth of the Empire had made it necessary that special attention should be paid to the diseases of hot climates. There was, he feared, but little doubt that as intercommunication between this country and the tropics increased, they would see more cases than at present of malarial fever, abscess of the liver, dysentery, and such like. Already in his own practice he had detected the ova of bilharzia hæmatobia in the urine of a youth who had been in Africa, and who was supposed to be suffering from symptoms of stone in the bladder; and in the urine of a boy who had recently come from Japan he had found parasites unlike any named species. Not many days ago, through the scientific enthusiasm of one of the members of the Branch who was on the infirmary staff, a necropsy was made on the body of a soldier who died suddenly. His peritoneum was studded all over with nodules resembling tubercles, which, on microscopic examination, were found to contain parasites, apparently coccidia. He thought it would be granted that they must in the near future make themselves better acquainted with the observations of Laveran, Patrick Manson, Carter, and Ross. He did not intend to suggest that general practitioners were careless as to the scientific side of medicine; they had in the Branch many men who were doing good work. By way of remedy for the evil which he had pointed out, he recommended that they should revive their knowledge of pathology by observation, experiment, and reading. Practical skill in the use of apparatus might be gained by attending post-graduate classes, or by careful reading, supplemented by actual work in a laboratory, with someone already skilled in work of the kind, knowledge was thus, he knew from personal experience, acquired easily and pleasantly.

A vote of thanks to the President for his address was proposed by Dr. CURETON, seconded by Mr. HARRIES, and carried unanimously.

The Relief of Dental Pain.—Mr. G. H. MUCKFORD read a short paper on the relief of dental pain at the bedside. There were two chief causes of dental pain: (1) That due to inflammation of the dental pulp, and (2) that due to periodontitis. The first kind was of a boring, stabbing nature, with remissions, and was often accompanied by neuralgia in the region of the fifth nerve. Careful exploration with a bent probe was necessary to discover the affected tooth, the patient often indicating the wrong one. The wisdom teeth were never to be overlooked. The treatment indicated was to clean out the food *débris* and softened pulp as much as possible, then syringe the cavity with hot water, and apply a small pledget of cotton wool soaked in liquefied carbolic acid. Oil of cloves containing a few crystals of cocaine was also advised. In periodontitis the tooth affected was soon tender to the touch; the condition usually occurred in teeth in the last stage of decay and in stumps. The tooth was lifted in its socket and became extremely sensitive. The pus at length found an exit for itself. The treatment recommended was in the early stage to paint the gum with tr. aconiti and tr. iodi (double strength) equal parts. In the later stages, hot bread-and-milk poultices, renewed every few minutes, applied between the teeth and the cheek. External poulticing was not recommended.

The Uses of Pure Carbolic Acid.—Mr. GODSON read a paper on the uses of pure carbolic acid (liquefactum). He said that all wounds, however small, should when contaminated be treated antiseptically, which was best done by brushing them with fine carbolic acid after the dirt had been removed by washing. The pain was slight, owing to the marked anæsthetic action of the drug. Compound fractures should have the whole of their surfaces thoroughly swabbed with the acid, the wound being enlarged, if necessary, for the purpose. The results were excellent. Joints which had been opened and become infected could be saved by careful sponging with the pure acid. Old wounds, ulcers, and sinuses, especially when foul and sloughy, often healed rapidly under this treatment. For boils it was most useful, preventing the development of small secondary crops; also as an injection into the indurated base of a carbuncle. It was very useful as an application to erosions of the os uteri: also in dental pain due to inflamed and exposed pulp. In alopecia areata he had used it with varying, and in tinea tonsurans with great, success. For nævi its subcutaneous use was preferable to that of perchloride of iron, as it was less likely to cause sloughing. The acid was most useful for the rapid and thorough disinfection of any instrument accidentaliy contaminated, the instrument being afterwards washed in 1 in 20 solution.—A discussion followed, in which the PRESIDENT, Dr. COOKE, Dr. MCCARTHY, Dr. GARDNER, Dr. KING, Dr. LYTLE, and Dr. HIGGINSON took part. Injection of the acid into the sac of a hydrocele was especially considered.

Annual Dinner.—After the meeting the annual dinner of the Branch was held at the Music Hall. Forty-four members and their friends were present.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

A MEETING was held on November 17th, which was well attended.

The Vaccination Act, 1898.—Dr. H. E. DIXEY opened a discussion on the Vaccination Act of the present year. Most of the members present took part in the discussion, and the following resolutions were carried unanimously:—

Proposed by Dr. H. E. DIXEY, seconded by Mr. FOSBROKE:

That this meeting of members of the Worcestershire and Herefordshire Branch of the British Medical Association expresses its entire disapproval of the Vaccination Act of the present year, believing it must eventuate in a great relaxation of vaccination in the country and in a few years lead to a large increase in small-pox.

The Branch would at the same time wish to dissociate itself from the opinion of those medical men who as members of Parliament supported the measure, and regret that a more vigorous and determined opposition was not given to the Bill by the Association and journals which presumably represent the views of the medical profession.

Proposed by Dr. H. E. DIXEY, seconded by Mr. FOSBROKE:

That the Branch is further of opinion that not only is compulsory primary vaccination necessary, but that revaccination between the ages of 14 to 16 should also be made compulsory; that more stringent measures should be taken to enforce efficient primary vaccination, and that with this view no certificate of primary vaccination should be allowed to be given which does not comply with the requirements of the Local Government Board.

Proposed by Dr. H. E. DIXEY, seconded by Mr. FOSBROKE:

That copies of these resolutions be sent to the several medical journals and to all Branches of the Association, in order that concerted action may be taken by the medical profession to lay their views before the Government, and endeavour to induce them to pass an amending Act next session embodying these statistics. That copies also be sent to the members of both Houses of Parliament in Worcestershire and Herefordshire.

Paper.—Dr. C. Braine-Hartnell read a paper on the Prevention and Cure of Tuberculosis, with special reference to the open-air treatment.

SPECIAL CORRESPONDENCE.

PARIS.

Alcoholism in France.—The Health of the French Army.—The Training of Nurses.—Death of Dr. Gruby.

In the opening lecture of his course Dr. Debove sounded a note of alarm. He declared that alcoholism was present everywhere in France, in the towns, in country villages, and among all classes. The resources and strength of the country were impoverished by this vice. It was no longer a condition of acute and sporadic alcoholism; alcoholism was now chronic in France. That country, according to Dr. Debove, has the unfortunate supremacy of being at the head of all the "ethylic nations." The proportion of alcohol at 100° drunk amounts in Paris to 14½ litres per head, in Belgium and Germany 10 litres, England 9 litres, Switzerland 8, Italy 6, Sweden 4, Norway 3, Canada 2. This unenviable supremacy is on the increase, as it is in Belgium, the proportion in the other countries being a descending scale. There are in France 500,000 wine shops; in the North of France one for every twenty-five adults; in the Seine Inférieure Department one for every twenty-two adults, in Paris one for every three houses, not counting the railway station bars. Dr. Debove told his hearers that no one escapes this epidemic; children, young girls, men, women all suffer from it. In some parts of France nurslings are brought up by bottle *à l'alcool*. Dr. Debove calls upon the medical world by example, and by carrying on a crusade against this invading tide of alcoholism, to try to stem it.

Dr. Labbé, Dr. Pozzi, and Dr. Cornil took an active part in the recent debate in the Senate on the health of the army. Dr. Labbé interpellated the Government on the recent typhoid fever epidemic at the Lure Barracks, and affirmed that impure water was the enemy to be conquered. Dr. Cornil dwelt on the fact that water is not the only vehicle of contagion; wine, milk, and the soil are also media of transmitting contagion, but water is the principal one, and therefore special precautions should be observed to obtain a pure water supply. Dr. Pozzi proposed that during military manœuvres sanitary inspectors should be sent to the localities chosen for the scene of these manœuvres, in order to ensure the certainty of sanitary precautions being observed on the arrival and during the stay of the troops. Dr. Labbé's motion was unanimously adopted. It ran as follows:

> The Senate, confident of the solicitude of the War Minister, urges him to perfect, in an energetic and continuous manner, all sanitary measures necessary to ensure the health of the army.

The departmental school for male and female nurses organised at the St. Anne Clinic has drawn up the following programme for the instruction of its pupils: Anatomy and physiology taught by Dr. Vallon; Administration taught by Dr. Taule; Dressings and Apparatus taught by Dr. Mauclaire; Sanitation taught by Dr. Dubuisson; Preliminary Pharmacy taught by M. Thabuis, head dispensing chemist at the Vaucluse Asylum. The general public can attend these lectures by inscribing their names on the register.

Dr. Gruby, a Parisian celebrity well known for his original manner of treating his patients, has just passed away. He was called in by nearly all the Parisian notabilities, among whom were Liszt, Chopin, Heine, Ambroise Thomas, Alexandre Dumas, father and son. Daudet also consulted Dr. Gruby, but was irritated by his original treatment and directions, and refused to follow them. Dr. Gruby died at the age of 88. The circumstances of his death were in keeping with his extraordinary way of living. He became misanthropic, and shut himself up in his room, refusing to see anyone, half opening the door to receive his food. The police commissary, informed of his habits by the neighbours, forcibly opened the doors on November 16th, and found him lying dead on a mattress placed on the floor across the door, which had been bolted.

BERLIN.

Medico-Gymnastics in Garrison Hospitals.—Berlin School Doctors.—Leprosy in East Prussia.—A Successor to Father Kneipp.—District Medical Officers.

In a rescript issued a short time ago, the Medical Department of the Prussian War Ministry draws attention to the excellent results obtained by the use of medico-mechanical gymnastic apparatus in garrison hospitals. These appliances (says the rescript) must be considered a decided enrichment of the therapeutic aids at our disposal; and wherever they are arranged in a practical manner, and put into practice by a trained staff under guidance of sanitary officials, their great usefulness is sure to make itself felt.

The Berlin school-doctor problem is at last to be pushed on a step—from the region of talk and discussion to that of practical experiment. In 25 municipal schools medical supervision is to be begun, and to be carried on continuously if found practicable. The proposed scheme is as follows: School doctors to be appointed for each district by the magistrates. The number of schools under charge of each doctor not to exceed four. All new pupils to be examined with a view to deciding whether they are mentally and physically equal to school discipline and work. Consultation of specialists where necessary. In special cases home visit to a pupil stated to be unable to attend school from ill-health. Verbal or written reports on (1) suspected or observed cases of infectious disease, or of physical unfitness among the pupils; and (2) suspected or observed sanitary deficiencies in or about the school house. Periodical examination of the school house and class rooms in and out of school hours. The school doctor to receive a salary of 500 marks (£25) per year for each school under his charge.

A few leprosy cases from the Province of East Prussia have been received into the Dermatological Clinic of the Breslau University for teaching purposes. This seems to have alarmed the townspeople, for the hospital authorities have thought it necessary to send a statement to the newspapers to the effect that every possible precaution against infection to others has been taken, that the railway carriages used by the lepers have been thoroughly disinfected, and that in the hospital these patients are completely isolated. In view of the general anxiety felt, it is not, unlikely, however, that the presence of leprosy cases in Breslau may be declared as no longer an absolute requirement for clinical instruction, and the poor wretches sent back to the places they came from.

Father Kneipp has found an imitator in a Protestant clergyman, who in a village near the Rhine is building a sanatorium for the cure of the sick by a beautifully simple method: wallowing in loamy earth, and then walking about stark naked. Man, argues Pastor Felke, being made from earth, as the Bible teaches, must by earth be cured of disease. And to prove his consistency, Felke treats every complaint—external or internal—in this one way, ordering his patients to sleep at night on the bare earth, to have the full advantage of "the currents of earth magnetism." No one who knows the inexhaustible gullibility of the human species will be surprised to learn that Pastor Felke has a large and constantly increasing number of patients, who stream to him from the neighbouring provinces, from Holland, etc.

The meeting of the Berlin-Brandenburg Aerzte-Kammer (representative body of medical men) was almost entirely taken up by proposing and discussing a basis for the better regulation of the district medical officers' position. The chief desiderata demanded were: that the district medical officer be created a fully salaried Government official, with right to a pension: that all private practice—with the exception of consultations—be prohibited to him; and that the coroner's and legal expert's duties be separated from the district medical officer's.

LIVERPOOL.

Proposed Hospital for Chronic Diseases in Children.—The Treatment of Tuberculosis.—Medical Students' Annual Dinner: Dr. Barr on Medical Education.

A meeting of medical men and others interested in the treatment of the sick poor was lately held for the purpose of pro-

moting a hospital for the open-air treatment of the chronic diseases of children. It was pointed out by the speakers that the hospitals at present in existence made practically no provision for the treatment of children suffering from caries and other chronic tuberculous diseases; they could not be efficiently treated as in-patients on account of the prolonged period during which they would require to be in the wards if they were to receive any permanent benefit; and it was hopeless to treat them as out-patients on account of the poverty and the insanitary condition of their homes. It was further pointed out that the chief remedial agents in the treatment of such cases were fresh air and sunlight, and that what was required was a large hospital situated in the country, where the patients could remain long enough to have a chance of being completely restored to health. Mr. Robert Jones, surgeon to the Royal Southern Hospital, who was one of the speakers, pointed out that this country was far behind Continental nations in matters of this kind, and instanced the splendid provisions which he had seen in a small village near Boulogne, where there were three large hospitals built for children, one with 1,000 beds, another with 300, and a third with 30. A committee was formed to carry out the objects of the meeting, and several promises of support were received.

The profound interest which is just now felt by the profession in schemes which hold out some prospect of successfully controlling tuberculosis, and the general feeling of hopefulness that it will be possible in the near future to diminish, if not to abolish, this terrible scourge of humanity, was evidenced by the large attendance at the last meeting of the Medical Institution, when Dr. Nathan Raw read an admirable paper on the Treatment of Tuberculosis in Open-Air Sanatoria. The general impression left on those who heard Dr. Raw's paper was that the line of treatment which he advocated opens up great possibilities, and Dr. T. R. Bradshaw has given notice that at the next meeting he will move for a committee to consider and report on the whole question of the prevention and treatment of tuberculosis in Liverpool.

The annual dinner of the medical students of University College took place on November 19th in the Adelphi Hotel. The chair was occupied by Dr. Barr and the vice-chair by Professor Sherrington. Amongst those present were Principal Glazebrook, Dr. Glynn, Mr. Mitchell Banks, Dr. Briggs, Dr. T. R. Bradshaw, Professor Boyce, representatives from Owens College and the Yorkshire College and about 100 students. Dr. Barr, in replying to the toast of "The Professors and Lecturers," said that although the lines of the student had to-day fallen in more pleasant places than formerly, he was still deserving of sympathy in respect of the multiplicity of subjects with which he was expected to make himself acquainted. There was a danger that the scientific part of the curriculum might absorb too much of the student's time, with the result that his practical studies in medicine and surgery were crowded in at the end of the course. The aim of most of those present was to become successful general practitioners, and for them a good knowledge of clinical medicine and surgery was of much more importance than the circulation in the bat's wing or the anatomy of the frog. They would find that when they got into practice the public would judge them according to their ability to treat them judiciously and successfully, and not according to the fancied value of the diplomas they possessed; and in this the public were right. Dr. Barr then discussed the advantages and drawbacks of the examination system, and concluded with a humorous description of the possibilities which might result from the introduction of a system in which examinations were replaced by friendly conferences between the student and his teachers. Amongst the speakers were Principal Glazebrook, Mr. Mitchell Banks, Professor Boyce, Dr. T. B. Grimsdale, and Messrs. Middleton and Keeling, the representatives of Owens College and Yorkshire College respectively. An excellent dinner and musical programme were provided. The annual dinner, which is organised entirely by the students of the medical school, has gradually increased in popularity, and is now a recognised occasion for the meeting of the staff of the school and the Royal Infirmary, with their past and present students on terms of mutual goodwill and fellowship. The last was undoubtedly the most successful gathering of the kind which has yet been held, not only in regard to the attendance, but also in regard to the quality of the speeches. Dr. Barr is to be congratulated on the tact with which he performed his duties in the chair.

BELFAST.

The Annual Report (1897) of the Medical Superintendent Officer of Health: High Mortality from Typhoid Fever; Low Mortality from other Zymotic Diseases.—Decrease of Pulmonary Phthisis.—The Birth-rate and Death-rate.—High Mortality from Diarrhœa.—Insanitary Houses.—The Water Supply.—Deficient Hospital Accommodation for Infectious Cases.

So much attention has recently been devoted to sanitary questions in Belfast that more than ordinary interest attaches to the annual report of Dr. Henry Whitaker, Medical Superintendent Officer of Health. It is a very able document, full and precise in its statement of fact, and commendably frank in its admission of the existence of serious sanitary defects, and of the necessity for far-reaching reforms. The chief feature of the year was the largely increased mortality from typhoid fever, the deaths from this disease numbering 354, as compared with 136 in the year 1896. This represents a rate of about 11 per 10,000 inhabitants. The gravity of this figure will be apparent when it is remembered that the rate for England and Wales as a whole is about 2 per 10,000 inhabitants. The deaths from typhoid in the years 1890-96 averaged 145, showing a minimum of 108 in 1892, and a maximum of 184 in 1895. The deaths during the year 1897 were thus considerably more than twice the normal average. The deaths from most of the other zymotic diseases were under the average. Measles showed a mortality of 124, as compared with 205 in 1896, scarlatina 32, as compared with 173, whooping-cough 187, as compared with 215, and diphtheria 38, as compared with 47. The gradual dying-out of typhus fever is one of the satisfactory features of public health in Belfast. The deaths from this disease were 5 in 1897, and 4 in 1896. Some years ago they were much more numerous.

Very satisfactory also is the evidence that pulmonary phthisis is steadily on the decline in Belfast. The deaths from this cause were 995 in 1897, as compared with 1,008 in 1896, and 1,084 in the year 1890, when the population of the city was less by more than 40,000 than it is at present. The deaths from diseases of the respiratory organs (other than phthisis) seem to be about stationary, in spite of a rapidly increasing population. They numbered 1,675 in 1897, as compared with 1,640 in 1896, and 1,703 in 1890.

The total birth-rate for the year was 33.3, and the death-rate 23.0 per 1,000. The zymotic rate for the year is put down at 3.6, and the rate of mortality from chest affections at 8.6 per 1,000. It is a matter of great difficulty to secure accuracy in these figures owing to the rapid growth of the population. By the census of 1891 the population was found to be 255,922. It is now estimated at about 310,000. By a recent Act of Parliament the boundaries of the city have been largely extended. As regards the deaths from phthisis, Dr. Whitaker remarks: "There can be little doubt that the effect of good sanitary work would be to reduce the death-rate from phthisis. It has done so materially in many districts, both at home and abroad. Phthisis is essentially a disease of overcrowding and bad ventilation. The public do not seem to have realised the fact, nor do they consider the infectious nature of the disease."

The deaths from diarrhœa were above the normal average, being 355 as compared with 206 in 1896. The significance of these figures in association with the largely increased mortality from typhoid fever will be noted. Dr. Whitaker attributes the deaths from diarrhœa to impregnation of the soil with filth, want of cleanliness of domestic premises, and deficient ventilation. He says that not much has yet been done to remedy these defects, but that some progress has been made, and that the results of recent sanitary reforms will not be at once apparent. "The evil results arising from the neglect, apathy, and carelessness of the past cannot be removed in a few years of better management, but I confidently hope that results will follow our sanitary efforts similar to those which have taken place in other large and important districts which suffered even more severely than ours from preventable

disease." The remarkable mildness of type of the scarlatina prevailing during the year is brought out in these returns. Only one death occurred among the cases treated at the Union Hospital, and no deaths amongst those treated at the Royal Hospital.

Dr. Whitaker deals very frankly and fully with the grave increase in mortality from typhoid fever. He has examined personally or by deputy into the sanitary condition of 2,211 houses in the city where typhoid fever occurred, and he found that 353 of these had privies and pits with back passages, 750 had privies and pits without back passages, and 1,218 occurred in houses with waterclosets. Whilst typhoid fever occurred in 2.7 per cent. of the houses having waterclosets, the houses with privies had 5.5.

The moral of these figures is not hard to read, and we are glad to note that the Corporation is at length about to take effective steps to put an end to the scandal of having thousands of houses in a prosperous and modern city destitute of waterclosets. An inspection of the ground in the neighbourhood of the Stoneyford reservoirs, one of the principal sources of water supply for the city, showed that the ground was heavily manured, and that some cases of typhoid fever had occurred in the neighbourhood. "Although it could not be said positively that the contamination of the water had been the cause of the outbreak (that is, of typhoid fever), yet the facts admitted of grave suspicion." A curious feature of the incidence of typhoid fever in Belfast is that two of the most insanitary wards in the city—namely, Dock and Millfield—have the least typhoid. The worst districts are Ballymacarrett and Shankill.

Dr. Whitaker again protests against the inadequacy of hospital accommodation for infectious diseases in Belfast, but notes that a municipal fever hospital is about to be erected. He concludes with a few practical recommendations, namely: the erection of a municipal hospital for infectious diseases, the accommodation at the Royal Hospital and the Union Hospital being inadequate; the examination of all the old sewers, the thorough cleansing out and reconstruction of these where required; the providing of destructors for the burning of the refuse and *débris* of the city; the regulation of privies and ashpits, and the remedying of defects in insanitary houses. It is satisfactory to learn that "during the past year steady progress has been made in improving the sanitation of the city. Many of the most unhealthy houses have been closed, and steps have been, and are being, taken to compel the owners of the poorer class of houses to put them, as far as possible, into proper order and make the necessary sanitary arrangements therein."

Upon the whole, Dr. Whitaker's report both shows that some progress has been made, and points the way which future reform must take. We would express the earnest hope that the Belfast Corporation, and especially the Public Health Committee, will not allow the warnings and recommendations of their own chief sanitary officer to remain a dead letter, but that they will seduously advance in the path of reform upon which they have already entered, and that complete success will in time crown their efforts.

CORRESPONDENCE.

THE PLEA OF INSANITY.

Sir,—Few of your medical readers will agree with Dr. Mercier that for you to suggest a change in the mode of submitting medical evidence to our Courts is to cast an undeserved "slur" on the administration of the criminal law in England; and when he warns medical men not to dabble their "amateur hands in legal procedure" he does not quite fairly represent what was recommended in your leading article of November 12th. Most of us who have frequently had to appear as witnesses will, I think, approve your suggestion and be grateful for it. Surely we are entitled to make suggestions in regard to any procedure, legal or other, through which our reputation is at stake and whereby we believe justice suffers. Legal procedure in many respects is constantly changing, and for the better. Why should Dr. Mercier assume that the present mode of giving medical evidence before the courts is the best possible, and that medical men should have no voice as to how their medico-legal duties should be done? What we want, and what we have a perfect right to urge, is that in any case where our special knowledge and experience is needed by the Courts for the administration of justice we shall have an opportunity of observing and examining into the whole of the known facts on both sides of any case before we come to a conclusion, and that we shall not be tempted, as we often are at present, to express opinions necessarily founded on *ex parte* facts. By reason of the present mode of procedure we are, and must often be, regarded and treated by judges as if we were partisans and advocates for one side, instead of being impartial scientific witnesses whose reasoned conclusions should carry definite value in regard to medical facts and opinions. Neither Dr. Mercier nor any other medical man can say that it adds to the repute of a our profession to have a number of well-known medical experts on each side of a case, half of them giving diametrically opposite opinions in court to the other half, and each having frequently to own ignorance of the facts on the other side. The present custom—it cannot be called a "procedure" at all—simply drives us into advocacy rather than evidence. It often also seriously impairs our own self-respect. It lowers our scientific, and even our ethical, position in the eyes of the lawyers, and it weakens our status in the public estimation. I was once talking about a certain case with a legal friend, and he said something which implied that "as much doctor's evidence" could always be got as could be paid for, a statement which I hotly controverted. He seemed quite surprised, and said something of this kind, "I can't see where the devil your *sæva indignatio* comes in. I tell you as a fact, which I know to be true, that I can retain any doctor in Edinburgh for any case I am engaged in just as I can retain the Lord Advocate or any other counsel." He was certainly wrong, but Dr. Mercier knows he as certainly expressed a common misconception of our whole position as scientific witnesses. The powerful influence of the British Medical Journal I rejoice to see used towards altering a bad custom that has inevitably led to such a disparaging opinion of this part of the work of our profession.

As to the details of the changes that might with advantage be introduced, he would be a rash man to suggest them without legal help. We might be asked to sit as assessors to the court and hear all the evidence, or we might submit a reasoned report, or a selected number of impartial experts employed by the Court might give evidence and be cross-examined. Certainly the poor as well as the rich should have the benefits of skilled examination and opinion. Meantime we can only educate our masters, the lawyers and their masters the public, in this matter and vigorously homologate your criticism of the present method and the general views you put forward, as being calculated to secure the ends of justice, to remedy an ever recurring medical scandal, to heighten our position as professional men, and to abolish a custom that leads us into temptation.—I am, etc.,

Edinburgh, Nov. 19th. T. S. Clouston.

VACCINIA IN THE CALF.

Sir,—With regard to some remarks made by Dr. Monckton Copeman in his second Milroy lecture, published in the British Medical Journal of May 14th, 1898, the following experiment may be of interest.

I killed on the twelfth day a calf which had been vaccinated with glycerinated lymph and took out its liver and spleen. Parts of these organs were separately pounded up with glycerine and stored in tubes in the usual way that glycerinated lymph is dealt with. After keeping these for fourteen days, two other calves were inoculated, one with the liver, the other with the splenic extract. No vesicles resulted, and the punctures and scarifications, at first a little reddened, rapidly healed up. A week later both these calves were reinoculated with stock glycerinated lymph.

The resulting vesicles were fair in the case of the calf originally vaccinated with the splenic extract and gave good results when used for inoculating a fresh calf. The calf, which had been vaccinated with the liver extract did not exhibit typical vesicles, and the quantity of lymph obtainable from them was very small. Again, two fresh calves were vaccinated with the liver and spleen extracts, which had now been kept for one month. There was no result. On revaccination with stock glycerinated lymph both calves exhibited

fairly typical vesicles, but the quantity of lymph obtainable was below the average.

My conclusions are that the glycerine extracts of the liver and spleen taken from a calf on the twelfth day after vaccination with stock glycerinated lymph do not contain the virus of cow-pox—at any rate, in sufficient quantities to convey the disease to other calves vaccinated with these extracts. Yet the calves seem to be in some measure influenced by the process, in that on revaccination with stock lymph they do not show as typical vesicles or as free formation of lymph as would be expected to occur in fresh calves.—I am, etc.,

J. W. CORNWALL, M.A., M.B.Cantab.,
Lieutenant, I.M.S.

Madras, Nov. 1st.

RADICAL CURE OF HERNIA BY TORSION OF THE SAC.

SIR,—Surgeons in general are under a debt of gratitude to Mr. Ball for having some years ago suggested a very simple, ingenious, and efficient method of disposing of the neck of the hernial sac by torsion and fixation. Mr. Ball's latest suggestion on this subject[1] is much more open to criticism. Mr. Ball, in his description of his operation, lays himself open to the charge of indefiniteness. For instance, he says:

> If the sac is of moderate size the fundus lies now in the inguinal canal, and together with the spermatic cord is pressed firmly backwards towards the abdominal cavity, while deep sutures are passed, taking good hold of the lateral structures of the canal, etc.....When these sutures are closed over lead plates they tend to keep up the displacement backward of the cord and sac while closing the inguinal canal effectually.

Let me analyse this descriptive statement in detail. If the fundus lies in the inguinal canal it cannot be pressed backwards because the posterior wall of the canal will prevent it, and no amount of pressure will drive it further back than it is, provided always it is in the canal as Mr. Ball states.

Again: "Deep sutures are passed, etc." I would respectfully ask, What are the lateral structures of the canal in which the sutures are to be fixed? Unless the external oblique aponeurosis has been divided, only the external ring is in view, and I wish very much to know definitely, What is sutured to what?

Again: If a suture is passed from the anterior wall of the inguinal canal to the posterior, and tightened, it will approximate the walls, and this may with equal correctness be described as drawing the posterior wall forward, or the anterior backward; but how such a suture can at one and the same moment shove backwards the spermatic cord and sac fundus, while drawing forward the posterior wall of the canal, on which these structures rest, is more than my limited intelligence is able to comprehend.

I presume "external ring" is intended for "internal ring" in the paragraph in which Mr. Ball says that "the sac can be felt as a ridge," etc.

Mr. Ball is one of the few men who, having for many years taught anatomy in the School of Physic, and having operated with success in a large number of cases, has an intimate knowledge of the normal and pathological anatomy of inguinal hernia. One therefore naturally expects from such a man language which shall not in any way be lacking in scientific accuracy. I have no doubt Mr. Ball's method will in his hands prove successful, but I fear his description must be largely supplemented and revised before it becomes intelligible to the many.

In conclusion, permit me to state very briefly my own views on the operation for the radical cure of inguinal hernia. For practical purposes, such cases may be divided into two classes: (*a*) those in which an inguinal canal still exists; (*b*) those in which the canal has been obliterated by the approximation of the internal and external rings. The former can be cured by any operation. No operation ever cures the latter.—I am, etc.,

T. MYLES,
Vice-Pres. R.C.S.I., Surgeon to Richmond Hospital.

Dublin, Nov. 12th.

SYPHILIS IN THE ARMY: 1812 AND 1898.

SIR,—In support of the view that inefficient treatment may be responsible for the aggravated form of disease, considerable prominence is given in the editorial article on the above subject in the BRITISH MEDICAL JOURNAL of November 5th, to Fergusson's "converted" opinion from his attenuation theory in explanation of mitigation amongst the Portuguese, to mercurial abuse in explanation of aggravation amongst the British troops in Portugal; moreover, the view is entertained that improved hygiene and treatment are principally responsible for the general mitigation of syphilis.

As I originally pleaded for the recognition of the work of William Fergusson, Inspector-General of Military Hospitals,[1] may I be permitted to advocate his claims, and to submit the view that climate, race, and attenuation do not play a subsidiary part in the mitigation, or the former two, in the aggravation of syphilis?

In the first place, Fergusson did not admit mercury was the only cause of aggravation amongst the British soldiers. The quotation that "venereal ulcerations became more intractable to the operation of mercury than under similar circumstances at home," shows that in Portugal there was some additional factor, and Fergusson, at the time he advanced the attenuation theory, advanced also the theories of climate with its "febrile affections," intemperance, and transplantation of virus from the mitigated disease of the native to the foreigner, as accounting for the aggravation of disease amongst the British.[2]

In his later paper he states:

> The soldiers were sanguineous, plethoric, highly-fed for soldiers, and addicted as they had ever been to the abuse of alcoholic stimuli. The climate at the autumnal season of the year was hot, and the campaign before reaching the capital had been active.....With such subjects, more especially at the beginning of the disease, before being lowered and depleted, it might have been foreseen that phagedæna would assume the reins while mercury gave the spur.

Moreover, he states:

> "I may almost say the Portuguese had no phagedæna." He could not recollect any similar case to ours amongst them with them with the exception of one, "but he was as highly fed, a drinker, and sanguineous as any of his English fellow servants".[3]

The plea for improved mercurial treatment at the present day set forth in the BRITISH MEDICAL JOURNAL leading articles of April 9th and November 5th, is somewhat discountenanced on June 4th by Colonel F. H. Welch, R.A.M.C. (retired). He says:

> It is impossible to explain the present frequency of virulence of syphilis in the army on the want of any mode of administration, or of the general use of mercury as compared to the past; an explanation other than the treatment adopted is wanted.

The explanation he gives is the want of "sanitary control." It may, however, be pointed out that Fergusson himself thought that mercury was tolerated in enormous doses in states of fever, and therefore on that possible ground the lea of inadequate mercurial treatment is supported.

In this paper on Fever as an Army Disease[4] it is seen that Fergusson was fully alive to the importance of those views which have been put forward on behalf of improved hygiene, morals, cleanliness, etc.

> Send troops where we will, they are destroyed by fevers. Into barracks at home? the contagions of accumulation creep in amongst them. To Walcheren? they are devastated by the autumnal malarious pestilence. To Spain? the same is perennial.....Have we any safeguard? None but in the good keeping, good condition, physical and moral, of the troops. No remedy after the disease is established, none whatever in the way of physic; for the best physician that ever existed will lose more patients than the most ignorant hospital mate, if he neglects the precautions of discipline and cleanliness.

The similarity of the aggravated form of syphilis amongst our British troops invalided home from India at the present day to that depicted by Fergusson amongst the British troops in Portugal (a similarity which perhaps, I may say, was originally brought forward by myself) favours the view that climate with its febrile affections is of equal importance to that of hygiene and treatment.

My own experience in favour of this is limited to cases invalided home from abroad and seen in the practice of the late Mr. Henry Lee, but he distinctly expressed the opinion to me that malaria aggravated syphilis.

Guthrie, to whose views Fergusson is stated to have been "converted," wrote:

> I perfectly coincide with him (Fergusson) in opinion that the change from the climate of Great Britain to that of Portugal in the summer with the different mode of life does act most powerfully on our northern constitutions, and disposes strongly to inflammatory affections. It is this

[1] *Lancet*, January 29th, April 23rd, June 4th, 1808.
Observations on the Venereal Disease in Portugal as Affecting the Constitutions of the British Soldiery and Natives, *Med.-Chir. Trans.*, vol. iv (1812).
[3] *Notes and Recollections of a Professional Life* (1846).
[4] *Ibid.*

that rendered the same kind of wounds more dangerous to the British soldiers than to the natives, and it was to this disposition, increased by the greatest irregularity of conduct and often by intemperance, a vice the natives are not addicted to, that we were indebted for the mutilations which ensued from the venereal disease. If the persons affected had been managed in the manner he has informed us he treated his friend after the battle of Vimiera the result would have been very different.[5]

This latter testimony demonstrates the fact that Fergusson, convinced of the non-mercurial treatment of syphilis amongst the Portuguese, had begun, though hesitatingly, to practise modified mercurial treatment himself.

Within two years afterwards first Mr. Rose and then Mr. Guthrie ventured on bolder views, and published to the world the feasibility, propriety, and safety of treating British soldiers in the same manner as the Portuguese.

Not only did Fergusson demonstrate the aggravating effect of climate, but he thought it "ought to be acknowledged" that the efficacy of sudorific woods in the treatment of syphilis was not only known in Portugal long before attenuation by a process of self-exhaustion could have taken place, but in tropical latitudes. In face of this and "much" that "has been written" it is not easy to agree that syphilis is not mitigated in certain warm climates.

With regard to aggravation of syphilis by transplantation of virus from the native to the foreigner, I may say that this view has been independently confirmed and appears to be worthy of consideration now.

I perhaps further might refer to another important point, namely, the fluctuations in virulence which occur in syphilis.[6]

With regard to Fergusson's "comforting" theory of attenuation, I accept the fact that he did not later again mention it.

In his preface to his latter work he says, however: "For candid criticism I shall ever feel most grateful, but I shall not reply to it otherwise than by correcting the errors and mistakes I may have fallen into in a second edition....." He never lived even to complete his work, which, his editor informs us, "is manifestly imperfect, ending abruptly with the article on syphilis without any peroration or *resumé*."

Eight years later the late Mr. Henry Lee[7] published and fully testified to Fergusson's theory of attenuation, and it has generally received remarkable and independent support. In the British Medical Journal of October 22nd attention is drawn to the recently-published *Transactions* of the Third Dermatological Congress. It is noted "as a work of reference for dermatologists and pathologists for many years to come," in which are "represented the views of the most prominent dermatologists in the world on many important questions."

In this volume Professor Haslund (Copenhagen) independently and afresh puts forward the attenuation hypothesis. He refers to the similar views of Lesser and Kopp. Professor Neisser (Breslau), abandoning it for the most part in favour of hygiene and treatment, nevertheless thinks it of interest to draw attention to Epstein's facts, which support attenuation. Professor Tarnowsky (St. Petersburg) converts hypothesis into fact:

Syphilis which never enters the gummatous period, and which is even exclusively limited to the initial symptoms—abortive syphilis, so to say—constitutes a real antithesis to the three categories of malignant syphilis we have just demonstrated. I possess thirty observations of this kind. In the majority of cases one of the parents of such patients had suffered from syphilis and had transmitted a lesser receptivity to the syphilitic diathesis. But, apart from parental syphilis, there are other causes still unknown to us which impart immunity from syphilis. For instance, I can mention the prostitutes of [illegible] who never contracted syphilis. Dr. Snerek has demonstrated for the town of St. Petersburg that all the prostitutes submitted to the sanitary inspection contracted syphilis about the third year of the exercise of their sad vocation. As a matter of fact, the enormous majority of such women become infected, but not all without exception. Those who had syphilis before becoming prostitutes do not get contaminated, neither those who show traces of hereditary syphilis, or whose parents previously suffered from syphilis. [illegible]

Moreover in 1874 (March 7th) attention was drawn in the British Medical Journal to Mr. Morgan's (Dublin) paper on modified syphilis and to his "valuable experience on some of the most important facts bearing on the doctrine of syphilis," and which supports attenuation of virus.

May 9th. Surgeon-Major W. S. Oliver, with sixteen years' service, writes:

I entirely concur with Mr. Morgan in his views as to the modification of syphilis by descent. I desire to further assert that it is syphilis in this modified form that the army medical officer has to deal with in 70 per cent. of the cases of so-called "primary syphilis" which come under notice. I am most firmly convinced that not more than 30 per cent. of these cases, if so many, can be considered true primary syphilitic chancre at all, but merely the primary local evidences of the transmission of secondary syphilis from one person so infected to another not previously contaminated.

On June 13th Mr. Morgan writes:

I believe it to be the fact that syphilis is capable of modification by descent, and that the vast majority of primary sores are not derived from sores, but from the inoculated discharges of constitutionally infected women.

On July 25th Surgeon-Major J. F. Porter, Professor of Military Surgery, Netley, writes entertaining the same opinion as Mr. Morgan.—I am, etc.,

John A. Shaw-Mackenzie, M.D.Lond.

Grosvenor Street, W., Nov. 11th.

[5] *Med.-Chir. Trans.*, vol. viii.

[6] Contagious Diseases Acts. *Blue Book.* 1882.

[7] *Lectures at the Lock Hospital*, 1854, *On Syphilis*, 1863.

THE ROYAL ARMY MEDICAL CORPS.

Sir,—Perhaps you will allow me very briefly to state what further steps ought, in my opinion, to be taken by the Secretary of State for War to place the Medical Service of the army in a state of efficiency:

1. Alter age at entrance from "21 to 28" to "22 to 25."

2. Make the examination more practical, especially in the subjects of anatomy and physiology.

3. Level up the pay of the Royal Army Medical Corps in India to at least that of the combatant ranks.

4. Increase the strength of the Royal Army Medical Corps gradually, as eligible candidates are obtainable, so as to ensure at least three years' home service after each tour of five years abroad, with a reasonable amount of leave for study and recreation. The intention to do this should be at once made public.

5. Abolish the Army Medical Reserve: it is a mere paper army, a mockery, a delusion, and a sham.

6. Reappoint medical officers to all militia battalions, train them at Netley and Aldershot, and thus create a real reserve.

7. Reduce the number of retired-pay appointments, and lower the maximum age to 60. Many of these appointments, especially those in and near London, ought to be held by full-pay officers.

I will not waste your space by giving reasons and arguments for these proposals: they are self-evident to all who are disinterested, and understand the subject. As I shall have left England on a lengthened tour in India, China, Japan, and America before this letter appears, I must leave any further expressions of opinion on the subject to others.—I am, etc.,

J. B. Hamilton,

Junior United Service Club, Nov. 21st. Surgeon-General (R.P.).

CRIMINAL ABORTION.

Sir,—Was Dr. Whitmarsh not guilty of the crime of murder? Was his crime no more than procuring abortion? I think it was more. If the woman had not died he would, nevertheless, have been guilty of procuring abortion, which, as you rightly say, is a felony. But the woman died, and that adds another element to the offence. What is murder? Sir James Fitzjames Stephen, in his *Digest of the Criminal Law* defines murder as "Unlawful homicide with malice aforethought." Obviously, a good deal turns on the legal significance of the words "malice aforethought." On this point Sir James is quite explicit. "Malice aforethought," he says, means any one of several states of mind. The one which is pertinent in this case is "an intent to commit any felony whatever." Is it not clear, therefore, that when the crime of procuring abortion results in the death of the woman the perpetrator of the crime is guilty of murder?

Is not criminal abortion itself so near to as not to be distinguishable from murder? It is the unlawful and intentional killing of a living child *in utero*, and does not seem to differ much morally from the unlawful and intentional killing of a child *ex utero*.

That the advertising and sale and use of abortifacients is widely prevalent there can be no doubt. It may be difficult to devise effective means of stopping these iniquitous practices, but some strong measures are urgently called for to stop the use of public newspapers and magazines for such nefarious purposes.—I am, etc.,

J. Rutherford Hill.

Pharmaceutical Society of Great Britain, North British Branch Edinburgh, Nov. 21st

THE TEACHING OF OTOLOGY IN THE PROPOSED NEW UNIVERSITY AT BIRMINGHAM.

SIR,—My attention has been drawn to the list of professors and lecturers which it is proposed to elect on the teaching staff of the projected medical department of the new Birmingham University.

As published in the press, I do not observe that any provision is to be made there for the teaching of otology, either by the election of a professor or lecturer. It will be within the recollection of your readers that when I had the honour of presiding over the Aural Section of the British Medical Association at its meeting at Newcastle I gave an address upon the general want of such teaching in England as compared with other countries, and I was supported in my contention by two able articles in the BRITISH MEDICAL JOURNAL. Since that time, and I venture to believe in consequence, medical schools have elected, where required, lecturers or professors of otology.

On this account I was surprised to find that in casting the curriculum of what will certainly be an important provincial university in the future, the subject of aural surgery was to be wholly neglected. It is not my purpose here to draw attention to the great need which still remains for putting otology in its proper place in England. This is well known; but I feel impelled to protest against this teaching body being considered complete without either a lecturer or professor of aural surgery. If in commencing such a school funds are found to be wanting, I have no doubt the Committee would have no difficulty in securing, at a small honorarium, the able services of a well qualified local aurist.—I am, etc.,

H. BENDELACK HEWETSON,
Ex-President of Aural Section of the British Medical Association; Honorary Ophthalmic and Aural Surgeon, General Infirmary, etc., Leeds.

November 23rd.

EARLY FEEDING IN TYPHOID FEVER.

SIR,—In his comments in the JOURNAL on my paper on the Treatment of Typhoid Fever published in the previous number Dr. Barrs urges that I should not only have mentioned his recommendations, but also the results of the cases on which they were based. But it is not possible, within the limits of a half-hour paper, to quote cases from publications referred to, and I gave the reference to the paper from which I quoted, and assumed that the professional audience I addressed were acquainted with it. Moreover, I did not question the results Dr. Barrs obtained so far as those cases went, but accepted them, and on the strength of these and other similar cases I wrote in the very sentence from which Dr. Barrs quotes: "Cases do occur with little or no intestinal ulceration in which solid food might be given early with advantage."

The main purport of my paper was to show that typhoid fever had altered in type in the direction of less severe and less frequent intestinal ulceration. In this belief I have frequently given solid food earlier than is usually recommended, and I quite agree with Dr. Barrs that in many cases no ill results ensue.

But in some cases, even when the patient has had a great desire for solid food, I have seen rapid rises of pulse-rate and of temperature follow its administration, and sometimes tympanites and diarrhœa. And I have several times been summoned to see patients on account of very serious symptoms—in one case melæna—having followed the taking of solid food before convalescence was established. While agreeing with Dr. Barrs that solid food might often be given earlier than is usually advised, I submit that a series of successful cases of such procedure does not justify the proposition that a patient's desire for solid food is a safe guide for its administration.—I am, etc.,

London, Nov. 21st. SIDNEY PHILLIPS.

COCAINE IN RIGID OS.

SIR,—In connection with this subject I should like to record the following case:

I had just read the latest letters on the subject in the BRITISH MEDICAL JOURNAL, when an urgent message came from a woman in labour. On arrival I found it was a case of eclampsia, the convulsions following one another in quick succession, the woman being perfectly unconscious, and pulse very weak and thready. She was a primipara. I gave her a rectal injection of hot water, injected ½ gr. of morphine, and sent for assistance, intending to give chloroform and terminate labour as quickly as possible. While waiting I thought of the cocaine, as the os was very rigid and only slightly dilated. As soon as the chloroform administration was begun I applied the cocaine, and by the time she was sufficiently under I could pass my hand (cone shaped) into the os, and within about three minutes had the forceps on. I think it is in cases of this sort that the cocaine will be found most useful.—I am, etc.,

Tyldesley, Lancs., Nov. 20th. SYD. W. MAY.

THE PREVENTION OF TUBERCULOSIS.

SIR,—In connection with the difficulty of compensation to farmers for destruction of tuberculous cattle, it seems to me the following questions are important:

What is the value of a tuberculous milch cow?

What financial benefit is likely to accrue to a farmer from keeping tuberculous cows in the same cowhouses with healthy cattle?

Is compensation for this destruction, duly adjudged, likely to overbalance the consequent effect—namely, saving our children from loss of life and limb?—I am, etc.,

Victoria Square, S.W., Nov. 14th. THOMAS GLOVER LYON, M.D.

RESECTION OF THE INTESTINE.

SIR,—Will you allow me to correct a slight error in your account of my case of resection of the intestine read before the Clinical Society on November 11th? The length of intestine removed was 27½ inches, not 24½ as stated.—I am, etc.,

Wimpole Street, W., Nov. 18th. R. CLEMENT LUCAS.

OBITUARY.

WE regret to announce the death of Mr. WALTER EDWARD HACON of Christchurch, Canterbury, New Zealand, which occurred suddenly from apoplexy at the comparatively early age of 47. He was the son of a medical man, and after a distinguished career as a student at Guy's Hospital, he became a Member of the Royal College of Surgeons of England, and a Licentiate of the Royal College of Physicians of London in 1872. In the following year he obtained the Licence of the Society of Apothecaries. He was for some time Resident Medical Officer at Warwick Asylum. On leaving that institution in 1879 he proceeded to New Zealand. For a year he acted as Surgeon to the armed constabulary on the West Coast of the North Island. He was then appointed Resident Medical Officer in charge of the Sunnyside Asylum. This office he held until 1887, when he settled in private practice in Christchurch. Mr. Hacon was essentially a kindly man, and took the greatest interest in his asylum patients, never thinking of his own comfort if any of them needed his help by day or night. He was very fond of children, and was always ready to do what he could to relieve suffering. He took a keen interest in all professional matters, especially sanitary reforms and the prevention of disease, and kept well abreast of progress in all departments of medicine and surgery. While at the Asylum he was struck with the difficulty of procuring pure calf lymph for vaccination purposes, and having inoculated some calves he procured a large supply of lymph, which he distributed throughout New Zealand. He was the founder of the Canterbury Branch of the St. John Ambulance Association, and gave enthusiastic support to every scheme for bettering the condition of the community. Mr. Hacon married a daughter of the late Mr. Le Grand Campbell of Wellington, and leaves her and three young children to mourn his loss.

WE have to record the death on November 15th of Mr. JAMES YOUNG SIMPSON YOUNG, who obtained the degrees of M.B., C.M.Edin. in 1891. He was the son of the late Dr. James Young of Edinburgh, and for seven years acted as medical officer to the Oddfellows Society in Edinburgh. In May last he was appointed Resident Medical Officer of the Corstorphine Convalescent Hospital. His death was due to pneumonia. Dr. Young was of a retiring disposition, but pos-

sessed many friends, and during his student days took an active interest in the religious meetings held by the late Professor Henry Drummond.

THE death is announced of Dr. ANDREW of Glossop, at the age of 46. He had been for some years in failing health, and seriously ill for several months from heart disease. He had resided and practised in Glossop for nearly a quarter of a century. He received his preliminary education at the Bath Grammar School, and his medical education at Owens College, Manchester. He was Surgeon to the Wood's Hospital, Glossop, and for many years conducted an extensive practice, during the course of which he earned the respect and affection of his patients, not least of the poor. He also took an active part in municipal affairs, having been twice elected a member of the Town Council.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following qualified candidates have been appointed Surgeons, dated November 8th: JOHN BOYAN, WILLIAM H. DAW, CYRIL SHEPHERD, HUGH L. NORRIS, ADRIEN A. FORRESTER, M.B., JAMES M. E. SWAINSON, JOHN STODDART, M.B., JAMES A. FORREST, M.B., WARREN G. WESTCOTT, FRANCIS J. MCKENNA, M.B., FAIRMAN R. MANN, WILLIAM W. KEIR, M.B., EDWARD C. SAWDY, PERCY H. BANNISTER, M.B., RICHARD S. OSBORNE, MERVYN W. FALKNER, EDWARD O. B. CARBERRY, M.B., JOHN K. RAYMOND, M.B., HENRY W. M. REES.

THE NAVY.

THE following appointments have been made at the Admiralty: WILLIAM H. DAW, CYRIL SHEPHERD, HUGH L. NORRIS, A. FORRESTER, M.B., JAMES M. G. SWAINSON, JOHN STODDART, M.B., JAMES A. FORREST, M.B., WARREN G. WESTCOTT, FRANCIS J. MCKENNA, M.B., FAIRMAN R. MANN, EDWARD C. SAWDY, PERCY H. BANNISTER, M.B., WILLIAM W. KEIR, M.B., RICHARD S. OSBORNE, MERVYN W. FALKNER, EDWARD O. B. CARBERRY, M.B., JOHN K. RAYMOND, M.B., HENRY W. M. REES, and HENRY R. GARDNER, M.B., Surgeons, to the *Victory*, for the Haslar Hospital November 8th; HERBERT L. PENNY, Surgeon to the Cape of Good Hospital, November 28th; GEORGE G. BARRETT, Surgeon, to the *Pembroke*, November 28th; HERBERT H. PEARSE, Surgeon, to the *Defiance*, November 18th; WALTER H. S. STALKARTT, Surgeon, to the *Vernon*, November 18th; HORACE ELLIOTT, M.D., Staff Surgeon, to the *Philomel*, December 1st; PERCY W. BASSETT-SMITH, Staff Surgeon, to the *Ganges*, December 1st.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL NICHOLAS LEADER has retired on retired pay. He was appointed Surgeon, February 3rd, 1878, Surgeon-Major February 3rd, 1890, and Surgeon-Lieutenant-Colonel, February 3rd, 1898. He was in the Egyptian war of 1882, receiving the medal and Khedive's bronze star, and in the Soudan campaign in 1885, when he was present in the reconnaissance to Hasheen, in the engagements at Hasheen and the Tofrek zereba, at the attack on the convoy on March 26th, and at the destruction of Temai; for this campaign he received two additional clasps. He was also in the Chitral Relief Force under Sir Robert Low in 1895, receiving the medal with clasp granted for that campaign.

Lieutenant-Colonel K. S. WALLIS also retires on retired pay. His commissions are as follow: Surgeon, August 4th, 1878; Surgeon-Major August 4th, 1890; and Lieutenant-Colonel, August 4th, 1898. He served in the Zulu war of 1879, and in the subsequent operations against Sekukuni including the storming of the stronghold—slightly wounded (medal with clasp); in the Boer war in 1880-81 in medical charge of the garrison at Potchefstroom during its investment (slightly wounded); and with the Nile Expedition in 1884-85 in charge of movable field hospital, being present in the reconnaissance to Metammeh (medal with clasp, and Khedive's star).

Captain W. S. DOWMAN, who entered the service as Surgeon-Captain July 28th, 1886, is promoted to be major.

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN C. GODSON, M.D., 18th Middlesex Volunteer Rifle Corps, to be Surgeon-Major.

Surgeon-Lieutenant A. HENDERSON, M.B. 1st Aberdeenshire Royal Engineers (Volunteers), to be Surgeon-Lieutenant.

INDIAN MEDICAL SERVICE.

THE undermentioned Majors, having completed twenty years' full pay service, are promoted to be Lieutenant-Colonels, September 30th: Bengal: T. H. SWEENY, D. F. BARRY, M.D., G. F. A. HARRIS, J. ANDERSON, M.B., C. J. BAMBER, M. O'DWYER. Madras: C. MALLINS, M.D., E. M. DAMLA, H. ST. C. CARRUTHERS. Bombay: C. G. W. LOWDELL, H. B. BRIGGS, M.B., W. P. CARSON, M.B.

The following Captains, having completed twelve years' full pay service, are promoted to be Majors, from September 30th:—Bengal: B. J. MACNAMARA, M.D., H. W. PILGRIM, M.B., G. B. FRENCH, F. W. THOMSON, M.B., E. H. BROWN, C. N. BENSLEY, M.B., S. H. HENDERSON, M.B., D. W. SCOTLAND, M.B., C. R. M. GREEN, J. H. SELLICK, M.B., E. C. HARE, F. C. CLARKSON, J. G. JORDAN, H. M. MORRIS, A. R. P. RUSSELL, M.B., J. MORWOOD, M.D., E. A. W. HALL, M.B. Madras: R. H. CARTER, F. G. MAIDMENT, I. P. DOYLE, D.S.O. Bombay: B. B. GRAYFOOT, T. E. DYSON, M.B.

Lieutenant ERNEST LE F. PAYNE, Madras Establishment, has been transferred to the half-pay list.

Colonel D [illegible] he service, whi [illegible] with the But [illegible] nth clasp.

Major M. B. BRAGANZA, Bombay Establishment, has also retired from the service, his first commission dating from April 2nd, 1881. He served in Burmah in 1886, and received the Frontier medal with clasp.

THE MEDICAL CHARGE OF IMPERIAL SER[illegible]

THE Secretary of State for India has sanction[illegible] owances for the additional medical charge of [illegible] on field service. This sanction applies to any [illegible] occurred during the recent frontier operations.

SICK SOLDIERS AT THE ALDERSHOT [illegible]

THIS incident, to which we made allusion in th[illegible] MEDICAL JOURNAL of September 24th, in an article on Med[illegible] in the Manœuvres, has elicited from the Secretary of State for W[illegible] tion, in a letter addressed to Mr. A. F. Jeffreys, M.P., wi[illegible] the subject to the War Office two months ago. The Secretary [illegible] writes: "The initial mistake consisted in the [illegible] handing over a party of 21 invalids to a lance-c[illegible] nt, to be conducted by train to Aldershot, and at t[illegible] to furnish the lance-corporal with written instruction[illegible] ke arose from the lance-corporal misunderstanding the [illegible] ns given him; but blame for the error can hardly be attached to a soldier called on suddenly to assume a position of responsibility outside his proper sphere. The whole incident was, in the opinion of the Secretary of State, most regrettable, and the officer responsible for the grave error of judgment has been censured accordingly."

THE ROYAL ARMY MEDICAL CORPS IN INDIA.

A CORRESPONDENT writes that medical service in India is anything but pleasant. In the hot weather, when all other officers rush to the hills, the medical officer has to remain in the plains, for it is his busiest time. The officers of the Indian Medical Service are constantly moved away from their changes on urgent duties, and the R.A.M.C. have to take their places, in addition to their own station hospital work; true, they get extra pay for charge of a native regiment, etc., but that does not lessen the strain of the work; and the multiplication of duties is absolutely prohibitory of leave. In fact, the brunt of the work in India falls upon the junior underpaid R.A.M.C. officers: the principal medical officers who heap work upon them do not seem to consider their physical well-being. The claims of junior officers to privileged leave following the late campaign have often been set aside in favour of seniors, who had no such claims.

THE PLAGUE AND ARMY MEDICAL OFFICERS.

THE Principal Medical Officer Her Majesty's forces in India has been asked for the services of sixteen medical officers for employment on plague duty.

MEDICO-LEGAL.

APPEAL AGAINST A CONVICTION IN SCOTLAND UNDER THE MEDICAL ACTS 1858.

IT appears from the report in the *Glasgow Herald* of November 17th and 18th, that Abraham S. Eastburn, of 13, Cambridge Street, Glasgow, sought (before the Lord Justice Clerk and Lords Trayner and Moncreiff) suspension of a conviction obtained against him in the Sheriff Court of Glasgow on a complaint at the instance of the Registrar of the Branch in Scotland of the General Council of Medical Education and Registration of the United Kingdom.

The charge as reported was that on July 13th last he wilfully and falsely took and used the title or addition of "A.M.S.," thereby implying that he was recognised by law as a practitioner in medicine in contravention of Section LX of the Medical Act 1858.

The complainer was convicted by Sheriff Substitute Boyd and fined £20, to be paid to the Treasurer of the General Medical Council.

The complainer contended that the conviction was incompetent. That it proceeded upon evidence which was wrongfully admitted by the sheriff, notwithstanding objections taken by the complainer. The "wilfully and falsely taking and using the title or addition of A.M.S." was not a contravention of the Act, nor did it imply that the complainer was recognised by law as a practitioner in medicine in contravention of Section XL That the charge was unfounded, and was not proved, and the conviction was bad and false, and ought to be quashed. Further, the proceedings did not set forth all the documents produced at the trial as required by the Summary Procedure Acts. In particular, it did not set forth the two volumes produced by the respondent purporting to be printed copies of the *Medical Register* for [illegible]

The complainer also stated that when he applied for a stated case, the Sheriff Substitute refused to include the note of the evidence in terms of the Summary Prosecutions Appeals (Scotland) Act, 1875. He was therefore compelled to bring a Bill of suspension.

After arguments by counsel on behalf of the complainer and respondent, in the course of which it was stated that the letters "A.M.S." meant American medical specialist, the Court rose.

The hearing of the case was resumed on the following day, and after hearing counsel for the complainer and respondent, the Lord Justice Clerk in giving judgment said that this prosecution was based under a special statute. That which was charged against the accused was made subject to a penalty in order to protect the public against persons professing to practise as medical men or surgeons under qualifications held forth which they did not possess.

Mr. Guthrie (counsel for the respondent) said the objection to the charge here was a technical objection. He was not quite sure that this was a quite correct description of the objection, and even if it were, they

must see whether that technical objection was such as to indicate that any injustice might be done by not giving effect to it.

The Lord Justice Clerk in the course of his judgment said that the indictment described the person and proceeded to make the charge against him. The prosecutor here with rather an indication of irony gave the address, and then he said—calling himself physician and surgeon, professor of medicine or surgery, and using the letters, titles, or additions, A.M.S. after his name. Plainly he thought that might be held not to come into the charge in any way whatever, for it was not said that he held himself out as that: or whether he held himself out as that; but that that was a name which he gave himself. There was nothing contrary to law in that. The charge began specifically with a statement that he, the person charged, did in a certain place and on a certain date do certain things, and that charge alone might be taken, and what was given as designation at the beginning of the indictment could not be admitted. The next thing was that the conviction did not apply to that charge, because the conviction convicted him only of using the letters A.M.S. after his name, implying that he was recognised as a practitioner in contravention of a certain Act. If the letters A.M.S., which were made the ground of the conviction, were not given in the accusation of offence at all, his lordship did not see how he could be convicted of having used them. He thought the framing of the charge and conviction was faulty, and it would be necessary that this conviction should be quashed. His lordship then added that while it was not necessary for the decision of the case, most undoubtedly incompetent evidence must have been received.

Lord Trayner agreed with Lord Justice Clerk. He thought it was very material to note that the letters A.M.S. indicated no degree in medicine whatever in any university in the United Kingdom, and he did not know what the words meant or indicated or implied; but what was still more strange was that the prosecutor did not know, and did not pretend to know, what those letters implied. As far as his lordship could judge from the complaint, and the evidence in the case, the "A.M.S." might as well have been "A.B.C." or "X.Y.Z." and any of these three letters, so far as he could tell, would mean the very same thing, but none of them would indicate to his mind the claim or title to practise in medicine. The charge was one of a most general kind; the conviction went on to convict the appellant of a certain offence—namely, that he used the title "A.M.S.," implying that he was a recognised practitioner in medicine. His lordship thought it important to notice, though not necessary for the decision of the case, there had been an irregularity in these proceedings of a very serious kind. The Sheriff had received as evidence two letters and extracts from the minutes of the General Medical Council which certainly were not competent evidence against the accused. He could not say how much it influenced the Sheriff's mind, or how little, but the evidence upon which he proceeded was to some extent incompetent, and in his lordship's view this would be quite sufficient to set aside the conviction.

Lord Moncreiff concurred with their lordships in quashing the conviction.

The appellant was awarded expenses.

INQUESTS AND MEDICAL WITNESSES.

IGNORAMUS asks for information on the following points: (1) What is the legal amount of notice for a coroner to give to a medical man to attend an inquest and to make a *post-mortem* examination? (2) What is the legal form of notice, and how ought it to be served? (3) If the coroner fails to attend at the time specified in such notice, what is a reasonable time for a medical man to wait for him?

*** 1. When a coroner has received notice of a death and made preliminary inquiries and obtained the report of his officer thereon, he then fixes the date of the inquest as soon as may be convenient and possible, which is usually within a day or two of the time when he decided that an inquest should be held. It therefore follows that the notices to the witnesses cannot be long; in most cases it is given the day before. It is usual to let the medical witness know the decision of the coroner as early as possible in order that time may be given for *post-mortem* examination, but there is no length of time for notice specified by law.

2. A printed form of notice for witnesses, as well as for the making of *post-mortem* examinations, is generally used, and this form will be found in the appendix to *Jervis on Coroners*. It is usually served the day before the inquest on the person required to attend, or left at his last known residence.

3. It may occasionally happen that a coroner is unable to be present at the time and place fixed for the holding of an inquest. Should this happen, a communication by telegram or otherwise is made to the officer in attendance, explaining delay, and should the coroner be so delayed that he finds he cannot be present within a reasonable time of the hour fixed, then he instructs his officer to adjourn the inquiry, otherwise the witnesses must wait until the coroner arrives. At other courts the witnesses are summoned to attend early on the day for which the case is fixed, and wait until it is called on, which may not be till the third or fourth day of the sessions.

W. H. N. calls [illegible] circumstances in connection with an [illegible] concerning the death of a child who died [illegible]

*** It would appear that the jury returned a verdict that the deceased child died from shock following scalds, and that the death was from an accidental cause. We should advise our correspondent to give little heed to the statements of the mother as to what occurred at the inquest. The house-surgeon was probably called to give evidence at the inquest, but we quite agree that if "W. H. N." was not required as a medical witness, he should as a matter of courtesy have received acknowledgment of his communications to the coroner.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

B.Sc. EXAMINATION.—The following candidates have satisfied the Examiners:

First Division.—C. E. Ashby (1, 3, 4), Owens College, Pharmaceutical Society and University Tutorial College; F. B. Barrett (3, 4, 8), Mason University College; A. W. Bartlett (5, 6, 8), Royal College of Science and private study; A. G. Cracknell (1, 2, 3), University Tutorial College: H. T. Davidge (1, 2, 3), Royal College of Science and private study: W. H. Eccles (1, 2, 3), Royal College of Science: J. L. Forbes (3, 4, 5), University Tutorial College: W. G. Freeman (5, 7, 8), Royal College of Science: W. H. Harwood-Yarred (4, 6, 7), St. Thomas's Hospital: R. W. H. T. Hudson (1, 2, 3), St. John's College, Cambridge: W. A. Picknett (2, 3, 8), Royal College of Science and private study: R. T. Robinson (1, 2, 3), private study; F. Shedden (3, 4, 8), Mason University College: H. H. Swinnerton (5, 6, 8), private study and Royal College of Science.

Second Division.—Sophia G. L. Adams (1, 2, 5), Royal Holloway College; R. Appleton, B.A. (4, 8, 9), University Tutorial College and People's Palace; J. S. Bailey (1, 3, 6), University College, Sheffield: Anne E. A. Baker (4, 5, 7), Bedford College, London; G. W. Baker (4, 5, 8), private study; F. Barlow (5, 6, 9), Royal College of Science and private study; G. R. Barnard (1, 2, 3), King's College and private study; S. E. Baynes-Smith (5, 6, 7), University College, Sheffield; J. C. Bedwell (4, 5, 8), private study and University Tutorial College; Mary Bell (1, 3, 4), Ladies' College, Cheltenham: Emily Mary Berridge (1, 3, 5), Royal Holloway College; Agnes G. D. Bigby (1, 3, 5), University College and University Tutorial College); A. W. Bird (1, 2, 3), private study and University College, Nottingham: S. Blofeld, B.A. (1, 2, 4), University Tutorial College, Birkbeck Institute, and private study; E. E. Brooks (1, 3, 4), private study; A. E. Case (1, 3, 4), Mason University College: T. J. Cheater (4, 5, 9), Finsbury Technical College and private study; H. R. Chilton (1, 3, 4), private study; E. Clark (1, 3, 4), University College, Sheffield; J. A. Clark (1, 2, 9), University College, Aberystwith; E. M. Conder (1, 5, 8), University College, Aberystwith; A. S. Cox (1, 2, 3), Hartley College and Royal College of Science; E. Crosland (2, 3, 4), Royal College of Science and private study: A. N. Crosskey (2, 4, 8), private study and Carlyon College; T. Crossland (1, 2, 3), Firth College and University College, Bristol; R. Crosthwaite (1, 3, 4), private study: L. A. E. De Zilwa (6, 7, 9), University College and private study: G. T. Dickin, B.A. (1, 2, 3), Kingswood School and private study: E. H. Dixon (1, 3, 4), University College, Bristol; E. E. L. Dixon (5, 6, 8), Royal College of Science; C. V. Drysdale (1, 2, 3), private study; H. B. Dutton, B.A. (4, 8, 9), Owens College and private study; C. G. Fernie, B.A. (1, 3, 4), University Tutorial College and private study; Margaret S. Freeman (1, 2, 6), University College, Aberystwith; F. Fritsch (5, 6, 8), private study and University Tutorial College; E. Goulding (3, 4, 5), Pharmaceutical Society and University Tutorial College; E. G. Guest (4, 8, 9), private study; H. L. Heathcote (1, 3, 4), Mason University College; H. A. Hinton (5, 8, 9), Royal College of Science, Birkbeck Institute, and private study; F. W. Hodges (4, 5, 6), University Tutorial College; F. Hodgson (1, 2, 3), University College: Sarah Ann Hunt (4, 8, 9), University College and private study; A. E. Ikin (1, 2, 9), private study; A. J. James (1, 2, 4), private study and tuition: Marguerite Jefferies (1, 4, 8), Westfield and University Colleges; J. H. Leonard (5, 6, 8), King's and University Colleges and private tuition and study; L. Lownds (1, 2, 3), University College, Nottingham: T. Luxton, B.A. (1, 2, 4), private study; H. Main (4, 5, 6), Birkbeck Institute and University Tutorial College; E. D. Mason (1, 3, 4), Mason University College; J. B. Miles (5, 8, 9), Carlyon College and Birkbeck Institute; H. Moore (3, 4, 9), Middlesbrough High School and private study: A. Mort (3, 4, 8), Royal College of Science, Dublin, and Salford Tutorial Institute; A. Morton, B.A. (5, 6, 8), Heriot Watt College, Edinburgh, and private study; R. Mundy, B.A. (5, 6, 8), Owens College; J. H. Nightingale (4, 5, 8), private study and University Tutorial College; A. E. H. Pakes (4, 7, 9), Guy's Hospital, Carlyon College, and private study; J. Parsons (4, 8, 9), University College, Bristol; E. A. Pinchin (3, 4, 6), private study and Birkbeck Institute; P. P. Platt (1, 2, 3), private study; P. Rawlinson (1, 2, 3), private study; W. C. Reynolds (3, 4, 8), Royal College of Science; S. S. Richardson (1, 2, 3), Royal College of Science and private study; Winnifred M. Ross (5, 6, 8), University Colleges, Aberystwith and Liverpool; E. Russell (3, 4, 5), private study and Birkbeck Institution; F. H. Shoosmith (3, 7, 9), University Tutorial and King's Colleges and private study; C. J. Silverston (3, 4, 8), Mason University College; C. Simmonds (3, 4, 8), University Tutorial College and Birkbeck Institute: R. W. Sloley (1, 2, 3), private study; C. Smith (1, 3, 4), Royal College of Science and private study; Lilian B. Voss Snook (1, 2, 3), University College, Bristol; Margaret Emma Taylor (1, 2, 4), Bedford College, London; A. E. Thomas (3, 4, 5), Merchant Venturers Technical and University Colleges, Bristol, and private tuition; F. N. Tinkler (2, 3, 4), University College, Bangor, and Royal College of Science; Elinor A. N. Twigg (5, 6, 8), Mason University College; Winifred Esther Walker (1, 3, 5), University College, Bristol; G. H. West (1, 3, 4), Mason College, Royal College of Science, and private tuition; M. E. White (1, 3, 4), University College, Aberystwith; W. M. Williams (1, 2, 3), University College, Bangor; E. Witham, B.A. (1, 3, 4), University College, Sheffield; P. M. Wright (1, 3, 9), private study and University Tutorial College.

Note.—The figures indicate the various Branches—namely: 1, Pure Mathematics; 2, Mixed Mathematics; 3, Experimental Physics; 4, Chemistry; 5, Botany; 6, Zoology; 7, Animal Physiology; 8, Geology and Physical Geography; and 9, Moral and Mental Science.

M.B. EXAMINATION.—The following candidates have satisfied the Examiners:

First Division.—C. W. Buckley, St. Mary's Hospital; H. Minnie Castledine B.Sc., Royal Free Hospital; F. F. Elwes, Middlesex Hospital; J. G. Emanuel, B.Sc., Mason College and Queen's and General Hos-

pitals, Birmingham; H. F.-N. Hine, Middlesex Hospital; T. J. Horder, B.Sc., St. Bartholomew's Hospital; H. Innes, London Hospital; H. G. Lawrence, St. Mary's Hospital; F. S. Lloyd, St. Mary's Hospital; D. N. Nabarro, B.Sc., University College; W. B. H. Wood, Queen's and General Hospitals, Birmingham.

Second Division.—W. M. Anderson, London Hospital; J. Ashton, St. Mary's Hospital; H. T. Barron, Westminster Hospital; S. H. Belfrage, St. Thomas's Hospital and University College; J. W. H. Bendle, St. Mary's Hospital; T. P. Berry, Guy's Hospital; G. P. Bletchly, Middlesex Hospital; Elizabeth Honor Bone, Royal Free Hospital; Gabrielle Ruth Slater Breeze, London School of Medicine and Royal Free Hospital; F. Brickwell, St. Bartholomew's Hospital; F. Butterfield, Owens College and Manchester Royal Infirmary; V. E. Collins, Guy's Hospital; Mabel Eliza Cousins, Royal Free Hospital; H. A. T. Fairbank, Charing Cross Hospital; Lucinda Catherine E. Forster, Royal Free Hospital; G. D. Freer, Queen's College and Mason College, and St. Bartholomew's Hospital; A. B. Fry, London Hospital; L. Gilbert, St. Thomas's Hospital; J. A. Glover, Guy's Hospital; A. S. Green, Royal College of Surgeons in Ireland and Meath Hospital; W. L. Griffiths, B.Sc., University College; J. Grimshaw, London Hospital; S. Gross, Yorkshire College and General Infirmary, Leeds; J. P. Hall, Owens College and Manchester Royal Infirmary; L. E. C. Handson, Guy's Hospital; H. E. Hewitt, St. Thomas's Hospital; J. Howell, Guy's Hospital; R. C. Leaning, St. Mary's Hospital; F. C. Lewis, St. Mary's Hospital; C. D. Lindsey, St. Mary's Hospital; J. P. Maxwell, St. Bartholomew's Hospital; P. W. Moore, Guy's Hospital; D. J. Munro, Guy's Hospital; H. Peet, Yorkshire College; A. G. G. Plumley, Medical School and University College, Bristol, and Guy's Hospital; C. S. Read, University College; F. Riley, Westminster Hospital; Adeline Mary Roberts, London School of Medicine and Royal Free Hospital; P. W. Rowland, St. Bartholomew's Hospital; C. Rundle, St. Mary's Hospital; H. A. Schölberg, St. Bartholomew's Hospital; H. D. Singer, St. Thomas's Hospital; C. A. Sprawson, King's College; R. H. J. Swan, Guy's Hospital; G. P. Tayler, St. Bartholomew's Hospital; W. H. M. Telling, Guy's Hospital; C. J. Utley, Owens College; A. Young, University Colleges, Sheffield and London.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen having passed the necessary Examinations and having conformed to the By-laws and Regulations have been admitted Members of the College:

Acland, H. T. D.	Hart-Smith, H. M.	Powell, C.
Adam, J. L.	Heath, F. H. R.	Powell, J. E.
Alexander, K. B.	Henderson, J. H.	Pugh, C. G.
Ambrose, W. C.	Hoban, T.	Renshaw, G.
Balderston, R.	Holländer, B.	Rice, D.
Bates, T. W.	Hutchinson, F. E.	Richardson, W. S.
Berry, T. P.	Irvine, G. H.	Rowland, L. T. A.
Berryman, E. N.	Jeffreys, H. C.	Rowland, P. W.
Blackburn, V. K.	Johnston, J.	Ryder, C. C.
Bonnet, S. R.	Jones, W. J.	Sandison, J.
Brown, J. W.	Jordan, A. C.	Saward, A. H. M.
Burd, C. P.	Keeling, G. S.	Scaping, H. M.
Cannan, D.	Lawson, F. H.	Scholefield, E. H.
Carsberg, A. E.	Leaning, R. C.	Sills, C. H.
Chadborn, C. N.	Letchworth, T. W.	Simpson, A. P. H.
Churton, J. G.	MacCallan, A. F.	Simson, C. C.
Clayton, E. T.	McGavin, L. H.	Simson, H.
Clegg, H. S.	McKay, R.	Smith, S. R.
Cogswell, P. D.	McMullen, W. H.	Smyth, A.
Coltart, G. H.	Marrack, G. C.	Somerville, J.
Coltart, H. N.	Martin, F. J. H.	Sprawson, C. A.
Colyer, S. W. R.	Martin-Leake, A.	Spurgin, P. B.
Cooper, F.	Maynard, G. D.	Sumner, F. W.
Crispin, E. S.	Mayo, T. A.	Symes, E.
Dalgado, P.	Milner, N.	Tarbet, P. R.
Darby, W. S.	Morris, F. M.	Telling, W. H. M.
Davies, D.	Morris, J. I. W.	Thomas, C. J.
Eason, H. L.	Murray, R. G.	Thorp, H.
Eddison, F. R.	Nourse, A. W.	Trotter, E.
Eichholz, O.	O'Neill, T.	Tucker, W. H.
Ereaut, H. J.	Osborne, H.	Turner, J. W.
Evans, J. R.	Owsley, G. C.	Turton, E.
Foss, E. V.	Page, A. F.	Underhill, S. V. H.
Fox, H. E. C.	Parsons, A. R. C.	Unwin, W. H.
Frankling, H. G.	Payne, R. W.	Urwin, J. J.
Fuller, L. O.	Peake, A. E.	Verley, R. C.
Galloway, W. H.	Pennington, S. B. A. C.	Vernon, A. A.
Gardiner, A. S.	C.	Walker, A. N.
Glasier, H.	Pierce, G. O.	Wilcox, R. L.
Glynne, E. E.	Pollard, S. P.	Woodforde, R. E. H.
Harris, J.		

The following gentlemen have passed the First Professional Examination for the Diploma of Fellow:

R. A. Ross, M.R.C.S.; M. V. Dee, M.R.C.S.Eng., L.R.C.P.Lond., M.B., C.M.Edin.; H. S. French, B.A.Oxon.; H. T. H. Williams, M.R.C.S. Eng., L.R.C.P.Lond.; R. H. R. Whitaker; W. Wright, M.B., Ch.B. Vict., S. Copley, M.R.C.S.Eng., L.R.C.P.Lond.; T. C. Savage; A. L. Matthews; W. H. C. Green, B.A.Cantab.; H. Davies-Colley, B.A. Cantab.; E. L. Evans, M.B., B.C.Cantab., M.R.C.S.Eng., L.R.C.P. Lond.; A. M. Colleutt, M.B.Cantab., M.R.C.S.Eng., L.R.C.P.Lond.; B. S. Jones; H. B. Bailey, M.R.C.S.Eng., L.S.A.Lond., M.D.Brux.; A. T. Compton; N. Maclaren, B.A.Cantab.; B. E. Potter, M.R.C.S. Eng., L.R.C.P.Lond.; A. H. Brodribb, M.R.C.S.Eng., L.R.C.P.Lond.; S. H. Modi, M.R.C.S.Eng., L.R.C.P.Lond., L.M.&S.Bombay; G. I. T. Stewart, M.B., C.M.Aberd.; John Atkins; T. F. Robinson; J. W. T. Walker, M.R.C.S.Eng., L.R.C.P.Lond., M.B., C.M.Edin.; F. E. Murray; A. Edmunds; F. D. Blandy; C. E. West; L. Jones; W. F. H. Coke; M. F. Reancy; F. Challans; E. H. Hunt, B.A.Oxon; T. W. Smith, M.R.C.S.Eng., L.R.C.P.Lond.; and H. Walker, B.A.Cantab.

Thirty-seven gentlemen were referred back to their professional studies for six months.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, November, 1898. The following candidates passed in

Surgery.—W. H. Bathurst (Section I), London Hospital; E. R. R. Cheeseman, Charing Cross Hospital; E. L. D. Dewdney, King's College Hospital; E. E. Evans, Royal Free Hospital; J. B. Hall (Section I), Leeds; J. Welsh, Dublin; J. M. Wood, Middlesex Hospital.

Medicine.—H. J. de Saram, Middlesex Hospital; J. E. H. Scott, Leeds; T. J. Vick, Guy's Hospital; A. F. Weston (Section II), St. George's Hospital.

Forensic Medicine.—J. E. H. Scott, Leeds; T. J. Vick, Guy's Hospital.

Midwifery.—G. H. Bedford, Guy's Hospital; R. F. Ellery, St. Bartholomew's Hospital; J. B. Hall, Leeds; P. O'Sullivan, Dublin; J. E. H. Scott, Leeds; H. J. Watts, Manchester.

The diploma of the Society was granted to the following candidates: E. R. R. Cheesman, H. J. Watts, J. Welsh, and J. M. Wood.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,537 births and 3,672 deaths were registered during the week ending Saturday last, November 19th. The annual rate of mortality in these towns, which had been 17.0 and 17.2 per 1,000 in the two preceding weeks, declined again to 17.1 last week. The rates in the several towns ranged from 8.8 in Croydon, 10.9 in Derby, 11.6 in Oldham, and 12.0 in Hull and in Cardiff to 22.4 in Newcastle-upon-Tyne, 22.6 in Liverpool, 23.1 in Wolverhampton, and 24.2 in Preston. In the thirty-two provincial towns the mean death-rate was 17.4 per 1,000, and was 0.8 above the rate recorded in London, which was 16.6 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.7 per 1,000; in London the rate was equal to 1.5 per 1,000, while it averaged 1.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.3 in Nottingham, 3.8 in Burnley, 4.1 in Swansea, and 4.2 in Norwich. Measles caused a death-rate of 1.9 in Norwich and 2.2 in Nottingham; scarlet fever of 1.0 in Burnley; whooping-cough of 1.1 in Halifax; "fever" of 1.2 in Sheffield, 1.4 in Norwich, 1.8 in Preston, and 2.3 in Birkenhead; and diarrhœa of 1.8 in Sunderland and 1.0 in Burnley. The 00 deaths from diphtheria in the thirty-three towns included 44 in London, 8 in Sheffield, 7 Liverpool, 6 in Swansea, 5 in Blackburn, 4 in Leeds, and 3 each in West Ham, Cardiff, and Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 3,188 at the end of the twelve preceding weeks, had further risen to 3,259 on Saturday last, November 19th; 319 new cases were admitted during the week, against 336, 318 and 340 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 19th, 917 births and 588 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.9 and 19.4 per 1,000 in the two preceding weeks, further rose to 19.5 last week, and was 2.4 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 13.8 in Paisley and 15.0 in Leith to 21.6 in Edinburgh and 23.0 in Aberdeen. The 264 deaths registered in Glasgow included 6 from scarlet fever, 3 from diphtheria, 5 from whooping-cough, 8 from "fever," and 8 from diarrhœa. Five fatal cases of measles, 2 of scarlet fever, 3 of "fever," and 6 of diarrhœa were recorded in Edinburgh; and 5 deaths from diphtheria occurred in Dundee.

PENSION GRANTED BY THE METROPOLITAN ASYLUMS BOARD.

WE notice that the pension of £184, being a sixtieth of his salary for each year of service, has been granted to Dr. Walmsley, who has retired from the medical superintendentship of the Darenth Schools after upwards of seven years' service. Dr. Walmsley having also served in the Metropolitan Asylums Board for several years previously as senior medical officer of the Leavesden Asylum, it can hardly be said that the amount of the pension errs on the side of generosity.

"THAT TROUBLESOME NURSING QUESTION."

THE phrase at the head of this note is one frequently heard during discussions by Boards of Guardians as to the appointment of a nurse or nurses for the workhouse infirmaries. The cause of the trouble is twofold, the dearth of applicants and the unwillingness of Guardians to appoint nurses. With the former trouble we feel the greatest sympathy. The action of right-minded boards willing to secure all that is required for the nursing of the sick is much hampered by a lack of suitable nurses. But with the latter we have no sympathy, for the trouble is self-created and arises from inability to appreciate the responsibilities of their position. Time is wasted and tempers are roused by fruitless discussion as to the need of a nurse, a question beside the mark, as the Local Government Board has settled the point for the guardians, and moreover the medical officers are urgent in recommending the appointment of the trained nurse. The *Bucks Advertiser and Aylesbury News* has published an instructive report of such a discussion by the Aylesbury Board when it was resolved not to appoint a trained nurse nor to have other than pauper help at night, except when especially required. A guardian's standard of

an efficient nurse is apt to be one who gets on well with the other officers and who can make the patients comfortable, and the infirmary nurse reached this standard; but the medical officer wanted more. The "nurse" stated that she was overworked, whilst to emphasise the need of skilled nursing a patient was reported to be suffering from bedsores.

TYPHUS FEVER IN THE PARISH OF KENSINGTON.

The following note as to the occurrence of typhus fever in the parish of Kensington is contained in the report of the Medical Officer of Health, Dr. T. Orme Dudfield, for the four weeks ending November 5th. The report is dated November 9th: "Three cases of this disease have been reported recently. The first was that of a married woman, who had been removed to the infirmary from a house in Kenley Street, where, with other persons, she had been in illegal occupation of an underground room which had been closed upon proceedings taken by the Sanitary Committee in 1895. The symptoms of the illness were suspicious, but obscure, and a positive diagnosis of typhus was not made until one of the nurses who had been in attendance upon the sufferer fell ill. This nurse was removed to hospital, and subsequently a second nurse, both of whom are suffering from typhus. There has been no fatality so far; the original sufferer is convalescent, and the two nurses are so far doing well. The critical period has not yet arrived in the case of the second nurse. I may add that the Sanitary Committee have directed proceedings to be taken against the 'keeper' of the house (which is registered) for permitting the illegal occupation of the underground room (it is empty now), where the disease is believed to have originated. The house drain has been found to be defective."

VACCINATION OFFICERS AND THE NEW ACT.

At a special meeting of the Vaccination Officers' Association held recently Mr. Elkerton, the Honorary Secretary, said that a statement explaining the views of the vaccination officers with regard to the Bill had been submitted to the Local Government Board. Among the matters dealt with in it was the reduction of the age limit from twelve, as originally proposed in the Bill, to six months and provision for the payment of vaccination officers per head on the birth-rate in addition to payment on successful vaccination. Both these points had been inserted in the Bill. In a general discussion on the new Act and Order several speakers called attention to a letter by "Public Vaccinator," which had appeared in the British Medical Journal urging that public vaccinators, private practitioners, and vaccination officers should cordially co-operate to make the best of the "tremendous experiment" under the new Act, in order that a fair trial could be given to it. Opinion was freely expressed that this suggestion should be adopted as far as vaccination officers were concerned in order that the period of five years during which the Act will remain in force should not be wasted from the point of view of experience.

MEDICAL ETIQUETTE IN REFERENCE TO POOR-LAW APPOINTMENTS.

H. M. E. asks whether it is medical etiquette for any one who is a candidate for a Poor-law appointment to send copies of testimonials to the guardians.

"*" We believe this is very frequently done, and if the testimonials are sent only to those who are entitled to vote when the election takes place, it cannot be regarded as contrary to medical etiquette.

POOR LAW FEES IN SCOTLAND.

W.C.B.—We are advised that in Scotland there is no official tariff of fees for "extras"; that, indeed, under a strict construction the salary might be held to cover all medical and surgical services. We have little doubt, however, that the parish council would not decline to pay a reasonable fee, which might be set down at a guinea in respect of the primary service, and five guineas for the operation, the latter fee including dressings. We know of no manual such as our correspondent desires.

CLAIM OF MEDICAL OFFICER UNDER SUPERANNUATION ACT, 1896.

W.E.S.B. writes to say that he has resigned his appointment of Poor-law medical officer, which he has held for fifteen years. He wishes to know whether "he is entitled to *claim compensation* from the guardians under the Superannuation Act."

"*" Our correspondent does not say what has led him to resign. We know of no *claim for compensation* after a voluntary resignation of office, so unless he has become incapable of discharging the duties of his office in consequence of "infirmity of body or mind," or of old age, or has attained the age of 65 years, he will have no claim on the guardians for superannuation allowance.

INDIA AND THE COLONIES.

INDIA.

The Subordinate Medical Service in India.—It is satisfactory to know that the conditions of a most useful class of public servants have been materially increased. The Secretary of State for India has sanctioned proposals submitted by the local Government for improving the position of Assistant Surgeons of the Subordinate Medical Service. The Service will in future be divided into four classes, on Rs.85, Rs.110, Rs.150, and Rs.200 respectively, the existing class on Rs.60 being abolished. Promotion will be given after certain fixed periods of service, the highest class being attained after nineteen years instead of the present average of twenty-four years. The Assistant Surgeons of the Subordinate Medical Department are often placed in positions of considerable responsibility, especially when in sub-charge of military hospitals, where, during the absence of military medical officers, they have, in addition to other duties, full disciplinary power over patients.

MEDICAL NEWS.

Typhus Fever in Edinburgh.—Ten further cases of typhus fever were reported in Edinburgh up to midday on Saturday, November 19th.

Owing to the death of Sir Stuart Knill the annual banquet of the Plumbers' Company, fixed for Wednesday last, was postponed.

The Duke of Cambridge will on December 12th open the Kingston Victoria Hospital, which is a local memorial of the Queen's Diamond Jubilee. On the same occasion he will be presented with the freedom of the borough.

Presentation.—On resigning the post of Assistant Medical Officer to the Warneford Asylum, Oxford, Dr. Thomas Goldie-Scot was presented by the staff of the institution with a clock bearing a suitable inscription as a mark of affectionate regard.

Brighton and Sussex Throat and Ear Hospital.—The new building in Church Road, Brighton, will be publicly opened by the Duke of Norfolk on Tuesday, November 29th, at 12 o'clock. The building, which has been erected at a cost of £4,600, will accommodate 20 in-patients, besides having a convenient out-patient department.

A donation of £1,000 from "H.," and one of £500 from "E.," have been received towards the special appeal of £100,000, started in November, 1890, to place Charing Cross Hospital on a sound financial basis, and to provide a proper out-patient department and nursing quarters, and other minor improvements. A total sum of £41,000 has now been received.

The Plague in Vienna.—Dr. Poech, who attended the late Dr. Mueller and Nurse Pecha in the Franz Josef Hospital, and who afterwards, together with Dr. Mayer and the Sisters of Mercy, was isolated in another part of the building, was finally released on November 13th. His colleagues proposed to give him a congratulatory dinner, but he declined the honour. It is announced that he will deliver an address on Dr. Mueller at the University.

Mr. John Edward Dunn, M.R.C.S., L.R.C.P., who was Mayor of Preston last year, was entertained at dinner by the medical profession in the town early in his year of office. On the eve of relinquishing his office this month, the Mayor returned the compliment by entertaining members of the profession in the town to the number of between fifty and sixty at dinner in the Guildhall; the opportunity was taken to present the Mayor with an address on behalf of the Medico-Ethical Society, expressing the deep personal regard and esteem the members felt for him.

The following is a list of the officers and Council of the Royal Society to be proposed at the annual meeting of November 30th: *President:* Lord Lister. *Hon. Secretaries:* Professor M. Foster and Professor Rücker. *Foreign Secretary:* Sir E. Frankland. *Treasurer:* Mr. Kempe. *Council:* Professor Bonney, Professor M. Foster, Sir E. Frankland, Mr. Kempe, Dr. Larmor, Lord Lister, Professor Maskelyne, Professor Poulton, Professor Rücker, Dr. Russell, and Dr. D. H. Scott, members of the existing Council; Professor Dewar, Sir A. Noble, Professor Schuster, and Professor J. J. Thomson, who have served before; and Captain Creak, Professor E. J. Cunningham, Professor Halliburton, Professor Herdman, Mr. Victor Horsley, and Dr. G. J. Stoney, new members.

The Alvarenga Prize of the Philadelphia College of Physicians.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about 180 dollars (£36), will be made on July 14th, 1899. Essays presented for competition may be upon any subject in medicine, but must not have been published. They must be sent without signature, but identified with a motto corresponding to one on the outside of a sealed envelope containing the author's name. They must be received by the Secretary of the College on or before May 1st, 1899. The Alvarenga Prize for 1898 has been awarded to Dr. S. A. Knopf, of New York City, for his essay entitled: "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

Decline of Rabies.—It is satisfactory to note the marked decline in the number of cases of rabies reported to the Board of Agriculture during the past year. Only 16 cases have occurred in the whole of the country since January last, as compared with some hundreds in previous years. The Muzzling of Dogs Order has been revoked in Berkshire, Buckinghamshire, Oxfordshire, and part of Hampshire. It was stated at the meeting of the London County Council on November 15th that if no case of rabies occurred in London before the beginning of December application would be at once made to the President of the Board of Agriculture to revoke the Order for London. The date mentioned is fixed because at the beginning of December it will be six months since the last reported case of rabies occurred in London.

Diphtheria in London.—There was a marked further increase last week in the mortality from diphtheria in London. The deaths referred to this disease, which had been 28 and 31 in the two preceding weeks, further rose to 44 during the week ending Saturday last, November 19th. Of these 44 fatal cases, 6 were of persons belonging to Mile End Old Town, 4 to Lambeth, 4 to Battersea, and 3 to Bermondsey sanitary areas. The recent increase in the number of notifications of diphtheria in the metropolis was fully maintained last week, the new cases numbering 301, against 250, 276, and 293 in the three preceding weeks. The increase was chiefly in Central and East London. In St. Pancras there was a further increase in the prevalence of the disease, 18 new cases being notified; while in Hackney the new cases, which reached the exceptionally high total of 27 in the preceding week, declined to 10 last week. There was a marked increase in the number of new cases notified in Shoreditch, Lambeth, Wandsworth, Greenwich, Lewisham, Woolwich, and Lee. In the Metropolitan Asylums Hospitals there were 1,246 diphtheria patients under treatment on Saturday last; the 186 new cases admitted during last week showed a further increase upon the numbers in recent weeks.

Death from an Enema of Laudanum.—An inquiry was held recently at Kingston as to the cause of death of a man who had been an inmate of the Tolworth Isolation Hospital and died from the effects of an overdose of laudanum administered in the form of an enema. It appears from the evidence as reported in the *Standard* that the patient was admitted for enteric fever, and suffered from persistent diarrhœa. On October 30th, the medical officer wrote a prescription for half a drachm of tincture of opium and gave verbal directions to the matron as to its administration. The prescription paper was left on the ward table and the nurse on duty was given a two-ounce bottle of laudanum from which to measure the requisite quantity. It was stated that she had had two years' experience of hospital work, but this was the first occasion on which she had been called on to administer this particular form of enema. She had been taught the ordinary signs and symbols used in prescriptions, but she unfortunately misread half a drachm for half an ounce. On finding that the patient was under the influence of the narcotic and was breathing stertorously, she at once reported the fact. The antidotal treatment proved of no avail, and the patient died the following morning. The death of a patient under such distressing circumstances is a subject for deep regret, but it is difficult to apportion the blame. The medical officer gave his directions as to the dose in writing, and naturally enough trusted the matron to see that his instructions were carried out. The matron seems to have been under the impression that she could safely trust a nurse of two years' standing to measure out half a drachm of laudanum, and to give the enema. The nurse may have had comparatively little experience in reading prescriptions, or possibly the ward may have been dimly lighted. We are told that it was the custom of the matron to measure out poisons, and it was unfortunate that the practice was departed from on this particular occasion. In many chemists' shops every bottle of medicine dispensed is checked by another dispenser, but it would not always be easy to carry this out in the wards of a hospital. No system is perfect and no person is infallible. Our only consolation is that such mistakes are of very rare occurrence, and that as a rule medicines are dispensed with marvellous care and accuracy. The coroner pointed out that if there were gross and culpable negligence it would amount to manslaughter; but the jury very wisely returned a verdict of "Death by misadventure," adding, however, a rider to the effect that much greater care should be exercised in dispensing poisonous drugs.

MEDICAL VACANCIES.

The following vacancies are announced:

BEDFORD COLLEGE (LONDON) FOR WOMEN, York [illegible] W.—Professor of Hygiene. Applications to the Secretary of Co[illegible]

BIRMINGHAM: MASON UNIVERSITY COLLEGE.—Lec[illegible] and Chief Demonstrator of Anatomy. Applications to the Secretary by December 3rd.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House-Surgeon. Salary, £40 per annum, with apartments and board. Applications to the Chairman of the Hospital Board by December 10th.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN AND LYING-IN INSTITUTION.—Honorary Surgeon in Ordinary. Applications to the Secretary, 70, West Street, Brighton, by November 30th.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Resident House-Physician. Salary £65 per annum, with board, lodging, and washing. Applications to the Secretary by December 3rd.

CARDIFF INFIRMARY.—Resident Medical Officer. Salary, £100 per annum. Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, board, washing, and apartments provided in each case. Applications to the Secretary by December 5th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—Assistant Surgeon. Applications to the Secretary by December 5th.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Appointment for six months. Salary at the rate of £30 per annum, with board and residence. Applications to the Secretary by December 2nd.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL.—House-Physician. Board, residence, etc., provided, and an honorarium of £25 at expiration of six months' approved service. Applications to the Secretary by December 17th.

FINSBURY DISPENSARY, Brewer Street, Goswell Road, E.C.—Resident Medical Officer. Salary, £100 per annum, with attendance, coals, and gas. Applications to the Secretary by November 30th.

GOSFORTH: NEWCASTLE-ON-TYNE CITY ASYLUM.—Assistant Medical Officer: unmarried, and under 30 years of age. Salary, £130 a year, rising to £150, with furnished apartments, board, etc. Applications to the Medical Superintendent.

GLAMORGAN COUNTY COUNCIL.—Bacteriologist. Salary, £250 per annum. Applications to the Clerk of the County Council by November 28th.

GLASGOW, UNIVERSITY OF.—Five Examiners for Degrees in Medicine. Salary for the Examinerships in Chemistry, Zoology, and Materia Medica and Therapeutics, £30, and those in Clinical Surgery and Clinical Medicine, £50. Applications to the Secretary of the Court, 91, West Regent Street, Glasgow, by December 17th.

GLOUCESTER: GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Board, residence, and washing provided. No salary. Applications to the Secretary by Nov[illegible]

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician; unmarried. Appointment for six months. Salary, £50, with board and residence. Applications, on forms provided to the Secretary, by D[illegible]mber 6th.

HULL ROYAL INFIRMARY.—House-Surgeon: unmarried. Salary, 100 guineas per annum, with board and furnished apartments. Applications to the Chairman of the House Committee by December 5th.

KINCARDINE: PARISH COUNCIL OF.—Resident Medical Officer. Salaries, £12 10s. per annum as Medical Officer, and £5 per annum as Vaccinator. Applications to David Ross, Inspector of Poor, Ardgay, N.B., by December 8th.

LIVERPOOL EYE AND EAR HOSPITAL.—House-Surgeon. Salary, £80 per annum, with residence and maintenance. Applications to the Honorary Secretary, 13, Berey's Buildings, George Street, Liverpool.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to the House-Governor by December 10th.

LONDON LOCK HOSPITAL, Harrow Road, and Dean Street, Soho.—Registrar. Applications to the Secretary, Harrow Road, W., by December 9th.

MANCHESTER: ST. MARY'S HOSPITAL, Quay Street.—House-Surgeon and Resident Obstetric Assistant Surgeon. Salary, £140 per annum, with board and residence. Applications to the Secretary by December 7th.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY.—House-Surgeon; unmarried. Salary, £80 per annum, with board and lodging. Applications, on forms provided, to the Secretary by end of December.

NEWCASTLE-UPON-TYNE UNION.—Assistant Resident Medical Officer; unmarried. Salary, £40 per annum, with furnished apartments, rations, and washing. Applications to the Clerk to the Guardians, Union Offices, Newcastle-upon-Tyne, by November 30th.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, with board [illegible] washing. Applications to the Secretary, 27, Clement's Lane, Lombard Street, E.C., by November 28th.

ROYAL BERKS HOSPITAL.—Assistant Medical Officer. Board, lodging and washing provided, and honorarium of 10 guineas. Appointment for six months. Applications to the Secretary by December 6th.

ST. LUKE'S HOSPITAL, Old Street, E.C.—Assistant Medical Officer; unmarried. Salary, £150 per annum, with board, lodging, and washing. Applications to the Secretary by December 1st.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum. Applications to the Secretary by December 7th.

WEST HAM HOSPITAL, Stratford, E.—Junior House-Surgeon. Appointment for one year but eligible for the post of Senior. Salary, £75 per annum, with board, residence, etc. Salary for Senior post £100. Applications, endorsed "Junior House-Surgeon," to the Secretary, by December 3rd.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician. Must be F. or M.R.C.P.Lond. Personal application to the House Committee on November 29th.

WESTERN GENERAL INFIRMARY, Marylebone Road.—Honorary Physician, Accoucheur, and Diseases of Women. Applications to the Honorary Secretary before December 1st.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Applications to the Secretary-Superintendent by December 15th.

WREXHAM INFIRMARY AND DISPENSARY.—House-Surgeon. Salary, £80 per annum, with furnished rooms, board, gas, coal, and attendance. Applications, on forms provided, to the Secretary, 27, Regent Street, Wrexham, by December 6th.

MEDICAL APPOINTMENTS.

Ahrens, G. H., appointed House-Surgeon of the Royal Ear Hospital, *vice* John Fallows, L.R.C.S.I., L.S.A.

Beddard, William Oliver, M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Dover Hospital.

Brumfield, Archibald N., M.R.C.S., L.R.C.P., appointed Senior House-Surgeon to the Macclesfield Infirmary.

Burton, E. T., M.R.C.S.Eng., L.R.C.P.Lond., appointed Resident Medical Officer at the Workhouse [illegible]

Clarke, F. A. H., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Medical Officer at the Beech Avenue Workhouse, Nottingham.

GERMAN, Arthur W., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the North Municipal District of the West Derby Union, *vice* A. Dunbar, M.D., deceased.

GIBBON, A. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the St. Mary's District of the Bury St. Edmunds Incorporation.

GRANT, W. Torrey, M.B., C.M.Edin., appointed Delegate for Sweden and Norway to the Quarantine Board of Egypt.

HEFFERNAN, H. H., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer for the Woolston District of the Rugby Union.

KELYNACK, T. N., M.D., M.R.C.P., appointed Honorary Pathologist and Bacteriologist to the Manchester Ear Hospital.

MCKINLAY, J. R., M.R.C.S., L.R.C.P.Lond., L.S.A., appointed Assistant Medical Officer to the Gordon Road Workhouse and the Heaton Road Homes of the Parish of St. Giles's, Camberwell, *vice* A. J. Bennetts, M.R.C.S.Eng., L.R.C.P.

MORGAN, John H., M.A.Oxon., F.R.C.S., appointed Examiner in Surgery at the University of Oxford.

OSBORNE, Oswald, M.R.C.S.Eng., L.R.C.P., reappointed Medical Officer of Health to the Bexhill Town Council.

PRICHARD, A. Heaword, M.R.C.S.Eng., L.R.C.P., appointed House-Surgeo to the Cancer Hospital, Brompton, S.W.

ROWLAND, John T., M.D.St.And., M.R.C.S., reappointed Medical Officer of Health to the Richmond Town Council.

ROWLEY, Oswald F., M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Surgeon to the Beckett Hospital and Dispensary, Barnsley, *vice* Edward Jeffery, M.R.C.S., L.S.A., deceased.

SCOTT, Charles R., M.B.Edin., appointed Assistant Medical Officer to the Warneford Asylum, Oxford.

SIEVEKING, A. R., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., appointed Senior Medical Officer to the Uganda Railway, East Africa.

STANTON, T. W., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Officer for the Osbornby District of the Sleaford Union.

WALKER, G. Charles, jun., M.B., Ch.B.Vict., M.R.C.S.Eng., appointed Resident Medical Officer and House-Physician to the Royal Mineral Water Hospital, Bath.

WILLIAMS, Ralph Paul, M.B.Lond., appointed House-Surgeon to the Hospital for Sick Children, Great Ormond Street.

DIARY FOR NEXT WEEK.

MONDAY.

London Post-Graduate Course, London Throat Hospital, 8 P.M.—Dr. Herbert Tilley: Demonstration of Selected Cases (Ear, Throat, and Nose).

Medical Society of London, 8.30 P.M.—Mr. Pearce Gould: A Consideration of the Value of Pressure in the Treatment of Wounds.

TUESDAY.

London Post-Graduate Course, Bethlem Royal Hospital for Lunatics, 2 P.M.—Dr. Craig: Moral and Impulsive Insanities, and Lunacy Law. Hospital for Diseases of the Skin, Blackfriars, 4.30 P.M.—Dr. Phineas Abraham: The Surgery of the Skin.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. Harry Campbell: Cases of Muscular Rigidity.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Mr. Ballance: A Case of Fifth Nerve Neuralgia treated by Operation.

WEDNESDAY.

London Post-Graduate Course, Hygiene at Parkes Museum, 4.30 P.M.—Professor Wynter Blyth: Disinfection and Disinfectants.

Hospital for Consumption and Diseases of the Chest, Brompton, 4 P.M.—Dr. Biss: Principles of Treatment of Pulmonary Tuberculosis.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. A. Beddard: Clinical Examination of Urine.

THURSDAY.

London Post-Graduate Course, Central London Sick Asylum, 5.30 P.M.—Mr. James Cantlie: Splenic Enlargements.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Colman: Demonstration of Selected Cases.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

Harveian Society of London, 8.30 P.M.—Dr. William Ewart: Disease: its Treatment and the Profession of Medicine in 1898. Harveian Lecture I.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Mr. Wallis: On Some Rectal Disorders.

FRIDAY.

London Post-Graduate Course, Bacteriology at King's College, 8 to 5 P.M.—Professor Crookshank: Tetanus, Rabies, and Cholera, etc.

Lectures on Medical Relief, Portman Rooms, Baker Street, W., 4.30 P.M.—Mr. F. G. P. Nelson: Sick Insurance.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. A. Beddard: Clinical Examination of Urine.

West London Medico-Chirurgical Society, West London Hospital, 8 P.M.—Clinical Evening. Cases will be shown by Dr. F. H. Alderson, Mr. Swinford Edwards, Mr. C. B. Keetley, Mr. McAdam Eccles, and Dr. J. B. Ball.

Laryngological Society of London, 20, Hanover Square, W., 5 P.M.—Cases and Specimens will be shown by Messrs. Cheatle, Wingrave, and Lake, and by Drs. Bond, Spicer, Grant, Tilley, Hill, and others.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

EDGECOMBE.—November 14th, at 12, Royal Villas, Station Parade, Harrogate, the wife of Wilfrid Edgecombe, M.B.Lond., F.R.C.S.Eng., of a daughter.

SCOTT.—On November 20th, at Madeira House, Shanklin, I.W., the wife of W. Whitelaw Scott, L.R.C.S.I., L.R.Q.C.P.I., of a daughter.

MARRIAGES.

LAYTON—YONGE.—October 20th, at Holy Cross Church, Newton Ferrers, Devon, by the Rev. C. E. [illegible] and Rev. Henry Layton, Vicar of S. Stephen's, Hammersmith, assisted by the Rev. Frank George Layton, L.R.C.P.Lond., M.R.C.S.Eng. (the Bride's brother), Dorothea, second daughter of the late Rev. Duke Yonge, Rector of Newton Ferrers.

LOWE—[illegible].—On November 16th, at the Parish Church, Louth, by the Rev. Canon [illegible], M.A., Rector of [illegible], assisted by the Rev. D. H. Ellis, B.D., LL.D., Mus. Bac., Vicar of St. Botolph's, Lincoln, Godfrey John Ralph Lowe, M.R.C.S., L.R.C.P., L.S.A., M.B.Lond., of C.M. Lodge, Chingford, to [illegible], youngest daughter of the late Thomas James, F.R.C.S., and Mrs. James, of Louth.

DEATHS.

MCKENDRICK.—At Maxieburn, Stonehaven, on November 18th, Mary Scottar, wife of [illegible], Professor of [illegible] in the University of Aberdeen.

WILLIS.—On November 19th, at Great Street, Stockport, Robert John Willis, L.R.C.P. and L.R.C.S., youngest son of the late William Willis, Belfast. No cards.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Th., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 8.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M., 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30., Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynecological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynecological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 3; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

W. H. W. desires to be recommended an institution where a mentally deficient child aged 5 can be placed at a cost of 10s. per week.

F.R.C.S.I. desires to hear of a book containing a simple course of lectures to be delivered to school teachers on the effect of study, position while studying, etc., on health.

J. P. G. asks for information as to the value of hydrogen peroxide in the treatment of psoriasis, and as to where it can be obtained packed so as to stand a voyage of ten days or so.

F. J. G. asks where a child (a girl) whose lower limbs are paralysed could be taken in and taught something useful; the local School Board has refused to have anything whatever to do with the case.

W. T. desires to hear of an inebriate home where a man in reduced circumstances would be received at a strictly moderate charge, say from £1 to £1 10s. a week.

C. J. B. L. wishes to know if there is any institution which will receive a female imbecile, aged 27 years, quiet and cleanly in her habits, and a good needlewoman; her friends can only afford to pay 5s. to 7s. 6d. weekly.

F. P. W. desires to hear of a home for a lady, 78 years of age, suffering from rheumatoid arthritis, and quite helpless. She is in a position to pay 30s. a week. Is there an institution in London which would take a case of this kind?

ANTITOXIC TREATMENT OF VARIOLA.

J. R. asks whether any attempt has been made to treat variola by an antitoxic serum.

*** We believe that the suggestion has been made. We are not aware that it has been practically tested.

NAIL BITING.

FIDES asks: What is the best treatment to adopt to prevent a girl aged 7 biting her nails? I have tried various bitter drugs applied to them, and gloves at intervals, but to no purpose.

A CHEAP AND EFFECTIVE ANTISEPTIC.

EPIDERMIS writes: I should be much obliged if any member could tell me of an antiseptic solution which is (1) effective, (2) cheap, (3) non-irritating to the skin, (4) non-corrosive to instruments. I find carbolic makes my hands so rough and consequently dirty) that I have had to give it up for operations; while having a good deal of surgery among club patients an expensive antiseptic is undesirable.

MARRIAGE AND AMENORRHŒA.

PETO writes: A lady, aged 23, has suffered from amenorrhœa from the age of 16, the period being normal until she had an attack of measles. She is in excellent health, tall and vigorous. Is marriage advisable in such a case?

*** We are advised that our correspondent should neither recommend marriage nor oppose it in such a case.

FREQUENT MICTURITION AFTER PARTURITION.

J. would be glad to know the best treatment for a case of frequent micturition which lasts in some cases for months after parturition, and which he presumes is due to over-stretching of the urethra and neck of the bladder. The administration of belladonna and strychnine does not seem to do much good. Would linear cauterisation of the urethral mucous membrane be of use, and if so, what would be the best method of carrying it out?

SALINE INJECTIONS IN COLLAPSE.

B.B. asks for information as to the process of injection of saline solution in collapse from hæmorrhage, and as to the composition of the fluid.

*** We are indebted to Mr. Arbuthnot Lane for the following answer to this question: Introduce slowly through a cannula tied into a superficial vein, as the basilic, from two to five pints of normal saline solution (1 drachm of common salt to a pint of water) at 100° F. by means of a glass, or Higginson's, syringe, care being taken to avoid the entry of air. The vein is readily exposed by a long incision crossing its course obliquely. It is freed from the surrounding parts, and an opening is made in it sufficiently large to admit the cannula. The vein beyond the cannula is closed by a ligature. The surgeon must be guided by the condition of the patient in determining when he has injected enough fluid.

POPULAR LECTURES ON MEDICAL SUBJECTS BY MEDICAL MEN.

WE have received a letter of complaint from a correspondent, who encloses a poster which he says is placarded all over his village, announcing a lecture by a local doctor on Some Interesting Facts in Physiology, with limelight illustrations. Our correspondent considers that this is not fair to the other medical men in the neighbourhood, and invites our comments.

*** The practice of giving popular lectures on medical subjects by medical practitioners has been so common during the past twenty years that it would be unfair to censure any one individual, as he can plead the example in all parts of the country of men occupying the highest professional positions. Undoubtedly some of these lectures have seemed to us to present objectionable features, but it would be unreasonable to say that a medical man should never give a popular lecture in his own village; and if he may do this it would be impossible to lay down rules within which he should select his subjects, although we may all agree that he should not use such an opportunity to advertise his own professional knowledge or skill.

ANSWERS.

KISMET.—Questions asking for any effectual means other than electrolysis for removing a beard have again and again been inserted, but no satisfactory substitute has been suggested.

THE ISLE OF MAN.

DR. ALFRED ASHBY (Reading) writes: If your correspondent "H. J.M." will write to Dr. Haviland, Ridgemount, Frimley Green, Surrey, I think he will obtain all the information he asks for.

M. writes: "H. J. M." will get every information about the Isle of Man if he writes to the Official Board of Advertisements, Douglas, for a copy of the *Official Guide*.

TREATMENT OF INEBRIETY.

J. B. R.—In inebriety of only one year's standing the starting point ought to be readily traceable. The first step towards true treatment, restraint in a home, has been found beneficial in many cases. As to various advertised drug treatments, we may refer our correspondent to the answers given to "R. A. F." and "Gold Cure" in the BRITISH MEDICAL JOURNAL of July 9th, 1898, p. 135, and November 12th, 1898, p. 1535.

CYCLE SADDLES.

M.D. writes in reply to "D. C. L.": I have ridden about 1,000 miles on a Christy saddle, and I can certify that it absolutely does away with perineal pressure. The weight comes entirely on the ischial tuberosities, and the skin over them and just below them on the thigh is apt to find out the pressure in a long ride. I have had no experience of the Henson, but it, too, I should think, would effectually prevent pressure on the perineum. Proper adjustment of the handles and of the saddle is essential. Most makers will allow a saddle for trial.

ATTENDANCE ON CHILDREN OF RETIRED MEDICAL MEN.

FAIRPLAY.—The following extract from a Code of Medical Ethics, by Dr. J. De Styrap, deals with the point raised by our correspondent:

"All legitimate practitioners of medicine, their wives and children while under the paternal care are entitled *ex officio* as a matter of right, but by *professional courtesy* to the reasonable and gratuitous services—*railway and like expenses excepted*—of the faculty resident in their immediate neighbourhood, whose assistance may be desired.....On the other hand, a son or a daughter altogether independent of the father, or the widow and children of a practitioner left in affluent or well-to-do circumstances, should be charged as ordinary patients, unless feelings of friendship or other special reasons render the attendant practitioner averse to professional remuneration; in such case the rule need not apply. Moreover, if a wealthy member of the family seeks professional advice, and courteously urges the acceptance of a fee, it should not be declined, *for no percentage* [illegible] *to be given from the debtor which the debtor himself would not wish to give.*"

NOTES, LETTERS, Etc.

LADY DISPENSERS.

As the accuracy of an answer given under this heading in the BRITISH MEDICAL JOURNAL of October 22nd has been called in question, it may be as well to state that the conditions of entry for the Minor Examination of the Pharmaceutical Society are that candidates have been registered as apprentices or students before making application, and that they have been engaged in translating [illegible] dispensing prescriptions for three years. This period of three years is generally spoken of as an apprenticeship: it may be served in a shop or a dispensary. The further study required in some school of pharmacy is not, however, compulsory.

The statement that the certificate of the Apothecaries Society in dispensing suffices for some hospital dispenserships was based on fact.

THE INVENTOR OF SPECTACLES.

WE recently quoted the Italian inscription in which the invention of spectacles is claimed for [illegible] century. As some doubt has been expressed [illegible] tion we communicated with [illegible] reports that the inscription runs as follows:

QUI GIACE
SALVINO D'ARMATO DEGLI ARMATI
DI FIRENZE
INVENTOR DEGLI OCCHIALI
DIO GLI PERDONI LE PECCATA
ANNO D MCCCXVII

Our correspondent adds: The above inscription [illegible] let into the wall of the [illegible] Maria Maggiore, [illegible] the tablet is modern, and above it is a bust which is not the portrait of Salvino.

THE ANTISEPTIC PROPERTIES OF SAWDUST.

MR. F. W. COLLINGWOOD (Brighton) writes: Concerning the antiseptic [illegible] I would [illegible] wing story that the said quality was known long before [illegible] y, in the modern sense of the word, was known. In a [illegible] ries, St. George's, there is a head which [illegible] Duke of Suffolk, in a state of adipocere. The [illegible] vant of the Duke begged the possession of [illegible] executioner on Tower Hill, and preserved it in [illegible] The head is to be seen at the present day; at all [illegible] hurch five years ago, and could be seen by paying the [illegible] sideration.

THE WRITING OF PRESCRIPTIONS.

S.W.W. writes: In the last issue of the BRITISH MEDICAL JOURNAL, I notice another attempt to denounce the use of the customary symbols in prescription writing. The fact of a fatal misadventure having recently occurred has apparently prompted the writer in this instance, and he thinks that "at this time of day we can afford to dispense with these symbols considering the danger to human life ....." Would "J.M.Y." not think it advisable to dispense with the "opium "also, for the very same reason "at this time of day"? The mishap referred to was caused simply by the fact that the prescription came into the hands of a person for whom it was in no wise intended, and to whom it should naturally be quite unintelligible. What has a "nurse" got to do with the reading of prescriptions? They are meant solely and exclusively for a qualified chemist, and if they are invariably transferred to his hands, all the directions necessary for nurse, etc., will appear in plain English on the label attached to the medicine, and mistakes cannot occur. I see no reason for the change suggested by "J.M.Y." (and by others who have already trotted out similar suggestions), and am of opinion that, should the change be adopted, it would lead to very much greater danger in the same direction. No: life is too short to enable the busy practitioner to write his prescriptions always in plain English (which language is, I presume, implied by "terms understood by all"). Abbreviations would, of course, result, increasing very materially the probability of such mishaps. I think it more than probable that every medical man who is a master of the art of prescription writing (alas! a much-neglected item in professional education nowadays) will rigidly adhere to the symbols which experience has proved to be exceedingly convenient, thoroughly efficient, and absolutely safe—if used only by those who know how—from ages past to "this time of day."

THE LATE INSPECTOR-GENERAL JOHN MURRAY, M.D.

WE regret to find that we were led into error in our notice of the late Dr. John Murray of the Bengal Medical Service by that usually very correct compilation, *The Index Catalogue of the Library of the Surgeon-General, U.S.A.* In its pages there is some confusion between two Dr. John Murrays. Dr. John Murray, who died in July last, graduated in arts in Marischall College, Aberdeen, in 1828, and in medicine in Edinburgh in the year 1831. The title of his graduation thesis was "De Necrosi."

LARGE FŒTUS: A CORRECTION.

IN the note from Dr. P. O'Connell (Stillorgan Castle, co. Dublin) on a Large Fœtus, published in the BRITISH MEDICAL JOURNAL of November 19th, page 1266, it should have been stated that the child was a female, and not a male as printed.

CALF LYMPH.

PUBLIC VACCINATOR writes: As a public vaccinator I have experienced great inconvenience due to the poor quality of the calf lymph, which I have got not from one source only, but from various, and the result has been that all have given very poor results—in many cases total failure: in others poor vesicles that will give very little protection. Without satisfactory lymph, vaccination cannot be carried out efficiently.

THE SALE OF OLD MEDICAL DIPLOMAS.

A CORRESPONDENT sends us the following cut from the *Exchange and Mart*, October 28th:

> VARIOUS. To relatives of deceased medical men. Wanted, by a collector, old medical diplomas, a good price paid, especially for sixteenth to eighteenth century diplomas; any acceptable, of whatever date.—2884S.

*** It is certainly curious to find that old medical diplomas are an article of merchandise. An antiquarian would hardly care for diplomas "of whatever date."

GERMAN ENTERPRISE IN HYPODERMIC SYRINGES.

K. writes: It is a well known fact that one or two makers of hypodermic syringes supply the barrel with their name, a sufficient guarantee, while the mounts and needles are of German manufacture, and the whole thing is sold retail by a chemist as of English make. Some time ago I bought a hypodermic syringe in case, barrel, two mounts, and needles, the barrel bearing the name of a very well known manufacturer. I first had occasion to use the syringe in the country, and found that the mounts in no way fitted the barrel; in fact, the syringe was useless. On writing direct to the manufacturer of the syringe, I got a reply that, "It is true the barrel is mine, but the Germans buy these and fix their own mounts and needles to them." Now is it not a shame that this should be so? I suppose one man out of a hundred would buy a syringe with the mounts and the barrel, and think that the whole syringe was of their make.

ORGANOTHERAPY IN DIABETES.

Dr. J. M[illegible], W.] writes: Referring to your article, Organotherapy in Diabetes (BRITISH MEDICAL JOURNAL, October 22nd, 1898), I would ask permission to state that in an article on Pan-creatic Diabetes in the JOURNAL of July 21st, 1894, I tried to explain, and I believe succeeded in explaining why pancreatic extract administered by the mouth failed to cure the disease. I then pointed out that the "internal secretion" of the pancreas, unlike the secretion of the thyroid, does not enter the general circulation before reaching the liver, but passes directly into the portal circulation, and that if we hope to cure the disease we must imitate Nature and get the glycolytic ferment directly into the portal vessels. I also suggested methods by which this could be effected.

In a further note in the JOURNAL of March 27th, 1897, I called attention to two cases reported from the Continent where pancreatic extract was administered in the method suggested with very hopeful results.

I will conclude by quoting a sentence from my last note in the JOURNAL: "If no fallacy has crept into the experiments of M. Kaufmann on the results of which my suggestions were founded, I am unable to see why, if these suggestions are carried out, pancreatic diabetes should remain an incurable disease."

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. J. Althaus, London; A. Ashby, M.B., Reading. **B** Dr. A. N. Boycott, Purley; Mr. W. E. S. Burnett, Bowdon; Mr. B. Brooks, Hull; Mr. A. N. Brushfield, Buxton; British Gynecological Society, The Secretary of the, London; Mr. E. T. Burton, Birmingham; Mr. W. O. Beddard, Dover; F. M. Blumer, M.B., Stafford; Messrs. Burroughs, Wellcome and Co., London; Mr. W. J. Burroughs, London; Messrs. F. and J. Bruce, London; Mr. L. A. Bidwell, London; Dr. J. B. Bird, Carlisle; Mr. J. P. Bush, Clifton; Dr. E. A. C. Baylor, Ash; R. Bishop, M.B., Manchester. **C** Cargona Company, Peterborough; F. J. H. Coutts, M.B., Manchester; Mr. G. T. Coleman, Cardiff; Mr. W. Carter, Dublin; Dr. A. E. Cooper, London; Mr. J. Campbell, Castleton; Mr. J. Court, Staveley; C. S. R. L.; Dr. G. W. Crowe, Worcester. **D** Mr. H. Danvers, Bordighera; Dr. W. B. Drummond, Edinburgh; Dr. E. W. Diver, Jarrow-on-Tyne. **E** Enfield Cycle Company, London; E. G.; W. McA. Eccles, M.B., London; Epidermis; C. R. Edmondson, M.B., Liverpool; J. Edgar, M.B., Glasgow. **F** Messrs. Fassett and Johnson, London; Fides; F. P. W.; Fair Play; A. H. Frere, M.B., Stradbroke; F.R.C.S.I.; F.R.C.S.E.; Mr. H. Faulkner, Exeter. **G** H. W. Gell, M.B., London; W. T. Grant, M.B., Alexandria; Mr. W. Gordon, Salisbury; Mrs. J. McC. R. Gilmer, Belfast; G. B.; Mr. A. W. German, Liverpool; Sir J. A. Grant, M.D., Ottawa; Dr. L. G. Guthrie, London; Dr. T. W. Griffith, Leeds; Mr. F. J. Greeves, Blackburn; Mr. F. R. Greenwood, Birmingham. **H** Dr. W. M. Hutton, Edinburgh; Mr. W. F. Haslam, Birmingham; Mr. F. Haydon, London; Dr. J. B. Huber, New York; Rev. J. W. Horsley, London; Dr. J. P. Henry, London; H. M. E.; Mr. J. R. Hill, Edinburgh; Mr. F. A. Humphry, Brighton; Dr. T. B. Hyslop, London; Mr. W. H. J. Huthwaite, Skipton-in-Craven. **I** Ignoramus. **J** Dr. J. Johnston, Bolton; Mr. G. Joynson, Northwich. **K** Dr. T. N. Kelynack, Manchester; E. M. Knowling, M.B., Tenby. **L** Mr. J. Lilwall-Cormac, Burton-on-Trent; D. Love, M.B., Cumbernauld; Dr. Levillain, Nice; R. C. Lucas, M.B., London; Mr. F. W. Lowndes, Liverpool; Messrs. Larcome and Veysey, Portsmouth; T. Laird, M.B., Heywood. **M** Dr. W. Milligan, Manchester; Messrs. Mayer and Meltzer, London; Mr. W. Marriott, London; Member; W. J. McCardie, M.B., Birmingham; Mr. H. H. B. McLeod, Shrewsbury; L. F. McDowell, M.B., Hope Town; Dr. T. Myles, Dublin; Mr. J. R. Mackinlay, London; M. D. Macleod, M.B., Beverley; Mr. J. H. Montague, London; R. J. Mills, M.B., Norwich; Mr. J. H. Morgan, London; Mr. S. W. May, Tyldesley; Sir W. Mac Cormac, Bart., London; A. M. Martin, M.B., Newcastle-on-Tyne; Dr. G. R. Murray, Newcastle-on-Tyne; Mr. E. R. Morgan, Morriston; M. O. H.; Mr. T. C. Melhado, London; McCredy Manufacturing Syndicate, The Manager of the, London. **N** Mr. P. Newell, Crowborough; Nottingham Medico-Chirurgical Society, The Secretary of the, Nottingham; Mr. N. E. Norway, Newquay Not a Public Vaccinator; Newport Medical Society, The Secretary of the, Newport, Mon. **O** Dr. P. O'Connell, Stillorgan. **P** Public Vaccinator; Mr. J. F. Potts, Sunderland; Puzzled; Mr. J. Priestley, Lee-on-the-Solent; Mr. A. H. Prichard, London; Mr. W. B. Pearsall, Dublin; Dr. S. P. Phillips, London; Messrs. A. and F. Pears, London; Mr. J. Plummer, Sydney; Dr. J. E. Platt, Manchester. **R** Messrs. J. Raphael and Co., London; Rusticus; Mr. O. F. Rowley, Barnsley; Mr. T. Richmond, Glasgow; Mr. W. M. Richardson, London; Mr. L. D. Rea, London. **S** S. C. R. M.; Mr. W. S. Sprent, Slingsby; Sir William Stokes, Dublin; Professor S. Stockman, Edinburgh; Mr. F. C. Simpson, Great Berkhamsted; Dr. T. D. Savill, London; Dr. G. A. Stephens, Swansea; G. B. Shuter, M.B., London; Dr. A. Smart, Edinburgh; Mr. A. R. Sieveking, Sheerness; S. W. W.; Mr. O. C. Smithson, Grays. **T** Mr. W. Thomas, Nantwich; Mr. H. G. Turner, Manchester; Mr. W. A. U. Thomson, Maidenhead; Mr. W. T. Thomas, Liverpool; Dr. D. G. P. Thomson, Penrith; Dr. H. Tilley, London. **V** Dr. M. A. Veeder, Lyons. **W** Dr. F. J. A. Waring, Hove; Mr. C. H. Whiteford, Plymouth; Dr. D. Walsh, London; R. P. Williams, M.B., London; Dr. F. Willcocks, London; Mr. E. S. Wood, Cambridge; Dr. J. R. Wallace, Calcutta; Mr. E. White, London; W. Wynne, M.B., Northam; Messrs. J. Wright and Co., Bristol; Mr. G. Whitehouse, Wrexham; Mr. G. A. Wolfendale, Crook; J. L. Waters, M.B., Hull; etc.

BOOKS, ETC., RECEIVED.

Drs. Harvey and Davidson's Syllabus of Materia Medica. By W. Martindale, F.L.S., F.C.S. Tenth Edition. London: H. K. Lewis. 1898. 1s.

Leçons de Clinique Thérapeutique sur les Maladies du Système Nerveux. Par Gilles de la Tourette. Paris: E. Plon. Nourrit et Cie. 1898.

The Book of Diet. By P. E. Muskett. Melbourne, Australia: G. Robertson and Co.; and London: Simpkin, Marshall and Co.

Die gestielten Anhänge des Ligamentum Latum. Von Dr. E. Rossa. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1899. 2s. 3d.

Die Einschränkung des Bauchschnitts durch die vaginale Laparotomie (Kolpotomia anterior). Von Dr. A. Dührssen. Berlin: S. Karger; and Glasgow: F. Bauermeister. 1899. 7s.

Traité de Diagnostic Medical et de Séméiologie. Par Dr. F. O. Mayet. Troisième Partie. Paris: J. B. Baillière et Fils. 1899. Fr. 8.

Maladies du Larynx, du Nez, et des Oreilles. Par A. Castex. Paris: J. B. Baillière et Fils. 1899. Fr. 12.

The Pharmacology of Aconitine, Diacetylaconitine, Benzaconine, and Aconine, considered in Relation to their Chemical Constitution. By J. T. Cash, M.D., F.R.S., and W. R. Dunstan, M.A., F.R.S. London: Published for the Royal Society by Dulau and Co. 1898. 10s.

The Guide to South Africa. By A. S. and G. G. Brown. Sixth Edition. London: Sampson Low, Marston and Co. 1898. 2s. 6d.

Robert Burns and the Medical Profession. By W. Findlay, M.D. London and Paisley: Alex. Gardner. 1898. 5s.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. By H. A. Hare, M.D., B.Sc. Third Edition. London: Henry Kimpton. 1899. 21s.

Naturalité et Démocratie. Conférences faites à l'École d'Anthropologie de Paris. By A. Dumont. Paris: Schleicher Frères. 1898.

*** In forwarding books the publishers are requested to state the selling price

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A CLINICAL LECTURE ON HALSTED'S OPERATION FOR REMOVAL OF CANCER OF THE BREAST.

Delivered at St. Bartholomew's Hospital

By HENRY T. BUTLIN, F.R.C.S., D.C.L.,

Surgeon to the Hospital.

Earlier Results.

In the last lecture I gave an account of the results of my operations for cancer of the breast in public and in private practice from the year 1880 to 1894, inclusive. The total number of cases in which I performed the first operation was 116:

Died of the operation	6
Not yet traced	3
Dead or alive, with local recurrence	51
Dead of cancer without local recurrence	22
Dead of other cause within 3 years of operation	2
Dead of other cause more than 3 years after operation	3
Alive and well	29

As this account will be published in full in the forthcoming volume of the *St. Bartholomew's Hospital Reports*, I merely give the summary here in tabular form.

Some of the cases which are contained in the above table really belong to the year 1895. For, although I began to perform the operation of which I shall presently speak at the beginning of 1895, I did not make it my only operation during that year.

Researches of Heidenhain and Stiles.

About the end of the year 1894 I saw a notice of Professor Halsted's paper on the Results of Operations for the Cure of Cancer of the Breast, and in consequence carefully read the paper itself in the *Annals of Surgery* (vol. xx). Although the results of the author were exceedingly good, sufficient time had not elapsed to allow of a final judgment of their value. Nevertheless, they appeared to me to justify a thorough reconsideration of the subject of the operative surgery of cancer of the breast. The operation was suggested by a paper in *Langenbeck's Archiv* (vol. xxxix, 1889) on the Causes of Local Recurrence of Cancer after Amputation of the Breast, by Dr. Heidenhain. I procured this paper and studied it, together with a paper on the Surgical Anatomy of the Breast and Axillary Lymphatic Glands, reprinted from the *Edinburgh Medical Journal* (1892), which the author, Mr. Harold Stiles, had been so kind as to send me.

Both authors came to the conclusion, from a general and microscopical examination of a number of breasts which had been removed, that cancer of the breast rapidly extends back towards, and then into, the pectoral fascia, even when there appears to the naked eye to be a considerable interval between the posterior border of the tumour and the fascia, and that the pectoral fascia is often very difficult to separate satisfactorily from the surface of the muscle. Both authors agreed in believing that the entire mammary gland is not removed by the operations which are usually performed, especially in thin women, and that cancer cells are soon and widely conveyed through the lymphatics of the breast, and particularly towards the pectoral fascia.

They differed in opinion on two questions, the first of them of comparatively small importance, because they both advised that the entire mammary gland should be removed. Heidenhain averred that every mammary gland which contains a nodule of cancer is, in very wide extent, probably *in toto*, diseased. Stiles had not found this to be the case, but as he had discovered cancerous cells or emboli in the lymphatic vessels of distant parts of the breast, the practical result was much the same. Heidenhain accepted the description of the lymphatics of the breast by Langhans, who makes those of the gland quite separate from those of the overlying skin, except where the two systems communicate through the great lymphatic plexus beneath the areola, through which all the lymph passes from the mammary gland below and from the integument above. From this plexus it is conveyed to the inferior axillary glands through two large afferent vessels. Stiles apparently designed the lymphatic system from the discovery of cancer emboli in lymphatics: (1) in the connective tissue processes radiating from tumour into the surrounding breast tissue or circum-mammary fat; (2) in the breast tissue remote from, as well as close to, the tumour; (3) in the connective tissue septa, separating the lobules of the circum-mammary fat; (4) in the so-called "ligaments of Cooper," where they often lead to small disseminated cancerous nodules in the corium; (5) in the retromammary tissue and pectoral fascia. Stiles also made a very important observation to the effect that "occasionally the glands above the pectoralis minor, in the apex of the axilla, and under the clavicle, are diseased, while the pectoral glands are normal. This points to the probability that some of the lymphatics from the mamma pass to join the glands at the upper part of the axilla directly, without entering the pectoral group."



Fig 1.—To show the skin incision in the case of cancer above the nipple and the triangular flap dissected back to its base line.

Looking back on my own clinical experience in order to see how far it seemed to be consistent with the investigations of Heidenhain and Stiles, I could quickly remember several cases in which recurrence had taken place in the substance of the pectoral muscle, after the removal of a cancer which appeared to be quite separate from the pectoral fascia, and even after the fascia had been roughly dissected off. Seeing how wide an area of apparently healthy tissues I had removed in every case that I had operated on, and how large

an area of integument I had taken away, I thought the frequency of recurrence *in situ* was much greater than it should have been. Again, I remembered cases in which the glands low down in the axilla had been little or not at all affected, while those above the pectoralis minor were larger and more obviously cancerous. And it also seemed to me that plaques and nodules in the skin are usually grouped, in the first place, at least, around or in the neighbourhood of the cancer and not about the nipple. I could not say certainly whether recurrence takes place in the tissues between the breast and the axilla, in which the lymphatic vessels run, but I was disposed to think it does not.

My own experience, therefore, led me to think the observations of both investigators were very valuable, particularly on the frequency and rapidity with which the cancer travels backwards towards the pectoral fascia, and on the affection of distant parts of the breast and fat of the breast. But I was much more inclined to accept the description of the lymphatics by Stiles than that by Langhans, which had been adopted by Heidenhain. It appeared only reasonable to hope that an operation designed to remove thoroughly the structures in which cancer of the breast may be disseminated would be a means of saving the lives of a few more women in every hundred of those submitted to operation.

HALSTED'S OPERATION.

The operation designed and practised by Halsted appeared to me to fulfil the requirements better than any other, and, since the beginning of 1895, I have made it my routine proceeding, although various reasons have led me to operate by the older methods from time to time, especially during the first year. Everything which is removed comes away in one continuous mass, and this mass contains the whole of the mammary gland, the whole of the pectoral muscle, with, perhaps, the exception of the clavicular portion; the fascia beneath the pectoral muscle and that in front of and behind the lesser pectoral, the loose connective tissue on the side and back walls of the axilla, the fat and all which it contains right up to the clavicle. In order to accomplish this more effectually, the lesser pectoral muscle is divided and the coracoid portion is turned up.

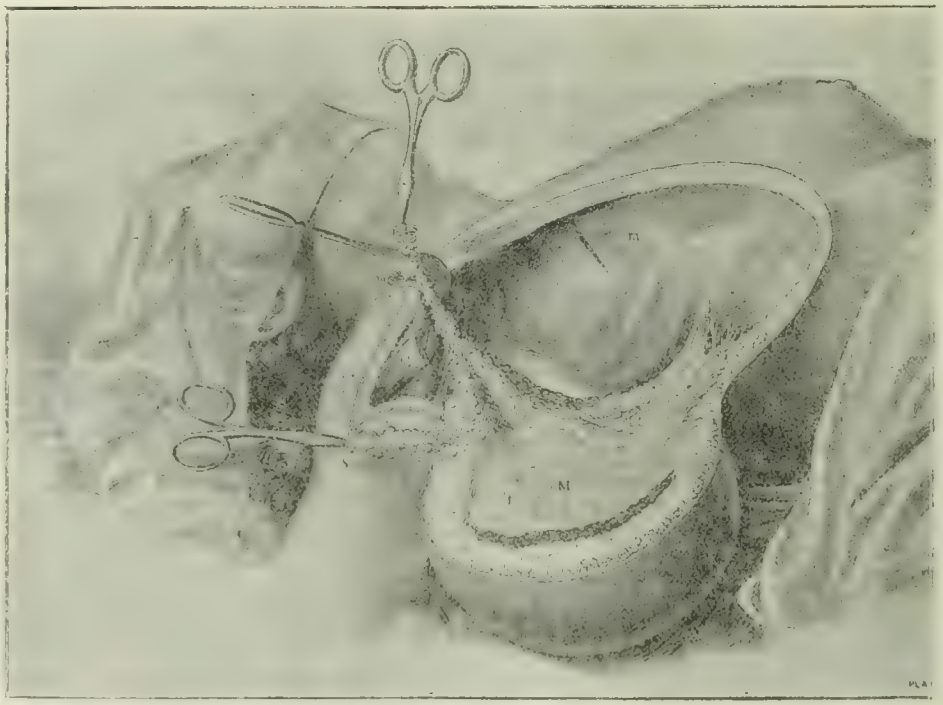


Fig. 2.—To show the exposure of the axilla, after the removal of the greater pectoral muscle and the division of the lesser pectoral, the coracoid portion of which is held up by a sharp retractor.

As Professor Halsted lays great stress on the details of his operation, I will give it as far as possible in his own words, simply omitting the remarks and opinions with which the description is interspersed:

1. The skin incision is carried at once and everywhere through the fat.

2. The triangular flap of the skin is reflected back to its base line (that is, the posterior fold of the axilla). There is nothing but skin in this flap. The fat which lined it is dissected back to the lower edge of the pectoralis major muscle, where it is continuous with the fat of the axilla.

3. The costal insertions of the pectoralis major muscle are severed, and the splitting of the muscle, usually between its clavicular and costal portions, is begun, and continued to a point about opposite the scalenus tubercle on the clavicle.

4. At this point the clavicular portion of the pectoralis muscle and the skin overlying it are cut through hard up to the clavicle. This cut exposes the apex of the axilla.

5. The loose tissue under the clavicular portion (the portion usually left behind) of the pectoralis major is carefully dissected from this muscle as the latter is drawn upward by a broad, sharp retractor.

6. The splitting of the muscle is continued out to the humerus, and the part of the muscle to be removed is now cut through close to its humeral attachment.

7. The whole mass, skin, breast, areolar tissue, and fat, circumscribed by the original skin incision, is raised up with some force, to put the submuscular fascia on the stretch as it is stripped from the thorax close to the ribs and pectoralis minor muscle. It is well to include the delicate sheath of the minor muscle when this is practicable.

8. The lower outer border of the minor muscle having been passed and clearly exposed, this muscle is divided at right angles to its fibres, and at a point a little below its middle.

9. The tissue over the minor muscle near its coracoid insertion is divided as far out as possible, and then reflected inward in order to liberate or prepare for the reflection upward of this part of the minor muscle.

10. The upper outer portion of the minor muscle is drawn upward with a broad sharp retractor as is shown in the illustration (Fig. 2).

11. The small blood vessels under the minor muscle near its insertion must be separated from the muscle with the greatest care. They should be dissected out very clean, and immediately ligated close to the axillary vein.

12. Having exposed the subclavian vein at the highest possible subclavicular point, the contents of the axilla are dissected away with scrupulous care, also with the sharpest possible knife. The glands and fat should not be pulled out with the fingers. The axillary vein should be stripped absolutely clean.

13. Having cleaned the vessels, we may proceed more rapidly to strip the axillary contents from the inner wall of the axilla the lateral wall of the thorax. We must grasp the mass to be removed firmly with the left hand, and pull it outward and slightly upward with sufficient force to put on the stretch the delicate fascia which still binds it to the chest. This fascia is cut away close to the ribs and serratus magnus muscle.

14. When we have reached the junction of the posterior

and lateral walls of the axilla, or a little sooner, an assistant takes hold of the triangular flap of skin and draws it outward, to assist in spreading out the tissues which lie on the subscapularis, teres major, and latissimus dorsi muscles. The operator having taken a different hold of the tumour, cleans from within outward the posterior wall of the axilla. Proceeding in this way, we make easy and bloodless a part of the operation which used to be troublesome and bloody. The subscapular vessels become nicely exposed and caught before they are divided. The subscapular nerves may or may not be removed, at the discretion of the operator.

15. Having passed these nerves, the operator has only to turn the mass back in its normal position, and to sever its connection with the body of the patient by a stroke of the knife.

(The two figures (Figs. 1 and 2) are copied from plates illustrating Halsted's paper).

I think this operation exposes the axilla far better than any operation we have been in the habit of practising in this country; and I do think it is desirable to remove a large part of the greater pectoral muscle with the fascia over and beneath it. It is, of course, a serious operation, and should be performed deliberately and with great care to take up every vessel as soon as or even before it bleeds. This is especially desirable in the separation of the pectoral muscle from its sternal and costal attachments. If care is taken to lessen the hæmorrhage, the operation is not more dangerous than any other large operation for the same disease. Between the beginning of 1895 and the end of 1897 I performed it thirty-three times, with one death.

The removal of the pectoral muscle and the division of the lesser pectoral do not impair the movement of the upper extremity. This depends on the area of skin which has been removed. The accompanying copy of a photograph (Fig. 3) shows how freely the arm can be moved. It is not taken from a selected case, but from a patient who happens to be in the hospital and on whom I operated some three years ago.



Fig. 3.—Patient after Halsted's operation, to show free movement of arm.

As in the last lecture, so in this, I shall only give the results of those operations which were performed more than three years ago, in order that every case may fall under the same time limit. Of the 33 cases, therefore, in which I have performed Halsted's operation, only 13 are available, and, of these 13, 9 were alive and well when last seen or heard of (from their medical men) at periods of from three to four years after the operation. As 11 of the patients were treated in the hospital, and the operation was a new one, my staff have been greatly interested in the results, and have secured the attendance of nearly all, if not of all, the patients from time to time, so that I have been able to exhibit them to my class within the last few weeks. The disease was examined microscopically in every instance in the pathological department. In one case it proved to be a duct carcinoma (not a bad type of malignant disease), but in the remaining cases it belonged to the ordinary variety of spheroidal-celled carcinoma. In more than one of the successful cases the glands in the axilla were cancerous.

Died of the operation	1
Dead or living with local recurrence	2
Dead of cancer without local recurrence	1
Alive and well	9

The tabulation of the 13 cases is given above.

Of course I cannot but regard this as a peculiarly fortunate series of cases, and I have no hope that an equal measure of success will be achieved in the next or in future series of 13 cases, for the proportion of successful cases is nearly 70 per cent. which we are not likely to attain for the present.

I have not removed the supraclavicular glands in any of my cases, for I am disposed to think with Cheyne that cases in which the supraclavicular glands are affected are hopeless, but I reserve my opinion on that matter for the present.

What may be Hoped from Operation in the Future.

I am not so sanguine as to believe that surgeons are going to cure every case of cancer of the breast by operation at some not far distant time; but I do believe that far better results will be secured in the future than we have been accustomed to in the past. In 1887, on a large series of operations performed by various surgeons, I was only able to declare success to the value of 10 per cent. Mr. Mitchell Banks had brought his own statistics up to 15 or 20 per cent. And the mortality due to the operation was very considerable, not less than 12 per cent. to 16 per cent. Compare with these the results furnished by Mr. Watson Cheyne in the Lettsomian Lectures, 1896, by Professor Halsted, and by myself. Mr. Cheyne has not adopted Halsted's method, but he has performed an operation which is very sweeping and fairly in accordance with the researches of Stiles. Forty-two of the patients treated by the three operators were treated more than three years ago, and 23 of the 42 are still alive and well, or have died of some other cause than cancer after passing the three years' limit.

And these results have been secured under the most disheartening circumstances. There is scarcely a single case in which the disease was not known to have existed for

several months; and in many of them it had been noticed for one, two, or more years. There were several of them in which the primary tumour was ulcerated, and several in which the axillary glands were filled with cancer.

It is much the same in public and in private practice. The operation is frequently performed solely for the sake of palliation. Nor can one be surprised that this is so. Cancer of the breast is very insidious in its onset, and is often discovered by accident. Neither the doctor nor the patient can bring themselves to believe that the little indolent, painless lump is really cancer; so valuable time is lost while the progress of the disease is being "watched."

Neither the patient nor the doctor has much faith in the value of an operation except as a palliative measure. The majority of medical men believe that "once cancer" means "always cancer," and, if the disease does not reappear in the breast or axilla, it will break out in some other part of the the body. The discussion on Mr. Sheild's paper at the Royal Medical and Chirurgical Society during the course of last session revealed the fact that this opinion is shared by some operating surgeons of high standing and long experience. I was at first at a loss to understand why this should be so. I now attribute it chiefly to two causes—the imperfect adaptation of the operations to the disease, and the fact that the patients who have been treated have not been followed up after the operation. One surgeon said that the untraced cases would be found at Somerset House, and in the search for my patients I sent there to seek their names in the death registers. Many of them were found, but those which were not found there were hunted out with extraordinary skill and patience by my former house-surgeon, Mr. J. Preston Maxwell, to whom I am greatly indebted for assistance. It will be seen in the table of earlier results that only 3 of the 116 patients have not been traced, and all the Halsted cases have been kept under observation. I do not know whether we shall still discover the remaining 3 patients, but we have every reason to believe that one of them at least is living and engaged as a domestic servant.

I trust that the results I have been able to publish in this lecture, added to those of Mr. Watson Cheyne and of Professor Halsted, will do something to encourage both medical men and their patients to take a more hopeful view of the possibilities of operation against cancer of the breast. We shall then procure the cases at a much earlier period for operation, and shall, I am sure, obtain far better results.

REMARKS

ON THE

TREATMENT OF FRACTURE OF THE PATELLA BY THE OPEN METHOD AND SUTURE.

By Sir WILLIAM STOKES, F.R.C.S.I.,

Surgeon-in-Ordinary to Her Majesty the Queen in Ireland.

There are few operative measures that have been suggested and practised of late years that afford better evidence of the value of aseptic practice than the treatment of fracture of the patella by the "open method." To Lord Lister we are indebted for the introduction of this important addition to our surgical resources. Formerly, any open wound involving the knee-joint was looked upon—and with good reason—as one of the most serious accidents that could happen. In a large proportion of such cases acute suppurative inflammation with septic complications as a rule promptly set in, and ended either fatally, or in the necessity for amputation. In illustration of the good results that may be anticipated after the operation of suturing the patella by the open method, the following case affords a signally good example. It is the fifth case of the kind I have treated by this method, and although suppuration occurred in one, the result was eventually, as in all the others, satisfactory.

For the notes of my last case I am indebted to my clinical clerk, Mr. Henry H. Swanzy, jun.

J. L., aged 28, by occupation a messenger in a victualler's establishment, was admitted into the Meath Hospital under my care on April 18th, 1898, suffering from a fracture of his right patella. While carrying a side of beef on his back down the paved yard of his employer he slipped and fell, and in doing so heard a "crack," doubtless produced by the bone lesion. On his admission into hospital almost immediately after the accident, the right knee was found to be enormously swollen, and on close examination the two fragments of the fractured bone could easily be determined separated by an interval of fully 1 inch. On being placed in bed, the limb was kept at first raised, a posterior well-padded splint adjusted, and a cold evaporating lotion applied. On the second day after the patient's admission into hospital (April 20th) I operated. A free vertical incision was made over the centre of the joint, and I found, on opening into it, that it was as usual occupied by several large blood clots. The bone fragments were widely separated, so much so that I feared a sufficient approximation of the fragments to bring them into accurate and immediate apposition would not be found possible. In this, however, I found subsequently that I was mistaken. Over the divided or broken surface of the upper fragment a large curtain-like flap of periosteum was found completely covering it, thus forming a fibrous barrier between both fragments. Its forcible detachment must have taken place close to the lower edge of the inferior fragment. This fibrous curtain was then excised, the blood clots removed, and the joint thoroughly irrigated with sterilised water. The fragments—the broken surfaces of which did not require to be refreshed, the fracture being so recent a one—were then sutured together with strong sterilised silk, this being effected rapidly and efficiently by my crochet suture needle. The bone was found very hard and dense—in truth, almost of the consistence of ivory. Two sutures were applied and the edges of the skin wound approximated by a continuous suture of fine sterilised silk. The limb was then fixed again on a posterior splint and kept elevated. Nothing noteworthy occurred during the convalescence of the patient. The wound healed without a trace of suppuration; the patient remained afebrile throughout, and on May 16th he left hospital for the convalescent home. On September 14th he returned to hospital to exhibit the knee. Its movements were found to be perfect, and the patient maintains that "it is a better knee than the other."

It will be observed that in the preceding case the variety of suture employed differed from that originally recommended by Lord Lister, which was silver wire. In both of my first two cases I employed wire sutures, but did not succeed in either of them in getting them encapsuled or quiescent. Though the results in both cases were eventually most favourable, the wires gave rise to irritation, and eventually had to be removed. I then determined to substitute sterilised strong silk, and in my later cases have employed it with most satisfactory results.

A good deal has been written of late, notably by Mr. Arthur Barker, in reference to the advantages derived from opening the joint, not by a direct vertical central incision, but by an oval flap, the convexity of which is directed upwards, thus avoiding a central cicatrix over the patella. The flap method has also been advocated by Dr. Ball, the convexity in his cases being, I believe, in the opposite direction. I think, however, the alleged advantages of such methods are much over-estimated, as in none of my cases have I found that the existence of the central cicatrix has been attended with any inconvenience to the patient. In kneeling it must be remembered that the pressure is not so much on the patella as on the tubercle of the tibia below the cicatrix.

Notwithstanding the good results obtained by Mr. Barker, the method of suture advocated by him of passing a wire behind both fragments does not commend itself to me, as I cannot but think that the permanent presence of a foreign body in the knee-joint must be a continual source of peril. None of the methods of subcutaneous suture either appear to me desirable for two reasons, first, because no provision can be made for clearing the joint of blood clots; and, secondly, if, as I believe is usually the case, a periosteal curtain intervenes between the fragments—a condition of things which was conspicuous in the case recorded above—no means exists by any method of subcutaneous suture for bringing the broken fragments into accurate and immediate apposition. I believe the open method of suture should be adopted in all cases of fractured patella, recent as well as old, unless some distinct contra-indication for any operative procedure exists. The operation is, of course, a serious one, and should not, I think, be undertaken by any surgeon unless he is constantly engaged in the performance of surgical operations carried out with the strictest and most careful antiseptic and aseptic precautions.

The objections that I think may be urged against the subcutaneous methods and retropatellary suture—the latter suggested originally, I believe, by the late Professor Volkmann are:

1. The impossibility of thoroughly freeing the joint of all blood clots, an objection equally applicable to the circumferential as well as the retropatellary methods of suture.

2. The inability to deal with the fibrous curtain which so frequently has been observed to exist between the broken

fragments, and which, if left, would effectually prevent osseous union taking place between the fragments.

3. The dangers inseparable from punctured wounds of the deeper structures of the joint being made in passing a sharp-pointed curved needle between the condyles and the articular surface of the patella.

4. The undoubted danger that must attend leaving a foreign body permanently in the interior of the knee-joint.

I see no reason to deviate from the original suggestion of making a vertical incision in preference to making a flap. It is the simplest method, and, as Professor Annandale has recently urged, simplicity is what we should aim at in all our operative measures.

It has also been stated that in drilling the bones for the introduction of the sutures the bone fragments are apt to split. But when such a calamity occurs it must, I think, be due to the employment of a faulty instrument or to a want of ordinary dexterity on the part of the operator. A bayonet-pointed drill should be employed. Although I can only speak from an experience of the operation based on five cases, I may say that in none of them have I seen this mishap occur.

In future I purpose using a drill worked by an electro-motor, which I have recently employed with very satisfactory results in suturing the bones in a case of resection of the knee. By the employment of this method of drilling and suturing it is hard to see how splitting could occur, as the drill passes through the bone so smoothly, swiftly, and easily.

The circumferential patellary suture, whether carried out by a subcutaneous or an open method, appears to me to be open to the objection of probably interfering by pressure with the nutrition of the bone. The external circumferential pressure, such as is used in Lonsdale's apparatus, undoubtedly acts injuriously in that way.

REMARKS ON THE VALUE OF STEREOSCOPIC PHOTOGRAPHY AND SKIAGRAPHY: RECORDS OF CLINICAL AND PATHOLOGICAL APPEARANCES.

[WITH STEREOSCOPIC ILLUSTRATIONS.]

By JAS. MACKENZIE DAVIDSON, M.B., C.M.,

Medical Officer in charge of the Roentgen Ray Department, Charing Cross Hospital.

The Advantages of Stereoscopic Pictures.

The advantages of stereoscopic photography for the purpose of recording and illustrating medical and scientific work is very great. For years past I have used it with the greatest benefit to myself and to students. Once its advantages over the ordinary single picture are realised, it appears certain that many illustrations in medical journals and in scientific or other periodicals—even in books—will be reproduced stereoscopically. The observer will be able to use some simple form of stereoscope (similar to a pair of pince-nez) for examining the illustration, and will at once see it in perfect relief. (See Fig. 1.)

Stereoscopic Photography,

In order to take stereoscopic photographs, the first requisite is a camera with twin lenses of 3½ to 6-inch focus, which should be mounted with their centres 2½ inches apart. It would be out of place here to enter into details of the method of taking these photographs and mounting the prints. The result to be aimed at is to obtain a picture in relief which shall be as far as possible a correct representation of the original. This can be done provided that the lenses in the stereoscope be of the same focal length as the lenses in the camera with which the photograph was taken. The observer, of course, must possess binocular vision.

The most convenient instrument for viewing ordinary stereoscopic photographs is some form of lenticular stereoscope, and there are a great variety of these to be had. The ordinary cheap forms do quite well, but it is an advantage to have one in which the distance between the two eyepieces can be altered to suit different observers.

If colour be desirable, the writer has succeeded in the following way: Two albumen prints were mounted correctly on a thin sheet of glass (stereoscopic size), and then coloured by the "chrystoleum process." Excellent results can thus be obtained.

Stereoscopic Skiagraphy.

It is only necessary to look at two good stereoscopic skiagraphs in a Wheatstone's stereoscope to realise at once how thoroughly practical and important this method is in surgical work. A single skiagraph is often confusing, if not misleading, but with two properly taken and viewed in a stereoscope, the picture stands out in true relief, and shows clearly the relation of the parts.

I will now describe the method and apparatus I employ. It is that which up to the present time I have found to be the best.

1. *The Crookes's Tube.*—A tube giving the best possible definition, and which will at the same time allow of the shortest exposures, is essential. The tube with an osmium anode (introduced by the writer) answers these requirements well. Mr. Cossar has made these tubes admirably, but unfortunately the supply of pure solid osmium seems to be exhausted. It can be obtained in fine powder, but in small lumps it cannot now be procured, and no one seems to care to make any more in the solid form.

2. *Horizontal Bar.*—Two skiagraphs must be taken from two different points of view. The Crookes's tube after one skiagraph has been taken must be displaced and then another skiagraph taken. I use the horizontal bar of my localising apparatus (described and illustrated in the British Medical Journal of January 1st, 1898). Any desired displacement, of course, may be given to the tube, but it seems best to displace it about 6 cm., which may roughly be taken as the distance between our eyes. The two skiagraphs thus taken from two different points of view, and the necessary marks made on the patient's skin to guide the surgeon, give data sufficient to localise the position of any foreign body or other part accurately; while the same skiagraphs give a stereoscopic picture enabling the surgeon to have a correct view of the parts in relief. This method, if correctly carried out, is so accurate and complete that the surgeon can have little cause for complaint.

3. *Changing Box.*—This consists of a stout frame of any desired size over which is tightly stretched some calf skin. This is stout enough to support a considerable weight and at the same time is thin and quite transparent to *x* rays. The photographic plate, wrapt in black paper in the usual way, is placed beneath the skin and brought up against it, and supported there by some suitable arrangement. Fig. 3 shows the apparatus, and if it be viewed with a stereoscope its construction will be readily seen and understood. The horizontal bar shows the tube holder displaced to one side, and the clip on the right side is the limit to which it must be displaced for the second photograph. A wire is seen stretched on the nearer end of the box, and the bar is arranged parallel to this wire. This leaves a white line at the edge of each negative, and this enables the photographs to be mounted correctly in register. A board is seen below, and upon it will be noted the photographic plate wrapt in the black paper. By means of a lever worked by a screw at the far end of the box, not visible in the illustration, this board is raised so that the plate is brought firmly up against the calf skin. The part of the patient to be skiagraphed is placed upon the top of the box. It will be easily seen how two photographs can be taken on different plates without disturbing the position of the patient; we are thus sure of obtaining correct stereoscopic pictures. This method can, of course, be carried out by having a table made with calf skin covering a space cut out of the top; or, again, an operating table can have a window, so to speak, covered by the calf skin upon which the patient can lie. This has the further advantage that it will allow a Crookes's tube to be placed below this part of the table, so that the patient could be examined by a fluorescent screen while lying on the couch.

4. *Wheatstone's Stereoscope.*—Two plane mirrors, about 4 inches square, are so fixed on a vertical support that their backs form an angle of 90° with each other. When the observer puts his face close to the edge where the mirrors meet, so that this edge lies vertically between his eyes, it follows that his right eye can only see what is reflected in the right mirror, while his left eye can only see what is reflected in the left mirror. Now, if the two skiagraphs,

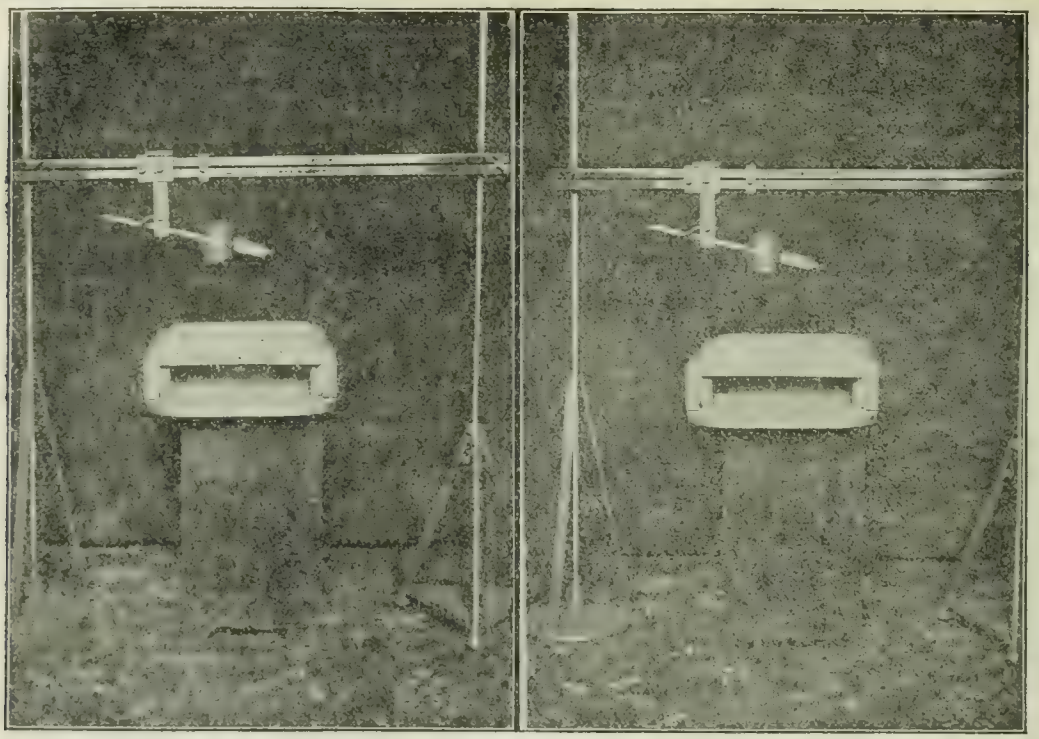


Fig. 3.—After a stereoscopic photograph showing horizontal bar with Crookes's tube and "changing box" arranged for taking stereoscopic skiagraphs.

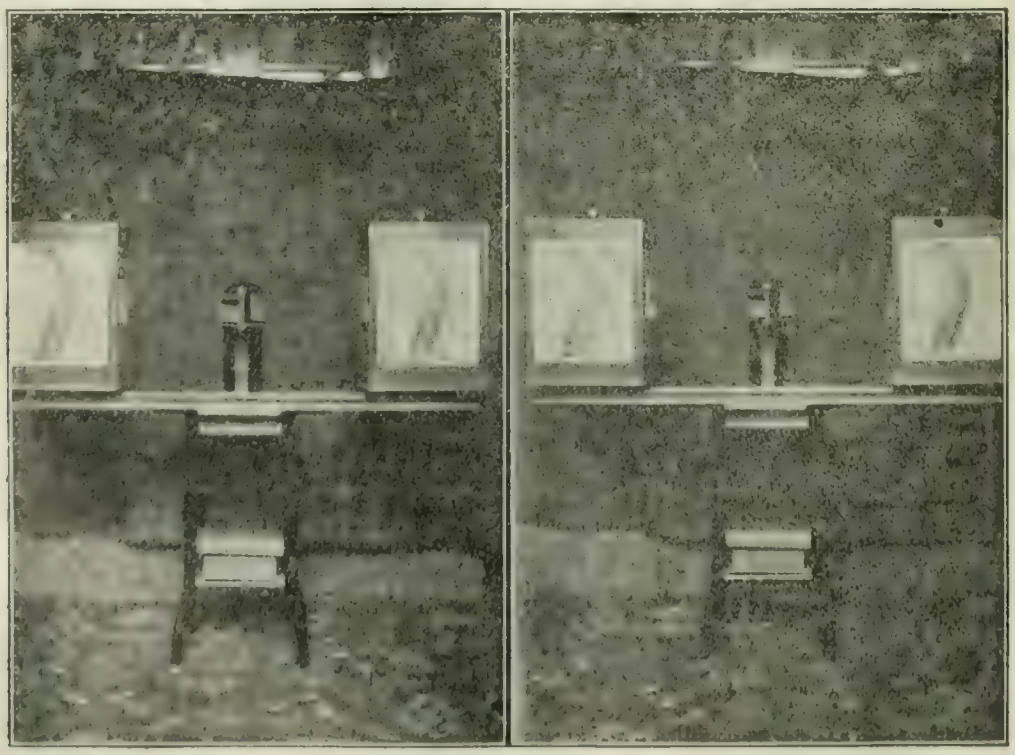


Fig. 4.—After a stereoscopic photograph of a Wheatstone's stereoscope.

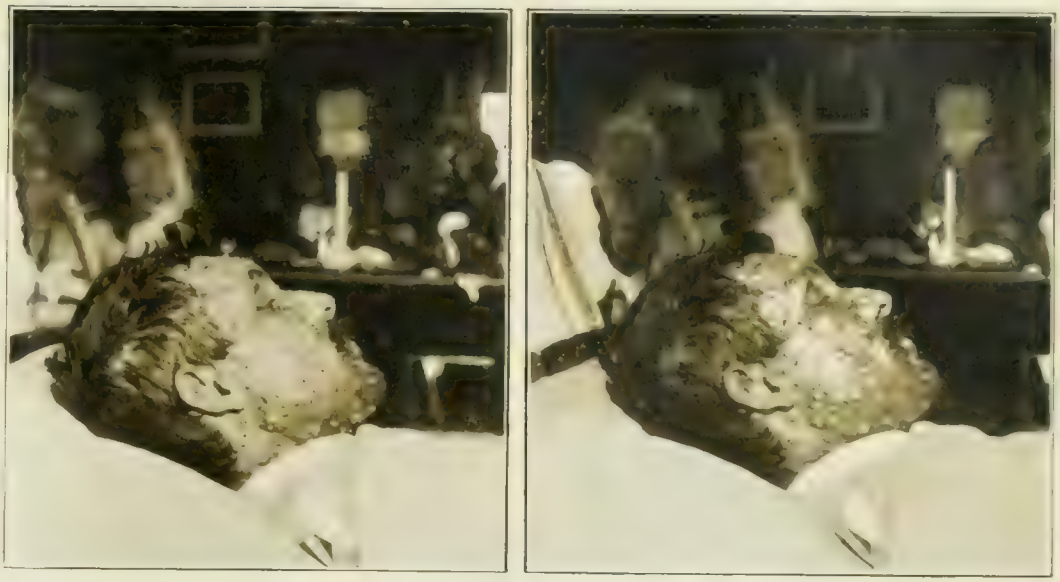


Fig. 1.—Stereoscopic Photograph of a case of Small-pox by Dr. W. W. Stainthorpe (Saltburn.)

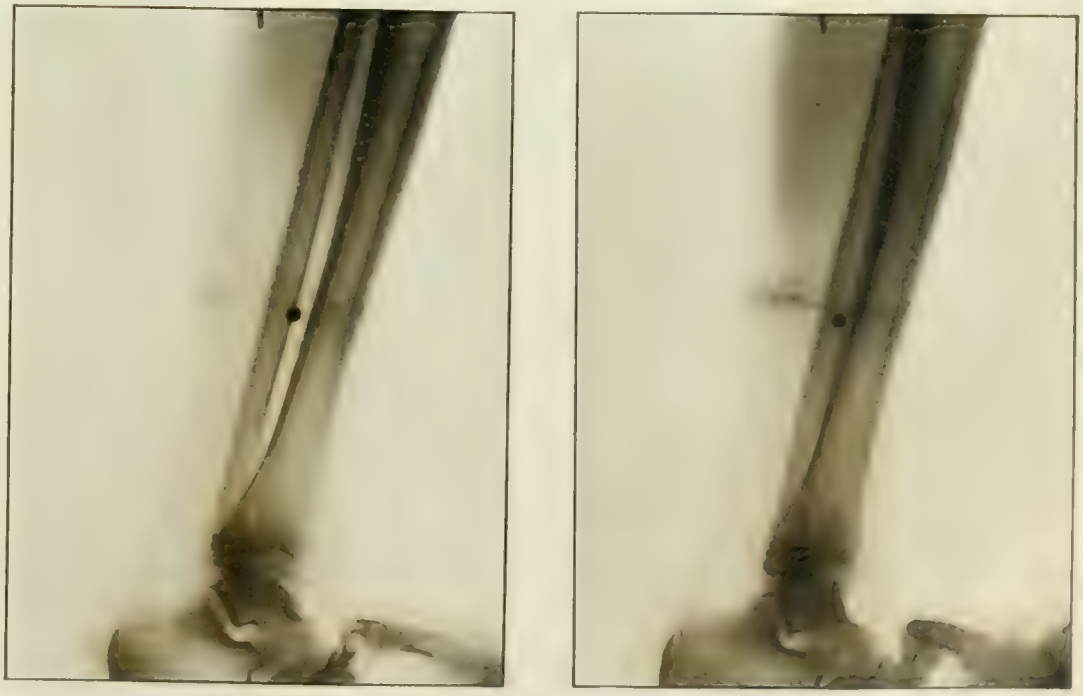


Fig. 2.—Stereoscopic Skiagraph, by Mr. Mackenzie Davidson, of a case of bullet in the leg (Mr. Howard Marsh's case). The shade encircling the limb is a ring of bismuth on the skin.

taken as already described, are placed so that the right eye image is opposite the right mirror and the left image opposite the left mirror, each eye will recognise its own picture, and they will combine (as usual) and give rise to a single image in perfect relief.

There are several devices for supporting the skiagraphs, and for simultaneously making them approach or recede from the mirrors. The simplest of all arrangements is to have two mirrors mounted on an upright block of wood, which is placed upon a table, while the skiagraphs can be supported by any simple means in the proper positions. The writer has devised a form of revolving Wheatstone stereoscope, shown in Fig. 4.[2] A four-sided box, which can be revolved on a vertical rod, is placed opposite each mirror. On each of its four sides one of a pair of stereoscopic skiagraphs is placed. The corresponding pictures are similarly placed on the other box. In this way the boxes can be revolved and two corresponding skiagraphs brought simultaneously in correct position opposite the mirrors. This avoids the necessity of adjusting each pair separately, and is a time in demonstrations. The block supporting the mirrors is attached to a small base with bevelled edges, which slides in a broad groove, and enables the observer to slide the mirrors towards or away from his eyes. In this way he can adjust the mirrors to the position which enables him to combine the pictures most comfortably. Each revolving box is fixed by its vertical support to its sliding board. This allows the distance of the skiagraph from the mirrors to be altered at will.

The Wheatstone stereoscope is peculiarly adapted for *x*-ray photographs: first, because, as everyone knows, a print from an *x*-ray negative is reversed—for example, if a skiagraph of a right hand be taken, when printed it appears to be a left hand. Now, if such a print be viewed in a Wheatstone stereoscope, it is reflected in one of the mirrors, and is thus reversed to its original position by the reflection. Therefore, if opposite the right mirror is placed the print from the negative produced when the Crookes's tube was displaced to the right side; and opposite the left mirror the print from the negative taken when the tube was displaced to the left, the observer will then see the parts in correct stereoscopic relief, as if he had been looking at them with his eyes placed so that the right eye was at the point occupied by the anode when displaced to the right, and the left eye at the point occupied by the anode when the tube was displaced to the left. If the skiagraphs be viewed under the same angle as they were taken, the stereoscopic picture would show the parts of the true or actual size, and the exaggerated distortion of the single *x*-ray photograph is overcome. The importance of such a result to a surgeon is great.

There is no limit to the size of the pictures which can be seen in a Wheatstone stereoscope. The largest size the writer has as yet taken stereoscopically is 12 by 15 inches.

If the right picture be placed opposite the left mirror, and left picture opposite the right mirror a stereoscopic picture will be seen as before, only reversed. For example, in one case a hand will appear as seen from the dorsal aspect; if the prints are transposed it will appear as a hand seen from the palmar aspect. The same transposition can be effected by turning each print upside down.

The negatives, while wet, can be seen in a stereoscope if they be held in proper position by upright frames, and each illuminated by a strong light diffused through ground glass or white paper, but the effect is not so good as viewing prints.

If it be desired to reproduce the skiagraphs as illustrations in a book or periodical they can be reduced and mounted alongside of each other, as has been done with the stereoscopic skiagraphs (see Fig. 2 on special paper) reproduced from the original full-sized plates taken by me of a case of "gunshot wound of the leg," under the care of Mr. Howard Marsh.

Inspection of Stereoscopic Slides without the Stereoscope.

By practice it is not difficult to acquire the power of combining stereoscopic pictures without an instrument of any kind. There are two ways of doing this:

1. By looking beyond the photograph, so that each eye sees the picture opposite it.

2. The most easily acquired and most important for *x*-ray work, as it enables skiagraphs of any size to be seen at once, consists in crossing the visual axes. This may be accomplished as follows: The photographs or skiagraphs are placed correctly in front of the observer; he then holds up his finger in the middle line between his eyes and the skiagraphs, and while looking at the top of his finger he will observe double images of each skiagraph; by a little perseverance he will learn to make two of the images in the centre combine, and he then will have a beautifully clear stereoscopic image apparently in the air. Behind to right and left will be two images, but these he soon learns to ignore, or he can cut them off by bringing his hands cautiously from the outer side of each eye towards the middle line, stopping the moment the two side images are cut off. It is, of course, very convenient in this way to see negatives in stereoscopic relief immediately after development.[3]

Notes.

[1] The apparatus is made by Messrs. Muirhead and Co., Elmer's End. [2] The Wheatstone stereoscope is made by Messrs. Curry and Paxton, Great Portland Street, W. [3] See Wheatstone's papers already referred to and Lecomte's *Sight*, the International Scientific Series, Kegan, Paul, and Co.

A CASE OF BULLET WOUND OF THE LEG, IN WHICH THE BULLET WAS LOCATED BY SKIAGRAPHY.

[WITH SPECIAL STEREOSCOPIC SKIAGRAPH.]

By HOWARD MARSH, F.R.C.S.,
Surgeon to St. Bartholomew's Hospital.

F. E., aged 14, was admitted into St. Bartholomew's Hospital on June 8th, with a bullet wound in the left leg. He said that as he was wheeling a barrow in the street he felt something sting his leg. On pulling up his left trouser he found blood trickling down from the wound. On examination this was found to be a quarter of an inch in diameter, and placed at the junction of the uppermost and middle thirds of the leg. A probe passed into it travelled in a direction downwards and outwards for a distance of 6 inches.

A day or two afterwards a skiagraph was taken by Mr. Mackenzie Davidson, and the bullet was very clearly seen to be situated at the back of the limb (see Fig. 2, special plate) about half-way between the tibia and fibula, but on a posterior plane.

Operation.

The limb was rendered bloodless by an Esmarch's bandage, and an incision about 3 inches long was made through the skin and superficial fascia at the inner border of the tibia. The deep layer of muscles was then separated from the bone, but the bullet was not found. Then the superficial and deep layers were separated from each other, and the bullet was immediately found embedded in the substance of the tibialis posticus muscle, and was easily removed. The wound was closed by a continuous suture, and dressings were applied. The wound healed by primary union, and the boy was discharged a few days afterwards.

Remarks.

The skiagraph, as produced by Mr. Mackenzie Davidson's stereoscopic process, defined the position of the bullet, which was not bigger than a pea, with great exactness. The stereoscopic skiagraph by which this report is illustrated, though reduced, well illustrates this point.

Without a skiagraph there was no means of knowing how far the bullet had travelled from its original point of entrance down the leg. The skiagraph disclosed this, and also the fact that it was placed on the posterior aspect of the limb and on a plane posterior to the bones. Thus the stereoscopic effect defined the situation of the bullet in a manner that had not as it appeared to me been previously possible.

Medical Education of Women in Russia.—A proposal was brought before the recent Congress of Russian Medical Men that an institute for the medical instruction of women should be established at Kieff. Dr. Piasseski proposed that the Faculties of Medicine of all Russian universities should be open to women. Both these proposals were received with sympathetic acclamations.

A CLINICAL LECTURE
ON
THE SLEEPING SICKNESS.

Delivered at Charing Cross Hospital, October, 1898.

By PATRICK MANSON, M.D., LL.D., F.R.C.P.,

Medical Adviser to the Colonial Office; Physician to the Seamen's Hospital Society Branch Hospital, Albert Docks.

Gentlemen.—I propose to speak to you this afternoon about the two negro boys who have been in Alexandra Ward for the last few weeks. They come from a village called Mbanza Manteka, on the Lower Congo, and were brought to England principally through the instrumentality and enlightened benevolence of Dr. Grattan Guinness and the missionary body he represents. They were brought to this country partly that they might have the chance of treatment under conditions more favourable than any their own homes could supply, partly that they might afford an opportunity for careful study of the deadly disease from which they are suffering. Although it is not likely that any of you, unless you should visit the West Coast of Africa, will ever see similar cases again, nevertheless their study is capable of affording useful lessons of a practical character. Apart from such practical consideration there is much about these cases of theoretical interest. If the medical student aspires, as he should aspire, to be a student of medicine, he must be catholic, and embrace in his studies all forms of disease, no matter though some of these diseases happen to be confined to a limited geographical area, no matter though they affect only what we, in our pride, consider an inferior race. The science of pathology embraces black men as well as white men; the principles of pathology are the same for all.

Nomenclature.

The disease from which these negro boys are suffering is called the "sleeping sickness;" sometimes, and because it is especially prevalent there, the "sleeping sickness of the Congo;" sometimes "negro lethargy." A better name would be "African lethargy."

Geographical Limits.

It has a singularly limited geographical distribution, being, so far as we at present know, absolutely confined to that part of West Africa which lies between the Senegal to the north and Loanda to the south, some 1,500 miles of latitude. It extends into the back country; how far it is difficult to say. I am told by Dr. Sims, of Stanley Pool, who has had many years' experience of Congoland, that it occurs as far up the Congo as Stanley Falls, that is to say, to the very centre of equatorial Africa. So that, after all, the geographical limitations are not so restricted. The area involved, though large, like everything that is at a distance from us, bulks small in the mind's eye. It probably exceeds that of Europe; it certainly carries a population of several tens of millions.

Although widely diffused throughout this huge region, fortunately for the inhabitants, it is only here and there, in certain circumscribed spots, in certain villages, or groups of villages, that sleeping sickness occurs as an endemic affection. Nor is it always equally prevalent in these places. In the spots affected it seems to come and go, to wax and wane as it were. And it is fortunate that it is so; for, when sleeping sickness breaks out in a community it attacks a large proportion of the members of that community, and all who are attacked surely die.

Mortality in Epidemics.

Thus in the village from which these boys come, out of a Christian congregation of about 1,000 last year 28 died of sleeping sickness; and this year, Mr. Richards tells me (it was Mr. Richards who brought these boys home), that up to the month of August, when he left the Congo, out of a congregation of about 1,150, 28 had already died, a mortality at the rate of about 40 per annum. Corre, a French writer, who studied the disease in Senegambia, tells us that in some districts of the Lower Senegal it sweeps away whole villages at a time, half the people dying, the remainder fleeing from the pestilence.

Racial Proclivity.

Hitherto we have no well authenticated account of the disease in a white man; doubtless, however, were the white man exposed to the cause, whatever this may be, he would prove as susceptible as the negro. It has been met with in half-breeds and in Moors. Some have suggested that sleeping sickness is in some way inherent and peculiar to the negro, a sort of ethnic disease. This cannot be the case, for the negroes of the States, of the West Indies and of Brazil, and the natives of north, east, and south Africa never, so far as we know, nowadays get the disease. I say nowadays because formerly, in the old evil times of the slave trade, sleeping sickness was well known on the plantations in the West Indies; but it was then known only as an imported disease. It never attacked negroes born on the plantations, only those who had been kidnapped in Africa. It did not spread on the plantations, or become domiciled, as it were, in America. I beg of you to note this circumstance; it is an important one to keep in mind in connection with the question of etiology.

Prolonged Latency.

Another significant fact about the disease is that it may remain latent for years—as long as seven years it is said. Thus, in the evil times I refer to, what appeared to be a healthy slave might be landed in the West Indies, and might do excellent work for his owner for several years, and then, without apparent reason, he would begin to exhibit symptoms of sleeping sickness, and by-and-by die of the disease.

Some years ago a little Congo boy was brought home to England, and placed in a training school in Wales. Here he worked for three years in apparent health, but at the end of this time the sleeping sickness laid hold of him, and he died. This is a well-authenticated case. The negroes themselves say that a man is never safe from sleeping sickness until seven years have elapsed after a visit to a sleeping sickness district. This prolonged latency is another important fact which I would also ask you to bear in mind as having a bearing on what I shall advance later on about the etiology of this singular disease.

Before proceeding further I will give a summary of what we have been able to learn and observe about our cases. The account is very incomplete, as there are linguistic difficulties which, as you will readily understand, make it difficult to get clear and reliable information about the subjective symptoms as well as about the medical histories of the cases.

Case I.—Eli Mboko, aged about 20, until his present illness began had the reputation of being an exceptionally bright and intelligent lad. He taught himself English, built his own house, and in many other ways displayed an amount of enterprise unusual in a negro. He was regularly employed as a teacher in the mission school at Mbanza Manteka, a village in the hilly country on the south bank of the Lower Congo, and a notorious haunt of sleeping sickness.

He discharged his duties with ability and energy until about twelve months ago. He then began to be listless and vacant-minded. He would now lie abed in the morning, neglect his work, and cease to take an interest in his former occupations and amusements. Mrs. Richards, who superintended the school, told me that on several occasions she found him standing motionless in the middle of the class-room regardless of what was going on around, and simply gazing into vacancy. When she spoke to him he would rouse himself and resume his work, but presently he would relapse into the same listless, vacant condition. He complained of headache, particularly occipital headache, and at times fever. By May of this year he was quite unfit for work; his gait had become tottery and uncertain, and he drowsed or slept most of the time. He never had any fits or maniacal attacks. He volunteered to come to England, and left the Congo on August 27th. He improved somewhat on the voyage, for when I fetched him from Bow on the day of his arrival in London—September 24th—though very quiet and reserved, he appeared to be wide awake, taking an interest in the traffic in the streets as we drove along to the hospital. He was quite able to walk upstairs to Alexandra Ward.

On admission under Dr. Abercrombie he seemed to be in good general health. He was fairly well nourished, and even sleek. Lately, however, he has fallen off somewhat in condition, and his hair and skin have become dry and lustreless. At first his breath was offensive; this has now improved. His appetite and digestion are vigorous. The bowels on admission were constipated—as, indeed, they still are. Microscopic examination showed that the stools contained large numbers of the ova of ascaris lumbricoides, of ankylostoma duodenale, and a few of trichocephalus dispar. The thoracic and abdominal viscera appeared to be healthy. There was no sugar or albumen in the urine. Temperature has ranged from 97° to 99° F., being usually slightly subnormal. Pulse 80 to 90, respirations 20. The blood count gave 5,300,000 per c.mm., hæmoglobin 60 per cent. The blood contained no malarial parasites, but filaria perstans was, and is, present in moderate abundance—about 1 filaria in every c.mm. The senses were, or appeared to be, normally active. Mr. Treacher Collins, who was good enough to make an ophthalmoscopic examination, found fundus and media perfectly healthy. The pupils were equal and reacted briskly both to light and accommodation. A very few and ill-defined papules could be made out on the skin of the chest and

abdomen, but there was no pustulation and no marked pruritus. The knee-jerks and other deep and superficial reflexes were active; but his gait was shuffling and feeble, and his hand grasp was markedly impaired. When he walked he progressed slowly, his knees slightly bent. He was easily fatigued, and always seemed glad to sit or lie down. There was no muscular tremor, no local anæsthesia, no paresis. The lymphatics glands, particularly those of the neck, were slightly but distinctly enlarged. In size they varied from an almond to a hazel nut; they were not at all tender.

Since admission his condition has varied very little. For the most part he keeps his bed, lying perfectly still with eyes shut, as if asleep. His face has an expression of deep melancholy. At times he sits up by the fire, but even then he seems to be asleep. The only time he rouses himself thoroughly is when food is brought, or when for a short time he goes on the balcony and watches the traffic in the streets. As a rule he is glad to get back to bed. A touch or a loud sound causes him to open his eyes, so that if he is asleep, the sleep must be a very light one. When spoken to he opens his eyes and answers questions slowly, in few words, and to the point. Even while he is being spoken to, often his eyelids fall as if he were overpowered by an irresistible desire to go to sleep. He never seeks to enter on, or to prolong, a conversation. He rarely smiles; if asked, he says he is very unhappy on account of his drowsiness. Since he entered hospital he has become distinctly more lethargic, and, I think, has lost flesh and muscular power.

Case II.—Tonda Mkaloo, supposed to be about 11 years of age, comes from the same village, Mbanza Manteka, as Mboko. Very little is known about his antecedents. He is believed to have shown symptoms of sleeping sickness for about two months, that is to say, since May or June, before he left the Congo. During the voyage home he became much worse. When brought to hospital he was in a state of great emaciation and weakness. He could not walk without support, and was barely able to stand alone: he had to be carried upstairs. His cheeks were sunken, his eyes unusually prominent, his lips were swollen and dry, the saliva dribbling constantly from the corner of his mouth; his hair was dry and scurfy, and his skin harsh and lustreless. Arms, abdomen, and chest were treaked with white lines, nail marks from the scratching provoked by an incessant pruritus associated with numerous scaly papules. The superficial lymphatic glands and even trunks were universally enlarged, particularly so those on the back and sides of the neck. Some of the glands appeared to be very tender, for he carried his head stiffly as if movement hurt him, and he shrank and cried when an attempt was made to examine the little swellings distinctly visible at the side of the neck.

His breath was foul, and his abdomen tumid and lax. The spleen was much enlarged, extending as far as the umbilicus; the liver also was enlarged, its lower border being readily felt about a hand's breadth below the costal margin. As in the case of his companion, his fæces contained myriads of ova of ascaris lumbricoides, ankylostoma duodenale, and trichocephalus dispar, and he was markedly constipated.

His temperature was considerably above normal for some days after admission. Eyes, lungs, heart, and kidneys appeared to be healthy.

The superficial and deep reflexes were active. He slept and drowsed almost continuously during the first few days. At first he had to be coaxed to eat, and had often to be fed by the nurse. Sometimes he would fall asleep at his meals. There was some suspicion of muscular tremor.

His blood count gave 4,500,000 per c.mm., and a hæmoglobin value of 50 per cent. Filaria perstans was found in considerable abundance—8 per 5 c.mm. No malaria parasites were discovered.

After due preparation he had a course of thymol (15 grains for four doses at intervals of an hour and a half); this effectually rid him of his intestinal parasites. Probably partly in consequence of this, partly in consequence of the warmth and good feeding, and partly in consequence of the large doses of arsenic he was put upon, his general health quickly underwent a marked improvement, and his spleen and liver diminished in size. Concurrently with this his drowsiness got less, and he is now much more lively; he even laughs occasionally. He sits up in bed or by the fireside and watches what is going on about him. He is also putting on flesh, and is able to walk about a little, though his gait is slow and shuffling. The pruritus, however, is as bad as, or even worse than, ever. His lymphatics, though diminished in size and no longer painful, are still distinctly enlarged. The prominence of the eyes is less marked: he no longer dribbles from his mouth, and he feeds himself and eats with some appetite. He has had one or two feverish turns, but, as a rule, his temperature is normal or subnormal.

So much has he improved during the few weeks he has been in hospital that we are sometimes tempted to think, were we not assured to the contrary by those familiar with sleeping sickness, that the diagnosis may be wrong. We are told, however, that there can be no doubt the little fellow is the subject of this disease, and that ere long the old symptoms will recur with increased severity, and that others of a graver character will by-and-by be superadded.

From these accounts you will be able to form some idea of the earlier phases of one type at least of sleeping sickness.



Case I.—Eli Mboko.

Symptoms.

Onset.—A negro, otherwise apparently in good health, is unaccountably smitten with a gradually increasing mental and bodily lethargy which goes on deepening in intensity until he is bedridden. Those who are familiar with the disease, including very often the patient himself, can recognise the earliest threatenings of the impending calamity. There is a characteristic expression of face and body; a significant droop of the upper eyelids; a listless carriage of the body; an indifference to old amusements and occupations; a stolid, rather mournful expression of countenance; perhaps slight puffiness of the features, It is noticed that the patient is easily tired at his work; that he lies long in bed in the morning; that he often falls asleep, even at his work; that he becomes morose and unsociable, and ceases to take a share in conversation. Nevertheless he will answer intelligently and to the point when addressed. He may have to be asked once or twice before he replies and the answer when it comes may be a brief one; but, from the appropriate nature of the answers, it is evident that questions are properly, though perhaps slowly, comprehended.

The Sopor.—While you speak to him his eyelids may fall and sleep seemingly overpower him. This is very apparent in the elder of these two boys. If you put the question to this lad he may tell you that he has headache, and he can be got to indicate with his hand the aching part; but he never spontaneously complains of his suffering. People may be talking all around, but apparentiy he takes no notice of what they are saying, although an unusual noise or a light touch may make him open his eyes for a moment. If he is really asleep at these times the sleep is a light one. The condition seems to be one of mental vacancy rather than one of true sleep.

Muscular Debility.—Equally striking is the muscular debility from which both patients suffer. Their movements are

all languid; and they are very easily tired out. Sitting up for an hour or two in a chair in the afternoon thoroughly exhausts them, and they are glad to get back to bed. When they walk they shuffle along, sometimes tottering like one half asleep, or like a drunken man; their knees seem to give way under them.

At first sleeping sickness patients can feed themselves, although they may take a long time over it. The little boy takes an unconscionably long time over dinner. He pauses between each mouthful, gazing into vacancy the while; he has to be reminded now and again that he is dining. Sometimes such patients will fall asleep with the morsel half way to their mouths, or even with the half chewed food between their teeth, and may have to be wakened up to swallow it. At a later stage of sleeping sickness muscular tremor usually sets in: sometimes this is so marked, even at an early stage, that the patient can no longer feed himself.

Early Nervous Symptoms.—The symptoms of the disease, at all events at this stage of its progress, point to a pathological condition of the higher nerve centres only. The knee jerks and other reflexes are intact; there are no bladder nor rectal symptoms; no trophic lesions. The discs and fundi are perfectly normal. Nutrition is not impaired, and digestion and assimilation are satisfactorily performed.

General Symptoms.—From the commencement the patient may be subject to short daily spells of feverishness; or he may have a high temperature for several days on end. Fever, however, is not, as a rule, of an urgent character, unless there is concurrent malaria. Occasionally there may be a little diarrhœa. At other times, and as a rule, the body temperature is subnormal—96° or 97° F. Such patients evidently feel chilly, for they like to coil themselves up in some sheltered spot and bask in the rays of the broiling tropical sun.

Skin Lesions.—A very striking and common symptom in sleeping sickness is the intense pruritus from which many of the patients suffer. It is especially marked on the trunk, but it occurs elsewhere. Little papules can be seen in many places, especially about the chest and abdomen. In healthy young negroes the skin is soft and glossy, like velvet; but in this disease—as is particularly apparent in the younger of these boys—it becomes dry and lustreless, and is generally scored all over with the white streaks produced by the incessant scratching. If you notice the elder of the two boys you will often see him carry his hand to his nose or forehead, and rub the part as if it were irritated.

Enlarged Glands.—Another and interesting feature of sleeping sickness is an enlargement of the lymphatic glands, especially of the posterior cervical. In some instances, as in the smaller boy, less so in the elder boy, most of the superficial glands are affected. The individual glands can readily be felt enlarged to the size of an almond or of a small nut. In the little boy at one time the posterior cervical glands on the right side appeared to be painful, for he would cry when his head was moved; he held his head rather stiffly, apparently in consequence of subacute cervical adenitis.

Progress of the Disease.—For a long time, perhaps for several months, this is about all that can be made out in the type of sleeping sickness we are considering. Some days the patients seem a little brighter, some days they seem a little duller. Occasionally they become quite active and intelligent; and it may even seem that they have recovered. Such improvement, I am assured, is invariably only temporary; sooner or later the lethargy returns, and the disease once more advances to the inevitable and fatal issue.

Convulsions and Mania.—In certain instances, and by no means rarely—and this is the other type of sleeping sickness I have hinted at—the disease is introduced by, or its progress is interrupted by, maniacal outbursts; not infrequently by epileptiform seizures, very like those of general paralysis of the insane. A whole series of convulsive fits may follow one after the other. The maniacal outbreaks may take very different forms—delusions of all sorts, hallucinations, homicidal or suicidal impulses. These epileptic and maniacal outbursts are supposed to be characteristic of the more acute cases; such cases are believed to advance more rapidly than the purely lethargic ones. I asked Mr. Richards why he did not bring a case of this description home. He told me that it would have been very difficult to have managed such a patient on board ship; that very probably he would have jumped overboard in a maniacal fit, or, at all events, he would have been an intolerable nuisance to his fellow passengers.



Case II.—Tendo Mkaloo.

Terminal Symptoms.—Whatever may have been the exact characters and progress of the earlier phases of the disease, ultimately the patient becomes completely bedridden. Nutrition now begins to suffer, if it have not done so before. Choreic, convulsive, or tetanic spasms of groups of muscles or, it may be, of a more general character, in addition to the tremor already mentioned, are apt to occur from time to time, indicating grave implication of the motor centres. Muscular prostration is now extreme, torpor more profound and continuous. Bedsores may form, or diarrhœa or other complication set in and carry off the patient, or he may die in one of his convulsive or tetanic seizures. Some years ago there was a case of this disease under Dr. Stephen Mackenzie in the London Hospital. I saw this man when he was dying. For hours his head was violently retracted by tetanic contraction of the extensor muscles of the neck, and every now and again he seemed to be on the point of asphyxia from spasm of the glottis. The disease may run its course in two or three

months, or it may last for as many years. Nine months seems to be about an average time.

Pathology.

Although a considerable number of *post-mortem* examinations of cases of sleeping sickness have been recorded, little, if any, light has been thrown by them on the morbid anatomy or pathology of the disease. In some of the records, fulness and even varicosity of the vessels is reported: in other instances the vessels are described as being empty. In some instances the brain substance was said to have been abnormally hard; in other instances abnormally soft. In the earliest recorded *post-mortem* examination the pineal body was found to be enormously enlarged; in subsequent examinations this condition has not been remarked. In Dr. Stephen Mackenzie's case, beyond a cysticercus on one of the anterior lobes of the cerebrum, no morbid lesion of the brain was detected; certainly there was no meningitis, and no gross lesion of the cerebral substance.

Natural sleep, as you are aware, is associated with, and probably depends on, anæmia of the brain. Morbid sopor depends sometimes, apparently, on the direct action of a toxic substance on brain cells; sometimes on a cerebral anæmia produced by the presence of a tumour, or by an action of the toxic substance on the intracranial circulation. In which of these ways the sopor of sleeping sickness is produced it is as yet impossible to say. I have sometimes been tempted to think that perhaps in these cases the pituitary body is the original seat of disease, and that the brain becomes secondarily affected. Such a hypothesis receives some, though I confess very slight, support from experimental physiology as well as from recorded cases of disease of this organ. I can only hope that our cases may yet throw much needed light on the nature of what is at present a pathological puzzle.

[Note.—After the delivery of this lecture I received on October 27th a letter from a friend on the Niger giving some particulars of the *post-mortem* examination of a case of sleeping sickness. The pituitary body was found to be enlarged. There was an old blood clot on or in it, and, as I gather, some cystic formation as well.]

Etiology.

It has often been asked, What is the cause of sleeping sickness? I cannot give any decided answer to that question, but we may very properly seek in the symptoms, distribution, and, so to say, the natural history of the disease for some indication as to this important point.

Sleeping sickness has been attributed to all manner of things, amongst others to sunstroke; but the case I have alluded to as having developed in Wales effectually upsets such an idea; a Welsh sun is not likely to penetrate a negro's cranium. It has also been attributed to the inordinate consumption of palm wine—a common vice in the negro; to excessive venery: to the use of improperly-prepared manioc—the staple food of many of the negro tribes, and when improperly prepared apt to be poisonous. Manifestly it can be due to none of these things, for children, who are just as subject to the disease as are adults, do not drink intoxicants, do not indulge in sexual excess; and even negroes, when they visit Wales, do not feed on manioc. In the slave days it was sometimes attributed to nostalgia, to grief at being torn from home and friends; but at the present day, at all events on the Lower Congo, there is nothing of this sort. Like all tropical pathological puzzles, sleeping sickness has been attributed to malaria—that blessed cloak for ignorance; but there are none of the clinical or pathological marks of malaria about the disease. It is true that one of our patients has an enlarged spleen, but the type of the fever he sometimes suffers from is not that of malaria. Moreover, I have examined his blood carefully on several occasions and found no plasmodia, no pigmented leucocytes. The other boy's spleen is not enlarged. In neither is there marked anæmia, such as there is invariably present in pronounced malarial cachexia. Some years ago two Portuguese pathologists declared that they found a specific bacterium in a case of sleeping sickness, and that they communicated the disease to the lower animals by injections of cultures of this bacterium. Dr. Bullock has attempted to grow a bacterium from the blood and lymphatic glands of one of the patients but his flasks have remained sterile. No; sleeping sickness can be attributed to none of these things.

There are some circumstances which, to my way of thinking, seem to suggest a clue that is well worth following up. I have already told you that sleeping sickness is limited to a certain region of Africa. In the endemic districts it attacks old and young, but especially the latter, particularly those between the ages of 10 and 20. It may pick out one or two in a household, or it may attack an entire family. Mr. Richards tells me that he heard on the Congo of an instance in which it was introduced into a hitherto immune village by a case that came from a neighbouring infected village; a circumstance suggesting transmission more or less direct of some form of infection. Indeed, the natives say that it is infectious; they say, doubtless erroneously, that the saliva, which sometimes dribbles from the corner of the mouth in advanced cases, conveys the disease. All these facts are compatible with and suggest a living contagium.

I have also told you that it may remain latent for many years, and develop ultimately thousands of miles away from the endemic centre—that is, from the spot where its cause was acquired. There are many disease germs which are capable of remaining latent for years, and then of springing into pathological activity—tubercle and leprosy, for example. But, then, these diseases differ from sleeping sickness inasmuch as they are not confined to limited geographical areas; and, moreover, when introduced into virgin populations, being directly communicable like all bacterial diseases, they spread. Sleeping sickness will not spread. Why does it not spread? Manifestly because it depends on certain local conditions, conditions found only in limited districts in West Africa. This implies that these conditions exist only outside the human body; and, moreover, that these conditions cannot be transported.

This further implies that sleeping sickness depends either directly on a food of some sort peculiar to West Africa; or, directly or indirectly, on some plant or animal equally limited in its geographical distribution. In Nature it is only such things as these that are geographically limited in the way that sleeping sickness is limited. Did it depend on a food—that is to say, on some organic poison in food, it is strange that the manifestations of the poisoning are at times delayed for years. It must therefore depend on some plant or animal. Further, the phenomena of the disease, the prolonged latency especially, demand that the cause must be something which can remain alive, though it may be pathologically inert for a very long time.

Filaria Perstans.

When in difficulties about the explanation of some obscure pathological or other phenomenon, in the absence of a better guide it is perhaps permissible to turn for assistance to analogy. Let us try if analogy will help us in our present dilemma, for there is an *a priori* probability that like diseases are produced by like causes. Let us first formulate precisely what it is we want from analogy. Are there any diseases which, like sleeping sickness, although produced by a living cause, can remain latent for prolonged periods, and which, moreover, can be acquired only in certain limited spots, are not directly infectious, cannot be introduced into virgin districts, and which depend directly or indirectly on the fauna or flora of their endemic areas? Yes; there are malaria, elephantiasis, and many others which I could mention. Why are these diseases so limited? Recent investigations enable us to answer this question. It is because their specific germs: the plasmodium in the one case, and the filaria in the other—before they can enter the body of man have to pass through the bodies of certain of the lower animals, which animals are so constituted that they can live only in certain more or less limited geographical or rather zoological areas.

If this be the case in the diseases mentioned and exhibiting the peculiarities enumerated, the same explanation may apply to other diseases with similar peculiarities. I think, therefore, that the germ of sleeping sickness in this respect resembles that of malaria and that of elephantiasis—that is to say, that at one stage of its existence it must necessarily live in some living host other than man; some animal or plant found only in the equatorial regions of West Africa.

There is one fact about sleeping sickness that greatly encourages this hypothesis, as it fits in exactly with such a view

of the etiology of the disease. A peculiar parasite—filaria perstans—has been found in the blood of both the patients which you have seen. Moreover, this same parasite was found in the blood of the other patient whose case was studied in London some time ago—Dr. Stephen Mackenzie's case. The particulars of this case are fully recorded in the Clinical Society's *Transactions*, vol. xliv. In fact, it was in the blood of the latter patient that this parasite was first discovered. Dr. Mackenzie told me that his house-physician (Mr. Fagan) while examining the blood, had found in it what he took to be the ordinary blood worm—filaria nocturna. Dr. Mackenzie remarked, however, that some of the worms appeared to be larger than others, and, knowing that I took an interest in this class of parasite, he asked me to look at them. I procured slides of the patient's blood, and carefully studied the worms. I remarked that the larger worm differed not only in size, but also in shape, in structure, and in habit, from the smaller. You are aware that the ordinary filaria of the blood, filaria nocturna, is an active, wriggling creature, about $\frac{1}{75}$ inch in length by about $\frac{1}{3000}$ inch in breadth; that it has a sharp-pointed tail; that it is enclosed in a loose trailing sheath or sac; that although it wriggles about, it practically remains at one spot on the slide, and does not locomote; and that it comes into the peripheral circulation only during the evening and night. Now this new worm was only about $\frac{1}{125}$ inch in length by about $\frac{1}{3000}$ inch in breadth; it had a blunt tail; it had no sheath; besides wriggling about, it travelled through the blood on the slide, often at a great rate; further, it was present in the peripheral circulation at all hours of the day, as well as of the night. Manifestly it was a new species.

Naturally enough the concurrence of a strange parasite in a strange disease suggested, though it by no means proved, a cause-and-effect relationship between the two. Accordingly I set to work to find out something more about this new worm, among other things its geographical range, its degree of prevalence, and if it were invariably, or often, present in sleeping sickness. I procured slides of blood from hundreds of natives of different parts of Africa and of the tropical world. I found that it was only in slides procured from Congoland and from one or two other parts of West Africa that filaria perstans occurred. It does not occur, as far as I have been able to ascertain, in Egypt, in East Africa, or in South Africa. I also obtained strong evidence that it does not occur in Dahomey, nor in the Illorin district in the Niger bend, districts where, although well within the geographical limits of sleeping sickness, that disease does not originate. I also found this filaria in blood sent me from cases of sleeping sickness on the Lower Congo. But when I came to investigate the degree of prevalence of filaria perstans in its geographical area, I seemed to find too much. I found that quite 50 per cent. of the healthy inhabitants of Congoland and of some other West African places harboured this parasite. This fact of course told against the theory that the new filaria stood in causal relationship to sleeping sickness. After all, their relationship might only be one of concurrence—a very different thing from cause and effect. In other respects, however, the new filaria seemed to fulfil all the requirements. It could be acquired only in a very limited area; it could be carried in a patient's body and live in a foreign country for years. I found it in the blood of a negro who had not been near Africa for over six years. Like other parasites of its class it could very well exist without causing disease. From its nature we know that it cannot spread by direct infection, but that it must first pass through the body of another animal; and, for the same reason, that it cannot be introduced and become domiciled in a virgin country where this other intermediate animal does not occur. We come to this then, that though there are some facts pointing to an intimate relationship between the parasite and the disease, yet the extreme frequency of filaria perstans, and the relative rarity of sleeping sickness in the endemic area seem to be strong arguments against this parasite being the cause of the disease.

At the same time we must bear in mind that there are many parasites which, though sometimes pathogenic, are nevertheless generally innocuous. Filaria nocturna, for example, does not by any means always give rise to elephantiasis; the cysticercus does not always become lodged in the vitreous humour and destroy the eye; distoma Ringeri does not always stray to the brain and cause Jacksonian epilepsy; hydatids do not always produce disease of the lungs or liver; so it may be with filaria perstans. It might very well be that it is only in a certain possibly small proportion of instances that it gets into a position to damage the encephalon. Similar parasites are known to be great travellers and to hunt each other, as it were, through the tissues of the body. Filaria loa, for example, may be felt one day in the connective tissue of a finger, and a few days later may be crossing the eye under the conjunctiva; in fact, it can be seen thus travelling about. The guinea-worm is also a notorious traveller; so are the young trichina and hundreds of other parasites. It is therefore quite in conformity with the teachings of analogy that filaria perstans may occasionally wander into some tissue, either in the brain or connected with the brain, and so in certain individuals set up serious cerebral disease, whilst in other and in the majority of cases it does not do so. This is quite conceivable. The fact of the presence of filaria perstans in a large proportion of people who may never suffer from sleeping sickness is therefore not an insuperable obstacle to accepting it as a cause of this disease.

There are several other facts, however, which seem to militate against this hypothesis. There may be an explanation for them, and the hypothesis suggested by geographical distribution and the presence of filaria perstans in so many instances of sleeping sickness may be perfectly correct; nevertheless, I think it right to mention that filaria perstans occurs, apparently, all over the Congo valley, while sleeping sickness is confined to certain villages and districts; moreover, it tends to occur in outbreaks which from time to time assume epidemic characters. If filaria perstans be the cause of sleeping sickness, we should expect the distribution of the disease to be in closer conformity than it seems to be with the prevalence of the parasite.

Then in sleeping sickness the lymphatic glands, as I have mentioned, are frequently enlarged. It is difficult to see how this clinical fact is to be explained on the supposition that the parasite acts pathologically primarily on the encephalon.

The pruritus, which is so marked a symptom in the disease, may be the expression of a neurosis; still, for this clinical phenomenon also, such an explanation is not entirely satisfactory.

If filaria perstans be not the cause of sleeping sickness I cannot suggest any other cause. There are sufficient grounds, at any rate, for regarding it as a possible cause, and for following up the clue which its occurrence in this disease clearly affords.

CONCLUSION.

The working hypothesis suggested by the facts—analogical, clinical, and experimental—is to this effect: That the germ of sleeping sickness operates primarily on the encephalon; that this germ is possibly filaria perstans; that the parasite in its wanderings, either by entering the brain, or by interfering more or less directly with its nutrition, may gradually bring about a cessation of its function, ultimately leading to secondary neuro-muscular malnutrition and symptoms of sleeping sickness. If it can be shown that filaria perstans is the cause of sleeping sickness, the next step will be to ascertain the life-history of this parasite outside the human body; this once known, it will become easy to indicate an efficient prophylaxis.

TREATMENT.

Sleeping sickness, so far, has proved incurable. The natives in some places excise the enlarged cervical glands. When such an operation has been followed by apparent recovery, doubtless there has been a mistake in diagnosis. I heard of what appeared to be a case of incipient sleeping sickness which was cured by large doses of arsenic; in this case, also, diagnosis may have been at fault. In the early stages of the disease purgation and tonics, the clearing out of intestinal parasites, and similar subsidiary measures, do good temporarily. The younger of our patients certainly derived benefit from a liberal dosing with thymol; it rid him of a large number of round worms and ankylostomata. At present he is rather better than when he entered the hospital, but we may not expect ultimate recovery. Some time ago hypodermic injections of testicular fluid seemed to give encouraging results in certain cases on the Congo; later experience, however, has not been favourable to this remedy.

At present our elder patient is taking a preparation of pituitary gland. The younger is on arsenic, which we propose to push. I am bound to say that though I hope for permanent benefit from these measures, I am very far from expecting it.

THE OSSEOUS SYSTEM IN THE INSANE.

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Fracture in the Insane.

It would appear, by reference to the Blue Book of the English Commissioners for 1896, that 7,182 persons died in all the institutions for the insane in England and Wales, there being 13 deaths from diseases of joints and bones, and 11 from fracture or dislocation. In 1897 the figures are respectively 6,783, 15, and 13. The textbooks in lunacy have very little to say on the matter, and likewise, surgical works bring to light nothing on diseases of the bones peculiar to the insane. However, Mr. Bryant, in his *Practice of Surgery*, states "that fractured ribs in the insane generally arise from direct violence." Dr. Mickle, in his work on *General Paralysis*, remarks on the bone condition in insanity; and he is supported by the late Dr. Sankey in his *Lectures on Mental Diseases*. Both these observers are agreed that "the weight of a blow on the chest may be very considerable, and be interrupted by the erection of the intercostal and other muscles of the thoracic walls." In remarking upon these cases of general paralysis, Dr. Sankey says "that the dulness of sensibility, which is remarkable in this mental affection, might really be at the foundation of the fractures of the ribs in the insane." The pugilistic attitude presents a powerful thoracic arch to receive a blow, but if the nervous system is blunted, as in general paralysis, this arch would appear to be frequently thrown off its guard; there being no resistance, a fracture under these circumstances would seem to be inevitable. Virchow and Eberth respectively, in 1856 and 1878, have expressed their views "on synostosis of base of skull in connection with cretins and idiots." Again, the French observers, Parrot and Charcot, claim our most thoughtful attention when we discuss the osseous system. Elsewhere on the Continent, in America, and in our own country, will be found several authorities dealing with osseous affections, whose writings are of considerable importance. Yet we are aware how much we have to unravel, how much we have to explain away, and how many more physiological facts pathologists require before they assert dogmatically the nature of this or that osseous affection. In the Pathological Society's *Transactions* Mr. Arbuthnot Lane declares "that examining the bones of a large number of bodies, I find that, taking the ribs as the criterion of density, the strength of the bones bears a direct proportion to the dentition of the patient." He remarks in the same *Transactions* (vol. xxxv) "that in the edentulous the ribs can usually be cut with great ease with a scalpel." He says, "I do not mean altogether to regard it as cause and effect, but when once the teeth are lost the osseous system degenerates even more rapidly." Mr. Arthur Durham, in *Guy's Hospital Reports* (vol. x) alludes to the fact that "bone is among the least highly vitalised of the tissues, and certainly the least highly vitalised of all in connection with which a comparatively abundant vascular supply is ready to promote absorption, and in other ways to assist destruction as well as repair."

I have purposely, for the interest of this paper, examined many pieces of bone in acid solutions. In these experiments I have satisfied myself that in the condition called "rickets" the bones are in a very low stage of vitalisation; that portions of ricketty osteal tissue readily part with their inorganic material, leaving a soft, spongy, mass otherwise intact. It would seem that the animal and earthy matters were only mechanically united, as if, physico-chemically, the metabolic processes were out of the regular course; nay, that the origin of this was due to a faulty pabulum supplying the osseous system, which could be easily remedied by dietetic treatment. Moreover, should there be, for instance, a scrofulous or syphilitic diathesis, a complication arises which materially alters the course and treatment of the disease.

Diet and Bone Changes.

We know that the chemistry of this ill-nutrition in rickets is as yet undetermined by physiologists. Many cases of rickets, as we are aware, do not readily respond to suitable feeding, and undoubtedly are complicated by inherited disease. As a comparison with rickets, we shall find that the ordinary domestic fowl may be used as an example of dietetic error. The hen that lays soft eggs is in a similar condition to the rachitic subject; the supply and demand are disproportionate, the pabulum is faulty, and the sexual function correspondingly deranged. Directly the dietetic error is remedied the bird ceases to lay soft eggs, the fibrous envelopes of the eggs assuming their normal hardened condition. Besides, although it is stated in Mr. A. Durham's article, it has never been proved that "hens having a deficiency of lime containing nourishment either lay soft eggs without chalky shells or they produce them at the expense of their own proper osseous systems." Those who are poultry fanciers, and, further, those who have studied the subject scientifically do not support this statement. Mr. Bland Sutton informs me that birds do not get mollities ossium, and that bone softenings of any kind are in birds very rare. Again, I disagree in part with obstetricians who lay stress on the association of mollities ossium and the pregnant state. Does the fœtus require such a supply of lime salts from the mother that would materially affect her osseous system? Have we, likewise, a complete account of all cases of osteomalacia, or a sufficient number of reported instances of recovery after the operation of oöphorectomy to make us sanguine on this operative measure? I believe that British obstetricians have had a limited experience of this disease, since it is recorded as being rare outside the Rhine valley. Should surgical measures be indicated, it does appear to me that induction of miscarriage is preferable to spaying,

Osteoporosis.

At this juncture I beg to recall to your memory the series of osseous specimens which fill the shelves of many hospital museums. These are representative of hyperostosis, osteoporosis, mollities ossium, osteitis deformans, syphilitic thickening, and erosion, etc. In my own possession are two examples of the described "pan" of the general paralytic, and likewise a typical preparation of Charcot's affection of bone. I have also before me several recently-removed ribs from different subjects obtained from the *post-mortem* room of Guy's Hospital. It is obvious that the breaking strain of each "hoop" is different. Further, an artificially decalcified rib, of a healthy consistence, crushes in the hand like a piece of india-rubber tubing, returning again to its form without loss of continuity when the pressure is removed. Anatomically, the thoracic bones are unique in their construction; a rib has several planes besides that of its own curvature; the reticular tissue, too, is in excess of the compact layer, and there is no central channelling. Moreover, the vascular supply is arranged in accordance with the architecture of the bone, and the rib, being in a constant state of motion, is at a disadvantage when the nervous system is blunted. Thus we shall perceive that it is not unusual to hear of the occurrence of fracture of the ribs in the insane apart from injudicious handling by the attendants. When we review the systems of the economy and the cachexiæ associated with diseases of these systems, we shall not wonder if we are told that the thoracic walls in the insane are liable to fragilitas ossium. That diseases of a certain type, in which the blood is materially altered in composition, encourage ill-nutrition of bone is manifest. In Fig. 3 is shown part of a child's skull, that of an Arab, which is markedly porous. The beautiful superimposed arrangement of the diploë tissue is well depicted in Fig. 1, and is a section corresponding to A (Fig. 3) over the parietal eminence. This arrangement of the columns of bone is clearly a design of Nature as a provision to protect the soft organ of the brain, and in rickets it appears to be an extravagant morbid process although salutary for the time being. The perverted nutrition of this portion of a ricketty skull is universally distributed and all the sutures are effaced. The owner of the calvarium must have suffered seriously during life from arrest of development. This, a typical example of a growing skull, indicates a morbid state of the organism, and is worthy of our careful inspection.

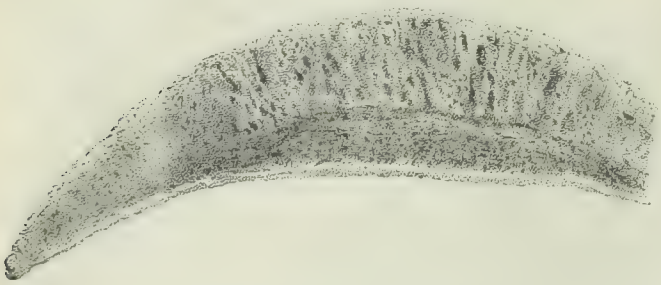


Fig. 1.—Section of child's left parietal eminence, columnar cancellous tissue superimposed on diploë. Natural size. Compare with Fig. 3, from which it is taken.



Fig. 2.—Section of healthy diploë of young man. Natural size.

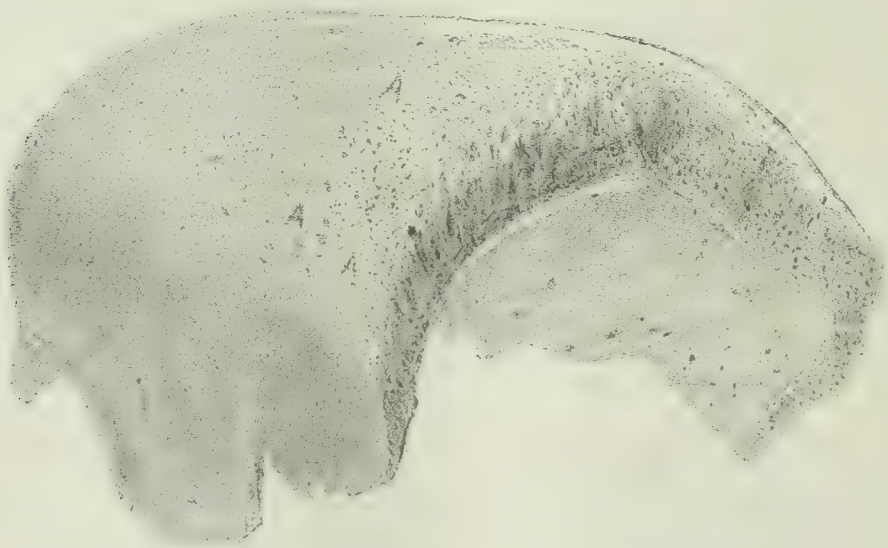


Fig. 3.—Profile of rachitic pan of child; section left parietal eminence and posterior part of right parietal bone; A, A, A, openings on the surface, of the tubular columns; osteoporosis so-called.

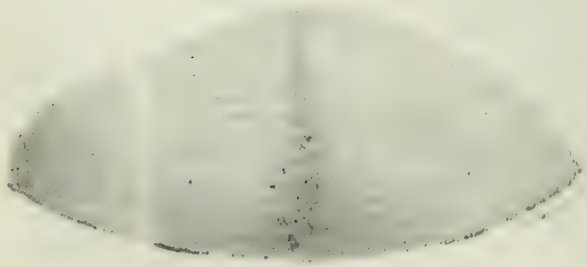


Fig. 4.—The [illegible] shaped and flattened pan of a general paralytic, view from behind.



Fig. 5.—Section of frontal eminence, natural size, general paralytic; pan excessively hypertrophied, diploë and tables.

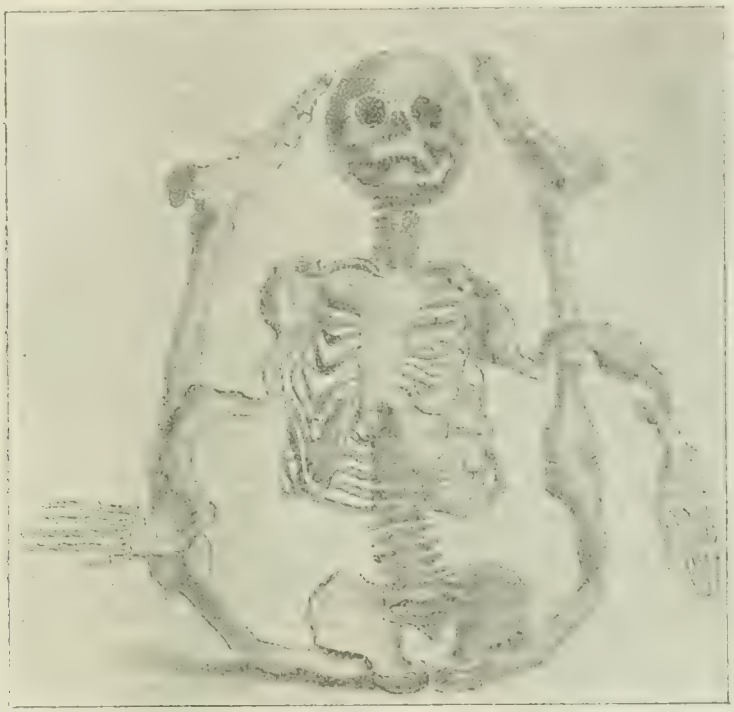


Fig. 6.—The skeleton of Madame Supiot; the historical case of mollities ossium: drawn from *Bromfield's Chirurgical Observations*, 1773. Slightly reduced in size for the convenience of the JOURNAL.



Fig. 7.—Madame Supiot during life. Slightly reduced in size for the convenience of the JOURNAL.

The superstructure engages the most exposed situations—namely, the frontal and parietal eminences. We shall note in specimens of bones that where there there is a sponge-like appearance on the surface (see Fig. 3, A A A) there is invariably a columnar upheaval of the cancellous tissue beneath (see Fig. 1). This ricketty child's skull is an excellent example. But whether the sutures which are so completely effaced in the specimen could ever have been opened up again is questionable. However, there is no reason why the provisional scaffolding (see Fig. 1) should not have become absorbed, as in similar cases of rickets, for daily we are surrounded in hospitals with square-shaped heads (Fig. 3), which we believe in adult life assume a natural contour. This state of affairs would appear to correspond to that condition of resolution which occurs with the provisional callus of a fracture. *Cæteris paribus*, it is not difficult to believe that even the obliterated sutures of the subject of the illustration might have reappeared when the morbid processes had ceased, since it is an undeveloped calvarium. These types of juvenile heads are nowadays considered by pathologists as purely rachitic, and not as formerly associated with the virus of syphilis. Various mammals, as stated by Mr. Bland Sutton, have shown this osteoporous condition of the bones.

It is only of recent years that pathologists have grasped these landmarks of disease, some observers still holding the opinion that this excessive osteoporotic condition of the skull is rare in the human subject. I am inclined to believe that it is not so rare, for rickets is not a fatal disease, and by adult age the normal architecture would, physiologically, assert itself. M. Paul Gervais has described a remarkable skull similar to Fig. 3. The scrutineers of the Pathological Society are agreed that my specimen is an example of rickets, remarking, however, that it is rare. In using the term osteoporosis we must not look upon it as a separate disease, but merely a pathological condition of bones occurring in rickets.

In studying Fig. 3, which is very correctly drawn, attention should be directed to the square-shape appearance, which we know in the living child is a point in rickets; it is that of a child about 6 to 7 years of age. If we consider for a moment the growth of the skull, and that part of the brain corresponding to the frontal and parietal eminences, we shall readily perceive the reason why there is squareness in the ricketty skull. That it is brought about by a horizontal and vertical arrangement of the columns of the cancellous tissue is well shown in Figs. 1 and 3. The sectional drawing shows very prettily the new columnar cancellous tissue superimposed on the original bone, the lower parts with its tables being well defined; the whole figure is correct to size of the specimen, and the openings of the tubular columns are satisfactorily produced in Fig. 3 A A A.

The Skull in General Paralysis.

My next illustration is Fig. 4, the view of the pan of a general paralytic seen from behind. We have it on the authority of Dr. Mickle, who states in his work on *General Paralysis*, p. 278, "that the brain pan in general paralysis is usually flattened from left temporal to right parietal region." The drawing faithfully delineates the flatness, and the pan is the better example of two I possess. The one I depict is firm, dense, and elastic as it rebounds on the ground; besides, it breaks with a short fracture when a piece has been detained in acid solution. Its compactness (see Fig. 5, a section correct to size, and taken posterior to the frontal eminences) is evidently the result of a closer aggregation of the constructive elements of its composition, due to a pathological change. Comparing this specimen with a similar portion of a healthy "pan," and subjected to the same acid medium, it is clear that the latter has a normal flexibility, and that it does not snap, but maintains its shape and pliancy. Thus it will be conceived that the regular physico-chemical processes are disturbed nay, that considerable change has arisen in the organisation of the bone. A piece of the thickened general paralytic skull resists substantially the acid solution, and, although it has been subjected to a prolonged stay in the fluid medium it is only just yielding. It would seem that the reduction of the earthy matter of the bone was replaced by a large preponderance of disorganised animal matter. That the gelatine of bone has become so altered in nature proves that a distinct pathological entity exists. We have, then, evidence of a very destructive transition in general paralysis, which affects the osseous system in its morbid cyclical changes. However, it is remarkable what resistance animal life offers to the invasion of disease; for while one part of a general paralytic's organism is losing ground, another part is putting on fat; not only so, but the irregularity and uncertainty of repair in general paralysis are marvellous, the digestive apparatus remaining good to the last. On examining the calvarium (Fig. 4) more closely, and although not seen in the drawing, we shall learn that it is $\frac{5}{8}$ inch in thickness (Fig. 5); the two tables are $\frac{1}{8}$ inch respectively, and the diploë tissue $\frac{3}{8}$ inch. The sagittal suture is intact and the lambdoidal likewise, except for about 1 inch, where obliteration is noticeable. The pan has a keel-shape appearance, but not so marked as in my other specimen, and a vertical section reveals the irregularity of the inner surface of the pan. The thickness of the skull is more marked over the four eminences. The general rarefaction will be noticed, and, not least, the worm-eaten appearance, the irregularity, the erased sutures, and the inordinate engraving of the grooves; all the inner surface of the pan exhibit these conditions. The whole "cap," as I have said, rebounds on the ground, and resists a sharp blow from a hammer. Microscopically there is a considerable change in the appearance of the Clopton-Havers system. The arrangement of this structure is apparently in a transition stage, and where spaces are seen in the osteal tissue they have become preternaturally dilated; the lacunæ show this very distinctly, but the canaliculi are invisible in this specimen, which is from a skull of distant date. Another microscopical section has a curious lamination, with a turning over of the plates at the ends of the section like yellow elastic twists.

A second example of the carinate or keel-shaped skull I have not depicted, but its thickness is only just above the normal measurement. The grooving for the meningeal vessels is considerably above the average, and there is thinning of the bony walls, corresponding to the depressions produced by the Pacchionian bodies. The flattening on the left side of the skull is marked, and the shape of the whole pan resembles the bottom of a ship. Externally, obliteration is beginning in the posterior part of the sagittal suture; internally, there is entire effacement of the serrations. Another pan in my possession, which belonged to the late Mr. John Hilton, the author of *Rest and Pain*, differs from a general paralytic calvarium since it is more uniformly thickened, and is not altered in shape. There is a pan in the Guy's museum of a woman who subsequently to excision of the breast for cancer developed acute mania. There are irregular bony excrescences on the inner surface of the frontal bone corresponding to the eminences, but the meningeal grooving is not excessive. Two similar calvaria are on the same shelf as the previous one, but they are considerably more thickened, and the history in the curator's register is not noteworthy. However, 1669(20) in the same hospital museum is labelled "Osteoporosis of the skull," and in the history of the case reported by the late Dr. Hilton Fagge, it is remarkable that for 14 years pains were experienced in the bones; again, it is stated that there was immobility of the chest, brittleness of the ribs, and breathing was difficult at the last; a psammoma was found of dura mater. The other parts of the osseous system appear to have been neglected, which might have confirmed the history of the case. Another "pan" of a youth about 17 is curiously square shape, and bulges equally and rather extravagantly in the parietal and occipital regions. The frontal portion is out of proportion, being very narrow in comparison to the rest of the skull. It is of normal thickness (see Fig. 2), a section from behind the frontal eminences; the sutures on the inside are all effaced, but on the outside they are visibly delineated. The posterior fontanelle is very irregularly ossified, and there is marked flattening in this site, and, coupled with the excessive parietal bulging, the evidence of late closing and rickets is established. Although a cured case of rickets the return to normal architecture in this pan has not been accomplished. It would have been interesting to have studied the mental peculiarities of the individual if such osseous changes do in the ordinary way affect the mental character. Whatever provisional classification we may establish in our minds with regard to these pathological processes, the following two pans will convince us of the irregularity of morbid changes in the

system from specific causes. Mr. Stonham, of Westminster Hospital, was kind enough to lend me them from the museum. Each pan is 1½ inch thick, and this measurement is generally distributed; the necrotic, worm-eaten patches, here and there distributed on the external surfaces of both pans, are typical of syphilis. In comparing these dense calvaria, which are completely without sutures or fissures of any kind, with healthy skullcaps, their pathological significance compared relatively to one another at once becomes evident. They are not porous like ricketty skulls, but are dense and vary in weight, being pathologically altered in structure. Most of this class of thickened skulls can be seen on the shelves of the hospital museums; some are oily or greasy to the touch, their histories are incomplete, and they are labelled as hyperostosis. It would seem that a great many of them were museum curiosities of a former age when syphilis was rampant and more in evidence than in these days of enlightened science.

The pans which I have just described are the thickest that I have handled from any museum. There are many other examples of osseous changes from other parts of the skeleton, but they are relative, and would unnecessarily lengthen this paper. However, specimen 1067 (20), Guy's museum, of bodies of dorsal vertebræ, sternum, clavicle, etc., is classified as mollities ossium, but it would appear to be better recognised as Charcot's affection, as the articular surfaces are gradually eroding, and besides, there is not a history of aneurysm; the bones are fragile and light, and one piece of the body of a vertebra is eaten away as if rats had been gnawing there. It is a liquid specimen in redistilled methylated spirit, and the respective pieces of bone all wear the same appearance.

Hyperostosis.

The late Mr. Arthur Durham, in the *Guy's Hospital Reports*, vol. x, very critically discusses hyperostosis, but he does not unravel the pathological problem. Neither can Sir James Paget or Mr. Hutchinson give us a clear elucidation of the pathological nature of these anomalous osseous lesions. I am aware, too, that more modern authorities dispute the views of these older teachers; but have they anything further to add in explanation of what was known twenty years ago?

Dr. Mickle repeats Mr. A. Durham's views "that the nervous system has distinct influence in producing ill-nutrition of bone." His work on *General Paralysis* is an index of research, and is familiar to most of us.

The series of skullcaps which fill the shelves of many museums, and which are at times associated more or less with hyperostosis in bones from the skeleton in general, you will find can be divided into at least two sets:

(*a*) Those of a spongy, light, and brick-like consistence, of which my illustration (Fig. 3) is a good example.

(*b*) Those that are dense and to which the term "sclerosis" may be applied, of which the general paralytic pan (Figs. 4 and 5) is a type.

Both divisions show invariably much irregularity; there is an increase in the markings, sometimes a dilatation or a diminution of the foramina, and frequently an exaggeration of the grooves supporting the vascular system. These pathological specimens cannot be common nowadays, and would appear to be as exceptional in some *post-mortem* rooms as the large stones formerly removed from the urinary bladder. That age has altered them, and that their history is often doubtful—some having been displaced from churchyards, and not a few from dissecting rooms—would confirm our views that they have somewhat changed since they were first deposited in mother earth. Many, and I believe that those having a dry, porous, sponge-like appearance have assumed that coralline condition by exposure to the weather, the soft organic material having been removed by disintegration. For instance, the Arab pan, Fig. 3, has been lying on a movable sandy heap off the island of Lamoo, Zanzibar littoral, since 1805. I removed it myself from these quarters nine years ago, amidst a host of skeletons which appeared as one approached the littoral as white specks. The white coralline appearance of these bones is undoubtedly due to a dry sandy soil in a tropical climate, and it would appear that under these climatic conditions osseous matter soon becomes bleached, and is readily pulverised into a white powder. On the contrary, churchyard bones are usually discoloured brown by exposure to moisture and earth, and possibly from the iron in the soil and interstices of the bones. It will be interesting for us to know that a Sultan from Omah in Arabia landed at this "Shella Point" Lamoo, and fought a battle, slaughtering a tribe then existing; and it is known that at this date—1805—the dominion of Zanzibar became established. The bones of the vanquished have been lying on this spot ever since. Two friends kindly assisted me in examining this sandy littoral, and, out of a great many human skeletons, the Arab ricketty-pan (Fig. 3) was the only pathological specimen we could find. I would add, too, of the many skulls we examined, some of which we took away with us, and the rest no doubt are still lying there, were not thickened in any way, but averaged ½-inch. We displaced several camel's jaws and a few species of "rodent" in this sandy churchyard of the East. Do these variously-thickened skulls that we have surveyed produce cerebral alienation: are they frequently associated with insanity; are any of them a consequence of mental aberration: or are they ever congenital? Is the asylum physician familiarly acquainted with their existence? These questions we may well ask when we consider "the correlation of sciences in psychiatric and neurological research." From what I can learn, both in and out of the psychological world, there is a difference of opinion. Some observers state "that flattening on one side of the skull, and these are not all alienists, obliteration of sutures and irregularities of the inner table, do not indicate a morbid state of the brain." Yet is not this condition of things a precursor of brain affection of which there may be many expressions? Scarbo[1] gives the statistics of Fournier, 91 per cent., Erb, 88 per cent., Gowers, 70 per cent., regarding the frequency of syphilis in locomotor ataxia; so he says: "Not all the cases of general paralysis are syphilitic, for general paralysis is probably a collective term for several different morbid processes; it will, perhaps, in time, be possible to distinguish those due to syphilis as constituting a disease distinct both clinically and pathologically from the rest." Thus, in considering the relation of syphilis to tabes and general paralysis, we should also bear it in mind when we discuss affections of the osseous system.

That the Pacchionian bodies, which are "sieves," may become enormously enlarged, eating away the inner table and not causing cerebral disturbance, I cannot believe. We know what in some temperaments the irritation of a tooth, a plug of cerumen, or an aural polypus, etc., will encourage peripherally; and these cerebral disturbances, such as convulsive or epileptiform seizures, are relieved or cured after the offending body is removed. We are prepared to admit that skulls are not always well proportioned, and may cause no serious, if any, brain affection. But are we ready to admit that thickened skulls are not uncommon? It is quite feasible, too, that those who are in the habit of carrying heavy weights on their heads, such as dock men and the natives of some tropical climes, may incite hypertrophy of the calvarium. This may likewise become pathological if the poison of syphilis is already in the system of the subject. We are justified, then, in asking ourselves the question, Are not these thickened heads frequently indicative, in our own country more particularly, of serious morbid changes?

Mollities Ossium.

I seek for your indulgence ere I touch on mollities ossium. This morbid revolution of the osseous system has been described by some observers in psychology as a peculiar affection of the ribs of some insane people. Whether they use it as an expression or as significant of the true disease, I think it hardly worth our while disputing. That there is an element of truth in the statement that "the ribs of the general paralytic are susceptible of fracture cannot be disputed." We wish, also, to be chary of contradicting opinions unless we can give sound reason that the ribs of the general paralytic are not pathologically weak. At all events, if you are agreed that the bones of general paralytics are liable to become softened, the responsibilities of the asylum physician become doubly increased, for the law invariably indicts a bad business in this matter. There is a difference of opinion amongst psychologists as to the occurrence of softening of the ribs in the insane. However, perhaps this condition is not familiarly recognised in the deadhouse. I am not aware, either, that the osseous system is as closely scrutinised in the *post-mortem*

room as other parts of the body. With regard to fractures of the ribs, many asylum surgeons are opposed to their frequency; in fact, not a few deny their frequency altogether, and remark that "they are not peculiar to general paralytics." Nay, several well-known medical superintendents, replying to questions I have put to them, say "that fractures in their respective institutions are uncommon."

Formerly, there was an affection of the bones which was more often in evidence than nowadays. I am not aware that there is a similar case on record to that of Madame Supiot. This general disorder of the osseous system, "mollities ossium" was typically brought before the profession in Great Britain by William Bromfield in 1773. The case is recorded by him in *Chirurgical Observations and Cases*, vol. ii. He was surgeon to the Royal Family of that period, and to St. George's Hospital. The history of the case is well recorded, but is not voluminous, and there are two excellent plates by Vitalba, a sculptor of that time. I have carefully drawn them, but reduced the drawings slightly to get them in the pages of the Journal (Figs. 6 and 7). One shows the woman as she was in the skeleton; the other the attitude she assumed in the living state. Every bone of the body appears softened, twisted, and perverted, except the skull, which probably, though not mentioned, was similar in architecture to that of the Arab pan (Fig. 3). Another point worthy of mention is that the patient was almost continuously in a sweat, or had a dew on her skin. She conceived twice, and on another occasion when she became pregnant it ended in a miscarriage. The urine is reported as being frequently surcharged with the salts that make bone. Little else beyond a good classical description of her daily existence is recorded. It would, indeed, have been interesting had the unaided eye of the epoch in which Madame Supiot lived been assisted by the modern instruments of research. As it was not so, no minute structure of her osseous system has been chronicled. Dr. Lazarus-Barlow, of Cambridge and St. George's Hospital, informs me that no part of Madame Supiot's skeleton is at St. George's or any British museum. A part is in the Musée Dupuytren. Bromfield is referred to in Beyland, *Die Rachitis*. Bromfield's account of Madame Supiot in *Chirurgical Observations and Cases*, is an abstract from Morand, *Histoire de l'Académie des Sciences*, pp. 114 and 541. It is clear, too, that Madame Supiot was not in London at any time: I have this on the authority of Mr. Shattock, the Pathological Curator of the Royal College of Surgeons of England. Morand's figure is that which is copied into Billroth's *Surgical Pathology*. If one considers the many theories that have been promulgated with regard to the cause of this disorder, and when we compare a disease like scrofula with this malady, we are tempted to say that in our age they are both rare affections. My view of mollities ossium is that not unlike rickets and scrofula it may occasionally arise from gross dietetic errors. Rickets is obviously a disease of growth, while mollities ossium appears to be more frequently one of decay. To support my theory, Mr. Bromfield states "that Madame Supiot, for some time before she was seized with her disorder usually ate a pound or a pound and a half of common salt in a week without any vehicle, the which custom she continued for two years." Dr. Nansen, the traveller, and other explorers, confirm the professional opinion that ill-nutrition frequently arises from errors of diet.

A case of mollities ossium was published in the British Medical Journal of October 30th, 1897. One physical sign so typical of this affection was recorded, namely, "a look so short and squatty," but the deep-seated pain in the bones, which has been variously spoken of as "rheumatic," is not mentioned; the woman is said, however, to have groaned at the last hour of her life. Dr. H. M. Lyman, of Chicago, exhaustively describes the microscopical appearances in this case, and in the synopsis you will see that there was extensive miliary tuberculosis, with a gastric ulcer. I believe atrophy of bones, changes strictly senile, and the real affection of Charcot, if more often sought for in the *post-mortem* room, would attract our attention.

Chronic Abscess of Bone.

Beyond the ordinary affections of the osseous system that I have described briefly, and which tend to fragilitas ossium, we must not forget chronic abscess of bone, first described by Sir Benjamin Brodie. Cancer and tubercle must also be weighed in the balance. In fact, any lowering of the vitality of the subject would strike us as a factor when we consider the etiology of fractures. These morbid states that I have mentioned are sufficiently clear to explain softness, pulpiness, and thinness of the compact layer in the ribs of the insane. It would seem, too, that healthy bones are liable to give way under irregular, trivial, and indirect causes. As one example we mention a case of the ribs giving way during sexual intercourse; besides, we have heard of sneezing and violent coughing causing indirectly a fracture of the ribs. I have myself at the Brompton Cancer Hospital found the ribs of some subjects at *post-mortem* examination susceptible of incision. These experiences must be familiar to many others. That asylum medical officers hold different views on the matter is not remarkable, for are we not all in the profession liable to the error of selecting our cases?

The Breaking Strain of Bone.

When we consider the breaking strain of a rib we have to associate the names of Drs. Mercier and Campbell. These gentlemen brought before the notice of the Psychological Association their experiences, and in 1895 read a paper on the subject before that Society. They have very ingeniously contrived a simple apparatus for testing the breaking strain of a rib; I refer you to their paper in the *Journal of Mental Science*-April, 1895. I believe other asylum physicians have performed similar experiments, but have not recorded their observations. Drs. Mercier and Campbell put to us the following question: "What are the forms of insanity which are accompanied by a low breaking strain of the ribs?" This, it seems to me, is difficult to answer, for is there a standard of excellence even in health? The hoops of the thorax must vary considerably in breaking strain at all times of life, whether we examine them under sane or insane conditions. Not only have we to consider the "diathesis," but also the athletic powers and previous occupation of the subject to compare with another. Moreover, we have to contend with delicate arches of trabeculæ and columns of bone which could only be worked out proportionately and in sectional areas in the mechanical problem.

The organ of the Psychological Association, the *Journal of Mental Science*, has from time to time registered instances of bone softening in the ribs of the insane. The year 1871 was a memorable one for this condition, since at the Carmarthen Asylum there were 20 deaths, of which 7 were examples of bone softening; 2 of these are recorded as ordinary senile changes, 4 as suffering from dementia, and 1 puerperal mania. All the subjects were beyond 50 years of age except two, who were 70 and 36; 5 are stated to be males and 4 females. In ten of the necropsies the bony walls of the chest are stated to be moderately healthy. Softness of the ribs, the ability to cut them freely with a knife, want of crepitation, and inability to detect fracture during life is reported. There is no record of the *post-mortem* examinations being completed.

This is a point, then, which I should urge—namely, a more complete examination of the whole of the osseous system in these inquiries; for why are a lunatic's ribs more diseased than the other bones of his body? Dr. Christian, writing in another issue of the *Journal of Mental Science* (January, 1886) on the Alleged Fragility of the Ribs of General Paralytics, is opposed to the idea that they are more susceptible to fracture. He gives 250 cases, and says: "I can assure you, gentlemen, I have not come across a single example of fracture among them."

This reminds me forcibly of an experience I had when at a children's hospital some years ago. Our cases of tracheotomy were not always successful, although performed skilfully; we did not select them either. But in visiting other children's hospitals I found they were remarkably fortunate in their recoveries. Perhaps the operations were selected, and possibly the nurses were more accomplished in the use of the feather and paid more attention to the toilette of these trying cases. I can quote others who hold the same opinion as Dr. Christian, and there are many who hold contrary views.

In conclusion, I beg to thank Dr. Lauriston Shaw, Curator of Guy's Hospital Museum, for allowing me to borrow many

valuable specimens, although the sketches I have made for this paper are preparations of my own. Had I been able to expend more time and observation in examining these various pathological bones, in performing elaborate qualitative and quantitative chemical observations upon them, and in applying the microscope to more recent specimens, I might have claimed the privilege of being original. So far, I can only excuse myself by the plea that I possess several pathological bones which have urged me, as a psychologist, to comment upon them. I leave others to further the pathology of these interesting anomalous diseases of the osseous system—as interesting, perhaps, though not so astounding or as marvellous to the impatient psychologist as the recent theory of Dr. Van Giesen, of America, "that the nerve cell is like a tiny octopus with retractile and expansive arms."

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A CASE OF SCISSORS LEGS.

By JOHN G. COOKE, M.B.,

Londonderry.

The case described in the following note, and illustrated by photographs, came under my notice for the first time in April, 1898, and again in July, 1898. I think it worthy of publication as a remarkable example of the rare pathological condition described by Mr. Clement Lucas in 1870, and of which a few cases have since been recorded.

The patient, J. D., aged 16 years, an undersized, somewhat delicate-looking boy, gave a history of having been all right in every way until four years ago, when he states that he hurt his right hip while tobogganing. No medical man was consulted, however, nor did the boy give up his ordinary work on a farm; so that I regard his statement as unreliable.

When I last saw him his condition was as follows: The right lower limb was an inch and a quarter shorter than the left, and the foot everted to some extent, but I was unable to satisfy myself of the existence of any dislocation of the hip-joint. The power of flexion and extension was perfect, but the limb was constantly in a position of adduction, and could not be abducted by any amount of force. The left hip could be fully flexed and extended, but could be very slightly abducted; not at all when he stood up, and only to the extent of uncrossing the legs when he lay down. The gait was very remarkable, a rolling motion of the trunk from side to side, followed by the rapid movement of each limb alternately swinging from behind to a position in front of its fellow, the foot markedly everted, locomotion being thus rendered painful and very slow. There was no further morbid condition to be made out, no scars, nor other evidences of joint disease.

The photographs show the position of the limbs better than I can describe them; and while the shortening of the right limb is puzzling, owing to the unsatisfactory history, the strange position and gait appear to be due to loss of power of abduction of both limbs, from whatever cause brought about.





I may add that the boy's condition was much worse on the second occasion than the first time I saw him, and the account given to me was that he was getting rapidly worse.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

SCARLATINA IN AN INFANT.

Apropos of the case of "Measles in an Infant," reported in the British Medical Journal of October 1st, p. 987, I can quote the following case:

Mrs. F., aged 39, was at the end of her fifth pregnancy, when all her children but one took scarlatina. She nursed them herself. Mrs. F. had had scarlatina when a child.

When she felt the first symptoms of labour she went to Lyons, some two miles from her country place, to avoid the contagion for the child. She was delivered there of a fine girl on January 2nd, 1866. The second day the child had sore throat, with much fever, and Mrs. F. said to Professor X., her attendant, "I am afraid baby is going to take scarlatina." This Professor X. would not admit, saying it was impossible, no case existing in the neighbourhood, and the baby not having been exposed to the contagion. However, the baby developed a strong eruption of scarlatina, and died on the third day.

This case seems to me interesting, for it shows, I believe, the possibility of an infectious disease traversing the mother's organism without apparently affecting it, and affecting the organism of the fœtus.

Geneva. A. Cordes, M.D.

A SPECIMEN SHOWING ONE OF THE POSSIBLE RELATIONS OF MITRAL TO AORTIC DISEASE.

This specimen, represented in the accompanying photograph, was taken from the body of a man aged 34. The necropsy revealed many interesting conditions—universal pleural and pericardial adhesions, some adhesions around the cæcum not connected with the appendix. The heart was greatly hypertrophied and dilated, and weighed 31 ozs. As can be seen, there is old-standing disease of the mitral and aortic valves. The segments of the aortic valves are shortened, puckered, and inverted at their free margins, and when the hydrostatic test was applied a central deficiency was found at the point where the three flaps normally come in contact. This deficiency would have admitted the passage of a stream of blood about one-sixth of an inch in diameter. The mitral valve is stenosed, the segments have indurated margins with thickening and amalgamation of the chordæ tendineæ, and there is much calcareous deposit in the substance of the valve. All these changes, of ancient date, I regard as rheumatic, in the absence of arterial or renal disease, and as occurring in a man only 34 years of age.



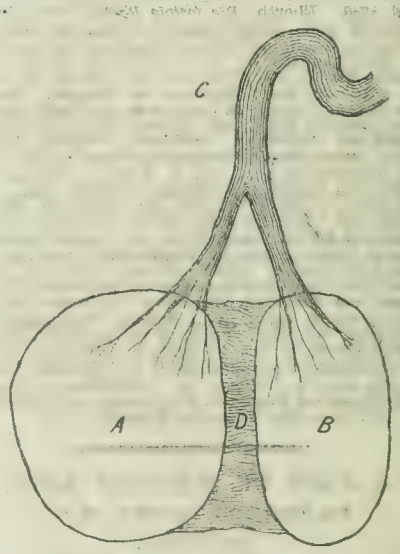
The special point of interest in the specimen is the presence of a circumscribed necrotic ulcer in an unusual position—namely, on the ventricular aspect of the mitral valve. The floor of the ulcer is formed by the calcareous deposit in the substances of the valve, and the ulcer is quite cut off from some smaller ones which exist on the auricular aspect of the same segment, nearer its attachment.

Ulcers beginning on the ventricular aspect of the anterior mitral segment are in my experience extremely rare, unless caused by some hanging mass of vegetation or retroverted portion of an aortic segment, "hammering" on it during the diastole, and a careful consideration of this specimen has led me to form the opinion that the determining cause of the ulcer has been the aortic regurgitant stream of blood itself. During the ventricular diastole when the mitral flaps hang down into the ventricle, it seems to me that the portion of the valve affected by the ulcer would be very much in the line of the regurgitant stream.

T. Wardrop Griffith, M.D.,
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Professor of Anatomy, Yorkshire College.

A CASE OF DOUBLE PLACENTA.

I was called at 1 A.M., on October 5th, 1898, to Mrs. A., a multipara. On arriving I found she had been in strong labour for about three hours; the os was fully dilated, head presenting, and the membranes had ruptured. The pains continued to be strong and frequent, but no progress was made, and at 3.30 A.M. I delivered with forceps. The child was a well-developed girl. After waiting an hour with my left hand on the abdomen holding the uterus, and finding the placenta would not come away, I inserted my hand into the vagina and found the placenta lying there, but it would not come away, as the membranes were adherent to a mass inside the uterus. At first I thought it was a fibroid, but on feeling the cord I found it bifurcated into the mass in the uterus, and so that I knew it must be part of the placenta. I had to detach this carefully before I could get it away. On examining the whole mass after removal I found that there were really two distinct placentæ, one rather larger than the other (the smaller half was the adherent part) with sharply-defined edges, and nowhere had they been united to each other except by membrane. Vessels came from each half and united to form one cord. I regret I did not preserve the specimen, but I did not think it was so uncommon as it appears to be. The diagram was made at the time, and may help to explain the conditions that existed.



A and B represent the two halves of the placenta, C the cord, and D shows where they were united by membrane. The smaller half B had to be removed from the wall of the uterus, but the larger half A came away naturally.

The patient made an uninterrupted recovery, with a normal temperature throughout. I may add that the father of the child was a twin, but the mother had never had twins, though this was her tenth child.

Loudoun Road, N.W. W. H. Neale, M.D.Lond.

GUNSHOT WOUND OF THORAX INVOLVING LUNG: RECOVERY.

Braima Ibadan, a private, Niger Coast Protectorate Force, while trying to overtake a column on May 11th was shot at short range from the bush. The bullet entered close to the right side of the eighth thoracic spine, passed upward and outward through the right lung, and made exit in the right axilla. He was unconscious for five hours, and after recovering was carried to the nearest village. Here he remained for a week, having his wounds dressed with a plaster of cowdung and other specifics.

He was found by the white officers on the return of the column in a filthy condition, both wounds suppurating freely and horribly offensive. The wounds were cleansed as well as possible with Condy's fluid and water, dressed with vaseline and native cotton, and bandaged with a puttee. Forty hours later he arrived in a hammock at Benin City.

On taking off the temporary dressings the stench was disgusting. Both apertures were discharging pus freely. His temperature was 104.2°, pulse 120, respirations 46. The right lung, except the apex was consolidated. The left lung was healthy. He had occasional cough, but expectorated very little. His breath was very offensive. On coughing or breath-

ing deeply air passed in or out of both apertures. I gave him a bath in 1 in 4,000 mercury perchloride and dressed the wounds with lint soaked in 1 in 1,500 mercury perchloride and quantities of absorbent wool. I gave him quinine, 5 gr. every four hours. He was bathed and the dressings changed twice daily.

During the next week he got gradually weaker. The temperature kept about 103° F., and the wound discharged freely. While dressing him on June 2nd he had a sudden fit of coughing, and ejected from the dorsal wound a long slough, which was followed by a copious discharge of very offensive grumous pus. He coughed up a little pus resembling the discharge at the same time. The temperature came down to 97°, and he became very feeble. Whisky ʒij every hour quickly pulled him round. Next day the temperature had risen again to 103° F., but steadily fell until, on June 18th, it was normal. The breath became sweet again, and both wounds rapidly healed, being closed on June 20th; and to-day (September 23rd) the man is walking about fairly well. There is only slight dulness at the right base on percussion, and the breath sounds can be heard nearly all over the lung. The left lung fortunately kept healthy.

Considering the length of time the man was without surgical attention and the nature of the injury, I think the recovery a remarkable one. He is a Haussa man, and even here slept on a mat on the ground covered with a blanket all through the case.

J. J. Day, M.R.C.S., L.R.C.P.Lond.,
District Medical Officer, Benin City, Niger Coast Protectorate.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

KING'S COLLEGE HOSPITAL.

ANEURYSM OF THE AORTA INVOLVING THE ROOT OF THE LEFT [illegible] CAROTID TREATED BY DISTAL LIGATURE.

(By William Rose, M.B., B.S., F.R.C.S., Senior Surgeon, and Albert Carless, M.S.Lond., Surgeon to the Hospital.

The treatment of aneurysms by distal ligature is one of comparatively recent introduction. Apparently the first case was undertaken in 1781, when an Italian surgeon named Pinchienati amputated below the knee for gangrene following a popliteal aneurysm, which subsequently became hard and ceased to pulsate. This isolated observation was not published, however, till 1811, and hence in no way detracts from the merits of Brasdor and Desault, who more or less independently and simultaneously proposed to place a ligature upon the vessel between the aneurysm and the capillary distribution in cases where the proceeding of Anel or the operation of Hunter was impracticable. The first application of this proposal was made by Deschamps just a century ago—namely, in 1798—who tied the common femoral for an inguinal aneurysm, an operation which was not followed by success. Since then it has been repeated many times, but has been limited almost entirely to aneurysms of the innominate trunk and of the arch of the aorta. Mr. Heath has recently published some remarks on this subject,[1] and Professor Le Dentu has contributed an elaborate paper.[2] The latter author refers to 126 cases in which the arteries at the root of the neck have been ligatured for innominate or aortic aneurysms, of which 94 involved the former trunk. There must therefore have been 32 cases of aortic aneurysm dealt with by distal ligature, and to many of these Mr. Heath refers in his paper.

The results have been on the whole encouraging, but the cases are so few that every one should be reported so that it may be clear as to whether or not it is a justifiable proceeding. In the case detailed below the conditions were singularly favourable, and although it is at present impossible to say what the final result will be, yet the improvement already attained is such as to warrant us in claiming distinct benefit from the operation, and, indeed, it is impossible to doubt that had the woman been left alone she would certainly have succumbed ere this, whereas she is at the present time walking about in comfort.

For the notes of the case we are indebted to our assiduous dresser, Mr. R. R. Mowll.

The patient, a widow aged 40 years, with two children, was sent to King's College Hospital by Dr. Corbyn, and admitted on December 26th, 1897.

History.—She was a cook, a total abstainer, and free from specific history. Twenty years before she had been the subject of gastric ulcer, with palpitation of the heart, and was at that time in the habit of taking large quantities of opium. She stated that her symptoms commenced five months previously with pain of a neuralgic character referred to the right shoulder, shooting down to the elbow, and extending up the left side of the neck and around the thorax. A swelling, about the size of a filbert, appeared close to the insertion of the left sterno-mastoid, but no pulsation was detected in it until a month before admission into hospital. It was early associated with dyspnœa on exertion and on carrying weights, and with some degree of dysphagia, the obstruction to the passage of food appearing to be located just behind the top of the sternum. She had also developed a troublesome dry cough of a ringing character, whilst the voice gradually became weaker. Six weeks before admission a severe attack of dyspnœa occurred, which was much aggravated on walking, and is stated to have been accompanied by complete aphonia: during the last month she had been much more comfortable, the pain and dyspnœa having been less, the cough not so troublesome, and the voice having returned.

State on Admission.—On examination of the neck and chest it was at once evident that there was a distinct prominence on the left side of the inner half of the clavicle and the first and second ribs. Very marked pulsation was also obvious in this region, and there was a large plexus of dilated veins beneath the skin. On palpation a swelling could be detected behind the insertion of the sterno-mastoid, extending inwards to the middle line, and outwards as far as the junction of the inner and middle thirds of the left clavicle. Its upper [illegible] could be clearly defined, reaching about an inch and a-half or two inches above the clavicle, but the lower border could not be felt, the swelling passing into the thorax. The portion which projected into the neck was about the size of a small orange, smooth in outline, and possessed of a characteristic expansile pulsation. The percussion note over the sternum and first two intercostal spaces was dull, the dulness extending outwards for at least 2 inches from the middle line, and downwards for 1½ inch from the top of the sternum. *No bruit* could be heard on auscultation, and the heart sounds were normal. The pulse in the left radial and temporal arteries was diminished and delayed, and there was some tugging on the trachea at each systole of the heart.

Diagnosis.—Such being the history and physical signs, there could be no question as to the diagnosis. One had evidently to deal with a case of aneurysm of the upper transverse portion of the arch of the aorta, which involved in addition the root of the left carotid and probably the origin of the subclavian on the same side. The [illegible] recurrent laryngeal nerve, with its resulting diminution of the voice and noisy cough, the presence of tracheal tugging, the effects produced in the pulse, both in the left radial and temporal arteries—all these facts pointed strongly to the aorta as being the primary seat of the aneurysmal change, and the extent of the external pulsation and of the area of dulness confirmed this opinion. At the same time, it was clear that the root of the carotid was seriously involved, and one could not but fear that the saccule forming above the clavicle was the chief site of danger, and might at any moment give way.

Treatment.—The patient was placed in a position of complete rest in bed, but the breathing was so bad that she had to be in the semi-recumbent posture with the head high. A light diet was ordered, consisting mainly of beef-tea, milk puddings, etc., and the amount of fluids was considerably reduced. During the twelve days that this *régime* was persisted in she suffered from many attacks of syncope of variable duration, sometimes three or four occurring on the same day. At these times her colour was extremely bad, the breathing very laboured, and she felt as if immediate death were impending. The carotid swelling also became more tense, and was evidently increasing in size and causing serious pressure upon the pneumogastric nerve.

First Operation.—Under these circumstances it seemed desirable to try to check the circulation through the carotid saccule, and so on January 1st, 1898, Mr. Carless (who was in charge of the wards during the Christmas vacation) tied the left common carotid. The operation was not an easy one, owing partly to the size of the aneurysm, and partly to the great distension of the veins in the neck. The incision had to be placed higher than usual, and thus the bifurcation of the carotid was first exposed. The common trunk was then traced down, and tied about an inch below the division, but the upper part of the aneurysm was distinctly seen during the necessary dissection. A triple strand of fine sulpho-chromic catgut was employed, and tied sufficiently firmly to divide the inner and middle coats. So many veins had been interfered with during the proceeding that it was thought wise to insert a small drainage tube, which was removed at the end of twenty-four hours. The wound was perfectly healed in eight days.

Effect of the Operation.—There was a slight increase on the tension of the sac for a short time, and the pulsations were rather more evident, but this soon passed off, and both tension and size gradually diminished. There was some temporary loss of power of the left side of the face and of the tongue, but this disappeared in a few days. Considerable pain was complained of over the left side of the chest, but was relieved by opium fomentations; there was also pain in the left arm. During the twelve days after the operation the patient expressed herself as feeling much better; the look of anxiety on her face to a large extent disappeared, and the syncopal attacks did not recur. The aneurysm during this period was slightly diminishing in size, but the pulsation still remained very evident, and on careful examination it appeared that compression of the left subclavian tended still further to decrease it.

Second Operation.—Twenty-four days after the first operation January

[1] British Medical Journal, February 19th, 1898.
[2] *Presse Médicale* March 2nd 1898

25th) this vessel was consequently tied by Mr. Rose in the third part with a triple strand of catgut, the artery being cleared sufficiently to demonstrate that no large branch arose at that point. The A.C.E. mixture was used as on the former occasion, and was administered most successfully by Dr. Silk. The wound healed perfectly without drainage, and was not dressed until the eighth day, when the stitches were removed. The left arm was wrapped in cotton wool and placed on a raised pillow, and for a day or two after the operation small doses of morphine were administered. On the first day it was found to be warm and free from numbness, and fourteen days later a fluttering pulsation was detected in the left radial.

After-history.—Four days after the second operation the patient had a violent paroxysm of coughing, attended with a fit of syncope. The temperature was 100.8°, the pulse small and rapid. The following day she was in a very critical condition, owing to the weakness of the heart's action, and as the syncopal attacks continued the patient was ordered tincture of digitalis (mx) with some spir. ammon. aromat. three times a day. This mixture was continued for some time, and had a most marked effect in steadying and strengthening the heart. On the first night natural sleep was procured, and gradually the attacks of syncope diminished in number and severity, so that on the fourteenth day after the ligature of the subclavian she was allowed to sit up. After a stay of four months in the hospital she was discharged to the convalescent home, her condition then being as follows: Marked pulsation was still noticeable at the root of the neck, and general bulging over the sterno-clavicular region, although this was much less extensive than when she came in. The distension of the veins over the neck and left arm was decidedly less. The upper part of the sac could be detected above the clavicle, but it was smaller and more solid, and the pulsation therein was less distinct; its upper border was fully an inch lower than when the patient was first seen. There was some tenderness on pressure over the inferior angle of the left scapula, but the lung sounds were normal. The first sound of the heart was prolonged at the apex; no *bruit* was to be heard either over the base or over the sac of the aneurysm; the patient was able to walk about with comfort, and was free from the feelings of oppression and breathlessness which were formerly so marked. She has been seen several times since her return from the convalescent home and the improvement is well maintained. The patient looks a different woman to what she was on her first admission. Her future will be noted with the greatest interest, and a further report will be made as to the ultimate issue.

The manner in which distal ligature brings about improvement in an aneurysm is not at all clear, and has been a fertile source of discussion. When an artery is tied on the proximal side the effect is at once obvious, since by this means the blood pressure is reduced practically to *nil*, and the only blood which can reach the sac does so in a regurgitant stream without force or impulse, and thus every advantage is given for contraction and gradual coagulation to occur. When, however, the vessel is tied beyond the aneurysm, a *cul-de-sac* is produced into which the blood is projected with the usual force, and seeing that there is no exit, it might be thought that the tension would be increased, and the aneurysm placed in a more than ever unfavourable condition. That this is not the case is evident from the fact that the tension diminishes after a short time, and that the blood in the aneurysmal sac coagulates. The explanations that have been forthcoming are somewhat varied. Thus it has been suggested that the clot which forms at the site of ligature gradually extends to the sac; this, however, has been proved in certain instances not to have taken place. Others have thought that the improvement was entirely due to the mechanical rest involved by the operation; certainly in this instance there is no indication that such an improvement would have occurred. For a fortnight the woman was kept absolutely quiet, but without the slightest benefit. As soon, however, as the carotid had been tied, amelioration in her condition appeared. A third suggestion that has been made is that the benefit is due to a derivation of blood to other channels, and this in measure must obtain. An increased amount of blood presumably passes through other vessels, and thus the strain on those involved in the aneurysm must be diminished. This idea will of course explain in part the shrinking of the dilated portion of the base of the carotid in this instance, but it is difficult to see how it acts when the arch of the aorta is alone involved. Le Dentu, in the paper quoted above, proposes another very feasible explanation of the diminution of tension which follows distal ligature—namely, that it is due to an aspiratory influence exercised by the blood stream upon the stagnant blood in the *cul-de-sac*. That such an influence could be at work in such a case as that quoted above cannot be questioned, but of course its effects would be diminished in cases of innominate aneurysm where only a part of the blood stream passing through the sac is cut off. At the same time it seems likely that other factors are brought into play, and in all probability the true mechanism by which the progress of the aneurysm is stayed is a very complicated and elaborate work, in which many conditions play parts of variable importance according to the peculiarities of the case.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Friday, November 25th, 1898.

JOHN LANGTON, F.R.C.S., President, in the Chair.

GUMMA OF LIVER.

MR. SPENCER described 3 cases in which relief followed operative measures. The cases suitable for such treatment were exceptional, being those in which there was a single gumma of the surface or edge, and where the liver was still unaffected by cirrhosis. An exposure of the tumour allowed a definite diagnosis to be made, and so a course of antisyphilitic remedies could be instituted. Case I was that of an unmarried cook admitted under Dr. Allchin to the Westminster Hospital. A tumour, apparently connected with the kidney, had slowly developed. On exposure a gumma of the free edge of the liver was discovered which had become united by adhesions to the abdominal wall, and which was overlapped by intestines. The mass was fixed in the wound, the interior scooped out, and the cavity filled with gauze. Healing rapidly occurred under antisyphilitic treatment. Case II was that of a widow, aged 33, admitted under Dr. de Havilland Hall. She had become ill a year before with enlargement of the liver, slight jaundice, and wasting. She was repeatedly tapped, but the fluid reaccumulated so quickly that she became exhausted. Drainage was resorted to at the operation. A digital exploration served to exclude malignant disease; there was some cirrhosis of the liver and a small gumma on the free edge. Iodide of potassium and mercury were therefore freely administered, and she left the hospital convalescent. But a complete restoration to health seemed impossible on account of the cirrhosis. Case III was that of a middle-aged woman seen ten years ago with Dr. Ferris, of Uxbridge. She had a large tumour growing from the liver which was about to ulcerate through the skin. In consideration of the fact that it would be practically impossible for a patient with cancer of the liver to survive until the growth had fungated through the skin, the mass was cut into and gummatous sloughs scooped out. The woman being thus freed from the effects of septic absorption, and being treated with antisyphilitic remedies, rapidly regained good health, and had remained healthy ever since. Mr. Spencer also referred to the removal of pedunculated gummata.

MR. R. C. LUCAS described the case of a female servant, aged 21, who had a tumour in the epigastric region evidently connected with the liver. He cut down in the middle line, found the tumour, and removed a portion; finding the cut surface of the tumour did not bleed, he closed the wound, and gave iodide of potassium in large doses, under which, in a year, she quite recovered. In another case, a woman, aged 38, had for two years had enlargement of the abdomen. Nothing was at that time done for her; but this year, in April, she returned to the hospital with a very large tumour, presumably of the liver. It had a nodular surface, probably due to liver substance, and not to tumour growth. He operated, and found the liver cirrhotic, but not after the manner associated with alcohol. The patient had been married eight years, but had never been pregnant; she was not addicted to drink. Large doses of iodide of potassium were given, and the patient was much benefited thereby.

THE PRESIDENT mentioned the case of a woman whom he had seen many years ago. She had a tumour of the liver, for which iodide of potassium was given, in the absence of indication for any other treatment. She recovered. It was curious that five of the six patients whose cases had been mentioned had been females; they were all probably cases of acquired syphilis, and had rapidly improved under treatment by iodide of potassium.

MR. SPENCER, in reply, said it was also curious that in none of the cases was there any history of the primary infection.

GREEN-COLOURED URINE.

DR. MORLEY FLETCHER, in a paper on this subject, enumerated the principal conditions in which green-coloured urine might occur. A case of green urine from a girl aged 12 was described. No source of the pigment was discovered. The urine was acid, and contained a large quantity of

indican. On filtration blue pigment granules were obtained. The urine on standing deposited greenish-blue uric acid crystals. At first it was thought that this was an instance of that extremely rare condition, namely, indigo in an acid urine. Spectroscopic examination showed, however, that the pigment was not indigo, but methylene blue. Another almost precisely similar case, occurring about the same time, was also quoted, in which the pigment likewise proved to be methylene blue. Experiments made with methylene blue, taken by the mouth, proved conclusively the nature of the pigment. It was pointed out that methylene blue located in the urine differed markedly in its spectrum and reactions from an aqueous solution of the same body, some compound probably being found in the urine.

Dr. A. Garrod said the urine in these cases was almost certainly coloured by methylene blue, though its presence was not accounted for. Green urine was very rare, and was generally due to indigo spontaneously separated out.

Operation for the Effects of Gastric Ulcer.

Mr. J. C. Wallis read notes of two cases which he had operated on for the effects of gastric ulcer. Case I.—A mother's help, aged 20, was admitted to the Metropolitan Hospital on March 11th, 1898, for a perforated gastric ulcer. She was operated on ten and a-half hours after perforation. On opening the abdomen, the extravasated contents of the stomach were found limited to the gastro-hepatic area. The rent was in the posterior wall, close to the cardiac end, and nearly one inch in length. This was sewn up by two rows of Lembert sutures, and a piece of omentum was sewn over this. The abdomen was wiped out with sponges, but no irrigation was employed and no drainage was used. The patient did well for eleven days, and had no peritonitis. On the eleventh day she developed phlebitis. On the seventeenth day basal pneumonia occurred, which continued until the twenty-ninth day, when the temperature came down and she began to improve. But on the thirty-first day she vomited suddenly 6 ounces of blood, and died within an hour. There was no *post-mortem* examination allowed. Mr. Wallis remarked on the cause of death by hæmorrhage thirty-one days after the operation as being unusual and unfortunate. He suggested that it might be advisable in many cases to enlarge the opening sufficiently so that an examination of the interior of the stomach might be made, and that a small electric lamp would be of great service in such cases. The fact that although the peritoneum was only wiped clean and not irrigated, there was no peritonitis, was in keeping with the now well-known resisting powers of the peritoneum. He had been led to adopt this method on account of the frequent occurrence of subphrenic abscesses after irrigation. Case II.—An unmarried lady, a patient of Dr. Fincastle Clark, was seen first in July, 1896. Her history dated from December, 1882, when she had an attack of gastro-enteritis, which lasted off and on until November, 1895, when on getting out of bed she was suddenly seized with the typical signs of a perforated gastric ulcer. From this she recovered, but from that time until the operation she was unable on account of pain to take exercise, and was only able to take fluid food in small quantities at a time. On examination she was seen to be extremely emaciated and weak, and the abdomen was tender when manipulated, especially above and to the right of the umbilicus, where there was a distinct sense of resistance. Dr. Abercrombie and Dr. Clark saw the patient with Mr. Wallis, and it was agreed that an exploratory laparotomy should be done. At the operation a strong cord, ¼ inch broad and 1¼ inch long, was found uniting the pyloric end of the stomach to the abdominal wall. This was removed. The patient made a complete recovery after a long convalescence, and was now able to enjoy her life after fourteen years of invalidism. The pain had never returned, and she had put on flesh and was able to take exercise, and as it was now two years since the operation, there were fair grounds for believing that the benefits would be permanent.

Dr. F. H. Hawkins (Reading) related the case of a girl, aged 18, in the Berkshire Hospital, who was anæmic, but had no symptoms definitely pointing to gastric ulcer. She one day had sudden pain, was brought to the hospital, was operated upon, recovered, and had since remained well. He raised the question whether an operation was essential in all cases of gastric perforation. He related two cases in which perforation occurred, and recovery ensued without operation.

Dr. Kingston Fowler would answer the question, Is an operation essential in such cases? in the negative. He narrated the case of a butler, long treated for gastric ulcer, who one day had sudden pain, with collapse, and whose liver dulness was on the following day quite gone. The patient refused operation, but stayed in hospital, was fed *per rectum* for a time, and to the surprise of everyone, recovered, the liver dulness gradually returning. So that perforation, with escape of gas into the peritoneum, was not always necessarily fatal.

Dr. Sidney Phillips said he had recently had much experience of gastric ulcers. Two were perforated, and both recovered without operation, in addition to another recovery after operation. In the first case there were the usual symptoms of perforation and disappearance of liver dulness. Under rectal feeding she improved, but as soon as food was given by the mouth the symptoms recurred, and the liver dulness again disappeared. Nutrient enemata were again used, and she ultimately recovered. The ulcer in this case was probably in the posterior wall. In another case, that of a girl aged 18, the pain was so acute that he thought it could not be due to perforation, especially as the liver dulness was normal. A couple of days later there were signs of local peritonitis. This was followed by another attack of pain, with loss of liver dulness. He held his hand, however, as the pulse was not snatchy or jerky, and there was no acute vomiting, and she was now recovering.

Dr. Lucas Benham observed that posterior ulcer was probably not as severe as one on the anterior wall which would burst into the general peritoneal cavity. He related the case of a middle-aged stout woman taken suddenly ill with great abdominal pain and diarrhœa. She improved under general treatment, but soon relapsed. The stools contained mucus and pus, and she ultimately died. *Post mortem* they found a perforated gastric ulcer the size of a shilling, which had ruptured into the posterior cavity of the peritoneum, and was so large that the contents of the stomach could pass freely in and out.

Mr. W. G. Spencer suggested that disappearance of liver dulness might sometimes be due to distension of the colon, which was strongly suggested by one of Dr. Phillips's cases; and he mentioned the case of a man with gastric symptoms and intestinal obstruction in whom the colon was markedly distended. *Post mortem* they found a duodenal ulcer of considerable dimensions, and the colon was extensively adherent to the duodenum, causing a kink in the colon. He also mentioned a recent case of pyloric obstruction for which he had done jejunostomy. In this case a fibrous band extended from the pylorus to the colon, causing its distension. For this latter symptom to possess any great value, it must be associated with a very rapid pulse, and in cases of perforation the pulse was rarely below 120 or 130.

Dr. Toogood related the case of a blacksmith, aged 45, who had been under treatment for gastric ulcer. After dinner one day he had acute pain with vomiting, and was admitted into the Lewisham Infirmary in a state of collapse. As the liver dulness had entirely disappeared, he cut down upon the stomach, but found it well dilated, so he stitched up the wound. The man died the same evening, and *post mortem* he found a very small aneurysm of the aorta which had ruptured. The pulse was between 130 and 140. He was unable to explain the disappearance of the liver dulness.

Mr. Charters Symonds described the case of a lady, aged 60, who for twenty five years had had symptoms resembling gall-stone colic. When seen she had great pain and was jaundiced, and the stomach was dilated as if from obstructed pylorus. An exploratory operation revealed a large stomach, and inside it at its centre an enormously thickened mass springing from the posterior wall, dividing the stomach at its centre into two cavities. There was no disease of liver; no gall stone. Believing the lesion to be malignant, he united the cardiac end of the stomach to the small intestine. She did well at first, but on the fifth day she sat up in bed, and died suddenly. *Post mortem*, the stomach was found filled with blood coming from an old ulcer, of which the thickened mass was the heaped-up border. On the posterior wall of the stomach was an enormous perforating ulcer, five inches in

iameter, the edges of which had become fixed to the parts n front of the spine. A second case was that of a gentleman, aged 46, who, after the age of 16, had had symptoms apparently typical of gall-stone colic. He was seized with agonising pain. Next day Mr. Symonds operated, and found the gall bladder healthy, but there were adhesions between the pylorus and duodenum, which were divided. The pain afterwards increased, and the stomach was after a time found to be dilated by Dr. T. J. Walker of Peterborough. At the second operation an ulcer was found on the gastric side of the pylorus; for this the pylorus was dilated, and the stomach united to the small intestine. Altogether this patient, in consequence of various adhesions, had had seven laparotomies performed, but he was now well. A third case was that of a girl in Guy's Hospital, who had the history of perforation of the stomach. There was an abscess in the middle line; when opened it gave exit to much foul-smelling pus that came from a cavity extending up to the diaphragm. There was a rent in the stomach which would admit three fingers: this being sewn up the patient did well. As to the desirability of operating in every case of supposed gastric perforation, he called to mind a man, aged 43, who at night had the typical symptoms; but operation was deferred until next morning, when he was found to have acute pneumonia, from which he recovered. Another case was that of a girl brought in that same night also with symptoms of gastric perforation. At the operation the stomach was found to be healthy, and the case was recorded as one of acute hysterical vomiting. Happily she recovered. He thought it was better to mop the peritoneum, and flush it as well. The pulse in perforation was not always rapid: he had seen it at 60 a minute, and a pulse of 30 with perforation of the stomach had been recorded.

Mr. WALLIS, in reply, believed that some cases of perforated gastric ulcer had occurred, and recovered without operation; but a far larger number had been followed by death from want of operation. Laparotomy was not a very terrible ordeal, and surgeons generally were convinced that perforation should be treated by operation. Obviously perforation of the posterior wall might be less dangerous than perforation of the anterior wall. Where the pus was fœtid it greatly resembled the pus from an appendicitis.

MEDICAL SOCIETY OF LONDON.

EDMUND OWEN, F.R.C.S., President, in the Chair.

Monday, November 28th, 1898.

COLEY'S FLUID IN THE TREATMENT OF SARCOMA.

THE PRESIDENT announced in connection with the report of a case of recovery from sarcoma after the injection of Coley's fluid[1] that one of the microscopists to whom the specimen had been entrusted for examination had expressed some doubts as to its sarcomatous character. After some discussion it was decided to refer the question to a subcommittee for further examination and report.

THE VALUE OF PRESSURE IN THE TREATMENT OF WOUNDS.

Mr. A. PEARCE GOULD discussed the value of pressure in the treatment of wounds, remarking that the importance of securing asepsis had revolutionised surgical procedure, and had shown the small part played by other measures in securing and in influencing the perfect repair of wounds. He thought there was a tendency to insist on details which were not of real importance, as for instance the enforcement of one position for days for the purpose of securing rest, which he described as an exaggeration. In respect of pressure he pointed out that it was largely ineffectual for the purposes for which it was employed, that it was often mischievous and might safely be dispensed with. Pressure was usually employed to secure apposition of the edges of wounds, to prevent oozing, to prevent bagging of fluid, to restrain muscular action, and to prevent the yielding of cicatrices. For some time past he had abandoned the use of pressure for these purposes, and the wounds had healed better, while the comfort of patients was greatly promoted. Pressure might easily prove harmful by provoking sloughing when there was a large flap, as after removal of the mamma. He had been struck by its inutility in certain cases, as where for instance fluid tended to collect beneath the flap after the edges had united. Pressure under these circumstances did not prevent the accumulation, whereas the insertion of a drainage tube at once overcame the difficulty. Pressure was equally inefficient when there was bagging of pus, when a counter-opening was required. Even when direct ill-effects were avoided, the good effects were often independent of the employment of pressure, equally good results being obtainable by means of a simple collodion dressing. He held that pressure was unnecessary even after such an operation as excision of the mamma. Even after laparotomy for removal of large ovarian cysts or for hysterectomy, a simple collodion dressing was better than mountains of cotton wool and the firm bandage that was still largely used.

The PRESIDENT raised the question whether the actual or potential space left after removal of the breast or a renal tumour was to be left without pressure of any kind for blood or serum to collect therein.

Mr. ALBAN DORAN said he had tried the effect of leaving off the strapping after abdominal operations, but on the whole he had come to the conclusion that the change was not an advantage. He thought it assisted the patient to pass flatus, which was the cardinal point in the after-treatment of these cases. By enabling the intestines to discharge this function, it also tended to prevent the stagnation of fæces. He therefore advocated firm but not tight pressure.

Mr. STANLEY BOYD asserted that pressure would not and could not succeed in obliterating the space beneath flaps or in preventing the accumulation of blood there. There were obviously certain places, such as the neck, where pressure could not be applied, and might be productive of harm if attempted. In the loin again he thought that pressure must necessarily be useless. He did not believe that one could prevent distension of intestines by a bandage, and he ridiculed the idea that pressure was needed to prevent the accumulation of blood in the abdominal veins. There were other ways of attaining the object in view, as, for instance, in perineorrhaphy, where Tait had taught them to use buried sutures in order to bring the deeper structures into apposition.

Mr. MARMADUKE SHEILD pointed out that no rule could be applicable to all cases. He adhered to the opinion that there were cases in which moderate pressure was advantageous, by securing coaptation of the surfaces. He recalled that the late Sir George Humphry used to dispense with dressings after amputation, and the stumps healed very readily, though this was in pre-Listerian days. He urged the necessity of keeping an open mind in all such matters. After inguinal colotomy, unless the parts were firmly supported, vomiting or coughing would not improbably lead to escape of intestine.

Mr. WALLIS admitted that there might be certain cases in which pressure might possibly be unnecessary. He advocated a middle course, preferring wherever possible to endeavour to approximate the tissues when closing the wound.

Dr. PEYTON BEALE pointed out that pressure was also used in order to keep dressings in place, a not unimportant detail.

Mr. GOULD, in reply, said that his remarks only applied to the treatment of wounds. He advised the President to use a drainage tube when there was oozing, instead of pressure. He did not believe that pressure would assist a patient in passing flatus, and he had had no trouble in this direction when he had not employed pressure. He added that when a person was suffering from indigestion and flatulence he did not button up his trousers tightly, but on the contrary made everything loose. He agreed that the plan of buried sutures was useful when applicable. With regard to the risk of escape of intestine after inguinal colotomy he said that he had never applied pressure in such cases. One had to place a pad over the wound, and just enough pressure to keep that in place. He pointed out that a bandage applied while the patient was breathing quietly under an anæsthetic would not be a safeguard when the patient began to vomit, because the abdominal muscles contracted and the abdomen became smaller, thus leaving a space beneath the bandage. With regard to serous exudations he thought that pressure was likelier to cause this condition than to prevent it. The bandage could not influence the arterial circulation, and pressure on the veins would favour effusion of serum. The very purposes for which pressure was usually employed had been obtained just as well without any pressure, so they ought to keep an open mind on this point. Hæmostasis was an important point, he admitted, but he

[1] BRITISH MEDICAL JOURNAL, November 19th, 1898.

attached less importance to pressure for this purpose now than he did five years ago.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Pathology.

Friday, November 4th, 1898.

J. M. Purser, M.D., President, in the Chair.

Diffuse Enchondroma of Thigh.

Mr. John Lentaigne read a communication on this subject.

Dr. E. J. McWeeney had made a microscopic examination, which showed the characters of hyaline enchondroma extremely well. The hyaline character of the matrix was very distinct, and a very large number of cartilage cells, some of them apparently in a germinating condition. Nearly all the enchondromata he had seen were of the fingers, and were of very regular, almost egg-shaped, outline, while this presented a very peculiar cauliflower sprouting which he had never previously seen. The central portion was composed of cancellous bone. It would be interesting to see whether there would be any tendency to generalisation of this tumour.

Tuberculosis Oculi.

Mr. J. B. Story showed two eyeballs removed for tuberculosis, and Mr. O'Sullivan exhibited and described the microscopic appearances. No. 1 was a case of tuberculosis of iris and ciliary body in a boy aged seventeen, presenting the ordinary characters. No. 2 was a case of localised tuberculosis of the intraocular end of the optic nerve, simulating papillitis with detached retina. It occurred in a healthy girl aged twenty-one. Mr. Story had never observed such a case, and believed it to be unique.

Dr. E. J. McWeeney said that the reason why they failed to find tubercles in the retina oftener than they did was, perhaps, because they failed to seek for them. As a rule the lesion of tuberculous eyes were more or less evident in front. He had had very favourable opportunities of seeking for the tubercle bacillus in eye specimens, as he had had specimens in which the condition was advanced and there was a good deal of caseation; where the anterior chamber was filled up with granulation tissue and giant cells with patches of caseation, and even here he found it a matter of the most extreme difficulty to demonstrate tubercle bacilli.

Dr. O'Sullivan, in reply, said that he had found a great deal of difficulty in getting the fuchsin out of the section after it was stained. He found no tubercle bacilli, and thought it possible that he had decolorised the bacilli, having had recourse to rather violent methods of getting the fuchsin out.

Bicuspid Aortic Opening.

Dr. H. C. Drury exhibited the heart of a man aged about 55, showing only two valves at the aortic opening. The condition during life was unknown, as the patient was admitted into hospital in a dying state, and lived only a few hours. There was atheromatous thickening of the aortic valves, which rendered them incompetent; also atheroma of the aorta above them. The other valves of the heart were normal, the pulmonary opening having three normal healthy valves. Though there was atheroma of the aorta and its valves, he considered that the bivalved condition was congenital, and not acquired by the adhesion of two, and subsequent absorption or ulceration of their attachment to the aorta, because (1) the valves were approximately equal in size and very large; (2) there was no evidence in either valve of a line of union. Their position was, one to the right and slightly posterior, the other to the left and slightly anterior—the slit between their free edges being directed from before and a little to the right, back, and a little to the left. The right appeared to represent the normal right posterior, with half anterior valves; the left representing the normal left posterior, with half anterior valves. There was a coronary opening behind each, the right coronary being situated behind the anterior part (half anterior valve) of the right valve; the left coronary behind the posterior part (left posterior valve) of the left valve. There was a distinct ridge behind the right valve, making a larger and smaller sinus in the aortic wall; from the smaller anterior sinus the right coronary artery arose. As there was atheromatous disease it was not quite clear whether this ridge was due to atheroma, or represented the normal division between the anterior and right posterior sinuses of Valsalva; but, judging from its position with respect to the right coronary opening, the latter view had strong support. There was no marked subdivision of the aortic wall behind the left valve.

Lesions of Heart.

Dr. J. B. Coleman exhibited a series of Hearts showing the following lesions:—(*a*) Pure aortic stenosis; (*b*) aortic insufficiency; (*c*) ulcerative endocarditis; (*d*) mitral stenosis and insufficiency; (*e*) hypertrophy and dilatation (chronic Bright's disease).

Septico-Pyæmia.

Dr. McWeeney gave an account of his study of a case of septico-pyæmia associated with acute suppurative arthritis in a boy aged 12, after a slight blow on the right knee from the swing-bar of a trapeze. Four days later the patient was admitted to the Mater Misericordiæ Hospital under the care of Mr. Lentaigne, with high fever and delirium. The knee was swollen and tender, but showed no trace of external injury. The joint was opened, a large amount of turbid, almost puriform, fluid evacuated, and the cavity washed out and drained. Next morning the temperature had fallen, but the patient seemed very weak, and developed pericarditis. Next day the temperature ran to 106°, with asthenic delirium, and and he sank. At the necropsy the points found were purulent infiltration of the soft parts surrounding the joint, an ecchymosis as big as a half-crown over the front of the inner condyle, a thin layer of purulent matter covering the crucial ligament, no suppuration of the lower epiphysis or diaphysis of the femur, no thrombosis of the popliteal vessels. Acute sero-fibrinous pericarditis, with suppurative myocarditis occurring in isolated foci as big as a pea in various parts of the myocardium, some of the foci being embedded in the muscle, some abutting like infarcts on the epicardium, and evidently of embolic origin. The lungs showed numerous septic infarcts, as did also the kidneys. There was incipient acute pleurisy on both sides. The case was evidently one of extremely acute generalised septic infection, starting from the knee, which had apparently become a *locus minoris resistentiæ* owing to the slight injury. The bacteriological examination revealed staphylococcus aureus in the fluid removed from the knee at the time of operation, and also in the pericardial fluid; also in the foci in the lungs, myocardium, and kidneys. How it had obtained entrance was not clear. The speaker demonstrated the cultures, and a series of microscopic slides, stained by the Weigert-Gram method, showing the cocci in the various organs. He also showed a preparation, made from his own finger, which had become infected at the necropsy without any wound, apparently along the shaft of a hair on the dorsal aspect of the second phalanx. In spite of active treatment a troublesome furuncle had resulted, the slough from which swarmed with the staphylococcus aureus. There was some lymphangitis, but he had fortunately escaped without glandular infection.

Pathological Ulnæ.

Dr. J. Knott exhibited and described a series of twenty-eight human Ulnæ, showing united fractures in various positions, rachitic curves, arthritic deposits and change of various kinds, illustrative of the principal pathological conditions of this bone. Two were young bones. One of these showed with beautiful distinctness two separate centres of ossification in the olecranon process.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Pathological Evening.

Edwin Lee, M.R.C.S., President, in the Chair.

Friday, November 18th, 1898.

Specimens.

A series of specimens of the various kinds of solid renal growths, with microscopic specimens, were exhibited.—Dr. Allan showed, among other specimens, a Foreign Body from the peritoneal cavity, a Syphilitic Tongue, and a Hypertrophied Tibia from a case of chronic ulcer of the leg.—Dr. Wardrop Griffith described and contrasted two specimens of Obstruction of the Inferior Vena Cava. In one the cause was aneurysm at the bifurcation of the aorta, with first pres-

sure on, and then communication with, the cava. The superficial abdominal veins were greatly enlarged. In the second example, occurring in a man who had died after an operation on the bladder, no symptoms were present during life. The obstruction was complete, and just above the junction of the renals. In this instance the collateral circulation was carried on entirely without the assistance of the superficial veins of the abdomen; this fact was accounted for by the obstruction having occurred so early that the developing vena cava—a late vessel to appear—had not fully taken over the functions of the cardinals, which therefore remained as unusually large azygos veins.—Dr. EURICH showed: (1) Specimen and microscopic sections of a Tumour of the Kidney removed *post mortem* from a child aged 2, and weighing 6¾ lbs. It was composed of small round-celled sarcomatous tissue, embedded in which was embryonic gland tissue. In its interior there was a hard nodule formed of embryonic striped muscle in different stages, and a few well-defined clusters of cells, either epithelial or endothelial—probably the former. The growth was in parts angiomatous and contained many hæmorrhages. The tumour should be classed among the teratomata. (2) Sections from a Perithelioma, a so-called "Psammoma," and a Cylindroma of the Brain. All three are really angio-sarcomata, the differences in their appearance being due to changes in their vessels, either in the direction of calcification or of hyaline degeneration. Both these changes might occur together; calcification was preceded by an obliterative endarteritic process. (3) Specimens of Malignant Disease (? Sarcoma) affecting the stomach, the ascending and transverse colon, and the rectum in a woman aged 29.—Dr. BRAITHWAITE showed a Cyst of the Great Omentum which had occurred in a female child aged 4 years. It occupied nearly the whole of the front of the abdomen. It was removed by operation in March, 1898, and found to contain between three and four pints of clear watery fluid. The cyst had walls about an eighth of an inch in thickness when it was empty of fluid, and its internal surface was speckled with patches, having an iridescent colour like mother-of-pearl. In addition to this larger cyst there were several much smaller ones, none, however, larger than a walnut. The patient recovered, and is now in good health. Two years previously the child's body was noticed to be very much bruised, but from what cause could not be ascertained. This might possibly have had some effect in originating the tumour.—Dr. WHITE showed microscopic specimens of Lardaceous Disease of the Kidney, Liver, and Spleen.—Mr. LITTLEWOOD showed a series of Twelve Kidneys removed either by lumbar or abdominal nephrectomy. The specimens included 3 of neoplasms, 3 of tuberculous disease, 2 of calculous disease, and 1 of septic pyelonephrosis.—Dr. BARRS showed a specimen of Typhoid Ulceration of the Large Intestine from the body of a young woman who died in the fifth week of the disease. The lesions showed the various stages, from a mere swelling of the solitary glands up to a commencing separation of a slough. There had been no relapse, and the patient had at no time been able to take solid food. A specimen of Typical Typhoidal Broncho-pneumonia was also shown from the same case.—Dr. CHURTON showed a specimen of Sarcoma of the Pancreas from a case in which there was glycosuria.—Mr. W. H. BROWN showed a piece of Gangrenous Intestine removed from a strangulated hernia.—Mr. NUNNELEY showed a specimen of Degeneration of an Eye, resulting from a foreign body resting on the retina for 30 years.—Mr. SECKER WALKER showed an eye affected with Secondary Glaucoma. Mr. NUNNELEY and Mr. WALKER also each showed a specimen of Intraocular Sarcoma.—Dr. TREVELYAN showed sections from Eczema of the Skin, death being due to other causes.—Mr. MOYNIHAN showed a series of Photographs and Lantern Slides, illustrating the anatomy of the duodenal fossæ and duodenal hernia.—An extensive series of Coloured Drawings were exhibited by Drs. BARRS and TREVELYAN. The Specimens some 60 in number—added to the Leeds Medical School Museum during the past eight months, were also shown.

LARYNGOLOGICAL SOCIETY OF LONDON.—At a meeting on November 4th, Mr. H. T. BUTLIN, President, in the chair, Professor MASSEI (Naples) showed a case of Lupus of the Larynx in a girl, aged 10 (with microscopical sections and drawings).—Dr. STCLAIR THOMSON showed a man, aged 51, with Hypertrophic Laryngitis of doubtful nature. He proposed to remove a portion of the growth from the right processus vocalis, and report to the Society as to its microscopical characters.—Dr. BARCLAY BARON (Bristol) showed (1) a man, aged 64, with Epithelioma of the Larynx; (2) a case of Growth in the Right Nostril of a woman, aged 34; (3) a young man who had a Blow on the Nose six months ago. Three weeks afterwards he noticed a swelling on the outside of the nose, and this had increased steadily. The case was shown to get the opinion of the members as to the nature of the swelling, Dr. Baron believing it to be inflammatory, with necrosis and sequestrum of cartilage as the cause of it.—Dr. WATSON WILLIAMS showed a man, aged 64, suffering from Cancer of the Œsophagus with Paralysis of one Vocal Cord.—Mr. ARTHUR CHEATLE showed a case of Paroxysmal Sneezing associated with Great Hypertrophy of Tissues in Neighbourhood of the Septal Tubercle. The patient had been shown at the June meeting.—Dr. PEGLER showed a case in which a Growth in the Anterior Commissure had been removed, but Paresis of the Right Cord remained. The patient was shown at the March meeting.—Dr. J. W. BOND showed (1) a case of Large Angioma of the Larynx in a man, aged 55. He proposed to perform thyrotomy and freely excise the disease. (2) A Woman, aged 49, with a Large Lipoma of the Soft Palate.—Mr. STEWART showed (for Mr. SYMONDS) a man, aged 55, with Doubtful Epithelioma of Larynx.—Mr. LAKE showed (1) a girl, aged 21, with Tuberculous Laryngitis after Removal of a Large Interarytænoid Mass; (2) a case of Membranous Laryngitis in a man, aged 25, the subject of a laryngitis of combined tuberculous and syphilitic origin.—Dr. WILLIAM HILL showed (1) a woman, aged 24, with Paresis of the Right Facial Nerve and of the Right Side of the Palate following Tympanic Suppuration; (2) a man, aged 40, on whom he had recently operated for Chronic Suppuration of the Frontal Sinus by the Ogston-Luc Method.—Mr. CRESSWELL BABER showed a case of (?) Œsophageal Pouch in a man, aged 62.—Mr. MORLEY AGAR showed an exceptional case of Cleft Palate. The bony cleft was on the left side, and only showed the inferior turbinate in its whole length. There was also some deformity of the vomer.—Mr. PARKER showed a case of Ulceration of the Soft Palate in a man, aged 32. The diagnosis lay between tertiary syphilis and tuberculosis. The former seemed to be more probable.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At a meeting on November 23rd, Dr. RADCLIFFE CROCKER, President, in the chair, the following cases were shown and discussed:—The PRESIDENT: (1) A little boy, 5 years old, suffering from Lichen Scrofulosorum Pilaris; (2) a female, aged 20, with Leucodermic Patches in Neck; (3) a case of Mixed Sclerodermia in a male, aged 19.—Dr. F. PAYNE showed a case of Acne Keloid (? sycosis frambœsiformis) in a man of about 50; the growth was on the scalp. Dr. A. EDDOWES showed (1) a case of Persistent Erythema with Lichenoid Affection of Limbs in a woman of about 45; it was generally regarded as a case of atypical lichen planus; (2) a case of Typical Lichen Planus.—Dr. T. D. SAVILL showed a case of Eczema in a Baby.—Mr. CAMPBELL WILLIAMS read a paper on Congenital Syphilis: a New Theory.—Dr. HALL (Sheffield) showed photographs of a case of Hard Sores on the Hands. He also read notes of a case of Eczema produced by Phenylhydrazin Hydrochlorate.—The papers and cases were discussed by the PRESIDENT, by Dr. F. PAYNE, Dr. MOUILLOT (Harrogate), Dr. A. EDDOWES, Dr. SHAW-MACKENZIE, Dr. OGILVIE, Dr. T. D. SAVILL, and Dr. HALL.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 10th, the PRESIDENT, Dr. Alfred Robinson (Rotherham), in the chair, Dr. SORLEY showed a case of Lateral Sclerosis.—Mr. LOCKWOOD related a case of Foreign Body in the Cheek. A girl, aged 29, was admitted into hospital with a suppurating sinus of the cheek. On examination under ether, what was thought to be necrosed bone was found to be a piece of glass, 2⅛ inches in length. It had perforated the malar bone, passed through the antrum of Highmore, along its orbital surface towards the posterior nares. The history was that twelve months previously she had fallen

upon the fender and sustained a wound which had never healed. Mr. Lockwood also showed a case of Myositis Ossificans Multiplex Progressiva, and a Fœtus with Gastrochisis.—Mr. Herbert Hallam showed a case of Adenosarcoma, which commenced in the cervical glands seven years ago.—Dr. Archibald Cuff showed a child presenting a well-marked example of Langdon Down's Mongolian Type of Idiocy.—Mr. Connell showed: (1) a patient who had been operated on for Purulent Peritonitis; (2) a morbid specimen of Phagedæna of the Penis; (3) microscopic slides from a case of Relapsing Appendicitis.—Dr. Burgess showed two cases of Patent and Dilated Ductus Arteriosus.—Dr. Arthur Hall showed: (1) a case of very large and numerous Gouty Tophi; (2) a case of Syphilitic Rosacea; and (3) a series of naked-eye and microscopical sections illustrating Exopthalmic Goitre.—Dr. Godfrey Carter read a paper on the Etiology of Graves's Disease. The President, Dr. Archibald Cuff, Dr. Leonard Giles, Mr. Dale James, Dr. Wilkinson, Mr. Garrard, and Dr. Waddy made remarks.

Ulster Medical Society.—The annual dinner of the Ulster Medical Society was held in the Princes' Restaurant, Belfast, on November 24th. Sixty-one members and guests sat down, the chair being occupied by the President of the Society (Dr. Joseph Nelson), who had upon his right Dr. Hamilton (President of the Queen's College), Dr. O'Neill (President of the North of Ireland Branch of the British Medical Association), Dr. W. A. McKeown, Professor Byers, Professor Sinclair, Dr. King Kerr, and upon his left Dr. J. A. Lindsay (ex-President of the Society), Colonel Moore (Royal Army Medical Corps), Dr. Walton Browne, Professor Whitla, Dr. Dempsey, and Brigade-Surgeon McFarland.—After the usual loyal toasts had been duly honoured, Dr. Kevin proposed the toast of "The Lord Lieutenant and Prosperity to Ireland." He complimented his Excellency upon his courageous declaration regarding university education in Ireland which he made on the occasion of his recent State visit to Belfast. Brigade-Surgeon McFarland responded.—Dr. King Kerr, in proposing "The Queen's College and Belfast Medical School," spoke of the satisfaction with which old Queen's men saw their Alma Mater advancing with the times, and by means of additional chairs and lectureships and new laboratories for research keeping up the standard of medical education. President Hamilton, in reply, recounted some of the recent honours won by students of the Queen's College, and threw out the hint that possibly serious changes were impending in Irish University education. Professor Byers, who also responded, complained of the very inadequate representation of the Belfast Medical School upon the Examining Board of the Royal University for medical degrees. The school sent up about 50 per cent. of the candidates for the degree of M.B., but had only two representatives upon an Examining Board of twelve. Dr. Calwell also responded as representing the clinical side of the school, and expressed the hope that clinical teaching would receive a great impetus from the erection of the new hospital.—Dr. Lindsay, who proposed "The British Medical Association," traced the progress of the Association from a small provincial body in England till it became national, and finally in these latter years imperial in its aims and scope. Dr. O'Neill (President of the North of Ireland Branch) and Dr. Campbell (Secretary) responded.—Professor Whitla proposed the toast of "The Army, Navy, and Reserve Forces," to which Colonel Moore, R.A.M.C., responded.—The toast of "The President of the Society" was proposed by Dr. Walton Browne, who alluded to his long-standing acquaintance with Dr. Nelson, and to the latter's many excellent qualities as a surgeon and as a friend. The toast was received with great cordiality; and Dr. Nelson made an appropriate reply.—The proceedings were agreeably diversified by the performance of a series of selections by a string band, while Dr. Mackenzie and Dr. McCullagh each contributed a solo, and Dr. Morrow a recitation. Dr. Haydn Mulholland acted as accompanist.

A Society of Biology and Philosophy has recently been founded in Madrid under the auspices of the distinguished Editor of the *Siglo Medico*, Dr. Don Matias Nieto Serrano, Marquis de Guadalerzas.

REVIEWS.

A Clinical Treatise on Diseases of the Breast. By A. Marmaduke Sheild, M.B.Cantab., F.R.C.S., Senior Assistant-Surgeon and Lecturer on Practical Surgery to St. George's Hospital, etc. London: Macmillan and Co. 1898. (Demy 8vo, pp. 526, 58 illustrations. 15s.)

This work is what it professes to be, and more also. By no means the least interesting portion of the work is the brief discussion on some of the interesting pathological points arising in the study of mammary growths. A certain freshness and novelty of thought are frequent and striking, and lend to the volume a charm which is all too conspicuous by its absence in not a few medical works. On the subject of the pathology of cancer there is an adequate exposition. The author writes: "I believe it to be impossible to deny that the connective tissue cells do not share in the proliferative process so remarkable in cancer, even if the disease does not commence in them." Most pathologists, perhaps, consider the question settled, but it is well that the present doctrine, correct or not, should suffer challenge from fresh or newly-interpreted evidence, from time to time. The arguments for and against the parasitic origin of cancer are succinctly stated, but the recent researches of Roncali and Sanfelice, omitted altogether here, are worthy of some attention. They are probably of greater importance than any other investigations so far made public.

These few references to the pathology in the work are given to show that the restrictive term "clinical" in the title is overmodest. The clinical pictures are drawn in a masterly way; the descriptions are full, telling, and accurate. The account of Paget's eczema, for instance, is quite the best in our language. The author has come to the conclusion that the name "superficial carcinoma of the skin" would be very appropriate. With regard to its causation, he says: "The clinical appearances of this disease in typical cases are so striking, and utterly unlike any other cutaneous disorder, that I feel confident there is a definite pathological explanation, and this may yet be found in the undoubted demonstration of some parasitic element." The spread of the malady into the mamma by way of the ducts seems clear enough.

A simple classification of the various forms of breast tumour is given. It is an easy matter to divide and subdivide the varied forms of neoplasm into genera, subgenera, species, and varieties. As an intellectual exercise it may have its advantages. From the standpoint of clinical utility there is nothing to recommend it. The classification here given is simple but sufficient. Fibroma and adenoma in their purest, authentic forms are rare. The name "fibro-adenoma" is applied to the usual mammary neoplasm occurring in young women, for "the common innocent tumour of the breast in young women is composed of both fibrous and glandular elements, mixed in various proportions." They are firm in texture, slow in growth, and encapsuled; they are usually benign, and not recurrent; and they are prone to undergo cystic changes. Their alliance with sarcomata is recognised in the following passage: "A woman may bear in her breast a tumour of the fibro-adenomatous variety which may have existed for ten years or more, giving her little or no trouble. Suddenly, with no marked reason, the growth takes on a rapid increase, and in three months may double its size. On removal it will be found at one spot associated with a mass of undoubtedly sarcomatous tissue." Sarcomata are considered far from common affections. They are encapsuled, at any rate in their earlier stages. Cystic change in them is generally associated with great size. They are usually single, and form firm, lobulated tumours devoid of the hardness and extreme mobility of fibro-adenoma. Complete removal, including the axillary fasciæ and glands is advocated. Prognosis is good or ill according to the rate of growth.

The section of the work, occupying some 200 pages, that deals with carcinoma is the fullest, most complete, and latest authoritative account that has appeared in England. All the points of interest receive full consideration, but that of chief importance is probably the attempted comparison between the results of the "complete" and "incomplete" operations. It will be remembered that the discussion at the Royal Medi-

cal and Chirurgical Society last session originated in a paper of Mr. Sheild's. The opinions expressed in that discussion are reproduced here. The comparison between the two classes of operations is hardly a just one. At the present day, every tumour of the breast is presumably subjected to minute and complete examination. Every case published by a surgeon in the position of Halsted (who is quoted) as cancer may be unhesitatingly accepted as such. It is, we think, more than probable that twenty years ago a series of cases of "cancer" would contain not a few instances of innocent disease. Microscopic examination was not then routine, nor particularly accurate, as modern notions go. And further, a point that is worthy of frequent reiteration is that, as every operating surgeon knows, the axillary glands when largely infiltrated with cancer may give no sign of this development. The history of cases of carcinoma of the mamma is very varied, and prognosis, as Mr. Sheild constantly impresses on his reader, should always be guarded. We are as yet only at the threshold of inquiry.

In conclusion, we heartily congratulate Mr. Sheild on a difficult task brilliantly accomplished. The whole subject is dealt with in a manner completely satisfactory, and worthy of high praise. Not the least of the many good points is the fluent and graceful, and withal forcible, style maintained throughout the work, which makes it a pleasure to read the book.

Diphtherie und diphtheritische Croup. [Diphtheria and Diphtheritic Croup.] Von Dr. Adolf Baginsky. Vienna: Alfred Hölder. 1898. (Imp. 8vo, pp. 374; 68 illustrations. M.11 60.)

Diphtheria, from whatever point of view we regard it, is a disease of such commanding interest that a work upon it from the pen of a physician and investigator so well known as Professor A. Baginsky is sure of a favourable reception, for few men are so competent as he is to treat every aspect of the subject.

After an account of the history of the disease he discusses its etiology and pathogenesis. This section includes two parts—the one general; the other, the more special, dealing with the contagion itself. Under the former are considered the geographical distribution and seasonal occurrence, the relation of cleanliness, social position, dwellings, and sewer gas to diphtheria, the questions of age, sex, race, and predisposition; and, finally, the important subject of the spread of the disease. A table based on 2,711 of the author's own cases shows that the age-period during the incidence was greatest from the end of the first to the end of the fourth year.

The chapter which deals with the diphtheria bacillus will undoubtedly be looked into with exceptional interest, as it treats of a subject to which we owe nearly the whole of the recent immense increase of knowledge as to diphtheria. The satisfactory character of this chapter is due to the fact that the author is possessed of laboratory as well as clinical experience. The method of double staining introduced by Neisser is commended, and is looked upon by Professor Baginsky as being of much importance in distinguishing the true diphtheria bacillus from the pseudo-bacillus, as well as from other microbes. The question of the associates of the diphtheria bacillus is also discussed. A comparatively brief reference is made to the possible conveyance of diphtheria by animals, but among them the cat is not included. The section on the pathological anatomy is well worked out, and especially, perhaps, the cardiac lesions.

In discussing the symptomatology, Dr. Baginsky divides the disease into (1) local diphtheria, (2) the general infection produced by diphtheria, and (3) septic diphtheria. Many subjects which have recently attracted attention, such as diphtheria without membrane, follicular diphtheria, chronic diphtheria, latent diphtheria will be found considered here. The symptoms are also further discussed under the various organs and systems, and here special attention is given to the important cardiac symptoms. The complications and sequelæ are mainly dealt with under diphtherial paralysis, cardiac paralysis, and renal affections. Diphtherial croup, as well as nasal, conjunctival, and cutaneous diphtheria, etc., are also specially described. The combination of diphtheria with other infections, and particularly with scarlet fever, is briefly discussed.

The value of bacteriological examination in the diagnosis of doubtful cases is emphasised, and in the remarks on prognosis the diminished mortality under efficient serum treatment noted.

The treatment described includes prophylaxis as well as local and general treatment. The scientific basis of the serum treatment, the dose required, the method of administration, the effects produced on the various symptoms are all carefully described. The objections raised against the serum treatment are not lost sight of. The author looks upon it as proved that the anti-diphtheria serum is a sure and efficient agent provided that it is given in sufficient quantities, and at a sufficiently early date. He is also of opinion that the complications and sequelæ are diminished by the early serum treatment.

Finally, the procedures of intubation (with illustrations) and tracheotomy, with their indications, are described. The striking disappearance even of threatening symptoms of laryngeal obstruction under the serum treatment is noted, but, on the other hand, the danger of undue postponement of the measures directed to the relief of the obstruction is insisted on. Professor Baginsky points out also that the prognosis after tracheotomy is also much improved as compared with the almost hopeless outlook in the days before serotherapy was introduced.

The above paragraphs will give some idea of the completeness of this work, and it is only necessary to add that all parts of the subject are treated with the skill and efficiency which we expect to find from a physician and pathologist of so much experience and such sound judgment as Professor Baginsky. His book well deserves a place by the side of the other excellent volumes belonging to the comprehensive series of works on special Pathology and Treatment edited by Professor Nothnagel, of Vienna.

L'Occlusion Intestinale. [Intestinal Obstruction.] Par D. Banby, Chef de Travaux de Médecine Operatoire à la Faculté de Toulouse, Chirurgien des Hôpitaux. Paris: Masson et Cie. (Crown 8vo, pp. 206. Fr. 2.50.)

The subject of intestinal obstruction is one of the most interesting and one of the most difficult in the whole realm of surgery. The frequency of the condition, the almost insurmountable difficulties in exact diagnosis, the vexed question of the most appropriate treatment, and, lastly, the enormous mortality, even under the best circumstances, suffice to render the subject one worthy of unsparing investigation. The present volume pretends to nothing more than a general survey of the whole matter. It is divided into three sections, the first dealing with etiology and pathogeny, the second with the clinical aspects of the disease, and the third with treatment. In the first, the classifications of Leichtenstern and Treves are followed fairly closely. No better arrangement could be desired. The clinical pictures in the second section are clearly, boldly, and effectively drawn.

The chief interest in the work centres, however, in the section on therapeusis. The importance of this branch is shown by the large share of space allotted to it. The operation of enterostomy, which has of late seemed to be losing its hold upon the affections of surgeons, is very wisely recommended in extremely urgent cases. The dictum of Von Wahl that a laparotomy without diagnosis is merely vivisection is very properly refuted. More importance should have been laid upon the fact that intestinal obstruction kills by poisoning, and not from any mechanical results of the block. The emptying of the bowel above the place of constriction is therefore urgently demanded practically in all cases. This should have been emphasised very strongly. The book can be recommended as an adequate presentation, in miniature, of our present knowledge. References to French authors are numerous, to German scattered, and to English lacking.

A Vaccination Romance.

Doctor Therne. By H. Rider Haggard, author of *She: Allan Quatermain:* etc. London, New York, and Bombay: Longmans, Green and Co. 1898. (Cr. 8vo, pp. 262. 3s. 6d.)

Vaccination seems to be on the way to become a popular subject with writers of romance. One of the best of the stories

in Mr. Rudyard Kipling's last volume turns on this subject, and this week Mr. Rider Haggard presents us with a romance in which the whole plot—and a very good one it is—turns on the antivaccinist agitation. The story, the date of which is put some twenty years in the future, is an autobiography of Dr. Therne, a clever fellow and a master of his "trade," as he calls it, but of a shifty, selfish, unscrupulous character.

After a romantic episode in Mexico, which gives the hero a wife and the author an opportunity to write a graphic description of a town stricken by small-pox, Dr. Therne settles in practice in the English town of Dunchester. He rather rapidly attains considerable success, but his prospects are wrecked and his home destroyed by an unfounded charge of carrying puerperal fever to a lady on whom he had attended. In his moment of extremest despondency, when he is contemplating suicide, he is befriended by a rich antivaccinator, who is an honest fanatic. He is first of all induced to accept a salary from the antivaccinators to inquire into cases of alleged ill-effects produced by vaccination. He himself remains convinced of the value of Jenner's discovery, and while pleasing his antivaccination friends does not commit himself distinctly on their side. At length he is pushed over the Rubicon by an offer of support with money and influence if he will stand for Parliament in the Radical and antivaccination interest. There is a brief struggle, not exactly between ambition and conscience, but rather between his ambition and his intellect. He is able to repeat all the party shibboleths till he comes to antivaccination. Then the leader of the party quickly detects some hesitation, and this is what ensues:

Let's understand each other. If you have any doubts about this matter say so, and we will have done with it, for, remember, once you are on the platform you've got to go the whole hog; none of your scientific finicking, but appeals to the people to rise up in their thousands and save their innocent children from being offered to the Moloch of vaccination, with enlarged photographs of nasty-looking cases, and the rest of it.

I listened and shivered. The inquiry into rare cases of disease after vaccination had been interesting work, which, whatever deductions people might choose to draw, in fact committed me to nothing. But to become one of the ragged little regiment of medical dissenters, to swallow all the unscientific follies of the antivaccination agitators, to make myself responsible for and to promulgate their distorted figures and wild statements—ah! that was another thing. Must I appear upon platforms and denounce this wonderful discovery as the "law of useless infanticide?" Must I tell people that "small-pox is really a curative process, and not the deadly scourge and pestilence that doctors pretend it to be?" Must I maintain "that vaccination never did, never does, and never can prevent even a single case of small-pox?" Must I hold it up as a "law (!) of devil worship and human sacrifice to idols"?

He overcomes his intellectual repugnance and the following chapters give a life-like description of the humours of a contested election in which the "A.V.'s." were the leading fighters on the Radical side. At his first meeting Dr. Therne made a speech in which he "went the whole hog," for, as he says, "having acted the great lie of espousing the antivaccination cause I felt that it was not worth while to hesitate in telling other lies in support of it." So he made the regulation antivaccinationist speech, and in his peroration called on his audience "as free men to rise against this monstrous tyranny and to put a stop to this system of organised and judicial infanticide," etc., etc.

As I sat down the whole of that great audience—it numbered more than 2,000—rose in their places shouting "We will! we will!" after which followed a scene of enthusiasm such as I had never seen before, emphasised by cries of "We are free Englishmen," "Down with the baby-butchers," "We will put you in, Sir," and so forth.

That meeting gave me my cue, and thenceforward, leaving almost every other topic on one side, I and my workers devoted ourselves to preaching the antivaccination doctrines. We flooded the constituency with tracts headed "What Vaccination Does," "The Law of Useless Infanticide," "The Vaccine Tyranny," "Is Vaccination a Fraud?" and so forth, and with horrible pictures of calves stretched out by pulleys, gagged and blindfolded, with their under parts covered by vaccine vesicles. Also we had photographs of children suffering from the effects of improper or unclean vaccination, which, by means of magic lantern slides, could be thrown life-size on a screen: indeed, one or two such children themselves were taken round to meetings and their sores exhibited.

The effect of all this was wonderful, for I know of nothing capable of rousing honest but ignorant people to greater rage and enthusiasm than this antivaccination cry. They believe it to be true, or at least seeing one or two cases in which it is true, and never having seen a case of small-pox, they suppose that the whole race is being poisoned by wicked doctors for their own gain. Hence their fierce energy and heartfelt indignation.

He is elected by a small majority, and in his first session witnesses the passage of the Vaccination Act of 1898, with its conscience clause. Mr. Haggard is very angry with the present Government, too angry to be just, for if antivaccination is not to be found in the dusty manuscript of the Newcastle programme it was a common plank in Radical platforms erected for local purposes.

Dr. Therne retains his seat for some twenty years or more, inherits the wealth of his early benefactor, and gradually gains some considerable parliamentary reputation. But Nemesis is at hand. This, he says, is what happened:

Since the passing of the famous Conscience Clause, many years before, as was anticipated would be the case, and as the antivaccinators intended should be the case, vaccination had become a dead letter amongst at least 75 per cent. of the people. Our various societies and agents were not content to let things take their course, and to allow parents to vaccinate their children or to leave them unvaccinated as they might think fit. On the contrary, we had instituted a house to house canvass, and our visitors took with them forms of conscientious objection, to be filled in by parents or guardians, and legally witnessed.

At first the magistrates refused to accept these forms, but after a while, when they found how impossible it was to dive into a man's conscience, and to decide what was or what was not "conscientious objection," they received them as sufficient evidence, provided only that they were sworn before some one entitled to administer oaths. Many of the objectors did not even take the trouble to do as much as this, for within five years of the passing of the Act, in practice the vaccination laws ceased to exist. The burden of prosecution rested with Boards of Guardians, popularly elected bodies; and what Board was likely to go to the trouble of working up a case and to the expense of bringing it before the court, when, to produce a complete defence, the defendant need only declare that he had a conscientious objection to the law under which the information was laid against him? Many idle or obstinate or prejudiced people would develop conscientious objections to anything which gives trouble or that they happen to dislike. For instance, if the same principle were applied to education, I believe that within a very few years not 25 per cent. of the children belonging to the classes that are educated out of the rates would ever pass the School Board standards.

Once again there is a general election, and Therne's seat is contested. At the same moment, small-pox is brought by a tramp into the town—the incident of the delirious tramp and his wild gambols is told with unsparing realism—and then follows the catastrophe which sends Dr. Therne into obscurity, a childless, broken man. The exact nature of the tragic ending we may leave readers to discover for themselves, but the vaccination of the antivaccinationist leader in fear of the epidemic is an incident not without historical basis in fact.

Mr. Rider Haggard has got up his subject carefully. His references to medical matters and his mastery of antivaccinationist phraseology show that he has studied its details thoroughly. Moreover, he knows his antivaccinator well, and familiarity has not bred respect. The honest fanatic, the designing agitator, and the ignorant dupe all appear in his pages, and are sketched with a master's hand. Most graphic, too, are the descriptions of what epidemic small-pox really is. The words which are put into the mouth of the repentant antivaccinator—repentant because exposed—ought to be in the memory of every defender of vaccination. He admits to himself that Jenner's discovery is one of the greatest boons—perhaps after the introduction of antiseptics and anæsthetics the very greatest—that has ever been bestowed upon suffering humanity.

"If the reader has any doubts upon the point, let him imagine a time when, as used to happen in the days of our forefathers, almost everybody suffered from small-pox at some period of their lives, those escaping only whose blood was so fortified by Nature that the disease could not touch them. Let him imagine a state of affairs—and there are still people living whose parents could remember it—when for a woman not to be pitted with small-pox was to give her some claim to beauty, however homely might be her features. Lastly, let him imagine what all this means: what terror walked abroad when it was common for small-pox to strike a family of children, and when the parents, themselves the survivors of similar catastrophes, knew well that before it left the house it would take its tithe of those beloved lives. Let him look at the brasses in our old churches and among the numbers of children represented on them as kneeling behind their parents; let him note what a large proportion pray with their hands open. Of these, the most, I believe, were cut off by small-pox. Let him search the registers, and they will tell the same tale. Let him ask old people of what their mothers told them when they were young of the working of this pestilence in their youth. Finally, let him consider how it comes about, if vaccination is a fraud, that some nine hundred and ninety-nine medical men out of every thousand, not in England only, but in all civilised countries, place so firm a belief in its virtue. Are the doctors of the world all

mad, or all engaged in a great conspiracy to suppress the truth?"

We must admit that in the quotations made we have not done justice to Mr. Haggard's story. We have for our purpose chosen polemical passages, but the story as a story carries the reader along, and will be eagerly read for the sake of its vivid pictures of life and its powerful study of a complex human character by those who would never trouble their heads about vaccination further than to be revaccinated when an epidemic is threatening. By writing it the author has done a great service to the cause of truth against falsehood, of knowledge against ignorance, and of experience against folly and knavery.

NOTES ON BOOKS.

Christmas Books.

The approach of Christmas is, as always, heralded by the appearance of a great multitude of books intended by those who present them to the world to serve as Christmas presents, especially for those "children and young persons" who are more ready to receive with enthusiasm the gift of a book at this than at any other season of the year. Any man of middle age who will recall the children's books and boys' books of his youth, the gaudy pictures, the ineffectual covers, and in the case of cheap editions of old favourites the bad paper and slovenly printing, will find a marvellous change and will note with pleasure and hope the greater care and the higher artistic skill now given to these matters. The change indicates without doubt an elevation of public taste and a progressive increase in the number of persons who care to buy beautiful books.

One of the most original gift books of the season, *A Child's Book of Saints* (5s. nett), by William Canton, is sent to us by Messrs. Dent and Co. The stories which it contains were told to a child, and they are written here in what one critic has called a "poet's prose," good English prose at any rate, in which sound is matched with sense, so that the writing has a character and literary flavour of its own. The saints are not all very familiar, nor are the stories exactly the orthodox stories of the saints, but they are conceived as well as they are told, and the volume, with its gentle strain of high moral teaching, will appeal perhaps as much to children of a larger growth as to those to whom it is ostensibly addressed. It is beautifully printed and bound and contains a series of drawings by J. H. Robinson which in grace of line and charm of conception are not unworthy of the text. A book which perhaps deserves to be mentioned near this is *A Puzzling Pair* by Amy Le Feuvre (the Religious Tract Society, 3s. 6d.), for though it brings us down to everyday life, yet the author shows much imaginative insight into the thoughts of young children, who live so much in a world by themselves. The title is well chosen, for the two children with their quick wits, vivid imaginations, and singular capacity for getting into scrapes, must have been a sore puzzle to their elders. The same Society publishes *Fairy Tales from Far Japan* (2s. 6d.), translated by Miss Susan Ballard, of the St. Hilda Mission, Tokyo. The selection is approved by Mrs. Isabella L. Bishop, who in a short introduction describes the tales as among the most popular specimens of Japanese fairylore beloved of native children. They are delightfully simple and characteristic, and will afford a new sensation to most British children, through the reproductions of native drawings might have been better.

Miss (or is it Mrs.?) Amelia Hutchison Stirling, M.A., has in *The Reign of Princess Naska* (Blackie and Son, London, Glasgow, and Dublin, 2s. 6d.) been successful in the very difficult task of writing a good story belonging to the class of which that immortal work *The Rose and the Ring* is the prototype. Her success is the more remarkable because previous experiments might have been taken to prove that such stories must be humorous, whereas this is pathetic. The book, which is prettily bound and well illustrated, is one of those which girls will like much, and their elders perhaps more. There is a moral, but it is not obtruded, nor is the pathos forced.

Messrs. T. Nelson and Sons (London, Edinburgh, and New York) have issued some excellent boys' books for the season. First we may in a medical journal most appropriately place *The Dormitory Flag*, by Harold Avery (5s.), a story of schoolboy life, because the concluding chapters tell very well a later adventure of two of the boys, who have become the one a subaltern and the other a surgeon in the army. They find themselves together, the only British officers, in the desperate defence of a small fort on the frontier of India. The incident of the surgeon who strikes a match at the risk of drawing the fire of the enemy at close quarters in order to examine his friend's wound is founded on fact, and the whole account of the obscure fight illumined to the world by this chivalrous deed is well told. Another book issued by the same publishers, *The White North* (2s.) by M. Douglas contains sketches of some of the Polar expeditions which have been conducted by other nations—the Swedish expedition under Nordenskiold, the ill-fated American expedition of de Long, and Nansen's successful voyage in the *Fram*. The last chapters contain an account of the Jackson-Harmsworth expedition. The volume, which is sure to interest every boy with a love of adventure, fittingly ends with an account of the pleasant act of international courtesy which led to the *Windward* sailing again under the American flag. From the same publishers we have *The Pirates' Gold* by Gordon Stables, M.D. (1s. 6d.), which well bears out the promise of its title. The same author has published with Blackie and Son *Courage, True Hearts* (3s. 6d.), the story of three boys who, after sundry experiences in Scotland and London, sailed in search of fortune, and who found at least adventures, many and stirring, in various climes, winding up by experiences of a sufficiently exciting sort in "the land of the nugget and diamond."

Mr. G. A. Henty is one of the most prolific and successful of the writers of stories of adventure for boys. He has a happy knack of seizing upon dramatic episodes by land and sea in the great struggle with the French, and while showing all reasonable respect for historic accuracy, knows how to hold the attention of young readers by infusing the just quantity of personal interest. Messrs. Blackie and Son send us two volumes by him; one of these, *Under Wellington's Command* (6s.) is a continuation of *With Moore in Corunna*, published last year. The present volume takes the story of the Peninsular war down to the battle of Salamanca, and centres round the career of a brave leader of a Portuguese regiment, Terence O'Connor, a dashing young Irishman, whose characteristics recall those of Lever's heroes. The other volume, *At Aboukir and Acre* (5s.) relates the experiences of a young Englishman who served both Sir Sidney Smith and Sir Ralph Abercrombie, took part in the siege of Acre and the battle of Alexandria, and witnessed the battle of the Nile. This volume contains eight spirited full-page illustrations by William Rainey, while the Peninsular volume contains twelve clever drawings by Wal Paget. The same publishers issue another volume illustrated by the same hand—*A Mystery of the Pacific* (5s.), a story in the manner of Jules Verne, of a wonderful unknown island inhabited by descendants of the Ancient Romans, who have retained the virtues, the failings, and the habits of republican days. Messrs. Blackie and Son have sent us also a collection of stories for young children which has for its title that of the first story, *Chips and Chops* (2s.). It relates the deeds of two dogs; and the stories, which are by R. Neish, are brightly told.

The author of the *Uncharted Island* (London, Edinburgh, and New York, T. Nelson and Sons. 3s. 6d.) is no unworthy rival of Mr. Henty. His story is of the sea, and he tells of a sixteenth-century map of a treasure island which was not an island, and of other strange things, which to be believed must be read, and may even then be found more exciting than credible, though Skelton Kuppord comes near to making them convincing. The same publishers send us a story, *Chums at Last*, by A. Forsyth Grant (2s. 6d.), the scene of which is laid in a public school. It is briskly told, with a fresh open-air atmosphere about it. There is at least one stirring incident of a train in danger, and the uses of a bicycle lamp, which proves that plucky things may be done, even in this old country. *Schooldays at Highfield House* is a rather uproarious book for a D.D. to write, and for the Religious Tract Society to publish, but its boisterous humour has found high approbation from discriminating readers of the class to whom it is addressed. It consists of a series of stories of the pranks

and adventures of boys at school, and the Rev. A. N. Malan is to be congratulated on the success of his new venture.

Mr. Gilbert Parker has before now shown himself to be possessed of rare skill in choosing for the setting of his novels some little known historical episode, and in his last volume, *The Battle of the Strong* (London: Methuen; 6s.) he has been not less fortunate than usual. Jersey at the end of the last century is uncommon ground for the novelist, but Mr. Parker opens with the attack made on the island by French filibusterers in 1781, and the frontispiece of his book is a reproduction of an engraving after Copley's picture of the "Battle of Jersey." Thereafter the story takes us to La Vendée, and there are adventures enough, and a pathetic thread of story through it all which serves to give a continuous interest to a very engrossing romance. In *Windyhaugh* Graham Travers (Margaret G. Todd, M.D.) has written the story of the development of a highly sensitive and nervous child, whose girlhood is passed amid unsympathetic surroundings, through many struggles, into a strong and broad-minded woman (Edinburgh and London: Blackwood; 6s.). *Other People's Stairs*, by Isabella Fyvie Mayo (the Religious Tract Society, 2s. 6d.) is a sketch of a sad, and we cannot help thinking very uncommon, side of domestic service. The story is well told.

The man who said that when he heard a new book praised he read an old one, has generally been reputed wise. We may therefore congratulate Messrs. J. M. Dent and Co. on their wisdom in giving us new editions of old favourites well printed, illustrated with good taste, and enclosed in covers which are pleasant to see and to handle. We have Thackeray's incomparable *Esmond* in one volume of reasonable size and in reasonably large print, embellished with a dozen drawings of no little excellence by Mr. Francis D. Bedford, which are well printed in subdued colours (4s. 6d. nett). In a companion volume we have the *Ingoldsby Legends*—that friend of our youth—very copiously illustrated by drawings, some in black and white and others in colour, by Mr. Arthur Rackham, and making a very elegant book (4s. 6d. nett). Last and least, but not least welcome, is a slim volume of selections from *Poetry for Children* by Charles and Mary Lamb), illustrated by very appropriate drawings by Miss Winifred Green (2s. 6d. nett). The poems and the pictures ought to charm even young children, while the elders may perhaps find something to learn and admire in the introduction written by Israel Gollancz. The public is promised further volumes of selections if this is welcomed, and we can only express the hope that the welcome will be as warm as the dainty volume deserves.

Among books with the undisguised purpose of giving instruction we have *Midland Sketches* by W. J. Gordon from the Religious Tract Society (1s. 6d.). It gives an account of the chief industries of the midland counties, with sketches showing the people at work. The cycle-making at Coventry is illustrated by four engravings which trace the cycle from start to completion. In the same way the making of lace at Nottingham of iron ware at Wolverhampton, of boots at Northamptom, of needles and fish hooks at Redditch, of carpets at Kidderminster is described, while some account is given of each town and its institutions. In *Insect Lives as told by Themselves* (1s. 6d.), published by the same Society, Mr. Edward Simpson seeks to fix the young attention by causing the insects themselves to relate their own chequered histories, while the way to more accurate knowledge is foreshadowed in the use of the correct specific names.

The Imperial Heritage (London: Ward, Lock, and Co., 2s. 6d.), by Ernest Edwin Williams, who has already in previous volumes done much to arouse the stay-at-home Briton to a consciousness of the greatness of his inheritance, is designed to make a similar appeal to his son. He gives a rapid sketch illustrated by reproductions of well-selected photographs of all the great colonies. The articles of course are but slight sketches, but they ought to attain their purpose by showing the young idea that there are many splendid countries where the Union Jack flies which only await the energies of some of our surplus population to make them as rich as they are already enterprising.

The Cry from the Sea and the Answer from the Shore (the Religious Tract Society, 3s. 6d.) is in a way a continuation of the *Log of a Sky Pilot*, by the Sky Pilot himself, the Rev. T. S. Treanor, who seems to take very kindly to the sailor's friendly nickname for a chaplain. It contains many graphic descriptions of lifeboat rescues during the storms of recent years, together with some account of the work of the Mission to Seamen, to which useful organisation the author is chaplain. Lieutenant-Colonel Conder, R.E., commends a cardboard model of the Temple of Jerusalem which Miss Maud A. Duthoit has designed for the Religious Tract Society. It gives, he writes, "the best idea of the Jerusalem Temple in the time of Christ that I have seen produced." It is made to scale $\frac{1}{16}$ inch to a cubit of 16 inches, and much time may be pleasantly spent by a neat-handed girl or boy in putting together the cardboard pieces, which are sent out packed flat in a box.

Sacred Art, a large quarto published by Cassell and Co., Limited (London, Paris, New York, and Melbourne, 9s.) has been designed for the purpose of interpreting the Bible story from Genesis to Revelation by means of reproductions in black and white of paintings by many famous modern artists. Some, such as those of Holman Hunt, of Millais, and of Leighton, are already familiar, so also are some of those of Watts and Rossetti, while others have not recently been seen. Others, again, by foreign artists, among which may be mentioned the fine examples of Bonnat and Puvis de Chavannes, have not hitherto been widely known in this country. Mr. A. G. Temple, the director of the Art Gallery of the Corporation of London, is to be congratulated upon the selection of paintings for reproduction which he has made, and also on the good judgment shown in the brief letterpress notes which indicate the nature of the incident illustrated in each picture. In the first two volumes of *Picturesque Europe*, a sumptuous work in five volumes also published by Cassell and Co. (bound in one volume, steel plates, 31s. 6d., or with the plates in lithography, 10s 6d.) the reader is taken from Windsor and Eton to various picturesque districts—Wales, Derbyshire, the Thames, the Lizard, and the Land's End, Killarney and the west coast of Ireland, the Grampians and the Lake country—to historic towns—Edinburgh, Warwick, Stratford, Oxford, and Cambridge—to the forest scenery and some of the great cathedral towns and famous ruined abbeys of Great Britain. From the same publishers come the annual volumes of three of the magazines issued by them. First the *Magazine of Art* (21s.), a handsome volume, profusely illustrated both by special plates and by engravings in the text. It contains many articles, as well as drawings of permanent value for the history of Art in this country. The modern craze for the artistic poster, for instance, is not neglected. The volume of *Cassell's Magazine* (8s.), June to November, 1898, contains a fine collection of miscellaneous reading appropriate to the leisure moments of a desultory reader, while the annual volume of the *Quiver* (7s. 6d.) for 1898 will appeal more particularly to those of a religious temperament. Here may be mentioned also the annual volume of the *Sunday at Home* (the Religious Tract Society, 7s. 6d.), which retains its well-known characters, though the illustrations show that its publishers move with the times. From the same office we have the *Leisure Hour* (7s. 6d.), which fully maintains its title to be considered one of the best of the magazines for young people, *The Girls' Own Annual* (8s.), the yearly volume of the *Girls' Own Paper*, and that very wonderful miscellany, the *Boys' Own Annual* (8s.), the scope and contents of which are well indicated by the motto on the title page, *Quicquid agunt pueri nostri farrago libelli!*

Among the books for quite small children is an elegant little *Alphabet* for little girls and little boys, by Mrs. Arthur Gaskin (London: J. M. Dent and Co.), a slim volume, each page containing a letter and a child's name, with a coloured drawing of a child in the style made familiar to us years ago by Miss Kate Greenaway. *The Animal Alphabet* (London: Thomas Nelson and Son; 6d.) contains some illustrations of considerable merit, printed in colours sufficiently brilliant to attract the infant's eye; while *Happy Holidays*, issued by the same publishers (1s.), contains a collection of pictures, stories, and rhymes suitable to a somewhat more advanced age. The annual volume of *The Child's Companion* (2s.) is adapted to a similar age; while *Our Little Dots* (2s.) contains much which will charm the younger fry. Both are published by the Religious Tract Society.

Visiting Lists and Diaries.

Smith's Physicians' and Surgeons' Visiting List, Diary, Almanack, and Book of Engagements (Hazell, Watson, and Viney, Limited, 12, Long Acre, London, W.C.), has now reached its fifty-third year of publication. It is so well known, and its merits are so generally appreciated, that a minute description of its various details is no longer necessary. It contains amongst other notes, a list of medicines in the *British Pharmacopœia, 1898*, with doses, and of external remedies. It is published in six editions, to suit practices of various sizes, with spaces for 25, 50, 75, or 100 patients for each week in the year; some of the editions have also a weekly journal. But each edition requires the name of each patient to be entered every week. Each size is published in two different styles of bindings, or in roan or silk limp for insertion into loose wallets, which are said to last three or four years. The price of the bound list varies from 2s. 6d. to 6s. 6d.; that of the limp copy and the wallet from 8s. to 13s. 6d. These prices include postage.

Wright's Improved Physicians', Surgeons', and Consultants' Visiting List, compiled by Robert Simpson, L.R.C.P., L.R.C.S., (Bristol: John Wright and Co.), is now in its sixth year, and is used for a large number of practitioners. The objects aimed at in the publication are stated to be chiefly those of economising space and the practitioner's time by enabling him to write his patients' names only once a month instead of weekly. It also includes a Consultants' Record, for consulting practitioners, and a list of principal drugs and their doses according to the *British Pharmacopœia*, 1898. It is in three forms: A, for 1899; B, "perpetual," that is, for any year, and even sufficient for two or three years if the practice is a small one; and C, for 1899, with a Supplement for Certifying Surgeons under the Factory and Workshops Act. In forms A and C a cash account follows the entries of each month; in B the cash accounts are all placed together at the end of the book. Forms A and C are constructed for 80 patients, with their addresses, each month; if addresses are not required, the patients' names could be extended to 160, but the space for each name would be cramped. These lists are excellent, and show that much care has been bestowed on their production. The price of a single copy of either of the three forms is 5s. 6d., post free.

Wellcome's Medical Diary and Visiting List for 1899 is "combined with the excerpta therapeutica, containing an epitome of the most recent notes on the therapeutics of important drugs in general use, both pharmacopœial and extra-pharmacopœial." It is published by Messrs. Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C. A copy of this volume has been sent to many practitioners. Its chief object is doubtless to spread abroad a knowledge of the various drugs, especially those compounded of animal substances, and of the serums manufactured by the above enterprising firm of pharmaceutical chemists; but it also contains an index of diseases and remedies that may be used in their treatment, a posological table, and a good visiting list, in which the names have to be written each week. A note from the firm states that "an analysis of the voting for the various forms of diaries showed so great a preponderance in favour of the weekly system" that they have continued it.

Messrs. Walker and Co. (Farringdon House, Warwick Lane, London, E.C.) have sent us specimens of "back-loop diaries" of various shapes and sizes. As the name indicates, the special feature of these publications is that a loop at the back carries the pencil. There can be no doubt that this is a most convenient arrangement, and that the publishers claim that when the habit of using this particular pattern has been formed it will not readily be given up is well founded. A very convenient form is a long, flat volume, the leaf of which measures 2¾ by 5¾ inches. This pattern can be had with one or two weeks on the opening, and bound in various materials at prices varying from 9d. to 2s. 6d., or in removable covers, for which refills can be obtained annually. But many other shapes and sizes can be obtained, down to a small book which fits into the waistcoat pocket, and shows a week on the opening. The diaries are strongly bound, and bear daily use well.

Christmas Cards.

We have received from Messrs. Raphael Tuck and Sons (71, 72, and 73, Coleman Street, City, E.C.) a number of Christmas cards, which may fairly be pronounced to be prettier than ever. On the score of artistic merit the first place must be given to platinotype reproductions of views and of original pictures, among which are some of the most famous productions of well-known artists. In the present series a tone paper is used with good effect. These "platino panels" are something more than Christmas cards, and are so delicately done as to be worth framing and preservation. They are mounted singly and in pairs, and vary in price from 1s. to 2s. or 4s. The tendency to rely more upon high artistic execution than on brilliant colouring, which used to be the chief note of Christmas cards, is further shown by the extensive black and white series, some of which, however are toned. A certain character of eccentricity belongs to the celluloid "cards," which lead us on to the mechanical cards, and finally to the mechanical toy-books, dear to small children, who will no doubt in the end exercise their destructive faculties upon them. Further, there are a great number of excellent cards of the more usual gay colours, and some of a popular nature. Lastly, we may mention a series of calendars, both useful and ornamental, and various small booklets of a religious type.

CONTRACT MEDICAL PRACTICE.

Friendly Societies and Dispensaries not Authorised by the State.

A Provincial Practitioner writes: That the above-mentioned media for the obtainment of medical and surgical attendance at the hands of duly qualified men are conspicuous throughout Great Britain and Ireland is undeniable. In the majority of these instances the organisation is so imperfect and the mode of admission of members so lax (the management or mismanagement being frequently in the hands of a few pompous philanthropists (?) such as clergymen and prominent tradesmen pushing their business), that one-half of the admitted members has no income-title to its benefits or those of any charitable body. Yet they are admitted, and, with the other deserving half, secure medical attention all the year round. Under the auspices, too, of these self-constituted bodies, the married women, on an average, receive qualified assistance in their confinements for a fee from a minimum of 7 to 8 shillings to a maximum of 10 shillings, which is far below the midwifery payment of the worst remunerated medical officer under the Local Government Board.

I have no desire, nor is it my intention, Sir, to trespass on your valuable space by offering further illustration of the calamitous and pauperising effects on the general medical practitioner incidental to the existence of such institutions as I have mentioned, for these have been exhaustively dealt with in your columns by those qualified to deal with them over a very extended period, unfortunately with, as yet, no resultant benefit to the profession. In the interest of the general practitioner, then, with your permission, I would enunciate a first instalment of a remedy to this intolerably disgraceful state of things by the following queries:

1. Should not every friendly society, dispensary, or any other charitable body associated with the provision of qualified medical aid to the public be registered and legalised by the Government?
2. Ought any such friendly society, dispensary, or other charitable body, thus associated, to be permitted to exist unless so registered and legalised?
3. Might not the General Medical Council determine queries 1 and 2? and, if arriving at the conclusion that all societies employing duly qualified practitioners should be State-registered, might not the said Council formulate (*a*) what it considers after due investigation a registrable society and (*b*) recommend same to the State, and (*c*) then hold as a reprehensible person and guilty of professional misconduct any qualified practitioner who gives medical or surgical aid to societies that are unregistered by the State and mete out that individual's duly merited punishment? (*d*) More promptly to deal with these evils, might not the Council call for a return through the Branches of the British Medical Association, or of its unattached members in outlying towns and districts, of all unregistered or unregistrable societies?

Some such action as this would, I venture to think, in a great measure (especially amongst some of the looser and money-grabbing medicos) conduce to a more worthy and becoming practice of our profession.

Army Chiropodists.—The authorities have, it is reported, introduced chiropody into the army, and the care of the feet on the march is so important that this appears a wise step. Some staff sergeants and sergeants of the Royal Army Medical Corps have, it is stated, already been trained for the work.

STEREOSCOPIC PHOTOGRAPHS.

The Application of Stereoscopy to Clinical Records.

The value of photography as a means of illustrating lectures on medical and surgical subjects has during recent years become more and more generally recognised. If, however, the photographs were binocular instead of being monocular, their value would be greatly enhanced. The image of any object produced on one eye differs from that produced on the other. Slight as this difference is, it is by it, through the blending of the two images, that the impression of relief, depth, or the third element of space is obtained.

It is obvious to every one possessed of two useful eyes that owing to the distance separating the eyes, the part of an object seen by the one eye is not the same as that seen by the other. Sir Charles Wheatsone in 1838 constructed an instrument to enable an observer to see drawings from these two dissimilar points of view combined so as to give rise to the realistic and striking illusion of apparent solidity. He very appropriately called his instrument a stereoscope. It is fully described in his admirable paper on *The Physiology of Vision*.



Method of looking at the stereoscopic pictures with the hand stereoscope.

The next stereoscope was invented by Sir David Brewster. He called his pattern the Lenticular Stereoscope, to distinguish it from Wheatstone's, which he referred to as the Reflecting Stereoscope. Brewster's stereoscope was small and portable, it possessed considerable magnifying power, and was very convenient for viewing photographs. It soon became very popular, and is the form which twenty or thirty years ago used to be seen in nearly every drawing-room. It is most remarkable that an instrument giving such realistic effects should have fallen so completely out of favour that, until comparatively recently, it had almost been forgotten.

So far as we can ascertain stereoscopic photography was not at the time of its early popularity used in medicine. Indeed, Sir Samuel Wilks has been good enough to inform us that he well remembers the difficulty that there used to be in obtaining even ordinary photographs of clinical cases. A photographic apparatus was bought for the artist at Guy's Hospital and a room fitted up, painted blue, as they always were at that time, but the success attained was not great. He recalls, however, a capital series of photographs of patients in Bethlem Hospital, taken in Dr. Hood's time, and therefore about thirty years ago. The application of photography to clinical medicine and surgery, which has now reached such a very important position, is of comparatively recent growth, and its general adoption is no doubt in large part due to the ease with which photographs can now be reproduced for the illustration of books and periodicals. Last June Dr. W. W. Stainthorpe sent us a series of very excellent stereoscopic photographs of cases of small-pox in various stages, and one of these is reproduced as a special illustration to this number of the Journal. In the Pathological Museum of the annual meeting at Edinburgh, some excellent stereoscopic photographs of congenital disease of the heart were shown by Mr. Harold Stiles, and some stereoscopic skiagraphs by Dr. Dawson Turner. It had previously come to our knowledge that Mr. Mackenzie Davidson, who had for some years taken stereoscopic photographs of clinical cases which he had used for the purpose of clinical instruction, had recently obtained some excellent stereoscopic skiagraphs, which had been found of great practical use in localising the position of foreign bodies in the tissues. By his kind co-operation we are enabled to publish a reduced stereoscopic skiagraph taken by him of a case of bullet in the leg, under the care of Mr. Howard Marsh, to whom we are indebted for a brief report of the case, which is published at page 1671. Mr. Mackenzie Davidson, in a paper also published in this number (p. 1669) briefly describes the method of taking stereoscopic photographs, and gives a detailed description of the manner in which he obtains stereoscopic skiagraphs.

Dr. Albert Neisser, of Breslau, commenced some time ago the publication of a *Stereoscopischer medicinischer Atlas* (Leipzig: J. A. Barth), and he has already issued a number of fasciculi, which consist of stereoscopic photographs of various morbid conditions mounted on cardboard. The advantages of stereoscopic photography, however, for the illustration of certain classes of clinical cases, are so obvious that we believe that the method will in time be largely adopted for the illustration of books and periodicals, and for this purpose it is not at all necessary that the pictures should be mounted on detached cards.

Brewster's stereoscope can easily be made in such a form

that it can be used for looking at stereoscopic pictures in a book in the same way as an ordinary magnifying reading-glass. A cheap form of stereoscope with the end pieces cut away, so that it can be conveniently held to look at any stereoscopic pictures, is shown in the stereoscopic photograph here reproduced, which has been expressly taken by Mr. Mackenzie Davidson. A method of obtaining the stereoscopic effect without the use of any instrument at all is given by Mr. Davidson in his paper (page 1671), but this is a knack which not everyone can acquire.

Fortunately hand stereoscopes are now made of very simple form, and can be sold at a very low price. We may state that arrangements have been made with the firm of Messrs. R. and J. Beck (68, Cornhill, London, E.C.) to supply by post hand stereoscopes, properly packed, to persons making application to them direct. Messrs. Beck, who have taken considerable trouble in the matter, inform us that they can supply a foreign-made stereoscope of the kind shown in the accompanying figure post free for 1s. 1d., and a more highly-finished instrument of the same pattern for 2s. A still simpler form, without the central diaphragm which is seen projecting from the eye-piece, will be supplied by this firm for 1s. post free; but this pattern is not so much to be recommended, since the central diaphragm cuts off the "lateral images," which are apt to be a little confusing unless the observer is thoroughly accustomed to the use of the stereoscope.

In the stereoscopic pictures printed in the text the grain of the process block is seen; but in those printed on special paper this slight objection to the method has been overcome by the special process of printing, which gives a uniform surface.

THE PLAGUE IN THE EAST.

The Austrian Report on Plague.

The report of the Austrian Commission on Plague which visited Bombay in January, 1897, and of which Dr. Hermann Mueller, who recently died from the disease in Vienna, was a leading member, was presented to the Imperial Academy of Science in Vienna on November 25th. The report forms a large volume, and consists of two main parts. The first by Dr. Albrecht gives a general account of the work, while the second part, by the late Dr. Mueller, gives his own clinical observations, and includes references to the anatomical and bacteriological work of his colleagues, Drs. Heinrich Albrecht, Anton Ghon, and Rudolf Pöch. In an appendix a detailed account is given by Dr. Rudolf Pöch of the fatal illness of Dr. Mueller himself, and of the hospital nurse who also died of the disease.

The Special Commission.

The members of the Special Plague Commission arrived in Bombay on November 26th, and we learn from a telegram from the *Times* correspondent that they commenced the hearing of evidence in Bombay on November 29th. The first witness was Mr. A. Wingate, Acting Chief Secretary, who gave a history of the plague in the Bombay Presidency. Segregation in the small towns had destroyed the plague, but it was impossible in the big towns on account of the requirements of trade, though it had been advantageous in certain wards of some towns. The shortest time during which evacuation of villages had been enforced was three weeks, and the longest three months. Dr. Haffkine was next examined. He described the constituents of his plague prophylactic, the method of its application, and the general result. It is stated that the probable course of proceedings will be a few preliminary sittings at Bombay, and to proceed to Haidarabad, Bangalore, and Madras, and thence to Calcutta, which will be reached about Christmas. Having taken evidence in the North-Western Provinces and the Punjab as to the outbreaks, the Commissioners will visit Sindh, ultimately returning to Bombay Presidency, where the proceedings are likely to be protracted, as this has been the principal seat of the epidemic.

India.

The mortality from plague in Bombay has slightly decreased during the past week, so that now for six consecutive weeks, with the exception of a fortnight ago when there was a slight increase, the decline has been fairly rapid. During the past week the number of plague deaths was under 50, for the first time since the month of July that so few deaths have occurred. In the Bombay Presidency the mortality from plague is falling everywhere, so that it would seem as though the third outbreak in the Bombay district was really on the wane.

The cities of Seringapatam and Bangalore in the Mysore State are seriously affected. During the past week fresh riots are reported from Chikballapur. Early in the week the rioters were dispersed, and forty-nine of the natives were brought to Bangalore and sentenced to six months' imprisonment. All of the prisoners were inoculated with plague serum before being taken to gaol. Later in the week fresh riots occurred; a mob of 800 Mohammedans proceeded to the segregation camp, where, after stealing every movable effect, they burned the whole to the ground.

In Bangalore a number of Europeans have been attacked, and one death has occurred. In one bungalow, three of the family were attacked by plague; it had been noticed that for some time previously dead rats and squirrels were found in the bungalow garden, but no serious notice was taken of the matter. It would seem that squirrels have to be added to the long list of animals liable to plague.

Outbreak in Madagascar.

The *Temps* and other French papers announce that plague has broken out at Tamatave in Madagascar. The report, if true, is interesting in many ways, as it is the first official record of plague ever having prevailed south of the Equator. An official despatch from Antananarivo, dated November 30th, confirms the news, and states that the bacillus has been demonstrated. The origin of the epidemic has not been ascertained. Two hospitals are to be built on an island in the roadstead. It is stated that the epidemic is at present stationary, and that the persons attacked are natives.

The Value of Haffkine's Inoculations.

The Honorary Secretaries of the Bombay Medical Union inform us that that body has recently held three meetings under the presidency of the Hon. Bhalchundra Krishma, to consider the present position of the plague prophylactic inoculations of Professor W. M. Haffkine. About fifty local medical men took part in the discussion, and the following resolutions were proposed:

1. That this meeting is of opinion that, considering the data now available and the satisfactory results of the observations collected regarding the protective effect of Professor Haffkine's plague prophylactic, the time has now arrived for the profession to make a definite pronouncement on the subject, and to invite the public to resort freely to the protective treatment as a very reliable safeguard against plague.

2. The immunity derived from inoculation when done with a full dose appears to last for at least six months, but there is the possibility of its lasting much longer.

3. From the observations collected lately, it appears that a second inoculation done ten days or so after the first, further reduces the incidence of plague in those who resort to inoculation, and a third, if such be practicable would increase the immunity still further. The public are therefore to be invited to resort to at least two inoculations, and even to a third, if practicable. The duration of protection is also likely to be enhanced by such a repetition.

4. This meeting of medical men, who have had a wide experience of inoculation on persons of all positions, ages, and conditions, declares emphatically that rumours of inoculation originating different diseases, such as leprosy, syphilis, etc., are devoid of any foundation; that, considering the nature of the prophylactic, which does not contain any living germs, such an eventuality is absolutely impossible; and that there are no facts to show that inoculation aggravates any existing ailments' despite of rare and isolated instances which may at first suggest such an idea.

Certain amendments were also proposed, but upon a vote being eventually taken the amendments were rejected, and the resolutions adopted, only four persons voting against them.

At a meeting of the Council of the Hospital Sunday Fund, held on October 28th, it was reported that the total amount received for the year was £40,397. The sum of £34,304 had been distributed among 132 hospitals and 54 dispensaries, and £2,000 had been spent on surgical appliances. The working expenses had been £1,649, or 4 per cent. of the receipts.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 3rd, 1898.

THE BRITISH MEDICAL ASSOCIATION.

We publish in another column this week some account of the arrangements already made for the next annual meeting of the British Medical Association, which is to be held at Portsmouth on August 1st, 2nd, 3rd, and 4th, of 1899, under the presidency of Dr. J. Ward Cousins, and in a special inset the list of the officers of Sections as at present arranged. This will be the sixty-seventh meeting of the Association, and it is gratifying to all those who are responsible for carrying on the work of the Association, whether as members of the Council of the Association or its Committees or of Branch Councils, or as salaried officers, to recognise that the Association continues to grow in numbers and in influence in a manner showing unmistakably that the services which it renders to the profession, not only in the United Kingdom, but also in the Colonies and Dependencies of the Empire, are appreciated by those whom it exists to serve. When the Association celebrated its 50th anniversary at Worcester in August, 1882, the Council reported that the number of new members elected in the year 1881-2 was 715, and that the total number of members of the Association was 9,563. This year, at the 66th annual meeting at Edinburgh, the Council was able to report that the number of new members elected in 1897-8 was 1,473, and that the total number of members of the Association was 17,746. It was added that this number of new members, 1,473, was the largest recorded increase in any one year since the Association was founded.

The Association now possesses 70 Branches. Those in the United Kingdom, which now number 38, cover nearly every part of England, Scotland, and Ireland, and by the meetings which they hold at stated intervals afford to those members of the Association resident in the various localities who are wise enough to become members of the local Branch opportunities for the discussion of matters affecting the progress of the science of medicine, as well as the professional interests of those engaged in its practice. Branches have also been established to the number of 32 in nearly all the principal British colonies and in many of the chief districts of the Indian Empire. These Branches are able to render to members resident in the Colonies and India services similar to those rendered by home Branches to home members.

It is encouraging to find that the value of the Association and its Journal is increasingly appreciated in our great Colonies. The New Zealand Branch, which was founded some two years ago, has already achieved a remarkable success, and its numbers have recently risen to 200, while we have had the gratification of announcing that a new Branch is in course of formation in Western Australia.

The Association, when it was first instituted under the the title of the "Provincial Medical and Surgical Association," at a meeting held in the Board Room of the Worcester Infirmary, on July 19th, 1832, resolved to publish a yearly volume of *Transactions*. Eight years later it was resolved to publish a weekly periodical, and this was given the name of the British Medical Journal when the name of the Association was changed to "British Medical Association." Under this name the Journal has increased in size and in influence, and is now everywhere recognised as a leading representative organ of the medical profession.

The present financial position of the British Medical Association affords a striking illustration of the success which may attend the application of the principle of co-operation if the administration be wisely directed by competent and experienced hands, and if the members themselves are willing to give time and attention to the work. Of men willing to do this the Association has never had any lack, and the unstinting labour given by succeeding Presidents of Council and Treasurers of the Association to its affairs, has been in a measure crowned by the purchase of the important freehold property in the Strand, in which the business of the central offices of the Association and of the Journal is conducted.

The invested property of the Association is now large, but this amount might easily have been greater had the Association been satisfied with the policy of merely rolling up a large reserve fund. This has not been its policy. On the contrary, it early recognised that financial success brought with it corresponding responsibilities. It has been recognised that the objects for which the Association exists are the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession; to these ends it has worked from the beginning, and with increasing effect as its resources increased. To the attainment of both objects the Journal has contributed by giving opportunities for the publication of original articles, analyses, and criticisms on subjects affecting the progress of medicine and the allied sciences, while it has afforded a medium for the discussion of matters affecting the honour and interests of the medical profession. But the Association has done much more than this. For many years past it has made special grants to assist those who are engaged in prosecuting original researches in medicine and the allied sciences. The Association now, through its Scientific Grants Committee, annually expends £850 in this way—£400 in a series of grants to individual workers, and £450 in three Research Scholarships. This year it has resolved to found an additional scholarship in memory of the late Mr. Ernest Hart, to which a payment of £200 a year will be attached. By this resolution the annual sum granted by the Association for the advance of medicine and the allied sciences will be more than £1,000 a year. In addition the Association has from time to time made grants to various independent institutions, such as

the British Institute for Preventive Medicine, which are carrying on scientific work for the advancement of medicine. Further, the Association has been active in gaining for the profession its due influence in public life, and in defending the interests of members while safeguarding those of the public. Work of this kind is done by the Branches, but chiefly by the Council, either directly, or through Committees; and for the due discharge of the references to these Committees, and especially for obtaining legal assistance in the drafting of Bills for presentation to Parliament, or of clauses for insertion in Bills already before Parliament, money is voted which, in the aggregate, amounts to several hundred pounds a year.

That the influence of the Association upon legislation and upon the administration of great public offices has been exerted with effect, and with great advantage to the welfare of the public and of the profession, ought not to need argument at this time of day, nor do we propose to argue the matter. To those who have followed the public health and medical legislation of the last twenty years, the influence which the Association has exerted is well known, and to those who are not acquainted with it we should commend the study of the subject as a useful intellectual exercise. Of its influence in other directions, the effective part which it took in supporting the demands of the medical officers of the army for army rank and titles, and in arousing the medical corporations and colleges to exert their influence in the same direction, is a good example, since that particular piece of work has been crowned with success.

The Association will not rest upon its laurels. It is a living and growing organisation which endeavours to meet one of the great needs of the profession to-day—the need of union—by knitting together in one association for common purposes all classes of the profession, from the veteran who has earned the esteem and recognition of his brethren, to the youngest member, who desires to practise it as an honourable and upright gentleman.

THE GENERAL MEDICAL COUNCIL.

ALTHOUGH during the past week a good many matters of interest have engaged the attention of the General Medical Council, we must, as the session has not concluded as we go to press, limit our remarks to a brief commentary upon the proceedings, reserving a more detailed discussion of those points which call for it.

A large amount of time has been devoted to the hearing of evidence in disciplinary cases, and to the discussion of these *in camerâ*, but in only one case did the Council consider that the charge had been proved to their satisfaction. The names of this practitioner and of John Lloyd Whitmarsh were removed from the *Register*.

Sundry alterations in the Standing Orders of the Council were brought forward at the end of the last session, and were referred to the Executive Committee, and upon its report some little time was spent in their discussion. At first sight it would appear that the Council would have been better employed in doing the work that lay before it than in discussing what look like minutiæ in its methods of procedure, but on closer examination it appears that the changes, most of them upon motions brought forward by Mr. Horsley, really involve some important principles. A tradition has grown up in the Council that the members of its more important Committees should almost always be re-elected, the practical effect being that the rate of change in these Committees is not commensurate with the rate of change in the *personnel* of the Council itself. To a certain extent this is reasonable, but the Executive Committee, adopting the views of some of the members of longest standing on the Council, recommended that the Penal Cases Committee should not be subject to any annual election. The Committee, which was well described by Mr. Carter as the grand jury of the Council, was created only about eight years ago, the decision as to whether matters of complaint should be brought before the Council or not having up to that time rested with the President. Its functions, at first purely advisory, have gradually increased in importance, and some of the alterations proposed would merely bring the Standing Orders into harmony with the practice which has grown up. But, as was shown by Sir Richard Thorne, if this Committee were not subject to periodical re-election, a member once appointed might remain upon it for twenty-five years without re-election, and Mr. Tomes pointed out that any member who thought that a change was desirable ought not to be exposed to the distasteful necessity of attacking the work of his colleagues, which would be the only way of giving effect to his wishes if the recommendations of the Executive Committee were adopted. These and similar considerations prevailed, and the important Penal Cases Committee will in future be elected every year, in May, by a sort of ballot, but of course it remains open to the Council to re-elect any member whom it may desire to retain.

A lengthy report upon the subject of the preliminary examinations in general education which should be recognised by the Council was presented; upon this we shall reserve our comments for the present, more especially as we are compelled by the great pressure of other matter to postpone our report of the debate on the subject. It will suffice for the moment to mention that the report, upon the preparation of which great pains had evidently been expended, recommended that the lowest grade of the College of Preceptors' examinations which is at present accepted should be expunged after January, 1900, and at the same time foreshadowed that, at an indefinite date in the future, further changes in the direction of increased stringency would be recommended. This report was adopted, and the resolution as to the desirability of fixing the date for further improvements referred back to the Education Committee.

The midwives' question came up in the form of reports from the Committee appointed to confer with delegates from the promoters of the Bill. Incidentally it appeared that there was a large divergence in opinion between their views and those of the Council, but the only matters really discussed had relation to finance, the probable expense which would be thrown upon the Council, and the means by which it was to be met, the feeling being that it was not fair to cast upon a fund provided by the fees paid by medical men and dentists the onus of additional expense for a purpose in which they were not directly interested.

The report of the small Committee appointed to endeavour to obtain some amendment of the law by which the company-form of infringement of the Medical and allied Acts might be checked is encouraging. Though brief, it sets forth the lines upon which the Committee has proceeded, and the remarks with which it was introduced seem, when read between the lines, to indicate that we may soon expect to hear more of it. Some amusement was caused by the announcement that ladies had commenced to cultivate this field, and an extract from the avowed objects of a company of ladies registered during the past month, which was read to the Council, ran thus: "To advance the interests of gentlewomen who are qualified to act as doctors, dentists, and chemists (by examination), or who are desirous of acting in these capacities," etc. It need hardly be said that not one of the original subscribers is registered either upon the *Medical, Dentists'*, or *Chemists and Druggists' Registers*. The draft Bill mentioned in the report, which has been submitted to the Government as indicative of the kind of provisions which would meet the evil, was not made public, but it was considered *in camerâ*, and the action of the Committee fully endorsed by the Council.

The sale of the new *Pharmacopœia* has been very much larger, so far, than that of its predecessor, and it has already been adopted by some of the colonies. An Indian and Colonial supplement is in course of preparation, which will embrace a good many drugs, which, although not in common use in this country, are employed in India and certain colonies.

It is proposed to send a report upon the Addendum, which is to contain approved drugs of this character, to the various Indian and Colonial medical authorities with a view to receiving their criticisms before it is finally settled. Measures have also been taken to procure periodical reports from experts upon the progress of pharmaceutical chemistry, so as gradually to accumulate material for the next edition.

The Pharmacopœia Committee may be warmly congratulated upon the success with which they have carried through a difficult task, in which it is impossible to satisfy everybody.

THE LAW AS TO CRIMINAL ABORTION.

In dealing with the Collins and Whitmarsh cases in the British Medical Journal of November 19th, the case of Reg. *v.* Heap, to which our attention has been kindly called by Mr. Lowndes, was inadvertently overlooked. The facts of that case were very similar to those in both the Collins and Whitmarsh cases, with the exception that Heap was an unqualified man. The verdict found by the jury was that of murder, and Heap was sentenced to death and afterwards hanged; this was in 1875. Fortunately for Whitmarsh the Home Secretary at first saw fit to commute the death sentence to penal servitude for life, and has now still further reduced it to that of twelve years' penal servitude.

The modern tendency in cases in which the prisoner has been found guilty of what is popularly known as "constructive" murder seems to be for the Home Secretary to commute the death sentence.

Apart from the present unsettled state of the law, or perhaps, to be more correct, the difference of opinion which exists among the judges as to the way in which they should direct the jury, surely the fact that the prisoner is dependent upon the leniency of the Crown, as exercised by the Home Secretary, to alter the death sentence which the judge has been obliged to pass, is sufficient to show that some legislation is necessary to amend or alter the law in cases of this class.

Before dealing with the inconsistency in the way in which the judges in the cases under discussion have directed the jury, it may be well to dispose of a suggestion which has been made in some quarters that it would have been sufficient to have prosecuted the prisoners for the crime of procuring abortion. The most damning piece of evidence adduced by the prosecution in Whitmarsh's case was the dying declaration of the deceased woman herself, and without this evidence it is possible, nay even probable, that the prosecution would have failed to establish a case against the prisoner. Now, it is perfectly clear that this dying declaration would not have been admissible in evidence against the prisoner, if the charge against him had been only that of procuring abortion, because such evidence is receivable on a charge of felony only when the death of the person making it is the subject of the charge, and the circumstances of the death are the subject of the dying declaration. Therefore, where a prisoner was charged with using instruments to procure the miscarriage of a woman who afterwards died, her dying declaration was held inadmissible on his trial (Reg. *v.* Hind, 29 *L. T.* (M. C.), 147).

As the law now stands, there can be little doubt that if a person whilst doing, or attempting to do, another act undesignedly kill a man, the killing is murder if the act intended or attempted were a felony.

With all due respect for the learned judge who presided at the Collins trial and also for the learned Attorney-General, there can be no doubt that according to the strict law as just stated Collins was guilty of murder, and no such alternative course as was suggested by the Attorney-General was really open to the jury. It is not at all free from doubt that even Mr. Justice Bigham did not go too far in suggesting the limitation to which we have referred in our previous issue. It must not be forgotten that Whitmarsh had been previously tried, on which occasion the jury disagreed. This is how Mr. Justice Darling directed the jury:

"It was the law that if a person in the commission of such felony as the act of procuring abortion involved (because to procure an abortion was a felony) did that which killed, he was guilty of murder. This was not a case in which there could be a verdict of manslaughter; there was no contention on the part of the prisoner that any such verdict was permissible."

This summing up embodies what has been stated above to be the strict law, and in truth no other summing up would correctly state it.

It is well to see the view expressed by the late Mr. Justice Stephen, a great authority upon criminal law, on this question. In the case of Reg. *v.* Serné (16 Cox, 311), Leon Serné and T. Goldfinch were indicted for the murder of a boy, S. Serné, the son of the prisoner, Leon

Serné, it being alleged that they wilfully set on fire a house in the Strand, London, by which act the death of the boy had been caused. Mr. Justice Stephen, in summing up to the jury, directed them as follows: ". . . . It is necessary that I should explain to you, to a certain extent, the law of England with regard to the crime of wilful murder, inasmuch as you have heard something said about constructive murder. Now that phrase has no legal meaning whatever. . . . . The definition of murder is unlawful homicide with malice aforethought; and the words malice aforethought are technical. . . . . The words have been construed according to a long series of decided cases, which have given them meanings different from those which might be supposed. One of these meanings is the killing of another person by an act done with an intent to commit a felony. . . . . If you think that either or both of these men . . . . killed this boy either by an act done with intent to commit a felony, that is to say, the setting of the house on fire in order to cheat the insurance company . . . . . the prisoners are guilty of wilful murder in the plain meaning of the word. . . . . I will say a word or two upon one part of the definition, because it is capable of being applied very harshly in certain cases, and also because though I take the law as I find it, I very much doubt whether the definition which I have given, although it is the common definition, is not somewhat too wide. . . . . In my opinion the definition of the law which makes it murder to kill by an act done in the commission of a felony might and ought to be narrowed. I think that instead of saying that any act done with intent to commit a felony, and which caused death, amounts to murder, it would be reasonable to say that any act known to be dangerous to life and likely in itself to cause death, done for the purpose of committing a felony, which caused death, should be murder."

Here we have a clear exposition of what the law is, followed in the next breath by a doubt whether it might and ought not to be narrowed. Is it going too far to assume that the Attorney-General when in the Collins case he used the words "not necessarily dangerous to life" really had in his mind what Mr. Justice Stephen had said the law "might and ought to be?" It is true that the judge in the Collins case accepted Mr. Justice Stephen's view; but all judges will not adopt that course, nor is it right and proper they should do so, their duty being to administer the law as they find it, and not to usurp the functions of the Legislature.

Perhaps a better occasion than the present has never arisen for reform in this direction. The inconsistency of the summings up of the three judges in the Collins and Whitmarsh cases already discussed, the pendency of another case involving a similar issue, the state of public opinion, the view submitted by one of the law officers in the Collins case, the attempt of the prosecution in the Whitmarsh case to whittle down the charge to one of manslaughter have excited general interest, and should simplify the task of reforming the law to a condition more in accordance with common sense.

It seems to us that the proper course to pursue would be to introduce a short Bill dealing with the whole of the class of cases comprised in the term "constructive" murder and not confined merely to cases of criminal abortion. The Bill might be drafted on the lines suggested by Mr. Justice Stephen's summing up in Reg. *v.* Serné, namely, that any act, not known to be dangerous to life, and not likely in itself to cause death, done for the purpose of committing a felony which caused death, should be manslaughter and not murder. Such a Bill, if passed into law, would go far to do away with the present absurdity of trying prisoners for wilful murder in cases where the death of the victim was neither contemplated nor desired, and with the solemn farce of judges having to pass sentence of death in cases where they know it will never be carried out.

THE SURGICAL OUTFIT OF THE NAVY.

We publish in another column a letter drawing attention to the defective nature of the surgical outfit of the ships of the Royal Navy. It is written by a civil surgeon well qualified to speak on such a matter, and the suggestions which he makes appear to be well worthy of the consideration of "My Lords." It cannot be said that the improvements suggested err on the side of excess; indeed, we imagine that our surgical readers will be disposed to open their eyes with astonishment when they find our experienced correspondent hinting that a complete set of instruments, a supply of modern dressings, means for sterilising appliances, and trained nurses for the sick and wounded will be looked upon by many naval officers as "quite impracticable." We venture to think that our correspondent is over-timid. We do not believe that what has been found practicable in an American ship of war would be regarded as impracticable by such practical persons as the officers of the Royal Navy. We imagine that the needs have only to be stated to be immediately remedied, for the people of this country would not be able to sleep o' nights if they thought that the brave men upon whom the very existence of the nation depends could not, when sick or wounded in the service of their country, command the best and most approved appliances which science could devise.

THE GENERAL MEDICAL COUNCIL AND THE HUNTER CASE.

We are requested to publish the following protest, which Mr. Victor Horsley and Mr. George Brown have lodged in consequence of the General Medical Council having refused them any opportunity to discuss the Hunter case:

November 30th, 1898.

We, the undersigned, hereby enter our protest against the legal advisers of the General Medical Council appearing on behalf of the Council in the appeal case now pending in support of the conviction of the late Mr. Herbert Kingsley Hunter for describing himself as a physician.

George Brown.
Victor Horsley.

THE VACCINATION SERVICE.

In an article under this heading, published in the British Medical Journal of November 19th, we commented upon the decision of the Cardiff Board of Guardians to terminate the contracts with the three public vaccinators of the town, and to appoint in their place a single public vaccinator to give the whole of his time to the work. The injustice to the present public vaccinators, against whom no complaint was made, involved in this plan has aroused much indignation in Cardiff, and the local medical profession addressed a strong remonstrance to the guardians and to the Local Government Board. At a meeting of the guardians on November 26th the matter was again debated, and the result was that in a large meeting the previous

resolution of the Board was rescinded by 46 votes to 23. As we pointed out, the previous decision of the guardians was very hastily taken, and it is satisfactory to find that wiser counsels have now prevailed.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, LONDON.

The first meeting of Governors of the Medical Graduates' College and Polyclinic will be held on Thursday, January 26th, 1899, when the laws drafted by the Organising Committee will be submitted for sanction, and a list of officers for the year balloted for. Suitable premises have been secured at 22, Chenies Street, Gower Street, London, W.C., where the following departments will be organised: 1. An office to afford information as to educational opportunities in the United Kingdom. In connection with this a journal will be issued, giving information as to the hours of attendance at different hospitals, etc., and a programme of the current work of the College and Polyclinic. 2. Clinical demonstrations will be given every afternoon. In connection with these, clinical assistants will be appointed, and records kept. 3. Clinical lectures will be delivered at stated times. 4. Courses of systematic lectures on physical diagnosis will be given by appointed lecturers, and arrangements will be made for the teaching of bacteriology, as well as for demonstrations on operative surgery, the use of the Roentgen rays, and on surgical and medical instruments. 5. In a clinical and pathological laboratory, opportunity will be afforded for gaining practical experience in pathological work. 6. A museum and library, the latter fitted to serve as a reading room and place of resort; the museum will contain chiefly objects of clinical and practical interest, such as drawings, models, surgical instruments, and apparatus for research. The annual subscription will be 1 guinea, and subscribers being qualified practitioners will be entitled to be present at the afternoon consultation, to bring or recommend patients, to have access to the museum and reading rooms, to attend lectures, and to vote at general meetings. Further particulars, and a form of application for membership, will be found in our advertisement pages.

MEDICAL WITNESSES IN WAITING.

We are glad to see that the question of the accommodation for witnesses in waiting at the assize and other courts has been raised by the Shropshire and Mid-Wales Branch of the Association. At the annual general meeting on October 25th a resolution proposed by Dr. Cureton, the full text of which will be found in the British Medical Journal, November 26th, page 1649, was unanimously adopted. The resolution expressed the opinion that special accommodation should be provided for medical witnesses in waiting before the grand jury and in court of assize and quarter session. Copies of the resolution were directed to be sent to the Chairman of Quarter Sessions, Chairman of the Grand Joint Committee of the County Councils, and Clerks of the Peace and Chief Constables in the area of the Branch. It is true that medical witnesses are not the only persons entitled to complain of their treatment as witnesses in waiting. It may be granted that they are treated with just as much or as little consideration as others who are physically and morally sensitive to the offensiveness of their surroundings. But medical witnesses have a special claim to consideration, inasmuch as they are generally summoned as experts, in a quasi-official capacity, having no personal interest one way or the other. They are men of education and refinement, occupying the social position of gentlemen; very likely the only witnesses of whom that can be said in most criminal cases. That they should be compelled to herd for many hours, perhaps, on several successive days in small dingy comfortless rooms, or draughty passages, or even in the open street, with the often unsavoury crowd of witnesses for and against the prisoners, is a real grievance, aggravated by the fact that it is a frequently recurring one to many medical men, such as police surgeons and medical officers of health. We should rejoice to see an effort made to secure more consideration for witnesses of all classes. We think it not unreasonable to expect some attempt to differentiate the obviously washed from the obviously unwashed. But if such a proposal appears too alarmingly revolutionary to the worthy functionaries who preside over these small details of our criminal procedure, we may at least press home our own particular hardship, which can be so very easily remedied. At the Old Bailey, although the accommodation for ordinary witnesses leaves much to be desired, medical witnesses are treated with at least as much consideration as solicitors, and are generally allowed to sit at the solicitors' table in the centre of the court while waiting to be called. Indeed, they may often be seen sitting amongst the wigs and gowns in the seats supposed to be reserved for barristers.

THE NOTIFICATION OF PUERPERAL FEVER.

At the meeting of the London County Council on Tuesday, the Public Health Committee presented a report on the subject of puerperal fever consequent upon the receipt of a letter from the Vestry of Bethnal Green dealing with the question. The Vestry had asked the Council to add to the list of notifiable diseases named in Section lv of the Public Health (London) Act, 1891, the names of diseases included under the head of puerperal fever by the Registrar-General as follows: "Both peritonitis and metritis, when occurring in connection with parturition, as well as puerperal pyæmia, puerperal septicæmia, and puerperal sapræmia." Eleven other sanitary authorities had written in support of the proposal, one expressed an adverse opinion, and another made an alternative suggestion. The report of the Public Health Committee contained the following observations: "We understand that many medical practitioners regard the five diseases mentioned by the Vestry as being merely various types of, and all included in the term 'puerperal fever' in Section lv, but that in the proceedings instituted by the Vestry against a medical practitioner who failed to notify a case of puerperal peritonitis, the magistrate held that puerperal peritonitis was not included in the disease called puerperal fever in Section lv. If these diseases are all covered by the term puerperal fever, it is of course unnecessary for the Council to pass any such resolution as the Vestry suggests. To do so, moreover, would in effect be merely to define the meaning of the term puerperal fever for the purpose of the Section which the Council has no power to do." The Vestry did not appeal against the magistrate's decision, but the Public Health Committee addressed a letter to Sir Samuel Wilks, Bart., M.D., F.R.S., President of the Royal College of Physicians, by whom it was laid before a Committee of the College. This Committee have unanimously passed the following resolution:

> This Committee is of opinion that, with a view to the limitation of dangerous infectious diseases, the London County Council would be acting rightly in adopting the view that the expression "puerperal fever," as contained in Section lv of the Public Health (London) Act, 1891, should be taken to include septicæmia, pyæmia, septic peritonitis, septic metritis, and other acute septic inflammations in the pelvis occurring as the direct result of childbirth.

In forwarding this resolution for the information of the Council, Sir Samuel Wilks added that he entirely approved of it. Commenting upon this the Public Health Committee states that it thus appears that the highest medical advice is to the effect that the term "puerperal fever" does cover the diseases mentioned, and that it is therefore unnecessary for the Council to make any such order as that asked for. The Council resolved that a letter of thanks should be addressed to Sir Samuel Wilks; that a copy of the report should be forwarded to the Vestry of Bethnal Green, with an intimation that the Council was advised that the

diseases referred to are covered by the term "puerperal fever" in Section LV; and that a copy of the report should be forwarded to each of the London sanitary authorities.

THE ABUSE OF MEDICAL CHARITIES.

Dr. Hime has published an able letter in the *Bradford Observer* dealing with the present condition and the administration of medical charities in that town, and urging the necessity for an inquiry into the way in which hospitals, general and special, in town and in country, are managed. The subject is so wide, and the differences so great between the circumstances of the various institutions in various places, that we are afraid no one committee or commission could carefully deal with them. But in each locality a strong committee of inquiry should be formed; and we believe that the results of such inquiry would be most instructive to the public and most beneficial to the medical charities themselves. The inquiry agency for London which we have always advocated in these columns has been some form of general hospital Board. But for places whose circumstances differ from those of London so widely as commercial cities like Bradford, old country towns, agricultural neighbourhoods, etc., some different form of agency would probably be preferable. The abuse which we believe would be found is not by any means only the pecuniary one. There are other directions in which the resources of even these charities—the best medical charities, we believe, in the world—are ill applied; while at the special hospitals, we believe, the pecuniary abuse largely prevails. Then, with regard to country hospitals, we have had several occasions to call the attention of our readers to the very dubious relations between them and societies of working-men subscribers; and many other matters might be brought forward which would well repay investigation. The root of the matter is touched by Dr. Hime when he says: "Let our hospital Boards be as careful in dispensing voluntary charity as the guardians are in dispensing public obligatory charity." We should be indeed happy if we could hear that in Bradford some public inquiry such as Dr. Hime indicates had been set on foot.

THE OUTBREAK OF TYPHUS FEVER IN EDINBURGH.

Fourteen further cases of typhus fever were reported during the week ending midday November 26th. This brings the total since the beginning of the outbreak to over 50, and these have all been treated in the City Hospital. Probably 6 or 8 other cases were treated as influenza, pneumonia, nephritis, etc., outside, chiefly by dispensary students. There have been five deaths in the hospital and possibly one outside. The initial source of infection was a "wake" two months ago. Members of nearly all the families attacked were present at that "wake." The disease is practically limited to the Richmond Street and Simon Square district, which was recently reported as an insanitary area and would speedily have been dealt with by the Town Council without the stimulus of this very bitter experience. The original case must have been imported, as for many years there has been no typhus fever in that locality. Quarantine has been vigorously carried out by the public health authorities, and its value has been amply attested by the fact that 14 of the 38 cases now in the City Hospital were actually taken from amongst those thus isolated. It is to be hoped that the disease is now well in hand and that the worst is over. The type has been of at least average severity. It has to be added with regret that one of the oldest and best nurses in the Fever Hospital has fallen a victim to the disease. Nurse Janet Thomson, who has been a nurse in the hospital for twenty years and in the service of the city for thirty years, died on November 28th. She was on duty a few days ago. The Convener of the Public Health Committee at the Council meeting on November 29th paid a well-merited tribute to the zeal and skill and good influence of Nurse Thomson. She died doing her duty for the humblest and poorest of her fellow citizens.

THE ROYAL SOCIETY ANNIVERSARY.

At the anniversary meeting of the Royal Society on November 30th, the President, Lord Lister, in the course of his address, expressed his satisfaction that the Secretary of State for India had appointed a British Commission containing a majority of scientific experts to inquire into the plague in India. One of the subjects which would engage their attention would be the value of Professor Haffkine's preventive inoculation; and he added that Professor Haffkine had promised to visit this country in May, and to bring the facts before the Society at one of the "meetings for discussion." Lord Lister then paid a warm tribute to Mr. Chamberlain for his enlightened action with regard to malaria and allied diseases and to rinderpest. Koch had ascertained that the serum of an animal suffering from rinderpest conferred a transient immunity, and Kolle and Turner, working on this basis, had been able to produce efficient immunity by simultaneously injecting at two distant parts of the animal's body a little of the antitoxic serum, and a dose of the blood of the diseased animal which without the serum would certainly prove fatal. The animal suffered from the disease in a form so modified that as a rule it had no symptoms, or only slight symptoms, though in about 1 per cent. death occurred; this was to be contrasted with the mortality from ordinary rinderpest, which was from 80 to 90 per cent. The annual medals were then presented, and the officers and Council for the ensuing year proposed by the Council were elected. In the evening the annual dinner took place under the presidency of Lord Lister, by whom the toast of "The Society," which was given by the Bishop of London, was acknowledged. The toast of "The Guests" was acknowledged by Lord Curzon of Kedleston and by Lord Kitchener of Khartoum.

THE CYCLE SHOWS.

In the development of industries it may be taken as a general rule that, when successive improvements are matters of detail rather than matters of principle, the industry has become established. The early years of an industry witness novel ideas often crudely carried into practice, the later years minor improvements well worked out as to detail. The cycle trade of to-day is in the latter condition. The year's advances as represented by the National and Stanley shows are in minor matters; the constructional scheme of the bicycle is as it was last year. It is consequently a matter of difficulty to pick out from the enormous mass of exhibits at the Crystal Palace and the Agricultural Hall any article for particular notice. In matters of detail so much is a question of individual taste. One fact, however, stands out with clearness—that is the great reduction in price even of good machines. With the enormous competition that exists in the trade this was bound to happen, and this year sees the commencement. Really serviceable machines can be obtained for £10, in some cases for even less. Some of the best examples of ingenious design and workmanship are improvements in brakes. As a whole, brakes can be divided into foot brakes and hand brakes, and then again into tyre or rim brakes and axle or band brakes. The latter class may be applied either to the crank, axle, or to the hub. Similarly the tyre or rim brakes may be applied to either the front or back wheel. Brakes acting on the driving wheel are probably better than those acting on the driven (front) wheel, and brakes operated by independent movement are better than those actuated by some quasi-automatic mechanism such as back pedalling. Ingenious as the latter system is, it is too complicated in practice to be really good. Of brakes, then, judged on this principle, we

should prefer, of those we have seen, the Cooper rim brake and the Sawyer foot brake. In the matter of lamps, too, several novelties can be seen. Acetylene, though it is the pride of the cyclist, is too apt to be the despair of the pedestrian and the coachman, for it is too bright for ordinary use. Electric lamps are not practical, for they either necessitate the carrying of heavy accumulators and the trouble of recharging, or else involve extra expenditure of foot power, as in that class which are operated from a small dynamo driven by the wheel. The ideal arrangement in a hilly country would be to convert the power lost in braking down hill into light, but electric science is not yet equal to this. Of saddles a vast selection is possible, but here again all depends on individual taste. Saddles should be made to measure, like boots and trousers. Of tyres, the Fleuss tubeless has stood the test of experience, and it is the most simple of any.

COMPULSORY SHOP CLUBS.

It is announced that the Home Secretary has assented to the appointment of a Departmental Committee to investigate the grievance of "compulsory shop clubs," and that this Committee consists of Mr. Jesse Collings, M.P., Mr. Cozens Hardy, Q.C., M.P., and Mr. Brabrook, Registrar of Friendly Societies. It will be interesting to learn what the Committee thinks of the hardship complained of. Most of these "shop clubs," styled compulsory because membership is made one of the terms of employment by the employer, are of the sick benefit variety, and the contribution of the members is often handsomely supplemented by the shop proprietor, and in some cases the clubs are only kept solvent by his assistance. Although the payment of the shop club doctor is small enough, and such appointments are not very favourably regarded by the profession, it is difficult to see what the workman, who for a few weekly pence obtains benefits in sickness which are often of the greatest use, has to complain of, or how he will be benefited if such institutions be made illegal. Of the value of such legislation as the Truck Act there can be no doubt, but whether it is a sound policy further to extend the already encroaching principle of legislative interference with the contracts of employer and employed is by no means certain.

OBSTETRIC SURGERY IN COUNTRY PRACTICE.

The superior professional education of the practitioner and the simplification of antiseptic surgery have rendered practicable to him certain bold operative procedures which not many years since would have never been dreamt of even in the operating theatre at a great hospital. Dr. Loussot, of Landivisiau in Brittany, was called in last August to a case in the country where the midwife had ruptured the uterus in attempting version. The patient was sinking from peritonitis. Dr. Loussot succeeded in procuring compresses, gauze, drains, silks, and brushes sterilised in an "autoclave." He at once boiled his instruments for thirty minutes, and burnt alcohol in the interior of the pots and pans at hand for holding sponges, instruments, etc. He also managed to get some clean linen and placed it on the table used for the instruments. A manservant administered the anæsthetic. Then, after a second cleansing of the patient's abdomen, an incision was made from the pubes to the umbilicus. The laceration, lying to the right, had already been detected from the vaginal side; there was also prolapse of intestine and omentum. The peritoneal cavity was full of bloody serum and clots. The rent in the uterus was four and a-half inches long, running parallel and anterior to the right broad ligament from the right fornix to the cornu. The most serious fact about the case was that the edges of the wound were badly bruised. Dr. Loussot, therefore, determined to remove the uterus entire, as Cæsarean section and even Porro's operation involved the leaving behind of damaged and evidently septic uterine tissue. The broad ligaments were tied off, the appendages removed, then a circular collar of peritoneum was dissected off the uterus. This was done without any difficulty. A ligature was passed under the inferior extremity of the rent, that is to say, into the top of the vagina. Then a series of interlocking ligatures were passed all round the vaginal insertion of the cervix, which was separated from the vagina bit by bit with scissors as each ligature was drawn tight. The peritoneum was not closed over the vagina, but a gauze drain was passed from above into the vaginal canal after free flushing of the peritoneum with boiled and salted water. The patient made a good recovery. Great credit is certainly due to the operator in this case for so promptly putting his principles into practice, and thanks are due to him for showing that panhysterectomy is not a desperate measure, feasible only to a few experts operating at a hospital or home. On the contrary, it is perhaps easier than Cæsarean section, which involves complicated sutures. When the uterus has become hopelessly septic, no doubt it is best removed. The older operation only hastens the fatal termination of the case. Mr. Gray, of Newmarket, and other living men, have succeeded in doing Cæsarean section successfully in remote places under very unfavourable conditions, and with no skilled assistance. Now that experience has made antisepsis easy, the rural obstetrician will no doubt perform bold feats of this kind more frequently, and with good results.

AN ECCENTRIC PHYSICIAN.

Dr. David Gruby, whose death was recorded in the British Medical Journal of November 26th, was one of the most eccentric as well as one of the most successful physicians in Paris. How much of his success was due to his eccentricity it would be difficult to say, but though the oddity of his manners and methods was to a large extent deliberate, he was not a quack. Born in 1810 at Grosswardein, in Hungary, he studied in Vienna, where in due course he took his degree. He was one of the pioneers of the use of the microscope in pathological work, and published his researches in two works, *Observationes Microscopicæ ad Morphologiam Pathologicam Spectantes* (Vienna, 1839), and *Morphologia Fluidorum Pathologicorum* (Vienna, 1840), both illustrated. The fact of his being a Jew closing all avenues to professional advancement in his own country at that time, he went to Paris, where he taught histology, having Claude Bernard among his pupils. It was in these early Parisian days that he presented some communications to the Académie des Sciences containing accounts of discoveries which had to be made anew half a century later by M. Sabouraud before they found acceptance. In 1842 Gruby described a fungus as present in "contagious mentagra," and this fungus is now recognised as identical with the trichophyton megalosporon endothrix, which M. Sabouraud has shown to be concerned in the production of certain forms of ringworm. In 1843 he described a different fungus which he called the microsporon Audouini, as occurring in cases of "porrigo decalvans," a term then used to designate alopecia areata. As other investigators failed to find the parasite in cases of alopecia areata, the microsporon was dismissed as a myth. Thus by an error in terminology a new truth was nearly lost to science. In 1844 Gruby described a third fungus which he had found in tinea tonsurans. To him, therefore, belongs the priority of the discovery of the plurality of the ringworm fungi, a fact which M. Sabouraud with a generosity by no means universal among scientific investigators, not only acknowledged but was the first to proclaim. But for him Gruby's researches would have remained comfortably buried in the *Comptes-Rendus* of the Académie des Sciences. Perhaps in disgust at the neg-

lect with which his scientific work was received, Gruby abandoned the microscope and gave himself up to practice. Patients soon flocked to him, the devout female sex naturally predominating, for was he not a kind of "Asian Mystery?" He rode in a carriage lighted only by a hole in the roof. He wrote prescriptions covering several sheets of paper, but consisting chiefly of harmless ingredients in a vehicle of *aqua fortis*. He exacted the strictest obedience, and insisted on a ritual of minute observances such as walking to the Arc de Triomphe on one side of the Champs Elysées, and coming back on the other; eating gingerbread and cheese at 5 o'clock in the morning, and apples at midnight; putting so many grains of salt into an egg, or leaving a particular window open in a room for twelve days and twelve minutes. In this way he did good to many hypochondriacs by making them give their whole mind to the carrying out of his instructions, and thus leaving them no time to think of their symptoms. The plan reminds one of the story of Sydenham, who directed a patient to consult "Dr. Robertson of Inverness." The patient braved all the perils of a journey to the Highlands in the seventeenth century, only to find that there was no physician of the name of Robertson there. But on his return he was obliged to own himself cured, the result being due, as Sydenham pointed out, to the mental preoccupation caused by the hope of deriving benefit from the Scottish oracle, and afterwards by nursing his wrath against the English Hippocrates. Gruby's consulting room was decorated with skeletons and stuffed animals, like the apothecaries' shops in the Middle Ages. He died as he had lived, in silence and alone. He allowed no one to enter his sleeping-room, and when the door was burst open by the police he was found lying dead on the skins spread on the floor, which formed his only bed.

TEMPORARY ECTOPIA CORDIS.

Those who were present at the great dinner given to Professor Virchow by the medical profession on October 6th will remember Surgeon-General Jameson's story of how Colonel Sloggett explained his escape from a fatal wound by the theory that "his heart was in his boots during the battle." A writer in the *Medical News* of New York says this recalls a conversation which he had with Ex-Governor O'Farrell, of Virginia, who, while a Confederate soldier in the Civil War, had been shot five times, and had received three sword wounds. One bullet entered just below the heart, and came out at the back. Dr. Hunter McGuire attended him at the time. After the then Colonel O'Farrell's recovery, Dr. McGuire said he wondered how he had not been shot through the heart. The Colonel said it must have been because his heart "was in his mouth" at the time. Temporary ectopia cordis would seem to be a not infrequent condition among warriors "when the drums begin to beat."

THE VICTORIA HEALTH INSTITUTE FOR INDIA.

The proposal to commemorate in India Her Majesty's Diamond Jubilee in India by the creation of a Victoria Health Institute was originated chiefly by His Highness the Maharaj Rana, of Dholepore. It received warm encouragement from His Excellency the Viceroy, Lord Elgin, and also from the Government of India. The exertions and influence of its originator have been successful in securing the support of all the ruling princes of India with one exception, and a sum of nearly 24 lakhs of rupees has been collected towards establishing and carrying on the institute. The Rana of Dholepore is known not only as an educated and enlightened prince, but also as a liberal man with large Oriental sympathies to whom the advantages of establishing such an institute are apparent. Complaints against the proposed institute have been made in some native quarters, notably by the Jains and other sects, but their opposition is scarcely considered to be based on rational grounds. The names of the other princes of India who have willingly helped the Dholepore Rana should be noted. They are the Maharajah of Patiala, the Maharana of Oodeypore, the Maharajah Scindiah of Gwalior, the Nawab of Rampore, and others. The details would be arranged by a committee. It is to be hoped that the great and rich chief, the Nizam of Hyderabad, will afford substantial help towards the beneficent object his brother Indian chiefs have in view. A petition has been presented to Lord Curzon by antivivisectionists in this country asking him to discourage the movement, but the growing necessity for a Pasteur Institute for India may be judged from the fact that since July 1st 19 British soldiers have been sent home by the Government to Paris for treatment at a cost not far short of Rs. 19,000.

"BOO-HOO" FEVER.

Dr. Walter F. Robinsin, U.S. Medical Inspector at Honolulu, has discovered a new disease which presents features sufficiently remarkable to make it worth while to reproduce his description. Shortly after the troops were settled in Honolulu, he says, there appeared among them a peculiar complaint somewhat resembling influenza. There were pains in all the bones, especially in the small of the back, generally severe headache, coated tongue, loss of appetite, and slight fever. It might be thought that these were mild attacks of malaria, more especially as malaria occurs on the island. Rigors were seldom observed during the attack, and there was nothing typical about the fever. The attacks did not last, as a rule, more than two or three days, and then the patient would feel as well as ever. One symptom, however, was almost constant, namely, general depression and discouragement. The soldier would lose all his courage and interest in his duties and in the army in general, and would only mope and wish to be sent home. This condition is known all over the island by the name of the "boo-hoo" fever. Strangers are very apt to be attacked by it, and Dr. Robinson thinks that the cause is undoubtedly to be found in the new climatic conditions in which the patient finds himself. He says it may fairly be compared to the distemper which affects horses when they are taken from one climate to another. Both quinine and phenacetin are of value in this disease, which, as already stated, is of short duration and yields readily to treatment. From Dr. Robinson's description of "boo-hoo" fever it may be gathered that this interesting disease bears a strong family likeness to nostalgia.

POISONOUS OVERCOATS.

After the recent snowstorm, a large number of men were employed by the Public Works Committee of the Birmingham City Council to assist in clearing the streets, and they were provided with overcoats. The drippings from their overcoats—particularly from the sleeves and the lower borders—produced large sloughs on the men's wrists and knees. Some sixty of the employees have complained of symptoms, and a considerable number of them are under treatment at the General Hospital and the Queen's Hospital. They are suffering from large patches of sloughing skin, dark grey in colour, surrounded by an area of very inflamed and œdematous skin. These patches are almost exclusively on the wrists and lower parts of the thighs. There is a good deal of heat and smarting about the inflamed patches, and in some cases considerable adenitis of the nearest lymphatic glands. Dr. Alfred Hill, the medical officer of health, has traced the trouble to chloride of zinc, with which the coats had apparently been treated in the process of manufacture. He found very large quantities of it in all the clothes. The great solubility of the chloride of zinc caused it to be washed into the dependent parts of the coats, where it came into direct contact with the skin. The warmth of the skin would then cau e evaporation and concentration of the solution, and produce the powerful escharotic effect

which the salt is known to have. The garments, to the number of 300, have all been called in, and the committee have decided to return them to the makers.

DR. J. B. RUSSELL.

Dr. J. B. Russell, on the eve of his departure to Edinburgh to undertake his duties as member of the Local Government Board for Scotland, was last week the recipient of several presents, and in addition to the dinner given in his honour by the managers and staff of the Western Infirmary of Glasgow and already mentioned in the British Medical Journal, he was entertained by the Society of Medical Officers of Health for Scotland. On the afternoon of November 25th the staffs of the Sanitary Department and of the Fever Hospitals of Glasgow met and presented him with a silver service and a lounge chair with reading desk. In acknowledging these gifts Dr. Russell made an amusing speech, contrasting the work of the sanitary authorities in their early days with that of the present time. The dinner given by the Society of Medical Officers of Health was also held on November 25th and Dr. Campbell Munro occupied the chair. Dr. J. C. McVail proposed the health of Dr. Russell and presented him with an address on parchment, together with a silver casket for its safe custody. The address emphasised his knowledge, experience, and administrative skill, congratulated him on his recent appointment, and expressed the gratification of the Society that his skill was now available for the whole of Scotland.

THE SANITARY INSPECTOR AS A MEDICAL EXPERT.

The medical profession is evidently held in scant respect in the good town of Ayr. Customarily, the medical officer of health is regarded as the authority for deciding the expediency, or otherwise, of the removal to hospital of patients suffering from infectious diseases. But they have changed all that in Ayr. The Town Council have decided that no patient shall be removed to hospital except upon the order of the sanitary inspector. That estimable official is presumably to be at the service of the medical practitioners of the town for purposes of consultation. With him will lie the decision as to whether the patient is fit for removal or no. The medical attendant may have views on the subject, but it is the sanitary inspector who is to ordain. The resolution certainly implies a serious reflection upon the medical profession, or upon the sanity of the Ayr Town Council.

MONARCHS AND MEDICINE.

His Majesty Menelek, Emperor of Abyssinia, who, it is reported, intends to present a paper on Vaccination at the forthcoming International Medical Congress in Paris, is said to take an enthusiastic interest in medical science, particularly in surgery. His favourite amusement, it is reported, is to be present at the operations in the hospital established at Adis-Alala by the Russian Mission. He watches the performance with a critical eye, and a skilful piece of knife-play or a dexterous feat of manipulation excites his warmest admiration. His pleasure rises to the highest pitch when he is given an arm to hold during an amputation, or is otherwise allowed to give active assistance. His delight on such occasions finds vent in rapturous exclamations of "Oyu gut! oyu gut!"—expressions which we give with all reserve, but which are said to mean "Admirable! admirable!" He is careful never to miss any rare or difficult operation, and insists on being kept posted in all that goes on in the hospital. This enthusiasm for the healing art on the part of the Negus recalls the fact that the Queen of Portugal has been credited with a like taste. Many years ago we gave currency to a report that Her Majesty, had after going through the regular curriculum of study, taken the degree of Doctor of Medicine. This statement was the means of eliciting an official contradiction from the Lord High Chamberlain of Portugal. On the strength of this contradiction we did our best to put the matter right, but it is much easier to start a statement of this kind on its travels than to stop it. The inaccurate information which we were misled into publishing has been in circulation ever since. After going the round of the press in Europe it crossed the Atlantic, and had a long run in the United States. As it has not been seen for some time, we had begun to hope that its long career had finally ceased. But there does not seem to be in the world of journalism a bourne from which no traveller returns; and it is with a feeling akin to dismay that we read in a recent number of a leading medical journal published in New York that "Marie (*sic*), the young Queen of Portugal, who has been known for some time to be engaged in the serious study of medicine, is now reported to have received her formal degree of Doctor of Medicine." It is added that Her Majesty's first patient is her husband, whom she is treating for obesity, and that so far the new M.D. is satisfied with the results of her treatment. The last statement is what Artemus Ward would have called a "goak" coeval with the original legend, and therefore long past the freshness of youth. As the British Medical Journal is one of the sources of this legend, we cannot see it revived even at this time of day without a guilty feeling. We therefore ease our conscience by stating once more that it is the baseless fabric of an imaginative journalist's vision.

THE CHALMERS HOSPITAL, EDINBURGH.

A new wing has been added to, and several other improvements made in, the Chalmers Hospital for the Sick and Hurt, Edinburgh, and it was reopened on Friday, November 25th. The changes, which essentially consist of improved and extended possibilities of treating outdoor patients and better accommodation for the staff, have been made in commemoration of the Diamond Jubilee of the Queen. The cost has been borne by a contribution from the funds of the Faculty of Advocates, who are the trustees of the hospital, and by contributions from individual members of the Faculty and others. The hospital was originally opened in 1864, has four wards, two private and two public. Each of the private wards contain eight beds, separated by curtains, and patients are received at 35s. a week, or 5s. a day. Each of the public wards has 12 beds. The hospital is managed by a Board of Directors appointed from their own number by the Dean and Faculty of Advocates.

MEDICAL SIGNATORIES OF THE DECLARATION OF INDEPENDENCE.

The *Journal of the American Medical Association* has an interesting article on the medical signatories of the Declaration of Independence, whereby the American Colonies formally cut themselves adrift from the Mother Country. The medical men who appended their names to that historic document were five in number, namely, Drs. Josiah Bartlett, Matthew Thornton, Oliver Wolcott, Benjamin Rush, and Lyman Hall. Dr. Josiah Bartlett is described as "a descendant of an English family whose founder had entered England with William the Conqueror, and had been ennobled by him." The founder of the American branch of the family settled in Massachusetts in the seventeenth century. Dr. Bartlett, who was born in 1729, was a home-bred American physician, and had gained a considerable local reputation by his successful treatment of malignant diphtheria, then called "black canker." In 1765 he was elected a member of the Provisional Legislature, and distinguished himself by his opposition to the Royalist Governor Wentworth, who, regardless of the fact that the vast majority of the settlers were Puritans, attempted to establish a State Church. In 1775 Dr. Bartlett was chosen a member of the Continental Congress, and later he became a member of the Committee which drafted

the Articles of Confederation under which the United States were ruled until the adoption of the Federal Constitution in 1788. Dr. Bartlett, when the Declaration of Independence was laid before Congress, was the first to vote for it, and the second to sign it, his name coming after that of John Hancock, the President of the Congress. Afterwards Dr. Bartlett was chosen Governor of New Hampshire. His interest in politics did not lead him to neglect his profession, and he took a prominent part in initiating the movement which resulted in the framing of a Pharmacopœia for the United States. Dr. Matthew Thornton was born in the North of Ireland in 1744, but went to the United States at the age of 3. In 1775, when the Royal Government was overthrown, Dr. Thornton was elected President of New Hampshire. He took a prominent part in organising the preparations made by the State for war. Dr. Oliver Wolcott was the descendant of a Puritan family which emigrated to New England in 1630. He was born in 1726, and took his degree at Yale in 1741. He was elected to the Continental Congress in 1776, and was elected Lieutenant-Governor of Connecticut in 1786. He was one of the foremost financiers of his time. Dr. Benjamin Rush, the most famous of them all, was the great-grandson of an officer of Cromwell's Ironsides. He was born in 1745, graduated at Princeton in 1766, and afterwards studied in Europe, taking the degree of Doctor of Medicine at Edinburgh. In 1789 he became Professor of Medicine in the College of Philadelphia, and he acquired a great reputation both as a teacher and a physician. He took a prominent part in establishing the Federal Constitution. Dr. Lyman Hall was born in Connecticut in 1731. He was one of the foremost in that State in organising resistance to the British Government. Even those who hold—wrongly, as we think!—that medical practice and politics are incompatible elements, will admit that the five doctors who signed the Declaration of Independence were politicians of whom the medical profession may well be proud.

THE CHEMISTRY AND BACTERIOLOGY OF ICE CREAMS.

THE London vestries have recently given a good deal of attention to the stuff purveyed by ice-cream vendors, and a valuable report on the chemical and bacteriological analyses of ice creams, undertaken for and at the order of the vestry of Paddington, has recently been presented to the Sanitary Committee by Dr. Dudfield, M.O.H. The reports of Professor Stokes, the public analyst for the vestry, and of Dr. Foulerton, of the British Institute of Preventive Medicine, show that 11 samples of ices were taken, 3 from shops and 8 from street barrows, and 4 samples from the washtubs on street barrows, for bacteriological investigation. The ices were also examined chemically. Dr. Dudfield inspected the premises of all the vendors, who were, with one exception, Italians; the exception, an Englishman, is stated to have been the only one who inhabited a place which in any degree approached the desirable state of cleanliness. Many of the other vendors lived in mews. From Professor Stokes's chemical report we learn that out of the 11 samples 2 contained no milk, and in 5 there was no admixture of egg. Fruit was used to flavour the ices in only 2 cases. It is satisfactory to learn that no metallic contamination from the vessels used could be detected in any case. Dr. Foulerton's bacteriological report states that no disease-producing organisms were found, but large numbers of others, many of which are known to be associated with fermentation processes. The number of organisms present per cubic centimetre ranged from 162,500 to nearly seven and a half million. The B. coli communis was found in all but 2 of the samples; 1 sample probably contained as many as 88,000 bacilli of this species. Many other organisms were isolated, amongst which may be mentioned the staphylococcus aureus and the streptococcus. Human hair, soot, dust, and in 1 case a small round worm, are among the objects identified microscopically. The wash-waters proved to be very bad judged bacteriologically, but the B. diphtheriæ was not isolated from them. Dr. Dudfield submits two suggestions: first, the desirability of registering places where ices are made or sold; and, secondly, the apparent inadequacy of existing legislation to deal with food stuffs bacteriologically contaminated. With regard to the latter point, we believe that the Public Health (London) Act, Section XLVII, Subsection 3, will be found to apply to ices, as, indeed, the President of the Local Government Board stated in reply to a question on the point in the House of Commons on June 23rd last, and we know that convictions have been secured under that section. It appears, however, that the ice-cream vendor can always throw the onus of blame on the milk vendor, though after the ice seller has once been warned this excuse would not serve him. Dr. Dudfield also suggests that the use of open vessels for the wash-water on the barrows should be prohibited, and that each barrow should be provided with a closed tank with a tap.

ANTIVIVISECTION IN THE UNITED STATES.

A JOINT Committee representing the various scientific societies of the City of Washington has been formed in view of the possible danger of a snatch vote being given by the Senate of the United States making vivisection in scientific research illegal. The American Humane Society is to hold a meeting in Washington in December, and it is considered to be not unlikely that the Antivivisection Bill now pending in the Senate may be called up, and perhaps passed.

THE MUNIFICENCE OF THE GLASGOW CORPORATION.

FOLLOWING upon the devolution of office by Dr. J. B. Russell, the Town Council of Glasgow have fixed the salary of the medical officer of health for the city at £700 per annum. There appears to be a consensus of opinion, alike among the general public and in the medical profession, that, in view of what is paid elsewhere, the salary is shabby in the extreme in the case of a municipality which claims to represent "the second city in the Empire."

THE SIRDAR'S EYESIGHT.

LORD KITCHENER OF KHARTOUM has recently consulted a well-known London ophthalmic surgeon; and we are glad to be able to state that the sinister rumours of threatened loss of sight which have been so widely circulated have no foundation in fact.

CAPTAIN LEONARD ROGERS, F.R.C.S.Eng., M.B.Lond., Indian Medical Service, has been selected by the Director-General to officiate as Imperial Bacteriologist during the absence of Dr. Lingard on one year's sick leave. The administrative control of the office referred to has been transferred from the Inspector-General in the Civil Veterinary Department to the Director-General of the Indian Medical Service.

THE Queen has been pleased, on the recommendation of the Secretary for Scotland, to approve of the appointment of Professor D'Arcy W. Thompson, M.A., of University College, Dundee, to the office of scientific member of the Fishery Board for Scotland, made vacant by the resignation of Sir John Murray, K.C.B., F.R.S., etc.

OWING to pressure on our space we are compelled to hold over a number of letters and communications, including a part of the report of the proceedings of the General Medical Council.



The Town Hall, Portsmouth.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, PORTSMOUTH, 1899.

For the first time in the history of the Association the annual meeting will be held next year at Portsmouth, the chief naval arsenal of Great Britain, and, as the locality is replete with many objects of national and historic interest and the centre also of many pleasant excursions, it cannot fail to prove a very attractive meeting place to the members.

The New Portsmouth.

At the entrance of the famous harbour the old town of Portsmouth is situated, and on the opposite side stands the ancient port of Gosport. Sixty years ago Portsmouth was a mean-looking and dirty place, surrounded by batteries and bastioned ramparts covered with trees and enclosed by trenches and outworks. During recent times, however, the locality has been literally transformed; the old walls have been levelled, the ancient moats filled up, and now well-cultivated parks and recreation grounds occupy their places. The changes of the last thirty years have converted Portsmouth into a large navy and army centre with ever-extending suburbs.

Southsea.

Southsea is situated on the coast outside the harbour, separated from the beach by a grass-covered common, and it now practically absorbs the whole water frontage of Portsea Island. Only a few years ago it was a small village, but it has now grown into a large and fashionable watering place, and from the esplanade and piers many pleasant views may be obtained of the mouth of the harbour, the roadstead of Spithead, and the Isle of Wight. In the interior the residences are for the most part villas. Trees are greatly cultivated, and the shady groves by which the place is intersected constitute not the least of its many attractions. The business streets are broad and well lighted, and the trading thoroughfares form pleasant promenades, which in fair weather present a gay, many-coloured, and busy appearance.

The General and Sectional Meeting Places.

The local arrangements for holding the annual meeting of 1899 are already making very satisfactory progress, and the medical profession are sure of the kind co-operation of the Mayor (Mr. Alderman Scott Foster), Inspector-General H. Macdonnell of Haslar Hospital, and the medical officers of the Royal Navy, and Surgeon-General C. McD. Cuffe, and the officers of the Royal Army Medical Corps.

At the suggestion of the Arrangement Committee the Council have decided to hold twelve Sections, as follows: Medicine, Surgery, Obstetrics and Gynæcology, State Medicine, Psychology, Anatomy and Physiology, Pathology, Ophthalmology, Diseases of Children, Pharmacology and Therapeutics, Laryngology and Otology, Tropical Diseases.

The rooms in which the sectional meetings will be held are situated close to the Town Railway Station, and all of them are within three minutes' walk of the Town Hall, a building well adapted for the general meetings and the annual dinner of the Association. The hall is a noble structure of the Corinthian order, erected at a cost of £140,000. It is situated in the very centre of the town, and has sitting accommoda-

tion for more than 2,000 persons, but it has sometimes happened that 3,000 have been collected within its walls. The building operations extended over a period of several years, and the opening ceremony was performed by H.R.H. the Prince of Wales in August, 1890.

THE MEDICAL INSTITUTIONS OF PORTSMOUTH.

Haslar Hospital.—The chief naval hospital and naval school in the kingdom stands on a tongue of land between the mouth of the harbour and Stokes Bay. In order to preserve the coast-line from the inroads of the sea a wall of stone has been erected from Fort Blockhouse to Fort Monckton. The hospital was erected somewhere between 1746 and 1762, and it is one of the largest brick edifices in the country. It contains 120 wards, and these afford accommodation for 2,000 patients. The western side of the quadrangle is formed by a chapel erected in 1763. The ground behind this building is occupied by well-cultivated pleasure grounds and the residences of the Inspector-General and the other officers of the medical staff. The hospital museum is well worthy of a visit, and contains many valuable pathological and mineralogical specimens.

The chief *Military Hospital* of the district is situated in Portsea on the site of the old fortifications. It is an old-fashioned building erected about forty years since, and contains accommodation for about 180 soldiers. Another station hospital stands on the Gosport side of the harbour facing Spithead. The wards are one-storey blocks, with good cross ventilation, and are united by open corridors.

The Royal Portsmouth Hospital is the general hospital of the town and surrounding neighbourhood. It is situated not more than half a mile from the Town Hall, and unfortunately occupies rather a back position, so that it is almost hidden from the gaze of the benevolent public. It is a singular old building, built in patchwork style, and destined to complete pulverisation in a few years. It was opened on January 2nd, 1849, with accommodation for only 12 patients, but during the last twenty-five years the institution has gradually increased, and now the old hospital contains 140 beds. The foundation stone of the New Portsmouth Hospital was laid by H.R.H. the Duke of Connaught on August 7th, 1897, and the first two blocks of the new building will be open for the reception of patients early in the ensuing year.[1]

The South Hants Eye and Ear Infirmary was established in 1884. A new and handsome building is now being erected on the original site, and when completed it will have accommodation for about 20 patients.

Besides these institutions may be mentioned the Borough Asylum, containing 720 beds, the new Union Hospital, the Contagious Diseases Hospital, and the South Coast Medical and Surgical Home.

THE HARBOUR.

Portsmouth can boast of one of the finest harbours in the world. It was used by the Romans and also by the Danes and Saxons during their incursions on the South Coast. At the mouth stands Point Battery, King Edward's Round Tower, and Fort Blockhouse. On the right bank is seen the Gun wharf, with its many storehouses and buildings, which constitute the naval and military arsenal of Portsmouth. It contains the munitions of war for the troops of the Southern District, including 20,000 magazine rifles and other arms ready for any emergency. The armoury is celebrated for its collection of ancient weapons and trophies of war—rivalled only by the Tower of London.

Beyond this establishment the waterside is occupied by the Harbour Railway Station and by the basins and building slips of the Dockyard.

The left bank is covered by the town of Gosport and the Royal Clarence Victualling Yard, from which are issued the beef, spirits, tobacco, tea, coffee, biscuits, and general supplies for the use of the Royal Navy. The Torpedo and Gunnery Schools can be seen in the upper regions of the harbour.

Whale Island is practically a naval school and its gun battery is the largest establishment of the kind under the direction of the Admiralty. Between the banks and extending into the higher reaches the broad water of the harbour is covered with every kind of fighting and pleasure craft, and with old hulks that have in days long gone by thundered forth many a broadside. Here, too, is to be seen the old *Victory*, the famous flagship of Nelson, and not far off is moored the *St. Vincent* training ship, generally covered with young seamen learning their art.

[1] BRITISH MEDICAL JOURNAL, August 14th, 1897.

THE NAVAL YARD.

Without the Dockyard Portsmouth would never have reached the position that it now holds. The natural advantages of the place for naval purposes were recognised at an early date, but it was Henry VII who practically founded the British navy, and converted the ancient docks into a royal establishment. In 1540 the dockyard covered an area of only eight acres; but to-day the space included within the boundary wall extends over one hundred and eighty acres, and of these ninety-five have been reclaimed from the mudlands of the harbour. In respect of position, extent of ground covered, number and size of basins, docks, workshops, and appliances of all kinds for building and repairing ships of war, Portsmouth Dockyard is unequalled by any similar establishment in the world.

HOTELS AND LODGINGHOUSES.

Southsea will supply the members of the Association with very pleasant and comfortable accommodation during their visit next year. Its outward face is lined throughout its length by numerous large hotels and lodginghouses, and a broad and level carriage drive. The principal hotels facing the sea are the Pier, Queen's, Esplanade, Imperial, Grosvenor, and Southsea Beach Mansions.

There are many famous inns in the old town of Portsmouth. The George Hotel in High Street is a historic house, and enjoyed a good reputation even in the days of James I. It was once the resort of many naval heroes such as Howe, Hood, Duncan, Rodney, and Collingwood; and it will be ever memorable as the house in which Nelson breakfasted for the last time in England. The room which he then occupied is still carefully preserved. The Star and Garter, at Point, is another old inn with many interesting associations. The deeds of the old house date back to the reign of Queen Mary. From its windows a fine view of Portsmouth Harbour can be obtained, and in it Howe, St. Vincent, Nelson, John Franklin, Dickens, and Thackeray, have often stayed. Louis Philippe, when in exile, made it a frequent resting place. The old Crown Hotel was known during the American and Napoleonic wars as the "Naval House." It was built on the site of an ancient gaol, and the old dungeon in which Jack the Painter was confined is still in existence. During the visit of the Allied Sovereigns in 1814, the Crown Hotel was the scene of many distinguished gatherings, and when Blucher visited Portsmouth this house was his resting place.

EXCURSIONS FROM PORTSMOUTH.

Portsmouth is a good centre for many pleasant trips, and there are many places of interest within a short distance of the town. Portsdown Hill can be easily reached in half an hour either by tramcar or rail. From its summit a magnificent view can be obtained, including a complete survey of the defences of Portsmouth. Porchester Castle stands on the extremity of a peninsula, which projects into the upper part of the harbour, and it is one of the earliest of the existing strongholds of the country.

To visit Netley Hospital, the finest military establishment of the kind in the British Islands, involves only a short journey by rail. Very near to the hospital is the beautiful ruin of Netley Abbey, surrounded by rural scenery and flanked by the placid Southampton water.

Winchester is well worthy of a visit, and the Cathedral and College of this ancient city have within them a thousand matters of historic interest.

A pleasant day can be spent at Chichester, including a visit to the Cathedral, and a drive to Goodwood, the seat of the Duke of Richmond. Another favourite excursion is in the direction of Salisbury, taking in Wilton House and Stonehenge.

Those who like the sea may have pleasant trips on the Solent and around the harbour; and then a short passage across Spithead will bring many charming places and the picturesque scenery of the Isle of Wight within their reach. We sincerely hope that the sea may be calm and the weather bright and genial during the first week of August, 1899, and that Portsmouth may then welcome many members of the Association.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1898.

Thursday, November 23rd.

Sir William Turner, President, in the Chair.

(Continued from page 1629.)

Penal Case.

The Council proceeded to the consideration of the case of Frederic Mercer, registered as of 141, Antill Road, E., Lic., Lic. Midwif. 1886, K. Q. Coll. Phys., Irel. The charge against Mr. Frederic Mercer was:

That, being a registered medical practitioner, he had in his employment an unqualified person named Bryden, whom he permitted and enabled to carry on medical practice, and attend on and administer relief to patients as though he were duly qualified, and whom he (Mercer) covered in the carrying on by him of a medical practice.

Mr. Muir Mackenzie stated the circumstances under which the case had been brought under the notice of the Council; and Mr. Alfred Henry Parker, of 142, Grove Road, Bethnal Green, L.R.C.P.Edin., L.S.A., the complainant, was in attendance.

The Council, after hearing Mr. Mercer, who explained the circumstances under which Mr. Bryden had attended a confinement during his (Mr. Mercer's) temporary absence, and after examining Mr. Bryden, deliberated *in camerâ*. When strangers were readmitted,

The President, addressing Mr. Mercer, said that the Council had given great consideration and deliberation to his case, and the resolution they had come to was that the charge made against him had not been proved to the satisfaction of the Council.

The Council then proceeded to consider the case of John Lloyd Whitmarsh, registered as Lic. Soc. Apoth. Lond. 1871, Lic. R. Coll. Phys. Edin. 1872, the charge being "that he was on or about October 24th, 1898, at the Central Criminal Court convicted of felony."

The Solicitor to the Council stated that the usual notices had been sent to the prison, and he had received a certified copy of the conviction.

The President said that the procedure adopted in cases of this kind was for the President to ask the Council to vote on the following resolution:

That John Lloyd Whitmarsh, having been proved to be convicted of felony, the Registrar be directed to erase his name from the *Medical Register*.

The resolution was carried,

The next case was that of Frederick Alfred Fisher, of 29, Colebrooke Row, Islington, registered as Mem. R. Coll. Surg. Eng., 1869, Lic. R. Coll. Phys. Edin., 1870, Lic. Soc. Apoth. Lond., 1871.

That, being a registered medical practitioner, he seeks to attract practice by public advertisements containing invitations to persons to consult him professionally at an address named in the advertisements, which advertisements published by him or to the publication of which he was a party, were themselves of a character grossly discreditable to a professional medical practitioner.

The advertisements complained of were those of an institution called the Nervous Debility Dispensary, City Road, E.C., and had been published in the advertisement columns of the *People* newspaper and elsewhere. The charge was preferred by the Incorporated Medical Practitioners Association, which was represented by Dr. Woods and Dr. Mann. Dr. Fisher did not appear, but wrote a letter saying that he did not understand the summons, as he had written twelve years ago requesting to have his name removed from the *Register*.

Dr. Woods said it had been brought to the notice of his Society that the practice of advertising in the press and by bills was becoming decidedly prevalent in the medical profession, and they desired to stop it, as it tended to degrade the profession.

Dr. McVail was of opinion that the Dr. Fisher mentioned in the advertisement had not been identified as the person whose address was in the *Medical Register* as of Colebrooke Row.

Mr. Tomes thought the question of identity was disposed of by the fact that the summons was sent to the person whose address was on the *Register*, and that person had answered it, saying he did not in the least value the privilege of registration.

Mr. Muir Mackenzie stated that on a question of identity it was in the power of the Council to draw inferences. If they found that "Dr. Fisher, L.R.C.P.," was on the brass plate at Colebrooke Row, and they also found, as was the fact, that he was the only London physician who had that particular qualification, in the absence of evidence to the contrary they could consider that as proof.

Sir Richard Thorne was of opinion that evidence of identity should be obtained, having regard to the fact that there were two men on the *Register* in London of the name of Fisher, who possessed the same qualification, and not one, as premised by Mr. Muir Mackenzie.

Dr. Woods said he had inquired of Dr. Cook, who lived many years in Islington, and he had been informed that the two persons were identical. He thought after Dr. Fisher's admission in the letter which he had written to the Council it was not necessary to produce evidence.

It was moved by Dr. McVail, seconded by Dr. Atthill,

That the consideration of the case of Frederick Alfred Fisher be adjourned.

On a vote being taken, 6 voted in favour of the resolution, which the President declared lost.

Strangers were directed to withdraw. On readmission,

The President announced that the decision arrived at was "that the Council judge Frederick Alfred Fisher to be guilty of infamous conduct in a professional respect, and direct the Registrar to erase from the *Register* the name of Frederick Alfred Fisher."

The Case of the late Mr. Hunter.

Mr. Brown had a question, on the ground of urgency, to bring before the Council, while its legal adviser was present. Through the courtesy of the Council he and Mr. Horsley had had an opportunity of inspecting the papers in regard to the case of the late Mr. Hunter.

The President suggested that as the matter was under appeal it should be discussed *in camerâ*.

Mr. Brown thought nothing was to be gained by discussing it *in camerâ*. He did not intend to go into the merits; he simply wanted to ask Mr. Muir Mackenzie if it was a fact, as he had been informed, that the appeal would be heard within the next few days.

Mr. Muir Mackenzie replied that he had applied to the Court to fix a day before the present session of the Council; but, under existing judicial arrangements, that could not be done. It had been placed at the head of the list, but he could not say when it would be heard.

The learned Counsel here intimated that he thought it desirable the matter should be discussed *in camera*, and strangers were directed to withdraw.

No other business was transacted, and the Council adjourned.

Friday, November 25th.

Sir William Turner, President, in the Chair.

Mr. Victor Horsley stated that before the Council proceeded to the consideration of the penal case, he wished to give notice that he should move, subsequently to the discharge of the next business, as a matter of urgency, that leave be granted to him to bring before the Council a breach of Standing Order No. 7. He did not move that now, because he did not wish to interfere with the business.

Penal Case.

The Council then proceeded to the consideration of the case of James Havard Jones, registered as of Ogof Llandyssil, Carmarthenshire, M.B., Mast. Surg. 1894, Univ. Edin. The charge as formulated was:

That, being a registered medical practitioner, he covers an unqualified person named George Jenkins in the carrying on by such unqualified person of a medical practice, and permits and by his presence and assistance enables the said George Jenkins to carry on a medical practice, and attend to administer relief to patients as though he were duly qualified.

The name of the complainant was Dr. John Jones, of Clydach, Swansea, registered as M.B., Bac. Surg. 1892, M.D. 1893, Univ. Lond., Mem. R. Coll. Surg. Eng. 1892, Lic. R. Coll. Phys. Lond. 1892.

Mr. Muir Mackenzie attended on behalf of the Council, Dr. John Jones appeared in person, and Mr. Lawson Walton, Q.C., M.P., instructed by Mr. Randell, M.P., represented Mr. James Havard Jones.

Dr. John Jones, in presenting his complaint to the Council stated that for some years prior to January 1st, 1898, he had been the medical officer appointed by the workmen engaged at the Tinplate Works, Clydach, Swansea Valley, and that up to the date mentioned he had employed George Jenkins, an unqualified man, as his assistant. On January 1st last, in consequence of the resolution of the General Medical Council in regard to the employment of unqualified assistants by medical practitioners, he dispensed with the services of George Jenkins, and on the same day he forwarded copies of the resolution of the Council in both English and Welsh to the workmen. Shortly after this a deputation of the workmen called upon him to inquire if he had quarrelled with his assistant. He said "No." Thereupon they asked him why he had dispensed with Mr. Jenkins's services. He replied that the resolution of the Council, of which they had already had copies, prohibited him from employing an unqualified assistant such as Mr. Jenkins was. They then said that they had been perfectly satisfied with his (Dr. John Jones) services, and would be sorry to lose them, but wanted him to consent to employ Mr. Jenkins again. He replied that he could not possibly do so. Mr. Jenkins was an exceedingly popular man among a certain section of the community, and in consequence of the position of matters he (Dr. John Jones) sent in his resignation to the workmen on January 10th. A few days after this Mr. James Havard Jones was appointed medical officer to the workmen in his place. He went and resided in the house of Mr. Jenkins, used Mr. Jenkins's horse and trap, and his surgery, and it was suggested that he and Mr. Jenkins were in the habit of driving and walking together, and that Mr. Jenkins accompanied him when he attended certain patients.

In answer to questions put to Dr. John Jones by Mr. Lawson Walton, he said that he knew of no capacity in which he could have continued Mr. Jenkins in his employment after the resolution of the Council. He knew as a fact that the workmen, rightly or wrongly, thought that Mr. Jenkins had been a little hardly dealt with by him after thirty years' continuous employment.

Mr. Richard Llewellyn Davies, chemist, was called as a witness by Dr. John Jones, but, as his evidence proved to be nothing but hearsay, it was rejected.

Mr. Lawson Walton, in opening the case on behalf of Mr. James Havard Jones, said that he might take the point that there was no evidence to support the charge of covering; but his client was most anxious that the Council should hear his account of the unfortunate professional quarrel which had embittered local feeling in the parish of Clydach. One would have expected in such a case as this to have had the testimony of a patient who had been treated by Mr. Jenkins; but such evidence was entirely absent, and the Council were asked to infer, upon the mere association in the same neighbourhood of Mr. George Jenkins and Mr. James Havard Jones, that there was some compact between them under which Mr. Jenkins was allowed to carry on an illegitimate practice, and Mr. James Havard Jones was allowed to reap the profits of it. He asked the Council, after hearing his evidence, to say that such an inference could not be drawn. Dr. John Jones had succeeded a number of medical men in the district who had continuously employed Mr. Jenkins for thirty years. Mr. Jenkins was a gentleman of the highest character and of the greatest respectability, and was greatly beloved by the people among whom he had laboured during that time, when suddenly, after having availed himself of Mr. Jenkins's services, Dr. John Jones saw fit to discharge him. Of course from the point of view of the Council that discharge was a proper act, but from the point of view of the workmen, who probably did not appreciate the public policy which actuated the Council, it was easy to understand how Mr. Jenkins at once became the object of great sympathy, and that the workmen thought, rightly or wrongly, that Dr. John Jones had acted harshly in the matter. They thought Mr. Jenkins might still be employed to mix drugs, or that there was some form of legitimate medical work that he was competent to discharge without offending against the resolution of the Council. The result of the quarrel was completely to sever the relations which had existed between Dr. John Jones and his patients. Thereupon Dr. John Jones sent in his resignation. That was a step which he took without consulting the men, and without any notice to them. A few days after this Mr. James Havard Jones was communicated with, but he said that he would not accept the appointment if Mr. Jenkins was engaged, and it was only on the distinct promise that Mr. Jenkins should have nothing to do with the appointment that he accepted it.

Mr. James Havard Jones, in answer to questions put to him by Mr. Lawson Walton, said that it was quite true that he lived in the same house as Mr. Jenkins, and that he used his horse and trap, and also his surgery, but this was under an agreement which he made with Mr. Jenkins's daughter, by which he was to pay them £15 a month. This included Mr. J. H. Jones's board and lodging. In answer to the suggestion that Mr. George Jenkins sometimes drove about with him, Mr. James Havard Jones said that this was so, but it was not done with the intention of Mr. Jenkins attending any patients. It was simply as a companion. There was absolutely no truth in the suggestion that he had employed Mr. Jenkins to attend any patient, and he never attended a single patient of his. He had never employed Mr. Jenkins in any capacity whatever, and he had never been in his surgery to make up any medicines. Mr. James Havard Jones was then asked several questions by Dr. John Jones and by several members of the Council, particularly as to the arrangement he had made with Miss Jenkins as to the payment of £15 a month, and in reply to Mr. Lawson Walton he said that his reason for going to that particular house was that he could not have obtained accommodation in the place on anything like such favourable terms; that it was the only possible arrangement he could have made; and that he had no other motive in paying £180 a year except to pay a fair sum.

Mr. George Jenkins was then called as a witness by Mr. Lawson Walton. He said he had never attended a single case since leaving Dr. John Jones's employment. He had never made any agreement with Mr. James Havard Jones to assist him in any way with regard to his practice. He approved of the agreement made between his daughter and Mr. James Havard Jones, but it was not a term of the agreement that he should assist Mr. J. H. Jones. He had been going about with Mr. J. H. Jones, but that had not been with the object of visiting patients. Since he left the services of Dr. John Jones he had been without employment, and owing to the resolution of the Council he could not obtain the same employment as he had before. He was now looking out for some fresh employment. In answer to Mr. Victor Horsley, he said he had never studied at any school of medicine, but he was apprenticed to a chemist in 1856.

Mr. William Evans, colliery manager, was called as a witness, and he stated, in answer to Mr. Walton, that it was not true that either he or the men imposed as a condition on the appointment of Mr. James Havard Jones that he should employ Mr. Jenkins.

The case for the defence having been closed, deliberations on the case was adjourned till the following day.

Saturday, November 26th.

Sir William Turner, President, in the Chair.

Penal Case.

The adjourned consideration of the case of Mr. James Havard Jones was then conducted by the Council *in camerâ*, the public having been requested to withdraw. Upon their readmission,

The President stated that the resolution the Council had come to, after deliberating upon the whole of the evidence which had been brought before them, was that the charge made against Mr. James Havard Jones had not been proved to the satisfaction of the Council.

A Question of Procedure.

The President said the next thing they had to consider was whether the Council should give leave to Mr. Victor Horsley as a matter of urgency to call attention to a breach of Standing Order, Chapter 4, Clause 7.

Sir J. Batty Tuke entered a protest against this on the

ground of the condition of the business of the Council and of the important work which had yet to be gone through.

The President put it to the Council whether they were willing as a matter of urgency that Mr. Victor Horsley should now be permitted to interpose and call attention to a breach of Standing Order, Chapter 4, Clause 7. Ten voted in favour of leave being granted, and 11 against.

At the request of Mr. George Brown the names were taken down, whereupon 12 voted in favour of the leave and 11 against, while 7 members did not record their votes. The motion was therefore carried.

Mr. Victor Horsley was sorry that it had been necessary to take a vote upon the subject, because the matter that he had to call attention to was a very small point; but at the same time it did affect the preparation of their programme and the rights of members of the Council to put items on the programme. The point that he had to draw attention to was that he had sent into the Registrar a notice of motion for insertion in the programme. The Registrar acknowledged the receipt of this. It was perfectly true that in the evening the matter to which his motion related was brought up, but it was during the time the proceedings were conducted *in camerâ*. He had not moved that the motion should be brought on *in camerâ*, but, on the contrary, as soon as it appeared that they were *in camerâ*, he moved that they should go out of *camera* immediately. He submitted that because of that accidental circumstance his motion ought not to have been excluded from the programme; in other words, that the programme ought to have contained his notice of motion.

Dr. MacAlister, as Chairman of the Business Committee, said that the Committee tried to use its common sense in preparing the programme. A second motion was handed in at the beginning of the sitting and was brought up as a matter of urgency at the end of the sitting. It appeared as having been proposed in the minutes which were taken of the meeting *in camerâ*, but the meeting went out of *camera* and adjourned without any motion being taken. It was impossible to put on the programme a thing which had been discussed.

The President stated that Mr. Victor Horsley's motion would have been on the programme of business in the ordinary course had it not been that when they were *in camerâ* he understood that Mr. Victor Horsley himself moved that it should be taken as a matter of urgency and that request was acceded to.

Mr. Victor Horsley said that he was sorry there should have been any misunderstanding; he had not moved any such thing; it was Mr. Brown who moved it.

The President understood that Mr. Brown was moving it for Mr. Victor Horsley.

Mr. Brown said that was not so.

Mr. Victor Horsley said that what happened was that he seconded Mr. Brewn's motion. On being asked by the President whether he proposed at that late hour of the evening to go into the subject. He said that he did, and for that purpose he moved that they should go out of *camera*.

The President said that they ought not to discuss in public what had taken place *in camerâ*.

Mr. Victor Horsley said that his notice of motion was dragged into the business by accident, in a haphazard way, and he moved on that occasion that they should go out of *camera*, in order that he might bring the matter forward in a public session.

Several members having spoken, Mr. Victor Horsley was appealed to withdraw his motion for the present, and this was ultimately done.

Report from Executive Committee.

The President said the next business was to receive a report from the Executive Committee in regard to proposed amendments in the Standing Orders referred to in the following resolution adopted on May 31st, 1898:

That the notices of motion numbered 7 to 14 inclusive on to-day's programme of business be referred to the Executive Committee for consideration and report.

On the motion of Sir Dyce Duckworth, seconded by Dr. D. Pettigrew, the Council went into Committee to consider the report of the Executive Committee.

Sir Dyce Duckworth said that in accordance with the resolution of May 31st the Executive Committee had considered the various notices of motion with regard to the Standing Orders, Chapter 9. The first was No. 7. That notice of motion was: "That each Committee shall be convened by the Chairman on his own motion, or by any two members of the Executive Committee." After discussion by the Executive Committee the recommendation they offered to the Council was that the following words should be added to the Standing Order No. 7: "Each Committee shall once a year, at least, report on the subject referred to it by the Council, and each Committee shall be convened at the discretion of its Chairman." He begged to move the adoption of that recommendation.

Mr. Carter seconded.

Mr. Victor Horsley submitted that it would be more in accordance with the general practice if any two members of the Committee should be able to call it together as well as the Chairman, and that the power of summoning the Committee should not be in the hands of one man. Therefore he begged to move as an amendment to add the words "or on the requisition of any two members of the Committee."

Dr. Bruce suggested the addition of the words "or on the requisition of a majority of the Committee."

Dr. Atthill was a member of the Committee which debated this measure, and he at first was of the same opinion as Mr. Victor Horsley, but he had since had reason to change his mind.

Dr. Heron Watson thought the Chairman should be the convener of the meetings, especially as it was not suggested that any injustice had ever been done in the past.

At the request of the President, Dr. Bruce formally moved the addition of the words "on the requisition of a majority of the Committee." This was seconded by Dr. Leech. Dr. McVail thought that Sir Dyce Duckworth might accept the addition of these words. The amendment as proposed by Dr. Bruce was then put to the meeting:

That each Committee shall once a year at least report on the subject referred to it by the Council, and each Committee shall be convened at the discretion of its Chairman or on the requisition of a majority of the Committee.

Sixteen members voted for the amendment and 11 against. The amendment was then declared carried.

The President then put Dr. Bruce's amendment as a substantive motion, and this was carried.

Penal Cases and the Branch Councils.

Sir Dyce Duckworth said that a proposal had been made that the Penal Cases Committee should be included among the other committees to be brought within Standing Order 9. After consideration the Committee recommended that this proposal be not recommended for adoption, as, in the opinion of the Executive Committee, it was undesirable to make further changes in the composition of the Penal Cases Committee, that body being often called upon to refer to evidence brought before it on former occasions, and even in former years, so that the knowledge of prior circumstances would be highly useful in their deliberations. The Executive Committee, therefore, recommended

That vacancies in the Penal Cases Committee should be filled as they occur, and then on the nomination of the Branch Council to which the member retiring or ceasing to act has belonged.

Mr. Carter seconded the recommendation.

Mr. Victor Horsley suggested that this matter should be postponed until they had settled what was to be done with the notice of motion by Mr. Brown. It was a question that interested many of them.

The President understood it was Mr. Brown's proposal that there should be no such committee as the Penal Cases Committee.

Dr. MacAlister moved that Mr. Brown be allowed to move his motion in Committee. This was agreed to.

Mr. Brown then brought forward his motion:

That Standing Order IX as far as relates to the Penal Cases Committee be, and is hereby, repealed, and that the duties hitherto discharged by the Penal Cases Committee be referred to the respective Branch Councils.

He said that if a full consideration were given to the merits of the cases by the Committee, or by the Branch Council, previous to their being reported to the Council, they would have been presented in a very much better form, and that many cases would not have come before the Council at all.

The last case which the Council had before them was a typical example. Had the case been examined into by a competent Committee which had power to act, it would have saved the Council much time and money.

The President asked Mr. Brown if they were really to understand that he was arguing that all penal cases should be disposed of by the respective Branch Councils.

Mr. Brown said No. His proposition was that all penal cases should be remitted to the Branch Council of the respective divisions in which the cases occurred, and that the Branch Councils should have power to examine witnesses, and then, having consulted with the legal assessor, they should recommend to the Council what course should be pursued. All the evidence upon which the recommendation of the Branch Council was based would be printed and circulated among the members of the Council, and then the Council would get a recommendation from the Branch Council precisely as they got recommendations from the Special Committees.

The President said that Mr. Brown was bound to show them that the Council would fulfil the Act of Parliament by so acting.

Mr. Brown said that they could remit matters to the Branch Council. Section vi of the Act, under which they were constituted, said: "The members chosen by the Medical Corporations and Universities of England, Scotland, and Ireland respectively, and the members nominated by Her Majesty, with the advice of her Privy Council, for such parts respectively of the United Kingdom, shall be the Branch Councils for such parts respectively of the United Kingdom, to which Branch Councils shall be delegated such of the powers and duties vested in the Council as the Council may see fit, other than the power to make representations to Her Majesty in Council as hereinafter mentioned." He submitted that that enabled the Council to delegate its powers to the Branch Council. He thought the penal work would grow under their new regulations, and that the prospect of all the cases being gone into in detail before the Council was alarming.

Mr. Victor Horsley, in seconding the resolution, said that this subject really arose at the first session of the Council at which he had the honour of attending. A notice appeared on the programme by Dr. Glover to the effect that the Penal Cases Committee was far too small; it was difficult to get a quorum, and the Committee should be enlarged. However, the Council did not think fit to enlarge the Committee. He agreed with Mr. Brown in thinking that it would be cheaper if a number of these cases were disposed of by the Branch Council; but, of course, if a serious case occurred, that should be brought before the notice of the whole Council.

The President observed that a Branch Council could not come to a decision to erase a name from the *Register*.

Mr. Victor Horsley agreed, and stated that he did not propose that it should. At the present time, however, cases were disposed of by the Penal Cases Committee.

The President said that they were disposed of in the sense of not being proceeded with.

Mr. Victor Horsley pointed out that the Penal Cases Committee was not a statutory body, and the Branch Council was; and, with the heavier responsibility upon it, he thought the Branch Council would do the work far better.

The President pointed out that Mr. Brown had gone very much beyond the terms of his motion. One very important proposal was that the Branch Council should be empowered to take evidence. The Penal Cases Committee took no evidence in the sense of summoning people. The Dental Committee could summon before it the person charged and the person bringing the charge; but the Penal Cases Committee had never done so. He was not prepared to say that it would be an economy either of time or money, if they even had the power to do what was proposed, because the cases must come before the General Medical Council. The evidence must be heard before the General Medical Council, and it was the General Medical Council that had to come to a decision.

Mr. Brown remarked that the President really drew him into extending the terms of his motion.

The President thought the members would like to hear what Mr. Muir Mackenzie had to say on this matter.

Mr. Muir Mackenzie said that this question was very fully and exhaustively considered during the presidency of the late Mr. John Marshall, who had had a large number of consultations with him upon the subject. Upon Mr. Marshall's instructions, and, he thought he might say, upon the instruction of the Council, he drew for submission to Parliament a Bill which would have carried out in effect the proposals that Mr. Brown had put forward. But an opinion which was given a considerable number of years ago by two very eminent counsel was to the effect that for the purposes of every inquiry under Section xxix of the Medical Act the whole of the evidence must be heard by the whole of the Council, and no erasure of a name under the Section would be valid unless the whole of the evidence for and against was heard and judicially determined upon by the whole of the Council; he meant, of course, the whole of the Council subject to any person being absent. He believed there was no power to delegate any part of the inquiry, on which the particular practitioner was standing his trial, to either a Branch Council, or any Committee of the Council, or to anybody except the whole Council itself. Of course, a preliminary sifting to see whether there was any case at all with which the Council should be troubled was quite a different thing; although that in itself was a matter which had to be dealt with with some care, because in the cases which had been taken to the court, in which the practice of the Council on an inquiry was questioned, one of the points in each case was the evidence, and facts had been before members of the Committee of the Council before the inquiry, and it was contended that that was contrary to natural justice. It was also contended, and in a certain sense rightly contended, that the whole of the complaint, the answer, and the evidence, should be heard before the one body. But when it was shown to the Court that all that had happened was that there had been a preliminary sifting of the complaint to see whether it ought to go before the main body, that was treated as being quite a different thing. As to the question whether the Branch Council could hear evidence, and make a report to the Council upon which the Council could act, he was distinctly of opinion that that would render the inquiry invalid, and a practitioner whose name was erased upon such an inquiry would be entitled to apply for a *mandamus* to have his name restored to the *Register*. He hoped that in a matter of this kind the Council would act with great caution, bearing in mind that when a practitioner's name was erased, every kind of statutory procedure was vigilantly scrutinised to see if any single false step had been taken on which the matter could be reviewed in a court of law. In answer to a question by Dr. MacAlister, Mr. Muir Mackenzie said that every piece of evidence on which the man's name was to be removed from the *Register* must be heard by the whole body of the Council, and the witnesses summoned.

Mr. Victor Horsley, while agreeing that the whole of the evidence must be heard by the Council, said that did not touch the gist of Mr. Brown's motion. What Mr. Brown had suggested was that a Branch Council would do the work more effectively and more economically than the Penal Cases Committee.

Dr. Glover said he did not agree with all Mr. Brown's remarks, but he thought it would be a great advantage to have the work done by the Branch Council; he thought that local members would help the Council to come to a sounder judgment on the facts than when the matter was considered by a group of persons meeting in London, some of whom were perhaps ignorant of the conditions of practice in Wales or in the north of England.

Dr. Bruce thought it would be an immense advantage for Branch Councils to sift the cases simply as a preliminary tribunal.

Mr. Carter, as a member of the Penal Cases Committee, said that possibly some of the Council did not quite realise what the Penal Cases Committee were called upon to do. They had been spoken of as if they were engaged in sifting the facts of a case, but the Penal Cases Committee had no facts before them, and no power to sift them. All they had before them were the statements, and into how far those statements corresponded with the facts the Committee were not able to inquire. If a complaint was made of certain misconduct on the part of a practitioner all the Penal Cases Committee could do was first to insist that the statement should be substantiated by a statutory declaration, and then they

had to say whether, if that statement was true, it disclosed any offence against the provisions of the Medical Act sufficiently grave to require inquiry at the hands of the Council. It was not the business of the Penal Cases Committee to sift facts, but to sift cases. They had to keep away from the Council a great number of cases which were extremely frivolous. He thought that to call together from various parts of England the members of the Branch Council to discharge functions which two or three men could discharge quite well, when the matter required nothing more than a little common sense, would be entirely undesirable. The most important knowledge the Penal Cases Committee could have was knowledge of what had gone before. He could not think that the proposal made by Mr. Brown had been thought out with sufficient care, although he fully recognised the excellent intention of Mr. Brown in bringing it forward. He did not think it would really absolve the Council from any work in the consideration of cases, or that it would lead to results different from those which had already been arrived at.

Mr. Brown said he had been anxious to take the opinion of the Council upon this point because he himself was not satisfied that the Penal Cases Committee had done its work quite well; indeed, he thought it had blundered, and had placed the Council in a position which they must all regret. Mr. Carter had said that he did not think it was the duty of the Penal Cases Committee to sift the evidence. That was just why he wanted the cases referred to the Branch Council, so that they might go to a body capable of sifting them. He had brought this matter forward because of an unfortunate case which was remitted to the Council and recommended by the Penal Cases Committee for prosecution. As the matter was put before the Council they were under the impression that they were prosecuting that man for an offence for which they had prosecuted others before.

The President reminded Mr. Brown that they were not sitting *in camerâ*.

Mr. Brown said he would not mention any names, but from his instructions from a member of the Penal Cases Committee they did not know the facts of the cases on which they recommended a prosecution.

The President thought that Mr. Brown was going beyond the point.

Mr. Brown replied that if he was not to be allowed to bring the point forward to-day he should do so on another day. Practically the Penal Cases Committee had advised them in a way which they had not the courage to stand up and defend.

Dr. Glover rose to a point of order. He was a member of the Penal Cases Committee, and was quite prepared to discuss the action of the Committee when the matter was raised fairly and squarely; but to make these innuendoes he thought was very unfair. He did not think it was fair to introduce by innuendo charges of which they had no particulars.

Mr. Brown replied that Mr. Carter had said that the Committee had done its work well, and he was referring to a case in which he said they had not done their work well.

Mr. Brown's motion was then taken as an amendment to Sir Dyce Duckworth's motion, and 5 members voted for the amendment and 20 against.

The President declared the amendment lost.

Mr. Brown asked for the names to be taken down, when 6 members voted for the amendment, 20 against, and 3 did not vote.

The President then put Sir Dyce Duckworth's recommendation, which had been seconded by Mr. Carter, to the meeting, and this was carried.

Mr. Carter moved the adjournment of the debate, and this was seconded by Mr. Bryant.

Dr. MacAlister then moved that the Council go out of Committee, and adjourned.

Monday, November 28th.

Sir William Turner, President, in the chair.

The Penal Cases Committee.

Mr. Victor Horsley desired to move a resolution, notice of which he had sent to the Registrar by letter, in order that the attention of the Council might be drawn to the procedure of the Penal Cases Committee in regard to the Hunter appeal case which was now pending.

The President observed that this would to a great extent be a dislocation of the business of the Council, whose permission would have to be obtained to move the resolution.

Mr. Victor Horsley then moved and Mr. Brown seconded:

That the discussion of Article 1 of the programme be postponed in order that the attention of the Council may be drawn to the procedure of the Penal Cases Committee in relation to the Hunter appeal case now pending, and that a resolution may be moved thereon.

The President put the resolution, when 6 voted for, 20 against, and 3 declined to vote.

Report of Executive Committee.

It was resolved, on the motion of Sir Dyce Duckworth, seconded by Mr. Bryant:

That the report of the Executive Committee on the proposed amendment of the Standing Orders be received and entered as an appendix to the minutes.

The Council then went into Committee on the recommendation of the Executive Committee:

That vacancies in the Penal Cases Committee should be filled as they occur, and then on the nomination of the Branch Council to which the member retiring or ceasing to act has belonged.

Mr. Carter contended that the Committee was formed primarily to assist the President in deciding whether a given complaint should or should not be submitted to the Council. Its inception was due to the late President, who asked the Council to appoint a small Committee of members resident in London, who could easily be brought together for the purpose; and it seemed to him that the sound principle of changing the *personnel* of committees was not so applicable in this case, for the knowledge of individuals which members acquired by serving on the Committee was not without its influence in the results obtained.

Dr. Bruce observed that the Committees were practically reappointed from year to year, and as the system had worked satisfactorily, he did not think it should be disturbed.

Sir Richard Thorne said that practically meant a life membership on any committee. There were members of the Council who had been such for more than twenty years, and he would not like to bind himself to put a member on this Committee for a quarter of a century, although he believed continuity was of the highest value. He moved as an amendment:

That the Penal Cases Committee be elected annually in May in the same manner as the Executive Committee.

This was seconded by Dr. Atthill, and carried; and was carried also when put as a substantive motion.

Sir Dyce Duckworth then brought forward a series of recommendations from the Executive Committee with regard to matters of detail. After a long discussion, the following resolution, moved by Dr. MacAlister, and seconded by Sir Dyce Duckworth, was adopted:

That the alterations in the Standing Orders recommended in the report of the Committee of the whole Council be adopted; provided that Mr. Muir Mackenzie, as legal adviser of the Council, raises no objection of a legal character to any of them.

Mr. Brown obtained leave to withdraw two motions which stood in his name with regard to direct representation in Scotland and Ireland. It had been suggested to him that they would have more force if moved by the representatives of the countries referred to.

(*To be continued.*)

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

At a meeting of the Organising Committee held in Paris on November 15th, the arrangements for the forthcoming Thirteenth International Medical Congress were completed. The date of the meeting is fixed for the week August 2nd to 9th, 1900. The work of the Congress will be distributed among five groups of Sections composed as follows:

Biological Sciences: Descriptive and Comparative Anatomy; Histology, Embryology, and Teratology; Physiology and Biological Physics and Chemistry; Anthropology.

Medicine: General Pathology and Experimental Pathology; Bacteriology, Parasitology; Pathological Anatomy, Medical Pathology; Hygiene and Medical Pathology of Infancy; Therapeutics and Pharmacology; Neuropathology; Psychiatry; Dermatology and Syphilography.

Surgery: General Surgery; Surgery of Children; Urinary Surgery; Ophthalmology; Laryngology; Rhinology, Otology.
Obstetrics and Gynæcology: Obstetrics; Gynæcology.
Public Medicine: Hygiene, Preventive Medicine, and Epidemiology; Forensic Medicine; Military Medicine and Surgery; Naval Medicine; Colonial Medicine.

French is the official language of the Congress for all international relations. In the general meetings and in the Sections German and English as well as French may be employed.

THE SEAMEN'S HOSPITAL SOCIETY AND THE VISITING STAFF OF THE DREADNOUGHT SEAMEN'S HOSPITAL.

We have received from the visiting staff of the Dreadnought Seamen's Hospital a copy of a series of letters which has passed between them and the Committee of the Society.

The correspondence has arisen in consequence of statements contained in a letter written by Sir Henry Burdett, under instructions from the Committee of the Dreadnought Hospital, with reference to the establishment of a school of tropical diseases at the Society's Branch Hospital at the Albert Docks. The two statements to which attention is particularly directed are: "(1) The teaching staff will consist of the senior medical staff of the Dreadnought Hospital at Greenwich as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school;" and (2) the statement that the Committee proposed "to concentrate cases of tropical disease" at the Branch Hospital. On July 18th Dr. Curnow and Dr. Anderson, visiting physicians, and Mr. G. R. Turner, visiting surgeon, addressed a letter to the *Times* stating that Sir H. Burdett's letter to the *Times* was the first intimation of any kind that they had received that such a scheme was on foot, and that the statement was made without their authority or consent. On July 21st the Secretary of the Hospital wrote in reply to a letter from Dr. Curnow stating that the passage in Sir H. Burdett's letter as to the teaching staff "was manifestly intended to convey the meaning that the members of the senior medical staff of both hospitals would have the first option of undertaking the educational work of the school." In replying on July 18th, Dr. Curnow refused to accept this as a satisfactory explanation, pointing out that the statement that the "teaching staff will consist of the senior medical staff of the Dreadnought Seamen's Hospital at Greenwich, etc." was quite positive and was unauthorised. Dr. Curnow also reiterated the question embodied in a previous letter as to the decision of the Committee "to concentrate as far as possible the cases of tropical diseases which alone gave its distinctive character to the Dreadnought Seamen's Hospital, Greenwich," at the Branch Hospital. The question is repeated in a letter signed by the three members of the visiting staff, whose names are given above, in a letter dated October 12th, and it is added that they find it impossible to give any answer to a request for co-operation until they have been put in full possession of the details of the proposed school. On October 17th the Secretary, under the instructions of the General Committee, wrote to express regret that Drs. Curnow and Anderson and Mr. Turner still felt aggrieved by Sir H. Burdett's letter, and also to express regret that they did not feel able to signify their wish to co-operate. This letter concludes by the statement that "The details of the scheme must necessarily remain open for consideration by the Committee which will be appointed to manage the school." In a letter dated October 29th the members of the visiting staff write:

"It is true we are aggrieved by the entirely unauthorised statement contained in Sir Henry Burdett's letter published in the *Times* of July 11th last, but we are still more so by the Committee's want of courtesy in not asking the opinion of the senior medical staff of the Dreadnought Hospital at any time during the inception of their scheme before the letter was written, and for which lack of courtesy no apology has been offered or regret expressed. The question as to the concentration of tropical cases at the branch hospital, and consequent starvation of the parent hospital at Greenwich in its one distinctive feature, has not yet been answered, although three times asked; and we press your Committee for a definite reply upon this point, after the receipt of which we will not trouble them with further correspondence." In a further letter, dated November 28th, the visiting staff state that having received no reply to their letter to the Committee of October 29th they proposed to send the correspondence to the press.

It seems clear that Drs. Curnow and Anderson and Mr. Turner have legitimate grounds for their complaint that they have been treated with want of consideration and courtesy, and it appears, therefore, that an apology and explanation are due to them. We hope that this may be frankly given and as frankly accepted, for it would be lamentable that the matters disclosed in this correspondence should endanger the success of an enterprise which, on grounds already more than once fully stated in these columns, we believe to be calculated to render importance services to the advance of medical knowledge, to the welfare of our fellow-subjects in tropical climes, and to the prosperity and consolidation of the tropical colonies and dependencies of the Empire.

COTTAGE HOSPITALS AND FEES AT INQUESTS.

The point raised in the letter of "Honorary Surgeon," which was published in the British Medical Journal of November 12th, p. 1525, appears to be distinguishable from those settled by previous decisions. The right of a medical officer to obtain fees in respect of *post-mortem* examinations is regulated by Subsection (2) of Section xxii of the Coroners Act of 1887, which enacts as follows:

Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution.....whether the same be supported by endowments or voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased as a medical officer of such institution shall not be entitled to such fee.

Here the words "or other medical institution" are substituted for the words "or other public medical institution" of 6 and 7 Wm. IV, cap. 89, s. 5. This change may have been made for the express purpose of bringing all medical institutions, whether public or private, within the operation of the statute, but as the former Act is now repealed we cannot look to its terms for guidance.

It will be observed that the section is framed specially with regard to "county and other lunatic asylums, public hospitals and infirmaries," all of which, with the exception of "other lunatic asylums," are essentially of a public nature and are supported either by the rates or by charity.

Applying the doctrine of *ejusdem generis*, the term "other medical institutions" should be read to mean "public" institutions. Such an interpretation would be in accordance with the spirit of the section, which was obviously inserted for the protection of the ratepayer, who, were it absent from the statute book, would not only have to provide the salary of a workhouse medical officer, but extra fees for each *post-mortem* examination which he conducted within the walls of the institution, and the public would probably assume that these duties had been taken into consideration when the rates of pay were fixed.

The facts of the case of Horner *v.* Lewis (67 *L.J.*, 524), which has been referred to, were shortly as follows: The plaintiff was honorary medical officer of a cottage hospital, which received patients from three parishes, containing in all a population of 160,000. It was supported entirely by voluntary subscription, admission being obtained by governor's letter. The action was brought by the medical officer for his fee for a *post-mortem* examination of the body of a person who died in the hospital. Both the judges (Wright and Kennedy, JJ.), in giving judgment for the defendant, based their decision upon the fact that this hospital was a public institution. There seems to be no doubt that this was correct.

The case submitted by "Honorary Surgeon," however, appears to be very different. He states that no one but a workman employed at the works can obtain admission to this surgical cottage hospital, and that only upon a payment of 1d. a week. If an institution of this kind is correctly described as a "public medical institution," it would almost seem that public schools, training colleges, almshouses, and asylums for the aged might all be brought under the same heading, as each and all of them have an infirmary attached, which is attended by a "medical officer." This would be absurd, and it is interesting to note that the judges in Horner *v.* Lewis tacitly admitted that the words "medical institution" meant "public medical institution."

Apart from the legal aspect of the matter, to have to perform such work without any remuneration would be a hardship on the private practitioner.

ARCHÆOLOGICA MEDICA.

XLVIII.—OLD SCOTTISH DOCTORS.

The *Caledonian Medical Journal* for October contains an address by Dr. Alexander Macdonald, President of the Caledonian Medical Society, in which he gives some interesting pictures of medical practice and practitioners in the Highlands in past days. The country doctor had then a very wide district, which he ruled as an autocrat. He is described as taking an active part at births—which is natural enough, and at deaths—which is open to an unpleasant interpretation. Further, he is said to have taken an active part at marriages, though what his precise duties were at these ceremonies is not stated. We are not, however, surprised to learn that Highland practice in the olden days was not suitable for faint-hearted or weak-kneed men. Dr. Macdonald refers to the lament of Miss Ferrier in her novel, *Marriage*, for the good old days when fine ladies after their lyings-in sat bolt upright in bed the day following the confinement, with fans in their hands, encased in their stiffest corsets, and wearing their finest dresses and hats, to receive the doctor and their lady friends.

The late Professor Goodsir's grandfather, who was born in 1746, was a good type of the old country doctor in Scotland. He is described as "kindly and energetic, devoted to his kirk and his politics, as well as his patients." Old Dr. Goodsir's rounds took him a week. On Monday morning he started from home with drugs and surgical instruments at hand. He carried a lantern with horn windows, which was fastened by a strap above his knee in the daytime. His saddle bags were like those of His Majesty's mails, and he travelled with speed. His biographer says that as his rough-clad form was seen battling with wind and rain, the people said, as his horse sped past, "There goes the doctor or the post."

Dr. Macdonald quotes the following bill for professional services rendered by Francis Legget, surgeon apothecary, to the wife of an Aberdeen laird, in the earlier part of the seventeenth century. The items of the little account show that Mr. Legget leaned decidedly to active methods:

8 oz. cordial mixture	4s. 0d.
3 vomits of half-a-crown each	7s. 6d.
2 dr. cephalic spirit	0s. 4d.
2 bloodings at half-a-crown each ...	5s. 0d.
Eye water	1s. 0d.
Anodyne purgative	1s. 0d.
Plaster for your back	1s. 0d.

In further illustration of the treatment in vogue in Scotland in the last century, Dr. Macdonald quotes from a collection of recipes printed in 1752, and described as being the property of "a late eminent physician," which was presented by Lord Bute to Marischal College, Aberdeen. Amongst the prescriptions is the following cure for "consumptions, vapours, and nerves":

Dose—3 oz. morning, noon, and night. The decoction is made as follows:—Take live snails cleaned from their shells, 4 oz., wash three or four times in water, and lastly in a quart of small beer; bruise them, and put them in two quarts of red cow's milk, and add dry leaves of red roses, and herbs, rosemary, marjoram, balm, and mint; put them in a still and run off upon white sugar-candy.

Other recipes in the book remind one of the ingredients in the witches' cauldron in *Macbeth*. Crab's eyes, blue bottles, live swallows, hog lice, cow dung, and other loathsome substances are mixed with all kinds of herbs. The following is a bath for the cure of dropsy and paralysis: "Seven sheeps' heads, a leg of beef, four calves' feet, and a quantity of vegetables boiled in it; as much water as may be necessary." Dr. Clark's cure for the cold, given to the Laird of Gordonstown, dated Edinburgh, May 20th, 1739, is: "The juice of twenty slaters squeezed through a muslin bag in whey. A pint to be taken three times a day as a dose while the cough lasts."

Dr. Macdonald describes various types of Highland practitioners of a bygone day—all worthy men, and not unlearned in their profession. A fine specimen was Dr. Donald Macdonald, who practised in Glen Urquhart for over forty years. He was a native of the parish of Kilmonevig, and belonged to a branch of the Glengarry family. He represented a type of man whose chief idiosyncrasy was a fondness for the mountain dew, and An Dochtair Ruadh, as he was familiarly called, was looked upon as a physician of much skill. As a surgeon his reputation for the reduction of strangulated hernia extended over several parishes, and he was believed to be all the more skilful when a little under the influence of liquor. He was very generous and kind-hearted, though somewhat rough in manner. For many years he went about continually in all kinds of weather, driving his own horse and gig, and a most peculiar driver he was, pulling one rein now and then the other, with the result that the horse went zig-zag instead of straight ahead. The tracks of the doctor's wheels were always known, crossing and recrossing the road continually, and his degree of inebriation could be estimated by the sharpness of the curves.

After the Poor Law Act came into force Dr. Macdonald was parochial medical officer, and he was also for many years inspector of the poor. His books as inspector got into disorder, and the inspector of the Board of Supervision made a surprise visit to him. The doctor, who "had just a drappie in his e'e," as the song says, welcomed the inspector with the words, "Smise domnul ruadh co un diabhal thus," in which even a mere Sassenach will recognise a reference to a biblical character not usually mentioned in official intercourse. The inspector escaped, but the doctor's career as an inspector of the poor came to an end. In his early youth Dr. Macdonald had travelled to Aberdeen, where he won a bursary by public competition, returning at the end of the session to work as a navvy at the construction of the Caledonian Canal. In the latter capacity he, by the free use of his fists and his other athletic qualities, won the respect and admiration of his fellow workmen. He died in 1862, at the age of 75. He was a man of fine physique, and the memory of his skill in medicine, of his kindness to the suffering poor, as well as of his little personal eccentricities, still lives in local tradition.

In some parts of the Highlands the art of healing was hereditary in certain families. According to a writer in the *Glasgow Herald*, the hereditary physician was an important personage in old Celtic life, and there are references to famous doctors both in legend and history. The Irish Brehon Laws recognise the medical profession, and furnish a table of fees chargeable according to the seriousness of the ailment and the local status of the patient. The great hereditary physicians of the Hebrides were the families known as MacBeth in Islay, Beaton in Mull, and Bethune in Skye. The *Ollamh Ileach* (Islay physician) and *Ollamh Muileach* (Mull physician) are household words, and some of the sayings attributed to them are still repeated among the Highland peasantry. According to the Beaton genealogy these two medical families were descended from the Irish monarch, Neil of the Nine Hostages. Whatever their pedigree, they were men of mark in the Hebrides for centuries. One of the Islay physicians, Fergus MacBeath, is believed to have written the Gaelic charter of 1408 by Donald of the Isles, in favour of Brian Vicar Mackay. In 1609 James VI granted to Fergus MacBeath a charter of the office of physician-in-chief in the Isles, and of the lands of Balinaby, Areset, Howe, and Saligo in Islay. An interesting feature of it is the recognition of the prestige and emoluments of the hereditary physician. The charter (as translated in the *Book of Islay*) sets forth that—

Fergus M'Baith in Islay and his predecessors, by virtue of diverse infeftments, donations, and dispositions formerly granted by the Lords of the Isles of our Kingdom of Scotland for the time being, have been legally entered into office of principal physicians within the said islands, and for the administration of the said office the following lands have been disponed to them hereditarily, in possession of which the said Fergus stands to this day just as he and his predecessors have been possessors of the same beyond memory of man.

With the view of strengthening his "rights and securities," the King granted and confirmed to the said Fergus for all his lifetime "all and whole the said office of principal physician within the bounds of our said islands, with all the profits and casualties belonging to the same," as also the lands mentioned.

The Beatons of Mull had their home at Pennycross, on Loch Scridan. They were the hereditary physicians of the MacLeans. One of them (Dr. John Beaton) is said to have been physician to James II. He died in 1657, and is buried in Iona. It is related that one of the Mull Beatons having been called upon to attend the Scottish King, the islanders flocked to him for advice as to their health during his absence, when he gave them this simple rule: "A bhi gu sugach, geamnaidh, moch-thrathach—to be cheerful, chaste (or temperate), and early risers."

The Bethunes of Skye are said to have been descended from a Fifeshire family. The first of them was Dr. Peter Bethune, who is mentioned as having been a "famous physician." In

settled in Skye on the invitation of the two principal proprietors in the island—Macdonald and MacLeod—who "promised him as much land as he was inclined to possess, rent free." It was agreed on the doctor's side "that one of his posterity, particularly the eldest son of the family if he had a turn for it, should be educated as a physician without any expense to him or his successors," while any of them inclined to medicine remained in Skye. They flourished in Skye for generations, some of them combining the functions of the spiritual and medical adviser. One of the family, Dr. Angus Bethune, studied physic abroad, and finished a Gaelic version of the *Lilium Medicinæ* at Montpelier. Another medical family of Skye was that of the MacLeans. The most famous of them was Dr. John Maclean, who tended the wounded who took refuge in Skye after the battle of Culloden. His surgical skill was celebrated in a Latin ode by a grateful patient, Captain Donald Roy Macdonald, who received a gunshot wound in the foot. The poem is entitled "De Pede Donaldi Macdonald in Proelio plumbeâ glande vulnerato," and the last verse runs as follows:

Interim curat medicus mederi
Sedulus partem mihi vulneratum,
Et precor cœptis faveat benignus,
Conditor orbis.

Pennant met Dr. Maclean at Duntulm in 1772, and notes in his journal that the Doctor's family had been "hereditary physicians for some centuries" to the Macdonalds. Dr. Maclean was, however, the last of the order. He was renowned as a surgeon all over the Western Islands. He was a good classical scholar, and could repeat the *Iliad* and the *Æneid* from beginning to end.

LITERARY NOTES.

WE announce, with great regret, the demise of the *Revue des Sciences Médicales*, after 26 years of useful existence. Under the editorship of Professor Hayem it has been one of the best conducted periodicals of its class. A complete set of the *Revue*, which is invaluable for purposes of reference, is in the library of the British Medical Association.

The list of births into the journalistic world announced for the New Year, though probably not yet complete, includes the following:—In France: *L'Intermédiare des Neurologistes et des Aliénistes*, of which the editor will be M. Sollier; the *Revue Clinique des Maladies Nerveuses*, to be published monthly, under the editorship of Dr. Levillain, of Nice; the *Archives de Thérapeutique*, to be edited by M. Vidal; and *Le Bonheur du Foyer*, of which Madame Helena Gaboriau, wife of Dr. Gaboriau and herself a Doctor of Medicine, is to take charge. In Germany the *Centralblatt für Nervenheilkunde und Psychiatrie*, the editor of which is Dr. Hans Kurella of Breslau, is to enlarge its scope by publishing a quarterly *Zeitschrift für Electrotherapie und medicinische Electrotechnik* entirely devoted to the medical uses of electricity. In Canada the *Canadian Medical Review* and the *Canadian Practitioner* have been consolidated; the new journal is to be called the *Canadian Practitioner and Medical Review*. In this country the *Practitioner* is to undergo the expansion natural to prosperity and advance of years; and a Medical Magazine Association is announced as having been "incorporated with the object of promoting the interests of the medical profession, having in view mainly the publication of a monthly journal." We gather, however, that it is not, as might appear, "the interests of the medical profession" which have in view the publication of a journal, but the newly incorporated association itself.

It is announced that the two final volumes of Professor Clifford Allbutt's *System of Medicine* will probably appear during the next six months.

The Scientific Press Limited will shortly publish a book on the *Water Supply of the Metropolis*, by Dr. Richard Sisley, who has given several years of study to the question. The edition will be limited to 500 copies, which may be subscribed for in advance.

The account of the expedition to Alaska, headed by the Duke of the Abruzzi, and the ascent of Mount St. Elias, is being written by Dr. Filippo di Filippi, the medical officer of the expedition. The book will be illustrated by a large number of beautiful photogravures.

We are sorry to see that our excellent American contemporary *Science* contains the announcement that "Dr. John William Toore" has been elected President of the Royal College of Physicians of Ireland for the ensuing year. It is true the *Times* recently gave prominence to a similar statement, but we expect more knowledge of medical persons, as well as things, from *Science*. The mistake recalls Byron's philosophical reflection, on a mistake of a similar kind in the Waterloo *Gazette*: "Such is fame!" A man's name is—let us say, adapting the patronymic to the occasion—Moore, and they print it "Toore"!

What Sir Richard Burton would have called a "prolepsis" of radiography has recently been unearthed from *Notes and Queries*, where reference is made to a story written by Muhammed M'asum in 1600. An exiled prince meets a man who is carrying what are designated "hakku tubes." Looking at the man the prince discovers that as long as the man holds the hakku tubes his entire interior economy is visible. The prince at once purchases the tubes. Coming to Ghuzni, he finds a patient, the King of Ghuzni, who is suffering from dyspepsia. There is good reason for the king feeling so uncomfortable, for when the hakku tubing is applied it is discovered that the patient has swallowed two water-snakes!

The triumphs of modern surgery—of which mention has occasionally been made in presidential addresses—are celebrated by an anonymous bard in the New York *Public Health Journal* for October as follows:

They sawed off his arms and his legs,
They took out his jugular vein;
They put fancy frills on his lungs,
And they deftly extracted his brain.

'Twas a triumph of surgical skill
Such as never was heard of till then;
'Twas the subject of lectures before
Conventions of medical men.

The news of this wonderful thing
Was heralded far and wide;
But as for the patient, there's nothing to say—
Excepting, of course, that he died.

The writer is deplorably flippant, and something inclined to scandal. But we read such things, as Sir Fretful Plagiary read the criticisms on his poems—for our amusement.

Pity the poor poets! The alienist and the criminal anthropologist vie with each other in finding symptoms of insanity and signs of degeneration in them, or adopting the convenient hereditary theory of the wolf in its condemnation of the lamb, if not in them in their fathers. Tasso was distinctly mad; Byron and Shelley were on the borderland. Now a German author has written a book to prove that Ovid was neurasthenic. The evidence is the letters addressed by the poet to the Emperor Augustus from his place of banishment on the shore of the Black Sea. Ovid has generally been evil entreated by scholars on the ground of the unmanly whining in his Pontine epistles; but now his character has been rehabilitated by the plea of "neurasthenia." Even Shakspeare, who has hitherto escaped the scenters out of degeneracy, has now been convicted of "neurasthenia" by Mr. Frank Harris. But that gentleman's views on medicine (as expressed in regard to Christian science and other matters) are of so remarkable a character that one would like to know what he understands by "neurasthenia." We therefore await with some interest the appearance of his promised book on *The Man Shakspeare*.

The formulary of Nicolas Nolleson, Master Chirurgeon at Vitz-le-François about 1733, has recently been unearthed by M. Pol Gosset. It contains some curious prescriptions. There is an infallible recipe for making barren women prolific, and another for restoring virility to husbands who are "out of pocket," to use a phrase of Dr. Johnson's. In the former case the remedy recommended is the womb of a hare, in the latter ram's testicles. Our modern "organotherapy" may be highly scientific, but it is not new. Nolleson, speaking of the points which the surgeon should bear in mind if he is to gain the good graces of his patient, says he should enter the sick room "with fear, modesty, reverence, and gravity." His speech should be marked by "gentleness, science, and authority;" his carriage should be neither abject nor arrogant, his dress should be respectable and modest; his hair should be worn moderately long; his nails should be clean, and well cut, lest he hurt the patient; lastly, he should take care to smell as much like the sweet South as possible—*fuyant toute puanteur!*

THE NEW VACCINATION ORDER.

The following fees have been either passed by Boards of Guardians, or recommended by Committees:

	(a)	(b)	(c)
Fulham	2s. 6d.	7s. 6d.	—
Kensington	2s. 6d.	7s. 6d.	—
Marylebone	2s. 6d.	7s. 6d.	3s. 6d.
St. Giles (Bloomsbury)	2s. 6d.	7s. 6d	3s. 6d.
Paddington	2s. 6d.	6s. 0d.	2s. 6d.
St. Olave's	2s. 6d.	6s. 0d.	2s. 6d.
Bury (Lancs.)	2s. 6d.	6s. 0d.	—
Greenwich	2s. 6d.	5s. 0d. ...	—

The Loughborough Board of Guardians have adopted the minimum fee as prescribed by the Order, except in the case of a child in a parish other than that in which the vaccination officer lives; in such a case the fee offered is 6s. It was further resolved that the fees should be subject to revision at the end of twelve months, as it was found difficult to form any accurate idea as to the work which would be entailed on the officers by the new Order.

A scale of fees suggested by the public vaccinators of the Bridgwater Union was published in the British Medical Journal of November 10th, page 1580. The Board of Guardians did not accept the scale, but suggested the following as an alternative for one year:

1. To pay 5s. for every case of successful vaccination or revaccination, in accordance with the Local Government Board's order, but no mileage charge.
2. To pay all postages.
3. To pay no mileage for visits of public vaccinators to cases where operation for some reason or another is not performed, there being no provision in the Local Government Board's order for making such a charge.
4. The Local Government Board have agreed to provide all lymph.

We understand that the suggestions of the Board have been considered by the public vaccinators of the Union, who have decided to refuse the terms offered by the Board, but have suggested that a conference should be arranged between them and the subcommittee of the Board of Guardians.

At the last meeting of the guardians of the Walsingham Union the proposals described by Dr. John T. Skrimshire, Public Vaccinator for the Blakeney District—published in the British Medical Journal of November 26th, page 1647—were considered, and after discussion it was resolved to offer the following terms:

Under Article 3 (a)—2s. per head throughout the district; and, in addition,

Under Article 3 (b)—5s. for one mile and under, 6s. for over one mile and under two, 6s. 6d. over two and under three miles, 7s. over three and under four miles, and 8s. for over four miles.

Under Article 3 (c)—The fee to be 3s. in lieu of the minimum fee of 2s. 6d. mentioned in the orders.

That the fee to the workhouse medical officer be 3s. 6d. in each case.

At a meeting of the Bury guardians on November 23rd the Finance Committee brought up a report recommending the following fees to be paid under the new Order:

To public vaccinators: 2s. 6d. in respect of children born after August 31st, 1898, and within the meaning of Article 3 (*a*) of the General Order of the Local Government Board; 6s. in respect of successful primary vaccination or revaccination performed at the home of the person vaccinated, Article 3 (*b*); and 3s. in respect of vaccination or revaccination at his surgery or elsewhere than at the home of the person vaccinated. To vaccination officers: 6d. in respect of each child entered in the birth list sent to him after December 31st, 1898, Article 20 (*a*); and 1s. in respect of each child successfully vaccinated within the meaning of Article 20 (*b* and *c*). The Committee also recommended that the postages necessary for carrying out the duties be paid by the Guardians.

The Chairman expressed the opinion that the fees were rather excessive, but the Clerk pointed out that the Committee had in view the prevalence of non-vaccination. Dr. Sellers observed that if the children vaccinated were taken ill they had to be visited until they were well. Dr. Chisholm explained that there would be a great deal of clerical work put upon medical men, in connection with the Act, for which they get paid nothing at all; and the Local Government Board had recommended that Boards of Guardians in their wisdom might increase the minimum recommended in the Act. The 6s. recommended was for domiciliary vaccination. The public vaccinators, even with 6s. a case, were poorly paid. It might seem a large sum for the guardians to pay, but this must be placed at the door of the agitators who brought the Act into force. The Chairman stated that the 2s. 6d. to the public vaccinators was for serving notice, and that if they were allowed to vaccinate and the vaccination was successful they got another 6s. There were 2,000 births in the union every year. The scheme was confirmed, a circular from the Birmingham Board of Guardians stating that they had passed a resolution to the effect that the minimum fees for public vaccination were excessive was also considered and ordered to lie upon the table.

Dr. J. W. Gill, Public Vaccinator of No. 1 District, St. Germans (Cornwall) Union, informs us that on November 24th a conference took place between the public vaccinators and a Subcommittee of the St. Germans Board of Guardians. After discussing the Act and its provisions as to payment, the following terms were offered by the Board and accepted on behalf of the public vaccinators, namely, the minimum fees allowed by the Act, plus 1s. a mile, or part of a mile, for each case successfully vaccinated beyond two miles from the residence of the public vaccinator. The public vaccinators consider this mileage fair, but they also asked for half fees and half mileage for cases visited but not vaccinated on account of refusals, illness, etc. This was refused by the Board.

Dr. Walter G. Gray, Public Vaccinator, Districts 4 and 5, Holsworthy Union, writes: The Board of Guardians here adopted the report of a Committee to the effect that the minimum scale of fees should be offered to the public vaccinators of this union, which is a typical specimen of a rural district. The public vaccinators attended the meeting of the Board of Guardians, and politely declined the "generous" offer, submitting a scale of fees as follows: A., 2s. 6d.; B., 7s. 6d.; or in the alternative, A., 2s. 6d.; B., 5s., and 1s. per mile over two miles, one way. The Board of Guardians thereupon gave the public vaccinators twenty-eight days' notice to terminate their contracts. The average mileage in this union for a domiciliary visit for vaccination would be five miles and a half.

Mr. Hugh Tennant Prince, M.R.C.S.E., Public Vaccinator, West District, Buntingford Union, writes: The district for which I hold the post of public vaccinator is a wide one. Under the old *régime* I had no vaccination station within three miles of my door, and now there are only a few cottages under that distance that may require my services as public vaccinator; so that, excepting for these dozen cottages or so, I must travel three miles before I can vaccinate a case. My most distant villages lie seven to nine miles away, and I may have to go even further if required. The Board of Guardians wrote me some five or six weeks ago as to fees, and I am sorry to say that I only applied for 3s. for the nearest village (three miles), 7s. 6d. for the intermediate ones, and 10s. 6d. for the most distant. But even these moderate charges were disallowed. The Board only sanctioned 5s., 6s. 6d., and 7s. 6d. respectively. I wrote asking the Board to reconsider the matter, and they replied "that the Board cannot see their way to reconsider the scale which they propose to pay you as public vaccinator." The nearest point in my most distant village is eight miles away, for which journey of thirty-two miles they propose to pay the sum of 7s. 6d. Can I receive any redress by applying to the Local Government Board? If not, what further steps can I take in the matter?

*** All contracts are subject to the approval of the Local Government Board, and our correspondent might send a statement to the Board setting out fully the facts that he gives in the above letter. We should also recommend him to communicate with one of the Honorary Secretaries of the Association of Public Vaccinators—Dr. V. A. Jaynes, 157, Jamaica Road, S.E., and Dr. A. E. Cope, 26, Bessborough Gardens, Westminster, S.W.

MOTOR CARS.

The Motor Car in Medical Practice.

The question is often asked, Would it be advisable for a country practitioner to dispose of his horses, and invest in a motor car? It is difficult, in the present condition of the automobile problem, to give an unqualified answer to this question. The following observations may, however, assist in arriving at a conclusion in individual cases.

Oil Motors.

It is obvious that the real value of a motor car to a medical practitioner must depend on the efficiency of the motor or engine by which it is driven. The principle underlying all oil-motor-driven vehicles is simple. A volatile combustible liquid is vapourised, the vapour mixed with air, the mixture exploded, and the force of the explosion utilised to drive the motor by which the car is propelled. All the numerous gas and oil engines, as well as the large number of road car "motors," depend for their supply of power on this simple process. But in its practical application many difficulties are encountered, and it is in the varying manner in which these difficulties are overcome that renders it by no means easy to decide on the value for general purposes of any particular type of motor car. All have their good points—some are suited for hilly country, others for flat, some for heavy loads, others for light; some work easily, others exist only on paper.

Admitting, however, that in a few instances so many of the difficulties have been overcome as to render a motor car a practicable vehicle, it is evident that the choice of a car is really the choice of a motor. The motor is the essential part of the vehicle; the superstructure can be arranged by any coachbuilder to suit individual requirements.

There are at present four chief types of motor in the market—the Daimler, the Bollee, the de Dion, and the Benz.

The Daimler Motor.—There is a very general opinion that this form of motor is the best for light traffic, but at the same time it is the most expensive. A recent practical testimony to the general efficiency and ease of management of the Daimler motor will be found in a recent number of the

Journal of the Royal Agricultural Society. At the meeting of the Society at Birmingham four prizes for self-moving vehicles were offered, and the first of these was carried off in the light-load class by the Daimler motor. Certain peculiarities in its structure, however, limit its sphere of usefulness. In the first place, it is always supplied with two cylinders, which require a jacket of water to keep them cool. These features increase the weight, and the motor, though well adapted for carriages, is not, in its present form at least, suitable for "voiturettes" or cycles. As to the best form of carriage, that must be a matter of individual choice. We can only direct attention to the "Marseilles phaeton," the listed price of which is £384. This is a hooded phaeton, and would appear to be suitable for medical use.

The De Dion Motor.—This motor is specially adapted for light work. There is no toothed gearing and no water cooling. The motor runs at a high speed, and is cooled by air. It appears to be the motor best adapted for motor cycles and light voiturettes. A motor tricycle can be had for 70 guineas. These machines would appear to be reliable, and if out of order can be easily got at for repairs, since none of the machinery is shut in.

The Bollee Motor.—This motor, as at present made, is an improvement in the original model. The Turrell improved Bollee motor has been designed to get over the disadvantages of the original Bollee, which were the troublesome working of the exhaust and the difficulty of governing. As now made, a two-seated "voiturette," fitted with one of these motors, can be had for 130 guineas.

The Benz Motor.—This is a good motor, with water cooling. It is the cheapest, but as the vapour is fired by electricity it is apt, according to some authorities, to get out of order and to require additional care to keep its electric mechanism in working condition. This mechanism, however, is of the simplest character, and in careful hands gives no trouble.

Steam versus Oil Motors.

Steam, which was the original method of propelling road automotor cars, has recently been reinvestigated, and the system has many points in its favour. A steam engine can be run at any rate, and can be reversed and started instantaneously. This is not the case with oil or gas motors as at present constructed. By the invention of boilers on the Serpollet system, the great encumbrance of boiler and fire has been reduced to a minimum, and the employment of liquid fuel has still further brought this class of vehicle within practicable limits. At the Birmingham trials the first prize in the heavy-load class was awarded to the Lancashire Steam Wagon Company. There is at present running in London a steam wagon in the service of Messrs. W. H. Smith and Sons which we have seen manipulated in the heaviest traffic with the greatest precision, and without any serious noise, vibration, or smell.

It is, however, unquestionable that motors of the Daimler type have established their position and found a sphere of usefulness. They have, however, two inherent disadvantages which limit their application without preventing their employment under suitable conditions. One is that they use as fuel a light oil not generally procurable without prearrangement, and the other is that an internal combustion engine is necessarily almost always more complicated and delicate in its adjustments than engines working with steam. The oil motor requires greater skill or greater observation and resource in the driver managing it. This is the judgment of the judges at the Royal Agricultural Society's trials. We might add that, compared with a steam engine, an oil engine suffers from the necessity of having to be kept continually running at a nearly constant speed, and that it cannot be reversed.

Relative Cost of Running.

There can be no question that the cost of running a motor ought to be very much less than horse traction. After the car is once paid for the working expenses are very small. One man only is necessary as driver, and whereas fodder for two horses will cost from 28s. per week, that for a motor car, namely, the petrol or light oil for the engine will not run to as many pence.

Practical Testimony.

From a correspondent, a medical practitioner in the country, we have received the following: "It will probably interest many medical men to hear that during the whole of the present year I have done my work entirely on my Beeston motor tricycle. The distance ridden, as taken by the cyclometer, is 4,100 miles in all weathers. The total cost has been:

	£	s.	d.
Petrol, 45 gallons	2	0	3
Repairs	2	0	0

The machine now is as good as the day I got it with, of course, the exception of the tyres, but they are still good for another 4,000 miles. A great number of medical men are using them, and they are far superior to any motor car, both on account of their simplicity, small amount of fuel used, and low price."

Vibration.

The great drawback to all systems is the vibration. This is not so much felt whilst running, when it is mingled with the necessary jolting of the car over rough roads, but as it is necessary always to keep an oil motor in action, the vibration when the motor is thrown out of gear and the car is at rest is often very objectionable. It is difficult to see why the motor should be mounted on the same frame as the carriage. We believe a system was introduced into this country, but without success, in which the motor drew the vehicle, being arranged so that it could be coupled to a variety of cars for various purposes. This arrangement is identical with that adopted in railway working, in which the engine pulls the the coaches, thus confining the vibration of the motor machinery to the engine itself. If this system could be adopted in road-running vehicles a great point would be gained, several cars adapted to different purposes and to different states of the weather could be kept, and the car coupled to any of them. In a climate such as this, where every kind of weather has to be faced, this system would present many advantages, and it is difficult to see why it has not succeeded

ASSOCIATION INTELLIGENCE.

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary*.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

SPECIAL CORRESPONDENCE.

PARIS.

Typhoid Fever and Water.—Alcoholism in France.—Contract Medical Practice.—Physical Education.

A Senator, M. Alcide Treelle, who is also a veteran soldier, is not disposed to admit that water is the principal medium for transmitting typhoid fever. In the recent discussion on typhoid fever in the Senate he stated that when campaigning for eight months in Kabylia in 1871 he was struck by the fact that so long as they were marching there was hardly any illness. The men drank whatever water was to be got, even water certainly contaminated by what might be called sewage, yet the regiment continued healthy. As soon, however, as tents were pitched typhoid fever, the principal disease of North Africa, appeared among them. The epidemic was a severe one, evidently owing its origin to infection from

germs contained in the soil. Similar facts have been observed in other regiments. M. Treelle holds that typhoid fever is caused by germs contained in the earth, which have their origin in excrement. In 1893 a violent epidemic broke out at Tiemcen, 200 out of 400 men being attacked. One of the five barracks was supplied with water filtered through Pasteur's filters, and yet only in that one did an epidemic of typhoid break out. The other four barracks were not provided with filters. In 1897, in an epidemic at Castres, the barracks outside the city provided with water filtered through Pasteur's filters were severely tried, whereas the scholastic establishments in the centre of the city entirely escaped.

It is not only Dr. Delbove who sounds a note of alarm concerning alcoholism in France. The fears which he expressed in his opening lecture, summarised in the Paris Letter published last week, and proved to be well founded, are still further substantiated by the law courts. An official working in the Ouest Department stated publicly that of ten crimes which he had to deal with, eight or nine were on an average the result of drunkenness. The jury of the Seine Inférieure Department, before separating after the November sessions, drew up and signed an address to the public authorities, drawing their attention to the disastrous effect of alcoholism as a cause of increasing criminality, and expressed the hope that every possible measure should be adopted to prevent the consumption of alcohol.

The Nismes Medical Society has sent to the "Sociétés de Secours Mutuels" of that town a circular urging that no one in easy circumstances should be admitted as a member of the said societies. The right of deciding what should be considered "easy circumstances" should, it is maintained, rest with the medical man treating the patient. The "bureau" of the medical syndicate claims the right of demanding that the name of the patient in easy circumstances should be struck off the list of members.

The first Commission of the Superior Council of Physical Education decided at its last meeting that the standard of physical education should be raised, and that the methods of doing so should be well defined. M. Cazalet's proposition, which was also adopted, is to the following effect: "That the measures necessary for providing all schools and colleges with shower baths should be immediately decided on and adopted." The Ministerial circular issued in 1890 and the directions drawn up by the Superior Consultative Sanitary Committee in 1892 served as the basis of M. Cazalet's proposition.

LIVERPOOL.

A Laboratory for the Study of Tropical Diseases.—The Progress of Cremation.—Death from Overlaying attributed to Vaccination.

Mr. Alfred L. Jones, who is the senior partner of an important firm trading with the West Coast of Africa, has offered the sum of £350 a year to establish and maintain a laboratory in Liverpool for the study of tropical diseases. The laboratory will be opened in association with the Royal Southern Hospital, and a Committee has been formed to carry out the scheme in connection with the hospital and with University College. It is intended to demolish some houses in Caryl Street, facing the hospital, and to erect such buildings as are needed, including one for the treatment of patients suffering from tropical diseases. Liverpool is exceptionally suited for the adoption of such a scheme, owing to the large number of patients suffering from tropical disorders who arrive at the port, and who for the most part find their way to those hospitals—the Royal Southern and the Northern—which lie close to the docks.

The Liverpool Crematorium Company has issued its second annual report. As might be expected, the progress of cremation, though steady, is slow. The number of cremations during the year was 23, as compared with seven in the first year. The company is still working at a loss, though at the present rate of progress the loss must soon be replaced by a profit. The pioneers of cremation, as of most other reforms, are naturally found for the most part among vigorous persons of middle age. Among such there can be no doubt that the sentiment in its favour has taken deep root, but it must be years before it can bear fruit in the adoption of cremation as the ordinary means of disposing of the dead. The crematorium at Anfield, which is a handsome Gothic structure, is the finest building of its kind in this country, and is considered by competent judges to be superior to the crematoria at Milan, Paris, and other cities on the Continent.

The county coroner, Mr. Brighouse, is to be congratulated on the persistency and thoroughness with which he lately investigated a case in which the death of a child was attributed by the parents to the fact of its having been vaccinated. The child was found dead in its parents' bed. It was stated at the inquest that about three weeks after the vaccination an eruption came out on the child's face and spread over the head, forming a number of sores which were at their worst at the time of death. The medical evidence was to the effect that the eruption was eczema of a type common in children, and that it had nothing whatever to do with vaccination. The *post-mortem* examination, which was made on the coroner's order, showed that death had resulted from asphyxia. There was no enlargement of glands nor anything to suggest the existence of blood poisoning. The jury found a verdict to the effect that death was due to the child having been overlain. The coroner, in the course of the inquiry, said that there was so much discussion nowadays as to whether vaccination did or did not cause death, that in all cases where any allegation of the kind was made he always held an inquest and ordered a *post-mortem* examination as well. If this admirable practice were more general on the part of coroners, it is probable that we should gradually hear less of the supposed evil results of vaccination.

CHICAGO.

The Death-rate of the Navy and Army during the War with Spain.—The Treatment of Tuberculosis.—The Society of Internal Medicine.—A New Hospital.

Some exceedingly interesting statistics are very likely to be framed from the late hostilities between this country and Spain. In the American navy, the numerical strength of which for the past six months has been 26,102, the total number of deaths was 85. In battle and from wounds 18 were killed, 11 died from accidents, and 56 succumbed to disease. In the army the showing is not so favourable. The maximum strength of the army is put down at 285,000 men, and up to October 30th there had been 1 death in 88 men from all causes, and 1 in 114 from disease; 61 enlisted men and 4 officers died of wounds received in battle; 257 enlisted men and 23 officers were killed in battle; and 2,485 enlisted men and 80 officers died of disease, making a total of 2,910 deaths. This shows that the loss from disease was over seven times that from other causes.

Much interest is being manifested in the application and outcome of the Murphy treatment of pulmonary tuberculosis at the new Dunning Hospital for Consumptives. It is too early yet to draw any conclusions, but the plan of treatment will be put to a careful test under circumstances favourable to a good result. Dr. Murphy makes no claim that the process will cure any particular percentage of cases; it has not been possible to put forth any such statement, as the whole matter is yet in a decidedly experimental state. Many have criticised Dr. Murphy for bringing the treatment out in advance of results: but it was more a preliminary announcement that he made at the last meeting of the American Medical Association, rather than any assumption as to curative virtues. The lay press garbled the entire matter, hence the criticisms.

The new Society of Internal Medicine seems to be getting into fair working order; and, if it can keep itself free from political contamination, it will fill a place of usefulness and honour. An annual discussion is provided for: the theme at the January meeting will be acute articular rheumatism.

A new general hospital has recently been completed in the south-western section of the city at 19th Street and Douglas Boulevard. It will be known as St. Anthony's, and will accommodate over 100 patients. The building and furnishings are thoroughly modern in every respect.

The Corporation of the City of London has made a grant of 100 guineas to the Royal London Ophthalmic Hospital, Moorfields.

CORRESPONDENCE.

THE SURGICAL OUTFIT OF THE SHIPS OF THE ROYAL NAVY.

SIR,—Will you kindly allow me to offer a few remarks on the surgical outfit of Her Majesty's modern warships? But at the outset I desire to state that I have not the slightest intention of casting any reflection upon the able medical medical officers of the Royal Navy.

For some years I have had many opportunities of visiting the fine vessels stationed from time to time on the South Coast, and I have often remarked upon the difficulty that must be experienced on board in carrying out modern surgical treatment in consequence of the absence of many indispensable requisites.

It is true that every ship in Her Majesty's service carries some cases of instruments, which are supplied by the surgeons themselves; but, in my opinion, these are insufficient for the treatment of the urgent cases which may occur at any moment during a voyage. I am quite aware that accidents and serious cases which happen near naval stations are at once removed to the naval hospitals; but these regulations cannot be carried out when vessels are at sea or in times of actual warfare, and I feel confident that the defects of the present old-fashioned system must sometimes place the surgeons of the Royal Navy in positions of difficulty and anxiety.

I trust that I may not be considered too bold or venturesome if I now make a few suggestions as to expanding the surgical outfit, and bringing it up to the requirements of the present day. Every ship ought to carry:

1. A set of carefully-preserved instruments sufficient for the performance of any operation that may be required during a voyage.

2. A store of dressings, consisting of the best materials now employed in surgical practice, packed in air-tight and waterproof cases.

3. Three sterilisers: one for water, another for instruments, and a third for dressings.

4. The attendants in the sick bay ought to be trained nurses qualified to undertake the sterilising of instruments and dressings, and capable of assisting during operations.

Men-of-war are not constructed for the treatment of the sick and wounded, and I am well aware that my suggestions will appear to many naval officers quite impracticable; but, having recently examined the surgical department on board a first-class American vessel, I know how easily improvements could be introduced into British war ships.

In conclusion, we live in restless and threatening times; and, while I am certain that the splendid ships of the Royal Navy are the best in the world in their fighting capacities, I desire to be equally certain that they carry the very best appliances for the relief of human pain and suffering.—I am, etc.,

November 30th. F.R.C.S.

THE PLEA OF INSANITY.

SIR,—The ground on which your leading article advocated a "change in judicial procedure" (the words are yours not mine) was that such a change was "needed to attain a righteous decision." My contention was that since what is admitted to be a righteous decision was in the case under consideration actually attained by the procedure now in use, the demand for a change was not sustainable on that ground. Dr. Clouston still advocates a change but mainly upon a different ground, namely, that the present system is injurious to the dignity and reputation of the medical profession, because it involves the public statement of differences of opinion, of diametrically opposite opinions, and thus gives to our evidence a false appearance of partisanship. If I have stated Dr. Clouston's position fairly, it is (1) that the public statement of differences of opinion is undesirable and derogatory, and (2) that this practice can be altered by a change of procedure. I would venture to traverse both statements. Dr. Clouston is the last man in the world to desire that differences of opinion, and the nearer attainment of truth that springs from differences of opinion, should cease to exist. So long as facts are dubious and are differently interpretable; so long as minds differ and apprehend facts differently; so long as men's experience and reasoning powers vary, so long will there be differences of opinion on complicated questions. And if differences of opinion exist why, should they not be publicly stated? Judges of equal learning and ability, sitting side by side upon the same bench, publicly pronounce their difference of opinion upon the same evidence, and no one thinks the practice derogatory. The clergy publish their differences of opinion from the pulpit; politicians deafen us with the clamour of their arguments; engineers thresh out their differences in the public press; historians make the world ring with their different intepretations of ascertained fact; sportsmen publicly stake their money on their opinions; scientific men wrangle in their societies, their books, and their special press; the controversies of scholars have been notorious ever since the revival of learning; the world is full of the public strife of opinion, and yet in no single section of mankind is the public statement of a difference of opinion looked upon as derogatory. Why should that be derogatory in the medical profession which is derogatory in no other walk in life?

But supposing that the public statement of differences of opinion be undesirable, can it be suppressed by a change of procedure? Supposing that the experts in mental disorder are appointed by the prosecutor or sit as assessors beside the judge, or are permanent officials retained by the Crown, or are selected and made to perform their functions in any other manner, will the mode of selection or the mode of making their opinions known secure unanimity among them? And if it do not, if they still differ in opinion, is not this difference of opinion to become public? Ought it to be suppressed? Can it be suppressed?

No, sir, the change if practicable is not desirable; if desirable is not practicable. That appearance of undue partisanship which it must be admitted is sometimes discernible in medical evidence is to be overcome not by change in procedure but by reticence, moderation and fairness on the part of the witnesses. That such partisanship is far from being a necessary concomitant of expert evidence is shown by the frequent compliments paid by the judges to the fairness of the medical witnesses who appear before them, compliments to which Dr. Clouston himself is not a stranger.—I am, etc.,

CHARLES MERCIER.

SIR,—May I be permitted to endorse most strongly every word of Dr. Clouston's letter in approbation of the views expressed in your leading article of November 12th; and also his criticism of the opinions expressed in Dr. Mercier's letter in the BRITISH MEDICAL JOURNAL of November 19th?

We all know that Dr. Mercier's views on this subject are now diametrically opposite to those expressed by him at the meeting of the British Medical Association held in Bristol in 1894. His contention is that "substantial justice is now done," and that therefore there is no reason why the law, or its method of procedure, should be altered. Dr. Clouston has very properly pointed out that, even if it is the case that in the end substantial justice is done, the legal procedure, or, as he terms it, "the present custom," is extremely detrimental to the position which medical witnesses have every right to lay claim to in the witness box, and, in consequence of this, their *bona fides* is called in question, both by the legal profession and the general public, so that the estimation of both the scientific and ethical value of expert evidence is extremely depreciated.

As things are at present, medical witnesses cannot help being to some extent medical advocates. My contention is that under no circumstances should expert evidence in these cases be taken on behalf of the prosecution or of the defence, but that it should be entirely independent. It is utterly wrong that the opinions of medical men should be referred to in a derogatory manner—as is so often the case—by judges on the Bench. Only last week, in a case in which medical evidence was taken on the question of the state of mind of the accused, Mr. Justice Wills, in addressing the jury, advised them "to be guided less by the views of the experts than by what they themselves had seen and heard in court;" and similar remarks from the Bench are constantly recurring.

As regards the statement of law in these cases, apart from the mere legal procedure, we have the opinion of many emi-

nent judges expressed in no measured terms. To refer to one instance, I will quote the remarks of the late Lord Chief Justice Coleridge in Reg. *v.* Pearsall, March, 1888. His lordship said that he remembered a case in his own experience in which a murderer was unquestionably mad, but was hanged because it could not be said that he was unaware of the nature and quality of his act: "that man," he said, "was hanged; God forbid that he should say justly, but certainly according to law, and that was still the law of England."

As to any suggestion of change of procedure in these cases, I think that in all these cases the trial should go on to a verdict of guilty or not guilty of the act, and that the question of insanity should be afterwards referred to a properly constituted commission appointed by the Home Secretary.

There is one point not referred to in your leading article, but which also requires careful consideration, and that is the question of unfitness to plead. As things are at present there is a possibility of an individual being detained as a criminal for the rest of his or her life in a criminal lunatic asylum whose guilt has not been brought home to them by any evidence whatever. Even Dr. Mercier must surely confess that this is not an entirely satisfactory state of the law.—I am, etc.,

Broadmoor, Berks. REGINALD H. NOOTT.

SYPHILIS IN THE ARMY.

SIR,—In view of the importance of this subject, as one factor in the army inefficiency from venereal diseases, I ask space to make a few remarks on your leading article of November 5th, as continuing the grave reflection thrown upon the medical staff in the article of April 9th of responsibility for the present results through defects of treatment. To the first article I offered a reply in the BRITISH MEDICAL JOURNAL of June 4th, adducing reasons against the view taken, and submitting another explanation of the facts; and with an experience of 34 years of army practice I venture to oppose the further adverse comment contained in the article of November 5th, to the effect that since Fergusson's day no "corresponding improvement in military practice" to the "more scientific treatment in civil life" has been made.

This conclusion follows an extract from a paper by Dr. Ogilvie in which the army practice in venereal diseases in the Peninsula days is given, as depicted in Fergusson's writings, and a strong resemblance of the cases from India in 1896 to those in 1812 from the Peninsula is asserted; yet, unless it be inferred that the old indiscriminate abuse of mercury given in all venereal sores, and "so long as the patient drenched in it remained above ground" has been revived in India in recent years (and let it be remembered that this excessive severity is but of recent production), the bearing of this extract upon the conclusion stated is not apparent. That there may be a similarity in the changes wrought by the same virus in 1812 and 1896 is more than probable, but that the Indian cases of 1896 are the resultant of virus and drug abuse as in the old days, is a conclusion which requires strong substantiating data yet to be adduced.

But is it a fact that military practice in this disease since 1812 has not corresponded to civil advance, be it from ignorance or indifference or other non-apparent reason? Who, if not army medical officers, gave the recoil from the common mercurial abuse in the early years of this century; and was it not due to such men as Rose, Guthrie, Thomson, even Fergusson, that a more rational mode of treatment followed? And to come to more recent years, is it not enough to mention Veale, Marston, Boileau, to prove an army concurrence with the best views of the day, and these men were far from being merely individual examples of the adoption of the best-known methods for meeting the grave conditions surrounding them? Since 1812 views on treatment locally and generally have varied greatly, and the medical staff, a changing body drawn from different schools of thought and practice in the United Kingdom, has reflected the teaching of the day; and hence the practice has varied both individually and in time. And that there is but little divergence in results in later years between civil and army practice, the experience of Surgeon-Captain Lambkin at Aix in 1891, whose paper on hypodermic injection of mercury formed the basis of the JOURNAL'S article of April 9th, fully attests. Mercurial inunction there held sway, attended by "marked success" both there and "in army practice." The majority of cases he met there came from England, comprising all classes, and in the duration and recurrence of the disease despite all treatment we recognise a counterpart of military experience. Personally, my observations are opposed to the opinion expressed of the lethargy or indifference of army medical men as a whole to civil improvements in syphilis and to the deduction that the recent severe cases of the disease from India are due either to inadequate use or excessive abuse of mercury.

But that there is a similarity in the disease of 1896 from India with that of 1812 from the Peninsula is probable, and the explanation I suggest is to be found in the similarity of character of the virus in the native sources. Fergusson notes that "none of the ulcers were such trifling cases of chancre as we have seen at home," a counterpart of the experience of many in India, and the character of the Indian diseases is thus stated by Dr. Ogilvie: "The havoc which syphilis has made there among a certain class of the population for generations impregnated with the virus is as bad or even worse than that caused in virgin soil." With such a concurrence in character of the source of origin and corresponding absence of all modification from sanitary measures, a close approximation in results, outside all asserted therapeutical defects yet to be substantiated, was to be anticipated and expected, and it is not apparent why such an intensity of source and recent withdrawal of the attenuating influence of hygiene cannot explain the present malignancy of the produced disease in the alien British soldier in 1896, so opposed to the results of 1879-80. I would ask, Is it more malignant than the disease at home which the first Contagious Diseases Act demonstrated to exist, and which this sanitary measure eliminated? And I would further ask, so far from the "Army Report being an unimpeachable witness against attenuation," do not the Blue Books for 1859 to 1886 furnish examples both of attenuations and exacerbations of virus marked by dovetailing into the presence or absence of sanitary control? Moreover, India is not the only foreign station occupied and productive of syphilis, and deductions on treatment from the observed results made from it must, in view of the approximation of the practice of sections of the staff wherever located, must cover the results from the army as a whole; yet what do these last results show but such a variability as to time, station, and same station at different periods, both in prevalence and intensity of disease, as to neutralise the conclusion arrived at from a part only? The late results from the Straits Settlements and China closely approximate those from India; and I submit that in these stations also the true explanation of the recent exacerbation of syphilis lies not in defects of treatment, whether of deficiency or excess of drugs, but in the character of the primary sore derived from an alien race and unmodified by hygienic measures.

I would ask, too, will not this centreing of view upon one part only of army inefficiency tend to relegate to the background the larger problem of venereal diseases in general, the suppression of these, and the curtailment of the originating vice?—I am, etc., FRANCIS H. WELCH, F.R.C.S.,

Lee, Nov. 26th. Surgeon-Colonel (retired) A.M.S.

SARCOMA TREATED BY COLEY'S FLUID.

SIR,—In a case to which some weight may possibly attach, the mere statement with respect to a new formation, that it is a sarcoma, can scarcely be viewed as adequate, seeing that the histological diagnosis of certain forms of this group of tumours is at times very difficult and dubious, and needs in such circumstances to be carefully considered in conjunction with the clinical history.

The microscopic section from Mr. Battle's case reported at the Medical Society of London on November 14th, 1898, was made in the Clinical Laboratory at St. Thomas's under Dr. Louis Jenner's direction, the note accompanying the material from the operating theatre being "Tumour of chest, (?) sarcoma," and it was afterwards entered up in the case-book under the designation of "fibro-sarcoma with giant cells." Wisely or unwisely, no clinical details of any kind are furnished with the material to be examined. On hearing, however, that the case was about to be reported as one of sarcoma, I discussed the matter with Mr. Battle, for it had occurred to me, without knowing anything of the syphilitic his-

tory forthcoming, that the swellings were possibly glandular, and that the fibrifying spindle-celled tissue represented the later stages of a large-celled hyperplasia.

The section shows coarse intersecting strands of fibrifying spindle-celled tissue, between which, here and there, occur more cellular areas, comprising, in addition, small groups of multinucleated giant cells.

There is no necrosis and no trace of past or recent hæmorrhage such as might furnish a clue to the presence of gigantic phagocytes.

The right classification of tumours will doubtless be that founded upon their etiology. The anatomical is not one of choice, but necessity; there are as yet no data for any other.

When a connective tissue growth presents obvious signs of an inflammatory process, it is by general consent excluded from the class of tumours. But the line between an inflammatory process and an irritative hyperplasia, with accompanying physiological hyperæmia, is too arbitrary a one upon which to risk the definition of a tumour. In a mammary carcinoma the stroma may present all the marks of an irritative overgrowth, with leucocytic infiltration, and equally so does the epithelium, closely packed as it is in the lymph spaces, and presenting all the disorderly results of an epithelial catarrh; if the process is not actually named inflammatory it is so close an approach to it that a distinction between the two ceases to have any serious value.

Not that such marks are present in all new formations; they are confined to certain groups of them. And time alone will show how many processes are concerned in the production of the results which, under our existing nomenclature, are classed together as tumours.

In a fibrifying sarcoma, the histological picture is one of connective tissue cells producing fibre; and as precisely the same picture is presented in the later stages of the formation of "scar tissue," the essentially similar nature of the histological processes becomes at once apparent; nor is the fascicular arrangement of cells and fibre less marked at times in "scar tissue" than in the sarcoma, whilst both, again, are equally uncircumscribed by a capsule.

In the case under discussion, however, there is a cause adequate to explain the new formations, and this being so, there is little reason, I submit, to class them amongst those of which the cause is unknown.

The patient had contracted syphilis six years previously, and in addition to the glandular swellings of the axilla and those about the clavicle, there was a small, fluctuating, spherical swelling over the right fourth costal cartilage, which was opened, and the yellow, cheesy contents of which were scraped away at the same time that the small portion of the clavicular tumour was cut out for examination.

This was done on January 5th, 1898. Iodide of potassium had been administered without result, and on January 22nd the injection of Coley's fluid was commenced; the use of iodide, however, was continued until March 6th, after which the injections were prolonged alone until May 11th, when the patient was discharged with the swellings much diminished, though not completely removed.

Whether the toxins of the fluid determined an effective action of the iodide is a matter for speculation; the result, at least, is a suggestive one in the therapeusis of the later lesions of syphilis.

There is nothing in the histological structure of the clavicular swelling to exclude the possibility of its being due to syphilis, and, the clinical evidence being what it is, for my part I am content to regard the lesions as syphilomata associated with a syphilitic glandular fibrosis.—I am, etc.,

Samuel G. Shattock,
November 28th. St. Thomas's Medical School.

THE USE AND ABUSE OF THE MIDWIFERY FORCEPS.

Sir,—I have read with the greatest interest your reports of the discussion on this subject which took place at the annual meeting of the British Medical Association.

As one actively engaged in the obstetric practice of a large hospital (the Women's, Melbourne, Australia), I could not but be struck with the serious indictment made by Professor Sinclair and brought prominently forward by Dr Milne Murray, "that the accoucheurs are the providers of material for the gynæcologists," and "that gynæcology has become so largely surgical as the direct result of surgical interference (that is, by the midwifery forceps, almost exclusively) in midwifery practice."

Dr. Murray summarises the dangers of premature forceps operation (apart from sepsis) thus:

1. The mother's parts may be bruised, lacerated, or otherwise injured by mechanical violence.
2. The too sudden emptying of the uterus may be followed by imperfect retraction and consequently dangerous hæmorrhage.
3. The fœtal head may be unduly compressed, lacerated, or damaged.

Taking this record as it stands the gynæcologist is only likely to be required for something arising out of No. 1. But is he to assume, because the forceps had been used, that they were the direct cause of the injuries and that the accoucheurs were the "providers of the material"?

It is within my knowledge that this is a very common assumption on the part of some gynæcologists who, in adopting the *post hoc propter hoc* argument, seem to forget that most serious lacerations occur in apparently perfectly normal labours and in the absence of any surgical interference whatever. I have, for instance, frequently shown our hospital students severe cervical lacerations, single, double, and stellate right up to the vaginal junction, which occurred in young primiparæ as the result of apparently normal head labours where forceps had not been used at all. And in the British Medical Journal of September 17th will be found the record of a most severe laceration of the rectal wall in a normal labour in which the second stage lasted less than half an hour and where forceps had not been used at all.

While freely admitting that forceps improperly used are harmful, it is scarcely fair to assume, as is commonly done, that because they had been used in a particular case, in which injuries are found, they were, *ipso facto*, the direct cause of the injuries, and the accoucheurs were the providers thereof.

On the other hand, we have direct and positive evidence that the gynæcologist occasionally provides work for the accoucheur. I have myself met with several instances of severely obstructed labour, as the direct consequence of Emmet's operation on the cervix, as performed by different gynæcologists. In one case I was telephoned for by our house-surgeon, who could find no "os" at all. I discovered its representative in the shape of a minute dimple in a mass of dense cicatricial tissue. And a difficult process of division and dilatation had to be gone through before delivery could be safely effected. Even then there were some unavoidable lacerations of the cervix, which, were, however, successfully united shortly after labour.

Finally, there is on record a fairly large number of abortions, serious operations (including craniotomies and "Porros"), and maternal deaths, which have occurred during labour as a direct consequence of various operations for uterine fixation performed by different gynæcologists antecedent to labour.

From these considerations I would be strongly inclined to take up the line of argument advanced at the meeting by Professor Playfair, whose classical work on systematic midwifery may still, I venture to think, be regarded as one of the safest guides to obstetric practice to be found in any language.—I am, etc.,

Frank A. Nyulasy, M.B., Ch.B.,
Honorary Obstetric Surgeon, Women's Hospital,
October 19th. Melbourne, Victoria, Australia.

TREATMENT OF ARTHRITIS BY MEANS OF HOT AIR.

Sir,—In connection with the above, I can fully endorse many of the remarks made by Dr. Short, both as to its beneficial effects and to the simplicity of the necessary apparatus.

During the past eighteen months I have had several cases of osteo-arthritis under my care in the South Devon Hospital, and, although they were all somewhat advanced, they all of them improved considerably under hot-air treatment.

My method of applying hot air differs from Dr. Short's in that I utilise an ordinary cradle such as is used for suspending a fractured leg, and so localise the heat to the affected joint. This has the advantage that it does not cause any exhaustion of the patients, and they are thus able to bear a bath every day; neither are they necessarily confined to their beds, or even to the ward.

I know of no remedy for osteo-arthritis which can compare for efficiency with hot air, and, as the necessary apparatus is so inexpensive, there is no reason why patients should not follow out this treatment in their own homes whilst living their ordinary daily life.—I am, etc.,

Plymouth, Nov. 29th. E. L. Fox.

PROFESSOR PETERS'S PAPER ON PARAFFIN CASTS.

Sir,—If the title of this paper had been On a New and Original Method of Using Paraffin in the making of Casts, his reply in the British Medical Journal of November 19th would have been intelligible and proper; but his title was On a New and Original Method of making Casts, which puts an altogether different aspect on his claim—a claim not disavowed by a single word in his contribution. Besides, he does not answer my objection to his novelty that it is cumbrous, expensive, and not portable. That I did all he has done, and more than thirty years ago, is confirmed by my old friend Dr. Walter J. Sykes, Editor of the *Analyst*.—I am, etc.,

Birmingham, Nov. 24th. Lawson Tait.

IRISH DISPENSARY DOCTORS.

Sir,—I have read the admirable letter of your correspondent "A Victim in the Toils" in the British Medical Journal of November 19th *re* above, and I cordially agree with his remarks. The condition of the Irish Dispensary Service is most lamentable, and is likely to be far worse in the near future, when our new masters come into office, yet nothing is being done to organise the profession, or to show up the intolerable state of things which exists.

The cause is mainly due to ourselves: so long as a dozen candidates can be had for every miserable dispensary vacant will Boards of Guardians offer the present wretched salaries and treat their medical officers with contempt. I look upon the condition of the profession in Ireland at present as most deplorable. In almost every town and many villages there is some medical Micawber waiting "for something to turn up," and employing his abundant leisure in rigging dispensary committees, and plotting against some unfortunate medical officer, who, if he has the misfortune to fall ill, probably finds that active canvassing has been going on in the hope of his speedy demise. There is no other profession or trade in the kingdom where members would stoop to conduct so dishonourable and degrading.

The country doctor who is supposed to get the private practice of his district now finds that his fees are cut down to starvation point by these newly-qualified men from towns, who will ride on bicycles any distance into the country for 5s. (medicine included), whilst the untrained assistants in the drug shops are allowed to prescribe over the counter for any and every disease, no matter how serious, so that the income of the country dispensary doctor is cut in upon from all sides. After seventeen years in the service I find that my salary is now smaller than in my first year owing to the diminution in vaccination and registration fees, which could not occur in any other service but ours.

Owing to our apathy and powerlessness, no satisfactory clause dealing with superannuation was inserted in the Local Government Bill, and a man when worn by disease or infirmity after a life of long service may be turned adrift without a penny if he has not been sufficiently subservient to his masters. The remedy for all this is in our own hands, but whilst there are so many portals to the profession as now exist, and until a different class of men enter it, I have not much hope of seeing any improvement in the position or prospects of the Irish dispensary doctor.—I am, etc.,

November 24th. Another Victim.

THE PROCEDURE OF THE GENERAL MEDICAL COUNCIL.

Sir,—One cannot help a feeling of amazement at the ultra-conservative views of some members of the General Medical Council anent the production and inspection of documents, and the waste of time involved in the discussion of this question. So far as my experience goes the inspection of minutes of proceedings of Committees and Council, and documents therewith, has been conceded as a matter of right, without any discussion. Surely it is time for a dignified body like the General Medical Council to do its work with less talking.

I wish Mr. Victor Horsley every success in his attempts to awaken this erstwhile sleepy body, the General Medical Council, to the necessity of wasting as little time as possible in their proceedings.—I am, etc.,

Cardiff, Nov. 28th. A. Sheen.

THE GENERAL MEDICAL COUNCIL: A CORRECTION.

Sir,—In the British Medical Journal of November 26th, in your report of one of the inquiries held before the Council it is stated that I said "that it had always been the practice to consider the neglect of patients came within Section xxix of the Act."

This is an error. My statement was to the contrary effect. My statement was that as long as my experience went back it had *never* been the practice (of the Council) to inquire into charges of neglect of patients, and that neglect of patients has never been treated as a subject-matter for the exercise by the Council of its disciplinary jurisdiction.

The point is one of importance, which is my excuse for asking you to insert this correction.—I am, etc.,

The Temple, Nov. 25th. M. Muir Mackenzie.

CYST OF THE MAXILLARY ANTRUM.

Sir,—On reading Mr. Stewart's account of his case of cyst of the maxillary antrum, I gather the impression that his first diagnosis was correct, and that it was, as he says, a cyst of the maxilla independent of the antrum itself; that it was, in fact, a dental cyst.

He says there was swelling below the left eye and fulness in the mouth, and that fluctuation was felt between these parts. Now, a cyst of the antral mucous membrane would protrude into the cavity of the antrum, and produce no effect on the bony walls till it had filled that cavity. The weakest part might then be expected to yield, and would be the inner or nasal wall, probably in the region of the opening of communication with the nose, where the wall is often only membranous. A simple cyst of the antrum would not expand the outer wall nor burrow into the body of the maxilla.

On the other hand, a dental cyst, beginning in the body of the bone, would hollow this out, and reaching the surface, either palatine or buccal, would expand, thin, and perforate the plate of denser bone; or, reaching the antral floor, might treat this in the same way. The antrum would then be separated from the cyst by a membranous rupture only, and when at last this gave way the two cavities would become continuous.

Such a sequence of events is not at all uncommon with dental cysts, and would account for all the facts mentioned by Mr. Stewart: (1) Easy communication between the cyst and the nose; (2) possibility of digital exploration of the antrum; (3) great extent of swelling in the mouth (this is a point greatly in favour of dental cyst): (4) quantity and nature of the fluid evacuated, quantity depending on the size of the cyst, and the fluid of dental cysts being of a translucent, tenacious nature, with crystals of cholesterin in suspension, just as the fluid described by Mr. Stewart.—I am, etc.,

J. G. Turner, F.R.C.S.,
Assistant Dental Surgeon, Dental Hospital, Leicester Square.

Nov. 28th.

A Roman Military Hospital.—According to the *Journal des Débats* a hospital has been discovered among the Roman ruins at Baden, in Canton Aargau, Switzerland. The excavations have laid bare a building containing fourteen small rooms, together with a number of articles, which it is thought served for the use of Roman surgeons, such as forceps, tubes, spatulæ, caustic-holders, ointment-boxes, measures, etc. The experts conclude that these objects show that the building served as the hospital for the fourth and fifth legions, which had their standing quarters at the place.

Presentation.—Mr G. J. R. Lowe was, on the occasion of his marriage, presented with a pair of silver-plated flower vases of George III pattern, by the members of the Lincoln District of the Great Northern Railway Sick Fund.

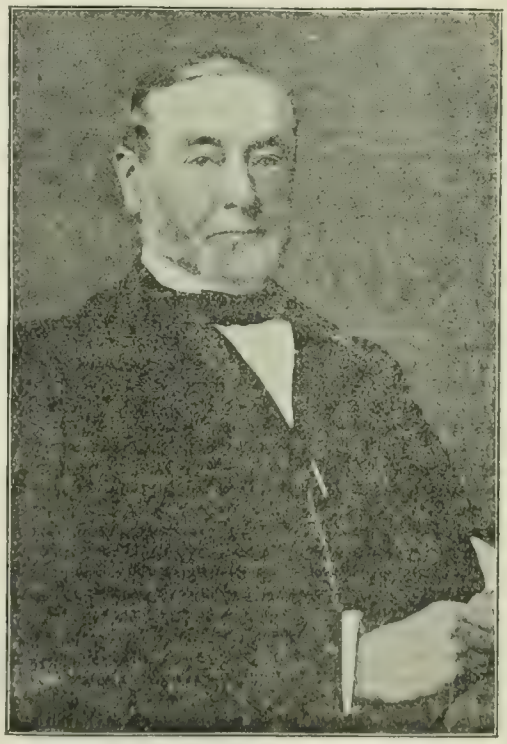
Dr. Errico de Renzi, Professor of Medicine in the University of Naples, has been named a Senator of the Kingdom of Italy.

OBITUARY.

WILLIAM FREDERICK CLEVELAND, M.D.St.And.,

Member of the Council of the British Medical Association, etc.

With deep regret we have to record the very sudden death of Dr. W. F. Cleveland at his residence, 199, Maida Vale, London, W., on Thursday, November 24th. He had on the previous Tuesday presided at a meeting of the Ethical Committee of the Metropolitan Counties Branch of the British Medical Association, and appeared to be in his usual good health. He saw his patients on Wednesday and Thursday morning, and was apparently quite well, and expecting Professor Bell Pettigrew of St. Andrews and another friend to dinner. A few minutes before their arrival he left the dining room of his house in which he had been chatting quietly, and went to the drawing room, where he fell heavily, and life was immediately extinct. A *post-mortem* examination showed that death was due to fatty degeneration of the heart, all the other organs being perfectly healthy.



He was born at Lowestoft, Suffolk, in 1823, and had consequently attained the age of 75. He received his early education at Yarmouth, at the school in which Sir J. Paget was also a scholar; and in April, 1839, he was apprenticed for five years to S. Sharman Braine, L.S.A., of Lowestoft, and entered at Guy's Hospital Medical School for his professional training in October, 1843. He obtained the diplomas of the College and Hall in 1846, and the M.D.St.And. in 1862. During his three years at the Borough School he won the high esteem of his teachers, amongst whom were Drs. T. Addison, B. G. Babington, G. H. Barlow, and W. W. Gull; and Messrs. Aston Key, Bransby Cooper, Cock, Hilton, and Birkett. On leaving Guy's he joined the firm of Messrs. Harris and Brodie Sewell in the City. In 1851 he married Miss Cordelia Churchill, who died some little while ago. Shortly after his marriage he left the City, and settled in Maida Vale, where he practised for the remaining 47 years of his life.

Possessed of talent, sound knowledge of disease, and urbane manners, Dr. Cleveland acquired a large practice. His industry and public spirit were also marked features of his character. He was one of the earliest promoters of the Kilburn Dispensary, founded in 1862; and was its Honorary Consulting Physician when he died. He took deep interest in the various medical societies and associations to which he belonged, and rose to the highest offices in each. Thus he was President of the Harveian Society in 1870, when he delivered a scholarly address on the Modes of Dying. He was a member of the St. Andrews Graduates' Association from its establishment in 1867, and died in office as its President. But it was in the British Medical Association that his energies, his ripe judgment, and his common sense views of life were of late years principally engaged for the public benefit.

In 1890 he was elected President of the Metropolitan Counties Branch of the Association, when he gave an address on the Energy of the Animal Body. He was President of the Ethical Section at the general meeting of the Association in London in 1895, and by his conduct in that difficult office more than justified the hopes of those who nominated him thereto. His Presidential address on Medical Ethics on that occasion was greatly appreciated. He had been for years a representative of his branch on the Council of the Association, where his remarks received deep attention from his colleagues, as they were always felt to be the outcome of sterling qualities of head and heart. He was a member of several committees, and as Chairman of the Joint Committee of the British Medical Association and the Medico-Psychological Association on incipient insanity, had lately been instrumental in forwarding a notable piece of work on this vexed subject.

In 1896 he published a paper on the Prophylactic Clothing of the Body in Relation to Cold, and in 1895 he gave the Harveian Lectures, choosing as his subject Induction and its Association with the History and Progress of Medicine. He was at two different times Vice-President of the Obstetrical Society, and was a frequent contributor to its discussions. In fact, he kept himself well abreast of modern advances, and was altogether a man of warm sympathies and wide culture, a staunch friend and colleague, and one whose loss is felt by a wide circle of patients and friends.

The funeral took place on Tuesday last at Paddington Cemetery. The first part of the service was held at St. Mark's Church, Hamilton Terrace, where it was conducted by Canon Duckworth, D.D., and the Rev. F. Marr, and was attended by a large number of relatives, friends, and colleagues, amongst whom was a deputation from the St. Andrews Graduates' Association.

Professor George James Allman, M.D., F.R.S., formerly Regius Professor of Natural Science in the Edinburgh University, who has just died at Ardmore, Parkstone, Dorset, was born in Cork in 1812, was the eldest son of Mr. James Allman, of Bandon, County Cork. He was educated at the Belfast Academical Institution, and resolved to study for the Irish Bar, but his love of natural science caused him to abandon law for medicine, and he accordingly graduated in Arts and Medicine in the University of Dublin in 1844. In the same year he was appointed Regius Professor of Botany in the University, and gave up all idea of practising medicine as a profession. In 1854 he was elected a Fellow of the Royal Society, and in 1855 he resigned his Professorship in the University of Dublin, on being appointed Regius Professor of Natural History and Keeper of the Natural History Museum in the University of Edinburgh. This post he held until 1870. Professor Allman devoted the greater part of his life to investigating the lower organisms of the animal kingdom. For his researches in this branch of biology he received in 1872 the Brisbane Prize from the Royal Society of Edinburgh; in the following year a Royal medal was awarded to him by the Royal Society of London; and in 1878 he received the Cunningham gold medal from the Royal Irish Academy. Soon after his election to his professorship in Edinburgh he was appointed one of the Commissioners of the Scottish Fisheries, a post he held until the abolition of the Board in 1881. When Mr. Bentham resigned the presidency of the Linnean Society Professor Allmann was elected, and he retained the position until 1883, when he resigned in favour of Sir John Lubbock. He was President of the British Association for the Advancement of Science in 1879. The large collection of hydroida made during the exploring voyage of the *Challenger* was assigned to Professor Allman for determination and description. He had previously dealt in a similar manner with the hydroida collected during the exploration of the Gulf Stream by the United States Government.

Many recent graduates of Glasgow University will notice with regret the death of Dr. Andrew Watson, Parkhead, Glasgow. After graduating at Glasgow University in 1892, he was resident physician in the Royal Infirmary and in Belvidere Fever Hospital, and was a general favourite with his colleagues. He had started practice in his native part of Glasgow, and was getting on well, when he was suddenly struck down by pneumonia, and after a few days' illness died on November 23rd.

Surgeon-General Alexander Smith, M.D., C.B., Honorary Physician to the Queen, died at Alfred Place, Thurloe Square, suddenly, on November 25th, at the age of 74. He was appointed Assistant-Surgeon, August 7th, 1846; Surgeon, January 12th, 1855; Surgeon-Major, August 7th, 1866; Deputy-Surgeon-General, April 28th, 1876; and Surgeon-General, July 5th, 1881; he accepted retired pay, October 14th, 1884. He served in the Eastern campaign in 1855, and was present at the siege of Sebastopol, including the assault of the Redan on June 18th (medal with clasp, and Turkish medal); with the expedition against the Jowaki Afridis in 1877-78 (medal); and in the Afghan war of 1878-80 as Principal Medical Officer, being present in the engagements at Ahmed Khel and Urzoo, near Ghuzni (mentioned in despatches, C.B., and medal with clasp). He was appointed Honorary Physician to the Queen, March 28th, 1894.

The late Miss Mabel Webb.—At a meeting held at the Royal Free Hospital under the presidency of Mr. Justice Bruce, it was resolved to commemorate the late Miss Mabel Webb, Curator of the Museum of the Hospital, by carrying out a reconstruction of the museum, and by the addition of adequate facilities for pathological work. Subscriptions to the amount of £200 were promised, but it was estimated that the total cost would be about £1,500. The scheme has the warm support of the members of the late Miss Webb's family, and Mrs. Webb has promised a generous donation to the main portion of the work. Subscriptions may be sent to Mr. C. W. Thies, Secretary, at the hospital.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Pilliet, head of the laboratory of the Charité Hospital, Paris; Dr. Turel, Professor in the Medical School of Grenoble, and Surgeon to the hospital of that city; Dr. Emmanuel Passenbronder, the oldest medical practitioner of Antwerp, aged 85; Dr. Semelaigne, Medical Superintendent of the Chateau St. James Lunatic Asylum, and some time President of the Société Médico-Psychologique, aged 78; and Dr. Louis Flatow, a prominent medical practitioner and sanitarian of Berlin, aged 63.

MEDICO-LEGAL.

THE SALE OF ABORTIFACIENTS.

A case of some interest has been decided in the Full Court of the Colony of Victoria, which corresponds to our Court for Crown Cases Reserved. We learn from a report in the *Pharmaceutical Journal* that one Hyland had been charged before the Supreme Court under Section LVIII of 24 and 55 Vict., c. 100, an Act passed for the suppression of attempts to procure abortion, which appears to have been adopted as law in Victoria. The details of the case are not of any particular interest, the prisoner having supplied to an officer of police certain pills containing drugs described, well knowing that the same were intended to be used with intent to bring about a certain result on a woman unknown. Two points were submitted to the full Court when the case was brought before that tribunal for the purpose of having the conviction quashed. These were: (1) Must there be an existing woman; (2) Must there be an intent to procure abortion. Counsel for the prosecution argued that it was not necessary that there should be an existing woman, and further that the offence was the unlawful supplying of the drug in the belief that it was intended to unlawfully use it.

Counsel for the defence submitted that it was necessary to show that there was an existing woman, and also an intention on the part of the person supplying or on the part of the person receiving the drug to use it for an illegal purpose. He further stated that in the present case there was no woman existent, and no intent shown. The Court was equally divided, and therefore the opinion of the Chief Justice prevailed, he being in favour of quashing the conviction

This judgment appears at first sight to be contrary to that given in the case of R. *v.* Hillman (1863), 33 *L.J.* (M.C.) 60, L and C. 343, which is generally regarded as a leading case on the subject. The facts were shortly as follows: Israel Hillman was charged with having unlawfully supplied pills containing certain drugs described, well knowing that the same were to be used by one Sarah Carrier, with intent to procure abortion. The jury found as a matter of fact that the prosecutrix (Sarah Carrier) did not intend to take the substance in question. A Court consisting of Erle, C.J., Williams, B., Wightman and Keating, JJ., upheld the conviction. In the course of his judgment Chief Justice Erle said that the intention of any other person than the defendant was unnecessary for the commission of the offence made punishable under the statute, which is directed against the supplying of any substance with the intention that it shall be employed in procuring abortion.

Without a full report of the judgment in the Colony it is difficult to say upon what grounds the judges based their decision. It is possible that they found that there was no intent in the mind of the accused. If such be the case, the decision can hardly be said to be inconsistent with R. *v.* Hillman. In R. *v.* Drake (13 *W.L.R.* 501), which was mentioned in the course of the argument, Chief Justice Higinbotham had found that "there was no woman and no intent, but that there was a belief in the mind of the accused of the existence of the intent as applicable to a woman believed to exist." This language is by no means clear: but if it is taken to mean that there need be no intent, it cannot be contended that the full Court were wrong in dissenting from it, having regard to the opinion expressed on the subject of intention by Chief Justice Erle in R. *v.* Hillman. If, however, the case of R. *v.* Hyland was decided upon the assumption that there must be an existing woman, the decision is obviously contrary to that of the leading case.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Degrees.—On Thursday, November 24th, at the Congregation in which Lord Kitchener received the honorary degree of LL.D., the following medical degrees were conferred:

M.D.: H. Smith, M.A., Trinity; E. Harrison, M.A., Clare; J. W. W. Stephens, B.A., Caius.

M.B. and B.C.: S. V. Roe, B.A., Pembroke.

Addenbrooke's Hospital.—At a poll of the Governors held on Monday it was agreed by a large majority that a formal Committee of Management should be appointed instead of the present Weekly Board.

UNIVERSITY OF ST. ANDREWS.

Mr. James Stuart, M.P., Rector of the University of St. Andrews, has, it is understood, appointed his brother, Mr. Joseph Gordon Stuart, W.S., as his assessor in the University Court.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Major, R. A. M. C., recently returned home, is open to exchange for a full or part tour abroad. State terms to "Sunshine," care of Holt and Co., 17, Whitehall Place, London, S.W.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon Alfred H. Miller has been promoted to be Fleet-Surgeon, November 3rd. His previous commissions are thus dated: Surgeon, June 4th, 1878; Staff-Surgeon, June 4th, 1890. He was Surgeon of the *Dee* during the Egyptian war of 1882, and has the medal and Egyptian bronze star granted for that campaign.

The following appointments have been made at the Admiralty: Robert H. Mornement, Surgeon, to the *Niobe*, undated: Henry W. D. Walsh, Fleet-Surgeon, to the *Sans Pareil*, November 25th: Robert Hickson, Staff-Surgeon, to the *Rupert*, November 25th: Edward Haines, Surgeon, to the *Camperdown*, November 24th: George A. S. Bell, Surgeon to the *Victory* for the *Duke of Wellington*, November 28th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. L. Browne, M.D., who is serving in the Madras Command, is appointed to officiate on the Administrative Medical Staff of the Indian Army, with the temporary rank of Colonel, from October 17th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. Young, M.B., Bengal Establishment, is appointed to be Principal Medical Officer Malakand Force, in succession to Lieutenant-Colonel W. J. Charlton, Royal Army Medical Corps.

MILITIA MEDICAL STAFF CORPS.

Mr. John Davies is appointed Surgeon-Lieutenant, November 23rd.

THE VOLUNTEERS.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in their respective corps, dated November 23rd: Paul McK. Terry, 2nd Hampshire Artillery (Southern Division Royal Artillery); Frederick F. German, 1st Lancashire Artillery; Wilberforce Thompson, 2nd Volunteer Battalion the Prince Albert's Somerset Light Infantry.

Surgeon-Major E. Jones, 3rd Volunteer Battalion the Welsh Regiment, is promoted to be Surgeon-Lieutenant-Colonel, November 23rd.

Surgeon-Lieutenant-Colonel F. Orton, 1st Volunteer Battalion the Duke of Cambridge's Own Middlesex Regiment, has resigned his com-

mission, with permission to retain his rank and uniform, November 23rd.

Surgeon-Captain W. B. Moir, M.D., 2nd Volunteer Battalion the Highland Light Infantry, has also resigned his commission, November 23rd.

Brigade-Surgeon Lieutenant-Colonel S. P. Smith has resigned his appointment in the West London Volunteer Infantry Brigade, November 23rd.

VOLUNTEER MEDICAL STAFF CORPS.

Quartermaster and Honorary Captain B. R. Howell, the Manchester Companies, has resigned his commission, retaining his rank and uniform, November 23rd.

Mr. Frank Hall is appointed Quartermaster to the Manchester Companies, November 23rd.

PRINCIPAL MEDICAL OFFICER NORTH-WESTERN DISTRICT.

On the retirement, early in December, on completion of 60 years of age, of Colonel F. B. Scott, R.A.M.C., he will be succeeded as Principal Medical Officer of the North-West District, Headquarters, Chester, by Colonel J. Fraser, quite recently promoted to that rank.

RAPID PROMOTION.

By the advancement of Lieutenant-Colonel T. J. Gallwey, M.D., C.B., to colonel's rank, in the recent *Soudan Gazette*, this officer passes over twenty-three men in the same rank (lately brigade-surgeons). Colonel Gallwey has about twenty-three years' service, and is not more than 46 years of age. He has been lucky, but he has also been deserving, having worked hard and efficiently. He obtained his appointment as Principal Medical Officer of the Egyptian army on March 25th, 1892.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 5,632 births and 3,748 deaths were registered during the week ending Saturday last, November 26th. The annual rate of mortality in these towns, which had been 17·3 and 17·1 per 1,000 in the two preceding weeks, rose again to 17·4 last week. The rates in the several towns ranged from 11·3 in Croydon, 12·2 in Huddersfield, 12·3 in Cardiff, and 12·6 in Plymouth, to 21·6 in Gateshead, 22·3 in Liverpool, 24·9 in Derby, and 26·1 in Wolverhampton. In the thirty-two provincial towns the mean death-rate was 17·9 per 1,000, and exceeded by 1·2 the rate recorded in London, which was 16·7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1·7 per 1,000; in London the rate was equal to 1·4 per 1,000, while it averaged 1·9 in the thirty-two provincial towns, among which the highest zymotic death-rates were 2·6 in Manchester and in Sheffield, 2·9 in Liverpool, 3·2 in Halifax, and 3·6 in Swansea. Measles caused a death-rate of 1·1 in West Ham and 1·3 in Manchester; whooping-cough of 1·0 in Derby and in Gateshead, and 1·5 in Cardiff; and "fever" of 1·1 in Halifax and 1·2 in Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 81 deaths from diphtheria in the thirty-three towns included 38 in London, 10 in Leeds, 7 in Liverpool, 6 in Sheffield, 4 in Leicester, 3 in Portsmouth, and 3 in Swansea. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had increased from 2,178 to 3,259 at the end of the thirteen preceding weeks, had declined to 3,162 on Saturday last, November 26th; 234 new cases were admitted during the week, against 318, 340, and 319 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 26th, 861 births and 595 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 18·9 to 19·5 per 1,000 in the three preceding weeks, further rose to 19·7 last week, and was 2 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11·9 in Perth and 15·2 in Paisley to 21·3 in Edinburgh and 22·6 in Aberdeen. The zymotic death-rate in these towns averaged 2·4 per 1,000, the highest rates being recorded in Dundee and Aberdeen. The 268 deaths registered in Glasgow included 4 from measles, 3 from diphtheria, 12 from whooping-cough, 7 from "fever," and 0 from diarrhœa. Four fatal cases of measles, 3 of whooping-cough, and 2 of "fever" were recorded in Edinburgh.

THE SHEFFIELD INFECTIOUS HOSPITALS.

We are glad to learn that the opposition of the Local Government Board to the proposed new hospitals for cases of infective disease in Sheffield is likely to be withdrawn. The grounds alleged in the Sheffield papers for this refusal seemed rather ridiculous. The impression there was, as we ventured to put it the other week, that the Board were punishing the Medical Department for the alleged delinquencies of the Department charged with the treatment of sewage. We learn, therefore, with no little satisfaction that the hospital scheme is to be considered on its own merits, and that the bitter cry of the Sheffield children for larger hospital accommodation is likely to be met by an ampler provision for the requirements of the city.

On November 11th the buildings of the medical department of the University of Tennessee were destroyed by fire.

MEDICAL NEWS.

Dr. Louis E. Stevenson, of Temple Sowerby, Penrith, has been elected a Fellow of the Geological Society of London.

The new building provided by the guardians of the poor of the Lewisham Union for the treatment of patients mentally afflicted will be opened by Mr. John Penn, M.P., on Tuesday, December 6th, at 3 P.M.

Successful Vaccination.—Dr. Louis E. Delmege, Public Vaccinator for the Burton District of the Kendal Union, has been awarded the Government grant for efficient vaccination in his district.

Presentation.—Dr. Armistead, the Medical Officer of Health for the Saffron Walden Urban and Rural Councils, and other councils, was recently presented on behalf of the sanitary inspectors with a silver-mounted liqueur stand, bearing an inscription testifying to the respect and esteem felt for him by the sanitary inspectors of the various councils with which he had been connected during the last twenty-five years.

International Congress of Gynæcology and Obstetrics.—The Third International Congress of Gynæcology and Obstetrics will be held at Amsterdam from August 8th to 12th, 1899. The following are the questions proposed for discussion: (1) Surgical treatment of fibromyomata; (2) the parts respectively played by antisepsis and perfected technique in the results of modern operative gynæcology; (3) the influence of position on the form and dimensions of the pelvis; (4) comparative study of the indications for Cæsarean section, symphysiotomy, craniotomy, and artificial premature labour.

The Prince of Wales's Hospital Fund.—It is announced that the Committee of the Prince of Wales's Hospital Fund for London, appointed last year to visit and inspect the various hospitals which have applied for a share in the Fund, has completed its task for this year. The Committee consisted of the following: Sir Henry Burdett, K.C.B.; Mr. Charles Burt, Sir Savile Crossley, Bart.; Mr. J. G. Craggs, F.C.A.; Dr. W. S. Church, Mr. John Croft, F.R.C.S.; Viscount Duncannon, Mr. Frederick M. Fry, Mr. A. D. Fripp, F.R.C.S.; Sir Trevor Lawrence, Bart.; Mr. J. Pierpoint Morgan, jun.; Mr. James C. Marshall, Mr. N. C. Macnamara, F.R.C.S.; Dr. E. C. Perry, Mr. T. Pickering Pick, F.R.C.S.; Mr. H. Power, F.R.C.S.; Mr. Albert G. Sandeman, Sir Thomas Smith, Bart.; Mr. Julius Wernher; and Mr. Alfred Willett, F.R.C.S. Each of the hospitals has been visited by two or more visitors, of whom one in every instance was one of the medical members of the committee.

Harveian Society of London.—The annual dinner of the Harveian Society was held at the Café Monico on November 24th. Between seventy and eighty guests sat down. After the loyal toasts the President, Dr. J. F. Goodhart, gave the toast of the evening, "Success to the Harveian Society." The other toasts were the "Kindred Societies," proposed by Dr. James Taylor, and responded to by Mr. Thomas Bryant, President of the Royal Medical and Chirurgical Society; "The Visitors," proposed by Dr. Milson, and responded to by Dr. Clippingdale, President of the West London Medico-Chirurgical Society; lastly, "The Health of the President" was proposed by Dr. Buzzard, and responded to by Dr. Goodhart. The speeches were interspersed with songs and part-songs, given by Mr. Mervyn Dene and the Crichton Part Singers. The proceedings were brought to a close before 11 P.M., and the function was generally felt to have been pleasant and successful.

MEDICAL VACANCIES.

The following vacancies are announced:

BEDFORD COLLEGE (LONDON) FOR WOMEN, York Place, Baker Street, W.—Professor of Hygiene. Applications to the Secretary of Council by December 10th.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House Surgeon. Salary, £50 per annum, with apartments and board. Applications to the Chairman of the Hospital Board by December 10th.

CARDIFF INFIRMARY.—Resident Medical Officer. Salary, £100 per annum. Also Assistant House-Surgeon. Appointment for six months. Salary at the rate of £50 per annum, board, washing, and apartments provided in each case. Applications to the Secretary by December 5th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—Assistant Surgeon. Applications to the Secretary by December 5th.

CROYDON UNION.—Resident Assistant Medical Superintendent and Dispenser. Salary, £100 per annum, increasing to £130, with furnished apartments, rations, and washing. Applications on forms provided to the Clerk to the Guardians, by December 5th.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL.—House-Physician. Board, residence, etc., provided, and an honorarium of £25 at expiration of six months' approved service. Applications to the Secretary by December 17th.

GLASGOW, UNIVERSITY OF.—Five Examiners for Degrees in Medicine. Salary for the Examinerships in Chemistry, Zoology, and Materia Medica and Therapeutics, £30, and those in Clinical Surgery and Clinical Medicine, £50. Applications to the Secretary of the Court, 91, West Regent Street, Glasgow, by December 17th.

GREAT NORTHERN HOSPITAL, Holloway Road, N.—Senior House-Physician. Appointment for six months. Salary at the rate of £60 per annum, with board and lodging. Applications to the Secretary by December 15th.

HANWELL: LONDON COUNTY ASYLUM.—Junior Assistant Medical Officer, between 23 and 30 years of age. Salary £75 per annum, with board, furnished apartments, and washing. Applications on forms provided to R. W. Partridge, Clerk to the Asylum Committee, 21, Whitehall Place, S.W., by December 10th.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician; unmarried. Appointment for six months. Salary, £20, with board and residence. Applications, on forms provided to the Secretary, by December 6th.

HULL ROYAL INFIRMARY.—House-Surgeon; unmarried. Salary, 100 guineas per annum, with board and furnished apartments. Applications to the Chairman of the House Committee by December 5th.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to the House-Governor by December 10th.

LONDON LOCK HOSPITAL, Harrow Road, and Dean Street, Soho.—Registrar. Applications to the Secretary, Harrow Road, W., by December 9th.

MANCHESTER ROYAL INFIRMARY; Resident Medical Officer, unmarried, and not less than 25 years of age. Remuneration, £150 per annum, with board and residence. Applications to the Secretary by December 15th.

MANCHESTER: ST. MARY'S HOSPITAL, Quay Street.—House-Surgeon and Resident Obstetric Assistant Surgeon. Salary, £140 per annum, with board and residence. Applications to the Secretary by December 7th.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—Medical Superintendent. Salary, £100 per annum, furnished rooms, fire, light, and attendance, and fees for classes he may be appointed to conduct. Applications to the Honorary secretary by December 15th.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, Bloomsbury, W.C.—Assistant Physician. Applications to the Secretary by December 12th.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY,—House-Surgeon; unmarried. Salary, £80 per annum, with board and lodging. Applications, on forms provided, to the Secretary by end of December.

OXFORD: RADCLIFFE INFIRMARY.—Surgeon. Applications to the Secretary by January 16th, 1899.

PARISH OF ST. GILES, CAMBERWELL.—Medical Officer for the Dulwich District. Salary, £20 per annum, and fees. Must reside in the district. Applications to the Clerk to the Guardians, 29, Peckham Road, S.E.

PERTH: JOHN MURRAY'S ASYLUM.—Assistant Medical Officer. Applications to Dr. Urquhart, Physician-Superintendent.

PRESTWICH, MANCHESTER: COUNTY ASYLUM.—Assistant Medical Officer. Salary, £100 per annum, increasing to £250, with apartments, board, attendance, and washing. Applications to the Medical Superintendent.

ROYAL COLLEGE OF PHYSICIANS, LONDON.—Milroy Lecturer for 1900. Applications to the Registrar by January 7th, 1899.

ROYAL BERKS HOSPITAL.—Assistant Medical Officer. Board, lodging and washing provided, and honorarium of 10 guineas. Appointment for six months. Applications to the Secretary by December 6th.

SHREWSBURY: SALOP INFIRMARY.—Assistant House-Surgeon. Appointment for six months. Salary at the rate of £40 per annum. Applications to the Secretary by December 7th.

SUNDERLAND: SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House-Surgeon. Salary, £150 per annum. Applications to James F. Potts, 13, Eden Vale, Sunderland, by December 10th.

TOXTETH PARK.—Junior Assistant Medical Officer for the Workhouse Infirmary. Salary, £75 per annum, with board, washing, and apartments. Applications marked "Junior Medical Officer" to the Clerk to the Guardians, 15, High Park Street, Liverpool, by December 14th.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Applications to the Secretary-Superintendent by December 15th.

WILTSHIRE, COUNTY OF.—Medical Officer of Health. Salary, £300 per annum, with allowances specifically mentioned in statement of duties, etc. Applications to the Clerk of the Council, County Offices, Arlington House, Trowbridge, by December 24th.

WREXHAM INFIRMARY AND DISPENSARY.—House-Surgeon. Salary, £80 per annum, with furnished rooms, board, gas, coal, and attendance. Applications, on forms provided, to the Secretary, 27, Regent Street, Wrexham, by December 6th.

MEDICAL APPOINTMENTS.

BILL, J. F., M.B.Lond., M.R.C.S.Eng., appointed Assistant Medical Officer to the Lewisham Union Infirmary.

BUTLER, H. J., L.R.C.P.Edin., M.R.C.S.Eng., appointed Medical Officer for the Seventh District of the Bradford (Yorks) Union.

FOX, E. H. Bruce, M.R.C.S.Eng., L.R.C.P.Lond., appointed House-Surgeon to the Royal South Hants Infirmary, Southampton.

GREENWOOD, A. C., M.R.C.S.Eng., appointed Medical Officer for the Burton Coggles District of the Grantham Union, and Medical Officer for the Corby District of the Bourne Union, *vice* F. J. Fletcher, M.R.C.S., L.R.C.P., resigned.

HERN, William, M.R.C.S., L.D.S., appointed Lecturer in Dental Surgery and Pathology to the Dental Hospital of London, *vice* Storer Bennett, F.R.C.S., L.D.S., resigned.

HIGGINS, G. H., M.R.C.S.Eng., L.R.C.P.Edin., appointed Medical Officer for the Third District of the Bradford (Yorks) Union.

HOGARTH, R. G., F.R.C.S.Eng., appointed House-Surgeon to the Samaritan Hospital for Women, Nottingham, *vice* G. Elder, M.D., resigned.

HORROCKS, Herbert, M.D., B.Sc.Lond., D.P.H., appointed Honorary Assistant Physician to the Public Hospital, Perth, Western Australia.

MACLULICH, Peers, B.A., M.B., B.Ch., B.A.O.Dub.Univ., appointed Second Assistant Medical Officer to the Joint Counties Asylum, Carmarthen.

METCALFE, J., M.D.Brux., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Ninth District of the Bradford (Yorks) Union.

MILNE, J. A., M.B., appointed Assistant Medical Officer of the Leeds Union Workhouse.

NOBLE, H. Percy, M.R., B.S.Lond., M.R.C.S., L.R.C.P., appointed Anæsthetist to the Metropolitan Hospital, Kingsland Road.

PIRIE, W. R., M.B., C.M., A.M.Aberd., appointed Assistant Anæsthetist to the Royal Infirmary, Aberdeen.

RAMSFORD, Frederick E., M.D., L.R.C.P., appointed Resident Medical Superintendent to the Stewart Institution, Palmerston, near Dublin.

ROWLEY, O. F., M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Surgeon to the Beckett Hospital and Dispensary, Barnsley, *vice* B. Jeffery, M.R.C.S.Eng.

SELLS, Hubert T., L.R.C.P.Edin., M.R.C.S.Eng., reappointed Medical Officer of Health to the Northfleet Urban District Council.

SHENNAN, Theodore, M.D.Edin., F.R.C.S.Edin., appointed Pathologist to the Royal Hospital for Sick Children, Edinburgh.

SCHOLEFIELD, George E., M.D.Edin., appointed Medical Officer of Health to the West Lancashire Rural District Council.

TEBAY, M. K., M.R.C.S.Eng., L.R.C.P.Lond., appointed Assistant Medical Officer of the St. George-in-the-East Workhouse and Infirmary.

VEALE, Hy. de Paiva B., L.S.A., appointed Medical Officer for the Fourth District of the North Bierley Union.

VIRET, B. P., M.B.Lond., M.R.C.S.Eng., appointed Medical Officer for the Eighth District of the Bradford (Yorks) Union.

WATSON, H. J., M.D.Toronto, reappointed Clinical Assistant to the Chelsea Hospital for Women.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been appointed House Officers from December 6th:

House-Physician.—H. D. Singer, M.B.Lond., L.R.C.P., M.R.C.S.

Obstetric House-Physicians.—(Senior) J. F. McClean, L.R.C.P., M.R.C.S.; (Junior) R. H. Bell, B.A., M.B., B.C.Camb., L.R.C.P., M.R.C.S.

Clinical Assistants in the Special Departments for Diseases of the Throat, Skin, and Ear.—Throat: H. E. Hewitt, M.B.Lond., L.R.C.P., M.R.C.S.; W. C. Ambrose, B.A. Camb., L.R.C.P., M.R.C.S. Skin: H. M. Scaping, B.A.Camb., L.R.C.P., M.R.C.S. Ear: H. T. D. Acland, L.R.C.P., M.R.C.S.

Clinical Assistant in the X-ray Department: G. J. Arnold, F.R.C.S., L.R.C.P.

Clinical Assistants in the Electrical Department: E. A. Gates, L.R.C.P., M.R.C.S.; H. N. Goode, L.R.C.P., M.R.C.S.

Several other gentlemen who held offices before have received an extension of their appointments.

DIARY FOR NEXT WEEK.

MONDAY.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. J. B. Ball: Methods of Examining the Throat and Nose.

Odontological Society of Great Britain, 10, Leicester Square, W.C., 8 P.M.—Mr. F. J. Bennett on Some Old and New Theories of Calcification: and casual communications by Mr. R. H. Woodhouse, Mr. J. H. Badcock, and Mr. H. Lloyd Williams.

Charity Organisation Society (Council), Royal United Service Institution, Whitehall Yard, S.W., 4 P.M.—Colonel E. Monteflore: A Survey of Metropolitan Medical Relief with special reference to the proposed Central Hospital Board for London.

London Post-Graduate Course. London Throat Hospital, 8 P.M.—Dr. Herbert Tilley: Demonstration of Selected Cases (Ear, Throat, and Nose).

TUESDAY.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Sir F. Semon: On the probably Cortical Origin of some Laryngeal Paralyses.

Roentgen Society, 11, Chandos Street, Cavendish Square, W., 8 P.M.—A discussion on Dermatitis in Relation to Roentgen Ray Work, to be introduced by Mr. Ernest Payne and Dr. Walsh.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. Fletcher Beach: Cases of Epilepsy and other Convulsive Disorders.

Pathological Society of London. 8.30 P.M.—Dr. C. Ogle: (1) Sarcoma of Pineal Body with Diffused Melanotic Sarcoma of Cortex. (2) Tumour of Pineal Body in a Boy. Mr. T. W. P. Lawrence: Enlarged Pineal Body. Professor W. S. Greenfield: Tumour of Pineal Body. Cysts of the Pineal Body will be shown by Dr. A. E. Russell, Mr. S. G. Shattock, Dr. A. W. Campbell, and Dr. A. E. Garrod.

WEDNESDAY.

Hospital for Consumption and Diseases of the Chest, Brompton, 4 P.M.—Mr. Godlee: Pulmonary Abscess.

Royal College of Surgeons of England, 5 P.M.—Mr. T. Pickering Pick: The Bradshaw Lecture on the Union of Wounds.

Hunterian Society, 8.30 P.M.—Clinical evening. Cases will be shown by Dr. T. Glover Lyon, Sir Hugh Beevor, Dr. Arthur Davies, Dr. F. J. Smith, and other Fellows of the Society.

Obstetrical Society of London. 8 P.M.—Specimens will be shown by Dr. W. Hunter (introduced by Dr. Amand Routh), Drs. Lewers, Spencer and John Phillips, and Mr. Targett. Papers: Dr. Ponder: (1) The Action which will be Beneficial in Parturition. (2) The Actions which in Parturition are not Beneficial, but only Injurious and tending to Disaster. (3) The proper Time for Instrumental Interference.

THURSDAY.

Harveian Society of London, 8.30 P.M.—Dr. William Ewart: Disease: its Treatment and the Profession of Medicine in 1899. Harveian Lecture II.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Dr. Barlow: Clinical Lecture on Demonstration of Recent Specimens.

Charing Cross Hospital. Post-Graduate Course, 4 P.M.—Dr. Murray: Medical Cases.

British Gynæcological Society. 8.30 P.M.—Specimens will be shown by Dr. G. Bantock, Dr. G. Elder, Dr. Purcell, and Mr. C. Ryall. Adjourned discussion on Mr. Stanmore Bishop's paper on the Combined Method in Pelvic Surgery.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

FRIDAY.

Lectures on Medical Relief. Portman Rooms, Baker Street, W., 4.30 P.M.—Dr. J. B. Hurry: The Provident Dispensary and Provident Nursing.

West London Post-Graduate Course, West London Hospital, W., 5 P.M.—Dr. J. B. Ball: Methods of Examining the Throat and Nose. Lecture II.

Clinical Society of London. 8.30 P.M. Mr. Campbell Williams: Lingual Chancre from Indirect Contagion which tends to show that Syphilitic Virus can remain Latent in the Dried State for over Two Months. Mr. Pearce Gould: A case of Pancreatic Calculus with Obstruction of the Common Bile Duct. Mr. Tripp and Dr. Bryant: A case of Acute Hæmorrhagic Pancreatitis with Microscopical and Bacteriological Specimens. Dr. Newton Pitt and Mr. W. H. A. Jacobson: A case of Acute Hæmorrhagic Pancreatitis.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

HEWITSON.—On November 21st, at 33, Brighton Grove, Newcastle-on-Tyne, the wife of Jno. Geo. Hewitson, M.B.Lond., of a son.

MARRIAGE.

McKENZIE—SCOTT.—On November 24th, at the Trinity Presbyterian Church, Wimbledon, by the Rev. D. C. McGregor, M.A., Harry Valentine McKenzie, M.B.Edin., of Torquay, second son of Alexr. McKenzie, Bombay, to Ethel, second daughter of R. Scott, Wimbledon.

DEATH.

CLARKE.—On November 24th, at 3, Chandos Street, Cavendish Square, Doris Litton, the infant daughter of Ernest and Kate Litton Clarke.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 3.
CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.
CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30); Obstetric, W., 2.30); Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.
GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Opthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M., Th., 2.
KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Tu., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.
LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W., S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.
LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.
METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30 *Operations.*—Tu. F., 2.
NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Tu., 2.30.
ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.
ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 2; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; Ophthalmic, M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.
ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30, Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.
ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.
ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45, o.p., M. Th., 1.0. Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10, F., 9.
ST. PETER'S. *Attendances.*—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 2. *Operations.*—W., F., 2.
ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2, o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F., 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 2.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Th. F., 9.30. *Operations.*—Tu. W. Th., 2.
WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th. F., 2; Ear, Tu., 2, S., 10. Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th. F., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London. Communications on business matters, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their name and address—not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT. We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS. The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

H. A. asks for suggestions as to a method of treatment for grinding of the teeth during sleep in an adult who is apparently in good health.

M.O.H. (Morpeth U.D.C.) would be glad to receive copies of rules and regulations applicable to district isolation hospitals.

G. W. P. would be glad of information as to the value of red bone marrow or lymphatic gland extract in lymphadenoma (Hodgkin's disease); arsenic, phosphorus, and cod-liver oil and Parrish's food have been tried without producing any improvement in the condition.

RUSTICUS asks for information on the following points relative to the obtaining a Russian degree or qualification to practise: 1. Which university or school gives most facilities? 2. What period of residence would be required in this school?

PUZZLED writes: I have a patient, a chemist, aged 26 (minor exam.), who has to leave the country on account of threatened phthisis—South Africa (inland) or Colorado suggested. I should be glad of any information as to possibility of obtaining outdoor employment at either of above or in any other place where the climate is dry and bracing. He is without means. He has been with a Manchester firm of manufacturing chemists for six years, is a good amateur photographer, and possesses excellent credentials.

FEES FOR CLUB CERTIFICATES.

W. B. T. asks: Is it usual for medical officers attached to provident dispensaries to make a small charge (say 6d.) to the members for their club certificates? Also if it is usual to charge for medicines supplied to the members in cases of urgency at such times that the dispensary is not open, say 2s. or less for a bottle of medicine?

LEFT HEMIPLEGIA WITH APHASIA.

MR. SIDNEY MATTHEWS, M.R.C.S., L.R.C.P. (Crawley) writes: On October 5th, 1898, I was sent for to see a female patient, aged 60, who had been accidentally knocked down by boys playing in the street. I found her suffering from slight concussion, and in a few days she was in her usual state of health, keeping of course quiet and doing no work. On October 28th I was again sent for. "The patient had tripped over a carpet," so two friends stated, "had fallen down, and seemed paralysed." On my arrival I found the patient in bed in the following condition: Complete motor paralysis of left arm and leg, sensation normal, aphasia, ptosis of left eyelid, paralysis of left side of face, tongue protruded to left side, pupils equal, no loss of consciousness. The next day the symptoms remained the same, with the addition of difficulty in swallowing. She remained in this state for two or three days, when she gradually improved so far as the paralysis of the face, tongue, etc., were concerned, and she now suffers only from complete loss of power in the arm and partial loss of power in the leg. I am unable to account for the paralysis being completely confined to the left side, as the right has not been in the slightest degree affected. Multiple hæmorrhage, non-decussation of fibres in medulla, fractured base, etc., have been suggested, but no explanation seems satisfactory.

EDUCATION OF CHILDREN OF DECEASED MEDICAL MAN.

THE widow of a medical man, left with very limited means, writes from Ireland to known if there are any schools in which her daughter, aged 14 years, and one of her sons, aged 11 years, could be received and educated free.

*** In Ireland there are the Male and Female Masonic Schools, in which a first-class education is given to the sons and daughters of deceased Freemasons. The office of the schools is at 15, Molesworth Street, Dublin. Our correspondent might herself be able to obtain a small annual grant from the Royal Medical Benevolent Fund Society of Ireland. The Acting Secretary is Mr. Arthur H. Benson, M.B., F.R.C.S.I., 42, Fitzwilliam Square, Dublin, who would answer any inquiry our correspondent may like to make as to a possible grant from that fund. We know of no school to which the daughters of medical men alone are admitted free. The Royal Asylum of St. Anne's Schools, Redhill, take such cases as that described entirely free of all cost; the London office, from which all particulars can be obtained, is at 58, Gracechurch Street, E.C. But the child must have a nomination paper filled up, and when admitted as a candidate the case has to take the chance of election; about 100 votes are necessary. A subscription of 10s. entitles to one vote; children, however, are not admitted over twelve years of age. The Royal Medical Benevolent College has nine free presentations to St. Anne's on the girls' side. Particulars of election can be obtained from Mr. Lamb, Secretary, 37, Soho Square, London, W.

ANSWERS.

M.R.C.S. has omitted to enclose his card as proof of the *bona fides* of his communication.

A. B. C.—We must advise our correspondent to consult his colleagues in the neighbourhood and to act with them in such a matter. No general rule can be laid down because in some localities friendly relations exist, and in others the reverse.

LANCASHIRE. In reply to our correspondent, we must remind him that, although by a highly-to-be-commended custom medical practitioners constantly give their services to the families of their professional brethren without asking or expecting any payment, there never was and

never can be any right to receive such services without incurring a liability to pay the ordinary fees. Our correspondent should therefore consider himself in the light of any other person whose relative was an inmate of the institution in question, and pay such fees as he contracted to do when he sent her there, of course including any extras that may fairly be charged to him.

Dr. Percy Newell (Crowborough, Sussex) writes: If "Epidermis" will try "formalin" he will have an effective and cheap antiseptic, deodorant, and disinfectant. Formalin is made by Messrs. Schering, and the Formalin Hygienic Company, 9, St. Mary-at-the-Hill, E.C., will send a descriptive pamphlet on application. I use the "normal" 4 per cent. solution made into ½, ⅛, or 1 per cent. by simple addition of water.

Fibroid might consult the second volume of Veit's *Handbuch der Gynäkologie*, which includes an important treatise on the palliative treatment of fibroids by Veit himself, a paper on electricity by Schaeffer, and an excellent article on the operative surgery of fibroids by Olshausen. This volume was issued in 1897. A good sketch of the operative and palliative treatment of uterine fibroids will be found in Howard Kelly's *Operative Gynecology*, vol. ii, published last spring.

Quarantine after Diphtheria.

M.O.H.—The case should be looked upon as being "infectious" as long as diphtheria bacilli remain, in spite of the patient being apparently quite well. The fact of the patient being apparently quite well is an additional element of danger in the case. The patient can go about, come into contact with other children, and so spread the infective bacilli. If the patient were still ill, an attempt would be made to disinfect the discharges from the throat and nose, and to keep him isolated, or at any rate out of the way of other children, and the risk of the spread of infection would be diminished. So long as diphtheria bacilli can be demonstrated in the discharge from the throat, every effort should be made to isolate and disinfect.

Peroxide of Hydrogen.

O. X. Y. writes, in reply to "J. P. G.": As to the value of hydrogen peroxide in the treatment of psoriasis, I have no experience. As to hydrogen peroxide itself, I can advise a solution at 6 volume strength, to be had of Messrs. Maiche, Limited, 4, St. Mary Axe, London, E.C. The purity of this solution is such that it can be used with perfect freedom. I have used it very much lately in various cases with pleasing results. It keeps well at a medium temperature. If packed in strong bottles, it ought to stand a long voyage.

Cycle Saddles.

Dr. Reuell Atkinson, (Clifton), writes: Replying to "D. C. E.," I may say that I have ridden a Christy saddle for more than twelve months and find that it effectually prevents any perineal pressure; in fact I never touch the peak at all, but like "M.D." I find that after any long distance my ischial tuberosities become tender. The reason for that lies in the springs on which the saddle is hung. There is little or no "give" in them. Were the Christy saddle hung like a Brooks's it would, I think, be ideal. I have a Henson saddle, but have discarded it, as although it removes the pressure from the perineum there is a very uncomfortable pressure on the underpart of the thighs from the iron edge of the frame, and further it is very difficult to secure just the right amount of air in each cushion. The cushions also tend to get hot. There is no saddle so comfortable that I have tried as a Brooks's, save for its perineal pressure. The perfect saddle has yet to be made.

Frequent Micturition after Parturition.

Dr. Geo. Steele Perkins (London) writes, in answer to "J.": I would suggest the continuous current applied to the interior of the bladder and to the urethra, which often has a beneficial effect in these cases.

Dr. S. Sloan (Glasgow) writes: Your correspondent "J." will probably find faradism relieve his patient. If the trouble is due, as from the description it apparently is, to irritability of the muscle of the bladder proper, an intravesical bipolar application of the secondary current of high tension, and with very rapid vibrations, will serve. If due to paresis of the sphincter, then the bipolar application of the primary current to the urethra and neck of the bladder should be employed, and the vibrations should number about 80 per minute. In the former case, the positive pole should be connected with the internal electrode; in the latter with the external. The amount of current ought to be what is agreeable to the patient. I find from 3 to 4 m.a., as measured by a faradimeter, the proper dose; and the time of application about 15 minutes once or twice a week. A very few applications will suffice. Of course, I am assuming that there is an absence of cystitis, and that the urine is normal in quality and in quantity.

Saline Injections in Collapse.

Dr. C. Hamilton Whiteford (Plymouth) writes: *Apropos* of the composition of the saline solution in your answer to "B. B.'s" query of November 26th, "B. B." will find the efficacy of the saline solution greatly increased by adding to the first pint an ounce of brandy and 5 minims of liquor strychninæ.

Dr. Jardine (Glasgow) writes: I have used saline injections in a large number of cases with very gratifying results. At first I did it into a superficial vein as described by Mr. Arbuthnot Lane, but have now entirely discarded that method and have adopted the intercellular one. The apparatus required is a medium-sized trocar and cannula, 6 feet of small tubing, a filter, and a small piece of adhesive plaster. An ordinary trocar and cannula will do, but the best form is an aspirator, one with a stopcock and side tube to attach the rubber tubing to. The apparatus can be thoroughly sterilised by boiling. I have found the axillæ or under the breasts the best region for the injection. A pint or even two pints can be run in in a very few minutes, and will be fully absorbed in a quarter of an hour. If necessary the same quantity can be injected into the other side. I have found it most useful in cases of shock and collapse from hæmorrhage in confinements. For some time I have been using the same method in treating eclampsia cases with gratifying results so far. In these cases I use bicarbonate of potash and common salt, about half a drachm of each to the pint. The diuretic effect is very marked. The usual methods of controlling the fits are used. The intercellular method of injection has many advantages over the direct method. It can be done more quickly, no cutting is required, there is no wound to stitch and dress afterwards, and there is no fear of introducing air into the circulation. The results are quite as good. I hope soon to publish a number of cases of hæmorrhage and eclampsia treated in this way.

NOTES, LETTERS, Etc.

Medical Plague Appointments in India.

The present demand of the Government of India is for ten medical men for temporary plague duty, or general duty in Madras. The India Office invites volunteers, who may be ready to start for India at two or three days' notice, to send their names to the Revenue Secretary, India Office, Whitehall, S.W., with a statement of their qualifications. Candidates must be under 40 years of age. The terms of appointment and other information will be forwarded on application.

The Power of Sight of Natives in South Africa.

Dr. E. Behrens-Schwarzbach (of London writes from Kimberley to say that during a visit to South Africa he was acting on a suggestion made to him by the late Mr. Ernest Hart. He investigated the power of sight of the natives of the soil. His notes are as follows: I have examined, in the Eastern Province chiefly, but also in Kimberley and in some of the towns in the middle province, a total of 1,853 black people—Kaffirs, Basuto negroes, Hottentots, and a few bushmen. I found it impossible for my purpose to separate members of different tribes. In the few instances in which I compared the sight of one with the other, no differences worth mentioning were detected. The so-called native locations and the native schools gave me the most material.

Out of 1,853 persons examined 1,009 were females and 846 males; all were, or seemed to be, under the age of 30. The result was as follows:

1 had power of sight almost					...	...	...	$\frac{20}{20}$
3	,,	,,	,,	about	...	...	...	$\frac{20}{30}$
35	,,	,,	,,	,,	...	...	...	$\frac{20}{40}$
218	,,	,,	,,	,,	...	...	...	$\frac{20}{50}$
1,509	,,	,,	,,	,,	...	...	...	$\frac{20}{60}$
5	,,	,,	,,	,,	...	...	...	$\frac{20}{70}$
28	,,	,,	,,	,,	...	...	...	$\frac{20}{80}$
9	,,	,,	,,	,,	...	...	...	$\frac{20}{90}$

In other words, out of a total of 1,853 natives, 1,509 possessed a power of sight equal to the normal sight of Europeans, 257 had a stronger and 87 a weaker sight than the normal-sighted Caucasian. The phenomenal strong vision of $\frac{20}{15}$ (which means that objects were noted at a distance of 60 feet, which an emmetropic white person could notice at a distance of 20 feet only) was in a Kaffir girl of 14 years of age. The subnormal sight mentioned was due to myopia acquired at school, thus proving that the same detrimental causes which produce short sight in children of the white race have a similar effect on the optic organ of the dark race.

It was most difficult to ascertain in many cases very exactly the power of vision, on account of the uncertain and hesitating statements sometimes made. But I have given the correct average measure. The result *in toto* was somewhat disappointing, inasmuch as the superiority of native eyesight over the European is by no means so general as it is often supposed to be—so far as South Africa is concerned.

With a few exceptions, all the natives tested in regard to their power of vision were also tested in regard to their perception of colours. But not a single case of colour blindness or of hesitation in perceiving even slight shades of colours could be detected amongst them, which result (having in mind the negative results of similar tests made amongst the South Sea planters, the Maoris of New Zealand, the aborigines of Australia, and the Papuans) seems to point to the probability that colour-blindness is one of the many Danaic gifts which civilisation has bestowed on the Caucasian race.

What the Vendors of Quack Medicines want.

The following letter was received by the Superintendent of a large hospital in Boston:

Pleasant Valley, Ala.,
September 24th, 1898.

To the Superintendent of Hospital of Boston, Mass.

Dr.—I have a medicine that I want you to test in your hospital: it will take a cancer out, roots and all, clean in eight or nine days; any old sore is a cancer, if the directions are followed. Now, if you have any old sore of any kind, will you test it? I will give it free for two, three, or four, or may be more; it is vegetable and harmless. Hoping that the request will meet approval, it will not kill any person only the cancer, it take the mater and say yes try it. I send stamp for answer.

Yours truly,

P.S.—I want to put it on the public.

That is just what all vendors of quack medicines want to do. And they will succeed in doing so as long as the public is willing to be put upon.

Degrees and Diplomas.

Dr. Frederick W. Collingwood (Grosvenor Club, London, W.) writes: I beg to draw your notice to the list of successful candidates for the Royal Naval Medical Service indicating as it does that university men when placed in competition with university graduates show a higher standard of proficiency in medical science. From it will be seen that the first four successful candidates are diplomates. The natural inference is that it is a gross hardship that the latter should be excluded from competing for certain appointments in civil life, as seen by the various advertisements where graduates are only eligible. It also seems harsh at the present day that these diplomates should be prohibited by

the authorities and discountenanced by a certain class of graduates from using the title of "Dr.," by which designation members of the medical profession are known to the public as such, and which title is conceded to diplomates by public custom.

CALF LYMPH.

ANOTHER PUBLIC VACCINATOR writes: I can fully endorse the remarks made by "Public Vaccinator" in the BRITISH MEDICAL JOURNAL of November 26th about the poor quality of calf lymph as ordinarily supplied. Quite recently I employed calf lymph (in tubes) for my stational vaccinations, and the results were most annoyingly disappointing. On making complaints to the wholesale druggists from whom it was obtained, my report was forwarded to the director (himself a medical man) of the establishment—a well-known and advertised one in town—for which they are agents, and the reply they received was: "I cannot see what your correspondent has to complain about." Comment is superfluous when such an opinion is expressed by one of our own profession. The excuses generally made for failures by those who supply lymph are either that the lymph has deteriorated from exposure to heat (that sent to me was kept for four or five days in a cool cellar), or that the operator has not used it according to instructions. The latter excuse was proved absolutely groundless by the fact that in one case of total failure lymph obtained from another source produced typical results.

A THIRD PUBLIC VACCINATOR writes: My experience with calf lymph is quite contrary to a "Public Vaccinator's." For months past I have used calf lymph at my weekly vaccination station, and I rarely have an insertion fail. During the past fortnight I vaccinated fifteen infants from four tubes of lymph, and the result was sixty fine groups of vesicles, not one insertion failing, and every arm fully reaching the standard required by the Local Government Board. I may mention that I obtained the lymph from the Jenner Institute.

SANATORIA FOR THE OPEN-AIR TREATMENT OF PHTHISIS.

DR. ARTHUR MAUDE (Westerham) writes: I am directed by the Committee of the Charing Cross Hospital Convalescent Home at Limpsfield, Surrey, to inform you that they have decided not to admit any more cases of phthisis to the Home, and that it will not therefore be available for the open-air treatment.

SUPERNUMERARY RIBS.

MR. G. W. NIVEN (Honorary Secretary of the Greenock Natural History Society) writes: Perhaps the following additions to the literature of supernumerary ribs referred to in the article on Cervical Ribs, by Dr. Herbert Alderson, in the BRITISH MEDICAL JOURNAL of December 4th, 1897, may not be uninteresting:

At the close of the last century a work was published at intervals in Edinburgh, entitled *Medical Essays and Observations, Revised and Published by a Society in Edinburgh*. It was edited by the two Secretaries of the Society—Colin Maclaurin, Professor of Mathematics, and Dr. Andrew Plummer, Professor of Medicine. In the fifth volume, that published in 1742, and now before me, there is a paper by Dr. John Gemmil, surgeon in Irvine, on a case of supernumerary ribs that had come under his observation. It is that of a woman of about 30 years of age, of a strong, robust constitution, who was hanged for a child murder on January 10th, 1735. On dissecting her body it was found to have a pair of extra ribs. Dr. Gemmil says: "On the skeleton of this woman, which I preserve, there are 13 vertebræ of the back, and as many ribs on each side, to wit, 8 true and 5 false; the cartilages of the two lowest true ribs unite in the middle for about an inch, then divide again, and are inserted separately into the sternum; the two lower false ribs are about 2½ inches long."

Sir Thomas Browne has some quaint remarks on the subject in his *Pseudodoxia Epidemica; or Treatise on Vulgar Errors*, published in 1646: "That a man hath one rib less than a woman," wrote the learned author, "is a common conceit, whence it is concluded the sex of the man still wants a rib that our father lost in Eve, and this is not only *passant* with the vulgar, but was urged against Columbus, in an anatomy of his at Rome, where, having prepared the skeleton of a woman that chanced to have thirteen ribs on one side, there arose a party that cried him down and even unto oaths affirmed this was the rib wherein the woman exceeded. Were this true it would ocularly silence that dispute out of which side Eve was framed; it would determine the opinion of Oleaster, that she was made out of the ribs of both sides, or such as, from the expression of the text, maintain there was a plurality of ribs required, and such as fearing to concede a monstrosity or mutilate the integrity of Adam, peremptorily conceive the creation of thirteen ribs."

That the rib from which Eve was made had been previously lent, as it were, to Adam was one of the many theories emanating from the fertile brains of the Jewish Rabbis. Possibly the fact of the speculation may be taken as an indication that the occurrence of supernumerary ribs had been noticed by the Jews. In his Targum or commentary on the text the Rabbi Jonathan says: "Eve was made from the thirteenth rib of the right side. ..... She was not drawn out by the head lest she should be vain; nor by the eyes, lest she should be wanton; nor from the mouth, lest she should be given to garrulity; nor by the ears, lest she should be an eavesdropper; nor by the hands, lest she should be intermeddling; nor by the feet lest she be a gadder; nor by the heart, for fear she should be jealous; but she was taken out from the side. Yet in spite of all these precautions she had all the faults so carefully provided against."

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. B. C.; Another Public Vaccinator; Dr. J. Aitkens, London; Mr. C. E. Ady, London; Another Victim; Another Eligible; Mr. J. Ashton Carnes; Mr. R. Atkinson, Clifton

THE BRADSHAW LECTURE
ON THE
UNION OF WOUNDS.

Delivered before the Royal College of Surgeons on December 7th, 1898.

By THOMAS PICKERING PICK, F.R.C.S.,
Vice-President; Consulting Surgeon to St. George's Hospital; Senior Surgeon, Victoria Hospital for Children.

Mr. President and Gentlemen,—It appears to me that there is considerable difference of opinion amongst surgeons and pathologists as to the way in which simple wounds unite, especially as to whether the process of healing is an inflammatory one or not. In selecting a subject for the Bradshaw Lecture this year I thought that I could not do better than discuss this question, and see whether, by a consideration of the subject, we can arrive at some distinct conclusion. I have formed a very definite opinion myself and it remains to be seen whether I shall succeed in winning you round to the same view that I hold.

Many surgeons and pathologists, and amongst them some of the most eminent in this country and on the Continent, believe that the union of wounds takes place without inflammation, and indeed assert that "repair in all its forms is effected without inflammation." These pathologists teach that "repair and inflammation are not only not identical, but that they are incompatible. That repair is a constructive physiological process and resembles closely that of development and growth; but that inflammation is a destructive pathological process, brought about entirely by micro-organisms introduced from without, and that when it attacks a wound in the process of repair, it at first checks repair, and later on brings about disorganising changes, and when a part repairs after it has been the seat of inflammation, it does so only when the inflammatory process has been arrested."[1]

Other pathologists, again, hold the opinion that all wounds unite by a process which they regard as inflammation. And while admitting that inflammation is a destructive pathological process, they believe, nevertheless, that the union of wounds takes place by it, and that there is a decrease in the vital activity of the affected tissues, and, as a result, a lower vitality in the product of this inflammatory process; I mean in the scar, or connecting medium, which binds the severed parts together.

There can, I think, be little doubt that John Hunter believed that wounds may heal without inflammation. In fact, in one place he distinctly states in his lectures "that primary healing takes its course without inflammation, and is painless." He did not, however, greatly emphasise the fact, and appears to have believed that the bond of union in these cases was extravasated blood. He thus describes the process: "The blood"—that is the blood extravasated into the wound—being alive, this uniting medium becomes immediately a part of ourselves, and the parts not being offended by it, no irritation is produced. The red particles are absorbed, and nothing but the coagulating lymph is retained, which, being the true living bond of union, afterwards becomes vascular." But John Hunter certainly did not believe that "repair in all its forms is effected without inflammation," for he states that "in many diseases it is the first step towards a cure."

I do not propose, however, to weary you further with the opinion of the older pathologists. I prefer rather to limit myself to a consideration of the question, as it exists at the present time, as to whether wounds heal without inflammation; and I take as my text on which to base our discussion the words of Karl Roser, of Marburg, a German pathologist of great repute. He says: "The clean, non-infected wound heals without inflammation by first intention; the infected wound, on the contrary, heals by second intention with the appearances of inflammation. In the first case healing follows immediately after the injury. In the other case inflammation intervenes between injury and healing as a disturbing complication."

Clearly the first point in considering this question is to have a clear and definite understanding of what inflammation is. As you are all aware, Burdon Sanderson has defined inflammation as the "succession of changes which occurs in a living tissue when it is injured, provided that the injury is not of such a degree as at once to destroy its structure and vitality." Or, more briefly and succinctly, that inflammation is the "response of living tissues to injury." Now, if we accept this definition, the whole question falls to the ground at once. Clearly, if this is true, no wound can unite without inflammation: a wound is an injury; therefore a response must take place, a succession of changes must occur which constitutes inflammation. Those, however, who believe that wounds heal by a strictly physiological and constructive process clearly do not accept this definition of the word, and regard inflammation as something else.

The older definition of inflammation was that it was that condition which was attended by certain, so-called, cardinal signs—pain, heat, redness, and swelling, and that we must regard these signs, again to quote the words of Dr. Burdon Sanderson, "as the characteristics of the thing of which the word 'inflammation' is the name." There is no question that these signs do attend or follow a wound, and so again, we must admit that if the aggregate of these signs constitutes inflammation, then that there is inflammation during the process of healing of a wound.

The opponents of the theory that wounds heal by inflammation admit that the four cardinal signs of inflammation are present, but they do not admit that therefore there is inflammation. Let me quote to you what Mr. Bryant says in his *Practice of Surgery* on this point. Speaking of wounds he says, "Within an hour or an hour and a-half the edges of the wound will be seen to be swollen, and slightly red, from increased vascularity, and if the connective tissue of the wounded part is loose, as in the eyelid or male genital organs, it will be puffed up and œdematous. To the patient the part will feel hot and stiff, and it will be the seat of a dull, aching, or burning pain. The edges of the wound will also probably be more sensitive, the amount of pain depending much upon the tension of the parts and upon the treatment to which they have been subjected. If the edges of the wound have been stitched together, and the parts are much swollen and œdematous, there will be tension upon the wound and a disposition to separate and gape. In a healthy subject however, where repair goes on well, all these local phenomena will subside and disappear in the course of two, three, or four days, according to the rapidity and perfection of the healing process and a cure will then take place. But should the local phenomena above described be more persistent, increase in severity, spread beyond the margins of the wound and surrounding parts, or alter in character for the worse, what has been a physiological reparative process will pass into a pathological or diseased one, and the parts will then be said to be inflamed."

The opponents of the doctrine of the healing of wounds by inflammation do not, therefore, hold that the presence of these four signs necessarily constitute inflammation; and no doubt this, in fact, is quite true. They are present in that condition which indeed is the first stage of the inflammatory state, but which may also occur quite independently of it; a condition to which we apply the term "determination," and which is undoubtedly a physiological process, and is an element in thousands of actions of daily life, and occurs in those conditions where a sudden increase of blood is required for some physiological purpose. Thus, a morsel of food is introduced into the mouth, requiring an increased quantity of saliva for its salivation; immediately a determination of blood to the salivary glands takes place, causing a more active secretion and an increased flow of saliva.

The first use of the word "determination" has been attributed to Paré. John Hunter called it the "incipient enlargement of the vessels," and in no part of his treatise on inflammation does he use the word "determination." He says: "The very first act of the vessels when the stimulus which excites inflammation is applied is, I believe, exactly similar to a blush. It is, I believe, simply an increase of distension beyond their natural size. This effect, we see, takes place upon many occasions; gentle friction of the skin produces it; gentle stimulating medicines have the same effect."

As a German equivalent to the word "determination" Virchow introduced the term "Wallung" (surging), which has been constantly used by his successors.

This determination, which we admit is a physiological process, is attended with a sudden afflux of blood to a part, and is characterised in consequence by certainly, at least, three of the four cardinal signs of inflammation: heat, redness, and swelling; and, possibly, also, in many cases, by the fourth also; for, at all events, if there is not actual pain, there is an uneasy or abnormal sensation, such as a sensation of fulness about the part. It is evident, therefore, that we are not in a position to say that a part is inflamed because of the presence of these four symptoms.

I have alluded somewhat at length to this question of determination, because I think it is important, with a view to accuracy of statement, that the employment of the word "determination" should be strictly limited, when used in connection with the inflammatory process, to the primary acceleration of the blood stream in and about an injured part, and should not be so extended as to comprise the subsequent stages of retardation resulting in stasis and exudation.

We have not yet arrived at our definition of inflammation; and, indeed, the difficulty is great in giving a clear and logical definition to this form of disease, although we easily recognise the condition, and understand the combination of processes which are taking place in the tissues.

I should regard inflammation as a modification of the normal physiological processes in the various tissues of the body, resulting from the application of some irritant to the part. This process being attended or followed in most cases by the formation of a new material of a less highly organised nature than the original tissue in which the inflammation has taken place.

And here I would draw your attention to a very important point, and one which it is very desirable that we should keep strictly in our minds, and that is, that these cases of what we may call "traumatic inflammation"—that is to say, inflammation produced by a wound in which no foreign body is allowed to remain—and which inflammation is, as I hold, necessary for the healing of the wound, are very different from those inflammatory processes which are due to the admission of septic organisms. And they differ especially in this marked peculiarity—that the irritation in the tissue does not extend beyond the immediate neighbourhood of the injury. The irritant which has produced the inflammation has been momentarily applied, and therefore the inflammation which results has a tendency speedily to resolve itself as soon as it has brought about those changes which are necessary for repair. This is very different from those cases where a prolonged irritant is applied to a part; then the process of inflammation is also prolonged, and when this irritant is some septic organism which has the power of multiplying in the tissues and of producing ptomaines which poison the tissues, the inflammation is not only prolonged but has a tendency to spread and diffuse itself rapidly by continuity of tissue.

It must be admitted on all hands, I think, that in the process of union of wounds there is the formation of a new tissue which forms the bond of union, and the point which we have to discuss is whether this new tissue is the result of inflammation or whether it is merely a physiological process, a condition of ordinary development or growth which is constantly taking place in the body. If we regard the subject from a clinical aspect, I admit that there is considerable difficulty in making any distinction between these two conditions. For, as I have endeavoured to show, we may have all, or almost all, the signs of inflammation as the direct outcome of a physiological process, and, on the other hand, we often meet with cases of wounds which heal without any of the four cardinal signs being present in any marked degree at the margins of the wound, though I believe they are always present to a certain extent, though it may be this extent is not appreciable to the ordinary observation. And it must be borne in mind that the difference between slight redness, swelling, and heat of the edges of a wound and the most intense form of these conditions is only one of degree, the latter being patent at the merest glance to the most superficial observer, whilst the former is so slight as to be scarcely distinguishable to the most careful investigator. When, however, we come to consider the question from an histological standpoint, it seems to me that we cannot separate it from an inflammatory process, however slight its extent and intensity may occasionally be.

Let us then examine the subject from an histological point of view, and let us first consider the manner in which adhesion of the edges of a wound takes place, whether this process is regarded as inflammatory or not, and this we will do in the briefest possible manner by simply stating the most salient points which have been observed, so that we may clearly carry them in our minds. And in order to do this we will take an example of the simplest kind of tissue, in which an incision has been made, and which unites by what is called adhesive union, or the "first intention" of John Hunter. For I do not propose at present to say anything about the so-called "immediate union of wounds," which was first described by Macartney, as I do not believe that such a condition exists. I shall have something to say, however, about this at a later period of my lecture.

Suppose, then, we make an incision through the skin into the subcutaneous tissue beneath. What happens? First it bleeds; then the bleeding ceases, and finally union takes place. The wound first bleeds because the capillaries contained in the tissue are divided; the bleeding stops because the blood coagulates in the capillaries as far as the nearest anastomosis, that is to say, to the next point of intersection of the capillary network. So that the first change is that all the cut vessels become filled with clots up to their first collateral branch, and this is undoubtedly simply a physiological process; the clotting being the result of the physiological conditions which bring about the formation of fibrin.

Secondly, the capillary vessels in the neighbourhood, that is to say, beyond the point of clotting, will be noticed to be dilated. By some this would also be regarded as a physiological process, and to arise merely from mechanical causes, from the increase of pressure to which the capillaries have been subjected in consequence of the coagulation which has taken place in their several extremities. About this I shall have to say a word or two in a moment, but let me first glance at the other changes which are to be observed in a wound before the process of union is effected.

The third change to be noted is in the connective tissue in which the vessels ramify. This becomes infiltrated with cells, and these cells multiply, so that we have the tissues at the edges of the wound infiltrated with a vast accumulation of cells, which are for the most part simple, nucleated cells, resembling leucocytes. After a time other larger cells appear, and some of these find their way to the surface of the wound, and are to be seen covering it.

Fourthly, the cells which cover the surface of the wound undergo a developmental process, and first becoming spindle-shaped and then fibre cells, are eventually converted into fibrous or scar tissue, which forms the cicatrix or bond of union.

Finally, and lastly, the capillary network at the margins of the wound prolongs itself in the form of loops into this new tissue, and becomes continuous with similar loops on the opposite side, and thus the new tissue becomes an organised structure, and unites the edges of the wound together.

These, very briefly, are the changes which can be observed with the microscope as taking place in the edges of a wound, whereby union is effected; and the question we have to consider is whether these changes are strictly physiological and akin to those of development or growth, or whether they are the result of that pathological process which we know as inflammation. Whether, in fact, these cells which are the essential elements in the process of union find their way between the edges of the wound in conformity with known physiological laws, and, having found their way there, undergo changes similar to those which are witnessed in the embryo, when the blastodermic cells of the ovum grow, develop, and differentiate into the various structures of the human being, or whether these changes take place as the result of a pathological process, altogether different and distinguishable from normal physiological action.

In discussing this point, we shall have to consider four

questions: (1) Is the dilatation of the blood vessels, which we described as the second change in our process of union, simply a mechanical one, and due to the increased pressure exerted on the capillaries of the part? (2) Is this vast accumulation of cells in and around the wound the simple outcome of a physiological process? (3) Are the changes which take place in the cells exactly identical with the mode of growth and development in embryonic cells? (4) And, lastly, What is the nature of the newly formed tissue?

The first point, then, which we have to consider is whether the dilatation of the blood vessels, which undoubtedly occurs, is simply due to mechanical causes. We have seen that when a wound is made the blood vessels at its margins become blocked, and it is perfectly clear that the blood will have to accommodate itself to this, and find another channel by the existing and patent by-paths around the blocked vessels. The result of this is increased pressure in these pasts, and, as a consequence, distension and dilatation of the vessels. So there can be no question that in this simple mechanical explanation there is a way in which we may account for the dilatation of the blood vessels, but unfortunately this mechanical explanation does not fully account for the subsequent changes which take place. It fully explains the first step in the process—the determination with increased motion—but it does not explain the determination with diminished motion, in which the circulation becomes slower and slower until the retardation results in stasis, with consequent diapedesis. For this we must look to some other cause than a mechanical one, and hence, as it is certain that this slowing of the blood current does take place, we cannot accept the theory that the dilatation of the blood vessels in inflammation is entirely due to a simple mechanical cause. To what, then, must we attribute this dilatation and this increased flow of blood? Numerous hypotheses have been advanced at different times as to the cause, and it cannot be said that even at the present time any one of these hypotheses gives a really complete and absolute explanation of the phenomenon. In considering the question I would strongly emphasise and ask you to bear in mind the words of Sir John Simon, who says that "a part does not inflame because it receives more blood; it receives more blood because it is inflamed." For if we do not admit this, the whole argument falls to the ground.

It is self-evident that the proximate cause of the dilatation must be change in the tonicity of the muscular coat of the vessels, and the question we have to determine is how this change of tonicity is brought about. It at once suggests itself that this may be due to some irritation which disturbs the function of the nerves of the vessels. And this may to a certain extent be so, especially as it has been proved by direct experiment that irritation of a sensory nerve causes dilatation of the arteries in the whole area to which the nerve is distributed. Why this irritation of a nerve should produce this active, directly paralysing effect is not quite so clear, though I think it may be very fairly explained in the following way. We know that the vagus nerve possesses an inhibitory action upon the heart, and that irritation of this nerve produces a diminution or obstruction in the action of this organ. We therefore assume that there is an inhibitory nervous system which arrests the contraction of mucles. And if this is true of the heart, why should it not also be true of the blood vessels; and why should we not assume that the muscular elements of the blood vessels, like the heart, are under the control of both the sympathetic and the cerebro-spinal system; the former of which causes the rhythmical contraction of the vessels, and the latter regulates and obstructs their contraction?

If this is so, it would explain the reason why irritation of the cerebro-spinal nerves would exert an inhibitory effect upon the muscular coat of the vessel, and as a consequence vascular dilatation. But it is quite clear that this explanation of the cause of the dilatation of the blood vessel is not sufficient to explain the phenomenon. It is true that part of the dilatation may be due to this cause, but I am inclined to think it is only a very small part; for it is clear that if this was the cause, and the sole cause, the dilatation would not be confined to the injured area, but would embrace all those parts supplied by the nerve irritated. Moreover, experiment and clinical experience negative this view. The experiments are those of Cohnheim, who has shown that in the tongue of a frog, after its nerves have been severed, the process of inflammation can be excited by almost any irritant, and, indeed, that where the tongue has been severed from all its connections, so long as the arteries and veins are allowed to remain intact an inflammation can be excited by similar causes. It is certain here that the dilatation is not dependent on any influence conveyed to the blood vessels from the cerebro spinal centre.

Clinical experience also points in the same direction. I need only allude, in illustration, to the fact that it is a matter of every-day experience to see inflammation set up in paralysed parts, where the nerves clearly can have nothing to do with the primary condition of dilatation. We must look, therefore, to another cause to explain the dilatation which takes place in the inflamed area. I think it may be briefly stated to be due to the direct effect produced upon the vessels of the part by the injury that has caused the disturbance, or, in other words, that the irritation disturbs directly the function of the muscular coat of the arteries and veins and the living cell substance of the capillary walls. This is in strict accord with Cohnheim's so-called "alteration" theory of inflammation, namely, that the "alteration of the physiological condition of the walls of the vessels is the cause of those phenomena and processes the sum of which is designated by the term inflammation."

The grounds on which Cohnheim based this proposition was by cutting off the circulation from a part for a certain length of time, say twenty-four hours, by encircling it with a ligature, and then at the expiration of this time loosening the ligature and restoring the circulation. By this means he produced as typical and intense an inflammation as by subjecting the part to the direct action of an irritant. By thus depriving a part of blood he unquestionably altered the physiological conditions of the blood vessels and other tissues, and this changed or abnormal condition was the proximate cause of the dilatation of the blood vessels, as well as the other phenomena of the inflammation. If, then, this undoubted alteration in the walls of the blood vessels—the part with which the blood first comes into contact in these experiments—causes them to act as if they were inflamed, may we not assume that a similar change takes place in the vessels when inflammation is set up by other causes, and induces a similar result?

If we accept this as true we have a strong argument in support of the view that inflammation is necessary for the repair of tissue, and therefore for the union of wounds. For we have here in the vessels a deterioration of tissue, a retrograde metamorphosis, which certainly cannot be regarded as a healthy physiological action; a something which is quite different from the *afflurus sanguinis*, the active congestion or determination of blood which is due entirely to nerve influence.

We pass on now to consider the second question which I set myself—namely, is the vast accumulation of cells in and around a wound during the process of healing the simple outcome of a physiological process? In order to answer this question, we have to ask ourselves another: Whence do they come? I suppose there is no one here present who would hesitate in answering that, at all events to a very considerable extent, they are emigrated leucocytes. And this is undoubtedly one source from which they are derived, though I think there is very little doubt that they are also in part derived from a second source. Into this point, however, it is foreign to my purpose at present to enter; and it is sufficient that we believe that the myriads of rounds cells which we see in and around a wound during the early stage of the healing process were originally derived in part from the leucocytes which have passed out of the circulation through the walls of the capillaries. We then ask ourselves another question, Why has this emigration taken place? It is a condition very different from what we observe in health. For though it cannot be denied that exudation of the plasma of the blood takes place as a physiological process, and emigration of the leucocytes very probably does so, still it is a very different condition to what we see in a wounded part, and we never find in healthy tissues the whole of the structure infiltrated with leucocytes to such an extent as almost, if not quite, to obscure the natural structure of the part. There is no doubt that the answer to this second question is that the emigration is due to stasis, or that condition of arrested circulation which

we know speedily follows the dilatation of the blood vessels in an inflamed part. And then we ask ourselves a third and final question, What is the cause of this stasis?

Many theories have at different times been put forward to explain this phenomenon. It has been attributed to the dilatation of the blood vessels, to changes in the corpuscles, and to changes in the tissues, especially the lining membrane of the walls of the vessels. It cannot be due to the dilatation of the walls of the vessels, because we do not find a similar phenomenon attending the dilatation of vessels from other causes. Division of the sympathetic in the neck of an animal causes dilatation of all the vessels of the head and face, from paralysis of the muscular coat of the blood vessels, but there is no tendency to stasis or arrest of the circulation. Then, again, it cannot be due to changes in the corpuscles; for if we examine under the microscope the mesentery of a frog in which inflammation is slowly set up from exposure to air, we may watch a leucocyte showing a tendency to stick to the wall of the vessel so long as it is contained in the inflamed area; it partially adheres, oscilates to and fro, but gradually makes progress onwards till it reaches the extreme limit of the inflamed area, when it at once loses this tendency to adhere, and flows on rapidly in the normal course of the circulation.

Another reason why it cannot be due to changes in the corpuscles is because if it were we must assume that not only the corpuscles in the inflamed area are changed, but all the corpuscles throughout the body, and therefore this same adhesiveness must be observable in every vessel in the body, for only one small portion of the blood was acted upon by the irritant which set up the inflammation, and the blood in the area of stasis cannot be that which was thus acted upon.

Stasis must therefore be due to changes in the walls of the vessels, or the tissue with which the blood comes in contact, so that the corpuscles when they pass into the injured area acquire a tendency to adhere. The lining membrane of healthy vessels differs from every other solid in the fact that the corpuscles have no tendency to adhere to them, and therefore no coagulation of the blood takes place; but when the corpuscles, and especially the leucocytes, come in contact with any foreign body, that is to say, anything else except the healthy wall of the vessel, they show an immediate tendency to adhere to it, to disintegrate and set free their fibrin ferment, and coagulation is the natural result. The same thing holds good if the lining membrane becomes altered in structure or diseased. It no longer possesses the power of repelling the corpuscles, but, on the other hand, attracts them and causes them to adhere. It acts as a foreign body. Look, for example, at many cases of thrombosis, where the coagulation is due to an altered state of the vessel wall, which causes the leucocytes to adhere to it, and as a consequence the vessel becomes occluded with clot. Or, again, look at the natural process of cure in an aneurysm. The lining membrane of the sac is an altered tissue from the ordinary lining membrane of an artery; it is a foreign body—a something other than the wall of a healthy vessel. In consequence of this, the leucocytes adhere to it; they disintegrate, they set free their fibrin ferment, and thus fibrin, the active clot of Broca, is formed on the interior of the sac.

In the fact, then, that in the union of wounds we have the tissues in and around the wound infiltrated with cells, we have another strong argument in favour of the theory that the union of wounds is an inflammatory process. This infiltration with cells is the direct outcome of stasis in the vessels, and this stasis is a necessary result of their deterioration or retrograde metamorphosis which can scarcely be regarded as a physiological process.

In connection with the third question which we set ourselves to consider, whether the changes which take place in the cells, which are now believed to be in a great measure large mobile cells formed by proliferation of the original cells of the part, which have replaced the emigrated leucocytes, are exactly identical in their mode of growth and development with embryonic cells, I am bound to say that I know no difference. It seems to me that we must acknowledge that these cells of granulation tissue are exactly identical with embryonic cells, and behave in the same manner, undergoing the same form of development into higher tissues. It would appear that the recognition of this fact has caused objections to be raised against designating as inflammatory the purely regenerative processes which take place in the healing of a wound. But I would contend that it in no wise invalidates my argument that the new formation of tissue which leads to the adhesion of wounds is inflammatory. My contention is that this newly-formed tissue, which is by a process of development eventually to form scar tissue, or the bond of union between the severed tissues, is the result of an inflammatory process; though the subsequent steps by which it undergoes development into scar tissue may be distinctly physiological, or at all events identical with processes which take place in the blastodermic membrane of the embryo, where the primary nucleated masses of protoplasm of which it is composed undergo changes of growth, multiplication, and differentiation until they become converted into complete animal cells of many different types. It is the mode of origin of the cells, and not their subsequent changes which marks off the process of union of wounds as an inflammatory one.

Leaving this point we pass on to consider the fourth and last question which I stated it was my intention to bring under your notice in elucidating the point which we have under consideration. The question is as follows: What is the nature of the newly-formed tissue which acts as a bond of union, and joins the two severed surfaces together? And in the answer to this question I think we shall find one of the strongest arguments in favour of the view for which I am contending—namely, that wounds always unite by a pathological process which we term inflammation.

The elucidation of this point will require a little careful consideration. So long as tissue elements retain their vitality they possess the power of undergoing nutritive and formative changes on the application of a physical or chemical stimulus. Up to comparatively recent times the knowledge of this fact caused pathologists to regard inflammation as a condition of increased, though perhaps perverted, activity of the process of nutrition. The converse of this is, however, the fact. Lord Lister was the first to initiate the doctrine that "inflammation consists not in increased, but in diminished vitality of the tissues affected." The process of inflammation, whether showing itself by enlargement, multiplication, or formation of cells is always a sign of lower vitality, and results, as Dr. Burdon Sanderson expresses it, in "tissue spoiling and not in tissue stimulation." And the more rapid the rate of reproduction, the less is the stability of the newly-formed tissue, and those tissues which are the result of the inflammatory process are always more lowly organised and of a lower vitality than the original tissue of the part before the process of inflammation took place. Inflammation must therefore be regarded as a destructive process. If we admit this—and who will gainsay it?—we have an extremely strong and potent argument in favour of the fact that the scar tissue or bond of union in a wound is a product of inflammation, and not a new formation the result of a physiological process.

Let us briefly consider what scar tissue is. It is composed of dense white fibrous tissue, which differs from the normal tissue which it has replaced in many important particulars. And, as Rindfleisch says, "Cicatricial tissue is far from being a connective tissue of ideally high quality." It is more dense than ordinary areolar tissue, and contains no yellow elastic fibres. It is smooth on the surface, and presents no papillæ. It is devoid of sweat glands, sebaceous glands, or hair follicles. It contains no lymph spaces or lymphatics, and nerve fibres are very few in number or altogether wanting. When first formed it is vascular, but its vessels soon disappear, and it becomes dry, hard, and white, and of lower organisation than the natural parts. Moreover, scar tissue is exceedingly prone to diseases of degeneration. How common a thing it is to find a scar breaking down and ulcerating, and how slow these ulcers are to heal, and how liable to recur. And, again, how frequently we find scar tissue becoming the seat of epithelioma; constituting what was first described by Mr. Cæsar Hawkins as the "warty tumour of cicatrices."

And even keloid must be regarded as a disease of degeneration; for though there is an excess of growth, this growth consists of a lowly organised fibrous tissue, intermingled with cells, which are arrested in their progress of development, and degenerate in their incomplete forms. If, then, this is the character of scar tissue, it can scarcely be regarded as the product of a healthy physiological process, and it becomes a powerful argument of the view that union of wounds is an

inflammatory, and therefore a pathological process, and not a physiological one.

This, then, is the evidence which I have to bring forward in favour of the view I am upholding, and it only remains now for me to endeavour to reconcile this view to the doctrine of the different forms of union of wounds.

In our textbooks on surgery it is customary to describe five classical ways in which wounds unite: (1) by immediate union, primary adhesion, or direct growing together of the severed surfaces; (2) by first intention; (3) by scabbing; (4) by second intention; and (5) by secondary adhesion or growing of two granulating surfaces together. To these I think we ought to add another—namely, healing by blood clot. It will be my endeavour to show that there are only two ways in which union of wounds takes place—namely, without suppuration and with suppuration; and, moreover, that the difference between these two conditions is very slight, being one more of degree than of kind, and that they are both the result of the same morbid process going on in the part—that is, inflammation.

Let us consider these different modes of union a little more in detail. It is the first of these that I most desire to consider, because it is a mode of union in which the essential principle was laid down by Macartney, of Dublin, who first described it, that there was no inflammation. He says: "Union takes place without any intervening substance, such as blood or lymph." We are told that when the surfaces of a clean-cut wound are carefully adapted and supported they will probably be found to present no signs of inflammation appreciable to the senses, and in the course of from twenty-four to forty-eight hours the wound will be so soundly united as to require no further attention, nothing being left except a linear mark, which at first looks more or less red, but gradually fades away, and in the case of small cuts disappears altogether.

This is hardly an intelligible account of what takes place. In what does the process of union consist? There must be some process by which the severed surfaces are caused to adhere together, and to become united in such a way as to present no trace hereafter of where the union has taken place. And, again, what is the nature of this linear mark, which at first looks red and then gradually fades away? And, finally, must we assume that there is no inflammation because there are no signs appreciable to the senses present? I confess that this theory of immediate union is beyond my comprehension, and I have searched for an intelligible account of what takes place without being able to find it.

Hear what another author says!

"When wounds unite by immediate union no other changes than these"—namely, coagulation in the vessels up to the nearest anastomosis and dilatation of the capillaries in the neighbourhood—"take place beyond the gradual restoration of the capillary circulation through the parts that have been divided, and under such somewhat rare circumstances no scar or cicatrix is left. The soft parts at first simply adhere together, and subsequently become continuous."

But why do they adhere? How do they become continuous? What becomes of the clots in the vessels, and why do the neighbouring capillaries dilate?

Another author says:

"The divided blood vessels and nerves are brought into perfect contact, and reunion ensues by the opposed surfaces simply growing together." Very simple! but I confess that I should like to be told how they grow together. Does the author mean that when the parts are replaced each minute filament of nerve and the open orifice of each capillary vessel is brought into "perfect contact" with its corresponding and severed half on the opposite side of the wound? The idea is of course absurd.

It seems to me that we must acknowledge the presence of some connecting material which shall first cause the cut surfaces to stick together, and through which they shall become continuous, just as much as in the case of two pieces of wood, which we cannot make stick together without the intervention of some adhesive material.

I for one, therefore, must discard the doctrine of the first mode of union of wounds as untenable. I explain those cases in which it is said to occur, and I must confess that I have never been so fortunate as to observe the process in my own experience, as cases where the inflammatory process is reduced to a minimum, and where therefore the adhesive material is correspondingly small.

Direct experiment negatives the proposition. If a wound, however small and however carefully adapted immediately after its infliction, be made, it will be found upon killing the animal and making sections of the injured part that there is a greater or less amount of connecting substance between the edges of the wound. Even if a very small incision be made through the cornea of a rabbit with the sharpest knife, and be prevented from gaping by at once closing the eye, the resulting cicatrix will be invisible to the naked eye, but nevertheless the intermediary substance may be demonstrated on microscopic examination. It seems clear to me therefore that we must exclude this fancied method from our category of modes of union of wounds, and arrive at the conclusion that, where union takes place very rapidly and without the ordinary signs of inflammation being appreciable to the senses, the difference is merely due to degree, and that the same changes take place here as in the so-called union by the first intention, though to a less extent. For who shall say how much hyperæmia, how much exudation, what amount of new formation of tissue is necessary to agglutinate and unite the edges of a wound together.

We proceed, secondly, to allude to the second mode of union of wounds, viz., union by first intention or by, as I believe, adhesive inflammation. I shall not say more about this mode of union than to mention that this would correspond to my suggested first division, that is to say union without suppuration. I have already discussed this process very fully and the changes which take place in the part up to the conditions of complete union and which changes are admitted by all whether they are believed to be due to an inflammatory process or not. We pass on therefore to union by scabbing. This I believe to be merely a modication of the process of union by first intention and not to be worthy of being placed in a distinct class by itself. When a wound heals by scabbing the separative material which is poured out undergoes similar changes to those which take place in the same material when the wound heals by first intention, the scab merely forming a protective film over the wound and preventing decomposition or putrefaction. Union by blood clot is another mode of union, which can only occur in an aseptic wound and has only recently been described. It is merely another modification of union by first intention or by adhesive inflammation when the edges of the wound are not in contact, but are separated by blood clot, which acts as a mould or framework into which the leucocytes and the plasma cells, the result of the inflammatory process, penetrate and where identically the same changes go on as in those cases where the edges of the wound are in close contact and where there is nothing between them but inflammatory exudation.

It is obvious that all these modes of union are merely modifications of one process and are identical as far as regards the changes which take place. They may therefore, I think, with propriety be classed together as modes of union of wounds without suppuration.

It remains for us now finally to consider the two other processes or modes of union of wounds, namely, union by second intention and union by secondary adhesion, or as it is sometimes called "third intention"—two modes of union which I would venture to class together in one group as cases of union with suppuration.

With regard to this mode of union it will be seen, I think that it is merely a modification of the mode of union we have already described; that in both the essential features are identical, and that the difference in the two is one rather of degree than of kind. The difference in the two would appear to be due to some circumstance which produces a prolonged irritation, and therefore the resulting inflammation is prolonged, and the amount of inflammatory exudation is increased. If we examine the changes which take place in this mode of union, we find that we have the same initial changes; the same blocking of the severed vessels; the same hyperæmia around, and the subsequent stasis, and the same exudation of what Hunter termed "plastic lymph." But instead of this exudation being slight in amount, and speedily ceasing, it goes on and on until the surface of the wound becomes

covered with a considerable layer, too thick to be nourished by the vessels in the underlying tissues. From malnutrition, therefore, the cells in the superficial layers undergo degeneration, and are converted into pus cells, and thus suppuration takes place. At the same time the deeper layers become vascular and converted into granulations, which undergo cicatrisation, and so the wound is healed. There can be no question, I think, that the cause of the prolonged irritation is the presence of septic micro-organisms in the wound.

Time will not permit me to describe the process in detail, but sufficient has been said for my purpose, which is to point out the close analogy between the process of union by first intention, and union by second intention. In both there is inflammation; in both this is attended with exudation, though varying in amount; and in both this exuded material forms the bond of union.

In union by secondary adhesion or "third" intention we have the same exudation of inflammatory material acting as the bond of union. We have inflammation, exudation, and the conversion of the exudation into granulations. If these granulations are now brought in contact they coalesce together, just in the same way as the exudation does in union by first intention. The vessels grow through this coalesced material from side to side of the wound, the cells of which it is composed undergo developmental processes, and are converted into scar tissue and the union is complete.

Such, then, Mr. President and Gentlemen, are briefly my views with regard to this important question of inflammation in connection with the union of wounds. The whole subject hinges on the one point of what we mean by inflammation. If we agree with Hueter and Kocher that no injury alone is competent to produce inflammation without the intervention of micro-organisms, then my whole argument falls to the ground. But if we believe, as I do believe, that inflammation may be induced without the concurrence of organisms—an inflammation, I admit, different from that excited by these bodies, for it neither tends to spread to contiguous parts beyond the area of injury, nor to infect distant parts through the blood stream or otherwise—then I say I have brought forward conclusive evidence to prove that the union of wounds is an inflammatory process. At least, if it is not, I know not what it is.

REFERENCE.

1 Hunterian Oration, 1893, Bryant.

ABSTRACT OF

THE HARVEIAN LECTURES.

ON

DISEASE AND ITS TREATMENT, AND THE PROFESSION OF MEDICINE IN THE YEAR 1899.

Delivered before the Harveian Society of London, December 1898.

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LECTURE I.

THE PRESENT ASPECTS OF DISEASE.

THE NINETEENTH CENTURY.

FROM the year 1899 we shall soon be looking back upon the greatest century medicine has ever known, a century of labour and of results. But our recent vicissitudes, our changes, and our prospects will be sufficiently illustrated by a review of a shorter period, that which is included within the memory of our own generation.

Gradually the class distinctions have become less marked, and now, in the closing years of this century, the physician is only distinguished from his fellow workers in more general subjects in that he is credited with a more ample knowledge of the matters to which he restricts his attention; while the humble apothecary of the early days of the century, who was not paid for his professional advice but solely for the medicines which he supplied, has given place to the highly accomplished practitioner of medicine and of surgery. He is to be found everywhere through the land, well taught, with a great knowledge of his profession, careful and judicial, wanting but little outside assistance in his work, and then only to help to solve some of the difficult or insolvable problems that present themselves in the practice of the profession. "*Fin de siècle*" is not an idle term. The whole world is conscious of changes, profound and rapid, and to these none are more keenly alive than ourselves who stand by and watch.

THE CONTRACTION OF THE FIELD OF MEDICAL PRACTICE.

Another great fact around which my remarks will centre is the increasing limitation of disease and the contraction of the field of medical practice. It will be seen that in many cases ailments which hitherto had belonged to the exclusive care of the general practitioner have had a tendency to escape from his undivided control. The causes of this change are various, its ultimate consequences of considerable importance, and to them some attention will be devoted in due course. Other changes no less remarkable have occurred, influencing the status, the practice, and the prospects of the profession.

THE GRADUAL DIMINUTION IN THE PREVALENCE OF DISEASE, AND ITS CAUSES.

The prevalence of disease has considerably diminished within the memory of the present generation, and, if its characters have altered in any degree, the change has been rather in the direction of attenuation. The notion of the parasitic origin of disease dates back to a remote antiquity; but the full proof of its correctness has been delayed until our own times, and with it the idea that their spread can be controlled and even arrested.

Etiology loses its use unless disease be recognised. In diagnosis also the most brilliant advances have been worked out in the laboratory. Bacteriology has given us tests for some of the most virulent affections, and the other sciences have been drawn into the service of the physician. Diagnosis must always be an art, but it is becoming more and more a science, needing technical knowledge and skill and an increasing supply of instruments of precision. One of our most striking innovations is the employment of scientific aid by the practitioner, and the adequate means which have come into existence to supply his requirements. At hospitals all this is provided by the clinical laboratory, which is therefore an essential part of their equipment, irrespective of any educational object.

It is to Jenner we owe the great idea that a disease may be practically stamped out by a thorough application of some universal protection. I need not weary you with figures, but you are aware that wheresoever efficient vaccination and re-vaccination are performed the mortality from small-pox is almost *nil*, and its incidence is restricted both in numbers and degree. In our own country it survives only by the will of the people.

THE SHARE OF HYGIENE IN THE PREVENTION OF DISEASE.

To hygiene, inspired of bacteriology, are due most of our practical measures of prevention. The suppression of cholera, of relapsing fever, and of typhus, the limitation in the spread of the common exanthems, our successful though still fractional results in the limitation of phthisis, and, not least, the improved health and strength of the rising generation; all this has been the direct fruit of a faithful application of its principles.

Again, we are indebted to it for the suppression of the epidemics of puerperal fever and septic peritonitis. This great progress was initiated by Semmelweis, but the modern life-saving reforms did not become part of practical gynæcology until Lister's great work had shown us how the previously unchecked spread of septic infection could be absolutely prevented. Pyæmia and septicæmia, which claimed so many victims, are now almost unheard of. Moreover, suppuration itself, with its long delays, its risks and sequelæ, has now ceased to be regarded as part of the process of healing.

Bacteriology has in some instances supplied us both with the prevention and the cure. The treatment of diphtheria is the most brilliant example of the curative value of the serums of immune animals. Less successful, but not wanting in promise, are other forms of serum treatment. The strepto-

coccus serum, the pneumococcus serum, the antitubercle serum, and the antitoxin treatment for tetanus and for plague are instances in point. Within quite recent years the immunisation of those likely to be exposed abroad to the infection of such virulent diseases as cholera, plague, and typhoid fever has been systematically practised; but in this country, since diphtheria has become amenable to treatment, there is less necessity for any protection of this kind.

The contemporary advances of surgery have been the evolution of an art which had previously desired its opportunity now given to surgeons by anæsthesia and antisepsis. As the opportunity was afforded a new surgery grew up under their hands, characterised by skilful manipulation and by infinite ingenuity of device. A tribute is also due to dental surgery, the improved methods of which are of incalculable service in the rational treatment of some lingering ailments.

Whilst the brilliant record of surgery has tended to eclipse everything else, the achievements of medicine have been unnoticed or minimised. To place things in their true light, the province of surgery would seem to be essentially curative. It may save life or limb, but this is a gain to the individual only. Medicine has done more in prevention. Its dealings with the individual are not always brilliant, but it has succeeded in protecting not the individual alone, but the community, against decimating diseases. The suppression of a single disease, such as typhus, small-pox, or cholera, would alone outnumber the surgical total of lives saved.

In phthisis the combination of two infections, the specific bacillus and the organisms of suppuration, explains the need for the perfection of ventilation. There seems to be at last in this country, after a long and regrettable delay, an earnest resolve to provide this remedy. We are now dealing closely with the agent of the disease in its various modes of dissemination—by the sputum, by food, and by milk. The importance of the purity of the milk supply has been revealed by the researches of Professor Delépine, which are now leading towards practical legislation. Since the tuberculin test enables us to detect disease in the cow before it has become otherwise obvious, there is no reason why the spread of tubercle by milk should not be efficiently prevented.

The prospect as regards the further limitation of disease would seem to be that one after another our parasitic diseases must yield to this never-halting progress, that much disease of a non-infectious kind will also be prevented, and that the ratio of instances of disease to the number of the healthy population must steadily diminish.

The increasing healthiness of the community is a notorious feature of the day; and we need not review the long list of the general infections. More important are some of the "trade" diseases which modern hygiene has taken into its care, and in which a distinct reduction has been brought about, as, for instance, in the destructive lung diseases from inhalation of dust, and in the affections due to intoxication by lead, mercury, and phosphorus.

Disease Cannot Entirely Disappear.

There is, however, a finality in this encouraging prospect; although we may in the distant future live healthier lives and die of old age, some diseases must remain always. The most virulent diseases are those most easily prevented; but others are incapable of being suppressed, and they are apt to be perpetuated by our success in saving the weaker lives.

The climacteric periods—pregnancy and childbirth—need watching with special care, and gynæcological practice must continue to flourish as it has done in the past.

The diseases of old age, of infancy, of childhood, and of puberty must claim as heretofore the services of the profession. In middle and advancing life the later developments of syphilis will continue to prevail so long as neither the State nor science can cope with this scourge. Many visceral degeneracies are also traceable to infective disease, to wear and tear, to unevenly apportioned labour, and to the thousand risks of life, but most of them to human perversity in turning food and drink into poison. The dietetic diseases of the alimentary, the renal, the cardio-vascular, the nervous, and other systems are likely to remain, like gout itself, more prevalent in this than in any other country, in proportion with its growing prosperity, and in spite of the wiser counsels now prevailing.

Lastly, cancer, insanity, and the nervous diseases are held by some to be on the increase.

Drug and Food Diseases.

There is a source of nervous ailments entirely special to this age, and the unexpected outcome of our nineteenth century chemistry and advertising. Intemperance in drugs is becoming more common, and it may possibly outstrip the abuse of alcohol in its evil results. The manufacture of new chemical products is supplying the public with endless carbon derivatives of high molecular power, and of imperfectly known physiological action. Fortunately, many advertised medicines are harmless, but their prolonged use is detrimental, if only by delaying the treatment required by the original affection. Others are most dangerous, and their continued indulgence leads to confirmed neuroses or hopeless neurasthenia, and it thus comes to pass that as the therapeutic activity of the profession tends to abolish disease, that of the public is manufacturing it.

Whilst the increasing purity of natural foods has reduced our mortality, modern ingenuity has been the unintended means of occasionally supplying poison in food. Fortunately, ptomaine poisoning is an unusual accident. A much more serious and widespread evil has been the undiscriminating substitution by mothers of condensed milk and manufactured foods for the fresh supply of milk. This neglect of fresh milk and the untutored administration of artificial foods, even of the best kind, without due regard to proportion and to suitability, have been disastrous. To this cause may be attributed the fact that, in spite of modern hygiene, infantile mortality from diarrhœa and marasmus has shown no adequate decrease, and sometimes an increase over that noted before these modern inventions.

The Danger from the Tropics.

Our chief danger, in these times of rapid travel and traffic between the old and the new worlds is the importation of epidemics of virulent diseases, as in the case of cholera of old, and recently of influenza with its peculiarly lasting effects: and the plague is our present nightmare. But short of so calamitous an invasion, we may expect the arrival of a growing number of patients returning from the tropics with impaired health. The study of the tropical diseases is therefore most opportune, for not only must they call for a considerable staff of medical advisers in the newly-developed centres, but their sequelæ cannot fail to require considerable treatment in this country.

Nothing short of the creation of a large and central hospital, readily accessible from all the medical schools, for the treatment and the study of these affections would seem to be adequate for the fulfilment of our long-neglected imperial responsibilities, for the needs which coming years will multiply, and for the requirements of this vast metropolis viewed as the centre of an immense tropical empire.

Our Scope of Usefulness and Our Opportunities in the Future.

It cannot be gainsaid that the limitation of disease is an increasing factor in the pressure which is felt in the ranks of the profession, yet we need only look around to see that a doctor is neither rarer nor less employed. Two modern developments tend to render him indispensable, and both are the reflected result of the modern work and progress of science: I refer to the dread of disease and to the desire of prevention.

A wholesome dread, in some cases almost amounting to panic, has seized upon the educated classes. For instance, the fear raised by the mention of scarlet fever might be thought immoderate, but that it serves an excellent purpose both for the public and for the profession. The educated classes have also learnt another valuable lesson; they have now been roused to the idea of the preventability of disease, and the doctor is often welcomed to conjure away its mere ghost. Nor is this limited to the case of the zymotics, which isolation tends to remove from the sphere of private practice. He is largely consulted for discomforts rather than for disease, for alarms rather than for ailments, most of them trace-

able to a too full enjoyment of the privileges of health and of the good things of this life. Thus his attention is now drawn by the patient to a different clinical condition, and this enlarging display of minor suffering may be one reason why nervous disorders are supposed to be more prevalent.

But in other directions also—including that of public health—important work awaits our highly trained students. A system of almost universal life assurance under State supervision, analogous to that which has been largely introduced into Germany, does not exist in this country; but if it were to become established among us it would make a considerable addition to professional work, in connection with the examination of candidates. Certificates of sound health and of freedom from contagious, and in particular from any tuberculous taint, will be more in request as the public becomes more educated in matters of hygiene, and more sensitive as to the risks of the dissemination of phthisis. For the selection of careers the profession is already largely consulted, and the State exacts qualifying medical examinations for the Services; but in this direction there is room for much more work than is at present done.

The soundness of future generations, and the exclusion of heritable disease, are duties which may not be mentioned, yet lie dormant near the conscience of the profession. But the profession is not anxious to invite any responsibility of this sort.

And again, on the subject of practical Malthusianism, which is probably opposed by the conscience of the profession as a false notion, politically, socially, and morally, its attitude has also been one of reserve. It has, I believe, always been in favour of the principles which are consonant with the best interests of humanity and with the greatest sum of happiness and power.

More advice will be needed by the State than has been hitherto taken, or at any rate acknowledged, by it in regard to ethnological and colonising questions—a mere sample of the large department of State work in which the profession is destined to take a share.

Compulsory Education.

The medical supervision of education is another important question which affords considerable scope for professional activity. Where so many children are congregated, and where parents are deprived of all means of selecting associates for them, a serious onus is incurred by the State, and nothing short of the greatest care can cover its responsibilities.

The fatal transmission of scarlet fever and of diphtheria is the worst evil, and the question arises whether anything further might be done to prevent their spread. Are all children who are allowed to return to their schools after an attack of diphtheria sufficiently disinfected in one of the most likely directions? The nasal cavities, which are nearest to the seat of affection, and in themselves often affected by the disease, may sometimes be overlooked as a persistent nidus. Again, it is since the children of the poorest have been forced into the Board schools, in the company of children of respectable and cleanly artisans, that vermin has invaded homes carefully kept, and that the health, or even the life, of many a delicate child has been sacrificed. All this is preventable by insisting that the hair of all children under a certain age attending these schools shall be kept short.

The Changes which have occurred in the Conditions of Practice.

Whilst disease has greatly diminished, treatment has grown, and is on the increase; and the labour of treatment is greater than at any previous time. This is true both for the general practitioner and also for the hospital physician and surgeon.

The Restlessness of Patients.

In the behaviour of those who are compelled to consult us, there is noticed a restlessness in their desire for the advice of various authorities, and a corresponding instability in the relationship between them and their medical adviser, which is much to the disadvantage of both. There is an old saying that "it is much easier to treat the patient than to treat the patient's friends," who often speak with an assurance about medical matters which is generally proportionate to their ignorance of the subject, and which it is particularly difficult to overcome. A patient who needed only to trust and persevere on the well-considered lines which had been laid down, may thus be passed from hand to hand, with little chance of benefit, and without any chance of carrying out the systematic treatment which is necessary. In this way the field of practice has been lessened for the family attendant, often to the detriment of his patients. But other causes have also led to a diminution of his opportunities. Too often the patient is mistaken as to his own troubles, and his most obvious symptom, that which attracts his notice, may be but a small part of the case. Nothing will satisfy him till he has had the opinion of someone who has a reputation in reference to the particular system which has caught his attention; and this is a process apt to be repeated indefinitely. By the concentration of the specialist's observation upon this prominent symptom, the important and essential elements of the case may pass unnoticed, a risk capable of avoidance had his adviser, familiar with his conditions, been at hand to reveal the less obvious essentials to a complete diagnosis.

Thus the patient's advantage lies in a co-operation between his regular medical attendant and his occasional adviser; but this also works for their advantage and comfort. The cultivation of this mutual professional intercourse tends to strengthen the bond of professional brotherhood; and well might we say, in the words of a great physician, "When doctors differ who shall decide; but when doctors agree who shall venture to differ?" This reminds us that combination is that which we must look to to ease many of our difficulties, and it is a remedy which brings with it pleasure as well as strength.

A CARDIO-PULMONARY MURMUR; OR A RESPIRATORY MURMUR RHYTHMICAL WITH THE HEART BEATS.

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In March, 1895, I had the good fortune to be in the chair when Dr. William Ewart read an interesting paper, on the Dorsal Auscultation of Heart Sounds and Murmurs, before the Harveian Society. In opening the discussion I took occasion to make the following remark[1]:—

> In reference to murmurs heard in the back, there was a murmur, systolic in point of time, which was well heard just below the angle of the scapula and sometimes in other situations, and which was produced in the air tubes, and, therefore, not strictly cardiac, though caused by the beating of the heart. It was a "whiffing" sound, and was most plainly heard during inspiration or only during this act. It was well to bear this murmur in mind, as it might be mistaken for a true cardiac murmur.

I subsequently collected a good number of cases illustrating this murmur, but unfortunately sixteen months ago an attack of scarlet fever caught me with the notebook containing the references to these cases in my pocket, and disinfection destroyed the germs of an article on the subject, as well as any microbes. I have, however, been able to find notes of some of the cases and have added others within the past few months.

In examination of the chest it is noticeable how, in certain conditions of the lungs, the heart sounds may be heard in parts far removed from the cardiac area. Consolidation from whatever cause conducts sound from the heart or from large vessels to the surface of the chest, so that such sounds are heard in unexpected places, and when so heard, furnish valuable information as to the interposed organ. Thus we may have the heart sounds conducted towards the right apex in tuberculous disease of the lung of that side, and we may hear the heart sounds clearly in any part of the chest wall over the position of a good-sized lung cavity. When, therefore, we hear sounds corresponding in rhythm to the beat of the heart, at some distance from that organ, or from any large vessel, we are at once led to suspect that there is some consolidation of the intervening lung.

There is, however, as I have already indicated, a source of fallacy, which, though frequently present, has received little notice from writers and is perhaps less recognised than it should be. It, however, deserves wider recognition; for the physical sign of which I speak may, if misinterpreted, mis-

lead not only as to the condition of the lungs, but also as to the condition of the heart. This physical sign is in fact a *bruit*, rhythmical with the heart beat, but produced in the lung—a respiratory sound which may easily be mistaken for a conducted cardiac sound. Heard, as it may be, at some distance from the heart or great vessels, it might convey an erroneous impression of the state of the lung: added to this, the character of the sound would certainly suggest some lesion of a valve of the heart if the sound were supposed to originate in this organ. The subject is therefore of importance, the more so that, as I have already mentioned, it is not of rare occurrence. I propose in this article to instance some cases in illustration of the physical sign under consideration, and to discuss the causation of the sign and its significance.

The sign is a blowing *bruit* or whiff, generally high pitched, but not always so, synchronous with the heart beat, and therefore rhythmical; sometimes heard throughout both inspiration and expiration, but more frequently only audible during some portion of the respiratory cycle. The *bruit*, though simulating a blowing cardiac or arterial murmur, is as I shall show caused by the movement of air in the lungs and air tubes, though its rhythm is communicated by the movements of the heart, and perhaps sometimes by the distension of a large artery.

Cases.

Case I.—R. W. R., male, aged 34, first seen in May 1892. Tuberculous deposit right apex. In February, 1893, I noted "a high-pitched blowing murmur synchronous with the heart beat (systolic) heard over the right side below the nipple level and into the right axilla." There was also a loud systolic murmur over the aortic cartilage during inspiration, absent during expiration. A month later the first murmur was "nearly gone," but still audible. The lung condition became quiescent, and the patient was in fairly good health when I saw him last year.

Case II.—Mrs. G., 25, consulted me in 1894 with tuberculous consolidation at the right apex. On the left, at the base behind, there was a soft systolic murmur during inspiration only; not heard over the cardiac area. Six months later the tuberculosis had become quiescent. There was a loud *bruit de diable* and arterial murmur in the neck, and a "systolic inspiratory murmur just inside the tip of the left scapula." Heart sounds clear.

Case III.—L. P., female, 16. Left pleurisy Christmas 1894. In November, 1895, she had cough with harsh breathing at the left apex. A loud systolic *bruit* was heard immediately below the tip of the left scapula, always present, but louder on inspiration. No murmur heard over the cardiac area. A fortnight later fine crepitations were noticed at the left apex, and the *bruit* at the base had disappeared.

Case IV.—C. L., female, 19. Tuberculous deposit right apex. Systolic "whiff" heard just below tip of left scapula, and in third space in front on right side. *Bruit de diable* in neck.

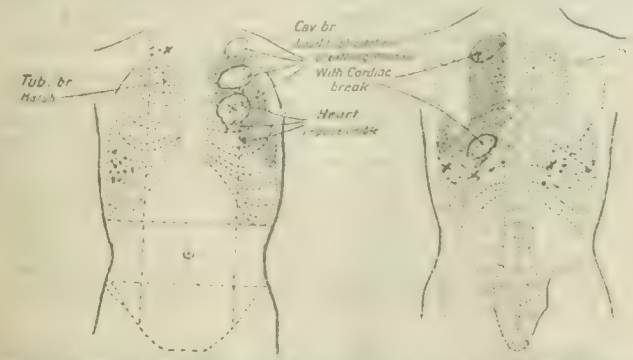
Case V.—Mr. S., aged 19, clerk. Seen in 1895 with rather overacting heart, faint systolic murmur over pulmonary cartilage (second left), but no murmur over cardiac area. Apex beat just below nipple. Impulse forcible. In left axilla and over left back up to about level of fourth dorsal spine, a systolic blowing murmur is heard only during inspiration (and chiefly during the latter part of this). It is a pulmonary (breath) sound and not a vascular sound.

Case VI.—Mr. W., aged 21, seen March, 1895. Recovering from left basic pneumonia. A systolic murmur heard over left base behind, on inspiration, not during expiration.

Case VII.—Miss McK, aged 20. Anæmic; has had pleurisy twice at left base. Faint systolic murmur heard over left base, especially during inspiration. Hæmic *bruit* over cardiac area.

Case VIII.—G. S., male, aged 25. Cold and cough (catarrh) four days. Much blackish phlegm. Later, systolic inspiratory whiff in left axilla.

Case IX.—L. N., female, aged 27. Was in hospital under my care in 1895 with extensive tuberculous mischief of the left upper lobe. In October, 1897, she came to see me. There was much cavitation of the left lung, and extension of the disease to the right side. Whilst talking to the patient one notices a peculiar sound produced with the breathing: a blowing or



puffing noise is produced during inspiration and at the beginning of expiration, rhythmic with the heart beat. This can be heard at some distance (about 6 feet) from the patient. With the stethoscope this sound is heard with greatest intensity under the left clavicle anteriorly, and just below the angle of the left scapula posteriorly. It is a dry, metallic puff, taking place at the same time as the first sound of the heart. The accompanying diagram will show that there are signs of cavities at the points where the systolic whiff is heard loudest.

Case X.—M. C., female, aged 20. Thin. History of phthisis for eighteen months. Cavity left apex with deposit to base of upper lobe. Right side free. Inspiratory whiff heard below the ri[illegible]

Case XI.—C. H. J., male, aged 20. Phthisis nine months. Acute. Cavity in right apex with active softening; deposit to fourth rib in front and sixth spine behind. Harsh, jerky respiration in left front to third space. Along the anterior axillary border on the left si[illegible] murmur (systolic) is heard during inspiration; absent d[illegible] th sounds at this spot good; no whispering pe[illegible] nds quite clear. A[illegible] ter systolic whiff in second [illegible] nd just within the nipple, chiefly inspiratory. Also sim[illegible] in tone below angle of left scapula, chiefly expiratory. [illegible] ove still audible. Fourteen days later inspiratory sy[illegible] ard all over the left front, very well marked just ou[illegible] art. Chest is thin, flat, and poorly covered. A week [illegible] ted above still plainly audible; that on the right seems [illegible] ratory, and that on the left chiefly inspiratory and postsystolic. No murmur over heart or aorta.

Case XII.—F. H., aged 31, male. Admitted December 31st, 1897. Phthisis—active; deposit scattered throughout both lungs. Cavities in both apices; larynx affected. On right side a systolic blowing *bruit* is heard in second, third, and fourth spaces from border of sternum to mid-axilla—an area as big as the hand. It is heard through both inspiration and expiration, sometimes missing one beat at end of expiration. Not conducted along aorta; aortic sounds clear. Breath sounds healthy, with few adventitious sounds over above area. The whiff goes on when patient is holding his breath, but then with to and fro sound—double. The respiratory systolic sound still heard as above three weeks later.

Case XIII.—H. S., male, aged 34. Fibroid phthisis—chronic. Heart sounds normal. Inspiratory and expiratory systolic whiff left front second space in the nipple line, also just inside the right scapula, here only inspiratory.

Case XIV.—S. S., female, aged 36. Thin, poorly covered chest; tuberculous deposit both apices, especially left. Chronic condition. Laryngeal papilloma in interarytenoid region. January 27th. Systolic *bruit*, inspiratory and expiratory, heard to-day down left back, from the middle of the interscapular region to just below the angle of the scapula; from there to the base, only the inspiratory part of the *bruit* is heard. March 3rd. Whiffs still heard in left back; well marked opposite eighth and ninth spines, about tip of scapula, where it is only inspiratory. Heart sounds clear.

Case XV.—E. H. P., male, aged 47. Thin, poorly-covered chest. Fibroid (chronic) phthisis, ulceration of epiglottis. January 20th. Systolic respiratory whiff left front at level of nipple (fourth rib) during whole of expiration only. Heart sounds at apex quite clear. March 3rd. The respiratory whiff is now heard very distinctly over the whole left front (except cardiac area), and most marked towards the left shoulder. Also heard over first two spaces on right front. On the front (both sides) the whiff is well marked during the whole of expiration and doubtful during inspiration. At left base behind—below tip of scapula—a similar whiff is heard only during inspiration. March 7th.—Whiff heard when he holds his breath, either after inspiration or after expiration. Much louder in latter. With the expiratory sound there is a distinct systolic *bruit* (whiff). With the inspiration a sort of jerky respiratory sound, the interruptions being rhythmical with the heart beat, but greatest intensity post-systolic.

Case XVI.—S. B., male, aged 21. Three months' history, dating from influenza in January, 1898, followed by pleurisy—fluid to the sixth rib behind. March 17th, 1898. left side clear. Left front, all over, inspiratory sound is loud and harsh and interrupted in synchronism with the heart beats. Expiratory sound much softer, with distinct systolic whiff. Heart sounds clear. No murmurs over either aorta or pulmonary artery.

Case XVII.—A. A. W., male, aged 41. Tuberculous deposit, left, to fourth rib, January 6th, 1898. Systolic high pitched whiff only heard during inspiration. Heard in the third space just inside the nipple line, left side. March 3rd. Still whiff in third left space as before. Below inner end of left clavicle there is cavernous breathing, with whispering pectoriloquy, and here the inspiratory sound is interrupted in synchronism with the heart beat.

Case XVIII.—L. S., female, aged 20, shop assistant. March 23rd, 1898. Palpitation and anæmia. Nothing pulmonary. Soft systolic murmurs heard at cardiac apex and at the pulmonary cartilage; *bruit de diable* in the neck. A systolic (respiratory) whiff is heard just below the tip of the left scapula, easily distinguished from the cardiac murmur, being rougher and of lower pitch.

Case XIX.—F. P., male, aged 18 (admitted March 17th, 1898), clerk. Ill seven months. Good deal of wasting. Tuberculous deposit in left lung (both lobes). Slight consolidation right apex. In first and second spaces the breath sounds give a "rhythmical jerky inspiration," not synchronous with heart beats; but with expiration the interruptions are with the beat, and constitute an expiratory systolic whiff.

Case XX.—A. P., female, aged 32. Anæmia and debility; no phthisis. Just above the cardiac area there is a systolic expiratory whiff. Heart sounds clear; beat forcible. Five minutes later, when the action of the heart quieted down, the respiratory whiff was no longer heard.

Case XXI.—J. M., male, aged 47. Fibroid lung with superadded tuberculosis. Very marked systolic respiratory murmur above cardiac area, throughout the whole respiratory cycle simulating a cardiac murmur. Heart sounds clear.

Case XXII.—Mr. R. G., aged 49. Has been twenty-seven years in India (Civil Service). Slight fibrosis of lung, but apparently no tubercle. Systolic inspiratory whiff heard below the tip of the right scapula, where there are some dry crackling *râles* to be heard also. Over-acting heart; no murmurs.

Case XXIII.—Occasionally when lying on my left side I can hear a high-pitched whiff, rhythmical with the heart beats, which seems to come from the trachea. It occurs only towards the end of inspiration and seems to be rather after the heart beat (postsystolic). It continues when I hold my

breath and is then heard with each beat of the heart. It is not heard when I am lying on my right side. Richardson's theory, referred to later on, of a piece of lung being pressed between the heart and the chest-wall might explain the effect of position on this whiff.

The cases noted above show auscultatory phenomena produced in the lung, and modified by the adjacent circulatory organs. We have other evidence that the sounds produced in one organ in the chest may be modified by the action of other organs in that cavity. As an example of the modifying action of the respiratory system on vascular sounds the following case may be given.

CASE XXIV.—M. T., female, aged 22. Anæmia with enlargement of the thyroid, especially of the right lobe. In the root of the neck on the right side there is a continuous, high-pitched, musical murmur (venous hum), which is much louder during inspiration. Here the negative pressure in the thorax during inspiration causes an increased flow through the vein, with consequent intensification of the murmur.

Of the 23 cases illustrating the cardio-pulmonary murmur, 13 are males and 10 females. In 14 of the cases (9 males and 5 females) there was tuberculosis of the lung; in 9 (5 males and 4 females), there was no tubercle detected. The murmur was heard only during inspiration in 10 cases; only during expiration in 4 cases, and during both inspiration and expiration in 7 cases. In 2 cases the part of the respiratory cycle is not noted. It will be seen then that in this series of cases the murmur is most frequently inspiratory. It is not permanent, sometimes being present at one examination, and not to be heard at another.

We may note that in Case II the *bruit* was distinctly audible over the position of the heart's apex, and was thus very liable to be taken for a cardiac murmur. In Case XIV the sound was heard down the left spinal groove along the course of the aorta. In both cases it was easily demonstrated by careful auscultation that there was no murmur in the heart or in the aorta. It will be observed that the lung condition varied greatly in the different cases. The *bruit* may be heard over a cavity and over apparently healthy lung. I have heard it in cases where there was no suggestion and no evidence of lung mischief; and, given a certain laxity of tissues, a general debility, I believe this *bruit* may be frequently found without disease of either lungs or heart. That most of the instances here recorded are in patients with lung disease is probably only due to the field of observation which my own practice chiefly affords.

As to the causation of the *bruit* under consideration it is clearly caused by the passage of air through the air tubes. It is only the ordinary respiratory murmur momentarily modified in intensity at the systole of the heart. Jerky respiratory sounds (cog-wheel breath sounds) are often heard in morbid states of the lung or as a result of nervousness; in the latter case the jerkiness is due to irregularity or want of smoothness in the action of the respiratory muscles.

The sound which I am now discussing is a form of jerky respiration, limited to a portion only of the lung, and due to a local cause. Its importance lies in the fact that the jerks, or inequality in the intensity of the respiratory murmur, occur at intervals corresponding to the beats of the heart—a rhythm which may cause the whiff, or breath-sound at its point of maximum intensity, to be mistaken for a cardiac murmur.

The simplest explanation of the influence of the heart beat on the respiratory murmur is that the heart kicks against a portion of the lung and forces some air out of that portion. This would explain some of the *bruits* heard during expiration. The sudden pressure, which during expiration would momentarily intensify the breath sound and so produce this systolic whiff, would act somewhat differently during inspiration. Alternating differences of pressure on a part of the lung in contact with the heart might produce jerkiness of the respiratory murmur in both inspiration and expiration, but in inspiration the greater intensity of the breath sound should coincide with the period of least pressure, and be cardio-diastolic in time. I have not been able to satisfy myself that this is so, though in some cases the sound seemed to be post-systolic. Parts of the lung distant from the heart might be influenced by the movements of the heart if consolidated lung intervened; and pleural adhesions might cause movements in the vicinity of the heart to be felt in more distant parts of the lung. Similarly the alternating distension and recoil of a large artery might affect parts in direct contact, or, more rarely, at a distance.

I have little doubt that these considerations will explain the broad fact that breath sounds may be rhythmically modified in intensity by the movements of the heart, but I cannot pretend to explain the physical detail in all the various conditions in which this sign may be noticed.

A less common form of this modification of the breath sounds by the impulse of the heart is exemplified in the following case:—

CASE XXV.—A. F., male, aged 19. Large, over-acting heart, with mitral disease from rheumatic fever. The respiratory sounds are jerky all over both sides, back and front, with the rhythm of the heart beats. The interruptions are only noticeable during inspiration, and are especially distinct towards the end of inspiration. A murmur or whiff is thus produced, which is heard most clearly below the tip of the left scapula.

Here we see the connection of the whiff with the interrupted or jerky respiration which is sometimes noticed with an over-acting heart. The occurrence of such jerky breath sounds is referred to in most textbooks on examination of the chest, and when, as in the foregoing case, the jerky respiration is heard all over the chest, its significance is not likely to be misunderstood. When, however, the distinct whiff or murmur, which was here present below the left scapula, is alone audible, without jerky breathing elsewhere, there is more risk of mistaking the meaning of the sign.

There is little significance in the sign *per se*, though I believe it is always associated with a general debility. The real importance of a recognition of the origin of the murmur lies in the risk of mistaking it for a sign of disease of the heart valves, and of suspecting also some lung mischief from the apparent conduction of a cardiac murmur to a distant part.

It is not to be supposed that a physical sign which is so frequently present should have hitherto escaped notice, but I can find little comment on this *bruit* in medical literature. The late Sir B. W. Richardson[3] drew attention to this cardio-pulmonary sound under the title of An Auscultatory Sound produced by the Action of the Heart on a portion of the Lung, and recorded three cases which had come under his notice. All these cases ended fatally, and Richardson was from this led to consider that the sign might have some serious significance. In each case the murmur was heard on the left side of the chest, in the neighbourhood of the nipple, and *post mortem* a piece of lung was found to be drawn down between the left ventricle and the thoracic wall, where it was held by adhesions. In one of the cases the pericardium was also adherent to the lung. Woillez,[4] in reporting a case of thoracic deformity, notes that the vesicular respiratory sound was reinforced at each pulsation or dilatation of the aorta, and refers to Richardson's paper for examples of a similar modification of the breath sounds. Richardson's cases are still referred to, and apparently few cases of this common physical sign have been recorded.

Before the introduction of instruments for auscultation, and even up to the time when the binaural stethoscope came into use, this sign would probably have escaped recognition except by the masters of auscultation. Now that we have means which are in the reach of all for intensifying the chest sounds, it becomes more necessary to call attention to sounds which may mislead the auscultator. Most physicians with experience of chest diseases must have noticed this sign frequently, and have referred it to its proper cause. I know that this is so with some of our best known specialists. But amongst the greater number of practitioners to whom I have mentioned or demonstrated this respiratory "whiff," its occurrence seems to have been unsuspected.

The intensity of the sound varies considerably. Sometimes it is only heard by careful attention, and would be easily overlooked; at others it may even be heard at some distance from the patient (as in Case IX). It is in the more obvious cases that the sign is the most misleading.

NOTE.—Since the above article was written, a new work on Diseases of the Lung has been published (*Diseases of the Lung*, by Kingston Fowler, M.D., and Rickman Godlee, F.R.C.S.), in which this respiratory "whiff" is mentioned. Dr. Fowler, however, appears to consider that it occurs only in cases of tuberculosis of the lung; the cases recorded in this paper show that this is not the case.

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[1] BRITISH MEDICAL JOURNAL, March 23, 1895, p. 645. [2] A case resembling this very closely is published in the *Lyon Médical* for September, 1897 (t. lxxxvi), p. 39, by Dr. L. Bonnet under the title "Bruits Pulmonaires Rythmés par le Cœur." [3] *Medical Times and Gazette*, 1860, i, p. 187. [4] *L'Union Médicale*, tomes 5-6, p. 515.

AN EXPERIMENTAL INQUIRY INTO CIRRHOSIS OF THE LIVER.*

BY

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Previous Researches.

Numerous attempts have been made to gain some insight into the causation of cirrhosis of the liver in man by the artificial production of an interstitial hepatitis in animals.

During the last two years we have been carrying on a series of experiments to obtain a true cirrhosis in animals by various methods, and it is our intention in this paper merely to deal with the results we have obtained by ligature of the bile ducts.

Before describing our experiments it is as well to review shortly the results obtained by other observers on this subject. As early as 1866 Leyden[1] ligatured the common bile duct and obtained degeneration of the hepatic cells: while Meyer[2] in 1872 found by the same means dilatation of the biliary passages and increase of the intralobular and extralobular connective tissue in cats. The same results were obtained by Wickham Legg.[3]

Charcot and Gombault,[4] Chambard,[5] Foà and Salvioli,[6] experimented on rabbits and guinea-pigs, and the ligature of the bile ducts always caused in these animals, in addition to the results already mentioned in cats, necrotic foci.

Since these experiments were carried out in the pre-antiseptic days it was impossible to say how much might be due to sepsis and how much to the direct ligature of the bile ducts. In fact Litten[7] considered the increase of connective tissue was not due to the ligature of the bile ducts but entirely accidental, the result of the inflammation of Glisson's capsule.

Lahousse,[8] Beloussow,[9] Camalis,[10] E. Pick,[11] and Gerhardt[12] all subsequently worked with antiseptics, and claimed that even when antisepsis was carefully carried out they found new connective tissue present in the liver after the ligature of the common bile duct. Steinhaus,[13] however, working with strict antiseptic precautions, could never find any increase of connective tissue in guinea-pigs thus experimented with.

It might be thought that the differing results obtained by these observers were due to the time which elapsed between the operation and the killing of the animal, as after ligature of the common bile duct most of the animals die within a fortnight. Nasse[14] ligatured some of the hepatic ducts instead of the common bile duct, and thus was able to keep the animals alive for a longer period. He found that the ligatured duct dilated, and the lobe of the liver supplied by the duct showed an increase of connective tissue which finally caused atrophy of the hepatic cells. Josselin de Jong[15] employed the same methods, and kept his animals alive as long as six weeks. When strict antiseptic precautions were employed he found no evidence of diffuse fibrous formation in those lobes of the liver in which the hepatic duct had been ligatured, but merely necrotic areas which afterwards became encapsuled with connective tissue.

From this brief description of the results already obtained we see that there is plenty of room for further investigation on this point, and in order to settle the question more definitely we decided to keep our animals alive for a longer period. As a matter of fact, when we first began our research we were unaware that others had experimented by merely ligaturing one or more hepatic ducts instead of the common bile duct.

Operative Procedure.

In all cases we employed cats in this research, as so many rabbits suffer from psorospermosis, and this alone causes an increase of connective tissue in the liver. The animals were operated on under ether with strict antiseptic precautions. Only in one of the cases was there any sign of sepsis; this was the cat which died from peritonitis sixteen days after the operation, and happened to have got affected through some of the stitches giving way. The liver was carefully turned upward, and in all the experiments the left hepatic duct was ligatured, the other ducts being left free. As a rule a double ligature was applied, and in some cases the duct divided so as to make sure that the channel did not open up. Afterwards the animals were fed on milk and meat, and appeared perfectly well; in fact, in the majority of cases, except for a slight loss of weight which might be considered due to the confinement, they appeared as if nothing had been done. That the loss of weight was not due to the operation was seen by the fact that the animals which were thin at the beginning gained weight after the operation. In no case was any jaundice present, and the motions passed were the same as those normally seen with cats on this diet.

After a period of from five to six months the animals were killed with chloroform.

Macroscopic Appearances.

The naked-eye appearance of the liver was little altered; there was no apparent wasting of the left lobe, nor was the right obviously hypertrophied. On a more careful inspection it was seen that there was a slight degree of granulation of the surface of the left lobe, the granules corresponding to the hepatic lobules. This could be easily recognised when compared with the normal appearance of the right lobe. The left hepatic ducts were dilated to the size of a goose quill on the distal side of the ligature, and they contained bile, which in some cases was thickened, but in others little altered. On cutting into the left lobe the dilated biliary passages were seen here and there to contain coloured bile, but macroscopically there was otherwise little difference between the section of the left lobe and a similar section of the right lobe.

Microscopical Appearances.

On making microscopical specimens, two sections, one of the left and the other of the right lobe of the liver were mounted on the same slide, so that one was able thus by placing the sections in juxtaposition to observe more accurately the changes following the ligature, and compare any slight degrees of pathological difference in the two lobes.

There was found to be little difference in the microscopical examination in the general appearance of the hepatic cells on the two sides, though on the left the individual hepatic cells were usually irregularly granular, and the cell columns were generally narrower and clearer than on the right. On the left side, however, there was found a development of interlobular tissue separating the hepatic lobules, while on the right side there was no such interstitial tissue, or at the most, in some sections a few nuclei were noted lying between a limited number of lobules. The increase of connective tissue on the left side was most marked in those animals which had been kept alive the longest, and in these cases there was a slight shrinking of hepatic lobules which appeared to contain here and there new cells. Thickened blood vessels were noticeable in the interlobular tissue, the biliary passages were markedly dilated and their epithelial lining considerably folded longitudinally, and the lumen of these vessels sometimes contained greenish coagula. There was no appearance of vitreous degeneration, nor could any necrotic patches be demonstrated.[16]

Conclusions.

We thus see that in these cats we have obtained by ligature of the hepatic ducts increase of interlobular tissue.

So far the animals examined have only lived five or six months, and in none has there been a marked atrophy of the left lobe, as one sees in the true cirrhosis in man. The experiments are being continued for longer periods, when it is hoped to get more marked results.

* Towards the expenses of this research a grant was received from the British Medical Association on the recommendation of the Scientific Grants Committee of the Association.

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ACUTE FEBRILE CATARRH ASSOCIATED WITH INFLAMED GLANDS OF HEAD AND NECK.

BY J. SNOWMAN, M.R.C.S.ENG., L.R.C.P.LOND.

THE main point of interest which concerns the condition treated of in these remarks centres in the fact that they refer to a definite and specific form of disease which apparently has hitherto escaped adequate recognition and is certainly accorded no position in our official nomenclature of disease.

The symptoms suggest that the disease is the result of a general infection of bacillary origin, with local manifestations, confined to the glands of the head and neck. It begins absolutely suddenly, with rigors and pain in the back, pyrexia, rapid pulse, and profuse sweating. The temperature rises to 103° or 104° F., the pulse to 130, the tongue becomes coated, the urine is high coloured and scanty, and there is intense headache. So far this resembles the invasion of atypical influenza, but within twenty-four hours the headache changes in character, and is replaced by a series of exquisitely tender areas over the whole scalp, and each area is soon felt to correspond with an inflamed gland. The patient generally complains of painful bumps, and examination reveals a series of enlarged glands, varying in size from a pea to a chestnut, over the frontal region at the beginning of the hairy scalp; over the occipital region and the posterior cervical glands. At the same time there is usually a fully developed acute tonsillitis of a simple type. The disease easily yields to treatment, and runs its course in a few days. The febrile symptoms subside, the headache diminishes in intensity, and the painful glandular enlargement, which is pathognomonic of the condition, gradually disappears, leaving the patient somewhat prostrate. There is little to distinguish the whole course of an attack from an acute febrile catarrh, except this distinctive and unusually-localised glandular affection. It is difficult to recall any pathological state wherein enlargement of the minute lymphatic glands of the frontal and vertex regions of the scalp exists. We are, of course, familiar with the enlarged suboccipital glands in impetigo and morbus pediculosus, and the enlarged posterior cervical glands of secondary syphilis. The former, however, is a distinctly local affection, and the latter is a manifestation of a general toxæmia of a more acute, but still essentially similar, nature to that of tuberculosis or lymphadenoma. The peculiar glandular inflammation herein described may therefore well claim an independent position in the nosology of disease, having an acute well-defined onset running a definite course with unequivocal physical signs. The morbid process is probably that of a general infection. The *materies morbi* becoming arrested in the glands of the scalp, its nature and point of invasion are matters of speculation. Most glandular enlargements are associated with well-ascertained specific causes. On the other hand we have the glandular inflammation of parotitis, which is the only local manifestation of an acute specific fever, and we have an orchitis of a similar nature. These represent acute inflammation of glands of unknown etiology, with sudden onset and rapid subsidence, but as they do not concern lymphatic glands their analogy with the condition described in this communication is imperfect, but the morbid processes must necessarily be similar.

During the last three years at least six cases of this acute inflammation of the scalp glands have come under my notice, and one of them merits detailed description owing to the extraordinary tendency it displayed to relapse.

The patient is a lady aged 35 years, who until 1895 had good health. On January 16th she had what appeared to be an ordinary attack of influenza with pains in limbs, headache and sickness, and temperature 104°. The symptoms abated in a few days and rapid convalescence ensued. On January 26th, soon after leaving her bed, a relapse supervened with similar symptoms. Subsequent relapses occurred again on February 9th, 16th, March 1st and 10th, and another during April, in each attack the headache was agonising and the sickness very distressing. And each attack was accompanied by a series of inflamed and enlarged glands, mainly over the occipital region, varying in size from a pea to a filbert nut, and exceedingly tender. In all the patient had fourteen similar attacks, the last being on October 28th, 1896. She was then three months pregnant, and she remained free until April, 1898, when she suffered another attack precisely similar in all details, the enlarged lymphatic glands in the scalp being the most prominent feature.

The extraordinary tendency of this case to relapse suggested a malarial origin, but no antecedent history of this diathesis could be ascertained in this or in the other cases, and the exhibition of quinine did not prevent the recurrence of the attacks. On the whole it presents the closest analogy to epidemic catarrhal fever or influenza, which for some undetermined reason attacks especially the glands of the head and neck, as other varieties attack the lungs, nervous system, or intestines. The classical accounts of this disease do not, however, mention this peculiar manifestation. The only references to a similar condition in recent literature contain an epidemic of acute catarrhal fever associated with enlargement of the carotid lymphatic glands, which prevailed in Eastern Ohio from 1893 to 1896, described by Dr. Park West; and a glandular fever of childhood affecting mainly the cervical glands, reported by Dr. Dawson Williams.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

EPISTAXIS—A SIMPLE METHOD OF TREATMENT IN SOME CASES.

EPISTAXIS may of course be caused by many surgical affections of the nasal cavities. These require their appropriate treatment; for such cases I do not propose to make any suggestion. In many, however, apparently the cause is not strictly merely local, but is due either to the condition of the blood or to some degeneration of the coats of the blood vessels. In some of these cases I have found a simple application successful, when, as sometimes happens, position—local application of astringents, hot water douches, and pressure have failed. Sometimes too as in the country, astringents and other appliances are not at hand, and under such circumstances I would suggest the trial of the application to the back of the neck of very hot poultices, which I have found useful on more than one occasion. I am quite aware that the use of hot water bags to the spine has been proposed, and I presume they act in the same way as hot poultices, but hot water bags are not often at hand, whilst hot poultices can readily be obtained in the poorest houses and most remote districts. I have used linseed meal to make the poultices, but any other heat-retaining material would do equally well. The *rationale* of the success of the method is the effect produced on the vessels through the vasomotor system.

I may quote shortly one case in illustration. Many years ago I was asked at 7 A.M. to see an old lady whose nose had been bleeding for three hours. I found her very weak, and the bleeding not severe, but continuous. Local pressure and astringents had been tried without success. I applied a very hot linseed poultice to the back of her neck, and the bleeding at once stopped. This lady subsequently went to the country, and she informed me that when she again got a return of the bleeding, and it continued any time, she doctored herself successfully by the application of the hot poultice. The bleeding in her case was evidently due to degeneration of the coats of the blood vessels; she had a rigid radial artery.

ANTONY ROCHE, M.R.C.P.I.,
Professor of Medical Jurisprudence and Public Health, Catholic University, Dublin.

TRAUMATIC APHASIA.

IN connection with the case related under this heading in the BRITISH MEDICAL JOURNAL of November 19th, I wish to put briefly on record a case which resembles that in the substitution of a less familiar language after a brain injury.

Captain C., aged 38, a Norwegian, but living for some time at Newhaven, and habitually speaking English, returned in good health from a cruise on March 4th, 1891. Early on the morning of March 5th he was found unconscious on the deck without evidence of accident. He was carried on shore and attended by Mr. Cann, with whom I saw him next day. After purgation, etc., he had recovered consciousness, but was restless (not rightly sensible), muttering words in a language we could not understand, and paralysed as to right arm and leg, possibly in the lower part of face. He was drowsy; the temperature 98°, and the pulse 60°. The heart and eyes were normal. His words were found to be Norwegian, which he had not talked to anyone's knowledge for a long time past.

When I saw him again, on March 20th, he had had retention, vesical catarrh, etc., but had gradually improved, and spoke sometimes English, sometimes Norwegian, and not always sensibly. He seemed to get more excited on alternate days. Ultimately he got better, and in June 1892 came to see me after a voyage, having still some difficulty with the right arm and leg. He was not able to steer well; his memory was impaired, and he said that he was still always worse on alternate days. He gave a history of sunstroke years ago on the River Plate, and he says he has had one or two attacks like this one, which was presumably a hæmorrhage, not far from the left frontal convolution. I believe he is still a sailing master.

Hove, Brighton. E. Mackey, M.D.

THE HOT-AIR BATH IN THE TREATMENT OF ARTHRITIS.

Dr. Short's note in the Journal of November 26th on "Hot-air baths" proves the advantages to be derived from this mode of treatment in arthritis. His method is based, as he says, on the old hot brick and bag of salt lines. Now I wish to draw attention to the most recent form of superheated air generator in successfully dealing with a very large class of chronic affections. Last spring I saw the "Dowsing" system at work in Bath, and so struck was I with its possibilities that on my return to Harrogate I brought the matter before the Town Council, and advised that rooms should be fitted up with all the apparatus at present in use for the application of hot air. The result was that on August 28th the Council set apart for ladies and gentlemen rooms with every form of the Greville electro-generators. Since that date till the present (November 26th) 548 baths have been administered, the patients suffering from all forms of gout—arthritis, sciatica, lumbago, rheumatism, swollen and stiff joints, many of very old standing, and the result has been simply astounding. I have not time to give an account of the most interesting and remarkable cases occurring in my practice, but shall do so at an early date. Meanwhile I wish to point to one or two facts. The temperature of the chamber can be raised to 400° F. I have never given a bath under 300°, and have gone as high as 363°. The temperature of the patient's body whilst using the bath has never risen more than two or three degrees, and the pulse has scarcely been affected. There has not been such a profuse amount of perspiration in the limb enclosed as one would naturally have expected, but a general sweating over the whole body. The duration of the bath should run from 40 to 45 minutes, so that allowing for undressing and redressing, an hour and a-quarter may be taken as the average time occupied. These baths can be had in any place where there is a suitable electric current at command. I may add I have never seen any unpleasant symptom attributable to these baths, such as sickness, headache, or palpitation, and that the course runs from 3 to 10 or 12 days, according to the nature of the case, and as a rule it will be found advantageous to allow from two to three days' interval between each bath.

Harrogate. A. S. Myrtle, M.D.

Return of the Spanish Troops from Cuba.—According to the *Siglo Medico*, of 1,498 Spanish soldiers landed from the *Monserrat* at Cadiz, 800 were seriously ill. There were 34 deaths before the transport left Gibara, the port of embarkation, and 96 died on the passage. The Spaniards complain—apparently not without reason—that men were put on board the transport who were not in a fit state for removal. Our Spanish contemporary further states that the sick who were disembarked from the *Forgas* at Valencia were in a disgusting state of filth and neglect.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHARING CROSS HOSPITAL.

ANEURYSM IN A BOY AGED 15.

(By S. H. Berry, M.B.Lond., late House-Physician to the Hospital.)

The following case presents some unusual points which are perhaps worth recording. A. C., aged 15, errand boy, was just commencing a game of cricket; he had taken up the ball to bowl, when he suddenly fell down unconscious, cutting his forehead. He was brought at once to Charing Cross Hospital, but life was extinct. A *post-mortem* examination was made by Dr. Hunter on the following day, August 15th, twenty-three hours after death. The body was well formed, the pupils were equal, and there was no œdema. On opening the thorax the anterior mediastinum was found to be occupied by a large thymus gland; this was about the size of an adult hand, each lobe measuring 5½ inches in length. The weight of the whole gland was 2½ ozs. Both lungs were very adherent to the parietal pleura. The pericardium was distended with 12 ounces of blood clot. The ascending aorta for the first inch of its length was closely adherent to the pericardium, just below the line of reflection was a transverse tear in the aorta, ⅝ inch in length; below this was a large aneurysm of the aorta. The aneurysm was fusiform in shape, 4 inches in vertical and 3 inches in transverse measurement. There were a few small fatty patches in the wall of the sac, and at the point of rupture, and 1 inch around there was obvious thinning of the tunica media. The aortic valves were slightly thickened, but competent. The right and left ventricles were normal. In the descending aorta there were a few small patches of atheroma. There were no signs of syphilis, congenital or acquired; nor was there any history pointing to severe strain, the boy's most violent exercise being the use of dumb-bells. No history of rheumatism could be obtained.

The occurrence of aneurysm of the aorta at so early an age, and the persistence and enlargement of the thymus at so late an age, are both, I believe, very unusual.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

J. F. Payne, M.D., President, in the Chair.

Tuesday, December 6th, 1898.

Melanotic Sarcoma of the Pineal Body.

Dr. C. Ogle exhibited the brain of a woman, the surface of which was everywhere pigmented from a diffuse growth of melanotic sarcoma in the meshes of the pia mater; the cerebellum and pons were not involved. From this investing spindle-celled growth processes extended into the cerebral tissue, in the deeper part of which, moreover, there were a certain number of isolated nodules. The pineal body was enlarged from similar growth, so as to measure an inch and a half in greatest diameter; the cells were spindle-shaped and giant; the growth in this situation was the primary. There were no tumours in other parts of the body. The patient had been under treatment ten weeks and suffered from headache, progressive emaciation, intermittent aphasia, and hemiplegia, the last named at first temporary, afterwards persistent. The author also recorded a second case, in which the pineal body was enlarged so as to be an inch in chief diameter, from the growth of an alveolar sarcoma into which much hæmorrhage had taken place; there were in the section, moreover, spaces lined with columnar cells, the presence of which might be referred to a persistence of the retinal elements of the pineal eye found amongst lizards, or might be of the same kind as the spaces present in the pineal body of birds. The patient in this instance was a boy who exhibited a precocious puberty, but whose chief symptom was sleepiness.

When roused he could answer questions rationally. Paralysis of both external recti occurred later, but no paralysis of any other muscles. There was no headache or deafness; death occurred in a fit. Amongst the recorded lesions of the pineal body, simple cyst was the most common; teratoma, glioma, and sarcoma had been described, though the number of such showed the rarity of disease affecting this body. Sleepiness had been observed in two other cases, but the symptom was probably not connected with any loss or alteration of function in the structure in question, which presented all the marks of being only an ancestral relic of the pineal eye.

Glioma of Pineal Body.

Mr. T. W. P. Lawrence recorded the case of a boy dying with tuberculous meningitis, and in whom the pineal was enlarged to twice the normal size; its surface was slightly lobulated. The periphery of the enlarged body consisted of the displaced normal tissue, the enlargement being due to a diffuse gliomatous formation. The patient's illness lasted only ten days, and there was nothing attributable in the symptoms to the condition of the pineal body.

Syphilitic Enlargement of the Pineal Body.

Dr. J. R. Lord recounted this case. The body was about four times the normal size, although the latter varied somewhat in different individuals. The histological change consisted in an increase of the fibrous stroma—a hypertrophic cirrhosis. The patient was an insane woman, so markedly demented that it was difficult to say whether drowsiness constituted one of the symptoms or not. She was the subject of acquired syphilis, and suffered from epileptic seizures, and afterwards from hemiplegia due to gummatous disease of the opposite hemisphere.

Cysts of the Pineal Body.

Specimens of cysts of the pineal body were also exhibited by Dr. A. E. Russell and Mr. S. G. Shattock. In the former of the cases (where the patient's history was known) there were no symptoms referable to the lesion; death occurred from fracture of the skull.

Dr. A. W. Campbell recorded the cases of two cysts of the pineal body. In one the patient was an epileptic woman. The proper tissue was displaced by a central collection of fluid, the inner lining of the space consisting of a dense collection of cells pigmented probably from hæmorrhage, or which might represent pigmented elements of a pineal eye; beyond this were large, pale, oval cells, the nature of which the author had not been able to determine. In the second example of pineal cyst the patient was also a female epileptic.

Dr. A. E. Garrod showed a pineal cyst from a boy who died with diabetes, the pancreas being found fibrotic. He did not connect any symptoms with the pineal lesion.

Calcareous Deposition in the Pineal Body.

Dr. A. F. Voelcker exhibited a recent specimen of unusual degree of calcification. There were calcified formations in the choroid plexuses. The patient died with senile gangrene.

The President remarked that the formation of cysts in the pineal body was an illustration of the well-known liability of such to arise in obsolete structures. The origin of pigmented sarcoma was interesting, as being a new growth again arising in a residuary tissue, the pigment being probably connected with the origin of the body in a pineal eye. The symptoms arising in the course of pineal disease must be regarded as mechanically caused, seeing that there was no reason for thinking that the body under consideration performed any physiological function.

Card Specimen.

Dr. A. F. Voelcker: Undescended Testis from an adult (lying within the abdomen).

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Friday, November 11th, 1898.

R. L. Swan, F.R.C.S.I., President, in the Chair.

Ligature of Subclavian Artery for Secondary Hæmorrhage.

Mr. R. Bolton M'Causland read notes of a case of stab wounds of the left shoulder necessitating ligature of the left subclavian artery on the twenty-seventh day for secondary hæmorrhages. A shoemaker, aged 34, was admitted to Steevens's Hospital on February 16th, 1898, under his care with four stabs about the shoulder, one of which entered the posterior fold of the axilla. He was very blanched, but the wounds were stitched up and dressed first on the fifth day. Slight bleedings came on on the seventh, eighth, ninth, and tenth days, necessitating plugging of wound; these ceased till the eighteenth, nineteenth, and twenty-first days, then a profuse hæmorrhage on Sunday, March 13th. Two days afterwards three courses seemed to present themselves (1) amputation at shoulder; (2) ligature of subclavian; (3) to enlarge the wound and look for the bleeding vessel. The latter procedure was first adopted, but profuse bleeding then came on; the wound was plugged with turpentine compresses, and the subclavian tied on the same side with three strands of No. 4 silk. No bleeding from the date of operation; the subclavian wound healed at once under two dressings; the axillary wound was dressed on the second day, and under a daily dressing granulated rapidly; healed on thirty-eighth day. Wild, uncontrollable delirium came on in forty-eight hours after operation and lasted nine hours; opium enemata and bromides seemed of use; it passed away as rapidly as it came on. The temperature remained normal from the second day and the man made a good recovery; he was out of bed on the twenty-fifth day. Morphine, arsenic, and quinine were used to combat pains in the shoulder, arm, forearm, and hand, also massage, which was of great benefit. He was now in good health, had almost complete movement in the shoulder, but could not hold his work in his left hand for more than two hours. The temperature in both hands was the same, though the patient complained of the left being colder. Radial pulsation appeared feebly on the thirty-fourth day after operation, and had not increased. The wounds were all soundly healed.

Mr. Henry Gray Croly would be disposed, in case of a stab in the neck, with severe arterial hæmorrhage, not to trust to pressure, but rather to enlarge the wound and seek for the bleeding points. Stabs at the bend of the elbow, where compression and digital pressure were applied, generally resulted in secondary hæmorrhage, laying open the wound, looking in a placental-like mass for a cut artery—an operation of extreme difficulty. The same applied to wounds of arteries in the vicinity of the wrist.

Mr. T. Myles said it was generally accepted, in cases where the hæmorrhage from a wound had ceased, that the Guthrian rule of exposing the wounded vessel might be held in abeyance; and he thought that, on the whole, this was fairly justifiable, subject to certain limitations. Amongst the circumstances governing it he thought that one was the extent and severity of the previous hæmorrhage and the capacity of the individual to withstand more hæmorrhage. If there had been much hæmorrhage in this case it would not have been good to allow the patient the chance of much further hæmorrhage. If the cessation of hæmorrhage was not due to weakness of the heart, then he thought any surgeon would be justified in postponing the operation and waiting for further developments.

Mr. Chance had found ligature of the third stage of the subclavian a very difficult operation. He had performed it in order to starve a large sarcoma of the axilla. Undoubtedly, when an artery was divided, if it could be tied at the seat of division, it was the ideal operation, no matter at what period it was done.

Mr. Lentaigne referred to the success which attended the ligation of arteries nowadays as compared with that in the old septic days. He agreed that the artery should be cut down on and tied, especially with the dictum that when the hæmorrhage had ceased from failure of the heart's action from a very weakened patient, the bleeding artery should be cut down on at once at the seat of injury.

Mr. M'Causland, in reply, said that the wounds from which the bleeding came were not situated in the neck. If there was decided arterial hæmorrhage, he agreed with Mr. Croly that the proper course would be to cut down on the vessel and tie it at once. In answer to Mr. Myles, he said that the stopping of the hæmorrhage in the first instance was not due to failure of the heart. Much blood was lost, but, on the following day after the stab; he did not think that it was a very large vessel which was wounded, as otherwise he would

have cut down on the artery and ligatured it. Bleeding did not occur on the fourth or fifth days, but the dressings became blood-stained on the seventh, eighth, ninth, and tenth days.

Coxa Vara.

Sir Thornley Stoker read a paper on coxa vara, which was published in the British Medical Journal of November 26th.

Section of Medicine.

Friday, November 18th, 1898.

J. W. Moore, M.D., P.R.C.P.I., President, in the Chair.

Recent Clinical Experiences of Septicæmia and Enteric Fever.

The President, after a few introductory remarks, submitted a series of cases of what he believed to be manifestations of septicæmia. The first case was that of an old gentleman, who died of septicæmic endocarditis occurring in the wake of chronic disease of the gall bladder. The second assumed the form of sapræmic enteritis in the grandson of this gentleman. The third was an instance of acute desquamatic dermatitis apparently caused by contact with toxic graveyard soil. The President also presented clinical records of two unusual cases of enteric fever. In the former of these two true relapses occurred within two months. The first relapse ran a course of sixteen days, the second one of fourteen days. In the other patient the brunt of the poison seemed to fall on the tonsils, and subsequently on the nervous centres. The intestines apparently quite escaped. Defervescence took place by crisis—not, as was usual, by lysis—on the sixteenth day, the temperature chart in this respect resembling typhus rather than enteric fever.

Acute Hæmorrhagic Ascites.

Dr. Finny recorded the clinical notes of a case of ascites which occurred in a gentleman, aged 42, and which ran its fatal course in three months from its onset. Paracentesis was required five times in the last three weeks, and removed 6½ gallons by simple drainage. The fluid from first to last was like blood in colour, and on standing deposited a soft, deep-stained sediment one-eighth or one-tenth of the volume. The patient was apparently, up to the last fortnight of his life, a healthy, well-nourished man, of a good fresh colour, a bright disposition, and of very active habits, and even up to a month before his death was able to go out partridge shooting and walked eight miles, and all through his illness he had a good appetite and partook of solid food. He never experienced any gastric or intestinal distress, and were it not for the great size and inconvenience of the abdomen he made no complaint. However, he was very sensitive to any jolting in a carriage and to any slight impact against the epigastrium. The primary diagnosis, based on the ascites and the apparent diminution of liver dulness, yielded after the second tapping to that of malignant disease of the omentum, although no tumour could be detected before or after tapping. This was confirmed by the *post-mortem* examination, which revealed a remarkable condition of the parts. The liver was smooth and healthy, but pushed out of sight of the intestines, which were pressed to the right side by an enormous thickening of the transverse mesocolon and omentum by a soft growth, which filled up the whole of the left side of the abdomen, and was in part 2 inches thick, and which readily broke down on handling and oozed blood from every part. Dr. Purser pronounced the neoplasm to be sarcomatous. Dr. Finny pointed out the extreme rarity of hæmorrhagic ascites; of its being in such quantity as to make tapping imperative; of its so rapidly re-forming; and of the absence of all inflammatory symptoms or rise of temperature.

Dr. Little had never seen a case of ascites in which there was hæmorrhagic fluid. He had little doubt, however, as to the diagnosis, because they all knew that hæmorrhagic fluid drawn from the thoracic cavity almost invariably indicated a new growth in the thorax. As regarded the character of the urine, he recollected a case of an old lady who was about to be tapped. He caught sight of a vessel under the bed half full of perfectly clear urine, and he therefore ventured to say that she had not got cirrhosis of the liver. He then found, on tapping, abundant growths all through the abdomen. Murchison's observation, that they should always doubt the existence of cirrhosis of the liver unless they saw deeply-pigmented urine, was worthy of consideration.

A Country Herbalist's Cure for the "King's Evil."

Dr. J. Knott read a paper on this subject. The details had been obtained from a sexton in the west of Ireland. The cure was carried out in three stages: (1) The "sore" was dressed with a preparation of the leaves of the cuckoo sorrel. (2) It was dressed with a preparation of the root of the meadow-sweet. (3) The healing was completed under a plaster compounded of bees' wax, sheep suet, yolk of egg, and first flour. Dr. Knott had found, on looking into the literature of herbal simples, that both the plants employed in this rural remedy had enjoyed a high reputation during the ages in which such remedies were specially prized. The treatment of "scrophulous ulcers" by the application of these herbs was mentioned by Dr. Beddoes, and the account of it was quoted from this writer by Dr. Winterbottom, who compared it with a very similar treatment of "scrophulous sores" which he had found in general practice among the aboriginal African natives, about Bassa, on the Grain Coast. Lengthy quotations were given from a number of authorities, showing the extensive employment of these remedies in the herbals and pharmacologies of past ages.

Dr. Cox pointed out that Dr. Knott had omitted to refer to a book which had considerable interest on the subject, and which was written by Keogh, a distinguished graduate of Trinity College, in the last century.

West London Medico-Chirurgical Society.—At a meeting on December 2nd, Dr. S. D. Clippingdale, President, in the chair, Dr. J. B. Ball showed: (1) A case of Black Tongue in a girl, aged 4 years. The dark surface occupied an area in front of the circumvallate papillæ, measuring about ¾ inch across and 1½ inch from before backwards, the anterior part and edges of the tongue being free. The condition had been present for two months, and had caused no trouble. (2) A case of Rheumatoid Arthritis in a boy, aged 10 years. The disease had come on after influenza two years previously, with pains in the legs and arms, and since that time there had been repeated attacks of pain and swelling of the joints, together with fever. The cases were discussed by Mr. McAdam Eccles, Dr. Bennett, and the President.—Dr. P. Abraham showed: (1) A case of Psoriasis in a girl, aged 5 years. (2) A case of Lichen Ruber Acuminatus. The cases were discussed by Dr. Whitfield.—Dr. Alderson showed a case of Recovery following Cirrhosis of the Liver. The patient had been tapped several times for ascites. Since the last tapping, more than a year previously, there had been no return of the ascites, and the patient was able to do his work. The case was discussed by Drs. Travers, Chapman, and Caley, and Messrs. Bidwell and McAdam Eccles.—Mr. McAdam Eccles showed: (1) A case of Submaxillary Cyst in a woman aged 39; (2) a case of a Swelling in the Region of the Parotid, which had lasted two years. The patient had several bad teeth. These cases were discussed by Messrs. Lloyd and Bidwell.—Mr. Keetley showed a case of Comminuted Fracture of the Olecranon treated by wiring. At the time of the operation a large piece of loose bone was removed; nevertheless the result was excellent, and movement of the joint was practically unimpaired. Observations on this case were made by Mr. McAdam Eccles.—Dr. Whitfield showed a case of Pityriasis Rubra in a man aged 48. The disease had lasted ten years. Remarks were made by Dr. Abraham.

West Kent Medico-Chirurgical Society.—At a meeting on December 2nd, Dr. Morgan Dockrell, President, in the chair, after several new members had been elected, Dr. A. E. Sansom delivered the Purvis Oration on "Some Practical Points in the Treatment of Heart Disease." Afterwards a largely attended *conversazione* was held, over seventy members and guests being present.—Mr. Thomas Moore gave a practical demonstration on the working of the Roentgen rays, being assisted by Dr. Pepperdene and Mr. Ernest Payne, the former of whom also showed a Wydt-Rocheford Coil. Among the exhibits in the screen room were: Fracture of patella, twenty-five years ago, upper fragment drawn up 8 inches; fractured arm; rabbit in bag; bird in cage; ribs.

hands, arms, heart, diaphragm, legs, etc. Over 200 radiographs were exhibited by Mr. MOORE, Mr. POLAND, Mr. PAYNE, and Mr. WEBSTER.—Mr. COOPER had charge of a room in which a number of beautiful Fluorescent Tubes lent by Dr. Pepperdene were exhibited. These included tubes showing many different fluorescing effects in varied vacua and others showing the spectra of the new gases, helium and argon.—Mr. LESLIE MILLER lent an apparatus for demonstrating Wireless Telegraphy.—Mr. ERNEST CLARKE showed a number of interesting microscopic specimens; and Messrs. Maw, Son, and Thomson gave an exhibition of Surgical Instruments and Appliances.—A feature of the decoration was a beautiful collection of Australian Ferns kindly lent for the occasion by Dr. Sansom.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 24th, Dr. ALFRED ROBINSON (President) in the chair, Mr. PYE-SMITH read a paper to introduce a discussion on Intestinal Obstruction with reference to differential diagnosis and treatment. Commencing with a large and most markedly acute group where the bowel was strangulated by some internal band or other cause, he insisted on the close similarity of such cases with cases of strangulated hernia, and advocated equally prompt treatment by operation. The diagnosis and treatment of other acute and chronic groups were then discussed, and the opinion expressed that real differences in the symptoms were normally to be found between cases of intestinal obstruction owning widely different causes, and that, in spite of admitted difficulties, the clinical problems might often be solved if we had before us a full, early, and correct history of the case, if we made a careful and thorough examination of the patient and analysis of his symptoms, and if we allowed the probabilities suggested by age, sex, and statistics to have their full influence.—The PRESIDENT, Dr. PORTER, Dr. SINCLAIR WHITE, Dr. GWYNNE, Dr. KAY, Mr. ARCHIBALD CUFF, Dr. WILKINSON, Dr. LEONARD GILES, Dr. BURGESS, and Dr. KEELING took part in the discussion.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 15th, Dr. BERRY (President) in the chair, Mr. ROBSON gave a Microscopical Demonstration.—Dr. MAJOR showed a series of Photographs of a Cretin under treatment by thyroid extract.—Dr. CAMPBELL showed a Liver weighing 109 ounces, a very marked instance of fatty and fibrous degeneration.—Dr. KERR showed: (1) A specimen of Malignant Disease of the Larynx, removed by laryngectomy; (2) specimen from a case of Lateral Sinus Thrombosis.—Dr. GLADSTONE showed a patient, and read notes on a case of Grave Anæmia, which had been successfully treated with arsenic and general massage.—Dr. RABAGLIATI read a paper on Some Effects of Frequent and Infrequent Feeding. He said he had had a considerable amount of experience now in treating patients by recommending them to eat twice a day only, in place of the three, four, five, or even six times frequently adopted. He noticed that with a few exceptions due to alcohol, syphilis, heredity, and the like, the main predisposing cause of nearly all the illness he had been in the habit of seeing for the last 30 years was too frequent and too abundant feeding. The view of Dr. King Chambers that 3 lbs. avoirdupois of food was a reasonable daily average was unfavourably criticised, the author holding that Ranke's estimate of 100 grammes of proteids, 100 grammes of fats, and 250 grammes of carbohydrates, in all about 1 lb. avoirdupois of mixed food, was far nearer the proper quantity: 3 lbs., he thought might, and in fact did, frequently produce starvation, due to over-repletion. As examples of starvation due to over-repletion, Dr. Rabagliati instanced callous ulcer of the leg, rheumatism, and cancer. Dr. HIME pointed out that the reader of the paper had produced very little evidence in support of his statements.

BRITISH GYNÆCOLOGICAL SOCIETY.—The annual dinner took place at the Café Monico on Thursday, November 24th. Dr. H. MACNAUGHTON JONES, President, was in the chair, and about eighty members and their guests were present, amongst whom were Sir William Turner, President of the General Medical Council; Surgeon-General Jameson, C.B., Director-General A.M.D.; Dr. Ward Cousins, President-elect B.M.A.; Mr. R. L. Swan, President R.C.S.I.; Mr. Edmund Owen, President Medical Society, London; Dr. Dudley Buxton, President Society of Anæsthetists; Sir W. Broadbent, Bart.; the Master of the Society of Apothecaries; Sir P. Smyly, Sir. J. Crichton Browne, Dr. Clifford Allbutt, Dr. Lombe Atthill, Dr. Mansell Moullin, Hon. Treasurer; Dr. F. F. Schacht, Editor of the Society's *Journal*, and Dr. A. Giles, Hon. Secretary. After the loyal toast of "The Queen and the Royal Family" had been duly honoured, Sir J. CRICHTON BROWNE proposed "The Sister Medical Societies"—not parent or kindred societies, but sister societies, ladies all, of the family of medicine, but each with characteristics of her own. First came that stiff and stately dowager and motherly matron, the Royal Medical and Chirurgical Society; next that pensive and melancholy widow, the Pathological; that practical and busy housewife, the Clinical; that crazy wanton the Medico-Psychological Association; that fine old monthly nurse the Obstetrical Society; those fascinating twin damsels, the Hunterian and Harveian; that demure and pious body, St. Luke's Guild; that convivial old lady, the Inebriety, and that skittish young girl, the Roentgen Ray Society. Like Canova's Graces, with arms intertwined, they should mutually support one another. Dr. CLIFFORD ALLBUTT in returning thanks dwelt on the great American medical societies, and thought America was now sending out such learned men that we in Great Britain would soon have difficulty in holding our own in the race. Dr. J. SINCLAIR thought the provincial societies might teach the metropolitan societies something. Sir WILLIAM TURNER proposed "The British Gynæcological Society," an offshoot of that "fine old monthly nurse" the Obstetrical Society, now some 14 or 15 years old, and doing good work. The PRESIDENT replied: he thought that gynæcology was closely allied to every other branch of medicine and surgery. Dr. GRANVILLE BANTOCK proposed "Our Guests." Mr. EDMUND OWEN, in replying, said it had been suggested that at the great exhibition in Paris in 1900 the members of the Gynæcological Society should show "all the parts removed," but it was found that a whole annexe would be required for the purpose. The question being referred to the authorities it was suggested by them that it would be much more interesting to have an exhibition of "the parts that remained." Mr. R. L. SWAN also returned thanks. Dr. ATTHILL proposed "The President," who replied; and Mr. B. JESSETT gave "The Officers of the Society," to which Dr. MANSELL MOULLIN, Treasurer, and Dr. SCHACHT (Editor of the Society's *Journal*) responded. The speeches were interspersed with songs by Miss B. Willey, Mr. W. Andrews, and Mr. J. Bromley.

REVIEWS.

THE SURGICAL AFFECTIONS OF THE STOMACH AND THEIR TREATMENT. By ARTHUR E. BARKER, F.R.C.S., Professor of the Principles and Practice of Surgery, etc., and Surgeon to University College, Hospital. London: The Medical Publishing Company. 1898. (Crown 8vo, pp. 158, 6 figures. 2s. 6d.)

THE surgical affections of the stomach are, at the present time, exciting so much attention from surgeons in all parts of the world, that it is a matter of interest to have an expression of opinion upon the subject from Mr. BARKER. This small work is a reprint of a course of lectures delivered as part of the winter session's course at University College, London. It does not read like an extract from a systematic course, but is rather a series of reports of operations, with a mass of statistics as to mortality, duration of life, diseases for which operations are undertaken, and so forth. Mr. Barker has to some extent disarmed criticism by telling us in the preface that the lectures were taken down "verbatim" in shorthand, but some errors, almost inevitable in shorthand reports, might have been eliminated, and the mode of expression might in some places have been improved, as, for instance, the statement, "Now the first matter of scientific importance which arises out of the statistics is the great industry of Mr. Goffe." Mr. Goffe has certainly prepared a large number of statistical tables with very great care, and in a highly creditable manner, but to say that his industry is a matter of scientific importance probably does not represent the author's meaning.

Mr. Barker has had an unusually large experience of cases of perforated gastric ulcer, and in other branches of gastric surgery he gives the results of a wide and comprehensive study of the published works of others. The result is an accurate statement of the present position of the surgery of the stomach. In some details, minor ones it is true, he differs from Professor W. W. Keen, of Philadelphia, whose views have recently been expressed in a series of articles in the *Philadelphia Medical Journal*.

The volume contains six lectures. In Lecture I a general outline of the course is given, reference is made to early experimental work, and to the application of this to the human subject. This is followed by a brief outline of the various operations performed on the stomach, and a division of them is adopted into those performed for malignant disease and those for non-malignant conditions. A description is given of the various sutures employed, but mention of Halsted's suture is omitted. The operation of gastroplication is described as unscientific and undesirable. If done, as Mr. Barker supposes, for pyloric stenosis, those epithets would be justified; but for gastric atony, Keen says, "the unanimous conclusion of those who have done the operation is in its favour."

Lecture II contains descriptions and statistics of pylorectomy and gastro-enterostomy, with a comparison of the anterior and posterior methods of performing the latter, in which preference is given to v. Hacker's operation.

Lectures 3 to 6 are occupied with non-malignant diseases, and the following useful classification is adopted:

Group 1.—Emergency operations:
- *a.* Gastrorrhaphy for perforation.
- *b.* Gastrotomy for hæmorrhage.

Group 2.—Remedial operations:
- *a.* Divulsion for pyloric stenosis.
- *b.* Pyloroplasty for pyloric stenosis.
- *c.* Gastroplasty for hour-glass stomach.
- *d.* Gastro-anastomosis for hour-glass stomach.
- *e.* Gastroplication for dilated stomach.
- *f.* Gastrolysis for adhesions.

Group 3.—Preventive operations:
- *a.* Pyloroplasty for pyloric stenosis.
- *b.* Gastro-enterostomy for all the above.

The illustrations to the work are clear and distinct, and the printing is good.

The book contains much useful information, and a little more care bestowed upon the editing would have made it more worthy of Mr. Barker's reputation.

The Effects of the Diamond Jubilee on the Resources of the Voluntary Charities: the Volume of Charity: is there a Maximum? By Sir Henry Burdett, K.C.B. London: The Scientific Press. 1898. (Cr. 8vo, pp. 43. 1s.)

In this little tract Sir H. Burdett has collected and compressed the arguments in favour of the Prince of Wales's Hospital Fund which his other public utterances have already made familiar to our readers. Still, familiar though they may be, it is well worth while to have them stated so plainly and tersely, and we doubt not that all who are interested in the Fund will turn to its pages with advantage.

Not that we can wholly praise the spirit in which Sir H. Burdett approaches his subject. He shows too great an impatience of difference of opinion, branding those who deny the utility of large public collections in aid of our hospital systems, such as the Prince's and the Sunday Fund, as "pessimists," charging them with "little regard for accuracy and truth," saying that they ought to be "properly ashamed of themselves," and even hinting that they ought to be forcibly suppressed. All this is to our minds most undeserved. Opposition to the Prince of Wales's Fund has no more connection with pessimism than with disbelief in the Copernican system, and even if the Fund has been ever so successful a man need not be in any way ashamed of having expected that it would fail; while, if their opposition has given him an opportunity to demonstrate the complete success of the Fund, Sir Henry ought to thank his opponents instead of scolding them. But does he demonstrate it? Certainly not, as far as the permanent success of the Prince's Fund goes, for this can only be asserted when a capital sum has been collected which will produce £100,000 a year or at least when that sum has been contributed for many consecutive years. We think, however, that he has succeeded in showing that the "Diamond Jubilee" exercised no adverse influence on the funds of the hospitals: and that in a society so rich and so easily circumstanced as that of London at present is, there is practically no limit to the sum which may be collected by any appeal which reaches the public heart. The pamphlet also shows how enormous are the sums now spent on charity; so that the immense contributions to the Indian Famine Fund, and to the numerous Jubilee celebrations, did not prevent the metropolitan hospitals from obtaining larger contributions (including subscriptions, donations, and legacies) in 1897 than in any previous year.

We need hardly say, however, after what we have previously written on the subject, that this goes a very short way towards convincing us of the present success of the Prince of Wales's Fund, although it may be taken to prove that such success is possible. The Fund was intended to elicit subscriptions from those who had not subscribed before. Now, judging from the published reports, this has not yet been accomplished. The people who bought "Jubilee stamps" may or may not buy the stamps now on sale. There are no newspaper collections of shillings or pennies this year, as there were last, and the subscribers of large sums are mainly persons who subscribed already to individual hospitals. It is true that we do not know to what extent this has diverted subscriptions from those hospitals, but few people doubt that it has done so in some degree. Without, therefore, feeling that we deserve the name of "pessimists," we believe that the time has not yet come to pronounce any definite opinion as to the success of the Fund; and we would urge on its promoters the necessity of organising some plan for raising small subscriptions from the lower middle class, who, as Lord Lister truly said, have not yet been effectually attacked.

Meanwhile, we commend Sir H. Burdett's pamphlet to our readers' careful perusal.

Beiträge zur Klinik der Rückenmarks und Wirbeltumoren. (A Contribution to the Clinical History of Tumours of the Spinal Cord and of the Vertebræ.) By Hermann Schlesinger. Jena: Gustav Fischer. 1898. (Roy. 8vo, pp. 208, 2 Plates and 47 Engravings, 6s.)

This account of the tumours of the spinal cord and its surroundings is mainly a statistical investigation of original (no fewer than 56 personal observations are recorded) and published cases, together with a copious bibliography. A work of this kind appeals almost solely to the "specialist," and no important generalisations are here recorded, so that an abstract of its contents is hardly possible. On the other hand, the book is one which must prove of the greatest value to future investigators in the field which it covers. The author admits frankly that to some extent he has been forestalled by the admirable work of Bruns, but he has wisely devoted his attention more particularly to those points upon which his researches amplify those of his predecessor, and he has especially studied from a statistical point of view the pathological frequency and anatomical distribution of various tumours.

Of tumours implicating the spinal cord, it is found that rather more than one-half originate in the vertebræ, whereas 42.3 per cent. are of intravertebral origin; of the total number nearly one-fifth are intramedullary, and rather more than one-tenth grow from the dura mater, others being growths of the nerve roots, cauda equina, arachnoid, and pia mater. Analysing the pathological structure of these tumours, it is found that among 400 cases which arose within the vertebral canal and not from the bones, we have the following order of frequency: Sarcoma (107), tubercle (64), echinococcus (44), fibroma and neurofibroma (33), gumma (28), glioma (20), and other rarer varieties. Of the 400 cases, 115 presented multiple spinal tumours at the necropsy. In about one-third of all cases was surgical intervention possible. All these varieties of tumour are carefully described, and numerous interesting examples are collected. The fact, which has been noticed by nearly all writers, that primary growths of the cord and meninges do not appear to produce metastases, is here emphasised. Vertebral growths—principally secondary sarcomata and carcinomata—are also fully considered.

The question of etiology is very fully dealt with, and

statistics are given of the age and sex distribution of various forms of tumours, from which we arrive at the following summary of probabilities: In a child under 10 years of age an intramedullary growth is probably tuberculous, an extramedullary growth, lipoma, or (after the fifth year) sarcoma. In the second decennium an intramedullary tumour is solitary tubercle or glioma, an extramedullary tumour multiple sarcoma (in females) or metastatic sarcoma or echinococcus (in males). Between the twenty-fifth and fortieth years we find especially intramedullary tubercle and glioma, extramedullary sarcoma, and echinococcus. In later life intramedullary gummata prevail, with various forms of extramedullary tumours. Injury is regarded as an important factor in the development of tumours, but as working by stimulation of a pre-existing growth rather than by an original excitation of growth. Many of the other etiological factors referred to are of the most doubtful validity.

The clinical history, diagnosis, and treatment of tumours of the cord are briefly dealt with, and we find here little that calls for comment. Useful rules are laid down for the selection of cases amenable to surgical treatment, but the technique and results of surgery are not touched upon.

Special chapters deal with various points which have attracted the particular attention of the writer, these including gummata, the radical cure of which by means of drugs is regarded as highly doubtful, vasomotor troubles, segmental localisation, and vesical disturbances. The account of vasomotor troubles is short but interesting, these being divided into four groups, namely: (1) Paralysis of isolated vascular tracts in the limbs, leading to cases of coldness and lividity often associated with hyperidrosis. (2) Raynaud's "symmetrical local asphyxia" and gangrene. (3) Erythromelalgia. (4) Transitory œdema of rapid onset and disappearance. And lastly we may call attention to some interesting observations relating to the localisation of the vesical and rectal spinal centres; the vesical centres are supposed to be bilateral and localised in the fourth and third sacral segments, probably towards their dorsal aspect; the spincter and detrusor are separated; the rectal centre is also separated by some little distance from those of the bladder, and probably lies lower down, in the fourth sacral segment. So few observations have as yet been made of the lower sacral centres that the cases here recorded obtain an exceptional value.

NOTES ON BOOKS.

IN an introduction which he has written for *The Sanitation of Domestic Dwellings*, by F. LATHAM, C.E. (pp. 132, illustrations 98. London: The Sanitary Publishing Co., Limited. 1898. Cr. 8vo, pp. 144, 98 illustrations. 2s. 6d.), Mr. Baldwin Latham confidently recommends the compilation of his nephew "to all sanitary officers and others interested in domestic sanitation." The utility of the manual to sanitary officers, however, is, or should be, very questionable, for there must be few sanitary officers who will discover anything within its narrow compass of 144 small pages, a considerable number of which are occupied by familiar illustrations, which was not already well known to them. For those who are preparing to become sanitary officers, or who are, for other reasons, desirous of mastering the essentials of sanitary construction, the book will prove of service, although its value is restricted by the very sketchy manner in which many branches of the subject are treated. In the author's opinion, for instance, it is essential that soil pipes should be tested with the water test "by plugging the end of the soil pipe and flushing the watercloset. Where there is a second floor of waterclosets using the same soil pipe the lowest closets should be plugged by means of" a patent air stopper (p. 113). Surely to be of value to the student information should be given in greater detail than this. The subject matter, though often indifferently expressed, is, so far as it goes, accurate and up-to-date.

IN *The Law Relating to Vaccination* (Manchester: Poor-law Officers Journal, pp. 51. 6d.) two barristers, Messrs. R. A. and C. H. LEACH, give the Acts of 1867 and 1898 in full, and many notes are attached to a number of the sections. Various Orders and Instructions are appended, including the circular letter issued by the Local Government Board in August last. The pamphlet should prove very useful to guardians, magistrates, vaccination officers, public vaccinators, and all who have to do with the administration of the Acts. In the introduction the authors urge that when the Act comes into full operation on January 1st, 1899, its provisions will apply not merely to children born after that date, but to all unvaccinated children under 14 years old. Looking to the huge accumulation of arrears during these fourteen years, the vaccination officials and the petty sessions will have no want of work if effect is given to this interpretation, which hardly seems open to question. Regarding the conscience clause, it is noted that the parent "is to convince the justices or magistrate of the existence of his (the parent's) conscientious belief," and thus "it would appear that the parent is to do something more than make a declaration;" but at the same time "it is hard to conceive how the justices or magistrate are to be satisfied in any other way than by the mere declaration of the parent," because "it is the existence of conscientious belief, and not the grounds on which that belief is founded, that is to satisfy the justices or magistrate." It is further noted that the parent or custodian of the child is not given the right to appear by another in this matter of conscientious belief.

THE thirteenth edition of Dr. C. A. EWALD'S *Handbuch der allgemeinen und speciellen Arzneiverordnungslehre* (Berlin: August Hirschwald. Roy. 8vo, pp. 1096. M. 20) is based on the German and other modern pharmacopœias, and has enjoyed great popularity in Germany. In English medical literature we have no such "Handbook of General and Special Prescribing," and in this country it would certainly be thought too bulky. It constitutes, however, a very valuable and useful book of reference for the prescriber. It consists essentially of two parts, the first devoted to prescription-writing and the making of pills, ointments, and all the other official forms of giving drugs; the second part consists of a description of all the most important official and unofficial medicines and their preparations, arranged in alphabetical order, with full and detailed directions for their administration in suitable forms and doses. Examples of prescriptions are freely given, and very shortly (in a word or two) the therapeutical uses are indicated.

THE fifth edition of Dr. ALTHAUS'S work *On Failure of Brain Power; its Nature and Treatment* (London: Longmans, Green, and Co. 1898. Crown 8vo, pp. 281. 5s.) contains a new chapter on the intimate structure of the brain. After giving a historical retrospect, he mentions the researches of Golgi and Ramón y Cajal, the electrical experiments of Fritzsch and Hitzig and Ferrier, the clinical studies of Charcot, Kussmaul, Hughlings Jackson, and others, as well as the developmental researches of Flechsig. This description of a subject which is well known at present will perhaps be useful to those who have not followed the researches which have been made. Recent views on the cellular structure of the brain are stated, and Dr. Althaus reiterates his opinion that "the work of the brain cell is of an electrical nature," a theory of which we have at present no proof. Under the heading of causes the influence of heredity is referred to, and the laws of inheritance as formulated by Darwin, Haeckel, Wallace, and others are discussed. The remaining chapters are devoted to the symptoms, nature, diagnosis, prognosis, and treatment of the affection, and under the last heading the author expresses his belief in the efficacy of electricity in the treatment of the disease.

THE last two instalments of Professor OSCAR LIEBREICH'S *Encyclopaedie der Therapie* (Berlin: August Hirschwald. 1898. Roy. 8vo, pp. 481-960) include a multitude of subjects from glucose to mamma. The editor puts a very liberal interpretation on the range of subjects included under the term "Therapie," and hence the volume really forms an encyclopaedia of materia medica, pharmacy, general and special therapeutics, and clinical medicine. The articles are mostly short and to the point, giving clear and exact information on a great variety of subjects.

SIR HENRY BURDETT opened on December 3rd the cottage hospital for Eltham and Mottingham. The new hospital is built on the pavilion system. The two principal wards contain accommodation for ten patients, and there are two private wards and bathroom.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1898.

Monday, November 28th.

Sir William Turner, President, in the Chair.

(Concluded from page 1715.)

Report of the Education Committee.

Sir John Batty Tuke moved, Dr. MacAlister seconded, and it was agreed:

That the report of the Education Committee in regard to the revision of the list of recognised preliminary examinations be received and entered on the minutes.

Sir John Batty Tuke then moved:

That the report of the Education Committee on the revision of the list of recognised Preliminary Examinations in General Education be received and entered in the minutes.

The Committee, he said, had been actuated by the very strongest desire to raise the standard of preliminary education. At one period of their deliberations they thought the best thing was to cut out all junior examinations, but after consultation with various educational authorities, and after taking opinion of men who were perfectly unbiassed, they came to the conclusion, most unwillingly, that such a step would be premature, as it would result in a serious depletion of the medical profession, and materially interfere with the interests of the public. While he thought that it was to the direct interest of the public that the standard of medical education should be raised, and that the way to effect that was to raise the standard of preliminary education, yet he considered it was necessary to approximate the meshes of the net gradually, so that the Council should not complicate the position so seriously as would have been the case if the original proposition had been carried; for he could not doubt that in such a case the supply of medical students would have fallen to a considerable extent. He hoped the day was not far off when the Council would be able to cut down their examinations; but he did not think it would be right or fair to do so till at least five years after the promulgation of the report. In the meantime, they should do all in their power to raise the junior examinations until they could accept only the senior. It was stated in the report that:

By the co-operation of the various educational authorities concerned, much may be done to raise the standard even of the junior examinations, and a number of these authorities have, at the request of the Council, already undertaken to take measures in this direction. The Council, moreover, by its own action in henceforth requiring another language, in addition to Latin and English, to be taken up by students, has materially enlarged the scope of its demands. In these two ways preparation is being made for the transition from the standard of the junior to that of the senior examinations. This transition the Committee are desirous of effecting so soon as the educational conditions of the country will permit; but they believe that a gradual and continuous advance along their present lines will be more likely to bring about a substantial improvement in the general education of medical students than any sudden and revolutionary change in the formal requirements of the Council. By exercising steady pressure where necessary on the educational authorities in favour of the adoption of better and more searching methods, by withdrawing recognition for examinations which are proved to have become inefficient, and by careful supervision and inspection of all, the Committee believe that they can give material aid in bringing about the desired improvements, and they have every reason to expect that their efforts will be supported and confirmed by the Council at large.

In conclusion, he said the Committee had for months—or he might say for years—carefully studied the subject, and he hoped that the Council would adopt their report.

Dr. MacAlister, in seconding the motion, thought that, in order to give him an opportunity of replying to any criticism which might be made on the report, the Council should go into Committee on it, and

Sir John Batty Tuke, on the suggestion of the President, substituted the following for his original resolution:

That the report of the Education Committee on the revision of the recognised list of Preliminary Examinations be considered by the Council in Committee.

This was seconded by Dr. MacAlister, and carried.

The following resolution was then moved by Sir John Batty Tuke, and seconded by Dr. MacAlister:

That the report be approved by the Committee.

Dr. MacAlister said that when the duty was imposed upon the Education Committee by the Council, they examined the various examinations on the list to ascertain whether or not they came up to the recognised standard of, at least, the junior local examination of the universities of the United Kingdom. In the case of those which did not, the authorities concerned were communicated with and informed of the views of the Committee. Various replies were received, one of which, from the College of Preceptors, challenged the opinion of the Committee, and it was therefore necessary to ascertain whether the opinion was well founded. During the years 1892-98 returns had been made to the Council, on behalf of the examining Boards for the Navy, Army, and Indian Medical Services, respecting those candidates for appointments who showed deficiency in general education. In the case of 10 of these candidates, the particulars given were insufficient to enable the Preliminary Examination to be traced; in the case of 29, the examination passed by the candidate was one of those at present recognised by the Council. In no fewer than 14 instances the examination by which the candidate had gained admission to the *Students' Register* was that of the College of Preceptors, while the remaining 15 candidates had qualified by one or other of nine of the recognised examinations. There were, in addition, 16 candidates who had qualified for registration by means of the examinations of the Society of Apothecaries or the Royal College of Surgeons of Ireland, but these examinations had now for some years been discontinued. It thus appeared that of all the examinations now on the Council's list the College of Preceptors' was that which most frequently gave rise to animadversion on the part of the examining Boards, and that the College contributed to the returns of comparative failure almost as many instances as all the other educational bodies together. It was also worthy of note that the returns reported no single instance of deficiency in general education on the part of a student registered by means of a university local examination. It had been contended that the examination of the College of Preceptors was equal to junior local examinations; but study of the papers had left no doubt in the minds of those who examined them that the papers of the College of Preceptors were not sufficient to ensure that all who passed had reached the standard of general knowledge and intellectual training desired by the Council. The Committee had had an opportunity, by the courtesy of the College of Preceptors, of examining the papers at that College, and also the papers at the junior local examinations. In the first place they were very much lower; that is to say, the candidates disqualified were very much lower. The conditions under which candidates who entered the examinations were allowed to pass were also considered, and were found to vary. In some the candidate had to take so many subjects or he did not get a certificate; in others he passed compulsory subjects, and so on. After all the points which it was necessary should be taken into account had been taken into account, the opinion was formed that the examination did not ensure a standard in accordance with the directions of the Council as defined by it. One part of the argument of the College of Preceptors had to do first with age, and secondly with the proportion of rejection. The fallacy on which this argument was built could easily be explained. The junior local examinations were not necessarily sufficient to satisfy the Council; those candidates who wished for certificates to admit them to the *Students' Register* had to take up four subjects, but no fewer. With regard to the average age of candidates who took the qualifying examination in the junior local examination, it was appreciably higher than in the case of the College of Preceptors. The facts laid before the Committee left them no room for doubt that the College of Preceptors' Examination was inferior to other junior examinations in England. If an examination had a reputation for being easy, ill-prepared candidates would go in for it, and a large proportion of rejections would be the result. The Committee had, in order to find out the opinion of schoolmasters on the subject, sent out at random a number of circulars to schools sending in candidates to both examinations; they were taken alphabetically, so as to be scattered over a wide area. They were asked, first, "In what order would you place the junior locals and the College of Preceptors' second class, as regards standard of difficulty, comprehensiveness,

time required for preparation, and facility of obtaining distinction." A number of answers were received, and those who gave information were set out as an appendix to the report. He thought that, when those answers were considered, the great majority were in the direction towards which other considerations led—namely, that the junior locals were recognised by schoolmasters as ensuring a higher standard than the College of Preceptors' second class. Dr. MacAlister then referred to further communications received from other bodies, which he thought should not be discussed in public, and strangers were directed to withdraw. On readmission Dr. MacAlister said that the recognition for certain purposes of the College of Preceptors' second and third class examinations by important public bodies was put forward by the College as implying a declaration that those examinations were equivalent to other recognised junior examinations; but this inference appeared to the Committee to be untenable. The list published by the General Medical Council itself included a large number of examinations, from that for a degree of Arts downwards, all of which were recognised for the purpose of students' registration. But it could not be maintained that the Council thereby pronounced those examinations to be equal in standard, or regarded them as equivalent, except in so far as that they all satisfied the minimum conditions which it imposed. The fact that the Headmasters' Association included in its "junior list" all the various "Professional Preliminary Examinations" without distinction, and that the London Technical Education Board and the Education Department recognised the third division of the College of Preceptors' examination showed in like manner that the lists of those bodies were not constructed on the principle of parity among the examinations referred to. They merely indicated that all fulfilled certain minimum requirements and that those minimum requirements were less stringent than those insisted on by the Council. The inference as to equivalence which the statement suggested was therefore more than doubtful *a priori*. But the Committee had made direct inquiries on the subject, and had ascertained definitely that no such inference was authorised or could be maintained. He asked the Council to consider that the Committee had spared no pains in order to get at the facts of this matter. It had been forced upon them by the report of the Army and Navy Medical Service, and, secondly, by the inaccuracy in the papers and answers and so on; thirdly, they had consulted a large number of masters in order to obtain the best possible expert opinion, and he thought the conclusion was inevitable, namely, that the standard of the College of Preceptors' second class was inferior to the standard of the General Medical Council. He then referred to the Scotch and Irish bodies, whose attitude towards the Council had been very different. They practically admitted that their examinations required improvement and they had been improved both as regards the quality of the papers set, the standard, and the number of marks required, and they were willing to submit papers and questions to the Council for examination in order that it might make suggestions. He thought that facility for examining the papers, questions, and answers which a candidate gave should be required by the Council in all these junior examinations. With regard to matriculation in universities in the United States, they did not at present recognise them. Candidates from these universities constantly came before the Committee, and they had been recognised in individual cases, but they were not recognised automatically. He, however, thought it was opportune to consider the question, and ascertain whether or not some of the American universities might not be put on their list; but that was not the question before them now. Communications had been sent to various bodies stating that it was the wish of the Council that junior examinations should be steadily raised, and a number of replies had been received saying that the bodies were quite willing to raise the standard, and had proceeded to do so. There were a large number of candidates desirous of admission, and it seemed to him that they should proceed in a gradual method, but he hoped that within five years it would be possible to adopt a standard which would be called a "senior standard." There was goodwill on the part of the institutions concerned to second their efforts, and if they kept up the pressure they would doubtless be successful.

Sir RICHARD THORNE said he thought the work of the Committee had been carried out under a misapprehension. They were asked to report as to the removal of those examinations which were of a lower standard than that indicated in the Committee's recommendation. That recommendation was to accept no certificate of a lower standard than that of matriculation. He was confident that it was the intention of the Council not to accept an examination which was not, at least, adapted to the age of 16; and they now learnt that the average of these junior locals was below the standard which the Council required. He complained that while statistics had been given with regard to the College of Preceptors none had been given with regard to other bodies with which it was comparable. With regard to the observation that if the standard was raised too high the requirements of the public would not be met, he thought that if candidates knew the standard to which they had to work they would not have half the rejections.

The PRESIDENT thought it was a very important report, and the further discussion should be postponed until the following day, which was agreed to, and the Council adjourned.

Tuesday, November 29th.

Sir WILLIAM TURNER, President, in the Chair.

REPORT OF EDUCATION COMMITTEE.

Dr. LEECH resumed the debate on the motion that the report be approved by the Committee. He said the report involved two important considerations: first, was the second class examination of the College of Preceptors to be withdrawn from the list on the ground that it was inferior to other junior examinations? and, secondly, what course should they adopt in the future? He thought the first question must be answered in the affirmative, as, in his opinion, the report of the Committee had proved conclusively that it was below the standard of other junior examinations. With regard to the second question, the report of the Committee was not so satisfactory. They state in presenting it: "The Committee desire it to be known that they contemplate the early introduction by the Council of a further increase in the stringency of educational tests to be applied to intending students of medicine. By the co-operation of the various educational authorities concerned much may be done to raise the standard even of the junior examinations"; and that appeared to him an incentive to raise the standard of those examinations. He was sure they all felt it was not creditable that they should accept examinations, limited almost to schoolboys, for entrance into the medical profession. He failed to see that by raising the standard they would be injuring the public by reducing the number of students; on the contrary, he thought they would get an all-round better class of men, who were wholly educated instead of partly educated. In his opinion it was desirable to strike the junior examinations off their list as soon as possible, and a time should be fixed when that was to be done. It was little short of a scandal that the examinations for entering their profession were so easy that they should be considerably tightened up; and, while expressing his disappointment with the report, he hoped the Council would do something courageous and more in accordance with the necessities of the times and of the profession.

Sir CHRISTOPHER NIXON, as a member of the Education Committee, said that he had no special knowledge of the College of Preceptors, but it seemed to him that it had been proved beyond all doubt that their examinations were not up to the standard of the junior locals of the universities. It was proved by the careful examination made by Sir John Tuke and Dr. MacAlister of the examination papers, but more especially by the unbiassed opinion of a number of headmasters, and he failed to see the force of Sir Richard Thorne's objection to the reports of those teachers.

Sir RICHARD THORNE wished to explain that he had since had an opportunity of seeing a letter with regard to the questions addressed to the headmasters, and he felt bound to admit that his inference was not justified.

Sir CHRISTOPHER NIXON thought that disposed of any question as to the value of the headmasters' opinion, which he considered was very strong; and that, taken in conjunction with the returns from the Army, Navy, and Indian Medical

Services, seemed to him abundant evidence as to the standard of the College of Preceptors' examinations. There were two alternatives: either to refuse recognition, or to ask that the standard should be raised to an equivalence with the junior locals. With regard to the Conjoint Examination of the College of Physicians and College of Surgeons in Ireland, the Committee of Management were strongly of opinion that it would be desirable if possible to have the Preliminary Examinations conducted by bodies that were in no way connected with professional colleges, and it was proposed to have a Board of Education in Ireland. But the University of Dublin would have nothing to do with the proposition, and consequently it fell through. Other steps had been taken to alter the character of the Examiners, and recently a petition had been sent to the Commission at present sitting on Intermediate Education in Ireland, asking that two examinations might be held in the year—one in March, to facilitate students entering before the summer session, and the other in September, and he knew that two members of the Commission were favourably impressed with the suggestion. Intermediate education in Ireland had been to a large extent a failure, though an enormous amount of money had been expended on it. No persons were better acquainted with the reasons for that failure than the Commissioners, for it was in consequence of that that they were appointed. He hoped the Council would take a strong part in recommending the establishment of an examination by the Intermediate Board that would be suitable to the needs of medical students. Another point which he desired to impress upon the Council was in reference to optional subjects. He happened to be inspector of the late Preliminary Examination conducted by the Conjoint Board in Ireland, when a Welshman presented as an optional subject Welsh. The examiner, who was a member of Trinity College, had not the least idea of Welsh, and as the only way out of the difficulty he had to borrow a Welsh dictionary in order to trace the man's ability or knowledge of the subject. He thought it was obvious from that that the optional modern language should be either French, German, Spanish, or Italian.

Mr. Carter felt disappointed with the terms of the report, in so far as it fixed no definite time for the transition from the junior local examination to the senior examination. He did not think so much fault could be found with the College of Preceptors, because he apprehended that their junior examinations were adapted to cover a larger area than that which the Council required; it was the Council's fault for accepting it. He thought some definite time should be fixed in advance for making a change all felt to be desirable.

Mr. Tichborne wished to have some assurance that when the time came to raise the standard the Irish bodies would be prepared to join in.

Dr. Atthill had no hesitation in saying that the College of Physicians and College of Surgeons of Ireland were quite ready to cease the Preliminary Examination when the time was found suitable. There were two things quite certain: First, they would maintain an examination equal if not superior to that required by the Council. If it decided to raise the standard, they would raise it willingly. Secondly, until there was an examination established which was fair to the pupils as to age, as to time, and as to standard, they would continue the Preliminary Examinations.

Sir Philip C. Smyly said that the Irish Colleges were anxious to give up the Preliminary Examination if a substitute were provided for it.

Mr. Brown was very sorry that the Committee had not seen their way to include the junior examinations of Oxford and Cambridge in the list of examinations which were no longer to be recognised. If the time when they would be no longer recognised could be fixed, that would receive the approbation of everyone connected with the medical profession.

Sir Wm. Thomson wished to express his admiration of the manner in which the work of the Education Committee had been done. He concurred with the views of Dr. Leech in reference to the question of raising the standard of examination, and the period at which that should be done. He thought that the question of standard was really for them to decide, and not for the examining bodies; so soon as the Council determined upon a standard the examining bodies would reach it. Ample notice of the change should be given to the teaching bodies, but five years was too long. With regard to the College of Physicians of Ireland it had time after time declared in favour of raising the standard, and it had always set itself in the van so far as the requirements of this Council were concerned. The Irish Colleges, he declared, were at one with the General Medical Council in desiring that the preliminary education of medical students should be raised to the highest possible level, and in that effort they could count on their support.

Dr. McVail thought the Council were in possession of the facts, and the only question to be decided was when the transition should take place from the junior to the senior examination. If a reasonable date were decided on the schools would be quite ready when the time arrived to prepare for such examinations as were considered suitable to be recognised.

Dr. Pettigrew was of opinion that there was a difficulty both as to raising the standard and fixing the time of transition from the junior to the senior examination. In Scotland there was great difficulty in regard to secondary education, owing to the fact that the universities gave double marks for Greek, Latin, and Mathematics, and, in that way, came into direct competition with secondary educational bodies.

Dr. McVail was astonished to hear such a statement, and asked Dr. Pettigrew for his authority.

Dr. Pettigrew thought he was right in what he had stated. In his opinion as much time as possible should be given to the education authorities to wheel into line.

Dr. Heron Watson was thankful for the cautious way in which the Committee had evidently framed their report. They had pushed on as far as they could: but they had not gone too far or too fast. It must be borne in mind that the unqualified assistant had been done away with, and that at the present moment there were not enough medical men to fill the vacancies which were now open. It would be wise not to lay down any definite period when the change should take place, but to wait and see what would be required.

Dr. MacAlister, in reply, acknowledged the handsome manner in which Sir Richard Thorne admitted his error with regard to the headmasters' opinion. He had not read the letter which accompanied the questions, and therefore it was a very fair comment to make that they might have been misled. He had also seen the Vice-President of the Privy Council, and he had his authority to read, what he felt he was not free to read in public yesterday, with regard to the claim of the College of Preceptors, as to the action of the educational authorities which was challenged by the Committee. Both the claim and the challenge were submitted to the Educational Department, and this is the answer: "Adverting to your letter dated 27th ultimo, I am directed to state that you are right in supposing that the recognition by the Examination Department of the second class certificate Examination of the College of Preceptors as practically equivalent to the third year examination prescribed under the Code for Pupil Teachers does not imply that the examination is of equal standard and range for all purposes with the Oxford and Cambridge junior local examinations," and there were similar communications from other authorities bearing out that statement in the report.

The President put the motion, "That the report be approved by the Committee of Council," and it was carried.

Dr. Leech moved:

That the Executive Committee be requested to consider and report to the Council during the next session as to the earliest date at which, in their opinion, it will be practicable to raise the minimum requirements of the Council as regards Preliminary Examinations to the standard of the Senior or Higher Examination now recognised.

Dr. Little seconded the resolution, which was carried.

On the motion of Dr. MacAlister the Council went out of Committee. It was then resolved, on the motion of Dr. MacAlister, seconded by Mr. Bryant:

That the report of the Council in Committee be adopted by the Council.

On the motion of Sir Dyce Duckworth, seconded by Mr. Bryant, it was resolved:

That the reports from the Examination Committee on the examinations of the Apothecaries' Hall, Dublin, be received and entered on the minutes.

Midwives Bill Committee.

The following resolution, moved by Dr. MacAlister and seconded by Dr. Pettigrew, was carried:

That the report of the Midwives Bill Conference Committee be received and entered on the minutes.

It was agreed on the motion of Dr. MACALISTER, seconded by Dr. PETTIGREW:

That the Council go into Committee of the whole Council for the purpose of considering the report of the Midwives Bill Conference Committee.

Sir RICHARD THORNE said that as the report was a long one he would take it as read, but there was one point to which he desired to draw attention which had arisen since it was circulated. He had made it clear that it was the opinion of the Council that medical fees could not be utilised for the purpose of this Bill, and had received an intimation from the Privy Council that they desired some indication of the money which would be necessary if any expense was likely to be involved, as it would have to be met by a Government grant. Since the report was issued the following paragraphs had also been added:

Your Committee have reason to believe that the Lord President of the Council is desirous of receiving some expression of opinion from the Council as to how this matter may best be met, and they would therefore make the following proposals to the Council:

1. That the duty of fulfilling any duties that may be imposed upon the Council under an Act regulating the practice of midwives be delegated to a Special Committee after the precedent followed in the case of the Dental Committee.
2. That so long as any such Act is only made to apply to England and Wales, the Special Committee consist of five members of the English Branch Council.
3. That in the first instance the Special Committee meet in London twice a year.
4. That the fees, etc., for attendance on this Special Committee be the same as those paid to members of the Executive and Dental Committees.

He had carefully considered the constitution of the Committee and the expense which would probably be incurred by it, and if the Council resolved to communicate this report to the Lord President, he suggested that the Privy Council should be requested to provide that a sum should be placed to the credit of the Council to be utilised by it for this particular purpose.

The PRESIDENT thought the best course to adopt would be to wait and see what form the Bill would take, as the allowance to be granted to the Council would depend upon the duties imposed upon it.

After some discussion Sir RICHARD THORNE adopted the suggestion of the President, and the report as originally circulated was adopted.

It was then resolved, on the motion of Sir RICHARD THORNE,

That the duty of fulfilling any function that may be imposed upon the Council under an Act regulating the practice of midwives be delegated to a Special Committee who should report to the Council.

On the motion of Sir RICHARD THORNE, seconded by Mr. VICTOR HORSLEY, it was agreed:

That the sum allowed by the Treasury to the General Medical Council for the performance of any duties imposed upon it under an Act regulating the practice of midwives should, in the opinion of this Council, be adequate to cover both the general and special expenses of the Council and its Special Committee.

Mr. BRYANT moved, and Mr. TEALE seconded, and it was agreed:

That the Midwives Bill Conference Committee be reappointed for the purpose of watching any legislation that may be proposed on the subject in the next session.

On the motion of Sir RICHARD THORNE, seconded by Dr. MACALISTER, Mr. Victor Horsley was added to the Committee.

REPORT OF THE COMPANIES ACT (AMENDMENT) COMMITTEE.

It was resolved on the motion of Mr. TOMES, seconded by Mr. VICTOR HORSLEY:

That the report of the Companies Acts Amendment Committee in regard to the proposed amendment of the Companies Acts, referred to the following resolution of the General Medical Council of May 30th, 1898:—"That the President, Mr. Tomes, and Mr. Horsley, be a Committee to take such steps as they deem most effective to induce the Government to insert a *clause* in the Companies Act Amendment Bill, now before Parliament, with the object of preventing the registration of companies to carry on medical, surgical, and dental practice," be received and entered in the minutes.

Mr. TOMES then moved:

That this report be approved.

He remarked that the report was very brief in relation to the importance of the subject, but it was accounted for by the fact that the work in connection with it had to be done by interviews with officials, and if they were to cry out on the housetops what they had said, it would at once stop such communication. They had simply mentioned in the report enough to indicate what had been done; but he hoped members would inspect the Bill, and use any influence they might have with any member of the House of Commons or the House of Lords in order to secure its adoption.

Mr. TICHBORNE said he should like the Bill to be read, as the suggestions were only those of the Committee, and the rest of the Council had no idea of what they were.

The PRESIDENT thought the Council were under great obligation to the Committee, and especially Mr. Tomes, for the very great care and attention given to this matter. It was one of very great importance, and he saw no reason why the Bill should not be read *in camerâ*.

This was agreed to, and strangers were directed to withdraw. On readmission, the PRESIDENT announced that the report of the Committee had been approved by the Council.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, it was agreed:

That the Committee be reappointed, and be requested to continue its efforts for the improvement of the law on the subject of companies formed to carry on professional functions.

It was agreed, on the motion of Dr. MCVAIL, seconded by Dr. BRUCE, that Mr. Tichborne be added to the Committee.

REPORT BY THE PUBLIC HEALTH COMMITTEE.

The report of this Committee was received and entered on the minutes.

Sir RICHARD THORNE said the real effect of the report was to ask the Council whether they desired the Committee to study the whole question of what candidates were to do during the two periods of six months which they were required to give to laboratory and outdoor work; if that was the Council's desire, he would suggest that the report should be referred back for further consideration.

At the suggestion of Sir WM. GAIRDNER, the words "interim report" were added to the resolution, which, as amended, was seconded by Mr. TEALE and carried.

REPORT ON EXCEPTIONAL CASES.

Sir DYCE DUCKWORTH moved and Dr. MACALISTER seconded:

That the report from the Students Registration Committee be received and entered on the minutes.

Sir Dyce Duckworth remarked that several cases presenting difficulty had been met by the Rules.

Mr. VICTOR HORSLEY took exception to Paragraph 4, which in his opinion ought not to be accepted.

Dr. MACALISTER said that the application ought not to be acceded to if Mr. Horsley had information which convinced him it was not desirable.

At the suggestion of the PRESIDENT the motion was amended and carried as follows:

That the report be adopted, with the exception of Clause 4.

The Council then adjourned.

Wednesday, November 30th.

Sir WILLIAM TURNER, President, in the Chair.

AN EXPLANATION.

Dr. PETTIGREW explained that when speaking yesterday on the report of the Education Committee he had stated that in certain Scotch Universities marks of double value were assigned to Latin, Greek, and Mathematics, which statement was disapproved of by some members of the Council. In order to ascertain the facts he had sent the following telegram to the Secretary of St. Andrews: "Are double marks given in Latin, Greek, and Mathematics in the Scotch Universities? If so, cite Ordinance," and he had received a reply to the effect that Latin, Greek, Mathematics, and also English count double under Ordinance 57, Section 12. That was the authority for his statement. He regretted that it should be so, as, in his opinion, it was done for the purpose of drawing students. There were junior classes in these institutions in which the A B C of Greek, Latin, and Mathematics was taught, with the result that they came into

direct competition with the secondary teachers in Scotland, and secondary teaching consequently was not in a forward condition.

Dr. McVail thought Dr. Pettigrew's statement would be entirely misleading to anybody who was not aware of the facts. It was perfectly true that in Scotland a higher value was rightly or wrongly attached to Latin, Greek, and Mathematics than to other subjects. The point which Dr. Pettigrew had wished to establish was that the standard of the Preliminary Examination could not be raised in Scotland, because things were so far behind that for every mark earned the examiners gave two, which was not the fact. He did not know how the matter stood with regard to Oxford and Cambridge, but in Scotland the Universities still attached greater weight to Latin, Greek, and Mathematics. So, while the maximum number of marks in those subjects was put down as 200, of which 100 must be got to obtain a pass mark, in French only 100 marks were allowed as a maximum and 50 is the pass mark. It seemed to him, so far from the Scotch Universities holding a lower class examination in these subjects, they held a much higher examination.

Proposed Alterations in the Building.

Mr. Bryant moved:

That the report of the President and Treasurers on the proposed alteration in the building be received and entered on the minutes.

He said satisfactory plans for the addition of another storey had been prepared and were now laid before the Council. Estimates of the cost had been obtained, and one for £2,349 was suggested for acceptance. They also advised the Council to accept with thanks the offer of the English Branch Council to advance the capital required at 3 per cent. to the extent of £3,000, seeing that the expense of lighting and furnishing the new rooms had likewise to be met. They believed that the suggested alterations of the premises would satisfactorily supply the requirements of the Council. The new work could be commenced at once, and be completed by the next session.

Sir Dyce Duckworth seconded the resolution, which was carried.

Mr. Bryant proposed, and Sir Dyce Duckworth seconded:

That the General Medical Council approves of the recommendations of this report, and thanks the English Branch Council for its kind offer.

Mr. Carter hoped that while the workmen were engaged something would be done with regard to the ventilation of the chamber, as members suffered from the condition of the atmosphere, especially during the hearing of the penal cases.

Mr. Bryant stated that he had intended calling the attention of the Council to the matter, which should be attended to.

Memorandum on Reciprocity.

The President suggested that the consideration of the report from the Executive Committee on the subject of the revision of the Memorandum on Reciprocity should be postponed until next session, and this was agreed to.

Standing Orders.

The President stated that Mr. Muir Mackenzie had considered Standing Order 5, Chapter 14, and he had advised certain modifications which made it much more clear, whereas before there was some difficulty in understanding what it meant. He thought as modified it met the points raised by Mr. Brown on the Standing Order.

Mr. Brown assented.

The President moved, and it was agreed:

That Standing Order 5, Chapter 14, as amended, be adopted. Standing Order 5, as amended, is as follows: "Where it is reported to, or otherwise brought to the attention of the President, or the General Registrar, that a registered medical practitioner has been convicted of a felony, misdemeanour, crime, or offence, the matter shall, under the direction of the President, be referred to the Penal Cases Committee for report to the Council, unless in any special instance the President shall deem it desirable to refer the matter to the consideration of the Branch Council, and the Penal Cases Committee or the Branch Council shall, if in their opinion the nature of the conviction renders such a course necessary, not only report the fact of the conviction, but also direct that the usual notice or summons be sent to the convicted practitioner under Clause 6 of the Standing Orders."

Report by the Pharmacopœia Committee.

On the motion of Dr. Leech, seconded by Dr. MacAlister, it was resolved:

That the report of the Pharmacopœia Committee be received and entered on the minutes.

Dr. Leech, in moving that the report be adopted, said that when the last report was presented there were indications that the sale of the *Pharmacopœia* would be considerable; as a matter of fact, during the last six months there were as many sold of the 1898 edition as were sold in the twelve months of the 1885 edition. The *Pharmacopœia* was as welcome in the Colonies as in this country. In Canada there was no official *Pharmacopœia*, but he had received a communication from Montreal informing him that it was intended to adopt its standard of preparations. He had had notice also from Natal that it was intended to make this *Pharmacopœia* official, as they did in 1885; and indeed the *Pharmacopœia* seemed to have proved very acceptable to the medical profession generally. They had undoubtedly received very able assistance from the Pharmaceutical Society, and they were advised by Dr. Attfield. Certain criticisms had been made and amendments suggested, and some of the statements required investigation, and it was suggested that they should be reported upon by experts with a view to obtaining information which should be incorporated in the next *Pharmacopœia*. The Committee also recommended that Dr. Attfield should be again appointed reporter, and that the Pharmaceutical Society should be asked to co-operate with the Pharmaceutical Society of Ireland by appointing representatives to confer with the Pharmacopœia Committee. In 1885 two Committees sat, and reports passed from one to another, which was found to be unsatisfactory, when conferences took place matters got on much better. It was also suggested that the Pharmacopœia Committee should have power to appoint experts in pharmacy and pharmaceutical chemistry to report upon matters deemed worthy of investigation; and also that Dr. Tirard should be appointed reporter on advances in pharmacology and therapeutics bearing on the *Pharmacopœia*. A large number of suggestions with regard to new remedies had been received from the Colonies, and some of these were incorporated in the *British Pharmacopœia* as an appendix; a number of other substances connected for the most part with recommendations concerning new drugs were reserved to be dealt with in connection with an Addendum. The drugs recommended for introduction had been carefully examined and described under the direction of the Pharmacopœia Committee, and suggestions had been drawn up with regard to preparations which might be required. It was proposed that these descriptions and suggestions, embodied in a report from the Committee, should be forwarded to the Indian and Colonial medical authorities, through the Privy Council, and also to other medical and pharmaceutical experts in India and the Colonies, with the view of obtaining further suggestions and criticisms prior to the production of the Indian and Colonial addendum.

The motion was seconded by Mr. Carter, and carried.

The President saw no recommendation or suggestion as to provision for the remuneration of the gentlemen whom the Committee proposed to employ.

Dr. MacAlister observed it was a question of time and labour, and the Chairman could communicate with the Treasurer.

The President understood that the Pharmacopœia Committee continued the practice in this matter.

Dr. Leech assented.

Other Business.

The President stated there had been an item on the programme of business from the first day of the session, and he presumed they had all made themselves acquainted with it; it came from the Executive Committee. That Committee asked Mr. Muir Mackenzie to peruse the papers as to their bearing on the case and advise the Committee as to the steps to be taken. With the sanction of the Council he would ask Mr. Muir Mackenzie, who was present, to give them his opinion.

It was agreed that the matter should be discussed *in camerâ* and strangers were directed to withdraw.

When the public were readmitted.

The President said: I have to intimate the following which is to go on the public minutes: A resolution was proposed by

Mr. Victor Horsley, seconded by Mr. Brown, that members of the profession visiting the session of the Council shall be furnished with a copy of the daily programme of business. This motion was negatived.

The Council again went into *camera*.

Thursday, December 1st.

Sir WILLIAM TURNER, President, in the Chair.

PERSONATION OF REGISTERED PRACTITIONERS.

Mr. VICTOR HORSLEY requested that his motion respecting personation which appeared on the programme of November 30th, and was discussed and carried *in camerâ*, should be announced in order that it might appear on the minutes.

The PRESIDENT announced that the following motion, moved by Mr. HORSLEY, seconded by Mr. BROWN, was agreed to by the Council *in camerâ* at yesterday's sitting:

That the Executive Committee be instructed to report upon means to secure identification of registered medical and dental practitioners, and to prevent fraudulent personation of such practitioners.

EDUCATION COMMITTEE'S REPORT.

The PRESIDENT said it appeared that what took place in the debate on the Education Committee's report in connection with the mode in which the Scottish Universities conducted their preliminary examinations had been reported both in the Edinburgh and Glasgow Universities; and, in consequence of these reports, he had received two telegrams, which he would read to the Council. The first telegram from Professor Butcher, of the University of Edinburgh, who was one of the Scottish University Commissioners, was as follows: "Question of double marks of English, classics, and mathematics has no relation to preliminary examinations, but only to awards to bursaries which are competitive examinations of university distinction, yet in these awards modern languages count far more than in English universities." The other was from Professor Stewart, who is the clerk to the Senate to the University of Glasgow, and was as follows:—"Amazed at yesterday's proceedings. Ordinance No. 57 applies to bursaries only, and has nothing whatever to do with the Joint Boards, with arts, or medical preliminary. In the preliminary examinations there is no such differentiation of marks, and each subject has 100 for its maximum. Modern and ancient languages stand on equal footing."

Dr. PETTIGREW stated that the observations which he had made during the discussion of the Education Committee's report on November 29th, and on the following day required some modification, and that he was prepared to explain if necessary. What he wanted to make out was that this double marking had the effect of keeping back the secondary education in Scotland by attracting to the universities raw youths who should still be at secondary schools. The said youths were so attracted by bursaries and double marks.

EMPLOYMENT OF UNQUALIFIED ASSISTANTS.

On the motion of Mr. TEALE, seconded by Dr. MACALISTER, the report of the Committee appointed to consider certain communications referring to the employment of unqualified assistants was received and entered on the minutes.

Mr. TEALE moved that the report be adopted. He said it was only necessary to read one or two portions of the report which referred to a series of communications, one of which was sent to the Privy Council, asking whether the Council would relieve the position of certain unqualified assistants. In regard to that, the Committee stated:

In so far as they [certain applications by individuals] contain requests that the Council should intervene with the object of procuring the reinstatement of [illegible] of such unqualified persons as assistants, the answer must be the same as that adopted by the Council last session, namely, that it is not within the province of the Council to take [illegible] them."

The Committee [illegible] communications which have come to the notice of the Committee [illegible] the evils against which the recent action of the Council was directed [illegible] spread and deeply rooted than was probably realised [illegible] by the profession or the public. The removal of such [illegible] in some cases the disturbance of old-established [illegible] ments, and a certain amount of temporary [illegible] to the individuals concerned. But notwithstanding [illegible] consequence, the Committee are convinced that the paramount duty of the Council in regard to the public in general [illegible] it urgently necessary that the law should be more [illegible] enforced.

The Committee accordingly recommend that the President be requested to convey to the Lord President of the Privy Council, and to the other persons who have addressed the Council on the subject herein dealt with, the substance of the foregoing remarks.

The second portion of the report dealt with a letter from the Secretary of the Gateshead Medical Association, requesting the opinion of the Council upon the following questions:

1. What is meant by a "*bonâ-fide* medical student?"
   (*a*) Is any man who has registered as a student, but has not yet passed his Final Examination, a *bonâ-fide* student? or, if not,
   (*b*) How many years must elapse after registration as a student before a man ceases to be a *bonâ-fide* student?
2. What is exactly meant by "proper training and instruction of students when applied to pupilage?"
   (*a*) How long may a student be a pupil?
   (*b*) May he be paid any salary?
   (*c*) Would board and lodgings be considered as salary?
   (*d*) May a pupil be allowed in any case at all to see a case of sickness in the absence of his principal? or
   (*e*) Must he in all cases be accompanied by his principal?
   (*f*) Can the pupil attend a midwifery case alone? If not, what difference does the Council see between the medical schools, which allow students to do so, and a medical man in private practice who follows their example as regards his pupil?

As to that, the report was as follows:

"It appears to the Committee highly inexpedient for the Council to issue formal definitions of the terms used in this clause. These terms are obviously employed in their ordinary and natural sense. The students referred to are such as are honestly pursuing their medical studies, with a view to obtaining a qualification in the regular course. The primary purpose of the clause is to facilitate the training and instruction of such students, during their pupilage, in the practice of medicine, surgery, and midwifery, and so to give effect to the recommendations issued by the Council with reference to the five years' course of medical study. One of these recommendations is as follows:

The fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as shall be satisfactory to the medical authorities.

"The duty of a registered practitioner who, in pursuance of this recommendation, undertakes to train and instruct pupils in the practical parts of their profession is obviously twofold. By his 'immediate personal supervision' he must ensure, on the one hand, that his pupils are properly taught, and on the other that the welfare of his patients is in no way prejudiced. Supervision which fails to secure both these ends must be regarded as inadequate, and the responsibility for such failure must rest with the registered practitioner.

"With regard to the training of pupils in practical midwifery, the Council has given a sufficient indication of its meaning in its resolution of June 9th, 1896. By this resolution it is laid down that every medical student (other than one who has attended the indoor practice of a lying-in hospital) shall, before admission to his Final Examination, produce a certificate to the following effect:

I hereby certify that..... has personally attended 20 cases of labour under my supervision, of which 5 were conducted by him in my presence. Also that he attended under my supervision the women in question during the puerperal period.

.....
Registered Medical Practitioner.

"The Committee are therefore of opinion that enough information has already been given to guide any registered practitioner whose purpose is in good faith to afford proper training to his pupils in connection with his own practice. To go beyond this, by formulating definitions on such matters as *bona fides*, and the nature and extent of the supervision that should be exercised, would serve no good purpose with regard to the interests of sound medical training. On the other hand, definitions of the kind might do harm if they led practitioners to have regard to the latter only, and not to the spirit of the Council's declarations. Questions of good faith and the like cannot be settled merely by reference to verbal definitions; and it is impossible so to frame general statements of this nature that they shall be applicable to all cases and circumstances. Each particular case as it comes before the Council must be dealt with on its merits, and with due regard to all the evidence adduced."

In conclusion, he said it was the intention of the Council by its regulations to lay down general principles, and their proposed effect had been exaggerated.

Dr. Pettigrew seconded the motion, which was carried.

Instruction of Students under the New Vaccination Act.

It was resolved, on the motion of Sir John Batty Tuke, seconded by Dr. MacAlister:

That the report of the Education Committee on the instruction of students in vaccination under the new Vaccination Act be received and entered on the minutes.

Sir Richard Thorne said that all the licensing bodies had decided that they would only accept, for the purpose of their licence, a certificate which was received by the Local Government Board. Formerly they were received from all the practitioners in the country, but it appeared so obvious to the Local Government Board, that many of these certificates were not worth the paper they were written on, that they would not accept them for public office. Under the new Act stations were practically abolished, except where they might be established during small-pox epidemics. These stations were maintained out of the rates, and it would not be right to require Boards of Guardians to maintain them at their cost merely for the purpose of teaching students, and other arrangements must be made. He might say that Mr. Chaplin was fully aware of the responsibility which had been assumed by the Local Government Board.

The motion was agreed to.

Dr. Glover moved, and Dr. Bruce seconded:

That it be a representation to the General Medical Council to the examining bodies that the Council is concerned to find the recent alterations in the Vaccination Acts may involve changes in the administration of the Acts unfavourable to proper instruction in vaccination in England, and to ask the special attention of the bodies to the adoption of the means for meeting this state of matters; and especially to the possibility of recognising, under proper conditions, instruction in vaccination by private practitioners

Dr. Glover said they all regretted the wholesale break up of the arrangements for public vaccination. The one hope of the country was in the private influence of the medical profession. The Council's regulations recognised that in his fifth year the student might take instruction from a registered practitioner. If there was one thing which a practitioner might be thought capable of teaching it was how to vaccinate an infant. He did not propose to ask the qualifying bodies to recognise the instruction of every practitioner, but only the instructions of those who could satisfy the bodies that they had the means and material of teaching, and who undertook to give such instruction carefully.

Mr. Carter thought, as arrangements were in progress to meet the difficulty, it would be better to avoid making any change until they knew precisely what those arrangements were.

Sir Christopher Nixon observed that every dispensary officer in Ireland had power to grant this certificate.

Mr. Brown said the acceptance of the certificate by the qualifying body was one thing, but its acceptance by the Local Government Board for a public appointment was quite another matter. A man might be qualified to vaccinate, but the Local Government Board might not confirm his appointment. He hoped that under the altered conditions the Local Government Board would see its way clear to recognise tuition in the future as they had done in the past.

The President was of opinion that the point raised by Mr. Brown was a very important one. Some years ago it was considered by the University of Edinburgh, because it had been found that graduates who were not provided with certificates recognised by the Local Government Board had had difficulties with regard to public appointments; a regulation had been passed by which every candidate had to produce a certificate from the Vaccination Department.

Dr. Reid said it was the same in the University of Aberdeen.

Dr. MacAlister thought that to have any effect the motion should not be addressed to the licensing body, but to the Local Government Board, which had the key to the position. If it did not choose to approve a practitioner the licensing body could say nothing.

Dr. McVail moved the previous question, which was seconded by Mr. Carter.

The President put the motion, which he declared carried.

At Dr. Glover's request the names were taken down, when 16 voted for, 6 against, 4 declined to vote, and 2 were absent.

Report of the Medical Aid Association Committee.

It was moved by Dr. Glover and seconded by Dr. Church:

That the third interim report for the Medical Aid Association Committee be received and adopted.

Mr. Victor Horsley protested that this was the third interim report upon such an important subject. He himself was against negotiating with friendly societies, but he should like to know what the result was. In this question they were not concerned with the respectable friendly societies but with the bad medical aid associations. He wished to refer, in regard to this question, to the condition in Coventry. He was informed that a letter had been written on the subject to the Council, and he would propose that this Committee should be invited to take it up and report upon it at the next session, in precisely the same way as the Committee on Unqualified Medical Assistants dealt with applications against medical practitioners.

Dr. Bruce stated that the Committee had considered this memorial, and it was not necessary to report upon it now. With regard to these more or less disreputable medical aid associations, the negotiations with friendly societies were important, because if the societies would agree to minister to the wants of the people in a proper way, medical aid associations would cease to exist.

The President said the paper mentioned by Mr. Horsley had already been put into the hands of the Chairman of the Committee.

Dr. Glover assented. He thought they should come to an understanding with the friendly societies: they represented a class which the Council ought to consider, and had shown a great desire to ascertain what was wanted.

The President entirely concurred in this observation because he was present at the meeting.

The motion was then agreed to.

Finance Committee's Report.

Mr. Bryant said the question of the establishment of a sinking fund had been, at the suggestion of the Council last session, referred to the different Branch Councils for their consideration, and reports on the subject had been received from the three Branch Councils. He then brought forward a resolution for the establishment of a sinking fund, which, after a long discussion, he withdrew, and at the suggestion of Dr. MacAlister substituted the following, which was carried:

That the Council approve of the principle to form a sinking fund for the repayment to the English Branch Council at the end of a term of years of a sum of £25,000, and that the Finance Committee be authorised to obtain from an expert a report to be laid before the Council on the methods of carrying the proposal into effect.

Report of Inspector of Examinations.

On the motion of Sir Dyce Duckworth, seconded by Mr. Bryant, the report of the Executive Committee on the appointment of an inspector of examinations was received and entered on the minutes. The adoption of the first paragraph of the report was then moved, whereupon Dr. Bruce moved the following amendment, which was seconded by Dr. Reid and carried:

That the question of the appointment of inspector of examinations for the Council be referred back to the Executive Committee with power to make an appointment.

On the motion of Sir Dyce Duckworth, seconded by Mr. Tichborne, it was resolved:

That the inspector be appointed to inspect all the examinations of the Apothecaries' Hall Dublin.

On the motion of Sir Dyce Duckworth, seconded by Mr. Tichborne, it was resolved:

That the inspector be appointed to inspect the Conjoint Examinations of the Royal College of Surgeons in Ireland and the Apothecaries' Hall, Dublin.

On the motion of Sir Dyce Duckworth, seconded by Mr. Bryant, it was resolved:

That the remuneration assigned to the inspector be on the same scale as that to Dr. Coupland.

On the motion of Sir Dyce Duckworth, seconded by Mr. Bryant, it was resolved:

That the Council do authorise the President to nominate one or more members of the Council to act as visitors along with the inspector.

Mr. R. C. Tichborne moved and Dr. Bruce seconded the following resolution:

That the examination of the Conjoint Boards of the Royal College of Physicians and the Royal College of Surgeons, Ireland, be reported upon for the next year by the inspector and visitor appointed by the Medical Council

Sir Christopher Nixon moved as an amendment, seconded by Sir W. Thomson:

That the examination of the Royal College of Physicians and Royal College of Surgeons of Ireland be reported upon, and at the same time that the reports of the examinations of universities and licensing corporations in general are presented to the Council.

The President put the amendment to the Council, when 17 voted in favour of the amendment and 2 against it. The amendment was therefore carried.

The President then put the amendment as a substantive motion, and 7 voted for the motion and 16 against. The amendment therefore as a substantive motion was declared lost.

Grammar Schools and the Five Years' Curriculum.

Sir Philip C. Smyly called attention to the following letter forwarded by the Royal College of Surgeons in Ireland in regard to a regulation of the Conjoint Board of the Royal Colleges of Physicians and Surgeons of England, which accepts time spent in institutes recognised by it for instruction in physics, chemistry, practical chemistry, and biology, as the first of the five years of professional study. He said that after reading the letter he should move the three resolutions which appeared in the programme; but before going to the letter he should like to say that it had been upon the agenda of the Council for ten days, but from the exigencies of the business of the Council it had been postponed to the last days of their meeting. He wished to say that the College of Surgeons in Ireland did not wish this letter to be in any sense understood to be an attack upon the Conjoint Board or upon either of the Royal Colleges. He then read the letter from Mr. John Barton, the Secretary of the Council of the Royal College of Surgeons in Ireland, dated November 17th, 1898, to the Registrar of the General Medical Council.

RECOGNITION OF GRAMMAR SCHOOL STUDIES BY THE LONDON COLLEGES.

Sir,—The attention of the President and Council of this College has been called to the terms of a regulation promulgated by the Conjoint Examination Board of the Royal Colleges of Physicians and Surgeons of England on July 14th, 1898, which declares that "the first of the five years of professional study may be spent at an institution recognised by the Board for instruction in Chemistry, Physics, and Practical Chemistry and Biology, or six months may be spent in attendance at a similar institution in receiving instruction in Chemistry, Physics, and Practical Chemistry only." Four complete years of professional study must be attended at a recognised medical school and hospital after passing Parts I and III of the First Professional Examination.

It is furthermore observed that, as appears from the most recent list of "institutions" recognised by the London Conjoint Board, fifty-four non-medical schools are accepted as centres of study in these subjects, of which thirty-five are grammar schools, and the remainder are departments of local technical schools, the teaching capacity of which may be open to question.

This College submits that the above-quoted regulation of the London Conjoint Board, which declares that four years of medical study shall suffice for a grammar school boy, or a student of a technical school, while five years are required from the student of a medical school, is at variance with the recommendation of the General Medical Council of June 9th, 1896 (Minutes, vol. xxxi, p. 163), which explicitly declares that "such course or courses shall not be held to constitute any part of the five years' course of professional study." When the General Medical Council adopted the requirement, it declared that such course should only qualify for part of the first year's examination, but should not, under any circumstances, exempt the student from any part of his five years' course of professional study; yet the London Conjoint Board has granted exemption from the first year in respect of these courses, and has thus reduced the necessary period in the case of these students to four years.

This College observes that, so far as the General Medical Council has recognised studies in non-medical schools, it has done so under guarantees for the *bona fides* of the instruction therein, and has reserved to itself by implication the power to withhold recognition. In 1894 (Minutes of General Medical Council, page 162), it resolved to require a list of institutions to be submitted by the licensing body which proposed to recognise them, and also required that a statement should be appended by such body "that after due inspection it is satisfied that the institution so recognised possesses sufficient laboratory accommodation and appliances for the efficient teaching of the required subjects." This College is unable to discover from the official records of the General Medical Council that the London Colleges have ever presented any statement as to the requisite inspection of such schools or as to their satisfaction with the teaching arrangements, or that, if such statement were presented, it was ever laid before the Council or received their approval. Notwithstanding this, it is observed that certain of these grammar schools and technical schools have been inscribed in the *Students' Register* as "institutions," the studies in which are accepted as the "commencement of medical study," and this College is desirous of being informed of the grounds on which such acceptance has been accorded, inasmuch as no permission is to be found in the records of the Council.

I am directed by the President and Council of this College to submit to the General Medical Council their most earnest protest against the recognition of grammar schools or other unguaranteed "institutions" as centres whose teaching exempts students from their first year of professional study, and to point out that their protest is supported by the emphatic judgment of the Education Committee of the General Medical Council (see Minutes, vol. xxx, Appendix 16, pages 8 *et seq.*). That judgment declares that the "interpretation of the phrase, 'teaching institution,' so as to include ordinary public schools was not contemplated by the Council," and was, in fact, rejected by the Council, and that "the intention of the Council was that the first years should, in general, be passed, if not at a university or other school of medicine, at a recognised school of science or technical college where the student could be brought under influences which are not operative in the schoolroom."

Sir Philip Smyly concluded by moving that the letter be received and entered on the minutes.

Dr. Lombe Atthill seconded this, and the motion was carried.

Sir Philip C. Smyly then said that the requests they had to bring before the Council were as follows:

1. That no centre of teaching shall be, in future, recognised as qualified to certify the "commencement of medical study" save a university or a recognised school of medicine, or a school of science in respect of which evidence of "inspection" and of "accommodation and appliances for the efficient teaching of the required subject" shall have been presented to the Council.
2. That all centres of teaching not included in this category be removed from the list in the *Students' Register*.
3. That except in the case of institutions thus indicated all students shall be required to fulfil the complete course of five years of professional study, exclusive of all studies pursued before the legitimate commencement of medical study.

It would be seen that in those resolutions they simply asked this Council for their opinion as to whether the step taken by the Royal Colleges was one that the other colleges might follow.

Sir William Thomson, in seconding the motion, said he thought that the letter which had been addressed to the Council would probably produce the impression that it was a case, at all events, for consideration. The Council of the Royal College of Surgeons of Ireland had taken upon itself to send this letter, not in the sense to make an assault upon any other body, but for the purpose of having the difficulty cleared up. The questions involved were, What was a *bonâ-fide* medical student? and What was a professional course? What was meant by a *bonâ-fide* student, and what was meant by professional study? These subjects required careful consideration. Some time ago, when this matter was brought before the General Medical Council, its policy was that there should be a distinct line drawn between the general preliminary education of the student and the time upon which he entered upon his professional course. He contended that the broad policy of the Council had been departed from. Under the present conditions it was possible only to pass a four years' course at a medical school, and he thought that was a matter deserving of full consideration. A *bonâ-fide* five years' course meant that the student started at the commencement of those five years, and that the first year did not run concurrently with the year spent in a grammar school. He did not question the capacity of the best grammar schools to teach certain things, but he questioned the capacity of the best grammar school in this country to take the first year of medicine.

Mr. Bryant was pleased to find the subject had been brought before the Council, because it gave him an opportunity of explaining the position the Royal College of Surgeons of England held at the present time and the position it held in 1894. They had, in a very slight degree, deviated from the recommendation of the Council, but he thought that it had been rather an improvement than the reverse. The Council had sanctioned for many years outside institutions as teaching institutions in these preliminary subjects; the College had done the same, and the success attending our

measure had not been bad, because of those students who passed 67 per cent. came from recognised institutions which were not medical schools, whereas only 61 per cent. came from medical schools and universities. He would move an amendment:

That the communication from the Royal College of Surgeons of Ireland and the motions standing in their name, and based thereon, of Sir Philip C. Smyly and Sir William Thomson, be referred to the Education Committee for consideration and report to the Council.

After some further discussion, the PRESIDENT put the amendment to the meeting, and declared it carried. He then put the amendment as a substantive motion, and this was also carried.

Inspection of Documents.

Sir RICHARD THORNE moved:

That in view of the fact that the operation of the Standing Orders as to the inspection of documents passed by the Council on May 31st, 1898, is not altogether satisfactory, the Executive Committee be instructed to consider and to report to the Council at the next session: "What arrangements can best be made to facilitate the examination by members of the Council of all documents which are the property of the Council, subject to leave being obtained for such examination, and to the legal rights of the Council in regard to such documents, as also to their proper safeguard."

Dr. MACALISTER seconded the motion.

The PRESIDENT said an amendment had been handed to him, which was moved by Mr. Victor Horsley, seconded by Mr. Tomes, that the words in the motion:

"To leave being obtained for such examination and" be omitted.

Mr. VICTOR HORSLEY, in moving the resolution, said that he understood from Sir Richard Thorne that he desired to keep those words in his motion. He (Mr. Horsley) asked him to leave them out, for the reason that he had taken Mr. Buckley's advice to the effect that the rights of all members of the Council to inspection of these documents were equal, and therefore it was not necessary to ask for leave.

Mr. TOMES, in seconding the resolution, said he thought that when they were asking the Executive Committee to see what means they could devise to facilitate the inspection of documents they should leave them with a perfectly free hand. It might be that they would report that leave should be granted, or they might not. Upon the question of leave, the Council had made it obvious that leave could only be withheld under very exceptional circumstances.

Dr. MACALISTER pointed out that if the Council was not sitting, leave must be given by somebody. He could not consent to the motion if the suggested words were left out.

Sir RICHARD THORNE remarked that, as Mr. Horsley said he had obtained legal opinion to the effect that he need not ask for leave, the Council would be binding itself to that opinion if it were to take the words out of the resolution. If the Executive Committee came to the conclusion that leave was not necessary, that was one thing; but to take the words out that Mr. Horsley had suggested would be to accept the position put forward by him.

The PRESIDENT then put the amendment which had been proposed by Mr. Horsley and seconded by Mr. Tomes for the omission of the words "to leave being obtained for such examination and"; 8 voted in favour of the amendment and 13 against.

Mr. VICTOR HORSLEY asked for the names to be taken, as he considered it an important point, when 9 voted in favour of the amendment, 13 against, and 4 declined to vote.

The PRESIDENT put the resolution as proposed by Sir Richard Thorne and seconded by Dr. MacAlister, and this was carried.

Fines under the Medical Acts.

Dr. GLOVER moved that the following interim report from the Committee on Fines under the Medical Acts should be approved and entered on the minutes.

This was seconded by Mr. VICTOR HORSLEY and carried:

The Committee have to report that they have endeavoured unsuccessfully to obtain an interview with the Commissioner of Police of the metropolis, who suggests that the Committee should communicate directly with the Secretary of State on the subject. The Committee will be glad to have from the Council a direction to take this action as opportunity may offer before the meeting in May.

Direct Representation.

Mr. BROWN had a notice of motion on the paper as follows:

That in the opinion of the Council the time has come when it is expedient to confer on the registered medical practitioners resident in England the power of returning an additional member to the General Medical Council as provided for in the Medical Act of 1886.

He said that as they were on the last day of the Council he had only twenty minutes left, and felt he could not do justice to the motion in his name, and therefore, with the permission of the Council, he asked leave to withdraw it.

The PRESIDENT asked the Council whether they granted Mr. Brown leave to withdraw his motion, and the leave was granted.

Alleged Infringements of the Medical Acts.

Dr. MACALISTER then said that a number of memorials had been handed in to the Business Committee, and he had been in some doubt as to whether they ought to be received or not, because they referred to more than one subject. The memorials were "on the subject of illegal certificates of proficiency in departments of medicine, surgery, or midwifery, received from the Corporate and Medical Reform Association, Limited, and from 237 practitioners and laymen." He moved that the memorials be laid on the table, so that the matter might be raised at the next session. He could not see what else could be done, as it was impossible for the Council to consider them then.

Mr. BROWN suggested that they might come on with his next notice of motion, which was to the effect that a special committee be appointed to consider and report at the next session of the Council cases of alleged infringement of the Medical Acts.

Mr. VICTOR HORSLEY seconded the proposition of Dr. MacAlister, that the memorials be laid on the table, and suggested that Mr. Brown's motion be taken in its proper order. Dr. MacAlister's motion was carried.

Mr. BROWN moved:

That a special committee be appointed to consider and report at the next session of the Council cases of alleged infringement of the Medical Acts by persons who profess to examine candidates in medicine, surgery, or allied subjects, and to grant certificates or diplomas testifying as to proficiency in any branch of medical or surgical science.

He said that there was evidence in the memorials which had just been referred to that certain bodies were granting certificates of proficiency for the treatment of diseases of the eye. He had had an opportunity of seeing the questions put in the examinations, and they certainly related to diseases of the eye. He thought it was very desirable that any examination which purported to relate to a branch of medicine or surgery should be taken notice of at once by the Council, and if it was right the Council might let it go on, but if it was wrong it was a thing which ought to be nipped in the bud.

Mr. VICTOR HORSLEY, in seconding the motion, said the question was vastly more important than was represented on the memorial, and it was one which was connected with the Companies Act Amendment. He thought that whether it was a Special Committee or a Branch Committee was not of great importance so long as a watching Committee was appointed to inquire into the matter and bring it before the Council next session.

Dr. MACALISTER moved an amendment:

That the memorials mentioned on the preceding subject be referred to the Executive Committee for consideration and report.

He said in bringing forward this amendment he did so because there was a question whether there was any legal power to interfere.

Mr. CARTER seconded the amendment.

The PRESIDENT put the amendment to the Council, when 13 voted for, and 8 against. He therefore declared the amendment carried. He then put the amendment as a substantive motion, and this was also carried.

University Degrees.

Dr. MACALISTER said, in reference to the next item on the programme, which was in regard to a resolution passed by the Incorporated Medical Practitioners' Association in regard to the Universities Degrees Bills, there had been handed to him a copy of the Universities Degrees Bill, the purport of which was that anyone who used a degree not obtained in the United Kingdom should put after it the source of that degree, otherwise he should be liable to a penalty. He might say that the

Council never had proposed to support the Universities Degrees Bill, and therefore he proposed that the Council should proceed to the next item.

Mr. VICTOR HORSLEY seconded this proposition, but stated that he intended to ask the Council at the next session to support the Universities Degrees Bill.

The motion was agreed to.

MEDICAL ORDINANCE, TRINIDAD, 1898.

The report of the Education Committee on the Medical Ordinance, 1898, of the Colony of Trinidad having been received and entered on the minutes, Sir JOHN BATTY TUKE moved:

That the Council intimate to the Right Honorable the Secretary of State for the Colonies that it fully approves of the provisions of the Ordinance in so far as they apply to the good rule and government of the medical profession and of dentists in the colony of Trinidad, and the protection of the public from the dangers of unqualified practice.

He said that the report stated, first of all:

(*a* That the establishment of a Medical Board, consisting of persons of good character holding "any medical diploma, or licence, in respect of which he may be entitled to be registered as a medical practitioner in Great Britain or Ireland." (*b*) For the election of a Council, consisting of a president, vice-president, secretary, and treasurer, and three members of the Medical Board, "to which shall be delegated such of their powers and duties as are by this ordinance vested in the Board as to the Board may seem fit." It is lawful for the Board (*inter alia*) to make and pass by-laws "for the good rule and government of the members, and the affairs of the Board, for regulating the manner of applying and using the funds of the Board, for regulating the appointment of examiners for the licensing of druggists and midwives," and "for the doing of such further matters and things not inconsistent with the provisions of the Ordinance, as may be deemed expedient and necessary for carrying the same into effect. And thereby to appoint such fines, not exceeding in any case five pounds, as they deem necessary for the prevention and suppression of offences against such by-laws." (*c*) For the sale of drugs and poisons (*d*), That "any person not being a member of the Board who shall after the passing of this Ordinance practise medicine or surgery or perform any surgical operation, or give any medical opinion or advice, or prescribe any medical or surgical treatment within this island in respect of which he shall demand or receive any fee or gratuity, or any remuneration, profit, or compensation, under pretext of services rendered, loss of time, travelling, or other expenses, under any other pretext whatever," and that any person who shall wilfully and falsely pretend to be, or use any medical or surgical title, or assumed any other step [? style], title designation, or description, implying that he is qualified to practise medicine, surgery, or midwifery," shall be liable to forfeit for the first offence twenty pounds, and in default be imprisoned with or without hard labour for any term not exceeding three months, and for a second or subsequent offence fifty pounds, or imprisonment for not more than six months. A similar provision is made to protect dentists.

Dr. MACALISTER, in seconding the resolution, called attention to the fact that this was perhaps the most stringent Medical Act in force in the empire. He believed many members of the Council would be glad if anything half so strong was introduced into the United Kingdom.

Sir RICHARD THORNE wished to emphasise the point that, under this Act, a midwife must be a person of good character, which the promoters of the Midwives Bill retained in two forms, namely, a person of good character and a fit and proper character.

The resolution was carried.

REGISTERED PRACTITIONERS AND THE LAW COURTS.

Mr. BROWN then brought forward a notice of motion which stood in his name, and which, after a slight discussion, read as follows:

That in all cases where a person whose name is not on the *Medical Register* or *Dentists' Register* is charged with an offence before a public tribunal in England and Wales, and it is reported that the accused claims to be a medical practitioner or dentist, it be an instruction to the General Registrar, or in the case of Scotland and Ireland the Branch Registrars, to write to the presiding official of the tribunal stating that the accused person is not a registered medical practitioner or dentist.

Dr. MCVAIL suggested, as this was a matter they could hardly deal with at the present session, that Mr. Brown should withdraw it from the consideration of the Council on that occasion. This was agreed to by Mr. BROWN.

DENTAL BUSINESS.

Mr. TOMES moved that the report of the Dental Committee be received and entered on the minutes. This was agreed to.

In moving the report, Mr. TOMES referred among other matters to the case of Henry Rowton, who was complained of as having given a death certificate. Mr. Rowton did not appear before the Dental Committee, but a letter was read from his solicitor dated November 17th, 1898, stating that his client undertook never again to issue any documents which could be considered to be medical certificates or to attend any patients as a medical practitioner. It appeared from the evidence that it was rather a case of a prescribing chemist than of a dentist acting as such, and Mr. Rowton had originally gained admission to the *Dentists' Register* as practising before 1878.

The PRESIDENT remarked that the Council had never thought out any procedure with reference to the Dental Acts, because the cases had been so very few. He said the Standing Orders of the Council were not explicit as to what the procedure should be, and he thought there should be a form of procedure in all dental cases.

Mr. TOMES then read a letter from the solicitor of Mr. Rowton, upon which Mr. Bryant remarked that it was tolerably clear that this person had been carrying on the practice for a long time.

The PRESIDENT said he had had a motion handed to him which had been drafted by the chairman of the Business Committee and which he proposed to put from the chair. It was that the further consideration of the charge found to be proved against Henry Rowton be adjourned to the next session of the Council. If they did that, that would show they were still keeping a watch upon him. The resolution was carried.

Mr. TOMES then moved:

That the report from the Special Committee of the Council on Dental Business be entered on the minutes.

Mr. Tomes said that it was proposed that a covering note should be issued to dentists as to the employment of unqualified assistants similar to that which was issued to persons on the *Medical Register*. The Dental Committee had adopted the following resolution:

That the members of the Dental Committee recommend the General Medical Council to reissue to all persons on the *Dentists' Register* the notice of November 24th, 1892, in regard to the practice of covering unqualified persons.

He moved that the recommendation of the Committee be adopted. This was seconded by Mr. CARTER and agreed to, and Mr. Tomes referred to a resolution of the Dental Committee, which was as follows:

That the members of the Dental Committee agree with the opinion expressed by the Executive Committee that the practice referred to in Dr. Buist's letter is most reprehensible; and recommend that if a charge of covering in connection with such administration of anæsthetics, were brought before the General Medical Council, it should be entertained and investigated.

He said the history of the resolution was that the Dundee and District Branch of the British Medical Association had passed a resolution to the effect that action ought to be taken in the matter of registered medical practitioners who rendered assistance to unregistered dental practitioners by administering anæsthetics for them. That resolution was received by the Council and it was referred for report to the Dental Committee. He had taken means to inquire whether the practice was general, and whether registered medical practitioners over the country did administer anæsthetics for unregistered dentists, and for unregistered practitioners such as bonesetters. He had in reply received a large number of answers. He had stated in his inquiry that the reply would be treated as confidential, and that he should not make any further use of the information except to give the numbers. He found the practice was exceedingly prevalent in the midlands. He had obtained answers from 25 towns that medical practitioners were in the habit of giving anæsthetics for unregistered dentists, and found in some instances the name of the medical practitioner was put up in the window of the unregistered dentist as giving anæsthetics for him. He had learned incidentally that in a few of the places registered medical practitioners gave anæsthetics for bonesetters. He had received confidentially the names of twenty-three registered medical practitioners who were in the habit of administering anæsthetics for unregistered dental practitioners. He thought, therefore, there was very good cause for the Council to adopt the recommendation. He had also talked to a number of the leading anæsthetists with whom he had come in contact, and he found that the Society of Anæsthetists had not discussed the subject, but amongst those to whom he had spoken there was a complete consensus of

opinion that the thing was wrong, and should be so stigmatised and dealt with. He therefore moved that the resolution of the Dental Committee be adopted.

Dr. MacAlister thought it was quite impossible to adopt it in its present form. The notice ought to be drawn out by their legal adviser. Therefore he would move

That the reissue of the notice of November 24th, 1892, be delayed until it can be accompanied by a supplemental notice to be framed by the legal adviser of the Council in the sense of the foregoing resolution.

That is the resolution appertaining to the administration of anæsthetics.

Mr. Tomes asked whether that would sufficiently express the adoption by the Council of the resolution.

The President said he thought so.

Mr. Victor Horsley seconded Dr. MacAlister's proposal, and this was carried.

Mr. Carter brought forward a report from the Executive Committee as to dental business transacted since the last session of the Council, pursuant to the resolution of the Council passed on May 31st, 1898:

This report contained among other matters the following:

They received and entered on their minutes the following communication from the Irish Branch Council in regard to dental registration: "35, Dawson Street, Dublin, October 18th, 1898. Dear Sir,—At their meeting yesterday the Branch Medical Council directed me to forward you the following copy of the resolution passed by them: Resolved—'That the local registrar shall keep a dentists' register, in accordance with Section XI, Clause 5, of the Dentists' Act, 1878.'—Faithfully yours, S. Wesley Wilson, H. E. Allen, Esq., LL.B." Whereupon it was resolved: "That this communication be remitted to the legal advisers of the Council, with a view to obtaining their opinion on this question." This opinion has since been received and entered in the minutes of the Executive Committee of November 26th, 1898, and a copy was directed to be sent to the Irish Branch Council.

The report also recommended that the application of a dentist registered in the Colony of Victoria to be registered as a colonial dentist be acceded to, as to which

Mr. Tomes observed that after going carefully through all the papers as to the curriculum and the examination of the Colony, he found that they were exactly modelled on those which obtained in this country; unless the clause in the Dental Act which allowed the Council to register certain foreign and colonial qualifications was to be a dead letter, they could not logically refuse to register the applicant, unless they had reason to suppose that that which was stated was not honest and *bonâ fide*: they had no reason to suppose that in this case, and therefore he moved the resolution.

Dr. MacAlister thought that notice should be taken of the fact that this was the first time that such a case had occurred.

The resolution was put to the meeting and carried.

This concluded the business of the meeting.

Vote of Thanks.

Dr. Glover, in moving a vote of thanks to the President, said he did not remember any meeting of the Council at which the work had been more prolonged, and when it had been more trying than it had been this session. They all admitted and admired the good temper which Sir William Turner, in presiding over the Council, had ever shown.

Mr. Carter seconded the vote, which was carried unanimously.

The President, in reply, said that he was much obliged to his colleagues for the vote of thanks accorded him. The session had been prolonged, and at times had been rather trying, but he should like to say that his colleagues had loyally supported him through all the proceedings, and he begged to thank them.

Serum Manufacture in Switzerland.—On November 2nd a Swiss Serum and Vaccine Institute was constituted in Berne, with a capital of 450,000 francs. The new Society is the successor of the Bacterio-Therapeutic Institute (Haefliger and Co.) of Berne, and of the Swiss Vaccine Institute (Chs. Haccius) of Lancy, Geneva. The Council of the new Institute is composed as follows:—*President:* Dr. Albert Vogt (Berne). *Vice-Presidents:* Dr. Chs. Haccius (Geneva), Professor de Cérenville (Lausanne), and Professors E. Hess, T. Kocher, H. Sahli, and E. Tavel, all of Berne. The Director is J. Haefliger (Berne). The scientific and technical management of the Institute is in the hands of Professor E. Tavel, with the assistance of Dr. F. Krumbein and Dr. Wilhelmi.

FIFTH REPORT OF MR. VICTOR HORSLEY TO THE REGISTERED PRACTITIONERS OF ENGLAND AND WALES.

Since my last report to the registered practitioners of England and Wales, published in the medical journals of May 14th of this year, another session of the Council has taken place. I am therefore in a position to report definitely concerning certain matters which were at issue on the date mentioned.

These matters are as follows:

1. The inspection of documents.
2. The case of the late Mr. Herbert K. Hunter, L.S.A.
3. The Midwives Bill question.
4. The Medical Aid question.
5. The question of reciprocity in foreign practice.
6. The amendment of the Medical Acts and the relation thereto of the Council's work in regard to unqualified practice by (*a*) individuals, that is, quacks, and by (*b*) fraudulent companies.
7. The responsibility of the Council for the character of the higher registrable qualifications.

I.—The Inspection of Documents.

It will be remembered that, immediately upon his election on April 7th, 1898, the President gave orders that I should not be allowed to see any documents the property of the Council, although up to the date named I had enjoyed the customary rights of a member of the Council. Unfortunately for the furtherance of business this act of the President was supported by a motion carried in the Council at the May session, 1898, by Dr. Glover and Dr. Bruce, and the matter was further complicated by the Council accepting, on the proposal of Dr. MacAlister, Dr. Glover's motion as a Standing Order. With the view of restoring the rights of members of the Council and thereby defending your interests I took the advice of Mr. Hempson and the opinion of Mr. Henry Buckley, Q.C., on the matter.

Mr. Buckley's opinion, briefly stated, amounted to the following positions: That the case of the King *v.* the Merchant Taylors Company which had been cited to the Council did not apply—as, indeed, I had already shown—to the case of members of the Council, and also, as Mr. Hempson had advised me, was directly negatived by the case of Byrne *v.* the South Wales Coal Company; that under these circumstances my position was clearly defined and good, and supported by the dicta of the judges in the first case mentioned: that, however, the case was wholly prejudiced by the action of the Council in making Dr. Glover's motion into a Standing Order; that it was legally possible for the Council by such Order to hamper its work and the opportunities of its members in any way, provided that no member could show damage or serious obstruction to his work to result from such hindrance; that it would be advisable to move at the next session for the production of documents, and that if these were refused I could then apply to the High Courts for a remedy. I therefore moved at the recent session several motions for the production of various sets of papers. Although opposed as strongly as possible by Dr. MacAlister, the Chairman of the Business Committee, and the President, the Council supported me by majorities amounting to over three-fourths of the Council. The discussions which preceded these votes created such an unfavourable impression that several members of the Council insisted that, since every member had a prescriptive right to see the documents, no delay should occur in the latter being produced for their inspection. More than this, later in the session a motion was proposed by Sir Richard Thorne, and carried, to the effect that inasmuch as the operation of Dr. MacAlister's Standing Order of the previous session was "not altogether satisfactory," the Executive Committee were directed to report as to the best means of facilitating the examination of documents by members of the Council. This resolution of Sir Richard Thorne was carried *nem. con.*, and although such a vote was a very striking commentary on the events of the previous session, the resolution contained one error of procedure which will require to be removed later—namely that leave must be asked of someone or of the Council before documents can be produced by the Registrar. This, of course, conveys with it the assumption that some members of the Council have an authority over other members of the Council, but such a

position is contradictory to the Medical Acts, under which all the members of the Council have equal rights, and no statutory authority can be delegated to any official whatsoever. The profession must clearly understand that it is not possible for the direct representatives to carry out their work properly until these illegal restrictions are fully removed, but at least it is very satisfactory to note that the proceedings of the last session have to a large extent neutralised the injury inflicted six months ago.

II.—THE CASE OF THE LATE MR. H. K. HUNTER, L.S.A.

The case of this gentleman, who unfortunately died after his conviction for calling himself a physician, is one of vital importance. It was one (in which a registered practitioner was prosecuted by the Council under Section XL of the Medical Act for calling himself a physician) that excited much attention at the time—that is, April, 1898—and I was especially attacked in the medical journals as having sanctioned this particular prosecution, and as being, in fact, responsible for it as a member of the Council, though a direct representative of the profession. The only constitutional course open to me was to raise the matter in the recent session of the Council, but discussion of it being refused me by a narrow majority, I have no option now but to clear myself before the profession, and show that not only was I not responsible, but that also the Council itself was not responsible, and that the prosecution in question was wholly unauthorised, and conducted upon lines which have never been the subject of discussion in the Council at all. Mr. Hunter was an L.S.A. and a registered medical practitioner. He was complained of to the Council for using the title of M.D., he only possessing the M.D. of Philadelphia. On being warned that he was doing an illegal act he thereupon ceased to use the M.D.

However, the Penal Cases Committee reported his case to the Council as one suitable for prosecution under Section XL of the Medical Act, and his conduct was described to the Council as that of an unregistered person practising under an American M.D. degree. The Council on this information ordered that a summons should be issued under Section XL of the Medical Act to restrain, as they believed, an unregistered person from practising under the cover of an American diploma. This decision was come to at the November session, 1897. The profession will now readily understand with what feelings I read in the *Times* in April, 1898, the account of the hearing of the summons, from which it appeared that Mr. Hunter was a registered practitioner holding an L.S.A. diploma, and that he was prosecuted, not for calling himself an M.D., but for putting upon his billheads the word "physician," that he was convicted and fined £5, and that he had lodged an appeal against the conviction. This was the first stage of this matter, and it will be seen that Mr. Hunter was prosecuted on a charge which had never been discussed by the Council and had never been authorised by the Council. At the May session, 1898, soon after these proceedings were made public, Mr. Brown and myself raised the question to draw attention to the procedure of the Penal Cases Committee and of the law officers, and to inquire by whose authority this prosecution had been initiated. The President appealed to Mr. Brown to withdraw his motion on the ground that the case was still *sub judice*. Unfortunately Mr. Brown assented, though on the understanding that the matter would be brought forward at the next, the recently completed, session. Not long after the May session Mr. Hunter died, and the Apothecaries' Society determined to prosecute the appeal in his stead. It being impossible under the recent Standing Order of the Council forbidding inspection of documents to find out what steps were being taken in this matter in the name of the Council until the session began on November 22nd, Mr. Brown and I on that date moved for the documents in the case to be produced, and, as just stated, we carried that motion in the face of a strenuous opposition offered by the President, the Chairman of the Penal Cases Committee, by Dr. MacAlister, by Dr. Heron Watson and by Mr. Carter. Gathering from the perusal of the surrendered papers that the appeal was being resisted by someone using the authority of the Council, I asked the Registrar who were the parties in the appeal case, but neither he, nor the President, nor the Penal Cases Committee, nor any of the members of the Council were in the possession of any such information. On my pressing the matter, the President agreed to write and find out what was the position of the Council in the appeal case immediately pending. The legal assessor informed the President that the General Medical Council was resisting the appeal on the ground (as he had already told the High Court) that Mr. Hunter had no right to call himself a physician. It follows, therefore, that not only the original prosecution, but also the resistance of the appeal, have been instituted without the Council being afforded the slightest opportunity of discussing the merits of the case or authorising action upon it. This is the first issue in the Hunter case—namely, the utterly unconstitutional nature of the procedure—and this issue I endeavoured to raise on three separate occasions during the last session, but was ultimately defeated, though by but a bare majority. The other issue—which should be called the main issue—namely, whether Mr. Hunter, as an L.S.A. registered under the Act of 1886, had the right to call himself a physician, is one about which I have no doubt whatever, and which it is easy to show is not governed (as was alleged before the magistrates) by the case of Regina *v.* Baker. This question of the merits of the case I will discuss on a subsequent occasion.

III.—THE MIDWIVES BILL QUESTION.

The matter of legislation for midwives came up before the recent session of the Council, and a small committee was reappointed to watch the introduction of any further legislation, as it seemed likely that such action might be taken by the Government. Further, a few additions were carried in the Council to the former principles which were laid down by the Council in the May session of the present year, and which principles, it will be remembered, were fully adopted by the Duke of Devonshire, the Lord President of the Privy Council.

IV.—THE MEDICAL AID QUESTION.

As will be seen by the published reports of the Council's session, the Committee which has this matter in charge has only published an interim report because it had been arranged to hold a conference with the officials of the reputable friendly societies in order to satisfy themselves of the precise position of such associations in relation to the medical profession. Such conference cannot take place before early in 1899, and consequently the Committee in question can only publish their full report at the next, the May, session of the Council. Greatly regretting as I do the delay in the Council taking up a definite attitude on this important matter, there is no possibility of altering the procedure that has been entered upon.

V.—THE QUESTION OF RECIPROCITY AND FOREIGN PRACTICE.

In the May session I brought up this matter and showed that the document issued by the Council as an authoritative one on the question of reciprocity in foreign practice was not in accordance with the Medical Acts. After some discussion it was referred to the Executive Committee for amendment and report. When, however, in the recent session their report was approached on the programme the President suggested that it was a matter which did not press and could be postponed for six months, with which of course I agreed, and especially as in its amended form the document is still, in my opinion, misleading.

VI.—AMENDMENT OF THE MEDICAL ACTS.

The relation of the work of the Council in regard to unqualified practice received considerable attention this session, and very distinct advance was made in more than one direction. The prevention of unqualified practice is necessarily to be considered under two headings, according as to whether *(a)* it is carried on by an individual or *(b)* by a company. As regards the individual, the singularly gross case of misprision of justice in the magistrates' treatment of the case of Matthews, prosecuted at Norwich by the Medical Defence Union, came before the Council, which, however, unfortunately could not intervene, inasmuch as the magistrates stated that they arrived at their decision on the point of fact and not of law. Upon this I drew the attention of the Council to the necessity of meeting such constructive evasion of the law by an amendment of the Medical Act, and obtained from Mr. Muir Mackenzie a reconsideration of his former adverse opinion on this subject.

The question of the infringement of the Medical Acts by companies is another point and is being dealt with by a Special Committee, consisting of the President, Mr. Tomes,

and myself. Proposals, which were subsequently approved by the Council, have been furnished to the Government, whereby it is to be hoped that the fraudulent companies constructed for the sole purpose of evading the clause of the Medical Act will be extinguished.

VII.—The Responsibility of the Council for the Higher Qualifications.

In connection with the matter of higher qualification, I gave notice at the recent session that I would draw attention to the fact that a memorial had been presented to the Council by certain members of a medical corporation complaining in specific terms of reprehensible insufficiency of the examination for the Fellowship of the corporation. As a matter of fact this memorial, which had been addressed to the Council, had never reached the Council because it was returned by the President to the complainants on the ground that the Council had nothing to do with any superintendence of or was in any way responsible for the status of examinations for higher qualifications. The matter being placed in my hands by the persons aggrieved, in order that it should come before the Council, I gave notice of the motion alluded to, but when it came on for discussion the President ruled it out of order on the same ground as that upon which he had returned the memorial, namely, that the question involved was not within the purview of the Council. There are two points included in this matter, the first is the act of the President in taking upon himself to reject a memorial addressed not to him but to the Council. The President has, I submit, no right to debar memorialists from approaching the Council, and in fact there is in the Standing Orders no restriction on memorials except that they must not relate to more than one subject. I did not bring up before the Council the question of the President's action because it being the end of the session I was anxious to obtain a hearing for the very important question raised by the memorial, namely, an alleged insufficiency of the examination which was that for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow. In this, however, I was disappointed because the President ruled the motion out of order, and the whole matter was thus once more suppressed so far as the General Medical Council was concerned. This ruling of the President was evidently given without reference to the Sections of the Medical Act of 1858 which deal with this subject and specifically with the examination for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow; I therefore at once gave notice that I would raise the question at the next session, namely in May, 1899.

December 5th. Victor Horsley.

THE SEAMEN'S HOSPITAL SOCIETY AND THE VISITING STAFF OF THE DREADNOUGHT SEAMEN'S HOSPITAL.

The following memorandum, having reference to the matters mentioned in an article published under this heading in the British Medical Journal of November 3rd, page 1716, has been issued with a covering letter signed by Mr. P. Michelli, Secretary of the Seamen's Hospital Society:

MEMORANDUM.

From certain paragraphs and letters in the newspapers, both lay and medical, it would appear that there exists some opposition to the projected school of tropical medicine. It has been contended:

1. That the selection of the Branch Seamen's Hospital was not a wise one, and that the Dreadnought at Greenwich, and Netley, offered superior advantages.

2. That the concentration of tropical cases at the Branch Hospital will operate to the detriment of the parent hospital—the Dreadnought.

3. That the clinical material offered at the Branch Hospital is insufficient, and that the hospital is difficult of access.

4. That it is unnecessary to build laboratories as it is proposed, seeing that at many places in London there are now fully-equipped establishments.

5. Lastly, that the staff of the Dreadnought Hospital have been treated by the Committee of the Seamen's Hospital Society with discourtesy.

It is almost unnecessary to state that the first four of these points has been carefully considered by the Secretary of State for the Colonies, and the whole by the Committee of the Seamen's Hospital Society; it is thought desirable, however, to state here, as briefly as possible, the facts bearing upon the points enumerated which have influenced those responsible for the carrying out of this scheme:

1. The Society's hospitals are the only ones in London where cases of tropical disease can be seen in sufficient number to provide clinical material for teaching purposes. The building called the "Dreadnought" at Greenwich, which formerly was the infirmary of Greenwich Hospital, is not the property of the Seamen's Hospital Society, but is held by them from the Lords Commissioners of the Admiralty, subject to six months notice. The building is old, unsuited for a school, and already fully occupied by patients and staff. The Society have no other land at Greenwich.

The ground attached to the Branch Hospital is held on lease for ninety years from the London and India Docks Joint Committee, and there is plenty of space for all the proposed buildings and future extension. The greater proportion of acute cases of tropical disease, especially among Orientals, naturally arrive first at the Branch Hospital, which is situated in the docks. In this respect the Branch Hospital will have an advantage over Netley, where the admissions are chiefly of English soldiers in advanced stages of disease, who have already been under treatment, often for long periods, in military hospitals at the stations from which they have been sent home. There is no reason to suppose that the War Office would allow medical men of every class—that is, civilians, medical missionaries, etc.—to study at Netley, and the distance from town is prohibitive as a London teaching centre.

2. Concentration of cases of tropical disease at the Branch Hospital is certainly desirable, but patients suffering from tropical diseases, and applying for admission to the Dreadnought Hospital, would still be admitted and treated there.

3. The total number of tropical cases under treatment at the Branch Hospital during the year ended November 30th last was 81.

Many cases now have to be refused at the Branch Hospital for want of room, but when the hospital is enlarged the number admitted will be much increased.

Of the above total 31 were suffering from malaria. These cases alone are sufficient to justify the establishment of a school there; this everyone acquainted with tropical medicine will appreciate.

With regard to the difficulty of access to the hospital, there is train service—four in the hour—between Fenchurch Street or Liverpool Street and Connaught Road Station, taking on an average 30 minutes. This station is one minute's walk from the hospital.

The course will be post-graduate, and will occupy the students' whole time, therefore they will have no difficulty in getting daily to and from the Branch Hospital whilst living in London, whilst they could not travel daily to and from Netley. It is manifest that the school must be established where patients suffering from tropical disease are to be found, and that the hospital to receive such patients must be placed to meet the needs of the patients rather than the convenience of students. Such a hospital cannot be placed in Central London, and students must of necessity for such a training go to a hospital established at a shipping centre.

4. Every teacher of clinical medicine must be fully aware that to separate the laboratory from the ward is highly prejudicial to successful work.

5. The visiting staff of the Dreadnought complain that they were not consulted before the establishment of the school was decided upon: this is a personal matter, and has nothing whatever to do with the merits or demerits of the scheme. It may be mentioned, however, that the visiting staff of the Dreadnought have been invited to co-operate, but have not so far seen fit to signify their willingness to do so. The Dreadnought Hospital and the Branch Hospital, though under one Committee of Management, are worked as two separate establishments. The visiting staff of the Dreadnought Hospital have no connection with or duties in the Branch Hospital.

The following letter has been addressed to the Secretary of the Society by Sir William Broadbent:

Dear Mr. Michelli,—You have done me the honour to send me a copy of the Memorandum issued, or to be issued, by the Committee of the Seamen's Hospital, and I feel bound to make one or two observations upon it.

It is implied that because the first four of the contentions have been carefully considered by the Secretary of State for the Colonies they may be regarded as *choses jugées*. But the Secretary of State would be guided by the information laid before him, and if this information was imperfect or one-sided, his approval was obtained under false pretences.

The personal matter of the injustice and discourtesy to the medical staff of the Dreadnought is said (par. 5) to have nothing whatever to do with the merits or demerits of the scheme. But this discourtesy entirely prevented certain aspects of the question from being brought to the notice of the Secretary of State, and made the data on which he based his judgment imperfect and one-sided.

How little any conclusion formed by the Committee is entitled to respect is made clear by the memorandum itself:

"It may be mentioned," it says, "that the visiting staff of the Dreadnought have been invited to co-operate," leaving it to be understood that this invitation was part of the original scheme, whereas it was not sent till it had become an insult.

This *suggestio falsi* is aggravated by the circulation with the Memorandum of a copy of Sir H. Burdett's letter, from which the passage in which he states that the senior medical staff of the Dreadnought would form part of the teaching staff of the school is omitted.

A Committee capable of such a suppression of truth material to the issue, and of such a suggestion of what is calculated to mislead, is, in my opinion, totally unworthy of confidence.

Yours faithfully,

Brook Street, W., Dec. 7th. W. H. Broadbent.

LITERARY NOTES.

In an erudite note on the Atlas and Epistropheus in the *Journal of Anatomy and Physiology* for October, Professor Alexander Macalister points out that it is by an error that the term "atlas" is applied to the first vertebra. The name is, of course, applied to the fabled Atlas, who bore on his shoulders, not the Earth, but a globe marked with the signs of the zodiac to represent the heavens. But Vesalius, following earlier writers, used the term "atlas" to designate, not the first, but the seventh vertebra, the *vertebra prominens*. Professor Macalister has little doubt that in this use of the term Vesalius was correct. It is, he says, the prominent point at the bend of the neck on which, in the classical figures, Atlas is supposed to bear the heavens. In the figures of Atlantes from the Theatre of Dionysos, now in the Louvre, this becomes evident, and the same will be seen in Cockerell's figure of the Atlas from the Temple of Olympian Zeus, at Agrigentum, as well as from the more modern Atlantes of Buonarotti, and other masters. That this was an old conception is shown not only by these examples, the first of which dates from the third century B.C., but also by the description of Atlantes in Pausanias, as they occurred on the chest of Cypselus (v. 18, 4), and on the throne of Apollo at Amyclæ (III, 18, 10; see also v. II, 5; and VI, 19, 8). Unlike the Caryatides, the Atlantes and their Roman equivalents, the Telamones, bore their burden on the neck, and so this idea of burden-bearing would naturally be associated by classical authors with the vertebra prominens. In one of the metopes of the Temple of Zeus at Altis, Olympia, Hercules had a cushion on his neck at the region of the seventh cervical vertebræ, to bear the sky (see, for figure and references, Frazer's *Pausanias*, III, 529). Again, in an antique figure in the Naples Museum, also representing Hercules as he relieved Atlas of his load for a time, the burden is borne in the same way. The name of "atlas" is so firmly established, however, that it would be pedantry to propose a change. The mistaken application of the name "atlas" to the first led to the further mistake of applying the name "epistropheus" to the second vertebra. Professor Macalister suggests that while it is now too late to propose any alteration in the name of the first vertebra, it may be worth while considering whether, in the revision of the international nomenclature, it might be possible to drop the term "epistropheus" and adopt that of "axis" for the second vertebra.

Now that a crusade against tuberculosis is being seriously entered upon, that symbol of sanitary progress, the harmless necessary spittoon, is likely to be held in greater honour than has heretofore been its portion. A sign of awakening interest in this adjunct of hygienic life is the curiosity which is expressed in some quarters as to its history. The distinguished French journalist, M. Francisque Sarcey, has committed himself to the statement that "this kind of implement" was unknown in the sixteenth and seventeenth centuries. M. Sarcey has been somewhat rash in his assertion, as appears by the following passage of Raoul Glaber, quoted by Dr. Mathot in a recent number of *La Chronique Médicale*:

> A brother of the Abbey of Saint Germain of Auxerre was wont to pray fervently at the foot of the altar of St. Mary. He had, like many others, [illegible] frequently while saying his prayers. One day he fell [illegible] his sleep a personage clad in white, who, standing be[illegible] holding in his hand a piece of stuff of great whiteness, addressed these words to him: "Why dost thou cast on me all this spittle with which I am covered? It is I who receive the prayers and carry them to the feet of the merciful Judge." This vision frightened [illegible] forth he kept careful watch over himself, and ad[illegible]s to follow his example as far as possible, since [illegible] Nature, nevertheless among almost all nations [illegible] churches, *unless there are spittoons provided for* [illegible] the case chiefly among the Greeks, who have [illegible] the ecclesiastical rule.

Whatever may have been the case in the Middle Ages, observation in some foreign churches would almost lead us to conclude that "the ecclesiastical rule" at the present day is that spitting in churches should be practised by the faithful and by their pastors as a pious exercise.

In the *Progrès Médical* of November 26th M. Henri Lemesle calls attention to a precursor of Lombroso. This is Guillaume Gratarol, a physician of the sixteenth century. In a treatise published in 1555 Gratarol devotes some chapters to the "prediction of the morals and character of men by consideration of the countenance and parts of the body." Man, says he, acquires a knowledge of interior things only by external appearances. Every prudent and wise prince wishing to accept anyone as a servant about his person will do much for the conduct of affairs in his house by informing himself diligently as to the disposition of the person, taking note of the face, which is the index of thought; of the eyes, which are the windows of the soul; and finally, "by minute inquiries," of the composition and quality of the body. Gratarol always shows an inclination to connect hereditary malformations either with madness or with criminality. Thus, he says, the length of the jaws signifies astuteness, chiefly in illicit things. Again, when the teeth which are like those of dogs [canines] are long and firm, and when they project out of the mouth, they bespeak a gluttonous man, wrathful, ill conditioned, and with a tendency to madness. "I have known such kind of folk," says he, "very greedy, great drinkers, cozeners, villains, and murderers." Further, he says that thick hair is a mark of cruelty—though he does not say that baldness is to be taken as a sign of benevolence. Large ears indicate foolishness. An aquiline nose is a bad sign; "a nose much hooked, and drawn downwards, is the appanage of wicked men who delight in killing"—a description which recalls the description of Blandois in *Little Dorrit*, whose nose "came down over his moustache," when he was chuckling over some piece of villainy. Gratarol noted that in villains and murderers the iris presents peculiarities; and, further, that a head which has a pit at the back (the median occipital fossa of which Lombroso makes so much) shows that its owner is ill-tempered and deceitful.

The twenty-fourth part of the New Sydenham Society's *Lexicon of Medicine and the Allied Sciences*, based on Mayne's lexicon (Scup—Tape), has just appeared. In the report presented to the fortieth annual meeting of the New Sydenham Society, held on July 29th, 1898, the following passage occurs:

> It is confidently hoped that the Lexicon of Medical Terms may be completed within twelve months. Considerable progress has been made in the preparation of a Supplement which will follow the completion of the main work.

We may remind our readers that the subscription to this most useful Society is one guinea annually, which may be sent to Mr. H. K. Lewis, 136, Gower Street, or to the Treasurer, Dr. Sedgwick Saunders.

Samuel Foote was, like the husband of Juliet's nurse, a merry man, but he is not generally accounted a scientific prophet. It would appear, however, that he was a Moses of bacteriology, being allowed to look into the promised land which he was not privileged to enter. In his comedy *The Devil on Two Sticks* (1768), one of the characters, a physician named Hellebore, is made to deliver himself as follows:

> I have discovered the primary cause of all distempers incidental to the human machine. And these, brethren, I attribute to certain animalculæ or piscatory entities, that insinuate themselves through the pores into the blood, and in that fluid sport, toss, and tumble about like mackerel or codfish in the great deep.

Cremation and Infectious Diseases.—The recent outbreak of plague in Vienna has once more given "actuality" to the question of cremation in Germany. A petition has been addressed to the Chief Magistrate of Berlin by 130 members of the medical profession, who call his attention to the danger of earth burial in cases of death from infectious disease, and urge the advisability, in the interest of the living, of cremation in such circumstances.

The Health of Quetta.—The Committee appointed to inquire into the enteric question, at Quetta, has been strengthened by the addition of Major Davies, R.A.M.C., an officer of special experience in bacteriology and sanitation. The Committee, it is reported, is likely to recommend several sweeping and expensive reforms in sanitary matters. While the heavy mortality which has occurred among the British troops this year, and which must have cost somewhere about one lakh of rupees to Government, it is to be hoped that no cheeseparing policy at army headquarters will bar the way towards carrying into effect the reforms which may be recommended by the Committee. Two companies of the Wiltshire Regiment, and the newly-arrived draft of the Suffolk Regiment have, on the recommendation of the medical authorities, gone into camp beyond the Hanna Pass to try if the germs of enteric cannot thus be shaken off.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 10TH, 1898.

THE HOME OF THE UNIVERSITY OF LONDON.

The *Times* announced a short time ago, in an article which bore evidence of inspiration, that the Government will shortly be under the necessity of resuming the site of the buildings now occupied by the University of London in Burlington Gardens for the extension of public offices. In that case it will "be necessary to furnish the University with new buildings, which at a time when the Treasury will be called upon for an additional grant to the same body for educational objects, might not be altogether convenient. The Burlington Gardens property is valued at upwards of £100,000, but in the hands of the University the rates, taxes, and outgoings are a heavy charge."

There can be no doubt that even under present conditions the space at Burlington Gardens is barely sufficient to meet current needs. The site is cramped; there is no possibility of extension. If therefore the University must go elsewhere it will be found that the possible sites are very limited in number. It has been suggested that the old buildings of Christ's Hospital might be acquired for the purpose. This would be in some respects an ideal solution. The new University would be at once endowed with traditions, and the shades of Coleridge and Lamb and many another Grecian might be imagined as watching over its destinies. But, though in the City of London, Christ's Hospital can hardly be said to be at the centre of modern London. Moreover, the site is not large; it is certainly very valuable, and it is understood that both St. Bartholomew's Hospital and the Post Office are casting longing eyes on certain portions of it.

The Government, we understand, has made a definite proposal to the Senate of the University to make arrangements to house the future University of London in the Imperial Institute at South Kensington. It is not very clear how the change is to be accomplished without practically abolishing the Imperial Institute as such. It is admitted that though the Institute represents a great conception, the buildings are far larger than its special work at present requires. The Institute has some valuable collections in its galleries, and these might no doubt be of use to the School of Commerce which it is proposed, after the example of Liverpool and of the embryo Birmingham University, to found as a part of the new University of London. The Institute is also beginning to do some good work in scientific research in connection especially with technical chemistry, but on the whole it cannot be said to have been a success, or to be in the way of fulfilling the aspirations of its founders. It seems to be somewhat in danger of degenerating into a kind of club for its Fellows, and a place for miscellaneous exhibitions and evening entertainments. It is stated that the Prince of Wales and the other authorities of the Institute are willing to place the estate at the disposal of the Government, and if this can be done without reservation there can be no doubt that it presents many advantages.

We understand that University College also has made a definite offer to the Senate under which the whole of its buildings, and the site upon which they are erected in Gower Street, would be placed at the disposal of the University for university purposes, and that the terms of the proposal are such as to render them worthy of careful consideration. If this scheme were carried out, it would be a reversion to the original scheme of those who founded the institution in Gower Street early in the century, but it would seem that the difficulty of continuing the teaching work of the present College, while conciliating the susceptibilities and guarding the interests of other collegiate institutions in London, would present great difficulties.

These several schemes came before the Senate on December 7th, and we understand that after dividing upon the question whether, as a moribund body, it was competent to deal with the proposal, and deciding in the affirmative, they were considered in detail. The discussion showed that there was a considerable body of opinion in favour of accepting the proposal of the Government as to the Imperial Institute. No final decision was arrived at, and the question was postponed for ultimate settlement to a meeting to be held on December 14th. The matter certainly requires further discussion than it has yet received, and the opinion of those bodies which will be constituent colleges of the new University ought to find expression. The Senate of the existing University is at present its governing body, but it is objected that so momentous a decision ought not to be taken solely on the authority of a body the functions of which are about to come to an end. Still, it is an old proverb that he who pays the piper shall call the tune, and if the Government is to undertake the responsibility of finding a suitable home for the new University, it may well be that they will press for an immediate answer, and it is broadly hinted that if the present opportunity is lost it may not recur.

The buildings of the Institute are large, and have been described as forming "one of the best examples of modern British architecture." They are fairly easily accessible from most parts of London, and if they can be placed fully at the disposal of the University, it is difficult to see what better site is likely to become available.

A further proposal which has been made, apparently the hope of conciliating the opposition which may be expected from those who have vested interests in the Imperial Institute, is that the name of the University should be changed to the Imperial University of London. This proposal does not seem likely to meet with the general approval of those interested in the University, and it might be taken as somewhat detracting from the main

object of the University, which is that it should serve as a real university in and for London. At the same time it is the case that the new University will have what may be called an Imperial side, and there are precedents for applying the adjective "Imperial" to the University of a capital city: thus we have the Imperial University of St. Petersburg, and the Imperial and Royal University of Vienna. The essential point is that the new University should be master in its own house, and to attain this end non-essentials may well be conceded if such concession will smooth the way.

THE GENERAL MEDICAL COUNCIL.

The winter session of the General Medical Council came to an end on December 1st, on which day a very large amount of work was got through, though in spite of the utmost assiduity some subjects set down for discussion were postponed. During the session a great many matters of interest were raised, and advanced to some extent, though few were settled.

We are not surprised to find the recent regulations of the Conjoint Board in England with regard to instruction in chemistry and practical chemistry, in physics, and in biology were challenged, though the particular form in which the matter was raised is perhaps a little to be regretted. It arose on a letter from the Royal College of Surgeons in Ireland, and had somewhat the appearance of an attack upon the English Board, although it was explained that there was no intention of making any such attack. The regulations permit a student, after passing his preliminary examination, to spend six months at certain institutions where he receives instruction in chemistry and practical chemistry, and in physics, or a whole year at an institution where, in addition he receives instruction in biology. It was contended that amongst the institutions recognised for such study were a number of grammar schools, and that this was not in accordance with the spirit of the rules laid down by the Council; or that, if it were held to be so, it would be more in accordance with the facts to cease to speak of a five-years curriculum and to call it a four-years curriculum, to expunge these subjects from the period laid down, and to compel them to be taken beforehand.

On the part of the Conjoint Board it was contended that the alteration was made after experience of the working of the old rules, which had been intended to encourage the student to complete his study of these subjects before embarking upon his professional courses. A student who had completed this part of his work elsewhere before registration still had his five years to go through after entering at a medical school, and found himself in respect of time in no better position than another who has not done so, but who was quite free to spend a whole year out of his five years at the medical school upon this same work. It was further contended that instruction in these subjects could be, and was, in fact, given by the institution selected for recognition as well or better than at a medical school, that it was not logical to allow the one to count for time and to disallow the other, and that the new rule which required four years of medical study after passing the examination in chemistry, physics, and elementary biology, really secured undivided attention to purely professional study for a longer period than the old rule, under which the student might spread his chemistry and biology over the first two or three years of his course at his medical school.

The question came up too late in the session for full discussion, and the matter was referred to the Education Committee, which was instructed to bring up a report at the next session. If the subjects named are to be reckoned as a part of the medical curriculum, it is difficult to see why the fact that a student receives his instruction in them at an institution other than a medical school should be supposed to reduce the medical curriculum to four years. There is nothing specially sacred about the instruction in such subjects given at a medical school. The main point is that the instruction should be good, given by properly trained teachers in properly appointed laboratories.

If grammar schools find it worth their while to provide such teachers and such laboratories there appears to be no ground, from the point of view of public policy, why they should not be allowed to do so. It is a little surprising, we confess, to be told that adequate provision is made in such schools, but secondary education in this country is full of surprises. The Secondary Education Bill, which is promised by the Government next session, may result in throwing light upon this, as upon many other related questions, and eventually afford adequate material for the formation of the judgment. At present the recognition of these schools rests with the Committee of Management of the Conjoint Board, and there is no reason to think that that Committee is likely to be disposed to admit a school to the list without very careful consideration. The obvious advantage, as has frequently been pointed out in these columns, of the regulation is that it gets these preliminary subjects out of the way before the student enters his medical school, and that after entering there he is able to devote the whole of four academical years to the study of strictly professional subjects.

The difficulties of the new Vaccination Act are sufficiently numerous, but one which has hardly as yet attracted the attention which it deserves is the question of the instruction of students in vaccination. With the abolition of the vaccination stations the old resource of students disappears, and it will not be easy, even in places where vaccination is still performed on a sufficiently large section of the community, for the student to find the vaccinees aggregated at any place in quantity sufficient to enable him to get his instruction without loss of time. Sir Richard Thorne informed the Council that schemes were under the consideration of the Local Government Board, but that they were not yet fully complete. As it appeared that the question was not yet ripe for discussion, a motion by Dr. Glover, recommending that the certificates should be accepted from any registered practitioner, was not discussed.

Some petitions relating to alleged hardship suffered by unqualified assistants who had been dismissed in consequence of the Council's recent notice and its action in regard to covering were reported upon by the Committee which had charge of this subject. The text of this part of the report will be found elsewhere in our columns. It states that the facts brought to the notice of the Committee make it plain that the evils against which

the action of the Council was directed were more widespread and deeply rooted than was probably realised either by the profession or the public. While it was admitted that the removal of such evils must involve in some cases the disturbance of old-standing but illegitimate arrangements, and a certain amount of temporary difficulty or even hardship to the individual concerned, the Committee expressed the opinion that the paramount duty of the Council towards the public in general rendered it necessary that the law should be strictly enforced. The argument appears to be unanswerable, and the report was endorsed by the Council.

A series of questions, in effect asking for a closer definition of the meaning of the "covering" notice, had been received from the Gateshead Medical Association, but it was considered inexpedient to issue formal definitions of the terms used, which, it was stated, "are obviously used in their ordinary and natural sense." Nevertheless, a certain amount of explanation is given as to what may be fairly taken to be the proper relative positions of a practitioner and a medical pupil, which, if carefully read, will be of some service to those who seek guidance, though the Council is of opinion that enough information has already been given to guide any registered practitioner "whose purpose it is in good faith to afford proper training to his pupils in connection with his own practice."

Attention was also called to the necessity for providing some further means of identification of registered persons and for safeguarding the issue of certificates, for it was shown that persons had come to the office who were not qualified, had obtained copies of the registration certificate of some registered practitioner whom they personated, and then had made use of these certificates to obtain employment as *locum tenens*. In one case the offender was not content with this amount of fraud, but consistently robbed a succession of his employers as well, and measures will in future be taken to interpose difficulties in the way of such as may desire to imitate his proceedings.

MOSQUITOS AND MALARIA.

The Natural History Department of the British Museum has recently issued a small pamphlet, entitled, *How to Collect Mosquitos* (Culicidæ), which contains minute instruction as to the best mode of catching and pinning out mosquitos and packing them for transport. Copies have been forwarded to Government medical officers in the various tropical countries. The examination of the insects sent to the Museum will be undertaken by the well-known dipterist, Mr. E. E. Austen, to whom all communications on the subject should be addressed, at the British Museum (Natural History), Cromwell Road, London, S.W. Professor Ray Lankester, the Director of the Museum, has been led to approve the issue of this pamphlet, owing to a recognition of the great importance that this subject has recently acquired, and of the surprisingly imperfect state of knowledge of the Culicidæ.

Reference was made in the British Medical Journal of November 12th (p. 1507) to researches now being made by Professor Grassi which have led that distinguished naturalist to accept the teaching of Manson and Ross as to the existence of a causal connection between malaria and mosquitos. It was there stated that by excluding from consideration the species of mosquito which abound the non-malarial places and those which do not bite human beings, Grassi had narrowed the "suspect" species to the following: Anopheles claviger (Fabr), Culex penicillaris (Rondani), and Culex hortensis (Ficalbi). The investigation in Rome has now been carried a step further, and has confirmed Ross's discovery of the pigmented body in the walls of the mosquito's stomach. In a preliminary note presented by G. Bastianelli, A. Bignami, and B. Grassi to the R. Accademia dei Lincei on November 28th, it is stated that in studying the relationship between the particular species of mosquito and the particular species of malaria parasite the three investigators had, in view of the complexity of the subject, judged it expedient to work together. As the first result of their researches they report that they have been able to follow, with complete certainty, certain phases of the development of the semilunar bodies in the wall of the middle intestine of several specimens of anopheles claviger, kept at a favourable temperature, which had sucked the blood of individuals affected with the æstivo-autumnal form of malaria. The most notable phases in question find an analogy in those discovered by Ross (second and third day), for the proteosoma of birds. In a room containing four patients suffering from æstivo-autumnal malaria, they placed six specimens of culex pipiens, one of anopheles nigripes, and four of anopheles claviger. The examination of the insects gave a negative result, except in the case of two of the anopheles claviger, in which the further stages of development corresponding to those described by Ross for the proteosoma of birds (fourth day) were found.

Apparently the two mosquitos with spotted wings, in which Ross in India found the stages of development corresponding to those of the proteosoma (about the third day) also belonged to the species anopheles claviger (Fabr). Up to the present attempts to cultivate the hæmamœbæ of owls and pigeons in anopheles claviger have proved fruitless. Messrs. Bastianelli, Bignami, and Grassi state in conclusion that at Lentini in Sicily, during the months of October and November, when malaria was very prevalent, while the culex penicillaris and the culex malariæ were not to be found, the anopheles claviger was extraordinarily abundant.

We understand that the British Museum authorities are inclined to question the identification of the species in which the Italian investigators have found the malaria parasite with the anopheles claviger (Fabr). We may state, on the authority of Mr. Austen, that the *Catalogue of the Described Diptera from South Asia*, by F. M. van der Wulp (1896), includes four species of anopheles, but anopheles claviger (Fabr) is not among them. All this shows the necessity of a fuller biological study of the insects, and the need for a central scientific authority to which species could be referred for identification.

INSURANCE COMPANIES AND MEDICAL AID SCHEMES.

The letter from Dr. Henry W. Jacob, of Great Malvern, which we publish at page 1786, affords a good example of the way in which certain insurance companies appear to be disposed to mix up their legitimate business with medical aid schemes. From Dr. Jacob's letter it appears

that a person who represented himself to be the agent of an insurance company, and who further represented that he was acting with the sanction of the insurance company, proposed to Dr. Jacob to become the medical officer to a medical aid association which he was endeavouring to form, and to accept the responsibility of attending men and women whose names presumably would be brought to him by the agent, for the sum of 1d. a week and children for ½d. a week, without wage limit or other restriction. The agent appears to have been conscious that the offer was not exactly liberal, for he pointed out the great advantage that it would be to the medical man to have a person in the position of an insurance agent, willing to utilise that position to obtain patients for him among families which he would not otherwise have been likely to attend. Shortly put, this amounts to an offer on the part of the insurance agent to act as a tout for the medical man in question. We need hardly add that the offer was at once declined, and we are glad to learn that steps were immediately taken, in consultation with Dr. Stanley Haynes, a former President of the Worcestershire and Herefordshire Branch of the British Medical Association, to call the attention of practitioners residing in the neighbourhood to the true nature of the proposition made by the insurance agent to Dr. Jacob, a proposition which it was thought not improbable he might make to others. We sincerely trust that this scheme for introducing a medical aid association, with its paltry payments and many objectionable features, in Malvern and its neighbourhood, may have been nipped in the bud by the prompt action which has been taken locally. This action may well serve as an example and as an encouragement to practitioners in other localities who may be approached with similar proposals by other insurance agents.

ENTERIC FEVER AT BELFAST.

In another column will be found an analysis of the official report of the extensive investigations made by Professor Lorrain Smith into the recent epidemic of enteric fever at Belfast. The practical outcome of the report is to show that the water supply of Belfast can be proved to suffer from fæcal contamination, and that there is presumptive evidence, though no positive proof, that the specific organisms of typhoid fever may have got access to the reservoirs at Stoneyford. At the same time Dr. Smith fully admits that the insanitary conditions existing in the city itself would be capable of originating an epidemic, and would, unless remedied, render futile any attempts at the extinction of the disease. He also states that pollution of the water supply is "one of the causes" of the outbreak in Belfast. Great stress is laid in the report upon the presence of large numbers of bacillus coli communis in the water obtained from the service pipes in infected houses. A considerable degree of importance is attached to the bacillus coli communis as an adjuvant factor in the etiology of enteric fever. Like other authorities, Professor Lorrain Smith has failed to find the typhoid bacillus in the suspected waters. The opportunity was afforded of investigating the nature of the epidemic by means of the "clumping test" given by the blood serum of the persons affected. We are glad to see that in conducting these observations Professor Lorrain Smith has not slavishly confined himself to the too general routine of observing the reaction given towards a single culture at a single low dilution. It appears from the report that in each instance a considerable number of cultures, not only of the typhoid bacillus, but also of allied forms, have been put to the test. It is by the aid of such liberally conceived investigations that the value of the serum test will find its true level. We gather that in many instances there is evidence that the infections were not simply pure infections by the typhoid bacillus. It would hardly be profitable to say more at the present time concerning this abridged report than to express the hope that in the near future we may be able to study the lessons presented by the Belfast epidemic in greater detail.

MARGATE HOSPITAL.

We are glad to learn that the Margate Sea-bathing Hospital is again open. It was closed some time ago by the remodelled Committee of Management to allow of a complete reconstruction of the drainage, together with some minor but not unimportant building operations, one of the objects of which has been a much-needed improvement in the accommodation for nurses and servants. The opportunity has been taken to appropriate two small wards to the treatment of diseases not scrofulous in character, but especially requiring sea air or sea bathing. For many years the hospital—or as it used to be called the "infirmary"—was restricted to scrofula; but this limitation was no part of the original design of the founders, who imposed no further limits to their charity than poverty and the probability of deriving benefit from the special influences of the place. The establishment of these wards is therefore a reversion to the original design, and will, it is hoped, be the means of relieving cases in more rapid succession than was done when only scrofula was received, and that often in very chronic forms. Among other recent improvements is a new operating theatre, which provides all the refinements of antiseptic surgery. The hospital is now being refilled as fast as arrangements can be made, but scarcely rapidly enough to keep pace with the public demand. The wards are pleasing, bright, and sanitary, particularly those built by the late Sir Erasmus Wilson, and the chapel is no less attractive, while the situation—as close to the North Sea as it is possible for a building to be placed—ensures that no salubrious influence which seashore can supply will be wanting to the subjects of serious disease who go there for the ministry of Nature as well as of art. We are informed that a very considerable proportion of the large sum which has been expended as indicated has been given by a member of the Court of Directors, who is, by virtue of his position, well acquainted both with the necessities of the charity and with its utility.

NAGANA OR TSETSE FLY DISEASE.

At the request of the Colonial Office the Royal Society of London appointed a Committee to co-operate with Major Bruce, R.A.M.C., in his research on this disease. This Committee entrusted the experimental work to Professor Kanthack, Mr. H. E. Durham, and Mr. W. F. H. Blandford, who have recently reported to the Royal Society the results of their observations. They inoculated all the ordinary laboratory animals, and also, to test the refractoriness of cross-bred animals, two hybrids of horse and zebra, and one hybrid of zebra and ass, from the stud of Professor Ewart, of Edinburgh. A donkey, monkey, two horses, and a bosch-bok were also inoculated. All of these animals, except the bosch-bok, proved susceptible and succumbed to the disease. The hæmatozoon could be found in the blood at some period of the disease. The lethal period showed slight variations for the individuals of each species, though differing considerably in the various species. Thus, rats died in one to three weeks, guinea-pigs in seven weeks and upwards. The latter animals proved more refractory than any other class. Inoculations with the blood or organs of animals dying of the disease, when introduced subcutaneously or into the blood vessels or peritoneal cavity, proved successful, but attempts to infect by means of the undamaged alimentary canal failed. The amount inoculated apparently had little influence on the results. No evidence of the existence of a resisting or sporing form was obtained; in blood drawn from a living infected animal and kept *in vitro* under aseptic conditions, the hæmatozoon died in at most four days. Complete drying also killed it, as did heating to 50° C.

for thirty minutes. The symptoms noticed were pyrexia, which was sometimes considerable (107° in one horse), and a sharp rise of temperature at any accession of hæmatozoon into the blood stream; muscular wasting, œdema, and infiltration of certain structures of the eye and nose. Some anæmia was also noted, but leucocytosis was not marked. A decreased resistance to pyococci was evident. The morbid lesions observed consisted of enlargement of the lymph glands, especially of those connected with the site of inoculation, and hypertrophy of the spleen. Similar changes occurred in the liver, which was often fatty. The iron reaction was obtained with the liver, spleen, and kidney. The hæmatozoa appeared early in the blood, and their number increased up to the death of the animal, and might number two to three millions per cubic millimetre. The count varied at different times, and there was generally a latent period before they could be found in the blood. Apparently the hæmatozoa first multiplied in the lymphatic gland corresponding to the site of inoculation, and thence found their way into the blood. Multiplication also occurred in the infected area. The parasites were found in serous exudations, but not in the urine, so long as hæmorrhages had not occurred in any part of the urinary tract. Dead and immotile forms were found in the blood, especially at advanced stages. No proof was obtained of the formation of any toxin. All attempts at immunisation by inoculation of serum, etc., failed. The Nagana parasite belongs to the order of Trypanosomas, the commonest of which is the T. sanguinis, met with in the blood of sewer rats. The life-history of these parasites is not known, and the investigators are pursuing their researches more particularly in connection with developmental forms. The further prosecution of the investigation has been made possible by the generosity of Mr. Beit, of South African fame, who has made the substantial donation of £200 to defray expenses.

SUCCESSFUL SPLENECTOMY IN PREGNANCY.

The *Centralblatt für Gynäkologie* reports, in its issue for December 3rd, an undoubtedly brilliant operation performed last summer by Chrobak, of Vienna. A ruptured spleen was removed by him from a pregnant woman on July 3rd. The patient recovered and gave birth to a robust male child at term on October 20th. The patient was 31 years old, and on July 2nd, when in the sixth month of her fifth pregnancy, she was kicked several times in the left side by a drunken man. Symptoms of internal hæmorrhage set in rapidly, without any sign of abortion. The patient's condition improved a little after rest in hospital, when collapse set in, and there was marked dulness in the left flank. Abdominal section was performed about nineteen hours after the injury. A median incision was made, the uterus was found intact, but there was a deep rent in the spleen, covered over with coagulum. The median wound being temporarily brought together, a lateral incision was made, and as suture of the splenic wound was impracticable, the spleen was drawn out, its pedicle tied in two places, and divided. The gaping vessels on the stump of the pedicle were then tied separately. After removal of all blood from the peritoneum both wounds were closed. The operation lasted one hour. The spleen was 5 inches long, and weighed 9 ounces. The damage which it had received was severe; in fact there were three rents in its coat quite apart from the chief laceration. It was probably engorged when struck, and burst at several periods. The patient was very ill for two or three days. Artificial serum was injected into the bowel, and morphine repeatedly administered. On the second day symptoms of threatened abortion set in. There were pains as well as hæmorrhage; but all went well and pregnancy proceeded. On October 15th pains set in, and a living child weighing 6¼ lbs., and over 19 inches in length, was delivered spontaneously at the end of fifteen hours. The placenta came away without complication, and the puerperium was quite normal. Thus fortune favoured the bold operator, who saved two lives. There are several matters of interest in this remarkable case. The kicks did not bring on miscarriage, though they ruptured the spleen. That organ evidently served as a buffer to the uterus, and the blows were probably delivered all in the same direction. The patient was small, sickly and ill-fed, yet in spite of a brutal assault, a wound of the gravest kind; a long operation, and threatened abortion, she was delivered at term, and her child was not only living but strong. Lastly, the two abdominal incisions do not appear to have interfered with parturition, nor, on the other hand, did that process injure them, yet the lateral wound had discharged serum on the twelfth day after operation, leaving a track which took several days to close.

RAILWAY REFORM.

A society—the Railway and General Travellers' Protection Association—is projected for the promotion of several railway reforms. The first is the introduction of a quieter method of signalling than "the hideous ear-splitting engine whistle." Next, fog signals and the banging of carriage doors by impatient porters are marked for amendment; also the inadequate lighting of carriages, platforms, and staircases, and concealment of the names of stations amongst forests of advertisements. It is suggested that indiarubber fittings should be put in railway carriages, so that the doors when slammed may close with a minimum of noise. Lastly, overcrowding of passenger carriages is denounced as a great grievance. Some of these points might certainly be amended in the interest of passengers, but it will be almost impossible to introduce the reforms indicated unless the directors of the companies are first assured that the change will be also for the advantage of the shareholders. This will not be an easy task in respect of the matters in question. For instance, how are platelayers, and other servants of the railways, to be warned during fogs of the approach of trains except by fog signals, whistles, or other equally noisy devices, acting on the sensorium by way of the auditory nerves? Again, on the Metropolitan Railway, where probably the chief overcrowding occurs, the trains cannot be run more frequently than at present (at the busiest times there are 16, 17, and even 18 trains in one direction in the hour), nor can the trains be lengthened, as they already extend the whole length of some of the platforms, and to lengthen the platforms would be a matter requiring parliamentary interference, as well as the incurring of very great expense.

WORKMEN'S COMPENSATION ACT.

A good example of the way in which this Act may be expected to work in many parts of the country has occurred at Saddleworth. The *Yorkshire Daily Post* of November 25th, under the heading of "Employers' Plaint at Saddleworth," reports an application made by Messrs. Naylor Bros. to the local Board of Guardians to supply further medical assistance to the men at the Greenfield Waterworks. Messrs. Naylor write that they can no longer afford to pay for medical attendance on their workmen, as they had hitherto done. They state that since the coming into force of the Workmen's Compensation Act the annual drain on their resources to pay the premium—about £600 per annum—for insurance against the liabilities under that Act, made it impossible for them to incur additional expenses beyond the responsibility for one attendance by the doctor in the case of serious accidents. No action was taken by the guardians, but it is easy to see what must be the necessary outcome. The district Poor-law medical officer will now be called upon to do, at the expense of the guardians, much of the work which has hitherto been paid for by Messrs. Naylor Bros. As many of the cases are accidents requiring special surgical treatment, the

guardians will have to pay the scale of fees laid down for such cases by the Local Government Board, and considerable extra expense will be thrown on the rates. This is likely to occur in many parts of the country, so that the total will amount to a considerable sum. If, therefore, the extra burden thrown on the rates is counted, together with the loss entailed on the workmen themselves by the employers being compelled to discontinue the voluntary assistance which they had been in the habit of providing, it is doubtful whether the success of this measure is likely to be commensurate with the expectations of its more ardent promoters.

IRISH DISPENSARY DOCTORS.

Some letters which we have published in reference to our recent remarks on the Irish dispensary doctors show how miserable is their condition. The old wrongs still remain uncorrected, in spite of the strenuous efforts which have been made for so many years to obtain their removal. The great difficulty, of course, is found in the fact that, in spite of what is known of the wretched service, there are always to be found candidates to fill every vacancy. The son of some local guardian is prepared for a particular place, and when the vacancy occurs he steps in as a matter of course; but he in time joins the crowd of sufferers, and adds his voice to the cry for relief that is always sounding. The pity is that he did not think of this before and turn his attention to other fields of work. It is this that has enabled Chief Secretary after Chief Secretary to meet all appeals for common justice with the stereotyped answer that there are always many candidates for every place. If there were none there would be some chance of improvement. But this should properly be effected by the action of the present occupants. The Irish Medical Association and the Branches of the British Medical Association in Ireland have in turn and together worked hard for reform, and they have achieved much. The former may justly be credited with having secured this privilege at least: that medical officers of 60 years of age and of twenty years' service are entitled to pensions under the new Local Government (Ireland) Act, when that law comes into operation. The British Medical Association and the Journal have given their aid; but we think that the officers themselves ought to be more in evidence. They can at least continue to make their grievances known. Their silence is interpreted as apathy, and that is just the condition which the authorities rely upon to justify their attitude. Reforms of a substantial kind can only be won by united and vigorous action. There ought to be an organised means of instructing candidates as to what they may expect, and if after this they accept the appointments they must bear the consequences. The history of the army medical struggle should inspire hope, if only intending Poor-law candidates would follow that excellent example.

EARLY TREATMENT OF MENTAL AFFECTIONS.

A separate building has been erected by the Lewisham guardians, adjacent to their infirmary, for the reception and temporary treatment of patients mentally afflicted. The building, which is a one-storey block, contains divisions for either sex, consisting, in each case, of a large ward for 8 beds (about 30 feet by 25 feet), a single room for an acute or noisy case, a padded room, a ward kitchen, and the necessary lavatory arrangements. The wards are well built and well lighted, and all the details have been carefully considered. At the opening ceremony on December 6th, under the presidency of Mr. John Penn, M.P., it was stated that the new building will give increased facilities for the plan which has been pursued with the pauper insane of the union since 1894. The result of early treatment had been most beneficial; 55 per cent. of the patients admitted under the magistrate's order (for the fourteen days supplementary to the original three) had been discharged cured to their own homes, while only 36 per cent. had had to be sent away to asylums. Dr. Toogood, the medical superintendent of the infirmary, remarked on the advantage such a system had in saving patients from the stigma of confirmed lunacy, and spoke of the benefit resulting in many cases from physical treatment in incipient insanity. He was of opinion that well-equipped wards in connection with parochial infirmaries afforded the best means of dealing with early symptoms, and would obviate the necessity of receiving houses for pauper lunatics, such as had been contemplated by the London County Council, and recently recommended by Dr. Rayner.

V.C. FOR A NAVAL SURGEON.

The *London Gazette* for December 2nd contains the formal announcement that the Queen has been graciously pleased to signify her intention to confer the decoration of the Victoria Cross on Surgeon William Job Maillard, M.D., Royal Navy, for his conduct during the attack on Candia on September 6th. The act of courage for which he is recommended is officially described as follows: On September 6th, 1898, during the landing of seamen from Her Majesty's ship *Hazard*, Surgeon Maillard, who had disembarked and reached a place of safety, returned through a perfect deluge of bullets to the boat, and endeavoured to bring into safety Arthur Stroud, ordinary seaman, who had fallen back wounded into the boat as the other men jumped ashore. Surgeon Maillard failed to bring Stroud in only through the boat being adrift, and it being beyond his strength to lift the man (who was almost dead) out of so unstable a platform. Surgeon Maillard returned to his post with his clothes riddled with bullets, though he himself was unhurt. Surgeon Maillard, who received his medical education at Guy's Hospital, obtained the degree of M.B. in the University of London in 1888, and that of M.D. in 1891, and on the latter occasion obtained the number of marks qualifying for the Gold Medal. He entered the Royal Navy in August, 1889, being placed second on the list. He was appointed to the *Hazard*, first-class torpedo boat, in August, 1897.

A BOARD OF GUARDIANS ON THE VACCINATION ORDER.

The *Wiltshire Times* reports a meeting of the Guardians of the Trowbridge and Melksham Union, at which a curious discussion took place regarding the new Vaccination Order. Mr. W. G. Parriss recommended "that they should let the matter slide, and allow the Local Government Board to do what they liked. In any case the payments were extortionate and unjust, and he should certainly refuse to sign any cheque." Then Mr. Chapman moved: "That this Board does not approve of the new scale of payment to public vaccinators and vaccination officers, and will refuse to make any payments if the control of its officers is taken out of their hands." In reply to the Chairman, Mr. Chapman explained that his motion was "contrary to the law of the executive, but not to the law of Parliament." He added that "for every child born the vaccination officer received 3d., and the medical gentleman 1s., for which they did not render the slightest service," and that for every case "dealt with" at the workhouse the doctor received another 2s. 6d. In view of all this information, it is hardly surprising that "Mr. H. G. Coleman expressed the opinion that the members of the Local Government Board did not know what they had passed," and as if to make the central authority's ignorance of their own order perfectly clear to the Rev. H. Saunders, who seems to have had some lingering doubts on the matter, "the clerk said under the minimum scale of payment the doctor would receive 1s. for each birth registered." This confirmation of Mr. Chapman was followed by quite a chorus of denunciation of the Local Government Board's doings, in which, in "a vigorous speech, Mr. Parriss put it

to the Board whether they would allow themselves to be led by half a dozen permanent officials at Whitehall," for, on his own part, he would "stand by the people," even "if he was lodged in Devizes Gaol for it." This valiant declaration was naturally received with applause, and the Chairman, not to be outdone, "repeatedly advocated a strong protest against the Local Government Board's orders," and a resolution by Mr. Parriss "was carried *nem. con.*" to the effect that Mr. Chaplin be informed that the guardians will never countenance prosecutions under the Vaccination Acts undertaken without their consent," and that they have "a strong and permanent objection to the control of their officers in so important a matter being taken out of their hands." The amazing ignorance of the guardians and their clerk regarding the contents of the order is surpassed only by their grotesque conceit of their own knowledge and wisdom, which perhaps reached its acme in the conclusion of Mr. H. G. Coleman, that "the Local Government Board did not know what they had passed." Mr. Chaplin could hardly desire a better example of the necessity for the independence of the vaccination officer than is to be found in the fact that such a local Board as this should make a special point of controlling that officer in the exercise of his statutory duties. But, indeed, the whole proceedings constitute a strange comment on the possibility which exists of even so admirable a thing as local government being occasionally degraded into the position of a laughing stock by those to whom it is intrusted. If the people of Trowbridge and Melksham had any conception of the figure they are made to cut by the proceedings of such a Board of Guardians as they have elected, they would surely make some effort to appoint men capable at least of understanding the plain meaning of the English language.

SANATORIUM FOR EUROPEANS IN THE CANARY ISLANDS.

It is reported that the Belgian authorities are now making inquiries with the view of obtaining a site for a sanatorium on Grand Canary for the benefit of invalids from the Congo Free State. The expense of the journey would be very much less than that of a voyage to Europe, and the time consumed in the passage to-and-fro would be greatly diminished. Some time ago we urged that the British Colonial Office should establish a sanatorium on one of the healthy islands off the north-west coast of Africa; and we hope that the Belgian example may stimulate Mr. Chamberlain to consider the project seriously. From the British possessions on the west coast of Africa the Canaries are readily accessible, and a sanatorium on one of them would confer a lasting benefit on our fever-stricken countrymen on the west coast. The Canary Islands lie between 27° 4′ and 29° 3′, and not only are they north of the tropics, but being separated from Africa by 100 miles of sea, they are little affected by the fierce continental heat of the adjacent mainland. The climate is wholly insular, and generally mild, dry, and salubrious. The islands lie within the zone of the trade winds, and in the lower levels the temperature is equable, the daily variation seldom exceeding 6° F. At the higher levels any temperature may be reached as the snow-capped peaks of Teneriffe and Hierro testify. Apart from political considerations, however, there is no doubt that were a sanatorium established in the Canaries, available for West African invalids, a great step would be taken in rendering that part of Her Majesty's dominions less uninviting than heretofore.

THE ROYAL SOCIETY OF EDINBURGH.

At the statutory annual meeting held on Monday, November 28th, the following office-bearers were elected for the ensuing session:—*President:* The Right Hon. Lord Kelvin, G.C.V.O., F.R.S. *Vice-Presidents:* The Rev. Professor Flint, D.D.; Professor J. G. M'Kendrick, M.D., LL.D., F.R.S.; Professor Chrystal, LL.D.; Sir Arthur Mitchell, K.C.B., LL.D.; Sir William Turner, M.B., F.R.S.; Professor Copeland, Astronomer-Royal for Scotland. *General Secretary:* Professor P. G. Tait. *Secretaries to Ordinary Meetings:* Professor Crum Brown, F.R.S.; Sir John Murray, K.C.B., LL.D., F.R.S. *Treasurer:* Mr. Philip R. D. Maclagan, F.F.A. *Curator of Library and Museum:* Mr. Alex. Buchan, M.A., LL.D., F.R.S. *Councillors:* Professor D'Arcy W. Thompson, C.B.; the Rev. Professor Duns; Lieutenant-Colonel Bailey, R.E.; Professor Geikie, LL.D., F.R.S.; Sir J. Batty Tuke, M.D., D.Sc.; Mr. A. Beatson Bell, Advocate; Professor Shield Nicholson, M.A., D.Sc.; Dr. John Gibson; the Hon. Lord M'Laren, LL.D.; Mr. C. G. Knott, D.Sc.; Dr. Alexander Bruce, M.A., F.R.C.P.E.; Mr. James A. Wenley.

HOSPITAL ABUSE.

A pronounced instance of hospital abuse came to light recently at the Clerkenwell County Court, where a defendant, who, according to the report in the *Daily Telegraph*, was stated to be a man of considerable means, pleaded that he had been in hospital fifteen days but not, he admitted, as a paying patient. His Honour Judge Edge, Q.C., read from the hospital letter, "This is to be used only by such as cannot afford to pay, and anyone otherwise using it is abusing the objects for which the institution is conducted." Defendant stated that he put two coins in the donation box, but demurred to answering the question of the plaintiff's solicitor as to their value. His Honour, in giving judgment for the plaintiff, remarked that "the way our voluntary hospitals are abused by persons well able to pay is a gross scandal." Such independent testimony as to the great and growing abuse of hospitals by well-to-do patients is very acceptable; it should cause reflection, and convince a section of the public that the constant complaints of medical men to the same effect are just, and that the abuse sadly needs repression. Were this accomplished many advantages of various kinds might ensue to patients and doctors, but undoubtedly the chief gain would be to the hospitals, the impecuniosity of which would thereby be very sensibly abated.

RESULTS OF SANITATION IN AN ITALIAN FOUNDLING HOSPITAL.

Some interesting statistics published by the *Corriere de Napoli* illustrate both the sanitary enlightenment which is spreading over Italy and its gratifying results. They relate to the Foundling Hospital of the Annunciation in Naples. The number and mortality of infants from January 1st to October 31st in the years 1896, 1897, and 1898 are shown in the following table:

	1896	1897	1898
Total infants	2,158	1,720	2,042
Total deaths	925	580	594
Percentage	42.86	34.51	29.93

In October, 1896, the Cavaliere Pucci was given the supreme direction of the hospital as Royal Commissioner. The success of his direction, though striking, would have been even greater but for a not very unusual impediment—want of money. The buildings are old and unsuitable. There is overcrowding from want of a sufficient number of extern foster-mothers. It appears that the hospital can only afford to pay wet nurses 8 lire (about 6s. 8d.) a month for eighteen months. On the other hand, as they can obtain a better price for their commodity by supplying it to outside customers, they naturally prefer to do so. Yet

the results already obtained are noteworthy, and we join the *Corriere di Napoli* in congratulating the Cavaliere Pucci upon the success of his administration.

THE LAW AS TO CRIMINAL ABORTION.

IT is worthy of notice that just prior to Dr. Whitmarsh's second trial a similar case was exciting the interest of the public in the antipodes. In September last Dr. Arthur Herbert Orpen of Auckland, New Zealand, was tried in the Supreme Court before Mr. Justice Conolly on a charge of murder. The criminal laws of New Zealand have been codified, and from the report of the trial printed in the *Australasian Medical Gazette* it would appear that the prisoner was indicted under Section or Clause 163 (4) of Act 56, 1893. The section or clause referred to reads as follows: "Culpable homicide is murder: If the offender for any unlawful object does an act which he knows, or ought to have known, to be likely to cause death, and thereby kills any person, though he may have desired that his object should be effected without hurting anyone." The prosecution seem to have asked the jury to find the prisoner guilty of murder, but the judge in summing up told them that, assuming death to have been caused by the accused in the course of an operation to procure abortion, this did not come within the meaning of the clause under which the charge was laid. The plain meaning of that clause was that the act must be "something which was likely to cause death." He then told them that it was competent for them to find a verdict of manslaughter, but the jury acquitted the prisoner. From the clause and the summing up it appears that the Legislature of New Zealand has gone some way towards making that alteration with regard to the law of "constructive" murder which we desire to see made in the English law. At the same time the wording of the clause is not entirely satisfactory, for the phrase "likely to cause death" is too ambiguous, and would lead to juries returning inconsistent verdicts, as the question would have to be left to the jury to determine whether the prisoner knew, or ought to have known, that the particular act would be likely to cause death. The interpretation of the clause would be rendered easier if the words "neccessarily dangerous to life" were substituted for "likely to cause death."

THE PRINCIPAL MEDICAL OFFICER HER MAJESTY'S FORCES IN INDIA.

WE learn with great satisfaction that it is now definitely settled that Surgeon-General William Taylor, shall succeed Surgeon-General Gore as Principal Medical Officer of Her Majesty's Forces in India. Surgeon-General Taylor, it is reported, will embark for India early in January, 1899. This is a satisfactory settlement of a matter which, as was stated in the BRITISH MEDICAL JOURNAL of November 26th, was causing great uneasiness in the Royal Army Medical Corps. Surgeon-General Taylor was among the Queen's visitors at Windsor Castle on December 7th, on which occasion he dined with Her Majesty and remained at the Castle.

SICK INSURANCE AND OLD-AGE PENSIONS

A LECTURE on Sick Insurance was delivered by Mr. F. G. P. Nelson, F.S.S., F.I.A., at Portman Rooms on December 2nd. He stated that there were 24,000 friendly societies providing sick pay and funeral donation with a membership of 7,000,000. The great difficulty with which these societies had to contend was malingering, which various means had been adopted to combat. It had been a matter of experience that wherever societies provided full sick pay through the whole of the illness, whatever its duration, they suffered in consequence financially. With regard to accidents, the proportion of risk was difficult to calculate. About one-fifth to one-third of men engaged in coal mining claimed annually in respect of accidents alone apart from ordinary sickness. He advised workmen to join one of the affiliated societies such as the Oddfellows or the Foresters, which were sound, and conducted on rigid principles. With regard to old-age pensions, he advocated the plan of providing sick pay up to the age of 65, and then a fixed pension, whether a man were sick or well, in or out of employment. He was opposed to the suggestion that the Government should subsidise the friendly societies, for under such an arrangement the Government would become responsible for their financial integrity, and would have the largest share in their management. In the course of his remarks, Mr. Nelson is reported to have said that, "with all deference to the medical profession, he had not a great deal of faith in medical certificates. It was only human that doctors, whose clients were the members of societies, should not offend them by refusing a certificate." This appears to imply that the medical officers of friendly societies are in the habit of giving certificates of ill-health to malingerers from fear of offending them. Such a charge must be repudiated. Malingerers may succeed in deceiving the medical officer of a club, who in many cases may continue to give certificates of ill-health when he may have reasonable grounds for doubt, not for fear of offending the member of his club, but because it is often far from easy to say how much is organic disease and how much neurosis. The medical officer must, under these circumstances, continue to give certificates until he can satisfy himself that his patient is restored sufficiently to health to resume work.

"THE LADY WITH THE LAMP."

THE *Cornhill Magazine* for December contains No. XII of the series of "Fights for the Flag," by the Rev. W. H. Fitchett, which is largely devoted to Florence Nightingale's services, with her band of 38 nurses, during the Crimea. The hospital at Scutari, where all the nurses landed, had 2,300 patients. The writer says the beds were "foul with every kind of vileness." "The mattresses were strewn two deep in the corridors, the wards were rank with fever and cholera and the odour of undressed wounds." This army of sick and dying was increased to 5,000 after Inkerman. The miracle wrought by the band of nurses is expressed in cold statistics. They found the death-rate in the great hospital at Scutari 42 per cent.; they brought it down to 2 per cent.! One story of Florence Nightingale's ability to overcome red tape is worth quoting. Some stores had arrived from England; sick men were languishing for them. But routine required that they should be "inspected" by a board before being issued, and the board, moving with heavy-footed slowness, had not completed the work when night fell. The stores were, therefore, with official phlegm locked up, and their use denied to the sick. Between the needs of hundreds of sick men, that is, and the comfort they required was the locked door—the symbol of red tape. Florence Nightingale called a couple of orderlies, walked to the door and quietly ordered them to burst it open and the stores to be distributed. What would have happened to a man who had dared to do such a thing?

PASTEUR INSTITUTES IN INDIA.

THE Nizam's Government has sanctioned the immediate construction of a complete and thoroughly-equipped Pasteur Institute for Hyderabad. It will adjoin the hospital and medical school, and will be available in about six months for patients. The Colombo Pasteur Institute, which is being constructed near the Lady Havelock Hospital out of funds towards which Mr. J. W. C. De Soysa contributed Rs. 10,000 in memory of his father, is approaching completion, and will be opened probably early next year. Meanwhile the Pasteur Institute for India hangs fire, and the delay is calling forth some expression of impatience on the part of subscribers.

THE NEW VACCINATION ORDER.

Vaccination Law and Lawlessness.

December 12th will be a day of some importance in the history of the administration of the Vaccination Acts. Section 11—the conscience clause—of the new Act "shall come into operation on the passing of this Act, but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act." That period ends on Monday next, and its near approach has been the occasion for much rushing and scrambling for certificates of conscientious objection on the part of parents who have in the past fourteen years been neglecting their duty to obey the law and protect their offspring from small-pox.

At Margate we regret to observe that the bench of magistrates appear to have determined that birth certificates are unnecessary, and that the mother may be accepted as an applicant instead of the father. It is to be hoped that this practice will not be persisted in, but will be confined to the clearing away of the antivaccination arrears which must be disposed of by Monday.

At Oldham the Antivaccination Society passed a most valorous resolution, as follows:

Seeing that under the new Vaccination Act our rates will be increased, our homes invaded, and our liberties restricted; that, having fought for and won our freedom, and having enjoyed it for nearly twelve years, it would be inconsistent with the spirit, interests, and objects of this Society, and a retrograde and humiliating step to seek by purchase of certificate exemption from an oppression we have already cast off; this meeting therefore advises its members and the public not to apply for exemption certificates from vaccination; and, further, that this meeting pledges itself to leave no stone unturned until the entire disestablishment and disendowment of vaccination be accomplished.

The Mayor of Oldham, however, though evidently friendly to his antivaccinationist constituents, appears to have been unwilling to see Oldham made the scene of a contest with the Local Government Board, and has therefore arranged to hold a series of evening sittings of justices for the granting of certificates to, according to his own calculations, the parents of the 40,000 or 50,000 unvaccinated children of the town. His purpose is praiseworthy but his logic is open to criticism. "If it is right," he argues, "to make it easy and cheap for provaccinators to get vaccinated, it is equally right to make it easy and cheap for antivaccinators to obtain certificates of exemption from vaccination." Similarly it might be held that if it is right to make the education of their children easy and cheap for pro-educationists, so it is right to make exemption from education easy and cheap to those who do not want their children educated. Indeed, his conclusion should be just the opposite, for if it is right to make vaccination or education easy, it is wrong to make refusal of vaccination or education anything else than difficult and troublesome. He concludes by referring to the consideration which he says should be given to "a parent whose affection for his children compels him to seek the protection of the court." But parental affection which is guided and directed by ignorance and prejudice is perhaps as great an evil as a child can suffer from. It is the same sort of affection which prevents a father from sending his stricken child to a fever hospital, and which thereby spreads disease and death in his own and other households; or which refuses to submit a loved one to the surgeon's knife, and ends by depriving it of life or limb. May the children of Oldham be saved from the results of such affection!

While Oldham, in spite of its antivaccination society, is providing certificates of exemption for its unvaccinated juveniles, Leicester is taking a very different course. At a mass meeting in the Market Place, it was decided, we learn from the *Daily News*, to ignore the conscience clause altogether "on the ground that men ought to exercise their own judgment without asking permission." This is the old story of every man doing what seems right in his own eyes, but we are bound to say that we are not displeased that Leicester, or at least that its mass meeting, has definitely determined to raise the question. The Royal Commission and the House of Lords and the House of Commons, as representing the nation, look on Leicester as utterly wrong in its neglect of vaccination, but are at the same time anxious to deal tenderly with erring communities, and to respect what is alleged to be genuine, if mistaken, parental solicitude for children's welfare. A means of conciliation was therefore devised, and a way of escape from the penalties provided by the Vaccination Act. Leicester, however, refuses the conscience clause, and in an ecstasy of self-conceit, determines to defy Parliament and the country. It will now be for Government to decide either to enforce the law, or to yield once for all to municipal lawlessness, and it is hardly possible to doubt which course it will pursue. But whatever be the result it is satisfactory that the question is to be raised without equivocation or delay.

Duties under the Birth Registration Fee.

Mr. F. Lorimer Hart, Public Vaccinator for Lewisham, writes: I doubt whether it is fully realised yet what are the duties demanded from public vaccinators under the so-called "birth registration fee" which has been fixed at a minimum of 1s. by the Local Government Board.

The wording of this provision is misleading at first sight. It is in no way analogous to the birth registration fee allowed to vaccination officers, and is by the various exceptions reduced to such cases only as come under the care of the public vaccinator. For this fee let us see what will be required of us. It will entail at least three, and probably more, of the following duties:

1. Notice of visit and postage.
2. Visit by appointment offering vaccination.
3. Examination of child as to health, the presence of fever, disturbed bowels, and eruptions on any part of the body being especially noticed.
4. Postponement of certificate to vaccination officer and postage.
5. Inquiry regarding recent exposure to infectious diseases, or prevalence of erysipelas in neighbourhood.
6. Postponement certificate of such cases to vaccination officer and postage.
7. Notice to medical officer officer of health *re* existence of such and postage.
8. Examination of sanitary state of house, the complete duties of an inspector of nuisances thus devolving on us.
9. Postponement certificate to vaccination officer if insanitary state exists, and postage.
10. Certificate (Form P) to medical officer of health and postage.
11. Indefinite number of visits and certificates of postponement from any of the above causes, and postage thereof.

[This is clearly intended by the title of the fee, indicating that only one such fee is recoverable for each birth registered; and by the wording of Clause (2) in first schedule, "Form of Vaccination Contract," namely, "and if his offer is accepted the public vaccinator will thereupon (*or after such postponement, if any, as may in his opinion be necessary*) so vaccinate the child."]

12. Notice to vaccination officer of refusal of parents to allow vaccination and postage.
13. In case of insusceptibility, three or four visits and two or three operations under aseptic precautions.
14. Certificate of insusceptibility to vaccination officer, and postage.
15. Record in register of each such unsuccessful operation.

Here, then, is what is involved in that innocent-looking item under birth registration fee, the minimum of which is 1s.

I have also drawn out a list of possible duties required under the vaccination fee, but will not trouble you with the details. One which does not appear to be an improbable issue in these days is that of our having to meet an action lying against us for evil consequences resulting from real or supposed neglect in the performance of the operation or in the examination of the sanitary state of the house previous to our having vaccinated the child.

The Jenner Institute for Calf Lymph, 73, Church Road, Battersea, has sent us a specimen of the artificial blower which they have sent out to members of the profession making application. It consists of a glass tube filled with pink cotton, and provided with the ordinary india-rubber bellows nipple. At the small end of the glass tube is a fine india-rubber tube, strengthened at the free end, which is attached to the vaccine tube. We are asked to state that the managers of the Institute believe that they have now responded to all the applications which they have received, and request that any gentleman whose application may have been overlooked will communicate with them again.

The Scale of Fees.

We are indebted to Mr. Humphrey J. Wheeler, Public Vaccinator for the No. 2 District of the Wycombe Union for the information that at a meeting of the public vaccinators of the Union on December and the following resolutions were passed:

"1. That whereas it is to be expected that many visits will have to be paid, some of them at great distances, after due notice has been given, which, either on account of the bad health of the child, or on account of its insanitary surroundings or by reason of the refusal of the parents,

will not result in the performance of vaccination, it is hereby resolved that the fee under paragraph (*a*), Section 1, Article 3, should be 2s. 6d. instead of 1s.

"2. That whereas the performance of vaccination under the new Regulations will be a much more lengthy and troublesome operation than it was formerly, and in view of the fact that the population in the rural districts is very scattered, it is hereby resolved that the following scale of fees should be allowed under paragraph (*b*):

	£	s.	d.
For cases within one mile of the vaccinator's residence ...	0	5	0
For cases over one mile and under three of the vaccinator's residence	0	6	8
For cases three miles and over of the vaccinator's residence	0	10	0

"3. That the fee under paragraph (*c*) be accepted for vaccinations performed and inspected at the vaccinator's residence; but that vaccinations performed elsewhere, such as at a station in time of an epidemic of small-pox, should be allowed an extra fee of 2s. per case if more than one mile away from the vaccinator's residence.

"4. That whereas the public vaccinators to the workhouse and union schools live several miles away, it is hereby resolved that they should be allowed 5s. per case.

"5. That the postage on all the forms required under the Order should be paid by the guardians, and that all lymph shall be supplied free of cost to public vaccinators.

"6. That Dr. Reynolds, Dr. McKay, and Dr. Wheeler be appointed as a Committee to confer further with the Board of Guardians if required, and that they be hereby empowered to arrange terms."

There has been in the union considerable default under the Vaccination Acts for some years past, and the public vaccinators therefore felt that it was most important that the fee under paragraph (*a*) should be sufficient to recoup them for fruitless domiciliary visits. The scale suggested under paragraph (*b*) is in arithmetical proportion to the old scale, 1s. 6d., 2s., and 3s.

At a meeting of the Nantwich Board of Guardians it was stated that Drs. Thomson and Vaughan, a deputation from the public vaccinators of the union, had proposed a minimum fee of 2s. for each visit within a distance of one mile from their respective surgeries, and a further fee of 6d. per mile or portion of a mile beyond the first mile; also that a fee of 5s. per case of successful vaccination be paid if within a mile of a surgery, 6s. over one mile and up to two miles, and 7s. 6d. for all cases over two miles. The Finance Committee recommended that the minimum fees allowed by the Order should be adopted, and an amendment to refer the matter back to the Finance Committee was lost by 10 votes to 15. We understand that the public vaccinators intend to ask the guardians to reconsider their decision, so as, if possible, to prevent the necessity of making an application to the Local Government Board.

The following are notes as to arrangements proposed or accepted:

Chard Union.—The minimum fees allowed by the Order to be tried for six months.

Westbury Union.—(*a*) 2s. 6d., (*b*) 5s., (*c*) 2s. 6d. and mileage. Certain fixed rates in various districts (accepted).

Cardiff Union.—(*a*) 1s. and in certain outlying districts 1s. 9d. and 2s. 6d., (*b*) 5s., (*c*) 2s. 6d.

Sudbury Union, Suffolk.—(*a*) 2s. 6d., (*b*) 5s. if in public vaccinator's parish, 7s. 6d. if in any other parish, (*c*) 2s. 6d.

Lambeth Union.—(*a*) 2s., (*b*) 5s., (*c*) 2s. 6d.

Tunbridge Wells Union.—(*a*) 2s. 6d., (*b*) 5s., (*c*) 2s. 6d., and mileage at the rate of 1s. a mile, or part of a mile, for cases over two miles from the public vaccinator's residence.

Bicester Union.—(*a*) 2s. 6d., (*b*) 5s. under two miles, 7s. 6d. over that distance, (*c*) 2s. 6d.

Weardale Union.—The Board have offered the minimum vaccination fees, but these have been declined by the public vaccinators, and the clerk has been instructed to ask the public vaccinators what terms they propose.

Bolton Union.—Drs. Kershaw and Johnston as a deputation of the public vaccinators proposed to the Vaccination Committee of the guardians the following: (*a*) 2s. 6d., (*b*) 5s. (*c*) 2s. 6d. and mileage at the rate of 1s. per mile beyond two miles. The decision of the Committee was postponed.

North and East Ridings of Yorkshire.—At a meeting at Malton of the public vaccinators of the North and East Ridings of Yorkshire it was resolved that the following fees should be asked: In urban districts (*a*) 6d., (*b*) 5s.; in rural districts (*a*) 2s. 6d., (*b*) 10s. 6d.

THE DUTIES OF PUBLIC VACCINATORS.

M. writes: 1. In small towns and rural districts, where the public vaccinator has hitherto been carried on quarterly or half-year, will the vaccination officers now (as stated in the new Act) have to send in weekly lists, and the public vaccinators have to vaccinate weekly; or will quarterly or half-yearly lists be supplied?

2. What will be the general rule with regard to the supply of vaccine to public vaccinators? Will the National Vaccine Establishment send a supply to all public vaccinators according to their need, on demand or otherwise, in small tubes which can be kept in stock, each tube for one vaccination; or on points of which, in populous places, a fresh weekly supply will be required, or will arrangement be entered into between the guardians and the public vaccinator, the latter to supply the lymph and the former to pay for it? I would add here that my experience in the use of lymph supplied by the National Vaccine Establishment, when occasionally I have had to use the supply, has not been on the whole at all satisfactory, failures in the success of the vaccination having been frequent when using the National Vaccine Establishment lymph, and exceedingly rare when using other. If the National Vaccine Establishment now supply all the lymph and failures are frequent, the increased and unremunerated labour to the public vaccinator will be great.

3. Is the public vaccinator prohibited by the Act from vaccination from arm to arm, or from taking from the infant's lymph in tubes for the purpose of conveying to other cases or of storing?

Is primary vaccination at the public vaccinator's surgery prohibited?

*** 1. There is no provision in the order for any distinction in routine of public vaccination between urban and rural districts. The lists will be sent weekly by the vaccination officer, and the public vaccinator will be required to visit within a fortnight of their receipt unless there is "any sufficient reason for delay," such as blocked roads from heavy rains or snow, we may suppose. (Article 7, Paragraph 2).

2. Calf lymph will be supplied on application to the Local Government Board or the National Vaccine Establishment, free of charge, in as large quantities as may be required by the public vaccinator. There will, we understand, be no need to put a stamp on the letter applying for lymph.

3. The public vaccinator is not prohibited from vaccinating from arm to arm in his private practice, but "all public vaccinations are to be performed with glycerinated calf lymph, or with such other lymph as may be issued by the Local Government Board."

4. According to this order no child, that is, person under 14 years of age, can be vaccinated primarily, at the public expense, anywhere except at the child's home. Primary vaccination of any person other than a child, that is, over 14, and revaccinations over 10 years of age, can be performed at the public vaccinator's surgery or elsewhere.

THE LOCAL GOVERNMENT BOARD AND BOARDS OF GUARDIANS.

DR. FRED JAS. BROWN (Newark-on-Trent) writes: What is the position of the public vaccinators when the guardians give them twenty-eight days' notice to terminate their engagements because, although in a rural district, they refuse to accept the minimum scale (*vide* Dr. W. G. Gray's communication, p. 1719)?

*** The Local Government Board has large powers in regard to the alteration of vaccination districts by Clauses 2 and 3 of the Act of 1867, and by Clause 9 of the same Act has similar powers in regard to vaccination contracts. Any contemplated changes must have the approval of the Local Government Board, but it is doubtful whether the Board would interpose a direct veto to the determination of the contract with a public vaccinator by the guardians, or whether it would consider its functions limited to advising or arbitrating between the two parties to the contract.

The circular issued with the Order says: "The precise sums to be paid are to be settled by agreement between the guardians and the public vaccinator, and to be approved by the Board; but, if not thus settled before the 1st of January next, the sums are to be determined by the Board" (that is, the Local Government Board).

It is so evident from this provision that the action of the guardians is absolutely antagonistic to the spirit of the Order that we may reasonably expect the Local Government Board to exert all its influence to prevent any misuse of the powers which the guardians possess. In any case such as that of the Holsworthy Union the facts ought to be communicated at once to the Local Government Board, with an appeal for their intervention, while at the same time everything possible should be done locally to secure a more reasonable consideration of the question by the guardians, as was done at Cardiff with satisfactory results. As the matter is under the serious consideration of the Association of Public Vaccinators, which has already made representations on the subject to the Local Government Board, the Honorary Secretaries, Dr. Albert E. Cope, 26, Bessborough Gardens, Westminster, S.W., and Dr. V. A. Jaynes, 157, Jamaica Road, S.E., will be glad to hear of any other unions where the guardians have adopted what can only be described as the bullying attitude.

TERMINATION OF CONTRACTS.

CYMPLE CYMON.—The guardians have still power to determine the contract at twenty-eight days' notice. In the case of Cardiff this course was actually adopted, but the resolution was fortunately rescinded at a subsequent meeting of the Board. The danger is a real one, however, and the Association of Public Vaccinators has already approached the Local Government Board with a request that the Board should exercise its power or use its influence to prevent the termination of contracts by the guardians until the existing public vaccinators have had a fair chance of trying the work under the new conditions.

PRIVATE VACCINATION.

A CORRESPONDENT writes: It seems probable to me that one effect of the new Act will be a considerable diminution in the number of my cases vaccinated privately. Formerly children were brought to my surgery from neighbouring parishes to be vaccinated, and the fee was paid in the quarterly account by the guardians, but I suppose that under the new Act the fee will only be paid if the operation is done by the public vaccinator of the parish in which the parents live; this may lead to more "conscientious objectors," as formerly they could have the operation done gratuitously by taking the child to a station in a neighbouring parish; or will it still be legal for parents to take their children to a surgery in a neighbouring parish, a minimum fee of 2s. 6d. being paid to the public vaccinator?

*** Act, 1867, Clause 11, unrepealed, says: "Where a district shall have been or shall be assigned to a vaccinator, he shall not be entitled to be paid a fee in respect of the vaccination or revaccination of any child or other person resident out of his district, except in case of a vacancy in the office of vaccinator in any adjoining district, or of the default of

the vaccinator therein, of which default notice shall have been given to him in writing by the guardians, or when a relieving officer of his union or parish shall in writing refer any child to him for vaccination." A child born in a district, and removing soon after birth, might be presumed to still reside in that district, and so some cases actually residing in another district, but born in the vaccinator's district, could, we imagine, be rightly dealt with by him. They receive from the registrar a notice which gives them particulars of the public vaccination in the district where the child was born. Otherwise any action such as our correspondent mentions is without legal sanction.

ROYAL COLLEGE OF PHYSICIANS.

An extraordinary Comitia of the College was held on Thursday, December 1st, Sir S. Wilks, Bart., M.D., F.R.S., President, in the chair.

The President announced that Dr. G. V. Poore had been appointed to deliver the Harveian Oration in 1899, and Dr. Foxwell the Bradshawe Lecture in 1899.

A communication was received from the Board of Trade requesting the College to appoint two members of a committee for revising the medical scales of passenger ships. Drs. Tirard and Sidney Phillips were appointed.

A communication was received from St. Bartholomew's Hospital Medical School on the effect of the new regulation of the Conjoint Board with respect to the period of dissections, and was, after a brief discussion, referred to the Committee of Management.

A communication was received from the Imperial Military Academy of Medicine at St. Petersburg inviting the College to send representatives to the celebration of the centenary of its foundation. It was left in the hands of the President to deal with.

Communications on merely formal business were received from the London County Council, Queen Victoria's Jubilee Institute for Nurses, and the Secretary of the Royal College of Surgeons.

A report of the Committee—consisting of Drs. Hensley, Brunton, and Allchin—on the Charity Commissioners' scheme for the Physic Garden at Chelsea was read. The scheme proposed the maintenance of the garden, the provision of laboratories, of facilities for instruction, and the appointment of a curator. It proposed also to appoint a committee of management, consisting of 15 persons, of whom 8 would be appointed by the trustees of the London parochial charities, 1 by the Royal Society, and 1 by the Royal College of Physicians and the Apothecaries Society alternately.

Dr. Hensley proposed to reply requesting that the Royal College of Physicians and the Society of Apothecaries, which had maintained the garden for many years, should have the same representation as the Royal Society.

The President observed that the gardens had been founded by a former President of the College, Sir Hans Sloane, and that it seemed only proper that the College should have a permanent representative on the committee of management.

The motion was seconded by Dr. Brunton and agreed to.

A report was received from the Committee of Management recommending the adoption of a synopsis of practical pharmacy which had been drawn up by the examiners in that subject in consequence of the issue of the new *British Pharmacopœia*, and that it should come into force on May 1st, 1899; also to recommend that the examination in materia medica and pharmacy applicable only to candidates under the old regulations, which has hitherto been conducted by papers and *viva voce*, be conducted in future *viva voce* only, on account of the small number of candidates under these regulations. The Commitee also requested that, in consequence of a desire expressed by the teachers and examiners in physiology that there should be an examination in practical physiology, they might be empowered to consider the question, and to take the opinion of the several medical schools and report to the Colleges on a future occasion. The report was adopted.

A report received from the Committee appointed at the last Comitia to consider a communication from the Colonial Office on the subject of leprosy was, after considerable discussion, remitted to the Committee for further consideration.

A report from the Committee on the Notification of Infectious Puerperal Disease was received. The resolution therein contained was printed in the British Medical Journal of December 3rd, p. 1703.

THE PREVENTION OF TUBERCULOSIS.

Manx Medical Society.

At the first meeting this session of the Manx Medical Society the President (Dr. Richardson) delivered an address dealing with the methods of prophylaxis of tuberculosis and its treatment by the open-air method. After referring to the necessity of arousing the public to recognise that tuberculosis is largely a preventable disease, he passed on to review briefly the recommendations of the Royal Commission on Tuberculosis. The regulations in force in Denmark were next referred to, and it was stated that in that country, in consequence of a law passed in 1893, all cattle are tested with tuberculin; those which do not react are kept separate in disinfected stalls and tested every six months with tuberculin. State compensation is given to the owners of cows affected with mammary tuberculosis, which are slaughtered according to law. The necessity of some such stringent regulations in this country was emphasised by the fact that in the case of the milk supplied to Manchester, of 93 samples taken at random at the railway stations, 18 were found to be tuberculous; and considering the large amount of milk consumed by young children, this was a question of the utmost importance in the prophylaxis of tuberculosis. As an additional means of combating tuberculosis, Dr. Richardson referred to the importance of strict attention to sanitation, efficient drainage of the land, avoidance of overcrowding, overwork, defective ventilation, etc.; also the erection of sanatoria, some for treatment of early cases, and others for refuges for those dying of tuberculosis.

He then proceeded to describe the open-air treatment of phthisis in different countries. One of the first sanatoria built for this line of treatment was in Silesia, and dated back to 1854. Several had since been constructed, and they were mostly at a considerable elevation, away from centres of population where the air was freer from microbes and other impurities. The principles of treatment at these institutions consisted in keeping the patients during the daytime in the open air protected from the weather; and at night keeping the bedroom windows open. Advanced cases were kept in bed day and night with the freest possible ventilation. The patients were well fed and their linen and utensils all disinfected. Patients rapidly became hardened to exposure, and a gain of 2 or 3 lbs. in weight weekly was frequently met with. Similar sanatoria were being established in Great Britain, and Dr. Richardson concluded by advocating the claims of the central highlands of the Isle of Man as a suitable place for the erection of sanatoria.

Ipswich.

A meeting of the medical men of Ipswich and the neighbourhood was held at the Town Hall on November 23rd, for the purpose of discussing what action should be taken in support of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. The chair was taken by Mr. Fryer, the President of the Ipswich and East Sussex Clinical Society, and amongst those present were Dr. W. A. Elliston, Dr. R. K. Casley, Dr. H. Brown, Dr. Brogden, Dr. J. Legge Currie, Mr. W. W. Sinclair (Secretary of the Society), Mr. G. S. Elliston, Dr. Orby Wood (Woolpit), Dr. F. A. Brooks (Felixstowe), Dr. Warner, Dr. Reed Hill, Dr. Ward, Dr. Hulme (Felixstowe), and others. Having explained the objects of the Association, Dr. W. A. Elliston said he rose in answer to the invitation of the Ipswich Clinical Society to propose the following resolution:

That this meeting is in accord with the object and aims of the National Society for the Prevention of Consumption and other forms of Tuberculosis.

In a campaign against tuberculosis there were five main lines of advance to be followed: (1) The general sanitation of towns, including drainage of subsoil, and abundant air space and ventilation; (2) supervision of trades tending to the development of tubercle; (3) the control of the food supply (milk and meat); (4) the proper isolation of the sick; and (5) the destruction of infective sputa and the disinfection of the rooms tenanted by the sufferers. He strongly urged the establishment of sanatoria in different districts for the reception of consumptive patients. Such institutions were provided in Germany, America, and other countries, and their provision in England would form a very beneficial and proper

hilanthropic outcome of the movement in which they were ngaged. Mr. G. S. Elliston, as medical officer of health for he borough, seconded the motion. Dr. Vincent said that at he request of the Council of the Clinical Society he had much leasure in proposing the following resolution:

That the co-operation of the National Society for the Prevention of Con umption and other Forms of Tuberculous Disease be invited to discuss he subject at a public meeting.

Ir. J. R. Staddon seconded the proposition, asking the co-peration of the National Society in opening the subject for iscussion at a public meeting, and this was put and carried. Committee consisting of Dr. W. A. Elliston, Mr. G. S. Elliston, Dr. Herbert Brown, Dr. Brogden, and Dr. R. K. Pasley, with the President (Mr. Fryer) and the Secretary (Mr. inclair), as *ex-officio* members, was appointed to approach he mayor with the suggestion that he should call a public neeting for the purpose.

Oxford.

Under the auspices of the Christian Social Union (Oxford City Branch), a meeting was held at Oxford on November 8th o discuss the subject of the prevention of consumption. The hair was taken by the Rev. A. J. Carlyle, who in his introductory remarks said that it was unfortunately only too bvious that religious people had by no means realised the xtent to which they were responsible for their fellow men and romen in every respect. A great deal might be done for the eneral social improvement of the people if only Christian people realised their responsibility, and gave some measure f their thoughts and attention to the great and pressing question of their health and material well-being. Dr. Whitelocke hen delivered an address, in which, after dealing with the auses of consumption and the means of preventing it, he poke favourably of the erection of sanatoria. The Rev. W. B. Duggan moved the following resolution:

That the attention of the city council be drawn to the matter of having he milk supply of Oxford regularly tested for the presence of tuberculosis, as is done in some of the larger towns.

Mr. H. M. Fletcher seconded, and the resolution was carried unanimously. Mr. Payne moved, and Mr. Pash seconded, he following resolution, which also was carried unanimously:

That this meeting desires to represent to the city council the need of making new by-laws with regard to buildings in the city.

Sunderland.

A meeting of the District Branch Committee of the Society or the Prevention and Cure of Consumption in the County of Durham, was held in the Town Hall, on November 25th. Dr. [illegible] and Mr. J. Morley Longden were elected honorary [illegible] on the proposition of Dr. Scurfield. The next item on the agenda was:

That a sanatorium be established on the most suitable site available in [illegible] with forty beds, under the superintendent of a specially [illegible] medical man, on the lines of the most successful sanatoria in existence, with an expenditure of about £150 a bed, and [illegible] with land and furniture. The expenses may reach £5,000 a [illegible] um, or £2,000 a year, some portion of which will be defrayed by paying patients.

Dr. Robinson said that at Ventnor and other places patients paid 10s. a week, which would reduce the yearly cost to £1,000. [illegible] beds would be as much as one resident medical man could attend to, and the number of beds could be increased as people got confidence in their method. After some discussion the following resolution was carried:

That so soon as a sufficient capital sum be raised by this and other district committees throughout the county, it is resolved that a first pavilion [illegible] a suitable and central locality, under the [illegible] specially trained resident medical man.

An Executive Committee was then elected. It was also agreed that the London Society should be approached to see if the Branch could be affiliated with it on payment of a nominal fee; and also that the medical men in other towns in the county should be asked to approach their respective mayors in regard to each town taking action. Additional subscriptions were promised, bringing the total up to £649.

Connecticut, U.S.A.

The State Board of Health of Connecticut has issued a circular for public information on Consumption: its Cause and Means of Prevention. The Board, believing that any effort to restrict and control the prevalence of consumption will be a failure without the hearty and intelligent co-operation of the public, hopes that the information which it gives will awaken an interest that will bring practical results.

THE PLAGUE IN THE EAST.

The Special Commission.

Last week we notified that the special Plague Commission had commenced its sittings, and recorded the evidence supplied by Mr. Wingate and Dr. Haffkine. During the past week several witnesses have been called, and the main points in their evidence have been transmitted by telegram to the *Times*.

Colonel Weir, the health officer of the city of Bombay, stated that in his opinion plague was endemic in Kathiawar, the North-West Provinces, Bengal, and the Himalayas, that the granaries in Bombay were first affected, and that the disease was carried by rats. This evidence was supported by Mr. Vincent, Police Commissioner, who stated that he believed plague to be endemic in Kumaon, and that the disease was brought to Bombay by religious ascetics coming from that district. Surgeon-General Bainbridge gave it as his opinion, from experience gained in Sindh, that rats were the medium of infection, and that sanitary measures should be placed before inoculation in combatting the disease. Dr. Gibson stated that for fourteen months he had been examining the earthen floors of infected houses for evidence of the bacillus, but had failed to find it. Major Crimmin, I.M.S., the health officer of the port of Bombay, described the process of examination adopted in the case of passengers entering and leaving the port, and stated that 16,000 persons had been prevented leaving the port until such time as all chance of infection had passed. Captain Wilkins stated that there were six segregation camps and twenty-six hospitals in Bombay; he declared that the number of people attacked by plague after segregation was very small. Dr. Viegas said that he saw the first case of plague on September 18th, 1896, and that he immediately called the attention of the authorities to the disease. Dr. Galliotti, of the University of Florence, gave a detailed account of his process of preparing a curative serum whereby 75 per cent. of cures were effected. Captain Jennings, I.M.S., the medical officer in charge of the inspection of railways, described the methods of inspection and detention employed on the railways; he stated that comparatively few of those detained under suspicion were attacked by plague.

Mr. Du Boulay, Deputy Municipal Commissioner, said that 25,358 persons had been inoculated with plague serum; 50,400 rats had been destroyed, and a bonus of half an anna was given for every dead rat.

Captain Childe, I.M.S., stated that the death-rates which usually preceded outbreaks of plague were high in insanitary and slight in sanitary dwellings. He had inoculated 400 people with Haffkine's serum and had seen no bad effects therefrom.

At a meeting of the Commission at Dharwar, Mr. Capel, formerly collector there, stated that the total mortality in Hubli and Dharwar districts from October, 1897, to December, 1898, was 23,577. The plague infection was introduced through the railway, and was spread in the districts by human agency. The disease was very severe among the uninoculated, but was less virulent in Dharwar than in Hubli. The evacuation measures were less efficient during the monsoon. Dr. Haffkine's serum was found to be beneficial. Miss Cawthorn and Drs. Winter, Hornibrook, and Cardoz, practitioners in the district, also gave evidence in favour of the prophylactic.

India.

The mortality in the city of Bombay, which had fallen in the previous week to 36, during the week which has just ended rose to 44. This can be considered in no sense discouraging, and when taken in conjunction with the general decline in the death-rate augurs well for the immediate future.

The returns from the Presidency show a general decline in the total number of deaths from plague, there being 300 fewer during the past, as compared with the previous, week.

In the Mysore State there is no improvement, and the cities of Bangalore and Seringapatam are still severely affected.

In the Madras Presidency the number of plague cases has increased, but in no single town or district is the epidemic alarming.

In the Hyderabad State the disease is widespread, and in several places the epidemic is severe.

The Central Provinces are gradually being invaded by plague from the south, and in the Wardha district more particularly is plague spreading.

The Samarkand Outbreak.

The following is the text of the official communication made by the Turkish Consul at Tiflis with regard to the outbreak of plague at Samarkand:

The report dated October 8th of the Physician of the Samarkand Medical Section, Zouboff, addressed to the Governor-General of Samarkand is as follows: In the village of Anzob, Outchastok of Pendjekente, situated upon one of the branches of the River Zararchane 250 kilometres south of Samarkand, an epidemic disease has appeared which has attacked 224 persons out of a population of 257. Of these 224 persons, 219 have died, while 4 have recovered or are convalescent. The epidemic was recognised at the commencement of September. At the present time (October 25th) there are still 12 persons sick. Having regard to the general character of the report and to the enormous mortality, 97.7 per cent., the physicians came to the conclusion that the disease was Indian plague. By order of the authority extraordinary measures have been taken to prevent the propagation of the epidemic. All the roads from Kichlagh have been closed, troops have been sent to surround Kichlagh, means of disinfection, physicians and assistants have also been sent. It is reported that all the infected houses in the village of Anzob, together with all the effects of persons attacked by plague, have been destroyed by fire. No fresh cases had occurred in the two weeks ending November 29th.

It is supposed that the disease was introduced into Anzob from Karachi by way of Afghanistan, and it is intended to send a medical mission to Afghanistan shortly to make inquiries.

The Russian Government has forbidden the transport of pilgrims by railway from beyond the Caspian Sea.

Madagascar.

The latest reports from Madagascar state that the disease is of a mild type, and that the severity of the outbreak is abating. It is seldom, however, that plague, when once it gets hold of a place, wanes until it has run its course.

CONTRACT MEDICAL PRACTICE.

Skipton.

A determined stand against the present low scale of club payment is being made at Skipton. It appears that in this town only 3s. a member per annum is paid, and the local profession have agreed to refuse all clubs that decline to pay a minimum of 4s. a member. The friendly societies of the district will not consent to this extra shilling, and threaten to bring a medical man into the town to attend to all their members unless the doctors continue on the old terms. It is satisfactory to find that medical men are uniting against the present club remuneration. It is almost incredible that practitioners should be found willing to contract to attend to all the incidents of sickness and accident in everyday life among the working population for 3s. per annum. At a time when their average wages were not more than half what they are now, the payments made by members of friendly societies were the same as now, so that it is clear they could be in no worse position than formerly if they now paid their medical officers double, for if their own needs required an increase in wages, the necessities of the medical men no less require a substantial increase in the fees hitherto paid. With a little more professional union such club rates as 3s. and 4s. a member per annum will cease to be heard of, and will be replaced by a minimum of from 6s. to 8s. It is often a wise step for the local profession to form a dispensary for their poorer patients in opposition to any medical institute organised by the friendly societies. The chief rules to be observed for successful working are (1) to maintain a suitable wage limit; (2) to insist on a medical examination of members; (3) not to admit women and children at lower rates than adults.

Mid-Derbyshire.

"Derwent" writes: Unfortunately, from experience derived whilst doing duty as *locum tenens* in Mid-Derbyshire, I was able to corroborate the account given by "Wingfield Manor" in reference to the abuses mentioned therein, a similar state of affairs having an existence in Belper at the present time. The non-existence of a friendly feeling between members of the profession, much as it is to be regretted, is no excuse for individuals belonging to it adopting such methods as referred to by your correspondent, which are so derogatory not only to these misguided individuals but to the profession as a whole, of which one fervently hopes they are by no means representative members. The *entente cordiale*, desirable as its universal existence would be amongst members representing a liberal profession, should be a matter of "inheritance" on joining its ranks and not one of "adoption" at some future period. The latter phase would amount to concerted action, which might be initiated through the medium of the nearest local medical society; and if this be the only means by which a better understanding can be arrived at for the general welfare of the members of the profession, then let the medical men in that district combine to such an end.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on November 25th. There were present Dr. de Havilland Hall (in the chair), Dr. J. B. Ball, Mr. J. Brindley James, Mr. William J. Stephens, Dr. J. Pickett, Dr. M. Greenwood, Dr. F. J. Allan, Dr. J. W. Hunt, Dr. W. Knowsley Sibley, and Dr. Walter Smith.

The customary investigation of the current claims showed that the favourable sickness experience of the autumn was maintained, and that the ordinary cases, both in number and duration, were well under the expectation upon which the Society's premium tables are based. On the other hand, the list of chronic cases (members who are apparently permanently incapacitated from professional work) increases steadily. When the Society was started fifteen years ago its founders realised that members of the medical profession had special need of some arrangement under which they would be permanently assisted when unable to properly carry on their professional duties. In many occupations a partial loss of mental capacity produces only a lessened power of earning money, but in the medical profession it is often literally a question of life or death to the patient. For this reason a medical man is obliged to give up practice entirely under circumstances which would only compel other men to work less, and accordingly the rules of the Medical Sickness and Accident Society were specially drawn to meet this liability. For the first twenty-six weeks of illness the Society allows its full sickness pay, and after that, if the member still remains ill, it allows him to draw continuous half-pay until he reaches the age of 65 years. Under this arrangement there are at present about a dozen members of the Society in the enjoyment of from 50 guineas to 150 guineas a year. The value of this can be fully appreciated only by those who find themselves incapacitated from work, and without any such provision.

Prospectuses and full information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

Colonial Nursing Association.—The half-yearly meeting of the Colonial Nursing Association was held at the Imperial Institute on December 1st. Lord Loch presided, and Princess Henry of Battenberg was present. The report stated that the object of the Association was the formation in England of a central organisation for the selection and despatch of nurses for work in certain of the colonies, and to give financial help in the same direction. The Association was supported officially by the Secretary of State for the Colonies, and during the last sixteen months 7 matrons and 11 nurses had been accepted and sent out by the Colonial Office. Lord Loch explained that the Association was first started in consequence of Mrs. Pigott, the Honorary Secretary, having seen, in Mauritius, several persons dying of fever from want of proper nursing. The work of the Association was now widespread; for whenever they heard of any part of the British Dominions being particularly unhealthy they sent out nurses there, and there was keen competition for these posts. The work needed some financial support, but only about £150 per annum was required, as the cost of sending out the nurses was in many cases refunded by the Colonies. Sir H. Burdett undertook to get one-tenth of the sum required in annual subscriptions if others would do the same. Mr. A. L. Jones promised to give £50, which he wished to be devoted to nursing in West Africa. After some remarks by Miss Kingsley and Sir C. Mitchell, of the Straits Settlements, the proceedings terminated with a vote of thanks to Princess Henry of Battenberg for her sympathy with the Association.

A Female Medical Inspector of Schools.—Dr. Mary H. Murray has been appointed by the New York Board of Health medical inspector of the twelve public schools in the third ward of the Borough of Queens, New York City. Dr. Murray is a graduate of the Women's Medical College of the City of New York, and served as *interne* in the hospital and dispensary for one year. She is the first woman who has been appointed on the staff of school inspectors in the United States.

A MONUMENT TO CHARCOT.

ON December 4th, the monument to Charcot erected near the main entrance of the Salpêtrière, where he worked so long and so fruitfully, was formally unveiled in the presence of M. Georges Leygues (Minister of Public Instruction), MM. de Selves (Prefect of the Seine), Brouardel (Dean of the Faculty of Medicine of the University of Paris), Navarre (President of the Municipal Council), Lockroy (Minister of Marine), Thuiller (President of the General Council), Napias (Director of the Assistance Publique), Bertrand (Perpetual Secretary of the Académie des Sciences), a deputation representing the French Institute, and a large assemblage of medical and scientific notabilities. Dr. Jean Charcot, son of the famous physician, and Madame Charcot, represented the family.

Professor Brouardel, in presenting the monument to the city of Paris, expressed the feeling of gratitude which the Faculty of Medicine felt towards the great neurologist who had shed such lustre upon it. He also expressed the hope that Charcot's pupils would crown the work of their master, and draw inspiration from his love for science, and in particular that his son, in whom he had justly placed such great hopes, should write the page which he himself had been prevented from completing.

M. Navarre, who next spoke, recalled the fact that the Municipal Council had done all in its power to further the investigations and second the efforts of Charcot. It helped him to lay the foundations of that Salpêtrière which had been transformed by him into a school shedding light upon the whole world. He praised Charcot particularly for having brought within the realm of the known and the natural things formerly classed as supernatural, and often attributed to demoniacal influence.

Professor F. Raymond, who followed, spoke as the successor of Charcot at the Salpêtrière, a position which he felt imposed upon him a very heavy burden. He gave a rapid review of Charcot's work, laying particular stress on what he had done towards determining the localisation of the functions of the brain. He went on to speak of Charcot's researches on the nervous system, which had brought about a revolution in our manner of conceiving the structure, functions, and pathology of the spinal cord. Charcot, said Professor Raymond, was, indeed, the most admirable healer of nervous diseases, of that great neurosis called hysteria. He taught us a just estimate of the extreme frequency of that affection. By him we were disabused of the error which consisted in believing that women were almost exclusively the victims of hysteria. Through Charcot we know to-day that both sexes pay practically an equal tribute to the disease. Again, Charcot's investigation of stigmata supplied the means of detecting hysteria in cases where it simulates symptoms and disorders which medical men had been in the habit of attributing to incurable lesions of the nervous centres. Thanks to the discoveries and the teaching of Charcot, we have learnt to cure paralyses, tremors, convulsions, pains, disorders of speech, perversions of intelligence and character, and many other morbid manifestations which not very long ago would have been looked upon as refractory to treatment; and in many cases these cures had the appearances of a miracle. Another subject successfully studied by Charcot was hypnotism. He it was, said Professor Raymond, who showed us that while the intervention of the hypnotiser has in it nothing of mystery—since it does neither more nor less than physical agents—the phenomena of hypnotism have nothing more of supernatural about them. They are essentially products of the cerebral automatism, just in the same way as the other manifestations of hysteria. In the course of its activity the brain stores up in the condition of memories all that passes within us and around us, and in particular the representations of the movements which we execute with the appearance of spontaneity, or which we accustom ourselves to execute under the influence of certain impulses. A large part of the phenomena springing from hypnotism are nothing else than the reawakening and setting in motion of these memories in a being whose personal will is held in subjection by another will, which dominates and directs his cerebral automatism. After speaking of Charcot as he was in his family and his home, Professor Raymond went on to say that he allowed no day to pass without consecrating a large portion of his time to his researches, his teaching, and his patients. His power of work was equal to the brilliancy of his intellectual endowment; and he was further gifted with an indomitable perseverance and an indefatigable ardour in research and in teaching, a remarkable tenacity of purpose and resolute courage in defending his opinions. The influence of his teaching was unequalled, and he not only trained his pupils, but encouraged them to take up original research, arming them with his method, penetrating them with his spirit, and animating them with his own enthusiasm. He helped them on in their career, supporting them by the whole weight of his authority. In this way he created a school still flourishing in vigorous life, which walks in his footsteps.



Professor Cornil next said a few words expressing his respect as a faithful pupil of Charcot, who had been his predecessor in the Chair of Pathology in the École de Médecine.

The Minister of Public Instruction then delivered an address in which he said that, looking upon the great and beautiful statue which a master sculptor had modelled in bronze, one asked whether it represented a professor or a priest. It was easy to guess that it represented an apostle. Such indeed was Charcot by his enthusiasm, his faith, and the breadth and boldness of the horizons which he opened up. On concluding his address M. Leygues conferred upon Dr. Gombault, Physician to the Ivry Hospital and one of Charcot's

oldest and most distinguished fellow-workers, the cross of a Knight of the Legion of Honour.

The statue, of which an illustration is given on p. 1778, is from the chisel of the distinguished sculptor, M. Falguière, with the collaboration of the well-known architect, M. Samson. Charcot is represented in his professorial robes standing in the act of giving a demonstration, the right hand indicating the left temporal region on the head of a dead body lying beside him, and the left making a gesture habitual to the great master in lecturing.

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1899.

Meetings of the Council will be held on January 18th, April 12th, July 12th, and October 18th, 1899. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 28th, 1898; March 23rd, June 22nd, and September 28th, 1899. Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

Metropolitan Counties Branch: West London District.—A meeting of this District will be held at the West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., on Friday, December 16th, 1898, at 4.45 P.M. The Physicians of the Hospital will give Clinical Demonstrations on the Interesting Cases in the Wards. Afterwards there will be a discussion. Dr. G. Crawford Thomson, Vice-President, in the chair. Tea and coffee will be provided at 4.30 P.M.—Thomas Dutton, M.D., 23, Holland Park Avenue, W., Honorary Secretary.

BATH AND BRISTOL BRANCH.

The second ordinary meeting of the Branch was held at Bath on November 30th; Dr. Lionel Weatherly, President, in the chair. There were 53 members and visitors present.

New Members.—The following gentlemen were elected members of the Association and of the Branch: Dr. T. R. Atkinson (Clifton), Mr. C. R. Dykes (Evercreech), Mr. A. E. Henchley (Blagdon), and Mr. F. Rose (Clifton).

Unregistered and Advertising Dentists.—A communication from the Western Counties Branch of the British Dental Association on (1) unregistered practitioners of dentistry, and (2) dentists who advertise, and another from the Worcestershire and Herefordshire Branch of the British Medical Association on the Vaccination Act, 1898, were, on the proposition of Dr. J. Stewart, seconded by the President, postponed for consideration at Bath in February.

Communications.—Dr. G. Parker described a case of Cystic Kidney with Pityriasis Rubra, and showed the specimen. Remarks were made by the President, Dr. Harrison, Dr. Mould, and Dr. Michell Clarke.—Mr. C. E. S. Flemming read a paper on Achondroplasia, illustrating it by a lantern demonstration. Dr. Edgeworth discussed the case, and showed some further slides.—Dr. E. J. Cave showed a specimen of Ulcerative Colitis. In the discussion which ensued Dr. Bannatyne, Mr. Scott, Dr. Goodridge, Dr. Waldo, Dr. Melsome, and Dr. Parker joined.—Dr. Wilson Smith and Mr. F. Lace read notes of two cases of Perforated Gastric Ulcer successfully treated by Operation; and Dr. Michell Clarke and Mr. W. M. Barclay described a case of Perforated Pyloric Ulcer, Operation, Recovery. Dr. Stack, Dr. King Martyn, Mr. Harsant, and Mr. Beath joined in the discussion.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

The autumn meeting was held at Aberdare on November 29th, Dr. T. Wallace, President, in the chair. Between twenty and thirty members were present. Dr. Pruen, Secretary of the Gloucestershire Branch, was present as a visitor.

Confirmation of Minutes.—The minutes of the annual meeting and of the last clinical meeting were read and confirmed.

The Transactions.—In accordance with notice the President moved:

That the resolution passed at the annual meeting, 1896, authorising the publication of *Transactions* be rescinded.

Mr. J. Lynn Thomas seconded, and it was carried unanimously.

New Members.—The following gentlemen were elected members of the Branch: T. M. Thomas, M.D., Newport; J. P. Burke, Merthyr; W. T. Rees, Llanboidy; D. R. Price, M.B., Ammanford.

The Open-air Treatment of Tuberculosis.—Dr. Pruen read an interesting paper on Some Recent Advances in the Treatment of Tuberculosis, more especially dealing with the open-air treatment. Remarks were made on the paper by Messrs. Vachell, A. Sheen, J. L. Thomas, and the President. A hearty vote of thanks to Dr. Pruen was carried unanimously.

Other Communications.—Mr. J. Lynn Thomas (Cardiff) read notes on the Value of Gloves in Operation Work, with a note on Cleansing of Hands.—P. R. Griffiths, M.B. (Cardiff), read notes of a case of Brown-Séquard's High-tension Paralysis.—Other papers by Drs. Trevor Jones, A. W. Sheen and A. Sheen were postponed to the next meeting.

Luncheon and Dinner.—Luncheon was kindly provided by local members, and in the evening about twenty sat down to an excellent dinner at the Boot Hotel.

ABERDEEN, BANFF, AND KINCARDINE BRANCH.

A meeting of the Branch was held at Aberdeen on November 16th. Dr. Osbert Wilson (Huntly) in the Chair. There was a large attendance of members.

New Members.—The following gentlemen were after ballot unanimously admitted members of the Branch: Dr. George Wilson, Stafford House, Nairn; Dr. William Lumsden, Edzell; Dr. J. E. Esslemont, 18, King Street, Aberdeen; Dr. Henry J. McGrigor, Glentilt Cottage, Torry, Aberdeen; Dr. John F. Christie, 3, Belvidere Crescent, Aberdeen.

The Diagnosis and Treatment of Pleural Effusions.—The President read a paper on this subject. In his own experience pleurisy with extensive effusions had been much more common since the appearance of influenza in epidemic form in 1891. Dealing with the diagnosis, he pointed out that the determination of the presence or absence of fluid in the cavity of the chest was not always such a simple matter as the ordinary textbooks would lead one to suppose, and insisting strongly on the advisability of exploratory puncture in all cases where there was the slightest doubt. He described how in his opinion this might be best accomplished. In regard to treatment he expressed his decided preference for the use of a medium-sized siphon-trocar over aspiration with a powerful vacuum and a quick running stream. Speaking of empyæma, he stated that though all were probably agreed as to the advantages of early and free incision, an ideal mode of drainage had yet to be invented. He concluded by thanking the members for their patient and attentive hearing, and hoped the short sketch he had given would elicit some interesting remarks from some of those present.

Professors Finlay and Stephenson and Drs. Gray, Rannie, Thomas Milne, and Lister took part in the discussion.

Other Communications.—Dr. Rannie read Notes of a Case of Pregnancy Complicated with Albuminuria, and a prolonged discussion followed, taken part in by Professors Stephenson and Cash and Drs. Wilson, McKerron, and Reddill.

Dr. Gray exhibited a patient whom he had trephined.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.

A meeting of this District was held at Eastbourne on December 1st, Dr. Hayman in the chair.

Communications.—Mr. Footner (Tunbridge Wells) read a paper on Thirty Consecutive Cases of Radical Cure of Inguinal Hernia. All the patients recovered. In 2 cases only was there any suppuration. In one the hernia recurred after a year's interval, and was reoperated upon with success. The operation consisted in torsion of the sac: ligature at the external ring, and removal of the sac below the ligature. The pillars of the ring were approximated by gut sutures. The

operation was not recommended in large irreducible hernia in patients under 4, or over 50 years of age.—Dr. MACKAY (Brighton) read a paper on Two Cases of Acute Ascending Paralysis (of Landry), giving an exhaustive review of the literature of this affection.—Dr. HAYMAN (Eastbourne) read notes of a Case of Spina Bifida.

SOUTH-EASTERN BRANCH: WEST KENT DISTRICT.

A MEETING of this District was held on November 18th at Gravesend, Dr. CHARLES FIRTH in the chair.

The Next Meeting.—It was resolved that the next meeting be held in Rochester, and that Dr. T. T. Brunyate be invited to preside. The Secretary was requested to arrange, if possible, for a conjoint meeting of the North, East, and West Kent Branches on that occasion.

The late Mr. S. Woodhams.—On the proposition of the CHAIRMAN it was unanimously resolved:

That the Secretary be requested to send a letter of condolence to the relatives of the late Mr. Sidney Woodhams.

Belladonna in Broncho-Pneumonia.—Dr. COUTTS read a paper on belladonna in the treatment of broncho-pneumonia, which will be published.—A discussion followed.

Paper.—Dr. P. V. BELL contributed a paper on Idiosyncrasy in Relation to Food and Drugs.

SYDNEY AND NEW SOUTH WALES BRANCH.

A MEETING of this Branch was held at the Royal Society's Room, Sydney, on September 30th, Dr. E. T. THRING, Vice-President, in the chair. There were also twenty-five members and one visitor.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Resignation of Hon. Sec.—The resignation of Dr. C. E. Rennie as Secretary of the Branch was announced.

Communications.—Dr. S. H. HUGHES exhibited a patient suffering from Pigmentation of the Conjunctiva, and explained the case. Dr. THRING made remarks.—Dr. CRAGO (for Dr. SCOT SKIRVING) read notes on the Prevailing Epidemic of Measles and Influenza. A discussion ensued in which Drs. NEILL, CRAGO, THRING, J. A. DICK, KENDALL, WORRALL, POCKLEY, FITZPATRICK, MORGAN, and MARTIN took part.

Election of New Councillor.—The CHAIRMAN said that, owing to the resignation of Dr. G. E. Rennie, it would be necessary to appoint a Councillor. Dr. CRAGO proposed and Dr. FIASCHI seconded:

That Dr. G. T. Hankins be elected Councillor.

Carried.

Midwifery Nurses Bill.—The CHAIRMAN stated that the Midwifery Nurses Bill was before Parliament, and, as the Bill was practically the same as that introduced by Dr. Graham in 1895, the Council were desirous of knowing whether the members wished the Bill opposed or not.—Dr. NEILL pointed out that, as the question was not on the business paper, it was irregularly before the meeting.—Dr. CRAGO proposed:

That as a matter of urgency the Midwifery Nurses Bill be dealt with at this meeting, although not on the business paper.

This was carried.—Dr. CRAGO proposed, seconded by Dr. MORGAN MARTIN, and carried:

That in the opinion of this Branch of the British Medical Association the Bill introduced by Dr. Graham in the Legislative Assembly is likely to increase the dangers arising from the incompetency of midwives, and should, therefore, in the public interest be strenuously opposed.

—Dr. J. A. DICK moved as an amendment:

That the Bill be referred to a Committee, consisting of the President, Vice-President, Honorary Treasurer, Honorary Secretary, and Drs. Fiaschi and F. H. Qualfe, for consideration and report.

This was seconded by Dr. NEILL, and negatived.

SPECIAL CORRESPONDENCE.

PARIS.

The Paris Water Supply.—Contract Medical Practice.—Infant Mortality in Brittany.

M. AMBROISE RENDU, who was entrusted by the Sixth Commission of the Municipal Council with the task of drawing up a report on the scheme for furnishing Paris with a water supply of spring and river water, has presented his report. The Municipal Council has passed a resolution approving of it. The project of utilising the Swiss lakes is definitively abandoned, for international as well as financial reasons. M. Rendu recommends that the aqueducts and water pipes should be modified in order that they may carry a larger volume of water. To save expense he recommends that the faulty earthen water pipes should be gradually removed and replaced by others more efficient. He proposes that an apparatus for measuring the water consumption in Paris should be established in every house. He declares that there is a sufficient water supply for Paris if there were not waste. The reason that in dry seasons Seine water is sent into Paris is attributed to the fact 10,000,000 cm. pass away in certain public establishments, schools, *mairies*, barracks, and public offices. There are no water meters. The possibility of drawing a water supply from the subterranean sheet of water which underlies the Paris soil is being studied. The chemical and bacteriological examinations will be made at the Montsouris Observatory.

The Charleville tribunal has decided against a mutual help society for having replaced its medical officer, between whom and the society there was a signed agreement. During the last seventeen years the medical officer had treated, at very low fees, the members of the society. In 1884 and in 1891 he consented to accept less in order to allow the society to square its accounts. The arrival of a younger medical man offered the opportunity of making further reductions. The society is condemned to pay the former medical officer 4 francs for everyone of its members.

M. Charpentier calls attention to the deplorable state of infant sanitation in Lower Brittany. M. Hébert of Audierne, in a memoir on the subject, condemns the practice of having children baptised immediately after their birth; in winter many children are killed in consequence of this custom. During the summer months mothers who suckle their children are not allowed to work in the sardine factories. Their offspring are in consequence left to the care of neighbours, who feed them on water with a little bread soaked in it, or with barley water. This form of nourishment is thus adopted during the season when infantile diarrhœa is an epidemic.

THE RIVIERA.

Homes of Rest on the Riviera, for whom Designed.—The Home for Women ("Helvetia") at Mentone.—The Home for Men at Mentone.—The Ladies' Home and Clergy House at Cannes.—The Home for Invalid Ladies at San Remo.

THE majority of English people are apt to regard the Riviera as the resort of the wealthier classes only. As a matter of fact, however, owing to the efforts of private individuals exercised during a term of years, "Homes of Rest" for people of limited means have been organised and successfully carried on. A brief account of these institutions will be of interest.

There are homes of rest for women and also for men in several of the resorts, and these differ slightly in their individual constitution. The purpose is, however, essentially the same in all cases, namely, to afford a winter or even two on the Riviera to members of the educated classes whose circumstances would not otherwise permit them this benefit. In all cases only such patients are received as show at least a reasonable probability of being restored to full and active work after a residence of one or two winters on the Riviera.

The oldest of these institutions is "Helvetia," or the Home for Invalid Ladies at Mentone. This institution owes its existence to the efforts of an English lady and a French Protestant pastor, who, with the aid of subscriptions, maintained and directed the home for many years. Latterly, however, the property has been vested in a Board of Trustees, or, as it is called in French law, a Société Civile, the direction remaining in the hands of the original founders. The home itself is a three-storeyed villa standing half way up the hill overlooking the East Bay of Mentone. Some charming descriptions of the house and surroundings will be found

in Augustus Hare's *Memorials of a Quiet Life*, written during the time he lived in this house. The actual management of the internal affairs of the home is in the hands of the lady superintendent, herself a former patient. There are fifteen bedrooms for patients, all looking full south, in addition to bath rooms, drawing, and dining rooms. The medical charge of the patients is undertaken by the physician to the institution, but inmates are at liberty to be treated by other practitioners. A trained nurse also lives in the house, and every inmate is entitled to her services. The home is open from November 1st to May 1st. Each inmate pays £1 a week, which includes wine, medicines, and medical attendance. The home is open to ladies of any nationality; they must be of the Protestant faith, but may be of any denomination. Every candidate for admission is supplied with a concise form of questions as to physical signs, temperature, etc., which has to be filled up by her regular medical attendant. A further statement is required to the effect that cure or real benefit is to be expected from a winter's residence. In addition to this, the Committee demand a letter from a clergyman to whom the applicant is personally known, stating that she would be unable to bear the expense of a winter in the South without the aid of the home. The age of admission is limited from 18 to 40. The certificates are scrutinised by the physician to the home and the managers. In case of doubt the patient is examined by Dr. Shaw, consulting physician to the home in London. The majority of the patients received are suffering from early phthisis and bronchitis, though there is a fair proportion of cases of asthma, rheumatism, and uterine disorders. Visitors are admitted every afternoon, the life is bright and cheerful, and old inmates retain the pleasantest recollection of their sojourn. The food is good and plentiful, but the open-air arragements could be a good deal improved, and shelters and deck chairs should be more plentiful, while arrangements for reading out of doors at night might be made. The good work done by the institution has been great, and with such additions as suggested its usefulness would be materially enhanced. In these days of hospital poverty it is gratifying to learn that the home has never had a deficit in twenty-four years.

A somewhat similar institution for men is the St. John's House of Rest in the West Bay of Mentone, which was founded in 1879. Designed for the benefit of sick or overworked clergy, it yet willingly receives men of other professions should there be room, clergy having the preference. Being essentially an Anglican foundation, its inmates are required to be members of the Church of England. No rules are laid upon them, but it is expected that they will attend service, and will respect the Bishop of Gibraltar's expressed wish as to not frequenting Monte Carlo. Each candidate for admission is supplied with a form of medical questions which has to be filled up by his own medical attendant; in case of doubt, Dr. Theodore Williams kindly acts as referee in London. In addition to this, it is essential for his admission that the patient should not have the pecuniary resources to enable him to winter in the South without assistance. No cases are, as a rule, received save such as are likely to benefit sufficiently to make them able for work after one winter. The inmates pay their fare out and back and £1 a week during residence. A distinguished physician gives his services gratuitously, and in cases of severe illness trained nurses are supplied without any extra charge to the patient. There is no warden, but a housekeeper resides in the home. Each inmate acts in turn as a sort of mess president. The inmates are at liberty to invite friends to lunch and dinner at a slight charge. The home is situated a short distance back from the sea, in the West Bay of Mentone. The house contains eleven south bed rooms and two west, as well as comfortable drawing, dining, and smoking rooms. The food is good and varied, and wine is supplied. The house is supported by voluntary contributions, and has no deficit. Here again, as at the Ladies' Home, there is a lack of shelters and arrangements for open-air life.

At Cannes two similar institutions exist—a Ladies' Home and a Clergy House of Rest. The Ladies' Home is a pleasant villa situated at Le Cannet, about a mile from Cannes. The conditions for residence are the same as to age, physical condition, and pecuniary state, as at the Mentone Ladies' Home. The home at Cannes differs from that at Mentone in that it is confined to British subjects. The inmates pay fr. 24.50 in advance each week. The patients are under the charge of two physicians who give their services to the home, and a trained nurse is in residence. Dr. Marcet acts as medical referee in London. The House of Rest is constituted on much the same lines as at Mentone.

At San Remo there is a home for invalid ladies, founded in 1877. The home itself is a two-storeyed villa, standing amongst the olives about half a mile from the sea. There are 15 south bedrooms for patients and 2 west. The age limit is 18 to 45 as compared with 40 in the other institutions. The funds are vested in a Board of Trustees, and the home is managed by a lady superintendent under the direction of a monthly Board of Management. The inmates pay one guinea a week, and have to submit a medical certificate which is practically identical with that required at Mentone and Cannes. The San Remo home differs from the others in that candidates have in addition to supply a certificate of social position. The care of the patients is in the hands of two honorary medical officers, while a trained nurse lives in the house.

From this brief sketch it is obvious that a considerable provision really exists to enable persons of limited means to secure a winter in the South. These institutions are probably hardly as well known as they deserve to be, vacancies being far from infrequent. While the Davos and St. Moritz Aid Funds provide for many invalids, there must remain a considerable number for whom high altitudes are unsuitable. For such cases these homes on the Riviera should be eminently adapted. In the light of later experience a winter in the South is a very different affair from what it was 20 years ago: more can be done by supervision and a regulated open-air life. Were the defects under which these institutions labour remedied, there would probably be nowhere more valuable sanatoria. Cases of phthisis must always form the majority of sufferers, but in the warmth and sunshine of the Riviera cases of bronchitis, heart disease, rheumatism, and early renal disease will find a climate even more specifically adapted for their cure.

LIVERPOOL.

The Medical Institution and Tuberculosis.—New Nurses' Home at the Northern Hospital.—The Royal Albert Asylum.—Annual Dinner of Resident Medical Officers.

At the meeting of the Medical Institution, held on December 1st, Dr. T. R. Bradshaw proposed the following resolution:

That a Committee be appointed to consider what further steps can be taken for the prevention of tuberculosis in the city of Liverpool, and for the treatment of the disease in the human subject; and to report thereon to the Institution.

Dr. Bradshaw said its chief incidence was not upon those who had nearly completed the allotted span of life, but it carried off the young, the father or mother of a helpless family, not infrequently the most useful and the most brilliant members of society. But the mere mortality from tuberculosis gave but a very inadequate idea of the distress for which it was responsible. Death from tuberculosis was generally preceded by months or years of feeble health or actual illness, during which the victim was a burden to himself and a source of anxiety and expense to his friends: many whose death was ultimately due to other causes suffered at some period of their lives from tuberculosis. It was hardly too much to state that although only one-tenth of the population died of tuberculosis, one-fifth were in one sense or other direct sufferers from its existence. No labour seemed too arduous, no expense too great to incur, in the hope of mitigating so terrible a scourge. That much had already been done in this direction the Registrar-General's returns abundantly proved, but the high mortality still prevailing showed that much more remained to be done in the future. Those who had heard Dr. Nathan Raw's admirable paper on the treatment of tuberculosis in sanatoria must have felt that much might be accomplished which had not yet been even attempted, and it was with the hope that some scheme might be devised for reducing some of the suggestions in that paper to practice

on an adequate scale that the present resolution was brought forward. The instructions to the proposed committee had purposely been left as wide as possible, but he ventured to suggest some of the subjects with which it might deal:

1. The dissemination of sound views as to the nature of consumption, especially that it is communicable, preventable, and to a large extent curable.
2. The provision on an adequate scale of sanatoria in the country.
3. The more effectual control of the sources of infection.
4. The question of adopting some form of notification.

The resolution was seconded by Dr. Manby, Assistant Medical Officer of Health, in the unavoidable absence of Dr. Hope, and was carried unanimously. The members selected to serve on the Committee were the President (Dr. W. Macfie Campbell), Dr. Hope (medical officer of health), Dr. Thomas Clarke (Chairman of the Hospitals Committee of the City Council), Dr. Caton, Dr. Carter, Dr. Barr, Dr. Nathan Raw, and Dr. T. R. Bradshaw, who will act as Secretary.

The Nurses' Home, which is the first part of the David Lewis Northern Hospital which has reached completion, was opened without any formality on December 5th. It is an imposing structure of red Ruabon brick, and is situated at the junction of Great Howard Street and Leeds Street. It is designed and furnished on the most approved plans for comfort and efficiency. The rooms are arranged in three storeys. The bedrooms are all provided with fireplaces, and can also be heated when necessary by hot water, and there is a liberal supply of bathrooms and offices. The basement contains the kitchen, a room for instruction in invalid cookery, boxrooms, and other offices. There are altogether sixty-three bedrooms, three large and comfortable sittingrooms for the sisters and nurses, and sittingrooms for the lady superintendent and the housekeeper. The ward sisters sleep in the home. At the Royal Infirmary it is, and for many years has been, the practice for the sister to occupy a room adjoining her ward, an arrangement which is believed to possess many advantages, but which has the obvious drawback that it renders her liable to have her rest disturbed by noise. The new out-patient department, which is in close proximity to the home, has advanced a long way towards completion.

The Royal Albert Asylum, Lancaster, which exists for the reception of weak-minded children in the seven Northern Counties, appears not to have received the amount of support from the public in Liverpool which might be expected in consideration of the number of patients which it receives from here. With a view to raising subscriptions a Ladies' Association has been formed for the district, the Countess of Derby being the President.

The resident medical officers at the hospitals and dispensaries in Liverpool and the surrounding district have arranged to hold an annual dinner. The first took place on December 3rd, at the Exchange Station Hotel. Covers were laid for about forty, and the chair was taken by Dr. T. H. Moyles, of the Brownlow Hill Infirmary. The arrangements for holding this annual gathering have been worked out with great care by a representative Committee, and the success of the first dinner, which was marked by great enthusiasm, augurs well for that of future meetings.

BELFAST.

Dr. Lorrain Smith's Report on the Water Supply.—The Results of the Bacteriological Examination of the Water Supply and their Interpretation.—General Conclusions.—The Contamination of the Soil.—The New Water Supply.—Sewage in Belfast Lough.

SOME time ago the Belfast City Council requested Dr. Lorrain Smith to make a bacteriological examination of the water supply of the city, with the view of determining whether pollution of the water was the cause of the recent serious epidemic of typhoid fever, now happily at an end. Dr. Smith has just presented his report to the Public Health Committee. It is a careful and exhaustive piece of work, and will, no doubt, demand and receive the most earnest attention. Dr. Smith begins by saying that:

The insanitary conditions in the city, which have been pointed out by experts in sanitation, are of such a nature as to contribute materially to the spread of infection from case to case, and possibly to originate the outbreak, and especially in a city where typhoid is endemic these conditions, if left unremedied, would render futile any attempts at the extinction of the disease.

The second question to which he directed his attention was that of the infection of the water supply. It was known that some cases of typhoid fever had occurred in the "catchment area" at Stoneylord, and the problem was to determine by bacteriological examination whether it could be shown that infected material from this source had reached the water supply.

It is recognised that there are two groups of bacilli which are in structure closely related, and which further indicate their similarity by the fact that each of them has a relation to typhoid fever. If we would discover in any given fatal case the bacilli which are the cause of the disease, we must examine the spleen *post mortem*, and from it make cultivations of the micro-organisms present. This I carried out, and found in the cases examined evidence of the presence of one or both of the groups just mentioned—namely, the typhoid bacillus of Eberth, and the bacillus coli communis of Escherich.

The next point to determine was whether one or both of these bacilli could be shown to be present in the water. Thirty samples of water were taken from various infected houses in the city, and examined, with the result that Dr. Smith

failed to isolate from these sources the typhoid bacillus, but had no difficulty in isolating a large number of varieties of the bacillus coli communis.

The presence of the latter in the water

is significant of the pollution of the water with intestinal excreta, and its significance in relation to the disease is increased when, in addition to possessing the typical cultural and structural characteristics, it has a high lethal power when injected into small animals, such as guinea-pigs.

As regards the "clumping reaction," Dr. Smith

has examined the blood of about 200 cases of typhoid fever, including for the sake of comparison some from Lurgan and Dublin . . . . and has come to the conclusion that we have in the coli bacilli which occur in the water a form of microbe which is directly concerned in the infection of typhoid fever.

Forty per cent. of the cases reacted to the coli bacillus, while at the very highest about 60 or 70 per cent. of the cases reacted to the typhoid bacillus. Dr. Smith's general conclusions are:

1. In the presence in the water of typical bacilli of the coli communis group we find evidence of contamination with intestinal excreta.

2. Certain of these bacilli exhibit their relationship to the process of infection in typhoid fever: (*a*) by their lethal effect on small animals, (*b*) by showing the reaction of infection when exposed to the blood of typhoid patients.

Short of discovering in the water the typhoid bacillus also, and thereby giving absolute proof regarding the primary cause of the epidemic, I know of no stronger bacteriological evidence than that which I have adduced in favour of the conclusion that this contamination of the water is one of the causes of the outbreak of the disease in Belfast.

Appendices upon the state of the catchment area at Stoneyford, the methods of analysis employed, the number of bacteria present in the water, and the reaction of infection and the bacillus coli communis conclude the report.

The general opinion of the medical profession in Belfast for a considerable time has been that the water supply of the city is of inferior quality, and probably plays some part in the causation and dissemination of disease, but that the facts regarding the high rate of typhoid fever and its occasional epidemic manifestations could not easily be reconciled with any "waterborne" theory. In opposition to that theory we have the indisputable facts that the disease is most unequally distributed throughout the city, and has lately attained alarming proportions in some areas, while hardly exceeding a normal average in others, and that in the presence of a severe epidemic some public institutions using the ordinary water supply, such as the City Gaol and the Asylum, have remained practically free from the disease. There seem grounds for thinking that as regards the incidence and causation of typhoid fever Belfast belongs to the category of such cities as Dublin and Munich, where an unusually heavy typhoid rate has been traced with considerable confidence to pollution of the soil with filth, rather than to direct contamination of the water supply. Dublin, in spite of an admirable water supply, remains much affected by typhoid. The story of sanitation in Munich, and how that city from having one of the highest, has come to have one of the lowest, typhoid rates in Europe has been told, and is one of the most brilliant pages in the records of public health. The Munich methods practically amounted to a resolute removal of all sources of soil pollution, abolition of cesspools and privies, reorganisation of the drainage system, abolition of slaughter-houses, etc.

Belfast is about to introduce from the Mourne Mountains a practically unlimited supply of water of unexcelled purity. The effect of this upon the health of the city, and especially upon the prevalence of typhoid fever, will be highly interesting.

At the monthly meeting of the Belfast City Council held on December 1st, an important deputation, including the Lord Bishop of Down, Connor, and Dromore, Mr. Thomas Andrews, J.P., Professor Letts, Mr. Richard Patterson, J.P., and others, waited upon the Council with the view of laying before it the present unsatisfactory state of the lough from the public health point of view. Mr. Andrews pointed out that while the main drainage system, which had been carried out under the Act of 1887, had been of considerable benefit to the city; it had injured the state of the lough shores on both sides. During the summer most unpleasant smells were perceptible, and these seemed to be increasing year by year, and to be extending farther down the lough. This state of things

is rapidly driving away visitors and prospective builders from our shores, and it is preventing the natural development of otherwise valuable suburban property, which would under more favourable circumstances be eagerly sought after by a large number of citizens. [The cause of this is] the discharge of a vast amount of sewage into Belfast Lough from so populous a city, without any attempt at filtration or chemical treatment. Secondly, the growth and decomposition, by the sun and other factors, of a certain class of seaweed, which is generated and nourished by a deposit of sewage.

He urged that the chemical treatment of the sewage of the city was by no means a problem difficult of solution. At Glasgow the cost of precipitating sewage was in 1897-98 £1 15s. 9d. per million gallons, which sum included 10s. 5d. for pumping, which in Belfast would probably be avoided. The daily discharge of sewage at Belfast was about 6 million gallons. The cost of removing the sludge and depositing it at sea was at Barking 5.40 pence per ton, and at Crossness 4.99 pence per ton. The distance necessary to remove the sludge would not exceed twelve miles at Belfast. Professor Letts also spoke, and showed that the evil-smelling gases on the foreshore of the lough had been proved to be sewer gases. The percentage of ammonia in the water was 0.05 at Greypoint, at the Lighthouse 2.12, and further up the river 5.25. The Lord Mayor promised that the matter would have the serious attention of the Corporation. He thought they had better await the recommendations of the Royal Commission, now considering the best mode of dealing with the outfall matter from sewers. When they knew what system to adopt they would put it into operation without delay.

CORRESPONDENCE.

THE OPERATION FOR REMOVAL OF CANCER OF THE BREAST.

Sir,—In Mr. Butlin's Clinical Lecture published last week he gives statistics of his cases of removal of the breast from 1880 to 1894. It would be interesting to know at what date Mr. Butlin changed the view which he at one time certainly held, that it was sufficient in cases of cancer of the breast to remove the tumour, and not the entire organ. In this lecture the stock account of Halsted's operation, with the well-known illustrations, is reproduced, and Mr. Butlin apparently dates his conversion from the end of 1894, when he first met with Halsted's paper and also procured a copy of Heidenhain's paper (1889) and Stiles's article (1892). He omits, however, all reference to the late Mr. Charles Moore's paper on "Inadequate Operations on Cancer" read before the Royal Medical and Chirurgical Society in 1867, and I can quite understand this, because Mr. Moore's valuable teaching was diametrically opposed to Mr. Butlin's practice for a good many years. When I succeeded Mr. Moore as Surgeon to the Hospital for Women in 1870 I followed his example of free removal, and improved upon it by clearing out the axilla in all cases in which the glands were affected. Mr. Banks, as is well known, went a step further, and in 1882 advocated the removal of the axillary glands in every case.

In the *Lancet* of June 24th, 1871, I published a lecture on Cancer of the Breast, which I quoted at the reading of Mr. Sheild's paper at the Medico-Chirurgical Society in January last, when Mr. Butlin was present. In that lecture I say:

If we believe that cancer has a tendency to spread through the neighbouring tissues, and thus reproduce itself, it is obvious that [illegible] complete removal of the organ in which it commences is best, and [illegible] astonished to find that in the present day there should be an [illegible] favour of excising the tumour only in cases of cancer [illegible]

As regards the operation, I say:

In amputating a breast, it is, I believe, most important to remove all skin, fat, and cellular tissue which may possibly contain cancer cells; and if the growth is adherent to the pectoral muscle there should be no hesitation in removing some depth of its texture, so as to be well beyond the influence of the disease. The incisions necessary for removing a breast cannot properly be limited to the ordinary elliptical incisions above and below the nipple; for the skin may be involved in other parts, and if any diseased portion is left the operation is useless. Any enlarged glands in the axilla should be removed at the same time; and there is, I find, no difficulty in clearing away all that is necessary in this region, without danger of hæmorrhage, by employing the finger freely to enucleate the glands, rather than by dissecting them out with the knife. I [illegible] of a strong solution of chloride of zinc to the whole of the wound is, I think, decidedly advantageous in destroying any remnants of disease in the surrounding tissues; and the occurrence of suppuration during the process of healing seems to be of advantage, rather than otherwise, in the same direction.

This free employment of the finger I found most useful in defining the thin margin of the breast long before Heidenhain had called attention to the subject, and my uniform practice of over 20 years was then summed up in a clinical lecture published in the *Lancet* of May 9th, 1891: "You will notice in my operations that I always use the fingers a good deal after I have first reflected the skin with the knife. I usually reflect the skin by a double incision, and then with the fingers tear away the skin until I feel that I have got to the margin of the breast. You can, with a little practice, with your finger recognise the edge of the breast, which is perfectly regular, and pull it up with a nail, and dissect or tear it away from the pectoral muscle. There is also another advantage—that we get less hæmorrhage. You may notice that I have seldom to tie or twist more than one or two vessels after removal of the breast." I go on to describe the method of clearing the axilla with the finger, and recommend removal of the pectoral when involved.

It is clear then, I think, that Mr. Butlin's lecture does not give an accurate account of the surgery of the breast prior to the time when he "found salvation" in 1894. It is evident, also, that Mr. Watson Cheyne (who calls Halsted's operation by the compound name of Heidenhain-Stiles), when he speaks in his Lettsomian lectures of the practice of the Edinburgh surgeons in 1872, naturally as a student did not know what was being done elsewhere, and may therefore be excused for giving his master, Lord Lister, the credit of "having taken the lead in this as in many other departments." I can less excuse his adoption of the word "cure" for cases which have survived an operation only three years.—I am, etc.,

Cavendish Square, Dec. 5th. Christopher Heath.

THE PROPOSED SCHOOL OF TROPICAL MEDICINE.

Sir,—In the discussion which has taken place on this important subject there has been a tendency to lose sight of the work of existing institutions, thus endangering the opportunity for co-operation and support.

I should feel very much obliged if you will therefore grant me space in the British Medical Journal to make a statement of the work carried on at King's College, and to supplement it with suggestions which I venture to think will assist in promoting the scheme which Mr. Chamberlain has so much at heart.

First of all, let me correct at once any impression which may exist that the bacteriological laboratories at King's College exist merely for the benefit of the medical undergraduates. Twelve years ago these laboratories were founded and equipped for the purposes of teaching and research. They were opened to all comers, and special facilities were granted to Colonial and foreign practitioners. More than 1,000 qualified medical practitioners, many of them holding high positions in the Colonial, naval, Indian, and army medical services have entered for instruction in the laboratory. The list of registered names includes those of practitioners and medical officers from Egypt, West Coast of Africa, Uganda, the Cape, British Guiana, Jamaica, Trinidad, Straits Settlements, India, Ceylon, China, Japan, Queensland, New South Wales, Canada, New York State, Michigan, Ohio, Missouri, Indiana, California, Florida, Chili, Buenos Ayres.

Several workers in the laboratory have been specially

trained with a view to combating plague, cholera, yellow fever, madura disease, actinomycosis, cattle plague, pleuro-pneumonia, and other diseases prevalent in our Colonies and in foreign countries. The Colonial and War Offices have recognised the laboratories by granting leave of absence in order that their officers might be trained in King's College. The course of instruction consists of:

1. Lectures and practical instruction in all that relates to the knowledge which we at present possess of the causation and prevention of diseases of man and animals attributed to bacteria and other micro-parasites.

2. Advanced technical instruction in the methods of original research thereby encouraging further researches in the Colonies by competent observers.

A thorough knowledge of these diseases cannot be imparted in a small clinical laboratory attached for convenience to the wards of a hospital.

In the first place, there would be no opportunity for learning anything about the epidemic diseases of animals. It will at once be admitted that the services of colonial health officers and colonial practitioners would be of increased value if they were qualified (especially in the absence of any veterinary surgeons or by co-operation with them) to advise upon the best means of stamping out tuberculosis, actinomycosis, cattle plague, pleuro-pneumonia, surra, Loodiana disease, etc., and also if they were competent to undertake original researches in connection with diseases of animals, and especially those communicable to man.

In the second place I would point out that cases of leprosy, yellow fever, cholera, plague, madura disease, and many other tropical diseases are very rarely imported into England, and therefore instruction at the bedside supplemented by examination in a clinical laboratory would be very irregular and inadequate. For training students in these diseases reliance must mainly be placed upon the pathological and bacteriological investigation of morbid specimens and materials supplied from the colonies, and the study of cultivations. To collect such material requires time, and to constantly carry on cultivations necessitates a large well-equipped laboratory and a well-trained staff, ready at all times to give instruction, and, indeed, willing to practically devote the whole of their time to teaching and research. Such a laboratory can only be provided and maintained at very great cost, and the establishment of a new laboratory on this scale would only provide for work for which provision has already been made at King's College and the Institute of Preventive Medicine. It would not supply any want, but it would enter into competition more especially in the teaching at King's College, and thus undermine the work which has been carried on for twelve years. The effects of this would be severely felt.

Mr. Chamberlain's object being the advancement of the education of colonial practitioners and the control of tropical diseases, let me point out how such an admirable object can be made to receive, as it should receive, the support of all. I would venture to make suggestions which are based upon a long experience of the needs of colonial practitioners. These suggestions I will embody in the form of regulations for admission to the Colonial Service. All candidates for colonial medical appointments should be required to attend and be "signed up" for the following:

1. A special course of *Clinical Instruction in Tropical Medicine*. This course [illegible] at the Seamen's Hospital, and in co-operation with the metropolitan hospitals. An arrangement might be made with the metropolitan hospitals, by which candidates for the Colonial Service were granted a circular ticket giving them the privilege of being shown in the wards any cases of interest to colonial practitioners.

2. A course of *Lectures on Tropical Medicine and Hygiene*, delivered at the proposed school of trop[illegible]medicine or Seamen's Hospital or any other medical school recognised by the Colonial Office as providing adequate training [illegible]

3. *Lectures and Practical Instruction*, for not less than six weeks, in a bacteriological laboratory or institute which is recognised by the Colonial Office as fully equipped with the materials and teaching staff necessary for giving the instruction required.

I would like to add another suggestion: Those already holding appointments in the Colonial Service and those engaged in private practice in the Colonies would derive very great benefit if they were to take advantage of these lectures and practical studies, and thus keep themselves in touch with the most recent views and with current research. Encouragement might be given to those on leave from the Colonies by the creation of Colonial scholarships or studentships, entitling the holders to free attendance on the same course of instruction demanded from candidates for the Colonial Service.—I am, etc.,

EDGAR M. CROOKSHANK, M.B.,
December 3rd. Bacteriological Department, King's College, London.

SIR,—The steps being taken to establish a post-graduate School of Tropical Medicine in connection with the Branch Hospital of the Seamen's Hospital Society, at the London Docks, deserve, I think, the fullest support.

Apart from the circumstance that the amount of clinical material available is likely to be far in excess of that found elsewhere, the advantages to post-graduates of having a school of instruction in which the undergraduate element is not in the ascendant, are very great indeed.

The medical schools of the metropolis are admirable in their way, but the curriculum of study is not adapted to the wants of post-graduates, the undergraduates necessarily having the first claim to the services of the various professors. It is essential to the success of any scheme for the instruction of post-graduates that the attention of the teaching staff should be wholly devoted to their requirements.

And this is one of the chief features of the scheme for establishing a school of tropical medicine at the Branch Hospital of the Seamen's Hospital Society, where the post-graduate element will largely preponderate. I do not think that facilities equal to those which exist at the Seamen's Branch Hospital for giving young medical men going abroad to practise instructions in the diseases which will surround them can be found elsewhere, not excepting Netley or Haslar.

Last week I visited the Branch Hospital, and at the time of my visit there were in the wards a patient with quartan fever, diagnosed as such on admission by the resident medical officer from an examination of the blood; another suffering from beri-beri, a third with tropical liver abscess showing amœba coli in the discharges, a fourth with Malta fever, and a fifth with dysentery.

Building operations on the school as well as on the residential quarters for a certain number of students were in active progress. Although the extension of the hospital had not then been begun, the work was to be taken in hand immediately. When these various buildings are completed, and the school is in full working order, this new departure in one branch of post-graduate teaching will go far to supply a want which has for long past been sadly needed and acutely felt.—I am, etc.,

OSWALD BAKER,
Surgeon-Lieutenant-Colonel I.M.S (retired).
Welbeck Street, W., Dec. 6th.

SARCOMA TREATED BY COLEY'S FLUID.

SIR,—May I request you to state that the interesting case to which Mr. Shattock refers in his letter in the BRITISH MEDICAL JOURNAL of December 3rd has been referred to a Committee of Fellows of the Medical Society for report? The man was shown at a meeting of that Society when under treatment during the last session, and was also shown this year after all trace of growth had disappeared. It is very important that the exact nature of the growth should be determined. Few of those who saw the case before treatment was commenced or for some time after that doubted the nature of the tumour.—I am, etc.,

Mansfield Street, W., Dec. 7th. WM. H. BATTLE, F.R.C.S.

THE SURGICAL OUTFIT OF THE SHIPS OF THE ROYAL NAVY.

SIR,—I was very glad to see the letter signed "F.R.C.S." commenting on the shortcomings of the equipment on board a man-of-war for treatment of surgical cases. Such as it is, it is inadequate to deal with any serious case in peace time, and what it would be in war time, in the very possible absence of a hospital ship, I can leave to your imagination. Aspticism is now practically out of the question, and the instruments which are allowed to be used by the surgeons are incapable of being made aseptic. To supply oneself with a complete outfit of aseptic instruments would be a considerable strain on most naval surgeons.

The most valuable suggestions of your correspondent are that sterilised dressings and sterilisers should be supplied. I cannot see that there would be any difficulty in either using

them or storing them, and they certainly would be most useful in ordinary work, to say nothing of the advantages to be gained by their use after an action. Even though cases occurring near a naval hospital are always sent there for treatment, they require some sort of dressing on board first; and it is scarcely necessary to point out the advantage of their being treated aseptically from the beginning. It would be a great pity that we should have to wait for a big naval fight to demonstrate the lack of preparation in these matters, and I sincerely hope that "F.R.C.S.'s" letter will be the means of drawing attention to the subject.—I am, etc.,

December 4th. MEMBER.

STEREOSCOPIC PHOTOGRAPHY.

SIR,—In the BRITISH MEDICAL JOURNAL of December 3rd, attention is drawn by Mr. Mackenzie Davidson, and in an editorial, to the advantages of stereoscopic over ordinary photographs for clinical purposes. Several years ago the better effects produced by stereoscopic prints was pointed out to me by one of my students, Mr. Bellamy, a skilled photographer. With his aid, I formed a collection of clinical stereoscopic views which more recently I have added to by many others taken by myself.

With the object of demonstrating the excellent effects produced, I exhibited in 1895 at the annual meeting of the British Medical Association (London) a large number of stereoscopes and placed before each a photograph representing some clinical case or a stage in some operation. Among these were included photographs representing the different steps in cataract extraction, the steps of operation for squint, and others, illustrating the methods of examining eye patients, school life and eyesight, and clinical cases of interest. Exhibitions on similar lines with stereoscopic photographs have been made before the Yorkshire Branch of the British Medical Association and the Sheffield and Leeds Medico-Chirurgical Societies. On several occasions I have also illustrated papers at the Ophthalmological Society with stereoscopic photographs.—I am, etc.,

Sheffield, Dec. 5th. SIMEON SNELL.

SCISSORS LEGS OR COXA VARA.

SIR,—The interest at present taken in obscure cases of deformity about the hip joint as well as the intrinsic importance of the subject must be my excuse for trespassing on your space with a few remarks on the Case of Scissors Legs reported in the BRITISH MEDICAL JOURNAL of December 3rd by Dr. J. G. Cooke, of Londonderry. In the first place, with all deference due from one who has not had the advantage of examining the patient, I would venture to question the correctness of his classification of it with the cases shown by Mr. Clement Lucas before the Clinical Society in 1880. These cases differed from Dr. Cooke's in one important particular—they were cases of ankylosis with definite histories of previous arthritis. They were remarkable because, as Mr. Lucas said:[1] "Adduction, as is well known, is very common in hip disease, but it is usually associated with flexion and inversion. Adduction with extensive and extreme eversion must be very rare." It is precisely this combination of adduction with extension and eversion which forms one of the most distinctive features of typical cases of coxa vara adolescentium. A comparison of the illustration given by Kocher[2] and that of Dr. Cooke's case will show the striking resemblance. Further, Dr. Cooke says that the power of flexion and extension was perfect in both hips, but in one only was adduction to a slight extent possible. These symptoms, combined with elevation of the great trochanter above Nélaton's line, form almost a characteristic picture of coxa vara. In the absence of any mention of the position of the great trochanter, however, no diagnosis can be made, and in any case no certain conclusion is possible without the aid of *x* rays, which, as I ventured to point out at the Edinburgh meeting of the Association,[3] are alone capable of making plain much that would otherwise remain obscure in such cases.

The question whether diminution of the angle between the shaft and neck of the femur which it has been shown occurs in some cases of coxitis was a cause of the deformity in Mr. Lucas's case, is one which space will not allow me to discuss now.—I am, etc.,

Seymour Street, W., Dec. 6th. E. MUIRHEAD LITTLE.

[1] *Lancet*, vol. ii., 1880, p. 1009.

[2] *Deutsche Zeit-schrift f. Chirurgie*, 1894. B. xxxviii.

[3] Remarks on Coxa Vara, BRITISH MEDICAL JOURNAL, November 5th, 1898, p. 1394.

THE ENTERIC OCCUPATION OF BELFAST.

SIR,—The old saying that "fools rush in where angels fear to tread" presents itself menacingly to a layman venturing to approach the columns of your journal. But, Sir, I read your paper weekly, and having at one time spent five years in Belfast, and being in other ways intimately connected with that city, I have been interested with the accounts of the enteric epidemic now raging there. As we sow so do we reap. Ten years ago, certainly, the sanitation of Belfast in some particulars was primitive, and would have compared unfavourably with many a Babu-governed city in the shiny East. Permit me to exemplify. My first residence in Belfast was a lodging in one of the chief thoroughfares of that city. At the rear of the terrace I lived in I discovered a back lane; this lane was heaped with mounds of refuse, decayed vegetable matter, dead cats and rats, and the usual unsavoury outcastings of the kitchen. On asking why this refuse was not removed, my landlady informed me that the Corporation only sent their carts when asked, and that a shilling had to be paid for each removal: verily a premium on filth and the germination of disease. If the landlady felt disinclined to part with her shilling, how much more would the poor labouring class grudge it? Having, then, recently come from an English borough, where the Corporation carts made their daily round, removing the refuse of rich and poor alike and where a heavy fine would have been the result to occupiers failing to have their refuse ready for removal, I was amazed at this reversal of methods, namely, a fine of one shilling for being clean substituted for five shillings without the option for being filthy—the latter the English method.

Again, on various waste spots of ground my eye met the following placards: "Please shoot rubbish." This was evidently in order to fill up inequalities for building, and rubbish, accordingly, was shot, and the ground duly levelled with the decaying vegetable matter, dead cats, and garbage of the surrounding cottages, which was well washed into the soil by the rain. After a year of this treatment a row of artisans dwellings would arise.

Again, I hear now that the new sewers in Belfast are ventilated by street gratings, emanating odours and gases, which blow into the windows of the citizens. Now, as Belfast is a network of factory chimneys, would not common sense have suggested the ventilating shafts being led up these chimneys, where the gases would have been rendered innocuous by the smoke?

In one particular, the smaller houses in Belfast were in advance of those in corresponding boroughs in England, namely, bath rooms were common, but usually the overflow pipe and emptying pipe, instead of being disconnected from the drains, and leading into the open-air in the back yards, led straight into the house sewer; thus was sewer gas laid on gratis.

I often commented on the want of sanitation in Belfast, and used to say, "Can this really be the home of a medical school?" Towns which are ignorant of sanitation should be taken in hand by the Local Government Board, whether they be ruled by a Lord Mayor, or whether they boast of being the seat of a medical school, and forced to do the right thing.

I apologise for the length of this communication to a scientific journal such as yours, but out of the mouth of a babe and suckling may sometimes proceed

Bombay, Oct. 26th. TRUTH.

MASSEURS AND MEDICAL ELECTRICIANS.

SIR,—In common, no doubt, with many of your readers, I have just received a circular from the Male Nurses' (Abstainers) Co-operative Association, 17, Albany Street, N.W., the first name on the list of patrons of which is that of Professor Victor Horsley, M.B., B.S., F.R.C.S., F.R.S., who is one of the direct representatives of the general practitioners on the General Medical Council. The following paragraph is in the circular:

"*Masseurs.*—Only masseurs and medical electricians holding a certificate from a medical man who is recognised as a specialist upon the subject are supplied by this Association."

I would fain receive an answer from Professor Victor Horsley to the following queries:

1. What is a masseur or medical electrician?
2. Who is to judge as to whether a medical man is recognised as a specialist upon the subject, and why?
3. What right has any medical man to grant certificates on this subject at all, and by whom was that right conferred?
4. Who conferred the right to supply these certificated specialists to the public on this Association?

Sir, I think it is due to Mr. Victor Horsley himself to draw his attention to this circular, and afford him an opportunity of explaining matters which to my thinking require a great deal of explanation, as it seems to me to be another attempt to enlarge the sphere of illicit practitioners, against which I for one have already strongly protested.—I am, etc.,

Preston, Nov, 5th. JAMES A. RIGBY.

THE PHYSIQUE OF BOYS ENTERING PUBLIC SCHOOLS.

SIR,—The publication of your articles on this subject has brought it into its proper sphere of discussion—namely, medical circles—and in this sphere I venture to point out that those who have written on the matter to the daily press have missed a very important reason why many boys are found wanting in physique when they enter our public schools.

The originator of the correspondence says that he finds the physical condition in which boys enter our public schools to be much below the normal, and I fully support his testimony. Like him, too, I think that "from a national point of view the importance of the facts disclosed is supreme." But my reason for thinking so differs from his, because I feel that the nation has cause to rejoice in the possession of institutions in which most of our boys are changed from the rather puny specimens that they are on their entry into them to the very fine examples of young manhood that they have become by the time of their departure from them—a change, in fact, very much like that of pupa to imago. Had "M.D." put by the side of his statement of the condition of boys on entry at 13 to 15 years of age one of their condition on departure at 17 to 19, the marked contrast would have been obvious.

Boys between 13 and 15 are not "typically healthy lads"; they have entered upon and are passing through a critical period of their lives (just as girls do a year or so later) which, originally a process of physiology, has become converted, possibly by man's inattention to Nature's laws, in many cases into one of pathology. Both the sexes will later in life, the females at 47 to 50 and the males at 60 to 63, pass through another critical period in which they will become specially liable to disturbance of their health.

Of 100 boys who enter a public school in one September about twenty will leave before the age of 17 by superannuation; about five will leave early from some physical incapacity; while about seventy-five will not leave before 17. Of these seventy-five very few will be found who do not exhibit vigour of mind and health of body. A good many will have some degree of varicocele, which does not affect health at all and which is easily remedied by surgery if destination for the army or civil service demand its treatment. Albuminuria is is not at all common after 17; from 13 to 16 it is very common indeed, so common and so harmless as to hardly need regard unless it indicate Bright's disease or the passage of blood or pus from some part of the urinary tract, which it does only in the rarest instances at this age; in fact it is mostly cyclic and determined probably more by imperfect hepatic than renal functions. Abnormal conditions of the heart, particularly of the muscles which form the cardiac walls and papillary columns and which complete the basal ring of the mitral valve, common enough at puberty, are rarely found after this is established; and the same holds good for anæmia, for adenoid growths and their complications, for certain "weak spots" at the apices of the lungs (to which attention is so often directed by the "specialist" on entry), for attacks of migraine, for peritoneal troubles originating in the vermiform appendix, for catarrhal jaundice, for ligamentous and muscular debility about vertebræ, knee-joints, and plantar arches, and for the host of other ailments to which boys are peculiarly liable during puberty and towards the close of the second dentition; which special liability disappears after the age of 17, owing in part to the fact of virility being established and probably in still greater part to the healthy conditions of mind and body engendered by the moral and physical disciplines which make public school life what it is.—I am, etc.,

Charterhouse, Dec. 1st. C. W. HAIG BROWN, M.D.

SYPHILIS IN THE ARMY.

SIR,—With regard to the letters on syphilis in the army which have been appearing in your columns, it would appear that the commonest cause of aggravated syphilis in tropical countries has been overlooked—I mean malaria. Racial intermixture, local concentration of disease, even inefficient treatment, may perhaps all play their part in increasing the severity of the disease, but no one who has any experience at all of tropical medicine can have failed to note the terrible enhancement of all the symptoms of the disease, both primary and secondary, which takes place when it infects one who is already suffering from malarial cachexia, even in a mild form. Sores assume a phagedænic condition, bubos ulcerate, eruptions become rupial, and mercury appears to lose half its virtues; while the sufferer, already debilitated, sinks into a condition of exhaustion, and unless speedily invalided will probably die. I am sure that any of your readers who have had practical experience in India or in other hot countries will agree that the picture is not overdrawn, and while I would not for a moment assert that no other agencies are aggravating syphilis in India, still I believe it will be found that malaria was also very prevalent in our armies in the Peninsula, concerning which I think the discussion first arose.—I am, etc.,

E. CARRICK FREEMAN,
December 2nd. Capt. R.A.M.C.

A CENTRAL FUND FOR THE SUPERANNUATION OF POOR-LAW OFFICERS.

SIR,—The amounts deducted from the salaries of Poor-law officers prove to be, so far, more than sufficient for the purposes of paying the pensions that have become due; but although this is satisfactory, the fact that the deductions are not paid into a central fund causes a considerable excess in some unions, with a corresponding deficit in others; if the guardians in the former case apply such funds for the expenses of the union, they use money which belongs to their officials; while in the latter case, in order to make up for the deficit, salaries already insufficient are further reduced. The present arrangement also acts as a bar to promotion, for guardians naturally demur to appoint officials, however fitted for important posts, who might be likely to claim a pension within a short period.

This seems to be a matter in which the British Medical Association might join hands with the Poor-Law Officers' Association, in order to have a central fund established, so that the present unsatisfactory state of affairs should cease.—I am, etc.,

December 3rd. W. L.

THE LIVERPOOL PATHOLOGICAL DIAGNOSIS SOCIETY.

SIR,—I notice in the BRITISH MEDICAL JOURNAL of November 19th a paragraph about the "Liverpool Pathological Diagnosis Society." From this it appears that the only condition of membership is an annual subscription of half a guinea, which entitles a member to send as many specimens as he desires for report. Surely a pathologist is as much a consultant as a physician or surgeon, and as such is entitled to an adequate fee. We do not expect consulting physicians and surgeons to give an unlimited number of consultations for half a guinea per annum. Why, then, should a pathologist do so? Societies such as this are doing their best to hinder the progress of pathology in England, for medical men will not undergo the special training necessary to make them skilled pathologists if they see that there is no hope of their being able to make a living by it.

I think, Sir, that societies which undertake to report on morbid products should be subject to two conditions:

1. There should be a graduated scale of charges according to the nature of the investigation required.

2. (And this is the more important) the use of such societies should be limited to those cases in which the patients are unable to pay the usual fee.

It should not be possible, for example, for a surgeon who receives a large fee for removing a tumour to obtain a report as to its nature for the inadequate sum of half-a-crown or less. —I am, etc.,

Leeds, Nov. 26th. C. Powell White.

THE EPIDEMIOLOGICAL SOCIETY.

Sir,—The abstract of my presidential address to the Epidemiological Society, published in the British Medical Journal of November 26th, which I have only now seen, contains several statements which I did not make and desire to disclaim. I did not describe the Vaccination Act of 1898 as "a retrograde step"—in my position it would have been improper for me to have done so—nor was I so rash as to prophesy that vaccination defaults would soon amount to a majority, or that "the outbreaks of small-pox at Leicester, Sheffield, Gloucester, and Middlesbrough afforded indications of what we might expect." I did not say that "sanitary authorities experienced changes not always for the better under the Local Government Act of 1888"—as a matter of fact they underwent no changes of constitution under that Act, nor that sanitation on the whole was less advanced in the northern counties; and the concluding remarks with respect to tuberculosis attributed to me go much beyond what I said. I enclose a proof of my paper in corroboration of this letter.—I am, etc.,

Whitehall, Dec. 1st. H. Franklin Parsons.

BRITISH MEDICAL BENEVOLENT FUND.

Sir,—I shall be much obliged if you will kindly insert this appeal on behalf of our poorer brethren in the British Medical Journal.

For many years I have received and distributed articles of clothing for men, women, and children, and am now practically without. I would be glad to have anything that can be spared, such as hats, jackets, dresses, or underclothing for women, or blankets, boots and shoes, old furs, overcoats, or anything, in fact, that has some wear in it and likely to be useful.—I am, etc., Edward East.

16, Upper Berkeley Street, London, W.,
Dec. 3rd.

IRISH DISPENSARY DOCTORS.

Sir,—After reading the letters of "Victim in the Toils." and "Another Victim," it will be a surprise to your readers to learn that the average Irish dispensary doctor is paid on a higher scale than we English district medical officers. For my district, with a population of 15,000, and area of over 4,000 acres, I received, with extra fees, in the year ending September 29th, 1898, £28 16s., namely, £25 salary, £3 16s. extra fees. In the year I paid 707 visits to patients at their own homes, and gave 220 consultations with medicine at my surgery. The salary includes cost of drugs, bottles, etc.

In looking over the last annual report of the Irish Local Government Board, I find the average salary of the dispensary doctor is about £110 per annum, but in addition to that, all drugs, a dispensary, a paid substitute in case of illness, a midwife in many districts, and surgical instruments, are all found for him free of cost. He is required to attend for two hours two or three days per week at a dispensary; this saves him from being disturbed at his meals, and by dispensary patients coming at all times, as they often do with me.

On referring to the above report, I noticed that one medical officer received as few as 50 tickets of all kinds, and many had not more that 50 red or visiting tickets in the year, or, say, 1 per week, visiting tickets being the only ones that involve much time.

I may perhaps mention that I am not the worst paid of the eleven district medical officers of the Ashton-under-Lyne Union. Whilst I believe that the salaries are not such as educated gentlemen should receive, I would like to mention that ½d. in the £ on the rateable value of my district would double my salary, whereas it would take 6d. in the £ to double the Irish officer's salary so as to bring it to a decent amount; this would be a heavy burden on a poor agricultural district. Wages and keep of horses are at least 20 per cent. less than in this country. The Irish officers get 2s. per case for vaccination; we only get 1s. 6d. under the old contract. I think, compared with ours, his condition is not quite so bad as he thinks it is. Let the Irish dispensary doctor try to encourage a spirit of honourable independence amongst the people where he lives, thereby getting more private patients, less dispensary patients, and generally improving himself, his patients, and the local rates.—I am, etc.,

R. H. Dreaper,
Medical Officer 12th District Ashton-under-Lyne Union.

Dec. 5th.

INSURANCE COMPANIES AND MEDICAL AID SCHEMES.

Sir,—I desire to draw attention to the fact that a person representing himself to be an agent of an insurance company is endeavouring to effect the formation of a "medical aid association" in Malvern. He called upon me a few days ago, and stated that with the sanction of the insurance company in question, he was about to combine the two occupations, and he pointed out the great advantage it would be to any medical man who would consent to the use of his name as medical officer of the association, to have a person in the position of an insurance agent willing and able to utilise that position to obtain patients for the said medical officer "among families which he would not otherwise have been likely to attend." I may add that the unique advantages alluded to included the privilege of attending men and women (without wage limit or other restriction) for the sum of 1d. per week, and children for the sum of ½d. per week. The surprise with which the "agent" received my categorical refusal to have anything to do with his association leads me to think that he must have entertained genuine hopes that medical men would encourage him in his undertaking. I thought it right to draw public attention to the matter, partly for the purpose of warning other medical men, and partly for the purpose of ascertaining whether it is usual for an insurance company to extend the ægis of its protection to schemes which are now universally recognised as hostile to the true interests of both profession and public.—I am, etc.,

Great Malvern, Nov. 28th. Henry W. Jacob, M.D.,

OBITUARY.

Surgeon-General ALEXANDER SMITH, M.D., C.B.,

Honorary Physician to the Queen.

Surgeon-General Alexander Smith, whose death in London, at the age of 74, was briefly announced in the British Medical Journal of December 3rd, was a prominent member of the Army Medical Service for many years. He was a Scotsman by birth, and educated at the University of Edinburgh. There he had the good fortune to study under Professor Syme, and from him Surgeon-General Smith derived that professional skill and experience which proved so useful to him in his subsequent career. He was a singularly handsome man, 6 feet 2 inches in height, soldier-like in appearance and character. The standard of duty which he set himself was a high one, and those who did duty under him were by his example encouraged to imitate it.

His services were varied and important. In August, 1846, he was first appointed to the 93rd Regiment as Assistant-Surgeon. In the following year he was transferred to the 2nd Dragoon Guards, and nine years afterwards to the 37th Foot. Promoted Staff-Surgeon 2nd class in 1855, he embarked for the Crimea, was present at the siege of Sebastopol, including the assault on the Redan on June 18th, and was awarded a medal with clasp and a Turkish medal. After a short home tour he proceeded to Bengal in 1858, and was appointed to the 51st Regiment, but his health having suffered he was placed on the home roster. His next foreign service was in Canada during the *Trent* affair in 1862, when he was gazetted to the 47th Foot, and did duty in that regiment until October, 1865, when for family reasons he was reluctantly compelled to relinquish his charge and return to England. After a short period of service at home in the Royal Artillery, he was given

a tour of Indian service, and in due course became Deputy Surgeon-General.

Then his great powers of administration came into play. In 1877-78 he accompanied the expedition against the Jowaki-Afridis and received a medal. In the Afghan war of 1878-80 he was Principal Medical Officer of the force commanded by Sir Donald Stewart, and was present at the engagements of Ahmed Kheyl and Urzu. He was necessarily thrown into intimate relations with his chief, who always spoke in terms of the highest praise of his admirable administration of the medical service. He was thanked for service with Kandahar Field Force, mentioned in despatches, given medal and a clasp, and created a C.B. He was promoted to the rank of Surgeon-General in 1881, and transferred to Gibraltar as Principal Medical Officer. There he devoted that energy peculiar to him to subjects of a sanitary nature, and through his instrumentality many important reforms were introduced in spite of resistance active and passive.

He retired in 1884 and settled down in Devonshire, devoting his leisure hours to fishing and shooting, and his greatest pleasure was to include his old regimental friends in the sport he loved so well. Throughout his life he was a reader and a writer. His literary skill was considerable, but it was expended chiefly upon professional subjects published in the various medical journals. Had life been prolonged his intention was to attempt a description of his own experience as an army surgeon during a very eventful period.

His death was unexpected. The day before it he walked an easy stride of four miles an hour; he was looking forward to the enjoyment of a summer in Scotland. There was every prospect of a ripe and happy old age when it all ended.

Owing to his connection with Her Majesty's household as Honorary Physician he was given a Jubilee medal. The Commander-in-Chief, in recognition of his valuable service, granted him a few months ago a good service pension. He was married twice, and leaves two daughters.

We regret to announce the recent death of a veteran of the profession, Frederick Hawthorn, L.R.C.P.Edin., M.R.C.S.Eng., L.S.A., in his 87th year, at Oaken, near Wolverhampton, the residence of his late son, Mr. F. J. Hawthorn, M.R.C.S., L.R.C.P., who also died a few months since. Mr. F. Hawthorn was found dead in bed in the morning, to the great grief of his wife, aged 89, who survives him, and of sons, daughters, and a wide circle of friends at Uttoxeter and Wolverhampton. The deceased gentleman was born at Uttoxeter in 1812, and was the third son of the late Mr. John Hawthorn, surgeon for many years in that town. He was a student of St. Bartholomew's Hospital, London, and obtained the qualification of L.S.A. as far back as 1836. He married in 1840, after settling in his native town, where he was Medical and Vaccination Officer of the Union Workhouse for fifty-six years, the longest service, it is believed, of any district medical officer in England. He was highly respected and much beloved by his many patients, and was a true friend of the deserving poor amongst whom he worked, and remained in active practice until 1892, when he was thrown out of his carriage and fractured some ribs. This accident necessitated his retirement from professional work. The funeral took place at the Parish Church, Uttoxeter, where the body was interred in the family vault. The service was conducted by the Vicar, the Rev. Prebendary Abud, and during its progress most of the business premises in the town had their shutters closed as a mark of the deep respect entertained by the citizens for one of their oldest townsmen.

On Sunday, November 20th, Mr. W. Smith died at his residence, Church Green House, Redditch. He had always enjoyed good health until July last, when symptoms of renal disease manifested themselves; thenceforth he was an invalid, and unable to leave the house except in his carriage or bath chair. Mr. Smith was born at Birmingham in 1817, and had consequently attained the age of 81 when he died. He received his general education at King Edward's Grammar School in that city under the famous Dr. Kennedy. He studied medicine at St. Bartholomew's and Westminster Hospitals; and became qualified as L.S.A. in 1840, and M.R.C.S. in 1841. He at once settled in practice at Redditch. In 1848 he married Miss Mary Callow, and this lady and two sons and four daughters survive him. Had he lived a fortnight longer he would have seen the jubilee of his wedding day. On the formation of the Local Board of Redditch in 1858 Mr. Smith was chosen as one of its first members, and retained that position for five or six years. In 1862 he became J.P. for Worcestershire, and at his death was with one exception the oldest magistrate in the town. He chiefly devoted himself to the practice of his profession, of which he at length became the senior local member; and his practice was probably the largest in the district. He had been surgeon to the Redditch Volunteers; medical officer for certain districts of the King's Norton and Bromsgrove Unions, and had held a seat on the Medical Board of the Smallwood Hospital. Altogether, his loss is much felt in every class of the community. The funeral was attended by various deputations from the several public bodies with which Mr. Smith was connected, by the members of the medical profession in Redditch, and a very large number of friends and neighbours, who evinced by their presence the universal feeling of respect and esteem entertained for the deceased gentleman.

We regret to announce the death of Dr. Philip Brown, at Elmfield, near Wylam, Northumberland, on November 29th, at the age of 76, after an illness which entailed much suffering. He was born at Bishop Auckland, Durham, studied at Newcastle and University College, London, and became M.D.Aberd. in 1852. He soon after settled at Blaydon, near Wylam, and had a large practice amongst all classes of people. He held the offices of Certifying Factory Surgeon and Medical Officer of Health. On May 16th, 1883, he was the recipient of a presentation (the outcome of a public subscription), which marked the high esteem in which he was held in his district; it consisted of a portrait in oils, a purse of gold, and a gold necklace for Mrs. Brown. He was twice married, and survived his second wife. The funeral took place at Blaydon on December 2nd.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE QUEEN'S VISIT TO NETLEY HOSPITAL.

For the third time during the present year Her Majesty has paid a visit to Netley Hospital. The previous visits, in February and May, were made for the purpose of seeing invalids returned from the North-West Frontier of India. The recent visit on Saturday, December 3rd, had for its object the inspection of the sick and wounded recently admitted from Egypt and the Soudan. The hospital now contains over eight hundred invalids, a large proportion of whom are soldiers of the 1st Grenadier Guards, Camerons, Seaforths, Northumberland Fusiliers, Lancashire Fusiliers, Lincolns, Warwicks, Rifle Brigade, 21st Lancers, and 32nd Field Battery R.A., who contracted disease during the Soudan autumn campaign, mostly on the return journey. The ailments from which they suffered were principally enteric fever, diarrhœa, and dysentery, some cases of sunstroke, Mediterranean fever, and simple continued fever having also been received. The men are now rapidly regaining their health. The type of enteric fever was a very severe one, giving a very pronounced reaction to the serum test, and in fatal cases presenting destructive lesions. The number of wounded admitted was small in comparison with the sick; these also are convalescent.

The Queen's visit was a private one: there was no guard of honour and no band, but there was a large muster of people from the neighbourhood, who gathered at the station and on the hospital grounds, and gave Her Majesty a warm reception. The Queen was received at the Netley Station by General Sir Baker Russell and the Staff of the Southern District, and at the hospital by Surgeon-General Nash, the professors of the school and staff of the hospital. Her Majesty was accompanied by the Princess Henry of Battenberg, the Princess Victoria of Schleswig-Holstein, Lady Lytton, Sir John Macneill, and other members of the Royal Household. Lord Kitchener of Khartoum was also in attendance.

The following officers were presented to the Queen: Colonels Notter, Stevenson, and MacLeod, Professors of

Hygiene, Military Surgery, and Military Medicine in the Army Medical School respectively; Lieutenant-Colonel Webb, Assistant Professor of Military Medicine; and Major Dick, Assistant Professor of Military Surgery, in charge respectively of the Medical and Surgical Divisions; Lieutenant-Colonel Chester, in charge of the Lunatic Asylum: Lieutenant-Colonel Blennerhassett, Secretary to the Principal Medical Officer; and Miss Norman, Lady Superintendent of Nurses.

The visit occupied two hours, from 1.30 to 3.30. The great majority of the patients were drawn up in line in the corridors, the surgeons on probation taking their place at the ends of sections belonging to their wards. Patients who were unable to leave their beds were seen in their wards. Her Majesty inspected nearly every patient in the hospital, and took a special interest in the more serious cases, making inquiries regarding them and speaking a few words of comfort and hope. Some patients who had been seen on a former visit were recognised and made happy by a few kind remarks. A pleasing incident was the decoration of First-Class Staff-Sergeant Benson and Private Davidson, of the Royal Army Medical Corps, with the Distinguished Service Order on account of specially meritorious work in the Soudan.

The Queen witnessed a demonstration of the Roentgen rays with great interest. Instruction in the use of skiagraphy has now become a part of the course of military surgery. Interesting illustrations of the value of this process are of frequent occurrence in Netley.

The effects of these royal visits to Netley are most beneficial. The staff derive encouragement from the feeling that their labours are recognised and appreciated, and the patients are gratified to know that the hardships and sacrifices they have undergone, the wounds they have sustained, and illnesses they have contracted in fighting for their country are the subject of sympathetic concern with the nation as represented by its Sovereign.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeons Alexander J. J. Johnston and James O'B. Williams, M.D., have been promoted to be Fleet-Surgeons, November 16th. Their previous commissions are thus dated: Surgeon, March 30th, 1878; Staff-Surgeon, March 30th, 1890.

ARMY MEDICAL STAFF.

Surgeon-General Alfred A. Gore, M.B., is placed on retired pay, December 1st. He was appointed Assistant Surgeon, October 1st, 1860; Surgeon, September 2nd, 1868; Surgeon-Major, March 1st, 1873; granted the rank of Lieutenant-Colonel, October 1st, 1880; made Brigade-Surgeon, August 18th, 1886; Surgeon-Colonel, January 13th, 1892; and Surgeon-Major-General, March 10th, 1895. He served at the bombardment and destruction of the Timmance town of Massougha on the Sierra Leone River on December 10th, attack on Madoukia December 27th, storm and capture of the stockaded Fetish town of Rohea on December 28th, 1861; mentioned in general orders for services and conspicuous bravery, and specially recommended for promotion in 1868; in the Ashanti War in 1873 as Sanitary Officer, being severely wounded in the action of November 3rd near Dunquah, and also wounded at Quarman on November 17th (medal); and was Principal Medical Officer in India during the operations on the North-West Frontier under Sir William Lockhart in 1897-8, his administration receiving the high approval of the commanding officer. He was appointed Principal Medical Officer to H.M.'s forces in India, March 10th, 1895, and is in receipt of a reward for distinguished services granted him in October of last year.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel W. M'Conaghy, M.D., Bombay Establishment, has been promoted to be Colonel from September 29th; his tenure of appointment in the administrative grade will reckon from that date.

THE VOLUNTEERS.

Surgeon-Captain D. T. Key, from the 1st City of London Volunteer Artillery (Eastern Division Royal Artillery) is appointed Surgeon-Captain in the 1st Dorsetshire Artillery (Southern Division Royal Artillery), December 3rd.

Surgeon-Captain R. Kirk, M.D., 8th Volunteer Battalion the Royal Scots (Lothian Regiment), is promoted to be Surgeon-Major, December 3rd.

Surgeon-Lieutenant-Colonel H. F. Hurst, 2nd Volunteer Battalion the Northumberland Fusiliers, has resigned his commission, December 3rd; he retains his rank and uniform.

Honorary Assistant-Surgeon W. Kay, 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers, also resigns his commission, retaining his rank and uniform, December 3rd.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps specified, dated December 3rd: Andrew S. Tindal M.D., 3rd Lanarkshire Rifles; Walter T. Brooks, M.B., 1st (Oxford University) Volunteer Battalion the Oxfordshire Light Infantry: Penrose J. Barcroft, late Staff-Surgeon Royal Navy, 1st Wiltshire Rifles; Percy J. Edmunds, M.B., 26th Middlesex (Cyclist) Rifles.

Surgeon-Captain J. S. M'Conville, M.D., 3rd (the Blythswood) Volunteer Battalion the Highland Light Infantry, has resigned his commission, December 3rd.

Surgeon-Major Sir J. Reid, Bart., M.D., K.C.B., 2nd Volunteer Battalion the Gordon Highlanders, resigns his commission, and is granted the rank of Surgeon-Lieutenant-Colonel, with permission to retain his rank and uniform, December 3rd.

Surgeon-Lieutenant-Colonel C. Pegge, 1st Glamorganshire Artillery, has resigned his commission, December 7th; he retains his rank and uniform.

VOLUNTEER MEDICAL STAFF CORPS.

Mr. Ashley W. Mackintosh, M.D., is appointed Surgeon-Lieutenant in the Aberdeen Company, December 3rd.

Surgeon-Captain P. O. Haynes, the Woolwich Company, has resigned his commission, December 3rd.

THE INDIAN MEDICAL SERVICE.

The effects of the strain on the Indian Medical [illegible] by the famine, plague, and recent Frontier camp[illegible]d, says the *Englishman*, by the fact that in the [illegible]ut of a strength of 368 officers, no fewer than 50 were [illegible] cate in July last, whereas during the corresponding period four years ago, before the Chitral expedition and the commencement of the famine and plague, only 8 officers were absent on medical certificate. Moreover, the Civil Medical Department has suffered considerably from numbers of commissioned medical officers employed in it having to revert to military duty. In Bengal, till very recently, the civil establishment was 13 short, and in the North-West Provinces 19 below the required figure. In consequence, several of the districts were deprived of their commissioned medical officers, and had to content themselves with assistant-surgeons and other locally-trained men.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

Lieutenant-General Sir George White V.C., G.C.B., G.C.S.I., Quartermaster-General to the Forces, will present the prizes to the members of the Volunteer Ambulance School of Instruction at St. Martin's Town Hall, Charing Cross, on Wednesday, December 14th, at 8.30. On this occasion there will be the usual entertainment (ladies' night). Further information can be obtained from Surgeon-Captain R. R. Sleman, Honorary Secretary, 8, Portman Street, W.

THE FRENCH ARMY MEDICAL RESERVE.

Upwards of 700 medical reservists, belonging in nearly equal proportions to the reserve and the territorial army of France, recently completed a course of training under experienced medical officers of the active army at various centres. Great consideration was shown in apportioning these reservists to stations most convenient to themselves, while in no case were they required to proceed to Corsica, Algeria, or Tunis, although the corps to which they were nominally assigned might be serving in those remote places.

THE DISTINGUISHED SERVICE ORDER.

Among the officers who attended at Windsor on December 1st, and received from the Queen the Order for Distinguished Service were Lieutenant-Colonel G. A. Hughes and Major E. M. Wilson, C.M.G., both of the Royal Army Medical Corps.

HEALTH OF THE DUTCH ARMY.

According to an official report recently issued, the mean strength of the army of the Netherlands during 1897 was 27,458, and the proportion of men on the sick list 145.07 for every 1,000 men present. A total of 55 deaths occurred among these, or 3.09 per mille living; these deaths do not include 8 suicides nor 6 deaths by accident or violence. The amount of sickness was equivalent to 10.8 days for each man in the army, and the average duration of each case was 13.0 days. Arranged by months, September had the lowest admission-rate (72.6), March the highest (177.2); August the lowest death-rate (0.07), May the highest (0.42). Of special maladies and groups of maladies, skin diseases were accountable for the largest number of sick—87.8 per 1,000 men for the year, the cases having an average duration of 9.1 days. Acute bronchitis came second with 52.7 per 1,000. The malarial fever rate was only 8.9. Forty-six cases of hernia were reported, the patients in 28 cases having been cured and returned to duty. No case of acute alcoholism or delirium tremens was reported during the year; but there were 23.3 admissions per 1,000 for gonorrhœa, with an average duration of 32.7 days; and 6.7 for syphilis, with an average duration of 34.5 days. There were 16 cases of typhoid fever, with 7 deaths; 193 cases of pneumonia, with 14 deaths; and 127 cases of consumption, 16 fatal.

THE ARMY PURITY ASSOCIATION.

Some time ago mention was made of this Association, which was originally started at Meerut in 1889 by a Presbyterian chaplain at the station. Its work from all accounts is being attended with considerable success. The work of last trooping season is being continued on the same lines during the present season at Deolali. A "Purity" meeting was held at the Deolali depôt (through which troops homeward and outward bound to India pass a certain short time) early in October, when addresses were delivered by Lieutenant-Colonel Kellie, the commandant; by Lieutenant-Colonel Stevenson, Royal Army Medical Corps; and the Rev. Mr. Baillie. At the close of that meeting the "purity pledge" was signed by thirty men, which is considered a good beginning to the winter's work. The work of the Association bids fair to surpass in interest the work of the army temperance movement.

MEDICAL EXAMINATION OF VOLUNTEER RECRUITS.

Surgeon-Lieutenant writes: Fully two years ago I was asked by the commanding officer of a local volunteer corps to act as examining medical officer of his recruits under the following circumstances: The

commanding officer had been unable to get a medical man to take a commission in his corps, and having approached the authorities at the War Office as to how he should arrange for having his recruits medically examined, the authorities suggested that the nearest Volunteer medical officer might undertake the duty. I happened to be that officer, and on being asked I consented to take on the work, and have performed it up to the present. Quite recently the commanding officer suggested that I should send in a bill for examining his recruits to him, and he would forward it to the War Office.

My difficulty is whether as an officer of Volunteers I should make a charge as suggested. Did I not hold a commission I should not hesitate to send in a bill. By answering the following questions you will greatly assist me in my difficulty:

1. In the circumstances should I forward my account? If yes,
2. Should I do so as surgeon-lieutenant of a volunteer corps?
3. Should I send it for the whole time I have examined or only for the Volunteer year just ended?
4. What charge should I make per recruit?

*** 1. The question of payment for examining recruits is entirely a matter between the commanding officer and the medical man he employs. We are advised that the War Office is not likely to entertain a claim for payment.

2. If a claim is made it should be in our correspondent's private capacity, and not as surgeon-lieutenant to another volunteer corps.

3. If a claim is sent in at all it would probably be advisable to make it for the whole time.

4. This must be entirely a mutual arrangement between the commanding officer and our correspondent, who should charge according to his usual scale and the time occupied.

MEDICO-LEGAL.

THE APOTHECARIES' HALL, DUBLIN.

PUZZLED asks if a Licentiate of the Apothecaries' Hall, Dublin, 1880, is a double qualification, or if the holder of such a diploma is legally qualified to hold a Government, municipal, or surgical appointment?

*** The reply to the first part of our correspondent's question is in the negative, as the Apothecaries' Hall, Dublin, was unable at the date mentioned to grant a statutory licence to practise surgery. The answer to the latter part of the question is therefore also in the negative.

DOMICILE.

ROSIN writes: What is the legal meaning of the word "domiciled" in Part 2, Sec. II (1) of the Medical Act, 1886. For instance, suppose I leave my practice in charge of a *locum* for a few weeks, during my absence obtaining a colonial degree, can I legally be domiciled in the colony during my few weeks' stay?

*** The word "domicile," which is used in the Act in its ordinary legal sense, denotes, generally speaking, that place or country which is in fact a man's home. A person will not lose the domicile which he possesses in any country unless he not only abandons his residence there, but also his intention to reside there, or, to use untechnical language, unless he leaves such place for good. Our correspondent would not therefore during his stay in a colony for a purely temporary purpose such as he mentions, lose his English "domicile," nor would he gain a colonial one.

THE TITLE OF "DR."

A CORRESPONDENT who holds the triple qualification of Edinburgh, together with the degree of M.D. of the Michigan (U.S.A.) College of Medicine and Surgery, writes to inquire if he is entitled to use the prefix of "Dr." on his doorplate, and to call himself "Dr.," and, generally speaking, to assume that title and to sign himself "M.D."

*** The subject of the user of the prefix title of "Dr." has been much discussed in the columns of the BRITISH MEDICAL JOURNAL, and we would refer our correspondent to the views expressed in the article in the JOURNAL of December 14th, 1895. He will there find it stated that in the opinion of the writer no legal proceedings would lie against a qualified medical practitioner who chooses to call himself "Dr.," or even to put that title on his doorplate, and we cannot carry the matter further than this. With regard to the user of the title "M.D.," the degree held by our correspondent is not registrable, and we think he might be liable under Section XI. of the Medical Act, 1858, if he used the letters "M.D." without any addition showing that it is a degree from the Michigan (U.S.A.) College of Medicine and Surgery.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD

MEDICAL FACULTY.—We are informed that the number of students who have entered on strictly professional study (1st M.B.) between October, 1897, and October, 1898, is 75. The number of students who have joined preliminary scientific classes with a view to graduating in medicine is 40.

UNIVERSITY OF CAMBRIDGE.

WALSINGHAM MEDAL.—The High Steward's medal for biological and physiological research has been awarded to Mr. J. Graham Kerr for his work on Lepidosiren. Mr. A. C. Hill is *proxime accessit*, his report being "Enzymes and Assimilation. Five other memoirs submitted for the prize are pronounced to be "of a high order of merit." Lord Walsingham's generous benefaction is evidently producing excellent results.

WALKER STUDENTSHIP.—An election to this studentship, intended to promote original research in pathology, will be made next term. The annual value is £200, and the tenure, under certain conditions, three years. Applicants (men or women) are to send in their names, etc., to Professor Kanthack on or before January 18th, 1899.

APPOINTMENTS.—Dr. Donald MacAlister is appointed a member of the Agricultural Science Syndicate and of the Special Board for Medicine; Dr. Guillemard a member of the Antiquarian Committee; Mr. F. Darwin, M.B., a member of the Museums Syndicate; Dr. Collingridge and Dr. Humphry members of the State Medicine Syndicate; Dr. Barclay Smith a member of the Special Board for Biology; Mr. E. G. Browne, M.B., a member of the Indian Civil Service Board; Professor Balfour, M.D., an elector to the Botany Professorship; Dr. Anningson, Dr. Collingridge, Dr. Kanthack, Dr. Notter, and Dr. Stevenson, Examiners for the D.P.H.; and Mr. A. F. Stabb, M.B., Deputy Examiner in Midwifery for Dr. Barbour, who is unable to examine.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly meeting of the President and Fellows of the College, held on Friday, December 2nd, Mr. John Joule, L.S.A., was admitted a Licentiate in Medicine of the College.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College:

R. Allen, M.B., B.Ch.R.U.; W. J. Corrigan, L.R.C.P.I., L.R.C.S.I.; A. Cuffe, L.R.C.S.I., L.A.H.; Miss J. G. Horwood, L.R.C.P.Edin, L.R.C.S. Edin.; and J. O'Callaghan, L.R.C.S.I., L.R.C.P.Edin.

The following candidates passed the primary part of the Examination: M. O'Sullivan, M.B., B.Ch.R.U., and L. J. Whelan, L.R.C.P.I., L.R.C.S.I.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

SOME MATTERS SANITARY IN THE HOME COUNTIES.

THE printing of the annual reports of medical officers of health is, we are glad to find, on the increase to a large extent, and the practice of thus placing on permanent record the annals of local self-government should have as one result the more careful preparation of data in these places on which the health officer has heretofore simply had his report read and pigeon-holed as a manuscript which had to be received, but which counted for little. In making a plea for some uniformity of size on the part of councils printing these reports, we should like to suggest that the official octavo form used by so many county councils and borough councils, and based, we assume, on the excellent series of Government health reports from the early Sixties until now, is one that might profitably be adopted. Too many of these printed reports still retain the appearance of documents prepared to fulfil an irksome duty, and one that has little claim on the time of officers of health. This is greatly to be deplored. Insecurity of office, miserable doles under the name of remuneration, and want of interest on the part of health bodies, have their large share in determining the class of report that is turned out; but something more than an amplified notification list and the data—however necessary—of a nuisance inspector's notebook are even so desirable.

It is refreshing to turn from documents such as we have just mentioned to reports of men of the stamp of our county health officers, and of many separate districts. As we write, there lies open before us the report for 1897 of Dr. L. W. Darra Mair on the Croydon rural district, which seems to us to be a model that may well be studied. Treating of an area of 23,000 acres, and of a population of 30,000 people, Dr. Mair in some 50 pages of print, discusses tersely the many phases of public health and sanitation, and gives the impression of a well-organised district under efficient supervision.

In that and in other home districts it is gratifying to note the growing disposition of councils to utilise the help afforded by bacteriology in the diagnosis of infectious disease. Dr. Groves, of Woodford, having inaugurated a scheme whereby bacteriology plays the leading part in determining when children ill of diphtheria may safely be

allowed to return to school. The results of bacteriological cultivations have in cases detained children at home for many weeks after apparent convalescence. In this and other Essex districts great care seems to be exercised in relation to the possible infectiveness of scholars after recovery from infectious diseases.

Dr. Thresh, in his excellent summary report for the county of Essex, points to the usefulness of the County Public Health Laboratory at Chelmsford, and evinces in all he writes a keen interest in the important duties which fall to him as county health officer. In great contrast hereto are the two towns of Maidenhead and Newbury in Dr. Woodforde's Berkshire combined districts, they alone not having in 1897 adopted compulsory notification, but showing excessive relative mortality over the rest of the combined area in regard to notifiable diseases.

In further reference to notification, we note that Dr. Peskett, of Leyton, seems to regard a medical practitioner as justified if he refuse to notify a case of "puerperal fever" simply because that disease under that name no longer finds place in the *Nomenclature of Diseases*, but we think a study of the *Nomenclature* will speedily show that the revisers have acted in a manner calculated to render notification more exact, and the opinion recently expressed by the Committee of the College frees the matter from any ambiguity which he supposed to have existed. The vexed question of hospital charges comes up in the 1897 report of Dr. Owen Coleman, of Surbiton. Dr. Coleman challenges the policy of making any individual charges in respect of a rate-supported isolation hospital established for the common weal. If such charges are to be made he would wish them made in relative proportion to the rateable value of the houses whence patients are received. But should those who by high rates support the institution also be mulcted in high individual charges for the public welfare? Surely a middle-class patient can do no more harm in his home than one in an artisan's dwelling.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns, including London, 6,638 births and 4,108 deaths were registered during the week ending Saturday last, December 3rd. The annual rate of mortality in these towns, which had been 17·0 and 17·4 per 1,000 in the two preceding weeks, further rose to 19·1 last week. The rates in the several towns ranged from 12·4 in Burnley, 13·5 in Halifax, 15·3 in Cardiff, and 15·9 in Sunderland, to 23·4 in Derby, 24·2 in Salford, 24·8 in Newcastle-upon-Tyne, and 27·8 in Wolverhampton. In the thirty-two provincial towns the mean death-rate was 19·7 per 1,000, and was 1·5 above the rate recorded in London, which was 18·2 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2·0 per 1,000; in London the rate was equal to 1·7 per 1,000, while it averaged 2·2 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3·1 in Preston, 3·5 in Blackburn, 3·6 in Salford, and 6·6 in Swansea. Measles caused a death-rate of 1·1 in West Ham, 1·2 in Newcastle-upon-Tyne, 1·4 in Portsmouth, and 1·7 in Bolton; whooping-cough of 1·0 in Swansea and 2·7 in Preston; and "fever" of 1·2 in Blackburn, 1·5 in Sheffield, and 1·8 in Wolverhampton. The mortality last week from scarlet fever showed no marked excess in any of the large towns. The 108 deaths from diphtheria in the thirty-three towns included 43 in London, 15 in Leeds, 9 in Swansea, 7 in West Ham, 4 in Blackburn, and 4 in Sheffield. No fatal case of small-pox was registered during the week under notice, either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 3,188, 3,259, and 3,162 in the three preceding weeks, had further declined to 3,142 on Saturday last, December 3rd; 264 new cases were admitted during the week, against 340, 319, and 234 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, December 3rd, 889 births and 632 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had increased from 18·9 to 19·7 per 1,000 in the four preceding weeks, further rose to 21·0 last week, and was 1·9 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 15·3 in Greenock and 18·7 in Perth to 21·5 in Edinburgh and 22·0 in Glasgow. The zymotic death-rate in these towns averaged 2·8 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 306 deaths registered in Glasgow included 6 from measles, 2 from scarlet fever, 7 from diphtheria, 15 from whooping-cough, and 6 from "fever." Nine fatal cases of measles were recorded in Edinburgh, and 2 deaths from diphtheria occurred in Paisley.

IRISH MEDICAL ASSOCIATION.

A special committee has been formed by the Irish Medical Association, consisting of Sir Thornley Stoker (President of the Association), Dr. Donnelly (Dublin), Dr. Smyth (Naas), Dr. Moorhead (Cootehill), Dr. Jacob (Dublin), Dr. Donnelian (Castlerea), Dr. Strahan (Dublin), Dr. Langford-Symes (Dublin), to prepare a scheme tending towards the improvement of the Poor-law medical service in Ireland. Dr. Smyth, of Naas, is the Honorary Secretary.

THE HOUSING OF THE SICK BY BOARDS OF GUARDIANS.

We have before us the reports of three Board meetings, at each of which this question was discussed, and they touch the three degrees of comparison. At Shardlow, according to the report in the *Derby Mercury*, the medical officer stated his dissatisfaction with the existing arrangements for the sick: "The sick beds were spread about different parts of the house; it was very difficult for the nurses to do their work." At Driffield Infirmary, to quote from the *Eastern Morning News*, a scheme was under consideration for placing the sick in a disused part of the workhouse, utilising eight apartments in the main building. After going into matters of size and area, the medical officer concluded his report by summing up the objections to this scheme, which are principally structural, "and the absence of proper bath-room, lavatory, and waterclosets accommodation." At King's Norton, according to the *Birmingham Post*, there is a report from the House Committee enlarging on the advantages of placing the infirmary (a new and separate building) under a matron with its separate staff and with a resident medical officer. We have instanced these three different types of dealing with the sick, as illustrating the state of confusion which still reigns as to the right manner of performing duties to the sick pauper.

CORRECTED DEATH-RATES IN THE METROPOLIS.

The Rev. J. W. Horsley.—The death-rates in London and in the sanitary area of St. Olave, after distribution of deaths in institutions, in the ten years 1888-97 were as follows:

Year.	London.	St. Olave.
1888	19.0	20.6
1889	18.0	25.1
1890	21.1	24.7
1891	21.1	27.9
1892	20.3	27.7
1893	21.0	25.5
1894	17.4	22.2
1895	19.4	26.5
1896	18.2	22.0
1897	17.7	22.1

According to the statistics published by the Registrar-General, 52 deaths of persons belonging to St. Olave sanitary area were registered during the quarter ending September last, equal to an annual rate of 18.5 per 1,000 of the estimated population. According to the report of the medical officer of health, as given in the *South London Press*, the death-rate for the same period is 17 per 1,000. A difference of only 5 in the number of deaths would account for this difference in the rates; it is probable that in distributing all the London deaths to their proper sanitary areas, the Registrar-General found that 52 deaths were of persons belonging to St. Olave, while the medical officer of health was aware of only 47 which so belonged.

It should be borne in mind that St. Olave sanitary area contains such a small population that the statistics of any one quarter are not a reliable basis for comparison. For instance, in the third quarter of 1897 the death-rate of St. Olave was 19.9 per 1,000, against 18.9 in London; while in the following quarter it rose to 28.0, while the death-rate in London remained practically stationary (19.0).

Dealing with the last ten years we find that the death-rate in St. Olave considerably exceeds each year that recorded in London generally; and that during these ten years, in equal numbers living, there were 126 deaths in St. Olave sanitary area to each 100 deaths in London. Among the forty-four sanitary areas of the metropolis St. Olave usually occupies a place among the ten with the highest rates.

As to the alleged untrustworthiness of the figures given in the Journal the facts relating to each of the sanitary areas of London are published regularly by the Registrar-General, and the tables and articles which appear from time to time in the British Medical Journal, quoted by the Rev. J. W. Horsley, are based upon these facts, and will be found to agree with them. If any statement as to the untrustworthiness of the figures were ever made by the late M.O.H., he doubtless meant that some deaths were included by the Registrar-General as belonging to his sanitary area which he (the M.O.H.) did not consider should be included, with the result that the death-rate, in his opinion, was unfairly raised.

The death-rates for St. Olave during the five years 1801-05 have been specially reworked on new estimates of population, which the London census of 1896 afforded the means of obtaining. They slightly differ, on this account, from those published from year to year, and are more correct.

HOUSE DRAINS IN ST. MARTIN-IN-THE-FIELDS.

The Vestry of the Parish of St. Martin-in-the-Fields have prosecuted a house-to-house inspection under difficulties, so far as the report of Dr. Skegg, the Health Officer, is able to certify in respect of last year. Three sanitary inspectors commenced the task; three months later one of them resigned; after eleven months more the remaining two resigned; the one new inspector appointed to tackle the work also soon resigned, and another was appointed whose retirement is not chronicled. Notwithstanding all these changes, the work went on, and Dr. Skegg is able to represent a large amount of property in respect of which new drains were to be laid. We note churches, theatres (9), other places of public resort, stores, hotels, and a large number of shops and private dwellings, each of them being specified. Without the means of judging how far the redrainage will remove all sanitary faults in the properties named, we at least are glad to note the dogged perseverance of the health department in carrying on the evidently much-needed inspection.

ATTENDANCE ON URGENT CASES WITHOUT MEDICAL ORDER.

J. F. F., who states that he is a district medical officer with a salary and 10s. as extra fee for each midwifery case, was called one night by a midwife to assist her in an urgent case. On arriving at the house he found only the patient and midwife there. A promise was given that when the husband returned an order should be procured. This has never yet been given, and when application was made to the guardians by "J. F. F." to sanction the payment of the fee they declined to do so, on the ground that too long a time had then passed. "J. F. F." wishes to be advised as to

the course he ought to pursue in the future if any similar case occurs, and whether he could safely decline to attend without an order.

*** We are sorry to say that many cases very similar to this are on record. In this case the refusal of the order by the guardians in a case which had been represented as urgent, and the attendance had been given, appears to be very unfair, and even unjust. Notwithstanding this, we cannot advise our correspondent to decline attendance on a similar case in the future, though he may safely say that it is not his duty to attend. We should advise him to keep an accurate record of all the facts of this case for future use if required.

QUARTERLY RETURN OF PAUPER LUNATICS BY DISTRICT MEDICAL OFFICER.

J. W. G., a District Medical Officer, writes a long letter complaining of having been twice requested by the Lunacy Commissioners to send to the clerk to the guardians a quarterly list of the pauper lunatics resident in his district. He says that his contract with the guardians does not cast this duty upon him, that he is informed by the chairman and the clerk that they (the guardians) do not require the lists in question to be sent in and that if sent in as requested the Commissioners of Lunacy will not pay any fee for what he calls "these certificates," and he asks by what right they demand them of him.

*** The two printed forms (enclosed to us) sent by the Commissioner of Lunacy to "J. W. G.," in which his attention is specially directed to the Act. 53 Vict., cap 5, Section CCII, ought to have convinced him that the sending (to the clerk to the guardians) this quarterly return is one of his statutory duties, though his contract with the guardians may not refer to it. The guardians have nothing whatever to do with the matter. Of course they do not want the list and they would naturally prefer these lists not to be sent as required by law, and this because they (the guardians) have to pay 2s. 6d. to the district medical officer for any name thereon inserted. This our correspondent appears to have overlooked. If there are no pauper lunatics in the district a statement to this effect is to be sent in quarterly, but for this no fee is payable. We recommend our correspondent to reply immediately to the polite request of the Commissioners of Lunacy and to apologise for his past neglect of duty, as by Section CCCXX of the Act already quoted he is liable to a penalty of £10 for every day the default continues.

CLAIM FOR PENSION UNDER THE SUPERANNUATION ACT.

SENEX writes to ask what steps should be taken when claiming a pension at the age of 60, and whether any certificates would be required.

*** Our correspondent must bear in mind that the mere fact of attaining the age of 60 does not qualify for superannuation under the Act of 1896 unless there has been 40 years' service, or unless the officer is incapacitated for further service in consequence of old age, some proof of which, we apprehend, would be required. Resignation at 65 would entitle an officer to a pension on proof of age only.

INDIA AND THE COLONIES.

INDIA.

PRESIDENCY GENERAL HOSPITAL, CALCUTTA.—It has for some time been [illegible] Presidency General Hospital, Calcutta, which is defective. [illegible] wants of the European community, is defective. [illegible] by a new hospital at a cost of 22 lakhs of rupees [illegible] ed. The expenditure will be spread over some [illegible] lakhs has been provided in the current year's [illegible] erecting certain subsidiary buildings which [illegible] ge to the existing hospital.

[illegible] FOR WOMEN, JAFFNA, CEYLON.—Through the [illegible] ow of Boston, U.S.A., a hospital for women [illegible] on, at a cost of Rs.53,000. It has been named [illegible] John M'Lead, who contributed 10,000 dols. [illegible] tution comprises a commodious dispensary, [illegible] ed, a nurses' home, "preaching [illegible] It is "intended for the good [illegible] from any part of the island desir- [illegible] efits will be welcome as far as the [illegible] t. Its doors will be open to persons [illegible] The hospital be[illegible] to the American [illegible] ted by the Drs. [illegible] h with.

[illegible] was an exceptionally [illegible] on June 12th shat- [illegible] down river banks [illegible] ive derangement of [illegible] owed by increase of [illegible] n was, moreover, a [illegible] In the [illegible] The [illegible] the [illegible] and bowel [illegible] all-pox did not exceed that of 1896, it was much higher than in the quinquenium 1891-95. The rate per 1,000 of population was very high—6.62—and in the district of Kamrup it reached 17.48: 271 tea coolies died on the steamers and 750 in the depots on arrival, and there were 3,108 deaths among coolies in the tea gardens. The Chief Commissioner has taken steps to prevent infected coolies from being embarked for Assam and Cachar, while cholera was more severe in the Assam Valley, and malarious fever was worse in the Cachar Valley, the rate or the province being 28.74; that for the district of Cachar was 35.30, and of Sylhet 39.89; 18,612 deaths were registered under the head of kala-azar, which appears to be creeping eastward on the north of the Brahmaputra, but not extending on the south side of the river. The effects of the earthquake were disastrous to sanitation both by injuring existing works and by diverting money elsewhere. Local bodies spent 44 per cent. of their income on sanitation. The Chief Commissioner, while commending attention to the remedy of sanitary defects in small towns and villages, objects to harassing an ignorant peasantry living in hills and jungle by laws and regulations of a pedantic and vexatious kind. This report has been admirably drawn up by Surgeon-Colonel A. Stephen, M.B., principal medical officer of Assam.

MEDICAL NEWS.

PRESENTATION.—Dr. W. J. Howarth, Medical Officer of Health for Bury, has been presented with a handsome inkstand by the Bury sanitary inspectors as a mark of respect.

SUCCESSFUL VACCINATION.—Drs. Settle, Robinson, Kershaw, Johnston, Garstang, Whitaker, Marsh, Doman, and Martin, the Public Vaccinators for the Bolton Union, have received the Government grant for successful vaccination.

LAST week a silver cradle was presented to Mr. and Mrs. Richardson Cross in recognition of the fact that a daughter had been born to them during the time of Mr. Cross's term of office as High Sheriff of Bristol. The presentation was made by the Mayor, and suitably acknowledged by Mr. Cross.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—At the autumn general meeting of this Association held on November 23rd, a hearty vote of thanks was accorded to Mr. R. T. O'Callaghan for his services in promoting the success of the reunions of the Association during the previous two years.

SURGICAL AID SOCIETY.—The report presented at the annual meeting of this Society showed that the total number of patients relieved had been 15,641, as compared with 14,550 in in the previous year. To meet the demands of the increasing numbers an extension of the premises had been arranged. The payments by and on behalf of patients showed a marked improvement, and there was a balance upon the net income from all sources.

DR. EDWARD DIVERS, Professor in the Imperial University of Tokio, Japan, has received Her Majesty's permission to accept and wear the Insignia of the Imperial Order of the Sacred Treasure of the Second Class, conferred upon him by His Imperial Majesty the Emperor of Japan, in recognition of services whilst actually and entirely employed beyond Her Majesty's Dominions in His Imperial Majesty's service.

LEPROSY IN FRANCE.—Leprosy, as is well known, still lingers on some parts of the Riviera. In 1856 the number of lepers on the Ligurian Coast was so considerable that the Sardinian Government established an asylum for their reception at San Remo. Within a few years that institution sheltered nearly a hundred lepers coming from Nice, Mentone, Le Tarbie, and adjacent districts. In 1893 it had only seven inmates, but the diminution is more apparent than real, for when Savoy was ceded to France the lepers changed their nationality, and passed from the care of Italy to that of France. According to the *Lyon Médical*, M. Perrin has recently seen eleven cases of leprosy at Marseilles, of which three are from San Remo, the remainder having been imported from more distant places. In Paris, as in London, there is always a certain number of lepers, who are attracted thither by the hope of deriving benefit from the skill of the dermatologists of the French capital.

DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff, and past and present students of the Dental Hospital, was held in the Whitehall Rooms of the Hôtel Métropole, on December 3rd. Mr. Storer Bennett, F.R.C.S., was chairman, and was supported by 150 guests and past or present students.

The toast of "The Queen" having been duly honoured, the Chairman proposed "The Past and Present Students," and said that the building of the new hospital had been actually commenced, and that largely increased space to be placed at the disposal of the school would be of the greatest use. Mr. Ashley Barrett, for past students, and Mr. W. H. Thomas, for present students, responded. Mr. E. Trimmer proposed "The Hospital and School," and said that he had witnessed the birth, adolescence, and middle age of the present scientific era in dentistry. Mr. Allen Stoneham, Chairman of the Committee of Management, in responding, said it was a marvel how 200 operations daily could be accomplished in the present inadequate building. Mr. E. Lloyd Williams, who also replied, said that new dental schools throughout the country had been manned to a large extent by former students of the Dental Hospital of London. Mr. Arthur S. Underwood proposed "The Visitors," to which Mr. A. Pearce Gould responded. He congratulated the hospital on the recent large increase of its school, and on the commencement of the new building. Mr. R. H. Woodhouse proposed "The Chairman," who in various directions had served the Dental Hospital. The Chairman briefly returned thanks, and the proceedings terminated.

Nurses, Religious and Lay.—Dr. S. P. Kramer, now stationed at Camp Witsoff, gives his experience of nurses in the *Cincinnati Lancet-Clinic* as follows: My experience here has convinced me of some things in regard to nurses. The general hospital here is divided into about two equal divisions, the main hospital and the annex. The former has trained nurses—lay women—under a female superintendent; the latter has Sisters of Charity under a sister superior. Whatever may be the case in civil institutions, in the field hospital the Sister of Charity is far superior. There is with them none of the bickering with the ward doctor, no fussiness, no refusing to perform menial work when necessary, no desire to "shine" as is the case with the "trained nurse." The Sister of Charity has no ambition but duty; she obeys all orders quietly, with a prompt, orderly and willing manner. No sacrifice is too great, no service too menial. It has been a matter or general comment here that the annex is a far superior hospital to the main branch, and, to my mind, this is largely due to the presence of the Sisters of Charity in the former.

Clinical Research Association.—This association entered in October on the fifth year of its existence; and the report of the Committee of Management on its results during the last two years indicates that the Association has done excellent work for its members, and that practitioners and local sanitary authorities and other public bodies have recourse to its help in increasing numbers. Taking this simply as an indication that accurate diagnosis in cases of doubt is with increasing frequency sought and obtained, it doubtless shows that the endeavours to arrest disease and to treat it on scientific principles are also becoming more precise. The Association appears since the Maidstone epidemic to have examined a largely increased number of samples of drinking water sent periodically by corporations or other public bodies, or by private individuals, for chemical and bacteriological examination. The report contains a copy of the recently introduced Post Office regulations for the transmission of specimens, non-compliance with which entails possible prosecution of the sender and confiscation of the specimen. Directions are given also for the selection and transmission of all morbid and pathological specimens, and samples of drinking water. In notes on the work of the various departments of the association, much highly interesting information of a practical kind is given, and it is stated that a sterile swab suitable for use in cases of suspected diphtheria has been designed, and is issued by the Association, which has its offices at 5, Denmark Street, London, S.E.

Dr. John Guitéras, Professor of Pathology in the University of Pennsylvania, who is looked upon as the greatest authority on yellow fever in the United States, will, it is announced, at the close of the present year resign his post to accept the Chair of the Practice of Medicine at the University of Havana. Dr. Guitéras wishes to reorganise the medical teaching in the University of Havana, now that Cuba has been liberated.

MEDICAL VACANCIES.

The following vacancies are announced

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and [illegible] vided. Applications to the [illegible]

DERBY COUNTY ASYLUM.—Assistant Medical Officer: unmarried. Salary, £120 per annum, rising to £150, with board, lodging, and washing. Applications to B. Scott Currey, [illegible]

DUBLIN: SWIFT'S HOSPITAL FOR LUNATICS, James's Street.—Visiting Physician. Appointment on January 1st, 1899. Particulars to be obtained from the Registrar.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL [illegible] Physician. Board, residence, etc., provided, and an honorarium of £25 at expiration of six [illegible]

EDINBURGH UNIVERSITY. Additional Examiner in Zoology. Period, four years. [illegible]

PORTSMOUTH [illegible] Applications to the [illegible] Road, Forest Hill, [illegible]

GLASGOW UNIVERSITY OF.—Five Examiners for Degrees in Medicine. Salary for the Examinerships in Chemistry, Zoology, and Materia Medica and Therapeutics, £50, and those in Clinical Surgery and Clinical Medicine, £30. Applications to the Secretary of the [illegible]

GLOUCESTER: GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Board, residence, and washing provided. [illegible] diary. Applications to the Secretary by December 21st.

GREAT NORTHERN HOSPITAL, Holloway Road, N.—Senior House-Physician. Appointment for six months. Salary at the rate of £60 per annum, with board and lodging. Applications to the Secretary by December 17th.

LAMBETH INFIRMARY.—Resident Clinical Assistant and Second Assistant. Appointment for six months. Salary at the rate of £50 per annum. Applications to the Medical Superintendent, Brook Street, Kennington, S.E.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum, with residence and maintainance. Applications to the Chairman by December 22nd.

LIVERPOOL STANLEY HOSPITAL.—Junior House-Surgeon. Salary, £70, with board, lodging, and washing. Applications, endorsed House Surgeon, to the Honorary Secretary, by December 15th.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon. Applications to the House-Governor by December 16th.

MANCHESTER ROYAL INFIRMARY: Resident Medical Officer, unmarried, and not less than 25 years of age. Remuneration, £150 per annum, with board and residence. Applications to the Secretary by December 15th.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Assistant Resident Surgeon. Salary, £52 per annum, with board and residence. Applications to the Secretary, 30, Charing Cross, by December 17th.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—Medical Superintendent. Salary, £100 per annum, furnished rooms, fire, light, and attendance, and fees for classes he may be appointed to conduct. Applications to the Honorary Secretary by [illegible]

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, Bloomsbury, W.C.—Assistant Physician. Applications to the Secretary by December 12th.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY.—House-Surgeon; unmarried. Salary, £80 per annum, with board and lodging. Applications, on forms provided, to the Secretary by end of December.

OXFORD: RADCLIFFE INFIRMARY.—Surgeon. Applications to the Secretary by January 16th, 1899.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Surgeon to Out-Patients; must be F.R.C.S. Applications to the Secretary by January 4th, 1899.

PARISH OF ST. PANCRAS.—Second Assistant Medical Superintendent for the Infirmary, Dartmouth Park Hill, N. Salary, £75 per annum and residential allowances. Applications, on forms provided, to the Clerk to the Guardians, Vestry Hall, Pancras Road, N.W., by [illegible]

PRESTWICH, MANCHESTER: CITY ASYLUM.—Assistant Medical Officer. Salary, £100 per annum, increasing to £250, with apartments, board, attendance, and washing. Applications to the Superintendent.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1900. Applications to the Registrar by January 7th, 1899.

SUNDERLAND: SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House-Surgeon. Salary, £150 per annum. Applications to James F. Potts, 13, Eden Vale, Sunderland, by December 10th.

TOXTETH PARK.—Junior Assistant Medical Officer for the Workhouse Infirmary. Salary, £75 per annum, with board, washing, and apartments. Applications marked [illegible] r" to the Clerk to the Guardians, 15, High Park Street, Liver[illegible]

WATERFORD DISTRICT ASYLUM.—Temporary Assistant Medical Officer unmarried, and not over 32 years of age. Salary, £3 3s. per week, with furnished apartments, attendance, rations, etc. Applications to Dr. Oakshott, R.M.S.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician and House-Surgeon. Applications to the Secretary-Superintendent by December 15th.

WESTMINSTER [illegible] Street, Soho, W.—Resident [illegible]

WIGAN [illegible] —Senior House [illegible] appointment for one [illegible]

WILTSHIRE [illegible] £500 per annum, with allowance [illegible] etc. Applications to the Clerk of the [illegible] Trowbridge, by December 24th.

YORK DISPENSARY.—Resident Medical Officer; unmarried. Salary, £150 a year, with furnished apartments, coals, and gas. Applications to Mr. W. Draper, De Grey House, York, by December 20th.

MEDICAL APPOINTMENTS.

BAILEY, Francis William, M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Anæsthetist to the Liver[illegible]

BATE, J. Brabant, L.S.A., appointed Resident Medical Officer at the Morden Isolation Hospital.

BOLLANS, R. W., M.B., Ch.B.Vict., appointed Medical Officer for the Hadfield District of the Glossop Union.

BOURFIELD, Edward C., L.R.C.P.Lond., M.R.C.S.Eng., appointed Bacteriologist for the Parish of Camberwell.

BRAY, E. J., M.B.Edin., appointed Medical Attendant on the Aborigines at Wingham, Manning River, *vice* Dr. Howse, resigned.

BROWN, Thomas H., M.B.Camb., appointed Junior House-Surgeon to the Bradford Royal Infirmary.

COLLIER, Horace Stansfield, F.R.C.S., appointed Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street.

CONNOR, S., M.D., appointed Health Officer for Wannon Shire, Narrow Riding, Victoria, *vice* Dr. W. D. K. Macgillivray, resigned.

DAVIES, W. N., M.D.R.U.I., M.Ch., appointed Medical Officer for the Llantrissant and Llantwit Fardre District of the Pontypridd Union.

DICKSON, Graeme, L.R.C.P.S., etc., reappointed Medical Officer of Health to the Hay Urban District Council.

EARNSHAW, Arthur, M.B.Lond., M.R.C.S., appointed [illegible] Physician to the Bradford [illegible]

[illegible] M.A., M.B., B.C.Cantab., appo[illegible]geon to the Royal Orthopædic Hospital, Oxford Street, *vice* Percy W. [illegible]

FAIRBANK, F. R., M.D.Heidelb., F.R.C.S.Edin., M.R.C.S.Eng., appointed Medical Officer and Public Vaccinator for the Western District of the Dorking Union.

FERGUSON, James M., L.R.C.P.E., L.R.C.S.Edin., appointed Medical Officer to the Burnley Joint Infectious Diseases Hospital.

HANKINS, G. T., M.R.C.S.Eng., L.S.A., appointed Surgeon for Diseases of the Nose, Ear, and Throat, Prince Alfred Hospital, Sydney.

HARNESS, H. Nelson, M.R.C.S.Eng., L.R.C.P.Lond., appointed Third Assistant Medical Officer to the Kent County Asylum, Chartham, near Canterbury, Kent.

HEARNE, W. W., M.B., appointed Resident Surgeon, Prince Alfred Hospital, Melbourne, *vice* Dr. Crowther, resigned.

HOCKEN, J. P., M.D., appointed Government Medical Officer and Vaccinator for the District of West Walsend, New South Wales.

LANKISTER, R. N., M.B., B.Sc.Durh., appointed Dispensary Surgeon to the Bradford Royal Infirmary.

LOW, J. Spencer, M.B., B.Ch., B.Sc.Edin., appointed, by the India Office, a Medical Officer for Special Plague Duty in India.

MCANALLY, E., M.R.C.S., L.R.C.P., appointed Medical Officer for the Third District of the Hollingbourn Union.

MANLY, R. A. A., M.B., appointed Health Officer for the Shire of Wyndham, Victoria, *vice* Dr. H. O'H. Giles, resigned.

NOLAN, L. A., L.K.Q.C.P.I., etc., appointed Health Officer for the Shire of Rosedale, Rosedale and Denison Ridings, Victoria, *vice* Dr. D. A. Campbell, resigned.

RAWLINGS, Dr., appointed Medical Officer and Public Vaccinator for the Northern District of the Dorking Union.

ROBERTS, E. A., M.D., appointed Medical Officer for the Twentieth District of the Kensington Union.

RICE, David, L.R.C.P.Lond., M.R.C.S.Eng., appointed House Physician at Bethlem Royal Hospital.

ROBIN, V. J. R., L.R.C.P.Lond., M.R.C.S.Eng., appointed Health and Medical Officer at Port Douglas, Queensland.

RUSSELL, E. U., L.R.C.S.I., appointed Port Health Officer for Newcastle, New South Wales.

SMITH, Lewis A., M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond., appointed Medical Registrar to the London Hospital, Whitechapel, E.

STEVENS, A. E., M.B.Durh., L.R.C.P.Lond., M.R.C.S., appointed House-Physician to Bethlem Royal Hospital.

STODDART, W. H. B., M.B., M.R.C.P., appointed Assistant Medical Officer to the Bethlem Royal Hospital.

TAYLOR, E. Claude, M.D., F.R.C.S., appointed Medical Officer to the Hampstead Workhouse.

UNDERWOOD, F. L., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer for the Third District of the Daventry Union.

VINES, H., L.R.C.P.Edin., M.R.C.S.Eng., appointed Resident Medical Officer and Public Vaccinator at Broome, and Quarantine Officer for the Port of Broome, West Australia.

ERRATUM.—In the notice of appointment of Mr. Hogarth, published in the BRITISH MEDICAL JOURNAL of December 3rd, it should have been stated that he had been appointed Surgeon to the Samaritan Hospital for Women, Nottingham, not House-Surgeon.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 8.30 P.M.—Mr. Bernard Pitts: The Transperitoneal Ligation of the Iliac Arteries. Mr. C. S. Wallace: Acute Suppurative Peritonitis.

TUESDAY.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Mr. Victor Horsley: Surgery of the Nervous System.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. Dundas Grant: Cases of Nervous Disorder of the Pharynx, Larynx, and Œsophagus.

Royal Medical and Chirurgical Society, 8.30 P.M.—Mr. J. Hutchinson, jun., and Mr. H. L. Barnard: On an Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur. The paper will be accompanied by a Lantern Demonstration.

WEDNESDAY.

The Sanitary Institute, Parkes Museum, Margaret Street, W., 8 P.M.—Discussion on Some Prevalent Fallacies in Vital Statistics, to be opened by Dr. Edward F. Willoughby.

South-West London Medical Society at Stanley's, 225, Lavender Hill, S.W., 8.30 P.M.—Mr. H. Temple Mursell: Some Points in the Diagnosis and Treatment of Urethral Stricture.

Hospital for Consumption and Diseases of the Chest, Brompton, 4 P.M.—Dr. Schorstein: Hæmoptysis.

Dermatological Society of London, 11, Chandos Street, W., 5.15 P.M.—Demonstration of Clinical Cases.

North-West London Clinical Society, North-West London Hospital, Kentish Town Road, 8.30 P.M.—Demonstration of Clinical Cases.

THURSDAY.

Harveian Society of London, 8.30 P.M.—Dr. William Ewart: Disease: its Treatment and the Profession of Medicine in 1899. Harveian Lecture III.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

Charing Cross Hospital, Post-Graduate Course, 4 P.M.—Mr. Gibbs: Demonstration of Surgical Cases.

Hospital for Sick Children, Great Ormond Street, W.C., 4 P.M.—Mr. Kellock: Demonstration of Selected Cases.

Neurological Society of London, 11, Chandos Street, W., 8.30 P.M.—Dr. F. W. Mott: Changes in the Brain, Muscles, and other Organs found in Persons having Died with Prolonged Epileptiform Convulsions. Dr. F. E. Batten: Congenital Abnormalities in the Nervous Systems of Three Children: (1) Non-development of Left Cerebral Hemisphere, etc. (2) Hydromyelia and Congenital Defect of the Cerebellum. (3) Heterotopia in Association with Spina Bifida. Drs. H. H. Tooth and Risien Russell: Acute Myelitis with Bacteriological Examination.

FRIDAY.

Society of Anæsthetists, 20, Hanover Square, W., 8.30 P.M.—Discussion on Selection of an Anæsthetic, to be opened by Mr. E. F. White.

Epidemiological Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 P.M.—Dr. Arthur Ransome: The Prospect of Abolishing Tuberculosis.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

DENBY.—On December 8th, at Shorbrook Mount, Horton Road, Bradford, the wife of Walter Denby, M.D., C.M.Edin., of a daughter.

DEATH.

PENFOLD.—On December 1st, at Mardale, Hurst Grove, Bedford, Mary, widow of Henry Penfold, Surgeon, Rainham, Kent, aged 63 years.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 3; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th. F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4.

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthalmic, W. S., 9.30. *Operations.*—Tu. F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Th., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Opthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, i.-p., 1; o.-p., 12; Obstetric, i.-p., Tu. F., 1.45; o.p., M. Tu. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F. 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

J. W. N. asks to be referred to recent literature on the joint affections of locomotor ataxia.

SECLUSION desires to hear of an institution in the counties of Kent, Sussex, or Surrey where an inebriate working man could voluntarily place himself. He could probably pay little or nothing.

WALES contemplates building a house in a town (health resort) of 1,500 population, and would be thankful for any information as to where he can obtain designs for a doctor's house.

CIVIS asks for information regarding any institution where an epileptic lad of 16 could be received. He is addicted to masturbation, is of fair intelligence, but seems to have lost all idea of the difference between right and wrong. His friends could pay £30 to £35 per year.

THE NOTIFICATION OF PULMONARY PHTHISIS.

M.O.H. desires to know whether any sanitary authorities have adopted voluntary notification of phthisis and payment for the same.

AMBULANCE LECTURES.

J. P. asks: Have any verbatim lectures in accordance with the syllabus of St. John Ambulance Association been published; or would it be possible to get the loan of the manuscript from some member who has given them?

*** Mr. Andrew Clark's lectures at the Polytechnic were taken down verbatim, and were published by the Polytechnic, Regent Street, W.

THE EXPULSION OF THE PLACENTA.

J. P. asks: (1) How long may one safely wait for the expulsion by Nature of the placenta? Recently I attended a primipara in whose case it was three hours after birth of child when placenta was expelled naturally. (2) Among savage tribes what means are taken for its expulsion and separation from the child?

*** (1) It is a customary and wise course to remove the placenta if it has not been expelled within an hour after delivery. (2) They are various; our correspondent will find information on the subject in Witkowski's *Histoire des Accouchements chez tous les Peuples*.

FEE FOR EMERGENCY SUMMONS.

SUBSCRIBER writes: A short time ago I was sent for to a case of compound fracture of the leg and fracture of forearm. When I arrived, a mile from my residence, the family doctor was there. I offered to retire but was requested to help, and was detained for two hours, having a cab waiting. What can I legally charge, and will it be professional to send the bill to the patient?

*** The usual course is for the two medical men to agree as to what claim should be made. The medical man in attendance should explain matters to the patient, receive the fee and send it on.

ANSWERS.

E. A. J. should consult a registered medical practitioner.

ROSIN.—It is not, we believe, usual for a medical man to have his name and address blown on medicine bottles, and the innovation is undesirable, as savouring of advertisement.

W. G. J.—We have seen a number of letters of the same kind as that forwarded by our correspondent, but we are not acquainted with the identity of the writer.

FAIRPLAY.—It is, we believe, usual to accord to a bachelor of medicine the title of "Dr.", except within the precincts of his university, but this is not quite the same thing as the assumption of the title of "Dr." by the M.B. himself.

F. J. J.—Under the circumstances stated our correspondent would be justified in making a claim on the trustees. The amount of the claim should be regulated in relation to the amount of the honorarium usually given by the deceased.

J. R. D.—Tubercle bacilli are not killed by prolonged freezing. A tuberculous lung was frozen for four months, and a small portion afterwards introduced into guinea-pigs, which developed tuberculosis in the usual period. It is not yet known that the bacillus spores.

T. W. B. writes, in reply to "Epidermis," who asks to be recommended a cheap and effective antiseptic: I recommend him to try Jeyes' "Perfect Purifier" for medical and surgical purposes. It is cheap, non-poisonous, and quite effective.

W.M.M.J.—The *Semaine Médicale*, edited by Dr. de Maurans, and published at 18, Rue L'Abbé-de-l'Épée, Paris, would probably best meet our correspondent's requirements. The annual subscription in the Postal Union is 10 fr.

C. F.W.—Of the larger treatises on surgical operations, our correspondent might consult Jacobson's *The Operations of Surgery*, price 34s.; and of the smaller handbooks, Waring's *Manual of Operative Surgery*, price 12s. 6d.

GRINDING THE TEETH.

MR. F. MORLEY (London, W.) writes: In answer to "H.A.", I have found a thin metal plate to cover the back teeth (and thus prevent them from meeting with those of the opposing jaw) efficacious in one case I met with. Any dentist could make such a plate; it is on the same lines as is often used in regulation cases to keep the bite open.

A FORMER SUFFERER writes: In reply to "H.A.", the mouth is always open while the teeth are ground as described. Therefore, let the sufferer practise lying down in the daytime for a short time with the lips closed, so as to form the habit of sleeping similarly at night. This takes time to acquire, but is successful.

THE NAIL-BITING HABIT.

DR. H. RAINSFORD (Kensal Rise, W.) writes, in reply to a question in the BRITISH MEDICAL JOURNAL of November 26th, 1898: I recently made a complete cure in the case of a lady of 23 who had bitten her nails all her life, by making her wear rubber finger stalls on all fingers for about ten days. After that time all desire to bite had gone, but I advised her to wear them at night for a little longer. This is some two or three months ago, and now she has very fair nails which are improving daily, in spite of years of ill-treatment. I should add that after giving up the stall I gave her some liquor strychninæ to paint the nails with, as she objected to the staining caused by aloes.

CYCLE SADDLES.

DR. CLAUDE A. P. TRUMAN (Stowell Place, Reading) writes: My excuse for "interrupting," so to speak, must be that I do not like to see an old friend casually dismissed in the manner that Dr. Atkinson dismisses the Henson. From his remarks I can scarcely believe that he has paid much attention to the adjustment of his saddle, and he admits that he has had some trouble with its inflation. I have ridden a Henson for over 6,000 miles, and provided that the saddle is in every way properly adjusted and inflated, I think that it will be found to relieve pressure everywhere most satisfactorily. I admit that it requires more careful adjustment than other saddles, and I contend that one is amply repaid for the trouble. I have only had to reinflate mine four or five times in the four years I have had it. I think that if your correspondent "D. C. E." is in difficulties he would not regret getting an Osoezi, which would, I think, meet all his requirements. It has a peak (which does not press), and therefore will appeal to those whom the Henson does not satisfy. May I add that no saddle, however good, can ever be satisfactory unless great pains are taken to get the exact adjustment suitable to each individual case. One might just as well walk into a hatter's and expect the first hat taken up to fit, as to look for comfort from a saddle—any saddle—simply stuck on to a machine.

MORPHINE POISONING IN INFANCY.

DR. CHARLES J. EGAN (King William's Town, South Africa) writes: In the BRITISH MEDICAL JOURNAL of October 22nd, Dr. Fotheringham reports a case of morphine poisoning in an infant, and wonders "if there is any other case on record of a young baby surviving such a dose." I have reported a case of morphine poisoning in a child 7 months old (dose 1 gr.) in the *Medical Times and Gazette* (formerly published by Messrs. Churchill and Son) in the number published March 4th, 1876.

"THE COURTESY CALL."

F.R.C.S.ED.—It is usually considered a wise policy for new comers to call on previously-resident medical practitioners, first, as an act of simple courtesy, and secondly, as an act of policy, so making the acquaintance of men with whom sooner or later they may meet, either as consultants or in the mutual interchanges of medical work. This rule cannot well apply to large towns where medical men are numerous, and the possible chances of meeting in work very remote, but in smaller communities and where it is readily possible to know each medical man, this first courtesy should not be omitted. When a call has been made or a card left, men are usually guided by the ordinary dictates of social life in returning the compliment. No definite time can be laid down for this return, and moreover there may be some who do not think a special return necessary, but bide the course of events; at any rate those who do not return the call may safely be excluded from the social list. To call upon thirty-three may be called heroic devotion. In such a case, a list might have been selected of prominent men, consultants, and the nearer neighbours, etc.

SALINE INJECTIONS IN COLLAPSE.

DR. CHARLES E. JENNINGS (Seymour Street, W.) writes: Referring to your recent notes, and in the absence of personal trial of the intercellular method of Dr. Jardine and others, I do not like to comment unfavourably upon it, but think it scarcely right that it should be contrasted with the intra-arterious method of injection, although Dr. Jardine says that, if injected into the intercellular tissue, one or two pints of saline fluid will be absorbed within a quarter of an hour. In any case of collapse from hæmorrhage by which life is jeopardised—in a case where minutes and even seconds count—it would appear that to refill the vascular system the fluid employed for the purpose had best of all be thrown directly into some superficial vein.

Mr. Arbuthnot Lane recommends the basilic vein; I now recommend the cephalic, with the reservation that the choice of the particular vein into which the injection is to be made must depend upon the circumstances of the particular case. The whole matter was dealt with by me exhaustively some years ago, and my suggestions were published in most of the medical papers, and I can also refer any practitioner desirous of special information to my work on *Transfusion of Blood and Saline Fluids* (3rd edition), with a preface by Sir T. Spencer Wells, and published by Messrs. Baillière, Tindall and Cox.

In preference to a drachm of common salt for each pint of water to be infused (and I particularly advise the minimum quantity of fluid to be injected necessary to restore reanimation instead of the maximum quantity which the patient may be supposed to tolerate with impunity), a powder of the following composition may be recommended: Chloride of sodium, 50 gr.; chloride of potassium, 3 gr.; sulphate of soda, 2.5 gr.; carbonate of soda, 2.5 gr.; phosphate of soda (Na_2PO_4), 2 gr.

The water employed for the purpose of the injection should be first thoroughly boiled to ensure sterilisation, and then cooled down to 100° F., or a little less. As to Dr. C. Hamilton Whiteford's suggestion that the efficacy of the solution will be greatly increased by the addition of an ounce of brandy and 5 minims of liquor strychninæ to the first pint, I think it more than likely that such would be the case, though for my part venture to recommend preferentially (as milder) 1 drachm of absolute alcohol and 5 minims of liquor ammoniæ. In conclusion, I

may add that the instruments which I invented some years ago for the transfusion of blood and for the intravenous injection of saline fluid have been very perfectly manufactured by Messrs. Krohne and Sesemann.

NOTES, LETTERS, Etc.

THE WRITING OF PRESCRIPTIONS.

E. W. writes: I quite agree with "S. W. W." that symbols should not be abolished. They were not originally designed for a nurse's comprehension. I regret to see that of late years Latin, which for centuries has been the language of medicine in almost every civilised country, has fallen into disuse. In my early days—fifty years ago—it was extremely rare for one to see a prescription with a word of English in it, not even the date. At that time patients valued their prescriptions—probably because they could not read them nor understand the mysterious hieroglyphics—insomuch that many would mount them in a book kept for the purpose. I have in three or four instances seen prescriptions stitched on cambric, two of which were Abernethy's. He, as did Brodie and most others in their time, wrote in "true law Latin," without any abbreviations. Some of the directions were long and required a good knowledge of the Latin syntax to translate. They were something more than the mere "t. d. sd.," which is about as far as the juniors of the profession now venture.

CHARING CROSS HOSPITAL CONVALESCENT HOME.

MR. ARTHUR E. READE, Secretary (Charing Cross Hospital), writes: I am directed by the Weekly Board to refer to Mr. Maude's communications in the BRITISH MEDICAL JOURNAL of October 29th and December 3rd on the admission of cases of phthisis at our convalescent home at Limpsfield. These letters had not been submitted to the Committee of the convalescent home, and it is right to inform you that the Committee have never undertaken to admit such cases, as the following printed regulation shows:

"Before a patient is admitted, a medical certificate must be forwarded stating that the patient is not suffering from consumption, nor from suppurating wounds or sores, and has not for at least two months suffered from any infectious disease, and has never suffered from insanity or from fits."

POST-MORTEM BLEEDING.

F. D. writes: *Post-mortem* bleeding is a phenomenon of rigor mortis in connection with the hydraulic relation of the blood, also with the recumbent position of the body and the contracting of adjacent and remote tissues.

CERTIFICATES UNDER THE WORKMEN'S COMPENSATION ACT.

MR. POOLE GABBETT (Secretary of the Norfolk and Norwich Hospital) writes: The Board of Management of this hospital has desired me to inform you, as a matter of possible interest to some of your readers, that in reference to the new Workmen's Compensation Act they have, in accordance with the recommendation of the honorary medical staff, passed the following provisional resolution: "That a fee of 10s. 6d. be charged for filling up certificates in connection with the new Act, and that for the present hospital residents be responsible for the certificates and retain the fee."

AN EIGHTEENTH CENTURY DOCTOR OF PHYSIC.

DR. WILLIAM DONOVAN (Erdington) writes: In a marriage contract entered into on April 2nd, 1757, between my great grandfather, Richard Donovan, of Kinsale and Nohaval, in the County of Cork, and Catherine, daughter of John Haman, of Marsham Street, in the City of Westminster, he is described as a "Doctor of Physic." I shall be much obliged if an entry of the granting of this degree could be sent to me, and will be glad to pay any reasonable expense that may be incurred in obtaining it.

PHTHISICAL PATIENTS IN SOUTH AFRICA.

DR. JAMES T. BAYS (Grahamstown, Cape Colony) writes: May I venture to give a word of warning to those of your readers who may be thinking of sending patients out to the Cape for the benefit of their health? In the first place, it is not every case that does well here. Advanced phthisis in any of its forms is much better at, or nearer, home. It is a sad thing to see some unhappy invalid in the last stages of the disease, dying without even the ordinary comforts of home life, in some out-of-the-way spot, with but rough accommodation, most likely (owing to drought) not being able to procure even milk or vegetables. In the second place, no one should venture out unless provided with sufficient money for a stay. The great majority of the larger towns are situated either on the coast or not far inland, and are to a great extent unsuitable for phthisical patients, while the up-country towns are small, and the chance of getting employment extremely limited. Many of the places which appear on a railway map consist only of the station-master's house, perhaps the two cottages of the gangers of the line, and more rarely still of a store, while in the far distance a farmhouse or two and a few native huts may be seen. Intending comers must remember that the cost of living is fully 50 per cent. more than at home, and owing to rinderpest and drought the price of the actual necessaries of life is still increasing. In the outlying villages and farmhouses, necessaries, or what an Englishman regards as such, not to mention the luxuries, are often unprocurable. To those, however, who can afford it, or can come to some definite employment, and in the early stages of illness, South Africa, with its almost continuous sunshine, and the dryness of its climate, holds out excellent prospects of restoration to health. But to those who land here in an almost penniless condition, the prospect is but a gloomy one.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. D Ainsley, Halifax; Messrs. Adams and Parkes, London; Messrs. Arnold and Sons, London; Mr. C. E. Ady, London; Mr. F. Addiscott, London; Mr. E. J. Abbott, London.
B Dr. T. W. Blake, Bournemouth; Mr. E. C. Bousfield, London; Messrs. Barber and Co., Derby; Mr. W. M. Beaumont, Bath; Mr. F. J. Brown, Newark-on-Trent; Dr. G. A. Bannatyne, Bath; Mr. G. F. Briscoe, London; J. W. Batterham, M.B., St. Leonard's-on-Sea; Bob; Mr. J. W. Battle, London; Dr. C. F. Bryan, London; Mr. F. W. Bailey, Liverpool.
C College of Preceptors, The Secretary of the, London; Mr. F. J. Charlton, Doncaster; Dr. G. G. Campbell, Montreal; Mr. J. G. Craggs, London; Mr. R. J. C. Coutts, Clifton; Mr. H. S. Collier, London; Mr. E. T. Collins, London; Mr. A. H. Corbould, London; Civil Surgeon; Mr. A. Clarke, London; E. M. Crookshank, M.B., East Grinstead; Mr. W. G. Copestake, Derby; G. E. J. Crallan, M.B., Bournemouth; Dr. J. S. Clayton, Accrington; Civis; J. G. Connal, M.B., Glasgow.
D Mr. A. J. Dalton, London; Dr. S. Davies, Plumstead; Mr. T. Dunlop, Glasgow; D. A. Davies, M.B., Swansea; Dr. L. Druitt, Koroit, Australia; Mr. R. H. Dreaper, Mossley; Mr. C. W. J. Dunlop, London; Mr. G. Dickson, Hay; J. Dewar, M.B., Portree.
E Mr. L. Evans, London; Dr. W. Ewart, London; Mr. C. J. Egan, King William's Town, South Africa; Mr. E. East, London; Dr. T. W. Eden, London; Enteric; E. A. J.
F F. D.; "Financial News," The Editor of the, London; Dr. M. G. Foster, San Remo; Fairplay; Sir J. Fayrer, Bart., London; Mr. H. Frowde, London; Mr. J. Farmer, Brackley; Mr. J. M. Ferguson, Burnley.
G Dr. A. E. Giles, London; Mr. G. Gravells, Birmingham; Mr. J. Gay, London; Mr. H. R. Greene, Belvedere; Mr. H. J. Glaisher, London; Dr. J. S. Galizia, Valetta; Dr. L. G. Guthrie, London; Dr. J. Galloway, London.
H Mr. L. H. D. Hale, Windsor; R. Haygarth, M.B., Keighley; Mr. R. G. Hogarth, Nottingham; Dr. C. W. Haig-Brown, Godalming; Mr. C. Heath, London; Mr. H. L. P. Hardy, Stroud; Dr. J. P. Henry, London; Dr. J. B. Hurry, Reading; Dr. H. G. Hine, Ripponden; Mr. G. M. Hurry, Guildford; H. R.; Dr. S. L. Haynes, Malvern; Mr. H. N. Harness, London; Mr. H. K. Harris, Richmond, Surrey; Dr. W. P. Herringham, London.
I I. M. S.
J Dr. H. W. Jacob, Great Malvern; J. R. D.; Mr. W. G. Jacob, Maryborough; Dr. J. Johnston, Bolton; Dr. C. E. Jennings, London; Mr. F. J. Joynes, Dursley; Dr. E. L. Jones, Cambridge; J. W. N.
K Mr. D. Kennard, Lambourne; Mr. C. W. Krohne, London; Mr. W. D. Knocker, Sidcup; Kidderminster Medical Society, The Secretary of the, Kidderminster; Mr. J. H. Keppel-Compton, Southampton; Mr. J. D. Kain, Stockport.
L Miss F. E. Lemon, London; Lieutenant-Colonel R.A.M.C.; Dr. R. B. Low, London; Mr. W. Lee, London; Mr. S. Lodge, Bradford; Mr. E. M. Little, London; Mr. H. Lawrence, London.
M Miss L. Madge, Calcutta; Dr. C. Moon, Dundee; Mr. T. J. Murphy, Sheffield; Mr. K. B. Murray, London; Member; E. H. G. Morris, M.B., London; Mr. F. Morley, London; Dr. R. Maguire, London; Mr. P. Michelli, London.
N Mr. W. G. Nash, Bedford; R. E. Newton, M.B., Swaffham; Mr. N. H. Nixon, London; Mr. P. Newell, Crowborough; Mr. N. E. Norway, London.
O Officer of the I.M.S.; One Who Knows.
P Messrs. H. Potts and Co., London; Dr. H. F. Parsons, London; Dr. J. B. Pettigrew, St. Andrews; Dr. J. Phillips, London; Provincial M.O.H.; Mr. G. Pernet, London; Mr. S. J. Platfoot, Norwich; P. V.; Mr. F. W. H. Penfold, Rainham; Perplexed; Mr. H. P. Pike, Gloucester.
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AN ADDRESS
ON
THE PRESENT KNOWLEDGE OF OUTBREAKS DUE TO MEAT POISONING.

Delivered before the Medical Society of Oldham on November 22nd, 1898.

By HERBERT E. DURHAM, M.A., M.B.Cantab., F.R.C.S.Eng.,
Grocers' Research Scholar.
(From the Pathological Laboratory of the University of Cambridge.)

Mr. President and Gentlemen,—Before proceeding to the discussion of the subject of food poisoning I should like to express my thanks to my friend, Dr. Godson, and also to Drs. Bowes, Ashton, Hearn, Clegg, and Wilkinson, for the very material assistance which they have afforded in enabling me to make some investigation into the outbreak of illness caused by eating veal pies in this town last July. I should also like to pay a tribute of gratitude to your fellow townsmen for their share in affording me facilities without the slightest hesitation; in fact, I only met with one "sensible" person who "knew" that at the time of my inquiry it was too late to discover anything about the illness.

Historical.

The history of our knowledge of the actual nature of meat poisoning dates from the discovery of a very characteristic bacillus by Gärtner in the year 1888. Since then there has been a gradual accumulation of evidence upon the matter by means of careful bacteriological analysis in Belgium, Germany, Holland, and other countries. You will observe—and it is with regret that I have to admit it—that this country does not find a place in the list. The early work which threw light on the nature of the poisons formed by bacteria resulted in the discovery of substances of similar constitution to the vegetable alkaloids. These were called ptomaines and leucomaines. Bodies of this nature were extracted from a great variety of pure and impure cultivations of bacteria in different substances. They were also extracted—but not necessarily present previously—from other poisonous materials, such as snake poison.

During the dozen years which have elapsed since the classical observations of Brieger on ptomaines became known our knowledge has not been allowed to remain at a standstill. And we now know that there are far more important toxic products than these which result from bacterial life. They are different in their chemical constitution from the ptomaines, and are apparently more closely related to substances of an albuminoid or proteid nature. Their poisonous properties are extremely great; in many instances the smallest fatal dose is but a fraction of a milligram (1 milligram = about $\frac{1}{65}$ gr.) when introduced beneath the skin. It is now known that the poisons of venomous snakes, and of some vegetable products—as jequirity and castor-oil seeds—are of a similar nature. But all these kinds of poisonous substances have only a comparatively indirect bearing upon the subject before us, and I have chiefly alluded to their existence on account of the usual practice in this country of calling all illness due to unsound meat as "ptomaine poisoning."

The point which I desire to insist upon is that in outbreaks we have really to deal with actual infections by living bacilli; just as after swallowing water or food infected with properly virulent cholera vibrios or typhoid bacilli, a person may be infected with cholera or typhoid, so after eating meat containing certain bacilli he may become infected with those bacilli, and show symptoms of what in severe cases may be called cholera nostras, for the want of a specific name. According to the dose, the virulence, and the susceptibility of the patient, the result may be anything from a slight passing illness to a severe and rapidly fatal attack. I do not deny that it is possible that some cases may be due to the ingestion of bacterial products solely, but so far we have no evidence that such cases exist; for those in which no satisfactory bacteriological evidence has been obtained must be disregarded. With the exception of Fischer, who asserts that he obtained a poisonous proteid substance from cultures of Gärtner-like bacilli which withstood 1½ hour's boiling, all authorities are agreed that these toxins are destroyed by a few minutes' exposure to such high temperatures. In the case of the veal pies which caused illness here, it seems evident that those which had been sufficiently cooked contained no poisonous principle (one individual is said to have eaten six of the pies without evil result). It is a well-ascertained fact that comparatively enormous doses of toxins must be given by the mouth in order to produce results which are obtained by tiny doses administered under the skin (for example, snake venom). So far as I have been able to ascertain, the toxic action of ptomaines is based upon experimental injections; it would be interesting to know whether they exhibit poisonous properties when given by the mouth. In every instance where a careful bacteriological examination of fatal cases has been made, an actual infection has been proved to exist; moreover, the precautions which will tend to prevent the occurrence of similar outbreaks of infection will also be of service when mere intoxications have ensued without any actual infection.

Bacteria Concerned.

The essential thing to know is what microbes are concerned with these outbreaks; and I may state at once that we have not to do with the organisms of ordinary putrefaction; the offending meat is usually of good appearance, smell, and consistence. So far as our knowledge goes at present—and as yet we are but on the threshold of the matter—only two kinds of bacilli[1] are definitely related to the causation of outbreaks of meat poisoning; one of these is the bacillus enteritidis first described by Gärtner, the other is the anaërobic bacillus botulinus of van Ermengbem. Of these the bacillus of Gärtner must be considered the more important, and to it I shall confine my attention; it has been found in more than a dozen epidemics—for instance, those worked out by van Ermenghem, Fischer, Gaffky and Paak, Günther, Holst, Johne, Kaensche, and Poels and Dhont. My own personal experience is limited to four outbreaks with a total of 256 persons, of whom 9 died. In the first of these, thanks to Dr. Stevenson, I was able to obtain a portion of the liver of a fatal case, and to isolate the bacillus enteritidis from it, as well as to confirm the diagnosis[2] by serum reactions in some of the patients; in the other three, serum diagnosis has alone been possible, owing to the length of time which had elapsed before my investigation could be undertaken. In all of these the evidence given by this test points directly to the conclusion that the illness was likewise due to a variety of this same bacillus; and I have not the slightest doubt in my own mind that if I had been earlier in the field I should have found that the organs of those who died were swarming with it.

Outbreak in Chadderton (Oldham).

The Chadderton outbreak is that which interests us at present. Notes upon this outbreak have already been published by Drs. Bowes and Ashton. I obtained blood from 19 persons who had been attacked, and from one who, though he had eaten of the incriminated veal pies, had suffered no ill-effects. The serum obtained from these sources was tested for clumping properties upon seven different varieties of the bacillus enteritidis, two varieties of typhoid bacillus, and another organism (see Appendix); at the same time and previously a number (about 50) of control experiments have shown that the serum of normal persons has not any clumping effect upon these bacilli when properly diluted. In outbreaks like the present, it is essential that a number of different varieties of bacilli should be tested, as, indeed, is also the case when a diagnosis of typhoid fever—and not a mere discovery that a "reaction" is present—is to be made. The reason of this is that varieties can be differentiated by means of their conduct in the presence of immunised sera although they are indistinguishable by ordinary cultural means. Every one of the samples taken from those who were ill gives positive reactions with certain of the varieties of the bacillus enteritidis. At a dilution of 1 per cent. none of them give any reaction with the typhoid bacillus, nor would a reaction be expected, for they react but slightly or not at all with the variety of B. enteritidis (Gärtner) which is most affected by typhoid serum. The sample from the man who had no ill-effects from his meal is perfectly

negative in reaction, even at 1-20 dilution. The inference is that the epidemic was caused by the presence of the bacillus enteritidis. Have we evidence that this bacillus could have been disseminated in a living condition amongst the pies? There is no such absolute evidence as would have been afforded by the discovery of the bacillus itself.

(1) We have the fact that 4 deaths occurred; this leads to a legitimate conjecture, since, as I have already said, in all fatal cases which have been examined in other epidemics, living bacillus enteritidis has been found.

(2) The fact that two persons became ill after eating other food (cut slices of ham and jam sandwiches) obtained from the same shop whence the fatal pies came. A slight contamination with dead bacterial products is not nearly so likely to have produced such serious effect as an infection of these foods with living bacilli; indeed, one of these persons died. A similar instance is afforded in another outbreak which I have recently been concerned with. One sufferer did not take meals in the house, where he acted as gardener, but he ate a piece of cake which had been placed in a barrow with the infected food from Saturday to Monday. Here, again, though it is possible that only poisonous products were soaked up by the cake, it is far more likely that a bacillary infection, with growth during the following two days, in reality took place. Anyhow, the man was severely ill, and developed a good reaction towards the bacillus enteritidis.

(3) We have the consideration that a positive serum reaction was developed by the sufferers; although by ingestion sterilised cultures of B. enteritidis are able to engender the formation of agglutinins, yet it is only when they are given in relatively large doses compared with the amount necessary in the case of living culture; and even then the agglutinins are not so abundantly produced as in the latter case.

Next, let me say a few words concerning the pies themselves. I am indebted to Dr. Wilkinson for information concerning them. It appears that 160 pies were made from veal obtained from the same calf (which was killed on Tuesday, the pies being made on the Thursday, and eaten chiefly on Friday and Saturday), the other ingredients being also the same (see Bowes and Ashton). They were baked "in three to five batches, and not all at the same time." A batch would therefore have consisted of about 53 to 32 pies. The total number of persons who became ill through eating the pies was 54; in some cases single pies were shared by from 2 to 4 persons, so that the number of infected ones is rather less than 54. From these figures it is to be presumed that the whole of one batch was not sufficiently heated, for the fact that in one or two cases pies caused illness, although they were eaten whilst still warm from the baking, suggests strongly that the contamination was not introduced at a subsequent period. All the fatal cases were due to pies which had been kept forty-eight or more hours; this points directly to the conclusion that living bacilli were present. Since the remaining 100 or more pies were eaten with perfect impunity, it is clear that they had been sufficiently heated to destroy living bacilli, and possibly also their products if present. The same may be said of the rest of the carcass, which caused no ill effects. Two circumstances lead me to suppose that the allowance of time for baking approaches the minimum; the first of these is that only twenty minutes are allowed, the temperature of the oven being 450° to 400° F. (about 230° to 204° C.), whilst, so far as I can gather, in domestic cookery fifty minutes is given as the least time even for a single small raised pie. The second is from an examination of a veal pie kindly sent to me by Dr. Godson; neither the crust nor the meat appeared to have been at all thoroughly cooked. It had been bought on a Monday, and was submitted to bacteriological examination on Wednesday morning. The colonies which resulted from planting minute quantities of the jelly and of the meat were innumerable; those from the jelly and superficial part of the meat were different from those obtained from the deeper portion of the meat; whether the latter were present in a living condition when the pie was taken from the oven I am unable to say, but anyhow the meat did not seem to be completely coagulated. An exposure of one minute to 70° C. is enough to kill the bacillus enteritidis (Basenau).

Disease in Animals.

In many of the known outbreaks the bacillus has not only been isolated from the organs of fatal cases but also from the suspected meat. It is also a striking fact that in all those cases where the source of the illness could be traced out the animal which supplied the meat was itself in a diseased condition; indeed, cases are not unknown where the sale of the meat was forbidden owing to the condition of the animal, but was surreptitiously put on the market in the form of sausage. The kinds of animal which, so far, have been proved to be at fault, are especially the cow and the calf; the horse, pig, and goat have likewise contributed to fatal infections with Gärtner's bacillus. [Van Ermenghem's bacillus botulinus was associated with a ham; here the clinical symptoms are different (constipation and nervous disorders) from those usually caused by B. enteritidis.] Curiously, no case where mutton was concerned has yet been proved. Still more curiously, pork only figures in one (Günther's) of the outbreaks which have been worked out bacteriologically; this is the the more remarkable since Dr. Ballard's review in the Local Government Board Reports 1890-91 deals with 12 outbreaks, of which 10 were traceable to some form of pork, and only 1 each to beef and veal. Theobald Smith has insisted on the similarity between the hog cholera bacillus and the B. enteritidis. In the epidemics which I have myself worked at two were veal and beef, the other two are not directly traceable to any particular viand with absolute certainty. Rabbit pies may be mentioned, but no bacteriological evidence is as yet available.

Next, I will call your attention to another animal which has been implicated in the dissemination of these infections; I refer to the illness known as "psittacosis" in France. The following is a short review of the circumstances of the first epidemic: a consignment of 500 parrots was despatched from Buenos Ayres, of these only 200 survived to reach Paris on February 3rd, 1892; they were divided into two lots by the owners. Two epidemics localised about the dwellings to which the parrots were sent resulted in a total of 42 cases of illness with 14 deaths. The next winter a fresh but less extended epidemic arose, the origin of which was also ascribed to a diseased parrot; at this time Nocard isolated a bacillus from the bone marrow of a parrot, which in cultural and morphological characteristics is identical with the bacillus enteritidis described by Gärtner five years before. In passing, I may note that the serum samples obtained from your fellow-townsmen show that the bacillus from which they suffered is not widely different from Nocard's variety of the bacillus enteritidis, though they react rather more strongly with certain other varieties with which I have tested them. It is quite certain that in some cases the birds were ill with diarrhœa, but the whole story is not very clear, and I feel by no means sure that in all the recorded outbreaks the birds were the prime cause. If I may make one suggestion in the event of any further outbreak occurring, it would be to call attention to the fact that on board ship birds are put under the tender care of the butcher, and their quarters are in close proximity to the "butcher's shop;" it is possible that the kernel of the mischief lies somewhere here.

The French observers do not hesitate to affirm that the disease may be spread from one person to another by contact; this has also been described by two authors (Gärtner and von Ermenghem) in meat poisoning outbreaks due to the B. enteritidis and was thought to be the case in one of the epidemics which has engaged my attention; I must say, however, that the proof did not seem to be quite clear of possible fallacy. In the outbreak which you had in this town I made a good many inquiries to elicit information on this point, and, although in many cases more than one member of a family was affected, I was entirely unable to get any evidence of personal contagion, for those who had eaten veal pies suffered, those who had not escaped; so that if the disease is ever really contagious, it does not appear to be so at all commonly.

Our knowledge of the distribution of the bacillus is still far from complete; in a form of septicæmia of calves, Thomassen has described a bacillus which falls under the name of B. enteritidis by its characters. Basenau has also done some most valuable work in examining the flesh and organs of diseased animals brought to the slaughterhouse in Amsterdam, wherefrom he has successfully isolated the B. enteritidis (B. morbificans bovis). The diseased conditions associated with sub-

sequent effect on the eaters of the flesh may be shortly summed up as "puerperal fever," septicæmia, "septico-pyæmia," diarrhœa, and localised suppurations; beyond suspicions arising from the insanitary condition in which some cowsheds are kept, we have no knowledge of the mode of infection of the peccant beasts.

Petruschky has described a bacillus under the name of bacillus fæcalis alkaligenes, which is identical in its characters with the B. enteritidis. The source from which it was isolated was fæcal matter[3] from "persons suspected to be suffering from typhoid fever, in which it was frequently found to be present." Probably, then, these patients were not suffering from typhoid fever, but from infection by the bacillus enteritidis. I do not know of a record of the presence of the B. enteritidis in normal fæces (or urine).

Milk.

There is another possible means of communication of this specific illness from the cow to man, namely, through the milk. Though so far we have no satisfactory or complete evidence from the bacteriological side, the outbreak described by Gaffky is very suggestive from the clinical symptoms that infection with B. enteritidis was communicated by means of the milk; the cow was traced out and was found to have been suffering from diarrhœa and an inflammatory swelling on the shoulder (an ox in the same stall likewise had an inflammatory condition, which, like that on the cow, does not seem to have been investigated).

Basenau has shown that the milk of a guinea-pig which had been infected with the B. enteritidis (*var.* morbificans bovis) contained very large numbers of the bacilli. But probably milk is not a common source of infections of this nature, since while the cow is ill the secretion of milk appears to stop. In respect to milk infections, mention must be made of the outbreak it St. Bartholomew's Hospital, in which Dr. Klein found an anaërobic bacillus, which he named B. enteritidis sporogenes; the further experiments which have been made with this organism rather tend towards the conception that it is merely a common inhabitant of the fæces and sewage.

Time of Year.

Next let me point out that although there is a widespread idea that this class of illness is a speciality of the summer months, this is by no means true, for several of the epidemics which have been bacteriologically examined have occurred in the winter or autumn. Naturally, from what has already been said, and the subjoined experiment of Poels and Dhont, it is well shown that summer heat is not necessary to make the meat of infected animals dangerous.

Further Experimental Evidence.

The following experiment made by Poels and Dhont—for which I am indebted to Basenau, the original being in Dutch—may next be of interest to you:

An ox was inoculated with a small quantity of pure culture of a variety of the B. enteritidis in the jugular vein; twenty minutes afterwards it was killed, being partially bled out.[4] On bacteriological examination, a few colonies were obtained from the spleen and liver; none could be found in cultures from the flesh; a few bacilli were also present in the blood. However, after keeping a piece of the flesh at 20° C. for seventy-two hours the bacilli had become abundant; the rest of the meat had been kept at a lower temperature—not exceeding 5° C.=41° F.; in this scanty bacilli were detected. "After we had assured the workers in the slaughterhouse that we were convinced, from the smallness of the number of bacilli present in the muscles, that the danger of eating the meat could not be very great, and that it would probably only cause a slight diarrhœa, 53 persons resolved to eat of it. Of these 53, 15 became ill in consequence; headache, gastro-intestinal catarrh, and abdominal pain came on in from twelve to eighteen hours; in some there was severe diarrhœa."

Without more details it would not be profitable to discuss some of the points which this important experiment suggests. It shows that an animal experimentally infected with pure culture of the bacillus will give rise to illness when its flesh has been kept. The moral which is especially to be insisted on is the effect of keeping the meat. Experiments of Gärtner and others show that bacteria are only to be found in the surface layers of sound meat after three days' keeping, and even after ten days they have only penetrated to a depth of 1 cm.; when roasted such meat will be quite sterile in the interior for a long time. Naturally with meat which has been infected before death this will not be the case. It has been said, probably many times, that because a piece of meat was not eaten up immediately no blame could attach to those who were responsible for its sale when persons were taken ill through eating it. Here is a case in point: A piece of beef was delivered and roasted; it happened, however, that the people took several meals with friends and the beef was not eaten for a few days; when it was eaten it gave rise to illness. Inquiry failed to reveal any untoward effects caused by other portions of the same carcass. In the light of the evidence that I have put before you I daresay that you would be inclined to agree with me that that piece of meat was derived from an unsound beast. The keeping was really part of the test of its soundness.

Two points which writers on the subject in this country are fond of referring to may be mentioned. The one is that exposure of meat to the influences of sewer air (Ballard, Poore) is responsible for its subsequent poisonous effects. We have no evidence that the bacillus enteritidis can be as it were "spontaneously generated" from sewer gas. The other is that meats, etc., containing much gelatinous material are especially liable to these contaminations; this is no doubt derived from the fact that media containing gelatine are extensively used for the cultivation of bacteria; the gelatine, however, is not used as a nutrient material but as an addition to other nutrient materials (peptone, etc.) in order to produce a solid transparent medium which can readily be liquefied.

Clinical Symptoms.

I do not propose to enter fully into the clinical symptoms of the disease. As in the case of most other bacterial diseases due to a single specific cause, the symptoms and lesions vary to a considerable extent. Diarrhœa is usually present but it may be slight, or especially in "psittacosis" it may be replaced by constipation. Diarrhœa is not a constant feature in experimental observations. Vomiting, another common effect, may be extremely intense or absent. Whether this has any relationship to the portion of the bowel which is chiefly inflamed is not known; though the small intestine is usually affected the colon may be involved. There is also much difference in the extent of lung affection in different cases and outbreaks. Sometimes pneumonic conditions are common, whilst on other occasions they are but little marked or absent. Herpes labialis, rashes, desquamation (some fourteen days after the attack) on hands and feet, jaundice, and great thirst may be mentioned. The onset is frequently sudden with nausea, and the headache with great pain in the joints, limbs, or back may lead to a diagnosis of influenza. The attack may be ushered in by a rigor; the fever, if any, generally lasts but a few days; however, it may be more protracted, or a relapse may set in. In almost all cases there is very great weakness. Convalescence is slow, lasting for three to six weeks. The more protracted cases may simulate typhoid fever to some extent; according to the descriptions, "psittacosis" is apt to be rather of the chronic type. This review of the clinical side is, of course, by no means exhaustive. In respect to serum diagnosis I have already uttered the warning that many cultures must be used for the test: in some of the "psittacosis" cases serum diagnosis has failed: it is not unlikely that this may have been due to an insufficient number of trials on varieties, though it should be added that the published evidence concerning "psittacosis" appears to me to be very inconclusive.

Prevention, Precautions, etc.

Before leaving the subject I will say a few words on preventive measures, and steps which I think should be taken when an outbreak occurs.

From the evidence which is at our disposal, it is clear that the flesh of cows and calves has been accountable for many deaths; it is also certain that a mere naked-eye inspection of the meat will not exclude danger, since meat infected with B. enteritidis may have quite a good appearance. The point of importance is to pay especial attention to the animal before it has been slaughtered; if suspicion is thus aroused bacterio-

logical inquiry should be made. Cows, too, are notoriously apt to be tuberculous, and are by no means an ideal source for our beef. Thorough sterilisation of the meat by heat will also destroy much of any formed poisons, which are rather more resistant to heat than the bacilli themselves.

In the event of an outbreak it is impossible to lay too much stress on the fact that promptness and thoroughness are absolutely necessary for getting at the root of the matter; every hour may be of importance, especially as the bacillus enteritidis is easily killed out by B. coli communis and proteus. The difficulty of making a satisfactory bacteriological examination with stale materials, improperly gathered, is very great. Suppose an outbreak arises, and is traceable to food obtained from a particular source with a considerable amount of, if not with absolute, certainty. All the remaining goods in the infected shop should at once be put under an official seal of *noli me tangere;* a selection of suspected articles should be made, and at once placed in a freezing apparatus and kept frozen hard until they are delivered for examination. Before anything is again sold from the same quarter thorough cleansing and sterilisation of utensils[5] is necessary, of course with destruction of such perishable articles as would be useless for research. If one of the patients should die, a coroner's order for a bacteriological examination should be in force within an hour or two of death. If materials—such as the outfit of serum tubes for diphtheria examination—are at hand, and someone versed in methods is available, cultures should be made from the liver, spleen, kidney, and heart blood (after searing the surface of the organ with a red-hot poker) within ten or twelve hours of death—earlier if possible. The spleen should be wrapped in a cloth or lint moistened with 1 in 500 corrosive sublimate, preferably without cutting into it; one kidney and a piece of liver cut out with a clean knife treated similarly; all these should be placed at once to freeze (*vide* Appendix). Small portions of the organs—not more than ¼ inch thick—should be put into spirit (rectified) for microscopic examination. The loop of intestine, so useful in the case of cholera, is probably of little use here. All these objects should be sent at once for examination, care being taken that sufficient freezing mixture is put in to ensure complete freezing until delivery.

There does not appear to be sufficient evidence of contagion from person to person for isolation of patients to be necessary. When these things have been done, and as much epidemiological evidence as may be possible has been obtained *without bias*, and careful search made amongst the other live stock whence the suspected meat came has been made, the matter rests in legal quarters. In these cases it is usual for the coroner to hold an inquiry. It seems to me that another class of food infection might also be inquired into by this authority with profit, namely, the tuberculous enteritis of children; here the urgency is not so great, for if the tubercle-infected dairy whence the suspected milk was derived is examined even after the weeks which will have elapsed since the actual infection took place, there will probably still be evidence of the presence of tubercle amongst the cows. Personally, in such a case, if it was shown that the owner of the dairy had taken no steps to ascertain the absence of tubercle (by means of tuberculin test, for example) I should consider him to be culpably responsible for the death.

From the point of view of the welfare of his fellow creatures, it would be preferable that compensation should be awarded him in the form of lodging, with suitable employment for awhile, rather than in the form of coin of the realm. It is not improbable that if a few examples were made, people would learn to appreciate that foods more or less loaded with (living) poison could not be sold with impunity.

I hope that I have aroused your interest in this form of infective fever communicable from animals to man, about which there is still much to learn; if I have driven my horse—the bacillus enteritidis—to the death, I can only hope that it may stimulate others to do likewise, not as I have done only in word but in deed also.

APPENDIX I.

Tables showing the serum reactions given by nineteen of the sufferers. The vertical rows each correspond to a certain race of bacilli. The following races are varieties of the bacillus enteritidis:

"Hatt 1" and "Hatt 2" were isolated by the author from the Hatton epidemic.

"Gärtner" isolated by Gärtner in 1888.

"Günther" isolated, and kindly sent to me by Dr. Günther, of Berlin.

"Morb." = B. morbificans bovis, isolated, and kindly given to me by Dr. Basenau, of Amsterdam.

"Psitt." = B. psittacoseos isolated by Professor Nocard, and kindly sent to me by Dr. C. Nicolle, of Rouen.

The other cultures used were two races of typhoid bacillus ("HS" and "W") and the bacillus of Dr. Gwyn, most kindly sent to me by Professor Flexner.

I wish to express my indebtedness and gratitude to the above-named gentlemen, who have been so friendly as to send me their cultivations.

The following signs are used to denote: Strong reaction +; well marked but weaker reaction *; trace or doubtful, tr. or ?; no reaction = o; no observation = —.

The tests here tabulated were made after Professor Wright's plan in capillary tubes, and give the limit dilutions at which recognisable sedimentation takes place. The whole series of samples were first tested on all the cultures at a dilution of 1 to 100. According to the results thus obtained further tests at higher or at lower dilutions were then made. I find this to be the most useful routine when a number of samples are to be examined. One cubic centimetre of a 1 to 50 dilution (= 20 c.mm. of serum) is ample for the preliminary test on nine or ten cultures.

TABLE I.—*Chadderton Epidemic, July 30th, et seq., 1898. Serum taken September 22nd, 1898.*

	Culture.								
	Hatt. 1.	Hatt. 2.	Gärtner.	Günther.	Morb.	Psitt.	Typh. H.S.	Typh. W.	Gwyn.
No. 3.									
1-100	+	+	tr.	+	?	—	—	o	o
1-200	tr.	?	tr.	+	■	*	—	—	—
1-500	tr.	o	tr.	tr.	o	*			
1-1,000	o	o	o	o	o	o			
No. 5.									
1-100	+	+	■	+	?	—	—	o	o
1-200	+	tr.	o	+	?	*	—	—	—
1-500	o	o	o	o	o	o	—	—	—
No. 8.									
1-100	+	+	■	+	■	—	—	o	o
1-200	+	tr.	—	+	■	+		—	—
1-500	tr.	■	o	■	■	o			
No. 13.									
1-100	+	+	o	+	o	—	—	o	o
1-200	+	+	—	+	o	*		—	—
1-500	*	tr.		*	■	tr.			
1-1,000	tr.	o		tr.	o	o			
No. 14.									
1-100	+	+	o	+	+	—	—	■	■
1-200	*	*	—	+	o	*		—	—
1-500	tr.	o		*	o	o			
1-1,000	o	o		o	o	o			
No. 18.									
1-100	+	*	o	+	+	—	o	o	o
1-200	tr.	o	—	tr.	tr.	tr.	—	—	—
No. 19.									
1-100	+	o	o	*	?	*	o	o	o
1-200	?	o		?	?	?			
No. 20.									
1-100	+	+	o	+	*	—	o	o	o
1-200	+	+	—	*	*	+	—	—	—
1-500	*	*		tr.	tr.	?			
1-1,000	o	o		o	o	o			
No. 21.									
1-100	+	+	o	+	+	—	o	o	o
1-200	+	+	—	+	*	+	—	—	—
1-500	tr.	tr.		tr.	?	?			
1-1,000	o	o		o	o	o			

Nine samples giving reaction by limit recognisable sedimentation in dilutions above 1-100.

It will be observed that the differentiation is better with those samples which give reactions in dilutions above 1 in 100; for instance, compare Nos. 3 or 13 with Nos. 4 or 15. Speaking generally, the strongest reactions all through are obtained with the cultures Hatton 1 and Günther. The cause of the epidemic was therefore probably more closely allied to these bacilli than to psittacosis and morbificans. The reader will notice that the reactions with typhoid and the race Gärtner are in harmony. Experience has shown that serum which affects these races has little or no action upon races like Hatton, especially when considerable dilutions are used. *Vice versâ* the serum of typhoid patients acts fairly well upon Gärtner, but not upon Hatton. In my paper in the *Lancet* of January 15th, 1898, tabulated results of the action of typhoid

patients' sera will be found; it may be noted that the culture there referred to as "ös" is very close to Hatton 1 in its serum reactions. The above remarks apply equally to the reactions obtained with the sera of artificially immunised animals upon these races. Serum tests on an epidemic caused by variety Gärtner are urgently wanted.

TABLE II.

	Culture.								
	Hatt. 1.	Hatt. 2.	Gaethner.	Günther.	Morb.	Psitt.	Typh. H. S.	Typh. W.	Gwyn.
No. 1.									
1-20	+	+	tr.	+	o	tr.	■	o	o
1-50	+	+	tr.	*	o	tr.	o	o	■
1-100	o	o	o	o	—	o	o	o	■
No. 2.									
1-20	+	—	*	+	o	*	o	■	o
1-50	?	?	o	?	o	o	o	■	o
No. 4.									
1-20	+	+	+	+	+	*	o	o	o
1-50	■	o	*	+	*	?	—	—	—
No. 6.									
1-50	+	tr.	*	+	o	*	o	■	■
1-100	*	*	o	+	o	—			
No. 7.									
1-20	+	*	*	+	*	+	—	—	—
1-50	*	o	*	+	■	tr.	—	—	—
1-100	*		■	*	■	?	o	■	o
No. 9.									
1-20	+	+	—	+	+	÷	—	—	—
1-60	+	—	*	+	o	+			
1-100	*	*	—	o	o	—	o	o	[illegible]
No. 10.									
1-50	+	+	tr.	+	+	+	—	—	—
1-100	*	*	o	*	?	—	■	■	o
No. 11.									
1-50	*	o	o	*	o	o	—	—	—
1-100	tr.	—	o	tr.	o	—	o	o	o
No. 15.									
1-20	+	+	—	+	+	*	o	o	■
1-50	*	?	o	*	*	o	o	o	o
1-100	o	o	o	o	■	o	o	o	■
No. 16.									
1-20	+	+	+	+	■	+	o	o	■
1-50	o	■	*	tr.	o	tr.	o	o	■

No. 17 had had no illness in consequence of eating two pies, and gave no reaction with any of the cultures at 1-20, 1-50, or 1-100. Thus 10 samples of the 19 gave weak reactions—that is, below 1-100.

Appendix on an Impromptu Method of Making a Simple Freezing Apparatus

Take a moderately large tin, such as a biscuit tin, and a wooden box of sufficient size to give 3 or 4 inches clear space in every direction when the tin is placed within it. Put a layer of sawdust 3 or 4 inches deep at the bottom; stand the tin upon this, and fill the surrounding space with sawdust also. The various organs, after being removed with as much cleanliness as possible, are each wrapped in a clean cloth wetted (not wringing wet) with 1-500 $HgCl_2$, and further wrapped and sealed each separately in a piece of gutta-percha tissue (most easily done with a trace of chloroform); they are then put into one or more watertight tins (those ¼ or ½ lb. tins in which some tobacco is sent out are admirable: they may be more securely closed by means of a paraffin candle and a warm poker). The tobacco tins are placed within the larger tin, together with pounded ice and common salt, in the proportion of 3 lbs. of ice to 1 lb. of salt. The lid is placed on the larger tin, and the wooden outer box filled up with sawdust. An apparatus which holds the above quantities of ice and salt will keep about ½ pint hard frozen for more than twenty-four hours. There can be no difficulty in obtaining these materials at a moment's notice. The maintenance of objects at a low temperature when bacteriological examination cannot be carried out completely on the spot is essential for satisfactory results to accrue.

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Notes, etc.

[1] I am of course aware that many other microbes have been described in connection with meat poisoning, but further confirmation is necessary before these can be definitely accepted. The importance of the bacillus enteritidis surpasses that of all others hitherto described on account of the number of times which it has been found as well as the remoteness of the localities. [2] British Medical Journal, September, 1898. [3] It is not unlikely that in reality these bacilli proceeded from the urine and not from the fæces: in the case of typhoid fever patients it appears that fewer negative searches for the typhoid bacillus have been recorded where loose than where solid motions were dealt with, and here again it is not improbable that the bacilli in reality were in the urine and not in the fæces. Recently I have examined seven specimens of "pure" urine-free fæces of varying consistence from typhoid patients at different stages of fever or relapse without finding the typhoid bacillus in a single instance, although a very extensive number of plates and subcultures were made. [4] The use of bleeding as a means in the slaughter of animals for consumption is probably not without importance from the hygienic point of view. [5] Contaminated skewers, knives, etc., may be the means of infecting other articles; an infected wooden skewer might implant the bacilli in the interior of a joint, and make it dangerous if more or less underdone in its centre. On the other hand, a metal one would very likely become sufficiently heated by conduction during the cooking to sterilise its immediate neighbourhood.

ABSTRACT OF
THE HARVEIAN LECTURES.
ON
DISEASE AND ITS TREATMENT, AND THE PROFESSION OF MEDICINE IN THE YEAR 1899.

Delivered before the Harveian Society of London, December 1898.

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Lecture II.

THE MODERN ADVANCES IN TREATMENT AS THEY AFFECT THE PUBLIC AND THE PROFESSION.

Surgery and its Influence on Therapeutics.

The changes which have occurred in the treatment of disease are not inferior to the advances in pathology. One of the greatest is the extension of the clinical domain of surgery. Not many years ago lives were sacrificed daily to the impossibility of establishing the diagnosis of actual suppuration in the abdominal cavity. The idea of laparotomy for the sake of ascertaining that no abscess existed there was as foreign to the professional mind as are to us the thoughts of dwellers in distant planets. The whole anxiety was lest an operation should be attempted whilst pus had not been proved to exist. Most of the cases operated on died, because gangrene and suppuration had proceeded too far before they were revealed by physical signs.

Physicians have a further debt to acknowledge in the influence which surgical methods have exercised over medical therapeutics in the direction of definiteness in diagnosis and of thoroughness in treatment.

The Medico-Chirurgical Idea in Therapeutics.

The relation between the work of the physician and that of the surgeon is one of ever-increasing harmony. The spirit of their treatment is becoming more and more identical—to their mutual advantage. Hospital physicians find themselves day by day bestowing more time and thought upon the study of cases which it is given to others to cure, and upon the discussion of methods which the surgeon may carry out; and some of this work and thought may perhaps not be wasted from a surgical standpoint.

Medical Questions of Treatment: Our Therapeutics, Past, Present, and Future.

Scepticism in therapeutics had existed from antiquity, but it had never prevailed. Early in this century, however, there came a wave of scepticism stronger than any before. Strangely, homœopathy, while it shattered the old belief, made claims upon our credulity greater than any superstition. It failed to build up any lasting medicinal system, though it called attention to some unutilised drugs, and modified our opinion of the mode of action of some of the older ones. But the practical service which it did render was to direct

attention to the importance of studying the resources of Nature, and of adapting diet to her requirements.

Expectant treatment was the next stage, and became for a time the last word of medical art. Drugs were discredited, and it was thought that the only safety lay in allowing Nature free scope.

Rational Treatment.

This paralysing form of scepticism is now dead. The advance in etiology and diagnosis rapidly revived the hopefulness of the physician by directing his aims towards definite objects; whilst the doctrine of discouragement was soon forgotten by the patients, with whom scepticism has never found much favour.

Treatment having learnt to strike at the cause, was henceforth to be styled rational. The action of the more potent remedies was recognised and studied, and the advantages originally due to empirical treatment were utilised once more and turned to better account.

Symptomatic Treatment.

But the majority, whilst recognising as paramount the rational treatment of the cause, feel no scruple in dealing separately with its manifestations. Favoured by closer clinical observation, this tendency is now a leading feature in practical therapeutics. Each symptom becomes a fresh opening for treatment by special drugs. Symptomatic treatment could hardly however have grown to its present importance but for the extraordinary supply of new remedies, possessed of some prominent virtue in relation to particular symptoms.

Polypharmacy and Monopharmacy.

Polypharmacy in its extreme form has had its day, and monopharmacy is now in the ascendant. The combination of drugs, skilful, efficient, and artistic, had been regarded as the highest fulfilment in practical therapeutics. Was this a fundamental mistake?

The view that drugs may be of use severally in their different ways, although administered simultaneously, is countenanced by the beneficial results of a mixed diet; but this analogy illustrates also the detrimental effect of any excessive complication; and clinical observation also teaches that drugs may act beneficially even when combined.

Monopharmacy, now in the ascendant, has lately been pushed to its simplest expression—the use of a single principle taking action upon a single morbid factor. But in the separate administration of any one vegetable drug, there is something of polypharmacy, the various principles contained being often dissimilar in their action. Even the isolated principles must tell upon various organs, the functions of which may react differently to them; and, as in the familiar instance of morphine, the therapeutic dilemma is often how to help one of the functions without harming the others.

It is now possible in some cases to single out the morbific agent as well as the remedial principle. This fulfilment is the fruit of bacteriology, which has provided us with toxins and antitoxins, addressing themselves directly to the cause of the disease.

Both Methods are still Prevalent.

Both tendencies are represented in our contemporary practice, and in the growing supply of two opposite sets of preparations. Pharmaceutical ingenuity has simplified the administration of separate drugs by wrapping up or compressing those which are unpalatable, without the addition of any flavouring excipients.

On the other hand we are provided with compounded medicines of great complexity which owe their popularity with the patients and their advisers to the excellence of their form.

The Art of Prescribing and its Modern Neglect.

The changes which these advances have wrought in professional practice are great and obvious. One of these results, the growing neglect of individual prescribing, may be regarded as unfortunate. This neglect is, at its origin, traceable to the schools, and the need for reform is urgent. If imperfectly trained in prescribing, the young practitioner would the more easily take to the use of ready-made preparations. Push this tendency to an extreme and it would result that the art of prescribing would pass into other hands. Without sacrificing the convenience afforded by an improved supply of suitable compounds, an effort might perhaps be made to educate the future practitioner to greater independence in combining for himself his therapeutic agents.

One of the advantages of personal prescribing is the opportunity afforded for adapting the remedies to the individual case, and for readjusting them to its changing needs. The worst form of polypharmacy is that which excludes variety. Change is the essence of symptomatic treatment, and the art is to save fatigue and disgust for the patient, whilst avoiding the cumulative action of drugs or their gradual loss of effect.

Wholesale Pharmacy and the Question of Dispensing.

The modern innovations in pharmacy have affected both the practising surgeon and the pharmaceutist. To those engaged in country practice there is a saving of time, of responsibility, and of extraneous assistance. The dispensing chemist is better trained now than he was, but his work is simplified and the skill of his craft less often required. There is also less of the practical handling of the crude drugs, and this affects the question of apprenticeship.

The wholesale manufacture of simple drugs—such as tinctures, infusions, and others—was but the first step to the wholesale manufacture of compounds. The dispensing chemist's occupation is curtailed; but this is not all. Wholesale manufacture means cheapness of production, and the co-operative supply has further reduced his opportunities. The operation of these causes is a factor in a troubled question which lies beyond the scope of our present subject.

The Old Drugs and the New.

New remedies of undoubted efficacy have been added in the later editions of the *British Pharmacopœia*, and outside the *Pharmacopœia* there is a yet larger supply. I can only allude in passing to the large and important subject of organotherapy, the idea of which we owe to Brown-Séquard, and the merits of which are still awaiting the verdict of experience. Some brilliant results have been achieved, particularly in the thyroid treatment of myxœdema, but there has been much disappointment in other directions. The supply of toxins and antitoxins is still in the safe keeping of experts, and in this relation the recent experience in Vienna teaches a lesson not easily forgotten.

Alcohol has long stood at the head of the list of poisonous drugs to which the public has unlimited access. Happily it is falling into discredit as a therapeutic agent.

Drug Diseases.

Ether, morphine, cocaine, the various hypnotics, antispasmodics and antineuralgics, including antipyrin, antifebrin, and phenacetin, are the chief representatives of that dangerous group of drugs to which much injury to health is often due. Sudden seizures from taking an overdose produce much alarm, though they may leave no permanent mischief. A greater evil is the gradual depression in health which may be induced by the daily use of some of these drugs. The weaker the patient the greater his dependence upon the relief which they confer, but their tendency is to confirm the neurotic habit; and the relief given to the pain is often the means of disguising its cause, and of leading to delay in its being rationally treated.

The Care of the Sick.

Nursing from time immemorial, the tending of the sick as a work of pure charity, has been carried on by religious communities. But in this country it is within our own times that the science and art of nursing have risen to their high standard, combining the highest motives with the highest efficiency, thanks to the completeness and the discipline of hospital training, and to the advanced teaching of the physician and surgeon. But to Florence Nightingale our chief debt is due.

Hospitals and Institutions.

A recognition of the advantages of hospital treatment—not elsewhere to be secured except by the wealthy—has led to the multiplication of hospitals for the relief of the poor, who in this are better off than others; and also of paying institutions, where treatment is organised instead of having to be improvised, and professional services are not gratuitous. For a

large number of members of the middle-class, who lead a solitary life, or lack the necessary comforts, nursing homes of this sort are a necessity.

Isolation Hospitals.—Notification and Isolation.

The growing number of isolation hospitals and the strict notification of the acute infections are, from the standpoint of public health, improvements of unmixed advantage, but they tend to restrict the sphere of practice. For phthisis, also, a modified plan of isolation is being practically discussed. Private sanatoria for phthisis have long existed abroad, in which the successful treatment of patients is assisted by constant care and supervision. We are now to imitate the example of Germany and to provide homes for the less affluent among the middle class, where modern methods can be applied, including the discipline which is necessary, though it may be felt to be more irksome in this country, where every man is a king.

Our greater task, however concerns the masses, whose aggregate of mortality from phthisis runs to very high figures. The only efficient way to protect the families of the poor is to remove the dangerous patients from their midst to sanatoria where the risk of infection can be fully controlled. The time may soon come when each large city is provided with suitable country isolation hospitals for phthisis. Our climate is proverbially unstable, but I believe that the tempering of the bleak winds is a problem which is not insolvable if the advantage of suitable site and soil and of adequate protection can be secured.

Action of this sort, which is now contemplated in Liverpool and elsewhere, will lead the educated to greater carefulness in the limitation of the infection without any resort to notification or segregation.

The Hospital Question.

Are the really poor to be the only privileged ones in obtaining hospital treatment and nursing? Are these privileges to be denied to a much larger class who, whilst able humbly to contribute towards the hospital funds, cannot purchase the analogous facilities offered in private homes? To deny to some of those who are quite unable to secure it elsewhere by payment the attendance which is desired and to offer it free of all charge to a lower stratum of poverty would seem to be an uneven dispensation of charity. These difficulties are better known to those who administer than to those who support our hospitals. So long as there are no nursing homes for the poorer middle class where payments can be adapted to the means of each, patients possessing no social or financial claim to gratuitous treatment will occasionally be sent to our hospitals by their own medical attendants.

General Therapeutics.

How different are our present notions from the old idea that disease was a thing to be starved out of existence, strangled by violent remedies, or made to escape with profuse discharges of serum or of blood. No longer do we see the bleeding of the old days, when, because it was spring or autumn, rich and poor flocked to the apothecary to be bled to the point of fainting. There was occasional good in blood-letting, and in certain conditions of disease it is now being revived. It was its immoderate use which was so baneful.

Our principles of treatment have become in a true sense physiological. Their object is to raise vitality when it is depressed, and to restore function if it should be arrested or disturbed. Our method differs entirely from that of the expectant treatment. Nature cannot always be safely left to herself. Interference, to use the word in an invidious sense, is to be avoided; but our intervention is often indispensable, as, for instance, when chronic obstructions finally lead to a deadlock. This is the climax of a long continuance of faulty or imperfect function. Long before the crisis, the need for intervention existed, and the art consists in its timely recognition.

Among the physiological principles of treatment, some of the most important are rest and sleep, activity and energy, habit and change, and physiological rest.

Rest and Sleep.

The difference between individuals in all that relates to sleep is remarkable. It is the privilege of some to command sleep at any moment, but it is probably exceptional to combine this facility with that of remaining awake at will—a dangerous power when it is abused. Some possess the opposite peculiarity, and are subject to the invincible desire for sleep after a definite expenditure of nerve energy. By this they are protected against exhaustion. Interesting physiological speculations and some practical notions also are suggested by the remarkable relief and freshness which they derive from even a very short period of sleep.

Much tissue repair cannot have taken place during those few minutes of profound sleep which will restore a jaded man to full activity. The energy which he subsequently develops must have been there when he fell asleep; yet it was unavailable. It is therefore clear that these brief and irresistible slumbers are essentially different from the long sleep of the night; and it is possible that we might turn both the short and the long sleep to separate therapeutic account.

In venturing a few remarks upon the therapeutic value of sleep and of hypnotics, I shall not refer to the systematic method of animal fascination known as hypnotism.

In the waking state, the effect taken by our various drugs upon the nervous system is conspicuously different. Similar differences may obtain during sleep between the actions of the various hypnotics. The sleep which they severally procure is probably not, as we may have assumed, an identical quantity. Differences in its duration and in the varying delay of its onset must have struck the least observant; but its quality must vary quite as much as we find it varying in the absence of any drugs.

Long Sleeps and Short Sleeps.

Sleep, then, would seem to have two offices, both fulfilled in the long sleep of the night which it is our usual endeavour to secure for our patients, namely, that of favouring the slow changes of repair, and that of interrupting consciousness by uncoupling the chain of neurons, or by relaxing protoplasmic tension or tone. This relief of tension is, it would seem, the only office performed by the shorter spells of sleep, and, therefore, the two forms of sleep suggest two therapeutic objects. The night's sleep which comes without any drugs may need to be bettered, and in improving the quality of spontaneous sleep our help is often of value. It might also need to be prolonged.

The systematic prolongation of sleep for the cure of disease is one of our opportunities hitherto little used. In chorea, sleep entirely subdues the muscular agitation, and this observation has led to the attempt to arrest the disease by prolonging sleep for considerable periods. A complication arises in connection with alimentation which in this disease, as in most other nervous troubles, is of primary importance. Partly for this reason, and because more than rest may be needed for a cure, the results hitherto reported have not sufficiently recommended the method.

Prolonged narcosis has also been suggested in excessive wear and tear of the nervous system; and in various nervous affections, including the mental, its renewed trial, combined with suitable methods of feeding, might lead to encouraging results.

Best suited, perhaps, to our everyday needs is a systematic resort to the shorter sleep. Like the light instalments of food which restore the lost function of appetite and digestion, short sleep in the day may be essential to the cure of nocturnal insomnia. Our growing wealth in hypnotics warrants a hope that a suitable agent may yet be found which in that direction would minister to the health of the invalid, and might command the luxury of sleep at any opportune time for the convenience of the worker.

Body rest as a systematic therapeutic agent has long found its place in our treatment for patients whom weakness alone, in the absence of medical advice, would not have compelled to take to their bed. To that class belong the frail women in whom the debility of anæmia, of dyspepsia, and of overfatigue develop symptoms often mistaken for hysteria. Rest in bed is their first need. In the treatment of chlorosis this is now recognised as the essential element for a rapid recovery. Its methodical employment forms an essential part of the Weir-Mitchell plan. But its most striking instance is that of the open-air rest cure for phthisis, which within quite recent

years has largely replaced at foreign sanatoria the previous method by muscular exercise.

PHYSIOLOGICAL REST TO THE ORGANS—ABSOLUTE AND RELATIVE.

Absolute physiological rest is sometimes provided by modern surgery, as in the case of the larynx in tracheotomy, of the rectum in colotomy, of the œsophagus in gastrostomy, and of the pylorus in gastrojejunostomy.

REST TO THE STOMACH.

Absolute physiological rest of one of our organs can only be secured by deeply interfering with another, sometimes to the extent of reversing its functions. The most striking instance in point is that of the complete suspension of gastric alimentation with the help of rectal feeding. So far as it secures physiological rest to the stomach the result is satisfactory; but at first sight the method is unphysiological. We turn the rectum, an excretory organ, into a channel for absorption.

A similar readjustment and even reversal of functions is sometimes seen in disease, as in the case of the lymphatic system. When the kidney refuses service, the function of absorption peculiar to the lymphatics is apt to be reversed. The lymphatic system may then become a reservoir, and ultimately, if ulceration of the skin should occur, a channel of excretion for superfluous fluid and for the solids dissolved in it. These facts carry suggestions which may some day be more widely utilised.

Partial physiological rest is much more easily applied in medical treatment. In connection with the alimentary system the advantages of partial rest are evident, as in that wholesome cure for the prevalent results of abuse of food as a mere stimulant, an exclusive milk diet combined with rest in bed. In vain has modern fashion endeavoured to lengthen the intervals between meals by deferring the midday feast, and throwing back the late dinner nearly to the hour which summoned our forefathers to bed. An additional after-meal has crept in between them, and the early cup of tea before rising also belongs nowadays to elementary hospitality.

The least the stomach can claim is that its digestions should not overlap. Unfortunately, even its single opportunity, the long rest of the night, is too often encroached upon, and a meal of indigestibles thrown in at 12 or 1. Half this amount of food would keep a man in strong work. The idle, even if they be strong, must break down under its weight. Alone the dyspeptic is safe whose constitutional weakness acts as a merciful protection. Physiological rest in this direction is much needed. Two good meals a day, and a light refreshment in between, is a safe rule for the majority, and with such a *régime* neither the stomach nor the economy can quarrel.

HABIT AND CHANGE.

Habit and change are both conservative. Their influence in saving energy is most marked in connection with the nervous and the alimentary system.

Change of scene, change of rest, and change of occupation are all beneficial for the nervous; but it is neither the scene, nor the rest, nor the work, but the change that does most good.

Work in this way becomes productive of rest. Greater still the relief when mental occupation is exchanged for that which is purely mechanical, and this is part of the secret of the relief to brain fatigue conferred by muscular exercise, which also alters the rate and quality of the metabolism.

Habit differs from change in the field of its usefulness, but is not far behind it in economy of fatigue and sparing of effort. The value of habit lies in the easier performance of those things which are in themselves healthful, whilst change is sovereign in breaking a deleterious succession.

THE CULTIVATION OF HABIT AS INFLUENCING NUTRITION.

Habit is intimately connected with rhythm, and with the establishment, by constant repetition, of paths of lessened resistance. We recognise in the vasomotor system and its reactions endless instances of the influence of habit upon functions and of the reaction of rhythmic functions upon cells, and leaving aside all theory, we must recognise as one of our working principles of treatment, based upon the teachings of this century, the cultivation of habit as a means of influencing intimate nutrition.

Training, both of the mental and of the muscular activities, to say nothing of the visceral, will be capable of educating certain attitudes of the vessels and of the tissues which they feed, and of keeping up, above all, the habit of muscular and elastic response.

FUNCTIONAL ACTIVITY AS A PHYSIOLOGICAL PRINCIPLE OF TREATMENT.

Atony, delayed nutrition, and atrophy are the dangers of rest. Activity and function are the chief stimulants of nutrition. The tendency of properly regulated activity is to strengthen function, just as it tends to hypertrophy the tissues. Both muscle and nerve and the body at large are "toned up" by activity and their nutrition is increased. In this total effect there is a reciprocity between the periphery and the centre. Powerful innervation favours the peripheral mechanisms, but we cannot doubt that the nerve centres derive assistance from the work and the tone at the periphery.

The bringing into play of the function which has been rested is the most important part of the treatment by rest. Passive and active movement and graduated muscular effort, with their secondary stimulations, are now being applied to the organic functions in a great variety of conditions of debility. Many sufferers, particularly those affected with chronic disease, are treated largely out of bed who were formally confined to an absolute inertia.

The healthy heart itself is our best exponent of the great principles of rest and activity. In health cardiac rest is actually apportioned to cardiac work. In the treatment of cardiac disease the share of rest is a very large one, and until recent times it was almost an exclusive share, but our principles have undergone considerable alteration. Whilst in phthisis the latest endeavour has been to keep the lungs at rest, the prevailing tendency of cardiac treatment is now to gradually train it for action. The modern methods identified with the names of Oertel and of Schott are so well known to you that their mention will suffice.

THE RESERVES OF FUNCTION AND THE PRODUCTION OF ENERGY.

Towards the fatal termination of chronic disease our remedies are in vain. For a long time waste has been in excess of repair, until at last the function of the higher organs ceases from want of a sufficient supply of force from the exhausted cells whence it should arise. In acute disease the issue of the struggle for life depends upon the amount of work still to be got from the vital organs in spite of the exhaustion which their cells may already have suffered.

Much energy is latent, and may require some extraordinary stimulus to bring it into action. In the "energetic" the capacity for work and its actual amount are manifest, and this brings out the particular meaning of the word "energy" as used in current language. It is the capacity for work of the nervous system in its office of animating the entire assemblage of functions, organs, and cells. Inasmuch as it raises the energy and calls forth the work of the several organs, energy, understood in this limited sense, is itself a function, and, as such, capable of education. That this is true of this central and ubiquitous function is equally true of the organs, each of which can be trained by special attention, and acquires thereby that structural increase which is the basis of energy and the storehouse of force. Likewise we cannot doubt that hypertrophy and strength of the nervous elements must be the result of their constant use.

PHYSICAL EDUCATION FOR MEN AND WOMEN.

A great outcry has arisen of late against the excessive importance attached to athletics at schools, at the universities, and at our medical schools, and in the columns of the daily press. The facts may partly justify the criticism. But perhaps a less severe view might be taken of the matter. In this age of unrest and of nervous strain there is little prospect of any slackening of the speed. Some of the consequences of this excessive nervous expenditure have already been noted. The best corrective is muscular exercise as part of our daily life.

I would not discourage athleticism in our pupils, for we are all familiar with the excellent results arising from a happy combination of sport and study.

Men in this country have always been athletes and sports-

men. There is, however, something new and to be watched with interest in the spreading cultivation of physical exercise by women. So considerable a revolution cannot be left unnoticed in its medical aspects. The first outcry against its alleged detriments is already subsiding, and even specialists have not condemned it. We can now point to its favourable results. Young women are growing up to a greater stature and weight, with better complexions and healthier nerves than had been witnessed before.

These considerations open a wide subject. If the improvement to which I have referred is not an imaginary one, it claims to be shared by the millions. One of our most urgent duties will be the provision for the poorer girls of adequate means of healthy exercise. Hard work they get in our great towns, but exhilarating exercise is unknown to them.

A praiseworthy movement has been set on foot, under the presidency of the Earl of Meath, and a British College of Physical Education was founded in 1891 and incorporated in 1897. This may become the nucleus of a widespread movement which might end in branches being attached to every school in the country.

The Public and the Profession.

"The Increasing Responsibilities of Medical Advice, and the Evil of Professional Correspondence."—I have anticipated in my first lecture some of the remarks which belong to this part of my subject, and I have hinted at the increasing curiosity of the public in matters medical.

In some ways the public is more exacting than it was. This is largely due to the increased publicity of information which was formerly regarded as strictly professional. One result is that an opinion is demanded in many cases where it would be wise to keep the diagnosis from the patient.

But there is a growing difficulty arising from the modern facilities for communication by the post, by the telegraph, and by the telephone. Although so much versed in medical affairs, in one particular the laity are not sufficiently informed as to their working. Patients do not always realise that letters can kill.

Advice and explanation are easily asked for. It does not strike the inquirer that for two minutes spent over such a message he expects the sacrifice of much time and labour from an overworked man, who, let alone the much-needed relaxation, has not time for the most urgent requirements, and the assumption by him of the anxious responsibility of hurried writings, which nothing would tempt him voluntarily to undertake. It were well if the public were enlightened in this matter.

Treatment without Advice and Advice without Treatment.—I need not refer to the number of periodicals addressed to the public, and particularly to the masses, in which professional matters are discussed and professional advice is offered by the editor or his correspondents. In this way many, to their detriment, resort to treatment without professional advice, and the various consequences to which this leads are well known. They affect the practice of medicine and the practitioner. His opinion is not always regarded as the last word on the subject, but the patients' and their friends' first impulse is often to question it and to seek further advice. Thus the patient is unsettled by the pervading instability of our time rather than by any blame which he attaches to his medical attendant. The doctor himself is much discussed. But the criticism of treatment is a more serious matter, because it affects the patient's interest. Some patients discuss it with their friends. Others are more inclined to read the most recent books on the subject, and frequently are depressed and made worse by their efforts.

Systematic serial consultations are one of the results based upon the deep-rooted conviction that doctors differ. This leads to much practice, and is the chief column of support for the consulting fraternity. The consequence of this is that many go from one authority to another getting excellent advice, but the treatment cannot be established on any firm or consistent basis, and but few of the things recommended are ultimately carried out. This is the other evil—that of advice without treatment.

The patients' annual treat at University College Hospital will be held on Thursday, December 29th, from 5.30 to 8.30 P.M.

THE CURATIVE VALUE OF CALMETTE'S ANTIVENOMOUS SERUM IN THE TREATMENT OF INOCULATIONS WITH THE POISONS OF AUSTRALIAN SNAKES.

A Rejoinder to M. le Dr. Calmette.

By C. J. MARTIN, M.B., D.Sc.,
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In the number of the *Intercolonial Medical Journal of Australasia*, published August, 1897, I communicated the results of experiments dealing with the value of M. Calmette's serum as a curative agent in cases of poisoning by the venom of Australian snakes. The conclusions arrived at were, that it had a slight but distinct protective effect against one of the constituents of these venoms, but that on account of its at present slight antitoxic strength it was practically valueless as a remedial agent in Australia.

In his reply to my criticism M. Calmette states that I am quite mistaken in my conclusions, and that the method I adopted to test his serum was fallacious, and that, accordingly, he is not surprised at my results.

In my paper, I was careful to state that my results applied only to the serum as I obtained it locally, for I thought it very possible that it had diminished in potency by the voyage or hot weather. As, however, M. Calmette "is not surprised at the results" of my experiments, one must conclude that such explanation is unnecessary.

In the present article I shall confine myself to the consideration of whether or not my experiments were a fair test. I imagine our difference of opinion on this point partly results from our holding diametrically opposite views regarding the nature of the antagonism between venom and antivenom. The nature of this antagonism is one of the vexed questions anent the subject of antitoxins generally, and two views have received considerable support. Calmette[1] in common with Roux, Metchnikoff, and Buchner, is of opinion that this antagonism is indirect, and that the antivenom operates upon the cells of the body so as to enable them in some unknown way to withstand or destroy the poison.

I am aware of the experimental evidence adduced by Calmette,[1] Wasserman,[2] Delarde,[3] Nikarnarow,[4] Marenghi,[5] which has led them to such a view. The whole of this experimental evidence is, however, entirely vitiated by the neglect on the part of these observers to take into account the influence of time during which a chemical reaction might occur, and the relative proportions of toxin and antitoxin in their mixtures.

On the other hand Behring has always maintained that toxin and antitoxin enter into some chemical relationship, and directly neutralise one another whenever they come in contact.

This view is supported by the experiments of Kanthack,[6] Fraser,[7] Stephens and Meyer,[8] with cobra poison, and by those of Ehrlich[9] with abrin, the poisonous proteid present in jequirity seeds. During the last few months also, I have, in conjunction with Dr. Cherry,[10] conducted a series of experiments on this point. We used diphtheria toxin and antitoxin, and snake venom and antivenomous serum, and we have, I think, succeeded not only in proving that the action of these antitoxins upon their respective toxins is a direct chemical one, but also in showing precisely why Calmette, Wasserman and others obtained results which led them to the opposite conclusion.

M. Calmette's principal objection to my method is that I failed to take account of the susceptibility of different animals to snake poison. After giving some instances of the varying resistance possessed by animals of different natural orders, he says:—"There is no exact correlation between the quantity of venom which kills in twelve to twenty-four hours and the weight of the animals. Everything depends upon the resistance of the particular kind of animal."

With the first sentence in this paragraph I am in entire agreement. The second statement is misleading as it stands, because the resistance of animals of the same species is to some extent dependent upon their weight. In his next paragraph he continues:—"This being established, one will

easily understand that, to immunise or cure a dog or mongoose, precisely because of the greater resistance of these animals, or their diminished sensibility to the venom, a much smaller dose of serum will be required than to immunise or cure a rabbit." This is a piece of reasoning, I confess, I am unable to follow. As a statement of fact, I can only say that my experience has been a direct contradiction of it. In all my experiments the amount of antitoxin necessary to counteract the effects of toxin has been in the same proportion whatever animal I have used, provided I experimented with several fatal doses of the toxin. The necessity of injecting well over the fatal dose into an animal in all experiments, to determine the antitoxin value of a serum will be obvious from the illustration below.

Supposing 1 c.cm. of serum will prevent death in a rabbit, weight 1 kilo., which has received exactly one fatal dose, say 0.000025 g. of venom. As it requires 0.000025 to kill, if the antitoxin destroys, say 0.000005 (or one-fifth of the total amount injected), the animal has really only to deal with four-fifths of a fatal dose, and lives. One cannot conclude from this, however, that 0.1 c.cm. neutralises 0.000025 of the venom. In order to make even reasonably sure of this, one must inject at least ten times a fatal quantity (as is done by Behring in estimating the value of his serum). If on injecting 0.00025 g. of venom, and 1 c.cm. of serum, the animal lives, 1 c.cm. must have neutralised over nine fatal doses—that is, there cannot have been a whole fatal dose left. By this method the possible error in estimation is reduced to just less than 10 per cent., in the former it might have been anything less than 100 per cent.

Rabbits are indeed, weight for weight, undoubtedly more susceptible to snake poison than mankind. M. Calmette seems to think, however, that the same quantity of serum will be capable of neutralising a much larger quantity of venom in a man than in a rabbit. I maintain, on the contrary, that the amount of venom neutralised will be precisely the same in both instances.

M. Calmette is "not surprised with my result," that 3 c.cm. of his serum fails to prevent the death of a rabbit injected simultaneously, but on different sides of the body, with this amount of serum, and 0.00005 g. of the venom. A healthy, vigorous tiger-snake (Hoplocephalus curtus), often yields me over 0.05 g. of dried venom. Nevertheless, he appears to imagine that two bottles of his serum (20 c.cm.) is capable of preventing death in a man bitten by such a snake, who would receive one thousand times as much!

According to the view I take of the subject, the 20 c.cm. of serum would neutralise less than 0.00035 g. of the venom, and there would still remain 0.05 − 0.00035 = 0.04965 to kill the man. The only circumstances under which such weak serum would be of service, would be when 0.05 g. represented a fatal dose, and 0.04965 g. was less than a fatal dose.

The antitoxic power of a serum cannot be estimated by trying its effect upon an animal which has received just a fatal dose, for if one could give just that amount of venom, and the serum neutralised $\frac{1}{100}$ of this amount, the animal would have had less than a fatal dose, and live. The same amount of serum would do to prevent death in a rabbit of 1 kilo., in a dog 10 kilo. in weight, or in a man of 70 kilo., provided precisely the fatal dose could be administered in each case, but if any amount considerably above the fatal dose be injected, I have always found that the quantity of serum necessary to ensure the life of the animal must be in direct proportion to the amount of venom introduced, less one fatal dose for that particular animal.

Why M. Calmette complains because I used rabbits, when his own statements regarding the value of his serum are drawn from experiments made upon rabbits I do not understand. In 1896 M. Calmette published a little book, giving a summary of his experimental results up to that date, entitled *The Venom of Serpents*. In the chapter headed, "The Antivenomous Serum of the Horse . . . .: Its Antitoxic and Therapeutic Value," page 61, he says: "The antivenomous serum, in order to be *sufficiently efficacious*, ought to be preventive in doses less than 0.1 c.cm. per kilogram of rabbit. (The italics are not in the original.) In my experiments I found that the serum did not come up to the standard thus laid down by M. Calmette. 0.1 c.cm. per kilogram did not prevent death when injected subcutaneously into a rabbit which had received just a fatal dose of venom, nor did 3 c.cm; in other words, the samples of serum did not reach $\frac{1}{30}$ of the minimum standard of efficacy laid down by M. Calmette himself.

According to M. Calmette's reasoning, I should have had better results with dogs, which are more resistant to snake poison than rabbits. I have referred to my notes, and find that on one occasion I injected as much as three bottles of his serum into a dog 7 kilos. in weight, which had just before received a subcutaneous injection of two fatal doses of the venom of the Australian black snake. Nevertheless he died, and I have never exceeded three bottles because the serum is expensive.

I might also mention that Calmette's serum is supplied accompanied by a circular, to the effect that the value of the serum is 250,000 by Roux's notation. Roux's notation for diphtheria consists in defining the proportion of serum in relation to the weight of the animal, which would protect a guinea-pig against one lethal dose of toxin. Accordingly, with a serum of a value equal 250,000, 1 c.cm. would protect 250,000 g. of animal against one fatal dose; or $\frac{1}{250}$ c.cm. would protect 1,000 gr. of animal against one fatal dose. In estimating by Roux's method, the toxin and antitoxin are mixed, and subsequently injected together.

I have estimated the value of Calmette's serum against the one constituent[11] of the venom of Hoplocephalus curtus according to Roux's method. I used rabbits, and I may remind M. Calmette that he quotes rabbits as the animal tested in his circular. I have tested two samples of serum—No 1, bearing date November, 1896, and No. 2 December 20th, 1897. The latter was very kindly sent to me by M. Calmette. The amount of serum necessary to protect 1,000 g. of rabbit against a minimum fatal dose of the one constituent of this venom, as calculated from my experiments, is between one-fifth and one-fourth c.cm.—when the venom and serum are mixed together in a glass prior to the injection. If one-fifth c.cm. protects 1,000 g. of rabbit, and the value of the serum for this poison by Roux's notation is 5,000, and not 250,000. In other words, its value as an antitoxin against this poison is only one fiftieth the strength represented in the circular. Of samples No. 2, my experiments showed that one-half c.cm. per fatal dose was sometimes, but not always, adequate to protect 1,000 g. of rabbit against one fatal dose of the poison. From this the value of Roux's notation should be 2,000, or $\frac{1}{125}$ of that stated.

From the statement that one-fifth or one-half c.cm. of serum is sufficient to protect 1,000 g. rabbit against one fatal dose of the venom, when these proportions are mixed together before using, one must not imagine that this will be adequate to protect the same weight of rabbit, supposing the poison be injected under the skin of the body on one side, and the serum simultaneously on the other. Under these circumstances the amount of serum necessary must be enormously increased. Fraser[12] found that in a case where 0.0004 c.cm. of his serum prevented death when mixed with a definite quantity of venom before injecting, 0.5 c.cm. (or more than 1,000 times the quantity) was required when the two were injected separately, although the serum was introduced thirty minutes before the venom.

From my own experiments I imagine that so great an increase in serum in the latter circumstances over that required in the former is not usually necessary. Nevertheless an increase to the extent of 10 to 20 is required, and if the venom has the start of the serum, as it would of course have in practice, the amount of serum must be still further greatly increased.

It is a matter of regret that I am unable to agree with M. Calmette concerning the value of his serum. Moreover, I am far from considering the test I subjected it to as too severe; but, on the contrary, I fear it was not sufficiently so, as I used in my first experiments only just over one fatal dose of the poison.

The question of the adequacy of my experiments rests entirely upon the larger question as to the method by which an antitoxin counteracts a toxin. If, as M. Calmette supposes, it it be due to a physiological reaction called forth in response to the stimulus antitoxin, I shall be quite ready to grant that relative susceptibility might have to be taken into account in determining the antitoxic value of a serum. In this particular

polemic, the fact that I am in the position of locally depreciating what may to some extent be regarded as a commercial article is extremely distasteful to me. At the same time, I should be the last to fail to appreciate that M. Calmette's production of antitoxin is the outcome of pure enthusiasm for science and humanity. The tiresomeness, expense, and great patience required to produce a serum of any considerable antitoxic power against snake venom I know from personal experience, and I can only congratulate M. Calmette on having shown that it was possible to do this, and on having gained some measure of success. I doubt not that he will soon succeed in procuring a serum possessed of greater potency, and I assure him that I shall be delighted to hear of his success, and to do what may be in my power to encourage its use in Australia.

References.

[1] *Ann. de l'Inst. Pasteur*, 1895. [2] *Zeit. f. Hygiene*, xxii, p. 263. [3] *Ann. de l'Inst. Pasteur*, December, 1896. [4] Abstract, *Journ. thicr. Chem*,, 1896, p. 983. [5] *Cent.f. Bakt.*, xxii, 1897, p. 521. [6] *Proc. Phys. Soc.*, November, 1896, (not published) quoted by Stephens (*Lancet*, February, 1898). [7] *Nature*, April 23rd, 1896, p. 593. [8] *Proc. Path. Soc.*, London (*Lancet*, February, 1898). [9] *Fortschritte der Med.*, 1897. No. 2. [10] British Medical Journal, October 15th, 1898. p. 1120. [11] *Vide* my paper in the *Intercolonial Medical Journal*, August, 1897. [12] *Nature*, April 23rd, 1896, p. 594.

MALARIA: IMMUNITY: ABSENCE OF NEGRO IMMUNITY: VARIETY.

As Illustrated by the Incidence of the Disease on Various Races in Sierra Leone.

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A short experience (barely six months) during one rainy season of malarial fever in Sherboro Island and the hinterland of Sierra Leone has afforded an opportunity of observing the incidence of the disease on a newly arrived negro regiment as compared with the native population. The following is a brief account of the observed effects of the disease on different races in so far as they seem to bear on the debated question of immunity and on the existence of varieties of malarial organisms. The facts may be taken to show that there is such a thing as immunity, though only of a relative kind; that the immunity is an acquired one; that the negro possesses no special immunity and that there is some ground for believing in the existence of more than one variety of malarial organism.

The negro natives of Sierra Leone appear to suffer in a mild degree only from the fever: not alone that they are not frequently attacked, but that the attacks are not often fatal and that the illness in their case is of a comparatively benign nature even when not treated with quinine. But in the soldiers of the West India Regiment—negroes from Jamaica, Barbados, St. Lucia, etc.—the fever is of a very severe and often fatal character, requiring prompt and careful treatment by European methods. Indeed, judging by the extent of sickness in the afore-mentioned regiment, West Indians are little if any better able to stand this climate than are the white officers and sergeants who command them. The contrast between West Indians and the natives composing the Sierra Leone Frontier Police when serving in the field in the same column was most marked; the former much troubled by fever, the latter having none.

Most writers—even to the author of the latest work on tropical diseases—ascribe an especial immunity to the negro race generally; but the behaviour of the disease in respect to the West Indian negro, as set forth above, does not support this idea. Yet the latter are the descendants of negro slaves imported into the West Indies from West Africa. The right interpretation of this seems to be that negro races generally have acquired an immunity by long residence in malarious places, but that the exemption is not a racial attribute, and that the West Indian negroes have lost the immunity originally acquired by their forefathers. It is popularly supposed on the coast that they do soon acquire a comparative freedom from malaria—that is to say, that after serving for a year or so in West Africa, they cease to be troubled much by fever. Observations covering so short a period as that under review scarcely warrant any opinion as to whether this is a trace of their ancestral immunity remaining to the West Indians or is merely the same tolerance which is sometimes said to be acquired by European "coasters"; for the matter of that it is admitted on all hands, wherever malaria prevails, even by those who deny the existence of acquired malarial immunity, that the newcomer is not such a good "life" as is the man who has got safely over his first attack of malarial fever.

A study of the disease in West Indians again leads us to the inference that either the West Coast fever is not malarial, or it is a special variety. But numerous observers have reported the discovery in the blood of persons suffering from West African fever of plasmodia similar to those found in malarial disease in other parts of the world; and we may therefore take it for granted that our fever is a malarial one. Among other places we find that malaria flourishes in the West Indies, and it follows that the West Indian negroes have been more or less subjected to its influence all their lives. It might then be reasonably expected that these people would be to some extent malaria-proof as compared with Europeans; but, as before stated, it is not clear that they possess any advantage over the white races (in West Africa at any rate) beyond that due to their being accustomed to a hot climate. The explanation of this may be that the malarial organism of the West Coast is of a different variety to the plasmodium of the West Indies, and that immunity acquired to the first mentioned confers no protection from the second. It might of course be argued that the interpretation lies in the greater virulence of the African organism. Or, again, that other than malarial factors in the Coast climate reduce the West Indian to such an extent as to render him vulnerable to an organism against which he had obtained sufficient immunity to enable him to withstand it in his own country. To this it may be replied that if it were merely a matter of differing virulence, the less virulent would have conferred some measure of protection; and as to the Coast climate, it is, in the matter of physiological comfort, said to be not inferior to that of the West Indies.

A parallel case to that of the West Indians in Africa may be found in that of the Chinese in Borneo. When in Borneo the writer had an opportunity of seeing that Southern Chinamen employed on the tobacco estates suffered very severely indeed from malaria, their habituation to paludal fevers in their own country being apparently of no value to them in Borneo.

INFECTIVE SARCOMATA IN DOGS.*

By

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and J. W. WASHBOURN, M.D., F.R.C.P., Physician to Guy's Hospital; Physician to the London Fever Hospital, etc.

In a previous paper[1] we described a series of tumours on the genitals of dogs which spread from animal to animal as the result of coitus. These tumours, which were of various shapes and sizes—sometimes large enough to completely block up the vagina—originated in the mucous membrane of the vagina and penis. In some cases the walls of the vagina were deeply infiltrated, and the tumours frequently ulcerated. Death sometimes ensued, either from cachexia, or from kidney disease the result of obstruction of the ureters, or from septic poisoning owing to sloughing of the growth. In one instance a secondary deposit was found in the inguinal lymphatic glands. The structure of the tumours, of which we gave a description illustrated by photographs, was that of a round-celled sarcoma. We were enabled to successfully inoculate the tumours on the penis of one dog and into the subcutaneous tissue of two other dogs, the resulting tumours having the the same structure as the original ones.

We gave an account of certain experiments made by Wehr, Geissler, and Duplay and Cazin, and we came to the conclusion that, although these authors gave a different interpretation of the microscopical structure, the tumours described by them were identical with those described by us. Geissler

* This research was aided by a grant from the British Medical Association.

looked upon the tumours as carcinomata, and he made successful inoculations into the subcutaneous tissue. In one instance he found after inoculation deposits in the internal organs; but, as no microscopical examination of these deposits was made, the connection between them and the original tumour could not be considered as proved. Wehr, who was successful in a number of inoculations, also looked upon the tumours as carcinomata. In one instance he found secondary deposits, which he stated to be carcinomatous, in the spleen and lymphatic glands. Duplay and Cazin, who made successful inoculations into the subcutaneous tissue, looked upon the tumours as inflammatory.

The tumours described by us, whether identical or not with those of the above-mentioned authors, were certainly sarcomatous in structure. They sometimes infiltrated the deep tissues, and in one instance we obtained a secondary deposit in the lymphatic glands. We have since obtained secondary nodules in the internal organs, so that the tumours do not differ either in structure or in "malignancy"—except, perhaps, in degree—from the sarcomata met with in the human subject.

In our previous paper we described the course taken by the tumours in the mucous membrane of the genitals when contracted during coitus. We also described a successful inoculation which we performed into the mucous membrane of the penis of a dog. We will briefly state the subsequent history of this case:

The tumour reached its maximum of growth 12 months after inoculation. It then formed a lobulated mass half an inch in diameter; a small portion which was snipped off was found to have the same structure as the original tumour from which it was derived; 4 months later it began to diminish in size, and had completely disappeared in another 2 months.

We draw especial attention to this case, because it is the only instance in which we have observed the tumours disappear spontaneously when situated in the mucous membrane.

We have since inoculated successfully the vagina of a bitch.

A young terrier bitch was inoculated by rubbing a portion of an infiltrating vaginal growth from another bitch over the seared surface of the mucous membrane of the vagina. At the end of two months the animal was killed. At the *post-mortem* examination, two smooth tongue-shaped tumours, the one half an inch in diameter, and the other rather smaller, were found near the urethral orifice. They were microscopically of the same structure as the other tumours.

We have not considered it necessary to make further inoculations of the mucous membrane. We have made a series of inoculations into the subcutaneous tissue, and it is these experiments which we now propose to record.

Method of Inoculation.

The method which we have adopted for inoculation is the following: The animal is placed under an anæsthetic, and the skin on each side of the abdomen is carefully shaved and cleansed. A small incision is made with a pair of scissors, which are then pushed under the skin so as to make a track in the subcutaneous tissue. One or two small fragments of growth are then introduced by means of forceps along the track for an inch to an inch and a half from the skin incision, which is subsequently closed with stitches and sealed with collodion and iodoform. The whole operation is performed with careful aseptic precautions. The fragments of tumour inoculated were always used immediately after removal.

General Result of Inoculations.

Including two animals mentioned in the previous paper, we have made inoculations into the subcutaneous tissue of 17 dogs. In 4 dogs the inoculation was unsuccessful, while in the remaining 13 definite tumours developed. Of the 17 dogs, 6 were inoculated with growths from the genitals, and in all a successful result was obtained. These primary growths were obtained from three separate bitches, two with a malignant type, and the third with a simple type of growth. The tumours resulting from inoculation were similar in all three series. The remaining 11 dogs were inoculated with growths from the subcutaneous tissue obtained by artificial inoculation. Definite tumours developed in 7 of these animals, whilst in 4 of them the inoculations were unsuccessful.

We have used as a rule wire-haired terriers, but we have not made sufficient experiments to state what kind of dogs are most susceptible. Most of our dogs were quite young; but we have successfully inoculated an old dog. Some dogs appear to be naturally refractory, and resist repeated inoculations.

A young white terrier was unsuccessfully inoculated on three occasions, the intervals between the first and the second and between the second and the third inoculations being 6 and 7 weeks respectively. Control animals were successfully inoculated on each occasion at the same time and from the same source.

An old wire-haired terrier was unsuccessfully inoculated on two occasions at an interval of 7 weeks. Control animals were successfully inoculated on both occasions at the same time and from the same source.

The tumours are capable of being transmitted at any time during active growth, and they do not apparently exhibit any marked difference as regards virulence during this period. The earliest successful inoculation was made from a tumour 21 days old, the latest from one 3 months old. As soon, however, as the stage of subsidence is reached, and the growth becomes flabby and begins to dwindle, transmission is no longer possible. Two of our unsuccessful inoculations can thus be accounted for, and the other two by the fact that the dogs were, as was subsequently proved, naturally immune.

Serial Inoculation.

The following experiments were made with the object of ascertaining whether the tumours could be transmitted through a series of dogs by subcutaneous inoculation, and, if so, whether an increase of virulence would result.

The material for inoculation was taken from the vagina of a bitch with a growth of an infiltrating malignant type.

Dog A, a young, fawn-coloured bitch, was inoculated in both flanks with fragments of the tumour from the bitch. At the end of 11 days there was a slight discharge of pus on the right side, but nothing to be felt on the left. At the end of 21 days a lobulated growth, the size of a filbert, could be felt on the left side. This was excised, and used for inoculating B.

Dog B, a wire-haired puppy bitch, was inoculated in the left flank from A. At the end of 10 days there was a minute nodule, which at the end of 25 days had disappeared. At the end of 38 days there was no sign of growth. At the end of 2 months a distinct tumour three-quarters of an inch in diameter was found (the animal had not been examined since last note). At the end of 3 months there was a large lobulated growth the size of a hen's egg, with well-defined margin slightly attached to the skin, but otherwise freely movable. A portion was removed for inoculating C. At the end of $3\frac{1}{2}$ months the tumour was $2\frac{1}{2}$ by $1\frac{1}{2}$ inches, soft and elastic in places with the overlying skin adherent, red, shiny, and thinned out. At the end of 4 months the skin had broken down, causing a deep ulcer extending into the growth with thickened edges. At the end of 5 months the ulcer had healed and there was a rosette-shaped mass $1\frac{1}{2}$ inch in diameter with depressed scar in the centre and with the overlying skin, thin, red, and adherent. At the end of 6 months the mass had again increased to 2 inches in diameter; it was flabby and the skin over it had ulcerated in two places. From this time it began to diminish. At the end of 7 months there was a small flabby mass of cicatricial tissue and at the end of 8 months the growth had completely disappeared. At the end of $8\frac{1}{2}$ months there was some recurrence, a growth the size of a walnut being present. At the end of 9 months the growth was flabby and dwindling. At the end of $9\frac{1}{2}$ months the animal was killed and the growth was proved to be represented by a little fibrous tissue.

Dog C, a small thin wire-haired puppy, was inoculated in both flanks from B. At the end of a month several small nodules the size of peas were present on both sides. At the end of 6 weeks the nodules had fused together so as to form lobulated masses $\frac{3}{4}$ by 1 inch on both sides. At the end of 2 months the growth on the right side was $1\frac{1}{2}$ inch in diameter and that on left side $1\frac{1}{4}$ inch in diameter. Dogs D and E were inoculated from portions of the growth on the right side. At the end of 3 months the growth on the right side was $2\frac{1}{2}$ by 2 inches and that on the left side $3\frac{1}{2}$ by $2\frac{1}{2}$ inches; the skin over both was ulcerated, but the growths were firm and apparently growing at the periphery. At the end of 4 months there was deep ulceration on both sides, the edges of the ulcers being firm and indurated. At the end of 5 months the two growths had nearly united, forming an ulcerated mass $3\frac{1}{2}$ by $2\frac{1}{2}$ inches. At the end of 6 months the animal died, the growths, which had for a time diminished in size, having again increased. There was at the *post-mortem* examination on the right side of the abdomen a mass about 4 inches long extending up to the thorax, and ulcerated at its lower part. A similar mass, but not quite so large, was present on the left side. In the liver a large number of small roundish nodules were found, varying in size from that of a millet seed to $\frac{1}{2}$ inch in diameter, the majority being $\frac{1}{4}$ to $\frac{1}{2}$ inch. As many as 30 were counted, but more were present. They were white and soft, and resembled the original tumours in consistence and appearance. None of them were breaking down. These which were situated on the surface of the liver were umbilicated. In the spleen there were 4 nodules from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter similar to those in the liver. The lungs and the other abdominal viscera were free. Sections of the nodules in the liver and spleen examined microscopically showed a structure similar to that of the original tumours.

Dog E, a small wire-haired puppy, was inoculated in both flanks from C at the same time as Dog D. At the end of 7 days a nodule about the size of a pea was felt on both sides. At the end of a month there was a nodule about $\frac{3}{4}$ inch in diameter on the right side, and a bilobed nodule $\frac{3}{4}$ by 1 inch on the left side. At the end of 2 months there were lobulated growths on both sides, that on the left side being 3 by $1\frac{1}{2}$ inch and that on the right side $2\frac{1}{2}$ by $1\frac{1}{2}$ inches. At the end of 3 months there was a mass 4 by 2 inches on the right side, and a mass 3 by 2 inches on the left side. A fragment was removed, and Dog F inoculated. A fortnight later both growths had considerably diminished and were very flabby. At the end of 4 months the growth on the right side had completely disappeared, and a few days later that on the left

Dog F, a long-haired brown puppy bitch, was inoculated in both flanks from E. During the first few days after inoculation a small nodule was felt, but this quickly disappeared and no tumour developed. The tumour on Dog E at the time of inoculation was flabby and just beginning to dwindle.

Dog D, a buff terrier puppy bitch, was inoculated in both flanks from C at the same time as E. At the end of a fortnight there was nothing to be felt on either side. At the end of a month, several nodules, forming a mass about ¾ by 1 inch, were felt on both sides. At the end of 6 weeks there was a growth on the right side 1 by 1 inch, that on the left side being 1¼ by 1 inch. A fragment was removed from the left side to inoculate G and H. At the end of 2 months there was a globular mass on the right side 1⅜ by 1½ inch, with the skin over it red and shiny: on the left side growth 1⅛ by 1⅛ inch. At the end of three months both growths were adherent to the skin, that on the right side being 2 by 2 inches, and that on left side 1⅛ by 1⅛ inch. At the end of 4 months the growth on the right side had completely disappeared, and that on the left side was the size of a walnut, soft and puckered. At the end of 5 months nothing was to be felt on either side.

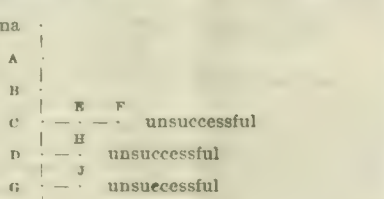
Dog H, an old wire-haired terrier bitch, was inoculated in both flanks from D at the same time as G. No tumour developed on either side. This dog was subsequently shown to be naturally immune.

Dog G, a young terrier bitch, was inoculated in both flanks from D at the same time as H. Some ulceration occurred on the right side, which healed in 10 days, leaving indurated tissue behind; at this date there was a distinct nodule on the left side ⅓ inch in diameter. At the end of 3 weeks there was nothing to be felt on the right side, on the left side a nodule ½ inch in diameter. At the end of 6 weeks nodule on left side was ¾ by ¾ inch. At the end of 7 weeks a fragment of growth was removed, and Dog I inoculated. The wound healed in a few days. At the end of 9 weeks the growth was firm and smooth, 1½ by 1½ inch. At the end of 11 weeks the growth was 2 inches in diameter, it was breaking down, and the skin over it had given way. At the end of 3½ months a fragment was removed from the edge, and J inoculated. Two months later the growth had completely disappeared.

Dog I, a young wire-haired terrier, was inoculated in both flanks from G. At the end of 3 weeks nothing was to be felt on either side. At the end of a month a few minute nodules were felt on both sides. At the end of 5 weeks there was a string of small nodules, 1½ by ½ inch on the right side, and on the left side a similar mass 1½ by 1 inch. The animal died at the end of 48 days from an inflammatory swelling on the face having no connection with the inoculation.

Dog J, a young, short-haired terrier, was inoculated in both flanks from G. Some inflammatory swelling occurred, and at the end of a fortnight there was a small nodule the size of a pea on each side. These completely disappeared in the course of a week, and no tumour developed. It will be observed that this dog was inoculated with a fragment of a tumour which was breaking down.

The following table represents the series of subcutaneous inoculations:



This series shows quite clearly that the tumours can be transmitted by subcutaneous inoculations through a number of dogs. The series came to an end owing to the death of Dog I from cellulitis of the face in no way connected with the inoculation. The unsuccessful inoculations were F, H, and J. Of these, F was inoculated from a tumour which was flabby and beginning to dwindle, J from a tumour which was breaking down, and H was one of the two dogs we have previously mentioned as naturally immune.

There is no evidence of an increase in virulence by passage through the series, but the number is not sufficient to draw conclusions from.

We will now describe the course taken by the tumours in the subcutaneous tissue, our description resting partly upon the above series and partly upon other inoculations which we have made.

THE COURSE TAKEN BY THE TUMOURS AFTER SUBCUTANEOUS INOCULATION.

For the first few days after inoculation a swelling can be felt due partly to the fragments of tumour introduced and partly to inflammatory exudation. In some cases this swelling completely subsides, so that nothing can be felt until the appearance of a small nodule indicates that the inoculation has been successful. In other cases the swelling persists, and it is difficult to decide whether the inoculation has been successful until a definite increase in the size of the swelling has taken place. The usual time at which there is distinct evidence of the first appearance of the growth after inoculation is about 3 weeks, but it varies between 12 days and a month. The tumours from some sources seem to be more active than from others. Thus in our first series of inoculations made from a pedunculated growth in the vagina the secondary growths were noted as being ⅛ inch to 1½ inch in diameter 16 days after inoculation. In a recent series made from a vaginal growth of very malignant type a definite increase in the size of the swelling following inoculation was observed 12 days after inoculation. In a third series made from an infiltrating but very slow growing vaginal growth the time was invariably longer, varying from 3 to 4 weeks.



Portion of tumour in subcutaneous tissue showing alveolated character. Highly magnified.

The small firm nodules which first appear gradually increase in size and form rounded lobulated masses. At the commencement they are freely movable beneath the skin, but at a later period the latter becomes thinned out, of a bluish-red colour, and firmly adherent to the growths. In consistence the growths are firm and elastic, and as a rule they remain fairly movable on the deep parts. The size ultimately attained varies; it usually reaches from 1½ to 3 inches in diameter. The maximum growth is attained in about 3 months. A curious regularity obtains in this respect. Of 7 animals in one series in which the growth was allowed to reach its full development, in 6 the maximum growth was reached in, as nearly as possible, 3 months, while in the remaining one the maximum was reached in 2½ months. Having reached this stage retrograde changes are not long in appearing. The growth becomes soft and flabby, and slowly dwindles until nothing is left to indicate its former presence. This on an average takes 3 months, the tumour running its entire course in about 6 months. In one case disappearance of the tumour occurred within a fortnight after attaining its maximum growth, while in another it took as long as 5 months. In nearly half the cases the subsidence of the tumour was accompanied by ulceration. The thinned-out reddened skin gives way over the growth, which has previously undergone softening, and there results a deep ulcer from which a thin grumous discharge flows.

Even when these retrograde changes are occurring, fresh growth occasionally takes place at the periphery of the tumour. This was marked in Dog C, where the growth, which

had ulcerated, and had considerably diminished in size, commenced to grow again.

In one instance—Dog B—recurrence took place even after the growth had apparently disappeared. A fortnight after we had noted the complete disappearance of the growth, a recurrence was observed at the site of the old tumour. A fortnight later it had reached the size of a walnut; it then became flabby, and 17 days later, when the dog was killed, it was represented by a small fibrous mass.

In one case—Dog C—the growth persisted till the death of the dog, which took place apparently as the direct result of the tumour and its secondary deposits in the viscera. The animal was thin and weakly before the inoculation, and to this is probably to be attributed its want of resistance.

Microscopical examination of the tumours in the subcutaneous tissue produced by inoculation and of the secondary deposits in the organs showed that they had a structure identical with that of the primary growth on the genitals. They were composed of small round cells, sometimes loosely packed, preserving their round form, sometimes more closely packed, assuming a polyhedral shape. There was a delicate stroma enclosing the cells in spaces of variable size. Numerous thin-walled blood vessels were to be seen not only in the supporting framework, but also between the cells. The growths presented the characteristics of a round-celled sarcoma. Nothing of an inflammatory character was to be made out in the actively-growing tumours, and it was only when ulcerated or diminishing in size that an infiltration of the growth with inflammatory products was to be seen.



Dog showing subcutaneous tumours the result of inoculation.

ACQUIRED IMMUNITY.

An animal which has once recovered is immune, and we have never been successful with subsequent inoculations.

1. An old black and tan terrier was successfully inoculated in the flank. The resulting tumour, which in 6 weeks formed a lobulated mass 1¾ by 1½ in., completely disappeared in 10 weeks. A month after the disappearance of the tumour the dog was unsuccessfully inoculated in both flanks from a vaginal tumour. A second dog was successfully inoculated from the same tumour at the same time. Seven weeks later it was again unsuccessfully inoculated from a vaginal tumour. Another dog was successfully inoculated from the same tumour at the same time.

2. A young fawn bitch was successfully inoculated in one flank. The resulting tumour reached the size of a filbert. It was removed, and was used successfully to inoculate another dog. A month after the disappearance of the tumour the dog was unsuccessfully inoculated from a vaginal growth. Another dog was successfully inoculated from the same growth at the same time.

3. A white wire-haired puppy was successfully inoculated in both flanks. The resulting tumours, which reached the size of 1¾ in. in diameter, had completely disappeared in 3 months. The dog was then unsuccessfully inoculated from a growth in the subcutaneous tissue. Two other dogs were successfully inoculated from the same growth at the same time. Five weeks later the dog was again unsuccessfully inoculated from a subcutaneous tumour. Another dog was successfully inoculated from the same tumour at the same time.

4. A black and white terrier puppy was successfully inoculated from a vaginal growth in both flanks. The resulting tumours reached the size of about 2 inches in diameter and then ulcerated, and completely disappeared in 6 months. The dog was then unsuccessfully inoculated from a subcutaneous tumour. Another dog was successfully inoculated from the same tumour at the same time.

CONCLUSIONS.

1. The tumours in question are infective round-celled sarcomata occurring in dogs.
2. The tumours can be transplanted from the genitals, where they naturally occur, to the subcutaneous tissue of other dogs.
3. The tumours can be transplanted from subcutaneous tissue to subcutaneous tissue through a series of dogs.
4. The tumours after reaching the maximum of growth may disappear spontaneously with or without ulceration.
5. The tumours may continue to increase, and may cause death by secondary deposits forming in the viscera.
6. If the tumour should disappear the animal is then immune to subsequent inoculation.

REFERENCE.

1 *Journal of Pathology and Bacteriology*, January, 1898.

THE COLD-BATH TREATMENT OF TYPHOID.

BY F. E. HARE, M.D.,

Late Resident Medical Officer, Brisbane Hospital, Queensland.

I HAVE read the able paper by Dr. Sidney Phillips on the treatment of typhoid fever with much interest and instruction. Some of his arguments however, more especially such as apply to the treatment by systematic cold bathing, call for comment.

Though pyrexia may not now be regarded as one of the chief dangers of enteric fever, this does not in any way weaken the case for cold bathing. While I am personally of opinion that the mere reduction of temperature is in itself of considerable importance, yet cold bathing has been repeatedly shown to act in many other ways, all more or less conducive to the welfare of the typhoid patient. So well recognised is this, that both in the Brisbane Hospital and in the German Hospital, Philadelphia, bathing is frequently continued during defervescence; that is, after the rectal temperature has ceased to attain the bathing point, 102.2° F. J. C. Wilson,[1] of the latter institution, states:

> Every now and then a patient whose temperature no longer rose to 101.4° F. (in the axilla) would ask to have the bath repeated, saying that it made him feel so much more comfortable. In consequence of this we have adopted the rule of giving one or two plunges a day during the defervescence..... The result has been entirely satisfactory, and has seemed to us to hasten the convalescence.

At Brisbane[2] bathing is frequently continued after the temperature has ceased to demand it, to dispel such symptoms as slight delirium, insomnia, thirst, dryness of the mouth and tongue, etc., and almost invariably with success.

Dr. Phillips says that "The chances of recovery of a person contracting typhoid to-day are little or no better than they were fifty years ago, notwithstanding the advances in medical knowledge and improved nursing and hygienic conditions." Although he does not say so, it is to be presumed that he intends this statement to be restricted to the British Isles, and those countries in which systematic bathing is not resorted to. Otherwise it is difficult to reconcile it with the following:

"The claim made for it"—the cold bath—"that it reduces the mortality from 17 or 18 to 8 or 9 per cent., has not been disproved." I would go further, and submit that the claim has been proved as thoroughly as it is possible to prove the success of any therapeutic measure. The many thousands of consecutive cases recorded on the Continent, in the United States, Canada, and Australia, and treated without selection, show an average mortality well below 8 per cent.

Dr. Phillips advances one rather unusual argument in defence of the omission to practise systematic cold bathing in this country. Taking 100 cases, it may be admitted that on the average 82 would recover even without cold bathing, while 9 would die even with the bath. Therefore he concludes that "91 of every 100 patients are subjected to repeated bathings unnecessarily, and that the 9 who die have these repeated bathings added to their sufferings." This line of argument might be applied to any form of treatment that is not invariably successful. Supposing it to be admissible, however, it does not seem an exorbitant price to pay for the saving of 9 lives in every 100 cases: for the reduction of the case mortality of typhoid by 50 per cent., especially as "the fatality of the disease.....has little altered" under other methods of treatment. But such an admission cannot be permitted to pass. For the advantages of cold-bathing are by no means exhausted in reducing the death-rate. The objects of treatment may be summed up as follows: (1) To save life if possible, (2) to prolong it if 1 prove to be impossible, and (3) to obviate suffering and promote comfort in any case, even when 1 and 2 prove to be impossible.

I have shown in *The Cold-bath Treatment of Typhoid* that (1) the case mortality of the disease is reduced by 50 per cent., (2) that nearly all the distressing symptoms connected with the pyrexial state, and many of those depending on the intestinal lesion, are alleviated to an extent not attainable by any other therapeutic measure, (3) that nutrition is maintained and convalescence greatly accelerated: and (4) that even in cases which terminate fatally, life is prolonged on the average by several days.

The possibility of selection of cases has naturally been entertained by all who have worked at the subject. To me it has seemed that any selection to be successful would require an almost complete foreknowledge of the course and duration of the disease in each individual case, and this at so early a stage that as yet no threatening symptoms are present. Personally I have found this quite impossible.

Dr. Phillips is of opinion that "if the temperature is not very high, is accompanied by remissions, is not very irregular in its rises and falls, if the pulse is not very rapid or feeble, and if the patient does not seem greatly affected by toxæmia .....he might be spared the cold bath for a time at any rate." I admit that if it were possible to foresee with any approach to certainty a short duration in such a case, the omission might be occasionally made without grave risk. But there is nothing in the above description of symptoms to show that the fever will not last for many weeks, in which case much ground will have been lost irrecoverably. The omission will then appear especially regrettable, since it is in the early stage that severe refrigeration is well supported, and that most advantage is to be derived therefrom.

All who have practical experience of cold bathing are struck with the great relief to all pyrexial symptoms, the increased comfort and deep refreshing sleep which rapidly follow each immersion. None of them, therefore, could have been responsible for the statement that "the 9 who die have these repeated bathings added to their sufferings."

Dr. Phillips says of the treatment:—"Its infrequent use .....is due not so much to a doubt of its virtue as to its impracticability." This admission is most important, for it may be taken to mean that the long-standing prejudices as to the dangers of inducing shock, collapse, internal congestions, hæmorrhages, pulmonary, and other complications, are at length beginning to yield to the pressure of authentically recorded facts. It will now be chiefly necessary to deal with the mechanical difficulties of the system; and these have now been overcome at so many hospitals for so many years in different parts of the world that it can hardly be maintained that the metropolis of Great Britain is incompetent for the task. As a matter of fact, when once the system has been fairly started, the practical difficulties in hospitals, at any rate, are found to be altogether imaginary. The only conditions in which this is not so, are in the homes of the poor and ignorant, and it is a question whether typhoid should ever be treated in such surroundings. In the houses of the well-to-do the treatment is of course perfectly easy and quite satisfactory.

REFERENCES.

[1] Observations on the Treatment of Enteric Fever by Systematic Cold Bathing in the German Hospital, Philadelphia. J. C. Wilson, p. 10. [2] *The Cold-bath Treatment of Typhoid*, pp. 63, 108.

SPINDLE-CELLED SARCOMA OF RECTUM.

EXCISION OF RECTUM, WITH PRESERVATION OF THE SPHINCTER, BY SUBPERIOSTEAL RESECTION OF THE COCCYX AND PART OF THE SACRUM.

BY THOMAS CARWARDINE, M.S.LOND., F.R.C.S.ENG.,

[Assistant Surgeon, Bristol Royal Infirmary.

SARCOMA of the rectum is rare. Cases of lympho-sarcoma and melano-sarcoma have been described by Ball[1] and by Nepveu, and Cooper and Edwards[2] record a case of mixed-celled sarcoma of the anus. I have not met with any published record of a spindle-celled sarcoma of the rectum in Great Britain, and Mr. Harrison Cripps, whose experience in rectal pathology is great, has not himself come across any sarcomatous growths.[3] Mr. Ball (Dublin) describes two specimens of spindle-celled sarcoma of the anus and rectum respectively,[4] and Cooper and Edwards refer to a rectal case under Dr. R. J. Lewis (Pennsylvania).[5] In the museum of the Bristol Royal Infirmary I have come across a specimen removed by Mr. F. R. Cross described as a spindle-celled sarcoma of the rectum, and an examination of a microscopical section confirms that diagnosis.[6]

History.—J. B., a miner, aged 41, was sent to me in July last by a medical friend for what appeared to be undoubtedly cancer of the rectum. Three months previously the patient began to experience pain, difficulty, and bleeding on defæcation. The finger in the rectum detected a bleeding, fungating, rosette-like mass, about 2½ inches long and 2 inches broad, extending over the anterior and left lateral wall, everted and thickened at the edges, ulcerated in the centre, with its lower margin about 2½ inches from the anus, and its upper beyond the reach of the finger. It was hard and craggy, but freely movable with the mucous membrane.

Structure of Growth.—A naked-eye section of the growth is represented in Fig. 1, which shows the probable origin in the submucous tissue, its direction of growth, and its circumscribed character. The tumour was composed of glistening interlacing bundles of tissue. For a microphotograph I am

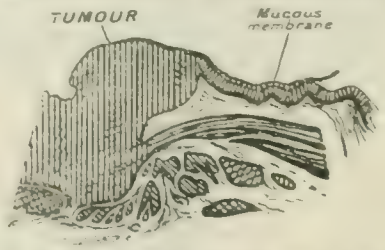


Fig. 1.—Naked eye section through edge of tumour.

indebted to my friend Dr. Jas. Taylor (Fig. 2, see p. 1812). The growth consists almost entirely of long spindle cells with a variety of oat-shaped nuclei, but here and there a large round cell or a large multinucleated cell is found.

Operation.—The method of operation presents some features of interest, and I venture to give the details on account of its facility and the excellence of its results. On July 29th left inguinal colotomy was performed in a few minutes without stitches by the method of Reclus, using a glass rod, and the gut was opened without anæsthesia a few days afterwards. This enabled the whole rectum to be flushed twice a day into a bedpan by means of a 4-pint douche of iodised water; so that at the date of operation (August 9th) the bowel was as clean and sweet as possible to be, and the area was neither obscured nor fouled by fæces.

The position was that recommended by Mr. Godlee—that is, with the buttocks projecting over the end of the table, with the left knee flexed at the side of the table resting on a stool. A clean incision was made over the coccyx and that

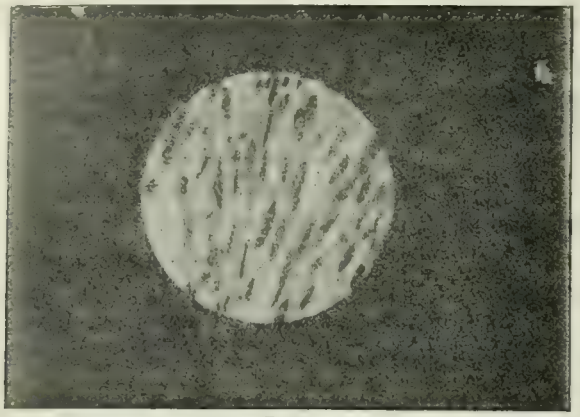


Fig. 2.

bone excised *subperiosteally*. The sphincter was then stretched and a sharp bistoury passed through the anus, transfixing at the upper part of the incision, and all the retro-rectal tissues cut through mesially with a rapid cut (Fig. 3). The tumour at once bulged into the wound, and it



Fig. 3.—Mesial retro-rectal section after subperiosteal resection of coccyx (median subperiosteal proctotomy).

was found necessary to excise the lower part of the sacrum subperiosteally. The rectum was then dissected horizontally with scissors just above the sphincter, and then on either side, the whole circumference of the bowel being raised except a narrow strip of healthy mucous membrane. The peritoneum was fully exposed for 3 inches by separation of the rectum from it, and the *mucous membrane* was divided transversely about 1½ inch above the growth (Fig. 4). This left a thick

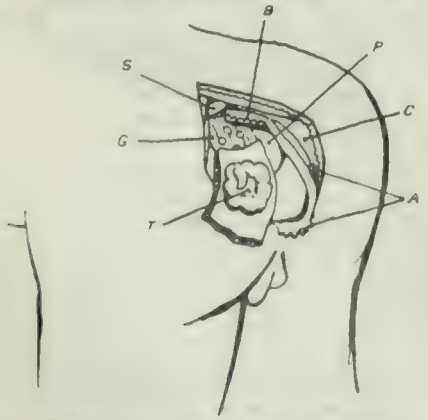


Fig. 4.—A, sphincter ani, right half; B, bowel, upper end; C, coccygeal periosteum; T, tumour; G, glands in presacral tissue; S, third piece of sacrum; P, peritoneum.

band of perirectal tissue, comprising that between the sacrum and peritoneum, in which were about a dozen enlarged glands. This tissue was separated high up into the hollow of the sacrum, where by means of a right-angled double-edged palate knife it was divided across. A few catgut sutures were applied to the mucous membrane, iodoform gauze was inserted into loose spaces, and the sacral wound stitched up with silkworm-gut sutures except for a small gauze drain below.

After-History.—After the third day the lower bowel was irrigated daily with iodine water through the lower colotomy orifice. The sacral wound healed by first intention, the stitches being removed on the ninth day. During this time the temperature touched 99° on one occasion only. On August, 19th, Mitchell Banks's method for reducing the colotomy spur was employed, and on August 23rd an extra-peritoneal operation was done for closure of the colotomy opening. A month later rectal sensation and control returned, and continued to improve so that he was able to walk about and control his motions. When he left on October 13th, much improved in appearance and weight, there was no sign of stricture, he had control over his fæces, and the finger in the anus was gripped by the sphincter, which exhibited muscular action on straining. The sacrum was completed, and a partial coccyx had reformed from the periosteum. A small colotomy fistula remained, and will require subsequent closure.

REMARKS.

Whilst this method, which we may call subperiosteal proctotomy, can have no disadvantages except those incidental to a preliminary colotomy, it seems to have numerous advantages, and to give great freedom of exposure without the very grave risks of Kraske's operation. Some of the advantages may be enumerated.

1. The purity and visibility of the empty and cleansed rectum, enabling all the parts to be clearly seen, and the peritoneum retracted as the dissection of the rectum from it proceeds.

2. The very free exposure of the whole, and the ability to dissect up the presacral tissue in continuity and divide it high up.

3. The asepticity of the operation performed as described.

4. The preservation of the sphincter ani with its mucous membrane, and thus of the rectal sense with subsequent fæcal control.

5. The preservation of the nerve supply to the coccygeus levator, and sphincter ani by subperiosteal resection of the coccyx and mesial proctotomy.

6. The renewal of the bony coccyx and sacrum from the periosteum, and thus the preservation of the natural coccygeal attachments of the coccygeus, levator, and sphincter ani.

7. The satisfaction to an operating surgeon of simple, safe, clean, and complete procedure.

REFERENCES.

1 Ball, *Rectum and Anus*, 1894, p. 342. 2 Cooper and Edwards, *Rectum and Anus*, 1892, p. 206. 3 Cripps, *Diseases of Rectum*, 1890, p. 336. 4 Ball, *Op. cit.*, p. 342. 5 Cooper and Edwards, *Op. cit.*, p. 206. 6 See also discussion, Pathological Society, BRITISH MEDICAL JOURNAL, November 19th, 1898, p. 1555.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

INTESTINAL ANTISEPTICS IN DIABETES.

DR. MONCKTON'S memorandum on the above subject in the BRITISH MEDICAL JOURNAL of November 19th is very interesting, and, as he has started the subject, it may be opportune to give the details of two cases treated on similar lines.

The first was our coachman, a fair-haired man of about 23, who fainted when driving me in October, 1895. I then found that he had been suffering for some weeks from neuralgia, constipation, frequent micturition, and progressive debility. He said he could hardly sit up when driving, and that a friend had been doing stable work for him. He had not named his symptoms as he was afraid of losing his situation. I found

the urine contained a good deal of sugar, and began treatment with a mixture containing strychnine and boracic acid, the latter being given to relieve irritability and pain in the bladder, and without any idea then that it would relieve the disease. I found it impossible to diet the man to any extent, and comforted myself with a casual remark of Sir William Broadbent, years before, to the effect that it was difficult to see what good could result from restraining the ingestion of carbohydrates; the more given by the mouth the more would appear in the urine, but that probably only showed that digestion was not efficiently performed. At any rate, the man was not dieted, and the sugar steadily decreased in amount. He complained that the medicine prevented his eating, and a small quantity of liquor arsenii hydrochloratis was added. The bladder trouble having ceased, an iron and arsenic mixture was given, and the improvement continued until, in two months' time, there was usually no sugar. After a three months' holiday he returned to work, and has been driving me ever since, nearly three years, in all weathers, with only a very slight relapse two years ago. He took tabloids or jujubes of Blaud, arsenic, and strychnine, for three months longer.

The second case was a dark-haired boy of about 18, then (January, 1897) employed on a farm. He was so weak when first seen that he could not turn round in bed by himself. He was passing very large quantities of urine, sp. gr. 1045. The yeast test brought the specific gravity down to 1002-1005. He was cyanosed and in a most alarming condition. I ordered skimmed milk as diet and the following mixture: ℞ Acidi borici gr. xx, glycerini ℥j, liq. arsenici hydrochlor. ♏v, liq. strychninæ hydrochlor. ♏x, aquam (calentem) ad ℥j. He steadily improved and the later treatment was the same as in the first case—namely, pills or tabloids of Blaud, arsenic, and strychnine in large doses. In three months he was quite well, has had no return yet, and is now coachman to a medical neighbour.

The first case was much the least severe, but Dr. Carlyon, of Truro, very kindly looked at the man for me, and gave a grave prognosis on account of his age, aspect, and the large quantity of sugar passed.

The complaint is rare here, and I have not seen a well-marked case since; but in a case of polyuria in a girl of 20, who passed daily 4 to 6 quarts or more, free from sugar, the same treatment had no effect. My partner, who is treating her, finds that large doses of antipyrin control the polyuria to some extent and improve the general health.

Newquay, Cornwall. N. E. Norway, M.R.C.S., L.R.C.P.

PHLEGMONOUS ULCERATION OF THE MOUTH TREATED WITH ANTISTREPTOCOCCUS SERUM.

On October 22nd I saw a somewhat delicate-looking lad, aged 16, who complained of toothache. He was apprenticed to a carpenter, but had done no work for a fortnight, as he had not felt well. Finding no carious teeth, I ascribed the pain to neuralgia, and prescribed quinine, potassium bromide, and gelseminum. This seemed to give temporary relief, but the pain returned the following night, and gradually grew worse. On October 24th I found him in great pain; the temperature was 103°, pulse 130, the tongue dry and thickly furred; the lips swollen, and the gums of a blue-black colour. The breath was particularly offensive. A mixture of quinine was prescribed, and a colocynth and hyoscyamus pill administered, the latter soon causing a free evacuation of the bowels.

The following day all the symptoms were aggravated, and the breath was horribly offensive. The gums were hanging in shreds, and rapidly sloughing. A continuous stream of dirty watery saliva was running from the mouth. The face was swollen, and the lymphatic glands in the parotid and submaxillary regions greatly enlarged and tender. Iron and quinine were given, and a powder of boracic acid and iodoform dusted on the gums, the boy being directed to wash out the mouth from time to time with a weak solution of potassium permanganate; liquid nourishment was taken well.

The condition of the patient gradually becoming more serious, Dr. S. H. Snell saw the case in consultation on October 29th, but to both of us it was inexplicable.

For some days the patient remained in a very critical condition, and then the symptoms suddenly subsided, and rapid improvement took place. The temperature came down to 99°, the tongue became clean and moist, and the fœtor entirely disappeared. All went well, and the boy seemed on the high road to recovery, until November 16th, when there was a rise in the temperature to 102°. On November 17th he was much worse; the temperature was 104°, the pulse 140, and the breath horribly fœtid. I found the soft palate sloughing, deep ulceration on the left side of the tongue, and a large oval sloughing ulcer on the dorsum. *Râles* and crepitations were heard on examining the lungs, with impaired resonance behind; a low septic type of pneumonia having evidently set in. Towards evening the boy became delirious, and I injected 10 c.cm. of antistreptococcus serum. A remarkable improvement took place, and at 11 P.M. the lad sat up in bed, was quite cheerful, and drank a large cup of cocoa, afterwards passing a good night. Next day (the 18th), about noon, a relapse ensued, and I injected another 10 c.cm. of the serum. This time no effect was observed, the patient gradually sinking; death taking place at noon on November 20th.

Remarks.—Whist attending the above case I have searched the works of most leading authorities, but can find no case at all resembling this. On first seeing the boy I naturally thought of acute mercurial poisoning, but on investigating the case found that theory quite untenable. The family history was good, there being no trace of either syphilis or tubercle. My former teacher, Mr. Moynihan, of Leeds, tells me that Mikulicz, in his recently published book (which I have not had an opportunity of seeing) describes a somewhat similar case, which he terms "phlegmonous stomatitis." In my case there was no trace of periostitis, and the disease, so far as I can see, must have been produced by some virulent micro-organism, and be closely allied to cancrum oris. This theory would be borne out by the effect of the first injection of antistreptococcus serum. I regret I did not try the serum earlier, when possibly it would have been more efficacious.

Grays, Essex. Oliver Smithson, M.R.C.S.

A CASE OF SEROUS CATARRH OF THE MIDDLE EAR PRODUCED BY THE ADMINISTRATION OF POTASSIUM IODIDE.

In the autumn of 1897 I was consulted by a patient who was suffering from secondary syphilis. He had contracted a primary sore four months before, and had been treated by mercurial inunction. When I saw him he was covered with a secondary syphilitic rash and had a typical syphilitic sore throat. He also complained of deafness of the right ear, and said he had had a discharge from the ear at times as long as he could remember, and had been slightly deaf, but that since the rash had come out on his body the deafness had increased and there had been more discharge.

I found the meatus filled with a thick purulent discharge, and on clearing this out a large perforation could be seen. The left ear was quite sound and the hearing perfect. I put him on a mixture containing potassium iodide, gr.iij, to be taken three times a day, and ordered a pill of mercury and chalk (gr.ij) at night. In five days he came back to me complaining of a "bad cold." There was profuse discharge from the eyes and nose and also a great deal of watery discharge from the right ear. He also complained of being completely deaf in the left ear, and on examining this ear I found all the conditions of serous catarrh. The upper part of the membrane appeared to be indrawn, while the lower portion was dark, and there was the appearance of a darker line separating the upper from the lower part of the membrane about the level of the handle of the malleus.

The patient stated that his hearing seemed to alter with the movements of his head. On inflation the hearing greatly improved but the improvement was soon lost. On examination of the ear after inflation, what appeared to be bubbles were to be seen. He stated that the deafness came on suddenly after he had been taking the medicine for three days, and at the same time that he began to run at the nose and eyes.

I discontinued the potassium iodide, and at the end of the week I again saw him, and he was then hearing again well, and all symptoms of iodism had disappeared. I put him on gr. vj of potassium iodide but the deafness and symptoms all returned, so I put him on sodium iodide, commencing with

3-gr. doses three times a day. The patient did well. He continued this treatment and had no return of the symptoms, and I increased the dose gradually to 20 gr. three times a day.

I think that this result of potassium iodide is unusual. The case is of interest also as showing one fact which I have often noticed—that sodium iodide is well borne when potassium iodide is not tolerated. I have also found that symptoms of iodism are produced with small doses of potassium iodide which is not the case when the dose is increased, but in this case the symptoms were rather worse with 6 gr. than they were with 3 gr.

Hertford Street, W. HERBERT M. RAMSAY, F.R.C.S.Edin.

A FATAL CASE OF HYDATIDIFORM MOLE.

On October 18th, 1898, I was consulted by Mrs. H. B., aged 35, whose only complaint was slight swelling of the ankles and legs. As she believed herself to be about 5 months pregnant, I considered her condition nothing unusual, so only prescribed a saline laxative and enjoined rest.

On the afternoon of October 19th, severe flooding suddenly set in, and on the next morning a hydatidiform mole the size of a large placenta came away. When I was called in I found the patient blanched, faint, and almost collapsed, and on thoroughly exploring the uterus bimanually, it was found to be practically empty, only a few vesicles being brought away. I administered a full dose of ergot in brandy, and she began gradually to recover.

To assist involution a course of ergot was given, and on October 20th she seemed better in every way, and on the next day was able to sit up in bed for a few minutes. She did not seem so well on October 23rd, and complained of slight dyspnœa, which I took to be anæmic, so that saline solution was administered by the rectum. The dyspnœa gradually increased, and on October 25th she was much worse and had to sit up in bed owing to the breathlessness, which was now quite apparently due to embolism and subsequent thrombosis of the pulmonary arteries. Ether, ammonia, and brandy were given to stimulate and maintain the action of the heart, which had become feeble and irregular, but the patient gradually sank and died the same afternoon in great distress. There was no *post-mortem* examination.

Kingsland Road, N.E. DAVID ROSS, M.D.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BRISTOL ROYAL INFIRMARY.

A CASE OF CIRRHOSIS OF THE RIGHT LUNG, WITH REMARKS.

(Under the care of HENRY WALDO, M.D., M.R.C.P., Physician to the Infirmary.)

A DELICATE-LOOKING boy, aged 10 years, admitted on August 31st, 1898, complained of having had a cold and cough for a long time. The family history was good. He had never been exposed to dust. A moderate amount of fœtid phlegm was expectorated, chiefly in the early morning. There was no hæmoptysis.

The chest was narrow and the right shoulder much lower than the left. The vocal fremitus and resonance was increased all over the right chest, which was much contracted. The percussion note was much impaired over the right side as well as over the left apex in front. There was a friction sound with a little sibilus all over the right lung. At both apices behind harsh breathing with rhonchus and sibilus could be heard. At an area just inside the angle of the scapula on the right side there were signs of a cavity. The expectoration was stained for tubercle bacilli upon five occasions with a negative result. The heart's apex was beating outside and an inch below the right nipple, and the cardiac dulness was limited to the right side. There was sometimes a systolic murmur audible over the apex, with the second sound sharp and distinct. The pulse, 72, was regular and equal in both wrists. The appetite was good, the bowels regular, and the tongue clean. The urine was acid, specific gravity 1025, and contained no albumen or sugar.

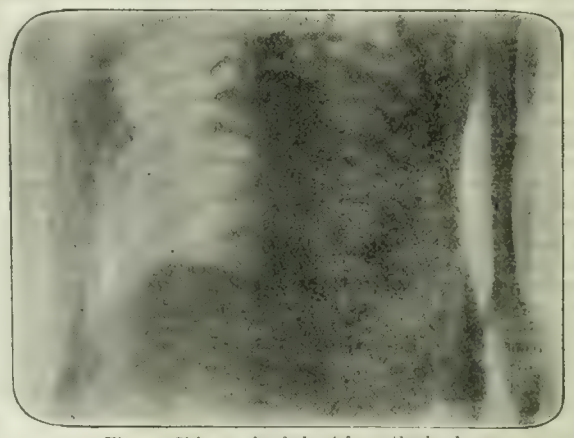


Fig. 1.—Skiagraph of chest from the back.

The term "cirrhosis of the lung" was first used in 1838 by Sir Dominic Corrigan for an affection of the pulmonary tissue, consisting in a replacement of its alveolar structure by a fibroid material, histologically analogous to that which in the liver causes the disease known as cirrhosis of that organ. Cirrhosis of the lung is either local or diffuse. Local fibroid change in the lungs is common. It is a constant accompaniment of tubercle, and in every case of phthisis the chronic interstitial changes play a very important part. This is quite distinct from the fibrosis or cirrhosis as it occurs in the right lung of this patient. In this case the fibrosis is diffuse and affects nearly the whole lung, and it is probably quite unconnected with tubercle, being, in fact, a diffuse interstitial pneumonia.

The fact that we have failed to find tubercle bacilli in the sputum would not, of course, prove that this case is non-tuberculous. Since the discovery of the tubercle bacillus in 1882 by Koch writers upon this subject differ somewhat as to whether diffuse cirrhosis of the lung is tuberculous or non-tuberculous, but the majority are of opinion that it has nothing to do with tubercle. One cannot see why fibrosis quite apart from tubercle should not occur in the lung as it does in the liver, or in the kidney as chronic interstitial nephritis, or as it does in the spinal cord in sclerosis. It has been suggested that the fibroid process begins with tubercle, which subsequently aborts. The cirrhosis in some cases appears to follow lobar pneumonia in which resolution does not take place; a gradual process of organisation goes on in the fibrinous plugs within the air cells, and the alveolar walls become greatly thickened by the new growth. Wilks and

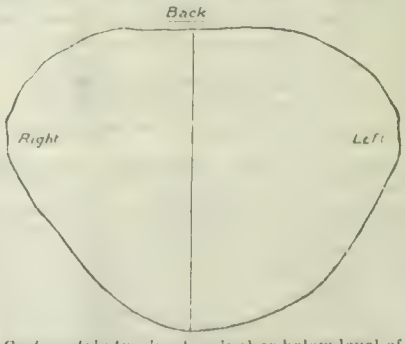


Fig. 2.—Cystometric tracing two inches below level of nipple.

Moxon state decidedly that this cirrhotic process commences in the alveoli and their walls. It may also follow broncho-pneumonia, the fibrosis extending from the bronchi. Or the lung may be invaded from the pleura, the lung substance being invaded from the surface by extension along the inter-lobular septa. This form is called by Charcot pleurogenous interstitial pneumonia, or it may be brought about by both

acquired or congenital syphilis. The bronchial tubes, as in this case, are nearly always dilated, and bronchiectasis with the secretion of fœtid muco-pus, which is paroxysmally expectorated, render the patient liable to septicæmia.

The most striking physical sign in this boy was the extreme displacement of the heart, the apex of which appeared to be beating outside the right nipple; where it had been pulled by the contracting fibrous tissue of the right lung. At first sight transposition of the viscera might suggest itself as the explanation, or the absorption of a left pleural effusion leaving the heart fixed to its altered position. As a result of the displacement and uncovering of the heart systolic murmurs are often produced at the base. Such murmurs are probably due to traction of the lung on the aorta or pulmonary artery, producing a slight narrowing of the vessel.

For the skiagraph I am indebted to Mr. James Taylor, M.R.C.S., skiagraphist to the Bristol Royal Infirmary.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

T. Bryant, M.Ch., F.R.C.S., President, in the Chair.

Tuesday, December 13th, 1898.

Death of Sir Wm. Jenner, Bart., M.D.

The President referred in sympathetic language to the death of Sir William Jenner, Bart., a former Vice-President of the Society, whose hard work, industry, and force of character had raised him from a comparatively obscure position to one of universal honour.

An Improved Method of Treatment of Separation of the Lower Epiphysis of the Femur.

Mr. J. Hutchinson, jun., and Mr. H. L. Barnard, in this paper, advocated that in all cases of separation of the lower epiphysis of the femur with displacement, the treatment with extension of the knee should be given up; and they showed by a considerable number of cases with skiagraphic records that it was easy both to obtain reduction, and to maintain it by flexing the knee so that the heel touches the buttock. This position was readily tolerated by the patient, and after ten days or a fortnight the limb could be put up on a Macintyre splint, and subsequently gradually straightened. It was argued that weight extension in the treatment of this injury was quite useless, and that the adoption of the full flexion method would not only greatly simplify the treatment, but would lessen the risk of shortening, would secure a better knee-joint, and in some cases might result in saving the limb. Attention was drawn to the disastrous results of compound separation of the epiphysis. Out of 30 collected cases, only 6 recovered with a useful limb. The full flexion method was perfectly adapted to compound cases. It was a further development of the plan of treatment on a Macintyre splint, flexed to about a right angle, and had distinct advantages. It was further maintained that the character of the displacement when the epiphysis was separated was more constant than was generally supposed. The accident occurring when the knee was hyperextended, it was the epiphysis which was nearly always drawn forwards, and the diaphysis which projected backwards into the popliteal space. At the same time some rotation or twisting of the leg, and corresponding projection of the diaphysial end, was not infrequent. Cases were brought forward illustrating the difficulty of diagnosis and of making certain whether reduction was properly effected by the old methods, and skiagraphs were appended proving the persistent tilting forwards of the epiphysis. It was, however, shown that a remarkable moulding and production of new bone occurred in the course of time, so that a much better ultimate result was obtained than might have been expected. Evidence was given that even when some displacement persisted the bone continued to grow in a normal manner. Probably nothing was so likely to damage the epiphysial disc as prolonged forcible efforts at reduction, such as have been recorded in many cases; and the authors maintained that this risk would be removed by the adoption of the full flexion treatment.

Mr. Jonathan Hutchinson, sen., said that in his twenty-five years of surgical work at the London Hospital he had never had one of these cases of separation of the lower epiphysis of the femur under his own care, though he had seen and examined cases under his colleagues' care. It was important to distinguish the cases where the separation was partial—that is, where the epiphysis and diaphysis were still touching each other at some point—from cases of complete separation, where there was absolutely no contact. He was doubtful whether the method of full flexion advocated would be of use in the latter category, which was the most difficult to reduce. When once the lower epiphysis of the femur had been replaced on the diaphysis, the risk of fresh separation was very small indeed—less, indeed, than in a dislocation, because the contiguous surfaces were so wide; it was therefore unnecessary, he thought, to maintain the flexed position. Separation of the upper epiphysis of the humerus was more analogous than the separation of the lower humeral epiphysis to separation of the lower epiphysis of the femur, as the surfaces were wide and broad, whereas at the lower end of the humerus the diaphysis was a mere ridge of bone. He had seen many cases of separation of the upper epiphysis of the humerus, but none of them had been complete. In cases of separation of the lower humeral epiphysis he had obtained good results by methods other than that of full flexion. Still he considered the method a valuable one for certain cases.

The President saw his first case of separation of the epiphysis while dresser to Mr. Aston Key, at which period this lesion was not recognised, and since that time he had been alive to these lesions. The distinction between complete and partial separation of the epiphysis was very important.

Mr. A. Pearce Gould said that the paper, which was of great practical use to surgeons, was largely due to skiagraphy. The accurate diagrams shown by the authors rendered discussion difficult, for there could be no two opinions as to the success of the treatment. The method of full flexion made the epiphysis retrace its steps, for its separation was due to over-extension. He was inclined to think that when the epiphysis was completely reduced full flexion was no longer necessary.

Mr. A. Barker insisted on the valuable facts and deductions contained in the paper, and inquired whether any bad results followed full flexion of the joint, and whether there was any evidence to show how long the epiphysis took to unite.

Mr. H. L. Barnard, in reply, said that in probably three of their cases there was complete separation of the epiphysis. The limb should be maintained in the position of flexion after reduction had been effected, because there was, it appeared, some risk of separation recurring, and because it was simpler than a splint. No bad results followed keeping the joint flexed for two weeks. This method did not apply to all cases of separation of the lower end of the humerus, and was not suitable for young children where the periosteum was weak.

CLINICAL SOCIETY OF LONDON.

Friday, December 9th, 1898.

John Langton, F.R.C.S., President, in the Chair.

Lingual Chancre from Indirect Contagion.

Mr. Campbell Williams described this case, which tended to show that the virus of syphilis could remain active in the dried state for over two months. The vehicle for the dried virus was the mouthpiece of a set of bagpipes that had been played upon by a syphilitic subject, and then put away for two months, when the owner used them and developed a hard sore of the tongue and the usual secondary syphilitic sequelæ, the chancre appearing either twenty or thirty days after the presumptive infection. The only other solution of more recent exposure to some other source of infection was strenuously denied. The history of the case was in favour of the patient's statements and condition.

Mr. Clement Lucas admitted the probable correctness of the explanation, observing that there was no more absurdity in the preservation of dried syphilitic virus than of dry vaccine virus on the old ivory points. He related the case of a man, aged 60, in whom a chancre occurred on the site of an abrasion of the tongue, caused by a dental plate, and in which the infection was believed to have been accidentally caused through a glass or pipe.

Mr. Campbell Williams, in reply, mentioned another case in which a patient had a chancre on a pimple over the

trochanter, due almost certainly to infection from seat of a W.C.

Pancreatic Calculi.

Mr. A. Pearce Gould read a paper on a case of pancreatic calculi, one of which obstructed the bile duct. The patient was a man, aged 46, whose only previous illness was an attack of influenza four years before. In September, 1895, he noticed some failure in health, and in November he suffered for a few days from severe pain referred to the umbilicus, chiefly felt on walking up hill. He became jaundiced, and this persisted until February, 1896, when he came under observation. The liver was then enlarged nearly down to the umbilicus; the gall bladder could be felt distended as a cylindrical swelling in the right lumbar region; there was no ascites. The motions were clay-coloured. On February 14th he explored the abdomen. Through a vertical incision to the right of the rectus muscle, half a pint of fluid was withdrawn from the gall bladder by aspiration. A lump was felt at the back of the small omentum, which proved to be a coral-like stone in the dilated duct of Wirsung, and other smaller calculi were found and removed. The operation did not relieve the obstruction to the flow of bile, and on March 3rd the man had an attack of agonising pain in the right hypochondrium. He reopened the abdomen, and with some difficulty was able to feel a stone in the head of the pancreas close to the duodenum, which he removed by incising the pancreas from the front, and he was then able to pass a probe through the duct into the duodenum. Soon after the operation bile was vomited, the stools became coloured, and bile ceased to flow from the incision in the gall bladder. Notwithstanding this, vomiting persisted, and he died of exhaustion the twelfth day after the second operation. *Post mortem* a little pus was found underneath the gall bladder, and also behind the ascending colon. The pancreatic duct was found to be dilated and ulcerated. There was a hydatid cyst at the back of the liver. The calculus was composed of phosphate and carbonate of lime.

Mr. T. H. Kellock described the case of a man, aged 56, who had acute abdominal pain, followed directly by jaundice. A fortnight later he had a second and similar seizure. On admission he was deeply jaundiced, and his liver was much enlarged. Ten days afterwards he had a rigor and severe pain at the liver, and three days later he passed a small concretion; subsequently the jaundice decreased, but he gradually sank, and died of exhaustion. At the necropsy the liver was enlarged and gall bladder dilated; and in the head of the pancreas, in a dilated portion of the duct, was another calculus of the size of a cherry stone.

The President remarked that jaundice was a notable feature of such cases, and he inquired how near the calculus was to the union of the pancreatic duct with the bile duct.

Mr. Gould, in reply, said the cavity in which the stone lay was half an inch from the union of the ducts, and pressed on both. That it caused the jaundice was proved by the passage of bile and disappearance of the jaundice directly after the removal of the stone.

Hæmorrhagic Pancreatitis.

Mr. A. D. Fripp and Dr. J. H. Bryant related a case of acute hæmorrhagic pancreatitis. The patient was a man, aged 42, admitted to Guy's Hospital on September 18th, 1898. He was seized with pain two days before and was admitted in a state of collapse. The pain was chiefly above the umbilicus. An exploratory laparotomy was performed at once. No obstruction was found. There was a good deal of blood-stained peritoneal fluid, the abdomen had a shotty feel, no necrotic nodules were found, and there was extreme contraction of the small intestine at places. The abdomen was closed and he died forty-eight hours later. The necropsy was performed eleven and a half hours after death. The body had a bloated appearance and there was great increase of subperitoneal and subcutaneous fat. The omentum was large and thick. Extensive fat necrosis was found in the omentum, mesocolon, fat round the pancreas, and the subperitoneal fat both visceral and parietal. There was extensive hæmorrhage into the fatty tissue around the pancreas, in the gastro-splenic omentum. The pancreas was twice its normal size, of a dull dark purplish colour, and infiltrated with blood. Patches of fat necrosis were also visible in the interlobular tissue of this organ. The stomach, duodenum, and the rest of the intestine presented a normal appearance except for a little ecchymosis around the cardiac orifice of the stomach. The heart weighed 13 oz., the valves and blood vessels were normal in appearance. Under microscopic examination the most striking change noticed in all the sections was the enormous amount of blood present, beneath the capsule of the organ, in the interstitial tissue between the lobules, between the acini themselves around the ducts, and in the fat cells and intercellular spaces of the periglandular connective tissues. A good many patches of fat necrosis were seen in the interlobular and periglandular tissues. The glandular acini immediately adjacent to these areas were in various stages of necrosis, and beyond these, again, the cells of the acini showed cloudy swelling, and their nuclei were faintly stained and indistinct. Apart from these areas there was very little evidence of any parenchymatous inflammation, the nuclei and protoplasm of the cells staining well with the various reagents. The pancreatic ducts were not obstructed, the cells presented a normal appearance. In the fibrous tissue of and around the ducts a good deal of blood was seen. The fat necrosis presented the usual features characteristic of that condition. Sections stained with methylene blue showed a few rod-shaped bacilli in the blood throughout the organ. There were no bacilli in the pancreatic ducts. Sections of the nerves and ganglia from the pancreatico-duodenal plexus were examined, but nothing abnormal was found. Cultivations were taken from the centre of the body of the pancreas with strict precautions to prevent the possibility of any accidental contamination and a pure culture of the bacillus coli communis resulted. The pathological process in this case appeared to be a primary acute interstitial inflammation associated with the presence of the bacillus coli communis, and characterised by extensive hæmorrhage as stated above, and by secondary necrosis and inflammation of the parenchyma in the immediate vicinity of areas of fat necrosis. The distribution of the bacilli suggested the blood vessels as the probable channel of infection. Two other cases were mentioned in which bacteriological examinations were made by Mr. Pakes, Demonstrator of Bacteriology at Guy's Hospital, the bacillus coli communis being obtained in pure culture from the pancreas in both instances. A similar fully reported case by Dr. Moore[1] was referred to in which a pure culture of the bacillus coli communis was also obtained, and in which the channel of infection was thought to be the lymphatic spaces. (Microscopical specimens were shown demonstrating the above-mentioned observations.)

Acute Pancreatitis.

Dr. Newton Pitt and Mr. Jacobson contributed a paper on 5 cases, which was read by Dr. Pitt. The first case was one of acute hæmorrhagic pancreatitis. A cornchandler, aged 42, temperate, had three attacks of severe abdominal pain, with vomiting, each lasting about an hour, in August and September, 1898. On November 12th he had another attack of intense pain, with vomiting and constipation. The pulse was 120, and abdomen rigid. On the 14th he had severe diarrhœa, temperature 100° F., and a swelling in the upper part of the abdomen. He was seen by Dr. J. Young (Stamford Hill) who brought him to Guy's Hospital. The man was extremely ill and difficult to examine. A retroperitoneal tumour with impaired resonance was found above the umbilicus, the motions were normal in colour, but the man was so ill that it was thought better to defer any operative interference. Under examination the urine was found to contain albumose; there was marked leucocytosis (22,500 per c.mm.), and the tumour lay behind the stomach (pushing forward the duodenum, and greatly distending the former). The evidence pointed to a pancreatic cyst, or an abscess in connection with either pancreas, gall bladder, or gastric ulcer, or a rapidly growing sarcoma. As the tumour was increasing in size, Mr. Jacobson decided to open the abdomen, and found extensive fat necrosis, and the tumour with the lesser omentum intestines and stomach matted to it. The oozing from every part when disturbed was excessive, and the firm feel of the mass prevented any radical treatment. The abdomen was closed, and the patient died next day. At the necropsy there was an abscess cavity some four inches across, in front of which was the stomach and lesser omentum, and behind

[1] *Medical Chronicle*, August, 1898.

lay the sloughy pancreas. The second case was a retrogastric pancreatic abscess. A middle-aged lady was seen by Dr. Pitt some years ago for intense abdominal pain and vomiting. She was found to have a large abscess behind the peritoneum in the right loin, where it was opened. Most of the pancreas had disappeared; the abscess occupied its site. It was now clear that this was a case of acute pancreatitis. The third case was one of acute hæmorrhagic pancreatitis. A woman, aged 70, was seen by Mr. Leedham Fuller (Streatham) on October 16th, 1898, for intense epigastric pain, with sickness and collapse, after an unsually good breakfast. The pain was not relieved by the vomiting. There was a constant desire to defæcate, which was not relieved by an enema, which brought away a constipated motion containing particles of fat. There was slight tympanites, which steadily increased until death, forty-eight hours later. She was said to have had a similar attack eighteen months previously. The necropsy showed fat necrosis of the omentum and acute hæmorrhagic pancreatitis. The fourth case was one of acute suppurative pancreatitis. Mr. G., aged 33; alcoholic, on November 12th, 1863, at 2 A.M., took a draught of cold water: at 3 A.M. he was seized with intense epigastric pain with vomiting. The symptoms quieted down on the 17th. On the 24th a pulsating tumour imperfectly resonant on percussion was noticed above the umbilicus; this became less distinct in the knee-elbow position; the pain ceased. The vomiting returned at the end of January, and he died on February 8th from exhaustion. *Post mortem* it was found that the omentum formed a black puckered mass, the stomach was greatly distended; the lesser sac of the omentum contained a well-defined abscess above and behind the stomach. The greater part of the pancreas was healthy, but some distended ducts communicated with the abscess. Case v, a publican, aged 60, had had severe abdominal pain and vomiting for three months, the attacks recurring every three or four days. For four years he had had attacks of gastric pain from time to time. On admission under Dr. Habershon there was a tender pulsating tumour in the upper part of the abdomen. He vomited frequently, and died of exhaustion. *Post mortem* some early peritonitis was discovered and a minute opening was found in the mesocolon leading to an abscess cavity behind the stomach, and filled with a brown fluid. At the posterior part of the abscess 2½ inches of necrotic pancreas were found. There were numerous nodules of yellow concrete matter in the wall of the cyst (probably fat necrosis).

The PRESIDENT described a case which he had seen. A man, aged 50, was seized with sudden vomiting and umbilical pain, and soon afterwards a tumour appeared above the umbilicus. He had vomiting and diarrhœa, and lost flesh rapidly. The tumour pulsated as he lay in bed, but in some positions pulsation ceased. He advised an exploratory operation, but first did paracentesis, and withdrew 11 pints of blood-stained ascitic fluid. The ascites did not return, but the tumour became more prominent, and two weeks later laparotomy was performed. A tumour was found behind the transverse colon; it was aspirated, and 7 pints of blood-stained fluid escaped. The blood sac was connected with the pancreas. He made a good recovery, but died two years subsequently of sudden hæmorrhage from the bowel. *Post mortem* it was found that the pancreas was nearly destroyed, and that the cicatrix almost occluded the portal vein, and caused the sudden fatal hæmorrhage. Whether at first it was a form of acute pancreatitis that had led to the formation of the cyst he could not tell.

Mr. BOWLBY thought that probably some of the cases included under this heading were due to embolism, others to injury or infective inflammation. The sudden onset of the attack and necrotic condition of the pancreas looked as if they were due to blockage of the artery. Had the condition of that vessel been observed in any of the cases? He had seen a lady in the country who had been suddenly seized with abdominal pain that caused her to scream and become collapsed. The symptoms at first pointed to perforating ulcer of the stomach, and morphine was injected, but after twenty-four hours the symptoms more resembled those of acute intestinal obstruction. She was fed by enemata. He first saw her forty-eight hours after the seizure; the pain was then partly subdued by the morphine; she was vomiting, had passed flatus *per rectum*, and the vomit was never stercoraceous. He operated, and found no obstruction, but the whole of the great omentum was covered with necrotic patches of fat. The pain was relieved by laparotomy, and recovery seemed in view, but after three days she became delirious, passed a liquid motion and died. He thought her case was one of acute pancreatitis caused by sudden embolism of the artery; but there was no necropsy.

Dr. PITT, in reply, pointed out that it was curious there were scarcely any cases of acute pancreatitis in the medical museums of London. At first sight the necrotic fatty patches were apt to be mistaken for tubercles crowding the omentum. Cases of pancreatitis were not now very rare; it was incredible that they did not formerly also occur.

Dr. BRYANT, in reply, quite agreed with Dr. Pitt's view that suppurative and gangrenous pancreatitis were later stages of the acute hæmorrhagic form, and he pointed out that the sections exhibited favoured this view. They showed numerous areas in which the following changes could be demonstrated: (1) Fat necrosis in the interlobular and periglandular tissues; (2) necrosis of the cells of the peripheral acini immediately adjacent to the fat necrosis; (3) cloudy swelling of the cells of the acini beyond the area of necrosed cells. He also agreed with Mr. Bowlby that some of the cases with a very acute onset might be due to embolism of the pancreatic arteries. These arteries had not been specially examined in the two specimens exhibited. The heart and large vessels however presented no signs of endocarditis, atheroma, or thrombosis. He said that an examination should be made and the result reported to the Society.

MEDICAL SOCIETY OF LONDON.

EDMUND OWEN, F.R.C.S., President, in the Chair.

Monday, December 12th, 1898.

TRANSPERITONEAL LIGATION OF THE ILIAC ARTERIES.

MR. BERNARD PITTS observed, by way of preface, that his paper would be more correctly described as "Two Cases of Ligation of the Iliac Vessels"—(1) of the internal iliac for pulsating tumour of the buttock, and (2) ligature of the common iliac for hæmorrhage from a pelvic abscess. Case I: A man, aged 41, came in January, 1894, with a pulsating swelling of the right buttock, first noticed in October, 1893. There was a history of a fall on the sacrum five years before, and a doubtful history of syphilis. The swelling was most prominent, and pulsated most distinctly at a point just external to the right sacro-iliac synchondrosis. It extended from the middle of the sacrum to a point 5 inches external to this, and from the crest of the ileum to a point 5½ inches below. It was firmly fixed to the deeper structures, but the skin over it was not adherent. There was no obvious glandular enlargement. The pulsation was somewhat expansile in character, and there was a loud *bruit*. Pulsation was diminished by pressure along the line of the iliac crest. He thought it was a case of pulsating sarcoma. On February 3rd he made an incision in the median line of the abdomen, dividing the posterior peritoneum also in the middle line, reflecting it to the right, carrying with it the ureter. He was unable to find the internal iliac artery, so to gain more room he made a transverse incision through the greater part of the right rectus muscle. Still failing, as he believed, to find the internal iliac, he exposed and ligatured what he believed to be the common iliac, using two goldbeaters' skin ligatures. After drawing them tight, however, it was found that pulsation still continued in the femoral vessel, and on further examination the external iliac artery was found lying to the outer side of the ligatured vessel, and the internal iliac artery was abnormal in its course. The common iliac was very short and the internal correspondingly long, lying in almost the whole of its course above the brim of the pelvis parallel with the external vessel. By ligature of the vessel all pulsation was arrested in the tumour. The relief afforded by the operation was at first very marked, but a week later some pulsation returned, though it never returned to the same extent as before the operation. On the sixtieth day, when the patient turned over in bed, spontaneous fracture of the right femur took place just below the great trochanter, and this established the diagnosis of sarcoma. He continued in a bedridden and distressing condition, and on the 158th day the limb was removed. No evidence of growth was seen at the seat of the fracture. Microscopical examination showed it to be a round-celled

sarcoma. Great improvement followed the amputation, and he was enabled to leave the hospital on the 232nd day after admission. Six months later his general condition was greatly improved; the gluteal swelling was larger and still pulsated slightly. A nodule was felt in the liver. He died of congestion of the lungs a year later. Case II: A gentleman, aged 24, came in October, 1894. In February, 1886, he had a boil on his neck, with fever and right pleurisy. He was two months in bed, and he then developed an abscess in the right lumbar region, which was incised and discharged for a few days. Some contraction of the left leg was then found and extension ordered. No evidence of mischief could then be discovered in the vertebræ or pelvis. After a sea voyage he apparently recovered and returned to school, but ten days later the leg again began to give trouble. In August, 1887, his right shoulder became painful, and an abscess discharged spontaneously opposite the insertion of the deltoid. He remained well until October, 1888, when the shoulder trouble recurred, and an incision was made which had to be repeated in the following June. In 1893 he suffered from sciatica of the right leg. In June, 1894, he was again troubled with pain in the right leg, loin, and along the iliac crest, with occasional fever. He improved somewhat, and was able to return to business in May, 1895. In July he suddenly developed another attack of pain in the leg, with tenderness in the groin, and a little thickening and resistance could be made out at the outer part of the iliac crest. The condition persisted off and on during a trip to India, and at times he noticed blood and mucus in the motions. In July, 1896, he came to a nursing home in London, with symptoms pointing to possible appendicular trouble. There was a definite discharge of pus in the stools. The discharge of pus afforded so much relief that an operation was declined, but he returned on August 24th, with hardness and redness over Poupart's ligament. An incision was made, and a small quantity of thick pus escaped. A long sinus was traced from the incision, just outside the femoral vessels, under Poupart's ligament, into the pelvis, but no bone could be felt. He left for home in three weeks. On October 23rd his temperature varied from 101° to 103°, with much tenderness about the sinuses and in the right iliac region. Mr. Pitts dilated the sinus, and introduced a larger tube. On October 27th he suddenly had severe hæmorrhage from the sinus, which was stopped by pressure for a week. On November 3rd the bleeding recurred, and again on November 15th, and an operation was decided upon. The patient was extremely collapsed. A precentral incision was made from the umbilicus to the pubes. The appendix was found to be normal. An incision was made in the peritoneum over the middle of the sacrum, and the internal iliac artery was exposed without difficulty. The vessel was found to be fixed by chronic inflammatory products, and all attempts to pass an aneurysmal needle round it failed. He was therefore constrained to ligature the common iliac. A stout floss silk ligature was used, and the vessel tied by a surgeon's knot. On pulling tight the third hitch they found that the circulation was not controlled, the ligature being too thick. The vessel was then tied in two places with a thinner floss silk ligature, and the circulation was then found to be effectually controlled. The patient did remarkably well, but pulsation in the tibials was not restored for some weeks. The patient reported himself in 1897 as feeling extremely well. In December, 1897, a swelling formed at the lowest part of the abdominal cicatrix, which subsequently burst and discharged laudable pus. He was kept at rest, and in March, 1898, the floss silk ligature came away in the discharge. The sinus then slowly closed. He was now in good health, and weighed 14 stone. Mr. Pitts thought that the original infection was tuberculous.

The PRESIDENT suggested that the disease might have been a latent form of septic disease. He declared his predilection for "the good old silk ligature."

The discussion was continued by Messrs. HARRISON CRIPPS, MARMADUKE SHIELD, and BALLANCE, and by Drs. BRUNTON, and LYNDON; and Mr. PITTS replied.

MEDICAL MAGISTRATE.—Mr. William Brown Holderness has been appointed a Justice of the Peace for the Royal Borough of Windsor.

OBSTETRICAL SOCIETY OF LONDON.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Wednesday, December 7th, 1898.

SPECIMENS.

DR. HUNTER gave a demonstration of specimens illustrating the development of the Graafian Follicle, and exhibited a series of Ovaries preserved with Formalin, in which the colours were well maintained.—Dr. LEWERS showed: (1) A Large Solitary Subperitoneal Fibroid Tumour of the Uterus (9½ lbs.) successfully removed by laparotomy with intraperitoneal treatment of the stump; (2) a Uterus with Multiple Fibroids (8 lbs.) successfully removed by supravaginal hysterectomy with intraperitoneal treatment of the stump. He said that, as regards the history, symptoms, and signs, cases of large solitary subperitoneal fibroids differed remarkably from the common cases where the uterus was the seat of multiple fibroids. In his first case the patient, married ten years, had had five children and two miscarriages, the last ten months prior to operation; menstruation had never lasted more than two days, and for ten months prior to operation there had been complete amenorrhœa. The uterus was in no way deformed, except at the place where the tumour was attached, and the cavity was of normal length. In the second case the patient, married five years, had not been pregnant; menstruation was profuse, and there had been constant metrorrhagia for three months before operation; the uterus was deformed, and the sound passed 7 or 8 inches.

CONGENITAL UTERINE TUMOUR.

Dr. HERBERT SPENCER read a short communication on three cases of congenital tumour at the internal os uteri causing hydrometra in newborn children. Two of the specimens had been briefly described in the catalogue of the gynæcological specimens in University College Museum, published in 1891, and were, as far as he was aware, the first recorded instances of the occurrence of this tumour. The tumour was a small sessile pea-like body situated at the summit of the anterior median column of the cervical *arbor vitæ*, and gave rise to dilatation of the cavity of the body by obstructing the outflow of mucus. Dr. Spencer thought the tumour might later in life produce pain at the menstrual or other times, and might perhaps explain the occurrence of certain polypi at the internal os uteri which were furnished with glands lined with several layers of epithelium, a condition he had met with in this situation in newborn children. He directed attention to a recent publication by Dr. Friedländer[1] on a similar condition in young girls.

INCARCERATED OVARIAN DERMOID TUMOURS DURING PREGNANCY.

Dr. HERBERT SPENCER showed a small multilocular dermoid tumour of the right ovary, which, being incarcerated in the pelvis, he had removed by laparotomy at the fourth month of pregnancy. Pain, which had been present before the operation, at once ceased on removal of the tumour, and the patient had five months later been successfully delivered of a living child at full term. Dr. Herbert Spencer also showed for another practitioner a small ovarian dermoid tumour which had been incarcerated in the pelvis at the time of labour. Forceps, and afterwards version, had been employed, with the result that the tumour was ruptured, and the patient died of septic peritonitis three days after delivery.

Dr. JOHN PHILLIPS said that he had met with a case in which the cyst had obstructed labour and necessitated its incision and suturing to the vaginal walls before delivery could be effected. A year later the patient was seized with a rigor and abdominal pain, and at the operation a large suppurating dermoid cyst was found with a coil of hair adherent to the old scar in the vagina. The patient made a good recovery. Dr. Phillips had recently had an impacted dermoid complicating early pregnancy which had been successfully removed.

Dr. GILES mentioned a case of an ovarian dermoid removed during pregnancy. He first saw the patient when she was three months pregnant, and decided to wait and see whether with the progress of pregnancy the cyst would rise out of the pelvis; as this did not happen, the cyst was removed by

[1] *Archiv für Gynäkologie*, 1898.

abdominal section, and the patient was expecting her confinement shortly.

Interstitial Uterine Fibroids with Placenta Prævia.

Dr. Boxall showed a uterus with interstitial fibroids from a case of placenta prævia centralis. The patient died forty minutes after delivery from *ante-partum* and *post-partum* hæmorrhage. In her previous confinement three years ago, a large fibroid was noticed in the lower pole of the uterus on the left side, and an abscess formed and burst into the vagina, the sinus in which still remained. The fibroid had shrunk considerably since the previous labour.

The Use of Forceps.

A paper by Mr. Ponder on the actions and use of forceps gave rise to some discussion.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

H. R. Swanzy, F.R.C.S.I., President, in the Chair.

Clinical Evening.

Thursday, December 8th, 1898.

Renal Retinitis.

Mr. Nettleship showed a microscopical drawing. Pigmentation of the retina was known to occur in cases of renal retinitis where the disease was either severe or of long standing; it was generally seen near the periphery, but if the case lasted long enough it was found near the disc. The case from which the drawing had been taken had been observed during life, and the pigmentation had been noted. After death the eyes had been examined. A number of oval or round cells, with amorphous *débris*, the remains of an inflammatory exudation, were found in the retina between the bacillary layer and the hexagonal pigment layer in different places; these foci contained pigmented cells derived from the pigment epithelium, probably by proliferation.

Sympathetic Ophthalmia Beginning Fourteen Days after Excision of the Injured Eye.

Mr. Holmes Spicer showed a boy aged 10, who was struck in the left eye on July 4th by a piece of sardine tin; there was a jagged wound of the cornea not involving the ciliary region; the anterior chamber was filled with blood, and the deeper parts could not be seen. A week later a piece of entangled iris was removed from the wound by iridectomy; the lens was found to be wounded. The eye remained painful and much congested and iritis set in, and it was excised on July 25th, three weeks after the injury. The patient remained in hospital till August 6th. Two days later there was slight ciliary injection of the right eye, fourteen days after excision. He was taken into hospital again: T was − 2, V $\frac{6}{6}$; the pupil was well dilated: there was no deposit on the back of the cornea: there was much floating matter in the anterior part of the vitreous; there was no optic neuritis. He was treated with atropine and mercurial inunction. The tension had now become normal, and the vision was $\frac{6}{9}$.

An Unusual Form of Marginal Keratitis.

Mr. John Griffith and Dr. Blair showed a case. The condition had existed for several years, and was associated with eczema of the face; the keratitis was symmetrical, attacking the inner and outer margins of each cornea close to the limbus. The lesions were slightly raised, vascular, and in three out of four limited by a curved line of opacity. It bore some resemblance to phlyctenular keratitis, but its persistence, absence of ulceration, and want of symptoms excluded this disease. It resembled spring catarrh, but the palpebral conjunctivæ were quite healthy.

Pulsating Exophthalmos with Visible Tumour.

Mr. W. J. Cant showed a man, aged 36, who was kicked on outer part of the left eyebrow eight years ago. Eighteen months ago he had pain over the right eyebrow with vomiting; the sight became dim, and he had diplopia. Gradually a swelling appeared at the upper inner angle of the right orbit, and he was conscious of a loud whistling sound in the head; as the swelling increased the sight returned and the diplopia ceased. R. E. V $\frac{6}{9}$ J. 1, proptosed 8mm. There were large tortuous veins on the ocular conjunctiva, a pulsating movable tumour diminished by pressure on the carotid; a loud *bruit* could be heard over the region of the tumour. There was no diplopia; the pupil acted normally; the retinal veins were enlarged, tortuous, and pulsating. He had been treated with rest, low diet, iodide of potassium, and digital compression with considerable benefit.

Symmetrical Choroiditis in the Early Stage.

Mr. Hartridge showed a man, aged 23, who first had dimness of sight five months ago; the sight had been progressively failing since. Family history good; personal health good; no history of syphilis. V. R. $\frac{6}{12}$, L. $\frac{6}{9}$. Both optic discs swollen and blurred; a large choroidal hæmorrhage on the outer side of each disc, œdema of the retina over the whole central region, with a number of small circular exudations in the superficial layers of the choroid; urine normal.

Atrophy of the Choroid with Sclerosis of the Choroidal Vessels.

Mr. Ernest Clarke showed a man, aged 53, who first attended the City of London Ophthalmic Hospital four years ago with the history that his sight had been gradually failing for a year. He had been a heavy drinker and had syphilis. He had well-marked optic neuritis in both eyes, and vision was reduced to fingers at a metre in both eyes; there was no history of night blindness. The following changes had been gradually coming on since then, and the present condition of the eyes was: Atrophy of the optic nerve and retina, atrophy of the epithelial pigment and of the chorio-capillaris, which allowed the vessels in the tunica vasculosa to be well seen; sclerosis of many of the choroidal vessels, especially on the temporal side of the posterior pole of each eye. The periphery of the retina showed pigmentation like that of retinitis pigmentosa. Large flocculent vitreous opacities. Vision reduced to p.l.

Myxosarcoma of the Orbit.

Mr. Juler showed a female, aged 20, who first had diplopia in May, 1897; in February, 1898, the left upper lid began to droop and the eyeball was turned downwards and proptosed; the displacement of the eye increased till June 15th, when there was marked ptosis and proptosis, the movements of the globe being limited. The tumour was soft and fluctuating, but contained two hard nodules. The skin of the face was sprinkled with brown and blue pigments spots which had always been present. On June 25th the contents of the orbit were evacuated after puncture by a trocar and cannula had given exit to several drachms of clear gelatinous fluid which came from a cyst in the growth. After removal the bone of the roof of the orbit was found eroded, and an aperture led to the dura mater. Last month there was a recurrence beneath the upper lid. Microscopically the tumour presented the appearances of a myxoma, but the invasion of the frontal bone and the recurrence indicated that it was probably sarcomatous. It consisted of stellate branching cells, round cells and blood vessels; within the meshes of the tissue was a large amount of mucin.

Congenital Absence of Choroid.

Dr. Tatham Thompson showed a man, aged 18, with V. = $\frac{6}{36}$, a dazzling white sclera being seen all over the fundus except at the macula; there were a few isolated choroidal vessels only.

Tumour of Iris.

Mr. A. H. Thompson showed a small tumour, probably a sarcoma, projecting from the anterior surface of the iris.

Injury to Cornea.

Mr. W. H. Jessop showed a case. A large flap turned back from the upper margin of the cornea had become reapplied and united.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Edwin Lee, M.R.C.S., President, in the Chair.

Friday, December 2nd, 1898.

The Treatment of Shock.

Mr. Basil Hall (Bradford) read a paper on the treatment of shock by large doses of strychnine. He related briefly a case

of air embolism occurring during operation, and also a case of apparently hopeless shock after the removal of an abdominal tumour. In both these cases, when death on the table seemed certain, recovery took place after the hypodermic injection of one-third of a grain of strychnine. He also referred to eleven other instances of severe surgical shock where doses varying from one-fifth to one-third of a grain had been injected with satisfactory results, and drew attention to the report of a case of snake poisoning when recovery followed the administration of large doses. In discussing the remarkable tolerance of the drug in conditions of profound shock, he compared with it a similar action in the case of alcohol. He urged that strychnine given boldly in such doses as he had indicated was a valuable remedy in surgical shock in its severer forms.

EXCISION OF ISTHMUS OF A BRONCHOCELE.

Dr. S. LODGE (Bradford) read notes of a case of bilateral paralysis of the laryngeal abductors successfully treated by removal of the isthmus of a bronchocele. The patient was a boy aged 14, who was suffering from a gradually increasing dyspnœa of seven years' duration.

ABDOMINAL SECTION IN VOLVULUS.

Mr. LITTLEWOOD brought before the Society a series of seven cases of volvulus in which he had performed abdominal section during the past three years; there were three recoveries: (1) Man, aged 62, volvulus of large intestine, involving part of transverse colon, descending colon, and part of sigmoid; the volvulus was 10 inches in diameter, and displaced the heart upwards into the third intercostal space; operation performed five days after onset of acute symptoms; death thirty hours later. (2) Man, aged 61, volvulus of cæcum, part of ascending colon, and part of ileum; the volvulus was about 5 inches in diameter; operation five days after onset; recovery. (3) Woman, aged 57, volvulus of sigmoid; operation six days after acute onset; death forty hours later. (4) Girl, aged 11, volvulus of sigmoid; operation thirty-six hours after acute onset; general distension with peritonitis; recovery. (5) Woman, aged 32, volvulus of small intestine about 10 inches in length. Acute symptoms started about three weeks after confinement; operation six days after onset. General peritonitis with stinking blood-stained fluid in peritoneal cavity. The volvulous portion of the bowel was deeply congested and adherent by soft adhesion to the surrounding bowels. Pelvis drained, the lower part of the wound not closed, and the twisted portion of bowel brought near the opening. Thirteen days later the volvulus, which had become gangrenous, separated and was removed. Two months later the intestinal fistulæ were closed by separating the parts from adhesions and suturing the upper and lower portions of bowel together. Patient made a good recovery and was now quite well, having since the operation been delivered of twins. (6) Man, aged 53; volvulus of small intestine involving several feet; operation five days after onset; death six days later. (7) Man, aged 20; volvulus of small intestine about 2 feet in length; tuberculous mesenteric glands and adhesions; three days after onset operation performed; death four days later.

ENLARGEMENT OF LIVER.

Dr. WARDROP GRIFFITH showed a case of painless enlargement of the liver occurring in a man aged 21. The enlargement, which was very marked, came on after acute pneumonia, and was unaccompanied by jaundice or loss of flesh. There was very slight ascites, but no other sign of portal obstruction. There was no alcoholic or specific history. He was improving under iodide of potassium.

CASES AND SPECIMENS.

The following cases and specimens were shown:—Mr. LITTLEWOOD: (1) A man aged 46, whose Rectum he had removed eight weeks previously, and had succeeded in getting primary union between the divided ends of the gut; (2) a man aged 45, with Carcinoma of the Breast; (3) Abdominal Gestation (fourth month). The thorax of the fœtus was opened immediately after its removal from the body; the fœtal heart continued beating for an hour and a-half.—Dr. WARDROP GRIFFITH: (1) Case of Primary Muscular Dystrophy. (2) Specimens from the *Post-mortem* Room.—Dr. BRONNER (Bradford): (1) Microscopic Specimen of Carcinoma of the Vocal Cords in a man, aged 28, simulating Papilloma. (2) Angio-fibroma of Vocal Cord in a man, aged 70, simulating Carcinoma.—Dr. CHURTON; (1) Syphilitic Pachymeningitis, etc., causing Complete Aphasia and Partial Right Hemiplegia. (2) Post-influenzal Paraplegia. (3) Tuberculous Cerebral Tumour with Left Hemiplegia and Complete Blindness. (4) Chorea of Two Years' Duration in a man, aged 60. (5) Crossed Paralysis. (6) Displaced (Congenital) and Fixed Right Kidney with Pyonephrosis.—Mr. MOYNIHAN: Tuberculosis of the Tunica Vaginalis.—Dr. TREVELYAN: (1) A case of Neoplasm of the Larynx. (2) A specimen of Polypus removed from the Larynx. (3) A specimen of Rupture of the Lung. (4) Microscopic preparations from the following specimens shown at the last meeting: (*a*) A Mass Expectorated from the Lung (Dr. Barrs). (*b*) A Foreign Body from the Peritoneal Cavity (Dr. Allan).—Dr. HELLIER: Scoop for Puerperal Uterus. —Mr. SECKER WALKER: Skiagraph showing a Piece of Brass in an Eye; attempts to remove the metal having failed, Mules's operation was performed.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Sir JOHN BATTY TUKE, M.D., LL.D., F.R.C.P.E.,
President, in the Chair.

Wednesday, December 7th, 1898.

CASES AND SPECIMENS.

Dr. RAINY showed a case of probable Muscular Dystrophy.—Mr. STILES showed a child, six months after reduction of Congenital Dislocation of the Hip by the method of Lorenz.—Mr. CATHCART showed a patient in whom symptoms of Myxœdema were subsiding after removal of goitre.—Dr. RUSSELL and Mr. COTTERILL showed a Brain illustrating breach between visual and motor speech centres, from which a tumour was three times removed.—Mr. STILES showed Clavicle, Humerus, and Femur from a rickety and syphilitic infant, with multiple fractures; also a Skiagraph of the same by Dr. Rainy.—Dr. SCOT SKIRVING showed: (1) Extreme Enlargement of Ischial Bursa; (2) Peculiar Contents of the same; and (3) a Ruptured Kidney.—Mr. CATHCART showed: (1) Enlarged Left Lobe of Thyroid; (2) Intestine six months after excision and suturing for gangrene from strangulated hernia.

PULMONARY REGURGITATION.

Dr. FRANCIS D. BOYD read a paper on this subject. He recorded two cases well representing the two factors which might result in the establishment of the lesion apart from congenital causes, first, endocarditis affecting the pulmonary valve; and, secondly, increased pressure within the pulmonary circuit, resulting in dilatation of the pulmonary artery and consequent incompetence of the valve. Case 1, woman of 25, had been out of sorts for some months, and for three months had dull pain in the left lower costal region, a pain increased by fatigue. The apex beat was in the fifth interspace in the mammary line, the right border 1¾ in. to the right of the mid-sternal line, the left ¼ in. external to the mammary line. An ill-conducted soft-blowing systolic murmur was heard in the mitral area; a similar murmur was audible in the tricuspid area, and the second sound was impure. This second sound increased in loudness as one passed up the left border of the sternum, until in the second interspace, 1 in. to the left of the sternal border, it amounted to a slight murmur accompanying the second sound. In the pulmonary area a soft blowing systolic murmur was heard. In the aortic area the second sound was pure. The pulse-rate was 96, tension low, volume fair, vessel healthy. The right cervical glands were enlarged. The spleen was much enlarged and tender. The red blood corpuscles numbered 3,080,000 per c.mm., and hæmoglobin was 40 per cent. During the first two months the patient was in hospital she had several irregular rises of temperature, with rigor and increased pain in the spleen. By the end of a month the second sound had increased to a definite murmur audible down the left border of the sternum. As the case was evidently one of septic endocarditis the spleen was punctured for bacteriological examination, but with a negative result. Since the temperature continued to rise at irregular intervals and the patient was getting worse, antistreptococcus serum was exhibited. The temperature improved. By the end of

January, 1898 (she was admitted in October, 1897), the pain in the spleen had disappeared, and the general condition had improved. The right border of the heart was now 1¾ inch to the right of the mid-sternal line, while the left was 1½ inch outside the mammary line. There was a faint diastolic murmur in the mitral area, in addition to the systolic already existing. Both were audible in the axilla. There was a loud diastolic in the tricuspid area. Both aortic sounds were pure. The patient left the hospital much improved in the end of January. She returned in June with greater cardiac enlargement, increase of diastolic murmur, albumen and tube casts in the urine, some œdema, and enlarged liver. Slight improvement took place for a time, but she died in September. There was no necropsy. It was not often that one had the opportunity of watching the gradual development of such a case. Case II, unmarried woman of 18, came under treatment in October, 1896, suffering from breathlessness, chest pain, and cough. The legs, arms, and face had showed signs of swelling three years before that, and there were severe pains in the legs, such as to prevent walking. Rest and treatment improved her, and she remained well for two years, when shortness of breath came on, with also pain in the chest, but no swelling of limbs. She was under treatment in hospital for three months, and continued well till the date given above, when she complained of being breathless and having cold limbs. Pulse rate 92, regular, moderate tension, and healthy vessel wall. There was marked pulsation all over the precordium, especially in the fifth left interspace internal to the mammary line, and in the second and third interspaces left of the sternum. The apex beat was in the fifth interspace, internal to the mammary line, and here there was heard a slight presystolic ending in a long blowing systolic murmur. In the second left interspace, 1 inch left of the sternum, a loud double murmur, the diastolic part of which was well conducted down the sternum, was audible. Improvement took place for a time, but extensive thrombosis of the right leg, followed by gangrene, carried her off. At the necropsy there was found marked mitral stenosis, recent endocarditis affecting the tricuspid valve, dilatation of the pulmonary artery with consequent incompetence of the valve. The dilatation seemed secondary to the mitral stenosis. Since Barié in 1891 and Gerhardt in 1892 gave detailed accounts of the literature of pulmonary regurgitation, a few further cases have been reported. The causes of pulmonary regurgitation when not due to congenital disease might be either inflammatory or secondary, as in the two cases now recorded. Of the former only about a fourth yielded a history of rheumatism. Lesion of the pulmonary valve rarely existed alone, as a rule a second lesion was present, usually aortic. Cases of the latter form were rare, but had been referred to by Stokes and Gourand as due to dilatation of the chambers. Gibson had pointed to the possibility of the lesion being secondary, and had adduced cases. Duckworth and Graham Steel had also written on the subject. The latter spoke of the "murmur of high pressure in the pulmonary artery." Age had little to do with the etiology of the lesion, though most of the cases had been recorded in young people. Once established the outlook was very grave. The cases recorded seemed more frequent in women, though the total number was yet too small to allow of definite conclusions. The diagnosis was not simple or easy. Dr. Boyd then discussed details of the points of differential diagnosis, and reviewed some of the theories of Gerhardt and Friedreich. The essential points of diagnosis were the location of the point of differential maximum intensity in the second interspace to the left of the sternum; the conduction of the murmur down the left border of the sternum; the arc of audition wide downwards and to the left, and very limited upwards or to the right: the absence of any characteristic alteration in the pulse as was found in aortic incompetence. No diagnostic significance could be based upon irregularity in the respiratory murmur. Prognosis in any case was grave, but various factors modified this—surroundings, condition, temperament, social state, etc.

The paper was briefly discussed by Drs. Gibson, W. Russell, T. R. Ronaldson, and others; and Dr. Boyd replied.

Sulphonal Poisoning.

Dr. G. Lovell Gulland read a paper in which he narrated a fatal case where the patient had, without the knowledge of his medical adviser, taken 30 grains of sulphonal every night for about six weeks. About a week before his death he developed ataxia of the extremities, lassitude and drowsiness, and then hæmato-porphyrinuria, and died somewhat suddenly. The *post-mortem* examination showed no very marked gross lesions beyond fatty degeneration of the heart and stasis in all the organs, but when these were examined microscopically the principal change was found to be necrosis of the secreting epithelium of the kidney, and certain degenerations in the liver and suprarenal capsules. Dr. Gulland proceeded to discuss the clinical history of chronic sulphonal poisoning, and to point out the differences between this and, on the one hand, the temporary by-effects after a single medicinal dose of the drug, and on the other the symptoms of acute poisoning from a large single dose. The pathology of both acute and chronic poisoning was described, and special stress was laid on the kidney changes which were common to both chronic and acute forms, and which the author believed to have at least as much to do with the fatal issue as the action of the drug as a blood poison. In regard to the treatment of acute poisoning, it was pointed out that it was essential to remove as much as possible of the insoluble drug from the alimentary tract, and also to keep up free diuresis, whilst in the chronic form the free use of alkalies was insisted on. The paper terminated with a discussion of the cases in which sulphonal should not be given, these being especially cases where there was constipation, great prostration, or kidney disease, and with a plea for the more careful and discriminating use of the drug.

Sir John Batty Tuke, Dr. William Russell, and others spoke, and Dr. Gulland replied.

LIVERPOOL MEDICAL INSTITUTION.

Pathological and Microscopical Section.

F. T. Paul, F.R.C.S., in the Chair.

Thursday, December 8th, 1898.

The Pathology of Ovarian Tumours.

Dr. Alexander read a paper chiefly based on an accurate examination of all the cases he had operated on during the last two years. He gave a careful description of the naked-eye and microscopical anatomy of all his specimens and illustrated his paper by numerous lantern photographs and microscopic specimens. He had had several cases of ruptured cysts and discussed the causes of rupture. He also showed an excellent specimen of confluent cyst; one large cyst with two pedicles, one going to each side. He gave a good deal of attention to dermoid cysts, and described a unique case in which the fatty and hairy contents had become agglutinated and rolled into little pellets, so that when the cyst was opened its cavity was found filled with little masses having a striking resemblance to boiled green peas.

Dr. E. T. Davis discussed the question of the malignancy of ovarian papillomata.

Mr. Paul and Dr. Grimsdale also discussed the paper; and Dr. Alexander replied.

Specimens.

Mr. Larkin (the Secretary) showed for Dr. Nathan Raw a specimen of Double Vagina and Septate Uterus obtained from a woman, aged 45, dead of sarcoma of the lumbar spine. She had had three natural labours, but in none of them did the abnormality seem to have been detected, nor did it cause her inconvenience in any way. The vaginal septum was thick and fleshy, and the two vaginæ of about equal size. There was an os uteri on each side. The uterus was not bicorned, and was divided by a thick septum.—Mr. Hawkins-Ambler showed a Uterus removed by vaginal hysterectomy for cancer confined to the cervix. The patient was 52 years of age, and was the subject of diabetes, passing 5 per cent. of sugar. Two days after the operation she had symptoms of diabetic coma, which passed off on treatment with alkalies. The sugar disappeared from the urine after the operation, and had not since returned. Otherwise recovery was uneventful. Dr. Grimsdale showed a well-marked specimen of Tubercle of the Fallopian Tubes. The microscope demonstrated numerous tubercles with large giant cells in the mucosa. The patient was a single woman, aged 26. She attributed her symptoms to taking cold. There was a large

fluid swelling in the left lower abdomen, which disappeared after seven weeks' treatment in hospital. Three months later a similar swelling appeared on the right side. Abdominal section was performed, the fluid escaped, and the tuberculous tubes were removed. She recovered, and reported herself well two years later.—Mr. R. A. BICKERSTETH showed a Squamous-celled Epithelioma of the Upper Jaw, which undoubtedly commenced in the antrum.—Mr. THELWALL THOMAS showed an Adenoma of the Testis from a man, aged 27. The body of the testis was not involved, the tumour arising probably in the paradidymis.—Dr. LESLIE ROBERTS showed specimens of Horn-cell Organisms—giant, flask-shaped bacilli, of no pathogenic significance, growing saprophytically in the horny epidermis.—Mr. R. W. MURRAY showed a specimen of Solitary Sacral Kidney obtained from a boy, aged 8. There was no trace of kidney in the normal position on either side. The single kidney was large and situated below the bifurcation of the aorta, on the promontory and in the hollow of the sacrum, and more to the left than right of the middle line. There was a single (left) ureter, which was only 2 inches long. The vascular supply was derived from the aorta by two vessels given off at the point of bifurcation, and which, after a short downward course, entered the top of the kidney. Clinically the case was also of great interest. The boy had been passing calculi for three years. On two occasions impacted calculi had been removed from the urethra. Twelve months before death a calculus became impacted in what was thought to be the left ureter, close to the bladder. This Mr. Murray, with a finger in the rectum, succeeded in forcing into the bladder. A similar impaction occurred some months later, and could not be relieved. The region of the left kidney was then explored, but no kidney was found. The abdomen was opened, but no kidney could be found on either side; but a mass was felt in the pelvis behind the bladder. There was never complete suppression of urine, but the boy died some time later, and at the *post-mortem* examination the true state of the parts was made out. The pelvis of the single kidney was much dilated, and the ureter contained numerous calculi.—Mr. DOUGLAS CRAWFORD showed a case of Encysted Hydrocele of the Epididymis. It had formed acutely. The globus major was converted into a large thick-walled cyst containing straw-coloured fluid, and having lymph on its walls.—Mr. ROBERT J. HAMILTON showed (1) a Metastatic Carcinoma of the Eyeball from a woman aged 35, who had been operated on six years ago for mammary cancer, and again six months ago for recurrence in the axilla. She had had great pain in the eye and gradual loss of vision. The ophthalmoscope showed what appeared to be a complete detachment of the retina. (2) A Melanotic Sarcoma of the Choroid from a woman of 25. A discussion followed, in which Drs. and Messrs. PAUL, ALEXANDER, RUSHTON PARKER, HAWKINS-AMBLER, GRIMSDALE, and R. A. BICKERSTETH took part.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—At a meeting on December 1st, Dr. R. FORTESCUE FOX (President) in the chair, Dr. WILLIAM BRUCE (Strathpeffer) read a paper on Separate *Rôles* played in Rheumatic Affections by (1) the Joints, (2) the Muscles, and (3) the Nerves, and the the consequent Indications for Treatment by (1) Rest, (2) Baths and Massage, and (3) by Electricity. He referred to the presence of "foreign" substances in the synovial linings of the joints and the cartilaginous endings of the bones, and to the wasting of muscular structure as a sign of rheumatic disease. With regard to the nerves, particular regions were chosen, as it were, for the expression of pain, and those regions in a general way corresponded with reflections in particular sensory tracts of the brain and spinal cord. He considered it doubtful if in all rheumatic attacks uric acid was present in excess, or that urates were deposited in every case in the affected parts. He regarded acute rheumatism as a distinct zymotic disease. He considered, after an experience of nearly thirty years in the treatment of rheumatic affections of hip, ankle, and thumb, and the corresponding joints of the lower limb, that the diseases were really articular, and that neuritis was the result and not the cause of the mischief. The cause of lumbago left more room for doubt as to the spinal articulations being affected. With regard to sciatica, he had been forced to the conclusion that in 98 per cent. of cases it was due to the trouble in the corresponding hip-joint. The paper was discussed by the PRESIDENT, Dr. GEO. OLIVER (Harrogate), Dr. DOWSE (London), and Dr. PERCY LEWIS (Folkestone); and Dr. BRUCE replied.—Dr. R. W. FELKIN (London), late Lecturer on Tropical Diseases, Edinburgh, read a paper on the Climate of the Egyptian Soudan. Roughly speaking, the ninth degree of north latitude divided the country into two parts. To the north were deserts, rocks, an Arab population, a high mean annual temperature (over 85° F.), a dry atmosphere, and slight rainfall (under 5 inches north of Dongola, under 10 inches north of the Sobat). Khartoum was unhealthy owing to its situation. South of the ninth degree north the country was very fertile; it had a high mean temperature of about 75° F.; the range of temperature was slight (about 10° F.), and the humidity was over 70 per cent. This area was inhabited by negroes. Dr. Felkin referred to the blocks which occurred in the Nile owing to floating vegetation; he explained the cause, and showed how they could be prevented. He mentioned the area where Anglo-Saxons might be expected to thrive when once a method of rapid transport had been secured. He concluded by referring to the prevalent diseases—malaria, dysentery, diarrhœa, guinea-worm, etc. He said that it was noteworthy that malaria and phthisis did not occur together in Central Africa, and he mentioned some interesting results which he had obtained with tuberculin in malaria. He urged the importance of the right man being sent to open up the country, and gave his opinion as to the kind of men best fitted for life in tropical Africa. Remarks were made by the PRESIDENT, Dr. JOHN SHAW-MACKENZIE (London), Dr. HARRY CAMPBELL (London), Mr. ALFRED HAVILAND, Dr. STREET (Westgate), and Dr. BAYNES. Dr. FELKIN, in reply, said that he did not think that yaws was due to syphilis. He thought that syphilis was most severe when first introduced, and that malaria had something to do with its virulence. He was unable to say where the natives got the idea of inoculation from, though it might possibly be from Abyssinia *viâ* Uganda. In Africa vaccination was strikingly successful. If porters were not vaccinated they always suffered very badly from small-pox, and the mortality was frightful. In some tribes cases of small-pox were isolated.

ULSTER MEDICAL SOCIETY.—At a meeting on December 1st, Dr. NELSON (President) in the chair, Dr. J. LORRAIN SMITH and Dr. TENNANT made a communication on the Classification of the Coli Group of Bacilli.—Mr. T. SINCLAIR KIRK showed a case of Extensive Ulceration in a Child.—Dr. A. B. MITCHELL read a paper upon the Influence of Antitoxin on the Mortality of Tracheotomy for Laryngeal Diphtheria, with Special Reference to the Results of the Operation in Ulster. Attention was first drawn to the prevalence of the disease in the northern province, in which there had been 3,402 deaths from diphtheria during the last twenty years, as compared with 3,320 in all the rest of Ireland. The annual death-rate from diphtheria in Belfast and the surrounding districts was 14 per 100,000, while the rate for Dublin was only 7. For years the general feeling of the medical profession in Ulster had been that tracheotomy offered only a slight prospect of saving life in diphtheria. Information received from the leading surgeons in different parts of the province showed that in 82 operations before the introduction of antitoxin there had been only 6 recoveries, a recovery-rate of 7.3 per cent. A similar list since the introduction of antitoxin yielded a total of 20 operations with 15 recoveries, or a recovery-rate of 75 per cent. The value of intubation as compared with tracheotomy was discussed, and the former operation was condemned in diphtheria (1) as being likely to force any pieces of loose membrane down into the trachea with the risk of instant suffocation; (2) as giving rise to great difficulty in feeding; (3) as liable to cause ulceration of the swollen vocal cords with permanent impairment of function; (4) as not affording such free exit for pieces of membrane, tracheal secretion, and so forth; (5) because, if coughed up, the nurse was totally unable to replace the tube. Finally, the necessity for the prompt administration of antitoxin in all suspicious cases was urged. In the discussion which ensued, Professor SINCLAIR agreed with Dr. Mitchell in his opinion regarding the improved prospects of operation since the introduction of antitoxin, in the value of artificial respiration, and in condemning intubation.

Drs. Darling (Lurgan), Calwell, Kirk, Dempsey, Killen, Robert Campbell, Tennant, and the President also took part in the discussion.

Association of Registered Medical Women.—At a meeting on December 6th, Miss Cock, M.D., President, in the chair, Mrs. Garrett Anderson showed and explained a large number of Diagrams which she had made to present Vaccination Statistics in an easily remembered form. The "anti-vacks" had an inner ring of letter writers, pledged to proclaim in the newspapers that vaccination was a delusion. Those who know better should not be silent or indolent, but should present the other view. The accidents of vaccination were much to be regretted, and everything possible should be done to diminish their number. Probably more careful methods of dealing with the vaccination wounds in the second and third week would have this result. The vaccination mortality in England and Wales was at present about 50 children in each year, or 1 in 14,000. In Scotland it was 1 in 38,000, and in Germany 1 in 100,000. A general and sustained effort should be made to reduce the English rate. But even if it could not be much reduced the loss of 50 children each year was a smaller calamity than the death of 1,600 times as many people from small-pox would be. The population of England and Wales in 1891 was about 39½ millions; it might be presumed that it was by this time quite 40 millions. The mortality from small-pox last century was variously estimated at from 3,000 to 5,000 per million of population. If it were now only 2,000 per million the annual death rate from small-pox in England and Wales would be 80,000=50×1,600. As to the plan of superseding vaccination by the isolation of every small-pox case, Mrs. Anderson pointed out that isolation had hitherto been combined with vaccination and revaccination, and she believed that in an unvaccinated and crowded community it would completely fail.

Kidderminster Medical Society.—At a meeting on November 25th, Mr. E. H. Addenbrooke, President, in the chair, Mr. T. Lionel Stretton showed: (1) A woman, aged 40, upon whom he had performed Cæsarean Section. She was admitted in September with extensive malignant disease of the cervix uteri and vagina, and was at the time about six months pregnant. The operation was performed on November 7th, as her condition forbade further delay. She bore the operation, which lasted half an hour, well, and made an uneventful recovery. The baby, which weighed 4½ lbs., is also doing well. (2) Portion of a Rectum removed from a woman, aged 61. She had suffered from symptoms for eight months. On July 19th a small portion of the recto-vaginal septum which was adherent was removed and the wound closed with sutures; the length of bowel removed was about 4 inches; the growth was a carcinoma and did not involve the sphincter, most of which was left and the bowel brought down and sutured to it. The bowels moved consciously on the eighth day; the stitches were removed on the twelfth day, and on August 13th she was discharged. Mr. A. C. Oldham, under whose care she now is, states that she has full control of her motions; there is no contraction of the anus, and no recurrence of the disease. (3) A man, aged 22, upon whom he had operated for Strangulated Hernia. There was a considerable swelling which contained a large piece of omentum; the rings were quite free. The constriction was situated at the centre of the sac, and consisted of a thick, circular, fibrous band, so strong that it had worn a deep groove in the portion of omentum, and had evidently been of long standing. The omentum and sac were removed and a radical cure performed. (4) Forty-two Gall Stones removed from a woman, aged 36. At the operation it was evident that one or more stones were impacted in the common duct, and as they could not easily be dislodged they were left to come away. Since the operation bile had reappeared in her fæces and she had had no recurrence of her symptoms, so it was probable that the calculi had been passed though they had not been seen. (5) A Scirrhus of the Breast, showing extreme retraction of the nipple, removed from a woman, aged 49. Mr. Stretton also read notes of a case of Strangulated Hernia in a lady, aged 73, seen in consultation with Mr. Dennis Fitch and Mr. Pomeroy. She had been ruptured for eight years and had worn a truss. On several occasions there had been difficulty in reducing it. The bowel came down twelve hours previous to Mr. Stretton seeing her on July 12th, and all efforts to reduce it were unavailing. Under an anæsthetic an incision was made over the swelling in the right groin, and a loop of the ascending colon was exposed and returned to the abdomen. Lying behind was a glistening body, which was found to be the sac of the original hernia; this was removed and a radical cure performed, an uneventful recovery following.—Dr. Evans showed skiagraphs of a case of Fracture into the Ankle-joint.—Mr. F. Oliphant showed (for Mr. W. Hodgson Moore): (1) A man, aged 38, from whose Knee-joint a Foreign Body had been removed three weeks previously. He recovered without any bad symptom and the joint was freely movable. (2) A Lipoma about the size of a walnut removed from the floor of the mouth of a lad, aged 16. Before removal it was thought to be a ranula. (3) A man, aged 41, who, after extensive disease of the Inter-phalangeal Joint of his Right Thumb, was left a useful hand for his work as a mason.—Mr. W. Miles mentioned the case of a woman with a Tumour in her side which resembled a movable kidney, so much so that the surgeon who was consulted made an incision in the loin. The tumour proved to be a portion of the right lobe of the liver with a dilated gall bladder attached.—Mr. F. Oliphant read a paper on Twelve Months' Work at the Hospital.

Nottingham Medico-Chirurgical Society.—At a meeting on December 7th, Mr. T. D. Pryce (President) in the chair, Mr. Laws read a paper on Pseudo-renal Retinitis, giving notes of cases illustrated by drawings, showing that all the appearances of renal retinitis might be present where there was no evidence of renal disease. In all these cases the retinal arteries were of the "silver wire" type described by Mr. Gunn, and it was suggested that there was in these patients a similar condition of the renal arterioles, causing interference with excretion and an augmented proportion of waste products in the blood. This increase was not more than might be tolerated, for many of these patients lived in good health for years; but when there was added to it a circulatory difficulty, such as that due to the pressure of the thickened retinal arteries in the veins, the tissues succumbed to the poison, and a "renal retinitis" was produced.—Mr. Anderson showed a woman after Choledolithotrity performed on October 17th. The patient had suffered for a lengthened period from frequent attacks of slight jaundice, with severe pain radiating over a wide area in the thorax and abdomen, and terminating in vomiting, which at once relieved the pain. There was marked cachexia and loss of weight. The single soft stone one-third of an inch in diameter lay in the diverticulum of Vater, and when discovered was easily crushed between the fingers. The patient had since been quite well, and gained 16 lbs. in weight. Mr. Willis referred to a precisely similar case under his own observation, which was operated on in the same manner thirteen months previously with complete relief up to the present time.—Mr. Mackay showed a Dermoid Cyst removed from the broad ligament of a girl aged 11 years.

REVIEWS.

The Yearbook of Pharmacy, 1898. London: J. and A. Churchill. (Demy 8vo, p. 536. 10s.)

This annual comprises abstracts of papers relating to pharmacy, materia medica, and chemistry, which have been contributed to British and foreign journals from July 1st, 1897, to June 30th, 1898, together with the *Transactions of the British Pharmaceutical Conference*, held at Belfast, August, 1898. The yearbook is indispensable to the pharmacist desirous of keeping himself acquainted with the progress in the subject with which it deals. It is also useful to medical men, for it contains notices of the various investigations which have been made during the year of drugs, both old and new, with regard to their therapeutic actions. From these it is learned that hydrastis as an expectorant in bronchitis is considered to be superior to most other remedies, that creosote is well suited for relieving habitual constipation, that thyroid extract pos-

sesses well-marked properties as a galactogogue, that sodium sulphite is recommended in chronic fœtid bronchitis, and thallium acetate to relieve the night sweats of phthisical patients.

It would appear that another link has been established in the chain of evidence respecting the essential unity of animal and vegetable life by the recent researches which show the close relationship existing between the basis of blood pigment and of leaf pigment.

The results of experiments upon the influence of alcohol on the digestive action of pepsin have shown that, although alcoholic liquids retard the activity of pepsin, this retardation does not occur in the stomach, owing to the rapid diffusion of the alcohol. An investigation on the influence of borax and boric acid on nutrition indicates that, while moderate doses of these substances do not exert any effect on the nutritional changes of the body, large doses (5 to 10 g. daily) retard the assimilation of proteid and fatty food. It is now stated that "green" iodide of mercury is, when pure, of a bright yellow colour, resembling that of lead chromate, and that the greenish colour is due to contamination with metallic mercury. It is satisfactory to know that mercurous iodide free from this impurity and also from mercuric iodide can be readily prepared by precipitation.

The book also contains an extensive and valuable list of notes and formulæ in which are included notices of many of the new so-called chemical remedies. The list of these new remedies is a very long one; it includes such names as euphthalin, validol, aneson, orthoform, anilipyrin, valerydin, agathin, phesin, guaiaquin, pyralosin, largin, ursal, etc.

The papers read at the Belfast Conference comprised several upon the chemistry and pharmacy of the *British Pharmacopœia, 1898*. A paper giving the results of the examination of gluten flour appears to have justified the doubt which has been entertained with regard to the value of some so-called diabetic foods.

TWENTY-TWO YEARS' EXPERIENCE IN THE TREATMENT OF CANCEROUS AND OTHER TUMOURS, ETC. By HERBERT SNOW, M.D. Lond. London: Baillière, Tindall, and Cox. 1898. (Demy 8vo., pp. 200. 5s.)

THIS work is a summary of the views of its author on the treatment of cancer. In many respects Dr. SNOW differs from the received opinions of the day. Our readers doubtless recollect his interesting "Notes on 300 Cases of Breast Excision for Malignant Disease" read at the Carlisle meeting of the Association, and published in the BRITISH MEDICAL JOURNAL, vol. ii, 1898, p. 1085. Dr. Snow declared that infection of the bone marrow is the great obstacle to radical cure by operation in mammary carcinoma. This infection, he found, occurs in all ordinary cases within six months of inception, frequently earlier, but its symptoms do not appear till within the second year, and may not be accompanied by nodular deposit or other palpable evidence of cancer for five to six years more. A chapter is devoted by Dr. Snow to the subject of marrow infection. In amputation of cancer of the breast the author insists on free and wide removal of the subcutaneous tissue rather than on free excision of skin. He holds that it is rarely if ever well to remove the pectoral muscles complete, as should they be infiltrated their ablation is useless in face of the visceral and marrow deposits, which must then exist. As these observations refer to operations for cancer of the breast only, it must be remembered that Dr. Snow definitely states that marrow infection, as a routine event, occurs only with mammary carcinoma.

Dr. Snow's special views on opium and cocaine in the treatment of cancerous diseases of course find a place in this book; this subject, again, was discussed by him at the Carlisle meeting (see BRITISH MEDICAL JOURNAL, vol. ii, 1898, p. 718).

The author does not believe in a "precancerous stage," and rejects the theory that the inhabitants of river valleys are specially subject to cancer, but his reference to Shrewsbury is insufficient to convince a supporter of this doctrine. Like most other writers on cancer he suggests a "true remedy" for the increasing prevalence of that dire disease. We doubt, however, whether the desired end will be brought about by increased specialisation, and by the recognition of what the author definitely terms "cancer science."

THE DOCTRINE OF ENERGY. By B. L. L. London: Kegan Paul, Trench, Trübner, and Co. 1898. (Cr. 8vo, pp. 118. 2s. 6d.)

THE author's contention is that the latest discoveries of physical science tend to show that the one reality of the outside world is not matter but energy; that the existence of matter is a hypothesis which was a natural result of the knowledge we formerly had, but which throughout presented great difficulties, both to physical science itself, and also to that form of inquiry which asks how if matter be external to and akin from intelligence the latter can appreciate it. This difficulty the author thinks does not arise with energy if we hold that we ourselves are centres of energy, since by that fact we are fitted to appreciate the rest of energy. Intelligence then, like sensation, is the result of energy, and it is the transmutation of this, the only reality, which form for us all the objects of thought whether these be the phenomena of the outside world or those of our own mind. The idea of matter has arisen from a mistaken interpretation of our sensations.

We do not feel inclined to criticise this theory in any dogmatic way. One difficulty the author himself points out: Is energy conceivable without a material on which to work? Another seems to us to lie in the notion that we appreciate energy because we ourselves are centres of it. We doubt if this solves the difficulty that has so long vexed metaphysicians. Does it really explain personality, or does it not rather pass it by still unexplained, but concealed under a new form of words? If we as centres of energy are one with all energy, how do we feel separate from the rest? If we are not one with it, what is the relation between it and ourselves? We are inclined to doubt whether by substituting energy for matter the writer has really united subject and object, or has reduced what men have always felt to be two realities—the thinking self and the thing it thinks about—to one.

DIE KRANKHEITEN DES MUNDES. [The Diseases of the Mouth.] Von J. MIKULICZ und W. KÜMMEL, in Breslau. Mit Beiträgen von A. CZERNY und J. SCHÄFFER. Jena: Gustav Fischer. 1898. (Roy. 8vo, pp. 256, 2 coloured plates, 60 figures. M. 8.)

THERE are few regions of the body where the varied forms of disease can be studied so effectively and with such profit as in the mouth. Surgically speaking, the mouth is an exceedingly fertile territory. Its diseases, then, call for our close investigation. It is enough for us to read the names of the authors of this work to know that the subject will be dealt with in a masterly fashion. A careful perusal of the work leaves us convinced that the work is worthy of its title-page.

The volume consists of six sections. In the first a general description of the mouth, anatomical and physiological, is given. The importance of the cavity as the gate of admission of a large number and a great variety of organisms is emphasised, and instructions as to the methods of examination are detailed.

In the second section, those diseases which affect the mouth generally, without special localisation, are described. Such are the affections noticed in general disease, the various forms of traumatism, inflammatory and parasitic diseases. In this section, a most able account of the manifestations due to syphilis and gonorrhœa is from the pen of Dr. SCHÄFFER. In the third section are considered the localised affections of the mouth; the diseases of the tongue, gums, lips, cheeks, and mucous membrane.

The fourth section deals with the new growths, simple and malignant, including the tumours affecting the jaws. The fifth section, written by Professor CZERNY, gives a full description of the disease of the mouth in children. In Section VI is given a useful series of prescriptions for tooth-powder, mouth washes, lip ointments, and so forth.

The teaching of the book is on the whole that which would be acceptable to English authority. In the section on cystic disease of the jaw and on the tumours of the jaw the im-

portant work of Bland Sutton is ignored. The periosteal ysts of Magitôt are considered as arising from the "rests" f Malassez, a view which, taking into account the epithelial ining of these cavities, is probably correct. A very typical ase of lipoma of the tongue is figured. The unusual con- lition of gonorrhœal stomatitis is carefully described, and a ery clear drawing of a typical case is given. The causation f ranula is fully discussed. The existence of Fleischmann's ursa is considered hypothetical, a view which will not be niversally accepted. The condition known as "acute anula" is stated to be due to an acute inflammatory affec- ion of one or more salivary glands. The interesting patches een on the palates of newly-born children or children a few lays old, and known as "Bednar's aphthæ," it is asserted, re the results of epithelial proliferation localised at points f friction.

The volume may be considered a complete, full, and generally uthentic exposition of our knowledge at the present day. The figures are exceedingly well done, but the coloured plates re—well, they are worthy of a pavement artist.

Die Erysipel—Erysipeltoxin—und Serumtherapie der bösartigen Geschwülste. Von Dr. Rudolf Eschweiler, in Bonn. Leipzig: C. G. Naumann. (Crown 8vo, pp. 142. M. 1.50).

In a small and very unpretentious-looking volume, Dr. Rudolf Eschweiler, of Bonn, has collected information of a most interesting description on the treatment of malignant tumours with erysipelas toxin and erysipelas and cancer serums.

The text is comparatively brief, dealing principally with the history of the discovery and application of these methods of treatment. The real gist of the work lies in a series of tables made up of abstracts of cases collated from all available sources.

In the first column of these tables the author gives the exact reference to the cases with which he is dealing. In the second is a short description of the case. In the third any untoward results are set forth; and in the fourth the result of the treatment, or of an attack of erysipelas, is given.

In Table I are recorded the effects of an attack of spontaneous or artificial erysipelas on malignant tumours. There are given notes of 59 cases, of which 15 recovered, but 6 of the others appear to have died from an attack of erysipelas. In one the history of the patient could not be followed out, but up to the time that he left hospital there was marked diminution in the size of the tumour, whilst another case still remained under observation. It will be seen from this record that at least 25 per cent. of the patients treated by this method are reported ultimately to have recovered.

Table II contains notes of 95 cases of tumours treated with erysipelas toxin alone, or along with the products of the bacillus prodigiosus. Recovery took place in 15, or in about 16 per cent. There was apparent improvement in at least 3 other cases. In 15 cases there was, accompanying or following the injection, considerable pain, fever, dyspnœa, pneumonia, suppuration, great loss of strength, vomiting, collapse, marked herpes, or eczema; whilst in 9 there was a very rapid increase of the growth, and in a few cases death from collapse or similar accident is recorded. During the treatment 14 of the patients appear to have died, several from pneumonia, collapse, or septic mischief, but some undoubtedly from the growth of the tumour.

In Table III are given the results of treatment of malignant tumours with erysipelas serum. These, 49 in number, offer very little encouragement to the surgeon. To begin with, in at least 37 of the cases very marked local and general symptoms, such as swelling, œdema, rashes, and high temperature occurred, although the more severe symptoms were usually wanting, and in only one case was there a "cure" of the disease, though in one other some improvement was noted.

As to the treatment with cancer and sarcoma serum, only 4 cases are collected, and in not one of these was any good result apparent.

It is evident, then, that up to the present the best results have been obtained with true erysipelas infection, for 25 per cent. of the patients recovered; the proportion of deaths from erysipelas is, however, somewhat high, so that the treatment is not unaccompanied by risk. With erysipelas toxin and Coley's fluid the results are not quite so good, the percentage of recoveries being about 16. With erysipelas serum the percentage of recoveries is very small indeed, only about 2, whilst with cancer serum the percentage is *nil*. Here, however, the number of cases is so small that it has very little statistical value.

These facts speak for themselves, and for those who wish to have in a handy form the details on which the statistics are based, this little book may be strongly recommended.

NOTES ON BOOKS.

The first of the annuals to reach us this year is *Who's Who* (London: A. and C. Black. 3s. 6d. net). The first to appear, it is also one of the most generally useful. Mr. Douglas Sladen, the editor, quotes a criticism which appeared last year, to the effect that *Who's Who* contained not only personages but potential personages. He accepts the criticism, and claims, with justice, that this is one of the chief objects of the book. Experience of previous volumes, which have been of use to us for almost daily reference, has proved to our satisfaction that the compilation is remarkably accurate, while the analytical tables, which occupy the first 150 pages of the book, greatly facilitate the search for information.

The aim of *Essentials of Modern Treatment of Disease for the Use of Practitioners*, by K. M. Madkarni, Part I (Madras: N. K. Rao and Co.; and London: Baillière, Tindall, and Cox. 1898. Crown 8vo, pp. 212) has been, the author states in the preface, "to supply the busy practitioner with a pocket compendium of ready reference, containing an epitomised account of the various modes of treating each disease recommended by eminent authorities of several countries." The work is a compilation, and reflects credit on the industry of the compiler. Diseases are arranged alphabetically, and different methods of medicinal treatment are given. Authorities are quoted, but no references are supplied. The *rationale* of the use of drugs and methods is very sparingly furnished or altogether omitted; and information regarding the success of treatment is exceedingly scanty or wanting. A work of this sort is, we fear, apt to give rise to mischief in practice—to purely empirical methods, to shifty unsettled management of cases, and to overdrugging. Most men like to treat disease on some kind of principle, and to obtain direction from pathology, or seek sanction from experience: and patients prefer to entrust themselves to men who are known to found their efforts on knowledge of this kind. The busy practitioner who would, for example, endeavour to frame a conscientious and consistent plan of treatment of Asiatic cholera from the scrappy hints contained in this book would find himself in a state of bewilderment to start with, and his patient in bad plight at the end. Another disadvantage of this sort of compilation is that drugging is sometimes encouraged when surgical measures are required, and early resort to them constitutes the best or only means of cure. The article on cancer may be referred to in illustration. The reason for publishing a compendium of this nature in parts is difficult to conceive. A "pocket book of easy reference" would surely have been more convenient if complete in one volume.

Dr. Edgard Chevalier's small work, *Chirurgie des Voies Urinaires* (Paris: J. B. Baillière et Fils. 1899. Crown 8vo, pp. 336, 83 figures. Fr. 5) deals with the *technique* of the various operations performed on the urinary organs. It is a work on operative surgery. The general descriptive part is prefaced by a detailed account of the procedures in general use for the sterilisation of catheters and instruments, and the importance of these is very properly emphasised. Instillation and flushing of the urethra, urethroscopy, and urethrotomy are fully described. The operative procedures recommended for hypospadias and epispadias are somewhat primitive, and the descriptions are rather bald. The bladder, ureter, and kidney are dealt with in succession. Practically all the recognised surgical procedures are mentioned, but the instructions given are in some cases very inadequate to the needs of a beginner, for whom the book is primarily intended. A young and comparatively inexperienced surgeon would hardly place reliance on so unpretentious a volume as this. The necessity for the publication of the work is therefore

doubtful. Granted the necessity, the volume is on the whole succinctly and effectively written.

DR. ARNOLD POLLATSCHEK, who is a practitioner at Carlsbad, has for the last nine years employed his leisure during the off-season in compiling with much labour a yearbook of treatment (*Die therapeutischen Leistungen des Jahres* 1897. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1898. Demy 8vo, pp. 376. M. 6.30) consisting of abstracts of the most noteworthy papers of the year dealing specially with therapeutics in medicine, surgery, and gynæcology. The special departments, such as the ear, throat, and eye, are only dealt with in relation to general medicine. Naturally a very great variety of subjects are considered, including bicycling, female dress, lumbar puncture, new drugs, the treatment of aneurysm, dyspepsia, and many other matters of perpetual interest to medical men. In every case a short but concise and clear abstract of the original communication is given.

WE have received the *Procès-Verbaux, Mémoires et Discussions* of the Eleventh Congress of the Association Française de Chirurgie which was held in Paris from October 18th to 23rd, 1897. The volume (Paris: Félix Alcan), which is edited by Dr. LUCIEN PICQUÉ, Secretary General, reaches only us between ten and eleven months after the conclusion of the Congress. The two chief discussions were on contusions of the abdomen, and on the indication for treatment by operation or otherwise of cancer of the rectum. The papers by those who introduced these subjects are elaborate essays containing much valuable historical and analytical matter, but the discussions, as is so often the case, seem to have been apt to tail off into a report of cases. The volume, which is provided with a table of contents and indexes of subjects and authors' names, contains many interesting clinical papers, is adequately illustrated, and appears to have been very carefully edited.

The Illustrated Annual of Microscopy (London: Percy Lund, Humphries and Co. 1898. 2s. 6d.) is intended essentially or amateurs, and no detailed review of it need therefore be here given. The field of microscopic research can no longer be seriously dealt with by microscopical societies, nor can the results of microscopic investigation in their entirety be set forth in microscopical journals. The appearance of such popularising works, however, is always welcome, since no better proof could be given that science is pursued by many (not professionally engaged in it) purely for the intellectual pleasure and profit derivable from it. Although the publication is intended for amateurs, it may be doubted whether any information is to be derived from microphotographs of bacteria reproduced by "process" through a particularly obvious screen, the result being that the individual features of the different organisms are as effectively eliminated as they would be in one of Galton's composite photographs. Still for a volume of 164 pages published at so cheap a price, the *Annual*, as a whole, is profusely and not unsatisfactorily illustrated.

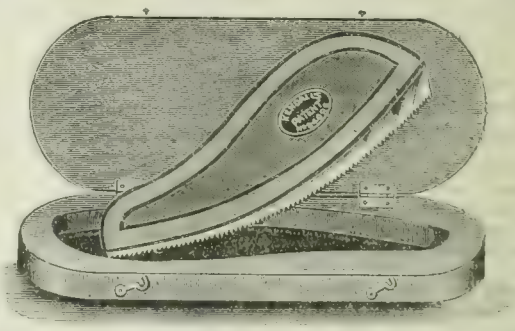
REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

Aseptic Ligatures.—Ligatures prepared by Messrs. Seabury and Johnson, of New York, seem likely to meet a need occasionally felt by surgeons who are suddenly called upon to operate without having at hand ligature or suture material which they have themselves carefully prepared, or on which they can thoroughly rely. The advantages claimed for these ligatures, which advantages, however, can be determined only by prolonged clinical and bacteriological trial, are that the catgut and silk of which they are composed are rendered absolutely sterile, and that as a result of special and careful packing in sealed capsules they reach the hands of the surgeon direct from the steriliser.

Aseptic Pocket Knife.—Messrs. Maw, Son and Thompson have made for Dr. Ridge, of Enfield, a very convenient form of knife for surgical purposes. It is small and light, and can be readily submitted to thorough and complete sterilisation. It is specially intended for the ordinary surgical pocket case. The handle forms a light, though strong, metal sheath, open at the front and back, into which the blade, when not in use, is inserted. The blade when withdrawn for use and fixed at the end of the sheath is held firmly as the result of an ingenious arrangement by which the haft slips into a long spring. This arrangement can be adapted to various shapes of blade, and the knife can be made either single or double with the two blades side by side or end to end. The handle or sheath is nickelled, and being wholly of metal can be rendered aseptic in any approved way.

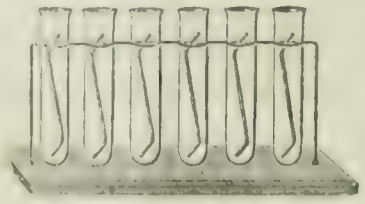
Saw for removing Stiff Bandages.—Our attention has been directed to a saw specially designed for the removal of plaster-of-paris and other firm bandages. This instrument, devised by Mr. E. G. Kendall, of High Street, Harborne, Birmingham, is so formed that the toothed edge of the saw



will enable the operator to cut through a casing of any thickness without cutting or injuring the flesh. Although we cannot see how, in careless hands, such an accident can be avoided by the use of this in the place of any other cutting instrument, we are of opinion that it acts speedily and effectively in dividing any hard casing, and that it is likely, either alone or in association with other tools, to prove useful in the completion of what is often found, both by surgeon and patient, a very tedious operation.

MEDICINAL AND DIETETIC PREPARATIONS.

Aseptic Female Catheter Stand.—This simple and useful appliance, made by Messrs. Reynolds and Branson, Leeds, consists of a thick glass slab which carries a ringed metal frame for six wide and strong glass test tubes. The metal is thickly tinned and the whole can be boiled without injury. The tubes are made of a length suitable for the ordinary short female catheter, and the slab is furnished with a frosted slip upon which the patient's name can be written opposite her own catheter.



This is an extremely convenient means of keeping catheters immersed in antiseptic fluid, and of preventing the indiscriminate use of the same instrument among a number of patients. The apparatus would, however, be improved by the addition of glass or metal caps for the test tubes to keep out dust, etc.; otherwise they should be plugged with cotton wool. Gynæcological wards and lying-in hospitals should find the catheter stand very useful.

St. Ronan's Natural Mineral Water.—Our analysis of a sample of this water shows that the amount of organic matter is very low, and unobjectionable in character so far as this can be ascertained by chemical analysis. The results afford no evidence against the claim that the water is a pure natural mineral water properly charged with gas, and it may therefore be accepted as such—as a pleasant and palatable table water. The proprietors are the St. Ronan's Wells and Mineral Water Company, Innerleithen, N.B.

THE EVOLUTION OF THE PHARMACOPŒIA.

In an address delivered at the opening meeting of the Glasgow and West of Scotland Pharmaceutical Association, Professor Stockman dealt with the evolution of our *Pharmacopœia*. After briefly sketching the history of Egyptian, Greek, Roman, Arabian, and Mediæval medicine, he said that in the fifteenth and early sixteenth centuries a number of manuals were written especially for apothecaries by different authors, none of whom were men of very great note. The titles sufficiently explain their purposes: *Luminare Minus Seu Lumen Apothecariorum*, Venice, 1517; *Luminare Majus*, Venice, 1496; *Compendium Aromatariorum*, 1488; *De Medicamentis Simplicibus et Compositis*, Venice, 1491: *Manipulus Medicaminum*, 1523: *Officina Apothecariorum*, Lyons, 1532, and others of the same kind. The Mediæval pharmacist was therefore by no means badly suppied with manuals to guide him in his work. The first book of the kind to receive the impress of any authority beyond that carried by the author's name was the *Antidotarium Florentinum*, Florence, 1498, a collection of medical recipes sanctioned by the university or medical college of the city.

The first *Pharmacopœia* sanctioned by the civil authority, and enjoined to be used under penalties by dispensers and compounders of medicines, was that of the town of Nürnberg, published in 1545, under the title *Pharmacorum Conficiendorum Ratio, vulgo vocant Dispensatorium*, etc. This work was compiled by Valerius Cordus from various sources, but chiefly from the practice of Galen. Cordus had made the compilation for his own use, and during a short residence in Nürnberg he showed it to the physicians composing the Medical College or guild, who prevailed upon the Town Council to adopt it and make it authoritative on all under their jurisdiction. Its contents comprise the collection and keeping of simples, adulterations, succedanea, weights and measures, and a large number of formulæ. The term "pharmacopœia," however, was not met with till 1561, when it was found twice in the *Compendium Pharmacopœiæ Joannis Placotomi*, Lyons, 1561, and *Pharmacopœia Medicamentorum omnium quæ hodie in officinis exstant, tractationem et usum ex antiquorum medicorum præscriptio continens*, Basel, 1561, a work by Anutius Foesius. The *Pharmacopœia Augustana* (Augsburg, 1646) was in some ways one of the most interesting of its time. In the introduction there was an amusing passage concerning the duties of the *Pharmacopœus*:

> As in the province of medicine, the pharmaceutic art vindicates for itself not the least humble place, and as it exists as an integral part of medicine, moreover as medicine among civilised peoples has always been held sacred and holy, therefore it is necessary that the pharmacist should be an honest man, trained in his art, holding exactly the reason and mode of preparing medicines, and properly skilled.

Without a prescription or permission from the magistrates he was not to sell poisons, love philtres, emmenagogues, nor abortifacients, neither himself nor by his servants or apprentices. In filling prescriptions he was to be *vigilans, circumspectus, et fidelis*: he must neither add nor subtract anything. At the end was a decree of "the most illustrious Town Council" of Augsburg concerning physicians, surgeons, and pharmacists. When necessary they were to confer together faithfully, candidly, and diligently for the public good. Surgeons, barbers, and bathkeepers were directed not to overstep the limits of their own callings, but, mindful of their oath and office, perform only those services to the patient which appertained to their several callings, preparing no medicines, much less administering them, and very much less selling them. Quacks of all kinds were forbidden the town, under the description of strollers, charlatans, empirics, apostates, Jews, artisans, fortune tellers, pedlars, sleight-of-hand men, secret-medicine vendors, old women, and bombastic doctors.

The *Pharmacopœia of Brussels* (1671) bore a close resemblance to the preceding, as did also that of Cologne (*Pharmacopœia Coloniensis*, 1627). Turning next to the *Pharmacopœias* of our own country, Professor Stockman said that in 1621 the College of Physicians published the first edition of the *Pharmacopœia Londinensis*, which was made authoritative in England and Berwick-on-Tweed by an Order of the King in Council. For the next hundred years it did not differ much from the very worst Continental ones. Thus in 1668 over 1,200 simple medicines were enumerated in its Catalogus simplicium, and these include the fat of man, lion, and vulture, hair, urine, blood, etc. One item was specially curious—"cranium humanum violente morte extinctum." In 1721 the work was greatly simplified, and there was a steady improvement till the last edition was published in 1851. This was still in Latin, but contained only 273 separate drugs, apart from their preparations. Previous to the publication of a *Pharmacopœia* some of the books mentioned above and Gerard's well-known *Herbal* were in use in England by apothecaries. The first edition of the *Dublin Pharmacopœia* was published in 1807, the last in 1850.

The first authoritative *Pharmacopœia* in Scotland was compiled and published by the Royal College of Physicians of Edinburgh in 1699. The last edition of the *Edinburgh Pharmacopœia* appeared in English in 1841. This brought us to the *British Pharmacopœia*, the first edition of which was published in 1864 by collating those of London, Edinburgh, and Dublin, and the whole history of which and its successors was accurately set forth in the preface to the present edition. In conclusion Dr. Stockman raised the question whether the earliest *Pharmacopœias* reflected accurately the state of therapeutics at the time of their publication—the seventeenth and early eighteenth centuries. At that time the practice of medicine in both countries, but especially in Scotland, was in a very backward state, and medical teaching still more so. Scottish physicians, for the most part, obtained their education in Continental schools, but the number of such men was comparatively small and a great deal of the medical practice of the country was in the hands of quite incompetent persons. Dr. Stockman referred to several of the popular treatises of domestic medicine, including the *Arcana Fairfaxiana*, a manuscript book of domestic medicine undoubtedly used by members of the well-known Fairfax family in England and a facsimile of which had been published by Mr. George Weddell of Newcastle-on-Tyne, and the *Pharmacopœia Bateana*, a collection of the recipes of Dr. Bate, who was physician to two kings of England and to the Protector. He also quoted Burns's description of Dr. Hornbook's armamentarium, which was probably taken from some apothecary's shop of the time:

> Calces o' fossils, earths and trees,
> Sal-marinum o' the seas;
> The farina o' beans and peas:
> He has't in plenty.
> Aqua-fortis, what you please,
> He can content you.
> Forbye some new uncommon weapons.
> Urinus spiritus o' capons,
> Or mite-horn shavings, filings, scrapings:
> Distilled per se:
> Sal-alkali and midge-tail clippings.
> And mony mae.

But Dr. Stockman was inclined to think that the actual practice of medicine was not in such a backward state as these books would lead one to expect. He had come to this opinion from a perusal of a rare and interesting little volume entitled, *Pharmaco-Pinax, or a Table and Taxe of the Prices of all usuall Medicaments, Simple and Composed, contayned in D. Gordon's Apothecarie and Chymicall Shop, within Mr. Robert Farquhar's high lodging in New Aberdene* (Aberdene, anno 1625). This was a list of the medicine kept in the shop, with prices attached, and it professed to contain all those in common use. It had a remarkable resemblance to similar price lists of the present day. To be sure one found human fat priced at 12s. Scots per oz., mummia of Egypt at 2s. Scots per dr., and powder of earthworms; but these almost exhausted the list of such things and otherwise the wares offered were ointments, plasters, pills, and powders, which differed only superficially from those of to-day. Dr. Gordon had also on sale "For Bairnlie Diseases" a "Syrope for the Kinkhost" at 3s. Scots per oz., an "Electuarie for Toothing," and "For Decorement" "Water to make yealow Haire," "Sweet soape-balls to wash the Hands," and so on. Professor Stockman said that such a trade price-list compiled for the use of his customers by a man whose wordly prosperity depended on his supplying them to their satisfaction more accurately represented the drugs in actual everyday use than any medical compilation made at an age when ancient authors were slavishly followed and tradition held all-powerful sway.

Successful Vaccination.—Dr. William Drinkwater, public vaccinator for the Bicester District of the Bicester Union, has received for the third time the Government grant for successful vaccination.

LITERARY NOTES.

WE learn that Sir Thomas Grainger Stewart is likely before long to come before the world in a new character. For some years past he has been wooing the Muse during his autumn holidays, and the fruit will shortly see the light in the form of a drama, entitled *The Good Regent: a Chronicle Play*. Both the medical and the literary world will look forward with interest to the publication of a play from so eminent a hand. We may not inappropriately recall the fact that several members of the medical profession have written plays, among them being Claude Bernard and Professor Charles Richet. It should not be forgotten that Oliver Goldsmith was a doctor, though the source of his degree is a trifle doubtful.

In the current number of the *Century* there is an article by Mr. P. L. Ford, entitled Many-Sided Franklin, which contains the following story about the famous eighteenth-century physician, Sir John Pringle. At a meeting of a medical society, under the presidency of Pringle, the question was debated "Whether physicians had, on the whole, done most good or harm?" After the discussion the President is reported to have delivered himself to the following effect:

> They must first tell him whether, under the appellation of physicians, they meant to include *old women:* if they did, he thought they had done more good than harm, otherwise more harm than good.

In a recent number we announced among the medical periodicals which the New Year is to bring forth the *Revue Clinique des Maladies Nerveuses*, which was to appear under the editorship of Dr. Levillain, of Nice. Since then Dr. Levillain has died, and his projected journal must be added to the long list of "things that might have been."

Mr. Fisher Unwin announces a novel which has a young medical practitioner for a hero. The author is Mr. F. J. Webb, and the title of the book is *Harry Ingleby, Surgeon*.

Another forthcoming work likely to interest medical readers is *Jerome Cardan (1501-1576): A Biographical Study*, by Mr. W. G. Waters. Hieronymus Cardanus was a celebrated physician and mathematician of Milan, who flourished in the sixteenth century. Besides practising medicine, he dabbled in magic, and his life was sufficiently diversified to make very interesting reading. An excellent account of Cardan was given many years ago by the late Professor Morley, who was himself a medical practitioner, but soon abandoned the lancet for the pen.

A book by the late Registrar of the General Medical Council, Mr. W. J. C. Miller, entitled *Nature Studies, with Critical Essays and Lectures*, will be issued by Messrs. John Bale, Sons, and Danielsson, Oxford House, Great Titchfield Street, W., about February 1st, 1899, "provided a sufficient number of copies are subscribed for." The volume, which will contain a portrait of the author, is edited by Mr. H. Kirke Swan, who contributes a biographical introduction. The price is 10s. 6d. net, and the edition will be limited to 400 copies. The nature and variety of the subjects dealt with may be gathered from the list of contents, which runs as follows: Introduction: Biography of W. J. C. Miller. 1. The Pleasures of Rambles—by Lane, Field, and Moorland. 2. Nature Pleasures in a Riverside Garden. 3. A Bird-loved Suburb of London. 4. Bird Life in London. 5. The Habits of the Domestic Swan. 6. The Arthurian Headland. 7. A Devonian Headland. 8. A Bird-haunted Pine Grove. 9. The Home of the Jackdaws. 10. The Summer Home of the Sea Birds. 11. Nature Poetry. 12. The Literary Charm of Scenic Associations. 13. Henrik Ibsen: A Dramatic Pioneer. 14. The Rise and Development of the English Drama. 15. The Structure and Harmony of English Verse: with application to Thomson's Poetry. 16. The Bard of Richmond: James Thomson. 17. Ingoldsby. 18. The Poetry of Byron.

One of the most amusing things in the comic number of the *Münchener medicinische Wochenschrift*, to which reference was recently made in the BRITISH MEDICAL JOURNAL, is the plaint of the over-pressed *Referent* on gynæcological literature. Addressing the Editor, he says, in the famous words of Luther, "Ich kann nicht mehr!" He may dare all that may become a man, but what is he to do? There lie before him three parts of the *Archiv für Gynäkologie*; the mere sight of the hundred tables which they contain makes him ill. But there are also besides parts of the *Zeitschrift für Geburtshulfe und Gynäkologie*; seven parts of the *Monatschrift*, and seventeen of the *Centralblatt*, of that ilk. Then there are the visiting cards of a number of able editors which he is guiltily conscious are intended to remind him that he has failed to mention the papers dealing with diseases of women which they have published. Then there is a veritable Monte Testaccio of new textbooks, new monographs, new editions, with a casual "Festschrift" or two thrown in. Then there are the reports of congresses and associations, the transactions of societies, the statistics of various operators, and innumerable reprints. To crown all there are medico-historical works expounding and criticising the teaching of Soranus and Hippocrates. No wonder that the unfortunate *Referent's* hair turns grey, and he retires from an intolerable position.

It may not be generally known that Egypt is fortunate in the possession of a monthly journal of its own devoted to hygiene. It is entitled *Tahib el Aila*, and is written in Arabic in a style likely to be understanded by the people. It is intended to diffuse a knowledge of the principles of sanitary science among the native population, and especially among the poorer classes. The teaching which it contains is in conformity with the hygienic precepts of the Koran. *Tahib el Aila* is edited by Dr. Eid of Cairo, who is also the proprietor. It has been in existence for three years, and has subscribers in all Arabic-speaking countries, such as Syria, Morocco, etc., but its largest circulation is naturally in Egypt.

In the *Maryland Medical Journal* of December 3rd Dr. H. M. Simmons gives a history of medical journalism in Maryland, which he says dates from the first decade of the present century. In 1808 Dr. Tobias Watkins established the *Baltimore Medical and Surgical Recorder*, which was the third medical journal published in the United States. The *Recorder* fled to the shades of the Hades of defunct journals in 1809, and two years later the *Baltimore Medical and Philosophical Lycæum* made its appearance under the direction of Dr. Nathaniel Potter, Professor of "Theory and Practice" in the College of Medicine of Maryland. The learned Nathaniel seems to have found the practice of journalism more arduous than the theory, for his *Lycæum* collapsed after its fourth number. The *Baltimore Philosophical Journal and Review* which followed eleven years later was only shown, like Marcellus, to the world: it was unable to break the *fata aspera* of medical journalism a second time. In 1829 came the *Maryland Medical Recorder* under the ægis of Dr. Horatio G. Jameson, Professor of Surgery in the Washington Medical College. This periodical struggled into a third volume before it followed those which had gone before. Several other journals passed swiftly across the stage, like the kings in Banquo's vision—the *Baltimore Monthly Journal*, the *Baltimore Medical and Surgical Journal and Review*, the *North American Archives of Medical and Surgical Sciences*, the *Maryland Medical and Surgical Journal*, the *Maryland and Virginia Medical Monthly*. They came like shadows, and so departed. The Civil War interrupted the succession for a time, for like laws, medical journals *inter arma silent*. After the war came the *Medical Bulletin*, the *Baltimore Medical Journal*, the *Physician and Surgeon*, each of which was duly gathered to its predecessors. At last, in 1877 there came something more stable in the form of the *Maryland Medical Journal*, which still lives and flourishes. Since its foundation there have appeared and disappeared the *Independent Practitioner*, the *Baltimore Medical and Surgical Record*, and the *Medical Chronicle*. The other medical journals now published at Baltimore are the *Johns Hopkins Bulletin*, the bulletins of the University of Maryland, of the Baltimore Medical College, and of the Women's Medical College, the *Alumni Journal of the College of Physicians and Surgeons*, and the *Journal of Eye, Ear, and Throat Diseases*. It may be added that the *Maryland Medical Journal* is the only weekly medical journal issued south of Philadelphia.

PAN-AMERICAN MEDICAL CONGRESS.—At the request of the Venezuelan Government and of the local committee, the next meeting of the Pan-American Medical Congress, which was to have been held at Caracas in December 1899, has been postponed to the same month in 1900. The reason alleged for the postponement is that the medical profession has been unable to make the necessary preparations owing to an epidemic of small-pox, while the Government has been kept engaged with one of the revolutions endemic in South America.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 17TH, 1898.

THE ENTITY OF ENTERIC FEVER.

The first great step in advance which was made in our knowledge of enteric or typhoid fever dates from the year 1849, when Sir William Jenner first clearly distinguished between the diseases known respectively as typhus and typhoid fevers. The next epoch dates from 1880, when Eberth described a bacillus which he believed to be specific; and from the researches of a large number of observers we now know that Eberth's bacillus is the causative agent of enteric fever. That Eberth's bacillus (bacillus typhosus vel typhi abdominalis) is of this etiological importance, is shown not only by the fact that it is present in every case of enteric fever, but also by the fact that specific preventive qualities and agglutinating properties towards the bacillus are developed in the blood during the course of, and after, the fever.

Although there can be no question that, from the bacterial standpoint, all cases of enteric fever are identical, in that the specific bacillus can and must be found if sought for—always in the spleen, sometimes in the blood—this uniformity is not a characteristic when cases are viewed from the clinical standpoint; in this enteric fever agrees with other illnesses caused by bacteria. The grades of difference which are presented in any series of cases of enteric fever vary from the typical textbook form of attack to a passing indisposition or "febricula," which would easily baffle recognition at the bedside. Enteric fever does not conform to a single type: thus in one case the main character may be a scarcely controllable diarrhœa with its depressing consequences, whilst in another obdurate constipation is a leading feature, or meningitic symptoms may be prominent; yet in all the enteric bacillus can be found.

Thus, although a typical attack possesses definite clinical characters, yet it is clear that aberrant forms of the fever are liable to be confused with infections due to other causes. One form of fever which has often been confused with enteric in past years has been clearly differentiated by the work of Bruce; this is known as Malta or Mediterranean fever. It is due to infection by the micrococcus Melitensis.

But there is another form of infective fever which has been, and probably still is, unrecognised as a separate disease from enteric fever when atypical forms of the two diseases are encountered. This form of fever has a further interest in that it is caused by a bacillus similar to the bacillus typhosus in many ways, although it is clearly separate from it in others. This bacillus was described by Gärtner in 1888 as the cause of an outbreak of illness affecting 58 people, of whom 1 died, which was directly traced to the consumption of the meat from an ox; this ox was slaughtered because it was suffering from diarrhœa. The only person who died is stated to have eaten of the meat in an uncooked condition.

The name given to this bacillus by its discoverer was "bacillus enteritidis." As some more recent authors have applied the name, with slight qualification, to entirely different bacilli, it is perhaps better to speak of it as Gärtner's bacillus, or the bacillus enteritidis (Gärtner). In certain respects—in its morphology (for example, flagella), and physiology (for example, inability to clot milk)—it resembles the B. typhosus, while it shares with the B. coli communis the power of fermenting certain sugars—for example, glucose, maltose. It is, however, very clearly distinguished from both these bacilli, and is so characteristic that it can be recognised easily. Indeed, were it not for the inaccessibility of the original description, and the inclusion of a milk-clotting bacillus under the same name by Lubarsch, it seems unlikely that any confusion between it and the B. typhosus on the one hand, and B. coli communis on the other, would have occurred. Fortunately the culture has been handed down, and is to be found in all bacteriological institutes.

Many outbreaks of so-called meat poisoning appear to have been proved to be due to infection with this bacillus. On another page we print an account of some of these outbreaks by Mr. Durham, who lays stress on the fact that in all cases in which the epidemiological cause has been traceable, the outbreaks have been uniformly due to the consumption of the insufficiently cooked meat of diseased animals. Another mode of infection by the bacillus enteritidis is through the agency of diseased parrots; in this case the fever has been called "psittacosis" by French observers.

When we come to look at the clinical side of the fever caused in main by this bacillus, we find that there is a very considerable variation in the symptoms. The typical attack may be described as a very severe diarrhœa, with very profound collapse, terminating fatally in three or more days: in such cases there may be delirium, either acute or of the low, muttering type; vomiting may be very severe and bloody; the stools may also contain more or less blood. In less severe cases, besides the diarrhœa, vomiting and prostration, a number of other symptoms are found. Perhaps the most constant is the slow convalescence and tardy restoration of strength. Several weeks may pass before a patient is able to get about without the aid of support; three to five or even seven weeks are not infrequently recorded as the period of recovery. In one outbreak van Ermenghem describes the symptoms as "scurvy-like," with derangements of vision and dilatation and inequality of the pupils. Rashes are not uncommon, and desquamation, especially on the hands and feet, is not infrequently observed.

These forms of the fever, whether severe or slight, are characterised by a short incubation period which may not be more than three or four hours, though more usually it

extends to twelve or more hours. The suddenness of the onset with nausea, headache, anorexia, pains in the limbs, joints, and back, together with the shortness of the pyrexia and possible multiplicity of persons attacked, will afford considerable aid in diagnosis. But all infections with the bacillus enteritidis do not conform to this type; in fact when we look to the other extremity we find, especially in the case of "psittacosis," that the incubation period may be as much as seven to twelve days. Diarrhœa is not a marked feature; indeed some observers hold that constipation is the more common; vomiting is said to be rather uncommon. When this form of the disease (psittacosis) was first recognised, one physician held that it was an "epidemic of typhoid fever, with relapses, created spontaneously by the parrots, by which it was modified in its nature." The pyrexia differs from that of enteric fever in that it generally ends suddenly after a few days; but as in the cases acquired from eating unsound meat, relapses and irregularly-occurring rises of temperature are described. The fact that Petruschky has isolated on many occasions from persons suspected to be suffering from enterica a bacillus which he calls "B. fæcalis alkaligenes," but which agrees in its characters with that of the B. enteritidis, is extremely suggestive.

The extent to which the lungs become implicated in infections by B. enteritidis (Gärtner) is also variable. In some epidemics pneumonic conditions are the rule, whilst in others slight broncho-pneumonia or bronchitis only may be found, or again lung symptoms may be completely absent. Albuminuria and, in severe cases, hæmaturia are recorded; the urine may also give the "diazo" reaction, but there is not sufficient evidence to show how common this feature may be. Taking the typical infections with the B. typhosus on the one hand, and that with the B. enteritidis on the other, there is not much probability of confusion; but we do not know to what extent the atypical forms of the two diseases are confused in bedside diagnosis. Nor do we know the true nature of hosts of passing attacks of fever, of diarrhœa, and the like.

Much further research is necessary in this direction. The modern refinement in methods of isolation and recognition of bacteria affords sufficient machinery for furthering our knowledge of the true nature of these various forms of illness.

In making a differential diagnosis at the bedside the following diseases have to be kept in mind: Enteric fever (enterica), typhus fever (typhus), relapsing fever (recurrens), Malta fever, influenza, and infections with varieties of Gärtner's bacillus. The distinction of these is of considerable importance from the point of view of treatment; this is especially the case, from the point of view of the patient, when enterica can be excluded with certainty. From the writings of French observers the rash in psittacosis may be confused with that of typhus; the presence of relapsing fever may be suggested by the recurrent attacks of pyrexia; the sudden onset and vague muscular pains and headache may suggest influenza, as in an epidemic with which we are acquainted; until we know more of the distribution of Malta (or Mediterranean) fever it is difficult to say how far this affects practitioners in this country, although abroad this specific fever must always be kept in mind.

In all these diseases, with the single exception of typhus, the causative microbe is well known and recognised. The ultimate and actual diagnosis depends upon the confirmation of the presence of the etiological agent; the same is true even when cases come to the *post-mortem* room. There is now evidence that enteric fever may occur without the characteristic lesions of the ileum. Of the cases which have been recorded, many cannot claim to be regarded as indisputable, for we cannot be certain that they were not infections with Gärtner's bacillus. However, Flexner, of Baltimore, has given an authentication of the presence of true Eberth's bacillus in such cases, which cannot be gainsaid. Still, the *post-mortem* appearances of "typhoid fever without typhoid lesions" can be accepted only when the presence of the enteric bacillus and the absence of the B. enteritidis, etc., is demonstrated. A further complication has been introduced by the discovery by Gwyn of another bacillus totally distinct both from B. typhi abdominalis and B. enteritidis in an apparently typical case of enteric fever. Since the diagnosis in this case was established by the agglutinating action of the blood serum of the patient as well as by the isolation of the bacillus, we may consider it more fully on a future occasion, when we propose to deal further with this important subject, especially from the point of view of differential diagnosis by means of the agglutinating power which is acquired by the blood serum during the course of many forms of bacterial disease.[1]

THE DENTAL BUSINESS OF THE GENERAL MEDICAL COUNCIL.

THE dental business, with which the work of the autumn session of the General Medical Council ended, included several matters of importance. For the first time the duty of ascertaining the facts in cases of complaints was relegated, under the terms of the Act, to the Dental Committee, which reported upon two cases of alleged covering, and upon a third case in which a registered dentist had been shown to have given two death certificates. In this last case it appeared that the defendant originally obtained admission to the *Dentists Register* as having been in practice (in conjunction with pharmacy), that he obtained registration as a chemist in virtue of having been in business prior to 1868, and that he kept an open chemist's shop. Hence, although his conduct only came within the jurisdiction of the Council by his name appearing upon the *Dentists' Register*, the case was essentially that of a prescribing chemist, and it was while acting in this capacity rather than as a dentist that he committed the offence complained of. In extenuation it was urged that the documents were not really death certificates (although the words "to certify" occur in them), but were merely information to the registrar; and a promise was given by the defendant through his solicitor

[1] The bibliography of infections with varieties of Gärtner's bacillus is already somewhat extensive. The reader may perhaps most profitably refer to the works of Basenau (Ueber eine im Fleische gefundene infectiöse Bacterie, *Arch. f. Hygiene*, xx, 1894, and Weitere Beiträge zur Geschichte der Fleischvergiftung, *ibid.*, xxxii, 1898), of Kaensche (Zur Kenntniss der Krankheitserreger bei Fleischvergiftungen, *Zeitschrift f. Hygiene*, xxii, 1896) of Descazals (Revue Générale de la Psittacose, *Gazette des Hôpitaux*, 1896, p. 1094) and the editorial review of Psittacosis in the *Gazette Hebdomaire* of April 18th, 1897. Many other references will be found in these papers.

that he would never do it again, nor would he attend patients as a medical practitioner. The Council, the facts being admitted, decided to postpone the further consideration of the case till the next session. The case discloses alike the prevalence in certain districts of what is to all intents and purposes medical practice being carried on by chemists in open shops, and the reprehensible laxity with which registrars accept certificates of the cause of death from unqualified persons; the fact that these two certificates were not in the authorised form, and that the deaths are entered as uncertified, does not make the thing one whit the better, and it is time that some alteration should be effected in this matter of death certificates. In another case it came out that the defendant had no longer any connection with the practice, nor indeed with dentistry at all in any place, and so, even had the Council found against him, their proceedings would have been somewhat futile.

It will be remembered that the Dundee and District Branch of the British Medical Association made a communication to the Council expressing the opinion that registered medical men ought not to administer anæsthetics for unregistered dentists, and that the Executive Committee passed a resolution that in their opinion this constituted a sort of covering. This resolution was referred to the Dental Committee, which in its report recommended that if such a charge were brought before the Council it should be entertained and investigated. It having been shown that the practice prevailed to a material extent, especially in the Midlands, this recommendation was adopted by the Council, and its legal advisers are to be requested to draw up a notice in appropriate terms.

It was also decided to issue to all persons (dentists) upon the *Register* a notice as to covering, which is in general tenour similar to that which was issued to persons upon the *Medical Register* last year, but is slightly varied in phraseology, on account of differences in the nature of dental practice which called for more close definition of the matters in which the services of an unqualified person might not be employed.

The application of a dentist qualified in the colony of Victoria to be registered in the Colonial list was granted, this being the first occasion upon which recognition has been accorded to a colonial dental qualification. But the Melbourne medical qualification is already recognised as admitting to the *Medical Register*, and, after careful examination, it was found that in respect of preliminary examination, of curriculum, and of final examination the home requirements had been closely followed, so that there was no reason for refusing the application.

THE PECULIAR PEOPLE AND THE LAW.

The law applicable to the Peculiar People, and indeed to all persons who deliberately and intentionally abstain from calling in medical aid for their children when ill, was once more declared on Saturday by the highest judicial authority in criminal law—the Court for the Consideration of Crown Cases Reserved. It has been assumed in recent cases that such deliberate abstention, whatever the motive might be, was criminal if it resulted in serious injury to health, and that if the child died in consequence, it was manslaughter. It might have been thought that this view of the law needed no confirmation from any higher authority than that of the judges who have so frequently acted upon it at the Old Bailey. But Mr. Justice Wills, though himself acting on this view, and directing the jury in accordance with it in the case of the man Senior at the last sessions, was troubled with doubts as to whether this view of the law was absolutely unassailable, and in order to set the matter at rest once and for all he "stated a case" for the higher court. The doubt in the learned judge's mind arose from the fact that the statute which now governs such cases, generally known as the Act for the Prevention of Cruelty to Children, 1894, does not specifically mention medical aid as one of the things which a parent is bound to provide, although it was specifically mentioned in the former Act (that of 1868), which, so far as it related to this matter, was repealed by the Act for the Prevention of Cruelty to Children. Section 1 of the last-named statute enacts that if any person "who has the custody, care, or control of any child under the age of 16 years wilfully assaults, ill-treats, neglects, abandons, or exposes such child . . . . in a manner likely to cause such child unnecessary suffering or injury to its health . . . . that person shall be guilty of a misdemeanour," from which it follows, of course, that if death resulted from such conduct the person would be guilty of manslaughter.

Mr. Justice Wills told the jury that the question was narrowed down to whether the defendant's failure to procure medical aid could be called "wilfully neglecting the child in a manner likely to cause serious injury to its health." He told them that the question of motive did not enter into the matter if the defendant had done what was expressly forbidden by statute; but the jury must be satisfied that medical aid and medicine were such essential things for the child that reasonably careful parents in general would have provided them in this case.

The Court for Crown Cases Reserved held that Mr. Justice Wills's direction to the jury was right in point of law, and the Lord Chief Justice in delivering a judgment in which the five other judges present concurred defined wilfully neglecting. "Wilfully," he said, meant that the act must be done deliberately and intentionally, not done accidentally or by mistake or inadvertence. "Neglect" meant the absence of such reasonable care as an ordinary parent would reasonably use for the protection and care of his child; in other words, the failure to take such steps for the protection of infant life and health as the general experience of mankind showed to be right and proper, providing, of course, that the means of rendering such treatment were within the reasonable power and competence of the person on whom the duty rested to render them. That duty might have at different periods of history different meanings. It was a question of degree. But in these days medical aid was within the reach of the very humblest and poorest.

The proposition urged by the counsel for the defendant was that it could not be considered wilful neglect if he was affectionate, and willing to supply everything save medical aid and medicine, and only abstained from supplying them because of his religious views. "But" (said

his lordship significantly) "where could the line be drawn? One could not shut one's eyes to the dangers of the view presented, and which appeared ahead. Take the case of a child with a broken thigh, on which an operation was necessary, which would be dangerous to perform without an anæsthetic; or a case in which tracheotomy was necessary, but it was also necessary in order to save the patient's life that drugs should be administered prior to or during the operation—the learned counsel's contention would cover that."

It is satisfactory to note that in the Lord Chief Justice's opinion the dropping of the words "medical aid" out of the Prevention of Cruelty to Children Act really makes no difference. "It certainly would be a strange result, and one quite opposed to the obvious facts relating to the history of this class of legislation, to suppose that the Legislature intended to take what might be called in this connection a retrograde step, because the provisions of the Act of 1894 showed the Legislature's increased care for the protection of infant children."

THE PREVENTION OF TUBERCULOSIS.

MEETING AT MARLBOROUGH HOUSE.

A PRIVATE meeting will be held, under the presidency of H.R.H. the Prince of Wales, at Marlborough House, on Tuesday, December 20th, to promote the objects of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. It is expected that Lord Salisbury will speak, as well as some representative members of the medical profession. The Prince of Wales desires to show in this way the interest which he has long taken in the question of the prevention of tuberculosis; but we understand that, as is usual in the case of private meetings at Marlborough House, the press will not be invited to attend.

THE SCHOOL OF TROPICAL MEDICINE.

WE have authority from the Foreign Office to state that Lord Salisbury has intimated his desire that the Protectorates under the administration of the Foreign Office should participate in the benefits which will be derived from the establishment of the new School of Tropical Medicine, and that the Lords Commissioners of Her Majesty's Treasury have consented in principle to the Protectorates making the requisite contribution to the funds necessary for carrying out the scheme. We are informed that Lord Salisbury will also nominate a representative on the Board of Management of the Seamen's Hospital Society.

THE LONDON UNIVERSITY AND THE IMPERIAL INSTITUTE.

THE Senate of London University met on Wednesday to consider the offer of the Government to house the University in the Imperial Institute. There was a prolonged discussion, in the course of which it was elicited that the University would have no separate entrance to its own portion of the building, with the exception of a small back door at the end of the East Wing. It would also be necessary to share the chief rooms, such as the Senate chamber and the public hall, with the authorities of the Imperial Institute. No decision was arrived at, and the meeting was again adjourned, with the view of obtaining still further particulars with regard to the proposed transfer to the Imperial Institute.

BACTERIOLOGY OF INFANTILE DIARRHŒA AND CHOLERA NOSTRAS.

THE report of the medical officer of the Local Government Board, just issued, contains an account of further investigations, conducted by Dr. Klein, into the pathogenic properties of bacillus enteritidis sporogenes, an anaërobic spore-bearing bacillus, which he ascertained to be the cause of an epidemic of diarrhœa among the patients at St. Bartholomew's Hospital in 1895. Dr. Andrewes, in his report of last year, showed that the bacillus was not to be obtained from the bowel discharges of healthy persons or of patients suffering from ordinary casual diarrhœa. The investigations reported this year show that the bacillus has been found associated with "food poisoning" due to milk, and also with summer diarrhœa of infants and with English cholera. The bacillus is widely distributed in Nature but is especially abundant and virulent in animal excreta and in matters contaminated therewith, such as crude liquid house refuse, manured earth, and sewage-polluted water. Dr. Klein finds presumptive evidence that it is intimately concerned in the causation of infantile diarrhœa and of English cholera, but in the absence as yet of any satisfactory method of detecting the bacillus in diarrhœa material, unless it be present in spore form, he is prevented from speaking with complete confidence on this point. Further, he has ascertained that milk as sold retail in this country is apt to contain spores of the bacillus, and experimentally that, among food stuffs, milk is a specially favourable multiplying ground for the bacillus. After growth in this medium it is apt, whether or not it forms spores, to be specially vigorous and to exhibit great virulence. Dr. Klein is not yet in a position to state what are the conditions which determine spore formation in the particular species, and what the circumstances which tend to enhance or to annul its virulence. Meanwhile he has, he believes, ground for regarding the bacillus as primarily derived from excrement, and for considering its presence in water, earth, and the like, as a more trustworthy criterion of direct fæcal pollution than the presence merely of bacillus coli.

UNVACCINATED CHILDREN.

THE report of the medical officer of the Local Government Board, which has just been issued, contains a digest of the vaccination officers' return dealing with births during the year 1895. This is the most recent period for which final information is procurable, and the facts given are based on repeated local inquiries concerning each child. It shows that after deducting from a total of 921,512 births those children who were successfully vaccinated, those who died unvaccinated, those who were registered as "insusceptible" of vaccination, and those who had small-pox before vaccination, there still remained 20.5 per cent. who could not be traced, or were otherwise not finally accounted for as regards vaccination. The proportion unaccounted for in the metropolis was 24.9 per cent., that for the rest of England was 19.8, both of which rates show a still further increase on a failure to comply with the provisions of the Vaccination Acts, which has been steadily growing for some fifteen years. Sir Richard Thorne, in commenting upon these figures, adds the observation, "If allowance be made for the further falling off in this respect which is believed to have occurred since 1895, the number of children now born in England and Wales who in one way or another escape vaccination is probably not much less than one-third of the whole. In this way the country is being prepared for widespread epidemics of small-pox, such as have been unknown to the present generation, unless the invariable rush and clamour for immediate vaccination on the part of those who have neglected or declaimed against the operation during times of freedom from small-pox should be capable of being so far met in the moment of emergency as largely to mitigate the impending disaster." The returns show

that 2,962 children were registered as insusceptible of vaccination in 1895. Upon this, Sir Richard Thorne somewhat drily remarks: "In this connection I would point out that the number of consecutive primary vaccinations by the Board's own officers without the occurrence of a single instance of so-called insusceptibility now reaches 107,180."

A PLAGUE-INFECTED VESSEL.

The arrival of the plague-infected P. and O. steamship *Caledonia* at Plymouth recently was an event which would in time past have created a good deal of excitement; and it argues much for the sanitary efficiency of our ports that it should have passed almost unnoticed. The vessel sailed from Bombay, and two Lascars developed plague by the time she reached the southern entrance to the Suez Canal. The patients, and two other men suspected to be sickening of the same disease, were landed at Moses Wells, a little south of Suez. At the latter port the boat was disinfected, and all possible precautions were adopted, so that any further illness of a questionable character would be immediately detected. The vessel came direct to our shores, instead of making for Marseilles, as is usual, and her detention at Plymouth was but little more than sufficed for the landing of her London passengers. When we say that she entered Plymouth Sound, we say in effect that she touched at one of our model ports; and hence, when she sailed a little later in the day for London, Dr. Collingridge would know that she had received at the hands of Dr. F. M. Williams, of Plymouth, all necessary attention. The passengers and crew were all mustered and examined by the port health officer last named, in the presence of Dr. Bulstrode, who had been sent down from the Local Government Board on behalf of the State Department of Public Health. The absence of all trace of plague since the vessel left Suez, and the fact that so many days had elapsed, made it unlikely that further cases would occur as the result of personal infection; but the names and addresses of all who landed at Plymouth were taken by Dr. Williams as a precaution. The mode of origin of the disease would be an important factor in determining the possibility of further mischief occurring. So far, nothing more is known than is here stated; but in view of the continued prevalence of plague in Western India, the matter is of interest and importance.

THE CHELSEA PHYSIC GARDEN.

Botany has long since fallen from the high esteem in which it was once held as an item of medical education. When chemistry was nebulous, physics non-existent, and physiology in its infancy, first year's students spent their time in gaining a very thorough knowledge of anatomy and systematic botany. Practical instruction in botany was carried out by a series of herborisings in which the professor and his pupils tramped together over Hampstead Heath, Finchley, Blackheath, or Battersea, collecting the various wild flowers, and afterwards classifying them over an early dinner at one of the numerous taverns. Albert Smith, in his calendar for the London medical students, says of them, rather maliciously, under the month of June, "Botanical excursions in full vigour for the first two Saturdays of this month, after which the students are never known to get beyond Jack Straw's Castle or the Red House, unless they go to Kew Gardens by the boat, and then they return at once, remaining on board, hiding in the fore cabin, and only paying their fares from Blackfriars to London Bridge." These were the halcyon days of the Chelsea Physic Garden, tucked away so snugly by the Hospital for Chelsea Pensioners, and thronged by eager students early in the pleasant summer mornings. Little by little their vogue passed away, until they were no longer self-supporting, and at last became a tax to the Society of Apothecaries, to whom all honour is due for their maintenance. It was for some time a question whether they should be sold and the land built upon. Better counsels fortunately have prevailed. They have passed into the hands of the Charity Commission, who have formulated a scheme for their future management. The gardens are to be vested in trustees. They are to be managed by a committee of fifteen competent persons. They are to be used for promoting the study of botany, with especial reference to the requirements of general education, of scientific instruction and research in systematic botany and vegetable physiology, and for instruction in technical pharmacology as far as the culture of medicinal plants is concerned. The draft scheme suggests that of the fifteen members of the Committee of Management only one shall be appointed by the Society of Apothecaries and the Royal College of Physicians in turn for a term of two years. The Royal College of Physicians very properly took exception to this paucity of representation, and, as will be seen from our report of the comitia held on December 1st.[1] asked that the College should have a permanent representative. It is to be hoped that the Society of Apothecaries will ask for a similar increase, and that the Charity Commissioners will be able to modify the scheme in this respect. It seems then that the gardens have entered upon a new lease of life, for if ever a teaching university should be founded in London, more especially should it be housed in the Imperial Institute, the professors of botany and pharmacology will find the gardens useful and conveniently near.

MOSQUITOS AND MALARIA.

We learn on trustworthy authority that the Italian investigators have once again succeeded in conveying to man malarial infection by means of mosquito bites. The parasite in this instance was the benign tertian; the mosquito employed was the same as that which has already proved an efficient transmittor of the malignant tertian parasite—namely, anopheles claviger. In this second successful experiment the mosquitos were brought from a distance from a notoriously malarial spot, and liberated on the subject of the experiment in Rome. The investigators referred to have not yet discovered Ross's "germinal rods" in mosquitos purposely fed on crescent-containing blood. We hear, however, that they have found these rods in mosquitos brought from a distance from houses in which there had been malarial fever cases.

A PREMIUM ON INEFFICIENCY.

If *Mr. Punch* should ever find Parliament too dull, it is to be hoped he will send Toby, M.P., on a visit of inspection to some of the district councils which administer sanitary matter in rural England. His tour might commence, for instance, in Bedfordshire. A rural district council in this reposeful county met recently and discussed the salary of a newly-appointed health officer. This gentleman's predecessor in office received £63, and we gather that this munificent salary was awarded because the Local Government Board considered £42, which the rural authority proposed to give, too little, and refused to be a party to the scandal by paying half the inadequate salary. Had they declined to contribute, the guardians would have had to provide the whole 40 instead of the 30 guineas which was all they would have to find to make up the larger sum. But with a new appointment these local worthies, dignified now as a "Rural District Council," have determined to enhance the importance of their own added glory by dwarfing the meagre salary of their medical officer of health. They accordingly appoint their new man at £50, and ask the sanction of the Local Government Board to this procedure. The Board remonstrate, point out the smallness of the emolument in relation to the area and population of the district, and advise more liberal remuneration. But one member of the local authority has discovered that it is unfair to the nation that the country should be taxed to the

[1] British Medical Journal, December 10th, p. 1775.

extent of £6 10s., more than the services of the new health officer are thought to be worth. This consideration for the pocket of the imperial taxpayer is truly touching. But the argument in favour of docking the payment to the doctor that appeals to us most is the one that contains a veiled compliment to the former holder of this lucrative and desirable post. It has been discovered that if the highly-paid official who advises these honourable gentlemen only does his duty there will be less for his successor in office to do. We must really quote the *ipsissima verba* of the speaker as given in the *Leighton Buzzard Reporter*: "Several members," said Mr. Goodman, who seems to be a sort of thought reader, "several members thought of proposing that the salary should be £40, for that they thought would have been ample for the amount of work likely to be required in a district of that kind. If the medical officers did their duty they [*sic*] would get little sickness or epidemics, and [observe the *sequitur*] the fact that they had done their work efficiently before was proof that there was less to do now." The meaning of which elegant sentence, so far at least as our unaided powers have been able to unravel the relatives, is that medical officers of health, should be paid salaries in the inverse ratio of the efficiency with which they do their work.

THE CHARITY ORGANISATION SOCIETY AND THE PROPOSED CENTRAL HOSPITAL BOARD.

A MEETING of the Council and friends of the Charity Organisation Society was held recently to hear and discuss an interesting and important paper by Colonel Montefiore, entitled A Survey of Metropolitan Charities. The object of the paper was to enforce the necessity for a Central Hospital Board for London. The opposition which this proposal meets with from the great hospitals is rather surprising. There are probably no institutions in the kingdom more worthy of support and better managed, on the whole, than the great metropolitan hospitals, but we believe that, included in the vague term "hospitals" there are a number of very dubious institutions, which suck up a large part of the funds contributed for charitable purposes, and divert it from the deserving charities. It is partly for the purpose of separating the two classes, and partly to introduce amendments which we believe to be called for in the system under which medical relief is supplied, that we have constantly supported the principle of a Central Board. Surely those hospitals which are necessary for medical education and for the relief of the poor, and which are well and economically managed, could derive nothing but benefit from the advice and assistance of such a Board, of which they would themselves form a large part. We cannot but believe that this fact will ultimately become clear to the governing bodies of our great hospitals. Meanwhile, our thanks are due to Colonel Montefiore for the perseverance with which he keeps the matter before the public. His paper was accompanied by statistics of our chief hospitals, which will be of the greatest value to all concerned in their management.

METROPOLITAN PROVIDENT MEDICAL ASSOCIATION.

THIS association has recently issued an appeal for further funds, in the course of which it is stated that nineteen of its branches are already self-supporting, but that money was required for extension of the movement. It was further stated that the provident members' contributions amounted to over £5,000 a year, and that they had a staff of more than a hundred doctors, who are general practitioners of the various districts in which the dispensaries are established. There can be no doubt that this Association has for the last twenty years been endeavouring honestly to promote a provident principle among the working classes with regard to medical relief. For a long time it was the only protest against the abuse of the out-patient department of our hospitals, and its dispensaries have always been counted among the best institutions of this character. It is, however, true that they are not altogether popular with the profession as a whole. The fees charged are too small, and more adapted to the condition of the working classes a generation back. This is no doubt due to the fact that the Association has had to compete with innumerable clubs, friendly societies, etc., which pay the doctor a still lower rate of remuneration. It is to be hoped the Metropolitan Provident Medical Association will be able to raise the scale of its contributions at a no distant period. Great discrimination, too, is required in choosing sites for dispensaries. To start one of these institutions in a neighbourhood where the artisan and working-class population are able to pay the ordinary fees of the doctors practising there would be an error of policy. Such a field might be easily made self-supporting and even to pay, but this would be effected at the expense of the profession.

LECTURES AT THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

THE Hunterian Lectures on The Influence of Gravity on the Circulation will be given by Dr. Leonard Hill on February 6th, 8th, and 10th; the Erasmus Wilson Lectures on The Chemical Pathology of Some Infective Diseases will be given by Dr. T. G. Brodie on February 20th, 22nd, and 24th. The Arris and Gale Lectures will be given by Mr. B. G. A. Moynihan, of Leeds on February 27th, March 1st and 3rd. The subject of this course of lectures is The Anatomy and Surgery of the Peritoneal Fossæ. Other courses of Hunterian Lectures will be given in March by Professor C. Stewart and by Mr. F. G. Parsons, who has chosen the subject, Joints of Mammals contrasted with those of Man.

THE CHELSEA WATER SUPPLY.

A REPORT on the examination of the water supplied by the Chelsea Waterworks to the Parish of Chelsea during the year ending November, 1898, has recently been issued by Dr. Louis C. Parkes, Medical Officer of Health for Chelsea, and Dr. S. Rideal, F.I.C. The water was examined daily as to colour and appearance in a two-foot tube, and and its temperature ascertained, and weekly samples were taken for bacterioscopic examination. By the former means a pollution of the water supply owing to fracture of a water main was at once discovered, and investigation then showed that the town hall supply was not drawn from the ordinary domestic service main but from the hydrant service. This defect was accordingly rectified. During the hot months, on twelve occasions after standing for 24 or more hours a considerable green algid growth was noticed in the water, showing that the spores of these algæ had passed through the company's sand filter beds. The annual range of temperature was found to lie between 40° and 70° F. For nearly four months it was above 60° F. Water of this temperature is of course very favourable to the rapid multiplication of any contained micro-organisms. The number of bacteria present was estimated weekly by gelatine plate cultures at 60° F. The average number of colonies developing at this temperature in 41 samples was 85 per cubic centimetre of the water. Agar-plate cultivations at blood heat were made at the same time, and the colonies counted after forty-eight hours' incubation. On one occasion no colonies developed, and on fifteen occasions less than five colonies developed for each c.cm. of water taken. Only once was the number of colonies in the agar plates very high, and that was on September 19th, when the temperature of the water was 67° F. On this occasion over 400 colonies, which proved to be due to a micrococcus, were counted. The number of colonies appearing at 60° F. (in gelatine), and at 98° F. (in agar) respectively showed no constant ratio. Considerable

importance is attached by the investigators to the organisms developing at blood heat on the grounds that these bacteria can retain their vitality, and may also multiply in the human body, and that it is known of some of them that they are derived from the intestinal tracts of man and animals. The blood-heat organisms were found to be much in excess of the average, at a time at which autumn diarrhœa was most prevalent. Forty-four samples were cultivated according to the Parietti method. In 70 per cent. growth occurred with 0.2 to 0.5 c.cm. of the water, and on six occasions when subcultures were made, this growth was proved to be due to the B. coli communis. It was found that whenever the number of blood-heat organisms (ascertained from the agar plates) was high, growth occurred in the Parietti medium. The oxygen required to oxidise organic matter varied during the year between figures corresponding to 0.022 to 0.127 gr. per gallon, which are equivalent to the figures given by pure waters. No relationship could be traced between the amount of oxygen required and the number of bacteria in the water. Drs. Parkes and Rideal conclude that reliance should not be placed upon sand filtration alone when the water is derived from a tainted source such as the Thames, a river with a very considerable inflow of surface water.

THE LIFE-TABLE FOR OLDHAM.

The last few years have been marked by a new departure in the vital statistics of large urban districts, in the shape of local life-tables. The first of these to appear was, we believe, that of Dr. Tatham for Manchester, followed by that of Dr. Newsholme for Brighton, Dr. Chalmers for Glasgow, Dr. Mumby for Portsmouth, Dr. Hayward for Haydock, Lancashire, and now we have before us Dr. Tattersall's life-table for Oldham. All these life-tables deal with the vital statistics for the years 1881-90 of the above communities. The Oldham life-table, like the Brighton life-table, on which it has been modelled, is constructed by what is known as the graphic method, the other life-tables mentioned above by analytical methods, that for Haydock having been constructed by an ingenious curtailed method. In adopting the graphic method, the medical officers of Brighton and Oldham have followed the example of the majority of actuaries, who look more favourably on the graphic than on the analytical method, and adopt it in the majority of their calculations. For the somewhat uncertain data which are embodied in the census and death returns, the graphic method presents great advantages besides its simplicity and elegance. It is well known that the ages, both of the living and the dead, tend to be returned in round numbers at decennial periods, for example, 20, 30, 40, and 50. A curve of the population shows hillocks at nearly every decennial interval. The graphic method enables these hillocks to be smoothed out, and thus gives a truer result than the original figures. A table is given by Dr. Tattersall which compares the main results of his with preceding life-tables. For males the expectation of life at birth is 34.7 years in Manchester, 35.2 in Glasgow, 36.9 in Oldham, and 43.6 in Brighton. At the age of 20 years the male expectation of life is 34.6 years in Manchester, 35.7 in Oldham, 36.9 in Glasgow, and 40.5 in Brighton. In Oldham the expectation of life is generally better than in Manchester up to the age of 60, beyond which point it falls slightly below it. Oldham is slightly better than Glasgow during the first five years of life; beyond that point the Glasgow conditions are more favourable to life than those of Oldham. Brighton, as might be expected, shows more favourable conditions throughout the whole of life.

HOSPITAL ABUSE IN PARIS.

The abuse of medical charities in Paris is becoming more widespread, and the public conscience on this point appears to be gradually becoming seared. The old dread of the hospital—which used to be regarded by respectable French people in much the same way as the workhouse is among us—is giving place to a tendency, which is said to be steadily increasing, on the part of well-to-do people to make use of these charitable institutions on false pretences. Rich people carefully got up in the guise of poverty present themselves at the hospital clinics; their object is mostly to secure a revision of the diagnosis made by their private medical adviser. Having got this and a prescription, they can be seen getting into their carriage, which has been left at what they consider to be a safe distance from the hospital, and driving away, pleased no doubt at the thought of having saved a consultation fee. Quite recently, at Dr. de Wecker's clinic in the Quinze Vingts Hospital, a lady wearing diamond earrings of the value of £160 was seen to take them off as she went into the waiting-room. It is satisfactory to record that Nemesis quickly overtook her, for her pocket was picked, and she offered 20 francs reward—the amount of the fee which she tried to save—but in vain. It is to be hoped that this will be a warning to others of her kind. Wealthy people will even do all they can to gain admission into hospitals to be operated upon. With a little diplomacy this can generally be effected in France. They do not hesitate to borrow receipts for rent and other certificates of identity from acquaintances living in a different quarter, and thus gain admission to a hospital under a false name. There is a sort of inquiry, but it is altogether inadequate, and the frauds are so skilfully conducted that they are difficult to detect. As the hospital accommodation of Paris is, in proportion to the population of the city, very limited, it is clear that if well-to-do people occupy beds intended for the poor, they are guilty not only of a peculiarly revolting form of selfishness, but of downright fraud. A suggestion has recently been made that persons abusing medical charities in such a manner should be prosecuted for fraud. A similar measure was proposed in the *Practitioner* some time ago, with the object of checking hospital abuse in this country, and we think the suggestion deserves consideration. A notice to the effect that persons detected in abusing the charity would be dealt with in that manner might be placed in a conspicuous part of the out-patient room. This measure would probably be more effectual as a deterrent than appeals to a sense of honour which does not exist, or homilies on the disgrace of accepting charity on false pretences.

A CHINESE MEDICAL JOURNAL.

Our Hong Kong Correspondent writes: The first number of a new magazine with the title *A Monthly Journal of Medicine, Surgery, and Hygiene* has just appeared. It is edited by Wan Tün Mo, a diplomate of the Imperial Medical College, Tientsin, and Resident-Surgeon Alice Memorial Hospital, Hong Kong. The publication of this journal marks an epoch in the history of Western medical science in China. Slowly but surely the more enlightened Chinese are becoming convinced of the superiority of Western methods of medicine, surgery, and hygiene. In the first issue the scope and object of the magazine are set forth in the following passage: "The journal is published solely for advancement of medical science and all contributions to its pages must be in strict harmony with the great facts on which true medical science is based with special reference to the facts of anatomy, physiology, botany, chemistry. Each issue is to consist of six sections: (1) Leading articles and translated selections from recognised authorities in medical world; (2) special cases and treatment; (3) to deal with new methods; (4) to give instruction in first principles of anatomy and physiology; (5) notes on laws of health, food, sanitation; (6) miscellaneous, including news of special interest to students of medicine. Western doctors in China will be asked to report cases of special interest.

Illustrated plates and diagrams will be used." The first issue contains three leading articles—two from Western sources treating of diagnosis and treatment of disease; the third is an exhaustive inquiry into the nature and causes of bubonic plague. There is also an introductory article on the study of anatomy and physiology. The section on hygiene treats of impurities in water and maladies to which they give rise; preservation of eyesight, means of maintaining the body in health, and the importance of pure air. Dr. Wan, the editor, is a man of large professional experience, and it is hoped that his new venture will have great success.

THE CASE OF THE LATE MR. H. K. HUNTER, L.S.A.

IN answer to numerous inquiries as to when this case will be heard, we are informed on the best authority that there is no probability of a Crown Court sitting before the Christmas vacation. The difficulty in the Court being formed is mainly caused by the absence of so many of the Queen's Bench judges on circuit. The General Medical Council and the Society of Apothecaries are both desirous of having the case disposed of at the earliest opportunity.

CYCLO-THERAPEUTICS.

DR. SIEGFRIED, of Bad Nauheim,[1] has strongly recommended cycling as a means of obtaining active and passive movements in the lower limbs, which are at the same time relieved from supporting the body weight. He has employed it both in local affections, such as joint diseases, muscular atrophies, and peripheral paralyses, and in central disorders, as general failure of strength, cardiac insufficiency, and diseases of the brain and cord, when other methods would have been impossible. The author is convinced from his own personal experience that modern improvements in machines have reduced their friction to a minimum, and so prevented wasteful expenditure of energy. He quotes four cases in illustration of his views, one of which presented some remarkable features. The patient, a man, aged 33, had suffered for four years from recurrent rheumatic attacks resulting in permanent flexion of the left hip and complete ankylosis of the left knee, together with great muscular atrophy. Very little improvement was effected by ordinary methods of treatment, so that Dr. Siegfried determined to try the effects of cycling. The patient had at first to be held on the tricycle by two assistants, and to use a considerably shortened pedal crank for the left foot. He was able to remain on only for five minutes at a time when commencing, but in three months could ride 15 miles a day regularly; five months later he could accomplish 35 miles a day without fatigue, and was, in fact, completely cured. It should be noted that the previous use of exercises and massage had proved ineffectual. The second case was one of chronic gout, with great deformity of both knees, hands, and shoulders, so that he was unable to rise from a chair without assistance. Two years' tricycling effected an almost perfect cure of both the physical condition and its attendant mental depression. In another case the patient had suffered amputation of the right thigh in the lower third; the artificial limb was fixed to the pedal of the tricycle, and the wasted thigh muscles greatly benefited. At the same time his cardiac rhythm was rendered regular, as shown by sphygmographic tracings. The last patient was a girl, aged 20, with cardiac insufficiency; the combination of cycling with baths containing carbonic acid gas effected a rapid cure. The author bases his conclusions on 97 cases, from which he has obtained more than 400 pulse tracings. He insists that the patients must be taught that cycling is for them a treatment, not an amusement, and that the physician must keep their exercises under his own observation. Where this precaution has been neglected more harm than good has often resulted, particularly in neurasthenics. Dr. Siegfried concludes by agreeing with Eulenburg's statements as to the value of cycling in diseases of the spinal cord, and by asserting that it can do no harm, and when successful produces better results than those obtained by other mechanical agencies.

[1] *Deut. med. Woch.*, 1897, No. 27.

MEDICAL PRACTICE IN PORTO RICO.

ENTERPRISING members of the profession in America are beginning to look for new spheres for the lancet in the colonies which have been won for the United States by the sword. But the prospect of their finding fresh fields and pastures new in their conquests does not appear to be very brilliant. Manila offers few attractions, and swarms with native doctors and with quacks of every shade. At Porto Rico there is plenty of sickness, but every native is his own physician. Rich and poor alike doctor themselves with herbs, in which they have a satisfying faith. So far it would seem that the only "open door" for medical men that is worth entering is in Cuba.

THE Queen has appointed Staff-Surgeon James Lawrence Smith, M.B., R.N., to be a member of the Fourth Class of the Royal Victorian Order. Staff-Surgeon J. Lawrence Smith was Surgeon to H.M.S. *Blonde* at the time of the death of Prince Henry of Battenberg on that ship.

DR. JAMES PURVES STEWART, who formerly held the appointment of University Assistant to Sir Thomas Grainger Stewart in Edinburgh, and who has since been Senior House-Physician to the National Hospital for the Paralysed and Epileptic, Queen Square, has been appointed Assistant Physician to the Westminster Hospital.

SURGEON-GENERAL WILLIAM TAYLOR, Army Medical Staff, was on December 10th invested by Her Majesty at Windsor with the decoration of the Military Division of the Third Class of the Order of the Bath for services in Egypt and the Soudan, including the battles of Atbara and Khartoum.

OWING to Dr. Cavafy's resignation of the post of Physician to St. George's Hospital, Dr. Ewart becomes Senior Physician, Dr. Rolleston full Physician, and Dr. A. C. Latham Assistant Physician. Dr. Latham has filled the posts of curator of the museum and medical registrar in the hospital, and was formerly Radcliffe Travelling Fellow, University of Oxford.

DR. JAMES LITTLE was on Wednesday nominated by the Academic Council as Regius Professor of Medicine in the University of Dublin, in succession to Sir John Banks, K.C.B., resigned. The new Professor is Physician to the Adelaide Hospital, Dublin, Crown representative on the General Medical Council, and has been President of the Royal College of Physicians and of the Royal Academy of Medicine.

DR. HAYDON, of Melbourne, visited India during the plague, and took back with him to Melbourne some cultivations of the plague bacillus. In consequence of the outbreak of plague in Vienna the Government of Victoria, fearing a similar occurrence, demanded from Dr. Haydon the surrender of the cultivations, and on his refusal to give them up unless compensated, seized and destroyed them.

MR. HAYTER LEWIS, for many years Professor of Architecture in University College, London, died on December 12th, at the age of 80. He was one of the first architects to recognise the importance of sanitary science to his art. He was a man of great erudition, and possessed a singular charm of manner, which endeared him to a wide circle of friends.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL.—This institution has entered on a career of extended usefulness. A new building has been recently erected in Church Street, Brighton, at a cost exceeding £7,000, and it was declared open on November 29, by the Duke of Norfolk.

CONSTRUCTIVE MURDER.

Again we have to draw attention to a trial in which the death of a woman from the results of an illegal operation formed the subject matter of the charge. Again the judge directed the jury that if they believed the facts adduced in evidence by the prosecution, they must find the prisoner guilty of murder whatever his motive might have been; and yet again the solemn farce has been gone through of sentencing the prisoner to death, to be followed, as in previous cases, by an announcement that the prisoner has been reprieved by the Home Secretary. The case referred to is that of Lieutenant Wark, who was tried at the Liverpool Assizes last week. It may be that the Home Secretary, in arriving at a decision so promptly, was influenced not so much by the fact that the case was one of "constructive murder," as by the fact that the evidence given against the prisoner was very slight and of a circumstantial nature; but, at the same time, the arguments which have recently been put forward in the British Medical Journal in favour of altering the law apply in the present case.

The direction given to the jury by Mr. Justice Phillimore, who tried the case, is very instructive, not only because the learned judge states the law in almost the same terms as those used in Whitmarsh's case, but also because he goes further, and shows that in this class of case a person may also be equally guilty of murder by being what is known to the law (1) as a principal in the second degree, or (2) by being an accessory before the fact.

The following is the most material part of the summing up

If a person committed a felony on the body of any one to whom thereby death resulted, he was guilty of murdering that person. If a man intended to beat his enemy within an inch of his life, but not to kill him, and death resulted, the law said it was murder. If the unfortunate woman caused her own miscarriage, then, as far as she was concerned, it was in law a case of suicide or *felo de se*. If the prisoner were her accomplice in that, if he were present aiding or abetting an illegal operation which caused her death, though he did not actually use the instrument, he was equally responsible for her death. If he were there, or encouraged or assisted her by getting a room, he would be what the law called a principal in the second degree. If he merely urged or counselled, and was not himself present at the illegal operation, he would be what the law called an accessory before the fact, and would still be guilty of murder.

In passing sentence on the prisoner his lordship said:

The jury have found that you are a party to procuring the abortion of this woman, which abortion led to her death, and I do not think as the law stands they could properly have found otherwise.

That the above extract is a correct summary of the law no one can doubt. The duty of the jury is to find a verdict simply of guilty or not guilty, and one is therefore left in the dark under which heading they found the prisoner guilty. It will be noticed that in the early part of the extract from the summing-up the learned judge pointed out that although there was no intention to kill, yet in the example given the person would be guilty of murder, or in other words, the jury were told to disregard the intention or motive of the prisoner.

What was the intention or motive of the prisoner in the case under discussion in aiding, abetting, or being a party to the performance of the illegal operation? It was not that he desired to be rid of the unfortunate woman, not that he wished for her death, but, on the contrary, because of his great affection for her, he strove, though wrongly, to shield her from the inevitable scandal which the birth of a child must of necessity have occasioned; and it may safely be said that in all the cases in which death has resulted from an illegal operation the person performing it has not had the slightest intention to cause death, but, on the contrary, the strongest motive to prolong life. Yet because the operation performed was a felonious one, and resulted in death, the operator or aider and abettor has by a technicality of the law been found guilty of slaying with "malice aforethought."

That such should be the law with regard to the class of case now being dealt with is repugnant to the ordinary sense of justice, and it cannot be doubted that morally the real intention of the person charged should in such cases be taken into consideration.

Is it not abundantly clear that these frequent trials for "constructive murder" must have a pernicious effect on the public mind by bringing the law into contempt and disrepute?

THE ENTERIC FEVER EPIDEMIC AT PAISLEY.

The epidemic of enteric fever at Paisley, to the existence of which we had occasion to refer a couple of months ago, has now run its course, after having extended to 279 cases, 34 of which ended in death. The epidemic, as we indicated at the time, presented features of considerable interest and of some complexity. While scattered cases occurred over the town, the disease in its epidemic form was confined to a comparatively small area in the east centre of the town. The milk supply in a certain number of cases was derived from a couple of dairies situated within the epidemic area, but a careful analysis of the circumstances showed that the proportion of persons supplied by these dairies who were attacked by the disease was not in excess of the proportion of persons attacked in other milk-runs within the special area.

The medical officer of health, Dr. Donald, having exhausted other sources of suspicion, came to the conclusion that the only theory which would account for all the facts of the case was that of a special local contamination of the water supply, and he reported accordingly. He had ascertained that there were within the special area an exceptional number of subsidiary water mains with dead ends. The scour-cocks at these dead ends discharged directly into the sewers. These subsidiary mains were supplied by a new arterial main, in connection with which a series of "bursts" had occurred in the period immediately preceding the development of the epidemic, necessitating the turning off of the water and the consequent creation of partial *vacua* in the pipes. The presentation of Dr. Donald's report appears to have given rise to a most regrettable display of feeling on the part of those responsible for the water supply. Dr. Donald was subjected to an embittered attack and recrimination, and the officials of the Water Department even went the length of instituting, on their own account, a special sanitary inspection of the infected area, and an inquiry into the circumstances of the milk supply, and presented a report to the local authority declaring that the epidemic was due to local insanitary conditions. The Corporation resolved to invoke the aid of Professor Frankland to elucidate the subject. By this time, however, the epidemic had passed its zenith, and a considerable amount of work had been done in the way of flushing out dead ends. Dr. Frankland's report is now to hand, and furnishes a most valuable contribution to the etiology of enteric fever. His results cannot be better presented than in the form of the summary with which his report concludes:—

"I would point out:

"1. That chemical analysis has shown the water in the dead ends of the mains to be organically somewhat inferior to that circulating in the trunk mains both of the high and low level services.

"2. That the bacteriological examination has shown the water in the dead ends of the mains to be in almost every case somewhat richer in bacterial life than the water circulating in the large mains of both supplies.

"3. That colon bacilli and other forms more or less resembling the typhoid bacilli have been found in six of the twelve samples collected from the taps in the affected area, whilst no suspicious forms were discoverable in the two samples taken from the trunk mains.

"4. That all the four samples taken from plugs inserted in the dead ends of mains in the affected area contained colon bacilli.

"5. That whilst the results referred to above do not actually prove a connection between the water supply and the recent epidemic, they are obviously quite in harmony with the existence of such a connection.

"6. That on general grounds the water in the dead ends of mains is most calculated to cause mischief, because in the event of any dangerous contamination of a water supply having taken place, the morbific material (typhoid bacilli) will tend not only to accumulate in such areas of sluggish circulation, but they will also remain there for a longer period of time than in any other part of the network of mains. The water consumer in such an area will, therefore, not only be more likely to receive typhoid bacilli, but will receive them in larger numbers and over a longer period of time, and there is thus a greater probability of his infection being secured. These considerations show the high importance of

the regular and frequent flushing of all such dead ends being carried out, and the serious danger to the water consumer of any want of attention to this duty.

"7. That the system which prevails in Paisley of making a direct connection between the water mains and the sewers is one of the most serious breaches of the laws of hygiene which I have met with in the whole course of my experience, and which it is impossible to condemn in sufficiently strong terms. I have no hesitation in saying that it is the imperative duty of the sanitary authority to see that every single connection of this kind is forthwith abolished.

"8. Whilst I am unable to pronounce any authoritative judgment as to the origin of the recent epidemic in Paisley, without taking a large body of evidence such as would have to be furnished at a Local Government Board inquiry, I am of opinion that the remarkable restriction of the epidemic to an area in which an extraordinary large number of dead ends of the water mains occur points to the particular dangers attending such dead ends, and which I have referred to in sections 6 and 7 as being a *causa sufficiens* of the mischief."

At the meeting of the local authority at which Professor Frankland's report was presented, Dr. Donald in a few dignified words tendered his resignation to the Corporation, and bespoke for his successor that co-operation and support which his position and the public interest alike demanded, and which had been so insufficiently accorded to himself.

THE PREVENTION OF TUBERCULOSIS.

MILK AND MEAT CONTRACTS.

DR. MEREDITH YOUNG, Medical Officer of Health, Crewe, sends us the following forms of contract for the supply of milk and butter and of meat respectively which have been accepted by tradesmen undertaking to supply the isolation hospital of the borough. They may be found useful by the managers of other institutions. Dr. Young adds that the persons who accepted those conditions were also able to quote the lowest price for all the articles named, though when he first proposed the contract it was asserted that no one would be found to accept such conditions unless they were paid a specially high price.

MILK AND BUTTER CONTRACT.

(*a*) The contractor agrees to supply the milk from his own cows, kept and fed on his own farm, and if at any time he shall temporarily supply milk from cows other than his own, he shall, if so required by the medical officer of health, furnish him with the name and address of any person from whom such supply is obtained.

(*b*) The contractor shall at all reasonable times allow the medical officer of health, or veterinary surgeon of the Corporation, with or without assistants, to inspect his cows, cowsheds, dairy, milk shop, milk store, and all receptacles which are used for the production, storage, or distribution of milk, and shall, whether resident within or without the borough, carry out the provisions of the dairies, cowsheds, and milk shops regulations in force for the time being in the Borough of Crewe.

(*c*) The contractor shall, at any reasonable time, allow the veterinary surgeon for the Borough of Crewe, in company with the medical officer of health, and with or without assistants, to apply the tuberculin test to any or all of the milch cows on his premises, and in the event of the tuberculin test above-named giving any reaction thus demonstrating the presence of tuberculosis), he shall, if this be necessary in the opinion of the medical officer of health or veterinary surgeon, immediately cease to supply the milk of such cow or cows for the purpose of carrying out the contract. If the contractor shall continue to keep any cow after the presence of tuberculosis in it shall have been demonstrated by the tuberculin test to the satisfaction of the veterinary surgeon of the Borough of Crewe, or the medical officer of health, this shall be held to be *primâ facie* evidence that the milk from such cow is used for the purpose of supplying milk under this contract.

(*d*) The contractor agrees and guarantees that the milk supplied under this contract shall in all cases contain not less than 3.2 per cent. of fat, as ascertained by [illegible].

(*e*) The contractor agrees and guarantees that no preservative of any kind whatever shall be added to the milk or butter supplied under this contract.

MEAT CONTRACT.

(*a*) The contract will be accepted subject to the contractor guaranteeing and agreeing that the whole of the meat supplied under the contract shall be English produce of the best quality, and from animals free from any trace of tuberculosis or any other disease.

(*b*) The contractor, whether resident within or without the borough, agrees to carry out the by-laws relating to slaughterhouses in force in the Borough of Crewe, and shall at all reasonable times allow the slaughterhouses used by him, and any premises used for the storage or sale of beef, and all furniture, receptacles, etc., used in connection therewith, to be inspected by the medical officer of health, the inspector of nuisances, or any other authorised official of the Corporation.

(*c*) The contractor agrees not to supply any meat which has been blown or inflated.

(*d*) The contractor agrees, if required by the medical officer of health, to furnish him with the name and address of any person who has been engaged in the keeping, slaughter, dressing, or preparation of the animal carcass, or meat for sale, or of the person from whom any animal, carcass, or meat was purchased or obtained.

UNIVERSITY COLLEGE AND THE NEW UNIVERSITY.

WE referred last week briefly to an offer made by University College to the new University. It is embodied in the following resolution which was adopted by the Council of the College on December 10th, 1898. As will be seen, the scheme is merely an outline, and it has been purposely kept free from details in order to leave their decision entirely in the hands of the Statutory Commission to which the resolution given below is, it will be seen, to be submitted:

That a deputation be appointed to represent to the Statutory Commission that:

Inasmuch as

I. University College, London, was founded as the University of London, with the object of providing a complete university education in London of the highest type;

II. The intention of the founders and benefactors of University College will only be carried out by the incorporation of the College in the University, so that its resources shall still be utilised for the furtherance of the highest educational work and for research;

The Council of University College are prepared to summon a general meeting of the members of the College, and to propose to them that such steps should be taken as may be necessary for placing the site, land, buildings, and endowments of the College at the complete disposal of the reconstituted University.

In making this offer the Council do not desire to throw any obstacle in the way of any other institutions in London which may be disposed to place their resources at the disposal of the governing body of the University.

It will be necessary, in accordance with the precedent afforded by the Universities Act (Oxford and Cambridge), to protect the interests of the existing teachers and executive staff of the College. The existing teachers are, however, to have no claim as such to any rank in the reconstituted University, or to any vested interest other than that they now have in the College.

Special provisions will probably have to be made as to the boys' school and its endowment, and perhaps for appropriate buildings on another site being provided for this department of the College work. Arrangements will also have to be made with regard to the hospital and its funds, of which the College is now the trustee.

Signed on behalf of the Council,

T. GREGORY FOSTER, Acting Secretary.

CONTRACT MEDICAL PRACTICE.

THE ORGANISATION OF MEDICAL RELIEF.

THE last of a course of lectures on this subject, under the auspices of the Charity Organisation Society, was given by Dr. Hurry, late of the Reading Dispensary, on the Self-Supporting Dispensary and District Nursing Association. The lecturer, after proving by statistics that the proportion of illness or accident was high among the artisan class, sketched out a scheme by which, on the basis of insurance, every member of the family might be ensured medical attendance and nursing when occasion arose. The premium calculated to make the dispensary self-supporting "would vary from 2d. to 3d. per head per week." Such a scheme is our old friend the provident dispensary, which in theory is all that can be desired, but has not yet succeeded in gaining the affections of the artisan class. Anything which secures thrifty habits on the part of the working man is to be commended, and a plan which enables him to forestall the demands of sickness or accident has much to recommend it; but this is not the only side of the question. There would be much more likelihood of the provident dispensary being acceptable to the working man if there could be some affiliation with the great hospitals, so that the patient should have the advantage of consultation by the staff if the case demanded it. That the dispensary should be provided with one or more nurses from the local association is a most valuable suggestion, and we trust that it may be taken up by those best qualified to carry it through.

MID DERBYSHIRE.

WINGFIELD MANOR writes: Having made careful and exhaustive inquiries in a town in Mid Derbyshire, I have found that abuses which would be tolerated nowhere else not only exist but flourish there. The employees of one of the largest industrial concerns of its kind in the United Kingdom pay their medical officers at the rate of 1d. or 3d. a quarter for advice, medicine, and medical attendance. I may add that every medical man in practice in the town is connected with this institution. There are besides two women's clubs, which pay their doctors 4s. and 3s. per annum for each member on their list; but—and I think this a unique condition—the confinements of the members have to be attended for this stipend, and without any extra remuneration.

THE NEW VACCINATION ORDER.

Scale of Fees.

The following notes are in continuation of those published last week as to arrangements proposed or accepted :

Rothbury Union, Northumberland.—(*a*) 2s. 6d., (*b*) 7s. 6d., (*c*) 3s. 6d. The district is essentially rural (accepted).

Worcester Union.—(*a*) 2s., (*b*) 6s. 6d., (*c*) 2s. 6d., the payments to be inclusive (accepted).

Pottersbury Union, Northampton.—(*a*) 2s. 6d., (*b*) 5s. within the radius of one mile from the residence of the public vaccinator, 7s. 6d. beyond; (*c*) 2s. 6d. (accepted).

Bridgwater Union.—(*a*) 1s. in the town in which the public vaccinator resides, 2s. or 2s. 6d. for distances outside the towns ; (*b*) 5s. in the towns, 8s. to 8s. 6d. outside the towns. These terms were accepted by the public vaccinators at a conference of the subcommittee of the Board by whom they must be approved.

Southwell Union.—The Board offered the minimum allowed by the Local Government Board, but the public vaccinators pointed out that the terms were insufficient, and submitted the following : (*a*) 1s. 6d. per case ; (*b*) 6s. per case within one mile radius of residence, 8s. 6d. per case outside the above radius ; (*c*) 2s. 6d. per case ; (*d*) 2s. 6d. per child vaccinated in the workhouse. Unsuccessful visits, after due notice, on account of insanitary house or any other cause, to be charged half fees. Lymph to be supplied at guardians' expense if the Local Government Board be unable or unwilling to supply it ; postages incurred to be refunded by the guardians. At a meeting on December 9th the Board decided to offer the minimum fees, *plus* 6*d*. per mile for every mile over four miles.

Prestwich Union, Lancashire.—The offer of the minimum terms under the Vaccination Order has been accepted.

Wycombe Union, Bucks.—The following scale has been accepted by the public vaccinators after a conference with the Finance Committee of the Board of Guardians :

Scale Proposed.		Scale Agreed to.
(*a*)	1s. for the whole union	2s.
(*b*)	District 1.—5s., urban	5s.
,,	2.—6s., rural	7s. 6d.
,,	3.—6s., rural	7s. 6d.
,,	4.—5s. 6d., urban and rural	6s.
,,	5.—5s. 6d., chiefly rural	7s. 6d.
,,	6.—6s., urban and rural	6s. 6d.
,,	7.—5s. 6d., urban and rural	6s. 6d.
,,	8.—5s. 6d., urban and rural	5s. 6d.
,,	10 and 11.—6s., rural	7s. 6d.
,,	12.—6s., rural	6s.
(*c*)	,, —2s. 6d.	2s. 6d.

With a fresh arrangement if stational vaccination should be resorted to.
Union and schools, 2s. 6d. 5s.

The fixed amounts were agreed upon owing to the difficulty of computing the mileage.

Public Vaccinators not Resident in the District.

J. T. S.—We do not understand upon what grounds the guardians should wish to alter the whole character of the arrangement which our correspondent informs us has been in force for thirty-six years with regard to the mode of measuring mileage. We may point out that if agreements have not been completed between guardians and the public vaccinators before January 1st, 1899, the rates will be determined by the Local Government Board.

A. K.—Public vaccinators need not necessarily reside within their districts.

Fees for Vaccination under the Age of Four Months.

K. C. asks : If a person applies to the vaccination officer to have her child vaccinated at six weeks of age, and he gives her a form directed to me to vaccinate the child at its home, shall I, on successful vaccination, obtain the capitation fee, as well as the minimum 5s. fee (as the child is under four months), or only the 5s. fee ?

*** Fee (*a*) according to Article 3, par. 2, is payable on all children whose names are sent in the list of the vaccination officer, "together with the number of children not included in such lists but vaccinated by the public vaccinator himself." This provides for the payment of fee (*a*) to the public vaccinator in any such cases as are referred to by our correspondent. Even if vaccination is unsuccessful this fee is payable.

INTERNATIONAL CONGRESS OF MEDICINE.

Section of Otology, Rhinology, and Laryngology.

This Section of the forthcoming Thirteenth International Congress of Medicine will itself be subdivided into two subsections, one dealing with Otology, the other with Rhinology and Laryngology. Each of these has a distinct Organising Committee constituted as follows : Otology : MM. Gellé, President ; Castex, Secretary ; Boucheron, Duplay, Ladreit de Lacharrière, Lannois, Löwenberg, Lubet-Barbon, Menière, Miot, Nimier. Rhinology and Laryngology : MM. Gouguenheim, President ; Lermoyez, Secretary ; Cartaz, Chatellier, Garel, Luc, Martin, Moure, Poyet, Ruault. Communications will be received in German, English, or French. Information respecting scientific matters in connection with the Section may be obtained on application to Dr. Castex, 30, Avenue de Messine, as regards Otology ; and to Dr. Lermoyez, 20 bis, Rue de la Boétie, Paris, as regards Laryngology and Rhinology. Communications regarding business matters (railway fares, lodgings, etc.) should be addressed to Dr. Chauffard, General Secretary of the Congress, 21, Rue St. Guillaume, Paris.

THE SEAMEN'S HOSPITAL SOCIETY AND THE VISITING STAFF OF THE DREADNOUGHT SEAMEN'S HOSPITAL.

We have received for publication the following memorandum and copy of a letter from the Secretary of the Seamen's Hospital Society, in reply to that from Sir William Broadbent, published in the British Medical Journal of December 10th :

Memorandum adopted at a Meeting of the Committee of Management of the Seamen's Hospital Society on December 9th, 1898.

It appears from the article published in the British Medical Journal of December 3rd, 1898, under the title of the Seamen's Hospital Society and the Visiting Staff of the Dreadnought Seamen's Hospital, that the two points of which the Visiting Staff complain are :

(*a*) A paragraph in Sir Henry Burdett's letter, published in the *Times* of July 11th, with reference to the proposed London School of Tropical Medicine, which stated : "The teaching staff will consist of the Senior Medical Staff of the Dreadnought Hospital at Greenwich, as well as of the Branch Hospital, together with a number of teachers specially selected and attached to the new school."

(*b*) The statement that the Committee propose to "concentrate cases of tropical disease" at the Branch Hospital.

The British Medical Journal expresses the opinion that an apology and explanation are due to the Visiting Staff, and the hope that this may be frankly given and as frankly accepted.

The Committee of the Seamen's Hospital Society have already in the correspondence expressed regret that any statement in Sir Henry Burdett's letter should have caused the Visiting Staff to feel aggrieved. The Committee regret also that the statement relating to the proposed constitution of the Teaching Staff was capable of bearing the interpretation that the Greenwich Visiting Staff had pledged themselves to take part in the teaching work of the school. The Committee wish to make an honourable apology to the Visiting Staff for any injury or indignity that has unconsciously been caused to them through the statement.

The Visiting Staff, in their letter of October 20th, say : "We are still more aggrieved by the Committee's want of courtesy in not asking the opinion of the Senior Medical Staff of the Dreadnought Hospital at any time during the inception of the scheme."

On this point the Committee would explain that the inquiry of the Secretary of State for the Colonies was "whether it might not be possible to provide the necessary accommodation in the new building" about to be erected for the enlargement of the Branch Hospital "for the officers whom it is desired to instruct." No inquiry as to the possibility of providing accommodation at the Dreadnought Hospital at Gre[illegible]

The two hospitals are worked as separate establishments with separate visiting staffs and separate resident staffs, the only medical officers having duty at both hospitals being the Society's principal medical officer, who resides at Greenwich and visits the Branch Hospital, and the ophthalmic surgeon, who visits each hospital.

In 1892, on the recommendation of a Subcommittee, of which the Greenwich visiting staff were members, a visiting physician to the Branch Hospital was appointed, and the Greenwich visiting physicians were relieved of duties at the Branch Hospital. They subsequently objected to the visiting physician of the Branch Hospital being described as an officer of the "Seamen's Hospital, Greenwich," thereby emphasising the disconnection of the two hospitals.

The establishment of a school at the Branch Hospital in which the visiting staff of the Dreadnought Hospital, with the exception of the ophthalmic surgeon, have no duties, will thus not affect them, and no want of courtesy to that staff [illegible] by the C[illegible] their opinion on a matter w[illegible] which they were attached.

With reference to the concentration of cases of tropical disease at the Branch Hospital, it may be explained that previous to the establishment of the Branch Hospital a large proportion of the cases of tropical disease landed in the Port of London were treated at the London Hospital. A smaller percentage applied for admission, and were treated at the Dreadnought Hospital at Greenwich. Since the establishment of the Branch Hospital the number of cases of tropical disease treated at the Dreadnought Hospital has been increased through the transfer from the Branch Hospital of convalescent patients originally admitted and treated there. The necessity of enlarging the Branch Hospital to avert the removal of convalescent patients at too early a stage had been so strongly felt by the Committee that plans had been prepared and arrangements made for an enlargement of that hospital before the suggestion of the Secretary of State for the Colonies for the establishment of a Tropical School was received.

As the majority of patients who come to the Society's hospitals suffering from tropical diseases are usually landed in the docks on the north side of the Thames, it is manifest that a large percen[illegible] be treated at the Branch Hospital, which was [illegible] object of treating patients landed at, or sus[illegible] docks. But there is no reason to suppose that the patients suffering from tropical diseases who have hitherto applied for admission and been treated at the Dreadnought Hospital will be fewer than heretofore, and the Committee do not contemplate the transfer of such patients to the Branch Hospital.

Dr. Curnow, the Senior Visiting Physician of the Dreadnought Hospital, in a letter published in the *Daily Chronicle* of November 20th, advanced

reasons for the establishment of the school at the Dreadnought Hospital in preference to the Branch Hospital. His letter was forcibly answered by "A Colonial Physician" in a letter published in the *Daily Chronicle* on November 29th, the arguments in which need not be here repeated.

Amongst the reasons which moved the Committee to decide on the Branch Hospital as the more suitable place were the following:

The Society hold the Dreadnought Hospital, formerly the infirmary of Greenwich Hospital, from the Lords of the Admiralty on a tenancy determinable by either party by six months' notice. They have no additional land at Greenwich, and they have no reason to think that the Lords of the Admiralty would either grant additional land or sanction the erection of additional buildings within the precincts of Greenwich Hospital.

They hold the land on which the Branch Hospital stands on lease for about 90 years from the London and India Docks Joint Committee, and the Joint Committee have both offered additional land for the extension of the hospital and the building of the school, and have approved the plans of the new buildings.

Above all other considerations it is manifest that the hospital must be placed where it will best serve the needs of patients, and that the school must be attached to the hospital at which tropical diseases can best be studied.

It is not open to question that the Society's Branch Hospital at the Victoria and Albert Docks is the hospital which affords the best opportunities in London for the study of tropical diseases, and the Society have throughout the negotiations for the establishment of the London School of Tropical Medicine been in full and constant consultation with the visiting staff of that hospital.

Greenwich, December 14th, 1898.

Copy of letter addressed to Sir William Broadbent:

Dreadnought Seamen's Hospital, Greenwich, S.E.,
December 14th, 1898.

DEAR SIR WILLIAM BROADBENT,—I have to acknowledge the receipt of your letter of December 7th. I understood it to have been written as an official communication, and therefore brought it before the Committee of the Seamen's Hospital Society at their meeting on December 9th.

You state that the action of the Committee "prevented certain aspects of the question from being brought to the notice of the Secretary of State, and made the data on which he based his judgment imperfect and one-sided," and that thus "his approval was obtained under false pretences."

This statement, the Committee maintain, has no foundation. There has certainly been no false pretence, and the use of such a term is indefensible. The Committee believe that all aspects of the question have been put before the Secretary of State and fully considered by him. If in your view this is not so, the Committee cannot doubt that Mr. Chamberlain is still open to consider the matter from any fresh aspect in which it can be put before him.

You further state broadly that the Committee have made a *suggestio falsi* in saying that the visiting staff have been invited to co-operate. The Committee much regret that you should have permitted yourself to make such a statement, and they protest not only against the language but against so strained an interpretation of the Memorandum. The correspondence which the Dreadnought Visiting Staff have published shows clearly at what stage they were asked to co-operate and nothing has been written in the Memorandum to lead to the conclusion that they were invited to co-operate at an earlier date than is disclosed by the correspondence.

Whether the invitation, when sent, was an insult or not, is a question on which the public will form their own opinion. It was not so intended by the Committee, and they do not gather that the visiting staff have so viewed it.

The Committee observe that you object to the omission from Sir Henry Burdett's letter, as issued with the Memorandum, of the passage against which the Dreadnought visiting staff so strenuously protested. The letter was reprinted in such a form as to show that a passage had been omitted. The Committee recognised that after the protest of the visiting staff the paragraph objected to must not be republished, but they saw no occasion to abstain from publishing the rest of the letter. We can hardly suppose that the visiting staff will join in your protest against the omission of the paragraph in question.

The Committee cannot but feel astonishment at a charge of such dishonourable acts as "suppression of truth material to the issue and suggestion of what is calculated to mislead" being made against them by a leading physician. Such charges as these are most regrettable and unfounded, and, the Committee fear, will not tend to the amicable adjustment of the difficulty which has arisen, and which the Committee greatly regret, and are anxious to do everything in their power to remove.

Believe me to be, yours faithfully,

P. MICHELLI, Secretary.

Sir William Broadbent, Bart., M.D., F.R.C.P., F.R.S., etc.,
84, Brook Street, Grosvenor Square, W.

The following letter appears in the *Times* of December 15th:

Sir,—The proposed scheme for affording additional instruction in tropical medicine has attracted attention to a subject with which the medical profession entirely sympathise. That physicians and surgeons who propose to practise in hot climates should have an opportunity afforded them for the special study of tropical diseases is no doubt most desirable, not only on the ground of humanity, but also as a duty to British subjects resident in the tropics. Having regard, however, to the scheme as detailed in the Colonial Office circular dated the 9th ult., there are several points bearing on its practicability and prospect of success which require careful consideration before it is finally adopted.

The scheme is very costly. It is estimated that the initial outlay will be £16,460, and that the annual cost of maintenance will be £3,000. Towards the first item the Colonial Office contributes £4,500, and it is estimated that the Colonial Medical Service candidates will contribute £1,000 to the latter. This leaves a capital sum of £12,960 and £2,000 per annum to be raised from the public. Fees from students would partly defray the yearly expenditure, but it is doubtful whether such sums can be procured from either or both sources.

A memorandum and circular are now being circulated by the Seamen's Hospital Society, which state that the school is intended for medical grrduates only. Of these candidates for the Colonial Medical Service will form a part, and it is anticipated that missionary societies, trading corporations, and private practitioners connected with the tropics will avail themselves of the opportunities offered by the proposed school. The number of students expected to be forthcoming is not stated, and it is well to consider whether additional facilities to those already existing are required before incurring the contemplated heavy expenditure.

The candidates for the Colonial Medical Service could be instructed at Netley, where the Royal Victoria Hospital affords more material for clinical instruction than can be obtained anywhere else, and has a staff of teachers practically acquainted with tropical diseases, as well as an excellent bacteriological laboratory. There seems to be no reason why these candidates should not go through a four months' residential course at Netley, and obtain the advantages which its hospital and school now afford to candidates for the Army and Indian Medical Services. It appears to us that candidates for the Colonial Medical Service might fairly be required to pass through this course as a qualification for appointment.

Medical men connected with missionary societies and trading corporations, along with those who, in a private capacity, propose to practise in the tropics, have open to them, for the special study of these diseases, the London and provincial schools of medicine where the subject is already taught. Many of these are provided with bacteriological laboratories and all that is required for academic teaching. For clinical work the material afforded by the Dreadnought and its branch (the former is much more accessible) is available for those residing in London, while those resident in the provinces have valuable opportunities, in this respect, at such ports as Liverpool, Newcastle, Bristol, and other places. It must not be overlooked that the diseases of hot climates are included in the lectures on the practice of medicine given at every medical college and school in the kingdom. It appears, therefore, that sufficient means of instruction already exist, and the large initial outlay and costly maintenance of the proposed school and hospital are consequently uncalled for.

In the published correspondence between the honorary medical staff and the Committee of Management of the Dreadnought Hospital it is stated in Mr. Michelli's letter, dated July 14th, that "the Committee will propose, as far as possible, to concentrate cases of tropical disease at the teaching centre." We are informed that this has been already done to some extent, for the Albert Docks branch has detained patients who were originally intended to be passed on to Greenwich, and the parent institution has therefore been depleted in order to feed its branch. This seems to be very undesirable in the case of the Dreadnought with its past traditions, and the more so because the cases of tropical disease in that hospital have been used already for teaching purposes in connection with one of the London schools.

It is, we think, unfortunate that the Secretary of State for the Colonies did not consult such an authority as the Royal College of Physicians as to the best method of giving effect to the scheme before it was made public, and it is much to be regretted that the Committee of Management of the Seamen's Hospital Society neglected to consult their senior visiting medical staff on a matter so seriously affecting themselves and the usefulness of the hospital at Greenwich.

We are, Sir, your obedient servants,

WM. ROBERTS, M.D., F.R.S.
DYCE DUCKWORTH, M.D., LL.D., Physician and Lecturer on Medicine, St. Bartholomew's Hospital.
J. FAYRER, M.D., F.R.S., Consulting Physician Charing Cross Hospital.
WILLIAM M. ORD, M.D.Lond., F.R.C.P., Consulting Physician, St. Thomas's Hospital.
W. S. CHURCH, M.D., F.R.C.P., Senior Physician, St. Bartholomew's Hospital.
W. R. GOWERS, M.D., F.R.S., Consulting Physician, University College Hospital.
I. BURNEY YEO, M.D., F.R.C.P., Senior Physician to King's College Hospital, and Professor of Medicine in King's College.
FREDK. T. ROBERTS, M.D., F.R.C.P., Professor of Medicine at University College; Physician to University College Hospital.
A. ERNEST SANSOM, M.D., F.R.C.P., Physician to the London Hospital and Lecturer on Clinical Medicine to the London Hospital.
THOMAS BUZZARD, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic.
W. B. CHEADLE, M.D., F.R.C.P., Senior Physician to St. Mary's Hospital and Lecturer on Clinical Medicine.
THOS. WHIPHAM, M.D., F.R.C.P., Consulting Physician to St. George's Hospital.
W. CAYLEY, M.D., F.R.C.P., Physician to the Middlesex Hospital.
G. FIELDING BLANDFORD, M.D., F.R.C.P., Lecturer on Psychological Medicine, St. George's Hospital.
F. DE HAVILLAND HALL, M.D., F.R.C.P., Physician to the Westminster Hospital.

December 14th.

THE ABUSE OF MEDICAL CHARITY IN BALTIMORE. According to the *Maryland Medical Journal* a man who had just applied for free treatment at the City Hospital Dispensary in Baltimore, on the plea that he was unable to pay a medical practitioner, suddenly fell dead. In his pocket was found $1,500 (£300) in notes.

THE PLAGUE IN THE EAST.

The Special Commission.

The Commissioners are now holding their investigations in Bangalore, and during their sojcurn the following evidence has, we learn from the *Times*, been taken on December 12th: Colonel Robertson, the resident at Mysore, stated that in consequence of the hostile attitude of the inhabitants it was impossible to deal effectively with the plague epidemic. Captain Roe, chief plague officer, maintained that segregation was unsuccessful, owing to the difficulty of securing the people; were segregation abolished the natives would not leave their homes. Major Deane declared that Yersin's serum was useless; Haffkine's serum, in the opinion of Major Deane, conferred a temporary immunity, but not to the extent supposed. Colonel McGann stated that plague had prevailed amongst native soldiers but not amongst Europeans, and that Haffkine's serum had been found valuable.

On December 13th Colonel Dobson, Residency Surgeon, and Dr. Willis, were among those examined. It was explained what measures had been taken to combat plague, and details were given of the cases of inoculation. They stated that transference of certificates of inoculation, which was reported to be prevalent to such an extent as to render statistics unreliable, was untrue. There was no racial immunity from plague; more Hindus died than any other class, but it was owing to the poorer conditions in which they lived. The Hindus were more amenable as regards inoculation than the Mohammedans. There was a large mortality from plague amongst monkeys, squirrels, and rats.

India.

In the City of Bombay the slight increase in the mortality from plague which we reported last week has continued, and by a telegram, dated December 12th, we gather that there is still an advanced tendency in the mortality returns from plague. The reports from the Bombay Presidency generally remain favourable, and a steady decrease in the epidemic is everywhere apparent outside the city.

In the Mysore State there is but little change, many towns and districts being severely affected. The populations of Bangalore and Seringapatam still exhibit signs of resistance to the segregation rules imposed upon them by the authorities, and were it not for the strong measures taken to ensure order, a repetition of the late riots would break out at any moment.

In the Madras Presidency plague continues in a more or less sporadic form, the inland parts of the Presidency are widely affected, although up to the present time the towns on the Carnatic shore have suffered but little. The cases occurring in the seaport towns have been merely imported cases, no local outbreaks having as yet taken place. The State of Hyderabad is infected in a similar manner to Madras. The latest addition to the plague-stricken districts is the Central Provinces, and in the Wardha district the disease is epidemic. The prevalent belief is the plague reached the Central Provinces from Bombay, and not from Hyderabad, which borders them on the south. The argument in favour of Bombay being the source of infection is held to be the fact that the disease broke out amongst the mill workers who had fled from Bombay thither.

Madagascar.

The most recent news from Tamatave is conveyed in a telegram, dated December 9th, which states that "plague is unchecked." There was a tendency to look upon the first report of the magnitude of the outbreak as being grossly exaggerated, and that the disease was confined to a few imported cases. Now it would seem that the French authorities are convinced that the disease has obtained a firm hold upon the natives, and that it is likely to spread. A European died of the disease in Tamatave during the past week, and as the unhealthy season is rapidly approaching in Madagascar, the outlook is not considered hopeful.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A meeting of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on Wednesday the 18th day of January next, at 2 o'clock in the afternoon.

Francis Fowke, *General Secretary.*

December, 1898.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1899.

Meetings of the Council will be held on January 18th, April 12th, July 12th, and October 18th, 1899. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, December 28th, 1898; March 23rd, June 22nd, and September 28th, 1899.

Francis Fowke, *General Secretary.*

Election of Members.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

Francis Fowke, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

Gloucestershire Branch.—The next meeting of the Branch will be held at the General Hospital, Cheltenham, on Tuesday, December 20th, at 7 P.M., the President (Dr. Soutar) in the chair. There will be supper afterwards at the Queen's Hotel. Agenda: 1. Some Recent Advances in the Treatment of Tuberculosis; Dr. Pruen, Cheltenham. 2. Peripheral Neuritis following the Treatment of Chorea by Arsenic: Dr. Foljambe Forster, Cheltenham.—S. T. Pruen, Cheltenham, Honorary Secretary.

BORDER COUNTIES BRANCH: COUNTIES OF ROXBURGH, BERWICK, SELKIRK, AND PEEBLES DISTRICT.

A meeting was held at Hawick, on November 25th; Dr. Blair (Jedburgh) in the chair.

The Expenses of the Branch District.—The Secretary read a letter from the General Secretary of the Association, regarding the payment of expenses of the Branch District, and he was instructed to inform him that, as members of the Border Counties Branch, they (the members of the Branch District) intended that these expenses should be paid out of the Branch subscriptions.

Hypnotism.—Dr. Haddon introduced a discussion on hypnotism. He traced its history from the earliest times on to Mesmer, whose thesis for the doctor's degree was upon "the influence of the stars and planets," and then to Braid, who first used it as a therapeutic agent. He gave his own experience, which led him to the conclusion that it was a powerful agent lying to the hand of the profession, and which was sadly neglected. He quoted from Myers *On the Psychology of Hypnotism* to prove the close alliance of this condition to that of hysteria.—The paper was discussed by Dr. Hamilton and Dr. Young; and Dr. Haddon, in reply, said he had been asked how to induce it. He held that it did not lie with the operator but with the patient, and depended on the power of concentrating his attention. Braid pointed out that it was the fixing of the eyes which was essential, as by putting something which glitters close to the eyes. He held it could be made use of for criminal purposes, but hypnotism could cure anything purely functional. Dr. Blair proposed a vote of thanks to Dr. Haddon for his address, which was unanimously accorded.

Colotomy for Intestinal Obstruction.—Dr. Bannerman related two cases of intestinal obstruction in which he had performed colotomy (left lumbar). The first was a man, aged 76, who suffered from complete obstruction for forty days. After the operation he got quite well and was able to go about for a number of years. The second case he showed was a man aged 57, with cancer of the rectum high up, which only a very severe operation could remove, and which he did not feel justified in recommending nineteen months ago; he did colotomy with great increase of comfort to the patient. In operating he advised the members to cut all the muscular fibres in the line of incision, and thus secure a straight wound from skin to bowel, otherwise a valve-like opening would result.

Scarlatina Anginosa.—Dr. YOUNG related some cases of scarlatina anginosa. The first, a girl, aged 10, temperature 104°; sore throat with patches on it, in which recovery was rapid; there was no albumen, no paralysis. In the second case the patient was also a girl, in the same epidemic of scarlet fever, but quite apart from the first case. On the fifth day, the temperature was 105°, and there was a diphtherial membrane covering the entire fauces and spreading to the nose. The temperature rose to 106°, the pulse to 150, with muttering delirium. The membrane did not spread to the larynx, and recovery ensued. He regarded this as not a true diphtheria, and therefore did not use the serum, as thereby he might have done harm. A discussion followed, in which most of the members took part, more particularly in reference to the use of serum and to the occurrence of post-diphtheritial paralysis and as to whether this was increased or diminished by the use of serum.

Specimens.—Dr. WADE, who was unable to be present, sent a specimen of perforation of stomach (anterior wall) from a case which ended fatally and was caused by the kick of a horse in the epigastrium.

SOUTH-EASTERN BRANCH: EAST KENT DISTRICT.

THE 149th meeting of this District was held at the Kent and Canterbury Hospital on November 24th. In the unavoidable absence through illness of Brigade-Surgeon-Lieutenant-Colonel Tomlinson, Dr. ROBINSON (Dover) was voted to the chair. Seventeen members were present.

Confirmation of Minutes.—The minutes of the last meeting, held at Hythe in September, were read and confirmed.

Conjoint Meeting of the Three Kent Districts.—It was proposed by Dr. GOGARTY, seconded by Dr. WHITEHEAD REID, and carried:

That the suggestion of Dr. Lawford Cooper, Honorary Secretary of the West Kent District, that a conjoint meeting of the three Kent Districts should be held at Rochester in March, 1899, be agreed to.

Dr. HACKNEY therefore proposed, and Dr. MARSHALL seconded, a motion:

That the resolution carried in May that the meeting in March, 1899 should be held at Sittingbourne, be rescinded.

This was carried.

The Open-air Treatment of Consumption.—Dr. EASTES (Folkestone) read a paper on this subject. He alluded to the greatly-increased interest that of late years had been taken in the treatment of consumption. The main points in treatment were constant life in fresh air, abundant nutrition, careful arrangements for rest, and exercise. That the results were excellent was shown by the statistics of patients in open-air occupation compared with those in close rooms and workshops. The fewer the people and the purer the air, the less was the mortality from tuberculosis. Open-air treatment was not necessarily limited to health resorts, but could be carried out in most places. The ideal residence was described. So long as the patients were indoors open windows were a necessity. The temperature of the rooms should be kept at about 60° F., and in cold weather this degree of warmth should be maintained—not by closing windows but by increasing fires. Sanatorium methods had great advantages, and the real remedy for consumption was fresh air.

Surgery of the Matabele Rebellion.—Mr. W. GREENWOOD SUTCLIFFE (Margate) read a paper on this subject. He gave a graphic sketch of the life of a military surgeon during the campaign. The medical arrangements existing at the outbreak of the rebellion, and the hospital at Bulawayo and its working in war time were described. An account was given of the treatment of the wounded in the field, on the march, and in the field hospitals, and several cases of severe gunshot wounds were related. Mr. Sutcliffe also dwelt upon the effects of the different types of bullets used by the natives. The native stone bullets were shown to have a great power of setting up spreading traumatic gangrene. An exhibition was given of bullets of native manufacture extracted during the campaign.

Cases and Specimens.—Dr. GOGARTY (Canterbury) showed two cases of Pseudo-Hypertrophic Muscular Paralysis from the wards of the hospital. Dr. WHITEHEAD REID exhibited a large Loose Fragment of Cartilage which had been removed from the KNEE-joint.

STAFFORDSHIRE BRANCH.

THE first general meeting of the session was held at Stoke-on-Trent on December 1st, Dr. MCALDOWIE (President) in the chair. Thirteen members were present.

Confirmation of Minutes.—The minutes of the last general meeting were read, approved, and signed.

New Members.—W. E. L. Horner, M.B., B.S., North Stafford Infirmary, Stoke; Robert Hughes, M.B., M.R.C.S., Fenton; and Bernard Robinson, M.R.C.S., L.R.C.P., Oakamoor, were elected members of the Branch.

Pig Bile in Graves's Disease.—Dr. ALLAN read a paper on a case of Graves's disease, successfully treated by pig bile administered by the mouth, hypodermically, and by being injected into the substance of the thyroid gland itself. He claimed to have demonstrated by several experiments described, that there was a reasonable probability that bile, besides having a destructive action on some bacteria, *in vitro* and *in corpore*, had also a modifying or counteracting influence on the action of the secretion of such glands as the thyroid, the action of whose secretion it might either counteract when excessive, or supplement, or replace when deficient, and that, according to the degree or duration of this control so would the function of the gland be in evidence. He also propounded a theory suggesting the location and *modus operandi* of this control in the bodily economy, and contrasted the conditions holding in cholæmic conditions and in Graves's disease.

Ophthalmia Neonatorum.—Mr. HERBERT H. FOLKER read a paper on ophthalmia neonatorum, touching on the cause, treatment, and prognosis. He advocated the use of nitrate of silver in preference to the more recent drugs on the ground that it had stood the test of years whereas the newer preparations had not had that test, and the condition was such that it admitted of no time being spent in uncertainties. Mr. Folker insisted on the necessity of the medical attendant applying the drug himself for the first week or so, and not, as was often done, leaving it to an inexperienced person.

Radical Cure of Inguinal Hernia.—Dr. HATTON read a paper on this subject. He considered that the simple operation of ligaturing the sac and excising it, and placing two or three sutures in the external ring was perfectly safe, and sufficient in most cases to effect a cure. But when, by the approximation of the internal to the external ring, the inguinal canal had nearly disappeared, he advised a modification of Bassini's operation as the best means of restoring the valve-like action of the canal. The skin incision should be made at least an inch above Poupart's ligament, so that the rows of sutures should not be on the same level.

Cases.—Dr. HIND showed (1) a brewer with a Herpetic Eruption on the Lips, Hands, and Feet, going on to complete Desquamation, and with well-marked Hyperæsthesia. It was the fourth attack in three years. (2) A case of Trephining over the Frontal Bone for injury in a lad. The disc was replaced and recovery rapid. (3) A case of Trephining for Pachymeningitis affecting the arm and leg area of the left hemisphere. The girl had severe clonic spasms of the right side on movement, and frequent epileptiform convulsions affecting the same side. The membranes were much thickened and adherent. They were dissected off the brain and freed all round by a blunt dissector. The spasms and fits had ceased. (4) Case of Gastrostomy for Occlusion of Œsophagus in a man who had drunk boiler composition in mistake for water. (5) A man who had suffered extensive Loss of Tissue from Back of Head and Neck consequent on severe Scald. Thiersch's method of grafting had been adopted, and the result was a pliable cicatrix without any contraction.—Dr. A. E. NORMINGTON showed a female Epileptic of a low type of intelligence, who up to two years ago was unable to walk. She now walked with her feet wide apart, but the attempt at locomotion was almost invariably accompanied by a fit characterised by sudden rigidity and loss of consciousness, lasting some thirty seconds. The recovery was equally sudden and without any clonic stage. Dr. MCALDOWIE showed: (1) A male patient, aged 18, suffering from hereditary Ataxy, with intentive choreiform movements and exaggerated reflexes. He had had epileptic fits since he was 9 years old, and he was feeble-minded. His head was small, forehead low, and occiput flat. Dr. McAldowie considered the symptoms due to atrophy of the nerve centres, and dependent on defec-

tive development. (2) A man, aged 74, with extreme Conical Cornea.

Specimens.—Dr. Hind showed (1) six Uric Acid Stones removed by the suprapubic operation from a man aged 73; complete recovery in four weeks. (2) A Dermoid Cyst and Cystic Ovary from a woman aged 23.—Dr. Hatton showed a Uterus with Epithelioma of the body removed by vaginal hysterectomy.—Dr. Edge showed (1) Portion of a Sarcomatous Uterus removed by *morcellement* through the vagina. Operation successful, but return of encephaloid sarcoma in the left ischio-rectal fossa three months afterwards. (2) A Uterus successfully removed *per vaginam* for symptoms pointing to myoma, not defined before operation, but found in the left uterine cornu after removal.—Mr. Blumer exhibited a Twin Fœtus which he calculated to be 30 weeks old, and which showed defective development of some of the vertebral arches, and also an umbilical hernia. It was stillborn. The other twin was perfectly formed, and was now a month old. Each fœtus was in a separate sac, and the cords were inserted separately into one placenta.

SPECIAL CORRESPONDENCE.

BERLIN.

Another Behring Patent.—Professor Roentgen.—Taxation of Private Hospitals.—A new Suburban Hospital for Berlin.—Proposed Vegetarian Hospital.—Hydropathy at the Charité.—An Unpublished Work by Professor du Bois-Reymond.—The Berlin Ambulance Service.

Professor Behring, together with a Dr. Ruppel, has applied for a German patent for a tuberculosis serum. His claim is: "A method for producing a highly poisonous and immunifying substance from tubercle bacilli or from cultures of tubercle bacilli."

Professor Roentgen lately had a call to the Leipzig University, to succeed Professor Wiedemann, who has retired at the age of 72. It was thought that Roentgen would be glad to accept the position, which in many ways is an advantageous one, but after some deliberation he declined it, and for the present remains at Würzburg.

The question whether the carrying on of private hospitals constitutes an industrial undertaking (that is, whether such private hospitals or sanatoria are subject to the "Gewerbesteuer" (trade tax) has just been decided by the Supreme Civil Court. The judge rules that, in cases where doctors have their private clinics solely for the purposes of their profession, that is, for teaching purposes, or as a means of study, or for scientific research, without intending to derive from it any pecuniary gain beyond the usual fees, the undertaking does not constitute a trade. But, in cases where doctors carry on private hospitals, chiefly with the object of deriving pecuniary advantage from the patients' payments for board and lodging, where therefore the management of the hospital is the prime object, and the doctor's own professional activity subservient to it, this professional activity must be considered as solely serving the objects of an industrial undertaking. And consequently the total profits of the undertaking must be subject to the trade tax. No doubt the distinctions pointed out in this ruling commend themselves to the legal mind as extremely definite, but whether many doctors will be found ready to own that their private hospitals are kept up—not for scientific objects, but "chiefly with the object of driving pecuniary advantages," etc.—is a doubtful question.

The new district hospital at Gross-Lichterfelde (one of the suburbs of Berlin) is growing apace, and will be entirely roofed in before the end of the year. It is built on the one-storey barrack system, and is to contain 153 beds, 92 for men and the rest for women and children. As the hospital is not intended to serve for infectious diseases, only a small building, with 10 beds, will be provided for cases requiring isolation, but there are some extra isolating rooms for delirious patients. The grounds cover more than 26,000 square metres, and a further piece of land of 11,000 square metres is in reserve, against the time when the hospital will prove too small.

At almost every meeting of the Berlin Town Council held during the last autumn months, Professor Baron's proposed vegetarian Children's Home has been on the order of the day, and under discussion, without a final resolution being taken. The facts are briefly these: Professor Baron, lately deceased, bequeathed a considerable sum to the city of Berlin for the establishment and support of a children's home on purely vegetarian principles. But opinions being much divided on the subject of vegetarianism, several of the magistrates and town councillors hold it against their conscience to consent to children being brought up without meat, and attended in illness by vegetarian faddists only, and the medical authorities whom they have consulted entirely concur with them. On the other hand, it goes hard to refuse a good sum for so useful a charity as a children's home. And so the question remains open at present, and a legal loophole is sought by which the clauses of the will could be interpreted in a way that would allow the restriction as to diet to be evaded.

In accordance with the greater attention paid to hydropathy and mechanical methods in modern therapeutics, more weight is to be laid on these subjects in future at the Prussian universities. Thus the new building of the Charité Hospital will contain a hydropathic department, and a spacious room furnished with the chief medico-mechanical appliances.

Dr. René du Bois-Reymond, son of the late distinguished physiologist, intends to publish his father's lectures on The Physics of Organic Metabolism, which have never been printed. Through the newspapers Dr. du Bois-Reymond appeals to former students who have full notes, and particularly those who have shorthand notes, of the course, to place them at his disposal for a time.

The Berlin "Unfall-stationen," the original Berlin ambulance stations, report that from October, 1897, to October, 1898, they have afforded first medical aid to 28,067 persons, gratuitously in 7,293 cases; 1,608 cases were conveyed in the carriages of the ambulance stations. The new experiment of giving away ice in cases of illness where it is required, especially on Sundays, when, except in the morning hours, it is impossible to obtain it, has proved most beneficial, and was carried out in 134 cases during the last two months. If the "Unfall-stationen" have done good work during the last year, the Berliner Rettungsgesellschaft, the new rival society, has not been idle. Its organisation, and its aims, too, differ somewhat from those of the "Unfall-stationen." The Rettungsgesellschaft, besides its stations at all points of the town, has a central bureau in telephonic communication by day and night with all the large Berlin hospitals, so that any of the local stations can learn from it at any time, also by telephone, of course, where beds are vacant, and that their cases are sure of being received at the hospital in question. At the stations themselves first aid only is given. The fact that no fewer than 1,000 Berlin doctors have volunteered for service in the stations, taking four hours' work when their turn comes in rotation, will give an idea of the effective organisation of this new service.

ABERDEEN.

The Royal Infirmary.—Professor Stephenson.—The Students' Medical Society.

At the Aberdeen Royal Infirmary considerable changes have been made during the present session in regard to the teaching of clinical surgery. Besides the usual lectures on the subject much greater attention is now being paid to the instruction of students at the bedside, in ward work, and in the admission room. These changes have been much appreciated by the students and by those interested in their hospital training. Dr. Pirie, formerly Registrar, has been appointed to the post of Anæsthetist, rendered vacant by the appointment of Dr. Gray to be an Assistant-Surgeon.

Professor Stephenson has found that the claims on his time as Gynæcologist at the Royal Infirmary render it necessary for him to resign his post of Physician to the Hospital for Sick Children. His loss will be much felt there, and his valuable services in the interests of the patients and of the institution will long be remembered.

At the University the enthusiastic interest taken by the students in the proceedings of their Medical Society has been one of the features of the session. A number of papers on subjects of interest are on their list, the meetings are well attended, and discussions are well maintained.

CORRESPONDENCE

THE OPERATION FOR REMOVAL OF CANCER OF THE BREAST.

SIR,—I cannot quite understand the object of Mr. Christopher Heath's letter in the BRITISH MEDICAL JOURNAL of December 10th My lecture was delivered in order to again draw pointed attention to the later researches on the anatomy and course of cancer of the breast, and particularly to do something to popularise Professor Halsted's operation for the removal of the breast and contents of the axilla; because, after an extended experience, I have come to the conclusion that it is the best operation for the purpose. It was not within the aim or scope of my lecture to give an accurate account of the surgery of the breast prior to 1894. Nor is any part of my lecture intended as a reflection on any surgeon or on any other method of operating for cancer of the breast.

At first, I was loth to give the "stock account," and reproduce the "well-known illustrations,"—that is, the author's account and illustrations—of Halsted's operation, on account of the space which they would occupy. Mr. Heath's letter shows me how desirable it was that I should do so, for no two methods can well be more dissimilar than those described by Mr. Heath and Professor Halsted. I hope those who intend to practise Halsted's operation will carefully study the description, and keep as closely as possible to the lines which he has laid down. I hope they will remove the greater pectoral muscle, divide the lesser pectoral, and thus expose the axilla up to the clavicle, and will use the knife and not the fingers for the removal of the breast and contents of the axilla.

With regard to my own change of views on the surgical treatment of cancer of the breast, I will only say that the largest operations practised a dozen and more years ago for cancer of the breast were attended by a large rate of mortality and produced a very small percentage of successes. I believed it would be more advantageous to the patient to make the cancer the centre of the operation and not to trouble about the set operation for the removal of the breast. I have acted on that principle for years and my results show that the practice was very successful. Now we have more information on the pathology and course of cancer of the breast, and I think Halsted's operation is best suited for the routine removal of the disease. On that account I venture to recommend it.

Mr. Heath's attack on me is so bitter that it verges on discourtesy, and I cannot understand what I have done to merit it. If the modification of my views is the offence I am likely to offend again. For if anyone will prove to me that there is a better method of treating any surgical disease than that which I now practise, I am quite prepared to modify or change the views which I now hold. And I trust I shall maintain this frame of mind to the end of my surgical career.—I am, etc.,

Harley Street, W., Dec. 10th. HENRY T. BUTLIN.

SIR,—I am desirous of pointing out that unless the incision in this operation is placed more over the sternum than is represented in Halsted's figure, the sternal process of the mamma will be cut off and left behind, as in the old operation.

The female breast is normally a very imperfectly integrated organ; for, instead of its constituent lobules being compacted together in a small space, they are generally widely diffused. On this subject Astley Cooper long ago remarked:

> The margins of the breast do not form a regular disc, but the secreting structure often projects into the surrounding fibrous and adipose tissue, so as to produce radii from the nipple of very unequal lengths; hence a circular sweep of the knife cuts off many of its projections, spoils the breast for dissection, and, in surgical operations, leaves much of the disease unremoved.

It is the more necessary to call special attention to this peculiarity, because the ordinary anatomical descriptions of the breast as a flattened circular mass are so very misleading. The truth is, as Hennig has well shown, the fully-developed female mamma has normally a tricuspid form; two of the cusps project towards the axilla—an upper and a lower one—and the other towards the sternum. At the level of the fourth costal cartilage, the latter process reaches the edge of the sternum, which it often overlaps.

I have often been asked as to the effect of free removal of the pectoral muscles on the utility of the limb. This is an experiment that Nature often makes for us. Congenital absence of the sternal part of the pectoralis major is a common anomaly; the entire muscle often defaults, and not infrequently the pectoralis minor as well. The absence of these muscles makes hardly any perceptible difference to the utility of the limb.—I am, etc.,

Clifton, Dec. 5th. W. ROGER WILLIAMS.

THE PROPOSED SCHOOL OF TROPICAL MEDICINE.

SIR,—Professor Crookshank's letter on the proposed school of tropical medicine amounts, when analysed, to a vigorous opposition to any consolidated "one-roof" scheme, and he definitely proposes that the intending student should have to chase his subject about London, much as he does at present, if he does it at all. If Professor Crookshank were commissioned to start a brand-new King's College medical school, which type would he choose? I think I could make a correct guess.

But let me consider his letter in order. He begins by a description of the completeness and excellent quality of the instruction supplied in his own bacteriological laboratories at King's College in reference to many parasitic diseases, and especially those found in the various Colonies. Let it be so, and what then? Professor Crookshank immediately goes on to remark that "a thorough knowledge of these diseases cannot be imparted in a small clinical laboratory attached for convenience to the wards of a hospital." Of course not. But he cannot seriously mean us to draw an inference that a "thorough knowledge" of these diseases can be imparted in a large laboratory such as that he describes at King's College, or in any other. Let him ponder over what a "thorough knowledge" of a disease means.

Professor Crookshank next states it as his opinion that "the services of colonial health officers and colonial practitioners would be of increased value if they were qualified ..... to advise upon the best means of stamping out tuberculosis," etc., "and also if they were competent to undertake original researches in connection with diseases of animals, and especially those communicable to man." Certainly. But allow me, as a colonial practitioner from one of the colonies enumerated in Professor Crookshank's long list, to offer an additional opinion that the services of *English* health officers and practitioners would probably be of "increased value" if they also were all similarly competent. It would indicate a very creditable standard of knowledge.

Next, Professor Crookshank points out that some diseases are very rarely imported into England, and says that therefore instruction at the bedside supplemented by examination in a clinical laboratory would be very irregular and inadequate, and that for such diseases study in a large and well-equipped laboratory is to be mainly relied on. Sir, a man *must* have a good laboratory training to have a decent understanding of microbial diseases, and the necessity is not confined to those of the tropics. What about diphtheria, typhoid, tuberculosis, and pyogenic infection? Every modern practitioner, whether for the tropics or not, ought to have at least the six weeks' course of bacteriology which Professor Crookshank advises.

But what sort of laboratory instruction will such a place as King's College afford on malaria, filariasis, dysentery, distomiasis, and ankylostomiasis? The idea of properly demonstrating the phases of a malarial organism, or the peculiarities of a filaria, in a non-clinical laboratory must show itself as absurd to such a man as Professor Crookshank. And yet he decries the clinical laboratory, or seems to. I am certain that he is under a misapprehension if he thinks the existence of a good clinical laboratory a menace to the prosperity of the general laboratory of the university type. In my opinion, exactly the reverse is the case. If a man has not already learnt how necessary is a course of systematic general bacteriology, he will not see much of a clinical laboratory without having it impressed on him. The laboratory of the university type and the clinical laboratory are complementary, not competitive, and each has its own place in the teaching function. Because, in a clinical laboratory chemical examinations of urine are carried out, do we hear the Professor of Chemistry complain? Does the Professor of Pathology cry out because morbid tissues are examined, or necropsies performed? How many Pro-

fessors of Bacteriology grow pale because Widal tests are made, or throat swabbings cultivated there?—I am, etc.,

Selwood Place, S.W., Dec. 13th. C. E. Corlette, M.D.

Sir,—In your issue of December 3rd you were good enough to express the hope that a frank apology should be given by the Committee of Management of the Seamen's Hospital Society, and frankly accepted by the staff. That apology has not been made, but last week an appeal for subscriptions and a memorandum (published in your columns) were widely circulated among the profession, but they were not sent to either Dr. Anderson, Mr. J. R. Turner, or myself, the senior visiting staff of the Dreadnought Hospital. I am compelled to make some remarks on this memorandum and the appeal, as an explanation of my action towards the proposed scheme.

I am writing as the Senior Visiting Physician of the Dreadnought Seamen's Hospital, whose experience of its medical work goes back more than twenty years, to the time when Sir Henry Burdett was the secretary, and is probably more complete than that of anyone living except Mr. Johnson Smith, the principal medical officer.

I have continued my association with the Hospital for this long period partly from a desire to see tropical cases, partly from the old traditions of the Dreadnought, and partly from the opportunities it afforded me to show students and medical men specimens of tropical disease. The scheme of the Committee of Management of the Seamen's Hospital Society will, if carried out, effectually destroy all these objects.

I think that the scheme promulgated by the Committee of Management is unnecessary, most unwise, and extravagant; £13,000 in July has expanded into £16,000 in December; and I shall show that the arguments urged in its support are misleading. The scheme in the appeal of the Society merely mentions a "bacteriological laboratory, pathological laboratory, and lectures, etc.," but the details were clearly stated in Sir Henry Burdett's letter to the *Times* of July 11th:

Provision will be made for from 20 to 25 students, with sleeping accommodation for about 10. There will be a fully-equipped laboratory, pathological room, museum, and every other accessory calculated to make the school efficient.

Before the bacteriology of tropical medicine can be studied, a general knowledge of bacteriological methods and of ordinary bacteriological diseases must first be learnt, and this can easily be obtained in the many bacteriological laboratories which now exist in London and elsewhere. The bacteriology of tropical diseases is fully taught at King's College and at Netley (and I suppose also at the British Institute of Preventive Medicine), and has long been so taught. A new fully-equipped bacteriological laboratory is obviously unnecessary, and the sum for furniture, fittings, etc., for a new school of from 20 to 25 students, namely, £400, if this is to include a bacteriological laboratory and its equipments, is almost too ridiculously inadequate to be referred to.

I have carefully looked over the list of the names of the gentlemen forming the Advisory Committee, and I can only find two (excluding the Chairman and Deputy Chairman) who can be in the slightest degree conversant with the medical work of the Dreadnought Seamen's Hospital. Dr. Robert Barnes was its physician in its best old days, and Mr. Johnson Smith is the principal medical officer (resident). It will be news to all the others that there exists at present in the Seamen's Hospital an excellent little museum, rich in pathological material, started in the days of Busk and George Budd, and which only needs a curator for its further development. I may venture to say that, with the exceptions above named, no one in that Advisory Committee has ever crossed the threshold of that museum.

For the teaching of tropical medicine in London, the essentials which are needed are a working laboratory for the examination of blood, sputa, excreta, etc., and an electrical room such as are in existence at every properly-equipped general hospital, and such as are evidently contemplated at Liverpool. These should be established at both the parent and the branch hospitals, and would probably come much nearer to the modest expenditure of £350 annually required at Liverpool than to that asked for in the proposed scheme. The calculation that £1,000 will be contributed annually in fees by students sent by Government is too absurd for serious attention unless the boarding and lodging of the ten students are included. But that these rooms will be constantly filled seems doubtful if the new school is so easy of access as is urged by the Committee.

From these remarks on the general scheme I now pass on to a consideration of the reasons put forward in the memorandum sent out by the Seamen's Hospital Society.

1. The small number and but little variety of the cases of tropical disease treated in the Society's hospitals has been clearly pointed out.

We are told that "the building called the Dreadnought" at Greenwich, which formerly was the infirmary of Greenwich Hospital, is not the property of the Seamen's Hospital Society, but is held by them from the Lords Commissioners of the Admiralty subject to six months' notice. This, of course, would obviously be a fatal objection to such a scheme as that indicated in Sir H. Burdett's letter, but considering that the Society has been in possession for twenty-eight years, the establishment and proper filling up of a working laboratory and electrical room would not seriously embarrass the Society's architect. Indeed, I find on page 16 of its latest report, published only this year, that since the Society has occupied the premises it has much improved the building at Greenwich, a chapel has been added, and the entire drainage of the hospital has been renewed. The building of the chapel necessitated a very extensive alteration of the Somerset Ward of the hospital. I think, therefore, that even on the insecure tenure put forward by the Committee, the necessary alterations for its proper conduct as a hospital might be carried out without incurring the displeasure of the Lords Commissioners of the Admiralty.

I venture, however, to ask, Is the whole truth disclosed in the statement that it is held from the Lords Commissioners of the Admiralty at six months' notice? for I find the following statement in "An account of the origin and progress of the Seamen's Hospital Society," published at p. 12 in the same report:

After four years' endeavours on the part of the Committee to effect so desirable an object, the Lords Commissioners of the Admiralty in the year 1870, under the powers afforded them by the Greenwich Hospital Act of the previous session, granted the Society a lease for 99 years of the infirmary (and adjoining Somerset Ward) at Greenwich Hospital, at a nominal rental, in view of the loan of the ship, with the attendant expense of the external repairs, fittings, and ships' stores.

I leave it to the Committee of Management to reconcile the two statements.

2 and 3. These can be taken together. The relations of the Branch Hospital to the parent institution at Greenwich are sufficiently clear from a paragraph in p. 11 of the Committee's report for the year 1889.

It is intended that the Branch shall be in telephonic communication with the hospital at Greenwich, and that the beds shall be used for the retention of urgent or special cases, all others being transferred by ambulance to Greenwich.

There is a special ambulance and a room for it at the Branch Hospital, which was opened in 1890. The manner in which this intention has been carried out since the present honorary physician was appointed in 1892 is clearly shown by the following figures:

In 1892 the number of cases of malaria and dysentery, typical tropical diseases treated at the Greenwich Hospital, were respectively 65 and 66. In the past year, 1897, they have fallen to 32 and 25. If this is not a depletion and starving of the parent institution I should like to know what is. It is, moreover, admitted in the memorandum that 31 cases of malaria were treated at the Branch Hospital during the year ending November 30th last. Does anyone conversant with malaria believe that the bulk of these cases could not have been taken safely and without harm across the river to the parent institution in accordance with the expressed intention of the founders, who publicly appealed for subscriptions on the lines quoted above? If this policy had been honestly adhered to by the visiting physician and the present Committee of Management, no such enlargement of the hospital as is now proposed would have been necessary. The ambulance does not now carry across any tropical cases except it be someone who is expected to undergo a protracted convalescence. This starving of the parent hospital of tropical diseases is rapidly bearing fruit on its medical side, for it is being more and more turned into an asylum or infirmary for chronically diseased and incurable sailors. A census

of my wards at the end of last month showed that in my 33 beds there were patients who had been there for 671, 444, 408, 266, 212, 193, 163, and 139 days, and for whom no benefit can be expected.

I would submit that it is very unfortunate that Mr. Chamberlain's most excellent wishes should not have been placed before a representative body like the Royal College of Physicians of London, who would probably have nominated a committee to report on the subject. Such a committee would have carefully considered the question in its whole bearing, and a comprehensive scheme would then have been laid before the Right Hon. the Secretary of State for the Colonies. It must necessarily have included the work of the existing bacteriological laboratories, of the parent hospital at Greenwich as well as of its Branch, and of any other medical institutions with sufficient tropical cases of disease, such as Liverpool, Leith, etc., to afford facilities for such clinical teaching. All tropical cases do not come into the Albert Docks, and therefore other institutions should be partially or entirely recognised as teaching centres for colonial surgeons as well as the proposed new school.

It would seem that Mr. Chamberlain has only had the opportunity during the inception of the scheme of obtaining the somewhat one-sided views of the Medical Adviser to the Colonial Office and of the Committee of Management of the Seamen's Hospital Society. The result is that he is recommended to enlarge and extend the work of the Branch Hospital, to which the Colonial Medical Adviser is the sole physician, to build a new school there, and to make compulsory at that school a two months' course for every aspirant for the Colonial Medical Service.

The injurious effects of the carrying out of the scheme on the parent hospital and other institutions have apparently but little troubled its framers.

I presume that my remembrances of these past years and my knowledge of these unpalatable facts were considered sufficient reasons why I and my colleagues were deliberately excluded from the conferences of the Committee.

Another instance of disingenuousness is shown in the appeal for funds, and should be mentioned. In the face of our published correspondence they actually circulate this paragraph:

> The educational body of the school will include not only members of the staff of the Seamen's Hospital Society, on which are to be found men who have themselves practised in the tropics, but etc.

Two members only of the medical staff, Dr. Manson and Dr. John Anderson, have practised in the tropics. Dr. Manson may be the educational staff; I have yet to learn that Dr. Anderson has signified his willingness to join. Can any statement be more misleading?

Apologising for the length of this letter, which I hope clearly explains the situation to the medical and lay public. —I am, etc.,

JOHN CURNOW, M.D.Lond., F.R.C.P.,
Senior Visiting Physician to the Seamen's Dreadnought Hospital.

Wimpole Street, W., Dec. 12th.

THE PRELIMINARY EXAMINATION OF THE COLLEGE OF PRECEPTORS.

SIR,—In a speech of Dr. MacAlister's which is reported in the BRITISH MEDICAL JOURNAL of December 10th (page 1751), the following statement occurs:

> During the years 1892-98 returns had been made to the Council, on behalf of the Examining Boards for the Navy, Army, and Indian Medical Services, respecting those candidates for appointments who showed deficiency in general education. In the case of 10 of these candidates, the particulars given were insufficient to enable the Preliminary Examination to be traced; in the case of 23, the examination passed by the candidate was one of those at present recognised by the Council. In no fewer than 14 instances the examination by which the candidate had gained admission to the *Student Register* was that of the College of Preceptors, while the remaining [illegible] had qualified by one or other of nine of the recognised [illegible]. There were, in addition, 16 candidates who had qualified for registration by means of the examinations of the Society of Apothecaries or the Royal College of Surgeons of Ireland, but these examinations had now for some years been discontinued. It thus appeared that of all the examinations now on the Council's list, the College of Preceptors' was that which most frequently gave rise to antinad version on the part of the Examining Boards, and that the College contributed to the returns of comparative failure almost as many instances as all the other educational bodies together.

Will you permit me to point out that the figures in the above statement (which is a textual repetition of the first section of the report of the Education Committee) are seriously inaccurate? All the cases of deficiency in general education reported to the General Medical Council by the respective Examining Boards of the "Navy, Army, and Indian Medical Services" are recorded in the published Minutes of the General Medical Council, and a careful examination of these minutes shows the number of cases from 1892 to 1898 to be as follows:

Preliminary Examining Body.	Navy.	Army.	Indian.
College of Preceptors	1	1	
Royal University of Ireland	—	1	
Royal College of Surgeons, Ireland	—	3	
Royal Colleges of Surgeons and Physicians, Ireland	1		
Apothecaries' Society	1		
Apothecaries' Society and Edinburgh University	—	1	
Edinburgh University, and College of Physicians and Surgeons, Edinburgh	—	1	
Aberdeen University	1		
Trinity College, Dublin	1	1	
Not traced	8	2	7
Totals	13	10	7

It will be seen that the total number of cases is 30, and that of these only 2 are those of candidates who are reported to have obtained their qualifying certificates from the College of Preceptors. Both these cases, it may be added, are cases of deficiency in "spelling."—I am, etc.,

Bloomsbury Square, W.C. Dec. 12th.

H. W. EVE,
Dean of the College of Preceptors.

MASSEURS AND MEDICAL ELECTRICIANS.

SIR,—I am much obliged to Dr. Rigby for having directed my attention to the circular from the Male Nurses (Abstainers) Co-operative Association. The term "medical electrician" is of course absolutely inappropriate and misleading. I have written to the Association in question saying that they must withdraw my name from the list of those who are ready to recommend them.—I am, etc.,

Cavendish Square, W., Dec. 10th. VICTOR HORSLEY.

SYPHILIS IN THE ARMY.

SIR,—Having taken much interest in this subject, permit me to add a few remarks whilst it is under discussion in your columns.

I would ask this question: Have students of late years the same favourable opportunities as in the past of practically learning the beneficial effect of mercury in the treatment of syphilis? I doubt it; for, amongst other reasons that militate against practical knowledge of the same, I would suggest the treatment by minute or even infinitesimal doses over a lengthened period, quite beyond the personal observation of the student, and the many more congenial studies, mental and physical, which now engross his time.

Some years ago a young army surgeon told me that he never treated syphilis with mercury until a secondary rash appeared, and that such was the teaching of his hospital. On inquiry of one of the staff of his hospital this statement was denied, but, all the same, it much impressed me as evidence that, however sound the teaching might have been theoretically, the result had certainly been most unsatisfactory so far as that officer, at least, was concerned.

Indeed, I would go so far as to state that, judging by my personal experience for some years before I left the service, I have good reason to fear that many army surgeons either have not a very firm belief in the value of mercury in primary syphilis, or that, in consequence of frequent changes of station, they are unable to carry it out so strictly as they otherwise would do.

Having satisfied myself after a very great experience of this disease in soldiers that no treatment in primary syphilis is so beneficial as mercurial inunction, it would, I think, be extremely interesting if a report could be obtained of the method of treatment by individual medical officers. Mercurial inunction is especially applicable in army hospitals where wards can be set apart for syphilis, and this treatment carried out under the immediate eye of the surgeon with little or no trouble or loss of time to himself, and with the satisfaction of knowing that it is not evaded.

How far the treatment of primary syphilis by subcutaneous injection of mercury has superseded the older methods in civil life, I have no knowledge, but I cannot believe that in military life it is so likely to be beneficial as mercurial inunction.—I am, etc.,

A. B. R. Myers,
Brigade-Surgeon-Lieutenant-Colonel.

Gloucester Street, S.W., Dec. 12th.

THE SURGICAL OUTFIT OF THE SHIPS OF THE ROYAL NAVY.

Sir,—It is a great pity that a discussion should be opened before actual facts are ascertained. To judge from the letters on the above subject it would almost seem to be a fact that antiseptics are unknown in the Royal Navy. Far from this being the case, I should say that very few medical officers dress their cases other than antiseptically in these days.

The following dressings are amongst those supplied by the Admiralty to every ship for use in the sick bay: Sal alembroth wool, carbolised gauze, and Lister's green protective. The following solutions are used: Carbolic acid, boracic acid, and corrosive sublimate. Though special sterilisers are not supplied, yet instruments can be rendered thoroughly aseptic by immersion in 1 in 20 carbolic acid solution. I have never had the slightest difficulty, even in the hottest parts of the world, in keeping even extensive surgical injuries perfectly aseptic with the above limited material (in kind, not quantity) at my disposal.

I do not in the least wish to infer that no improvements are needed, but I must protest against any idea that our bluejackets are not receiving the best surgical treatment that they are entitled to. As long as strict antisepticism is carried out on board our men-of-war, it is a comparatively secondary matter as to how and with what materials it is carried out. Even the dry method of rendering dressings aseptic by means of a steriliser has its opponents amongst the best surgeons of the day; and certainly the method that is still in use on board ship is the same method which gave such brilliant results in the hands of Lister himself, when I had the honour to be one of his dressers.—I am, etc.,

December 12th. Staff Surgeon, R.N.

CRIMINAL ABORTION.

Sir,—Mr. J. Rutherford Hill in his letter on this subject, published in the British Medical Journal of November 26th, p. 1655, appears rather to miss the point. Of course Whitmarsh was guilty of "murder" in the technical legal sense, and no one could doubt that Mr. Justice Bigham correctly stated the law when he told the jury that Whitmarsh was guilty of murder if he had done what he was accused of doing. But it was murder of a kind which requires a qualifying adjective to differentiate it from plain murder as understood by the non-legal mind; it was of the kind called "constructive," in which the element of "malice" necessary to make it murder consisted, not in any malicious feeling towards the deceased, but in a depraved state of mind evidenced by the intent to commit a felony, it matters not what felony. In my view Whitmarsh was guilty of two distinct felonies: (1) The felonious procuring of abortion; (2) gross carelessness and negligence in the treatment of a patient by reason of which the patient died; a crime amounting to manslaughter if the carelessness was gross enough in the opinion of the jury. I am quite aware that the law regards the combination of these two offences as something quite different in kind from the sum of the two, but this is illogical.

When Mr. Hill says that criminal abortion is "the unlawful and intentional killing of a living child *in utero*, and does not seem to differ much morally from the unlawful and intentional killing of a child *ex utero*," he must be prepared to maintain that the embryo is "a living child" from the first moment of conception. That is a doctrine which I do not propose to argue at present, but it is certainly not the doctrine of the English law. So emphatically is this not the law of England that as has often been pointed out the deliberate malicious killing of a full time child which is in course of being born naturally is not an offence cognisable at all by the law of England. It is not murder nor manslaughter, or indeed any kind of homicide, for the reason that the child has not a separate existence at the moment of death. Nor is it procuring abortion for obvious reasons. It is in fact no crime at all. This is a curious anomaly arising from the fact that the law does not regard the fœtus so long as it remains *in utero* as constituting a living child.—I am, etc.,

November 29th. Lex.

THE CASE OF THE LATE MR. H. K. HUNTER, L.S.A.

Sir,—In the last number of the British Medical Journal Mr. Victor Horsley reports on the prosecution of Mr. H. K. Hunter for calling himself a "physician." It is difficult for me to imagine why any registered practitioner may not call himself "physician" as well as "surgeon." Is a gentleman who holds the L.S.A. only entitled to the appellation of "apothecary?"

As one who knew the late Mr. Hunter to be a straightforward man of nervous temperament, and to have a weak heart, I believe that the prosecution—one might almost call it persecution—hastened his death. Perhaps the instigators of that prosecution may therefore feel some regret for their action. It appears very strange that Mr. Hunter should be "prosecuted on a charge which had never been discussed by the Council and had never been authorised by the Council."

It seems to me that it would have been well if some of the apparently misdirected energy spent in this prosecution, and in resisting the appeal against its result, had been directed to better objects, and that "red-tapeism" should not be allowed to hinder investigation and discussion of "unauthorised" action taken in an important case like this one.

Thanking you in anticipation of your insertion of this letter, I am, etc.,

Birmingham, Dec. 13th. W. J. McCardie.

COCAINE IN RIGID OS.

Sir,—I would take this opportunity of adding my testimony to the value of cocaine in cases of rigid os uteri, as recommended by Dr. Farrar.

I have just had a case of very rigid os in a primipara (European), debilitated by frequent attacks of malarial fever, and in whom, also, the labour pains were in consequence extremely feeble. I freely applied a 10 per cent. solution of cocaine hydrochlorate on a small piece of cotton wool, which was left *in situ* just within the lips of the os. On re-examination within ten minutes I found the previously rigid os fully dilated, so that I was enabled to apply the forceps with ease and deliver the child.

Up till now I have been in the habit of giving chloral hydrate to help to dilate the os, but I consider cocaine leaves nothing to be desired in this direction. There were absolutely no bad effects from the use of the cocaine as above, and I used it very freely.—I am, etc.,

George Bidie, F.R.C.S.E.,
Captain I.M.S.

Hyderabad, Nov. 17th.

THE LIVERPOOL PATHOLOGICAL DIAGNOSIS SOCIETY.

Sir,—Although one cannot but admire the high ideal which Mr. C. Powell White places before us of the office of the pathologist, I am afraid the day is far distant when the public will pay for the opinion of a pathologist as they now pay for the opinion of a consulting physician or surgeon. The patient or his friends ask for the opinion of a physician or surgeon, and the service rendered is primarily and chiefly in the interests of the patient. On the other hand, the opinion of the pathologist is chiefly for the guidance of the practitioner.

Mr. White says it should not be possible for a surgeon who receives a large fee for removing a tumour to obtain a report as to its nature for half a crown or less. This does seem an injustice, but the abuse may not be so real as apparent, for the surgeon who is in the position of receiving a large fee is oftener than not attached to a school or hospital where he can can have his specimens examined for nothing, the different departments rendering services to one another.

Such an association as the Liverpool Pathological Diagnosis Society should be of distinct service to the mass of our profession, who must accept small fees, for the best of all reasons.—I am, etc.,

Leeds, Dec. 10th. Gordon Sharp.

SIR,—There is much to be said for Dr. Powell White's contention in his letter on this subject. A pathologist is certainly entitled to a proper fee, and, within certain limits, is entitled to obtain it from the medical practitioner whose work he does. All depends on the point of view from which we regard these pathological societies. If the idea is to obtain material for general pathological investigation, it will be necessary not only to charge no fee at all, but to make the facilities for transmissions of specimens of all kinds very considerable. In this case, of course, the pathologists would have a quantity of material that would be of no sort of use, and should have wide discretion in rejecting it. They should also be paid by the State, which would properly bear the expenses of equipment, and provide for free transmission of specimens.

If, on the contrary, the object of the work be to assist the practitioner in matters of diagnosis and develop his knowledge of the pathological conditions underlying his work—conditions which it is absurd to expect he will personally investigate—then a fair fee would be proper, not only to assist in the great expense of the laboratories, but to ensure that he should not waste the time of the pathologist with complicated and unnecessary investigations, sent in out of ignorance of what is likely to be interesting or important, or from a mere fussiness of habit. I think the work done at Liverpool will be of great use to the profession. I do not think, either, that it is done so freely as your correspondent imagines, and members sending in many specimens would soon have a hint that it did not pay. The idea is, I believe, to stimulate the practitioner into more precise methods of diagnosis, and to develop a habit of inquiry that will grow strong enough for higher fees to be asked. Experiments of this sort in this country are necessarily tentative, but there is a considerable future before such work as the Liverpool Pathological Society is attempting to do.—I am, etc.,

Liverpool, Dec. 13th. G. A. HAWKINS-AMBLER.

STEREOSCOPIC PHOTOGRAPHY.

SIR,—I am pleased to notice a revival in stereoscopic photography as utilised in surgery. For some years at my class of surgical pathology I have been exhibiting such photographs of tumours, ulcerations, etc., as an addition to the usual demonstration of museum specimens. They have been much appreciated, and they serve to impress on students the shape, size, and general characteristics of tumours and deformities much more than the ordinary photograph. I sent a large assortment to the Carlisle annual meeting in 1896.—I am, etc.,

Liverpool, Dec. 13th. W. THELWALL THOMAS.

VACCINATION AND SMALL-POX—THE FUTURE.

SIR,—It is time we recognised that the concession to ignorant misrepresentation has brought us face to face with the most terrible national danger which has beset us in the last fifty years, to wit, the danger of unlimited small-pox. In Blackpool we have not yet had a very formidable outbreak of conscientious objections, but every court day brings more, and in the large manufacturing towns of Lancashire and Yorkshire the magistrates have had sittings lasting all day, where 800 to 900 objectors have had certificates of exemption granted. It is a mere farce asking for reasons, a mere waste of time; the "reasons" are always forthcoming, such as they are. It ought only to be necessary for a person to go to any police station and state that he is a conscientious objector, and be provided with a form which should only need the signature of the inspector on duty. It is a shame to waste the time of the Bench with such a cruel farce; it is an insult to any well-informed magistrate that he should be compelled to sign certificates of exemption well knowing that in so doing he is giving ignorant and prejudiced people the means of becoming a danger to themselves, their families, and the general public. In one Yorkshire town I see that 17,000 certificates of exemption have been granted, and in many others the state of things is similar.

If it were a fair fight between vaccination and non-vaccination the case would not be as bad. But it is not, for on one side you have the Antivaccination Society, a well-organised body, busily engaged in disseminating its pernicious literature, on the other side nothing is done. One would think that it was an elementary duty of a Government to protect the ignorant governed from the maleficent influence of this Society. But no! not a move does it make, just simply lets the whole nation slide into small-pox.

When I am on the bench I never take the trouble to inquire what are the grounds of objection. It is a waste of time. One is bound to grant the certificate of exemption sooner or later. To ask a lot of questions and wait for answers wastes the time of the Bench and all concerned, and does not do a rap of good. The mischief is even now very extensive, for I should think scores of thousands must have got certificates of exemption for their children; so we have a lot of food for small-pox growing up.—I am, etc.,

Blackpool, Dec. 10th. WM. HARDMAN, M.B., J.P.

P.S.—The number of certificates granted of exemption from vaccination in Oldham was 34,000 last Monday.

SIR,—That vaccination is a protection against the attacks of small-pox, and that our laws relating thereto as at present administered are a farce, are facts which I believe few will venture to dispute. That the British public has resolutely set its face against compulsory vaccination is equally certain. The enormous growth of that peculiar mental development, the "vaccination conscience," is ample proof of this contention. That the profession, and through them our legislators, should endeavour to adapt their actions to this altered environment and these changed conditions is also desirable and important. Just as our naval and military authorities have all their plans prepared in case of a foreign invasion, so also is it imperative that the medical advisers of the Government should have a plan of campaign drawn up for combating the epidemic occurrence of variola.

Personally I am persuaded that the public do not object to vaccination *per se*, but rather to the compulsory carrying out of vaccination by law, and that when the danger of small pox immediately threatens, the great mass of the people will cry aloud for protection. It therefore behoves the profession to be ready to meet this emergency.—I am, etc,

Nottingham, Dec. 12th. T. DAVIES PRYCE.

A CENTRAL FUND FOR THE SUPERANNUATION OF POOR-LAW MEDICAL OFFICERS.

SIR,—I am glad to see your correspondent, in the BRITISH MEDICAL JOURNAL of December 10th, proposing a central superannuation fund for Poor-law officers. This is urgently required, and to complete the scheme all Poor-law officers (save the nurses excepted in the Amendment Bill) should be placed on the fund.

A good many officials, including medical men, did not join the fund in the first instance as they objected to the inclusion of the nurses. This injustice has now been remedied, but no opportunity has been given for these officers to join the fund. It was expected that the Amendment Bill would allow this, but as it has not done so, we must ask that further amendments will give every Poor-law officer the right to pay for and claim a pension.—I am, etc.,

December 12th. POOR-LAW MEMBER.

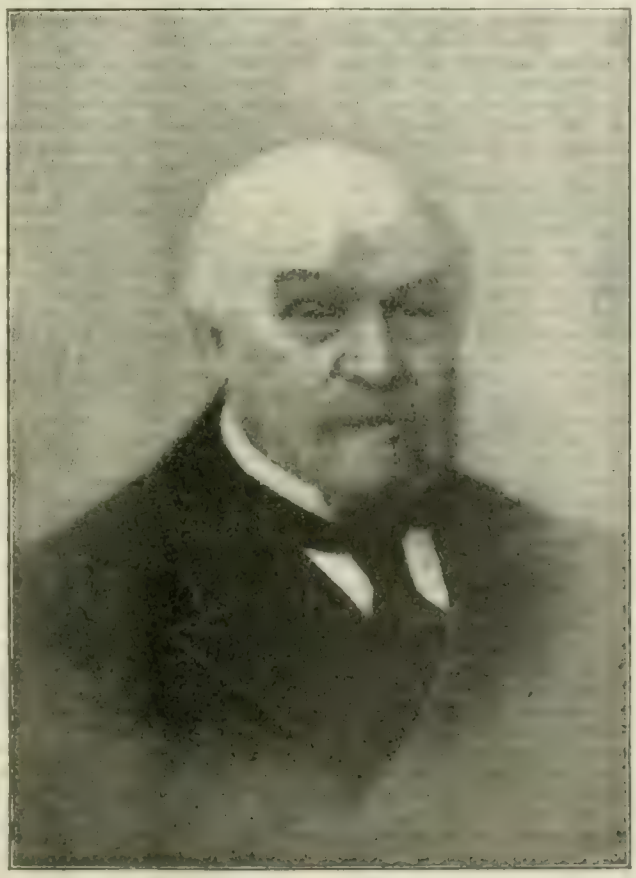
THE TRANSMISSION OF CUBAN FEVER BY INSECTS.—In the New York *Medical News* of October 15th, Dr. Frank Donaldson, Assistant Surgeon, First Volunteer Cavalry, reports an instance of apparent transmission of the Cuban fever by infection from a "fly bite" which occurred after the regiment was mustered out. A lady who was acting as nurse in the regimental hospital was taken ill a few days after entering on her duties with what proved to be a typical attack of Cuban fever. Dr. Donaldson was at a loss to account for it. She had been perfectly well, had not been in a malarious district, and had spent the summer in the North. During several days while at Camp Wikoff there had been a terrible visitation of "flies," and the men in the hospital had complained that their bite frequently drew blood, and on several occasions this lady had called his attention to the fact that blood had followed the bite of one of the "flies." She was at the time of writing in hospital, and the disease was running a typical course.

OBITUARY.

SIR WILLIAM JENNER, BART., G.C.B., M.D., F.R.S.,

Physician in Ordinary to the Queen and to the Prince of Wales; Sometime President of the Royal College of Physicians of London.

SIR WILLIAM JENNER died on Sunday, December 11th, at his house near Bishop's Waltham, Hampshire. Conventional words of regret seem out of place in recording the peaceful termination of a life which had already exceeded the Psalmist's span by many years, and had been spent in the service of humanity and of the profession which he loved so well. Yet the members of the profession cannot but feel that it is the poorer by the removal of one who, though he had long retired from active work, represented for it the attainments of the highest ideals both as a man and as a physician, and will desire to offer to the members of Sir William Jenner's family an expression of sincere sympathy in their bereavement.



Sir William Jenner about ten years ago retired from practice owing to failing health, and had since resided at Greenwood, near Bishop's Waltham. About three weeks ago symptoms of hemiplegia, from which he had previously suffered, became more marked. After a time his strength failed, and he passed peacefully away on Sunday afternoon.

Sir William Jenner was the son of Mr John Jenner, and was born at Chatham on January 30th, 1815; he had thus nearly completed his eighty-fourth year. He received his medical education at University College, London, and obtained the diplomas of M.R.C.S.Eng. and L.S.A. Lond. in 1837.

The medical staff of University College Hospital during the time when Jenner was a pupil there included Dr. Elliotson, Dr. Carswell, Mr. Liston, and Mr. Quain, afterwards Professor of Anatomy. He must have been among the earliest students of the hospital, for it was only opened for the reception of patients on November 1st, 1834, although the University Dispensary had been in existence, and had been used for teaching purposes since 1828 by the professors of what was then the University of London. Sir William Jenner's connection with the hospital therefore extended over the whole period of the existence of the building now being demolished, with the exception of a few years immediately after obtaining his qualification to practise, which he spent in general practice in the immediate neighbourhood. His circumstances at this time were straitened, and he was wont in later life to refer in his lectures to the severe struggle through which he then had to pass as an encouragement to those among his students upon whom fortune did not smile. In 1844 he obtained the degree of M.D. in the University of London, and the first public medical appointment which he held was on the staff of the Royal Maternity Charity, Finsbury Square.

Soon after taking his degree at the University of London Jenner must have turned his attention to the study of the subject with which his name has ever since been identified. At the beginning of 1847 he commenced a detailed study of the cases of continued fever admitted into the London Fever Hospital. During that and the following year he made notes of nearly 1,000 cases of acute disease, chiefly of patients under the care of Dr. Tweedie, the senior physician to the hospital. The result of his inquiry was a paper on Typhoid and Typhus Fevers: An Attempt to determine the Question of their Identity or Non-identity, by an Analysis of the Symptoms and of the Appearances found after Death, in Sixty-six Fatal Cases of Continued Fever, observed at the London Fever Hospital from January, 1847, to February, 1849, published in April, 1849, in the *Monthly Journal of Medical Science* (Edinburgh and London), one of the editors of which at that date was Sir William T. Gairdner, of Glasgow, then Pathologist to the Royal Infirmary of Edinburgh; this essay was in the following year published as a thin octavo, bearing the title of *On the Identity or Non-identity of Typhoid and Typhus Fevers*. The publication of this paper undoubtedly marks an epoch. It is true that before this, thanks to the labours of Lombard of Geneva, of Gerhard and Pennock of Philadelphia, of H. C. Barlow and A. P. Stewart in this country, and of Louis, the opinion had been growing that the highly-contagious typhus fever, commonly known as gaol fever in this country, was distinct from the typhoid fever chiefly studied in France, which presented special intestinal lesions, and was rarely infectious. The view, however, did not obtain general acceptance until the publication of Jenner's paper, which was founded upon a minute clinical and pathological study of 66 fatal cases, in 23 of which ulceration of Peyer's patches existed, while in the remainder it was absent. He showed that this difference in the *post-mortem* appearances corresponded with differences in the clinical features—the course, eruption, and duration—of the two sets of cases and established the non-identity of typhoid and typhus fevers so completely that the question has never since been disputed.

The excellence of the work which he was doing was quickly recognised, and in 1849 he was appointed Professor of Pathological Anatomy in University College, and shortly afterwards Assistant Physician to the hospital. In 1854 he became Physician to the hospital, and two years later, when a special department for diseases of the skin was instituted, it was placed under his control. He acted as Professor of Clinical Medicine in substitution to Dr. Parkes, during the latter's absence in the East at the time of the Crimean war, and when Dr. Parkes was appointed Professor of Hygiene at Netley, Dr. Jenner was confirmed in the appointment.

In 1853 he became Physician to the London Fever Hospital, in which his earliest clinical investigations had been made. He resigned this appointment in 1861. Previous to this, in January, 1852, he had been appointed Physician to the Hospital for Sick Children, Great Ormond Street, an office which he retained until 1862, when he was appointed Professor of the Principles and Practice of Medicine in University Col-

lege. In 1861, on the death of Dr. Baly, he was appointed Physician Extraordinary to the Queen, and in the same year was called upon to attend the Prince Consort in the attack of typhoid fever which cut short a life which seemed to promise so much more usefulness to this country. In the following year he was appointed Physician in Ordinary to the Queen, and for a quarter of a century he remained Her Majesty's most trusted medical adviser. In 1868 he received the honour of a baronetcy. When in 1871 the Prince of Wales was attacked by the disease which had been fatal to his father, Sir William Jenner, who had been Physician in Ordinary to His Royal Highness since 1862, had the satisfaction of guiding his illustrious patient through a severe attack, and of witnessing his complete restoration to health. In 1872 he was created a Knight Commander of the Bath, and in 1889, when he retired from practice and relinquished his active duties at Court, he was advanced to the dignity of Grand Cross of the same order.

Though after 1862 Jenner leaped into a leading position among physicians in London, and enjoyed a very large consulting practice, and although in 1867 he was compelled to resign the Chair of Medicine in the College, he continued his attendance in the wards of the hospital, though with diminishing regularity, until 1878, when the growing claims of private practice compelled him to lay down an office which he had held with great distinction for twenty-four years. In the following year the Council of University College appointed him Consulting Physician, a post which he retained till the day of his death.

As a clinical teacher he was exceedingly impressive; his manner was to question his students at the bedside, and lead them to observe for themselves. Errors of observation he sought to have corrected on the spot, and when the facts had been elicited he discussed their interpretation, usually expressing his own opinion with great distinctness, and occasionally giving utterance to some telling phrase which stuck in the memory. He often inspired something approaching terror by leading an overconfident or careless answerer among the students into a trap, but when he had shown the victim the absurdity into which he had fallen, he would add some word of kindness and encouragement. And it is certainlytrue that the clinical fact which Jenner sought to teach was thus indelibly impressed on the mind of the student. His teaching was undoubtedly dogmatic, some of his pupils thought too dogmatic, but he himself supplied the necessary corrective. "That is the opinion I have come to from my observation," he would say; "You must test it for yourselves by your own observations." During the time that he held the post of Professor of Clinical Medicine he also gave set clinical lectures, which were usually very carefully prepared; examples of his style are afforded by the series of Clinical Lectures on the Diagnosis of Extra-pelvic Tumours of the Abdomen, delivered at University College Hospital in 1868. These were published in the BRITISH MEDICAL JOURNAL soon after their delivery, and have since been republished in the collected volume of *Clinical Lectures and Essays*, issued in 1895. The three lectures on Rickets, republished in the same volume, which were delivered at the Hospital for Sick Children, in December, 1859, and January, 1860, may also be mentioned on account of their intrinsic merits. The topics of these two courses of lectures illustrate very well the kind of subject which he preferred to choose. He was above all things practical in the best sense of the word: he sought to make his students familiar with common diseases, and in treating of them he always dwelt on the symptoms distinctive of the disease, often impressing the main facts in some graphic phrase which remained in the memory. "In typhoid fever when delirium begins headache stops—headache and delirium always mean meningitis." "When you see a child suffering from obstinate vomiting and constipation always think of meningitis." "When you see a woman with a big belly, always, even if she be a queen, think of pregnancy." He was resolute against over-stimulation by alcohol, and one of his sayings was, "When in doubt about alcohol in typhoid, don't give it; but when in doubt in typhus, give it."

There was a great deal of light and shade in his pictures of disease, that is to say, he always grouped the symptoms and put the most prominent in the foreground. He seemed to be able to enter into the difficulties of the youngest students, never talked over their heads, and was careful, by the grouping of symptoms, as already mentioned, and by the constant repetition of lectures on such subjects as emphysema and bronchitis, on typhoid fever, on rickets and pneumonia in children, and other similar everyday diseases, to ground his men in the elements of practical medicine. His teaching from the first was very highly appreciated by students, and from the time when as an assistant physician in the out-patient room he taught the elements of percussion and auscultation, his teaching was always attended by a large class. He also impressed upon students the importance of following up in the *post-mortem* room the results of disease in cases which had been studied in the wards, and for many years he gave regular demonstrations of naked-eye anatomy, and even to the end of his service as physician to the hospital endeavoured to attend every *post-mortem* examination of a case which had died under his care. Looking to the character of the man, the system on which his instruction was given, and the energy which he threw into his hospital work, it is not to be wondered at that he had among his pupils many who won distinction in after-life. He watched their careers with interest, himself drew great satisfaction from their success, and was a loyal friend.

The attitude of his mind towards the scientific study of clinical medicine cannot be better expressed than in the following sentences from the preface which he wrote for his essay on the Identity or Non-Identity of Typhoid and Typhus Fevers: "I considered, therefore, that it was necessary to begin *de novo*, and consult only the voice of Nature, convinced that, although the most intellectual might fail at first to comprehend her often ambiguous language, yet that her most humble votaries might, by patience and daily watching, by keeping honest record of every sound she uttered, by joining letter to letter, adding word to word, and line to line, at last spell out her meaning, and so reach that rank which the great Master of Induction tells us man may legitimately hope to attain, namely, that of her interpreter. The consciousness of his ability to gain that title ought to stimulate man to exertion—the certainty that he is able to reach no higher cannot fail to annihilate his pride."

No small part of Sir William Jenner's success as a clinical teacher, and of the great influence which he exerted, was due to his own firm conviction of the importance of the services which the physician can render to his patient. At a time when a kind of therapeutic Nihilism was fashionable, he contrived to hit a happy mean between undue scepticism and undue credulity. In his Address in Medicine, delivered to the annual meeting of the British Medical Association in Leeds in 1869, after reviewing the advances which had been made in the diagnosis and prognosis of disease, he went on to observe that: "So far as concerns the non-professional public, the aims and objects of medicine ought to be: to prevent disease, to cure disease, to prolong life, and to alleviate physical suffering. But then it is manifest that the definition of special diseases must precede all attempts to determine their several causes and their modes of cure. Every advance, therefore, in the correct definition of special diseases and in the diagnosis of special diseases is a step in the direction of an advance of preventive and of curative medicine." In instancing the knowledge which medicine had placed at the disposal of the public for the prevention of disease, he was not afraid to speak out; and in this same address he said, referring to recent epidemics: "The persons who died at these places from typhoid fever, and a large proportion of those who died at the East End of London from cholera, were as certainly killed by the water they drank, and killed without need, as if the water supplied to them had been contaminated with arsenic."

As a consulting physician he held for many years the leading position in England; this was due not merely to the great reputation which he had gained as a clinical teacher and practical physician, but also to the tact and discretion which he habitually displayed. He was exceedingly careful in making the clinical examination, definite in his opinion, and most considerate to the practitioner with whom he consulted; to the patient himself he was at once sympathetic and firm, qualities which are always highly appreciated both by the sufferer and his friends.

In public affairs, so far as he took part in them, he was what is called "a strong man." He formed his opinions rapidly, held to them with tenacity, and defended them with vehemence. Upon some matters which deeply excited his interest he seemed sometimes to be swayed by prejudice rather than by reason. Conscious of the rectitude of his own motives, he was rather too disposed to attribute moral obliquity to those who had arrived at a different opinion to himself. He was thus intolerant of opposition, and when he encountered it was apt to make it a personal matter, But while so much must be said in endeavouring to give a true picture of the man—and certainly he himself would have been the last to desire that anything should be suppressed—it will yet be only justice to say that his influence, which for many years was very great, was always exerted for the maintenance of what he conceived to be the honour and dignity of the profession and the advancement of the science and art of medicine. It was recognised that his failings were the excess of qualities which were of the highest value to his time and generation. His own honesty and straightforwardness were above suspicion, and were, indeed, obvious to everyone who came into contact with him. This straightforwardness, combined with the energy of his character and an immense power of doing hard work, made him a born leader of men.

In 1881 Jenner received the crowning honour of his professional career, at least the highest honour in the power of his professional brethren to confer upon him, by his election to the Presidency of the Royal College of Physicians. He was re-elected on six successive occasions. The chief public event during his term of office was the amalgamation between the two Royal Colleges to form an Examining Board for England, which has worked so harmoniously ever since. It was followed as a necessary corollary by the purchase of the site on the Thames Embankment, and the erection thereon of the Examination Hall and Laboratories, the foundation stone of which was laid by Her Majesty the Queen in May, 1886. Two events of great importance to the profession took place during his Presidency. One of them was the passing of the Medical Act in 1886. In the early stages of the preparation of the Bill the College, through Jenner, played an influential part. It was about the same time that the agitation for a teaching university in and for London took shape in the appointment of the first Royal Commission. The special examination for a diploma in Public Health was instituted under his auspices. One of the most interesting, if not one of the most important, of the internal events during this period was the re-entombment of the remains of the immortal Harvey in the year 1884. In the same year, with a view to relieving Jenner of some of the multifarious official duties which fall to the lot of the President, the office of Vice-President was created, to be held only by past Senior Censors, the first nominees being Drs. F. Farre and Fincham. Jenner was, perhaps, not an ideal President. He was too much occupied to be able to master all the details of College business, but he was a good chairman at the meetings of the Fellows, and on one famous occasion when some important topic was under consideration, he announced that he would not give permission to any Fellow to leave the meeting till a decision had been come to. His annual addresses were admirable, always lucid and to the point, and delivered with much feeling. He could never be induced to consent to their publication, but it is hoped that portions of them may yet see the light of day. Almost his last official act was to serve as chairman of the Committee appointed to found a memorial of Dr. Moxon, which resulted in the establishment of a gold medal to be awarded triennially for distinguished merit in relation to clinical medicine. A few years later, in 1894, he was the second recipient of it, though unfortunately the state of his health did not permit of his attending the College to receive it in person.

Of the esteem in which Sir William Jenner was held by the Queen there is no need for us to attempt to say anything, for Her Majesty has expressed her own feeling in the following gracious words which appear in the *Court Circular* of December 12th: "The Queen received yesterday with much regret the news of the death of Sir William Jenner, who had been Her Majesty's physician for upwards of thirty years, and who only retired from the Queen's service in 1893, owing to failing health. He was not only a most able physician, but a true and devoted friend of Her Majesty's, who deeply mourns his loss."

Sir William Jenner was not a voluminous writer, indeed the whole of what he desired to preserve is contained in the two volumes which were published in 1893 and 1895—the *Lectures and Essays on Fevers and Diphtheria*, and the *Clinical Lectures and Essays on Rickets, Tuberculosis, Abdominal Tumours, and other Subjects*. His lectures and articles reproduced the best features of his bedside teaching. They were terse, except that he was in the habit of interspersing brief accounts of cases, or rather of the salient features of cases, which he had seen, relating them with simple force in very direct language. The subject selected for a lecture was dealt with in a very complete manner; the main points were thrown into prominence, and practical remarks on treatment were never omitted. Though apparently unstudied, they were composed on a definite plan, and one of his favourite pupils writes to us: "I have often heard him say: 'First state your general conclusions; then give your cases, and your reader will be able to carry along with him the clue which you have previously given him, and see how far you establish your contentions.'"

One of the subjects which specially attracted him was that of the etiology and pathology of emphysema. His exposition of the inspiratory theory was based on careful pathological work—it is said that he once spent two days in a knacker's yard to make observations, an example of the thoroughness of his methods—and he was never tired of pointing out to his class the immediate signs and the more remote consequences of the condition. He explained and defended his views in a paper read before the Royal Medical and Chirurgical Society in 1857, and in a well-known article in Reynolds's *System*. The same pupil from whom we have just quoted remembers that five-and-twenty years ago he used to criticise the then current views as to typhlitis and perityphlitis, and would frequently point out the part which the appendix played in the production of the condition to which these terms were applied.

"I can remember," our correspondent remarks with regard to another subject, "as far back as 1875 his anticipating much that was subsequently taught about syphilitic brain disease, especially about syphilitic disease of the arteries. The lectures on diphtheria contain an account of the symptoms and etiology of the disease which is singularly complete. Indeed, when the date (1861) at which they were delivered is remembered, they afford a most striking demonstration of the scientific value of clinical studies when conducted as Jenner knew how to conduct them. The nervous phenomena, including those due to involvement of the vagi, are extremely well, though briefly, described; and in discussing the etiology he showed a wise caution, justified by subsequent experience, in rejecting the hypothesis that the disease was produced by conditions 'ordinarily reckoned antihygienic,' and in expressing the opinion that it was disseminated by personal contact between the infected and the healthy. His attitude on this question at that date was the more remarkable because he was among the first to draw attention to the relation of emanations of sewer gas to outbreaks of pneumonia. In consequence doubtless of these views he gave great attention in the course of practice to domestic sanitation, especially to all matters connected with drainage, and was wont to express his condemnation of appliances more in vogue twenty years ago than is happily now the case in characteristic terms. Thus at the meeting held to promote a memorial to his great friend Dr. Parkes he spoke of the D trap, and said 'I call it the double D trap.' A certain thrill ran through his audience, who wondered what was coming, until he added after a dramatic pause, 'because it deals out death and disseminates disease.'"

In early life he was a pretty frequent contributor of reviews and other articles to the *British and Foreign Medico-Chirurgical Review*, and to the *Medical Times and Gazette*. At one time he even undertook duties of an editorial nature in connection with the latter journal, but after a very brief experience relinquished work which he did not find altogether congenial.

Sir William Jenner received many honours from the learned bodies. He was elected a Fellow of the Royal Society in 1864; he was President of the Epidemiological Society of London, 1866-68, President of the Pathological Society of London,

1873, and of the Clinical Society of London in 1875. He received the honorary degree of D.C.L. from the University of Oxford, and of LL.D. from the Universities of Cambridge and Edinburgh.

The funeral will take place this day, Friday, at 1 P.M. at the village of Durley, close by the house in which his later years were spent and where he died.

Sir William Jenner married in 1858, and is survived by Lady Jenner and by four sons and one daughter. He is succeeded in the baronetcy by his eldest son, Major Walter Kentish William Jenner of the 9th Lancers, D.A.A.G. Curragh District since 1896.

We are indebted to Sir William Gowers for responding in the following terms to a request to write an appreciation of Jenner, as a clinical teacher and physician:

A comparison between clinical teachers is practically impossible, because each one can only be thoroughly appreciated by those who have learned under him for long, and have thus become able to appreciate and qualified to judge the various sides and aspects of the instruction. It is, however, difficult for any of those who followed the teaching of Sir William Jenner, at the time of his life when they were able to obtain it in fullest measure, to conceive that any equally effective clinical teacher ever existed. Certainly no one whom the students of the last half century had the opportunity of hearing seemed nearly to rival him. Facts observed, certain relations definitely perceived, dominated him and his teaching. Pathological observation, scrupulously precise and thorough, was applied to the elucidation of symptoms, and the results were expressed in concise, terse, emphatic words, which fixed themselves in the memory of those who heard him. It was the same with the clinical facts of disease, and his keen observation and retentive memory made his observations in early life of service in later years. For instance—and it is an example of his power of seizing facts which a less acute observer would have passed unnoticed—he illustrated the suddenness of the onset of sore throat in tonsillitis, in contrast to its more gradual commencement in diphtheria, by a case he had seen at the very outset of his medical career. When doing some medical work in the country, a man came to him with simple quinsy, who said, "My throat became sore this morning, while I was walking across the yard." To trace symptoms to their causes, to make clear the precise morbid processes on which their manifestations depend whenever the steps of reasoning were sure, was an element in teaching in which he specially delighted. It is conspicuous in his published lectures, the two volumes of which deserve reading and re-reading, and must always have a value for those who value logical thought and lucid presentation of the facts that cannot die.

An amusing illustration of the effect produced by the character of his teaching was afforded one day. The Chaplain to University College Hospital was an old but active clergyman, the Rev. W. Stebbing, a voluminous author and F.R.S. He was fond of varying his ministrations to the sick by listening to the teaching of Jenner. One day, at the conclusion of a peculiarly forcible bedside lecture, he rushed up, stretched out his gowned arms, and grasped Sir William's hand, "Dr. Jenner, I should like to send you to Oxford, sir, and make you Professor of Logic and Moral Philosophy."

Sir William Jenner's teaching derived much of its unique quality from the fact that, with the partial exception of diseases of the nervous system, there was no department of practical medicine in which he was not thoroughly at home by the effect of special personal work. His experience gained at the Hospital for Sick Children, which resulted in his brilliant work on rickets and tuberculosis, was extended at the Fever Hospital to all acute diseases, in which his teaching had a peculiarly practical value. His researches on emphysema illustrate the attention he had given to diseases of the lungs, while those of the heart, with their various effects on the system, were a favourite subject. The minute and careful observation he had devoted to abdominal diseases is conspicuous in his published lectures, and was constantly evident at the bedside, while he was equally at home in diseases of the skin, of the department for which he at one time had charge. A marked characteristic of his teaching was his indifference to the number of attending students. During the later years of his hospital work the exigencies of private practice, with its urgent demands, often made him late, and sometimes only his clinical clerks would be in the ward. But some of his finest clinical teaching was given to only two or three students. His inspiration was always from the case before him, never from his audience.

His lectures on systematic medicine, given at the College, were models of concise, practical teaching, teeming with the results of his own experience, generally given in an unobtrusive manner, and he never neglected the more important conclusions of others. They were delivered slowly, so that every student could take down all that was said of importance, and the notes from which they were delivered, evidently carefully prepared, were invariably written on the blank backs of old letters.

His enormous capacity for work was no doubt largely conditioned by his ability to sleep, almost at will—in the train or anywhere. But the statements made regarding the number of patients whom he was accustomed to see at home in a given time requires some qualification. He had at one time the last quarter of each hour left vacant, as he did not feel able to do justice to four average patients in the hour. All his work was characterised by extreme conscientiousness. He never really "slurred" a case, never neglected the examination of the urine, or abdomen, or blood, in any case whose symptoms suggested the importance of the examination.

The ability to seize such indications with precision was one of his most marked characteristics, and one that he himself consciously valued. He once remarked that the great value of out-patient practice to a physician was that it gradually gave him the power of discerning when a minute examination was necessary and when it was not; to distinguish the patients on whom much time should be spent and those who could be speedily dealt with safely. The ability thus acquired was the subjective side of the tact which enabled him to deal with a patient speedily and yet so thoroughly that no impression of speed was conveyed.

Dr. G. V. Poore has been good enough to send us the following notes: Jenner was the very best medical teacher I have ever heard, and I think that all his pupils would agree in this estimate. I have never encountered one who thought differently. He was the exception which proves that there may be something far more forcible in teaching given orally than when printed. I should be inclined to think that I have never forgotten anything I ever heard him say—or, rather, saw and heard him say, for his emphatic manner was not the least valuable part of his teaching. And yet there was nothing artificial, and no suspicion that he ever was trying to produce an effect or to appear learned. His teaching was the outcome of his fulness of knowledge, and if he did not know a thing he would say so at once. He taught students what in his judgment was the nearest approach to truth, and he did not bother them with controversies which would only bewilder them. It was astounding to hear him brush away the cobwebs of controversy and show us the fundamental facts which they were concealing.

I never heard him waste a word, and I shall never forget the first lecture of the session in his Course of Systematic Medicine. When he walked hurriedly into the room, and before he had unrolled his manuscript or even reached his desk he began: "The great aim of the physician is to prevent disease; failing that, to cure; failing that, to alleviate suffering and prolong life." I need not say that he commanded the rapt attention of his class. Oratory in the conventional sense there was none, and yet on reflection I am inclined to think that at times he was superior to any orator I have ever heard, because he was sound, simple, and sincere, and he made his audience feel it. At the bedside he was equally great, and needless to say he was practical and never left the facts before him to theorise or talk mere book pathology. Here his methods were Socratic, and he generally selected a student and put to him a question, and if the answer given was incorrect it afforded an opening for valuable clinical remarks.

I have often heard him say to a student, "Why do I ask you questions?" And if the student replied (as was probable)

"To find out what I know I suppose, Sir," Jenner would immediately say, "Not at all. It is to find out what you do *not* know in order that I, by my teaching, may lessen your ignorance." By selecting a not too brilliant student he succeeded in not teaching above the heads of the majority of his audience, which is the great fault of most clinical teachers, who are apt to forget what are the real difficulties of students. The exceptional man teaches himself, but the average man and the man a little below the average wants practical guidance. I feel sure that Jenner has made sound clinicians out of a great deal of very ordinary material.

MEDICO-LEGAL.

CHARGE OF PROCURING ABORTION: ACQUITTAL.

Mr. David Wallace, M.B., C.M.Glasg., practising at Beckenham, was at the Kent Assizes at Maidstone tried for the alleged performance of an illegal operation on a girl named Warrilow at Beckenham, and acquitted on December 10th. The case for the prosecution, which was undertaken by the Treasury, was, to quote from the report of the *Daily Telegraph*, of an unusual description. There was no suggestion that the alleged offence was performed for a monetary consideration, but it was sought to show that the accused had taken advantage of the unconscious condition of the prosecutrix at his surgery some two and a-half months previously, and that in this circumstance was to be found an adequate motive for his subsequent conduct. The prosecutrix herself had no knowledge of any assault, and the evidence in support of it consisted of admissions said to have been made by Dr. Wallace at a later date, and after the use of an instrument in the presence of the girl's mother had disclosed the young woman's real condition. The defence was an emphatic denial of the allegations. It was common ground that the prosecutrix suffered from an internal ailment, and the evidence of the accused was that the instrument was used in treating her for her complaint, and with no knowledge that the girl was *enceinte*. Dr. Wallace, it appeared, had undertaken medical and surgical work in connection with a club, against the inadequacy of whose payments other practitioners in the locality had "struck."

Mr. Justice Hawkins, in summing up the case, remarked that the instrument in question was used legitimately, and there was no criminal act, even if it was negligently used. It would be a monstrous thing if in this country it should be said that a man must be convicted, or otherwise they would stamp somebody or other with perjury or something else. He did not wish to impute to the mother that she had invented anything, but she had stated in the information upon which the warrant of arrest was granted that her daughter told her the circumstances of the assault, and that Dr. Devane and Dr. Sturges told her that the instruments and medicines which the prisoner had used were those generally employed for illegal purposes. That certainly was not true, if they believed the girl herself, because she stated that she knew nothing of the assault, nor was it the fact that the doctors made the statement alleged. No man would be safe if he depended for his liberty or character upon evidence which was not absolutely conclusive against him, particularly where his previous record was a good one.

The jury retired, and on their return the Foreman said, "We are unanimously of opinion that the prisoner is not guilty."

CHARGE OF ABORTION AGAINST A MIDWIFE.

In the case of Reg. *v.* Inglis, which was heard at Leeds on December 9th before Mr. Justice Channell, the prisoner was indicted for the wilful murder of Emma Anderton, whose death was alleged to have been caused by an attempt on the part of the prisoner to procure abortion.

It appeared from the medical evidence that the deceased had died of septicæmia after abortion from the third to the fourth month. The defendant, who gave evidence, stated that she had used a syringe on certain occasions to give a vaginal injection to ease the pain from which the deceased was suffering. The defendant stated that she was unaware that the deceased was pregnant. Other facts of the case appear in the judge's charge.

Mr. Justice Channell, in summing up after some preliminary observations, said: In spite of the Criminal Evidence Act, it is not the law that the prisoner has to make out his innocence; the prosecution must still prove him guilty. The Legislature would never have given the prisoner the power of going into the box if the jury were always to put a discount upon his evidence. This point, however, should be considered when the evidence as a whole comes to be weighed. Now the popular idea of murder is that there can be no murder without an intention to kill. It is beyond dispute that if a person commits a felony, from which death does in fact result, murder has been committed. The only doubt which arises is where an act is done which, although felonious, will not necessarily result in death, but that difficulty does not occur in this case. Again, if a person takes upon himself to perform a dangerous operation, and death results in consequence of negligence he may be found guilty of manslaughter. If the prisoner used the enema or syringe when it was foul, although she had no intention to procure abortion, she may be found guilty of manslaughter if it be proved to your satisfaction that septicæmia, which caused the death, was due to her neglect in using an unclean instrument. It should be remembered, however, that septicæmia is one of the dangers of childbirth. It is often caused by carelessness or oversight. Matters remaining in the uterus, being dead, commence to decompose, and become a source of danger when not removed. In the present instance Dr. Wilson observed traces of blood poisoning when he first saw the patient. The poison therefore which contaminated the blood must be ascribed to some other source, if the doctor was correct in his diagnosis. Both the doctors are agreed that the mischief might have been caused by the use of an unclean syringe, but this is only one of the many ways in which such evil may arise. They also say that a syringe of this kind may be, and often is, used to wash out the vagina, but to introduce it into the neck of the womb is an extremely difficult operation, which can only be performed by a practised hand.

The difficulty in this case therefore is to know what gave rise to the blood poisoning. If its occurrence is equally consistent with natural causes, and an unlawful act, you must not convict on that alone, but must weigh the other circumstances of the case. The deceased in her statement said that upon the occasion of her first visit she asked the prisoner to syringe her. She was syringed, felt no pain, and gave the prisoner 1s. She also stated that she told the prisoner that she was pregnant, and that she did not want to have any more children. It must not, however, be inferred from this that she meant the prisoner to perform an illegal operation. It does not appear that the deceased meant that the first operation was an unsuccessful attempt to procure abortion. Now, with regard to the second visit. Consider the circumstances in which the deceased woman was placed. She complained of a fall, which had hurt her. She went out on the afternoon of the 17th with her child, and for a period of an hour and a half was exerting herself, and exertion may have a serious effect upon a woman in her condition. You have heard the prisoner's statement that she syringed the deceased; you have heard that, according to the prisoner's story, it was done at the request of the poor woman to relieve her from pain. On the other hand you have heard, upon the dying oath of the deceased, that the operation was done with intent to procure abortion. Counsel for defendant had suggested that the evidence of the deceased was that of an accomplice, but such evidence does not legally require corroboration, although the Court will generally advise the jury that it is unsafe to rely upon it.

What, then, was the object of this act? Was it done to procure abortion? If so, it was an illegal act, and if in consequence the poor woman died, murder has been committed. Was it no more than a mere washing out of the vaginal parts with warm water? If so, it was a harmless operation. Was it a legal operation negligently done? If so, your verdict must be manslaughter. On the other hand, if it was in your opinion illegal, and done with felonious intent, you must, having regard to the result produced, find the prisoner guilty of murder.

The jury retired for about half an hour, after which they returned a verdict of "Not Guilty."

PROFESSIONAL RISKS.

At the Leeds Assizes on December 10th Mr. Francis Arthur Winder, M.B., B.Ch., B.A.O.Dubl., was charged with criminal assault on a girl named Goddard. According to the evidence, as reported in the *Bradford Observer*, the girl was hysterical, and her charge was met by the prisoner with absolute and emphatic denial. The jury found the prisoner not guilty, and the verdict was received with applause in court. Mr. Justice Channell, the presiding judge, said that it was his usual practice not to comment on the verdicts of juries, because when he expressly stated his agreement with them it might possibly be supposed that he felt disapproval in other cases. But, having regard to the peculiar nature of the case, he felt it his duty to state that he had never tried a case which left less doubt in his mind. Any other verdict would have been insane. There could not be the slightest doubt of the prisoner's innocence, and it was only justice to him to say so.

LUNACY ACT PROSECUTION.

Before the Richmond magistrates on December 9th, 1898, Edward George Day, a nurse, living at Kew, was charged with infringing the Lunacy Act by unlawfully taking charge of and detaining a young gentleman said to be of unsound mind. It appeared from the evidence as reported in the *Daily Graphic* that Day received into his house a man who was apparently harmless; he was allowed to go in and out as he liked, was well fed and properly looked after; in fact, his position seemed much better than that which he would have enjoyed in an asylum. The fault of Day was that, supported by the opinion of his local medical men, he did not consider the patient to be a lunatic and did not get him certified, and consequently he was fined £5. We believe one magistrate declined to consider this individual to be a certifiable lunatic. Once more the definition of unsoundness of mind is the difficulty. Anyone who detains for profit anyone who is of unsound mind is liable, but surely there are hundreds of persons who, having mental defects of one kind and another, do not need either asylum care or certification, but nevertheless are of unsound mind. Is anyone whose memory is very weak or who is deficient through disease in will power necessarily to be treated as a lunatic? If so, no wonder our asylums are full and that still there is a cry for more.

The Lunacy Law in England is not working well. The magisterial interference does no good, the restriction of granting further licences leads to the detention of hundreds of patients in single care, and the best private asylums are all full. Some plan, such as the Scotch system of registration without certification of acute curable cases, would cut at the root of many of these evils, and would once more encourage the treatment of the insane by doctors and not their control by lawyers. We recognise that one function of the Treasury and the Commissioners is to see that the law is observed, but recent prosecutions do not seem to have proved any real danger arising from detention of lunatics in private.

APPEALS UNDER THE WORKMEN'S COMPENSATION ACT

The Workmen's Compensation Act has already been the subject of discussion in the Court of Appeal, no fewer than four cases having arisen since the commencement of the present term. This is partly due to the fact that questions of difficulty are brought direct to that tribunal without having been first heard in a Divisional Court.

In Woodham *v.* The Atlantic Transport Company, a question arose as to the meaning of the term "dock." The Act applies to accidents in a "factory," but the proper definition of that term has to be sought in the Factory and Workshops Act. According to that statute the word includes every dock, wharf, etc., and, so far as relates to the process of loading or unloading therefrom or thereto, to all machinery used in that process. The facts of the case were that a workman was employed in assisting to unload the *Manitoba* as she lay in the Royal Albert Dock. It was part of his duty to pack cases of cartridges into a basket

which was lowered into the hold by means of a crane. While thus employed, one of the cases which contained percussion caps exploded and killed him, and his widow sought compensation. The county court judge held that the term "dock" included a ship in the dock, and gave judgment for the plaintiff for the agreed sum of £270. From this judgment the defendants appealed. It was urged by Mr. Joseph Walton, Q.C., who appeared on their behalf (*a*) that the word "dock" only comprised the land part of the dock, and (*b*) that the accident did not arise while the deceased was employed "about" the crane. The word about did not mean mere physical proximity, but meant that the workman must have some connection with the working of the machinery. Without calling on the respondents the Court dismissed the appeal, on the ground that the accident happened while the deceased was employed about the crane. They did not decide the more important point upon which the county court judge had based his decision—as to whether the ship formed part of the dock.

In Billings *v.* Holloway the meaning of the expression "building which exceeds 30 feet in height" was discussed. The Act applies only to buildings answering that description. It appeared that a hodman had been injured by a brick falling from the scaffold of a building in the course of erection, which, at the time of the accident, had not reached the height of 30 feet. The county court judge decided that the Act did not apply in such a case. Before the Court of Appeal it was contended by the appellants that the Act applied if the building in the course of erection was, when finished, to exceed 30 feet in height. The Court, however, dismissed the application.

In Smith *v.* Lancashire and Yorkshire Railway Company, the meaning of "an accident arising out of and in the course of the employment" was discussed. A porter had been killed on the railway. He had been collecting tickets from the passengers, and just as the train was leaving the station he stepped on to the footboard to speak to a young lady of his acquaintance. His Honour, Judge Bompas, had decided that the accident arose "out of" or "in the course" of the employment, and that in the absence of serious and wilful misconduct on the part of the deceased his relations were entitled to succeed. In this case the Court allowed an appeal on behalf of the company, having regard to the fact that the porter got on the footboard merely for his own pleasure, and not for any object of the company.

In the last English case which has been reported it was decided that, if an accident happen to a workman engaged in loading a cart belonging to a factory outside the gates, he can claim under the Act.

Inasmuch as the Act applies to the United Kingdom, cases decided in the Scottish courts will often be of value to English lawyers. We hear of a decision at Paisley upon the meaning of the words "serious and wilful misconduct." It appears that one John M'Nicol lost his sight owing to the explosion of a delayed shot in a mine. One of the regulations provided that no one should return to a delayed shot until after the lapse of thirty minutes. In the absence of proof that the workman was aware of this rule—although the Coal Mines Regulation Act, 1881, was posted up outside the mine—the Court held that there was no "serious misconduct" and awarded damages. These words have often been discussed in the English courts, and this would seem to be a correct interpretation of the law.

Having regard to the comparative ease with which the above decisions have been arrived at, it would appear that those who termed the Act "an Act for the employment of lawyers" were a little out in their reckoning.

INQUESTS WITHOUT MEDICAL EVIDENCE.

L. writes to inform us that in the district where he resides, inquests are frequently held and verdicts arrived at, without medical evidence being called, the hospital porter or the police constable supplying all the evidence of the cause of death that seems to be required. A case lately occurred in which the deceased person in a state of delirium tremens was seen to cut his throat with a razor and inflict other injuries upon himself, and when admitted to the hospital he was dead. No medical evidence was required at the inquest, and a verdict of suicide was returned. In another case a man reported to have died suddenly in the street was brought to the hospital, and the death duly reported to the coroner. No inquest was held or *post-mortem* examination made, the coroner being satisfied that, as stated by the friends, he had died from heart disease, and the death was so registered.

*** It is possible and probable that in both the above cases the conclusions arrived at were correct as to the causes of death, and that the absence of medical evidence, or more scientific witnesses, did not in these instances interfere with the due course of justice—the coroner and jury being satisfied with the statements of the ordinary witnesses and the circumstances and surroundings in connection with each case—and so the verdicts were arrived at.

We are, however, of opinion that whenever an inquest is held the evidence produced should be complete, and this cannot be so in the absence of medical evidence. We know of a case in which a medical practitioner who had attended the deceased during life was quite prepared to certify the cause of his death as from heart disease, on his being found dead one morning on the floor of his bedroom, and everything was done by relatives to avoid an inquest. On *post-mortem* examination it was found that he had died from a revolver shot through the heart. If coroner's juries are content to arrive at verdicts without medical evidence as to the cause of death, it may happen that in verdicts of natural death, or from the visitation of God, cases of manslaughter, or even of murder, may pass undiscovered.

CONTEMPT OF COURT.

VINDEX wishes to know if, when the coroner's court room is cleared for the jury to consider their verdict, he may freely express himself amongst the witnesses and the public who are waiting readmittance, as to the action of the coroner, without fear of consequences?

*** The coroner possesses all the powers of a judge as to contempt of court, and these continue so long as the court is sitting, until the jury have returned their verdict, all the business of the court concluded, and the court properly and formally closed. We are advised that any language or conduct which, if it occurred in the court-room might be considered a contempt of court, would be equally so if expressed in the precincts of the court amongst witnesses and others, during the sitting of the court; and as the powers of the coroner are summary, we would venture to advise anyone likely so to offend, to consider his ways and be wise.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

EXAMINER.—Dr. G. N. Pitt has been appointed an additional examiner in Medicine.

DEGREES.—At the Congregation on December 8th the following medical degrees were conferred:

M.D.—E. S. St. B. Sladen, M.A., B.C., Caius.

M.B. and B.C.—H. Williamson, B.A., St. John's; H. B. Roderick, B.A., Emmanuel.

ROYAL UNIVERSITY OF IRELAND.

THIRD EXAMINATION IN MEDICINE.—The following candidates have passed this Examination:

Upper Pass.—J. E. MacIlwaine, Queen's College, Belfast; J. A. D. Radcliffe, Queen's College, Belfast; J. C. Rankin, Queen's College, Belfast.

The above may present themselves for the Further Examination for Honours.

Pass.—J. Brangan, Catholic University School of Medicine; J. W. Brown, B.A., Queen's College, Belfast; Emily M. Crooks, Queen's College, Belfast; J. P. Dee, Queen's College, Cork; B. R. Dinnis, Queen's College, Cork; H. Donnelly, Queen's College, Belfast; M. J. Forde, Queen's College, Galway; A. J. Frost, Catholic University School of Medicine; J. McC. Gibson, Queen's College, Belfast; G. Graham, Queen's College, Galway; T. Gray, Queen College, Belfast; A. J. Hewitt, Queen's College, Galway; R. Lee, Queen's College, Cork; J. J. Lynch, Queen's College, Cork, and Catholic University School of Medicine; Evelina S. J. Massy, Royal College of Surgeons and Catholic University School of Medicine; R. Mathewson, Queen's College, Belfast; P. G. Moran, Catholic University School of Medicine; W. Nicholson, Queen's College, Galway; P. L. O'Driscoll, Queen's College, Cork; J. H. Reford, B.A., Queen's College, Belfast; J. J. Robb, Queen's College, Belfast; H. E. Rutherford, Queen's College, Belfast; H. B. Steen, Queen's College, Belfast; H. Stevenson, B.A., Queen's College, Belfast; J. Stewart, Queen's College, Belfast; M. G. Taaffe, Catholic University School of Medicine; J. Tierney, Queen's College, Belfast; J. J. Waters, Queen's College, Galway; A. Welply, Queen's College, Cork.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,692 births and 3,835 deaths were registered during the week ending Saturday last, December 10th. The annual rate of mortality in these towns, which had increased from 17.0 to 19.1 per 1,000 in the three preceding weeks, declined to 17.8 last week. The rates in the several towns ranged from 12.4 in Derby, 12.6 in Croydon, 13.2 in Huddersfield, and 13.6 in West Ham to 22.0 in Liverpool, 23.0 in Swansea, 23.2 in Sunderland, and 27.2 in Bolton. In the thirty-two provincial towns the mean death-rate was 18.5 per 1,000, and exceeded by 1.8 the rate recorded in London, which was 16.7 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.0 per 1,000; in London the rate was equal to 1.7 per 1,000, while it averaged 2.0 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.4 in Portmouth and in Bolton, 3.8 in Nottingham, 4.0 in Preston, and 5.1 in Swansea. Measles caused a death-rate of 1.1 in West Ham, 1.3 in Manchester, 1.7 in Bolton, and 2.0 in Nottingham; whooping-cough of 1.0 in Bristol, 1.5 in Swansea, and 2.2 in Preston; and "fever" of 1.2 in Sheffield and 1.3 in Bolton. The mortality from scarlet fever showed no marked excess in any of the large towns. The 92 deaths from diphtheria in the thirty-three towns included 43 in London, 9 in Leeds, 7 in West Ham, 5 in Swansea, 5 in Sheffield, 4 in Portsmouth, and 4 in Liverpool. One fatal case of small-pox was registered in Liverpool, but not one in any other of the thirty-three towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had declined from 3,259 to 3,142 at the end of the three preceding weeks, had further fallen to 2,990 on Saturday last, December 10th: 270 new cases were admitted during the week, against 319, 234, and 264 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 10th, 668 births and 433 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 19.7 and 21.0 per 1,000 in the two preceding weeks, was again 21.0 last week, and was 1.2 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates

ranged from 13.6 in Leith and 14.5 in Paisley to 23.0 in Aberdeen and in Greenock, and 24.5 in Edinburgh. The zymotic death-rate in these towns averaged 2.4 per 1,000, the highest rates being recorded in Leith and Greenock. The 283 deaths registered in Glasgow included 5 from measles, 3 from scarlet fever, 2 from diphtheria, 8 from whooping-cough, and 6 from "fever." Three fatal cases of scarlet fever were recorded in Greenock, and 2 of "fever" in Paisley.

THE MUZZLING OF DOGS ORDER.

The Public Control Committee of the London County Council, under the guidance of Mr. W. Crooks, its chairman, has asked the Board of Agriculture for the relaxation of the muzzling order of dogs of 1897 in the County of London. It was urged in support of the request that only one case—of "dumb rabies"—had occurred in London during the past year, and since in that form of the disease the dog could not bite, there had been for twelve months freedom from any active cause for the spread of the disease: and further, if the order were relaxed, the Council's muzzling regulations to the effect that dogs should wear muzzles except when they were under the control of some person, and wear a collar bearing the name and address of the owner, would be enforced. To maintain the immunity which at present existed the Council urged the great importance of the prohibition of importation not only of foreign but also of Irish dogs, as rabies was still prevalent in Ireland. Mr Walter Long, in reply, stated that the action of the London County Council in co-operating heartily with the Board of Agriculture was deserving of the highest praise, and their combined efforts had undoubtedly led to the present satisfactory state of affairs; but he said that it was more difficult to deal with a vast and crowded population like London than with more scattered populations in the country. One rabid dog might in a very short time inoculate several, and thus the present immunity which had been gained would be rapidly lost. At present he must ask the Council to bear a little longer with the enforcement of the present muzzling order. We think that Mr. Long's decision is one which must commend itself as being the wisest in the light of past experience. In 1889 in the metropolitan district there were 176 cases of rabies; this number fell to 3 in 1892, the fall corresponding and being continuous with the regulation for muzzling then in force. As soon as this was relaxed there was a steady increase in the number of cases, and the increase continued till the muzzling order was again enforced. There is no reason to suppose that if the muzzling order were relaxed now the same thing would not happen again, especially in view of the prevalence of rabies in Ireland, and the possibility at any moment of the introduction of a rabid dog into our midst.

LADY MEATH ON IRISH AND ENGLISH WORKHOUSES.

In a letter to the *Times* of December 10th Lady Meath draws attention to the need of classification, especially among the epileptic and imbecile class, and the need for general reform. Lady Meath also suggests that information should be obtained from workhouse and other officials, by which means abuses would be brought to light and reformed. Lady Meath may not be aware that Dr. Moorhead collected a large amount of most valuable information on the condition of the Irish workhouses, which was placed before the authorities, and that the British Medical Journal issued a commission of inquiry into the administration of the English and Irish workhouses, which was forwarded to the department; but these inquiries have not resulted in reform as Lady Meath expects. The department is quite ready to shut its eyes to awkward facts. Our Commissioner stated that the infirm, both aged and helpless, were locked in at night without an attendant; this the authorities denied. Lady Meath corroborates this statement "as being the custom in the union with which I am best acquainted in Ireland," a custom which Lord Meath succeeded in altering after much trouble. The Irish Workhouse Reform Association, under the presidency of Lord Monteagle, is doing good and quiet work, and is advancing the cause of reform, and if everyone will co-operate with it plenty of daylight will be let into these dark places.

CARE OF THE WEAK-MINDED.

At the annual Poor-law conference for the South Eastern and Metropolitan Divisions held last week, Dr. G. E. Shuttleworth read a paper on "Poor Law Provision for the Mentally Deficient Class," in which he pointed out that so far very little had been done to make provision for the class of weak-minded children who were unsuitable for housing in the workhouses or insane asylums. Among imbecile children some could be educated and others cannot. Careful and prolonged tests should be made in each case, as considerable improvement could be effected in some cases which appeared almost hopeless at first. Schools should be established as places of manual and industrial training quite as much, if not more, than for the teaching of the three "R's." Until such schools, which would have to be provided and maintained jointly by several counties, were established, the guardians should place weak-minded children in voluntary homes at small weekly payments.

ICE CREAM PROSECUTIONS.

Prov. M.O.H.—We are not aware that any procedure has been taken against ice cream vendors under Section xxviii of the Public Health Acts Amendment Act. But we understand that an attempt on the part of a London vestry to secure the conviction, under the Sale of Food and Drugs Act, of the vendor of ice cream manufactured with unwholesome ingredients has been upheld. We assume that the power of Section 111 was invoked.

According to the *Berlingske Tidende* the first competition offered by the Nansen Fund, which was established soon after the return of the *Fram* in 1896, has just been advertised. The prize will be given for work in embryology based on original investigation, and its amount is 1,500 kroners (about £50). The result will be announced at the annual meeting of the Christiania Academy of Science on May 3rd, 1900.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Captain R. A. M. C., nine months home from abroad, is open to exchange for a tour of service in Ceylon. State terms to "Exchange," care of Holt and Co., 17, Whitehall Place, London, S.W.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon James Lawrence Smith, M.B., has been appointed a Member of the Fourth Class of the Royal Victorian Order.

Staff-Surgeon Edward G. Swan has been placed on the retired list, November 4th. He was appointed Surgeon, August 25th, 1881, and Staff-Surgeon twelve years thereafter.

Staff-Surgeon John Ottley has also been placed on the retired list, December 1st. His commissions were of the same date as those of Staff-Surgeon Swan. He was Surgeon of the gunboat *Starling* during the Niger expedition in 1883, and landed at Abo with the Naval Brigade, and saw some severe fighting; he was mentioned in despatches.

Staff-Surgeon Edward Denman Minter, late of H.M.S. *Rupert*, died at the Royal Naval Hospital, Plymouth, on December 9th. He was the youngest son of the late Inspector-General John M. Minter, R.N., Honorary Physician to the Queen, and Surgeon Extraordinary to the Prince of Wales. He was appointed Surgeon, February 16th, 1885, and Staff-Surgeon, February 16th, 1897. He was wrecked in the *Victoria*, the flagship of Sir George Tryon, when it came into collision with the *Camperdown* off Tripoli, and the Admiral, 21 officers, and 350 men were drowned.

The following appointments have been made at the Admiralty:—Walter H. S. Stalkartt, M.D., Surgeon to the *Victory*, for Portsmouth Dockyard, December 7th; Robert T. Gilmour, Surgeon to the *Vernon*, January 11th; Walter H. O. Garde, Surgeon to the *Victory*, additional, January 11th; William J. Colborne, Surgeon to the *Victory*, for disposal, November 27th; William H. Pope, Surgeon to the *Thunderer*, December 10th.

ARMY MEDICAL STAFF.

Colonel W. S. M. Price, R.A.M.C., is promoted to be Surgeon-General, *vice* A. A. Gore, retired, December 1st. Surgeon-General Price was appointed Assistant Surgeon, September 30th, 1864; Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; Brigade-Surgeon, November 7th, 1889; and Surgeon-Colonel, February 27th, 1895. He was in the Afghan war in 1878-80, when he took part in the operations in the Bazar Valley, including the engagement at Deh Sarakh (medal); and in the Nile expedition in 1884-85 with the Korti Field Hospital (medal with clasp and Khedive's bronze star).

ROYAL ARMY MEDICAL CORPS.

Colonel Frederick B. Scott, M.D., C.M.G., is placed on retired pay, December 9th. His commissions were thus dated: Assistant-Surgeon, October 1st, 1862; Surgeon, March 1st, 1873; Surgeon-Major, April 28th, 1876; Brigade-Surgeon, January 23rd, 1888; and Surgeon-Colonel, December 25th, 1892. From *Hart's Army List* we learn that Colonel Scott received the special approbation of the Madras Government, followed by that of His Royal Highness the Commander-in-Chief, for his services rendered while in medical charge of the 18th Hussars during a most virulent outbreak of cholera in the regiment at Secunderabad, in May, 1871. He served in the Zulu war of 1879, and organised the Bearer Company; made the hospital arrangements at the Fort Pearson base for the Ekowe Relieving Column; afterwards with the 2nd Division on the personal staff of Lord Chelmsford and in medical charge of the Headquarters Staff, and was present in the engagement at Ulundi, where his services were described by Lord Chelmsford as having been "of the greatest value;" he accompanied the 17th Lancers in their charge and pursuit of the enemy, and by rendering timely aid to a Lancer who was dangerously wounded prevented his falling into the enemy's hands, and served subsequently to the end of the war as Senior Medical Officer of Port Durnford and that line of communication between Ulundi and the Tugela (mentioned in despatches, medal with clasp). During the Egyptian war of 1882 he was on the personal staff of the Duke of Connaught, commanding the 1st Brigade, and was present at the battle of Tel-el-Kebir (appointed a Companion of the Order of St. Michael and St. George, medal with clasp, and Khedive's star).

Lieutenant-Colonel Alexander W. Duke is promoted to be Colonel, *vice* W. S. M. Price, December 1st. Colonel Duke's commissions are as follows: Assistant Surgeon, October 1st, 1[illegible] Surgeon, March 1st, 1873; Surgeon-Major, October 1st, 1880; rank of Lieutenant-Colonel, October 1st, 1888; and Brigade-Surgeon-Lieutenant-Colonel, September 8th, 1894. He has no war record in the Army Lists.

Lieutenant-Colonel James M. Beamish, M.D., is also promoted to be Colonel, *vice* F. B. Scott, M.D., C.M.G., December 9th. He entered the service as Assistant-Surgeon, April 1st, 1871; became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1883; was granted the rank of Lieutenant-Colonel, April 1st, 1891; and became Brigade-Surgeon-Lieutenant-Colonel, February 27th, 1895. He served in the Afghan war in [illegible] train of the 1st Division of the Kabul Expeditionary Force in Dadur and the Bolan Pass (medal); and with the Burmese Expedition in 1885-6 (medal with clasp).

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant E. P. A. Mariette, M.B., resigns his commission, December 14th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel Walter Conry, Bengal Establishment, has retired

rom the service, November 28th. He entered the service as Surgeon March 31st, 1877, becoming Surgeon-Lieutenant-Colonel March 31st, 1897. He was with the Burmese Expedition in 1885-7, and has the Frontier medal with clasp.

Lieutenant-Colonel MALACHI O'DWYER, Bengal Establishment, has also retired from the service from November 30th. His first commission dates from September 30th, 1878; that of Lieutenant-Colonel from September 30th, 1898. He was engaged in the Afghan war in 1879, and has the medal granted for that campaign.

The date of retirement of Lieutenant-Colonel JAMES J. MORAN, M.D., Madras Establishment, notified in the *London Gazette* of November 1st, is October 10th.

The correct name of Captain R. H. CASTOR, promoted to be Major in *London Gazette* of November 22nd, is as now stated.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From	To
Surgeon-General W. Taylor, M.D., C.B.	Egypt	Head Quarters
Lieut.-Colonel M. R. Ryan, M.D.	Malta	Crete.
,, J. L. Peyton, M.B.	Holywood	Curragh.
,, B. W. Somerville-Large	Dublin	Portsmouth.
Major E. H. Myles, M.B.	Portsmouth	Punjab.
,, R. O. Cusack	Curragh	Limerick.
,, R. H. Forman, M.B.	Dover	Madras.
,, P. M. Carleton, M.D.	Cork	Templemore.
,, C. R. Woods, M.D.	Home District	Egypt.
,, T. Archer, M.D.	Egypt	Chester.
,, R. Jennings, M.D.	Portsmouth	Chatham.
,, S. Townsend, M.D.	Ballincollig	Queenstown.
,, R. E. R. Morse	Warley	Madras.
,, W. G. Birrell, M.B.	Egypt	,,
,, E. V. A. Phipps	LandguardFort	Warley.
,, W. C. Beevor, M.B.	Coldstream Gds.	Scots Guards.
,, H. N. Thompson, M.B.	Woolwich	Bombay.
,, S. F. Freyer, M.D.	Punjab	Shorncliffe.
,, A. Stables, M.B.	Bengal	Aldershot.
,, F. W. C. Jones, M.B.	Dover	Crete.
,, J. M. F. Shine, M.D.	Cork	Cahir.
,, R. I. Power	,,	Ballincollig.
,, H. E. Cree	Shoeburyness	Madras.
,, F. J. W. Stoney	Limerick	Kinsale.
,, B. L. Mills, M.D.	Madras	Pemb. Dock
,, W. R. Crooke-Lawless, M.D.	Scots Guards	Coldstrm. Gds.
,, R. J. D. Hall	Egypt	Lydd.
,, A. Hosie, M.D.	Portsmouth	West Africa.
Captain G. A. Wade, M.B.	Shorncliffe	C. of G. Hope.
,, E. G. Browne	Haulbowline	Cork.
,, C. R. Elliott, M.D.	Chatham	Punjab.
,, J. W. Bullen, M.D.	Kinsale	Madras.
,, A. P. Blenkinsop	Dublin	West Africa.
,, R. J. Copeland, M.B.	Egypt	Dover.
,, J. Girvin	,,	Netley.
,, T. Birt	Preston	Gibraltar.
,, H. E. Winter	Dover	Strts. Stthunts.
,, H. D. Mason	Bombay	Colchester.
,, F. J. W. Porter	Bengal	,,
,, G. W. Tate, M.B.	Woolwich	West Africa.
Lieutenant L. Addams-Williams	Malta	Crete.
,, M. M. Rattray, M.B.	,,	,,
,, T. H. M. Clarke, M.B.	,,	,,
,, L. J. C. Hearn, M.B.	Egypt	West Africa.
,, F. S. Penny	Woolwich	,,
,, S. de C. O'Grady, M.B.	Kilworth	Bengal
,, N. H. Ross, M.B.	Egypt	Portsmouth.
,, W. H. S. Nickerson, M.B.	Aldershot	Gosport.
,, G. S. Nickerson, M.B.	,,	Colchester.
,, R. S. H. Fulir	,,	Portsmouth.
,, W. Jagger, M.B.	,,	Netley.
,, A. B. MacCarthy, M.B.	,,	Dover.
,, G. J. S. Archer, M.B.	,,	Dublin.
,, S. O. Hall	,,	Colchester.
,, A. E. Weld	,,	Woolwich.
,, J. S. Gallie	,,	Edinburgh.
,, F. J. C. Hefferman	,,	Dublin.
,, A. E. Thorp	,,	Chester.
,, C. W. Malmprise	,,	Dover.
,, H. Herrick	,,	Curragh.
,, J. Cowan, M.B.	,,	Belfast.
,, A. R. O'Flaherty	,,	West Africa.
,, H. B. G. Walton	,,	,,
Quartermaster J. B. Short	Egypt	Crete.
,, G. L. Allen	Dublin	Netley.

THE BATTLE OF GEDARIF.

THE *London Gazette* of December 9th contains a despatch from Lord Kitchener, Sirdar of the Egyptian Army, reporting the operations in the Soudan subsequent to the defeat of the Khalifa at Omdurman. The principal event described is the advance to Gedarif by the force under Lieutenant-Colonel Parsons on September 7th. This was entirely successful, the country being practically cleared of the Dervish forces. Among others, mention is made of the services rendered by Lieutenant-Colonel J. A. Clery, Major G. D. Hunter, D.S.O., and Captain C. C. Fleming, all of the Royal Army Medical Corps. Of the last named, who had charge of the medical arrangements and baggage guard, it is said that a detachment under him "found themselves heavily engaged by greatly superior numbers."

MEDICAL NEWS.

CLINICAL RESEARCH ASSOCIATION.—The offices of the Association are not at the address erroneously published in the BRITISH MEDICAL JOURNAL of December 10th, but are at 1, Southwark Street, London Bridge, S.E.

SUCCESSFUL VACCINATION.—Dr. James G. Roberts, Public Vaccinator for the No. 3 District of the Royston Union, has obtained the Government grant for successful vaccination in his district.

DR. CROSBY, who has been for twenty-one years a member of the Langbourne Ward of the city of London, was on December 8th unanimously elected Alderman of the Ward on the motion of Sir John Lubbock, M.P., seconded by Mr. Fortescue Flannery, M.P.

PRESENTATION.—Dr. H. T. Sylvester, V.C., who has lived and practised in Westminster for more than a quarter of a century, has been presented by his friends and patients with a picture of the incident in the Crimean war which gained him the Victoria Cross. In addition to the picture, Dr. Sylvester was presented with a silver teapot and an album containing the names of the subscribers and a suitable address. Mr. Burdett Coutts, M.P., made the presentation.

VICTORIA COTTAGE HOSPITAL, KINGSTON-ON-THAMES.—This memorial of the Queen's Diamond Jubilee, the site for which in Coombe Road was presented by the Duke of Cambridge, was opened by his Royal Highness on December 12th in the presence of the Mayor (Dr. Finny), the members of the Corporation, and the authorities of the hospital. The Duke afterwards inspected the building, which has been erected on a site of nearly two acres, and has accommodation for ten patients, and was subsequently entertained at luncheon in the Town Hall.

AT an Examination for Inspectors of Nuisances, held by the Sanitary Institute, in London, on December 2nd and 3rd, 1898, 128 candidates presented themselves, of whom 74 were certified, as regards their sanitary knowledge, competent to discharge the duties of inspectors of nuisances. At an Examination in Practical Sanitary Science on the same days, 6 candidates presented themselves, of whom 1 was granted a certificate.

SIOUX INDIAN NURSES.—At the Third Division Hospital, Jacksonville, Florida, there are many patients who will be able to say that they have been nursed by four sisters who are direct descendants of some of the Sioux tribes of Indians of the Dakotas. These women belong to the order of American Sisters, as it to-day exists in the United States. Only Indian girls are admissible to it. The order volunteered for the front when the war broke out, with the intention of following up the line of battle, and of taking care of the fallen and wounded on the battlefield. It was only recently that their services were accepted.

LEEDS SCHOOL OF MEDICINE.—The twentieth annual dinner of past and present students was held on December 8th, at Powolny's Restaurant. The chair was occupied by Dr. James Braithwaite, Honorary Obstetric Physician to the Leeds General Infirmary, the vice-chairmen being Dr. J. Dobson and Mr. Edmund Robinson. A large number of the staff of the medical school and infirmary were present, including Mr. Littlewood, Mr. Brown, Dr. Griffith, Dr. Trevelyan, and Mr. Moynihan. About 100 gentlemen sat down to dinner. After the loyal toast had been duly honoured, Mr. Hugh Keeling proposed "The Staff," which was replied to by Dr. Braithwaite and Mr. Robinson. Mr. W. H. Brown, in the absence of Dr. Barrs, proposed "The Students, Past and Present," which was replied to by Dr. Dobson and Mr. Collinson. The toast of "The Visitors," proposed by Dr. Griffith, was replied to by Mr. Hutton on behalf of Owens College, Manchester, and by Mr. Ouranofski on behalf of University College, Liverpool. Selections of music were played during dinner, and songs were contributed during the evening by students both past and present.

MUNIFICENT BEQUESTS.—The late Mr. John Wansey Nathaniel Bentley, of Camden Square, has by his will made the following among other bequests: To Charing Cross, Guy's, St. Thomas's, and Poplar Hospitals, £500 each; London Hos-

pital, £1,000; Metropolitan Hospital, Kingsland Road, £1,000; German Hospital, Dalston, £1,000; St. Mary's Hospital, Paddington, £1,000; North-West London Hospital, Kentish Town Road, £1,000; Hospital for Sick Children, Great Ormond Street, £1,000; Chelsea Hospital for Sick Children, £1,000; Brompton Hospital for Consumption and Diseases of the Chest, £1,000; Society for the Prevention of Cruelty to Children, £1,000; Royal Sea Bathing Infirmary at Margate, £1,000; Asylum for Idiots, Earlswood, £2,000; Royal Hospital for Incurables, £2,000; London Orphan Asylum, £2,000; Cancer Hospital, Fulham, £2,000; Great Northern Central Hospital, £2,000.

The Longevity of Spanish Nuns.—The Spanish Minister of Justice has sent a circular to all the bishops of Spain calling their attention to a fact which he appears to think remarkable, namely, the extraordinary longevity of the nuns in the convents of Spain. Does the Minister propose to ask the bishops to put down this bad habit of long living which these cloistered ladies have got into, for fear it should induce large numbers of women to follow their example, and thus lead to the depopulation of Spain? Or is he simply inviting the bishops to discover and reveal to him the secret of the nuns' longevity?

The Shah and His American Physician.—According to the New York *Medical Record*, the Shah has recently conferred upon George W. Holmes, M.D., the decoration of the Order of the Lion and Sun, which is the highest in his gift, except one which is reserved exclusively for the Prime Minister. Dr. Holmes went to Persia in 1874, and is now in charge of the Presbyterian Medical Mission in Hamadan, Persia. Formerly he resided in Tabriz, where for a number of years he was the chief consulting physician to the present Shah, who was then Crown Prince. Since ascending the throne, the Shah has repeatedly invited Dr. Holmes to become his personal physician, and to have charge of the health of the royal harem.

Ambulance Work Among Railway Men.—It is encouraging to note the active interest which our great railway companies are taking in ambulance work. Prominent among these is the Lancashire and Yorkshire Railway Company, which has now organised an ambulance centre of its own, with Manchester as its headquarters; Mr. Bolland, its president, and Mr. R. H. Selbie as its secretary-in-chief. During the last ten years classes in connection with the L. & Y. Railway Station at Bolton have been held under the instruction of Dr. Johnston, honorary surgeon to the Bolton Infirmary. These, now affiliated with the railway centre, have been recently organised as a local ambulance corps. On November 25th the Mayor (Alderman Nicholson, J.P.) distributed the certificates to the 38 members of the last two classes, who, out of the 40 presented, satisfied the examiner.

The International Congress of Dermatology. — The fourth International Congress of Dermatology and Syphilography will be held in Paris from August 2nd to 9th, 1900. The meetings will take place in the Hôpital St. Louis. Notice of communications should be sent to the General Secretary, Dr. Georges Thibierge, 7, Rue de Surène, before June 1st, 1899. Members of the Congress may speak in any language which is familiar to them, but they are requested to use by preference German, English, or French. By agreement with the Organising Committee of the thirteenth International Medical Congress, to be held at the same time, the Section of Dermatology of the Congress will be combined with the Congress of Dermatology; consequently members of the latter will be considered as members of the Medical Congress without the necessity of formally enrolling themselves as members thereof. The following are the questions proposed for discussion: *Dermatology:* (1) The Parasitic Origin of Eczema; (2) Tuberculides; (3) Forms of Alopecia Areata; (4) Forms of Leucoplakia. *Syphilis and Venereal Diseases:* (1) Syphilis and Associated Infection; (2) The Descent of Hereditary Syphilities; (3) Causes of Generalised Infections in Gonorrhœa.

Borough Polytechnic Institute.—Additions to this Institute, including the "Victoria Gymnasium," the "St. Olave's Workshops," and new Cookery School and Physics Laboratories, were opened recently. The Institute, which was established in 1892, has become a centre of technical training and general culture for South London, and during last year there were more than 3,000 entries of students. There are well-equipped physics and chemical laboratories, and we are glad to notice that amongst the subjects practically taught are human physiology, domestic and personal hygiene, first aid and sick nursing.

A Life-saving Appliance.—According to the *Journal d'Hygiène*, a gentleman of Bordeaux, stimulated by the loss of the *Bourgogne*, has devised a means of saving life at sea, and moreover, professes to have proved the value of his invention by exhaustive experiments. The appliance consists of an ordinary belt to which are attached a number of light india-rubber balloons similar to those that are constantly hawked about in the streets. Ready for use the whole thing fits into a bag the size of an ordinary purse, and in a minute and a half a child can inflate the globes and fasten the belt under his arms. In one of the experiments the inventor's little boy leaped into a violent current caused by the sudden opening of a sluice, and was completely submerged, balloons and all, for several seconds. When he reappeared the balloons were intact and supported the boy with the utmost ease. It is claimed for the apparently fragile globes that their shape and elasticity render them practically indestructible, and no doubt in calm water this might be the case. On a crowded deck, however, or amidst breakers, something of a tougher description would seem to be desirable.

Female Shop Assistants in Paris.—The Société d'Hygiène has lately been occupying itself with the hard case of the young women who toil all day long in Parisian shops striving to please customers, but are not allowed to sit down and rest themselves for a moment, even though for the time being they may be entirely disengaged. According to Dr. Gréhant, who has devoted much attention to the matter, the dog-in-the-manger action of the proprietors is prompted by an ignoble dread lest the young women should collect in groups for conversation, and thus neglect their duty; but this excuse must surely be a subterfuge, since talk can just as well carried on standing as sitting. M. Gréhant has come to the conclusion that until the lady patronesses take up the cudgels on behalf of their suffering sisters it is vain to hope that the evil will ever be remedied. They alone are capable by united effort of influencing the owners of the larger shops, whose lead the smaller fry are bound to follow. Male remonstrance is utterly useless; as well might water be poured on a duck's back in the hope of wetting its skin. A prominent member of the Society, M. Joseph de Pietra Santa, was astonished to find that the young women never went out. The shopmen walk abroad in their leisure time, or else frequent the neighbouring *cafés*, but their fair congeners never by any chance quit the scene of their labour. On the motion of M. Foveau de Courmelles the following resolution was adopted: "Females employed in large shops should be required to maintain the vertical position solely while in the act of serving customers, and not in the absolutely continuous fashion at present exacted."

The Discovery of Glauber's Salts.—Many medical discoveries have been made by chance. Cinchona is a notable example. We learn from the *Chemist and Druggist* that the therapeutic use of sulphate of sodium is another. Our contemporary says that Professor Ferguson, in lecturing recently to the Andersonian Chemical Society of Glasgow, told how Johann Rudolph Glauber discovered his *sal mirabile*. Glauber, while on one of his many journeys, fell sick of a fever on his way to Vienna, and had to stop at a roadside village. Here his digestion failed him entirely, and he could eat nothing. The natives told him of a well whose waters they said would cure him, and he, though sceptical, set out, taking with him a large piece of bread. When he arrived at the well he soaked a few crumbs in the water, and ate them with relish, though previously food had nauseated him. He returned much improved, and investigated the salt in the water, showing that it was not nitre, as had been supposed, for it was not "fiery" in nature, as he proved by adding it to burning coal.

Obstetrical Society of London.—The following is the list of officers for 1899 recommended by the Council:—*President:* Alban Doran, F.R.C.S. *Vice-Presidents:* J. W. Byers, M.A., M.D. (Belfast); W. R. Dakin, M.D.; W. Duncan, M.D.;

J. B. Hurry, M.A., M.D. (Reading). *Treasurer:* J. Watt Black, M.D. *Chairman of the Board for the Examination of Midwives:* Percy Boulton, M.D. *Honorary Secretaries:* John Phillips, M.A., M.D.; H. R. Spencer, M.D. *Honorary Librarian:* Amand Routh, M.D. *New Members of Council* recommended are R. Boxall, M.D.; T. C. Hayes, M.D.; W. L. Reid, M.D. (Glasgow); G. H. D. Robinson, M.D.; W. Japp Sinclair, M.D. (Manchester); A. F. Stabb, M.B., B.C.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident-Surgeon and Apothecary, unmarried. Salary, £80, increasing to £100, with board, lodging, washing, coals, candles, and furnished apartments. Applications to Mr. G. Fell, Solicitor, Aylesbury, by January 2nd, 1899.

BANBURY: HORTON INFIRMARY.—House-Surgeon and Dispenser. Salary, £60 per annum, with board and lodging. Applications to the Hon. Secretary, 21, Marlborough Road, Banbury, by December 31st.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the House Governor by December 31st.

BURY INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum, with board, residence, and attendance. Applications to the Hon. Secretary, Knowsley Street, Bury.

DUBLIN: SWIFT'S HOSPITAL FOR LUNATICS, James's Street.—Visiting Physician. Appointment on January 1st, 1899. Particulars to be obtained from the Registrar.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Appointment for six months. Salary, £40 per annum, with residence, board, and washing. Applications to the Secretary before December 30th.

EDINBURGH UNIVERSITY. Additional Examiner in Zoology. Period, four years. Applications to Secretary, University Court, by January 7th, 1899.

FOREST HILL PROVIDENT DISPENSARY.—Medical Officer. Applications to the Honorary Secretary, Mr. A. H. Corbould, Yale Cottage, Inglemere Road, Forest Hill, S.E., by December 22nd.

GLOUCESTER: GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House-Surgeon. Board, residence, and washing provided, but no salary. Applications to the Secretary by December 21st.

LEICESTER INFIRMARY.—Honorary Assistant Physician. Applications to the Secretary by January 2nd, 1899.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum, with residence and maintainance. Applications to the Chairman, by December 22nd.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—House-Surgeon to the Male Hospital. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary, at Harrow Road, by January 7th.

MIDDLESEX HOSPITAL, W.—Bacteriologist. Salary, £100, and fees for special classes. Applications to the Secretary-Superintendent by January 2nd, 1899.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY.—House-Surgeon; unmarried. Salary, £80 per annum, with board and lodging. Applications, on forms provided, to the Secretary by end of December.

NORFOLK AND NORWICH HOSPITAL.—Dental-Surgeon. Applications to the Secretary by January 7th

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Fitzroy Square, W.—Clinical Assistant. Appointment for six months. Honorarium at the rate of £35 per annum. Applications to the Secretary by December 23th.

OXFORD: RADCLIFFE INFIRMARY.—Surgeon. Applications to the Secretary by January 16th, 1899.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Surgeon to Out-Patients; must be F.R.C.S. Applications to the Secretary by January 4th, 1899.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1900. Applications to the Registrar by January 7th, 1899.

RYDE: COUNTY ASYLUM.—House-Physician. Salary, £50 per annum, with board, lodging, etc. Applications to the House-Surgeon by January 2nd, 1899.

ST. SAVIOUR'S UNION, Surrey.—Assistant Medical Officer at the Infirmary, East Dulwich Grove, S.E. Remuneration, £80 per annum, with furnished apartments, board, and washing. Applications, marked outside "Application for Second Assistant Medical Officer," to the Clerk, Union Offices, John Street West, Blackfriars Road, S.E., by December 22nd.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Anæsthetist. Honorarium, £25 per annum. Applications to the Secretary by December 28th.

WEST BROMWICH DISTRICT HOSPITAL.—House-Surgeon; unmarried. Salary, £80 per annum, with board, residence, and washing. Applications to the Hon. Sec., Mr. William Bache, Churchill House, West Bromwich, by December 20th.

WIGAN: ROYAL ALFRED EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary £80 per annum, with apartments and rations. Appointment for one year. Applications to the Secretary by December 23th.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Surgeon; unmarried. Salary, £75 per annum, with board, residence, etc. Applications to the Secretary by December 22nd.

WILTSHIRE, COUNTY OF.—Medical Officer of Health. Salary, £500 per annum, with all allowances specifically mentioned in statement of duties, etc. Applications to the Clerk of the Council, County Offices, Arlington House, Trowbridge, by December 28th.

WORCESTER CITY AND COUNTY ASYLUM.—Assistant Medical Officer, not over 30 years of age. Salary, commencing £100 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by December 30th.

YORK DISPENSARY.—Resident Medical Officer; unmarried. Salary, £150 a year, with furnished apartments, coals, and gas. Applications to Mr. W. Draper, De Grey House, York, by December 20th.

MEDICAL APPOINTMENTS.

ANGWIN, S. L., M.B. appointed Health Officer for St. Arnaud Borough, Victoria.

BRIAN, J., L.R.C.P.Irel., appointed Medical Officer for the Emlagh Dispensary District.

BELGRAVE, T. B., M.D.Edin., M.R.C.S.Eng., appointed Health Officer for Bulong, West Australia, *vice* Dr. Horrlott, resigned.

BENNET, P. A., M.D., appointed Physician for Diseases of the Skin, Prince Alfred Hospital, Sydney.

BERKELEY, Comyns, M.B., B.C.Cantab., M.R.C.P., appointed Physician-Accoucheur to the Western General Dispensary.

BURT, W. C., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer to the Workhouse and Public Vaccinator for the High Bickington District of the Torrington Union.

COLLINS, J. N., M.D., appointed Medical Officer for the Caistor District of the Peterborough Union.

DODSON, J. P., M.B.Lond., appointed Resident Casualty Officer to the General Infirmary, Leeds.

FERGUSON, John, L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Appleton Wiske District of the Northallerton Union.

GAMAN, F. R. S., M.R.C.S., L.R.C.P.Lond., appointed Medical Officer of Health to the Caistor Rural District Council.

GARDNER, Thomas Hudson, M.R.C.S., L.R.C.P., appointed Resident Medical Officer to the Royal Hospital for Diseases of the Chest, City Road, *vice* J. B. Maxwell, resigned.

GARRETT, J. H. M.D.Durh., D.P.H.Camb., reappointed Medical Officer of Health to the Cheltenham Town Council.

GOUGH, H. E., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer of Health to the Northwich Rural Council.

GRAHAM, Dr. W., appointed Assistant Medical Officer at the Walton Workhouse of the West Derby Union.

GRIFFITHS, J. C., M.B.Lond., M.R.C.S., appointed Medical Officer for the Tealby District of the Caistor Union.

HENZELL, A. P., M.B., etc., appointed Health and Medical Officer at Mackay, and Visiting Surgeon to the Mackay Prison, Queensland, *vice* Dr. E. McBurney, resigned.

HILLS, W. C. D., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Twelfth District of the Wisbech Union.

LAIDLAW, D. F., M.B., Ch.M.Edin., appointed Officer of Health for Hamilton Borough, Victoria, *vice* L. Robinson, M.D., resigned.

LISTER, W. T., B.A., M.B., B.C., F.R.C.S., appointed Assistant Surgeon to the Central London Ophthalmic Hospital, Gray's Inn Road.

MOORE, H. C., M.R.C.S.Eng., appointed Deputy Medical Officer of Health for Hereford.

MOORE, H. J., M.B., M.Ch.R.U.I., appointed Medical Officer for the Ardree Dispensary District.

O'GORMAN, M. C., L.R.C.P., L.R.C.S.Irel., appointed Medical Officer for the Aughrim Dispensary District.

PEPPER, H. W., M.R.C.S., L.R.C.P., appointed Resident Surgeon to the Birmingham General Dispensary.

PURSER, Cecil, M.B., M.Ch.Sydney, appointed Physician to the Prince Alfred Hospital, Sydney.

ROBERTS, R. W., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Second Eastern District of the Neath Union.

RUSSELL, J. Risien, M.D., F.R.C.P.Lond., appointed Assistant-Physician to the National Hospital for the Paralysed and Epileptic, Queen Square, *vice* W. S. Colman, resigned.

SHARPE, C. H., L.R.C.P., L.R.C.S.Edin., appointed Medical Officer for the Second Oldbury District of West Bromwich Union.

SIMPSON, G. W., L.R.C.P.Lond., M.R.C.S.Eng., appointed Medical Officer for the Lamberhurst District of the Ticehurst Union.

SMITH, James, B.A.Camb., L.R.C.P., L.R.C.S.Edin., appointed House-Surgeon to the Whitehaven and West Cumberland Infirmary, *vice* E. S. Dickson, M.B., C.M.Glas., resigned.

STEWART, J. Purves, M.A., M.D., M.R.C.P., appointed Assistant Physician to Westminster Hospital.

STURROCK, Alexander Corsar, M.B., appointed House-Surgeon to the Grimsby Hospital, *vice* H. S. Beadles, M.R.C.S., L.R.C.P.Lond., resigned.

SUTCLIFFE, E. H., M.B.Durh., M.R.C.S.Eng., appointed Medical Officer for the Great Torrington District of the Torrington Union.

TUNNICLIFFE, F. W., M.D., M.R.C.P., appointed Assistant Physician to Out-patients to the Victoria Hospital for Children, Chelsea.

WALKER, D. E., M.B., C.M.Edin., appointed Medical Officer for the Second District of the Brixworth Union.

WILLIAMS, John D., M.D., B.Sc., appointed Gynæcologist to the Cardiff Infirmary.

WILLIAMS, W. T., M.R.C.S.Eng., L.S.A., appointed Medical Officer to the Chorlton and Manchester Joint Workhouse.

WOOD, R. M., L.R.C.P.Lond., M.R.C.S.Eng., appointed House-Surgeon and Dispenser to the Tiverton Infirmary, *vice* H. England, B.A.Camb., M.R.C.S., L.R.C.P., resigned.

WRIGHT, F. W., M.R.C.S.Eng., appointed Medical Officer and Public Vaccinator for the Southern and Lingfield District of the Godstone Union, *vice* S. C. Austin, M.R.C.S., resigned.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London, 8.30 P.M.—Dr. E. F. Trevelyan: A Cyst on Third Ventricle and one on Fourth Ventricle, and an Anomalous Tumour of the Brain. Dr. H. Morley Fletcher: Peculiar condition of the Colon in Pernicious Anæmia. Drs. Crosse and Pakes: Blackwater Parasite alive. Drs. Pakes and R. Howard: The Technique of Blood Film. Mr. H. Botham Robinson: Multilocular Tumour from Inguinal Canal in the Female. Dr. C. D. Green: Extensive Sarcoma of Mediastinum. Dr. Trevelyan: Card Specimens.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C., 3.30 P.M.—Dr. Colman: Syringomyelia.

Chelsea Clinical Society, the Parish Hall, Pavilion Road, Sloane Square, S.W., 8.30 P.M.—Dr. C. C. Gibbes: Early Diagnosis of Mitral Stenosis, with Cases. Mr. J. W. E. Mortimer: A case of Delirium Tremens treated by Inhalation of Chloroform. Mr. C. A. Morris: Intestinal Obstruction due to Gall Stones.

West End Hospital for Diseases of the Nervous System, 73, Welbeck Street, W., 4 P.M.—Dr. Harry Campbell Cases of Paraplegia.

WEDNESDAY.

Royal Meteorological Society, 25, Great George Street, Westminster, S.W., 7.30 P.M.

Royal Microscopical Society, 20, Hanover Square, 8 P.M.

THURSDAY.

London Temperance Hospital, 2 P.M.—Dr. Soltau Fenwick: Clinical and Pathological Demonstration to Senior Students.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 5s. 6d., which sum should be forwarded in a post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTHS.

ALLISON.—On December 3rd, at Newcastle-on-Tyne, the wife of T. M. Allison, M.D., B.S., of a son.

CROSS.—On December 11th, at The Priory, Downham, Norfolk, the wife of George Frederick Cross, M.B., B.S., of a daughter.

EWART.—On December 8th, at 58, Queen's Gate Terrace, the wife of Dr. Charles Ewart of a son.

HUNT.—On December 10th, at Brookfield, Borrowash, Derbyshire, the wife of J. Aspinall Hunt, M.R.C.S., L.R.C.P.E., of a daughter.

MASTERMAN.—On December 8th, at 3, Newnham Terrace, Cambridge, the wife of E. W. G. Masterman, F.R.C.S., F.R.G.S., of a daughter.

MARRIAGES.

BROWN—RENY.—On December 8th, at St. Luke's, Westbourne Park, by the Rev. T. O. Reny, Vicar of Prittlewell, Essex, uncle of the bride, assisted by the Rev. R. J. Knowles, Vicar of the Parish, George Brown, M.R.C.S.Eng., Member of the General Medical Council, of Gibson Square, N., to Edith Kate, only daughter of Major General Reny, late Bengal Staff Corps, of Leamington Road Villas, W., and The Gill, Cumberland.

PORDE—SANGSTER.—On November 30th, at St. Peter's, Cranley Gardens, S.W., by the Rev. C. C. Gosselin and the Rev. Dr. Ridgeway, Vicar of the Parish, Robert Michael Porde, L.R.C.P. and S.Edin., Colonial Surgeon, Gambia, to Alice Maude, youngest daughter of Major Sangster, late 97th regiment.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations.*—Tu. F. S., 2.

CENTRAL LONDON OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily.

CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances.*—M. W. Th. S., 2; Tu. F., 5. *Operations.*—1.-p., Tu., 2.30; o.-p., F., 2.

CHARING CROSS. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations.*—Th. F. S., 3.

CHELSEA HOSPITAL FOR WOMEN. *Attendances.*—Daily, 1.30. *Operations.*—M. Th. F., 2.

CITY ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—M., 4.

EAST LONDON HOSPITAL FOR CHILDREN. *Operations.*—M. W. Th. F., 2.

GREAT NORTHERN CENTRAL. *Attendances.*—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations.*—M. W. Th. F.

GUY'S. *Attendances.*—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations.*—Tu. F., 1.30; (Opathalmic) M., 1.30; Tu., 2.

HOSPITAL FOR WOMEN, Soho. *Attendances.*—Daily, 10. *Operations.*—M. Th., 2.

KING'S COLLEGE. *Attendances.*—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 2.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations.*—W. Th F., 2.

LONDON. *Attendances.*—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations.*—Daily, 2.

LONDON TEMPERANCE. *Attendances.*—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations.*—M. Th., 4.30.

LONDON THROAT, Great Portland Street. *Attendances.*—Daily, 2; Tu., F., 6. *Operations.*—Daily, 2.

METROPOLITAN. *Attendances.*—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Tu., 2; Dental, Tu. Th. S., 9. *Operations.*—Tu. W., 2.30; Th., 4

MIDDLESEX. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations.*—Daily, 1.30.

NATIONAL ORTHOPÆDIC. *Attendances.*—M. Tu. Th. F., 2. *Operations.*—W., 10.

NEW HOSPITAL FOR WOMEN. *Attendances.*—Daily, 2; Ophthamic, W. S., 9.30 *Operations.*—Tu F., 9.

NORTH-WEST LONDON. *Attendances.*—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations.*—Tu., 2.30.

ROYAL EYE, Southwark. *Attendances.*—Daily, 2. *Operations.*—Daily.

ROYAL FREE. *Attendances.*—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations.*—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.

ROYAL LONDON OPHTHALMIC. *Attendances.*—Daily, 9. *Operations.*—Daily, 10.

ROYAL ORTHOPÆDIC. *Attendances.*—Daily, 2. *Operations.*—M., 2.

ROYAL WESTMINSTER OPHTHALMIC. *Attendances.*—Daily, 1. *Operations.*—Daily, 2.

ST. BARTHOLOMEW'S. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations.*—Daily, 1.30; (Opathalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.

ST. GEORGE'S. *Attendances.*—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2. Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations.*—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.

ST. MARK'S. *Attendances.*—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations.*—M. 9; Tu., 2.30.

ST. MARY'S. *Attendances.*—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0. Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9. Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations.*—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Opathalmic), F., 10.

ST. PETER'S. *Attendances.*—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations.*—W. F., 2.

ST. THOMAS'S. *Attendances.*—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations.*—M. W. Th. S., 2; Tu. F., 3.30; (Opathalmic), Th., 2; (Gynecological), Th., 2.

SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances.*—Daily, 1.30. *Operations.*—Gynæcological, M., 2; W., 2.30.

THROAT, Golden Square. *Attendances.*—Daily, 1.30; Tu. F., 6.30. *Operations.*—Daily, exc. M., 10.

UNIVERSITY COLLEGE. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations.*—Tu. W. Th., 2.

WEST LONDON. *Attendances.*—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations.*—Daily, about 2.30; F., 10.

WESTMINSTER. *Attendances.*—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations.*—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—if course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies.*

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

☞ Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings*

QUERIES.

J. asks for references to any English literature on meningitis serosa.

MEMBER asks for advice as to the treatment of a case of floating kidney in which there is strong objection to any operative procedure. He desires to know what form of pad is most satisfactory. A renal pad and abdominal belt have already been employed.

IODISM IN A SYPHILITIC PATIENT.

IODISM asks for suggestions for treatment in the case of a patient who contracted syphilis thirteen years ago. Treated for two years with mercury, the patient now has eczema of both forearms, over sacrum, and psoriasis of leg. Doses of potassium iodide, as small as 2 gr., produce acne, and make the eruptions worse. Locally iodoform and mercurial ointments are useless.

UNQUALIFIED LOCUM TENENS.

A. R. H. asks: Is it legal for a medical man to employ an unqualified assistant, and to leave him in charge while he goes away for a holiday?

*** The wording of the notice issued by the General Medical Council, in accordance with the resolution of November 24th, 1897, appears to be sufficiently explicit: "The Council hereby gives notice that any registered medical practitioner who is proved' to have allowed an unqualified person "to attend or treat patients in respect of matters requiring professional skill.....is liable to be judged as guilty of 'infamous conduct in a professional respect.'"

PHYSICAL DEVELOPMENT OF BOYS.

SEABROOKE would be glad to know of a book which would give reliable information of the average weight, height, and physical development of English boys between the ages of 5 and 15.

*** Our correspondent will find the information he requires in *The Medical Inspection of and hysical Education in Schools,* by Charles Roberts, F.R.C.S. London: John Bale and Sons. Price 2s.

DISPENSARY OFFICER'S SUBSTITUTE (IRELAND).

M. (Ireland) was asked by the doctor in medical charge of an adjoining dispensary district to do his duty for ten days. There was no mention made of returning fees to him for attending paying patients in his district. M. asks what is the etiquette in such cases.

*** In some cases, when a medical man looks after his friend's cases during his absence, he gets half fees: but in many the substitute takes all. It is a matter of arrangement. Of course no one could expect to have his work done for nothing.

WORKMEN'S COMPENSATION ACT.

REFEREE writes: I have been appointed medical referee for a coal and iron company employing 6,000 men. I live in the centre of the district, and my journeys on behalf of the company will be within a radius of from eight to ten miles. I am only to visit such accidents as the company think advisable, and I shall be required to make reports on all cases visited, besides attending inquests and county courts. Can you advise as to the scale of fees I should charge?

*** We are indebted for the following reply to a surgeon of large experience in an industrial district: The fee per case will vary according to whether the injured workman attends at the referee's house, or whether he has to visit the patient. If the latter, the distance must be reckoned from his own house. The amount to be charged must be estimated upon the basis of what our correspondent's fee would be if he had to see or visit these persons as his private patients; further, in determining the amount, he must try if possible to gauge the sum per case which the company would be willing to pay. The writing of the report is an extra charge, for which 5s., or at the most, 10s. 6d., might be claimed. The fee for attendance at the county or the coroner's court would depend on the distance and on the time given, say, 10s. 6d. or £1 1s. on each occasion.

ANSWERS.

F.R.C.S. In England the letters F.R.C.S. are generally understood to mean F.R.C.S.Eng.

EDINA should consult the directors of the laboratories in which he has worked.

MEMBER, who asks to be referred to books treating of mentally deficient children, their education and treatment, might consult *Mentally Deficient Children, their Treatment and Training,* by Dr. G. E. Shuttleworth (London: H. K. Lewis. 1895. 4s.), or *The Mental Affections o Children, Idiocy, Imbecility, and Insanity,* by Dr. W. W. Ireland (London: J. and A. Churchill. 1898 14s.), or *The Treatment and Education of Mentally Feeble Children,* by Dr. Fletcher Beach (London: J. and A. Churchill. 1895. 1s. 6d.).

CREMATORIA.

A CORRESPONDENT writes for information as to cost and other details of crematoria.

*** The average cost of building a modern crematorium may be taken to be about £3,000. The total cost of the establishment at Glasgow was £2,960. The Woking buildings cost, however, over £5,000, but this is an excessive expenditure. At present there are in Great Britain crema-

toria at Woking, Liverpool, Manchester, and Glasgow. The number of cremations that have been carried out is: Woking, 1,266; Manchester, 269; Glasgow, 35; and Liverpool, 35. Of these, 212, 55, 10, and 23 respectively have been performed this year. All information as to cremation may be obtained from the Cremation Society of England, 324, Regent Street, London, W.

CYCLE SADDLES.

DR. JAS. HOLMES (Overdale, Whitefield) writes: During the past twelve months I have used a Christy saddle. Within this time I have had two saddles, a spring having been broken in the first. Like Dr. R. Atkinson I found my ischial tuberosities somewhat tender after a long ride when using the first saddle, but with the second this is not the case, as the springs have elasticity, being quite a different pattern. There is certainly no perineal pressure. I have given the saddle a good test, my distance being nearly 4,000 miles, much of this over very rough roads.

NOTES, LETTERS, Etc.

ERRATUM.—Dr. R. Bolton M'Causland (Dublin) writes to call attention to two errors, one a printer's error, in his reply in the report of his case of Ligature of the Subclavian Artery for Secondary Hæmorrhage, read before the Surgical Section of the Royal Academy of Medicine in Ireland, as published in the BRITISH MEDICAL JOURNAL of December 10th, 1898, pp. 1746-47. 1. There should be no stop, or certainly only a comma not a semicolon) after the words "after the stab" (p. 1746, second line from the bottom). 2. On p. 1747, last line, the word "blood-stained" is too strong; slightly "blood-tinged" would be more exact.

THE ARMY PURITY ASSOCIATION.

X. writes: In the BRITISH MEDICAL JOURNAL of December 10th you have a reference to the "Army Purity Association," which you say was originally started at Meerut, in 1889, by a Presbyterian chaplain. May I point out that you are in error in thus describing the origin of the Army Purity Association? The one you refer to was the Army Health Association, founded by the Rev. John Crawford, but the Army Purity Association was only founded last year, and is run in connection with the Army Temperance Association. Its principal officials are the Rev. C. M. Becker, Chaplain of Jullundur, and the Rev. J. H. Bateson, of Simla, the General Secretary of the Army Temperance Association. In October last was issued the first number of a periodical to support this movement, but it is for the present being issued as a supplement to *On Guard*, the official organ of the Army Temperance Association. In addition to these two societies, there is also the Order of St John in the Wilderness, founded by the Rev. William Cumine, Chaplain of Bareilly, which is conducted on the same lines as the I.O.G.T. So that there are now three separate societies engaged in purity work amongst the British troops in India; and although the two last founded seem to have established a higher moral standard than the earlier one, they are all engaged with similar objects, and are all doing good and useful work.

ASSUMPTION OF MEDICAL DESIGNATION.

DR. HENRY DUTCH, M.D., M.R.C.S. (London, W.) writes: Might I be allowed to suggest to the executive of the various medical defence societies that it is their duty when a person is charged with a criminal offence, and describes himself as a medical man without a legal right to such a dignity, to immediately correct such misstatements in the daily press? The frequency of these incidents is calculated to bring discredit on our profession.

THE PATHOLOGY AND TREATMENT OF EPILEPSY.

THE President of the Board of Managers of Craig Colony offers a prize of $150 (£30) for the best contribution to the pathology and treatment of epilepsy, originality being the main condition. The prize is open to universal competition, but all manuscripts must be presented in English. All papers will be submitted to a committee, to consist of three members of the New York Neurological Society, and the award will be made at the annual meeting of the Board of Managers of Craig Colony, October 10th, 1899. Each essay must be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside the motto or device which is inscribed upon the essay. The successful essay becomes the property of the Craig Colony for publication in its Annual Medical Report. Manuscripts should be sent to Dr. Frederick Peterson, 4, West 50th Street, New York City, U.S.A., on or before September 1st, 1899.

PHTHISICAL PATIENTS IN SOUTH AFRICA.

O. E. H. (St Leonards) writes: Dr. Bays's letter reminds one of dear old Sir Thomas Browne's comment on a similar case: "He was fruitlessly put in hope of advantage by change of air . . . , and, therefore, being so far spent, he quickly found *soothing to Tivoli*, and the most healthful air of little effect where death had set his broad arrow."

TREATMENT OF ANTHRAX.

SURGEON-GENERAL RICHARD C. LOWNDES (London, S.W.) writes: Perhaps the enclosed extract from the letter of a South American correspondent may be of some interest to the readers of the BRITISH MEDICAL JOURNAL. "In England, a man treated in hospital by a really clever doctor generally (and always) dies if he catches the infection from a South American hide. Here in camp (Argentina) where one never sees a doctor, and where many of our people often get anthrax during the summer, they do not die, and get well when treated by an ignorant native. Here, when a man takes the infection, it can be recognised at once, as looking like an angry boil with a black or dark purple head; off he goes to a 'curandera,' generally an old woman. She takes a piece of thick wire, heats it red hot, and proceeds to burn the centre of the boil away; as the process goes on the flesh can be seen to burn away without feeling it, till the sound part is reached. The native cures you without knowing why. The scientist fails, though he has the theory at his finger ends."

LETTERS, COMMUNICATIONS, Etc., have been received from **A** Mr. R. B. Anderson, London; A. R. H.; Dr. J. Abercrombie, London; Mrs. E. G. Anderson, M.D., London; A. B.; Dr. P. H. Abercrombie, London; A. K.; Assistant. **B** Mr. O. Baker, London; Messrs. C. Barker and Sons, London; Messrs. R. Blottière et Cie, Paris; Mr. T. Blair, Leeds; Mr. W. F. Brook, Swansea; Mr. H. T. Butlin, London; Mr. P. S. Bhacka, Surat; Bournemouth Medical Society, Secretary of, Bournemouth; Messrs. Blandy Brothers and Co., London; Mr. J. G. Bryant, London; J. M. Blumer, M.B., Stafford; C. Berkeley, M.B., London; British Gynæcological Society, Secretary of, London; Mr. F. Barrow, Rothbury; Mr. G. Brown, London; Messrs. E. Bridge and Co., London. **C** Mr. E. W. Cross, Leytonstone; K. C. Chetwood Aiken, M.B., Truro; Mr. W. G. Copestake, Derby; Messrs. T. Cook and Son, London; Mr. H. N. Custance, London; Messrs. G. Carré et C. Naud, Paris; J. Carroll, M.B., Glasgow; Dr. A. E. Cooper, London; Dr. W. H. Calvert, Melrose; Mr. C. E. Corlette, London; Dr. J. M. Clarke, Clifton. **D** Dr. T. Dutton, London; Doubtful; Mr. A. W. Dalby, Frome; T. Drapes, M.B., Enniscorthy; A. Dingwall, M.B., Prestleigh; Mr. W. Drinkwater, Bicester; Mr. F. Deas, Merton; D. M. M.; Mr. H. T. Dufton, Stowmarket. **E** Mr. A. W. Edwards, Aberdeen; Mrs. E. Evers, Weston-super-Mare Dr. C. Ewart, London; Ethics: Dr. W. Ewart, London; Edina; Mr. H. W. Eve, London; Mr. B. Eckstein, Buda-Pesth. **F** Fairplay; Messrs. Fassett and Johnson, London; F.R.C.S. Dr. R. F. Fox, London; Dr. R. T. Ferguson, Anstruthers; Mr. R. M. Forde, London. **G** Mr. F. C. Greville-Smith, Hounslow; Messrs. Grindlay and Co., London; Mr. T. H. Gardner, London; Mr. R. Girvan, Maybole; Mr. C. R. O. Garrard, Manchester. **H** J. Huskie, M.B., Carlisle; Dr. H. P. Hawkins, London; E. B. Holmes, M.B., Liverpool Mr. R. G. Hebb, London; Mr. R. Harrison, London; Mr. W. H. Hall, Frant; Mr. V. Horsley, London; Dr. J. B. Hurry, Reading; W. Hardman, M.B., Blackpool, Mr. R. K. Hamilton, Hasland; Mr. A. Harrison, Curry Rivel; Mr. H. Hillman, London; Mr. W. B. Holderness, Windsor; Dr. T. W. Hime, Bradford; Dr. J. H. Hunter, South Shields; Mr. G. A. Hawkins-Ambler, Liverpool; G. Hailey, M.B., Dundee; Mr. R. Hordley, Stoke-on-Trent; Mr. J. A. Hunt, Borrowash. **I** Iodism; Inquirer. **J** Mr. C. Jarman, London; Dr. R. Jardine, Glasgow; J. F. Jordan, M.B., Birmingham; Mr. E. A. Johnson, Gottingen; Mr. E. Johnstone, Manchester. **L** Dr. R. C. Lofthouse, London; Mr. B. Langran, Liverpool; Leeds and West Riding Medico-Chirurgical Society, Secretary of, Leeds: Mr. R. Le Sueur, London; Mr. A. J. Lowe, Manchester; W. J. Lindsay, M.B., London; Mr. H. Lorenz, London. **M** r. J. C. P. Muir, London; Dr. S. Martin, London; Dr. T. Maguire, Stony Stratford; Mr. A. K. Matthews, London Mr. C. Mulholland, Belfast; Mr. E. W. G. Masterman, Cambridge · Dr. R. Morgan, Kinsale; Member; Mr. J. Melling, London; Mr. W. Martindale, London; Mr. R. 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A CLINICAL LECTURE
ON
ASTHMA AND ITS TREATMENT.

Delivered at the Hospital for Consumption, Brompton.

By SIDNEY MARTIN, M.D., F.R.S., F.R.C.P.,
Assistant Physician to the Hospital, and Physician to University College Hospital.

Definition.

The term "asthma" has been somewhat loosely applied to several different pathological conditions and groups of symptoms, the exact nature of which it is important to consider in order to discuss a rational treatment. The term is constantly and wrongly used by patients and others to express the dyspnœa which accompanies emphysema and chronic bronchitis. This is dyspnœa due to pathological changes in the lungs, and is to be distinguished from "cardiac asthma," which is dependent on a condition of the lungs and nervous system induced by a disordered circulation of the blood dependent on disease of the valves or the myocardium; and from "renal asthma," which is possibly to be explained either by the effect of a poison or of disordered circulation on the respiratory centre in the course of disease of the kidneys; and from "pressure dyspnœa" dependent on the pressure of an aneurysm or new growth on the trachea.

Spasmodic Asthma.

Spasmodic asthma, whether primary or secondary, is a disease essentially due to some nervous changes. Its partial heredity, its occurrence largely in "neurotic" individuals, its occurrence in families subject to migraine, as well as the characteristic attacks of the disease, bring it into relation with nerve storms, such as epilepsy. The typical uncomplicated asthmatic attack, as it is seen in children and in some adults, is sudden in its onset, and occurs in the early hours of the morning, between 2 and 4 A.M. It is characterised by intense dyspnœa, in which the patient is unable to assume the recumbent position, but is obliged to hold on to a chair or the bed railing firmly in order to get purchase for the accessory muscles of respiration. The shoulders are raised, and both the natural and the accessory muscles of respiration are contracting vigorously, although the chest moves but little in expansion. The dusky face shows the embarrassment to the circulation and the deficient oxygenation of the blood: the sweating skin shows the great muscular exertion as well as the effect of deficient oxygenation of the blood. The lungs are as a rule actually enlarged during the paroxysm, but auscultation shows that little or no air is entering into them. The respiratory murmur is absent, or whistling and sonorous rhonchi alone are heard. The attack lasts a variable time, and may be over by breakfast time, or it may last for twenty-four hours or longer. After the attack some expulsion of mucus from the lungs occurs, but there is no continued cough or expectoration.

Causation.

Such attacks as these in an individual may be started by very varying conditions, some of which are obvious, others of which are very obscure. I say "started" because the attacks remain practically of the same nature throughout the varying forms of asthma. Hay asthma is a form of the disease directly traceable to the inhalation of the pollen of grasses and flowers; the attacks are of the same nature as other forms of asthma, and may be succeeded in the winter by asthmatic attacks. Again, asthma may be distinctly preceded or excited by indigestion of food—the so-called peptic asthma—the attacks of which usually occur an hour or two after the largest meal of the day.

Asthmatic attacks, are, moreover, initiated by disease of the lungs; thus bronchitis may lead to attacks of asthma—bronchitic asthma. Attacks are sometimes initiated by an infectious disease—either affecting the lungs, such as pneumonia, or the nervous system generally such as influenza. In other cases, asthmatic attacks in association with chronic disease of the nose and throat, an association which is not of such great importance as is sometimes stated. In some cases (summer asthma), the attacks occur for years only in the summer, disappearing in October or November to recur the following year.

Pathology.

It is well at this point to consider of what nature are the attacks of asthma, inasmuch as a study of the attacks might indicate an appropriate treatment. Normal respiration is carried out by the muscles of the thorax and diaphragm, the movements being regulated by the respiratory centre in the medulla. This centre has the most complicated relations, since it receives afferent impulses by means of the vagus, and sends out indirect impulses to the thoracic and phrenic nerves. It is, moreover, connected with and influenced by the sensory nerves of the skin and of the upper respiratory tract. The proper working of the centre depends not only on its integrity, that is, absence of local disease and the presence of a sufficient blood supply, but also on the influences which come to the centres from the nerve terminations in the lungs or from the sensory nerves. The centre is in its normal working to some degree automatic. In disease it is obvious that it may be disordered either by disease—functional or organic, affecting it locally, or by influences which start from the periphery either by the sensory nerves of the upper respiratory tract or from the lungs themselves.

There have been many theories to account for the attacks of asthma. The supposition of an acute inflammatory (erysipelatous or bacterial) inflammation of the bronchial tubes may be dismissed at once. Asthma is non-febrile, and is not an acute infectious disease. Another theory supposes that there is a sudden swelling (non-inflammatory or vasomotor) of the bronchial mucous membrane, of which there is no evidence. The most commonly-received idea is that there is a bronchial spasm in which the unstriped muscular fibres of the smaller and non-cartilaginous bronchial tubes is firmly contracted, causing difficulty of the entrance of air.

The phenomena of the asthmatic attack show undoubtedly that something is happening in the lungs themselves. The absence or diminution of the respiratory murmur shows that air does not enter the lungs, or enters at any rate with great difficulty, although the attempts at respiration are extremely vigorous. Why does not the air enter? There is no obstruction to its entrance in the trachea or larger bronchial tubes which contain cartilage. The sudden onset and frequently sudden cessation of the asthmatic attack shows this as well as the fact that external pressure alone can obstruct the cartilage-containing bronchial tubes. The supposition is that the lumen of the soft-walled tubes on their way to join an alveolus is contracted, and thus the obstruction to the entrance of air is produced. One argument in favour of this occurrence is that the auscultatory phenomena of the asthmatic attack are not always, or indeed constantly, observed over the whole of the lung area. Thus in parts the respiratory murmur is inaudible, in other parts audible, and over the same area it may be at one time audible and at another inaudible. This changing localisation of the area of lung attacked is very important in explaining the immediate cause of the asthmatic paroxysm; this must be a cause which is capable of rapidly coming and going. The presence of the muscular fibre and the capability of the contractility of the soft bronchial tube are facts which are the basis of the explanation. A rapid turgescence of the mucous membrane of the bronchial tube, which could only result from a vascular disturbance, might explain the phenomena; but in this case one would naturally suppose that a profuse expectoration of a mucoid and watery liquid would occur after the paroxysm. This, however, does not occur; the expectoration is mucoid and frequently insignificant in amount, and such as is readily accounted for by the relative stagnation of the blood stream and increased venosity of the blood in the lungs during the paroxysm. The most rational view to take is that there is a spasm of the bronchial tubes during the asthmatic attack, and that this accounts for the symptoms observed. But this bronchial spasm is not the only feature to be discussed, and it is not merely an irritant to the air passages that is essential in asthma. Sufficient account has not been taken of the condition of the respiratory centre and of the central nervous system generally.

Cases such as are called "cat asthma" are rare indeed, but do occur, in which the asthmatic paroxysm is induced by the sight (or smell?) of a cat. In this case there is apparently

no local irritant in the lungs themselves tending to produce the attack, but the bronchial spasm must be produced by a reflex effect through one of the nerves of special sense affecting the respiratory centre directly or indirectly through the cerebral centres. Again in hay asthma the peripheral irritant does not get into the lungs, but affects the naso-pharynx, and so leads to the asthmatic attack—it must be in a reflex manner. Again, in bronchitic asthma there is a local irritant in the lungs, the chronic inflammation of the bronchial mucous membrane, which may act as the exciting cause of the asthmatic attack. But it is not every case of chronic bronchitis that becomes asthmatical, and there must be some other condition besides the local irritant in the lungs which leads to the asthmatic paroxysm. Again, influenza, an infective disease which damages the nervous system, is in some cases followed by asthma; and in this case, although there may be a passing lung affection, which may predispose, there must be something else which leads to the asthmatic attacks. This is the condition of the central nervous system—a condition which cannot be defined categorically, but only expressed vaguely as that which is present in the individual predisposed to asthma. One is accustomed to speak of cases of asthma in which the neurotic element largely predominates. Such cases occur chiefly in women, and are characterised by the ready development of attacks under the influence of emotion, passing worry, of the menstrual period or of the menopause. In such cases the disordered condition of the nervous system is the main feature of the asthma. In other cases, again, the main element in producing the attacks is one of peripheral irritation either of the upper air passages (as in hay asthma) or of the bronchial mucous membrane (as in bronchitic asthma).

CLINICAL VARIETIES.

Cases of asthma as they come under treatment present various aspects. In some the attacks recur with their typical symptoms at longer or shorter intervals, and in between the attacks an examination of the chest reveals no abnormal physical sign; these cases are seen more commonly in children under the age of 10 years. But as the attacks recur and the asthmatic stage is prolonged and becomes more irregular, they are associated with bronchitis, and the patients (children or young adults) tend to develop a bronchitic chest as well as emphysema. The condition of things is reversed in bronchitic asthma, in which the bronchitis and winter cough may have lasted some time before the asthmatic attacks develop. The condition of a patient suffering from chronic asthma associated with bronchitis is an unenviable one, especially in frequent changes of weather. In severe cases there is always more or less lividity with dyspnœa on exertion due to the emphysema as well as to embarrassment of the circulation; the asthmatic attacks conduce to the bronchitis, and *vice versâ*. Even if such a patient is removed to a climate suitable for the bronchitis, the asthmatic attacks may persist, although not in so severe a form.

TREATMENT.

In considering the treatment of asthma it will be convenient to limit the discussion to the primary spasmodic form uncomplicated by bronchitis and to the form associated with bronchitis, whether this be bronchitic asthma, that is, bronchitis preceding the asthma or a case of primary asthma complicated later by chronic bronchitis. In the latter case the treatment is that of bronchitis as well as asthma, in the former it is that of asthma alone.

It is to be remembered that the attacks of asthma may begin suddenly and cease suddenly; and their sudden cessation is due, as a rule, to no medical treatment, but to some sudden excitement, shock, or some change of life, or to a change of locality. This applies chiefly to those cases uncomplicated by bronchitis. The sudden stoppage of the attacks, even for months, does not preclude their recurrence; indeed, they usually recur. Each case of asthma has its peculiarities as regards the manner in which the attacks are influenced by locality, food, and mode of life.

In discussing the treatment it must be borne in mind, as has already been pointed out, that although it is probable that spasm of the bronchial tubes is the immediate cause of the respiratory symptoms, in some cases the attacks are associated with peripheral irritation (inhalation of pollen, disease of the naso-pharynx, etc., indigestion of food), and that in all cases of asthma although to a varying degree there is a functional disturbance of the central nervous system and of the respiratory centre.

Sedatives.—It is necessary to treat the asthmatic attack; the patient demands it, and the condition requires it. In uncomplicated asthma sedatives will cut short the attack, such as the hypodermic injection of morphine (grain $\frac{1}{6}$-$\frac{1}{4}$), the administration of chloral, or the inhalation of chloroform. The effect of the latter is evanescent, and is not to be compared in efficiency to either morphine or chloral. The use of morphine or of chloral is to be limited to the attacks, is not to be continued for too long a period, and must be in the hands of the practitioner and not of the patient.

Inhalation.—The inhalation of the fumes of burning nitre paper or specially prepared powders, or of cigarettes, is the popular remedy for the attacks of asthma. In many cases they give relief, in some marked relief. The powders consist of stramonium and nitre chiefly; the one we use at the hospital contains one part each of anise and nitre, two parts of stramonium leaves, and 5 grains of tobacco to the ounce; one teaspoonful is to be burnt on a plate and the fumes inhaled. The cigarettes used are a manufactured article containing stramonium leaves, nitre, and tobacco; they relieve the attacks sometimes when the powder fails. A pill containing $\frac{1}{6}$-$\frac{1}{4}$ gr. of morphine, with $\frac{1}{80}$ gr. of atropine sulphate, given at bedtime, is sometimes useful. Extract of stramonium ($\frac{1}{4}$ gr.) may be substituted for the atropine. I have not found the ethereal tincture of lobelia very useful; but I have not tried it in the way recommended by Hyde Salter, namely, in repeated small doses before the attack is expected.

Treatment of the General Condition.—The relief of the attacks of asthma is a necessity, inasmuch as repeated attacks not only seriously curtail the business and pleasure of life, but conduce in the pure spasmodic form to the supervention of bronchitis and emphysema. The use, however, of sedatives, such as morphine and chloral, and of inhalations, constitute no treatment of the disease, and must be limited as much as possible, especially in the uncomplicated form of asthma, while efforts are made to benefit the general condition of the patient. Harm is frequently done by the indiscriminate use of inhalations, predisposing as they do by their irritant nature to the supervention of bronchial catarrh. Of remedies which may be continuously administered to patients who have frequently-recurring attacks, two are most constantly used, namely, iodide of potassium and arsenic. The iodide may be most conveniently given with stramonium, as in the mixture in the Hospital Pharmacopœia, which consists of a quarter of a grain of extract of stramonium, 2 gr. of extract of liquorice, 3 gr. of iodide of potassium, and 5 minims of chloric ether. This mixture may be given two or three times daily in cases of asthma, and in many instances with benefit. In some cases, indeed, although not usually, it promptly stops the attacks. It possesses two drawbacks. The stramonium leads in some cases to paralysis of accommodation which is detrimental to the carrying on of the person's occupation. But by diminishing the dose the patient soon ceases to experience discomfort from the remedy, and I have not yet seen an asthmatic who did not prefer the stramonium, with its drawbacks, to the disease. Some asthmatics, especially those of a highly neurotic temperament, are very susceptible to the action of stramonium; I have seen doses of even $\frac{1}{8}$ gr. of the extract produce dryness of the throat and a state of nervous excitability which necessitated the stoppage of the drug. I think if patients can take the stramonium with the iodide they do better than with the iodide alone. If given alone the iodide must be administered in 5-grain doses two or three times daily, from time to time the medicine being stopped. Arsenic by itself in doses of 3 minims of the liquor arsenicalis is a useful remedy for continuous administration in asthma, and it may be combined with iodide of potassium (3 to 5 gr.) in a mixture.

Peripheral Irritation.—The treatment of local conditions which act as peripheral irritants in cases of asthma need not be discussed at length. With regard to the naso-pharynx, the presence of a nasal discharge (watery and mucoid) in cases of asthma other than hay asthma is by no means uncommon, but is not always associated with serious local disease. The in-

sufflation of a solution of bicarbonate and chloride of sodium, if there is much nasal secretion, is frequently of service, and the application of cocaine in such cases to the nasal mucous membrane is described by the patients as helping to relieve the attacks. Application of the cautery in some cases relieves hay asthma. In children with large tonsils or with adenoids, in whom asthma supervenes, the surgical treatment of the local condition, although it may be necessary, does not of itself cure the asthmatic attacks, which may persist for months after the fauces and pharynx have been successfully treated. The removal of a nasal polypus may greatly relieve the attacks, but not a few cases persist after removal.

Diet.—Chronic asthmatics—that is, those in whom the attacks have lasted for some months or years, are frequently the subject of indigestion of food, as shown in the symptoms of weight and discomfort after food, and flatulence. This is sometimes the result of over-drugging. In the cases of peptic asthma, the regular attacks of the disease occur after a meal, usually the heaviest meal in the day, and are associated with indigestion of food. The regulation of the diet of asthmatic patients is of great importance; meals ought to consist only of digestible food, and that in moderate quantity, no heavy late meals being allowed. Remedies such as alkalies after meals given with the view of correcting the indigestion, combined with a proper diet, give great relief to cases of peptic asthma. Although the asthmatic ought to be careful as regards the food taken, it is wrong treatment to starve such a patient; only harm can come of it, inasmuch as the best chance of the patient recovering is an improvement of his general health, and this cannot occur without a sufficiency of food. It is for this reason, doubtless, that cod-liver oil does so much good in some cases when every remedy seems to have failed. The improvement if the oil can be taken is sometimes very marked, rendering possible the diminution, or even cessation, of the inhalations which the patient considered his sheet-anchor.

The confirmed asthmatical adult can only be relieved, and that sometimes very imperfectly, by the methods which have been detailed; and indeed in some cases all treatment appears of as little avail as in confirmed epilepsy. It is quite otherwise with the asthma of children under the age of 10 years, at which time a large number of cases arise. By treating the attacks by a careful regulation of the diet and mode of life of the child, and by the avoidance of any "hot-house" treatment over a number of years, the asthmatic child loses his attacks without serious damage to the respiratory apparatus.

A CONTRIBUTION TO THE CLINICAL STUDY OF THE GASTRIC JUICE.

By J. MICHELL CLARKE, M.A., M.D.Cantab., F.R.C.P.Lond.,
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The two following cases illustrate the importance, both for purposes of diagnosis and treatment, of a clinical examination of the contents of the stomach in cases of disease of that viscus. It is certainly desirable that such an examination should be carried out in all cases of stomach disorder in which the usual forms of treatment do not quickly relieve the patient. Exact quantitative estimation of the constituents of the gastric juice is unfortunately rarely possible in ordinary practice, but sufficient information for all practical purposes of treatment may be gained by some such method of procedure as was adopted in the two following cases, and can be accomplished in half an hour. More exact data to indicate the direction which treatment should take may thus be obtained than by studying simply the patient's subjective symptoms, and sometimes evidence, not otherwise to be gained, pointing to the presence behind ostensible "dyspepsia" of some more formidable disease.

1. On the Composition of the Gastric Contents in a Case of Tabes Dorsalis with Gastric Crises in which Hæmatemesis Occurred.

In the case described below gastric crises formed the striking symptoms of tabes dorsalis, the other signs being unobtrusive, and they were attended with hæmatemesis, in the absence of any symptom of gastric ulcer, and with failure of secretion of HCl during the attacks.

S. W., a clothworker, aged 42, complained of severe attacks of vomiting coming on at frequent intervals. He had had no very bad illness, and denied all history of syphilis, but had gonorrhœa at 18 years of age. He attributed his illness to strain during a "tug-of-war" at Aldershot. The first attack of vomiting occurred seven years ago, the next six months afterwards, and during the next two or three years he had about two attacks in each year. Since then they have become more frequent, and during the past year have occurred at intervals of about three weeks. At first they lasted for about half a day, but latterly they have become more violent, and last two to three days. Whilst the attacks last he vomits about every hour; the vomit is intensely bitter in taste, and yellowish or green in colour; towards the end of an attack he has often brought up a fluid like coffee grounds. He can trace no cause for the paroxysms: the kind of food he takes makes no difference; they generally begin in the morning, and leave him much exhausted for a day or so, with a depressing sensation in the pit of the stomach. During the attacks he has an indescribable sensation of discomfort in the pit of the stomach, but no acute pain. In the intervals he is well, and does not suffer from vomiting, dyspepsia, or pain in the stomach. Ten weeks before admission he vomited nearly 3 pints of dark-red fluid, apparently blood, with some clots. On examination the patient was sallow and anæmic. The tongue was large, red, covered with a very thin white fur, and indented by the teeth. The thoracic and abdominal organs appeared to be healthy. There was no tenderness in the epigastrium, the stomach was not dilated, and no tumour was felt. The knee-jerks were absent; the pupils were very small, the right being larger than the left, they reacted to accommodation, but not to light. The optic discs were pale; the superficial reflexes were normal. There was no affection of sensation to touch, pain, or temperature, except a little blunting of sensation over the feet. There was no ataxy of gait or other movement. He was not giddy in the dark, and the bladder was unaffected. He had a slight girdle-pain, and on inquiry it was elicited that for at least twelve months he had suffered from attacks of typical lightning pains in the arms and legs, which often came on about two days after a gastric crisis. The urine was normal. From March 10th to 16th the stomach contents were examined at varying intervals, after a test-meal of weak tea, toast, and butter.

The tests used for HCl were Gunzberg's, Boas's resorcin tests, and benzo-purpurin papers, with Congo red papers for detection of free acid. I could not estimate the HCl by the more exact and elaborate methods, but an attempt was made to determine roughly the quantity of HCl by using Gunzberg's reagent after first extracting the lactic acid from the gastric contents by agitating with ether, and separating the ether. Gunzberg's reagent gives a reaction with 0.06 per cent. free HCl, and the 10 c.cm. of gastric fluid was progressively diluted with distilled water until no reaction was obtained, and the percentage of HCl calculated from the number of dilutions. This is, of course, only a rough method, but so far as it went indicated in the following examinations that between the crises the quantity of HCl was much above the normal. The total acidity is given, according to Ewald's plan, in terms of the number of c.cm. of decinormal soda solution required for neutralisation. An hour to an hour and a half after the test meal the total acidity of the gastric fluid withdrawn was 64; the amount of HCl on one occasion at least 0.4 per cent., and a small amount of lactic acid was present. Two to three hours after the meal, total acidity 80, with much free HCl, peptones, and no lactic acid. Four to five hours after the meal the stomach was empty, except on one occasion when it contained a little fluid (four hours later) whose acidity was 108.

On March 17th a gastric crisis began, and continued for 48 hours. The vomited matter was fluid at first, of the colour of coffee grounds, with a few streaks of bright blood, and a quantity of mucus. Under the microscope undigested milk and some altered blood corpuscles were found, but no sarcinæ. Later it became yellow in colour. In all about 80 ounces were vomited, with a total acidity 60, a very marked lactic acid reaction, but no free HCl was present by the above tests After this attack the stomach contents were examined on

occasions after test meals. The total acidity varied from 54 to 70 one or two hours after the meal, the amount of HCl present was very large, about 0.4 per cent., with a small quantity of lactic acid. The fluid contained abundance of peptones (albumoses), and digested white of egg rapidly. Three and a half hours after a meal the stomach was empty.

On March 31st another attack of vomiting occurred, and lasted for 30 hours; the patient brought up 80 ounces of fluid of the same characters as before, intensely acid, the acidity apparently due chiefly to the large quantity of lactic acid present; free HCl was completely absent. The attack was to some extent relieved by hypodermic injections of morphine. A feature of these crises was that the patient felt better immediately that they were over and felt inclined to take solid food at once, and was able to keep down a good meal.

On April 13th a third, but milder, attack occurred, and shortly afterwards he left the hospital. The gastric contents were again examined four times in the interval between the two last attacks, and showed a total acidity of 60 to 80, presence of a large amount of free HCl, roughly about 0.4 per cent., with a small quantity of lactic acid, and active proteolytic properties.

The interesting points of the case are:

1. The presence, apparently as a constant feature, in the intervals between the gastric crises, of a large amount (excess) of HCl during the process of digestion, and stomach digestion appeared to be rapidly completed. There was no evidence of secretion of HCl in the intervals between meals when the stomach was at rest.

2. The absence of free HCl from the stomach altogether during the whole duration of the gastric crises, and the presence of abundant lactic acid during these. In other cases Rosenthal and Hoffmann have found a marked excess of HCl during the crises, and other observers have found lactic acid present. In the intervals the HCl did not increase progressively until the onset of the crisis, so that they could not be attributed to excessive irritability of the stomach from this cause.

3. The presence of blood in the vomit. In the attacks observed in the hospital the vomit was at first "coffee ground" and the amount small. It can hardly have been due to the violence of the vomiting, for the blood was generally contained in the first vomited matters, and disappeared when the vomiting had lasted some time. The "coffee-ground" appearance is evidence that it must have stayed in the stomach some little time, at any rate sufficiently long to be acted upon by the gastric juice. In addition the patient had had (according to the account he gave, which there was no reason to doubt) a severe attack of hæmatemesis before admission into the hospital. There were none of the usual signs and symptoms of gastric or duodenal ulcer. One knows, of course, that a gastric or duodenal ulcer may present no signs, and be entirely latent until a profuse hæmorrhage or perforation occurs, and it is possible that the patient may have been the subject of a latent ulcer. It would be expected, however, that some symptoms should have been present after the large hæmorrhage occurred if there had been an ulcer.

A case of gastric crises with hæmatemesis is given by Charcot,[1] and he insists there on the possibility of this occurrence without any other lesion of the stomach complicating tabes.

In respect to the uncontrollable character of the vomiting, its long duration, sudden onset and abrupt termination, with the intense feeling of depression at the pit of the stomach, the attacks conformed to the usual characters of gastric crises.

The only other point to be noticed is that the patient was in the pre-ataxic stage of the disease, and that the other signs, though quite sufficient to make a positive diagnosis, were sufficiently few. The case well illustrates the importance of always bearing in view the possibility of tabes dorsalis in obscure stomach affections, and of searching for the signs of the disease.

2. A CASE OF NEURASTHENIA WITH ANACIDITY OF THE GASTRIC JUICE.

The following case is an example of the fact that occasionally free HCl is absent from the gastric juice in cases of neurasthenia in which dyspepsia forms a prominent feature, and of the aggravation of the dyspeptic symptoms which at once takes place if the gastric motility is impaired, so that the stomach can no longer discharge its contents into the duodenum at the normal rate. Whilst the stomach can normally empty itself the dyspeptic trouble is comparatively slight in spite of the absence of HCl.

The patient was a thin rather weakly lad, aged 19, who complained of a weak heart and flatulence. He came of a healthy family, and had always been well until the present illness, which he attributed to gradual deterioration of health from his work as a boxmaker, which involved his carrying a considerable weight up two flights of stairs many times a day. He had smoked very little. He had been in good health until July 2nd, 1897, when whilst at work he had an attack of syncope. He returned to work in a few days, but had another attack; after a fortnight's rest a second attempt to resume work brought on a third faint, and since then he had been laid up with shortness of breath, palpitation on exertion, and with excessive flatulence after food.

He was admitted to the hospital on September 4th, 1897, and was then rather anæmic and not well nourished. The pulse was 96, irregular, not compressible, running up to 120 on any exertion or excitement. Respirations 28, temperature normal. The tongue flabby, tremulous, covered with a thin white fur. The breath was offensive, and he was constantly eructating a quantity of wind. The muscles were poorly developed, unduly irritable on percussion, but there was no myoidema.

On examination the lungs were healthy, except for some irregularity of respiration, and an occasional rhonchus. The heart's apex was in the fifth space in the nipple line, the area of dulness normal; a faint systolic murmur accompanying the first sound was audible at the base only, and the second sound was accentuated in the pulmonary area. The stomach was not dilated; the other abdominal organs appeared healthy. The urine was acid, 1022, contained no albumen or sugar, and deposited phosphates on boiling. The appetite was good, the bowels constipated.

Examination of the gastric contents an hour and a half after a test meal gave total acidity 30, chiefly due to acid salts, a complete absence of HCl, small amount of lactic acid, and a marked rosy-red colour with Fehling's solution. Examination four to five hours after a meal showed that the stomach was empty.

During the following fortnight he had no vomiting, but suffered a good deal from flatulent distension of the stomach; the pulse varied from 98 to 120. He gradually improved, and on September 28th was discharged better. His diet was carefully regulated, and he took a mixture containing acid. hydrochlor. dil., strychnine, and pepsine, during his stay in the hospital. On his discharge his pulse had fallen to 80, was regular, improved in strength and tension. The dilatation of the stomach had disappeared. His appetite was good and there was no vomiting.

On October 19th (three weeks later) the patient returned, saying that he had not been able to do any work and that walking quickly or uphill brought on distressing attacks of palpitation. He had had six attacks of faintness, which came on suddenly, made him feel for a few minutes as if all use had gone out of his limbs and were accompanied with noises in the ears. He never fell down or lost consciousness in these attacks. He had a great deal of flatulence after meals, a burning pain behind the sternum and in the left hypochondrium, but no vomiting, and the bowels were regular. On examination there was pulsation in the third, fourth, and fifth left intercostal spaces, and in the second during expiration only; the second sound in the pulmonary area was rough and reduplicated, otherwise the heart sounds were normal and the area of cardiac dulness was not enlarged. The pulse was 96, running up to 110 on any excitement or exertion. The stomach was somewhat dilated, otherwise the abdominal organs were normal. He was constantly bringing up an extraordinary quantity of wind.

He was put on a carefully regulated rather dry diet of easily digestible food and the stomach washed out daily before breakfast. He took after meals three times a day a mixture containing acid. hydrochlor. dil. ℥xv-xx, liq. strych. ℥iij, strontii bromidi gr. x. Examinations of the gastric contents on three occasions, one hour, two hours, and three hours after

a test meal gave respectively total acidity 16, 23, and 16. No free HCl, to any test; a small quantity of lactic acid and some butyric acid, sugar and peptones were both present, the latter in greatest amount two hours after the meals. Examined four to five hours after a meal the stomach was found to be empty or to contain a very small amount of fluid. As the stomach was washed out each morning there was no chance of any residuum from the food of the previous day being present, and indeed after washing out a few times the gastric dilatation present on admission ceased.

On November 3rd the gastric symptoms had much improved, but as the pulse still continued to be weak, rapid-92 to 116 to the minute—and irregular, the Schott treatment by graduated exercises and baths, at first simple brine baths then carbonic acid baths, was regularly carried out.

On November 16th the washing out of the stomach was stopped. Under the above treatment he had improved steadily, the pulse had become stronger and more regular, and the rate 84 to 92 beats to the minute. On two occasions he felt faint in the bath, and the pulse was then found to rise to 104. He had improved so much in all respects that on November 30th the baths and exercises were stopped, and he was sent to a convalescent home on December 3rd. The gastric contents were examined on many occasions during November at intervals of one to three hours after a test meal; the total acidity varied from 7 to 16. Free hydrochloric acid was always found absent. The acidity was due chiefly to free acid, lactic acid being found on each occasion; on one there was an odour of butyric acid. Peptones and sugar were always found.

He attended as an out-patient on his return from the convalescent home, and appeared to be much stronger and better. He had no shortness of breath, and the pulse was more regular, but still rapid, varying from 84 to 96 per minute. The indigestion and flatulence now troubled him very little.

The stomach emptied on February 4th, one hour and a-half after a test meal gave total acidity 37; lactic and butyric acids, peptones and sugar present, but no free HCl.

On February 11th, four hours after a meal, only a few teaspoonfuls were obtained, and this contained a little free HCl for the first time, and peptones.

On February 18th, one hour and a-half after, total acidity was 35, lactic acid was present, and again a small quantity of free HCl.

Portions of the gastric juice were on two occasions kept at the body temperature with small cubes of boiled white of egg, and were found to exercise in two and a-half hours a digestive action upon it with formation of peptones, though somewhat feebly. In the above account the peptones should probably be called albumoses; no attempt was made to differentiate between them. The total acidity is expressed as recommended by Ewald in terms of the number of c.cm. of decinormal soda solution required to neutralise 100 c.cm. gastric juice.

The patient expressed himself as feeling quite recovered on February 18th, 1898, and returned to work.

The pronounced symptoms of gastric disorder in this case, and the accompanying dilatation of the stomach, were obviously part of a general neurasthenic condition in which the heart also shared. In this "nervous dyspepsia" an interesting feature was the absence of free hydrochloric acid from the gastric juice for so long a period. Ewald in his work mentions other instances of severe neurasthenia in which there was "nervous anacidity of the gastric juice," and says that he has repeatedly observed it in hysteria.[2] It seems that in such conditions the HCl is more often diminished than altogether absent. In this particular case the age of the patient and the other symptoms present put the diagnosis of cancer of the stomach, which is the most frequent condition in which free HCl is absent, out of the question. Moreover, the washings of the stomach did not show that amount of mucus which is found in the so-called "mucous" variety of chronic gastric catarrh in which HCl is generally much deficient in quantity. In spite of the absence of free HCl, a certain amount of peptones or albumoses was formed, indicating that the secretion of pepsin proceeded.

The gastric symptoms were relieved after a course of washing out the stomach had got rid of the dilatation, and the gastric walls had recovered their normal motility; the great flatulence was also soon relieved by this measure, and was in part due no doubt to the excessive fermentation allowed by the absence of free HCl combined with stagnation of the gastric contents. Recovery of the motor power of the stomach walls was thus followed by improvement in the dyspeptic symptoms, although HCl was still absent. It is further interesting to note that on recovery secretion of HCl into the stomach returned, though in small amount.

The sudden fainting attacks may be attributed to the heart muscle sharing in the general weakness, and to the disturbance of the action of that organ by the excessive flatulent distension of a dilated stomach.

REFERENCES.

[1] *Leçons du Mardi*, 1888-89, p. 343. [2] *Diseases of the Stomach*, New Sydenham Society's translation, p. 617.

A DEMONSTRATION OF INTRAGASTRIC INSTRUMENTS.*

I.—Professor Fenton B. Turck, M.D.,
Chicago, U.S.A.

Professor Fenton B. Turck (Chicago) demonstrated certain intragastric instruments and gastric methods devised by himself. The mode of introduction and the actual use of the different forms of apparatus were shown clinically upon patients accustomed to and skilled in the passage of the stomach tube.

1. The Gyromele.

The gyromele consisted of a flexible cable, to the end of which was attached a sponge covering a spiral spring, which could be removed from the cable at will and changed. The cable passed through a rubber tube, and this again was attached to a revolving apparatus, not unlike a dentist's drill, for the purpose of producing revolutions of the sponge.

When it was wished to explore the stomach cavity a sponge was fitted over the lower end of the cable. On introduction of the sponge-capped end into the stomach it glided along the larger curvature, and was then made to revolve. The exact location of the sponge in the greater curvature was palpable through the abdominal wall. In some cases it even was possible to pass it through the pylorus into the duodenum. The distensibility and extent of dilatation of the stomach could also be determined by means of cables of various degrees of flexibility used with the gyromele. The stiffer cables when introduced into the stomach and allowed to glide along the greater curvature distended the stomach wall, while the more flexible cables failed to stretch it. The difference between the two indicated the degree of distensibility and dilatation. The revolutions of the sponge within the stomach could be readily palpated through the abdominal walls. The exact location, position, size, and shape of the stomach was easily determined by its use, and the area outlined with pencil on the body; in the cadaver subsequent examination had shown such results to be accurate. With the gyromele, also, the material adhering to the sponge could be tested chemically and bacteriologically. To obtain an uncontaminated sample of the gastric contents or of the mucus, together with the material entangled in it, adhering to the stomach walls, a silk web tube encased the metal cable and sponge, and was itself encased in a wider soft rubber tube, supplied with a protective cap of rubber over the terminal opening. This cap was kept applied to the end of the tube by means of an attached piece of string passing along the lumen of the tube. When the end of the tube had reached the stomach cavity all parts of the apparatus were rendered strictly aseptic beforehand—the cable was pushed down, the string relaxed, the cap separated from the tube, and the sponge, therefore, accessible to the stomach contents.

The therapeutic effect produced by the gyromele was largely mechanical in origin. It removed the mucus, etc., from the stomach walls, especially if green soap solution (1 oz. in 2 pints of water) was used to soften it; rendered

* In the Section of Pharmacology and Therapeutics at the Annual Meeting of the British Medical Association, held in Edinburgh, July, 1898.

possible the local application of drugs or electricity; while it strengthened the atonic muscles and reduced any circulatory congestion by reason of locally-applied vibration and massage.

Gyromeles could be introduced into the œsophagus, large intestine, bladder, or other cavity. Small instruments were made for the posterior nares. For the purpose of exploring strictures of the œsophagus ivory bulbs could be attached; and strictures could be located anywhere from the œsophagus to the cardia. The flexible cable, encased in a rubber tube, proved less dangerous than the stiff, short whalebone as formerly used for exploring purposes, but which was quite inadequate, and always involved the danger of puncture. When the ivory bulb had passed a stricture and entered the stomach cavity revolutions were produced which, felt through the abdominal wall, proved that the bulb had passed into the stomach, not into a diverticulum at the side of the stricture.

2. GASTRIC MOTOR METER.

A small oblong rubber bag attached to one end of a small tube was passed into the stomach cavity, inflated with air, and the other end of the tube connected with a manometer. The records of the manometer showed the longer respiratory waves and the shorter aortic and peristaltic movements. The mercury rose 30 mm. during ordinary respiration, 200 mm. or more during forced respiration. In health the change occasioned by gastric peristaltic movements was from 10 to 15 mm., in cases of dilated stomach only from 2 to 5 mm. These results pointed to the marked influence which the acts of inspiration and expiration exerted upon the mechanical mixing of the stomach contents.

3. STOMACH-TUBE FILTER.

By means of this instrument—an ordinary stomach tube in which the usual terminal apertures had been replaced by a bulbous point penetrated by minute holes—the fluid portion of the stomach contents could be drawn off by aspiration, free from the solid contents, and from risk of injuring the mucous membrane. By this means the fluid toxin-containing moiety was removed, the solid, innocuous, and nourishing solids left behind. Its use helped to mitigate the patient's starvation which necessarily followed the total removal of gastric contents after each meal.

4. INTRAGASTRIC "RESUSCITATOR."

This afforded a means of supplying heat locally to the stomach walls, and more widely to the whole organism. One side of a stomach tube, divided into two compartments, was connected with a hot-water supply apparatus, the other side with a graduated bottle, and the double tube ended by passing into a thin india-rubber bag, which fitted closely to it when empty, to the stomach walls when full.



Fig. 1.—The intragastric "resuscitator."

Fig. 1.) The temperature of the water was maintained at from 20° to 130° F. by an automatic arrangement. Water passed through the bag in a room was not so promptly reduced in temperature as when passed in and out of the bag within the stomach. Even when placed in cold water its temperature did not fall so rapidly as when within the stomach or colon; but after a certain time elapsed (about ten minutes) the viscus reduced the temperature less quickly. W. Gilman Thompson made some interesting experiments on dogs by the introduction of hot air into the trachea and various other parts of the body, and observed a great reduction in the temperature of the air during its passage. The temperature-regulating mechanism was very active internally as well as externally, a fact to be recognised in direct internal methods of treatment, such as the use of a constant flow of water at high temperature through a rubber bag in direct contact with the viscera. The direct action of this high temperature upon the vessels within the viscera led to prompt results from marked vasomotor stimulation.

During irrigation of the stomach with hot water by this method, the surface of the body began to glow and the hands and feet became warm: results of the reduction of visceral congestion. Not only was it of use in intestinal diseases, but also in cases of shock marked by internal congestion. This method might be employed during operation where shock was imminent.

5. NEEDLE DOUCHE AND DOUBLE FORCE IRRIGATOR.

The usual method of performing lavage was attended by two disadvantages. The stomach was filled with water and weighed down by the weight of fluid introduced, while only the loose, non-adherent material was removed. The needle-douche consisted of a double tube (Fig. 2), one of the component tubes, smaller and shorter than the other, and ending in a perforated ball; the other, wider and longer, projected so far beyond the first as to reach the fundus of the stomach when blown up with air, while the bulbous end of the first just reached through the cardiac orifice. After inflation of the stomach with air passed through the smaller tube, a strong force of water was propelled down it, causing the formation of a shower of fine jets of water striking the walls of the viscus with considerable force. The water was at once returned through the longer and wider tube, and sucked up by means of an aspiration apparatus.

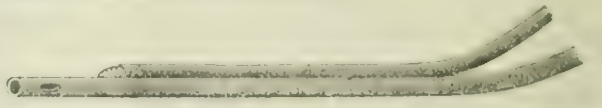


Fig. 2.—The needle douche.

The advantages of the needle douche were summed up as follows:

1. It removed material from the walls.
2. Water returned at once, avoiding over-distension and weighing down of stomach with water.
3. It acted as a vasomotor stimulant. By using hot and cold water from 115° to 45° F. alternately, it was a powerful muscular stimulant, and also quickened sluggish circulation.

For general purposes it was not necessary to use a force pump to compress the air, but simply a small rubber bulb similar to that used with an atomiser. When hot and cold water were used alternately two irrigators were necessary. The irrigators were made in the usual way. A bottle, through the cork of which a glass tube passed, was connected with a rubber bulb. By compression of the rubber bulb the air pressure over the water in the bottle was increased, forcing the water out of the bottle into the irrigating tube. Thus a forced shower was produced under pressure by means of a single bulb. By using a glass Y-tube, connected with a single bulb attached to the stem of the Y, the ends of the glass tube being attached to the rubber tubes, which again led to each bottle—namely, the hot and cold water, the air could be compressed in both bottles. The outflow tubes from the irrigators were connected with another glass Y-tube, the stem of the Y-tube being connected with a single rubber tube. Hot and cold water could be used alternately by having a simple cut-off snap on the tube leading from each bottle.

6. NEBULISER.

This instrument was practically a variant of the needle douche. The double tube was the same, but, instead of water,

a nebulising solution was converted into a fine cloud by the use of a nebulising bottle. From this bottle the suspended particles traversed a second bottle provided to arrest any stomach contents ejected, and along with air were forced into the stomach, the air and particles not arrested there escaping by the second tube. Oleum caryophylli, oleum cinnamoni, in equal parts, along with 15 per cent. of menthol, acted as a powerful analgesic when applied in this way: as an antiseptic and as a vasomotor stimulant camphor, or creolin, lysol, formalin, and other bodies could be used.

7. Intragastric Capsule.

Each capsule contained in a gelatine globule a small piece of rubber tubing, through slits in which strips of Congo red, dimethyl-amido-azo-benzol, and amphoteric litmus papers were inserted; one or two small lead shot were attached to the lower end of a silk thread, by which the capsule containing the rubber tubing was lowered into the stomach. The shot were added to facilitate the passage of the capsule downwards through the gullet, and to the dependent portion of the stomach in which the contents were lying. A piece of bread given with the capsule often assisted in its deglutition. Five minutes were allowed after its entrance into the gastric cavity, by which time the gelatine had melted, the rubber tube expanded, and the test papers come in contact with the contents. The advantages claimed were as follows:

1. No tube had to be swallowed.
2. The use of the capsule was perfectly free from risk in cases of ulcer.
3. It could be used frequently without prejudice to the patient, his disease, or his organs.
4. It excited no flow of gastric juice.
5. After patients had become accustomed to swallowing these capsules the later use of the stomach tube, if necessary, was rendered easier.
6. A microscopical examination could be made from the drop of contents always removed from the stomach in the lumen of the tube.

8. Rubber Bib with Pouch.

A very useful addition to the ordinary equipment for the practice of lavage was a rubber bib which fitted closely to the chin just below the lower lip, and prevented any escape of fluid down the neck or on to the clothes. The fluid caught by it flowed into a pouch, so contrived as to prevent any spilling, and was then conveyed by a tube into a proper receptacle. It could also be used in the local treatment of nasal disease, the opening of abscesses, etc.

9. Intragastric Nippers.

Small pieces of the gastric mucous membrane could be ...pped off by means of this instrument, in which small nippers or pinchers could be protruded through the end of a stomach tube and closed upon a fragment of tissue. Microscopic examination of the portion obtained gave evidence of the condition of the glandular elements in the stomach wall.

II.—Professor Dr. Ewald,
Berlin.

Professor Ewald exhibited and explained a new form of gastroscope devised by Dr. Kuttner, his assistant. The instrument was composed of a series of segments forming an easily movable tube which retained the curve given it if untouched. When bent to correspond with the œsophageal canal, it was passed into the stomach. It could then be straightened by turning a screw at its outer end. The other end of the tube contained an electric lamp and a prism, by means of which a picture of the stomach wall was reflected through a system of lenses at the outer end of the instrument, much magnified by its passage through them, and rendered visible in a manner identical to that of a telescope. Professor Ewald also showed a gastro-diaphanoscope.

III.—G. Herschell, M.D.,
London.

Dr. Herschell demonstrated the use of apparatus for producing mechanical vibrations with which he had successfully treated cases of atony of the stomach and constipation. The vibrator consisted of an oscillating rod in a handle to which a reciprocatory motion was communicated by means of a revolving cable, this in its turn being rotated by an electromotor. The vibrating rod terminated in a disc or other suitable appliance for application to the body of the patient. Dr. Herschell pointed that, although vibration had been applied to the human body for neuralgia and other neuroses, he was the first to suggest its employment to procure contraction of an atonic stomach and to cure constipation. The effect of vibration applied to the epigastric region was in most cases to dilate the pupil, to increase the tension of the radial pulse, and to contract up an atonic stomach. In many cases it was possible at once to empty a distended and dilated stomach by this means, and to procure passage of the contents into the duodenum. He showed diagrams of cases in which a course of treatment had produced a marked diminution in the size of the stomach, had materially shortened the time taken before the appearance of the salol reaction, and had practically cured the gastric atony. In constipation, the result of atony of the intestines and weakness of the abdominal walls, it had produced good results after the failure of massage, electricity, and purgatives. He also stated that the apparatus could be procured of Mr. Geere Howard, of 10, Berners Street, London.

IV.—A. Symons Eccles, M.B.,
London.

Mr. Symons Eccles exhibited a model of a clinical couch, constructed with a view to examination of the stomach and other viscera in any position that might be desired, relaxation of the abdominal walls being ensured by the support afforded in the erect, or almost erect, posture, as also in any other, including the tilted position. When the handles of the lever were downwards the couch was fixed in the position required. On raising them the lever was freed, the screw loosened, and the plane of the couch could be altered to any angle desired.

V.—Dr. Einhorn's Instruments.

Dr. Lockhart Gillespie (Edinburgh) demonstrated the use of several instruments forwarded by Dr. Einhorn, of New York, who was unfortunately unable to attend personally.

1. The Gastro-diaphanoscope (or Diaphane).

He showed a gastro-diaphanoscope for the transillumination of the stomach cavity through the abdominal parietes (Fig. 1).

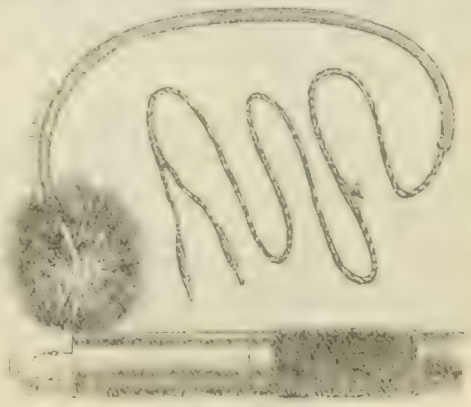


Fig. 1.—The Gastrodiaphanoscope.

The instrument consisted of a rubber stomach tube of the usual kind, ending, however, in a strong glass convex end, securely fastened to the rubber by a small metal mounting. The glass bulb was hollow, and of slightly less diameter than the rest of the tube. Through the closed upper end of this glass bulb two electric wires were fused, forming within it a small incandescent light, and communicating without with a double isolated electric cable, which traversed the rubber tube and separated into its two components on reaching the free extremity. These two wires were of considerable length, and served to complete an electric current when their terminal pegs were connected with the poles of a battery. When a patient was examined he was placed in a darkened room, the

anterior aspect of the abdomen uncovered, his stomach moderately filled with water, the tube passed down, and the lamp lit. In most individuals a distinct area of illumination became visible. If the parietes were laden with fat the light either could not be transmitted through them, or only dimly. The normal stomach afforded a small rounded area of illumination, a small round portion in the centre showing more brightly where the stomach wall approached the external surface most closely. The area was situated in the middle line a little above the umbilicus.

In dilatation of the stomach the illumined area was larger, more wedge-shaped, the apex of the wedge downwards, and over a lower part of the abdomen, the centre perhaps as low as the umbilicus. In gastroptosis the whole area was shifted down to just above the pubes.

2. The Deglutable Stomach Electrode (Fig. 2).

Einhorn's deglutable electrode was then shown. A very fine (1 mm.) rubber tube enclosing a thin soft wire was at one end connected with the negative pole of a battery, at the other with a metallic button lying within a hard rubber capsule with a number of perforations in its wall. The patient drank a tumblerful of water, placed the capsule on the tongue far back, and with the aid of some more water swallowed it.

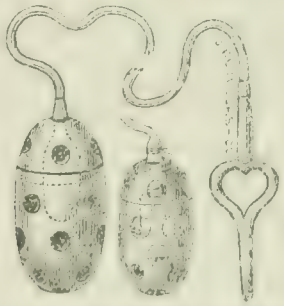


Fig 2.—The deglutable stomach electrode.

A mark on the tubing served to show when the capsule had gone down far enough. The electrode connected with the positive pole (its form was a matter for individual selection) was then placed on the skin where desired. The circuit, of course, was completed by the water in the stomach, which, passing through the perforations in the covering of the capsule, came in contact with the metal button, while at the same time all direct conjunction of the mucous membrane and the metal was avoided.

3. The Stomach Bucket (Fig. 3).

To enable the physician to withdraw a small but sufficient amount of material from the stomach for testing purposes in cases where the stomach tube could not be tolerated, Dr. Einhorn had invented a small metal bucket, which could be swallowed with the same facility as an ordinary gelatine capsule, and which could be recovered again *plus* some contents by means of a silk cord attached to it. The bucket itself was of capsule shape, made of silver (1.75 cm. by 0.75 cm.); the upper end was partly open, with a bar of metal spanning the opening, to which the silk cord was tied. The

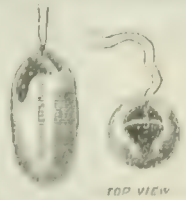


Fig. 3.—The stomach bucket.

method of swallowing the bucket was the same as for the electrode, except that no water was to be used. When the bucket had been in the stomach for a minute or two, it was withdrawn by traction on the silk cord. Should resistance to its passage upwards be afforded by the cardiac opening, the patient was directed to perform the movements of deglutition. If there were considerable quantities of mucus poured out by the mucous membranes of the fauces and gullet, the aperture of the bucket might be covered with a film of gelatine, which, as a rule, did not dissolve until immersion in the gastric fluids.

4. The Gastric Spray.

Another instrument shown on behalf of Dr. Einhorn was the gastric spray. The spray consisted of a soft rubber stomach tube terminating in a nozzle with a fine opening, and connected at the upper end with a tube which passed through the cork of a bottle fitted up in the ordinary manner for producing a spray by means of elastic force bulbs.

A small case containing a stomach bucket, and an outfit sufficient for the clinical investigation of the fluid withdrawn by it, was also shown.

ON MENSTRUATION AND OVULATION IN MONKEYS AND IN THE HUMAN FEMALE.

By WALTER HEAPE, M.A.,
Trinity College, Cambridge.

Menstruation in monkeys was described by Rengger as occurring at irregular periods in cebus, by Saint Hilaire and Cuvier as a regular monthly discharge in cercopithecus, cynocephalus, and macacus, and by Sutton as fairly regular in macacus. The late Mr. Bartlett, superintendent of the Zoological Gardens in London, and Mr. Sanyal, superintendent of the Zoological Gardens in Calcutta, both assure me that monkeys menstruate regularly in their establishments, and I myself have observed regular menstruation in semnopithecus entellus, macacus cynomolgus, and cynocephalus porcarius, during the short time specimens of these animals were under my notice in Calcutta. Semnopithecus entellus, living in the jungles on the south bank of the Hooghly, has a definite breeding season, and it is to be noted that the specimens under my notice for three months menstruated regularly, although it was not their breeding season. Dr. Aitchison assures me that M. rhesus, living in the hills at Simla, also has a definite breeding season, and I have very strong evidence that the same species living around Muttra in the plains has a definite breeding time, although it is a different time from that given me by Dr. Aitchison for M. rhesus at Simla.

Although absolutely regular menstruation throughout the year is not definitely proved for all species of monkeys, still it is quite certain some of them menstruate during the non-breeding period, and this is a fact to be noted, for it would appear to be a connecting link between the lower mammals who come on "heat" only at breeding times, and the human female who is, generally speaking, capable of breeding at all times. This relationship is brought still closer by the facts that some women, of peoples who live very far north, do not regularly menstruate during the winter months, and that a special breeding season among human beings is not only suggested by the customs of widely-separated peoples but is actually observed by some of them.

The histological phenomena of menstruation, exhibited by S. entellus and M. rhesus, is divided into four periods. Periods of rest, of growth, of degeneration, and of recuperation. The period of growth shows two well-marked stages, the growth of stroma and the increase of vessels, while the period of degeneration has four well-marked stages, the breaking down of vessels, the formation of lacunæ, their rupture, and the formation of the menstrual clot.[1]

Two processes of peculiar interest are noticeable in this menstrual history—the behaviour of leucocytes and the remarkable adaptability of the uterine mucosa tissue. The leucocytes are early attracted to the peripheral vessels, presumably by the degenerative changes which are going on in the tissue there; they arrive in great numbers, but the waste products are otherwise disposed of, by the denudation of the superficial mucosa, before the great majority of leucocytes have time even to attack the offending degenerate tissue. Many of them are contained in the discarded tissue, but few migrate from the vessels, and large numbers are to be seen adhering to the ruptured walls of the vessels; later they are again seen within the newly-formed vessels retiring from the field. This is what happens during healthy menstruation, but in cases of suppressed menstruation they are probably

actively engaged, and in many diseases of the menstrual organ play a very important part.

As regards the adaptability of the mucosa tissue, it is chiefly of interest as evidence of the archaic nature of that tissue. The devastation witnessed within the uterus when the mucosa is denuded is astonishing, and yet a few days afterwards it is again possessed of glands, blood vessels, and superficial epithelium. This happens every month, and it is a remarkable feat of which no other organ in the mammalian body is capable. Moreover, it is noticeable that by far the larger number of capillary blood vessels, together with some of the epithelium, is formed from the indifferent elements of the mucosa—a remnant, it seems, of that power of reproducing lost parts which some of the lower animals possess.

A review of the various modern views of menstruation in the human female leads to the opinion that it will be found that while the histological phenomena accompanying menstruation in the latter may differ somewhat in detail from those in monkeys, they are practically identical processes; further, menstruation and "heat" are very much more similar than has hitherto been recognised.

With regard to the relation of ovulation to menstruation, if it is granted that menstruation in monkeys is the same process as menstruation in woman, then it can definitely be stated that ovulation does not occur during each menstrual period, and that it does not necessarily occur during any menstrual period. In S. entellus and M. rhesus[2] I have shown that menstruation frequently occurs without ovulation—probably this is the case during the whole of the non-breeding season; while Leopold and Miranoff have shown that ovulation may occur independently of menstruation in the breeding human female.

The want of power to ovulate is no doubt one of the causes of sterility, and the importance of all considerations dealing with the process of ovulation is obvious to those who have to combat sterility. It is a fuller knowledge of the cause of ovulation which is required, and it is hoped it will be forthcoming and be found of assistance to those who desire to induce ovulation.

NOTES.

[1] The various stages may be followed with the help of the drawings in Mr. Heape's paper on "The Menstruation of Semnopithecus Entellus" (*Phil Trans.*, vol. clxxxv, 1894.) [2] The Menstruation and Ovulation of Macacus Rhesus. *Phil Trans.*, vol. clxxxviii, 1897.

AXIS TRACTION WITH ORDINARY FORCEPS.

By JOHN F. LE PAGE, M.D.

THE method of delivery with traction in the axis recommended by Dr. T. Archibald Dukes in the BRITISH MEDICAL JOURNAL of November 5th as the "most powerful method" is open to criticism. I premise that axis traction has for one object the avoidance of "powerful" methods. *Arte, non vi* should be the watchword of every obstetrician. I take exception to his directions: "Keep both arms the whole time rigid and extended," "and pull with your back." "Fancy pulling an oar or anything else without using the back!" "One's whole strength can, when necessary, be exerted in urging the child's head in any desired direction," and the nurse is to "keep the patient on the bed." The last quotation has my unqualified approval, for it is an instruction which would commend itself as one of imperative necessity. It is, indeed, marvellous that with all this "powerful" traction, "no compression need be used unless the forceps are beginning to slip." As a matter of fact, this is certainly not so, but considerable compression would be necessary to prevent slipping whilst such Herculean efforts were in progress. It is erroneous to write, "let the handles assume their natural position close to the symphysis pubis," for, with the head above the brim, when the blades are in position the forceps are against the perineum, and not the os pubis.

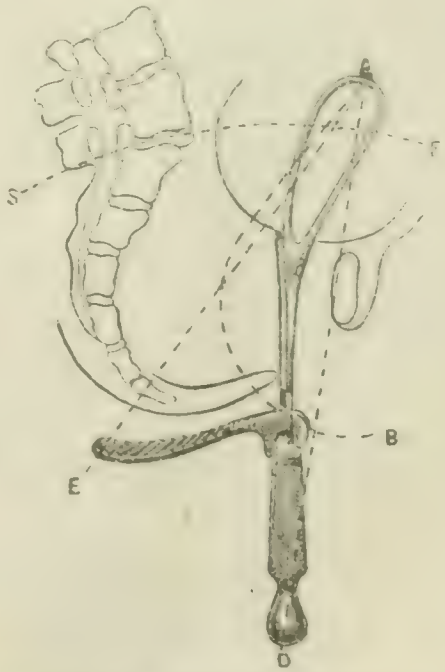
Dr. Dukes expresses the opinion that "any intelligent man would use the instruments in the above way unless he were told to act otherwise." The intelligent man who did follow this method would, I am afraid, deserve censure.

I submit that, in view of the fact that our profession embraces thousands of young men who have not yet had much midwifery experience, and so have not had the material from which to evolve just and sound individual opinions, but who still do as they have been taught because they were so taught, the foregoing advice is dangerous in the extreme, and, as contrary to the principles of the art, should be earnestly denounced.

Tactile dexterity in the conduct of instr[illegible]bour, and not powerful traction, is an inevitable ou[illegible]vance in the science of midwifery during the past [illegible]ury; an advance which leaves no excuse for conduct[illegible] in an heroic manner, but which demands, as a p[illegible]n, the observance of scientific principles.

To denounce axis traction would be to repudiate a law in mechanics which is absolutely inviolable and unalterable; that is, that the direction of applied force, whether it be a *vis a tergo*, or a *vis a fronte* is always a straight line, whatever the shape of the instrument through which it is conveyed. The line of traction is not along the curve of the blades, but in an imaginary line from near their points to near the extremity of the handle. Hence the introduction of axis-traction forceps, which, by a second movable handle, allow of traction in a more backward direction. The arrangement advised by Dr. Dukes is not an axis-tractor, but a means by which the forceps are simply converted into a lever of the third class, the head being the weight, the end of the handle the fulcrum, and the lock the power. His directions are to "push with the right hand and pull with the left;" that is to push the handle upwards and forwards, and pull the lock backwards. This is leverage, and is not admissible except for special purposes, such as lifting the head off the brim.

I entirely agree that axis-traction forceps do in many cases, especially in primiparæ, cause considerable pressure on the perineum. It is frequently quite impossible with them to use traction in the axis of the brim; and it was to obviate this pressure, and to allow of traction at any angle, and to supply a very ready and effective means of converting any ordinary long forceps in a moment, when *in situ*, into an axis-traction forceps, which overcome all the disadvantages of Tarnier's, Galabin's, and others, that my "axis tractor" was made some four years ago.[1]



The figure shows approximately the relations of the long forceps, head, and pelvis. The line A B indicates the true axis, and A D the direction of power used with forceps; A E is the line of traction with the axis tractor, and it is obvious that by using the handle of the forceps as a guide, the whole of the force expended may be directed in the true axis A B; whereas traction with forceps alone is along the line A D, and is necessarily expended to a very considerable degree on the anterior

brim, the effective force being far less than half the amount which is used. In the axis A B there is no loss of power, and risk of any injury to the structures over the pubic bones is reduced to a minimum. Although in its ordinary use this attachment is a tractor, it is possible with ease to lift a head over the pubic brim in pendulous abdomen (F S) and adjust it to the brim, or to the diameters of a deformed pelvis. In brief, by combined use of handle and tractor, the head can be moved into any position, and traction made in any direction with the greatest ease and precision. And whilst the lock is allowed considerable play, so that continuous pressure of the head is avoided, the force requisite for delivery is, in practice, found to be little, for it may be entirely used in the line of least resistance.

If instrumental delivery is conducted with precise knowledge of the mechanism of natural labour and of the direction of natural force—which is not downwards, but backwards into the hollow of the sacrum—and the instrument used is capable of accurately supplementing that force, and is, in its slightest movement, absolutely under the control of the operator, all difficulty disappears and with it the excuse for an undue and dangerous expenditure of force on parts which were never by Nature intended to suffer such abuse.

REFERENCE.

By Messrs. R. Sumner and Co., of Liverpool, by whom I am informed that many hundreds are now in use in this country.

DYSTOCIA DUE TO ANTE-PARTUM HOURGLASS CONTRACTION OF UTERUS: CÆSAREAN SECTION.

By COURTENAY C. WEEKS, M.R.C.S., L.R.C.P.LOND.,
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HISTORY.

On July 29th, 1897, I was called to Mrs. B., aged 25 years, who was in labour with her second child. The pains occurred on and off for two days, and the "waters had broken" shortly before my arrival. On making an abdominal examination one was at once struck by the peculiar contour of the abdomen. It seemed to be occupied by two distinct tumours, one in its upper and the other in its lower part. The lower seemed to be about the size and shape of a child's head; the upper, larger, had its long axis transversely, and protruded very much forward. Between these two swellings a distinct groove could be made out; fœtal limbs could not be palpated. The two swellings seemed (as the patient lay on her back) to occupy different planes, and suggested the possibility of twins.

Vaginal examination revealed the vertex presenting with occiput posterior. The os was well dilated, and the head just above the promontory of the sacrum, which was somewhat though not excessively prominent. An attempt was at once made to rectify the malposition, but quite failed. It was then noted that although the pains were strong and regular, and the uterus could be felt to contract, that absolutely no descent of the head took place. It seemed to be "strung up" over the promontory of the sacrum. Four hours after seeing the patient I gave chloroform, and made a further examination of the uterus preparatory to application of the forceps. The vagina and os seemed normal; the latter was well dilated. On passing the hand up by the side of the fœtal head (this was done with difficulty owing to the firm contraction of the lower segment of the uterus)—I found that the neck was firmly grasped by the uterus, which was powerfully contracted at this point. At first it was absolutely impossible to pass beyond this contraction. Bimanually the lower segment of the uterus was felt to be thinned, but not markedly so. It was also demonstrated that the sulcus, felt abdominally, corresponded with the contraction felt internally.

Forceps were applied, but absolutely no descent was produced. After a further interval I sent for Mr. S. H. Perry, and later for Dr. M. Perry, and from first to last we endeavoured either to rectify the malposition or deliver by forceps or version. All our efforts failed, even under deep chloroform anæsthesia and chloral hydrate. The pains throughout these manipulations kept very strong, and somewhat rapidly the patient's condition became so serious that we decided that the uterus must be emptied.

OPERATION.

Craniotomy was resorted to but without any success. Cæsarean section was then decided upon sixteen hours after I first found the os fully dilated, and not until we fully agreed that it was the only chance for the patient. Chloroform was administered by Dr. Perry. The skin was rapidly prepared, and a very thorough mercurial vaginal douche given after one final attempt at forceps delivery. The abdomen was opened by a median incision, and the uterus exposed. Sponges wrung out of warm boracic lotion were then placed all round the uterus, and it was incised, whilst Mr. S. H. Perry placed his hands well down on each side of the uterus in the pelvis, and so most effectually and thoroughly controlled the hæmorrhage. The child was quickly delivered, and was rapidly followed by placenta and membrane; a large sponge was then placed for a few seconds in the uterine cavity, and firm pressure was kept up whilst the uterus contracted, which it did very well. No cause could be ascertained for the contraction; the uterus was a dark, slaty, blue colour. A double row of sutures—one taking up the whole of the thickness of the uterine wall as far as the submucosa, and the other taking up only the peritoneal cover so as to cause infolding of the edges, were used. The abdominal wound was closed by one set of sutures only.

AFTER-HISTORY.

Immediately after the operation strychnine and ergotine were given hypodermically, and soon after 15 c.cm. of anti-streptococcus serum, the operation being done in a not over-clean cottage. There was a good deal of collapse, but the patient rallied well, and her temperature at night was 100° F., and was normal the following morning.

For fifty-two hours the patient did very well in every way, the highest temperature being 101.4° at the end of forty-eight hours. There was practically no pain, no vomiting, no distension, flatus passed *per anum*, the tongue was clean and moist, respiration was abdominal, and the facial aspect good. She slept and felt and looked very comfortable. On the third day she had a little cough, and after one coughing attack (lungs appeared normal) she complained of severe abdominal pain, became very collapsed, and vomited a little bile-stained fluid. The pulse was very rapid, feet and hands were cold. There had been no chills or rigor, and now the patient complained simply of pain, and asked for a "good dose of salts." Stimulants caused a slight rally, but only for a while; a few hours after this initial attack of pain the abdomen was slightly distended. The abdominal wound was then examined; a few stitches had given way in two places, allowing knuckles of omentum to protrude. These were reduced and a couple more stitches removed, so that the uterus might be examined for any hæmorrhage. This was fifty-nine hours after the operation, and we found the wound beginning to heal and an entire absence of any sign of hæmorrhage or inflammation.

We attributed the collapse to the nipped omentum. Various stimulants, rectal and axillary injections of saline solution, were tried, but the patient gradually sank thirty-two hours after the attack of pain, and eighty-four after the operation. The respiration towards the end was of a peculiar sighing character, and resembled that seen in collapse due to loss of blood. The lochia were established, and never had any bad odour. Vaginal douches were used from the first. There was no vomiting until the "acute attack of pain," and only twice very slightly afterwards. There were no rigors, diarrhœa, nor tenderness of abdomen. Hearts, lungs, and great blood vessels normal. The clinical picture was one of good progress for fifty-two hours, and then sudden and eventually fatal collapse.

POST-MORTEM EXAMINATION.

There were no signs of any peritonitis; the uterus was well contracted, and of a light bluish colour. In the right iliac fossa was an ileo-cæcal intussusception, reduced fairly easily; only slight extravasation of lymph. The adjacent coils of intestine were slightly injected and finely granular on the surface.

REMARKS.

The interest of this case naturally centres in the cause of the dystocia. That we had a very definite "contraction of a

number of uterine fibres around the child's neck" I am quite satisfied. The contraction was, moreover, not due simply to a "rigid internal os," but to a strong unyielding tetanus of one portion of the uterine wall.

The diagnosis in our case was made by:

1. The definite palpation of the constriction around the neck of the child, corresponding with a sulcus felt abdominally.

2. The insuperable difficulty experienced in attempting delivery.

3. The absence of signs of tonic contraction of uterus until long after the constriction was felt.

The literature of the subject seems to be somewhat scanty. Playfair mentions the condition, and refers to Hosmer's cases in the *Boston Medical and Surgical Journal*, 1878. Blundell also is referred to by Dr. Playfair. In Hosmer's article four mothers are referred to and seven labours. In each of the cases mentioned the constriction was felt abdominally; Case No. IV especially resembles my own.

Brunings[1] refers to a case where marked tetanus followed premature rupture of membranes. Demelin,[2] referring to this subject, mentions the various times at which "retraction," or, as I have termed it, "contraction" occurs. Probably my own case would come under the third head, namely, "Contraction before rupture of membranes," in so far as I found the condition immediately on my arrival very soon after the membranes had broken.

Herman,[3] writing of Partial Contraction of the Uterus, says, "The so-called strictures are produced not by partial contraction, but by imperfect dilatation." But in the above case dilatation must have been so far advanced as to allow the head to pass, since the contraction was around the neck. I believe the cause of the condition is found in sudden rupture of the membranes when a strongly acting uterus is associated with some mechanical obstruction.

I take this opportunity of thanking Dr. Perry, Mr. S. H. Perry, and Nurse Ridley for much help and kindness at the operation and subsequently, and Dr. Rivers Pollock for help in looking up the literature of the subject.

References.

[1] Epitome, British Medical Journal, May 14th, 1898. [2] *Ibid.*, August 27th, 1898. [3] *Difficult Labour*, 1895.

ABSTRACT OF

THE HARVEIAN LECTURES.

ON

DISEASE AND ITS TREATMENT, AND THE PROFESSION OF MEDICINE IN THE YEAR 1899.

Delivered before the Harveian Society of London, December 1898.

By WM. EWART, M.D., F.R.C.P.,

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Lecture III.

EDUCATION AND MEDICAL PRACTICE.

The Provident System and its Problems.

In its ideal form the provident system seeks to secure the greatest good to the greatest number, benefiting alike the deserving poor and the profession. Its principle is the insurance of the healthy against the expenses of future illness. That principle has been accepted by the profession as belonging to our scheme of usefulness, and as tending to professional advantage if only it were fairly worked. Our services are for many a necessity, and it is right that they should be within the reach of those for whom they are intended.

The poorer patients have five courses open to them: (1) Some of them are sufficiently near the margin of pauperism to enable them to obtain Poor-law relief. (2) Many of them apply to the chemist for advice and medicine, and this largely keeps up the practice of counter prescribing. (3) Others are anxious for treatment by hospital physicians and surgeons, and endeavour to obtain it at the hospital for which they have a predilection, though this may not be the nearest one to their own home. (4) A large number enrol themselves in the lists of the provident dispensaries and of the clubs. (5) Others prefer to get their advice independently, and at the time when they think they need it.

It is the patient who chooses between these courses. The medical man has no choice, except that of refusal when he is appealed to. If his charges should be prohibitive he would drive this humble practice into the other channels which have been indicated. In order to meet the necessities of the case there must be for his advice a sliding scale within the reach of the humblest means. This unavoidable smallness of remuneration is a reason for his preferring a system where it is to a certain extent disguised.

Unfortunately the slender compensation so well deserved has been only partially reaped by the profession. Benevolent in its intent, co-operation has opened the door to novel dangers and abuses of which the practitioner is ultimately the victim.

The Provident Association.—The beneficent institutions known as dispensaries seek to be self-supporting; but a charitable interest is taken in their management by members of a richer class, and this is a saving clause, for much depends upon the spirit of those who administer as well as of those who receive the relief. The collateral advantages which are opened up to those who serve a well-conducted dispensary render it a matter for regret that it has not been found practicable to extend them to all the local practitioners or at least to as many as may wish to participate. The remuneration itself is small, but it is fairly divided according to the work done.

The difference between these institutions and the friendly societies is fundamental; in the latter the softening element of charity is less prominent, and that of sentiment is not included. In early days the medical man's willingness to help them may have been considered a favour. This is now changed, and they have not always refrained from turning his difficulties to account. Other associations, built purely upon the principle of commercial insurance, although business-like in some directions, are free from any scruples connected with medical etiquette, and in other directions there is less regard than in the friendly societies for the individual interests and for the professional dignity of the medical officer.

The Prevalent Abuses.

The defects which have arisen are clearly unintentional, and the outcome of ordinary economical principles. They include: (1) The obviously inadequate remuneration for excessive work and responsibility; and (2) the unjust appropriation of advantages intended for the poor by those able to pay.

Were the charitable ministrations bestowed only on the deserving poor, their cost would be a lighter burden. But it is well known that, owing to imperfect checks, and to the failure to realise the fault of which they are guilty, many thoughtless individuals receive relief who are really able to pay a fair honorarium for private attendance, and this is contrary to the intentions of those who manage these institutions.

This abuse is not sufficiently guarded against in the organisation of clubs. Some men of substance are admitted as members, or retain a membership assumed in less prosperous days, and do not refrain from getting their medical advice at an almost gratuitous rate. The practice of others is made to suffer besides that of the medical officer, for should he fail to meet cheerfully the behests of his employers, or refuse to submit to a reduction, the club may find a stranger to fill his place, and this will mean additional competition in an already restricted field of practice.

The worse troubles arise in connection with the medical aid societies. They actively canvass the public. Their medical officer is advertised not always fairly, it is said—but he may have to suffer for the advertisement. And the climax is reached when he is victimised not only by the societies but by intermediate agents. Instances have often occurred when

agents have induced people to insure, and to transfer themselves from the private list to the club list of the same medical man.

The Detriment to the Profession.—Diminution in practice goes hand in hand with a lessened value set upon professional services. But the worst aspect of the whole position is the further decline in dignity and emolument due to the fact that, small as may be the pittance, it has its market, and any competition can only lower its figures. The low value which is thus forced by contract reacts upon the remuneration of others, who but for this would have been in a position to resist the unmerited depreciation of their services. Thus special correctives are needed against the evils known as the tyranny of the clubs, the lowering of the fees by competition, the exploitation by medical aid societies, the underselling of medical work, the insufficient wage limit, and also the admission of women and children at a lower subscription than men, though they need more attention, and previously contributed to private practice.

THE REMEDY.

Where is the remedy to come from? Its possible sources are: State interference, corporate action, independent combination within the profession, which might be purely local or more general, and education.

Some action has already been taken, especially in the direction of local combination. Much credit is due to various local groups for their energy and success, and their example may tell at a distance. Indeed, it has suggested the idea of an extended combination, which might include representatives of all local associations, and through them of all practitioners interested in the provident system.

A totally distinct action has also been proposed, that of State aid in this difficult matter. This is a remedy not without a danger, for if the State is to come to our assistance it is possible that its inelastic control might fall heavily upon us, and trammel us, when it would be much to our advantage to be free.

But leaving State control aside, there remains the official action of the professional governing bodies, who alone can speak for the entire profession. If I mistake not, there is a strong feeling abroad that these difficulties should be noticed officially; but others are inclined to think that the profession ought not to be committed, and that independent combination should be able to provide a remedy.

Between courses so different it is difficult to choose. One of them pledges the profession; the other allows free scope to self-government without the assumption of too onerous a responsibility.

Self-help is sound policy, but in this matter it is regarded with good reason as unequal to the task. There is a difficulty in repudiating arrangements firmly rooted in localities; and any efforts in that direction are but too likely to be defeated by the action of members of the profession who are outside these local combinations. To meet this difficulty, it is not to be wondered at that the General Medical Council should be appealed to for an exercise of their power to approve those arrangements which have been found most suitable in the various districts, and to restrain registered practitioners from an unprofessional intrusion which tends to render joint efforts nugatory. This would doubtless afford the easiest way out of the present complication, provided it could safely be resorted to without prejudice to future advantage. It must not be forgotten that a march has been stolen upon the profession owing to its isolated action, and it is to be feared that the local combinations must remain trammelled by the influence of these unfortunate beginnings, and that their proposals might not come up to the level which the profession may have in prospect. In view of that object it might be undesirable that the profession should stand committed to any adjustment arrived at locally or even by a combination of many local groups. Indeed, there might be a danger lest any larger combination might wear in the eyes of the public an importance other than that which it claimed for itself, and be thought to carry a mandate from the profession. In this respect there is perhaps an advantage in combination preserving for the present its purely local character.

The Reasons for Delay. In favour of a policy of waiting, the fact should be remembered that we are still within the period of transition, and that we cannot yet foretell the proportions which the co-operative treatment may ultimately attain. One point appears to be clear. Any final settlement should be made on an independent basis. A privilege usurped, however unintentional the usurpation, is not from the standpoint of the injured party a fair basis for negotiation. All local attempts at readjustment must suffer from this disadvantage. It must be made evident that the profession repudiates the estimate which has unfortunately been placed upon the value of the services of its members. Though I may not have much support in leaning towards cautious delay in any comprehensive handling of the difficulty, I feel sure that I am with all of you in thinking that its study cannot be safely postponed, and that it should engage the earnest and early attention of our authorities.

The Remedy from Education of the Public and the Profession.—There is a different remedy, most effectual, but slow—the teaching and the appreciation of that which we owe to ourselves and which is due to us by the public. On our side, the great body of the profession are guided by those high principles which are being universally taught. The dangerous few must be either educated up to its level or kept out.

It is difficult to overrate the influence which can be exercised on the minds and dispositions of our pupils whilst they are passing through the medical schools. More may be done perhaps to raise in their youthful mind a superior ideal of the dignity and of the unity of the profession. Men cast in this mould might be allowed to shape the higher interests of the profession wherever they go.

Much more general is the lack of due appreciation on the part of the public, especially among the lower classes, who are not unlikely at times to misinterpret the most charitable intentions. Literature might do much to enlighten them as to our position; and in the recent lofty achievements of the profession there is a theme which, if properly handled, might work in the direction which is wanted.

The remedy would thus consist first and foremost in the cultivation of a high ideal in the study of medicine, and, in the second place, of the authoritative influence which combined action might exercise upon the press.

MEDICAL EDUCATION.

Examinations are a necessary evil. The public must be protected, and a mass of important facts must be grasped by the student. But under this load the freedom both of study and of teaching suffers, and imagination and original thought are less developed than memory. We have recently heard from authorities that the burden of scientific facts is becoming intolerable for the student of medicine, and that some part of the burden must be removed; and, in anticipation of a yet distant revision, it may be permitted me to bring forward impressions gathered from some observation of the student and of his work, especially in their clinical aspects.

Clinical work is for us all essential, and the difficulty is how to give to its study a share not altogether disproportionate.

The Preliminary Examination and the Recruiting of the Profession.—In the student's own interest, our gates should not be thrown open too widely, lest he should be caught in a groove, in which, as time wears on he may find neither success nor escape. Medical students need not be picked men, but tried men they should be; and to ensure this is the chief office of the entrance examination, which might also be a means of checking an excessive supply.

Our opportunity is to frame an entrance examination which should test men as to their fitness for their future labours, but should not demand of them anything wasteful from the point of view of their life's work. On the contrary, the entrance examination might be rendered practically useful in the direction of relieving as much as possible the overloaded curriculum.

The utilitarian reform which we have witnessed seems to have stopped short at the sacrifice of the classics. Yet there are studies now neglected in the curriculum, the rudiments of which should not be entirely unknown to members of a learned profession. I refer to the elements of botany, of zoology, and of geology, which are most desirable. If made compulsory in the schedule of the Preliminary Examination, these subjects, together with physics and chemistry, would be useful to the student, and educationally they would be some compensation for the loss of a classical training.

The Curriculum.—The greatest improvement in medical education is the recently introduced five-years' curriculum. This extension has already produced the best results. Yet much pressure remains, and the question has been asked whether the best use is made of the additional time, and whether a special claim could not have been established in favour of our professional training, so long and increasingly sacrificed to the preliminary subjects.

The old-fashioned apprenticeship was given up long ago without any equivalent as a substitute. It is impossible that we should ever return to it. Yet it was a thoroughly practical though primitive method of learning as much of the profession as the local opportunities allowed. In that arrangement the supply of scientific knowledge was scanty, but there was little waste from the point of view of utility.

This distribution of the student's work has been completely reversed, but the partial sacrifice of the practical professional studies was an unintended result, due to the desire to cultivate a higher living in the service of medicine. Unfortunately for a long period the teaching of the sciences had to be theoretical and by lectures, without any practical participation on the part of the learner. Thus the student, deprived of the apprenticeship, spent his early days in studying practical science in an unpractical way. When he joined the country practice as a qualified man it was the old apprenticeship over again—most things practical yet to be learnt—only the apprenticeship was at the wrong end of his time.

The Academical and the Utilitarian Idea.

The present system might be regarded as "academical" to a fault. The subjects are dealt with, as it were, in compartments. The pupil is taken through each of them from its beginning to its end. But often he might perhaps have done more for himself had he attempted less.

Too often, also, the teaching of valuable elementary subjects is practically divorced from their uses; and when the time comes when the chemical, the physiological, and the biological learning and methods might have been of practical value they have been forgotten. This will seem to suggest the desirability of associating, though not at too early a date, a medical purpose with the teaching of anatomy, physiology, biology, and chemistry, and to render their applications more clinical. Any of the sciences well learnt, but particularly anatomy and physiology, would serve this educational need. But the utilitarian or professional idea looks to those few great principles and facts without which no physician or surgeon ought to trust himself to work, as those upon which the main stress ought to be thrown in the teaching of the sciences. With these at his command, the pupil might progress by imperceptible degrees to a higher level of scientific and clinical efficiency, and the acme of his scientific training would be the study of practical pharmacology, which combines all the other clinical sciences. We do not notice any progression of this sort in our present system. Whilst elementary physiological matters are imperfectly grasped, some of the most difficult problems, those which tax the expert, are made the study of the beginner. There is much to be said in favour of reserving these higher subjects as a reward for the veteran student.

The younger student's practical work in laboratories might with advantage be concentrated upon those methods which are of practical use, further knowledge being added upon a firm foundation of facts previously known. Thus, whilst avoiding the risk of a premature entry into the wards it might be useful to shift a great deal of the practical physiological work from the physiological to the clinical laboratory.

Work performed there in connection with the examination of the urine, of the blood, of the physical conditions of the normal organs, the study of the heart sounds independently of murmurs, of the respiratory sounds when uncomplicated by disease, of the position of viscera as recognised by palpation and auscultation, would never be regarded as wasted either by the student or later on by the practitioner, and would be useful additions to the practical work of physiology.

Clinical laboratories in connection with teaching hospitals are a great need for students and for research. Whilst in this country most philanthropists have made it their ideal to supply a sufficient number of beds and have overlooked the real pauper in the hospital—science—and the real need, that of a knowledge how to cure the diseases which are put into those beds, a much clearer view of things has long prevailed on the other side of the ocean. Practical sense has made it obvious that the object of hospital treatment is not euthanasia, but recovery, the secret of which cannot be learnt without the means of study. When this need is more widely understood among us generosity will soon flow in this neglected channel.

Clinical Medicine.

The cry from the obstetric side is, "Give us more time to train the clinical pupil in the most responsible and important part of his future practice"—a justifiable demand, but how can it be granted when clinical medicine itself is starved? Nominally three years are provided for clinical training. But too often after upwards of two years absorbed in preliminary studies, these subjects are forgotten, and may have to be learnt again at the expense of time properly belonging to clinical work.

The elementary clinical work seems to be too long delayed. After much time devoted to pure science and to examinations the pupil suddenly enters the wards unprepared. To him all clinical things are new. He is yet unfitted to utilise the advantages of a clinical clerkship which too often is conferred upon him at this stage. General elementary clinical practice is what he needs, and this he would quickly gain in the wards by contact with others of greater experience whilst completing his knowledge previously acquired in the practical work of physiology and chemistry, until he became able to take up with full profit the privileges of a clinical clerk, and study disease and its treatment in association with the physician, whose functions do not include the teaching of elementary methods. For lack of this, the most important part of his advantages as a clerk are often lost to him, and this accounts for the unfinished clinical condition in which so many have entered upon practice.

Medical Education.—Medical education would gain much in being made continuous by blending the clinical idea from a relatively early date with the scientific studies, and by keeping up a progression in the higher studies of anatomy and physiology. The student would find interest and meaning in each laboratory method, because shown to be connected with some clinical point, and his clinical anatomy and clinical physiology would remain his valued and lasting possessions.

Clinical Anatomy.—Anatomy, the "mathematics of medicine," will never cease to be indispensable and paramount among preliminary subjects, a fitting introduction to the most laborious profession. No part of anatomy is superfluous; but we cannot forget that entire subjects are being thrown overboard. Some parts of anatomy are of supreme importance throughout professional life, and the final examinations wisely require a knowledge both of surgical and of medical anatomy. But the average student has to learn these parts of the subject twice, because meanwhile he has been allowed to forget them. If this is the upshot, too much time has been claimed by anatomy at the beginning. The first year might suffice for undivided attention to the foundations of anatomy, whilst further instalments might be added by degrees and with a practical bearing. A study of the relations of parts might thus coincide with the teaching of operative surgery, and medical anatomy with that of practical medicine and of clinical work.

The long anatomical curriculum ought to lead as a net result to an accurate knowledge of those parts of the body with which we shall be professionally concerned. If the rest is to be finally forgotten, might not its teaching be compressed?

For the higher examinations, a late application to anatomy has always been necessary, and this shows that the suggestions thrown out are not absolutely unpractical.

Clinical Physiology.—Similar considerations apply to what I may term "clinical physiology." In physiology we use too little our great opportunities of studying man. What might not Harvey have accomplished had he been armed with our present instruments and methods of investigation? What should we think of a practical course on the circulation which did not include listening with the stethoscope to the heart sounds and learning accurately where they are to be listened for? Or shall we deal practically with splanchnology, and not make ourselves familiar by palpation and by percussion with the position of the various organs?

All this is the physiology which is essential; not abstruse, not difficult nor repellant; and these physiological observations, though so important and indispensable, are of a purely elementary nature. They might afford an easy rise to the higher, truly difficult physiological inquiries for which many a young student is at first totally unprepared, and remains to the last unappreciative, whilst the living body appeals to every practical youth. The advantages of such a system would be great and would tell at both ends. Early in his career the student would be awakened to a professional interest in studies which would henceforth assume for him in all their theoretical details a practical purpose. The gain at the other end would be incalculable. Instead of his helplessness in approaching the bedside, the novelty of the situation and its strangeness would have long been removed. He would feel the confidence of an observer, and might proceed to truly clinical studies of disease instead of wasting the clinical opportunity upon mere instrumental practice at the wrong time.

CENTRALISATION AND THE ONE-PORTAL SYSTEM.

The continued agitation for reform has been a prominent feature of recent years. In this the profession has shown its earnestness in the cause of progress. Centralisation is the question of the day; it lies behind most of our present problems, and in particular of those relating to university teaching, to the multiplicity of schools, to the variety of examining bodies, and to the relative value of the titles conferred by examination. But we may be well advised in not departing more than is unavoidable from the opposite system, perhaps less perfect in its form, but more fertilising, a system to which we owe what we are. Let us beware of sacrificing the vitality and spirit of our great professional bodies to the doubtful advantage of a monotonous uniformity.

The one-portal system was some years ago even more urgently needed than it now is. Further improvement is necessary, but it is a question whether any radical change is indispensable. All that is practically wanted might be attained by all the corporations raising the standard of their examinations to a uniform level, which would obviate any downward competition between them, and at the same time would exclude from the profession, if possible, at the entrance examination, those who are not thoroughly equal to its responsibilities, so that none but the fittest could get their names on to the *Medical Register*.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

THE VALUE OF VENESECTION.

IN the early days of my practice, which dates back over fifty years, venesection, as is well known, was the recognised practice in acute pneumonia, and it does not admit of a doubt that it was a practice carried to excess, and I am free to confess that many a poor sufferer was hurried off this mortal stage as much by the treatment as by the disease. It seems to me, casting back over this long stretch of years, that we have gone during the latter years to the other extreme. For some years past I have been of that opinion, and in cases now and then, when the indications pointed out its advisability, have had recourse to venesection, believing it to be a very salutary line of treatment to adopt, particularly in such cases as pulmonary congestion or apoplexy, and cases of acute pneumonia.

It is in severe cases of pneumonia that it is of such signal service, cases that I should describe as cyclonic in their violence, like a tornado that overwhelms everything in its path if, haply, its violence cannot be arrested. How many such cases, alas! many of us have seen so rapid as to baffle all ordinary means, no time, in fact, for remedies to act. In such cases employed early what resource so potent as venesection?

I am led to make these remarks from reading Dr. Lucas Benham's paper recording nineteen cases of severe pneumonia read before the Medical Society of London, in which he speaks of the timely use of venesection and the often conversion of a severe case of pneumonia into a mild one by an early resort to bleeding. One typical case occurs to me.

I was sent for one evening in the early spring about 25 years ago to see a strong young countryman. I found him breathing with great difficulty, skin very hot, pulse small and laboured, slow, about 60 in the minute, countenance anxious, lips blue and tongue covered with a white fur. I at once determined to bleed. At first the stream was sluggish, the blood being almost too thick to run and very dark. After about 15 ozs. had been taken it began to flow more freely and became brighter in colour: the countenance became less dusky, the pulse increased in number and became softer and fuller. I continued the bleeding until over 30 oz. had flowed, by which time the man had so far recovered that the *râles* had almost disappeared from his chest, and he was able to take a deep sigh. From this time his safety was assured, and he made steady progress towards recovery.

My attention was also attracted to the report of a case of puerperal eclampsia by Mr. H. Darwin Hay, of Eastfield, Faringdon. I cannot help thinking that had he employed venesection in the case of that young woman the result might have been different. Two typical cases of puerperal eclampsia recur to my mind.

One in January, 1860. Deep snow and extreme cold prevailed. About 8 P.M. I was sent for eight miles into the country to see a poor woman in convulsions. I found her breathing heavily, comatose, urine loaded with albumen, pulse small and laboured. She was a multipara. There was no time to try the action of medicines; I at once determined to bleed. She was about 4½ months pregnant. I took away about 25 oz. of blood. Slowly but steadily she recovered consciousness, her pulse rose in volume and rapidity. She never had another fit, and went on to her full time.

In another case, that of a primipara, I was called in consultation with a medical friend, and found her unconscious, comatose, breathing heavily; face and body swollen, legs from the knees down and feet and labia very œdematous; urine loaded with albumen. She had been in this condition for some hours: the convulsions were very frequent and violent. I was told that potassium bromide had been given in large and repeated doses by the mouth, and when she could not swallow, 2 drachms for a dose *per rectum*. I at once recommended bleeding, having had cases of a similar character during my long years of practice. A vein was opened in the arm. At first the blood that flowed was like tar in appearance and consistence. After 8 or 10 ounces had flowed the patient opened her eyes, her pulse increased in frequency and volume, she gradually recovered consciousness, and by the time a good basinful of blood was taken she had become quite calm. She never had a recurrence of the fits after the bleeding, although she did not go to her full time. This case occurred twelve years ago, therefore comparatively in recent times.

I think there can be little doubt that no other treatment offered the same chance of success as bleeding did in these cases that I have recorded.

EDWARD PICTON PHILLIPS, M.R.C.S.E., L.S.A.,
Haverfordwest.

SUPPURATIVE OTITIS MEDIA COMPLICATED BY HYPERPLASIA OF THE MEATUS.

F. L., aged 40, had had occasional discharges from the left ear for six or seven years; had consulted a medical man in January, who had removed something from the passage. Early in July he had much pain on the left side of head, the discharge ceased, and he felt ill. He came to me on July 17th, looking anxious and worn. I found the meatus was blocked up by a firm growth, in front of which a probe could be passed for a short distance. There was a fulness behind the auricle, and the parts were tender. I advised an immediate operation, and the patient having been placed under chloroform I proceeded to remove the growth. This was of considerable density, and composed largely of fibro-cartilage. There was no pedicle, the growth being continuous with the posterior wall of the meatus throughout its entire length. By means of sharp scissors and a bistoury the canal was opened up, whereupon a quantity of pus poured out of the ear. This must have been pent up under considerable pressure.

For some time after it was necessary to use means to keep open the natural channel, as there was a decided tendency to recurrence. I found carbolic acid of great value in arresting growth. At the same time I took care to irrigate the middle ear frequently with my favourite solution of silico-fluoride. My efforts were seconded by the admirable patience of Mr. L., which alone enabled me to bring the case to a satisfactory conclusion. As it was, I had to repeat the use of the knife more than once, and had recourse to such caustics as silver nitrate and carbolic acid. At the end of September I was at last able to relieve him from further attendance. The middle ear was dry and sweet, and although the posterior wall of the meatus was decidedly thickened, there was a good passage, and the hyperplastic activity of the tissues seemed to be at an end. Six weeks later there was no alteration perceptible in the condition of the parts. As the middle ear is now in a healthy condition and the cause of the hyperplasia no longer existent, I do not anticipate further trouble.

The attitude of the profession in this matter of discharging ears is still somewhat dubious. I can understand a hesitation to recommend the heroic methods of certain surgeons; but there is certainly no danger to be feared from antiseptic irrigation carefully carried out. The great danger undoubtedly is from living germs. A teaspoonful of pus made Mr. L. very ill, but the application of pure carbolic acid caused practically no disturbance.

F. Faulder White, F.R.C.S.,
Hon. Surgeon to the Coventry Hospital.

ACQUIRED TONGUE-TIE.

As I can find no record of this condition, I think it worth while recording the following case:

A Bengali lad, aged 8; nearly half the lower lip, from the right angle to opposite the right central incisor tooth, is firmly united to the margin of the tongue for a corresponding distance; except the median lower incisor, all the teeth on that side have fallen out. The history of the case is that three years ago he suffered from an ulcerative stomatitis, probably of aphthous or scorbutic origin. The teeth fell out, the ulcerated surfaces of the tongue and lip united along the line of contact, and have been in this condition for two years. The union is firm, involving the whole thickness of the tongue.

The rarity of this deformity contrasts markedly with the frequency of symblepharon after ulceration of the conjunctiva. This may be explained by the intervention of the teeth, and the necessity of movements of the tongue and lips when taking food.

Arthur Powell, B.A., M.Ch.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GENERAL INFIRMARY, SALISBURY.

DEATH UNDER CHLOROFORM.

(By William Gordon, House-Surgeon).

T. M., aged 60, a carpenter with alcoholic tendencies, was admitted on July 23rd, 1898, suffering from chronic rheumatism with ankylosis of both hip-joints.

On November 14th an attempt was made to break down some of the adhesions under an anæsthetic. Accordingly the patient was prepared in the usual way, and chloroform administered by means of a modified Skinner's frame and drop bottle. The patient had no symptoms of disease of the heart or lungs, and the same operation had previously been performed on September 19th, the same anæsthetic having been administered in the same way by the same anæsthetist, without any complications except some struggling. On this occasion the patient struggled somewhat violently, but breathed well, with reflexes strong. Up to this point the amount of chloroform used was 1¾ drachm, and the duration of time four minutes. Suddenly the face turned livid, reflexes disappeared, with complete relaxation of the sphincters. Breathing and pulse stopped simultaneously. The head was at once laid over the edge of the bed, artificial respiration begun, nitrite of amyl held to the nostrils, hypodermic injections of strychnine and brandy given, brandy administered *per rectum*, which, however, was not retained, oxygen gas through the nose, the face and chest stimulated by wet towels, and the galvanic battery applied to the phrenic nerve. These methods were persisted in for over an hour, but were of no avail.

Post-mortem examination revealed nothing abnormal but a slight thickening of the dura mater, with evidence of an old meningitis, and rather an excess of external fat.

Swiss Institute for Epileptics.—The Swiss Institute for Epileptics at Zurich, which was opened in 1886, and has ever since had an increasing number of patients, expects to open a new building for male patients in the course of next year. This will provide accommodation for 200 patients.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

J. F. Payne, M.D., President, in the Chair.

Tuesday, December 20th, 1898.

The President, before the ordinary business of the meeting, made a reference to the late Sir William Jenner, who was a past President of the Society.

Cysts in the Brain.

Dr. E. F. Trevelyan exhibited a cyst about the size of a cherry, which lay free in the cavity of [illegible]. No minute examination of it had yet been made, but the author regarded it as probably parasitic. The patient was a man, aged 26, who had suffered from intermittent symptoms for six years. He showed also a small cyst lying loose within the fourth ventricle. In this case there had been no previous symptoms with the exception of one epileptic fit. This cyst the author also regarded as parasitic, since cysts of the third and fourth ventricle were mostly of this nature. Dr. Trevelyan recorded, moreover, a specimen of tumour beneath the velum interpositum, possibly arising in the pineal body, and of the class of angeio-myxo-sarcoma. There was a second smaller tumour contiguous with the chiasma.

Blackwater Fever.

Dr. W. H. Crosse and Mr. W. C. C. Pakes contributed a communication on a case of this condition. A young officer who had served for fourteen months in Nigeria had had several attacks of malaria whilst out there and came home suffering from his third attack of dysentery. He had never had blackwater fever in Nigeria, but had an attack for the first time in England. This attack began apparently as an ordinary attack of malaria, but after two days the symptoms of blackwater fever supervened. He had considerable pyrexia, was jaundiced, vomited green vomit, and passed porter-like urine. The urine contained a fair quantity of albumen, but only a few red discs. He had no quinine until six hours after the onset of the hæmoglobinuria. In spite of his improving under quinine he had a slight relapse of the hæmoglobinuria, which disappeared whilst he was having still larger doses of quinine. The urine three days after the onset of hæmoglobinuria was pink in colour, and gave a band of hæmoglobin but not of urobilin. Sugar and bile pigments were both absent. Albumen was present to the extent of rather more than one part per 1,000. There was an increase in the leucocytes, and a considerable number of granular casts and renal cells. Only a very few red discs were present. Hæmatozoa were found in the blood. These the authors thought resembled the æstivo-autumnal, and not the ordinary quartan or tertian, parasite. After the relapse the blood and urine were both again examined. No hæmatozoa could be found; there was a definite leucocytosis, and nucleated red discs were seen. The urine was similar to the previous specimen, but the casts and renal cells were much fewer. They thought this case had an important bearing upon the causation of the disease. Three alternatives appeared to be open: First, that blackwater fever was unconnected with malaria or quinine; secondly, that it was caused by quinine; and thirdly, that it was connected with malaria. If the first alternative were true, it would follow that the disease could be acquired in England, or must have a latent period of over a month, since the patient had left Africa more than a month previously. Neither of these they thought were borne out in fact. That this case could not have been caused by quinine they were satisfied, because, as had been stated, the blackwater fever preceded the administration of quinine by six hours. That the disease was connected with malaria was supported by the fact that hæmatozoa were found by them and had been found by other observers, notably by Plehn, who considered that those found in blackwater fever differed in nothing from those found in the ordinary tropical African malaria. Further, the disease was only found to attack those resident in or having resided in tropical countries. Blackwater fever did not attack persons who had not previously suffered from malaria. There appeared to them to be two alternatives as to the causation. In the first place there might be a special

hæmatozoon, which was responsible for the disease. Texas cattle fever was caused by a hæmatozoon, and severe cases were marked by hæmoglobinuria. On the other hand, Plehn's statement contradicted this idea. They thought that the most probable theory was that the hæmoglobinuric fever was really a complication of tropical African malaria having similar relation to that disease which hyperpyrexia had to rheumatic fever. As in rheumatic fever the hyperpyrexia was an added symptom which was unaffected by salicylates or alkalies, so the blackwater complication was superimposed upon malaria and required additional treatment. They referred to the Notes on a Case of Blackwater Fever published in the *Lancet* of December 3rd by Dr. F. P. Mackie, who found parasites in stained films, but had been unable to demonstrate them in the fresh specimens; he noted the presence of an increase in the extra-corpuscular flagellated bodies in a mixture of blood and normal salt solution after two days, and although unable to obtain permanent specimens of them, he was convinced that they were not bacilli; the readers of the paper did not think that the possibility of this had been disproved. They pointed out that blastomycetes which were not saccharomycetes were quite common in the urine after exposure to the air; and moreover they drew attention to something unique in Dr. Mackie's case, in that he had demonstrated granular casts in a urine containing no albumen.

The Preparation of Blood Films.

Mr. W. C. C. Pakes and Mr. R. Howard read a short note on this subject. The best instrument for puncturing the lobe of the ear or the back of the finger was a specially made lancet-pointed needle. The plan of passing two cover glasses across one another did not give sufficiently uniform films. Dr. Manson had introduced the use of tissue paper drawn over a slide with the object of getting a more uniform thickness, and this method the authors applied to cover glasses, which should be not less than $1\frac{1}{2}$ inch by $\frac{3}{4}$ inch. The cover glasses were held in a clip and smeared by means of cigarette paper cut into strips across the direction of the ribs. An excellent stain was carbol-thionin blue, which acted equally well after the use of any fixative agent.

Dr. J. W. Washbourn remarked that though hæmoglobinuria was the chief symptom in blackwater fever, yet red corpuscles had been found in the case reported. He thought the condition probably part of an ordinary malarial affection. As the hyperpyrexia of rheumatism was due to the action of the poison upon a particular part of the nervous system, so the malaria parasite might select different tissues in different cases, for example, the capillaries of the brain, with the production of symptoms indistinguishable from apoplexy: or it might select the intestinal capillaries leading to symptoms resembling those of cholera: and possibly the blackwater phenomenon arose from a location of the parasite in the kidneys, or in the bone marrow, in which situation it might bring about the blood destruction which showed itself as hæmoglobinuria. The localisation of the parasite might account also for the paucity of the organisms in the circulating blood.

Dr. H. D. Rolleston raised a question as to the relation between acute hæmoglobinuric fever and the lesser degrees of hæmoglobinuria met with in malaria.

Peculiar Condition of the Colon in Pernicious Anæmia.

Dr. H. Morley Fletcher recounted the case of a man, aged 34, affected with pernicious anæmia. No diarrhœa had been present. The liver, after death, gave the iron reaction, as did the kidneys, and the marrow in the head of the tibia, whereas the spleen gave none; there was œdema of both lungs. The mucosa of the colon was rough and somewhat warty; it was leathery in consistence, and microscopically presented a necrotic change. There was a fibrosis of older standing affecting the submucous tissue. The author considered the necrosis as an epiphenomenon, but thought that the other condition might have been concerned in the causation of the disease. There was no evidence of thrombosis of mesenteric veins to account for the necrosis of the mucous membrane; and though arsenic had been administered, this was not in any large quantity; a neuropathic origin was conceivable, but there was no evidence of it.

The President observed that in antimony poisoning the colon might be affected indirectly by the excretion of the poison, whilst the parts of the alimentary canal above might escape; the same was true in mercurial poisoning, but he did not know whether this held in the case of arsenic.

Extensive Sarcoma of the Mediastinum.

Dr. C. D. Green recorded this case, which concerned a girl 14 years of age. The left lung was replaced by the growth—a round-celled sarcoma—which surrounded the aorta and great veins, and had eroded the spinal column. There were secondary growths in the right lung, the liver, and pancreas. The thymus was at times the source of mediastinal sarcoma, but the author thought that the disease in the present case had commenced in the lymphatic glands of the hilum. The disease had run an extremely rapid course.

Card Specimens.

Dr. Trevelyan: Adenoma of the Kidney; Suppuration of the Gall Bladder in Typhoid; Extensive Calcareous Deposition in the Mitral Ring; Detached Fibro-lipoma in the Abdominal Cavity, probably an appendix epiploica.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

F. W. Kidd, M.D., President, in the Chair.

Friday, November 25th, 1898.

Tuberculous Tubes.

In discussing a case reported by Dr. Macan the President said, with regard to the extravasation of the pus into the cavity of the peritoneum, although this pus might not have had any pathogenic organisms in it, at the same time if it escaped from ovaries which were masses of tuberculous degeneration, it was hardly to be desired that such should be left in the cavity of the peritoneum, and he therefore thought that drainage was advisable in this case.

Dr. Purefoy said he would like to ask whether drainage through the vagina in these cases was preferable to drainage through the wound.

Dr. Jellett said it was a mistake to think that because pus was sterile there was no necessity for drainage, as pus, though sterile, might cause subsequent suppuration owing to saprophytic changes.

Dr. Tweedy said this case exhibited the immunity that patients suffering from suppurating tumours had to sepsis; when the tumour burst into the abdominal cavity the patient seldom got sepsis, in his experience, and the fact that the pus was fœtid did not make the prognosis a bit worse. He therefore thought that not to drain the abdomen would have been to run a great risk of leaving toxic pus in it. The pus might have been sterile as far as not containing germs went, but it might also have contained toxic poisons, and it would have then been serious for the patient if left in the abdomen.

Dr. Macan, in reply, said he did not want to enter into a discussion as regarded drainage. They had several series of ideas with regard to the drainage of pus in the peritoneum. When he considered the mechanics of the matter, he could not understand how a piece of gauze stuffed through the posterior *cul-de-sac* of the vagina could drain between the intestines. He knew that pus sometimes was sterile, but investigation showed that it took about eighteen months for a tube case to become sterile. As far as smell went, he did not consider it of any value at all in diagnosing pus.

One Hundred Cases of Abdominal Section: Second Series.

Dr. Alfred J. Smith said these 100 abdominal sections were performed as follows: Thirty-nine times for ovarian tumours; four times for the separation of adhesions; nine times for exploratory purposes; twenty-one times for the cure of fibromyomata; once to enucleate a broad ligament fibromyoma; four times for tubal pregnancies; four times for the radical cure of the ventral hernia; four times for double pyosalpinx; once for appendicitis; once for double hæmatosalpinx; once for enucleation of mesenteric cyst; once for Porro's operation; twice for salpingo-ovaritis; twice for hydrosalpinx; once for the enucleation of a broad ligament cyst. The peritoneal cavity was opened twice in performing anterior colpotomy, and three times in performing posterior colpotomy. As to the treatment of fibromyomata he felt it his duty not

to accept the simple fact of the presence of a tumour as a sufficient indication for operation; he must be satisfied that its continued presence was in some way or other a menace to life, or that its presence was incompatible with a comfortable existence. Each case was weighed on its merits, and he practised in each case that particular method of operation which seemed to meet the requirements of the particular case. Consequently, he did not treat all cases alike; he performed enucleation twice, myomectomy six times, panhysterectomy twice, retroperitoneal hysterectomy eight times, and double oophorectomy three times, making in all twenty-one operations without a death. Dr. Smith also read notes of interesting cases from the *technique* which he employed in performing retroperitoneal hysterectomy, or the displacement method for treating ventral hernia—the preparation of the patient, the sterilisation of instruments, etc.; also notes on the after-treatment of abdominal section cases. Taking the first series of fifty cases, and the present one of one hundred, he performed 150 abdominal sections with only two deaths, or a percentage of only 1.3 per cent. nearly.

The President said, speaking of drainage, that he thought that perhaps they were almost unanimous with regard to not leaving a drain of any kind in the abdominal cavity.

Mr. Tobin described how the surgeons of St. Vincent's Hospital had all arranged to operate in the same way, and if a change was to be made in any detail the surgical staff met together and rejected or adopted the proposed change. He thought that this was an admirable arrangement for all concerned.

Dr. Macan said the question of sewing the abdominal wall *en masse*, or of sewing each of the layers separately together, was important and he thought to simplify this by making through-and-through stitches, and then taking the coats separately, prevented hernia from forming. Speaking about the cases of appendicitis, he said he had received an extremely interesting paper from Dr. Edward, of New York, where he (Dr. Edward) said that it had been demonstrated that one could palpate the vermiform appendix in the usual bimanual method with as much facility as one palpated an ovarian tumour, for example. With reference to the administration of morphine after abdominal section, he (Dr. Macan) would always advocate its use.

Dr. Smith, in reply, said he was glad that the President recognised the value of distension of the bladder previous to abdominal operations. If Dr. Macan would read the report of the cases he would see a tabulated list, and there also would be found the reasons why he undertook exploratory incisions, and also particulars referring to the separation of adhesions. He thought Dr. Macan's suggestion—that when he sutured the abdomen through and through he would then introduce a secondary suture and suture the aponeurosis—was very valuable. As regards palpation of the vermiform appendix, he (Dr. Smith) had made the relations of the vermiform appendix a special study, and as Dr. Macan's friend from America wanted to persuade him (Dr. Macan) that he could palpate the vermiform appendix in the normal situation, all he could say was that he hoped Dr. Macan did not believe his American friend. In concluding, Dr. Smith said he was in favour of the administration of morphine after abdominal operations.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Vincent Jackson, F.R.C.S.Edin., President, in the Chair.

Thursday, December 8th, 1898.

Instrument for Breaking-up Impacted Gall Stones.

Mr. Lawson Tait showed an instrument which he had repeatedly used with success in breaking up concretions left in the ducts after cholecystotomy. He found that wherever a stone had travelled this instrument would follow without risk. It consisted of a small scoop, out of the end of which was cut a notch, so that an instrument after the fashion of a double quill drill was formed. The addition of a tubular handle through which a stream of water was forced greatly assisted in the removal of the *debris*. The success met with by Mr. Barling and others in freely laying open the ducts and removing the stones entire was alike gratifying and surprising, but, for his own part, Mr. Tait would feel safer in leaving the ducts intact.

Ovarian Cyst.

Mr. Lawson Tait also showed a simple unilocular cyst in which by undue delay the operation had been converted from one of the simplest and safest to one of the most difficult and deadly in his department of surgery. The case was one of a group of three such of quite recent occurrences when the patients had been kept under observation for months after they ought to have been operated on, and even had been tapped, giving the subsequent operation a fatal result. The preparation before them showed adhesions of an intimate nature over every part of its surface—there was no spot not adherent to something. The organs to which intimate attachments had occurred included the liver, the whole of the transverse colon, left kiduey, small intestines, uterus, and bladder. The contents of the cyst were purulent. The shock of the operation was so great that until the day following the operation the patient's pulse could not be felt. The first one of the three died of shock—the present nearly died. Had these cases been operated on earlier all three would have made easy recoveries. It was not fair to the patients that the operations should be so unduly delayed. It was most unfair alike to the art of surgery and to the surgeon to reckon such cases in the mortality of the operation. The rule had been long established that for an ovarian or parovarian tumour the time of its removal should follow the time of its discovery as rapidly as possible, and that any practice of delay, or encouragement of such a state of things as had resulted in these three cases, should be regarded as an offence much worse than covering.

Stricture of the Œsophagus: Retrograde Dilatation from the Stomach.

Mr. Barling showed a patient, aged 2, who in August last drank sulphuric acid out of a bottle, and who six weeks later was admitted to the General Hospital with a stricture of the œsophagus. The child at that time could only swallow fluid in very small quantities, and she looked very ill and emaciated. Frequent attempts were made to pass an instrument through the stricture, on three occasions the child being anæsthetised, but all attempts to enter the stricture failed. On October 31st the abdomen was opened, and the stomach about the middle of its anterior surface, the incision in the organ being about an inch long and across its long diameter. Each edge of the stomach incision was secured by a thread, and precaution taken to prevent any leaking into the abdomen. The right index finger was then passed into the cardiac orifice of the stomach, and used to guide bougies of various sizes into the œsophagus, and eventually a fine bougie was passed through the stricture and into the mouth. A second and larger was then passed through, and tied to its lower end a piece of stout silk, with one end drawn out of the mouth and the other out of the stomach incision; the string was used in a sawlike manner to divide the stricture tissue in the œsophagus. Further dilatation with bougies now enlarged the stricture until it would admit a No. 13, which was left *in situ* in the œsophagus, the other end being brought out of the mouth. The stomach was now closed, and the abdominal incision also, and an excellent recovery followed. A No. 16 bougie could now be passed, but this had to be done every day as there was a great tendency to contraction. The child was improving in general health, and was able to take solid food of all kinds.

Murphy's Button.

Mr. Christopher Martin showed a Murphy's button (from a case of enterectomy) which had been in the intestine for nearly four months. The patient was a married woman, aged about 55, who had a large umbilical hernia partially reduced. She suffered from repeated attacks of obstruction for which a previous operation had been performed, though without much relief. Mr. Martin operated on June 4th, and found adherent to the neck of the sac two coils of small intestine firmly glued together, and twisted into a kind of knot. In separating them one coil was torn open. The bowel above and below the tear was so altered by chronic inflammation that it was necessary to excise about three inches. The two ends were anastomosed by Murphy's button. The patient made a good recovery from the operation, though she continued to suffer from persistent nausea and retching, which medicine quite failed to

relieve. On September 27th she passed the Murphy's button, and from that time the nausea and retching ceased, having evidently been caused by the irritation of the button within the bowel.

PAPERS.

Dr. PURSLOW read a paper on the Treatment of Uterine Inertia.—Mr. J. FURNEAUX JORDAN read a paper entitled a Contribution to the Treatment of Pus in the Pelvis.

MANCHESTER MEDICAL SOCIETY.

G. A. WRIGHT, F.R.C.S., President, in the Chair.

Wednesday, December 7th, 1898.

TUMOUR OF THE PONS.

DR. DIXON MANN described a case of tumour of the pons, of which a minute pathological investigation had been made by Professor Delépine. The earliest symptom was a humming noise in the left ear. This continued until death, which took place two years and a-half afterwards. Ptosis occurred early, and, after disappearing, subsequently recurred and persisted. During the later stage the patient had repeated attacks of tonic spasms, and on one or two occasions epileptiform seizures. The right arm and leg were spastically contracted and devoid of motor power. Professor Delépine found that the tumour was a round-celled sarcoma situated in the left crus; it involved all the cranial nerves excepting the first and ninth, but the third was the only one which showed marked indications of physical changes; it was atrophied, its diameter being only two-thirds that of the corresponding nerve on the right side.

PERIPHERAL NEURITIS.

Dr. EDGE mentioned some cases of peripheral neuritis. Two were due to the abuse of alcohol, and one to diphtheria. These were compared with three others which were caused by the toxin of beri-beri.

RENAL TUBERCULOSIS.

Mr. T. JONES mentioned two cases of renal tuberculosis, in each of which the kidney had been removed, both ending in recovery. Case I.—A man, aged 43, was admitted into the infirmary with a tumour filling the left side of the abdomen. Its contour and the distinct notching of its lower margin, together with the absence of anything abnormal in the urine led to the diagnosis of a splenic tumour. Exploration by an anterior incision showed its renal origin. Removal of the tumour was followed by complete recovery. Case II.—A man, aged 21, admitted with a large right lumbar abscess, which was opened and drained five weeks later; after some improvement in the patient's general condition, the diseased kidney was removed through the loin. Besides the disease in the kidney, there was a large tuberculous nodule in the right epididymis. The corresponding vesiculæ seminales and the prostate were also diseased. The patient was shown to the meeting in the enjoyment of excellent health.

DEVELOPMENT OF MOVEMENT OF HAND IN INFANCY.

Dr. MUMFORD read a paper on this subject. He said that limb movement might be classified as those of locomotion, prehensia (thumb inactive or acting with finger), and manipulation, in which the thumb acted apart from the fingers, and the hand could be supinated. Infantile movements were mainly involuntary and inherited, and these inherited movements were those of reflex action; instinctive, and so-called spontaneous movements of manipulation were mainly acquired and voluntary. Independent use of thumb and power of supination, so characteristic of manipulation, began about the fifth month, and was fully developed by the twelfth month. There were, however, still many inherited and instinctive movements which appeared even later, for example, walking. Swimming movements seemed natural to the human being, and were partly at least inherited and not purely acquired movements, since the human infant could be and was taught to swim in the very early months of life in many of the Pacific islands and the Sandwich isles, and in Siam. Photographs and drawings of the several movements described were shown.

MALIGNANT JAUNDICE (TYPHOID ICTERUS).

Dr. HARRIS related a case and showed preparations from the liver of a man, aged 57, who had died of jaundice associated with nervous symptoms and the typhoid state. The patient had been ill seven weeks before admission to the hospital, and died six days after he had come under Dr. Harris's observation. The chief symptoms during the six weeks previous to his admission to hospital had been pains in the limbs, pains in the abdomen and vomiting. The jaundice had been present about eight days before admission, and was extremely intense when the case was admitted to the infirmary. Shortly after admission low, muttering delirium with picking at the bedclothes came on; the tongue was dry and brown, and there were sordes on the teeth; the stools were clay-coloured; the urine contained bile and a few sheaves of tyrosin were obtained from several specimens, but no leucin could be obtained. The liver dulness was slightly increased in size; there was no enlargement of the spleen. The urine contained a doubtful trace of albumen. The patient became comatose, urine and fæces were passed unconsciously and he died about six days after admission, or about eight weeks after the onset of his illness. At the *post-mortem* examination the body was found to be intensely jaundiced. There was no lesion in the intestinal canal; there was no obstruction at any part of the bile ducts, and the gall bladder contained a little dark, reddish-brown bile. The liver weighed 3 lb. 10 oz., was slightly more friable than usual, but showed no signs of yellow or red atrophy, and with the exception of being bile-stained, presented no unusual features to the naked eye. Microscopically, the liver cells were of somewhat irregular shape, slightly cloudy, but the most marked change was that the nuclei showed evidence of active proliferation and stained unusually well with logwood. The other organs of the body presented nothing unusual, with the exception of being bile-stained.

LIVERPOOL MEDICAL INSTITUTION.

W. MACFIE CAMPBELL, M.D., President, in the Chair.

Thursday, December 15th, 1898.

SUDDEN DEATH TWELVE DAYS AFTER PARTURITION.

DR. J. E. GEMMELL related a case of sudden death from complete thrombosis of the basilar artery. The patient, aged 40, was in the lying-in hospital, a primipara. The perineum was torn at the labour, immediately sutured, and healed by first intention. She suffered from insomnia for the first four days. Her temperature was 100° F. on the third, fifth, and seventh days, and the pulse 76. On the seventh day the nurse reported a "short fit," twitching of the muscles of the face and limbs, followed by a period of unconsciousness. On the twelfth day she died suddenly while taking a cup of tea. *Post mortem* all organs were found healthy; thrombosis of the basilar artery complete. There was nothing to suggest septic mischief. The uterus was 6 inches long. Many cases of sudden death had been recorded as occurring ten to fourteen days after labour, in which no *post-mortem* examinations had been held, and which had been considered as due to pulmonary thrombus.

ATRESIA OF RECTUM.

Mr. G. G. HAMILTON showed a male child, aged 3 months, on whom he had operated twenty-four hours after birth; neither urine nor fæces had been passed. There was atresia of the rectum, no anus, some hypospadias, and an imperfectly developed urethra. The hind gut was found high up, and brought down to the skin. Some days later a urethra was made. Through the urethra fæces came, as well as urine, for some days, but now only urine.

SALINE IRRIGATION IN ABDOMINAL OPERATIONS.

Mr. HAWKINS-AMBLER traced the history of the procedure and the methods of using it as a hæmostatic, and for the purposes of lavage. He discussed the indications for its use and avoidance. He pointed out the advantages of saline irrigation in minimising inflammatory exudation after operation and relieving that inspissation of the blood, shown in its increased specific gravity, which caused increased peripheral resistance and more or less circulatory embarrassment. The absorptive capacity of the peritoneum was discussed, and it was contended that irrigation lessened shock and combated septic processes. Post-operative irrigation was considered useful in commencing peritonitis, pseudo-ileus, and in overcoming intestinal obstruction if due to early slight adhesion. An analysis of 30 cases was presented.

Dr. Alexander used irrigation only in special cases, and always used sterilised water. For hæmorrhage he would be afraid to use water hotter than 100° F. and certainly would not use water at 120° F. in the abdominal cavity. He preferred perchloride of iron as a hæmostatic for oozing. For shock he thought it better and safer to use saline solution *per rectum* or in extreme cases into the cellular tissue of the axilla.

Dr. Briggs considered simple irrigation and drainage conducted with care harmless. Lord Lister had shown in wounds the vast differences between gross and mild infection, and between organisms without and within the tissues. It was not necessary to go beyond those differences in estimating the value and use of irrigation and drainage.

Professor Sherrington and Dr. E. T. Davies also spoke.

Infective Heart Disease.

Dr. T. R. Glynn read notes of a case of infective heart disease.

British Orthopædic Society.—The annual general meeting of this Society was held at the Westminster Hospital on December 9th. Messrs. Wohlmann, Bennett, and Melsome were elected members of the Society. Messrs. Freer, Robert Jones, and William Thomas were elected members of Council. A vote of thanks to Mr. E. Luke Freer for his services as Provincial Secretary was carried unanimously. An ordinary meeting followed, at which Mr. Horrocks Openshaw's paper on Tendon Reimplantation, adjourned from the last meeting, was read. He defined the proceeding as the transference of the tendon of a healthy muscle from its normal situation and its attachment, implantation or grafting upon the tendon of a muscle more or less completely paralysed. He gave a history of the subject and a summary of cases recorded, which showed that almost every tendon near the ankle had been utilised to strengthen every other muscle when paralysed, and that the sartorius had successfully been employed by Goldthwait as a substitute for the quadriceps. He had found the results of grafting the peronei into the tendo Achillis for talipes calcaneus excellent. In several cases of paralysis of the tibialis posticus he had grafted the peroneus longus or brevis into it with satisfactory results. As a general rule in tendon grafting a muscle should be selected whose action nearly resembled that of the paralysed one, but this was not always possible. In some cases it was advantageous to take an antagonist that was causing distortion, but care must be taken that too much was not done and an opposite deformity produced. Distortion ought previously to be removed by operation and instrumental treatment. Strict asepsis was a *sine quâ non*. The tendons should be disturbed as little as possible, and as large surfaces of tendon applied to one another as possible, and they should be very firmly united by sutures that would not rapidly be absorbed. Stout catgut he considered the best material. Kangaroo tendon could hardly be sterilised by ordinary methods, and silk often gave rise to stitch abscesses and troublesome sinuses.

Folkestone Medical Society.—At a meeting on December 7th, Dr. Larking read a paper on Infantile or Summer Diarrhœa. He pointed out the importance of remembering that diarrhœa was one of the seven chief zymotic diseases, and its resemblance to Asiatic cholera, both in etiology and symptoms. Reference was made to Ballard's investigations. The collapse was probably due to the formation of toxins in the bowel, as many cases died that had had only very slight diarrhœa. The best treatment was to combine an antiseptic with an aperient. Acids were more beneficial than alkalies if the patient could retain them, this being due to the fact that acids were inimical to bacterial life. The importance of omitting milk from the diet was specially dwelt upon, a farinaceous diet being substituted, and after a day or two this should be changed to one of meat juice, thus first starving out all the milk-feeding bacteria, and then those feeding on farinaceous food. Drugs such as opium should be administered with caution. He was very sceptical as to the utility of so-called astringents, such as hæmatoxylin, kino, and chalk mixture. During an epidemic of summer diarrhœa he advocated treatment in hospital, temporary or otherwise, owing to the rapidity with which grave symptoms might come on.

REVIEWS.

An Atlas of Bacteriology: containing One Hundred and Eleven Original Photomicrographs with Explanatory Text. By Chas. Slater, M.A., M.B., M.R.C.S.Eng., F.C.S., Lecturer on Bacteriology, St. George's Hospital Medical School, and Edmund J. Spitta, L.R.C.P.Lond., M.R.C.S.Eng., F.R.A.S., formerly Demonstrator of Anatomy, St. George's Hospital Medical School. London: The Scientific Press Limited. 1898. (Demy 8vo, pp. 134. 7s. 6d.)

In the very unpretentious volume before us Mr. Slater and Mr. Spitta have placed within the reach of the medical student who takes an interest in bacteriology an atlas containing no fewer than 111 really excellent photographic reproductions of the appearances presented by micro-organisms under the microscope, in culture tubes, and, in a few instances, in the tissues. The authors have gone on the principle that these photographs will speak for themselves, and have appended very short descriptions. They have, however, given a singularly lucid though very condensed account of the photographic methods and apparatus employed in the production of the negatives from which the prints have been made. Messrs. Slater and Spitta offer as their reason for publishing this work the statement that, excellent as are the atlases now to be purchased, the cost is usually prohibitive in the case of the ordinary medical student, whilst in some of the atlases greater attention is paid to special characteristics and features than to the provision of "a series of photographs of preparations of micro-organisms and their cultures, such as are usually met with and made by the student in an ordinary course of practical bacteriology."

Though useful for the medical student and as a laboratory handbook for both student and teacher, the authors have so arranged the work that it may also be of use to the "medical officer of health and for practitioners as an atlas to which on certain occasions they may find it convenient to refer." Even a superficial examination of the plates shows that the claims made are in no way exaggerated. Amongst the illustrations are represented the micrococcus melitensis of Bruce, the organisms producing suppuration, anthrax, leprosy, cholera, tuberculosis, glanders, typhoid fever, pneumonia, plague, tetanus, malignant œdema, actinomycosis, and malaria. In addition a number of organisms which resemble some of these pathogenetic forms in one feature or another are added for the sake of comparison or contrast. The cilia, flagella, and the minute structure of micro-organisms of anthrax and diphtheria, typhoid fever, and cholera, are not always easy to depict, especially in photographs, and we would venture an opinion that the specimens here presented are the pick of a much larger number of photographs than are here published, as the details are in most instances exceedingly well brought out. If there is a fault to be found with the illustrations, it is with those representing test-tube cultures, some of which, especially those in which the gelatine is liquefied, presenting a somewhat unnatural appearance, and except for the part near the surface of the gelatine might in one or two instances be easily mistaken for surface cultures. This, however, is a small matter on which we do not wish to lay too much stress, as the rest of the illustrations are so characteristic. The book is essentially what the Germans would call a hand atlas; it is convenient in form, is well though inexpensively got up, and we believe should fill the niche for which it is designed by the authors.

Practical Plant Physiology: an Introduction to Original Research for Students and Teachers. By Dr. W. Detmer. Translated from the second German edition by S. A. Moor, M.A. London: Swan Sonnenschein and Co. 1898. (Demy 8vo, pp. 576, 184 illustrations. 12s.)

Of the many German works on botany that have been rendered into English, this is one of the most deserving of that distinction, and fortunately a competent translator has been found.

The first edition of Dr. Detmer's book appeared some ten years ago, and it met with a cordial reception in a country

where physiological investigation was revived by Julius Sachs and others, and has since been so successfully pursued. This fact alone should ensure it a favourable reception here, especially as it is also acknowledged that the second edition embodies the advance made in physiological research up to date. Indeed, there is no other work in which the investigation of physiological phenomena is so fully described and illustrated. The methods of experiment and the latest apparatus employed in them are explained in a lucid yet concise manner. The matter is primarily divided into the physiology of nutrition and the physiology of growth and movements resulting from irritability.

The first is subdivided into three sections—namely, the food of plants, the molecular forces in plants, and the metabolic processes in plants. The second is subdivided into the movements of growth and the movements of irritation. Each of the sections is again divided. Thus, taking the first section, the food of plants, this is dealt with under the heads of—assimilation, the production of proteids in plants, the constituents of the ash of plants, and organic compounds as the food of plants. Each of these divisions of the third order is arranged in paragraphs, with suitable descriptive headings, so that it is quite easy to find what one is in search of. Taking as a specimen the paragraph on the utilisation by plants of the free nitrogen of the air, six pages are devoted to this subject. In these six pages sufficient information is given to enable the student to understand and carry out experiments to test the question whether leguminous plants assimilate the nitrogen accumulated by bacterium radicicola in the tubercles of their rootlets. Perhaps more space might have been profitably devoted to the discussion of this important question; but the author does not touch the practical or commercial side of it, nor even refer to that part of the literature. He does not even mention nitragin, the inoculating manure containing bacteria, which is now being used experimentally in the growth of leguminous crops. But this can hardly be regarded as an omission in the work before us, and we merely mention the fact for the information of those persons who may wish to ascertain the present aspect of the question from a purely practical standpoint.

We have only to repeat that this book is the most complete and trustworthy of its kind in English, and probably in any language.

LES DÉFENSES NATURELLES DE L'ORGANISME: LEÇONS PROFESSÉES. [The Natural Defences of the Organism: Professorial Lectures.] Par A. CHARRIN, Professeur Remplaçant au Collége de France. Paris: Masson et Cie. 1898. (Demy 8vo, pp. 326. Fr. 6).

IN the work before us, Dr. CHARRIN gives in printed form a course of lectures on the natural defences of the body against the attacks of disease. As the reputation of the author would lead one to expect, these lectures are of very great interest, in so far that an enormous amount of information derived from many sources has been brought together. As was also to be expected, the researches quoted are largely of French origin, though Dr. Charrin has not ignored the work of other nations, and this is especially true of Germany and England. Dr. Charrin, indeed, acknowledges foreign literature far more than is usual with his countrymen. For this reason the work is of wider interest than such books usually are, and it should prove of exceptional interest to the student. It will be a mine of wealth also to those who desire to know what individual investigators have done in connection with the defences of the organism against disease.

Although it was, perhaps not necessary—indeed, it would have been out of place—to have given more than the names of the authors referred to in the spoken lectures, one cannot but regret that Dr. Charrin has not given footnotes, with full references, to the works consulted. With such notes in his printed pages, the value of the book as a work of reference would thus have been enormously increased. One other criticism of the book, which perhaps could not have been made on the lectures as delivered, is that so little attempt is made to weigh the evidence that has been collected, and to give in concise form an opinion of the work of other men. It has often been said that the most dogmatic teachers are for purposes of teaching the most effective. Whilst acknowledging that such a theory may be pushed to very great extremes, it must be remembered that the strength of a teacher (whether in the lecture room or as a writer) depends to a very great extent on his power of presenting in an individual manner his own work and its bearing on the work of others, and we believe that, admirable as these lectures are, they would have been still more valuable had not Dr. Charrin's modesty prevented him from expressing his own opinion more fully on many points of which he treats.

After this excursion one must return to the fact that we are here dealing with a book which displays in a most marked degree the personal achievements as well as the erudition of the author. Starting from the point that the animal organism is constantly exposed to attacks of many agencies from without, Dr. Charrin lays down in systematic fashion the various factors which assist the organism in resisting the attacks of the causal agents of disease. After giving a general review of the subject, he takes in order the condition of the blood and the other fluids of the body, and shows what an important action these may have. He then discusses the various glands, especially those that have special functions, such as the thyroid and the suprarenal bodies, and shows how in all probability they exert a marked influence on the removal and neutralisation of the poisonous products formed as a result of ordinary metabolic processes. In considering the spleen he treats of it both in its relation to the composition of the blood, and to the elimination of certain poisons from the body. Then leaving the special glands, he takes up the consideration of our defences against thermal conditions, especially those connected with the nervous and vasomotor systems. The secretions of the nasal fossæ, the buccopharyngeal cavities, the gastric and intestinal juices, the pancreatic and the hepatic secretions are all discussed in turn, and their importance insisted upon. The secretions of the kidney are also carefully analysed, and the variations as regards the nature of the toxicity of the urine considered. Finally there is a chapter on the nervous system and a summary of the defences outside the organism.

It is evident that in a work of this kind three questions must constantly be coming to the front. Phagocytosis; the destruction by the various cells of the body of natural and disease products; and lastly, the production and action of various antitoxins, using the term "antitoxin" in its very widest sense, as it is employed by Bouchard. Dr. Charrin has treated each part of his subject with a certain degree of thoroughness, and we can promise anyone who will carefully read through this work that he will rise from its perusal with a feeling of astonishment, not that he escapes disease, but that he should ever, by any chance, become affected.

DIE FUNCTIONSTÖRUNGEN DES GROSSHIRNES. [Disorders of Cerebral Function.] Von Professor ALBERT ADAMKIEWICZ, of Vienna. Hanover: A. W. Kollner. 1898. (Demy 8vo, pp. 254. 4 coloured plates. M. 8.)

AFTER a few pages in which the general anatomy and physiology of the cerebral cortex are briefly sketched, Professor ADAMKIEWICZ gives about 100 pages to its general pathology. Six of these are devoted to organic diseases (congenital defect, infantile encephalitis and microcephaly, acquired diseases, pachymeningitis, senile atrophy, softening, and sclerosis); the following thirty contain the functional diseases, or psychical disorders, anomalies of sleep, hypnosis, apparent death, drunkenness, dream, somnambulism, and the forms of insanity; in the next forty are described irritation, over-irritation, and paralysis of the cortex, of which the first is subdivided into (1) simple irritation symptoms—headache, pyrexia, trophic disorders, polyuria, diabetes, and albuminuria; and (2) complex symptoms eclampsia, chorea, facial tic, athetosis, paralysis agitans, stammering, tremor. Under the second heading are included neurasthenia and hysteria; and under the third, coma, agony, syncope, and apoplexy. Lastly, fifteen pages are given to cerebral compression. There are then forty pages in which are discussed the disorders of the psychical field of organs of locomotion and of the various senses; and the remainder is devoted to the white matter, the central ganglia, and other minor parts of the brain.

It is very difficult to criticise the book, because it is hard to see for what purpose it was written. Its title perhaps excuses it from any detailed account of organic cerebral disease, and as above mentioned, this subject occupies only six pages, but we expect in return a full and accurate account of cerebral function, and in this we are grievously disappointed. Perhaps a quotation (p. 10) will best explain this feeling.

The union of all functions of the cortex from simple impression and ideation to the height of logical thinking, from elementary emotional stimulus to refined taste, and upwards to the martyrdom of moral conviction and self-abnegation—from primitive will impulse and involuntary reflex movement to the conscious action—this complete total of the receptive, inductive, and productive activity of the cortical ganglion cells forms the content of mind. The cortex of the brain is therefore the seat of the developed mind. Before the cortex has reached the height of its development, there can therefore be no developed mind. But the cortex develops only gradually after birth, and is still undeveloped in the newborn child. As therefore the newborn child can have no developed mental functions, so on the other hand what he possesses of mental functions is not a product of the cortex. Now the newborn child already possesses feelings of pleasure and pain which compel him to impulsive satisfaction of the one and instinctive avoidance of the other. So far, therefore, as impulse and instinct are concerned, the mind has its seat in the great ganglia of the cerebrum already developed in the newborn child.

We are afraid that this sort of reasoning will hardly be found satisfactory. We will add another. "Certain processes form (p. 20) a middle region of psycho-physical changes, and since they are in connection both with the physical and the psychical, they offer an example of solidarity between spirit and matter, body and mind, which controverts the theories of the dualists." The examples given are expressions of emotion, and the effect of emotion on the heart and other organs. But no one supposes that "the dualists" deny the coincidence of mental and material changes, and we should hardly expect many to agree with the author's view that by pointing out coincidence he has proved "*solidarische Einheit*." As an example of what may be called the less visionary part of the book we subjoin the following.

As in hysteria (p. 95) the psychical shok (*sic*), so in so-called traumatic neurosis it is the trauma which tears the molecules of the nervous system out of rest. If the whole body is subjected to the trauma, as in railway accidents, the brain and the cord by reason of their mass suffer most from the shaking. And according as morbid symptoms of irritation prevail on the one side or the other, one speaks of "railway spine" (*sic*) or "R. brain." The action of the trauma either impairs the normal vibration of the nervous molecules, or entirely severs them from their connection. In the first case the traumatic neurosis receives the clinical form of neurasthenia, in the other permanent paralyses are added to the above.

But pathology which rests wholly upon imagination may itself be called a neurosis. We cannot recommend the work to our readers.

Die instrumentelle Behandlung der Harnleiden mit besonderer Berücksichtigung der Technik des Katheterismus [The Instrumental Treatment of Urinary Disease, with special reference to the Technique of Catheterisation]. Von Dr. R. Kutner. Berlin: August Hirschwald. 1898. (Demy 8vo, pp. 330. M. 8.)

Dr. Robert Kutner is already favourably known to us by his small work on *Asepsis in the Treatment of Urinary Disease*. The present volume is a fuller and more complete description of the methods recommended and adopted by him.

A sufficiently full description of the anatomy of the urethra and bladder is followed by a detailed account of the various forms of catheters and sounds in general use. An important reminder is given that the passage of the catheter is a surgical operation, and should be considered as such. It is not merely a manœuvre, rashly and indiscriminately to be undertaken. The various procedures by which catheters, soft and solid, are sterilised are fully described, and the apparatus recommended for that purpose by the author are illustrated in section. In preference to all forms of antiseptics the sterilisation by steam is, very properly, advocated, and an extremely simple and easily-managed form of apparatus, suited to the use of a patient, is figured. An ingenious, but somewhat elaborate, form of bottle for the lubricant has been devised by the author. A solution of boracic acid (12 per cent.) in glycerine, with a small quantity of water, is recommended as the safest and best for use with all urethral instruments. Then follow minute instructions as to the passage of instruments, and the many points of difficulty are carefully enumerated and discussed. Chapters are given on the diagnosis and treatment of stricture, prostatic enlargement, stone, gonorrhœa acute and chronic, and retention of urine. The descriptions in all cases are accurate and concise. In an appendix a useful table of the differential diagnosis of urinary diseases, in which the more important symptoms are carefully analysed, is given.

The book is exceedingly useful and practical, and bears the impress of careful and thorough work both theoretical and technical. It is, perhaps, the most satisfactory volume of its kind which has as yet been published.

NOTES ON BOOKS.

Sir Dyce Duckworth has published in a handsome quarto volume (Longmans, Green, and Co.) his Harveian oration on *The Influence of Character and Right Judgment in Medicine*. The oration was published in our columns at the time of its delivery last October, and will have been read with interest. Its scope and matter justifies and explains the statement in the preface which the author has written for this volume, that in spite of the long series of orations and expositions of Harvey's works, which now constitute an extensive literature, he found the theme of Harvey, his life, his character, and his works to be well-nigh inexhaustible.

Dr. Stöhr's *Textbook of Histology* (Second Edition. London: J. and A. Churchill. 1898. Roy. 8vo, pp. 424, 292 Illustrations, 14s.) has long been recognised as one of the standard works on histology, and it is only right that English-speaking students should have an opportunity of reading it in their own language. We doubt whether it is a better book than those already in circulation in this country; its standard, however, is very high, and no doubt it will be a formidable competitor with these. The text is clear and brief, and the translator, Dr. Emma L. Billstein, has done her work with ability and success. The editor, Dr. Alfred Schäfer, has made a few minor alterations and additions, among which are some new figures to illustrate the structure of the uterus and placenta. The technical instructions appear to be sufficiently full and clear and well up to date. The chief beauty of the book lies in its illustrations. These will not be entirely unknown to the English reader, because Professor McKendrick made extensive use of them in his *Textbook of Physiology*. They have in the present work been extremely well reproduced, and the delicate touch of the original artist are not lost.

The third edition of the *Tax-payers' Cash Book*, by Alfred M. Scarff, Fellow of Society of Accountants and Auditors (London: The Income-Tax Adjustment Agency. Demy 8vo. 2s. 6d.) is described by its author as "being an easy system of book-keeping for small businesses, with full instructions and examples for ascertaining profit and making returns for income-tax, and preparing accounts in support of an appeal against income-tax overcharges." It contains full information as to the modifications in the income-tax and land-tax included in the "Finance Act, 1898." By the simple yet efficient means of proving their profits which this cash-book makes possible for traders, they are said to have been able in numerous cases to obtain a reduction of excessive assessments and in some cases entire discharge of assessments altogether. Each double page is for one week's cash account, the left-hand page detailing receipts from business, and from rents, interest, etc.; whilst on the opposite page payments for business and private expenses can be recorded, and space is allotted for a cash summary. The publication is arranged especially to meet the wants of traders, but any professional man anxious to keep accounts in a methodical manner might derive much help from its use.

The twenty-six plates of *Kroll's stereoskopische Bilder fur Schielende*, which is in its fourth edition re-edited by Dr. R. Perlia (Hamburg: Leopold Voss) should prove useful in trying to secure binocular vision without operation, or as supplementary to operation, in cases of strabismus; they can be used in any ordinary stereoscope. On fourteen of the plates the two objects are dissimilar—for example, bird and cage—and exercises with these must be continued until the squinting eye at once sees its half of the picture. In the remaining plate the two objects are similar, and to indicate when fusion has been obtained there is a smaller object in a suitable position; thus, of two cows, one has a small bird on its back. Plate 23, the use of which is recommended as a

preliminary to those just mentioned, has one half movable, so that the one figure can be approximated to or removed from the other. A person with convergent strabismus will be able to see the two pictures when they are close together, and perhaps to fuse them; by gradually separating them the two eyes will be exercised in maintaining single vision. To get good results the glasses which correct the patients' ametropia should be worn, and the vision of the squinting eye must not be too defective.

REPORTS AND TRANSACTIONS.

The first volume of the *Transactions of the Glasgow Obstetrical and Gynæological Society* (Glasgow: Alex. Macdougall, 1898) contains papers read during the session 1896-7, together with abstract reports of each meeting. Though the Society was established in 1885, it has only now considered it necessary to publish a separate volume, though many of the papers read before it have been published in this and other medical papers. The Society has the custom of electing an Honorary President and in recent years has always gone outside Glasgow for this officer. It is the custom for the Honorary President to deliver an address, and this volume contains the exceedingly interesting historical address, entitled "The Jubilee of Anæsthetic Midwifery," delivered by Professor A. R. Simpson, of Edinburgh, before the Society in January, 1897. It contains also a valuable essay on the pathology of ante-natal life, which was contributed by Dr. J. W. Ballantyne, and an address given by Dr. Malcolm Black, the President of the Society, on aseptic midwifery, which describes in detail the method followed at the Glasgow Maternity Hospital. The volume also contains reports on the work of this hospital by Dr. R. Jardine and Dr. J. M. Munro Kerr, which embody a great deal of statistical information of permanent value.

The fourth volume of the *Transactions of the Dermatological Society of Great Britain and Ireland*, which is edited by GEORGE PERNET, M.R.C.S., and WILLIAM T. FREEMAN, F.R.C.S. (London: H. K. Lewis. Royal 8vo. pp. 62, 5 plates. 5s.) contains an account of the work done during the session 1897-98. Examples of uncommon diseases of the skin were exhibited such as xanthoma diabeticorum, leprosy, granuloma fungoides, dermatitis herpetiformis, sclerodermia, etc. Several anomalous and unusual cases were also brought forward for diagnosis. The volume contains papers on the local effects of iodoform and on ringworm contracted from a hedgehog. Five good plates illustrate the text.

The *Report of the Reading Pathological Society* contains a brief summary of the proceedings of the fifty-seventh session (1897-98), together with a list of members and the rules of the Society.

DIARIES.

MESSRS. CASSELL AND CO., LIMITED (London, Paris, New York, and Melbourne) send us specimens of Letts's diaries now published by them. *Letts's Medical Diary* is already very well and favourably known to the profession. In addition to the space for the daily list, it contains ruled pages for noting obstetric engagements, vaccination, nurses' addresses, and cash account, as well as a good deal of information useful for reference, including a table of poisons and their antidotes. The prices are, for 54 patients' names daily, cloth 4s., tuck 5s. It can also be obtained covered in silk for wallets. *Letts's One-day Pocket Diary and Almanack* is a very compact volume for the waistcoat pocket, giving a page to each day. The pencil is carried in a loop in the back; price 1s. 6d. Another pocket diary in similar form shows a week at an opening, and is issued in a wallet for which refills can be obtained. *Letts's Office Diary and Almanack* is published in various forms, those before us being quarto (price 10s.) and octavo (6s.). Both allow a page to a day, and are furnished with an alphabetical index, and a special page of "Memoranda of Things Lent, etc.," which, if properly kept, may save many searchings of heart. The volumes contain a good deal of useful information for the writing table, and the paper for entries has a good smooth surface.

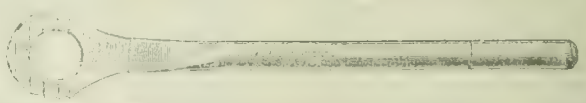
MESSRS. EASON AND SON, LIMITED (Dublin), have issued their *Every-hour Diary* for 1899, which, as we pointed out last year, appears to be well suited to the consulting-room table, since the exact hour of an appointment can be made as far ahead as may be necessary without any possible risk of confusion. The same firm issue an *Every-hour Monthly Diary* for the pocket, which may, if desired, be used in conjunction with the desk diary.

MESSRS. R. BRIDGE AND CO. (92, Chancery Lane) have issued a pocket diary in twelve parts, one for each month of the year, which is inserted in a wallet. The diary gives a page to each day, and has the advantage of being very thin and lying flat in the pocket. The makers state that it has been specially designed to meet the requirements of the legal and medical professions, and will be found convenient by those who do not make use of an ordinary medical visiting list.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

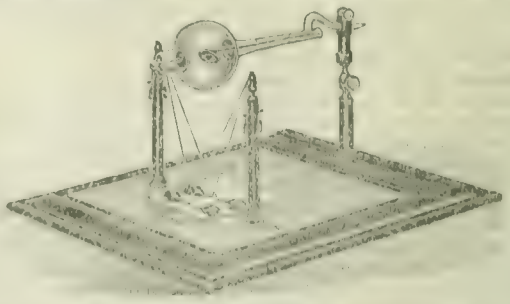
MEDICAL AND SURGICAL APPLIANCES.

DR. J. B. GABE, of Morriston, near Swansea, has devised a combined tongue depressor and thermometer case which is shown in the accompanying drawing. The appliance has the advantage of combining two very necessary articles in the space and price (2s. 6d.) of one. It is further claimed that the instrument offers a special advantage for bringing back the index of the clinical thermometer after use. By placing the thermometer in the case, bulb upwards, the index may



be shaken down without any danger of breakage, and with little or no trouble as compared with the ordinary method, since the tongue depressor forms a handle for the purpose. As a tongue depressor the instrument would, we think, be improved if the flat portion was set at a slight angle to that carrying the thermometer. The instrument is made by Messrs. Lynch and Co., Aldergate Street, E.C.

Localiser for Use with X Rays.—Mr. George Harrison, M.R.C.S.Eng. (Ealing), in the BRITISH MEDICAL JOURNAL of April 2nd, described a localiser which he had designed; it has now been completed, and the following is his description of the method he employs: The double image of the foreign body is obtained by moving the tube to each end of the slide. The developed negative is then placed on the board, and the side pillars fixed in position. The silk threads being then



passed over the tips of the pillars, the position of the body is shown with great accuracy. The machine has been made under his directions by Messrs. Coxeter and Son, of Grafton Street, Gower Street, who will be pleased to show it to anyone desirous of seeing it. The same firm are also making another apparatus on the same principle, large enough to take in the whole thorax, etc.

MEDICINAL AND DIETETIC PREPARATIONS.

Normal Saline Solution.—Normal saline solution for intravenous injection is generally prepared at the time of using by dissolving 60 grains of common salt in one pint of water at 105° F. The preparation of this solution is, of course,

extremely simple, but to ensure that the solutions are perfectly aseptic is not so easy. Mr. Martindale (10, New Cavendish Street, W.) has sent for examination a glass tube of saturated saline solution. It contains 120 grains of pure sodium chloride in sterilised solution, sufficient to form two pints of normal saline solution. When required for use the point of the tube is wrapped in a cloth, and then snapped off by pressure above a file mark. The solution is poured into two pints of boiled distilled water, and when cooled to 105° F. is ready for use. These tubes of saline solution will be found to be exceedingly convenient for the ready preparation of a solution which is mostly required *statim*, and there is also the great advantage of being able to make a perfectly aseptic solution.

Creosotol, Duotal, and Heroin.—We have received from the Elberfeld Farben-Fabriken Company, Limited, 19, St. Dunstan's Hill, E.C., samples of some new chemical products. *Creosotol* is a transparent viscous liquid, nearly odourless, and possessing a slightly bitter taste. Chemically it is a mixture of phenol carbonates of creosote. In cases of tuberculosis creosotol is administered in doses of half a drachm, which may be increased up to 5 drachms, taken in wine, brandy, or cod-liver oil. *Duotal* is a carbonate of guaiacol ether (guaiacolum carbonas puriss.). It is a white crystalline powder, inodorous, tasteless, and insoluble in water. Upon the mucous membrane it has no irritating effect, as is the case with creosote or guaiacol. Internally duotal breaks up into guaiacol and carbonic acid. The dose of duotal is 8 gr. a day, which may be increased to 96 gr. *Heroin* is offered as a substitute for morphine, and it is claimed for it that it does not produce the disagreeable secondary effects which morphine and other narcotics are apt to produce. It is said not to cause constipation nor alter the blood pressure in any way, and possesses the property of lowering the temperature to a greater degree than morphine. Excellent results are stated to have been obtained in cases of bronchitis, pharyngitis, laryngitis, and in catarrh of the lungs in phthisical persons. Heroin is the di-acetic-ester of morphine. It occurs as a white crystalline powder, almost insoluble in water, but it can be dissolved in brandy or in water acidulated by a few drops of acetic acid. The dose is 0.005 g. (gr. 1/12), given three or four times a day.

Belladonna Plaster.—The value of an application of belladonna must mainly depend upon the amount of alkaloids present in the preparation used. The *British Pharmacopœia*, 1898, gives a standard of alkaloidal strength for the belladonna preparations. It is well known that the extract of belladonna prepared from the root is not a constant product, and the plaster prepared from it is consequently not always the same. Emplastrum belladonnæ, *B. P. 1898*, must now contain 0.5 per cent. of alkaloids. Messrs. Seabury and Johnson, 31 and 32, Snow Hill, London, E.C., have sent samples of belladonna plasters guaranteed to be of the strength now standardised by the *Pharmacopœia*. They are made with a rubber basis, and perforated so as to render them porous.

Carbo-sapol.—Carbo-sapol is composed of liquefied carbolic acid, 50 per cent., with hard and soft soap. It is a thick dark-reddish brown liquid, which mixes very readily with water in all proportions. We do not find that the solutions have any irritating action upon the skin: in fact, the soap leaves the skin quite soft. Carbo-sapol, prepared by Mr. John McMillan, chemist, 17, Great Western Road, Glasgow, will be found to be very convenient for the easy preparation of carbolic solutions on account of its ready miscibility with water. For cleansing purposes, such as washing blood out of sponges, this saponaceous solution of phenol is decidedly serviceable.

Compressed Tablets.—Messrs. Parke, Davis, and Co., 451, Oxford Street, W., prepare compressed tablets convenient for the preparation of nasal and throat solutions. The Plasma Nasal Tablets contain the chlorides, sulphates, and phosphates of sodium and potassium with a small quantity of menthol. The Throat (Mentholated) Tablets are composed of menthol, cocaine hydrochloride, oil of anise, benzoic acid, and eucalyptol.

It is understood that under the will of Miss Annie Hamilton, of Finchley Road, which has recently been upheld by the courts, University College Hospital, Westminster Hospital, St. Thomas's Hospital, Guy's Hospital, and the London Hospital, will each probably benefit to the amount of £8,000.

THE MANCHESTER MEDICO-ETHICAL ASSOCIATION.

Address by Mr. Victor Horsley on the Procedure of the General Medical Council and the Reform of the Medical Acts.

A numerously attended meeting was held at the Memorial Hall, Manchester, on December 16th, by the Manchester Medico-Ethical Association, under the presidency of Dr. Rayner, of Stockport, to hear the following address by Mr. Horsley on the work of the General Medical Council.

Mr. Horsley said: I had the greatest pleasure in accepting the invitation of this Association, remembering as I did the numerous pleasant occasions on which I have visited Manchester especially in relation to the question of medical politics. To begin with I will just sketch out to you the lines on which I propose to occupy some of your time this afternoon. In the first place, I wish to draw your attention to numerous defects in the procedure of the General Medical Council in the hope that by the publication of a few of these we may secure further reform. Then I wish to proceed from that to dwell on the way in which this publicity of these defects may be secured, and then to pass on from that to discuss some of the criticisms of my views on the General Medical Council and its work, and lastly to pass to the large question of the amendment of the Medical Acts. I find that that would practically fill up the time that I can justifiably occupy. I know there are other matters of vital interest, but it seemed to me that if you would raise them by asking me questions we might expedite business.

The Procedure of the General Medical Council.

The General Medical Council is an extremely curious body; it is unlike any other public body of men collected for public business I have ever come into contact with. Its duties, according to some persons, are those of superintending the education of medical men, and registering them when educated: and for a long time these were regarded as the only object of the General Medical Council. I think the members of the General Medical Council, when they sat in the Council chamber, collectively forgot their duty towards their neighbour; they forgot that by having entrusted to them the control of the *Register*, that duty carried with it the necessity of observing the difficulties and dangers which affect the medical profession as a whole. For a long time they took no notice of these difficulties, and did not seek to ameliorate the condition of the medical profession. For the last four years a change has occurred. There is a growing feeling, which is stronger at each session, that the responsibilities of the Council towards the profession are very real, and require a larger proportion of the Council's time and attention. As regards, however, the procedure of the Council in its work, it is unlike that of any other public body. It would astonish you to hear, for instance, that there is no record kept of the statements made in the Council chamber; there is no shorthand note of public meetings or private meetings, the only record that exists is what is published in the medical journals. In regard to the delicate work of the Council—namely, the penal matters—there are some Standing Orders in regard to these cases; but apart from these there are no regulations, and the action of the Penal Cases Committee is uncontrolled. It used to be declared by some members of the Council that the Penal Cases Committee was a kind of grand jury, and every member of the profession consequently felt that if there was a grievance lodged against him it went before such a grand jury of his compeers for consideration. As a matter of fact it is authorised to act in this way, but the conduct of its business is wholly without rules. I succeeded last session in carrying a resolution whereby the Penal Cases Committee should report at the next session of the Council as to what procedure they do adopt. Upon that report I intend to bring forward such reforms as have occurred to me, and which I know are occurring to other members of the Council in regard to this serious division of our work. There is another matter of congratulation in relation to penal cases procedure which I may refer to. Hitherto for some unexplained reason the Penal Cases Committee has not been elected annually, and therefore has never been practically altered since it was constituted, except by the death of one President and the elec

tion of the present President. I proposed at the last session that this should no longer be the case, and that the Committee should be renewed annually, and no one advanced any sound reason why this should not be done. It is hardly necessary to say, however, that when I first put forward this resolution it was temporarily shelved for six months, and that the Executive Committee to whom it was referred did not think it advisable to make any alteration in the mode of election, but despite Mr. Carter's opposition I am glad to say that my proposal, which was adopted by Sir Richard Thorne, and moved by him as an amendment, was carried by a large majority. Now the Council will have the opportunity of electing the members of the Penal Cases Committee every year, or of not electing them, as may be thought fit. This is a distinct step forward, and a blow to the party of official obstructiveness, of which Mr. Carter is the recognised embodiment. Now, to return to the question of characteristics of the procedure of the Council, I must, of course, allude to a prominent and disagreeable feature, namely, secrecy. You will have seen from the reports of the last session that very definite steps are being taken by certain members of the Council to introduce more and more difficulty in the way of anyone getting to know what is going on in the Council, or of anyone (who has a right to know such as registered practitioners) knowing what is about to go on which is of importance, because if a man has an interest in any matter before the Council he may naturally wish to go to the Council chamber to hear it discussed. This applies to us specially as registered practitioners, but it applies also to the public, and it is commonly forgotten by many members of the Council that they are a statutory body commissioned by Parliament to deal with public moneys, which moneys are not primarily the moneys of the Council; they are national funds subscribed by members of the profession, and paid by them as earnest money when they register their names. Therefore any discussion with a prospective or current concern in the spending of these moneys should be open to the general public, and the general public for the same reason have a right to know when a financial question is to be discussed. What was the arrangement in this particular up to the last session? Up to this session anybody who went to the public gallery of that Council and, wishing to know what was going on, asked in a courteous way in the office for a programme of the public business was handed a programme of the business. I am sorry to say that at this session under the recently-established *régime*, we discovered on the second day that members of the profession who came to the public gallery were refused programmes, and, as I am informed, not in a very polite way by the officials. I brought the matter up, and I was curtly informed by the President that programmes were never given away at all and that they had never been given away, and this denial by the President was reported in the BRITISH MEDICAL JOURNAL. I promptly refuted the denial, and brought forward not only my personal experience of previous years, but also two complaints of two friends of mine having been refused the programme. In spite of what I said it was reiterated again in the Council, and actually by the Registrar, that they had not been given away, and the President in the Council denied it in such a way that it was really difficult to keep one's temper in the face of such unblushing misstatements. Chiefly in consequence of the Registrar's pertinacious inaccuracy I lost my motion. I also lost it because the President stated as an argument against me that the programme was a confidential document because the word "confidential" was written across it. This is not a bad joke, it is a serious fact, and it was quite evident that members of the Council were really persuaded to think that and to believe that if the word "confidential" is printed on a paper that makes it confidential. I in vain pointed out that it was nothing of the sort, because the document was handed to the representatives of the press, the reporters, and I therefore there and then asked the legal assessor of the Council whether the printing of the word "confidential" across it made it confidential and he said of course it did not. Then with the customary shading off which I am afraid many lawyers are inclined to indulge in, he conveyed the idea put forward by the official party that it would be just as well perhaps if the people in the gallery did not have the documents. But the fact remains that public moneys are expended and public business transacted, and yet not only the public but registered practitioners are not permitted to see the programmes which are no more confidential than an ordinary newspaper. I daresay in a year or two we shall have this put right, but it is one of the attempts to conceal the Council's actions which is temporarily successful. The actual conduct of some of the proceedings *in camerâ* is of course obligatory in regard to penal cases, but there are many subjects discussed *in camerâ* which are on the borderland and ought not to be discussed *in câmera*, but such is the alarm of certain members of publicity that they move the Council to go into *camera*, and the majority of the Council are so easily terrified by questions of law which are common knowledge to most people, that they support the motion and the matter is smothered for a time. There are many signs which indicate that there is a strong wish to introduce what may be called Dreyfusian tactical procedures into the Council. The President asked this session that he should be given more discretionary power, and he ruled out of order a resolution of mine which, being perfectly in order, will require discussion next session. The Executive Committee, which was originally appointed to shorten the Council's work, now by the nature of its reports lengthens the work. I moved last session sundry reforming resolutions which the Executive Committee reported upon in an obstructive and destructive sense, which only caused a discussion of some hours, with the result that we gained about 70 per cent. of the points, and in the teeth of the Executive Committee's hostile recommendations. Among these, for instance, I proposed that the members of any committee should have an opportunity of calling their committee together if several of them thought fit; whereupon the Executive Committee sought to again centralise the power to the Chairman by proposing that he alone should have authority to convene a meeting. This somewhat comic act of obstruction was defeated as it deserved.

Another curiosity with regard to procedure of the Council is the document question. I am not going to weary you with all the details, for I have reported how the present state of affairs stands in my report to the registered practitioners, but it is difficult to know how to deal with the General Medical Council. For instance, when I moved one of my resolutions calling for documents, Dr. MacAlister said that he did not want to see such documents, and he did not suppose any other member wanted to see them either. Dr. MacAlister is an important member of Cambridge University, a person to whom important matters are doubtless referred almost daily for consideration. In this instance the matter was a penal question of great importance, but he actually said he did not want to see the documents bearing upon it, and without which it was of course impossible to understand it. Such conduct and such statements are not business, and if any member does not intend to read the documents on which he nevertheless presumes to adjudicate, he would be fulfilling a duty towards the profession, the public, and the body he represents if he resigned his seat. Just as in the case of the Hunter scandal, I saw little hesitation on the part of members who, nevertheless, had not read the papers, to vote against my resolution, so I am not aware of Dr. MacAlister refraining from voting on any important question, though we have it from his own lips that he is quite indifferent as to what may be the facts of the case he expresses a decision upon.

We will now pass to the question of delay of business in the procedure of the Council which is very serious. It is due to several factors. In the first place the members of the Council are not informed between the sessions of what is going on, they come to each session as it were like boys coming to school for the first time excepting, of course, those members of any special committee to whom some small piece of business happens to have been referred. The papers are in the hands of the Registrar, who is a paid servant of the Council, and he enjoys the privilege of studying the papers, which privilege by the action of the Standing Order of last session is refused to the members of the Council. That is the condition of affairs. On this latter point I was much amused to note the wording of the resolution which was carried by Sir Richard Thorne, namely, that the working of Dr. MacAlister's Standing Order inhibiting and obstructing the inspection of documents was not "altogether satisfactory," and that it was desirable to facilitate the inspection. That is now to be done

by a report of the Executive Committee next session. The report will probably result, as before it has resulted, in putting the brake on, but at any rate we must be thankful for small mercies. This is the first official step down from the unwarrantable position assumed by the President last session. Then, also, there is Mr. Carter's irresistible impulse to refer everything for six months, and the same psychological trouble affects a few other members and things are thus put aside.

I want next to say a few further words about these facts and their publication in the medical journals, for what you read in the medical journals is only a tithe of what goes on in the Council chamber. I am not referring to the lay journals, such as the *Times* report, for by a singular coincidence no report appeared in the *Times* at all when all the important business concerning the documents was in dispute. This session certain reports have found their way into the *Times*, but I am referring now to the medical papers, and I will confine myself to the British Medical Journal, of which I have a right to speak, being a member of that Association. The British Medical Journal gives the profession only very meagre reports. It is perfectly true that not a word can be said against the accuracy of the report, but it is quite easy to take down a portion of a speech and fail to convey the whole spirit of that speech. The real trouble is that these reports are not taken by medical men, but by ordinary reporters, and consequently the reporter does not feel the importance of any given subject, he puts down what he thinks are weighty arguments, but very often these are of no interest to us as professional practitioners. The Journal, in my opinion, takes very little notice of current matters pressing on the practitioner. Take the Hunter case, for instance. I cannot conceive any greater scandal than the Hunter case, but it has received very little attention in the Journal. All that is very correct you may say, because the case is now *sub judice*, but the proceedings in the magistrate's court ought to have been very fully reported, and much attention drawn to the case. Besides, there are two totally different questions involved in this matter; first, the disgraceful procedure under which the legal action has been taken, and for which the officials connected with the penal work are wholly responsible; and, secondly, the merits of the L.S.A. diploma. It is only the latter point which is now *sub judice*. The first ought to have been thoroughly dealt with in our Journal.

Further, in regard to the attempts of various societies to test the Medical Acts, various cases have been tried, but only colourless reports have appeared. That is not the way in which matters relating to the legislative side of the profession's work ought to be treated by the British Medical Journal.

The Right to Practise.

The last point of course involves the protection of our privileges, which are being encroached upon by the public, but the British Medical Journal does not take sufficient notice of such encroachments or encourage us in any way how we are to prevent these infringements of our rights. For instance, on November 26th an article said to be written by a "legal correspondent," criticising some views I had expressed concerning the interpretation of the Medical Acts, appeared in the Journal. Much greater weight would have been attached to the opinions expressed in that criticism if the writer had had the courage of his opinions and added his name to the article. I will only draw attention to one point, and a very important point—namely, the question as to who has or who has not the right to practise medicine in this country. The Journal's nameless exponent of the law (?) says that the Medical Act contains no "clause" (*sic*) expressly imposing a penalty on anyone practising without having been duly registered. Of course, as most medical men know this statement is wholly untrue, Section xl of the Medical Act, 1858, being devoted entirely to this point. I showed that Section vi in the Act of 1886 distinctly gives the right to practise only to the registered man, and I also pointed out that according to the legal maxim *ubi jus ibi remedium* that this right of ours to practise was guarded by the remedy contained in Section xl of the Medical Act, which provides that an unregistered person should be prosecuted. My critic, who was too modest to mention his name, says in effect: "Oh! that is not so, your remedy against the invasion of your right is contained in the Act in another place, and that is the Section by which you have the right to sue for your fees." Just attend to what that means. He is saying there that the remedy for the wrong done to us by unregistered persons practising is our right to sue for our fees. That is not a remedy, that is only another right of ours. It is just in the same way as if I had two half-crowns in my pocket, and one of them was stolen by a pickpocket, our legal expert would say: "Well, you have your remedy against the theft; you have the other half-crown still in your pocket!" The Act tells us distinctly we alone have the right to practise, and we alone can sue for our fees, but the second privilege or right is not a remedy against violation of the first. I submit that it is an imposition on us as members of this Association that our subscriptions should be spent in printing such misleading and such anonymous trash, and I should like to add also that if we are to have legal articles in the British Medical Journal it seems to me that they ought to be edited by some legal expert who really does know something about the Medical Acts, as, for instance, an authority like Mr. Hempson.

The Amendment of the Medical Acts.

That brings me to the all-important question—namely, the question of the amendment of the Medical Acts, because I was agreeably surprised and pleased to think that I could detect in the Council at the last session a distinct glimmering of light on this subject. Of course you have no time to read the Minutes of the Council, but if you had, you would have found that the legal assessor stated three years ago that in his opinion there was no necessity to amend the Medical Acts. This statement was made in answer to a document from the Medical Defence Union, pointing out a failure in the prosecution of an American quack, and of a person struck off the *Register* for practising under a foreign degree who was not registered, and that the Act had been seriously injured by the remarkable finding of the stipendiary magistrate of Cardiff. Three years ago the Council did not care anything at all about the matter, and the legal assessor gave the opinion I have referred to. I am very glad to say, however, that in the last session I succeeded in getting him to withdraw from that absolute position. It was another instance of giving way to stress of political weather. The Council had had laid before them the important case of the prosecution of an unqualified man at Norwich, named Matthews, who was successfully prosecuted under the Apothecaries' Act and fined the full penalty, but as regards the Medical Act, though he called himself both "doctor" and "surgeon," the magistrates held for some unexplained reason that he had no right to call himself a surgeon, but that he had a perfect right to call himself a doctor. I will say at once that this case brought home to the Council the point which has been the subject of battledore and shuttlecock judgment in the Courts for years—namely, the act of a person being "wilful and false"—and the difficulties which are caused by the absolute decisions of magistrates deciding in cases. If a magistrate decide on a question of fact, then there is no more to be said; if you appeal to the High Court, all that is said is that the magistrate decided on fact, and there is no help or hope for anyone, and that is what happened in this Matthews case. The magistrates apparently were extremely friendly towards the defendant, and they refused to state a case in the form I have told you. Such decisions are nothing less than driving a coach and horses through the Act of Parliament. This case unquestionably impressed the Council, and especially because it was pre-eminently a matter of "title," and I think that the first step we must take, if we want to obtain an amendment of the Medical Act, is to first convert the General Medical Council to the necessity of the case, and with this glimmering of light that I have mentioned we may see our way to advance a little further. There is another reason for first converting the Council. The Council is continually brought into communication with the Privy Council, and under these circumstances the Privy Council naturally refers to the General Medical Council when it wants to know anything concerning medical legislation. It is obvious, therefore, that if the British Medical Association brings out an amendment Bill, as I hope it shortly will, and sends it to the Privy Council, it would be referred by that body to the

General Medical Council. Moreover, to obtain our object we must bring influence to bear on the Government, and the Council certainly has some influence with the Government; unless therefore we persuade the Council first we have little chance of the Government taking the Bill up as a Government measure, and without that there is hardly any other way to pass a Bill. Therefore we must work to convert the Council to accepting our view of an amendment Bill. I have already told you how the Council was in years gone by hostile to interfering with the Act at all, but that was chiefly because in those years the General Medical Council objected to safeguarding the rights and privileges of the practitioner. Now there is a change, and I should say probably the large majority of the Council are sincerely anxious to protect the privileges of the practitioner. Now, what ought an amendment Bill to contain? Years ago among the various Bills that were proposed in the British Medical Association and out of it there were three points always prominent, which points also appeared in the addresses of candidates for the direct representation of the Council, and were as follows: The first was the question of representation in the Council, the second was the one-portal system, and the third was the safeguarding of registration.

As regards the representative, or rather non-representative, character of the Council, Mr. Brown has put forward at different sessions of the Council a resolution that the Council should act under the powers under the Act of 1886 and appoint three more representatives, but that motion has never yet received a hearing—it has always been shelved by the small coterie of officials who arrange the programme. Towards the end of the session the President has usually made pathetic appeals to Mr. Brown to withdraw the notice on the ground that the time is too short. Though Mr. Brown, I believe, now quite intends to press the matter at the next session I am afraid it will be defeated, so that we cannot reasonably look for help in that direction. But a new Bill might abolish all the representatives of the Corporations, and make the whole body of the Council truly elective, and thus we should have representation in the highest degree. A second way would be that Section IV of the Medical Act, 1858, which affects the constitution of the Council in regard to the representatives of the different bodies, should be amended so as to carry out its original intention. That section states that a representative shall be chosen by each of the following bodies, and that word "bodies" most of us holds to mean the whole body politic of each Corporation. However, as you know well, the central councils of these Corporations have, so to speak, grabbed the position, and have refused in any way to consult the members of their Corporations in the election of their representative. There is, of course, the remedy of going to the High Court, but that, I think, would be simply throwing away good money. It would be necessary, therefore, that an amendment Bill should contain such wording as would make Section IV of the Act of 1858 clear beyond dispute, and that the election should be placed in the hands of all members of such bodies.

This matter of representation rather hangs with the next question, namely, the one-portal system, because if the one-portal system were carried first the Government would doubtless see that there was no reason for the representatives of the Corporations being directly elected at all. I am bound to remind you that these gentlemen have constantly denied that they are representatives of such and such a Corporation ever since Sir Dominic Corrigan once said that their discussions were nothing but battles of the shops. Nevertheless, we have occasionally at each session this shoppy character coming up. Last May session we had a strenuous dispute between the College of Surgeons of Edinburgh and that of England, and at this last session also we saw the Crown representative of Scotland, who spoke in the name of the Scotch schools as though the Scotch schools had been unfairly treated in relation to the examination for entrance into the services. These were instances of this shop feeling, and so long as any representatives are elected by a small body such as a Council of a Corporation is, they must inevitably have a relatively narrow view of things tinged by the colour with which their College happens to paint them.

In regard to the one portal system, for many reasons we must have an equalisation of the qualifying examination; the present system is wholly unjust, and the practical question is, What attitude does the Council bear towards it? I think the attitude at the present moment is rather favourable, though there is no doubt that the present Council will have nothing to do directly with any preliminary examinations; but though they dismissed a motion by Sir Christopher Nixon and myself a few sessions ago dealing with that point, they rejected it in such a way as to show that the feeling existed that perhaps the one-portal system might be tried with advantage in the final or qualifying examination. If we pursue that line perhaps we shall find that the Council may be converted to a one-portal system. The President some years ago said to me at Liverpool that he would shed his last drop of blood against the proposal, and that is doubtless the feeling of the Scotch schools, but the equalisation of the character of the qualifying examination is so desirable a thing that the unreasoning opposition of any school need not be feared.

Next as to the protection of our hard-earned privileges I must say that even now it seems to be thought by some leaders of the profession that there is something degrading in endeavouring to protect our privileges. If we have privileges we ought to protect them is the view I take up, and I certainly object to a medical man being considered to be fairer game for exploitation than any other professional man. Still it is the fact that there are leaders of the profession who hold the pessimistic view, and I mention the existence of this idea because I think it is our duty to endeavour to remove that idea wherever it exists, and here I think private influence on the part of the profession can do a good deal. The men we wish to influence come into contact with the people connected with the Government offices, and they can exert a notable personal influence in some cases. This is a factor that is not to be disregarded from a political point of view, if we are to push forward the attainment of the amendment of the Medical Act, and undoubtedly this plan of privately influencing the leaders of our own profession would have much success and should be actively pursued. The chief privilege that has to be protected is, of course, practice, and our first thought should be how that is to be safeguarded.

Evidently in view of the conduct of the magistrates I have quoted above we must secure a redrafting of Section XL, for if it be possible for a magistrate to state as a judgment that which is patently absurd, then it is clear that the Act on which he bases that judgment is capable of misinterpretation, and if so it must be corrected. I do not admit, and I never shall admit, that the reading of Section XL. could lead to misinterpretation by any ordinary person who reads it carefully, however we have to take things as we find them, and as the Norwich case is the second occasion on which a magistrate has misinterpreted it, it is clear that it must be amended so as to make it clear to the magisterial mind. How we are to get forward and how we are to convert the Council is another matter. I think the Council should be approached in this sort of way. The Branches of the British Medical Association ought to hold medico-political meetings as well as scientific meetings, and at these medico-political meetings they ought to pass resolutions, and not merely send them to the Council of the Association, but also send them to the members of the General Medical Council. Undoubtedly such communications gradually make some impression and turn the attention of the minds of the Council to the fact that the profession is feeling keenly on the matter. The worst argument that we have to deal with is that the profession does not care, and this statement is a peculiarly difficult one to put aside in a public debate unless we have distinct resolutions before us which have been framed at meetings and sent to the Council. I have already alluded to private influence brought to bear on the members of the profession who are not members of the Council, I should like to apply exactly the same line of argument towards those members of the Council with whom professional men are personally acquainted. Lastly, much good can be done by the members of any given Corporation meeting together and passing resolutions to be sent to the Council of their Corporation to be sent on to the General Medical Council. Many of the representatives of the Corporations in the General Medical Council say they never hear anything from the members of their Corporations, and therefore they can only assume that the members of the Corporation are perfectly satisfied with what the

Council does. I have repeatedly had this said to me at the Council, and of course it cannot be completely answered except by the votes of the members of such Corporations. My last word I have to say this afternoon is that if such meetings and such resolutions are passed relative to any given matter, as I hope they will be done in the Hunter case, when the full facts are laid before the profession, and if these resolutions are published in the papers, that will influence the Council, and by such means you will support your direct representatives in the Council. They are in a minority, and they feel in the minority occasionally, but they do not regard it as a hopeless minority if they have the support of their constituents.

Discussion.

Dr. Brassey Briebley considered the possibility of the introduction next session of a Midwives Registration Bill by the Government as a matter of great public concern, and believed that it was only the apathy of the great medical authorities which rendered such legislation possible.

Dr. Colin Campbell said that from a strong opponent of Mr. Horsley's views he had now become an enthusiastic supporter of his work as a reformer. He hoped the governors of Victoria University would be asked to support a proposal that the University's representative on the General Medical Council should be voted for by the whole Convocation of the University. That would be a beginning of the end of the present hole-and-corner system of election which prevailed in the various Corporations.

Dr. Woodcock, in proposing a vote of thanks to Mr. Horsley, expressed surprise at anyone believing the General Medical Council was capable of conversion; he himself thought it would "die in its sins."

Dr. Dreschfeld seconded and Mr. Whitehead supported the vote of thanks, which was unanimously carried.

Mr. Horsley, replying to the vote of thanks, said: It is undoubtedly believed by the representatives of the corporate bodies of the General Medical Council that they are greatly honoured by their election to that Council, and without wishing to be immodest, I claim that you have done me far greater honour by electing me as member of the Council. I feel that strongly, and it more than recompenses me for any trouble or pains I am put to. May I mention also that the fact of my having been supported here in the Lancashire and Cheshire Branch is an act which is always present before me, but, oddly enough, especially at those moments when I have been defeated at the Council? I suppose it is because one feels that in this part of the country there is a keen interest among the members of the profession. With regard to the questions asked, Dr. Brierley has spoken of the facts that the resolutions which are sent to the Council of the British Medical Association get no further or have no notice taken of them. That is undoubtedly frequently true of resolutions sent to public bodies, but that is no reason why we should not continue to send resolutions. On the contrary, insistence is the only way to win, and if the resolutions are repeated they gradually bear down opposition, and in the case of the General Medical Council, they instruct where instruction is needed. I sympathise with Dr. Brierley as to the fate of such resolutions, and also as to the diploma of the Obstetrical Society, and I hope we may soon have an opportunity of undoing what the Council has done. You may remember in that matter that the Council did a very extraordinary thing: they first of all threatened a number of leading gynæcologists with the erasion of their names from the *Register* for being guilty of infamous conduct, and then they went entirely back on their word, and they accepted what is actually a diploma, the wording of which was really hardly better than that of the previous one. As regards the amendment of the Medical Acts, certainly the Parliamentary Bills Committee of the British Medical Association has unofficially received the Bill drafted by the Lancashire and Cheshire Branch, and I hope it will be brought forward immediately after Christmas. I must thank Dr. Colin Campbell for the way in which he has supported my work. I am very grateful for criticism; I am therefore especially indebted to him for what he has said to-day, and clearly if as he suggests the Victoria University elected its representatives in the same way as the University of Oxford, then we should have undoubtedly made a great step. I shall try to obtain the same thing at the University of London. Our University is represented by a Senate, which is a dying body, and I hope in the new University that the point will be looked to and that the graduates will have the power of election. I am especially obliged to Mr. Whitehead for the support he has always given to the work, and I look upon him as a leader in successful defence work. Dr. Woodcock has as usual exercised his kindly wit. It is quite true that I am not too old to be an enthusiast, but I have met many enthusiastic old gentlemen, and I believe that I shall still remain enthusiastic when I become older, but as regards the question of faith in the convertibility of the Council I think no one is past redemption—[a voice: Not Mr. Brudenell Carter?]. Well, there are of course various degrees of redemption, but you have not to convert the whole Council, but only one person more than half of the members of that Council. If you look through the names you will see that while by a good stroke of fortune the chief obstructionists on that Council have passed from its ranks, the men who have taken their places are men who have come to the Council in a sort of degree ready to be converted, and our hopes are therefore the brighter.

THE SEAMY SIDE OF WAR: A REPLY.

[The following communication has been received from a correspondent who signs himself "Observer," and who is in a position to know the facts. Complaints of the kind formulated by our lay correspondent were rife after the battle of Atbara, and were made the subject of questions in Parliament. Similar complaints were beginning to be heard about Khartoum, and there is or was an intention to raise questions in Parliament again. It is therefore eminently desirable that the nature of these complaints should be made known in order that they may be answered. Otherwise the ball of gossip goes on increasing until it attains very large proportions.]

Your "lay correspondent," writing about the "Seamy Side of War" in the British Medical Journal of November 12th, has devoted several paragraphs to the organisation and administration of the Egyptian medical service during the 1898 Soudan campaign. While he freely criticises the organisation—about which I propose to show you he is extremely ignorant—he makes a malicious attack on the administration. I should have thought that you, Sir, as Editor of the British Medical Journal, would have hesitated to publish the remarks connected with medical organisation, as you have been fully informed on this subject by your valued correspondent of the Egyptian army in the Journals of April 18th and May 9th, 16th, and 30th, 1896, during the Dongola campaign. It is not my intention to go again over this well-beaten ground, and I must only refer you and your readers to the above-quoted Journals; but I would incidentally state that I consider the medical organisation of the Egyptian army is, as far as present knowledge will permit, up to date.

This is specially so as regards the requirements for active service, seeing that we have been continuously engaged on a campaign of two and a half years' duration. But notwithstanding this, which I thought was the common knowledge of all who were engaged on this arduous active service, your lay correspondent in his first paragraph dealing with the Egyptian Army writes:

> They were natives, it is true, and accustomed to hardship; but a wounded man of whatever race deserves the relief to suffering which the skill of the surgeon and the attention of trained orderlies can alone afford.

This is a direct attack on organisation as it leaves on the mind the idea that there are no trained orderlies, one of the primary essentials of a medical corps.

It is sufficient for my purpose to point out this gross error in your correspondent's article in order to show that he knows nothing whatever about medical organisation, not only in the Egyptian army but in any army. I will, therefore, not waste time in noticing any other points of organisation he has criticised.

Now I pass on to the administration on active service. Your correspondent states:

> The Egyptian cases, which brought up the total to 500, were in yet worse plight (than the British), their very much smaller medical staff being absolutely unable to tackle the demands made upon them.

These statements are absolutely untrue. The staff was not

smaller than the British, and they were able to cope with the wounded, who, besides being looked after by their own officers and men (trained) of the medical corps, were materially assisted by trained men from battalions and corps of the Egyptian army, and by numerous fatigue parties. Besides, as a military necessity, we were moving back on our lines of communication, which were well equipped in every respect. There was a 100-bed hospital at Dakhila Fort with fresh staff, and also a 200-bed hospital at Berber with a large staff, with large quantities of reserves of all description—medicines, surgical material, and medical comforts; and as we retired all that was necessary was brought up or down on these lines of communication as required.

Is your correspondent aware that it took 4,000 native soldiers all their time to carry the wounded back the forty miles from where the battle of Atbara was fought to the river at Dakhila Fort. The severe cases, every one of them, were carried by these troops on stretchers or angareebs (native beds).

Your lay correspondent says some of the British battalions volunteered to carry their own wounded, and appears to blame the authorities for not allowing them to do so. They could not have done the work, and although the offer was a gallant one, I think it was wisely decided not to add to the difficulties of the situation, and increase sickness, by employing British soldiers as bearers in such a climate, when there was any amount of native soldiers available for the duty.

Does your correspondent contend that because the native soldiers were "wholly unaccustomed to the work of carrying wounded, and let them slip and fall, causing tortures to the sufferers," to use his own expression, there should have been 4,000 trained bearers (camp followers) to meet such contingencies?

If he does not mean this, what was his object in making such untrue, ungenerous, and sensational statements, which must have given pain to the public and especially to relatives and friends of those on active service? If they were not inserted to draw attention to any grave defect of transport, I cannot see what other possible or better arrangements could have been made. I think this paragraph should never have been published.

My personal experience is that, trained or untrained, there are no better bearers for sick and wounded than the Egyptian soldier. When the battle was over and there was no pursuit or further enemy to deal with, the whole army became available for looking after the wounded. Lucky the wounded were that had such splendid transport. I quite agree with your correspondent that the medical staff worked like heroes, that they were overworked and dead-beat; but it should be remembered that after a big battle the hospital staff are always overworked and dead-beat. The battle of the Atbara was far and away the biggest battle since the Crimea, if the number and severity of the casualties is taken as a test. The whole affair was conducted with an extraordinary amount of success, considering the difficulties of the situation, and the military necessity of getting back as soon as possible to the Nile; and although your correspondent has picked out every hole and corner he can for extremely adverse criticism, I consider that his unmitigated sensationalism proves him unfitted to deal with questions of this kind.

At the battle of the Atbara over 500 British and Egyptian soldiers, of which half were very badly wounded, were dressed, collected together under shade of trees, and huts rapidly run up by the Soudanese soldiers, and given medical comforts, before midday on April 7th, the day of the battle.

It is difficult to realise what this really means, particularly in such a climate. I do not think I can explain it better than by drawing a comparison. Supposing 500 "healthy" men are suddenly thrown on a comparative weak and skeleton staff, and this staff has to arrange only for feeding and placing them, this under ordinary circumstances would, I venture to state, take some time. But let them be wounded, half of them helpless. I think this ought to bring home to your readers what the treatment of wounded immediately after a big fight entails on the medical staff.

Your correspondent implies that it was not the duty of company officers and their men to come to the assistance of their own wounded, and constantly harps on the fact that the medical comforts of the army had to be supplemented from private stores.

Was ever such a gross libel made? To think that private supplies could ever take the place of public supplies. This is nothing more or less than a gross exaggeration. There never was any want of medical comforts. The wisest and most capable commander of modern times left nothing to chance. He absolutely knew almost to an ounce what medical comforts were with the combined British and Egyptian armies, and gave from one to the other as occasion required. As it so happened, the Egyptian army, having been already a long time on active service, and having been specially prepared to meet the Emir Mahmoud's attack before a single British soldier left Cairo, more thoroughly found in all the medical necessaries to withstand even a prolonged siege if necessary, and the Sirdar gave therefore definite orders that the British should want for nothing. Small credit is therefore due to the Egyptian Medical Service, for the very little medical supplies they shared with their hard-worked brothers in arms on this memorable occasion.

This want of medical comforts only therefore existed in the imagination of your correspondent, and in the limited and malicious view he has exhibited in his correspondence. There has not been a battle fought in recent times where similar complaints have not been made, and I have come to the conclusion, while you have people like your lay correspondent on the field of battle, you will always have these petty-minded spurious complaints.

Having now disposed of the battle of the Atbara, I come to the advance on and battle of Khartoum. The two phases of the 1898 campaign were entirely different, The Atbara was fought in a hurry; that is, rapid movements forced on us by the tactics of the enemy, perhaps, did not allow of every possible independent medical arrangement being made for the British forces at this early date in the campaign. The admirable medical organisation laid down by the skilled hand of Colonel McNamara, C.B., took some time to develop, as it was absolutely new to the other departments of the army with which the Principal Medical Officer of a British army in the field is intimately tied up. But during the long, trying summer months between Atbara and the advance on Khartoum, there was ample time for the perfection of these details, and it may be truly said that no army ever took the field better equipped in every respect to fight the battle of Khartoum. Besides well-equipped lines of communication, there were five sections of field hospitals attached to each brigade, sections to artillery and cavalry, and bearer companies. This organisation was to succour wounded wherever they fell, near the river or far away in the desert. There were also three completely equipped hospital barges; these barges were brought up for the accommodation of wounded when the opportunity arose for placing them there, and for evacuating them as soon as possible after the battle to Atbara and Abadia.

The night before the battle these hospital barges, together with all other boats and barges except those carrying ammunition, were ordered across to an island in midstream, about 300 yards from our position. This was a wise military precaution, as it was the intention of the Sirdar to move out of the zareba at daybreak to attack if necessary. These barges already contained sick from the British brigades, and it would have been an extraordinary case of obliviousness had the Sirdar allowed these barges to remain on our side of the river absolutely helpless, and much in the way of the gunboats.

Your lay correspondent calls this move inexplicable. I am not astonished, for he appears to have seen nothing in its right light. After the first attack in the zareba was beaten back, the wounded of both armies were placed on the only barges available—the ammunition barges. These barges, having accomplished their mission of resupplying the artillery for the contemplated advance on Omdurman, were handed over to the wounded. They were admirably suited for the purpose, as the ammunition was cleared before the wounded were got on board, and there was none of the yelling bitterly complained of by your correspondent. On these barges there were surgeons and orderlies. Remember, also, that your correspondent states: "Within ten minutes (of being wounded) every possible care and attention, wounds dressed, etc.;" all the wounded had been excellently looked after up to the time they were put on the barges.

I cannot understand why the barges, when they were taken away by steamers, did not move across to the hospital barges 300 yards away on the island. This is a local circumstance depending entirely on the officers, medical or otherwise, who were on the bank before they started, or on the steamer when they moved off. But what I contend is this: that without the hospital barges, which were brought up principally to transport the wounded down the river, there was plenty of assistance and brigade section hospitals to provide for the very small number, most of them slightly wounded, on the ammunition barges. Granted the wounded were overcrowded as a temporary measure; but was it not better to place them on barges protected from the sun by substantial wood awnings than leave them on the bank? Your lay correspondent says there were only spirit lamps to cook food with on these barges. These lamps, being part of the equipment of a section field hospital, are specially provided for these emergencies. Does your correspondent expect large kitchen ranges to follow armies in battle?

The fact of the wounded, dying, and dead being huddled together for a short time must be accepted as inevitable in war, "but it should not be written about."

Even the wood awnings come in for criticism. Also the wind blowing away the chloroform. Was such nonsense ever published before?

Then your correspondent indulges in impossibilities: "Only if the Dervishes had delayed their late attack, etc.," "there was extraordinary obliviousness in not appreciating the fact that the Dervishes were again coming on." Your correspondent was apparently on a barge at this time. He at all events was in utter ignorance of the orders given by the Sirdar. There is nothing more certain than that the Sirdar suspected an attack on our right when we advanced. MacDonald's brigade before moving out of the zareba was strongly reinforced by artillery from our left (British), showing that the attack was expected. Also MacDonald's brigade changed places with Lewis's Egyptian brigade in order that one of the finest fighting machines ever made, brought to absolute perfection by the gallant MacDonald, should be in the place most liable to attack.

Collinson's reserve brigade was ordered to protect the wounded, and the gunboats north of our position had strict orders to cover the wounded which were then being evacuated to the ammunition barges. I think your correspondent must have seen only imaginary Baggara horsemen when he describes the uneasy feeling they caused him. From his narrative of events I think he must have been suffering from a peculiar kind of excitement on September 2nd.

The Sirdar having provided for every possible contingency, ordered the advance in echelon of brigades towards Omdurman so as to prevent the enemy from regaining the town. I call this the masterstroke of the day. Some military severely criticised this movement, but I think events proved the wisdom of the Sirdar's tactics. If the enemy got back into Omdurman in anything like order, we should, instead of having our wounded numbered in hundreds, have had them in thousands. I consider this move of the Sirdar, and his subsequent rapid occupation of the town, the most noteworthy events of September 2nd, for by so doing he completed in twelve hours the smash of the Mahdi, and saved innumerable lives.

Your correspondent apparently thinks that while these great ends were being accomplished, the Sirdar or one of his hard-worked headquarter staff should have been directing movements of barges and wounded. When a big battle like this is going on, spread over ten miles of country, individual responsibility and energy come a great deal into play. Any mistakes of detail should be visited on the people on the spot, and there should no waiting for detailed orders. Red tape is responsible for much of the latter want of initiative. Throughout the whole of the Soudan campaign the Sirdar gave much direct responsibility with corresponding power, was indulgent and encouraging to slight mistakes, but visited gross mistakes with a heavy hand. This was the secret of his success, which should not be lost sight of.

Although this letter has already become inordinately long, and is far from a pleasant task for the writer, I must shortly relate what was done for the Egyptian army wounded. Those wounded during the first attack—about 160 in number—most of them being slight wounds, were attended to in dressing stations formed just in rear of the fighting line. They were all thoroughly dressed and given the necessary medical comforts. When the order for the advance was given they were evacuated to ammunition barges quite distinct from the British. Your correspondent states: "With the best intentions in the world it was impossible to dress all their wounds, and they complained bitterly throughout the night of not having had any attention." This is absolutely untrue as regards the dressing, for everyone, as previously stated, was thoroughly dressed—not purely first field dressings—before being put on the barges. There was plenty of time to do this when the zareba was being attacked: the medical staff was large, there was heaps of surgical material, and the numbers of wounded were small and nearly all the cases slight. As regards complaints during the night, I think this is a normal condition of affairs on the first night after a battle, particularly after this battle, where everyone was rather tired and hungry after fighting and marching for over twelve consecutive hours. I know some of the medical officers on land did not get to rest that night until about two o'clock, and were up at daybreak at work again. The wounded on barges, about which your correspondent complains, I consider were extremely lucky to be able to rest all day and night without any disturbance whatever, and during the very early hours of September 3rd every possible comfort and medical arrangement was made for them.

The wounded (about 168) from the action fought by MacDonald's brigade were brought to the original zareba, and accommodated in the village as a temporary measure. They were attended by British surgeons of the Egyptian army, assisted by Egyptian medical officers and competent native orderlies, and there was abundance of every medical necessary. This dressing station was in the afternoon formed into a hospital, where the wounded remained throughout the night. The Egyptian army hospital boats, containing equipment for 600 beds, with reserves of medicines, surgical material, and medical comforts, crossed over from the opposite bank on the evening of September 2nd, joining hands with the zareba hospital. Therefore, in this hospital, which apparently did not come under the notice of your correspondent at all, and where the bulk of the Egyptian wounded were treated, every possible attention was paid to them. Not a single thing was wanting, and all the most necessary operations were performed there. On the morning of September 3rd, all the wounded, those on barges and in the zareba hospital were concentrated at Khor Shambat, together with the Egyptian army. A 600-bed hospital was opened, the hospital boats having come up with the wounded of zareba hospital, and before midday on September 3rd all the wounded were accommodated in tents on pure desert ground.

On this occasion, although 24 hours later there were 584 in hospital, 230 wounded, the rest sick, there was no great pressure on the medical staff; as we were in our own home, no transporting was required, and most of the wounds were slight—nothing like the Atbara conditions. I am sorry your correspondent did not stay to see this hospital, as he might then have learnt something about the medical organisation and administration of the medical corps of the Egyptian army. It is not a very easy thing to provide all the necessary arrangements for 584 sick and wounded under any conditions whether in peace or war, but I think it will be generally admitted that if it can be accomplished in war it certainly cannot be done without a certain amount of organisation. Whenever your correspondent deals with the Egyptian army medical service he gets into a hopeless muddle. He cannot have seen anything of it, therefore he considered, I suppose, none existed. But he should remember the smoothest-working machines attract least attention and are probably the best for work. Nothing perhaps that is not self-advertised arrests his attention.

I would like to inform your correspondent that the Egyptian army is the healthiest in the world in peace or war, and that this is not accomplished without having a very highly trained medical service. Your correspondent was very unlucky meeting a British officer of the Egyptian army who crabbed the medical corps of the Egyptian army.

During the two and a half years' campaigning I have never heard anything but unstinted praise given by British officers

both for the organisation and administration of the Egyptian army medical service. The agreement of officers with the Egyptian Government comes in for criticism, and, from your correspondent's remarks, you would imagine that they had not only to feed themselves, but also to provide medical comforts for their men. The Egyptian army know what these statements are worth, recognising that no officers have ever been done better on active service than the Egyptian army British officers. This, of course, is not due so much to Government, but to the teaching an Egyptian army officer receives of having, amongst other numerous duties, to look after himself.

The solitary wounded British officer of the Egyptian army who had to be accommodated on a steamer on the day of the battle is magnified into "British officers," as if there were a dozen of them. This particular officer, your correspondent then goes on to say, was nearly sent to his death by being evacuated north in a dirty overcrowded Dervish steamer. But this officer did not happen to be sent down on this steamer, and therefore why mention it? This shows what malice was in your correspondent's mind.

Does he know that wounded had to be sent across the Bayuda desert in 1885 on jogging camels, etc., very seriously wounded, much more so than the comparatively light casualty return of the battle of Khartoum? But in 1898 a steamer, smoothly gliding down the Nile, is not good enough for wounded. I entirely deny the Dervish steamer was unfit to carry wounded, and at the last moment it was crowded up by people ordered away, and anxious to leave under any conditions, because no wounded were sent.

Then your correspondent, as he proceeded north, speaks of the unflagging care and attention the wounded received on the voyage to Atbara, at Abadia, and, above all, on the Red Cross Society's steamer *Mayflower*. As he gradually removes himself from the toil and turmoil of war, he waxes eloquent. I can hear him say: "Why have we not Charing Cross Hospitals on the field of battle, and the moment we get wounded placed in spring beds surrounded by every luxury? I don't like these deserts, with their sand and dust storms, their intolerable heat and glare. Give me Abadia General Hospital, carried on thousands of camels; never mind the feeding of the troops or the transport of ammunition; nothing matters as long as when I get wounded I am at once placed in the utmost luxury."

One of these days, perhaps, the treatment of wounded in war will be run somewhat on these lines, but for the present the ordinary soldier is quite satisfied with the present medical arrangements, providing, as they do, all necessaries, and in very many instances luxuries, on active service in the field.

As long, however, as people like your lay correspondent find their way to the battlefield, we must expect complaints similar to those made in the article I have criticised. There are querulous, busy, and nervous individuals in all ranks of society, and we can never hope to eradicate them from the army, but I cannot envy the mind of your correspondent who could sit down and write such malicious nonsense, and I fail to discover your object in publishing it.

THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THE annual dinner of the Royal College of Physicians of Edinburgh took place on December 15th in the Hall of the College, and was attended by a large number of Fellows and guests. The chair was taken by Dr. JAMES ANDREW, who had been elected President of the College at the last preceding meeting. The croupiers were the VICE-PRESIDENT (Sir J. Batty Tuke), the TREASURER (Dr. P. A. Young), and the SECRETARY (Dr. R. W. Philip).

After the toast of "The Queen and the Prince and Princess of Wales," given by the PRESIDENT, had been duly honoured, the President gave that of "The Navy and Army," for which Fleet-Surgeon CORRY, R.N., and Colonel ROONEY, R.A.M.C., responded. Sir JOHN BATTY TUKE, in giving the toast of "The Lord Provost and Magistrates of the City of Edinburgh," referred to the enlightened steps which the municipality had taken for the benefit of the public health, and mentioned that the research laboratory of the College was now undertaking work of a public health nature, which it might be desirable that the Health Committee of the Corporation, which was so ably presided over by Baillie Pollard, should eventually assume. The toast was acknowledged by the LORD PROVOST in suitable terms. The toast of "The Clergy" was given by Dr. T. R. DONALDSON, and acknowledged by the Rev. ROWLAND ELLIS. Dr. BYROM BRAMWELL, in proposing the toast of "The Universities," referred to the great work which the Scottish universities had done in the past, were doing in the present, and would undoubtedly continue to do in the future, and dwelt on the affection with which their alumni regarded them. The toast was acknowledged by Professor JOHN SETH, who referred at some length to recent regulations with regard to the teaching in logic and moral philosophy, and the examinations in those subjects. Sheriff ANDREW JAMIESON then, in a sympathetic speech, gave "The Health of the President," which was received with enthusiasm, and acknowledged in suitable terms by Dr. ANDREW. The toast of "The Medical Corporations" was given by Dr. ALEXANDER JAMES in a humorous speech, in which he referred to the fact that, while in London the research laboratory was maintained jointly by the two Colleges of Physicians and Surgeons, in Edinburgh the task had been left to the Physicians alone. He expressed the hope that the College of Surgeons might eventually co-operate. The toast was acknowledged by Dr. HECTOR CAMERON, President of the Faculty of Physicians and Surgeons of Glasgow, and by Professor CHIENE, President of the Royal College of Surgeons of Edinburgh. The opportunity was taken to mention, in connection with the toast, the Royal College of Physicians of London, and to call upon Dr. DAWSON WILLIAMS, who briefly responded.

During the evening Dr. JOHN SMITH sang an original song which he had composed recently, of which we are glad to be able to give the text:

"THE BOILIN' O' THE MILK."
Air: "*Whan the Kye Come Hame.*"

Come all ye gentle dairymaids that warble through the glen,
I'll tell ye of a secret ye may be dinna ken!
What is the greatest bliss that yer tender hearts could claim?
Its the boilin' o' the milk whan the kye come hame!
Whan the kye come hame, when the kye come hame,
Its the boilin' o' the milk whan the kye come hame!

See yonder pawky coofeeder that's sittin' on the hill,
He kens the milk's rank puzhon that he sells, and that t'wad kill
A wean; but then he feels he's absolved frae a' the blame
By the boilin' o' the milk whan the kye come hame!
Whan the kye come hame, etc.

Lang syne when bairns were fed wi' milk that was baith warm an' new;
We little kent sic ferlies were rampaugin' through the coo;
Sic pleskies noo wad quickly bring mischanter tae oor frame
But for boilin' o' the milk whan the kye come hame!
Whan the kye come hame, etc.

Then wha amang the gentry folk is there that wadna shun
Tae eat a raw bacillus, or e'en ane that's undordone?
But ye get the danger bye ere yet pit it in yer wame
By the boilin' o' the milk whan the kye come hame!
Whan the kye come hame, etc.

Ye mithers wha may whiles aucht a bacillus o' yer ain,
An' wadna hae heriditary skaith befa' yer wean,
I rede ye a' tak tent that the remedy's the same,
As the boilin' o' the milk whan the kye come hame.
Whan the kye come hame, etc.

Awa' wi' antiseptics then, what comfort can they gie,
Or a' the airts that prey upon frail man's credulity?
Gie me a canty hour wi' the lad I winna name,
Whan he's boilin' o' the milk whan the kye come hame.
Whan the kye come hame, etc.

It's neither the Inspectors nor the Bailies o' the toon,
Nor a' their Regulations that can pit the evil doon,
But a chield has fand the cure, an' tae him belangs the fame,
It's the boilin' o' the milk when the kye come hame.
When the kye come hame, etc.

NOTES.—Kye = cows; puzhon = poison; wean = child; ferlies = wonders; pleskies = mischievous tricks; mischanter = mishap; wame = belly; aucht = own; airts = arts; canty = cheerful.

A MEDICAL Congress of Hygiene is to be held at Como, in Italy, in 1899, in connection with which there will be a solemn commemoration of Volta. Professor Baccelli, Minister of Public Instruction, has been named Honorary President of the Organising Committee, which also includes the names of Professor Bizzozero, Senator of Italy, and Professor Golgi. An exhibition of Hygiene will be held in connection with the Congress.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 24TH, 1898.

THE PREVENTION OF TUBERCULOSIS.

The meeting which was summoned by the Prince of Wales at Marlborough House on Tuesday last will mark an epoch in the long and disastrous history of tuberculosis in this country. It was a private meeting to further the objects of the National Association for the Prevention of Consumption and other forms of Tuberculosis, which will in future date its existence and what we trust may be a career of great usefulness from this occasion. Though the meeting was private, the Prince had asked a number of representative men to meet him, and after Sir William Broadbent had read a lucid statement of the objects of the Association, and of the means by which it is sought to obtain them, Sir T. Grainger Stewart, speaking as President of the British Medical Association, and as Professor of Medicine in Edinburgh University; Dr. J. W. Moore, speaking as President of the Royal College of Physicians of Ireland; Professor Macfadyean, as Principal of the Royal Veterinary College; and Sir Samuel Wilks, as President of the Royal College of Physicians of London—all, as will be seen from the full report in another column, bore testimony from their several points of view to the importance of enlisting public opinion in the fight against tuberculosis.

The Marquis of Salisbury, in moving a resolution approving the objects of the Association, and commending the method adopted of seeking to instruct public opinion, and to stimulate public interest rather than to advocate compulsion, laid special stress upon the necessity of educating the public mind. His speech indicated very clearly that the Government are not prepared to accept the proposal which has been put forward in some quarters with a view of making a resort to the tuberculin test compulsory on dairy farmers. We believe that that opinion is very widely held, not only by veterinarians and agriculturists, but also by those who are responsible for public health administration. With the growth of an enlightened public opinion, it seems reasonable to hope that commercial enterprise and the pressure of competition will eventually lead to very great improvement in the conditions under which dairy cows and cattle for slaughter are kept. Very much may also be done by local health authorities not only by improving the general conditions of the housing of the people, and the trade in milk and meat, but by educating the public mind to appreciate the importance of domestic hygiene.

There are already many encouraging signs of the growth of public opinion in this matter. We are no longer satisfied to fold our hands in resignation before the scourge of consumption, or to regard it as a mysterious product of inheritance or of bad climate. We recognise that it is an infective disease to be prevented. We are no longer content to seek to afford euthanasia to its victims, but have learnt that the means most effective for its prevention are also most effective for its cure. The change in medical opinion dates from the epoch-making research of Koch, by which he demonstrated that a specific bacillus was the cause of tuberculosis in all its forms. Since then hundreds of workers—physicians, pathologists, and sanitarians—have built upon the solid foundation laid by Koch, have proved that tuberculosis is a preventable disease, and have indicated the means which must be taken to prevent it, both in man and in animals. Gradually a change has been taking place in the whole attitude of public opinion. Owing to the insistent teaching of members of the medical and the veterinary profession, it is beginning to be understood that tuberculosis is preventable, and the question which the Prince of Wales put on a memorable occasion with regard to other infectious diseases is beginning to be asked—If preventable, why not prevented?

The Prince of Wales, by lending his countenance to the movement now on foot, has added another to the many great services which he has rendered to this country. It was obvious to all who had the pleasure of hearing the thoroughly practical speech which he delivered on Tuesday, that he took a deep personal interest in the question, and that he had been at considerable pains to inform himself upon the means which had been taken both for the prevention of tuberculosis in cattle and for the cure of consumption in man. The Prince of Wales has always shown a great interest in all matters affecting the prosperity of agriculture in this country, and as a landowner and an active supporter of the Royal Agricultural Society he has become well aware of the importance of exterminating tuberculosis from our herds. He has also by a visit to Falkenstein made himself acquainted with the hygienic treatment of consumption in man, which has been attended with so much success. His aspiration that similar sanatoria may shortly be established on an adequate scale in this country is in a fair way to be fulfilled, and we believe that many sufferers in the future will have cause to be grateful to the Prince for the assistance which he has given to the National Association for the Prevention of Consumption at this early stage of its career.

TUBERCULOUS PATIENTS UNDER THE POOR LAW.

There is some reason to hope that one result of the more general attention which has been drawn to the advantages of a better and more scientific mode of treatment of tuberculosis will be some definite action on the part of the Poor-law authorities, into whose hands a large proportion of the cases occurring among the poorer classes gravitate. In the metropolitan area in particular there is now an opportunity of coping with the dire disease which, directly or indirectly, is the cause of much misery and poverty. In the twenty-five large infirmaries now existing within the area a very

considerable and distressing aggregation of such cases is to be found. In one infirmary of about average size, which accommodates some 500 patients, we are told that last year 62 cases of tuberculous disease affecting the respiratory organs alone were admitted, and we have reason for thinking that the admission rate of consumptive cases in some other kindred institutions is even higher than this. The consumptive patients admitted to the Poor-law infirmaries in London usually suffer from the disease in the advanced stage. In very many instances the patients have already had the benefit of medical treatment in general or special hospitals. They find their way to the infirmaries as a last resource, and the high mortality swells the death roll of the infirmaries. Indeed, it would not be overstepping the mark to say that tuberculosis in one form or another supplies almost a fourth of the mortality of these institutions. But the Poor-law infirmaries also receive many cases in the incipient stage. In these cases appropriate hygienic and dietetic treatment might prove successful.

So far as we are aware, with the exception of isolated attempts at a more rational treatment on the part of some medical superintendents, attempts which under the existing circumstances of the infirmaries could not be expected to yield very striking results, the matter has not received the special attention of the parochial Boards in the metropolis. The only means existing in the direction indicated appears to be the occasional removal of a few cases occurring in infirmary practice to the convalescent homes or sanatoria carried on under private auspices at various seaside towns, with which establishments the majority of the Boards of Guardians have contracts for the care and maintenance of such cases.

Whether the duty of making the special provision of the kind indicated should be undertaken by individual Boards or by the Central Committee which already exists in the form of the Metropolitan Asylums Board is a moot point. It may be argued that that Board is already overweighted with responsibilities. Yet it alone possesses the power to frame a comprehensive scheme which in the long run would probably prove to be the most economical. The subject is now ripe for discussion and indeed for action, for there can be no doubt that the separation from other patients in the infirmaries of those suffering from pulmonary phthisis would not only be beneficent to the patients themselves, since it would render it easier to put them under conditions favouring recovery, but would also conduce to the welfare of the other inmates. It is also desirable in the interest of the general public that it should be generally known that the removal of a patient suffering from active phthisis with copious expectoration from crowded tenements and small houses would be the removal of so many active foci of infection.

The tuberculous population of our infirmaries, large as it is, by no means comprises the whole of the cases coming under the care of the Boards of Guardians. Considerable numbers undoubtedly remain under treatment at their own homes by the district medical officers. The majority of these are presumably in an early stage, and, therefore, all the more amenable to hygienic treatment. Many poor phthisical patients refuse the offer of treatment in the infirmary until their condition has become hopeless. All this time this constitutes a danger to those about them; for though much educational work has been done by the hospitals for consumption, the poor phthisical patient cannot be expected fully to appreciate the importance of burning or disinfecting their sputum. Moreover, when eventually removed to the infirmary and admitted to the ordinary wards, they continue to be centres of infection unless antiseptic methods happily obtain therein. The architecture of the metropolitan infirmaries does not as a rule lend itself to the method of isolation which is so desirable, and the result is that frequently the tuberculous are distributed among the non-tuberculous. It is the opinion of some medical superintendents that the spread of the disease under such circumstances is more than to be suspected. We are informed that in certain instances it has actually been observed. Such an occurrence would appear highly probable where patients of tender years are warded with the subjects of pulmonary tuberculosis for long periods, and without due regard to antiseptic precautions.

With these considerations before us it is reasonable to hope that not on the restricted ground of parochial necessity, but for the commonweal, we shall very shortly hear of the more modern and hygienic mode of coping with tuberculosis being adopted by Boards of Guardians. In the meantime, the recognition of the communicability of tuberculosis would naturally suggest the isolation of its subjects in the various infirmaries from the rest of the inmates, and the adoption of a routine treatment of the sputa of the tuberculous with some efficient bactericide. This would mean much. The warding of the young and susceptible inmates in the vicinity of the tuberculous will, we may hope, become shortly a thing of the past. But the efforts of the Poor-law bodies should by no means end here. The satisfactory results obtained in the many existing open-air sanatoria demand the organisation for the care and restoration of the pauper, of means similar to those which are at present only within reach of his well-to-do neighbour.

The same Gathorne Hardy's Act which rendered possible the erection of special homes for the imbecile and hospitals for the fever-stricken is no doubt applicable to the case of tuberculous patients. The aggregate of cases thus to be provided for will no doubt prove considerable, but the possibility of diminishing the ravages of the scourge of "consumption" will amply justify the undertaking by whatever authority may choose to be the first to embark in this much-needed work.

POST-MORTEM DELIVERY.

The belief that spontaneous delivery *per vias naturales* may take place many hours after the death of the mother was universal in the sixteenth and seventeenth centuries, and the natural credulity of those times embellished it with many marvellous details. Thus Rudolph Camerarius records the case of a woman hanged in the Netherlands by order of the Inquisition about 1551, whose body was left hanging on the gallows, and who gave birth to living twins four days after death, the children being found suspended by their umbilical cords from the undetached placenta. In his *Exercitationes Anatomicæ* (1653) Sue states that in many districts it was the custom to place needles, thread,

and scissors in the coffin of a pregnant woman who died undelivered, presumably for the use of the ministering spirits who superintended the birth of the child. Reimann in 1877 collected records of thirty-six cases of *post-mortem* delivery reported during the present century, and the majority are so well attested that there is little room for scepticism as to the possibility of the occurrence. In one of Reimann's series the extrusion of the child twenty-four hours after the alleged death of the mother was actually observed by eye-witnesses, and in many others the reported occurrence was confirmed by an authorised *post-mortem* examination. Stories of the birth of living children in this manner are unworthy of credence, but the extrusion of a dead child is quite conceivable, as the mechanical result of automatic uterine contractions continuing after the death of the mother, or of advancing rigor mortis. It is not proved in any of the recorded cases that labour had not begun before the death of the mother, and indeed the presumption is strong that dilatation of the cervix, which is a vital process, must have occurred during life, although possibly not until death was very near at hand.

Evidence is entirely wanting, however, to show that the child *in utero* may survive the death of the mother for more than a few minutes. The only trustworthy facts bearing upon this point are those furnished by cases of *post-mortem* Cæsarean section. This operation was formerly much practised, but has latterly fallen into disrepute from a growing conviction of its futility. As far back as the time of Numa Pompilius a law existed that no pregnant woman who died undelivered, whether in labour or not, should be buried until the child had been extracted from her womb. Many mythical heroes were alleged to have been born in this way. Æsculapius himself was said to have been cut from his dead mother Coronis by command of Apollo; and, according to Shakespeare, Macduff "was from his mother's womb untimely ripped." It has been shown, however, that in a very large proportion of cases the effort to rescue the child is unsuccessful. Puech, writing in 1874, collected 453 cases, and in only 101 of these was the child living when extracted; and of these 101 only 43 survived, the remainder dying within a few hours of birth. The fœtal mortality of the operation was therefore 90.5 per cent. It should be explained, however, that in a considerable number of cases a macerated fœtus was found, and in many the operation was not undertaken until some hours had elapsed since the mother's death.

In properly selected cases—for instance, in cases in which the child is known to be alive, and in which the operation can be performed immediately after the death of the mother, a much more favourable result would no doubt be obtained, but it must be remembered that the fœtal mortality after Cæsarean section of the living mother is at least 20 per cent. No direct observations have been published regarding the immediate results to the fœtus which follow the mother's death. Most writers on the subject are, however, agreed that it is useless to attempt to rescue the child if more than ten or fifteen minutes have elapsed. There is a case recorded by Blattner[1] in which a living asphyxiated child was extracted by Cæsarean section one hour after the mother's death; prolonged efforts at resuscitation succeeded in making the child breathe for ten minutes, but it then died. The record of the case is incomplete, and the evidence of the time of actual occurrence of death is unsatisfactory; this is a source of fallacy which is present in many of the recorded cases in which more than 15 minutes are alleged to have elapsed when the child was delivered, and it is possible that, although apparently dead (*Scheintod*), the patient was not actually so when the operation was begun. From the intimate physiological dependence of the fœtus upon the maternal circulation it necessarily follows that its prolonged survival of the mother's death is impossible under any circumstances whatever. Probably it is very slowly asphyxiated, as the blood flow through the maternal spaces fails, and in all probability the slower the failure of the maternal circulation, the more prolonged is the duration of the fœtal asphyxia, for it is known that the fœtus accommodates itself much more successfully to a gradual than to a sudden arrest of the placental circulation. Presumably, therefore, the fœtus would die more quickly if the mother's death were sudden than if it were gradual.

[1] *American Journal of Obstetrics*, vol. viii, p. 160.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

The Prince of Wales presided at a meeting of this Fund at Marlborough House on December 20th, when it was reported that the receipts for the current year up to December 17th had been £38,494, which, with the balance of the funds for 1897, gave a total sum in hand of £203,490. Having regard to all the circumstances, the Executive Committee were of opinion that £32,500 was available for distribution this year. The report of the Distribution Committee made reference to the work of the Visiting Committee, consisting of an equal number of medical and lay members, which visited all the hospitals within a radius of seven miles from Charing Cross. The information thus received had been tabulated, and before recommending renewal of the annual grant to the principal hospitals inquiry had been made as to how far the condition on which the grant had been given last year had been complied with. The answers proved very satisfactory, and the Committee recommended that the annual grants should be continued in the same amounts as before, subject to the proviso that in the present state of the Fund not more than £5,000 be given to any one hospital; after making these grants a sum of £12,050 remained, which it was recommended should be distributed, as a rule, by way of donations. The result would be that 57 beds now unoccupied would come into use during the next year, and this, added to the 185 beds reoccupied last year, made a total of 242 beds made available by the operation of the Fund. The report having been adopted, the Prince of Wales expressed his warm thanks to those who had served on the Visiting and other Committees. Sir Henry Burdett said that the evidence appeared to show that of over a million people who gave to the Fund in the first year some four hundred thousand seemed likely to become regular contributors. A vote of thanks to the Prince of Wales for presiding was unanimously adopted, and it was announced that the grants would be transmitted to the various institutions on December 30th.

THE NEW GASES.

Our Berlin correspondent writes: "Tuesday evening, December 20th, was a gala night at the Deutsche Chemische Gesellschaft. The large hall of the First Chemical Institute of the University contained a crowded and distinguished audience, assembled to listen to Professor Ramsay's address on the newly-discovered gases

and their relation to the periodic law. Of Berlin's distinguished chemists—and their number is not small—scarcely one was absent. But, besides Emil Fischer, Landolt, Liebermann, van T'Hoff, Witt, Thoms, Thiemann, and Scheibler, who in the Chemical Society were, so to speak, on their own ground, the audience included the Rector of the University, Professor Waldeyer, Rudolf Virchow, the physiologists Engelmann and Munk, the geographer v. Richthofen, the astronomer Foerster, the pharmacologist O. Leibreich, the physicists Warburg, von Bezold, Kohlrausch, Paalgow, and others. Professor Ramsay spoke in excellent German, illustrating his address by photographs (thrown on the screen) of the apparatus used in his experiments, and by various spark-spectra of the new elements. After the lecture a vote of thanks was proposed by Professor Liebermann, President of the Chemische Gesellschaft, to which Professor Ramsay replied, modestly naming Lord Rayleigh as the pioneer in this branch of chemical science, without whose primary physical investigations his own discoveries would have been impossible. The German Emperor, whose interest in modern science is well known, has requested Professor Ramsay to give him some account of his researches, and has intimated his intention of visiting the Chemical Institute for the purpose. On another evening of the week Professor Ramsay will deliver a popular lecture on The Elements of the Atmosphere, in the hall of the Urania, an institute for the popularisation of science."

BRITISH ART V. ITALIAN SANITATION.

For some years past the Town Council of Florence has been engaged in improving the sanitation of their city—an operation which was certainly not premature. To this end it was obviously needful that many old rookeries should be removed. This always is so in such cases. Further improvements, as the Town Council considers them, are impending. A number of gentlemen of artistic distinction in London consider them desecrations. They have expressed their views to the Syndic of Florence, the Marquis Torrigiani, in a letter recently published. It is now the Marquis's turn, and he has replied to these criticisms in a most courteous but lengthy letter. The Marquis points out that the Town Council is a body freely elected by the citizens, and may therefore be taken to represent their views. He and they consider that the primary duty of such a body is to provide for the sanitary needs of those who have to live and die there, and to take care that these should live as long and as comfortably as possible. He points out that the Council is by no means insensible to the necessity of conserving the many historical and artistic buildings which make Florence the resort of the civilised world, and intimates that, apart from higher considerations, they are not so foolish as to be willing to destroy those attractions which enhance so materially the wealth of the citizens. Lest their hygienic aspirations should outrun their artistic conservatism, the Council has had a subcommittee of artistic experts to advise them as to what should be preserved and what might be demolished. The Syndic points out that many of the criticisms and exhortations of the London letter writers have no basis in fact; that the supposed demolitions which have aroused their artistic apprehensions are not going to be effected under the new scheme; and especially that it is not proposed and never has been intended that the buildings on the Ponte Vecchio should be removed. Those who do not know Florence may be informed that the Ponte Vecchio is like the "Old London Bridge" of ancient views of London. We of course cannot but agree with the position taken by the Syndic and Council, that their first and imperative duty is to provide for the health of their constituents. As no omelette can be made without breaking of eggs, so no sanitary improvements can be made without demolitions, and we believe that such an enlightened body as the Council may be trusted not recklessly to destroy those charms which have made Florence celebrated throughout the civilised world.

THE SANITATION OF NICE.

In consequence of an outbreak of typhoid fever—now happily at an end—this autumn in Nice, the Mayor of the town has appointed a Commission composed of medical men and engineers to inquire into the present sanitary condition of the town, and to make recommendations for its improvement. In the past few years a good deal has been done to improve the drainage and water supply, but there is no question that a good deal yet remains to be accomplished before the town can be pronounced sanitarily perfect. It is more than a quarter of a century since a supply of drinking water was brought in from the mountains about twelve miles away. As the town grew in size and as the demands for water increased, not only in quantity, but, with the introduction of hydraulic lifts, etc., in the variety of purposes for which it was used, this supply was found insufficient, and some twenty years ago a new supply was obtained from a distance of about twenty-five miles. This new supply was very abundant, but the quality of the water was not quite equal to the earlier supply; the latter was therefore kept for house purposes, whilst the former—the new source—was given a separate canalisation, and was used for working the lifts, watering the streets, and, later, for flushing the sewers. Power, however, was retained to mix the two supplies in case of scarcity of water, and in the summer it is generally necessary to do so. This mixture of the two supplies has given rise to much complaint in the town, but there is no evidence to show that any harm has ever arisen from it. Where the real danger from water has come in is in the fact that throughout the town there are in the courtyards of many of the houses wells and pumps from which subsoil water is drawn. Now Nice, like nearly all towns on the Continent, is in great measure a "cesspool town;" the soil pipes end in cesspools, whilst the pipes from the kitchen sinks go into the sewers. Cesspools are generally leaky; hence the subsoil becomes polluted, and any water from it liable to be polluted. The combination of wells and cesspools has had the usual consequences in the occurrence of an epidemic of typhoid fever every few years. These epidemics break out soon after the first fall of heavy autumnal rains, which stir up the subsoil water and carry cesspool contents into the wells. The incidence of the fever cases is clear proof of this. The disease is almost entirely confined to those classes of the population who drink well water. No cases occur in the hotels, and very few in the better class of villas or apartments. One or both of two things, then, are necessary to do away with these periodical epidemics: (1) To suppress the wells; (2) to purify the subsoil water. In regard to the first desideratum, there is no law in France that permits a municipality to interfere with private wells. All the public wells were closed some years ago with considerable benefit to the public health; but the private wells go on, and probably will go on for years, as it has so far proved impossible to pass a law through the Chamber giving power to suppress them. Therefore the only plan available is to purify the subsoil by introducing the *tout-à-l'égout* system, and it is to this task that the Commission must address itself. The town has a very fair system of sewers. About five years ago, it spent some £40,000 in rebottoming these sewers, and a few years earlier a considerable sum had been spent in making a complete system of flushing chambers, one of which was placed at the head of every branch sewer in the town. These flushing chambers contain about 300 to 400 gallons each, and discharge automatically about six times in the twenty-four hours. Improvement is wanted in two directions. The sewers at present terminate in three iron pipes

which are carried a certain distance out to sea straight in front of the beach. As the shore is very shelving, these pipes rapidly descend, and at their mouths are about 40 feet below the surface. This may be all right so far as sanitation is concerned, but, as one of the French doctors put it, "it may be quite healthy to have your watercloset in the corner of your drawing-room, still it is not what the polite world does." Similarly, there may be no great harm in having your sewers discharging within full view of your principal promenade, but it nevertheless produces a bad impression. To remedy this will be an easy matter. The other pressing improvement—to suppress the thousands of cesspools in the town and make connection between all the closets and the sewers—is much more difficult. This is the problem which will have to engage the special attention of the Commission. Some years ago the eminent French engineer, M. Masson, was requested to furnish a plan for solving this problem. He drew up a scheme founded on ordinary gravitation principles, and the scheme lies at this moment in the pigeon holes of the Mairie. The first duty of the Commission will doubtless be to examine this scheme afresh. It is said that for about a quarter of a million sterling this could be carried out. It is to be hoped that this time the inquiry will lead to a satisfactory solution of the difficulty.

THE LATE CHAPLAIN TO UNIVERSITY COLLEGE HOSPITAL.

Mr. William Stebbing writes to us from the Athenæum Club, under date of December 21st, as follows: "Allow me to make a correction in the Christian name of the Chaplain of University College Hospital, the Rev. Henry (not W.) Stebbing, D.D., mentioned by Sir William Gowers in the interesting anecdote he told of Sir William Jenner in the British Medical Journal of December 17th. Dr. Stebbing will be still remembered by many successions at University College of students and professors, by whom he was, I may say without filial bias, affectionately honoured. My father had known Jenner throughout his career, from the arduous commencement to the triumphs of his mature manhood. Few things afforded him greater pleasure than to listen, as Sir William Gowers has related, with sympathetic admiration to his lifelong friend's clinical lectures." We can fully corroborate the statement that the late Dr. Stebbing was regarded with affection by the old students of the hospital. He was a well-known figure in the wards, and took a human interest in the students, with whom he was always on the most excellent terms. He never obtruded his office, but as he was much in request to give certificates of moral character, which are required by the medical corporations, he had many occasions of giving good advice, which was not rendered the less effective by the quiet humour which characterised his observations on such occasions.

A WORKING COLONY FOR EPILEPTICS.

The Asylums Committee of the London County Council have recommended the Council to provide a working colony for male epileptics on the Horton Manor Estate. The proposal is the outcome of prolonged deliberations by the Committee on the advisability of altering the present system, and providing some less expensive and more efficient method of housing the epileptic insane. There are about 700 male epileptics in the various London asylums, and their separation from other insane persons is highly desirable. On an area of land comprising 127 acres, it is proposed that suitable buildings be erected for a colony of epileptics to be drafted off after careful selection from the London asylums. Here they will have outdoor occupation in the shape of farm work, and at the same time every care will be taken of them during fits. It is to be hoped that provision will be made not only for the epileptic insane, but also for epileptics who are not insane. The experience of the Chalfont St. Peter Colony for Epileptics has been most favourable. It is stated that among the applicants for admission to this establishment, about 1 in 10 drop out of the list every year through insanity or death, but that among the inmates the death-rate and the proportion of transfers to the lunatic asylums is extremely small. This shows the benefit derived from residence at the colony, and that these unfortunate people when placed under such favourable circumstances do not degenerate and become actually insane to nearly the same extent as if they were left unprovided for, and when placed early under treatment are enabled to live lives of useful activity. In view of the very large number of epileptics in England, and the large proportion of these among the poorer classes, who are by reason of their affliction unable to continue at their work, become impoverished, and ultimately inmates of the county asylums, such a preventive measure as the establishment of similar epileptic colonies as that now proposed in other parts of great Britain, is one which must commend itself to all.

SALARIES OF MEDICAL OFFICERS OF HEALTH.

The announcement that the Bristol City Council has declined to increase the present somewhat inadequate salary of the medical officer of health will be read with regret by all who know the excellence of the work done by Dr. Davies. He is one of those officers in the van of sanitary science, the real value of whose services to the authorities who retain them cannot easily be over-estimated. A town clerk or an engineer would laugh at the ridiculously small salaries frequently offered to competent medical men, who give up all chance of more lucrative employment in their own profession, and devote their whole time to the practice of preventive medicine. When towns like Bristol are fortunate enough to secure such indefatigable workers as the present health officer for that city, they ought to treat them well—to encourage them in their work by their support, by giving them at least adequate remuneration for the time they devote to their duties, and to furnish them with no reasonable cause for regretting that they have relinquished the care of the individual for the care of the community. Individuals are often generous, and generally grateful. We fail to see why corporate bodies should be niggardly in dealing with a profession to whose care for the welfare of its citizens the community owes so much.

SYPHILIS IN THE THIRD GENERATION.

The alleged transmission of syphilis to the third generation—that is to say, its transmission from an individual to his or her grandchildren, is a question not only of great theoretical interest, but also of no little practical importance. The report of the Committee of the Royal College of Physicians of London on Syphilis in the Army, presented last year, appeared to assert or assume that such transmission did occur. The evidence for such an occurrence has been re-examined by Dr. George Ogilvie,[1] and a study of the series of alleged instances, which he has collected from literature with much industry and marshalled with great skill, hardly seems to warrant the conclusion to which he comes, not it would seem without reluctance, that evidence affords not indeed absolute proof, but a "reasonable probability" that syphilis may descend to the third generation. C. Hochsinger [2] also has recently studied the list of published cases, and has laid down the conditions which must be fulfilled by any case which can be accepted as proving the occurrence: (1) It must be proved that the grandparent or grandparents had syphilis before the conception of the parent. (2) It must be proved that a parent (second generation) had congenital syphilis, and this can only be done if the individual is seen and treated in in-

[1] *British Journal of Dermatology*, 1897.
[2] *Rev. des Mal. de l'Enf.*, 1898.

fancy, or if a series of quite characteristic lesions are manifested at a later age. (3) It must be proved that neither of the parents has suffered from acquired syphilis, and finally (4) it must be proved that the child (third generation) is really suffering from hereditary and not from acquired syphilis. It is on the third head that most of the alleged instances break down, and Hochsinger's conclusion is that there is not a single case on record in which the evidence is conclusive. It will be generally admitted that a very different fate may attend the products of conception of parents one or both of whom have suffered from syphilis. In a large but undetermined number of instances the fœtus dies *in utero* if the disease is in an active stage in the parents. The child, if born alive, may succumb in early infancy to the severity of the disease, or it may present the well-known lesion of hereditary infantile syphilis, and under suitable treatment reach the adult age, either without further manifestations or after suffering from the well-known lesions of late hereditary syphilis. When it has reached the adult age the individual may present obvious traces of the disease, not only in lesions of mucous membrane, skin, teeth, and bones, but also in general stunting of growth and feebleness of health. On the other hand a child which has suffered from inherited syphilis in infancy may be thoroughly robust, and show no traces of the disease when it reaches the adult age. The proof that such individuals have recovered completely from the disease is afforded by the fact that they are liable to acquire syphilis. How often this occurs cannot be stated, but that it does occur there can be no doubt. These individuals, at least, could not have transmitted the disease of the fathers to the third generation. Not a little of the importance of syphilis from the point of view of public policy is due to the circumstance that in addition to the sickness and premature deaths which it causes among those who acquire it, it has a serious effect in diminishing fecundity and in increasing the death-rate of the children which are born alive. If a woman have borne one syphilitic child it will usually be found that the mortality is very high among her offspring born later, even if they do not present obvious signs of hereditary syphilis.

POOR-LAW PROVISION FOR THE MENTALLY DEFICIENT CLASS.

Dr. Shuttleworth's paper on this subject, read at the Poor-law Conference to which we have already briefly referred, ought to lead to some searchings of heart. Although various committees and conferences have considered this question for more than twenty years, little progress has been made outside the metropolitan district. The first separate provision for idiot children in the provinces was made in 1888 by the erection of a block for 50 boys and girls in connection with the Northampton County Asylum; since then the county of Hants, the Lancashire Asylums Board, Birmingham, and the Middlesex County Council have made provision for 350 more, but with the addition of these the Poor-law authorities have only made special accommodation for about 400 imbeciles and idiots as distinguished from the ordinary insane. If we contrast the provision for 1,000 children at Darenth Schools by the metropolitan district for a population amounting to four and a-half millions with that of 400 for the rest of the country with a population almost six times as great, the lack of accommodation made by the Poor-law authorities in the counties outside London is at once evident. Accommodation should have been provided for nearly 6,000. Certainly the provincial authorities have found room in the voluntary institutions for idiots at Starcross, Colchester, and Lancaster for 446 children, but this accommodation cannot be relied upon as permanent in the case of the two last-named institutions. It is absolutely necessary that in any Poor-law arrangement which may be made for idiots and imbeciles the educable should be separated from the non-educable children. The experience at Darenth Schools has already proved the necessity for the separation of these two classes. For those who are not educable custodial care is only required, but the institution which receives them should be twice as large, if not larger, than the one which accommodates the educable children, for whom manual and industrial as well as educational instruction will be required. Boards of Guardians have much power in their own hands if they will take the trouble to exercise it. In the north of England, for example, the unions of Manchester and Chorlton have, at the instigation of Dr. Rhodes, combined to establish a colony, consisting of cottages on the Alt-Scherbitz plan with central administration offices and infirmary, for 1,500 epileptics and imbeciles now accommodated in their workhouses. Guardians should also avail themselves of the voluntary homes for mentally feeble children, at which the payment varies from 10s. to 12s. a week. Full particulars can be obtained from the National Society for Promoting the Welfare of the Feeble-Minded, at 53, Victoria Street, S.W. Dr. Shuttleworth has done well in pointing out to the Poor-law authorities the lack of provision for these unfortunate children and the way in which this deficiency can be remedied.

THE SCHOOLBOY'S TEETH.

The School Dentists' Society is a body of comparatively recent formation, but its existence is amply justified by the suggestive statistics contained in the address of its President, lately published in the *British Journal of Dental Science*. Mr. Sidney Spokes points out that, at the instance of the School Committee appointed some years since by the British Dental Association, the mouths of over 10,000 children attending various parochial, industrial, and other schools were examined, with the result that more than 85 per cent. of these boys and girls, of an average age of 12 years, were found in need of skilled attention for decayed teeth. Similar results have attended investigation along these lines in other directions, and there are now hopeful indications that the parental conscience is being stimulated to a recognition of the facts, and is awakening to the value of dental prophylaxis. For Mr. Spokes can also furnish evidence of the good already achieved in this direction. One at least of the large public schools has for the last five years instituted a system by which the mouth of every pupil is examined at entrance, and the actual condition of his teeth noted on a chart. A copy of this chart is sent to the parent or guardian under a covering letter from the head master, in which attention is drawn to what is needed, with a request that this may be attended to before the boy returns next term. These charts are so arranged that the state of each boy's teeth, together with the work required and done at any date, can be referred to at a moment's notice. On every Saturday throughout the school year the dental surgeon spends five hours in dealing with such cases as the parents wish attended to at school. The good effects of these five years of special care have been conspicuous; and the resident medical officer, Dr. Horace Savory, is able to write in most emphatic terms as to the beneficial results which have accrued to the general health of the school, as well as to greater attention now paid by parents to this particular. Nor should it be forgotten how greatly detailed care of this kind helps to foster in each pupil the (often too dormant) principle of personal dental hygiene, with all its attendant and far-reaching advantages. We hope that the day is not far distant when every large school will have its own dental surgeon attached to it. The whole period of adolescence must be one of anxious watchfulness in this respect, though the school dentist will have less initial work to execute in proportion as the importance of his labours is recognised at home and at the preparatory school. Similar remarks apply also to schools for girls, for, although æsthetic considerations have

indeed hitherto conspired to affect them rather more favourably than their more careless brothers, future generations will owe at least as much to the hygienic education and the physique of its mothers as to the training bestowed upon its sires.

POISONOUS OVERCOATS.

Many of the employees of the Birmingham City Council who were laid up owing to the large quantities of chloride of zinc in the overcoats supplied to them on November 23rd last are still in attendance at the General and the Queen's Hospitals. Some of the slighter cases are now well, but about thirty still attend as out-patients at the General Hospital, and a somewhat smaller number at the Queen's Hospital. We have been kindly furnished by Messrs. Percy S. White and Godfrey Taunton, assistant house-physicians at the former hospital, with the following details of the conditions observed: "The men when seen at the very earliest stage, in which they complained of itching, showed a condition extremely similar to an ordinary patch of urticaria; very shortly in the place of this a large number of cream-white spots appeared, the centre of each being a hair follicle, which stood out as a dark centre to the spot. This appearance was present in every case, and the main symptom complained of was the pricking sensation. These spots, gradually increasing at their periphery, had in from six to ten hours coalesced, forming definite patches of necrosis, averaging in size 1 inch by ½ inch. The patches were markedly depressed, and soon changed from a cream-white colour to a somewhat greenish tint, which may have been due to the dye of the coat. On the following day the above symptoms were more marked. Tactile sensation was entirely absent, and the patches were surrounded by an inflammatory zone. A considerable proportion of the cases later presented a cellulitis, and an accompanying lymphangitis of the arm. On the 27th these necrosed patches were showing distinct signs of separation, and on the following day a few of these had completely come away, leaving a healthy granulating surface. Some of the milder cases which never went on to definite necrosed patches, but only showed the typical appearance of cream-white spots, became pustular on the third day. On the 30th most of the sloughs had separated, and were found to extend to the superficial fat." When the sloughs separated the ulcers left were generally serpiginous, being due to the fusion of several smaller ulcers. In some of the worst cases the ulceration has gone so deeply as to lay bear the muscular tissue.

SCARLET FEVER SURGERY AND CHILDBED.

The question of the degree of danger to the patient when scarlet fever attacks an operation case or a woman in childbed is one of perennial interest. In surgery the prognosis is not necessarily grave when the fever is mild. Professor Sippel, of Frankfort, reports a case of ovariotomy in a woman, aged 22. Four days later the pulse and temperature rose high, yet there were none of the evidences of the more dangerous sequelæ of ovariotomy. Within a week the characteristic rash and inflammation of the fauces appeared. The fever proved of medium rather than mild type, but there was no renal complication. The abdominal wound had been closed by two separate layers of interrupted silk sutures applied to the peritoneum and fascia, and also by catgut, which the operator had chosen as the proper material for uniting the skin. Yet the wound, in spite of the fever and the superficial catgut, healed perfectly. Sippel maintains that this was not a case of specific infection by the wound, but that the infection was derived from the tonsils and pharynx. During incubation the operation was performed, and the development of the fever did not interfere with the healing of the wound. The same has been observed after hernia operations during mild or medium scarlet fever. Sippel turns to the grave subject of scarlet fever in childbed, and, as usual with foreign authors, invokes the name of Braxton Hicks as a supporter of the theory that there is a special puerperal scarlatina. Sippel quotes the reference, namely, the thirty-second volume of the *Transactions of the Obstetrical Society*, ignoring, we regret to say, the valuable treatise on Scarlatina during Pregnancy and in the Puerperal State, prepared by Dr. Boxall, and to be found in the thirtieth volume of those *Transactions*. What Dr. Braxton Hicks really remarked in the passage to which Dr. Sippel refers was that he himself had erroneously been quoted as holding the view that puerperal fever was caused by scarlatina. But he did not then assert that he believed in a special obstetrical scarlatina. Dr. Hicks simply added that "for himself, it seemed most likely, according to our present knowledge, that in the bad cases, similar to those seen in hospitals formerly, there were two poisons acting concurrently."

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE.

The British Institute of Preventive Medicine, which was founded with the view of establishing a national home for bacteriological investigation in this country, has entered into possession of the new building designed for its work on the Chelsea Embankment. The funds at the disposal of the Institute, however, have only enabled it partially to complete the original plan of the building. The Jenner Memorial Committee decided some time ago to transfer any funds which it might obtain to the Institute, and the Council decided to alter the name of the Institute to the "Jenner Institute of Preventive Medicine," and in this way to commemorate permanently the memory of Jenner and his work. The legal formalities have now been completed, and the Institute will in future continue its work as the Jenner Institute of Preventive Medicine. The Chairman of the Council of the Institute is Lord Lister, P.R.S., the Honorary Treasurer Sir Henry E. Roscoe, and the Director Dr. Allan Macfadyen.

PROPOSED "CONSULTING INSTITUTION" AT BIRMINGHAM.

Birmingham is already well supplied with general and special hospitals for the relief of the sick poor, and there are, in addition, several provident dispensaries with medical officers attached to them for a class who can afford to pay a little for their medical advice. The outlines of a scheme to add to these what is termed a "Consulting Institution," where the skilled opinions of physicians, surgeons, and specialists may be had at what is termed a "reasonable price," has been put forward in a tentative way. So far as we can ascertain, no attempt has been made to obtain any expression of opinion from the medical profession as a body. It would appear from an interview with Mr. Arthur Chamberlain, published in the *Birmingham Daily Post*, that the promoters expect that such an institution would be self-supporting, and that it is intended to be in no sense a charity. In fact, however, though notes of introduction from general practitioners would, we are told, be encouraged, they would not be compulsory; and it would be quite open for anyone, whatever his wealth or position might be, by paying the small fee to be fixed on, to obtain a consultant's opinion. At a subsequent interview Dr. Saundby, to whom the heads of the scheme were submitted, opposed the suggestion, and pointed out that it was asking consultants to give their services for half the market price, unless young consultants only were engaged; that they were always willing to see patients for reduced fees; and, finally, that in the working of such an institution there would probably be other points which would offer grave grounds for objection. A short time ago a very similar project was mooted at the Women's Hospital in Birmingham. It was then suggested

that the fees which patients would be called upon to pay should be divided between the hospital and each particular member of the staff. The proposal met with the unanimous disapproval of the acting staff and was dropped. The new scheme as brought forward tentatively in the press has at present met with anything but a favourable reception. But if it is definitely and seriously brought forward in detail, it will, we feel sure, meet with the disapproval and opposition of the profession in Birmingham.

TERATOLOGY AND ANTENATAL PATHOLOGY.

On the recommendation of the Medical Faculty and Senatus of the University of Edinburgh, and with the permission of the University Court, Dr. J. W. Ballantyne, Lecturer on Midwifery and Gynæcology in the Medical College for Women, Minto House, will deliver a series of six lectures on Teratology and Antenatal Pathology within the University. The lectures, which are free to the members of the medical profession, will be given in the Medical Jurisprudence Class Room, at 5 P.M., on consecutive Fridays in February and March, 1899. In the first lecture, which will be introductory, the relations of teratology and antenatal pathology to each other, and to other branches of biological and medical science, will be considered. The second and third will deal with the pathology of the fœtus and embryo, the fourth with teratogenesis, the fifth with the pathology of the germ, and the sixth with antenatal therapeutics.

THE WHITWORTH HOSPITAL, DARLEY DALE.

THE Duchess of Devonshire opened the Whitworth Hospital, Darley Dale, last week. The hospital has been established at a total cost of £20,000 by the trustees of Sir Joseph Whitworth's estate, and in accordance with the wishes of the late Lady Whitworth. Dr. W. Moxon, of Matlock, as Chairman of the Hospital Trust, in addressing the Duchess, said that the hospital had been taken into use as early as 1889, and had continued in use until July, 1897, during which period 614 patients had been treated within its walls. It had then been temporarily closed, but was now opened with ceremony as a public institution. The hospital, which consisted of two parts—the hospital proper and an isolation hospital for infective cases arising within the institution—occupied a sunny site in an elevated position, and had been erected in a substantial manner, and fitted with the most approved appliances and sanitary arrangements. The hospital was now controlled by representative trustees, and it was hoped that, useful as it had been in the past, it would have a still larger sphere of usefulness in the future. In future probationers would be trained in its walls, and eventually the trustees would be in a position to send out competent nurses to the homes of the sick poor. The hospital had a full medical staff, and was in every way well equipped for its work. Mr. Victor Cavendish, M.P., in acknowledging a vote of thanks to the Duchess of Devonshire, said that the closure of the hospital had been a matter of regret in the neighbourhood, and the want of such a hospital was so obvious that he felt certain that the public would be prepared to provide the small amount of money required to keep it in a state of efficiency.

LONGEVITY IN SPAIN.

ACCORDING to Dr. F. Olóriz, Professor of Descriptive Anatomy in the Medical Faculty of Madrid, it may be estimated that the proportion of centenarians at the present day for the Peninsula and the adjacent islands is 25 per million. The ratio in 1857 was 12, in 1860 13.97, and in 1877 29.87. In the census of 1887 the proportion had fallen to 23.39. On the whole, however, the proportion of centenarians to population in Spain has notably increased during the last century; while the total population has not quite doubled, the proportion of centenarians has trebled. The distribution of centenarians in the different provinces of Spain is very unequal. Malaga, Almeria, Murcia, Cadiz, Seville, Granada, and in general the Andalusian provinces stand at the head of the list; in Malaga, for instance, the proportion rises to something over 100 per million. The second place is occupied by the Galician provinces, the others following with slight differences till the bottom is reached in the provinces of Alava, Soria, and Teruel, in which not a single case of centenarianism is registered. Professor Olóriz concludes that, generally speaking, in the southern zone of Spain, from Sierra Morena to the coast, including the Spanish African Colonies and the Canary Islands, the proportion of centenarians is approximately from 50 to 60 per million of population; in the north-eastern region the proportion averages from 35 to 40, becoming much less in the Cantabrian zone, from west to east; it hardly reaches 15 in the valleys of the Tagus and the Guadiana; it falls to 7 in those of the Ebro, with the Eastern Mediterranean slopes, in spite of the relative abundance of centenarians in the city of Barcelona; and to less than 5 per 1,000,000 in the valley of the Douro. To sum up, extreme longevity is exceptional in the central regions of the Peninsula; it increases towards the maritime regions, especially in the south, and it reaches its maximum on the two sides of the Straits of Gibraltar. The proportion of sexagenarians in the same regions varies, but in a manner altogether different. For instance, while the proportion of persons of 60 years of age is 7 per cent. in the North East, the Cantabrian regions, Catalonia, and the Balearic Isles, it is 6½ in the valley of the Ebro, about 6 on the East Coast, and in the two Castilles, and falls to 5½ in Andalusia, especially on the sea coast. Comparing this geographical distribution with that of the centenarians, Professor Olóriz concludes that in the north extreme and ordinary longevity coincide; in the centre the latter is moderate, and the former exceptional, but in the south the proportions are inverted, as if the hot climate of Andalusia used up the energy of the human frame more rapidly in average members of the race, while being more favourable in prolonging life to an extreme degree in the exceptional individuals who live beyond the seventh decade. Professor Olóriz is careful to guard against drawing positive conclusions as to the effect of climate in the production of extreme longevity, but he thinks it probable that the sea coast, with slight variations of temperature, is more favourable thereto than inland and variable climates. From his investigations he thinks himself warranted in stating that centenarianism is in Spain relatively more common in women than in men, in celibates than in the married, and in the illiterate than in persons of education.

DEATH OF PROFESSOR KANTHACK.

DR. A. A. KANTHACK, Professor of Pathology in the University of Cambridge, died on December 21st, after an illness of some two months' duration. All who knew the energy, enthusiasm, and ability which Professor Kanthack brought to his chosen work, will join with us in feeling the deepest regret that a career so full of promise and of performance should thus have been so soon cut short.

MR. FREDERICK TREVES, F.R.C.S., has been appointed a Consulting Surgeon to the London Hospital.

MR. SYDNEY D. ROWLAND, M.A., M.R.C.S., L.R.C.P., has been appointed Assistant Bacteriologist at the Jenner Institute of Preventive Medicine, Chelsea.

DR. A. M. GOSSAGE, Assistant Physician to Westminster Hospital, has been appointed Assistant Physician to the East London Hospital for Children, Shadwell.

MR. J. H. TARGETT, M.B.Lond., F.R.C.S.Eng., formerly Curator of the Pathological Museum of the Royal College of Surgeons of England, has been appointed Assistant Obstetric Physician to Guy's Hospital.

THE PREVENTION OF TUBERCULOSIS.

Meeting at Marlborough House.

A private meeting was held at Marlborough House, on Tuesday, December 20th, at the invitation and under the presidency of H.R.H. the Prince of Wales, K.G., to further the objects of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

At the invitation of His Royal Highness, there were present, amongst others: The Marquis of Salisbury, Lord Rosebery, the Earl of Derby, Lord James of Hereford, Sir Samuel Wilks, Mr. Bischoffsheim, Sir T. Grainger Stewart (Edinburgh), Dr. Hermann Weber, Dr. J. E. Pollock, Mr. T. McKinnon Wood, the President of the Royal College of Physicians of Ireland, the Chief Rabbi, Lord Loch, Sir James Blyth, Sir Richard Thorne, Mr. Walter Long, Dr. Thomas Barlow, the Lord Provost of Edinburgh, the Director-General Medical Department R.N., the Director-General of Army Medical Service, Mr. Shirley Murphy, Dr. Grimshaw, Sir William Priestley, Dr. Playfair, Dr. Woods, Sir John Brunner, Dr. Sidney Coupland, Sir James Sawyer, Canon Rawnsley, Dr. Dickinson, Sir Donald Currie, Dr. Andrew (Edinburgh), and the members of the Organising Committee, including Sir William Broadbent, M.D., F.R.S. (Chairman), Mr. Malcolm Morris (Hon. Treasurer), and Dr. StClair Thomson (Hon. Secretary).

The Prince of Wales opened the proceedings by calling on Sir William Broadbent, Chairman of the organisation, to deliver a statement on the work of the Association.

Sir William Broadbent said: I have the honour to lay before your Royal Highness, on behalf of the Organising Committee of the National Association for the Prevention of Consumption, a brief statement of their objects and methods. We learn from the returns of the Registrar-General that nearly 60,000 deaths are every year registered as due to tuberculosis in England and Wales, and to this number may be added a considerable percentage of the deaths set down to acute affections of the lungs, in which tubercle has played an unrecognised part. Of these over 40,000 are from consumption, 6,000 from tuberculous disease of the intestines and mesenteric glands, and 6,500 from tuberculous meningitis. The destructive work of tubercle does not end here; 5,500 deaths are attributed to other forms of tuberculosis, among which are diseases of the bone. Humpback, hip-joint disease, disease of the knee, ankle, elbow, wrist, and other joints, which cripple or disable so many children, are the sign manual of tubercle. This terrible waste of life, with all the protracted suffering attending it, and the distress, moral and material, which it involves, is in great measure preventable. Already, by the effects of subsoil drainage, by improved hygiene, by the higher general standard of comfort and cleanliness, by greater attention to ventilation and to the construction of dwellings, the number of deaths from consumption and other forms of tuberculosis has been reduced by more than 50 per cent. in fifty years. The single sad exception to this statement is that tabes mesenterica, the disease of the bowel in children traceable to tubercle conveyed by milk, has increased. But while sanitary improvements have so far reduced the mortality from tuberculous diseases, science has pointed out the way by which these ravages may not only be directly mitigated, but directly prevented. It is now definitely known that consumption is a contagious disease; that it is communicated from person to person, and from animal to man; and that it arises in no other way. It is not an inherited vice in the constitution which declares itself in course of time; but while some constitutions are more prone to it than others, and while an unhealthy mode of life and unwholesome surroundings predispose to its attacks, every case of consumption is derived from some pre-existing case. Phthisis, with all the various forms of tuberculous disease, is the work of a microbe—the tubercle bacillus—discovered by Koch. This living organism is present in countless millions in the diseased lungs or intestines or bones. By its multiplication it blocks the minute blood vessels, chokes the air vesicles, and destroys structures, and by a poison or toxin which it forms it gives rise to febrile disturbance, nocturnal perspirations, and wasting. It is by the transmission of these bacilli that tuberculous diseases of all kinds are spread. The principal way in which they are conveyed from a diseased to a healthy person is by means of the expectoration, which contains them in enormous numbers, and which when dried is suspended in the atmosphere, especially of ill-ventilated rooms, in the form of dust and inhaled. Happily they are not present in the breath of the consumptive patient, so that consumption is not contracted merely by breathing the same air or living in the same house with a sufferer. Another way in which the bacilli are disseminated is in milk. Cows, unfortunately, are very subject to tuberculosis, and sooner or later the bacilli find their way into the milk. Through milk so contaminated infants and young children become affected with tabes mesenterica, tuberculous meningitis, and disease of the bones. The flesh of diseased animals also may contain the bacilli. If we could ensure the destruction of all the sputa of the sufferers from phthisis, and secure a supply of milk and meat absolutely free from tubercle bacilli, all the diseases due to tuberculosis, which now cause one-seventh or one-eighth of the total number of deaths, would cease from the land. These facts are generally known throughout the medical profession, and the precautions based upon them will be inculcated by the medical attendant. But the adoption of the necessary measures would, as we know from abundant experience, be very slow, and would require many years; and if 70,000 persons die every year from tuberculous disease—which for Great Britain and Ireland is a very moderate computation—at least 200 new persons must catch the disease every day. It is the realisation of this fact which has called into existence the National Association for the Prevention of Consumption and other Forms of Tuberculosis. The mission of the Association is to carry into every dwelling in the land an elementary knowledge of the modes in which consumption is propagated and of the means by which its spread may be prevented, and thus to strengthen the hands of medical men throughout the country who are dealing with individual cases of this disease. To this end the public attention must be captured, the public imagination must be impressed, the defensive instincts of the general public must be aroused; and we do not hesitate to express our belief that your Royal Highness will, by the single gracious act of calling together and presiding over this meeting, save thousands of lives. The objects of the Association can be stated in a few words. They are (1) to educate the public as to the means of preventing the spread of consumption from those already suffering from the disease; (2) to extinguish tuberculosis in cattle; (3) to promote the erection of sanatoria for the open air treatment of tuberculous disease. It is only necessary here to indicate the spirit in which the operations of the Association will be conducted. While making known the contagious character of consumption, it will endeavour to allay the panic which arises in some minds when it is known that consumption is catching. It does not advocate the compulsory notification of consumption, but it will urge upon sanitary authorities the desirability of insisting on the disinfection of rooms in which consumptive persons have died, when notification of the fact is made through the certificate of death. Its method is instruction and persuasion, not compulsion. In particular it will seek to enlist the co-operation of the sufferers themselves; and when the victim of consumption understands that, by observing the precautions recommended by the Association, he (or she) is protecting family and friends from the disease, he will be careful to carry them out. On the other hand, the friends and relatives of sufferers and the public generally will in self-defence discourage and repress the filthy and unnecessary habit of expectoration in public vehicles and places of public resort: and we may expect railway companies and others to follow the example set in America of putting up notices pointing out the danger of the practice. So, again, with regard to milk. The Association recognises the fact that it is impracticable to stamp out tuberculosis in cattle by the immediate slaughter of all diseased animals, but it will insist that the public has a right to a milk supply which shall be absolutely free from tubercle bacilli, and shall not scatter death among the children of all classes of the community. It will earnestly advocate the testing of herds by tuberculin and the isolation of animals found to be affected, a method which has been attended with conspicuous success in Denmark; and it will urge upon district and county councils and all rural and urban authorities the supervision of cattle sheds and of

dairy farms and of all the agencies for the distribution of milk. Another important matter upon which it has already memorialised the London County Council is the provision of public slaughterhouses, where the inspection of carcasses can be carried out before the evidences of disease have been removed. Until tuberculosis is eradicated from among our cattle an indispensable precaution is to boil or sterilise all milk, especially that given to children. The sterilisation of milk is an easy and a simple process, and it ought to be done at home. Sterilisation on a large scale at the dairy is open to abuse, and it may be so carried out as to impair the nutritive qualities of the milk. The third great object of the Association is the promotion of the erection of sanatoria for the open-air treatment of consumption and tuberculous disease generally. It aims not only at prevention, but cure. The isolation and cure of those suffering is, however, the very best and most efficient preventive measure, since a consumptive patient once lodged in a sanatorium ceases to be a focus from which the disease spreads. Your Royal Highness has visited Falkenstein, and can bear witness to the provision there made for the open-air treatment of phthisis, and of the success which attends it. Your Royal Highness may, therefore, well reproach us for lagging behind Germany in a matter of such importance. America also is in advance of this country, but it is only lately that the medical profession here has been convinced that the open-air treatment of consumption could be successfully carried out in this country. We have thought it necessary to send our patients on long voyages, or to the south of France, or to the germ-free atmosphere of the high Alps, originally recommended by Dr. Hermann Weber—one of the pioneers in the hygienic treatment of consumption, who is here as a guest of your Royal Highness to-day. Now, however, experience gained in such diverse parts of the country as Edinburgh, Norfolk, and Ireland, to say nothing of the different winter resorts on the south coast, has demonstrated that most satisfactory results can be obtained at home. The chance of recovery, formerly the privilege of the favoured few, is thus open to all classes of the community. The Association, therefore, will advocate the erection of sanatoria for every large centre of population. The Poor-law authorities will sooner or later find that it is more economical to provide sanatoria where tuberculous paupers may recover than to send them to infirmaries to die. Municipalities will consider it their duty to defend the populations over whose interests they watch from consumption, as they now do from fever, by the erection of sanatoria; and, above and before all, the charitable public generally, and those whose sympathies are drawn towards sufferers from consumption by having lost parents, children, or brothers or sisters or friends from this disease, will seize the opportunity of doing more for them than merely to smooth their passage to the tomb. Meanwhile a beginning is to be made in London by a self-supporting sanatorium, which will minister to the needs of the class which lies between the rich and the poor. The London partners of Messrs. Wernher and Beit have undertaken to erect and equip such a sanatorium at an estimated expense of £20,000, the construction and management of which will be under the guidance of the Association. As at Falkenstein, any excess of income over expenditure will be devoted in the first instance to the payment of a small interest (2½ per cent.) on the capital, and the balance to such purposes in connection with the objects of the Association as may be determined by the Committee. This offer has been a great encouragement to the Organising Committee, and we know that many benevolent persons are ready and waiting to come forward to supplement it by making provision for the poor. The idea which animates the Association is that the prevention of consumption is a national duty, in which the medical profession and the public can co-operate, the medical profession leading and guiding the movement. The Organising Committee have every reason to congratulate themselves on the interest which has been excited in all parts of the country. Branches are being formed in York, Norwich, Ipswich, Huddersfield, and other towns, and at York a considerable sum of money has already been raised for the erection of a sanatorium. An impetus will be given to the work of the Association by the meeting here to-day, under the presidency of your Royal Highness, which will greatly expedite its success in dealing with the gigantic task it has undertaken.

Sir T. GRAINGER STEWART, President of the British Medical Association, said: I believe that I owe the honour of being asked to join this meeting to two circumstances. I happen to be President of the British Medical Association and I occupy the Chair of Medicine in the University of Edinburgh. I speak in the name of the profession as represented by the Association and the Edinburgh School of Medicine also. I should congratulate the profession first upon the fact that you, Sir, have been graciously pleased to summon this meeting. Secondly, I congratulate the new Association and also the profession upon the effective and luminous statement made by Sir William Broadbent. With regard to Scottish experience there are two or three points worthy of notice. In the first place, statistics show that Scotland is very much in the same position as England and Wales as described Sir William Broadbent. I find from the returns for 1896 that while in London about 173 out of every 100,000 of the whole community died of pulmonary consumption, in Edinburgh about 170 per 100,000 died, in Glasgow the numbers are 192, and in Scotland generally 166. Thus, in Scotland we are deeply interested in the question of the prevention of tuberculosis. My second point is that already a good deal of attention has been paid to its prevention by many landowners in Scotland; many have taken great precautions in regard to getting their herds free from the tuberculous taint, and not only are we glad to know that has been done by wealthy landowners, but also by dairy farmers. Evidence given before the Royal Commission shows that some of the dairy farmers in the neighbourhood of Edinburgh have made costly experiments. One who found, on testing his herd of thirty-four milch cows, that 64.4 per cent. of them were tuberculous, set aside these in a separate place, and did not use them for milk for supplying his customers. He replaced the animals, and now he is able from an absolutely safe and sound herd to supply a milk which may be safely used without being sterilised or boiled, and which is more pleasant to take and more safe for the community. He finds, moreover, that he gets a higher price for his product. We shall soon have many dairies absolutely safe in these respects. Another point with regard to Scottish experience which may interest your Royal Highness is that the open-air system has been fairly tested and carried out near Edinburgh. You have visited Falkenstein. I do not pretend that the slopes on which the Victoria Hospital for Consumption stands compare with the splendid slopes of Falkenstein, but the system established there by my friend and former assistant, Dr. Philip has brought out results which have been astonishing. It is proved that in that hospital the windows can be kept widely open both night and day, not only without injury, but with positive advantage to the patients. I have seen patients leave my own wards in the Royal Infirmary and be treated at the Victoria Consumption Hospital by the open-air method in a climate not famous for its clemency, and these patients have improved rapidly, and splendid results have been attained. Not only has this work demonstrated the success of the open-air treatment, but by means of the advice given to patients and their friends at the outdoor department in Edinburgh, it has sufficed to diffuse a great deal of information. My last point is that the Municipality of Edinburgh takes a warm and intelligent interest in this as in all matters of public health. It was the first to adopt the principle of notification of zymotic diseases, and in the question of tuberculosis it is showing a like interest. The Town Council, under the presidency of the Lord Provost, whom I see among your Royal Highness's guests to-day, has unanimously referred to the Public Health Committee to inquire as to what steps ought to be taken for the prevention of tuberculosis.

Dr. J. W. MOORE (President of the Royal College of Physicians of Ireland) said: I wish to express my acknowledgment of the compliment which is paid to my College in asking me to address a few words to this meeting. It may interest the company, Sir, to hear something about the prevalence of consumption in Ireland. For my facts I have to thank the Registrar-General for Ireland, Dr. Grimshaw. In the twenty years ending 1890 there were registered 1,800,000 deaths, and of these in round numbers 200,000 were caused by consumption of the lungs alone. If we add to that terrible list of

deaths the forms of consumption which kill in other ways, we find that tuberculosis was responsible for 11.2 per cent. of all deaths. It is a remarkable fact that all the so-called zymotic diseases put together have not killed as many in Ireland as this one fell scourge of the human race, tuberculosis. I think it must be admitted by all hospital physicians that tuberculosis is a disease which is not best treated in our general hospitals; the surroundings are not the best for the consumptives themselves, there is a pathos about a hospital which has a depressing effect on phthisical patients. Further, the consumptives themselves have an injurious effect upon the other patients, and the sooner we learn that consumption should be treated in special sanatoria the better for those who are sick. In Ireland we have made a good start; there is the magnificent hospital in Belfast, the Royal Hospital, which comprises a special department for consumptives, but funds unfortunately only admit up to the present of opening ten beds. Through the generosity of Earl Fitzwilliam some years ago, a plot of ground in the county of Wicklow, extending over nineteen acres, was given free of rent for the purpose of the construction of a consumption hospital. It started into existence under the loving patronage of the Marchioness of Zetland. It was opened on March 19th, 1896, for the reception of 24 consumptive patients, 12 male and 12 female. The treatment adopted is the open-air treatment. The site is midway between the sea and the mountains, and the climate has been tested by observations taken for the last year and a-half. The patients treated have been 200 in number. Of 164 patients who were discharged, 2 have died. The remaining 162 made an average gain of half a stone in weight. Many of the early patients have been at work since they left, and some appear, according to their friends, to be perfectly well. That last statement I have personally corroborated, for I know two instances of patients treated there in the present year in which in all human probability death would have ensued ere this but for the treatment afforded. One is a maidservant, who is now rapidly convalescing from phthisis of the right lung; the other is a young Englishman, a compositor, who is now able to carry on his calling. The question of notification still remains to be settled. If consumption be made notifiable it will be necessary to establish some machinery properly supervised by medical officers. I am sorry to say that from some oversight the Local Government Bill for Ireland contains no provision for the establishment of county medical officers. There is one other point: a magnificent machinery exists in the country for teaching the people the danger of tuberculosis, and we owe it to Her Majesty the Queen, who, with the womanly instinct which is one of her characteristics, eleven years ago devoted a large sum of money for the purpose of providing nurses for the sick poor in their own homes. In Dublin we have two very important institutions connected with the Queen's fund, and on the Committee of one of these I myself serve. This is a statement from the last report, on December 31st, 1897: Seventy Queen's nurses were working in Ireland, and were carrying relief and comfort and education wherever they went. They know all about the danger of tuberculosis; they go to the homes of the sick poor in the cities and in the country; they tell the people how dangerous contaminated expectoration is, and how necessary it is to test the milk; and I have seen the very best results from this machinery.

Sir James Sawyer (Birmingham) said: We know that tuberculosis is peculiarly a disease affecting domestic animals, and one distinct and immediate direction in which a great deal of tuberculosis could be prevented would be by making sure that bovine animals are sheltered and housed in buildings which are fit for their habitation. In the prevention and in the arrest of other infectious diseases which have been successfully prevented and arrested, the chief motive power has been, not legislation, but popular knowledge. If we go on diffusing knowledge we shall get an aggressive public opinion which will take the whole matter into its own hands.

Dr. Andrew, the President of the Royal College of Physicians, Edinburgh, said: I can only say that I beg to support all that my friend Sir Grainger Stewart has put forward.

Professor McFadyean, of the Royal Veterinary College, said: In every animal which suffers from the scourge of tuberculosis there are certain parts that contain the living germs of the disease; and no fact is more firmly established than that any human being who takes such parts of an animal as food runs the risk of contracting the disease, unless cooking or some other process can be relied upon to kill the germs. A very few years ago a more alarming estimate than is indicated by what I have just said was widely entertained, because it was held by many that in the majority of tuberculous animals the germs were found in the whole body, and no tuberculous carcass was fit for food. This is not borne out by recent investigations. We know now that in the tuberculous animal there are some parts containing the tubercle, but the greater part does not, and is not dangerous. That was the finding of both the Royal Commissions that have sat on the subject. But while recent investigation has thus shown that the danger in this respect is not so great as it was at one time supposed to be, the knowledge recently acquired tends in quite the opposite direction. Speaking generally, the individual animal is less dangerous, but there are far more animals dangerous to a certain degree than was suspected a few years ago. It is probably true of this country, and also of the Continent of Europe, that not less than 20 per cent. of cattle sold for food are tuberculous. Tuberculosis, as Sir William Broadbent has remarked, is a common disease in milch cows, and in a considerable proportion of milch animals affected by tuberculosis the disease attacks the udder, and the milk is thus affected. There may be nothing about the milk to warn the individual who sells it, or the more unfortunate individual who drinks it, of its dangerous character. It is impossible to doubt, indeed we know as a matter of fact, that there is scarcely any legal obstacle to the selling of such milk. It is being sold every day, and some human beings are being infected daily. When measures are devised for the safety of human beings, the question of tuberculosis among animals must be taken into consideration. This Association may render great service by diffusing the knowledge that until tuberculosis can be eradicated from our domestic animals everyone can protect himself by thoroughly cooking meat and milk.

The Marquis of Salisbury said: Sir William Broadbent has placed in my hands a resolution which he has desired me—nay, he has almost prescribed it to me—to move, and in these days of advancing democracy the only authority left is the authority of your doctor; otherwise I should have demurred to his request, because I am unfit to comment upon this most important subject, the object of the present meeting, and I feel very unworthy to do so after the distinguished authorities who have given us the benefit of their opinion. I believe that it is true, as Sir William Broadbent says, that we are very much behind the world in these matters. We are behind the world in practical efforts. We are even behind the world in theories of the matter, for I believe it is quite a recent event that the contagious character of consumption has been fully acknowledged in this country. I remember some relations of mine just after the great war who went abroad to be cured of consumption at an Italian city, and they found there the strongest provisions of the law against their inhabiting any dwelling for such purposes from which the contagion might be expected to spread, and that after death those very provisions which Sir William is anxious that sanitary authorities should take here were already a matter of law and of active practice in that country. In this matter the theory of science has been ahead of us, and so it is not surprising that our practice has been a little behindhand, and now it calls on us to make redoubled efforts to level our position up with other nations. I believe this Association will be of great value in spreading both full knowledge and correct ideas upon this matter. As one gentleman said in the course of the discussion, it is the public only who can effect a change, and it is only by public knowledge any real good will be done. Nothing has seemed to me more striking in the luminous statement of Sir William Broadbent, or in the discussion following, than the absence of all desire that the powers of the law should be brought into operation to carry out the objects of the Association. It is a snare which they should carefully avoid. They must be content with preaching the salutary doctrine which they hold, and must not think of applying it to the secular arm. Without alluding to any vexed questions, we know that there are some difficulties which are attached to the carrying out of the decrees of medical science by the action of the law, and the danger of any similar result would

be very great in the present case. I see my right honourable colleague, the Minister for Agriculture, here, and I speak, so to say, under his eye, but he will join me in saying that it would considerably prejudice the spread of sound opinion upon this subject if any a tempt were made to procure or ensure the sanitary condition by any action of central or local authority. It must be taught, it cannot be enforced. I am afraid if you attempted to enforce the use of tuberculin, which has been referred to, you would find among the farmers many conscientious objectors who would object to the operation of your law. Let us be warned by past mishaps, and I have no doubt that, under the patronage of His Royal Highness, with the unequalled facilities which the medical profession has for spreading sound ideas on scientific matters among the population all over the country (through the machinery of nursing associations, by literature, by the action of the scientific missionaries who now spread themselves all over the country) you will be able to produce a sufficient recognition. The dangers of which science now warns us must be guarded against, and in some years hence, and I have no doubt at an early period, when you have generated such a movement as this, the extinction to a very great extent of this terrible disease will come about. Great progress has already been made. Most of us know families in which many members have been lost by consumption, and even now it is no longer the terrible scourge that it was. There is, however, still much to be done. Whether it is done rapidly or slowly, or whether it is done effectively or imperfectly, will depend on the energy with which this Association labours at the work, and especially on the assistance received from the medical profession. I will now propose the resolution, which is as follows:

This meeting desires to express its approval of the effort which is being made by "The National Association for the Prevention of Consumption and other Forms of Tuberculosis" to check the spread of the diseases due to tubercle, and to promote the recovery of those suffering from consumption and tuberculous disease generally. It also commends the method adopted by the Association of instructing public opinion and stimulating public interest rather than the advocacy of measures of compulsion.

Sir SAMUEL WILKS said: I beg leave to second the resolution. The subject of tuberculosis has been so much advanced in recent years by the studies of the medical profession that we think now we ought to receive the co-operation of the public in order to endeavour if not to suppress, at any rate to withstand, its ravages. As Lord Salisbury has just said it is only so short a time ago as the past generation that this disease was looked upon as a kind of scourge hanging over the country. Most lamentable tragedies have been caused by it. How many an eldest son, the hope and bright promise of some great family, has been cut off in his young manhood, how many a young girl in her bloom! I never have forgotten reading in the life of Edmund Burke the passage in which he describes how he was struck down by the death of his son; all hope, he said, of a successor had passed, the storm had blown over him, and he lay like an old oak on the ground torn up by the roots. These experiences in those times were looked upon almost as a kind of inheritance, an inevitable evil. Certainly medicine did no good. It is only of late years, due, perhaps, at first to increased means of locomotion when people could easily get out of this country, especially in winter time, that we were able to get air and sunshine for our patients, only indeed for the richer people among our patients. Some went to the Riviera, some to the Engadine, some to the Cape, others for a sea voyage, and they came back cured. Not only is this so in my own medical experience, but among friends in my own profession I can count dozens of cases of men who have passed through life after being thus cured of consumption. This opinion has been strengthened from experiments made with the tubercle bacilli; it is found that when cultivated artificially in damp places they grow, but that in sunshine they die. This is all corroborative of what I have said. I am told there is a remarkable illustration of this in the Zoological Gardens. There the idea used to be to keep up a high temperature in the houses of certain animals from the tropics. Now they let these animals go out even in winter into the fresh air, and the mortality is considerably less. It might be said if all this is known the patient could go to the doctor and he could get his prescription; but the prescription is a dear one, an expensive one; a poor clerk comes to you and you order him six months or twelve months abroad; he cannot afford it. We want sanatoria in which such patients can be placed under the best conditions for what they specially require for their recovery. Their main requirements are sunlight and air. When I was at school I used to read about Diogenes in his tub, who, when visited by Alexander the Great said "Get out of my sunshine." I thought that was rude and ill-mannered until five years ago when after I had had influenza I went to the seaside for air and sunshine, and I sat there in front of the sea; and as I sat there a friend came before me, and I said without thinking of Diogenes, "Get out of my sunshine;" and then for the first time I saw what a great philosopher that man was. I look upon this movement, Sir, as a national object, and the proof of it is the meeting here under your auspices, because with your discrimination you would not have undertaken this unless you had considered it a national object.

H.R.H. THE PRINCE OF WALES then read the resolution, and having put it to the meeting it was carried unanimously.

The EARL OF ROSEBERY, in moving a vote of thanks, said: I have the lightest and briefest task which has fallen to any of the speakers to-day, because it is to convey your thanks to His Royal Highness for promoting this meeting and presiding over it, which he has done with his characteristic urbanity and dignity. I have come here entirely as an auditor and a learner to-day, and I am not competent to speak of the high subjects which have been treated in so interesting a fashion; but I express the views of all, whether they come as teachers or learners, in saying how pleased we are to see the Prince of Wales restored once more. [Hear, hear!] The first act after his recovery from his illness is to be once more foremost in good works, and taking part in this Association which we all hope will do so much to prevent a terrible disease.

Mr. WALTER LONG, M.P., seconded the resolution, which was cordially carried.

The PRINCE OF WALES, replying to the vote of thanks, said: I beg to tender my thanks to the speakers for the very kind way in which they have moved this vote of thanks to me for occupying the chair. I assure you it has been a great privilege to preside at so interesting and so important a gathering. When my friend Sir William Broadbent asked me to take the chair I gladly assented, because I felt that, notwithstanding my want of knowledge of this particular subject, and possibly of medical subjects generally, and feeling that a more competent person than myself should have occupied the chair, still in doing so I take the chair to prove to you the deep interest I take in this very important subject. We have all listened to the able and clear statement which has been made by Sir William Broadbent, which has proved to you all the great importance of the National Association for the Prevention of Consumption which has been organised. We have all listened with interest to the able speakers who are thoroughly masters of the subject under discussion, and I am glad to think that in Scotland and Ireland their attention has been called to this subject so deeply, and that good work is being done. Lord Salisbury alluded to our being backward in this country in making such efforts as might prove advantageous for stamping out this fell disease. I am inclined to think so too. I believe in Germany, Sweden, Switzerland, and America they have gone ahead of us, and we should follow their good example. The three points which Sir William Broadbent alluded to were, first, educating the public to prevent the spread of consumption from those already suffering. Now, it is obvious to all that this is important, and the way in which much can be done is to extinguish tubercle in cattle. I agree with Lord Salisbury that to try to pass a law which would force farmers to perform operations on their cattle would possibly be unpopular; but still, if people would sometimes sacrifice their cattle which are suffering from tuberculosis, they would do more by good example in stamping out this complaint. I mention the matter because I have been informed that Her Majesty the Queen gave authority that thirty-six of her dairy cows at her Home Farm, which, on being tested by tuberculin, were found tuberculous, were to be destroyed. In regard to sanatoria, I have just alluded to how this disease should be stamped out; but when it exists the great object is to cure it. No doubt these sanatoria, one of which I visited at Falkenstein, and

which impressed me greatly, are very useful. Our climate has been against our having them before. In Germany and Sweden and Switzerland the climate lends itself to this mode of life more than we find here. Though I think, on the whole, our climate is the best in the world, unfortunately we do suffer from vicissitudes of temperature and dampness, which everyone knows is bad for consumption. I was much struck at Falkenstein with the sanatorium under Dr. Dettweiler, which is a sanatorium that everyone would wish to follow in England. I was told that in the village at Falkenstein there was no case known of consumption, the arrangements were so good, and there was no means of the villagers becoming contaminated. I do not know that there is any more for me to say. I can only repeat that not only do I take the deepest interest in this important subject, but if anything lies in my power to further this great object I shall only be too proud to do it, and to give my assistance to this Association. I thank you for listening to me and for the remarks about my health, the the improvement in which has given me the opportunity of standing before you to-day.

Before leaving, the Prince took the opportunity of thanking the London partners of Messrs. Wernher, Beit, and Co., for their promise to provide the sum of £20,000 for a sanatorium for patients of limited means.

THE BIOLOGICAL SEWAGE TANKS AT LEEDS.

The long-looked-for report on the experiments recently made at Leeds with the Dibdin tanks was presented a few days ago in a private form to the members of the Sewage Committee, and was considered by them at their meeting on Monday, December 19th.

Leeds Sewage Works.

The normal dry weather flow of sewage in Leeds averages 15 million gallons daily. This is about the same quantity as the water supplied by the Corporation to the town. The rate of flow rises to an amount that would correspond to 22 million gallons daily during the day, and falls to below an average of 8 million gallons in the night. A twentieth of an inch of rain increases the flow to a rate of 60 millions, the maximum capacity of the outfall sewer. The sewage works at Knostrop consist of lime-precipitation tanks, erected, after a number of experiments with other processes, in 1874 at a cost of £57,524. The annual working cost is nearly £7,000. The sludge is an unsaleable article, but is sufficiently valuable to be fetched away.

Difficulties of "Broad Irrigation."

Several methods of dealing with the Leeds sewage have been proposed. Broad irrigation has been considered, but the cost of conveying the sewage to suitable land in the immediate neighbourhood would be something like £11,000 a year, chiefly in pumping. Other lands some 13½ miles away were considered as in some respects suitable, but they are in portions too subject to floods. By making the distance 20 miles—necessitating an expenditure of nearly half a million in laying a conduit, and probably the rest of the million in purchasing land—a gravitation irrigation scheme might be effected; but both these plans are expensive and difficult.

The Biological Sewage Tank.

The Leeds Corporation having visited the works at Barking and Sutton, were so impressed with the feasibility of a bacteriological system, that they resolved to experiment, under Mr. Dibdin's guidance, upon their own sewage. For this purpose they erected two coke filter beds, each of one-eighth of an acre in area, one filled with coarse material to receive the sewage, the second with finer breeze to re-treat the effluent from the first. The two tanks have been capable, during the year experiments have been going on, of dealing at each filling with an average of about 54,000 gallons, but this amount varied considerably at different times. The gross capacity of the rough bed was 174,800 gallons; when filled with coke this was diminished to 83,300. When it had been at work two months careful measurement showed that the capacity of the rough bed had been reduced to 63,400 gallons. This was what might have been expected, as the beds got into working order, the surfaces and interstices of the coke having become coated with a dark gelatinous slime containing multitudes of micro-organisms. Mr. Dibdin's estimate of the working capacity of the bacteria beds is two-thirds of their original water capacity. So that the actual capacity of the Leeds coarse bed on December 2nd was greater than might have been expected. On Mr. Dibdin's estimate it should have been 55,000 gallons. Curious alternations seem to have taken place in the tanks. On December 16th, 1897, before the triple filling was commenced, the capacity was 58,800 gallons: on December 30th it had fallen to 57,100; on January 13th and 27th it was respectively 51,100 and 45,400. At the 284th filling the work was suspended. It was evident that the rough bed was sludging up. This was probably due to a combination of causes. In the first place the organic matter in suspension in the sewage was probably not being digested sufficiently fast. There was doubtless also some breaking up, or settling down, of the coke. The bed, in fact, had slightly diminished in height. No doubt also a certain amount of grit had passed on to the bed, and with it the bacteria could not of course deal.

Its Effect.

It is estimated from the analyses during two months and a-half—October 2nd to December 15th, 1897—that the suspended matters in the Leeds crude sewage averaged 37.2 gr. to the gallon. The effluent from the rough bed during the same period averaged 11.9 gr., so that 25.3 gr. per gallon had been kept back in this bed alone. We have seen that the capacity had fallen from 83,300 to 45,400 gallons. The average measure of the fillings during this period was 64,600 gallons, so that in the 284 fillings 18,346,400 gallons had probably been treated. If the 23.3 gr. kept back were regarded as sludge containing 90 per cent. of water, it is estimated that such sludge would have occupied the space of 65,000 gallons, but the diminution of the capacity of the tank from 83,300 to 45,400 was only 37,900. Deducting this from the 65,000 gallons of sludge left behind in the tank, we have 27,100 as the amount disposed of or liquefied by the rough bed, or about 42 per cent. of the whole. At this period the beds were left to rest for a fortnight (February 4th to February 18th, 1898).

The average temperature of the sewage entering and the effluent passing from the beds had been from 65° to 66° F. during these winter months, when the atmospheric temperature was below 40° F.

At the end of the fortnight's rest, before recharging, the temperature at the bottom of the rough bed was found to be 77° F., that of the atmosphere at the time being 38.5° F. When the tank was refilled, it was found capable of retaining 55,900 gallons, the fortnight's rest having increased its capacity by 10,500 gallons. It is suggested that two weeks out of five in winter and one out of four in summer would be sufficient to keep the tanks in good working order with three fillings a-day. The experiments point, however, to the necessity of keeping out of the tanks accumulations of fibre, etc. This may be done either by straining the sewage through fine screens, or by slightly settling it before allowing it to enter the tanks, or by a combination of the two.

The average purification obtained during the earlier experiments made with crude sewage was on the whole satisfactory. Measured by the diminution of the oxygen absorbed at 80° F. in four hours, the purification effected was some 82.3 per cent., while measured by the diminution in the albuminoid ammonia it was 73.6 per cent., the actual oxygen absorbed by the effluent having been 0.679 gr. per gallon, and the albuminoid ammonia left being 0.095, while the nitrogen as nitrates rose to 0.11 gr.

Screening and Settling.

Experiments were afterwards made with screened sewage, a perforated zinc trough being used as a carrier. During the time that this was being erected—for a short period of two weeks—the effluent from the rather overworked precipitation works was turned on to the beds, and a very good result obtained. The results with the screened sewage were also excellent, and the tendency to sludge up on the part of the coarse tank greatly diminished. It was felt, however, that some arrangement should be made to keep out the mineral grit which came down from the streets at times of flood in enormous quantities and experiments were made by allowing the crude sewage to settle for varying amounts of time—one hour, half-an-hour, and finally by simply filling a tank with

crude sewage and then emptying it on to the filter beds. The results in all these experiments, so far as the effluent was concerned, were very much the same as with crude sewage, but the tendency to sludge on the part of the tank was diminished.

GENERAL CONCLUSIONS.

As a general result it may be stated that, notwithstanding the large quantities of chemical wastes coming down the sewers, the bacterial beds purified the sewage to such an extent that it was perfectly fit to be passed into a stream very much purer than the River Aire, that the sludging up of the tank could be largely prevented by allowing the grit to subside, and that an occasional rest of a week or a fortnight enabled the bacteria in the tank to dispose of the organic portion of the sludge.

It is probable, as a result of these experiments, that under ordinary circumstances, allowing certain intervals of rest, some 400,000 gallons of Leeds sewage could be dealt with on an acre of filtering bed. This would mean for a town the size of Leeds a minimum of 40 acres of filtering beds for an ordinary dry-weather flow. The Corporation have resolved to put down three other tanks to further carry on their experiments. Two of one-eighth of an acre each will duplicate the existing ones, and the third, of a quarter of an acre, will be used for further experiments with the effluent from the present lime precipitation works, which are themselves meanwhile being increased to something more like the size required by the town. We shall look forward with interest to the further report.

THE BELFAST WATER SUPPLY.

DR. LORRAIN SMITH'S adverse report regarding the quality of the Belfast water supply, a report based upon exhaustive bacteriological examination, has produced a great impression. At a meeting of the Water Commissioners on December 5th, the Chairman (Mr. E. W. Price, J.P.) stated that a Committee had been appointed to consider the subject and present a report. This report had been read and considered in the presence of Dr. Frankland, who was in entire accord with it. The report was as follows:

Your Committee report to the Board that they have carefully considered the report presented to the Public Health Committee of the Corporation by Dr. Lorrain Smith, dated November 28th, which casts serious reflections upon the quality of the water supplied to the consumers in the city of Belfast and surrounding district. At the outset of their observations your Committee think it right to correct a false impression which might be conveyed by Dr. Smith's observations, namely, that the Commissioners have shown indifference to the necessity for safeguarding the water supply. Such an impression would be seriously misleading, for the whole subject of the water supply, and its quality has received from every member of the Board and the officials constant and anxious attention, and everything has been done that was possible to guard against contamination of the water. As regards the cases of typhoid at Phillips's farm, which occurred in January, 1897, it was suggested by Dr. Lorrain Smith's report that these cases formed the source of the epidemic which appeared in Belfast in March, 1897. The suggestion, however, is negatived by the fact that the water passing Phillips's farm had been run to waste, and excluded from the reservoir at Stoneyford for the whole period referred to, and though this important factor in the case was brought under the notice of the public health authorities, all reference to it has been excluded from the report. It may, however, tend to allay uneasiness and alarm in the minds of the public of Belfast if your Committee draw special attention to the fact that Dr. Lorrain Smith has been unable to discover the typhoid bacillus in any of the samples of water examined by him, and his investigation has been very lengthened and ardnous. This your Committee regard as very satisfactory; but they did not leave this matter to be dealt with by one scientist. Acting under instructions from your Committee very many samples of water have been taken in the catchments and from house taps in Belfast from time to time, and chemical and bacteriological examinations have been made. The catchments were also visited from time to time by the gentlemen engaged, so that they had the fullest possible information to guide them in their research. The results of their researches have been supplied to the Committee by Professor Frankland, F.R.S., bacteriologist to the Birmingham Water-works, and Corporation, also by Mr. Hodges, F.I.C., F.C.S., and by Mr. Barklie, F.C.S. Now, the two last-named gentlemen and Dr. Lorrain Smith agree that the typhoid bacillus does not appear in the Belfast water; and your Committee think the Commissioners may rest satisfied on this point. With the inferences drawn by Dr. Lorrain Smith from the presence in the water of the bacillus coli communis, your Committee's scientific advisers totally disagree. No doubt this microorganism is found in the human system when typhoid is also present, but it is also found in all healthy subjects, whether animal or human. In fact, your Committee are advised that a gathering ground entirely uninhabited, but upon which sheep or cattle are grazed, will yield water containing this bacillus, and that it is found in many of our public water supplies, and its presence therefore is no reason for condemning the water. In the opinion of your Committee the water supply is not the only factor that has to do with the public health. In Dublin there is an admirable water supply, and yet frequent and serious visitations of typhoid occur, and in the opinion of Sir Charles Cameron the cause of the typhoid must be sought in the organic pollution of the soil, and in general insanitary conditions. Your Committee believe that these two elements exist in Belfast, but Dr. Lorrain Smith's attention appears to have been almost wholly devoted to the water supply. Ten-and-a-half pages of his report are devoted to the water supply, and about eight lines to the many other conditions which have an influence on the public health. Dr. Smith, in one passage of his report, ignores, or rather questions, the value of filtration as a protection against the passage of diseased germs. Now, many eminent authorities who were examined before Lord Balfour's Commission on the London water supply, gave it as their opinion that filtration, if carefully carried on, was a very real safeguard against the passage of disease germs in drinking water; in fact, that from 95 to 98 per cent. of the micro-organisms in the water were intercepted by the filters, and the health of the consumer proportionately guarded. The Commissioners have spent a good many thousands of pounds in the construction of filter works, and these have been described by Dr. Frankland as equal to any in the United Kingdom. Further, very close attention has been paid to the farmsteads in the various catchments. In every case where possible, and where the farmers consented, works of a protective and remedial character have been carried out, Arrangements have also been made for the immediate notification of cases of infectious diseases in the gathering grounds by the doctors of the locality. In connection with the new Mourne scheme now under construction, the Commissioners have purchased the whole catchment, so that there cannot be the slightest chance of injury to the natural purity of the water. Though satisfied that every reasonable precaution has been taken to render the water supply of Belfast safe and wholesome, your Committee recognise the fact that doubts have been cast upon its suitability; and, further, that zymotic disease may occur in a catchment at any time where there is a population near the streams or reservoirs; and your Committee feel also that it is essential that public confidence in the water supply should be maintained, and the Commissioners are therefore proceeding with the promotion of a Bill for the purchase of the greater number of the farmsteads and dwellings within the catchments at Stoneyford and Woodburn. This will involve a very large outlay, but your Committee are of opinion that no reasonable expense should be spared in order that the catchments may be substantially in the Commissioners' ownership and control, and that the supply of the city and district may be of the highest quality possible.

No one in Belfast accuses the Water Commissioners of carelessness or inefficiency. They have probably done fairly well, considering the fact that the catchment areas supplying the water are in many respects unsatisfactory. Further, they deserve great credit for their enterprise in undertaking and prosecuting at great expense the new Mourne scheme, which when accomplished will probably give Belfast a water supply second to none in the world.

Writing in the *Northern Whig* of December 8th, Dr. Letts, Professor of Chemistry in the Queen's College, who has for years consistently contended that the Belfast water was bad, says:

The subject of the Belfast water is one in which I have taken an interest almost since the time of my appointment to the Chair of Chemistry here nearly twenty years ago; and those of your readers with a sufficiently long memory will recall the fact that I have repeatedly expressed the opinion that the water is not of good quality. I based this opinion, first, on the results of repeated analyses, which show that it does not come up to the standards of purity laid down by the authorities on the subject. Thus, the "albuminoid ammonia" has often risen above 0.02, while in a good drinking water it ought not exceed 0.01; the "oxygen absorbed" amounts to from 0.3 to 0.4, while it should not exceed from 0.1 to 0.2, and the "organic nitrogen" exceeds 0.02, the limiting standard for a good drinking water. Secondly, I pointed out that the sources of the water were peculiarly liable to dangerous pollution, and that the spread of an epidemic of typhoid fever by its means was not at all improbable. Dr. Lorrain Smith's report on the recent epidemic was therefore of peculiar interest to me, as confirming my view, and in emphasising the necessity of a purer water supply from less questionable sources. The delicate and tedious investigation which he has recently brought to a close could only have been attempted with any probability of useful results by one who, like himself, has devoted many years to the study of bacteriology and its methods. The time has long since passed when questions of the kind could be solved by amateurs, and the public may rely with confidence on the accuracy of his work and the importance of his conclusions.....In my opinion the Belfast water is not good, and nothing can make it so. The Mourne scheme, when completed, will furnish an abundant supply of pure water. In the meantime the less the town supply is used by its inhabitants for drinking purposes the safer it will be for them.

In the same issue there appears a letter from Mr. Robert F. Blake, F.I.C., Demonstrator in Chemistry in Queen's College, giving the results of a recent analysis by him of the Belfast water. According to this, the amount of "albuminoid ammonia" was 0.0185, and the oxygen absorbed at 80°, 0.3064 to 0.3396.

THE NEW VACCINATION ORDER.

ASEPTIC VACCINATION; THE RESPONSIBILITY OF PARENTS.

DR. ALFRED EDDOWES (Wimpole Street, W.) writes: My attention has been called to the report of proceedings in a metropolitan police court, wherein my name was used in reference to a former work of mine at the Shadwell Children's

Hospital, to strengthen the case of a "conscientious objector" to vaccination. The use of my name only came to my knowledge after the event. I need scarcely say that I am opposed to the present national antivaccination experiment. The public, however, having decided to carry out this experiment, it is more incumbent than ever that the profession should bring to the performance of the minor surgical operation of vaccination the highest skill suggested by our recent scientific discoveries in medicine. As the outlines of aseptic vaccination have already been fully discussed in the BRITISH MEDICAL JOURNAL, I need not dwell upon them, but merely mention some details which I have adopted and found useful in practice. The site chosen is cleansed with absolute alcohol and time allowed for this to evaporate thoroughly—say at least two minutes. When the serum or trace of blood on the surface after operation has dried the whole is protected for ten to fourteen days with a dressing of mildly antiseptic gelatine, painted over it in the manner which one daily employs for certain skin affections. In addition to this I always caution the parents or guardians of a child as to accidents which may possibly arise, and instruct them to inform me at once if necessary. Would it not be a good thing if the Local Government Board issued well thought out instructions to parents or guardians as to their duty in taking care of their children's arms after vaccination?

THE CONSCIENTIOUS OBJECTOR AT OLDHAM.

WE are informed that the magistrates of the County Borough of Oldham have followed the following method in granting certificates of conscientious objection to vaccination:

They arranged to hold on each evening of the four or five days preceding the 12th, special courts for this purpose alone. The applicants purchased at the local booksellers certificate forms at 1d. each. These they filled up themselves, and the magistrates sitting in these special courts signed them. They asked no questions of the conscientious parent, and at the rate the signatures were appended, could not even read over what they were signing, but simply placed their signature under a form which stated that the person whose name was on the certificate had satisfied them he had a conscientious objection to his children being vaccinated.

Unless the act of bringing the certificate to be signed be construed into a sufficient proof of the condition of their conscience, it is difficult to understand how the magistrates obtained their opinion unless they were such skilled physiognomists as to be able to read the conscientious objections in the various faces.

From 6 P.M. to midnight and later these worthy justices sat with the mayor as their leader, signing their names as long as their fingers would hold the pen, while outside the courts the people struggled and strained to get their turn, and at times varying the monotony by singing "Christians, Awake," and other suitable hymns.

It is estimated, though no record has been kept, that over 30,000 certificates have been signed.

SCALE OF FEES.

The following notes are in continuation of those published in our previous issues as to arrangements proposed or accepted:

Wcobly Union.—(*a*) 1s., (*b*) 10s., (*c*) 2s. 6d. The guardians have accepted *a* and *c*, but declined to give more than 5s. under 2 miles and 10s. above that distance under *b*.

Spilsby Union.—(*a*) 1s., (*b*) 5s. for all vaccinations performed within 1 mile. 1-2 miles 9s., 2-3 miles 11s., 3-4 miles 13s., 4-5 miles 15s., 5-6 miles 17s., 6-7 miles 19s.; a mileage fee of 1s. a mile for all fruitless journeys; (*c*) 2s. 6d.

St. Ives Union, Hunts.—(*a*) 1s., (*b*) 5s. if within the parish in which the public vaccinator resides, 6s. 6d. if outside the parish and in the districts of St. Ives, 7s. 6d. in the districts of Somersham, Warboys, and Swavesey, and 2s. 6d. in the Union Workhouse.

Mansfield Union.—The guardians offered the minimum fees for one year, which offer has been accepted by the public vaccinators.

THE PAYMENT AND SUPERANNUATION OF POOR-LAW MEDICAL OFFICERS.

WE published in the BRITISH MEDICAL JOURNAL of December 10th, page 1786, a letter from a correspondent signing himself "W. L.," suggesting that a central fund should be established from which all pensions to Poor-law officers under the Superannuation Act, 1896, should be paid, and stating his reasons for this conclusion.

In order to enable our readers more clearly to understand the suggestion put forward by our correspondent, it will be desirable briefly to allude to the regulations with regard to the superannuation of Poor-law officers which existed prior to the passing of the Act of 1896.

The first statute having relation to the subject is that of 27 and 28 Vict., cap. 42, being an Act to provide for the Superannuation Allowance to Officers of Unions and Parishes. Under the provisions of this Act the guardians of any union or parish were empowered, with the consent of the Poor-law (Local Government) Board, to grant to any officer whose whole time had been devoted to the service of the union and who should be incapable of discharging the duties of his office with efficiency by reason of permanent infirmity of mind or body or of old age an annual allowance not exceeding in any case two-thirds of his then salary. No officer was to be entitled to this pension on the ground of old age who should not have attained 60 years and who should not have served as an officer of some union or parish for twenty years at least.

This statute, subject to some intervening amending Acts not necessary to particularise, including an Act extending the above provisions to medical officers whose entire time might not have been devoted to the service of the union, remained in force until the passing of the Act of 1896, which effected a radical and long-desired change in relation to the superannuation of Poor-law officers.

It will be observed that under the earlier statutes the guardians were empowered but were under no obligation to grant any superannuation allowance, and in fact one month's notice in writing had to be given to every guardian before any proposal to make such grant could be brought forward in order to secure the opinion of every member of the Board. On the other hand, no contribution had to be made by any officer towards the formation of a Pensions Fund.

The Act of 1896, however, wholly changed this state of things, and subject to the power of contracting themselves out of the provisions of the Act vested in persons holding office at the time of the passing of the Act, every Poor-law officer as defined by the Act is now entitled, as of right, to a superannuation allowance by such Act prescribed, and the guardians of every union are under obligation to make such allowance to be paid out of the common fund of the union. To provide for the payment of this compulsory pension every officer or servant in the service or employment of the guardians, subject as indicated above, is required to contribute a percentage of his salary or emoluments to the common fund of the union.

It will be seen that the effect of these provisions must necessarily be extremely variable. In those unions where the officers are young the guardians may not be called upon to pay any superannuation allowance for some years, and the percentage deducted from the salaries of their officers being carried to the common fund of the union, may in fact be applied in the interim for other purposes; while, on the other hand, in those unions where the officers have almost completed their term of service, the pensions may become shortly or even immediately payable, hence the necessity, in the opinion of our correspondent, for a central fund to be established to which all contributions could be made, and out of which all pensions could be paid.

In writing on this subject it is pointed out by another correspondent that in default of some such provision as is indicated, many hardships will crop up, and that it will soon be very difficult for a Poor-law officer who has seen in any capacity any material length of service, and who from any cause whatever becomes disengaged, to procure for himself a new appointment; and this opinion is founded on the fact, confirming the opinion of our correspondent "W. L.," that in order to defer as long as possible the payment of pensions, Boards of Guardians will probably be disposed to select for service young men and will reject the claims of all those whose past services will render them earlier claimants for superannuation; in fact, that those past services which have hitherto been sufficient to procure for the applicant a fresh appointment, may in future be an absolute bar to his obtaining one, and that no officer will venture to resign any appointment he now holds, however inadequately he may be paid, because he will feel that in applying elsewhere for a vacant office younger and inexperienced candidates will be preferred. This, it is pointed out, may produce a very serious state of affairs as regards increase of salary, it being not unreasonable to suppose that it will operate as a strong inducement to Boards of Guardians to refuse all such applications for past efficient services, relying on the fact that the applicants will not venture to resign owing to the difficulty of obtaining fresh employment. If the plan of requiring all contributions to be paid to a common fund could be adopted, it is maintained that Boards of Guardians would again elect officers on their merits without regard to their future claim for pensions.

There is no doubt a great deal to be said in favour of the suggestions to which we have alluded; but it must be borne in mind that nothing can be done towards attaining the objects in view without further legislation, and before advocating any applications for additional parliamentary powers we should like to invite the opinion which Poor-law medical officers in general entertain on the subject.

The proposal seems, undoubtedly, to be one to which earnest attention should be given. It is essential in the public interest that the Poor-law medical service should not be permitted to suffer any diminution in efficiency, and anything which may tend to promote the unprejudiced and disinterested exercise by Boards of Guardians of their powers in the employment of officers cannot be too cordially supported.

THE PLAGUE.

India.

In Bombay city the mortality from plague was again somewhat higher than in the previous week. Throughout the Presidency, however, the numbers continue to decline.

In the Mysore State the crisis of the epidemic seems to have passed, as the death-rate in most places is declining. The outbreak in Bangalore has been more severe than in any other city in India. The latest news is that plague has appeared amongst the European troops. Though one death only is recorded, a telegram, dated December 16th, states that the outbreak is serious. We do not imagine that the soldiers are attacked in any numbers. In several places—Hong Kong, Bombay, Poona, etc.—a few European soldiers were attacked, but no numerically serious death-rate has been recorded. The military authorities have, however, caused the barracks to be evacuated.

The Special Commission.

On December 15th the Plague Commission, sitting at Bangalore, examined witnesses from Bombay. Colonel King, the Sanitary Commissioner, in his evidence as reported in the *Times*, stated that inoculation was a valuable aid to sanitation in dealing with the disease. Major Bannerman, vaccination inspector, believed that Haffkine's serum had been effective in reducing the mortality 89 per cent. He suggested educating the natives in the efficacy of inoculation, and stated that in the city of Madras, although there was no plague, 5,366 persons had submitted to inoculation. Captain Robertson, Medical Sanitary Officer of the Anantapur District, traced the spread of plague by human agency from the railway stations to several villages. In every instance, after the first case among the population occurred, unusual mortality was observed amongst rats.

On December 19th the Commission held its inquiries at Hyderabad. Colonel Lawrie said that the first indigenous case in the State of Hyderabad occurred in January, 1897. He held that Haffkine's fluid is not a serum, but a putrescent organic fluid, containing micrococci of putrefaction and occasionally pathogenic organisms. It was, therefore, directly against modern medicine and antiseptic surgery to inject the fluid. He advocated evacuation, disinfection, and the burning of houses as a means of destroying plague. Mr. Stevens, Deputy Commissioner, said that sixty-eight villages in Hyderabad State had been attacked by plague during 1898. Disinfection by burning in kilns had absolutely destroyed all germs. No bacteria were to be found in the ashes; the plague never reappeared after the infected houses of the villages had been subjected to this treatment. Herdsmen, who lived for the most part in the open air, were less liable to be attacked than those persons cooped up in towns. On the following day Captain Johnson described experiments which had been made to determine whether living organisms were found in Haffkine's fluid. Out of six bottles, five showed a distinct growth, the other was doubtful. Colonel Lawrie, when recalled to give evidence, expressed his willingness to use Haffkine's fluid if it were rendered sterile, but he was afraid the process might render it useless. He admitted that the fluid, as now used, afforded considerable protection, but denied that it gave immunity.

Madagascar.

The French authorities state that between November 26th and December 2nd of this year, 38 cases of plague had occurred at Tamatave with 18 deaths. The authorities are taking every possible measure to eradicate the disease. The rats are being killed in large numbers as a precautionary measure. It is interesting to remember that the Madagascar rat is not of the Murinæ tribe which inhabits the Old World generally, but is of the tribe Sigmodontes which is found in the American Continent and, in the Old World, only in Madagascar. It would seem, therefore, that both tribes of rats have the power of contracting plague, and the war against the rat in Madagascar is, therefore, an expedient step.

The Propagation of Plague by Insects.

An important paper on this subject appeared in *Annales de l'Institut Pasteur*, October, 1898, from the pen of Dr. Simond. He has studied the subject since 1893 clinically and experimentally, first in the Chinese province of Quang-Si at Long Tcheon, where he was then stationed, and later in India, chiefly at Bombay. This paper embodies the results of his observations during that period. By a series of closely-reasoned arguments he showed that there are two agents in the transport and spread of plague. The first and most important is the rat. By this animal the disease is spread by slow degrees, but it is the essential cause in the characteristic outbreaks of epidemics. The other agent is man, by whom plague is transported to greater distances than those attained by the rat. After the introduction of infected rats into healthy surroundings an epidemic generally followed after a brief delay, whilst the arrival of an infected human being was not always followed by other cases of infection. For such an occurrence a coincidence of favouring circumstances appeared to be necessary, the most important of which seemed to be the previous transmission of the virus to rats. An interval was observed between the death of the importing case and the commencement of the epidemic which represented the lapse of time necessary for the development of plague amongst the rats.

Dr. Simond established the fact that plague always occurred first amongst the inhabitants of the quarter where it had first attacked the rats. That, in large cities, it remained confined to that quarter so long as the rats did not emigrate. From the moment, however, when that migration began, plague would spring up in the other quarters and in the villages around, always following the routes taken by the infected animals.

From numerous observations he concluded that direct contact with a rat dead of plague was frequently the cause of the human disease, though such contact was not only not indispensable, but in ninety-nine cases out of a hundred did not occur, and that it was sufficient for rats to die in a house to infect it, and render it for a long time dangerous to its inhabitants. The gravity of a human epidemic was found to be on a par with the gravity of the rat epizootic. Dr. Simond attempted also to prove that after the great mortality amongst the rats had ended, plague still existed amongst them, though in a mild form, and that to this must be attributed the sporadic cases occuring after an epidemic had practically died out.

From an examination of the climatic conditions and seasons existing in the various plague areas, he concluded that these factors had little influence on an outbreak, with the exception that all the great epidemics of China and India reached their maximum at periods of the year other than the hottest. Many experiments were undertaken to determine whether rats and other animals could be infected by the alimentary canal. To this end cultures of the B. pestis, and the blood and organs of animals dying of plague were mixed with the food, but the results were in every case negative. Again, mice were injected subcutaneously with watery suspensions of the intestinal contents, and with the urine of a rat dead of plague. Some died within fifteen hours, but death proved to be due to other causes, while the rest never exhibited any symptom of plague. Nor did attempts to infect animals by the lungs meet with greater success. Monkeys were made to respire air containing suspended particles infected with plague bacilli, but in no case did any symptoms of plague supervene.

He points out that clinically it had long been recognised that the point of infection in man is marked by a local reaction, a vesicle, which in a certain proportion of cases ushers in an attack of plague. This vesicle is always situated on a

region where the skin is fine and delicate. This local reaction, he holds, is the result of attenuated virulence on the part of the microbe; where the vesicle with its corresponding bubo is wanting, he believes that their absence is due to the much greater virulence of the bacillus, and not to a different method of infection. The striking contrast between the difficulty of infecting animals by the alimentary canal, and the ease with which infection by the skin occurred, induced Dr. Simond to look for some active agent by which the virus might be deposited in the skin. On *a priori* grounds he suspected the flea and the bug, and he proceeds to show that such infection might occur through the flea. He discovered that fleas of a certain kind infested rats that were plague-stricken. So long as the rat was healthy, it kept its fur clean, and killed the fleas, but when ill it no longer defended itself, and fleas then swarmed in its fur in hundreds. These fleas were examined after the death of the rat, and in many cases a bacillus morphologically like that of plague was found in the contents of their intestines. Isolation by culture was not possible, owing to the conditions under which the work was done, but the examination of the contents of the stomach of fleas from the same source, but which had not come in contact with diseased animals, failed in every case to reveal the presence of such bacilli.

Fleas taken from diseased rats were ground up with water and inoculated into three mice; one died of typical plague, after eighty hours, the other two died in nine and twelve days respectively, but the B. pestis was not found in their organs. A rat, apparently ill, obtained from a plague area, was placed in a large glass jar. There were on it a few fleas; some more fleas taken from a cat were added, and when the rat appeared to be about to die another rat in a cage was introduced into the jar. The first rat died, and its body was removed after thirty-six hours. The second rat died of typical plague in five days. Another similar experiment on a mouse terminated fatally, but two adult rats escaped. It was noticed that they defended themselves skilfully against the attacks of the fleas. When the flea, fresh from an infected carcass, attacked a new host, it deposited a minute drop of digested blood at the point of suction.

In the light of these experiments, Dr. Simond quotes the observation of Yersin that plague bacilli multiply in the intestines of flies. It is therefore no matter for surprise that the same holds good for fleas. So far as the transmission of plague from man to man is possible, Dr. Simond suggested that other parasites, more particularly the bug, might be responsible.

Finally, as a result of his observations and experiments, Dr. Simond comes to the conclusion that the mechanism of the spread of plague includes the conveyance of the virus by rat and man, its transmission from rat to rat, man to man, and from either species to the other, by the agency of parasites; and that measures of prophylaxis should be directed against each and all of these factors.

CONTRACT MEDICAL PRACTICE.

An Offer and a Threat.

"M. B." writes from mid-Derbyshire giving some details of the action of the National Medical Aid Society in his district. He encloses a letter from a manager of this Society, which exemplifies in a striking manner the way in which these joint stock companies work to the detriment of the medical profession. The manager writes:

> I shall be glad to hear from you accepting the appointment, as otherwise we shall either have to approach another medical gentleman in the district, or else send one of our own into the district, a course which we are loth to adopt. We are intending to have the whole district worked up without delay, and I do not think it would be an exaggeration to say we shall have 500 members in a very short space of time, etc.

To a struggling practitioner offers of this kind, coupled with the scarcely veiled threat to start competition in the case of refusal, must necessarily have great weight. Where a medical man is unfortunately located in a district which is only capable of supplying him with enough practice to gain a bare livelihood, it is—to say the least—a disquieting circumstance to be told that his district will be "worked up," and that another practitioner will be supported at the company's expense in opposition, if he does not take what is offered him; so that it is not wonderful, if some of our brethren have not the courage of our correspondent to uphold the dignity of their profession at all hazards.

This employment of registered practitioners by lay corporations to provide dividends for their shareholders has for some time engaged the attention of the profession. There can be no doubt that much harm has been done to the profession, with no corresponding gain to the public, by the action of these enterprising providers of "cheap doctors." The matter is at the present time before the General Medical Council, and it is much to be hoped that that body will see its way to restrain members of the profession from conduct of this kind.

We learn that the profession at Enfield has united against the London and Manchester Medical Aid Society, and that the latter has introduced a medical man. If the medical men in Enfield stand firm, the Society is not likely to achieve a very great success.

THE CORK MEDICAL BENEFIT ASSOCIATION.

The report and balance sheet presented to the first annual general meeting of this Association, which was formed to provide medical attendance and medicine for members and their families, in accordance with the rules laid down by the Cork medical profession for the regulation of club and society practice in the city, to provide sick pay and burial money, and, after providing for a reserve fund, to pay a dividend to the members at the end of each financial year, disclosed considerable progress in regard to membership and a very sound state of affairs in reference to finance. After paying all working expenses, including salaries of medical officers and chemists, and providing for a large dividend to the members, the Committee were enabled to place £55 19s. 7½d. to the credit of the reserve fund, which, with stock in hands valued at £15 9s. 6d., made £71 9s. 1¾d. to be carried forward.

Mr. W. Egan (the Chairman) said that the Association, being supported by the medical profession in Cork, presented advantages above all others, and rested upon a solid basis; its members had the advantage of the first medical consultative skill in the South of Ireland.

The report and balance sheet were adopted, and the Committee for the ensuing year elected, consisting of eight lay and eight medical members; the medical members were Professor S. O'Sullivan, M.D., Professor H. Corby, M.D., Professor Ashley Cummins, M.D., and Dr. J. Cotter, F.R.C.S.I.; and the following representatives of the medical officers: Drs. Lee, O'Connell, O'Mahony, and E. Murphy.

The members of the profession in Cork are greatly to be congratulated on the success which has attended their determined efforts to shake themselves free from the tyranny of the clubs. It will be remembered that the majority of the clubs declined to accept the conditions laid down by the medical profession in Cork some three years ago, and brought in four medical men from outside to act as medical officers. The expedient has not proved very successful, for we are informed that only one of the four now remains. The success of the Cork Medical Aid Association shows that the interests of the public need not suffer. We are assured also that the medical men themselves have not experienced any pecuniary loss by severing their connection with the clubs when these bodies refused to accept the very moderate terms suggested by the profession. The indemnity fund tided over any immediate loss, and the increase in general practice among past club patients has more than compensated for any actual loss of income from the clubs. The conflict is not yet over in Cork, but the large measure of success achieved by the medical profession, which throughout has been completely united, shows the way in which a successful issue to similar conflicts in other places may be achieved. It is a fresh proof that if the members of the medical profession in a locality will remain united and true to themselves they will be able to arrange to give their services to provident institutions and clubs under conditions consonant with the dignity of the profession and at a rate of remuneration which, under existing local conditions, is felt by the profession in the locality to be reasonable. An argument often used by agitators is, that in protesting against and rejecting the miserable rates of remuneration which many clubs seek to impose, the medical profession is striking against the provident system

we have frequently exposed this fallacy. But there is no more effective means of proving its hollowness than that which was adopted in Cork, namely, the establishment of a Provident Association giving medical benefits at a proper rate, and managed by a joint committee upon which the medical officers and the medical profession are suitably represented. This is the plan which has been successfully worked out in Cork, and we hope that this success, which we have the greatest pleasure in recording, may serve as an encouragement to medical men in other localities who are engaged in the "Battle of the Clubs."

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on Wednesday the 18th day of January next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

December, 1898.

BRANCH MEETINGS TO BE HELD.

SOUTH-WESTERN BRANCH.—The winter intermediate meeting will be held at the Athenæum, George Street, Plymouth, on Saturday, January 14th, 1899, at 2.30 P.M., the President, Hugh M. Montgomerie, M.D. (Penzance) in the chair. Luncheon will be provided at Risdon's Restaurant before the meeting. Notices of papers to be read, of cases, or specimens to be exhibited, are to be sent to the Honorary Secretary as soon as possible, that an agenda paper may be issued. The Branch Council will meet at 2 P.M.—H. M. WEBBER, M.S., 4, Woodland Terrace, Plymouth, Honorary Secretary.

STIRLING, CLACKMANNAN, AND KINROSS BRANCH.

A MEETING of this Branch was held on November 11th at Larbert, Dr. MACPHERSON in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Resignation of the Honorary Treasurer.—The resignation of Dr. Ferguson, of Alloa, as Treasurer was received with regret, and the Secretary was directed to convey to Dr. Ferguson the thanks of the Branch for the highly efficient manner in which he had performed the duties pertaining to the office.

Case.—Dr. CLARKSON (Falkirk) showed a Cretin who was being treated by Thyroid Extract. The boy, although he had only been two months under treatment, showed marked physical improvement, but the mental improvement was only trifling. His movements had become much more lively. Skiagraphs of several of the ossific centres showed them numerically deficient.

Specimen.—Dr. HIGHET (Stirling) showed a Piece of Knitting Needle which he had removed from the abdominal wall of a young lady. The needle had entered at the hip, and in two months had travelled to near the centre of the abdominal walls.

New Members.—John Young, M.B., C.M.Glasg. (Bonnybridge), and Joseph McGowan, M.B., C.M.Glasg. (Grangemouth), were admitted members of the Branch.

METROPOLITAN COUNTIES BRANCH: WEST LONDON DISTRICT.

A MEETING of this District was held at the Hospital for Diseases of the Nervous System at Welbeck Street, W., on Friday, December 16th, at which there was a good attendance of members, G. CRAWFORD THOMSON, M.D., Vice-President, in the chair.

Confirmation of Minutes. The minutes of the last meeting were read and confirmed.

Cases.—Drs. FLETCHER BEACH (and for T. OUTTERSON WOOD), SAVILL, DUNDAS GRANT, HARRY CAMPBELL, and Messrs. H. WORK DODD and CANTLIE showed a series of interesting and instructive clinical cases, which, unfortunately, there was no time to discuss.

Vote of Thanks.—The VICE-PRESIDENT proposed a vote of thanks to the committee for allowing the meeting to be held at the hospital; this was seconded by Dr. THOMAS DUTTON and carried.—Mr. H. W. KIALLMARK (late Vice-President) proposed a vote of thanks to the staff, who, he said, had done everything in their power to make the meeting a success; this was seconded by Dr. DUTTON and carried with acclamation.—Dr. FLETCHER BEACH thanked the members for their cordial vote, and hoped the District would favour the hospital with another visit.

Tea.—Afternoon tea was kindly provided by hospital authorities before the meeting was held.

SPECIAL CORRESPONDENCE.

BERLIN.

An International Congress on Tuberculosis.—The Centenary of the St. Petersburg Military Medical Academy.—The German Society for the Establishment of "Lung Sanatoria."—General News.

AN International Congress on Tuberculosis and the methods for combating it will be held in Berlin from May 23rd to 27th next year. The Imperial Chancellor, Prince Hohenlohe, will preside, and will be supported by an influential Committee, headed by the Duke of Ratibon and Professor von Leyden. Five divisions of the subject have been agreed on: (1) Propagation, (2) Etiology, (3) Prophylaxis, (4) Therapeutics, (5) Sanatoria. Each of these questions will be introduced by a short and concise address, so as to leave ample time for free discussion and debate. Membership of the Congress is not to be confined to any particular class; any person interested in that terrible scourge of all nations, tuberculosis, can become a member by simply taking a ticket at the office of the Central Committee for Lung Sanatoria. As in the case of the Leprosy Conference a couple of years ago, foreign Governments will be officially informed of the proposed Congress and requested to send delegates.

Professor Waldeyer, rector of the Berlin University, and Professor von Bergmann, together with Army-General-Surgeon Dr. Grassnick as representative of the Prussian military-medical institutes, will leave for St. Petersburg to be present on December 30th at the *fêtes* in honour of the Russian military-medical academy's jubilee—that is, the hundredth anniversary of its foundation. The most cordial relations have always existed between the St. Petersburg Academy and the Berlin medical schools, and probably there is hardly one of its professors who has not spent a term or two in Berlin, working either in the Anatomical, the Pathological, the Physiological, or the Bacteriological Institute. On the jubilee day a banquet is to be given in Berlin too.

December 17th was the day fixed for the annual meeting of the German Society for the Establishment of Lung Sanatoria; but as the Empress, who is patroness of the Society not only in name, would have been unable to be present on this day, the meeting has been postponed to January 9th.

Last week, for the first time in the history of the Berlin University, the doctor's degree in Philosophy was conferred on a lady. Fraulein Elsa Neumann, the candidate in question, was examined in physics by Professors Plank and Warburg, in mathematics by Professor Fuchs, and in physiology by Professor Dilthey.

A convalescent home for the soldiers of the Guards regiments is to be erected in Bisenthal near Berlin. This will be the fourth military convalescent home in Prussia, their establishment dating back no further than 1895. In these houses soldiers dismissed from hospital are not only comfortably lodged and well fed, but when their strength begins to return are gradually accustomed to drill and other military exercises until quite fit once more for barrack life and its daily routine.

BRISTOL.

Remuneration of Resident Medical Officer at Fever Hospital.—Salary of the Medical Officer of Health.—Hospital Sunday.

AT a meeting of the Town Council, held on December 13th, the question of the remuneration of the resident medical officer at the new fever hospital at Ham Green was discussed, and it was agreed to pay him £100 a year. The remarks of one of the aldermen are instructive, and show how an enlightened business man views the remuneration of a medical

officer in an arduous and responsible post such as this will be. Mr. Alderman Davies stated he thought it would be a dangerous thing to commit patients to the care of a man who considered that amount sufficient, and regretted that the medical profession were not better remunerated; a statement with which we thoroughly concur.

At the same meeting of the Council a proposal was brought forward to increase the salary of the medical officer of health, Dr. D. S. Davies, from £750, and £50 as port sanitary medical officer, to £850, from January, 1899, and to £900 from January, 1900. It was pointed out by the mover that Dr. Davies has had no increase to his salary for the twelve years he has held his office, that during this time his duties have been greatly augmented, and it was now suggested that he should take on the superintendence of the new fever hospitals. The increased duties referred to have been imposed in consequence of the Notification Act, the Infectious Diseases Prevention Act, the Public Health Amendment Act, and the Housing of the Working Classes Act. In addition to this the area of the city was increased in November, 1897, from 4,661 to 6,756 acres, and about 85,000 persons added to the population, which has effected a saving of between £300and £400. Further, Dr. Davies has for several years undertaken to examine bacteriologically all cases of suspected diphtheria as well as apply Widal's test for doubtful cases of enteric fever. It is perhaps needless to remark that these do not come within the duties of a medical officer of health, and though the small expense connected with the examinations are included in the health office expenses, Dr. Davies has received in return nothing more than votes of thanks from his professional colleagues, who thoroughly appreciate his assistance, and from the Health Committee. The Council have made no recognition of the time and labour involved. Of the discussion which took place on the proposal, the less said the better, for it reflects no credit on the supporters of the amendment which postponed the matter for two years, but it is simply pitiable—to use a mild expression—to find members of the Health Committee attempting to mislead the Council with such unsubstantial and erroneous statements as those that were used. It is a most regrettable fact that all the additional work which Dr. Davies has undertaken—much of it voluntary and done purely for the sake of the city—should pass without any recognition; the more so when the proposal to increase his salary is met with such unfounded imputations of extravagance by a member of the Health Committee. Whether Dr. Davies will relinquish the voluntary work in the future as it is so unappreciated by the Council remains to be seen, but in the interests of the citizens of Bristol we hope not. If he does, the public will suffer. The question that will next arise will be, Who shall undertake the superintendence of the new fever hospitals at Novers Hill and Ham Green? for the Council cannot expect Dr. Davies or anyone else to add to their responsibilities without adequate remuneration. The carrying of the amendment was not only a most shortsighted policy, but was an act of great injustice to an able and energetic medical officer, who has not only a claim for an increase on account of the additional work put upon him since his appointment, but also for the immense amount of voluntary labour and additional time he has given to improve the health of the city under his charge.

The formation of the new committee according to the plans devised by the provisional one was carried into effect on December 14th. About a year ago the Mayor of Bristol called together a meeting to appoint a committee who should take on the arrangements for the collections at places of worship for a year, and form plans for the future constitution of the committee. The Mayor of Bristol (Mr. Herbert Ashman) was in the chair, and the Bishop of Bristol, Canon Cornish, the Rev. Urijah Thomas, Mr. F. R. Cross, M.B., and many others were present. The Mayor, in moving the adoption of the report, referred to the fact that the last collection only raised about a fifth of the money required to pay the deficit on current expenses of the various institutions, and only half the places of worship fell in with the suggestion of having the collection made on the appointed day. The actual amount received was £1,128 3s. 5d. He hoped that with a more united effort a much larger sum would be raised in 1899. The Bishop of Bristol expressed his heartiest approval of the movement, and undertook to write personally to every clergyman of the Church of England who did not send a collection last year asking for his co-operation. An influential committee was formed consisting of clergymen of various religious denominations, certain representatives from the medical institutions, and some well-known ladies and gentlemen. The committee is probably as strong a one as is possible to get for such an object, as every religious denomination is represented, and the laymen are known to take a practical interest in the movement. Mr. G. J. Swann was elected honorary treasurer and Dr. Bertram Rogers honorary secretary. The next collection will be held on January 29th, the last Sunday in January.

LIVERPOOL.

New Operating Theatre at Mill Road Infirmary.—Dinner of the Medical Faculty.

The West Derby Board of Guardians has provided a new operating theatre for the Mill Road Infirmary, which is one of the most perfect in existence, and is fitted up with all the most modern appliances. It was formally opened on December 17th, the company present including Professor Mitchell Banks, Mr. J. C. Bradshaw (Chairman of the Board), Dr. Nathan Raw (Medical Superintendent), and several other medical men. The operating room is on the top flat of the infirmary, and has an anæsthetising room adjoining it. It is lighted by a large roof-light facing south and west; it is artificially lighted by electricity, and there are hand-lamps for operative work. The instruments and dressings are sterilised by dry heat at 220° F. Injectors for the supply of sterilised water are provided, and all the wash-basins are supplied with pedal-taps, obviating the necessity of touching the taps by the hand. It is stated that about 250 major operations are performed in the infirmary each year.

The biennial dinner of the Medical Faculty of University College is fixed to take place at the Adelphi Hotel on the evening of January 28th, 1899. It would, in the ordinary course of events, have taken place last October, but was postponed in consequence of the visit of Lord Lister to Liverpool and the numerous social gatherings which were associated with that event.

GLASGOW.

Testimonial to Dr. John Burns.—The Illness of Professor Coats.—The Pathological Department of the University.—The Health Department of the City.

Dr. John Burns, of Bridgeton, one of the oldest medical practitioners in Glasgow, whose professional services now extend over a period of more than half a century, has recently received striking testimony of the estimation in which they are held. His friends have subscribed for a portrait in oils, which has been painted by Mr. John P. Downie. On the afternoon of December 19th a large company assembled in the Trade Hall, when the presentation of the portrait was made. Bailie James Dick, the senior magistrate, presided, and the presentation of the portrait was made by Professor Sir William Gairdner, who paid an eloquent tribute to the noble work the doctor had done, confessing that he spoke not only as a friend but also as a grateful patient. Dr. Burns suitably acknowledged the presentation, and then handed over the portrait to the Corporation, to be hung in the public galleries. In the evening Dr. Burns was entertained at dinner.

Very great regret is felt, and the regret will be shared by all who know him, that Professor Coats should be laid aside by a serious illness. On his return from an extended furlough Dr. Coats had resumed his duties at the Pathological Department of the Western Infirmary. However, he has recently been laid aside by somewhat severe illness, and it is gratifying to hear that he is already very much better. It is sincerely hoped that his improvement will be maintained and that he will soon be on his feet again.

The Pathological Department has been most unfortunate of late, and just when Dr. Coats is laid aside the senior assistant, Dr. J. R. Sutherland, has also had the misfortune to be attacked by illness and will likewise need a somewhat prolonged rest. The University Court has made arrangements for the

work of this department being carried on satisfactorily, the major part being undertaken by the junior assistant, Dr. A. R. Ferguson.

Much interest is being taken in the arrangements of the Health Department that will be made by the Town Council consequent on the resignation of Dr. J. B. Russell. These arrangements are still under consideration, and though there seems to be a section in the Council bent on cutting down expense in this and other departments, it is hoped that the proposals regarding the medical officer and assistant medical officer will be on a suitably liberal scale. There was a strong desire that in recognition of his valuable services to the city Dr. J. B. Russell should receive a retiring allowance. The first proposal was that £250 a year should be given him as a pension, but this has now been modified, and it is proposed that he be given an honorarium of £1,000, which is equal to one year's salary. It is hoped that there will be no serious opposition to this scheme.

CORRESPONDENCE.

PRELIMINARY EXAMINATIONS.

SIR,—I am instructed to send you the following table, which was drawn up in this office from the returns supplied to the General Medical Council by the various Examining Boards, including those for the Navy, Army, and Indian Medical Services, and submitted to the Education Committee when preparing the report quoted in Mr. Eve's letter to your JOURNAL of December 17th. By an oversight in drafting the returns were described in the first lines of the paragraph quoted as if they came from the Examining Boards for the medical services only. These lines should read as follows: "During the years 1892-98 returns have been made to the Council on behalf of the Examining Boards, including those for the Navy, Army, and Indian Medical Services, regarding those candidates who showed deficiency in general education." The necessary correction will be made in the report before it is issued to the public.

It will be observed that the summary of the statistics given in the remainder of the paragraph, and the conclusions drawn therefrom in the following paragraph of the report, are in accordance with the figures in the table submitted to the Education Committee.—I am, etc.,

H. E. ALLEN,
Registrar of the General Medical Council.

299, Oxford Street, London, W., Dec. 21st.

Table showing the Number of Candidates reported as having been Deficient in General Education, with the Preliminary Examinations passed by them during the Years 1892-1898.

	1893.	1894.	1895.	1896.	1897.	1898.	Total.
R. Univ. Irel.		1	-	-	-	-	2
Coll. Precep.	9	2	-	-	1	1	14
R. Coll. Surg. Irel.	4						6
Univ. Dubl	2				—	1	3
Univ. Lond	2						2
Apoth. Soc. Lond.	7	2	—	—	—	1	10
Inter. Ed. Board, Irel. (Jun. Grade)	2			--			2
Educa. Inst. Scot.	1	-					1
Univ. Aberd		1			—	1	2
*Coll. Phys. Surg., Manitoba		1	-				1
*Queen's Univ., Irel.		1					1
[illegible]		1					1
*Fac. Phys. Surg. Glasg.				1			1
Univ. Glasg				1			1
R. Coll. Phys. Surg. Irel.						1	1
Totals	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	48

* Examinati[illegible]t now on the Council's list.

The original letter from the War Office, calling attention to deficiencies in Preliminary Education appears in the Executive Committee's minutes for February, 1891.

In 1893 seven persons were reported by the India Office, particulars not given.

Also in 1893 one candidate, whose name could not be traced in the *Students' Register* was reported by the Conjoint Board of the Colleges of Physicians and Surgeons of Ireland.

In 1895 one army candidate, name not given, was reported for bad spelling. In 1897 one army candidate was reported for bad spelling.

THE GENERAL MEDICAL COUNCIL: INSPECTION OF DOCUMENTS.

SIR,—As an elector who has always voted for Dr. Glover I should like to ask him why he voted for a motion curtailing the liberty of members of the Council inspecting documents. To my mind this action of his was so serious that unless he can defend it I feel that many electors will join with me in refusing him our support at the next election. Scotch electors may be left to settle the matter with Dr. Bruce. Again, in reading the report of proceedings of the Council, it has struck me as curious that when a vote has been taken and it is suggested that the names be taken down, the second voting so often differs from the first. I should like the names not only taken down but also published.—I am, etc.,

Clapham Common, Dec. 15th. EDWIN H. ROE.

P.S.—One cannot help wondering whether the Society of Apothecaries admired the action of their representative in impeding Mr. Horsley in his defence of one of their own associates.

THE SEAMEN'S HOSPITAL SOCIETY AND ITS VISITING STAFF.

SIR,—The "honourable apology" of the Committee of the Seamen's Hospital Society is obviously insufficient, and is followed by a confused attempt at explanation and extenuation which makes it practically no apology at all. Such as it is, it has not reached the visiting staff in any shape or form except as a publication in the BRITISH MEDICAL JOURNAL, and it has been published in this paper only.

The Committee state in the JOURNAL that they do not contemplate the transfer of all tropical cases to the Branch Hospital. At least four times previously they have refused this information to the visiting staff of the Dreadnought.

There are other matters at issue between the Committee and us than the premature publication of Sir Henry Burdett's letter and the unauthorised statements contained therein. As some of the visiting staff of the Dreadnought were intended to be teachers in the proposed school, it was obviously improper and open to misconstruction for the Committee to be in consultation with the physician of the branch hospital without the knowledge of his assumed future fellow medical teachers of the Dreadnought, both of them much senior to him in the service of the Society.

Even the statement of the Committee that they have been in full and constant consultation with the visiting staff of the branch hospital cannot be allowed to pass.

The ophthalmic surgeon, who probably would have told us of what was going on, was excluded like ourselves from all information. His name was lately published in the list of the advisory Committee without his consent, and it has now, by his request, been removed from it.

The Committee quote an extract from Mr. Chamberlain's correspondence with them. It would be more satisfactory to have it *in extenso*.

Are we to understand that the offer of public money came from the Colonial Office solely to increase the accommodation of the hospital to which the medical adviser to the Colonial Office is attached, that the Committee deliberately kept their visiting officers of the Dreadnought in ignorance of their scheme until it had been decided to accept this offer, and to become responsible for the expenditure of this public money? If so, was this done with only one possible teacher of tropical medicine then at their disposal—the medical adviser to the Colonial Office himself?

The Committee in their memorandum have referred to the assumption by this gentleman of the title of physician to the Seamen's Hospital, Greenwich (235 beds), when he was physician to the Branch Seamen's Hospital, Victoria and Albert Docks (18 beds), and say that we objected to his being so described. Dr. Manson really so described himself in Kelly's *London Medical Directory*, 1895, Churchill's *Medical Directory*, 1896, in the list of contributors to Davidson's *Hygiene and Diseases of Warm Climates*, and in the BRITISH MEDICAL JOURNAL.

There is abundant evidence in the minute book of the Seamen's Hospital Society and elsewhere, to show he was elected a physician to the Branch Seamen's Hospital at the Victoria and Albert Docks on the same day that Mr. Gunn

was elected ophthalmic surgeon to the Seamen's Hospital Society.

To this mistaken action of Dr. Manson's we took exception, and for it he apologised. The matter has not hitherto in this controversy been publicly mentioned by us, although it might have ultimately become necessary, as we understand that this was the reason the Committee deliberately refused to let us know of the proposed school. Because the physician to the Branch Seamen's Hospital, Victoria and Albert Docks, was asked in 1896 why he described himself Physician to the Seamen's Hospital, Greenwich, the visiting staff of the latter are to have no voice in matters closely concerning them in 1898!

Such has been the judgment of a Committee that Sir William Broadbent has written "is unworthy of confidence." Resenting this criticism, they say they do not gather that the visiting staff have viewed their invitation as an insult, or would join in Sir William Broadbent's protest. The visiting staff most cordially join in this protest against the treatment they have received, and against the omission of parts of Sir Henry Burdett's letter. They regard the latter proceeding as unfair and misleading.

As the explanatory memoranda of the Committee were not sent to any except a carefully-selected *clientèle* from which we were excluded, it more than ever behoved the Committee to omit nothing in the letter bearing on the present attitude of the visiting staff of the Dreadnought.—We remain, etc.,

JOHN CURNOW, M.D., F.R.C.P.,
JOHN ANDERSON, M.D., F.R.C.P.,
Harley Street, Dec. 21st. G. R. TURNER, F.R.C.S.

THE PROPOSED SCHOOL FOR TROPICAL DISEASES.

SIR,—Permit me to give my experience of two months' work at the Albert Dock Hospital. During October and November I attended the hospital in order to obtain, if possible, sufficient practical knowledge of malaria to fit me for work in Central Africa, whither I am shortly to go. In that time I had the opportunity of observing the following clinical varieties of the disease: Simple tertian, double tertian, simple quartan, double quartan, and malignant or æstivo-autumnal fever. From all these I made and examined, on successive days, and at various hours of the day, fresh blood films. I further obtained a large number of dry films, which I have since stained and mounted.

As a result of my two months' work, therefore, I have learnt to recognise the various parasites for diagnostic and clinical purposes, and also have in my possession over 100 permanent preparations, most of them double stained, illustrating every phase of the tertian and quartan parasite, and such phase of the malignant parasite as can be found in the peripheral blood. I have also procured fresh and stained specimens of the amœba coli.

I think that the above affords a striking witness to the utility of the proposed school, at any rate to those who, like myself, intend to work in malarial regions.—I am, etc.,

ROBERT HOWARD, M.A., M.B.Oxon.
Guy's Hospital, Dec. 20th.

THE OPERATION FOR REMOVAL OF CANCER OF THE BREAST.

SIR,—I am sorry to have so seriously annoyed Mr. Butlin by my letter of December 10th. My inquiry as to the date of his change of view was I think a reasonable one, for I did not know whether it took place before or after 1880—nor do I know now. The object of my letter was, I thought, obvious, namely to claim for myself some credit for following Mr. Moore's teachings at a time when it was not received by Mr. Butlin and others. I have never performed Halsted's operation, which I regard as unnecessarily severe, but I have frequently removed large portions of the pectoral, and habitually clean the axillary vein (with my finger) when clearing the axilla. I had no intention of making any "attack" on Mr. Butlin, and regret extremely if what I wrote "verges on discourtesy," and having privately asked Mr. Butlin what he refers to, I beg leave to withdraw my reference to his having "found salvation in 1894," which was in no way intended as an expression of contempt.—I am, etc.,

Cavendish Square, W., Dec. 19th. CHRISTOPHER HEATH.

THE POSITION OF LARYNGOLOGY AND OTOLOGY AT THE NEXT INTERNATIONAL MEDICAL CONGRESS.

SIR,—In the BRITISH MEDICAL JOURNAL of December 17th I see it stated on page 1839 that the Section of Otology, Rhinology, and Laryngology of the forthcoming International Medical Congress will itself be sub-divided into two subsections—one dealing with otology, the other with rhinology and laryngology. Permit me to inform you that protests having been raised against an inferior position being given to these specialities than the one they had occupied at previous International Congresses, the decision has been rescinded. I have received a few weeks ago from the Secretary of the Section of Laryngology and Rhinology, M. Marcel Lermoyez, the following communication: "Le Sécrétaire-Général du Congrès m'a prié de faire savoir aux collègues étrangers la création de deux sections distinctes, l'une d'Otologie, l'autre de Rhino-Laryngologie."—I am, etc.,

Wimpole Street, W., Dec. 19th. FELIX SEMON.

THE WORKMEN'S COMPENSATION ACT AT SADDLEWORTH.

SIR,—May I point out an error in your leaderette in the BRITISH MEDICAL JOURNAL of December 10th? The contractors for the extension of the Ashton and Stalybridge Waterworks did not ask the Saddleworth Guardians to provide "further medical assistance" for their men. On the contrary, the Guardians asked the contractors to provide such assistance; and the letter—quoted by the *Yorkshire Evening Post*—is the contractor's reply to the Guardians' request.

As the case appears to illustrate a serious flaw in the new Act, perhaps a few details may be of interest. Up to the time the Act came in force the contractors paid me for attendance on accidents, without contributions from their men. This letter shows how fresh liabilities under the new Act caused them to discontinue this system. Subsequent to July 1st some cases of accident came to me for treatment; and as they had no "orders" for treatment, and were not urgent, I refused to attend these persons without either payment or orders from the relieving officer. The relieving officer gave the orders, and called the attention of the Guardians to the case. (I may explain that by an excellent system in vogue in Saddleworth each "order" carries a separate payment; and patients choose their "doctor.")

The flaws in the Act are now pretty obvious. It will certainly benefit the relatives of those who are killed outright, and, in the case of wealthy employers, will benefit those who are permanently disabled. For minor injuries—which constitute the vast majority—the injured person receives no pay for fourteen days, and is, as well, liable for medical attendance, and so he continues to be when he begins to receive half his wages—on the expiration of the fourteen days.

As far as I can see the Act will (1) increase litigation, (2) create more disunion of interest between master and servant; (3) increase the work of the hospital out-patient department; and (4) proportionately diminish that of general practitioners; and, finally, where hospital help is not at hand, the doctor called in will either have to go without his fees, or get them from the injured person or the parish.—I am, etc.,

Uppermill, Saddleworth, Dec. 14th. COLIN CAMPBELL.

MASSEURS AND MEDICAL ELECTRICIANS.

SIR,—As some exception has been taken to the term "medical electricians" which appeared upon our circular, we beg to inform the members of the medical profession that the paragraph has been withdrawn. In explanation, we beg to say that the words were intended to be used in the same sense as medical nurse, surgical nurse, etc.—I am, etc.,

LOUIS MINAHAN.
Male and Female Nurses' (Abstainers) Association,
11, Bentinck Street, Manchester Square, Dec. 20th.

CONSULTANTS FOR MEDICAL AID ASSOCIATIONS.

SIR,—An attempt which forms an episode in the history of medical aid associations is now taking place in Birmingham. It is true that it is an attempt destined to failure; but it is interesting as showing that the temptation to exploit the profession of medicine is too great to be resisted by some laymen. To farm a medical man, to have a medical servant

at a salary of £150 a year, to push their business till he earn £750 a year, for his employers to pocket the difference, either directly or by securing his skill at reduced fees—all seems so simple and so desirable. They would do the same with the lawyers, only the Incorporated Law Society says No. They quite fail to see that professions exist for the public good and convenience, and that, sweated in this way, all that is good in a profession will cease to be.

A Birmingham manufacturer would be considerably surprised if the medical profession had the presumption to adjust the price at which he should sell his hardware. Nevertheless, such a gentleman now comes forward to fix for the leaders of a great profession the price at which they shall sell their skill. He professes a profound sympathy for the "lower middle class" and their medical needs, and he proposes to relieve those needs, not at his own expense, but at that of the medical profession! A medical aid association is to be formed, and is spoken of as a "Consulting Institution." A consulting "department" is to be opened in "some central position in the city, and subsequently as the scheme developed and the necessity arose, other consulting rooms might be taken in other parts of the district." The staff is to "consist of consulting physicians and surgeons and such specialists as it may be found necessary and desirable to add from time to time."

These gentlemen (where they are to come from we are not told) are to be the salaried servants of the Institution at a minimum of £150 a year, and prescriptions are to be sold at 5s. 3d. and 10s. 6d. each. The hours of attendance at the consulting "department" are from 10 to 4 daily, and it is added "therefore the patients will never congregate in large numbers." Here I cordially agree with the gentleman's conjecture. Seven years ago I said that the simple expedient of running a medical practice by farming a medical man would be attempted in connection with consultants, and in spite of failure elsewhere this attempt is again to be made in Birminghan. Not in connection with charity, be it understood, for that is in no sense concerned.

It is of course at this time of day not necessary to criticise such proposals in a medical journal, for no respectable practitioner will be found to accept service in any such "consulting department"; but I may perhaps be allowed to direct attention to the resolution passed by the Ethical Section of the British Medical Association in 1896, a resolution which was worded by myself.

That it is unprofessional for any medical man to hold office in any club or similar organisation, such as insurance companies or medical aid associations, in which advertising or canvassing is resorted to; that it is unprofessional for any medical man to farm his skill and labour to any person or persons not possessing a medical licence; by "farming" being understood a condition of service whereby such unqualified persons make money either by direct profit or by obtaining in a co-operative way medical attendance for less than the fees ordinarily paid and accepted by the profession generally.

—I am, etc.,
LESLIE PHILLIPS.
Birmingham, Dec. 20th.

CONSTRUCTIVE MURDER.

SIR,—As a member of almost twenty years' standing in the profession who has, I believe, never before troubled you with a letter, may I crave a few lines of friendly criticism anent your editorial headed "Constructive Murder" in the BRITISH MEDICAL JOURNAL of December 17th?

You ask what the intention of the prisoner was in doing the felonious act? The answer is, No one knows but himself. The law does not pretend to know any man's motive, but infers that all persons who commit felonies act with malice aforethought, that is, act *malo animo*, and if one man acting *malo animo* kills another the law, which is Society, says that is murder. The commission of a felony implies malice, and if death results the victim is maliciously killed, that is, murdered. Luckily our law is logical not sentimental, and is above the changes of fashion. The common law of England represents the common sense of England, and if it cuts hard on the abortion-mongers the remedy is simple. Let the abortion mongers cease from abortion-mongering, and all is well. The remedy lies at their elbows. What you term in your article a "technicality of the law" is really the logical sequence of the law, that is, the true outcome.

One word more. You write as follows: ".....And it may safely be said that in all the cases in which death has resulted from an illegal operation the person performing it had not the slightest intention to cause death, but on the contrary the strongest motive to prolong life." I ask, Whose life did he wish to prolong? Not the child's, surely; for he stopped it clean off, and clearly not the woman's, for we all know that artificial abortion in ordinary circumstances is more dangerous to the woman than natural labour. How can killing a live embryo and jeopardising a woman's life prolong life? I can understand it being called a double murder, that is murder of mother and murder of offspring, but I cannot see where the motive of prolonging life comes in.—I am, etc.,

Bath, Dec. 17th. WM. A. DAY.

THE TREATMENT OF ANTHRAX.

SIR,—A correspondent in the BRITISH MEDICAL JOURNAL of December 17th writes on the successful treatment of anthrax by ignorant natives in Argentina, using the actual cautery. Allow me to say that the actual cautery has been used from time immemorial in all countries where anthrax prevails, and that it is still the treatment before any other in Russia, Persia, Western Asia, and South America. The mortality from cutaneous anthrax varies in different countries. In a letter I have from Dr. Woolmer, Argentine Republic, he wrote: "I have probably had nearly 500 cases of malignant pustule and remember only to have lost 2." These were not seen by him till late, when general infection had taken place. His remedy was the actual cautery.

Dr. Muskett, South Africa, treated 50 cases without a death. His remedy was ipecacuhana, internally and externally.

In England the mortality is decreasing—it is now under 20 per cent. It is not improbable that the greater heat, light, and activity of septic bacteria in hot countries acting on the anthrax bacillus lessens the virulence of the poison. The best treatment is free excision of the focus of mischief and the injection into the tissues around of a solution (1 in 1,000) of formalin or chinosol.—I am, etc.,

Bradford, Dec. 18th. J. H. B.

THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

SIR,—Will you oblige by inserting the enclosed resolution, passed at the final meeting of the London Post-Graduate Course which now, after nine years of useful work, gives way to make room for the larger institution the Medical Graduates' College and Polyclinic? It is hoped by means of the new institution that London will become the greatest centre for post-graduate study in the empire.—I am, etc.,

FLETCHER LITTLE, M.B.,
Hon. Secretary.

22, Chenies Street, Gower Street, London, W.C., Dec. 20th.

That this meeting, having learnt with pleasure that another scheme for post-graduate work has been organised which will have the advantage of a Central College, and that most of those who have taken interest in the London Post-Graduate Course are now concerned in promoting the new one, thinks it desirable that the London Post-Graduate Course should now terminate its labours.

COMPENSATION FOR TUBERCULOUS CATTLE.

SIR,—Dr. Lyon asks three questions, to which I venture to offer replies:

1. What is the value of a tuberculous milk cow?

The answer depends upon the extent of the disease. Probably 25 per cent. of milk cows are tuberculous, but as they only remain in the hands of cowkeepers unless the cowkeeper is also a breeder) for about a year, the loss is very small. From death or premature slaughter the loss of cows from tuberculosis may perhaps be put at 2 per cent. of the herd per annum. A tuberculous cow may be worth to her owner just as much as any other cow.

2. What financial benefit is likely to accrue to a farmer from keeping tuberculous cows in the same cowshed with healthy cattle?

The benefit is represented by the profit on all the milk they produce. As a rule the premises are proportionate in size to the number of cows kept, and separation would require another shed to be built. The disadvantage implied in the question is the slow but constant and certain infection of other animals.

3. Is compensation for destruction, duly adjudged, likely to overbalance the consequent effect, namely, saving our children from loss of life and limb?

Most certainly not. The object to be attained is out of all proportion to the money consideration. The object is the public good, and might well be paid for out of public funds.

The question of controlling tuberculosis among cattle is in

danger of being approached from far too narrow an aspect. The recommendations of the Royal Commission are limited to measures for the protection of human life from the disease in animals. They apply to cattle when in the hands of butchers and cowkeepers only. They attempt to ward off danger just when it is imminent, and leave infected animals in the hands of breeders, feeders, and dealers to develop and spread disease without hindrance.

The Commission recognised this weakness, but its duties were limited to inquiry so far as meat and milk were concerned. The report says: "All precautions against the communication of tuberculous disease to human beings from the consumption of meat and milk of diseased animals must be regarded as temporary and uncertain palliatives so long as no attempt is made to reduce the disease among the animals themselves." This larger action would require the scheduling of tuberculosis under the Animals Diseases Act. Unfortunately, the Royal Commission, by a majority of one, reported against the payment of compensation to butchers. Throughout the agricultural world this has been accepted as an authoritative pronouncement against compensation for tuberculous animals if seized in the possession of farmers, breeders, or cowkeepers. Consequently all these interests are now more or less arrayed against any fresh legislation such as the Commission undoubtedly approve. For thirty-three years—ever since the cattle plague devastated our herds—legislation has existed for the control of a number of animal plagues. The three of greatest gravity have been stamped out, and everyone acquainted with the struggle knows that only when liberal compensation has been conjoined with compulsory slaughter has success been attained. For thirty-three years the principle of compensation has been conceded, and it seems both unjust and inexpedient now to insist upon a theoretical discussion of the question. To control a contagious disease among animals is simply a matter of knowledge and money. It is worth doing whenever the spread of the disease is understood and the economy of the process can be demonstrated. Bovine tuberculosis presents two reasons for its control: the protection of human life and the salvation of our cattle.—I am, etc.,

Chelsea, S.W., Nov. 29th. W. Hunting, F.R.C.V.S.

OBITUARY.

CHARLES JOHN HARE, M.D.Cantab., F.R.C.P.Lond.

Rarely can it happen that a hospital is deprived of two members of its consulting staff within one week, but such a loss has befallen University College Hospital. Already Dr. Hare had died before Sir William Jenner was buried. They were appointed Assistant Physicians to the hospital on the same day in 1850, and were lifelong friends. Unlike his colleague, however, Dr. Hare remained at work until his last illness, and it was a source of some regret to him that he was not actually "in harness" up to his death. His last illness was borne with Christian fortitude. As early as April last he was aware of a constriction of the œsophagus. The growth that caused it gradually encroached upon the spinal column, and eventually produced paralysis of the lower part of the body, and he sank and died at his residence, Berkeley House, Manchester Square, on Thursday, December 15th. His last public appearance was at the annual dinner of past and present students of University College Hospital in October of this year. His health was on that occasion proposed by Dr. G. V. Poore, who dwelt especially on the great amount of work which Dr. Hare had done not only as Physician to the hospital, but also, and for many years after his retirement, as member of committees. Dr. Hare's reply showed then no failure of strength or spirit.

He was the only son of the late Mr. Samuel Hare, F.R.C.S., of Leeds, and was born in 1818. He was consequently in his eighty-first year when he died. He was educated at Caius College, Cambridge; and afterwards received his professional training at University College, London, and at Paris. A year ago, speaking at the dinner of the Harveian Society, he gave in graphic language his reminiscences of those former days, especially of the travelling to London by coach and subsequently to the French capital before railways existed. He graduated M.B.Cantab. in 1841, M.D. 1847, passed the examination for M.R.C.P. in 1850, and was elected F.R.C.P. in 1859. In 1850 he was appointed Assistant-Physician to University College Hospital, and became Physician in 1858, and in 1862 succeeded to the charge of patients in the place of Dr. Garrod (now Sir A. Garrod), who had resigned. In 1863 he was appointed Professor of Clinical Medicine to the Hospital.

In 1867 Dr. Hare's friend, Mr. Edward Yates, bequeathed to that institution more than £46,000, half for the Samaritan Fund, half for the general purposes of the hospital. Dr. Hare was his executor, and erected a handsome memorial tablet and mantelpiece in one of the wards of the hospital (called the Yates ward) on which the character of the bequest is inscribed. In that same year, owing to overstrain of eyesight from work with the microscope, Dr. Hare regretfully terminated his official connection with the hospital; and the Committee passed a resolution expressing their thanks for the zeal and ability with which he had fulfilled the duties of Physician and Professor of Clinical Medicine, and also their appreciation of the great services he had rendered the hospital in his management of the complicated and important affairs connected with Mr. Yates's bequest. Some years subsequently, Dr. Hare was elected Consulting Physician to the Hospital. He became, in time, the senior member of its Council, and was an indefatigable member of several of its committees. He also did good professional work at several dispensaries in North London, particularly the St. Marylebone General Dispensary, the St. Pancras and Northern Dispensary, and the Paddington Provident Dispensary, to all of which institutions he was Consulting Physician for very many years.

He was formerly Assessor to the Regius Professor of Physic, and Examiner in Medicine to the University of Cambridge. He was for years Honorary Treasurer of the Royal Medical and Chirurgical Society, and held that post at the time of the transference of the Society from its former home in Berners Street to its present house in Hanover Square. In the business connected with this migration his financial capacity was of immense service to the Society. He was ex-President of the Harveian Society, the Medical Society of London, and the North London and University College Medical Societies: and was President of the Metropolitan Counties Branch of the British Medical Association in 1882-83. His Presidential Address was entitled "Good Remedies out of Fashion," and was published in the British Medical Journal, July 28th, 1883, and afterwards republished as a small book by Churchill. He was a Delegate from the Royal Medical and Chirurgical and the Pathological Societies to the International Medical Congress at Philadelphia in 1876, and from the Royal Medical and Chirurgical Society to the International Medical Congress at Rome in 1894, and to the Centenary of the Société de Médecine of Paris in 1896.

He contributed a series of cases illustrative of diseases of the abdomen and of abdominal tumours, aneurysms of the cerebral arteries, and aneurysms of the aorta, to the medical journals. He was not, however, a voluminous writer on medical subjects; though his private correspondence was enormous, and in nothing were his industry and capacity for "taking pains" better exemplified than in his letters, which were models of correctness and promptitude. He was a man of excellent business habits; never, for instance, signing his name to any document without adding the date, and his letters often bore at their head a clock-face on which the long and short hands indicated the exact time of their being written.

Dr. Hare was of tall, upright figure, and had every appearance of robust health; whilst his courtly manners, perennial good spirits, and wide knowledge of men and countries made him a *persona grata* in Metropolitan medical circles. He will be sadly missed by hosts of friends. Looking at him, one could hardly appreciate until quite lately the fact that he was 80, that fifty years had elapsed since he was President of the Harveian Society, and that in 1878, when he was 60 years of age, he had passed through a bad attack of enteric fever at Vienna whilst he was on his autumn holiday. A marked trait of his character was his large-hearted generosity. He possessed ample means, and contributed largely to medical charities, which have lost in him a never-failing friend and supporter.

Dr. Hare married in 1863 Catherine, youngest daughter of Mr. Edward Westhead, of Croston Tower, Cheshire. This lady and two sons and three daughters survive him.

The funeral service took place on December 20th at Marylebone Church, and was conducted by Canon Barker, who, after the lesson, gave an address "not in praise, but in memory" of the deceased physician, whom he had known for thirty years. He dwelt not on Dr. Hare's learning or medical skill, or his industry, but on his uprightness of character, and his other sterling good qualities. The service was attended by relatives and friends, and a very large number of medical *confrères*, especially those who had been associated with Dr. Hare in the numerous offices he had held. The interment subsequently took place at Highgate Cemetery. The coffin was covered with wreaths, to one of which were attached the following words fitly summarising the useful and busy career of Dr. Hare:

A life well lived.
A race well run.
A rest well earned.
A crown well won!

WILLIAM MUNK, M.D., F.R.C.P.LOND.,

Harveian Librarian of the Royal College of Physicians of London.

WE have also to record the death on December 20th of Dr. Munk, Harveian Librarian of the Royal College of Physicians of London. William Munk, who was born in September, 1816, was educated at University College, London, and obtained the degree of M.D. Leyden in 1837, at the early age of 21. He at one time held the post of Demonstrator of Morbid Anatomy at St. Thomas's Hospital. For many years he was Physician to the Royal Infirmary for Diseases of the Chest, and at the time of his death was Consulting Physician to the Hospital for Incurables. He became a Fellow of the Royal College of Physicians in 1854, and three years later was elected Harveian Librarian. He will be chiefly remembered as the compiler of that extremely useful work, *The Roll of the Royal College of Physicians of London*. This contains biographical notices of Fellows from the foundation of the College in 1518 down to 1828. The first edition, in two volumes, was published in 1861; the second, in three volumes, in 1878. Dr. Munk also edited a new edition of the *Gold-Headed Cane*, which was published in 1884, and noticed in the columns of the BRITISH MEDICAL JOURNAL at the time. More recently he wrote a life of Sir Henry Halford, for so many years President of the Royal College of Physicians. He also served the College as Censor, and the esteem with which he was regarded was shown by the fact that the Fellows subscribed for a portrait of him to be painted by the Hon. John Collier as a mark of their appreciation of his forty years' labours. This portrait, which was completed last summer, has been presented to the College, and now hangs in the lower library. Dr. Munk was a Fellow of the Society of Antiquaries, and took much interest in subjects connected with the history of the profession in this country, and especially of that of the College of Physicians of London.

Dr. F. J. Smith, who attended him in his last illness, informs us that Dr. Munk had suffered for years from glycosuria. On November 11th Dr. Smith found that he was suffering from a small carbuncle, which healed rapidly under boracic fomentations, and also a gangrenous condition of the tissues of the left heel; this also at first showed signs of healing, but broke down again, and continued to suppurate till his death. "During the last three or four weeks," Dr. Smith adds, "I have expected his death almost daily, but his extraordinary vitality triumphed over the inroads of disease, till on December 18th he became comatose, and gradually grew weaker and weaker, and died without recovering consciousness. It is interesting to note as regards his longevity that his father lived to be 87, and he leaves seven brothers and sisters behind him whose average age is very nearly 73. He also leaves three daughters and two sons to mourn his loss."

ROYAL NAVY AND ARMY MEDICAL SERVICES.

HONOUR TO THE KHARTOUM EXPEDITION.

CAPTAIN CHARLES CHRISTIE FLEMING, M.B., Royal Army Medical Corps, employed with the Egyptian Army, has been appointed a Companion of the Distinguished Service Order, in recognition of his services during the recent operations in the Soudan. From the BRITISH MEDICAL JOURNAL of December 17th it will be seen that Captain Fleming was mentioned in the despatch of Lord Kitchener describing the operations in the Soudan subsequent to the defeat of the Khalifa at Omdurman on September 2nd.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

THE annual concert and distribution of prizes was held on Wednesday, December 14th, at St. Martin's Town Hall. The hall was crowded, and the entertainment given was most excellent. The President, Major Maclure, V.D., was in the chair, and was most ably supported by his aides, Surgeon-Captain Sleman, Sergeant Pleasance, and Ambulance Sergeant Bussell. The prizes were distributed by Lieutenant-General Sir George White, V.C., G.C.B., late Commander-in-Chief in India, and now Quartermaster-General to the Forces. The prize winners were numerous, and the prizes—handsome and well chosen—were presented by the School and private donors.

Sir George White, in receiving the prize winners, made a soldierly speech, commenting most favourably upon the value of the training through which each had just passed. He pointed out that men could fight with far greater force when they knew that if they were wounded skilled hands were ready to carry them off the field of battle, and to minister quickly and properly to their surgical requirements. He considered that the value of such training could not be overestimated, and expressed the opinion that by attending the Ambulance School volunteers proved that they looked upon their work as a serious matter, and not merely as a piece of holiday soldiering.

Surgeon-Lieutenant-Colonel Giles also spoke of the excellent work carried on in the school, through which over 2,000 men have passed successfully, and a large number of officers.

The greatest praise is due to Surgeon-Captain Sleman for the manner in which the work of the school is conducted; every detail is carried out under military rules, and the teaching is able and efficient. The officer instructors are drawn from various volunteer corps, assisted by an excellent staff of non-commissioned officers. The classes meet at one or other of the various headquarters of Volunteer regiments in London by the kind permission of the officer in command. The next class for the training of regimental stretcher-bearers will be held at the headquarters of the 4th V.B. the Queen's Royal West Surrey Regiment, 71, New Street, Kennington Park, S.E., by permission of Lieutenant-Colonel J. Davies Jenkins commanding, and will commence at 7.30 P.M. on Wednesday, February 8th, 1899. The school is no longer a luxury; it is an absolute necessity. The duties of Volunteer surgeons are becoming harder each year, and the examination which has to be passed is by no means an easy one. The funds of the school are derived from the fees paid by those attending; and any surplus which may remain from the sale of tickets from the annual concert is devoted to obtaining prizes for the men training as stretcher-bearers.

At the concert were many guests, including Lieutenant-General G. Moncrieff, Surgeon-General Taylor, C.B., Colonel Allan, M.B., Major Wilson, C.M.G., D.S.O., and Colonel Hatton and officers 1st Battalion Grenadier Guards.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

MAJOR R.A.M.C., returned home in November, 1897, is open to exchange with one who has already done a portion of his foreign tour in Colonies or India. State particulars to "Primrose," care of Sir C. B. McGrigor, Bart., and Co., 25, Charles Street, St. James's Square, London, S.W.

ROYAL ARMY MEDICAL CORPS.

AN examination for candidates for twenty-four commissions in the Royal Army Medical Corps is to be held in London on February 3rd and following days.

ARMY MEDICAL RESERVE.

SURGEON-CAPTAIN W. B. MOIR, M.D., having resigned his appointment in the Volunteers, ceases to belong to the Army Medical Reserve, December 21st.

Surgeon-Lieutenant DAVID L. HAMILTON F.R.C.S.Edin., 4th Volunteer Battalion the Manchester Regiment, to be Surgeon-Lieutenant, December 21st.

ARMY MEDICAL STAFF.

SURGEON-GENERAL W. A. CATHERWOOD, M.D., is appointed Principal Medical Officer Bengal Command, from November 9th.

INDIAN MEDICAL SERVICE.

CAPTAIN R. H. MADDOX, M.B., Bengal Establishment, is appointed Personal Assistant to the Principal Medical Officer, Bengal Command, from September 30th.

Lieutenant-Colonel F. A. SMYTH, Bengal Establishment, has retired from the service from July 27th. He was appointed Assistant-Surgeon, October 1st, 1879, and became Brigade-Surgeon-Lieutenant-Colonel, January 12th, 1895. He was with the Burmese Expedition in 1886-7, and has the Frontier medal, with two clasps.

Major H. HENDLEY, Bengal Establishment, Joint Civil Surgeon of Simla, is appointed to the medical charge of Army Head Quarters, Staff and Establishments at Simla, from October 28th.

THE VOLUNTEERS.

SURGEON-CAPTAIN G. MACKAY, 1st Midlothian Artillery, has resigned his commission, December 21st.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the respective corps specified, dated December 21st: ARTHUR C. OLDHAM, 1st Worcestershire and Warwickshire Artillery; HENRY FULTON, 1st Hampshire Engineers; ROBERT H. CORDEUX, M.B., 1st Nottingham (Robin Hood) Rifles.

Surgeon-Lieutenant-Colonel W. LORRAINE, M.D., Galloway Rifles, has retired, with permission to retain his rank and uniform, December 21st.

Lieutenant ANDREW R. WILSON, M.B., 1st Volunteer Battalion the Cheshire Regiment, resigned his commission, and is appointed Surgeon-Lieutenant, December 21st.

Surgeon-Lieutenant J. ABERNETHY, M.B., 3rd Volunteer Battalion the South Wales Borderers, has resigned his commission, December 21st.

The undermentioned gentlemen are appointed Surgeon-Lieutenants in the corps specified, dated December 14th: ARCHIBALD A. S. SKIRVING, M.B., 1st Midlothian Artillery; DAVID K. MUIR, 2nd Volunteer Battalion the Northumberland Fusiliers; WILFRED CURTIS, 1st Volunteer Battalion the Prince of Wales's Volunteers (South Lancashire Regiment).

Surgeon-Captain F. E. FENTON, 1st Middlesex (Victoria and St. George's) Rifles is promoted to be Surgeon-Major, December 14th.

Surgeon-Lieutenant W. F. MACDONALD, M.B., 2nd Volunteer Battalion the Highland Light Infantry, has resigned his commission, December 14th.

PRESENTATION TO THE CONNAUGHT HOSPITAL (ALDERSHOT).

A PRESENTATION of engravings and reading desks has been made to the Connaught Hospital by the 15th Middlesex Volunteers, in recognition of the kindness and attention shown to some of their members who were injured on Easter Monday in the railway accident at Bisley, and who were taken to this hospital for treatment. The steel engravings are "The Roll Call" and "Rorke's Drift." In addition to these and the reading desks for use at the bedside, a pretty flower bowl has also been given. All are destined for the ward in which the injured volunteers have been treated. A tea and impromptu concert followed the formal presentation by Colonel A. W. Chambers, commanding the volunteers.

MEDICAL OFFICERS AND PLAGUE.

THE services of medical officers are very urgently required in India to enable the local government and administrators to cope with plague. Local governments are at present thirty-two officers short of the authorised complement, and are reduced to the greatest straits to meet the calls made upon them. The services of sixteen military medical officers are accordingly to be placed at once at the disposal of the Government of India for employment on plague duty. The remaining sixteen officers will, it is understood, be brought from home.

LIEUTENANT-COLONEL THOMAS MAYNE, of the Madras Establishment, died recently at Melbourne, aged 49. Colonel Mayne, who joined the service as Assistant Surgeon, March 30th, 1872, and became Brigade-Surgeon-Lieutenant-Colonel twenty years thereafter, had been in India for twenty-six years. For the greater part of this time he was in medical charge of the 24th Madras Infantry. An inquiry which he held into the diet of military prisons in the Presidency resulted in a saving of [illegible] per annum to the Government, who recognised his services by presenting him with a testimonial. He recently assisted in the investigations as to enteric bacteria. Colonel Mayne was on his way home for the benefit of his health, when he was seized with dysentery, and was landed at Melbourne, where he died. He had intended to return to duty if his health improved.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

FINAL M.B., B.CH. EXAMINATION.—The following candidates have passed this Examination:

O. Eichholz, Magdalen; F. E. Freemantle, Balliol; E. Hopkinson, Trinity; R. O. Moon, New; R. W. Payne, Christ Church; L. H. Schofield, New; E. W. Walker, Christ Church; S. Welby, Trinity.

FIRST M.B. EXAMINATION.—The following candidates have passed this Examination in the subjects undernoted:

Anatomy and Physiology.—C. L. Coode, Hertford; V. S. Hodson, Marcon's Hall; G. A. Jones, Magdalen; A. E. G. Loosely, Pembroke.

Organic Chemistry.—P. E. H. Adams, Exeter; C. V. Aitchison, Balliol; L. H. Badcock, Trinity; J. M. Bickerton, Merton; A. W. S. Fisher, New; A. F. Hertz, Magdalen; F. P. T. Hilliard, Magdalen; V. S. Hodson, Marcon's Hall; F. Howson, non-coll.; A. C. Inman, Wadham; H. W. Kaye, Magdalen; H. L. Laws, Wadham; H. C. Lecky, Christ Church; R. S. Macgregor, Exeter; C. F. Pinching, St. John's; P. F. Tinne, Magdalen; H. M. Turnbull, Magdalen; A. J. Wigmore, non-coll.; E. A. G. Wilkinson, University; H. M. Woodward, Keble.

The Diploma in Public Health has been granted to Messrs. A. L. Ormerod, New; C. A. Reynolds, Keble; and E. A. Saunders, St. John's.

UNIVERSITY OF CAMBRIDGE.

FIRST EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have satisfied the Examiners:

Part I. Chemistry and Physics.—C. A. Anderson, B.A., Trin.; H. M. Aviss, Down; A. S. B. Bankart, Trin.; E. Bell, Cla.; H. Breakey, Jes.; W. T. Briscoe, H. [illegible] M. Brown, P[illegible]b.; H. M. Clarke, Cla.; G. C. Compton, Cai.; H. P. Crampton, Cla.; J. M. Cunningham, Trin.; S. H. Daukes, Cai.; H. M. Davies, Trin.; L. G. [illegible] Trin.; H. S. Dickson, Christ's; K. V. Elphinstone, Trin.; [illegible] Fardon, Christ's; A. T. Fi[illegible] J. M. Hamill, Trin.; H. H[illegible] G. L. Hodgkin, Trin.; W. [illegible]rne, Pet.; W. G. Howarth, King's; A. B. Howitt, Cla.; E. C. Hughes, Cla.; W. E. Hume, Pemb.; J. H. Iles, Cai.; H. B. Jackson, Cla.; F. A. G. Jeans, Joh.; C. King, Trin.; U. E. Kitchen, Sid. Suss.; J. L[illegible]wn; H. R. Lawrence, Pemb.; R. O. Lee, M.A., Emm.; K. Lucas, Trin.; J. Mellanby, Emm.; E. S. Montagu, Trin.; W. H. Newton, Emm.; H. E. H. Oakeley, B.A., Joh.; J. A. A. Orlebarr, Magd.; P. R. Parkinson, Cai.; C. F. Parry, Cai.; N. C. Patrick, B.A., Christ's; L. T. Penman, King's; R. N. Poignand, Cai.; F. P. Roberts, Cai.; E. S. Scott, B.A., Pemb.; L. Shingleton-Smith, Joh.; F. F. Shout, Cai.; W. H. Smyth, Emm.; P. S. Stephens, Trin.; W. H. R. Streatfeild, Queens'; D. W. Tacey, Christ's; F. C. Trapnell, King's; J. H. Trench, Trin.; J. D. C. White, M.A., Trin.; R. G. Wills, Joh.; C. J. Wilson, Christ's.

Part II. Elementary Biology.—J. D. Barris, Cai.; E. Bell, Cla.; A. D. Brunwin, Trin.; S. H. Daukes, Cai.; H. J. Fardon, Christ's; H. N. Fink, B.A., Trin. H.; H. U. Gould, B.A., Trin.; R. E. G. Gray, Pemb.; J. M. Hamill, Trin.; W. H. Hastings, Trin.; G. L. Hodgkin, Trin.; W. G. Howarth, King's; A. B. [illegible] Cla.; H. B[illegible]son, Cla.; F. A. Juler, Trin.; J. Mellanby, Emm.; E. S. Montagu, Trin.; W. S. Neave, B.A., Joh.; G. W. de P. Nicholson, Jes.; H. E. H. Oakeley, B.A., Joh.; J. A. A. Orlebar, Magd.; R. Puttock, Emm.; F. P. Roberts, Cai.; E. S. Scott, B.A., Pemb.; G. H. Shepley, Joh.; L. Shingleton-Smith, Joh.; W. H. Simpson, Cai.; H. A. Smith, H. Selw.; W. H. Smyth, Emm.; E. L. T. Taylor, Cai.; S. H. S. Taylor, Cai.; F. C. Trapnell, King's; J. H. Trench, Trin.; C. J. Wilson, Christ's; N. Wilson, Pemb.

SECOND EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have satisfied the Examiners:

Part I. Pharmaceutical Chemistry.—C. E. A. Armitage, Emm.; A. E. Bar[illegible]y, B.A., [illegible] W. Bayly, M.A., Cla.; G. F. Bird, Trin.; W. F. Blandford, Pet.; A. S. Bradley, B.A., Cai.; M. B. Briggs, Joh.; P. J. Burgess, B.A., Sid. Suss.; N. C. Carver, B.A., King's; J. G. Castellain, Trin.; D. H. Collingha[illegible]'s; L. Courtauld, B.A., Trin.; R. M. Courtauld, Pemb.; W. B. Crowfoot, Emm.; C. W. Cunnington, Non-Coll.; H. F. Curl, Christ's; T. R. Elliott, Trin.; E. A. Ellis, Down.; G. R. Footner, Pemb.; L[illegible]burg, Emm.; E. Gard[illegible] Cai.; B. C. Ghosh, B.A., Joh.; C. B. Goulden, Non-Coll.; M. F. Grant, Trin.; G. H. Harper-Smith, Cai.; E. T. Harris, Christ's; Everard Harrison, Trin.; R. N. Hart, Sid. Suss.; A. G. Harvey, B.A., Joh.; W. R. Higgins, Cai.; T. W. S. Hills, Down.; G. G. Hirst, Cai.; H. D. Hoffman, B.A., Trin.; H. M. Joseph, Trin.; A. E. Kerr, Christ's; A. S. Littlejohns, Cai.; T. C. Lucas, B.A., Cla.; F. M. Matheson, Cai.; C. W. P. Moffatt, Cla.; W. M. Mollison, King's; R. F. Moore, Christ's; A. L. Murison, B.A., Trin.; W. L. Murphy, Joh.; C. L. Nedwill, B.A., Trin.; W. H. Orton, Trin.; H. I. Pinches, Sid. Suss.; C. T. M. Plowright, Joh.; G. L. Ranking, Pemb.; R. Rees, Down.; W. T. Scott, Cla.; J. G. Slade, B.A., Cla.; T. Somerville, Emm.; J. M. Stenhouse, Sid. Suss.; H. T. Thompson, Christ's; G. A. Ticehurst, Joh.; G. A. Weir, B.A., Trin.; C. F. O. White, Trin.; F. L. Woods, Cai.; R. A. Worthington, Cla.

Part II. Human Anatomy and Physiology.—J. A. And[illegible], B.A., Joh.; L. B. Aveling, B.A., Christ's; G. D. Barton, B.A., Pemb.; J. M. Bennion, B.A., Joh.; E. Bigg, B.A., Cai.; A. T. Bowater, B.A., Sid. Suss.; H. S. D. Browne, B.A., Trin.; C. V. Bulkeley, B.A., Trin.; H. O. Butler, B.A., Emm.; E. J. Butler, B.A., Pemb.; J. F. H. Dally, B.A., Joh.; G. W. Deeping, B.A., Trin.; B. J. Dudley, B.A., H. Selw.; W. S. Fox, B.A., Trin.; H. T. George, B.A., Cai.; H. Gordon-Smith, B.A., Trin.; T. Guthrie, King's; E. F. G. T. Herp, Sid. Suss.; W. Hill, B.A., Emm.; A. C. Hudson, B.A., Trin.; K. Kellie, B.A., Cai.; G. A. Kempthorne, B.A., Joh.; E. H. Kitch[illegible] B.A., Down; G. E. Loveday, B.A., Cai.; [illegible] Manser, Pet.; H. W. Masterman, B.A., Cla[illegible] Down; F. H. Parker, B.A., Pemb.; D. Pe[illegible] Richmond, Clare; J. W. Rob, B.A., Joh.; H. Robinson, Trin.; [illegible] St. Clair-Smith, B.A., Trin. H.; A. M. Simpson, King's; R. [illegible] Smedley, B.A., Pemb.; B. Spearman, Cai.; H. Spurrier, B.A., [illegible] A. H. Style, B.A., Emm.; B. L. Thurlow, Cai.; G. L. [illegible] J. Wharton, B.A., Joh.; H. L. Wilson, B.A., H. Selw.; V. [illegible] King's; A. Wolle, B.A., Pemb.

THIRD EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have satisfied the Examiners:

Part I. R. Ainsw[illegible], B.A., Pemb.; H. F. Bassano, B.A., Trin.; F. E. Cornaby, B.A., Non-Coll.; E. Cox, B.A., Cai.; S. W. Curl, B.A., Down.; W. S. Darby, B.A., Trin.; N. Devereux, M.A., H. Selw.; A. T. Fraser, B.A., Cai.; J. H. P. Fraser, Jes.; A. C. Fry, Pemb.; H. A. Gaitskell, M.A., Cla.; F. A. Godson, B.A., [illegible] Christ's; G. E. Harthan, B.A., Jes.; H. M[illegible] C. L. Hawkins, B.A., Emm.; N. Heard, B.A[illegible] B.A., Magd.; M. Horne, B.A., Trin.; R. [illegible] Joh.; O. Inchley, B.A., Joh.; G. F. Lobb, B[illegible] B.A., Cai.; A. E. Martin, B.A., Down.; J. C. Matthews, B.A., Jes.; H. R. Mayo, B.A., Cai.; T. A. Mayo, B.A., Cla.; W. T. Mullings, B.A., Christ's; J. P. L. Mummery, B.A., Cai.; F. J. Nicholls, B.A., Joh.; G. E. Orme, B.A., Cai.; F. A. Rose, B.A., Joh.; R. N[illegible] B.A.,

Trin. H.; F. Shuffiebotham, B.A., Trin.; J. F. Skrimshire, Joh.; E. Talbot, B.A., Trin.; R. S. Trevor, M.A., Cla.; A. N. Walker, B.A., Queens'; W. B. Winton, B.A., Cla.

UNIVERSITY OF EDINBURGH.

THE NUMBER OF STUDENTS.

THE following table gives the number of matriculated students of medicine in the various years at the University of Edinburgh at the 30th day of November in each of the last four sessions:

	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Total.
Session 1895-96	224	195	244	209	321	1,193
,, 1896-97	218	223	202	239	279	1,161
,, 1897-98	205	206	228	193	333	1,167
,, 1898-99	187	211	212	211	329	1,150

The following line gives a comparison of the past two sessions as at November 30th:

	De-crease.	In-crease.	De-crease.	In-crease.	De-crease.	De-crease.
	18	3	16	18	4	17

The following table gives the number of matriculated students of science in the various years in each of the past four sessions at November 30th:

	First Year.	Second Year.	Third Year.	Total.
Session 1895-96 ...	46	30	35	111
,, 1896-97 ...	54	25	38	117
,, 1897-98 ...	48	39	33	120
,, 1898-99 ...	58	28	33	119

Comparing the two past sessions the result is:

Increase.	Decrease.	Same.	Decrease.
10	11	—	1

The following table gives the number of women who were either matriculated students of Medicine, or Extra-Academical graduation students of Medicine:

At November 30th, 1895	39
,, ,, ,, 1896	71
,, ,, ,, 1897	79
,, ,, ,, 1898	96

And, finally, the following is the number of matriculated students in all the Faculties taken together, again as at November 30th in each session:

1895-96	2,470
1896-97	2,473
1897-98	2,456
1898-99	2,488

The present session, therefore, shows the largest record of the past four years.

UNIVERSITY OF DUBLIN

AT the winter commencements, Michaelmas Term, held on Friday, December 16th, 1898, the following degrees and licences in Medicine, Surgery, and Midwifery were conferred by the University Caput:

Licentiatus in Medicinâ, Chirurgiâ, et Arte Obstetricâ.—S. H. Woods.

Baccalaurei in Medicinâ, in Chirurgiâ, et in Arte Obstetricâ.—L. Q. Bulger, A. M. Carolin, S. Copley, A. Greene, A. W. May, W. F. C. MacC. Morrogh, F. H. Oswald, T. G. N. Stokes (B Ch. *stip. cond.*)

Doctores in Medicinâ.—W. F. Ahern, A. W. Beaumont, F. W. Bonis, L. Q. Bulger, S. Copley, F. B. Counihan, R. Counihan, G. W. Eustace, H. L. Geoghegan, A. Greene, G. J. Lane, E. Lyons, A. W. May, G. E. P. Meldon, W. C. Minchin, G. A. Moore, J. H. Moorhead, H. G. Ormsby (*in absentiâ*), J. J. Purser.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following gentlemen, having passed the requisite examination, have been elected Fellows of the College:

C. E. Douglas, M.B., C.M. and M.D. Edin.; C. W. Edwards, M.R.C.S. Eng., L.R.C.P. Lond.; H. T. Galbraith, L.R.C.S.E.; C. M. Kruger, M.B., C.M. Edin.; and E. Pearson, L.R.C.S.E.

The gold medal presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William M'Phane Bathgate, F.R.C.S.E., Lecturer on Materia Medica in the Extra-academical School, has been awarded, after the annual competitive written examination in Materia Medica, to Mr. George Robertson.

APOTHECARIES' HALL, IRELAND.

AT a meeting of the Governor and Court of the Apothecaries' Hall of Ireland, the following gentlemen were appointed to conduct the examinations in Medicine, Surgery, and Midwifery for the year: *Chemistry and Physics:* Professor W. N. Hartley, F.R.S.; C. R. C. Tichborne, D.P.H. *Pharmacy:* W. V. Furlong, L.R.C.P.E., L.R.C.S.I., and G. A. Stritch, L.F.P.S.G. *Anatomy:* J. Campbell, M.D., F.R.C.S.E., and J. P. Fagan, F.R.C.S.I. *Biology:* F. Adye-Curran, M.D., F.R.C.S.I., and J. A. Johns, M.B., B.Ch. *Materia Medica:* John Evans, L.R.C.S.I., and S. M. Thompson, L.R.C.S.I. *Physiology:* C. M. O'Brien, M.B. Durh., L.R.C.P.I., L.R.C.S.I., and G. B. White, F.R.C.S.I. *Hygiene:* Sir Charles Cameron, M.D., D.P.H., and J. M. Day, M.B., D.P.H. *Medical Jurisprudence:* H. A. Auchinleck, L.R.C.P. and S.Edin., F.R.C.S.I., and J. E. Kenny, L.R.C.P. and S.Edin. *Pathology:* J. Knott, M.D., F.R.C.S.I., and C. M. O'Brien, M.D.Durh., L.R.C.P.I., L.R.C.S.I. *Midwifery and Gynæcology:* T. More Madden, F.R.C.S.Edin., and R. D. Purefoy, M.B., F.R.C.S.I. *Ophthalmology:* F. O'Devaine, F.R.C.S.I., and R. J. Montgomery, M.B., F.R.C.S.I. *Surgery* (appointed by General Medical Council): H. G. Howse, M.S., F.R.C.S.E., and H. A. Thompson, M.D., F.R.C.S.Edin. *Medicine:* W. E. Ashley Cummins, M.D., and M. McHugh, M.B., L.R.C.S.I.

MEDICO-LEGAL.

THE COLLAPSE OF THE CASE AGAINST THE CHRISTIAN SCIENTISTS.

So far as the law courts are concerned the last word has been said as to the circumstances attending the last illness and death of Mr. Harold Frederic; and very unsatisfactory (to the public) that last word is. The coroner's jury, it will be remembered, returned a verdict of manslaughter against the two ladies, Miss Kate Lyon, who lived with him at Kenley, and appears to have had charge of his establishment there and to have assumed the general charge and control of the patient throughout his last illness, and Mrs. Mills, the Christian scientist "healer," who was called in by Miss Lyon. The Treasury took up the case, and after a full inquiry extending over several days before the Croydon justices withdrew the charge against Miss Lyon, having come to the conclusion that no jury would convict her, but asked for a committal against Mrs. Mills. The magistrates, however, were of opinion that the evidence against Mrs. Mills was not sufficient to justify them in sending her for trial, and they therefore discharged her also, stating that they came to this decision with the less difficulty because the defendants would necessarily be indicted on the coroner's inquisition, upon which the Treasury could obtain the decision of the higher Court, so that justice could in no sense be defeated by the refusal of the magistrates to commit for trial. When, however, the case came before the Central Criminal Court in due course last week counsel for the Crown announced that, after consulting with the Attorney-General, he did not propose to offer any evidence against either of the defendants. Mr. Justice Hawkins, the presiding judge, directed the jury that under these circumstances they had no alternative but to return a verdict of not guilty, as no evidence was before them on which any other verdict was possible. But the learned judge pointed out that he was not responsible for the withdrawal of the charge, and emphatically declined even to share the responsibility in any degree with the Crown. From some cause not explained it seems that no copy of the depositions taken before the Coroner or magistrates had been sent to the judge. The judge said he would have read the depositions if they had been sent to him, and might then have assented to the course proposed by the Crown or might not have assented. Those who know Mr. Justice Hawkins will feel pretty confident that in a case of such great public interest he would have stated his reasons for assenting or dissenting, and in doing so would have thrown some much-needed light upon the law and its relation to the facts of this case.

As we said in a previous notice of this case, "the point on which an authoritative deliverance is required is how far it is lawful for those about a sick person, presumed to be incapable of forming an intelligent judgment for himself, to neglect ordinary medical treatment, and rely solely on 'faith healing.'" As no statute deals with the case of adults in general over 16 years of age, the question can only be answered by reference to the principles of the common law, and these principles do not appear to recognise any positive legal duty on the part of any person to supply medical aid or medicines to a sick adult unless that person has in fact the charge and control of the patient for the time being, and the patient is in fact incapable of taking care of himself. In such circumstances the common law holds the person responsible for procuring whatever is necessary for the patient—food, clothing, fire, etc.—and it would be a question for the jury to say whether, in the particular circumstances of the case before them, medical aid and medicines could reasonably be considered necessaries. If this was answered in the affirmative, there would be the further question, Why were they not supplied?

On this point Mr. Justice Wills, in his charge to the jury in the case of Senior, which we noticed last week, directed the jury that "in order to make out a case of manslaughter by negligence of this kind, purely at common law, the negligence must be gross and wanton; so much so as to indicate something, at all events, of an evil mind, and that it was impossible to say that of the prisoner, who was shown to have spared neither expense nor care, and to have taken in all respects but one (namely, the procuring of medical aid and medicines) every precaution to do the best for the child."

For his failure to provide medical aid and medicines Senior was sentenced to four months' imprisonment with hard labour. But it is clear that under the common law Senior could not have been convicted of criminal neglect, and the statute under which he was convicted is expressly limited to patients under 16 years of age. But had

there been a similar provision applicable to adults the case against Miss Lyon would have been narrowed down to the question, Was Mr. Harold Frederic capable of taking care of himself? Whether such a provision would be desirable in the interests of the public, and whether if desirable the Legislature could ever be persuaded to enact it, are delicate questions which we cannot discuss at present.

CONSULTATION FEE.

A CORRESPONDENT asks us whether he is entitled to recover his fee under the following circumstances: I was attending a patient suffering with synovitis of the knee. He was a lodger in a house, the tenants of which were turned out for non-payment of rent, and to prevent my patient being also evicted I gave a certificate to the effect that he was not fit to be moved. This certificate was forwarded to the landlord's solicitors, who called the next day upon me, and requested me to meet another doctor in consultation over the case, to discuss the time when the patient would be sufficiently strong to be moved. I met the other doctor in consultation, and sent in an account for my fee to the solicitors, who, however, refused to pay, saying it was etiquette for me to meet the other doctor, and that I was entitled to no fee.

*** We are advised that our correspondent is not entitled, under the circumstances he mentions, to recover his consultation fee from the solicitor or his client the landlord, though we think it is certainly a hard case.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,281 births and 3,575 deaths were registered during the week ending Saturday last, December 17th. The annual rate of mortality in these towns, which had been 19.1 and 17.8 per 1,000 in the two preceding weeks, further declined to 16.6 last week. The rates in the several towns ranged from 10.9 in Derby, 11.7 in Croydon, 12.0 in Hull, and 12.4 in Burnley, to 20.9 in Manchester, 21.5 in Swansea, 21.7 in Sunderland, and 21.9 in Nottingham. In the thirty-two provincial towns the mean death-rate was 16.7 per 1,000, and was slightly above the rate recorded in London, which was 16.5 per 1,000. The zymotic death-rate in the thirty-three towns averaged 1.7 per 1,000; in London the rate was equal to 1.6 per 1,000, while it averaged 1.8 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.3 in Norwich, 3.4 in Bolton, 4.0 in Nottingham, and 8.2 in Swansea. Measles caused a death-rate of 1.4 in Manchester, 3.0 in Bolton, and 3.1 in Nottingham; scarlet fever of 1.0 in Swansea; whooping-cough of 1.0 in Swansea, 1.2 in Cardiff, and 1.3 in Preston; and "fever" of 1.0 in Swansea and in Sheffield, and 1.2 in Salford. The 103 deaths from diphtheria in the thirty-three towns included 40 in London, 10 in Swansea, 7 in West Ham, 7 in Liverpool, 7 in Leeds, 6 in Sheffield, and 4 in Birmingham. No fatal case of small-pox was registered during the week under notice either in London or in any of the thirty-two large provincial towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had declined from 3,259 to 3,000 at the end of the four preceding weeks, had further fallen to 3,043 on Saturday last, December 17th; 260 new cases were admitted during the week, against 234, 264, and 276 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 17th, 888 births and 584 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 21.0 per 1,000 in each of the two preceding weeks, declined to 19.4 last week, but was 2.8 per 1,000 above the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 20.2 in Perth and 13.1 in Paisley to 21.2 in Dundee and 22.2 in Aberdeen. The zymotic death-rate in these towns averaged 2.1 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 266 deaths registered in Glasgow included 5 from measles, 5 from scarlet fever, 2 from diphtheria, 9 from whooping-cough, and 6 from "fever." Two fatal cases of scarlet fever and 2 of diphtheria were recorded in Edinburgh, 3 of "fever" in Aberdeen, and 3 of scarlet fever in Greenock.

THE EPIDEMIC OF ENTERIC FEVER AT ABERDEEN.

PROFESSOR MATTHEW HAY, the Medical Officer of Health for Aberdeen, in a recent report on the prevalence of zymotic diseases in that city shows that a somewhat grave increase of enteric fever has occurred. The population of Aberdeen in 1891 was 124,043. Writing on December 15th to the Public Health Committee Dr. Hay says: Typhoid fever is much concern at present. During the past month 30 cases were reported or discovered, which represents an increase of 10 as compared with the preceding month, and 24 as compared with November, 1897. Within the last three months there have been altogether 80 cases of typhoid or considerably more than during the whole of last year. There has not been for many years so large a number of cases within so short a period." The large increase in September was traced to an infected milk supply from two adjacent dairies, which were subsequently closed. The great increase during the past month has been traced to another dairy, where only one cow was kept. This dairy keeper was not registered, and his arrangements were very defective. In the end of September a case of ill-defined sickness occurred at this dairy. In the later half of October other persons at the same place took ill. By the first week of November the whole family, save the parents, but including the domestic servant, were ill—seven persons in all. The cases have been notified as typhoid. Then came 2 cases from an adjacent house, to which milk had come from this dairy. In every family supplied from this dairy, with one exception, cases of typhoid occurred. In all 17 cases have been found to be comprised in this outbreak. In the family which escaped all the milk was boiled. The dairy keeper is being prosecuted for non-registration. Another similar outbreak, but on a more extensive scale, has now begun at a dairy farm with seven cows, which also was an unregistered dairy; 25 cases have been traced to this source and 2 deaths. A third milk epidemic was starting on Thursday, December 15th, but it has not yet been fully investigated.

UNHEALTHY OCCUPATIONS.

X. Y. asks for the best book dealing with unhealthy occupations, and the legislation regarding them.

*** Some information will be found in all the leading textbooks on hygiene or the duties of health officers. Our correspondent may find *Trade Nuisances*, a sixpenny pamphlet of the "Aids" series (Sanitary Publishing Company, Fetter Lane, London) of service. We believe copies of the reprint of a portion of Ballard's *Effluvium Nuisances* may still be had (4s.), probably from Messrs. King, Westminster. Dr. Arlidge's work, *The Hygiene, Diseases, and Mortality of Occupations* (London: Rivington, 21s.) might be consulted. In addition to the Public Health Acts, *The Law Relating to Factories and Workshops (including Laundries and Docks)*, by May Abraham and Arthur Llewellyn Davies (Eyre and Spottiswoode, 5s.), will be found useful.

INFECTIOUS DISEASES (NOTIFICATION) ACT, 1889.

A. B., who is a guardian, district councillor, and a general medical practitioner, desires to know whether he is legally entitled to the 2s. 6d. fee for every infectious case he may notify to the medical officer of health, or does his membership of the Boards disqualify him or prohibit him to send in a charge at all.

*** Section XI of the Infectious Diseases (Notification) Act, 1889, sets forth that a payment to any medical practitioner under the Act shall not disqualify him from serving on a sanitary authority or Board of Guardians. A medical officer of health can even claim his fee for notifying to himself. The fee is only 2s. 6d. for notifying cases in private practice.

DISMISSAL OF DISTRICT MEDICAL OFFICER AFTER THREE YEARS' SERVICE.

S. E. J. does not tell us on what terms he was appointed; he does not even say that he was appointed at all; but he does say that he supposed he was acting "temporarily." If he will give us more precise information on this and other points of his case, we will endeavour to advise him.

MEDICAL NEWS.

THE dinner of the London School of Tropical Medicine, at which Mr. Chamberlain is to preside, will be held at the Hotel Cecil on May 10th.

INTERNATIONAL CONGRESS OF DERMATOLOGY.—We are informed by Dr. Pringle, the British Secretary of the Section for Syphilis and Venereal Diseases, that the official translation of the first and second subjects set down for discussion is as follows: (1) Syphilis and Associated Infective Processes, (2) The Influence of Hereditary Syphilis on Succeeding Generations.

PRESENTATION.—On his retirement from office as Honorary Physician to the Bradford Royal Infirmary, Dr. H. C. Major was recently entertained at dinner by the honorary medical and surgical staff, and presented with an illuminated address, and with an album containing the photographs of the staff. Previously Dr. Major had been the recipient of an illuminated address from the Board of Management of the Infirmary, and of an aneroid barometer from the Resident Staff.

DIPHTHERIA AT ALDERSHOT.—It seems strange that any reluctance should have been shown at a recent meeting of the School Board to close the schools owing to the outbreak of diphtheria, although the medical officer strongly recommended this procedure. The fact that 53 cases have been reported during the past month, and that 12 have ended fatally, seems to be sufficient to justify an immediate closing of the schools as a precaution against a spreading of the disease. The School Board is the reluctant party, but the District Council showed themselves fully alive to the seriousness of the situation and have adopted the only safe course.

STATE LABORATORIES IN THE UNITED STATES.—The *Philadelphia Medical Journal* of November 5th announces that the State Legislature of Vermont has just passed an Act providing for the equipment and maintenance of a State laboratory, which shall include in its work "the chemical

and bacteriological examination of water supplies, milk, and all food products, and the examination of cases, and suspected cases, of diphtheria, typhoid fever, tuberculosis, malaria, and other infectious and contagious diseases." The sum of 5,000 dollars (£1,000) has been appropriated for the establishment of the laboratory, and 8,000 dollars (£1,600) a year will be allowed for expenses. Vermont is the fourth State of the American Union which has established such a laboratory. To Michigan belongs the honour of having been the first to take this important step; its example was followed by Massachusetts, and later by New York.

The Registration of Midwives.—The *Times* states that the following memorial has been presented to Mr. Henry Chaplin, President of the Local Government Board: "It is within the knowledge of various departments of Her Majesty's Government that efforts have been made for many years to place the practice of midwives under legal regulation and control. The urgent need for such a measure is now so widely admitted as to be beyond controversy; and a Select Committee of the House of Commons, as long ago as 1893, asserted it in emphatic terms; but the overcrowded state of public business makes the chances of private members' Bills almost hopeless, and already many years have been wasted in vain efforts to obtain legislation by this means. We find that in many of our colonies legislation for the control of midwives' practice is already in force, notably in Cape Colony, where for seven years the regulations have been on the same lines as those already proposed for this country. We, therefore, earnestly pray that you, Sir, will use the great influence of your department, with which we are assured the matter mainly rests, to the end that it may be dealt with by the Government in the ensuing session, and means taken to remove this disgrace from the mother country.—We are, Sir, faithfully yours, Katherine Balfour of Burleigh, President of Association for Promoting Compulsory Registration of Midwives; J. B. Balfour, M.P., Clackmannan, Kinross; Lydia Booth, President National Union Women Workers; Kate Courtney, Chairman Women's Liberal Unionist Association; T. Skewes-Cox, M.P., Surrey, Kingston; Marian Deans, Women's Liberal Co-operative Society; Alan de Tatton-Egerton, M.P., Knutsford, Cheshire; W. Hazell, M.P., Leicester; Fanny Fullajar, Poor-law Guardian, Leicester; Henrietta Hayter, Chairman Women's National Liberal Association; Jane Henniker, Poor-law Guardian, Fulham; Edith Hogg, Vice-President Women's Industrial Council; J. H. Johnston, M.P., Sussex, Horsham; Eva McLaren, National British Women's Temperance Association; G. F. Roumieu, J.P., Coroner for Surrey, Past President Coroners' Society, England and Wales; Charles Schwann, M.P., Manchester; G. Danford Thomas, M.D., Coroner for London and Middlesex.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident Surgeon and Apothecary, unmarried. Salary, £80, increasing to £100, with board, lodging, washing, coals, candles, and furnished apartments. Applications to Mr. G. Toll, Solicitor, A.

BANBURY: HORTON INFIRMARY.—House-Surgeon and Dispenser. Salary, £60 per annum, with board and lodging. Applications to the Hon. Secretary, 21, Marlborough [illegible] by January [illegible].

BATH: ROYAL [illegible] HOSPITAL.—House Surgeon. Salary at the rate of £60 per annum, with board, [illegible] and washing. Applications to the Secretary by January 5th, 1899.

BIRMINGHAM: CITY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary, £80 a year, with board, lodging, etc. Applications to the Medical Superintendent.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon. Appointment for six months. No salary, but residence, board, and washing provided. Applications to the H[illegible]

CITY OF [illegible] DISEASES OF THE CHEST, Victoria Park, E.—[illegible] board, etc. Also Second [illegible] at the rate of £30 per [illegible]

DERBY [illegible] MARY.—Assistant House Surgeon. Salary, [illegible] and washing. Applications to the Secretary by [illegible]

DUDLEY [illegible] House-Surgeon. Appointment for six months. [illegible] board, and washing. Applications to the [illegible]

[illegible] [illegible]ior in Zoology. Period, four years. [illegible] [illegible] January 7th, 1899.

PE[illegible] [illegible] Road, E.C.—Resident Medical [illegible] [illegible]ndance, coals, and gas. [illegible]

[illegible] [illegible] [illegible]rompton.—

[illegible] [illegible] [illegible] of Medical [illegible] [illegible] washing. Applications to the Secretary-Superintendent by January 7th, 1899.

KENSINGTON DISPENSARY.—Resident Medical Officer, under 35 years of age. Applications to the Hon. Secretary, T. W. O. Wheeler, 20, Lower Phillimore Place, Kensington, W., by January 9th, 1899.

LEICESTER INFIRMARY.—Honorary Assistant Physician. Applications to the Secretary by January 2nd, 1899.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Resident Junior House Surgeon. Salary, 60 guineas per annum. Applications to the Chairman of Medical Board by January 9th, 1899.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—House-Surgeon to the Male Hospital. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary, at Harrow Road, by January 7th.

LONDON THROAT HOSPITAL.—Surgeon and a Pathologist. Applications to the Secretary, Medical Committee, by January 4th, 1899.

MANCHESTER: ANCOATS HOSPITAL.—Resident Junior House Surgeon. Salary, £50 per annum, with board and washing. Applications to the Secretary.

MIDDLESEX HOSPITAL, W.—Bacteriologist. Salary, £100, and fees for special classes. Applications to the Secretary-Superintendent by January 2nd, 1899.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY.—House-Surgeon; unmarried. Salary, £80 per annum, with board and lodging. Applications, on forms provided, to the Secretary by end of December.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W. Three Female Assistant Physicians in the Out-patient Department. Applications to the Secretary by January 4th, 1899.

NORFOLK AND NORWICH HOSPITAL.—Dental-Surgeon. Applications to the Secretary by January 7th.

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Fitzroy Square, W.—Clinical Assistant. Appointment for six months. Honorarium at the rate of £35 per annum. Applications to the Secretary by December 29th.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon. Appointment for six months. Board, lodging, and washing provided. No salary. Applications to the Secretary by January 10th, 1899.

OXFORD: RADCLIFFE INFIRMARY.—Surgeon. Applications to the Secretary by January 10th, 1899.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Surgeon to Out-Patients; must be F.R.C.S. Applications to the Secretary by January 4th, 1899.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1900. Applications to the Registrar by January 7th, 1899.

RYDE: COUNTY HOSPITAL.—House-Physician. Salary, £70 per annum, with board, lodging, etc. Applications to the House-Surgeon by January 2nd, 1899.

ST. ANDREWS UNIVERSITY.—Additional Examiner for Graduation in Materia Medica. Appointment for three years. Applications to the Secretary, University Court, by January 14th.

ST. LUKE'S HOSPITAL, Old Street, E.C.—Clinical Assistant. Appointment for six months. Board and residence provided. Applications to the Secretary.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone Road, N.W.—Anæsthetist. Honorarium, £25 per annum. Applications to the Secretary by December 28th.

SUNDERLAND INFIRMARY.—House Physician. Salary, £80, rising to £100, with board and residence. Applications to the Chairman of the Medical Board by January 5th, 1899.

WESTERN OPHTHALMIC HOSPITAL, 153, Marylebone Road, N.W.—Assistant Surgeon. Applications to the Secretary by January 4th, 1899.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Medical Registrar. Salary, £50 per annum. Applications to the Secretary by January 2nd, 1899.

WIGAN: ROYAL ALFRED EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary £80 per annum, with apartments and rations. Appointment for one year. Applications to the Secretary by December 28th.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer, not over 30 years of age. Salary, commencing £100 per annum, with board, lodging, and washing. Applications to the Medical Superintendent by December 30th.

MEDICAL APPOINTMENTS.

Blaker, Percy S., M.R.C.S., L.R.C.P.Lond., appointed House Physician at the City of London Hospital for Diseases of the Chest, Victoria Park.

Booth, George, M.D.Durh., appointed Honorary Surgeon to the Chesterfield and North Derbyshire Hospital, *vice* Charles Booth, M.D.Edin., resigned.

Burgess, Robert, M.B., C.M., appointed Certifying Factory Surgeon for the Stanley District, *vice* Dr. Peddie.

Edmunds, Flavell, M.R.C.S.Eng., L.R.C.P.Lond., appointed Honorary Surgeon to the Chesterfield and North Derbyshire Hospital, *vice* Charles Booth, M.D., resigned.

Forster, Dr. J., appointed Medical Officer for the Conisbrough District of the Doncaster Union.

Fuller, W. A., M.R.C.S., L.R.C.P., appointed Assistant House-Surgeon to the Cardiff Infirmary.

Hall, J. Field, M.B., M.Ch., appointed Assistant Physician to the Hospital of St. Francis, New Kent Road, S.E.

Kitchin, P., L.S.A., appointed Medical Officer for the Box and Ditteridge District of the Chippenham Union.

Matthew, G. Porter, M.A., M.D., B.C.Cantab., M.R.C.S., L.R.C.P., appointed Assistant Surgeon to the Provincial Hospital, Port Elizabeth.

Melland, Charles H., M.B.Lond., M.R.C.S., appointed Resident Medical Officer to the Manchester Royal Infirmary.

Pratt, Eldon, M.B.Lond., F.R.C.S., appointed Resident Medical Officer to the Cardiff Infirmary.

Rattray, P. W., M.B.Aberd., appointed Medical Officer to the Highgate Hill Workhouse of the Parish of St. Mary, Islington.

Rawes, William, M.D., F.R.C.S., appointed Medical Superintendent of St. Luke's Hospital, London, E.C.

Robertson, William, M.D.Glasg., D.P.H.Edin. & Glasg., appointed Medical Officer of Health and Police Surgeon to the City of Perth, *vice* Alex. Simpson, M.A., M.D., B.Sc. (Public Health, Edin.), deceased.

Stevenson, Bruce, L.D.S., appointed Clinical Dental Assistant to the Hospital of St. Francis, New Kent Road, S.E.

Stonham, H. A., L.R.C.P., M.R.C.S., D.P.H., appointed Public Vaccinator for the Stepney Union.

Turner, John Andrew, M.B., D.P.H., appointed County Medical Officer of Health for Hertfordshire.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

BIRTH.

Bidwell.—On December 17th, at 59, Wimpole Street, Cavendish Square, W., the wife of Leonard A. Bidwell, F.R.C.S., of a daughter.

DEATH.

Minter.—On Friday, December 9th, at the Royal Naval Hospital, Stonehouse, Ernest Denman Minter, Staff-Surgeon R.N., [illegible] son of the late John Mordenburgh Minter, Esq., M.D., Inspector-General of Hospitals and Fleets R.N., Hon. Physician to the Queen, and Surgeon-Extraordinary to H.R.H. the Prince of Wales.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Th. S., 2; Tu. F., 5. *Operations*.—1.-p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 3.
CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. [illegible] Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Tu., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Th. F.
GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.
KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., [illegible] W. Th. F., 2.
LONDON. *Attendances*.—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.
LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances*.—Daily, 2; Tu., F., 6. *Operations*.—Daily, 2.
METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W. S., 9.30. *Operations*.—Tu. F., 9.
NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 3; Dental, F., 9. *Operations*.—Th., 2.30.
ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.
ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Sec[illegible]
ST. GEORGE'S. *Attendances*.—[illegible] and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Tu., 9.
ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M. 9; Tu., 2.30.
ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances*.—M., 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.
ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Th., 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 2; (Gynæcological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynæcological, M., 3; [illegible]
THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 3; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.
WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electrical, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London. Those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for [illegible]

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES [illegible]

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Astiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

G. B. would be glad to hear of any who have used creosotal whether they have found it give rise to delirium or excitement? He has been giving it to a phthisical patient, in whom it seems to have done so; the patient is much improved in other ways.

M.D. (Member B.M.A.) writes: Can any reader suggest any drug, or combination of drugs, in the treatment of the following case? Obstinate constipation, stools very hard, dry, and scant[illegible] torpor; much flatulence, worst some three hour[illegible] bad during the first hour or two in bed: [illegible] general—that is, intestinal as well as [illegible] has been suggested. Has anyone any experience of its use in such a case? If so, in what doses or combinations? An early reply would greatly oblige.

COQ VOLANT.

M.D., M.R.C.S., asks what the English name, properties, and action, when taken internally, of the above is? It is used on the Continent by poachers to stupefy fish in some rivers. What effect would be produced by eating fish which had taken it?

TREATMENT OF ASCITES BY INJECTIONS OF OXYGEN.

M.D.(BRUX.) writes: In the BRITISH MEDICAL JOURNAL of November 5th there is a note of an article on the above treatment by Maignot. I would like to ask if any of your readers has had any experience of it, and with what results, more particularly in ascites from cirrhosis of the liver.

THE COURTESY CALL.

SIGMA, the newly-appointed medical officer of health for a county borough asks if he ought to call on all the practitioners in his district.

*** While it would be courteous to do so, the rule is less absolute in the case of a medical officer of health than of a private practitioner. The advantage of a call is that friendly relations are at once established, but it is no breach of etiquette to omit it.

TYPHOID FEVER AND THE ATLANTIC PASSAGE.

DR. C. J. B. JOHNSON (Rock Mount, King's Heath, near Birmingham) writes: A patient returned from New York to Liv[illegible] November. Ten days after he felt out of sorts, and has [illegible] undoubted attack of enteric fever. He is of opinion he [illegible] disease on the boat, and is anxious to know if any of the [illegible] sengers were similarly attacked. If any reader of the BRITISH M[illegible] JOURNAL has a case of enteric fever that commenced in Octobe[illegible] returning from New York to Liverpool, I shall be glad if he will communicate with me.

AN OLD ABUSE REVIVED.

A CORRESPONDENT asks our opinion upon the following letter which he has received:

Dear Dr. [illegible]

I have opened consulting rooms in [illegible] Street for the benefit of those who are unable to pay medical men their proper fees. It is only an experiment and may not answer. Should this be abused, I shall either close the place up or insist upon letters or cards of recommendation being brought from the clergy or ministers of religion.

With kind regards, Yours very truly,

[illegible]

Drs. [illegible]

P.S.—Can you call with Mrs. [illegible] on Friday and have a chat with me? We shall both be glad to see you.

*** The practice of seeing gratis patients was common enough in some towns a generation or two ago, but proved such a fruitful source of abuse that it was generally condemned and given up. Any attempt to revive it should be discouraged by the medical profession.

ASSISTANTS AND NOTIFICATION FEES.

ASSISTANT'S principal is in general practice and medical officer of health for district. Assistant notifies cases of infectious disease to his chief as medical officer of health. Is he entitled to the fees?

*** The Act makes no distinction between principals and assistants. "Every medical practitioner attending on or called in to visit the patient" is bound to send the notification. "The local authority [illegible] shall pay to every medical practitioner for each certificate duly sent by him in accordance with this Act a fee of," etc. The question as to who is to pocket the fee after it is paid is entirely a matter of ar[illegible] between the principal and his assistant, and would be gover[illegible] by the terms of the contract between them. The circumstance that [illegible] is also medical officer of health does not affect the legal position, as he is entitled to a fee even if notifying to himself.

ANSWERS.

IODISM IN A SYPHILITIC PATIENT.

DR. JOHN IRVING (Leytonstone) writes: In reply to "Iodism," I would [illegible] the following combi[illegible] R [illegible] ferri [illegible] citratis, gr. v.; [illegible] M [illegible] ter [illegible] ted. An old sy[illegible] [illegible] at in[illegible] nd a te[illegible] [illegible] previous [illegible] [illegible] [illegible] ed of three months the [illegible] [illegible] n to which he had the [illegible] [illegible] iche. I added iron and [illegible] as above, [illegible] uccess.

The iodism almost immediately disappeared, and in less than a fortnight the skin had healed. In "Iodism's" case he might try locally glycerine of lead subacetate (3j to 3xix of water) or an ointment of lead iodide.

DR. ARTHUR H. HART (Clapton, N.E.) writes: "Iodism" should use the following ointment. Ichthyol, 40 gr., salicylic acid 10 gr., petroleum ointment 1 ounce. In cases where small doses of iodide of potassium cause acne, large doses, that is, 20 to 30 gr. three times a day, often fail to do so. The iodide of potassium should be administered with tincture of nux vomica in compound decoction of sarsaparilla half an hour before meals, and followed by large draughts of water.

"IODISM" is referred to a paper by Mr. Henry Greenway on treatment of constitutional syphilis by carbolic acid, in the BRITISH MEDICAL JOURNAL, December 19th, 1868.

SURGEON TO AN ODDFELLOWS' LODGE.

A. P. L.—Before replying to our correspondent we shall be obliged if he will furnish us with a copy of the rules of the Lodge in question, in order that we may judge how far such rules affect the point at issue.

NOTES, LETTERS, Etc.

HEALTH AND SICKNESS ASSOCIATION.

A CORRESPONDENT sends us his experience of this Association. He was, so he stated, canvassed by one of their agents, who wanted to know if he would become a local medical officer for the Association, and assured him that there were three or four candidates a week for examination in the town in which our correspondent was practising. A condition of the appointment, however, was that a certain number of £1 shares of the Association, on which 5s. was paid up, should be taken. Our correspondent foolishly, as he says, consented to act, and took up some shares, and almost immediately two candidates presented themselves for examination. A considerable time has since elapsed without any other candidate appearing, and in the meantime a call has been made on the shares, so that our correspondent finds himself much out of pocket, and he hopes that his experience may prove instructive to some of our readers.

CONSTRUCTIVE MURDER.

JURIST writes: I do not think the law laid down by Mr. Justice Phillimore in the case of Lieutenant Wark is correct, but it has now been repeated by so many judges from whose charges there could be no appeal, and a statute will be required in order to prevent its future repetition. Let me point out briefly what the law, as thus laid down, amounts to. Lieutenant Wark was charged with having "wilfully, feloniously, and of his malice aforethought," killed Jane Yates. The judge practically told the jury to discard the words "wilfully" and "of his malice aforethought," and to convict the prisoner of murder if they found that the killing was felonious. Where is there a word in our statutes to show that the words "wilfully and of his malice aforethought" are mere surplusage? And is not manslaughter as well as murder a "felonious" killing? The jury had the legal right to return a verdict of manslaughter, and they exercised the right in the case of Dr. Collins. But in the case of Lieutenant Wark I think the proper verdict would have been not guilty. The proof that death resulted from an illegal operation was deficient.

But the present law—if law it be—has worse consequences than those referred to by you. It leaves jurors to force and strain their consciences, and to find verdicts by taking the plain words of the English language in an unnatural sense. Suppose that an intelligent foreigner had been present, that he had heard Wark charged with killing Miss Yates with malice aforethought, and then heard Mr. Pickford say in his opening speech that there was no ill-feeling between the parties, that, on the contrary, they were on terms of affection, would not his conclusion be that there was an end of the case? Malice without ill-feeling, malice combined with affection, would have filled him with amazement, and when he asked what authority there was for this extraordinary perversion of language would he be satisfied with the answer: "Mr. Justice So-and-So said so in a particular case, and as no appeal could be brought from his decision, other judges have since followed it?"

OPHTHALMOLOGICAL SOCIETY.

DR. J. TATHAM THOMPSON (Cardiff) writes: In the BRITISH MEDICAL JOURNAL of December 17th I am reported as having shown at the Clinical Evening of the Ophthalmological Society a case of "Congenital Absence of Choroid." May I point out that the case was described by me as "Congenital Deficiency of Choroid." I said that the chorio-capillaris and pigment layers were missing except at the macular region in each eye, minute choroidal vessels were sparsely scattered here and there, especially at the extreme periphery. The fields of vision were both restricted to a small central area of less than 10 degrees. The uncorrected central vision $\frac{2}{60}$ J. 1, but with lenses of -3 dioptres spherical V = $\frac{3}{6}$ J. 1.

REPLACEMENT OF DETACHED SCALP.

DR. J. D RHODES, L.R.C.P., L.R.C.S. (Plumstead) writes: I notice in today's press a case reported from the Broussais Hospital, Paris, of the replacement of a woman's scalp, which is described as "Surgery Extraordinary." My father, James Rhodes, M.R.C.S., L.S.A., of Glossop (deceased this year), had a similar case three years ago at Wood's Cotton Mill, Glossop, whose hair got entangled in the machinery, which tore all the scalp off. He was in a very precarious condition for some time after the surgery, and he sent to have the scalp cut from the hair in the house. This he treated and reaffixed by means of thirty-three sutures, with recovery.

GASTROTOMY ON A HORSE.

ACCORDING to the *Boston Medical and Surgical Journal*, what is probably the first gastrotomy on a horse was recently performed by Dr. George A. Crowin, a veterinary surgeon of East New York. The stomach was opened for the purpose of removing a silver watch and some coins which had accidentally fallen from a stableman's pocket into the animal's manger, and were swallowed by it with its fodder. The operation was entirely successful, and it is recorded that the watch continued to go for an hour after being swallowed.

LETTERS, COMMUNICATIONS, Etc., have been received from

(A) W. M. Anderson, M.B., London; A. P. L.; Mr. A. B. Avarne, Blaenavon; Mr. E. B. Anderson, London; Mr. E. G. Annis, Huddersfield; Dr. J. Allison, Kettering; Mr. G. E. Armstrong, London; A. K.; Mr. J. A. Atkinson, Knaresborough. (B) Mr. R. J. Bland, London; B.; Dr. F. Beach, Kingston Hill; Mr. J. Battersby, Glasgow; Mr. W. J. T. Barker, London; Dr. J. H. Bell, Bradford; Dr. E. E. Blaauw, Buffalo; Mr. C. H. Butlin, Camborne; Dr. A. E. Brindley, Bury; Bowmont; Mr. H. A. L. Banham, Barnsley; Mr. J. P. Bush, Clifton. (C) Mr. G. Cleaver, London; Cargona Co., Peterborough; Dr. J. Curnow, London; Cork; Mr. T. H. Cosser, New Delavel; Mr. C. Campbell, Saddleworth; Mr. H. J. F. Crosby, Grimsby; L. Cobbett, M.B., Cambridge; Mr. W. G. Copestake, Derby; Ceylon Branch, Sec. of, Colombo; C. B. G.; R. F. Campbell, M.B., Cosham. (D) Diplomate; Mr. F. Dalton, Rottingdean; Devoniensis; Mr. L. Dickson, London; Mr. W. A. Day, Bath; Mr. A. Deck, Cambridge; Mr. R. T. E. Davies, New Tredegar; Dr. T. Dutton, London; J. D. Duncan, M.B., Arbroath; District Visitor's Husband; Dr. T. S. Dowse, London. (E) Mr. W. F. Ellis, Leeds; Mr. J. Ewing, Wakefield; Mr. J. B. Endean, Lockington; Mr. C. J. Egan, King William's Town, S.A.; W. McA. Eccles, M.B., London; Dr. W. Ewart, London; Dr. A. Eddowes, London; Executor; Emigrant; Mr. F. Edmunds, Chesterfield. (F) Mr. W. M. Fisk, Montreal; Mr. A. Forrest, Wallsend-on-Tyne; Mr. D. P. Ffrench, Ballygar; Fair Play; Mr. W. S. Freeman, Otford; Mr. W. L. Ffrench, Lincoln. (G) Mr. F. J. Greeves, Blackburn; Mr. T. P. Gostling, Worcester; G. B. B.; Sir W. R. Gowers, London; Miss S. Grumpelt, M.D., Barkly West, S.A.; A. Griffiths, M.B., Falkirk; Mr. H. Greenway, Plymouth; G. S., Member B.M.A. (H) Mr. T. L. Hall, Dilwyn; Mr. G. Harrison, London; Mr. T. Hayes, London; Dr. A. H. Hart, London; W. Hardman, M.B., Blackpool; Mr. W. T. Hayward, Adelaide; Mr. C. Heath, London; Mr. W. F. Haslam, Birmingham; J. O. Hollick, M.B., Knowle; Dr. T. W. Hime, Bradford; Mr. J. Hall, Stroud. (I) Dr. J. Irving, Leytonstone. (J) Mr. C. Jarman, London; Jurist; Dr. J. Johnston, Bolton; Mr. C. J. B. Johnson, Birmingham; J. F. Jordan, M.B., Birmingham. (K) Mr. G. T. Knight, Nottingham; Mr. S. Karger, Berlin. (L) L. T. E.; L.D.S.Eng.; Mr. E. M. Little, London; W. Leask, M.B., Birkenhead; Dr. J. F. Little, London; E. A. Lermitte, M.B., London; D. Lloyd, M.B., Denbigh. (M) Mr. C. H. Melland, London; Member; M.B.; R. C. Macdonald, M.B., Foyers; Mrs. E. D. Minter, Plymouth; M.R.C.S.; Mr. G. B. Masson, Fincham; Dr. W. Milligan, Manchester; M.D., Member B.M.A.; Mr. J. Murphy, Aidin; M.D., M.R.C.S.; M.D.; Miss R. E. March, Emsworth; Mr. A. G. S. Mahomed, Bournemouth; Mr. R. Montgomery, Dublin; Mr. M. C. Moxham, Boston; Mr. C. F. Marshall, London; Magna est Veritas et prævalebit; Dr. W. Moxon, Matlock; A. M. Martin, M.B., Newcastle-on-Tyne; Dr. H. W. G. Macleod, London; Mr. W. H. D. Mence, St. Ives; Mr. L. Minahan, London. (N) North Riding. (O) Dr. H. Oppenheimer, London; C. E. F. Owen-Snow, M.B., George Town, S.A. (P) Mr. C. J. Palmer, Mansfield, Woodhouse; Dr. F. W. Pavy, London; Dr. F. L. Phillips, Birmingham; J. J. Pringle, M.B., London. (Q) Quentin Durward. (R) Dr. J. S. R. Russell, London; Mr. E. H. Roe, London; Dr. W. Robertson, Perth; Mr. H. D. Ryson, London. (S) Mr. E. G. O. Smith, Kingston, Jamaica; Sir T. G. Stewart, Edinburgh; Mr. F. W. Smith, Kingsland; Mr. H. Sell, London; Mr. H. A. Stonham, London; Mr. W. D. Spanton, Hanley; Messrs. Street and Co., London; T. Streatfield, M.B., Folkestone; Mr. H. Scott, Gt. Yarmouth; Sir F. Semon, London; Mr. F. C. Simpson, Gt. Berkhamsted; Mr. H. W. Scriven, London; Dr. F. J. Smith, London; Mr. T. J. Sworder, Hertford; A. F. Stabb, M.B., London. (T) Dr. F. W. Tunnicliffe, London; Town Councillor; Mr. W. T. Thomas, Liverpool; Mr. R. Thomas, London; J. A. Turner, M.B., Hertford; Mr. T. W. Torrington, London; J. T. Thompson, M.B., Cardiff. (W) Dr. P. J. Waldo, London; Mr. T. Wright, Washington, Co. Durham; Mr. F. W. Walton, London; Mr. H. E. Watts, Ilford; W. R.; Mr. C. Warren, Clontarf.

BOOKS, ETC., RECEIVED.

The Treatment of Disease by Physical Methods. By T. S. Dowse, M.D., F.R.C.P. Bristol: John Wright and Co. 1898. 7s. 6d.

Small Accumulators, How Made and Used. Edited by P. Marshall, A.I.M.E. London: Dawbarn and Ward. 6d.

Traitement des Dermatoses par la Petite Chirurgie et les Agents Physiques. Par L. Brocq. Paris: G. Carré et C. Naud. 1898.

Manual of First Aid. By J. A. Austin, M.D. London: Sampson Low, Marston, and Co. 1898.

Hospital Expenditure: The Commissariat. London: The Scientific Press. 1898. 2s. 6d.

The Purification of Sewage. By S. Barwise, M.D., M.R.C.S., D.P.H. London: Crosby, Lockwood and Son. 1898. 5s.

Holden's Human Osteology. Edited by C. Stewart, F.R.S., and R. W. Reid, M.D., F.R.C.S. Eighth Edition. London: J. and A. Churchill. 1898. 16s.

Mittheilungen aus der medizinischen Klinik zu Upsala. Von S. E. Henschen. Erster Band. Jena: Gustav Fischer. 1898. M. 8.

The Erection of a Consumptive Sanatorium for the People. By Dr. Nahm. Translated by W. Caldwell, M.A., M.D. Belfast: Mayne and Boyd. 1898. 2s.

The Micro-Organism of Faulty Rum. By V. H. Veley, M.A., F.R.S., and L. J. Veley (née Gould). London: Henry Frowde. 1898. 5s.

Atlas and Abstract of the Diseases of the Larynx. By Dr. L. Grünwald. Edited by G. P. Grayson, M.D. London: Rebman Publishing Company. 1898. 10s. 6d.

Atlas of Syphilis and the Venereal Diseases. By Dr. F. Mracek. Edited by L. R. Bangs, M.D. London: Rebman Publishing Company. 1898. 15s.

Herbert Fry's Royal Guide to the London Charities. Edited by John Lane. Thirty-fifth Annual Edition. London: Chatto and Windus. 1898. 1s. 6d.

*** In forwarding books the publishers are requested to state the selling prices.

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N.B.—It is against the rules of the Post Office to receive letters at *Poste Restante* addressed either in initials or numbers.

REMARKS
ON
THE PATHOLOGICAL CHANGES IN A CASE OF CHRONIC SYPHILITIC SPINAL PARALYSIS.

By R. T. WILLIAMSON, M.D.Lond., M.R.C.P.,
Medical Registrar Manchester Royal Infirmary, and Assistant to the Professor of Medicine, Owens College.

Syphilitic disease of the spinal cord may give rise to various symptoms, according to the nature of the pathological changes. The symptoms may be those of acute myelitis, of tumour (gumma), of meningitis, of meningo-myelitis, of pseudo-tabes, and other forms of spinal syphilis have been described. Professor Erb[1] has specially drawn attention to a group of cases of chronic syphilitic disease of the spinal cord which present a certain combination of symptoms. To these cases the name of "Erb's syphilitic spinal paralysis" is frequently given. The patient presents superficially the familiar symptoms of spastic paresis or paralysis, as regards gait, attitude, and movements. The patella tendon reflexes are increased, and ankle clonus is present, but there is relatively only slight muscular rigidity. The bladder is constantly affected. As a rule there is only slight, though constant, affection of sensation. The onset of the disease is generally gradual, seldom rapid. Marked spastic paresis gradually develops, but only exceptionally is there complete paraplegia. The upper half of the body is unaffected. There is often a tendency to improvement under antisyphilitic treatment.

A large number of cases have been recorded which have presented the combination of symptoms to which Erb has drawn attention; but there has been much discussion as to whether these symptoms ought to be regarded as characteristic of spinal syphilis, and only a few pathological examinations have been made.

Oppenheim[2] admits the frequency of Erb's group of symptoms, but believes that they are simply due to a dorsal myelitis of syphilitic origin, not extending over the whole transverse section of the cord. He believes that there has been a meningo-myelitis in the dorsal region, but that the meningeal affection has subsided, and only the results of the myelitis and secondary degeneration have been left behind.

Whatever opinions may be held as to the advisability of regarding Erb's group of symptoms as those of a special affection, there can be no doubt that cases of syphilitic disease of the spinal cord are not infrequently met with, which present this combination of symptoms. Hitherto only a very few pathological examinations have been made in this form of spinal syphilis, and hence the records of the pathological changes in the following case, which clinically corresponded in most points with Erb's type, may be of interest. During life the patient was under the care of Dr. Joseph, Honorary Surgeon to the Warrington Infirmary, and the abstract of the clinical history is taken from notes kindly furnished by Dr. Langdale, House-Surgeon to the hospital. Dr. Langdale also made the *post-mortem* examination, and to both of these gentlemen I am indebted for kindly forwarding the spinal cord to me for examination.

Clinical History.

The patient was a man, aged 27, labourer, who first came under treatment in November, 1894. He had been a soldier, and had contracted syphilis in 1888, at the age of 21. In 1893 he began to be troubled with difficulty in micturition. This increased, complete retention occurred, and for almost twelve months before he first came under observation he had been obliged to use a catheter to draw off the urine.

When first examined, in 1894, he complained of retention of urine, of weakness of the legs, and of a tired feeling at the back of the knees on going upstairs. There was at that time no definite paralysis or wasting of the muscles of the legs. The plantar reflexes and the knee-jerks were increased; ankle clonus was present on the right side, doubtful on the left; the gluteal, cremasteric, and abdominal reflexes were present. There was no anæsthesia, no pain in the back, no girdle sensation and no inco-ordination. The pupils reacted normally, and the optic discs were normal.

Ten months later (in August, 1895) he began to suffer from pain in the back, especially at the lower part. In November, 1895, the legs were so weak that he was unable to walk without assistance. The movements of the left leg were greatly impaired, those of the right leg to a less extent. There was still complete retention of urine. The knee-jerks were increased, and ankle clonus was present on both sides. On the right leg, and on the abdomen on both sides as high as the umbilicus, there was slight impairment of cutaneous sensibility; on the left leg sensation was normal. The urine contained pus. After rest in bed the condition of the bladder improved, and he was able to pass urine without the aid of a catheter. The legs also improved rapidly, and the patient was able to walk again, but the gait was unsteady. Sensation became quite normal.

In December, 1896, the patient again came under observation. There was then some difficulty in micturition. He was able to walk, but there was inco-ordination of the lower limbs. At a later date there was obstinate vomiting and hiccough, and the urine contained pus. Death occurred in February, 1898.

The *post-mortem* examination was made by Dr. Langdale, who kindly sent me the spinal cord and portions of the brain for examination. The necropsy revealed extensive double pyelonephritis, but no other macroscopic changes of interest were detected. The cerebrum, cerebellum, pons and medulla appeared normal macroscopically.

Pathological Examination.

The spinal cord was hardened in Müller fluid; numerous pieces were embedded in celloidin. Sections were prepared and stained according to Weigert's method, and with logwood and eosin, and with aniline blue black. Diagram 1 represents the distribution of the changes in the spinal cord at various levels. The portions of the figures in this diagram which are shaded by dots represent the regions of degeneration and secondary ascending and descending sclerosis—that is, the parts in which, in the sections stained according to Weigert's method, nerve fibres are absent or scanty.

Microscopical Examination.

In the pia mater and arachnoid evidences of slight meningitis were found in all regions of the cord, but the changes were most marked in the dorsal region, least marked in the cervical region. The meninges were slightly thickened by fibrous tissue, and in various parts there was slight infiltration with round cells chiefly around the blood vessels.

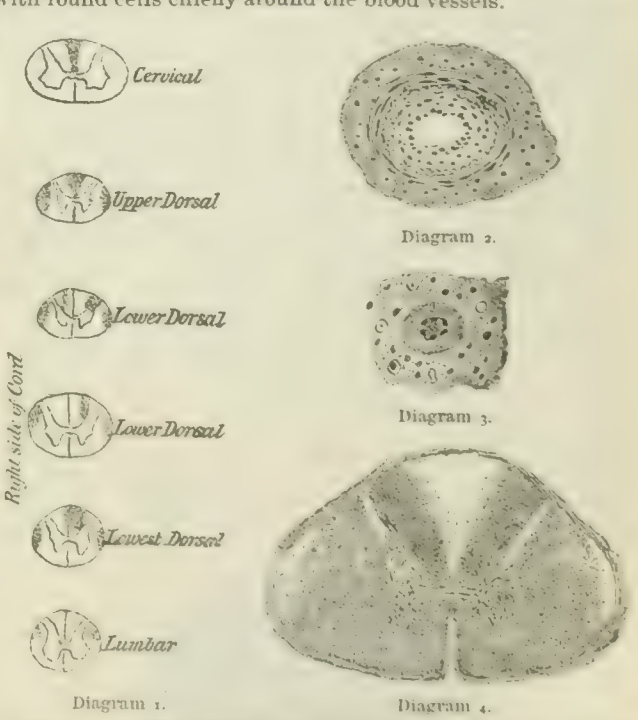


Diagram 1.

Diagram 2.

Diagram 3.

Diagram 4.

Diagram 1.—Showing distribution of lesions in the spinal cord at various levels. The sclerotic and degenerated parts are shaded. Diagram 2.—Section of meningeal artery showing endarteritis. Diagram 3.—Section of small vessel in the white matter of the cord showing hyaline thickening of its walls. Diagram 4.—Section of spinal cord in upper dorsal region. Weigert's stain. Pale parts=regions of sclerosis. Black dots=normal nerve fibres.

The spinal blood vessels presented well-marked changes in numerous parts. The larger arteries in the meninges, especially at the posterior part of the cord, near the posterior nerve roots, often presented marked endarteritis. The internal coat was often much thickened by abundant new cell formation on the inner side of the elastic lamina, the lumen of the vessel being thereby much diminished (see Diagram 2). The

middle and external coats were generally not much altered; but frequently there was an infiltration of leucocytes around the vessels. The veins were either unaffected or the changes (proliferation of the intima cells) were less than in the arteries. In many places the veins were surrounded by cell infiltration. The very small meningeal arteries presented thickening of the walls and slight proliferation of the cells of the intima, and they were often surrounded by round-celled infiltration.

The meningeal vessels were generally well filled with red corpuscles, but in a few places the lumen of a vessel was partially occluded by a thrombus.

Within the cord, especially in the diseased parts indicated on p. 1922, the walls of the small vessels were often very much thickened, and had a homogeneous hyaline appearance, also the endothelial cells of the intima were slightly proliferated (see Diagram 3). In some places these hyaline vessels were surrounded by slight infiltration of leucocytes.

The two prominent features of the vascular changes were the endarteritis of the larger meningeal arteries and the hyaline thickening of the walls of the small vessels within the cord.

The changes in the white matter will be best indicated by describing the sections at various levels.

In the cervical region there was marked degeneration in the posterior median columns, and the degenerated region presented the usual appearances of secondary sclerosis, namely, absence of nerve fibres and increase of neuroglia connective tissue. The pia mater was slightly thickened by fibrous tissue, and in the lateral region of the cord, just beneath the pia mater, in the region of the direct cerebellar tract, and a short distance in front of it, there was an increase in the neuroglia connective tissue and a diminution of the number of nerve fibres. But this peripheral sclerotic change was very slight, and did not extend to the crossed pyramidal tract. The last mentioned tract and all other parts of the white matter appeared normal. The grey matter was normal.

In the upper dorsal region marked degeneration was seen in the posterior columns, localised to the posterior median column and a little of the adjacent part of each posterior external column. The sclerosis at the anterior part of this region—that is, close to the grey commissure—was slight. In the lateral region of the cord there was a peripheral strip of degeneration just under the thickened pia mater. The degeneration extended inwards, and affected the outer part of each crossed pyramidal tract (see second figure, Diagram 1, and also Diagram 4). The degenerated parts, both in the posterior and lateral regions, presented the ordinary appearances of secondary sclerosis—namely, disappearance or diminution of the nerve fibres and great excess of neuroglia connective tissue with dilated blood vessels.

The sclerotic changes were more marked in the lateral column of the right side, and at one point on this side there was a gummatous infiltration. This commenced from the pia mater and surface of the cord, and extended inwards as an irregular, somewhat oval mass, just anterior to the position of the crossed pyramidal tract (see Diagram 5). In the centre

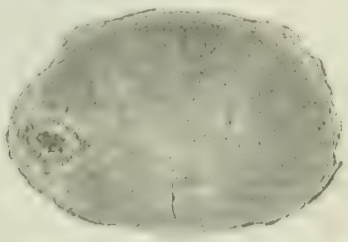


Diagram 5.—Representing section stained with logwood and eosin. Gummatous mass surrounded by cell infiltration, extending inwards from the surface of the cord. Upper dorsal region.

of the patch was a small mass of amorphous caseous substance. This was surrounded by nucleated fibrous tissue, and externally was a zone of abundant cell infiltration. The small vessels presented marked hyaline thickening of their walls. In some of the sections this gummatous infiltration was seen to invade the grey matter slightly.

In the mid-dorsal region there was a similar distribution of the peripheral sclerosis in the lateral columns (as in Diagram 4). But in the posterior columns the intense sclerosis in the region of the posterior median columns had disappeared. There was, however, a slight diffuse increase of the neuroglia fibrous tissue all over the posterior columns, both external and median. The neuroglia was well supplied with nuclei and the small blood vessels were dilated. Nerve fibres were seen at all parts of the posterior columns in this region, but their number was much less than in a healthy spinal cord, and they were more widely separated by neuroglia connective tissue. The grey matter was normal.

In the lower dorsal region there was a small degenerated sclerotic patch in the posterior columns adjacent to each posterior horn of grey matter (as shown in the third figure of Diagram 1). The one on the left side implicated the grey matter of the posterior horn. There was also a peripheral zone of sclerosis in each lateral region. At a lower level only one of the sclerotic patches in the posterior column was seen (as shown in the fourth figure of Diagram 1). In the lowest dorsal region, just above the lumbar enlargement, there was a large patch of degeneration in the posterior columns of the left side. It extended from the posterior median fissure up to the posterior horn of grey matter (as shown in the fifth figure of Diagram 1 and also in Diagram 6). In this degener-



Diagram 6.—Section of spinal cord in lowest dorsal region (Weigert's stain); affected parts pale; normal nerve fibres represented by black dots.

ated patch, sections stained according to Weigert's method showed a complete absence of nerve fibres. The periphery of the patch was bounded by a broad zone of dense fibrous tissue. Internal to this zone was a region in which there were a considerable number of blood vessels with hyaline walls, surrounded by a network of well-nucleated fibrous tissue. In the centre of the patch were numerous tortuous blood vessels, presenting marked hyaline degeneration of the walls, and surrounded by round-celled infiltration. This cell infiltration varied in amount at different parts; it consisted of leucocytes, together with a few compound granular cells, but none of the large epithelioid-like cells, so common in acute non-syphilitic myelitis, could be detected. In the lateral part of the cord at this level there was the same peripheral zone of degeneration (Diagram 6) as in the mid-dorsal region.

In the lumbar region of the cord the only change, apart from the affection of the meninges and their vessels (described above), was sclerosis, just limited to the region of the crossed pyramidal tracts (as shown in the last figure of Diagram 1).

Grey Matter of the Cord.—As mentioned above, at one point in the lower dorsal region a sclerotic patch invaded the whole of the posterior horn of grey matter; also at one spot in the upper dorsal region the outer half of the grey matter was invaded by gummatous infiltration on the right side; but in all other parts of the cord the grey matter was normal, with the exception of dilated and diseased blood vessels. The nerve cells and fine nerve fibres of the grey matter seen in Weigert's specimens were everywhere normal, except at the points just mentioned. The columns of Clarke appeared normal.

As regard the distribution of the changes above described, it is evident that the degeneration in the posterior median columns in the cervical region was of the nature of secondary ascending sclerosis; it was less extensive than that in the posterior columns of the upper dorsal region. The degenera-

tive changes in the lateral region of the cord were evidently due to a sclerosis produced by the extension inwards of inflammatory changes beginning in the pia mater. As mentioned above, they affected the peripheral region of the cord, and also implicated the crossed pyramidal tract. In the lumbar region, however, there was distinct secondary descending sclerosis, exactly limited to the crossed pyramidal tract.

A prominent feature of the pathological changes was the endarteritis of the larger vessels, especially in the meninges and the hyaline degeneration of the smaller vessels. All the degenerated portions of the cord presented sclerotic changes except those in the posterior columns in the lowest dorsal region, and at one point in the antero-lateral columns on the right side in the upper dorsal region. Here the changes were those of a gummatous infiltration.

The pathological changes were certainly not those of disseminated sclerosis; their distribution was not sufficiently irregular; there was also marked secondary ascending sclerosis in the cervical region, which is very rare in disseminated sclerosis; and during life the symptoms were not those of the disease just mentioned. The typical endarteritis, the slight meningeal changes, the extension of the lesion from the meninges into the adjacent parts of the cord, the histological (gummatous) nature of the most recent patches, and the syphilitic history of the patient, all indicate clearly that the case was one of spinal syphilis.

The pathological and microscopical examinations of the spinal cord, which have hitherto been recorded in cases of Erb's syphilitic spinal paralysis, are too few to enable one to draw definite conclusions as to the lesions, and possibly they may not always be of the same nature and distribution. But the above record furnishes a good example of the changes which may be met with, in a case which presented during life most of the symptoms of "Erb's syphilitic spinal paralysis." The chief point of difference from Erb's cases was the gait; there was considerable inco-ordination in the movements of the legs; but this has been recorded in other cases also.

Briefly the pathological changes may be summarised as follows: Endarteritis and hyaline degeneration of the arteries of the spinal cord and meninges; slight meningitis; gummatous infiltration of the right antero-lateral columns in the upper dorsal region; sclerosis of the periphery of the cord in the lateral columns in the whole of the dorsal region; sclerosis in the posterior median columns in the upper dorsal region; irregular sclerotic patches, with one patch of cell infiltration (gummatous) in the lowest dorsal region; descending sclerosis in the lumbar crossed pyramidal tracts; ascending sclerosis in the cervical posterior median columns.

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A CASE OF SYRINGOMYELIA.

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It is only within the last few years that the possibility of giving a clinical picture of syringomyelia has been recognised. The presence of abnormal cavities in the spinal cord was first recorded by Morgagni[1] nearly two centuries ago, and these for long were looked upon as mere pathological curiosities. In later years, however, the pathology of this condition has been pretty clearly established, and now syringomyelia is recognised as having a definite symptomatology, and the striking statement is made by Starr[2] that "it is not less common than such a well-known disease as disseminated sclerosis," and Charcot agreed with Schultze that "it was at least as common as amyotrophic lateral sclerosis."[3] The rapidity with which this advance has been made in our knowledge of the disease is strikingly brought out by comparing the well-established group of symptoms now regarded as diagnostic, and described in detail by Bruhl,[4] with the statement made by Erb, even in 1878, that "all experience thus far teaches that the development of cavities, as such, produces no sort of symptoms by which it could be recognised during life"; and again, that "no special symptom, no peculiarity in the course of the disease, betrays the complication."[5] The following case is instructive, especially as it illustrates some of the variations from the classical type that may be met with, and I have Sir William T. Gairdner's kind permission to publish it in detail:

J. B., aged 33, a farm servant, was admitted to Sir William Gairdner's ward in the Glasgow Western Infirmary on February 9th, 1898, suffering from a chronic nervous illness, the most prominent features of which were wasting of the right hand and forearm, marked spastic paraplegia, and some sensory disturbance.

History.—As a child he was healthy, the only illness he remembers having had being measles. He had no convulsions, but at the age of 10 he says he was nervous and easily frightened, though not prevented from attending school. At the age of 12 he left school and began to work on a farm, and two years later, during a severe winter, he suffered much from fissures on his hands, which were long in healing and more troublesome on the right hand. From this time the right hand was noticed to be weak, and he began in his work to use the left hand more than the right. During the following winters he suffered much from chilblains on his hands (right more than left), and in the spring of 1883 (aged 18) he had a whitlow on the ring finger of the right hand, which took a long time to heal. The weakness of the right hand meanwhile was gradually increasing, and the muscles were becoming atrophied. In July, 1883, he suffered much from vertical and occipital headache, and also had indigestion with occasional vomiting, and a gnawing pain in the back between the shoulders. He went on with his work till towards the end of the month, when for a few days the headache was very severe, and he could not bear the light on his eyes, and was sleepless. One day at this time, when walking in the garden, he suddenly got dizzy and fell, but without hurt or loss of consciousness, and he was able to get up and walk into the house. Next morning he fell down in the house, and had to be lifted into bed, a movement of which he was quite unconscious. He remembers being out of bed again by the time the doctor arrived, and also that he was out of bed a day or two later, having his head shaved and a blister applied. However, within a week he was completely paralysed, and was wholly confined to bed for fully a month. At first he could not move arms, legs, or back, but gradually recovery took place, more in arms and back than in legs, so that he was soon able to get out of bed, and walk with the aid of sticks. It should be added that he suffered from retention of urine during the first fortnight he was confined to bed, but after that there were urinary difficulties, though never complete retention. After this headache was occasional, and he often felt a sharp pain in the right occipital region, but he practically suffered no pain apart from this headache. He came to the Western Infirmary in July, 1884, and remained under treatment for about five months. His case at this time was indexed "spastic paraplegia," there being noted in addition some permanent inequality of the pupils, atrophy and weakness of the right arm, and some sensory disturbance. Very little change took place during his residence, and soon after leaving he proceeded to the University College Hospital, London, where he was under the care of Sir William Gowers. Since then his general condition has not changed much. He has not been able to do any regular work. His right arm has gradually been getting more wasted and weaker, and latterly there have been some subjective sensory disturbances in the left hand, which is getting more susceptible to cold, and seems to be getting slightly weak, and also wasted. The spastic condition of the lower limbs and the urinary difficulties have remained much the same. In August, 1897, the patient was in the Glasgow Royal Infirmary.

Family History.—His parents are both dead, the father at age of 67, after an attack of paralysis of the right side; the mother at the age of 66, from influenza with pulmonary complications. He is one of a family of three sons, his two brothers being alive and well. No relation is known to have suffered from any nervous illness.

Present State.—The patient is a healthy-looking man. There is some œdema of the feet and legs. There is slight postero-lateral curvature of the spine in the upper dorsal region, the convexity being to the right. There is a slight want of symmetry between the two sides of the face, but no relative difference in the power of the facial muscles can be appreciated. There is marked paresis of the right arm, especially of the hand, but the grasp of the left hand is probably also deficient. With the dynamometer the grasp of the right hand is registered as 0, and that of the left as 45. There is considerable atrophy of the right hand and forearm as compared with the left. The thenar and hypothenar eminences are practically gone, and the interossei muscles very deficient. There is characteristic deficiency in the movements of the hand. He cannot oppose the thumb to any of the fingers, and when he tries to fully extend the fingers there is over-extension of the first phalanges and flexion of the terminal ones. There is distinct though less marked wasting of the thenar and hypothenar eminences of the left hand, and this is associated with an inability to oppose the left thumb to the little finger. No relative wasting is made out in the shoulder muscles. Fibrillary tremor is present in the muscles of both hands. There is no rigidity of the upper limbs, though there is some tendency to contraction of the third, fourth, and fifth fingers of the right hand. No triceps, biceps, or wrist jerks are got on either arm. There is paresis of both legs, slightly more marked on the right side. Secondary rigidity is very marked, and the attitude of the limbs characteristic. The feet are extended at the ankles, and the first phalanges of the toes are over-extended, while the terminal phalanges are fully flexed. The great toes are specially affected in this way, that of the left foot being quite dislocated at the metatarso-phalangeal joint. The muscles of the right leg seem to be less bulky than those of the left, and at the thickest part of the calf, though the circumferential measurement varies to some extent with the œdema, the right is always one-half to one inch less than the left.

The knee-jerks and ankle clonus are exaggerated on both sides, and the plantar reflexes are very distinct. The epigastric, abdominal, and cremasteric reflexes are not got. There are no tremors of the limbs.

There is no evidence of trophic change in the skin or its appendages

The sensation of touch seems to be perfectly normal all over the body and an examination of the face, arms, and legs with the æsthesiometer (Weber's) reveals no appreciable difference in the two sides of the body. The localisation of touch is very accurate, and no delay in the transmission of the sensation can be appreciated. However, sensation of pain and thermal sensation appear to be somewhat defective all over the body, the deficiency being most marked in the right arm, less in the left arm, and least in the legs, trunk, and face. The distribution of the loss of sensation of pain and that of the loss of sensation of heat and cold correspond pretty well, though the former is rather more profound. In testing the sensation of pain with a sharp needle, it is found that the needle can be passed right through the skin of the arms, and even of the legs and of the front of the chest, without complaint, and there is great difficulty in distinguishing between the point of the needle, the head of a pin, and the tip of one's finger. The analgesia varies in degree at different areas, being most profound in the right arm and shoulder from the neck, less in the left arm from the shoulder girdle, and least marked elsewhere. The thermo-anæsthesia is greatest in the right arm from the shoulder girdle, less in the right side of the neck and the left arm from the shoulder girdle, but fairly good in the front of chest and left side of neck and elsewhere. The muscle sense is normally present.

The skin is very insensitive to electrical stimulation. In the muscles of both arms and hands the galvanic current produces contractions with 2 to 3 milliampères, there being considerable difficulty in getting responses from the intrinsic muscles of the hands. In the facial muscles only 1 milliampère is required. With the faradic electricity, the muscles of the arms and hands contract with a coil distance of 5 or 6 cm., while for the face the coil distance is 7 cm. In the legs muscular contractions are only produced by comparatively strong currents, both galvanic and faradic. There is no qualitative change, K.C.C. always being greater than or equal to A.C.C.

When he walks the patient keeps his feet rather far apart; his limbs are stiff, and he swings round both feet, trailing the balls of the toes on the ground. His gait is rather spastic than ataxic, but he cannot walk so well in the dark, and he cannot stand steadily with his feet together and his eyes shut. Except for occasional headache he makes no complaint of pain, either in back, round the trunk, or in the limbs. He has no speech defect, and his intellectual capacity is unaltered and his memory good.

In regard to the eyes, it is noted that the pupils are unequal, the right always smaller than the left. Both pupils respond, however, to light and on accommodation. There is at times slight nystagmus. There is no oculo-motor paralysis, though there is slight convergent strabismus. The visual acuteness is normal, as also the sense of colour and the field of vision. The fundus oculi reveals nothing of special note. There is probably diminution of the sexual sense, though it is not lost. There is no alteration of the other special senses.

The patient's temperature is normal. His appetite is good, and, except for some flatulent distension after food, his digestive system is healthy. The lungs and heart are normal. The urine is slightly alkaline, usually contains triple phosphates and some pus cells, but only a trace of albumen.

No alteration took place in the patient's condition during residence in hospital, and he was dismissed on April 1st, 1898.

In this case all the symptoms that one looks for in syringomyelia are present, though their distribution and their relative prominence differ considerably from the usual type. There are symptoms indicating some lesion of the anterior cornua, namely, the advancing muscular atrophy of the hands and arms, especially the right. There are also symptoms pointing to lesions of the posterior cornua, namely, the loss of sensation of pain, and of heat and cold, with the preservation of the sense of touch and the muscle sense. No trophic changes are present in addition to the wasting of the muscles, unless the chilblains and the occurrence of a whitlow are of that significance. But there are present characteristic disturbances of the eyes, most notably the disparity of the pupils, indicating the implication of the sympathetic fibres from the spinal cord for the eye; also curvature of the vertebral column, and some urinary difficulties. In addition there are symptoms which point to extension of the lesion to the white substance of the cord, by pressure or otherwise, and consequent secondary degeneration. Implication of the lateral tracts is indicated very distinctly in this case by the spastic paraplegia. Slight degeneration of the posterior columns is suggested by the small amount of ataxia that is present (Romberg's sign). The level of the primary lesion is indicated by the distribution of the muscular atrophy and by the pupillary sign, both of which were present early.

In the diagnosis of syringomyelia it is the sensory phenomena that are most important, as distinguishing it from other nervous diseases. This patient's present condition resembles in many ways amyotrophic lateral sclerosis, although the muscular atrophy is decidedly asymmetrical, and the spastic paraplegia is rather out of proportion to the atrophy. However, there is clearly something more than amyotrophic lateral sclerosis, and the ocular symptoms, the sensory phenomena, and the onset of the disease in early youth all point to a different diagnosis. Similarly simple progressive muscular atrophy is distinguished from syringomyelia by the absence of sensory disturbances in the former; and disseminated sclerosis would be distinguished by the presence of affections of the speech, characteristic tremors, and, as a rule, normal sensibility. Again, peripheral neuritis may be differentiated as a rule with ease, for though its prominent symptoms are altered sensations, the tactile sensation is what is invariably most affected, and there is never present the dissociation of the different forms of sensation. Moreover, the anæsthesia of neuritis corresponds with the distribution of the affected nerves, whereas the sensory phenomena of syringomyelia are present in regular defined segments.

Another disease which must be distinguished is hysteria, and Charcot has pointed out that the sensory phenomena so characteristic of syringomyelia may be met with in hysteria. One of the points to be observed in making a differential diagnosis is that disturbances of the special senses are absent in syringomyelia, though they are common in hysteria, the most common being diminution of the visual field. Moreover, in hysteria the paralytic phenomena are usually rapid in their onset, while in syringomyelia the onset is slow and progressive. In hysteria also there is sometimes equally sudden disappearance of the symptoms; it may be with recurrence brought about by emotional causes, but such sudden changes are unknown in syringomyelia. Our present patient was particularly free from any disposition to hysteria, and the differential diagnosis was not difficult.

The course of this patient's illness has been rather anomalous. It seems to have begun at the age of 14 with progressive atrophy of the muscles of the right hand. This made slow but steady progress, and has latterly affected also the left hand. But suddenly, at the age of 18, he took a "fit" associated with unconsciousness, and followed by complete paraplegia, from which a large amount of recovery was got. The most probable explanation of such an unusual mode of development is the occurrence of spinal hæmorrhage. The now generally-recognised cause of syringomyelia is gliomatosis of the cord; and it has been pointed out that certain gliomata are very vascular, and may be affected by hæmorrhage. The sudden pressure would be the cause of the apoplectiform seizure and the succeeding paraplegia, while the partial recovery is explained by the reabsorption of the hæmorrhage. Syringomyelia is essentially a chronic illness, and though such sudden seizures are often regarded—at least by the patient—as the onset of the illness, careful inquiry will show, as in this case, that the onset of the disease was antecedent to the sudden attack, there having been some previous progressive atrophy of muscles or some sensory manifestations. Indeed, the chronicity of the disease is well illustrated by this case, as there is comparatively little change in his condition since his former residence in the Western Infirmary, now fourteen years ago.

It is of considerable interest to look back on the report of this patient's condition on his first admission in 1884. At that time the case was regarded as prominently one of spastic paraplegia, though this diagnosis does not seem to have been regarded as quite complete, and the inequality of the pupils, the atrophy of the right hand, and some not very clearly-defined sensory irregularities were the disturbing elements. However, it was just about this time that syringomyelia was beginning to be considered to be a disease with definite symptoms, and capable of clinical diagnosis. The publications of Schultze[6] and Kahler,[7] commencing in 1882, first drew attention to these symptoms, and in particular to the typical sensory phenomena which Charcot called the "dissociation syringomyélique." Subsequent clinical observations, frequently verified *post mortem*, have fully confirmed the importance of their work, and especially the importance of systematic examination of sensation in its different phases. From the numerous cases since reported, in some of which previous diagnosis of progressive muscular atrophy, spastic paraplegia, or amyotrophic lateral sclerosis had been made, it now appears that this "dissociation syringomyélique" is far from being such a rare condition as used to be thought.

Another point of interest in this case is the widespread distribution of the anæsthesia of pain, and of heat and cold. The distribution of the analgesia and the thermo-anæsthesia is most commonly hemiplegic, limited to one-half of the body, and usually affecting only one of the upper limbs and the adjacent portion of the thorax. That is what one finds in classical cases like that reported by Jackson and Galloway,"

which I had the privilege of seeing in the London Hospital. Sometimes both upper limbs with adjacent portions of the thorax in the form of a "vest" are affected, but it is distinctly exceptional to have the sensory disturbance generalised over the whole body, though such cases have been reported.[9]

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THE DIAGNOSIS DURING LIFE OF RETINAL AND LABYRINTHINE HÆMORRHAGES IN A CASE OF SPLENIC LEUKÆMIA.

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A case of leukæmia which was studied in the Western Infirmary some ten years ago has not yet been reported, but certain points in the diagnosis made me resolve to publish it some time.

The patient was a married woman, aged 29, with five children; she was affected with splenic leukæmia, the spleen being enormously enlarged, without any glandular affections recognisable during life. Her fifth child was born in January, 1887, and her attention was directed to a lump in her left side three months later. In August, 1887, she was admitted to the Glasgow Royal Infirmary, where the lump referred to was identified as a large spleen, and the blood was found to be highly leukæmic—nearly one white to three red corpuscles. No hæmorrhages were found in the retina at that time. After trying a change to her native place—Islay—she was admitted to the Glasgow Western Infirmary on June 14th, 1889. The condition of the spleen was much the same as reported in the Royal Infirmary notes, but it was apparently larger, and the strength and condition generally had deteriorated; slight œdema of the feet was present on admission, but it passed off with rest in bed. The blood showed in 1889 very much the same proportion of red to white corpuscles as in 1887; we found 1,190,000 white and 2,080,000 red corpuscles in the cubic millimetre. This was shortly before death. The white corpuscles were mostly of the ordinary size, but about one-fourth of them were larger and more granular, with fatty contents. In 1887 the Royal Infirmary notes indicated the same diversity in size of the white corpuscles.

A month before admission to the Western Infirmary vomiting was troublesome for three weeks, but she seemed to have had no bleedings from the stomach or bowels (except slightly from piles when the bowels were costive), and no epistaxis.

After admission to the Western Infirmary the œdema disappeared, but the bowels became very loose, and this resisted treatment. A small swelling at the left frontal region suppurated and burst; this became erysipelatous, and the redness spread. This was associated with only slight pyrexia (100° to 100.4° F.), but it hastened her death, which occurred on July 19th, 1889, fully a month after admission.

The greatest point of interest was the implication of the eyes and the internal ears in a case of leukæmia; the possibility of recognising this during life, as due to hæmorrhages, was a matter of diagnostic interest.

About a month before admission to the Western Infirmary, whilst crossing from Islay in the steamer, she was supposed to have contracted "a cold," and to this she ascribed the deafness and ringing sounds in her ears from which she suffered, as well as the bloodshot appearance in her left eye. While on the steamer she was affected with severe giddiness, when the noises in the ears came on, and she felt sick, although the sea was quite calm at the time. As already stated, there had been an attack of vomiting a week or two before this.

An examination of the left eye showed at once that the blood-shot appearance ascribed to cold was really a conjunctival ecchymosis, and this immediately suggested the probability of hæmorrhages in the fundus; these were readily found on ophthalmoscopic examination. This discovery in its turn suggested the possibility of hæmorrhages being present in the nervous structures of the internal ear on both sides. The sudden deafness, the noises in the ear, the giddiness, and sickness, all pointed in the direction of a labyrinthine affection. An exploration of the ears was made by Dr. Thomas Barr. Nothing abnormal was found in the external or middle ear, and the Eustachian tubes were easily inflated, but no improvement in the hearing resulted. A watch could not be heard on contact on either side, and the voice was heard only when loudly spoken near to the ears. The tuning-fork was heard longer by air conduction than by bone conduction. The conclusion of Dr. Barr's report on June 17th was: "The suddenness of the onset, the extent of the deafness, the presence of giddiness, and disturbance of head balance at the beginning, as well as the severe tinnitus, point to exudation in the cavities of labyrinth, probably hæmorrhagic in character."

At the examination of the body after death, the eyeballs were removed for examination by Dr. Thomas Reid, and the bones containing the internal structures of the ear were carefully dissected by Dr. Barr. The sections made of the retina displayed the hæmorrhages beautifully, and a microphotograph showed a striking abundance of leucocytes in the blood vessels. The examination of the internal ear showed hæmorrhages in the vestibule and the first turn of the cochlea, not at all in the middle ear.

Amongst other features of interest in the *post-mortem* examination may be mentioned the size of the spleen, 14 by 8 inches, and the weight, 6 lbs. 4½ ozs. It presented on section large, yellowish, firm patches of wedge-like shape, suggestive of infarctions, but on microscopic examination no indication was found of this having actually occurred. Some general enlargement of the mesenteric and retroperitoneal lymphatic glands was noted, and similar glands were seen in the neck. The omentum presented numerous, small, pearly nodules. Minute submucous hæmorrhages were seen in the colon with some injection of the vessels. The brain presented nothing specially abnormal, but the veins showed a considerable amount of greenish yellow clot. The heart contained greenish, opaque, fibrinous material, with a grumous fluid residue.

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As regards the literature of the subject, the most important contribution is by Gradenigo, in 1886, who gives a summary of the cases up till that date. A case by Steinbruegge, in 1887, presents some resemblance to my case, inasmuch as both the eyes and the ears were affected. From the reports of cases it would seem that in leukæmia there may be hæmorrhagic lesions both in the middle and inner ear, and that these may coexist with hæmorrhage elsewhere. (Something of the same kind has been observed in pernicious anæmia. See *Archiv für Ohrenheilkunde*, Bd. 31, S. 231.)—Politzer, A. Pathologisch-anatomische Veränderungen im Labyrinth bei leukämischer Taubheit. Congress in Basel, September, 1884. *Archiv für Ohrenheilkunde*, Bd. xxii, S. 109.—Blau, L. Ueber Erkrankungen des Gehörorganes bei Leukämie. *Zeitschr. f. klin. Med.* Bd. x, Heft 1 und 2. Abstracted in *Archiv für Ohrenheilkunde*. 1886. Bd. xxiii, S. 169, and in *Archives of Otology*, vol. xv, p. 265.—Gradenigo, G., jun. Das Gehörorgan bei der Leukämie (with plates). *Archiv für Ohrenheilkunde*. 1886. Bd. xxiii, S. 242.—Steinbruegge, H. Labyrinthine Disease in a case of Leukæmia. *Archives of Otology*. 1888. Vol. xvii, p. 59. *Zeitschrift f. Otologie*. Bd. xvi, S. 238. See *Archiv für Ohrenheilkunde*. Bd. xxiv, S. 200. 1887.—Gellé. Leukocythämie mit Taubheit und Facialilähmung beginnend. *(Revue Mens. de Laryng.* 1887, No. 12). See *Archiv für Ohrenheilkunde*. Bd. xxvi. S. 253.—Steinbruegge, H. Communication to International Congress in Berlin. August, 1890. Case of leukæmia in a girl of 14 years, with hæmorrhages in the middle ear and in labyrinth *Archiv für Ohrenheilkunde*. Bd. xxxi, S. 231.—Wagenhäuser. Labyrinth befund eines Falles von Taubheit bei Leukämie. *Archiv für Ohrenheilkunde*, 1892. Bd. xxxiv, S. 210.

THE ARTHROPATHIC DYSTROPHIES.

By T. ALDOUS CLINCH, M.D.Edin.,

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Definition of Terms.

It is a well-known fact that injuries of joints, often by no means of a severe character, leave behind them weakness which not uncommonly lasts for the rest of the sufferer's life. In some cases the weakness and atrophy of the limbs is so marked that special attention has been paid to them, and they were named cases of arthropathic amyotrophy (Charcot).[1]

This name, however, is too limited, for changes occur in

other tissues. The skin and epidermic structures,[2] the connective tissues, ([2], [3]) the bones,[4] and even the vessels,[5] and nerves ([6], [7]), may severally or collectively be affected, and so, though the muscular atrophy is in many cases the most pronounced change, the broader and more comprehensive word dystrophy appears to me to describe these cases better than the more exactly limited word amyotrophy.

The arthropathic dystrophies, then, may be defined as those changes in the nutrition of any of the tissues of a limb which follow disease or injury of a joint, not being the direct result of this latter, and whether it be acute or chronic.

This definition excludes all changes that may be produced locally by suppuration in and around joints, or by the pressure of the effusion into the joint, or by pressure of a displaced bone on a nerve trunk or other tissues. It also excludes the changes in the ligaments, such as shortening or lengthening, which result from the disease or defective treatment.

Similar changes occur after injuries of limbs, such as fractures of bones or burns and lacerations of the skin.[8] They may then be considered as a special subdivision of the reflex dystrophies (generally termed reflex muscular atrophies).

ETIOLOGY.

Sex appears to have little or no influence in favouring the occurrence of these troubles. Age is, however, of great importance; disease of the hip-joint, for example, in a child will interfere with the development of its limb to a remarkable extent. Nélaton,[1] in 1835, noticed that such cases suffered even in the growth of the bones. An acute arthritis produced experimentally in a young animal will cause complete paralysis, lasting for days, and in that time serious changes occur in the bones and muscles.

In man one of the most important, if not the most important, factors in producing these dystrophies is the neurotic diathesis,[1] and in patients of this description the changes may occur with the rapidity with which they do in the lower animals.

The rheumatic diathesis, which, practically speaking, we must consider really does exist, certainly favours their occurrence ([9], [3]). Another very important point is the character of the arthritis—for example, whether it is septic or aseptic: septic, gonorrhœal, acute rheumatismal, tuberculous joints, *et hoc genus omne*, produce disturbance of nutrition of a more severe character than do simple arthritis or luxations.

Opinions differ greatly as to the general liability to suffer from these lesions, some authorities[10] saying that they occur in every case, while other consider them the exception rather than the rule.[11] It may be taken as a good working principle that dystrophy occurs in one or more tissues of a limb in all arthropathies, though to a greatly varying extent.

SYMPTOMATOLOGY.

In a traumatic arthritis, at the moment of injury, a sudden impotence of the limb is experienced in many cases;[12] it may be transient or last some time, only diminishing with the arthritis and gradually giving way to the paralysis due to muscular atrophy: cases of this kind are rare according to Gowers,[10] but Raymond[13] states that he has produced such experimentally with great uniformity. A minor form of it must be in the remembrance of many; personally, a sharp blow on an exposed cartilaginous surface, as in accidentally striking the elbow or knee, when in certain positions, against projecting parts of furniture, is immediately followed by a passing sensation of helplessness quite independent of the sensation of pain.

The inflammation of the joint proceeds and the changes may set in either with great rapidity or slowly; in the first cases the muscles may lose one-third of their bulk in a week; in the slower cases, associated with the muscular change may be thickening or wasting of the skin; fat and aponeuroses may hypertrophy or atrophy, the hairs show increased or diminished growth, there is increased or diminished exudation from the skin, the local temperature may rise but generally falls (the temperature is of course higher in immediate proximity to the joint).

The nervous system gives evidence that the changes may even extend to it; the reflexes increase, muscular twitchings are seen, and tapping the muscles calls forth exaggerated fibrillary contractions; anæsthesia or hyperæsthesia may be found ([14], [13], [3]), either in patches or extending over the whole limb; hyperalgesia or neuralgia with painful spots may occur; thus, in a traumatic arthritis of the knee, I have seen severe pain and hyperæsthesia occur over the skin of the calf. These subjective nervous symptoms may be referred to the opposite limb. Spasm of the muscles is well known and recognised by surgeons.[15] Slow systematic movements, athetotic in type, are seen rarely.

The electrical reactions in a well marked case are as follows:[16] The faradic excitability is often diminished but generally exaggerated; there is no increase in the answer to the galvanic current, and the reactions to the different poles remain normal.

The typical reaction of degeneration very rarely occurs and then usually in cases of osteo-arthritis; it always indicates organic disease of the nerve cell (Charcot).[16] The static electrical discharge produces an exaggerated muscular contraction (Charcot).

The changes in the tissues are far from being localised around the joint; thus arthritis in the ankle may produce severe atrophy of the muscles of the buttock. The extensor muscles are credited with suffering most acutely ([10], [13]), but from some carefully analysed experiments (to be detailed elsewhere) that I have made this view appears to be incorrect. The bones become more fragile and are readily broken.

The muscles, being the true ligaments of the joints, are apt in their weakened condition to permit strains of the ligaments and capsule, re-exciting inflammation which in its turn further weakens the muscles and so completes the vicious circle; this is often seen resulting from sprains of the ankle-joint.

PATHOLOGY.

It is not my intention here to discuss the pathology of these conditions at full length; much disputation has occurred over it, but now there are few who deny that they are produced reflexly through the nervous system. Raymond[13] showed that if the posterior nerve roots of the lumbar region of the dog were divided on one side, and if then an arthritis was produced in each knee-joint, the muscles atrophied only on the side on which the nerve roots were *not* divided. Kornilofi[17] disputed this, but Hoffa[18] has again repeated the experiments and confirmed Raymond's results. The conclusion drawn, therefore, is that interruption of the afferent part of the reflex arc prevents irritation of the centre, and so prevents damage to the nutrition of its dependent parts.

The importance of the influence of rest is now much discounted. The patient with a diseased hip lies on his back in bed, with both limbs otherwise in exactly similar conditions; the one leg wastes markedly, the other but slightly, or not at all. The animal whose knee has been inflamed carries the limb high off the ground: here is no rest, but the contrary, as the muscles are all tonically contracted, but still the limb wastes with great rapidity.

DIAGNOSIS.

In the majority of cases this is very simple, but unless these conditions are borne in mind it is easily overlooked. Dr. G. V. Poore has pointed out that many so-called trade spasms may be associated with chronic changes in one or other joints of the involved limb. For instance, in writer's cramp the shoulder may be affected with chronic rheumatism, treatment applied to the symptom being of no value unless the primary lesion is also attacked.

If the muscular atrophy comes on with great rapidity, or if epidermic and neuralgic symptoms are specially prominent, confusion with nervous disease of a different character may readily occur; but in such cases the electrical reactions usually show a greater departure from the normal. In cases of traumatism, lesions of the nerve trunks may be excluded by the electrical reactions and by the distribution of the motor and sensory disturbance; in general, a lesion of a nerve trunk gives rise to more severe paralysis than occurs in the cases of which we are speaking.

In many, especially chronic cases—and these are the ones most frequently seen—measurements will reveal no loss in size of the limb, the fatty and connective tissues having apparently replaced the muscles. The diagnosis in these cases must be made by the history, or the presence of disease still persisting in the affected joint, together with the flabby and

toneless state of the muscles. These are the cases so frequently described as weak joints, stretched or yielding ligaments, etc.

Prognosis.

In cases in which distinct changes are visible in a few days, the prognosis is bad, though careful treatment may check the disease to some extent. When the primary disease has been cured, sometimes improvement may be effected to a limited extent. When the joint disease persists, good results may be expected from treatment, if it is curable: but where the joint disease is incurable, no improvement can be expected, though the downward progress of the tissues may be retarded or even temporarily arrested.

Treatment.

In every case of joint disease or injury the certainty[10] of dystrophic changes following to a greater or less extent must be remembered. In acute disease or trauma of a joint there is no special indication for treatment apart from that suitable for the joint itself. The more frequent practice of aspiration may be recommended: properly carried out it is devoid of risk, and there is no doubt that tension of the joint capsule increases the tendency to these changes, and so must be relieved by the best means at hand. After a few days careful comparisons of the two limbs should be made; if atrophy is found massage should be at once employed, and passive movements as soon as possible. At a later stage, if there is not too much irritability, the faradic current must be employed, and in the cases where the reaction to this is feeble, sparking from a friction machine is recommended by Charcot.

In chronic cases, massage, douches, electricity must all be tried, and where there is no joint disease persisting systematic exercises may also be employed with great advantage. Where joint inflammation persists, as it often will do to a very slight degree, the question arises of its causation, and often it can be shown to arise from the feeble manner in which shocks and strains are warded off by the muscles. In such cases rest and fixation, together with the means already advocated for improving the muscular nutrition, will do much good. When the inflammation is rheumatic in origin the treatment must be constitutional as well. Nervous irritability is often present, and will be improved by tonics rather than by sedatives.

The dystrophic condition of the skin and other structures usually does not call for special treatment: if, however, pains of a neuralgic type are present analgesics may be given with caution.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

PECULIAR RESPIRATORY DISORDER PRODUCED BY THE HABITUAL USE OF STRYCHNINE.

In October, 1897, I was consulted by W., a medical man, aged 31, for certain symptoms due, he said, to the taking of strychnine two years previously. He had then been taking as a tonic liquor strychninæ hydrochlor. 5 to 10 minims thrice daily, with a little sal volatile. He was at first benefited, but afterwards experienced a desire to take abnormally deep inspirations, and he felt that to do so would overcome the inhibitory power over the lung, probably the action of the diaphragm. One morning, after a dose of strychnine, he did take such an inspiration, and from that moment he experienced the sensations complained of. They were, briefly, inability to take deep inspiration, a fixation of the chest walls compelling him to stoop, weakness on exertion, great confusion of thought and memory, occasional clay-coloured fæces, usually greater in amount than ordinary. After six months the apex beat descended to the sixth interspace, and headache and drowsiness became marked.

Acting on medical advice he travelled for six months, but was little benefited. All attempts then and subsequently to act on the heart with drugs increased the headache.

In October, 1897, I examined him, and found the heart dilated slightly. There was a wide subcostal angle, with marked epigastric pulsation. The chest moved *en masse*, and was hyper-resonant. There was slight bulging in the hepatic region. The patient had a very anxious expression. He said his life was a burden from headache and confusion of thought occasioned by trying to think coherently on his cases. He said he felt as if his chest, especially in the hepatic region, was too full, as if his lungs were distended, but that any attempt to empty them only increased the headache and mental confusion, and was followed by pale stools next morning. He had lost a stone in weight.

I tried a great variety of drugs to act upon his liver, but with little benefit. Most relief was obtained from an ordinary pill of aloes, nux vomica, and belladonna with a couple of quinine lozenges. Without the lozenges there was no benefit. For the headache, antipyrin did temporary good. Bromides were of no avail. For the emphysema, so-called by the patient himself, senega, belladonna, and potassium iodide in small doses gave slight relief. Galvanism over the diaphragm did no good.

The patient in spite of treatment got gradually worse, became very melancholic, and so drowsy that he would sleep in his chair whenever left alone for five minutes.

In October, 1898, chiefly by way of experiment, I prescribed tincture of hyoscyamus 20 minims at night. The effect was strikingly beneficial. After a single dose, the drowsiness ceased entirely, and has never tended to recur except on severe exertion. The headache and mental confusion were much improved. The lower ribs approximated, and the patient could empty and fill the lungs more easily. The apex beat, except on deep inspiration, returned to the fifth interspace. The patient has continued steadily to improve.

I consider that in this case some amount of emphysema was produced directly by the strychnine, but that there was in addition an over-action of the inhibitory centre of respiration producing what might be called a general brain strain. The case is interesting as illustrating (1) a rare condition produced by strychnine and a serious danger in its use, without any premonitory muscular twitchings: (2) the excellent effects of hyoscyamus in such a case after persistence of symptoms for three years,

C. W. Lawson, M.A., L.R.C.P. and S.E., L.F.P.S.G.
Gilsland, Cumberland.

PARADOXICAL PYREXIA.

After the discussion at the meeting of the Clinical Society on November 11th, and the note on the subject in the British Medical Journal, the following case may be of interest. The temperatures were on each occasion taken by myself, and I can guarantee that they are correct. There were no poultices, no hot bottles, nor anything up the sleeve: in fact, "no deception" of any kind:

Mrs. A., aged 35, was recovering from a very mild attack of influenza, when one day at my evening visit I found to my great surprise that her temperature in the armpit was 104° F., and on taking it again shortly afterwards it was 106° F. She said she did not feel uncomfortable, nor particularly hot. I gave a dose of phenacetin, but in half an hour the temperature was 107° F. As I was at first afraid that the hyperpyrexia might be a dangerous complication of the influenza, I asked for a second opinion, but when the temperature in another half-hour was 108°, with a pulse of 100 and little or no discomfort, I was relieved at the thought that

I probably had to do with a case of neurosis. Within half an hour the thermometer registered its highest possible point—113.4°. The patient now allowed that her head felt a "little strange," and that she had slight tremors of the muscles of the limbs, though they were imperceptible to me. She soon afterwards began to perspire freely. The temperature now fell to 100.6°, and, a piece of the index being left above 113°, due to the rapid fall of the mercury, the thermometer could only be kept as a curiosity. The next day, when the patient was up, the temperatures, registered with a new thermometer, were most erratic, as the subjoined table will show:

December 26th.
10 P.M., 106°, pulse 100.
10.30 P.M., 107°.
11 P.M., 108°.
11.30 P.M., 113.4°, pulse 120.
12 P.M., 100.6°, pulse 78.

December 27th.
9 A.M., 113°, pulse 100.
10 A.M., 106°.
11 A.M., 113°, pulse 78.
1 P.M., 113°.
3.30 P.M., 99.4° in left axilla, 100.4° in right axilla.
9 P.M., 108° in right axilla.
9.15 P.M., 99° in right axilla.

December 28th.
11 A.M., 99.4° in left axilla, 105° in right axilla.

For several days the vagaries of temperature continued, though the patient was about the house. She was of a highly neurotic and unstable temperament, and the presence of what Dr. Savage calls a "mad calorific area" seems the most probable and descriptive explanation of the pyrexial condition met with in this and similar cases.

Tenby. ERNEST M. KNOWLING, M.B.Cantab.

MEASLES AND SCARLET FEVER COEXISTING IN THE SAME PERSON.

ON October 31st, 1898, F. L., a girl, aged 8, had all the symptoms of measles, with a well-developed and pretty extensive rash. Upon the morning of November 10th, the mother met me with the announcement that the child "had broken out with measles again." And sure enough, there was another widely-distributed rash, but this time it was not that of measles, but of undoubted scarlet fever, accompanied by high temperature and sore throat. This rash continued for three days, gradually declined, and was followed by extensive and very rapid desquamation and complete recovery.

In the BRITISH MEDICAL JOURNAL for October 20th, November 24th, and December 1st, 1894, I find 3 cases recorded of measles following immediately upon scarlet fever. In this case the sequence of the symptoms was reversed, but in all of them the interval between the two eruptions was about the same, namely, ten or eleven days, and in each case the poisons of both diseases must have coexisted in the same individual.

JOHN JOHNSTON, M.D.Edin.,
Honorary Surgeon to the Bolton Infirmary.

PROLONGED INCUBATION PERIOD OF TYPHOID FEVER.

Is the incubation period in some cases of typhoid fever much longer than that usually assigned to it? I have several times attended patients suffering from typhoid fever whose friends have declared that they have been far from well for a couple of months or more previous to the attack. Of course, such a state might be due to other circumstances, or a severe relapse following a very mild attack might account for it; but I have a suspicion that some cases whose direct cause cannot be ascertained may be accounted for on the supposition that the incubation period has been much longer than usual. Dr. Roberts in his *Theory and Practice of Medicine* says that the incubation period may be much longer than ten days, and Sir Wm. Broadbent in *Quain's Dictionary*, "probably in most cases 21 days."

Quite recently the following circumstances occurred. For some nine or ten weeks, in a house where typhoid fever was present, two boys of the family had a somewhat drowsy appearance, with "beefy" tongues, their suspicious appearance evoking from me daily and anxious inquiries respecting their feeling, their answers being that they were all right; on each of these occasions I found the temperature was all right too. At last one became ill on December 3rd, with high temperature and other symptoms of the disease. The other, without any further sign of trouble, got quite himself again, both his general appearance and tongue becoming quite normal.

Polluted well water was regarded as the probable cause of the first case in the house, which came under notice on September 15th, and its use was discontinued; this was almost three months before the boy's illness commenced. Nottingham Corporation water was subsequently laid on, and the well filled up; the drains were satisfactory, the milk supply also, but the closet was a midden; the fæces and urine from the patients were, however, well disinfected. The infected house, or closet, or something else may be said to have caused the boy's illness, with the usual incubation period; but the lad's appearance for so many weeks previous to his illness, together with evidence of other instances of a similar nature, opens up the question, to my mind, whether a very much longer period than the orthodox twenty-one days may not elapse before the disease obtains the mastery, and also, indeed, whether the disease is not mastered after a period of combat without causing marked febrile symptoms in many other instances.

Having noticed that some correspondence has recently taken place respecting cold bathing in typhoid fever, I can say that I am convinced from my own observations that great comfort, with lowering of temperature, has ensued, and in my opinion life has been saved by frequent tepid sponging.

Carlton, Nottingham. J. T. KNIGHT.

REPORTS OF SOCIETIES.

BRITISH GYNÆCOLOGICAL SOCIETY.

H. MACNAUGHTON JONES, M.D., President, in the Chair.

Thursday, December 8th, 1898.

SPECIMENS.

THE following were shown: By Mr. CHARLES RYALL: (1) Myoma Uteri complicated with distended tube and broad ligament; (2) Large Fallopian Tube.—By Dr. MACPHERSON LAWRIE (Weymouth): (1) Fibroid Uterus removed by subperitoneal hysterectomy; (2) Fibroid Uterus undergoing malignant degeneration.—By Mr. J. W. TAYLOR (Birmingham): (1) Small Myoma removed from the fundus after anterior colpotomy, and division of the uterus; (2) Two Small Ovarian Cysts, each removed by posterior colpotomy; (3) Tubal Mole with Right Fallopian Tube, removed by posterior colpotomy. —By Dr. F. A. PURCELL: Uterine Carcinoma removed by vaginal hysterectomy.

THE COMBINED METHOD IN PELVIC SURGERY.

Mr. E. STANMORE BISHOP (Manchester) read a paper in which he related the following cases: Case I. Mrs. H. W., aged 28; second child, premature labour due to fright, followed by severe hæmorrhage: miscarriage two years ago, followed by persistent hæmorrhage; two months ago smart bleeding, with excessive pain on left side, which is becoming more acute; small firm mass in ovarian region, which is very tender; removal by combined operation, because too firmly fixed to be brought down *per vaginam*: adhesion through omentum to pelvic brim; recovery. Case II. Mrs. J. A. C., aged 46; second child; born twenty-years ago; menstruation since irregular and profuse; quantity increasing; sacral and hypogastric pain also increasing; bedridden for fourteen months; double pyosalpinx; removal by combined operation, because even after complete division of uterus *per vaginam*, parts were too rigid to allow of their being brought down. On abdominal section two large pus sacs with adherent intestine were found; recovery. Case III. Mrs. C., aged 29; no pregnancies; scarlet fever: chill during menstruation; No period for fifteen months; loss of flesh for twelve months; night sweats for nine months; bedridden ten months; left leg fixed in flexion; œdematous; double pyosalpinx; removed by combined operation, because parts too fixed, even after total section of the uterus, to allow of their being drawn downwards. On abdominal section, small intestine found adherent to the tube, bladder, and iliac fossa. The right ovary was found a thick-walled abscess—separate from the rest, and embedded in adhesions in the right iliac fossa. Death. Case IV. Mrs. L. R., aged 39; several miscarriages, no full-time pregnancies; increasing menorrhagia and metrorrhagia; much pain; uterus enlarged to size of six-months pregnancy; partly soft, partly intensely hard; uterine canal elongated; fibroid uterus. Removed by

combined operation because, the patient being very anæmic, it seemed advisable to render the operation as bloodless as possible, by tying the uterine arteries at the earliest possible moment and by doing most of the work from below, to shorten the time during which the peritoneum should be open. When this was done, abdominal section was done, so as to shorten as much as possible the entire duration of the operation. These cases were selected because each illustrates some point in the question under discussion. Thus, Case I shows the difficulty in the removal of even a small tumour through the vagina when it is adherent above and there is no justification for removal of the uterus. Case II shows that, even when the uterus can be removed with the tubes, there may still be great risk in doing this through the vagina alone, when intestinal adhesions are present. Case III showed the impossibility in all cases of removing all foci of suppuration without the double attack, whilst Case IV showed the advantage gained in an operation intended to be finished by abdominal cœliotomy, by performing the earlier steps *per vaginam*. Advantages in time and minimisation of shock. Mr. Stanmore Bishop proceeded to review the advantages of abdominal and vaginal cœliotomy and their several disadvantages. He pointed out that many of the disadvantages originally present in the abdominal operation had now been eliminated by improvements in position, technique, etc., whilst the vaginal operation, which at first appeared to avoid all these, was unsuitable in certain cases and had certain dangers of its own. He emphasised, however, certain marked advantages which it undoubtedly possesses. He advocated the combination of both methods in some cases in which it was impossible or unadvisable to finish the operation from below, and deprecated the "morcellation" recommended by Landau. This manœuvre, he suggested, should not bear the same name as that of the operation devised by Péan, and designed for the removal of single fibroids *per vaginam*, which left the uterus intact and useful. He advised it also in cases which must be finished through the abdomen, in order to diminish the amount of shock. He invited the Society to define the limit beyond which the vaginal attack should not be carried.

Dr. Herbert Snow observed that in only one of Mr. Bishop's cases was the combined method deliberately adopted; in the other three it was done as a matter of necessity; and he thought most of the Fellows would feel that in these three cases it would have been better to begin by the abdomen. He did not agree with the author that mere laparotomy meant much shock; most of the cases originally described as shock were really cases either of concealed hæmorrhage or of septic peritonitis. He doubted if any advantage of the combined method would compensate for the drawback of proceeding to laparotomy after the hands had become soiled with pus and mucus in the vagina.

Mr. Mayo Robson (Leeds) thought it was best to make up one's mind beforehand which route to adopt; at the same time, every operator ought to be prepared to follow up one route by the other. His experience was that it was only rarely necessary to complete by the abdomen an operation begun by the vagina. As a rule, in a case of hysterectomy, if he found that he could not bring the uterus down, he would prefer not to operate at all; for in such cases life was probably not prolonged. For most cases he preferred the abdominal route.

Mr. Bowreman Jessett agreed with the previous speakers that it was better to determine beforehand which route to adopt, but this was not always possible except under anæsthesia. If such an examination showed that there was much fixation, he thought it better to proceed at once to laparotomy. If, as in Mr. Bishop's third case, an operation had been begun by the vagina, and it was found that there was much pus, and the patient was then placed in the Trendelenburg position, it seemed to him that there was great danger of the pus passing into the peritoneal cavity, a view that was supported by the fact that the patient died on the next day.

Mr. J. W. Taylor (Birmingham) pointed out that there were two distinct questions in the paper (*a*) the combined method in the treatment of myoma, (*b*) the same in the treatment of inflammatory conditions. For myomata the operation was a valuable one because it was often safer to secure the uterine arteries through the vagina, as the first step and also the duration of the operation was thereby shortened. In inflammatory conditions they did not yet know how much could be done by the vagina but were still learners.

Mr. J. Furneaux Jordan (Birmingham) approved of the combined method for hysterectomy for the reasons given by Mr. Taylor, and also because the work done by the vagina was extraperitoneal. Most other cases could be dealt with by one or the other route, and he agreed that in such cases it was better to decide beforehand which to adopt. He had done about ten vaginal cœliotomies; in one he had to open the abdomen after all, but in most cases a careful diagnosis beforehand would obviate this necessity. For inflammatory conditions the abdominal route was usually the best; but pyosalpinx operated on by laparotomy had such a high mortality, that some palliative vaginal procedure was often better.

Dr. Macpherson Lawrie (Weymouth) thought the cases requiring the combined method must be few and far between.

Dr. Heywood Smith questioned whether Mr. Bishop's contention that the combined method was quicker would be found generally true; because time was lost by the fresh disinfection of the hands, and by changing the patient's position. The real question before them was not to decide between the vaginal and the abdominal route, as might be gathered from some of the speakers, but between either of them and the combined plan.

Dr. Purcell stated that the double method originated with Martin, who was, however, so unfortunate in his early cases that he gave it up. All depended, in the first instance, on the correctness of diagnosis. He thought the combined plan was to be regarded as a method of expediency when the diagnosis had proved faulty, and the operation could not be completed by the vagina.

Dr. Arthur Giles remarked that the *raison d'être* of the vaginal operation was to obviate the necessity of opening the abdomen. There was nothing that was done by the combined method that could not be done by the abdominal alone; consequently it seemed to him that to open the abdomen after beginning an operation through the vagina was practically a confession of failure; it meant that the operator had found himself unable to carry out his original intention. It was not his experience that abdominal operations for pyosalpinx had a specially high mortality, for it happened that a rather large proportion of his cases of abdominal section had been for pyosalpinx, and so far there had been no death among them.

The President pointed out that Mr. Bishop was forced to the consideration of the combined method by cases in which operation had been too long delayed. He should have felt inclined to operate through the abdomen in the first instance in these cases; but he took it that Mr. Bishop did not advise that the combined method should usually be adopted deliberately. Much had been said about the cleansing of the vagina, but when antisepsis had been properly secured there ought to be no difficulty in passing from one route to the other, for the vagina could be disinfected as thoroughly as the abdomen. The duration of an operation was not such an important point as the careful attention to hæmostasis and the union of the wound; but his impression was that vaginal operations, taking them all in all, took longer and were attended by more hæmorrhage than abdominal operations. The Society was much indebted to Mr. Bishop for his paper, which dealt with some of the most recent work in gynæcology.

Mr. Stanmore Bishop briefly replied.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

G. S. Middleton, M.B., in the Chair.

Friday, December 16th, 1898.

Tubercle of the Brain.

Dr. J. Lindsay Steven showed the brain from a case of multiple tuberculous tumours in which there had been striking symptoms during life. The patient was a delicate boy aged 7, and the first symptom was ptosis of right eye. Shortly after this left hemiplegia developed, and later athetosis of left arm. There was also dilatation of the right pupil and paralysis of the internal rectus of the right eye. At a later stage the left side of face and tongue became paralysed, and there was ptosis of the left eye. Cerebral vomiting and convulsions supervened, and the patient gradually sank. The diagnosis

of multiple tuberculous tumours of the brain was justified by the variety of the nervous lesions, by the patient's previous and family history, and by the presence during his present illness of patches of scrofuloderma. The *post-mortem* examination revealed tuberculous tumours in the cerebellum, pons, and right crus cerebri, there being marked atrophy of the right third nerve as it passed over the latter tumour.

The CHAIRMAN, in speaking of this case, emphasised the fact that many tumours might exist in the brain with no head symptoms.

PERFORATING ULCER.

Dr. J. LINDSAY STEVEN also showed specimens from two fatal cases of perforating ulcer, the one in the duodenum and the other in the stomach. The first case was that of a nurse in the Royal Infirmary, Glasgow, and occurred in 1893. The patient had had slight symptoms of indigestion, never requiring medical treatment, but suddenly while assisting at the putting up of a fracture she was seized with severe pain in the abdomen. She became speedily collapsed, and died in twenty-one hours with all the symptoms of perforative peritonitis. At the *post-mortem* examination general septic peritonitis was found, and a typical perforating ulcer just outside the pylorus. The second case was that of a domestic servant, aged 19, who had had gastric symptoms for six months, but without hæmatemesis or melæna, and she had not been under medical care. One night after the evening meal she was seized with severe epigastric pain, which, however, passed off after two or three hours, and next day she was able to go about. The next evening after the evening meal she had a second attack of epigastric pain, got no sleep, soon developed general peritonitis, and died about twenty-five hours after this second attack of pain. The *post-mortem* examination revealed general peritonitis, and a round, punched-out ulcer in the anterior aspect of the stomach. The first attack of pain probably coincided with a partial rupture of this ulcer, which was completed the next day.

Dr. RUTHERFURD showed the stomach from a case operated on for perforation. The patient was a young woman, aged 25, who had on more than one previous occasion been resident in the Royal Infirmary on account of gastric symptoms. On this occasion there was a sudden attack of pain in the epigastrium with collapse, and four hours later she was admitted into the infirmary, and about four hours thereafter operation was performed. There was considerable difficulty in the operation, owing to old adhesions between stomach, abdominal wall, and diaphragm, and the perforation, which was on the anterior wall, but near the cardiac extremity, was only brought into view by tearing up those adhesions. The ulcer was sutured, and the patient rallied well from the operation, but died three weeks later from peritonitis. *Post mortem* general peritonitis was discovered, and also that a second ulcer on the posterior wall had ruptured, though Dr. Rutherfurd did not regard that as the cause of the peritonitis. He had douched the abdominal cavity with a weak saline solution, and was inclined to regard that as a mistake.

An interesting discussion followed on Dr. Steven's and Dr. Rutherfurd's cases.

CIRRHOSIS OF LIVER IN A CHILD.

Dr. W. K. HUNTER showed specimens from a cirrhosed liver from a child. The patient—a boy aged 6 years—was admitted to the Royal Infirmary in a moribund state, and died within a few hours. His illness had extended over a period of six months, and had been associated with diarrhœa, ascites, jaundice, and enlargement of liver and spleen. There was no history of syphilis, but the child was found even at his early age to have consumed considerable quantities of alcohol. Pathologically the case was found to be an example of multilobular cirrhosis.

PAPER.

Dr. A. A. GRAY read a short paper on a case of Mycosis of the Larynx, and showed specimens illustrating the condition.

PRESENTATION.—Mr. A. J. Pollard, of Armley, has been presented with a silver cigarette case by the members of the Holbeck Division, St. John Ambulance Association, North Eastern Railway Company, Leeds, in recognition of his services as instructor.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

PATHOLOGICAL AND CLINICAL SECTION.

Friday, November 25th, 1898.

JORDAN LLOYD, F.R.C.S., President, in the Chair.

EXTRADURAL ABSCESS.

MR. GAMGEE read notes of two cases of extradural abscess, complicating suppuiative otitis media. Both patients were children, 5 years of age. In each case the abscess cavity was situated between the upper surface of the petrous bone and the dura overlying the temporo-sphenoidal lobe; in the one instance the membranes were intact, while in the other the dura, pia, and arachnoid were adherent and perforated, exposing a slight patch of brain matter. The treatment adopted in each case was the opening up of the antrum, with free removal of bone, so as to lay open the whole abscess cavity. Both patients recovered.

URINARY CALCULI.

Mr. HASLAM showed (1) A small stone, weighing only 7 gr., that he had removed from the kidney of a man, aged 26, who had had attacks of profuse hæmaturia for nearly twelve months, and some pain in the region of the kidney. (2) Three large and two small stones, weighing in all 24 gr., that he had removed from the ureter of a man, aged 24. The patient had been under his care four and a half years ago with symptoms of stone in the left kidney, but on exploring that organ no stone was found; the symptoms, however, were completely removed by the operation. For four months before admission on the present occasion he had suffered from acute pain over a spot about midway between the umbilicus and the right anterior superior spine of the ilium. The pain was greatly aggravated by pressure or by flexion of that leg; there was also pain in the bladder and penis, and the urine contained pus. The right ureter was explored through an incision very similar to that employed for ligature of the common iliac artery by the extraperitoneal route. The stones were easily detected and removed. The ureter was not sutured, but a drainage tube was passed down to it and the wound was sewn up. No urine ever came through the tube, and the wound rapidly healed. (3) A round stone, weighing 212 gr., removed by suprapubic lithotomy from a boy, aged 9 years. The patient was not aware of there being anything the matter with him until a few days before admission, when the stone evidently blocked the opening of his urethra, and interfered with his emptying his bladder. At the operation, though the bladder was distended until it reached half-way up to the umbilicus, the peritoneum was found to extend down to the pubes.

ENTERIC FEVER AND PYLEPHLEBITIS.

Dr. FOXWELL showed two specimens of intestine. The first was from a woman who died from enteric fever on the forty-sixth day, in a relapse, death apparently being due to blood poisoning. The ulceration was very extensive, especially in the colon, where the ulcers ran transversely, often an inch in length, like tuberculous ulcers. In both colon and ileum were several small patches of localised adhesive peritonitis. On separating these, however gently, fæcal extravasation took place. The gut itself tore very easily, so that it was difficult to say if there were actual perforation during life. In the primary attack there was nothing noteworthy except considerable diarrhœa, which steadily decreased and in six days ceased under tannalbin given in 15 gr. doses every four hours. Throughout the relapse there was considerable distension, which sometimes became acute, but was always relieved by enema, seidlitz powder, or rectal tube. This last was most efficacious, and the sister found it much easier to manage the loose, involuntary stools when it was *in situ*. The other specimen was also taken from a woman, aged 40, who was admitted with diarrhœa, abdominal pain, headache, and fever. Ten days after the first onset a rigor occurred, and afterwards there were one, two, and three daily, the temperature several times being above 107° F. She was treated as probably suffering from enteric, but when Dr. Foxwell first saw her, on the thirty-fifth day, there was no doubt that the condition was

one of "concealed suppuration: probably appendicitis." It was quite impossible to localise this, however. Both liver and spleen were large, but neither was tense nor had any tenderness. The abdomen was varying, somewhat rigid in places, but nowhere constantly so, though most frequently on the left side. Once a slight doughiness was noted in the right iliac fossa. As a whole the belly was natural in appearance and flaccid. Vaginal and rectal examinations were negatived. On the thirty-eighth day distinct acute neuritis of both discs was seen; no streptococci could be found in the blood, but Widal's reaction was present in a concentrated, though not in a dilute solution. The patient had had enteric two years previously. The brain and cord were now exposed in several places by Mr. Leedham-Green, but neither pus nor any excess of meningeal or ventricular fluid was discovered. After this operation the rigors ceased for five days, but then recurred, and death came on the fifty-second day of the illness. At the necropsy, deep down in the right pelvis the ileo-cæcal valve, with the adjoining portions of ileum and cæcum, was firmly adherent to the pelvic wall by old fibrous adhesions; on separating these a drachm of not evil-smelling pus was discovered. In the ilium, 1 inch from the valve, was an old perforation with thickened walls, a quarter of an inch in diameter. There was no sign of any recent peritonitis, but thin, translucent, old adhesions existed in several places. The liver was riddled with pylephlebitic abscesses. The brain was healthy, but in one of the tracks of the exploring needle, in the right lobe of the cerebellum, was a recent blood clot half an inch by a quarter. No cause could be discovered for the neuritis. Dr. Foxwell thought the first case showed how hopeless the multiple lesions in enteric must often make any attempt at surgical procedure. It also gave striking evidence of the power of self-closure in ulcerative perforation. The second case gave equally striking evidence of the danger of an old perforation, even when securely sealed, whilst it also proved conclusively the possibility of such sealing.

Subphrenic Abscess.

Dr. Short showed the stomach from a case of subphrenic abscess following perforation of the viscus. The patient was a girl, aged 16, who was first seen on August 17th, fourteen days after being taken with severe pain in the region of the stomach, with vomiting. She had previously suffered from dyspepsia and pain after food for twelve months, but had never vomited blood. The physical signs pointed to air and fluid beneath the diaphragm. On draining the cavity through the ninth space in the posterior axillary line fœtid pus was evacuated. She did very well for some three months, but the temperature was never satisfactory. At the end of this time she suddenly developed acute pleuro-pneumonia of the right side, and died in a few days. At the necropsy some curdy pus was found in the crevices between the stomach, liver, and diaphragm; otherwise the abscess cavity was healed, and the ulcer closed by firm adhesions to the spleen.

Myoma of Uterus.

Mr. J. Furneaux Jordan showed two specimens of uteri removed by hysterectomy for myoma. The first was a large myoma weighing 8¾ lbs. It was removed from a patient aged 50, and her history was briefly as follows: First appearance of tumour a little over three years ago; grew rapidly at first. She came under Mr. Jordan's care in the out-patient department of the Women's Hospital two years and a half ago, and under treatment its growth ceased so much that for the next eighteen months there was very little increase in size of the tumour, and the hæmorrhage consisted of practically nothing more than rather profuse menstrual periods. Twelve months ago it again increased in size, and there was also increase in the hæmorrhage. The patient had suffered from chronic bronchitis for thirteen years, her respiration was always hampered, and directly the tumour increased in size, rising well above the umbilicus, it became exceedingly embarrassed. She was admitted to the hospital, but at a consultation it was decided to postpone operation, on account of the condition of the lungs being such as to render the administration of an anæsthetic a serious matter. The tumour continued to grow, and, the hæmorrhage becoming more and more profuse, she was admitted again in September of this year. She was with difficulty anæsthetised with chloroform, and in a very few minutes the tumour was removed by the clamp hysterectomy. A large nodule had, previously to the application of the clamp, to be shelled out of the left broad ligament. She made a good recovery, although her bronchitis was still very troublesome. The second specimen was a uterus with several large nodules of fibromyoma which had completely blocked up the pelvis. It had been removed nine days previously from a patient aged 51. She was admitted to Mr. Jordan's private hospital, where the operation was performed, for pressure symptoms in the pelvis, and because it was increasing in size. Complete hysterectomy was performed by the combined method. She had quite a sharp attack of peritonitis on the second and third day, in which Mr. J. W. Taylor kindly saw her, but was now quite convalescent.

EDINBURGH OBSTETRICAL SOCIETY.

J. Halliday Croom, M.D., F.R.C.P.E., President, in the Chair.

Wednesday, December 14th, 1898.

Specimens.

The President showed: (1) Missed Abortion: (2) Ovarian Tumour complicating pregnancy; (3) Parovarian Cyst.—Dr. Brewis showed: (1) An Ovarian Tumour and a Calcified Fibroid Tumour removed from a patient aged 74; (2) a Five Months' Pregnant Uterus removed for Cancer of the Cervix; (3) Specimen from two cases of Hysterectomy by Kelly's method.—Dr. J. W. Ballantyne showed: (1) Frozen Sections of Fœtus hardened in Formol; (2) Multilocular Ovarian Cyst; (3) Vulvar Epithelioma removed by Thermo-cautery with no recurrence; (4) Twin Fœtus (and Placenta) showing the first stage of Sympœdia; (5) Secundines from cases of Placenta Prævia.—Dr. Haultain showed a Uterus successfully removed from a woman, aged 28, by Vaginal Hysterectomy for Deciduoma Malignum.

Chronic Inversion of Uterus.

Mr. J. W. Struthers read notes on a case of chronic inversion of the uterus replaced by manipulation after posterior colpotomy had been performed. A woman, aged 38, was admitted to Leith Hospital on October 3rd, 1898, complaining of excessive discharge at the menstrual period and constant intermenstrual discharge. Nineteen months before she had been delivered of her eighth child in a precipitate labour. She was told by the doctor who attended her that the "womb had come down." A week later the womb again came down during micturition, but was easily replaced. The patient was advised to keep her bed for a month, which she did. She nursed her child for thirteen months. At the end of that time menstruation began; the "period" lasted ten days, and was very copious. It was followed by a yellow watery discharge, which went on till the next period, which again lasted ten days and was excessive. She had no pain, but was getting weak and unfitted for her household duties. She stated that on two occasions an "instrument" was put in, but that it was not successful in curing her trouble, because it always came out. She had always been a healthy woman, and had had eight children. Now she was very anæmic. On vaginal examination the diameter of the tumour at the cervix was about 1 inch, while lower down it was 1½ inch. On October 13th, under chloroform, an attempt was made to reduce the inversion with the hand, aided by pressure with Aveling's repositor, but this failed. On October 15th Aveling's repositor was introduced and fixed. It was tolerated till the 17th. On the 25th, under chloroform in the lithotomy position, Dr. Berry Hart made an incision of 1½ inch long in the posterior fornix, opening into the pouch of Douglas. Two fingers of the left hand were introduced through this, and passed down into the infundibulum uteri. With the fingers of the left hand fixing the uterus and stretching the constricting ring, an attempt was made to reduce the inversion by manipulating the body of the uterus with the right hand. This succeeded, and a silk stitch was introduced to approximate the lips of the cervix and prevent any tendency to reinversion. The incision in the pouch of Douglas was closed with three sutures, and the vagina plugged with iodoform gauze. Convalescence was uninterrupted. Gradual reposition with Aveling's repositor having

failed, the next alternative was that successfully carried out, while the third alternative was hysterectomy.

Professor A. R. SIMPSON, Dr. N. T. BREWIS, and Dr. BERRY HART spoke; and Dr. STRUTHERS replied.

A SERIES OF ABDOMINAL SECTIONS.

Dr. F. W. HAULTAIN read a retrospect of a first series of 110 abdominal sections for pelvi-abdominal disease. He tabulated his cases thus:

Operation.				Total.	Mortality.
Ovariotomy	Simple pedunculated cysts	Unilateral	18	35	0
		Bilateral	3		
	Simple sessile cysts	Abdominal	3		
		Subperitoneal pelvic	4		
	Papillomata	Unilateral	1		
		Bilateral	2		
	Solid tumours	Fibroma	2		
		Oöphoroma	1		
	Dermoid		1		
Broad ligament cysts				2	0
Hysterectomy	Fibrocystic		2	3	0
	Simple fibromyoma		1		
Myomectomy				3	0
Mixed tumours				2	0
Extrauterine pregnancy				5	0
Ventrifixation	Retroflexion		2	5	0
	Procidentia uteri		3		
Porro-Cæsarean				1	0
Suprapubic cystotomy				3	0
Exploratory				10	1
Removal of Appendages	Dysmenorrhœa			2	0
	For fixed delusion			1	0
	For fibromyomata			4	0
	Diseased ovaries			8	0
	Matted appendages			15	0
	Simple tubal disease	Hæmatosalpinx	3	11	1
		Hydrosalpinx	1		
		Pyosalpinx	6		
		Tubercle	1		
				110	2

It was unnecessary to describe in detail each individual case, but a small residue remained, which were of interest both clinically and surgically, and there were some general broad facts to be gleaned from one's experience in these 110 cases: (1) Ovariotomy: This operation was performed on women whose ages varied from 21 to 81. In the latter case the tumour was a large intraligamentary cyst, which grew upwards between the layers of the mesocolon, and was thus encircled by the adherent colon. Through the difficulty in enucleating and separating the cyst, the operation was a very long one (an hour and a-quarter), yet in spite of this and the great age of the patient she made a rapid and perfect recovery. The largest ovarian tumour removed weighed 83 lbs., and the patient on recovery weighed 84 lbs. In one case there was a rudimentary uterus, not larger than the terminal phalanx of the little finger, and a total absence of Fallopian tubes. The cyst was intraligamentary, pelvic, and sessile. The absence of the usual landmarks of the uterus and tubes considerably complicated the enucleation. There were three solid ovarian tumours; one weighed 6 lbs., and was composed of white fibrous tissue, another 1½ lb., with the characteristic of exaggerated chronic ovaritis, and the third was cellular throughout. The two first were associated with rapid and excessive ascites. In the second case the periphery of the new growth was intensely congested. This afforded a clue to the reason why solid ovarian tumours were accompanied by ascites, while similar tumours of the uterus were not. Two fungating papillomata were also associated with ascites, and one of them had been "tapped" fourteen times in the year previous to operation. 2. Hysterectomy was done twice for fibrocystic myomata, one of which was distinctly cystic and the other merely œdematous the initial stage of cyst formation. In both there was profuse menorrhagia and metrorrhagia. One hysterectomy was because the patient's mind had been poisoned against electrical treatment, which would have sufficed. 3. Mixed tumours: In one case an ovarian tumour on the left, and a simple broad ligament cyst on the right. In another, a large ovarian cyst and a medium-sized broad ligament cyst on the right side, and on the left side a large broad ligament cyst, while on the uterus were numerous fibromyomata, one of which was the size of a cocoa-nut. 4. Extrauterine gestation: In 5 cases operation was performed after the symptoms of so-called rupture had been manifested. In 4 there had been profuse intraperitoneal hæmorrhage with resulting profound anæmia, but in 1 only of these 4 was there evidence of rupture. The remaining 3 showed that the source of the bleeding was through the patent abdominal extremity of the tube. From these specimens it would appear that in the majority of cases separation of the ovum, with necessary bleeding, was the primary factor in the so-called rupture. The fifth case was complicated with appendicitis of seven years previous, and in whom the surrounding structures had been left matted and adherent. There was a limp of the right leg from the date of the appendicitis. The right gravid tube was found embedded in the pelvis, and the intestines presented an intensely congested appearance. After recovery the limp disappeared. 5. Ventrifixation: This operation had been found eminently satisfactory. It was twice performed for enlarged congested and fixed retroflexed uteri, with marked symptoms, where douching and plugging had been futile. Of three cases of procidentia for which it was undertaken, it had alone been absolutely successful in two, while in a third a secondary kolporrhaphy had to be performed to rectify a pronounced rectocele which remained. The method of fixation was by stripping the parietal peritoneum off the edges of the abdominal wound, and then apposing and fixing the fundus to the extraperitoneal tissue by means of silkworm-gut sutures, which included the skin and recti muscles, as well as penetrated the anterior uterine wall. So far none of the cases had subsequently become pregnant. 6. Porro-Cæsarean: Performed in a country cottage in the middle of the night on a dwarf 3 ft. 11 in. in height, during the second stage of labour, with violent uterine pains, alarming thinning of the lower uterine segment, and a conjugata vera under 2 inches. The Porro-Müller method was adopted, and the pedicle treated extraperitoneally, and secured by the elastic-tube method devised by Lawson Tait. A son now aged 6½ years resulted. 7. Suprapubic cystotomy: Undertaken for new growths in the bladder, all papillomatous and hæmorrhagic. There has been no return of hæmorrhage. The ages were 17, 50, and 52 years. This method was better and more efficient than by vaginal incision or urethral dilatation. Urethral drainage was found best. A No. 20 soft rubber catheter was used. 8. Exploratory incisions: The abdomen was opened three times for ascites when extensive secondary malignant infiltration of the peritoneum was found. Once the infiltration was tuberculous and drainage gave gratifying results. In one case apparently healthy though adherent ovaries were freed, and once apparently healthy prolapsed ovaries were stitched to the pelvic wall. In another case an adherent pedicle was freed after a previous oöphorectomy. Another case was an absolutely adherent ovarian cyst so intimately fixed to the anterior abdominal wall that it could not be separated. Removal being impossible, a large incision was made through the cyst wall and numerous loculi broken up and the contents evacuated. The cavity was washed out with a weak solution of iodine. After nine years the patient was well. In this group a fatality fell to be recorded, though the operation was of the simplest nature. A hard swelling behind the uterus was giving rise to pressure symptoms. It was a subserous cervical fibroid, which it was intended should be removed *per vaginam* later. The patient died on the third day from acute septic peritonitis. 9. Removal of appendages: In 2 cases it was absolutely necessary to do this for dysmenorrhœa. In another case the appendages were removed to try to cure a monthly aberration that she was harbouring a man in her inside. The result was not satisfactory. Three cases were done for bleeding fibromyomata with excellent results, a fourth with disappointing result. Of the diseased ovaries 2 had hæmatomata in one ovary and the other healthy. The remaining cases were for chronic ovaritis. The ultimate result as regarded these and the subsequent group of matted appendages had been sufficiently satisfactory to warrant the procedure. In removal of the appendages there were 2 cases of outstanding interest, one a hæmatosalpinx in which the patient, though suffering from enlarged and distended tubes, had never menstruated, though, at the same time, she was in-

capacitated from work by severe monthly pain. By the sound the uterus measured one inch. The other case was of apparently primary tubercle of the Fallopian tubes in an unmarried woman, aged 54, with ascites. A second fatality occurred here. Extremely adherent pustules were being removed, and some pus escaped into the peritoneal cavity. In the technique of the operations described, aim had been directed to three primary essentials: (1) Asepsis; (2) control of bleeding; and (3) precaution against injury to the hollow viscera. Deaths occurred under the second head from venous oozing which had followed the loss of a large quantity of blood during the operation. Therefore it was well, before proceeding to free adherent tumours from the surrounding structures, to attempt to cut off the circulation through the tumour by ligaturing the main sources of blood supply. With large adherent areas the bleeding should be controlled as one slowly proceeded. True shock after abdominal operations was a much over-rated danger. Where dense adhesions existed between tumours and the hollow viscera it was better to leave a portion of the cyst wall attached. When pus escaped into the peritoneal cavity irrigation with 1 in 40 boroglyceride solution was done. Drainage should be done through the posterior fornix vaginæ. As to after-treatment, the aim was (1) to preserve strength, (2) to promote comfort, and (3) to prevent intestinal paralysis. A nutrient enema was always given before the patient left the operating table, and this was to be repeated every four to eight hours, as required, should the patient be unable to take nourishment by the mouth. Thirst was best relieved by large normal saline enemata, and by swabbing the gums, mouth, and lips with a weak solution of glycerine and water. Pain was lessened by putting a large pillow below the patient's knees to diminish abdominal strain. For severe pain $\frac{1}{8}$ to $\frac{1}{4}$-gr. of morphine hypodermically, or a $\frac{1}{2}$-gr. morphine suppository. The patient should be turned on her side several times during the first forty-eight hours, to give relief and to promote free peritoneal drainage by absorption. A large turpentine enema injected high up into the bowel was very beneficial in flatulent distension, the nozzle of the syringe to be kept in the rectum till the enema was returned. Massage along the colon with the nozzle still *in situ* might be tried; finally, free purgation with calomel and saline. Accidental complications: Severe secondary hæmorrhage from the abdominal wound, a pulmonary embolism after moving the patient from one room to another on the seventh day, a case of double suppurative parotitis after ovariotomy where the night attendant had recovered from mumps only a fortnight previously. A pair of catch forceps left in the abdominal cavity was the last of the accidental complications referred to. The forceps were removed, and the patient made a good, though slow, recovery.

The paper was discussed by the President, Professor A. R. Simpson, Drs. D. Berry Hart, N. T. Brewis, Milne Murray, Haig Ferguson, and Fordyce; and Dr. Haultain replied.

Repeated Ectopic Pregnancy.

Dr. Haig Ferguson read a paper on repeated ectopic pregnancy in the same patient, with an account of a case where two gestation sacs (one a lithopædion) were successfully removed from either side at one operation: with the literature of the subject. Apparently this was the first case of the kind actually demonstrated in Scotland, though Reid of Glasgow had described a case which in all likelihood belonged to the same category. Olshausen was the first to give statistical observations regarding extrauterine pregnancy occurring twice in the same patient, in connection with a case of his own, and Abel thought such cases much more common than was generally thought. There had lately been a considerable number of cases reported of repeated tubal pregnancy in the same woman, but laparotomy performed twice on the same woman was mentioned by only fourteen operators. Kokmann's was the only case where a normal pregnancy and delivery occurred between the two laparotomies. In Lawson Tait's case a normal pregnancy and labour occurred between the two extrauterine gestations, but there was no second operation. Few statistics were available regarding the frequency of the condition. According to Zangemeister the shortest interval between two repeated tubal pregnancies was six weeks, and the longest five years. The following were the points of Dr. Ferguson's own case: A healthy woman aged 29 had her first child in May, 1891. It was a "cross" birth, and the child only lived an hour. A second child was born in February, 1892, and only lived an hour. Menstruation was thereafter regular till January, 1894. Four months later she was suddenly seized with violent abdominal pain, chiefly on the right side, and shivering. She was then in Ireland. She could give no history of discharge of blood clot or membrane. She was confined to bed for many weeks. On recovery she menstruated regularly till February, 1898, when she again missed two periods. On April 11th she had severe pelvic pain and retention of urine. A fluctuating swelling of the size of a goose's egg was found on the left side of the uterus, which was enlarged and pushed aside. To the right and above the level of the fundus a fairly hard irregular body was felt. A piece of typical decidua was shed after the examination. On April 19th abdominal section was done: as the characteristic tubal pregnancy on the left side was touched it ruptured posteriorly through the tube wall close to the broad ligament. The sac and the corresponding ovary were easily removed. On the right side was an irregular nodulated swelling attached by a narrow pedicle to a very much dilated and tortuous tube, which was adherent to the fundus uteri. The tube was filled with serum. This sac was a lithopædion, and contained the bones of a 4-months' fœtus. The right ovary was cystic, and was removed at the same time. The patient made a good recovery. Extrauterine gestation was due to a great variety of possible causes, the chief of which was some mechanical obstruction, most likely from perisalpingitic or perimetric adhesions causing obstruction of the tube by the formation of peritoneal bands. Dr. Haig Ferguson advocated removal of the appendages of the opposite side as well as the affected side in extrauterine gestation. The different modes of operating under various conditions were then given, and finally the literature of the subject was tabulated.

The paper was discussed by the President, by Drs. A. R. Simpson, D. Berry Hart, and F. W. Haultain, and Dr. Haig Ferguson replied.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

J. Rutherford Morison, M.B., F.R.C.S., Vice-President, in the Chair.

Thursday, December 8th, 1898.

Cases, etc.

Dr. A. E. Morison showed: (1) A patient, aged 22 years, who had noticed a Lump at the Root of the Neck for the past two years. A skiagraph showed this to be due to a cervical rib over which the subclavian artery ran. On the opposite side was an elongated transverse process. (2) A New Method of Preparing Catgut. After having been immersed in ether for twelve hours the catgut was wrapped upon glass plates and placed in a 5 per cent. solution of formalin for twenty-four hours, then under running water for twelve hours, and lastly dried. It might be kept in this condition and immediately before use boiled, or it might be kept permanently in a 1 in 2,000 solution of corrosive sublimate in methylated spirit. The advantages claimed were absolute sterility and maintenance of the strength of the catgut.—Dr. George Murray brought forward: (1) A case of Friedreich's Ataxia in a lad, aged 18 years, whose sister, aged 22, also suffering from this disease, was in the hospital under the care of Dr. Oliver. The case presented decided mental deficiency; nystagmus was very evident: the pupils, however, reacted readily to light. The usual irregular muscular contractions were present, being most marked in the muscles of the face and neck. The gait was extravagantly ataxic, but the knee-jerks were not absent. Dr. Oliver's case, presenting similar symptoms, was also shown to the meeting. (2) A case which, in Dr. Murray's opinion, illustrated the Relationship between General Paralysis and Locomotor Ataxia. This patient twelve years ago suffered from plumbism, and two years ago from rheumatic gout; twelve months ago he had a left-sided hemiplegia. He now presented some loss of power in the left side; speech was somewhat indistinct, and the pupils were unequal. The marked inco-ordination, however, was more evident on the right side. The right hip and great toe joints

showed extensive Charcot's disease. Dr. GORDON BLACK and Mr. MORISON discussed the joint changes.—Dr. BENNETT exhibited a patient with optic atrophy following injury. The man, after being unconscious for one hour from a severe accident due to the fall of a stone, vomited a large quantity of blood, and presented marked swelling of the right eyelids. On subsidence of swelling, there was absolute blindness of the right eye, with optic atrophy and anæsthesia of the skin below the orbital margin. The explanation offered was a fractured base extending into the optic foramen and sphenoidal fissure.—Mr. PAGE reported the case of a man upon whom he had recently operated by Extirpation for Arterio-venous Aneurysm of the Femoral Artery in Hunter's canal. The patient, eight years ago, had stabbed himself by accident in the right thigh, causing profuse bleeding, which was arrested by a pad and elastic bandage. In a few days the wound had healed, but pulsation was at once noticed, and, together with swelling, gradually increased. Lately increased pulsation and thrill had caused loss of sleep. On examination, a pulsating and expansile swelling, as large as a fist, was found in the site of Hunter's canal. The thrill and *bruit* characteristic of arterio-venous communication was heard over the sac and along the course of the femoral vessels. There was no enlargement of the superficial veins, nor œdema of the foot. On November 16th, the sac, together with portions of both artery and vein involved, was completely removed, catgut ligatures being used. The patient made an uninterrupted recovery, and at no time was there cause for anxiety as to safety of the limb.

TREATMENT OF FRACTURES OF TIBIA AND FIBULA.

Mr. RUTHERFORD MORISON described his method of treating fractures of the tibia and fibula as follows: Without attempting to set, the fractured leg was put up for ten days, with plenty of packing, in Gooch splinting. This temporary splint was then removed, and the bones and callus moulded into shape and position. The limb was now put up in plaster-of-paris. Two patients having been so treated, showed excellent results.

EPITHELIOMA PENIS.

Mr. ANGUS showed a patient four years after removal of penis and infected glands, which, on microscopic examination, had been proved to be epithelioma. There was no recurrence.

Mr. MORISON, Mr. MARTIN, and Dr. LYON SMITH, commented upon the improved statistics for malignant disease after radical operation.

SPECIMENS.

The following specimens were exhibited: Dr. MODLIN: Suppurating Dermoid Cyst.—Dr. G. R. MURRAY and Dr. HARDCASTLE: (1) Stained slides illustrating the stages of Widal's Reaction for Enteric Fever; (2) Case with Tubes for sending specimens for bacteriological diagnosis.—Dr. G. R. MURRAY: New Pillow Sling.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—At a meeting on December 14th, Dr. ROXBURGH in the chair, Dr. C. ELLIOTT showed a patient with Lichen Ruber Planus; Dr. WALDO and Dr. A. J. HARRISON spoke on the subject.—Dr. MICHELL CLARKE showed a case of Acromegaly.—Dr. E. C. WILLIAMS showed: (*a*) Cases treated by the Localised Application of Superheated Dry Air: (1) Stiff Knee; (2) case of Rheumatoid Arthritis. (*b*) A case of Alopecia Areata treated by the Oxygen Cap. Dr. ROGERS, the PRESIDENT, Dr. J. SWAIN, Mr. PAUL BUSH, Dr. CAREY, Dr. ELLIOTT, and Dr. WALDO remarked on the patients. Mr. C. A. MORTON showed a large Sarcoma of Kidney successfully removed from a young child. Mr. R. WILLIAMS and Mr. CARWARDINE discussed the specimen. Dr. J. O. SYMES showed a microscopic specimen of Tetanus Bacilli in Pus, and a lantern slide of the same specimen.—Dr. MICHELL CLARKE showed a microscopic specimen of the Malaria Parasite, and illustrated his remarks by some carefully-prepared lantern slides.—Dr. J. SWAIN showed a specimen of Double Pyosalpinx.—Dr. W. C. SWAYNE read a paper on Symphysiotomy, with notes of a case. Dr. J. G. SWAYNE and Mr. MORTON commented on the paper.—Mr. MUNRO SMITH showed a large number of lantern slides, illustrating the pathology of Rodent Ulcer, explaining each slide as it was thrown on the screen by the oxyhydrogen light. His interesting remarks on the subject raised a long discussion, in which Mr. MORTON, Mr. WILLIAMS, Dr. EDGEWORTH, and Dr. MICHELL CLARKE took part.

FORFARSHIRE MEDICAL ASSOCIATION.—At a meeting on December 2nd, Dr. J. MACKIE WHYTE, Vice-President, in the chair, Dr. WHYTE showed a boy, aged 12, who was admitted in June, 1896, to the Dundee Infirmary for ascites. He had been a delicate child, and had suffered from a chronic otorrhœa, but otherwise there was nothing marked till the onset of the illness six weeks previously. There was evidence of lardaceous disease in liver, spleen, kidneys, and intestines. In the liver, too, there seemed to be deep fibrous constrictions. The abdomen was tapped repeatedly till October, 1897; the amount of fluid drawn off latterly was 324 oz. in nine days. The urine up till that time was very scanty, but after the tapping in October it suddenly increased in quantity and the fluid ceased to gather in the peritoneum. The cause of the disease was apparently the otorrhœa, syphilis being excluded with fair certainty. The reason for the cure was quite doubtful.—Dr. Whyte also showed a Brain from a case of Purpura with hæmorrhage into the base, which seemed to have begun in the optic thalamus. The patient had numerous hæmorrhages all over the body. There were no symptoms localising the cerebral hæmorrhage from which she died.—Mr. GREIG showed Part of a Catheter removed from the bladder by suprapubic cystotomy of a man, aged 63, suffering from an enlarged prostate. Professor Kynoch showed a specimen of Gonorrhœal Salpingitis and abscess of the ovary removed by cœliotomy.—Professor KYNOCH also read a paper on the Recent Improvements in the Treatment of Vesical Fistulæ. He described the various operations suggested and performed during the last fifty years for the treatment of small, medium, and large fistulæ, where there was destruction of tissue. He gave notes of a case of his own in which he had obtained a successful result by paring and suturing the edges of the fistula. Lastly, he dealt with vesico-uterine fistulæ, in the treatment of which he thought that when closure of the os uteri was the only available treatment the ovaries might be removed at a subsequent operation. Professor MACEWAN, Mr. GREIG, Dr. BUIST, and the CHAIRMAN all spke on the paper. Professor KYNOCH briefly replied.—Dr. MACGILLIVRAY gave a short paper on the Treatment of Iritis, in which he emphasised the importance of the early and energetic use of atropine combined with cocaine in the form of an ointment. This ointment he recommended should be applied every hour or oftener till all synechiæ were broken down. He also advocated the internal administration of mercury, hot fomentations, and leeches to the temple to allay severe pain. Dr. DUNCAN spoke on the internal treatment, which he did not think was sufficiently emphasised in the paper. The CHAIRMAN also spoke. Dr. MACGILLIVRAY, in reply, said the paper did not aim at, though approving of, etiological treatment.

BIRKENHEAD MEDICAL SOIETY.—At a meeting on December 9th, Dr. H. NAZEBY HARRINGTON, President, in the chair, Dr. TEMPLE showed two children with Congenital Defects of Forearms and Hands.—Dr. R. OWEN MORRIS showed a woman with an Abdominal Tumour (for diagnosis).—Mr. HERBERT BUTCHER opened a discussion by reading a paper on the Causation, Differential Diagnosis, and Treatment of Torticollis. He first dealt with the action of the muscles which would be involved in certain deformities, and the necessity of differentiating which muscles were actually at fault in any special case, so that a correct diagnosis having been made manipulation of the head might be employed in the proper direction and massage of the faulty muscles applied. In obstinate cases where milder methods had failed tenotomy was advocated; the operation recommended was the open method in preference to the subcutaneous, and in girls the high operation on the sterno-mastoid, namely, the incision being made round the auricle, and the muscle divided at its insertion into the mastoid process. After tenotomy of the muscle the head should at once be placed in the correct position, and retained there by a retention apparatus, and if it was found impossible to replace the head, it should be forced into posi-

tion during anæsthesia. In the spasmodic variety, Mr. Butcher insisted that nothing seemed to avail except operation, and recommended an early resection of the spinal accessory nerve at the anterior border of the sterno-mastoid muscle, and even if retrocolic spasm existed, no further operation should be done for at least a couple of months, as in these cases the simple resection of the spinal accessory nerve had been known to result in cure. If this should not be so, then the suboccipital triangle should be exposed, and the great occipital nerve, with the first, second, third, and fourth nerves, would come into view, and one or more of them might be dealt with if necessary. Mr. Butcher quoted cases where one or more of these posterior cervical nerves had been resected with brilliant success. Drs. Vacher, Laird Pearson, Dixon, Ellis Pearson, and the President joined in the discussion; and Mr. Butcher replied.

REVIEWS.

Tests and Studies of the Ocular Muscles. By Ernest E. Maddox, M.D., F.R.C.S.E. Bristol: J. Wright and Co., and London: Simpkin, Marshall and Co. 1898. (Cr. 8vo, pp. 444, 112 illustrations. 10s. 6d.)

Dr. Maddox is well known in the ophthalmological world as an authority on muscular defects in the eye, and in the work under consideration, which consists of fourteen chapters, he gives a selection of the best tests for the efficiency of the ocular muscles, together with a few original ones.

Chapter I is devoted to the anatomical consideration of the eye and its socket, and in this there is a very full description of Tenon's fascia, the check ligaments, and the exact method of insertion of the muscles into the sclerotic. Chapters II to VII deal with the many complicated movements of the eye, and, although they have important practical bearings, yet they will be found rather difficult to follow unless the reader is well up in mathematics.

The other chapters treat of ophthalmoscopic corneal images and squints and their detection, while there is an appendix in which a short account is given of Priestley Smith's fusion tubes and of some of the many points he brought forwards in the Bowman lecture of this year. The book is profusely illustrated with diagrams and reproduced photographs.

The author has succeeded in treating this difficult subject in a masterly manner and in a lucid style. The many points which present themselves when the study of muscular defects is fully entered on are all extremely interesting from a scientific standpoint, although clinically it is not often necessary to enter into great detail, still cases which require a minute diagnosis are becoming more frequently met with as education advances, and so these muscular defects are coming into greater prominence. The reader who makes himself thoroughly acquainted with all the tests given there will not find many muscle cases insoluble.

The work is one which all will welcome and which will prove of the greatest utility as a book of reference not only to ophthalmic surgeons, but also to neurologists. It is likely to occupy a permanent place in ophthalmological literature and we can thoroughly recommend it to all those who are interested in this very important subject.

Practical Pharmacy. By E. W. Lucas, F.C.S. London: J. and A. Churchill. 1898. (Royal 8vo, pp. 528, 283 illustrations. 12s. 6d.)

This work is written for pharmaceutical students with the object of giving such information upon practical pharmacy as pharmacists should possess without going too deeply into details of operations that can only be conducted on a manufacturing scale. The contents are divided into six parts. The first treats of the general processes of pharmacy, such as distillation, sublimation, etc. The pharmacopœial preparations are very fully described in the second part. The information here given is of great value, being based upon the author's own practical work in the laboratory. Not only are the preparations of the *British Pharmacopœia* mentioned, but also the methods of manufacture of tablets, tablet triturates, eye discs, cachets, capsules, medicated cotton, gauzes, etc. Considerable prominence has been given to pharmacopœial testing and explanations of the reactions involved. Part v comprises a very useful series of tables of solubilities, etc. The author has introduced a chapter on urine analysis, for "he believes that in the future pharmacists will be called upon to undertake not only examinations of urine, but possibly many other operations of a similar character." This chapter is well written and the illustrations of urinary deposits could not be excelled.

The work as a whole is well done, the style is clear, the arrangement good, the illustrations most excellent, and the information reliable and adapted to the wants of the pharmacist.

Pest, Bubonenpest. Von Dr. Scheube, San.-Rath u. Fürstl. Physicus in Greiz. Separat-Abruck aus der Real-Encyclopädie der gesammten Heilkunde. Dritte gänzlich umgearbeitete Auflage. Wien: Urban and Schwarzenberg. (Demy 8vo, pp. 28.)

This article by Dr. Scheube is a reprint of an article in the *Encyclopädie der gesammten Heilkunde*, edited by Dr. Eulenburg of Berlin. In twenty-eight pages Dr. Scheube has been able to give a very complete summary of all that was known regarding the plague up to the date of publication.

Appended to the paper is a page and a-half of references to the literature of the subject, which will be valuable to students of this special question. It is evident that the author himself has carefully examined these sources of information, and, as a result, he has given a brief, but comprehensive, summary of the geographical distribution of the disease. The etiology, with special reference to the bacillus, is discussed in the light of recent work, the bacteriology of the malady receiving a very complete exposition. The glandular form, the skin form (plague pustule), the blood form (plague septicæmia), pneumonic form (as described by Childe), the intestinal form, and so-called abortive plague (pestis minor) are all described. The curious question as to the existence of pestis minor is not much elucidated by the author. He states that under this head are to be included many slight forms of illness with indefinite symptoms, such as pain in certain groups of glands, feeling of fatigue, vertigo, headache, sleeplessness, slight forms of indigestion, ephemeral forms of fever, abnormal perspirations, pains in the limbs, which are to be noticed in certain persons during an epidemic of plague. These cases are supposed to be of the nature of plague, because the subjects of them live in houses or belong to families in which, at the same time, cases of plague occur, and because they often leave behind them persistent weakness or marked debility of the heart. Surely better evidence than that is wanted to establish the fact that they are cases of plague.

The pathological anatomy of plague is described, the prophylactics considered, and the statistics regarding the results of Haffkine and Yersin's inoculations are given. Under the heading of "Therapeutics" the results of these inoculations are stated.

Traumatic Separation of the Epiphyses. By John Poland. F.R,C.S. London: Smith, Elder, and Co. 1898. (Roy. 8vo, pp. 958; 337 illustrations and skiagraphs. 52s. 6d.)

The surgery of the epiphyses has not received at the hands of surgeons the same wealth of investigation that has been given to other branches of their art. In the standard textbooks the subject is, as a rule, dealt with most inadequately. To say that such a condition of things demanded alteration is but to give utterance to a platitude. The injuries are of the gravest importance, are not infrequently overlooked, and are capable under misdirection of giving rise to permanent and lamentable results: any work, therefore, dealing effectively with such injuries will be sure of a cordial recognition by the profession. We may say at once that Mr. Poland has written a classic. For some time, rendered alert by premonitory notices, we have been eagerly anticipating the advent of this work. On carefully reading through it, the reason for the delayed appearance becomes at once apparent. Completeness

was being aimed at—completeness in every detail of every section, completeness of letterpress, of reference, and of illustration—and completeness has been achieved. It is only in exceptionally rare cases that the first edition of so large a work as this, fully, almost lavishly, illustrated and containing a multitude of references, is so free from error of all kinds.

To enter into anything like a minute examination or to attempt an appreciation at all adequate is beyond the limits of our space. We can only briefly refer to the salient features of the work. There are four parts. In Part I a brief historical retrospect precedes a full and accurate account of the anatomy of the epiphyses, illustrated by no fewer than nineteen full-page illustrations of the development of the bones of the hand. Etiology and the influence of age and sex are then discussed, and the relative frequency of the various injuries stated. The most important point in dealing with epiphysial injuries is the prognosis. Is the subsequent growth of the bone likely to be interfered with, and, if so, to what extent? This question is fully, elaborately, and satisfactorily dealt with. Part II describes the separation of the epiphyses of the upper extremity, Part III of the lower extremity, and Part IV of the ribs and vertebræ.

If there is any feature in the work with which fault can be found—though we are reluctant to mention it—it is in this: that the work is, in some parts at least, not sufficiently personal. Here and there one is inclined to wish for a rather more insistent direction as to treatment. What makes one surgical work live, the lack of which suffers many to die, apart from a stock of references, is its authenticity—that part of it which is the author himself, his own thought, his own judgment; in a word, his own individuality. If anything, there is some lack of that quality here; but where so much is good it is fretful to complain.

Of the illustrations we cannot speak too highly. In a work dealing with this subject they add materially to the worth: better and more expressive illustrations could not be wished. The work is emphatically one with which every surgeon must make himself acquainted.

Traité de Médecine et de Thérapeutique. Tome V. Maladies des Glandes Salivaires, du Pancréas, du Foie, de la Rate, des Reins, de La Vessie, des Organes Génitaux de l'Homme et de la Femme. [Diseases of the Salivary Glands, Pancreas, Liver, Spleen, Kidneys, Bladder, and the Organs of Generation in the Male and Female.] Publié sous la direction de MM. P. Brouardel et A. Gilbert. Paris: J. B. Baillière et Fils. 1898. (Roy. 8vo, pp. 992. Fr. 15.)

The fifth volume of MM. Brouardel and Gilbert's treatise maintains a high level of excellence. The volume opens with a somewhat slight account of the diseases of the salivary glands by M. Dupré, which, however, includes an interesting reference to the glandular infections. In the next thirty-four pages MM. Richardière and P. Carnot give a clear analysis of a group of very obscure diseases—those of the pancreas. The subjects of hæmorrhagic and suppurative pancreatitis are particularly well treated. The authors emphasise the importance of the administration of salol by the mouth as a help in the diagnosis of pancreatic lesions. The diseases of the liver, as would be expected from the names of the authors of the articles, MM. Gilbert, Fournier, Garnier, and Surmont, are excellently discussed in what is the principal part of the volume. The chapter on the diseases of the spleen by M. Launois is distinctly meagre, as indeed is inevitable at the present time from the nature of the subject. We notice that the author adheres to what, in our opinion, is an untenable position that red blood corpuscles are developed from leucocytes.

Among the articles on the Diseases of the Kidneys by MM. Jeanselme and Chauffard there is nothing of outstanding value, but the whole subject is treated in a thoroughly scientific manner. The articles on uræmia and the general etiology of nephritis are especially well done. There is an interesting essay on the history of the evolution of the doctrine of nephritis, in which, as is their due, English physicians are acknowledged to have been the pioneers and chief explorers in this important territory. The chapter on diseases of the bladder is, as it seems to us, but little more than mediocre, and that on the diseases of the genital organs in the male is much on the same level. The disorders attributable to the reproductive organs in the female are discussed by M. Armand Siredey, in 125 pages, and although their treatment is good as far as it goes, yet we cannot but think that the discussion of these diseases would have been wisely relegated to gynæcological works. The absence of any index greatly detracts from the general usefulness of the book. On the whole, however, we have little else than praise to bestow on this admirable volume of a most valuable system of medicine.

Les Phthisiques Adultes et Pauvres en France, en Suisse, et en Allemagne [Adult Poor Consumptives in France, in Switzerland, and in Germany]. Par Dr. G. Sersiron. Paris: Félix Alcan. 1898. (Roy. 8vo, pp. 179, with views and plans of Sanatoria. Fr. 5.)

This volume deals with the modern sanatorium treatment of consumptives, and especially of poor consumptives. The author explains that in France at present a poor consumptive has to apply for admission to one of the general hospitals, where the treatment provided is unsuitable, and the result is most discouraging. He often occupies a bed needed for others who would derive more benefit from the hospital. The arrangements at general hospitals are not suited to his case, and as a possible source of infection he is an actual danger to others.

Dr. Sersiron describes several sanatoria in detail, most of them as yet but little known in England. In Switzerland he describes the sanatorium of Heiligen-Schwendi above the Lake of Thun, the sanatorium erected by the town of Basel at Davos-Dörfli, and the Braunwald sanatorium (opened in December, 1897) founded by Canton Glarus near the spa of Stachelberg, at an altitude of 1,150 metres. In Germany he describes the excellent establishment on the Oderberg, close to St. Andreasberg in the Harz Mountains, and the Bavarian sanatorium of Krailling-Planegg near Munich. In France itself there is the Parisian sanatorium of Angicourt, near Liancourt, which has still to be completed. As examples of private charitable effort in France Dr. Sersiron points to the sanatorium which is being erected by citizens of Lyons at Hauteville, and to the small Jewish institution at Cimiez, near Nice.

The treatment of poor consumptives is one of the most important questions of the present time, and everyone should therefore be interested in Dr. Sersiron's book, which may be regarded to some extent as a supplement to the two well-known works in the same language published in 1895 by Dr. S. A. Knopf and Dr. Léon-Petit.

Laboratory Work in Physiological Chemistry. By Frederick G. Novy, M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second edition. Ann Arbor: George Wahr. 1898. (Roy. 8vo, pp. 326, 25 illustrations. $2.00.)

Dr. Novy has produced a book which is creditable both to himself and to the style of teaching adopted in Michigan University. It gives considerably more than is wanted by what is generally called the "ordinary" medical student, and will no doubt be largely used by those who are training for research work in physiological chemistry. The directions given for practical work are clear and correct.

While thus speaking in the highest terms of praise of the work as a whole, we cannot but think that its usefulness would have been still further increased by three improvements:

The first of these relates to the arrangement of the text; practical work and theoretical considerations are often too much jumbled up together; it would have been better to keep the two separate; the practical work might all be put together either at the beginning or the end of each chapter. It is somewhat confusing to teacher and student alike to find the practical instructions in fragments in different parts of the same chapter.

The second point relates to the illustrations; these are not

altogether well selected, and might have been more numerous. It would also have been better to have inserted them in the text instead of collecting them together in a few plates at the end of the book.

Thirdly, in order to render the work more available for the use of those engaged in research work the references to original memoirs should have been given. Perhaps in a future edition Dr. Novy may see his way to adopt these suggestions.

THE INEBRIATES ACT, 1898.

The Inebriates Act, 1898, comes into operation on January 1st, 1899, and it is stated that the Home Secretary is about to issue circulars to judges, magistrates, and local authorities explaining the purpose of the Act. Section xxi, however, provides that a regulation made under the Act shall not come into effect until it has lain four weeks on the table of each House of Parliament while that House is sitting. Further, any such regulation and the date on which it comes into effect must be notified in the *London Gazette*. It appears, therefore, that the provisions of the Act with regard to reformatories cannot be put into operation for some months. General regulations for the management and discipline of Certified Inebriate Reformatories have been issued, and can be obtained either directly or through any bookseller from Messrs. Eyre and Spottiswoode, East Harding Street, E.C.; John Menzies and Co., Edinburgh and Glasgow; and Hodges, Figgis, and Co., Dublin, price 1½d. It is stated that these are model regulations, and that rules submitted to the Secretary of State for approval by the managers of an inebriate reformatory should incorporate or be based on these regulations, subject to any modifications rendered desirable by the special circumstances of the institution.

The Acts of 1879 and 1888.

The temporary Inebriates Act, originally known as the Habitual Drunkards Act of 1879, was the legislative outcome of a strong public opinion proceeding from and fostered by the medical profession. Though its enactment was followed by the permanent cure of a substantial proportion of habitual drunkards, the distinguishing feature of that Act was the legal affirmation of power to the habitual drunkard to sign away his liberty for a period not exceeding twelve months, for reformative and curative purposes.

The Act of 1888 made the provisions of the preceding temporary Act permanent, so satisfactory was the experience in the comparatively few instances in which habitual drunkards had voluntarily applied for admission to, and detention in, licensed retreats.

The New Act.

By the judicious administration of those Acts the general opinion in favour of the substitution of remedial treatment in place of the traditional procedure, neither reformative nor deterrent with inebriate offenders, had so increased that, in response to a strong public demand, the Government succeeded in passing the Inebriates Act, 1898, on July 12th last.

Though it cannot be denied that this third Act has disappointed the earnest desire of the profession and the public in containing no provision for the compulsory restraint of non-criminal habitual drunkards, the Act contains provisions so valuable for the remedial treatment of criminal inebriates as to bid fair to effect a revolution in our judicial procedure with criminal habitual drunkards of both sexes. Two groups of criminal habitual drunkards are, on and after January 1st, 1899, when the Act comes into operation, to be included.

Criminal Drunkards.

In the one group are embraced habitual drunkards convicted of an offence punishable with imprisonment or penal servitude. The convicted, in addition to, or in substitution of, any other sentence, may be ordered to be detained for a term not exceeding three years in any State inebriate reformatory, or in any certified inebriate reformatory the managers of which are willing to receive him. The Court is to be satisfied from the evidence that the offence was committed under the influence of drink, or that drunkenness was a contributory cause, and that the offender admits, or is found by the jury, to be a habitual drunkard. After a plea or verdict of guilty, the same jury is then, if there is no admission of habitual drunkenness, to inquire, without being sworn again, whether prisoner is a habitual drunkard.

Repeaters.

The other group consists of habitual drunkards who, within the twelve months preceding the date of the commission of a fourth offence, have been convicted summarily three times of any offence set forth in the first schedule. This group shall be liable, on conviction on indictment, or (by consent) on summary conviction, to be detained in any certified inebriate reformatory, the managers of which are willing to receive them, for a term of not more than three years.

The Two Classes of Inebriate Reformatories.

Procedure having been laid down, the Act goes on to the establishment and maintenance of two classes of inebriate reformatories. The Secretary of State is empowered to establish State inebriate reformatories, and for that purpose may, with the consent of the Treasury, acquire or appropriate land or buildings, or build, the cost to be paid from moneys provided by Parliament. The Secretary of State may also make regulations for the management of these State inebriate reformatories, and for the classification, treatment, employment, and control of the inmates, and for their absence under licence. The Prisons Acts, 1865 to 1898 (inclusive of their penal provisions), or as hereafter amended, are to apply to State inebriate reformatories, as if these were prisons, provided that no regulations shall authorise the infliction of corporal punishment.

Another class of inebriate reformatories, to be called certified inebriate reformatories, so long as the certificate is in force, may, on the application of any county or borough, or of any persons desirous of establishing an inebriate reformatory, be certified by the Secretary of State, who may make regulations for them also and for the inmates, and their transference to other reformatories, and may impose a fine not exceeding £20, or imprisonment for not more than three months, for a breach of the regulations. In reckoning the period of detention in a certified inebriate reformatory, the term of imprisonment is not to be computed.

The Secretary of State may appoint inspectors of certified inebriate reformatories whose salaries are to be defrayed out of funds provided by Parliament.

Finance.

The Treasury may pay out of these funds the expenses of inmates detained in certified inebriate reformatories.

Any county or borough council, or two or more councils, may contribute in whole or in part to the establishment of a certified (or intended to be certified) inebriate reformatory, and to the cost of the detention of any inmates. A borough council may borrow as if for a purpose authorised by Section cvi of the Municipal Corporations Act, 1882.

The cost of conveyance to a certified inebriate reformatory is to be charged to the police authority at whose instance the person is conveyed.

The estate of the inebriate can be made liable for the cost of detention in either a State or certificated inebriate reformatory by an order of a county court judge, if the judge is satisfied that the detained inebriate has real or personal property more than sufficient to maintain his family. Application may be made as to a State inebriate reformatory by anyone authorised by the Secretary of State, and as to a certified inebriate reformatory by the manager, or any two of them, or by any authority contributing to the maintenance of the detained inebriate.

Escape of Inmates.

As to escape of an inmate from a certified inebriate reformatory, or from the charge of anyone under licence, before expiration of time, every officer authorised in writing by the reformatory managers to retake and recovery shall, for these purposes, have all the powers, protections, and privileges of a

constable. The escaped can be apprehended without a warrant, and taken back to the reformatory.

Amendment of the Habitual Drunkards Act, 1879.

The Act of 1898 embodies several practical amendments of the Habitual Drunkards Act, 1879, two of which are of special importance. Voluntary applicants for admission to and detention in a licensed retreat can have their applications attested by *one* justice (instead of by two justices as previously), and the period of detention for which an applicant can apply is doubled, that is, extended from one year to two years.

The period for which a licence for a retreat may be granted is also extended from thirteen months to two years.

The licensing local authority hereafter will be, in a borough the borough council and the town clerk, and elsewhere the county council and its clerk, a county council being empowered to delegate any of its powers as a local authority to a commtitee.

By one amendment power is given to any county or borough council, and to two or more councils in combination, to contribute to the establishment or maintenance of a retreat under the Inebriates Acts, 1879 and 1888, as amended by the Act of 1898.

The extension of a term of detention, or readmission, may be granted on attestation by one justice, without a statutory declaration, the attesting justice not being required to satisfy himself that the applicant is a habitual drunkard.

The time between escape from and return to a retreat is not reckoned as part of the term of detention. A warrant for the apprehension of a patient who has escaped from a retreat may be issued by any justice having jurisdiction in the place where the escaped patient resides.

In the case of a patient dying while absent from a retreat on licence, a certificate of the causes of death, with the name of anyone present at the death, by a registered medical practitioner, and copies thereof must be duly certified by the person in charge of the deceased, and sent by that person to the coroner, to the district registrar of deaths, to the clerk of the local authority, and to the person by whom the last payment was made for the deceased, or to at least one of the persons who signed the statutory declaration under the Inebriates Act, 1879. Failure to comply renders the person in charge guilty of an offence against this Act.

The Secretary of State is empowered to make regulations on all matters necessary or proper for carrying into effect the provisions of this or any other Act with respect to retreats, including the enforcement of work essential to health, and to substitute new forms if required.

Supplemental.

Regulations are not to come into effect until after having lain four weeks on the table of both Houses of Parliament when Parliament is sitting. Regulations to be notified in the *London Gazette*.

Section 1 of the Poor Removal Act, 1846, to apply to persons in or on licence from a State or certified inebriate reformatory as if they were prisoners in a prison within the meaning of that Section.

Adaptations to Scotland.

If the accused pleads not guilty at the first diet, at the second diet the jury will be sworn, and the prisoner be tried only on the special offence charged, and, if found guilty, the jury will be resworn to try as to habitual drunkenness. When at the first diet the accused pleads guilty of the offence but denies drunkenness, the plea to be recorded and the jury to be sworn at the second diet to inquire as to drunkenness.

Any habitual drunkard who has been summarily convicted of a scheduled offence three times within the twelve months prior to a fourth offence may be tried before the High Court of Justiciary or by the sheriff with a jury, or with his own consent by the sheriff summarily, and shall be liable on conviction to a detention of not longer than three years in any certified inebriate reformatory which will receive him.

The Secretary for Scotland will represent the Secretary for State in England. The use of a part or the whole of any available poorhouse can be given for an inebriate reformatory, with the consent of the Secretary for Scotland. The Prisons (Scotland) Act, 1877, will represent the Prisons Act, 1865 to 1898. Burgh and the town council thereof represent borough and borough council in England; burgh includes police burgh, council includes burgh commissioners and town clerk clerk to burgh commissioners, for raising money by rate or loan for expenditure under this Act. County councils and town councils will have the same powers as if a certified inebriate reformatory were a certified reformatory under the Reformatory Schools Act, 1866. Reference to Poor Removal Act, 1846, not to apply, but in computation for the settlement of a pauper the time spent in an inebriate reformatory to be reckoned as time spent by him as a prisoner. References to a county court judge to be construed as to the sheriff, to the coroner as to the procurator fiscal, and to the *London Gazette* as to the *Edinburgh Gazette*.

A Committee to frame regulations for the proposed inebriate reformatories in Scotland, and generally to advise the Secretary for Scotland as to the methods of working the Act, is sitting. At first there was no medical man on that Committee. The Royal Colleges of Physicians and Surgeons of Edinburgh and the Glasgow Faculty of Physicians and Surgeons pointed out this omission to Lord Balfour of Burleigh, who at once requested the Presidents of those Corporations to name a medical man who "would command the confidence of the profession." They nominated Dr. Clouston, who accordingly has been added to the Committee.

Adaptations to Ireland.

References to Summary Jurisdiction Act, 1879, and offences in second column of first schedule thereto to be construed as references to Criminal Justice Act, 1855, and offences in Section 1 thereof. The Lord Lieutenant to have power to establish inebriate reformatories, and, with the approval of the Treasury, either authorise the Prisons Board to acquire land, erect or acquire buildings, or appropriate the whole or any part of any building vested in or under control of the Prisons Board, expenses to be paid out of money provided by Parliament. References to the Secretary of State to be construed as to the Lord Lieutenant; reference to the Prisons (Ireland) Acts, 1826 to 1884, to be substituted for reference to Prisons Acts, 1865 to 1898. For reference to a borough and borough council, references to a county borough and a county borough council to be substituted. Towards establishing or maintaining a certified inebriate reformatory the council of a county borough may, with consent of the Irish Local Government Board, borrow at interest on corporate securities. Expenses of conveying persons to and from certified inebriate reformatories to be defrayed as if prisoners to and from prisons. The *Dublin Gazette* to contain all notices, etc. References to the Poor Removal Act, 1846, not to apply.

Definitions.

In the Inebriates Act, 1898, "managers" of a certified inebriate reformatory mean any persons having the management or control thereof. "Expenses" include cost of custody and maintenance in the reformatory and while absent on licence, and cost incurred on returning inmates to their houses and settlements on discharge. "Patient" is a person admitted into a retreat before discharge therefrom.

The Inebriates Act, 1898, shall be construed as one with the Inebriates Acts, 1879 and 1888, the three being cited together as the Inebriates Acts, 1879 to 1898.

Schedules.

The First Schedule enumerates the offences referred to as, on a fourth conviction (after three convictions in the preceding twelve months), rendering a habitual drunkard liable to detention for three years in a reformatory. These are—drunk in a highway or other public place, or on licensed premises; while drunk, riotous, or disorderly in highway, etc.; drunk while in charge, on highway, etc., of any carriage, horse, cattle, or steam engine; drunk when in possession of loaded firearms; refusing or failing, when drunk, to quit licensed premises when requested, also to quit places licensed under the Refreshment Houses Act, 1860; drunk in any street or public thoroughfare within metropolitan police district, and being riotous or indecent, also in any street within the Town Police Clauses Act, 1847; intoxicated while driving a hackney carriage (ditto, 1847), and, in addition, as a driver or conductor of a stage carriage in London; drunk and persisting, after refusal of admission, in attempting to enter a passenger steamer, and in declining to leave. (Scotland): Intoxicated and incapable, and not under care or protection, in a street, thoroughfare, or public place; drunk in charge of carriage, horse, cattle, or steam engine, or when in possession of loaded firearms; drunk in a shebeen (Ireland); Drunk and refusing or neglecting to quit licensed premises under Refreshment Houses (Ireland) Act, 1840; drunk in any street or thoroughfare in Dublin, or guilty of riot or indecency; drunk in any street, square, lane, road, way, or other public thoroughfare or place. Similar offences in local Acts.

The twentieth meeting of the Balneological Congress will be held in Berlin from March 3rd to 7th, 1899, under the presidency of Professor Oscar Liebreich. All communications on the subject should be addressed to Sanitätsrath Dr. Brock, 18, Melchiorstrasse, Berlin, S.O.

THE WATER UNDER LONDON.

[From a Correspondent.]

It is something more than a coincidence that while the daily papers are deploring the fact that the East-end is to be left without legal remedy for the scarcity of its water supply, we should at the same time be called upon to admire the enterprise of a South London firm, which has provided the means whereby to make itself entirely independent of the water companies. The firm in question has, in the exercise of its undoubted legal rights as the law at present stands, sunk an artesian well to the depth of 425 feet, and by means of compressed air daily pumps therefrom the enormous total of 840,000 gallons of water. This well is in the neighbourhood of the Clapham Road, adjacent to the most crowded districts of South London, and, taken as a typical case, suggests some reflections on the future of the London water supply.

The wells of old London—rarely more than a hundred to two hundred feet deep—are chiefly a matter of antiquarian curiosity. One such—now covered in—is a familiar feature at the east-end of the church of St. Clement Danes. Another old well in the Temple still yields a supply of water, and there is yet another in the precincts of the Tower of equal, if not greater, antiquity. But the modern artesian tube of small diameter goes to infinitely greater depths, piercing the thick stratum of black flints embedded in chalk which underlies the metropolis. Those who are fortunate enough to possess this means of supply are naturally quiet upon the subject, and a return of the artesian wells within the metropolitan area would probably convey some astonishing information. It is enough for our purpose to show that many firms, for the capital expenditure of a few thousand pounds, and the annual cost of pumping, obtain for their own exclusive use a supply of water for which they would have to pay several hundred pounds a year in water rates. This water percolating at great depths through undefined channels is drawn from the whole area of what geologists would describe as the London Basin.

To take a few of these wells as instances: in Camberwell a big mineral water firm, by means of eight artesian borings, draws a million and a half gallons a day. In the neighbourhood of the Tottenham Court Road, a large business house owns a well which yields 10,000 gallons; and in Bermondsey wells of 250 and 300 feet produce an equally large flow. The Islington Vestry is pumping from its own wells for the Hornsey Baths a body of water that will amount to over 20,000 gallons an hour, and a tube now being sunk at Hyde Park Court is expected to supply the whole of those mansions. The Houses of Parliament and all the public buildings in Whitehall are said to obtain their supply from a well at the upper end of Trafalgar Square; and a large brewery in Whitechapel depends upon similar means, as do several large hotels. In short, there is nothing to prevent an owner of a few square feet of freehold from sinking an artesian tube into the London Basin, and drawing thence all he can.

The law upon this subject as settled by the two leading cases is perfectly clear, and indeed if closely considered could hardly be otherwise as a general principle, though it is here submitted that London and other crowded areas of population call for exceptional treatment. The first proposition is that any man may sink a well to any depth and so gather the water of a large adjacent area without reference to the fact that he may have no rights of property over that area. As a rider to this we may add that a neighbour may sink a deeper well and draw off all the water from the shallower without being liable for the damage; that is a *damnum sine injuriâ*. Percolating streams of water are regarded by the law just as animals *feræ naturæ*, no one has a property in them till he has confined them and made them his own. A second proposition, however, lays it down that though subterranean waters flowing in undefined channels are the property of none till caught in a well or other reservoir, yet the man who pollutes them by sewage or otherwise to the detriment of his neighbour's well is guilty of an actionable wrong.

In the case of Chasemore *v.* Richards, decided by the House of Lords in 1859, the Local Board of Croydon sunk a well and pumped therefrom 600,000 gallons daily, the effect of which was to intercept subterranean waters and prevent them ever reaching the river Wandle. It was held that the mill-owners on that stream had no remedy for the diminished volume of water. In the later case of Ballard *v.* Tomlinson, the plaintiff was the owner of an artesian well at Brentford, sunk to the depth of about 300 feet; at about 100 yards distance the defendant had a well of similar depth, which, having become useless as a well, was used for the disposal of sewage, to the injury of the plaintiff's water supply. This was held to be an actionable nuisance, and the defendant was restrained from polluting the sources of a supply in which neither of the parties had any property. In giving judgment the Master of the Rolls laid it down "that no one has at any time any property in water percolating below the surface of the earth, even when it is under his own land; but it is equally clear that anybody has a right to appropriate that percolating water, at least whilst it is under his own land, to the extent that he may take it all, so as to prevent any of it going on the land of his neighbour.....This percolating water below the surface of the earth is, therefore, a common reservoir or source in which nobody has any property, but of which everybody has, as far as he can, the right of appropriating the whole."

It therefore follows that private individuals, by going deep enough, might appropriate the water under the whole of the London Basin; so that if the London water supply of the future—and the same applies to all crowded areas—is to be supplemented by the pumping of the water under the Thames Valley by means of deep wells, legislation is needed to check the wholesale appropriation for private purposes of a common source of supply. Even if the question is solved for London by bringing water from the Welsh hills, it is time that Parliament should recognise the principle that every area of population should have the first call on the percolating streams beneath the surface of the earth.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary Council was held on December 8th, 1898, Sir William MacCormac, Bart., K.C.V.O., President, in the Chair.

Report from the Board of Examiners in Dental Surgery.

The report, which was as follows, was adopted:

In pursuance of the resolution of the Council of August 2nd, 1898, the Board of Examiners in Dental Surgery have taken into consideration the recommendations of the General Medical Council as to the course of study and examination for licences in Dental Surgery, and have to report that, as the recommendations appear to be in all important particulars similar to the Regulations of the College, the Board can only recommend that the Council should express their approval of them.

With respect to the suggestion that schedules defining the range of examination in Anatomy and Surgery be issued, the Board do not recommend its adoption for the reason that, in their opinion, it would probably lead to a system of cramming which is undesirable.

Report from the Committee of Management.

This related chiefly to a synopsis of practical pharmacy drawn up in consequence of the issue of the new *Pharmacopœia*, and its general tenour was stated in our report of the last meeting of the Royal College of Physicians of London.[1]

Erasure from the Medical Register.

A member whose name had been erased from the *Medical Register* was required to show cause why he should not be so removed from being a Member of the College.

A letter was read of November 30th, 1898, from Sir William Turner, President of the General Medical Council, enclosing a copy of two clauses drafted with the object of amending the Medical Acts so as to prevent persons whose names have been erased from the *Medical Register* for a criminal offence or for professional misconduct, from using any title, diploma, or degree so long as the erasure remains in force; and inquiring whether such clauses are approved by the Council of the College. This was referred to the Discipline Committee for report.

Resolutions at the Annual Meeting.

At this meeting (November 17th, 1898) there were present, in addition to fifteen members of the Council, 17 Fellows and 75 Members.

The second resolution, moved by Mr. Joseph Smith, seconded by Dr. Thomas Morton, was:

That in view of the expressed opinion of the Council that it "repre-

[1] British Medical Journal, December 10th, page 1775.

sents the whole and therefore all parts of the Corporation," and in view of the fact that, so far as it has hitherto been possible to ascertain their sentiments both individually and at general meetings, the opinion of a large number of the Members is, and has been for many years past, that they should have some share in the election of the governing body, this meeting requests the Council to again consider whether some means cannot be found of fulfilling this desire.

The answer to the above was that the Council do not consider it either necessary or advisable to reopen the question of the representation of Members on the Council after the large share of attention which the Council have of late given to the matter and after the result of the recent canvass of Fellows.

The third resolution, moved by Mr. W. G. DICKINSON, seconded by Dr. HERBERT SNOW, was:

That this meeting notes with satisfaction that the Council has at last definitely expressed its disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and this meeting further trusts that the Council will extend its disapproval to the acting by Fellows and Members of the College as paid officials of any Association which adopts these unprofessional practices.

This was referred to the Discipline Committee.

The fourth resolution, moved by Mr. BRINDLEY JAMES, seconded by Dr. F. H. ALDERSON, was:

That this meeting approves of the proposal to institute a gown for the Members of the College, and trusts that the Council will see its way to carry this suggestion into effect.

This was referred to the Committee of General Purposes.

MEDICAL SCALES FOR MERCHANT AND PASSENGER SHIPS.

Mr. Alfred Willett and Mr. Richardson Cross were appointed representatives of the College on a committee to be appointed by the Board of Trade to revise the medical scales issued for merchant and passenger ships in accordance with the recent revision of the *British Pharmacopœia*.

THE FELLOWSHIP EXAMINATION.

Mr. H. MORRIS, in pursuance of notice, moved the following resolution, which was carried:

That a Committee be appointed to consider and report whether any change, and if so what change, should be made (to the advantage both of the College and of the candidates) in the conditions under which candidates are admitted to the examinations for the Fellowship of the College.

ASSOCIATION INTELLIGENCE.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at No. 429, Strand (corner of Agar Street), London, on Wednesday the 18th day of January next, at 2 o'clock in the afternoon.

FRANCIS FOWKE, *General Secretary.*

December, 1898.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1899.

MEETINGS of the Council will be held on January 18th, April 12th, July 12th, and October 11th, 1899. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, March 23rd, June 22nd, and September 21st, 1899.

FRANCIS FOWKE, *General Secretary.*

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—A meeting of the District will be held at the North West London Hospital, Kentish Town Road, on Wednesday, January 11th, at 4.30 P.M. Dr. Morton will preside. Mr. Jackson Clarke will read a paper on The Early Diagnosis and Treatment of Deformity and Disease of the Spine. Cases of interest will be shown in the wards of the hospital. The District Committee will meet at 4.15 P.M.—H. J. MACEVOY, Broadesbury, N.W., Hon. Secretary.

SOUTH-WESTERN BRANCH.—The winter intermediate meeting will be held at the Athenæum, George Street, Plymouth, on Saturday, January 14th, 1899, at 2.30 P.M., the President, Hugh M. Montgomerie, M.D. (Penzance), in the chair. Luncheon will be provided at Risdon's Restaurant before the meeting. Notices of papers to be read, of cases, or specimens to be exhibited, are to be sent to the Honorary Secretary as soon as possible, so that an agenda paper may be issued. The Branch Council will meet at 2 P.M.—H. M. WEBBER, M.S., 4, Woodland Terrace, Plymouth, Honorary Secretary.

CEYLON BRANCH.

AN ordinary meeting of this Branch was held on November 26th in the Colonial Medical Library, Colombo, Surgeon-Major PERRY, President, in the chair; and sixteen members and two visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The following gentlemen were unanimously admitted members of the Association and Branch: C. G. Peries, M.B., C.M.Aberd., M. Linne Tamby, F.R.C.S.Edin., B. S. Reyhardt, L.R.C.P. and S.Edin., F. Foenander, L.R.C.P. and S.Edin., George P. Hay, L.C.M.C.Ceylon, and J. S. Johnpulle, L.C.M.C.Ceylon.

Death of Dr. Lisboa Pinto.—On the proposal of the PRESIDENT, supported by Dr. S. DE M. ASERAPPA, a vote of sympathy with the members of the late Dr. Lisboa Pinto's family was unanimously passed. Both the proposer and supporter of the motion spoke in feeling terms of the loss the Branch had sustained by Dr. Pinto's death. A minute expressive of the loss sustained by his death was unanimously resolved; and the Secretary was requested to forward a letter of condolence to Mrs. Pinto.

Paper.—Dr. BRITO read a paper on The Minute Pathological Anatomy of Paranji, which lasted nearly an hour in delivery.—At the conclusion of the paper the PRESIDENT and Dr. H. M. FERNANDO made a few remarks.

Rules and Regulations.—The meeting then went into the question of altering some of the rules and regulations submitted by a Special Committee at the last meeting.

Annual Dinner.—A Committee was elected to make arrangements for the dinner early next year.

Cases.—Several clinical cases from the General Hospital and microscopic specimens were exhibited to the members present.

ABERDEEN, BANFF, AND KINCARDINE BRANCH.

A MEETING of this Branch was held in Aberdeen on December 21st, Professor OGSTON in the chair.

Trephining for Injury.—Dr. GRAY read notes of a case of trephining for injury in a young child. The patient was exhibited at last meeting of the Branch.

The Force Developed by Bullets on Impact.—Professor OGSTON presented a communication on this subject, and described a series of interesting experiments which he had conducted. By means of specimens and photographs he was able to demonstrate the force developed by a bullet of high velocity on striking fluid media.

Skiagraphy of the Femur.—Dr. IRVINE FORTESCUE gave a description of the difficulties met with in skiagraphy of the femur, and showed a number of drawings from skiagraphs illustrating apparent deformities of the caput and cervix femoris due to malposition of the focus tube.

Exhibits.—Dr. SCOTT RIDDELL showed Skiagraphs of Tuberculous Disease of the Os Calcis, of Fracture of the External Condyle of the Femur, and of Fracture of the Patella a week after operation. He also exhibited a Movable Cartilage removed from the knee-joint, and a Tuberculous Os Calcis removed in a recent Wladimiroff-Mikulicz resection.

THE *Normandie Médicale* states that a recent competition for the post of Prosector in the Medical School of Rouen resulted in the nomination of Mdlle. Robineau, *interne* of the hospitals.

OBITUARY.

ALFREDO ANTUNES KANTHACK, M.D., F.R.C.P.Lond.,

Professor of Pathology in the University of Cambridge.

Alfredo Antunes Kanthack, whose death at Cambridge was announced in the British Medical Journal of December 24th, was the second son of Emilio Kanthack, sometime British Consul at Pará, Brazil.

After the work entailed by the Long Vacation classes in Cambridge, and suffering no doubt from the earlier effects of the disease which carried him off, he found himself so exhausted that he took what was for him an unusually long holiday of some weeks. On his return to Cambridge at the beginning of October, he expressed himself as feeling much benefited. About the middle of October, however, he became jaundiced, and was seized with a severe attack of abdominal pain. On examination, a mass was felt in the abdomen, and though at first there was some improvement both in the local and general condition, it was soon evident that he was suffering from some malignant growth. He rapidly became weaker, and died on December 21st at the early age of 35.



Born at Bahia in Brazil on March 4th, 1863, he came with his family to Europe in 1869. The years 1871-81 were spent in Germany at school, first at Hamburg and afterwards in the Gymnasia at Wandsbeck, Lüneburg, and Gütersloh.

In 1881 he came to England, and for a few months went to school at the Liverpool College. At school, up to his 15th year, he seems to have been rather a backward boy, and, though after that age he developed very rapidly, it was not till he left school that he began to show the immense capacity for acquiring the mastery of any subject that he took up which so distinguished him in later years.

In 1882 he entered University College, Liverpool, and after matriculation at London University took in succession the B.A. (1884), the Intermediate M.B. (1885), B.Sc. (1886), in every case with honours. In 1887 he came to London, and after entering St. Bartholomew's Hospital obtained the double qualification of M.R.C.S. and L.R.C.P. In 1888 he took the F.R.C.S., as well as the M.B. and B.S. Lond., with honours in all subjects and the Gold Medal for Obstetrics.

The year 1889 he spent in Berlin, and there, working under Virchow, Koch, and Krause, he added to his reputation as an able and indefatigable student a character for accurate observation and original thought in the field of research. His work in *Virchow's Archives*, on the Histology of the Larynx, published at this time, led to a controversy in Berlin from which he emerged victorious. Without neglecting his clinical work, for that Virchow would not allow, he devoted himself chiefly to pathology and bacteriology, laying the foundation of his wide knowledge of this subject, which he afterwards did so much to advance. Here, too, he made many friends, both among his teachers and his fellow-workers, and nowhere will his loss be more truly mourned than in Berlin nor by anyone more than by his old master. Professor Virchow, writing on December 23rd, paid this last tribute to the memory of his distinguished pupil: "I am deeply distressed to hear of the sudden death of my faithful friend Kanthack, whom I so recently saw when I was in England. I now bid him a last farewell. May English medicine never lack such men." From Berlin he returned in 1890 to serve at St. Bartholomew's Hospital as Obstetric Resident under the late Dr. Matthews Duncan.

Whilst still a Resident Dr. Kanthack was one of the Commissioners (the others being the late Dr. Beaven Rake and Dr. Buckmaster) appointed jointly by the Royal College of Physicians, the Royal College of Surgeons, and the Executive Committee of the National Leprosy Fund to inquire into and report on the extent to which leprosy prevailed in India, its pathology and treatment, and to suggest measures for dealing with leprous subjects. The report was on many points of a negative character. The most important conclusions were: (1) That there were some grounds for believing that a gradual decrease in the number of lepers was taking place; (2) That direct contagion was at the most a very small factor in causing the spread of leprosy; and (3) that compulsory segregation of lepers was not advisable. A special committee appointed to consider the report refused, with some exceptions, to accept these conclusions, which were directly opposed to many of the alarmist reports current in England at the time that the National Leprosy Fund was started. The Commissioners' conclusions, however, were endorsed by the medical members of the Executive Committee, and were in accordance with the views held by the Indian Government.

On his return from India in 1891 Dr. Kanthack was appointed John Lucas Walker Student at Cambridge, and he was enabled to resume his research work. During his tenure of office he published several papers dealing directly or indirectly with the question of immunity, the most important of which, written in conjunction with Mr. Hardy, appears in the *Proceedings of the Royal Society* vol. lii. Coming at a time when the purely phagocytic theory of Metchnikoff was beginning to be questioned, and the supporters of the humoral theory were in their turn beginning to claim more than their share, it demonstrated the impossibility of making either theory explain all the facts, and pointed out that neither theory, even if proved, would bring us any nearer the true understanding of immunity.

While at Cambridge he also published a paper on Mycetoma, proving, what Carter had long before suggested, that the disease is parasitic in nature, and that the parasite is closely allied to, if not identical with, actinomyces.

In 1892 he left Cambridge to go to Liverpool with the idea of practising as a physician. He held during his residence the post of medical tutor at the Royal Infirmary and was appointed Demonstrator of Bacteriology, a post especially created for him. The offer of the Directorship of the Pathological Department in the school and hospital brought him back to St. Bartholomew's Hospital. He remained there till

he was appointed Professor of Pathology at Cambridge in 1897. The Lectureship on Pathology, the Lectureship on Bacteriology, the Curatorship of the Museum were all intrusted to his hands. In addition the clinical material, which had been almost exclusively examined in the wards, came increasingly to his department till the number of specimens reached many hundreds in the course of a year. As the value of his teaching became patent he was met with requests for new classes in special subjects, and but for the assistance given him by his own pupils his work would soon have grown beyond his capacity. Still he found time to prepare and read short papers, many of great value, at the Pathological Society's meetings, where he was a regular attendant.

In 1896, during the illness of the late Professor Roy, he was appointed as deputy, but still continued at St. Bartholomew's, travelling backwards and forwards. In the spring of 1897 he left St. Bartholomew's to reside in Cambridge, and in the autumn of that year, after the death of Professor Roy, he was appointed Professor. His friends felt that his going there, while giving him full scope for the exercise of his powers of organisation and of teaching, would at the same time relieve him from the stress of too much routine work, and would give a greater amount of leisure for work of his own.

The report of the investigation which, with Durham and Blandford, he has been conducting on the tsetse fly disease was published during his last illness, and although no method of curing or preventing the disease has been discovered, yet the ground has been cleared for further investigation by the elucidation of many new points in connection with the susceptibility of various animals and the duration of infectivity of the material after the death of the host.

His last work, published in conjunction with Dr. Sladen, was a report of some experiments, afterwards to be repeated on a larger scale, made with a view to discover the percentage of samples of milk infected with tuberculous material at the moment of delivery to the consumer. Besides the papers mentioned, he has since 1892 contributed papers to the *Journal of Anatomy*, the *Journal of Physiology*, as well as to the British Medical Journal.

As a boy Kanthack was rather weakly, and till he came to England his only recreation was swimming. Once he came to this country he threw himself with zest into outdoor games. At football he was much above the average, and nowhere was he more popular than on the football field, when he always played for his side and never to the gallery. When he gave up playing he still contrived to see a good game. He hardly ever missed a university contest, whether cricket, football, or athletic sports.

Although his teaching attracted every class of men, it was doubtless his love of field sports that brought him in the first instance into touch with many of his most devoted pupils. His influence with younger men was remarkable, and he seemed able to get work creditable to both master and pupil out of the most unpromising material. His counsel was sought by many who were acquainted with him only through his work, and he had correspondents in every part of the globe attracted by the many-sided nature of his pathological knowledge.

He had an almost complete knowledge of the literature of his subject, and this combined with a well-developed critical faculty and a personal influence all his own, marked him out as the man fitted above others to direct the working of a laboratory, and to raise up in Cambridge a school of pathology not unworthy to rank with those of its sister sciences.

Removed from our midst almost at the outset of a career in which by his performances he had already assured for himself a foremost place, the loss to pathology will be by many at first forgotten in the loss of a tried and valued friend.

Dr. Kanthack married in 1895 Lucie, the daughter of Mr. F. Henstock, of Liverpool, who survives him.

The funeral service took place in the Chapel of King's College, of which Prof. Kanthack was a Fellow, on Christmas Eve, and the interment at the Histon Road Cemetery. The officiating clergy were the Rev. A. Austen Leigh and the Rev. T. J. Puckle, of the parish of St. Luke's. The coffin was covered with wreaths, sent, among others, by the staff and the Medical School of St. Bartholomew's Hospital, the students of the London Hospital, the staffs of the Pathological and Physical Laboratories, Cambridge, and the members of St. John's College Combination Room. The heads of colleges present were: The Master of Christ's (Dr. Peile), the Master of Emmanuel (Mr. W. Chawner), the Master of Jesus (Rev. Dr. Morgan), the Master of St. John's (Rev. Dr. Taylor), the Master of Selwyn (Rev. Professor Kirkpatrick, D.D.), and the Master of Trinity (Rev. Dr. Butler); and among others who attended were: Professor R. C. Jebb, M.P., Professor Sir George Stokes, Professor Alexander Macalister, Professor Clifford Allbutt, Professor Cowell, Professor J. J. Thomson, Professor Liveing, Professor Marshall Ward, Professor Ridgeway, the Public Orator (Dr. Sandys), Dr. Donald MacAlister, Dr. Waraker, Dr. Routh, Dr. Horton Smith, Dr. Dalton, Dr. Langley, Sir Robert Ball, and the Vice-Provost and Bursar of King's College. The chief mourners were: Mrs. A. A. Kanthack, Mr. R. Kanthack, Miss Kanthack, Major F. T. Henstock, Miss Parnell, Dr. Laurence Humphry, and Dr. Drysdale.

An old pupil writes: The death of Professor Kanthack must have come as a very painful surprise to many of his old pupils, as it certainly did to me. How hard it is to realise that this young and brilliant scientist is gone for ever, and to those who have seen and heard him and who had marked his zeal and constant devotion to duty, and who have heard his lucid expositions in conversation in the classroom and in the laboratory, the loss is both keen and personal. He was a master in the art of teaching bacteriology, and his disquisitions on pathology made the dead bones live. He was a draughtsman of the highest order, his illustrations on the blackboard being of surpassing excellence. So modest and unassuming was he that some of his older and more aggressive pupils may have imagined themselves his equal in knowledge; but they soon found out that conceit is but a poor substitute for knowledge, and self-assurance nowhere beside the wisdom of the wise.

DONALD CAMPBELL BLACK, M.D.Glasg., F.F.P.S.G.,

Emeritus Professor of Physiology, Anderson's College, Glasgow.

We regret to have to record the death of Dr. Campbell Black, of Glasgow, who passed away at his residence on December 20th. His death, which was due to failure of the heart, took place rather suddenly. He had been complaining of a cold for a few days, but was able to be out on the day before his death.

Dr. Black was a native of Oban, where he was born some 58 years ago. He studied in Glasgow University. He graduated in 1862, and since then had practised in Glasgow. For some years he was Senior Assistant Physician of the Glasgow Royal Infirmary, and for six years Professor of Physiology in Anderson's College. He was also Surgeon-Captain of the 10th Lanarkshire Rifle Volunteers, and took an active interest in all matters relating to the Highlands. In medical circles Dr. Black was best known as an ardent advocate of medical reform. His independence of thought and action brought him into antagonism with many, but even those who could not agree with him were forced to admit his honesty of purpose. On a recent occasion he was a candidate for a seat as a direct representative on the General Medical Council, but unsuccessfully. He made several contributions to medical literature. Only a few weeks ago his numerous friends in Glasgow presented him with his portrait in oils, in recognition of his personal ability and work. His comparatively early death was quite unexpected.

With much regret we record the death of Ernest Denman Minter, L.R.C.P.Edin., L.M., M.R.C.S.Eng., Staff-Surgeon, R.N., at the Royal Naval Hospital, Plymouth. He was the youngest son of the late John M. Minter, M.D., Inspector-General of Hospitals and Fleets, R.N., Honorary Physician to the Queen, and Surgeon Extraordinary to the Prince of Wales. Staff-Surgeon Minter received his medical education at Guy's Hospital. He became qualified in 1884, and entered the medical service of the navy in February, 1885. He was serving on board the *Victoria*, the flag-ship of Vice-Admiral Sir George Tryon, K.C.B., Commander-in-Chief of the Mediterranean Squadron, when that vessel was sunk off Tripoli, June 27th, 1893, after collision with H.M.S. *Camperdown*, and the admiral, 21 officers, and 350 men were drowned. Surgeon Minter was appointed to the *Rupert* in December, 1895, and was promoted to the rank of Staff-Surgeon, February, 1897.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1898.

Subscriptions to the Association for 1898 became due on January 1st; and notice is hereby given, in accordance with By-law 5, that Branch Secretaries' subscription accounts close on October 31st, and all unpaid subscriptions must be forwarded after that date to the General Secretary, 429, Strand, London. Post-office orders should be made payable to the General Post Office, London.

British Medical Journal.

SATURDAY, DECEMBER 31ST, 1898.

LORD IVEAGH'S GIFTS.

The magnificent gift of a quarter of a million sterling, which Lord Iveagh has made to the Jenner Institute of Preventive Medicine, is a proof at once of the liberality and of the enlightened humanity of the donor. Every man of broad sympathies who stops to consider the evils—the poverty, the moral and physical degeneration, the actual crime and disease—which he sees around him, and especially in great cities, must be moved with the desire to find a remedy. The sentiment of pity will stir him to help the individual, and in the past benevolence has usually found its expression in schemes of charity, many of which survive in usefulness to the present day. But the more thorough study of social problems, which has been a characteristic of the century now drawing to its close, has led to the apprehension of the fact that charity to the individual, noble and necessary as it is, is no real remedy; that it deals with effects and not with the causes of these effects. We have learnt also that it is very apt to be misapplied, and so to perpetuate the evils which it seeks to alleviate. It has been perceived that disregard of the principles of hygiene begets disease of body and deterioration of the moral fibre, and that these beget poverty and crime. Earlier in the century the problem was attacked, but so far as related to the prevention of disease, in a somewhat empirical way. In more recent years science, following the road discovered by the genius of Pasteur, has shown us the actual causes of many infectious diseases, has demonstrated the conditions favourable to the growth and spread of their living infectious principles, and has provided a solid ground of vantage from which to take measures for their suppression. More than this, again under the inspiration of Pasteur, and largely through his own labours, science has, by the study of immunity, begun to extend the principle of preventive inoculation, for the first conception and application of which the world is indebted to Jenner, so as to afford a method for the protection of the individual from disease, while at the same time by the discovery of antitoxins it provides means for his cure when attacked.

Within the last fifteen or twenty years the growth of bacteriology has worked a profound change in the way in which the infections are regarded, and has introduced a precision previously wanting into the methods by which they are investigated. A new science requires new appliances and means for its study and extension. This fact was early recognised by the French, who never displayed truer patriotism than in establishing the Pasteur Institute in Paris, where Pasteur himself conducted his latest researches, where his pupils continue the work which he began, and from which have gone out not only numberless contributions to knowledge, but also, with great liberality, the actual material for preventive inoculation and for antitoxin treatment.

Other countries, while acknowledging their debt to France, and sensible of the generosity which has always distinguished the Pasteur Institute, yet felt it to be their duty to establish similar institutions. In July, 1891, the British Institute of Preventive Medicine was founded to investigate the means of preventing and curing the infective diseases of men and animals, to provide a place where such researches may be carried on, to afford instruction in preventive medicine, to prepare and to supply such special protective and curative material as may be found of value, as well as to provide the means to carry out investigations in all branches of bacteriology, including those of practical importance to chemists, agriculturists, and manufacturers. Under the direction of Lord Lister, the Chairman of its Council, the Institute has made considerable progress. Much excellent work has been done in its laboratories, and it has recently entered into possession of new buildings specially adapted to its purposes which have been erected at Chelsea.

As we were able to announce last week, the Jenner Memorial Committee has handed over the funds which it has collected to the Institute, which will in future bear the name of The Jenner Institute of Preventive Medicine. In spite of this, however, the Institute remained hampered by want of funds, and the original plan of the building has only been partially completed; it is this institution which Lord Iveagh has resolved to help in its great work by presenting to it £250,000. In future the control and management of the Institute will be in the hands of a Board of seven trustees, three to be chosen by the present Council of the Institute, three by the donor, and one by the Royal Society. Lord Iveagh further proposes that part of the fund which he has given shall be appropriated to the enlargement of the buildings of the Institute at Chelsea, part to increasing the inadequate salaries of the Director and other members of the scientific staff, part to the expenses of administration and maintenance, and the remainder chiefly to found fellowships and studentships, tenable for a limited period, for research either in the laboratories of the Institute, or in centres of outbreaks of disease whether at home or abroad. As Lord Lister (the Chairman), and Sir Henry Roscoe (the Treasurer of the Institute) observe in the letter in which they make public Lord Iveagh's offer, the opportunities in the United Kingdom for research directed to the prevention of disease are not equal to those possessed by foreign nations. All who are acquainted with the present position of the sciences upon which Preventive Medicine rests will agree with them in expressing the opinion that Lord Iveagh deserves the gratitude of the nation for thus munificently providing for the cultivation in the British dominions of biology and allied sciences for the good of mankind in an institution which henceforth will compare favourably with any similar establishment in other parts

of the world. In making his gift he has been actuated by the highest motives—by a desire to benefit humanity. He has chosen this particular object because he is convinced that humanity may best be benefited by action based on knowledge acquired as the result of scientific research of a really high order; and further because he perceives that the application of scientific knowledge already acquired, such as, for instance, inoculation against rabies, needs to be conducted in a central institution, and under skilled direction. It is expected that of the quarter of a million about £200,000 will be available for endowment, which at 3 per cent. would yield an income of £6,000 a year, a sum by no means too large to defray the cost of the maintenance of the enlarged building, and the salaries of the scientific staff, fellows, scholars, and research students. Lord Iveagh's gift will, however, put the Institute on a permanent footing, and it is hoped that this will induce other benefactors to endow scholarships.

Another offer which Lord Iveagh has made also involves a gift of a quarter of a million, to be devoted to a comprehensive scheme for the improvement of an insanitary area in the heart of the city of Dublin, forming the centre portion of the district extending from St. Patrick's Cathedral to Christ Church Cathedral. The Corporation are about to deal with a portion of this area. Last year Lord Ardilaun, Lord Iveagh, and Mr. James Talbot Power obtained an Act of Parliament to convert the southern portion of this district into a public garden. Lord Iveagh now intends to promote a Bill to enable him at his own expense to acquire and clear the remaining portion of the site, and to utilise it, after widening and improving adjacent streets, for the erection of workmen's dwellings, lodging houses for single men, shops, etc., and of certain recreative buildings, such as a concert hall, reading and lecture rooms, a swimming bath, gymnasium, etc. The Corporation of Dublin have conveyed their heartiest thanks to Lord Iveagh, and have expressed their belief that the scheme should prove most beneficial to the interests of their city, and particularly to the inhabitants of the congested districts in the neighbourhood of the area affected by it.

This local scheme is a fitting pendant to the great national benefaction which Lord Iveagh has made to the Jenner Institute. The one shows him to be a man of wise benevolence, the other proves him to be possessed of an enlightened appreciation of the means which science is placing in our hands for the fight against disease by gathering knowledge of the mode in which it is propagated—knowledge which, in spite of the outcry raised by ignorance and fanaticism, will undoubtedly operate for the good of man by the elevation alike of his physical and his moral nature.

VISCERAL NEUROSES.

AFFECTIONS of the nervous system are apt to supervene in the later stages of many visceral diseases. The classical example of the condition is uræmia, but cirrhosis of the liver frequently ends in delirium or coma, and heart disease has been specially connected by Dr. Mickle with the melancholic type of insanity. In disease of the thyroid gland, nervous symptoms are prominent throughout, and constipation together with what, for want of a better name, we are obliged to call biliousness, are well known for the languor, sleepiness, and misery which they produce.

In all these cases the problem of causation is of great interest. The symptoms of uræmia have hitherto been ascribed to the circulation of waste products in the blood from defective excretion by the kidneys. Those of myxœdema are due to loss or alteration of the constituent which the thyroid body contributes to the blood. The langour and melancholy of constipation have been supposed to be caused by a poison absorbed from the intestine. The three, therefore, are types of different ways in which the body may be affected. In the first it is poisoned by its own refuse, in the second by its failure to form its proper juices, and in the third by a product of putrefaction which is derived from without.

It is perhaps not surprising that although in the case of uræmia this theory has held the ground for at least fifty years, no one has yet been able to determine with any certainty the poison or poisons concerned. Of late years an attempt has been made by Bouchard and his scholars to specify more precisely the nature of uræmia by examining the toxic effects of urine when injected into the blood of animals. Their hypothesis is that what causes uræmia is what healthy people excrete in the urine, and they state that the experimental injection of this fluid reveals seven separate poisons with various toxic activities, which reproduce the clinical symptoms seen in uræmia. Much of this work, however, is unconvincing, and many of the experiments have in other hands produced different results.

Little can be considered established beyond the fact previously known that the urine is poisonous when so injected, and that its effect is chiefly due to the salts of potassium which it contains. Nevertheless, their statements have given a considerable impulse to the hypothesis of specific auto-intoxication.

Auto-intoxication is a word loosely used to cover all the three modes of poisoning mentioned above, and others as well. Its want of precision both renders it a convenience to pathologists in search of a theory, and prevents its playing a part of much real importance, for the more facts a term covers the less is it possible to define and specify it. Nevertheless for the moment it has a vogue, and its chief promise lies in the direction of distinguishing the poisons special to the various organs, and by consequence the group of clinical symptoms proper to each. This has given an impulse to the same effort from the clinical side, and attempts have been made to define and distinguish nervous disorders due to the kidneys, the liver, and the generative organs.

No one will deny that in any disease of these organs nervous symptoms are possible, are even common, or that the symptoms depend upon the disease. But the more carefully we examine the clinical conditions the more difficult does it appear to be to go beyond such a simple statement as that, for the nervous symptoms which may occur in these cases do not follow types but are of a great variety, and even the best known of the group, uræmia, embraces so many forms that it is, on the one hand, almost easier to imagine it due to a general malnutrition than to a specific poison or poisons; and, on the other, each separate symptom—mania, convulsion, coma,

insomnia, dyspnœa, or paralysis—occurs from causes which have no renal connection.

If this be the case with uræmia, still more is it necessary to be cautious when hepatic insanity is put before us as a special type. There is, indeed, in the case of the liver an inevitable complication with the direct effect of alcohol upon the nervous system, and it becomes increasingly difficult to ascribe nervous symptoms to the special action of a diseased organ, when we know that alcohol is capable of affecting both the nervous system and the viscus too. Dr. Cullerre, in an able article,[1] argues that insanity with marked liver disease, which may even be supposed to have been brought on by the disease, does not differ from the ordinary types; that in the insane the supervention of liver disease does not modify the type, and that therefore it is less prudent to look upon the visceral disorder as an exciting cause, than to suppose that its effect upon nutrition predisposes to nervous degeneration.

It is not long since certain signs of senile degeneration were ascribed to the absence of a hypothetical internal secretion of the testicle. Few would now be found to maintain that theory or to prescribe the injection of testicular fluid on that argument, though, like most of the proteids which have been extracted from various tissues in the last few years, it has at times a considerably stimulating effect. But psychical disorders have been so long and so generally referred in women to the organs of degeneration that here, if anywhere, we should expect to find a neurotic type. Yet though these patients are extremely prone to neurosis it does not appear to follow any special or separate form; it is as protean here as in other relations—there is, in fact, no special ovarian insanity.

We can best appreciate how weak is the foundation in these cases for a theory of specific poisoning, by contrasting them with the case of myxœdema, where a known and distinct secretion is concerned. The nervous changes proper to this disease are both peculiar and constant, and offer none of the varying and irregular characters of the neuroses ascribed to the other viscera. It is probable, therefore, that in these latter the immediate causes of the nervous symptoms are themselves too many in number and too loosely connected with the visceral functions to produce any distinct group of symptoms in each case; but this does not preclude us from believing—what, indeed, most persons have hitherto believed—that disease of a gland such as the liver or the kidney will give rise to many impurities in the circulation, some of which may, perhaps, directly affect nervous tissues, but whose general effect upon nutrition is undoubtedly disastrous.

PROFESSOR VIRCHOW ON THE VALUE OF EXPERIMENT IN PATHOLOGY.

Professor Virchow has just republished (Berlin: Aug. Hirschwald) his famous general address to the International Medical Congress held in London in 1881. He thereby confers an additional obligation upon all lovers of scientific truth, and gives renewed pleasure to the numerous body of admirers of his own intellectual vigour and rectitude. The lecture itself occupies a firm place in the minds of all who have devoted any attention to the steady march of biological science. So sober, so compact, and yet so convincing a statement of the claims of the experimental method has probably never before or since appeared. The perfect balance of argument and diction, the simple directness of the phraseology, and the wealth of historical illustration are—and higher praise cannot be given—worthy of the illustrious author, who advances his arguments with an openmindedness and a temperateness which, if wasted upon his adversaries, must at least command the respect of all thinking men and women. The present reprint is enriched by an appendix arising out of Professor Virchow's recent visit to England. He remarks that the antivivisectionist movement, while abating in England, has during the intervening seventeen years assumed a truly maniacal form in Continental countries previously believed to be inhabited by an enlightened and unprejudiced people. Nevertheless, the sphere of experiment upon living animals has at the same time enormously extended. This extension is the inevitable concomitant of the progress of bacteriological knowledge, for the living animal is the sole test of the toxicity of microorganisms and their products. Hence the method of direct experiment is not only necessary, but in many cases affords the sole and indispensable means of determining the nature of microbic diseases. It has led also to the successful study of antitoxins and has proved in consequence the foundation of serum-therapeutics. That the public is beginning to realise the practical value of experimental physiology and pathology is shown, as Professor Virchow points out, by the enthusiasm evinced by the whole population of Liverpool on the occasion of the opening of the Thompson-Yates Laboratory. And, as he does not fail to remark, the fact which must cause most consternation among the enemies of science is that the munificent and pious founder whose name is commemorated in this great institution is a clergyman. For these reasons he is glad to read his old lecture again; it honestly seems to him a good one, and he thinks it his duty once more to bring it before the world. "It may be," he says, "that no antivivisectionist enemy will be convinced by it, but I am not without hope that it may immunise many who are healthy. Let it go forth and preach to the unbelievers!" And all will unite in hoping that its mission may not be in vain.

[1] *Revue Mentale*, 1898, vol. vi., p. 531.

POST-MORTEM EXAMINATIONS.

Most of our readers will have noticed in the daily papers of last week comments and letters respecting a charge of perjury made by Mr. Braxton Hicks, coroner for the South-Western District and Surrey, against a medical practitioner who gave evidence at a recent inquest, and stated on oath that he had made a *post-mortem* examination on a child, and that he had examined all the various organs of the body, which led him to the conclusion that the death occurred from congestion of the brain and convulsions. The coroner having formed the opinion that no adequate *post-mortem* examination had been made, adjourned the inquiry, and requested the divisional surgeon of police and two other practitioners to examine the body, which was done, and the evidence given at the adjourned inquest resulted in confirmation of the belief that no adequate examination of the organs of the body had previously taken place, and the jury found that the cause of the death was pleuro-pneumonia. At the termination of the inquest the coroner charged the practitioner in question with perjury, and he subsequently appeared before Mr. Plowden at the South-Western Police-court, one of the solicitors from the Treasury appearing to prosecute. For some reason or another the magistrate seems to have quite misunderstood the gravity of the charge, and to have regarded the matter as a question of disputed opinions between medical witnesses; and after making some undignified and inaccurate observations concerning the proceedings at the coroner's court, and showing marked want of courtesy to the coroner himself, he dismissed the case, and the accused was discharged. The whole purport of the

proceedings lay in the fact that a medical practitioner stated on oath before the coroner and jury that he had made a *post-mortem* examination of the various organs of the body, whereas the coroner came to the conclusion that he had failed to do so. If the police-court failed to grasp the character and importance of the charge, or to perceive the prejudicial effect, as regards the safety of public life, which the treatment of such cases with levity is likely to produce, we on the other hand enter our protest against the magisterial method of dealing with so grave and important a matter. Upon the results of *post-mortem* examinations often depends the verdict of juries, which may determine the liberty or the very existence of a fellow human being charged with manslaughter or murder. We can, however, feel assured, from the high standard of uprightness and integrity which prevails in our profession, that this important duty is generally discharged by members of the profession conscientiously and with a due sense of the responsibility which rests on them. When making *post-mortem* examinations, especially for medico-legal purposes, the importance of making the investigation as complete as possible, and of recording the results in writing for future reference, is generally recognised. The order issued by the coroner for these purposes contains general instructions as to what should be done, and directs an examination of all the organs and the viscera of the body, and an analysis of the contents of the stomach if necessary.

SANITATION IN HEALTH RESORTS.

WE have before us the last annual reports of the health officers of Bournemouth, Morecambe, and the Isle of Wight rural district, and find in them much that is of more than local interest. It is always refreshing to read the reports of Dr. Groves to his rural council in the Isle of Wight, and to note the kindly, and withal telling, manner in which he presents his arguments to the council. In his last report he very lucidly lays down the line of argument that the attempt to isolate small-pox near populous centres is inadvisable, and that it is wiser to provide accommodation for all other infectious fevers rather than withhold assent to the latter proposition, because the powers that be decree that from a particular site small-pox cases must be entirely excluded. Dr. Groves further disabuses his council's mind of the fallacy that school closure promotes the spread of disease more than the attendance of healthy and sick in the confined space of class rooms. At Morecambe, Dr. Watterson chronicles the following as one year's work—the adoption of a new scheme of sewerage, the opening of a sanatorium for fever patients, the provision of a small-pox hospital, the inauguration of a system of gratuitous domestic disinfection, and the appointment of an whole-time sanitary inspector. Such progress is highly to be commended, and more is still in prospect. At Bournemouth garden refuse is collected by the Corporation for cremation in the borough destructor, for the purpose of putting an end to the nuisance which has been caused by the system of burning this refuse in private gardens. As a matter of fact, we assume that in many localities, especially in suburban London, the dustmen collect such refuse weekly when clearing the housebins.

UNDERMANNING OF LUNATIC ASYLUMS IN ADELAIDE.

THE tension between the Government of South Australia and the profession in the Colony is responsible for some unhappy results, which were partially disclosed at an inquest recently held at the Parkside Lunatic Asylum. It appears that there are two lunatic asylums—the Parkside Asylum, situated two miles from the city, and the Adelaide Asylum, in the city; for twenty years there had been two medical officers of these asylums. The senior, Dr. Patterson, the Colonial Surgeon, resided in a house at the Adelaide Asylum, in North Terrace, in close proximity to the Adelaide Hospital. Dr. Cleland presided at the Parkside Asylum. About two years ago Dr. Patterson resigned, and of course vacated his house. At that time the Government were unable to find a suitable residence for Dr. Leith Napier. Dr Cleland was then appointed Colonial Surgeon and Senior Medical Officer to the Adelaide Asylum, but he was still to reside at Parkside; whilst Dr. Napier was appointed Assistant Medical Officer to the Adelaide Asylum, and was installed in Dr. Patterson's house. Dr. Napier is Gynæcologist to the General Hospital, Adelaide, is the Senior Surgeon in charge of the surgical wards, and is allowed private practice. The amount of time, therefore, that he can devote to lunacy work cannot apparently be large. Dr. Cleland made a protest at an inquest against the amount of work thrown on his shoulders. The inquest was held by the city coroner (Dr. Whittell) to inquire into the cause of death of John Flanagan, which occurred at the Parkside Asylum on November 13th. The deceased had been an inmate of the asylum for many years, and had previously been a labourer. He was a quiet patient, and had lately been entrusted with the oversight of a number of boys. He seemed as well as usual about an hour before he was found hanging in the store. He was cut down immediately but was quite dead. Dr. Cleland was sent for but did not arrive until an hour and a-half after the event. At the inquest he deposed that he was the only medical officer of that asylum, and, in addition to his duties there, he had the oversight of the North Terrace Asylum, and was Colonial Surgeon, a position which involved medical oversight of country hospitals. There were 706 patients in the Parkside institution, and he did not know of any other asylum in the world where one medical man had the care of so many patients. He was not at home when the death occurred, but immediately on his return he went to the room where the body was. Everything possible had been done for the man. The coroner, in addressing the jury, said that the number of patients was too great for one man. He sympathised with the policy of economy, but if the Government could see their way to afford assistance to Dr. Cleland, he was sure it would be to the benefit of the institution, and would relieve Dr. Cleland's overstrain. The jury also expressed the same views in a rider attached to their verdict. It would appear that something like a 1,000 lunatics are practically under the charge of one medical officer, which is an indefensible state of things, and one which the Government of South Australia ought to remedy without delay in the interests of the unfortunate lunatics under their care.

THE "KNOCK-OUT" BLOW

AT the Headmasters' Conference at Shrewsbury on December 23rd, the Rev. Dr. Wilson, of Lancing, moved "that the Committee be requested to communicate with the authorities in the Aldershot Gymnasium with a view to modifying, in the interests of school physical training, the rules of the boxing contests at the public schools' gymnastic competitions." He held that boxing should be taught so that boys might learn how to defend themselves; but, from what he had seen at Aldershot, the hits seemed to count for more than the defence, and it was not the kind of boxing contest suited for boys. The resolution was carried unanimously, after a speech by the Rev. the Hon. E. Lyttelton, of Haileybury, seconding Dr. Wilson. The meeting really condemned the "knock-out blow," which was meant to incapacitate the competitor. Delivered not straight from the shoulder, but sideways and on the tip of the chin, it produced unconsciousness, and, if given with a great deal of force, sometimes inflicted a serious injury on the base of the skull. A small boy at Haileybury was boxing with a professional—the latter, of course,

merely playing; but the youngster struck him on the tip of the chin, so that he fell on the ground and was incapacitated for a second or two. From the remarks of the headmasters we see that the schoolmaster is indeed abroad, after Lord Brougham's original application of that expression. The allusion to damage to the base of the skull and the clinical record of the effect of a blow delivered by a small boy on the chin of a powerful trained athlete, show that the pedagogues knew what they were talking about. A fall on the chin may drive one condyle of the lower jaw into the skull, so that we cannot wonder if a smart tap on the chin causes a fracture of the base passing from the glenoid fossa in any direction in the track of very important arteries, sinuses, and nerves. At the least, concussion of the brain must ensue when a vigorous and dexterous youth lands his fist well against the chin of his opponent. The force may be simultaneously transmitted to both condyles, so that the base of the brain receives a shock to the right and to the left. In fact, the "incapacitation" at which the striker aims is due to concussion. This injury is bad enough, but worse may be inflicted by the blow. Clearly schoolmasters cannot tolerate the concussion of their boys' brains even by a recognised blow in boxing.

GREEN STOOLS IN ENTERIC FEVER.

The occurrence of green stools in enteric fever which has recently given rise to some discussion in the British Medical Journal, is dealt with in an article in the *St. Bartholomew's Hospital Reports*, vol. 33, by Drs. A. E. Garrod and Drysdale, and the late Professor Kanthack. They describe the character of this kind of stool in 3 cases of enteric fever. The stools consisted of particles resembling chopped parsley suspended in a liquid which on filtration was turbid but almost colourless. They were acid in reaction and devoid of offensive odour. Chemical examination of the solid particles showed the absence of urobilin or its chromogen, to which the normal colour of stools is due, and the presence of biliverdin; and this the authors believe to be the colouring matter present in all green typhoid stools. The biliverdin probably exists in combination, since it can only be extracted by the use of acid alcohol, while free biliverdin is readily soluble in neutral alcohol. This view as to the causation of the green colour was held by the older writers, but lately Lesage and others have asserted that the pigment is frequently of bacterial origin. In consequence of these statements the authors made cultures of organisms from these stools, and obtained as the predominant organism the bacterium coli commune or some member of an allied group. Proteus vulgaris was found in 2 cases, but no organism capable of forming a green pigment when grown in artificial media. Presence of unchanged bile pigment in the stools may be due to hastened peristalsis associated with extensive ulceration or catarrh about the lower end of the ileum and the colon, that is, at that portion of the bowel where the normal conversion process of the bile pigment into urobilin takes place. Possibly, however, bacterial action may be concerned in some way or other with the absence of the usual processes of transformation of the biliverdin into urobilin.

VENTILATION OF TUNNELS AND BUILDINGS.

A paper on this subject was recently read by Mr. Francis Fox at a meeting of the Institute of Civil Engineers. He laid it down as a fundamental proposition that if the amount of carbon dioxide in the air of a railway tunnel did not exceed 20 parts in 10,000 the ventilation might be deemed satisfactory. He next gave a formula by which to find the volume of air which must be introduced into a tunnel per minute, and remarked that the ventilation of the Severn and Mersey tunnels had been determined by this rule, and had been declared satisfactory by a departmental Committee of the Board of Trade. In the Metropolitan Railway tunnels the amount of carbon dioxide in the air was sometimes as much as 86 parts per 10,000. The Mont Cenis tunnel, which is eight and a-half miles long, is at a higher altitude at its centre than at either end; this is inimical to good ventilation, and at times great difficulty is experienced in carrying on the traffic. The men working in the tunnel are subjected to great discomfort, and the corrosion of the rails is excessive, about 300 tons having to be relaid every year. The St. Gothard tunnel, 9½ miles in length, is nearly level from end to end, so that natural ventilation almost suffices. Experiments made at the Pracchia tunnel, on the line between Florence and Bologna, showed that without ventilation the tunnel was filled with dense smoke, that the temperature was 107° F., with 97 per cent. of moisture, or nearly complete saturation; but under the Saccardo system of ventilation, by which 210,000 cubic feet of air per minute were passed through the tunnel, the thermometer indicated 80° F. (the temperature of the external air), and the moisture was normal. With regard to the ventilation of buildings, Mr. Fox animadverted on the inconsistency of keeping houses clean, streets swept, and sewers flushed to preserve the air pure, while allowing it to become absolutely foul for want of proper ventilation. Air passed through human lungs had been well designated "air sewage." It was highly poisonous, and the breathing of it over and over again was fraught with the gravest consequences to health. In Great Britain 70,000 deaths occurred annually from tuberculous disease, nearly all of which could be saved were the value of fresh air both understood by the community. Carbon-dioxide in the air of rooms should not exceed 10 parts per 10,000. Ventilation of 20 cubic feet a head a minute was sufficient for ordinary purposes. The impurity of air in schools and dwelling houses was often greater than that in sewers. The air in a room might be quite cold and very foul: whilst it might be warm and yet perfectly fresh. To avoid draught the air should enter through a large number of small orifices so as to thoroughly diffuse the current, but gratings were apt to diminish the volume of air passing between them. Probably no large building could be successfully ventilated without mechanical force furnished by steam, electricity, or other such agency, since automatic extractors not infrequently become inlets, thus reversing the whole system. The inlets should be Tobin or similar tubes, about 5 feet above the floor. It was most desirable—and in this we cordially endorse the views of the author—that the public should be educated to appreciate the value and merits of fresh air.

THE GRIEVANCES OF IRISH POOR-LAW MEDICAL OFFICERS.

A meeting of the Poor-law medical officers of the Kells Union was held in Kells, county Meath, on December 7th, to consider and, if possible, devise a remedy for the present deplorable condition of the Poor-law medical service in Ireland. The Chairman delivered an address in which he said that when the Poor-law system was originated by some charitably-disposed persons, the doctors accepted paltry salaries so as to aid the charity. People were starving all over the country, and typhus fever was raging, and for these poor people the system was originated. The workhouses were never meant to be hospitals; nor was the dispensary doctor ever expected to attend on a ticket any one except a pauper. Now, the bulk of the patients were not paupers at all except in spirit, and those who issued tickets to such persons were thereby unnecessarily burdening the rates as well as defrauding the doctors of their legitimate fees. They were also doing a great injustice to the really poor, who were properly entitled to gratuitous medical aid. No persons should be em-

powered to issue tickets who might use them for private or business purposes. The system required immediate revision, as it was now so much abused that one could not be surprised to see any resident in a district applying for free relief. Committees were increasingly unsympathetic, and considered the medical officers sufficiently paid, although their work increased alarmingly, and their private practices decreased. Their professional attainments were valued at *nil*. They were on duty twenty-four hours every day all the year round, including Sundays, and they were allowed no holidays whatever. Was it any wonder, then, if their health prematurely broke down? One would think that such hardworked officials would be well pensioned, but what did one find? They got no pension at all unless the guardians pleased, and if a pension was granted it was not as large as a police constable's. There was no body of men which so fully devoted its whole time to any service as the Irish Poor-law medical officers did to the Poor-law service. It was not possible to indicate any practitioner in the country districts in Ireland who could afford to retire on the amount amassed from his attendance on private patients, independent of a Poor-law pension. With reference to the abuse of the medical relief tickets, a remedy would be that a committee should be formed in each dispensary district at the beginning of every year to consider applications from the resident paupers of the district as to their eligibility for receiving free medical attendance, drugs, appliances, etc., and that the doctor should have the right to attend the meeting. A list of those found eligible should be formed, and tickets issued only to those on this list for the ensuing year, with the exception of new comers. The doctors practically worked the whole Poor-law system, and they should be suitably remunerated. A prolonged discussion took place upon the various points brought forward by the Chairman, and finally it was unanimously agreed that a deputation from the medical officers of the Kells Union should wait upon the senior medical officer of each neighbouring union, and ask him to call a meeting of the medical officers of his union, and that they in turn should send deputations to the neighbouring unions further on. Then a meeting of the medical officers of the whole county should be held at a central place, and they should endeavour to send a deputation from the county meeting to wait upon the members of Parliament for the county, and lay before them the grievances of the Poor-law medical officers.

MEASLES AND RUBELLA.

VERY extensive epidemics of infectious diseases have recently occurred in the Australian colonies and New Zealand, and from a study of them some questions of interest in regard to measles and rubella present themselves. First with regard to measles. While no age affords protection against this disease, it is especially a disease of childhood, and the great preponderance of cases in children is stated to be due to the fact that in civilised countries few individuals escape infection in childhood. In 1893 there was an extensive epidemic of measles, and during 1898 a still more extensive and severe form of the disease has prevailed; one point of interest in connection with which has been the large proportion of adults who have been affected. In some cases the temperatures have been high and the symptoms severe. In a great many of these cases the patients were stated to have had an attack of measles either in the previous epidemic or in childhood. But in addition to these cases of genuine measles occurring in adults, that is, cases which have presented all the usual catarrhal symptoms, with well-defined measles rash, a number of adult patients have shown what are commonly described as the symptoms of German measles or rubella, that is, very slight febrile movement, a modified measles rash, enlargement of the cervical glands, etc. Another group of cases has also been observed; several children of the same household have all had an attack of genuine measles, and in the course of three or four weeks have had a return of all the symptoms, fresh eruption of the rash, but with more moderate temperature and less catarrh than in the first disease; so that some have been disposed from these characters to regard them as instances of relapses or second attacks. With regard to rubella more particularly, while it has undoubtedly been present along with measles and scarlet fever on the Australian Continent, it appears to have been the chief epidemic disease prevalent in New Zealand, or at any rate in the South Island. Here the cases all presented what may be said to be now regarded as the characters of this disease—a peculiar rash resembling sometimes scarlet fever and sometimes measles, but not so crescentic in outline; absence of catarrh; enlargement of lymphatic glands, especially the cervical; moderate fever, the temperature rarely reaching 103°; mild constitutional symptoms; an incubation period of from fourteen to twenty-one days; and absence of pulmonary or renal complications or sequelæ. An interesting fact bearing on this is reported by Dr. Jackson, of the Brisbane Fever Hospital. He states that cases of measles and rötheln at the beginning of the epidemic were kept together in the same tent, yet, in his experience, no patient suffering from one disease had taken the other. Scarlet fever patients had taken measles, but no patient with measles had taken rötheln, or conversely. From this he concluded that at that time in Brisbane there was only one disease, either measles or rötheln, and he did not consider it "sufficiently proven that so-called rötheln was not second-attack measles." It is generally agreed that an attack of either measles or rubella does not confer any immunity from an attack of the other disease; on the contrary, it appears probable that measles may predispose to rubella. But, according to Dr. Clement Dukes, second attacks of either disease do not occur, and instances of reported second attacks of the same disease are not really so, the difficulty of diagnosis in some cases being very great. In the cases of adults with severe symptoms of true measles, who were reported to have had an attack of measles in infancy, we must suppose that that illness was really rubella, or else that second attacks of measles can occur, as is not, *a priori*, improbable. To say that, if a patient suffering from measles is said to have had measles before, the former attack must have been rubella and not true measles, is simply begging the question. Second attacks of other infectious diseases, such as scarlet fever and small-pox, do occur, and there seems no reason why the same thing should not hold good for measles also. The experience of the Australian physicians, during this last epidemic at any rate, affords evidence of the possibility of second attacks of genuine measles in some cases.

REMOVAL OF THE VERMIFORM APPENDIX.

THIS operation is very familiar to surgeons. The great majority of cases of perityphlitis call for no operative treatment, according to Mr. Treves and many other authorities. The indications for surgical interference are fairly understood, and we hear much of operation with recovery, and also know something of deaths after excision of the appendix. But those who are true surgeons and hold that a successful operation does not always mean a successful case will attach great importance to cases of excision followed by no benefit after convalescence. A discussion on this subject took place at a recent meeting of the Société Médicale des Hopitaux de Paris. Brissaud reported two years since a remarkable case of hysteria; clinical symptoms of inflamed appendix appeared, and the structure was removed. It was found to be distinctly inflamed and sclerosed. All the local symptoms vanished, but immediately hysterical flexion of the right leg set in and has lasted ever since. The symptoms

of appendicitis are clearly magnified by the hysteria, which in turn seems to have played a part in stopping all local pain after operation. Follet related a new case of much interest in many respects quite the opposite to Brissaud's. A healthy lad, aged 17, free from any sign of hysteria, was suddenly attacked with all the characteristic symptoms of "appendicular colic." About five attacks occurred within two months. Follet found that the pain was greatest at McBurney's spot, and there was distinct resistance in the right iliac fossa. The usual operation was performed. The appendix was perfectly free, and there was not a trace of adhesion. Its insertion was invaginated into the cæcum, and the abdominal wound closed without drainage. There was a certain amount of disease in the appendix, as some infiltration was found in the submucous tissue near the cæcum, greatly reducing the calibre of the canal. Had the patient been lost sight of after convalescence, it would doubtless have been said that his severe pains were due to this morbid condition. Very naturally the case would have been quoted as showing how very severe symptoms are caused by trifling disease of the appendix, and some would argue that operative interference is indicated more often than authorities admit. But the case was traced, and six months after the patient left the surgical home, where he underwent the operation, he was seized with symptoms precisely similar to those which had troubled him before operation. They recurred twice in two months. There was, as before, both pain and tenderness in the right iliac fossa. These cases offer much food for reflection, for recovery from an operation and cure of the patient's disorder are not synonymous.

JUBILEE OF THE NORWICH MEDICO-CHIRURGICAL SOCIETY.

The Medico-Chirurgical Society of Norwich has now been in existence fifty years. It was originated in 1848 under the first presidency of Mr. John Greene Crosse, with the name of the Norwich Pathological Society. After some years this was amalgamated with the Norwich Medical Book Society, with the new name of the Norwich Medico-Chirurgical Society, under which title it now exists. The result of this amalgamation was that the members of the medical society became possessed of a large and very valuable library. This being the Jubilee year of the Society, the President (Mr. W. E. Wyllys, of Yarmouth) most hospitably invited its members to a banquet at the Royal Hotel, Norwich, on December 8th, to celebrate the occasion, an invitation which was accepted by seventy-eight gentlemen, including three of its honorary members—namely, Dr. Robert Barnes, Mr. Richard Barwell, and Mr. A. Pearce Gould, of London—and two of the earliest members, Sir Peter Eade and Mr. W. Hanks Day. It may be mentioned that the Norwich Medico-Chirurgical Society has one hundred and thirty-six members, and now includes almost the entire profession of Norfolk, as well as many residents in Suffolk and adjacent districts. Presidents are chosen alternately from Norwich and from outside districts. After the usual loyal toasts the President congratulated those present upon the long-standing usefulness and present great prosperity of the Society; and other speakers spoke of its excellent professional as well as social influences and of the splendid hospitality of its President.

THE TYPHUS FEVER OUTBREAK IN EDINBURGH.

Just when it seemed that the Edinburgh outbreak of typhus fever had been overcome—only 1 new case had been reported in the week ending December 24th, as against 7 in each of the two preceding weeks—it has to be stated that 4 fresh cases were admitted to the City Hospital on Christmas Day and 1 on the day following. Unfortunately, while doubtless they may all be traced to known pre-existing cases, these new ones come from Greenside Row, a hitherto uninfected district of the city. The public health authorities have promptly met this recrudescence, and have put in quarantine a large number of persons who have been in contact with these 5 new patients. Since the beginning of the outbreak, early in October, wellnigh 80 cases have been treated in hospital, and there have been 9 deaths—a low mortality for typhus fever. Besides these, there have been a dozen or more cases undiscovered or specified under some erroneous diagnosis and treated outside hospital. These may have been responsible for 4 or more deaths. On Wednesday morning, December 28th, 22 cases remained under treatment in the City Hospital.

ANOTHER PLAGUE-INFECTED LINER AT PLYMOUTH.

Plymouth was on December 24th again visited by a plague-infected steamship, the ss. *Golconda*, belonging to the British India Company, having on board an officer of the company ill of plague of a mild type. The patient was removed to the floating hospital *Pique*, and all due precautions were observed and carried out under the supervision of Dr. Williams, the port medical officer. The case of plague, it is said, only became known on board after the vessel left Marseilles, but the patient had apparently been out of sorts some time before. On the diagnosis of the disease strict isolation was enforced on the vessel, and seemingly all else were well on arrival at Plymouth. The *Golconda* proceeded later to London. Despite the Christmas season no delay of any moment occurred in pushing the vessel forward at every stage of her channel voyage. A medical inspector of the Local Government Board has watched the matter on behalf of the State.

EPIDEMIC MENINGITIS IN CHICAGO.

There has lately been issued the abstract of a report on a recent appearance of epidemic cerebro-spinal meningitis or cerebro-spinal fever in Chicago, compiled by Dr. William J. Class, the Medical Inspector of the Department of Health of that city. "Cerebro-spinal fever," it must be admitted, is one of those diseases the diagnosis of which is too often a "refuge for the destitute." It is probable that many of the cases so certified are really cases of tuberculous meningitis, or cases of meningitis due to the pneumococcus, or the so-called "cerebral" cases of typhoid fever or other acute infectious diseases. It is believed by those responsible for this report that the true epidemic meningitis, popularly known as "spotted fever," is on the increase, and that the epidemics which have occurred within the last eighteen months or two years in France, in Boston, in California, and elsewhere threaten a general diffusion of the disease, and should arouse the custodians of the public health to increased watchfulness. Notes of 38 cases which were treated in the city hospitals are published in the abstract of the report; of these 25 ended fatally, giving a mortality among the more severe cases, of 65 per cent., but it is estimated that if the numerous cases which were too slight to require admission into the hospitals are taken into consideration, the death-rate would probably not exceed 20 per cent. It is unfortunate that a necropsy was made in only 6 of these 38 cases. Cultures were made from the exudation on the meninges, which showed a micrococci, having all the characters of the diplococcus intracellularis meningitidis, and fluid obtained by lumbar puncture likewise contained meningococci. The only clinical feature observed that is in any sense new was a marked difficulty in swallowing; this occurred in 6 cases, all of which ended fatally, and the writer of the report is therefore inclined to attach a grave prognostic import to the symptom. Herpes labialis was present in 12 cases. Bradycardia was pronounced in several of the cases; in one the pulse-rate was only 80 with a temperature of 105° F. It is to be regretted that an ophthalmoscopic examination of the fundus oculi was not

systematically made; the presence of cupping of the optic disc observed in one of the cases is probably without special pathological significance. The average duration of the disease in the individual cases was about four weeks. The evidence derived from this epidemic tends to confirm the view of the contagiousness of the disease, that the channel of infection is the nasal and buccal mucous membrane, and that insanitary conditions markedly predispose to the disease. The writer of the report considers that its infectivity resembles that of phthisis, and urges systematic notification and isolation of the cases as they arise.

ANILINE AND MALIGNANT DISEASE.

IN 1877 Grandhomme noted that the workmen in an aniline dye factory were liable to severe cystitis, with or without hæmaturia. Only three years ago Rehn, of Frankfort, stated that he had found that in aniline cystitis sarcomatous tumours tended to develop in the bladder. Leichtenstern has recently recorded three cases. A man, aged 51, still in robust health, worked at naphthaline and naphthylamine. Cystitis and hæmaturia set in, and a tumour developed. An operation was performed, and the bladder was excised; it was found to be a mass of sarcomatous growths. The patient died in two days. The viscera were healthy. The other case must bid us pause in holding the vesical growths to be true "neoplasms." A man, aged 31, worked with toluidine, and soon acquired the characteristic appearances of the cachexia which it induces—earthy-pale complexion and greenish discoloration of the hair and nails, with dysuria and anorexia. Micturition became very frequent, but only a few drops of reddish or greenish urine passed at one attempt. A tender, firm tumour developed in the bladder, rising above the pubes. The passage of a catheter and pressure in the hypogastrium caused extreme pain. Salol, uva ursi, tannin, and alkalies with demulcents did no good. Opiate suppositories, subcutaneous injections of morphine, and hot sitz baths, followed by poultices, brought about a cure in the course of over six months. Within seven months the tumour had disappeared. Leichtenstern, who seems to have proved by examination that the tumour in the first case was a sarcoma, admits that he was puzzled by the second case. Possibly it was a simple, but very acute, proliferating submucous cystitis. This subject needs much consideration. Is it a key to the mystery of new growths? May the disintegration of the highly complex groups of carbon compounds in these new dyes stimulate connective tissue cells in an unfavourable sense? Yet after all we are not sure that the aniline-bred tumour is in fact malignant.

"FEMALE LIVES."

A VALUABLE paper read by Dr. Hingston Fox has recently been published in the *Proceedings* of the Life Assurance Medical Officers' Association. It has always been somewhat of a paradox that while the tables of mortality for England and Wales invariably show an average lesser mortality of females, nevertheless from an assurance point of view female lives are not up to the standard of male lives. This indicates, as Dr. Fox points out, that female lives are selected for assurance in some way unfavourably to the offices as compared with the selection of male lives. Two factors in this selection have to be considered—the motive for assurance and the efficiency of the medical examination at entrance. As regards men in the middle and upper ranks of society assurance is so common that offices have to deal with a class practically identical with the community at large; but with women assurance is the exception, and in the past the majority of female assured lives were married women, and the assurance was generally effected to cover a life interest in property; hence there was an obvious motive for assuring such lives as showed any tendency to weakness. This is only an exemplification of the fact, recognised by actuaries, that nominee lives are not so good as those of individuals who take out an assurance on their own lives. The increasing share taken by women in the business of life has led to a great extension of assurance among unmarried women, especially of endowment assurance, and this cannot fail to influence beneficially the mortality of female assured lives. In the past there can be no doubt that the examination of female lives has not been conducted with the same thoroughness as has been the case in males. The examination of the urine is always a difficulty, and an investigation into the condition of the pelvic organs is not feasible. The appointment of lady doctors to examine applicants of their own sex might possibly have a good result. It is thought that it would be worth while at all events making the attempt. Dr. Fox is of opinion that having regard to the evidence of mortality both in the general population, and especially among the assured, an extra charge should be placed on female lives up to the age of 50 years.

THE WORK OF THE DISPENSARIES OF THE NORTH-WEST PROVINCES OF INDIA IN 1897.

IN the report on the dispensaries of the North-West Provinces and Oudh for 1897 there was recorded a falling off in the number of persons who attended them, amounting to upwards of a quarter of a million out of a total of about three and a-third millions. This serious decrease is attributed by the Inspector-General of Hospitals to three causes: First, that on account of the famine a considerable number of people were treated at the poor-houses and relief work hospitals; secondly, that the fear of plague measures deterred many patients from attending the dispensaries; and thirdly, that owing to the frontier campaign, together with the plague and famine, many of the civil surgeons were removed from their districts and their places taken by civil assistant surgeons and hospital assistants, "thus very seriously affecting the popularity of a large number of these institutions." This last assigned cause is of considerable importance in connection with the recently-sanctioned increase in the number of civil surgeonships that are to be given to assistant surgeons, so it may be well to look a little more closely into the figures on which this statement is based. An analysis shows that in nineteen of the districts there was a falling off in the attendance, varying from one-third to one-tenth of the total number of cases treated. In one of these districts plague cases had occurred; while in 3 more famine was very severe, and might reasonably be held responsible for the decrease. Of the remaining 15, 6 were held by the regular civil surgeons, but in 2 of them he was removed during the last three months of the year; while one was a very large station, in which the civil surgeon could only exercise a general supervision over the hospitals, the actual attendance on the patients being carried out by the hospital assistants. On the other hand, 9 were were held by assistant surgeons or hospital assistants. Turning to the table which gives the districts in which an increase—for the most part only a small one—had taken place, we find out of 11 such instances 7 were held by the civil surgeons, and 4 by assistant surgeons. These figures, then, bear out the statement of the Inspector-General, and justify the opinion recently expressed in the BRITISH MEDICAL JOURNAL, that the new scheme of the Government of India for giving an increased number of civil surgeonships to assistant surgeons educated in the Indian medical colleges is a very liberal one, and should fully satisfy the legitimate aspirations of the subordinate medical department, and go far to attract a better class of native to the Indian medical colleges.

THE PLAGUE IN THE EAST.

The Special Commission.

The Plague Commission at Bangalore examined numerous witnesses as to the efficacy of Haffkine's serum. The general consensus of opinion was that the protection it afforded was satisfactory. Two lady doctors (Mrs. Batten and Miss Livingstone) stated that inoculations of women and children had a beneficial effect. Mr. Slight, district magistrate, said that the milk distributed by cow owners was almost invariably diluted with water obtained from wells contaminated with subsoil drainage. The Maharanee gave a banquet to the Commissioners at the palace on December 14th.

Colonel Hutcheson, Administrative Medical Officer and Sanitary Commissioner in the Central Provinces, stated that in the North-West Provinces, where he had been Sanitary Commissioner for seven years, there had been periodical outbreaks of maha-mari for the past thirty years in Kumaon, Gurhwal, and neighbouring districts. The symptoms of maha-mari corresponded exactly with those of plague, except that the pneumonic form was unknown.

The Plague Commission arrived at Calcutta on December 23rd. A three days' sitting will be held at the capital, after which the Commission will proceed to Agra, and thence, *via* Lahore and Karachi, to Bombay, when a second tour of the plague-stricken districts of the Bombay Presidency will be made.

The Epidemic in India.

In the Bombay districts there has been a marked decline in the plague returns during the past week. It would seem, therefore, that we may look forward to a rapid disappearance of plague from the Bombay Presidency, at any rate in the epidemic form. Sporadic cases no doubt will remain to be dealt with, but previous experience of the disease encourages the hope that the termination of the third outbreak indicates the abatement of the epidemic form. In the Mysore State the disease shows still a high mortality, but in the city of Bangalore, where it raged so severely, a satisfactory decline in the death-rate from plague is recorded. In the Hyderabad States there are several districts where plague is rife, and there are no signs as yet of any marked remission. In the Madras Presidency and in the Central Provinces the disease pursues a persistent course, but nowhere is there a high mortality indicative of a severe epidemic.

SPECIAL CORRESPONDENCE.

DUBLIN.

Lord Iveagh's Gift to Dublin.—The Character of the District to be dealt with.—The Improvements Intended.—Other Improvements.

Not only has Lord Iveagh placed the country and the world at large under a debt by his splendid generosity in connection with the Jenner Institute, but he has dealt with his own city of Dublin with like liberality.

He has announced his intention of promoting a private Bill in the next Parliament which will enable him to take possession of an area of about three acres of slums, either compulsorily or by arrangement. This district is in the neighbourhood of St. Patrick's Cathedral, and extending towards Christchurch Cathedral. It is occupied mainly by wretched tenement houses—insanitary, of course, and the inhabitants are chiefly of the very poorest class. After the removal of this mass of wretchedness, Lord Iveagh has declared his intention to substitute dwelling houses which will accommodate 1,250 people. Besides this there will be a lodging house for 500 single men, after the model of Lord Rowton's lodging houses in London. Then there will be a splendid concert hall to hold 1,000, equipped with organ and band, and it is provided that instruction shall be given in music without cost to those who desire it. A swimming bath, a gymnasium, and reading rooms will also be erected.

The total cost of all this will be somewhere near a quarter of a million; a princely gift indeed; but its great importance lies in the replacing of a great area of squalid buildings in which the poor droop and die, by houses in which all that is most modern in sanitation will be provided; in the elevating influences which will operate in precept and example, and in the suggestion which is again presented to the wealthy of the good work which they might do.

We note that in Dublin Lord Iveagh's brother (Lord Ardilaun) and Mr. James Talbot Power, of the great firm of distillers, have associated themselves with him in procuring an Act for the conversion of an adjacent area into a public park or garden, and the Corporation has undertaken the clearing of the neighbouring Bride's Alley. The Guinness gifts are already well known. They were begun by the father of the present Peers by the restoration of St. Patrick's Cathedral at a cost of £150,000, then the two sons named converted Stephen's Green into a great public garden at a cost of £20,000, and presented it to the city. Next Lord Iveagh provided £15,000 in connection with the Guinness Trust for providing homes for the working class; and he now caps his munificence by presenting two sums which in themselves represent half a million of money. Ireland is to be congratulated on possessing such citizens, who, realising the responsibility of their great wealth, use it for the high purpose of bettering the physical and intellectual condition of the poor.

LIVERPOOL.

Formalin as a Preservative of Milk.—Proposed Changes at the Ladies' Charity.—The Centenary of the Athenæum.

An important test case as to the legality of adding antiseptics to milk lately came before the Liverpool stipendiary. A milk dealer was summoned for selling separated milk containing a little formalin. The sample was not sold as fresh milk, but as separated milk—that is, milk from which part of the cream has been removed by the centrifuge at a moderately high temperature. It is a custom in the trade to treat in this way milk which has arrived from the country too late for distribution on the morning rounds, and it is alleged that the milk thus treated cannot be placed on the market unless some antiseptic is added to keep it sweet. Mr. Collingwood Williams, one of the public analysts, stated that he found the sample of milk in question to contain 1 part of pure formaldehyde in 20,000. He was of opinion that this substance was unnecessary for the preservation of properly treated milk, that it rendered the milk less easy to digest, that it was injurious to the stomach, and that it enabled stale milk to be sold as fresh. Professor Boyce stated at some length his opinion that formalin was decidedly harmful. On the other hand, Mr. Davies, analytical chemist, and Dr. Barron, physician to the Bootle Borough Hospital, gave it as their opinion that the small quantity of formalin in the milk was not injurious. The magistrate inflicted a fine of £5 and costs. Notice of appeal was given.

It is believed that important changes are about to be made in the Ladies' Charity and Lying-in Hospital, which will bring it into direct relation to the Medical School. A general meeting of the subscribers has been summoned to consider the proposal to admit unmarried women in the case of a first confinement, and there is every reason to believe that this will be accepted. To understand the merits of the proposal in all its bearings, it is necessary to remember that each inmate of the hospital occupies a separate room, and that the demand for admission is so limited that the hospital is seldom more than half full. With regard to the instruction of medical students, a scheme has been proposed which, if accepted, bids fair to provide that instruction and practice in midwifery which Liverpool has not hitherto supplied in a manner regarded as satisfactory. It is proposed that the district midwives shall be connected by telephone with the hostel in which the students taking out their midwifery shall reside, so that the latter can be informed as early as possible when a case is likely to occur. Further, it is proposed to appoint a salaried outdoor assistant to the hospital, one of whose duties would be to assist the district medical officers in cases of difficulty. It is also proposed that the Professor of Midwifery shall have two beds permanently in the hospital and a seat on the Medical Board.

An extremely interesting function took place on December 19th, when the Liverpool Athenæum celebrated its one hundredth anniversary. This institution, which comprises a valuable library and an extensive news room, was founded by William Roscoe, in association with Dr. James Currie, the originator of the cold bath treatment of fever, and with Dr. Rutter. Dr. Currie's name is not less known in the world of literature than in that of medicine, as he was the author of a *Life of Burns*, which has formed the groundwork of all subse

quent biographies of the poet. He was one of the physicians to the old infirmary when it was located close to where St. George's Hall now stands.

LEEDS.

A New Nursing Home for the Infirmary.—Bacteriological Diagnosis and the Hull Municipal Authorities.

A MUCH desired extension of the premises for the accommodation of the nursing staff of the Leeds General Infirmary was opened recently in the presence of many members of the Board and staff by Mr. James Stables, of Horsforth, to whose munificent generosity it is largely due. The new building, which will accommodate fifty-two nurses, is placed immediately behind the infirmary, and has been erected under the direction of Mr. W. H. Thorp, of Leeds, the architect of the new medical school and operating theatres in Leeds, and of the new operating theatres in Bristol. It consists of three storeys and a basement, and is arranged in two wings which meet at an angle, the junction being occupied by the entrance hall, vestibule, and principal staircase. The new home is connected by a subway beneath Thoresby Street with the old one, and together they afford accommodation for eighty-eight nurses. The building contains, in addition to a separate room for each nurse, day rooms for sisters and nurses respectively, a reading or writing room, and a visitors' room. The ventilation, heating, and drainage are all on the most approved and recent principles, and the building is lighted throughout by electricity. A bicycle shed for thirty-two machines, with a cleaning room in the courtyard, is a somewhat novel but necessary addition to an institution of this kind thoroughly up to date. The cost of the building, exclusive of site, has amounted to about £10,000. At the opening ceremony, the Treasurer, Mr. Benson Jowitt, sketched out the rapid development of nursing in Leeds during the past twenty-five years, and certainly the changes as described by him are remarkable. A vote of thanks to Mr. Stables, carried by acclamation, terminated the proceedings.

The city and county of Kingston-on-Hull have decided to place the bacteriological examinations incidental to the working of the sanitary authority in the pathological department of the Yorkshire College. A deputation of the Hull Sanitary Committee, consisting of Mr. Alderman Fraser (Chairman), Mr. Councillor Holder and the Medical Officer of Health, Dr. Wright Mason, came over to Leeds recently to make the final arrangements. Thus, by the enlightened exertions of the Hull Sanitary Committee and Dr. Mason the opportunity is afforded to the practitioners of Hull to obtain free of cost a bacteriological examination on suspected cases of diphtheria, typhoid fever, etc. For this purpose a small diagnosis case will be deposited with each medical man who who will forward it to Leeds as occasion arises. The reports will be communicated as rapidly as possible to Dr. Mason, who will at once forward them to their destination.

CORRESPONDENCE.

THE GENERAL MEDICAL COUNCIL.

INSPECTION OF DOCUMENTS.

SIR,—May I ask space enough in your columns to reply to the letter of Mr. Edwin H. Roe, who, as one of my constituents and supporters, wishes for an explanation of my motion "curtailing" (to use his words) "the liberty of members of the Council inspecting documents." The request is a very proper one, and I am pleased to respond to it.

I hold it to be not the right only, but the duty, of every member of the Council to inspect, as far as possible, all its documents; and I hold it to be the duty of the Council to make proper arrangements for facilitating the discharge of this duty by members. The right and the duty are too obvious to need discussion. The primary object of my motion, seconded by Dr. Bruce, was to secure this right, and, at the same time, to secure the care of the documents. I am sure Mr. Roe will admit that the Council would be acting with great negligence if it did not take scrupulous care that documents affecting possibly the character and conduct of members of the profession and others should be most safely guarded. We know how easily documents are lost from mere carelessness. Such was the purpose of our motion as originally drafted. In its final form, as adopted by the Council, the care of the documents was more in evidence than the convenience of members who might wish to study them.

I soon found by experience that the motion was unsatisfactory, either for facilitating the inspection of documents by members, or preserving them in safety for ready use. I was arranging at the last meeting, with Dr. Bruce's co-operation, to propose its immediate amendment, but found that we had been forestalled by Sir Richard Thorne Thorne, who carried a motion referring the subject to the Executive Committee for consideration, and report at the next meeting of the Council. I hope I need not labour to show that I am a lover of light and of free discussion. Though I think the time has not come for a full discussion of the Hunter case, I gave my cordial support to the motion of Mr. Brown and Mr Horsley for the inspection of documents.[1] As regards Dr. Bruce, he may safely be left to take care of himself. His association with me shows that there could be no design on the rights and freedom of members. He is as redoubtable a champion of freedom and of fair play as Mr. Horsley himself, and, I humbly trust, neither of them are more so than myself. It would distress me, moreover, to think that the direct representatives in the Council had any monopoly of these indispensable virtues for men exercising judicial functions. I am quite sure it is not so.—I am, etc.,

Highbury Place, Dec. 26th. JAMES GREY GLOVER.

SIR,—Mr. Roe, in the BRITISH MEDICAL JOURNAL of December 24th, asks Dr. Glover (and by implication myself) to explain why we voted for restrictions on the liberty of members who wished to consult documents belonging to the General Medical Council.

I have no doubt Dr. Glover will be able, if he thinks it necessary, to give a complete and satisfactory answer to his constituent.

Speaking for myself, while opposed to the particular action of the President in Mr. Horsley's case, I felt, and still feel, that order should be maintained in this matter of access to documents, and that the President was justified by the opinion of his legal advisers in the action which unfortunately, as I think, he resolved to take.

As in a similar case discussed by Mr. Horsley at Manchester lately, it may be right to resist the demands made at the point of the bayonet, which, if put in more courteous form, might well be acceded to.

Dr. Glover's character for single-mindedness and honesty of purpose is acknowledged by all. His action, I know, was taken in the interests of peace. I may be allowed to say that this was also my sole motive for meddling in this troublesome business.—I am, etc.,

WILLIAM BRUCE,
Dingwall, Dec. 24th. Direct Representative for Scotland.

PRELIMINARY EXAMINATIONS.

SIR,—In the letter of the Registrar of the General Medical Council the incorrectness of the figures given in the report of the Education Committee with regard to cases of "deficiency in general education" reported by the Examining Boards of the Navy, Army, and Indian Medical Services is admitted, and it is explained that the limitation of these reports to the three services was due to an oversight in the drafting of the report, which has, however, already been issued to the public in the half-yearly volume of the Council's minutes, has been made the subject of general comment in the press, and has been officially communicated to this College. The oversight is, to say the least, unfortunate, as the report in the form in which it was presented to the Council was calculated to convey a most erroneous impression as to the extent of the alleged "deficiency in general education" attaching to persons who had registered as medical students on the certificates of this College.

It is now stated that the figures given in the report comprise the whole of the cases reported by the various examining boards, "including those for the Navy, Army, and Indian

[1] See Report of the Council's Proceedings, *Lancet*, November 26th.

Medical Services," and that out of these fourteen are those of candidates who had passed their preliminary examination at the College of Preceptors. With regard to the accuracy or otherwise of the figures given in the table in the Registrar's letter, it may be sufficient to say that the total number of cases reported is, after the most careful examination of the published Minutes, found to be (as set out in the following table), not 58, but 84, or, exclusive of cases not traced, 65.

Table showing the Number of Candidates reported as having been Deficient in General Education, with the Preliminary Examinations on which they qualified for Registration as Medical Students, during the Years 1892-1898.

Preliminary Exams.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Total.
Univ. Lond.	—	2		—	—	—	—	2
Univ. Dubl.	—	1	1	—	—	—	1	1
Univ. Aberd.	—	—	1	—	—	—	1	2
R. Univ. Irel.	1	—		—	—	—	—	4
Queen's Univ., Irel. ...	—	—		—	—	—	—	2
Coll. Precep.	1		2	—	—	1	1	11
Inter. Ed. Board, Irel...	—	2	1	—	—	—	—	3
Apoth. Soc. Lond. ...|	—	2	—	—	—	—	1	3
R. Coll. Surg. Irel. ...	2	5	12	—	—	—	—	19
R. Coll. Phys. Surg. Irel.	—	—	1	—	—	—	1	2
Coll Phys. and Surg., Manitoba...	—	—	1	—	—	—	—	1
Univ. Edin. and Col. Phy. and Surg. Edin. ...	—	1	—	—	—	—	—	1
Univ Glasg. and Col. Phy. and Surg. Glasgow ...	—	—	—	—	1	—	—	1
Apoth. Soc. and C. P. ...	2	1	1	—	—	—	—	4
Apoth. Soc. (*bis* and C.P.	1	2	—	—	—	—	—	3
Educa. Inst. Scot. and C.P.	—	1	—	—	—	—	—	1
R.U.I. and Queen's U.I....	—	1	—	—	—	—	—	1
Univ. Edin. and Apoth. Soc.	—	—	1	—	—	—	—	1
Not traced	—	8	1	—	1	9	—	19
Totals	7	33	27	0	2	10	5	84

The number of the cases attributed to the College of Preceptors is apparently arrived at by including some cases in which, under the old "piecemeal" regulation of the General Medical Council, candidates were registered on certificates obtained from more than one examining body. As it would be impossible to say whether the subject of "English," in which the spelling test is usually included, was passed at one or the other examination, it seems only fair that all such cases should be eliminated, and the number for which the College of Preceptors may be held to be responsible would then be reduced to 11,—11 cases in 7 years out of a total of 2,133 candidates who during that period have come on to the *Medical Students' Register* by means of College of Preceptors' certificates. The proportion of cases traced to the College is therefore represented by the fraction $\frac{11}{2133}$, or about $\frac{1}{2}$ per cent. The total number of medical students registered during the past seven years amounts to 12,526. The average of traced cases of deficiency would therefore be 1 in 193, or $\frac{1}{2}$ per cent., the same proportion as that attributable to the College of Preceptors. But if only the number of those who have qualified on one or other of the Junior or Preliminary Examinations in the United Kingdom be considered, the proportion would be 65 out of 8,467, or 1 in 130, or about $\frac{3}{4}$ per cent. The proportion of reported cases of "deficiency in general education" amongst candidates who have qualified during the same period on certificates of the Irish Intermediate Education Board is represented by the fraction $\frac{1}{52}$, or nearly 2 per cent., which is a somewhat different ratio from $\frac{11}{2133}$. Nevertheless, this Examination is retained on the list, as are also the Public Entrance and other pre-graduate Examinations of Trinity College, Dublin, with a proportion taken together of $\frac{1}{35}$, or nearly 3 per cent. The mere statement of these facts reduces the whole matter to its true proportions and exhibits in the clearest light the triviality of the charge that has been brought against the College of Preceptors' Examination, and made so prominent a feature in the report drafted, as was stated by the Chairman of the Committee, by Dr. MacAlister.—I am, etc.,

H. W. Eve,
Dean of the College of Preceptors.

College of Preceptors, Bloomsbury Square, W.C., Dec. 26th, 1898.

THE SEAMEN'S HOSPITAL SOCIETY AND ITS VISITING STAFF.

Sir,—The letter in the British Medical Journal of December 24th, signed John Curnow, M.D., F.R.C.P.; John Anderson, M.D., F.R.C.P.; G. R. Turner, F.R.C.S., might lead readers to infer that in various publications I had deliberately assumed a title to which I had no claim; that [illegible] that this description was untrue, I had designated myself Physician to the Seamen's Hospital, Greenwich.

In self-defence I am constrained to ask you to allow me space to make the following statement:

In 1892 I was appointed a physician to the Seamen's Hospital Society. My duties, I was informed, were sole charge of the medical cases in the Society's Branch Hospital, Albert Docks; to visit convalescents at the Dreadnought Hospital, Greenwich, when transferred there from the Branch Hospital; to take part in the meetings of the Society's honorary visiting staff. In discharge of these duties I visited the Seamen's Hospital, Albert Docks, twice a week, and the Seamen's Hospital, Greenwich (Dreadnought), once a week, and attended most, if not all, of the meetings of the medical staff to which I was summoned.

At the time of my election I was not informed that my office carried with it any particular title; but as I performed all the duties of a hospital physician at both of the Seamen's Hospitals I naturally inferred that I was a physician to both of these hospitals, and that I had a perfect right to designate myself as such. Accordingly, and in conformity with medical custom, I called myself, or was called, in various publications sometimes "Physician to the Seamen's Hospital, Greenwich," sometimes "Physician to the Seamen's Hospital, Greenwich, and Seamen's Hospital, Albert Docks."

Some three years ago I was pained and surprised to be informed by the Secretary of the Seamen's Hospital Society that my colleagues (as I regarded them) at the Dreadnought (Seamen's Hospital, Greenwich) had collectively and officially represented to him that I had assumed a title to which I had no right, and that he had been asked officially to request that I should discontinue the practice. If I am not mistaken (unfortunately I have destroyed the correspondence), I was requested to write to the medical press and publicly intimate that I was not a Physician to the Seamen's Hospital, Greenwich, and that I had no right so to describe myself. I protested. After some correspondence, in the course of which I intimated that I considered that my colleagues might have spoken to me privately if they thought I was in error or considered themselves aggrieved, I expressed regret *if* I had unwittingly arrogated to myself a title to which I had no claim.

In consequence of the want of consideration shown me by my colleagues at the Dreadnought, I have ceased to visit there, feeling that my seniors did not care to be associated with me, and myself not caring to be associated with those who, I considered, had treated me with scant courtesy, not to say fairness or friendliness.

At the time of the correspondence referred to I did consider, as I still consider, that I had a perfect right—in fact as much right as either Dr. Curnow or Dr. Anderson had—to designate myself Physician to the Seamen's Hospital, Greenwich. I regret now that, shrinking from a petty squabble and for the sake of peace, I gave way on what at the time seemed to me to be a most trivial matter.—I am, etc.,

Patrick Manson.

Queen Anne Street, Cavendish Square, Dec. 28th.

A CENTRAL FUND FOR THE SUPERANNUATION OF POOR-LAW MEDICAL OFFICERS.

Sir,—All Poor-law officers owe the British Medical Journal a debt of gratitude for the constant attention you give to their affairs.

The question of a Central Superannuation Fund is one that deeply concerns the younger officials who seek for promotion, as there is already a tendency amongst Boards of Guardians to ask applicants how long they have served, and anything approaching ten years is not favourably regarded, whereas a few years ago long experience was the candidate's best support.

Another point is that all Poor-law officers should be placed

on the pension fund. Several did not join, as they thought by so doing they would draw attention to the inclusion of the female officers; this has been rectified by the Amendment Bill, and we hope that further legislation will make it compulsory for all to be under the fund, or to allow those who were Poor-law officers before January 1st, 1897, to join on payment of back contributions. The passage of the Bill has seriously altered for the worse the position of those who are not included in it, and guardians begin to say that in future they will only give pensions to those to whom the law grants a pension.—I am, etc.,

December 27th. POOR-LAW MEMBER.

ROYAL MEDICAL BENEVOLENT COLLEGE.

SIR,—I am glad to see that the Treasurer of the Royal Medical Benevolent College has appealed to the public as well as to the profession for assistance to support the aged pensioners and the young foundation scholars of the College.

In his letter to the *Times* of December 27th, Dr. Holman reminds those outside the profession how frequently the lives of practitioners are too early sacrificed in the discharge of their private or public duties.

I think that medical men should more frequently urge upon their patients the claims of the needy ones who have been either stricken down by disease or those who have been left unprovided for by the premature death of husband or father. Much might and ought to be done in this direction, and in my experience patients when applied to have cheerfully given. The grave default, however, no doubt lies in the fact that the support received from the members of the medical profession is so terribly small.

If each practitioner would but subscribe a few shillings a year, no more would be heard of these appeals to carry on work of such inestimable value to all ranks of the profession. The annual reports show that all ranks of the profession have received help, and at the same time, I grieve to say, show also how very little the profession contribute to the funds of the College.—I am, etc.,

Dec. 27th. HONORARY LOCAL SECRETARY.

SYPHILIS IN THE ARMY.

SIR,—I have followed with much interest the correspondence on this subject, which has found place in your columns. In the BRITISH MEDICAL JOURNAL of December 3rd Surgeon-Colonel Welch brings forward some questions and statements with regard to the virulence of the disease at home and abroad, and the effects of the first Contagious Diseases Acts on this virulence. I should be very glad to know on what Colonel Welch bases his question about "the malignancy of the disease at home, which the first Contagious Diseases Acts demonstrated to exist and which this sanitary measure eliminated"?

I can find in the Army Medical Reports no other criterion of the virulence of the disease than in the average stay in hospital of the cases under treatment. The first Act was passed in July, 1864, and applied to the principal military stations. Referring to venereal diseases in 1866 the Report for that year says (p. 7):

> These results compared with a similar table in the Report for 1864 show a marked reduction in the syphilitic group as regards the proportion admitted and the mean daily sick, and a very trifling reduction in the gonorrheal group. *The duration of cases under treatment*, however, shows a different result, the gonorrheal cases having undergone a reduction of one day and the *syphilitic only rather more than half a day* (for instance, on 28.13 days for syphilis and 16.68 for gonorrhœa).

This can hardly be regarded as showing any elimination of malignancy. Colonel Welch's statements are, however, probably based on further reports, of which I should be very glad to know.

Again, before a Select Committee of the House of Commons in 1868 evidence was given by Dr. T. Graham Balfour, Deputy-Inspector of Military Hospitals, who produced tables showing the amount of disease from 1860 onwards in the stations under the Act and others. He summed up thus (Q. 1,124):

> It may be stated generally that, prior to the introduction of the Act, there had been at all these stations—namely, those subsequently coming under the Act—a progressive decrease in the amount of this class of diseases. At the stations to which the Act has not been applied, with two or three exceptions, a similar progressive reduction has been going on, but with less regularity, a result, perhaps, of the smaller number under observation giving rise to greater fluctuations.

This may not prove anything about virulence, but at least it seems to show that there was no marked "elimination" following the Act of 1864. The most striking piece of evidence I can find bearing directly on the malignity of the disease among soldiers is in the evidence of Surgeon-Major Wyatt, of the Coldstream Guards, before a Committee of the House of Lords of the same year, 1868. The following are his questions and answers:

> Q. 708. I understand you to say that in your opinion the venereal disease has generally, independently of the Act, become more mitigated and of a milder type?—Surgeon-Major Wyatt: Yes; that is the experience of all surgeons, both civil and military.
>
> Q. 709. And you do not think that is rightly to be attributed to the operation of the Act?—Surgeon-Major Wyatt: I think not. I think that the whole type has changed, and that hygienic considerations are better understood by people who have intercourse with those persons and by the women themselves. It is an undoubted fact that in this country and in France the character of the disease is very much diminished in intensity.

He had previously stated that his regiment had two battalions, one quartered at Windsor and one in London. That quartered at Windsor used to have exceedingly severe cases, but, he said, had had much less severe cases since the Act came into force, which fact he inclined to attribute to that measure; but a very similar amelioration, he added, had also taken place in the London battalion, which could not be due to any such cause, the Acts not being in force there (Q. 699, 700).

Before the same Committee Mr. Acton stated that the disease had of late years assumed a milder form, owing to increase of sanitary knowledge and independent of the Acts (Q. 922, 924). Likewise Mr. (now Sir James) Paget stated that he did not believe the disease was really increasing, it was only being better investigated (Q. 639).

There is, of course, evidence to show that among the women disease used to get very bad from neglect, and that, under the Act these bad cases were fewer among those who submitted to examination. But this is not exactly the question at present in dispute.

I should be glad if Colonel Welch would tell me where the evidence to which he refers may be found. I should also like to know to what factors he attributes the remarkable decrease in venereal disease in the Home Army since 1886 in the absence of all sanitary control? Syphilis, like other zymotic diseases, is undoubtedly subject to periodical variations in its virulence, and it must always be difficult to disentangle the many causes that are at work in producing these variations.—I am, etc.,

December 12th. INQUIRER.

SIR,—I am glad to see that Surgeon-Lieutenant-Colonel Myers is in favour of mercurial inunction in the treatment of syphilis in the army. I have had the opportunity of comparing the results obtained by inunction with those obtained by the method of intramuscular injection for a period of more than a year at the London Lock Hospital. The evidence thus obtained is in favour of the older method, although it may not be so scientific in theory. Under this treatment the duration of symptoms was less and fewer cases of recurrence occurred than in those cases treated by injection.—I am, etc.,

C. F. MARSHALL, M.D., F.R.C.S.

Finsbury Square, E.C., Dec. 17th.

THE SURGICAL OUTFIT OF THE SHIPS OF THE ROYAL NAVY.

SIR, I have read the letter of "Staff-Surgeon, R.N.," in the BRITISH MEDICAL JOURNAL of December 17th, with much interest, as it tends in every way to accentuate the necessity of remodelling on modern lines the surgical outfit of the ships of the Royal Navy.

"I do not in the least wish to infer," he judiciously remarks, "that no improvements are needed, but I must protest against the idea that the blue-jackets are not receiving the best surgical treatment that they are entitled to." Surely, if our sailors are now receiving in all parts of the world the best surgical treatment, there can be no necessity for any improvements at all. However, I quite understand what these words very feebly express, and I cordially endorse their intended import, that the able medical officers of the Royal Navy are endeavouring to carry out "the best surgical treatment" as far as it is possible with the imperfect appliances and materials at their command.

Your correspondent tells us that he formerly held the important office of dresser to Lord Lister himself, and I am delighted to discover in his letter clear indications that his sojourn in some of "the hottest parts of the world" has not robbed him altogether of his old aseptic enthusiasm, and that he is now manifesting a waning confidence in the treatment of "extensive surgical injuries" with the dressing material supplied by the Admiralty, material which he describes as "limited in kind, not quantity." This I accept as a strong corroboration of my suggestion that all the dressings ought to be supplied in air-tight and waterproof cases.

I trust that "Staff-Surgeon R.N." will accept my sincere thanks for his useful critique on my letter, which certainly contains strong additional evidence of the absolute necessity of a thorough inquiry; and I venture to hope that he may never again be compelled to rely, when serving afloat and far away at sea, upon the limited surgical outfit he has himself to provide, and upon the carbolised gauze, sal alembroth wool, and other dressings supplied by the Admiralty in perishable covers, and I am ready, against the red tape and official obstruction which hinder on every side departmental progress, to defend my assertion that without a complete set of instruments adapted to meet all emergencies, and a liberal supply of protected dressings, and the essential sterilising appliances, and the help of properly trained assistants in the sick bay, it will ever remain impossible on board Her Majesty's warships to render to our brave blue-jackets "the best surgical treatment" which they are entitled to receive.—I am, etc.,

December 21st. F.R.C.S.

THE MEDICAL ACTS AND THE MEDICAL PROFESSION.

SIR,—I have read the report of Mr. Victor Horsley's address to the Manchester Medico-Ethical Association, and I beg leave to make the following comments.

Mr. Horsley first draws attention to the statement that "the Medical Act contains no clause expressly imposing a penalty on anyone practising without having been duly registered," and then says: "Of course, as most medical men know, this statement is wholly untrue, Section XL of the Medical Act being devoted entirely to the point." To what point? Consider, for a moment, the exact words of the Section:

> Any person who shall wilfully and falsely pretend to be, or take or use the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner, or apothecary, or any name, title, addition, or description, implying that he is registered under this Act, or that he is recognised by law as a physician or surgeon, or licentiate in medicine and surgery, or a practitioner in medicine, or an apothecary, shall, upon a summary conviction for any such offence, pay a sum not exceeding twenty pounds.

It will be observed that all the titles enumerated are well-known. A person seeing any one of these titles on a door-plate might at once assume that the occupant of the house was a registered practitioner or that he was recognised by law as a physician, etc., and by this Section a peculiar virtue is given to them.

In hearing a case under Section XL, a magistrate might, it is conceived, ask himself one or more of the following questions: (*a*) Is the title which the defendant has adopted contained in Section XL; or (*b*) does the use of the title which he has adopted imply that he is a registered practitioner; or (*c*) does it imply that he is recognised in law as a physician, surgeon, etc.? Can it be contended that a quack who describes himself as "John Jones, the Greatest Healer of the Age," comes within *a*, *b*, or *c*? Bearing in mind that the object of the Act was to enable the public to distinguish between qualified and unqualified practitioners, it is submitted that those who practise medicine or surgery without holding themselves out as lawfully entitled to do so cannot be proceeded against under this section.

With regard to Mr. Horsley's application of the maxim "*ubi jus ibi remedium*," it is undoubtedly correct, but the remedy is not against the quack *quâ* unregistered practitioner, but against the irregular practitioner who holds himself out as registered or otherwise infringes the provisions of Section XL.

It is also alleged that the writer contends: "The remedy against the invasion of the right is contained in the Act in another place, and that is the section by which the right to sue for fees is conferred." What was in fact stated is as follows: "The legislature could not have contemplated the punishment of unregistered practitioners as a means of protecting those upon whom the right was conferred." As against the unregistered quack, who practises without endeavouring to assume a title, the remedy of the profession—if such it can be called—is the statutory privilege to sue for fees, while an additional remedy—namely, the exaction of a fine—exists as against those who act in contravention to Section XL.

I have not yet referred to the Apothecaries' Act of 1815. Section XIV provides that from and after August 1st, 1815, it shall not be lawful for any person or persons to practise as an apothecary in any part of England and Wales unless they have been examined as therein mentioned. By Section XX any person practising without a certificate shall for every such offence forfeit and pay the sum of £20. The case of Davies *v.* Makuna (*L. R.*, 29 Ch. Div., 396) is of considerable interest, both from the point of view of the Apothecaries Act, and also with reference to the Act of 1858. The plaintiff, an unregistered practitioner, sued the defendant, a registered practitioner, for breach of an agreement whereby he undertook not to practise in the district after the determination of his employment as the plaintiff's assistant. It was urged by the plaintiff that the Act of 1858 did not prohibit unqualified persons from practising, but only prevented them from recovering fees, inflicting a penalty upon them for the wilful use of certain titles implying that they were duly qualified. It was contended on behalf of the defendant that the agreement described the plaintiff as a medical practitioner, and that in assuming a title which did not belong to him he had contravened the Act, and that any agreement made or entered into on that understanding was void. Mr. Justice Pearson, in giving judgment, said, *inter alia*: "It is not an Act to prevent unqualified practitioners from practising, but it is an Act to enable the public to distinguish between qualified and unqualified practitioners." He found in favour of the plaintiff on the ground that although unregistered he had not done anything improper in making this agreement, and that it was binding on the defendant. This judgment was overruled on appeal not because the Act of 1858 had been wrongly interpreted, but because additional evidence was adduced to show that the plaintiff was acting or practising as an apothecary contrary to the Act of 1815, Section XIV (1) of which absolutely prohibits unqualified persons from practising, makes practising illegal, and, therefore, vitiates any contract entered into on the ground that the apothecary was entitled to practise as such. Cotton, L. J., in giving judgment, said:

> The result of the evidence appears to me to be that the plaintiff is exercising a profession which he is not at liberty to carry on in England. The case appears not to have been fully before Mr. Justice Pearson, for he proceeds on the Medical Act of 1858 alone, and if there had been no other Act in the case, I should have been disposed to agree with him.

Granted that this is but an *obiter dictum*, it is, at any rate, an expression of approval by a very high authority of Mr. Justice Pearson's argument.

In ascertaining the true meaning of a statute the speeches made and opinions expressed by members of Parliament in the course of a debate are not admissible in law to throw light upon obscure sections, although they are often used by counsel in the course of the arguments. While the Act of 1886 was under discussion, Mr. Addison (Ashton-under-Lyne) expressed his surprise that those who represented the interests of the medical profession had not referred to a serious defect in the Bill.

> He was aware of the offences created by the Medical Acts and also in the eye of the law, if a person implied that he was a medical practitioner when in reality he was not. At the same time it was well known that persons might really practise surgery and medicine without being guilty of an offence. He hoped that Sir Lyon Playfair would attempt to introduce some protection to the medical profession and to the public against those who were not only not duly qualified, but were not qualified at all.

Mr. Bryce, in reply, said that while recognising the importance of the question he thought that it was one which ought to be treated in a special bill.[1]—I am, etc.,

December 10th. THE WRITER OF THE ARTICLE.

[1] For the verbatim report of the speeches made on this occasion see *Hansard's Parliamentary Debates*, vol. 305, column 246.

A CASE of typhus fever in a man, aged 25, was notified at Islington on December 8th.

THE SEAMY SIDE OF WAR.

SIR,—Your correspondent "Observer," who appears to have taken up the position of a counsel for the defence, makes important statements in the BRITISH MEDICAL JOURNAL of December 24th, but before attaching weight to them the public and the profession are justified in putting to him the following questions, which I desire to confine to the British troops engaged:

First, Is it a fact that, contrary to the advice of the Army Medical Service, a sufficient number of medical officers were not ordered to the front prior to the battle of the Atbara?

It is asserted that the only medical officers available to attend the wounded after that battle were those attached to regiments—one to each unit—and that there was no bearer company or field hospital within miles of the battlefield; in other words that there was a shortage of three officers of the bearer company, and four of the field hospital with the British brigade.

It is further asserted that the stores and supplies considered necessary by the Army Medical Service were not permitted to be brought to the front before the battle of the Atbara. Is that so?

Regarding the battle of Omdurman, it may, as "Observer" implies, have been an important measure of military precaution to have moved the hospital barges away from the bank before the battle, but was the medical department informed in time of the intention to do so, that they might have been able to make other arrangements for the wounded?

It is asserted that these three barges were equipped with great care by the medical department, and it is obvious that their removal at such a crisis must have caused great difficulty. Was the principal medical officer consulted? If not, why not?

It is a good sign to see the public take an interest in such questions. It will make generals more careful to consider the medical arrangements, now often forgotten till the pinch comes, when if everything is not in order the medical service is held up to public execration.—I am, etc.,

December 27th. INQUIRER.

HOSPITALS AND TUBERCULOUS PATIENTS.

SIR,—I have read with great interest the leading article in the BRITISH MEDICAL JOURNAL of December 24th on "Tuberculous Patients under the Poor Law." It is high time that public attention should be drawn to the crying necessity for a greatly-increased number of beds for the treatment of consumption amongst the poor, and for the establishment of separate institutions and sanatoria where the treatment can be efficiently carried out. The figures which you give show that a much smaller number of cases of pulmonary consumption are treated in the infirmaries than is to be expected from the prevalence of the disease in the great metropolitan area.

If we suppose that the number of consumptive patients admitted to the infirmary to which you allude may be taken as representative, we should have some 1,500 patients with pulmonary tubercle admitted to the twenty-five metropolitan infirmaries in the course of a year. The special consumption hospitals admit annually some 2,500 consumptive patients, and we may suppose the general hospitals admit about 500 more. This would make a total of 4,500 consumptives treated as in-patients annually, of which number only one-third are accounted for by the Poor-law infirmaries—and this is among a population which contains at least 40,000 consumptives and with an annual death-rate of 10,000 from phthisis.

But it is unnecessary to appeal to figures to show that the hospital accommodation for poor patients suffering from consumption is deplorably inadequate to the needs of the population. The consumption hospitals are always full, and this in spite of the fact that admission to them is beset with many difficulties. Only a selection of the patients applying for admission can be admitted. Advanced cases are almost always refused, and cases in which the disease is active are likely to be rejected. Much valuable time is lost during the period of waiting till the patient's turn for admission comes, and many a case suitable when the name is entered on the rota for admission becomes ineligible during the interval.

From the point of view of prevention of the disease, it is the inability of hospitals to admit the more advanced and active cases which deserves our most earnest consideration. These are the cases where the patients linger in their own homes until they die and leave as their only legacy the seed of the disease to those in whose midst they have died. For if infection is not altogether a delusion and a myth, it is in the latter stages of the disease that its seeds are more likely to be sown among the unaffected, when, as is practically impossible in the homes of the poor, due precautions cannot be taken. If there is fear of communication of the disease in the ward of an infirmary, there is tenfold risk in the poor man's home.

It may be said that the workhouse infirmary is open for admission of the patient in the advanced and hopeless stage, and indeed it is his only refuge. But everyone who knows anything of the working classes is aware of the unwillingness with which they seek its shelter. And it is safe to affirm that the accommodation of the workhouse infirmaries would be utterly insufficient if many of those in an advanced stage of consumption were to seek admission to their walls.

In every stage of the disease consumptive patients are willing and anxious to be admitted to hospitals; and it is one of the most painful duties of a member of the staff of a consumptive hospital to refuse these poor people admission. If the advanced cases were taken care of in hospitals, one of the certain modes of sowing of the disease would be done away with. The great principles of self-interest and self-preservation should appeal to the community to provide the necessary hospital accommodation, if no higher motive can move them. But I would plead the cause of the sufferer from this dire disease in its later stages for his own sake, and not simply because he is a danger to others. Common humanity should prompt that everything should be done which can make more tolerable to the poor patient that last period of the disease which, so hard to bear in all its stages, is especially so towards its end.

As I write, the advertisement of one of the most important consumption hospitals meets my eye, stating that fifty beds are closed for lack of funds. In the case of another, an appeal for money to establish a convalescent home has met with practically no response. The answer to the Prince's question—If preventable, why not prevented?—is a complex one. One of the essentials to prevention is, I believe, an adequate amount of hospital accommodation; and if this cannot be provided by voluntary subscription, then it must be done at the public expense. Experience, however, shows that the working classes will much more willingly go to hospitals which are supported by voluntary contributions than to those which are carried on at the expense of the ratepayers. Any attempt to compel tuberculous patients to go to rate-supported hospitals would, I believe, be fraught with failure; but I am certain that there would be no difficulty in filling hospitals or sanatoria supported by voluntary contributions with two or three times the number of patients at present accommodated in the existing consumption hospitals.—I am, etc.,

Welbeck Street, W., Dec. 26th. HECTOR MACKENZIE.

THE IRISH DISPENSARY DOCTOR.

SIR,—The correspondence columns of the BRITISH MEDICAL JOURNAL are not infrequently occupied with letters complaining of the wrongs of the Irish Poor-law dispensary doctor. To an outsider reading them, it would appear that they are a downtrodden race, groaning under "the iron heel of a grinding tyranny," existing rather than living upon a pittance hardly sufficient to keep body and soul together, the sport of guardians, shopkeepers, and other rural bullies, sweated for the benefit of the rich ratepayers. It would also appear as if they were too insignificant to have any friends, and, though quivering under the burden of their many woes, too crushed to even turn like the proverbial worm.

Now what are the facts? For sixty years there has been an association in Ireland entirely devoted to the interests of this class, an association which spends its small income in fighting their battles in the law courts, in Parliament, and with the Local Government Board.

It would take up too much space to enumerate all this Association has done for the dispensary doctors of Ireland. There is hardly a boon these "poor" men have obtained, either in increased salaries or better conditions of service,

that has not been obtained for them through the efforts of the Irish Medical Association. Naturally it would be presumed that every dispensary doctor in the island was a member of it. Alas! I would be ashamed to say how few are willing to pay 10s. a year to help on the good cause, and how many are willing to accept anything they can get through the efforts of the Association and pay nothing at all. Indeed, were it not for the generous help of those who are not connected with the Poor-law service, the Association would have been derelict long since. I find that out of the thirty-two counties of Ireland, twenty-two contribute less than £7 per annum each.

Now, the moral of my tale is this: The Irish dispensary doctor is quite contented with his lot. He may not be well paid from an English standpoint. But his wants are few, his expenses light, and his ambition moderate. He does not have to go his rounds in a carriage, wearing a frock coat and a silk hat. The work is not onerous, for the Irish poor are not very exacting in the matter of medical attendance.

I take it, and I think I am not far astray, that when the Irish dispensary doctors feel they are worth more than what they are getting they will soon strike for better pay. They will—as the national school teachers have done successfully—band themselves together, and as a united body demand to be paid the value of their services. Till then I do not regard them as an object of any particular sympathy on the part of their professional brethren, the Government, or the public in general, for the gods help those who help themselves.—I am, etc.,

December 6th. ONE WHO KNOWS.

SIR,—In the BRITISH MEDICAL JOURNAL of December 10th Dr. Dreaper endeavours to draw a comparison between the English and Irish Poor-law medical services, but I understand that it has again and again been declared by those best able to judge that there is no ground whatever for comparison, the services being totally different in every particular. The English parish doctor is only called upon to give free attendance to the pauper who is unable to pay either through a club or otherwise, while the Irish dispensary doctor is bound to attend any one who can get a ticket, and that means practically every one.

Dr. Dreaper's district contains about 4,000 acres, while mine contains about 32,000 acres; his population is 15,000, mine about 6,000. The population of Dr. Dreaper's district shows that it must be a very large town, as there are only five towns in Ireland with as large a population; but how many of the 15,000 are paupers? At least 5,600 of those in my district consider themselves subjects for free medical attendance on tickets. Even Poor-law guardians have filled in tickets for me to visit and attend themselves and their families, and well-to-do farmers have told me I am bound to attend them because they pay poor-rates; while it is quite common to get tickets from shopkeepers, publicans, and master tradesmen. You may ask why do I not get these tickets cancelled as the law directs? The answer is simply, I dare not fight with my masters; I prefer to get along peaceably, for in a neighbouring district it was made so hot for the medical officer by worrying him with unnecessary visiting tickets that he had to resign.

The amount of work quoted by Dr. Dreaper, I regret to say, does not apply to this or any other district with which I am acquainted, for the number of tickets registered have often been over 2,000 in a year, latterly about 12,000. When he quotes 50 visiting tickets, and assumes that that means only 50 visits, he evidently does not know that one ticket is sufficient for the entire illness, and may more likely represent 10 or 20 visits than one. Again, has Dr. Dreaper to travel 25 miles on a ticket? For I have to do so, and that in two or three different directions; for instance, I have had a case of typhoid 10 miles away, at the same time a case of pneumonia 7 miles, and a case of acute rheumatism 8 miles, each in quite a different direction from the others. Does he assume that the three tickets that represent these cases will only account for three visits? Evidently he is ignorant of the Local Government Board regulations, which say we must give as many visits as are necessary in each case, and he knows such cases as the above require to be seen at least every second day during the acute stage at least.

I may also tell Dr. Dreaper that I have often as many as 60 patients to attend and compound for at the dispensary in one day, while perhaps only about 10 of them may be primary cases with a ticket, the others having already had their cases registered. He also thinks we only attend dispensary patients at the dispensary for a couple of hours twice a week, but that is another mistake, for they come to my house at every hour of the day and night, every day of the week, Sundays and Christmas Days not excepted. Sickness does not wait for dispensary days and hours even in Ireland.

On the whole I fail to see the object of Dr. Dreaper's criticisms. Is it to show the drawbacks to the English system in order to get them remedied, or is it to try and destroy the little sympathy we are endeavouring to arouse towards remedying the well-known and universally admitted grievances of the Irish dispensary doctors? the following being the chief:

1. The mode of appointment, which is made solely on the grounds of religion, politics, and some local connection; professional attainments and qualifications do not count, and so long as the local election of candidates remains in force, it is utterly hopeless to think of boycotting the service as was so successfully done in the army; the only proper way is to have a competitive examination for entering the service.

2. Tickets should only be issued by the relieving officer, who could be held responsible for his work, and the giving of them should not be left to shopkeepers who give them to their customers as a prize with a pound of tea.

3. The necessity for an annual holiday. I am eleven years dispensary doctor, and I have never had a holiday.

4. The absolute necessity for an adequate pension when incapacitated from work by age or infirmity, as only a very meagre provision has been made in the new Local Government Bill for pensions.—I am, etc.,

Ballygar, Dec. 14th. DIGBY P. FFRENCH.

EARLY LIP CANCER.

SIR,—In the BRITISH MEDICAL JOURNAL of October 22nd and November 12th, letters appear from Dr. Williams and Dr. Herbert Snow, which throw doubt on the microscopic diagnosis of the case of early lip cancer reported by Dr. Johnston in the BRITISH MEDICAL JOURNAL of October 8th. As the microscopic examination was made by me you will, I hope, allow me to answer these criticisms as briefly as possible.

Dr. Williams is disposed to doubt the possibility of microscopic diagnosis of squamous cancer from the original growth, apart from lymph-gland infection and other clinical signs of malignancy. No doubt there are cases in which such diagnosis is difficult, if not impossible, but the present case is not one of these difficult cases. It is one in which, as can be seen by reference to my description, the whole subcutaneous and muscular tissue is filled with masses of epithelial cells, surrounded by extensive small-celled infiltration, causing atrophy of muscle fibres and showing degenerative changes. To this general description I have only to add that, although these masses appear isolated in a single section, a series of sections shows that they are not really so, being connected with each other and with the superficial epithelium by tortuous and irregular columns of epithelial cells. The growth spreads not only downwards and laterally, but also upwards towards the surface, so that the masses are found in places underlying the normal skin epithelium, and separated from it only by a thin layer of the cutis.

This irregular burrowing of the epithelium through the surrounding tissues in all directions is quite different from the thickening and ingrowth found round tuberculous or syphilitic inflammations.

The epithelial masses consist of an outer layer, one or two cells deep, of cubical or flattened cells with numerous mitoses. Inside this is either a concentrically laminated mass of cells whose nuclei do not stain, and are crescentic or irregular in shape or a granular mass, in which no cell outlines can be made out, staining a faint purple with hæmatoxylin, and containing irregular deeply stained particles of chromatin. A few multinuclear epithelial cells are found in the outer layers of the nests, and in the columns connecting them with one another. These can quite easily be made out in thin sections, the nuclei, round or oval, two or three in number, overlapping one another. Such multinucleated epithelial cells are not distinctive of cancer, being also found in lupus and other skin inflammations.

The small-celled infiltration in the stroma of the cancer consists chiefly of mononuclear elements, the so-called plasma cells, whose protoplasmic granules stain a deep blue with polychromic methylene blue. There are also many mast cells, the granules taking on a red colour with the same dye, while the polynuclear leucocytes which are present in considerable numbers, both in the stroma and between the layers in the cell nests show a clear unstained protoplasm.

Part of Dr. Snow's criticisms has been answered by what I have already said. I can hardly understand how anyone who read my description could say, as he does, that there is no record in it of leucocytic infiltration. The term "small-celled infiltration," which I used, is, I think, better, because it does not involve a theory.

Until the etiology of cancer has been cleared up the primary microscopic sign of malignancy, where lymph gland infection is absent, will, I believe, be the "limitless growth" of the epithelium, and all considerations derived from the form of the cancer cells, and the reaction of the surrounding tissues should be regarded as of diagnostic importance only in so far as they are shown by experience to accompany this primary sign.—I am, etc.,

A. C. O'SULLIVAN, M.B.,
December 7th. Lecturer in Pathology, Trinity College, Dublin.

INSUSCEPTIBILITY TO VACCINIA.

SIR,—It may be assumed to be generally accepted that there are several different causes which lead to the declaration that an infant is "insusceptible" to vaccination; well-known statistics, such as those of Dr. Cory, seem to show that vaccination performed thrice unsuccessfully by no means implies an actual insusceptibility to vaccinia; and no doubt in a large majority of cases returned as "insusceptible" the vaccinator has been at fault either by scratching too minute an area of skin or by using inactive lymph: or, as has often been found, the mothers have prevented the success of the operation by purposely washing, or otherwise interfering with, the "places" immediately vaccination has been completed.

It will probably be agreed, however, that if such causes of failure are set aside there is a small residuum of cases truly insusceptible, in the sense that vaccination of infants, properly performed with efficient lymph on three occasions, with intervals of a few weeks or months between them, has failed altogether. And most vaccinators would probably recognise a degree of partial insusceptibility, where out of several insertions of efficient vaccine over a considerable area, made on two or more occasions, at most a single small vesicle has resulted.

The purpose of my letter is to inquire of those who have had large experience of vaccination whether any information can be furnished of the relation, if any, between such truly insusceptible or partially insusceptible infants and the condition of vaccination or variolation of the parents—particularly of the mothers.

In the case of an infant born to a mother actually suffering from small-pox, there are recorded instances in which the infant, vaccinated on several occasions with efficient lymph, and remaining exposed to variola, has developed neither vaccinia or variola. This appears to be the extreme case of true insusceptibility dependent on the maternal condition. Are there known comparable instances in which an infant has been born to a mother actually suffering from vaccinia, and and has proved insusceptible to vaccinations properly performed with efficient lymph? And going further back, what has been the condition as to insusceptibility, or partial insusceptibility, of infants born to mothers who have suffered from variola or vaccinia before, but not long antecedent to, parturition? And again, how long after birth does this insusceptibility last?

Beyond two cases recently under my observation of infants whose mothers had been successfully revaccinated shortly before the commencement of pregnancy, and who, after several vaccinations with lymph, efficient in other cases, presented in one case no reaction, and in the other a single minute vesicle on the second time of vaccinating, I am unable to contribute any other facts upon the subject. But the matter has considerable interest, and in Gloucester, Middlesbrough, and at other places, where no doubt there has lately been a considerable number of mothers vaccinated during pregnancy, or having small-pox during or immediately antecedent to pregnancy, there may have been several opportunities of observing what, if any, has been the degree of insusceptibility of their infants to vaccination.—I am, etc.,

Oaklands, Chiswick Lane, W., Nov. 20th. G. P. SHUTER.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

THIRD EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have satisfied the Examiners:

Part II.—J. L. Allen, B.A., King's; C. H. Barnes, B.A., Christ's; P. F. Barton, B.A., Joh.; J. A. H. Brincker, B.A., Joh.; A. E. Carsberg, B.A., Cai.; A. W. Daniel, B.A., Emm.; S. E. Denyer, M.A., Queens'; W. Eardley, M.A., Joh.; E. E. Glynn, B.A., Cla.; W. D. Harmer, B.A., King's; G. E. Harthan, B.A., Jes.; H. M. Hart-Smith, B.A., Cai.; J. H. F. Jerrard, B.A., Cai.; M. B. Johnson, B.A., Trin. H.; A. C. Jordan, B.A., Sid. Suss.; G. S. Keeling, B.A., Cai.; T. W. Letchworth, B.A., Emm.; F. J. Lidderdale, Trin.; A. F. MacCallan, B.A., Christ's; P. L. Moore, B.A., Joh.; B. A. Percival, B.A., Joh.; S. P. Pollard, B.A., Cai.; C. Powell, B.A., Emm.; C. Reismann, B.A., Joh.; E. P. Sewell, B.A., Pemb.; C. C. Simpson, M.A., Trin.; P. T. Sutcliffe, B.A., Emm.; E. C. Taylor, B.A., Joh.; H. C. Thorp, B.A., Emm.; I. Ll. Tuckett, M.A., Trin.; A. N. Walker, B.A., Queens'; A. M. Ware, B.A., Pemb.; W. K. Wills, M.A., Joh.; R. J. Willson, B.A., Emm.; A. G. Wilson, B.A., Cai.

APPOINTMENTS.—Dr. Alex Hill has been reappointed a University Lecturer in Advanced Human Anatomy for five years. Dr. A. Macalister has been appointed an Additional Examiner in Anatomy.

DEGREE.—At the Congregation on December 15th, Arthur Burton, M.A., M.B., B.C., of King's College, was admitted to the degree of Doctor of Medicine.

UNIVERSITY OF LONDON.

M.D. EXAMINATION.—The following candidates have satisfied the Examiners in the subjects undernoted:

Medicine.—P. E. Adams, St. Bartholomew's Hospital; A. P. Allan, B.S., Guy's Hospital; J. H. Bodman, B.S., University College, Bristol, and St. Bartholomew's Hospital; W. F. V. Bonney, B.S., Middlesex Hospital; *J. A. O. Briggs, St. Bartholomew's Hospital; Maud Mary Chadburn, London School of Medicine and Royal Free Hospital; F. N. Cookson, Middlesex Hospital; M. Dixon, B.Sc., University College; R. W. Dodgson (Gold Medal); St. Mary's Hospital; E. G. D. Drury, B.S., St. Bartholomew's Hospital; G. R. Elwin, St. Mary's Hospital; A. H. Evans, B.S., Westminster Hospital; J. W. Haines, B.S., St. Bartholomew's Hospital; A. Heath, St. Bartholomew's Hospital; A. Howell, St. Mary's Hospital; T. H. Hunt, B.S., Owens and Yorkshire Colleges; *J. Hussey, St. Bartholomew's Hospital; W. H. Jewell, B.S., Guy's Hospital; J. L. Jones, B.S., University College; C. H. J. Lockyer, B.S., Charing Cross Hospital; A. A. Martin, B.S., St. Mary's Hospital; Elizabeth Jane Moffett, B.Sc., London School of Medicine and Royal Free Hospital; E. Pratt, St. Bartholomew's Hospital; G. B. Price, B.S., University College, Bristol, and St. Bartholomew's Hospital; W. T. G. Pugh, B.S., Middlesex Hospital; A. W. Sanders, St. Mary's Hospital; W. G. Savage, B.Sc., University College; H. J. Scharlieb, B.S., University College; A. W. Sikes, B.S., B.Sc., St. Thomas's Hospital; E. I. Spriggs, Guy's Hospital; W. H. B. Stoddart, B.S., University College; F. H. Thiele, B.Sc., University College; E. Thomas, B.S., University College; E. J. Toye, B.S., B.Sc., St. Bartholomew's Hospital; Ethel May Vaughan, B.S., London School of Medicine and Royal Free Hospital; W. B. Warde, St. Bartholomew's Hospital; T. H. Wells, Middlesex Hospital.

State Medicine.—W. E. Dixon, B.S., B.Sc., St. Thomas's Hospital; W. J. Potts, M.D., Owens and University Colleges.

* Obtained the number of marks qualifying for the Gold Medal.

M.B. HONOURS EXAMINATION.—The following candidates have passed this Examination in the subjects undernoted:

Medicine.—First-class: T. J. Horder, B.Sc. (Gold Medal), St. Bartholomew's Hospital; H. G. Lawrence (Scholarship and Gold Medal), St. Mary's Hospital; R. H. J. Swan, Guy's Hospital. Second Class: F. F. Elwes, Middlesex Hospital; W. L. Griffiths, B.Sc., University College; F. C. Lewis, St. Mary's Hospital. Third Class: Elizabeth Honor Bone, Royal Free Hospital; H. D. Singer, St. Thomas's Hospital.

Obstetric Medicine.—First Class: T. J. Horder (Gold Medal), St. Bartholomew's Hospital; H. G. Lawrence, St. Mary's Hospital; J. P. Maxwell (Scholarship and Gold Medal), St. Bartholomew's Hospital. Second Class: J. G. Emanuel, B.Sc., Mason College and Queen's and General Hospital, Birmingham; F. C. Lewis, St. Mary's Hospital. Third Class: V. E. Collins, Guy's Hospital; D. J. Munro, Guy's Hospital; H. Peet, Yorkshire College; A. G. G. Plumley, Medical School and University College, Bristol, and Guy's Hospital; F. Riley, Westminster Hospital.

Forensic Medicine.—First Class: V. E. Collins, Guy's Hospital; T. J. Horder (Gold Medal), St. Bartholomew's Hospital. Second Class: L. Gilbert, St. Thomas's Hospital; A. S. Green, Royal College of Surgeons, Ireland, and Meath Hospital; H. E. Hewett, St. Thomas's Hospital; F. S. Lloyd, St. Mary's Hospital; H. D. Singer, St. Thomas's Hospital.

M.S. EXAMINATION.—The following candidates have satisfied the Examiners:

C. H. Fagge, Guy's Hospital; C. E. M. Kelly, M.D., Owens College; J. S. Sloane, B.Sc., St. Bartholomew's Hospital; W. Turner, King's College.

B.S. EXAMINATION.—The following candidates have passed this Examination:

First Division.—T. V. Cunliffe, Owens College and Manchester Royal Infirmary; J. G. Emanuel, B.Sc., Mason College; J. P. Maxwell, St. Bartholomew's Hospital; D. J. Munro, Guy's Hospital; Winifred Secretan Patch, B.Sc., Royal Free Hospital and London School of Medicine; E. W. Spink, Yorkshire College.

Second Division.—Louisa Garrett Anderson, London School of Medicine for Women; J. S. Boden, King's College; Elizabeth Honor Bone, Royal Free Hospital; H. W. Bruce, Guy's Hospital; A. S. Cobbledick, Bristol Medical School; E. Coleman, Guy's Hospital; Lucinda Catherine E. Forster, Royal Free Hospital; L. Gilbert, St. Thomas's Hospital; E. G. L. Goffe, University College; A. S. Green, Meath Hospital and Royal College of Surgeons in Ireland; J. P. Hall, Owens College and Manchester Royal Infirmary; L. E. C. Handson, Guy's Hospital; H. E. Hewitt, St. Thomas's Hospital; J. D. Jenkins, London Hospital; J. C. H. Leicester, M.D., B.Sc., University College; F. C. Lewis, St. Mary's Hospital; J. L. Maxwell, St. Bartholomew's Hospital; Mary Elizabeth Pailthorpe, London School of Medicine for Women; F. Riley, Westminster Hospital; H. Sinigar, M.D., Mason College; Florence Ada Stoney, London School of Medicine for Women; R. H. J. Swan, Guy's Hospital; W. H. M. Telling, Guy's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen having passed the necessary Examinations and having conformed to the By-laws and Regulations have been admitted Fellows of the College:

C. A. Worth, L.R.C.P.Lond.; A. G. Ince, L.R.C.P.Lond.; G. H. Sowry, M.B., B.S.Lond.; L.R.C.P.Lond.; N. B. Harman M.B.Cantab., L.R.C.P.Lond.; H. T. S. Bell, L.R.C.P.Lond.; A. W. Ormond, L.R.C.P.Lond.; A. W. Sikes, L.R.C.P.Lond., B.Sc.Lond.; W. I. Hancock, L.R.C.P.Lond.; W. Stuart-Low, L.R.C.P.Edin., L.F.P. and S.Glasg.; J. A. Bonnin, M.B., Ch.B.Adelaide, L.R.C.P.Lond.

Four other gentlemen passed the examination (but have not yet attained the legal age of 25 years), and will receive their diplomas at future meetings of the Council. Twenty were referred for six months, and 1 for one year.

The following gentlemen having passed the necessary examinations have been admitted Licentiates in Dental Surgery:

L. M. Balding, Charing Cross and the Dental Hospital of London; A. O. Bell, Guy's Hospital, Dental Department, and School; H. H. Belsey, Charing Cross, and the Dental Hospital of London; H. N. Besford, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; F. J. Bradburn, University College, Royal Infirmary, and Dental Hospital, Liverpool; P. S. Campkin, Guy's Hospital, Dental Department, and School; H. Charnock, Guy's Hospital, Dental Department, and School; I. Cohen, Charing Cross, and the Dental Hospital of London; W. P. Crombie, M.B., C.M. Aberdeen, Aberdeen University, and Guy's Hospital, Dental Hospital, and School; E. A. G. Dowling, M.R.C.S.Eng., L.R.C.P.Lond., St. Bartholomew's Hospital, and the National Dental Hospital; H. H. Evans, Guy's Hospital, Dental Department, and School; J. S. Farnfield, Guy's Hospital, Dental Department, and School; L. M. Fleetwood, Guy's Hospital, Dental Department, and School; W. C. Harrison, Mason University College, Queen's and General Hospital, and the Dental Hospital, Birmingham; H. W. J. Hawthorn, Mason University College, Queen's and General Hospital, and the Dental Hospital, Birmingham; C. H. Huckle, Guy's Hospital, Dental Department, and School; C. F. Jesson, Guy's Hospital, Dental Department and School; E. Mason, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; E. N. Mason, Guy's Hospital, Dental Department and School; A. Mitchell, Owens College, Royal Infirmary and Victoria Dental Hospital, Manchester; W. H. Must, Middlesex Hospital and the National Dental Hospital; A. G. Payne, Charing Cross and the Dental Hospital of London; W. F. Peach, St. Mary's and the Dental Hospital of London; W. H. Phillips, Guy's Hospital, Dental Department and School; W. R. Read, St. Bartholomew's and the National Dental Hospital; A. W. Roberts, Charing Cross and the Dental Hospital of London; H. Rose, Middlesex and the National Dental Hospital; B. Sherratt, Owens College, Royal Infirmary and Victoria Dental Hospital, Manchester; J. I. Shorrock, Owens College, Royal Infirmary and Victoria Dental Hospital, Manchester, and Royal Infirmary and Dental Hospital, Liverpool; G. V. Smallwood, Mason College, Queen's and General Hospital Birmingham; P. L. Smith, Mason College, Queen's and General Hospital and the Dental Hospital, Birmingham; W. E. Stelfox, Owens College, Royal Infirmary and Victoria Dental Hospital, Manchester; W. H. Thomas, Charing Cross and the Dental Hospital of London; E. A. Wolter, Charing Cross and the Dental Hospital; B. J. Wood, University College, Royal Infirmary and Dental Hospital, Liverpool.

Twenty-six gentlemen were referred back to their professional studies for six months.

SOCIETY OF APOTHECARIES OF LONDON.

PASS LIST, December, 1898.—The following candidates passed in:

Surgery.—W. F. E. Ashton, Birmingham; E. U. Bartholomew, Charing Cross Hospital; W. H. I. Bathurst (Section II), London Hospital; C. T. Bishop (Sections I and II), Charing Cross Hospital; C. G. Catterall (Section I and II), Leeds and Westminster Hospital; G. J. D. Davies, Leeds; H. Fawcett, Cambridge and London Hospital; P. T. Goodman, St. Thomas's Hospital; A. H. Safford, King's College Hospital; T. J. Vick, Guy's Hospital; C. Welch, London Hospital.

Medicine.—G. Aldridge, London Hospital; W. F. E. Ashton, Birmingham; W. H. I. Bathurst (Section II), London Hospital; W. F. C. Bennett (Section I), Sheffield; C. T. Bishop (Sections I and II), Charing Cross Hospital; R. Brookes (Section I), Westminster Hospital; F. W. Chesnaye (Section I), St. George's Hospital; L. D. B. Cogan, Guy's Hospital; [illegible] Guy's Hospital; W. T. Davies, [illegible]; J. E. [illegible]; [illegible]

Forensic Medicine.—W. F. E. Ashton, [illegible], C. T. Bishop, [illegible], Westminster Hospital; [illegible] Cotman, Aberdeen and London Hospital; W. T. Davies, London Hospital; T. A. E. [illegible] Hospital; D. V. Lowe, [illegible]

Midwifery.—W. Archer, Leeds; W. F. C. Bennett, Sheffield; C. T. Bishop, Charing Cross Hospital; H. N. Collier, Guy's Hospital; S. E. Dunkin, Charing Cross Hospital; F. Ellis, London Hospital; C. Fisher, St. Bartholomew's [illegible] pital; W. H. Gale, St. Thomas's Hospital; T. R. Griffiths, University College Hospital; T. B. Haig, St. Bartholomew's [illegible] Edinburgh; R. O. Jones, Guy's Hospital; MacD. E. Judge, Guy's Hospital; R. A. Lyster, Birmingham; W. A. Sugden, St. Mary's Hospital.

The diploma of the Society was granted to Messrs. W. F. E. Ashton, E. U. Bartholomew, W. H. I. Bathurst, C. T. Bishop, C. G. Catterall, L. D. B. Cogan, G. J. D. Davies, W. T. Davies, P. T. Goodman, T. J. Vick, and C. Welch.

MEDICO-LEGAL.

PRACTICE BY AN UNREGISTERED PERSON.

ON December 15th, at Houghton-le-Spri[illegible] was charged that he on October 31st, at [illegible] and falsely take and use the title o[illegible] that he was recognised by law[illegible] barrister, instructed by Mess[illegible] appeared to prosecute at the [illegible] and Mr. Edward Clark, of Newcastle, defended. Mr. [illegible] the case, said that the charge was made under Section [illegible] Act, 1858, and, if convicted, defendant was liable [illegible] Defendant was before the court four years ago for unlawfully using the letters M.D. and B.C., when he was convicted and he appealed, but the high court upheld the magistrates' decision. The only distinction between this case and the one before that was that instead of using the letters "M.D.(Brux.)" defendant had used the letters "F.C.S.M.London." He had used these letters and practised as a doctor in a number of cases. In the case under notice a girl named Ethel Liddle was attended by defendant and died of scarlet fever, and defendant after her death signed a certificate on a form which was a copy of the Government form which defendant had had printed for himself. He signed his name and the letters "F.C.S.M." Mr. Meynell submitted that these letters were there, and for the purpose of misleading ignorant people that this man was in some way qualified to act as a doctor.

John Liddle, father of the girl mentioned, and Mary Liddle, mother, spoke to defendant attending their daughter, but both stated and re[illegible] in cross-examination that they consulted defendant knowing him to be a botanist only, and with the knowledge that he had no medical qualification.

James Elliott, registrar of births and deaths at Hetton, deposed to receiving certificates from defendant. He entered the cases, but they were not put down as certified. He knew defendant [illegible]

Dr. Sutherland, medical officer of health for the Southern Division of the Houghton-le-Spring District, deposed to receiving a notification that the girl named had died from scarlet fever. He knew defendant was not a doctor and he destroyed it.

For the defence, Mr. Clark said that the case had signally failed. There was no pretence whatever on behalf of defendant that he was a medical man. The witnesses for the prosecution knew what he was, so did everyone else, after his conviction a few years ago at the court. The letters "F.C.S.M." did not imply that he was a medical man, and the prosecution could not put any such construction upon them. Defendant's death forms were not the same colour as those of the medical authority, and when he filled one up he did not sign it as certified. The letters meant Fellow of the Council of Safe Medicine, whose examinations defendant had passed.

The defendant gave evidence, and declared that all the people who consulted him knew he had no legal qualification. He had declared it himself to the public six or seven times. He had never pretended that he was a medical doctor. The death forms he had had printed he drafted out himself, and he did not sign them as a medical man. Cross-examined by Mr. Meynell, defendant admitted that he had 400 people paying him from 6d. to 2d. a fortnight, and had a man to collect the money.

A witness said that indignation meetings had been held at Hetton against attempts to interfere with Steel's business.

The Bench said the first case four years ago was perfectly clear, but in this case they had very serious doubts as to whether defendant had infringed the Section or not, and they would give him the benefit of the doubt. The case was dismissed.

The Bench refused Mr. Clark's application for costs.

Other charges against defendant under different sections of the Act were also dismissed, and one was withdrawn.

CHARGE OF MALPRAXIS.

AT the Leeds Assizes on December 18th an action wa[illegible] Mr Justice Darling against Dr. A. Maevie of Baildon, for alleged negligence in the treatment of a boy aged 16 years, who met with an accident in August, 1896, while jumping. He fell, and his knee was cut open. It was alleged for the plaintiff that negligence had been shown in treatment, and that as a consequence the boy had a stiff knee. The defendant gave evidence, and stated that he had carefully examined the wound, and failed to find any foreign body. There had been great haemorrhage, the

wound was perfectly clean, and he had attempted to get union by first intention, but did not succeed. The boy was subsequently admitted to the Bradford Infirmary, where an operation was performed. He remained in the infirmary until November. Among the witnesses called by the defendant was Mr. T. R. Jessop, of Leeds, who stated that all the defendant did under the circumstances was quite reasonable and proper, and was what he would have done under similar circumstances. He had examined the boy in November 1898, and formed the opinion that there was a piece of glass still in his knee and that impression was confirmed by skiagraphs. The judge in summing up referred to the skiagraphs, and observed that if Mr. Jessop's theory was correct, the other surgeons who had seen the case subsequently to the defendant had failed to detect the piece of glass. He commented also upon the doubt whether the defendant was in the first instance told that the boy had fallen on a piece of glass. It was somewhat remarkable, he said, that the action was brought, among other things, on the ground that the defendant did not detect that the boy was suffering from fracture of the knee-cap, but no one now contended that there had been such an injury. They could at least acquit the defendant of that. The jury might reasonably ask themselves, Why did not the father bring the action earlier? Why should he have waited? If he had a good action against the doctor, he ran the risk of losing it by waiting. The action, his lordship pointed out, was not brought till a year after the doctor's bill was first sent in. The jury returned a verdict for the defendant, and judgment was entered accordingly. His lordship also certified for a special jury.

ALLEGED PERSONATION.

THE story which has been sketched during the hearing of a charge of manslaughter against "Edward Joseph Nugent, a medical practitioner of 38, Barking Road, Canning Town," is certainly a most remarkable one. The hearing at the West Ham Police Court was concluded on December 28th, when the accused was committed for trial, bail being allowed, himself in £300 and two sureties in £150 each. The case arose out of an inquest held recently by Mr. G. E. Hilleary, the coroner for West Ham. The defendant had attended a woman in her confinement; she suffered from inversion of the uterus, and, according to the evidence, there was some delay in going to her assistance after the symptoms of this condition developed. Eventually the defendant asked for assistance, and Dr. Carey was called in and reduced the inversion, but the woman died. During the inquest Mr. Hempson, the solicitor to the Medical Defence Union, obtained leave to ask the defendant, who was then called as witness, certain questions, the answers to which were not regarded as satisfactory. At the Police Court Mr. Horace Avory appeared to prosecute for the Treasury, and, after calling evidence to support the charge of manslaughter, he preferred against the defendant the further charge of committing wilful and corrupt perjury before the coroner. The defendant pleaded not guilty to the charge of manslaughter, reserved his defence, and called no witnesses. He was committed for trial at the Central Criminal Court, and the charge of perjury was proceeded with.

Mr. Hilleary, the coroner, produced the depositions of his inquest. The defendant, who had elected to give evidence, gave his name as Edward Joseph Nugent, and described himself as L.R.C.S.Irel. and L.R.C.P.Irel. He said he was a registered medical practitioner, had been off the *Register* for some years owing to his moving about, but had been on again for two years. The name, it may be said, appears on the *Medical Register* for 1898. Araminda Nugent, called as a witness, said that she was married on November 5th, 1884, in Dublin, to Edward Joseph Nugent, then in practice in that city. In 1890 her husband went to Woolwich, and practised at Artillery Place there, and at Creek Road, Deptford. He was not successful, and in 1894 he received assistance from the British Medical Benevolent Fund. In January, 1895, he went to Sydney, N.S.W., and she had not seen him since, though she had heard from him as late as November last. She knew the defendant as Mr. Rowland, and had known him for some years before her husband went abroad as a visitor to her husband, but not as his assistant. The day before her husband went away he gave the defendant two diplomas, and in consequence of some arrangement made with her husband he had been in the habit of sending her 3s. 6d. a week. After the inquest the defendant had called on her, and in the course of conversation had, in reply to the question whether she would have to appear in court, said that he did not think so, but that if she did she must not say he was not her husband. The defendant was no relation to her or to her husband. Dr. Bateman, the Secretary of the Medical Defence Union, said that he had in 1895 written to the accused charging him with personating E. J. Nugent, and had repeated the charge at an interview. It was indignantly denied. Dr. Bateman said that he had communicated with the General Medical Council, giving the information in his possession, but "Nugent" had written subsequently, stating that his name had been placed on the *Medical Register*. Mr. Avory stated that the defendant had obtained the insertion of the name in the *Register* by application to the Irish Branch Council. The defendant was committed for trial on this charge also, but, as has been said, was admitted to bail. We refrain from commenting on the case at the present stage of the proceedings, but it will be seen that it raises some interesting questions.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL STAFF EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

MAJOR R.A.M.C., serving in Malta, with two years from March next to complete tour, is open to an exchange to India for whole or part tour. Address, "Change," care of P.M.O., Malta.

WANTED by Major R.A.M.C. under orders for Bengal, leaving in February, an exchange to remain in England for eight or ten months longer. Address, stating terms, to "Anglian," care of Holt and Co., 3, Whitehall Place, London.

MAJOR R.A.M.C., with one year to complete in a Colony, is desirous of exchanging with an officer recently home. Address, "Mungo," care of Messrs. Holt and Co., 3, Whitehall Place, London, S.W.

ROYAL NAVY MEDICAL SERVICE.

STAFF-SURGEON CYRIL J. MANSFIELD, M.D., has been appointed to the *Pearl*, December 22nd.

ROYAL ARMY MEDICAL CORPS.

CAPTAINS of the Royal Army Medical Corps serving in India will in future be allowed to undergo short courses of operative surgery at the medical colleges of Calcutta, Madras, and Bombay under arrangements just made by the Government of India.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT JOHN K. TOMORY, M.D., 1st Sutherland Highland Rifles, to be Surgeon-Lieutenant, December 28th.

INDIAN MEDICAL SERVICE.

DEPUTY-INSPECTOR-GENERAL DUNCAN MACRAE, retired list Indian Medical Service, died at Kamer Castle, Isle of Bute, on the 14th instant, at the age of 82. He joined the East India Company's service in January, 1838, and served through the Afghan war of 1842, under General Pollock. He was present at the capture of Khythul in 1843, went through the campaign in Sind in 1846, and the campaign in the Punjab in 1848-9, including the siege of Mooltan and the battle of Goojerat. He also served through the Indian Mutiny in 1857-8, and was present at Umballa, Meerut, and the capture of Delhi. He had received three medals and three clasps.

YEOMANRY AND THE VOLUNTEER RIFLES.

SURGEON-LIEUTENANT P. B. MACKAY, Yorkshire Dragoons (Queen's Own), is promoted to be Surgeon-Captain, December 28th.

Surgeon-Lieutenant JOHN OLDERSHAW, M.D., 1st Cheshire and Carnarvonshire Artillery, resigns his commission, and is appointed Captain, December 28th.

Mr. GEORGE WILSON, M.B., is appointed Surgeon-Lieutenant in the Highland Rifles, December 28th.

Surgeon-Major M. E. LING, 1st Volunteer Battalion the Suffolk Regiment, has resigned his commission, December 28th; he retains his rank and uniform.

Mr. JOHN WILLIAM LOGIE, M.B., is appointed Surgeon-Lieutenant in the 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry, December 28th.

UNITED STATES ARMY SURGEONS AND BRITISH METHODS.

ACCORDING to the *New York Times* of December 6th, Lieutenant-Colonel R. M. O'Reilly, chief surgeon, and Lieutenant Weston, will sail shortly on the hospital ship *Bay State*, for Kingston, Jamaica, to investigate British military medical methods in tropical climates. At the conclusion of the investigation, Colonel O'Reilly is to proceed to Santiago to land supplies, and thence on to Havana, where he is to hold the office of chief surgeon during the temporary occupation. The *Bay State* will be retained as a hospital ship under Colonel O'Reilly's orders, its light draught fitting it for use in the shallow Cuban waters. The scope of the investigations is indicated in the following order issued by Surgeon-General Sternberg:

"You are expected to make a careful inquiry with reference to the methods now in use in the island of Jamaica for protecting soldiers of the British army stationed upon that island from fatal infectious diseases and from the deleterious effects of climatic influences. You should ascertain as far as practicable the results attained by improved methods which have been adopted as the result of experience, and full details as regards the housing, clothing, and feeding of British soldiers in semitropical and tropical climates; also the methods found most satisfactory for the disposal of excreta, and for the protection of troops from infectious diseases, and especially yellow fever, dysentery, camp diarrhœa, and the malarial fevers. The measures of prophylaxis adopted, and the results of such measures, should be fully investigated. Especial attention should be given to the question of rations and clothing which have been found suitable for the climate of Jamaica; also as to the construction of barracks found by experience to be most suitable and conducive to the health of soldiers in garrison; also to everything pertaining to camp equipment and the sanitation of camps as practised and as required by army regulations and orders. You are expected to make to the Adjutant-General of the army a full report upon these subjects."

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns, including London, 6,160 births and 3,830 deaths were registered during the week ending Saturday last, December 24th. The annual rate of mortality in these towns, which had declined from 19.1 to 16.6 per 1,000 in the three preceding weeks, rose to 17.8 last week. The rates in the several towns ranged from 10.6 in Cardiff, 12.4 in Wolverhampton, 12.5 in Leicester, and 13.8 in Croydon, to 22.1 in Liverpool, 23.0 in Manchester, 25.4 in Salford, and 30.2 in Swansea. In the thirty-two provincial towns the mean death-rate was 18.3 per 1,000, and exceeded by 1.3 the rate recorded in London, which was 17.0 per 1,000. The zymotic death-rate in the thirty-three towns averaged 2.0 per 1,000; in London the rate was equal to 1.7 per 1,000, while it averaged

2.2 in the thirty-two provincial towns, among which the highest zymotic death-rates were 3.5 in Leeds, 4.4 in Nottingham, 5.1 in Bolton, and 7.7 in Swansea. Measles caused a death-rate of 1.5 in Manchester and in Salford, 2.6 in Bolton, and 2.9 in Nottingham; whooping-cough of 1.1 in Halifax, and 1.3 in Preston; "fever" of 1.1 in Salford, 1.3 in Brighton and in Bolton, and 1.4 in Norwich. The mortality from scarlet fever showed no marked excess in any of the large towns. The 115 deaths from diphtheria in the thirty-three towns included 46 in London, 17 in Leeds, 10 in Swansea, 7 in Sheffield, 6 in West Ham, 6 in Liverpool, 4 in Brighton, and 3 in Cardiff. No fatal case of small-pox was registered during the week under notice, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had declined from 3,259 to 3,043 at the end of the five preceding weeks, had further fallen to 2,001 on Saturday last, December 24th; 221 new cases were admitted during the week, against 264, 276, and 260 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, December 24th, 910 births and 541 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 21.0 and 19.4 per 1,000 in the two preceding weeks, further declined to 18.2 last week, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. Among these Scotch towns the death-rates ranged from 11.6 in Leith and 15.2 in Paisley to 21.1 in Aberdeen and 22.1 in Perth. The zymotic death-rate in these towns averaged 2.3 per 1,000, the highest rates being recorded in Aberdeen and Paisley. The 252 deaths registered last week in Glasgow included 6 from measles, 9 from scarlet fever, 8 from whooping-cough, and 8 from "fever." Three fatal cases of measles and 2 of "fever" were recorded in Edinburgh.

INFECTION AND DISINFECTION.

Bowmount.—The context does not throw any light upon the interpretation of Section lvii of the Public Health (Scotland) Act, 1897. Replying categorically to our correspondent's queries we should say:

(1) That by "disinfection" is to be understood any natural or artificial process by which a previously infected person or article is deprived of infectivity.

(2) "Infectious disease" is not defined in the Act, and the phrase must be interpreted in a common-sense way. For the purposes of Section lvii it would be sufficient, we should say, to include under the designation "infectious disease" the diseases compulsorily notifiable under the Infectious Disease (Notification) Act, together with measles, whooping-cough, and perhaps chicken-pox.

POOR-LAW SUPERANNUATION IN IRELAND.

T. H. M. writes: In the case of workhouse officials resident on the premises and entitled to compulsory superannuation under the Local Government (Ireland) Bill upon the Civil Service scale, are such officers entitled to include the value of their apartments in reckoning their salaries and emoluments? I should be glad to know by what Act of Parliament the Civil Service scale of superannuation is fixed.

*** Section 118 of the Local Government (Ireland) Act, 1898, to which our correspondent presumably refers, provides in effect that existing officers of boards of guardians in Ireland shall, under the circumstances mentioned in the Act and without prejudice to any existing right, be entitled to receive superannuation allowances on the scale and according to the Acts and rules relating to Her Majesty's Civil Service. The existing statutory rights of Poor-law officers in Ireland in respect of superannuation allowances are defined by the Union Officers (Ireland) Superannuation Acts, 1865 and 1872 and the Medical Officers Superannuation Act (Ireland), 1869. The Acts relating to the Civil Service are the Superannuation Acts, 1834 to 1892, the scale of allowance being regulated by the Superannuation Act, 1859. We do not consider that the Acts we have quoted warrant, generally speaking, an affirmative answer to our correspondent's question, but at the same time it is possible that the considerations present in any individual case may be of such a nature as to justify an affirmative answer in such case.

BONESETTER'S ATTENDANCE ON CASES OF FRACTURE.

R. R.—(1) Our correspondent, we think, acted rightly in deciding to retire from the private case when the bonesetter was called in. (2) If sent for to a club patient he should attend, but we think he is not bound to continue his attendance unless the bonesetter ceases to attend. (3) He should retire from a pauper case, but only after explaining that he will be ready to give further attendance if requested whenever he is informed that the bonesetter's attendance has ceased. This promise should be made in the presence of a reliable witness.

Diphtheria and the Cat.—At a recent meeting of the Frimley District Council, the medical officer reported imperfect sanitary arrangements in connection with the occurrence of cases of diphtheria. In the case of two patients, a mother and a child 21 months old, Dr. Walcot reported that they had recently made a visit to Wandsworth, and that "a cat in the house where they had visited was ill, and made a curious sound in breathing. The cat would neither eat nor drink, and its breath had a bad smell. On the day after it (the cat) was killed, the child showed signs of sickness, which developed into diphtheria." The child died after a week's illness, but the mother recovered.

MEDICAL NEWS.

The Royal Institution.—At the Royal Institution of Great Britain, which will celebrate its centenary next year, Professor Ray Lankester will commence a course of ten lectures on The Morphology of the Mollusca, on January 17th, and Dr. A. Macfadyen, the Director of the Jenner Institute of Preventive Medicine, a course of four lectures on Toxins and Antitoxins on February 9th. The Friday evening meetings will commence on January 20th, when Professor Dewar will give a lecture on Liquid Hydrogen; on February 3rd Mr. Victor Horsley will deliver a discourse on The Roman Defences of South-East Britain; and on March 17th Professor Francis Gotch will give a discourse on The Electric Fish of the Nile.

Poisonous Flannelette.—Some kinds of flannelette are well known to be highly inflammable, and to counteract this defect it appears that some manufacturers have recently been saturating the flannelette with chloride of zinc, a deliquescent salt, which thus keeps the material always moist. In one analysis made of flannelette thus treated it was found that as much as 23.12 per cent. of chloride of zinc and 7.88 per cent. of water was present. Chloride of zinc, however, is not only deliquescent but has also an irritant effect on the skin, and material containing it in such quantity when worn next the surface of the body must excite a certain amount of dermatitis and possibly some superficial ulceration. This form of adulteration is thus injurious in several ways, and it would be well to avoid any flannelette which gives the sensation of being damp.

Victoria Hospital for Sick Children, Chelsea.—At the invitation of the Duke of Westminster a meeting was held at Grosvenor House recently, to take steps to raise funds for the erection of new buildings for the Victoria Hospital for Sick Children, Chelsea. From the statements made by Mr. M. R. Smith, the Chairman of the Committee of Management, Mr. T. Pickering Pick, Senior Surgeon to the hospital, and Mr. Farquhar, the Treasurer, it appeared that the present buildings were never intended for the purpose, and in consequence of structural defects and small size were quite inadequate to meet the demand for beds. It was proposed to erect a large building to provide the necessary accommodation for in-patients, and to render the present house suitable for the use of the staff and other purposes. A sum of £25,000 would be required.

Ambulance for Sick or Injured Horses.—An interesting experiment is to be made at the forthcoming cavalry manœuvres in India with horse ambulances. Scores of instances are known to cavalry or artillery officers where valuable horses, seriously lamed or otherwise injured when on the march, or at a distance from cantonments, have had to be destroyed, even when it was certain that time and treatment would have given hopes of recovery, because there was no organised system by which sick or maimed horses of cavalry or artillery could be removed to a properly equipped veterinary hospital. The reports on the experiments to be carried out at the Aligarh-Delhi manœuvres with three horse ambulances will be interesting, and may ultimately prove of great value to the mounted branches of the service.

School of Medicine at Beyrout.—It appears that there is a medical school which rejoices in the unique privilege of having a Jesuit as its Director. This is the French Medical School at Beyrout in Syria, which is under the direction of Father Catin. In spite of this remarkable anomaly of organisation the school appears to be a very successful one. The teaching staff consists of eight French medical men, all former *internes* of French hospitals and holding the doctor's degree of the Universities of Paris, Lyons, and Montpellier. There are Departments of Chemistry and Pharmacy and a Laboratory of Microbiology, all under the direction of French men of science. Recently a Midwifery Clinic has been added to the school. The number of pupils is 130. It is only recently that the school has begun to grant diplomas, and at present the average output is about ten a year. A prolonged struggle has been carried on to get these diplomas recognised as valid by the Turkish Government; but now, it is stated, the matter is on the point of being settled in a satisfactory manner.

COLUMBIA UNIVERSITY.—It is announced that Columbia University has received a gift of $50,000 (£10,000), from a person whose name is not made public, to be devoted to the maintenance of a children's ward in the Roosevelt Hospital as an increase of the teaching facilities of the medical school (the College of Physicians and Surgeons). It is stated that the ward is to be known as the Abraham Jacobi Clinic. It is also announced that a scholarship has been established in the medical school to be called the O'Dwyer scholarship, in memory of the late Dr. Joseph O'Dwyer.

ANTIRABIC INSTITUTE OF TURIN.—In the *Annales de l'Institut Pasteur* of November 25th Dr. Francesco Abba, who succeeded Dr. Bordone-Uffreduzzi as director of the Municipal Antirabic Institute of Turin, gives statistics of the cases treated there during 1896-97. In 1896 the total number of persons who applied for treatment was 672. Of this number only 470 were treated, as it was proved that the animals which had bitten the remaining 202 persons were not rabid. The mortality among the 470 patients actually treated was 0.21 per cent. During 1897 the number of applicants was 584, of whom 376 were treated, with a mortality of 0.26 per cent. From September 30th, 1886, when the institute was founded, to December 31st, 1897, the number of applicants was 4,728, of whom only 3,396 were treated. The mortality among these was 0.73 per cent. Dr. Abba states that in 1896 there was a great increase in the number of persons bitten as compared with preceding years. This being assumed to be due to negligence on the part of individuals and local authorities in regards to the prophylaxis of rabies in dogs, measures were taken in combination with the prefects of the provinces which send the largest number of patients to the institute to secure the slaughter as speedily as possible of all dogs, bitten or suspects. As the effect of this the number of persons bitten by fox dogs diminished in 1897 by about 100.

MEDICAL VACANCIES.

The following vacancies are announced:

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Resident-Surgeon and Apothecary, unmarried. Salary, £80, increasing to £100, with board, lodging, washing, coals, candles, and furnished apartments. Applications to Mr. G. Fell, Solicitor, Aylesbury, by January 2nd, 1899.

BATH: ROYAL UNITED HOSPITAL.—House Surgeon. Salary at the rate of £60 per annum, with board, lodging, and washing. Applications to the Secretary by January 5th, 1899.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund Street, Birmingham. House-Surgeon. Salary at the rate of £42 per annum, with board, lodging, and washing. Applications to the Secretary by January 14th, 1899.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary, £100 per annum, with board, etc. Also Second Assistant Physician. Appointment for six months. Salary at the rate of £30 per annum. Applications to the Secretary by January 6th, 1899.

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon. Salary, £40 per annum, with board, residence, and washing. Applications to the Secretary by January 18th, 1899.

EDINBURGH UNIVERSITY. Additional Examiner in Zoology. Period, four years. Applications to Secretary, University Court, by January 7th, 1899.

FINSBURY DISPENSARY, Brewer Street, Goswell Road, E.C.—Resident Medical Officer. Salary, £100 per annum, with furnished residence, attendance, coals, and gas. Applications to the Secretary by January 7th, 1899.

GOVAN DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary, £100 a year, with board and residence. Applications to the Medical Superintendent, Hawkhead Asylum, Paisley, by January 5th, 1899.

HOSPITAL FOR DISEASES OF THE THROAT, Golden Square, W.—Resident Medical Officer. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary-Superintendent by January 7th, 1899.

KENSINGTON DISPENSARY.—Resident Medical Officer, under 35 years of age. Applications to the Hon. Secretary, T. W. O. Wheeler, 20, Lower Phillimore Place, Kensington, W., by January 9th, 1899.

LEICESTER INFIRMARY.—Honorary Assistant Physician. Applications to the Secretary by January 2nd, 1899.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Resident Junior House Surgeon. Salary, 60 guineas per annum. Applications to the Chairman of Medical Board by January 9th, 1899.

LONDON FEVER HOSPITAL, Islington, N.—Assistant Physician. Must be a F. or M.R.C.P.Lond. Applications to the Secretary by January 6th, 1899.

LONDON LOCK HOSPITAL, 91, Dean Street, W.—House-Surgeon to the Male Hospital. Salary, £50 per annum, with board, lodging, and washing. Applications to the Secretary, at Harrow Road, by January 7th.

LONDON THROAT HOSPITAL.—Surgeon and a Pathologist. Applications to the Secretary, Medical Committee, by January 4th, 1899.

MANCHESTER ANCOATS HOSPITAL.—Resident Junior House Surgeon. Salary, £50 per annum, with board and washing. Applications to the Secretary.

MIDDLESEX HOSPITAL, W.—Electrologist. Salary, £100, and fees for special classes. Applications to the Secretary-Superintendent by January 2nd, 1899.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, Bloomsbury.—Senior House Physician. Junior House Physician is applicant. Candidates must state whether they would accept either appointment. Salary for Senior, £75; Junior £50, with board, and apartments. Also Pathologist. Honorarium 50 guineas. Applications to the Secretary, by January 9th, 1899.

NEW HOSPITAL FOR WOMEN, 144, Euston Road, N.W. Three Female Assistant Physicians in the Out-patient Department. Applications to the Secretary by January 4th, 1899.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Dental Surgeon, also Assistant House Surgeon. Appointment for six months. Board, lodging, and washing provided. No salary. Applications to the Secretary by January 7th and 10th, 1899, respectively.

NOTTINGHAM GENERAL HOSPITAL.—House-Physician. Salary, £100 per annum, with board, etc. Applications to the Secretary by January 31st, 1899.

OXFORD: RADCLIFFE INFIRMARY.—Surgeon. Applications to the Secretary by January 10th, 1899.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Surgeon to Out-Patients; must be F.R.C.S. Applications to the Secretary by January 4th, 1899.

RAINHILL COUNTY ASYLUM (near Liverpool).—Assistant Medical Officer, unmarried, and not more than 30 years of age. Salary £100 per annum, increasing to £250, with furnished apartments, board, attendance, and washing. Applications to the Medical Superintendent.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1900. Applications to the Registrar by January 7th, 1899.

RYDE: COUNTY HOSPITAL.—House-Physician. Salary, £50 per annum, with board, lodging, etc. Applications to the House-Surgeon by January 2nd, 1899.

ST. ANDREWS UNIVERSITY.—Additional Examiner for Graduation in Materia Medica. Appointment for three years. Applications to the Secretary, University Court, by January 14th, 1899.

ST. THOMAS'S HOSPITAL.—Assistant Surgeon. Must be F.R.C.S.Eng. Applications to Mr. E. M. Hardy, Treasurer's Clerk, by January 7th, 1899.

SUNDERLAND INFIRMARY.—House Physician. Salary, £80, rising to £100, with board and residence. Applications to the Chairman of the Medical Board by January 5th, 1899.

TOXTETH PARK, LIVERPOOL.—Senior Assistant Medical Officer of the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments. Applications, marked "Assistant Medical Officer," to the Clerk to the Guardians, 15 High Park Street, Liverpool, by January 11th, 1899.

TYNEMOUTH VICTORIA JUBILEE INFIRMARY, Spring Gardens, North Shields.—Resident House-Surgeon. Salary, £100 per annum. Applications to the Secretary, by January 11th, 1899.

WESTERN OPHTHALMIC HOSPITAL, 153, Marylebone Road, N.W.—Assistant Surgeon. Applications to the Secretary by January 4th, 1899.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Medical Registrar. Salary, £50 per annum. Applications to the Secretary by January 2nd, 1899.

MEDICAL APPOINTMENTS.

BURROWS, Vincent, M.B., B.S.Durh., M.R.C.S., appointed Medical Officer for the No. 2 District of the Aylesbury Union.

CARLAW, T. W., M.D. (Canada) appointed Clinical Assistant to the Chelsea Hospital for Women.

COTES, Dr., appointed Medical Officer for the Great Barford District of the Bedford Union, *vice* C. Sprigge, M.D., resigned.

DICKEY, A. A. G., M.D.R.U.I., J.P., appointed Medical Officer and Public Vaccinator for the Colne District of the Burnley Union, *vice* J. H. Keay, M.D.Edin., resigned.

HAMILTON, W. C., M.B., C.M., appointed Certifying Factory Surgeon for Plymouth, *vice* W. A. Buchen, M.B., C.M.Edin., deceased.

HILLMAN, G. B., L.S.A., appointed Medical Officer of Health to the Castleford Urban Council, *vice* E. W. Kemp, resigned.

MCKERRON, R. G., M.A., M.D., appointed Senior Physician to the Royal Hospital for Sick Children, Aberdeen, *vice* Professor Stephenson, resigned.

ORR, David, M.B., appointed Pathologist to the County Asylum, Prestwich, Manchester.

ROSS, Marion J., M.B., appointed Resident Medical Officer for the Workhouse of the Newcastle Union.

SUMNER, F. W., B.A.Cantab., M.R.C.S., L.R.C.P., appointed House Physician to St. Mary's Hospital, London.

WOOD, Richard, M.D., reappointed Medical Officer of Health to the Driffield Rural Council.

ERRATUM.—In the notice of the appointment of Mr. F. W. Wright, published on December 17th, it was stated in error that he had been appointed Medical Officer to the Lingfield and Southern Districts of the Godstone Union, instead of to the Southern District only.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London, 8.30 P.M.—Mr. A. E. Barker: The Final Sequel to a Case already reported of Removal of Cystic Disease of a Supposed Accessory Thyroid Body. Dr. Parkes Weber: On an Apparent Thickening of the Subcutaneous Veins. Dr. C. D. Green: Primary Carcinoma of the Liver. Mr. D'Arcy Power: A Case of Intussusception. Mr. R. R. Lucy: A Case of Intussusception. Mr. Barwell: A Case of Congenital Limb Deficiency and Redundancy, illustrated by lantern slides and stereoscopic skiagraphs.

WEDNESDAY.

Obstetrical Society of London, 8 P.M.—Specimens will be shown by Drs. Lea, Addinsell, and John Phillips. Papers—Dr. Donald: A Case of Ectopic (Intraligamentous) Gestation at the seventh month, in which the Foetus was extracted by Vaginal Incision. Dr. Drummond Robinson: Vulval Discharges in Children.

THURSDAY.

Harveian Society of London, 8.30 P.M.—Mr. Howard Marsh: On the Subsequent History of Cases in which Adhesions have formed in Joints, the Peritoneal Cavity, and other parts.

FRIDAY.

West London Medico-Chirurgical Society, West London Hospital, W., 8.30 P.M.—Mr. R. Lake: The Treatment of Laryngeal Phthisis. Mr. J. R. Lunn: Two Cases of Optic Neuritis associated with Mastoid Disease. Dr. James Allan: A series of Twelve Tracheotomies for Laryngeal Diphtheria in young children, with nine recoveries.

Laryngological Society of London, 20, Hanover Square, W., 4.30 P.M.—Annual General Meeting. Election of Officers and Annual Reports. The following will show cases: Dr. Scanes Spicer, Mr. Charters Symonds, Dr. Barclay Baron, Dr. Dundas Grant, Mr. Morley Agar, Dr. Tilley, Sir Felix Semon, Dr. Watson Williams, Mr. Wyatt Wingrove, Mr. Atwood Thorne, Dr. Wm. Hill, and Dr. St. Clair Thomson. Dinner at the Café Royal at 8 P.M.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post office order or stamps with the notice not later than Wednesday morning in order to insure insertion in the current issue.

MARRIAGE.

RUTHERFORD—NAPIER.—At Hyndland Church, Glasgow, on December 22nd, by the Very Reverend Principal Story, D.D., assisted by the Rev. Henry Grey Graham, Henry Rutherford, M.B., C.M., to Jean Hay Frew, second daughter of the late Robert Assheton Napier, Esq., shipowner, Glasgow.

DEATHS.

DOUBLEDAY.—On Christmas Day, at Long Clawson, Melton Mowbray, James Doubleday, late of Chiddingfold, Surrey, M.R.C.S.Eng., L.F.P.S., Guy's, St. Thomas's, Berlin, M.B.Lond., M.D.Berlin, aged 71.

KNOX.—At East Molesey, on Christmas Day, James Jenkinson Knox, M.A., M.B., B.C.Cantab, aged 32, elder son of John Knox, M.D., Bakewell.

HOURS OF ATTENDANCE AND OPERATION DAYS AT THE LONDON HOSPITALS.

CANCER, Brompton (Free). *Attendances*—Daily, 2. *Operations*.—Tu. F. S., 2.
CENTRAL LONDON OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily.
CENTRAL LONDON THROAT, NOSE, AND EAR.—*Attendances*.—M. W. Th. S., 2; Tu. F., 5. *Operations*.—1.-p., Tu., 2.30; o.-p., F., 2.
CHARING CROSS. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. F., 1.30; Skin, M. Th., 1.45; Dental, M., 9; Throat and Ear, F., 9.30. *Operations*.—Th. F. S., 3.
CHELSEA HOSPITAL FOR WOMEN. *Attendances*.—Daily, 1.30. *Operations*.—M. Th. F., 2.
CITY ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—M., 4.
EAST LONDON HOSPITAL FOR CHILDREN. *Operations*.—M. W. Th. F., 2.
GREAT NORTHERN CENTRAL. *Attendances*.—Medical and Surgical, M. Tu. W. Th. F., 2.30; Obstetric, W., 2.30; Eye, M. Th., 2.30; Throat and Ear, Tu. F. 2.30; Skin W., 2.30; Dental, W., 2. *Operations*.—M. W. Th. F.
GUY'S. *Attendances*.—Medical, daily, 2; Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, M. Tu. Th. F., 1.30; Ear, Tu., 1; Skin, Tu., 1; Dental, daily, 9; Throat, F., 2. *Operations*.—Tu. F., 1.30; (Ophthalmic) M., 1.30; Th., 2.
HOSPITAL FOR WOMEN, Soho. *Attendances*.—Daily, 10. *Operations*.—M. Th., 2.
KING'S COLLEGE. *Attendances*.—Medical and Surgical, daily, 2; Obstetric, daily, 2; o.-p., daily, 1.30; Eye, M. W. Th., 1.30; Ear, Th., 2.30; Throat, M., 1.30, F., 2; Dental, M. Th., 10; Skin, W., 1.30. *Operations*.—W. Th. F., 2.
LONDON. *Attendances*.—Medical, daily, 1.-p., 2, o.p., 1.30; Surgical, daily, 1.30 and 2; Obstetric, M. Tu. Th. F., 2; o.p., W. S., 1.30; Eye, Tu. S., 9; Ear, W., 9; Skin, Th., 9; Dental, Tu., 9. *Operations*.—Daily, 2.
LONDON TEMPERANCE. *Attendances*.—Medical, M. Tu. W. Th. F., 1.30; Surgical, M. Th., 1.30. *Operations*.—M. Th., 4.30.
LONDON THROAT, Great Portland Street. *Attendances*.—Daily, 2; Tu., F., 6. *Operations*.—Daily, 2.
METROPOLITAN. *Attendances*.—Medical and Surgical, daily, 2; S., 9; Obstetric, W., 2; Eye, W., 2; Throat and Ear, Th., 2; Dental, Tu. Th. S., 9. *Operations*.—Tu. W., 2.30; Th., 4.
MIDDLESEX. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, Tu. Th., 1.30; o.p., M., 9; W., 1.30; Eye, Tu. F., 9; Ear and Throat, Tu. F., 9; Skin, Tu., 4; Th., 9.30; Dental, M. F., 9.30; W., 9. *Operations*.—Daily, 1.30.
NATIONAL ORTHOPÆDIC. *Attendances*.—M. Tu. Th. F., 2. *Operations*.—W., 10.
NEW HOSPITAL FOR WOMEN. *Attendances*.—Daily, 2; Ophthalmic, W. S., 9.30 *Operations*.—Tu. F., 9.
NORTH-WEST LONDON. *Attendances*.—Medical, daily, exc. S., 2, S., 10; Surgical, daily, exc., W., 2, W., 10; Obstetric, W., 2; Eye, W., 9; Skin, F., 2; Dental, F., 9. *Operations*.—Th., 2.30.
ROYAL EYE, Southwark. *Attendances*.—Daily, 2. *Operations*.—Daily.
ROYAL FREE. *Attendances*.—Medical and Surgical, daily, 2; Diseases of Women, Tu. S., 9; Eye, M. F., 9; Skin, Th., 9; Throat, Nose, and Ear, W., 9. *Operations*.—W. S., 2; (Ophthalmic), M. F., 10.30; (Diseases of Women), S., 9.
ROYAL LONDON OPHTHALMIC. *Attendances*.—Daily, 9. *Operations*.—Daily, 10.
ROYAL ORTHOPÆDIC. *Attendances*.—Daily, 2. *Operations*.—M., 2.
ROYAL WESTMINSTER OPHTHALMIC. *Attendances*.—Daily, 1. *Operations*.—Daily, 2.
ST. BARTHOLOMEW'S. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. W. F., 2; o.p., W. S., 9; Eye, M. Tu. W. Th. S., 2; o.-p., M. Th., 9; W. S., 2.30; Ear, Tu. F., 2; Skin, Tu., 9; Larynx, Tu. F., 2.30; Orthopædic, M., 2.30; Dental, Tu. F., 9. Electrical, M. Tu. Th. F., 1.30. *Operations*.—Daily, 1.30; (Ophthalmic), Tu. F., 2; Abdominal Section for Ovariotomy, F., 2.
ST. GEORGE'S. *Attendances*.—Medical and Surgical, daily, 1.-p., 1; o.-p., 12; Obstetric, 1.-p., Tu. F., 1.45; o.p., M. Th. 2.30; Eye, W. S., 1.30; Ear, Tu., 2; Skin, W., 2.45; Throat, F., 2; Orthopædic, F., 12; Dental, M. Tu. F., S., 12. *Operations*.—Daily, 1; Ophthalmic, M., 1; Dental, Th., 9.
ST. MARK'S. *Attendances*.—Fistula and Diseases of the Rectum, males S., 2; females, W., 9.30. *Operations*.—M. 9; Tu., 2.30.
ST. MARY'S. *Attendances*.—Medical and Surgical, daily, 1.45; o.p., 12.45; Obstetric, Tu. F., 1.45; o.p., M. Th., 1.0; Eye, Tu. F., 9; Ear, M. Th., 9; Throat, Tu. F., 3; Skin, M. Th., 9; Dental, W. S., 9; Electro-therapeutics, M. Th., 2.30; Children's Medical, Tu. F., 9. *Operations*.—M., 2.30.; Tu. W. F., 2; Th., 2.30; S., 10; (Ophthalmic), F., 10.
ST. PETER'S. *Attendances*.—M. 2 and 5; Tu., 2; W., 5; Th., 2; F. (Women and Children), 2; S., 4. *Operations*.—W. F., 2.
ST. THOMAS'S. *Attendances*.—Medical and Surgical, M. Tu. Th. F., 2; o.p., daily, 1.30; Obstetric, Tu. F., 2; o.p., W. S., 1.30; Eye, Tu. F., 2; o.p., daily, exc. S., 1.30; Ear, M., 1.30; Skin, F. 1.30; Throat, Th., 1.30; Children, S., 1.30; Electro-therapeutics, o.p., Th., 2; Mental Diseases, o.p., Tu., 10; Dental, Tu. F., 10. *Operations*.—M. W. Th. S., 2; Tu. F., 3.30; (Ophthalmic), Th., 3; (Gynæcological), Th., 2.
SAMARITAN FREE FOR WOMEN AND CHILDREN. *Attendances*.—Daily, 1.30. *Operations*.—Gynæcological, M., 2; W., 2.30.
THROAT, Golden Square. *Attendances*.—Daily, 1.30; Tu. F., 6.30. *Operations*.—Daily, exc. M., 10.
UNIVERSITY COLLEGE. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetrics, M. F., 1.30; Eye, M. W., 1.30; Ear, M. Th., 9; Skin, Tu. F., 2; Throat, M. Th., 9; Dental, Tu. F., 9.30. *Operations*.—Tu. W. Th., 2.
WEST LONDON. *Attendances*.—Medical and Surgical, daily, 2; Dental, Tu. F., 9.30; Eye, Tu. Th., 2; Ear, Tu., 2; S., 10; Orthopædic, W., 2; Diseases of Women, W. S., 2; Electric, M. Th., 2; Skin, M. F., 2; Throat and Nose, Tu., 2; S., 10. *Operations*.—Daily, about 2.30; F., 10.
WESTMINSTER. *Attendances*.—Medical and Surgical, daily, 1.30; Obstetric, M. Tu. F., 1.30; Eye, Tu. F., 9.30; Ear, Tu., 1.30; Skin, W., 1.30; Dental, W. S., 9.15. *Operations*.—M. Tu. W., 2.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS FOR THE CURRENT WEEK'S JOURNAL SHOULD REACH THE OFFICE NOT LATER THAN MIDDAY POST ON WEDNESDAY. TELEGRAMS CAN BE RECEIVED ON THURSDAY MORNING.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, W.C., London; those concerning business matters, non-delivery of the JOURNAL etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate beforehand with the Manager, 429, Strand, W.C.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look to the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that all letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not to his private house.

PUBLIC HEALTH DEPARTMENT.—We shall be much obliged to Medical Officers of Health if they will, on forwarding their Annual and other Reports, favour us with *duplicate copies*.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are directed will be found under their respective headings.*

QUERIES.

M.R.C.S. asks whether any instance is known of saccharine having an injurious effect on the eyesight.

QUALIFICATION AS HOSPITAL SURGEON.

G. S., writes as follows: A hospital advertises for assistant-surgeon under the following conditions, quoted from its rule framed in 1875. "Any surgeon appointed must.....be a Fellow or Member of one of the colleges of the United Kingdom." I should be much obliged if you would state whether, in your opinion, this condition would be met by the appointment of a Licentiate of the Conjoint Board of the Scottish Colleges and Faculty, whose diploma bears date 1888.

*** We think that the hospital authorities would undoubtedly be justified in construing the words "Fellow or Member" so as to include a Licentiate of the Conjoint Board mentioned by our correspondent.

ANSWERS.

J. A. A.—A kleptomaniac, if not certifiably insane or imbecile, might place himself under control as a voluntary boarder. There are no other institutions except reformatories in which he could be placed.

VALUE OF FOREIGN PRACTICE.

EMIGRANT.—A good English practice when transferred realises about two years' purchase on the gross receipts. But most charges are influenced more or less by local and personal circumstances as to amounts. One year's purchase for the practice named would appear to be fair.

"COQ VOLANT."

DR. A. DE WATTEVILLE (Welbeck Street, W.) writes: Your correspondent must surely have misunderstood the words "coque du Levant" (*coccus Indicus*), which are used to designate the drug used to stupefy fish on the Continent. The active principle is picrotoxin, of which very small quantities are actually absorbed by the fish. I should expect the poison to be destroyed in the processes of assimilation and of cooking, and the fish so obtained to be harmless when eaten in moderate quantities.

BACTERIOLOGY FOR GENERAL PRACTITIONERS.

W. M. M. J.—The two books we should recommend are Muir and Ritchie's *Manual of Bacteriology* (Pentland, Lond. and Edin.); and Wethered's *Medical Microscopy* (H. K. Lewis, London), the former for bacteriological methods and descriptions, the latter for [illegible] of urine. Swift, Tottenham Court Road, is a reliable maker of microscopes. For a good second-hand microscope Chas. Baker, 244, High Holborn, is probably the best firm to which to make application.

NOTES, LETTERS, Etc.

"ANLAGE."

GREAT difficulty has been experienced in finding an English equivalent for the convenient German word *anlage*. Among the translations suggested have been forecast, fundament, rudiment, beginning, origin, foundation, and Dr. Arthur Willey recently suggested in *Nature* "primordium." Our contemporary states that Professor Burt G. Wilder, while expressing an opinion favourable to this word, suggests "proton," already familiar in numerous compounds, as a shorter and better equivalent.

RAILWAY REFORM.

DR. J. CARROLL (Glasgow) writes: I would respectfully submit that the most urgent reform is the provision on all long-distance trains of proper and sufficient lavatory accommodation for each carriage. The urgency is well known to long-distance travellers on all our railways; no train, in my opinion, should be run more than a hundred miles unless thus provided. Local and short-distance trains would not be affected. I make this suggestion in the interests of elderly men and women who, as we all know, are often in great pain when compelled to retain their urine even for a comparatively short time. Ladies with children would also share and appreciate lavatory accommodation, as is shown by the invariable scramble to get into such a carriage.

CHRONIC MEMBRANOUS COLITIS.

DR. J. CHRISTIAN SIMPSON, (Cambridge) writes: In the BRITISH MEDICAL JOURNAL of November 5th Dr. Lawrie reports an interesting case of chronic membranous colitis cured by right inguinal colotomy and subsequent closure of the artificial anus. He refers to a case reported by Dr. Hale White and Mr. Golding-Bird as being the only one previously recorded. I beg to point out, however, that Dr. Lawrie has unfortunately missed the report of the first case that was operated on in this way, and which was fully recorded by me in the *Medical Press and Circular* of July 20th, 1898. There is also a "further note" in the *Medical Press* of July 20th, 1898, giving the state of the patient more than four years after the operation. This case was noted in the *Yearbook of Treatment*, and is also referred to in the article on Diseases of the Colon in Allbutt's *System of Medicine*, in both instances by Dr. Hale White.

Though my case was published subsequent to the report of the case under the care of Dr. Hale White above referred to, the priority of the actual operation, which was performed by Mr. Keith, has never been disputed. In an article on Colitis by Dr. Hale White in the *Lancet*, March 2nd, 1895, he says, "It has been suggested that in a very intractable case it might be justifiable to open the colon high up," and in the following week's issue Mr. Keith intimated that he had already practised this treatment in June of the previous year, and that the full report would be published later.

May I remark on one point which seems to me to be of importance? It is known that in some way—probably through the sympathetic system, as I have tried to trace—there is a relation between utero-ovarian disease and this form of colitis. Monod described three cases of "mucous colic," which term he used as a synonym of "pseudo-membranous colitis," in which membranous dysmenorrhœa coincided. My patient had this form of dysmenorrhœa previous to the definite appearance of the colitis. At the operation the uterus was apparently normal, but the ovaries were enlarged and diseased, and were removed. Dr. Lawrie's patient, however, had already had her uterus removed, but unfortunately he does not note the pathological condition requiring this operation, within three months of which the colitis began to develop. It would be interesting to know the state of this patient's ovaries, and also the condition of the pelvis in relation to any adhesions implicating the large intestine. Perhaps Dr. Lawrie will kindly throw some light on this point.

ALLEGED POISONOUS TOYS.

A TELEGRAM from Washington, U.S.A., was published in certain English newspapers recently, which alleged that German toys and similar coloured goods were poisonous. This assertion has since been contradicted by a correspondent, who states that the German law for the protection of the public in this particular respect is stringent. By an Act dated May 14th, 1879, supplemented by a further law, dated June 29th, 1887, anyone knowingly using pigments in any way injurious to health in the colouring of toys is punishable by a fine of £50, or six months' imprisonment, or by five years' imprisonment, or ten years' imprisonment with hard labour, or even by imprisonment for life, according to the degree of the dangerous character of the pigment. Moreover, the German police have power to enter shops and factories for purposes of inspection; so that there does not appear to be any valid reason to suspect that the material used for colouring toys "made in Germany" has poisonous properties.

ACADEMICAL COSTUME.

A DIPLOMATE writes: I see that the Royal College of Surgeons are about to accord to their Fellows and Members the privilege of wearing an "academical gown." This is certainly a step in the right direction, but I would suggest that they go further, and grant with the gowns hoods. Some may ask what surgeons want with hoods? The answer is evident. They would, as a matter of right, on such occasions as their graduate colleagues now appear in their "university gowns and hoods," also wear a distinctive dress. Notice was called to the fact that non-university men compared most favourably with graduates in the recent competition for the Naval Medical Service, the first four on the list being diplomates. This favourable comparison I think will generally be found to be the case. We cannot call ourselves "Dr.," but, at any rate, give us some badge to show we have passed some examination.

IRISH DISPENSARY DOCTORS.

FAIR-PLAY writes: Under the above heading in the BRITISH MEDICAL JOURNAL of December 3rd, "Another Victim" writes deploring our present position, especially as regards superannuation, which, I venture to assert, few fair-minded men will deny we are justly entitled to. The leading members of the profession in Ireland earnestly endeavoured to induce the Government to introduce a clause into the Local Government (Ireland) Bill to make it compulsory on Boards of Guardians to grant retiring allowances in deserving cases, but failed; and why? The only reason I can give is that our representatives in Parliament were utterly indifferent whether, in the event of our being incapacitated from any cause, we were compelled to take shelter in the workhouse. In alluding to our representatives, I mean the Unionist members, some of whom were specially reminded that the majority of "Poor-law medical officers" were not only of the same political creed, but laboured hard to secure their election as fit and proper persons to represent us, and advocate our claims at Westminster. The Nationalist M.P.'s were indifferent too, but why? They knew full well that the various Boards of Guardians, being almost without exception Nationalists, were willing and able to take care of their own, and to their credit be it said. As an argument against superannuation being made compulsory, it was urged that the dispensary doctor did not devote his whole time to the duties of his office. I wonder how such a statement could be made when it is well known that he cannot be absent from his post for a single day without providing a substitute, and that if he is engaged attending a private patient, no matter how urgent the case may be, he is supposed to abandon it there and then if a "red ticket" is presented to him, or else employ a doctor to attend thereon. If this is not whole time, I should be glad to know what is. If the members of the profession were loyal to themselves, and unanimous, I have little doubt of their being in a position ere long to dictate their terms to a very great extent, thus enabling them not only to submit more resignedly to the denial of a just right, but to look more complacently at what at present seems a dark picture indeed; what else could it be under existing circumstances which cannot be altered one moment too soon?

EFFECTS OF ENVIRONMENT ON BIRDS.

DR. WYLLIE (262, Beverley Road, Hull) writes: Country practitioners are often zealous students of natural history: may I therefore inquire from them, through the medium of the BRITISH MEDICAL JOURNAL, "what structural changes they may have noticed in any family of birds when their usual food or habitat has undergone radical change; for example, what changes have been observed in the webbed feet and the bills of ducks, geese, etc., which have through several generations been deprived of ponds and muddy bottoms?"

POST-MORTEM DELIVERY.

DR. J. FARQUHAR (Burbage, Marlborough, Wilts) writes: In your leader on Post-Mortem Delivery, the writer says, in the last paragraph: "Presumably, therefore, the fœtus would die more quickly if the mother's death were sudden than if it were gradual." In the seventies, I was called in to assist in the case of a primipara, aged 15, in a state of eclampsia and moribund. The medical man in attendance had been unable to deliver through an undilated os uteri. Five minutes after my arrival death took place, while an examination (digital) was being made. My friend immediately said he could apply the forceps as dilatation had taken place. Recognising the uselessness of such a proceeding in the urgent circumstances, I advised Cæsarean section, which was performed at once. Nevertheless, the fœtus was quite dead from asphyxia in removal, and as the death of the mother was a slow one, the history of this one case does not support the contention of the article in question.

POLICLINIC.

DR. A. T. BRAND (Driffield, E. Yorks) writes: I should like to point out how frequently the word "policlinic" is misspelt in medical literature. This misspelling is evidently due to a want of appreciation of the etymology of the word, which is derived from πόλις a city, and not from πολυς many. Policlinic therefore is the correct spelling, and not polyclinic, and the meaning of the word is simply city clinic, a dispensary, there being no in-patients, but simply out-patients, treated. For example, in Vienna there are several hospitals for the reception of in-patients, and also the general policlinic (die allgemeine Poliklinik), or city dispensary.

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BOOKS, ETC., RECEIVED.

The Voice of the Spirit. Edited by H. Swan. Books III and IV. London: Sampson Low, Marston, and Co. 1898.

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Raiders and Rebels in South Africa. By Elsa G. Green. London: George Newnes. 1898. 5s.

Chirurgie du Cœur et du Péricarde. Par F. Terrier et E. Raymond. Paris: Felix Alcan. 1898. Fr. 3.

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Sim[illegible] [illegible]
Sm[illegible] [illegible]
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W[illegible] [illegible]
W[illegible] [illegible]
W[illegible] [illegible]
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Stenhouse, J. H., M.B., Surg. R.N.
Stephens, H. F. D., M.B., Staff-Surg. R.N.
Stephens, H. N., Surg. R.N.
Stott, W. G., M.B., Surg. R.N.
Sugrue, J., M.D., Staff-Surg. R.N.
Swan, E. G., Staff-Surg. R.N.
Tait, W., M.B., Staff-Surg R.N.
Thomas, J. H., Staff-Surg., R.N.
Thomas, J. L., Staff-Surg. R.N.
Thompson, W., Staff-Surg., R.N. (retired)
Thorpe, V. G., Staff-Surg. R.N.
Todd, Howard, Fleet-Surg. R.N.
Townsend, E. B., Staff-Surg., R.N.
Triggs, J. B. B., M.B., Staff-Surg., R.N.
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Vasey, S. W., Staff-Surg., R.N.
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Wood, J. C., Surg., R.N.
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Yeo, R. F. Fleet-Surg., R.N. (retired)
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ARMY MEDICAL SERVICE.

In this list, Surgeon-Generals of the Army Medical Staff, as well as retired officers of the late Army Medical Staff, are distinguished by the letters A.M.S. Officers of the Royal Army Medical Corps by the letters R.A.M.C., and retired officers of the late Medical Department by the letters A.M.D.

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Berry,
Bever n R.A.M.C.
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Inman, A. W. P., M.B. Major, R.A.M.C.
Inmss, B. J., Captain, R.A.M.C.
Irvine, D. L., Major, R.A.M.C.
Irving, L. A., Lt.-Col. R.A.M.C.
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James, W. M., Lt.-Col. (retired), A.M.S.
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Jameson, J. C. M.B., Captain, R.A.M.C.
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Jennings, J. W., Captain, R.A.M.C.
Jennings, R., M.D., Major, R.A.M.C.
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Jones, P. W. C., M.B., Major, R.A.M.C.
Jones, J. M., Major, R.A.M.C.
Joslin, C. L., Major, R.A.M.C.
Joynt, E. H., M.D., Lt.-Col., R.A.M.C.
Joynt, H. L., Lt.-Col. (ret.), A.M.S., Erdington—D. Br.
Julian, O. R. A., Captain, R.A.M.C.
Kay, A. G., M.B., Major, R.A.M.C.
Kearney, J., M.D., Major, R.A.M.C.
Keatly, J., Major, R.A.M.C.
Keays, W., Lieut.-Col., R.A.M.C.
Keble, A. E. C., Captain, R.A.M.C.
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Kelly, M., M.D., Major, R.A.M.C.
Kelly, R. E., M.D., Captain, R.A.M.C.
Kelly, Wm., M.D., Major, R.A.M.C.
Kennedy, A., Major, R.A.M.C.
Kenny, W. W., M.B., Lt.-Col., R.A.M.C.
Keogh, A., M.D., Major, R.A.M.C.
Kerin, M. W., Major, R.A.M.C.
Keys, C. W. Moore, M.D., Lt.-Col. R.A.M.C.
Kiddle, F., M.B., Captain, R.A.M.C.
Kiddle, W., M.B., Major, R.A.M.C.
Kilkelly, C. R., M.B., Major, R.A.M.C., Surg.-Major Grenadier Guards
Kirkpatrick, R. C., M.D., Lt.-Col., R.A.M.C.
Kirkpatrick, R., M.B., Major, R.A.M.C.
Knaggs, H. T., Major, R.A.M.C.
Knox, M., Lt.-Col. [illegible] S.
Lambkin, P. J., Major, R.A.M.C.
Lamprey, J. J., Lt.-Col. (retired), A.M.S.
Lane, A. V., Major, R.A.M.C.
Lane, C. A., Major, R.A.M.C.
Lane, W. L., M.B., Lieut.-Colonel R.A.M.C.
Langdon, Hon. Brig.-Surg. J., Lieut.-Col. (ret.), A.M.S., Brecon
Langridge, G. T., Lt.-Col., R.A.M.C.
Latchford, J., M.B. [illegible], A.M.S., Galway
Lattey, A. J. Surg-Capt. [illegible]
Lavie, T. G., Major [illegible]
Lawson, C. B., M.D. [illegible] R.A.M.C.
Leader, N., Lieut. [illegible] R.A.M.C.
Leake, G. D. N., Lt. [illegible] R.A.M.C.
Leishman, W. B., M.B. [illegible] R.A.M.C.
LeMottee, G. H., [illegible] R.A.M.C.
Lenehan, T. J., [illegible]
Le Quesne, F. S., [illegible]
Lever, R. C., M. [illegible] Bey, Oxford—O. Br.
Lewer, Alfred, Sut- [illegible] Southsea
Lewer, R., Surg.-M. [illegible] S.
Lewis, J. R. M., M. [illegible] ret.), Kingston Hill (dead)
Lilly, A. T. I., Major, R.A.M.C.
Lithgow, S. A., M.D., C.B., D.S.O., Q.H.P., Surg.-Maj.-Gen. (ret.), A.M.S., Royal Infirmary, Edinburgh
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Long, J. W. F., Major, R.A.M.C.
Longhurst, B. W., Captain, R.A.M.C.
Lougheed, S. F., M.D., Major, R.A.M.C.
Love, R. L., M.D., Major, R.A.M.C.
Lowsley, M. M., Lieut., R.A.M.C.
Lucas, T. R., M.B., Major, R.A.M.C.
Luther, A. J., Captain, R.A.M.C.
Lynden-Bell, E. H. L., M.B., Major, R.A.M.C.
Macadam, J. S., Brig.-Surg.-Lt.-Col. (ret.), A.M.S., Southsea
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McCracken, J. A., M.D., Lt.-Col. (ret.), A.M.S., Altmore
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McCreery, N., Lt.-Col. (ret.) A.M.S.
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MacDougall, A. J., M.B., Captain, R.A.M.C.
McDowell, F., Captain, R.A.M.C.
McFarland, Hon. Brig.-Surg. F. E., Surg.-Major, (retired). [illegible] N. of I. Br.
Mackie, H. S., Major, R.A.M.C.
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McLaughlin, J., M.D., Captain, R.A.M.C.
Maclean, Hon. Dep.-Surg.-Gen. Alex., Surg.-Major (ret.) A.M.D., Thurso, N.B. (dead)
Maclean, F. B., Major, R.A.M.C.
McLoughlin, G. S., M.B., Captain, R.A.M.C.
McMillan, J. F., Captain, R.A.M.C.
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Nealon, P. J., M.D., Major, R.A.M.C. (dead)
Newland, F. R., M.B., Major, R.A.M.C.
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Nunnerley, P. J. R. Captain, R.A.M.C.
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O'Brien, R. F., Major, R.A.M.C.
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O'Connell, Mathew, D., M.D., Lt.-Col., R.A.M.C.
O'Connor, A. P., Major, R.A.M.C.
O'Donnell, J. J., M.B., Major, R.A.M.C.
O'Donnell, T. J., Major, R.A.M.C.
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Patterson, T. W., D.S.O., Lt.-Col. (ret.), Ramelton
Paxton, J., M.D., Lieut.-Col. (ret.), A.M.S., Bedford
Peard, H. J., Major, R.A.M.C.
Pearse, Albert, Captain, R.A.M.C.
Pecke, H. S., Captain, R.A.M.C.
Penton, R. H., D.S.O., Major, R.A.M.C.
Perry, A., Surg.-Maj. (retired) A.M.S.
Peterkin, A., M.B., Major, R.A.M.C.
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Philson, S. C., Major, R.A.M.C.
Phipps, E. V. A., Major, R.A.M.C.
Pike, W. W., M.B., Major, R.A.M.C.
Pinches, W. H., Major, R.A.M.C.
Pocock, H. I., Captain, R.A.M.C.
Pollock, C. E. Captain, R.A.M.C.
Pollock, C. F., M.B., Colonel (ret.), R.A.M.C.
Poole, W. C., M.D., Captain, R.A.M.C.
Poole, W. C. T., Major, R.A.M.C.
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Porter, P. J. W., Captain, R.A.M.C.
Porter, R., M.B., Major, R.A.M.C.
Powell, E. E., Captain, R.A.M.C.
Powell, J., Lt.-Col. R.A.M.C.
Powell, S., M.B., Major, R.A.M.C.
Power, R. L., Major, R.A.M.C.
Poynder, G. F., Major, R.A.M.C.
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Preston, A. F., M.B., Surg.-Genl., A.M.S.
Price, W. S. M., Colonel, R.A.M.C.
Quill, R. H., M.B., Lieut.-Col., R.A.M.C.
[illegible] Lt.-Col. (ret.), A.M.S., Weston-Super-Mare
[illegible] R.A.M.C.
[illegible], Milton—S.E. Br.
[illegible] Maj.-Gen. (ret.), A.M.S.
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Reid, James M., M.D., Major, R.A.M.C.
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Reynolds, J. H., LL.D., M.B., V.C., Lt.-Col. (ret.) A.M.S.
Rhodes, J. H. A., Major, R.A.M.C.
Rimg, J., M.D., Lt.-Col., R.A.M.C. (dead)
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Wade-Brown, F. J., Captain, R.A.M.C.
Wales, Hon. Brig.-Surg. J., Surg.-Maj. (ret.), A.M.D., S. E. Br.
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Walker, James, M.B., Surg.-Capt. (dead)
Wallis, K. S., Lieut.-Col., (ret.) R.A.M.C.
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Webb, W. M., Surg.-Maj.-Gen. (ret.), A.M.S.
Weir, Hon. Brig.-Surg. C. J., M.B., Surg.-Major, (ret.), A.M.S., Enniskillen
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Weston, E. B., Major, R.A.M.C.
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White, Hon. Brig.-Surg. W. O'B., Lt.-Col. (ret.), A.M.S., 28, Denny St., Tralee
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Whitestone, C. W. H., M.B., Captain, R.A.M.C.
Whittaker, Hon. Dep. Surg.-Gen. J. H., Lieut.-Col. (ret.), A.M.D., Phœnix Park, Dublin
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Wright, E. O., Major, R.A.M.C.
Wikeley, Hon. Brig.-Surg. C. E., Surg.-Major (ret.), A.M.D., Mussoorie, N.W.P., India
Wiles, Hon. Dep. Surg.-Gen. J., Brig.-Surg. (ret.) A.M.D.
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Will, J., M.B., Major, R.A.M.C.
Williams, E. M., Captain, R.A.M.C.
Williamson, John G., Lt.-Col. (retired), A.M.S.
Williamson, James, M.B., Surg.-Col., A.M.S. (dead)
Wills, C. S., C.B., Lieut.-Col. (ret.), A.M.S. Lancaster
Wills, S. R., Major, R.A.M.C.
Wilson, E. M., D.S.O., Major, R.A.M.C.
Wilson, G., M.B., Major, R.A.M.C.
Wilson, James, M.B., Brig.-Surg. (ret.), A.M.S., Guildford
Wilson, J. B., M.D., Major, R.A.M.C.
Wilson, W. D., M.B., Surg.-Gen., A.M.S.
Wilson, W. J., M.D., Brig.-Surg. (ret.), A.M.S., Oakcroft, Fareham
Windle, R. J., M.B., Major, R.A.M.C.
Winter, T. B., Major, R.A.M.C.
Withers, S. H., M.B., Captain, R.A.M.C.
Wolseley, W. O., Lieut.-Col., R.A.M.C.
Wood, O. G., M.D., Lieut.-Col., R.A.M.C.
Woodhouse, T. P., Major, R.A.M.C.
Woods, C. G., M.D., Major, R.A.M.C.
Woods, C. R., M.D., Major, R.A.M.C.
Woolfryes, J. A., M.D., C.B., C.M.G., Surg.-Gen. (ret.), A.M.D Kintbury, Berks
Wright, A., Captain, R.A.M.C.
Wright, Hon. Brig.-Surg. T. W., Surg.-Maj. (ret.), A.M.D., Passage West, Co. Cork
Wright, R. W., Major, R.A.M.C.
Wyatt, H. J., Major, R.A.M.C.
Yarr, M. T., Major, R.A.M.C.
Young, A. S. W., Lieut.-Col., (ret.) R.A.M.C.
Young, C. A., Captain, R.A.M.C.
Younge, G. H., Major, R.A.M.C.
Yourdi, J. R., M.B., Major, R.A.M.C.

INDIAN MEDICAL SERVICE.

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MEMBERS 185.

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Adams, C., M.B., Major, Madras Estab.
Adie, J. R., M.B., Major, Bengal Estab.
Ainsworth, Hugh, M.B., Lieutenant, Bengal Estab.
Allison, H., M.D., Lieut.-Col., Madras Estab.
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Anderson, A. R. S., Captain, Bengal Estab.
Anderson, A. V., M.B., Major, Bombay Estab.
Anderson, John, M.B., Lieut.-Col. Bengal Estab.
Anderson, J. w. T., Major, Bombay Estab.
Armstrong, H. S., Lieut.-Col., Madras Estab.
Armstrong, J., M.B., Lieut.-Col., Bengal Estab.
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Barren, W. A., Lt.-Col., Bombay Estab. (dead)
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Bennett, Vivian B., M.B., Captain, Bombay Estab.
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Drake-Brockman, W. [illegible]
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Duke, Joshua, Lt.-[illegible]
Duer, C., M.B., Capt.[illegible]
Duncan, A., M.D., [illegible]
Dyson, H. J., Major, [illegible]
Dyson, T. E., M.B. [illegible]
Edwards, W. R., M.[illegible]
Elcum, D., Surg.-Ma[illegible]
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Elphick, H. W., M.B. [illegible]
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ffrench-Mullen, D., M.D., Lt.-Col., Bengal Estab.
Fink, G. H., Major, Bengal Estab.
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Fitzpatrick, J. F., M.D., Surg.-Lt.-Col., Madras Estab. (ret.)
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AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(1) Thrombosis and Embolism of Large Abdominal Vessels.

KÖSTER (*Deut. med. Woch.*, May 26th, 1898) relates the following interesting cases: (1) Thrombosis of the inferior mesenteric vein in a man, aged 31. He was suddenly seized with pain in the lower part of the abdomen, severe but not fæcal vomiting and hiccough. Three days later the abdomen was distended. As enemata only brought away flatus and blood laparotomy was at once recommended; a large part of the intestine was found to be gangrenous. At the necropsy the trunk of the inferior mesenteric vein was found to be thrombosed. The symptoms here were those of acute obstruction with peritonitis, and the cause of the thrombosis appeared to be an entero-colitis. (2) Thrombosis of the superior mesenteric vein in a woman, aged 40, who was seized shortly after recovery from typhoid fever with severe abdominal pain, constipation, and fæcal vomiting. Laparotomy was performed, and some adhesions tied and divided. She was again discharged from hospital, but the pain soon returned. She was readmitted, and died in 14 days, there being no abdominal symptoms for a week. At the necropsy there was gangrene of the intestine, but not in all parts supplied by the superior mesenteric vein, which was thrombosed. The cause of the thrombosis was obscure. (3) Thrombosis of the superior mesenteric vein in a man aged 57. In this case there was ascites, and at the necropsy a diffuse carcinoma of the liver was found. The thrombosis in this case must have been due to the obstructed circulation through the liver. There are only a few cases on record of thrombosis of the large mesenteric veins, and the author gives short details of them. Variations were noted in the amount of intestine involved. In all these cases except one the thrombosis was looked upon as an ascending one. The diagnosis cannot be established with any certainty during life. Acute obstruction, perforative peritonitis, and perhaps invagination of the intestine may give rise to similar symptoms. (4) Embolism of the mesenteric artery in a woman, aged 53, with mitral stenosis. A differential diagnosis between thrombosis and embolism is here impossible. (5) Thrombosis of the splenic vein in a man, aged 27, occurring during convalescence from typhoid fever. The diagnosis during life could not be made; an intestinal perforation with a localised peritonitis seemed most probable. The spleen was greatly enlarged. The thrombosis was an ascending one. Köster has only found one similar case in the literature recorded by Bonne. (See BRITISH MEDICAL JOURNAL, April 30th, 1898, for the details of a case of thrombosis of the superior mesenteric vein, read by Dr. Rose Bradford before the London Clinical Society; other cases were referred to in the discussion.) Quite recently (BRITISH MEDICAL JOURNAL, June 4th, 1898), Mr. T. E. Gordon, of Dublin, successfully resected 2 feet of gangrenous small intestine, the cause of which he believed to be obstruction of some branch of the superior mesenteric vessels.

(2) Involuntary Movements in Tabes.

HIRSCHBERG describes (*Journ. de Méd.*, May 10th, 1898) a feature of tabes dorsalis which has received little attention, though it is now some time since it was first remarked. This consists in involuntary movements taking place during rest. Movements of flexion, extension, adduction, supination, etc., may be observed. They may be to a certain extent rapid, so that they have been described as choreiform or else slow in character and called athetosiform. Their principal seat is in the fingers and hands, but they have also been observed in the feet and in those cases of tabes in which the fifth nerve is particularly involved (cerebral tabes), the muscles which depend on the fifth for their sensation may also exhibit involuntary movements, giving rise to curious grimaces and irregular movements of the tongue and jaws. These movements as their name implies, take place spontaneously, and frequently without the knowledge of the patient. They are not always so evident as might be expected, and may require to be looked for, but the writer states that they are much more common than is generally supposed, and it is stated that a case of tabes affecting the hands and arms is almost certain to exhibit involuntary movements. They are rendered worse by closure of the eyes, which points to their being due to the same cause as Romberg's symptom.

(3) Intestinal Animal Parasites.

PEIPER (*Deut. med. Woch.*, November 25th, 1897) draws attention to the case of a girl, aged 10, who had symptoms absolutely indistinguishable from meningitis, but who recovered when some sixteen round worms were expelled after santonin. There are many such cases recorded in which alarming nervous symptoms have disappeared under similar conditions. By some these symptoms are looked upon as reflex in character. Another view is that the parasites may either contain a poison or produce one as a result of the metabolism caused by them. Round worms are not always so harmless as has been represented; in the West Indies they are looked upon as dangerous parasites. Attention has been drawn to a characteristic smell possessed by them, and a poisonous substance obtained from them has been known to set up an acute conjunctivitis with chemosis when accidentally applied to the eye. Living ascarides have been found by Arthur and Chanson to contain a poison which, when injected into rabbits, produced severe symptoms, and even death. It cannot be definitely explained why toxic symptoms are not always present in these cases, but their appearance may depend on the duration of the disease and on the number and vitality of the worms. The ordinary tapeworms do not generally cause symptoms, but tænia nana has been known to do so. The bothriocephalus is supposed to cause at times an intense anæmia. In ankylostomiasis the marked anæmia may not always be produced by loss of blood, but by a protoplasm-destroying poison. Arslan has separated from the urine of two cases a toxin which produced anæmia in rabbits. The author refers to the symptoms which have been known to arise upon rupture of a hydatid cyst or upon puncture. In hydatid fluid there are undoubtedly toxic bodies. Probably toxic symptoms can be produced by the tricocephalus. Peiper refers to cases of oxyuris in which symptoms other than local have been noted. In trichinosis very intense symptoms have been set up shortly after eating infected meat before the parasites could have begun to migrate. Indeed, some of the early cases in an epidemic have been taken for cholera. It is probable that a toxin contained within the capsule, and liberated in the stomach, has produced the symptoms. Animals fed upon tapeworms have been known to die within twenty-four hours without other obvious cause. Tænia expansa can cause in lambs a fatal cachexia. The author concludes that it is exceedingly probable that these animal parasites contain or secrete a poison which is particularly damaging to nervous tissue, and also to the blood. It is, however, in only a few patients that these parasites cause the above-mentioned symptoms.

SURGERY.

[*The following abstracts of papers read in the Section of Surgery and Anatomy at the meeting of the American Medical Association are from advance proofs kindly supplied by the Editor of the "Philadelphia Medical Journal."*]

(1) Course and Treatment of Injuries to the Peripheral Nerve.

A. H. LEVINGS, of Milwaukee, reported a series of 85 experiments on animals to determine the results of nerve section and the various methods of repairing injuries to the peripheral nerves. The sciatic nerve was operated upon in all cases and microscopic examination followed the sacrifice of the animals in 70 cases. The essentials for successful operation are stated to be: (1) Careful asepsis; (2) care in not separating the nerve from the connective tissue about it; (3) the ends must be squarely and evenly approximated; (4) if tissue is used to bridge gaps, its fibres must be longitudinal. Forcible stretching to bring cut ends together does not yield as good results as the implantation of some tissue. The flap operation was successful in only 1 case out of 3. A bridge of any fibrous substance used to

bridge over a gap merely acts as a scaffolding over which the nerve fibres travel and usually leads to success, provided not over 3 or 4 in. of the nerve have been removed. Several strands of silk may be used and yield better results than catgut. Many other tissues were tried and the best results were obtained from the use of muscle. It is believed that immediate suture or filling the gap by some suitable tissue before degeneration takes place will almost always result in restoring function. C. A. Powers, of Denver, mentioned a case of compound fracture of the humerus in which he used the sciatic nerve of a dog to bridge a gap of 4 in. in the musculo-spiral nerve. Sensation returned in 3 or 4 weeks, but motion had not returned. Dr. Reed, of Rocky Springs, Wyo., believed that regeneration depended upon the injury to the neural as well as the vascular supply of the nerve itself. The ends of the injured nerve might both be attached to some neighbouring nerve, instead of bridging the gap. He found this method successful in experimenting on dogs, and in one patient he attached the ends of the median nerve above and below the point of injury to the ulnar nerve, with a successful result. In reply, Levings stated that sensation might be restored in case of injury by the free anastomosis of the sensory nerves, but this was not true of the motor function.

(5) Post-operative Insanity.

R. Harvey Reed said that slight operations in normal, healthy patients were often followed by insanity, while many insane persons were benefited by operation. Several illustrative cases were reported. A woman of 56 was operated upon for laceration of the cervix and perineum, with prolapse of the uterus. After an uneventful recovery, when about to be sent home, acute mania set in. The patient was sent to an asylum, and was considered in a dangerous condition for three months, when recovery slowly followed. There was no infection or family history of insanity. Another woman suffered from severe melancholia after removal of the uterus and ovaries but eventually recovered. As an example of the results of operation in cases of insanity, that of a woman of 37 who had been twelve years insane was reported. An operation for removal of the uterus was followed by ureteral fistula. Investigation showed that the kidney of the same side was diseased, and on operation a cystic kidney was removed. A ureteral fistula on the other side resulting from a calculus, as was afterwards found, was cured by a third operation attaching the ureter to the vertex of the bladder. Recovery followed, and the patient became mentally and physically well. To show that the mental disturbance was not limited to the female, a case of acute mania and death following a stellate fracture of the patella in a man of 35 was reported. An operation for tuberculous bone disease in a man of 37 was also followed by raving mania lasting several months. Other cases of mental aberration apparently due to operation were reported by G. W. Johnson (Dunning, Ill.), Davis (Omaha), A. J. Ochsner (Chicago), Moore (Oregon), and Stewart (Pennsylvania). Ferguson (Chicago) believed that there was a connection between septic infection and post-operative insanity, and he mentioned the frequency of puerperal insanity occurring after childbirth in preantiseptic days as compared with the present to support this view. This position was also sustained by the fact that insanity occurred most often after operations, in which it was almost impossible to make the field perfectly antiseptic, as the female genital tract. Three cases were reported—1 following perineorrhaphy, another after an operation for double hydrocele, and a third after one for vesical fistula.

(6) Tendon Suture.

H. O. Marcy of Boston said that the use of buried absorbable sutures was among the most important advances in modern aseptic surgery. The drainage tube was of decided disadvantage, as it left an area that must close by granulation, and it might be the carrier of infection to the deeper structures. Its use was rendered unnecessary by the use of sutures thoroughly closing the deeper parts of wounds. The choice of material for such sutures was a matter of great importance. Catgut was necessarily faulty because in order to obtain the connective-tissue layer of the intestine of the sheep long maceration was necessary, which was really a putrefactive change that made it almost impossible to disinfect the material later. Again, it was composed of a mesh of fibres that might be compared to those of a piece of silk cloth and were twisted into the suture. As soon as the suture was moistened by the tissues of the body and softened, it formed an irregular band the strength of which could not be depended upon. After experimentation with various substances, Marcy first decided upon the tendon from the tail of the kangaroo as best adapted for sutures, but even much of this was unreliable, and it was very expensive. The importance of individual attention to the antiseptic preparation of ligatures and sutures was insisted upon.

(7) Hernia Complicated by Hypertrophied Prostate.

G. W. Johnson (Dunning, Ill.) reported that he had operated upon 28 cases of hernia complicated by enlarged prostate, all of which were completed more than three months ago. Palliative treatment should always be tried and yielded favourable results in many cases. The operation for hernia was performed in conjunction with castration or vasectomy, and in several cases was done for the relief of double hernia. Bassini's operation was chosen in all but 5 cases, in which Fowler's operation was tried. All the patients had been completely relieved, although the improvement was not rapid in all. A. J. Ochsner (Chicago) said that in old men hernia was often troublesome, in consequence of the effort at evacuation of the bladder caused by enlargement of the prostate. He had operated with success in 5 such cases after the method used by Johnson. In children a similar trouble arose from phimosis, and the hernia might often be cured by operating for phimosis and putting the child in a recumbent position, with elevated hips, for from three to six weeks. Mayo (Rochester, Minn.) had operated on all cases of hernia occurring in asylum practice, because it was impossible to keep a truss on insane patients, and he had removed the testicles in these cases with excellent results. Frew. C. Valentine (New York) did not agree that castration was a necessary operation. The experience of the best European surgeons, he believed, was opposed to this method of treatment.

MIDWIFERY AND DISEASES OF WOMEN.

(8) Treatment of Post-Partum Hæmorrhage by a Pyramidal Abdominal Bandage.

Enrico Sava (*Archivio di Ostetricia*, etc., May, 1898) has met with a grave case of *post-partum* hæmorrhage from inertia of the uterus, in which after various measures had been tried without result the bleeding was successfully arrested by bandaging the abdomen. After all the clots have been expressed from the cavity of the uterus, the fundus is drawn over to the front, and made to rest upon the symphysis pubis in such a fashion that its posterior surface looks directly upwards. Then a bandage is passed tightly round the abdomen immediately above this level, so as to keep the uterus in this position of forced anteversion. The idea was suggested to Sava by what naturally occurs to the uterus in abortion. He thinks the method is to be preferred to packing the uterus and vagina, etc. It is simple, and can be carried out by the midwife or nurse. It stimulates the external, not the internal, surface of the uterus. The danger of concealed internal hæmorrhage is avoided, and the risk of puerperal infection is greatly lessened. Further it produces a kind of autotransfusion, a large quantity of blood being sent to the nervous centres.

(9) The Treatment of Gonorrhœa in Women.

Fürst (*Therap. Monatshefte* April, 1898) has found protargol to be the safest and best application in the treatment of gonorrhœa in women. By it a cure can be effected with considerable certainty in three weeks. For therapeutic purposes cases may be divided into two groups, (1) those in which the parts below the external os alone, (2) those in which the parts above—namely, the cervical canal and the endometrium, and occasionally the tubes, are involved. Simple gonorrhœal vaginitis is rare, and is usually secondary to either descending or ascending infection. Hence it is of the greatest importance in every case of cervical gonorrhœa to treat the endometrium at the same time, even if still healthy, in order to prevent its secondary

infection. A thorough treatment of the endometrium is now possible without fear of doing more harm than good since protargol is not irritating. A. In the second group of cases the author's method is as follows: (1) The vulva and vagina are cleaned and disinfected, (2) the cervix is gently pulled down, and when necessary the internal os enlarged with dilators; (3) the uterus is washed out with sterile tepid water; (4) then with at least 3½ pints of a ½ per cent. protargol solution; next, if this produces no irritation, with (5) a 1 per cent. solution; (6) the vagina is dried with sterile cotton wool, and a 5 per cent. protargol bougie passed into the cervical canal, and kept in place with a tampon; (7) after fifteen minutes, when the bougie will have melted, the tampon is removed, the vagina dried with wool, and a 10 per cent. protargol-glycerine tampon introduced; (8) after twenty-four hours the same process is repeated, and every day for five to seven days, only the protargol solution is strengthened gradually to 2½ per cent., and the bougies to 10 per cent. The woman should keep in bed for the first week of treatment; (9) although at the end of this time no gonococci can be found, it is necessary to repeat the process every other day during the second week: on the alternate days astringent solutions (2½ per cent. bismuth subnitrate with glycerine and water), and bougies of boro-phenol-alum 1 per cent. are used, though the tampon is still of protargol glycerine; (10) during the third week astringents alone are employed (a daily injection of the bismuth with one alum bougie and tampons of glycerine of tannin); (11) the cure is thus completed in three weeks, but it is well for the woman to continue the injections herself for a time. Relapses take place practically only when reinfection occurs from gonorrhœal salpingitis, against which of course the protargol treatment is powerless. In 8 out of every 10 cases of virulent discharge the primary site is the cervix and uterus, and the above treatment applies. B. In the few remaining cases where a gonorrhœal vaginitis is primary its site is in the lower third near the vulva. Here treatment is much simpler. (1) Any desquamated mucosa is touched with lunar caustic; (2) injections of 5 per cent. protargol solution and tampons of 10 per cent. glycerine of protargol; (3) later the treatment is astringent. Of course in these cases any vulvitis, Bartholinitis, or urethritis must be treated also. The author always washes out the bladder, as a prophylactic measure, with 1 per cent. protargol solution, or if cystitis is already present with 2½ per cent., and leaves a 5 per cent. protargol bougie in the urethra, which is one of the commonest places from which relapses start.

(10) Manual Detachment of Placenta.

Littauer (*Centralbl. f. Gynäk.*, No. 20, 8898), in the course of a discussion on the subject at Leipzig, gave an instructive demonstration of the local midwives' returns. According to the tables, including 10,978 labours, the placenta was extracted by artificial means in 159, excluding all cases where mere expression or extraction of the placenta was undertaken, there remain 59, or just a hundred under the total, where the placenta was detached by the hand from its uterine connections. On closer analysis the ratio obtained by Littauer, who eliminated all placenta prævias, was 1 manual detachment in 161 labours at term and premature, or 1 in 186 labours at, or close upon, term. He thinks this latter ratio excessive. Hönck at Hamburg (1890-94) found that 1 in 365 was enough in a well-ordered external maternity department. Littauer found out that some practitioners were too fond of the practice, one accounting for 6, one for 5, and one for 4 of the cases in the tables; 2 of the 59 manual detachment cases died, 1 within seven hours, of hæmorrhage, though whether there was flooding before separation of the placenta is not stated, and 1 of syncope apparently, as the patient had morbus cordis. Yet the remaining 57 did not suffer proportionately from any of the complications of the puerperium, and only 1 had a serious sequelæ, phlebitis, which did not end fatally.

(11) Embryonic Fibroid causing Uterus Duplex.

Pick (*Monats. f. Geburts. u. Gynäk.*, October, 1897) recently demonstrated two cases of uterus duplex where a myoma had developed in fœtal life so as to get in the way of Müller's ducts and prevent the union of their lower segments. The arrangements of the plicæ in the cervix seemed to support this theory.

THERAPEUTICS.

(12) Ulcerative Endocarditis treated with Antistaphylococcus Serum.

Moritz (pamphlet, *Zur Serumtherapie bei Endocarditis maligna*, St. Petersburg, 1898, A. Wienecke) has been the first to treat a case of malignant endocarditis successfully with antistaphylococcus serum. Considering the high death-rate in this disease (80 per cent.), which would be probably still higher if other forms of endocarditis could be excluded always, he thinks one case of recovery by the new treatment worth publishing. A man, aged 22, who had never had rheumatic fever or syphilis, became ill at Christmas, and was admitted to hospital on January 22nd. A diagnosis of acute endocarditis was made, complicated by a metastatic right iridochoroiditis. Great care was taken to exclude other diseases, such as typhoid fever. Widal's reaction was absent from the serum, and the diazo from the urine. In case the disease should prove to be a fresh infection grafted on an old valvular disease, he was treated at first for rheumatic endocarditis. Though the eye trouble was cured by February 20th with scopolamin hydrobromide and compresses, his general condition in spite of the above treatment grew steadily worse. The liver and spleen enlarged, and anorexia, epistaxis, a rash, and other grave symptoms arose. It was then decided to try injections of serum. It was hard to decide, however, which of the many bacteria capable of giving rise to ulcerative endocarditis were present in this case. The man had had gonorrhœa and cystitis, which, however, had been cured eight months before this illness, and no gonococci could be discovered. Practically the decision lay between staphylococci and streptococci. As the author had had a very similar case before (with the same sort of musical murmur), where staphylococcus albus et aureus were found *post mortem*, he decided to try antistaphylococcus serum prepared at the Imperial Institute for Experimental Medicine of St. Petersburg, and the first injection was made on February 25th. Briefly, the result of 6 injections of 5 c.cm. each of this serum was to do away with all acute symptoms, and by March 11th the temperature was normal. There remained, however, a mitral regurgitant murmur, which was no longer musical, slight enlargement of the right heart, and an abnormally frequent pulse when he left the hospital on March 25th. Whether his cure was permanent is still uncertain, but he had kept well when last heard of six weeks later. After the second injection there was a metastatic inflammation in the right calf, and after the sixth in the left ankle, which were eventually absorbed without suppuration. Moritz thinks these go to prove that the serum acted directly on the diseased valves, since if the cicatrising process in these were stimulated, particles of vegetations would be more than usually likely to be cast off and to form emboli.

(13) Intestinal Irrigation.

Kemp (reprint from *New York Med. Journ.*, January 29th, 1898) has experimented on dogs as to the effect of continuous intestinal irrigation with normal saline solution, a double-current hard rubber rectal irrigator being used. In every case the animal was under morphine (average dose ½ gr.), with a small quantity of ether if required. (1) Effect on pulse tension: (*a*) With a solution at 100° to 104° F. the increase of tension is so slight that it can be neglected practically. (*b*) At 105° to 108° tension is moderately increased. (*c*) At 110° to 120° tension is much increased and the heart stimulated; excellent in shock or before operations to prevent shock. (*d*) Cold irrigation (36° to 60°) stimulates and causes increased tension, then depresses and pressure falls; it must therefore be used cautiously. (2) Effect on shock from hæmorrhage: The solution should be at 110° to 120°; for example—normal blood pressure of dog 155 mm., after hæmorrhage 112 mm., after hot irrigation for ten minutes 140 mm. (3) Effect on temperature: (*a*) Hot irrigation (110° to 120°), when prolonged, increases the temperature of blood and body. (*b*) Cold irrigation reduces temperature, but is depressing after 20 minutes. (*c*) Clinically hot irrigation raises temperature in shock; cold enemata have been used to reduce temperature in dysentery and infantile

diarrhœa. Kemp would not begin high intestinal irrigation with a solution below 60° F., though iced water rectal irrigation is safe as a rule. (4) Effect on renal secretion: (*a*) In 10 minutes hot irrigation (110° to 120°) stimulates secretion by the heated blood and by its general effect on the circulation. (*b*) In 20 minutes irrigation at 100° to 120° causes increased secretion through actual absorption from the intestines, as shown by a potassium ferrocyanide test. (*c*) If the body temperature or pulse tension be not too high it is best to irrigate at 110° to 120°. This acts both by stimulating the circulation and by the absorption of fluid. Lower temperatures (100° to 104°) seem less powerful and to act through absorption alone, the pulse tension being very slightly raised, and there being no increase of urinary secretion until after 20 minutes. (*d*) Absorption, therefore, from the large intestine occurs in 20 minutes; hence the value of irrigation in diarrhœa. (*e*) Clinically hot irrigation is an excellent remedy in acute uræmic suppression; profuse sweating and action of bowels accompanying diuresis. Renal disease with polyuria contraindicates it. Cold irrigation is dangerous in renal disease owing to the collapse which ensues after 20 minutes, though some have advocated cold enemata. Clinically every case must be taken on its merits. Thus in a young person even with considerable pulse tension and temperature hot irrigation may be excellent, while in an old person with atheromatous arteries it would be dangerous. (5) Compared with injecting saline solution directly into a vein or hypodermically, the author states that: (*a*) After injection into a vein renal secretion occurs in 1½ to 2 minutes. (*b*) After hypodermoclysis in 3½ to 4 minutes. (*c*) After enteroclysis in 20 minutes. The two first methods are useful in acute uræmia to dilute the poison and cause renal secretion, especially if a definite amount of blood be withdrawn by venesection and then replaced by saline solution. However, irrigation is much more simple and easily performed than the other methods, and it acts rapidly in shock, though more slowly when diuresis is required.

(14) Antipyrin Eruptions.

W. Wechselmann (*Deut. med. Woch.*, May 26th, 1898) emphasises the difficulty sometimes experienced in recognising the antipyrin rash. It may spread universally over the body or be limited to more or less definite areas. In the latter case the parts about the mouth, anus, eyelids, the extremities, especially the backs and palms of the hands, the fingers and toes are most often affected. When limited in this way it may be attributed to syphilis. The rash consists of raised, well-defined red spots, round or oval in shape, upon which vesicles quickly appear. Healing takes place with a laminated desquamation or crust formation, and pigmentation frequently remains behind. The diagnosis is often made more difficult by the patient denying that it can be due to the use of any drug. The rash frequently does not appear after the first dose, but only after the antipyrin has been taken for some time, so that the patient hardly believes it possible that it is due to the drug. The author gives details of 5 illustrative cases. He says that the rash is not so often seen as the use or misuse of antipyrin would lead one to expect. The size of the dose has little effect in producing it. The pigmentation is due to the rapid recurrence of the rash in the same part. Perhaps the drug is here excreted by the sweat glands and salivary glands rather than by the kidneys. In some investigations the presence of antipyrin in the urine could not be established.

PATHOLOGY.

(15) The Action of Sausage Toxin and Antitoxin on Nerve Cells.

Kempner and Pollack (*Deut. med. Woch.*, 1897, No. 32) report a number of experiments with the toxin and antitoxin of bacillus botulinus, the cause of botulism or sausage poisoning. Following Marinesco, they have investigated the action of the toxin upon the nerve cells of the anterior horn of the spinal cord. There is first a rarefaction and disappearance of the chromatophil elements, and then the Nissl bodies are destroyed and often pulverised. The cell is greatly enlarged, and presents the appearance of a roundish surface covered with dust, in the midst of which the nucleus stands out sharply, although often less deeply stained than usual. Eventually the cell is almost completely destroyed, appearing only as an amorphous mass containing a contourless nucleus; the cell is pale, almost colourless, but when restored in the way about to be described reacquires an intense blue tint. Three sets of experiments were made with the antitoxin serum first prepared by Kempner. (1) Simultaneous injection of toxin and antitoxin mixed or separately; (2) preventive injection of serum followed by inoculation with toxin; (3) curative injection of serum after poisoning. It was found that 0.000005 g. of toxin killed a guinea-pig in 48 hours, the ganglion cells of the anterior cornua being found after death in a condition of complete disintegration. The first well-marked appearances of poisoning were definitely visible in the cells about 20 hours after the injection, and the larger the dose the more marked were the changes produced. The third series of experiments showed that 0.001 c.cm. of the serum of an immunised goat could prevent the effects of a fatal dose of toxin injected nine hours previously. They further proved the important fact that the serum injected 24 hours after inoculation could save the animal, even when the nerve cells were profoundly altered, and, more than this, could restore the cells themselves to their former characteristic appearance. In the cured animal there was thus perfect regeneration of the cells. The authors were not able to prove a definite and constant relation between the amount of cell degeneration and the severity of the clinical toxic phenomena. The results, however, agreed entirely with those of Flatau and Goldscheider, as regards the regeneration of nerve cells degenerated as the result of the tetanic toxin. This regeneration was found to take much longer than recovery from the symptoms of botulism or of tetanus respectively. In the former case it was certainly extraordinary to note the length of time occupied by the passage off of a degeneration which had become visible within 20 hours.

(16) The Secretion of Urine by the Fœtus.

Schaller (*Cent. f. Gyn.*, April 2nd, 1898) carried out some experiments to determine whether a regular secretion of urine takes place in the fœtal kidneys. His method is based on the observations of Mering, who found that phloridzin administered by the mouth produces glycosuria which is not attended by an increase of the sugar in the blood. The elective action of phloridzin is first manifested in the kidneys. Schaller concludes that if the drug be administered to a pregnant woman, a part of it will find its way into the fœtal blood; and if the fœtal kidneys be active, sugar will be found in the urine and so in the liquor amnii, provided that the latter results in part from renal secretion in the fœtus. Hence the quantitative examination of the liquor amnii for sugar will give the measure of the urinary secretion. But if the fœtal kidneys be not active, little or no sugar will be found in the liquor amnii. His results showed: (1) That in the earlier months of pregnancy (fourth to sixth month) the administration of phloridzin led to the production of no sugar in the liquor amnii; (2) when pregnant women were given phloridzin shortly before the onset of labour pains, out of 20 cases the liquor amnii showed no sugar in 14, but a considerable quantity in 6; (3) when the drug was given some time before labour, there was no sugar in the liquor amnii. Experiments on bitches advanced in pregnancy showed that when these were fed on phloridzin for eight days, 4.7 per cent. of sugar appeared in their urine; but on performing abdominal section and examining the liquor amnii of the embryos, no trace of sugar was found. The writer promises to report later observations.

(17) Preservation of Anatomical Specimens.

Melnikow-Raswedenkow (*Centralbl. f. Pathol.*, 1898, 8-9) recommends the following process for fairly preserving the natural appearances of normal or pathological specimens: (1) Expose to vapours of pure formalin for 24 hours, or treat for 48 hours with a solution composed of formalin 5 to 10 parts, potass. acetate 3 to 4, potass. chlorate 0.5, distilled water 100; (2) pass through alcohol of increasing concentration, during two to three days; (3) preserve in glycerine 20 parts, potass. acetate 15, distilled water 100. The specimen may finally be embedded in gelatine.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

[*The following are abstracts of some of the most interesting papers presented at the annual meeting of the American Medical Association recently held at Denver. We are indebted for advance proofs of the proceedings to the courtesy of the Editor of the "Philadelphia Medical Journal."*]

MEDICINE.

(18) Some Neglected Signs in Chest Diseases.

NORMAN BRIDGE (Los Angeles, Cal.) said that in the absence of the more pronounced signs of pulmonary tuberculosis, slight evidences, such as weak inspiration, prolonged or harsh expiration, and a variation in the signs on the two sides must be looked for. He insisted upon making the patient expire profoundly, as *râles* were often heard then. Deep inspiration and coughing should also be practised. Cracked-pot resonance was a doubtful sign, but when it was on one side only, and accompanied by *râles*, it meant a lesion. Breath sounds were very likely to be lessened in the early stages of pulmonary tuberculosis, owing to partial closure of the bronchi from deposit about them. Greater cough during recumbency on the affected side was a valuable sign, dependent upon the sinking down into lower bronchi of mucus by the action of simple gravity. The comparison of the two sides posteriorly was advised, as in this way one was better able to discover the signs due to the fibrosis that extended around the tuberculous foci and thus to recognise the disease early. Bridge also insisted that fluid in the pleural cavities was often overlooked in children, as dulness was often absent low down, especially on the left side, owing to transmitted resonance from the stomach. The intercostal spaces of children did not bulge, though they were firmer and less compressible than those of adults. Vocal resonance might be distinct, and the only signs that were reliable were the fremitus and the position of the heart.

(19) Acute Meningitis.

DANIEL R. BROWER (Chicago) laid emphasis on the Skeer sign, which, when present, would enable a diagnosis of tuberculous meningitis to be made very early. It was dependent on the deposition of tubercles around the pupillary margin of the iris, showing itself first as a distinct wreath of white clouds about a millimetre from the margin. This sign occurred before any change had taken place in the size of the pupillary orifice. After three or four days these minute cloud-like masses disappeared, and a yellowish-brown circle took their place, becoming more and more attenuated as the pupil dilated. These secondary changes were doubtless due to degeneration of blood vessels and tissues in consequence of tuberculous deposits. Unfortunately the sign was frequently absent, but when present he regarded it as pathognomonic of tuberculous meningitis. He advocated treatment with iodoform by inunction. He preferred a 10 per cent. ointment of iodoform and lanolin applied daily to the shaved scalp. Absorption took place promptly, and iodine might sometimes be discovered in the urine and saliva an hour after the inunction. Of 45 cases treated in this way there were 32 recoveries. H. N. Moyer (Chicago) spoke in endorsement of the efficacy of Brower's treatment.

(20) The Association of Chronic Diarrhœa with Achylia Gastrica.

ALLAN A. JONES (Buffalo) said that the hurried passage of food through the digestive tract was an insufficient explanation of lienteric diarrhœa. The normal gastric accretion prevented this hurried passage by comminuting the food, and thus rendering it less irritating to the bowel, and by giving a stimulus to pyloric contraction, and preventing too early escape of the stomach contents. In achylia gastrica these effects of the secretion were absent. The result was often more severe intestinal symptoms than gastric as a result of precipitate expulsion of food, with irritation or overwork of the intestine, of the action of toxic substances developed, or of coincident inflammation of the intestine. Constipation and diarrhœa might alternate, or the latter might be inconstant. The treatment consisted in the frequent administration of large doses of hydrochloric acid with pepsin; small doses of tincture of iron or of Fowler's solution before meals; intragastric faradisation; and control of intestinal putrefaction by calomel in especial.

(21) Headaches.

H. GRADLE (Chicago) read a paper on Diagnostic Characteristics of Headaches according to their Origin, with Especial Reference to Headaches Dependent upon Affections of the Special Senses. He said that not only the peripheral lesion, but also the condition of the nervous system must be considered. Certain peripheral conditions would necessarily cause headache in each case; while, on the other hand, inflammatory affections and mere refractive anomalies led to headaches only in some patients. The difference in the symptoms hinged on the condition of the nervous system. The most important question concerning the site of a headache was whether it was wholly or predominantly one-sided. One-sided headache was always due to a lesion on the same side of the head, either intracranial or in one of the organs of special sense. The only exception was that form of migraine which, though one-sided at the time, alternated regularly between right and left, for in this case the source was not one-sided, if it were peripheral at all. Conversely, one-sided lesions might in some instances cause headaches not limited to the same side. From the point of view of their time relations, headaches could be classified as: (1) Paroxysms recurring at (*a*) irregular or (*b*) regular intervals; (2) attacks following some specific act; and (3) more or less continuous pain. The cases classified under (1) (*a*) constitute the form called migraine. As to (2)—namely, headaches following specific acts, the most characteristic was the pain brought on by the use of the eyes for near work. The more precise the coincidence of headache with eyework, the more probable was the origin in either hypermetropia, hypermetropic astigmatism, or myopic astigmatism—in the order mentioned. Headaches more or less persistent or with irregular intermissions might result from the same optic anomalies, but only in run-down subjects. Other assisting factors could often be demonstrated, such as gastric or intestinal disease, loss of sleep, and particularly insufficient outdoor exercise. Continuous one-sided headache, if at all connected with the eye, was usually indicative of some serious inflammatory condition, or, in more serious cases, glaucoma. Intense suppurative inflammation of the sinuses led to persistent and usually severe headache. Nasal stenosis, in distinctly neurotic subjects, might cause persistent headache. Inflammatory conditions of the pharyngeal tonsil were sometimes the source of continuous headache in both children and adults. Gradle had seen two instances of persistent, diffuse one-sided headache, with irregular exacerbations, which could not be traced to any peripheral source except carious teeth, and which ceased promptly after their extraction.

SURGERY.

(22) Temporary Closure of Carotid and Subclavian Arteries.

G. W. CRILE (Cleveland) related a few of the more important results of an experimental research into the effects of temporary closing of the carotid and subclavian arteries. He had made 106 experiments on dogs. A series of operations was undertaken to determine whether the depression of respiration occurring in operations in the region of the brachial plexus was caused by the disturbance of the nerves or the influence of chloroform. The results indicated that depression followed only when nerves supplying the muscles of respiration were interfered with. Another series of experiments to determine the cause of the profound shock following blows on the lower chest or the abdomen seemed to show that no amount of injury to the solar plexus affected the heart's action and that this had comparatively little influence on respiration. The same was true of blows on the stomach. Blows over the heart itself produced decided fall in blood pressure, varying somewhat in different dogs; and blows over the naked heart caused still greater disturbance. Experiments with foreign bodies in the œsophagus showed

that those located in the lower end had comparatively little effect, while those located in the upper end cause marked choking and fall in blood pressure, as a result probably of the stimulation of the fibres of the vagus. In regard to foreign bodies in the trachea and larynx, no irritation of the mucosa below the larynx had any influence of importance, but irritation in the larynx produced a fall in blood pressure and embarrassment of respiration. This would suggest that in the removal of foreign bodies from the larynx it would be best to stimulate the heart and to produce local anæsthesia of the mucosa by the use of a cocaine spray.

(23) Indications for Intubation in Diphtheria.

H. M. MCCLANAHAN (Omaha) said the majority of cases of diphtheria recognised early were amenable to treatment with antitoxin. A certain number failed to respond to this treatment. In these cases, if at the end of twenty-four hours a study of the symptoms led to the conclusion that the patient was no better, intubation should be practised. The operation should be performed in all cases presenting any one of the following symptoms prominently: deep epigastric recession with each inspiration; laboured and prolonged expiration; extreme restlessness; spasmodic attacks coming on at intervals; or persistent cyanosis. In cases seen late it might be wiser to intubate and administer antitoxin rather than administer antitoxin and wait for its effects before intubation.

(24) Adrenal Tumours in the Kidney.

BAYARD HOLMES (Chicago) said that a number of cases of tumour of the kidney and of the genito-urinary tract showing resemblance in structure to the adrenal body had been recorded. He reported the case of a previously healthy man, always temperate in his mode of living, who was seized with symptoms resembling those of pneumonia. His general appearance suggested sclerosis of the kidney. Later, symptoms of effusion into the pleura developed, and a pint of blood-tinged fluid was removed by aspiration. The condition gradually became more serious and death followed. At the necropsy the right lung was found consolidated, and contained a tumour resembling in structure the suprarenal capsule. The kidney was found surmounted by a mass the size of a clenched fist. The struma suprarenalis was associated with contraction of the capillaries, blanched skin, arteriosclerosis of all the capillaries, resulting often in severe headache, perhaps in apoplexy. In the case of a few adrenal tumours symptoms presented themselves resembling those of poisoning by adrenal extract. Removal of the tumour before metastasis occurred relieved the symptoms.

(25) Pneumaturia.

H. A. KELLY (Baltimore) said that gas might gain entrance into the bladder: (1) from mechanical causes from the outside; (2) by developing in the viscus; (3) by communication with some air-holding viscus. Most cases occurred in old men with enlarged prostates, or in case of obstruction from stricture. Yeast fungi and various bacteria had been discovered giving rise to gas within the bladder. As an example of connection between the bladder and a hollow viscus, a case was mentioned in which the sigmoid flexure was found communicating with the bladder by a fistulous opening, and in which the condition was relieved by operation. J. Ransohoff (Cincinnati) had seen a case of malignant disease of the rectum, with involvement of the bladder-wall, in which gas was passed with the urine. D. W. Graham (Chicago) mentioned two cases depending upon acute prostatitis, with gonorrhœal stricture. In one case gas was passed only two or three times.

(26) Ether Pneumonia.

J. M. ANDERS (Philadelphia) said that an analysis of cases occurring in some of the private and public hospitals of Philadelphia showed that ether pneumonia occurred once in about every 300 cases. The irregularity, slightness, or moderateness of the pyrexia in many cases accounted for the fact that the condition was often overlooked. The micro-organisms giving rise to the pneumonia were probably not usually obtained from the mask or inhaler used, but it was likely that partly dried secretions were loosened by the moisture in consequence of the increased secretion of the mucosa caused by the irritating effects of the ether, and that they were thus drawn into the lungs. In all the cases that had come under his own observation there was bronchitis, coryza, or some other inflammatory condition of the respiratory tract before the administration of the anæsthetic. Any such predisposing causes should, if possible, be removed first. Most cases occurred in cold weather, when perhaps the patient was carried from a warm operating room through cold corridors, and in many cases probably too much ether was administered.

(27) Fracture of the Clavicle in Children.

A. E. GALLANT (New York) read a paper based on 200 cases treated by Sayre's method, and demonstrated the method of treatment. In a surgical service including 18,042 children aged 10 years and under, there were seen 343 fractures, of which 172 involved the clavicle, especially at the outer portion of its middle third. The shoulder in these cases dropped downward, inward, and forward, dragging on the acromial fragment, and making an angle at the seat of fracture. The inner fragment had not been found displaced above the outer, as described by Sayre and Gray. A. C. Cotton (Chicago) said that the continued use of plaster might be impracticable because of the irritation to which it gave rise. Sometimes he used a stocking drawn over the arm, which was then firmly bandaged. R. B. Gilbert (Louisville) in a case corrected the deformity by using a moleskin perforated bandage. The adjustment of the plaster should be made under chloroform; only partial anæsthesia was necessary. Gallant, in reply, emphasised the difficulty of preventing movement, while movement did not always prevent healing. He cited the case of an infant whose clavicle was broken during delivery, but united before the fracture was recognised. He did not use chloroform but laughing gas for short operations.

MIDWIFERY AND DISEASES OF WOMEN.

(28) Treatment of Retroversion of Uterus.

J. RIDDLE GOFFE (New York) read a paper on Anterior Colpotomy and Shortening of the Round Ligaments through the Vagina for the Relief of all Cases of Retroversion of the Uterus, Simple or Complicated, Howard Kelly had collected a list of 45 different operations that had been suggested for the relief of uterine posterior displacement. That was a proof of the general interest in the subject. The uterus rested in an unstable position, which varied with the position of the patient. When the body was in the upright position the uterus nominally rested on its anterior surface, and was suspended by the utero-vesical and utero-sacral ligaments, while it was steadied in this position by the broad and round ligaments. It must be concluded, therefore, that the uterus was supported by its ligaments, and was subject to the intra-abdominal pressure. In the normal position this pressure fell upon the posterior surface of the organ, and the fundus was driven still further forward and held in its normal anteverted position. The round and broad ligaments might be relaxed and the uterus would remain in the normal position, but once let the utero-sacral ligaments become stretched, and the uterus was sooner or later displaced on account of the forward dropping of the cervix and backward tilting of the fundus. The most frequent cause of relaxation of the utero-sacral ligaments was subinvolution after parturition. Next in order of frequency came prolapse of the appendages, and then fibroid tumours of the uterus situated near the insertion of the utero-sacral ligaments. Retrodisplacement was not confined to married women. In single women the trouble lay in the vesico-uterine ligaments, and especially in the manner of their insertion into the uterine tissues. They were inserted normally nearer the fundus than the utero-sacral ligaments. In these congenital cases the insertion of the vesico-uterine ligaments was too low on the cervix. This condition might be corrected by detaching the utero-vesical ligaments and attaching them higher up on the anterior surface of the uterus. Next to these ligaments the most rational structures to be utilised in correcting these displacements were the round ligaments. The most popular operation to-day was the modified or original Alexander operation. The objections to Alexander's operation were several, including hæmorrhage, the making of two scars, difficulty

in finding the ligaments, and breaking of these structures. Goffe suggested anterior colporrhaphy in all cases of retrodisplacement, whether simple or complicated. The patient was placed in the lithotomy position, and a transverse incision made in front of the cervix. The bladder was stripped from the uterus. The anterior vaginal wall was put upon the stretch and divided throughout in its extent from the cervix to the internal orifice of the urethra. The finger was then passed over the uterus through this incision, hooked over the cornu, the adhesions were broken up and the fundus brought forward into the vagina and out as far as the vulva. Complete drainage was thus secured from Douglas's pouch down into the vagina. The appendages might also be brought down and removed or treated conservatively. The round ligaments were then drawn and stitched together and the loop stitched to the anterior surface of the uterus near the cervix. The uterus was then returned to its normal position. The bladder was adjusted, the vaginal incision closed by catgut, and a piece of iodoform gauze introduced. He had treated 31 cases in this way, and in all the cases of simple retroversion (6 in number) the results were perfect. Some cases were complicated, requiring resection of the tube and ovary. In a number of these the patients had become pregnant, but had not suffered from a return of the displacement. Attempts at loosening the round ligaments from the connective tissue had been followed by profuse bleeding, in one case requiring hysterectomy.

(29) Gonorrhœa as a Factor in Puerperal Fever.

A. H. BURR (Chicago) said that from 10 to 30 per cent. of women become gonorrhœic, and rather the latter number than the former. According to Wertheim, next to the urethra the uterus was the most frequent part infected by gonorrhœa. Burr held that no marriage licence should be issued without a certificate of freedom from gonorrhœa on the part of applicants.

(30) Plastic Surgery of Cervix Uteri.

H. P. NEWMAN (Chicago) presented a communication on the indications for plastic surgery of the cervix uteri, with a new method of operating. He stated that the operation of trachelorrhaphy had been in vogue twenty-five years, but of late years it had been replaced by amputation of the cervix and modelling of the cervix. Emmet now said that with a few exceptions amputation was the better plan. Newman said he had developed a new method of operating. The indications for amputation were malignant disease, enlargement and hyperplasia of the cervix, conical cervix, incurable laceration, chronic metritis and cervicitis, uterine displacements, congenital elongation, and cervical stenosis. Cervical stenosis was the bottom of much pelvic pathology. The technique of the operation was as follows: After the usual preparatory treatment, the patient was placed in the Sims or lithotomy position, the cervix drawn down, and the uterus curetted. The bullet forceps was then reversed and introduced into the cervix, and traction made from within. The cervix was next transfixed with a knife, and a clean cut made from above downward in the anterior lip. The posterior lip was transfixed and cut in a similar manner, and the plug of intervening tissue removed with curved scissors. If the flaps had been properly made they fell together and covered the portion removed, assuming the appearance of the normal cervix. Sutures were then introduced in four groups, anterior, posterior, and lateral. A tampon was introduced and retained for twelve days. The sutures were removed in two weeks. Newman proposed the name of "tracheloplasty" for the operation as a more descriptive name than trachelorrhaphy or amputation of the cervix.

(31) The Rational Treatment of Chronic Endometritis and Metritis.

A. H. GOELET (New York) stated that a positive cure of chronic endometritis was seldom obtained because the disease was not properly managed. Curettage, upon which so much reliance was placed as a method of cure, usually failed because too much was expected of it alone, and no attention was given to the after-treatment. Curettage was to be regarded only as a preliminary, though a very important, step in the treatment. The effort to remove the entire endometrium with the sharp curette was to be discountenanced. It was only necessary to remove that which was diseased, and this being softened from inflammatory action, could be removed with the partly sharp instrument and without using force. Special stress was laid on the importance of thorough drainage and cleanliness in the after-management and upon its strict observance until a complete cure was obtained. Cauterisation of the endometrium, which it was to be regretted, was still practised by some, and the after-mismanagement, with neglect of proper drainage, must be regarded as relics of barbarism. A cure of this condition was perfectly easy if the disease received the same careful attention that would be given to diseased cavities in any other part of the body. The treatment was, however, often undertaken by men grossly incompetent to understand or cope with the condition. The result was many hopelessly invalid women.

THERAPEUTICS.

(32) The Modern Treatment of Tuberculosis.

C. DENISON (Denver) read a paper entitled "Theory and Conclusions on the Modern Treatment of Tuberculosis." Representing the benefit to patients suffering from tuberculosis as 100 per cent., he said 45 per cent. were affected by climate and changes involving mental influence, exercise, and out-of-door life; 30 per cent. were due to good feeding, local supervision, and medical treatment; 25 per cent. to inhalation, local medication, and antitoxin treatment. So saturating the blood with creosote, for instance, that the bacillus would be stopped in its growth and the patient not be hindered thereby, was, he thought, a mere speculation. He doubted whether inhaled substances ever reached the air vesicles and terminal bronchioles where the disease was located. He would like to demonstrate more clearly than had been done heretofore the fact that (1) correct inhaling or, more properly, exhaling, (2) altitude above sea level, (3) rightly directed gymnastic training, all worked on the same principle of mechanical distension of the air cells.

(33) The Cure of Tuberculosis.

J. WHITTAKER read a paper on the Spontaneous Cure of Tuberculosis and the Imitation of its Methods. He stated that two-thirds of humanity at least had tuberculosis, about one-third dying of it, while in the other one-third it became latent or cured. The chief factor in the cure of this third was altitude, which acted by sterilising, immunising and invigorating the soil by the action of dryness, cold, sunshine, pure air, and increased respiration, but also and chiefly by increasing the number of red blood cells, and thereby the oxygenising power of the blood. He had attempted to imitate the effects of altitude by trying to increase the number of blood corpuscles by the administration of blood. Coagulation could be prevented by obtaining the blood from leech bites, but this was too expensive. Sodium oxalate would prevent coagulation, but was not used from fear of poisoning; therefore, to each quart of blood ½ oz. each of sodium bicarbonate and sugar of milk and 1 g. of common salt were added. A pint of water containing such a mixture added to a pint of blood being thrown high up into the bowel. Such enemata were retained with ease, and after their repeated use marked increase in weight and gain in nutrition were noticed, especially in anæmic cases.

(34) The Medical Treatment of Appendicitis.

ELMER LEE (New York), in dealing with this subject, said that surgery now played too large a part in the treatment of appendicitis, and urged that medical treatment should be used in the early stage, and that operation should not be undertaken unless abscess, rupture, or necrosis was diagnosed. In treatment he used solely free irrigations of the colon with 2 or 3 quarts of water, giving large quantities of water internally, using hydrotherapy for fever and for pain, napkins wet with ice water being applied over the appendix. Food was to be limited, and to prevent recurrence the colon should be kept well flushed. E. J. A. Rogers (Denver) said the primary

cause of the disease was lack of the natural cleansing lavage of peristalsis and the invasion of stagnating contents by bacteria. The various forms of bacterial invasion could never be separated clinically, and if it were a severe form, or if the vitality were low, death would result. It was wiser to operate in the early stages. H. Sewall (Denver) said that one must always eliminate functional cases due to an overloaded colon, and relieve that organ in such instances, but if it was suspected that pus was forming or about to form, operation must be undertaken. J. Tyson (Philadelphia) believed that the diagnosis was often difficult, and that many cases which got well under medicinal treatment alone were not appendicitis at all, and he preferred to refer cases at once to the surgeon and sanction operation if he diagnosed appendicitis. J. B. Walker (Philadelphia) mentioned a case in which apparent recovery ensued, but owing to occupation and distance from a surgeon, operation was undertaken in the interval, and an entirely unsuspected large pus cavity was evacuated. In another case there was a prolonged illness during a portion of the time, resembling typhoid fever. Upon operation a pus sac was found, which had probably been present for eleven months. Such cases were leading him to more frequent operation, even when apparently favourable or in process of recovery.

(35) Milk: its Absorption versus its Digestion.

L. D. Bulkley (New York) showed that milk alone was sufficient to meet the needs of the body. Intravenous injection of fresh milk had been safely practised, showing that the economy could assimilate it without previous digestion and absorption. Working on this theory, Bulkley had adopted the following plan for the rapid absorption of milk without previous curdling and digestion: A number of hours after a meal—usually three or four—the food disappeared from the stomach, with all gastric juice, and the mucous surface became alkaline. This was the "alkaline tide" of the stomach. If at this time milk, free from fat, fresh, and alkaline, and at the temperature of the body, were taken, it would excite no secretion of gastric or pancreatic juice on account of its freedom from all irritant qualities, and it would, therefore, pass at once in an unaltered state into the absorbents and system. This saved Nature much work and avoided the disturbances of coagulation. The milk entered the blood current more quickly, and in no way disturbed the appetite for regular meals, even increasing the latter. Milk could thus be taken by patients who could not take it with their meals.

(36) Thyroid Extract in Anæmia.

Samuel Bell presented a paper on some results of the administration of thyroid extract on the red and white corpuscles and hæmoglobin in cases of anæmia associated with melancholia. He related that at the Upper Peninsula Hospital for the Insane, Michigan, 9 cases were under treatment in the first series—7 females and 2 males—all suffering from some form of mental depression. Blood examinations were carefully made. In 1 of the cases the red corpuscles were increased 728,400; the leucocytes 1,330, and the hæmoglobin 7 per cent. In 9 cases thyroid medication was employed and careful observations made; in 5 cases there was a marked change for the better; in the other no favourable influence was noted. In 3 of the 5 in which improvement took place there was increase in weight during the treatment, and in 2 subsequently. The psychological effect was observed almost from the beginning of the treatment in those in which permanent improvement took place.

(37) Treatment of Uræmia.

In a paper entitled Some Considerations upon Uræmia and its Treatment, E. W. Mitchell (Cincinnati) agreed with Bouchard that the symptoms of uræmia were much like those produced by the poisons that had been extracted from urine; and he thought uræmia was often at least due to auto-intoxication from a destruction of tissue, decomposition of foods in the digestive tract, or reabsorption of secretions. The quantity of albumen in the urine was no measure of the danger of the appearance of uræmia. In treatment veratrum viride was eulogised. Rest was a most important factor. Drastic diuretics should not be used. Chloroform destroyed the blood corpuscles if too long used, hence its administration in convulsions should not be prolonged. Morphine might be used once in convulsions in acute cases, but its use in chronic cases or its repeated use in acute cases should be interdicted. Pilocarpin was condemned, as it was likely to drown the patient in his own bronchial secretions. Injections of salt solution might advantageously be used, preceded by venesection if the blood pressure were high.

PATHOLOGY.

(38) Indol, Indican, and Indigo Blue.

J. Leonard Vaux (Ottawa) presented a paper on indol, indican, and indigo blue, their pathological significance and clinical value, for which he was awarded the gold medal of the Alumni Association of Trinity University and Trinity Medical College in Toronto, Ontario, after a three years' competition, the judges being Professors J. G. Adami, Wyatt Johnson, and Ruttan. Indol was produced not only from the proteids of food, but also during suppuration in a closed cavity, continued suppuration, with a free outlet, and in ulceration or necrosis of tissue, the intensity of reaction increasing with the length of time the suppuration had gone on, the adaptability of the surface for absorption and the extent of the surface for absorption. Suppurative peritonitis, for instance, giving an intense reaction much more quickly than pleural empyema. Indol was not the first product in proteid disintegration, being preceded by tyrosin; but tyrosin did not result directly from proteid disintegration. The source of indol might become clearer by studying the relation of the liver to tissue metabolism. The experiments of Nepveau and Villiard were adduced, who were able to demonstrate indol and indican in livers and tumours after death by means of oxidising agents or by extraction with alcohol. It might be assumed, then, that suppuration, or rapid degeneration of tissue caused an increased deposit of indol in the liver and increased elimination, and after death it might be possible to extract its oxidation product, indigo blue, from the liver by oxidation. In regard to lardaceous changes it must be accepted that the deposit of amyloid material was a product of the activity of degenerated cells upon a substance antecedent to the amyloid substance that circulated in the blood. Vaux advanced the theory that this antecedent substance was a derivative of indol which retained its power of easy oxidation into indigo red and indigo blue. He notes the reactions of amyloid material, especially that to iodine, and he states that following his hypothesis these reactions must be considered as indicative of a liberation of indigo red from the tissues by the oxidising action of iodine, further oxidation to indigo blue being produced by sulphuric acid. Other proof was found in the facts that the lardaceous material occurred in chronic suppuration, and a marked elimination of indol was seen in such cases; that the former yielded tyrosin, while the derivative of indol was a product of tyrosin; that the former was poor in potassium, while the latter had strong affinity for potassium; that the seat of selection of the former was the liver, while indol was freely deposited in the liver in suppuration; and that the primary factor of the lardaceous material was deposited by the blood, while the derivative of indol circulated in the blood, and was there oxidised. In regard to the liver the experiments cited showed that indoxyl or its derivative remains in the liver; hence an excess occurred there in suppuration. The lower vitality resulting from suppuration prevented proper reduction of indol by the liver, and there remained in the liver a large amount of imperfectly reduced and indigo-forming substance. Nitrogenous waste and products of degenerated cells were added, and lardaceous material finally resulted. Further confirmation of Vaux's theory was found in the fact that Czerny found that the leucocytes of animals in which suppuration had been induced yielded the characteristic amyloid reaction; and in Herter's statement that the chief changes found in chronic indol poisoning were congestion of the liver capillaries and pigmentation of the liver cells. It only remained to be shown that the red and blue colorations of the amyloid reactions were due to indigo red and indigo blue.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(39) Brain Tumour.

A "SYMPOSIUM" on this subject took place in the Section of Neurology and Medical Jurisprudence at the recent meeting of the American Medical Association. C. H. Hughes (St. Louis) discussed the Symptomatology; F. Peterson (New York) Localisation; E. Jackson (Denver) Ocular Symptoms; P. C. Knapp (Boston) Treatment from the Neurological Aspect; and W. W. Keen (Philadelphia) Treatment from the Surgical Aspect. Hughes said that conditions of the intracerebral circulation, excited by or preceding the development of a neoplasm, glioma, or other growth within the brain, by a morbid cause projecting within it from the brain's enveloping membranes or bony covering, caused a symptomatology —cephalalgia, neuro-retinitis often, and sometimes glaucoma—that might exist independently of any form of intracerebral or intracranial morbid growth. Hysteria complicated, even as it was sometimes complicated by, cerebral tumour. Altered cerebral circulatory states, especially of vasomotor origin, independent of intracranial growths, were not continuous as tumours were. Chief among the persisting signs were the ocular fundus and pupillary signs, the paralyses of cerebral source, monoplegias, hemiplegias, etc., monospasm, hemispasm, etc., tremors, epilepsy, vertigo, paralyses of sensory, motor, and special senses, inco-ordination, anæsthesia and pain due to regional or general cerebral irritation or pressure and degeneration due to intracranial pressure. Such a symptomatology opened the possibilities and consequences of cerebral sclerosis, atheromatous, inflammatory, or specific vascular changes, emboli, thrombi, or thrombotic inflammation of vessels, apoplectic sequelæ, abscesses, interstitial nephritis, uræmic, alcoholic, or other toxipathies, involving the brain, its vessels, texture, or coverings, and serous, ventricular, or subarachnoid effusions. Insanity was often a marked symptom of tumours. Peterson presented several charts, one showing the localisation of functions in the cortex, another showing the centres of language and the result of their lesions. Jackson referred to optic neuritis as the most striking and significant symptom of brain tumour occurring in 80 or 90 per cent. in all cases. It could not, however, be regarded as pathognomonic, and it was of little value in indicating the location of the tumour. The typical optic neuritis of brain tumour was characterised by great swelling, sometimes 10 or 12 D. (3 millimetres), abruptly limited, at no great distance from the margin of the disc; with arteries narrowed, veins dilated and very tortuous, and small vessels much enlarged, but not very numerous, because scattered through the swollen tissue; small flame-shaped hæmorrhages upon or near the papilla; the other portions of the fundus, except for the alteration in the vessels, being normal or presenting changes that were in most cases slight as compared with those at the disc. In contrast, swelling and discoloration of the disc, occurring as an anomaly, were never of very high degree. Jackson also referred to optic atrophy, changes in the pupil, with impairment of accommodation, paresis of the extra-ocular muscles, nystagmus, impairment of central vision and limitation of the field of vision, and impairment of colour perception. Knapp said that of 405 cases collected by him the growth in 34 was found but could not be removed: in 92 it was not found at the point of operation; and in 224 it was found, but in 34 of these it was of such a nature that it could not be wholly removed; in 55, or 14 per cent., the operation was palliative, and in some of these there was perhaps a mistake in diagnosis. He was not very sanguine as to the results of operation in cases of tumour, but he dwelt upon the advisability of operative procedure for gummata and tuberculous growths. The greatest danger was associated with sarcomata and gliomata, the likelihood of recurrence being especially marked. Keen referred to the difficulty of localisation, and urged that every case of brain tumour be subjected to faradism during the operation before the tumour or the brain was touched. As to the technique of the operation, Keen advocated a very large opening, as giving a better opportunity to ascertain the location of the tumour.

(40) Epilepsy in Secondary Syphilis.

RUBINO contributes some observations on the occurrence of epileptic seizures in the course of secondary syphilis (*Riv. d'Igiene e Med. Prat.*, April, 1898). He points out how epilepsy may occur as markedly in the secondary as in the tertiary period of this disease, being due to grave lesions of the superficial structures, or else to direct action of the virus on the epileptogenic centres, and manifesting itself apparently in those patients who are also prone to neuropathic symptoms. The author thinks that it is justifiable to look upon secondary syphilis as the cause of epilepsy when this condition occurs in adult age without other known cause in individuals who were not disposed to this nervous disorder, and in whom the specific affection has either remained latent or has only revealed itself by very slight signs. The clinical picture of secondary syphilitic epilepsy does not seem to differ in its essential characters from the ordinary form, and in referring to it therefore by its name, it is not intended to specify a special disease, but rather a variety, differing alike in its treatment and prognosis in view of its causation. The treatment must therefore be directed to the underlying condition. To this as a rule the seizures rapidly respond, but Rubino points out the importance of continuing antisyphilitic treatment for a considerable time; for if one rests content with the early and apparent immediate success, there is likely to be a return of the seizures in a very chronic form.

(41) The Examination of the Sputum.

A. HOFFMANN (*Centralbl. f. inn. Med.*, May 14th, 1898) draws attention to two kinds of cells which are differentiated by the eosin stain: (1) There is a cell about the size of the white blood cell which contains several small deeply-stained nuclei. Hoffmann looks upon this as a polynucleated white cell. Such cells are seen in specimens of the blood from marked anæmia, especially that occurring in chronic nephritis. (2) The other kind of cell is rarer but more striking. It shows a sharp outline and contains an area inside which is either unstained or only slightly stained. In this area there are several well-stained molecules of varying shape. Sometimes these molecules are so numerous as to fill the unstained area, but they mostly number from 2 to 5. These cells are larger than pus cells. The author found them most abundantly in whooping-cough, but they are also present in other diseases. They are most often found in the sputum of children. They are rarely seen where eosinophile cells are present. In many forms of bronchitis, as well as in asthma, eosinophile cells are found, and Hoffmann would look upon what he terms "eosinophile bronchitis" as an incomplete form of asthma. The second kind of cell described here is present in an acute bronchitis which has no relationship with asthma. Their origin is difficult to explain, but the author regards them as altered nuclei of the cylindrical epithelium of the bronchial tract.

SURGERY.

(42) Surgical Treatment of Intestinal Tuberculosis.

MARGARUCCI (*Il Policlinico*, No. 4, 6, 8, 10, 1898) states that the parts of the intestinal canal most frequently affected are in their order of frequency the last part of the ileum, the cæcum, and the first part of the ascending colon. Bacilli may reach the intestine not only in the food but through the blood. In the first method of entrance multiple ulcerating foci result, in the second an exuberant production of inflammatory tissue about tuberculous granulations in a limited part of the intestine. Women of middle age are most often affected. The pain may be diffused or localised, continuous or spasmodic; nausea and vomiting are frequent. Tumefaction in the painful part, which easily changes in volume, may be detected. The painful spasm is followed by diarrhœa. These symptoms are more common where there is some stenosis either from cicatrisation of old ulcers or from tuberculous neo-formations. The best treatment is resection of the affected parts. The author refers to 7 cases which were operated upon. The mortality was 42.8 per cent., with 4 cures. Details as to the operative tech-

nique are given, and a record of 8 cases of intestinal tuberculosis illustrating various points in the disease.—Pantaleoni (*Archiv. Prov., de Chirurgie*, June, 1898) reports a case of tuberculous stenosis of the small intestine in a woman, aged 33 years, in which he removed with complete success about 5 inches of the affected gut, the walls of which were much thickened and of cartilaginous hardness. The divided segments of intestine were brought together by three rows of sutures. The operation was a long and complicated one, as it was found necessary not only to remove a portion of the mesentery, but also, as firm adhesions had taken place between the affected loop of intestine and the posterior surface of the bladder, to resect at the seat of this adhesion the serous and muscular layer of the vesical wall. In this case there was no restriction with regard to feeding. In the course of the after-treatment some tea was swallowed about three hours after the operation, and after the first 24 hours the patient was allowed to take what she fancied. The author holds that if the two ends of the divided intestine be carefully and properly united by sutures, and if the operation prove to be an aseptic one, no risk should attend the passage of food already reduced by the digestive processes to a thin and absorbable pulp. The paper contains a careful study of the clinical characters and diagnostic signs of intestinal tuberculosis, and a review of 12 previously recorded cases in which this morbid condition was treated by enterectomy.

(43) Treatment of Fractured Patella.

Ball (*Practitioner*, May, 1898) describes a method of radical operation for transverse fracture of the patella, which may be used in recent cases or in cases which have failed under ordinary treatment. He exposes the joint by a horse-shoe flap and cleans out all blood clot. The edges of the fragments are trimmed and a periosteal flap raised from each. A wire rope consisting of eight strands of steel wire is used, and annealed just before being used. This is passed in two separate pieces, the upper piece passing through the quadriceps tendon, and down each side through the tendinous expansion to the level of the fracture. The lower piece is passed through the ligamentum patellæ, etc., in the same way. The two wires are then tightened and twisted together at the sides, and their ends hammered flat. The periosteal flaps are united by catgut. The author thinks this method as safe as any subcutaneous wiring, while it has the advantage of exposing the parts to view and cleaning the joint thoroughly. He recommends it in all cases where the surgeon is sure of his antiseptic precautions. He quotes a case of six months' duration, previously treated only by rest in bed, where the fragments were separated four inches. After treatment in the way described, the wound healed in a week; passive motion was begun in two weeks, and the patient walked in a month. A subsequent skiagraph showed the fragments united and the wire rope *in situ*. No harm apparently results from the presence of the wire rope in the tissues.

(44) A Fatal Case of Gonorrhœa.

Ghon and Schlagenhaufer (*Wien. klin. Woch.*, 1898, No. 24) record the case of a young girl who, when admitted into hospital, had been suffering for four weeks with pains in the limbs and the symptoms of influenza: four days before admission she had begun to have rigors, which were still continuing. On examination it was found that she had acute gonorrhœal inflammation of the urethra and Bartholin's glands. Intermittent fever developed, and six days later there was sudden pain in the right foot, which became cold and bluish, while the sensibility of the whole limb was diminished. This became steadily worse, and in five days more the foot was gangrenous. The heart sounds had been previously obscured by murmurs, but now became audible, and enabled the murmurs to be recognised as mainly systolic and most marked at the base on the left side. The patient became rapidly worse and died next day. At the necropsy it was found that ulcerative endocarditis had attacked the aortic valves, and that septic abscesses were present in the myocardium; the heart was secondarily dilated and hypertrophied. The gangrene of the foot and leg was the result of an embolus in the femoral artery. There was an abscess in the peritoneal covering of the posterior wall of the uterus. The gonorrhœal process had affected the urethra, the vagina, and the cervical portion of the uterus. There was parenchymatous degeneration of the liver and myocardium, together with œdema of the lungs. In the heart lesion gonococci were found, and the endocarditis was thus obviously gonorrhœal. It is very noticeable that many of the ordinary signs of malignant or pyæmic endocarditis, such as septic emboli and enlargement of the spleen, were absent, as also was the typical gonorrhœal joint affection. The bacillus was tested by cultivation, and eventually by introduction into the human urethra; it was not present in the embolus, but was found in the retro-uterine abscess. The urethra contained a large number of small highly vascular polypoid excrescences, developed from the subepithelial connective tissue; these are common in subacute and chronic gonorrhœa. The point of entry of the infection into the blood or lymphatic system could not be determined.

MIDWIFERY AND DISEASES OF WOMEN.

(45) Descensus Ovariorum.

At the recent meeting of the American Medical Association, A. Goldspohn, of Chicago, read a paper on this subject. He stated that descensus, improperly called prolapse, of the ovary was responsible for many of the distressing symptoms of which women complain. The normal location of the ovary, as ascertained by Schultze, was against the lateral wall of the true pelvis, a little below the brim and protected by a projecting folding of its mesentery. Its free border was directed in an inverted and posterior direction. It was suspended in the true pelvis nearly as high and nearly as far removed from the median line as possible. It was subject to the action of the abdominal pressure. There were two degrees of descensus. In the first degree the ovary lay in the retro-ovarian shelf and could be felt in the posterior fornix of the vagina by bimanual palpation. In the second it passed over the utero-sacral fold and sank into Douglas's *cul-de-sac*. The left ovary descended far the more frequently in both degrees, and in the severe cases of double ovarian prolapse it was the most displaced. The causes of prolapse were (1) anything causing an abnormal or disproportionate increase in the weight of the organ, or inflammatory conditions; (2) a multiformation of corpora lutea and unruptured heavy Graafian follicles. A second group of cases included the condition in which the ovarian ligaments became elongated, as in subinvolution; or when vicious traction was made upon them in minor gynæcological operations. (3) The chief cause of descensus was retroversion and retroflexion of the uterus. Harmful factors incident to descensus were: (1) Venous stasis; (2) traumata from the uterus and the rectum. Hæmatomata, œdema, connective-tissue hyperplasia, chronic oöphoritis leading to multiple cystic degeneration in one part of the ovary and cirrhosis in other portions, and peri-oöphoritis, were the pathological changes in prolapsed ovaries. The so-called medical treatment of this condition was effective in cases in which descent was associated with retroversion and uterine subinvolution subsequent to parturition. A properly fitting pessary and a vagino-abdominal faradic current, with massage and tonic medicinal treatment would do good in a few cases. Non-puerperal cases, however, were not benefited. Wool tampons impregnated with glycerine and renewed daily would reduce the tenderness, and manual massage might then correct the displacement, when a pessary must be worn for life. The best treatment for these cases, however, must be surgical. The displacement of the uterus must be corrected at the outset. The round ligaments might be shortened by vaginal section, but ventral cœliotomy was the proper route in all cases complicated by adhesions and lingering septic action. Intra-abdominal shortening of the round ligaments then acted admirably. The ovarian fimbriæ were caught by a thread and secured to the inner free margin of the main suspensory ligament of the ovary near the ilio-pectineal line. Thus, the ovary and the fimbriated extremity of the tube were suspended in normal relation to each other and with a proper degree of mobility. Alexander's operation is not an ideal method for the treatment of ovarian prolapse. Only skin and fat should be cut, all other tissues being separated with a blunt instrument and the internal

inguinal ring stretched. In this way hernia would be prevented. A small opening, large enough to introduce the index finger was thus obtained, and any degree of fixation could be loosened and the tube and ovary brought up and out of the ring, when incision or conservative treatment of the appendages may be practised.

(46) Vesicular Mole and Drugs.

KEIFFER (*L'Obstétrique*, March 15th, 1898) seriously attributes the development of vesicular mole to the effect of emmenagogues taken during pregnancy. They set up proliferating arteritis, which interferes with the normal development of the placenta. He noted that in three cases where vesicular mole had developed the patients had taken emmenagogues—piscidia, viburnum, saffron, and salicylate of soda. The latter drug had been prescribed to a young primipara for amenorrhœa. Hæmorrhages followed, and Keiffer diagnosed pregnancy. In spite of appropriate treatment abortion occurred at the sixth month, and a vesicular mole was expelled. No normal placental tissue could be found: there was marked endarteritis, many vessels in the membranes being blocked by their proliferating endothelium.

(47) Sudden Death in Infants: "Asthma Thymicum" (?).

LANGE (*Centralbl. f. Gynäk.*, No. 20, 1898), speaking at Leipzig of a case of sudden death where the thymus was found enlarged, raised a discussion on the whole subject. Krönig was of opinion that rapid death of an infant should always be attributed to sepsis. It is in newborn infants that the purest examples of "bacteriæmia" are to be found, not a trace of disease being visible at the necropsy, even at the umbilical wound, when the blood is full of colonies of streptococci. Lange's patient died suddenly at $3\frac{1}{2}$ months; it had been treated for gonorrhœal ophthalmia in an outpatient department, and had been weighed every week. It was not under weight, and it died suddenly, early in the morning, without any symptoms of acute or subacute mischief in the respiratory tract. The trachea, just 1 inch above the bifurcation, was contracted so that its lumen, not absolutely effaced, was like the hollow in the sheath of a sword. This contraction was due to the thymus, which weighed over three-quarters of an ounce, measured 1 inch in thickness, and closely embraced and compressed the trachea. Structural changes were detected in the tracheal tissues. Lange claims that this case is the first recorded in which purely mechanical and persistent compression of the trachea by the thymus was sufficient to kill. He showed the parts, and with them another instructive preparation of hyperplasia of the thymus without visible compression of the trachea, from an infant who had died suddenly from after-attacks of spasm of the glottis. Zweifel had his doubts about the cause of death in Lange's first case, as the lumen of the trachea was entirely obstructed. Asthma thymicum might cause death, but there was great difference of opinion concerning that disease.

(48) Syphilis of the Uterus.

LEGRAIN (*Ann. des Mal. des Org. Génito-Urin.*, April, 1898) reports on three cases of syphilitic disease of the uterus. In all three cases the uterus was uniformly enlarged, but not fixed; the cervix was not ulcerated or eroded. In two cases there was metrorrhagia and anæmia, and in the third purulent endometritis. Two of the patients had other syphilitic manifestations. Under specific treatment all recovered, the uterus resuming its normal size. The author considers these cases to be parenchymatous and fungous metritis caused by diffuse cell infiltration of the uterus rather than gummata. He thinks syphilis of the uterus more common than is generally supposed, and that some cases diagnosed as fibroids are really syphilitic.

THERAPEUTICS.

(49) A Method of Resuscitation in Apparent Death from Anæsthetics.

HERZOG (*Deut. Zeit. f. Chirurgie*, vol. xlvii. pp. 5 and 6, 1898) gives the results of some experiments he has undertaken on animals with a view of testing the efficacy of Laborde's method of "rhythmical traction of the tongue" in cases of apparent death from drowning and anæsthetics. Laborde described his method at the Medical Academy in Paris in 1892. His attention was first directed to the question by observing the good results which he obtained in the laboratory on narcotised animals, by rhythmical traction of the tongue. In 8 cases of drowning, where the animal was kept under water for three and a-half minutes, resuscitation took place in 5 cases. In Sylvester's method animals cannot be revived after one and a-half minute's submersion. The directions for the use of Laborde's method are as follows: Place a piece of linen round the tip of the tongue, and grasp it with the thumb and middle finger; now pull the tongue forward with a jerk, and then relax it again; repeat this manœuvre twenty times a minute. A sense of resistance is felt in the tongue before there is any attempt at respiration. Traction should be continued for thirty or sixty minutes. Herzog experimented on dogs; he administered chloroform till the respiration had ceased for one and a-half minutes. He found that Laborde's method was useless in cases of asphyxia in a late stage of narcosis. In an early stage of narcosis, however, Laborde's method is distinctly useful when associated with other forms of resuscitation. Traction on the tongue is said to stimulate the centres in the medulla; this necessitates an increased blood supply to the part. The respiratory centre is in close proximity to the centres concerned in the movements of the tongue, the beneficial effect would therefore act on both.

(50) Rest: A Neglected Factor in Gastro-Enteric Diseases.

IN a paper on this subject at the recent meeting of the American Medical Association, C. V. Spivak (Denver) protested against the too frequent and general use of lavage, galvanisation, and other local mechanical measures in the treatment of gastro-intestinal diseases. His own method was to advise rest in bed in all serious cases, with entire abstinence from food for at least from 1 to 3 days, nutritive enemata being used if longer abstinence was necessary, with poultices over the epigastrium, which gave comfort and acted as a splint for the stomach. He recited histories of cases with hyperchlorhydria, gastric disturbance with pulmonary tuberculosis, membranous enteritis, and other affections in which failure of permanent relief by the usual methods of treatment was followed by entire cure of permanent amelioration of symptoms when the rest cure was employed. He considered this treatment indicated in all neurotic cases, in all cases with pain or diarrhœa, and in almost all tuberculous cases, and he thought it never contraindicated.

(51) The Electrical Treatment of Neurasthenia in Hysterical Patients.

APOSTOLI AND PLANET (*Annales d'Electrobiol.*, May 15th, 1898), in a second communication, record four cases of the association of these diseases treated by electricity. They state that these two neuroses are frequently found in association in the same subject, though in different degrees. Neurasthenic patients who are also hysterical often derive great benefit from treatment by static electricity or by franklinisation. The curative process of the static bath is especially exercised upon insomnia, and its effect is marked by the return of normal sleep. Most, but not all, hysterical patients whose condition is improved by static electricity show an intolerance, varying in degree, towards the high frequency currents, and especially towards auto-conduction in the electric cage. Faradisation, which is as a rule indicated as alone serving to produce an effect upon certain local hysterical troubles, especially those of sensibility in one organ or a limited region, is often powerless, while static electricity, which acts in a general manner, may give more rapid and more effectual results. Static electricity can indeed, according to the authors, bring about the disappearance of certain hysterical manifestations, such as convulsive ties complicated with constipation and copræmia. The cutaneous sensibility to the static spark, which is found to be abolished or more or less diminished in hysterical patients who are commencing electrical treatment can be more or less completely restored under the influence of franklinisation alone; this can therefore be used as a supplementary aid in diagnosis. Finally the authors state that static electricity or franklinisation (consisting of a simple bath with electrodes leading off from the vertebral column and the painful points) is the most capable and effica-

cious electrical means of rendering aid in every respect in the treatment of a certain number of hysterical cases.

(52) Behring's Tetanus Antitoxin.

Erdmann (*Wiener klin. Woch.*, No. 19, 1898) says that up to the present time the published cases in which tetanus antitoxin has been used amount to 11 cases with 11 deaths. He relates two fresh cases which have occurred in Vienna. The first case was a man aged 56, who was attacked with trismus after thirteen days' incubation period. Nineteen hours after the first attack of spasm he was given a full intravenous injection of antitoxin. The treatment had no effect on the progress of the disease, and the patient died next day. The second case was that of a farm labourer, aged 48, who was injected with 10 g. of Behring's serum directly after the first symptoms of spasm were noticed. The patient died in a few hours.

(53) Lactophen in the Treatment of Insomnia in the Insane.

Cristiani (*Rif. Med.*, June 16th, 1898) has given lactophen for insomnia in over 200 cases of insanity with very good results. The dose given varied from 1 to 3 g., the remedy being administered in some sweet emulsion. Sleep that had all the characters of a natural slumber followed in a very short time, lasted from four to nine hours, and was not succeeded by any bad effects—no stupor or morning headache and no digestive disturbances. Like most other hypnotics, it lost its effect after continued use, but after a short intermission could be used again with good results. The author used it in all kinds of mental cases and in different physical conditions—for example, cardio-vascular, kidney, and other diseases. He considers it quite safe and more generally useful—in insane subjects—than opium, chloral, trional, or any other hypnotic. As it has no taste or smell it is not difficult to administer.

(54) Eucaine β.

Reclus (*Bull. de l'Acad. de Méd.*, March 29th, 1898) has used eucaine β for more than six months. Its solutions are very stable, and can be boiled, whereas cocaine at 80° is transformed into ecgonine, which is without analgesic effect. It is much less toxic than cocaine, but its anæsthetic effect is also weaker. Reclus prefers a 2 per cent. solution for injecting into the tissues. It causes local vaso-dilatation, and hence bleeding is apt to occur, and half an hour after injection sharp smarting pain is often felt, which may last an hour or two. Reclus concludes that cocaine carefully used is to be preferred.

(55) Protargol in Ophthalmic Practice.

Bossalino (*Gazz. d. Osped.*, March 27th, 1898) has employed protargol, which is an albuminate of silver, in affections of the conjunctiva and lachrymal sac. It is a yellowish powder easily soluble in water, and not precipitated therefrom by albuminoid substances, by acids or by alkalies, nor reduced by the action of light. Bossalino has used it in ½ per cent. solution as a lotion, and in 5 to 10 per cent. solution as an application. While not particularly satisfactory in cases of blepharitis or of phlyctenular conjunctivitis, it has been beneficial in the catarrhal forms of conjunctivitis and in dacryocystitis. While less energetic than nitrate of silver, it has the advantage of not causing irritation and smarting; nor is it liable to cause deposits on the cornea. It can safely be prescribed to patients to use at home. It is not precipitated by the tears.

PATHOLOGY.

(56) Insects and the Transmission of Contagious Diseases.

P. R. Joly in a monograph on this subject (*Thèse de Bordeaux*, 1897) quotes instances of malignant pustule, Egyptian ophthalmia, and Delhi boil conveyed by flies. He has also found as the result of careful observations that the legs of flies may be covered by staphylococci and many other forms of bacteria. Tubercle is particularly liable to be disseminated by flies; thus they come in contact with sputa and other means whereby tubercle bacilli discharged from the body of the patient becomes ingested. The insects then alight on food and deposit the tubercle bacilli, and thus easily contaminate milk, meat, and other substances. The author quotes Yersin as having noticed that the bodies of dead flies collected in his laboratory often contained numbers of the plague bacillus. The influence of various insects, more particularly mosquitos, in carrying the filaria sanguinis is well known. The mosquito has also been suspected as the agent in the conveyance of malaria, and the writer suggests that the "sleeping sickness" is due to infection carried by insects. Ordinary inflammatory conditions may be produced by the common flea and bug, though the writer has been unable to find that the latter insect carries tuberculous infection, as is stated by some observers. The writer goes on to show the importance of warding off flies as far as possible, especially in cases of the diseases mentioned. He suggests a solution of formal as of considerable use for this purpose, and particularly good in cases of phthiriasis.

(57) Effect of Ether Inhalation upon the Lungs.

W. Lindemann (*Centralbl. f. Path.* 11—12, 1898) has experimentally investigated this subject, and finds the effect of ether inhalations upon the lungs a double one—(1) the pulmonary vessels lose their tone, and dilate; (2) their walls become more pervious, and hence œdema results. The congestion and œdema are, of course, increased if the cardiac action is enfeebled; without such cardiac weakness the œdema cannot become dangerous. The vascular dilatation is effected early in the administration of ether, and lasts for some little time after the latter is ended; the perviousness of the vessel walls develops later, but restoration to the normal occurs rapidly. A number of different pathological conditions can thus arise depending upon the presence or absence of cardiac weakness or failure and upon the time of onset of the same, for example, before pulmonary changes have occurred, or after the vascular dilatation, but before transudation, etc. Ether has thus a toxic effect upon the pulmonary vessels; such toxic effect is accompanied or followed by an exudation of lymph, and this albuminous material may form a ready nidus for invading organisms, with consequent pneumonia.

(58) Perforating Ulcer of the Mouth.

Letulle (*La Presse Médicale*, April 2nd, 1898) records an instance of this rare condition in an alcoholic man, aged 51, who presented fairly well-marked symptoms of tabes. The teeth in the left half of the lower jaw were all wanting except the central incisor, those on the right side being healthy. In the upper jaw there were only three teeth left, and apart from the persisting teeth the alveolar border was atrophied; on the right side of the upper jaw there was a cavity involving the alveolar border and the hard palate, opening like a cone into the middle meatus of the nose. The mucous membrane lining it was pale, thickened, but not ulcerated; its sensibility was much impaired. The patient was not aware of this condition, but on being questioned he said that liquid food had for five months come through the right nostril. This lesion is rare; Baudet has collected 8 cases chiefly on the subject of tabes. It may be unilateral or bilateral, but always occurs in the same situation. As to the explanation of the lesion, there are two views: (1) that of Galippe that it is the result of alveolar pyorrhœa aggravated by tabes; and (2) that of Baudet that it is an atrophic tabetic lesion due to the fifth nerve being affected, which begins by loss of the teeth and atrophy of the jaws, and sometimes terminates by ulceration and perforation into the antrum. The decision between these theories must be left to the future, but probably a combination of the two would be most satisfactory. At present only one case has been examined after death, and that very incompletely.

(59) "Typhoid Pneumonia."

At the recent meeting of the American Medical Association H. E. Tuley (Louisville) related a case in which many of the symptoms pointed to typhoid fever; yet no evidence of this disease was found after death except slight enlargement of the mesenteric glands. On the twelfth day signs of consolidation of the lungs appeared, and the necropsy showed the lungs to be almost completely consolidated. Bacteriological examination of the lungs revealed only the diplococcus pneumoniæ. In such a case, Tuley thought, the term "typhoid pneumonia" seemed justifiable.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(60) Cardiac Lesions and Biliary Colic.

POTAIN draws attention (*Journ. de Méd.*, April 10th, 1898), to the occurrence of cardiac lesions in the course of cases of biliary colic and other hepatic affections. In a patient under his care suffering from biliary colic, very great increase of cardiac dulness was noticed, with absence of any of the usual causes. This condition has been noticed by Potain on several occasions, and was first described by him in 1878, in reference to a patient also suffering from biliary colic, who presented a high degree of tricuspid regurgitation. A little time after, this condition had quite disappeared, the hepatic symptoms having subsided. Potain points out that this association of cardiac dilatation and tricuspid incompetence is a variable one, and it sometimes happens that the cardiac lesion becomes permanent, be it from its frequent occurrence, or because the biliary condition may be constant. This relation of cardiac dilatation to affections of the biliary system is more difficult to make out in simple cases of catarrhal jaundice. The writer, however, quotes Barié as having recorded several cases of this kind in which the cardiac complications disappeared so soon as the catarrhal state of the bile ducts cleared up. It may be asked, if a similar complication exists in cases of cirrhosis, and it seems that the rule holds good for cases of hypertrophic cirrhosis accompanied by jaundice. On the contrary, Potain has not noticed it in instances of common cirrhosis. As to the mechanism of this condition, it has been explained in various ways. The suggestion put forth by the writer is that the strain on the right side of the heart is due to a spasmodic condition of the pulmonary capillaries. In support of this there is a certain amount of experimental evidence, for Franck and Arloing are quoted as having shown that irritation of the bile duct raises the blood pressure in the pulmonary artery. It would seem to be a necessary factor that the mucous coat of the bile vessels should be intact, as it appears that in ulcerated conditions there is an absence of reflex influence on the more distant organs.

(61) Persistent Ductus Arteriosus.

ZINN, of Gerdhardt's clinic (*Berl. klin. Woch.*, May 16th, 1898) relates a case, and discusses the diagnosis. The patient was a weakly woman, aged 37, with somewhat clubbed finger ends, but no cyanosis. The cardiac dulness began in the left mammary line, and extended to the right edge of the sternum. It was also prolonged upwards in a quadrilateral form up to the first interspace. The apex beat was in the fifth interspace. There was a systolic thrill, most marked in the first left intercostal space. A very loud systolic murmur was heard in the pulmonary area, and extended into the diastole. The murmur was heard in the carotids and subclavian, and very distinctly behind. The pulse was regular but small. The other organs were healthy. Apparently there was no other symptom complained of except shortness of breath on vigorous exertion. There were evidences of past rickets. Rickety children suffer from atalectasis, which is itself looked upon as a cause of persistent ductus arteriosus, or patent foramen ovale. The points in favour of a patent duct were the extension of the cardiac dulness upwards and also to the right, the marked systolic murmur and thrill extending into the diastole, the conduction of the murmur into the vessels of the neck, and the absence of cyanosis. The presence of the murmur behind to the left of the third and fourth thoracic vertebræ has also been looked upon as evidence of a patent ductus arteriosus. Gerdhardt thought that a greatly dilated ductus arteriosus would account for the absence of the second pulmonary sound. This malformation is rare, and only a few cases are on record. Grunmach took a Roentgen photograph, and the results obtained confirmed the view advanced above. The extension of the cardiac dulness upwards in cases of persistent ductus arteriosus was pointed out by Gerhardt; it is due to a dilatation of the pulmonary artery brought about by the entrance of blood from the aorta.

(62) Alterations of Taste and Smell in Tabes.

KLIPPEL has made a study of the various alterations in the senses of smell and taste as they occur in tabes dorsalis (*Arch. de Neurologie*, 1898, and *Journ. de Méd.*, April 10th, 1898). Contrary to the general idea that these symptoms are rare, the author finds that they are of common occurrence in cases of this disease, and may manifest themselves at a very early date; in regard to this they correspond to the other sensory symptoms, such as numbness, paræsthesia, and pains. At the same time the author has noticed the late occurrence of these symptoms in several cases. In these circumstances anosmia and agustia are observed, and as by this time the patient has, as a rule, many other symptoms to absorb his attention, complete loss of smell may go unnoticed. Both these symptoms may appear suddenly and in association with bulbar symptoms. In other instances smell and taste merely show perversion and in an intermittent form, thus resembling crises. There may be for a day or so at a time peculiar earthy, metallic, or bitter taste sensations appearing independently of meals, and lasting for about ten minutes or a quarter of an hour. In the same manner patients may complain of sour smells and odours of stale fish, vomited matter, etc.

(63) Rupture of the Left Ventricle.

DUPLANT (*Lyon Médical*, No. 17, 1898) relates a case of rupture of the left ventricle in a man aged 68. The patient had complained of pain in his left side for some considerable time. Ten days before his death he began to suffer from severe dyspnœa and œdema of the legs. His face was cyanotic, and the radial pulse was scarcely perceptible; signs of pericardial effusion developed. At the *post-mortem* examination the pericardium was filled with blood and the left ventricle was torn; the opening, about the size of a shilling, was filled with blood clot; this fact probably enabled the patient to live ten days after the perforation took place.

SURGERY.

(64) Resection of Renal Tissue as an Aid to Diagnosis.

BLOCH (*Revue de Chirurgie*, June, 1898) advocates resection of a small portion of renal tissue as a diagnostic measure in cases of kidney disease the nature of which cannot be determined by other means, including exposure and puncture of the affected organ. Seven cases are reported in which this practice was applied with good results. Removal and subsequent microscopical examination of a portion of the cortical structure may result in the preservation of a kidney supposed to be seriously and incurably diseased, and the exploratory operation itself, which, it is held, is free from danger in any case, may be followed by the cessation or relief of troublesome symptoms. In many cases of renal disease it is impossible, the author states, to make a diagnosis of the nature of such disease even after free exposure and palpation of the kidney. It is only by microscopical and bacteriological examination of altered renal tissue that one can tell whether such alteration be due to inflammation or to a new growth, or whether the appearance of the tissue supposed to be diseased be deceptive and not due to any morbid change. By such practice one may be able to distinguish between cases of chronic inflammation and cases of tuberculosis, and also to determine whether or not any large suppurating cavity in the region of a kidney be connected with this organ. The knowledge acquired by a histological examination of the resected renal tissue may lead the surgeon to refrain from secondary nephrectomy, and thus, the author points out, the operation he advocates may be regarded as one likely to promote conservatism in renal surgery.

(65) Should the Operation of Cholecystostomy in Two Stages be Abandoned?

FENGER (*Annals of Surgery*, June, 1898) states that notwithstanding the general tendency amongst surgeons to perform cholecystostomy in one and not in two stages, he is still indisposed to give up the two-stage operation entirely. It protects more securely against infection of the peritoneum, and in cases of suppuration of the gall bladder is just as safe as an operation for abscess of the liver or any other retroperitoneal collection of infective material. It is held that when the object of a cholecystos-

tomy is not so much the removal of stones from the biliary tract as drainage of a septic gall bladder, the operation in two stages is preferable and, indeed, the only rational one. The author would also perform the two-stage operation in any case in which, during an acute attack of cholecystitis the gall bladder is found small, deeply situated, and adherent to surrounding organs. In some of the most complicated cases both the local and general conditions may necessitate the two-stage operation as the wisest compromise, as the patient may not be able to bear an operation lasting from one to three hours. The author points out as another reason apart from safety for leading him to adopt the operation in two stages in some of the most complicated cases, that the simple drainage of the gall bladder not only relieves troublesome symptoms, but brings about a change in the pericystitis whereby the hard, œdematous, infiltrated adhesions become soft and pliable, and the organs again become movable. In these improved circumstances the bile ducts may be exposed and isolated more readily and with less risk.

(66) Renal Sarcoma in Children.

CONCETTI (*Rif. Med.*, May 9th, 10th, and 11th, 1898) reports 3 cases of this disease, 2 of which were operated upon, and 1 was alive and well two years after the operation. Early infancy (from birth to 5 years) furnishes the largest proportion of cases, and 20 per cent. of the recorded cases occurred within the first year. The male sex is more often affected. In the author's two cases no evidence of suprarenal tissue could be found, no glycogen, and no parasitic blastomycete such as has been described by Sanfelice. The immense majority of renal malignant growth in children are sarcomatous or myxosarcomatous in nature. In the author's cases the weights of the growths were 970 and 1080 g. respectively; one weighing 15,000 g. has been described by Vander Byl. The right kidney is more often affected than the left. The chief symptoms are the presence of a tumour behind the colon, rapidly growing, more or less free according to the presence or absence of adhesions; if cysts develop, examination of the fluid is a help in diagnosis. Examination of the urine gives negative or uncertain results; hæmaturia is exceptional. The average duration of life is only six months if the case is left alone. From published statistics the author finds that the mortality from operation is 40 per cent.; by relapse 45 per cent.; cures more than two years' duration 7 per cent.; results unknown 8 per cent. Not more than 9 or 10 cases of absolute cure after operation are known at present. In spite of these figures the author recommends nephrectomy if there are no signs of systemic infection.

(67) Modern Views on Trachoma.

SCHULHOF (*Wien. med. Presse*, 1898, Nos. 24 and 25) gives a very complete summary of recent work on the etiology, pathology, and treatment of trachoma. He quotes some striking figures as to its prevalence; in thirty Austrian counties there were in 1895 nearly 30,000 sufferers, while in the Russian army in 1896 the number of victims reached the almost incredible proportion of 62 per cent. The author summarises the results of his investigations in the following conclusions: Trachoma is an infectious disease which can be spread by contagion. Its appearance is favoured to a certain extent by special conditions, such as race, locality, general nutrition, and occupation. The actual natural history of the affection is not yet established; experiments and inoculations into animals have so far failed. The hypertrophy of the conjunctiva (granulation) is pathologically and histologically the principal characteristic of the morbid process. Hitherto the following have been generally accepted as the best means of treatment: Solution of silver nitrate and its substitute argentamin, touching with copper sulphate, washing out with sublimate, the galvano-cautery, and in very obstinate cases more extreme measures such as the use of jequirity, peritomy, and the removal of the hypertrophic folds. Among the newer remedies the following deserve a trial: guaiacol-glycerine, ichthyol, sozoiodol preparations, and electrolysis. But the most important measure by far is prophylaxis by means of regulation of the sanitary conditions and prevention of the spread from patient to patient.

MIDWIFERY AND DISEASES OF WOMEN.

(68) Rupture of Tubal Cyst: Ovum Uninjured.

LABEY (*Bull. de la Soc. Anat. de Paris*, January, 1898, Part 2) issues an important illustrated note of a case of the well-known tubal gestation cyst in which three facts are evident. First, the rupture was certainly due to medical examination. Secondly, the rent in the sac was very evident; this is usually the case. But, thirdly, the ovum managed to keep inside the tubal dilatation, though there was enough bleeding to cause death. The patient was 45, and had been pregnant four times, the last confinement taking place as long as seven years ago. A fortnight before admission into the Hôtel Dieu, Paris, under Polaillon, she suffered from free flooding when the period was three weeks overdue. Previously the catamenia had been very regular. Bleeding, with passage of clots, continued. The patient was examined. She was very fat. The uterine cavity measured 3½ inches, and slight resistance was noticed in the right fornix. Internal hæmorrhage set in soon after the examination, and the patient died in the afternoon. The peritoneal cavity was full of clots and fluid blood. There were no adhesions except between the cæcum and vermiform appendix and the right tube. The left appendages were normal; the uterus, very bulky, seems to have shed its decidua. A fœtal cyst occupied the outer part of the right Fallopian tube, the fimbriæ of which were visible, the ovarian fimbria being particularly well developed. In the upper part of the posterior aspect of the tubal cyst was a wide rent over an inch in length. The chorionic villi showed very plainly the membranes of the ovum were quite intact, and the fœtus could be seen floating about in the liquor amnii.

(69) Cyclical Stomatitis as a Menstrual Phenomenon cured by Oophorectomy.

B. B. DAVIS (*Med. Times*, May, 1898) describes the case of a married woman, aged 35, who had had four children. Several times before the birth of the last child attacks of stomatitis coincided with menstruation. For three years after this she suffered from severe ulcerative stomatitis, involving the tongue and the whole of the buccal mucous membrane. The first sign of the molimen was soreness of the mouth appearing five days before the menstrual flow. The attack was at its height at the end of menstruation, at which time the mouth was full of small dirty ulcers. During the stomatitis no solid food could be taken, and liquids only with caution. All medical treatment had failed, and as the patient was losing ground the tubes were removed. Both ovaries contained cysts about the size of a duck's egg, and the right Fallopian tube contained a mass of blood clot which was not a tubal gestation. The patient completely recovered. As to the explanation of the cyclical character of the stomatitis, the author suggests that it may have been a feeble attempt at vicarious menstruation.

(70) Secondary Operations for Rupture of the Perineum.

KHOLMOGOROFF (*Vratch*, No. 19, 1898) advises the performance of secondary operations for ruptured perineum during the puerperal period, that is, from the second to the twentieth day after labour. He performed the operation in 25 cases during that time, and in all cases obtained primary union. There is no danger of lochial infection of the raw surfaces, if suitable precautions are taken. The operation is undertaken in those cases where immediate suturing after labour has not been done, or where, if done, has not been successful. The patient's vagina is carefully washed out with corrosive sublimate solution and a tampon of sublimate gauze inserted to take up the discharge. The tampon is removed just before the operation, the vagina again syringed out, and a fresh tampon inserted, which remains *in situ* for twenty-four hours. This prevents the lochia coming in contact with the wound until some adhesion of the raw surfaces has already taken place. After this the tampon is unnecessary, and careful vaginal douching is sufficient. The operation consists in first marking out the extent of the raw surface, and then removing the granulation or cicatricial tissue with a sharp spoon within that limit. The sutures are then inserted in the usual way, and the raw surfaces brought together. The sutures are re-

moved on the seventh day. The temperature generally remains normal after the operation, but there may be a slight rise. In this way many a perineum can be repaired during the time the patient is under observation after labour, and this does away with the necessity of her applying for advice in six weeks afterwards, which many of them fail to do through either fear or neglect.

(71) Malignant Uterine Disease in Youth. GLANTENAY AND R. MARIE (*Gaz. Hebd. de Méd. et de Chir.*, April 21st, 1898) relate a case important in respect to "deciduoma malignum," real or suspected. A woman, aged 25, suffered for two years from menorrhagia. The uterus at length attained the size of a fœtal head at term. It was removed by abdominal panhysterectomy, and was found to be the seat of a true spindle-celled sarcoma with pseudo-cysts due to separation of areas of neoplastic tissue rather than to breaking down of the cells. Glantenay and Marie believe, without giving reasons, that the new growth was of myomatous origin. As there was no history of labour or abortion the question of deciduoma was not raised, but had gestation occurred it might have been otherwise: and indeed the new growth would doubtless have been deeply modified in its histological characters.

(72) Delivery of Twins after Death of Mother.

GOGOTSKY (*L'Obstétrique*, March 15th, 1898) reports that a primipara, aged 30, was admitted, for eclampsia, into the maternity of the University of St. Vladimir, Kieff. Cyanosis and dyspnœa set in two hours after admission, and death appeared imminent. The os was but little dilated; the cervix was therefore incised laterally with scissors. The forceps was applied, but during its use the mother died, and three minutes after her death a slightly asphyxiated child was born. A second child was delivered by podalic version eight minutes after the death of the mother; it was asphyxiated, but readily revived.

(73) Removal of a Retroperitoneal Chyle Cyst.

SARWEG (*Centralbl. f. Gynäk.*, No. 16, 1898) publishes full notes of an interesting operation performed last December by Döderlein of Tübingen on a girl aged 11. The child had been under observation for over three years. In May, 1895, the cystic tumour, which had first been noticed by the parents in the summer of 1892, was aspirated and several pints of a milky fluid came away. In May, 1896, eleven pints of similar fluid were removed, and on December 21st, 1896, the cyst was ruptured by a fall and acute peritonitis followed. In November, 1897, the abdomen was greatly distended, measuring 28 inches in its greatest circumference, it was not quite tense and fluctuated very distinctly. It reached upwards to midway between the umbilicus and ensiform cartilage, and on rectal examination was found not to extend into pelvis. The flanks were resonant on percussion. On December 3rd, 1897, the operation was performed. The cyst was found to be retroperitoneal. On dividing the posterior layer of peritoneum the cyst wall was uncovered, it was very thin and quite transparent. As it was punctured eight pints and a half of milky fluid came away. It was now found that the cyst wall came out between the stomach and the transverse colon having perforated the "gastrocolic ligament" or portion of omentum between those two viscera. The base of the cyst was traced to the head of the pancreas, with which it was connected by a pedicle three-quarters of an inch long and as thick as a little finger. It was tied and divided, a canal being exposed and a little chyle oozed from the canal till the ligature was drawn tight. Three weeks later the child was perfectly well. The fluid proved to be chyle without a trace of pancreatic element, the cyst wall bore none of the characteristics of a pancreatic tumour. Döderlein insists that a chyle cyst should be extirpated, not tapped.

THERAPEUTICS.

(74) Phosphorus and Morphine Poisoning. SCHREIBER (*Centralbl. f. inn. Med.* June 11th, 1898) mentions that potassic permanganate has been recommended as a remedy against both acute phosphorus and acute morphine poisoning, and in some such cases it has given very good results. The oxidation products of phosphorus and morphine are non-poisonous, at least in the doses in which they are then likely to be present in the stomach. The only disadvantage of potassic permanganate is that the potassium salt is poisonous, and therefore cannot be given in large doses. The author has made experiments to ascertain whether the sodium salt, which can be used in larger doses, would answer as well. Thus 2.75 g. of potassic permanganate killed a rabbit, whereas the same dose exercised no poisonous action upon another similar animal. Sodium permanganate is, however, not harmless; the maximum dose for a medium-sized dog is 4.5 g. Strong solutions are especially to be avoided, as they act as corrosives to the gastro-intestinal mucous membrane, and produce fatty changes in the liver and heart, and also renal irritation. The good effects obtained by the sodium salt were shown to be not inferior to those of the potassium salt. Although experiment shows that the administration of the antidote suffices, yet the stomach should be previously washed out with a 2 per cent. sodium permanganate solution. This should be done even if the poison has been taken some hours previously. After this, half a litre of the same solution is taken, or it may be passed through the tube into the stomach. The washing out should be repeated again in a few hours. If washing out is not possible, apomorphine should be injected, as emetics administered by the mouth interfere with the permanganate. Where the emetic must be given by the mouth, half a litre of sodium permanganate is given immediately afterwards, and then another half litre after the vomiting. The usual remedies must not be omitted if there is any evidence of absorption having taken place from the stomach, because permanganate is of little service after the poison is absorbed.

(75) The Hydro-electric Treatment of Chronic Rheumatism.

CHAUVET of Royat (*Arch. d'Elect. Méd.*, April 15th, 1898) strongly supports Nevison's views as to the value of the electric bath in chronic rheumatism. He either uses pure Royat water, or adds 2 per cent. lithium chloride to it. The current is produced by a battery of 50 Leclanché cells, and is employed at an intensity of from 15 to 30 milliampères. The electrodes consist of charcoal covered with flannel, and each sitting lasts from ten to thirty minutes. The author records 14 cases of rheumatoid arthritis and 1 of gout treated in this way. In 8 the results were most satisfactory; in 2 the baths were beginning to do good when they had to be discontinued owing to the supervention of local or general excitability. In both these cases the patients were from the first nervous and apprehensive. In the remaining 4 cases no improvement was noted, and it is to be remarked that in all of them Heberden's nodes were present. The author thence infers that the treatment is not indicated where this particular deformity is found to exist. In any case, however, it does no harm, and during its continuance there is an absence of the acute exacerbations which are so common in rheumatoid arthritis. There is a remarkable improvement in the suppleness of the joints, and in successful cases the author claims that the hydro-electric method is more rapid in its effects than any other which he has tried.

(76) Treatment of Soft Chancre.

UNNA (*Monats f. prakt. Derm.*, 26, 6) describes a treatment for soft chancres which has proved very successful in many cases. The ulcer and the surrounding skin is first washed over with soap and water, and then with perchloride lotion. After this cleansing process is completed the chancre is frozen with chlorethyl, and the superficial layer of the chancre is removed with a sharp razor. The hæmorrhage is controlled by touching the raw surface with a stick of nitrate of silver. The wound is covered with iodoform powder, and a zinc oxide plaster is next applied. The plaster is renewed every twenty-four hours. The treatment is usually continued for four or five days, and at the end of this time the chancre has healed.

(77) Iron Somatose.

PAUZER, of Neusser's clinic (*Wien. klin. Woch.*, 1898, No. 25) records the results obtained by the use of this substance in eleven cases of anæmia, of which eight were chlorosis, one purpura hæmorrhagica, one secondary to gastric ulcer, and the remaining one of unknown

causation. In most of the cases rest in bed was also enjoined; the iron somatose was given for considerable periods, and the red corpuscles and hæmoglobin estimated every week or fortnight. In the case of secondary anæmia and in three of those of chlorosis very favourable results were obtained. In two other cases these were only arrived at after a lengthened interval, and in a further one they were very slight. As to the remaining cases, in two no good effect was produced and the other two are not available for comparative purposes as the patients were not kept in bed throughout. One of the greatest advantages of the remedy is that it is always well taken and only produced sickness in one case. It appears to be useful to give iron in combination with so readily absorbable a substance as somatose, the only drawback to the extended use of the preparation being its high price.

(78) Artificial Immunity by Alkaloids.

Gioffredi (*Arch. Ital. de Biol.*, Tome xxviii, Fasc. iii, 1897) has attempted to immunise dogs against certain vegetable alkaloids, using the same methods as are used for immunising animals against bacterial toxins. With cocaine and atropine he failed to produce immunity or to obtain an antitoxic serum. With morphine, however, he succeeded in gradually raising the quantity injected until twice the minimum fatal dose could be borne without producing more than slight narcosis. The serum also obtained from an animal thus immunised has marked antitoxic properties; 10 c.cm. to 20 c.cm. sufficed to neutralise the effect of double the minimum fatal dose of morphine if injected into a non-immune animal before or at the same time as the latter. Nevertheless, the author does not feel justified in concluding that this is a true immunity, comparable to that obtained by injecting bacterial toxins, since after six months, when the dog could bear very large doses of morphine, it died suddenly, and *post-mortem* endocarditis and fatty degeneration of the left ventricle were found exactly analogous to that sometimes met with in morphinomaniacs.

PATHOLOGY.

(79) The Immunity of Hydrocephalic Fluid from Bacterial Invasion.

Luigi Concetti (*Archiv. f. Kinderheilk.*, vol. xxiv, parts iii and iv, 1898) has made chemical observations on the bactericidal properties of the fluid withdrawn from cases of hydrocephalus. He says that the serous membrane surrounding the central nervous system appears to be less liable to invasion by pathogenic germs than the serous membranes enclosing the other viscera of the body. The meningitis in children can rarely be proved to be due to the direct infection by micro-organisms, but is usually caused by toxin poisoning. There can be no doubt that if micro-organisms are experimentally introduced into the cranial cavity, the meninges become infected. The circumstance under which these experiments take place differ entirely from cases of general infection, in which there is no local injury which could favour the development of septic organisms in one part more than another; and, further, in experimental investigation the poison is introduced in large quantities locally; this never takes place when it is circulating in the blood stream. Concetti analysed the hydrocephalic fluid and found that it was always clear, slightly alkaline in reaction, and having a specific gravity of 1005-1010; it also contained a very small quantity of albumen, 0.20 per 1,000, a trace of phosphorus and chloride; the examination for peptone, uric acid, and sugar gave negative results. Hammersten's analysis of normal cerebro-spinal fluid (*Leitfaden der physiol. Chemie*, Upsala, 1890) agrees in every particular with Concetti's observations with regard to the composition of hydrocephalic fluid. Concetti suggests that the higher percentage of albumen found by previous authors may be due to inflammatory changes set up by the operation of puncture in the pre-aseptic days. Tables are given showing the results of the experiments with the following organisms: Streptococcus pyogenes aureus, staphylococcus pyogenes aureus, staphylococcus pyogenes albus, Frænkel's pneumococcus and bacterium coli commune. Rabbits and guinea-pigs were selected for experiment. The culture mediums employed were hydrocephalic fluid, and for control experiments bouillon, and bouillon and distilled water. The cultures were kept for forty-eight hours at a temperature of 35°. It was found that after the poison had passed through three rabbits its virulence was greatly increased in those cases in which the bouillon and bouillon and distilled water had been employed; whereas in the case of hydrocephalic fluid cultures the virulence of the poison was not increased, and that in many instances it was diminished. The pathological lesions were fewer and much less severe in the hydrocephalic cases than in the others; septic changes were very rarely seen. These experiments agree with Bernabeo's observations on the immunity of cerebro-spinal fluid from external sources of infection (*Annali di Igiene sperimentale*, 1896, fascic. iii, sec. 351). Clinical experience also helps to emphasise the points with regard to the comparative immunity of the nervous system to general infectious diseases met with in childhood.

(80) The Bacterial Complications of Diabetes.

Honl (*Wien. klin. Rundschau*, 1898, Nos. 16, 17, and 19) publishes an elaborate study of this subject, based upon twenty-nine necropsies. He finds tuberculosis by far the most frequent complication, occurring in 41.3 per cent. of the cases. Pneumonia and broncho-pneumonia were present in 24.1 per cent., and suppurative changes in the lungs in 20.6 per cent. He points out that diabetic tuberculosis may assume various forms, the most noteworthy of which is distinguished by extremely rapid destruction of lung tissue with the presence of very few of the specific micro-organisms. Honl considers that it is due to bacterial symbiosis. In other cases, septic or pyæmic processes may arise from the tuberculous cavities, and these may be traced sometimes to organisms which are very rare in human pathology. Thus the croupous pneumonia which occasionally complicates diabetes is apparently not in all cases due to the pneumococcus. One of the author's cases was what he describes as a pneumo-bacillary septico-pyæmia, in which a general infection resulted from the diffusion of Friedländer's bacillus from the lungs. This is only the fourth case of the kind hitherto described. The author has also found it possible to elevate the immunity of certain animals against many infectious processes. Thus experimental phloridzin-diabetes raises the immunity of rabbits against Friedländer's bacillus. The paper is accompanied by a good bibliography, and is worth careful study in the original.

(81) Fœtal Tuberculosis.

Doléris (*L'Obstétrique*, March 15th, 1898) records two cases of maternal tubercle in one of which the disease was limited to the lungs and the fœtus escaped, for inoculation of guinea-pigs with its blood gave no results, while inoculation with the mother's blood caused tubercle in the animals. In the other case no traces of tubercle could be found in the fœtal organs; nevertheless inoculation of a guinea-pig produced it, and Doléris concludes that the fœtus must therefore have been infected with the tubercle bacilli.

(82) Arrhythmia from Pericardial Irritation.

Heitler (*Wien. klin. Woch.*, 1898, No. 3) records a discovery made experimentally upon the dog, which has an important clinical bearing. He finds that irritation of the visceral pericardium in that animal by electricity, or by pinching or merely touching its surface causes a marked disturbance of rhythm, even when the vagi and all the nerves from the inferior cervical ganglion to the heart are cut. That the effects are due to stimulation of the pericardium was demonstrated by painting it with cocaine, when they could no longer be obtained, even with very powerful excitation. The excitability of the pericardium varied in different parts, being greatest in the longitudinal sulcus, especially the upper third. The middle third was less susceptible, and the lower third intermediate between the two. The left ventricle was excitable, especially in the upper third; the excitability of the apex was variable. Arrhythmia resulted from stimulation of the right ventricle in the neighbourhood of the sulcus, but was not marked in other parts. It was throughout more intense when the stimulus was applied during systole than diastole. Occasionally the heart went into fibrillar contraction and death; this happened in one-third of the author's experiments.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(83) Laryngitis Exsudativa.

SCHECH (*Münch. med. Woch.*, June 28th, 1898) classifies under this heading a number of affections in which there appears in the laryngeal mucous membrane exudation with more or less fluid contained in vesicles or hyperæmia with more or less swelling. In miliaria there are a number of the smallest vesicles on the epiglottis and aryteno-epiglottic folds, giving rise to the sensation of a foreign body. There is a similar eruption on the body. It may be necessary to apply cocaine or eucaine. Herpes is more frequent. If it occurs elsewhere on the body the diagnosis is easy; otherwise it may be mistaken for syphilitic plaques, acute pemphigus, diphtheritic deposit, etc. The pain is very considerable. Inhalations and insufflations of cocaine, etc., may be needed. Variola or varicella may affect the laryngeal mucous membrane. The prognosis is serious; tracheotomy or intubation may be necessary, especially in children, owing to the laryngeal obstruction. Foot and mouth disease may be accompanied by vesicles, which rupture and form ulcers. The diagnosis is very difficult. Aphthæ sometimes occur in the larynx in association with aphthæ of the mouth or vulva. Pemphigus rarely gives rise to vesicles in the larynx. It has sometimes even been limited to the larynx. It may be acute or chronic. As in herpes, relapses may frequently occur. Ulcers do not as a rule arise. The prognosis is unfavourable. The patient may be exhausted by the relapses, and eventually die from marasmus or intercurrent disease. The pemphigus eruption is larger than that due to herpes or syphilis. Urticaria may certainly affect the laryngeal mucous membrane. The symptoms depend on its extent. The prognosis is generally good, but death may occur from asphyxia. The treatment consists of gargles, sucking ice, the injection of cocaine into the larynx if the pain is severe and tracheotomy in threatening stenosis. Lichen ruber planus is more common in the mouth and fauces than in the larynx. There may be no symptoms or discomfort felt in talking or swallowing. The disease is apt to persist. Arsenic should be given by the mouth, and sublimate and carbolic acid used locally. Impetigo herpetiformis is extremely rare in the larynx, as also are erythema nodosum and multiforme. Such cases have, however, been observed.

(84) Chronic Lead Poisoning.

KARCHER (*Correspondenz-Blatt. f. Schweiz. Aerzte*, May 1st, 1898) reports two cases of lead poisoning. (1) A painter, aged 50. In 1895 he had colic and paresis of the upper extremities, less marked in the forearm than in the shoulder muscles, especially the deltoids. This was cured. In August, 1897, he suffered from renewed colic, tremors, and violent pains in both arms. There was paresis of the muscles supplied by both radial nerves, which, however, disappeared, leaving only paralysis of the extensors of the ring fingers. The paralysis and atrophy affected chiefly the scapulo-humeral muscles; the deltoids, pectoralis major, rotators of upper arm (especially infraspinators and teres minor), and the levator scapulæ being almost absent. Such a case is chiefly interesting from the point of view of differential diagnosis, the muscles affected being the same as in Erb's type of progressive muscular atrophy. The author also reports an undoubted case of the latter, and then compares the two. At the height of the paralysis and atrophy due to lead, the two were very similar, and the differential diagnosis could not be made with certainty. The shoulder muscles were first affected in both; in both atrophy was the most marked symptom and fibrillary tremors were absent, and there was no R. D. in either. The following facts were in favour of lead paralysis (*a*) lead poisoning was certainly present; (*b*) the deltoids were markedly affected, muscles which are attacked very seldom and then late in the disease in Erb's paralysis; (*c*) the temporary paralysis of the forearm muscles; (*d*) the muscles affected corresponded as a whole to Remak's brachial type of lead paralysis, though the slight implication of the forearm was exceptional. The diagnosis was cleared up by recovery following treatment in December, 1897. (2) A solderer, aged 35, who, besides typical lead poisoning combined with general muscular weakness, had ceaseless fascicular contractions producing no locomotor effect in the dorsal muscles of the hand and in the lower extremities, especially the calf muscles. These fascicular contractions are called by Schulze "myokymia," and have no connection with degeneration. They may be present in other diseases, and are purely of a functional neurotic character. This patient had other neuroses, a limitation of the visual field, and weakness of normally developed muscles. The presence of these neuroses in this case is interesting as illustrating the fact that lead poisoning plays an important part in the etiology of the neuroses, especially hysteria.

(85) Ecmnesia.

KRAFFT-EBING, at the Neurological Society of Vienna (*Neurol. Centralbl.*, July, 1898) recorded under the name of "ecmnesia" a curious mental condition which followed the use of hypnotism. A servant girl, aged 21 years, after severe excitement suffered from attacks of lethargy, followed by delirium. She was treated by hypnotism, and after being so treated once, passed into a mental state in which she seemed to go back to a period ten years earlier. Everything that had occurred during the last ten years was completely forgotten, but for all that had occurred previous to that time her memory was perfect. She had several of these attacks, and they were stopped by further hypnotic treatment. According to the author, similar mental conditions have been produced by hypnotic suggestion in other cases, but the present case is peculiar in its spontaneous origin.

SURGERY.

(86) Irrigation by Submersion in Empyema.

AT the recent annual meeting of the American Pediatric Society, S. A. Adams gave the following reasons in support of this method of treatment: (1) It is simpler, cleaner, easier, and in the 10 to 15 minutes that the patient is sitting in the bath he will be washed out from 200 to 300 times—not 3 or 4 times. (2) Much economy is effected in dressings, as by removing the thickened matter from the pleural surfaces there will be less irritation and the production of much less pus. (3) The baths improve the general condition of the patient, causing better metabolism. In irrigation fresh water was constantly used; but as the pus and other products were heavier than water they fell to the bottom of the tub, while the upper portion of the water remains unpolluted. Adams reported the case of an Italian girl, aged 8 years, whose family history showed no transmissible taint. Five months ago she was said to have had pneumonia of the right side, after which she never recovered her health. The appetite was fair, the patient was constipated, cough had been almost incessant, and there was occasional fever and night sweats. An abscess on the anterior aspect of the chest at the third interspace to the right of the sternum, had appeared within five days. Emaciation was marked; the features were pinched; there was slight icteric discoloration of the skin, the cutaneous veins were distended, and the pulse was weak and thready. An abscess about 4 inches in diameter was situated just to the right of the sternum between the second and fourth ribs. Its covering was thin and its walls relaxed with each inspiration, and became tense with expiration. Respiration was accelerated, but there was no dyspnœa. There was flatness on percussion over the entire chest anteriorly and posteriorly. Vesicular breathing was absent. Bronchial breathing and voice were present anteriorly and posteriorly, but feeble and distant. Vocal fremitus was almost absent. There was bulging of the intercostal spaces on the right side. A free incision was made into the abscess, and more than a pint of greenish pus escaped and continued to do so with each expiration. A dressing was applied, and the child was transferred to the surgical service for operation. Four days later about 2 inches of the seventh rib were resected in the right axillary line. A large quantity of pus escaped. The pleural cavity was thoroughly irrigated through the

upper and lower openings, a drainage tube have been inserted into the latter. The child's condition improved slowly, and the physical signs of the normal chest were returning, but the profuse discharge continued in spite of thorough daily irrigation. After twelve days it was determined to place the patient in a bath of boiled water at 100° F. for 15 minutes, after the method of Zeman. The cleansing was complete. With every inspiration the water would run into the two openings, and, with expiration, it would return laden with pus, which would sink to the bottom. The entire body was kept under the water until expiration expelled clear fluid, the time varying from 10 to 20 minutes. At first a bath was given daily, and then one every other day until the child recovered after two months, and was discharged six weeks later. She preferred the baths to irrigation with the syringe. Sixteen baths were given, extending over three weeks. At the time of discharge the patient was a rosy, robust girl, with a normal chest and normal chest sounds. Having witnessed the thoroughness of this method of irrigation, and the comfort of the child while reposing in the warm bath, Adams was ready to recommend it in cases of empyema in which an opening of sufficient size to enable free ingress and egress of the water is made. It was a matter of choice which antiseptic, if any, was to be used, but care should be exercised in employing those that were easily absorbed. Boiled water, or a saturated solution of boric acid, would be sufficient in most cases; the latter, however, would add greatly to the expense. The bath was prepared in the same manner as in the Brand method, and the water should be kept at a uniform temperature of 100° F. by adding warm water from time to time. There was no chilling, so the patient might remain in the bath several minutes after the water was returned perfectly clear. Adams said the method was tried in cases of tuberculous disease, but there was so much contraction of the chest that the water did not go in with any effect whatever.

(87) Exosplenopexy.

HOCHEL (*Archives Prov. de Chir.*, July, 1898) reports a case in which a laparotomy for supposed ovarian tumour revealed an enormously hypertrophied and adherent spleen. As an attempt to remove the diseased organ would, under the circumstances, have been almost inevitably fatal, the author decided to leave a portion exposed at the surface of the body, and at the same time to close the peritoneal cavity. The parietal peritoneum was fixed by a continuous suture to the splenic capsule, and between the lips of the external wound a portion of the surface of the spleen, about 4 inches in width, was left uncovered by skin. This exposed portion soon became soft and gangrenous, and in the course of a month from the date of operation nearly the whole of the enlarged spleen sloughed and came away. During the after-treatment suppuration and septic mischief were prevented by frequent and very careful antiseptic dressing. The patient made a good recovery, and lost very little strength and vigour during the gradual softening and removal of the spleen. This operation, for which the author proposes the title of exosplenopexy, had, he finds, been done by other surgeons in two further cases, once successfully, and in the other with fatal results on the third day.

(88) Hernia of the Bladder.

BRUNNER (*Deut. Zeitschr. f. Chir.*, Bd. 47) who has collected 180 cases of vesical hernia, gives some interesting information on this condition, especially as a complication met with in operations for the radical cure of inguinal hernia. Hernia of the bladder is rarely met with in a purely extraperitoneal or intraperitoneal form, but in a very large majority of instances occurs in what is called a paraperitoneal form, the protruded portion of bladder being closely connected with, and partly covered by, the sac of an intestinal rupture. It presents itself in about 1 per cent. of cases of inguinal and femoral herniæ submitted to an operation for radical cure. In many such cases the vesical protrusion is artificially caused by traction on the intestinal hernial sac during the operation. Of 126 operations for radical cure of intestinal hernia, in which the complication of a vesical hernia occurred, the bladder was wounded in 81, and escaped injury in the remaining 45. Of these latter cases 3 only were fatal, whilst after accidental opening of the bladder death resulted in 21 cases, in 13 of which the fatal result was directly due to the vesical injury. In such cases the author would close the wound in the bladder by sutures, and leave a portion of the external wound open so as to guard against any risk of escape of urine.

(89) Caries of the Hyoid Bone: Extirpation: Recovery.

ULLMANN (*Wien. med. Presse*, 1898, No. 23) records a case of caries of the hyoid bone, a condition which he says had never previously been described. The case is further interesting from the operation which was performed. The patient was a man, aged 28, with a tuberculous family history. Two years previously, after a winter cough, an abscess developed in the neck, above the thyroid cartilage. This was surgically treated, and recovery took place rapidly. Three months later, while on military service, another abscess formed, broke spontaneously, and got well. A year after the first trouble an abscess again developed, which left an intractable fistula. When this had persisted for a year the patient consented to a radical operation. It was then found that the fistula extended down to the hyoid bone, which was bare of periosteum. The muscles were separated from the body, which was then excised; this revealed a fistula lined with tuberculous granulation tissue extending along the left greater cornu. It was therefore decided to extirpate the remainder of the bone, and this was carefully done, the tongue being fixed by a thread to prevent it from being swallowed. Care was taken not to injure the mucous membrane of the floor of the mouth during the operation. A strip of iodoform gauze was left in the wound, which healed up in three weeks without complication. A particularly noteworthy point was that speech was good, and the mobility of the tongue normal. Nothing amiss was detected laryngoscopically either before or after the operation.

MIDWIFERY AND DISEASES OF WOMEN.

(90) Uncontrollable Vomiting of Pregnancy.

KLEIN (*Zeitschr. f. Geburtsh. und Gynäk.*, vol. xxxix, Part 1, 1898) recommends systematic treatment for the hyperemesis gravidarum. Care must be taken to exclude all cases where the sickness is not essential to pregnancy in any individual patient, and where, though limited to gestation, it does not cause serious debility. It may be neurotic or hysterical. It tends to pass through three stages if unchecked. In the first stage vomiting occurs immediately after meals; in the second it comes on spontaneously or at the mere thought of taking food; in the third symptoms of extreme debility are present, fever, faint odour of the skin, delirium, etc., ending in death. The first two stages are best treated by purely dietetic means, combined with perfect mental and bodily repose. Fluids alone should be given, such as milk, thin soups, fruit juice, and mineral waters. Tea, coffee, and cocoa must be forbidden, as they increase the tendency to vomit. Should this dietetic treatment fail after a few days' trial at the patient's home, it is best that she be treated in a nursing institution, where the diet can be administered with due punctuality and strictness. Klein does not recommend treatment by "suggestion," nor by drugs, nor any local appliances, unless a definite lesion like impaction of the retroflexed uterus in the pelvis exists. Even in the third stage of hyperemesis the induction of premature labour is rarely required; prevention of the increase of hyperemesis is the first aim of the physician, hence strict diet must be enforced as early as possible, whilst if the treatment be commenced when the patient's condition has become very grave it seems, in Klein's opinion, still preferable to operative obstetric interference.

(91) Dry Labour.

BRODHEAD (N. Y. *Med. Rec.*, May 14th, 1898), discusses the dangers and treatment of this condition. Strictly speaking, a dry labour is one in which the membranes have ruptured prior to or with the first pain, but for practical purposes all cases are included in which the membranes rupture during the first stage, when the "water wedge" has yet much to accomplish. The author's

experience is that rupture with the first pains occurs in 15 per cent. of cases, and twice as often in multiparæ as in primiparæ. The dangers to the child are asphyxia and meningeal hæmorrhage, the two being frequently associated, and being caused by pressure on the cord and interference with the fœtal circulation. The dangers to the mother are œdema of the cervix and vulva, laceration of soft parts, to which the œdema predisposes, pressure necrosis, hæmorrhage, liability to sepsis, rupture of the uterus, either spontaneously or during difficult efforts to extract the child, together with those constitutional symptoms which arise in cases of protracted labour. As regards treatment, the author's plan is to give at once a large dose of castor oil and glycerine, followed shortly after by 10 gr. of quinine sulphate repeated every three hours, with $\frac{1}{30}$ gr. strychnine sulphate every two hours. Antiseptic precautions must be unusually thorough, and the vulva should be kept protected by an antiseptic pad, changed as often as saturation with amniotic fluid makes necessary. Chloral and opium should be given with great caution, as these cases generally need stimulation rather than a period of rest. As a theoretical procedure he speaks well of tamponing the vagina to hinder escape of amniotic fluid. He advises early operative interference in most cases, and thinks that not more than half an hour should elapse after the second stage of labour has begun before such interference is resorted to. For douching lysol gives excellent results.

(92) Thrombosis and Embolism in Childbed.

SINGER (*Arch. f. Gyn.*, vol. lvi, Part 1) draws the following conclusions from the records of cases described by Mahler and from those observed by himself: (1) The formation of a thrombosis is associated with a step-like rise in the pulse curve, the curve coinciding with the completion of the thrombus and the appearance of lung symptoms. (2) The thrombus curve is characteristic; typically the pulse rises while the temperature remains normal, and then the former remains high while the latter rises. If œdema or lung symptoms supervene, the highest point of both is reached, then the temperature falls while the pulse remains high. (3) If the temperature rises from the first, the thrombus is of the inflammatory type. (4) In such cases the secretions should be carefully examined, and in many instances gonococci will be found, even when no internal examination has been made by either doctor or midwife before labour. (5) As regards treatment, the most important point is early recognition of the condition; and the patient should then be kept absolutely in the recumbent position. For the details of treatment the author refers the reader to Mahler's work in the second volume of the *Arbeiten aus der Dresdener Frauenklinik*.

(93) Rupture of Vagina.

FINKELKRANT (*Gaz. Lekarska*, No. 7, 1898) reports a case not without interest in relation to current questions on injuries to the genitals. A multipara, aged 40, complained of sudden violent pain during connection. Hæmorrhage followed, and she was admitted into hospital. A laceration of the posterior vaginal wall extending into the posterior fornix was detected, and was sewn up with catgut; the wound healed by first intention. Finkelkrant discovered that the genitals were the seat of premature senile involution. The case shows that the tissues of the genital tract in a multipara entering middle age are not necessarily tough and resistant, but may, on the contrary, be thin and inelastic; hence laceration attributed to coitus is quite possible, and wounds in the posterior fornix in such cases are not invariably due to cutting or thrusting instruments introduced into the vagina for criminal purposes.

(94) Tumours of the Placenta.

ALBERT (*Arch. f. Gynäk.*, vol. lvi, Part 1) has collected all the recorded cases of placental tumours, and adds particulars of 4 others. The 36 previously recorded tumours are classified as follows: Fourteen cases of myxoma fibrosum, 10 of fibroma, 9 of angioma, 2 of sarcoma, and 1 described by Merttens as hyperplasia of the chorionic villi. Albert criticises the naming of the last 3. Sarcoma implies malignancy, and in the 2 cases so described there was no evidence at all of malignancy. He thinks these 2, as well as Merttens's tumour, would be better described as angioma fibro-myxomatosum. The author's 4 cases were all of the nature of angioma. The site of origin of these tumours is discussed, and is concluded to be the allantois, inasmuch as neither amnion nor decidua had anywhere any relation to the tumour. The cause of these tumours was given by Goodhart as the organisation of blood clot; by Storch as a previous endometritis; by Hildebrandt as degeneration of placental villi under the influence of dilatation of vessels and stasis of blood in them. The author attributes the growth to a proliferative rather than a degenerative process in the villi. As to clinical symptoms, in 4 cases there was hydramnios, in 6 there was severe hæmorrhage, and in 1 eclampsia. The prognosis for the child is bad; 12 only out of 36 are stated to be normal, 10 were premature, 3 stillborn. In 5 cases in which labour was at term the child did not reach the average weight. A good bibliography completes the paper.

THERAPEUTICS.

(95) Gastric and Intestinal Antiseptics.

RIEGNER, of Senator's clinic (*Deut. med. Woch.*, June 23rd, 1898) first refers to the various views held as to the possibility of disinfecting the contents of the alimentary canal. He has himself continued the experiments of Strauss upon gastro-intestinal antiseptics. Stomach and intestinal contents were placed in graduated tubes, and grape sugar in equal amounts added. The antiseptic was then added in known quantity in watery or alcoholic solution, and more rarely in powder form when not soluble. The author gives details of a number of experiments. As regards gastric antiseptics, he concludes that sodic salicylate, $\frac{1}{8}$ per 1,000, menthol $\frac{1}{2}$ to 2 per 1,000, and thymol $\frac{1}{8}$ to $\frac{1}{2}$ per 1,000 have relatively high disinfecting powers. A medium disinfectant action is possessed by chinosol, chloral hydrate, soluble silver, and actol, and only a slight one by even large doses of steriform and ichthyol. As regards intestinal antiseptics, chinosol and thymol arrest fermentation in $\frac{1}{8}$ per cent. solution, and delay it in $\frac{1}{4}$ per cent. Actol, bismuth salicylate, or bismuth β-naphthol arrest it in 1 per cent., and delay it in $\frac{1}{4}$ per cent. Resorcin, chloral hydrate, silver, benzo-naphthol, and steriform are inferior to the agents above-mentioned. From experiments it becomes obvious that antiseptics behave differently in relation to the stomach and intestine. Thus menthol is an excellent gastric, but an inferior intestinal, antiseptic. These questions cannot be definitively settled by laboratory experiments, but must be determined by practice. Thus a disinfectant is useless if too poisonous. Again, a gastro-intestinal antiseptic must be insoluble. This insolubility is also a guarantee against intoxication. Extensive contact with the intestinal contents is desirable, and hence the antiseptic should be given in frequent and small doses. In motor insufficiency of the stomach salicylic acid, menthol, and thymol have been shown to be of clinical value by Strauss. Among intestinal antiseptics Strauss has shown menthol to be worthy of recommendation. Thymol is inferior to menthol, and must be given on a full stomach to avoid irritation. Actol must be given in capsules or pills, which are not soluble in the stomach. Both bismuth salicylate and bismuth β-naphthol are worth trying in flatulency. Sodic salicylate and chinosol are too soluble. Washing out the stomach and bowel is an important measure. Salicylic acid, menthol 0.25 g., thymol 0.1 g., may be added to nutrient enemata. The author comes to the conclusion that these antiseptic agents have a practical if somewhat restricted value.

(96) Dietetics of Heart Disease.

AT the recent annual meeting of the American Medical Association, R. H. Babcock, of Chicago, referred to the vicious circle established between digestion and heart disease. Venous stasis of stomach, intestines, pancreas, gall ducts, and liver intensified the difficulties of nourishment under these conditions. Not only was digestion impaired, but the glycogenic, urea-forming, and protective functions of the liver were added to the problem. Anæmia was thus added, also uric acid accumulation in the system, and deficient general oxidation. Two classes of cases were to be considered: (*a*) those in which compensation was present; (*b*) those in which compensation was lessened or lost. In the second class the dietary must be restricted. The "gone" feeling

and thirst in these cases were no indication for food. Food should not be given too often, but at intervals of five or six hours. The stomach was to be spared, and the symptoms would improve. If necessary, somatose, nutrose, or even nutrient enemata might be given. Hot water before meals was useful. The amount of fluid taken with meals should be restricted. In the presence of œdema it should be reduced to a minimum. This included milk also. Starch, sugars, and fats were bad, owing to their tendency to cause flatulency and post-prandial pressure. Proteids were best. Apples, peas, beans, meats, oysters, were all good. When nephritis complicated it, milk was to be used; when arteriosclerosis, no food containing much calcium salts should be taken.

(97) The Effect of Alkalies on Gastric Secretion.

Hayem (*Sem. Méd.*, April 20th, 1898) states that alkalies given for some time and in sufficient doses, so far from curing hypersecretion of hydrochloric acid, are the most powerful agents in producing it. This is especially true of bicarbonate of sodium. They produce this effect after being absorbed and during their excretion. That it is not due to their local action on the gastric mucosa is proved by mineral waters, which aid the absorption of alkalies, producing hyperchlorhydria more readily than alkalies alone. The above is true only if the gastric glands are numerous and active. If the mucosa is atrophied, instead of raising the digestive power of the gastric juice with a tendency towards hyperchlorhydria, alkalies depress and aggravate the hypopepsia.

(98) Anticharbon Serum in Malignant Pustule.

Salvatore (*Gazz. degli Osped.*, July 3rd, 1898) records another case of malignant pustule successfully treated by injections of anticharbon serum (Sclavo). Five injections were made, and a total amount of 80 c.cm. injected without any ill effects, either local or general. The author was particularly struck by the sense of well-being which followed the injections. The treatment promptly arrested the œdema and caused its disappearance in a short time. Moreover, the destruction of tissue in the site of the pustule was considerably limited. Reference is made to 13 other cases in which this serum was successfully used.

(99) Treatment of Bronchitis.

Quincke (*Berl. klin. Woch.*, June 13th, 1898) draws attention to the fact that in bronchitis, as in the case of collections of pus, the object of treatment is to facilitate the draining away of the exudation. This is, however, possible in bronchitis only to a limited extent. Cough, and especially the act of vomiting, assists to this end. The same object has been attempted by means of the elastic corset, respiratory exercises, etc. Often in the early morning the bronchitic brings up a large quantity of sputum by the help of more or less persistent coughing. Quincke recommends that at this time the patient should lie as flat as possible for a couple of hours, so as to assist the draining of the secretion into the large bronchi, and hence its expectoration. The patient becomes accustomed to the position, even though with some difficulty, and can expectorate by turning the head to one side. After a few days the foot of the bed may also be raised 20 to 30 cm. In suitable cases the author says that in two to four weeks there is a considerable diminution in the sputum. This mode of treatment is adapted to cases of chronic bronchitis which have led to a cylindrical or sacculated bronchiectasis in the lower lobes of the lung. It is of no avail in cases of diffuse, and especially recent, bronchitis, with general secretion, or in cases of abscess cavities communicating laterally or incompletely with the bronchi, or of cavities with irritating contents. It may be difficult to distinguish between these conditions in practice, and this mode of treatment may help in the differential diagnosis. The number of suitable cases is not large, but at times the results are remarkable.

PATHOLOGY.

(100) Bacteriology of Whooping-cough.

Zusch (*Münch. med. Woch.*, June 7th, 1898) says that in a case of whooping-cough he found a very small bacillus resembling the influenza bacillus, but possessing many points of distinction in its mode of growth, etc. In 24 further cases he obtained similar results. Cover-glass preparations of the sputum were first made, and then cultivation experiments. The bacilli were most easily found in uncomplicated cases in the catarrhal and early convulsive stages. Particles of mucus are selected for cover-glass preparations from the well-washed sputum. Occasionally the bacillus is present in pure culture. It is a short oval rod, 1½ to 2 times as long as it is broad, and the centre stains imperfectly. Mostly it is present in large numbers. A thorough washing of the particles of mucus is essential before attempts are made at cultivation. The best medium is a glycerine agar made with anasarcous fluid. The colonies are moderately small, round, slightly raised, grey or greyish white, and finely granular. The growth is less marked on ordinary glycerine agar or on agar or glucose agar, and it does not grow better on blood serum agar than on glycerine agar. In broth cultures there is no turbidity after twenty-four hours, but a sediment sinks to the bottom of the tube. There is no film on the surface. Gelatine is not liquefied. The microbe is non-motile, forms no spores, and is but slightly resistant to high temperatures. It is a facultative anaërobe, and is mostly decolorised by Gram's method. Grape sugar is not fermented, nor milk coagulated by it. It does not give a serum reaction. Experiments on animals were negative. The results of bacteriological examination correspond closely with the clinical course of whooping-cough. In 2 cases the author was thus able to make the diagnosis when there was clinical uncertainty. Czaplewsky examined the author's specimens, and agreed that the microbe was exactly the same as that found by him. Thus Czaplewsky and Hensel's observations are independently confirmed by Zusch. The future can only settle as to whether this bacillus is the specific cause of whooping-cough.

(101) Pseudo-Lupus Vulgaris caused by a Blastomyces.

T. C. Gilchrist and W. R. Stokes (*Journ. of Experimental Med.*, vol. iii, No. 1) report the case of a man, aged 33, suffering from a cutaneous disease, presenting many of the features of lupus vulgaris. The disease was first noticed 11½ years ago at the back of the left ear in the form of a pimple which soon became pustular. The process slowly spread over almost the entire face, the central portion now presenting an atrophic cicatricial condition. A similar lesion occurred, one month after the primary invasion, on the back of the hand, and this healed in about four years after treatment with caustic. Six months later a third lesion (on the scrotum) appeared, which increased in size for a year, and then healed spontaneously. Other lesions on the left thigh and back of the neck likewise healed spontaneously. There were no enlarged lymph glands, and the general health was good. The family and personal history revealed no syphilitic or tuberculous taint. Sections from the cutaneous lesions showed the presence of what appeared to be budding blastomycetes. The organisms were chiefly spherical, unicellular bodies, about 10μ to 20μ in diameter, and consisted of a doubly-contoured membrane enclosing a fine granular protoplasm, with sometimes a vacuola. No nucleus could be seen, and neither were mycelium nor hyphae present. In many sections there were almost typical tubercles. The organisms were almost always outside of cells, comparatively few being enclosed in giant cells. Pure cultures were obtained from the lesion and grew on all ordinary media, especially on potato and beer-wort agar. The cultures showed both budding forms and a fairly profuse mycelium, but older cultures carried through many generations produced sometimes little or no mycelium. Dogs, a horse, a sheep, and guinea-pigs were successfully inoculated, the most striking results being nodules grossly simulating tumours in the lungs. Since the parasite did not ferment sugar and produced in cultures mycelium, it might belong to the blastomycetes or to the oidia. The authors, in conformity with prevailing nomenclature, regard it as a blastomyces, and have named it blastomyces dermatitidis; the disease they call blastomycetic dermatitis. They suggest that all tuberculous lesions of the skin should be searched for similar organisms, which can be done by soaking unstained sections in liquor potassæ, when the organisms if present will stand out as doubly-contoured refractive bodies.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(102) Uræmic Insanity.

E. Bischoff (*Wien. klin. Woch.*, 1898, No. 25) publishes a long and important account of this psychosis, the rarity of which is illustrated by the fact that he has seen only 2 cases among 3,000 carefully observed lunatics. It appears, however, that uræmia, both acute and chronic, may lead to insanity, though the special pathological anatomy is still obscure. The complication is particularly likely to arise in those who are hereditarily predisposed, or who are addicted to alcohol; in this condition pregnancy is also important, but febrile attacks have less significance than was formerly believed. The actual cause of the mental disturbance is most often the uræmic intoxication, but in a certain number of cases the insanity appears to depend upon the convulsive attacks which it follows, in much the same way as epileptic insanity. It is possible also that the visual disturbances may play some part in the pathogenesis. Uræmic insanity usually runs the course of acute mania, from the other forms of which it is distinguishable mainly by the association of disturbances of the central and peripheral nervous system. These disturbances resemble the paralytic seizures of general paralysis, and since in many cases of uræmic insanity there is a marked general lowering of functional activity from the psychical side as well, the differential diagnosis may be rendered difficult; this is particularly the case where the mental defect expresses itself as weakness of intelligence, judgment, and memory. When uræmic insanity attacks patients who have a strong hereditary predisposition, the symptoms of acute mania are often accompanied by katatonic attacks. The prognosis is, in all cases, bad as regards life, but if the uræmic condition passes off there is considerable prospect of recovery from the mental impairment. The treatment must, of course, be directed to the two conditions, uræmia and insanity: the author considers that the latter is, so to speak, continuous with the ordinary uræmic delirium, all intermediate stages existing. It is therefore important to watch the progress of the latter, with a view to early psychiatric treatment.

(103) Round Worms.

Mertens, of Ebstein's Clinic (*Deut. med. Woch.*, June 9th, 1898) describes two cases in which round worms made their way into the biliary passages: (1) A woman, aged 30, had a severe attack of abdominal pain with vomiting three weeks before admission. She had suffered from similar attacks one year and a half and one year previously. On admission there was considerable jaundice with some hepatic and splenic enlargement. The urine was of a dirty brown colour. The stools were slightly coloured. The patient's condition became worse. There was much pain in the abdomen, and there was some ascites. Three weeks after admission two dead round worms were found in the stools; in the middle of one there was a constriction, and both presented signs of maceration. Rapid improvement followed. The jaundice and ascites entirely disappeared, and the patient recovered completely. The treatment employed was that for cholelithiasis, large oil rectal injections being given. The diagnosis of obstruction of the common bile duct by a stone was made in this case. The fever present was looked upon as being due to a suppurative inflammation of the bile passages. Suspicions of a tumour of the liver were raised by the presence of ascites. The disappearance of the symptoms after the worms were passed showed that the obstruction of the choledochus was due to a worm and not to a gall stone. Round worms occur in the bile passages in children much more frequently than later in life. The author found only two recorded cases in which changes in the liver could be made out during life in these cases. This possible cause of jaundice should be borne in mind. (2) A woman, aged 68, died from carcinoma of the stomach and peritoneum. The bile passages were dilated, and contained concretions and a round worm. Here the patient had suffered from attacks of pain in the abdomen, with occasional vomiting, for some years past. The urine contained no bile pigment.

(104) The Differential Diagnosis between Progressive and Alcoholic Paralysis.

Marandon de Montyel (*Rev. de Méd.*, February, 1898) says that in the stage of commencing paralysis progressive general paralysis bears such resemblance to that form of so-called alcoholic paralysis which occasionally supervenes in the course of chronic alcoholism, that the most experienced alienists have given a diagnosis and prognosis of cases as being general paralysis which have been contradicted by the subsequent course — especially by their recovery after a few weeks. The most prominent sign in the differential diagnosis is the mode of onset, which in general paralysis is known to be gradual and insidious, while the alcoholic form commences suddenly. The moral alteration in the latter is very remarkable. The typical general paralytic, on the other hand, still exhibits in the midst of his intellectual ruin transitory noble feelings. The psychical phenomena are more to be depended on than either the physical or intellectual for the elucidation of these diseases.

(105) Murmurs in the Femoral Vein.

Geigel (*Münch. med. Woch.*, July 5th, 1898) says that if pressure be made on the femoral artery and vein for 10 seconds in such a way that the artery is not entirely closed, a systolic murmur may frequently be heard; moreover, if the pressure is suddenly removed the murmur may still be heard for several seconds. This murmur is at times short, at times prolonged and blowing, and occasionally even musical, whistling and singing. The author believes that the murmur is produced in the femoral vein. No arterial murmur would last so long. It may happen that the murmur is not exactly synchronous with the systolic murmur, and hence a double *bruit* may be heard. This venous murmur is due to the fact that, owing to the artery being patent and the vein compressed, the blood stagnates in the extremity, and when the obstruction is removed the blood rushes on with great force. If the vein is still a little narrowed by the pressure, a continuous murmur must arise until the difference of pressure in the crural and iliac veins is equalised. This venous murmur in the femoral vein is heard in very many people, in the healthy as well as in the subjects of disease. It must be recognised in order to avoid confusion with the double murmur associated with aortic disease.

SURGERY.

(106) Predisposition to Hernia.

Kocher, of Berne (*Correspond. Bl. f. schweiz. Aerzte*, June 15th, 1898), says that in practically all cases of the sudden appearance of a hernia one of the following anatomical predisposing causes is present: (1) A congenital hernial sac formed from imperfect closure of the processus vaginalis, which accounts for a third of all cases according to Wood. (2) An adipocele arising from the subserous fatty tissue may stretch the rings and prepare the way for a peritoneal pouch. (3) A conical sac of peritoneum formed in the way described below, and which is of congenital origin only in so far as it may depend on a congenital weakness of the abdominal walls. The intestine at the moment of rupture, therefore, enters an already formed sac in any case. Nevertheless, the existence of any of these predisposing causes does not necessarily produce a hernia proper. When performing a radical cure for a hernia on one side, if there has been any clinical evidence of a predisposition on the other, Kocher has often taken advantage of the narcosis to operate on it also as a prophylactic measure. He has thus had frequent opportunities of studying prehernial conditions. The conical sac of peritoneum mentioned above is formed by the repeated pressure of the intestines, by which the parietal peritoneum is driven forwards over Poupart's ligament as a cone with its base posteriorly. In this process the fascia transversalis yields first, then the internal ring is enlarged, and the ascending fibres of the transversalis fascia (Henle's ligamentum inguinale internum mediale) are stretched and pushed towards the middle line, together with the epigastric vessels (in indirect hernia). Further, the anterior wall of the inguinal canal must be relaxed also, and even at this early stage

the pillars of this external ring are abnormally separated whereby the intercolumnar fibres are stretched, and lose their power of resistance. Kocher states that almost all direct inguinal herniæ are produced by a similar mechanism, while as regards indirect herniæ, he believes more arise in this way than through the presence of a patent processus vaginalis. Clinically the presence of such a peritoneal cone is recognised by the fact that on coughing the inguinal region is driven forwards as a circumscribed, mostly oval, swelling, which subsides as soon as the cough is finished without it being necessary to reduce any escaped intestine. This bulging is often accompanied by pain or discomfort. When, however, there is an unclosed processus vaginalis there is always a narrow neck, and its presence gives the patient no inconvenience whatever until intestine is suddenly forced into it.

(107) Technical Details in Asepsis.

AT a meeting of the Berlin Medical Society (*Berl. klin. Woch.*, July 4th, 1898) a discussion took place with regard to a paper read by Schäffer on asepsis. Dührssen said that the principle of asepsis was so simple that it could be appreciated by everyone. The practical realisation of this principle, however, was by no means simple, and required the careful consideration of each individual surgeon. He employs an aseptic operating coat, which he removes from the sterilising chamber, having previously washed his hands with a nail brush. The lid of the chamber is raised by an assistant, who is not allowed to touch the coat. The process of buttoning is accomplished by a second assistant. Lister's theory of the infection of wounds by the access of air was considered to have a wider significance than the infection by contact. In this connection the author stated that it was most important to see that all bleeding had stopped before closing a wound, as all blood accumulations formed a most favourable medium for the growth of bacteria. In peritoneal operations this was most important; cases which did badly usually showed *post mortem* signs of blood extravasations in those parts which had been subjected to operative treatment. Asepsis (according to Schäffer and Dührssen) at the time of operation will not ensure a good result unless all bleeding points have been secured before closing the wound. During the last six years Dührssen has employed the following method of cleaning his hands: He brushes them for five minutes in a hot 1 per cent. solution of lysol; the water is almost boiling, so that at first the process is painful. The one disadvantage in using lysol is that it has a pungent smell.

(108) A Case of Hara-kiri.

HARTE (*Annals of Surgery*, June, 1898) gives some interesting information concerning the act of self-destruction called *hara-kiri*, which has been practised by high-class Japanese for centuries, and also puts on record a case which, notwithstanding the serious nature of the injury inflicted, terminated in recovery under treatment in accordance with recent methods of abdominal surgery. The patient, a man aged 40 years, who had become mentally depressed because of loss of sight, thrust a butcher's knife into his abdomen on the left side, and drew it across to a corresponding point on the opposite side, dividing the whole thickness of the parietes, and allowing a large amount of the viscera to escape. When the patient was seen by the author, it was found that a large transverse wound, 8 to 9 inches in length, had been made in the abdominal wall on a line just above the umbilicus. From this wound protruded the transverse colon, omentum, and a large mass of small intestine, a portion of which, about 15 inches in length, had been severed from its mesentery and stripped of the peritoneal covering. In addition to this mutilation, the protruding mass of intestine had become soiled from contact with clothing and dust in the bottom of the waggon in which the patient had been conveyed. After the administration of an anæsthetic the wound was enlarged in the middle line so as to allow the author to remove some clots from the abdominal cavity, and to secure some large mesenteric branches which had been divided. The mass of intestines was then thoroughly cleansed with hot distilled water, and replaced in the abdominal cavity, with the exception of the part severed from its mesenteric attachments. About 18 inches of this injured bowel were removed, and the continuity of the intestinal canal was re-established by Murphy's button. The patient made a speedy and good recovery, the button having been passed on the eighteenth day.

MIDWIFERY AND DISEASES OF WOMEN.

(109) Rupture of the Umbilical Cord.

ALBERT (*Arch. f. Gynäk.*, vol. lvi, Part 1) divides injuries to the umbilical cord into three classes: (1) Rupture of individual vessels in the cord; (2) rupture of the cord as such; (3) avulsion of the cord from the child's abdomen or from the placenta. (1) Rupture of vessels may be due to varix; of this the author has found records of two cases, one in the fifth and one in the sixth month. In the latter case the membranes ruptured, a little blood came away, and the child died. A varix the size of a hen's egg had burst, and three other varices were found the size of a hazel nut. Three cases are on record in which the rupture occurred near the point of division of the vessels on the placenta. In one of them, narrated by Westphalen, the cord passed from the umbilicus to the left side of the child, and over the back to the right side of the neck, where there was a fairly tight knot. In a third group of cases of rupture of individual vessels, the site of the lesion may be an aberrant vessel associated with a velamentous placenta, of which Leopold saw an example, or a vessel passing along the membranes to a succenturated placenta, as in a case in the Dresden Klinik. The author has found three other cases with a velamentous, and one with a succenturiated placenta. The rupture of the vessel appears in most cases to have been incidental to the rupture of the membranes. In every case the child died. It is noteworthy that the labour was in every case spontaneous. (2) Rupture or the cord itself may be due to operative procedures; it has probably occurred more often than records show. Two cases were noted at the Dresden Klinik during forceps extraction. More easily understood are the cases in which the cord is ruptured by the fall of the child on the floor when precipitate delivery occurs with the mother standing up. Koch collected 37 cases of such delivery, in 6 of which the cord was ruptured, and some half-dozen other cases of rupture under similar circumstances have occurred. Spontaneous rupture of the cord during delivery in the horizontal position has been reported by several observers. (3) Avulsion of the cord from the skin of the abdomen has been reported by Weeder, Dupuys, and Bontemps and Perret. Of avulsion from the placental tissue the author has found no case in medical literature, but he relates a case that occurred in the Dresden Klinik. When the child's head was born the cord was tightly round the neck. As the face was beginning to be cyanotic, and the cord could not be loosened, it was about to be divided and the ends secured when a strong pain expelled the breech, and it was found that the placental end of the cord was free. It was at once secured with forceps. When the placenta was expelled it was found that the cord had torn away just at its insertion. Probably one of the vessels had given way shortly before the birth of the child, for the amniotic fluid contained blood, and the child was rather anæmic for some days after birth.

(110) Treatment of the Vomiting of Pregnancy.

BACON (*American Journ. of the Med. Sci.*, June, 1898) publishes 3 cases of hyperemesis gravidarum where he induced premature labour without curing the vomiting, and which all ended fatally. He quotes Cohnstein's statistics, embracing 200 cases, of which 40 per cent. only were cured by abortion. From his experience and from an examination of the literature of the subject, he draws the following conclusions: (1) The abnormal irritability of the nervous system, including the vomiting centre, is to be allayed by keeping the patient in a horizontal position, by attention to the skin, bowels, and kidneys, using rectal and, if necessary, hypodermic injections of normal saline solution. (2) The hysterical condition so often present should be controlled by strengthening the will and influencing the dominant ideas of the patient. (3) All sources of peripheral irritation should be discovered and treated. (4) In extreme cases subcutaneous saline injections serve the threefold purpose of (*a*) diluting the blood

and raising blood pressure, (*b*) eliminating toxins through the renal and intestinal emunctories, (*c*) furnishing two most important kinds of food (chlorides and water). He reports a case in the ninth week of pregnancy and in a desperate condition, where the hypodermic injection of a quart of salt solution twice a day, combined with washing out the stomach every morning and rectal injections of salt solution four times a day, produced immediate improvement. The vomiting ceased after the second injection, and food was retained, though the patient eventually died of tetanus (? from an infected hypodermic puncture). Laborie in France has also used this method with excellent results. (5) Induction of abortion is never indicated. At a stage when it is safe and efficient, it is not necessary, and in extreme cases it adds greatly to the danger, rarely stops the vomiting, and can be substituted by artificial serum.

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(111) Rupture of Uterus from Without.

Kouwer (*Centralbl. f. Gynäk.*, July 16th, 1898) related, at a recent meeting of the Netherlands Obstetrical Society, a case of rupture of the uterus from a fall downstairs. The patient was 44, and in her eighth pregnancy nearly at term. Violent pain, abdominal swelling, and anæmia followed. A few hours later, as the signs of anæmia had increased, Cæsarean section was performed. At the time the os was dilated enough to admit the finger. On opening the abdominal wound much blood spurted out from the uterus. On its anterior surface were several longitudinal rents from an inch and a half to 3 inches in length. They involved the serous and part of the muscular coat of the uterus, and were closed with sutures; as they gaped the uterus appeared wide and bulky. The fœtus (dead) and placenta were removed. The patient died suddenly a few hours later, blood gushing out of the vagina just before death. Lacerations of the uterus from without inwards are decidedly rare.

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(112) Prolonged Gestation with Deformed Fœtus.

Rea (*Journ. Amer. Med. Assoc.*, May 14th, 1898) attended a 4-para, aged 34. Her last menstruation was September 4th, 1896, but she did not engage in sexual intercourse till September 30th, two days before her next expected period. There had been no intercourse for two months before this, and there was none afterwards. Labour was expected on July 6th, 1897. Twice during pregnancy she had severe hæmorrhage, the second time being on June 20th; but labour did not come on till August 5th. There was no placenta prævia, as had been feared; but the child was a monster of the "acrania" variety. [From the description we should call it an "anencephalic" fœtus.] It nursed naturally after the 1st day, but succumbed on the third. Accepting the patient's account as correct, the gestation lasted in this case 305 days. The author discusses the question of maternal impressions as leading to fœtal monstrosities, and accepts Ballantyne's view that such cases are rather to be regarded as coincidences. He points out that hæmorrhage is rare during pregnancy, except from abnormal implantation of the placenta, and considers that in this instance it was a case of menstruation during pregnancy or a metrorrhagia.

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(113) Removal of Pelvic Exostosis after Cæsarean Section.

Kramer (*Centralbl. f. Chirurg.*, No. 9, 1898) advocates operation on non-malignant bony tumours of the pelvis. A primipara, aged 21, underwent conservative Cæsarean section for obstruction to labour by an exostosis of the right os pubis, including both the body and the ramus. Eleven months later the patient was found to be seven months pregnant. Kramer therefore removed the tumour. The skin incision was begun a little above the symphysis, and prolonged downwards and backwards 6 inches, passing 1 inch outside the right labium majus. The muscular attachments were detached, the vaginal wall dissected off the exostosis, and the tumour itself separated from the os pubis by a chisel. The tampon, without any ligature, was found sufficient to arrest hæmorrhage. Three months and a half later the patient was delivered of a strong healthy child without instruments. No recurrence has been observed. Kramer thinks that the operation would have been easier if done from above, but he feared in this case to produce abortion by handling the uterus, and wished to avoid making an abdominal wound.

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(114) Eclampsia Ante Partum and Post Partum.

Davis (*Amer. Journ. of Obstet.*, April, 1898) reports two cases. In the first the patient, a primipara, aged 21, was seven months pregnant, and when brought to the Jefferson Maternity was having severe convulsions at about ten-minute intervals. The urine was of specific gravity 1020, reaction acid, urea 1.13 per cent., serum albumin present in large quantity; pulse, 120 to 140. She was put in a hot pack, normal salt solution was introduced continually under the skin for an hour, and 10 minims of veratrum viride were given hypodermically. Chloroform controlled the convulsions, which continued when the anæsthetic was suspended. Labour meanwhile was hastened, and completed in about two hours. The child was stillborn. The patient continued comatose, but recovered consciousness two days after admission. Treatment had been continued vigorously. The analysis of the urine was interesting: In the first specimen, secreted before convulsions were severe, the specific gravity was 1020, and the urea 1.13 per cent. After convulsions had continued several hours, the urea was 0.5 per cent., the specific gravity being unaltered. Forty-eight hours after admission the urea was 2.14 per cent. The patient made a good recovery. In the second case the patient, a primipara aged 19, seemed stupid when admitted in the first stage of labour. Delivery occurred normally, but some hours after she developed severe convulsions, which continued at intervals of half an hour for six hours, when they ceased. Urine: specific gravity 1002, acid, abundant albumin; urea, 0.51 per cent.: granular and hyaline casts. Good recovery. The author points out that it seems to be clearly demonstrated that toxins of unknown composition are the cause of eclampsia. These bodies are not found in the urine of eclampsic patients during the attack, nor are they found in great quantities in any urine; if they were present in the urine, the patient would not have eclampsia. The percentage of urea is an index of the amount of waste successfully excreted; when it is high the patient is not forming poisonous compounds from it within her body. In the treatment time is most important; each half hour that passes without vigorous treatment is greatly to the patient's disadvantage. The hot pack, and saline injections into the skin and bowel should be given; whilst in the two related cases veratrum viride seemed of decided service.

THERAPEUTICS.

(115) Formaldehyde Disinfection.

Schlossmann (*Berl. klin. Woch.*, June 20th, 1898) says that there are two chief methods of carrying out this disinfection. In Trillat's method an attempt is made to prevent the formation of polymers of formaldehyde by adding calcic chloride, whereas in Schering's apparatus para-formaldehyde is converted into gas, and this is again changed into formaldehyde by means of the water produced by the burning of a certain amount of spirit. The probability is, however, that in both methods the greatest part of the formaldehyde escaping into the air is converted into polymers. In the method introduced by the author and Walther, polymerisation is prevented by the use of hygroscopic substances, and especially glycerine. Lingner has constructed an apparatus consisting of a vessel in which the water is boiled. The steam rises into a reservoir which contains 40 per cent. formaldehyde and 10 per cent. glycerine. This mixture they term glycoformal. From this reservoir four pipes pass out into the room. In this way the room can be quickly filled with a mixture of formaldehyde steam and glycerine. A room of 60 cm. is so filled with vapour in 10 minutes that an electric lamp placed in the centre is no longer visible. All microbes are destroyed in three hours at the latest. The advantages claimed by Schlossmann are the following: (1) the sterilisation is absolute. (2) the closure of all cracks and clefts is not necessary. (3) the procedure requires only three hours, (4) there is no danger of explosions, (5) the method is cheap. (6) the glycoformal vapour is heavier than air and therefore sinks,

and (7) the total disinfectant powers of the gas are obtained. The windows are thrown open for half an hour after the disinfection. Liquid ammonia is then placed in the room in an amount proportionate to the formaldehyde used. The windows are again opened, and thus all smell is got rid of. This method of disinfection can be carried out by the unskilled. Hess made the bacteriological investigations for the author.

(116) Treatment of Gonorrhœa by Ointments.

Pitruzzella (*Giorn. Ital. delle Malattie Veneree e della Pelle*, Part iv, 1897) has tried this form of treatment in 60 cases of gonorrhœal urethritis in the male. All were chronic cases except 7, of which 2 were acute and 5 subacute. The results were as follows: 42 cases were cured, 9 relieved, and 9 unchanged, including among the latter the 2 acute cases, and 1 of the subacute. The drugs tried were acetate of lead, sulphate of copper, nitrate of silver, and ichthyol. The basis was lanolin mixed with olive oil to a creamy consistence and applied on a steel sound. The duration of treatment was from twenty-two to forty-one days. The author recommends this treatment in chronic, but not in acute, cases.

(117) The Action of Suprarenal Extract on the Circulation.

Velich (*Wien. med. Woch.*, 1898, No. 26) has confirmed Schäfer and Oliver's discovery that injection of suprarenal extracts raises the blood pressure and stimulates the vagi, and where these have been put out of action or the medulla cut through causes acceleration of the pulse. The former effect is due to contraction of the small vessels, particularly in the abdominal cavity, the latter to direct stimulation either of the heart muscle or the intracardiac ganglia, together with some influence through the cervical cord. He has also shown that even where the whole cord has been destroyed the injection of large doses of suprarenal extract still causes a noteworthy rise of blood pressure, which must thus be produced by stimulation either of the vessels themselves or of the peripheral vasomotor mechanism. Continuing his investigations, Velich finds that the medulla is also concerned in the rise of blood pressure following injection of suprarenal extract, and that intravenous injection still causes this rise in animals which have been deeply poisoned with curare or chloral. These drugs in large quantity practically abolish the functional activity of the spinal cord. In deep curare poisoning the pulse acceleration occurs also when the vagi are intact, showing that their nuclei are poisoned by a large quantity of the drug. A further series of experiments was performed upon the pulmonary circulation in order to decide whether vasoconstrictor fibres for the pulmonary vessels exist. It was found that the intravenous injection of suprarenal extract leads to a slight rise of pressure in the pulmonary circulation. The principal cause of this rise is that the right heart receives an increased supply of blood from the hyperæmic brain through the superior vena cava, while the left heart does not empty itself properly. Hence the existence of a special vaso-constrictor mechanism, central or peripheral, for the pulmonary circulation cannot at present be established. Thus, for example, warm suprarenal extract causes vaso-constriction when applied to most parts of the body in animals or to the human skin, but evokes no pallor when dropped on to the surface of the lungs.

(118) Euphthalmin.

Winselmann (*Klin. Monatsbl. f. Augen.*, July, 1898) considers euphthalmin a valuable mydriatic for diagnostic purposes. A 5 per cent. solution causes initial mydriasis in 20 minutes, maximum mydriasis in 32 minutes; a 10 per cent. solution in 14 and 23 minutes respectively. Slight pupillary reaction to light remains till 5 to 14 minutes later. Accommodation is not at all or very slightly impaired, reading not being hindered. The maximum mydriasis lasts 3 to 3½ hours, and the pupil resumes its normal size in about 7 hours. Euphthalmin causes no conjunctival or corneal irritation, no pain, and no rise in tension.

PATHOLOGY.

(119) The Nature of Diazo-Reaction.

Geisler (*Vratch*, No. 9, 1898) has accidentally discovered that peptonised meat bouillon gives a characteristic reaction with Ehrlich's test. No such reaction could be obtained with either fresh meat juice or pure peptone. Evidently the reaction is due to some substances formed in the process of preparing the meat bouillon, when chemical changes at present unknown to us take place. A bouillon solution of typhoid bacilli gives a much feebler reaction than the peptonised bouillon by itself, showing that some of the substances on which the diazo-reaction depends are destroyed by the germs. The one peculiarity about the reaction with meat bouillon is that there was no precipitate. This has been shown to depend on the more favourable medium of the bouillon for the preservation of the unstable colouring substance. The clinical experiences of different observers have led the author to conclude that the presence of diazo-reaction in the urine depends on the amount of leucocytolysis, or the solution of white blood corpuscles in the blood serum present in any disease. This is most marked in typhoid fever, in measles, in erysipelas, in leucocytosis, in pyæmia, and in other suppurative diseases. Leucomuclein prepared from pus with the aid of artificial gastric juice, as well as other substances dissolved out of the leucocytes, did not give the diazo-reaction. A negative result was also obtained with the blood, cerebro-spinal fluid (in tapping for tuberculous meningitis) and pleuritic fluid taken from patients, whose urine gave a marked diazo-reaction. The author is therefore of opinion that the substances giving the diazo-reaction must be formed in the kidneys themselves during the excretion of the products of leucocytolysis from the blood.

(120) Arsenic in the Hair.

E. Schiff (*Wien. klin. Woch.*, 1898, No. 22) reports six series of experiments made upon dogs, with a view to deaermining whether the ingestion of trsenic led to its deposition in the hair. The dogs were first shaved, and the hair boiled with water, no arsenic being found either in the hair or in the extract. Arsenious acid was then administered for some weeks, commencing with doses of ½ mg., and increasing gradually to 6 mg. (about $\frac{1}{10}$ gr.). When the hair was long enough it was cut, and this was thrice repeated. An aqueous extract contained no trace of arsenic, but the hair itself, after destruction of its organic constituents, could be proved to contain the metal by Marsh's test. It was not, however, in sufficient amount for quantitative estimation. A further experiment was made in order to determine the rate at which the arsenic was absorbed. To this end a dog was poisoned with a large dose of arsenic, and its hair examined, with the same results as in the cases in which the drug had been continuously given. An explanation is thus afforded of the rapid and valuable action of arsenic in skin diseases, and at the same time confirmation is afforded of the discovery of Brouardel and Pouchet, that arsenic may be found in the hair of victims poisoned by it.

(121) Hypertrophic Tuberculosis of the Colon.

Bezançon and Lapointe (*Presse Médicale*, May 18th, 1898) draw attention to this form of tuberculosis of the intestine which tends especially to attack the two ends of the colon, the cæcum and the rectum, possibly because stagnation of fæcal matter occurs in those situations. Clinically these cases appear to be stenosis, or more rarely new growth of the intestine; in one of their cases the rectum was excised for carcinoma, and was then found to be tuberculous. The mucous membrane is replaced by tuberculous granulation tissue, which spreads diffusely, and invades the muscular coat and may even replace it. The fatty tissue around the rectum is invaded, and becomes fibrosed. Microscopically the lesions are a combination of tuberculosis and ordinary inflammation. Bacilli are very difficult to find, and are probably rare; possibly this, combined with diminished virulence, leads to an attenuated form of tuberculosis. Sourdille in 1895 showed in 5 cases that the stenosed condition of the rectum often called syphilitic might be due to tubercle, and in his thesis last year Lapointe added 4 more cases, making 9 in all, of stenosing tuberculous proctitis. Much the same lesions occur in the cæcum, but the intervening part of the colon is not exempt, and may present multiple areas of stenosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

CONGRESS OF TUBERCULOSIS.

Paris, 1898.

The fourth Congress of Tuberculosis was held in Paris from July 27th to August 3rd, under the presidency of Professor Nocard, of Alfort. In view of the importance of the subject, it has been thought well to devote the present number of the Epitome to a summary of the proceedings.

(122) President's Address.

The President began by a graceful allusion to his predecessor, the late Professor Verneuil to whom he said was due the unexpected success of these Congresses, and the powerful movement of opinion to which they had given rise in the medical world and among the public at large. He went on to say that for the fourth time in ten years medical men and veterinarians were assembled together to study in common the manifold and important problems connected with the question of tuberculosis. Of these there was none more important, or the solution of which was more urgent, than that of prophylaxis. When Koch published his discovery of the bacillus of tuberculosis it seemed reasonable to hope that a means of neutralising its effects would shortly be found. On all sides efforts were made to discover means of destroying the bacillus or of neutralising its effects within the organism, but all these efforts had been in vain. The bacillus of Koch is one of the most resistent of the micro-organisms known, and in proportion as we have learnt to know it better, there appears to be less prospect of finding an agent, chemical or other, capable of destroying it in the organism or of preventing its evolution without causing grave damage to the organism itself. It is certain that there are great differences in virulence among different types of Koch's bacillus, but that bacillus does not produce immunity against itself, and it was soon necessary to renounce all hope of preventive vaccination by the inoculation of attenuated virus. The employment of soluble products of the bacillus in the treatment of bacillary lesions some time ago gave the greatest hope, speedily followed by the most painful disillusion. Subcutaneous, intraperitoneal or intravenous injections of serums from refractory animals have given no better results. Further, it is now known that not one of our domestic animals is refractory to tuberculosis in the absolute sense of the term. Antitoxic serum has also proved a failure; it has sometimes been antitoxic in its effect, but never antimicrobic, having no power to check the growth of the bacillus or its progressively destructive action. The *x* rays have also proved useless. In short, the "conquering remedy" has still to be found, but it must not be inferred that tuberculosis is incurable. On the contrary, it has been shown by Brouardel and Grancher that it is the most curable of chronic diseases provided it be treated in the very early stage. The greatest hope, however, for the future, lies in prophylaxis. Although the rules of prophylaxis were laid down in 1889 by the Permanent Committee of the Congress, and although efforts have been made since then by the Academy of Medicine, the Council of Hygiene, the Society of Public Medicine, the League against Tuberculosis, and the Œuvre des Enfants Tuberculeux to enlighten the public as to the means of precaution, the results so far have been insignificant. Nevertheless, public opinion is beginning to be aroused to the danger of infection, and it is the duty of the medical profession to continue preaching in season and out of season that tuberculosis is preventable, arising in the immense majority of cases from contagion which can easily be guarded against. Nocard did not expect that all medical men would agree with this, but he expressed the conviction that it was as true of human tuberculosis as it undoubtedly was of that of animals. As regards bovine tuberculosis the question has been finally settled; it has been certainly demonstrated that the isolation of diseased animals is sufficient at once to check the spread of the disease. This isolation is easy to carry out, thanks to tuberculin, which enables one to make with marvellous precision the diagnosis of the disease even when it does not manifest itself by any external symptom, and when it consists solely in recent very limited lesions. It has been established that contagion is the only cause of bovine tuberculosis really to be dreaded, the part played by heredity being practically negligible. It is no longer denied that the immense majority of tuberculous cows bring forth calves which are healthy at the moment of their birth, and which will remain so if care be taken to separate them from the mothers immediately after birth, and to feed them with boiled milk. By these simple means the most infected cowhouses can be definitively freed from the disease. Nocard cited in proof of his statements the example of Denmark, which he hoped would be imitated elsewhere. He admitted that it would be rash to conclude absolutely that all this held good of human tuberculosis, but he insisted that the more the question was studied the greater was found to be the part attributable to contagion in the dissemination of the disease. In a competition for a prize offered in 1896 by the Academy of Medicine for an essay on the question of the relative parts played by heredity and contagion, of seven competitors, the one who was most in favour of heredity attributed to it only one sixth of the cases which he had observed. Accepting these figures, Nocard pointed out that of the 150,000 French who each year die of tuberculosis, 125,000 might be saved if they could be guarded against contagion. Inasmuch as dried tuberculous sputum is the ordinary vehicle of infection, every effort must be directed to render it harmless. Here, however, comes in the difficulty. Nocard deprecates legislative enactments on the subject, however mild; he thinks the moment has not yet come for such measures, public opinion not being yet prepared for them. He recommended that all public places should be supplied with hygienic spittoons, with a conspicuous notice forbidding people to spit anywhere else. If this measure, he thinks, were carried out in all public offices, in the waiting rooms of railway stations and in railway carriages, in theatres and concert rooms, in warehouses, churches, workshops, barracks, and especially in schools, it would become a habit which would not be lost easily in after life. Thus gradually there would be accomplished the reform of our habits in this respect which alone will make an effective prophylaxis of tuberculosis possible.

(123) The Progress made since the last Congress.

L. H. Petit, the General Secretary, who spoke next, recalled the fact that at the previous Congress certain resolutions had been passed which had been forwarded to the Ministers of the Interior, of Agriculture, of Commerce, and of Public Instruction. One of these was to the effect that all public schools should be provided with a sufficient number of spittoons, and that the pupils should be accustomed not to spit on the floor. In another the Minister of Public Instruction was requested to call the attention of the rectors and inspectors of all academies to the assistance that might be given by teachers and governesses in carrying out the previous resolution. Petit said he was not aware that anything had been done officially to give effect to these resolutions, but in many schools measures had been taken to render the expectoration of the pupils harmless, and to prevent the flying about of dust in the schoolrooms. A third resolution to the effect that tuberculosis should be included in the list of contagious diseases the notification of which is compulsory has so far remained a dead letter, and will probably continue to do so for some time, inasmuch as in the report recently presented by Professor Grancher to the Academy of Medicine, and approved by that body, this measure is pronounced to be inopportune. A further resolution to the effect that the disinfection of all places in which tuberculous patients have lived should be made compulsory, has not yet been carried into effect officially, but it has become so general in Paris and other large towns of France that it would be inadvisable to ask for more in the meantime. In a further resolution the Public Assistance was called upon to separate consumptive patients from others in general hospitals, and to gather all

tuberculous patients together in special hospitals, or, as a temporary measure till such institutions could be provided, in special wards. In furtherance of this resolution the Hospitals Board appointed a Committee of medical men and hospital managers to study the question thoroughly. The report of this Committee, drawn up by MM. Grancher and Thoinot, recommended the isolation of tuberculous patients and the medical antisepsis of wards. From inquiries made by Petit as to what had been done in pursuance of these recommendations it appears that: (1) As regards the isolation of tuberculous patients, pavilions have been set apart at the Lariboisière, Laennec, and Boucicaut Hospitals, and 6,000,0000 francs have been voted for new buildings at the Saint Antoine, Cochin, Broussais, Bichat, La Pitié, and and Tenon Hospitals, and for a new hospital on the right side of the Seine. (2) As regards antisepsis, the wards, passages, etc., have been furnished with spittoons, special ovens for their disinfection and for the sterilisation of dishes etc., which have been used by patients, and with beds and night tables of a kind easy to disinfect and keep aseptic. In a little time therefore, said Petit, poor tuberculous patients in Paris will be very well cared for compared with what was formerly the case; but how much better would it be if hospitals, tents, and patients were removed out of Paris. The Public Assistance has this measure in contemplation, and Petit held out the hope that at the next meeting of the Congress they would be able to go and admire a model establishment at Agincourt. Other resolutions passed by the previous Congress as to the inspection of meat, and the installation in public slaughterhouses of apparatus for the sterilisation of the meat of tuberculous animals, had moved the Minister of Agriculture to issue an order dated September 26th, 1896, for the seizure and destruction, or the use only after sterilisation of tuberculous meat, but these measures so far have not actually been carried out. Other resolutions urging that bovine animals imported from abroad should be subjected to the tuberculin test, and excluded from France if discovered to be unsound, have done good, but nothing has yet been done administratively for the repression of bovine tuberculosis in France itself. With regard to the supervision of cowhouses only a small number of municipalities, among which are Nice and Cannes, have so far done anything to ensure the elimination of tuberculous cows. Summing up the work of the last five years in regard to the prevention of tuberculosis in France, Petit said that little had been done by private initiative, and that effective measures had been taken only when the Government or the administration had shown the example. With regard to sanatoria, private enterprise had done practically nothing, the chief cause of this being, according to Petit, the abstention of the leaders of the profession from taking an active part in an aggressive movement against tuberculosis.

(124) The Prophylaxis of Animal Tuberculosis.

Bang (Copenhagen) presented an important communication on this subject. With regard to the diffusion of tuberculosis among bovine animals in the different civilised countries, he gave the following statistics:—Germany: In the slaughterhouses the percentage of animals discovered to be tuberculous is for Baden 3.67 per cent., for Bavaria 5 per cent., for Hamburg 8.56 per cent., for Prussia 12.7 per cent., for Saxony 27.5 per cent., and Zwickau 37.5 per cent. The positive results given by the tuberculin test in Bavaria during 1895 and 1896 were 37.2 per cent. and 41.9 per cent. In some other places the percentage was as high as 79 and 80 per cent. Austria: In the Vienna slaughterhouses the average of animals found to be tuberculous from 1893 to 1895 was from 1.30 to 1.80 per cent., a fact which Bang attributes to the fact that the cattle mostly came from Hungary, where tuberculosis is not widespread. The tuberculin test gave positive results in a proportion varying from 39 to 43 per cent. Switzerland: No statistics from slaughterhouses are forthcoming; nevertheless in Strebel, in the canton of Freiburg, of 2,212 bovines dead or slaughtered for various diseases, 12.44 per cent. were found to be tuberculous. The beasts which reacted to tuberculin represent a proportion of 41 to 52.5 per cent. France: Bovine tuberculosis is very irregularly distributed in that country. In 1889 the slaughterhouses of Toulouse had 9.28 per cent. of tuberculous animals, whilst, according to Nocard, in Brie and Beauce one-fourth of the cattle were affected. The tuberculin test also showed a very wide diffusion of the disease in France. Belgium: A report of 1896 shows that the proportion of animals which reacted to tuberculin in that country was 48.8 per cent. Holland: The slaughterhouses of Amsterdam showed 8.12 per cent., those of Rotterdam 7 per cent., those of Leyden 4.17 per cent. of infected animals. England: The most interesting data are furnished by reports on animals slaughtered on suspicion of peri-pneumonia; under these conditions 10.6 per cent., 12.5 per cent., and even 22 per cent. of tuberculous animals have been found. In the Manchester slaughterhouse, 29.4 per cent. were found tuberculous. Denmark: The Copenhagen slaughterhouse gave the following figures: In 1895 there were 29.66 per cent., in 1896 25.31 per cent., and in 1897 26.87 per cent. of tuberculous bovines. Bang collected statistics of 224,969 beasts subjected to the tuberculin test with 28.8 per cent. of positive reactions. Sweden: The tuberculin test showed 42.2 per cent., and 46.9 of infected animals. Norway: The native cattle gives only 6 to 6.8 per cent. of positive reactions, whilst the Scotch cattle imported into the country gives 18 per cent. America: In the Western States of North America tuberculosis is as widespread as in Europe. In districts including large towns the percentage of bovine tuberculosis is nearly 30, falling below 10 in less populous regions. Australia: The data available show a proportion of tuberculous animals varying from 4 to 7 per cent., but the tuberculin test has not been employed. The high proportions of positive reactions to tuberculin should not, said Bang, be looked upon as very alarming, as the larger number of animals thus shown to be tuberculous have only insignificant local lesions which can get perfectly well or may remain stationary for years, and give rise to no danger of contagion. Nevertheless the deficit caused by the deaths of tuberculous animals is relatively high; Siedamgrotzky estimates it for Germany at six millions and a-half a year. After a review of the ways in which tuberculosis is transmitted from animals to man, and of the measures of repression adopted in different countries, Bang gave a summary of what is being done in Denmark. On his initiative, the Danish Government in 1893 passed an enactment enjoining owners to submit bovine animals to the tuberculin test and to isolate as completely as possible those which reacted. The State supplies the tuberculin, and pays the veterinarians. Sound animals are placed in quarters carefully disinfected, with special minute precautions for the prevention of the conveyance of infection by the attendants, etc. The test is repeated every year or even every six months, so that animals which have become infected may be weeded out as soon as possible. The calves of tuberculous cows are removed from the mother, and after the second day fed with boiled milk or drawn from a healthy cow. Animals presenting clinical signs of tuberculosis are not slaughtered; they are kept in quarters reserved for animals which have reacted to tuberculin, but they must not be sold for any purpose except for slaughter, and the meat is subjected to veterinary inspection. By a new law dated March 28th, 1898, exception is made of cows affected with mammary tuberculosis which must be slaughtered, the owner receiving from the State an indemnity varying from one-quarter to one-half the value of the meat. Animals which have reacted to tuberculin without showing clinical signs of tuberculosis can be sold for any purpose. Bang thinks it desirable that they should be marked in a special way, but there are commercial objections to such a measure. He recommends that those who buy the animals should subject them to the tuberculin test before putting them in an uncontaminated cowhouse. The new law also provides grants to owners wishing to have their cattle tested by tuberculin, provided they are prepared to isolate animals proved to be infected. Cattle from abroad are placed in quarantine, and tested with tuberculin; animals which react are slaughtered. Milk and buttermilk from the dairies of the country, and intended for the nourishment of the animals must have been heated to 85° C.; the same holds good with regard to milk and butter imported from abroad. Bang sums up by formulating the "ideal

prophylactic measures" which should be adopted to bring about the entire disappearance of bovine tuberculosis: (1) The recognition of all animals affected with tuberculosis, and their compulsory notification, followed by the examination of all beasts which have been exposed to contagion. (2) Destruction of all animals sufficiently diseased to be able to transmit the affection. (3) Complete isolation of animals slightly affected, which must be slaughtered as soon as the disease tends to develop itself in them. The carrying out of this programme, he admits, presents great difficulties, and even if it could be applied, tuberculin is not an infallible indicator, and would allow some tuberculous beasts to remain among the sound. Even if it be assumed to be possible to weed out all tuberculous cattle and animals which have been exposed to contagion, a thing which would be possible only in a country where tuberculosis has been newly introduced, we should always have to reckon with the possibility of infection being transmitted from man to the cattle. We must therefore be content with bringing about a slow and gradual diminution of the disease. When the resources of a country do not allow of the payment of an indemnity for every beast presenting clinical signs of tuberculosis, every assistance should be given to owners to fight against the scourge for themselves. By such a policy in Denmark the proportion of tuberculous calves, which was 15.5 per cent. up to 1895, has since then been 10.6 per cent. The isolation of infected animals should be as strict as possible. Bang gives statistics from April, 1896, to May, 1898, showing that among 30,971 beasts which did not react to tuberculin the first time, 4,524, that is to say 14.6 per cent. reacted in the following year.

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(125) Koch's T R.

Arloing, J. Courmont, and J. Nicholas, of Lyons, presented the results of an elaborate investigation of the therapeutic properties of Koch's new tuberculin. They declared with regret that they were unable to confirm Koch's statements in regard to the remedy on several essential points. This discrepancy they explained either by variation in the properties of the tuberculin or in the virulence of the tuberculosis or by a difference in the *modus operandi*; with regard to the last point they think it regrettable that Koch has not been more explicit as to his method of procedure. They sum up their results in the statement that both as a preventive and a curative agent in respect to experimental tuberculosis T R. has in their hands constantly failed. They agree with Koch that the new tuberculin does not cause much disturbance of the important vital functions in tuberculous animals; nevertheless, without going so far as to say that it "mobilises" the bacilli in the organism, they have observed that it seems to favour the extension of tuberculosis in the lymphatic glands. They conclude as follows: Koch's new tuberculin is ineffectual against experimental tuberculosis before or after inoculation, although freed from the pyrexia-causing, vaso-dilator, toxicardiac and nauseating substances present in the original tuberculin, it still contains a poison which slows the heart and favours the development of specific adenitis in the parts which it traverses in penetrating into the organism.

Landouzy reported on the new tuberculin from the clinical side. From his experience of its effects in 6 cases (3 men and 3 women), the only conclusion to which he could come was that, while it did not cause any manifest improvement either general or local, on the other hand it did not appear to have any injurious effect. He thinks that this statement may be taken to represent the general feeling of the few practitioners who in France have tried the new tuberculin on the human subject. From a careful study of all the reports which have been published in Germany and in France, he is led to believe that the weight of opinion at present is against T R. Nevertheless he is inclined to say that of the various toxin-therapeutic procedures which have been employed in the treatment of tuberculosis, T R. is perhaps that which has fallen least short of the promised effects, and it may be looked upon as a useful adjuvant in the treatment of sufferers from tuberculosis.

Leclerc (Lyons) said that he had treated 8 cases with T R., 5 of pulmonary tuberculosis, and 3 of tuberculous disease of bone. The maximum dose injected in no case exceeded 3 mg., and was often considerably below that figure. Three times the injections caused great pain. One patient died from acute œdema of the lung in the development of which Leclerc is inclined to think the tuberculin played some part. In the other cases the treatment did not appear to have any influence on the patient's condition. He sums up by saying that T R. seems to have no curative effect whatever. It is less dangerous than the original tuberculin, but perhaps not altogether harmless.

Vaquier (Villiers-sur-Marne) stated that he had tried TR. in 5 cases of children suffering from pulmonary tuberculosis in different stages. As long as a dose of 1 mg. was not exceeded the injections were well borne; larger doses produced febrile reaction of some intensity. The pulmonary lesions seemed to be in no way affected by the treatment, where they became rapidly worse except in one case.

O. Benoit (Paris), who had studied the effects of the new tuberculin both in animals and in the human subject, urged that it should not be hastily condemned. It had seemed to him that when used in cases in the early stage uncomplicated by secondary infections it had been distinctly of service and sometimes had even brought about cure. This was noted in cases of pulmonary tuberculosis without fever in the first and second stages, in tuberculosis of bone and in cystitis and sarcocele of bacillary origin.

Bourhial (Algiers) had seen only ill effects from the use of the remedy, which in his hands often caused febrile attacks and exacerbations of the disease. The doses employed went up to 9 mg. The duration of treatment varied from a month and a half to three months.

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(126) Another New Tuberculin.

J. Denys (Louvain) reported that for 18 months past a new tuberculin had been investigated in the bacteriological institute of Louvain, and had been found experimentally to possess preventive and curative properties. Dogs were inoculated with tubercle, and some of them were afterwards treated with the tuberculin, the others being used as "controls." *Post-mortem* examinations of these animals were made by Borden, with the following results: In the dogs which had been treated with the tuberculin the tubercles were larger but contained relatively few bacilli and often none; the granulations underwent a fibrous transformation; there was no generalisation of the disease to the liver, spleen, or lungs, such as was noted in the "controls." These experimental results encouraged Denys to try the tuberculin in human patients. In 19 cases of tuberculosis in the last stage with extensive lesions and fever, the result was *nil*. In 6 cases of febrile tuberculosis with moderate or slight lesions the temperature was reduced and improvement took place. Improvement was considerable in cases of apyretic tuberculosis even when cavitation had taken place, provided the invasion of the lungs was not extensive. In a series of 48 cases of this kind there were 15 cures (disappearance of bacilli or cessation of expectoration), 25 of improvement, while in 2 the condition remained stationary; there were 6 deaths, 4 due to intercurrent complications, and 2 to excessive emaciation. In none of these cases was any medication whatever employed except the tuberculin. The treatment was carried out in accordance with Koch's principle, beginning with small doses which were increased as tolerance became established. Denys adds that, if intense reaction follows an injection, the treatment must be suspended for some days. The use of the remedy should be continued from six to twelve months or longer. In no single case did Denys observe either extension of the disease in the lung or development of new foci in distant parts. He is still engaged in perfecting the method of preparing his tuberculin, and when this object has been accomplished he will publish the details.

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(127) Oxytuberculin.

J. O. Hirschfelder (San Francisco) presented a communication on the treatment of tuberculosis by oxytuberculin. The idea of this treatment was given him by the observation of Spencer Wells that tuberculous peritonitis is sometimes rapidly cured after an exploratory laparotomy. This effect, in Hirschfelder's opinion, is due to the oxidation of the tuberculous products by the action of the air; hence he thinks it may be inferred that tuberculin may form an

antitoxin for itself by oxidation. He has studied this question since 1896. In the first instance he employed Koch's tuberculin; now he prepares a special one of his own by cultivating the tubercle bacillus in veal broth mixed with 4 per cent. of glycerine, 1 per cent. of peptone, and 0.5 per cent. of chloride of sodium; to this a normal solution of carbonate of sodium is added in the proportion of 3 c.cm. per litre. Cultures made on this medium are extremely virulent, killing guinea-pigs in less than three weeks. By sterilising them by means of heat, and then filtering, tuberculin is obtained; this is next oxidised by heating for 120 hours at 100° C., and adding to it every 12 honrs 100 c.cm. of oxygenated water, prepared in such a fashion that 1 volume of the solution can liberate 10 volumes of oxygen. After oxidation the product is slightly alkalinised with soda, and allowed to stand for some time. It can afterwards be preserved in tubes sealed after sterilisation by heat, or by adding to it 2 per cent. of boric acid, and 3 per cent. of glycerine. The product thus obtained has completely lost the reactive properties of tuberculin; injected into animals, whether healthy or tuberculous, it causes no rise of temperature. It can be injected even in large doses into the veins of an animal without giving rise to any apparent disturbance in the economy. A series of experiments as to the action of oxytuberculin on cultures of tubercle bacilli has shown that while an equal quantity of tuberculin added to broth does not prevent the development of the bacilli, their growth is checked when the broth contains oxytuberculin in the proportion of 7 parts to 20. Hirschfelder has used this remedy in 70 cases of tuberculosis, administering it by subcutaneous injection at first in a dose of 5 c.cm. once a week, then of 5 c.cm. every three days, rising gradually to a dose of 20 c.cm., and even more. The number of injections and the duration of treatment must be regulated according to the clinical conditions in each case. The results have been very encouraging. Improvement has been noted in many cases and cure in some; in particular one case of miliary tuberculosis was cured contrary to expectation. Hirschfelder has further satisfied himself that cutaneous tuberculosis can be cured by the application of oxytuberculin.

(128) Serumtherapy in Pulmonary Tuberculosis.

Maragliano (Genoa) presented a report on the treatment of pulmonary tuberculosis by serumtherapy. The following is a summary of his conclusions: A period has now been reached in the history of medicine when it no longer seems rash to consider the possibility of using serumtherapy against tuberculosis. The presence of tuberculous antitoxins in the blood of animals into which the poison of tuberculosis has been injected is certain. The most active tuberculous toxins are those derived from watery extracts of Koch's bacilli; these are neutralised in animals by the antitoxin contained in the blood of animals which have received injections. The serum which contains the antitoxin is harmless for animals and for human beings. This serum can in certain conditions bring about a lasting clinical cure of human tuberculosis. The use of this serum is justified: (1) By the action of the serum against the poisons, and, perhaps, against the bacilli, of tuberculosis; (2) by the analogy of the therapeutic process due to the serum with the defensive processes originating within the organs infected with tuberculosis; this analogy is shown (*a*) by the presence of antitoxin in the blood of a healthy human being; (*b*) by the production of the antitoxin in a human being who has been injected with the tuberculous poisons; (*c*) by the presence of the antitoxin in the organism of patients in whom spontaneous recovery from tuberculosis takes place. (3) The favourable action of the serum is shown clinically in the human subject: (*a*) By the fall of temperature; (*b*) by the disappearance of the bacilli; (*c*) by the cure of the broncho-pneumonic foci.

Landouzy recalled the experiments of Richet and Héricourt, who injected dog's blood into the peritoneal cavity of rabbits inoculated with cultures of avian tuberculosis. The mortality in rabbits so treated was 17 per cent., as against 55 per cent. in "controls." Afterwards Bertin and Picq, and subsequently Bernheim and Lépine used goat's blood in human beings with some success. Bouchard showed that the blood serum has the same immunising and therapeutic properties as the whole blood. It was found, however, that neither the dog nor the goat which had been supposed to be immune in regard to tuberculosis was really so; it was only a question of degree. To make a true serumtherapy of tuberculosis possible it was necessary in the first place to find a means of producing a truly anti-tuberculous serum; for this purpose it was necessary to find a means of surely vaccinating animals against tuberculosis. Landouzy reviewed at length the efforts towards this end made by Maragliano, Behring, and others, concluding by affirming that up to the present no antituberculin had yet shown itself constantly and adequately victorious either in man or in animals. As regards the specific, treatment of tuberculosis, he said, we are still only in the period of hope. But even if a preventive and curative anti-tuberculous serum were found, more must not be looked for from serumtherapy than it can do. To expect that it will suppress bacillosis, cure tuberculous infection, and repair parabacillary inflammation is to expect more than will probably ever be accomplished by the nearest approach to a specific treatment that will ever be discovered. The only chance of serumtherapy doing any real good is to use it in the very earliest stage of the disease. If a really effective serumtherapy were found tomorrow it would not take the place of hygienic methods; the regulated "phagotherapy" and "aërotherapy" by which the best cures are at present brought about. Whatever progress is made in serumtherapy, tuberculosis will always be more easily prevented than cured. Landouzy concluded with an eloquent peroration, in which he denounced the apathy of the authorities in France in regard to the repression of tuberculosis, absolutely nothing, he said, being done to check its spread except in the army; and even in the army tuberculosis was in 1895 accountable for a morbidity of 7.03 per 1,000 and a mortality of 1.14 per 1,000; the total loss caused by the disease, counting deaths, invaliding, and rejections being 10 per 1,000.

(129) The Clinical Significance of the Agglutination of Koch's Bacillus by Human Blood Serum.

S. Arloing and P. Courmont reported that they had continued the researches communicated by Arloing to the Montpellier Congress in 1898 and to the Académie de Médecine in May, 1898, on the agglutination of liquid homogeneous cultures of Koch's bacillus. They employed by preference homogeneous cultures, from eight to twelve days old, in glycerinated broth. The serum was mixed with the culture in the proportions of 1 in 5 to 1 in 20. In the tubes one could easily observe with the naked eye the production of the deposit of agglutinins and the clarification of the liquid in a time varying from some hours to 24 hours. (1) In 26 phthisical patients with advanced lesions, reaction was positive in 92 per cent., negative in 7 per cent. of cases. In two patients with cavities agglutination did not take place. (2) In 22 tuberculous subjects with lesions only slightly advanced (pleurisy, induration at the apex) reaction was positive in 95 per cent. It failed only in one case in which moreover the bacteriological examination did not confirm the clinical diagnosis. (3) In cases of surgical tuberculosis (adenitis, arthritis) reaction was always positive, but often rather feeble. (4) In non-tuberculous patients and in healthy persons the serum is generally non-agglutinative; in some cases it is feebly, in still rarer cases it is strongly, so. The authors believe that in these cases latent tuberculosis may be present, as indeed is often proved by *post-mortem* examination. They think that the disease may in future be detected by this test, and they refer to several cases which have come under their observation in which persons apparently non-tuberculous, in whom a positive reaction has occurred, have subsequently been proved to be tuberculous either clinically or *post mortem*. In any case the well nigh constant existence of serum reaction in cases of early tuberculosis gives the greatest hopes that it may be possible to detect commencing tuberculosis by serum diagnosis.

(130) An Epidemic of Tuberculosis.

Ricochon of Champdeniers gave an account of an epidemic of tuberculosis in a village which had been free from the disease for 15 years. A consumptive patient went to stay there, and this was followed by the occurrence of a series of 12 cases of grave tuberculosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

CONGRESS OF TUBERCULOSIS.

Paris, 1898.

[Concluded]

(131) The Roentgen Rays in the Diagnosis of Pulmonary Tuberculosis.

Bouchard and Claude (Paris) presented a long report on the application of the Roentgen rays to the diagnosis of pulmonary tuberculosis. In that disease at the outset the lesions consist of new formations (tubercles, isolated or agminated) constituting an obstacle to the penetration of air; and of congestion of greater or less intensity. At this time the fluorescent screen will show at one apex or both, sometimes at several places in the lungs—small spots, ill-defined at their circumference, or a slight mistiness veiling one apex; in other cases a kind of stippling of small shadows on a less dark ground. Confluent pulmonary infiltrations with a tendency to softening and ulceration give rise to almost complete opacities; these are darker in the case of lobar infiltrations, lighter in the case of lobular infiltrations. The intensity of the shadows is proportional to the defect in the penetration of air into the lung; if the lesion forms a compact voluminous mass absolutely impenetrable by the air, the darkness shown on the screen is complete; if there is a number of little nodules separated by parts still permeable by the air, the general opacity is less intense, and on the dark ground are to be seen deeper shadows corresponding to points completely caseated. The formation of cavities reveals itself on radioscopic examination as on the plate, sometimes by an absolute opacity, sometimes by zones of relative transparency surrounded by spots of variable opacity. Absolute opacity is met with only in the case of cavities full of pus, or when the cavity is deeply seated and surrounded by pulmonary tissue stuffed with tubercles, or when a covering of dense adhesions prevents the passage of the light rays. If, on the other hand, the cavity is superficial, empty, and has a thin wall, it shows as a clear zone when compared with the neighbouring parts of the lung more deeply shaded; it is oval in shape, and sometimes the ribs in front of it are visible. When the cavity fills, up the clearness which marks its situation diminishes, and there is only a large shadow, rather less deep at one part than in the rest of its extent. Every degree of variation is possible, but the essential character in all forms of the radioscopic image of cavities is the presence of a very dark zone more or less annular in outline, encircling a region relatively clear or altogether transparent, whilst the rest of the lung in the neighbourhood is in shadow. It is the sharp contrast between these two elements of the lesion—spots relatively clear showing on a ground frankly dark a shadow fining off at the circumference and sharply cut round the central clear zone—that is characteristic of a cavity. The pneumonic confluent form of acute phthisis reveals itself on the fluorescent screen by complete opacity of the diseased parts; this is explained by the fact that at these points the lung is no longer permeable to air. Effusion at the base is shown by a thick shadow which hides the diaphragm, and below is lost in the obscurity of the abdominal mass, and above is limited by a zone of penumbra directed obliquely from above down, from the axillary region to the vertebral column, or in the shape of a curve concave at the upper border. Examinations at intervals of a few days will show the variations in the extent of the liquid effusion by variations in the extent and form of the shadow. An intense opacity of generally rounded outline occupying the middle part of a lung in which the upper and lower parts have almost retained their normal clearness suggests an interlobar effusion. Here again the variability of the shadows at different times is a help to diagnosis. Dense and extensive adhesions of the pleura, on the other hand, manifest themselves by shadows less dark but constant in their form. In such a case it is often impossible to distinguish the condition of parenchymatous lesions by radioscopic examination alone. Pneumothorax is characterised by an abnormal transparency of one side of the chest, which allows the light to pass through without any interference, except over a small area on the affected side corresponding to the retracted lung. The heart and the vessels may be displaced; the curve of the diaphragm is lower than in health. In hydro-pneumothorax and pyo-pneumothorax the appearances vary according to the position of the patient; if he is lying down, the whole of the affected side is dark; if he is standing up, the upper side of the part is more transparent than in the normal state, and the lower is opaque. Even slight tuberculous changes in the pleura affect the mobility of the diaphragm. In general terms it may be said that in pulmonary tuberculosis there is a diminution in the movements of ascent and descent in the diaphragm; this change may be observed on one or on both sides. Radioscopic examination can also give important information as to the condition of the mediastinal glands in tuberculous patients. In acute or subacute bronchitis the two sides of the chest show little or no departure from the normal state, and there is no change in the respiratory movements of the diaphragm—negative signs which may be of some importance. In pneumonia there is complete opacity at the part corresponding to the lesion. This opacity, however, varies in its limits and intensity from day to day. The movements of the diaphragm are diminished on the affected side. Non-tuberculous broncho-pneumonic foci cause a slight opacity, but according to Maragliano this becomes less marked on deep inspiration. On the other hand foci of pulmonary sclerosis, like patches of tuberculous infiltration, do not become clearer on deep inspiration. In simple emphysema the permeability of the lung to air is increased, and thus the transparency is exaggerated, and the ribs are less distinct. Moreover, the emphysematous lung is larger than natural, and extends into the pleural *cul-de-sacs*, so that the transparent surface corresponding to the organ extends more upwards towards the mediastinum, and particularly more downwards towards the abdomen. When the subject is examined at the back there is seen below the diaphragm a transparent surface of much greater extent than in the normal state. The authors conclude that the use of the *x* rays makes it possible in certain cases to discover commencing changes in the lungs at a period when other methods of clinical investigation give no indication. In other cases it defines the extent or reveals the importance of a lesion insufficiently disclosed by auscultation or percussion. Again, it enables the practitioner to reject the hypothesis of tuberculosis in cases where symptoms and clinical signs of doubtful import puzzle the clinician; while at the same time it often enables him to trace to their true cause general disturbances which clinical observation has failed to detect. Radioscopy is not merely a method of control, correcting or supplementing the ordinary methods, but it yields new indications. By making visible the working of the respiratory apparatus, it shows the functional value of one lung. It discloses the pleural adhesions, the pareses or ankyloses of the diaphragm, which limit the movements of expansion. In a word, it makes the evolution of the disease visible to the eye.

A. Beclère (Paris) in a communication on the same subject, said that for the exact and complete determination of tuberculous lesions radioscopy and radiography should be employed simultaneously. He dealt successively with the results obtained by the *x* rays (1) in latent, (2) suspected, and (3) declared tuberculosis. In latent tuberculosis the patient has every appearance of perfect health and presents absolutely no physical sign or symptom of disease. The frequency of this state of things is shown by the large number of cases among soldiers who have died of various diseases in whom old unsuspected tuberculous foci have been found. Kelsch made radioscopic examinations on 124 men admitted to hospital in October and November, 1897, for various medical and surgical affections, all cases in which pulmonary tuberculosis could be recognised by the ordinary diagnostic methods being carefully excluded. The results were absolutely negative in 73 of the cases, but in the remaining 51 the fluorescent screen revealed abnormalities of various kinds—lessened transparency of the apices, enlargement of the bronchial glands, more or less marked

opacity of the pleura, diminished movement of the diaphragm. These appearances were considered by Kelsch to be characteristic of tuberculosis. He adds that the screen, by allowing as it were a pathological examination of the lung to be made during life, confirms the conclusion to which he has been led by *post-mortem* examinations, namely, that in young persons latent tuberculosis exists in at least two or three of every five cases. The use of the *x* rays also serves for the identification of tuberculous lesions which disguise themselves under the mask of anæmia, chlorosis, dyspepsia, and neurasthenia. In cases of suspected tuberculosis, if the disease attacks the lung suddenly, radioscopic examination shows chiefly a diminution in the clearness of the image at the apex and in the pushing down of the diaphragm on the affected side. Tuberculosis may begin by an attack of diaphragmatic pleurisy, the symptoms of which are so slight that the only proof that the pleura is involved and that the case is not merely one of intercostal neuralgia is supplied by the Roentgen rays, which show thickening, diffusion, and immobility of the diaphragmatic shadow. If the case is one of dry pleurisy with "stitch" in the side, but without any decisive physical sign, radioscopic examination shows superficial opacities quite close to the thoracic wall. In cases of effusion the condition of the apex in regard to transparency on the affected side must be carefully investigated. Even a slight degree of opacity in the region of the apex is important in regard to prognosis. In declared tuberculosis the lesions are plainly shadowed on the screen. In such cases radioscopy is more valuable for prognosis than for diagnosis; it will show when both apices are attacked where clinical examination appears to warrant the conclusion that one is still intact, or when the lesions extend lower down than is disclosed by ordinary methods. The *x* rays are particularly useful for the detection of central lesions, which on account of the depth at which they are situated are apt to be overlooked.

(132) Therapeutic Action of X Rays on Tuberculosis.

J. Bergonié (Bordeaux) and Teissier (Paris) presented a report embodying the results of some experiments of their own as to the effect of the *x* rays on the tubercle bacilli and reviewing critically the results recorded by Lortet and Genaud, Fiorentini and Lureschi, Mäksam, Rodet and Bertin-Sans and others. They conclude that animals infected with tuberculosis in various ways, and subjected for more or less prolonged periods of time to the action of the rays die for the most part without appreciable modification of the lesions and without any retardation in the evolution of the disease. The results of clinical experiments were as follows: (1) *Cutaneous Tuberculosis.* In lupus the *x* rays produce, as the light rays do in radiography, a dermatitis of greater or less intensity, and it is to this reactive inflammation that the effects are due. The difficulty is not to produce dermatitis followed by improvement, or even by temporary cure, but to limit the inflammation in respect of intensity and of duration. One has to bear in mind the long incubation period of these forms of dermatitis, and not to be misled by the absence of immediate reaction into making too long and too numerous applications. When the dermatitis can be graduated, the effect of the *x* rays in cutaneous tuberculosis is favourable. (2) *Tuberculosis of Joints.*——In the cases of tuberculous arthritis in which good results have been recorded it is impossible to separate the effect of the *x* rays from that of conservative treatment, particularly immobilisation. The only thing definitely assignable to the rays is a local inflammation which is of doubtful therapeutic value and could be obtained by more manageable methods. (3) *Pulmonary Tuberculosis.*—If in some favourable cases abatement of fever, improvement of the general state and sometimes though more rarely modification of the local condition have been observed to follow the use of the rays, these good effects have not been lasting; the disease has followed its course and the fatal termination has not been retarded by the treatment. In some cases acute pneumonic processes have been set up which if not certainly traceable to the rays were in close relation of time to the application. Serious digestive disturbance has also been observed after the treatment. The authors sum up their conclusions in the statement that the results of the *x* rays on tuberculous pulmonary lesions have so far been almost entirely negative. Not only has the disease not been cured, but its evolution has not been stopped or even checked. It may be taken as proved that up to the present time the action of the rays is, if not dangerous, of no therapeutic efficacy whatever.

(133) Influence of the X Rays on Experimental Tuberculosis.

Rodet and Bertin-Sans reported that they had subjected guinea-pigs which had been inoculated in the thigh with tuberculosis to the action of the *x* rays. They varied the conditions as regards intensity, duration, and frequency of sittings and arrangement of the tubes. In some cases the treatment was begun a certain time after the inoculation (curative treatment), in some almost immediately (preventive treatment). The rays caused local trophic disturbances often of a serious character, in the form of extensive ulcerations in the regions directly exposed to the rays; the ulcerative process was favoured by pre-existing local tuberculous lesions. The rays had a bad effect on general nutrition, the animals treated showing less growth or greater loss of weight than the "controls." Death was generally hastened by the treatment. This was more particularly the case in the animals in which the rays produced caustic effects, but it occurred independently of this. The treatment had a manifest influence on the infection of the lymphatic system, determining a regressive action in glands already involved, and restraining general infection of the system. On the other hand, so far from restraining the invasion of viscera the treatment to some extent favoured it. The spleen, the liver, the lungs were found on the whole more tuberculous in the animals treated than in the "controls." In no case did the rays have any beneficial result.

(134) Seroguaiacol in the Treatment of Tuberculosis.

Berlioz (Grenoble) presented a communication in which he stated that in order to combat the impairment of the constitution as well as the microbic infection he had attempted to combine with serum, which has a stimulating action on the nutrition, a remedy of well-known efficacy in tuberculosis, namely phosphite of guaiacol, which contains 95 per cent. of guaiacol and soluble phosphorus. A still more active product is obtained by adding glycerinated extract of testicle, liver, brain, spleen, or lung, in the proportion of 3 per cent. This mixture is administered in enemata of 30 g. Two such enemata may be given daily. Berlioz said that by this treatment he had obtained considerable improvement in tuberculous patients.

(135) Artificial Serum in the Treatment of Tuberculosis.

Blache (Paris) has found that injections of artificial serum are well borne by tuberculous children, there never being any febrile reaction. If the pulmonary lesions are not very markedly improved, the general condition has always seemed to be favourably modified. The author from his experience recommends this treatment as useful and absolutely harmless. Blache does not think that artificial serum is a trustworthy diagnostic agent.

On the other hand, Sirot (Beaune) said injections of artificial serum can be employed as a means of deciding a doubt as to the existence of tuberculosis. In doses of 20 c.cm. it causes in an adult who is the subject of the disease a thermic reaction as characteristic as that of tuberculin; unlike the latter, however, it is quite harmless.

Hutinel referred to a communication made by him to the Société Médicale des Hôpitaux in 1895, giving the results of researches carried on by him for two years as to the effects of injections of salt water. He had then already noted that in many tuberculous subjects the injection of artificial serum is followed by transient rise of temperature; this effect is, however, seen to a less degree in patients with any other disease, and cannot, therefore, be regarded as pathognomonic. In this previous communication he also pointed out that injections of artificial serum were not altogether innocuous, though less so than injections of tuberculin. He had seen in children and in adults several cases in which they had been the starting point

of inflammatory phenomena which had serious consequences.

(136) A Comparative Study of the Physiological Effects of Different Products extracted from Cultures of Koch's Bacilli.

Arloing gave an account of the results of attempts made in conjunction with Guinard, of Lyons, to separate a certain number of the complex substances of which Koch's original tuberculin is composed. Some investigators had endeavoured to free that product from certain injurious substances which it contained. Koch himself first succeeded in this by obtaining TR.; next came Hirschfelder with his oxytuberculin. In the experiments of Arloing and Guinard a culture of tubercle bacilli in broth had been filtered on porcelain, so as to separate the bacilli from the broth. The filtered broth was next divided into two parts, one of which was reserved for further treatment. The first half exactly represented Koch's first tuberculin; the authors designated it by the name of TA.; a second tuberculin (TB.) was obtained by the washing and decoction of the bacilli left on the filter. The second half of the filtered broth was treated with alcohol. The substances thus precipitated yielded a third tuberculin (TC.). Lastly, the broth, freed from the substances precipitable by alcohol, furnished a fourth tuberculin (TD.). The physiological effects of each of these four products were studied on dogs, the injections being made into the jugular or mesenteric veins. TA. proved extremely virulent, killing 1,000 times its weight of dog. This tuberculin has in a very high degree the property of dilating vessels; it accelerates the pulse, lowers arterial tension, and produces elevation of temperature and gastro-intestinal phenomena—nausea, vomiting, diarrhœa, dysentery—of great intensity. TB. is very slightly toxic and causes only slight slowing of the heart. TC. is slightly febrigenic. TD. dilates vessels, and excites the heart to a slight degree. If these results, said the authors, are compared with those furnished by the study of the products obtained up to the present by modifying Koch's original tuberculin, it will be seen that TR. has as its chief physiological action the power of slowing the pulse; from that point of view it recalls their TB. Hirschfelder had greatly modified the original tuberculin by oxydising it. The poisons acting on the circulatory and digestive apparatus had been considerably attenuated, so that the injection of the substance caused only slight disturbance of the circulation and a little diarrhœa and vomiting.

(137) The Treatment of Poor Patients in Sanatoria.

Netter and Beaulavon urged the necessity of treating indigent sufferers from tuberculosis in sanatoria on the following grounds: (1) The sanatorium ensures the isolation of the patient, who otherwise constitutes a danger of society; (2) the sanatorium alone, owing to its special arrangements, makes it possible to give the tuberculous patient the care which he needs; (3) the sanatorium, which is especially intended for the more curable cases, affords a means of realising a substantial financial and social gain, as has been shown by the results obtained by assurance companies against invalidism and old age. Isolation hospitals and pavilions as at present established meet only one of the requirements of the case, namely, that which has reference to the danger to society caused by the tuberculous. They have the serious drawback that they necessitate a very heavy expenditure which would probably not be exceeded by the creation of sanatoria, which would afford a satisfactory solution of the problem. Every effort should be made by the medical profession to send to sanatoria tuberculous cases at the beginning of the disease, when they offer the best chances of cure. With the view of securing this object, the question of providing for the support of the families of the patients during the stay of the breadwinners in sanatoria will have to be considered.

(138) An Ideal Sanatorium.

S. Bernheim and Blanchet, (Paris) say that although the isolation of consumptives in hospitals is a prophylactic process, it is not very useful for the patients themselves, who, placed in indifferent sanitary conditions and an impure atmosphere, derive relatively little benefit from the measure. What is needed is sanatoria constructed expressly for consumptives at altitudes of 800 to 1,400 metres, far from the dwellings of men, and particularly from any large centre of population. The authors suggest the following plan of sanatorium as a type: An immense central building connected with two wings by vast glass-covered galleries. On the south front there should be a gallery 200 metres in length for the open-air treatment. All the bedrooms should have a southern aspect, and should resemble a surgical operating room in appearance and in furniture; they should be capable of being easily made aseptic. Each one should have accomodation for only two patients. As regards the financial side of the question, the authors contend that if the sum recently voted by the Paris Municipal Council for the isolation of consumptives were to be devoted to the construction of sanatoria, the city of Paris would be able at once to have twelve model sanatoria, which would accomodate 12,960 consumptives every year. This would have the further advantage of setting free a large number of beds in the general hospitals which are badly needed for other patients.

(139) Treatment of Tuberculous Arthritis by Bloodless Methods.

Calot (Berck) dealt with this subject. He said the best treatment of cold abscesses is not a so-called radical operative procedure which is often disappointing in its results, and which always causes too great a loss of substance, nor is the expectant method the best. As in the case of cold abscesses in general the treatment which most surely cures white swellings and leaves the most serviceable limb is unquestionably puncture, followed by a modifying injection into the interior of the joint. Of 40 cases of white swelling cure was effected in 39 by this method alone. In a single case, that of a man of 30 who had a white swelling of five years' standing, Calot had, owing to anatomical peculiarities which made the application difficult, to have recourse later to arthrectomy. The orthopædic results of the bloodless method have been extremely remarkable. Not only have the limbs kept their shape, length, and solidity, but in nearly one-fourth of the cases the joints have entirely, or almost entirely, recovered their movements. Calot looks for still better results from the orthopædic point of view, as he proposes in future to direct his efforts to the restoration of movements; hitherto he has not done this, restoration having taken place spontaneously, without any interference on his part. The technique of the injections is the same as in the case of cold abscess: the liquid used for the purpose is also the same. Calot prefers camphorated naphthol, which he injects in small quantities, the dose being from 1 to 10 g., according to the age of the patient. He begins by injecting camphorated naphthol after emptying the joint, at intervals of two or three days. After the eighth injection of naphthol he injects ether and iodoform twice. Then, having on two or three occasions completely emptied the joint of the liquid which it continues to secrete for some time after the last injection, he applies compression with plaster over cotton wool. The period of injections lasts from twenty-five to thirty days; that of compression lasts three or four weeks, after which the patient is discharged. In the case of a dry white swelling, the first four or five injections of naphthol into the synovial sac cause its walls to secrete a brownish serosity, which brings the case into line with those of ordinary swelling. When a fistula exists the duration of treatment is longer. A cure is often effected by injections made in such a manner that the liquid remains in the passage. In connection with this subject Calot takes occasion to point out that the existence of a fistula is always attributable to the medical practitioner who has had charge of the case; such a condition ought never to be present.

Coudray (Paris) said the conservative treatment of tuberculous joint disease by rest, immobilisation, and compression was not only intolerably tedious but not always sure. Except as regards the hip, where extension is the procedure of election, the tuberculous focus should be attacked directly. For this purpose he preferred the method of "sclerogenic" injections introduced by Lannelongue. By this means he had obtained excellent results in 64 cases of articular tuberculosis, especially when he was able to intervene in the first months of the disease. Success was particularly

marked in the white swellings of the knee. The method was not applicable to lesions of the hip or of the vertebral column, the diseased parts being inaccessible by reason of their depth and the uncertainty as regards the exact situation of the focus.

Redard (Paris) said that in the conservative treatment of tuberculous arthritis he employed intra-articular injections of olive oil containing 5 or 10 per cent. of iodoform. He preferred this preparation to iodoform and ether, which caused very painful distension and sometimes gangrene of the skin. He recommended that injections should be made around the joint into the fungating masses, and around and into the fistulous tracts. As regards white swelling of the knee he had obtained complete success in 60 per cent. of the cases; as regards other joints, in 40 per cent. This method, better than any other, ensured the preservation of movements in the affected joints. Cold abscesses were amenable to the same treatment, and Redard said that in this category he had had 70 per cent. of successes. He pointed out that care must be taken before the iodoform oil is injected to wash out the cavity with a solution of naphthol beta. Oxygenated serum prepared with phosphate of soda and bioxide of hydrogen had been successful in his hands in cases accompanied with fistulæ, in which iodoform oil generally failed. The serum was attended with the drawback that it caused distension of the cavity by liberation of gases, but the distension was less than after the use of iodoform and ether.

(140) Agglutination of Koch's Bacilli.

Dubard presented a communication on this subject in which he stated that the blood of tuberculous animals and men had agglutinated and immobilised for the moment Koch's bacilli, which in the majority of cases are mobile. With the exception of the guinea-pig, which, when submitted to a normal regimen, presented a blood that was always inactive, the healthy man, the healthy rabbit, the horse, and the dog presented irregularly a blood possessing the property of agglutination. There seemed to him to be a relation between the agglutinating power of the blood of a healthy animal and its relative immunity as regards tuberculosis. He classified the agglutinating power of the serum of animals studied by him in decreasing degree as follows: Horse, dog, sheep, goat, man, rabbit, guinea-pig (in which the agglutinating power was *nil*); and in the case of cold-blooded animals, which all momentarily agglutinate the human bacillus, as follows: Viper, green lizard, snake, carp, frog, grey lizard. The blood of gouty subjects showed great power (2 cases). Watery extracts of the liver of healthy animals and of diseased organs (caseous glands and tuberculous lungs) had the agglutinating property. A large number of chemical compounds, antiseptic or otherwise, determined the precipitation of mobile bacilli when tuberculosis by itself had no effect. Dubard added that the blood of the guinea-pig could be endowed with the agglutinating property (1) by injection of certain antiseptic substances as had been shown by Arloing; (2) by injection of tuberculins, extracts from caseous products, which, after from forty-eight to sixty hours, caused the appearance of the specific reaction in the blood. It was possible *in vitro* to increase the agglutinating power of a serum by placing it in contact with tuberculin. Whatever tuberculin (avian, human, or piscine) was used for injection into a healthy guinea-pig, it caused the appearance in the blood of the specific reaction with regard to all the tubercle bacilli—avian, human, and piscine indiscriminately. The ingestion of Koch's bacilli killed by chloroform of tuberculin, or of caseous extracts, determined the appearance of active substances in the blood serum of the guinea-pig and of man, or increased such activity if it existed in the first instance. A serum should be regarded as active only if it determined precipitation and immobilisation in less than twenty-four hours, and in a dose of 1 in 5 of culture; certain serums displayed their activity in less than two hours. Urine was a bad reagent, for the slightest change in its density was sufficient to determine the appearance in that liquid of substances which precipitated bacilli. Nevertheless, after the injection of tuberculin or the ingestion of antituberculous serum, the urine came to present such a difference in agglutinating power that it must be looked upon as a specific effect. When Dubard had satisfied himself that the ingestion of tuberculous products always without exception brought about the appearance in the blood of an agglutinating substance, he made further investigations in that direction. In several series of experiments guinea-pigs submitted, after infection with virulent tuberculosis, to biweekly ingestion of 10 c.cm. of sheep's serum in which mobile bacilli had grown, presented a tuberculosis of markedly slow course, recalling that of the disease in man. In 10 human patients who submitted to the daily ingestion of 10 c.cm. of the same serum, weight increased and manifest improvement in all their symptoms took place. Nevertheless one of them, a child, had since died of meningitis, when the pulmonary, cutaneous, and osseous lesions which previously existed were practically cured. (No necropsy could be made.) Dubard concluded that if tuberculins, with the chemical and physiological complexity which they presented, were to take a definitive place in the therapeutics of tuberculosis of slow course and in the early stage, they should be given by the stomach, inasmuch as in that manner they excite to the highest degree the antitoxic reactions of the organism. This method of administration presented the advantage that it introduces antituberculous serums, the toxins of which would undergo a new filtration through the cells of the intestine and the liver, that would arrest the necrosing and pyrexia-producing substances contained in those serums. Increase in the amount of urine was an index of the activity of the substance introduced and of the eliminating process.

(141) Local Tuberculosis in the Aged.

Widal in a communication on this subject said that local tuberculosis whether of bone or skin was generally looked upon as exceptional in the old. He has however had the opportunity of studying 10 cases in persons from 70 to 78 years old. From the clinical point of view the evolution of these local tuberculoses beginning at so advanced an age was similar to that observed in the young whether the disease was tuberculosis of the skin, "cold abscess" of bone or subcutaneous tissue. In some of his patients he was unable to discover any personal tuberculous antecedents. At the *post-mortem* examination of two among them, one 74 the other 76 years of age, he found fibrous cicatrices at the apex, the remains of old tuberculous lesions. One of his patients had had hæmoptysis at 20, but had presented no other sign of tuberculosis since that time. Two others, both aged 78, had had tuberculous submaxilliary glands, one at 8, the other at 10; recovery quickly took place in both. This long interval of 70 years shows how long tuberculosis may remain quiescent in the system. In some of the patients a kind of retrograde heredity was observed. Their children had been attacked by tuberculous disease long years before any manifestation of the disease became apparent in the parents. One had lost two children from phthisis, 30 and 35 years respectively before the disease began to develop in him.

(142) Surgical Treatment of Tuberculosis of the Bladder.

In a communication on this subject, E. Desmos (Paris) said that, although tuberculosis of the urinary passages often remains localised to the organ originally attacked, operative procedures, such as curetting or total resection of the vesical mucous membrane were generally followed by no good result, and were sometimes followed by generalisation of the infection throughout the urinary apparatus. Nevertheless, painful forms of tuberculous cystitis can often be dealt with satisfactorily by suprapubic cystotomy, but in these circumstances care must be taken to leave the vesical mucous membrane untouched, whatever lesions it may present; the operator must be content with draining the bladder. If the patient is willing to put up with the inconvenience of a fistula for a long time—at least a year—not only does the pain diminish or cease altogether, but nearly all the lesions undergo a temporary arrest, owing to the permanent relief of the congestion of the bladder walls and the abolition of micturition through the natural passage. When operation of any kind is contraindicated, recourse must be had to instillations of sublimate and injections of guaiacolated oil, and to general treatment.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(143) Quinine Hæmoglobinuria.

Murri (*Arch. Ital. de Biologie*, Tome xxviii., fasc. iii., 1897) reports a case of this affection. A girl, aged 17, contracted tertian ague in July, 1898. In spite of treatment she was not cured in January, 1894, and was still taking quinine. At that time she had an attack of ictero-hæmoglobinuric fever directly after taking quinine, and subsequently whenever quinine was taken such an attack was observed, consisting in rigors, vomiting, followed by smoky urine, and lastly, jaundice. The spleen became larger and firmer, and sometimes the liver enlarged also, with hypochondriac pain. At the beginning of an attack there was simple polyuria, then from being acid the reaction became alkaline, and lastly, peptone, serum albumin, globulin, hæmoglobulin, and urobilin, hyaline casts, epithelial renal cells, and leucocytes, but no red corpuscles or bile pigments, appeared. After an attack the above all disappeared, the serum albumin and peptone last. An examination of the blood showed there was a diminution of the number of red corpuscles, but the malarial parasite could never be found. In spite of this effect of quinine it had its usual influence in prolonging the interval between the attacks of true malaria. The author give reasons for believing that quinine hæmoglobinuria occurs only in those whose organs have been altered by malaria, quinine alone being insufficient to produce it. (1) For 20 years he has been trying to produce quinine hæmoglobinuria in animals without success. (2) In a healthy man 75 or even 300 gr. of quinine produce no hæmoglobinuria, while in this girl, after malaria, 1.54 gr. did with absolute certainty. (3) No case of quinine hæmoglobinuria has been reported which was not complicated by malaria. (4) The proof that one has not to do with an idiosyncrasy in a person with whom malaria is a coincidence is furnished by the fact that quinine intoxication appears in most cases, sometimes after a good many doses have had to be taken—that is, after the malarial poison has had time to act on the organism, but not before. (5) It is not produced by an intolerance gradually set up by repeated doses of quinine, for large and repeated doses are often given in non-malarial diseases, and yet not a single cases of quinine hæmoglobinuria has been reported in these. (6) This hæmoglobinuria is almost unknown in Europe, except in Sicily and Greece, and becomes relatively frequent in extra-European countries where malaria is more virulent. (7) The author's patient had three ictero-hæmoglobinuric attacks after the malaria was cured, and without any quinine having been given. This shows that the hæmoglobinuric mechanism had become so easily set in motion that its usually specific stimulus (quinine) could be replaced by others, though exactly what these were could not be discovered. It seemed as though the biological change left in the patient by malaria would not be permanent, for some months after the patient had been cured of her malaria and had had no quinine attacks, a little over 1½ gr. of quinine given experimentally had very little effect, and even 7¾ gr., though causing intoxication (fever, albuminuria, peptonuria, and urobilinuria), produced no hæmoglobinuria.

(144) Toxi-Alimentary Dyspnœa.

Bohn (*Journ. de Méd.*, June 10th, 1898) has made a series of observations on the occurrence of dyspnœa under certain conditions of toxic absorption from the alimentary canal. This form of dyspnœa is intermittent, but of continual tendency. It is sometimes exclusively nocturnal, but sometimes occurs during the day as well, and when of nocturnal occurrence it is generally in the early part of the night. It sometimes becomes exclusively diurnal in patients who have previously only suffered at night. The dyspnœa begins as simple defect of respiration with a feeling of weight, but no pain or agony. The first symptom is liable to appear as the patient is falling asleep, or, should the attack be diurnal, it is provoked by some effort which may be apparently slight, as going upstairs, an animated conversation, or carrying something slightly too heavy. An attack presents the following features. The patient first complains of a "bar-of-iron" feeling across the chest, with sense of weakness and utter prostration. This is followed by a sensation of rigidity of the chest, so that respiratory movements seem impossible. At the same time there may be gastric convulsion, giving rise to noisy eructations followed very often by vomiting. The heart beats in an agitated manner, and respiration then takes on the characteristics of an asthmatic seizure; the face becomes pale, and cold sweats break out. The attack lasts for half an hour or more, to be followed by sanguineous expectoration. These symptoms may not be all present in the same case, for gastric eructation may be absent. Physical examination shows the presence of tachycardia and *bruit de galop*, but examination of the lungs reveals few if any physical signs. There may be intervals of long duration between the attacks. This form of dyspnœa is often accompanied by certain symptoms of an interesting character, such as pallor of the face and integuments, and *digiti mortui* and vertigo, and inefficient kidney action. The condition, according to the writer, is one of arterial spasm with accompanying increased arterial tension, and thus it is likely to cause sclerosis of the vessels. As to the cause of this affection, and the various complications which accompany it, evidence would go to show that some alimentary defect is present, this occurring in subjects whose arterial system is in any way affected, or whose eliminating organs are defective in their action. Some temporary indiscretion of diet is liable to be followed by the absorption of some toxic material, causing an attack of dyspnœa. The writer points out that this form of seizure must not be confounded with uræmic dyspnœa, the latter being due to an endogenous form of poisoning from the retention of toxic materials produced in the organ itself. Alimentary toxæmia, on the other hand, is exogenous, and depends on poisonous materials coming from outside. It follows, therefore, that on the choice of diet will depend altogether our success in treatment. Patients with arterial sclerosis must therefore exercise particular care in diet, and should there be any tendency to dyspnœic seizures, the diet should be largely composed of milk, one suggestion being to give the patient milk diet for a week at a time, to be followed by a somewhat more liberal *menu* the following week.

SURGERY.

(145) Cyst of the Liver.

Borroff (*Khirurgya*, July, 1898) describes a case of cyst of the liver in a woman aged 51. She first noticed a swelling in the right hypochondrium about twelve years ago, a few days after a confinement. The swelling was then nearer the middle line and of the size of a small fist; it caused no discomfort, and the patient never suffered from jaundice or disturbances of the gastro-intestinal canal. During the last four years the swelling has been increasing and causing a feeling of weight as well as attacks of pain in the right hypochondrium. The patient has also become dyspnœic. On examination a large swelling can be seen extending from the liver downwards to about 8 cm. above the pubes, and from 5 cm. in front of the iliac crest on the right side to about 8 cm. to the left of the middle line. The growth evidently belongs to the liver, and has no connection with the uterus. The other organs and the urine are normal. The provisional diagnosis was that of a cyst or hydatid cyst of the liver, and an operation for its relief was decided on. The abdomen was opened along the middle of the rectus muscle. The swelling was then found attached with two-thirds of its bulk to the right lobe of the liver, and with one-third to the left lobe. There were no adhesions with neighbouring organs. The gall bladder was seen under the swelling. The surface of the tumour was of a greyish-white appearance, with dark lines corresponding evidently to the course of the vessels. This latter circumstance at once distinguished it from an ordinary hydatid cyst, whose wall is non-vascular. The cyst was opened and found to contain a brownish, thick, and viscid liquid. The cyst was emptied, an oval part of its wall excised, and the remaining parts stitched to the edges of the abdominal wound. The patient made a good recovery, and left the hospital in two months' time after the operation with a deep and narrow sinus discharging

about a teaspoonful of a muco-serous fluid in twenty-four hours. A microscopical examination of the excised portion of the cystic wall showed it to consist of vascular connective tissue covered externally with peritoneum, and lined internally with columnar and cutical epithelium. This and other more minute details made the author conclude that the cyst was formed from the bile ducts, not as a retention cyst, but from an adenoma which underwent cystic degeneration. He therefore terms the tumour an adeno-cystoma hepatis.

(146) Appendicitis.

Ryerson Fowler, in a review of ten years' work, 1887-1897 (*Methodist Episcopal Hospital Report*), analyses 340 cases of appendicitis; 75 patients died; 51 deaths were due to septic peritonitis, which in 49 cases was present before the operation. This constitutes a powerful argument for early operation. If this element (septic peritonitis) of the disease could be eliminated appendicitis would be robbed of most of its terrors. The statistics show that early diagnosis and prompt operative interference are the means to this end. Thus, of 61 consecutive cases (*a*) 20 were found to be free from infection beyond the appendix. These were operated upon at the end of two days and three quarters on the average, and all recovered. (*b*) 30 were accompanied by localised abscess, were operated upon at the end of six days and a third on the average, and 3 died. (*c*) The remaining 11 cases were complicated by diffuse peritonitis, were operated upon at the end of five days on an average, and 9 died. Fowler remarks that there must have been a time in the history of each of these cases when an operation would have promised a cure. The dangers arising from an early operation in competent hands are infinitesimal as compared with those attending the conditions in the later stages of this disease. There can be no reasonable excuse, under circumstances where proper surgical aid is available, for delaying operative interference.

(147) Oblique Osteotomy of the Femur for Ankylosis of the Hip.

Berger (*Revue d'Orthopédie*, July, 1898) reports a successful case of oblique trochanteric osteotomy performed for the correction of faulty position and extreme deformity of the right lower limb following disease of the hip. The affected limb, the muscles of which had atrophied to a considerable extent, was immovably flexed on the pelvis at an angle of about 45 degrees, and was adducted to such an extent that the thigh passed across the front of its fellow on the left side. The anterior part of the trochanteric region having been exposed by an incision 6 inches in length, the upper end of the femur was divided by chiselling in an oblique line extending from the upper margin of the great trochanter to the inner surface of the bone just above the base of the small trochanter. The patient—a lad 18 years of age—made a good recovery, and was able, after an interval of a few months, to walk well without the use of a stick, and to resume active work. About fifteen months from the date of the operation the patient was carefully examined, when it was found that the femur had increased in length to the extent of three-quarters of an inch. The limb was straight and in a good position, and the muscles of both thigh and leg had increased very much in bulk under the influence of regular and active exercise. In his comments on this case Berger states that though division of the femur in any direction may result in extension and straightening of a lower limb rendered distorted and crippled by the results of coxalgia, it is only by oblique osteotomy that the bone can be really elongated so as to overcome the shortening of the limb caused by luxation of the head of the femur, the destruction of the articular surface and extremity, and the arrest of growth due to epiphysial lesions. The operation, to be successful in its remote results, should be followed by prolonged and continuous extension of the lower limb. With the view of preventing any splintering of the femur the author effects his long oblique division of the bone by using three chisels simultaneously, one applied to the great trochanter, another to the middle part of the neck of the bone, and the third to the portion of bone just above the lesser trochanter.

(148) Operative Treatment of Epilepsy.

Andrew McCosh (Report of the Presbyterian Hospital, New York) reports 12 cases of epilepsy submitted to trephining. In all an interval of at least twelve months had elapsed since the operation. Of the 12, 3 cases were cured; in each of these a distinct source of irritation in the cortex was found. Five patients were improved; in four a well-marked lesion was found, in the fifth nothing definite. Four patients were unimproved by operation; in two a distinct lesion was found, in the other two nothing obvious. The epilepsy was traumatic in the three who were cured, in four out of the five improved, and in two out of four unimproved. The prognosis as regards cure is therefore much more favourable in traumatic cases. The operations performed for epilepsy, or, indeed, for any cerebral lesion, are on the whole disappointing. In any long series of reported operations the large majority of the patients have not benefited by the operation, and the number of permanent cures is lamentably small.

MIDWIFERY AND DISEASES OF WOMEN.

(149) Retraction of the Uterus in Labour.

Demelin (*L'Obstét.*, January 15th, 1898) has published some instructive observations on this serious phenomenon. Putting aside cases where ergot is abused, retraction is observed (1) just before expulsion of the afterbirth, whether Bandl's ring or the whole uterus retracts and incarcerates the placenta; (2) when the fœtus is still in the uterine cavity, entirely or partially above Bandl's ring; (3) before the rupture of the membranes. Of the third and rarest condition Demelin gives two cases. The first patient was a phthisical primipara with great pelvic deformity. Labour set in spontaneously during the seventh month. Demelin detected two tumours, one above the other. The superior tumour extended to above the umbilicus; it felt like contracted uterus, and no fœtal outlines could be distinguished. The lower fluctuated, and was taken for a distended bladder till the use of the catheter made no difference in its bulk. The membranes were found filling the vagina and presenting at the vulva. The os was completely dilated. The hand was passed with ease into the flaccid lower segment of the uterus. The membranes were ruptured, then a great quantity of liquor amnii, stained with meconium, came away. A small fœtal head was found, feeling like the clapper of a bell, at the top of the lower segment, Bandl's ring constricting its neck and the prolapsed funis. The heart was seized with a basiotribe, and the dead fœtus delivered after strong traction. The placenta came away naturally. The patient died of phthisis during the puerperium. Demelin relates another case, already described in a thesis, where contraction occurred before the waters broke, and the bag of membranes presented at the vulva. Lingering labour concluded the fifth pregnancy of a woman aged 40. On April 7th, 1894, at 11 A.M., the head presented in the fourth position. Next day, at 10.30, the membranes were found actually parting the vulvar cleft. The head was exceedingly high. The forceps proved a failure, the blades slipping off the head twice. Then, in attempting version, it was found that the head swung like the clapper of a bell in the lower and flaccid part of the uterus. The walls were tightly contracted round its neck. The forceps was again applied, but again slipped off on traction. Finally, as the cord had ceased to beat, basiotripsy was performed and a large child was delivered. The puerperium was normal.

(150) Placenta Prævia: Rupture of Uterus: Diastasis of Symphysis.

Ludwig (*Centralbl. f. Gynäk.*, No. 19, 1898) at the Vienna Obstetrical Society, in February read notes of a bad case of placenta prævia where great abnormalities were discovered in the pelvic joints. The patient was 41, quite robust, free from lameness and from any history of trouble in her five previous labours. Turning was effected without difficulty, and half an hour later the breech was found well down in the pelvis. With manual assistance the child was delivered, and twenty-five minutes later the placenta came away, with little hæmorrhage. Ten minutes later much flooding occurred; then a laceration was detected in the right side of the cervix, extending high up. It was closed as well as possible by six sutures, the uterus and vagina being plugged.

The patient, however, having already lost much blood before the turning was done, rapidly succumbed, blood coming through the vaginal tampon within an hour. A small subserous hæmatoma lay around the cervix, and the laceration extended for nearly 3 inches along the right side of the lower segment of the uterus. The pelvis was slightly unsymmetrical, the left side being the smaller. The symphysis pubis gaped to the extent of half an inch, and was quite movable, though held together by bands like cicatricial tissue. The right sacro-iliac synchondrosis was slightly movable, but the left was the seat of bony ankylosis. The laceration probably took place during the delivery of the child. The cervical tissues are very soft in cases of placenta prævia.

(151) Perforation of Uterus by Sound and Curette.

Rosenfeld (*Centralbl. f. Gynäk.*, No. 11, 1898) reports a case of unusual importance, as the injury was made plain to the naked eye by operation. The patient was 32, with flabby muscles; the last pregnancy ended 18 months before the operation, which was to cure complete rupture of the perineum and prolapsus uteri, from which she had long suffered. Before the operation, by Prochownick, a sound was passed cautiously into the uterus, and suddenly slipped in for over 5 inches; no pain followed. Next day Prochownick began by using a blunt curette. It also passed in suddenly over 6 inches, going into and beyond the uterine cavity. Partial amputation of the cervix was performed, as well as repair of the perineum. In the course of somewhat complicated incisions (Mackenrodt's operation) the body of the uterus was rotated into the vagina. The perforation lay in the posterior wall of the uterus, a little behind the fundus. It was slit-like, a quarter of an inch long, and its edges were almost clean cut. There was no evidence of peritoneal irritation, but a thimbleful of bloody serum, without clot, escaped from Douglas's pouch. The edges of the wound were carefully united with catgut. No ill consequences seem to have followed. Rosenfeld calls attention to Beuttner, Courant, and Odebrecht's three cases of instrumental perforation of the uterus, all reported in the 1897 volume of the *Centralblatt für Gynäkologie*.

(152) Intrauterine Injections in Gynæcology.

Grammatikati (*Vratch*, No. 25, 1898) has frequently made use of intrauterine injections in his gynæcological clinic, and considers them a very special therapeutic agent. The daily use of such injections for a longer period, especially in congestive and inflammatory affections of the female genital organs, leads to a temporary cessation of menstruation, and in fact to a complete state of physiological rest of these organs, in which the Graafian follicles cease to mature in the ovaries, and there is no monthly change in the uterus. This conclusion, though based on numerous clinical observations, required for its full confirmation a histological examination of the ovaries, and fortunately the author was able in one case to investigate an ovary after a course of intrauterine injections. The case was that of a married woman, 20 years old, who was suffering from a painful swelling in the pelvis, which was diagnosed as right pelvis cellulitis and peritonitis of gonorrhœal origin (gonococci were found in the vagina). The patient was treated by daily intrauterine injections of equal parts of tincture of iodine and 95 per cent. alcohol. After 115 injections the patient improved considerably, the swelling diminishing in size, becoming less painful and more mobile; but as there was no further improvement it was proposed to operate and remove the swelling, to which plan the patient readily consented. The abdomen was opened, and a cyst of the right ovary and the matted Fallopian tubes on both sides were removed. The careful microscopical examination of the left ovary showed the following: The ovary was anæmic; its tissue was poor in cells, there were few primordial vesicles, and no more mature ones; there were no corpora lutea; in one word, there were no signs of any ovular activity.

(153) Puerperal Tetanus.

Kühnau, of Kast's clinic (*Berl. klin. Woch.*, July 11th and 18th, 1898), first gives an account of the literature of this rare affection. Of 24 cases examined since the recognition of the tetanus bacillus, this microbe has only been found in 3. Chantemesse and Widal proved its presence in pieces obtained by the curette from the uterus after death. Heyse found it in the lochia both morphologically and by experimental investigation. Stern produced tetanus by inoculating pieces from the endometrium into animals. The author then records a case in a woman, aged 42, very carefully investigated. The labour appeared to be quite normal. The patient had a vaginal douche on the sixth day, and got up. Two days later there was an offensive vaginal discharge. Ten days after delivery headache and difficulty in swallowing supervened. Attacks of spasm came on when attempts at swallowing were made. On admission on the next day there was much cyanosis, retraction of the head, trismus, and the risus sardonicus. Attempts to swallow brought on attacks of spasm, when the breathing stopped, and the face became blue. The attacks lasted about three minutes, and consciousness was not lost. Behring's tetanus antitoxin was injected direct into the veins. Death followed in this desperately severe case very shortly afterwards. At the necropsy the spleen was found enlarged, and the uterine cavity contained discoloured tenacious secretion. The endometrium presented a greyish-green appearance. Several microbes, including the streptococcus, etc., were found by cultivation in the lochial discharge obtained during life, but not the tetanus bacillus. Bacilli resembling tetanus bacilli were found in the endometrium, and a number of microbes, including the tetanus bacillus, were also obtained by cultivation from it. Four out of twelve animals inoculated developed tetanus. Inoculation of animals from the earth obtained from the cracks in the floor, also with straw taken from the mattress, as well as with splinters from the patient's abode, gave positive results. Injection of the urine produced no result. Injection of blood serum from the patient also induced tetanus. The nervous system was comparatively healthy. The spasm of the glottis, which ultimately caused death, reminded one of hydrophobia, and was a striking feature of the case. The case was characterised by a mixed infection with bacteria of putrid decomposition, septic microbes, and the tetanus bacillus. The finding of the tetanus bacillus in the neighbourhood of the patient explained the origin of the disease. The author thinks that the patient was infected by means of the vaginal douche. [Kühnau's case appears to belong to that group of cases which forms a transition between ordinary tetanus and hydrophobic or cephalic tetanus.]

THERAPEUTICS.

(154) Immunisation against Cholera and Typhoid Fever.

R. Pfeiffer and Marx (*Deut. med. Woch.*, August 4th, 1898) have investigated the employment of preserved inoculation material against these diseases for use in epidemics or in war. Pfeiffer and Kolle's method of immunising man against typhoid fever consists in injecting subcutaneously 2 mg. of an eighteen hours' old agar culture killed by an exposure to a temperature of 70° C. In this way the serum of the inoculated individual acquires the properties of the serum taken from a patient who has passed through an attack of typhoid fever. For the purposes of preservation the authors added 5 per cent. phenol or 50 per cent. glycerine. They found by experiment that the efficiency of the inoculation material was unimpaired by the phenol but was considerably diminished by the glycerine. In the same way they showed that cholera inoculation material may also be preserved for long periods by the addition of 0.5 per cent. phenol. Pfeiffer and Marx then inoculated with this preserved material three laboratory attendants against typhoid because they have on several occasions known of severe laboratory typhoid. The injections were made into the back. In a short time the temperature rose to 38° C., and there was headache and *malaise*. One of the attendants was well on the following day, whereas the other two after a restless night still had a temperature of 38° C., and showed some swelling and redness about the site of the injection. Twenty-four hours after the injection these symptoms began to abate, and the patients were well on the following day. Blood was taken from these attendants before and after the inoculation, and the serum showed marked immunising properties after the injections. Thus the authors

conclude that both the cholera and typhoid inoculation material may be kept unimpaired for at least four to ten weeks by the addition of 0.5 per cent. carbolic acid.

(155) Subcutaneous Injection of Iron.

Birgelen, of Penzoldt's clinic (*Münch. med. Woch.*, July 26th, 1898) first reviews the literature of the subject. He says that there are cases in which a course of iron is strongly indicated, and yet it cannot be given by the mouth. The author has recently treated four patients with the subcutaneous injections of iron in whom the effects of rest and diet were as far as possible eliminated. He used a 10 per cent. watery solution of ferrum citricum oxydatum, but more recently a similar solution of ferrum citricum ammoniatum. The injections were made into the arm under all the ordinary precautions. The solution should not be more than ten days old and should be sterilised. Even with these precautions there were signs of local irritation, especially in the case of the first named salt. The author then gives details of his four cases. In the first case there was the clearest evidence of the good effects of this mode of treatment. In the second case the improvement could not be so distinctly assigned to the treatment, whereas in the third case the treatment was unsuccessful, and in the fourth it had to be interrupted owing to an abscess which appeared in the arm. The author thinks that, although the results are not brilliant, yet the value of the treatment cannot be denied. The subcutaneous method is only to be adopted when treatment by the mouth fails.

(156) Removal of Tattoo Marks.

Skillern (*Philadelphia Medical Journal*, June 18th, 1898) recommends glycerole of papain for the removal of tattoo marks, as the most effective and most painless method. The skin is prepared as for an aseptic operation, and anæsthesia produced by a chloride of ethyl spray. The marks are covered with glycerole of papain, which is worked into the skin by aseptic fine needles. A dressing of the same substance with gauze is applied and left on for five days. The marks are then disappearing, and superficial crusts separating. The procedure may have to be repeated.

(157) The Treatment of Ringworm.

Thomas (*Rev. méd. de la Suisse rom.*, July 20th, 1898) recommends his modification of Sabouraud's treatment for tinea tonsurans: (1) The whole scalp is painted with tincture of iodine and then carefully dried. By this each diseased patch is stained a darker brown than the healthy skin, enabling one to attack places at once which would be otherwise invisible. A circle is drawn with a blue pencil round each ring, and the hair epilated for 1 cm. outside it, the rest of the hair being cut short. (2) The patches are painted every day with the iodine until a certain amount of irritation of the skin is set up. The treatment is then suspended until the skin has regained its natural appearance, and the hair begins to grow again. (3) The patches are shaved and the daily painting is resumed, active treatment thus alternating with abstention until microscopic examination shows the cure to be complete. The only difficulty about the course is to recognise the exact time for temporarily leaving off the painting, since if continued too long a pustular eruption results and causes delay. The above treatment is more especially applicable to the common variety of tinea caused by small spores.

PATHOLOGY.

(158) Identity of Avian and Human Tuberculosis.

In a communication on this subject, presented to the Congress of Tuberculosis recently held in Paris, Nocard said the bacilli of avian and human tuberculosis were distinguishable from each other by a number of characters the most important of which were the following: The different appearance of the cultures which in the case of human tuberculosis were dry and warty, and in the avian disease were fatty, shining, and soft; the temperature at which the micro-organisms ceased to grow, which in the human was 42° C., while the avian bacilli continued to develop at 43° C. and 44° C. Moreover, the action on animals was different; the fowl almost invariably showed itself refractory to inoculations of human tuberculosis, but succumbed rapidly after inoculation of the avian virus. On the other hand, the dog died of tuberculosis after intravenous and intraperitoneal inoculations of human cultures, whilst it was impossible to infect him even by means of enormous doses of avian cultures. The guinea-pig was relatively refractory to avian virus injected under the skin, but reacted to very small doses of human tuberculosis. The rabbit was equally susceptible of infection by either virus, but after infection with human cultures the animal died of generalised tubercle, whilst after avian infection it died of bacillary septicæmia. The horse was hard to inoculate experimentally, but the animal sometimes developed tuberculosis spontaneously, and the disease occurred in two forms, abdominal and pulmonary. These two types corresponded to two different sources of infection; Nocard has recently found that bacilli isolated from the pulmonary form have the properties of the human tuberculosis, while those from the abdominal form approximate to the properties of the avian virus. Man, like the horse, appears to be susceptible of both forms. Two years ago Nocard found in the sputa of a phthisical patient bacillus which by the character of their cultures and the effect of inoculation very closely resembled avian bacilli. Man may therefore, he concludes, under certain conditions not yet determined, be infected by avian tuberculosis, and there is therefore some danger in the use of tuberculous birds as food. A strong argument in favour of the identity of human and avian tuberculosis is the fact that the disease may be introduced into an uncontaminated poultry yard by a keeper suffering from phthisis whose expectoration contains bacilli. Nocard says that the experimental failure of Straus and himself to infect fowls by making them swallow tuberculous sputum cannot be regarded as evidence to the contrary, the condition of a laboratory and of a poultry yard being altogether different. He added that he had been able to furnish the final proof of the identity of human and avian tuberculosis by transforming a culture of human tubercle bacilli into avian. He filled sacs of collodion with a culture of human tuberculosis or glycerinated broth, and placed them in the peritoneum of fowls. After six to eight months the fowls were killed, when the sac was generally found to contain nothing but liquid. But it also contained more bacilli than it did originally; the culture was fully alive, and when sown again it was found that it had acquired all the morphological properties of avian tuberculosis. Inoculated in fowls it was harmless. After three or four passages in the same way through the peritoneum of fowls, cultures more completely transformed were obtained which killed guinea-pigs and rabbits in just the same manner as avian tubercle did, and which were pathogenic in fowls. Nocard concludes that avian and human tuberculosis are two varieties of the same species, and not different species.

(159) The Contagiousness of Tuberculosis.

Moussu, of Alfort, who has made a special study of the conditions under which tuberculosis is transmitted by contagion, reported his results to the Congress of Tuberculosis recently held in Paris. He made an experiment which consisted in exposing to direct tuberculous contagion several animals of different species by placing them in the same byre with tuberculous cattle. Care was taken to ascertain that the animals—among which were 7 bovines, 17 goats, 2 sheep, and 1 pig—were all healthy before exposure. The 7 bovines reacted to tuberculin before they showed any clinical sign of tuberculosis. All save one were killed, and in all there were found tuberculous lesions generally limited to the mediastinal or mesenteric glands. Of the 17 goats, some reacted distinctly on being subjected to the tuberculin test; the others were shown by *post-mortem* examination to be tuberculous. The 2 sheep reacted to tuberculin. In one which was killed in no long time afterwards there was no tuberculous lesion visible to the naked eye. In the other, which was killed after a longer interval, distinct tuberculous lesions were found. The pig had been bitten on the thigh, and had been infected with tuberculosis at the site of the wound by bacilli contained in the litter of the byre. The length of stay of all the animals in the infected byre varied from five months to one or two years. The author adds that dogs and fowls exposed to contagion in the same manner always remained free from tuberculosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(160) Intermittent Immobility of the Pupil in Tabes.

Eichhorst (*Deut. med. Woch.*, June 9th, 1898) describes two cases which he has had the opportunity of examining from time to time. Out of 103 cases of tabes, only 2 showed the intermittent character of the light reflex; in all the rest the absence of the light reflex was a constant symptom. The first case was that of a woman, aged 38, who had had syphilis, and now suffered from typical tabes dorsalis, loss of knee-jerk, ataxy, and lightning pains. In September, 1893, the right pupil was larger than the left, they both reacted to light and accommodation. In January, 1894, it was noticed that both pupils had lost the light reflex, but reacted well to accommodation. During the next month the light reflex remained absent. Eichhorst lost sight of the patient for two years, but had the opportunity of examining her again in February, 1896; the light reflex had returned, all the other symptoms remained the same. For the next ten months the patient was under constant observation. The pupils continued to react to light until June 22nd, 1896. On this day the light reflex was absent, and continued to be so for the next four days. Another return of the light reflex occurred, lasting ten days. On December 17th, 1896, the pupils were immobile to light, and since this date they have continued to be so. The second case was that of a woman, aged 38, who had a suspicious history of syphilis, but this was not as clear as in the first case. She had well-marked signs of tabes, and had been under observation for six years. In 1891 the pupils were equal and reacted to light and accommodation slowly. In 1892 the patient suffered greatly from lightning pains, which were relieved by salicylates; the pupils now reacted more promptly to light than they had done in the previous year. In 1895 a perforating ulcer of the foot commenced, and the patient was worse in every way. The left pupil was immobile to light, whilst the right was mobile. In 1897 the general symptoms were getting worse. The right pupil was larger than the left, both reacted to light and accommodation.

(161) Œsophagoscopy.

Kirstein (*Berl. klin. Woch.*, July 4th, 1898) first refers to the history of œsophagoscopy, and its revival within the last two or three years. He mostly places the patient in the sitting posture, and does not use cocaine. Apart from such well-known contraindications as aneurysm, etc., the patient's neck may be stiff, or the mouth cannot be held open wide enough. There are a certain number of patients in whom œsophagoscopy is very easy; in others such an amount of force has to be used as to make it doubtful whether it should be employed. The difficulties all lie in the upper part of the œsophagus, but the tongue constitutes the chief obstacle. The tube of the œsophagus must press the tongue forwards or to one side. The author chiefly discusses the first form or median œsophagoscopy. The tongue may be so resistent that there is no possibility of pressing it down so as to obtain a view of the arytenoids which cover in the entrance into the œsophagus. If this is so, median œsophagoscopy is impossible. The œsophagoscope may strike against the vertebral column, and be with difficulty pushed on. If cocaine is used, the dorsal surface of the epiglottis should be anæsthetised. The author maintains that autoscopic examination shows whether it is possible to use the œsophagoscope. He finds that a portion of the cords must be visible by autoscopy, if the other instrument is to be used with ease. He thinks that some fourth of the cases lend themselves readily to œsophagoscopy. If the procedure is difficult, this does not mean absolute contraindication, if the end to be obtained warrants the attempt. The lateral introduction of the œsophagoscope has no real advantage over the median. Kirstein refers to the case of a sword swallower, in whom he could easily see the whole of the larynx and the trachea and bronchi by autoscopy.

(162) Tabes Dorsalis.

Senator (*Berl. klin. Woch.*, July 18th, 1898) relates two unusual cases. The first case was an example of the rapid development of the disease, so that in sixteen months the patient had very marked ataxia, disturbances of sensation, absence of knee-jerks, and incontinence of urine. There were in addition occasional clonic spasm in the arms and legs. The motor power of the legs was also diminished. The patient had a tabetic foot. The foot appeared shortened, and markedly thickened and rounded. The arch had also disappeared. According to Charcot the tabetic foot is due to changes in the bones of the tarsus and metatarsus, and later in the joints. It is apparently more a disease of the bones than of the joints. Tabetic foot is rare; according to Tansini, it would occur once in 1,250 cases of tabes. It usually appears early in the disease. In the author's case it was one of the earliest symptoms. In the second case the patient, aged 50, developed the first symptoms of the disease ten years previously. These consisted of gastric crises which occurred at varying intervals. There was no trace of ataxia. The knee-jerks were absent, and the light reflex gone. The patient developed a Dupuytren's contraction of the palmar fascia which may have been connected with the tabes. Trophic disturbances in the tendons, with consequent rupture, is known to occur in this disease. The patient also had an apoplectic attack, with unconsciousness and right-sided hemiplegia, the latter passing off in fourteen days (tabetic hemiplegia). Syphilis was denied in both cases, but gonorrhœa was admitted in the first.

(163) Post-typhoid Paralysis.

Jean Foix (*Thèse de Paris*, 1898) publishes a careful study of this affection, with an analysis of four cases. He states that paralysis may supervene in typhoid fever either during the invasion, the height of the disease, or convalescence, the latter being by far the most frequent; there may be an extended interval of apparent health between the primary disease and the paralysis. The author classifies the forms which the paralysis may take in the following order of frequency: paraplegic, hemiplegic, aphasic (chiefly in children), monoplegic, and affecting a single nerve, more particularly the median. The sensory disorders, subjective and objective, run *pari passu* with the motor; the sensibility of the affected part is always diminished and sometimes lost. The sphincters are now and then involved. Muscular atrophy is a constant symptom in peripheral neuritis of typhoid origin; it progresses with the paralysis and is often incurable. In the central forms œdematous infiltration of the cord may be found, and also of the spinal meninges; in the peripheral forms the paralysis is due to parenchymatous neuritis. The actual cause is undoubtedly the toxins produced by Eberth's bacillus, although the germ itself has occasionally been found in the nerves, and may hence play a more direct part. The paraplegic form is of two kinds, due respectively to affection of the cord and the peripheral nerves. With regard to treatment, Foix believes solely in the systematic and methodical application of the galvanic and faradic currents. By this means he claims to stop, if not to cure, the muscular atrophy. He gives a fairly comprehensive bibliography.

SURGERY.

(164) The Question of Interference in Recent Simple Fractures of the Patella.

Powers (*Annals of Surgery*, July, 1898) publishes the views of 71 distinguished surgeons on both sides of the Atlantic, given in answer to inquiries made with the object of estimating the place occupied in the surgery of to-day of the practice of operating on recent simple fracture of the patella. Analysis of these opinions on the general ground of the advisability or non-advisability of operation shows 17 as deliberately opposed to it, 9 as urging it in all cases in which competent surgical skill can be rendered amid suitable surroundings, and 41 recommending it in selected cases, while 4 prefer the use of Malgaigne's hooks. Of the total number of surgeons consulted on this subject, 70 per cent. favour operative interference in some cases. After a careful consideration of the dangers, limitations, methods, and results of operative treatment of frac-

ture of the patella, the author concludes that such treatment has a well-fixed place in modern surgery. He holds that it should be done only by adepts in surgical art; that it should be confined to healthy individuals of suitable age; that its dangers and advantages should always be fully explained to the patient; that it should be reserved for fractures presenting a separation of the fragments of over one-half of an inch, or with extensive laceration of the capsule, and that it should always be supplemented by early massage and mobilisation of the joint.

(165) Intermittent Hydrarthrosis of Neuropathic Origin.

FÉRÉ (*Revue de Chirurgie*, July, 1898) reports 5 cases of a morbid condition denominated intermittent neuropathic hydrarthrosis. This condition, which is stated to be a rare one, is characterised by intermittent and, in some instances, regularly periodical attacks of swelling of one or several joints, generally without fever and without any local sign of inflammation. In the intervals of the attacks the affected joints become quite healthy, this clinical character distinguishing intermittent hydrarthrosis from those irregular forms—*hydrarthrosis à répétition*—in which acute or subacute attacks occur in the course of some chronic articular affection. The knee is the joint that is most frequently attacked, in some cases alone, occasionally with other joints. All the joints, however, may be affected either simultaneously or alternately. This joint affection is, as a rule, a very mild one. Although there may be considerable distension of the joint, there is but very little local pain, and in most cases there is an absence of general disturbance and freedom from fever. In discussing the origin of this form of hydrarthrosis, the author, whilst not excluding malaria, infective diseases, and blood poisoning as occasional causes, attributes much importance to its frequent association with certain neuroses. Of the cases reported in this paper, it occurred with hysteria in three, with epilepsy in one, and in the remaining case with general paralysis of the insane.

(166) Dorsal Luxation of the Thumb.

VITRAC (*Rev. de Chir.*, July, 1898) has been led by clinical and experimental study of dorsal luxation of the thumb to recognise lateral displacement as an important and invariable complication of this injury. In a large majority of cases, about 95 per cent.—the displacement is inwards. The much rarer external dorsal luxation is caused by the application of great force to the thumb whilst extended and abducted. Of this special injury there are two varieties: the complete and the complex external dorsal luxations. In the former the axis of the first phalanx is perpendicular to that of the metacarpal bone. The phalanx is outside the middle line of the metacarpal bone, the head of which presents a marked projection in the first interosseous space. The long flexor tendon can be felt on the outer side of the thumb. In complex dorsal luxation the thumb is shortened, the long axis of the phalanx is parallel to that of the metacarpal bone, and the long flexor tendon cannot be felt. In both varieties the lateral ligaments of the joint and the adductor and the inner bundles of the short flexor muscles are torn through. The great difficulty and in many cases the impossibility of effecting by ordinary means reduction of an external dorsal luxation of the thumb are attributed by the author to the displacement of the long flexor tendon. If the first phalanx cannot be reduced by manipulation the surgeon should have recourse either to exposure and replacement of the flexor tendon, or by division of this structure either above the wrist or at the seat of luxation. The author is in favour of an operation that would expose the injured joint freely, and permit, besides replacement or division of the tendon, any other steps that might be found necessary.

(167) Epigastric Hernia.

MONGIE (*Gaz. Hebdom. de Méd. et de Chirurg.*, April 21st, 1898) describes an instance of this rare form of rupture which in every respect assumed the characters of an umbilical hernia. The patient was a very fat man, aged 50. Fifteen years previously he detected a lump, as big as an egg, in the epigastrium. It grew slowly, and for three years remained as large as a fœtal head. An operation was performed. The fat was very thick, but the sac was isolated and dissected out and then opened. A great mass of intestine was exposed, covered by a fat omentum, which adhered at numerous points to the sac. The neck was of extreme width, as broad as the palm of a man's hand. Nevertheless, it was effaced, the peritoneum being united with interrupted silk sutures. The anterior part of the rectal sheaths and the subcutaneous cellular tissue were treated with a continuous catgut suture. The skin wound was closed with silkworm-gut. The patient was well in a fortnight, able to eat and digest a good meal.

MIDWIFERY AND DISEASES OF WOMEN.

(168) Fibroma of Ovary.

BARREMANS (*Ann. de l'Institut de St. Anne, Bruxelles*, vol. ii, No. 1898) after studying many cases of this form of tumour, concludes that it is often impossible to distinguish it from a pedunculated subserous uterine fibroid. Hegar's method of diagnosis is trustworthy; the finger is passed into the rectum, and pressed against the tumour, at the same time the uterus is drawn downwards by a volsella. If the tumour be ovarian, it will not move; if uterine, there will be great resistance to drawing down the cervix, which will clearly be continuous with the morbid growth. True fibroma of the ovary often sets up ascites, yet is rarely adherent to adjacent structures. It is never invested by a distinct capsule, like a uterine myoma. It undergoes different kinds of degeneration, even malignant, contrary to the opinion of many observers. Thus Jacobs, of Brussels, operated on a woman, aged 51, removing a pair of ovaries converted into large tumours, which together weighed 13 lbs. Neither growth showed the least trace of sarcomatous regeneration, and were, it appears, removed entire. Nevertheless, the patient died two after years the operation from sarcoma of the peritoneum with ascites. In another case acute peritonitis occurred. At the operation the pedicle formed a cord four inches long, and twisted no fewer than five turns. The last case was also of special interest. The patient was nearly 60, and had already undergone five operations—three for uterine myoma and one for fibroma of the vagina. Before operation she suffered from great distension of the abdomen due to ascites, as well as to the large size of the ovarian tumour. When the abdominal incision was made, thirty-four pints of clear ascitic fluid escaped. The ovarian tumour weighed over 14 lbs., and was adherent to intestine. Unlike most ovarian fibromata, it did not form one mass, but consisted of an agglomeration of about fifty small tuberous bodies, an exaggeration of a condition oftener seen in uterine myoma. All the four cases recovered from the operation.

(169) Operation for Extreme Procidentia.

MARTIN (*Zeitschr. f. Geburtsh. u. Gynäk.*, vol. xxxviii, Part 2, 1898) considers that an operation for the cure of complete descent of the pelvic organs as the ultimate result of long-standing uterine prolapse must be very thorough if undertaken at all. He recently operated on an old woman of 78. The prolapse began after a first labour, and her last occurred many years ago. The bladder was quite outside the vulva. There was a huge rectocele including, besides the usual diverticulum of the anterior part of the lower third of the rectum itself, the rest of the rectum and much of the large intestine above it. This descent of large intestine involved the formation of a capacious pouch full of small intestine, and constricted at the vulva, so that there was a true "neck" as well as a true perineal sac. Martin set to work to extirpate the whole vagina. Anteriorly this was easy: its thickened wall was dissected off the bladder, which was pushed upwards, then the uterus and appendages were removed with little difficulty. The recto-vaginal septum gave, on the other hand, much trouble. Martin set to work to separate the rectum from its anterior connections. He dissected till he reached the peritoneum. Then he pushed upwards a long segment of liberated gut, and sutured a line of rectal tissue, at a reasonable distance from the anus, to the very small fringe of vaginal tissue which he had left around the vulvar orifice. He admits that a "fearful" gap was left to fill in. Fortunately the integument in the aged patient was so lax that he could draw it inwards from

around the vulva, and suture it so as to close in the rectum, support the mass of viscera, and obliterate the vulvar orifice, leaving open room for the urinary meatus. Yet there appears to have been no abnormal tension on the skin thus employed as a pelvic diaphragm. The patient passed urine naturally from the first, and stood upright, contrary to orders, on the second night. On the twelfth day it was difficult to keep her in bed. The skin had healed rapidly, and supported with ease the bladder and intestines, no heavy, diseased internal genitals being left to bear downwards.

(170) Removal of an Extraperitoneal Uterine Stump.

DARTIGUES (*Bull. de la Soc. Anat. de Paris*, April-May, 1898) relates an interesting hysterectomy recently performed by Pozzi. Two years ago Picqué removed a large fibroid, and, as the pedicle was narrow, applied the *serre-nœud*. A bad hernia developed in the lower border of the cicatrix; therefore Pozzi removed the whole remainder of the uterus with the cervix and integuments in the surrounding cicatrix. A small interstitial myoma had developed in the stump anteriorly, immediately under its attachment to the cicatrix, so that the whole stump assumed the appearance of a normal uterus with the body bent naturally on the cervix. There were also intestinal adhesions, and, what was even more serious, a number of fibrous cords looking like the cordæ tendineæ of the heart ran from the stump upwards to the back of the abdominal wall. Loops of intestine had worked their way into the narrow gaps between these cords.

(171) Cystic Fibroma of the Round Ligament.

BLUHM (*Archiv f. Gynäk.*, vol. lv, Part 3, 1898) describes a tumour removed from the round ligament. The patient was a housemaid, aged 20; she suffered from a painful swelling in the right inguinal canal, apparently a gland or a hernia of the ovary. The swelling always increased shortly before the period, and subsided afterwards. Its removal was not very difficult, and it was found to grow from the right round ligament. That process of the uterus bore a central canal, which was pervious for half an inch backwards, and ended anteriorly as a cyst in the middle of the tumour. On removal the tumour, as big as a plum, was seen to be partly cystic; the cysts were very irregular, and in fact were rather lymphangiectases. The solid material was fibrous tissue with few connective tissue cells, and here and there were strands of plain muscle cells. There was a capsule consisting of connective tissue, rich in fat and striated muscular fibres. Besides the lymph spaces there were numerous glandular structures, which Bluhm traces to the Wolffian body. Cullen, Martin, and Pfannenstiel have recently recorded similar cases.

(172) Cicatricial Atresia of Os Uteri.

BOISSARD (*Gaz. Hebdom. de Méd. et de Chirurg.*, April 21st, 1898) reports a case which occurred at the Maternité, Paris. The uterine cavity had been swabbed, and chloride of zinc applied to the cervix. A few months later the patient returned, complaining of severe abdominal pain. The uterus was very bulky and fluctuated. Not a trace of an os externum could be found. The uterus was punctured from the vagina and a tumblerful of dark blood escaped. A new os was made by incision and the wound carefully sutured on each side of the cervix so as to prevent it from closing again over the cervical canal. The cervix has remained open. Bar, in a discussion on Boissard's case, noted an extreme instance in his own experience. The cervix was entirely buried in a scar, the result of a previous confinement, and hysterectomy had to be performed.

(173) Congenital Diaphragmatic Hernia in Pregnancy.

KEIM, ROSENTHAL, AND HUGUIER (*Progrès Méd.*, June 4th, 1898) showed at a recent meeting of the Obstetrical Society of Paris the organs of a patient who had died at the fifth month of pregnancy from dyspnœa and hæmatemesis. There was a congenital diaphragmatic hernia on the left side. The stomach and most of the intestinal coils were in the left pleural cavity; the heart lay on the right side, and the left lung was rudimentary. The authors pointed out that while pregnancy might exercise a beneficial effect on external hernias, such as femoral and inguinal, it had sometimes an opposite effect on internal ones.

(174) Second Cæsarean Section on a Rachitic Patient.

LAMBINON (*Journal d'Accouchements*, March 27th, 1898) records a case in which Charles operated twice on the same patient. The same operator delivered another patient three times by the same method. He advocates Cæsarean section in contradistinction to hysterectomy in these cases, and has performed in all nine Cæsarean sections, with the result of saving the nine mothers and the nine children. The author believes it always to be advisable to await the onset of labour before operating, since natural dilatation of the cervix favours the discharge of the lochia. It is an advantage during the operation to bring the uterus out through the abdominal wound to facilitate the Cæsarean section and the suture of the uterine wound. After removal of the after-birth the decidual membranes should always be removed. If Sänger's sutures be used, a perfect cicatrix is formed and catgut is not essential.

(175) Repeated Extrauterine Pregnancy.

DORLAND (*Amer. Jour. of Obstet.*, April, 1898) records a case of this rare condition. The first tubal pregnancy occurred on the left side, in a patient aged 28, who had had four children, the eldest 6 years, and the youngest 15 months. She was operated upon at about the seventh week, and the embryo was found within the tube. Her second tubal pregnancy occurred twenty months later, on the right side. At the operation the condition was found to be an instance of Bland Sutton's tubal abortion. Dorland has found that sixteen cases besides his own are on record, including one just lately reported by Schoolfield. He gives complete references.

(176) Precocious Puberty.

DE VLACCOS (*Ann. de Gynéc. et d'Obstét.*, March, 1898) gives a full report of a distinct instance of this phenomenon, with a photogravure of the patient. She was born in August, 1892, and has all the appearance of a child aged 10, excepting that as far as the genital and mammary regions are concerned she is yet more developed. In height she measures 3 feet 8 inches; her weight is 3 st. 8 lbs. The hair of her head is very abundant, whilst her intellectual development is not above her years. When six months old a bloody vaginal discharge was noticed, and it returned in about six weeks. The interval steadily became shorter, and now the catamenia are monthly, lasting for about four days, the child becoming depressed in spirits at each period. The mammæ resemble those of a girl of 17, and not only has hair grown on the pudenda, but much subcutaneous fat has developed in the region of the thighs and nates as normally occurs at puberty.

THERAPEUTICS.

(177) Ox Bile in Biliary Lithiasis.

GAUTIER (*Rev. méd. de la Suisse rom.*, June 20th, 1898) has tried ox bile internally in biliary colic. Prévost and Binet, in 1888, concluded that bile was the most powerful cholagogue, and Schiff in 1873 recommended sodic cholate as a prophylactic against biliary lithiasis. As the cholate of sodium is expensive and difficult to prepare, Gautier had an extract of bile made. The bile is decolorised to get rid of the toxic colouring matter (especially bilirubin), and then sterilised at 104° to 105° C.; 100 g. of bile produce 10 g. of the extract. Of this latter, he gives 10 to 20 centigrammes (1½ to 3 gr.) in pill or capsules twice a day after meals. They may be continued for years, or given intermittently whenever there is any sign of colic. The results Gautier has obtained in several cases have been brilliant. It cannot, however, be regarded as a certain preventive of colic, since if the gall bladder is full of stones it does not cause them to disappear, though its effect will be evident later—that is, it prevents the formation of fresh calculi, and, when those already present have been passed, the trouble will be over. The treatment is also to be recommended after operations for the evacuation of calculi to prevent relapses. Thus it is most important to be able to recognise cases early before many stones have been formed. A form of colic, which is very liable to be overlooked, simulates gastralgia (abortive

biliary colic), and is characterised by the pain beginning as late as three or four hours after meals, very quickly attaining a maximum, and then gradually vanishing. This pain is localised in the epigastrium, or slightly to its right, radiates downwards and to the back, and is accompanied constantly by considerable meteorism. The epigastrium and right hypochondrium are tender; constipation is present before and during the attack, and the fæces are dry and pale. Such an attack may last but one day, or recur every day for weeks, and it is sometimes the only painful sign of gall stones. The author has treated several such cases, some of which had been treated without result for a long time for gastralgia, with success. Even large doses (7½ to 9¼ gr.), which were given for obstructive jaundice, were well borne.

(178) Tannate of Orexin in Anorexia.

Bodenstein (*Wien. med. Presse*, 1898, No. 26) gives the result of his experience with this new stomachic, so much recommended by Penzoldt and his pupils. Tannate of orexin forms a yellowish-white powder, odourless and almost tasteless, insoluble in water, but readily dissolved by weak acids, such as the gastric juice. It acts favourably both on the mobility of the stomach and the secretion of hydrochloric acid, and so leads, as has been experimentally established, to a notable shortening of the period of digestion; it is hence even more valuable in the functional than in the organic diseases of the stomach. The author has found it of particular use in the inappetence of childhood, as during convalescence from diphtheria and other acute specifics, and in chronic affections such as scrofula and anæmia. He gives it in the form of chocolate tabloids, each containing 7½ gr., twice a day two hours before meals. In adults its good effects are most marked in the anorexia of phthisis, more especially where there is tuberculous enteritis with colloquative diarrhœa; it is found to succeed here where all the ordinary stomachic bitters have failed. In a case of uræmic vomiting, previously influenced only by injection of morphine, and in 2 of hyperemesis gravidarum, this distressing symptom was alleviated. In very few of the author's cases was the remedy without effect; in none did any untoward complication supervene. It was always well borne, and the author emphasises the remarkable results obtained by him in the anorexia of consumptives and chlorotics, and in gastric neuroses and atony.

(179) Protargol.

Pergens (*Klin. Monats. f. Augen.*, April, 1898) thinks highly of this silver preparation in acute catarrhal forms of conjunctivitis. It contains 8.3 per cent. of silver, and dissolves in water to the extent of 50 per cent., forming a brownish solution, which becomes darker on exposure to light. It is claimed that it does not stain linen, but Pergens finds that it does. He has employed 2 to 10 per cent. solutions; even 20 per cent. solutions cause no pain or irritation. In acute conjunctivitis the drops should be used three, six, or twelve times a day. In suppuration of the lachrymal sac, syringing out with 10 per cent. solution is very effective. In chronic forms of conjunctivitis with hyperplasia the results are not so satisfactory.

PATHOLOGY.

(180) A Pathogenic Streptothrix in the Sputum.

Rullmann (*Münch. med. Woch.*, July 19th, 1898) details the bacteriological examination of some sputum obtained from a case of v. Ziemssen's, in which a pathogenic cladothrix was supposed to be present, and to be derived from a localised lesion near the root of the right lung. The sputum contained hard masses composed of a pure culture of a fungus. Branching was only very rarely found in it. It stained easily but irregularly with methylene blue and fuchsin, and was not decolorised by Gram's method. On some culture media it grew in spindles, and also in rods with clubbed ends resembling the diphtheria bacillus. It was only on Loeffler's serum and on egg albumen in the presence of oxygen that it produced threads. It was a question as to whether it was a new streptothrix differing from that of Israel. Other observers have seen streptothrix grow in a form resembling the diphtheria bacillus. This fact shows the relationship between it and the diphtheria group. It would almost appear impossible to separate streptothrix from actinomyces. There have been several instances recorded of recent times of streptothrix being pathogenic to man. The author then refers to a case recorded by Celli, in which the infection was apparently derived from horse fodder. Rullmann then details a large number of experiments on animals with the streptothrix obtained from the above-named sputum. Mice, guinea-pigs, rabbits, and a horse were variously inoculated, subcutaneously, intraperitoneally, or cultures were injected into the trachea or into the circulation. In whatever way the microbe was introduced a more or less general infection followed, proved to be due to the streptothrix, as this fungus could be again cultivated from the diseased organs. To the statement that the streptothrix can produce a pseudo-tuberculosis the author would add that it can give rise to suppuration in glands, as was found in his experiments. No characteristic poison could be obtained from broth cultures, but further experiments will be made.

(181) The Nature of Venereal Warts.

Cathcart (*Journ. of Path. and Bact.*, July, 1897) combats the usual statement that venereal warts are due to the irritation of gonorrhœal or other discharges or to syphilis. He regards them as true tumours, and directly contagious in themselves. He concludes: (1) Warts may exist without any irritating cause such as gonorrhœal or other discharge being present. If such irritant is present it is not the cause of the warts. (2) Local irritation and discharges may exist indefinitely causing warts. (3) Warts may occur soon after connection without any long continued irritation being possible. (4) The overgrowth of papillæ in elephantiasis, and the warty condition of the skin near urinary fistulæ and callous ulcers are not true warts. (5) Warts are not syphilitic since they occur frequently in the absence of any symptoms of syphilis. Warts and condylomata may exist in the same patient, but the wart is more irregular and pedunculated, and remains after antisyphilitic treatment. (6) Warts differ from condylomata in their mode of growth, the condyloma being mainly an overgrowth of connective tissue to which the epithelial covering is secondary; whereas the wart is essentially an epithelial growth. (7) Warts are directly contagious without any discharge being present in either party, and may occur without intercourse. Several cases are quoted to support this statement.

(182) The Neutralisation of Toxins by the Digestive Secretions.

Nencki, Sieber, and E. S. Simanowski (*Centralbl. für Bacteriol.*, 19-20, 1898) state that most toxins and antitoxins appear inert when introduced into the stomach or rectum, and they do not pass unaltered through the alimentary tract, as neither urine nor fæces contain any part of them after the experiment. Emulsions of stomach, and of small and large intestines of rabbits and guinea-pigs, carefully filtered will, when mixed with the diphtherial toxin in varying proportions, generally neutralise the same. The emulsion of small intestine is the most efficacious. It owes its efficacy to the pancreatic juice. This secretion will neutralise the diphtherial toxin at the temperature of the room, but better still in the incubator; 1 g. of the secretion will neutralise 10,000 times the fatal dose of the toxin. The gastric juice is less active. This difference in activity does not depend on acidity or alkalinity. Watery pancreatic extracts are equally efficacious. As regards the tetano-toxin matters are reversed, the gastric secretion producing the strongest neutralising effect, similarly the bile if mixed with the toxin in the right proportion. Bile when mixed with pancreatic juice is more powerful than when employed by itself. The larger the various secretions remain mixed with the toxins prior to injection, the more powerful is their neutralising effect. The juices neutralise but do not render immune, for if juices and toxins be injected separately the action of the latter is not interfered with; in other words, the enzymes must have the opportunity of acting directly upon the toxins in order to neutralise them.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(183) Hereditary Cerebellar Ataxy.

Miura (Reprint from *Proceedings of Medical Faculty, Royal Japanese University*, Tokio, 1898) reports 3 cases of this rare disease, adding a long and valuable clinical study. Two of the patients were brothers, and suggestions of a similar affection were present in other members of the family—in this instance the male members of the family were most affected, but the disease was transmitted on the female side. In one of the brothers (the younger) the gait began to be affected at the age of 25 and the disease was fully developed when he was 33; in the other it did not commence till the latter age. This late onset is characteristic of the disease. In both cases the affection began with a febrile attack of unknown nature lasting 10 to 15 days. The younger brother became unfit for work at 37 and died 5 months later: the eldest was not incapacitated till 42, and was alive when the memoir was written. In both cases the palpebral fissure was narrowed, but the pupils equal; in the first the reaction to light and accommodation was sluggish and there was slight horizontal nystagmus. In both there was great limitation of the visual field, being more marked in the vertical direction in the younger, in the horizontal in the elder: the boundaries of the optic disc were almost indistinguishable in both cases and the disc itself highly injected in the younger. In both the speech was stuttering and explosive and accompanied with spitting of saliva. The voluntary movements of the extremities were profoundly affected; swaying was present even while sitting, and neither patient could stand with his feet together. The gait was zigzag; the younger brother could only walk with a stick and while looking at the ground, the elder was several times arrested for supposed drunkenness. The inco-ordination extended to the muscles of the arms and face, resulting in irregular and often exaggerated movements. There was more or less loss of power in all the limbs; the tendon reflexes were present but not increased. In the younger there was temporary disturbance of the bladder, in the elder impotence. Cutaneous sensibility was unaffected in the former, lost on the outer side of the leg in the latter. The cutaneous reflexes were on the whole increased, and there was no muscular atrophy. The mental condition was low. The necropsy on the younger brother showed a marked atrophy of the pons, medulla, cerebellum and cord relatively to the rest of the central nervous system. There were no noteworthy qualitative changes and the posterior and lateral columns of the cord were not degenerated; this presents a sharp contrast to the condition in Friedreich's disease. In the lower part of the dorsal region the central canal of the cord was dilated and immediately below it was for a short space double. The third case was a younger sister of the others; in her the disease was much less marked, with the exception of the fundus and the field of vision, which were greatly and characteristically affected. In discussing the disease the author lays stress on the imperceptible manner in which various cases pass from this typical cerebellar to the better known spinal form.

(184) Direct Bronchoscopy.

Killian (*Münch. med. Woch.*, July 5th, 1898) says that the bronchi may be examined either indirectly by means of the mirror, or by direct superior or inferior tracheoscopy. By the former method only the commencement of the bronchi, and especially the right, can be seen. By Kirstein's method the author has been able to see more than by the mirror, and even in children whom it is impossible to laryngoscope good results have been thus obtained. A little more of the main bronchi can be seen by turning the patient's head to one side. Tracheoscopy can be carried out by the tube used for œsophagoscopy. These tubes may be passed into the main bronchi. In tracheoscopy through a tracheotomy wound the mirror is not of much value. A considerable improvement is effected by attaching Casper's electroscope to the tubes. The importance of obtaining a view into the bronchi is obvious in the case of foreign bodies. The author says that under cocaine anæsthesia it becomes possible to introduce stiff tubes into the chief bronchi, and so to change the position as to obtain a view of the lumen of the main bronchi and even of their branches. It is a matter of indifference to the patient whether the tube stops at the bifurcation or is pushed further on, provided the cocainisation is sufficient. The well oiled and warm tube speculum is introduced through the tracheal wound, the head hanging backwards and inclined to one side. The illumination is obtained from Kirstein's frontal lamp or Casper's electric lamp. The tube is pushed on carefully under this inspection. The author gives examples showing the possibility of this procedure. A similar result may be obtained by passing the tubes through the mouth. The pharynx and larynx must be cocainised by a 20 per cent. solution. The mandrin may be required at a certain stage in the manipulation. No unfavourable effect on the breathing was noted. In bronchial catarrh there may be greater irritability, but coughing brings no harm with it. Direct superior bronchoscopy must be limited to patients who can be examined by autoscopy, and who are not too ill or anxious. Perhaps narcosis may assist. Inferior bronchoscopy is always possible. The advantages obtained by suitable position apply to bronchoscopy as well as to laryngeal autoscopy. The author hopes that apart from foreign bodies and bronchial affections, direct bronchoscopy may be useful in the diagnosis and treatment of lung affections.

(185) Preroseolar Osteo-periostitis.

Etienne publishes three observations (*Journ. de Méd.*, July 25th, 1898) of instances of multiple osteo-periostitis occurring in the first two or three weeks following a primary sore and before the appearance of roseola. In one of these cases the lesions were very diffuse, occupying the head and all four limbs; in the other two they were limited to the face. They differ completely from the gummatous form which occurs later, and also from the early variety, with great tendency to cause destruction of tissues. On the contrary, their tendency is to rapid disappearance. This preroseolar form of osteo-periostitis seems to be decidedly rare, for the author quotes Mauriac as having met with only very few instances in several thousand cases of syphilis observed by him. At the same time, he suggests that this rarity may be more apparent than real, as some swelling over the bones may quite well escape observation, notwithstanding the accompanying pain, and it is a well-known fact that very severe cephalalgia may be present as one of the early manifestations of syphilis, and that the only drug capable of producing the least effect is iodide of potassium. The author suggests that this intense headache may be due to cranial periostitis, perhaps wholly internal.

SURGERY.

(186) Tuberculosis of the Middle Ear.

Winckler (*Wien. med. Presse*, 1898, Nos. 17 and 18) records 9 cases of this rare affection, the diagnosis of which is attended with many difficulties. The only safe sign is the demonstration of the presence of the tubercle bacillus in the exuded pus. In 5 cases the disease assumed an extended and fungating form; of these, 1. a child of 3, succumbed to tubercle in the region of the third ventricle, while the others, 2 of which were exhibited, recovered. In 4 cases the tuberculosis was of the ulcerative type; only 1 of these recovered, the others all dying of diffuse purulent meningitis. Of the whole 9 cases, in 4 the tuberculous process was limited to the ear; all these were of the fungating type, and they included the fatal one in this category. The author is of opinion that his results show the affection not to be perfectly hopeless. He hopes that when the diagnosis is made earlier, so that operation can be undertaken at a more favourable period, the results in primary tuberculosis of the middle ear will be still more favourable. He believes that in a number of cases early diagnosis is not impossible if the symptom-complex is carefully studied, and every suspicious case kept under continuous observation and frequently examined with the auriscope. The only treatment is to lay the affected portion

freely open, including the antrum and the attic, if necessary to remove all the tuberculous material, pack with sterile gauze, and follow the ordinary treatment of consumptives. In those in whom advanced tuberculosis is present in other parts of the body, treatment of the ear is, as a rule, useless.

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(187) Treatment of Varicocele.

N. Senn (*Philadel. Med. Journ.*, June 18th, 1898) is of opinion that too many varicoceles are operated upon, and that the desire for operation in many patients is due to sexual neurasthenia. The author examined 9,815 recruits for volunteer service, and found 2,078 to have varicocele, that is, about 21 per cent. Most of them were slight cases; 15 affected the right side only, and 18 were bilateral. More than half were unaware of their complaint, and atrophy of testicle was never found. Senn concludes that varicocele in varying degrees is met with in nearly one out of four men between the ages of 18 and 30; that of itself it is seldom the cause of any noticeable disturbance; that it seldom causes disability for military service; that operation is seldom indicated; that patients who apply for treatment do so in consequence of nervous disturbances independent of the varicocele.

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(188) Congenital Tumour of the Hard Palate.

W. N. Berkeley (*Medical and Surgical Report of the Presbyterian Hospital, New York*, 1898, p. 347) describes the case of an infant admitted to hospital when half an hour old with a tense smoothly nodular tumour, as large as a man's fist, profecting from the mouth. It was found to be attached by a pedicle, 1 inch in diameter, to the posterior part of the hard palate. The tumour was at once removed by the cautery without any loss of blood. The child died of lung complications. The tumour was partly cystic, and contained cartilage, embryonic connective tissue, blood and lymph vessels, smooth muscle, and fat. It was covered over by stratified epithelium, partly squamous, partly columnar, the latter showing some cilia. The tumour may be regarded as a teratoma, with a large amount of hæmo-lymphangomatous growth.

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(189) Actinomycosis in Man.

Fantino (*Rif. Med.*, April 20th, 21st, and 22nd, 1898) records 9 cases of actinomycosis in man, of which 1 was fatal. The upper jaw was the seat of disease in 1 of the cases, the lower jaw in 5, the neck in 1, and the abdomen in 2. In all the facial cases dental caries was present, which probably favoured the localisation of the disease. No foreign bodies were found in any of the diseased masses. Contracture of the masseters occurred in 3 of the cases. Pain was not by any means a constant or marked symptom. Fever was slight or even absent. The difficulty of finding the actinomycetes, especially in the later stages of the disease, was well exemplified; in one of the cases they could not be found until after three months, although repeatedly looked for. Generally they are more easily found in the early stages of the disease, when fortunately the most can be done for the patient. The author points out some of the cardinal features of the disease and the way it differs from chronic inflammation, tubercle, carcinoma, syphilis, and other conditions. To show that actinomycosis in man is not so rare as is commonly supposed, the author has tabulated 39 cases published in Italy since 1882, not counting the 9 now reported by him.

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(190) Cancer of the Breast.

Fantino (*Rif. Med.*, May 30th-June 2nd, 1898), *apropos* of the recent discussion at one of the London medical societies on the surgical treatment of cancer of the breast, has examined the statistics of Professor Carle's clinic. This includes 228 distinct cases. The author concludes strongly in favour of the more radical operation of to-day, Professor Carle, for example, usually removes entirely the external fascia over the pectoralis major even in cancers that are quite free. Careful examination of the glands in the neighbourhood, whether affected or not, leads the author to support Stiles's theory as to embolic diffusion. In 33 cases operated upon during the last sixteen months, out of 24 large glands 23 were infiltrated with disease. The smaller glands were examined twenty-six times, and were found affected ten times; in many cases no such infiltration was suspected. Out of 280 cases of mammary tumour, 81.5 per cent. were carcinoma, 16.4 per cent. fibro-adenoma, 2.1 per cent. adeno-sarcoma or myxosarcoma. In 10 per cent. there was a clear hereditary history of cancer. Relapses occurred in 14.5 per cent. in the first three months, 36.3 per cent. in the first six months, and 66.3 per cent. within the year. Out of 100 cases operated on more than three years ago 30 are alive and well, 3 alive but with relapses, 61 died from relapses, and 6 died from other causes. Relapse generally occurred in the cicatrix or skin. Very obstinate and frequent relapse was often seen after typically scirrhous and chronic forms of tumour. The marked increase in the percentage of cures and the diminution in external recurrence after the modern radical operation are strong points in its favour. As to the operative mortality, among the 228 cases there was only one death, on the fiftieth day, and here nephritis and pneumonia were present.

MIDWIFERY AND DISEASES OF WOMEN.

(191) Operative Treatment of Pelvic Suppuration.

Le Dentu (*Bull. et Mém. de la Soc. de Chir.*, No. 26, 1898), in the course of a discussion on the treatment of pelvic suppurations in the female, expressed at some length his views on the indications and contraindications of incision of vaginal *culs-de-sac*. Such treatment, he states in a concluding summary, is indicated in (1) a case of suppurative hæmatocele in which there is a single sac; (2) a case of suppurative hæmatocele made up of numerous deposits included within septa, provided in such case there be a probability of a solid boundary of adhesions between the tumour and the peritoneal cavity; (3) a case of unilateral salpingitis or suppurating ovaritis, on condition that the sac be adherent to the mucous membrane of the vagina, or at least that it be not much raised above the *cul-de-sac*; (4) a case of double suppurating salpingitis, provided the two sacs have run together so as to form a single sac, and do not project to any great extent into the pelvic cavity. In such cases as these, however, a long history of pelvic mischief and a chronic course of the disease would indicate some other treatment. Simple incision of either the anterior or the posterior vaginal *cul-de-sac* is decidedly contraindicated in cases (1) of multilocular suppurating hæmatocele when the superior limits of the disease are ill-defined, and when there is reason to fear the rupture of adhesions and penetration into the peritoneal cavity during the operation; (2) when there are grounds for suspecting the existence of a salpingitis or ovaritis, either single or double, which is complicated with encysted peritonitis; (3) when the swelling, even though small, is situated far above either *cul-de-sac*; (4) when the omentum just above the disease is thickened and indurated, and forms a considerable portion of the swelling. In cases in which incision of either *cul-de-sac* or of both is contraindicated the surgeon should have recourse either to vaginal hysterectomy or to laparotomy.

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(192) Placental Tumours.

Bode and Schmorl (*Arch. f. Gynäk.*, vol. lvi, Part 1) met with an instance of a placental tumour with the characters of a fibroma, but resembling also the tumours described as myxoma fibrosum or fibro-sarcoma of the placenta. It was the size of a fist. The patient was a 3-para, and was acutely anæmic; the child was 35 cm. long and stillborn, showing beginning maceration. There was a sharp *post-partum* hæmorrhage which brought the patient to a condition of collapse, but which was got under control, and the patient made a normal recovery. In cases which the authors have collected there has usually been no symptom pointing to any abnormality; the labours have been generally normal and at term, though sometimes premature; once or twice there were twins. Severe bleeding was the most frequent after-effect. There appears to have been no permanent deterioration of the mother's health. The placenta in the authors' case presented a groove dividing it into two parts, the larger being normal placenta, while the tumour formed the smaller part. The latter was smooth on its maternal surface and reddish brown;

the amnion passed over it in the usual way. On section it appeared nearly homogeneous, and brownish or greyish red. Microscopically the tumour had no proper capsule. Two conditions were distinguishable; on the one hand, a thickened fibrous tissue containing numerous large branching vessels; on the other hand, the parenchyma proper of the tumour; in this round and spindle cells could be observed, rather larger than white blood corpuscles, and some of them branching. The cells lay largely in groups, separated by the fibrous tissue. In places the vessels were so large and numerous as to suggest the condition of angioma. The central parts of the tumour showed in places a mucoid degeneration. The tumour was to be considered, not as a sarcoma, but as a fibroma very rich in cells, or as a fibromyxoma teleangiectodes.

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(193) "Fibroid" of the Fallopian Tube.

Jacobs (*Centralbl. f. Gynäk.*, No. 29, 1898) finds that only 6 authentic cases of fibromyoma of the tube have been recorded. He adds a seventh. The patient was 41. Nineteen years earlier she suffered from retained placenta followed by prolapse, and was never afterwards free from hypogastric pain. For six months before operation she was subject to diarrhœa and pain in the left iliac fossa. Both appendages were removed, as well as the uterus above the cervix. In the middle of the left Fallopian tube was a tumour as big as an orange; it had been distinguished before the operation, and adhered to omentum and intestine. The tube itself was dilated and obstructed at the fimbriated extremity; it was, like its fellow, the seat of hypertrophic interstitial salpingitis. The tumour was made up of distinct plain muscle cells and fibrous tissue, the latter predominating. There was a softened area in the middle, apparently due to the dilatation of lymph spaces, and certainly not malignant. The patient recovered from the operation.

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(194) Carbamic Acid in Eclampsia.

K. B. Hofmann (*Centralbl. f. inn. Med.*, July 16th, 1898) has examined the cerebro-spinal fluid and urine from a case of eclampsia. The fluid was clear, alkaline, and the specific gravity 1009. With copper sulphate and sodic hydrate it gave a violet colour, but no biuret action. It contained a reducing substance the exact nature of which could not be made out. The author found a small quantity of carbamic acid present. The urine obtained a few days later than the cerebrospinal fluid also contained carbamic acid. An elaborate account of the chemistry is then given, Drechsel's improved method being the one employed. The presence of Drechsel's reaction shows that in the cerebro-spinal fluid in eclampsia there is an abnormal amount of an ammonium salt which in the presence of an alkaline carbonate and carbon dioxide is converted into ammonium carbaminate. This must also occur in the blood and other fluids, and therefore a toxæmia with ammonium carbaminate results. The high percentage of ammonium salts in the urine is in favour of this view. Further investigations are needed as to the presence of this salt in the cerebro-spinal fluid both of those suffering from eclampsia and from healthy individuals.

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(195) Puerperal Gangrene.

Magnus Tate (*St. Louis Med. and Surg. Journ.*, April, 1898) recalls Simpson's 5 cases, and adds 1 in his own experience. The patient was a primipara, aged 25, in good health. When six and a-half months pregnant, she suffered from œdema of the face and feet two days after a chill. The abdomen became swollen. Three very severe convulsions occurred on the ninth day. This was followed by orthopnœa, and ten days after the fit she was delivered of a dead child; the labour was nearly painless. Next day the patient complained of a "sleepy feeling" in the left foot, with some pain. These symptoms passed away, but returned a week later. The right foot was also affected, and a bluish patch appeared on each ankle, the discoloration spreading rapidly up the legs nearly to the knees, with no line of demarcation. The feet were greenish-black, dry, leathery, wrinkled, cold, and clammy. The thighs were warm, but no pulsation of the femoral artery could be detected. The respiration and heart sounds were normal, but the urine was highly albuminous. The patient was perfectly rational, and complained of intolerable pain in the feet and legs. At the end of eleven days the temperature became high and mounted steadily, death occurring three days later. A few hours before death there was marked disintegration of tissue.

THERAPEUTICS.

(196) The Action of Peronine on Cough.

A. Mayor (*Rev. Méd. de la Suisse Rom.*, June 20th, 1898) and West have investigated the action of the hydrochlorate of a benzylic ether of morphine, named by its introducer, Merck, peronine (C_{21}, H_{25}, NO_3). It has been used clinically as a substitute for codeine in doses of 0.02 to 0.04 centigrammes (about $\frac{1}{333}$ to $\frac{1}{166}$ gr.) two or three times a day, and has been praised especially for its action in allaying the cough of phthisis, chronic bronchitis, and whooping-cough, and is said to produce neither sweats nor dyspepsia. The authors conclude: (1) Its action approaches that of codeine more than any other alkaloid; thus in the rabbit it has but a slight narcotic action, and when the dose is increased it causes not narcosis but convulsions. (2) These convulsions are not of spinal origin, as those of strychnine and thebaine, but of cerebo-bulbar, and cause death by asphyxia, which results with a dose four times less than in the case of codeine. (3) If life is prolonged by artificial respiration death ensues from arrest of the heart, and it is thus a cardiac poison. (4) It is remarkable that an alkaloid so feebly narcotic calms cough almost as well as morphine. Thus after tracheotomy the vapour of ammonia always caused a fit of coughing in rabbits. But when 5 milligrammes of peronine per kilo. of body weight were injected the tracheo-bronchial sensibility was diminished to such an extent that ammonia caused no cough or a very slight one, though the animals were only slightly somnolent. (5) Its effect is still more remarkable if the drug is pushed to the verge of convulsions when there is no somnolence at all, and all the reflexes are extremely active, except that of coughing, which is absent. (6) Peronine is therefore a real substitute for codeine, but considering the former's greater toxicity has been employed hitherto in rather too large doses.

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(197) Diet in Diabetes.

Treupel (*Munch. med. Woch.*, July 26th, 1898) discusses some points in diet. In diabetes the objects are (*a*) to lessen the production of sugar, and (*b*) to promote the consumption of the sugar already present in the fluids of the body. Both these objects are effected by limiting the carbohydrates. Thus a strict diet of albumens and fat should be imposed, but for not longer than four weeks. Then an amount of carbohydrates may be allowed according to the case. Beer should as far as possible be avoided. Pentose and ramnose belong to carbohydrates, which are well borne without increasing the amount of the sugar. Individualisation must always be practised in the treatment of diabetes. The author then details (*a*) strict and (*b*) more generous diets for diebetics. As regards subcutaneous feeding, fat is best adapted for it. After the injection of sugar painful infiltration is often observed, even when sterilised solutions are used. Albuminous solutions are not to be recommended. Artificial food stuffs are useful in cases of blood diseases accompanied by wasting, in the febrile, and especially in tuberculosis where the ordinary food stuffs cannot be employed. Artifically prepared fats are comparatively little used, but lipanin and some others are readily absorbed. The ordinary fats, as in butter, cream, yoke of egg, are, however, very digestible. Many artificial preparations of carbohydrates are in use. In infants' foods diastase has converted the starch into sugar. It must be remembered that milk, sugar, and other forms (especially honey), contain valuable and soluble carbohydrates, and have the advantage of being cheap. Of all artificial foods, the albuminous are the most important. Somatose, nutrose, eucasin, sanatogen, and sanose, are excellent preparations. The two essentials of these albuminous foods are that they should be palatable and cheap. As yet an ideal preparation—that is, one which will satisfy these two conditions—has not been discovered.

(198) The Treatment of Chronic Rheumatism.

A. Bier (*Münch. med. Woch.*, August 2nd, 1898) discusses the use of hot air and passive hyperæmia in the treatment of this disease. He says that some years ago he used the hot air treatment for chronic rheumatism after having tried it for tuberculous joints. Recently the hot air method has attracted much attention. Undoubtedly it lessens in a striking manner both the pain and stiffness in the joint. Almost the only effect produced by the hot air is the active hyperæmia. The author maintains that he can get better results by passive hyperæmia. Often the good results are marked, and the details of such a case are given. In rare cases of chronic rheumatism Bier has met with patients who maintained that they obtained benefit from hot air when the passive hyperæmia failed. He has only seen himself one patient who was not improved by the latter method. In advanced cases the pain at any rate can be relieved. A further advantage of passive hyperæmia is that the method of using it is simpler than in the case of hot air. Both Schüller and Baümler say that they have seen good results from it. Passive hyperæmia, if properly carried out, should produce no pain. The leg should be bandaged from the toes up to the affected knee, and then an elastic bandage is applied above the knee over another bandage. Each case must be observed as to how far the passive hyperæmia can be borne with safety. It must not cause pain, and if pain is previously present it should be relieved by it. If the joint is painful the method may be used continuously, but the position of the bandage must be changed every twelve hours. In other cases it may be employed either during the day or night. The diseased joint itself is not bandaged. If pain is produced by this treatment it is due to its faulty application.

(199) Saccharated Extract of Thymol in Whooping-Cough.

Fischer (*Deut. med. Woch.*, July 7th, 1898) treated 5 of his own children with thymol extract prepared by Täschner in Berlin, and called by him "pertussin." The mixture is sold in bottles, and has a brownish colour, aromatic smell, and is of a syrupy consistence. Täschner's formula is the following: Thymol, 1 part; and syrup, 7 parts. Children take it well in doses from a half to one tablespoonful three times a day. The effect of the medicine was quite remarkable in these cases; the distressing cough was soon relieved, and the attacks of cyanosis speedily diminished. Several of the well-known remedies had previously been tried, with no success. The author tried giving the extract in other conditions, such as chronic catarrh of the larynx and bronchi; these cases were greatly relieved by pertussin, it diminished the tendency to spasmodic cough, and at the same time loosened the phlegm. Cases of emphysema, in which there was a sense of oppression on the chest, were greatly benefited, and in a few days the patients were able to walk upstairs with little discomfort.

PATHOLOGY.

(200) Trichinosis.

T. R. Brown (reprint from *Journ. of Exper. Medicine*, vol. iii, No. 3, 1898) gives an account of an investigation made by him on trichinosis, with especial reference to the increase of the eosinophilic cells in blood and muscle, the origin of these cells, and their diagnostic importance. He claims to have demonstrated: (1) In a case of acute trichinosis an extensive leucocytosis with great absolute and relative increase in the number of eosinophilic cells in the blood, associated with a coincident decrease in the quantity of neutrophilic elements. (2) From the examination of the specimens of muscle removed during life, besides the peculiar degenerations of the muscle, a longitudinal splitting of some of the fibres, a remarkable transverse splitting of others, a great proliferation of nuclei, about many of which vacuoles are seen, and large numbers of polymorphonuclear eosinophilic cells, which were especially prevalent in the more degenerated areas. (3) In a second case after death), besides similar changes in the muscle, large numbers of eosinophiles throughout the infested portion. (4) In two other cases during life a great increase of the eosinophilic cells in the blood, with a coincident increase of the polymorphonuclear neutrophiles, associated with leucocytosis, though of less extent than in the first case. (5) In pieces of muscle removed in these last two cases changes in most respects similar to those cited in the first case, but of less degree. (6) The similar character of the nuclei of the eosinophiles and the neutrophiles both in the blood and in the muscle, and the presence in the first case of certain cells which might be regarded as forms transitional between neutrophiles and eosinophiles, suggesting the possibility that the increase in the latter elements may in these instances take place in the muscle by direct transition from the neutrophiles. From these observations Brown thinks it fair to conclude: (1) That there is a marked decrease in the percentage of eosinophilic cells in the blood in trichinosis. (2) That this increase may be used as a diagnostic sign in this disease. (3) That this disease in its sporadic form is more common than has hitherto been supposed, as shown by the discovery of the three cases above described, within a comparatively short period, at the Johns Hopkins Hospital. (4) That a systematic examination of the blood should be undertaken in cases with indefinite intestinal, muscular, or articular symptoms, in the hope that in some at least of the hitherto doubtful cases a diagnosis may be reached.

(201) The Genesis of Uric Acid.

Giaginis (*Gazz. degli Osped.*, May 1st, 1898) finds that the administration of substances of the nuclein class causes an increase in the amount of uric acid eliminated. Liver increases the uric acid more than a corresponding quantity of muscle tissue, and calf thymus even more than liver substance. Since the author never found substances of the xanthin class in thymus, and constantly found an increased number of leucocytes after the administration of nuclein-containing bodies, he believes that the increase in uric acid observed in connection with the administration of nuclein substances is due to an induced leucocytosis. The author, however, points out that it is possible that the nuclein in the organism may give rise to xanthin substances, which in their turn may form uric acid.

(202) Congenital Tumours.

Schmorl (*Centralbl. f. Gynäk.*, No. 18th, May 7th, 1898) exhibited, at a recent meeting of the Gynæcological Society of Dresden, three rare specimens of congenital tumour. The first was a teratoma attached to the pelvic extremity of the fœtus by a cystic projection passing between the rectum and the coccyx. It was of the size of an infant's head, and was the cause of delay in labour. The second was a growth from the right pleural cavity. It was of the size of a pigeon's egg, of firm consistence, and of a brownish red colour, and it was attached by a broad base to the vertebral column just above the diaphragm. It was not attached to the right lung, but it consisted of an alveolar structure very closely resembling that of the lung. It was regarded as an accessory and imperfectly formed pulmonary lobe. The third specimen was a congenital tumour of the stomach, which had been removed from an infant which had died from pneumonia when eight days old. It was of the size of a bean, and was situated in the greater curvature, about 3 mm. distant from the pylorus. It lay chiefly in the submucosa and muscularis, and had a gelatinous appearance on section. Microscopically it was an adenoma.

(203) The Bacteriology of the Blood in Disease.

In a contribution to the study of the bacteriology of the blood in disease (*Report of the Presbyterian Hospital, New York*) Drs. James and Tuttle adduce, after elaborate investigation, the following conclusions: (1) The attempt to cultivate bacteria from the blood of living persons is useless unless carried out in a painstaking way, and with thorough antiseptic precautions, and with blood drawn directly from a vein. (2) The number of diseases in which this procedure is useful is small. (3) In malignant endocarditis it is of great value; in other septic diseases of moderate value, and in typhoid fever it may, on rare occasions, prove of some use. In other morbid conditions its usefulness has not yet been proved.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(204) Senile Pleurisy.

MAURICE LEMOINE contributes an interesting article (*Journ. de Méd.*, July 25th, 1898) on the occurrence of pleurisy in old people. Generally speaking, a primary pleurisy is very uncommon in the later years of life, but its occurrence as a complication is much more frequent, and in the great majority of cases is a result of renal disease. Postpneumonic, tuberculous and cancerous forms of pleurisy are also met with, probably in this order. As to the nature of the pleurisy, the effusion is either serous or sero-fibrinous, the purulent form being very uncommon. The author points out that very often pleurisy with a large amount of effusion may be completely latent in an old person. Four varieties may be described. The first occurs in subjects who are apparently healthy. There may be merely some *malaise*, headache, and sleeplessness. Pyrexia may be completely absent or only very slight. There is no dyspnœa to speak of, and there may be merely slight pain in one side of the chest. On physical examination the existence of effusion becomes evident. The quantity of fluid may be considerable. This form is characterised by the very favourable character of all the symptoms; the fluid as a rule is absorbed spontaneously, though, it must be added, it has a tendency to return. The second form occurs in persons of somewhat impaired health. They notice that respiration is accompanied by some difficulty, and there may be nocturnal dyspnœa and breathlessness on exertion; sometimes some perimalleolar œdema. These symptoms are followed by a sudden attack of cardiac failure. Careful examination of the chest under these circumstances may show the presence of an unsuspected pleuritic effusion. Prognosis in this form is uncertain. Careful treatment may bring about absorption of the fluid, but in other cases notwithstanding every care, cardiac failure or uræmia bring about fatal termination. The third form is more marked in its characteristics, there being cardiac dilatation, anasarca, Cheyne-Stokes respiration, and intense dyspnœa. In these cases pleural effusion is a late symptom. In the fourth variety the cause of pleurisy is pulmonary infarction, and the symptoms in this condition may be observed previous to the appearance of the pleurisy which only supervenes towards the end of the second week. In addition to these varieties, tuberculous and pneumonic pleurisy are found among elderly patients, but do not differ in their symptomatology from cases occurring earlier in life. The writer points out that pleurisy in old people is of much longer duration, and consequently its prognosis is somewhat variable, and one fact worthy of note is that a second pleurisy may appear on the other side before the complete subsidence of the first. Sudden death in the course of a pleurisy the writer considers as very rare among old people. Treatment does not differ in these cases from the ordinary methods in vogue earlier in life.

(205) Diseases of the Alimentary Tract.

G. ROSENFELD (*Centralbl. f. inn. Med.*, July 23rd, 1898) first relates two exceptional cases occurring respectively in a woman aged 32 and a man aged 26. In both cases there was constipation, vomiting, inanition, and prostration. The urinary symptoms were remarkable, as the urine contained in both cases a substance which yielded osazon, with phenylhydrazin, and at times considerable quantities of acetone and aceto-acetic acid. In the first case there was also stupor. Diabetes was excluded. The symptoms must have been due to an auto-intoxication in both cases, which ended in complete recovery. The author then reports a case in which the Roentgen photography showed a spindle-shaped shadow in the region of the œsophagus and thoracic aorta. He introduced a tube open at the end, through which was passed a second thin tube having a ballon attached to its end. A solution of bismuth was then injected into the ballon, and a photograph taken. The fluid was then withdrawn, and the ballon inflated with air and a second photograph taken. In the latter case a light shadow could be distinguished from the dark shadow of the heart, and a diverticulum of the œsophagus was recognised. Rosenfeld then discusses the diagnosis of early carcinoma of the stomach. Blowing up the stomach may help in the diagnosis, but the Roentgen photography, with a sound containing shot, is of greater assistance in showing the connection of a very movable tumour with the stomach. This procedure may also assist in enabling the observer to recognise a tumour before it can be felt. In gastric carcinoma the stomach is rarely empty, even a long time after food has been taken. If this retention of food occurs in a small stomach, it is strong evidence in favour of carcinoma. The Roentgen rays, along with the sound containing shot, is the only reliable method of making out the size of the stomach. Thus if considerable remains of food can be washed out of a small stomach some fifteen hours after food, there is strong evidence of gastric carcinoma. This condition may exist even in the absence of regular vomiting or of any vomiting at all.

(206) Scarlatinal Myositis.

BRÜCK has observed 3 cases of myositis in the course of scarlet fever (*Gazz. degli Ospedali*, July 7th, 1898), occurring in the second and third weeks of the disease and after the subsidence of acute symptoms. This complication is unaccompanied by fever, and as a rule disappears rapidly. From a clinical point of view it can hardly be distinguished from ordinary muscular rheumatism, and is characterised by spontaneous pain, extreme sensitiveness to pressure and disturbance of motor function, with occasional increase in size of the muscles. The author's first case was in a girl, aged 14, who first noticed intense pain in the muscles of the back on the fifteenth day of the disease, rendering it quite impossible to sit up or to turn in bed. The pains increased in severity for two or three days, but disappeared on administration of salicylate of soda. In the second case the thoracic muscles were those principally affected: while in the third the abdominal muscles were so intensely tender to touch that it was impossible to make any examination. In the author's opinion these are cases of actual inflammatory change in the muscular disease.

(207) Paralytic Chorea.

PORTE records a case (*Journ. de Méd.*, July 25th, 1898) of a child of neurotic temperament who became totally paralysed in one leg during the course of an attack of chorea. The paralysis lasted two months and disappeared completely. The occurrence of paraplegia with chorea has been recorded by West and others, but the explanation of the condition is obscure. The author believes that paralysis may arise under different circumstances, first in patients with a strongly hysterical and neurotic temperament, and in such there does not seem to be any myotrophic results, while in the ordinary forms of choreic paralysis myotrophic changes are very marked as pointed out by Raymond and Rondot. It is important to remember the fact that paralysis may occur in chorea (whatever may be its explanation) as an error in diagnosis might easily occur, the case being taken for one of infantile paralysis with a much graver prognosis, for it seems to be a fact that choreic paralysis always disappears.

SURGERY.

(208) Chronic Ankylosing Inflammation in the Vertebral Column.

BÄUMLER (*Sonderabdruck aus d. Deut. Zeitschr. f. Nervenheilkunde*, Bd. xii) refers to a case of this kind in which the hip joints were also involved, the latter affection preceding that of the spine. The patient when first seen had both hips ankylosed, the head was bent forward and both active and passive movements in the upper cervical spine were very limited and painful. The cervical vertebræ themselves appeared to be thickened. There was no evidence of syphilis or tubercle. Considerable improvement followed upon rest in bed in a horizontal position. Some eighteen years later the patient was in good health but the cervical spine remained almost immobile and the ankles, knees, and one shoulder were involved as well as the hips. The author has often noticed that the maintenance of unusual positions leads to pain and tenderness in the parts in question. This patient has to sit and write at a desk, and the ankylosis of the

hips led to an unusual position in the spine. To this the author would attribute the affection of the spine. The carrying of heavy weights on the shoulders may bring about a similar condition. Severe infective arthritis may lead directly to this affection of the vertebral column or indirectly as in the above case. Baümler then refers to a case reported by Brodhurst in which there was repeated gonorrhœal arthritis and an ankylosis was eventually developed between the vertebræ as in other parts. Affections of nerves and muscles may also lead to this ankylosis owing to the change in the static relations of the vertebral column. The resulting kyphosis may be mistaken for a tuberculous spondylitis. The author draws attention to the importance of rest in the early treatment of this affection.

(209) Noma of the Vulva.

FREYMUTH AND PETRUSCHKY (*Deut. med. Woch.*, April 14th, 1898) report a case in a child aged 3 years, in which the diphtheria bacillus was found, and which was treated with the serum. The child was admitted on February 2nd with recent measles. There was much hoarseness and considerable dyspnœa. On February 5th an extensive noma was observed in the external genitals. Cultivation experiments revealed, besides other microbes, one exactly resembling the diphtheria bacillus. The dysphagia along with the laryngitis, rhinitis, and noma also suggested a mixed infection of measles and diphtheria, and therefore Behring's serum was injected. The child gradually improved, the slough separating from the vulva. It received in all 6,000 immunity units, and made a good recovery. Freymuth states that previous researches have shown noma to be due to various microbes. In the above case it was the diphtheria bacillus. Later in the disease exudation was observed on the uvula and palate. Freymuth insists that noma may thus sometimes be treated with success with the serum, and he is convinced that this was the case here. The prognosis of noma has hitherto been none too favourable, a third of the cases recovering. He thinks that if a bacteriological examination is made, the number of cases due to the diphtheria bacillus will be found to be considerable. Petruschky concludes the paper with an account of the very thorough bacteriological examination made in the above-described case.

(210) Pancreatic Cyst of Traumatic Origin: Operation: Recovery.

ERWIN PAYR (*Wien. klin. Woch.*, 1898, No. 26) records the case of a young man who fell from his bicycle, the handle-bar striking him violently in the abdomen. In the course of two months he began to suffer violent pains in the epigastrium and to notice a small tumour in that region. This increased rapidly in size, and at the end of four months from the injury reached from the ensiform process to the umbilicus. He was supposed to be suffering from renal disease, and was put on diuretin; within thirty-six hours of this the tumour suddenly disappeared with great pain, and with it all the previous symptoms. The patient remained quite well for six weeks, but when the drug was left off the tumour reappeared within eight days, and gave rise to much discomfort, but this time without vomiting. During the next month the tumour disappeared three times, once after the aspiration of a small quantity of its contents. On another occasion a larger amount was removed and was found to be alkaline in reaction, and brown in colour, and to contain albumen, sugar, mucin, and a powerful amylolytic ferment, but no proteolytic enzyme. The urine and fæces were normal, but each disappearance of the tumour was preceded by diarrhœa lasting two or three days, and followed by constipation for forty-eight hours. During the diarrhœa the motions contained white fatty masses. Laparotomy was performed and the cyst was found below the liver, the left lobe of which was flattened and adherent to the cyst wall. The stomach was pushed away to the left of the cyst, which appeared to come through the foramen of Winslow. Aspiration drew off more than 7 pints of greenish-brown fluid; a portion of the cyst wall was then excised and the edges of the opening carefully sewn to the peritoneum. Another pint and a half of fluid having been expressed a drainage-tube was inserted and the wound closed. The subsequent course was favourable, and fourteen days after the operation only a small fistula remained; the patient had gained 22 lbs. in weight; but of 105 recorded cases this was the ninth in which the cyst assumed this abnormal position and only the third in which the unusual situation was diagnosed. It was also curious that the lesser omentum, instead of being attached to the cyst, lay free in the abdominal cavity; while, furthermore, the cyst had passed from the small bag through the foramen of Winslow - a condition only once observed before. As regards pathology, the case probably falls into Körte's second group, in which trauma has given rise to inflammatory changes in the pancreas, from which a cyst has resulted.

MIDWIFERY AND DISEASES OF WOMEN.

(211) Puerperal Laceration of Rectum above Sphincter.

GMEINER (*Centralbl. f. Gynäk.*, No. 10, 1898) observed a case of this kind last December, all the more remarkable as it occurred in a young primipara aged 21. On October 1st she had been carefully examined. The upper part of the vagina was very raw, though there seemed to be hardly a definite papillary colpitis present. In other respects all was normal. The last period was on February 20th, 1897. On December 6th the pains set in at 7 P.M., and the patient was admitted into the German University Maternity at Prague. The vertex presented in the first position, the os admitted the tips of two fingers, the membranes had not ruptured. Twenty-four hours later the os admitted three fingers; the patient was put in a warm bath for half an hour, then strong pains set in. The waters broke at 2.45 A.M. on December 8th. The pelvis was capacious, the head came down quickly. Twenty-five minutes later it was seen that a jet of liquor amnii escaped from the anus during every pain. In order to prevent further laceration, which would have involved the perineum, sphincter, and nearly the whole of the recto-vaginal septum, a free incision was made into the right labium and vaginal wall above it, and delivery immediately followed without any more damage. The child was a male, 6 lbs. 6 ozs. in weight, and nearly 20 inches long. The cranium was normal. The placenta being delivered, the rectum was washed out with Condy's fluid, some returning by the vulva. On examination a deep rent was detected along the right side of the posterior vaginal column reaching almost to the cervix, and in its deepest part were three curious little perforations into the rectum, each large enough to admit a pea, and arranged in a triangular manner, each a finger's breadth from the other. They were at once closed with catgut; the wide rent in the vaginal mucosa was next covered in by deep and by superficial catgut sutures, whilst the surgical incision was repaired with interrupted silk sutures. The catheter was needed for five days. At the end of a fortnight the vaginal and rectal wounds were quite healed. The damage which chronic inflammation had inflicted on the vaginal tissue accounted for the laceration happening in a normal labour where the second stage did not last half an hour. In one of the two other cases recorded where the rectum was lacerated above the sphincter, the head had been fixed in the outlet for twenty-four hours before the laceration occurred (Reignier), whilst in Piering's case, where the prolapsed hand entered the rectum, the patient was a primipara aged 41.

(212) Spondylolisthetic Pelvis.

E. SCHJONBERG (*Norsk mag. f. Laegevidensk.*, June, 1898) describes the case of a woman, 43 years of age, sent into the Christiania Maternity Hospital to have premature labour induced. Her two previous pregnancies had terminated: the first in craniotomy and the second in the premature birth of twins. In her childhood she had been strumous, and when 24 years old she had strained herself in attempting to lift a heavy weight. The strain was followed by pains in the back, and during the following six months she was easily fatigued, and could not stoop without suffering. She was now about the eighth month of her third gestation, and showed marked lordosis of the lumbar spine, there being a deep hollow between the spinous process of the fourth and that of the fifth lumbar vertebræ. Pelvic inclination, measured by Schultze's apparatus, was 25°. The symphysis was situated high. The interspinous diameter was 26, the intercristal 28.5, the intertro-

chanteric 30, and that of Baudelocque 19.5 cm. The diagonal conjugate was 10.25 cm. The promontory, as well as the internal surface of the fifth lumbar vertebræ, made a projection of about 1 cm. on the anterior surface of the sacrum, with which they formed an angle of about 45 degrees. Labour was induced by hot douches for two days followed by the introduction of two bougies into the uterus, and in two days later the patient was delivered of a dead male fœtus weighing 2,350 g., and measuring 55 cm. in length. Schonberg ascribes the spondylolisthetic state of the pelvis to the accident at the age of 24 years, and thinks there must have been pre-existent dolichospondyly—that is, abnormal prolongation of the interarticular part of the fifth lumbar vertebra. This is the third case reported in Norway, the other two having been noted by Vedeler.

(213) Venesection in Puerperal Eclampsia.

Van Roojen (*Journal d'Accouchements*, of Liége, May 29th, 1898) was called in to a case of severe eclampsia following delivery. There were convulsions, albuminuria, œdema, and cyanosis. He opened the median cephalic vein and bled to 400 g. At once the patient began to improve, and no more fits occurred, although at the end of a month an hysterical attack was noted. An injection of 20 mg. of hydrochlorate of morphine was given after the bleeding. The improvement in the pulse was very distinct directly the heart had been relieved of a greater amount of blood than it could easily impel. Lambinon, of Liége, also reports a case of puerperal eclampsia successfully treated by venesection.

(214) Extra-uterine Pregnancy at Full Term.

Swift (*Boston Med. and Surg. Journ.*, May 12th, 1898) reports a case of this rare condition. The patient, aged 34, had been married eighteen months. Three years before, she had had some pelvic trouble, which was called ovaritis, and confined her to bed six weeks. Last regular menstruation was January 21st, 1897. The February period was only a slight show, symptoms of pregnancy beginning at about the same time. On March 26th she had a sharp attack of pain in the abdomen, resembling the former attack of ovaritis, and she was miserable for six or eight weeks. There were no symptoms of collapse with this attack, but a good deal of nausea, attributed to the pregnancy. She was first positive of feeling motion in July, and this grew stronger up to November 19th, since which time it had entirely ceased. During the last two months the motion was said to have been very violent, and she thought the child at times must have been in convulsions. This motion was perceptible to friends through her clothing, and when lying in bed would move the bedclothes. The fœtal heart sounds had been heard from time to time by her physician. On November 19th, at the closet, she felt a sudden gush of warm fluid from the vagina; there was no appearance of blood. Throughout the rest of the day there were regular but not severe pains. After that, all motion of the child ceased, and she noticed that she was getting smaller. The breasts became hard, large, and painful, and then gradually subsided. A week later her physician called, and diagnosed the death of the child. After waiting a week, there being no sign of labour, he inserted a catheter into the uterus with the idea of inducing labour, but, this not being effected, Swift was called in to empty the uterus. He diagnosed extrauterine gestation, with pseudo-labour and death of the child; and advised waiting, to minimise the chances of hæmorrhage from the placenta. On January 3rd, 1898, he operated. The child was easily delivered; in one place the side of the head was firmly adherent to the sac which was attached to the intestine. The placenta was only attached to the upper edge of the broad ligament, probably the tube, for this could not be distinguished except where it left the uterus, and here it was much thickened. The patient made a good recovery.

(215) Emphysematous Vaginitis.

Fedorotskaia-Viridarskaia (*Ann. de Gynéc. et d'Obstét.*, May, 1898) reports an instance of this vesicular affection of the vagina, which is in most cases associated with pregnancy. The vesicles are full of gas, and are mostly situated in the posterior vaginal wall. They vary in size from a pin's head to a pea, and lie in the submucous connective tissue. Eisenlohr traces this disease to the agency of microbes. He obtained pure gelatine and agar-agar cultures, slightly alkaline. As long as it remained alkaline a culture gave out a gas which seemed to be trimethylamine. Fedorotskaia's patient was in the fifth month of pregnancy. She was feverish, and had rigors and show of blood. The vagina looked as though its veins were varicose; this appearance was due to numerous vesicles, chiefly in the upper and posterior part of the vaginal wall. Anteriorly and laterally the vesicles were scanty and very small. The fact that they contained gas was proved by pricking them when the vagina was filled with water, bubbles of gas at once escaping. The bag of waters was intact, but abortion set in. The vagina was washed out twice daily with a 1 in 2,000 sublimate solution. At the end of a fortnight the vesicles had entirely disappeared. It remains uncertain whether the cure was due to the injections or to the cessation of gestation.

THERAPEUTICS.

(216) Tannopin.

Carl Fuchs (*Die Heilkunde*, August, 1898) reports 7 cases from Drasche's clinic in which this drug was used. Tannopin is a condensation product of tannin (87 per cent.) and urotropin (13 per cent.), and was originally introduced by Nicolaier in the treatment of affections of the urinary organs. It is a brown powder, insoluble in most ordinary solvents, but splits up into its constituents by alkaline intestinal juice. Its antiseptic and astringent value in catarrh of the bladder having been proved, Schreiber, of Ebstein's clinic, tried it in 32 intestinal cases, including acute and chronic catarrh, tuberculous enteritis, and typhoid, giving doses of 7½ to 15 gr. three or four times a day with very good results, especially in the tuberculous patients. Fuchs's first case was one of tuberculous enteritis in a case of acute general tuberculosis; 60 gr. a day of tannopin were given for two days, with the result that the daily number of motions fell from twelve to one. The second case was one of acute diarrhœa, which was rapidly cured, as were also the third, fourth, and fifth, patients suffering respectively from morbus cordis which had been too vigorously treated with digitalin, phthisis, and chronic diarrhœa of uncertain origin. The sixth patient, whose diarrhœa came on in the course of Bright's disease, did not react quite so satisfactory; tannopin was given for some weeks, but the diarrhœa did not cease entirely, though the stools were reduced in number from five to two a day. The last case was one of cystitis, and in this the smarting during micturition diminished, the flow of urine increased, and the urine itself became clearer and less purulent. The frequency of micturition was not diminished, but the amount passed each time was increased. In this respect tannopin is undoubtedly inferior to urotropin, its action on the urinary passages being only symptomatic; this was the conclusion arrived at by Schreiber as well. As regards the intestines, it rapidly diminishes the watery stools in acute enteritis, but in chronic diarrhœa its action is less constant, being in some cases complete stoppage, in others only limitation in the number of the dejections.

(217) Therapeutic Action of Air on Serous Membrane.

Brial has collected (*Thèse de Bordeaux*, 1898) a large number of cases illustrative of the admission of air into serous cavities as a therapeutic agent. The most numerous cases refer to the injection of air into the peritoneum in cases of tuberculous disease of that organ, and the writer brings out several interesting details in support of the well-known fact that tubercular peritonitis frequently retrocedes on the admission of air into the peritoneal cavity. This method has also been tried in cases of ascites following on cirrhosis, and the writer quotes several unpublished instances occurring in the practice of Picot, Cassaet, and others, in which, though not followed by cure, the case certainly showed no return of the fluid, and it is suggested that this fact might be made use of for retarding the progress of the disease and preventing the drain on the constitution due to the constant effusion of fluid. Air has also been injected into the pleural cavity under certain conditions, such as pneumothorax, etc., with a certain degree of benefit. Lastly,

it has been tried in the tunica vaginalis in cases of hydrocele, but the result was quite unsuccessful. Consequently, the method only seems to apply to the peritoneum and pleura. As regards methods, the air should be sterilised and the quantity should not be excessive.

(218) Treatment of Migraine.

Frieser (*Münch. med. Woch.*, August 30th, 1898) bases his observations on twenty-nine cases. He maintains that migraine is rarely a disease by itself, but is a symptom accompanying some other affection. Sometimes there is a hereditary predisposition, and the author gives details of three such cases. Migraine often complicates anæmia, and also, in the author's opinion, various diseases of the female generative organs. He gives details of a case in which the replacement of a retroflexed uterus was followed by a cessation of the attacks. The author has seen migraine in cases of ear disease, and details of a case are given in which after the removal of a nasal polypus there were no more attacks. One of the most frequent causes of migraine lies in dyspepsia due to chronic gastric catarrh, dilatation of the stomach, etc. Imperfect digestion of carbohydrates is sometimes found. Overwork in school children is an important etiological factor. Frieser mentions two cases in which injury to the head and a violent mental emotion respectively were followed by attacks of migraine. He thinks that the actual cause of the attack consists in the fermentative and other changes in the stomach contents. In the attack itself the author washes out the stomach; and if this cannot be done large quantities of warm water should be taken. He looks upon menthol as the best remedy. Constipation and dyspeptic symptoms must be carefully treated by diet and otherwise. Antipyrin, phenacetin, etc., cannot be relied upon. Frieser has obtained better results with benzacetin and trephinin, which he gives in doses of 0.5 g. Valerianate of menthol may be used in the intervals. He has known relapses occur even after a period of more than a year after the last attack.

PATHOLOGY.

(219) The Blood in Nephritis and Uræmia.

Brunner (*Centralbl. f. inn. Med.*, May 7th, 1898) has investigated the amount of water in the blood in 33 cases, and of the alkalis in 15 cases, of chronic nephritis of some standing. The state of the œdema and the amount of urine and albumen were also noted. The dilution of the blood is one of the characteristic features in nephritis. The blood was obtained in these cases sometimes by means of leeches when there was no œdema, but mostly by venesection. The amount of water in the blood, in the serum, in the defibrinated blood, etc., was also estimated. The amount of solids in the blood stands normally at from 21.5 to 22.5 per cent. in the plasma and serum at 9 to 10 per cent., and in the red cells at 30 per cent. In only 1 of the 33 cases was the amount of solids in the blood normal; in the other cases it averaged from 17 to 19 per cent., and once it only reached 13 to 15 per cent. The author concludes that the dilution of the blood serum and plasma is regularly present in chronic nephritis, and is only exceptionally absent. The least amount of solids in the serum stood at 5.21 per cent., thus the serum contained almost twice as much water as normally. The blood cells in this case were normal, and the amount of solid constituents in the red deposit was larger than usual. In considerable œdema this dilution of the blood may be slight. Uræmia exercises the most certain and obvious effect upon it. Under any circumstances considerable dilution of the blood was noted when the uræmic symptoms were marked. The regular occurrence of this dilution shows that it is not a matter of chance. In no case was there marked dilution without uræmic symptoms. In cases of oliguria the fluid not excreted must accumulate in the blood. The absence of polyplasmia is due to œdema, and thus the œdema is a compensatory event. A patient with oliguria feels comparatively well as long as œdema is present. The presence of the polyplasmia is an unfavourable sign, and the œdema of the blood, as it may be called, stands in causal relationship with uræmia. As a result of his investigations into the amount of sodium and potassium present, the author states that there is a distinct tendency to a decrease in the sodium contents. Sodium is very necessary to organic oxidation processes, and thus the decrease in the amount cannot be a matter of indifference. The variation in the amount of water in the blood is of importance in prognosis. Stintzing's method can be used to estimate it. The empirical treatment of uræmia is thus supported by experiment, and the value of watery purgation confirmed. Perhaps, also, it is of importance to give certain quantities of sodium salts in nephritis. The author sets forth in tabular statement the various features of his investigation.

(220) Gastric Diverticula.

Ferguson (*Glasgow Med. Journ.*, March, 1898) discusses the origin of these diverticula so rarely found on account of the strength of the muscular coat of the stomach. They may be due to the action of a force from within, when they are called pulsion diverticula, or to a traction from without, when they are named traction diverticula. The pulsion diverticulum is caused by a weakening of a circumscribed portion of the stomach wall as the result of injury or disease. Retention of foreign bodies in the stomach has been known to produce them, and the author gives instances from recorded cases. Here the diverticulum is found in the most dependent parts of the stomach. They have been seen in association with gastric ulceration, pyloric obstruction being also present. The reason of their being so rare in gastric ulceration is that the floor of the ulcer is usually strengthened by a perigastritis. Only two cases of traction diverticulum of the stomach are on record. Adhesions are found between some adjacent structure, such as lymphatic glands and the stomach. When once the muscular walls of the stomach yield and a traction recess is formed, the same forces come into play as operate on pulsion diverticula. The author then relates a case of gastric diverticulum in a man aged 34, who died of acute mania. The stomach was dilated, and in the line of the greater curvature 5 cm. from the cardiac opening there was a diverticulum of the size of a plover's egg. The opening into it was slightly contracted, but admitted the tip of the forefinger. The lining membrane was smooth, and the contents only gas. Dr. Sutherland made a careful microscopic examination. The mucous membrane gradually became thinner, and the muscular coat entirely disappeared a short distance from the mouth of the diverticulum. The serous coat was also absent. It was essentially a pulsion diverticulum or a hernia of the mucous membrane through the muscular coat. There were no adhesions outside. Ferguson thinks that the line of the greater curvature may be a place of less resistance in the stomach, as the line of the attachment of the mesentery is in the intestine.

(221) The Tetanus Bacillus in General Paralysis.

Montesano and Montessori (*Centralbl. f. Bakt.*, xxii, 22 and 23) record the following case: They were engaged in the routine examination of the fluid obtained by lumbar puncture in general paralytics when they found that 2 c.cm. of that drawn off in one case produced tetanus in the guinea-pig into which it was injected. Cultivations confirmed the presence of the tetanus bacillus. A second puncture gave the same result. The patient died of his disease about three months later, and cultures of the cerebrospinal fluid still showed the presence of the tetanus bacillus, together with ordinary streptococci which had been found throughout. For at least three months, therefore, this patient's cerebrospinal fluid had contained active tetanus bacilli without his having developed any of the signs of the disease. The authors discuss the case without arriving at any definite conclusion upon it. In 10 other cases examined no tetanus bacilli were found. In none of these were epileptiform attacks observed, while in the case under notice such attacks were unusually numerous. The authors suggest that, assuming general paralysis to be of toxic origin, as many believe, the products of such an organism as the tetanus bacillus might determine the presence or absence of convulsive seizures. Dönitz has obtained by the injection of maximal doses of tetanus toxin into very susceptible animals a disease which is characterised by chronicity of course, great wasting, and occasional convulsions, and thus departs widely from ordinary tetanus, whilst somewhat approaching the type of general paralysis.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(222) Beri-beri.

F. Grimm (*Deut. med. Woch.*, July 21st, 1898) refers to the various views on the nature of this disease. Many authors, in describing the disease, have not taken into account the early symptoms, and hence the discordant views. The fact that beri-beri does not render the patient immune against itself is also often overlooked. The author also emphasises the differences between this disease and malaria. In the early stage of the disease a definite group of symptoms are noted. The frequency of the pulse is increased, especially on the slightest exertion; there is a feeling of weight in the epigastrium and a sense of suffocation with quickened breathing. Paræsthesiæ are complained of in the legs within a couple of hours up to two days of the onset, and later patchy tactile anæsthesia. The patellar knee-jerk and the electric reactions are maintained and even increased at this time. A hard œdema appears in the legs very early. A rise of temperature occurs even in the slightest cases. The author divides the disease into beri-beri simplex and accumulatum. Simple beri-beri may be described under three stages: (1) the stage of rising temperature, which lasts about a week; (2) the stage of fluctuating temperature, with a duration of two weeks; and (3) the stage of convalescence, lasting a varying time. In the second stage the paresis appears, the electric reactions are gradually diminished, and the knee-jerks are lost. Ataxia does not occur. In the third stage the swelling of the muscles and the œdema disappear, and a gradual regeneration takes place. This simple form of beri-beri is due to one dose of the poison, and runs its course without exacerbation or relapse. If a relapse takes place it is due to a new infection, and the disease passes into the form of beri-beri accumulatum. The effects of the fresh attacks are much more serious owing to the action on the heart and other important organs. The treatment is mostly symptomatic. Prophylaxis has been carried out with the best results in Japan. The disease appears to stand in relation to marine animals, and the poison would seem to be destroyed by heat, as in cooking. Young children are quite immune against the disease.

(223) The Ascaris Lumbricoides as a Cause of Death.

Vermeulen (*La Belg. Méd.*, June 23rd, 1898) reports the case of a child aged 2½ years, who became ill with anorexia and *malaise*. Some days later three ascarides were passed after a vermifuge, and the temperature rose to 102.2° F. Again two worms were evacuated; the child was somnolent but did not vomit. Later three worms were expelled by the mouth. The pupils became widely dilated; the fever continued; there was constipation unaffected by calomel and santonin, though castor oil produced a stool containing more worms. The abdomen became tympanitic and tender, and the child died comatose. The author thinks there can be no doubt that the worms were the cause of this illness. Recently Chauffard has described a typhoid form of lumbricosis, and Tauchon has collected 3 cases of it. P. Marie published a case in a man aged 54, where it was impossible to exclude enteric fever with certainty, and Loi one in an infant aged 6 years, where all the symtoms of meningitis were present. In the latter case the diagnosis was made by finding ova in the stools, typhoid fever being excluded by the serum test. All these cases recovered under treatment in spite of the gravity of the symptoms, but the author's case proves that death may follow even when the treatment is suitable and the diagnosis made early. Marie observes that in the case of worms quinine has no antipyretic action, while santonin has, even though its administration is not followed by the expulsion of the parasites, and considers this fact to be of importance in the differential diagnosis. There are three theories as regards the etiology of the symptoms: (1) That the worms act mechanically by setting up pathological reflexes; (2) that they cause a true infection by raising the virulence of the intestinal micro-organisms through irritation of the mucous membrane and perhaps through their excreta (Chauffard); (3) that the ascarides themselves are virulent. Chansou and Tauchon proved this by crushing the worms and injecting the juice into guinea pigs. Marie thinks that the two latter theories are alone worth considering, as it seems impossible that a few (in his case three) worms could produce such an illness by mechanical irritation.

(224) Late Dysenteric Abscess of the Liver.

Josserand draws attention (*Journ. de Méd.*, July 25th, 1898) to the fact that hepatic abscess may originate in patients who many years previously have suffered from dysentery, and it is therefore important in all cases presenting the signs of this condition to go most carefully into the history. It is quite possible that the occurrence of an attack of dysentry seven, eight, or even ten years previously, and possibly forgotten by the patient, may be the cause of abscess of the liver. Several cases bearing this out are recorded by the author and others. Sometimes the symptoms closely resemble those of phthisis, there being wasting, night sweats, and irregular temperature, with pleuritic friction and purulent expectoration. In one case the author found on *post-mortem* examination a very slight amount of chronic dysenteric ulceration in the intestine. From this he infers that a small intestinal lesion may be latent for a long time, and finally declare itself by causing hepatic abscess.

SURGERY.

(225) Resection of the Liver for Echinococcus.

Palleroni (*Gazz. degli Osped.*, August 7th, 1898) records the case of a woman, aged 55, who after an injury some fifteen years ago had suffered from various vague symptoms, culminating in the development of an abdominal tumour. The signs were not clear, and the diagnosis lay between a tumour of the liver and a movable kidney. It was decided that on the whole a hepatic tumour was indicated. Laparotomy was thus performed, and a cyst discovered in the right lobe of the liver for about one-third of its volume, and adherent to the gall bladder. The adhesions were carefully detached, and the cyst completely excised. The larger bleeding vessels were ligatured, and the general oozing stopped by plugging for a few minutes. Several silk sutures were inserted in the liver, and the edges brought well together. The operation lasted an hour and a-half, and was followed by complete cure. As regards the technique, the author lays stress on the value of a preliminary ligature passed through the whole substance of the liver, so as to keep the organ well in the abdominal wound.

(226) The Treatment of Gunshot Wounds in Military Practice.

Nicholas Senn (*Journal of the American Medical Association*, July 9th) thus sums up a paper on the modern treatment of gunshot wounds in military practice: (1) In theory and practice military surgery is equivalent in every respect to emergency practice in civil life. (2) The wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries. (3) The fate of the wounded rests in the hands of the one who applies the first dressing. (4) The first dressing should be as simple as possible, including an antiseptic powder composed of boric acid, four parts; salicylic acid, one part; a small compress of cotton, safety pins, and a piece of gauze 40 inches square. (5) Any attempt to disinfect a wound on the battlefield is impracticable. (6) The first dressing stations and the field hospitals are the legitimate places where the work of the hospital corps and company bearers is to be revised and supplemented. All formal operations must be performed in the field hospitals, where the wounded can receive the full benefits of aseptic and antiseptic precautions. (7) Probing for bullets on the battlefield must be absolutely prohibited. (8) Elastic constriction for the arrest of hæmorrhage must not be continued for more than four to six hours for fear of causing gangrene. (9) The *x* rays will prove a more valuable diagnostic resource than the probe in locating bullets lodged in the body. (10) Gunshot wounds of the extremities must be treated upon the most conservative plan, the indications for primary amputation being limited to cases in which injury of the soft parts, vessels,

and nerves suspends or seriously threatens the nutrition of the limb below the seat of injury. (11) Operative interference is indicated in all penetrating gunshot wounds of the skull. (12) Gunshot wounds of the chest should be treated by hermetically sealing the wounds under the strictest aseptic precautions. (13) Laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hæmorrhage of visceral wounds, and the general condition of the patient is such as to give ground for the expectation that he will survive the immediate effects of the operation.

(227) Syphilis of the Female Urethra.

Fisichella (*Rif. Med.*, May 14th, 1898) reports 13 cases of ulcerative lesions of the female urethra of a syphilitic nature, and giving negative results to bacteriological examination for tubercle bacilli or for the bacillus of Ducrey-Unna. The ulcers have scooped-out, jagged margins with greyish base, are torpid, and secrete a sanguino-purulent discharge, not very painful, liable to become phagedænic, difficult to cure, and easily relapsing. The most serious symptom is incontinence of urine. In diagnosis one has to distinguish these ulcers from venereal ulcers, from chronic ulcer of prostitutes, from epithelioma, from esthiomenic ulcer, from tuberculous ulceration, and from primary syphilis. The first disease is more rapid and more painful, secretes more pus, and contains Ducrey's bacillus; the second is rare in the urinary meatus, is stationary, and is not influenced by specific treatment: and the other conditions are sufficiently characteristic in themselves. In treatment the author recommends injections of calomel or of KI, locally iodoform, tr. iodi, 10 per cent. sol. of ferro-potassium tartrate.

(228) Ulcerating Granuloma of the Groin.

Galloway (reprint from *British Journal of Dermatology*, No. 102, vol. ix) describes the clinical features and histological characters of a peculiar form of ulceration affecting the groin that is frequently met with in British Guiana, and has been described by Conyers and Daniels. The case described by the author the first, he believes, studied in this country—was admitted into the Middlesex Hospital and treated there by Pringle and Morris. The affection is characterised by the development of large nodules of a pinkish colour, which break down on their surfaces and become ulcerated. The areas which have ulcerated lose their smooth surface and assume a granular aspect. The superficial granular ulcers bleed readily, and give rise in many instances to a profuse watery discharge. In course of time the nodule is replaced by dense scar tissue and the lesions gradually cicatrise; the part first affected in males is usually the skin of the pubes or groin; in females it appears almost always to have started in the labium or vagina. It has not yet been accurately ascertained whether this disease may attack other regions. The author, who has made a careful microscopical examination of specimens of this disease, holds that it is not related either to malignant disease or tuberculosis, and although it presents certain histological resemblances to syphilis, the complete failure of antisyphilitic treatment and the opinion of observers who are accustomed to see the two maladies side by side in the same race and in the same climates seen, together with the absence of certain microscopical characters of syphilis, to place this disease on a separate category. It bears a very close histological resemblance to frambæsia or yaws, but at the same time differs from this form of granuloma in some of its clinical features. It is concluded that in this form of "groin ulceration" we have to do with a disease having the characters of an "infective granuloma."

(229) A Second Attack of Syphilis.

Tarnovski (*Vratch*, No. 9, 1898) reports a case of reinfection by syphilis. In the beginning of September, 1886, a man, 30 years old, strongly built and with well-developed muscles, but of an active and neurotic temperament, came to him with two ulcers on the skin of the lower part of the left groin. The ulcers had thickened margins, and were accompanied by a painless swelling of the superficial inguinal glands. The sores were first noticed three weeks before advice was sought, and were the result of frequent intercourse with prostitutes. At the end of September—that is, seven weeks after the first appearance of the ulcers—the patient complained of evening headache, general *malaise*, profuse night sweats and feverishness. This was followed by a papular eruption on the sides of the trunk and the flexor surfaces of the extremities. Mercurial inunctions were prescribed at first, and later iodide of potassium. This treatment was continued from time to time for the different symptoms of syphilis, which finally disappeared in 1890. In August, 1897, on the fourth day, after impure sexual congress, two small sores appeared in the furrow behind the glans. These were diagnosed by the local doctor as soft chancres, and cauterised with carbolic acid. When the scab fell off the base and edges of the ulcers commenced to thicken, and the right inguinal glands to swell. The ulcers were treated with a 5 per cent. solution of carbolic acid; they soon healed, but the thickening kept increasing. The patient, however, considered himself cured. He drank wine, and led a free and active life. In the beginning of December (about three and a half months after the appearance of the chancres) he accidentally discovered a rash on his body; after this several moist and thickened patches appeared on his penis. He then consulted Tarnovski, who found a moist papule about 2 cm. in diameter in the furrow behind the glans, in the same place where the soft sores appeared in August. There was well-marked induration round the papule. The glans itself was studded with dry millet-shaped and lentil-shaped papules. In the right groin one could feel an enlarged gland the size of a woodnut, firm, elastic, and somewhat tender on manipulation. The whole trunk of the body, and especially its sides, were covered with numerous scattered maculæ of syphilitic roseola; in some parts the spots were raised, and changed into papules. Along the spine there were several papules commencing to scale. Similar papules were present on the right palm. On the hairy part of the head there were a few crusts of superficial syphilitic impetigo. In short, the patient showed a characteristic polymorphous syphilide (primary rash). The patient was also seen by Drs. Yavine and Schapiro, of St. Petersburg, who had no doubt that they had to deal with a fresh syphilitic infection. It is also interesting to add that the patient's mother, who died of general paralysis, had several symptoms strongly suggesting that she was infected with syphilis previous to the birth of the patient. The latter, who was the ninth child, suffered when 7 years old from paresis of the right side of the body, which disappeared only after several years' treatment.

(230) Larvæ in the Conjunctival Sac.

Capolongo (*Giornale dell' Assoc. Napoletana di Medici e Naturalisti*, March, 1898) records the case of a boy who had some dust blown into his eye while playing; this caused considerable irritation. When seen an hour later there was slight blepharospasm and marked bulbar injection and watering. No foreign body could be perceived at first, though the everted lids and the eye were carefully examined; closer examination, however, showed a minute white fleck on the limbus, which became mobile; it was removed, further search made, and a second one found. They proved to be larvæ of one of the species of tachinariæ, their length being about 1 millimetre.

(231) Primary Actinomycosis of the Skin.

Kamen (*Wien. med. Woch.*, 1898, No. 18) reports a case of actinomycosis appearing in and limited to the skin; this is the rarest form of the affection, and as it has a marked tendency to healing, it may give rise to great difficulty in diagnosis. The patient in this case had suffered on and off from the disease for six years. For the last three there had been a persistent ulcer on the right thigh, which was partially scarred over, but resisted all remedies. It was at first thought to be due to friction, the patient being a cavalryman. All ordinary antiseptic remedies failed, and the slowly-growing ulcer was regarded as either tuberculous or syphilitic. Treatment by iodide was, however, equally unavailing, even when supplemented by scraping. Chronic fever was next thought of, but could not be confirmed bacteriologically. Finally, a careful examination of the pus revealed the presence of the rag fungus; cultures again failed, perhaps on account of the antiseptics which had been applied to the ulcer. Treat-

ment by means of large doses of iodide of potassium was now carried out, with the good result that under 60 grains a day the infiltration of the edges lessened, the granulations became healthy, and the whole ulcer shallower and more covered in. The author, in showing the case, expressed the hope that this remedy would avert the danger of metatases.

(232) Double Chancre of the Lids.

Helbron, of v. Michel's clinic (*Münch. med. Woch.*, May 24th, 1898), reports a case in a boy aged 11. On the upper and lower lids there was a semicircular raised ulcer, with a yellowish grey slough. When the eyelids were closed, the two halves made almost a complete circle. On the lower lid, in addition, there was a hard swelling in connection with the tarsal cartilage, but separate from the ulcer. The gland in front of the ear and also one beneath the jaw were enlarged. The ulcers healed in about four weeks. Six months later there was an iritis in the left eye. There were also two masses of granulative tissue in the neighbourhood of the lig. pectinatum. A week later an opacity appeared on the posterior wall of the cornea, and an indurated nodule in the tissue of the left upper eyelid. A slight opacity was then noticed in the vitreous, and there was also a commencing optic neuritis. Inunction treatment was commenced a month later. The patient ultimately made a good recovery. A double chancre of the lids is very rare. The origin of the disease was traced in this case to the boy sleeping with an elder sister, who had mucous tubercles in the mouth and other evidences of syphilis. The disease was in all probability conveyed by kissing. The granulation tissue swellings in the iris should be looked upon as papules of the second stage. The vitreous did not present the characteristic opacity usually seen in syphilis. An acute syphilitic neuritis occurs usually early, within 1 to 5 years. The earlier it appears the better the prognosis, as in this case. The syphilitic manifestations remained here confined to the eyes, showing thus a local lessened resistance.

MIDWIFERY AND DISEASES OF WOMEN.

(233) Hydatid Tumour of Ovary.

Schultze (*Zeit. f. Geburtsh. u. Gynäk.*, vol. xxxviii, Part 3, 1898) already described a case of true hydatid disease of the ovary in the *Festschrift* issued in 1894, the jubilee year of the Berlin Obstetrical Society, page 125. The cyst was nearly six inches in diameter, and was freely movable; 30 echinococcus cysts were enucleated from the omentum and mesentery. Last autumn Schultze operated on a second case at Jena. The patient was a married woman about 30; an attack of fever had followed her second and last confinement; she kept her bed for three months, and then, when 27 years old, recovered completely. For a few years, not precisely stated in the report, she remained well. For three years before the operation, the patient was troubled with severe pain whenever she bent down, though she could lift a weight without feeling any pain at all. Schultze detected a cystic ovarian tumour. On opening the abdominal walls a shiny white cyst wall, moderately vascular, was exposed. The tube was stretched and drawn upwards, the mesosalpinx ran normally on to the tumour, which was, therefore, clearly ovarian. On tapping an absolutely colourless fluid escaped. The pedicle was very broad; in passing the transfixing needle through its substance the operator noticed that some more colourless fluid escaped. Then it was found that the base of the cyst burrowed into the lower part of the broad ligament. In attempting enucleation the cyst wall was torn and an echinococcus escaped. So close were the deep adhesions that the base of the cyst could not be extirpated, but was fixed to the lower angle of the wound, the remaining three quarters of the tumour were cut away. The peritoneal cavity was carefully searched, but no more hydatids were detected even in the omentum, mesentery, or liver. The base of the cyst was washed out and drained; it granulated and filled up very well. There was no rise of temperature during convalescence. Exactly four months after the operation the patient was in perfect health. The ovarian cyst was full of characteristic daughter cysts. Schultze adds to his report a valuable bibliography of cases of echinococcus of the ovary.

(234) Interstitial not Identical with Tubo-uterine Pregnancy.

Beckmann (*Zeit. f. Geburtsh. u. Gynäk.*, vol. xxxv iii, Part 3, 1898) relates a case in his own experience where he found a true interstitial pregnancy, the sac being absolutely independent of the uterine part of the tube, whilst there was no question of a rudimentary horn or allied teratological condition. The patient was 27; her last pregnancy ended eight years since. The period was quite regular till it suddenly ceased, and when it had been absent four months she was seized with violent abdominal pain, followed by syncope and pallor. The peritoneum was full of blood, and a fœtus was found in the coils of the small intestine; it was a male, over 6½ inches long. A retroperitoneal hysterectomy was performed, and the patient was saved. Beckmann describes the uterus and the sac with great minuteness, but without any drawings. The sac was as big as an apple, and lay in the uterine wall close to the left cornu; the relations of the round ligament were normal, the left Fallopian tube ran on the uppermost part of the sac, a little posterior to the seat of rupture. The lumen of the tube lay normally in its substance, and did not communicate at any point with the cavity of the sac. The true uterine cavity was regularly lined with a decidua of a pale pink colour, the wall of the sac bulged into it, but there was no communication between their cavities. There was a well-formed placenta lining the inner wall of the sac, where it bulged towards the true uterine cavity, extending to the upper part of the sac. The round ligament ran from the outside of the sac towards the inguinal canal, not from between the sac and the uterus as in tubo-uterine pregnancy. The former site of origin is also seen in pregnancy in a rudimentary horn, but Beckmann examined the uterus very carefully and was satisfied that there was not a trace of any division of the uterus into abnormal cornua. Beckmann admits that this "true interstitial pregnancy" is closely allied to the tubo-uterine variety. The ovum imbeds itself in the musculosa of the uterus immediately on issuing from the uterine orifice of the tube. The author discusses the subject at length, quoting a large number of cases. He believes that if diagnosed very early the cervix may be dilated, and the septum between the uterus and the cavity of the sac incised so as to allow of the delivery of the fœtus through the normal passage.

PATHOLOGY.

(235) Bacteriology of Epidemic Pneumonia in South Africa.

Kolle (*Deut. med. Woch.*, July 7th, 1898) had the opportunity of making a bacteriological investigation of a pneumonia epidemic which occurred during November and December, 1897. A Commission of inquiry was appointed at Kimberley to ascertain, if possible, the etiological factors of the outbreak. There was a prevalent belief amongst medical men in South Africa that croupous pneumonia was distinct from the European disease in its etiology. Kolle's researches with regard to this recent epidemic go to prove that no such distinction exists. Out of 15 cases in which a *post-mortem* examination was made, Fraenkel's diplococcus was found in 11, whilst the influenza bacillus was discovered in 4 cases. In 18 sputum examinations the influenza bacillus was found in 2 cases, and the diplococcus in 16. No case was free from micro-organisms. Typical cultures of the influenza bacillus were obtained on blood agar, the diplococcus was cultivated on glycerine agar. The death-rate was unusually high, from 60 to 70 per cent. The epidemic occurred amongst the poor, who lived in badly ventilated dwellings. The pathological anatomy resembled the European disease in every particular; moreover, the biological characters of Pfeiffer's influenza bacillus and Fraenkel's diplococcus showed no variation in type from the commencement to the end of the epidemic.

(236) Kidney Lesions in Malaria.

G. R. Picci has investigated (*Il Policlinico*, vol. v, 1898) the effects of malaria on the kidney. Besides producing a simple albuminuria, this disease may cause actual lesion of the kidneys, though the tendency to do so does not appeared to be marked, and such renal lesions as are produced by malaria seem

to be more common in autumn and spring than at other seasons, and more particularly occur in young patients. There does not seem to be, according to the writer, any relation between the severity of the one and the other; thus a slight attack of malaria may in certain patients produce well-marked nephritis, and renal lesions are not more liable to occur in a first attack than in any others. Usually the renal lesion is subacute and accompanied by few symptoms, and is desquamative or tubular in character, and in the great majority of cases there is restoration to health without any trace of the lesion being left. At the same time, should there be repetition of the malarial attacks, there is a marked tendency for a renal lesion to become permanent. Sometimes a nephritis of an acute character, and much more marked, may arise from malaria and pass into a chronic form, but the author observes that some of the more usual features of the disease may be absent. Œdema is generally present. The renal attack may appear during the febrile period or after, the latter form being styled by the author post-malarial, as it may only first appear several days after the attack. It is possible that the so-called cases of malarial hæmoglobinuria are in point of fact instances of acute malarial nephritis. The writer refers to some rare cases of acute anasarca without albuminuria as occurring in malaria.

(237) Splenectomy and Infective Diseases. COURMONT AND DUFFAU have carried out an extensive series of experiments (*Arch. de Méd. Expér.*, May, 1898) with the view of ascertaining the susceptibility of animals to inoculation of certain micro-organisms after splenectomy. They find that the influence of the spleen is very variable and its explanation obscure. The apparent contradictions are due to variable factors, such as the form of virus inoculated and the time elapsing between splenectomy and the injection of a pure culture of micro-organisms. The animal selected by the writers was the rabbit, the reason being that splenectomy in this case is a fairly easy operation and does not cause any appreciable change in the animal's health. They show that a splenectomised rabbit is more susceptible than a control animal to the effects of the bacillus pyocyaneus, whether the spleen has been recently removed or not. A rabbit recently deprived of its spleen is more susceptible to the staphylococcus pyogenes, but should some time have elapsed between the operation and the injection the animal seems more resistant. In a case where Marmorek's staphylococcus was injected into a rabbit recently splenectomised, there was considerably greater resistance than in a control animal, the opposite being the case where the splenectomy was of some duration. A rabbit splenectomised from six to thirty-four days has a considerable amount of resistance to the toxin of staphylococcus pyogenes. Should the duration be of older standing the result is the opposite. There is, therefore, a certain degree of parallelism between the effect of splenectomy in the presence of infection and antitoxin of staphylococcus. A splenectomised rabbit seems to resist diphtheritic toxin to a greater extent than an unoperated animal. The explanation of the diversity in the effects of splenectomy according to the virus inoculated seems to lie in some form of serum change undergone after operation. Thus, the serum of a splenectomised rabbit of eight days' duration is microbiophilous for staphylococcus pyogenes, but bactericidal or immune for the streptococcus of Marmorek. The spleen, therefore, seems to secrete substances which are of use or the contrary to the organism for its defence according to the species of pathogenic micro-organism which may attack it. From this it seems that splenectomy does not prevent immunisation, but, on the other hand, it cannot be said that it is without influence.

(238) Amœbæ in Dysentery and Enteritis. ROEMER, of Hamburg (*Münch. med. Woch.*, January 11th, 1898), first refers to the recorded investigations into this subject. His observations were made upon 17 cases of dysentery in adults and 2 cases of dysenteric diarrhœa in children. The demonstration of the amœba is easy. Some of the mucus is examined on a slide at about the body temperature. The specimen may be fixed with sublimate, then hardened in absolute alcohol and stained in logwood and eosin. The author found the amœba in all the cases recognised clinically as dysentery, including those coming from abroad as well as those arising at home, with the exception of the two children. The amœbæ showed active movements, especially in the cases from the tropics. There were no perceptible differences between the amœbæ from tropical dysentery and those from European dysentery. In both forms the amœbæ contained red cells or their remains, and in 1 case an eosinophyl cell was present. The amœba mostly had a rounded nucleus and nucleolus, but sometimes several nuclei. The chromatin was sometimes arranged at either pole, as if division of the amœba was taking place. In a few specimens the ectoplasm was seen to be differentiated from the endoplasm. No encysted forms were found. The author was able to set up dysentery in 2 out of 6 cats by feeding them on dysenteric stools. Notwithstanding these results, he does not look upon the causation of dysentery as solved. The amœba, like the monadines, may only be saprophytic. The most important point in favour of the pathogenic properties of the amœba is its exclusive presence in dysenteric hepatic abscess. Charcot's crystals were also found in the dysenteric stool in the author's cases. The treatment consisted in rest in bed, milk and later soups, tannic acid (1 per cent.) injections, and in acute cases decoction of salep. Hot fomentations were placed on the abdomen, and a strong ipecacuanha infusion or a preparation of the cortex of simarubra and granate roots was given by the mouth. The latter was very successful in 3 cases. Measures were also taken to prevent any possible spread of the disease.

(239) The Cause of Agglutination. NICOLLE (*Ann. de l'Inst. Pasteur*, March, 1898) publishes a research on the true nature of the agglutination of microbes and serums, mainly conducted upon the typhoid bacillus and B. coli communes. These organisms contain an agglutinable substance both when living and when killed by heat or antiseptics. Their filtered cultures, also, when treated with appropriate serums, give masses visible to the naked eye, and resembling microbial agglomerations, both in microscopical appearance and in colour reactions. This result is best obtained after warming in the incubator for fifteen to twenty hours, and is rendered more rapid and noticeable by the addition of talc powder or of the young culture of another microbe. If the organisms are taken from a young culture, their bodies, after washing with distilled water, and the liquid in which they have been macerated both agglutinate, the one behaving almost like normal microbes, the other like a filtered culture. The presence of the agglutinable substance as an integral part of the body of the microbe is a constant fact, whatever may be the conditions under which the culture was made. The substance is extremely resistant to physical agencies, such as heat, cold, sunlight, drying and high pressure; even a certain number of antiseptics do not prevent the phenomenon. The agglutinable material is soluble in water, acids and alkalies, and also in ether and absolute alcohol. In this last respect it differs entirely from microbial toxins, which are precipitated from their solutions by absolute alcohol. Nor has it anything in common with bactericidal power, which is destroyed by a temperature of 60° C., by which the property of agglutination is unaffected. Nor can the agglutinating power be a sign of infection, strictly speaking, since it can be produced by the inoculation of a microbe deprived of all virulence or of a filtered culture. It is simply the indication of the passage into the organism of the specific agglutinable substance. The amount of this substance produced bears no relation to the virulence or the toxicity of the cultures employed. In young germs the substance is present only in the microbes, later on it gets into the surrounding fluid as well. Its main characteristic is its power of agglomerating and of causing the bodies containing it to agglomerate in the presence of active serum. The same effect is produced if the serum is added to an ethereal or alcoholic extract of the agglutinable substance mixed with bouillon. Nicolle agrees with Gruber that it resides in the outermost layer of the microbes, and that the phenomenon of agglutination consists in the coagulation and coalescence of the external dangers of agglutinable organisms. It is a purely passive phenomenon, dependent solely on the influence of the appropriate serum.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(240) Gastric Tetany.

Sievers (*Berl. klin. Woch.*, August 1st and 8th, 1898) relates 2 cases of tetany complicating gastric dilatation. (1) A girl, aged 21, was known to complain of discomfort in the epigastrium for a week. This was followed by vomiting, and then by tetany on the next day. She was admitted moribund. The hands and feet were involved, and there was opisthotonos but no trismus. Death occurred in three-quarters of an hour from respiratory failure. At the necropsy, the pylorus was much narrowed by the cicatrisation of two ulcers, and the stomach was greatly dilated. (2) A woman, aged 42, had suffered for many years with gastric symptoms, but had been much worse during the past five years. There had been pain, acid eructations, and vomiting, but she continued to work until the day before admission. During the following night there was pain in the limbs, and tetany appeared. On admission she was found to be much wasted. The neck and trunk muscles became involved as well as the limbs, and later the facial and jaw muscles. There was a trace of albumen in the urine. Death occurred from respiratory failure within twenty-four hours of the onset of the tetany. At the necropsy there was marked gastric dilatation as the result of the cicatrisation of a small gastric ulcer. Gastric tetany is rare. In Finland, where gastric dilatation is common, only 4 cases of this form of tetany including the above cases are known to the author. It has been attributed to desiccation of the tissues and to reflex irritation. Frankl Hochwart even suggests that tetany may be an infective disease. At present auto-intoxication is the most usually-accepted cause. In gastric tetany authorities have at times quite failed to isolate a convulsive poison. Bouveret and Devic attempted to show that gastric tetany was a complication of hyperchlorhydria. They induced convulsions in animals by injecting an alcoholic extract of the stomach contents from a case of this kind. Sievers then gives short details of 27 fatal cases of gastric tetany collected from the literature of the subject. In most cases the dilatation was due to the cicatrisation of an ulcer, and therefore hyperchlorhydria was probably present. In some cases there has been no such cicatrised ulcer, and in other cases there was presumably no hyperchlorhydria, as, for instance, in Blazicek's case, where an enlarged gall bladder pressed on the duodenum. In 3 of the 27 cases above referred to a simple ulcer was complicated by carcinoma. On account of the exceptions met with, Sievers thinks that Bouveret and Devic's explanation is unsatisfactory. The reason why tetany more often complicates gastric dilatation due to a cicatrised ulcer may be that in these cases the dilatation and retention of the stomach contents are most marked. The author's paper is abundantly illustrated from the literature of the subject.

(241) Landry's Paralysis.

Mills and Spiller (*Journ. of Nervous Mental Disease*, June, 1898) report a case of Landry's paralysis. A man, aged 35 years, after weakness for one month and some numbness of the feet, complained of numbness in both hands and was unable to execute fine movements. Then he began to fall in walking and within five days from the onset of definite symptoms all the extremities were completely paralysed and there was some difficulty in respiration. Two days later there was much dyspnœa and dysphagia; the limbs were slightly rigid, sensation was normal, there was no tenderness, pain which had been present in the thighs had now passed away, tendon reflexes in the lower limbs were lost, the sphincters were not affected, the fundi and ocular muscles were normal. Consciousness remained until death, which occurred seven days after the onset of definite symptoms. *Post mortem*, the peripheral nerves showed considerable neuritis, there was some round cell infiltration of parts of the spinal cord, meninges and nerve roots, and also of the medulla oblongata; the cells of the anterior horns of the cord were much altered, being swollen, rounded, and too homogeneous in the centre. There were no hæmorrhages. The brain was normal. No micro-organisms were found. The writers have collected the recorded cases of Landry's paralysis, and from a study of these and of their own case draw the following conclusions: (1) That there is a form of ascending flaccid paralysis with little disturbance of sensation, with normal electrical reactions, and without involvement of sphincters, and that this is of rapid course, usually terminating in death. (2) Atypical cases occur and transitional forms which make the diagnosis between Landry's paralysis, polyneuritis and myelitis difficult. (3) It is possible that in some cases no lesions exist, but such cases were recorded when the methods of examination were imperfect. It may be that in these cases the patient succumbs to toxæmia before demonstrable changes in the nervous system take place. (4) Landry's paralysis may be due to myelitis alone. (5) Polyneuritis may be present, but changes in the anterior cornual cells will usually be found by Nissl's stain. (6) It is probable in some cases at least that the entire peripheral motor neuron is attacked at the same time by the poison of the disease.

(242) The Factors Predisposing to Pneumonia.

Fermi and Montesani (*Centralbl. f. Bakter.*, xxiii, 1-4) have carried out an exhaustive series of researches into the conditions influencing the morbility and mortality from lobar pneumonia in various towns and in different classes of society. They show that meteorological factors are not the sole ones concerned in the spread of pneumonia from town to town. There is no doubt, however, that the character of the winds, the liability to sudden changes of temperature, and the relative humidity have an important influence, so that the liability of particular cities and districts to be infested with pneumonia depends upon their position with relation to mountain peaks, lakes, and the sea. Climatic conditions act also indirectly by influencing the habits of the indwellers. Thus, when these are such that much work is done in the open air, there is often great exposure to chills although the weather is in general mild. The prevalence of given diseases in certain towns may also be traced in some cases to the preponderance of some particular industry. The character of the inhabitants may play a further important part: thus, the habitual carelessness of the Neapolitans predisposes them to pneumonia far more than the Piedmontese. Questions of diet, and particularly of the abuse of alcoholic drinks, must likewise be considered. Then, again, there is the economic condition of the various towns, increasing or diminishing as it does the resisting powers of the inhabitants: with this is bound up the equally important question of public and personal hygiene. Failure in any of these conditions leads to increased morbility from pneumonia, and no doubt from all other infectious diseases, while at the same time there is a greater tendency on the part of those attacked by the disease to succumb to it. Above all, in spite of the lessened exposure, there seems to be no doubt that the mortality from pneumonia is much greater in towns than in the country. In the large towns particularly the predisposing occupations are more numerous, and the economic conditions less satisfactory; the struggle for existence is keener and more severe, and the mode of life, particularly among the poor, less hygienic. The poor, indeed, tend to be herded together in unhealthy houses, to be fed with insufficient and unhealthy food, and to give themselves up to various forms of excess. All these circumstances must, according to the authors, be reckoned among the factors predisposing to pneumonia.

(243) Brachial Neuralgia.

Oppenheim, at the Neurological Congress at Jena (*Neurol. Centralb.*, June, 1898), discussed the nature of cases in which pain in one arm was the chief or only symptom. According to some observers most of the cases occurred in women, and the pain was in the course of the radial or ulnar nerve. Of 189 cases 81 had some obvious cause, organic or otherwise: in the remaining 108 cases no cause was found. In this latter group the pain was not limited to the course of any nerve, and there were no tender spots: there were frequent remissions and exacerbations of the pain. The symptoms point to a neurosis, and are often associated with neurasthenia or hypochondriasis. The treat-

ment which was found most successful was subcutaneous injection of antipyrin, electric baths, hypnotism, and similar methods. In some cases the use of Roentgen rays did good.

SURGERY.

(244) Treatment of Subcutaneous Rupture of Large Arteries.

Lejars (*Rev. de Chir.*, April and June, 1898), who has collected from various sources 32 cases of traumatic rupture of large arteries, and added to this list 2 cases treated by himself, insists on the importance in the early treatment of such injury of very careful disinfection of the skin of the limb supplied by the ruptured vessel. Gangrenous phlegmon, which so often causes serious and, indeed fatal, mischief in such cases, owes its origin, the author holds, to the introduction of pathogenic microbes by small and superficial skin lesions, which are apt to be regarded as of slight importance. It is thought that in some cases of ruptured artery active surgical intervention, at an early stage, might be applied with good results. With abundant effusion of blood, it would be well to lay open the seat of injury with the objects of clearing away the clots, and of securing by ligature the ruptured vessel. Such treatment, which might have the further advantage of preventing peripheral embolism, has not yet been practised in cases of simple arterial rupture, and is suggested rather than advocated by the author. In cases in which gangrene has followed the injury to the artery, early and high amputation of the affected limb is urgently included whenever serious and threatening symptoms are developed. In conditions that are less alarming the author would endeavour to save the limb by a method of embalming, and resort to free incisions, injections of very hot water, and the application of thick dressings saturated with alcohol. Such treatment, he states, will often give good results in apparently desperate cases.

(245) Cure of Aneurysm by Gold Wire and Electrolysis.

W. H. Noble (*Philadelphia Medical Journal*, June 25th, 1898) describes a case cured in this way after the failure of iodide of potassium. The patient, a man aged 37, had a large aneurysm of the abdominal aorta, the size of a fœtal head. The tumour was exposed by a free abdominal incision and a hollow gold-tipped needle inserted into the sac. Bleeding was free at first, but soon stopped. Eight and a half feet of number 30 gold wire were passed through the needle and connected with the positive pole of the battery; a clay plate placed under the buttocks was connected with the negative pole. The current was gradually increased to 70 milliampères during half an hour. The pulsation in the aneurysm diminished, but the patient became collapsed and cyanosed, rallying, however, under stimulant treatment. The wire was left in the sac, and the wound closed. The patient died six months later from some other affection, but there was no recurrence of the aneurysm. The author quotes 11 other cases treated in this way, 4 of which were apparently cured and 6 relieved.

(246) Congenital Varicose Veins.

Koenig (*Journ. d. Sc. Méd. de Lille*, May 21st, 1898) has met with a case of an unusual form of varicose veins in a youth, aged 17. The patient complained of an ulcer, the size of the palm of the hand, at the level of the lower and inner third of the right leg, and it was during the examination of this ulcer that Koenig noted the presence of varicose veins on the lower limbs and on the lower part of the abdominal walls. On the legs they had the usual appearances and arrangement of such varices, but at the upper part of the thigh on each side they became much more numerous, and were grouped together in the form of a fan. They ceased abruptly at the costal margins, and did not at all affect the penis and scrotum. The father and a sister of the patient were similarly affected, and he had suffered from no condition in his childhood which could have caused them. For these reasons they must be looked upon as congenital.

(247) Fibro-myxoma of Male Breast.

Péraire and Pilliet (*Bull. de la Soc. Anat. de Paris*, May, 1898) find that Poirier, in his recent exhaustive thesis on tumours of the breast in men, makes no note of any case where the mammary new growth was a fibro-myxoma. They now claim a case in their own experience. The patient was a tinker, aged 59. His right breast was as large as an orange, hard and tuberous, owing to a tumour which was ill-circumscribed and closely incorporated with the gland; the skin was red, adherent, thin, and vascular, but the breast did not adhere to the pectoralis. The nipple was not retracted, and no fluid issued from it on pressure. There were no enlarged glands either in the axilla or near the clavicle. The left breast was healthy. The tumour seems to have existed ever since youth as a lump half an inch to the inner side of the right nipple. It caused no inconvenience till two years before observation, when it began to grow, and for twelve months had been painful. The tumour was removed last March. After injecting a 1 in 100 solution of cocaine hypodermically all round the breast so as to make a crown of punctures, it was rapidly removed by transfixion. The wound was drained for a week, the skin being united with catgut. The tumour was firm, white, and gelatinous, on section; it had completely absorbed the normal mammary tissue.

(248) The Spontaneous Absorption of Senile Cataract.

Natanson (*Klin. Monatsbl. f. Augen.*, April, 1898) has seen three cases in which spontaneous absorption of cataract had occurred, and finds that there are records of at least fifty such cases, that is, in which the opaque cortex, or even nucleus, has become absorbed within the intact capsule of the lens. From a study of these cases it becomes apparent that the process represents a very late stage in the retrogressive metamorphosis of senile cataract when left untreated by operation. In the few cases which have been observed throughout their course, absorption has been led up to by a stage in which the clinical picture was that of a Morgagnian cataract. With the gradual disappearance of the fluid cortex the nucleus (if it persists) lies in the lower part of the capsule, the anterior and posterior portions of which come into apposition, and of course present the character of hypermaturity. The capsule retains sufficient transparency to allow of the fundus being seen fairly clearly, and correction of the aphakia with glasses may considerably improve vision. The average time for the absorption of a senile cataract is ten to twelve years, but may be less; and as it absorbs, vision slowly returns.

MIDWIFERY AND DISEASES OF WOMEN.

(249) The Afterbirth and Hæmorrhage.

Tucker, of New York (*Amer. Gyn. and Obst. Journ.*, June, 1898), has compiled tables of high value to the obstetrician in relation to the delivery of the placenta. He carefully distinguishes between cases where the placenta was born edge first, or maternal or fœtal surface first, and between spontaneous expression and Credé's manual expression. Amongst other conclusions based on his statistics he finds that the "natural blood loss" (where there is no true flooding from any cause) is 7.4 oz. when the placenta is expressed by the Credé method within 20 minutes after the child's birth, but only 5.7 oz. when expelled spontaneously within 20 minutes. Natural blood losses occur relatively oftener when the placenta is born fœtal surface outwards than when the other surface presents, but in the latter case the quantity of blood lost is greater. The natural blood loss is greatest in full-term labours, and in primiparæ. It is interesting to find, and most important to note, that though the "natural blood loss" is higher on the average when Credé's method has been employed, *post-partum* hæmorrhages are more frequent in spontaneous delivery of the placenta. The presentation of the placenta exercises, in cases of flooding, an influence the reverse of what is seen when there is only a natural blood loss, for more blood is lost in flooding when the fœtal surface is born outwards, but true flooding is more apt to occur when the maternal surface is born outwards. Hæmorrhages are more frequent, and larger in full-term than in premature labours. The order of placental births in reference to loss of blood when all classes of cases are considered together are as follows, according to Tucker's statistics: (1) Edge first, maternal surface outwards: average loss, 10.8 oz. of blood (most). (2) Maternal surface, first and outwards, average loss, 10.4 oz. (3) Edge first: fœtal surface outwards: average loss 10.0 oz. (4)

Edge first: average loss, 9.2 oz. (5) Fœtal surface first and outwards: average loss, 8.8 oz. (least). Tucker analyses these facts at great length, and refers to the opinion of numerous authorities on the birth of the placenta and membranes.

(250) Rupture of the Uterus, probably Traumatic, in Third Month of Pregnancy.

Hivet (*Bull. et Mém. de la Soc. Obs. et Gyn. de Paris*, April 21st, 1898) related the following case:—A patient, aged 41, multipara, was admitted to the Hôpital Necker on March 22nd, and died half an hour after admission. There had been amenorrhœa for three months and a half, violent pains for three days. On March 21st symptoms of internal hæmorrhage set in, and a voluminous fluid tumour was found in the posterior and left lateral *culs-de-sac*. The necropsy showed acute peritonitis. The two layers of the left broad ligament were separated by a large collection of fluid which had passed anteriorly between the uterus and bladder, raising the peritoneum, and posteriorly passed up into the lumbar region, following the utero-ovarian vessels. The uterus was three fingers' breadths above the symphysis pubis; the appendages were normal. On incising the outer border of the left broad ligament, a fœtus of 3 months with its membranes was found in the midst of a quantity of blood clot, and on washing out the cavity a circular perforation of the uterus, as large as a 5-franc piece, was found, forming a communication between the uterine cavity and the cavity in the broad ligament. The vagina was intact. In explaining the condition, the author excludes pathological alteration of the uterine walls, for these were found healthy; also external injury, for there had been none; also spontaneous rupture, for no case has ever been recorded so early in the pregnancy, and concludes, therefore, that the perforation was due to injury of the uterus from within, probably by a rigid sound. Most likely the orifice of rupture was at first narrow, and widened out, under the influence of uterine contractions, sufficiently to allow the passage of the fœtus and its envelopes.

(251) Pregnancy and Goître.

Bonnaire (*Centralbl. f. Gynäk.*, No. 21, 1898) reports a case of pregnancy in a German woman from the country near Stuttgart. A large goître, chiefly involving the middle lobe, extended to behind the sternum. After the end of the third month violent attacks of dyspnœa set in, mostly at night, and the goître became engorged, tender, and painful during speech and deglutition. As in the seventh month the dyspnœa grew very threatening and was not controlled by doses of tincture of iodine; abortion was induced. During the expulsive pains a remarkable change of symptoms set in quite suddenly. Instead of fits of dyspnœa, there were marked hysterical manifestations, globus, hyperæsthesia of a tract of skin under the breasts and in the region of the ovaries, and partial hemianæsthesia. The temperature kept at 103° for several days for no reason connected with the genital tract. Bonnaire thinks that the swelling of the goître during pregnancy was more than a coincidence, and that the prompt disappearance of the dyspnœa after abortion might partly be credited to the previous dosing with iodine which seems to have caused the goître to diminish a little in size. The later attacks could not, he thinks, be purely hysterical, as there was not only rise of temperature but also recurrence of albuminuria, which had occurred a little before the induction of abortion and had promptly been stopped by appropriate treatment. After recurrence the strictest milk-diet system had proved vain, and the patient still suffered from albuminuria. The cardinal symptoms of exophthalmic goître were absent. Bonnaire attributes the attacks to auto-intoxication from the thyroid tumour.

(252) Ovarian Cysts and Typhoid Fever.

Lovrich (*Centralbl. f. Gynäk.*, No. 23, 1898) exhibited at the recent meeting of the Royal Hungarian Medical Association, a suppurating ovarian tumour. The patient was 24, and had borne two children. Four months before the operation she suffered from an attack of typhoid fever. During convalescence pain in the hypogastrium set in, and abdominal swelling was observed. Accordingly Lovrich operated, removing a cyst of the left ovary. It was full of pus; on cultivation typhoid bacilli were obtained. Widal's reaction was, however, absent, which showed, in Lovrich's opinion, that the suppuration was due to infection from the bacterium coli; that germ reached the ovary through several adherent coils of intestine. The patient made a good recovery.

(253) The Time of Operation after Extra-uterine Pregnancy at Term.

Whitney (*Boston Med. and Surg. Journ.*, May 12th, 1898), in commenting on Swift's case, discusses this question; and advocates the plan of treatment followed in Swift's case—namely, waiting till after the death of the child and cessation of the placental circulation before operating. For the absence of any contractile wall to aid in stopping the hæmorrhage, when the placenta is loosened, is a factor that is the cause of death in the majority of cases where the operation has been done during the life of the child, or shortly after its death. Bandl cites 37 cases in which the operation was done during the life of the child, with a fatal result in 31. In cases where the fœtus is dead and operation has been undertaken, there has been severe bleeding from the placental insertion, even after nine weeks. Leitzmann quotes 10 cases that were operated upon from eight days to five weeks after the false labour, and of these 8 died. In 23 cases operated upon from six weeks to one year, 6 died. The rule has therefore been laid down that the operation should be done if the patient came under observation at any time between the ninth week and the second year after the death of the fœtus. After the latter time there is very little danger to the mother, the fœtus generally becoming calcified, and operative interference should not be advised unless other conditions (pregnancy, inflammation, etc.) render it necessary.

THERAPEUTICS.

(254) Normal and Antidiphtheria Horse Serum.

Szontagh and Wellman (*Deut. med. Woch.*, July 7th, 1898) have not been able to prove the presence of nucleo-albumen either in normal or in the curative serum, and they maintain that the curative action cannot therefore be due to nucleo-albumen. The authors next examine the relation of albumen and globulin in these serums. The amount of globulin obtained by saturating serum with magnesic sulphate depends on the temperature. The authors do not look upon it as excluded that there should be a difference in the amount of globulin present in the various serums. The percentage of albumen present is rather less in normal serum than than it is in antidiphtheritic serum, but no general conclusions can be drawn from it. The specific gravity of the two serums showed no difference. The lowering of the freezing point is less in antidiphtheritic serum. The electric conductivity is also less in antidiphtheritic serum than in normal serum. This may be due to the increased amount of albumen and the diminished amount of chlorides may not be without influence. The authors then give tables setting out these facts. One table shows the results of the examination of the serum from two horses before and after immunisation, and they decidedly confirm the views expressed above. In the serum which the authors obtained from Preisz and Paltauf respectively the lowering of the freezing point and the conductivity diminished with the increasing amount of antitoxin present. The question of conductivity is not without its practical aspect, as the strength of the curative serum can at least be approximately calculated in this way.

(255) Coronillin.

Maramaldi (*Rif. Med.*, June 24th, 1898) has studied the physiological effects of this alkaloid in various animals. In dogs it causes at first diminished frequency of heart beats with increase of their power, through stimulation of the inhibitory apparatus both extrinsic and intrinsic. This is soon followed by increased frequency and weakness of the pulsations due to paralysis of the inhibitory nerves and lessened irritability of the myocardium. Increase and successive decrease of the blood pressure are observed concurrently with the above phenomena. The muscular coats of the arteries are not directly excited. Bigeminal pulse is not infrequent in the first stage. Changes occur in the respiration, probably due to influence on the vagus. The amount of urine is diminished. Death occurs

from cardiac paralysis. The alkaloid has been tried clinically, and is said to have done good in tachycardia, but in other cardiac troubles it does not appear to have much value. This, according to the author, is due to the fact that when given by the mouth, coronillin is split up into glucose and coronillein by the action of the hydrochloric acid in the stomach. Coronillein has not the same action as coronillin. Unfortunately this latter alkaloid cannot be given hypodermically, as it is extremely irritating. Owing to its instability in the presence of acid coronillin is not likely to be of general service as a cardiac tonic.

(256) Oxytuberculin.

Guinard has carried out some observations (*Lyon. Méd.*, July 10th, 1898) with a view to verifying some of the statements of Hirschfelder, Mondielli, and others on the effects of oxydised tuberculin. The first series comprised inoculations on healthy rabbits, as much as 5 c.cm. of tuberculin being injected hypodermically. There was no pyrexia of any importance, nor any appearance of any indisposition or any other derangement. There was an absence of local inflammatory reaction at the side of inoculation. Similar observations were carried out on heifers and guinea-pigs, some being tuberculous others perfectly healthy, and in no case was there any elevation of temperature. Special records were kept of the arterial pressure pulse and respiration, and in the case of a dog some hours after an injection there was very slight rise of pressure, the pulse being the same. Respiratory movements were noticed to be slightly irregular. There was no vomiting or diarrhœa. Thus the author confirms in every respect the statements of Hirschfelder that oxytuberculin produces no injurious effects of any kind. The author further made some investigations to ascertain if portal injection could in any way alter the reaction to oxytuberculin in view of the fact that the toxic effects of some bacterial products are intensified on passage through the liver. He therefore injected 20 c.cm. of oxytuberculin into a mesenteric vein of a dog weighing 11 kilos. Five and half hours after arterial pressure, pulse, and respiration showed nothing abnormal. Thus it would seem that oxytuberculin has no pernicious effect on thermogenesis in either tuberculous or non-tuberculous animals, that none of the other functions is deranged.

PATHOLOGY.

(257) Post-typhoidal Suppuration caused by the Typhoid Bacillus.

Werner (*Zeit. f. Hygien. und Infectionskrank.*, vol. lxxviii, part 1, 1898) relates the case of a woman, aged 23, who had a typical attack of typhoid; during convalescence she developed an abscess in Bartolini's gland. A bacteriological examination revealed the fact that the abscess was caused by typhoid bacilli; pure cultures of the bacillus were obtained. Werner has searched the literature on the subject, and has failed to discover a single case in which an abscess was definitely proved to be caused by the typhoid bacillus. During the first week of the illness the Widal reaction gave negative results; on the eighth day, however, the reaction was positive with a dilution of 1 in 30. The agglutinative power increased during the progress of the disease, until the serum dilution reached 1 in 70 in the fifth week. When the fever began to subside the agglutinative tendency diminished. In the eighth week of the illness, and twenty-five days after the temperature had become normal, a swelling was noticed in the posterior part of the left labium majus; it was the size of a pigeon's egg, very tender, and with a sense of fluctuation. Pus was seen to be escaping from the duct of Bartolini's gland on the left side. The tumour was incised, and 4 c.cm. of blood-stained pus escaped. The growth on an agar culture resembled the usual typhoid cultivations in every respect. Undoubted proof was accorded by experiments on guinea-pigs with Pfeiffer's serum. This case is held to prove that the typhoid bacillus is able to cause suppuration by itself, and without the addition of other septic microbes. With regard to the method of infection, Werner suggests that the bacillus is either conveyed in the blood stream, or else that the close proximity of the anus to Bartolini's gland would be a sufficient explanation of the local infective theory.

(258) Immunity and Superinfection in Chronic Gonorrhœa.

Jadassohn (*Correspondenz - Blatt f. Schweitz. Aerzte*, May 1st, 1898) concludes that (1) there is no such thing as a diminution of infectivity of a chronic gonorrhœa that is, it produces an acute gonorrhœa in others, and that there is no immunisation of the organism through gonorrhœa of an organ, for instance, a chronic urethral discharge, may produce acute gonorrhœal conjunctivitis in the same individual. (2) After gonorrhœa of any mucous membrane there is, as a rule, no immunity for that membrane even for a short time. (3) It is not known how a mucosa gradually becomes accustomed to the presence of gonococci in it, though for other individuals or mucous membranes they have lost no virulence. Wertheim showed that a mucous membrane affected with chronic gonorrhœa did not react to cultures taken directly from it, though it did to cultures taken from another patient. (4) In spite of this it is certain clinically that some chronic gonorrhœas may become acute through superinfection with their own gonococci. (5) The author does not believe that the mucosa ever becomes so used to the presence of gonococci that they can live as saprophytes on it after its tissue has become quite normal. On the contrary, the inflammation always remains for a time after the gonococci have vanished. (6) The question how a chronic gonorrhœa reacts to superinfection with gonococci from another source is unsettled, though of great practical interest. From the author's experiments one finds that a chronic gonorrhœa may become acute (*a*) in some cases through an increase of its own gonococci, and then naturally from the gonococci of others; (*b*) sometimes only when reinoculated with gonococci from another source. In other cases, however, it reacts to neither one nor the other, and hence proves an exception to conclusion (1), as there must be some sort of immunity established.

(259) Fluid from a Pancreatic Cyst.

Lenarcic (*Centralbl. f. inn. Med.*, July 30th, 1898) describes in detail the examination of the fluid from such a case. It was dark brownish in colour, not transparent, and yielding on shaking a yellow-coloured froth. There was very little sediment, and this consisted chiefly of red and white cells. Küster's fatty granular cells were absent. The specific gravity was 1010, and the reaction alkaline. When shaken up with air the fluid showed two absorption bands corresponding in position to those of oxyhæmoglobin. There was also present a derivative of blood pigment of undetermined nature. The presence of sugar was proved both by Fehling's solution and fermentation. Only a small quantity of mucin was found. Albumen was present, but no peptone. Both tryptophan and urea were absent. The minute composition of the fluid corresponded to that of the pancreatic juice obtained by Schmidt from a permanent fistula in a dog. An artificial digestion showed the absence of trypsin. The fluid possessed a very marked amylolytic action. A mixture was thus obtained of the osazone of iso maltose and maltose and perhaps grape sugar. Achroodextrin was also probably present.

(260) Fibrinous Bronchitis.

Herzog (*Centralbl. f. allgem. Pathol.*, viii, 24) records two cases in which the microscopical examination enabled him to establish the existence of a true fibrinous bronchitis as distinguished from the mucous exudation found in Grandy's case (Epitome, No. 116). Both of Herzog's cases were chronic, and each showed typical casts, the second exhibiting the characteristic lamellar structure extremely well. In both the casts consisted of a fibrinous basis, containing in the first case a small, and the second a large, number of leucocytes, mainly mononuclear. The various fibrin stains coloured the fibrillæ deeply; they were completely digested by artificial gastric juice at the body temperature, and portions of the exudation were clarified by dilute acetic acid. The author is inclined to lay more stress upon the digestion experiments than on the colour tests. He found that the exudation in a case of fibrinous rhinitis behaved just as that in fibrinous bronchitis; investigation of two cases of membranous enteritis gave, however, totally different results, showing the false membrane in this disease to be mucous and not fibrinous.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(261) The Association of Hysteria and Epilepsy.

The expression "hystero-epilepsy," introduced by Charcot, in no way applies to the occurrence of epilepsy and true hysteria in the same subject. Joffroy points out (*Journ. de Méd.*, June 10th, 1898) that these two diseases are sometimes combined, and that this combination often presents somewhat unusual features. Thus, he quotes the case of a girl who presented two forms of crises, the one characterised by vertigo coming on instantaneously without any precursory sign, and disappearing suddenly. At other times there was a preceding gastric aura followed by loss of consciousness for some seconds. The other form was preceded for a considerable interval by a condition of *malaise* with very marked sensation of globus, ending in a marked hysterical seizure, at times accompanied by loss of consciousness. Should this not occur there was a violent attack of crying. At the same time various stigmata were present, such as ovaralgia, complete left hemianæsthesia, loss of taste and smell on the same side. There is thus no doubt as to the occurrence of hysteria in this case, and it is no less certain that true epilepsy was present as well. Joffroy quotes another example in which there was always an attack of hysteria major, followed by a state of drowsiness similar to that found in epilepsy. In other instances the epileptic seizure may precede the hysterical attack. The author finds that the administration of bromide modifies markedly the epileptic condition in such a manner that the case retains only the hysterical element. A noteworthy point seems to be that bromide treatment does not appear to reduce the frequency of the seizures, exerting its effect merely upon the epileptic element.

(262) A Study of Tabes.

Trevelyan (*Quart. Med. Journ.*, July, 1898) publishes a series of observations based upon 12 cases of tabes, 3 of which occurred in women; but of 52 cases from the author's notebooks, no fewer than 20 were in females, the usual proportion given being only 1 in 10. Syphilis was the cause in the majority of cases, but attention is called to the potency of cold in bringing out the symptoms of a latent tabes: in none of the author's cases could cold be established as the causative factor. One instance, in which there was no history of syphilis, is recorded as being of doubtfully traumatic origin. Among the early symptoms particular note is made of those relating to the eye; an irregular margin to the pupil and temporary inequality of the two pupils are specially mentioned. Optic atrophy was present in 2 out of the 12 and 11 of the 52 cases referred to. Ataxy and pains were often absent in these cases. Bladder symptoms were often among the earliest manifestations; they appeared as irritability of the organ, or as weakness of the sphincter or detrusor. Of the 12 cases, 2 exhibited tabetic arthropathy, which assumed the hypertrophic or benign form of Marie; in 1 case there was a spontaneous fracture in which, contrary to the usual rule, union was not complete, and much callus was thrown out. Aortic disease was present in 2 cases, in 1 of which it was latent: in this instance it was due to rheumatic fever, while in the other it resulted from the syphilis which led to the tabes. In discussing treatment, the author refers first to the great influence of the mind over the body in this disease, and the consequent importance of giving the patient a cheerful prognosis. With regard to general treatment, he has not seen any very obvious results from antisyphilitic remedies, though he thinks that a course of them should always be tried in early cases. A short course of arsenic may also be advisable, and some good has appeared to result now and then from the use of testicular extracts, though this may be a result of suggestion. Galvanism along the spine and hydrotherapeutic treatment may also at times prove of service. As regards symptomatic treatment for the lightning pains, the author uses local measures, antineuralgic remedies, and, as a last resource, morphine; he regards cocaine as worse than useless. For the ataxy the palm is given to the method of graduated exercises as practised by Fraenkel, over-fatigue being, of course, most carefully guarded against. Finally, it is recommended in refractory cases to try the various therapeutic measures systematically, and to carefully note the results obtained.

(263) Serous Meningitis Simulating Brain Tumour.

Diller records an interesting case (*Journ. of Nervous and Mental Diseases*, June, 1898) in which serious alcoholic meningitis gave rise to symptoms suggestive of intracranial growth. The patient was a man aged 33, of strongly alcoholic habits, who suffered from severe headache, vomiting, optic neuritis, weak ataxic gait, loss of knee jerks, etc. Towards the end of the case there were marked convulsions and delusions. The writer looked upon the case as one of cerebral tumour, but upon *post-mortem* examination, there was a considerable amount of chronic leptomeningitis with subpial collections of fluid. This similarity of the symptoms of this condition with those of tumour has been recorded in several cases more particularly by Oppenheim who states that the latter diagnosis is generally made.

(264) Measles.

Möller (*Archiv f. Kinderheilk.*, vol. xxi) gives some statistics with regard to the measles epidemic in Munich in 1887. He tabulates the results as follows: (1) There was no law of periodicity in the measles epidemics. (2) The measles contagium must have its origin in some kind of clothing which has been worn by, or has come into contact with, an infective person. With the increase of population a diminution in the interval between successive epidemics has been noticed. (3) The spread of measles appeared to be influenced by the time of year; the number diminished with the approach of warm weather. Whether the higher temperature had a direct influence on the virus, or whether the freer ventilation in the houses affected the virulence of the contagium it is impossible to say. (4) The death-rate from measles during the last twenty years shows that there are two maxima, one in December and a higher one in May and June. The death-rate has diminished during the last ten years. (5) The highest mortality is found among infants during the first year. (6) A rickety chest with the accompanying broncho-pneumonia doubles the mortality.

(265) Intestinal Myasis.

Malfi (*Rif. Med.*, July 22nd, 1898) reports the case of a woman who complained of passing *per anum* what she called worms, which proved to be the larvæ of musca carnaria. The condition had lasted for four years, and only occurred during the summer. None were ever passed by the nose or mouth. Similar cases have been recorded of this accidental parasitism, and Joseph gave the name "myasis" (Gr. μῦια, a fly) to the group. Several of the cases hitherto recorded were marked by more or less severe symptoms, but in the author's case there was no vomiting, no thirst, regular action of the bowels, good appetite, and no abdominal pains. During the winter months no larvæ could be detected in the fæces. Probably they were ingested as eggs and not as larvæ; and it is known that many of the diptera deposit their eggs on food.

SURGERY.

(266) Treatment of Angular Curvature of the Spine.

Gevaert (*Annales de la Société Belge de Chirurgie*, No. 4, July 15th, 1898), in a report on the treatment of Pott's curvature, states that the method of rapidly extending the spine is not free from risk. Death may occur under chloroform or from shock; an abscess in connection with the diseased bone may be ruptured into an internal cavity. The treatment may be followed by paralysis of the lower limbs and the bladder, or may result in rapid generalisation of tuberculosis. Extension of the spine and immediate immobilisation are applicable only to curvatures in the dorsal region, especially the middle of the back. Curvatures in the cervical region are best treated by slow and continuous extension, and those in the lumbar region by Sayre's plaster jacket. Cutting operations, such as cuneiform resection and laminectomy, are now, the author states, rejected by most surgeons. The

loss of osseous material caused by the breaking down of the bodies of diseased vertebra cannot, it is held, be repaired by new bone. Consequently the treatment by rapid extension is applicable only to recent cases of Pott's disease or those in which the angular projection involves but a small number of vertebræ. It is contraindicated in the case of cachectic children who are troubled with cough, or suffer from abscess or fistula, or who present signs of degeneration of internal organs.

(267) The Surgery of Pancreatic Abscess.

SIKORA (*Gazette des Hopitaux*, July 7th, 1898) observes that the prognosis of suppurative pancreatitis is very serious since of all published cases all have proved fatal excepting Paul's and Thayer's. These happen to be the only cases where there was surgical interference. Senn first advocated that step. He proposed that after a median abdominal incision the parietal peritoneum should be sutured to the cut edge of the skin so as to prevent pus from entering into the muscular layers of the abdominal wall. Then the peritoneum pushed forwards by the abscess is carefully sutured to the abdominal wound. A long incision is needed if the abscess be not very prominent, else it will be difficult to fix its serous covering satisfactorily to the parietes. Not till the suturing has been finished by tying of all the sutures should the abscess be opened and drained. Lumbar drainage is sometimes needed as in cases of pancreatic cyst. Paul emptied over a pint of pus out of a pancreatic abscess. Pieces of disintegrated glandular tissue floated about in the pus, and at the bottom of the cavity the head and tail of the pancreas could be felt. Yet though the entire organ seemed broken up, the patient recovered from the operation and was restored to health. Thayer's case was similar, the patient was a man aged 44, with all the symptoms of suppurative pancreatitis. The abscess was opened on Senn's principle; a thick orange-brown pus, mixed with greasy tissue, came away. The abscess cavity opened into the substance of the pancreas. Within three months the patient was well again.

(268) Acute Cholecystitis.

RICHARDSON (*American Journ. of the Med. Sciences*, June, 1898) calls attention to those cases of acute cholecystitis of sudden onset in patients of apparently perfect health, where there is no history of gall stones, and which do not depend on typhoid fever, pneumonia, or other infective processes. Of 59 cases of cholecystitis operated on by him only 10 began without known pre-existing disease. The chief point about such cases seems to be that, though it is quite as important to recognise them early as it is in acute appendicitis, yet it is often very difficult or impossible to do so owing to the great variety of diseases which they may simulate. Three of the author's 10 cases were diagnosed as acute appendicitis with such certainty that the incision was made over the appendix. In 3 the symptoms were those of acute intestinal obstruction, and though the site of the obstruction may appear to be in the region of the gall bladder, in some cases there is nothing whatever to show its position. Again, the disease may be mistaken for the sudden closure of an organic stricture, for an inflammatory process in a diseased kidney, an acute peritonitis, an acute pancreatitis, an extravasation from the stomach, or a malignant abdominal tumour, or a tumour with a twisted pedicle. The chief importance of an exact diagnosis is for the selection of a suitable incision. If the symptoms point to the gall bladder rather than the appendix it should be made over the former and *vice versâ*. When there is great doubt as to which is affected, the cut may be made behind the cæcum, high up and enlarged in whichever direction is required. When there is no localised pain or tumour or history pointing to a definite lesion, it should be in the middle line. The prognosis is grave, but if an operation (opening and draining the gall bladder) is done early, the prospect is very encouraging. Seven of the author's 10 cases recovered.

(269) Sarcoma of the Larynx.

HAUSZEL (*Wien. klin. Woch.*, June 9th, 1898) remarks on the rarity of this disease. In Professor Chiari's clinic in Vienna 4,000 out-patients are examined yearly. There has not been a single case of sarcoma of the larynx for the last three or four years. Bergeat says that the disease is more frequent amongst those who are brought into close contact with horses. Hauszel reports the case of a man, aged 55, who who had been a stableman all his life. For forty years he had enjoyed good health. About fifteen years ago he is said to have caught cold, and since then he has suffered from a troublesome cough. He had no pain, and felt quite well in himself. The last few months before admission he has complained of hoarseness and some dyspnœa. These symptoms gradually became worse. There was no history of syphilis. On laryngoscopic examination, a tumour the size of a hazel nut could be seen occupying the anterior two-thirds of the true and false cords on the left side, and also the anterior half of the true cord on the right side. The inferior aspect of the tumour could not be seen. The colour of the tumour was pale pink. The glottis was considerably narrowed. The mucous membrane of the larynx was redder than normal, but there was no œdema present. The movements of the arytenoid cartilages were diminished. In the nasal cavities both inferior turbinates were hypertrophied. A small portion of the tumour was removed for microscopical examination. Immediately after this operation extensive œdema of the larynx occurred, which necessitated tracheotomy. The subsequent microscopical examination showed the tumour to be a large spindle-celled sarcoma. A few days later laryngotomy was performed, and the tumour removed, together with the anterior portions of the vocal cords. The operation was successful, and the patient was discharged. A month afterwards the patient died from a sudden attack of dyspnœa.

MIDWIFERY AND DISEASES OF WOMEN.

(270) Dermoid Cyst Complicating Labour.

TREUB (*Bull. Soc. Obs. Gyn. de Paris*, April 21st, 1898) showed a dermoid cyst, weighing 650 g., sent to him by a practitioner with the following history: A year previously the patient was found to have an ovarian cyst with a long pedicle. Ovariotomy was advised, but not consented to. The medical man was called to the patient again during labour. He found the tumour bulging out the posterior vaginal wall. The child's head presented by the ear. The hand in the vagina showed that the upper part of the tumour was not accessible. The membranes had been ruptured since the morning. He did not apply forceps for fear of rupturing the cyst, and did not puncture for fear of infection. Version was impossible because of the fixation of the head in the pelvic inlet. In the absence of immediate danger he decided to wait; but the next morning, as no change had occurred, he decided to interfere, and applied the forceps, as he was not sure of the death of the child. The head gradually descended, but the tumour descended also, and presently came to lie between the blades of the forceps, without his being able to reduce it. Pulling cautiously, the tumour suddenly came out from the vulva, and fell on the floor; this happened so quickly that he could not see how it came about. The extraction of the dead child was then easily accomplished. Treub had occasion to visit the patient sixteen days later, and found a granulating rent running transversely across the posterior *cul-de-sac*. Discussing the treatment of these cases, Treub advises reposition of the tumour wherever practicable. If this fails, posterior colpotomy followed by careful suturing of the vaginal wound is the best treatment; in a private house without proper assistance, he would suggest puncture of the cyst as giving the best chance for mother and child.

(271) Diffuse Hypertrophy of the Breasts in a Virgin.

FRAENKEL (*Deut. med. Woch.*, June 23rd, 1898) describes and figures a case where, as usual, evidence as to cause was negative; the clinical history on the other hand was remarkable. The patient was a working woman, aged 30, who consulted Fraenkel for very rapid growth of the breasts, which had attained an enormous size. She was quite healthy and menstruated first when 17. Until the age of 22 she was quite regular. Then the period ceased completely for many years with little or no constitutional disturbance. In January, 1898, she was again seen and a month later there was another distinct menstrual period. Immediately the breasts began

to grow, and by April, 1898, when Fraenkel first saw the patient they were enormous. The right breast measured nearly 11 inches vertically from its uppermost to its lowest limit passing over the nipple, the left 14 inches. The patient was cachectic and anæmic, the hymen tight, the uterus atrophic and retroflexed. Thyroidin was given, but without the least result. By May 11th, after she had taken 200 tablets the vertical measurement of the right breast was over 14 inches and that of the left over 16 inches. Amputation was contemplated.

(272) Operation for Ectopic Gestation near Term: Live Fœtus; Mother Saved.

Neugebauer (*Centralbl. f. Gynäk.*, No. 30, 1898) operated on a patient nine months' pregnant. She was 36, and had been pregnant three times previously; the last pregnancy ended at term two years and a half before the operation. Early in the fourth pregnancy the patient suffered from severe pelvic pains. At the end of the fifth month the fœtal movements were first felt; the suffering had now grown intolerable so that the patient was kept under morphine. At the end of three months later she had become very cachectic. The abdomen was distended as in pregnancy but more to the left: the circumference at the navel was 39½ inches. The walls of the sac were so thin that the fœtal movements could be plainly seen under the parietes; the patient writhed in agony when these movements occurred. The uterus was retroverted and pushed to the right; its cavity was 4⅞ ins. long, whilst the vagina showed the usual changes. A free median abdominal incision was made; the breech of the fœtus at once presented. The child being delivered, the cord was secured on each side with pressure-forceps before division. Unfortunately the child died in nine hours from pure debility; the morphine taken by the mother had no doubt injured its nutrition. It was over 18 ins. long and weighed over 6½ lbs. Hardly a drop of liquor amnii was discovered. The placenta directly after the division of the cord bulged out of the lower extremity of the wound, self-detached from its insertion on the bladder and utero-vesical pouch. It was indistinctly trilobed, but most likely from changes in the sac wall. The cord was over 14 ins. long and inserted laterally. Very little of the placenta required manual extraction. The hæmorrhage was checked by pressure with cloths soaked in an antiseptic solution, and also by ligature of vessels around the limits of the placenta attachment. The uterus was now seen to be retroverted and pushed to the right, as it had appeared before the operation. The right appendages were normal, the sac seemed to have developed from the left side, but the patient was too exhausted to allow of examination of relations. The cavity of the sac was permanently plugged with three strips of iodoform gauze. The operation lasted thirty minutes. On the second day one of the strips of gauze was removed, the bowels were opened by calomel and castor-oil on the fourth, when the temperature had risen to 100.5°. As there was foul discharge from the cavity the two remaining strips were removed, and on the eighth day, when the sutures were taken away, an india-rubber drainage tube was passed into the cavity. A small fistulous track remained, and continued to discharge several months later. At that date the patient was otherwise in good health. The period was regular, and although utero-vesical pouch must have been obliterated there was no dysuria.

(273) Schleich's Anæsthesia in Gynæcological Operations.

Kleinhaus of Prague (*Monats. f. Geb. v. Gyn.*, June) reports his experience of 13 cases. The solution was in every case sterilized after preparation, and cannulæ with special curves were employed for the injections. In plastic operations on the perineum 6 to 8 injections generally sufficed, and for anæsthesia of the perineum only 2 injections below the insertions of the labia minora. The infiltration of the tissue did not prove any real impediment in the operation. In laparotomies no local anæsthesia was attempted inside the abdominal cavity, and, contrary to other observations, the ligature and amputation of the stump did not cause any pain. One ovarian tumour was so removed, though adherent, but in another adherent case narcosis was necessary. In all cases recovery was uninterrupted.

(274) The Treatment of the Vomiting of Pregnancy and of Phthisis by Oxygenated Water.

Gallois (*Sem. Méd.*, March 16th, 1898) has used oxygenated water in the vomiting of pregnancy for the last three years, and has had only two cases where it failed to cure. This treatment has no effect on ordinary gastric vomiting, but Bonnel has had excellent results with it in the vomiting of tuberculous patients. It is doubtful how its acts; partly, perhaps, by giving up its oxygen, and partly by neutralising the toxic properties of some ptomaine.

(275) Uretero-vaginal and Uretero-abdominal Fistulæ.

Ferguson of Chicago (*Amer. Gynec. and Obstet. Journ.*, May, 1898) has compiled a useful monograph on these serious complications, including 2 cases in his own practice. From the study of 67 cases he draws the following conclusions: (1) The left ureter is more frequently the seat of trouble than the right. (2) Uretero-vaginal is much commoner than uretero-abdominal fistula. (3) The most common cause is difficult labour, especially when the forceps are used. (4) Of all the operations performed in the pelvis, vaginal hysterectomy is the most frequent cause of ureteral fistula. (5) Other conditions being favourable, all cases of ureteral fistula are curable by operation. In uretero-vaginal fistulæ the direct method of operating should be selected, and no particular operator's method is suited to all cases. Intraperitoneal operations are suitable for uretero-abdominal fistulæ. (6) For the cure of uretero-vaginal fistula, it is absolutely unjustifiable to perform hysterectomy, nephrectomy, or colpocleisis. When septic infection of a kidney occurs it may be necessary to open and remove it. To remove a kidney or uterus, or to close the vagina in these cases of simple fistula, bespeaks lack of surgical ability. (7) Another unsurgical procedure is transplanting the cervix uteri into the bladder in cases of uretero-uterine fistulæ. It causes sterility, directs the menstrual flow into an abnormal channel, and renders possible a backward flow of urine into the uterus and Fallopian tubes, and even the peritoneum. (8) Uretero-enterostomy is only justified when no other operation is feasible. It has but little to recommend it on general principles.

THERAPEUTICS.

(276) The Treatment of Enteric Fever.

Walger (*Centralbl. f. inn. Med.*, September 19th, 1898) discusses the treatment of this disease with the serum obtained from convalescents. He relates in detail 4 cases so treated. All four patients presented an unfavourable prognosis before the injection was given. Cases 1 and 2 occurred in decrepit and poor women, whereas the third case, in a strong, healthy, young woman, was of a severe type. In Cases 1 and 2 the general condition improved rapidly after the injection. In Cases 3 and 4 the disease lasted longer, but here also the good effects of the injection were very obvious. The author remarks that under this serum treatment the anatomical process may gradually recede, or it may continue for some time, or even perhaps spread. In both Cases 3 and 4 relapse occurred, but the author thinks that if they had not been injected they would probably have died. The repetition of the injection in the one attack has, in the author's opinion, no object, but it is different in the relapse, which he looks upon as a fresh attack. The amount of serum injected was 10 c.cm. Walger apparently thinks that the use of an efficient serum treatment will render Widal's test unnecessary.

(277) The Treatment of Obesity.

Richter (*Zeitschr. f. diätet. u. physikal. Therapie*, Bd. i, Heft 4) says that perhaps in no department of the pathology of metabolism has exact laboratory experiment given such valuable information as in the treatment of obesity. The deposit of fat is brought about by the supply of fat-forming material. According to modern research albumens do not assist in fat formation. The chief consumption of fat occurs in muscular work. The putting on of fat is more often due to a permanent want of proportion between fat formation and fat consumption. There are forms of obesity which are caused by the deficient combustion of nitrogenous-free substance in the cells, and this occurs in the obesity

coming on after excessive loss of blood: after castration; and at the menopause. In the treatment fat-forming substances must be diminished. The oldest method is that of Banting, which consists almost exclusively in a nitrogenous diet, the fats being reduced to a mimimum, and the carbohydrates only given in small amount. In Oertel's treatment the fluids are also lessened. In Ebstein's diet the carbohydrates are chiefly reduced. The reduction of the fat can be brought about by all these deprivation methods. They provide less than half the number of calories in ordinary diet. Banting's diet possesses all the disadvantages of a pure nitrogenous diet. Oertel's diet is also rich in nitrogen. It is not possible to say whether the diminution of fluid favours the loss of fat. In Ebstein's diet the nitrogenous element is small, but the patient is not put at once on this diet. V. Noorden and Dapper have shown that albumen gain may occur at the same time as fat loss. The diet during the treatment may need alteration. Normally 2,800 calories are present in the diet, but this may be reduced in the obese to 1,400 or 1,500. Besides the increased albumens, the fats and carbohydrates should be given in the usual increased proportion but in diminished quantity. Later the fat may be reduced. Butter and alcohol must be strictly limited. Thus quantitative reduction is adopted at the beginning, and only later the qualitative change. The next point in the treatment is the increased consumption of the body fat. Gradually increased methodical muscular exercise carefully supervised should be employed. Warm baths increase the loss of heat by the skin. Saline purgation may also be of service. Forced cures must be avoided in the class of cases of obesity following loss of blood, castration, the menopause, etc. As regards thyroid treatment the author says that the tabloids should only be used for a short time, and then along with a sufficient diet. The thyroid treatment can only be used to assist the deprivation methods, and then only with care, as unpleasant symptoms may develop.

(278) Protargol in Ophthalmia Neonatorum and other Conjunctival Diseases.

F. E. Cheney (*Boston Surgical and Medical Journal*, August 25th, 1898) uses protargol, a fine yellowish powder, consisting of silver chemically combined with a protein substance instead of nitrate of silver, in the treatment of conjunctival diseases, and especially of ophthalmia neonatorum. It does not stain the skin, and causes scarcely any irritation, so that a 2 or 4 per cent. solution can be used without cocaine. Cheney employed it in 25 cases of ophthalmia neonatorum, in 10 of which one eye was treated with protargol, and the other with nitrate of silver. The lesser degree of irritation in the protargol eye was very noticeable, and there was less tendency to the formation of a fibrinous coagulate. As a prophylactic it was also most efficacious.

PATHOLOGY.

(279) Rhabdomyoma in Place of the left Lung.

C. Helbing (*Centralbl. f. Path.*, No. 11-12, 1898) describes what is probably a unique case of lung tumour. A man, aged 23, suffered from thoracic pain and dyspnœa; the heart was pushed completely to the right side of the chest; there was complete dulness on percussion on left side, and absence of vocal fremitus, with signs of insufficient entry of air at the root. Six litres of sanguineous fluid were withdrawn at different periods. *Post mortem* the diaphragm was pushed downwards, so that its abdominal aspect was convex. The left lung, or the mass in place of it, weighed 16 pounds, and was composed of fibrinous-looking material with small patches of necrosis; the mass resolved itself into a few small isolated tumours anteriorly. The mass was absolutely airless; the vessels at the root were pervious, but no vessels could be seen in the tumour. No trace of bronchi could be found, either macroscopically or microscopically. There were no other growths in the body. The main mass of the tumour contained in its interior a number of small grey translucent nodules, which proved to be composed of hyaline cartilage containing a few elastic fibrils and calcified here and there. The mass of the tumour was composed of small lymphoid cells, with giant cells scattered among them; fibrous bands traversed it in all directions. Scattered throughout the tumour were strands of delicate embryonic striped muscle fibres. A few cysts lined with cubical epithelial cells were also visible, and the surface of the tumour was covered by a single layer of similar cells, evidently pleural epithelium. The growth contained capillaries only. The author considers the tumour to be allied to the teratomata. The left lung was probably congenitally absent (*cf.* the absence of larger vessels and of all traces of bronchial tubes), but instead of the hydrothorax *e vacuo* usually resulting in such cases a tumour developed from the embryonic residue of the undeveloped lung.

(280) Hæmorrhagic Pleural and Peritoneal Effusions in Hepatic Cirrhosis.

Barjon and Henry (*Lyon Médical*, June 19th, 1890) give in detail 4 cases of hepatic cirrhosis from Bondet's clinic, in 3 of which the diagnosis was confirmed by necropsy. In 2 of the later there was a hæmorrhagic pleural effusion on the right side and ascites at first serous, subsequently hæmorrhagic, the other case, examined after death, and the one not thus confirmed, both had hæmorrhagic right pleural effusions. From a consideration of these cases and those previously recorded, especially in Jean's thesis (Paris, 1891), it appears that hæmorrhagic effusions are rare and that they cannot be explained like purpura and epistaxis, as due to hepatic insufficiency. Cirrhosis has a special tendency to lead to right-sided pleural effusion which is more often hæmorrhagic than ascites due to the same cause. In the great majority of cases the cause of the hæmorrhagic character of the effusion is tubercle, but in some instances no sign of tuberculosis is forthcoming, this is especially true of those cases of ascites which are clear at the fist tapping and subsequently become hæmorrhagic, this transformation is traumatic, and due to damage done by the puncture to the dilated vessels forming the collateral circulation on the peritoneum.

(281) The Meningococcus Intracellularis.

Schiff of v. Schrötter's clinic (*Centralbl. f. inn. Med.*, June 6th, 1898) discusses the presence of this micro-organism in the nasal cavities of individuals not suffering from cerebro-spinal meningitis. He first refers to a case of this meningitis in which the meningococcus was not only found in the fluid drawn off by spinal puncture, but also in the nasal secretion. That this microbe is the cause of cerebro-spinal meningitis has been placed beyond doubt. Heubner was the first to find it in the cerebro-spinal fluid during life. A spread of this disease from the nose has been looked upon as probable for many years. Weichselbaum and others have found the meningococcus present in the nasal cavities. Consequently the nasal secretion has been looked upon as infectious. Thus the absence of this microbe from the nose is a matter of importance in diagnosis. The author then refers to a case in which the meningococcus was present in the nose and yet the case was proved to be tuberculous meningitis both by spinal puncture and necropsy. This led Schiff to examine the nasal secretion in 27 cases in which the nose was either healthy or the seat of a slight catarrh. In 7 of these Weichselbaum's meningococcus was present, but only only in such numbers in 3 cases as to give rise to a pure culture. It also showed itself pathogenic to mice and guinea-pigs when injected into the pleural and peritoneal cavities. Thus this investigation shows that the meningococcus may not very infrequently exist in the nasal cavities of individuals not the subjects of epidemic meningitis. Heubner has also found it in the healthy nose and in the nasal cavities of a patient suffering from tuberculous meningitis. In this as well as another case both the meningococcus and the tubercle bacillus were present in the cerebro-spinal fluid; thus there was a mixed infection. Lenhartz also found both microbes associated in one case and the meningococcus and streptococcus in another. Jaeger found Fraenkel's pneumococcus and Weichselbaum's meningococcus present in a case together. Thus although the nose may be the starting point of the disease, yet the meningococcus is more frequently present there than it gives to a severe infection. The author refers to its presence there as a possible explanation of cases of cerebro-spinal meningitis of apparently traumatic origin.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(282) Toxæmic Delirium in Heart Disease. Eichhorst (*Deut. med. Woch.*, June 23rd, 1898) first draws attention to the fact that patients with uncompensated heart disease are often greatly improved by rest alone, but that not infrequently cardiac tonics are also necessary. The effect of this treatment is often very rapid, when the urine increases to 2,000 or even 5,000 c.cm. in the twenty-four hours, and the dropsy disappears. With this increased diuresis characteristic symptoms are sometimes noted in the patient which can only be attributed to auto-intoxication. Somnolence may first appear, and then delirium. At times the patient mumbles incomprehensible words and sentences, or shouts out or becomes excited and violent. Thus to the apathetic state there succeeds one in which there is much tossing about of the body. The pupils are small and often unconsciousness may follow. The patient breathes deeply and hurriedly, but the face is not cyanosed. This condition may last several days, or even extend into the second week, to cease when the œdema has disappeared, and the polyuria due to the digitalis and diuretin has come to an end. This condition is not serious, all the author's cases recovering. An intermission of the digitalis and diuretin is not necessary. There was no albuminuria, and hence the symptoms could not be looked upon as uræmic. Eichhorst believes that they are due to the absorption of some poison into the blood from the œdematous fluid which is not excreted quickly enough by the kidney. In this way the central nervous system is poisoned.

(283) Nephritis following Vaccination with Calf Lymph. Frölich (*Jahrbuch f. Kinderheilk.*, vol. xlvii, pp. 2 and 3, 1898) relates the case of a child, aged 6½ years, who was vaccinated at the State Institute in Christiania, and 11 days after the operation developed symptoms of nephritis. The family history was good, and there had been no case of scarlet fever or any other infectious disease in the house or neighbourhood. The child had always been perfectly healthy, and had not suffered from any previous illness. On the eleventh day after vaccination the mother noticed that the eyelids and cheeks appeared to be swollen; this symptom disappeared in two days, and was succeeded by pain and swelling in the scrotum; no other part of the body was affected. On the fourteenth day after the vaccination the urine contained blood. Some of the œdema had returned on the eyelids and cheeks. The lymphatic glands in the neck and inguinal regions were enlarged and tender; there was also slight œdema of the legs. All the organs of the body appeared to be normal. The temperature was also normal. The child continued to have blood and albumen in the urine for the next month; he ultimately made a good recovery. There was no pain in the back or headache throughout the illness. The vaccination marks looked perfectly normal, and they had never caused the child any discomfort. The usual antiseptic precautions were adopted in this case at the time of operation; and other children vaccinated with the same calf lymph experienced no unfavourable symptoms. Some similar cases have been recorded by German observers; they all made good recoveries.

(284) Brachialgia and Brachial Neuralgia. Oppenheim (*Berl. klin. Woch.*, June 27th, 1898) says that the type of neuralgia is best illustrated by trigeminal neuralgia and by sciatica. The cardinal symptom consists in paroxysmal and severe pain in the course of a nerve and its branches, which may lead to motor, vasomotor, and secretory disturbances, but is not associated with symptoms due to structural alteration in the nerve. Some refer all neuralgia to a neuritis, but it must be a very special form which lasts for years and decades without producing symptoms due to degeneration of the nerve. Brachial neuralgia is most often seen in women. Exposure to cold, overuse, and especially traumatism, are put down as causes. Pressure due to tumours, aneurysm, callus, etc., are also assigned as causes. Some authors attribute it to vertebral and spinal cord affections, and others to infections and intoxications. Gowers especially mentions gout. Brachial neuralgia is rarely strictly limited to the course of single nerves, but is more ill-defined, and the tender points are not constant. It has to be distinguished from muscular rheumatism, bone and joint disease, and vertebral and spinal cord affections. Some would distinguish sharply between brachial neuralgia and neuritis. Speaking from his own experience, Oppenheim thinks that brachial neuralgia is a rare disease, and that it is frequently only a symptom of an organic or functional disease of the central nervous system or of genuine neuritis. He then analyses 189 cases in which there was severe pain in the arm. In 15 there was a spinal lesion, and in 30 marked neuritis. In 6 cases the neuritis was of an infective or toxic origin. In 12 cases the nature of the infection was doubtful. In 22 cases the etiology consisted in diabetes, gout, alcohol, etc., but there was no evidence of any organic nervous disease. In 14 cases it was an occupation neuralgia. In the chief group of 96 cases, however, it was not really so much a genuine brachial neuralgia as pain occurring in the course of hysteria, neurasthenia, hypochondriasis, etc., or due to a neuropathic or psychopathic diathesis. The pain was not the only symptom, but there was sleeplessness and mental overstrain. Psychic influences were often the starting point of the disease. The effect of treatment accords with this view. The author concludes that genuine brachial neuralgia is rare, and that it most often consists in pain in the arm of ill-defined character and localisation, and that it possesses the peculiarities of a pain of psychic or neurasthenic origin, rather than that of a genuine neuralgia.

(285) Raynaud's Disease in Newborn Children. Durando Durante (*Méd. Infantile*, No. 7, 1898) reports two cases of fatal symmetrical asphyxia of the extremities (one ending in extensive gangrene) in children of syphilitic parents. He does not look on syphilis as the cause of the disease, which he considers to be a purely nervous affection. The rarity of this disease, especially among children, makes the cases very interesting. A necropsy on one of them revealed nothing peculiar.

(286) Pulmonary Osteo-arthropathy. Hasbrouck (*New York Medical Journ.*, May 14th, 1898) describes a case of this disease which was secondary to sarcoma of the anterior mediastinum, involving the lung secondarily. The fingers increased in length and thickness, and were clubbed at the ends. The lower ends of the radius and ulna were also enlarged, the feet and ankles to a less extent. The bones of the skull and the rest of the skeleton were unaltered. *Post mortem* a sarcoma was found filling the space between the main bronchi. The growth extended along the bronchial tubes and infiltrated the lung tissue. Microscopic examination showed an alveolar sarcoma. The author points out that in all similar cases previously reported obstructive pulmonary lesions have been found, either bronchial, pleural, or pulmonary. The disease differs from acromegaly in the absence of changes in the bones of the skull.

SURGERY.

(287) Surgery of the Sternum. Longuet (*Progrès Méd.*, July 23rd, 1898) gives a summary of the surgery of the sternum as follows: (1) Sternectomy for affections of the sternum. This may be indicated (1) exceptionally in congenital malformations causing compression of the lung; (2) in traumatic osteitis and abscess, and for bullets lodged in the posterior table of bone; (3) for osteitis, which may be pyogenic, tuberculous, syphilitic, or due to actinomycosis; (4) for tumours—enchondroma and sarcoma, most of the latter being beyond treatment owing to their rapid growth and extension. The author divides the operations into atypical, consisting of partial operations for osteitis and sequestrotomy, and typical resections for tumour. Partial superior sternectomy may be done by Bardenheuer's method, which preserves a bridge of bone between the clavicles. A vertical incision is made down the centre of the manubrium, and a second between the sterno-clavicular joints. Each clavicle is separated from the first rib, and

1 cm. of the latter resected on each side; the manubrium is then divided transversely 1 cm. below its upper border and removed. The normal attachment of the clavicles is thus preserved. Dudon's operation differs in removing the whole manubrium after dividing the first two costal cartilages on each side and opening the sterno-clavicular joints. The aim of Bardenheuer's operation is to prevent falling in of the clavicles and constriction of the subjacent organs; but Longuet denies that there is any proof that this occurs. Movement of the arms after the operation of complete removal of the manubrium is said to be good, the clavicles not being indispensable. The complications are: (1) Wounds of the jugular and innominate veins, causing hæmorrhage and air entry; (2) wounds of the pleura, causing pneumothorax; (3) wounds of the pericardium. (11) Sternectomy for operations on the mediastinum. This may be required (1) for foreign bodies, (2) mediastinal suppuration, (3) aneurysm, (4) new growths. Bardenheuer and Tabrulay have performed partial resection of the manubrium as a preliminary to ligation of the innominate artery for aneurysm. For benign new growths, such as lipoma, fibroma, and cysts temporary resection is required, but for malignant tumours permanent resection is necessary. In operations for tumour Longuet does not think Bardenheuer's operation gives enough room for manipulation, and prefers complete removal of the manubrium.

(288) Radical Cure of Hernia.

Kocher's latest method for the radical cure of inguinal hernia is described and advocated by Buchanan (*Philadel. Med. Journ.*, June 25th, 1898). The advantages claimed are: (1) Simplicity; (2) no breach is made which can weaken the abdominal wall; (3) confinement in bed is short, only ten days; (4) statistics are favourable, only 3 per cent. recurring and no death. The following are the steps of the operation:— An incision is made from the external ring to a point midway between the internal ring and the anterior superior spine of the ilium, three-quarters of an inch above and parallel to Poupart's ligament. The sac is separated from the cord up to the external ring, opened and its contents dealt with. It is then separated from the cord in the inguinal canal. A small opening a quarter of an inch long is made, within the external angle of the wound, through the abdominal wall. Through this opening dressing forceps are passed into the peritoneal cavity, through the internal ring and into the sac, the fundus of which is seized and drawn inside out through the opening, where it is fixed by its base and the rest cut off. The canal is then obliterated by buried sutures. The only disadvantage of the operation is that it cannot be done in cases of old hernias with adherent sacs and dilated rings, nor in cases of strangulated hernia where the constriction is above the external ring, and where the canal should be opened.

(289) Treatment of Impermeable Traumatic Stricture of the Urethra.

Wagner (*Centralbl. f. Chir.*, No. 30, 1898) describes a case of unusually severe traumatic stricture of the urethra, in which nearly the whole of the urine mixed with fæcal matter was discharged through a fistula in the perineum. The urethra, from the bulbous portion to the neck of the bladder, had been destroyed, and through the fistula a probe could be passed into the lower part of the rectum. Mikulicz, who had charge of this patient—a lad aged 16—first removed with success the whole circumference of the rectum, the circular incision of the wall of the gut being made about 2½ inches above the anus. Subsequently, with the object of restoring the flow of urine through the penis the following novel operation was performed. An incision was commenced in the middle line of the hypogastric region, about 2 inches above the pubic symphysis, and carried downwards on to the dorsum of the penis. This wound having been deepened, and the rami of the pubic bones exposed, the suspensory ligament of the penis was divided, and the roots of the corpora cavernosa also cut through, the corpus spongiosum being left intact. The anterior surface of the bladder was next exposed, and a small incision made into this viscus, to the margins of which was carefully sutured the posterior extremity of the urethra, which was sealed near the bulb. By the use of a chisel a groove about ½ inch in depth was made at the upper margin of the symphysis for the reception of the corpus spongiosum. A large catheter was passed along the penis thus elevated above the symphysis, and was retained for some weeks after the date of operation. After a treatment of about twelve months the patient was able to retain urine for two hours, and to micturate readily and with a full stream. The perineal fistula, however, had not closed. The results of this operation, Wagner holds, have been extremely satisfactory, and he suggests that a like treatment may in future be found beneficial in cases of impermeable stricture due to extensive destruction of the urethra, and also in dealing with new growths of the prostatic and membranous portions of this canal.

(290) Gonorrhœal Neuritis.

Allard (*Arch. d'Elect. Méd.*, June 15th, 1898) reports a case of multiple neuritis arising fifteen days after the onset of a badly treated gonorrhœa. There was a high stepping gait and complete inability to dorsiflex either foot. The muscles of both lower limbs, especially the left, were wasted and showed a certain amount of fibrillary tremor. Sensibility was diminished in the same regions and there was great pain on pressure along the sciatic and anterior crural nerves. The knee jerks were lost and the affection of the vasomotor system was shown by great dermographism. The leg muscles exhibited an incomplete reaction of degeneration most marked on the left side in the case of the extensors and peronei, on the right in the case of the flexors. Diminution of response to faradism was the most notable characteristic. The patient at first became worse and the pain required relief by salicylate of soda, antipyrin, and local applications. Then as the gonorrhœa yielded to treatment and electrical measures were used for the legs, improvement slowly followed. Galvanism was used three times a week, the positive pole being placed over the muscles and just sufficient strength of current employed to evoke a break contraction. The muscles which still responded to faradism were stimulated by a gentle and slowly interrupted induced current.

MIDWIFERY AND DISEASES OF WOMEN.

(291) Repeated Cæsarean Section in a Case of Extreme Spondylolisthesis.

Braun-Fernwald (*Centralbl. f. Gynec.*, May 14th, 1898) relates the case of a patient, the history of whose pregnancies was as follows: (1) Turning and extraction, child stillborn; (2) artificial induction of premature labour; (3) spontaneous delivery at the eighth month of a macerated fœtus; (4) abortion; (5) Cæsarean section at term; (6) artificial abortion; (7) the second Cæsarean section. In the last case labour began spontaneously, and shortly after its onset it was found on examination that the anterior uterine wall was so thin that the child's head could be felt abdominally with alarming distinctness, and rupture of the uterus seemed threatening. At the operation the anterior uterine wall was found very thin, except at the site of the previous wound. The uterus was opened by Fritsch's transverse fundal incision. The bleeding was little, but not notably less than usual. The child was born asphyxiated; was revived, but died the following day. After separation of the placenta the uterus was amputated above the cervix, the uterine arteries being secured by ligature. The patient made an uninterrupted recovery. The pelvic deformity was such that the inferior surface of the last lumbar vertebra covered the anterior surface of the first and part of the second lumbar vertebra.

(292) Prolapse of Vaginal and Rectal Mucous Membranes in an Infant with Spina Bifida.

Pérignon, of Sedan (*Journ. de Sc. Méd. de Lille*, June 4th, 1898), has seen a rare case of congenital vaginal and rectal prolapse. The infant was the offspring of a woman with a cleft palate and a deformed nose, possibly due to syphilis, and of an apparently healthy man. The confinement was normal, but the mother had two traumatisms during pregnancy. The infant was 11 days old when seen by Pérignon. When born it showed a tumour (spina bifida) in the sacro-lumbar region, the size of a large apple, flattened and ulcerated. The lower limbs were quite paralysed. There was double club-foot, valgus on the left side, varus on the right. The

anal orifice was gaping and its mucosa prolapsed, and through the vulvar orifice a cylindrical tumour protruded, which carried on its surface an ulcerated area. It was at first thought that this mass was the uterus; but further examination proved it to be the prolapsed vaginal mucous membrane with its characteristic transverse rugæ. The cranial sutures and fontanelles were wide. The infant showed no other malformations and lived for some weeks. There was difficulty in the evacuation of the bowels, and the fæcal matter was hard. Pérignon believes that the accumulation of fæces in the pelvis caused the herniation of the mucous membranes through the natural orifices, which were relaxed on account of the paralysis. The vaginal prolapse was first noticed on the third day of life. There was also a certain amount of true prolapse of the uterus, the cervix being nearer the vulvar orifice than is usual.

(293) Mammary Tubercle.

Arcoleo (*Rif. Med.*, June 6th, 1898) records the case of a woman, aged 58, with no family history of tubercle, who had suffered from costal caries and tuberculous osteomyelitis of one finger in the left hand. When seen, she presented a small tumour in the upper and inner part of the breast, which was painful and tender. This was excised, and some pus let out. Other nodules formed, so that finally the whole breast was removed, and the axilla also cleared out. Several tortuous sinuses, leading to various purulent foci, were noticed. Inoculation into guinea-pigs gave positive results as to the presence of Koch's bacillus.

(294) Tubal Hæmorrhage independent of Tubal Pregnancy.

Bovée, of Washington (*Amer. Gynec. and Obstet. Journ.*, May, 1898) strongly dissents from the current teaching that pelvic hæmatocele is always due to ectopic gestation. He publishes a case which he classifies as tubo-ovarian hæmorrhage resembling ruptured ectopic pregnancy. Bovée's patient was a coloured woman, aged 23, married, not pregnant since four years ago, but subject to pelvic pains for five years. Her period had been regular, but the last came on after slight delay with pain, and continued for a fortnight freely. Then she was examined; she appeared anæmic and exhausted. A mass was felt above and to the left. At the operation this mass proved to be the left Fallopian tube greatly dilated and full of blood clot, unorganised and readily separated from the tubal wall. The canal of the tube communicated with a blood sac in the ovary by a short sinus which consisted of the groove in the ovarian fimbria of the tube bridged over by adhesions. The tube was protected by adhesions to the omentum, but the wall of the cyst in the ovary had given way, and a considerable quantity of clot had escaped into the peritoneal cavity. There was no histological evidence of tubal pregnancy, but there had evidently been hæmorrhage into the ovary—an ovarian apoplexy as some authorities term it. Bovée quotes, as supporting his opinion that internal hæmorrhages from the tube and ovary are not always the result of tubal pregnancy, Scanzoni's case of fatal rupture of the ovary during menstruation. Bovée does not dwell on the fact that earlier writers had not the assistance of histologists who could detect chorionic villi in clot, but he rightly concludes that to ignore published evidence of the frequent occurrence of hæmorrhage from the ovary and tube due to inherent disease of those organs independent of impregnation and to continue to diagnose ruptured ectopic pregnancy without microscopical or other certain evidence is to ignore scientific truths and to foster false pathology.

THERAPEUTICS.

(295) Heroin.

Dreser (*Therap. Monatshefte*, September, 1898) records the results of his pharmacological investigations upon this new drug, the diacetic ester of morphine. It is a respiratory sedative, and as such was carefully compared with cordeia. The sedative action was found to be greater than that of either morphine or cordeia, while heroin is only one-tenth as poisonous as the latter drug, which has a much more powerful convulsant effect. Experimentally heroin slows and somewhat deepens the respirations, increasing the respiratory capacity. It also increases the power of the inspiratory muscles, raising the inspiratory pressure in one case from 23 to 40 cm. of water. These beneficial effects are aided by the general quieting of all the muscles which also occurs. The reaction of the respiratory centre to chemical influences is unaffected, while that to the mechanical condition of the lungs is somewhat lessened. The heart and vasomotor system are not primarily affected by heroin, the action of which upon them is secondary to that which it exerts upon respiration.—Floret (*ibid.*) reports as to the action of heroin in disease, mainly in relation to the cough and pain of catarrhal and inflammatory conditions of the upper respiratory tract. Some 60 patients treated with the drug unanimously testified to its ameliorative action upon troublesome cough and pain in the chest and side. The beneficial results were particularly marked in cases of long duration and associated with bronchitis and emphysema. In one case at least it succeeded where codeia had failed, and Floret himself was cured of a dry paroxysmal cough by a single dose of $\frac{1}{12}$ gr. In the treatment of pulmonary phthisis it was found that the cough improved in 21 cases out of 25; of the remaining 4, 1 did not yield to morphine. In 3 cases of bronchial asthma the beneficial effect was obvious. No unfavourable after-symptoms, not even those usually associated with morphine, were noticeable; one patient only had a transient attack of giddiness. The drug was ordinarily very well borne, and the patient was not confined to the house whilst taking it. The ordinary dose was $\frac{1}{12}$ to $\frac{1}{8}$ gr. daily in powder with white sugar. A watery solution to which a small quantity of dilute acetic acid has been added can readily be given in drop form.

(296) Suprarenal Substance in Hay Fever.

Solomon Solis-Cohen (*Philadelphia Med. Journ.*, August 13th, 1898), who for many years has suffered from hay fever, last summer tried suprarenal substance, abandoning all other measures, so as to give the remedy a fair trial. Except that he soon found it necessary to resume the wearing of dark glasses when driving in the sun, the treatment was, he says, entirely successful in controlling symptoms. After a time, having discontinued it from carelessness, the symptoms returned in full force. He then experimented as to the effect of taking or omitting the medicine, and found that after taking it he was comfortable for a certain number of hours, and that intermitting it for longer periods or omitting it altogether for a day would cause a return of greater or less distress. At first he used a glycerine extract freshly prepared from carefully selected adrenals of sheep. In a vehicle of simple elixir (fifteen minims to a teaspoonful), it was not unpleasant. This dose three times daily was at first sufficient; later it became necessary to increase either the dose or the frequency. A larger dose caused a suspicion of nausea. Tabloids prepared by Burroughs and Welcome were therefore substituted. One tabloid, representing 5 gr. of suprarenal substance, was allowed to dissolve in the mouth (the effect seeming to be better when the remedy was administered in this way, probably owing to direct absorption) every second, third, or fourth hour, according to effect. The average amount taken was five tabloids daily, the last one being taken at bedtime, and ensuring "a sneezeless coryzaless night." Sometimes a single tabloid was not sufficient, and two would be taken at a dose, that is, within a few minutes. If coryza or sneezing had begun, it would cease within fifteen minutes after taking the tabloid. The action of the suprarenal substance is, the author points out, to raise blood pressure by increasing the vascular tone; and this action may be local as well as general. To this effect in bringing about contraction of the vessels of the nasal mucous membrane he attributes the relief experienced.

(297) Lysol Poisoning.

G. Klugk (*Münch. med. Woch.*, July 12th, 1898) says that of 13 cases collected by him 4 were due to the external application of lysol, and the remaining 9 to its internal administration. He then relates a case in a woman aged 35, occurring during a relapse in enteric fever. By mistake the nurse gave her some 12 g. of lysol, of which she swallowed 10 g. Five minutes later the patient was markedly cyanosed, and in a state of stupor. The breathing was noisy, difficult, quickened, and irregular. Spasm was at times noted in the extended arms. The pulse could not be

felt. Camphor was injected, and the stomach washed out a few minutes later. The wash water smelt of lysol. The heart's action stood at 160 per minute, and was a little irregular. The pupils were somewhat dilated, and did not react to light. The tongue was dry. The patient began to improve after the camphor injections, but she was still unconscious two hours after taking the poison. She woke up three and a half hours later, and complained of burning in the mouth. Milk and natrium sulphuricum were given by the mouth. She vomited a little later, and the vomit smelt of lysol. The urine contained albumen and casts. The patient ultimately recovered after passing through a further relapse of the typhoid fever. The local symptoms here were not severe. The danger lay in the general symptoms, which consisted of rapid coma and cardiac weakness. The temperature fell rapidly from 39° to 36° C. The symptoms resembled those of carbolic acid poisoning. It is usually said that the difference between lysol and carbolic acid poisoning is that in the former the symptoms do not come on for some little time, but here they appeared in 10 minutes; hence no generalisation can be made. The typhoid fever may have accounted for the severity and early appearance of the symptoms. Thus, as with carbolic acid, the symptoms of lysol poisoning may not correspond with the size of the dose. The relative toxicity of carbolic acid and lysol are usually placed at 8 to 1. Thus if 10 g. is the lethal dose of the former 80 g. would be that of the latter. There have been 4 cases of fatal lysol poisoning in children but none in adults. Lysol is apparently absorbed with difficulty. The stomach should be thoroughly washed out, even if the poison has been taken some time before. Deglutition spasm may occur; hence it is better to use a gum elastic tube rather than quite a soft one. Ether and camphor are used against the collapse. The natrium sulphuricum used in this case was given on theoretical grounds, but it is perhaps best omitted.

(298) Saccharin in Infantile Feeding.

KELLER (*Centralbl. f. inn. Med.*, August 6th, 1898) observes that he has not noticed any particular effect upon the gastro-intestinal symptoms themselves when saccharin has been used. Infants took sow's milk to which saccharin had been added without difficulty. Saccharin is preferable to many other forms of sugar, as these latter sometimes produce diarrhœa. When sugar is added to the food of infants suffering from gastro-intestinal affections the excretion of ammonia is increased. This increased ammonia excretion can be lessened by the administration of alkalies, thus showing that it is due to increased formation of acid. If it can be proved that metabolic changes occur under these conditions which are likely to lead to an acid intoxication, it is better to avoid the use of those sugars. In the author's investigations saccharin was found to have no action upon ammonia excretion. He employed tablets which contained one part of saccharin to three parts of bicarbonate of sodium. He appends tables from three cases to show that when saccharin was being used the ammonia excretion was small when compared with that occurring in other children also suffering from gastro-intestinal disease. Finally, Keller gives details of the investigations into metabolism carried out in three cases, in two of which one and a-half tablets of saccharin were given and in the remaining one two tablets. There was no evidence that saccharin hindered absorption. The author concludes that when it is merely a question of sweetening the food of infants, saccharin is the most suitable form of sugar.

PATHOLOGY.

(299) The Active Principle of the Suprarenals.

GÜRBER (*Sitzungs. d. physik.-med. Gesellschaft. Würzburg*, 1897) finds that in the rabbit, as in other animals, injection of suprarenal extract causes a rise of blood pressure, due in all probability to a direct stimulation of the muscles in the vascular walls. There is also a slowing of the pulse, which the author attributes to a compensatory action of the vagus. He has been unable to establish the relationship alleged by Mühlmann between the active principle of suprarenal extract and pyrocatechin, nor does he find the latter substance to cause any rise of blood pressure when injected. Gürber has succeeded in obtaining a crystallisable substance from the gland which has this vasoconstrictor property, and which contains the elements C, H, O, N, and S, giving of the latter as H_2S at a temperature of 140° C. In addition to this he has been able to prepare a substance, the existence of which had not been previously suspected, and which caused a fall of blood pressure when injected. It is obtained by drying a slightly acid aqueous suprarenal extract over the water bath, powdering the residue, and heating for some hours to 140° in a vacuum tube. The product is extracted with alcohol, cooled to 0.5° C. and filtered; the filtrate contains the vasodilator substance. This the author believes to be performed in the suprarenal, as it cannot be obtained by applying the above-mentioned process to the vasoconstrictor body. Owing to the extraordinary solubility of the latter substance, Gürber has not yet succeeded in obtaining both at the same time from the suprarenal.

(300) Immunity against Poisons.

L. LEWIN (*Deut. med. Woch.*, June 16th, 1898) has studied the immunity of the hedgehog especially against cantharides. The difficulty of poisoning this animal with opium, cyanides, arsenic, sublimate, has long been known, but the author shows that it is only against cantharides that the hedgehog can be said to be immune in the ordinary sense of the word. Lewin then shows that the conjunctival and rectal mucous membranes of the hedgehog possess no immunity against the local action of this drug. This animal displays a remarkable toleration to cantharides introduced into the stomach. This may be due to the imperfect solvent action of the gastric juice and therefore deficient absorption, or to the increased resistance of the organs, or to the regulation of the disturbance caused by the absorption taking place so quickly as t prevent any cumulation of serious changes or to the formation of some neutralising body. The author then details experiments in which oil of cantharides and cantharidia were injected subcutaneously. It was thus demonstrated that the hedgehog has no absolute immunity against cantharides, but that its tissues suffer much less from this inflammation-producing agent than those of other animals. The toleration is greater when the Spanish fly is given by the mouth than when cantharidin is used. If a sufficient quantity is introduced death eventually occurs. If it is assumed that the coefficient of resistance of the tissues is greater here than in other animals an explanation of the toleration is furnished. The longer the time during which the absorption of cantharides into the circulation take place the greater the resistance. The author's experiments show that no immunity can be conferred on animals by injecting them with the blood or blood serum of hedgehogs treated with cantharidin. If an antitoxin were produced it should be possible to transfer the immunity to other animals. It cannot be assumed that the antitoxin remains fixed in the tissues.

(301) Secondary Toxic Products in Infection.

CENTANNI (*Rif. Med.*, September 5th, 1898), looking at the fact that although by means of antitoxins one may check the growth of bacilli and their toxins, yet the disease still goes on, thinks that the further progress of the disease may be due to the formation of toxic products from the decomposition or change in the tissues primarily induced by the bacilli or their toxins. The first order of infection, namely, that due to the bacilli or their toxins, he calls primary; the second, that due to the formation of toxic products from tissue change, he calls secondary. He has investigated the subject experimentally with regard to diphtheria, rabies, and the pneumococcal infection. He found, for example, that ordinary diphtheria antitoxin, whilst it checked bacillary growth, had no influence on the secondary tissue changes. On the other hand, a filtrate of local diphtheria had a favourable effect on the secondary tissue infection, but none on the primary bacillary infection. Apparently after simple inflammatory processes, for example, that produced by injecting boiling water, a certain secondary tissue infection occurs also. But in neither case was the author able to identify and isolate these secondary toxic products. He urges that for the cure of infectious diseases one should use a mixed antitoxin directed against the primary and secondary infection.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(302) General Infection starting from the Tonsils.

Jessen (*Münch. med. Woch.*, June 7th, 1898) first refers to the literature of the subject, and then gives details of illustrative cases: (1) A man, aged 30, had a dirty greenish exudation on one tonsil from which the streptococcus and staphylococcus were alone obtained. This was followed by a characteristic erythema nodosum and severe pains in the joints. The fever gradually disappeared. The examination of the blood was negative. The case resembled a gangrenous diphtheria, but had no relation with it. (2) A woman, aged 28, was admitted comatose and died in twelve hours. Here there was no other source for the pyæmia except in the suppurative foci in both tonsils, which were obviously older than the other lesions. (3) A girl, aged 17, suffered twelve days after the commencement of an angina, due to the streptococcus, from a streptococcal broncho-pneumonia, pericarditis, pleurisy, and nephritis. There was along with the stupor a roseolous eruption and hæmorrhages. Recovery ensued. (4) A girl, aged 24, had a whitish-yellow exudation on both tonsils, and then developed signs of a diffuse broncho-pneumonia, pericarditis, and general sepsis. The staphylococcus was found after death in all the diseased structures. Jessen draws attention to the fact that this case would run a risk of being classed as influenza. He emphasises the fact that tonsils with a normal appearance may contain foci of suppuration. If an exudation appear on the tonsils, and then later small abscesses are found in their substance, it must be taken for granted that the microbes have penetrated from without. The author thinks that these cases giving rise to severe infections may be recognised as such, as the exudation is not situated in the lacunæ, but exists in long yellow or yellowish-white streaks, extending from above downwards over the tonsils. The treatment of these cases should consist in as continuous application to the tonsils as possible. Extirpation of ragged tonsils for prophylactic purposes is distinctly indicated. Bacteria causing chronic affections such as tuberculosis may penetrate through the tonsil, and the author gives illustrative cases. He emphasises the necessity of attending to the tonsils in these cases. The adenoid tissue in the various tonsils is a more frequent starting point of general infections than is generally believed.

(303) Pericarditis Callosa.

Galvagni (*Clin. Modern.*, An. 4, N. 341) under the above title records three cases of chronic fibrous pericarditis. The difficulty in diagnosis is made greater by the fact that the disease generally begins insidiously in childhood. After a period of more or less good health, the symptoms of central obstruction to the circulation set in. When fully developed the disease shows itself by a small but regular pulse, cyanosis of the face without marked œdema of the lower extremities, full and tortuous jugular veins without pulsation. In spite of the stasis in the whole venous system the right heart is often not dilated. There is almost complete fixedness of the area of dulness and of the apex beat in the lateral position. There is also weakness of the cardiac sounds, and not rarely a reduplication of the second sound. The pulsus paradoxus and inspiratory swelling of the cervical veins were not present in the author's cases. Systolic retraction is not often present. A kind of hepatic cirrhosis from venous stasis is frequently seen, and may be the cause of ascites. Usually the large vessels, especially the arteries, are narrowed in calibre and slender, a phenomenon not seen in ordinary cardiac disease. It is probably due to the length of the disease, starting in childhood, and the narrowing of the cardiac cavity.

(304) Carbolic Acid Poisoning.

Lewin (*Deut. med. Woch.*, April 21st, 1898) appends some remarks upon a suspected case. The severity of the poisoning may be due (1) to the place from which the poison gains access into the blood, (2) to the quantity taken, and (3) to the concentration. Many cases of fatal poisoning have been recorded where a non-lethal dose has been injected into the rectum for purposes of treatment. Death has been known to occur after a dose of 6 g. taken by the mouth, and recovery has ensued after doses of 30 or 35 g.; in the latter case the carbolic acid was dissolved in alcohol, which would favour its absorption into the blood. Even 120 g. of raw carbolic acid has been taken, and recovery ensued. One g. of carbolic acid, the amount found in the suspected case, could not produce death. The author found that when animals were poisoned with concentrated or weak solutions of carbolic acid, and this was allowed to remain in the stomach after death, appreciable quantities could pass out through the stomach walls into the abdominal cavity. Death may sometimes be produced without the poison entering the blood in a so-called reflex fashion. As regards the action of carbolic acid on the mucous membranes, 1 per cent. produces no change, and a 2 per cent. a slight colour change to be seen only on careful examination. A 4 or 5 per cent. produces a white discoloration, which disappears in the living subject in three to four hours. Fluid 90 per cent., or the crystalline substance, calls forth a white slough upon every tissue of the body, whether applied pure or in water. The symptoms produced by carbolic acid vary: (1) if a concentrated solution (60 to 90 per cent.) is drunk, the patient may die rapidly with or without previous vomiting, or he may become comatose, with stertorous breathing, slow pulse, vomiting, etc., from which he may die or recover; (2) if weak solutions (1 to 3 per cent.) are taken, there may be prostration, unconsciousness, spasm, vomiting, etc. When weak solutions are taken into the stomach, the symptoms develop slowly, giving time for treatment.

(305) Disappearance of a Mitral Murmur.

Starck (*Jahrb. f. Kinderheilk. u. Phys. Erziehung.*, vol. xlvii. pp. 2-3) had the opportunity of watching a case of endocarditis in a girl, aged 11. A year ago she first complained of pain in her joints. The present attack consisted in pain and swelling of both ankles. The temperature was raised and pulse frequent. The heart was not enlarged, but there was a soft systolic murmur at the apex, and the pulmonary second sound was accentuated. The child was treated with salicylates for two days, and was kept in bed for three weeks: an ice-bag was also applied over the cardiac area. There was never any enlargement of the heart. A month later the child was again examined; the heart was of normal size, no systolic murmur could be heard, and the pulmonary second sound was not accentuated. The author believes that there was real mitral insufficiency whilst the attack of rheumatism lasted, and that now the valve has completely recovered. A similar condition has been reported by other observers. Bauer relates a case in which there was temporary incompetency of the aortic valves in acute endocarditis.

SURGERY.

(306) Sarcoma of the Mesentery of the Small Intestine.

Dukhanin (*Khirurgya*, May, 1898) describes a case of this rare disease. The patient was a healthy-looking peasant, aged 30, who applied for advice for a swelling in the stomach, a feeling of weight and pains in the loins. He first noticed the swelling about nine months ago, but three years previously he had what he described as a strain of the stomach after doing some laborious work. On examination, a large round tumour was seen occupying the abdominal cavity; it extended from the symphysis pubis to 5 cm. above the umbilicus, and from 6 cm. to the left of the linea alba to 5 cm. to the right side of the line; it felt hard and smooth on palpation, and was somewhat dull on percussion; it could be displaced easily towards the left, but not upwards or towards the right. The patient was fairly well nourished; his family history good and his internal organs normal. The temperature was not raised; he passed the usual quantity of urine in the day, and there was neither albumen nor sugar in it. The diagnosis arrived at was that it was either a fibroma or sarcoma growing from the posterior abdominal wall or the mesentery. It was decided to perform laparotomy, and if possible to remove the growth. On

opening the abdomen in the middle line, a round tumour was seen below the omentum; it sprang from an oval-shaped base in the mesentery of the small intestine; the oval was placed perpendicularly to the intestine, so that the part adherent to the wall of the gut was only about 1 sq. cm. in area; the oval base was surrounded by knots of intestine, but the tumour itself was not adherent to the neighbouring parts. The base was freed by first ligaturing and then dividing small portions of it. There was free hæmorrhage during this process. The empty space in the mesentery was closed by a continued catgut suture, while too small silk ligatures were used for the wound in the serous coat of the intestine. After the usual abdominal toilet the abdomen was closed by two series of sutures. The patient made an uninterrupted recovery, getting up on the twentieth day after the operation. The microscopic examination of the tumour showed it to be a fibro-sarcoma.

(307) Radical Cure for Inguinal Hernia with Defective Conjoined Tendon.

BLOODGOOD (*Bulletin of the Johns Hopkins Hospital*, May, 1898) notes that in some cases of hernia the conjoined tendon is found either obliterated or else very narrow or very thin, so that the lower angle of Hesselbach's triangle has lost its strongest support. He remedies this condition by substituting for the conjoined tendon a part of the rectus. The earlier steps are the same as in Halsted's radical operation. The external oblique is divided, the sac excised, and the peritoneal cavity closed. About 1 inch of the internal oblique is divided, vertically. The two outer abdominal muscles are now retracted; this exposes the sheath of the rectus, which is divided in the direction of its muscular fibres from its insertion at the symphysis pubis upwards for a distance of about 2 inches. The outer border of the muscle then bulges, and is caught with two or three sutures of stout black silk, which are used as retractors to draw the muscle outwards and downwards. Deep sutures of silver wire are passed, blanket-stitch fashion, through the obliques, as in Halsted's operation, with the addition that the four sutures below the displaced cord are made to include the sheath and some of the muscular fibres of the rectus. When these sutures are tied, the rectus is approximated to Poupart's ligament and the aponeurosis of the external oblique, from a position just below the transplanted cord down to the symphysis pubis. The transplanted rectus strengthens the lower portion of the wound better than any other available tissue could do.

(308) Section of the Cervical Sympathetic in Epilepsy.

DONATTI (*Wien. klin. Woch.*, 1898, No. 16) reviews the principal surgical methods largely due to Alexander of Liverpool which have been employed in the treatment of true epilepsy. Division of the cervical sympathetic on both sides is suggested on theoretical grounds by the pallor and other signs of sympathetic stimulation which usher in an ordinary epileptic attack. Practically Jonnesco reports satisfactory results obtained by this means, but his cases were only observed for a short time. The author had the operation performed in 3 cases of true epilepsy and 1 of cerebral tumour simulating that disease, and only discovered after death in the *status epilepticus*. In the first 3 patients the superior cervical ganglion and a strip of the cervical sympathetic between it and the middle ganglion were excised on both sides at one sitting, in the last on the right only; this patient died before the second operation could be carried out. In every case the operation failed totally to check the convulsions or improve the patient's condition in any way. This was obviously due to the fact that disturbances resulting from section of the sympathetic passed away with great rapidity. Thus in the unilateral operation the right or operated side showed marked redness of the face, conjunctival injection, palpable rise of temperature, and increased perspiration as compared with the left, but all these had passed away again within four days, and the two halves of the face were again the same. Curiously enough in the bilaterally operated cases the resulting slight ptosis and narrowing—with sometimes irregularity of the pupil—were often unequal on the two sides. All the reflex reactions of the pupils remained unaffected, as also did the response to mydriatics and myotics such as atropine, scopolamine, and eserine. These drugs must therefore act directly on the muscular tissue of the iris. The author also found that the electrical resistance of the skin of the face was diminished on the side of the cut sympathetic by no fewer than 400 ohms, that is, from 1,600 to 1,200.

(309) Thrombosis of the Vena Cava Inferior.

J. BUGGE (*Norsk. Mag. f. Laegevidensk.*, July, 1898) records the case of a sailor, 42 years of age, who fell from a height of 6 metres in the hold of a ship. The accident was followed by sharp pain and by paræsthesia in the lower limbs. Sensibility and movement were markedly diminished. A month later œdema and varicose veins appeared in the legs, and a year and a half later the veins of the abdominal walls became dilated and sinuous. These veins were specially evident at the sides of the abdomen, had the thickness of the finger, and represented the hypertrophied circumflex iliac veins. The current of blood in them was from below upwards. The inferior epigastric veins were also enlarged: but this was not the case with the circumumbilical veins or the truncus anastomoticus lumbo-vertebralis. Bugge believes that thrombosis of the inferior vena cava resulted from the fall, and emphasises the differences between such venous enlargements and those due to circulatory troubles in the portal vein.

MIDWIFERY AND DISEASES OF WOMEN.

(310) The Galvanic Treatment of Hyperemesis Gravidarum.

BORDIER AND VERNEY (*Arch. d'Elect. Méd.*, May 15th, 1898) treat hyperemesis gravidarum by the simultaneous galvanisation of both vagi. An indifferent electrode of about 10 square inches is placed on the epigastrium, while two small electrodes are set on each side of the neck, between the two lower bundles of the sterno-mastoids. These are connected with the positive pole of the constant current; they may be conveniently replaced by a single curved electrode, the two ends of which are in the positions indicated. This is kept in place by indiarubber bands. A practical detail is to employ a sudden instead of a gradual increase of current the moment the patient feels any nausea. The authors record a case, two months pregnant, in which both solids and liquids of all kinds had been vomited for the previous three weeks, so that the patient was much wasted and very feeble. After six sittings she was completely cured, and went safely to term. The galvanisation was performed while the patient was sipping some milk; the intensity of the current was at first from 10 to 20 milliampères, later not more than 10. Part of the first glass of milk taken was vomited, but after that progress was rapid and continuous, and after the fourth sitting the patient was able to take an egg and some veal with bread and wine. The authors lay stress on the application of the positive pole to both the vagi, and also on the sudden increase in the intensity of the current to meet the commencement of the act of vomiting.

(311) Female Organs and Thyroid Gland.

DE VOOGT (*Centralbl. f. Gynäk.*, No. 27, 1898) is sceptical about the alleged association between the thyroid gland and the female reproductive apparatus. Freund's teaching about bronchoceles appearing at puberty and also at the menopause is open to fallacy. The fact does not necessarily imply cause and effect; at puberty many independent organs are active, and males also show active development of bronchoceles at puberty and near middle age. Exophthalmos is certainly commoner in women than in men, but it is not primarily a disease of the thyroid gland, and in some cases that organ remains small, nor when it enlarges does any evidence of ovarian or uterine disease necessarily exist. De Voogt describes the case of a girl, aged 15, under his own care for bronchocele. The catamenia had just begun. In August, 1897, the circumference of the neck was close on thirteen inches. He administered iodides and iodothyrin without benefit. In October menorrhagia occurred. In March, 1898, a movable spherical tumour was detected in the right fornix. On the 8th it was removed, proving to be, as expected, a dermoid ovarian cyst. The left ovary was absolutely healthy. The period

occurred quite normally in April, May, and June. The circumference of the neck remains much as it was last August. There seems then no connection between the bronchocele and the tumour, whilst the remaining ovary was found healthy, but the thyroid swelling might have diminished from some other cause after the ovariotomy, to which operation a supporter of the current theory would certainly have attributed its diminution.

(312) Ruptured Tubal Gestation: Subcutaneous Saline Injections.

Gueuer (*Monats. f. Geburts. u. Gynäk.*, June, 1898) operated on a woman aged 37, who had been subject to perimetritis and had not borne a child for nine years. The period ceased abruptly and a fortnight after the date that it was overdue some hæmorrhage set in. She was in a state of collapse, so before getting ready for abdominal section about three pints and a-half of artificial serum were injected into the connective tissue over the sternum. On opening the peritoneal cavity, the ostium of the affected tube was found greatly dilated. From it hung a trace of fœtal membranes. The patient made a good recovery, but Gueuer admits that an abscess developed at the seat of the subcutaneous injection.

(313) Pregnancy following Ventrifixation of the Uterus.

Lapthorn Smith (*Amer. Journ. of Obst.*, July, 1898) investigated this question by sending out circulars to one hundred American physicians. Seventy-three replies were received; 32 observers had had no experience of pregnancy following ventrifixation; whilst 41 had met with cases amounting to 148 in all. He comes to the following conclusions: (1) That so far as curing retrodisplacements is concerned, ventrifixation with two buried silk stitches through the peritoneum and fascia, gives the most reliable results. (2) Ventrifixation should be reserved for cases in which abdominal section is necessary for other reasons, such as the detaching of adhesions, and the removal of the diseased tubes which cause the adhesions. When it is expected that pregnancy may follow some other operation should be chosen, because (3) when the uterus is firmly attached to the abdominal wall and pregnancy follows, trouble of some kind, either pain, miscarriage, or difficult labour takes place in about 30 per cent. of the cases, that is 36 in 148. According to his investigations, the other 75 went on to normal labour. (4) When suspensio uteri was performed, that is, the uterus attached to the peritoneum of the abdominal wall, a few relapses occurred; but to counterbalance this objection the patients were free from pain during pregnancy, and the labours were less tedious, not requiring serious obstetrical operation. The uterus should therefore be suspended rather than fixed to the abdominal wall in all cases in which any part of the ovary is allowed to remain. (5) A third method, intra-abdominal shortening of the round ligaments, is claimed by some to be preferable to either fixation or suspension. This may be done either by drawing a loop of the round ligament into the loop which ties off the ovary and tube, or, in cases in which the latter are not removed, simply by detaching them from adhesions and by shortening the round ligaments by drawing up a loop of it, and stitching it to itself for a space of about two inches. (6) If the uterus be attached to the abdominal wall, the stitches should be kept on the anterior surface, but near the top of the fundus. Complications were more frequent when there was too much anteversion than when the anterior surface was attached to the abdominal wall. (7) Several correspondents mentioned that they knew of many cases of pregnancy after Alexander's operation, and that in no case was the pregnancy or labour unfavourably influenced by it. Alexander's operation should therefore be preferred whenever the uterus and appendages are free from adhesions. (8) The result of Alexander's operation are so good that even when there are adhesions it may be well to free them by a very small median incision, and then shorten the round ligaments by Alexander's operation. This can be done without adding more than one-half per cent. to the mortality, which in Alexander's operation is *nil*.

(314) Pregnancy and Diaphragmatic Hernia.

Kenn, Rosenthal, and Huguier (*Progrès Médical*, June 4th, 1898) report how a grave congenital defect may not be fatal until the abdomen has to bear the weight of a pregnant uterus. A woman was attacked with dyspnœa during the fifth month of her first pregnancy. Then followed symptoms of generalised pneumothorax. The patient vomited blood as black as soot and died of syncope. At the necropsy congenital diaphragmatic hernia was discovered. A part of the stomach and intestine lay in the left pleural cavity. The uterus was unusually large for the fifth month, either through hydramnios or twin pregnancy. This condition rendered the patient's malformation all the more speedily perilous when gestation had set in.

THERAPEUTICS.

(315) Antidiphtheritic Serum in Ozæna.

Holger Mygind of Copenhagen (*Journal of Laryngology, Rhinol., and Otol.*, August, 1898) has treated ten cases of ozæna with subcutaneous injections of antidiphtheritic serum. Of these, seven were young soldiers, aged 19 to 22; while three were girls, aged respectively 10, 12, and 14 years, all three being sisters and daughters of a non-commissioned officer. He took great care only to select such cases for treatment as were pronounced and true cases of genuine ozæna, and in all there were present typical fetor, discharge of crusts, and atrophy of some part of the osseous walls of the nasal cavity; besides in all cases the mucous membrane of the nose was of the character generally described as atrophic—that is, it was pale, shrunk, and dry. He first commenced injecting subcutaneously 20 c.cm. of the antidiphtheritic serum prepared in the bacteriological laboratory of the Copenhagen University gratuitously for the Danish medical profession. This serum has a strength of about one hundred antitoxin units in each cubic centimetre. The dose was repeated—as is done in cases of diphtheria—a few days later. This dose was soon found to be too strong, or could not at least be repeated so soon, the patients getting severe symptoms of serum infection. By degrees he found 10 c.cm. to be a proper dose for adults and 5 c.cm. for small children, increasing the dose now and then to 15 c.cm. in adults. He also found it best to wait to repeat the dose until eight to twelve days had elapsed after the previous injection to prevent accumulative effect. According to the numerous experiments he has made there can be no doubt that it is a fact that subcutaneous injection of antidiphtheritic serum in cases of genuine ozæna has an immediate and very marked effect upon the mucous membrane of the nose. This action generally appears towards the end of first twenty-four hours after the injection, the patient discharging the crusts with more ease; besides, the crusts are mixed with mucous or muco-purulent secretion. During the following days the mucous membrane of the nose loses its dry and pale appearance, becoming moist and assuming a natural vivid red colour, and also swelling considerably. The colour and the swelling are very different from the colour and swelling of the mucous membrane as seen, for instance, in cases of using Gottstein's tampons or copious syringing, having as a rule not the slightest appearance of irritation. Besides, the crusts are seen to be surrounded with mucous secretion, which also appears on the surface of the mucous membrane where there are no crusts. After this period of reaction a period of counter-reaction generally is seen, the pituitary membrane beginning to assume its red character; but after a second or third injection—a greater number of injections might perhaps be necessary now and then—Mygind has, in all cases observed by him, seen a lasting improvement. This improvement has in a few of his cases been only small, though distinct; in most cases it has been very considerable, the patients having lost the fœtor, and either never discharging any crusts or only discharging small ones now and then. In one case the result approached very near to recovery. Mygind concludes by expressing the opinion that the injection of antidiphtheritic serum is the most effective remedy for ozæna yet known. He has made experiments to determine what it is in the serum that produces the effect. They are not yet complete, but he has satisfied himself that the presence of the toxins is of no importance, but that it is the serum alone which acts. He adds that he has obtained results apparently as good as those here reported by injections of normal horse serum in ozæna.

(316) Treatment of "Black Eye."

Charles H. May (reprint from New York *Medical Record*) says the treatment of contusions of the lids depends upon whether one sees the patient early, when there is considerable swelling, or not until later, when the discoloration is the prominent feature. If he is seen early treatment consists of cold compresses or cooling or evaporating lotions; with these one can diminish the amount of swelling and discoloration, though it is impossible to prevent them entirely. If the patient is seen later hot compresses and massage are indicated to hasten the disappearance of the discoloration. Cold compresses are to be applied continuously at first, but not by means of an ice-bag or a piece of ice wrapped in a handkerchief and applied directly to the swollen lids, since these furnish too intense and too constant cold. Small compresses of lint or flannel, fourfold or sixfold, measuring 1 and 1½ inch in diameter, are to be cooled upon a block of ice and then transferred to the lids. Several compresses of this sort are placed upon the ice and an exchange between the warm one on the lids and a cool one from the ice is effected every minute or two. In this connection it may be well to mention that care should be taken not allow the cold compresses to cover the nose, since such carelessness causes acute coryza in many persons. Cold compresses of this sort are to be applied during the first twenty-four hours, either continuously or every second or third hour for an hour at time, depending upon the amount of redness and swelling. The sensations of the patient usually guide one in determining the proper amount of cold; when the compresses are used too continuously they will become uncomfortable. The application of cooling and evaporating lotions are of service, though less potent than iced compresses. Such cooling lotions consist of: ℞ acidi borici ʒij, spir. vini ʒij, aquæ q.s. ad Oj; or ℞ tinct. arnicæ ʒij, aquæ q.s. ad Oj. Both of these are to be applied cold, the compresses being wrung out of the boric acid or the arnica mixture and changed frequently. After twenty-four to forty-eight hours, when the swelling has subsided, the discoloration will show itself in a more pronounced manner; the lengthy duration of this stage can be cut short by hot applications and by massage. Flannel cloths are to be wrung out of hot water—as hot as can be borne—and allowed to lie upon the lids, being changed every minute or two; such applications are continued for an hour at a time, and applied three times a day, or oftener if it is especially desirable to hasten the return of the lids to a normal condition. When the skin is very sensitive, especially in women, it is well to apply a little white vaseline or any variety of bland salve to the eyelids previous to the use of hot compresses, so as to prevent soreness and irritation of the skin. Massage is a very satisfactory means of causing a rapid disappearance of the discoloration. The area involved is smeared with the ointment of the yellow oxide of mercury or white vaseline will answer equally well, and then gentle massage is practised for five or ten minutes at a time, or longer, several times a day. If it is particularly desired to cause a very rapid disappearance of the blood stain, the hot compresses may be used continuously, and the massage for a number of hours. By these means the disfigurement may be almost, if not entirely, removed within twenty-four hours, or even sooner, after the subsidence of the swelling.

(317) Lavage of the Stomach in Chronic Gastric Catarrh.

Caporali (*Rif. Med.*, August 4th, 1898) draws attention to the value of lavage of the stomach with solution of zinc sulphate in cases of gastric catarrh where there is an excess of mucus. The usefulness of sulphate of zinc in other chronic catarrhal conditions led the author to try it in chronic gastric catarrh. From 0.10 to 0.8 g. in a litre of distilled water were passed into the empty stomach every morning, followed by a final lavage with a 2 per cent. solution of carbonate of soda so as to change any remaining sulphate of zinc into the innocuous carbonate. The author has tried this method of treatment in 5 cases of chronic gastric catarrh with hypersecretion of mucus with satisfactory results. In 3 other cases where there was no excess of mucus the sulphate of zinc lavage had no effect.

PATHOLOGY.

(318) Rhizomelic Spondylosis.

P. Marie (*Rev. de Méd.*, April 10th, 1898) describes under this title a morbid entity, of which he has himself seen three examples, and has collected three cases from literature conforming to this type. As the name implies, the disease consists of ankylosis of the spine and of the limbs where they join the trunk. The spine is ankylosed, and in addition there are bony outgrowths from the vertebræ which can be felt on the bodies of the cervical vertebræ when the fingers are introduced into the pharynx. The spinal ankylosis is more marked in the lumbar region and less in the neck. The spine becomes fixed on flexion, and hence considerable kyphosis results. Of the two joints the hip is more markedly affected than the shoulder, and is the only one in which true ankylosis results. In the shoulder there is very considerable limitation of movement, as is shown by the fact that the arms cannot be raised to the right angle with the trunk. Although the subjects of the disease do not complain of loss of movement in the knees, observation shows that they are affected. In order to maintain the erect posture the knees are flexed, and walking depends on movements at the knees and at the ankle joints, and is difficult with sticks or crutches. Pain begins first in the knees, and spreads upwards towards the cervical spine. The ribs become fixed, and thus respiration is abdominal. The thorax and the pelvis become markedly flattened. The nodes described by Bouchard occur on the fingers. All the cases have been in men, and the disease usually begins in early adult life. Rhizomelic spondylosis differs from severe cases of chronic rheumatoid arthritis with ankylosis of the spine in not affecting the smaller joints. In hereditary traumatic kyphosis—a condition described by Marie and Astié—the kyphosis is curvilinear, and there is no affection of the joints. In spite of the marked joint changes there are never any objective signs of inflammation in them. There is no evidence of any infection such as gonorrhœa; from the presence of Bouchard's nodes in the fingers a trophic origin seems possible. Although none of the known cases have been examined *post mortem*, Marie has discovered a specimen in the Musée Dupuytren, which is probably an example of rhizometic spondylosis. The spine is ankylosed, and shows bony growths and ossification of the supraspinous ligament, while the hip-joints are affected. Bricon's case of multiple exostoses, hyperostoses, and synostoses of the spine in a cat probably belongs to the same category.

(319) Pulmonary Tuberculosis in Children.

Comby (*Archives de Méd. des Enfants*, May, 1898) analyses 211 necropsies on children under 2 years of age with reference to the frequency of pulmonary tuberculosis. In 13.27 per cent. of these tuberculosis under 3 months. Out of 53 children aged 3 to 6 months, 7.54 per cent were affected; out of 57 children aged 6 to 12 months, 22.80 per cent., and out of 29 children aged 1 to 2 years, 38 per cent. The figures contraindicate heredity as a cause of the disease, and point to contagion as the way in which the disease is acquired. The respiratory and not the gastro-intestinal tract is the path of infection. Caseation of the tracheobronchial glands was found every time in 28 necropsies on children under 2 years. In 21 cases the lungs were tuberculous, in 7 they were not, in 7 cavities existed, even in children of 4, 6, or 8 months. In the 21 cases of pulmonary phthisis 8 had intestinal ulcerations, and 3 tuberculous ulceration of the stomach. In 24 cases the following forms were made out: 10 cases of the apyretic variety with disseminated tubercles and pulmonary cavities, wasting diarrhœa, and vomiting being the chief symptoms; 12 cases of a febrile type, with occasional hyperpyrexia, accompanied by pneumonia, prostration, or a typhoid condition; 2 cases of the ulcerative variety, with fever, cough, sweating, and clubbing of fingers. In children, miliary tuberculosis is more frequent than in adults. Measles, whooping-cough, diphtheria, influenza, and pneumonia all predispose the development of tubercle. In older children the same forms occur. The prognosis in young children is bad; the disease runs a rapid course, cavities forming in a few weeks and death ensuing in a few months in many cases. The prognosis in older children is much less grave, and cure is not rare.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(320) Diphtheria and Coryza.

Grenet and Leoné (*Arch. de Méd. des Enfants*, August, 1898) report on a series of experiments conducted by them to ascertain the connection of various cases of purulent coryza, unaccompanied by false membrane, with true diphtheria. The greater number of cases were in children under a year old attacked, only as far as could be ascertained, by coryza, but some of them manifesting other signs, for example, of hereditary syphilis, gastro-enteritis, or convalescents from measles. They found in a large number of cases a very small bacillus smaller than the short diphtheria bacillus, and often curved in form. It was found to grow longer when cultivated in suitable media, but never attained the dimensions of the large diphtheria bacillus. Inoculated into the rabbit, the bacillus proved fatal 8 times out of 16 cases in a period varying from thirty-six to sixty hours. Inoculation experiments enabled the authors to distinguish between two varieties of bacilli found in the nasal cavities: (1) A bacillus of which either the pure culture or the toxin proved fatal, giving rise in the animals inoculated to lesions entirely analogous to those produced by the classic variety of the diphtheria bacillus. (2) A bacillus very difficult to distinguish from the first variety, having the same essential form and character, but which was not fatal to the animals inoculated. The two varieties were met with at times in the same subject. It is therefore possible to find in the nasal cavities of children suffering from a coryza of apparently benign character a bacillus presenting all the characteristics of the diphtheria bacillus, and in some cases of great virulence. The existence of this bacillus explains the appearance of diphtheria in children who have not been in contact with any known source of contagion, and justifies the bacteriological examination of all cases of chronic purulent catarrh in hospitals.

(321) Disturbed Compensation in Valvular Disease.

Balint (*Deut. med. Woch.*, January 6th and 13th, 1898) has made an experimental study in this subject. He first refers to the views current at the present time. The author produced aortic incompetence in dogs, cats, and rabbits by Rosenbach's method, but later he employed a hooked sound, by which he could not only pull back a valve but also tear it off. The animal was under observation until its death, and then the condition of the heart muscle was carefully examined. Hypertrophy of the heart was always induced, and tables are appended showing the exact results. The experiments on dogs went to show that there was no disturbance of compensation after the destruction of one or two aortic valves within the period of observation, the maximum time being 293 days. In order to examine Krehl's view, which makes the disturbance of compensation dependent upon extension of the inflammatory process from the endocardium to the cardiac muscle, the author injected phosphorus oil after destroying the valves. The heart muscle underwent fatty degeneration, but there was no loss of compensation. Thus the fatty change in the myocardium did not produce loss of compensation. These experiments accord with Strümpell and Fraentzel's view that fatty degeneration is the result and not the cause of loss of compensation. The author then made a number of experiments, in which he divided one or both vagi after destroying the valves. He found that after destruction of the aortic valves and section of one vagus in dogs and cats, a loss of compensation resulted after a given time, and this occurred even when the section of the nerve was made long after the valves were damaged. In rabbits no such effects were produced, and the cause of death was not obvious. In spite of very careful examination no change was found in the myocardium in these cases. Thus, in the disturbance of compensation the nervous mechanism of the heart plays a very important part, but its exact mode of action is difficult to explain. Control experiments were always made by the author. He admits that the animals may possibly not have been kept alive long enough in the earlier experiments, and that perhaps disturbance of compensation might have appeared later. These results cannot be applied without further consideration to the case of man, but it is not improbable that the cause of disturbed compensation does not lie so much in the changes in the cardiac muscle as in those in the nerves.

(322) Landry's Paralysis.

A. Schultz (*Norsk. Mag. f. Laegevidensk.*, June, 1898) gives the pathological details of two fatal cases of Landry's paralysis which occurred during 1897. The first was that of an individual 36 years old, apparently previously healthy, and it proved fatal in fifteen days from paralysis of respiration. The muscles and nerves were intact as tested by electricity, and there was no visible disturbance of sensibility, no paralysis either of bladder or rectum. There was a slight degree of paræsthesia of some branches of the trigeminus, and facial paresis on the right side. The disease had its origin in chronic alcoholism. Microscopic and bacteriological investigation of the nerves and cord gave negative results. The second case was a very typical one, following chronic multiple neuritis, and here also accompanying chronic alcoholism. Death was due to paralysis of respiration. The median, radial, ulnar, and sciatic nerves did not react either to the faradic or the galvanic current, and the muscles supplied by these nerves showed the reaction of degeneration. There had been some lowering of the sensibility, but no vesical or rectal paralysis. Microscopic examination revealed slight acute and diffuse myelitis of the spinal cord. In the peripheral nerves a more or less marked parenchymatous and degenerative neuritis was noticed. Cultures made from the nerves and spinal cord gave negative results. The author regard Landry's paralysis as a multiple neuritis in which the morbid process is transmitted from the nerves to the cord, in which it specially attacks the motor elements (anterior and lateral columns and cells of the anterior horns). Sometimes the changes are found only in the peripheral nerves, but even then the malady may have been transmitted to the spinal cord, in which, however, it has set up only functional disturbances. In yet other cases no pathologico-anatomical changes are found either in the spinal cord or in the peripheral nerves. The etiology is the same as that of multiple neuritis.

(323) Bolognini's Symptom in Measles.

A. Köppen (*Centralbl. f. inn. Med.*, July 2nd, 1898) draws attention to Bolognini's observation in measles that when both hands are placed on the abdomen with the fingers directed downwards, and an alternating and gradually increasing pressure is exercised, a slight rub can be felt as if two uneven surfaces were moving over each other. This was noted early by [illegible] 108 out of 200 cases of measles, where there were no signs of peritoneal irritation. Bolognini attributes it to a fleeting peritoneal exanthem. In 310 cases of measles in which 343 examinations were made Köppen found this sign present 154 times. He compares the sensation, however, to the crackling felt in subcutaneous emphysema. It [illegible] only when the small intestine was manipulated between the hands. The author has never found it present in healthy children, and but rarely in those suffering from intestinal affections. He concludes that the symptom is very frequent in measles, but that it is not pathognomonic, and that it arises from alteration in the intestinal contents.

SURGERY.

(324) The Operative Treatment of Non-Malignant Stenosis of the Pylorus.

Henle (*Centralbl. f. Chir.*, No. 29, 1898) discusses the question whether pyloroplasty or gastro-enterostomy be the better operative method to adopt in cases of non-malignant constriction of the pylorus. The results obtained from the former method in the practice of Mikulicz have convinced him that this is quite as successful with regard to the restoration of function as gastro-intestinal anastomosis; and, moreover, in pyloroplasty, it is pointed out, the natural conditions of the affected parts are maintained. The occasional failure of this operation is attributed by the author to a faulty

technique, or to errors in the selection of suitable cases. An instructive case is here recorded in which on operating for the relief of frequent vomiting, gastric pain, and other symptoms of pyloric obstruction, Mikulicz not only departed from his usual practice of performing pyloroplasty, but also modified to some extent the ordinary method of gastro-enterostomy. The obstruction was found to be due not to stricture but to displacement of the pylorus, caused by the retraction of firm bands of adhesion between the pyloric end of the stomach and the duodenum on the one hand, and the colon and the liver on the other. The pylorus had been drawn upwards, dragging with it the end of the stomach and the first portion of the duodenum, which were placed side by side, each taking a vertical direction. As the pylorus could not be readily reached it was decided to establish an anastomosis between the dilated stomach and the small intestine. The ordinary practice of taking up a loop of jejunum was not adopted, but the displaced and contiguous portions of stomach and duodenum were opened and stitched together. The patient, it is stated, made a good and complete recovery.

(325) Treatment of Gunshot Wounds.

ROSWELL PARK (*Buffalo Medical Journal*, August, 1898) condemns the indiscriminate and usually injurious use of the probe in gunshot wounds. The objections to its use are many, and it teaches nothing which cannot be learned without it. It is rarely clean; it stirs the blood clot, and tends to reproduce hæmorrhages; it permits access of air to the deeper parts, and it rarely gives information which is of any real service at the time. It is an instrument to be used—if at all—in hospital, and not on the battlefield. If an important cavity is entered by the ball, this may be known without probing. Four times out of five the ball is in a position where it cannot be touched with the probe. Park recommends the use of the telephone probe, and the Roentgen rays for the localisation of bullets in the division hospital, where deliberate and aseptic methods can be carried out.

(326) Operative Treatment of Pericardial Effusion.

BRENTANO of Körte's clinic (*Deut. med. Woch.*, August 11th, 1898) draws attention to the three methods of treatment (1) by tapping, (2) by incision, and (3) by incision after the resection of a portion of rib. With regard to the first named, a safe place has not yet been found where the puncture can be made without danger to the heart itself or pleura. The author maintains that when the pericardial sac is full of fluid the heart remains near the anterior surface. The pleural effusion, which has occasionally followed puncture, has been most probably due to a wound of the pleura. A further disadvantage is that the pericardial sac can never be completely emptied in this way, and the puncture has to be repeated. The author thinks that simple incision should also be discarded. Both the mammary vessels and the pleura are in danger of being wounded. Partial pericardial adhesions may also be present. The opening of the pericardial sac after resection of a portion of rib is so simple that it can be done without general anæsthesia. It is most convenient to resect the fifteenth left costal cartilage. Brentano divides the cartilage through its centre, and then removes the two halves. A puncture is made to ascertain the character of the effusion, and the pericardium then carefully incised. It is well to attach the margins of the pericardial incision to those of the skin. After evacuating a purulent effusion, washing out with sterile water should be practised. The removal of coagula and fibrin masses is very important. In case of a purulent effusion the author has seen no disadvantage in the daily washing out with sterile water or weak lysol solution. By the method of incision after rib resection the pericardium may be directly treated, and the adhesions will be less than when the remains of the exudation are left. The author cautions against operating on cases in which there has been long-continued cardiac disturbance. In 5 cases treated in Körte's clinic, marked improvement always occurred, but only 1 case recovered. In 2 cases there was a suppurative pericarditis due to infective osteomyelitis. In 2 others the pericardial effusion was sero-fibrinous. The cases were of long standing, and the author adds that it might possible have been better if they had not been operated upon. The fifth case, which recovered, occurred in a girl, aged 10, with a large and threatening effusion of rheumatic origin.

(327) Treatment of Subclavian Aneurysm by Excision of the Sac.

MOYNIHAN (*Annals of Surgery*, July, 1898) reports a case of aneurysm of the third portion of the right subclavian artery, which he treated by excision of the sac. A curved incision with the convexity downward was made in front of the clavicle, the middle portion of which bone was liberated by sawing on either side, and then pulled well downward so as to facilitate free exposure of the aneurysm. An aneurysm needle, threaded with four strands of catgut, was passed round the second portion of the artery, which was then tied at a distance of about one-third of an inch from the aneurysm. Between this ligature and the sac a thin silk ligature was passed, and tied as close up to the aneurysm as was possible. The intervening portion of artery having been divided, the sac was detached from the surrounding parts, till the first part of the axillary artery was reached, which was, in its turn, ligatured and divided. Fifty-nine days later a second aneurysm developed about one inch internal to the ligature on the second part of the subclavian. The innominate artery was then ligatured, but the patient died about an hour afterwards from hæmorrhage and shock. The author concludes, from a study of this case, that the advantages of excision of the sac of an aneurysm over those of distal ligature are: (1) A far greater chance of recovery from the operation; (2) no risk of recurrence; (3) a far less risk of gangrene; (4) a probability of complete recovery from any of the results of nerve interference.

MIDWIFERY AND DISEASES OF WOMEN.

(328) A Large Fibromyoma Uteri.

PLATONOFF (*Khirourgya*, August, 1898) reports the following case. A Cossack's wife, aged 45, applied to him with a large abdominal tumour. The history of the case was that the swelling first commenced in the lower part of the abdomen; that it gave rise to no pain or hæmorrhage, and caused little anxiety at first; but that during the last ten years it kept gradually increasing and rising into the abdomen, until at last it not only prevented the patient from doing any work, but also interfered with her ability to walk. On examination the patient was found pale and emaciated; her face and feet were œdematous, and the urine contained a trace of albumen; the respiration was frequent, shallow, and costal in type, and the abdomen was highly distended and measured 85 cm. from the pubes to the sternum, and 165 cm. in circumference at the level of the umbilicus; the tumour felt hard, and had a smooth surface. Vaginal examination and attempts at sounding were unsuccessful, as the os was drawn up too high into the abdomen. The diagnosis, under the circumstances, was doubtful. The large size of the tumour, the smooth surface, the absence of hæmorrhage, and some slight fluctuation in the tumour, suggested a cyst of the ovary. The patient remained a fortnight under observation, during which time the circumference of her abdomen increased by 5 cm. Owing to her repeated requests for an operation, an exploratory laparotomy was decided upon. An incision 30 cm. long was made in the middle line, when about half a pint of yellowish fluid escaped from the abdominal cavity. The hand was introduced through the wound, and the tumour could be felt springing from the uterus but adherent to the bladder, the large curvature of the stomach and the ascending and descending colon; the adhesions were so firm that further interference was useless. The abdominal wound could not be closed, and was therefore left open. After the operation the patient became feverish. Two subsequent attempts were made to remove the tumour in pieces with the aid of Paquelin's cautery, but the hæmorrhage was too free. Gangrene appeared in the wound and extended inwardly, the temperature remained high, the patient's strength failed, and she died on the eighteenth day after the operation. On *post-mortem* examination it was found that the tumour started from the uterus; that it was firmly attached to the bladder, pancreas, large curvature of the stomach, the ascending and the

descending colon; that it was richly supplied with blood vessels, the largest being the thickness of a finger, and springing directly from a large aorta; and that it displaced the intestines backwards and upwards. The liver was of normal size; the kidneys were wasted and œdematous, and the ovaries small and atrophied. The liberated tumour was shown to be an interstitial fibromyoma uteri, weighing 41 kilogrammes.

(329) Labour Complicated by Parasitic Twin.

Shaver (*Richmond Journal of Practice*, January, 1898) publishes the report of a labour where the monstrosity recalls the case of "Posterior Dichotomy: a Three-legged Boy," described and figured in the British Medical Journal of June 11th, 1898. A primipara, aged 18, appeared to be pregnant of twins, but two hearts could not be detected by auscultation. The presentation was occipito-anterior; the maternal parts were very dilatable. After the head was born labour was delayed and a hand was detected presenting. This was replaced and the shoulders were born, when another delay occurred, the thighs being flexed and the feet presenting along the trunk. The hips were finally born, and the child was found to be closely attached to another, which was finally delivered. The first child, the "autosite," was a girl, the parasite an acephalous monster attached by a broad base occupying the region from pubes to sacrum in the autosite, the nates being obliterated. The parasite was much the larger, and Shaver distinctly states that it possessed a penis and testes—possibly clitoris and inguinal ovaries, since the sex is, according to the experience of others, invariably identical in twins of this kind. The monster seems to have been thrown away, we must note, after a bold flap amputation; it had two feet and one hand, but no arm nor leg. The funis was common to parasite and autosite. The rectum of the living child was found about half an inch from the anus, where it gave off a branch gut to the parasite; this was cut and stitched and the wound closed. The child was neglected and died on the fourth day.

(330) Hyperemesis Gravidarum.

Klein (*Zeits. f. Geburtsh. u. Gyn.*, vol. xxxix, Part 1), after reviewing the theories of various authors as to the etiology of the condition, and the different lines of treatment advocated, sums up in the following conclusions: (1) With Kaltenbach and Frank the term should be limited to those cases in which the vomiting is set up and kept up by the pregnancy, and the patient's nutrition suffers. (2) The reason of the hyperemesis in Kaltenbach's restricted sense is to be sought in a neurosis (Ahlfeld) or hysteria. (3) In the treatment of hyperemesis of the first and second degrees dietetic treatment by the limitation of nourishment to liquids, with mental and bodily rest, is sufficient. (4) If treatment at home is not successful within a few days, treatment in an institution must be proposed. (5) If the vomiting does not then stop the patient must be transferred to an institution. (6) Local treatment (with the exception of the treatment of dangerous complications, such as retroflexion of the gravid uterus) and treatment by drugs and suggestion, are superfluous. (7) In hyperemesis of the third degree the artificial induction of labour is occasionally required. (8) To avoid this the earliest practicable treatment of the hyperemesis in the first and second stages is necessary.

(331) Fœtal Achondroplasia.

Maygrier, at a recent meeting of the Obstetrical Society of Paris (*Progrès Méd.*, July 23rd, 1898), exhibited photographs and the skeleton of an achondroplasiac fœtus. The infant was born dead, and was the offspring of a healthy mother and of a father who showed some signs of rickets and was alcoholic. The limbs were short and curved, the hypertrophied skin on them was thrown into marked folds, while the trunk had fairly normal dimensions. The head was hydrocephalic. The examination of the placenta was interesting. It weighed 425 g., and on its uterine surface were numerous greyish calcareous grains. Maygrier thinks one is justified in suggesting that this abnormal deposit of calcareous material in the placenta may be related to the changes in the bones of the fœtus.

THERAPEUTICS.

(332) Sulphonal Poisoning.

Wien (*Berl. klin. Woch.*, September 26th, 1898) relates a fatal case of subacute poisoning in a woman, aged 32, suffering from paranoia. The patient received mostly three doses, each of 0.5 g., at intervals of an hour and a-half on each of thirty-one days, with occasional intermissions. The urine was examined daily, and the patient had been treated previously with about the same doses with no ill effect. When the sulphonal was discontinued the patient had become quiet, but this was not the result of any sulphonal narcosis. Her general condition was good. Thirty-six hours later the symptoms of sulphonal poisoning appeared. They consisted at first of gastric symptoms, with pain and vomiting, and later paralysis and hæmatoporphyrinuria were noted. It appears to the author probable that the poisoning was due to a cumulative action. Besides the ataxia there was paralysis in the arms and legs, probably due to a peripheral lesion. A notable fact in this case was the late appearance of the hæmatoporphyrinuria, which occurred eight days after the onset of the intoxication symptoms. Albuminuria and other evidence of a toxic nephritis appeared later. The pulse-rate fell towards the end to 68 as a result of changes in the myocardium. At the necropsy a toxic nephritis and cystitis were found. The heart muscle showed degenerative changes and the pericardial sac contained an excess of fluid. The author maintains that the great danger in sulphonal poisoning lies in the irreparable changes found in the heart. In the stomach there were small hæmorrhagic erosions, and the organ presented an hour-glass contraction due to old ulceration. Nine-tenths of the cases of fatal sulphonal poisoning have occurred in women. Although the number of cases of poisoning by sulphonal is small considering the frequency with which it is used, yet precautions must be taken. The use of this agent must be as limited as possible, and intermissions of even four or five days are too short. The author thinks that when symptoms of poisoning have already appeared, transfusion—or, failing that, infusion—of saline solution should be tried. Camphor should be used in case of the least threatening of cardiac failure. Efforts should be made to promote the excretion of the sulphonal by diuresis, etc.

(333) Antitoxin Treatment of Pneumonia.

A. H. Smith of New York (*Amer. Journ. of the Med. Sci.*, October, 1898) gives a summary of the investigations into this subject. It is probable that the infection is not maintained through its whole course by the same microbes, but by a constant succession of fresh ones, the local process ceasing to extend when the supply of microbes terminates. Yet the production of an antitoxin would also appear to play a part in bringing about the crisis. Some ten years ago Netter rendered mice and rabbits immune against the pneumonic infection by injecting the fluid obtained from the dried spleen of infected animals. Later he employed with the same result pleuritic exudation containing pneumococci and also pneumonic sputum. Foà immunised animals by means of an attenuated culture of the diplococcus. The brothers Klemperer rendered rabbits immune against this infection, and cured dogs by using the serum of immunised animals. Man, unlike animals, is only slightly susceptible to the pneumococcus infection. The Klemperers injected themselves with the pneumococcus, and found that in small quantity no effect was produced, and with larger quantities only a local swelling appeared with passing febrile symptoms. The disease is grave in man, owing to the absorption of poisons from the local lesion. The immunity against the pneumococcus is only short-lived. Lara obtained encouraging results in treating 10 cases of pneumonia with serum. Bozzolo also treated 5 cases, with 1 death. De Renzi used the serum in 10 severe cases, and all recovered. Wiesbecker treated 5 cases with serum obtained from convalescents, and always noted a remarkable improvement in the subjective symptoms. Washbourn used in his cases serum from an immunised pony, devising a special method of cultivation so that the microbes maintained their virulence for sixty-six days. Several cases have been treated with Washbourn's serum, with favourable re-

sults. Smith says that the serum treatment encourages to further effort, but that a large number of observations can alone enable one to draw conclusions as to its efficacy. He mentions that efforts are being made by the New York Health Board to supply a reliable antitoxin for the treatment of pneumonia.

(334) The Artificial Feeding of Infants.

GREGOR (*Deut. med. Woch.*, October 6th, 1898) speaks of the value of a malt soup in the feeding of infants with gastro-intestinal affections. He has used it in more than 100 cases. In 74 very young infants the observations were extended over several months. Here the soup was given out in bottles in the poly-clinic. The hygienic conditions of these infants were very unsatisfactory, and yet the results were good. The development was arrested and severe gastro-intestinal symptoms were present. In 27 of the 74 cases a complete recovery ensued, so that the patients were free from symptoms for many months; 18 infants still under observation were so much improved that they might be looked upon as cured; 13 cases were much improved; in 3 cases there was no improvement. Of the 74 cases, 13 died, death being due in 6 cases to intercurrent disease. The results obtained with this malt soup were much better than those obtained with Gaertner's fat-milk preparation. The malt soup contained but few bacteria. The mothers were told to keep it at 15° to 20° where it was possible. Thirty-four of the 74 cases were from 3 to 9 months old, and 23 under 3 months. In infants over 3 months with chronic gastro-intestinal affections this malt soup should be tried and continued for several months. In younger infants it requires dilution. In children from 9 to 15 months with severe rickets this feeding should be tried. In artificially-fed children in whom the nutrition is less satisfactory than in breast-fed children this malt soup gives as good results as other artificial foods. Feeding at the breast may be supplemented by one or two meals of this malt soup.—Keller (*ibid.*, September 29th, 1898) describes the method of preparing this malt soup: 50 g. of wheaten flour are well mixed up with ½ litre of cow's milk and the mixture passed through a sieve. In another vessel 100 g. of malt extract are dissolved in ½ litre of water at 50° C., and to it are added 10 c.cm. of an 11 per cent. solution of pot. carb.: these two preparations are then mixed and boiled.

(335) Peroxide of Hydrogen in Diseases of the Ear and Nose.

HALÁSZ (*Wien. klin. Rundschau*, 1898, No. 42) strongly recommends peroxide of hydrogen as an antiseptic and styptic in otological and rhinological practice, into the former of which it was introduced by Bettmann in 1885. The author reviews the work of previous observers, particularly Pollitzer, and adds the discovery that in very protracted cases this drug may form a useful preliminary to more active treatment. Thus in a case of otitis media of ten years' standing cauterisation with trichloracetic acid proved unavailing. The patient was treated with the peroxide for a week. The suppuration grew less, and the trichloracetic acid being reapplied speedily effected a cure. The particular indication for the peroxide is these extremely difficult cases, where every other remedy has failed. In more recent attacks it may be applied at once, and leads rapidly to healing. As a styptic it is very valuable in the removal of aural and nasal polypi; if instilled beforehand, the operation is rendered almost bloodless, and any oozing is soon stopped by swabbing with the peroxide. In one case of acute otitis media the instillation of the drug caused intolerable pain, so that it had to be washed out; after warming it, some was reintroduced and was then easily borne. The author found no unpleasantness in any other case in which peroxide of hydrogen was administered. With regard to strength, he used a 3 to 6 per cent. solution; that employed in Paris varies from 10 to 12 per cent. No toxic effects such as follow injection into a vein were observed.

PATHOLOGY.

(336) Pathology of Syphilis.

ADAMI (*Montreal Med. Journal*, June, 1898) discusses the nature of the different stages and forms of syphilis. His conclusions may be summed up as follows: (1) In certain cases there may be an absence of the primary cutaneous or epithelial manifestations of syphilis. (2) Individuals may fail to present either primary or secondary symptoms that are recognisable, and yet eventually develop definite tertiary lesions. (3) When the subject is relatively insusceptible, it is possible that the disease may be limited to the primary cutaneous lesion, not followed by secondary lesions. (4) In syphilis, like tuberculosis, the congenital form of the disease begins at what may be termed the secondary stage of the acquired disease—for instance, the stage of general dissemination of the veins. (5) Syphilis under proper treatment, if not a self-limiting disease, is at least one which can be healed, so that many of the lesions recognised as tertiary are truly the indications of the old healed syphilis and not signs of progressive or latent disease. (6) If the disease has not completely died out and remains latent, the resistance of the tissues of the organ is such that in most cases it does not tend to light up again; there is so considerable a local reaction that the infection and consequently the spread of the process tend to remain strictly localised, and the germs do not become disseminated through the blood. Thus, neither the blood nor the secretions contain the virus. (7) In a very small number of cases the reaction of the tissues may be so lessened, and the virus retain or gain so high a virulence that either it causes ulceration, or in other ways becomes disseminated and capable of causing infection even late in the tertiary stage. (8) In the liver of a newborn infant presenting externally evidence of the secondary stage, there may be several varieties of lesions: (*a*) Well-defined gummata; (*b*) miliary gummata with generalised fibroid changes affecting circumscribed areas; (*c*) miliary gummata and fibrosis affecting the whole organ, which is thus enlarged; (*d*) generalised atrophic cirrhosis without much evidence of gummata, but associated with icterus, œdema, etc., the liver being granular and contracted. Hence the changes in the liver in congenital syphilis resemble the tertiary rather than the secondary stage of the disease. (9) The liver of acquired syphilis may present two conditions: (*a*) Cicatrices and fibroid changes which are indications of a previous syphilis now healed; (*b*) the lighting up again of an obsolescent syphilis from old foci in which the virus has remained latent. (10) Progressive syphilis is characterised by the same succession of phenomena, whether it be studied a few months or many years after the primary infection. Anatomically and histologically there is no valid distinction to be drawn between secondary and tertiary syphilis.

(337) The Combination of the Tetanus Poison and Nervous Substance.

MILCHNER, of Leyden's clinic (*Berl. klin. Woch.*, April 25th, 1898) refers to Ehrlich's theory that the immunity process consists in definite groups of nerve cell substance existing in excess and escaping into the blood. The author finely divided the brain of a guinea pig or 10 gr. of fresh calves brain, and then emulsified it in 10 c.cm. of normal saline solution. Varying quantities of tetanus poisoning were added, and the whole centrifugalised until as clear a fluid as possible was obtained. A second emulsion was then made from the deposit. When the tetanus poison was present in such quantities that 1 c.cm. of the fluid contained ten times the lethal dose, it was found that both the clear fluid and the second emulsion could be injected without ill effect. In other experiments the author added an access of the tetanus poison. Here the tetanus was delayed in its development, some of the poison remaining uncombined. The author concludes that the mixture of brain substance and the tetanus poison is a chemical and not a vital process. The combining substance exists in the brain cells in an insoluble form, and seizes upon the poison if not present in too large quantities, thus rendering the fluid free from the tetanus poison. If there is too much poison present a part is left behind uncombined. In some other experiments the brain substance was boiled before being emulsified. Here the antitoxin was destroyed by heat; the clear fluid when injected caused death earlier than the second emulsion. These experiments show that the combination between the toxin and antitoxin occurs without the intervention of living tissue.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(338) The Argyll-Robertson Phenomenon.
Eichhorst (*Deut. med. Woch.*, June 9th, 1898) draws attention to the fact that this phenomenon, which is usually so constant and lasting, may occasionally be intermittent. Erb has also pointed out that it may vary. In 103 cases of tabes Eichhorst invariably found a permanent loss of the light reflex in all except two women where it was intermittent. (1) A woman, aged 38, with a previous history of syphilis, showed unmistakable signs of tabes in 1893. The unequal pupils reacted to light, but only sluggishly. Three months later there was a total loss of the light reflex. Two years afterwards no further symptoms had developed, and the pupils now again reacted to light, but very sluggishly. The reaction then disappeared for four months, when it again became present for ten days, after which it disappeared. (2) A woman, aged 38, with evidence of syphilis, had been in the clinic on four different occasions. In 1891 the pupils reacted to light, but were sluggish. A month later the pupils reacted very actively to light, and this persisted for two months. In 1895 the patient was readmitted with a perforating ulcer. The left pupil now did not react to light, whereas the right did so sluggishly. In 1897 the left pupil had regained to some extent its power of reacting to light. In both these patients a movable kidney was noted. The author says that the pupil reflex reaction to light may vary even after a long duration of the disease, and in spite of the patient being otherwise worse.

(339) The Temperature in Cerebral Hemorrhage.
Gilles de la Tourette (*Sem. Méd.*, June 8th, 1898) insists that of all the signs which enable a prognosis or diagnosis to be made when a comatose patient is seen for the first time, the temperature is by far the most important. (1) In cerebral hæmorrhage the temperature may fall at once to 97° or even 95° F., but in three or four hours, or earlier, it rises to 100.4° or 102.2°. If it does not rise beyond 102.2° recovery may be expected, whether it keeps up near that point for twenty-four to thirty-six hours, or tends to fall again at once; but if in the first five or six hours after the stroke the temperature approaches 104° and is rising an hour later, a rapidly fatal issue is almost certain. The rare exceptions are some old or debilitated people, who may die in a few days in spite of the temperature never reaching 102.2°. This applies to the prognosis of all states of coma of intracranial origin, whether due to cerebral hæmorrhage or softening, cerebral tumour, the status epilepticus, or fractures of the skull, but the temperature alone is useless for differentiating these conditions. Besides a high temperature the following are of grave prognosis:—Early muscular rigidity, extreme persistent myosis, conjugate deviation of the eyes, and acute gluteal decubitus. When any of these are present the prognosis is serious even though the temperature has not passed 102.2°. Though such a useful guide to prognosis the temperature is useless for locating the lesion; with a high temperature it may be equally in the hemispheres—cerebellum, medulla, or pons. Temperature does not help the prognosis as to the chance of paralysis if recovery is probable; in the absence of conjugate deviation or early rigidity there are at first no guides, but twenty-four hours later a puffing out of one cheek more than another may indicate that that side will be paralysed. (2) On the other hand in intoxications the temperature usually falls below normal, and the prognosis becomes serious the more it falls. This applies to acute alcoholic or opium poisoning, and to uræmic and diabetic coma, a temperature of 95° being not uncommon in the latter. (3) In hysterical coma the temperature remains normal. Alex. Bruce (*ibid*, July 20th, 1898) differs from Gilles de la Tourette in considering the chief value of the thermometer to be in localising hæmorrhages. He bases this belief on a statement of Gowers that in hæmorrhage into one of the ventricles there is an initial fall, followed or not by a rise of temperature, while in hæmorrhage into the pons there is no initial fall of temperature, which rises from the first.

(340) Albumosuria.
Fitz (*Amer. Journ. of the Med. Sci.*, July, 1898) discusses the significance of albumosuria in medical practice. Since the discovery of albumose in the urine by Bence Jones in 1845, many observers have published cases, under the titles of peptonuria, propeptonuria, or albumosuria. Most authorities now accept Stadelmann's conclusion that peptone as distinguished from albumose never occurs in fresh urine, although it may be found in stale albuminous urine from the action of bacteria on the albumin. The different varieties of albumose, like albumin, are precipitated by nitric acid, ferrocyanide of potassium and acetic acid, and ammonium sulphate—the last named, however, may not precipitate all, especially deuteroalbumose—but are not coagulated by boiling. They resemble peptone in being soluble at a boiling temperature, in being precipitated on cooling, and in giving the binuret reaction, but, unlike peptone, are precipitated by ammonium sulphate. The usual clinical test is that of Hofmeister modified by Salkowski, but urobilin occasionally gives the same reaction. Von Jaksch and others have concluded that albumosuria is most often found in deep-seated suppuration, in acute infectious diseases, especially fibrinous pneumonia, and in affections with more or less extensive destruction of tissues. The urobilin reaction may explain its supposed almost constant presence with persistently high temperatures. Among chronic affections where albumosuria has been found, the most important is osteomalacia, but Kahler believes such cases to be not true osteomalacia, but examples of myelogenous tumours. A distinction must be drawn between transitory and persistent albumosuria. The former has been found in such a variety of diseases as to be of little practical value except in the diagnosis of acute pneumonia, deep-seated suppuration, including meningitis, and macerated fœtus. Persistent albumosuria has acquired importance recently in connection with the diagnosis of multiple latent tumours of the trunk, especially myelomata. In one of the author's cases extreme persistent albumosuria led to a probable diagnosis of multiple tumours of the bones, which was confirmed later by the Roentgen rays. Another of Fitz's patients was a woman with myxœdema, who died in spite of thyroid tabloids. Von Jaksch has reported the only other case in myxœdema. Whatever the value of albumosuria in diagnosis, its persistent and excessive presence is a sign of very grave prognosis, since practically all such cases have proved fatal.

(341) The Seat of the Apex Beat in Tuberculosis.
Morano (*Rif. Med.*, September 3rd, 1898) has reinvestigated this subject in the light of Cardile's statement that the apex beat was displaced inwards in tuberculosis and early tuberculous disease of the lungs. He examined 150 subjects, divided into three classes: (1) healthy and going about, (2) non-medical cases laid on their back, (3) medical cases confined to bed. In the first two classes the apex beat was in the fourth intercostal space in 67 per cent. and in the fifth in 33 per cent. of the cases. In females the percentage of cases in which the apex beat is in the fourth space is rather higher. Age tends to lower the position of the apex beat. In about half the cases the apex beat ascended to the fourth space and a little inwards in changing from the erect to the supine position. In the third class of cases the apex beat in tuberculosis of the lungs was in the fourth and fifth spaces six and seven times respectively. Speaking generally, the author states that in disease producing obstruction to the lesser circulation the apex beat is lowered. Owing to mistaking the clavicular-costal space for the first intercostal space the fifth intercostal space of many authors is really the fourth. As far as the author's observations have gone with reference to the inward displacement of the apex beat in tubercle they do not confirm those of Cardile.

SURGERY.

(342) Nephrectomy for Wounded Kidney.
Nasse (*Deut. med. Woch.*, August 18th, 1898) exhibited a case at the Berlin Medical Society, in which he had successfully performed this operation. A

boy had been struck in the abdomen whilst performing feats at a gymnasium. When admitted into the hospital he was passing a considerable quantity of blood, and his bladder was distended nearly to the umbilicus. A catheter was introduced, and a large amount of blood escaped. The bladder after a few minutes was filled again with blood. In the right lumbar region there was increased resistance, and a sense of fulness in the neighbourhood of the kidney. Operation was at once decided upon. The capsule of the right kidney was distended, and filled with blood. The kidney was removed; there was troublesome hæmorrhage, which was stopped by pressure. The boy made an uninterrupted recovery. The author gives some practical advice with regard to three groups of cases: (1) Profuse hæmorrhage sets in immediately after the accident, the patient becomes very anæmic, and dies in twenty-four hours; (2) the hæmorrhage is more gradual and intermittent, it may extend over several weeks, and ultimately death takes place from anæmia; (3) the hæmorrhage ceases completely, and the case appears to be progressing favourably, when suddenly after some time hæmorrhage again commences, the patient becomes collapsed, and dies. In groups 1 and 3 an immediate operation is necessary. In group 2 the treatment is not so clear: many of these cases are cured by rest. If the patient becomes very anæmic, an operation is necessary. The extent of the operation will depend on the amount of injury to the kidney substance; some cases only require ligature, whilst in others the entire organ must be extirpated.

(343) Lannelongue's Sclerogenic Method. COUDRAY (*Arch. Gén. de Méd.*, April, 1898) reviews the results obtained by applying Lannelongue's method of injecting zinc chloride to the cure of diseases other than hernia (*vide* EPITOME, vol. i, par. 281, and vol. ii, par. 105, 1897). His own cases so treated number 100. (1) For tuberculosis of the large joints, with the exception of the hip, in a child 8 to 10 years old, 10 to 12 injections of 4 or 5 drops of a 10 per cent. solution of zinc chloride are sufficient. The needle of the syringe is introduced down to the bone round the edge of the synovial membrane. Excellent and permanent cures are effected in this way, especially in early tuberculous arthritis of the knee. When suppuration has occurred the method is very useful by provoking a reaction, which shows exactly how much tissue must be removed at the subsequent curetting, or reveals foci not discoverable clinically. (2) In several cases of congenital dislocation of the hip an excellent result was obtained, the head of the femur being placed in good position under chloroform before making the injections. (3) In malignant tumours which are inoperable it may arrest the disease temporarily. In a woman with undoubted scirrhus of the breast with enlarged axillary glands, who refused a cutting operation, on three occasions several injections of the zinc chloride were made round the tumour and the axillary glands. The woman was then lost sight of. Five years later she was seen again; the breast was atrophied, and there was no trace of cancer there or elsewhere. (4) The author has had no personal experience of the sclerogenic radical cure of hernia, but he has seen all Lannelongue's cases, and has been struck with the absence of relapses, and with the firmness of the abdominal wall.

(344) Wound of Thoracic Duct. H. CUSHING (*Annals of Surgery*, June, 1898) reports a successful case of suture of the thoracic duct after accidental wound during an operation for the removal of carcinomatous glands in the posterior triangle of the neck, secondary to a former removal of the left breast for scirrhus. In this case the duct was seen as a thin-walled, colourless vessel, lying on the scalenus muscle. A small longitudinal wound was found, and closed by a fine silk passed by a small French needle so as to slightly invert the edges. The patient recovered without further leakage. The thoracic duct is usually free from operative injury, but when it rises in the neck, as in the above case, it is liable to be injured during deep operations in the neck. The author recommends suture in all cases if possible. If this cannot be done, he advises a provisional ligature to be placed in the proximal side of the wound, the leakage to be controlled by gauze tampons, and the patient put on low diet. If leakage continues, and threatens starvation, the provisional ligature should be tied, with the hope of final readjustment of the collateral circulation, or trusting in the presence of anomalous anastomotic branch which may suffice to carry the lymph into the venous circulation. The results of division or obstruction of the thoracic duct, as shown by experiments on dogs, are fatal from rupture of the receptaculum chyli, causing death either from visceral compression by extravasated fluid, or starvation from loss of chyle. The duct may, however, be gradually compressed by tumours without fatal results, the lymph current becoming reversed, and taken up by the right lymphatic duct.

(345) Mental Disturbance after Operations. RAYNEAU, at the Congrès des Médecins Aliénistes (*Journ. de Neurol.*, August, 1898), discussed the causation of mental disturbance following operations. Many varieties of such disturbance have been recorded — mania, melancholia, dementia, hysteria, etc.; there is no one type of affection which prevails, no *folie post-opératoire*. The question of importance is whether these disturbances may occur in any subject, or whether there must be some predisposition, hereditary or acquired. The evidence seems to be in favour of the latter view, and in some of the recorded cases there was undoubtedly some mental flaw before the operation. The exciting cause is very doubtful; moral impression, shock, the anæsthetic, the antiseptics, and general ill-health have all been blamed, but perhaps preceding alcoholism and the occurrence of septic infection are the most important factors. Gynæcological operations are not more likely to cause mental trouble than other forms of surgical interference, and in any case the complication is rare, mental disturbance having been noted only after 1 or 2 per cent. of all operations.

MIDWIFERY AND DISEASES OF WOMEN.

(346) Treatment of Abortion by Abdomino-vaginal Expression of the Uterus. P. BUDIN (*Progrès Méd.*, September 17th, 1898) records three cases of incomplete abortion treated by digital curettage and abdomino-vaginal expression of the uterus. He forbids the use of the curette under such circumstances, and is of opinion that all forms of abortion forceps are dangerous. In order to remove the retained products of conception with safety the following procedure is recommended. Chloroform is administered, and with all antiseptic precautions the cervical canal is dilated with, first, the index finger and then the middle finger. Occasionally it may be necessary to employ the Hegar dilators. The uterus is fixed with the hand acting through the abdominal wall. Then with two fingers or one, according to the age of the pregnancy, the interior of the uterus is thoroughly scraped, all portions of placenta being separated from the walls. To evacuate the uterus it is sometimes sufficient to make traction on the placental fragments with the fingers or with one finger hooked. Usually, however, it is necessary to employ uterine expression. This is done by placing two fingers in the posterior vaginal fornix and pressing them forwards, while with the other hand placed on the hypogastrium pressure is made on the anterior fundus and fundus uteri. In this way the organ is compressed between the two hands, and the contents are forced into the vagina. The uterine cavity is then washed out, and a mixture of glycerine and creosote applied. Only when there is any hæmorrhage and the uterus does not retract properly is it necessary to plug the utero-vaginal canal with iodoform gauze.

(347) Unruptured Hymen in Pregnancy. ALBESPY (*La Gynécologie*, August 15th, 1898) observed a very marked case in the Maternity of Rodez, in Languedoc. A single woman, aged 23, became pregnant after a single connection, which was incomplete and very painful. At the labour the midwife diagnosed presentation of the cervix at the vulva. This complication seemed strange in a primipara, yet Albespy agreed that the presenting structure was, to the touch, very like the cervix of a gravid uterus. He inspected, and at once saw that it was no cervix but a greatly dilated urethra. The hymen was very tough, and its orifice, placed anteriorly, scarcely admitted a fine probe. Albespy believed that the pressure of the fœtal head bear-

ing down on the bladder, and producing a certain amount of cystocele, had caused prolapse and dilatation of the urethra. The vagina seemed normal. By auscultation and abdominal palpation the presentation was found to be right occipito-anterior. Not until the spontaneous rupture of the membranes did Albespy incise the hymen. He cut antero-posteriorly on a grooved director, and made a lateral incision on each side with scissors. The vulva had first been rendered aseptic. The child was delivered spontaneously an hour later. The hymen was half a centimetre thick. The vulva was dressed with iodoform gauze. The patient was discharged in good health on the tenth day. No note is made of the condition of the urethra on discharge.—Lemaistre (*Revue Médicale*, June, 1898) relates an instance where a woman, aged 42, became pregnant after twenty years of married life. She had always been regular, and connection had been frequent, yet penetration had never been effected. Abortion took place at the fourth month, a fœtid placenta with a hæmorrhagic area being expelled spontaneously. Lemaistre proceeded to clear out the uterus, but the vulvar orifice was found quite closed by a diaphragm very tender to the touch. At length an orifice large enough to admit the tip of the little finger was discovered in the anterior part of the membrane. It looked very like a meatus urinarius. On pressure with the tip of the fore-finger against the orifice it yielded, and the vagina was found to be very contracted, though quite elastic. The cervix was not dilated. On careful inspection of the vulva it became evident that the membrane was the hymen proper, which had never been ruptured till at the medical exploration. The special point of interest in this case was the retention of the placenta, for a time, in the vagina. It decomposed there, and then managed to slip out of the very narrow orifice of the hymen. Thus imperforate or resistant hymen may be a source of sepsis.

(348) Uterus Bicornis: Amputation of One Cornu: Recovery.

Branfoot (*Indian Medical Gazette*, July, 1898) operated on a married woman, aged 28; she had borne four children, the youngest being over 2 years old. For eight months she had pelvic pain extending down the front of the right thigh. The uterus from the vaginal side felt slightly enlarged, with a rounded tumour in front and to its right side, as in dilated tube. At the operation the tumour was found covered with thickened, inflamed omentum. The right tube was greatly dilated, and under it was a cystic ovary, whilst to its right was the main tumour, which looked more solid. The cyst was tapped and dark green fluid escaped. Then the main tumour was punctured with an exploratory trocar. Very thick dark blood escaped, and bright arterial blood spurted from the puncture. Then the parts were drawn out, and seen to be the right half of a uterus bicornis, with atresia of the cervix, hæmatometra, and hæmatosalpinx. The left and parous cornu of the uterus and its appendages were healthy. The right half of the uterus, with the tube and cystic ovary were secured by loops of No. 4 silk passed deeply into the broad ligament, one loop passing through the wall of the left half of the uterus, at about the level of the os internum. Then the parts were cut away. The pelvis was sponged dry and the abdomen closed with silkworm-gut sutures. A drainage tube was passed into Douglas's pouch, and removed in thirty hours. The patient recovered without rise of temperature. There was slight show of blood on the third, fourth, and fifth days.

(349) Pulmonary Embolism in Childbed.

Vogt (*Norsk. Mag. for Lägevid*, 1897, p. 1,130) relates four typical cases with severe symptoms, three ending fatally as usual. The fourth occurred in a woman who had passed through a normal labour and got up on the tenth day; one main branch seems to have been plugged, but the patient recovered.

THERAPEUTICS.

(350) Treatment of Ascites by Injections of Oxygen.

The treatment of different forms of peritonitis by exposure to air has formed the subject of considerable investigation. A modification of this method has been studied by Maignot (*Thèse de Lyon*, 1898), namely, the injection of sterilised oxygen. The writer shows that this method presents considerable advantages over ordinary air, and that it is of use not only in tuberculous forms of peritonitis but also in the ascites due to cirrhosis of the liver. It has been supposed, for instance, by some that the effects of air injections are due wholly to the oxygen. It is logical, therefore, to assume that pure oxygen would be more efficacious and much more easily controlled than small injections of air. As the result of a considerable amount of experience, the writer thinks that from 1 to 2 litres of oxygen should be ample for each injection, and that this amount is much more easily borne by the patient than the larger injections of 5 or 6 litres employed by some observers. After such injections the writer finds that the only sequelæ are a very slight elevation of temperature (0.3 to 0.4), or a slight abdominal pain which disappears in about twenty-four hours. It is well to apply a binder with a pad placed over the site of injection. The writer seems to have obtained some very remarkable results from oxygen injections.

(351) The Dietetic Treatment of Diabetes.

Lépine (*Sem. Méd.*, No. 50, 1898) discusses the dietetic treatment of diabetes mellitus. The advantage of restricting the carbohydrates in the food is pointed out, but attention is drawn to the importance of the quantity as well as the quality of the diet; and observations by Külz, Minkowski, and Naunyn are quoted, showing that too large a quantity of nitrogenous food may increase the sugar excretion. Fats are of great service, and may be allowed in large quantities. The substitutes for bread are referred to, but Lépine allows ordinary bread, rigorously limited in amount according to the nature of the case. Fruits are often forbidden, but Lépine points out that many fruits contain little carbohydrates—oranges and apricots only 2.5 to 3 per cent., peaches only 2 per cent. Some patients are able to take milk without any increase in the glycosuria; but if the case be one in which milk sugar cannot be assimilated, and yet the use of milk is desirable, then one of the methods of preparing artificial milk described by Wright, Ringer, and Williamson may be employed. As regards alcoholic beverages, the author points out that it is probable that there are certain wines more injurious than others, not only on account of the sugar which they contain, but from the presence of some substance the exact nature of which is unknown. All wines are dangerous for most diabetic patients if they are taken in large quantities.

(352) Pyrosal and Phenosol.

Burghart, of Leyden's clinic (*Deut. med. Woch.*, October 13th, 1898) discusses these two new antipyretics, which have been used in the clinic for nearly a year. Pyrosal is an acid salt of the salicylacetate of antipyrin and phenosol salicylacetic acid combined with p.-phenetidin. Pyrosal dissolves with difficulty in water, ether, or alcohol, and splits up in the presence of acids and bases into its components. Phenosol also dissolves with difficulty in water, ether, and cold alcohol, but more readily in hot alcohol. When heated with alkalies, it splits up into its components. Both these salts have a bitter acid taste, but they are readily taken in tabloids or in milk, etc. They are probably both split up into their components in the alimentary canal, but they are readily absorbed, as the salicylic reaction soon appears in the urine. As pyrosal contains 50 per cent. antipyrin and 36 to 37 per cent. salicylic acid and phenosol, 57 per cent. phenacetin, and 43 per cent. salicylic acid, the dose given is 0.59 twice to six times in the day. No unpleasant symptoms were produced by them. Burghart says that the introduction of these agents increases our resources. They will not cure all rheumatic and neuralgic affections, nor will they prevent the occurrence of complications, but negative results are met with less frequently when these agents are used than the more usual remedies. Generally speaking, their action is more prompt than the salicylates. Details are then given of 25 illustrative cases.

(353) Treatment of Gonorrhœa.

Gravagna (*Rif. Med.*, July 28th, 29th, 1898) has tested the value of various new remedies for gonorrhœa in a fair number of cases. He finds that, at any rate as

far as the remedies selected by him are concerned, the results obtained are very little better than those which were observed after the use of the older remedies. The drugs selected by the author were alumnol, protargol, argentamin, and argonin. Microscopic examination of the secretion showed gonococci long after the onset of treatment; nor was the disease cut short in the manner described by the introducers of these new preparations. If there was no marked advantage to be gained by using the newer drugs, on the other hand no disadvantages followed their use. They clearly have not the germicidal action with which they are credited.

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(354) Injections of Antitetanus Serum into the Nerve Centres in Traumatic Tetanus.

Bilhaut (*Ann. de Chir. et d'Orthopédie*, August, 1898) was called to see a girl, aged 11 years, who had been suffering for three days from symptoms of tetanus. There was trismus and opisthotonos. No point of entrance for the pathogenic bacillus could at first be found, but ultimately a very small wound was discovered on the left foot, caused by the falling of a weight on the foot, and consequent breaking of the skin by one of the toenails. Chloral had been given in large doses, and on the fourth day an injection of antitetanus serum had been made; 500 g. of artificial serum (phosphate and chloride of soda) were also injected, and this treatment was continued for three days. Then as the state of the child was alarming, Bilhaut did a double craniectomy, made a small incision into the dura mater, and slowly injected into the cerebrum 2 c.cm. of antitoxic serum. The injection lasted five minutes, and the whole operative procedure fifteen minutes, including the suture of the skin. The same was done on the opposite side of the head (the left). During the night previous there were several attacks of suffocation, and artificial respiration had to be resorted to, but after the intracerebral injection all the grave symptoms disappeared, and the state of the child seemed satisfactory. At 6 o'clock in the evening, however, the pulse became very rapid, syncope supervened, and the patient died at 8 o'clock. Bilhaut was led to try this treatment by the report of a case successfully dealt with thus, reported by Quenu.

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(355) The Electrical Treatment of Neurasthenia in Hysterical Subjects.

Apostoli and Planet (*Annales d'Electrobiol.*, September 15th, 1898) contribute a third memoir on this subject. They have already shown, in previous articles in the same journal, that contrary to current opinion franklinisation can be very advantageously employed combating the various symptoms of hysteria. They first of all call attention to the fact that the fortunate results obtained cannot always be ascribed to suggestion: first, because the improvement is not restricted to the most obvious symptoms and those which make most impression on the patient and his friends and lead to the physician being called in. The good influence is exerted rather on symptoms which have almost escaped the notice of the patient, and which have been at once revealed by medical examination. Apostoli and Planet show in this paper that in certain cases franklinisation is very badly borne by the patient, and that the subjective symptoms to which it gives rise would tempt the physician to abandon it. It is necessary, however, to take care to guard oneself against this, for toleration is not long in being established or improvement in manifesting itself. In support of this opinion the authors quote two cases, in both of which the patients showed a very marked intolerance at first; one of them, however, began to stand the treatment well at the end of the eighth sitting, the other at that of the twelfth. Both were eventually cured.

PATHOLOGY.

(356) The Action of Diphtheria and Streptococcus Toxins on the Nervous System.

Mouravieff (*Rev. Neurologique*, July 15th, 1898) reports the result of a further series of experiments upon guinea-pigs. In acute diphtherial affections the most marked alterations are found in the cells of the anterior cornua of the spinal cord, comprising chromatolysis which is mainly peripheral, formation of vacuoles in the cell body and its processes, and even loss of the nucleus. With streptococcus cultures the injection was made every five or seven days during four to seven weeks; the only objective effect was occasional wasting. The animals were killed by chloroform and the nervous system examined by Marchi's process and the author's formol-methylene-blue method. The modifications undergone by the cells of the anterior cornua were insignificant, but characteristic phenomena were discovered in the white matter. The lesions were scattered throughout the whole of this, but particularly affected the posterior roots in the dorsal and lumbar regions. The posterior roots were also degenerated, showing that the morbid process had particularly selected the central prolongations of the cells of the posterior ganglia. The medullary sheath either took an intense blue stain in one part over a pale blue ground or showed globules of myelin; these changes were only satisfactorily demonstrated by the author's method. It is thus seen that diphtheria toxins specially attack, while streptococcus toxins spare the cells of the anterior cornua of the cord. On the other hand, the former only affects the white matter in exceptional cases while the latter never fails to do so. As the result of the injection of diphtheria toxin there follows in time peripheral neuritis; this is not produced by the streptococcus toxin, which leads instead to degeneration of the central prolongations of the cells of the posterior ganglia. Furthermore, while the diphtheria toxin acts on the nerve fibres principally through the intermediation of the changes which it produces in the cells, that produced by the streptococcus attacks the fibres mainly directly. The final set of experiments consisted in the injection of a mixture of the two toxins; the effect of this was to produce within twenty-four hours both results above mentioned, the grey and white matter being simultaneously affected. The action of the combined toxins was often greater in the individual elements than when either was used alone, complete vacuolisation and chromatolysis being sometimes seen. The article concludes with a complete and illustrated description of the changes in the nerve fibres as demonstrated by the formol-methylene-blue method.

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(357) The Artificial Production of Toxic Gout.

Von Kóssa of Buda-Pesth (*Archives Internat. de Pharmacodynamie*, vol. v, Fasc. i and ii, 1898) has experimented on birds by injecting subcutaneously certain substances with a view to producing gout artificially. The fact that ligaturing the ureters of birds or reptiles would produce a deposit of uric acid in the kidneys and elsewhere, especially in the synovial and serous membranes, has been known since the time of Galvani, but hitherto gout has not been produced in birds by poisons except by Ebstein. This observer repeatedly injected small doses of neutral chromates into birds, and found that a retention of urates followed, which were deposited in the kidneys, and often also serous membrane, etc., just as in the case after ligature of the ureters. Von Kóssa finds that oxalic acid and its salts, sugar (both cane and grape), carbolic acid, acetone, aloin, and mercuric chloride have the same effect as the chromates. The infection of the food with the ustilago maidis has also been known to cause a uratic deposit in a fowl. This toxic gout in birds is identical histologically with human gout. Since urates in the urine and uric acid calculi are common in diabetes, and since this artificial gout was very marked after injecting sugar into birds, the author at first thought it possible that all the above compounds produced gout simply by causing diabetes, but this theory is untenable, as chromic acid never produced glycosuria in birds. The simplest explanation of the toxic gout of birds is that the marked nephritis which occurs in nearly all such cases of poisoning, conjoined with necrosis of the parenchyma of the kidney, obstructs the excretion of urates as effectually as tying the ureters. A curious difference exists between the avian gout produced by poisoning with inorganic (chromates) and organic (sugar, oxalic acid) substances. The deposit of urates in the former can be prevented by injecting piperazin at the same time as the neutral potassium chromate. Gout produced by organic compounds, however, can neither be prevented nor removed by piperazin, and the animals die quicker than if no piperazin had been given.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(358) Appendicitis and Renal Colic.

Dieulafoy, in a clinical lecture (*Journ. de Méd.*, September 10th, 1891), points out that in some cases the diagnosis between appendicitis and renal colic is one of considerable difficulty. A patient under his care had two years previously suffered from pain in the right side of the abdomen, somewhat diffuse in character, and accompanied by vomiting and constipation. There were three attacks in all at different times, and on one occasion the diagnosis was thought to lie between hepatic and renal colic. On the last occasion it was noted that there was no tenderness over the cæcum, and from the fact that there was severe testicular pain the medical man in charge of the case concluded that it was one of renal colic. Dieulafoy, who saw the case, however, was inclined to doubt the diagnosis of renal colic, as there was no tenderness over the kidney; and, secondly, from the fact that the testicular pain gradually increased in intensity to subside in the same manner instead of coming on suddenly and rapidly disappearing, as in renal colic. The case was operated on by Marion, who found a curved appendix lying behind the cæcum. It was in an ulcerated condition, and adherent to the psoas-iliacus. In this situation it exerted some pressure on the genito-crural nerve. In point of fact, this nerve is partly distributed to the cremasteric and testicle, and it is to its irritation that the testicular pain of renal colic is due: consequently, the result in an appendicitis of this nature, or renal calculus, etc., will be the same although the cause is different. Dieulafoy states that in very many cases he has noticed a certain degree of similarity in the symptoms of appendicitis and stone in the kidney.

(359) Auto-intoxication in Epilepsy.

Solaro (*Rif. Med.*, July 19th, 20th, 21st, 1898), in a synthetic review of recent opinions on this question, finds probable evidence of auto-intoxication in the phenomena of the aura, in the supervention of dementia, in the dyspeptic disorders which often precede an attack of epilepsy, for example, vomiting, fetor of breath, constipation, diarrhœa, slight icterus, etc. So also the sphygmographic changes observed in blood tension before and during an attack may be referred to toxic influences. The toxicity of the urine was found by Voisin and Petit to be less during the attack and greater after. Krainsky found that for one or two days before an attack the elimination of uric acid in the urine was lessened, whilst immediately after an attack it was increased. This was so constant a phenomenon that attacks could be predicted or diagnosed afterwards from the examination of the urine with regard to the uric acid. The actual substance causing the attack, according to Krainsky, is carbaminate of ammonia. Indican and acetone have also been suggested as epileptogenic poisons. The serum of the blood of epileptics has a strong toxic action during the attacks. Treatment addressed to the eliminating organs, to the digestive tract, receives fresh sanction on the view that auto-intoxication plays no inconsiderable part in the production of the epileptic attack. The *rôle* of the bromides in calming the cerebral irritability is in no way lessened by laying stress upon the importance of getting rid of toxic substances in the organism.

(360) Ocular Crises in Locomotor Ataxia.

Pel (*Berl. klin. Woch.*, January 10th, 1898) relates the following case. In a man, aged 41, with undoubted tabes and commencing dementia, the sensory symptoms were comparatively few. Hæmorrhages were noted in the skin over the course of the peroneal nerves after the lancinating pains. The attacks referred to the eyes consisted in marked burning and stabbing pains in the eyeballs and neighbouring parts, powerful spastic contraction of both orbiculares, abundant secretion of tears, and reddened and swollen conjunctivæ. There was also hyperæsthesia in the skin round about the eyes. These attacks may have been due to irritation of the trigeminal nerve with so-called ciliary neuralgia. Affections of the trigeminus are not so very rare in tabes, such as anæsthesia, hyperæsthesia, neuralgic pains, falling out of the teeth, etc. The patient's sight in between the attacks was perfect. These attacks could not possibly have been due to any drug treatment, as they persisted when the iodides were omitted, and were also present under indifferent treatment. This case provides further evidence of the multiplicity of the symptoms of tabes dorsalis.

(361) Excessive Temperature in Pneumonia.

Donier has studied the question (*Thèse de Lyon*, 1898) of high temperature and prognosis in pneumonia. Some of the observations which he quotes were received by him from Friessinger. From his investigations he comes to the conclusion that in some cases of pneumonia a high temperature is of good rather than of bad omen. In some cases he observed temperatures ranging from 41.0° to 42.4° C. In these cases the mortality reached 13.3 per cent., while in cases in which the temperature varied between 39.5° and 41° C. there were 19.85 per cent. deaths, while in those between 38° and 39.5° C. the mortality was as high as 23.07 per cent. The point of importance in these cases is to note the character of the pulse in conjunction with the temperature. A high temperature with a good pulse denotes that although the disease is severe the tissues are reacting to it, and that probably it will exhaust itself in a short time. When, however, the pulse is rapid and the temperature high, it shows a less resistive power in the economy. On the other hand, should the temperature be considerably lower—38° C., and the pulse rapid—it points to a severe degree of infection and little or no reaction on the part of the tissues. Thus, high temperature in pneumonia is not necessarily an alarming symptom, and many such cases do extremely well.

SURGERY.

(362) Suture of the Left Auricle.

Giordani (*Rif. Med.*, September 9th-10th, 1898) reports the case of a man, aged 35, admitted into hospital on July 9th with a knife wound in the antero-internal aspect of the left axilla, directed inwards and downwards across the second intercostal space. When admitted the patient was blanched and pulseless. The author, without giving any anæsthetic (as the patient was almost moribund), opened up the wound as far as the left margin of the sternum, and with a vertical incision down to the fifth rib and resection of part of the third and fourth ribs, exposed the wound. A large quantity of blood was removed from this large wound, and it was then seen that there was a free opening in a transverse direction in the pericardium, and, deeper still, a wound of the left auricle. There was also another smaller wound in the anterior surface of the pericardium. All these wounds were rapidly stitched up, and a portion of the fourth rib removed for purposes of drainage. Transfusion was not performed for fear of increasing blood pressure. The patient lived until July 26th, and then died from septic bronchopneumonia. Pleurisy and embolic abscess in the right lung were found at the necropsy. The wound at the auricle had completely united, and showed a good cicatrix. The pericardium was adherent to the heart. The part of the left lung covering the pericardium also showed a wound.

(363) Thrush of the Bladder.

V. Frisch (*Wien. klin. Woch.*, 1898, No. 39) records the case of an anæmic woman, aged 64, who sought advice on account of an acute cystitis. She passed voluntarily 4 ounces of urine, and 12 more were obtained by catheterisation, the last portions bubbling and containing a considerable quantity of gas (pneumaturia). The urine showed a trace of albumen and 4 per cent. of sugar; it had a musty odour, and deposited a thick precipitate of white granular bodies, which were occasionally floated up to the surface by gas bubbles. Cystoscopic examination revealed more of these bodies attached to the wall of the bladder. Microscopically they were seen to consist of a mycelium, which bacteriological cultivation proved to be of the nature of thrush. The urine contained also yeast cells, some bacteria, bladder-cells, and a very few pus corpuscles. Senator has published a case in which pneumaturia was produced by the alcoholic fermentation of diabetic urine, but in that under

notice it was found that the bulk, at any rate, of the gas resulted from the action of the bacterium coli; this had been previously recognised, and also experimently produced, by Schnitzler. Von Frisch treated the patient by washing the bladder out with a 1 in 1,000 solution of silver nitrate, and the condition was practically cured in four weeks. Thrush of the bladder has never previously been described, the organ being regarded as one of the few externally communicating cavities which escape the deposit of the fungus. Whence it comes in this case cannot be determined; the only plausible theory is that it had previously affected the vagina, whence it had disappeared before the patient was seen.

(364) Artificial Ischæmia as a Method of Producing Local Anæsthesia.

KOFMANN (*Centralbl. f. Chir.*, No. 40, 1898), who believes that the injection of cocaine even in small proportions is not free from risk, has tried to produce local anæsthesia simply by rendering the seat of operation quite bloodless. This method has been very successful in several cases of operation on the limbs, and he reports as instances removal of a ganglion from the wrist, of a needle from the hand, and of a cyst from the popliteal space. The ischæmia is produced by Esmarch's method. An interval of some minutes (from a quarter to half an hour) must transpire between the application of the constricting band and the use of the knife, which interval is utilised for a thorough cleansing and sterilisation of the surface of the limb at the seat of operation. It is necessary to effect rather forcible compression, which must cause more or less pain, and is liable, especially when used near the distal extremity of a limb, to produce local gangrene. This method, moreover, can have only a somewhat restricted application, as it cannot be practised except on a limb.

(365) Removal of Hydatid of Lobulus Spigelii.

JACOMET (*Bull. de la Soc. Anat. de Paris*, July, 1898) reports a case of pedunculated hydatid cyst attached to the lobulus Spigelii. The patient was a woman, subject for four months to sharp lumbar pains; a movable tumour was then detected in the right hypochondrium. It lay to the right of the median line, and could be freely pushed from right to left or *vice versâ*. There was no fluctuation. On pressing the parietes to feel the under surface of the liver, something like a pedicle could be felt. When the recti contracted the tumour seemed fixed, so that at first a new growth in the sheath of the right rectus was suspected; but the free lateral mobility contraindicated that theory. No distinct clinical feature was associated with the evolution of the tumour. A Langenbuch's incision was made, and a pyriform tumour discovered after lifting up the omentum. A very long pedicle, passing directly backwards, connected it with the lobulus Spigelii of the liver. Two strong pressure forceps were applied to the hepatic attachment of the pedicle, which was then divided. The forceps were left on for forty-eight hours. The tumour proved to be a true hydatid; its walls were very thick, which accounted for the absence of fluctuation. Recovery was rapid.

MIDWIFERY AND DISEASES OF WOMEN.

(366) Hermaphroditism.

NEUGEBAUER AND WITTHAUER have collected (*Centralbl. f. Gynäk.*, No. 42, 1898) a considerable number of cases of this teratological condition which have been reported in the last twelve months in Continental medical journals. Bellin, of Charkoff, was consulted by the Russian police authorities about a case of rape, where the victim was 24, and believed, of course, by the guilty parties to be a woman. The rectum was lacerated in three directions. There was hypospadias involving the scrotum, which held, on each side, a small testis. It was found, however, that the testicles occasionally slipped back into the inguinal canal. A depression, not half an inch deep, represented the vagina. On rectal examination the vasa deferentia could be felt, but no trace of a uterus. Neither menstruation nor any kind of emission was noted, and sexual instinct was entirely absent. Bellin ruled that the plaintiff was a male.

Bychowsky writes of another case where the subject, aged 19, had cohabited with several men and several women, preferring the latter. The general aspect was masculine, the pelvis of the male type. There seemed to be a vulva with labia majora only, marking the orifice of a vagina 2¾ inches in length. The clitoris was 2½ inches long, the meatus urinarius opened as in the female. On examining by the rectum the cords could be detected; they ran obliquely downwards, the right was a little over 2 inches in length, the left shorter and thicker. No genital gland could be found. Bychowsky ruled that the subject was a woman; Professor Neugebauer, however, is doubtful on this point. Did the two cords represent a uterus bicornis or the vasa deferentia?

Zevachoff relates a much plainer case, where a stillborn child showed hypertrophy of the clitoris and persistence of the sinus urogenitalis. He rightly classes it as "pseudo-hermaphroditismus femininus externus."

Suyetinoff also reports another instance of an undoubted female, who, on the other hand, was alive and well at 45 and had menstruated regularly for two years when young. Her outward appearance was very masculine, as she had a beard, a man's voice, and undeveloped breasts. There was a reducible right inguinal hernia. A testicle-like body, with a cord resembling a vas, lay in the right labium majus. The clitoris, under two inches long and three-quarters of an inch thick, looked like a penis with hypospadias. The labia minora were absent, a shallow depression behind the meatus urinarius represented the vagina. After this woman had been some time under observation the hernia became strangulated. At the operation the testicle and vas proved to be an ovary and tube. This case is most important in relation to the discovery of a genital gland in the greater labium of a suspected hermaphrodite. Hernia is common in such folk, and an ovary may well become herniated.

Jablowsky has published a similar case. A subject, aged 28, had never menstruated. When 16 the beard began to grow. There seemed to be a penis nearly 4 inches long when erect; the vagina was 4 inches deep. As in Suyetinoff's case, the right genital gland lay in the labium majus, and felt like a testicle, but the patient underwent operation for strangulated hernia, and the gland proved, in the operator's opinion, to be an ovary. Neugebauer rightly feels doubtful about this point, as under the circumstances the genital gland could only be examined externally and by the naked eye.

Katzenstein, of Munich, watched with great care a case of doubtful sex in a newborn child, which was the reverse of Zevachoff's, being an instance of "pseudo-hermaphroditismus masculinus externus." According to Klein's report, Katzenstein detected hypospadias involving penis and scrotum. A testicle and epididymis were palpable, and the opposite gland came down in a few weeks. Behind the urethral orifice was a rudimentary vagina, whence mucus escaped on the second day after birth. Close to it, on each side, was the orifice of a vas deferens. External to the termination of the right vas was another aperture, believed to be the end of a prostatic duct.

There are also reports of two adult cases, verified by dissection of the genital tract. The first is, in most of its features, the reverse of Suyetinoff's. An adult, aged 36, had a beard, no mammæ, and a deep voice. There was a penis-like structure 2½ inches long and over 2 inches in diameter at the glans, which was well developed. The urethra opened at the root of the penis. No trace of a vaginal depression, nor of a genital gland, could be made out. Erections occurred, but the patient was frigid. Though brought up as a woman (as in Suyetinoff's case) there was distinct preference for women. This hermaphrodite underwent operation for cancer of the cæcum, and died of suppurative peritonitis. Neither the uterus nor its appendages could be found in the pelvis. The bladder was small; between it and the rectum lay a sac about 3 inches long and 2½ inches broad. This sac was full of fluid, and lined with mucous membrane prolonged below into a short canal, which opened into the urethra. On each side of the sac, evidently the homologue of a prostate, was a thick-walled duct ending in an irregularly-shaped cystic dilatation, the vesicula seminalis. No trace of a genital gland could be found on either side. Thus the subject was clearly a malformed male, just as Suyetinoff's was

evidently an ill-developed female. Both cases show how important is careful observation of any doubtful subject of this kind.

Lastly comes Ströbe's case, which is the best reported of all. A patient, supposed to be a male, died of cancerous stricture of the œsophagus at 63. He was married, but had never begotten children, and no information could be obtained as to sexual potency, or to the appearance of anything like menstruation. Externally he appeared to be a man, but his beard was scanty. The penis and its urinary meatus were normal; the organ itself measured over 4 inches long after death. The scrotum was empty. On opening the peritoneal cavity a well-formed uterus was discovered, its fundus 2½ inches broad. The Fallopian tubes, and the round and the broad ligaments were all present. The uterus was flattened: it measured posteriorly, from fundus to the bottom of Douglas's pouch, three-quarters of an inch long; anteriorly the part covered by peritoneum was half that length in vertical measurement. The right broad ligament reached close to the appendix vermiformis, in the angle between which and the abdominal end of the Fallopian tube lay a rudimentary testis and epididymis. The right round ligament ended in fat in the corresponding half of the scrotum. There was a distinct band between uterus and testis resembling the ovarian ligament. The left Fallopian tube was related, like the right, with a testis and epididymis at its further end. Neither tube bore fimbricæ in its ostium. The right inguinal canal was closed: the left admitted two fingers, which could be passed into the corresponding half of the scrotum, lined by a process of peritoneum. The uterine cavity opened into the caput gallinaginis of a normally-lobed prostate: on each side was the orifice of a well-developed Wolffian duct. The urethra was normal. Microscopical research proved that the two genital glands were undoubtedly testicles; their development had been arrested, and the uterus masculinus had grown abnormally. Ströbe's report of this case, with two instructive plates, appears in Ziegler's *Beiträge zur pathologischen Anatomie*, vol. xxii, 1898. Neugebauer considers it to be one of the most valuable records of hermaphroditic malformation ever published.

THERAPEUTICS.

(367) Orthoform.

Klaussner (*Münch. med. Woch.*, October 18th, 1898) states that a new orthoform has been brought out in addition to the original orthoform. There is a little difference in the chemical composition of the two agents. The new orthoform has been used by the author in ulcers, fissures, wounds, burns, etc. It has the advantages of being an evenly fine powder, whiter in colour, and cheaper than orthoform. It does not run into lumps. The use of orthoform has been recommended in laryngeal ulceration. It produces an anæsthesia lasting from 18 to 36 hours. It has also been employed in hay asthma. In ulcerative processes in the stomach this agent has an almost certain action, whereas it is useless in nervous gastralgia. In prurigo and herpes zoster orthoform either in powder or ointment is of great value. In ophthalmic practice it has been used with success. In dilatation of the cervix and in curetting, tampons dusted with orthoform have been recommended. It arrests the pains in carious teeth. It has been used with success in fissures of the anus, carcinomatous ulcers, and painful bedsores. In combination with Schleich's anæsthesia it will arrest the pain of the infiltration. It has been used with arsenic for injection into inoperable malignant disease. Orthoform is non-poisonous, and thus it has been applied to carcinomatous ulcers over long periods of time with great relief. The author maintains that orthoform has justified the statement made about it by Einhorn and Heinz that along with absolute harmlessness it is able to produce a complete and long-lasting local anæsthesia.

(368) Hepatic Extract in Hæmoptysis.

The coagulating action of liver extract on the blood, as shown by Gilbert and Carnot, has been carefully studied by Berthe (*Journ. de Méd.*, October 10th, 1898), with the view of pointing out its practical utility. The patients on whom the observations were made were tuberculous, and had suffered repeatedly from hæmoptysis, which had not responded to any ordinary treatment. In all the cases the result was rapid. The method was also tried in cases of epistaxis and metrorrhagia. The method consists in giving an extract of liver, about 12 grammes for a dose, in tepid soup. This amount will in many cases suffice, but can be repeated when necessary. It may also be administered *per rectum* in the same dose. There are various ways of making the preparation, which may be in the form of an alcoholic, water, or glycerine extract, but one of the best and most suitable preparations is the desiccated liver. Of the liquid forms the glycerine is the most efficacious. In some cases, should it not be possible to procure a ready-made extract, the writer finds that an emulsion of liver freshly prepared, and given in the form of an enema, seems to act perfectly well, 1 to 200 grammes being finely chopped up, and then rubbed up with water, about 150 grammes of liver being used. Fresh pig's liver is one of the best sources of preparation.

(369) Electricity as an Aid to Diadermic Medication.

Gilles (*Arch. d'Elect. Méd.*, May 15th, 1898) records some further observations on the assistance yielded by electricity to the passage of drugs through the skin. It is not yet certain whether the process is merely mechanical—that is, one of cataphoresis—or truly chemical—in other words, electrolysis. The assimilation has been proved at both poles, electropositive bodies, such as lithium, being best absorbed at the anode, and electronegative, as iodine, at the cathode. The author has, however, succeeded in proving that the absorption of iodine takes place to some extent at the anode. The drug should be given in dilute solution, the surface of contact large, the density of the current accordingly small, and its intensity as high as possible. The indifferent pole is formed by a bath of salt solution into which the hand or foot is dipped, the active by a local bath applied to the affected part. When this is impossible, a pad of wool is soaked in a solution of the electrolyte and the current distributed through it by means of a pewter electrode. Other methods are detailed by the author for use in special cases. Chloride of lithium given diadermically produced excellent results in 4 cases in which the administration was commenced just as the attack was declining; in 2 others there was no apparent result. Chronic gout was usually unaffected, though in 2 cases small tophi disappeared during the treatment. Acute rheumatism was only benefited during convalescence, but the administration of lithium in this way restored mobility to several joints which had ankylosed through the disease; in a case of rheumatoid arthritis no good resulted. In chronic rheumatism the muscles were favourably influenced, and the joints, except in 1 case, improved, though incompletely. In all cases pain was alleviated, at any rate temporarily. No therapeutic effects have hitherto been obtained by the diadermic use of bromide of potassium. The author next proceeded to investigate the possibility of using iron in the same way; he employed a solution of the sulphate to which a small quantity of tartaric acid had been added. The current was not as a rule more than 20 milliampères; the foot alone could be employed, as the absorption of the drug produced a yellowish-brown tint of the skin, most noticeable after a day, and persisting for several months. In chlorosis and simple anæmia the results were very good, the gastric troubles and general condition rapidly improving; in neurasthenia and hysteria they were similar to those from other electrical methods, but less certain. The administration of iron in this way appears to have a good effect in cases of hæmorrhage; 1 of recurrent epistaxis was particularly benefited by it. The method is evidently worthy of an extended trial.

(370) Treatment of Chronic Eczema on the Hands.

Edlefsen (*Therap. Monats.*, February, 1898) has found a successful mode of treatment of this disease. Eczema on the hands and fingers chiefly affects washerwomen, and not infrequently women of the better classes. He orders a paint consisting of pure iodine 0.1, iodide of potassium 0.25, glycerine 12 parts; the paint is applied every evening, and the hands are enveloped in lint. The irritation is always relieved, and in 14 days the disease is generally cured. This treatment has been adopted with success in many

cases where other remedies have failed. In the more obstinate cases boracic ointment was applied in the morning, and the iodine paint in the evening.

(371) Largin in Gonorrhœa.

Kornfeld (*Wien. med. Presse*, August 14th, 1898) reports on largin, the latest albumen silver preparation devised for the treatment of gonorrhœa. Largin is a greyish powder produced by the action of an ammoniacal solution of oxide of silver on an alcoholic solution of the dry product of decomposition of the paranucleo proteids. In a solution of 1 in 4,000 it is said to kill the gonococci, and is hence superior to nitrate of silver or protargol. Pezzoli (*Wien. klin. Woch.*, No. 11, 1898) was the first to use it, and came to the following conclusions: (1) Largin as an antigonorrhœic is at least equivalent to the other silver compounds; (2) it surpasses the other silver albumen compounds with regard to the power of killing the gonococci; (3) it penetrates more deeply with dead organic substances. Treatment should begin early to prevent immigration of the gonococci into the deeper parts of the mucous membrane. Kornfeld has used largin in 29 cases of gonorrhœa. In cases of recent acute anterior urethritis, the results were good, and the average duration of treatment thirty days. In cases of posterior urethritis largin caused a decrease, but not a complete disappearance of gonococci. In 6 chronic cases, largin was superior to the other silver compounds. When used in the early stage of the disease, it tends to prevent posterior urethritis.

PATHOLOGY.

(372) Protective Substances against the Staphylococcus Infection.

Bail, of Hueppe's Institute (*Berl. klin. Woch.*, October 17th, 1898) says that the deleterious action exercised by the pyogenic cocci upon living leucocytes suggests an intimate relationship between the two. The leucocytes obtained from rabbits by means of aleuronat injections constitute a very marked protection against many times the lethal dose of virulent staphylococci. As regards the virulence of the staphylococcus, doses may be employed which produce an acute or a chronic illness. Thus the dose which produces death within twenty-four hours is taken as the lowest limit. Living leucocytes were obtained after Buchner's method by injecting aleuronat into the pleural cavities of large rabbits. The whole exudation may be taken, or it may be centrifugalised and the consituents so separated. The author then gives the details of experiments in which living leucocytes and many times the lethal dose of the staphylococcus were injected at the same time into the chest. The animals either remained well or clearly showed evidence of protection. Simultaneous injections of tissue of organs or of mononucleated leucocytes and the staphylococcus gave different results. The protective action is destroyed by measures which do not destroy the bactericidal substances. The individual disposition of the animals exercises a great influence. The previous injection of an efficient leucocidin prevented the protective effects of the leucocytes against the staphylococcus. Distilled water, leucocidin, and heating to 60° destroy the protective substances. If the aleuronat exudation has been produced before the injection of the staphylococcus large doses of the latter may be given. The injection of the staphylococcus and exudation into different places is without result. The author concludes that there must be something in the cells themselves which prevents the staphylococcus from exercising its baneful effects. Either the leucocytes hinder the development of the poison, or combine with it when once formed. When a very virulent coccus is injected into the pleural cavity it develops its peculiar poison either along with leucocydin, or this substance is an active component of the toxin. The leucocytes arriving undergo degeneration, and the animal dies rapidly unprotected. If the dose is less, or the virulence slight, or the individual predisposition little, the leucocytes develop their protective action, and the animal recovers or suffers from the chronic infection. Bail thinks that there is a more special relation between the protective substances in the leucocytes and the pyogenic microbes.

(373) Intracranial Teratoma in the Aged.

Eberth (*Virchow's Archiv*, vol. cliii, Part I, July, 1898) discovered a tumour hardly larger than a split pea in the dura mater of a woman, aged 75, who had died of a wasting malady. It lay to the right, near the vertex, and was soft and yellowish grey in colour, looking like a psammoma. In form it resembled a nail, with the head spreading in the subdural tissue, the point touching the surface of the dura mater. On microscopical examination it was found to consist of a fibrous stroma with fat cells, a few dark-bordered nerve tubes, and very distinct striped muscular tissue arranged irregularly. This tissue was well-developed, showing hyaline degeneration in parts only. The tumour was evidently a teratoma of mesodermal origin. Eberth notes some older cases. Thus Weigert described a teratoma of the pineal gland full of cysts which bore cylindrical epithelium, sebaceous and sweat glands, cartilage, fat, medullated nerve fibres, and plain muscle cells. Strassmann and Strecker found in a teratoma of the right choroid plexus connective tissue, cysts with stratified epithelium, neuroglia tissue, multipolar ganglia, nerve fibres, muscular fibres both plain and striated, cartilage, bone, fat, glands, blood vessels, and lymphatic tissue. Saxer detected a teratoma of the third ventricle. It was largely made up of fœtal brain substance, containing spaces in which lay cartilage, bone, and striped muscle, as well as nerve tissue. All these three tumours were of considerable size, Strassmann and Strecker's and Weigert's being as big as a walnut, Saxer's as large as a fist. Eberth's was remarkable for its diminutive proportions. Two were in infants, Weigert's in a boy aged 14. Eberth's, on the other hand, was in an aged woman, and had remained quiescent throughout her life.

(374) Purulent Arthritis and Friedlaender's Pneumobacillus.

Several cases of purulent arthritis occurring in the course of pneumonia are on record. So far bacteriological examination has shown that the cause of this inflammation of the joint is Fraenkel's pneumococcus. Emil Bois describes a case (*Arch. Gén. de Méd.*, May, 1898) in which he was able to discover Friedlaender's pneumobacillus as apparently the cause. The writer has only been able to discover one other case in medical literature. In the instance quoted several careful bacteriological examinations were made, consisting of cultures and inoculations, and he was able to find Friedlaender's pneumobacillus. This case resembles those due to the diplococcus in the fact that it ended fatally. The prognosis in all cases of pneumonic arthritis is excessively grave, but in a case quoted by Galliard and Morely recovery took place. This case was one of purulent arthritis of the right wrist, preceded by a lobar pneumonia and followed by a left empyema. The arthritis was treated by incision and drainage, and the patient so far recovered that there was only a slight degree of stiffness of the wrist. The pus from the joint contained diplococci in abundance.

(375) The Termination of Gowers's Tract.

Rossolimo (*Neurol. Centralbl.*, October 15th, 1898) records a case, the *post-mortem* examination of which affords most important evidence as to the central course of the antero-lateral ascending tract or tract of Gowers. The patient was a girl of 12, whose spinal cord was completely crushed by a sarcomatous growth from the first and second lumbar vertebræ. The secondary degenerations were carefully investigated by Busch's modification of Marchi's method; owing to the position of the lesion the direct cerebellar tract was not markedly affected. Interest chiefly centres in the tract of Gowers, the passage of which so far as the nucleus of the trigeminal and back into the cerebellum by the superior peduncle was not confirmed. It was found to end partly in the posterior corpora quadrigemina; part of it ran in the fillet, and there was a partial decussation in the region of that of the fourth cranial nerve. Some of the remaining fibres passed up along the fasciculus longitudinalis intermedius to end in the substantia nigra, and the rest terminated in the globus pallidus, entering into both inner limbs of the lenticular nucleus. The only fibres which reached the cerebellum from this tract did so by way of the direct cerebellar tract.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(376) Spinal Meningitis Complicating Measles.

Starck (*Jahrb. f. Kinderheilk. u. physic. Erziehung*, vol. xlvii) reports the case of a girl, 8 years of age, who had a typical attack of measles, and on the second day of the eruption she complained of great pain on movement. The nurse found it impossible to turn the patient on her side, because of the extreme tenderness. All movements of the legs and arms were followed by muscular spasms. The skin over the legs and arms was hyperæsthetic. The neck was stiff, and the head slightly retracted. The temperature was 101° F. On the same evening there was retention of urine, which lasted several days. On the fifth day of the nervous symptoms the patient was able to pass urine, but considerable pain was experienced in doing so. On the seventh day the arms were free from pain, the legs were still attacked with painful spasms when touched. In a fortnight the child was able to walk a short distance alone; the legs were still stiff but not painful. The knee-jerk was exaggerated. Micturition was painful, and the bowels only acted after purgatives. Ultimately the patient made a good recovery. Measles seemed to be the only possible cause of this condition; all other diseases were carefully excluded, and the child's previous health had been excellent. The cranial nerves and brain were unaffected. The author says that scarlet fever and typhoid are more often followed by lesions of the spinal cord; he has not been able to discover a case similar to the present one after an exhaustive examination of the complications and sequelæ of measles.

(377) Trophic Changes in General Paralysis.

Colobian has published (*Arch. de Neurol.*, 1898) a very complete series of statistics on the various trophic alterations in general paralysis. General anæsthesia and sometimes œdema were noticed somewhat late in the cases. Caries and dropping out of the teeth, especially of the lower incisors, somewhat similar to that observed in tabes, were present. Aural hæmatoma, as is, of course, well known, occurred with great frequency. Erythema, pemphigus, zona and other bullous eruptions, alopecia, and ichthyosis were all observed. The author shows that zona seems to be invariably painless, and should, therefore, be watched for. Perforating ulcer is by no means rare, and bedsores, trophic alterations of the nails, accompanied by brown coloration and atrophy, have been noted. The bones become very brittle. There may be increase of saliva and urine; polyuria, glycosuria, and albuminuria are well-known symptoms. Bedsores may occur extremely readily, even in situations in which there has been no pressure. Finally, the writer points out that gastric digestion seems to be greatly increased in some cases, so that patients are liable to eat large quantities of food, and even to digest it.

(378) Tuberculous Endocarditis.

Michaelis and S. Blum of v. Leyden's clinic (*Deut. med. Woch.*, September 1st, 1898) have succeeded in setting up a tuberculous endocarditis in rabbits. The authors first refer to the researches which proved malignant endocarditis to be of microbic origin. At one time it was thought that endocarditis and tuberculosis were mutually exclusive until morbid anatomy demonstrated that these two lesions might occur together. Thus out of Frommhold's 277 cases of valvular disease 22 or 8 per cent. had phthisis. In such cases it might happen that the valvular disease occurred first and the phthisis followed, or that the endocarditis had supervened upon the phthisis. The bacteriological examination is obviously of much importance here. In some cases the streptococcus and staphylococcus have been found in the endocarditis occurring in phthisis, and more recently the tubercle bacillus. Thus in 3 consecutive cases of phthisis with endocarditis v. Leyden found the tubercle bacillus in the vegetations. Michaelis and Blum set up aortic incompetence in rabbits by piercing the valves with an instrument introduced through the carotid. In about two hours later the tubercle bacillus was injected into the vein of the ear. The animal died in from three to six weeks. Besides a diffuse tuberculosis the heart was hypertrophied and dilated. The valves which had been damaged were covered with soft vegetations. The tubercle bacillus was demonstrated in them, sometimes in large and sometimes in smaller numbers. The staining of the tubercle bacillus in sections is not always quite an easy matter, and perhaps this will account for some of the negative results which have been obtained. The author's experiments show that the tubercle bacillus can by itself set up a verrucous endocarditis.

(379) Polyneuritic Influenza.

Of the many and various ways in which influenza declares itself, one of the most important is that in which the peripheral nerves are early and severely affected. Nicolle records (*Journ. de Méd.*, August 25th, 1898) the case of a young woman, aged 27, who suffered from influenza. The ordinary symptoms lasted about four days, and then disappeared completely, when on the sixth day she complained of severe pains appearing and disappearing suddenly of a lightning-like character, and affecting different parts of the body. These pains were sufficiently severe to make the patient cry out. On examination it was evident that these pains followed the distribution of the superficial nerves, and so accurately was this the case that their course could be marked out on the skin. There was no sensory or vasomotor alteration. Antipyrin was prescribed in medium doses, and under this treatment the pains disappeared in the course of a few days.

(380) Congenital Hereditary Mitral Stenosis.

Cochez and Crespin (*Sem. Méd.*, April 27th, 1898) reported before the French Congress of Internal Medicine, held at Montpellier, the histories of two families bearing on the question of hereditary mitral stenosis: (1) Mother and her 6-year old child have simple uncomplicated mitral stenosis. (2) Mother and four children, one a boy aged 3 years, the rest girls aged 20, 14, and 12. All appear to be strong, except the eldest, who has occasional congestion of the right apex. Other facts support the view of the congenital origin of the affection. Thus the coexistence of congenital malformations with mitral stenosis has been frequently recorded. Cochez himself has treated two patients with simple mitral stenosis for ozæna, which according to many is due to a congenital absence of the inferior turbinate bones: and one, a young man of 26, who besides mitral stenosis had extremities deformed by syndactyly and congenital amputations.

SURGERY.

(381) Biliary Calculi removed by the Duodenal Route.

McBurney (*Annals of Surgery*, October, 1898) reports a case of successful removal of a large biliary calculus from the common duct by the duodenal route. This operation, which he has performed on six different occasions, with five recoveries and one fatal result, the author regards as a legitimate one in gall-bladder surgery. When a gall stone lies in the common duct at any point in the upper two-thirds of this passage, the approach to it through the wall of the duct is not difficult. In most cases, however, the management of the wound in the wall of the common duct is by no means simple. The healing of such a wound, if left open, cannot be completed without long-continued drainage, with its accompanying dangers, and very frequently effectual suturing is exceedingly difficult, especially when the wall of the duct has become much attenuated through distension. When a stone is situated at the extreme lower end of the passage, and when it cannot be dislodged to a place higher up in the duct, its removal without opening the intestine is both difficult and dangerous. Under such circumstances it seems to the author that the removal of the stone through an incision made in the duodenum is clearly indicated. It is much easier, he holds, on account of proximity, to suture the anterior wall of the duodenum than to suture the incised wall of the common duct, and properly sutured intestinal wound heals, as a rule, with rapidity and perfection.

The author's experience would lead him to prefer the duodenal route for the removal of the calculus situated at almost any point from the termination of the cystic duct to the point of entrance of the common duct into the small intestine. The orifice of the duct he has found very easily dilatable, and it may be freely incised, he states, for at least half an inch with perfect safety. This method has also the advantage that, by the introduction of a probe, the bile ducts can be examined for a long distance upwards towards the liver. Moreover, the orifice of the duct having been considerably dilated, there is far less risk that overlooked fragments of gall stone, granular material, or thick bile, will be retained and give rise to further mischief.

(382) Sciatic Hernia.

Giron (*Archives Prov. de Chirurgie*, No. 10, 1898) records a case of sciatic hernia which, he states, is the nineteenth that has hitherto been put on record. The hernial tumour in this case was unusually large, its circumference measuring about 24 inches, and it occupied the whole of the inner half of the gluteal fold on the right side. By prolonged taxis, the volume of the swelling could be reduced by at least three-fourths, and there then remained a small resonant protrusion formed mainly by irreducible intestine. The hernia, which had first made its appearance after a fall on the buttock, gradually increased in size during the subsequent interval of eleven years. As the patient —a woman aged 55—was suffering from a serious organic disease, the treatment consisted simply in supporting and protecting the peroneal protrusion in a bag of soft leather. The author thinks that under any circumstances an operation for radical cure would have been contra-indicated in this case, as it would have been found very difficult to close the wide entrance to the sac, which was bounded on one side by an osseous margin, and on the other by an unyielding ligament. The list of cases hitherto published of this rare affection shows that in most instances the patient is a female, and that the swelling occurs on the right side.

(383) The Danger to the Eye of Ligature of the Common or Internal Carotid.

Siegrist (Heidelberg Congress of Ophthalmology, August, 1898) gives two cases: (1) Ligature of the common and internal carotid for hæmorrhage following an operation for carcinoma of the tongue. Sudden blindness on the side of the ligature, presented the features of embolism of the central artery of the retina. Section six days later; ascending thrombosis from the site of ligature, and extending 6 mm. into the ophthalmic artery. Central artery blocked near its origin by an embolus, the latter being overlaid with a thrombotic mass. The retinal changes concern the inner layers. Infiltration advancing from periphery to centre of cornea, with small central ulcer and peculiar changes in the epithelium. (2) Pulsating traumatic exophthalmos. Ligature. Blindness on the same side embolic in character. Five months later atrophy of the papilla, choroidal vessels all visible, partly normal, partly sclerosed; fine pigmentation of retina. After a year and a half the macular region showed no sclerosis, but still fine flecks of pigment; in the upper part of the fundus the choroidal vessels were completely sclerosed, and the retinal pigment was heaped up in masses around around this area.

(384) Resection of the Liver.

H. Lilienthal presented to the New York Academy of Medicine at its meeting on October 10th (*Med. Record*, October 22nd) a specimen of resected liver, which had been removed by him from a man, aged 44. The patient had been admitted to the medical side of the Mount Sinai Hospital early in August, 1898. He had had a certain amount of diarrhœa, was very cachectic, and had the appearance of a man of 60. There was a hard and not very sensitive tumour above the umbilicus; it was very movable. The surgeons were undecided as to the nature of the tumour, but on abdominal section it proved to be the edge of the left lobe of the liver containing a growth. The abdomen was carefully explored with an entirely negative result. A double temporary ligature of catgut was put around the portion of liver to be resected. Then, while strong traction was made, a tentative cut was made in the liver, and to his surprise he found that the vessels were drawn out so that they could easily be ligated as the resection proceeded. This was done, and a large piece of the liver resected without any hæmorrhage. A large piece of sterilised rubber tissue was placed on the intestines and a piece of gauze against the raw surface of the liver. These were removed in a few days. The patient's general condition improved markedly, and he returned to his home. Lilienthal said, however, that he had heard that the diarrhœa had returned. The pathologist of the hospital reported that the tumour resembled a perithelioma—a tumour such as was found in the suprarenal bodies. He added that almost microscopical tumours of the suprarenal body of this nature might cause large metastatic tumours of the liver.

MIDWIFERY AND DISEASES OF WOMEN.

(385) Extirpation of the Ankylosed Coccyx in a Lumbosacral Kyphotic Pelvis.

V. Heidekken (*Arch. f. Gyn.*, vol. lvi, Part 2) attended a primipara, aged 24, 4 feet 8 inches high, the subject of kyphosis. The summit of the lumbar projection was formed by the fourth lumbar vertebra. The sacrum had a double curve in sagittal section, a backward convavity above, and convexity below. The coccyx was large, and its individual vertebræ were fused together as well as with the sacrum. The pelvic measurements were as follows: Tip of coccyx to lower border of symphysis, 9.5 cm.; tip of coccyx to upper border of symphysis, 10.5 cm.; lower end of sacrum to lower border of symphyis, 12 cm.; to upper border of symphysis, 13 cm.; upper end of sacrum to lower border of symphysis, 20 cm.; to upper border of symphysis, 19 cm. The pubic angle was very narrow. The promontory could not be palpated, and the abdomen was pendulous. Though the patient was within a week of full term labour was induced. Twenty-seven hours after the onset of regular pains the head was arrested by the coccyx. The fœtal heart was no longer audible. As the space was too small to allow of a simple perforation, the author decided to remove the coccyx. This was done without any difficulty. Forceps were applied, but failed to deliver; craniotomy was therefore performed. The mother made an uneventfdl recovery, the operation wound healing by first intention.

(386) Hydrocele of Round Ligament.

Noll (*Centralbl. f. Gynäk.*, No. 29, 1898) relates 3 unpublished cases of "hydrocele feminæ." The first is specially important, as symptoms of strangulated hernia set in some six months after Noll had diagnosed a cyst of the right round ligament. There was vomiting and rise of temperature. The swelling in the right groin was as big as a goose's egg, hot, red, tender, and firm, just as is seen in cases of strangulated hernia with gangrenous contents. Still as Noll had seen the case when less acute, he concluded that inflammation of the hydrocele explained everything. This proved to be the case. The cyst was easily enucleated. Its walls and the surrounding tissues were infiltrated with bloody serum; it contained fœtid dirty-brown serum. It did not communicate with the abdominal cavity. The wound was drained, and the woman who was aged 32, began to recover directly after the operation. In the 2 remaining cases the hydrocele was also in the right round ligament. In the second two cysts were plainly detected on palpation. At the operation, as the upper cyst was being enucleated, a third, as big as a pigeon's egg, appeared; it lay against the inner abdominal ring, closely connected with the peritoneum. The muscular fibres of the round ligament ran on the right and external aspect of the walls of the three cysts. The cyst in the third case was completely invested by the muscular fibres of the ligament. Internally the tendinous pubic end of the ligament was found to contain a central channel as wide as a crow quill. There was no difficulty in removing the cysts in any of these cases, and all did well.

(387) Leucocytosis in Pregnancy.

Ascoli and Esdra (*Boll. della Soc. Lancisiana*, August 18th, f. 2, 1898) have examined the blood of 17 women at various stages of pregnancy with a view to the presence or absence of any excess of leucocytes. Assuming the mean to be 7,600 leucocytes per mm., any figures decidedly above that

were taken to indicate hyperleucocytosis. The authors also made observations with regard to post-digestive hyperleucocytosis in pregnant women. As to the so-called serous plethora of the pregnant the authors have no data to decide upon. It was found that although the figures representing the number of leucocytes were comparatively high, yet they were quite within the physiological limits, and that there was no true hyperleucocytosis. Probably this is true for the greater part of the term of pregnancy, but towards the end, shortly before expulsion, there is a true hyperleucocytosis.

(388) Macerated Fœtus in Latter Half of Pregnancy.

Nau (*Centralbl. f. Gynäk.*, No. 25, 1898) has collected 61 cases from one hospital at Marburg. In nearly 28 per cent. there was absence of all symptoms raising suspicion of fœtal death on the part of the mother herself. In about 50 per cent. nothing more was noted than distinct cessation of fœtal movements; in 19.67 per cent. other symptoms were said to be present; but Nau urges the possibility that they were often suggested by leading questions. In the most nearly verified cases Klein and Baumeister were of opinion that the constitutional disturbance was due to absorption of toxins due to maceration of the fœtus without the action of bacteria. The dead fœtus was usually expelled in the eighth month. The average term of retention of the fœtus in the uterus after its death was fourteen days. About 29.5 per cent. of the fœtuses presented abnormally. The average duration of the first and second stages of labour in the 61 cases was seventeen and a-half hours for primiparæ and half an hour less for other women. In 47.37 per cent. of the cases the membranes broke prematurely. It is significant that in only 6 cases was any obstetrical operation required, and in all of these instances no grave operation was needed. The placenta in no case was adherent. In 1 case the decidua was entirely absent; 42 out of the 61 mothers passed through childbed without any fever, and in only 3 of the 19 "temperature cases" was the fever evidently due to the passage of a dead fœtus out of the genital canal. Death of the fœtus does not seem to cause displacement of the uterus.

(389) The Placenta in Cæsarean Section.

Marcy (*New York Medical Journal*, July 16th, 1898) recently performed Cæsarean section on a dwarf 4 feet 3 inches in height, when labour at term had set in. The pelvis was very small, the child large. The uterus was drawn forwards through a large incision, and some of the usual precautions were taken against hæmorrhage. Marcy insists that it is of great importance to determine the site of the placenta and avoid injuring, but not to avoid incising the uterus over the placental site, as suggested by many authors. Having found out the site of the placenta he made an incision as nearly over its centre as possible. A mere button-hole was cut in the uterus at first. Then the finger was inserted as a guide, and a 5-inch incision made while the back of the hand compressed the placental site. Directly the hand was removed the intrauterine pressure forced the placenta through the incision. But gentle pressure was used, so that the uterine contents should not escape with a rush. The placenta popped out like a cauliflower, and Marcy was able to lift it, with membrane intact, out of the uterus. Hardly two ounces of blood were lost. The child came out with no sign of asphyxia; it weighed over 8½ lbs. A hypodermic injection of ergotine was given to the patient directly the uterus had been emptied. The uterus contracted normally. The muscular coat was united with silk sutures, which did not include the peritoneum or mucosa. The serous coat was closed with silk Lembert sutures, and then the omentum was drawn over the sutured uterine wound. The peritoneum involved in the abdominal wound was sutured separately with a continuous catgut suture. The patient made an uninterrupted recovery. Some ten months after the operation both mother and child were well. Marcy lays much stress on what he holds to be the proper management of the placenta as a factor in ensuring so favourable a result.

(390) Operative Treatment of Irreducible Retroflexion of the Pregnant Uterus.

Mann (*Am. Jour. of Obst.*, July, 1898) says that formerly there were two alternatives: replace the uterus or, failing this, empty it. He holds that the latter procedure should be replaced by opening the abdomen and pulling up the fundus by the hand introduced behind it. If the uterus be so large as to fill the pelvis completely replacement by the vagina is unsuccessful, not because the uterus is too large to be forced through the pelvic brim, but because it is held down by atmospheric pressure, and it can then be replaced only by letting in air behind it. Moreover, pregnancy may exist when there are adhesions, which may be an insuperable bar to reposition till they have been broken up by the hand on the inside. Mann reports 2 cases in which abdominal section was performed after efforts to push up the uterus under anæsthesia had failed. Pregnancy was not interfered with in either case. He has found only one similar case, reported by Cameron, in the British Medical Journal, vol. ii, 1896, p. 1277.

THERAPEUTICS.

(391) Treatment of Pulmonary Tuberculosis.

At the recent annual meeting of the New York State Medical Association (*Phil. Med. Journ.*, October 29th) Delancy Rochester, of Buffalo, said that as success in the treatment of pulmonary tuberculosis depended so largely on the treatment of the individual, it was difficult to lay down general rules. A fundamental principle was to keep the patient most of the time in the open air and in a sunny place. Bathing was most important, as one of the objects of treatment was to keep open the avenues of excretion. A tepid or cool sponge bath should be taken every morning, and be followed by friction of the surface. A hot bath might be taken once or twice a week, and when night sweats were profuse it was desirable to induce perspiration. The most suitable articles of diet were raw beef, eggs, baked potato, boiled rice, and boiled young beets, cocoa, chocolate, and milk. The last-named should not be taken at the same time as meat. If there was much involvement of the lung, little or no exercise should be taken. For their local action, inhalations of essential oils containing various medicaments were to be preferred. One of the best vehicles for this purpose was essence of peppermint. A cheap and efficient inhaler might be improvised from a cigar-holder packed tightly with absorbent cotton. Five or ten drops of the following mixture should be placed in this inhaler, and renewed two or three hours: Menthol, 1 part: spirit of chloroform, guaiacol, terebene, eucalyptol, and thymol, of each 2 parts. In connection with the constitutional treatment of pulmonary tuberculosis, Rochester said it was well to bear in mind that guaiacol could be made into a perfect emulsion with milk of magnesia. Balsam of copaiba often acted well, and should be prescribed in an emulsion made with mucilage of acacia and syrup of tolu. If creosote was taken, it must be a very pure article, and must always be given with food. The dose should be gradually increased, the urine and the tolerance of the stomach being watched, and if it seemed wise to diminish the dose, this should always be done gradually. Rochester had been able to give as much as 2 c.cm. of creosote three times daily for a considerable time. When there was much bronchial irritation, the cough was best treated by inhalations or with hydrocyanic acid and chloroform water. For excessive vomiting, drachm doses of cerium oxalate were recommended.

(392) Paracentesis Pericardii.

Girandeau (*Sem. Méd.*, September 14th, 1898) advises that, when once the diagnosis of a large pericardial effusion (half a pint upwards) has been made, no time should be lost over treatment by drugs, blisters, and the like, but immediate paracentesis should be practised. Among the signs of a large effusion, he mentions tympanitic resonance at the left base behind; impaired resonance may take its place, but is uncommon. If this sign is present, tapping is called for; if not, it can be postponed. A pericardial rub is no contraindication, but a sign that the heart is not bound down by adhesions. Girandeau insists (in opposition to Brentano, *vide* Epitome, vol. ii, 1898, par. 326) that tapping should always be preferred to incision, which should be used only when the former fails. This applies even to purulent effusions, which are occasionally cured by tapping alone, the only exceptions requiring immediate incision being

putrid effusions. If a trocar is used, it is well to puncture the skin with a knife first; it should be inserted obliquely, as nearly parallel to the surface of the heart as possible. The author always taps at the seat of election in the fourth or fifth intercostal space about 2 inches to the left of the sternum, though it is certain that the two layers of the left pleura are frequently perforated. Theoretically, pneumothorax might result, but has never been recorded, and, though empyema or even pneumonia have been known to follow, they are very rare accidents. The heart has been wounded, occasionally fatally, but this accident is unlikely if an exploring syringe is inserted before the trocar. Tapping may be repeated as often as necessary, especially in rheumatic cases, where the effusion may eventually disappear. If the fluid is purulent and re-collects after one tapping, incision and drainage are indicated. Whatever the nature of the fluid, the immediate object and result of tapping is to relieve the most urgent symptoms. Permanent cure may follow, as in rheumatic cases, but the cure is more apparent than real, adherent pericardium, fibroid mediastinitis, etc., being sequelæ.

(393) The Effects produced by Anæsthetics upon the Kidneys and Circulation.

By the use of Roy's oncometer Thomson and Kemp (New York *Med. Rec.*, September 3rd, 1898), have arrived at the following conclusions: (1) Ether appears to cause contraction of the renal arterioles producing deleterious effects upon the secreting cells similar to what obtains upon ligature of the renal artery. The quantity of urine becomes lessened and finally there is suppression. Albuminuria always develops. These results are due to a specific effect, not to any general change in the circulation. (2) Chloroform, while depressing the heart and lowering blood pressure, induces no changes in the kidneys besides slight diminution in the quantity of urine excreted, and a small amount of albumen after prolonged anæsthesia, the result, it is believed, of the concomitant failure of arterial circulation and dangerous lowering of blood pressure. (3) "A. C. E." mixture: When given with 95 per cent. of air the blood pressure falls, but the kidneys appear only affected in the same slight manner as with chloroform. If, however, given by the "closed" or "semi-closed" method, a very marked depression of the heart with fall of blood pressure take place, and the kidneys show an ether effect, that is, diminution (without suppression, however) of albuminuria and damage to the secreting cells. (4) Schleich's mixture (various solutions of chloroform, sulphuric acid, petroleum ethers, benzin) produce effects upon the circulation corresponding with those of chloroform, that is, depression of the heart and fall of blood pressure, and upon the kidneys similar to those arising from ether although not so severe, namely, diminution approaching but without total suppression of urine, albuminuria, and damage to the secreting cells. The renal changes were more marked than with the A. C. E. mixture. (5) With nitrous oxide slight albuminuria appeared. The experiments were made on dogs. The research, it is contended, shows that the A. C. E. and Schleich's mixtures possess no advantage over, and are even more dangerous than chloroform or ether, that chloroform is more harmful to the circulation than ether, that ether is distinctly more deleterious to the kidneys than is chloroform, it should not, therefore, be employed when initial renal disease exists.

(394) Serum Treatment of Syphilis.

CHARMEIL (*Echo Méd. du Nord*, July 10th, 1898) gives the result of his researches. He employed heifer's serum because bovines are not susceptible to the disease, and hence he thought the serum might possess antisyphilitic properties. He began with 150 c.cm., and obtained an energetic reaction, the temperature rising to 104° F., and taking twenty-four to thirty-six hours to return to normal. As a rule there were no bad after-effects, but in a few cases there were slight pulmonary signs, which soon disappeared. Charmeil also tried horse's serum with less active results. All patients improved rapidly without any mercurial treatment. He is of opinion that the results are due to the fever induced rather than to any specific action.

PATHOLOGY.

(395) Transmission of Toxins from Fœtus to Mother.

CHARRIN (*Gaz. des Hôp.*, August 25th, 1898) relates some experiments which he performed to determine the possibility of the transmission of toxins from fœtus to mother. Laparotomy was performed on a pregnant rabbit, and 1 c.cm. of diphtherial toxin was injected into 4 of the embryos. The rabbit aborted on the third day, and died on the fifth. In 7 experiments of this kind the toxin traversed the placenta and poisoned the mother in 4 cases; 2 died of peritonitis, and 1 survived without protective inoculation. Charrin then tried protective inoculation by injecting the soluble products of Loeffler's or Nicolaier's bacillus; but spite of minimal doses, the animals quickly died. In another set of experiments he injected 3 c.cm. of pyocyanic toxin divided among 5 embryos. On the fifth day the rabbit aborted, but survived. Eight days later he injected an active preparation of bacillus pyocyaneus into the mother's vascular system, the dose being 1 c.cm. Two control rabbits inoculated at the same time died on the third and fourth days respectively; the first rabbit survived eleven days. In another experiment the prepared rabbit survived twenty-three days, while the control animals died in fifty-seven and sixty-two hours respectively. From these and other similar experiments the author concludes that toxins deposited in the fœtus, either directly—that is, artificially—or through the spermatic cell of the father (a possibility demonstrated by the history of syphilis) can be transmitted to the mother. When, owing to difficulties in placental dialysis, the mother receives only a small dose or only certain portions of the bacterial secretions, the result is a condition of immunisation, as illustrated by Colles's law. The mother, on the other hand, may transmit to later offspring the characters she has had imparted to her through the first fœtus from the father of the latter; and this may be the case, even if the later offspring have a different father. Charrin suggests that these facts afford an explanation of those vagaries of heredity known as telegony.

(396) Blastomycetes as Sources of Infection of Malignant Tumours.

MAFFUCCI AND SIRLEO, of the Institute of Pathological Anatomy at Pisa, conclude (*Zeitschrift f. Hygiene u. Infectionskrnkhtn.*, Bd. xxvii, H. 1) that though the origin of malignant tumours from infection is not yet demonstrated, many such tumours do so arise. Certain blastomycetes have proved to be of pathological importance; the processes which up to the present they have been found to set up, in animals and human beings, have been septicæmia, suppuration, and chronic inflammatory new growth of the type of granuloma, and in anatomical construction not in any way resembling carcinoma or sarcoma. In animals liable to cancerous new growths blastomycetes taken from human cancer have as yet caused only ordinary inflammation. The presence of blastomycetes cannot always be demonstrated in human carcinoma or sarcoma by histological examination or cultivation; more easily found in malignant melanotic tumours, their topographical distribution then indicates that the infection has supervened on the tumour. That blastomycetes may cause cancer or sarcoma is possible, but has not been proved; and while the growth of papilloma due to coccidium shows that psorozoa may be the origin of new growth, no experiment has yet shown that they can cause cancer or sarcoma in animals capable of such growths. Research for the infectious causes of tumours should not be limited to any one class of parasite.

(397) The Nature of Chorea.

MONCORVO, at the Académie de Médecine (*Revue Neurologique*, August, 1898), stated that it was so common to find in cases of chorea a family history of neurotic or alcoholic antecedents that there could be no doubt that these had some etiological influence; at the same time, chorea was closely related to certain infectious diseases, particularly rheumatism, and one was compelled to regard chorea as the result of the action of the rheumatic infection on the nervous system of a hysterical subject. The drugs which had proved useful in chorea were those which had proved useful in rheumatism namely, antipyrin, exalgin, asaprol, and analgen.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(398) Gout.

SCHMOLL (*Centralb. f. inn. Med.*, October 22nd, 1898) discusses the theory of this disease. He says that one point in Garrod's views as regards gout remains true, and that is the richness of the blood in uric acid during the attack. The necroses of tissue in which uric acid crystals are deposited constitute a new fact discovered by Ebstein. Some authors have shown that gouty patients are unable to maintain a nitrogenous equilibrium in spite of a sufficient supply of calories and an adequate nitrogenous diet. It is not known in what form the nitrogen is retained. Before and during the attack of gout a nitrogen deficit accompanies the nitrogen retention. Garrod has endeavoured to explain gout by a diminished excretion of uric acid, Ebstein by an increased formation, and Pfeiffer by an increased production together with something else. Reliable analyses have shown that the excretion of uric acid on the gouty varies within normal limits. For a long time uric acid was looked upon as an incomplete oxidisation product; now it is generally believed that it is derived from nuclein and the alloxan group. Feeding with nuclein or with thymus has been shown to increase greatly the excretion of uric acid. Uric acid arises through the oxidisation of the alloxan group. (1) Cells perishing in the body yield nuclein from which uric acid is derived. (2) Uric acid is also derived from the alloxan group supplied such as theine, caffeine, etc. (3) In the gouty, deposits of uric acid may be dissolved, and so increase the excretion of uric acid. It is very difficult to estimate the last-named factor. As regards the second, feeding with pure nuclein and thymus show that about one-fifth of the alloxan bases thus supplied are oxidised into uric acid and the other four-fifths disappear in the body. The latter may be built up into nuclein, or the alloxan bodies may be split up in the alimentary canal. Another, and the most probable, view is that the bases are absorbed and are converted into uric acid, which latter if not excreted by the kidney is changed into urea. It is impossible yet to say whether the uric acid formation is increased or diminished in gout. In a gouty patient fed with thymus the excretion of uric acid was increased from 0.5 to 1.3 g.; this would show that the richness of the blood in uric acid was due to increased formation. This increased formation would appear to be due to increased cell destruction. Pfeiffer and others have shown that during the attack of gout, an increased amount of uric acid is excreted. The necrotic processes described by Ebstein will explain the cell destruction with escape of nuclein as mentioned above. The cause of these necrotic processes is as yet unknown. The author would look upon them as caused by the retained nitrogenous metabolic products. The questions remaining to be solved are (1) What substances are retained in the body in gout? and (2) under what conditions are they retained?

(399) Post-epileptic Albuminuria.

GALANTE (*Rif. Med.*, April 26th and 27th, 1898) has examined the urine of 16 epileptics (14 male and 2 female) free from cardiac or vascular lesions, with a view to determining the presence or absence of albuminuria after an attack. The urine was withdrawn by catheter immediately after an attack, and the albumen estimated quantitatively by Scheier's method. In every case albumen was found, varying from 2.04 g. to 0.25 g. per cent. In 2 cases, after very violent attacks, a few hyaline casts were seen. The albuminuria lasted from four to twelve hours. If there had been pre-existent albuminuria the amount was always increased after a fit. There was a constant relation between the amount of albumen and the amount of indican observed in the urine. Assuming that albuminuria is due to some renal epithelial change of a temporary and fugitive nature in epilepsy, the author points out several factors in the epileptic attack likely to induce such changes in the renal epithelium—for example, the circulatory disturbances caused by the convulsive spasm of the thorax, the increase in autotoxins found in the blood, the intense muscular work done in the fit, and lastly the concentration of the urine from excessive perspiration.

(400) Amaurotic Family Idiocy.

HIRSCH (*Journ. of Nerv. and Ment. Dis.*, July, 1898) gives a full report of a case of amaurotic family idiocy, the infantile cerebral degeneration of Kingdon and Russell. The infant, as in the other recorded cases, was of Jewish family; two other children had died with similar symptoms. The patient was healthy till 6 months old, when he became weak and unable to sit up. Perception of light was normal; the typical symmetrical white patches at the maculæ were present. Sensation and reflexes were normal. The child became gradually weaker, and died at the age of 22 months. The necropsy showed nothing abnormal macroscopically except an unusual prolongation of the second temporal fissure. Microscopically a striking change was found in the cells of the cerebral cortex and the nuclei of the cranial nerves, and also in the cells of the grey matter of the cord. These cells were enormously enlarged and rounded as if blown up; the Nissl bodies had disappeared. There was some degeneration of the pyramidal tracts. The changes in the grey matter of the cord have not been noticed before, but otherwise the appearances agree with those found by other observers. The changes in the eyes are explained by the finding of the same swollen condition of the ganglion cells of the vesicular layer, which are normally arranged in several layers only at the macula, and therefore, being much swollen, cause the opaque white appearance seen at that spot. The question is raised whether the affection is due to an arrested development, or, as Kingdon and Russell maintain, to a degenerative process, and both on clinical and anatomical grounds it is concluded that the condition is degenerative, and possibly due to some toxin, which the writer thinks may perhaps be found in the mother's milk.—Peterson (*ibid.*) records another case: The infant was of Russian Jewish family; one other child had died at the age of 10 months with similar symptoms. Blindness was noticed at 4 weeks; there was much restlessness: the patient became weaker; there was some rigidity, with twitchings of muscles, and death occurred at the age of 7½ months. The fundus could not be seen, and *post-mortem* examination of the eyes was unsatisfactory. At the necropsy the brain showed some defective development, and microscopically the cells of the cortex were very small and deficient in number. There were no tract changes in the cord.

(401) A Case of Trade Paralysis.

CH. FÉRÉ (*Belg. Méd.*, September 15th, 1898) points out that while trade spasms are comparatively common, trade paralyses are much less so. He narrates the case of a girl, aged 14, a tapestry worker, whose work necessitated her keeping the right arm constantly elevated and abducted. After twelve days of this work signs of paralysis began to appear in the right arm, and soon became complete. There was no anæsthesia of the affected limb, and no evidence that the girl was hysterical. Under massage and electricity the patient recovered. It is to be noted that the paralysis affected the whole arm, and not simply the group of muscles concerned in the trade movement, in this respect differing from trade spasms. There was also idiomuscular contraction of the paralysed side; this Féré looked upon as a reaction of muscular debility, such as is seen in exhausted cyclists.

SURGERY.

(402) The Operative Treatment of Goitre.

KOCHER (*Correspondenzblatt für Schweizer Aerzte*, No. 18, 1898) publishes the results of 600 cases in which thyroidectomy has been performed at Bern in the course of the past three and a-half years. Of these cases, 450 were treated by the author himself and the remaining 150 by his assistants. This is an additional report to one of 1,000 cases published early in 1895. In accounting for the large number of thyroidectomies performed for the removal of goitre since February, 1895, Kocher asserts that thyroid extract is not more effectual than iodine as an internal agent, and that consequently the use of the former in the treatment of goitre has not diminished the proportion of cases needing operative inter-

ference. Thyroidectomy, which in Kocher's practice has been found an almost absolutely safe operation in uncomplicated cases of simple goître, is held to be indicated by excessive development of nodular growths in the thyroid gland, in all instances of cystic disease, and whenever there is a suspicion—however slight this may be—of malignancy. The chief indication is dyspnœa due to compression and consequent stenosis of the trachea, a condition which cannot be remedied or even relieved by medicinal treatment. As the most serious and, in uncomplicated cases of goître, the only danger attending thyroidectomy is the fatal action of a general anæsthetic, Kocher during the last two years has used cocaine locally on all patients submitted to this operation, with the exception of young children and very nervous or sensitive subjects. The following are dwelt upon as important points in the author's method of performing thyroidectomy: A curved skin incision across the front of the neck, the convexity of the curve being downwards; the sterno-hyoid and sterno-thyroid muscles are detached at their lower extremities from the sternum, and not divided high up in the neck, whilst the omo-hyoid is left intact; the enlarged gland after division of its fibrous capsule is raised from the trachea and drawn out of the wound, so that the thyroid vessels are put on the stretch and freely exposed before the application of ligatures; the isthmus after its exposure, and after ligature of the vessels running transversely along its upper and lower borders, is forcibly compressed by forceps, so that the colloid material is forced out, and the isthmus is reduced to a narrow fibrous band. Since 1883, when it had been proved by both surgical and pathological experiences that total removal of the thyroid gland is certain to result in the development of the condition called cachexia strumipriva, Kocher has not, except in case of absolute necessity, performed a complete thyroidectomy. Since he has attended to this rule, and has endeavoured even in the most unfavourable cases to save some portion, however small, of the diseased gland, he has met with cachexia strumipriva in 4 cases only out of 1,500 in which thyroidectomy had been practised. In the rare cases in which it may be found necessary to remove the whole of the gland, the threatening cachexia may be averted by the administration of thyroid extract. The series of 600 cases with which this paper deals includes 18 cases of malignant goître, 11 cases of strumitis, and 15 cases of Basedow's disease. In 6 of the 18 cases of malignant disease thyroidectomy had fatal results. The operation was also fatal in 2 of the 11 cases of strumitis, and in 2 of the 15 cases of Basedow's disease. Of the remaining 556 cases in which thyroidectomy had been performed for the removal of ordinary colloid goître, 1 only was fatal, and in this single case death was the result not of the operation itself, but of the action of chloroform. The high death-rate after thyroidectomy for malignant goître is due, Kocher states, to the complicated nature of such cases and the frequent necessity for removing portions of the trachea and œsophagus, and also of such important parts as the internal jugular vein, the common carotid artery, and the spinal accessory, pneumogastric, and sympathetic nerves. The dangers attending excision of the thyroid gland in cases of strumitis and of Basedow's disease are attributed in the former to suppuration of the diseased gland and septic infection, and in the latter to the faulty general condition of the patient.

(403) Consequences of a Wound in the Neck. Bellisari (*Rif. Med.*, August 24-25th, 1898) reports the case of a healthy man, aged 28, who five years ago received a knife wound in the right carotid region, followed by hæmorrhage so severe as to lead to the belief that he was dead when first seen. However, the wound healed, and five days after the accident the patient had an apoplectic fit followed by left hemiplegia and aphasia. Partial recovery occurred, but six months later epileptic attacks set in, recurring about every two months. The apex beat was in the sixth space, and there was a loud continuous murmur heard over the precordial region. A study of the cardiograms and sphygmograms led the author to diagnose some dilatation between the carotid and the heart, aortic stenosis, and also some valvular insufficiency; the patient was also partially demented. There was no history of syphilis or previous illness before the accident, and the family history was good. The author supposes that an embolus was the cause of the hemiplegia, and the aortic trouble was due to a spreading enteritis started by the wound of the vessel in the neck.

(404) Resection of the Liver. Terrier and Auvray (*Rev. de Chir.*, September, 1898) have collected 40 cases of hepatic tumour in which laparotomy was performed either for the relief of urgent symptoms or for the removal and radical cure of the disease. In 2 of these cases the operation was practised simply with the object of remedying the results of compression of the bile ducts, cholecystostomy having been performed in each instance and no attempt made to extirpate the hepatic growth. In 18 of the 38 cases in which an attempt was made to perform a complete and radical operation the tumours were of a malignant nature. Of the remaining cases, more than half of the whole number, in which there seemed to be no risks of relapse or generalisation of the disease after the operation, 3 presented angiomatous tumours, 3 tumours the nature of which was not thoroughly determined, non-parasitic biliary cysts, and 9 syphilitic tumours. In 6 cases death occurred as a result of the operation, having been due to hæmorrhage, to septicæmia, or to shock. Septicæmia, it is pointed out, may be prevented by observation of the rules of a rigorous asepsis; and hæmorrhage, which, however, rarely occurs, can in most instances readily be avoided by practising the latest and most improved methods of operation, and by attention to the new plan of intrahepatic ligature. The remote results of operations for the removal of hepatic tumours have been much less unfavourable in cases of malignant than in those of non-malignant disease. In most instances relapse or generalisation of malignant occurs after a brief interval. Some few instances, however, have been recorded in which the patients remained free over intervals varying from two to three and a half years.

(405) The X Ray in Medico-legal Cases. Williams and Lloyd (*Annals of Surgery*, October, 1898) disparage the value of skiagraphy in both medico-legal and surgical practice. In a note on a report of a case of cervical rib, published by the former, Lloyd makes the following comments: "The use of the *x* ray in medico-legal cases, without careful preparation for such work, is likely to do much harm. To leave a photograph that has to go into court to a single individual who may be interested in the case would be a grave error, for he might accentuate the deformity very decidedly by placing the tube a little out of its proper position. Consequently in every case brought before a court the *x*-ray picture should be taken before witnesses who can testify to the position of the photographic plate, the position of the patient on this plate, and the position of the tube, and who can at the same time state the distance at which the tube was placed from the patient, so that allowance may be made for any distortion that may appear in the picture."

MIDWIFERY AND DISEASES OF WOMEN.

(406) Primary Multiple Vaginal Cancer. Lange (*Centralbl. f. Gynäk.*, No. 25, 1898) noted this rare malady in a woman, aged 53. She had been subject for a year to fœtid discharge, which latterly became sanious. Dysuria and pain on defæcation also set in. A cancerous growth was detected in the middle third of the vagina, and separated from it by a healthy tract of vaginal mucous membrane was a smaller nodule on the posterior vaginal wall towards the right. The diseased tissues were completely excised in July, 1895. In October a recurrent deposit was removed. In March, 1896, the patient was still alive, but subject to hypogastric pains.

(407) New Operation for Absence of the Vagina. P. Walton, (*Belg. Méd.*, September 22nd, 1898), instead of dreading the opening of the peritoneum during the operation for absence of the vagina, rather counsels it as enabling the operator to find the uterus easily and at once. He reports the case of a woman 25 years of age, who had never menstruated, but who had suffered every month from epistaxis and severe abdominal pain. Three years previously an operation had been

performed for absence of the vagina, but unsuccessfully. The external genital organs were normally formed, and between the labia minora was a mucous infundibulum showing a transverse cicatrix, the mark of the former operation. Walton made an incision in the form of an H in the position of the old cicatrix, the perpendicular sections occupying the bases of the labia minora. He dissected upwards and opened into the pouch of Douglas. Passing in his finger, he was able at once to feel the body of the uterus and a well-developed right ovary. An imperforate cervix was next dissected out. It was divided transversely, when a little black blood escaped. The uterus was found to measure 4 cm. in depth. The opening in the peritoneum was closed with two catgut sutures, and the uterus was drawn down to the vulva and a vagina easily made by making use of the mucous flaps. The artificial vagina was about 8 cm. in depth, and was plugged with iodoform gauze for some days. It is now five months since the operation was performed, and there has been regular menstruation in small amount, with complete disappearance of the menstrual suffering.

(408) Vaginal Pessaries.

Augustin Goelet (*Virginia Med. Semi-Monthly*, August 12th, 1898) puts much good advice concerning the use of vaginal pessaries into a series of axioms. Never use a pessary except as a temporary or auxiliary support. Never permit a patient wearing a pessary to pass from under observation. Never retain a pessary if it is causing the least discomfort. Daily vaginal douches are necessary. Never introduce a pessary unless the uterus is freely movable and can be replaced by manipulation. Never fail to seek the cause of the misplacement and endeavour to remove it. The pessary alone will not cure.

(409) Severe Flooding in Newborn Children.

Doléris (*Bull. et Mém. de la Soc. Obstét. de Paris*, May 12th, 1898) records a kind of epidemic of this affection in his wards at the Hôpital Boucicaut. Five newborn infants were seized with bleeding from the vulva, as well as hæmorrhages from other parts, especially the navel and skin. Great debility without fever accompanied these symptoms. Two died in the wards, 1 died after discharge, 1 was lost sight of after discharge, whilst 1 only recovered after careful treatment in the hospital. A good summary is given of previous cases related by other authors, followed by a complete report of Doléris's own cases. The results, especially of the bacteriology of the patients, were admittedly negative. Nor could Doléris, in spite of the most careful scrutiny, detect the origin of the epidemic of genital bleeding. All the mothers were healthy, all suckled the patients in question, and were free from sore nipples. The patients were washed in running warm water, with sterilised wool, under the superintendence of the midwives. The discussion on these cases did not bring to light any positive results. Bar had observed 15 or 16 cases in Paris hospitals. These were mostly, he delared, due to infection. Loviot was of the same opinion; he noticed that the breasts of the mother or the umbilicus of the patient might be at fault. Charpentier had seen milder cases, where three or four attacks precisely resembling flooding or menorrhagia occurred in newborn female infants, recovery following. In two well-neurished male infants severe intestinal hæmorrhages occurred, but both recovered.

(410) Acute Inversion of the Uterus after Parturition.

Stone (*Amer. Journ. Obstet.*, August, 1898) records 25 cases taken from the literature of the last five years, and including 1 in his own practice. Six patients died. Most of the cases occurred in young women, the youngest 17, the eldest 44. No fewer than 16 were primiparæ, 1 had prolapsus uteri, 2 contracted pelvis, 1 "uterine disease" and albuminuria before pregnancy, 1 had phthisis. In 22 the labours were abnormal, 9 very prolonged, 4 precipitate, 4 forceps deliveries, 2 versions, 1 premature (6½ months), 2 had very short cords, in 8 traction was used. In 10 the placenta was said to be adherent; 1 prævia, 2 succenturiata. In one of the two latter inversion occurred at stool seventeen days after labour. In 15 cases the uterus was reduced at once, 2 died, in 3 it was reduced later: all recovered. Two out of 3 cases where the uterus was not reduced died, the third underwent spontaneous reduction at the end of three months. In 2 cases, instead of secondary reduction, abdominal hysterectomy was performed within six months, with good results. In 1 of the 3 secondary reduction cases an incision was made through the posterior fornix.

THERAPEUTICS.

(411) Metacresolanytol in Erysipelas.

Koelzen, of Loeffler's Institute (*Deut. med. Woch.*, October 27th, 1898) relates an investigation into the use of this agent in the treatment of experimental erysipelas in animals and ordinary erysipelas in man. One of the objects of the investigation was to ascertain whether the bactericidal substances anytil and anytol can penetrate through the skin as well as ichthyol, from which they are derived. Metacresolanytol contains 40 per cent. metacresol and 60 per cent. anytin. Erysipelas was produced in animals by the injection of the streptococcus or of the bacillus of mouse septicæmia. Treatment was commenced as soon as a florid erysipelas developed in the ear. The author relates in detail several series of experiments, control experiments being also made. Painting the surface with the metacresolanytol was found more efficient than injecting it into the tissues round the erysipelatous patch. When the painting was carried out every two hours, the results were very satisfactory. Microscopical examination of the tissues in the cases treated by painting failed to discover the microbes which had originally set up the disease. The treatment was then applied to 5 cases of erysipelas in man. At first the patch was painted for 20 to 30 minutes, and then every two hours for 10, 15, or 20 minutes, according to the size of the patch. The treatment was only continued for 2 to 3 days. If the erysipelas was very extensive, only the edges were painted. The solution used was a 3 per cent. Good results were noted in all the 5 cases, including a severe one. Details are appended of these cases. The author maintains that this method of treatment is well worthy of further trial.

(412) Ergot in Chronic Malaria.

A. Jacobi (*Med. News*, October 22nd) says that in connection with malaria there are two organs which have to be considered in the administration of medicines: the blood and the spleen, the former because it contains the sporozoa, the latter because of its sponge-like mass in which it harbours the infected blood and serves as a receptacle of dangers. It appears that a direct effect on the blood or on the plasmodia is not required for a cure, but that gradually the restoration of the spleen to a fairly normal size, forcing the stagnating blood into a normal circulation with progressive elimination of the plasmodia, is sufficient to open the gate to recovery. He gives ergot in the form of fluid extract (Squibb's), one teaspoonful in whisky and water four times a day. He gives details of several illustrative cases, and formulates the following conclusions: (1) There are cases of chronic intermittent fevers with large tumefaction of the spleen that, after having resisted the action of quinine, arsenic, methylene blue, eucalyptus, and piperine, are benefited by ergot. (2) When enlargement of the spleen is not old and not firmly established, the contracting effect of ergot is noticed within a reasonable time. (3) The attacks will disappear before the diminution in the size of the spleen is very marked. (4) Though temperatures, after the employment of ergot, remain irregular, and now and then somewhat elevated, rigors, as a rule, are not noticed with this elevation. (5) Plasmodia do not seem to disappear from the blood so rapidly as they do after quinine, when the latter is effective. But even while some are still present, the attacks being more or less under control, the patient will feel better. (6) Complicating local pain requires additional treatment with ice, or cold douches, or heat; chronic hyperplasia calls for iodide of potassium or iodide of iron. Digestive disorders may indicate, as they often do when quinine is expected to act, before the employment of ergot, an emetic, or a purgative, or stomachics. (7) An experience extending over 40 years, in which he has used ergot in many instances, seems to Jacobi to justify in asserting at least this much: that there are many cases of chronic malaria, apparently intractable, that will get well with ergot. (8) There are cases occasionally in which the return of

elevations of temperature after the successful use of ergot makes the combination of ergot and quinine, or ergot and arsenic, advisable, though quinine and arsenic had not been successful previously, (9) Ergot, like quinine, probably by its sudden contracting effect on the spleen, and by the forcing of large quantities of plasmodia-laden blood into the circulation, is, in chronic malaria, when hydræmia and spleen tumour are excessive, capable of bringing on the very first attack of rigors and fever. (10) Recent cases of malaria have got better, or were improved under the extensive use of ergot, but many resisted a long time: that is why acute cases should rather be treated with quinine.

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(413) Cassaripe in Infectious Diseases of the Eye.

S. D. RISLEY (*Phil. Med. Journ.*, October 29th) has had his attention called by H. B. Chandler, of Boston, to "cassaripe," which is described as the inspissated juice of the cassada, which is highly antiseptic, and forms the basis of the West India preservative pepper pot. The cassava belongs to the euphorbiaceæ or spurge family, and is extensively cultivated in tropical America and the West Indies for the large fleshy root, which contains an abundance of farina. In preparing cassava bread a milky poisonous juice exudes. This juice is concentrated to a semisolid known as "cassaripe," heat destroying its poisonous properties. It is a powerful antiseptic, a solution poured over meat seeming to preserve it indefinitely. Chandler, who has used it in a 10 per cent. ointment, says that in large sloughing corneal ulcers in old persons it has given him more satisfaction than anything he has ever used. Risley has also used it as a 10 per cent. ointment in cases of corneal ulcer and infectious diseases of the eye, but as it causes no irritation, he sees no objection to its being employed in much stronger preparations. The ointment was applied freely between the lids, and the eye subjected to massage so as to distribute it thoroughly into the retrotarsal folds, and in the corneal cases a protecting bandage was applied. When the patients are in hospital this was repeated three times daily; in outpatients it was done morning and evening. No other treatment was employed except that atropine was used, and a wash of boric acid was applied. In a few minutes after the application of the ointment in new cases the discomfort was much diminished, and the improvement was usually rapid as compared with other forms of treatment. In a case of ophthalmia neonatorum the eye was thoroughly cleansed, the ointment of cassaripe applied, and a supply given to be used three times daily at home after the usual wash. In two days the purulent discharge had entirely ceased. Risley concludes that his observation seems to show that cassaripe is a powerful vegetable antiseptic, which promises to be a useful addition to our means of treating infectious forms of ocular disease.

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PATHOLOGY.

(414) Protective Action of the Liver against Microbes.

ROGER (*Sém. Méd.*, October 19th, 1898) describes his recent results on the subject (Paris Society of Biology). In 1897 he found that certain cultures of anthrax bacillus introduced into a branch of the portal vein did not kill rabbits, whereas cultures of the same virulence injected into other blood vessels did cause death. He then found that the lungs possessed a protective action against the streptococcus, whilst the liver possessed none. The staphylococcus aureus grows rapidly in the brain, but, like the anthrax bacillus, is destroyed by the liver. The liver seems to be powerless against bacillus coli, and even to favour the growth of this microbe. Both liver and kidney arrest the growth of oïdium albicans. Recently Roger has made further experiments on rabbits to determine what conditions modify the protective action of the liver. This protective action is less marked when the animal is kept without food, but remains observable even after three days of fasting. If $\frac{3}{4}$ c.cm. of a sterilised culture of bacillus prodigiosus is injected into an intestinal vein, the liver loses all its protective power against staphylococcus aureus. Large doses of glucose—given by the mouth—weaken the protective power of the liver, whereas small doses increase it. The effect of ether is most striking; 5 drops of ether injected into the portal vein, or 2 c.cm. given by the mouth, abolish the protective action of the liver, whereas small doses by the mouth—2 or 3 c.cm. of a solution of ether in alcohol and water—increase it. When the ether is injected subcutaneously its effect is much less marked. Perhaps the beneficial action of potions containing ether, in the case of patients with infectious diseases, may be explained on the supposition that dilute doses of ether given in this way increase the protective action of the hepatic cells against certain microbes.

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(415) The Effect of Burns on the Coeliac Plexus.

KOROLENKO (*Archives des Sci. Biol. de l'Institut Imp. de Méd. Expér. à St. Pétersbourg*, Tome vi, No. 3, 1898) reports a case of Ouskoff's in which a man, who had extensive scalds mostly of the third but partly of the second degree, died a day and a half later, and a microscopic examination of the solar plexus revealed the following changes: All the ganglion cells were shrivelled and retracted from their capsules, the protoplasm was uniformly hyaline and strongly stained; the nuclei were invisible or ellipsoid masses without a trace of chromogenic structure. Since then he has observed two other cases where *post mortem* similar changes were found. A summary of the various views as to the cause of death after burns is given, and the author remarks that they agree in one point only namely, that death occurring within two days of the accident is always due to shock. He has therefore investigated the changes found in the cœliac plexus experimentally by producing scalds on the abdomen of rabbits by a jet of steam at different temperatures acting for a varying time. Unless the animal died rapidly the cœliac plexus was excised while it was still living at different periods after the scald. Their morbid histology is described in detail, but briefly the process is either (1) a coagulation of the ganglion cells, with retraction of the protoplasm from their capsules, which corresponds essentially to the changes found *post mortem* in Ouskoff's case, and is found only after severe scalds; or (2) œdema of the cells with less retraction of protoplasm found only after slighter lesions. Examination of the plexus after removal at different dates after the injury proves that there is a tendency for the altered cells to recover their normal characters (by imbibition of the separated paraplasma). Thus in œdema the cells may be again quite normal by the fifth day, and even in coagulation the number of affected cells is obviously less on the sixth day (if the animal lives), which points to the possibility of a *restitutio ad integrum*. These ganglionic changes are chiefly of a reflex nature, for they could not be produced by the high temperatures acting directly on the ganglion through the thin abdominal walls, because (1) the temperature close to the cœliac plexus was the same, or nearly so, after the scalding as it was just before; and (2) the same results were obtained when the scalds were made on distant parts, such as the hind legs. The burns may act on the cells either (1) by a purely nervous stimulus, (2) by disturbing the circulation or even causing its complete arrest. The possibility of the former is proved by the recent work of those who have produced changes, not unlike those described here, in the spinal cells by stimulating an afferent nerve electrically or even mechanically; of the latter, by the abnormal anæmia of all the ganglions examined after extensive scalds followed by rapid death. In slight scalds, however, the ganglions, when excised, even as soon as half an hour afterwards, were extremely vascular. Considering all the facts, the author concludes that in severe cutaneous burns the cells of the solar plexus are first stimulated reflexly; this stimulus then passes out to the abdominal circulatory system, in which it produces spasm of the vessels, including the nutrient vessels of the plexus itself, so that its nerve cells are stimulated on the one hand, and on the other suffer in their nutrition. In less severe cases the initial stimulus lasts for a shorter time, and on its ceasing is succeeded by a dilatation of the vessels which may last several days, and is one of the factors in producing the pathological changes in the abdominal viscera found when death after burns has been delayed some time. In cases of rapid death after burns the influence of the solar plexus on the heart complicates the question.

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MEDICINE.

(416) Atriplicism.

Matignon (*Medical Reports of Chinese Maritime Customs, 1898*) gives an exhaustive account, illustrated by the records of 12 cases, of a form of food poisoning which he has named "atriplicism." It is produced by the consumption of the shoots of a kind of spinach (atriplex serrata). It appears to arise only in people, especially beggars, who eat the herb uncooked and without being washed. It may therefore be due to toxic products secreted by a minute parasitic insect, colonies of which are often found at the top of young shoots. The disease is more common in women than in men, perhaps owing to their weaker condition, and is met with only in the months of May, June, and July, when the herb is edible. The symptoms come on within ten to twenty hours of the ingestion of the shoots. The first stage, which takes from fifteen to twenty hours to develop and lasts for from three days to a week, is that of infiltration. It commences, as a rule, with a painful numbness, perhaps associated with formication of the hands. Œdema soon supervenes, with irritation and often cyanosis of the nails and finger tips. The distribution of the œdema is curious and characteristic; it is limited to the hands, forearms, and face. On the forearms it affects the anterior and postero-external portions only, in direct contravention of the laws of gravitation; the elbow is free. The face aspect is even more swollen than in Bright's disease, and is of an earthy colour. The hands are practically useless from the swelling and pain, their tactile sensibility is diminished, but that to heat and light is greatly increased, so that cases may be diagnosed by the way in which they are wrapped up for protection from the sun's rays. There is no albumen in the urine, the pulse is slow, sometimes as infrequent as 52 per minute, and the temperature may be subnormal. The next feature of the disease is the formation of ecchymoses on the affected areas, probably from rubbing and scratching. These ecchymoses vary in size, but they almost always ulcerate. During this stage the patient's general condition is worse, and there may be slight fever. In fairly healthy subjects this is followed by mere epithelial desquamation and resolution, but in those who are debilitated the ulceration is very persistent and terminates in cicatrisation, often with the formation of cheloid. No complications are recorded except that in one case the disease was followed by dry gangrene of the fingers. The treatment consisted in a saline purge during the first two days of the disease. With regard to the pathology of the affection, the author considers that it is a local action of the poison resembling somewhat erythromelalgia but more closely Raynaud's disease. It is like the latter complaint in its sexual incidence, the parts affected, and many of the symptoms; on the other hand, atriplicism spares the feet, and is not limited to young subjects, nor is it intermittent in its occurrence as is Raynaud's disease. Laveran suggested that it was due to actual contact with the herb, since the exposed parts are alone affected, but Matignon has succeeded in disproving this by actual experiment in healthy subjects.

(417) Intermittent Hereditary Hydrarthrosis.

E. Blanc (*Loire Médicale*, November 15th, 1898) has met with a case of the rare condition known as intermittent hydrarthrosis. The patient was a woman 26 years old, who at the age of 7 years had suffered from a nearly simultaneous swelling of the knees, elbows, and ankles, which occurred periodically but irregularly during the next six years. Five years ago she began to suffer sharp pains in the left leg, and specially in the groin; these lasted for about a year, and then suddenly disappeared, their disappearance being accompanied by swelling of the left knee. Since then these phenomena have reappeared every ten days, lasting always three days. On the first day there is pain from the ankle to the groin, with stiffness of the knee; on the second the pains disappear, and hydrarthrosis begins; and on the third the articular swelling is at its maximum, and commences to diminish during the night. The health was otherwise good, the heart, lungs, and kidneys being normal. Various forms of treatment were tried without success, but the application of the actual cautery over the joint apparently caused the transference of the phenomena to the knee of the opposite side, and modified the length of the intermissions. This treatment, along with fixation of the joint, was the only one that the patient would permit. Her mother, aged 52 years, had also suffered in exactly the same way since the age of 22 years after a confinement. Blanc remarks on the apparent heredity in this case, and thinks that the arthritic nature of the hydrarthrosis was thus demonstrated, although the idea of auto-infection was not to be lost sight of. In view of the want of success of ordinary methods of treatment, the author recommends antiseptic injections into the joint, and even arthrotomy.

(418) Measurement of the Lungs.

Von Basch (*Wien. med. Presse*, 1898, No. 20) publishes a preliminary communication regarding a new method of measuring the capacity and at the same time the elasticity of the resting lungs. The results obtained by spirometry are obviously unsatisfactory, since the amount of residual air cannot be determined, and we can hence form no idea as to the area of available lung surface, or, in other words, the efficacy of the lung in blood ventilation. Gréhant's method, which depends upon the analysis of a mixture of hydrogen with expired air produced by respiration in a room of known capacity, is more accurate, but very difficult of application. The plan recommended by von Basch was first tried by him in association with Kornfeld and Grossmann upon animals, and has now been successfully applied to man. It consists in connecting the lungs with a delicate manometer—in man by means of a sound passed through the nostril. The manometer is so arranged that a certain pressure closes a circuit and rings an electric bell; it is also connected by means of a graduated tube with a syringe, by which water can be pumped in or out. The amount of water which must be pumped along the tube before the signal rings indicates the increase or diminution of the volume of the lung necessary to the establishment of a given pressure. The more that is required to be pumped in the greater the true respiratory capacity of the lungs. The elasticity can at the same time be determined by Mariotte's law, the pressure and volume varying inversely. In animals the trachea is opened and artificial respiration performed; in man the tube is inserted through one nostril and the mouth, and the other nostril closed. It is necessary in man to reduce the pressure in the manometer by means of the syringe instead of increasing it, as in the latter case the results tend to be vitiated by a spasmodic closure of the glottis. Further details are promised, and in particular some account of the valuable results obtained in the estimation of the available lung area in phthisis and in the various kinds of bronchitis.

(419) Acute Myositis.

Cayet (*Thèse de Paris*, 1898) publishes a study of this affection based upon 11 cases, personal and collected. He regards it as a morbid process due usually to two etiological factors. The exciting cause may be trauma of the muscle, its tendon, or the bones or articulations with which it is connected; damp, cold, and strain are the most important exciters. The predisposing cause is an infection or intoxication arising either from within or without. The principal symptoms are severe but not throbbing pain, brawny swelling, and local redness (which may be slight), and heat. Later there is an abundant exudation in the region of the affected muscles, followed by a cooling process which leaves the skin like wax (as in phlegmasia alba dolens). The prognosis is good, but in a certain number of cases permanent sclerotic changes may supervene. The treatment consists in leeches or other antiphlogistic measures at first, and mercurial or iodide of lead ointments later on. The use of electricity does not seem to be particularly indicated, but systematic massage is very valuable. Care must be taken, however, to alternate it with sufficient intervals of muscular rest. The cure is best completed by means of graduated exercises and passive movements.

SURGERY.

(420) Interscapulo-Thoracic Amputation.

BERGER (*Rev. de Chir.*, October, 1898) holds that save in some rare cases amputation in the contiguity of the trunk interscapulo-thoracic amputation—and not disarticulation at the shoulder-joint—is the operation that is indicated in the treatment of malignant tumours of the upper extremity of the humerus. This conclusion is based not only on the author's small experience of the operation with which his name has been associated, but also on the results obtained by other surgeons. In two cases treated by Berger himself both patients soon recovered from the immediate results of the operation, and were alive and in good health, one after an interval of sixteen years, the other after an interval of eighteen months from the time of convalescence. Reference is made to a table of forty-six collected cases, which, although many of the records are brief and incomplete, supports the favourable view taken by the author of interscapulo-thoracic amputation. This operation, notwithstanding its extent and the amount of mutilation it causes, may be regarded as a relatively safe one, as in 2 only of 40 cases was it attended by directly fatal results. The mortality, it has been shown, is much higher—about 13 per cent.—after secondary removal of the scapula for recurrence of malignant disease after disarticulation at the shoulder, and also after interscapulo-thoracic amputation practised for extensive and spreading disease of the scapula. With regard to the efficacy of the operation, the author's table of cases indicates that in about 33 per cent. it may be followed by prolonged periods of freedom from recurrent disease. In ten cases at least the patients were alive and free from disease after intervals exceeding that of eighteen months. In some of these instances, however, it seems that the morbid growth was not of a decidedly malignant character. In some few cases of relatively benign tumour of the head of the humerus, especially chondroma and myeloplaxic sarcoma, simple resection of the diseased portion of the bone may be practised, provided the growth be small and closely circumscribed and there be no doubt before or during the operation as to the nature of the disease.

(421) Amputation at the Knee-Joint in Senile Gangrene of the Foot.

AT the recent annual meeting of the New York State Medical Association (*Phil. Med. Journ.*, October 29th) Stephen Smith, of New York, stated that many eminent surgeons had practised amputation above the knee-joint in cases of senile gangrene, alleging as a reason that it was impossible to determine at what point the circulation had been obstructed, and that consequently one was more likely to obtain well-nourished flaps if the amputation were done at the knee or through the thigh. He showed by reference to an anatomical chart that there were eight arterial branches in this region, and that if the incisions and flaps were suitably planned this arterial supply need not be seriously interfered with. The method of amputation was as follows: A straight incision is made from 2 inches above the upper border of the patella downwards over the centre of that bone to the tuberosity of the tibia. From the lower extremity of this perpendicular incision two curved incisions are made, having their convexity downwards, and extending respectively in the direction of the external and internal borders of the limb. These two incisions having been united posteriorly by a straight incision across the upper border of the calf, the flaps are dissected up from the tibia and fibula, the patella is removed, and the knee-joint disarticulated. A case of senile gangrene of the foot in an alcoholic subject, aged 78, was reported, in which the method was successfully applied.

(422) Scarlet Fever after Laparotomy.

A. SIPPEL (*Centralbl. f. Gynäk.*, No. 44, November 5th, 1898) relates a case in which a large ovarian tumour was removed from an unmarried woman, aged 22. During the three succeeding days there was a rise in pulse and temperature, unaccompanied, however, by any of the other symptoms of peritonitic infection. There was no vomiting, and flatus passed freely on the morning of the second day; further, when the wound was examined on the third day, it was found to be healing normally. Another cause for the fever had, therefore, to be sought for, and such was found in the existence of a well-marked pharyngitis. Five days after the operation the characteristic rash of scarlet fever was visible on the neck, chest, and arms, and the angina was worse. The fever ran its usual course, and was of medium severity; nevertheless, the abdominal incision healed by first intention, the deep silk sutures showing no reaction, and the superficial catgut ones having separated spontaneously. It was evident that this was a case of scarlet fever of the usual type and not of the kind known as wound infection. The patient had been infected before the operation, and the incubation period had been slightly lengthened.

(423) Coxa Vara.

FRAZIER (*Annals of Surgery*, July) relates a case of "coxa vara," and gives an analysis of this and 41 other instances that have been recorded since 1894. With regard to the etiology of this affection, the author found that in 10 of the tabulated cases—in 25 per cent.—there was associated with the deformity of the hip either genu valgum or pes planus, one or the other or both. From the evidence collected by him, he draws the following conclusions: Three classes of curvature of the neck of the femur are recognised—the congenital, the infantile, and the adolescent. It is highly probable that in the majority of infantile cases the deformity is due to rickets, the presence of which is demonstrable in deformities of other parts of the skeleton; and that in the so-called adolescent cases there is no demonstrable rachitis, the real cause of the deformity being traced to some diminished resistance of the bone, the exact nature of which is still a matter for speculation. In a paper on the same subject Charpentier (*Revue d'Orthopédie*, No. 4, 1898) states that if it be intended to express by the term "coxa vara" any incurvation of the neck of the femur without respect to the nature of such condition, then it may be said that there is a coxa vara of early age that occurs in the subjects of multiple rachitic manifestations, and a coxa vara of adolescence that is associated with one or other of morbid or traumatic conditions, such as the inflammation of growing bone (*ostéite de croissance* of the neck of the femur), hip-joint disease, arthritis deformans, fracture, and localised and retarded rickets. Whilst the coxa vara of childhood causes but slight deformity, and is in most cases bilateral, the incurvations of the second group are usually well marked, and by causing much stiffness of the joint and pronounced shortening, result in serious disturbance of the functions of the limb.

MIDWIFERY AND DISEASES OF WOMEN.

(424) Acute Œdema of the Cervix of the Gravid Uterus.

MARTHA SOMMER (*Correspondenz-Blatt f. Schweiz. Aerzte*, November 1st, 1898) reports an example of this complication. A woman, aged 25, pregnant for the third time, and about at term, experienced pain over the sacrum and tenesmus after lifting a weight. Suddenly a swelling appeared outside the vulva with some red discharge. When seen by the author the same day there was a dark red elongated tumour (about 4 inches long), with a smooth, easily-bleeding surface, projecting from the vulva. It was flattened antero-posteriorly, and had a narrow neck at the introitus vaginæ. *Per vaginam* it could be made out to be continuous with the anterior lip of the cervix. The buttocks were elevated, and the tumour wrapped in cotton wool. Next morning it had vanished, though *per vaginam* the anterior lip was still soft and swollen. Ten days later labour commenced, and turning was necessary for an arm presentation with prolapsed funis. A vaginal examination some weeks later proved the uterus and cervix to be perfectly normal. The diagnosis of this condition is often difficult. In this case, if it had not been for a previous examination some months before, when no abnormality was found, the author would have taken it for a chronically hypertrophied anterior lip of the cervix with secondary œdema due to pregnancy. Such swellings suddenly appearing during labour have been mistaken for the placenta in placenta prævia, for large polypi, inversio vaginæ, or (when the whole cervix is œdematous) prolapsus uteri. The prognosis is favourable. The treatment consists in rest in

the dorsal position. The etiology is obscure. Geyl attributes it to an unknown vaginal bacillus. At any rate, it is not due to pressure of the fœtus as in chronic œdema, since it has been observed in an early stage of pregnancy before any great pressure could arise, and in the above case the pelvis was particularly large and the presentation obliqne, so that pressure by the fœtal head on the anterior lip was out of the question.

(425) The Diagnosis of Double Uterus.

J. Bastian (*Rev. Méd. de la Suisse Rom.*, October 20th, 1898) publishes 2 cases of this malformation, one a uterus bilocularis with a double cervix and vagina, the other a uterus bicornis with a single cervix and an incomplete vaginal septum. He believes such deformities to be much commoner than is usually supposed, being frequently overlooked. One of his cases bore out Meurer's statement that in such cases the pelvis is abnormally large owing to the sacrum being wider and more curved than usual. The symptoms may, in the absence of careful examination, simulate metritis. Thus if both sides of the uterus menstruate together, as in one of Bastian's cases, a physiological menorrhagia results; if alternately, there appears to be metrorrhagia. There are three chief varieties, the uterus bilocularis, the uterus bicornis, and the uterus didelphus. A diagnosis can be made by methodical examination: (1) The labia minora must be separated to see whether the vagina is septate or not; if it is, a uterine malformation must be suspected. (2) A uterus bilocularis appears on bimanual examination to be of normal shape, though abnormally large. On passing two sounds simultaneously, one to the right and one to the left, it can be felt that there is a septum dividing them, and by moving them about whether it is wanting in places, as, for instance, when there is a single cervix (uterus bilocularis unicollis). They are found in 32 per cent. of double uteri. (3) The uterus bicornis is the most frequent variety, forming 55 per cent., and may occasionally be diagnosed by bimanual examination alone. More often it is necessary to bring the cervix down to the vulva with volsella forceps, and then to explore the posterior surface of the uterus from the rectum. Two sounds should be passed, when one learns whether the cervix is double or not (uterus bicornis unicollis). (4) The uterus didelphus is the rarest (14 per cent.). Passing the sounds simultaneously shows that there are two diverging cavities, more or less independently movable. In 1 in 10 of all cases there is atresia of the, usually in such cases rudimentary, vagina or uterus on one side, leading to lateral hæmatocolpos, which simulates vaginal cyst, or lateral hæmatometra, which simulates a swollen tube. These cases are very difficult to diagnose, but must be always thought of.

(426) Congenital Pelvic Kidney obstructing Labour.

Cragin (*Amer. Journ. of Obstet.*, July, 1898) discusses the occurrence of congenital pelvic kidney and its relation to labour. From Morris's necropsy records the frequency is about 1 in 800 cases. The features which mark the misplacement as congenital are: (1) Lack of mobility, (2) shortness of the ureter, (3) the arrangement of the bloodvessels. Floating kidney is more common on the right side, but congenital pelvic kidney on the left. Of 76 cases, 64 were on the left side and 12 on the right. The arterial supply is generally derived from one of the common iliac arteries. The condition is not infrequently associated with malformation of the genital organs. As to the association of this anomaly with labour, the writer has found 5 cases reported and adds a sixth. In the first (Hohl) the tumour was felt at two successive labours; the woman died at 75, and the condition was verified by necropsy. In the second (Hüter) the patient twice had labour induced, as she had a kyphotic pelvis; soon after the second labour she died of œdema of the lungs, and the necropsy confirmed the diagnosis. In the third case (Fischel) the patient had passed through three difficult labours, one child being stillborn; at her fourth pregnancy a living child was obtained by induction of labour at the thirty-fifth week. The fourth case (Runge) had borne seven children, all without medical aid except the fifth; at her eighth pregnancy she was found to have two tumours, besides the pregnant uterus; cœliotomy showed one to be a dermoid and the other a congenital pelvic kidney. The fifth case (Albers-Schönberg) had had two difficult labours; the third resulted in rupture of the uterus, from which she died on the fifth day. The nature of the obstruction was verified by necropsy. The author's case, a 3-para, was delivered in her first confinement by forceps, and in the second by turning. Behind the cervix was a cystic tumour reducing the internal conjugate to about 7 cm. The tumour was tapped *per vaginam*, but was still too large to allow of delivery; so vaginal nephrectomy was performed. Seventeen hours after the operation a well-formed female child was delivered with ease. The convalescence of the mother was uneventful, and the development of the child was satisfactory. The author has failed to find in literature another case of vaginal nephrectomy.

THERAPEUTICS.

(427) The Serumtherapy of Relapsing Fever.

Loeventhal (*Deut. med. Woch.*, October 27th and November 3rd, 1898) immunised three horses by injecting them with blood containing spirilla of relapsing fever. 283 cases of this disease, treated in the Moscow clinic, are divided into two groups. The first, 152 in number, were treated in the ordinary way, and the remaining 131 were injected with serum obtained from the immunised horses. Of the 131 cases 84 were injected during the first apyrexia, or a few during the last days of the first paroxysm; 15 cases were insufficiently treated. Lastly, 16 were injected in the second paroxysm, 8 during the second apyrexia, 4 in the third paroxysm, 2 in the third apyrexia, and 2 in the fourth paroxysm. Of the first group of uninjected cases, 10 died and 2 were reinfected, so that 150 were left. Of these 18 had one paroxysm, 46 two, 65 three, 10 four, and 1 five. Six cases were treated with antistreptococcus serum without result. Of the 131 injected cases, 1 died, leaving 130. Of the 83 sufficiently treated, 39 had no further paroxysm. These 39 patients received 1,661 c.cm. of serum, or, on an average, 18.45 c.cm. per injection; 31 of the 83 had two paroxysms, 11 three, 1 four, and 1 five. Compared with the first group, these cases showed a more prolonged apyrexia after the first paroxysm, and a shorter second paroxysm. The single fatal case occurred at the end of the second paroxysm. In the whole 131 cases, 328 injections were given, amounting to 6,251 c.cm., or on the average 19.05 c.cm. per injection, and 47.06 c.cm. for each person. Thus the dose, compared with that of other curative sera was not large. The pain caused by the injections was greater than that observed with antidiphtheritic serum. There was only one abscess among the 328 injections. Respiratory complications were equally present in both groups. There was a general exanthem, with joint swelling and albuminuria, and casts in 2 of the injected cases. One of these died, and at the necropsy there was found cardiac disease, phthisis, acute nephritis, etc. The author thinks that the renal complications were caused by the serum. Skin eruptions were noted in nearly 20 per cent., including the so-called early rash. Skin affections are often seen in relapsing fever, but the author would put them down here to the serum. The first injection should be given on the third day of the first apyrexia, and the second on the fifth day. Injections given on the fifth day of the first paroxysm are useless, and so also the commencing the serum treatment in the second paroxysm. If the treatment has been begun in the first paroxysm it should be extended during the following apyrexia. According to statistics, relapsing fever ends with one paroxysm in not more than 25 per cent. at most, whereas in the injected cases the percentage stood much higher. The average stay in hospital has been calculated at thirty days in the injected cases, whereas, according to statistics, it is 36.8 days. Loeventhal thinks that these good results can only be attributed to the serum treatment.

(428) Podophyllin.

Hector Mackenzie and Dixon (*Edin. Med. Journ.*, November, 1898) have investigated the physiological and therapeutic effects of Indian podophyllin and its constituents. There are two species of podophyllin, the American P. peltatum and the Himalayan P. emodi. The authors first refer to the investigations of Podwyssotzki, Dunstan and Henry, and Umney. (1) The resins from the

two varieties of podophyllin were first examined, and that from the Indian variety was found to be the more active. Neither form of resin could be depended upon to relieve the bowels in chronic constipation, yet the emodi resin was the more satisfactory. (2) Podophyllin toxin is an active purgative, and larger doses produce vomiting. If a large dose is given to dogs acute enteritis is set up which may end in death. When given subcutaneously its also exerts its specific effect. The authors then detail the appearances found in dogs to which large doses had been given, the animal having to be killed by chloroform. As regards therapeutic effects both the crystalline and amorphous podophyllotoxin acts with more certainty than the resin, but the dose required appears to be almost as large as that of the resin. Doses not exceeding $\frac{1}{2}$ gr. act better than large doses. Details of experiments on cats are then given. (3) Picropodophyllin is not contained in the plants. Its effects on cats and dogs were almost *nil*. It was given in doses of $\frac{2}{3}$ to $\frac{1}{2}$ gr. in alcoholic solution, and it acted satisfactorily in 2 out of 3 cases in man. (4) Podophyllic acid. Sodium podophyllate was given in doses of $\frac{1}{10}$ to $\frac{2}{3}$ gr., and good effects were noted in 3 out of 6 cases. (4) Podophylloquercitin is inert. (5) Podophylloresin. This resin was found to be as active as the crude emodiresin, and twice as active as the ordinary *B. P.* resin. This podophylloresin has much the same effects as podophyllotoxin, but the latter exercises no cholagogue action, as is shown by the author's experiments on animals, and by their investigation upon a case of biliary fistula in man. Podophylloresin is soluble in alcohol, and subcutaneous injection then produces a similar action. Indian podophylloresin freed from podophyllotoxin and quercitin was given in 19 cases, mostly in doses of 1 gr., with satisfactory results. Podophylloresin itself, given to healthy men, produced a satisfactory action of the bowels in $\frac{1}{2}$-gr. doses. Experiments with this resin are then recorded. The authors conclude as follows: (1) Indian podophyllin is an active purgative and a useful therapeutic agent. It may be substituted for P. peltatum, but the variety given must be known, owing to the greater activity of the former. (2) The crude resin contains crystalline podophyllotoxin and podophylloresin both excellent luxatives, without secondary constipation or other objectionable symptoms. Podophylloresin alone has a chologogue action, the amount of solids in the bile being increased. Both exert their therapeutic action when given hypodermically, but the irritation produced precludes this mode of administration.

(429) Heroin.

STRUBE, of Gerhardt's clinic (*Berl. klin. Woch.*, November 7th, 1898) says that heroin has been introduced as a substitute for morphine, and that it is a narcotic possessing a special action on respiration. From his own experiments and those of Dreser (see EPITOME, October 15th, 1898, par. 295) the therapeutic indication appears to consist in (1) dyspnœa, where it is desirable to diminish the frequency of breathing and to increase its depth; and (2) bronchial and pulmonary affections where an irritative cough and dyspnœa, with sleeplessness, are produced by an accumulation of secretion. Strube has tried heroin in 50 cases, chiefly of phthisis. It was given in the evening in place of morphine and codeine. The dose is 0.005 g. in pill or powder. It has a slightly bitter taste, and is soluble with difficulty in water, but dissolves readily in water acidified with acetic acid. A soluble oxalate has also been introduced. Not more than 0.01 g. was given as a single dose, nor more than 0.025 g. in the twenty-four hours. The therapeutic effect was observed in from half to two or four hours, according to the dose. Sometimes the patients woke up again in three or four hours, when a second dose produced sleep until the morning. Heroin also proved itself of service in allaying cough in hæmoptysis. The author thinks that it is inferior to morphine as an anodyne. He gives tables to show that the frequency of respiration was considerably reduced. The soothing effect was very obvious, and especially in a case of combined aortic and mitral disease with chronic nephritis. A distinct general narcotic action was also noted. No ill-effect was observed. The diminished rate of breathing was not due to collapse. The respiration remained quiet and regular, and the pulse was mostly unaffected or very slighly reduced in frequency. Further investigation must show whether patients become accustomed to the remedy so as to necessitate increased doses, and whether its long continued use is at all harmful.

(430) Ephedrin.

DE BOURGON (*Annales d'Oculist.*, September, 1898) finds that a drop of a 10 per cent. solution of ephedrin hydrochloride is markedly mydriatic, the effect lasting fourteen hours, but causes considerable conjunctival irritation. The ciliary muscle is slightly paralysed. A drop of a 5 per cent. solution causes no irritation, accommodation is very slightly affected, and the size of the pupil is doubled, this maximum effect lasting ten minutes, and disappearing completely in three and a-half hours. A 1 per cent. solution has only a feeble and transient effect. For purely ophthalmoscopic purposes the 5 per cent. solution would appear to be very useful, but by reason of its slight effect on the ciliary muscle it is not to be recommended in determining refraction.

PATHOLOGY.

(431) The Bacterial Origin of Biliary Calculi.

MIGNOT (*Arch. Gén. de Méd.*, August, 1898), refers to the usually accepted theory that for the production of gall stones a special diathesis is necessary. Even those who, owing to the discovery by Gilbert and others of living bacteria in the centre of biliary calculi, believe that bacteria are the exciting cause, generally consider that a diathesis is a necessary predisposing cause. This, however, is a mistake. The author has succeeded in producing typical calculi in guinea-pigs and has obtained the following results: (1) Foreign bodies when introduced into the gall bladder can stay there for an indefinite time, provided they are aseptic, without causing inflammation or precipitating the solids from the bile. (2) Foreign bodies previously impregnated with virulent micro-organisms cause a more or less intense cholecystitis and precipitate the solids from the bile. As long as the bacteria retain their virulence, however, they cannot form a calculus, but only a sediment mixed with pus. This precipitate has no tendency to cohere or to adhere to foreign bodies. (3) Mignot then shows why previous attempts to form calculi have failed. The bacteria must be attenuated, not virulent. This is best attained by growing them for some months in bile to which constantly decreasing amounts of broth are added. When sufficiently attenuated they are no longer pathogenic when injected into the cellular tissue of animals. By injecting these into the gall bladder stones are occasionally formed, but more often the bacteria are washed out into the intestine. If, however, a foreign body, especially if porous, such as cotton wool, be placed in the bladder and fixed to its wall to prevent expulsion, a stone is formed round it with the greatest certainty. Five or six months are required for the formation of a perfect calculus. The kind of bacteria injected seems to be of quite secondary importance. Mignot has proved that the typhoid bacillus, the B. coli, staphylococci, streptococci, and even the non-pathogenic B. subtilis, are capable of giving rise to calculi, and probably a great number of other organisms are equally so.

(432) The Biology of the Gonococcus.

LAITINEN (*Centralbl. f. Bact.*, No. 20, 1898) has been working at the growth of the gonococcus in artificial media. He found that the best nutritive media were either cystic or ascitic fluid combined with bouillon or agar. Human blood serum is also excellent, but this, unfortunately, cannot be kept for any length of time. The best results were obtained with a medium consisting of two-thirds bouillon and one-third ascitic fluid; this combination contained 9 c.cm. of caustic soda per thousand. The cultures grew best at a temperature of 36° C. Experiments with sterilised gonococcus cultures in guinea-pigs gave the following results:—Both a local and general reaction followed the injections; the animals died with signs of toxin poisoning. Precipitation experiments showed the presence of toxins, but further observation will be necessary in order to determine whether toxins can be produced from the cultivating media (cystic and ascitic fluid).

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(433) Clinical Aspect of the (1897) Plague in Bombay.

A. M. LEWIN (*Vratch*, No. 21, p. 613) describes the following characteristic symptoms: (1) Facies pestica—the sudden exhaustion and weakness at the commencement of the illness are apparent in the facial expression, which is that of a sleeper with the eyelids lowered and the wrinkles smoothed out, and exhibits deep apathy and an absolute indifference to the surroundings. No other fever at its commencement—even on the very first day—is characterised by such extreme debility. (2) The tongue is swollen, showing the impression of the teeth on its edge; it is moist and is not tremulous. It is completely covered with a thick, moist, white fur (*langue nacrée* of Bulard), not met with in any other disease, generally present on the first day, and lasting for two or three days. (3) Lewin was not able to observe the alteration in speech mentioned by others, as he was not acquainted with the native dialect. (4) Psychical troubles are characteristic signs of the plague; the systematic and obstinate "fixed ideas" are for the most part of a depressive character. At the height of the malady the sense of weakness disappears, and the patients rise in bed or even get up. (5) Sclerotic injection: There is generally great pericorneal injection, without actual effusion of blood, and therewith an acute conjunctivitis, or much more rarely keratitis, iritis, or panophthalmia. (6) Buboes: In this epidemic carbuncle and petechiæ were infrequent. The buboes appeared very early, and were often well developed at the beginning of the second day. A disproportionately large inflammatory swelling surrounded those affecting the inguinal, and was even more marked round the preauricular, glands—parotitis pestica—on account of the œdema of the glottis liable to supervene, was one of the most dangerous symptoms of the plague. (7) The inflammation of the lungs closely resembled commencing influenza, and was without well marked local signs; plague bacilli in the sputum were characteristic. (8) Plague gangrene occurred, generally during early reconvalescence or later; the ulcers seldom affected the favourite seats of bed-sores, and had perpendicular margins not undermined. (9) Buboes which opened spontaneously were followed by deeply retracted cicatrices and persistently discharging fistulæ. Lewin strongly recommends the early incision of buboes, as the undermining of the skin by the pus may attain enormous proportions. (10) Pestis ambulatoria: Some cases are extremely slight, marked only by a little rise in temperature and a little pain in the inguinal region and armpit, but these cases are very dangerous in spreading the disease. (11) During convalescence psychoses of a depressive character, amounting sometimes to absolute stupor, may last from ten to fifteen days. Lewin explains them as due to inanition, the result of a specific poison produced by the plague bacillus.

(434) Weil's Disease.

LEICK (*Deut. med. Woch.*, October 20th, 1898) reports a fourth case from the Greifswald clinic. The four patients were all engaged on the same estate, and attributed their illness to contaminated food, with the exception of the last one. The author draws attention to the fact that during many years the only cases of Weil's disease have come from this one place, and have occurred within the last two years. In the present case a man, aged 28, was seized with vertigo, and a feeling of prostration, with pains in the splenic region. A few days later there was jaundice, loss of appetite, thirst, and diarrhœa. On the fourth day vesicles appeared on the lips, and there was marked epistaxis. Delirium occurred, especially at night. On admission, there was marked jaundice, as well as petechiæ scattered over the body. Temperature 31.2°C.; pulse, 112. The spleen was distinctly enlarged, and the urine contained a little albumen. Under treatment, mainly dietetic, the temperature gradually fell, and the other symptoms diminished. The pulse fell to 50 beats a minute. Convalescence was slow and interrupted. On the nineteenth day after the onset there was a relapse, the fever lasting several days. The illness presented all the characteristics of Weil's disease, including the tenderness over the liver and the muscular pains. The etiology is very obscure. Bacteriological and other examination of the blood was negative. The author vigorously opposes the view that Weil's disease is really enteric fever complicated by jaundice. Widal's reaction is absent. He looks upon it as a disease by itself, of which the specific infective virus is as yet unknown.

(435) The Bacillus in Diphtheria.

GRIGORIEFF (*Arch. de Méd. des Enfants*, August, 1898) gives the following as the results of his investigations with regard to the persistence of the diphtheria bacillus in the mucous membranes of patients convalescent from diphtheria. In four-fifths of the whole number (36 out of 46) the bacilli disappeared very quickly, namely, not later than a week after the disappearance of the membrane. In a tenth (5 out of 46) the bacilli disappeared during the second week. In a tenth of the whole number (5 in 46) the bacilli were found up to the end of the third week. Bacteriological examination of the nasal cavities showed that the bacilli disappeared about the same time, or nearly so, as in the throat. An exception to this rule was when the nose was more severely attacked, not always with the formation of membrane. The author's conclusion is that the bacilli disappear or lose their virulence very early—as a rule during the first two weeks. It must, however, be borne in mind that in some patients the bacilli remain much longer than the period mentioned, and the continued virulence of these has been demonstrated on animals. The author concludes that the time of isolation must not be regarded as a fixed period, but must depend entirely on repeated bacteriological examination of the nose and throat. These are of the highest importance in children going to school or otherwise mixing with other children. In hospitals convalescents should as much as possible be kept apart from those patients who are in the acute stage of the disease. In addition to serumtherapy it is of the utmost importance to irrigate the throat, mouth, and nose until the patient can be pronounced cured.

(436) The Lower Edge of the Liver.

PICHLER (*Centralbl. f. inn. Med.*, September 10th, 1898) says that it is recognised that the enlarged liver may so bulge the abdominal wall as to be distinctly visible. He maintains, however, that the lower border of the liver which is not enlarged may also at times be seen. In observing Litten's diaphragm phenomenon, the author found it possible to see the shadow of the lower hepatic margin descend with inspiration and ascend with expiration when the individual was not too fat, and the abdominal walls not too distended. The shadow can be recognised only on deep breathing. It is best seen in the right lobe of the liver, less clearly in the left. By changing the position of the patient, different parts may be brought into view. The position adopted in order to demonstrate Litten's phenomenon is the most suitable. Meteorism causes the shadow to disappear. There are two usual methods of ascertaining the lower border of the liver, the one by palpation, which is not always available, and the other by percussion, which is sometimes deceptive. The author says that this simple method of inspection has often sufficed when palpation was impossible, owing to tenderness. The limits of other organs may also produce shadows which move with respiration.

SURGERY.

(437) Bilateral Ligature of the Internal Iliac Artery.

QUÉNU AND DUVAL (*Rev. de Chir.*, November, 1898) publish the results of a study of the anatomical relations of the internal iliac artery, and describe a method, based on these results, of practising bilateral ligature of this vessel by the transperitoneal operation. That this operation is now one of practical interest, and not merely a dissecting-room exercise, is shown by a list of 14 recent cases, in which both internal iliacs have been tied with the object either of producing atrophy of a pathological growth (enlarged prostate, uterine fibroma), or of preventing free

hæmorrhage during removal of the rectum and sigmoid flexure for cancer, or during total abdominal hysterectomy. In 5 of these cases the operation was performed in the old way by double incision, and without opening the peritoneal cavity. In the remaining 9 cases the transperitoneal method was selected, which method the authors have been led by their personal experience on both the living and dead subject to regard as the only rational and practical one, whether for bilateral or single ligature of the internal iliac; the operation in itself is a safe one with regard to both immediate and remote results, and the circulation is soon completely re-established in the pelvic region supplied by the ligatured vessel. The abdomen having been opened by an incision in the middle line extending from a point just below the umbilicus to the pubic symphysis, the artery is exposed by a vertical incision of the posterior layer of the parietal peritoneum. The middle of this incision should correspond to the level of the upper margin of the sacrum. The operation is usually found an easy one when performed on the right side, but on the left side it may be attended with much difficulty when the sigmoid flexure is short and fixed by a narrow mesentery. In such case it would be necessary to penetrate both layers of the mesentery, the vessels to the large intestine being carefully avoided, and thus to divide three layers of peritoneum before the artery could be exposed.

(438) Treatment of Serpiginous Ulcer of the Cornea.

LESSHAFT (*Klin. Monatsbl. f. Augen.*, October, 1898) is of opinion that in the treatment of this condition attention should be directed in the first instance to the lachrymal passages, that is, in cases where the ulcer is apparently spontaneous and not due to trauma. The absence of any manifest dacryocystitis is no bar to the infective influence on the cornea of bacteria in the nasal duct. Accordingly he slits up the lower canaliculus and irrigates the duct with 1 in 5,000 $HgCl_2$ daily, washes out the conjunctival sac with the same solution, and applies a moist dressing with protective to the closed lids. In addition iodoform is dusted on the ulcer and inner canthus, and atropine is instilled. This line of treatment he has found immediately effective; the ulcer ceases to spread; infiltration becomes less and disappears, and hypopyon absorbs; scarring is reduced to a minimum. It is only in the event of the ulcer not yielding to this treatment that he employs and recommends the galvano-cautery, or, if the ulcer is very extensive, Saemisch's section.

(439) Operative Treatment of Exophthalmic Goitre.

SCHWARTZ (*Bull. et Mém. de la Soc. de Chir. de Paris*, November 22nd, 1898) reports two cases of exophthalmic goitre treated by bilateral resection of the sympathetic nerve in the neck. In one patient, a woman aged 23, the lower part of the superior ganglion on the right side, together with about 2 inches of the nerve trunk, was excised. This operation was at once repeated on the right side. In the second case, the patient, a woman, aged 31, had suffered severely from attacks of angina pectoris. In this case, as there was considerable difficulty in exposing the sympathetic nerve on the right side, and the patient was very weak, it was thought well to defer the operation on the left side for a month. In both cases the operation, it is stated, gave much relief, and was followed at first by less marked prominence of the eyeballs and by reduced pulse frequency, and subsequently by a gradual amelioration of the general symptoms. The second patient was decidedly much benefited by the operation, as the distressing attacks of angina suddenly ceased after the sympathetic had been resected on both sides.

(440) Luxation of Eye from Blowing the Nose.

SCHANZ (*Beiträge zur Augenheilkunde*, Heft xxxiv, 1898) reports the case of a glass blower who, while blowing a glass, had the gas jet blown into his fact by a puff of wind; this caused him to sneeze and violently blow his nose; the eye became displaced forwards out of its socket, but was replaced, with some force, by a fellow workman. The patient then went to consult Schanz, who expressed some scepticism as to his story; thereupon he immediately blew his nose, and the eye proptosed. Schanz pressed it back into place, the lids being tense with air and crackling when touched. The air could be partly expressed. In the course of a week the emphysema had entirely subsided, and some inflammation of the disc had also disappeared, and vision was normal. The patient had always been accustomed to inflate his cheeks, and thence expel the air in the process of blowing glass, and not directly from the lungs. This had led to an increase in the patency of Steno's duct, so that the parotid gland became inflated at the same time as the cheeks. Examination of the nose failed to reveal where its walls were perforated.

(441) Intubation in Syphilitic Stenosis of the Larynx.

SARGNON (*Arch. Prov. de Chir.*, August) holds that intubation as practised by O'Dwyer is the best method of treating laryngeal stenosis, especially that of syphilitic origin. Tracheotomy, it is allowed, affords rest to the diseased larynx, and when combined with an active specific treatment may be followed by rapid and complete cure. But intubation, the author holds, when practised in similar conditions, gives the same results with greater rapidity by reason of the mechanical dilatation effected by the tube; and, moreover, it does not leave an external and visible cicatrix. The practice advocated by Schrötter in chronic cases of stenosis, of performing tracheotomy and afterwards gradually dilating the strictured larynx by bougies, is not certain in its results, and in the rare instances in which complete cure has been effected this has not resulted until after a very prolonged and tedious course of treatment.

MIDWIFERY AND DISEASES OF WOMEN.

(442) Appendicitis during Pregnancy.

BOUILLIER (*Thèse de Lyon*, 1897) discusses this subject on a basis of 22 observations, considering (1) the influence of pregnancy on appendicitis, (2) the influence of appendicitis on pregnancy. As to the first point he concludes that pregnancy plays no part as an etiological factor in the causation of appendicitis. The pregnant woman is not more subject to this form of inflammation than the non-pregnant. The influence of appendicitis on pregnancy is, on the other hand, well marked. In 7 out of the 22 cases abortion at about the fourth month resulted, either before or after surgical treatment. Spontaneous abortion may be due either to the febrile condition and the affection of the general health, or to infection of the pelvic organs from the appendix; possibly to both factors. The mortality in the 22 cases was: Maternal, 30.4 per cent.; fœtal, 47.8 per cent.; consequently pregnancy renders the prognosis of appendicitis more serious. The treatment is that of appendicitis, the pregnancy not constituting a contraindication. Early intervention is desirable, since if the case be left there is a grave danger of puerperal complications due to general infection or to direct infection of the pelvic organs.

(443) Missed Abortion; Twins.

DE BRUIJN (*Nederl. Tijdschrift van Geneeskunde*, No. 16, 1898) writes of a healthy woman, aged 40, the mother of eight robust children, in whom the period ceased at the beginning of October. She consulted her doctor the following March because, though she was evidently pregnant, no fœtal movements had been felt. The abdomen, too, was in her opinion getting smaller rather than larger. The uterus was of the size normal at the fifth month, the ostium was closed, no fœtal movements could be detected on palpation, nor could the fœtal heart be heard. No operative measures were adopted. In August an ovum was discharged entire. It measured 11½ by 8½ in. Most interesting is the fact that there were two amniotic cavities, each containing a fœtus. One was of about the sixth the other of the eighth week. The placenta seemed to have reached the fourth month; histologically, its structure was normal. The mother was in excellent health, both all through this pregnancy and in childbed. A year and a half later she was delivered at term of a healthy child. De Bruijn has observed another missed abortion. A multipara, aged 47, ceased to menstruate after May, 1897. In October the fœtal movements ceased. In March, 1898, a fœtus, 7⅛ in. in length, was delivered spontaneously. It was much shrivelled. The placenta had undergone fibrinous degeneration, and was extensively calcified.

(444) Utero-intestinal Fistula.

Neugebauer (*Revue de Gynéc. et de Chirurg. Abdom.*, July-August, 1898) has issued valuable tables of 28 cases of utero-intestinal fistula. In 12 the fistula was not detected till after death; in 21 the patients were pregnant or recently delivered. In 11 of these cases the fistula was due to retained fœtus, "missed labour." In 1 very unusual case the patient had yellow fever in the fourth month of pregnancy. The vomiting set up abortion followed by fatal peritonitis. A communication 4 inches wide was found between the intestine and the utero-vaginal canal (*Rheinische Monatschrift für praktisch Aerzte*, 1850, p. 574). In 9 the fistula occurred from injuries at delivery or puerperal complications. Thus in 2 cases the injury was due to the forceps, in 1 to version, in 1 to manual detachment of the placenta: 3 other cases are indefinite in this respect, but apparently some injury during labour explains them. There remain 7 cases where the patients were not pregnant but recently delivered. Two were purely teratological in newborn children. In 2 the fistula was caused by rupture of a hæmatometra into the rectum, in 2 by evacuation of pus from a suppurating myoma, in 1 from precisely the same condition, there being also tuberculosis of the intestine. As to the part of the intestinal canal involved, the communication of the uterine cavity was with the stomach in 2 cases, the rectum in 9, the sigmoid flexure in 3, the transverse colon in 1, some part of the large intestine not specified in 2, and the small intestine in 12. This series includes some repetitions, as in 1 case there was a fistula involving the small intestine and the sigmoid flexure, in 1 there were three small intestinal fistulæ, and in 1 as many as three rectal fistulæ; there was also a double case of this type not clearly defined. More distinctly the individual 28 cases are thus classified: Utero-gastric fistula, 2; utero-intestinal (small), 11; utero-colic or utero-rectal, 14; unspecified case, 1. No fewer than 14 of the 28 died. Of the 14 recoveries, spontaneous closure occurred in 11. This seems the rule when the fœtal relics are evacuated in "missed labours." In 1 forceps-injury case the fistula did not close for years. In 1 case the os externum was closed by sutures after paring of its edges, so that the catamenia drained into the intestine. Resection of the fistulous portion of intestine was successfully performed in 2 cases through an abdominal incision; in 1 case abdominal section was undertaken in order to remove a fœtus retained in the uterus which was incompletely ruptured. Fæces and ascarides had issued from the uterus, which communicated at the fundus with the small intestine. The patient died. In another fatal laparotomy the uterus and intestine were separated and the fistulæ closed by suture. Resection of the intestine would, it was admitted, have been safer. Nine died, unoperated upon, by exhaustion and pyæmia; 2 from tuberculosis; 1 from yellow fever. The 2 teratological cases were naturally fatal. Treatment answers better than operation, considering the circumstances under which utero-intestinal fistula is usually seen. Removal of the source of irritation—generally retained fœtal bones—ensures cure. The 2 cases of operation for closure of the bowel from the original aspect proved failures.

(445) The Appendages after Vaginal Hysterectomy.

Van der Hoeven (*Centralbl. f. Gynäk.*, No. 35, 1898) considers that Brennecke relied upon pure theory when he asserted that the ovaries of necessity undergo atrophy after vaginal hysterectomy. As a rule, it appears, the tubes and ovaries seem to cause no trouble. After Péan's operation for pelvic abscess fistulous tracts may develop, but they heal spontaneously. Though the appendages may be absoluteiy healthy when the hysterectomy is performed, they sometimes become subject afterwards to the disease for which that operation was undertaken. Hæmatosalpinx may develop, or even, as in Wendeler's case, tubal pregnancy. Several cases of serous cyst of the pelvis developing after vaginal hysterectomy or abdominal section have been reported. These records show, however, that they are not solely the result of the former operation. Van der Hoeven has described four such cases, three after vaginal hysterectomy, and these were respectively diagnosed as preovarian cysts, ovarian cyst, and hydrosalpinx. The serous cysts were extirpated successfully. As a rule operation is best, but hot irrigations are of benefit. The symptoms are pain and swelling, and also usually fever.

(446) Hypodermic Injections of Saline Solution in Eclampsia.

Poucet and Vinay (*Sem. Méd.*, June 1st, 1898) report the following case. A woman in the sixth month of pregnancy was attacked with eclampsia, and her general condition was extremely serious, with complete coma, suppression of urine, high temperature, etc. Abortion was induced, the child being dead when born; 5½ pints of normal saline solution were then injected hypodermically. Recovery was rapid and complete.

(447) Extrauterine Gestation at Term: Fœtus Dead for Four Years.

Bastian (*Rev. Méd. de la Suisse Rom.*) relates a case successfully treated by marsupialisation and drainage. The patient, aged 34 years, dated the commencement of pregnancy nearly five years back. Labour came on in due course with regular pains; but after the expulsion of a "fleshy membrane" the pains subsided and the fœtal movements ceased. There was a free secretion of milk which disappeared after the administration of purgatives and the application of hot compresses. Three months after the ineffectual labour menstruation recommenced and continued regularly. The patient resumed work and suffered no inconvenience till a fall from the top of a ladder produced a violent pain in the left iliac fossa. On examination a tumour was found, and as the patient refused particulars as to her history a diagnosis of uterine myoma was made and abdominal section was decided on, when the true nature of the case was discovered. The deeper parts of the sac were so intimately adherent to surrounding structures that the operator, Vaucher, removed as much of it as possible and sutured the rest to the abdominal wall. A fistula remained for some time, but two and a half months after operation it had completely closed. The patient was discharged convalescent five weeks before this time. Examination of the parts concerned showed that the gestation sac was formed by the left tube and broad ligament, the tube had ruptured the broad ligament and the pregnancy had continued as the intraligamentous form. The author cites cases in which the fœtus was retained for 8, 14, 15, 18, and 43 years respectively. As regards treatment he observes that some surgeons recommend marsupialisation, others total extirpation; but he considers that the anatomical considerations alone can furnish the indications, and it may be necessary to sacrifice a surgical idea in favour of the patient's health.

THERAPEUTICS.

(448) Lactophenin as a Hypnotic.

A. Cristiani (*Il Manicomio Moderno*, 1898, No. 2) recommends the use of lactophenin as a hypnotic. He gives it in doses of from 15 to 45 gr. suspended in sweetened mucilage in the evening one hour after food. He has employed it in over 200 cases of insanity accompanied by insomnia, and concludes that it has a hypnotic action which is certain, rapid, intense, prolonged, and harmless. The sleep which it produces is deep, calm, and restorative, and lasts generally from four to nine hours. Its use is not followed by any unpleasant phenomena, such as headache and *malaise*. The drug has no cumulative action. It may be safely used even when the patient's physical condition is weak. Like other hypnotics it has failed to act in certain cases, and in some in which at first it was successful it has after a time entirely lost its power. He considers that it is the hypnotic *par excellence* in the insomnia of the insane accompanied by serious involvement of the physical health in any form.

(449) Antipyrin Intoxication.

Immerwahr (*Berl. klin. Woch.*, August 22nd, 1898) relates a remarkable case in a woman, aged 28, who had syphilis in 1894, for which she was thoroughly treated. Nearly three years later syphilitic manifestations appeared, consisting of mucous patches in the mouth and vulva, and also chronic induration of glands. These symptoms again disappeared under treatment. In April, 1898, she took 0.5 g. of antipyrin on account of headache, and on the following day she had a crop of vesicles in the mouth, which soon disappeared. A few days later she took another dose of 0.5 g.

of antipyrin. In the same evening she shivered, and was feverish, and had an urticarial eruption over the body. On the next day there were numerous vesicles on the mucous membrane of the cheek, soft and hard palate, upper and lower lips, and also on the vaginal mucous membrane. The patient thought that this was a relapse of the syphilis. In four days the vesicles began to dry up, but food was taken with much difficulty. The urticaria-like rash had now disappeared. Immerwahr thought that this eruption of vesicles must be due to antipyrin, and therefore made use of nothing but simple treatment. In a few days the eruption entirely disappeared. The importance of the differential diagnosis in this case is obvious. The author remarks that it is necessary to put these cases on record, considering the frequency with which antipyrin, salipyrin, and migranin are used.

(450) The Arrest of Hæmorrhage.

Cavazzani (*Gazz. degli Osped.*, September 25th, 1898) draws attention to a revival of an old method of arresting hæmorrhage, reintroduced by Tuffier, who christened it "angiostripsia." The essence of the process consists in a violent crushing or bruising of the vessel by means of strong specially made forceps, so that the intima is immediately broken. If no blood oozes after this, there is no fear of its doing so later. The advantages claimed for the new method are safety, speed, avoidance of injury to tissues, and freedom from the dangers which attend the use of the ligature. The author has seen the angiotribe used successfully in an excision of the tongue where no ligature was applied. Indeed, he goes so far as to say the angiotribe has almost suppressed the use of the ligature.

(451) Hypophysin in the Treatment of Acromegaly.

Cyon (*Progrès Méd.*, November 26th, 1898) communicated to the Paris Académie de Médecine a contribution on the treatment of acromegaly by hypophysin. He showed the part played clinically by the hypophysis in protecting the cerebrum against congestions. In this way it completed the more mechanical part of the thyroid body. The taking of hypophysin exercised an undoubted effect upon the cardiac and vasomotor centres. In the case of an obese acromegalic seven weeks' treatment diminished the weight by 9 kilogrammes and the circumference of the abdomen by 35 cm. The pulse became regular, and the headache, nystagmus, and intellectual apathy were improved. This patient, 12 years of age, received a daily dose of 0.02 gr. of hypophysin.

PATHOLOGY.

(452) Serum Diagnosis in Typhoid Infection.

Tarchetti (*Gazz. degli Osped. e delle Clin.* November 6th, 1898) in addition to observations on Widal's reaction from the diagnostic point of view, has experimented in 7 cases, with a view of determining what relation, if any, exists between the intensity of the agglutinating power and the gravity of the infection. According to Courmont with slight fever and slight agglutinating power the prognosis is uncertain, so also with high fever and high agglutinating power. High fever and low agglutinating power is a bad indication, low fever and high agglutinating power good. The author has worked the subject out thoroughly, and finds himself unable to corroborate Courmont's statements, and quotes cases in support of his opinion. When relapses occur he found that there was an increase in the agglutinating power. The degree of agglutination appears to be closely related to the resisting power of the organism and the modality of the infection. No safe prognostic conclusion can be drawn from comparison of the temperature chart in relation to the degree of agglutinating power.

(453) Organismal Contents of the Lungs.

Barthel (*Centralbl. f. Bakt.* xxiv, 11-12) submits Dürck's statement that the healthy human lung is, during life, rich in bacteria to a searching examination, and comes to the following conclusions:—(1) The finer bronchioles and the air vesicles are free of organisms; (2) the trachea and the bronchi of moderate calibre exhibit upon their surface both pathogenic and non-pathogenic organisms; (3) as compared with the flora of the mouth and fauces there are more pathogenic organisms in the trachea and bronchi. This difference in proportion may be due to the multiplication within the bronchi of the pathogenic varieties which are known to grow better than the merely saprophytic ones at the temperature of the body, and also to the excretion of these organisms during disease into the bronchi from out of the blood stream or lymphatics, an event the possibility of which has been demonstrated. These organisms tend to be removed by the ciliated epithelium, and to be rendered inert by freshly-secreted mucus; but if their epithelium or the mucous follicles be in any way injured the bacilli gain entrance into the substance of the lung. The diplococcus lanceolatus appears to be more often present than all other varieties, and to be one of the most virulent.

(454) Syphilis.

Adami (Reprint from *Montreal Medical Journal*, June, 1898) enters into a full discussion of the stages and forms of syphilis, with especial reference to its hepatic manifestations. He strongly supports Wagner's idea of the unity of syphilitic lesions, which, like those of tuberculosis, are due to the development of a specific neoplasm. The three commonly recognised stages of the disease are clinically convenient, but not pathologically sound. Adami believes that from analogy, as from clinical history and absence of any indications of the same, in sundry cases there may be an absence of the primary cutaneous or epithelial manifestations of syphilis, and that individuals may fail to present either primary or secondary symptoms that are recognisable, and yet eventually develop definite tertiary lesions of the disease. He furthermore holds that where the subject is relatively insusceptible, the disease may be limited to the primary cutaneous manifestation, not followed by secondary lesions. With regard to the congenital form, this begins, as with tuberculosis, at what may be termed the secondary stage of the acquired disease, that is, the stage of general dissemination of the virus throughout the organism. Turning to the relation between secondary and tertiary lesions, the author points out that Hutchinson more than twenty years ago demonstrated the occurrence of gummata in the so-called secondary stage of the disease. The best proof of the practical identity of secondary and tertiary lesions is to be obtained by the study of the hepatic affections. Thus the liver of congenital syphilis is found studded with miliary gummata as well as being affected with pericellular fibrosis; all this is within a few months of the primary lesion, while the secondary cutaneous manifestations are abundant. True gummata have also often been found in the liver within a few weeks of birth, and in fact all the hepatic changes seen in congenital syphilis are characteristic of the tertiary rather than the secondary form of the disease. With regard to acquired syphilitic changes in the liver, Adami remarks that in early cases *post-mortem* material is naturally rare, while late ones have not been investigated of late years with sufficient care. He gives the records of seven necropsies performed by himself, from which he draws the deduction that the conditions are ordinarily included under the term tertiary syphilis, conditions obviously comparable to those recognised in tuberculosis. There are, first, the cicatrices and fibroid changes which indicate a previous syphilis now healed and obsolete; and secondly, the lighting up again of an obsolescent syphilis from old foci in which the virus has remained latent. Diffuse chronic perihepatitis he regards as more a complication than a direct syphilitic manifestation. The author is convinced that the lesions occurring in the congenital and the acquired disease are identical, and brought about by the same process or processes, which are also at work whether we have to deal with the congenital or the acquired disease. Anatomically and histologically there is no valid distinction to be drawn between secondary and tertiary syphilis any more than in tuberculosis. This conclusion tends to reconcile the views of those who hold that tertiary lesions are not infectious with the cases in which such infection has occurred five or ten years after the primary inoculation. This is merely due to the lighting up of the old infection, while many of the lesions recognised as tertiary are merely the indications of an old healed or self-limited syphilis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(455) Metabolism in Stomach Affections.
Joslin, of Ewald's clinic (*Berl. klin. Woch.*, November 29th, 1897) has investigated metabolism in a case of gastric ulcer, of extensive resection of the stomach, and of gastro-jejunostomy when meat peptone and eucain were added to a diet of known constituents. (*a*) Gastric ulcer. The investigation covered 5 periods: (1) The preliminary; (2) when 30 g. of peptone were added; (3) when the preliminary diet was again given; (4) when 30.5 g. of eucain were added; and (5) when a simple diet chosen by the patient was given. The nitrogen balance increased considerably during the peptone and eucain periods. This increase was not due to any excess of food taken during the first period. In the fifth period the amount of nitrogen in the urine fell, while that in the fæces increased. This confirms Ewald's view that the diet must not be left to the patient when an equality in metabolism is required. A considerable excess of nitrogen in the form of peptone and eucain were provided in the second and fourth periods, and the favourable absorption of peptone and eucain was evident. The value of meat peptone and eucain for the purpose of providing abundant nutriment in small volume has been often shown. (*b*) In the second case (in a woman aged 45) two-thirds of the stomach had been resected for carcinoma, and a gastro-jejunostomy done. Two periods were investigated. In the second the nitrogen represented by 210 g. of oatmeal ("gries") was replaced by 55.44 g. of meat peptone; 1.93 g. more nitrogen was given in the second period, due to the increased quantity of bread. In the second period the amount of nitrogen in the urine was almost equal to that of the first, though there were 716 calories less provided. The absorption of nitrogen was better during the peptone period. The chief change lay in the nitrogen and fat loss. In place of 6 per cent. seen in the healthy individual the nitrogen loss rose to 12.66 per cent. in the first period, and to 9.71 in the second. The loss of fat in the stools rose to 18.71 per cent. (*c*) The metabolism in the case of gastro-enterostomy was investigated before and after the operation. In place of a nitrogen loss of 3.6 per cent. before the operation, it became 19.85 per cent., and the loss of fat rose to 31.21 per cent., although the calories supplied remained about the same. The patient was losing weight. Resection of the stomach and gastro-enterostomy influence gastro-intestinal digestion considerably. The effect on fat digestion is remarkable. The deficient absorption of fat was due to gastric resection in the first case, and to the carcinoma in both cases. Both patients were feeling well, but the case of gastro-enterostomy subsequently died, whereas the case of resection of the stomach was seen later greatly improved. In this last-named case albuminous digestion represented 60 per cent. before the operation, and there was combined but no free hydrochloric acid, whereas in the other there was no hydrochloric acid, and much lactic acid was developed. The author then refers to two further cases of gastric ulcer, in which peptone was given in clyster, but the investigations were interrupted.

(456) Hysterical Spasm of the Œsophagus in a Child.
Cattaneo (*Gazz. degli Osped.*, September 4th, 1898) reports the case of a child, aged 12, who for the last five years had suffered from apparent œsophageal stricture. The symptoms set in suddenly after swallowing a glass marble. The child ate certain solids without much trouble, and all solid food was managed more easily than liquid, and warm liquids better than cold. Constant vomiting followed the attempt to swallow. There was no history of injury likely to induce any true stricture, and a sound was passed quite easily and revealed no constriction. The child presented other facts in favour of hysteria—for example, restricted visual field, absence of conjunctival reflex, dulness of pharyngeal reflex, and a certain amount of insensibility to pain. Hyperidrosis was also noticed. The treatment carried on during the five years had availed little, so the author passed a sound, and gave the patient to understand that he had found a stricture, which would be cured in eight days if she had the sound passed regularly each day. This prediction was happily fulfilled—and, indeed, in less than eight days the patient was cured.

(457) Dysenteric Arthritis.
Remlinger (*Revue de Méd.*, September 10th, 1898) has described a series of cases of dysentery which occurred in military practice in Tunis. Several of these cases were accompanied by pain and swelling of some of the joints, more particularly of the knee. These cases were free from any rheumatic history previous to being affected with dysentery In each instance there was a large amount of effusion which required evacuation, and then it was found to be strongly fibrinous. The writer, as head of the military bacteriological department, made careful investigations of the fluid, with the view to ascertaining the possible bacteriological origin. In no instance could any organism, amœbic or otherwise be found. The author looks upon these cases as forming a sort o secondary arthritic affection occurring in the course of dysentery, and possibly due to toxic infection. There are two varieties of the condition—a dry form in which there is polyarticular pain affecting different joints with extreme rapidity, and unaccompanied by effusion; the second, which is effusive in character and much more rebellious to treatment. These forms may be combined in the same individual. The prognosis is good so far as may be gathered from the writer's cases, more particularly the dry form. When effusion occurs it is generally necessary to aspirate the joints. Antipyrin given internally allays pain.

(458) Paraplegia Brachialis Polyneuritica.
Menz (*Berl. klin. Woch.*, June 13th, 1898) relates a case in a man aged 42, who had suffered from phthisis for four years. Suddenly one night he was seized with severe pain in one arm, which rapidly became almost completely paralysed. Later the other arm gradually became affected. On admission, there were signs of phthisis at both apices. The examination of the arms revealed disease of the suprascapular, anterior thoracic subscapular, and axillary nerves. The onset of the paralysis, the intense irritation symptoms at the commencement, the disturbance of sensation still present, the rapid improvement at least in the muscles of the left upper arm, show that the disease was a peripheral neurotis. Many of the muscles still presented the reaction of degeneration. These bilateral partial paralyses of the brachial plexus are very rare. The two cases recorded by Bernhardt and Remak respectively were traumatic in character, at least in Bernhardt's case. The other two cases recorded respectively by Heyse and Krafft-Ebing, as well as the author's case, occurred in connection with pulmonary disease. Heyse's case supervened on phthisis, whereas that of Krafft-Ebing followed upon pneumonia. The case recently reported by Lesznsky also occurred in the course of acute pneumonia.

SURGERY.

(459) Implantation of Bone in the Cranium.
Valan (*Archiv. per le Scienze Mediche*, vol. xxii, No. 19) has conducted a series of experiments on the skulls of animals with the view of determining what happens to the disc of bone transplanted in the hole made by the trephine. According to one school the transplanted disc is entirely necrosed and absorbed, and its place taken by newly-formed bone; others say that the transplanted disc does not die but lives. The author takes a position midway between these two opposing schools. He finds that the implanted bones undergo necrosis in the central parts, but that there is a more or less extensive zone at the periphery which preserves its vitality, and becomes incorporated with the newly-formed bone. The extent of this peripheral area is closely related to the youth of the subject and the slenderness of the cranium—the younger the subject and the thinner the skull, the greater the peripheral area of retained vitality in the implanted bone. The rapidity with which the dead parts of the bone become absorbed and the new bone formed is closely related to the youth of the subject and to the spongi-

ness of the bone. Experiments with decalcified and with calcined bone clearly showed the greater advantage of the latter in the formation of strong bony tissue. The experiments are described in detail, and there are excellent lithographic reproductions of the histological appearances at different stages.

(460) Extirpation of Cancer of the Rectum by a Combined Abdominal and Perineal Method.

Quénu (*Rev. de Chir.*, August), in a communication made to the Société de Chirurgie of Paris, pointed out that surgical interventions in cases of cancer of the rectum may be reduced to two methods: the perineal operation for cancer, involving the lower part of the gut; and a combined abdominal and perineal method for all other forms of the disease. The perineal operation permits of the ready removal of at least 6 inches of the lower part of the rectum, but as it is held advisable to operate well beyond the limits of the disease, the author would practise the abdomino-perineal method in every case in which the cancer has spread beyond a line 4 inches above the anus. The objections to the latter and more radical method are the necessity of establishing an artificial anus in the groin, and the increased gravity of the surgical intervention, especially with regard to wound infection and hæmorrhage. Quénu states that every operation on the rectum sacrificing the sphincter leaves a false anus, and holds that infection may be prevented by careful attention to aseptic precautions, whilst free and dangerous bleeding may be avoided by preliminary ligation of both internal iliac arteries. The first stage of the abdomino-perineal operation consists in median laparotomy and transperitoneal ligation of these vessels. The sigmoid flexure is then exposed and divided, and the proximal end is stitched to the margins of an opening made in the left groin. The rectum is now separated from the surrounding pelvic structures, its upper open extremity being closed by a ligature of gauze, and the abdominal wound is sutured. The final stage consists in freeing the lower part of the rectum by the ordinary perineal incision, and in removing by this way the whole of the diseased gut. Quénu has performed this operation in two cases with complete success, and without causing the least shock.

(461) Metatarsalgia.

Jones and Turby (*Annals of Surgery*, September, 1898) in a paper on metatarsalgia, or Morton's disease, dissent from the theory of its causation as advanced by Morton, and to a very considerable extent followed by all subsequent writers. They are of opinion that clinical observations, as well as anatomical facts, accord much better with the theory of treading upon than that of pinching the branch of plantar nerve near the head of the fourth metatarsal bone. In this opinion the authors state that they are fortified by three facts: (1) The proximity to the painful area of the communicating branch of the superficial division of the internal plantar nerve; (2) the collapse of the anterior arch in most of the cases; and (3) the bulk of superincumbent body weight in walking on the toes is borne on the first and fourth toes. It is somewhat difficult to ascertain the cause when the neuralgic pain is situate about the heads of other metatarsal bones than the fourth. The explanation, it is suggested, may be this: that when the transverse arch gives way at the heads of the metatarsal bones, and tight boots continue to be worn, the under surface of the heads of the metatarsal bones are rubbed over the digital nerves in the effort made by the foot to accommodate itself during progression to its cramped position, and possibly one head is pushed out of place at the spot where the pressure is greatest, and the digital nerve is compressed between the bone and the sole of the boot. This idea is favoured by the fact that corns frequently occur over the painful spot. In some cases osteophytic outgrowths have been made out on the under surface of the metatarsal bones, and an instance is referred to of distinct enlargement of the head of the fourth metatarsal bone. In cases of severe metatarsalgia the simplest method, and by far the best, is resection of the head of the metatarsal bone. This operation, the authors hold, gives the best results, and should, in their opinion, be practised in all cases in which the pain cannot be relieved by simpler and palliative measures.

(462) Appendicitis.

Richardson and Brewster (*Boston Med. and Surg. Journ.*, July 14th, 1898) give the results of personal observations and treatment of 750 cases of appendicitis. Out of 464 acute cases, 284 were operated on, with 63 deaths, or a mortality of 21 per cent.; 149 cases recovered without operation, and 31 were moribund when first seen by the authors; 151 cases were operated on in the "interval"—that is, after acute attack—all of which recovered. The authors draw attention to the danger of converting a local into general infection of the peritoneum, which is responsible for many deaths. General infection may occur in the first twelve hours, but is commonest on the third or fourth day. Since cases of similar severity and similar local signs recover sometimes without operation, the question of operative interference on the third or fourth day should be carefully considered. Three areas of infection are described: (1) Thick pus round a perforated appendix; (2) local peritonitis adjacent to the above, with yellow or greenish pus enclosed in adhesions, not surrounding the appendix but in direct contact with it at some point; (3) clear or opaque serum in the peritoneal cavity. Cultures of the fluids will show whether they are infected or not. The course of the infection is by direct contamination, although the different fluids are apparently shut off from each other by adhesions. Operative success depends on restraining the infection within moderate limits. Harrington's method of operating by a median incision, surrounding the infected area with gauze packing, and then draining and disinfecting is recommended. Local abscesses of a week or more duration all recovered with simple drainage. Cases of appendectomy for gangrene and perforation usually recovered if the lesion was small and localised. Many cases recovered with general infection, and some after contamination during operation. In many cases where an abscess was only drained there was evidence of gangrene of the appendix, and in some subsequent operation showed the appendix still virulent. Fæcal fistula often followed removal of the appendix, but generally healed spontaneously. The question of operation is often difficult, because when the case is seen by the surgeon the conditions favourable to operation have often gone by. A patient in whom a severe attack is subsiding should not be operated on so long as symptoms improve, but increasing gravity of symptoms indicates operation. Cases seen at the beginning when local and general symptoms are severe should be explored. Statistics on this point are not convincing. Out of 180 cases treated medically 31 died, or 17 per cent., a lower mortality than after operation for acute cases; but some of the 31 might have recovered by operation. On the other hand, out of the 63 fatal cases recorded above some might have recovered under medical treatment only. The authors conclude that if all cases were seen by the surgeon on the first or second day, every fatal case would have been operated on at a time most favourable for cure. The authors quote 3 cases of acute cholecystitis which were mistaken for appendicitis. The efficacy and safety of operations in the interval between attacks have often been shown, and receive further support from the 151 cases operated on without a death.

MIDWIFERY AND DISEASES OF WOMEN.

(463) Operative Treatment of Sloughing Fibroids.

Vautrin (*Ann. de Gynéc. et d'Obstét.*, August, 1898) was consulted by a woman, aged 52, subject to a large uterine fibroid. Bleeding was severe, and œdema of the legs and albuminuria had set in. The sanious discharge became fœtid, and the patient grew cachectic. A tumour was found projecting into the vagina. It was sloughy and very friable. There was no pedicle, and it was clear, after careful search, that it was continuous with a large interstitial mass. Vautrin cut away the sphacelated part of the tumour, and then thoroughly cleaned out the vagina by antiseptic injections continued for several days. Lastly, total abdominal hysterectomy was performed after Doyen's method. The lips of the womb were first compressed with forceps so as to prevent the escape of septic material from the uterine cavity, and several compresses were pushed down

the vagina from above after it had been opened. Otherwise the operation was not specially modified. The peritoneal cavity was drained from the vagina, and the abdominal wound closed. The patient was rapidly restored to health. Vautrin admits that a pedunculated fibroid polypus requires simple removal, as has long been practised, but when a fibroid mass projecting into the uterine cavity, or even into the vagina, is quite sessile or continuous with a similar growth which is developing upwards, hysterectomy is far less dangerous than partial removal of the tumour through the vagina.

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(464) Teratoma of Abdominal Cavity.

Montgomery (*Journal of Experimental Medicine*, New York, May, 1898) relates the following case which occurred in the surgical practice of McNutt, of San Francisco. The patient was a girl, aged 12. Ten months before operation she noticed that her abdomen was swelling. Latterly the enlargement had increased rapidly—over an inch a day. The abdominal veins were dilated, and there was ascites, but no loss of flesh. At the operation, two gallons of slightly bloody ascitic fluid escaped, and a tumour was discovered and removed. It lay on the right side of the abdomen and in the peritoneal cavity; it was long, narrow, and curved, the shorter arm of the curve lapped around the caput coli, whilst the longer was attached to the outer side of the ascending colon through nearly its whole length to a point almost as high as the liver. It shelled out easily, and no other diseased tissue seemed to be left in the abdominal cavity. It weighed 2 lbs., and looked like a cerebral hemisphere. The patient recovered, but the abdomen soon began to enlarge once more, and it was opened again seven weeks after the first operation. A mass almost as large as the first was taken away, but it could not be readily enucleated as before, and it spread as a continuous layer of glairy, friable tissue over the visceral peritoneum of the lower part of the abdomen, behind the bladder, and nearly across to the left side of the abdominal cavity. The patient died on the third day. The uterus, ovaries, liver, spleen, and kidneys appeared normal, and there did not seem to be any involvement of the intestinal wall excepting that the new growth developed in its serous coat. The surface of the tumour first removed was chiefly skin. In the interior, which was full of cysts, more or less high types of tissues were found mixed up without any ascertainable order. There were tracts of bone, hyaline, fibre, and even elastic cartilage, epithelium, sometimes ciliated, and a trace of an eye represented by a tract of retinal pigment epithelium. There was plenty of skin, also nerve tissue, but nothing like striated muscular fibre. In many places were masses and strings of round or polyhedral epithelial cells forcing their way between the fibres of the stroma of the tumour as in ordinary carcinoma. In the recurrent growth, which was made up of a similar medley of tissues, the tracts of malignant degeneration were yet better marked. Montgomery gives a good summary of cases where teratomas have proved to be malignant. Out of 10 cases, the primary seat was the ovary in 7, and metastases usually took the form of ordinary sarcoma or myo-sarcoma. Of the remaining 3, 2 were intrathoracic, whilst the third was Czerny's very remarkable case of an ordinary congenital sacral tumour in a patient aged 55; it underwent malignant change after repeated traumatisms. After extirpation there was local recurrence followed by metastasis of flat epithelial cancer in the inguinal glands.

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(465) Flooding from Rupture of Placental Sinus.

Mijnlieff (*Med. Weekblad van Noord-en Zuid-Nederland*, No. 8, 1898) records a case where the patient was a 2-para, and after a normal labour became pregnant, all going on well till the eighth month. Then flooding set in when she was engaged at laundry work. The hæmorrhage subsided, and she kept her bed for four days. Three weeks later flooding again set in at night; it subsided after rest, as before. Seven days later the patient gave birth spontaneously to a living child over 5½ lbs. in weight. There was no evidence of any old-standing detachment of the placenta. A rent was, however, detected in the membranes; it ran on to the border of the placenta, where there was an old clot running right and left in the marginal sinus.

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(466) Torsion of Uterus by a Tumour.

Kreutzmann (*Centralbl. f. Gynäk.*, No. 32, 1898) operated on a woman, aged 36, for removal of an abdominal tumour. She had been married twenty years, but had never been pregnant. Menstruation was regular and painful. Abdominal swelling had been observed for several years; it had advanced slowly. A tumour was readily diagnosed; it seemed to be an ovarian cyst, and a hard mass, perfectly distinct, projected from the back of the uterus. It was noted during the examination that the uterus lay in its normal axis. At the operation an ovarian tumour was found, and removed without difficulty. There were no adhesions. The pedicle was found to spring from the left side, but the tumour lay entirely to the right; it had twisted the uterus on its long axis. On account of the fibroid which projected from the back of the uterus, that organ was removed in the usual way. The silk ligatures passing through the parametria were brought about into the vagina, and thus the peritoneum of Douglas's pouch was brought into contact with the serous coat of the bladder. Parametritis ensued, and an incision was made over Poupart's ligament and drained through the vagina. A little pus escaped. Ultimately recovery was complete. It appears that the torsion of the uterus did not cause pain or peritonitis, as is the rule in torsion of an ovarian tumour.

(467) Compound Hæmorrhage after Vaginal Hysterectomy.

Schwarz of Agram (*Centralbl. f. Gynäk.*, No. 35, 1898) relates a case of some importance where the uterus was removed for cancer; at the operation there was more bleeding than is usual, and many clamp forceps were applied. Three hours later severe hæmorrhage set in. No spouting artery could be found, clamps were applied to some suspicious spots, and the hæmorrhage ceased. Profuse hæmorrhage occurred within two hours. Abdominal section was at once undertaken, and a laceration of the left broad ligament detected and sutured. There was no more hæmorrhage for awhile; but on the seventeenth day, after a strain, profuse vaginal bleeding occurred. On examination a track of granulation on the mucous membrane of the vagina was found, and it bled very freely. Iodoform-gauze tampons were passed into the vaginal canal, without effecting their object, and the bleeding did not stop until strong stypties were used for the plug. The hæmorrhage never recurred. There was no family history of hæmophilia, but Schwarz believes that his patient was subject to that affection, as she told him that she bled freely, not only during menstruation and delivery, but also after a slight bruise or scratch. The hæmorrhage was clearly, then, from two sources, as the laceration of the broad ligament of necessity involved bleeding.

THERAPEUTICS.

(468) Lavage of the Heart and Pericardium in Purulent Pericarditis.

Chimenti (*Annal. dell' Accad. Medico-Chir. di Perugia*, vol. x., g. i) records the case of a girl, aged 19, who was admitted with purulent pericarditis following influenza ten days before. On admission the girl was almost morribund, temperature 104°, extreme dyspnœa, delirium, and threatened suffocation, etc. There was bulging of the precordial region, absence of apex beat, and dulness extending from the left axillary line to the mid-clavicular line on the right, from the second left intercostal space above down to the seventh below. An exploratory puncture was made in the seventh space with negative results, another in the fourth space showed the presence of pus. A free incision was at once (without any anæsthetic) made in this space, and as no pus came from the pleural cavity the pericardium was opened, and more than a litre of thick flocculent pus let out. The cavity was well washed with warm sterilised boracic solution, drainage maintained, and the dressings applied. During the washing the patient was seized with general tremor, and fainted, but on immediately emptying the pericardial sac she soon recovered. The after-history of this case was uneventful, and the patient left the hospital in forty-five days cured. She was seen two months later, and had kept well.

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(469) Formalin for Sweating Feet.

Gerdeck (*Rif. Med.*, November 15th,

1898) advocates the use of formalin in this malady. The sole of the foot should be painted with pure formalin three times a day; between the toes only once, and not at all on the dorsum of the foot. In addition, it is useful to pour 4 or 5 drops of formalin on to the boot and warm it; this serves to disguise the odour of sweat, and is also a good preservative of leather. The results are said to last for three or four weeks, when a repetition of the treatment is necessary. If the pure formalin is objected to, a 30 per cent. solution may be painted on more frequently. The formalin acts as a deodorant and is non-toxic. The skin becomes dry as leather, and no longer sweats. No harm was observed amongst the soldiers whose foot-sweating was stopped by this treatment.

(470) Ass's Milk.

Schlossmann (*Zeitschr. f. Physiolog. Chemie*, vol. xxiii, p. 3) has made careful analyses of ass's and human milk. The specific gravity of ass's milk is from 1031 to 1036; it contains solids 11.15 per cent., sugar 4.94 per cent., nitrogen 0.2431 per cent., fat 0.364 per cent. The great difference between human and ass's milk is shown in the following illustration: 1 g. of fat would be associated with 4.2 g. of proteid in ass's milk, whilst in human milk only 0.34 g. of proteid would be combined with the same amount of fat. Supposing an infant 3 months old required 34.86 g. of fat, which would be contained in 920 g. of breast milk, and that it had to obtain this amount from ass's milk, the child would have to consume 146 g. of proteid in order to obtain the requisite amount of fat, if human milk were substituted for the ass's only 11.96 g. of proteid would be required by the child. The daily amount of ass's milk required by an infant who is to be fed entirely upon it would be 10 litres.

PATHOLOGY.

(471) The Diphtheria Bacillus.

Kurth (*Zeits. f. Hyg. und Infect.*, September 23rd) deals with the recognition of the diphtheria bacillus. The points on which he lays stress are: (1) The result of inoculating animals; (2) the behaviour of the bacillus towards stains and towards Neisser's double stain in particular; (3) its microscopic appearance; (4) the formation of acid in grape sugar and bouillon. The first of these affords the most certain test. A pure culture which can give rise to illness in a guinea-pig when injected alone, but which is rendered harmless by the simultaneous administration of antitoxin, is without doubt a culture of the diphtheria bacillus. The converse does not hold absolutely, for the author has had three cultures which, though harmless to guinea-pigs, were, he says, undoubtedly diphtherial. Neisser's double stain is an exceedingly valuable aid to diagnosis. If the specimen takes on this stain the diagnosis is certain. The opposite, however, here again, does not always hold; for Kurth has had three cases of virulent cultures which did not stain by Neisser's method. In connection with this process, Kurth calls attention to the importance of rinsing the cover-glass in distilled water. The Bremen tap water spoils the granular staining completely. The V shape is the chief characteristic of the whole group of diphtheria bacilli and their "doppelgaenger." Cultures growing on a warm stage were watched for several hours, and occasionally a straight bacillus was observed to double up "like a penknife" to an angle of about 70 degrees. In length, the limbs of the V should be not less than five times their breadth. If they fail to observe this proportion, the bacilli are probably not those of diphtheria. The only exception to this rule which has been observed is a culture he has been growing for five years. During the last two years this has ceased to produce long rods. The formation of acid depends largely on the culture medium; not less than 0.2 per cent. of glucose should be added to the bouillon. On fresh meat bouillon the acid is merely a preliminary to an alkali formation. The two principal "doppelgaenger" of the Klebs-Loeffler are the bacillus pseudo-diphthericus alkali-faciens, and the bacillus pseudo-diphthericus acidum-faciens. Kurth occupies himself mainly with the former, which was found in 20 per cent. of diphtheria cases; this may persist during convalescence, after the Klebs-Loeffler has disappeared. It was found in numerous cases of slight, and of scarlatinal, sore throat where repeated search failed to discover the Klebs-Loeffler. Kurth mentions an interesting group of cases: Anna and Minna H. had measles with sore throat, from both of which the bacillus pseudo-diphthericus alkali-faciens was obtained, but no true diphtheria bacilli; antitoxin was administered to both. A fortnight later a brother William, and Minna for the second time, were brought to the hospital with sore throats. From William's throat the true diphtheria bacillus was obtained; from Minna's the pseudo-diphthericus acidum-faciens. As to the bacilli resembling those of diphtheria, which are found in the conjunctiva, Kurth is of opinion that we do not know enough about them to enable us to speak definitely—a remark which might be applied with justice to the whole group of bacilli which resemble the Klebs-Loeffler.

(472) Syringomyelia and Sarcomatosis of the Spinal Cord.

Orlowski (*Arch. de Neurol.*, September, 1898) records a case which throws light on disputed points in the etiology of syringomyelia. The patient was a girl, aged 15, who died after a year's illness characterised by slowly-ascending paralysis and anæsthesia; the loss of sensation was rather greater as regards pain than other feelings, but the typical symptoms of syringomyelia were absent. There was very little pain. At the *post-mortem* examination the spinal canal was found to contain throughout its whole length a sarcomatous new growth which appeared to have taken origin in the spinal pia mater; it had destroyed the whole of the lower part of the cord, and pierced the vertebral column. At the region of the ninth dorsal nerve root the new growth had taken two directions. The principal part extended into the subdural space and invaded the cord in the form of a muff, at places penetrating into its substance; it extended up as far as the decussation of the pyramids, and its thickness was greatest at the lower part of the cervical enlargement. The other route followed by the sarcoma was the central portion of the cord, which it occupied as a well-defined hollow column filling nearly the whole of the dorsal region; the cavity was bounded by walls of connective tissue. The central substance of the cord at the level of the first cervical roots presented another excavation, but independent of the neoplasm; this cavity began in a gliosis visible in the posterior column throughout the whole cervical region. The two cavities were not lined with epithelium, and bore no relation to the central canal, which was, however, anomalous, being in several places multiple. In addition to these lesions, there was a marked venous hyperæmia of the cord, together with an œdema of the nerve tissue attaining its maximum in the cervical region just below the upper cavity. The bulb was extremely soft, too diffluent in fact to allow sections to be cut: there were some metastatic deposits in the cerebral and cerebellar pia mater. The author regards the growth as a highly malignant endothelioma; a complete list of previous cases (eleven) is given. The chief pathological interest centres in the genesis of the cavities. The inferior one was surrounded by the sarcoma and lined by connective tissue; there was no degeneration of the elements of the new growth, so that if the cavity arose in this way it must have been preceded by the formation of connective tissue. But, on the other hand, the cervical cavity was in no way connected with the sarcoma; it arose in a gliomatous tissue, probably developed from the ordinary neuroglia of the posterior columns. Neither of the cavities was lined with columnar epithelium, and the author hence opposes Schlesinger's view that such cavities always arise from the central canal. With regard to the latter, however, he is able to confirm the formation of sinuosities giving in some places the appearance of six or seven canals lined with well-preserved cylindrical epithelium. The two phenomena of cavity formation were here found side by side and parallel, and the conception that they represent successive stages of the same process cannot be correct. The author considers the relation between the two to be explicable on Kronthal and Langhaus's hypothesis that cavity formation in syringomyelia results from venous and lymphatic stasis. The sarcomatous growth would thus have caused the stasis, and this in turn have given rise to gliosis and eventual syringomyelia.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(473) The Psychological Weight Curve in Phthisis.

Wolff-Immermann (*Münch. med. Woch.*, June 21st, 1898) draws attention to the importance of recognising slight alterations of the body weight in cases of phthisis. He gives the results of some of his observations in the hospital at Reiboldsgrün. At first the patient's clothes are weighed independently, and the exact weight is marked on a board beside his bed. On all future occasions the patient must wear the same clothes, so that the amount may be subtracted from the general body weight. It is also important to weigh the patients always at the same time of the day, and to note how much food is being consumed. Cases occur in which a definite increase or diminution in weight takes place, and where the patient's appetite and general condition remain the same. Immermann has found that these fluctuations in weight are, in the majority of cases, to be attributed to psychical causes. Anything producing annoyance or excitement is sufficient to cause a definite lowering of the body weight for a day or two, without interfering with the satisfactory progress of the case. Curve charts are given which demonstrate these points. The increase of weight which accompanies a change of treatment is also very noticeable. At the commencement of the milk cure there is a steady rise in weight, which however does not continue after the first two or three weeks. A similar rise in weight is seen to commence with the administration of iron. The author suggests that the element of hope accorded to the patient by an alteration of treatment is sufficient to explain the rather rapid rise of body weight which takes place at the commencement of the new treatment. Immermann considers that the weight curve in phthisis shows the progress of convalescence most surely, and in this respect resembles the temperature curve in acute infectious diseases.

(474) Typhoid Fever and Insanity.

Paris (*Archives de Neurol.*, August, 1898) records the case of a woman, aged 44 years, who for several years had been insane with ideas of persecution and of grandeur. An attack of typhoid fever occurred, and ran an uncomplicated course, and as it subsided the insane ideas became less prominent and less fixed. A relapse of typhoid followed, with very severe symptoms, and on recovery the patient seemed perfectly sane. The case had always been regarded as incurable, and the disappearance of mental symptoms was thought at first to be only temporary; the patient was accordingly kept in the asylum some months longer; but now, after three years, there has been no return of insanity.—Hyvert (*ibid.*) records three cases of insanity in which typhoid fever occurred. In two of these an improvement in the mental condition followed. One, a woman, aged 29, with acute mania of two months' duration, completely recovered from her mental symptoms as the typhoid subsided; the other, also a woman aged 20, weak-minded, with hallucinations and insane ideas, had a severe attack of enteric with rigors and broncho-pneumonia; when these passed off the mental condition was found to be much improved, and the patient left the asylum practically cured.

(475) Pericardial Tuberculosis.

Meltzer (*Münch. med. Woch.*, August 23rd, 1898) relates a remarkable case occurring in a mental patient, aged 58. He had been losing weight for some months past, but without any obvious cause. He was suddenly seized with symptoms of cardiac failure, and died in six hours. The anterior margin of the lungs were separated from each other by a mass of loose, dullish-white, tissue due to a chronic mediastinitis. The pericardium was adherent, but its layers could be separated. There was no fluid present, but there were some fifty dense masses of tissue arising in the pericardium itself, and varying in size from a pea to a cherry. To the naked eye they resembled gummata or masses of malignant disease. Microscopically they were found to be made up of tuberculous tissue, in which were present a few tubercle bacilli. The mediastinal glands were tuberculous, and there was an old tuberculous lesion in the left upper lobe. The other organs were healthy, presenting no signs of tuberculosis. Birch-Hirschfeld described the specimen as a rare example of pure *perlsucht* of the pericardium in the human subject. Meltzer says that he has not been able to find a similar case recorded. Schüppel, in speaking of the difference between tuberculosis in man and animals, says that the pearl-like bodies in the serous membranes in animals rarely assume the miliary form, but usually consist of masses of the size of a pea up to that of a potato, and that before they caseate or calcify they look more like fibrous tumours. Bollinger is of opinion that perlsucht is nothing else than a modification of the tuberculosis brought about by the chronicity of the infection in cattle. The author draws attention to the fact that tuberculosis pursues a very chronic course in the institution in which the above-named patient died, but that there had been no other instance of its assuming this *perlsucht* form.

(476) Gastric Hyperæsthesia.

A. Pick (*Wien. med. Woch.*, August 20th) understands under this term an increased sensitiveness of the gastric mucous membrane to chemical, mechanical, and thermal stimuli, or to any one of them. Thus a patient with good appetite has pain when certain articles of food or drink are taken, and this is not relieved until such food or drink has disappeared from the stomach. The more empty the stomach the more certainly is pain produced by these articles. The stomach is most often hypersensitive to sugar, fat, and carbohydrates. There is in these cases no pain when the stomach is empty. Of thermal stimuli the stomach is more often sensitive to cold. The abnormal sensations may vary, amounting sometimes to severe pain, and even vomiting may occur. It is characteristic that fluids are as badly borne as solids or even worse. As to chemical stimuli, sometimes acids cannot be taken, as they produce so-called heartburn or even cramp-like pain in the stomach region. Heartburn occurring a couple of hours after food is usually due to hyperchlorhydria. Pick is convinced of the reality of this acid hyperæsthesia. Sometimes along with it there are typical signs of hypersecretion. Past gastric affections, over-eating, psychical influences, mental overwork, hysteria, neurasthenia, influenza are among the causes of gastric hyperæsthesia. Pain, eructation, heartburn, and vomiting are the chief symptoms. The pain is usually diffuse and disappears when vomiting supervenes; it may be lessened by faradism. The vomiting is characteristic in so much that fluids are more often vomited than solids. Sometimes vertigo and faintness are complained of. The diagnosis is based upon the healthy state of the gastric juick and the occurrence of periods free from symptoms. The diagnosis from gastric ulcer may be difficult. The treatment must be directed to the neurosis on which the disease depends. The feeding is important. The faradic current is useful. The treatment is largely suggestive. Medicinal agents occupy a secondary place; cocaine and menthol are the most efficient. The use of alkalies is only symptomatic treatment, and of these magnesia usta is the best for allaying the heartburn.

(477) Addison's Disease in Children.

Addison's disease has generally been considered rare in childhood. Dezirot has, however, collected a series of observations (*Journ. de Méd.*, August 28th, 1898) showing that it is not so uncommon as is supposed. He has collected records of 48 cases, the youngest being 7 days old, and the age of the eldest included in the series was 14½. Almost invariably the condition is due to tubercle. The earlier symptoms of the condition are extremely vague, consisting either in extreme weakness which does not, however, coincide with any loss of weight or anæmia. In other cases gastro-intestinal symptoms, such as nausea, vomiting, diarrhœa, constitute the earliest manifestations, and of all the cases collected by the author these symptoms were usually present. On the other hand, pain and pigmentation are particularly uncommon in the child. Convulsive seizures are usually met with in the infantile form of Addison's disease. Intermissions are sometimes observed, and as a rule the course of the disease is more rapid than

in adult years. The author has obtained some fair results with suprarenal medication.

SURGERY.

(478) Diphtheria Noma.

Freymuth and Petruschky (*Deut. med. Woch.*, September 22nd, 1898) relate a second case of this disease. A boy, aged 8, was admitted under Freymuth in the fifth week of enteric fever. He was drowsy and heavy, and the rectal temperature was 40.9° C. The serum test gave a positive reaction. About a week later there was stomatitis, with blood-stained and ill-smelling saliva. The mucous membrane about one of the upper teeth became discoloured, and a few days later the corresponding part of the cheek was involved. Diphtheria bacilli were found by Petruschky. Fifteen hundred immunity units of diphtheria serum were immediately injected, and another 1,000 on each of the following six days. Two similar injections were again given four and seven days later respectively, so that the child received in all 9,500 units. The process extended at first, but then came to a standstill. The right cheek, the right half of the lips, and the submaxillary region were converted into a hard and swollen mass. The left side remained unaffected. At one time the child appeared to be dying, the pulse being 160 and irregular, and the temperature 40.2° C. A line of demarcation then appeared, but the recovery was further delayed by two abscesses in the subcutaneous tissue of the trunk. A plastic operation would be necessary. The serum treatment was at least harmless; in fact, it appeared to assist in the recovery. If used earlier, it might have arrested the disease sooner. Petruschky remarks that typhoid bacilli were here excreted in large quantities in the urine. Besides diphtheria bacilli in the secretion from the mouth there were numerous fine spirilla and cocci. By culture the staphylococcus aureus, Loeffler's bacillus, and the pseudo-bacillus were found. The virulence of the diphtheria bacillus was here slight to guinea-pigs, but the authors do not look upon this as against its being the genuine bacillus. The severity of the case was obvious by the separation of two sequestra from the jaw.

(479) Severance of Several Toes: with Restoration.

John Cooke Laurens (*New York Med. Journ.*, August) reports the case of a coloured man who had been using a heavy axe, and had cut through the heavy shoe he wore, and severed the metatarsal bone of the first toe just through the head, and completely disarticulating the toe. The second toe was off entirely just in front of the metatarsal joint, and the third was cut and broken, but not off. Owing to the distance from the house he had to ride horseback more than a mile, and this, with the slowness of the messenger, caused a delay of four hours before the doctor reached him. The shoe and sock had not been removed, and the foot was elevated. The author cut the shoe away with the sock, and found that practically all hæmorrhage had ceased, owing to the clots. When he examined the injury the second toe fell away in his hand, and the first toe was discovered to be hanging by a mere string of skin, every muscle and vessel being cut. As in all cabins, the room was small and ill-suited for hospital purposes, but it was decided to try the forlorn hope and replace both toes. The site of injury was washed in warm water and was found very dirty. No hæmorrhage other than a slight oozing being present, the hot water was quite sufficient to stop it. The toes being quite warm from the mass of clot which filled the shoe, no time was lost in placing them in position and suturing the approximated edges, the needle being inserted deep enough to include the tendon on each toe. Interrupted sutures were used, as the foot was very rough and the wound in an awkward place for continuous work. A dressing of iodoform and boric acid, equal parts, was used, with plain gauze, and the foot bandaged to a splint extending beyond both heel and toes. The iodoform was discontinued after the first day, as it inflamed the part too much, and plain boric acid was substituted. In spite of the disadvantages of lack of attention, care, etc., union by first intention occurred over more than half the injury, and there was but little pus where granulation took place. On the third day sensation was present in both toes, and in a week the patient could move them a little on the splint. The stitches were removed on the tenth day, and a good recovery was made. In July the toes were reported to be strong and movable; sensibility was perfect, and, save for a little tenderness, the man said his foot was as good as ever.

(480) Deep Œsophageal Diverticula.

Reitzenstein, of Boas's clinic (*Münch. Med. Woch.*, March 22nd, 1898), says that œsophageal dilatations are divided into diffuse and circumscribed—the former are mostly due to an anatomical narrowing. The primary or so-called idiopathic dilatations are distinguished with great difficulty from the secondary. The circumscribed dilatations are either due to traction or to pressure from within. The former are situated opposite the bifurcation of the trachea and give rise to no symptoms, whereas the former are placed at the junction of the pharynx and œsophagus, where the tube is at its narrowest. Besides these typical pressure diverticula, large sacculated diverticula in the lower part of the œsophagus occur, but only 5 such cases have been recorded in the last five years. The author then gives details of such a case in a woman, aged 50, which was very thoroughly examined by the following methods: (1) A stomach tube was passed into the diverticulum and into the stomach, and the fluids from both chemically and microscopically examined; (2) two tubes were passed at the same time, one into the diverticulum, and the other into the stomach; (3) Einhorn's electrical apparatus was used, and finally a photograph by the Roentgen rays was obtained after the dilatation had been filled with a solution containing bismuth. The conclusions were drawn that there were two cavities, the one consisting of the stomach, and the other of a diverticulum in the œsophagus. An organic narrowing could be excluded, and thus there remained a primary dilatation of the œsophagus or a deep-seated, large diverticulum, or the two conditions combined. The author concludes that there was a diverticulum which would hold 100 to 300 c.cm., and also a diffuse dilatation of the œsophagus. The shadow obtained in the Roentgen photograph measured 10 cm. broad and 10 cm. high, and bulged to the right. The treatment consisted in washing out the œsophagus daily in the horizontal position. Food was taken by the patient while she was lying on her back. Considerable improvement occurred, and she gained 12 lbs. in weight in five weeks.

(481) The Curability of Cancer of the Breast.

Warren (*Boston Med. and Surg. Jour.*, August 25th, 1898) publishes a list of 72 cases of cancer of the breast on which he has operated in the course of the last fifteen years. Of the 72 patients 26 were alive in June last and 38 have died. Of the 26 living patients there are 3 who are now suffering from recurrence of the disease and 4 who have had a recurrence but remained well up to the time the paper was prepared. Taking the three years' limit as the gauge of success, the author finds 17 such cases in his list. Of these patients 2 are dead, 1 dying ten years after the operation of apoplexy, the other after an interval of six years of sporadic cholera. In 3 instances operations have been performed for recurrence, and the patients are now alive and well, 1 three years, 1 four years, and the third ten years after the last operation. Of the remaining 12 cases the operation was performed in 3 over three years ago, in 4 over four years ago, in 2 over five years ago, in 1 over nine years ago, in 1 eleven years ago, and in 1 over twelve years ago. It is evident, the author states, that high percentages of cures, or of good results persisting after an interval of three years, can be obtained only when cases are selected with some care. Before the percentages of success can be permanently placed so high that surgeons may hope to save over one-half of their cases, medical men must be educated up to that point that they will recommend an early operation and not wait until the case is hopeless before they send their patient to consult a specialist.

MIDWIFERY AND DISEASES OF WOMEN.

(482) The Ovaries in Mollities Ossium.

Labusquière (*Ann. de Gynéc. et d'Obstét.*, July, 1898), admitting on well-known evidence the beneficial effects of removal of the ovaries in checking the

advance of mollities, has examined numerous ovaries from patients subject to that disease. The theory advanced by Fehling to explain the phenomenon of mollities is that the disorder consists of the trophoneurosis of the osseous system depending on a disease of the ovary: as the marrow plays an important part in maintaining the normal composition of the blood, the trophoneurosis causes a general disturbance of its composition. However, as in the case of the ovary in association with uterine myoma, the results of these researches are admittedly negative. They do not, Labusquière is bound to admit, explain or demonstrate the ovarian lesion which causes this trophic neurosis. There are marked changes in the vessels in the ovary, but these changes can be explained by the age of the patients, the influence of previous pregnancies, and vascular stasis. Malnutrition accounts for œdema and subsequent sclerosis and atrophy of the follicles. The abundance of corpora fibrosa was striking, and might lead a hasty observer to false conclusions. These white bodies, however, usually consist of vessels involved in hyaline changes and diseased intervascular connective tissue, and they develop whenever any kind of disease sets up these changes in the vessels. The specific change in the ovary of mollities remains to be found.

(483) Vaginal Hysterectomy for Cancer.

Lamphear, of St. Louis (*Amer. Journ. Surg. and Gynæc.*, September, 1898) reports 109 cases where he has performed this operation. Seven survived over six years, 13 over five, 12 over three, recurrence occurring within five years, whilst 15 died from or soon after operation. Sixteen recurrences were correctly ascertained: 1 died after three years, 2 were still living (with recurrence after three years), 7 died within three years, 6 were still leaving, with recurrence within three years from the operation. In 10 more recurrence was suspected. One died more than five years after operation from disease unassociated with the cancer, which had not recurred; 3 died under the same condition between three and five years. Thirty-two were still in "danger period," or had been lost sight of. More concisely Lamphear tabulates the 109 cases thus: (1) Apparently recovered, 36; (2) with recurrences of cancer, 26; (3) still doubtful, 32. He admits that five years is not an absolute limit of danger. Lester Hall notes a case of recurrence more than five years after hysterectomy. Lamphear considers that radical operation is indicated under the following circumstances: (1) Hysterectomy should be performed as soon as a diagnosis of carcinoma of the cervix is made, provided the disease is unquestionably not too far advanced for any possible benefit at the time of first examination. (2) Whenever there is a fungus growth upon the cervix, especially in a patient near the menopause, which persists in spite of treatment, even though there is no ulceration and but little tendency to spread, radical operation should be performed. It is probably the papillary form of carcinoma cervicis (cauliflower cancer), and there is always involvment of the mucous membrane of the body, so that high amputation will not cure. (3) When there are one or more nodules in the mucous membrane of the cervix, which soon ulcerate and destroy the mucosa, operation should not be delayed. Such trouble is almost invariably the nodular variety of carcinoma of the cervix. (4) When there is an infiltrate in or beneath the cervical mucous membrane, just within the os, which soon breaks down and destroys the cervix by erosion, hysterectomy is advisable instead of the former high amputation. The condition is that variety known as cancer of the cervical mucous membrane ("eating cancer"), and may have progressed far before the os shows any marked change when viewed through the speculum. (5) When there is evidence of the existence of cancer of the parenchyma of the uterus (usually fibro-sarcoma), even if the cervix seems to be perfectly normal, immediate removal is imperative. Such cases are not rare. I have removed several such wombs. (6) Vaginal hysterectomy is necessary whenever a glandular endometritis becomes inveterate, showing a tendency to degenerate into a typical malignant adenoma—that is, adenocarcinoma (glandular carcinoma or primary cancer of the mucous membrane of the uterine body)—at the menopause, as indicated by (*a*) the appearance of irregular hæmorrhages, (*b*) the presence of a serous, reddish, odorous discharge, and (*c*) paroxysmal pain. (7) In all cases where there is even a strong suspicion of malignant disease the uterus should be removed. In early operation lies safety. I have removed a number of wombs on the mere suspicion of cancer, and the microscope has confirmed the suspicion in all but one case. I can quite agree with Pozzi that "it may even happen that as a last resort against persistent hæmorrhage alone we are obliged to perform vaginal hysterectomy with only the diagnosis of probable cancer."

(484) Cause of Pain as a Symptom of Twisted Pedicle.

Cerné (*Normandie Medicale*, August, 1898) recently exhibited at Rouen a small cyst, hardly as large as a moderate-sized apple, which had been the cause of severe pelvic pain for three months, so that hydrosalpinx rather than ovarian tumour was suspected. Yet there were no adhesions and no sign of peritonitis, the cyst was unilocular and apparently parovarian. A very definite lesion was discovered, the pedicle being twisted three turns and a half. The parts on the distal side of the seat of torsion were infiltrated with blood, and hæmorrhage had occurred into the cavity of the cyst. This case, like many others in the experience of those who have performed many ovariotomies, shows that the pain, often so marked in torsion of the pedicle, is directly due to the torsion, and is situated in the twisted structure. It is not caused by the movement of the cyst irritating the peritoneum.

(485) Large Abscess of Ovary after Pneumonia.

Dirner (*Centralblatt f. Gynäk.*, No. 32, 1898) reports the removal of an ovarian tumour, as big as the fœtal head, from a multiparous woman aged 32. It had developed during convalescence from double pneumonia. Thus puerperal infection was out of the question, whilst there was no evidence of the existence of the bacillus coli communis.

(486) Dangers of Ovarian Cystoma in Pregnancy.

Schwarz (*Centralbl. f. Gynäk.*, No. 32, 1898) reports that a woman with a dermoid cyst was taken with labour pains at the sixth month, but as the tumour was impacted in the pelvis and could not be reduced and flooding had set in, the fœtus was extracted. During version the cyst burst, and the patient died on the third day of peritonitis. Tenesváry observed that the result once more impresses upon us the necessity of ovariotomy in such a case, delivery to be effected afterwards.

THERAPEUTICS.

(487) Fleiner's Treatment of Hyperchlorhydria.

Olivetti (*Therapeut. Monatshefte*, April, 1898) has investigated the results obtained by Fleiner's method of treating hyperchlorhydria. This consists in giving large doses of subnitrate of bismuth (2½ to 5 drachms) suspended in water through the œsophageal tube, when the stomach is empty before breakfast. The whole course lasts 22 to 25 days, the total quantity of bismuth used being as much as 10 oz. The writer's cases included cases of hyperchlorhydria with evident ulceration, as well as some where ulceration was presumably absent, and his investigations show that: (1) The treatment is well borne and leads to a distinct subjective improvement, which lasts some time after discontinuing the treatment, (2) The improvement is not permanent, but lasts longer in cases accompanied by ulceration. (3) The bismuth has no distinct effect on the gastric secretion or movements. The secretion of HCl in hyperchlorhydria is also influenced but slightly, and the small decrease is not enough to account for the improvement in the other symptoms, such as pain and vomiting. These results are not in accord with those of Fleiner himself, who in one case observed a gradual reduction of HCl from 4 to 1 per 1,000, in another form 3 to 0.98, and in a third from 2.9 to the normal. To explain the disappearance of the painful symptoms and their speedy reappearance when the bismuth has passed into the intestine, Olivetti accepts Fleiner's theory that the bismuth forms a protective film on the surface of the mucous

membrane, so that the abnormally acid gastric juice no longer comes into direct contact with it.

(488) Treatment of Laryngospasm.

Hugel (*Münch. med. Woch.*, No. 44, 1898) mentions the experiments of Krause as being one of the latest additions to our knowledge of the etiology of laryngospasm. Krause found that stimulation of the cortex in the neighbourhood of the prefrontal gyrus caused spasm of the glottis. The vasomotor centre was stimulated almost at the same time; this causes anæmia of the brain, with a resulting general convulsion. Experimental evidence, however, is often of little clinical value. The author has cured laryngospasm in 6 cases; the ages ranged from 2 to 13 months. The spasm was caused by an enlarged and elongated uvula; astringent remedies had no effect whatever on the size of the uvula. The cessation of spasm and convulsions was very marked after the uvula had been cut. Hugel believes that an elongated uvula is often overlooked in practice; and he lays stress on the fact that a little local treatment will often obviate the necessity of giving internal remedies.

(489) The Hydrochlorides of Hydrastinine and of Cotarnine.

Ronsse (*Arch. Internat. de Pharmacodynamie*, vol. v, fasc. 1 and 2, 1898) has made a very thorough comparative study of the action of the hydrochlorides of hydrastinine and cotarnine ("stypticine"). Chemically, these two bodies are very closely allied, cotarnine being methoxylhydrastinine. The writer gives the following indications for their respective use: (1) Both drugs are useful as hæmostatics in uterine affections complicated by hæmorrhage where contraction of the uterus is indispensable (*post-partum* hæmorrhage, etc.). Still, hydrastinine ought to be preferred, since its action is not only oxytocic but also vasoconstrictor, thus uniting all the conditions favourable to the arrest of hæmorrhage. (2) Stypticine has a tonic action on the heart, lasting for some time, while hydrastinine is a cardiac stimulant, whose effect soon passes off. The former is, therefore, preferable in all chronic uterine disorders depending on vascular disturbances. (3) On the other hand, hydrastinine acts more rapidly and energetically than stypticine, and may often replace ether and camphor as a stimulant. It should be chosen in cases of acute anæmia from hæmorrhage where life may depend on the rapidity of action of the remedies employed.

PATHOLOGY.

(490) The Pathology of Gonorrhœa.

Lelenesz (*Vratch*, No. 4, 1898) finds that gonococci have a most destructive action on cellular protoplasm, causing it to degenerate and liquefy, leaving only a feeble staining, vacuolised nucleus. As similar changes have been observed both in cells containing gonococci and in those in cells free from them, this destructive action must be due to some toxins produced by the gonococci. The latter chiefly invade epithelial cells and leucocytes. The presence of gonococci in the protoplasm of white blood corpuscles can partly be accounted for by the theory of phagocytosis; but that this is not the sole explanation is evident from the fact that the germs of gonorrhœa have been found to multiply inside these corpuscles, and to destroy its protoplasm. It was formerly supposed that gonococci only invaded columnar epithelium, and did not penetrate deeper than the submucous layer. It is now proved that they may invade squamous epithelium and connective tissue, and even penetrate between the bundles of muscular fibres. Thus gonococci have been found in the urethra of both sexes, in the vagina and cervical secretion, in the body of the uterus, in the pus of pyosalpinx, in the bladder and kidneys, in the cavity of the mouth and nose, in the ear, in the joints, in endocardial vegetations, and in the blood. Gonorrhœa is a general infectious disease, and gives rise to certain general symptoms. Such are a rise of temperature and an increase in the number of leucocytes in the blood during the acute stage, and a decrease in the number of red corpuscles during the chronic stage. There is also observed a fall in the weight of the body. In addition to these general symptoms any system in the body may suffer. Besides the swelling of the lymphatic glands, chiefly in the genital region, the spleen has been found enlarged in a number of cases. If the gonococci gain access to the blood they may cause organic diseases of the heart, such as pericarditis, myocarditis, and endocarditis, or functional disorders like tachycardia, palpitation, and angina pectoris. Inflammation of the aorta, inflammation of the veins, infarcts in the spleen, peliosis rheumatica, and epistaxis are other disturbances of the circulatory system which have been observed. The respiratory system is sometimes affected, and then we find pleurodynia, or even pleurisy, with effusion containing gonococci. In the alimentary system we may get stomatitis, loss of appetite, all kinds of gastrointestinal troubles accompanied by jaundice and fever, and sometimes resembling typhoid. Albuminuria, gonorrhœal pyelitis, and gonorrhœal nephritis have been met with, but their pathology has not been sufficiently investigated. The nervous system suffers early, and the following affections have been observed: (1) Changes in the sensory nerves causing anæsthesia, hyperæsthesia, paræsthesia, and pains in the nerves, in the skin, in joints, in muscles, and in internal organs; (2) changes in the vasomotor nerves causing hyperæmia, anæmia, paralysis of vessels, and dermographism; (3) changes in the secretory nerves causing increased or diminished sweating, local sweating, an increase in the flow of mucus from the urethra, etc.; (4) changes in the trophic nerves causing some forms of skin disease, atrophy of the testicle, and muscular atrophy; (5) changes in the motor nerves, causing paresis, paralyses, and twitchings; (6) changes in the skin reflexes and tendon reflexes. Gonorrhœal affections of the central nervous system gives rise to a variety of symptoms, such as asthenic neuropsychosis, neurasthenia, hemiplegic phenomena, etc. Lastly, the skin of gonorrhœal subjects is often affected with erythema multiforme, dermatitis, hæmorrhagic purpura, urticaria, horny excrescences, local ichthyosis, keratosis of the soles of feet, alopecia areata, and chloasma.

(491) Experimental Tabes.

Edinger and Helbing (Reprint from *Trans.* of 16th Congress of Internal Medicine) report the results of their attempts at the experimental production of tabes, or rather of degeneration of the posterior columns of the cord. These were conducted upon rats, and consisted at first merely in the induction of fatigue by excessive muscular exercise; this was effected either by the struggles of the animals when hung up by their tails or by putting them in a revolving cage. It was found that a short period of such overstrain did not affect the cord, but after a considerable time (79 days) degenerative changes were found in the posterior columns, most marked in the lumbar region and diminishing upwards. When, however, the animal had previously been rendered anæmic by means of pyrodin, any period over 8 days of this muscular exertion produced profound degeneration. (It should be noted that pyrodin alone, which leads to marked anæmia with great swelling of the spleen, does not affect the cord.) The parts involved were the posterior roots, a large portion of the posterior columns, and the root fibres entering the posterior horns. There was in severe cases implication of the anterolateral tracts, and occasionally of some of the intramedullary fibres of the anterior roots. Thy degeneration was most intense in the lumbar region, the external band of the posterior columns always suffering more than any other part; in the cervical cord the posteromedian column was but little affected. The "ventral field" of the posterior column escaped, as is the cases in tabes; in the rat it is probably a direct corticospinal tract, while in man it is of purely intramedullary origin. No lesions, degenerative or otherwise, were ever found in the brain. These conditions were constant in 13 rats, ranging only in intensity with the duration of the strain. The authors append the following conclusions to their important paper: (1) Even in normal animals abnormally powerful exertion can produce disease of the posterior columns; (2) it is impossible to introduce a predisposing factor (for example, anæmia) under the influence of which less prolonged exertion will lead to the same effect; (3) the affection produced resembles both in localisation and nature (primary atrophy of the nerve fibres) the diseases of the posterior columns known to occur in man.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(492) Stokes-Adams Disease.

PETRUCCI (*Gazz. degli Ospedali*, September 11th, 1898) records a case of this condition. The patient was a country labourer, aged 52, whose family history was negative. At 17 years of age he had suffered from slight malarial fever. In 1890 he suffered from influenza for about a week: three years afterwards he felt, on returning from work one day, a sensation of *malaise* and extreme prostration, with a feeling of constriction of the chest and dimness of vision. These symptoms were followed by marked frontal sweating. The following day he returned to work, still feeling somewhat weak. The following year he suddenly suffered from severe attacks of syncope, with feeling of oppression. For some time he was liable to similar attacks, together with vertigo, and some vomiting. On being seen by the author he was found to have a pulse-rate of 14 in a minute, with some slight irregularity, and even occasional intermittence on the occurrence of which the patient suddenly became pale, and seemed about to faint. On physical examination nothing else of a definite nature was revealed, except some slight pulmonary emphysema. The cardiac apex was in the fifth space, and the sounds somewhat indistinct though free from murmurs. The urine showed nothing abnormal, except that chlorides seemed to be deficient. While under observation the average pulse-rate showed the minimum to be 14 beats, the maximum 24 per minute. Some months afterwards the patient died suddenly, apparently from syncope. On *post-mortem* examination (made under difficulties) a considerable degree of atheroma of the right carotids and coronary arteries was present. The myocardium was pale, and showed foci of chronic myocarditis. The valves were all competent, but showed patches of atheroma on the cusps. The medulla could not be examined. The diagnosis made by the writer was Stokes-Adams disease, a condition to which attention has been drawn more particularly of late years. Its symptoms consist chiefly in those described above. The writer has collected details of the majority of cases described up to the present. It would seem from these that there is a difference of opinion as to the lesions present. According to some, the prevailing condition is fatty degeneration of the myocardium accompanied more or less by atheromatous change in the coronary arteries, and general arterio-sclerosis. On the other hand, some are of opinion that the disease is a neurosis, or possibly due to a disease of the vagus, either nuclear or peripheral. It has even been supposed that the two conditions may be combined, that is to say, that the vascular tissue causes certain nutritive alterations in the medulla, especially the important centres in the floor of the fourth ventricle. The duration of the disease is uncertain, apparently in some instances a few weeks, in others as long as a year. The writer quotes even a lower pulse-rate than that recorded by himself. As to treatment there seems little that can be done. Injections of caffeine, strychnine, and other cardiac tonics have been tried by the writer. In all cases careful dieting is of great importance.

(493) Myasthenia.

UNVERRICHT (*Centralbl. f. inn. Med.*, April 9th, 1898) first gives details of two cases occurring in patients, aged respectively 24 and 26 years. The absence of muscular wasting, and of disturbance of sensation or reflex action, the variability in the symptoms within short periods of time show it to be a disease of at present unknown morbid anatomy. In the first case, paretic symptoms were observed, but they varied so much that the disease could not be said to be a genuine paralysis, but an abnormal fatigue in the muscles. Erb first described this affection, and because ptosis and weakness of the muscles of mastication and of the neck were most marked, he looked upon it as a disease of bulbar symptom complex. Since then cases have been recorded by many observers. Young individuals are mostly affected. Occasionally it comes on acutely, but at other times months and even years pass before the disease attains its height. Abnormal sensations, paræsthesia, and pains are sometimes observed, but they are never very prominent. The cause is mostly unknown. The main symptom consists in the remarkable proneness of the voluntary muscles to fatigue. Although the muscles innervated from the medulla are mostly first and chiefly involved, this is not always the case. The disease has thus no definite localisation. Several repetitions of the same voluntary effort leads to an almost paralytic weakness. Diplopia results from involvement of the eye muscles, and Eulenburg once observed intermitting ophthalmoplegia. Deglutition disturbances may under certain conditions even cause death. In Strümpell's case there were attacks of difficulty in breathing, general restlessness, and marked cyanosis. Sometimes a lasting paralysis supervenes, and sometimes there may be jawdrop from weakness of the masseters. The face muscles may be almost expressionless. The disease may be taken for hysteria. Jolly pointed out a characteristic change in the electric reactions in the fact that the fatigue noticed after voluntary effort is also present after electrical stimulation. The variation in the symptoms leads to the supposition that this disease is functional in character, and the minutest examination has discovered no lesion after death. Possibly it may be due to accumulation of products causing muscular fatigue. Treatment has not produced any marked effects. Neither strychnine, arsenic, nervine tonics, electricity, nor hydrotherapy have proved reliable. Strümpell proposed the term "asthenic bulbar palsy," Jolly "myasthenia gravis pseudo-paralytica," but Unverricht prefers the name of "myasthenia" alone.

(494) Dropfoot following Alcoholic Paralysis.

FERNAND GAUCHER draws attention (*Thèse de Paris*, 1898) to the great importance of preventing permanent deformity in cases of alcoholic paralysis. The writer points out that in the large majority of cases permanent dropfoot and other deformities are due to the want of sufficient care on the part of the medical attendant. In all cases of alcoholic paralysis the antero-external group of muscles of the leg are early affected, allowing of dropfoot with internal rotation; consequently, if the patient is lying in bed, pressure of the bed coverings tends to aggravate this pernicious position. It is important therefore to correct this deformity by means of suitable apparatus. This, on the other hand, requires considerable caution as the low trophic condition of the tissues is liable to result in pressure lesions, should any of the different forms of rigid apparatus be employed. The writer therefore suggests using a simple wooden stand thickly padded so as to maintain the foot at right angles to the leg. The next point is to obviate the pressure on the limbs by using a cradle. During the earlier part of the disease this should suffice, but so soon as the patient is able to bear it, passive movements and massage should be regularly employed, with a view to keeping the mobility of the joints in a healthy condition, and as quickly as possible to promote the nutrition of the wasted muscles. From an early period in the case the exhibition of galvanic currents is necessary. To this may be added the faradic so soon as the patient can stand it. In those cases where dropfoot becomes permanent, there is generally chronic myositis, and it is to prevent this condition that our best efforts should be employed. Sulphur baths, hot-air baths, and other methods have often been of extremely beneficial influence in these cases.

SURGERY.

(495) The Surgery of Ulcer and Cancer of the Stomach.

TH. KOCHER (*Correspondenzblatt f. Schweizer Aerzte*, October 15th, 1898) advocates a more extended use of exploratory incisions in doubtful cases of gastric disease. He has regretted delay in operating often, but operating never. Thus simple ulcer in elderly people is often difficult to distinguish from carcinoma, but both are often best treated by removal, and hence the difficulty is not of much importance. The indications for operation in simple ulcer are: (1) repeated hæmorrhages (two or three), even if small, and especially if dilatation of the stomach is present; (2) violent pain

and frequent vomiting, when caused by retention from pyloric obstruction; (3) perforation; (4) the possibility of its being not simple but cancerous. Mikulicz concludes from an analysis of 238 cases that the danger to life of an operation for simple ulcer is not greater than the average danger of the ulcer itself. Every operation must be adapted to the case. Thus the results of enterostomy or pyloroplasty have been brilliant in relieving pain and dyspepsia, which are generally due to pyloric obstruction, even when the ulcer has not been excised. When there are many adhesions Kocher considers a circular resection of the stomach to be often safer than an irregular excision of the ulcer. Again, for hæmorrhage, a regular pyloric resection will often succeed where circumscribed excision or ligature of the bleeding vessel are impossible. As regards carcinoma: The author quotes Leube with approval that if the symptoms (gastralgia, etc.) are to be benefited at all by medical treatment, the improvement must begin in four or five weeks; that is, if there is no change in that time, the case is probably malignant, and surgery is the only chance. The operation is also frequently postponed too late, because free HCl is present, which is supposed to exclude carcinoma, but does not. Another argument for early operation is that, even though the diagnosis prove to be wrong, and the gastralgia, etc., to be dependent on adhesions, epigastric hernia, or gall stones and their complications, these diseases cannot be cured except by operation. Even if the symptoms are neurotic, a laparotomy may cure them. Kocher says, therefore, whenever in doubt, operate. He has performed fifty-seven resections, and from his results can state that carcinoma of the stomach is now a curable disease, and that patients from whom it has been removed may live for years, well nourished and with a good digestion. He strongly advocates his own operation—namely, resection of the pylorus with complete closure of the wounds with a double suture, and subsequent posterior gastro-duodenostomy. He does not approve of Murphy's button.

(496) Gunshot Injuries of the Spine.

PREWITT (*Annals of Surgery*, August) has tabulated 49 cases of gunshot injuries of the spine treated since the beginning of the aseptic era. Of this number, 24, including a case treated by the author, were subjected to operation, with 11 recoveries and 13 deaths; 25 were not operated upon, with 8 recoveries and 17 deaths. The mortality after operation was about 55 per cent. in the cervical and 66 per cent. in the dorsal region. Of three operations for injury to the lumbar portion, each was successful. The author has arrived at the following conclusions: (1) It is the duty of the surgeon to advise immediate operation in all cases of gunshot wounds of the spine, provided the wound has involved the posterior or lateral parts of the spine at an accessible region, unless the condition of the patient is such as to indicate clearly that he is hopelessly stricken; (2) to wait to see whether Nature is competent to restore the damage is to wait until irreparable damage has been done in many cases, as, for instance, rapid degenerative changes, meningitis, and myelitis. The delay permits of the continuance of conditions, the removal of which is the purpose of the operation; (3) the presence of complications due to penetration of the great cavities and injury of their viscera will influence the question of operation, but not necessarily forbid it.

(497) Local Anæsthesia and Artificial Ischæmia.

BRAUN (*Centralbl. f. Chirurgie*, No. 43, 1898) holds that the arrest of the supply of blood to a limb by Esmarch's method, is both a useless and a dangerous adjunct to any plan of producing local anæsthesia. In discussing the practice recently advocated by Kofmann of rendering bloodless the seat of a proposed operation and then injecting a solution of cocaine, he asserts that an artificially-produced anæmia does not by itself affect the organs of painful sensation. The action of cocaine or any other local anæsthetic injected into the tissues may, however, be intensified by the condition of anæmia in consequence of the arrested absorption of the anæsthetic solution. If local anæsthesia be absorbed after the simple production of local ischæmia such a result is due not to the cutting off of the blood supply to the benumbed parts, but to a dangerous compression of the sensory nerves.

(498) The Other Kidney in Contemplated Nephrectomy.

EDEBOHLS (*Annals of Surgery*, April, 1898) insists, on the strength of long experience, that before extirpation of the kidney a knowledge of the presence and condition of its fellow becomes of paramount importance. The aids to such knowledge are examination of the urine, palpation of the kidney, cystoscopy, catheterisation of the ureters, skiagraphy, the fluoroscope, and lastly—not first—exploratory incision. The presence of a second kidney is determinable by most of these aids, but Edebohls admits that none except incision can in all cases give completely satisfying information regarding the exact condition of the other kidney. He further warns us that in cases of pyrexia and tuberculosis of vesical or of unilateral renal origin, catheterisation of the ureters involves the risks of infection of a previously healthy ureter and kidney, and should be avoided. Though averse to haste in making an exploratory incision, Edebohls does not scruple when in doubt to make a lumbar incision, to deliver through it and then examine the fellow of the kidney, previous to completing an otherwise indicated nephrectomy. For modern surgery, he declares, with improved methods and technique, has rendered lumbar exploratory incision a safe and expeditious procedure, the most and generally the only reliable one for determining the exact condition of the other kidney.

(499) Congenital Defect of the Fibula.

F. J. COTTON and A. L. CHUTE (*Boston Med. and Surg. Journ.*, August 25th and September 1st, 1898) describe three cases of congenital defect of the fibula and one of partial fusion of tibia and fibula, with a congenital constriction round the leg. In the three former cases there was absence of one or more toes; in one only was the fibula completely absent, in the other two it was present in a rudimentary form. These details were discovered by means of the *x* rays. In the case of fusion of the leg bones there was no ossification of the foot. The authors accept the amniotic theory as the most plausible yet advanced. Between the fifth and eighth week, pressure of a too tightly fitting amnion interferes with the development of the exposed fibula and the outer toe or toes of the exposed foot. Lack of space determines the bend of the growing tibia; the adhesion which produces the so-called scar is a result of contact of the most salient point of the tibia with the enveloping wall. Early pressure and disuse produce deficient vessels and nerves and so lead to the lack of growth of the whole limb. Where there is a rudiment of the fibula of some size, but situated higher up than normal, an operation aiming to slide this down and fix it to the tibia as an external malleolus might be worth considering. Amputation is to be thought of only in cases utterly unsuitable for other treatment.

MIDWIFERY AND DISEASES OF WOMEN.

(500) Puerperal Eclampsia.

KARL WINKLER (*Virchow's Arch.*, vol. cliv, page 187) has made careful examinations of the organs in fatal cases of eclampsia. He comes to the conclusion that the essential changes are those of the kidneys, and that the convulsions are caused by an intoxication of the organism with the producers of metabolism (analogous to what takes place in uræmic conditions). The severe nephritis, which gives rise to the disorder of the renal secretion, is evidenced histologically by atrophy of the glomeruli and by severe fatty degeneration of the epithelium in the convoluted tubules, etc. The nephritis may occur: (1) acutely, as an exaggeration of the normal renal change of pregnancy; (2) as recurrent chronic nephritis where there has been earlier kidney disease. There are other changes to be found in various organs, which are partly due to the convulsions, partly due to the pregnancy. The spots of hæmorrhage and necrosis which have been discovered in the liver in many cases of eclampsia, as described by Jürgens, Klebs, etc., have likewise been found in many infectious diseases, and particularly in cases of epileptiform convulsions. In puerperal convulsions the liver can be mechanically damaged by pressure between the pregnant uterus and the muscles of the abdominal wall and diaphragm. Metastasis of hepatic cells by the circulation is not confined to cases of puerperal convulsions, but

can take place likewise in other conditions; in cases of convulsions the great variations of pressure to which the blood vessels are subjected may serve to explain the entry of cells from the liver, bone marrow, and placenta into the blood vessels, and their metastasis to the lungs and other organs. Sudden variations in blood pressure likewise explain the occurrence of hæmorrhages in the pia mater and the brain substance.

(501) Secondary Cancer of Vagina after Ovariotomy.

SEMMELINK (*Nederland. Tijdschr. van Verlosk. en Gynæc.*, vol. ix, 1898, No. 1) closely investigated a case of clinical importance. A woman underwent ovariotomy. The tumour was a malignant adenoma of the right ovary. The left ovary was also removed, apparently on suspicion or on Pfannenstiel's principle that recurrence on the opposite side is practically certain in adenoma, papilloma, sarcoma, or carcinoma of the ovary. Six years later a growth developed in the vagina. Semmelink explored the parts and found a circumscribed deposit on the vaginal mucous membrane behind the urethra. It was examined with the microscope and proved to be an adeno-carcinoma. There were no enlarged lymphatics and no evidence of deposit in the bladder or urethra. The uterus seemed normal, but a large hard tumour lay to its left. On that account no operation was deemed justifiable. The patient died within four months. No *post mortem* was allowed.

(502) Stypticin in Uterine Hæmorrhage.

BRAITENBERG (*Wien. med. Presse*, 1898, No. 35) tabulates 24 cases of metrorrhagia treated with stypticin in the Innsbruck Gynæcological Clinic. Stypticin is hydrchloride of cotarnin, the base of the opium-alkaloid narcotin: it is a yellow, inodorous, bitter powder, and is usually given in ¾ gr. doses five to eight times a day. In severe cases 3 gr., or even more, can be safely administered. When taken by the mouth eructations are apt to follow, so that intramuscular injections of a 10 per cent. solution into the nates are to be preferred. In the 24 cases referred to a negative result is recorded in one only, and an almost negative in another; there were no ill-effects. The sedative action recorded by previous authors was not evident, as when pain was present it rarely yielded at the same time as the hæmorrhage. In accordance with previous observations, least result was obtained in uncomplicated hæmorrhagic endometritis; when, however, the stypticin was used for bleeding which had returned after curetting, its action was much more marked. When the hæmorrhage arose from malposition of the uterus, from peri- or parametritis, or from inflammation of the appendages, stypticin checked it most signally. In menorrhagia and dysmenorrhœa the results were equally good, as also in hæmorrhage without obvious anatomical cause. In a case of fibroids, however, no good was done. Only one case of hæmorrhage in pregnancy was treated: this was one of threatened abortion from retroflexion. Seven doses of ¾ gr. stopped the hæmorrhage and averted the abortion. None of the patients were confined to bed during the treatment, unless their diseases actually required it.

(503) Pregnancy and Heart Disease.

JESS (*Münch. med. Woch.*, October 11th, 1898) has during the last few years collected from his own clinic and also from those of others all the material bearing on this question. He says the family doctor is often asked whether a girl should be allowed to marry who is the subject of heart disease. The author's advice in these cases depends upon whether there is compensation or not. A heart with healthy muscle walls will bear pregnancy and parturition fairly well provided the patient is still young. Another point to be considered before giving a prognosis is the social position of the patient. The rest, both before and after parturition, is more readily obtained amongst the upper classes. The question of premature delivery in these cases is very difficult to decide. Schlazer brought on abortion in 3 out of 25 cases of pregnancy and heart disease: all 3 patients died. An abortion usually takes longer than a normal delivery, and this is probably the reason of the fatal termination. Advice is frequently asked during the last months of pregnancy, when it is too late to bring on abortion. Special instruction is given in Schlazer's clinic in the management of labour in cases of heart disease. The main object in treatment is to deliver as soon as possible with the forceps or turning. As the fœtus is passing through the pelvis a sand bag weighing from 8 to 10 lbs. is placed on the abdomen in such a manner that it rests on the fundus uteri: the constant pressure of the sand-bag ensures the complete contraction of the uterus; no blood clots remain behind, which saves the patient from subsequent pains. Alcoholic stimulants are given immediately after delivery. The patient is kept in bed for three or four weeks at least.

(504) Inversion of the Uterus.

COLE (*Med. News*, October 22nd, 1898) reports 2 cases, one in his own practice and one in that of a midwife. In the first case a hydrocephalic fœtus was delivered by instruments. The cord was only 8 inches long, and immediately after delivery the patient became pallid, pulseless, and cold. On attempting to get contraction of the uterus by manual aid he found that the uterus was inverted and the placenta loosened. The latter was hurriedly removed and the fundus was restored to its normal position by pressing the fingers of one hand against the fundus uteri and the other over the hypogastric region of the abdomen. After replacement, the hand was allowed to remain in the uterus a few seconds while contraction was produced by Credé's method. The uterus was washed out with hot 1 in 3,000 perchloride solution, followed by hot sterilised water. The patient made a satisfactory recovery. In the second case, when summoned to the patient, he found her collapsed, and suffering from a frightful uterine hæmorrhage. The uterus was already protruding from the vulva. He replaced it at once by the same method as in the other case. The midwife had pulled on the cord until she tore it loose from the placenta, and said that the reason the patient was so sick was that she had no afterbirth.

(505) Coexistence of Uterine Cancer and Fibromyomata.

E. CAMELOT (*Journ. des Sc. Méd. de Lille*, No. 44, October 29th, 1898) describes two cases in which cancer of the body of the uterus without malignant disease of the cervix coexisted with fibromyomata of the same organ. The association is very rare, and is attributed by the author to the irritative action of the myomatous growths on the neighbouring mucous membrane of the uterus. In this way an endometritis is set up, this takes on the glandular type, and so an atypical malignant adenoma (the first stage of cancer) is produced.

THERAPEUTICS.

(506) The Untoward Effects of Drugs.

GEORGE F. BUTLER (*Medicine*, October) says practitioners are too apt to refer any untoward effects produced by drugs to defects or impurities. Predictions may be made with considerable accuracy as to such effects in regard to any particular drug from a knowledge of its action, of the organs chiefly affected by the ordinary action of the drug and the methods of drug excretion. An antipyretic will have, as untoward effects, skin eruptions because it is excreted through the skin, because the skin through its pores regulates temperature, and hence is under the control of the central nervous system, regulating temperature; and finally because the skin is in close connection from an early period with the nervous system. For the same reason profuse debilitating perspiration often results. Since control of the temperature cannot be effected without control of the vasomotor system regulating the blood supply, heart failure, collapse, and palpitation may result, together with certain eye and ear symptoms. If the drug is one which tends to cause slight brain vasomotor disturbance, such as results from what is known as a tonic action, then delirium, blindness, and deafness of a temporary character are produced. Temperature in the human subject is regulated by the three systems of nerves: thermotaxic or heat-regulating, thermo-excitory or heat-increasing, and thermo-inhibitory or heat-decreasing. As a more or less exact balance is kept by these centres, undue action of any of them constitutes a morbid state. If the thermo-inhibitory centres are too much stimulated they may lose their control; hence in certain individuals temperature rises from an antipyretic. The action on the heart may, by its influ-

ence on the kidney circulation, cause kidney and bladder symptoms, even to the extent of albumen in the urine. If the antipyretic is excreted through the kidneys, albuminuria is especially likely to present itself as an untoward result. Alteratives and purgatives produce hæmorrhages from the mucous membranes, and œdema of those of the organs of special sense, besides skin eruptions. Hypnotics, through their action on the central nervous system, produce excessive perspiration, skin eruptions, vertigo, and heart collapse. Astringents cause diarrhœa and bloody intestinal discharges. Diaphoretics cause pains at certain points from overstimulation. In classifying tonics and alteratives together, the influence of the trophic nervous system, evident in the constitutional changes produced by diseases like typhoid fever, must be taken into account. Alterative drugs have much the same constitutional effect, according to the theory of their action now coming into general acceptance.

(507) Protargol in the Treatment of Ophthalmia.

Pisenti (*Annal. della Facoltà di Med. di Perugia*, vol. x, f. 1) has tried the above preparation of silver for the last six months in various types of ophthalmia and inflammations of the lachrymal canal. His results are decidedly encouraging. Protargol even in 10 per cent. solution (the strongest used by the author) does not cause so much and such lasting pain as a 2 per cent. solution of silver nitrate. In ophthalmia neonatorum the author used a 10 per cent. solution two or three times a day with excellent results. For catarrhal ophthalmia, a weaker solution (2 to 5 per cent.) was used. No very encouraging result was observed in granular conjunctivitis. Protargol does not cause any of those changes in the corneal epithelium which may sometimes be seen after the use of silver nitrate, and it has a power of penetration into the tissues five times greater than that of the nitrate; it is also an active germicide as far as the gonococcus is concerned.

(508) Intoxication Symptoms after Injections of Oleum Cinereum.

Ledermann concludes a paper on this subject in the *Berl. klin. Woch.*, November 14th, 1898. In the injection treatment distinction must be made between the use of soluble and that of insoluble preparations. Sublimate injections can seldom be used as they give rise to pain. Insoluble salts are more convenient, and the author especially points out the value of the salicylic and thymol preparations of mercury. The pain of the injection is slight. Sometimes cough and pain in the chest have been noted after the injection, but such symptoms have rapidly passed off. In some cases, however, these symptoms attributed to embolism have been said to be much more severe. Ledermann has never seen any unpleasant effects from the use of salicylic and thymol preparations. The absorption takes place here evenly and gradually. In the case, however, of the oleum cinereum infiltration takes place about the injection and delays the absorption. The author looks upon it as a dangerous mistake to continue the injections when this infiltration remains. Intoxication symptoms may arise even in those apparently in health, and it may be impossible to arrest them. Ledermann then gives examples of recorded cases of poisoning by oleum cinereum. He employs injections of insoluble mercurial preparations only in those who are strong and whose organs are intact. The state of the heart and lungs must be specially attended to. Patients susceptible to mercury must not be injected. Objections to the injection treatment disappear if the dangers of the syphilis actually exceed those of the injections. The author strongly advocates the inunction treatment with resorbin-mercury. Thus the storage of large quantities of mercury in the body is avoided. He employs the injection treatment less frequently than inunction, and would never use the oleum cinereum.

(509) Iodide of Potassium in Hæmorrhagic Endometritis.

Silvestri (*Gaz. degli Osped. e delle Clin.*, November 20th, 1898) draws attention to the value of iodide of potassium in the treatment of fungous endometritis and the metrorrhagia of uterine fibroids. He records five cases, in each of which, with one doubtful exception, syphilis could be excluded, where the administration of moderate doses of KI brought about a cure. The author further recommends the use of this drug in habitual abortion when threatening, or as prophylactic agent. The mode of action is somewhat uncertain; it may be in virtue of its absorbing powers, or through improving the state of the blood, depressing the heart, and as an aphrodisiac moderating the function of the genital organs, and thence the reflex congestion.

PATHOLOGY.

(510) Fatty Sclerodermia in Infancy.

Knöpfelmacher (*Jahrb. f. Kinderheilk.*, vol. 45, pp. 2 and 3) has made a chemical investigation with regard to the fat contained in the skin of infants. The subject was suggested to him whilst examining a case of the so-called fatty sclerodermia. The name fatty sclerodermia is applied to all cases in which the skin and subcutaneous tissue becomes tough. The skin in these cases is cold and anæmic; it does not pit on pressure, neither does it fall into folds or creases. The skin lies in close apposition to the internal organs, all the mucous membranes are dry, the muscles become quite rigid, so that in advanced cases the entire body is as hard as a board. The muscular rigidity is particularly marked in the extremities. The patient lies immovable. The following questions gave direction to the author's investigations: 1. How is the fat of the skin stored at the various periods of infancy? When does the oleic acid reach the amount found in the skin of adults? 2. Is the fat of the adipose tissue similar in composition in all parts of the body? 3. Is there any chemical alteration in the fat of fatty sclerodermia? The result of the investigations is as follows: The proportion of oleic acid in the fat of a newborn child is 43.3 per cent. The amount of oleic acid gradually increases until the child is a year old, when the amount of oleic acid has risen to 65 per cent.; the adult requirement does not exceed this. The fat of a badly-nourished child contains very little oleic acid, whilst the fat of a well-nourished child contains the normal amount. The fat surrounding the os calcis is richer in oleic acid than that in any other part of the body. The author proceeds to enumerate the causes of fatty sclerodermia: (1) The enormous loss of fluid in certain diseases, particularly infantile diarrhœa. (2) Subnormal temperature. (3) The readiness with which the fat in infants becomes stiffened; at two months old the fat already contains a high percentage of oleic acid, so that the onset of sclerodermia at this age is very unusual.

(511) Ulceration of Varicose Veins on the Stomach.

Letulle (*La Presse Méd.*, November 29th, 1898) records 2 cases of fatal hæmatemesis from rupture of varicose veins in the stomach. This condition is much more rarely recognised on the stomach than on the œsophagus, but is possibly sometimes overlooked. It is due to hepatic obstruction and the compensatory development of the collateral circulation between the gastric and œsophageal veins. Both Letulle's cases were due to cirrhosis. The veins undergo chronic inflammation, and as a result of fibrosis of their walls aneurysmal pouches are developed. As a further consequence of inflammation the overlying gastric mucous membrane becomes fixed to the varicosity, and an elevated area is thus formed. From the irritation of food or from toxic or septic processes the mucous membrane may become ulcerated and the vein opened. Clinically there is no means of diagnosing this condition.

(512) The Influence of the Spleen in Destruction of Bacterial Poisons.

Chimici (*Gazz. degli Osped.*, November 27th, 1898) has conducted a series of experiments on guinea-pigs with a view to elucidating this question. His results are almost entirely negative. Apparently guinea-pigs can exist equally well without as with their spleens. Moreover, the "displeened" animals showed the same symptoms after injections of diphtheritic, tetanic, or tuberculous toxins, as those possessing spleens; in other words, the removal of the spleen made no difference to the course of disease after toxic injection. The author further tried the effect of injecting toxins with splenic juice; here also the addition of the splenic juice causes no modification in the ensuing symptoms.

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